APPENDIX B

Tables

TABLE 1: ACTIVITY CATEGORY DESCRIPTIONS

Table 1: Activity Category Descriptions

STREET ID LEGEND	
STREET ID	STREET NAME
351	KY-351
2084	KY-2084
8029B	LC-8029A (Entrance to John James Audobon State Park)
ARLC	Arlington Court
ARLD	Arlington Drive
AUGD	Augusta Drive
BALD	Balmoral Drive
BARB	Barrett Boulevard
BARC	Barrett Court
BARD	Barnett Drive
BARR	Barker Road
BLUD	Blue Ridge Drive
BOWL	Bowling Lane
BRAD	Braxton Park Drive
BRIA	Brinson Avenue
BROD	Brookstone Drive
CAMC	Camaro Court
CAMD	Camaro Drive
CANL	Canary Lane
CATD	Catalena Drive
CBTP	Circle B Trailer Park
CBTP2	Trailer Park
CHED	Cheaney Drive
CLAS	Clay Street
GLOD	Glover Drive
COBD	Cobblestone Drive
COLD	Cole Drive
COLED	Coles Drive
CONA	Congress Avenue
CTAP	Cole Trailer Park (Row A)
CTBP	Cole Trailer Park (Row B)
CULC	Culpepper Court
DOND	Donna Drive
EFOR	East Fork Hollow Run
ELKA	Elk Avenue
ELOA	Eloise Avenue
FRAD	Frances Drive
FREA	Frederick Avenue
FRYD	Fryer Drive
GARL	Garden Lane
GRED	Greenbriar Drive

STREET ID LEGEND	
STREET ID	STREET NAME
GRSF	Green River State Forest
GUMS	Gum Street
HALD	Hallway Drive
HARL	Harmony Lane
HART	Harpeth Grenn Trace
HCHA	Hendeson County High School Athletic Fields
HERA	Herron Avenue
HILT	Hillcrest Terrace
HIYD	Hi-Y Drive
HUBL	Hubbard Lane
IROD	Ironwood Drive
JAMD	Jamestown Drive
JOHD	Johnson Drive
KENC	Kennedy Circle
KIML	Kimsey Lane
LAKD	Lake Drive
LAKR	Lakecrest Road
LEXD	Lexington Drive
LOCD	Locust Drive
MAGS	Magnolia Street
MARA	Marbo Avenue
MARD	Marywood Drive
MARKD	Mark Drive
MELL	Melody Lane
MELP	Melwood Place
MICD	Michael Drive
MIMD	Mimosa Drive
MORD	Morris Drive
NPAD	North Park Drive
NELS	North Elm Street
NGRS	North Green Street
NLIA	North Lincoln Avenue
NPAD	North Park Drive
POPA	Poplar Avenue
POWS	Powell Street
PRIV	Private Drive
R414	Route 414
REES	Ree Street
REID	Reid Drive
RETR	Rettig Road
RHEA	Rheinhardt Avenue
RICA	Richardson Avenue

STREET ID LEGEND	
STREET ID	STREET NAME
RICL	Rice Lane
ROBR	Robin Road
ROOD	Rooney Drive
RTTP	Race Track Road Trailer Park
SAND	Sand Castle Drive
SBOR	South Boeka Road
SHEA	Shelby Avenue
SHEP	Shenandoah Place
SNOA	South Norman Avenue
SOUD	Southside Drive
SPRD	Springer Drive
SPRR	Springer Road
SPRWD	Springwood Drive
SROA	South Rotherwood Avenue
SROD	South Roosevelt Drive
SRUA	South Ruston Avenue
SSTB	South Street James Boulevard
STPD	Saint Patrick Drive
STRR	Stratman Road
SVID	South Villa Drive
SWEA	South Weinbach Avenue
TARD	Taransay Drive
TP	Trailer Park
TRER	Tree Line Road
US41	US 41
US60	US 60
VaBA	Van Bibber Avenue (West of South Weinbach Avenue)
VANA	Vanguard Avenue
VILD	Villa Drive
VNBA	Van Bibber Avenue (East of South Weinbach Avenue)
WALL	Walnut Lane
WASS	Washington Street
WATL	Watson Lane
WEDD	Wedgewood Drive
WENA	Wentworth Avenue
WFOR	West Fox Hollow Run
WGRS	West Grant Street
WILD	Willow Drive

TABLE 2: RESULTS FOR NO-BUILD ALTERNATIVE

Table 2: Results for No-Build Alternative

LEGEND	
	Exceeds Noise Abatement Criteria
	Exceeds Substantial Increase Criteria (10 dB(A) in KY, 15 dB(A) in IN)
	Exceeds Both Criteria

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
A1	Residential (B)	66	1,146	48.3	49.7
A10	Residential (B)	66	558	55.7	57.4
A11	Residential (B)	66	880	52.4	54.1
A5	Residential (B)	66	1,167	50.0	51.8
A9	Residential (B)	66	874	55.4	57.0
Atkinson	Residential (B)	66	353	58.5	60.0
IN-01-01-ELOA-01	Residential (B)	66	640	52.0	52.2
IN-01-01-ELOA-02	Residential (B)	66	518	52.9	53.0
IN-01-01-FREA-01	Residential (B)	66	542	56.1	57.1
IN-01-01-FREA-02	Residential (B)	66	537	56.6	57.7
IN-01-01-FREA-03	Residential (B)	66	586	56.6	57.7
IN-01-01-MARA-01	Residential (B)	66	574	53.8	54.1
IN-01-01-MARA-02	Residential (B)	66	582	54.0	54.4
IN-01-01-MARA-03	Residential (B)	66	637	54.0	54.8
IN-01-01-MARA-04	Residential (B)	66	545	54.8	55.3
IN-01-01-MARA-05	Residential (B)	66	604	55.7	56.6
IN-01-01-MARA-06	Residential (B)	66	611	55.9	56.8
IN-01-01-MARA-07	Residential (B)	66	560	56.7	57.6
IN-01-01-REES-01	Residential (B)	66	273	53.4	54.2
IN-01-01-REES-02	Residential (B)	66	216	54.3	55.1
IN-01-01-REES-03	Residential (B)	66	177	54.9	55.7
IN-01-01-REES-04	Residential (B)	66	139	56.1	56.9
IN-01-01-REES-05	Residential (B)	66	96	55.9	56.8
IN-01-01-RHEA-01	Residential (B)	66	510	50.0	50.8
IN-01-01-RHEA-02	Residential (B)	66	522	49.9	50.7
IN-01-01-RHEA-03	Residential (B)	66	469	50.5	51.3
IN-01-01-RHEA-04	Residential (B)	66	139	52.6	48.2
IN-01-01-SBOR-01	Residential (B)	66	439	51.3	52.1
IN-01-01-SBOR-02	Residential (B)	66	364	52.2	53.1
IN-01-01-SBOR-03	Residential (B)	66	149	54.7	55.5

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
IN-01-01-SBOR-04	Residential (B)	66	198	54.7	55.6
IN-01-01-SBOR-05	Residential (B)	66	652	52.6	49.5
IN-01-01-SBOR-06	Residential (B)	66	772	52.6	48.5
IN-01-01-SHEA-03	Residential (B)	66	629	55.0	55.8
IN-01-01-SHEA-04	Residential (B)	66	635	55.2	56.0
IN-01-01-SNOA-01	Residential (B)	66	537	57.0	58.1
IN-01-01-SNOA-02	Residential (B)	66	483	57.9	58.9
IN-01-01-SNOA-03	Residential (B)	66	425	58.9	60.0
IN-01-01-SNOA-04	Residential (B)	66	355	60.4	61.4
IN-01-01-SNOA-05	Residential (B)	66	330	61.0	62.0
IN-01-01-SROA-01	Residential (B)	66	525	57.4	58.4
IN-01-01-SROA-02	Residential (B)	66	285	61.4	62.4
IN-01-01-SROA-03	Residential (B)	66	224	62.8	63.9
IN-01-01-SROA-04	Residential (B)	66	167	64.4	65.4
IN-01-01-SROD-01	Residential (B)	66	296	53.0	53.9
IN-01-01-SROD-02	Residential (B)	66	261	53.6	54.4
IN-01-01-SROD-03	Residential (B)	66	223	54.2	55.0
IN-01-01-SROD-04	Residential (B)	66	188	54.8	55.7
IN-01-01-SROD-05	Residential (B)	66	144	55.3	56.2
IN-01-01-SRUA-01	Residential (B)	66	414	50.7	51.6
IN-01-01-SRUA-02	Residential (B)	66	378	51.2	52.1
IN-01-01-SRUA-03	Residential (B)	66	341	51.7	52.6
IN-01-01-SRUA-04	Residential (B)	66	302	52.3	53.2
IN-01-01-SRUA-05	Residential (B)	66	265	53.1	53.9
IN-01-01-SRUA-06	Residential (B)	66	229	53.6	54.4
IN-01-01-SRUA-07	Residential (B)	66	191	54.3	55.1
IN-01-01-SRUA-08	Residential (B)	66	156	54.8	55.6
IN-01-01-SRUA-09	Residential (B)	66	116	55.5	56.4
IN-01-01-SSTB-01	Residential (B)	66	497	49.9	50.7
IN-01-01-SSTB-02	Residential (B)	66	466	50.3	51.1
IN-01-01-SSTB-03	Residential (B)	66	428	50.7	51.6
IN-01-01-SSTB-04	Residential (B)	66	388	51.3	52.2
IN-01-01-SSTB-05	Residential (B)	66	356	51.8	52.6
IN-01-01-SSTB-06	Residential (B)	66	317	52.3	53.2
IN-01-01-SSTB-07	Residential (B)	66	299	52.7	53.5
IN-01-01-SSTB-08	Residential (B)	66	239	53.6	54.5
IN-01-01-SSTB-09	Residential (B)	66	199	54.7	55.5

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
IN-01-01-SSTB-10	Residential (B)	66	157	55.0	55.9
IN-01-01-SSTB-11	Residential (B)	66	117	55.7	56.5
IN-01-01-SVID-01	Residential (B)	66	129	55.3	56.1
IN-01-01-SVID-02	Residential (B)	66	186	54.3	55.1
IN-01-01-SWEA-01	Residential (B)	66	598	56.2	57.2
IN-01-01-SWEA-02	Residential (B)	66	535	57.1	58.1
IN-01-01-SWEA-03	Residential (B)	66	464	58.3	59.3
IN-01-01-SWEA-04	Residential (B)	66	608	52.6	56.2
IN-01-01-VaBA-01	Residential (B)	66	547	48.5	49.0
IN-01-01-VaBA-02	Residential (B)	66	575	48.9	49.5
IN-01-01-VaBA-03	Residential (B)	66	600	49.0	49.6
IN-01-01-VaBA-04	Residential (B)	66	595	49.1	49.7
IN-01-01-VaBA-05	Residential (B)	66	630	49.3	49.8
IN-01-01-VaBA-06	Residential (B)	66	741	49.9	50.1
IN-01-01-VaBA-07	Residential (B)	66	731	50.4	50.6
IN-01-01-VNBA-01	Residential (B)	66	587	48.7	49.6
IN-01-01-VNBA-02	Residential (B)	66	562	48.7	49.6
IN-01-01-VNBA-03	Residential (B)	66	526	48.7	49.5
IN-01-01-VNBA-04	Residential (B)	66	508	49.1	50.0
IN-01-01-VNBA-05	Residential (B)	66	508	49.6	50.4
IN-01-01-VNBA-06	Residential (B)	66	421	50.3	51.1
IN-01-01-VNBA-07	Residential (B)	66	359	51.2	52.0
IN-01-01-VNBA-08	Residential (B)	66	381	51.2	52.0
IN-01-01-VNBA-09	Residential (B)	66	327	51.5	52.3
IN-01-01-VNBA-10	Residential (B)	66	293	52.0	52.9
IN-01-01-VNBA-11	Residential (B)	66	240	53.7	54.6
IN-01-01-VNBA-12	Residential (B)	66	200	54.3	55.1
IN-01-01-VNBA-13	Residential (B)	66	289	53.1	53.9
IN-01-01-VNBA-14	Residential (B)	66	281	53.2	54.0
IN-01-01-VNBA-15	Residential (B)	66	251	53.6	54.4
IN-01-01-VNBA-16	Residential (B)	66	234	53.9	54.8
IN-01-01-VNBA-17	Residential (B)	66	220	54.2	55.1
IN-01-01-VNBA-18	Residential (B)	66	220	54.1	55.0
IN-01-01-VNBA-19	Residential (B)	66	173	55.0	55.9
IN-01-02-MARA-01	Residential (B)	66	403	55.5	55.9
IN-01-02-MARA-02	Residential (B)	66	411	55.7	56.3
IN-01-02-MARA-03	Residential (B)	66	413	55.9	56.6

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
IN-01-02-MARA-04	Residential (B)	66	417	56.2	56.9
IN-01-02-MARA-05	Residential (B)	66	430	56.4	57.0
IN-01-02-MARA-06	Residential (B)	66	427	56.7	57.3
IN-01-02-MARA-07	Residential (B)	66	417	57.1	57.8
IN-01-02-MARA-08	Residential (B)	66	400	57.6	58.4
IN-01-02-MARA-09	Residential (B)	66	375	58.3	59.3
IN-01-02-MARA-10	Residential (B)	66	378	58.8	59.8
IN-01-02-MARA-11	Residential (B)	66	337	59.7	60.6
IN-01-02-MARA-12	Residential (B)	66	348	59.9	60.8
IN-01-02-MARA-13	Residential (B)	66	386	59.5	60.5
IN-01-02-MARA-14	Residential (B)	66	575	56.3	57.4
IN-01-02-MARA-15	Residential (B)	66	569	56.3	57.4
IN-01-02-MARA-16	Residential (B)	66	676	55.1	56.1
IN-01-02-REES-01	Residential (B)	66	219	54.0	54.9
IN-01-02-REES-02	Residential (B)	66	171	54.9	55.7
IN-01-02-REES-03	Residential (B)	66	128	55.5	56.3
IN-01-02-RHEA-01	Residential (B)	66	785	52.6	48.2
IN-01-02-RHEA-02	Residential (B)	66	770	52.6	48.2
IN-01-02-RHEA-03	Residential (B)	66	721	52.6	56.3
IN-01-02-SBOR-01	Residential (B)	66	485	50.5	51.3
IN-01-02-SHEA-01	Residential (B)	66	673	54.1	54.8
IN-01-02-SHEA-02	Residential (B)	66	599	54.6	55.4
IN-01-02-SNOA-01	Residential (B)	66	600	56.1	57.1
IN-01-02-SNOA-02	Residential (B)	66	552	57.8	57.7
IN-01-02-SNOA-03	Residential (B)	66	502	56.6	58.5
IN-01-02-SNOA-04	Residential (B)	66	442	58.4	59.5
IN-01-02-SNOA-05	Residential (B)	66	366	60.1	61.2
IN-01-02-SROA-01	Residential (B)	66	247	62.8	63.7
IN-01-02-SROA-02	Residential (B)	66	326	61.0	61.9
IN-01-02-SROA-03	Residential (B)	66	390	59.6	60.6
IN-01-02-SROA-04	Residential (B)	66	444	62.6	64.3
IN-01-02-SROA-05	Residential (B)	66	404	57.8	58.8
IN-01-02-SRUA-01	Residential (B)	66	359	51.4	52.2
IN-01-02-SRUA-02	Residential (B)	66	289	52.5	53.3
IN-01-02-SRUA-03	Residential (B)	66	239	53.6	54.4
IN-01-02-SRUA-04	Residential (B)	66	175	54.4	55.3
IN-01-02-SRUA-05	Residential (B)	66	134	55.2	56.1

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
IN-01-02-SRUA-06	Residential (B)	66	103	55.8	56.7
IN-01-02-SSTB-01	Residential (B)	66	475	50.0	50.8
IN-01-02-SSTB-02	Residential (B)	66	440	50.4	51.3
IN-01-02-SSTB-03	Residential (B)	66	397	51.2	52.0
IN-01-02-SSTB-04	Residential (B)	66	359	51.5	52.3
IN-01-02-SSTB-05	Residential (B)	66	322	52.1	52.9
IN-01-02-SSTB-06	Residential (B)	66	287	52.6	53.5
IN-01-02-SSTB-07	Residential (B)	66	248	53.3	54.1
IN-01-02-SSTB-08	Residential (B)	66	214	53.9	54.7
IN-01-02-SSTB-09	Residential (B)	66	175	54.6	55.5
IN-01-02-SSTB-10	Residential (B)	66	133	55.4	56.3
IN-01-02-SWEA-01	Residential (B)	66	357	59.7	60.6
IN-01-02-SWEA-02	Residential (B)	66	208	62.9	63.8
IN-01-02-SWEA-03	Residential (B)	66	665	52.6	56.0
IN-01-02-SWEA-04	Residential (B)	66	722	52.6	55.6
IN-01-02-VNBA-01	Residential (B)	66	467	50.5	50.5
IN-01-02-VNBA-02	Residential (B)	66	436	50.9	50.9
IN-01-02-VNBA-03	Residential (B)	66	384	50.9	50.9
IN-01-02-VNBA-04	Residential (B)	66	338	51.2	51.2
IN-01-02-VNBA-05	Residential (B)	66	536	51.4	51.4
IN-01-02-VNBA-06	Residential (B)	66	450	51.7	51.7
IN-01-02-VNBA-07	Residential (B)	66	423	52.0	52.0
IN-01-02-VNBA-08	Residential (B)	66	355	52.3	52.3
IN-01-02-VNBA-09	Residential (B)	66	284	53.2	53.2
IN-01-02-VNBA-10	Residential (B)	66	700	52.0	49.7
IN-01-02-VNBA-11	Residential (B)	66	597	52.0	50.6
KY-02-01-8029B-01	Recreation (C)	66	263	63.9	65.4
KY-02-01-8029B-02	Recreation (C)	66	297	63.2	64.7
KY-02-01-BARR-01	Residential (B)	66	1,002	51.1	52.9
KY-02-01-BARR-02	Residential (B)	66	781	53.1	54.9
KY-02-01-BARR-03	Residential (B)	66	718	53.8	55.6
KY-02-01-BRIA-01	Residential (B)	66	329	59.9	61.5
KY-02-01-BRIA-02	Residential (B)	66	366	58.9	60.4
KY-02-01-BRIA-03	Residential (B)	66	351	59.8	61.3
KY-02-01-BRIA-04	Residential (B)	66	385	58.1	59.7
KY-02-01-CAMC-01	Residential (B)	66	1,037	51.1	52.9
KY-02-01-CAMC-02	Residential (B)	66	1,130	50.5	52.3

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-01-CAMC-03	Residential (B)	66	1,130	50.7	52.4
KY-02-01-CAMD-01	Residential (B)	66	1,178	49.9	51.6
KY-02-01-CAMD-02	Residential (B)	66	1,073	50.6	52.4
KY-02-01-CAMD-03	Residential (B)	66	998	51.3	53.1
KY-02-01-CAMD-04	Residential (B)	66	919	52.0	53.8
KY-02-01-CANL-01	Residential (B)	66	469	57.9	59.8
KY-02-01-CANL-02	Residential (B)	66	339	60.7	62.5
KY-02-01-CANL-03	Residential (B)	66	260	62.4	64.2
KY-02-01-CATD-01	Residential (B)	66	589	56.2	57.7
KY-02-01-CATD-02	Residential (B)	66	587	55.9	57.5
KY-02-01-CATD-03	Residential (B)	66	565	56.0	57.8
KY-02-01-CATD-04	Residential (B)	66	572	55.8	57.6
KY-02-01-CATD-05	Residential (B)	66	574	55.8	57.6
KY-02-01-CATD-06	Residential (B)	66	583	55.6	57.5
KY-02-01-CBTP-01	Residential (B)	66	1,057	52.5	54.1
KY-02-01-CBTP-02	Residential (B)	66	1,015	52.8	54.4
KY-02-01-CBTP-03	Residential (B)	66	969	53.1	54.7
KY-02-01-CBTP-04	Residential (B)	66	932	53.4	55.0
KY-02-01-CBTP-05	Residential (B)	66	884	53.8	55.5
KY-02-01-CBTP-06	Residential (B)	66	842	54.2	55.9
KY-02-01-CBTP-07	Residential (B)	66	801	54.5	56.1
KY-02-01-CBTP-08	Residential (B)	66	749	54.9	56.5
KY-02-01-CBTP-09	Residential (B)	66	689	55.4	57.1
KY-02-01-CBTP-10	Residential (B)	66	594	56.2	58.0
KY-02-01-CBTP-11	Residential (B)	66	562	56.8	58.5
KY-02-01-CBTP-12	Residential (B)	66	527	57.3	59.0
KY-02-01-CBTP-13	Residential (B)	66	502	57.5	59.3
KY-02-01-CBTP-14	Residential (B)	66	468	58.1	59.9
KY-02-01-CBTP-15	Residential (B)	66	492	58.3	60.0
KY-02-01-CBTP-16	Residential (B)	66	558	57.5	59.1
KY-02-01-CBTP-17	Residential (B)	66	648	56.2	57.8
KY-02-01-CBTP-18	Residential (B)	66	693	55.6	57.3
KY-02-01-CBTP-19	Residential (B)	66	737	55.0	56.7
KY-02-01-CBTP-20	Residential (B)	66	784	54.5	56.1
KY-02-01-CBTP2-01	Residential (B)	66	996	53.3	55.0
KY-02-01-CBTP2-02	Residential (B)	66	976	53.5	55.2
KY-02-01-CBTP2-03	Residential (B)	66	948	53.6	55.3

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-01-CBTP2-04	Residential (B)	66	893	54.0	55.6
KY-02-01-CBTP2-05	Residential (B)	66	867	54.1	55.8
KY-02-01-CBTP2-06	Residential (B)	66	927	53.5	55.2
KY-02-01-CBTP2-07	Residential (B)	66	970	53.1	54.7
KY-02-01-CBTP2-08	Residential (B)	66	1,005	52.8	54.5
KY-02-01-CBTP-21	Residential (B)	66	829	54.0	55.7
KY-02-01-CBTP-22	Residential (B)	66	871	53.6	55.2
KY-02-01-CBTP-23	Residential (B)	66	919	53.2	54.8
KY-02-01-CBTP-24	Residential (B)	66	960	52.8	54.4
KY-02-01-CBTP-25	Residential (B)	66	1,007	52.4	54.0
KY-02-01-CBTP-26	Residential (B)	66	1,049	52.1	53.7
KY-02-01-COLD-01	Residential (B)	66	89	54.0	55.7
KY-02-01-COLD-02	Residential (B)	66	96	54.3	55.9
KY-02-01-COLD-03	Residential (B)	66	91	54.7	56.3
KY-02-01-COLD-04	Residential (B)	66	89	55.2	56.8
KY-02-01-COLD-05	Residential (B)	66	92	62.5	64.0
KY-02-01-COLD-06	Residential (B)	66	90	64.3	65.9
KY-02-01-COLED-01	Residential (B)	66	305	57.1	58.8
KY-02-01-COLED-02	Residential (B)	66	253	57.4	59.1
KY-02-01-COLED-03	Residential (B)	66	194	57.4	59.1
KY-02-01-COLED-04	Residential (B)	66	144	57.5	59.1
KY-02-01-COLED-05	Residential (B)	66	89	57.6	59.2
KY-02-01-COLED-06	Residential (B)	66	30	57.6	59.2
KY-02-01-COLED-07	Residential (B)	66	75	58.3	59.8
KY-02-01-COLED-08	Residential (B)	66	120	58.5	60.0
KY-02-01-COLED-09	Residential (B)	66	165	58.5	60.0
KY-02-01-COLED-10	Residential (B)	66	216	58.4	59.9
KY-02-01-COLED-11	Residential (B)	66	258	58.6	60.2
KY-02-01-COLED-12	Residential (B)	66	285	58.7	60.2
KY-02-01-COLED-13	Residential (B)	66	322	59.2	60.8
KY-02-01-COLED-14	Residential (B)	66	325	59.8	61.3
KY-02-01-COLED-15	Residential (B)	66	319	60.4	62.0
KY-02-01-COLED-16	Residential (B)	66	338	61.1	62.7
KY-02-01-COLED-17	Residential (B)	66	297	56.7	59.9
KY-02-01-COLED-18	Residential (B)	66	243	55.7	58.6
KY-02-01-CTAP-01	Residential (B)	66	54	54.8	57.2
KY-02-01-CTAP-02	Residential (B)	66	73	59.0	62.6

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-01-CTAP-03	Residential (B)	66	29	55.3	57.2
KY-02-01-CTBP-01	Residential (B)	66	30	55.4	57.2
KY-02-01-CTBP-02	Residential (B)	66	178	55.3	57.1
KY-02-01-CTBP-03	Residential (B)	66	208	55.3	57.0
KY-02-01-CTBP-04	Residential (B)	66	202	49.9	51.6
KY-02-01-CTBP-05	Residential (B)	66	146	58.6	60.5
KY-02-01-DOND-01	Residential (B)	66	1,168	53.9	55.9
KY-02-01-FRYD-01	Residential (B)	66	600	55.4	57.2
KY-02-01-FRYD-02	Residential (B)	66	601	55.3	57.1
KY-02-01-FRYD-03	Residential (B)	66	594	55.4	57.2
KY-02-01-FRYD-04	Residential (B)	66	600	55.3	57.2
KY-02-01-FRYD-05	Residential (B)	66	588	55.4	57.3
KY-02-01-GUMS-01	Residential (B)	66	397	59.6	61.4
KY-02-01-HARL-01	Residential (B)	66	438	59.9	61.7
KY-02-01-HARL-02	Residential (B)	66	379	62.5	64.3
KY-02-01-HARL-03	Residential (B)	66	324	66.6	68.3
KY-02-01-HARL-04	Residential (B)	66	254	50.8	52.6
KY-02-01-HARL-05	Residential (B)	66	120	51.4	53.2
KY-02-01-JAMD-01	Residential (B)	66	1,039	52.4	54.2
KY-02-01-JAMD-02	Residential (B)	66	957	50.8	52.6
KY-02-01-JAMD-03	Residential (B)	66	858	50.7	52.4
KY-02-01-JOHD-01	Residential (B)	66	1,040	50.6	52.4
KY-02-01-JOHD-02	Residential (B)	66	1,054	50.3	52.1
KY-02-01-JOHD-03	Residential (B)	66	1,066	50.3	41.0
KY-02-01-JOHD-04	Residential (B)	66	1,104	50.2	52.0
KY-02-01-JOHD-05	Residential (B)	66	1,108	50.3	52.1
KY-02-01-JOHD-06	Residential (B)	66	1,127	50.2	51.9
KY-02-01-JOHD-07	Residential (B)	66	1,103	50.0	51.7
KY-02-01-JOHD-08	Residential (B)	66	1,131	49.5	51.3
KY-02-01-JOHD-09	Residential (B)	66	1,153	49.8	51.6
KY-02-01-LOCD-01	Residential (B)	66	1,256	50.3	52.0
KY-02-01-LOCD-02	Residential (B)	66	1,245	50.9	52.6
KY-02-01-LOCD-03	Residential (B)	66	1,195	53.2	54.9
KY-02-01-LOCD-04	Residential (B)	66	1,189	55.5	57.1
KY-02-01-MARD-01	Residential (B)	66	312	61.4	63.2
KY-02-01-MARD-02	Residential (B)	66	362	60.3	62.1
KY-02-01-MARD-03	Residential (B)	66	473	58.4	60.3

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-01-MARKD-01	Residential (B)	66	1,048	39.6	41.3
KY-02-01-MARKD-02	Residential (B)	66	911	65.2	67.0
KY-02-01-MIMD-01	Residential (B)	66	282	54.7	56.4
KY-02-01-NELS-01	Residential (B)	66	827	56.6	58.3
KY-02-01-NELS-02	Residential (B)	66	836	64.9	66.6
KY-02-01-NELS-03	Residential (B)	66	707	65.9	67.7
KY-02-01-NELS-05	Residential (B)	66	435	58.3	59.9
KY-02-01-NELS-06	Residential (B)	66	429	58.3	60.1
KY-02-01-NELS-07	Residential (B)	66	425	58.2	60.0
KY-02-01-NELS-08	Residential (B)	66	415	58.3	60.1
KY-02-01-NELS-09	Residential (B)	66	416	58.2	60.1
KY-02-01-NELS-10	Residential (B)	66	422	58.2	60.0
KY-02-01-NELS-11	Residential (B)	66	412	58.8	60.6
KY-02-01-NELS-12	Residential (B)	66	423	58.4	60.2
KY-02-01-NELS-13	Residential (B)	66	417	58.8	60.6
KY-02-01-NELS-14	Residential (B)	66	420	58.5	60.4
KY-02-01-NELS-15	Residential (B)	66	367	60.2	62.0
KY-02-01-NELS-16	Residential (B)	66	423	58.9	60.7
KY-02-01-NELS-17	Residential (B)	66	407	59.3	61.1
KY-02-01-NELS-18	Residential (B)	66	461	58.1	60.0
KY-02-01-NELS-19	Residential (B)	66	480	57.8	59.6
KY-02-01-NELS-20	Residential (B)	66	487	57.6	59.5
KY-02-01-NELS-21	Residential (B)	66	507	57.2	59.0
KY-02-01-NELS-22	Residential (B)	66	458	58.2	60.1
KY-02-01-NELS-23	Residential (B)	66	479	57.8	59.6
KY-02-01-NELS-24	Residential (B)	66	508	57.2	59.0
KY-02-01-NELS-25	Residential (B)	66	503	57.3	59.1
KY-02-01-NELS-26	Residential (B)	66	511	57.1	59.0
KY-02-01-NELS-27	Residential (B)	66	525	56.9	58.7
KY-02-01-NELS-28	Residential (B)	66	539	56.6	58.5
KY-02-01-NELS-29	Residential (B)	66	543	56.5	58.4
KY-02-01-NELS-30	Residential (B)	66	621	55.3	57.1
KY-02-01-NELS-31	Residential (B)	66	561	56.2	58.1
KY-02-01-NELS-32	Residential (B)	66	577	55.9	57.8
KY-02-01-NELS-33	Residential (B)	66	600	55.6	57.4
KY-02-01-NPAD-01	Residential (B)	66	163	64.9	66.9
KY-02-01-NPAD-02	Residential (B)	66	155	65.1	66.9

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-01-NPAD-03	Residential (B)	66	135	68.2	69.9
KY-02-01-NPAD-04	Residential (B)	66	165	64.9	66.7
KY-02-01-NPAD-05	Residential (B)	66	160	65.1	66.9
KY-02-01-NPAD-06	Residential (B)	66	89	64.6	66.4
KY-02-01-NPAD-07	Residential (B)	66	127	63.6	65.4
KY-02-01-NPAD-08	Residential (B)	66	176	63.2	65.0
KY-02-01-NPAD-09	Residential (B)	66	209	63.0	64.8
KY-02-01-NPAD-10	Residential (B)	66	229	56.7	58.5
KY-02-01-NPAD-11	Residential (B)	66	235	58.5	60.3
KY-02-01-RETR-01	Residential (B)	66	539	59.3	61.1
KY-02-01-RETR-02	Residential (B)	66	442	61.4	63.2
KY-02-01-RETR-03	Residential (B)	66	405	52.2	53.8
KY-02-01-RETR-04	Residential (B)	66	354	60.4	62.2
KY-02-01-RETR-05	Residential (B)	66	309	61.4	63.2
KY-02-01-RETR-06	Residential (B)	66	217	63.4	65.1
KY-02-01-RETR-07	Residential (B)	66	160	65.0	66.7
KY-02-01-RICL-01	Residential (B)	66	1,117	51.6	53.3
KY-02-01-ROBR-01	Residential (B)	66	472	57.8	59.7
KY-02-01-ROBR-02	Residential (B)	66	392	59.6	61.4
KY-02-01-ROBR-03	Residential (B)	66	329	61.0	62.7
KY-02-01-ROBR-04	Residential (B)	66	247	62.7	64.4
KY-02-01-ROOD-01	Residential (B)	66	1,233	50.2	51.9
KY-02-01-ROOD-02	Residential (B)	66	1,168	50.6	52.3
KY-02-01-ROOD-03	Residential (B)	66	997	51.9	53.6
KY-02-01-ROOD-04	Residential (B)	66	940	52.6	54.4
KY-02-01-ROOD-05	Residential (B)	66	848	53.6	55.4
KY-02-01-RTTP-01	Residential (B)	66	117	61.2	62.7
KY-02-01-RTTP-02	Residential (B)	66	94	61.5	63.0
KY-02-01-RTTP-03	Residential (B)	66	117	62.7	64.2
KY-02-01-RTTP-04	Residential (B)	66	119	63.6	65.1
KY-02-01-RTTP-05	Residential (B)	66	124	64.7	66.2
KY-02-01-SHEP-01	Residential (B)	66	1,074	51.0	52.6
KY-02-01-SHEP-02	Residential (B)	66	1,064	51.0	52.6
KY-02-01-SHEP-03	Residential (B)	66	1,060	51.0	52.7
KY-02-01-SHEP-04	Residential (B)	66	1,052	51.1	52.7
KY-02-01-SHEP-05	Residential (B)	66	1,054	51.0	52.7
KY-02-01-SPRD-01	Residential (B)	66	1,058	50.8	52.5

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-01-SPRD-02	Residential (B)	66	1,014	51.2	52.9
KY-02-01-SPRD-03	Residential (B)	66	951	51.7	53.4
KY-02-01-SPRD-04	Residential (B)	66	879	52.4	54.1
KY-02-01-SPRD-05	Residential (B)	66	809	53.0	54.8
KY-02-01-SPRD-06	Residential (B)	66	724	53.9	55.7
KY-02-01-SPRR-01	Residential (B)	66	966	51.5	53.2
KY-02-01-SPRR-02	Residential (B)	66	982	51.3	53.1
KY-02-01-SPRR-03	Residential (B)	66	950	51.6	53.3
KY-02-01-SPRWD-01	Residential (B)	66	1,197	49.6	51.4
KY-02-01-SPRWD-02	Residential (B)	66	1,053	50.8	52.5
KY-02-01-SPRWD-03	Residential (B)	66	955	51.5	53.3
KY-02-01-SPRWD-04	Residential (B)	66	870	52.3	54.1
KY-02-01-STPD-01	Residential (B)	66	843	53.9	55.6
KY-02-01-STPD-02	Residential (B)	66	847	53.9	55.5
KY-02-01-STPD-03	Residential (B)	66	838	54.0	55.6
KY-02-01-STPD-04	Residential (B)	66	833	54.2	55.7
KY-02-01-STRR-01	Residential (B)	66	87	56.6	59.0
KY-02-01-TP-01	Residential (B)	66	793	54.3	55.9
KY-02-01-TP-02	Residential (B)	66	875	53.7	55.3
KY-02-01-TP-03	Residential (B)	66	785	54.3	55.9
KY-02-01-TP-04	Residential (B)	66	674	55.4	57.0
KY-02-01-TP-05	Residential (B)	66	715	54.9	56.5
KY-02-01-TP-06	Residential (B)	66	321	60.5	62.1
KY-02-01-TP-07	Residential (B)	66	246	61.9	63.6
KY-02-01-TP-08	Residential (B)	66	251	61.7	63.4
KY-02-01-TP-09	Residential (B)	66	246	61.8	63.5
KY-02-01-TP-10	Residential (B)	66	132	65.3	66.9
KY-02-01-TP-11	Residential (B)	66	142	64.8	66.4
KY-02-01-TP-12	Residential (B)	66	130	65.3	67.0
KY-02-01-TP-13	Residential (B)	66	167	63.8	65.5
KY-02-01-TP-14	Residential (B)	66	119	65.8	67.4
KY-02-01-TP-15	Residential (B)	66	98	67.1	68.7
KY-02-01-TP-16	Residential (B)	66	580	56.5	58.1
KY-02-01-TP-17	Residential (B)	66	537	56.9	58.6
KY-02-01-TP-18	Residential (B)	66	489	57.7	59.3
KY-02-01-TP-19	Residential (B)	66	445	58.3	60.0
KY-02-01-TP-20	Residential (B)	66	406	58.9	60.6

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-01-TP-21	Residential (B)	66	371	59.5	61.2
KY-02-01-TP-22	Residential (B)	66	576	56.4	58.0
KY-02-01-TP-23	Residential (B)	66	538	56.9	58.6
KY-02-01-TP-24	Residential (B)	66	499	57.4	59.1
KY-02-01-TP-25	Residential (B)	66	445	58.2	59.9
KY-02-01-TP-26	Residential (B)	66	402	58.9	60.6
KY-02-01-TP-27	Residential (B)	66	375	59.4	61.1
KY-02-01-TP-28	Residential (B)	66	326	60.3	61.9
KY-02-01-TP-29	Residential (B)	66	557	56.7	58.3
KY-02-01-TP-30	Residential (B)	66	526	57.1	58.8
KY-02-01-TP-31	Residential (B)	66	493	57.5	59.2
KY-02-01-TP-32	Residential (B)	66	445	58.2	59.9
KY-02-01-TP-33	Residential (B)	66	408	58.8	60.5
KY-02-01-TP-34	Residential (B)	66	370	59.4	61.1
KY-02-01-TP-35	Residential (B)	66	329	60.2	61.9
KY-02-01-TP-36	Residential (B)	66	562	56.6	58.3
KY-02-01-TP-37	Residential (B)	66	512	57.3	59.0
KY-02-01-TP-38	Residential (B)	66	442	58.2	59.9
KY-02-01-TP-39	Residential (B)	66	365	59.2	61.0
KY-02-01-TP-40	Residential (B)	66	350	62.8	64.2
KY-02-01-TP-41	Residential (B)	66	319	60.3	62.0
KY-02-01-TP-42	Residential (B)	66	471	57.9	59.6
KY-02-01-TP-43	Residential (B)	66	438	58.3	60.0
KY-02-01-TP-44	Residential (B)	66	403	58.9	60.6
KY-02-01-TP-45	Residential (B)	66	377	59.3	61.0
KY-02-01-TP-46	Residential (B)	66	327	60.2	61.9
KY-02-01-TP-47	Residential (B)	66	420	58.6	60.3
KY-02-01-TP-48	Residential (B)	66	374	59.3	61.0
KY-02-01-TP-49	Residential (B)	66	330	60.1	61.8
KY-02-01-VILD-01	Residential (B)	66	1,218	50.7	52.5
KY-02-01-VILD-02	Residential (B)	66	1,133	51.5	53.2
KY-02-01-VILD-03	Residential (B)	66	1,075	52.1	53.8
KY-02-01-VILD-04	Residential (B)	66	1,015	52.8	54.5
KY-02-01-VILD-05	Residential (B)	66	963	53.3	55.1
KY-02-01-VILD-06	Residential (B)	66	923	53.9	55.7
KY-02-01-VILD-07	Residential (B)	66	792	55.7	57.4
KY-02-01-WALL-01	Residential (B)	66	1,011	53.1	54.6

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-01-WALL-02	Residential (B)	66	960	53.6	55.1
KY-02-01-WALL-03	Residential (B)	66	924	53.8	55.3
KY-02-01-WALL-04	Residential (B)	66	830	54.6	56.2
KY-02-01-WATL-01	Church (D)	66	953	53.9	54.7
KY-02-01-WATL-02	Residential (B)	66	348	65.8	67.3
KY-02-01-WATL-03	Residential (B)	66	384	62.3	63.8
KY-02-01-WILD-01	Residential (B)	66	897	53.0	54.4
KY-02-01-WILD-02	Residential (B)	66	952	52.2	53.7
KY-02-01-WILD-03	Residential (B)	66	979	51.8	53.4
KY-02-01-WILD-04	Residential (B)	66	958	51.9	53.6
KY-02-01-WILD-05	Residential (B)	66	965	51.8	53.4
KY-02-02-8029B-01	Recreation (C)	66	370	61.5	63.1
KY-02-02-8029B-02	Recreation (C)	66	428	60.2	61.7
KY-02-02-BARR-01	Residential (B)	66	1,000	51.1	52.9
KY-02-02-BARR-02	Residential (B)	66	930	51.7	53.5
KY-02-02-BRIA-01	Residential (B)	66	411	58.5	60.1
KY-02-02-BRIA-02	Residential (B)	66	473	58.1	59.7
KY-02-02-BRIA-03	Residential (B)	66	492	59.3	60.9
KY-02-02-BRIA-04	Residential (B)	66	510	63.2	64.7
KY-02-02-CAMC-01	Residential (B)	66	882	52.9	54.7
KY-02-02-CAMC-02	Residential (B)	66	940	52.4	54.2
KY-02-02-CAMD-01	Residential (B)	66	1,123	50.5	52.2
KY-02-02-CAMD-02	Residential (B)	66	950	52.0	53.8
KY-02-02-CAMD-03	Residential (B)	66	871	52.8	54.6
KY-02-02-CANL-01	Residential (B)	66	475	57.9	59.7
KY-02-02-CANL-02	Residential (B)	66	375	59.9	61.7
KY-02-02-CANL-03	Residential (B)	66	285	61.8	63.6
KY-02-02-CANL-04	Residential (B)	66	191	64.1	65.9
KY-02-02-CBTP-01	Residential (B)	66	1,061	52.3	54.0
KY-02-02-CBTP-02	Residential (B)	66	926	53.3	55.0
KY-02-02-CBTP-03	Residential (B)	66	867	53.8	55.4
KY-02-02-CBTP-04	Residential (B)	66	778	54.6	56.3
KY-02-02-CBTP-05	Residential (B)	66	739	54.9	56.6
KY-02-02-CBTP-06	Residential (B)	66	680	55.5	57.1
KY-02-02-CBTP-07	Residential (B)	66	674	55.9	57.5
KY-02-02-CBTP-08	Residential (B)	66	724	55.2	56.9
KY-02-02-CBTP-09	Residential (B)	66	770	54.7	56.4

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-02-CBTP-10	Residential (B)	66	820	54.2	55.9
KY-02-02-CBTP-11	Residential (B)	66	876	53.7	55.4
KY-02-02-CBTP-12	Residential (B)	66	912	53.4	55.1
KY-02-02-CBTP-13	Residential (B)	66	958	53.0	54.7
KY-02-02-CBTP-14	Residential (B)	66	1,003	52.6	54.3
KY-02-02-CBTP-15	Residential (B)	66	1,053	52.4	54.0
KY-02-02-COLD-01	Residential (B)	66	195	53.9	55.6
KY-02-02-COLD-02	Residential (B)	66	192	54.0	55.6
KY-02-02-COLD-03	Residential (B)	66	193	54.2	55.9
KY-02-02-COLD-04	Residential (B)	66	190	54.8	56.3
KY-02-02-COLD-05	Residential (B)	66	190	55.2	56.7
KY-02-02-COLD-06	Residential (B)	66	202	55.7	57.2
KY-02-02-COLED-01	Residential (B)	66	331	58.6	60.4
KY-02-02-COLED-02	Residential (B)	66	271	58.9	60.6
KY-02-02-COLED-03	Residential (B)	66	191	58.9	60.6
KY-02-02-COLED-04	Residential (B)	66	133	58.8	60.4
KY-02-02-COLED-05	Residential (B)	66	77	58.9	60.5
KY-02-02-COLED-06	Residential (B)	66	29	59.0	60.6
KY-02-02-COLED-07	Residential (B)	66	241	63.0	64.6
KY-02-02-CTAP-01	Residential (B)	66	88	55.8	58.4
KY-02-02-CTAP-02	Residential (B)	66	114	55.2	57.5
KY-02-02-CTAP-03	Residential (B)	66	144	54.9	56.9
KY-02-02-CTAP-04	Residential (B)	66	140	54.7	56.6
KY-02-02-CTAP-05	Residential (B)	66	79	54.7	56.5
KY-02-02-CTAP-06	Residential (B)	66	27	54.7	56.5
KY-02-02-CTBP-01	Residential (B)	66	191	56.5	58.2
KY-02-02-DOND-01	Residential (B)	66	1,195	49.7	51.4
KY-02-02-DOND-02	Residential (B)	66	1,040	50.8	52.6
KY-02-02-DOND-03	Residential (B)	66	919	51.8	53.6
KY-02-02-DOND-04	Residential (B)	66	860	52.4	54.2
KY-02-02-FRYD-01	Residential (B)	66	459	57.6	59.4
KY-02-02-FRYD-02	Residential (B)	66	481	57.1	59.0
KY-02-02-FRYD-03	Residential (B)	66	483	57.1	59.0
KY-02-02-FRYD-04	Residential (B)	66	468	57.4	59.2
KY-02-02-FRYD-05	Residential (B)	66	480	57.1	59.0
KY-02-02-FRYD-06	Residential (B)	66	475	57.3	59.1
KY-02-02-HARL-01	Residential (B)	66	464	58.0	59.9

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-02-HARL-02	Residential (B)	66	403	59.4	61.2
KY-02-02-HARL-03	Residential (B)	66	359	60.3	62.1
KY-02-02-HARL-04	Residential (B)	66	312	61.4	63.1
KY-02-02-HARL-05	Residential (B)	66	208	63.6	65.4
KY-02-02-HARL-06	Residential (B)	66	102	67.4	69.1
KY-02-02-JAMD-01	Residential (B)	66	678	54.3	56.2
KY-02-02-JAMD-02	Residential (B)	66	684	54.2	56.1
KY-02-02-JAMD-03	Residential (B)	66	631	54.9	56.7
KY-02-02-JAMD-04	Residential (B)	66	647	54.7	56.5
KY-02-02-JAMD-05	Residential (B)	66	677	54.3	56.2
KY-02-02-JAMD-06	Residential (B)	66	711	53.9	55.7
KY-02-02-JAMD-07	Residential (B)	66	831	52.6	54.4
KY-02-02-JAMD-08	Residential (B)	66	910	51.9	53.7
KY-02-02-JAMD-09	Residential (B)	66	1,083	50.4	52.2
KY-02-02-JOHD-01	Residential (B)	66	802	52.9	54.7
KY-02-02-JOHD-02	Residential (B)	66	770	53.2	55.1
KY-02-02-JOHD-03	Residential (B)	66	789	53.0	54.9
KY-02-02-JOHD-04	Residential (B)	66	788	53.0	54.9
KY-02-02-JOHD-05	Residential (B)	66	852	52.4	54.2
KY-02-02-JOHD-06	Residential (B)	66	928	51.7	53.5
KY-02-02-JOHD-07	Residential (B)	66	885	52.1	53.9
KY-02-02-JOHD-08	Residential (B)	66	976	51.3	53.1
KY-02-02-JOHD-09	Residential (B)	66	1,008	51.1	52.8
KY-02-02-MARD-01	Residential (B)	66	438	58.8	60.6
KY-02-02-MARKD-01	Residential (B)	66	918	53.0	54.6
KY-02-02-MIMD-01	Residential (B)	66	78	56.7	58.3
KY-02-02-MIMD-02	Residential (B)	66	190	56.7	58.3
KY-02-02-MIMD-03	Residential (B)	66	272	57.4	59.0
KY-02-02-NELS-01	Residential (B)	66	242	62.8	64.6
KY-02-02-NELS-02	Residential (B)	66	268	62.2	64.0
KY-02-02-NELS-03	Residential (B)	66	286	61.9	63.7
KY-02-02-NELS-04	Residential (B)	66	360	60.3	62.1
KY-02-02-NELS-05	Residential (B)	66	311	61.4	63.2
KY-02-02-NELS-06	Residential (B)	66	387	59.7	61.5
KY-02-02-NELS-07	Residential (B)	66	353	60.5	62.3
KY-02-02-NELS-08	Residential (B)	66	341	60.8	62.6
KY-02-02-NELS-09	Residential (B)	66	168	66.4	68.0

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-02-NELS-10	Residential (B)	66	130	68.2	69.7
KY-02-02-NELS-11	Residential (B)	66	243	62.8	64.5
KY-02-02-NELS-12	Residential (B)	66	242	63.0	64.7
KY-02-02-NELS-13	Residential (B)	66	193	64.3	66.0
KY-02-02-NELS-14	Residential (B)	66	182	64.6	66.3
KY-02-02-NELS-15	Residential (B)	66	121	66.7	68.4
KY-02-02-NELS-16	Residential (B)	66	69	69.5	71.1
KY-02-02-NELS-17	Residential (B)	66	54	69.8	71.5
KY-02-02-NELS-18	Residential (B)	66	60	69.2	70.9
KY-02-02-NELS-19	Residential (B)	66	109	66.2	68.0
KY-02-02-NELS-20	Residential (B)	66	169	64.5	66.2
KY-02-02-NELS-21	Residential (B)	66	240	62.5	64.3
KY-02-02-NELS-22	Residential (B)	66	292	60.8	62.6
KY-02-02-NELS-23	Residential (B)	66	363	59.3	61.1
KY-02-02-NELS-24	Residential (B)	66	422	58.2	60.0
KY-02-02-NELS-27	Residential (B)	66	519	57.2	59.0
KY-02-02-NELS-28	Residential (B)	66	513	57.5	59.3
KY-02-02-NELS-29	Residential (B)	66	549	57.2	59.0
KY-02-02-NELS-30	Residential (B)	66	589	56.8	58.6
KY-02-02-NELS-31	Residential (B)	66	533	57.8	59.6
KY-02-02-NELS-32	Residential (B)	66	554	57.8	59.6
KY-02-02-NELS-33	Residential (B)	66	595	57.6	59.4
KY-02-02-NELS-34	Residential (B)	66	608	57.8	59.5
KY-02-02-NELS-35	Residential (B)	66	564	58.6	60.3
KY-02-02-NELS-36	Residential (B)	66	425	60.4	62.1
KY-02-02-NELS-37	Residential (B)	66	472	59.6	61.3
KY-02-02-NELS-38	Residential (B)	66	513	59.3	61.0
KY-02-02-NELS-39	Residential (B)	66	567	58.5	60.2
KY-02-02-NELS-40	Residential (B)	66	392	61.1	62.8
KY-02-02-NELS-41	Residential (B)	66	290	61.8	63.5
KY-02-02-RETR-01	Residential (B)	66	442	58.6	60.4
KY-02-02-RETR-02	Residential (B)	66	374	60.0	61.8
KY-02-02-RETR-03	Residential (B)	66	317	61.2	63.0
KY-02-02-RETR-04	Residential (B)	66	270	62.1	63.9
KY-02-02-RETR-05	Residential (B)	66	191	64.0	65.8
KY-02-02-RETR-06	Residential (B)	66	119	66.4	68.2
KY-02-02-ROBR-01	Residential (B)	66	483	57.6	59.5

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-02-ROBR-02	Residential (B)	66	407	59.2	61.0
KY-02-02-ROBR-03	Residential (B)	66	335	60.8	62.6
KY-02-02-ROBR-04	Residential (B)	66	242	62.8	64.6
KY-02-02-ROOD-01	Residential (B)	66	1,181	50.9	52.6
KY-02-02-ROOD-02	Residential (B)	66	1,130	51.1	52.9
KY-02-02-ROOD-03	Residential (B)	66	1,064	51.8	53.6
KY-02-02-ROOD-04	Residential (B)	66	965	52.9	54.6
KY-02-02-ROOD-05	Residential (B)	66	881	53.8	55.6
KY-02-02-RTTP-01	Residential (B)	66	42	60.3	61.9
KY-02-02-RTTP-02	Residential (B)	66	113	59.8	61.3
KY-02-02-RTTP-03	Residential (B)	66	149	60.1	61.6
KY-02-02-RTTP-04	Residential (B)	66	186	59.7	61.3
KY-02-02-RTTP-05	Residential (B)	66	195	60.1	61.7
KY-02-02-RTTP-06	Residential (B)	66	215	60.8	62.4
KY-02-02-RTTP-07	Residential (B)	66	205	62.0	63.6
KY-02-02-RTTP-08	Residential (B)	66	181	63.8	65.3
KY-02-02-SPRD-01	Residential (B)	66	968	51.5	53.2
KY-02-02-SPRR-01	Residential (B)	66	767	53.3	55.1
KY-02-02-SPRR-02	Residential (B)	66	739	53.6	55.4
KY-02-02-SPRR-03	Residential (B)	66	768	53.3	55.1
KY-02-02-SPRR-04	Residential (B)	66	762	53.4	55.2
KY-02-02-SPRR-05	Residential (B)	66	756	53.4	55.2
KY-02-02-SPRWD-01	Residential (B)	66	1,233	49.5	51.2
KY-02-02-SPRWD-02	Residential (B)	66	1,163	49.9	51.7
KY-02-02-SPRWD-03	Residential (B)	66	1,110	50.3	52.1
KY-02-02-SPRWD-04	Residential (B)	66	1,025	51.0	52.8
KY-02-02-SPRWD-05	Residential (B)	66	943	51.8	53.6
KY-02-02-STPD-01	Residential (B)	66	638	56.2	57.9
KY-02-02-STPD-02	Residential (B)	66	652	56.0	57.6
KY-02-02-STPD-03	Residential (B)	66	640	56.3	57.9
KY-02-02-STPD-04	Residential (B)	66	631	56.3	57.9
KY-02-02-STPD-05	Residential (B)	66	640	56.5	57.9
KY-02-02-STPD-06	Residential (B)	66	641	56.9	58.1
KY-02-02-STPD-07	Residential (B)	66	611	58.7	59.2
KY-02-02-US41-01	Hotel (E)	71	210	64.4	66.0
KY-02-02-US41-02	Hotel (E)	71	456	58.9	60.5
KY-02-02-VILD-01	Residential (B)	66	1,166	51.3	53.1

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-02-02-VILD-02	Residential (B)	66	1,117	51.9	53.7
KY-02-02-VILD-03	Residential (B)	66	1,043	52.7	54.4
KY-02-02-VILD-04	Residential (B)	66	982	53.5	55.2
KY-02-02-VILD-05	Residential (B)	66	924	54.2	55.9
KY-02-02-VILD-06	Residential (B)	66	865	54.9	56.6
KY-02-02-VILD-07	Residential (B)	66	771	56.1	57.8
KY-02-02-VILD-08	Residential (B)	66	701	56.8	58.5
KY-02-02-WATL-01	Residential (B)	66	1,046	51.4	52.9
KY-02-02-WATL-02	Residential (B)	66	1,057	51.4	52.8
KY-02-02-WATL-03	Residential (B)	66	849	55.3	55.9
KY-02-02-WILD-01	Residential (B)	66	709	55.9	56.9
KY-02-02-WILD-02	Residential (B)	66	718	54.5	56.0
KY-02-02-WILD-03	Residential (B)	66	748	54.0	55.6
KY-02-02-WILD-04	Residential (B)	66	748	53.9	55.5
KY-02-02-WILD-05	Residential (B)	66	720	54.2	55.9
KY-02-02-WILD-06	Residential (B)	66	742	53.8	55.5
KY-02-02-WILD-07	Residential (B)	66	824	53.0	54.7
KY-03-01-BARB-01	Residential (B)	66	486	58.6	59.3
KY-03-01-BARC-01	Residential (B)	66	411	61.2	62.8
KY-03-01-BARC-02	Residential (B)	66	432	60.5	62.1
KY-03-01-BARC-03	Residential (B)	66	433	60.2	61.8
KY-03-01-BARC-04	Residential (B)	66	385	59.9	61.5
KY-03-01-BARC-05	Residential (B)	66	347	59.8	61.5
KY-03-01-BARC-13	Residential (B)	66	447	60.0	57.4
KY-03-01-BARC-14	Residential (B)	66	462	60.0	57.4
KY-03-01-BARD-01	Residential (B)	66	500	58.6	60.3
KY-03-01-BARD-02	Residential (B)	66	450	59.1	60.9
KY-03-01-BARD-03	Residential (B)	66	394	59.9	61.6
KY-03-01-BARD-04	Residential (B)	66	384	59.6	61.3
KY-03-01-BARD-05	Residential (B)	66	388	59.3	60.9
KY-03-01-ELKA-01	Residential (B)	66	528	56.6	57.2
KY-03-01-ELKA-02	Residential (B)	66	409	58.3	58.6
KY-03-01-ELKA-03	Residential (B)	66	350	59.2	59.4
KY-03-01-ELKA-04	Residential (B)	66	281	60.4	60.6
KY-03-01-HERA-01	Residential (B)	66	159	66.7	66.2
KY-03-01-HERA-02	Residential (B)	66	205	64.6	64.1
KY-03-01-HERA-03	Residential (B)	66	271	62.5	62.1

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-03-01-HERA-04	Residential (B)	66	312	61.4	61.0
KY-03-01-HERA-05	Residential (B)	66	352	60.2	60.0
KY-03-01-HERA-06	Residential (B)	66	459	57.8	57.8
KY-03-01-HERA-07	Residential (B)	66	501	56.6	56.7
KY-03-01-HERA-08	Residential (B)	66	531	55.8	56.0
KY-03-01-HERA-09	Residential (B)	66	572	54.9	55.3
KY-03-01-HIYD-01	Residential (B)	66	506	57.0	58.5
KY-03-01-HIYD-02	Residential (B)	66	438	57.6	59.0
KY-03-01-KIML-02	Residential (B)	66	324	60.8	62.7
KY-03-01-KIML-03	Residential (B)	66	216	64.4	66.3
KY-03-01-KIML-05	Residential (B)	66	363	59.5	61.2
KY-03-01-KIML-06	Residential (B)	66	378	58.6	60.5
KY-03-01-KIML-07	Residential (B)	66	263	60.7	62.4
KY-03-01-KIML-08	Residential (B)	66	280	61.2	62.9
KY-03-01-KIML-11	Recreation (C)	66	225	64.6	66.0
KY-03-01-NELS-01	Residential (B)	66	343	62.6	64.3
KY-03-01-NGRS-01	Residential (B)	66	303	61.7	63.5
KY-03-01-NGRS-02	Residential (B)	66	333	59.2	60.8
KY-03-01-NGRS-03	Residential (B)	66	322	58.6	60.0
KY-03-01-NGRS-04	Residential (B)	66	311	58.1	59.2
KY-03-01-NGRS-05	Residential (B)	66	311	58.3	60.5
KY-03-01-NGRS-06	Residential (B)	66	249	60.2	61.1
KY-03-01-NGRS-07	Residential (B)	66	217	60.8	59.2
KY-03-01-NGRS-08	Residential (B)	66	345	58.8	62.2
KY-03-01-NGRS-09	Residential (B)	66	332	60.5	62.6
KY-03-01-NGRS-10	Residential (B)	66	327	60.9	59.1
KY-03-01-RICA-01	Residential (B)	66	304	60.7	60.4
KY-03-01-RICA-02	Residential (B)	66	302	54.3	55.1
KY-03-01-RICA-03	Residential (B)	66	337	54.0	55.0
KY-03-01-RICA-04	Residential (B)	66	365	54.0	55.2
KY-03-01-RICA-05	Residential (B)	66	397	54.2	55.6
KY-03-01-RICA-06	Residential (B)	66	422	54.5	56.1
KY-03-01-RICA-07	Residential (B)	66	464	55.1	56.7
KY-03-01-RICA-08	Residential (B)	66	484	55.5	57.3
KY-03-01-RICA-09	Residential (B)	66	448	56.1	57.8
KY-03-01-RICA-10	Residential (B)	66	500	56.3	58.1
KY-03-01-RICA-11	Residential (B)	66	560	56.3	58.1

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-03-01-RICA-12	Residential (B)	66	492	57.1	58.9
KY-03-01-RICA-13	Residential (B)	66	639	54.8	56.6
KY-03-01-VAL4-AA	Residential (B)	66	228	61.3	63.2
KY-03-02-BARC-01	Residential (B)	66	430	60.1	61.7
KY-03-02-BARC-02	Residential (B)	66	394	60.0	61.6
KY-03-02-BARC-03	Residential (B)	66	329	60.4	62.0
KY-03-02-BARC-04	Residential (B)	66	329	59.9	61.5
KY-03-02-BARC-05	Residential (B)	66	552	58.9	60.4
KY-03-02-BARC-06	Residential (B)	66	592	58.2	59.7
KY-03-02-BARC-07	Residential (B)	66	647	56.9	58.4
KY-03-02-BARC-08	Residential (B)	66	611	56.5	57.9
KY-03-02-BARC-09	Residential (B)	66	658	56.4	57.9
KY-03-02-BARC-10	Residential (B)	66	617	56.2	57.6
KY-03-02-BARC-11	Residential (B)	66	540	56.1	57.5
KY-03-02-BARC-12	Residential (B)	66	492	56.0	57.4
KY-03-02-BARD-01	Residential (B)	66	542	57.6	59.1
KY-03-02-BARD-02	Residential (B)	66	492	57.4	58.9
KY-03-02-ELKA-01	Residential (B)	66	471	57.1	57.2
KY-03-02-ELKA-02	Residential (B)	66	409	58.3	58.3
KY-03-02-ELKA-03	Residential (B)	66	363	59.4	59.3
KY-03-02-ELKA-04	Residential (B)	66	302	60.8	60.7
KY-03-02-ELKA-05	Residential (B)	66	258	62.0	61.9
KY-03-02-HIYD-01	Residential (B)	66	400	57.5	58.5
KY-03-02-HIYD-02	Residential (B)	66	391	57.6	58.7
KY-03-02-NGRS-01	Residential (B)	66	100	62.8	64.3
KY-03-02-NGRS-02	Residential (B)	66	83	62.3	63.3
KY-03-02-RICA-01	Residential (B)	66	222	63.1	62.7
KY-03-02-RICA-02	Residential (B)	66	155	65.6	65.1
KY-03-02-RICA-03	Residential (B)	66	419	53.9	54.7
KY-03-02-RICA-04	Residential (B)	66	439	53.7	54.6
KY-03-02-RICA-05	Residential (B)	66	463	53.4	54.5
KY-03-02-RICA-06	Residential (B)	66	493	53.4	54.6
KY-03-02-RICA-07	Residential (B)	66	531	53.5	54.9
KY-03-02-RICA-08	Residential (B)	66	565	53.7	55.3
KY-03-02-RICA-09	Residential (B)	66	585	54.1	55.8
KY-03-02-RICA-10	Residential (B)	66	618	54.3	56.0
KY-03-02-RICA-11	Residential (B)	66	629	54.9	56.7

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-04-01-BALD-01	Residential (B)	66	4,566	40.4	40.4
KY-04-01-BALD-02	Residential (B)	66	4,677	40.4	40.4
KY-04-01-BALD-03	Residential (B)	66	4,760	40.4	40.4
KY-04-01-BALD-04	Residential (B)	66	4,214	40.4	40.4
KY-04-01-BOWL-01	Residential (B)	66	4,469	39.8	39.8
KY-04-01-BOWL-02	Residential (B)	66	4,176	39.8	39.8
KY-04-01-BOWL-03	Residential (B)	66	4,348	39.8	39.8
KY-04-01-BRAD-01	Residential (B)	66	4,717	39.8	39.8
KY-04-01-BRAD-02	Residential (B)	66	4,690	39.8	39.8
KY-04-01-BRAD-03	Residential (B)	66	4,643	39.8	39.8
KY-04-01-BRAD-04	Residential (B)	66	4,756	39.8	39.8
KY-04-01-BRAD-05	Residential (B)	66	4,803	39.8	39.8
KY-04-01-BROD-01	Residential (B)	66	3,027	40.4	40.4
KY-04-01-BROD-02	Residential (B)	66	3,145	40.4	40.4
KY-04-01-BROD-03	Residential (B)	66	3,225	40.4	40.4
KY-04-01-COBD-01	Residential (B)	66	4,743	40.4	40.4
KY-04-01-COBD-02	Residential (B)	66	4,846	40.4	40.4
KY-04-01-COBD-03	Residential (B)	66	4,936	40.4	40.4
KY-04-01-COBD-04	Residential (B)	66	4,254	40.4	40.4
KY-04-01-COBD-05	Residential (B)	66	5,016	40.4	40.4
KY-04-01-COBD-06	Residential (B)	66	4,922	40.4	40.4
KY-04-01-COBD-07	Residential (B)	66	4,831	40.4	40.4
KY-04-01-CULC-01	Residential (B)	66	4,455	39.8	39.8
KY-04-01-CULC-02	Residential (B)	66	4,419	39.8	39.8
KY-04-01-CULC-03	Residential (B)	66	4,380	39.8	39.8
KY-04-01-CULC-04	Residential (B)	66	4,496	39.8	39.8
KY-04-01-CULC-05	Residential (B)	66	4,501	39.8	39.8
KY-04-01-HART-01F	Residential (B)	66	5,075	39.8	39.8
KY-04-01-HART-02F	Residential (B)	66	5,144	39.8	39.8
KY-04-01-HART-03	Residential (B)	66	5,273	39.8	39.8
KY-04-01-HILT-01	Residential (B)	66	193	58.5	59.3
KY-04-01-HILT-02	Residential (B)	66	279	55.2	56.0
KY-04-01-HILT-03	Residential (B)	66	498	50.3	51.1
KY-04-01-MELL-01	Residential (B)	66	3,338	40.4	40.4
KY-04-01-MELL-02	Residential (B)	66	3,620	40.4	40.4
KY-04-01-MELL-03	Residential (B)	66	3,796	40.4	40.4
KY-04-01-MICD-01	Residential (B)	66	258	56.1	56.9

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-04-01-MICD-02	Residential (B)	66	266	56.0	56.8
KY-04-01-MICD-03	Residential (B)	66	258	56.7	57.5
KY-04-01-MICD-04	Residential (B)	66	443	52.7	53.5
KY-04-01-MICD-05	Residential (B)	66	520	51.2	52.0
KY-04-01-MORD-01	Residential (B)	66	162	58.8	59.6
KY-04-01-MORD-02	Residential (B)	66	246	55.6	56.4
KY-04-01-MORD-03	Residential (B)	66	317	54.1	54.9
KY-04-01-MORD-04	Residential (B)	66	379	53.2	54.0
KY-04-01-MORD-05	Residential (B)	66	443	52.2	53.0
KY-04-01-MORD-06	Residential (B)	66	501	51.3	52.1
KY-04-01-MORD-07	Residential (B)	66	579	50.3	51.1
KY-04-01-PRIV-01F	Residential (B)	66	5,401	39.8	39.8
KY-04-01-R414-01F	Residential (B)	66	3,218	39.8	39.8
KY-04-01-R414-02F	Residential (B)	66	2,949	39.8	39.8
KY-04-01-SAND-01	Residential (B)	66	4,877	39.8	39.8
KY-04-01-SAND-02	Residential (B)	66	4,975	39.8	39.8
KY-04-01-SAND-03	Residential (B)	66	5,019	39.8	39.8
KY-04-01-SAND-04	Residential (B)	66	5,056	39.8	39.8
KY-04-01-US60-01	Church (D)	66	179	61.3	62.3
KY-04-01-US60-02	Residential (B)	66	92	65.1	66.2
KY-04-01-US60-03	Residential (B)	66	136	62.8	63.9
KY-04-01-US60-04	Residential (B)	66	207	60.2	61.3
KY-04-01-US60-05	Residential (B)	66	256	58.5	59.5
KY-04-01-US60-06	Residential (B)	66	306	57.0	58.0
KY-04-01-US60-07	Residential (B)	66	303	57.1	58.1
KY-04-01-US60-08	Residential (B)	66	342	55.7	56.8
KY-04-01-US60-09	Residential (B)	66	347	55.5	56.6
KY-04-01-US60-10	Residential (B)	66	352	55.4	56.4
KY-04-01-US60-11	Residential (B)	66	351	55.4	56.4
KY-04-01-US60-12	Residential (B)	66	360	54.9	56.0
KY-04-01-US60-13	Residential (B)	66	353	55.3	56.4
KY-04-01-US60-14	Residential (B)	66	355	55.2	56.3
KY-04-01-US60-15	Residential (B)	66	370	54.7	55.7
KY-04-01-US60-16	Residential (B)	66	392	53.8	54.8
KY-04-01-US60-17	Residential (B)	66	387	53.8	54.8
KY-04-01-US60-18	Residential (B)	66	398	53.3	54.3
KY-04-01-US60-19	Residential (B)	66	393	53.1	54.2

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-04-01-US60-20	Residential (B)	66	394	52.9	53.9
KY-04-01-US60-21	Residential (B)	66	398	52.6	53.6
KY-04-01-US60-22	Residential (B)	66	382	53.9	54.8
KY-04-01-US60-23	Residential (B)	66	416	53.6	54.4
KY-04-01-US60-24	Residential (B)	66	447	52.7	53.4
KY-04-01-US60-25	Residential (B)	66	504	51.3	52.1
KY-04-01-US60-26	Residential (B)	66	553	50.1	50.9
KY-04-01-US60-27	Residential (B)	66	609	48.9	49.7
KY-04-01-US60-28	Residential (B)	66	632	48.4	49.2
KY-04-01-US60-29	Residential (B)	66	692	47.2	48.1
KY-04-01-US60-30	Residential (B)	66	754	46.2	47.0
KY-04-01-US60-VAL-02	Residential (B)	66	310	62.2	63.1
KY-04-01-US60-VAL-03	Residential (B)	66	385	56.5	57.9
KY-04-02-BALD-01	Residential (B)	66	4,483	40.4	40.4
KY-04-02-BOWL-04	Residential (B)	66	4,120	39.8	39.8
KY-04-02-BRAD-01	Residential (B)	66	4,488	39.8	39.8
KY-04-02-BRAD-02	Residential (B)	66	4,458	39.8	39.8
KY-04-02-BRAD-04	Residential (B)	66	4,533	39.8	39.8
KY-04-02-BRAD-05	Residential (B)	66	4,590	39.8	39.8
KY-04-02-BROD-01	Residential (B)	66	3,156	40.4	40.4
KY-04-02-BROD-02	Residential (B)	66	3,232	40.4	40.4
KY-04-02-BROD-03	Residential (B)	66	3,322	40.4	40.4
KY-04-02-COBD-01	Residential (B)	66	4,588	40.4	40.4
KY-04-02-COBD-02	Residential (B)	66	4,690	40.4	40.4
KY-04-02-COBD-03	Residential (B)	66	4,765	40.4	40.4
KY-04-02-COBD-04	Residential (B)	66	4,141	40.4	40.4
KY-04-02-COBD-05	Residential (B)	66	4,038	40.4	40.4
KY-04-02-CULC-01	Residential (B)	66	4,220	39.8	39.8
KY-04-02-CULC-02	Residential (B)	66	4,192	39.8	39.8
KY-04-02-CULC-03	Residential (B)	66	4,215	39.8	39.8
KY-04-02-CULC-03a	Residential (B)	66	4,247	39.8	39.8
KY-04-02-CULC-04	Residential (B)	66	4,281	39.8	39.8
KY-04-02-CULC-05	Residential (B)	66	4,304	39.8	39.8
KY-04-02-CULC-AMB-02	Residential (B)	66	4,188	39.8	39.8
KY-04-02-HILT-01	Residential (B)	66	300	57.2	58.0
KY-04-02-HILT-02	Residential (B)	66	354	54.5	55.3
KY-04-02-HILT-03	Residential (B)	66	443	51.7	52.5

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-04-02-HILT-04	Residential (B)	66	487	50.5	51.4
KY-04-02-MELL-04	Residential (B)	66	3,620	40.4	40.4
KY-04-02-MELL-05	Residential (B)	66	3,342	40.4	40.4
KY-04-02-MELL-06	Residential (B)	66	3,258	40.4	40.4
KY-04-02-MELL-07	Residential (B)	66	3,560	40.4	40.4
KY-04-02-MICD-01	Residential (B)	66	517	50.2	51.0
KY-04-02-MICD-02	Residential (B)	66	513	50.6	51.4
KY-04-02-MICD-03	Residential (B)	66	501	50.9	51.7
KY-04-02-MORD-01	Residential (B)	66	196	59.2	60.0
KY-04-02-MORD-02	Residential (B)	66	264	56.7	57.5
KY-04-02-MORD-03	Residential (B)	66	326	55.0	55.8
KY-04-02-MORD-04	Residential (B)	66	383	53.7	54.5
KY-04-02-MORD-05	Residential (B)	66	475	51.6	52.4
KY-04-02-MORD-06	Residential (B)	66	517	50.7	51.6
KY-04-02-MORD-07	Residential (B)	66	553	50.4	51.2
KY-04-02-SAND-02	Residential (B)	66	4,766	39.8	39.8
KY-04-02-SAND-03F	Residential (B)	66	4,755	39.8	39.8
KY-04-02-SAND-04	Residential (B)	66	4,829	39.8	39.8
KY-04-02-US60-01	Residential (B)	66	139	62.2	63.0
KY-04-02-US60-02	Residential (B)	66	134	61.7	62.5
KY-04-02-US60-03	Residential (B)	66	107	63.6	64.4
KY-04-02-US60-04	Residential (B)	66	118	62.0	62.9
KY-04-02-US60-05	Residential (B)	66	212	56.7	57.5
KY-04-21-BRAD-03F	Residential (B)	66	4,465	39.8	39.8
KY-05-01-2084-01	Recreation (C)	66	157	57.0	58.8
KY-05-01-2084-02	Recreation (C)	66	141	57.1	59.0
KY-05-01-2084-03	Recreation (C)	66	277	54.8	56.6
KY-05-01-2084-04	Recreation (C)	66	386	55.7	57.4
KY-05-01-2084-05	Recreation (C)	66	542	54.6	56.5
KY-05-01-2084-06	Residential (B)	66	53	64.2	65.6
KY-05-01-2084-07	Church (D)	66	131	56.2	57.8
KY-05-01-2084-08	Fire Station (F)	66	199	51.3	52.8
KY-05-01-351-01	Recreation (C)	66	389	57.7	59.9
KY-05-01-ARLC-01	Residential (B)	66	89	67.9	70.5
KY-05-01-ARLC-02	Residential (B)	66	187	62.2	65.0
KY-05-01-ARLD-01	Residential (B)	66	659	58.5	59.7
KY-05-01-ARLD-02	Residential (B)	66	521	51.8	53.8

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-05-01-ARLD-03	Residential (B)	66	452	52.0	54.0
KY-05-01-ARLD-04	Residential (B)	66	178	52.4	54.5
KY-05-01-ARLD-05	Residential (B)	66	125	52.6	54.6
KY-05-01-ARLD-06	Residential (B)	66	71	53.7	55.6
KY-05-01-ARLD-07	Residential (B)	66	46	54.9	56.6
KY-05-01-ARLD-08	Residential (B)	66	58	58.3	60.6
KY-05-01-ARLD-09	Residential (B)	66	108	58.2	60.8
KY-05-01-ARLD-10	Residential (B)	66	165	59.0	61.7
KY-05-01-ARLD-11	Residential (B)	66	257	60.5	63.3
KY-05-01-ARLD-12	Residential (B)	66	190	62.5	65.3
KY-05-01-ARLD-13	Residential (B)	66	154	64.0	66.7
KY-05-01-ARLD-14	Residential (B)	66	135	65.3	68.0
KY-05-01-ARLD-15	Residential (B)	66	86	69.3	71.8
KY-05-01-ARLD-16	Residential (B)	66	59	71.3	73.7
KY-05-01-AUGD-01	Residential (B)	66	350	59.7	62.5
KY-05-01-AUGD-02	Residential (B)	66	382	51.2	61.9
KY-05-01-AUGD-03	Residential (B)	66	430	58.5	61.2
KY-05-01-AUGD-04	Residential (B)	66	520	50.8	52.9
KY-05-01-AUGD-05	Residential (B)	66	442	50.8	52.7
KY-05-01-AUGD-06	Residential (B)	66	400	50.9	52.7
KY-05-01-AUGD-07	Residential (B)	66	328	51.1	52.6
KY-05-01-AUGD-08	Residential (B)	66	261	51.5	52.6
KY-05-01-AUGD-09	Residential (B)	66	269	50.9	51.8
KY-05-01-AUGD-10	Residential (B)	66	273	51.3	52.4
KY-05-01-BLUD-01	Residential (B)	66	361	49.5	51.2
KY-05-01-BLUD-02	Residential (B)	66	399	49.7	51.4
KY-05-01-BLUD-03	Residential (B)	66	461	49.0	50.8
KY-05-01-BLUD-04	Residential (B)	66	488	48.6	50.2
KY-05-01-BLUD-05	Residential (B)	66	529	48.3	49.9
KY-05-01-BLUD-06	Residential (B)	66	562	48.1	49.6
KY-05-01-BLUD-07	Residential (B)	66	610	47.8	49.3
KY-05-01-CHED-01	Residential (B)	66	177	58.7	61.4
KY-05-01-CHED-02	Residential (B)	66	211	58.1	60.8
KY-05-01-CHED-03	Residential (B)	66	240	57.4	60.0
KY-05-01-CHED-04	Residential (B)	66	283	56.7	59.4
KY-05-01-CHED-05	Residential (B)	66	335	56.2	58.9
KY-05-01-CHED-06	Residential (B)	66	367	55.5	58.1

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-05-01-CLAS-01	Residential (B)	66	480	48.2	49.7
KY-05-01-CLAS-02	Residential (B)	66	540	47.5	49.0
KY-05-01-EFOR-01	Residential (B)	66	132	66.3	69.0
KY-05-01-EFOR-02	Residential (B)	66	96	68.2	70.8
KY-05-01-EFOR-03	Residential (B)	66	114	67.5	70.1
KY-05-01-EFOR-04	Residential (B)	66	125	66.8	69.4
KY-05-01-EFOR-05	Residential (B)	66	124	66.9	69.5
KY-05-01-EFOR-06	Residential (B)	66	115	67.5	70.0
KY-05-01-EFOR-07	Residential (B)	66	112	67.7	70.3
KY-05-01-EFOR-08	Residential (B)	66	114	67.6	70.1
KY-05-01-EFOR-09	Residential (B)	66	116	67.5	70.0
KY-05-01-EFOR-10	Residential (B)	66	115	67.4	70.0
KY-05-01-EFOR-11	Residential (B)	66	107	67.8	70.3
KY-05-01-EFOR-12	Residential (B)	66	119	67.1	69.6
KY-05-01-EFOR-13	Residential (B)	66	100	67.9	70.4
KY-05-01-EFOR-14	Residential (B)	66	113	67.1	69.7
KY-05-01-EFOR-15	Residential (B)	66	124	66.5	69.1
KY-05-01-EFOR-16	Residential (B)	66	129	66.2	68.8
KY-05-01-EFOR-17	Residential (B)	66	122	66.6	69.1
KY-05-01-EFOR-18	Residential (B)	66	139	65.7	68.3
KY-05-01-EFOR-19	Residential (B)	66	124	66.5	69.1
KY-05-01-EFOR-20	Residential (B)	66	105	67.4	69.9
KY-05-01-EFOR-21	Residential (B)	66	141	65.6	68.1
KY-05-01-EFOR-22	Residential (B)	66	172	63.9	66.5
KY-05-01-EFOR-23	Residential (B)	66	238	61.5	64.1
KY-05-01-EFOR-24	Residential (B)	66	329	59.5	62.0
KY-05-01-EFOR-25	Residential (B)	66	431	58.0	60.5
KY-05-01-EFOR-26	Residential (B)	66	488	59.2	61.9
KY-05-01-EFOR-27	Residential (B)	66	561	57.2	59.6
KY-05-01-GARL-01	Residential (B)	66	144	63.7	68.0
KY-05-01-GRED-01	Residential (B)	66	112	65.3	68.0
KY-05-01-GRED-02	Residential (B)	66	172	68.5	70.3
KY-05-01-GRED-03	Residential (B)	66	308	65.9	67.7
KY-05-01-GRED-04	Residential (B)	66	379	61.2	63.1
KY-05-01-GRED-05	Residential (B)	66	470	58.7	60.4
KY-05-01-GRED-06	Residential (B)	66	545	58.0	59.6
KY-05-01-GRED-07	Residential (B)	66	550	57.0	58.7

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-05-01-GRED-08	Residential (B)	66	578	56.0	57.6
KY-05-01-GRED-09	Residential (B)	66	590	55.5	57.1
KY-05-01-GRED-10	Residential (B)	66	634	54.8	56.5
KY-05-01-GRED-11	Residential (B)	66	677	54.4	56.1
KY-05-01-GRED-12	Residential (B)	66	728	54.0	55.6
KY-05-01-GRED-13	Residential (B)	66	787	53.6	55.2
KY-05-01-GRED-14	Residential (B)	66	856	53.2	54.8
KY-05-01-HALD-01	Residential (B)	66	441	52.2	54.6
KY-05-01-HCHA-01	Recreation (C)	66	477	51.6	54.0
KY-05-01-HCHA-02	Recreation (C)	66	568	54.1	56.8
KY-05-01-HCHA-03	Recreation (C)	66	432	56.2	59.1
KY-05-01-HCHA-04	Recreation (C)	66	339	57.9	60.8
KY-05-01-HCHA-05	Recreation (C)	66	316	58.4	61.3
KY-05-01-HCHA-06	Recreation (C)	66	318	58.6	61.4
KY-05-01-HCHA-07	Recreation (C)	66	294	59.9	62.6
KY-05-01-HUBL-01	Residential (B)	66	62	70.4	72.8
KY-05-01-HUBL-02	Residential (B)	66	114	67.1	69.7
KY-05-01-HUBL-03	Residential (B)	66	167	64.3	67.0
KY-05-01-HUBL-04	Residential (B)	66	195	63.2	65.9
KY-05-01-HUBL-05	Residential (B)	66	254	61.2	64.0
KY-05-01-HUBL-06	Residential (B)	66	323	59.7	62.5
KY-05-01-HUBL-07	Residential (B)	66	370	58.9	61.7
KY-05-01-LAKR-01	Residential (B)	66	401	58.8	61.5
KY-05-01-LAKR-02	Residential (B)	66	386	58.9	61.6
KY-05-01-LAKR-03	Residential (B)	66	382	58.9	61.6
KY-05-01-LAKR-04	Residential (B)	66	383	58.8	61.5
KY-05-01-LAKR-05	Residential (B)	66	393	58.7	61.3
KY-05-01-LAKR-06	Residential (B)	66	390	58.6	61.3
KY-05-01-LAKR-07	Residential (B)	66	391	58.6	61.3
KY-05-01-LAKR-08	Residential (B)	66	390	58.6	61.2
KY-05-01-LAKR-09	Residential (B)	66	401	58.4	61.0
KY-05-01-LAKR-10	Residential (B)	66	388	58.6	61.2
KY-05-01-LEXD-01	Residential (B)	66	503	53.6	55.6
KY-05-01-LEXD-02	Residential (B)	66	387	55.3	57.3
KY-05-01-MAGS-01	Residential (B)	66	92	63.2	64.7
KY-05-01-MAGS-02	Residential (B)	66	258	59.1	60.8
KY-05-01-MAGS-03	Residential (B)	66	336	57.9	59.6

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-05-01-MELP-01	Residential (B)	66	136	65.9	67.7
KY-05-01-MELP-02	Residential (B)	66	87	69.5	71.4
KY-05-01-MELP-03	Residential (B)	66	105	68.7	70.5
KY-05-01-MELP-04	Residential (B)	66	120	68.1	69.8
KY-05-01-MELP-05	Residential (B)	66	132	67.6	69.3
KY-05-01-MELP-06	Residential (B)	66	135	67.1	68.9
KY-05-01-MELP-07	Residential (B)	66	140	66.4	68.3
KY-05-01-MELP-08	Residential (B)	66	120	67.3	69.2
KY-05-01-MELP-09	Residential (B)	66	113	67.5	69.3
KY-05-01-MELP-10	Residential (B)	66	70	69.4	71.2
KY-05-01-MELP-11	Residential (B)	66	66	69.6	71.5
KY-05-01-MELP-12	Residential (B)	66	138	66.4	68.5
KY-05-01-MELP-13	Residential (B)	66	182	64.6	66.8
KY-05-01-MELP-14	Residential (B)	66	196	62.1	64.3
KY-05-01-MELP-15	Residential (B)	66	174	59.4	61.6
KY-05-01-MELP-16	Residential (B)	66	138	57.7	59.8
KY-05-01-MELP-17	Residential (B)	66	123	56.5	58.6
KY-05-01-MELP-18	Residential (B)	66	107	55.5	57.5
KY-05-01-MELP-19	Residential (B)	66	91	54.4	56.4
KY-05-01-MELP-20	Residential (B)	66	86	53.8	55.8
KY-05-01-MELP-21	Residential (B)	66	89	53.7	55.7
KY-05-01-MELP-22	Residential (B)	66	120	53.4	55.4
KY-05-01-NLIA-01	Residential (B)	66	443	56.8	58.5
KY-05-01-NLIA-02	Residential (B)	66	522	55.8	57.6
KY-05-01-POPA-01	Residential (B)	66	329	56.4	58.3
KY-05-01-POPA-02	Residential (B)	66	369	55.7	57.5
KY-05-01-POPA-03	Residential (B)	66	495	54.2	56.1
KY-05-01-POPA-04	Residential (B)	66	553	53.9	55.8
KY-05-01-POWS-01	Residential (B)	66	279	50.5	52.1
KY-05-01-POWS-02	Residential (B)	66	349	49.6	51.2
KY-05-01-POWS-03	Residential (B)	66	409	49.1	50.8
KY-05-01-POWS-04	Residential (B)	66	452	48.5	50.2
KY-05-01-POWS-05	Residential (B)	66	492	48.2	49.9
KY-05-01-POWS-06	Residential (B)	66	554	47.9	49.6
KY-05-01-TRER-01	Residential (B)	66	584	50.8	52.9
KY-05-01-TRER-02	Residential (B)	66	595	50.5	52.6
KY-05-01-TRER-03	Residential (B)	66	588	50.3	52.4

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-05-01-TRER-04	Residential (B)	66	598	50.0	52.0
KY-05-01-TRER-05	Residential (B)	66	621	49.8	51.9
KY-05-01-TRER-06	Residential (B)	66	684	49.5	51.5
KY-05-01-VANA-01	Residential (B)	66	121	67.3	69.8
KY-05-01-VANA-02	Residential (B)	66	237	62.1	64.9
KY-05-01-VANA-03	Residential (B)	66	352	59.3	62.1
KY-05-01-VANA-04	Residential (B)	66	403	58.3	61.1
KY-05-01-VANA-05	Residential (B)	66	502	56.5	59.2
KY-05-01-VANA-06	Residential (B)	66	385	54.7	57.3
KY-05-01-VANA-07	Residential (B)	66	249	53.4	55.7
KY-05-01-VANA-08	Residential (B)	66	197	53.1	55.1
KY-05-01-VANA-09	Residential (B)	66	129	52.9	54.3
KY-05-01-WASS-01	Residential (B)	66	283	50.1	51.6
KY-05-01-WASS-02	Residential (B)	66	324	49.7	51.2
KY-05-01-WASS-03	Residential (B)	66	366	49.4	51.0
KY-05-01-WASS-04	Residential (B)	66	425	49.2	50.8
KY-05-01-WENA-01	Residential (B)	66	323	60.5	62.5
KY-05-01-WENA-02	Residential (B)	66	365	59.6	61.6
KY-05-01-WENA-03	Residential (B)	66	451	58.4	60.4
KY-05-02-351-01	Residential (B)	66	82	68.0	69.6
KY-05-02-351-02	Residential (B)	66	128	66.6	68.0
KY-05-02-351-03	Residential (B)	66	218	62.4	63.6
KY-05-02-351-04	Residential (B)	66	247	61.3	62.5
KY-05-02-351-05	Residential (B)	66	262	59.7	61.0
KY-05-02-351-06	Residential (B)	66	184	61.1	62.2
KY-05-02-351-07	Residential (B)	66	209	62.3	63.4
KY-05-02-351-08	Residential (B)	66	327	59.7	60.8
KY-05-02-351-09	Residential (B)	66	394	60.0	61.2
KY-05-02-351-10	Residential (B)	66	472	59.4	60.6
KY-05-02-ARLD-01	Residential (B)	66	748	63.2	64.3
KY-05-02-ARLD-02	Residential (B)	66	853	58.5	59.6
KY-05-02-ARLD-03	Residential (B)	66	900	56.5	57.7
KY-05-02-ARLD-04	Residential (B)	66	961	54.1	55.5
KY-05-02-ARLD-05	Residential (B)	66	922	52.7	54.3
KY-05-02-ARLD-06	Residential (B)	66	509	50.7	52.7
KY-05-02-ARLD-07	Residential (B)	66	460	50.7	52.8
KY-05-02-ARLD-08	Residential (B)	66	370	50.9	53.0

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-05-02-ARLD-09	Residential (B)	66	343	50.9	53.1
KY-05-02-ARLD-10	Residential (B)	66	311	51.1	53.2
KY-05-02-ARLD-11	Residential (B)	66	256	51.4	53.6
KY-05-02-ARLD-12	Residential (B)	66	238	52.1	54.3
KY-05-02-ARLD-13	Residential (B)	66	216	53.1	55.5
KY-05-02-ARLD-14	Residential (B)	66	209	53.7	56.1
KY-05-02-ARLD-15	Residential (B)	66	238	54.0	56.4
KY-05-02-ARLD-16	Residential (B)	66	236	54.6	57.1
KY-05-02-ARLD-17	Residential (B)	66	260	54.9	57.5
KY-05-02-ARLD-18	Residential (B)	66	276	55.6	58.2
KY-05-02-ARLD-19	Residential (B)	66	333	55.9	58.6
KY-05-02-ARLD-20	Residential (B)	66	381	56.1	58.8
KY-05-02-ARLD-21	Residential (B)	66	427	57.2	60.0
KY-05-02-ARLD-22	Residential (B)	66	404	57.7	60.5
KY-05-02-ARLD-23	Residential (B)	66	352	58.7	61.5
KY-05-02-ARLD-24	Residential (B)	66	314	59.5	62.3
KY-05-02-ARLD-25	Residential (B)	66	269	60.9	63.6
KY-05-02-ARLD-26	Residential (B)	66	246	61.5	64.3
KY-05-02-AUGD-01	Residential (B)	66	521	51.4	53.7
KY-05-02-AUGD-02	Residential (B)	66	376	51.2	53.1
KY-05-02-AUGD-03	Residential (B)	66	260	51.5	53.2
KY-05-02-AUGD-04	Residential (B)	66	140	52.5	53.3
KY-05-02-AUGD-05	Residential (B)	66	68	55.9	55.5
KY-05-02-AUGD-06	Residential (B)	66	76	56.6	56.1
KY-05-02-AUGD-07	Residential (B)	66	131	55.2	54.9
KY-05-02-AUGD-08	Residential (B)	66	612	55.5	58.2
KY-05-02-AUGD-09	Residential (B)	66	674	54.7	57.4
KY-05-02-AUGD-10	Residential (B)	66	763	53.6	56.3
KY-05-02-CHED-01	Residential (B)	66	89	55.1	57.3
KY-05-02-CHED-02	Residential (B)	66	123	54.7	56.8
KY-05-02-CHED-03	Residential (B)	66	162	54.3	56.5
KY-05-02-CHED-04	Residential (B)	66	174	53.7	55.8
KY-05-02-CLAS-01	Residential (B)	66	447	49.1	50.1
KY-05-02-CLAS-02	Residential (B)	66	503	47.9	49.0
KY-05-02-CLAS-03	Residential (B)	66	490	48.4	49.8
KY-05-02-CLAS-04	Church (D)	66	622	47.2	48.7
KY-05-02-EFOR-01	Residential (B)	66	247	61.7	64.5

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-05-02-EFOR-02	Residential (B)	66	333	59.9	62.7
KY-05-02-EFOR-03	Residential (B)	66	370	59.3	62.1
KY-05-02-EFOR-04	Residential (B)	66	332	59.9	62.7
KY-05-02-EFOR-05	Residential (B)	66	334	59.9	62.7
KY-05-02-EFOR-06	Residential (B)	66	328	60.0	62.8
KY-05-02-EFOR-07	Residential (B)	66	330	59.9	62.7
KY-05-02-EFOR-08	Residential (B)	66	330	59.9	62.6
KY-05-02-EFOR-09	Residential (B)	66	337	59.7	62.4
KY-05-02-EFOR-10	Residential (B)	66	336	59.6	62.4
KY-05-02-EFOR-11	Residential (B)	66	339	59.5	62.2
KY-05-02-EFOR-12	Residential (B)	66	346	59.3	62.0
KY-05-02-EFOR-13	Residential (B)	66	345	59.3	62.0
KY-05-02-EFOR-14	Residential (B)	66	345	59.2	61.9
KY-05-02-EFOR-15	Residential (B)	66	348	59.2	61.9
KY-05-02-EFOR-16	Residential (B)	66	354	59.1	61.7
KY-05-02-EFOR-17	Residential (B)	66	352	59.1	61.7
KY-05-02-EFOR-18	Residential (B)	66	356	59.0	61.6
KY-05-02-EFOR-19	Residential (B)	66	370	58.8	61.4
KY-05-02-EFOR-20	Residential (B)	66	435	58.0	60.5
KY-05-02-EFOR-21	Residential (B)	66	452	57.8	60.3
KY-05-02-GARL-01	Residential (B)	66	181	63.7	66.5
KY-05-02-GRED-01	Residential (B)	66	89	69.7	71.6
KY-05-02-GRED-02	Residential (B)	66	164	66.1	67.9
KY-05-02-GRED-03	Residential (B)	66	301	61.3	63.3
KY-05-02-GRED-04	Residential (B)	66	413	59.2	61.1
KY-05-02-HALD-01	Residential (B)	66	645	54.3	56.9
KY-05-02-HALD-02	Residential (B)	66	661	53.5	56.1
KY-05-02-HUBL-01	Residential (B)	66	134	61.5	64.2
KY-05-02-HUBL-02	Residential (B)	66	222	61.8	64.5
KY-05-02-HUBL-03	Residential (B)	66	249	59.1	61.8
KY-05-02-HUBL-04	Residential (B)	66	316	58.3	61.0
KY-05-02-HUBL-05	Residential (B)	66	347	57.6	60.3
KY-05-02-HUBL-06	Residential (B)	66	401	57.0	59.7
KY-05-02-HUBL-07	Residential (B)	66	489	57.0	59.7
KY-05-02-LAKR-01	Residential (B)	66	544	56.8	59.4
KY-05-02-LEXD-01	Residential (B)	66	489	52.3	54.3
KY-05-02-LEXD-02	Residential (B)	66	415	52.6	54.6

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-05-02-LEXD-03	Residential (B)	66	382	53.2	55.3
KY-05-02-MAGS-01	Residential (B)	66	319	57.4	59.2
KY-05-02-MAGS-02	Residential (B)	66	404	56.6	58.4
KY-05-02-MELP-01	Residential (B)	66	277	62.3	64.0
KY-05-02-MELP-02	Residential (B)	66	295	61.8	63.6
KY-05-02-MELP-03	Residential (B)	66	310	61.4	63.2
KY-05-02-MELP-04	Residential (B)	66	319	61.2	63.0
KY-05-02-MELP-05	Residential (B)	66	317	60.5	62.5
KY-05-02-MELP-06	Residential (B)	66	399	58.7	60.7
KY-05-02-MELP-07	Residential (B)	66	380	57.5	59.5
KY-05-02-MELP-08	Residential (B)	66	343	56.5	58.5
KY-05-02-MELP-09	Residential (B)	66	297	55.8	57.9
KY-05-02-MELP-10	Residential (B)	66	233	53.8	55.9
KY-05-02-MELP-11	Residential (B)	66	231	53.3	55.4
KY-05-02-MELP-12	Residential (B)	66	248	52.8	54.9
KY-05-02-MELP-13	Residential (B)	66	315	52.0	54.1
KY-05-02-POPA-01	Residential (B)	66	271	55.5	57.4
KY-05-02-POPA-02	Residential (B)	66	331	54.4	56.3
KY-05-02-POPA-03	Residential (B)	66	377	53.8	55.7
KY-05-02-POPA-04	Residential (B)	66	428	53.2	55.1
KY-05-02-POPA-05	Residential (B)	66	502	52.4	54.2
KY-05-02-POPA-06	Residential (B)	66	579	51.8	53.6
KY-05-02-TRER-01	Residential (B)	66	337	51.0	52.4
KY-05-02-TRER-02	Residential (B)	66	357	50.7	52.1
KY-05-02-TRER-03	Residential (B)	66	372	50.4	51.9
KY-05-02-TRER-04	Residential (B)	66	384	50.1	51.6
KY-05-02-TRER-05	Residential (B)	66	409	49.8	51.2
KY-05-02-TRER-06	Residential (B)	66	435	49.6	51.0
KY-05-02-TRER-07	Residential (B)	66	467	49.5	50.9
KY-05-02-TRER-08	Residential (B)	66	554	49.2	50.6
KY-05-02-TRER-09	Residential (B)	66	656	49.1	50.8
KY-05-02-VANA-01	Residential (B)	66	135	67.3	69.9
KY-05-02-VANA-02	Residential (B)	66	212	63.7	66.3
KY-05-02-VANA-04	Residential (B)	66	456	57.9	60.7
KY-05-02-VANA-05	Residential (B)	66	427	52.9	55.3
KY-05-02-VANA-06	Residential (B)	66	377	52.6	55.0
KY-05-02-VANA-07	Residential (B)	66	282	52.0	54.0

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		NO-BUILD
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	PREDICTED NOISE LEVEL dB(A)
KY-05-02-VANA-08	Residential (B)	66	200	51.9	53.5
KY-05-02-VANA-09	Residential (B)	66	128	52.7	53.7
KY-05-02-VANA-10	Residential (B)	66	559	56.1	58.8
KY-05-02-VANA-11	Residential (B)	66	591	54.9	57.5
KY-05-02-WASS-01	Residential (B)	66	277	50.2	51.7
KY-05-02-WASS-02	Residential (B)	66	320	49.8	51.4
KY-05-02-WASS-03	Residential (B)	66	385	48.6	50.3
KY-05-02-WASS-04	Residential (B)	66	453	49.1	50.8
KY-05-02-WASS-05	Residential (B)	66	494	48.4	50.1
KY-05-02-WASS-06	Residential (B)	66	561	48.0	49.7
KY-05-02-WENA-01	Residential (B)	66	276	61.6	63.6
KY-05-02-WENA-02	Residential (B)	66	332	60.2	62.2
KY-05-02-WENA-03	Residential (B)	66	410	58.6	60.7
KY-05-02-WENA-04	Residential (B)	66	489	57.4	59.4
KY-05-02-WENA-05	Residential (B)	66	483	56.6	58.6
KY-05-02-WENA-06	Residential (B)	66	457	55.5	57.5
KY-05-02-WFOR-01	Residential (B)	66	437	58.8	61.5
KY-05-02-WFOR-02	Residential (B)	66	488	57.7	60.4
KY-05-02-WFOR-03	Residential (B)	66	546	56.9	59.6
KY-05-02-WFOR-04	Residential (B)	66	583	56.3	59.0
KY-05-02-WFOR-05	Residential (B)	66	665	55.1	57.8
KY-05-02-WFOR-06	Residential (B)	66	704	54.6	57.2
KY-05-02-WFOR-07	Residential (B)	66	763	53.8	56.4
V1	Residential (B)	66	861	60.6	62.1
V16	Residential (B)	66	349	60.0	60.7
V17	Residential (B)	66	77	63.6	64.9
V7	Residential (B)	66	2,172	61.8	63.4

TABLE 3: RESULTS FOR CENTRAL ALTERNATIVE 1

Table 3: Results for Central Alternative 1

LEGEND	
	Exceeds Noise Abatement Criteria
	Exceeds Substantial Increase Criteria (10 dB(A) in KY, 15 dB(A) in IN)
	Exceeds Both Criteria

*** Some receiver's for the Toll I-69 Only scenario have predicted noise levels of 0.0 dB(A). The 0.0 dB(A) results are due to receptors being added to the Toll Both Crossing scenario after the initial analysis showed impacts at 500 feet from the proposed edge of pavement. As described in Section 2.2, when there are impacted receptors at 500 feet the NSA is extended to 800 feet and then reevaluated for additional receptors.**

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		CENTRAL ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-01-FREA-01	Residential (B)	66	542	56.1	840	56.3	64.7
IN-01-01-REES-01	Residential (B)	66	273	53.4	285	54.3	69.4
IN-01-01-REES-02	Residential (B)	66	216	54.3	226	55.2	69.6
IN-01-01-REES-03	Residential (B)	66	177	54.9	194	55.8	69.6
IN-01-01-REES-04	Residential (B)	66	139	56.1	152	56.5	68.9
IN-01-01-REES-05	Residential (B)	66	96	55.9	101	57.5	68.5
IN-01-01-RHEA-01	Residential (B)	66	510	50.0	520	61.6	69.6
IN-01-01-RHEA-02	Residential (B)	66	522	49.9	567	60.6	69.3
IN-01-01-RHEA-03	Residential (B)	66	469	50.5	550	61.1	69.1
IN-01-01-RHEA-04	Residential (B)	66	139	52.6	625	58.1	70.2
IN-01-01-SBOR-01	Residential (B)	66	439	51.3	438	62.4	70.5
IN-01-01-SBOR-02	Residential (B)	66	364	52.2	370	62.9	70.5
IN-01-01-SBOR-03	Residential (B)	66	149	54.7	163	55.4	66.5
IN-01-01-SBOR-04	Residential (B)	66	198	54.7	209	61.8	68.2
IN-01-01-SBOR-05	Residential (B)	66	652	52.6	562	0.0	70.9
IN-01-01-SBOR-06	Residential (B)	66	772	52.6	771	0.0	70.8
IN-01-01-SROD-01	Residential (B)	66	296	53.0	291	61.7	68.8
IN-01-01-SROD-02	Residential (B)	66	261	53.6	256	54.4	69.5
IN-01-01-SROD-03	Residential (B)	66	223	54.2	219	55.2	69.6
IN-01-01-SROD-04	Residential (B)	66	188	54.8	184	55.7	69.7
IN-01-01-SROD-05	Residential (B)	66	144	55.3	140	56.6	69.0
IN-01-01-SRUA-01	Residential (B)	66	414	50.7	781	61.2	68.6
IN-01-01-SRUA-02	Residential (B)	66	378	51.2	745	61.0	68.9
IN-01-01-SRUA-03	Residential (B)	66	341	51.7	714	52.7	68.8
IN-01-01-SRUA-04	Residential (B)	66	302	52.3	689	53.4	69.0

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		CENTRAL ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-01-SRUA-05	Residential (B)	66	265	53.1	697	54.1	68.6
IN-01-01-SRUA-06	Residential (B)	66	229	53.6	636	54.6	68.3
IN-01-01-SRUA-07	Residential (B)	66	191	54.3	636	55.3	68.4
IN-01-01-SRUA-08	Residential (B)	66	156	54.8	617	55.9	68.1
IN-01-01-SRUA-09	Residential (B)	66	116	55.5	558	56.6	67.9
IN-01-01-SSTB-01	Residential (B)	66	497	49.9	675	61.3	68.9
IN-01-01-SSTB-02	Residential (B)	66	466	50.3	620	61.3	69.3
IN-01-01-SSTB-03	Residential (B)	66	428	50.7	589	61.3	69.1
IN-01-01-SSTB-04	Residential (B)	66	388	51.3	550	61.6	69.1
IN-01-01-SSTB-05	Residential (B)	66	356	51.8	511	61.6	69.0
IN-01-01-SSTB-06	Residential (B)	66	317	52.3	476	53.3	69.0
IN-01-01-SSTB-07	Residential (B)	66	299	52.7	463	53.6	69.0
IN-01-01-SSTB-08	Residential (B)	66	239	53.6	406	54.7	68.9
IN-01-01-SSTB-09	Residential (B)	66	199	54.7	389	55.8	68.8
IN-01-01-SSTB-10	Residential (B)	66	157	55.0	350	56.1	68.5
IN-01-01-SSTB-11	Residential (B)	66	117	55.7	307	56.9	68.5
IN-01-01-SVID-01	Residential (B)	66	129	55.3	839	56.4	67.2
IN-01-01-SVID-02	Residential (B)	66	186	54.3	868	55.4	68.0
IN-01-01-SWEA-01	Residential (B)	66	598	56.2	733	55.7	68.0
IN-01-01-SWEA-02	Residential (B)	66	535	57.1	680	56.8	67.8
IN-01-01-SWEA-03	Residential (B)	66	464	58.3	638	58.0	67.4
IN-01-01-SWEA-04	Residential (B)	66	608	52.6	788	0.0	67.0
IN-01-01-VNBA-01	Residential (B)	66	587	48.7	589	61.4	69.7
IN-01-01-VNBA-02	Residential (B)	66	562	48.7	565	62.4	70.6
IN-01-01-VNBA-03	Residential (B)	66	526	48.7	528	61.7	70.0
IN-01-01-VNBA-04	Residential (B)	66	508	49.1	509	57.9	65.8
IN-01-01-VNBA-05	Residential (B)	66	508	49.6	470	56.7	65.9
IN-01-01-VNBA-06	Residential (B)	66	421	50.3	423	56.8	66.0
IN-01-01-VNBA-07	Residential (B)	66	359	51.2	362	58.3	66.2
IN-01-01-VNBA-08	Residential (B)	66	381	51.2	384	59.4	69.0
IN-01-01-VNBA-09	Residential (B)	66	327	51.5	330	61.1	67.9
IN-01-01-VNBA-10	Residential (B)	66	293	52.0	295	63.4	71.6
IN-01-01-VNBA-11	Residential (B)	66	240	53.7	271	63.3	71.5
IN-01-01-VNBA-12	Residential (B)	66	200	54.3	225	63.3	71.1
IN-01-01-VNBA-13	Residential (B)	66	289	53.1	286	62.6	70.4
IN-01-01-VNBA-14	Residential (B)	66	281	53.2	277	61.8	69.4
IN-01-01-VNBA-15	Residential (B)	66	251	53.6	247	54.4	70.1

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		CENTRAL ALT. 1		
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			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-01-VNBA-16	Residential (B)	66	234	53.9	230	54.8	70.2
IN-01-01-VNBA-17	Residential (B)	66	220	54.2	216	55.0	69.9
IN-01-01-VNBA-18	Residential (B)	66	220	54.1	217	55.0	70.1
IN-01-01-VNBA-19	Residential (B)	66	173	55.0	169	55.9	70.1
IN-01-02-REES-01	Residential (B)	66	219	54.0	328	55.0	69.3
IN-01-02-REES-02	Residential (B)	66	171	54.9	271	55.8	68.9
IN-01-02-REES-03	Residential (B)	66	128	55.5	227	56.5	68.7
IN-01-02-RHEA-01	Residential (B)	66	785	52.6	785	0.0	69.4
IN-01-02-RHEA-02	Residential (B)	66	770	52.6	785	0.0	67.9
IN-01-02-RHEA-03	Residential (B)	66	721	52.6	756	0.0	70.2
IN-01-02-SBOR-01	Residential (B)	66	485	50.5	482	62.2	69.8
IN-01-02-SRUA-01	Residential (B)	66	359	51.4	864	52.4	68.1
IN-01-02-SRUA-02	Residential (B)	66	289	52.5	805	53.6	68.2
IN-01-02-SRUA-03	Residential (B)	66	239	53.6	785	54.7	68.0
IN-01-02-SRUA-04	Residential (B)	66	175	54.4	754	55.5	68.3
IN-01-02-SRUA-05	Residential (B)	66	134	55.2	721	56.3	68.1
IN-01-02-SRUA-06	Residential (B)	66	103	55.8	711	57.0	67.9
IN-01-02-SSTB-01	Residential (B)	66	475	50.0	758	60.7	68.4
IN-01-02-SSTB-02	Residential (B)	66	440	50.4	705	61.1	68.8
IN-01-02-SSTB-03	Residential (B)	66	397	51.2	688	60.7	68.3
IN-01-02-SSTB-04	Residential (B)	66	359	51.5	656	61.0	68.7
IN-01-02-SSTB-05	Residential (B)	66	322	52.1	616	53.1	68.7
IN-01-02-SSTB-06	Residential (B)	66	287	52.6	581	53.7	68.9
IN-01-02-SSTB-07	Residential (B)	66	248	53.3	563	54.3	68.5
IN-01-02-SSTB-08	Residential (B)	66	214	53.9	528	54.9	68.7
IN-01-02-SSTB-09	Residential (B)	66	175	54.6	499	55.8	68.7
IN-01-02-SSTB-10	Residential (B)	66	133	55.4	474	56.5	68.5
IN-01-02-SWEA-01	Residential (B)	66	357	59.7	452	59.5	69.5
IN-01-02-SWEA-02	Residential (B)	66	208	62.9	316	62.6	63.1
IN-01-02-SWEA-03	Residential (B)	66	665	52.6	740	0.0	68.6
IN-01-02-SWEA-04	Residential (B)	66	722	52.6	790	0.0	70.9
IN-01-02-VNBA-01	Residential (B)	66	467	50.5	470	63.3	71.7
IN-01-02-VNBA-02	Residential (B)	66	436	50.9	456	62.9	71.3
IN-01-02-VNBA-03	Residential (B)	66	384	50.9	380	62.1	70.2
IN-01-02-VNBA-04	Residential (B)	66	338	51.2	334	62.2	70.5
IN-01-02-VNBA-05	Residential (B)	66	536	51.4	538	62.2	70.2
IN-01-02-VNBA-06	Residential (B)	66	450	51.7	465	61.3	68.9

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		CENTRAL ALT. 1		
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			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-02-VNBA-07	Residential (B)	66	423	52.0	419	62.3	70.0
IN-01-02-VNBA-08	Residential (B)	66	355	52.3	352	62.5	70.3
IN-01-02-VNBA-09	Residential (B)	66	284	53.2	280	62.3	70.2
IN-01-02-VNBA-10	Residential (B)	66	700	52.0	705	0.0	70.0
IN-01-02-VNBA-11	Residential (B)	66	597	52.0	603	0.0	66.1
KY-04-01-BALD-01	Residential (B)	66	4,566	40.4	449	52.9	57.3
KY-04-01-BALD-02	Residential (B)	66	4,677	40.4	562	51.7	56.1
KY-04-01-BALD-03	Residential (B)	66	4,760	40.4	648	50.9	55.3
KY-04-01-BALD-04	Residential (B)	66	4,214	40.4	691	50.1	54.5
KY-04-01-BOWL-01	Residential (B)	66	4,469	39.8	246	61.2	64.7
KY-04-01-BOWL-02	Residential (B)	66	4,176	39.8	395	56.2	60.5
KY-04-01-BOWL-03	Residential (B)	66	4,348	39.8	581	53.5	57.6
KY-04-01-BRAD-01	Residential (B)	66	4,717	39.8	608	52.6	56.9
KY-04-01-BRAD-02	Residential (B)	66	4,690	39.8	515	53.8	58.2
KY-04-01-BRAD-03	Residential (B)	66	4,643	39.8	416	55.3	59.7
KY-04-01-BRAD-04	Residential (B)	66	4,756	39.8	697	51.7	55.8
KY-04-01-BRAD-05	Residential (B)	66	4,803	39.8	800	50.5	54.5
KY-04-01-BROD-01	Residential (B)	66	3,027	40.4	688	51.6	55.9
KY-04-01-BROD-02	Residential (B)	66	3,145	40.4	560	53.6	57.8
KY-04-01-BROD-03	Residential (B)	66	3,225	40.4	474	54.9	59.1
KY-04-01-COBD-01	Residential (B)	66	4,743	40.4	267	58.0	61.9
KY-04-01-COBD-02	Residential (B)	66	4,846	40.4	345	56.1	60.2
KY-04-01-COBD-03	Residential (B)	66	4,936	40.4	375	54.9	59.1
KY-04-01-COBD-04	Residential (B)	66	4,254	40.4	659	53.8	58.1
KY-04-01-COBD-05	Residential (B)	66	5,016	40.4	597	51.9	56.3
KY-04-01-COBD-06	Residential (B)	66	4,922	40.4	652	51.3	55.6
KY-04-01-COBD-07	Residential (B)	66	4,831	40.4	725	50.5	54.9
KY-04-01-CULC-01	Residential (B)	66	4,455	39.8	641	52.3	56.5
KY-04-01-CULC-02	Residential (B)	66	4,419	39.8	551	53.9	58.0
KY-04-01-CULC-03	Residential (B)	66	4,380	39.8	455	55.4	59.5
KY-04-01-CULC-04	Residential (B)	66	4,496	39.8	736	51.4	55.4
KY-04-01-CULC-05	Residential (B)	66	4,501	39.8	808	50.6	54.6
KY-04-01-HART-01F	Residential (B)	66	5,075	39.8	690	51.9	55.9
KY-04-01-HART-02F	Residential (B)	66	5,144	39.8	685	51.9	56.0
KY-04-01-HART-03	Residential (B)	66	5,273	39.8	831	50.3	54.2
KY-04-01-HILT-01	Residential (B)	66	193	58.5	200	55.9	55.5
KY-04-01-HILT-02	Residential (B)	66	279	55.2	286	53.6	53.6

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			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
KY-04-01-HILT-03	Residential (B)	66	498	50.3	500	50.5	51.0
KY-04-01-MELL-01	Residential (B)	66	3,338	40.4	370	56.9	61.1
KY-04-01-MELL-02	Residential (B)	66	3,620	40.4	484	54.6	59.0
KY-04-01-MELL-03	Residential (B)	66	3,796	40.4	451	55.1	59.5
KY-04-01-MICD-01	Residential (B)	66	258	56.1	260	55.2	55.0
KY-04-01-MICD-02	Residential (B)	66	266	56.0	270	56.0	55.7
KY-04-01-MICD-03	Residential (B)	66	258	56.7	261	57.0	56.6
KY-04-01-MICD-04	Residential (B)	66	443	52.7	447	54.1	54.2
KY-04-01-MICD-05	Residential (B)	66	520	51.2	524	52.9	53.2
KY-04-01-MORD-01	Residential (B)	66	162	58.8	163	61.3	60.6
KY-04-01-MORD-02	Residential (B)	66	246	55.6	244	59.0	58.6
KY-04-01-MORD-03	Residential (B)	66	317	54.1	313	57.4	57.2
KY-04-01-MORD-04	Residential (B)	66	379	53.2	372	56.6	56.5
KY-04-01-MORD-05	Residential (B)	66	443	52.2	431	55.7	55.7
KY-04-01-MORD-06	Residential (B)	66	501	51.3	481	54.9	55.0
KY-04-01-MORD-07	Residential (B)	66	579	50.3	554	53.9	54.1
KY-04-01-PRIV-01F	Residential (B)	66	5,401	39.8	675	51.1	56.0
KY-04-01-R414-01F	Residential (B)	66	3,218	39.8	878	49.8	51.5
KY-04-01-R414-02F	Residential (B)	66	2,949	39.8	1,103	48.0	53.5
KY-04-01-SAND-01	Residential (B)	66	4,877	39.8	522	53.6	58.0
KY-04-01-SAND-02	Residential (B)	66	4,975	39.8	610	52.5	56.8
KY-04-01-SAND-03	Residential (B)	66	5,019	39.8	690	51.6	55.7
KY-04-01-SAND-04	Residential (B)	66	5,056	39.8	774	50.8	54.8
KY-04-01-US60-01	Church (D)	66	179	61.3	209	62.5	63.0
KY-04-01-US60-02	Residential (B)	66	92	65.1	105	66.4	66.8
KY-04-01-US60-03	Residential (B)	66	136	62.8	148	63.9	64.4
KY-04-01-US60-04	Residential (B)	66	207	60.2	232	60.9	61.4
KY-04-01-US60-05	Residential (B)	66	256	58.5	286	59.1	59.7
KY-04-01-US60-06	Residential (B)	66	306	57.0	336	57.8	58.4
KY-04-01-US60-07	Residential (B)	66	303	57.1	333	57.8	58.4
KY-04-01-US60-08	Residential (B)	66	342	55.7	372	56.7	57.3
KY-04-01-US60-09	Residential (B)	66	347	55.5	377	56.6	57.1
KY-04-01-US60-10	Residential (B)	66	352	55.4	382	56.3	56.9
KY-04-01-US60-11	Residential (B)	66	351	55.4	381	56.4	57.0
KY-04-01-US60-12	Residential (B)	66	360	54.9	390	56.2	56.6
KY-04-01-US60-13	Residential (B)	66	353	55.3	382	56.2	56.8
KY-04-01-US60-14	Residential (B)	66	355	55.2	384	55.6	56.8

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			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
KY-04-01-US60-15	Residential (B)	66	370	54.7	400	54.9	56.3
KY-04-01-US60-16	Residential (B)	66	392	53.8	410	55.1	55.6
KY-04-01-US60-17	Residential (B)	66	387	53.8	384	54.7	55.7
KY-04-01-US60-18	Residential (B)	66	398	53.3	390	54.5	55.4
KY-04-01-US60-19	Residential (B)	66	393	53.1	386	54.5	55.2
KY-04-01-US60-20	Residential (B)	66	394	52.9	387	54.5	55.1
KY-04-01-US60-21	Residential (B)	66	398	52.6	391	54.6	55.2
KY-04-01-US60-22	Residential (B)	66	382	53.9	375	54.3	55.3
KY-04-01-US60-23	Residential (B)	66	416	53.6	409	53.2	55.2
KY-04-01-US60-24	Residential (B)	66	447	52.7	442	52.0	54.2
KY-04-01-US60-25	Residential (B)	66	504	51.3	500	50.8	53.1
KY-04-01-US60-26	Residential (B)	66	553	50.1	551	49.9	52.1
KY-04-01-US60-27	Residential (B)	66	609	48.9	610	49.5	51.4
KY-04-01-US60-28	Residential (B)	66	632	48.4	633	48.7	51.1
KY-04-01-US60-29	Residential (B)	66	692	47.2	696	56.2	50.4
KY-04-01-US60-30	Residential (B)	66	754	46.2	761	49.8	49.9
KY-04-01-US60-VAL-02	Residential (B)	66	310	62.2	534	55.5	56.9
KY-04-01-US60-VAL-03	Residential (B)	66	385	56.5	572	45.4	58.0
KY-04-02-BALD-01	Residential (B)	66	4,483	40.4	540	50.6	55.1
KY-04-02-BOWL-04	Residential (B)	66	4,120	39.8	579	53.5	57.6
KY-04-02-BRAD-01	Residential (B)	66	4,488	39.8	604	50.4	57.1
KY-04-02-BRAD-02	Residential (B)	66	4,458	39.8	529	51.6	58.2
KY-04-02-BRAD-04	Residential (B)	66	4,533	39.8	730	51.5	55.5
KY-04-02-BRAD-05	Residential (B)	66	4,590	39.8	795	51.1	55.0
KY-04-02-BROD-01	Residential (B)	66	3,156	40.4	743	50.7	55.1
KY-04-02-BROD-02	Residential (B)	66	3,232	40.4	649	52.0	56.4
KY-04-02-BROD-03	Residential (B)	66	3,322	40.4	543	53.7	58.0
KY-04-02-COBD-01	Residential (B)	66	4,588	40.4	433	53.1	57.5
KY-04-02-COBD-02	Residential (B)	66	4,690	40.4	523	52.2	56.7
KY-04-02-COBD-03	Residential (B)	66	4,765	40.4	588	51.6	56.0
KY-04-02-COBD-04	Residential (B)	66	4,141	40.4	745	50.1	54.4
KY-04-02-COBD-05	Residential (B)	66	4,038	40.4	746	50.2	54.5
KY-04-02-CULC-01	Residential (B)	66	4,220	39.8	612	54.0	56.9
KY-04-02-CULC-02	Residential (B)	66	4,192	39.8	533	51.5	58.2
KY-04-02-CULC-03	Residential (B)	66	4,215	39.8	430	51.9	60.2
KY-04-02-CULC-03a	Residential (B)	66	4,247	39.8	694	56.1	56.0
KY-04-02-CULC-04	Residential (B)	66	4,281	39.8	777	50.8	54.9

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		CENTRAL ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
KY-04-02-CULC-05	Residential (B)	66	4,304	39.8	855	50.0	54.0
KY-04-02-CULC-AMB-02	Residential (B)	66	4,188	39.8	391	53.4	60.9
KY-04-02-HILT-01	Residential (B)	66	300	57.2	219	50.7	51.7
KY-04-02-HILT-02	Residential (B)	66	354	54.5	294	49.9	51.1
KY-04-02-HILT-03	Residential (B)	66	443	51.7	407	49.7	50.5
KY-04-02-HILT-04	Residential (B)	66	487	50.5	471	50.8	50.3
KY-04-02-MELL-04	Residential (B)	66	3,620	40.4	754	51.6	55.5
KY-04-02-MELL-05	Residential (B)	66	3,342	40.4	544	53.9	58.2
KY-04-02-MELL-06	Residential (B)	66	3,258	40.4	784	51.3	55.3
KY-04-02-MELL-07	Residential (B)	66	3,560	40.4	852	50.6	54.4
KY-04-02-MICD-01	Residential (B)	66	517	50.2	520	51.4	51.3
KY-04-02-MICD-02	Residential (B)	66	513	50.6	517	52.0	51.8
KY-04-02-MICD-03	Residential (B)	66	501	50.9	505	59.1	52.2
KY-04-02-MORD-01	Residential (B)	66	196	59.2	200	57.6	58.5
KY-04-02-MORD-02	Residential (B)	66	264	56.7	268	56.5	57.3
KY-04-02-MORD-03	Residential (B)	66	326	55.0	331	55.8	56.4
KY-04-02-MORD-04	Residential (B)	66	383	53.7	389	54.2	55.9
KY-04-02-MORD-05	Residential (B)	66	475	51.6	480	53.6	54.4
KY-04-02-MORD-06	Residential (B)	66	517	50.7	520	53.6	53.8
KY-04-02-MORD-07	Residential (B)	66	553	50.4	554	52.5	53.8
KY-04-02-SAND-02	Residential (B)	66	4,766	39.8	610	61.8	56.8
KY-04-02-SAND-03F	Residential (B)	66	4,755	39.8	535	53.6	57.9
KY-04-02-SAND-04	Residential (B)	66	4,829	39.8	792	50.6	54.7
KY-04-02-US60-01	Residential (B)	66	139	62.2	143	60.2	60.9
KY-04-02-US60-02	Residential (B)	66	134	61.7	137	58.9	59.3
KY-04-02-US60-03	Residential (B)	66	107	63.6	118	53.3	58.1
KY-04-02-US60-04	Residential (B)	66	118	62.0	130	49.8	53.0
KY-04-02-US60-05	Residential (B)	66	212	56.7	225	56.1	50.2
KY-04-21-BRAD-03F	Residential (B)	66	4,465	39.8	466	55.0	59.3

TABLE 4: RESULTS FOR WEST ALTERNATIVE 1

Table 4: Results for West Alternative 1

LEGEND	
	Exceeds Noise Abatement Criteria
	Exceeds Substantial Increase Criteria (10 dB(A) in KY, 15 dB(A) in IN)
	Exceeds Both Criteria

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
A1	Residential (B)	66	1,146	48.3	1,642	48.1	48.2
IN-01-01-ELOA-01	Residential (B)	66	640	52.0	978	51.0	50.4
IN-01-01-ELOA-02	Residential (B)	66	518	52.9	830	51.7	51.0
IN-01-01-FREA-01	Residential (B)	66	542	56.1	243	57.4	55.9
IN-01-01-FREA-02	Residential (B)	66	537	56.6	215	56.9	55.8
IN-01-01-FREA-03	Residential (B)	66	586	56.6	154	57.6	56.4
IN-01-01-MARA-01	Residential (B)	66	574	53.8	699	52.4	51.8
IN-01-01-MARA-02	Residential (B)	66	582	54.0	657	52.6	52.1
IN-01-01-MARA-03	Residential (B)	66	637	54.0	638	52.6	52.2
IN-01-01-MARA-04	Residential (B)	66	545	54.8	529	53.3	52.9
IN-01-01-MARA-05	Residential (B)	66	604	55.7	321	54.4	54.1
IN-01-01-MARA-06	Residential (B)	66	611	55.9	274	54.7	54.4
IN-01-01-MARA-07	Residential (B)	66	560	56.7	198	55.6	55.3
IN-01-01-REES-01	Residential (B)	66	273	53.4	352	54.4	54.1
IN-01-01-REES-02	Residential (B)	66	216	54.3	294	55.3	55.0
IN-01-01-REES-03	Residential (B)	66	177	54.9	264	55.9	55.6
IN-01-01-REES-04	Residential (B)	66	139	56.1	221	57.1	56.8
IN-01-01-REES-05	Residential (B)	66	96	55.9	170	57.0	56.7
IN-01-01-RHEA-01	Residential (B)	66	510	50.0	585	50.9	50.6
IN-01-01-RHEA-02	Residential (B)	66	522	49.9	636	50.9	50.6
IN-01-01-RHEA-03	Residential (B)	66	469	50.5	619	51.5	51.2
IN-01-01-SBOR-01	Residential (B)	66	439	51.3	339	52.1	51.6
IN-01-01-SBOR-02	Residential (B)	66	364	52.2	237	53.1	52.6
IN-01-01-SBOR-03	Residential (B)	66	149	54.7	7	55.5	54.9
IN-01-01-SBOR-04	Residential (B)	66	198	54.7	65	55.2	54.7
IN-01-01-SHEA-03	Residential (B)	66	629	55.0	419	53.5	53.2
IN-01-01-SHEA-04	Residential (B)	66	635	55.2	385	53.8	53.4
IN-01-01-SNOA-01	Residential (B)	66	537	57.0	60	57.7	57.1
IN-01-01-SNOA-02	Residential (B)	66	483	57.9	117	58.7	58.1
IN-01-01-SNOA-03	Residential (B)	66	425	58.9	174	60.0	59.4
IN-01-01-SNOA-04	Residential (B)	66	355	60.4	254	61.5	61.0

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-01-SNOA-05	Residential (B)	66	330	61.0	287	62.1	61.5
IN-01-01-SROA-01	Residential (B)	66	525	57.4	104	56.7	56.3
IN-01-01-SROA-02	Residential (B)	66	285	61.4	172	60.9	60.6
IN-01-01-SROA-03	Residential (B)	66	224	62.8	241	62.3	62.0
IN-01-01-SROA-04	Residential (B)	66	167	64.4	188	63.7	63.4
IN-01-01-SROD-01	Residential (B)	66	296	53.0	343	54.0	53.7
IN-01-01-SROD-02	Residential (B)	66	261	53.6	310	54.6	54.3
IN-01-01-SROD-03	Residential (B)	66	223	54.2	273	55.3	55.0
IN-01-01-SROD-04	Residential (B)	66	188	54.8	234	55.9	55.6
IN-01-01-SROD-05	Residential (B)	66	144	55.3	189	56.4	56.1
IN-01-01-SRUA-01	Residential (B)	66	414	50.7	846	51.8	51.5
IN-01-01-SRUA-02	Residential (B)	66	378	51.2	809	52.2	52.0
IN-01-01-SRUA-03	Residential (B)	66	341	51.7	777	52.8	52.5
IN-01-01-SRUA-04	Residential (B)	66	302	52.3	751	53.4	53.1
IN-01-01-SRUA-05	Residential (B)	66	265	53.1	757	54.2	53.9
IN-01-01-SRUA-06	Residential (B)	66	229	53.6	695	54.7	54.4
IN-01-01-SRUA-07	Residential (B)	66	191	54.3	693	55.4	55.1
IN-01-01-SRUA-08	Residential (B)	66	156	54.8	672	55.9	55.6
IN-01-01-SRUA-09	Residential (B)	66	116	55.5	612	56.6	56.3
IN-01-01-SSTB-01	Residential (B)	66	497	49.9	745	50.9	50.6
IN-01-01-SSTB-02	Residential (B)	66	466	50.3	690	51.3	51.0
IN-01-01-SSTB-03	Residential (B)	66	428	50.7	659	51.7	51.4
IN-01-01-SSTB-04	Residential (B)	66	388	51.3	619	52.3	52.1
IN-01-01-SSTB-05	Residential (B)	66	356	51.8	580	52.8	52.5
IN-01-01-SSTB-06	Residential (B)	66	317	52.3	545	53.4	53.1
IN-01-01-SSTB-07	Residential (B)	66	299	52.7	531	53.8	53.5
IN-01-01-SSTB-08	Residential (B)	66	239	53.6	473	54.7	54.4
IN-01-01-SSTB-09	Residential (B)	66	199	54.7	454	55.8	55.5
IN-01-01-SSTB-10	Residential (B)	66	157	55.0	413	56.2	55.9
IN-01-01-SSTB-11	Residential (B)	66	117	55.7	368	56.8	56.5
IN-01-01-SVID-01	Residential (B)	66	129	55.3	889	56.3	56.0
IN-01-01-SVID-02	Residential (B)	66	186	54.3	920	55.4	55.1
IN-01-01-SWEA-01	Residential (B)	66	598	56.2	221	56.7	55.1
IN-01-01-SWEA-02	Residential (B)	66	535	57.1	284	57.8	56.2
IN-01-01-SWEA-03	Residential (B)	66	464	58.3	349	59.0	57.3
IN-01-01-VaBA-01	Residential (B)	66	547	48.5	1,170	49.2	48.7
IN-01-01-VaBA-02	Residential (B)	66	575	48.9	1,172	49.2	48.7

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-01-VaBA-03	Residential (B)	66	600	49.0	1,190	49.1	48.6
IN-01-01-VaBA-04	Residential (B)	66	595	49.1	1,152	49.2	48.7
IN-01-01-VaBA-05	Residential (B)	66	630	49.3	1,158	49.2	48.7
IN-01-01-VaBA-06	Residential (B)	66	741	49.9	1,166	49.1	48.6
IN-01-01-VaBA-07	Residential (B)	66	731	50.4	110	49.6	49.0
IN-01-01-VNBA-01	Residential (B)	66	587	48.7	81	49.7	48.9
IN-01-01-VNBA-02	Residential (B)	66	562	48.7	95	49.7	48.8
IN-01-01-VNBA-03	Residential (B)	66	526	48.7	82	49.7	48.8
IN-01-01-VNBA-04	Residential (B)	66	508	49.1	90	50.2	49.3
IN-01-01-VNBA-05	Residential (B)	66	508	49.6	81	50.7	49.8
IN-01-01-VNBA-06	Residential (B)	66	421	50.3	68	51.5	50.6
IN-01-01-VNBA-07	Residential (B)	66	359	51.2	27	52.5	51.6
IN-01-01-VNBA-08	Residential (B)	66	381	51.2	71	52.3	51.5
IN-01-01-VNBA-09	Residential (B)	66	327	51.5	49	52.7	51.9
IN-01-01-VNBA-10	Residential (B)	66	293	52.0	46	53.1	52.3
IN-01-01-VNBA-11	Residential (B)	66	240	53.7	271	54.5	53.8
IN-01-01-VNBA-12	Residential (B)	66	200	54.3	26	55.0	54.4
IN-01-01-VNBA-13	Residential (B)	66	289	53.1	212	54.0	53.6
IN-01-01-VNBA-14	Residential (B)	66	281	53.2	221	54.1	53.7
IN-01-01-VNBA-15	Residential (B)	66	251	53.6	202	54.5	54.2
IN-01-01-VNBA-16	Residential (B)	66	234	53.9	197	55.0	54.6
IN-01-01-VNBA-17	Residential (B)	66	220	54.2	197	55.2	54.9
IN-01-01-VNBA-18	Residential (B)	66	220	54.1	214	55.2	54.8
IN-01-01-VNBA-19	Residential (B)	66	173	55.0	178	56.1	55.8
IN-01-02-MARA-01	Residential (B)	66	403	55.5	507	53.9	53.4
IN-01-02-MARA-02	Residential (B)	66	411	55.7	453	54.1	53.7
IN-01-02-MARA-03	Residential (B)	66	413	55.9	407	54.4	54.0
IN-01-02-MARA-04	Residential (B)	66	417	56.2	365	54.7	54.4
IN-01-02-MARA-05	Residential (B)	66	430	56.4	326	54.8	54.4
IN-01-02-MARA-06	Residential (B)	66	427	56.7	286	55.1	54.8
IN-01-02-MARA-07	Residential (B)	66	417	57.1	232	55.6	55.3
IN-01-02-MARA-08	Residential (B)	66	400	57.6	180	56.1	55.8
IN-01-02-MARA-09	Residential (B)	66	375	58.3	101	56.9	56.5
IN-01-02-MARA-10	Residential (B)	66	378	58.8	51	57.5	57.2
IN-01-02-MARA-11	Residential (B)	66	337	59.7	36	58.2	57.9
IN-01-02-MARA-12	Residential (B)	66	348	59.9	61	58.9	58.5
IN-01-02-MARA-13	Residential (B)	66	386	59.5	53	58.8	58.4

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-02-MARA-14	Residential (B)	66	575	56.3	123	57.2	56.3
IN-01-02-MARA-15	Residential (B)	66	569	56.3	147	57.3	46.8
IN-01-02-MARA-16	Residential (B)	66	676	55.1	66	55.4	56.3
IN-01-02-REES-01	Residential (B)	66	219	54.0	396	55.1	54.3
IN-01-02-REES-02	Residential (B)	66	171	54.9	339	56.9	54.8
IN-01-02-REES-03	Residential (B)	66	128	55.5	293	56.6	56.6
IN-01-02-SBOR-01	Residential (B)	66	485	50.5	447	51.4	51.0
IN-01-02-SHEA-01	Residential (B)	66	673	54.1	592	52.6	52.1
IN-01-02-SHEA-02	Residential (B)	66	599	54.6	526	53.2	52.8
IN-01-02-SNOA-01	Residential (B)	66	600	56.1	63	56.7	55.9
IN-01-02-SNOA-02	Residential (B)	66	552	57.8	112	57.5	56.7
IN-01-02-SNOA-03	Residential (B)	66	502	56.6	170	58.4	57.6
IN-01-02-SNOA-04	Residential (B)	66	442	58.4	235	59.7	58.8
IN-01-02-SNOA-05	Residential (B)	66	366	60.1	305	61.5	60.6
IN-01-02-SROA-01	Residential (B)	66	247	62.8	257	63.7	63.2
IN-01-02-SROA-02	Residential (B)	66	326	61.0	221	61.7	61.2
IN-01-02-SROA-03	Residential (B)	66	390	59.6	154	60.2	59.7
IN-01-02-SROA-04	Residential (B)	66	444	62.6	94	63.1	62.7
IN-01-02-SROA-05	Residential (B)	66	404	57.8	29	58.0	57.5
IN-01-02-SRUA-01	Residential (B)	66	359	51.4	924	52.4	52.2
IN-01-02-SRUA-02	Residential (B)	66	289	52.5	863	53.6	53.3
IN-01-02-SRUA-03	Residential (B)	66	239	53.6	841	54.7	54.4
IN-01-02-SRUA-04	Residential (B)	66	175	54.4	808	55.5	55.2
IN-01-02-SRUA-05	Residential (B)	66	134	55.2	773	56.3	56.0
IN-01-02-SRUA-06	Residential (B)	66	103	55.8	760	36.3	35.5
IN-01-02-SSTB-01	Residential (B)	66	475	50.0	826	51.0	50.7
IN-01-02-SSTB-02	Residential (B)	66	440	50.4	773	51.5	51.2
IN-01-02-SSTB-03	Residential (B)	66	397	51.2	755	52.3	52.0
IN-01-02-SSTB-04	Residential (B)	66	359	51.5	721	52.6	52.3
IN-01-02-SSTB-05	Residential (B)	66	322	52.1	681	53.2	52.9
IN-01-02-SSTB-06	Residential (B)	66	287	52.6	645	53.7	53.4
IN-01-02-SSTB-07	Residential (B)	66	248	53.3	625	54.4	54.1
IN-01-02-SSTB-08	Residential (B)	66	214	53.9	590	54.9	54.6
IN-01-02-SSTB-09	Residential (B)	66	175	54.6	558	55.8	55.5
IN-01-02-SSTB-10	Residential (B)	66	133	55.4	531	56.5	56.2
IN-01-02-SWEA-01	Residential (B)	66	357	59.7	331	60.6	58.8
IN-01-02-SWEA-02	Residential (B)	66	208	62.9	182	63.7	61.8

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-02-VNBA-01	Residential (B)	66	467	50.5	218	51.4	50.6
IN-01-02-VNBA-02	Residential (B)	66	436	50.9	257	51.7	51.0
IN-01-02-VNBA-03	Residential (B)	66	384	50.9	326	51.7	51.1
IN-01-02-VNBA-04	Residential (B)	66	338	51.2	319	52.0	51.4
IN-01-02-VNBA-05	Residential (B)	66	536	51.4	248	52.2	51.8
IN-01-02-VNBA-06	Residential (B)	66	450	51.7	235	52.7	52.3
IN-01-02-VNBA-07	Residential (B)	66	423	52.0	347	52.9	52.6
IN-01-02-VNBA-08	Residential (B)	66	355	52.3	322	53.2	52.9
IN-01-02-VNBA-09	Residential (B)	66	284	53.2	303	54.2	53.8
KY-02-01-BARR-01	Residential (B)	66	1,002	51.1	295	57.2	57.2
KY-02-01-BARR-02	Residential (B)	66	781	53.1	74	59.3	59.3
KY-02-01-BARR-03	Residential (B)	66	718	53.8	10	59.7	59.8
KY-02-01-CAMC-01	Residential (B)	66	1,037	51.1	161	62.4	62.4
KY-02-01-CAMC-02	Residential (B)	66	1,130	50.5	277	60.9	60.8
KY-02-01-CAMC-03	Residential (B)	66	1,130	50.7	310	60.8	60.8
KY-02-01-CAMD-01	Residential (B)	66	1,178	49.9	310	60.4	60.3
KY-02-01-CAMD-02	Residential (B)	66	1,073	50.6	226	62.0	62.0
KY-02-01-CAMD-03	Residential (B)	66	998	51.3	163	63.6	63.5
KY-02-01-CAMD-04	Residential (B)	66	919	52.0	103	65.1	65.0
KY-02-01-CANL-01	Residential (B)	66	469	57.9	155	66.7	66.8
KY-02-01-CANL-02	Residential (B)	66	339	60.7	280	63.6	63.8
KY-02-01-CANL-03	Residential (B)	66	260	62.4	363	62.1	62.2
KY-02-01-CBTP-01	Residential (B)	66	1,057	52.5	449	55.2	56.9
KY-02-01-CBTP-02	Residential (B)	66	1,015	52.8	408	55.4	57.2
KY-02-01-CBTP-03	Residential (B)	66	969	53.1	361	55.6	57.6
KY-02-01-CBTP-04	Residential (B)	66	932	53.4	326	55.8	57.8
KY-02-01-CBTP-05	Residential (B)	66	884	53.8	278	56.0	58.2
KY-02-01-CBTP-06	Residential (B)	66	842	54.2	237	56.3	58.5
KY-02-01-CBTP-07	Residential (B)	66	801	54.5	196	56.6	59.1
KY-02-01-CBTP-08	Residential (B)	66	749	54.9	146	57.2	59.9
KY-02-01-CBTP-09	Residential (B)	66	689	55.4	85	57.7	60.5
KY-02-01-CBTP-17	Residential (B)	66	648	56.2	25	60.0	62.6
KY-02-01-CBTP-18	Residential (B)	66	693	55.6	71	59.7	62.0
KY-02-01-CBTP-19	Residential (B)	66	737	55.0	115	59.4	61.6
KY-02-01-CBTP-20	Residential (B)	66	784	54.5	161	58.8	60.8
KY-02-01-CBTP2-01	Residential (B)	66	996	53.3	405	54.5	56.5
KY-02-01-CBTP2-02	Residential (B)	66	976	53.5	382	54.8	56.9

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	TOLL I-69 ONLY 2045 PREDICTED NOISE LEVEL dB(A)	TOLL BOTH CROSSINGS 2045 PREDICTED NOISE LEVEL dB(A)
KY-02-01-CBTP2-03	Residential (B)	66	948	53.6	353	55.0	57.2
KY-02-01-CBTP2-04	Residential (B)	66	893	54.0	296	55.5	57.7
KY-02-01-CBTP2-05	Residential (B)	66	867	54.1	268	55.8	58.1
KY-02-01-CBTP2-06	Residential (B)	66	927	53.5	323	55.5	57.6
KY-02-01-CBTP2-07	Residential (B)	66	970	53.1	368	55.1	57.2
KY-02-01-CBTP2-08	Residential (B)	66	1,005	52.8	402	55.0	56.9
KY-02-01-CBTP-21	Residential (B)	66	829	54.0	206	58.4	60.3
KY-02-01-CBTP-22	Residential (B)	66	871	53.6	248	58.1	59.8
KY-02-01-CBTP-23	Residential (B)	66	919	53.2	296	57.7	59.3
KY-02-01-CBTP-24	Residential (B)	66	960	52.8	336	57.4	58.9
KY-02-01-CBTP-25	Residential (B)	66	1,007	52.4	383	57.0	58.5
KY-02-01-CBTP-26	Residential (B)	66	1,049	52.1	404	56.7	58.1
KY-02-01-COLD-01	Residential (B)	66	89	54.0	448	54.4	56.2
KY-02-01-COLD-02	Residential (B)	66	96	54.3	389	55.3	57.2
KY-02-01-COLD-03	Residential (B)	66	91	54.7	349	55.8	57.7
KY-02-01-COLD-04	Residential (B)	66	89	55.2	298	56.3	58.4
KY-02-01-COLD-05	Residential (B)	66	92	62.5	236	57.1	59.3
KY-02-01-COLD-06	Residential (B)	66	90	64.3	179	58.0	60.5
KY-02-01-COLED-17	Residential (B)	66	297	56.7	106	63.8	64.8
KY-02-01-COLED-18	Residential (B)	66	243	55.7	160	63.9	64.2
KY-02-01-CTAP-01	Residential (B)	66	54	54.8	438	55.0	56.8
KY-02-01-CTAP-02	Residential (B)	66	73	59.0	468	54.6	56.4
KY-02-01-CTAP-03	Residential (B)	66	29	55.3	453	54.7	56.5
KY-02-01-CTBP-01	Residential (B)	66	30	55.4	366	56.1	58.0
KY-02-01-CTBP-02	Residential (B)	66	178	55.3	254	57.1	59.4
KY-02-01-CTBP-03	Residential (B)	66	208	55.3	243	57.4	59.6
KY-02-01-CTBP-04	Residential (B)	66	202	49.9	237	57.6	59.8
KY-02-01-CTBP-05	Residential (B)	66	146	58.6	228	57.9	60.1
KY-02-01-DOND-01	Residential (B)	66	1,168	53.9	384	58.8	58.9
KY-02-01-HARL-01	Residential (B)	66	438	59.9	98	66.1	66.7
KY-02-01-HARL-02	Residential (B)	66	379	62.5	156	64.6	65.1
KY-02-01-HARL-03	Residential (B)	66	324	66.6	220	63.6	64.0
KY-02-01-HARL-04	Residential (B)	66	254	50.8	293	62.0	62.4
KY-02-01-HARL-05	Residential (B)	66	120	51.4	419	59.7	60.0
KY-02-01-JAMD-01	Residential (B)	66	1,039	52.4	132	57.2	57.2
KY-02-01-JAMD-02	Residential (B)	66	957	50.8	233	58.1	58.1
KY-02-01-JAMD-03	Residential (B)	66	858	50.7	132	59.2	59.2

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
KY-02-01-JOHD-01	Residential (B)	66	1,040	50.6	301	57.9	58.0
KY-02-01-JOHD-02	Residential (B)	66	1,054	50.3	312	58.1	58.3
KY-02-01-JOHD-03	Residential (B)	66	1,066	50.3	321	58.2	58.3
KY-02-01-JOHD-04	Residential (B)	66	1,104	50.2	356	58.0	58.2
KY-02-01-JOHD-05	Residential (B)	66	1,108	50.3	354	58.4	58.6
KY-02-01-JOHD-06	Residential (B)	66	1,127	50.2	369	58.7	58.9
KY-02-01-JOHD-07	Residential (B)	66	1,103	50.0	322	59.8	59.9
KY-02-01-JOHD-09	Residential (B)	66	1,153	49.8	204	60.5	60.5
KY-02-01-LOCD-01	Residential (B)	66	1,256	50.3	381	59.3	59.3
KY-02-01-LOCD-02	Residential (B)	66	1,245	50.9	376	59.4	59.4
KY-02-01-LOCD-03	Residential (B)	66	1,195	53.2	368	60.0	59.9
KY-02-01-LOCD-04	Residential (B)	66	1,189	55.5	353	59.4	59.3
KY-02-01-MARKD-01	Residential (B)	66	1,048	39.6	368	57.2	58.4
KY-02-01-MARKD-02	Residential (B)	66	911	65.2	228	58.8	60.1
KY-02-01-MIMD-01	Residential (B)	66	282	54.7	243	57.2	59.3
KY-02-01-NELS-01	Residential (B)	66	827	56.6	93	64.5	64.4
KY-02-01-NELS-02	Residential (B)	66	836	64.9	111	65.1	65.0
KY-02-01-NELS-03	Residential (B)	66	707	65.9	37	67.6	67.5
KY-02-01-NPAD-01	Residential (B)	66	163	64.9	52	59.3	58.8
KY-02-01-NPAD-02	Residential (B)	66	155	65.1	194	59.9	59.5
KY-02-01-NPAD-03	Residential (B)	66	135	68.2	264	59.8	59.5
KY-02-01-NPAD-04	Residential (B)	66	165	64.9	272	60.2	60.1
KY-02-01-NPAD-05	Residential (B)	66	160	65.1	318	60.1	60.3
KY-02-01-NPAD-06	Residential (B)	66	89	64.6	417	59.2	59.4
KY-02-01-NPAD-07	Residential (B)	66	127	63.6	378	59.8	60.0
KY-02-01-NPAD-08	Residential (B)	66	176	63.2	329	60.6	60.9
KY-02-01-NPAD-09	Residential (B)	66	209	63.0	295	61.1	61.5
KY-02-01-NPAD-10	Residential (B)	66	229	56.7	288	61.5	61.9
KY-02-01-NPAD-11	Residential (B)	66	235	58.5	289	61.7	62.1
KY-02-01-RETR-01	Residential (B)	66	539	59.3	34	60.2	60.3
KY-02-01-RETR-02	Residential (B)	66	442	61.4	143	66.3	66.3
KY-02-01-RETR-03	Residential (B)	66	405	52.2	173	65.6	65.6
KY-02-01-RETR-04	Residential (B)	66	354	60.4	217	64.4	64.3
KY-02-01-RETR-05	Residential (B)	66	309	61.4	255	63.4	63.4
KY-02-01-RETR-06	Residential (B)	66	217	63.4	343	61.8	61.8
KY-02-01-RETR-07	Residential (B)	66	160	65.0	400	61.1	61.0
KY-02-01-RICL-01	Residential (B)	66	1,117	51.6	299	60.4	60.3

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
KY-02-01-ROBR-01	Residential (B)	66	472	57.8	112	66.5	66.9
KY-02-01-ROBR-03	Residential (B)	66	329	61.0	248	63.4	63.7
KY-02-01-ROBR-04	Residential (B)	66	247	62.7	332	61.7	62.0
KY-02-01-ROOD-01	Residential (B)	66	1,233	50.2	409	59.3	59.3
KY-02-01-ROOD-02	Residential (B)	66	1,168	50.6	356	60.2	60.1
KY-02-01-ROOD-03	Residential (B)	66	997	51.9	185	62.4	62.4
KY-02-01-ROOD-04	Residential (B)	66	940	52.6	111	63.1	63.1
KY-02-01-ROOD-05	Residential (B)	66	848	53.6	35	65.7	65.6
KY-02-01-RTTP-02	Residential (B)	66	94	61.5	61	65.0	66.3
KY-02-01-RTTP-03	Residential (B)	66	117	62.7	107	64.7	65.5
KY-02-01-RTTP-04	Residential (B)	66	119	63.6	134	64.7	65.3
KY-02-01-RTTP-05	Residential (B)	66	124	64.7	164	65.1	65.4
KY-02-01-SHEP-01	Residential (B)	66	1,074	51.0	400	57.9	57.9
KY-02-01-SHEP-02	Residential (B)	66	1,064	51.0	388	57.9	58.0
KY-02-01-SHEP-03	Residential (B)	66	1,060	51.0	382	57.9	57.9
KY-02-01-SHEP-04	Residential (B)	66	1,052	51.1	372	57.8	57.9
KY-02-01-SHEP-05	Residential (B)	66	1,054	51.0	371	57.7	57.7
KY-02-01-SPRD-01	Residential (B)	66	1,058	50.8	372	57.5	57.6
KY-02-01-SPRD-02	Residential (B)	66	1,014	51.2	329	58.2	58.2
KY-02-01-SPRD-03	Residential (B)	66	951	51.7	266	58.9	58.9
KY-02-01-SPRD-04	Residential (B)	66	879	52.4	194	59.8	59.8
KY-02-01-SPRD-05	Residential (B)	66	809	53.0	124	60.4	60.4
KY-02-01-SPRD-06	Residential (B)	66	724	53.9	40	61.3	61.4
KY-02-01-SPRR-01	Residential (B)	66	966	51.5	267	57.8	57.8
KY-02-01-SPRR-02	Residential (B)	66	982	51.3	278	57.5	57.5
KY-02-01-SPRR-03	Residential (B)	66	950	51.6	244	57.8	57.7
KY-02-01-SPRWD-01	Residential (B)	66	1,197	49.6	357	59.6	59.6
KY-02-01-SPRWD-02	Residential (B)	66	1,053	50.8	220	61.9	61.9
KY-02-01-SPRWD-03	Residential (B)	66	955	51.5	133	64.0	64.0
KY-02-01-SPRWD-04	Residential (B)	66	870	52.3	79	65.4	65.4
KY-02-01-STPD-01	Residential (B)	66	843	53.9	216	59.2	60.7
KY-02-01-STPD-02	Residential (B)	66	847	53.9	174	59.5	60.9
KY-02-01-STPD-03	Residential (B)	66	838	54.0	112	60.3	61.5
KY-02-01-STPD-04	Residential (B)	66	833	54.2	84	60.9	61.9
KY-02-01-STRR-01	Residential (B)	66	87	56.6	236	57.8	60.2
KY-02-01-TP-01	Residential (B)	66	793	54.3	201	56.2	58.9
KY-02-01-TP-02	Residential (B)	66	875	53.7	281	55.3	57.7

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
KY-02-01-TP-03	Residential (B)	66	785	54.3	188	56.3	59.1
KY-02-01-TP-04	Residential (B)	66	674	55.4	79	57.9	60.7
KY-02-01-TP-05	Residential (B)	66	715	54.9	117	57.4	60.1
KY-02-01-TP-06	Residential (B)	66	321	60.5	86	62.4	63.6
KY-02-01-TP-07	Residential (B)	66	246	61.9	161	63.1	63.3
KY-02-01-TP-08	Residential (B)	66	251	61.7	156	63.0	63.3
KY-02-01-TP-09	Residential (B)	66	246	61.8	160	63.1	63.3
KY-02-01-TP-10	Residential (B)	66	132	65.3	274	65.6	64.5
KY-02-01-TP-11	Residential (B)	66	142	64.8	263	65.3	64.2
KY-02-01-TP-12	Residential (B)	66	130	65.3	273	65.7	64.5
KY-02-01-TP-13	Residential (B)	66	167	63.8	234	64.5	63.7
KY-02-01-TP-14	Residential (B)	66	119	65.8	280	66.1	64.9
KY-02-01-TP-15	Residential (B)	66	98	67.1	298	67.3	65.9
KY-02-01-VILD-01	Residential (B)	66	1,218	50.7	410	59.0	58.9
KY-02-01-VILD-02	Residential (B)	66	1,133	51.5	355	60.0	59.9
KY-02-01-VILD-03	Residential (B)	66	1,075	52.1	316	60.8	60.7
KY-02-01-VILD-04	Residential (B)	66	1,015	52.8	284	61.7	61.7
KY-02-01-VILD-05	Residential (B)	66	963	53.3	233	62.6	62.5
KY-02-01-VILD-06	Residential (B)	66	923	53.9	192	63.5	63.5
KY-02-01-VILD-07	Residential (B)	66	792	55.7	119	66.3	66.3
KY-02-01-WALL-01	Residential (B)	66	1,011	53.1	438	54.6	56.5
KY-02-01-WALL-02	Residential (B)	66	960	53.6	392	54.8	56.9
KY-02-01-WALL-03	Residential (B)	66	924	53.8	351	55.1	57.3
KY-02-01-WALL-04	Residential (B)	66	830	54.6	260	56.0	58.4
KY-02-01-WATL-01	Church (D)	66	953	53.9	131	60.6	61.4
KY-02-01-WILD-01	Residential (B)	66	897	53.0	230	61.2	61.0
KY-02-01-WILD-02	Residential (B)	66	952	52.2	281	59.9	59.9
KY-02-01-WILD-03	Residential (B)	66	979	51.8	306	59.3	59.3
KY-02-01-WILD-04	Residential (B)	66	958	51.9	282	59.5	59.5
KY-02-01-WILD-05	Residential (B)	66	965	51.8	286	59.2	59.2
KY-02-02-BARR-01	Residential (B)	66	1,000	51.1	281	57.3	57.3
KY-02-02-BARR-02	Residential (B)	66	930	51.7	210	58.4	58.3
KY-02-02-CAMC-01	Residential (B)	66	882	52.9	73	63.7	63.6
KY-02-02-CAMC-02	Residential (B)	66	940	52.4	129	63.1	63.0
KY-02-02-CAMD-01	Residential (B)	66	1,123	50.5	250	61.1	61.0
KY-02-02-CAMD-02	Residential (B)	66	950	52.0	113	63.8	63.7
KY-02-02-CAMD-03	Residential (B)	66	871	52.8	59	64.2	64.1

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	TOLL I-69 ONLY 2045 PREDICTED NOISE LEVEL dB(A)	TOLL BOTH CROSSINGS 2045 PREDICTED NOISE LEVEL dB(A)
KY-02-02-CANL-01	Residential (B)	66	475	57.9	139	66.9	66.9
KY-02-02-CANL-02	Residential (B)	66	375	59.9	223	64.7	64.7
KY-02-02-CANL-03	Residential (B)	66	285	61.8	300	62.7	62.7
KY-02-02-CANL-04	Residential (B)	66	191	64.1	386	61.3	61.3
KY-02-02-CBTP-01	Residential (B)	66	1,061	52.3	446	55.7	57.3
KY-02-02-CBTP-02	Residential (B)	66	926	53.3	313	56.3	58.2
KY-02-02-CBTP-03	Residential (B)	66	867	53.8	254	56.7	58.8
KY-02-02-CBTP-04	Residential (B)	66	778	54.6	166	57.3	59.8
KY-02-02-CBTP-05	Residential (B)	66	739	54.9	128	57.7	60.3
KY-02-02-CBTP-06	Residential (B)	66	680	55.5	70	57.9	60.7
KY-02-02-CBTP-07	Residential (B)	66	674	55.9	58	58.5	61.2
KY-02-02-CBTP-08	Residential (B)	66	724	55.2	107	58.3	60.9
KY-02-02-CBTP-09	Residential (B)	66	770	54.7	153	57.9	60.3
KY-02-02-CBTP-10	Residential (B)	66	820	54.2	203	57.5	59.6
KY-02-02-CBTP-11	Residential (B)	66	876	53.7	258	57.2	59.1
KY-02-02-CBTP-12	Residential (B)	66	912	53.4	294	56.8	58.7
KY-02-02-CBTP-13	Residential (B)	66	958	53.0	340	56.6	58.3
KY-02-02-CBTP-14	Residential (B)	66	1,003	52.6	384	56.4	58.0
KY-02-02-CBTP-15	Residential (B)	66	1,053	52.4	434	56.1	57.6
KY-02-02-COLD-01	Residential (B)	66	195	53.9	463	54.1	55.9
KY-02-02-COLD-02	Residential (B)	66	192	54.0	406	55.0	56.8
KY-02-02-COLD-03	Residential (B)	66	193	54.2	354	55.5	57.4
KY-02-02-COLD-04	Residential (B)	66	190	54.8	300	56.2	58.2
KY-02-02-COLD-05	Residential (B)	66	190	55.2	241	56.8	58.9
KY-02-02-COLD-06	Residential (B)	66	202	55.7	183	57.6	60.1
KY-02-02-COLED-07	Residential (B)	66	241	63.0	124	63.9	64.6
KY-02-02-CTAP-01	Residential (B)	66	88	55.8	357	56.2	58.1
KY-02-02-CTAP-02	Residential (B)	66	114	55.2	354	56.3	58.2
KY-02-02-CTAP-03	Residential (B)	66	144	54.9	339	56.5	58.4
KY-02-02-CTAP-04	Residential (B)	66	140	54.7	340	56.4	58.3
KY-02-02-CTAP-05	Residential (B)	66	79	54.7	339	56.4	58.3
KY-02-02-CTAP-06	Residential (B)	66	27	54.7	328	56.5	58.4
KY-02-02-CTBP-01	Residential (B)	66	191	56.5	116	59.8	62.2
KY-02-02-DOND-01	Residential (B)	66	1,195	49.7	384	59.3	59.4
KY-02-02-DOND-02	Residential (B)	66	1,040	50.8	225	61.5	61.6
KY-02-02-DOND-03	Residential (B)	66	919	51.8	106	63.2	63.3
KY-02-02-DOND-04	Residential (B)	66	860	52.4	76	65.2	65.2

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	TOLL I-69 ONLY 2045 PREDICTED NOISE LEVEL dB(A)	TOLL BOTH CROSSINGS 2045 PREDICTED NOISE LEVEL dB(A)
KY-02-02-HARL-01	Residential (B)	66	464	58.0	101	66.6	67.0
KY-02-02-HARL-02	Residential (B)	66	403	59.4	161	64.9	65.3
KY-02-02-HARL-03	Residential (B)	66	359	60.3	207	64.4	64.9
KY-02-02-HARL-04	Residential (B)	66	312	61.4	257	63.2	63.5
KY-02-02-HARL-05	Residential (B)	66	208	63.6	361	61.1	61.4
KY-02-02-HARL-06	Residential (B)	66	102	67.4	472	59.4	59.6
KY-02-02-JAMD-01	Residential (B)	66	678	54.3	39	60.2	59.7
KY-02-02-JAMD-02	Residential (B)	66	684	54.2	36	60.6	60.1
KY-02-02-JAMD-03	Residential (B)	66	631	54.9	29	54.8	54.4
KY-02-02-JAMD-04	Residential (B)	66	647	54.7	32	55.8	55.4
KY-02-02-JAMD-05	Residential (B)	66	677	54.3	46	57.4	57.0
KY-02-02-JAMD-06	Residential (B)	66	711	53.9	23	61.4	60.2
KY-02-02-JAMD-07	Residential (B)	66	831	52.6	94	60.3	60.6
KY-02-02-JAMD-08	Residential (B)	66	910	51.9	175	59.1	59.3
KY-02-02-JAMD-09	Residential (B)	66	1,083	50.4	349	57.3	57.4
KY-02-02-JOHD-01	Residential (B)	66	802	52.9	64	61.2	61.5
KY-02-02-JOHD-02	Residential (B)	66	770	53.2	30	61.5	61.6
KY-02-02-JOHD-03	Residential (B)	66	789	53.0	45	61.7	61.9
KY-02-02-JOHD-04	Residential (B)	66	788	53.0	41	58.0	62.2
KY-02-02-JOHD-05	Residential (B)	66	852	52.4	102	62.0	61.5
KY-02-02-JOHD-06	Residential (B)	66	928	51.7	171	61.3	61.7
KY-02-02-JOHD-07	Residential (B)	66	885	52.1	126	61.0	62.1
KY-02-02-JOHD-08	Residential (B)	66	976	51.3	213	61.9	61.5
KY-02-02-JOHD-09	Residential (B)	66	1,008	51.1	297	61.3	61.5
KY-02-02-MARKD-01	Residential (B)	66	918	53.0	178	59.4	60.5
KY-02-02-MIMD-01	Residential (B)	66	78	56.7	121	60.0	62.5
KY-02-02-MIMD-02	Residential (B)	66	190	56.7	105	59.9	62.4
KY-02-02-MIMD-03	Residential (B)	66	272	57.4	67	61.2	63.7
KY-02-02-NELS-01	Residential (B)	66	242	62.8	86	59.0	58.5
KY-02-02-NELS-02	Residential (B)	66	268	62.2	77	61.1	60.3
KY-02-02-NELS-03	Residential (B)	66	286	61.9	125	62.5	61.9
KY-02-02-NELS-04	Residential (B)	66	360	60.3	70	63.8	62.8
KY-02-02-NELS-05	Residential (B)	66	311	61.4	151	63.1	63.1
KY-02-02-NELS-06	Residential (B)	66	387	59.7	90	63.8	64.0
KY-02-02-NELS-07	Residential (B)	66	353	60.5	140	64.3	64.6
KY-02-02-NELS-08	Residential (B)	66	341	60.8	169	63.9	64.4
KY-02-02-NELS-09	Residential (B)	66	168	66.4	205	66.8	66.5

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
KY-02-02-NELS-10	Residential (B)	66	130	68.2	169	68.0	67.6
KY-02-02-NELS-11	Residential (B)	66	243	62.8	322	63.7	63.3
KY-02-02-NELS-12	Residential (B)	66	242	63.0	323	63.8	63.4
KY-02-02-NELS-13	Residential (B)	66	193	64.3	274	64.6	64.2
KY-02-02-NELS-14	Residential (B)	66	182	64.6	265	64.8	64.4
KY-02-02-NELS-15	Residential (B)	66	121	66.7	206	66.0	65.6
KY-02-02-NELS-16	Residential (B)	66	69	69.5	155	67.2	66.9
KY-02-02-NELS-17	Residential (B)	66	54	69.8	140	67.7	67.3
KY-02-02-NELS-18	Residential (B)	66	60	69.2	141	67.5	67.2
KY-02-02-NELS-19	Residential (B)	66	109	66.2	185	66.0	65.7
KY-02-02-NELS-20	Residential (B)	66	169	64.5	246	64.5	64.2
KY-02-02-NELS-21	Residential (B)	66	240	62.5	316	63.0	62.7
KY-02-02-NELS-22	Residential (B)	66	292	60.8	368	61.7	61.4
KY-02-02-NELS-23	Residential (B)	66	363	59.3	439	60.5	60.1
KY-02-02-NELS-24	Residential (B)	66	422	58.2	499	59.6	59.2
KY-02-02-RETR-01	Residential (B)	66	442	58.6	179	67.4	67.3
KY-02-02-RETR-02	Residential (B)	66	374	60.0	235	65.5	65.5
KY-02-02-RETR-03	Residential (B)	66	317	61.2	276	64.2	64.1
KY-02-02-RETR-04	Residential (B)	66	270	62.1	338	63.2	63.2
KY-02-02-RETR-05	Residential (B)	66	191	64.0	383	61.7	61.6
KY-02-02-RETR-06	Residential (B)	66	119	66.4	456	60.7	60.5
KY-02-02-ROBR-01	Residential (B)	66	483	57.6	128	66.8	67.0
KY-02-02-ROBR-02	Residential (B)	66	407	59.2	203	65.3	65.6
KY-02-02-ROBR-03	Residential (B)	66	335	60.8	277	63.5	63.6
KY-02-02-ROBR-04	Residential (B)	66	242	62.8	371	61.7	61.8
KY-02-02-ROOD-01	Residential (B)	66	1,181	50.9	333	59.6	59.5
KY-02-02-ROOD-02	Residential (B)	66	1,130	51.1	282	60.4	60.4
KY-02-02-ROOD-03	Residential (B)	66	1,064	51.8	219	61.3	61.2
KY-02-02-ROOD-04	Residential (B)	66	965	52.9	137	62.9	62.8
KY-02-02-ROOD-05	Residential (B)	66	881	53.8	85	65.1	65.0
KY-02-02-RTTP-07	Residential (B)	66	205	62.0	86	64.4	65.6
KY-02-02-RTTP-08	Residential (B)	66	181	63.8	139	64.4	64.9
KY-02-02-SPRD-01	Residential (B)	66	968	51.5	272	57.9	57.9
KY-02-02-SPRR-01	Residential (B)	66	767	53.3	73	59.9	60.0
KY-02-02-SPRR-02	Residential (B)	66	739	53.6	42	60.0	60.1
KY-02-02-SPRR-03	Residential (B)	66	768	53.3	69	59.7	59.8
KY-02-02-SPRR-04	Residential (B)	66	762	53.4	61	59.6	59.6

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
KY-02-02-SPRR-05	Residential (B)	66	756	53.4	52	59.6	59.6
KY-02-02-SPRWD-01	Residential (B)	66	1,233	49.5	373	59.4	59.3
KY-02-02-SPRWD-02	Residential (B)	66	1,163	49.9	305	60.5	60.5
KY-02-02-SPRWD-03	Residential (B)	66	1,110	50.3	254	61.3	61.3
KY-02-02-SPRWD-04	Residential (B)	66	1,025	51.0	173	63.1	63.0
KY-02-02-SPRWD-05	Residential (B)	66	943	51.8	110	64.9	64.8
KY-02-02-STPD-01	Residential (B)	66	638	56.2	12	60.7	63.1
KY-02-02-STPD-02	Residential (B)	66	652	56.0	23	61.3	63.4
KY-02-02-STPD-03	Residential (B)	66	640	56.3	6	62.4	64.2
KY-02-02-VILD-01	Residential (B)	66	1,166	51.3	442	59.4	59.3
KY-02-02-VILD-02	Residential (B)	66	1,117	51.9	418	60.0	59.9
KY-02-02-VILD-03	Residential (B)	66	1,043	52.7	358	61.2	61.1
KY-02-02-VILD-04	Residential (B)	66	982	53.5	309	62.3	62.2
KY-02-02-VILD-05	Residential (B)	66	924	54.2	260	63.5	63.4
KY-02-02-VILD-06	Residential (B)	66	865	54.9	206	64.7	64.7
KY-02-02-VILD-07	Residential (B)	66	771	56.1	125	67.2	67.2
KY-02-02-VILD-08	Residential (B)	66	701	56.8	84	69.3	69.2
KY-02-02-WATL-01	Residential (B)	66	1,046	51.4	334	58.5	58.6
KY-02-02-WATL-02	Residential (B)	66	1,057	51.4	294	58.5	58.6
KY-02-02-WATL-03	Residential (B)	66	849	55.3	104	62.7	62.8
KY-02-02-WILD-01	Residential (B)	66	709	55.9	50	66.2	65.6
KY-02-02-WILD-02	Residential (B)	66	718	54.5	54	64.9	64.2
KY-02-02-WILD-03	Residential (B)	66	748	54.0	80	63.6	63.0
KY-02-02-WILD-04	Residential (B)	66	748	53.9	77	63.1	62.7
KY-02-02-WILD-05	Residential (B)	66	720	54.2	47	62.8	62.5
KY-02-02-WILD-06	Residential (B)	66	742	53.8	66	62.0	61.8
KY-02-02-WILD-07	Residential (B)	66	824	53.0	143	60.8	60.7
KY-03-01-BARB-01	Residential (B)	66	486	58.6	440	57.9	57.2
KY-03-01-BARC-01	Residential (B)	66	411	61.2	138	65.2	65.0
KY-03-01-BARC-02	Residential (B)	66	432	60.5	150	62.6	62.4
KY-03-01-BARC-03	Residential (B)	66	433	60.2	158	61.9	61.8
KY-03-01-BARC-04	Residential (B)	66	385	59.9	162	61.3	61.2
KY-03-01-BARC-05	Residential (B)	66	347	59.8	160	60.9	60.9
KY-03-01-BARC-13	Residential (B)	66	447	60.0	165	65.2	65.0
KY-03-01-BARC-14	Residential (B)	66	462	60.0	172	63.7	63.6
KY-03-01-BARD-01	Residential (B)	66	500	58.6	507	58.9	58.7
KY-03-01-BARD-02	Residential (B)	66	450	59.1	445	59.4	59.2

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
KY-03-01-BARD-03	Residential (B)	66	394	59.9	373	59.9	59.8
KY-03-01-BARD-04	Residential (B)	66	384	59.6	355	59.5	59.4
KY-03-01-BARD-05	Residential (B)	66	388	59.3	358	59.0	58.9
KY-03-01-ELKA-01	Residential (B)	66	528	56.6	525	56.8	56.8
KY-03-01-ELKA-02	Residential (B)	66	409	58.3	407	58.2	58.2
KY-03-01-ELKA-03	Residential (B)	66	350	59.2	349	58.8	58.8
KY-03-01-ELKA-04	Residential (B)	66	281	60.4	280	59.6	59.7
KY-03-01-HERA-01	Residential (B)	66	159	66.7	270	66.4	65.7
KY-03-01-HERA-02	Residential (B)	66	205	64.6	194	64.4	64.1
KY-03-01-HERA-03	Residential (B)	66	271	62.5	233	62.4	62.1
KY-03-01-HERA-04	Residential (B)	66	312	61.4	264	61.3	61.1
KY-03-01-HERA-05	Residential (B)	66	352	60.2	304	60.2	60.0
KY-03-01-HERA-06	Residential (B)	66	459	57.8	390	58.4	58.3
KY-03-01-HERA-07	Residential (B)	66	501	56.6	450	57.4	57.3
KY-03-01-HERA-08	Residential (B)	66	531	55.8	496	56.9	56.8
KY-03-01-HERA-09	Residential (B)	66	572	54.9	552	56.4	56.4
KY-03-01-HIYD-01	Residential (B)	66	506	57.0	492	57.4	57.3
KY-03-01-HIYD-02	Residential (B)	66	438	57.6	428	57.6	57.6
KY-03-01-KIML-02	Residential (B)	66	324	60.8	277	65.1	65.1
KY-03-01-KIML-03	Residential (B)	66	216	64.4	168	68.3	68.4
KY-03-01-KIML-05	Residential (B)	66	363	59.5	317	63.9	63.8
KY-03-01-KIML-06	Residential (B)	66	378	58.6	327	63.8	63.8
KY-03-01-KIML-07	Residential (B)	66	263	60.7	212	66.9	66.9
KY-03-01-KIML-08	Residential (B)	66	280	61.2	234	65.9	65.8
KY-03-01-KIML-11	Recreation (C)	66	225	64.6	169	63.3	63.2
KY-03-01-NELS-01	Residential (B)	66	343	62.6	403	62.6	62.3
KY-03-01-NGRS-01	Residential (B)	66	303	61.7	295	61.5	61.4
KY-03-01-NGRS-02	Residential (B)	66	333	59.2	309	58.7	58.8
KY-03-01-NGRS-03	Residential (B)	66	322	58.6	311	57.7	58.0
KY-03-01-NGRS-04	Residential (B)	66	311	58.1	306	56.9	57.3
KY-03-01-NGRS-05	Residential (B)	66	311	58.3	318	57.2	57.5
KY-03-01-NGRS-06	Residential (B)	66	249	60.2	251	59.1	62.3
KY-03-01-NGRS-07	Residential (B)	66	217	60.8	218	59.7	61.4
KY-03-01-NGRS-08	Residential (B)	66	345	58.8	346	58.1	58.8
KY-03-01-NGRS-09	Residential (B)	66	332	60.5	337	60.0	58.0
KY-03-01-NGRS-10	Residential (B)	66	327	60.9	332	60.5	57.3
KY-03-01-RICA-01	Residential (B)	66	304	60.7	310	60.9	60.5

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
KY-03-01-RICA-02	Residential (B)	66	302	54.3	408	57.9	58.0
KY-03-01-RICA-03	Residential (B)	66	337	54.0	452	58.0	58.1
KY-03-01-RICA-04	Residential (B)	66	365	54.0	479	58.2	58.3
KY-03-01-RICA-05	Residential (B)	66	397	54.2	503	58.3	58.3
KY-03-01-RICA-06	Residential (B)	66	422	54.5	511	58.5	58.6
KY-03-01-RICA-07	Residential (B)	66	464	55.1	519	58.5	58.6
KY-03-01-RICA-08	Residential (B)	66	484	55.5	507	58.7	58.7
KY-03-01-RICA-09	Residential (B)	66	448	56.1	468	59.2	59.2
KY-03-01-RICA-10	Residential (B)	66	500	56.3	479	59.2	59.2
KY-03-01-RICA-11	Residential (B)	66	560	56.3	505	58.3	58.2
KY-03-01-RICA-12	Residential (B)	66	492	57.1	447	59.7	59.7
KY-03-01-RICA-13	Residential (B)	66	639	54.8	584	57.2	57.2
KY-03-01-VAL4-AA	Residential (B)	66	228	61.3	228	63.9	64.0
KY-03-02-BARC-01	Residential (B)	66	430	60.1	168	61.9	61.8
KY-03-02-BARC-02	Residential (B)	66	394	60.0	175	61.6	61.5
KY-03-02-BARC-03	Residential (B)	66	329	60.4	202	62.5	62.6
KY-03-02-BARC-04	Residential (B)	66	329	59.9	239	61.7	61.7
KY-03-02-BARC-05	Residential (B)	66	552	58.9	224	62.5	62.4
KY-03-02-BARC-06	Residential (B)	66	592	58.2	279	62.1	62.1
KY-03-02-BARC-07	Residential (B)	66	647	56.9	375	61.0	60.9
KY-03-02-BARC-08	Residential (B)	66	611	56.5	366	60.3	60.3
KY-03-02-BARC-09	Residential (B)	66	658	56.4	396	60.5	60.5
KY-03-02-BARC-10	Residential (B)	66	617	56.2	378	60.1	60.0
KY-03-02-BARC-11	Residential (B)	66	540	56.1	338	59.6	59.6
KY-03-02-BARC-12	Residential (B)	66	492	56.0	314	59.4	59.5
KY-03-02-BARD-01	Residential (B)	66	542	57.6	514	58.0	57.8
KY-03-02-BARD-02	Residential (B)	66	492	57.4	471	57.7	57.6
KY-03-02-ELKA-01	Residential (B)	66	471	57.1	470	57.5	57.3
KY-03-02-ELKA-02	Residential (B)	66	409	58.3	408	58.5	58.3
KY-03-02-ELKA-03	Residential (B)	66	363	59.4	362	59.6	59.4
KY-03-02-ELKA-04	Residential (B)	66	302	60.8	302	60.9	60.7
KY-03-02-ELKA-05	Residential (B)	66	258	62.0	258	62.0	61.8
KY-03-02-HIYD-01	Residential (B)	66	400	57.5	395	56.8	57.0
KY-03-02-HIYD-02	Residential (B)	66	391	57.6	385	57.0	57.1
KY-03-02-NGRS-01	Residential (B)	66	100	62.8	82	57.7	59.6
KY-03-02-NGRS-02	Residential (B)	66	83	62.3	79	56.0	57.9
KY-03-02-RICA-01	Residential (B)	66	222	63.1	267	63.1	62.6

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 1		
						TOLL I-69 ONLY	TOLL BOTH CROSSINGS
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)	2045 PREDICTED NOISE LEVEL dB(A)
KY-03-02-RICA-02	Residential (B)	66	155	65.6	192	65.0	64.5
KY-03-02-RICA-03	Residential (B)	66	419	53.9	513	56.8	56.9
KY-03-02-RICA-04	Residential (B)	66	439	53.7	543	56.8	56.9
KY-03-02-RICA-05	Residential (B)	66	463	53.4	578	56.9	57.0
KY-03-02-RICA-06	Residential (B)	66	493	53.4	608	56.9	56.9
KY-03-02-RICA-07	Residential (B)	66	531	53.5	632	56.9	57.0
KY-03-02-RICA-08	Residential (B)	66	565	53.7	635	57.1	57.2
KY-03-02-RICA-09	Residential (B)	66	585	54.1	610	57.3	57.3
KY-03-02-RICA-10	Residential (B)	66	618	54.3	605	57.3	57.3
KY-03-02-RICA-11	Residential (B)	66	629	54.9	575	57.6	57.6
V1	Residential (B)	66	861	60.6	802	60.4	59.3
V16	Residential (B)	66	349	60.0	325	58.8	58.0

TABLE 5: RESULTS FOR WEST ALTERNATIVE 2

Table 5: Results for West Alternative 2

LEGEND	
	Exceeds Noise Abatement Criteria
	Exceeds Substantial Increase Criteria (10 dB(A) in KY, 15 dB(A) in IN)
	Exceeds Both Criteria

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
A10	Residential (B)	66	558	55.7	121	60.8
A11	Residential (B)	66	880	52.4	571	58.0
A5	Residential (B)	66	1,167	50.0	1,093	54.5
A9	Residential (B)	66	874	55.4	800	60.4
Atkinson	Residential (B)	66	353	58.5	282	63.6
IN-01-01-ELOA-01	Residential (B)	66	640	52.0	1,020	51.3
IN-01-01-ELOA-02	Residential (B)	66	518	52.9	875	52.3
IN-01-01-FREA-01	Residential (B)	66	542	56.1	540	57.8
IN-01-01-FREA-02	Residential (B)	66	537	56.6	540	57.1
IN-01-01-FREA-03	Residential (B)	66	586	56.6	591	57.7
IN-01-01-MARA-01	Residential (B)	66	574	53.8	770	53.6
IN-01-01-MARA-02	Residential (B)	66	582	54.0	738	53.9
IN-01-01-MARA-03	Residential (B)	66	637	54.0	746	54.1
IN-01-01-MARA-04	Residential (B)	66	545	54.8	633	54.9
IN-01-01-MARA-05	Residential (B)	66	604	55.7	614	56.3
IN-01-01-MARA-06	Residential (B)	66	611	55.9	621	56.5
IN-01-01-MARA-07	Residential (B)	66	560	56.7	571	57.4
IN-01-01-REES-01	Residential (B)	66	273	53.4	635	54.4
IN-01-01-REES-02	Residential (B)	66	216	54.3	601	55.4
IN-01-01-REES-03	Residential (B)	66	177	54.9	595	56.0
IN-01-01-REES-04	Residential (B)	66	139	56.1	566	57.1
IN-01-01-REES-05	Residential (B)	66	96	55.9	529	57.1
IN-01-01-RHEA-01	Residential (B)	66	510	50.0	792	51.0
IN-01-01-RHEA-02	Residential (B)	66	522	49.9	885	50.9
IN-01-01-RHEA-03	Residential (B)	66	469	50.5	906	51.5
IN-01-01-SBOR-01	Residential (B)	66	439	51.3	452	52.0
IN-01-01-SBOR-02	Residential (B)	66	364	52.2	375	52.9
IN-01-01-SBOR-03	Residential (B)	66	149	54.7	161	55.2
IN-01-01-SBOR-04	Residential (B)	66	198	54.7	210	54.9
IN-01-01-SHEA-03	Residential (B)	66	629	55.0	644	55.4
IN-01-01-SHEA-04	Residential (B)	66	635	55.2	645	55.6

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-01-SNOA-01	Residential (B)	66	537	57.0	552	57.5
IN-01-01-SNOA-03	Residential (B)	66	425	58.9	439	58.9
IN-01-01-SNOA-04	Residential (B)	66	355	60.4	368	60.4
IN-01-01-SNOA-05	Residential (B)	66	330	61.0	342	60.8
IN-01-01-SROA-01	Residential (B)	66	525	57.4	544	58.1
IN-01-01-SROA-02	Residential (B)	66	285	61.4	315	60.7
IN-01-01-SROA-03	Residential (B)	66	224	62.8	254	61.4
IN-01-01-SROA-04	Residential (B)	66	167	64.4	196	60.8
IN-01-01-SROD-01	Residential (B)	66	296	53.0	568	54.0
IN-01-01-SROD-02	Residential (B)	66	261	53.6	549	54.6
IN-01-01-SROD-03	Residential (B)	66	223	54.2	528	55.2
IN-01-01-SROD-04	Residential (B)	66	188	54.8	497	55.9
IN-01-01-SROD-05	Residential (B)	66	144	55.3	473	56.4
IN-01-01-SRUA-01	Residential (B)	66	414	50.7	1,219	51.8
IN-01-01-SRUA-02	Residential (B)	66	378	51.2	1,187	52.3
IN-01-01-SRUA-03	Residential (B)	66	341	51.7	1,161	52.9
IN-01-01-SRUA-04	Residential (B)	66	302	52.3	1,142	53.5
IN-01-01-SRUA-05	Residential (B)	66	265	53.1	1,157	54.2
IN-01-01-SRUA-06	Residential (B)	66	229	53.6	1,098	54.8
IN-01-01-SRUA-07	Residential (B)	66	191	54.3	1,103	55.5
IN-01-01-SRUA-08	Residential (B)	66	156	54.8	1,087	56.0
IN-01-01-SRUA-09	Residential (B)	66	116	55.5	1,031	56.7
IN-01-01-SSTB-01	Residential (B)	66	497	49.9	1,067	50.9
IN-01-01-SSTB-02	Residential (B)	66	466	50.3	1,010	51.3
IN-01-01-SSTB-03	Residential (B)	66	428	50.7	988	51.8
IN-01-01-SSTB-04	Residential (B)	66	388	51.3	956	52.4
IN-01-01-SSTB-05	Residential (B)	66	356	51.8	922	52.9
IN-01-01-SSTB-06	Residential (B)	66	317	52.3	897	53.4
IN-01-01-SSTB-07	Residential (B)	66	299	52.7	889	53.8
IN-01-01-SSTB-08	Residential (B)	66	239	53.6	845	54.8
IN-01-01-SSTB-09	Residential (B)	66	199	54.7	839	55.9
IN-01-01-SSTB-10	Residential (B)	66	157	55.0	808	56.3
IN-01-01-SSTB-11	Residential (B)	66	117	55.7	772	56.9
IN-01-01-SVID-01	Residential (B)	66	129	55.3	1,315	56.4
IN-01-01-SVID-02	Residential (B)	66	186	54.3	1,341	55.5
IN-01-01-SWEA-01	Residential (B)	66	598	56.2	581	57.3
IN-01-01-SWEA-02	Residential (B)	66	535	57.1	518	58.4

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-01-SWEA-03	Residential (B)	66	464	58.3	452	59.7
IN-01-01-VaBA-01	Residential (B)	66	547	48.5	1,174	48.5
IN-01-01-VaBA-02	Residential (B)	66	575	48.9	1,173	49.1
IN-01-01-VaBA-03	Residential (B)	66	600	49.0	1,190	49.2
IN-01-01-VaBA-04	Residential (B)	66	595	49.1	1,159	49.4
IN-01-01-VaBA-05	Residential (B)	66	630	49.3	1,165	49.6
IN-01-01-VaBA-06	Residential (B)	66	741	49.9	1,179	49.9
IN-01-01-VaBA-07	Residential (B)	66	731	50.4	1,142	50.3
IN-01-01-VNBA-01	Residential (B)	66	587	48.7	591	49.6
IN-01-01-VNBA-02	Residential (B)	66	562	48.7	567	49.5
IN-01-01-VNBA-03	Residential (B)	66	526	48.7	530	49.5
IN-01-01-VNBA-04	Residential (B)	66	508	49.1	511	49.9
IN-01-01-VNBA-05	Residential (B)	66	508	49.6	472	50.4
IN-01-01-VNBA-06	Residential (B)	66	421	50.3	425	51.2
IN-01-01-VNBA-07	Residential (B)	66	359	51.2	364	52.2
IN-01-01-VNBA-08	Residential (B)	66	381	51.2	386	52.0
IN-01-01-VNBA-09	Residential (B)	66	327	51.5	332	52.3
IN-01-01-VNBA-10	Residential (B)	66	293	52.0	297	52.7
IN-01-01-VNBA-11	Residential (B)	66	240	53.7	246	54.1
IN-01-01-VNBA-12	Residential (B)	66	200	54.3	213	54.7
IN-01-01-VNBA-13	Residential (B)	66	289	53.1	316	53.8
IN-01-01-VNBA-14	Residential (B)	66	281	53.2	329	53.9
IN-01-01-VNBA-15	Residential (B)	66	251	53.6	317	54.4
IN-01-01-VNBA-16	Residential (B)	66	234	53.9	324	54.8
IN-01-01-VNBA-17	Residential (B)	66	220	54.2	341	55.1
IN-01-01-VNBA-18	Residential (B)	66	220	54.1	380	55.1
IN-01-01-VNBA-19	Residential (B)	66	173	55.0	376	56.1
IN-01-02-MARA-01	Residential (B)	66	403	55.5	571	55.2
IN-01-02-MARA-02	Residential (B)	66	411	55.7	528	55.7
IN-01-02-MARA-03	Residential (B)	66	413	55.9	495	56.0
IN-01-02-MARA-04	Residential (B)	66	417	56.2	471	56.4
IN-01-02-MARA-05	Residential (B)	66	430	56.4	460	56.6
IN-01-02-MARA-06	Residential (B)	66	427	56.7	445	56.9
IN-01-02-MARA-07	Residential (B)	66	417	57.1	427	57.4
IN-01-02-MARA-08	Residential (B)	66	400	57.6	410	57.9
IN-01-02-MARA-09	Residential (B)	66	375	58.3	385	58.5
IN-01-02-MARA-10	Residential (B)	66	378	58.8	391	59.0

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-02-MARA-11	Residential (B)	66	337	59.7	356	59.2
IN-01-02-MARA-12	Residential (B)	66	348	59.9	371	59.5
IN-01-02-MARA-13	Residential (B)	66	386	59.5	413	59.4
IN-01-02-MARA-14	Residential (B)	66	575	56.3	588	57.1
IN-01-02-MARA-15	Residential (B)	66	569	56.3	578	57.2
IN-01-02-MARA-16	Residential (B)	66	676	55.1	682	55.8
IN-01-02-REES-01	Residential (B)	66	219	54.0	759	55.2
IN-01-02-REES-02	Residential (B)	66	171	54.9	713	56.3
IN-01-02-REES-03	Residential (B)	66	128	55.5	680	56.6
IN-01-02-SBOR-01	Residential (B)	66	485	50.5	555	51.3
IN-01-02-SHEA-01	Residential (B)	66	673	54.1	738	54.2
IN-01-02-SHEA-02	Residential (B)	66	599	54.6	660	54.9
IN-01-02-SNOA-01	Residential (B)	66	600	56.1	606	56.7
IN-01-02-SNOA-02	Residential (B)	66	552	57.8	559	57.1
IN-01-02-SNOA-03	Residential (B)	66	502	56.6	510	57.8
IN-01-02-SNOA-04	Residential (B)	66	442	58.4	452	58.9
IN-01-02-SNOA-05	Residential (B)	66	366	60.1	375	60.4
IN-01-02-SROA-01	Residential (B)	66	247	62.8	265	61.4
IN-01-02-SROA-02	Residential (B)	66	326	61.0	347	60.6
IN-01-02-SROA-03	Residential (B)	66	390	59.6	412	59.4
IN-01-02-SROA-04	Residential (B)	66	444	62.6	467	64.2
IN-01-02-SROA-05	Residential (B)	66	404	57.8	529	58.3
IN-01-02-SRUA-01	Residential (B)	66	359	51.4	1,319	52.5
IN-01-02-SRUA-02	Residential (B)	66	289	52.5	1,267	53.7
IN-01-02-SRUA-03	Residential (B)	66	239	53.6	1,252	54.8
IN-01-02-SRUA-04	Residential (B)	66	175	54.4	1,226	55.6
IN-01-02-SRUA-05	Residential (B)	66	134	55.2	1,195	56.4
IN-01-02-SRUA-06	Residential (B)	66	103	55.8	1,186	57.0
IN-01-02-SSTB-01	Residential (B)	66	475	50.0	1,177	51.1
IN-01-02-SSTB-02	Residential (B)	66	440	50.4	1,125	51.5
IN-01-02-SSTB-03	Residential (B)	66	397	51.2	1,118	52.3
IN-01-02-SSTB-04	Residential (B)	66	359	51.5	1,092	52.6
IN-01-02-SSTB-05	Residential (B)	66	322	52.1	1,057	53.2
IN-01-02-SSTB-06	Residential (B)	66	287	52.6	1,027	53.8
IN-01-02-SSTB-07	Residential (B)	66	248	53.3	1,017	54.4
IN-01-02-SSTB-08	Residential (B)	66	214	53.9	987	55.0
IN-01-02-SSTB-09	Residential (B)	66	175	54.6	963	55.8

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
IN-01-02-SSTB-10	Residential (B)	66	133	55.4	943	56.6
IN-01-02-SWEA-01	Residential (B)	66	357	59.7	339	61.3
IN-01-02-SWEA-02	Residential (B)	66	208	62.9	190	64.2
IN-01-02-VNBA-01	Residential (B)	66	467	50.5	471	51.2
IN-01-02-VNBA-02	Residential (B)	66	436	50.9	450	51.5
IN-01-02-VNBA-03	Residential (B)	66	384	50.9	431	51.5
IN-01-02-VNBA-04	Residential (B)	66	338	51.2	449	51.8
IN-01-02-VNBA-05	Residential (B)	66	536	51.4	540	52.1
IN-01-02-VNBA-06	Residential (B)	66	450	51.7	455	52.7
IN-01-02-VNBA-07	Residential (B)	66	423	52.0	451	52.8
IN-01-02-VNBA-08	Residential (B)	66	355	52.3	439	53.1
IN-01-02-VNBA-09	Residential (B)	66	284	53.2	489	54.1
KY-02-01-8029B-01	Recreation (C)	66	263	63.9	291	65.1
KY-02-01-8029B-02	Recreation (C)	66	297	63.2	324	64.3
KY-02-01-BRIA-01	Residential (B)	66	329	59.9	85	64.8
KY-02-01-BRIA-02	Residential (B)	66	366	58.9	119	62.5
KY-02-01-BRIA-03	Residential (B)	66	351	59.8	69	65.1
KY-02-01-BRIA-04	Residential (B)	66	385	58.1	113	62.1
KY-02-01-CANL-01	Residential (B)	66	469	57.9	323	63.0
KY-02-01-CANL-02	Residential (B)	66	339	60.7	213	65.1
KY-02-01-CANL-03	Residential (B)	66	260	62.4	134	66.6
KY-02-01-CATD-01	Residential (B)	66	589	56.2	209	62.0
KY-02-01-CATD-02	Residential (B)	66	587	55.9	279	61.7
KY-02-01-CATD-03	Residential (B)	66	565	56.0	379	61.8
KY-02-01-CATD-04	Residential (B)	66	572	55.8	395	61.7
KY-02-01-CATD-05	Residential (B)	66	574	55.8	400	61.5
KY-02-01-CATD-06	Residential (B)	66	583	55.6	411	61.2
KY-02-01-CBTP-10	Residential (B)	66	594	56.2	429	61.1
KY-02-01-CBTP-11	Residential (B)	66	562	56.8	396	61.7
KY-02-01-CBTP-12	Residential (B)	66	527	57.3	360	62.3
KY-02-01-CBTP-13	Residential (B)	66	502	57.5	334	62.6
KY-02-01-CBTP-14	Residential (B)	66	468	58.1	298	63.0
KY-02-01-CBTP-15	Residential (B)	66	492	58.3	317	62.8
KY-02-01-CBTP-16	Residential (B)	66	558	57.5	379	62.2
KY-02-01-COLED-01	Residential (B)	66	305	57.1	413	60.9
KY-02-01-COLED-02	Residential (B)	66	253	57.4	397	61.2
KY-02-01-COLED-03	Residential (B)	66	194	57.4	403	61.3

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-02-01-COLED-04	Residential (B)	66	144	57.5	395	61.6
KY-02-01-COLED-05	Residential (B)	66	89	57.6	390	61.8
KY-02-01-COLED-06	Residential (B)	66	30	57.6	397	61.7
KY-02-01-COLED-07	Residential (B)	66	75	58.3	400	62.2
KY-02-01-COLED-08	Residential (B)	66	120	58.5	394	62.3
KY-02-01-COLED-09	Residential (B)	66	165	58.5	389	62.4
KY-02-01-COLED-10	Residential (B)	66	216	58.4	395	62.3
KY-02-01-COLED-11	Residential (B)	66	258	58.6	387	62.6
KY-02-01-COLED-12	Residential (B)	66	285	58.7	388	62.5
KY-02-01-COLED-13	Residential (B)	66	322	59.2	360	63.1
KY-02-01-COLED-14	Residential (B)	66	325	59.8	320	64.0
KY-02-01-COLED-15	Residential (B)	66	319	60.4	274	65.2
KY-02-01-COLED-16	Residential (B)	66	338	61.1	239	66.0
KY-02-01-COLED-17	Residential (B)	66	297	56.7	177	67.8
KY-02-01-COLED-18	Residential (B)	66	243	55.7	123	69.5
KY-02-01-FRYD-01	Residential (B)	66	600	55.4	430	60.7
KY-02-01-FRYD-02	Residential (B)	66	601	55.3	435	60.4
KY-02-01-FRYD-03	Residential (B)	66	594	55.4	433	60.2
KY-02-01-FRYD-04	Residential (B)	66	600	55.3	443	59.9
KY-02-01-FRYD-05	Residential (B)	66	588	55.4	438	59.9
KY-02-01-GUMS-01	Residential (B)	66	397	59.6	425	62.4
KY-02-01-HARL-01	Residential (B)	66	438	59.9	311	64.4
KY-02-01-HARL-02	Residential (B)	66	379	62.5	252	65.9
KY-02-01-HARL-03	Residential (B)	66	324	66.6	197	67.3
KY-02-01-HARL-04	Residential (B)	66	254	50.8	128	70.0
KY-02-01-MARD-01	Residential (B)	66	312	61.4	224	63.2
KY-02-01-MARD-02	Residential (B)	66	362	60.3	267	62.8
KY-02-01-MARD-03	Residential (B)	66	473	58.4	376	61.6
KY-02-01-NELS-05	Residential (B)	66	435	58.3	151	63.8
KY-02-01-NELS-06	Residential (B)	66	429	58.3	212	63.8
KY-02-01-NELS-07	Residential (B)	66	425	58.2	237	63.7
KY-02-01-NELS-08	Residential (B)	66	415	58.3	234	63.7
KY-02-01-NELS-09	Residential (B)	66	416	58.2	240	63.5
KY-02-01-NELS-10	Residential (B)	66	422	58.2	247	63.4
KY-02-01-NELS-11	Residential (B)	66	412	58.8	241	63.4
KY-02-01-NELS-12	Residential (B)	66	423	58.4	255	62.9
KY-02-01-NELS-13	Residential (B)	66	417	58.8	254	62.7

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-02-01-NELS-14	Residential (B)	66	420	58.5	263	62.2
KY-02-01-NELS-15	Residential (B)	66	367	60.2	216	64.2
KY-02-01-NELS-16	Residential (B)	66	423	58.9	277	62.9
KY-02-01-NELS-17	Residential (B)	66	407	59.3	265	63.4
KY-02-01-NELS-18	Residential (B)	66	461	58.1	321	62.9
KY-02-01-NELS-19	Residential (B)	66	480	57.8	341	62.8
KY-02-01-NELS-20	Residential (B)	66	487	57.6	349	62.6
KY-02-01-NELS-21	Residential (B)	66	507	57.2	368	61.9
KY-02-01-NELS-22	Residential (B)	66	458	58.2	319	64.0
KY-02-01-NELS-23	Residential (B)	66	479	57.8	345	63.3
KY-02-01-NELS-24	Residential (B)	66	508	57.2	377	62.7
KY-02-01-NELS-25	Residential (B)	66	503	57.3	375	62.9
KY-02-01-NELS-26	Residential (B)	66	511	57.1	384	62.8
KY-02-01-NELS-27	Residential (B)	66	525	56.9	399	62.6
KY-02-01-NELS-28	Residential (B)	66	539	56.6	412	62.5
KY-02-01-NELS-29	Residential (B)	66	543	56.5	417	62.3
KY-02-01-NELS-30	Residential (B)	66	621	55.3	495	61.4
KY-02-01-NELS-31	Residential (B)	66	561	56.2	435	62.1
KY-02-01-NELS-32	Residential (B)	66	577	55.9	452	61.6
KY-02-01-NELS-33	Residential (B)	66	600	55.6	475	61.3
KY-02-01-RETR-01	Residential (B)	66	539	59.3	51	61.4
KY-02-01-RETR-02	Residential (B)	66	442	61.4	119	62.9
KY-02-01-RETR-03	Residential (B)	66	405	52.2	111	63.4
KY-02-01-RETR-04	Residential (B)	66	354	60.4	94	64.4
KY-02-01-RETR-05	Residential (B)	66	309	61.4	76	65.4
KY-02-01-ROBR-01	Residential (B)	66	472	57.8	347	63.2
KY-02-01-ROBR-02	Residential (B)	66	392	59.6	267	64.9
KY-02-01-ROBR-03	Residential (B)	66	329	61.0	204	66.5
KY-02-01-ROBR-04	Residential (B)	66	247	62.7	122	69.0
KY-02-01-RTTP-01	Residential (B)	66	117	61.2	228	66.8
KY-02-01-RTTP-02	Residential (B)	66	94	61.5	207	67.2
KY-02-01-RTTP-03	Residential (B)	66	117	62.7	163	68.3
KY-02-01-RTTP-04	Residential (B)	66	119	63.6	136	69.6
KY-02-01-RTTP-05	Residential (B)	66	124	64.7	107	70.8
KY-02-01-TP-06	Residential (B)	66	321	60.5	171	66.1
KY-02-01-TP-07	Residential (B)	66	246	61.9	96	67.7
KY-02-01-TP-08	Residential (B)	66	251	61.7	97	67.5

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-02-01-TP-09	Residential (B)	66	246	61.8	89	67.8
KY-02-01-TP-16	Residential (B)	66	580	56.5	427	61.4
KY-02-01-TP-17	Residential (B)	66	537	56.9	385	62.0
KY-02-01-TP-18	Residential (B)	66	489	57.7	338	62.7
KY-02-01-TP-19	Residential (B)	66	445	58.3	295	63.5
KY-02-01-TP-20	Residential (B)	66	406	58.9	256	64.3
KY-02-01-TP-21	Residential (B)	66	371	59.5	222	64.9
KY-02-01-TP-22	Residential (B)	66	576	56.4	420	61.4
KY-02-01-TP-23	Residential (B)	66	538	56.9	382	62.0
KY-02-01-TP-24	Residential (B)	66	499	57.4	343	62.6
KY-02-01-TP-25	Residential (B)	66	445	58.2	289	63.6
KY-02-01-TP-26	Residential (B)	66	402	58.9	247	64.3
KY-02-01-TP-27	Residential (B)	66	375	59.4	221	64.9
KY-02-01-TP-28	Residential (B)	66	326	60.3	172	66.0
KY-02-01-TP-29	Residential (B)	66	557	56.7	398	61.8
KY-02-01-TP-30	Residential (B)	66	526	57.1	369	62.3
KY-02-01-TP-31	Residential (B)	66	493	57.5	336	62.8
KY-02-01-TP-32	Residential (B)	66	445	58.2	288	63.6
KY-02-01-TP-33	Residential (B)	66	408	58.8	251	64.4
KY-02-01-TP-34	Residential (B)	66	370	59.4	214	65.1
KY-02-01-TP-35	Residential (B)	66	329	60.2	172	66.0
KY-02-01-TP-36	Residential (B)	66	562	56.6	401	61.8
KY-02-01-TP-37	Residential (B)	66	512	57.3	349	62.5
KY-02-01-TP-38	Residential (B)	66	442	58.2	276	63.5
KY-02-01-TP-39	Residential (B)	66	365	59.2	196	64.3
KY-02-01-TP-40	Residential (B)	66	350	62.8	179	64.7
KY-02-01-TP-41	Residential (B)	66	319	60.3	145	65.0
KY-02-01-TP-42	Residential (B)	66	471	57.9	311	63.3
KY-02-01-TP-43	Residential (B)	66	438	58.3	277	63.7
KY-02-01-TP-44	Residential (B)	66	403	58.9	243	64.3
KY-02-01-TP-45	Residential (B)	66	377	59.3	217	64.8
KY-02-01-TP-46	Residential (B)	66	327	60.2	167	65.8
KY-02-01-TP-47	Residential (B)	66	420	58.6	258	64.1
KY-02-01-TP-48	Residential (B)	66	374	59.3	212	64.7
KY-02-01-TP-49	Residential (B)	66	330	60.1	168	65.5
KY-02-01-WATL-02	Residential (B)	66	348	65.8	22	68.0
KY-02-01-WATL-03	Residential (B)	66	384	62.3	54	65.1

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-02-02-8029B-01	Recreation (C)	66	370	61.5	397	63.1
KY-02-02-8029B-02	Recreation (C)	66	428	60.2	455	62.2
KY-02-02-BRIA-01	Residential (B)	66	411	58.5	156	61.9
KY-02-02-BRIA-02	Residential (B)	66	473	58.1	155	61.5
KY-02-02-BRIA-03	Residential (B)	66	492	59.3	101	61.7
KY-02-02-BRIA-04	Residential (B)	66	510	63.2	42	63.9
KY-02-02-CANL-01	Residential (B)	66	475	57.9	153	62.4
KY-02-02-CANL-02	Residential (B)	66	375	59.9	170	64.0
KY-02-02-CANL-03	Residential (B)	66	285	61.8	151	65.6
KY-02-02-COLED-01	Residential (B)	66	331	58.6	295	62.9
KY-02-02-COLED-02	Residential (B)	66	271	58.9	280	63.4
KY-02-02-COLED-03	Residential (B)	66	191	58.9	294	63.4
KY-02-02-COLED-04	Residential (B)	66	133	58.8	299	63.5
KY-02-02-COLED-05	Residential (B)	66	77	58.9	298	63.7
KY-02-02-COLED-06	Residential (B)	66	29	59.0	302	63.9
KY-02-02-COLED-07	Residential (B)	66	241	63.0	155	68.6
KY-02-02-FRYD-01	Residential (B)	66	459	57.6	292	62.3
KY-02-02-FRYD-02	Residential (B)	66	481	57.1	318	61.7
KY-02-02-FRYD-03	Residential (B)	66	483	57.1	327	61.3
KY-02-02-FRYD-04	Residential (B)	66	468	57.4	318	61.3
KY-02-02-FRYD-05	Residential (B)	66	480	57.1	335	61.1
KY-02-02-FRYD-06	Residential (B)	66	475	57.3	333	61.4
KY-02-02-HARL-01	Residential (B)	66	464	58.0	338	63.5
KY-02-02-HARL-02	Residential (B)	66	403	59.4	277	64.9
KY-02-02-HARL-03	Residential (B)	66	359	60.3	233	66.0
KY-02-02-HARL-04	Residential (B)	66	312	61.4	296	67.4
KY-02-02-HARL-05	Residential (B)	66	208	63.6	82	70.8
KY-02-02-MARD-01	Residential (B)	66	438	58.8	357	61.7
KY-02-02-MIMD-03	Residential (B)	66	272	57.4	479	60.7
KY-02-02-NELS-01	Residential (B)	66	242	62.8	102	67.4
KY-02-02-NELS-02	Residential (B)	66	268	62.2	129	67.1
KY-02-02-NELS-03	Residential (B)	66	286	61.9	148	67.0
KY-02-02-NELS-04	Residential (B)	66	360	60.3	221	65.7
KY-02-02-NELS-05	Residential (B)	66	311	61.4	179	67.0
KY-02-02-NELS-06	Residential (B)	66	387	59.7	257	65.0
KY-02-02-NELS-07	Residential (B)	66	353	60.5	226	66.2
KY-02-02-NELS-08	Residential (B)	66	341	60.8	214	66.8

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-02-02-NELS-19	Residential (B)	66	109	66.2	184	67.5
KY-02-02-NELS-20	Residential (B)	66	169	64.5	243	66.0
KY-02-02-NELS-21	Residential (B)	66	240	62.5	314	64.3
KY-02-02-NELS-22	Residential (B)	66	292	60.8	365	63.1
KY-02-02-NELS-23	Residential (B)	66	363	59.3	436	61.8
KY-02-02-NELS-24	Residential (B)	66	422	58.2	495	60.8
KY-02-02-NELS-27	Residential (B)	66	519	57.2	85	62.0
KY-02-02-NELS-28	Residential (B)	66	513	57.5	200	62.5
KY-02-02-NELS-29	Residential (B)	66	549	57.2	322	62.5
KY-02-02-NELS-30	Residential (B)	66	589	56.8	401	61.7
KY-02-02-NELS-31	Residential (B)	66	533	57.8	407	62.9
KY-02-02-NELS-32	Residential (B)	66	554	57.8	428	62.8
KY-02-02-NELS-33	Residential (B)	66	595	57.6	470	62.5
KY-02-02-NELS-34	Residential (B)	66	608	57.8	482	62.7
KY-02-02-NELS-35	Residential (B)	66	564	58.6	440	63.9
KY-02-02-NELS-36	Residential (B)	66	425	60.4	299	65.4
KY-02-02-NELS-37	Residential (B)	66	472	59.6	347	64.6
KY-02-02-NELS-38	Residential (B)	66	513	59.3	389	64.5
KY-02-02-NELS-39	Residential (B)	66	567	58.5	442	63.6
KY-02-02-NELS-40	Residential (B)	66	392	61.1	267	67.3
KY-02-02-NELS-41	Residential (B)	66	290	61.8	165	69.1
KY-02-02-RETR-01	Residential (B)	66	442	58.6	106	63.2
KY-02-02-RETR-02	Residential (B)	66	374	60.0	99	64.5
KY-02-02-ROBR-01	Residential (B)	66	483	57.6	357	62.7
KY-02-02-ROBR-02	Residential (B)	66	407	59.2	282	64.3
KY-02-02-ROBR-03	Residential (B)	66	335	60.8	210	65.3
KY-02-02-ROBR-04	Residential (B)	66	242	62.8	116	67.4
KY-02-02-RTTP-01	Residential (B)	66	42	60.3	270	65.4
KY-02-02-RTTP-02	Residential (B)	66	113	59.8	298	64.7
KY-02-02-RTTP-03	Residential (B)	66	149	60.1	285	65.0
KY-02-02-RTTP-04	Residential (B)	66	186	59.7	306	64.5
KY-02-02-RTTP-05	Residential (B)	66	195	60.1	282	65.1
KY-02-02-RTTP-06	Residential (B)	66	215	60.8	241	66.3
KY-02-02-RTTP-07	Residential (B)	66	205	62.0	190	67.8
KY-02-02-RTTP-08	Residential (B)	66	181	63.8	135	69.5
KY-02-02-STPD-04	Residential (B)	66	631	56.3	194	61.7
KY-02-02-STPD-05	Residential (B)	66	640	56.5	141	61.7

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-02-02-STPD-06	Residential (B)	66	641	56.9	86	61.9
KY-02-02-STPD-07	Residential (B)	66	611	58.7	58	63.0
KY-02-02-US41-01	Hotel (E)	71	210	64.4	220	66.0
KY-02-02-US41-02	Hotel (E)	71	456	58.9	448	62.2
KY-03-01-BARB-01	Residential (B)	66	486	58.6	450	57.7
KY-03-01-BARC-01	Residential (B)	66	411	61.2	190	62.3
KY-03-01-BARC-02	Residential (B)	66	432	60.5	200	60.4
KY-03-01-BARC-03	Residential (B)	66	433	60.2	202	59.8
KY-03-01-BARC-04	Residential (B)	66	385	59.9	211	59.5
KY-03-01-BARC-05	Residential (B)	66	347	59.8	202	59.5
KY-03-01-BARC-13	Residential (B)	66	447	60.0	220	62.5
KY-03-01-BARC-14	Residential (B)	66	462	60.0	224	61.4
KY-03-01-BARD-01	Residential (B)	66	500	58.6	542	39.8
KY-03-01-BARD-02	Residential (B)	66	450	59.1	483	60.9
KY-03-01-BARD-03	Residential (B)	66	394	59.9	413	61.5
KY-03-01-BARD-04	Residential (B)	66	384	59.6	393	61.3
KY-03-01-BARD-05	Residential (B)	66	388	59.3	395	60.8
KY-03-01-ELKA-01	Residential (B)	66	528	56.6	537	58.1
KY-03-01-ELKA-02	Residential (B)	66	409	58.3	419	59.4
KY-03-01-ELKA-03	Residential (B)	66	350	59.2	361	60.1
KY-03-01-ELKA-04	Residential (B)	66	281	60.4	292	61.1
KY-03-01-HERA-01	Residential (B)	66	159	66.7	210	66.6
KY-03-01-HERA-02	Residential (B)	66	205	64.6	172	65.1
KY-03-01-HERA-03	Residential (B)	66	271	62.5	231	63.0
KY-03-01-HERA-04	Residential (B)	66	312	61.4	269	61.9
KY-03-01-HERA-05	Residential (B)	66	352	60.2	309	60.9
KY-03-01-HERA-06	Residential (B)	66	459	57.8	398	59.1
KY-03-01-HERA-07	Residential (B)	66	501	56.6	458	58.1
KY-03-01-HERA-08	Residential (B)	66	531	55.8	504	57.7
KY-03-01-HERA-09	Residential (B)	66	572	54.9	560	57.2
KY-03-01-HIYD-01	Residential (B)	66	506	57.0	515	59.0
KY-03-01-HIYD-02	Residential (B)	66	438	57.6	446	42.9
KY-03-01-KIML-02	Residential (B)	66	324	60.8	291	63.3
KY-03-01-KIML-03	Residential (B)	66	216	64.4	183	66.8
KY-03-01-KIML-05	Residential (B)	66	363	59.5	326	62.0
KY-03-01-KIML-06	Residential (B)	66	378	58.6	339	61.5
KY-03-01-KIML-07	Residential (B)	66	263	60.7	224	63.6

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-03-01-KIML-08	Residential (B)	66	280	61.2	243	63.8
KY-03-01-KIML-11	Recreation (C)	66	225	64.6	181	62.5
KY-03-01-NELS-01	Residential (B)	66	343	62.6	415	63.5
KY-03-01-NGRS-01	Residential (B)	66	303	61.7	332	63.0
KY-03-01-NGRS-02	Residential (B)	66	333	59.2	341	60.9
KY-03-01-NGRS-03	Residential (B)	66	322	58.6	330	60.2
KY-03-01-NGRS-04	Residential (B)	66	311	58.1	318	59.6
KY-03-01-NGRS-05	Residential (B)	66	311	58.3	318	59.7
KY-03-01-NGRS-06	Residential (B)	66	249	60.2	263	61.1
KY-03-01-NGRS-07	Residential (B)	66	217	60.8	230	61.6
KY-03-01-NGRS-08	Residential (B)	66	345	58.8	358	59.8
KY-03-01-NGRS-09	Residential (B)	66	332	60.5	337	62.2
KY-03-01-NGRS-10	Residential (B)	66	327	60.9	344	61.9
KY-03-01-RICA-01	Residential (B)	66	304	60.7	313	61.2
KY-03-01-RICA-02	Residential (B)	66	302	54.3	416	58.5
KY-03-01-RICA-03	Residential (B)	66	337	54.0	460	58.3
KY-03-01-RICA-04	Residential (B)	66	365	54.0	487	58.3
KY-03-01-RICA-05	Residential (B)	66	397	54.2	511	58.5
KY-03-01-RICA-06	Residential (B)	66	422	54.5	519	58.6
KY-03-01-RICA-07	Residential (B)	66	464	55.1	527	58.7
KY-03-01-RICA-08	Residential (B)	66	484	55.5	517	58.9
KY-03-01-RICA-09	Residential (B)	66	448	56.1	477	59.5
KY-03-01-RICA-10	Residential (B)	66	500	56.3	491	59.4
KY-03-01-RICA-11	Residential (B)	66	560	56.3	517	57.9
KY-03-01-RICA-12	Residential (B)	66	492	57.1	459	59.8
KY-03-01-RICA-13	Residential (B)	66	639	54.8	596	57.0
KY-03-01-VAL4-AA	Residential (B)	66	228	61.3	90	63.3
KY-03-02-BARC-01	Residential (B)	66	430	60.1	212	59.9
KY-03-02-BARC-02	Residential (B)	66	394	60.0	222	59.7
KY-03-02-BARC-03	Residential (B)	66	329	60.4	229	61.3
KY-03-02-BARC-04	Residential (B)	66	329	59.9	266	60.6
KY-03-02-BARC-05	Residential (B)	66	552	58.9	362	60.1
KY-03-02-BARC-06	Residential (B)	66	592	58.2	410	59.5
KY-03-02-BARD-01	Residential (B)	66	542	57.6	551	59.6
KY-03-02-BARD-02	Residential (B)	66	492	57.4	501	59.3
KY-03-02-ELKA-01	Residential (B)	66	471	57.1	478	58.1
KY-03-02-ELKA-02	Residential (B)	66	409	58.3	416	59.0

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		WEST ALT. 2	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-03-02-ELKA-03	Residential (B)	66	363	59.4	370	60.0
KY-03-02-ELKA-04	Residential (B)	66	302	60.8	310	61.4
KY-03-02-ELKA-05	Residential (B)	66	258	62.0	266	62.4
KY-03-02-HIYD-01	Residential (B)	66	400	57.5	407	59.1
KY-03-02-HIYD-02	Residential (B)	66	391	57.6	397	59.3
KY-03-02-NGRS-01	Residential (B)	66	100	62.8	108	63.2
KY-03-02-NGRS-02	Residential (B)	66	83	62.3	91	61.8
KY-03-02-RICA-01	Residential (B)	66	222	63.1	241	63.4
KY-03-02-RICA-02	Residential (B)	66	155	65.6	168	65.4
KY-03-02-RICA-03	Residential (B)	66	419	53.9	521	57.5
KY-03-02-RICA-04	Residential (B)	66	439	53.7	551	57.2
KY-03-02-RICA-05	Residential (B)	66	463	53.4	586	57.1
KY-03-02-RICA-06	Residential (B)	66	493	53.4	616	57.0
KY-03-02-RICA-07	Residential (B)	66	531	53.5	640	57.1
KY-03-02-RICA-08	Residential (B)	66	565	53.7	643	57.2
KY-03-02-RICA-09	Residential (B)	66	585	54.1	622	57.2
KY-03-02-RICA-10	Residential (B)	66	618	54.3	617	57.3
KY-03-02-RICA-11	Residential (B)	66	629	54.9	587	57.4
V16	Residential (B)	66	349	60.0	399	58.6
V17	Residential (B)	66	77	63.6	79	63.3
V7	Residential (B)	66	2,172	61.8	13	67.0

TABLE 6: RESULTS FOR US 41 (KY 351 TO KY 425) (ALL ALTERNATIVES, BOTH TOLLING SCENARIOS)

Table 6: Results for US 41 (KY 351 to KY 425) (All Alternatives)

LEGEND	
	Exceeds Noise Abatement Criteria
	Exceeds Substantial Increase Criteria (10 dB(A) in KY, 15 dB(A) in IN)
	Exceeds Both Criteria

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		US 41 (KY 351 to KY 425)	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-05-01-2084-01	Recreation (C)	66	157	57.0	698	60.8
KY-05-01-2084-02	Recreation (C)	66	141	57.1	565	61.6
KY-05-01-2084-03	Recreation (C)	66	277	54.8	760	59.4
KY-05-01-2084-04	Recreation (C)	66	386	55.7	694	60.6
KY-05-01-2084-05	Recreation (C)	66	542	54.6	778	59.4
KY-05-01-2084-06	Residential (B)	66	53	64.2	39	68.0
KY-05-01-2084-07	Church (D)	66	131	56.2	104	62.3
KY-05-01-2084-08	Fire Station (F)	66	199	51.3	173	58.0
KY-05-01-351-01	Recreation (C)	66	389	57.7	391	63.3
KY-05-01-ARLC-01	Residential (B)	66	89	67.9	134	72.3
KY-05-01-ARLC-02	Residential (B)	66	187	62.2	212	67.1
KY-05-01-ARLD-01	Residential (B)	66	659	58.5	1,121	60.2
KY-05-01-ARLD-02	Residential (B)	66	521	51.8	832	56.2
KY-05-01-ARLD-03	Residential (B)	66	452	52.0	765	56.4
KY-05-01-ARLD-04	Residential (B)	66	178	52.4	451	56.9
KY-05-01-ARLD-05	Residential (B)	66	125	52.6	385	56.9
KY-05-01-ARLD-06	Residential (B)	66	71	53.7	305	57.7
KY-05-01-ARLD-07	Residential (B)	66	46	54.9	250	58.6
KY-05-01-ARLD-08	Residential (B)	66	58	58.3	65	63.3
KY-05-01-ARLD-09	Residential (B)	66	108	58.2	115	63.6
KY-05-01-ARLD-10	Residential (B)	66	165	59.0	170	64.5
KY-05-01-ARLD-11	Residential (B)	66	257	60.5	278	65.9
KY-05-01-ARLD-12	Residential (B)	66	190	62.5	212	67.8
KY-05-01-ARLD-13	Residential (B)	66	154	64.0	175	69.1
KY-05-01-ARLD-14	Residential (B)	66	135	65.3	156	70.4
KY-05-01-ARLD-15	Residential (B)	66	86	69.3	107	74.0
KY-05-01-ARLD-16	Residential (B)	66	59	71.3	80	75.7
KY-05-01-AUGD-01	Residential (B)	66	350	59.7	360	65.7
KY-05-01-AUGD-02	Residential (B)	66	382	51.2	392	65.1
KY-05-01-AUGD-03	Residential (B)	66	430	58.5	440	64.1
KY-05-01-AUGD-04	Residential (B)	66	520	50.8	574	54.9

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		US 41 (KY 351 to KY 425)	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-05-01-AUGD-05	Residential (B)	66	442	50.8	492	54.8
KY-05-01-AUGD-06	Residential (B)	66	400	50.9	448	54.8
KY-05-01-AUGD-07	Residential (B)	66	328	51.1	371	54.6
KY-05-01-AUGD-08	Residential (B)	66	261	51.5	304	54.5
KY-05-01-AUGD-09	Residential (B)	66	269	50.9	298	54.3
KY-05-01-AUGD-10	Residential (B)	66	273	51.3	330	53.8
KY-05-01-BLUD-01	Residential (B)	66	361	49.5	336	54.7
KY-05-01-BLUD-02	Residential (B)	66	399	49.7	368	54.4
KY-05-01-BLUD-03	Residential (B)	66	461	49.0	421	53.5
KY-05-01-BLUD-04	Residential (B)	66	488	48.6	437	52.8
KY-05-01-BLUD-05	Residential (B)	66	529	48.3	462	52.5
KY-05-01-BLUD-06	Residential (B)	66	562	48.1	478	52.4
KY-05-01-BLUD-07	Residential (B)	66	610	47.8	507	52.1
KY-05-01-CHED-01	Residential (B)	66	177	58.7	302	64.3
KY-05-01-CHED-02	Residential (B)	66	211	58.1	349	63.6
KY-05-01-CHED-03	Residential (B)	66	240	57.4	400	62.7
KY-05-01-CHED-04	Residential (B)	66	283	56.7	469	62.0
KY-05-01-CHED-05	Residential (B)	66	335	56.2	544	61.5
KY-05-01-CHED-06	Residential (B)	66	367	55.5	603	60.7
KY-05-01-CLAS-01	Residential (B)	66	480	48.2	476	52.0
KY-05-01-CLAS-02	Residential (B)	66	540	47.5	521	51.1
KY-05-01-EFOR-01	Residential (B)	66	132	66.3	142	72.0
KY-05-01-EFOR-02	Residential (B)	66	96	68.2	106	73.7
KY-05-01-EFOR-03	Residential (B)	66	114	67.5	123	72.9
KY-05-01-EFOR-04	Residential (B)	66	125	66.8	133	72.2
KY-05-01-EFOR-05	Residential (B)	66	124	66.9	132	72.3
KY-05-01-EFOR-06	Residential (B)	66	115	67.5	121	72.7
KY-05-01-EFOR-07	Residential (B)	66	112	67.7	117	72.9
KY-05-01-EFOR-08	Residential (B)	66	114	67.6	118	72.8
KY-05-01-EFOR-09	Residential (B)	66	116	67.5	119	72.7
KY-05-01-EFOR-10	Residential (B)	66	115	67.4	117	72.7
KY-05-01-EFOR-11	Residential (B)	66	107	67.8	107	72.9
KY-05-01-EFOR-12	Residential (B)	66	119	67.1	119	72.2
KY-05-01-EFOR-13	Residential (B)	66	100	67.9	101	73.1
KY-05-01-EFOR-14	Residential (B)	66	113	67.1	138	72.4
KY-05-01-EFOR-15	Residential (B)	66	124	66.5	187	71.9
KY-05-01-EFOR-16	Residential (B)	66	129	66.2	246	71.6

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		US 41 (KY 351 to KY 425)	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-05-01-EFOR-17	Residential (B)	66	122	66.6	301	71.9
KY-05-01-EFOR-18	Residential (B)	66	139	65.7	365	71.0
KY-05-01-EFOR-19	Residential (B)	66	124	66.5	432	71.9
KY-05-01-EFOR-20	Residential (B)	66	105	67.4	469	72.7
KY-05-01-EFOR-21	Residential (B)	66	141	65.6	566	70.9
KY-05-01-EFOR-22	Residential (B)	66	172	63.9	653	69.0
KY-05-01-EFOR-23	Residential (B)	66	238	61.5	721	66.4
KY-05-01-EFOR-24	Residential (B)	66	329	59.5	786	64.0
KY-05-01-EFOR-25	Residential (B)	66	431	58.0	816	62.3
KY-05-01-EFOR-26	Residential (B)	66	488	59.2	826	61.4
KY-05-01-EFOR-27	Residential (B)	66	561	57.2	842	60.3
KY-05-01-GARL-01	Residential (B)	66	144	63.7	155	71.1
KY-05-01-GRED-01	Residential (B)	66	112	65.3	95	72.4
KY-05-01-GRED-02	Residential (B)	66	172	68.5	155	70.4
KY-05-01-GRED-03	Residential (B)	66	308	65.9	292	66.8
KY-05-01-GRED-04	Residential (B)	66	379	61.2	363	65.6
KY-05-01-GRED-05	Residential (B)	66	470	58.7	454	64.0
KY-05-01-GRED-06	Residential (B)	66	545	58.0	531	63.0
KY-05-01-GRED-07	Residential (B)	66	550	57.0	620	61.8
KY-05-01-GRED-08	Residential (B)	66	578	56.0	753	60.5
KY-05-01-GRED-09	Residential (B)	66	590	55.5	822	59.8
KY-05-01-GRED-10	Residential (B)	66	634	54.8	911	59.0
KY-05-01-GRED-11	Residential (B)	66	677	54.4	961	58.5
KY-05-01-GRED-12	Residential (B)	66	728	54.0	1,031	57.9
KY-05-01-GRED-13	Residential (B)	66	787	53.6	1,131	57.3
KY-05-01-GRED-14	Residential (B)	66	856	53.2	1,213	56.8
KY-05-01-HALD-01	Residential (B)	66	441	52.2	605	56.8
KY-05-01-HCHA-01	Recreation (C)	66	477	51.6	494	56.4
KY-05-01-HCHA-02	Recreation (C)	66	568	54.1	591	58.9
KY-05-01-HCHA-03	Recreation (C)	66	432	56.2	447	60.9
KY-05-01-HCHA-04	Recreation (C)	66	339	57.9	348	62.7
KY-05-01-HCHA-05	Recreation (C)	66	316	58.4	322	63.4
KY-05-01-HCHA-06	Recreation (C)	66	318	58.6	320	63.4
KY-05-01-HCHA-07	Recreation (C)	66	294	59.9	299	64.7
KY-05-01-HUBL-01	Residential (B)	66	62	70.4	82	75.3
KY-05-01-HUBL-02	Residential (B)	66	114	67.1	134	72.5
KY-05-01-HUBL-03	Residential (B)	66	167	64.3	187	70.2

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		US 41 (KY 351 to KY 425)	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-05-01-HUBL-04	Residential (B)	66	195	63.2	215	69.3
KY-05-01-HUBL-05	Residential (B)	66	254	61.2	274	67.3
KY-05-01-HUBL-06	Residential (B)	66	323	59.7	347	65.4
KY-05-01-HUBL-07	Residential (B)	66	370	58.9	394	64.4
KY-05-01-LAKR-01	Residential (B)	66	401	58.8	404	64.2
KY-05-01-LAKR-02	Residential (B)	66	386	58.9	387	64.2
KY-05-01-LAKR-03	Residential (B)	66	382	58.9	382	64.1
KY-05-01-LAKR-04	Residential (B)	66	383	58.8	382	64.0
KY-05-01-LAKR-05	Residential (B)	66	393	58.7	396	63.8
KY-05-01-LAKR-06	Residential (B)	66	390	58.6	411	63.7
KY-05-01-LAKR-07	Residential (B)	66	391	58.6	439	63.6
KY-05-01-LAKR-08	Residential (B)	66	390	58.6	472	63.6
KY-05-01-LAKR-09	Residential (B)	66	401	58.4	521	63.3
KY-05-01-LAKR-10	Residential (B)	66	388	58.6	556	63.4
KY-05-01-LEXD-01	Residential (B)	66	503	53.6	816	58.6
KY-05-01-LEXD-02	Residential (B)	66	387	55.3	626	60.7
KY-05-01-MAGS-01	Residential (B)	66	92	63.2	76	67.0
KY-05-01-MAGS-02	Residential (B)	66	258	59.1	243	64.5
KY-05-01-MAGS-03	Residential (B)	66	336	57.9	321	63.1
KY-05-01-MELP-01	Residential (B)	66	136	65.9	120	69.4
KY-05-01-MELP-02	Residential (B)	66	87	69.5	71	72.3
KY-05-01-MELP-03	Residential (B)	66	105	68.7	91	72.1
KY-05-01-MELP-04	Residential (B)	66	120	68.1	105	71.8
KY-05-01-MELP-05	Residential (B)	66	132	67.6	116	71.6
KY-05-01-MELP-06	Residential (B)	66	135	67.1	121	71.8
KY-05-01-MELP-07	Residential (B)	66	140	66.4	126	71.5
KY-05-01-MELP-08	Residential (B)	66	120	67.3	107	72.1
KY-05-01-MELP-09	Residential (B)	66	113	67.5	103	72.2
KY-05-01-MELP-10	Residential (B)	66	70	69.4	63	73.8
KY-05-01-MELP-11	Residential (B)	66	66	69.6	71	73.8
KY-05-01-MELP-12	Residential (B)	66	138	66.4	154	70.7
KY-05-01-MELP-13	Residential (B)	66	182	64.6	200	69.1
KY-05-01-MELP-14	Residential (B)	66	196	62.1	269	66.8
KY-05-01-MELP-15	Residential (B)	66	174	59.4	345	64.7
KY-05-01-MELP-16	Residential (B)	66	138	57.7	398	63.0
KY-05-01-MELP-17	Residential (B)	66	123	56.5	449	61.9
KY-05-01-MELP-18	Residential (B)	66	107	55.5	506	60.7

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		US 41 (KY 351 to KY 425)	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-05-01-MELP-19	Residential (B)	66	91	54.4	502	59.5
KY-05-01-MELP-20	Residential (B)	66	86	53.8	463	58.6
KY-05-01-MELP-21	Residential (B)	66	89	53.7	442	58.4
KY-05-01-MELP-22	Residential (B)	66	120	53.4	437	58.0
KY-05-01-NLIA-01	Residential (B)	66	443	56.8	428	61.1
KY-05-01-NLIA-02	Residential (B)	66	522	55.8	506	61.9
KY-05-01-POPA-01	Residential (B)	66	329	56.4	305	61.1
KY-05-01-POPA-02	Residential (B)	66	369	55.7	345	59.7
KY-05-01-POPA-03	Residential (B)	66	495	54.2	471	59.2
KY-05-01-POPA-04	Residential (B)	66	553	53.9	529	55.7
KY-05-01-POWS-01	Residential (B)	66	279	50.5	254	55.0
KY-05-01-POWS-02	Residential (B)	66	349	49.6	324	54.4
KY-05-01-POWS-03	Residential (B)	66	409	49.1	384	53.8
KY-05-01-POWS-04	Residential (B)	66	452	48.5	428	53.6
KY-05-01-POWS-05	Residential (B)	66	492	48.2	467	53.3
KY-05-01-POWS-06	Residential (B)	66	554	47.9	529	54.9
KY-05-01-TRER-01	Residential (B)	66	584	50.8	623	54.6
KY-05-01-TRER-02	Residential (B)	66	595	50.5	622	54.3
KY-05-01-TRER-03	Residential (B)	66	588	50.3	617	54.0
KY-05-01-TRER-04	Residential (B)	66	598	50.0	639	53.8
KY-05-01-TRER-05	Residential (B)	66	621	49.8	671	53.4
KY-05-01-TRER-06	Residential (B)	66	684	49.5	751	52.9
KY-05-01-VANA-01	Residential (B)	66	121	67.3	131	68.3
KY-05-01-VANA-02	Residential (B)	66	237	62.1	247	65.0
KY-05-01-VANA-03	Residential (B)	66	352	59.3	363	39.9
KY-05-01-VANA-04	Residential (B)	66	403	58.3	417	61.7
KY-05-01-VANA-05	Residential (B)	66	502	56.5	542	59.9
KY-05-01-VANA-06	Residential (B)	66	385	54.7	651	58.0
KY-05-01-VANA-07	Residential (B)	66	249	53.4	500	57.3
KY-05-01-VANA-08	Residential (B)	66	197	53.1	441	56.4
KY-05-01-VANA-09	Residential (B)	66	129	52.9	350	56.8
KY-05-01-WASS-01	Residential (B)	66	283	50.1	257	56.3
KY-05-01-WASS-02	Residential (B)	66	324	49.7	298	55.9
KY-05-01-WASS-03	Residential (B)	66	366	49.4	340	42.6
KY-05-01-WASS-04	Residential (B)	66	425	49.2	399	40.5
KY-05-01-WENA-01	Residential (B)	66	323	60.5	310	66.5
KY-05-01-WENA-02	Residential (B)	66	365	59.6	351	65.7

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		US 41 (KY 351 to KY 425)	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-05-01-WENA-03	Residential (B)	66	451	58.4	436	64.3
KY-05-02-351-01	Residential (B)	66	82	68.0	60	71.0
KY-05-02-351-02	Residential (B)	66	128	66.6	107	69.3
KY-05-02-351-03	Residential (B)	66	218	62.4	295	65.5
KY-05-02-351-04	Residential (B)	66	247	61.3	397	64.6
KY-05-02-351-05	Residential (B)	66	262	59.7	528	63.4
KY-05-02-351-06	Residential (B)	66	184	61.1	600	39.6
KY-05-02-351-07	Residential (B)	66	209	62.3	673	63.9
KY-05-02-351-08	Residential (B)	66	327	59.7	794	61.8
KY-05-02-351-09	Residential (B)	66	394	60.0	862	61.8
KY-05-02-351-10	Residential (B)	66	472	59.4	938	61.2
KY-05-02-ARLD-01	Residential (B)	66	748	63.2	1,191	64.2
KY-05-02-ARLD-02	Residential (B)	66	853	58.5	1,306	60.0
KY-05-02-ARLD-03	Residential (B)	66	900	56.5	1,359	58.4
KY-05-02-ARLD-04	Residential (B)	66	961	54.1	1,316	56.7
KY-05-02-ARLD-05	Residential (B)	66	922	52.7	1,215	56.0
KY-05-02-ARLD-06	Residential (B)	66	509	50.7	746	54.8
KY-05-02-ARLD-07	Residential (B)	66	460	50.7	683	54.9
KY-05-02-ARLD-08	Residential (B)	66	370	50.9	572	55.2
KY-05-02-ARLD-09	Residential (B)	66	343	50.9	533	55.3
KY-05-02-ARLD-10	Residential (B)	66	311	51.1	481	55.5
KY-05-02-ARLD-11	Residential (B)	66	256	51.4	393	55.9
KY-05-02-ARLD-12	Residential (B)	66	238	52.1	344	56.7
KY-05-02-ARLD-13	Residential (B)	66	216	53.1	298	57.9
KY-05-02-ARLD-14	Residential (B)	66	209	53.7	259	58.6
KY-05-02-ARLD-15	Residential (B)	66	238	54.0	262	59.0
KY-05-02-ARLD-16	Residential (B)	66	236	54.6	245	59.7
KY-05-02-ARLD-17	Residential (B)	66	260	54.9	264	60.1
KY-05-02-ARLD-18	Residential (B)	66	276	55.6	282	60.8
KY-05-02-ARLD-19	Residential (B)	66	333	55.9	340	61.1
KY-05-02-ARLD-20	Residential (B)	66	381	56.1	388	61.2
KY-05-02-ARLD-21	Residential (B)	66	427	57.2	434	62.5
KY-05-02-ARLD-22	Residential (B)	66	404	57.7	425	63.0
KY-05-02-ARLD-23	Residential (B)	66	352	58.7	373	63.8
KY-05-02-ARLD-24	Residential (B)	66	314	59.5	335	64.6
KY-05-02-ARLD-25	Residential (B)	66	269	60.9	289	65.8
KY-05-02-ARLD-26	Residential (B)	66	246	61.5	277	66.3

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		US 41 (KY 351 to KY 425)	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-05-02-AUGD-01	Residential (B)	66	521	51.4	622	55.8
KY-05-02-AUGD-02	Residential (B)	66	376	51.2	471	55.3
KY-05-02-AUGD-03	Residential (B)	66	260	51.5	376	55.3
KY-05-02-AUGD-04	Residential (B)	66	140	52.5	257	55.2
KY-05-02-AUGD-05	Residential (B)	66	68	55.9	144	56.4
KY-05-02-AUGD-06	Residential (B)	66	76	56.6	111	57.1
KY-05-02-AUGD-07	Residential (B)	66	131	55.2	208	56.1
KY-05-02-AUGD-08	Residential (B)	66	612	55.5	622	60.7
KY-05-02-AUGD-09	Residential (B)	66	674	54.7	685	59.9
KY-05-02-AUGD-10	Residential (B)	66	763	53.6	775	58.6
KY-05-02-CHED-01	Residential (B)	66	89	55.1	325	59.6
KY-05-02-CHED-02	Residential (B)	66	123	54.7	389	59.2
KY-05-02-CHED-03	Residential (B)	66	162	54.3	458	58.8
KY-05-02-CHED-04	Residential (B)	66	174	53.7	443	58.0
KY-05-02-CLAS-01	Residential (B)	66	447	49.1	487	52.5
KY-05-02-CLAS-02	Residential (B)	66	503	47.9	528	51.4
KY-05-02-CLAS-03	Residential (B)	66	490	48.4	500	52.2
KY-05-02-CLAS-04	Church (D)	66	622	47.2	622	51.2
KY-05-02-EFOR-01	Residential (B)	66	247	61.7	258	67.8
KY-05-02-EFOR-02	Residential (B)	66	333	59.9	343	65.7
KY-05-02-EFOR-03	Residential (B)	66	370	59.3	379	65.0
KY-05-02-EFOR-04	Residential (B)	66	332	59.9	341	65.8
KY-05-02-EFOR-05	Residential (B)	66	334	59.9	341	65.6
KY-05-02-EFOR-06	Residential (B)	66	328	60.0	333	65.7
KY-05-02-EFOR-07	Residential (B)	66	330	59.9	335	65.5
KY-05-02-EFOR-08	Residential (B)	66	330	59.9	333	65.4
KY-05-02-EFOR-09	Residential (B)	66	337	59.7	338	65.1
KY-05-02-EFOR-10	Residential (B)	66	336	59.6	336	65.0
KY-05-02-EFOR-11	Residential (B)	66	339	59.5	338	64.8
KY-05-02-EFOR-12	Residential (B)	66	346	59.3	349	64.5
KY-05-02-EFOR-13	Residential (B)	66	345	59.3	363	64.5
KY-05-02-EFOR-14	Residential (B)	66	345	59.2	388	64.4
KY-05-02-EFOR-15	Residential (B)	66	348	59.2	419	64.3
KY-05-02-EFOR-16	Residential (B)	66	354	59.1	470	64.1
KY-05-02-EFOR-17	Residential (B)	66	352	59.1	512	64.1
KY-05-02-EFOR-18	Residential (B)	66	356	59.0	571	63.9
KY-05-02-EFOR-19	Residential (B)	66	370	58.8	644	63.5

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		US 41 (KY 351 to KY 425)	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-05-02-EFOR-20	Residential (B)	66	435	58.0	677	62.5
KY-05-02-EFOR-21	Residential (B)	66	452	57.8	636	62.4
KY-05-02-GARL-01	Residential (B)	66	181	63.7	201	69.7
KY-05-02-GRED-01	Residential (B)	66	89	69.7	73	73.5
KY-05-02-GRED-02	Residential (B)	66	164	66.1	149	70.9
KY-05-02-GRED-03	Residential (B)	66	301	61.3	286	67.1
KY-05-02-GRED-04	Residential (B)	66	413	59.2	397	65.1
KY-05-02-HALD-01	Residential (B)	66	645	54.3	747	59.3
KY-05-02-HALD-02	Residential (B)	66	661	53.5	817	58.4
KY-05-02-HUBL-01	Residential (B)	66	134	61.5	231	67.5
KY-05-02-HUBL-02	Residential (B)	66	222	61.8	242	67.9
KY-05-02-HUBL-03	Residential (B)	66	249	59.1	341	64.9
KY-05-02-HUBL-04	Residential (B)	66	316	58.3	399	63.9
KY-05-02-HUBL-05	Residential (B)	66	347	57.6	456	63.0
KY-05-02-HUBL-06	Residential (B)	66	401	57.0	500	62.3
KY-05-02-HUBL-07	Residential (B)	66	489	57.0	509	62.2
KY-05-02-LAKR-01	Residential (B)	66	544	56.8	596	61.7
KY-05-02-LEXD-01	Residential (B)	66	489	52.3	824	56.9
KY-05-02-LEXD-02	Residential (B)	66	415	52.6	759	57.3
KY-05-02-LEXD-03	Residential (B)	66	382	53.2	751	58.1
KY-05-02-MAGS-01	Residential (B)	66	319	57.4	303	62.5
KY-05-02-MAGS-02	Residential (B)	66	404	56.6	388	61.8
KY-05-02-MELP-01	Residential (B)	66	277	62.3	261	66.7
KY-05-02-MELP-02	Residential (B)	66	295	61.8	279	66.7
KY-05-02-MELP-03	Residential (B)	66	310	61.4	296	66.6
KY-05-02-MELP-04	Residential (B)	66	319	61.2	303	66.6
KY-05-02-MELP-05	Residential (B)	66	317	60.5	311	66.1
KY-05-02-MELP-06	Residential (B)	66	399	58.7	394	64.5
KY-05-02-MELP-07	Residential (B)	66	380	57.5	464	63.1
KY-05-02-MELP-08	Residential (B)	66	343	56.5	532	62.0
KY-05-02-MELP-09	Residential (B)	66	297	55.8	568	61.3
KY-05-02-MELP-10	Residential (B)	66	233	53.8	626	59.0
KY-05-02-MELP-11	Residential (B)	66	231	53.3	588	58.2
KY-05-02-MELP-12	Residential (B)	66	248	52.8	574	57.4
KY-05-02-MELP-13	Residential (B)	66	315	52.0	610	56.5
KY-05-02-POPA-01	Residential (B)	66	271	55.5	244	61.1
KY-05-02-POPA-02	Residential (B)	66	331	54.4	304	60.0

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		US 41 (KY 351 to KY 425)	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-05-02-POPA-03	Residential (B)	66	377	53.8	350	59.4
KY-05-02-POPA-04	Residential (B)	66	428	53.2	401	59.0
KY-05-02-POPA-05	Residential (B)	66	502	52.4	475	58.1
KY-05-02-POPA-06	Residential (B)	66	579	51.8	552	57.0
KY-05-02-TRER-01	Residential (B)	66	337	51.0	369	54.4
KY-05-02-TRER-02	Residential (B)	66	357	50.7	384	54.1
KY-05-02-TRER-03	Residential (B)	66	372	50.4	408	53.9
KY-05-02-TRER-04	Residential (B)	66	384	50.1	435	53.6
KY-05-02-TRER-05	Residential (B)	66	409	49.8	475	53.3
KY-05-02-TRER-06	Residential (B)	66	435	49.6	510	53.1
KY-05-02-TRER-07	Residential (B)	66	467	49.5	550	52.9
KY-05-02-TRER-08	Residential (B)	66	554	49.2	643	52.6
KY-05-02-TRER-09	Residential (B)	66	656	49.1	741	52.6
KY-05-02-VANA-01	Residential (B)	66	135	67.3	145	72.7
KY-05-02-VANA-02	Residential (B)	66	212	63.7	222	69.6
KY-05-02-VANA-04	Residential (B)	66	456	57.9	466	63.3
KY-05-02-VANA-05	Residential (B)	66	427	52.9	624	57.7
KY-05-02-VANA-06	Residential (B)	66	377	52.6	570	57.1
KY-05-02-VANA-07	Residential (B)	66	282	52.0	463	56.1
KY-05-02-VANA-08	Residential (B)	66	200	51.9	370	55.9
KY-05-02-VANA-09	Residential (B)	66	128	52.7	285	55.4
KY-05-02-VANA-10	Residential (B)	66	559	56.1	610	61.3
KY-05-02-VANA-11	Residential (B)	66	591	54.9	683	60.0
KY-05-02-WASS-01	Residential (B)	66	277	50.2	252	55.9
KY-05-02-WASS-02	Residential (B)	66	320	49.8	295	55.6
KY-05-02-WASS-03	Residential (B)	66	385	48.6	360	54.7
KY-05-02-WASS-04	Residential (B)	66	453	49.1	428	54.2
KY-05-02-WASS-05	Residential (B)	66	494	48.4	469	54.0
KY-05-02-WASS-06	Residential (B)	66	561	48.0	536	53.5
KY-05-02-WENA-01	Residential (B)	66	276	61.6	267	67.2
KY-05-02-WENA-02	Residential (B)	66	332	60.2	324	66.0
KY-05-02-WENA-03	Residential (B)	66	410	58.6	403	64.5
KY-05-02-WENA-04	Residential (B)	66	489	57.4	482	43.2
KY-05-02-WENA-05	Residential (B)	66	483	56.6	536	63.2
KY-05-02-WENA-06	Residential (B)	66	457	55.5	616	61.1
KY-05-02-WFOR-01	Residential (B)	66	437	58.8	446	63.7
KY-05-02-WFOR-02	Residential (B)	66	488	57.7	496	63.0

RECEIVER	DESCRIPTION (ACTIVITY CATEGORY)	NAC dB(A)	EXISTING		US 41 (KY 351 to KY 425)	
			DIST. TO ROAD (ft)	NOISE LEVEL dB(A)	DIST. TO ROAD (ft)	2045 PREDICTED NOISE LEVEL dB(A)
KY-05-02-WFOR-03	Residential (B)	66	546	56.9	553	62.1
KY-05-02-WFOR-04	Residential (B)	66	583	56.3	636	61.5
KY-05-02-WFOR-05	Residential (B)	66	665	55.1	718	60.2
KY-05-02-WFOR-06	Residential (B)	66	704	54.6	756	59.6
KY-05-02-WFOR-07	Residential (B)	66	763	53.8	815	58.7

TABLE 7: BARRIER RESULTS FOR CENTRAL 1 - TARANSAY DRIVE (TOLL BOTH CROSSINGS)

Table 7: Central 1 - Taransay Drive (Toll Both Crossings)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	2045 PRED. NOISE LEVEL dB(A)	IMPACT ?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-04-01-BALD-01	1	Yes	40.4	57.3	Yes	50.5	Yes	No
KY-04-01-BALD-02	1	No	40.4	56.1	Yes	49.7	Yes	No
KY-04-01-BALD-03	1	No	40.4	55.3	Yes	49.2	Yes	No
KY-04-01-BALD-04	1	No	40.4	54.5	Yes	48.6	Yes	No
KY-04-01-BROD-01	1	No	40.4	55.9	Yes	50.3	Yes	No
KY-04-01-BROD-02	1	No	40.4	57.8	Yes	51.5	Yes	No
KY-04-01-BROD-03	1	Yes	40.4	59.1	Yes	52.0	Yes	Yes
KY-04-01-COBD-01	1	Yes	40.4	61.9	Yes	52.7	Yes	Yes
KY-04-01-COBD-02	1	Yes	40.4	60.2	Yes	51.9	Yes	Yes
KY-04-01-COBD-03	1	Yes	40.4	59.1	Yes	51.0	Yes	Yes
KY-04-01-COBD-04	1	Yes	40.4	58.1	Yes	50.5	Yes	Yes
KY-04-01-COBD-05	1	Yes	40.4	56.3	Yes	49.4	Yes	No
KY-04-01-COBD-06	1	Yes	40.4	55.6	Yes	48.9	Yes	No
KY-04-01-COBD-07	1	Yes	40.4	54.9	Yes	48.6	Yes	No
KY-04-02-BALD-01	1	Yes	40.4	55.1	Yes	49.3	Yes	No
KY-04-02-BROD-01	1	No	40.4	55.1	Yes	49.4	Yes	No
KY-04-02-BROD-02	1	No	40.4	56.4	Yes	50.1	Yes	No
KY-04-02-BROD-03	1	Yes	40.4	58	Yes	51.0	Yes	Yes
KY-04-02-COBD-01	1	Yes	40.4	57.5	Yes	50.5	Yes	Yes
KY-04-02-COBD-02	1	No	40.4	56.7	Yes	49.9	Yes	No
KY-04-02-COBD-03	2	No	40.4	56	Yes	49.5	Yes	No
KY-04-02-COBD-04	1	No	40.4	54.4	Yes	48.4	Yes	No
KY-04-02-COBD-05	1	No	40.4	54.5	Yes	48.2	Yes	No

TABLE 8: BARRIER RESULTS FOR CENTRAL 1 – US 60 TIE (TOLL BOTH CROSSINGS)

Table 8: Central 1 - US 60 Tie (Toll Both Crossings)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT ?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-04-01-US60-01	1	Yes	61.3	63.0	No	58.6	No	No
KY-04-01-US60-02	3	Yes	65.1	66.9	Yes	60.3	Yes	No
KY-04-01-US60-03	2	Yes	62.8	64.4	No	57.6	Yes	No
KY-04-01-US60-04	3	Yes	60.2	61.2	No	55.0	Yes	No
KY-04-01-US60-05	2	Yes	58.5	59.5	No	53.8	Yes	No
KY-04-01-US60-06	3	Yes	57.0	58.4	No	53.5	No	No
KY-04-01-US60-07	2	Yes	57.1	58.6	No	54.2	No	No
KY-04-01-US60-08	1	Yes	55.7	57.5	No	53.8	No	No
KY-04-01-US60-09	1	Yes	55.5	57.3	No	53.5	No	No
KY-04-01-US60-10	1	Yes	55.4	57.2	No	53.4	No	No
KY-04-01-US60-11	1	Yes	55.4	57.1	No	53.3	No	No
KY-04-01-US60-13	1	Yes	55.3	57.0	No	52.8	No	No
KY-04-01-US60-14	1	Yes	55.2	56.9	No	52.6	No	No
KY-04-01-US60-16	1	Yes	53.8	55.7	No	51.4	No	No
KY-04-01-US60-17	1	Yes	53.8	55.9	No	51.2	No	No
KY-04-01-US60-18	1	Yes	53.3	55.5	No	50.8	No	No
KY-04-01-US60-19	1	Yes	53.1	55.4	No	50.7	No	No
KY-04-01-US60-20	1	Yes	52.9	55.3	No	50.4	No	No
KY-04-01-US60-21	1	Yes	52.6	55.3	No	50.1	Yes	No
KY-04-01-US60-22	1	Yes	53.9	55.6	No	50.1	Yes	No
KY-04-01-US60-23	1	Yes	53.6	55.9	No	49.8	Yes	No
KY-04-01-US60-24	1	Yes	52.7	55.3	No	48.6	Yes	No
KY-04-01-US60-25	1	Yes	51.3	54.0	No	47.9	Yes	No
KY-04-01-US60-26	1	Yes	50.1	52.7	No	47.0	Yes	No
KY-04-01-US60-27	1	Yes	48.9	51.5	No	49.0	No	No
KY-04-01-US60-28	1	Yes	48.4	51.1	No	48.9	No	No
KY-04-01-US60-29	1	Yes	47.2	50.4	No	48.6	No	No
KY-04-01-US60-30	1	Yes	46.2	49.9	No	48.2	No	No
KY-04-01-US60-VAL-02	1	Yes	62.2	56.9	No	56.2	No	No
KY-04-02-TARD-02	1	Yes	40.4	42.1	No	41.8	No	No

TABLE 9: BARRIER RESULTS FOR CENTRAL 1 – BRAXTON PARK DRIVE (TOLL BOTH CROSSINGS)

Table 9: Central 1 - Braxton Park Drive (Toll Both Crossings)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT ?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-04-01-BRAD-01	1	No	39.8	57.0	Yes	50.4	Yes	No
KY-04-01-BRAD-02	1	No	39.8	58.2	Yes	51.3	Yes	No
KY-04-01-BRAD-03	1	Yes	39.8	59.7	Yes	52.3	Yes	Yes
KY-04-01-BRAD-04	1	No	39.8	55.8	Yes	49.8	Yes	No
KY-04-01-BRAD-05	1	No	39.8	54.5	Yes	49.1	Yes	No
KY-04-01-CULC-01	1	No	39.8	56.5	Yes	50.2	Yes	No
KY-04-01-CULC-02	1	No	39.8	57.9	Yes	50.9	Yes	No
KY-04-01-CULC-03	1	Yes	39.8	59.6	Yes	52.2	Yes	Yes
KY-04-01-CULC-04	1	No	39.8	55.4	Yes	49.8	Yes	No
KY-04-01-CULC-05	1	No	39.8	54.6	Yes	49.1	Yes	No
KY-04-01-HART-01F	1	Yes	39.8	55.9	Yes	50.0	Yes	No
KY-04-01-HART-02F	1	Yes	39.8	56.0	Yes	50.1	Yes	No
KY-04-01-HART-03	1	No	39.8	54.2	Yes	49.4	No	No
KY-04-01-PRIV-01F	1	Yes	39.8	56.0	Yes	50.7	Yes	No
KY-04-01-R414-01F	1	No	39.8	53.5	Yes	50.6	No	No
KY-04-01-R414-02F	1	No	39.8	51.5	Yes	49.8	No	No
KY-04-01-SAND-01	1	Yes	39.8	58.0	Yes	51.6	Yes	No
KY-04-01-SAND-02	1	No	39.8	56.8	Yes	50.8	Yes	No
KY-04-01-SAND-03	1	No	39.8	55.7	Yes	49.9	Yes	No
KY-04-01-SAND-04	1	No	39.8	54.8	Yes	49.5	Yes	No
KY-04-02-BRAD-01	1	No	39.8	57.1	Yes	50.4	Yes	No
KY-04-02-BRAD-02	1	No	39.8	58.2	Yes	51.0	Yes	No
KY-04-02-BRAD-04	1	No	39.8	55.5	Yes	49.5	Yes	No
KY-04-02-BRAD-05	1	No	39.8	55.0	Yes	49.2	Yes	No
KY-04-02-CULC-01	1	No	39.8	57.0	Yes	51.0	Yes	No
KY-04-02-CULC-02	1	No	39.8	58.2	Yes	51.2	Yes	No
KY-04-02-CULC-03	1	No	39.8	56.0	Yes	50.2	Yes	No
KY-04-02-CULC-03a	1	Yes	39.8	60.1	Yes	52.6	Yes	Yes
KY-04-02-CULC-04	1	No	39.8	54.9	Yes	49.6	Yes	No
KY-04-02-CULC-05	1	No	39.8	54.0	Yes	49.2	No	No
KY-04-02-SAND-02	2	No	39.8	56.9	Yes	50.5	Yes	No
KY-04-02-SAND-03F	1	Yes	39.8	57.9	Yes	50.9	Yes	Yes
KY-04-02-SAND-04	1	No	39.8	54.7	Yes	49.1	Yes	No
KY-04-21-BRAD-03F	1	Yes	39.8	59.3	Yes	52.2	Yes	Yes

TABLE 10: BARRIER RESULTS FOR CENTRAL 1 – MELODY LANE (TOLL BOTH CROSSINGS)

Table 10: Central 1 - Melody Lane (Toll Both Crossings)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT ?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-04-01-BOWL-01	1	Yes	39.8	64.7	Yes	56.4	Yes	No
KY-04-01-BOWL-02	1	Yes	39.8	60.5	Yes	53.5	Yes	No
KY-04-01-BOWL-03	1	No	39.8	57.7	Yes	52.1	Yes	No
KY-04-01-MELL-01	1	Yes	40.4	61.1	Yes	55.5	Yes	Yes
KY-04-01-MELL-02	1	No	40.4	59.0	Yes	52.9	Yes	No
KY-04-01-MELL-03	1	Yes	40.4	59.4	Yes	52.7	Yes	Yes
KY-04-02-BOWL-04	1	No	39.8	57.6	Yes	51.8	Yes	No
KY-04-02-MELL-04	1	No	40.4	55.5	Yes	50.8	No	No
KY-04-02-MELL-05	1	No	40.4	58.2	Yes	53.1	Yes	No
KY-04-02-MELL-06	1	No	40.4	55.3	Yes	51.5	No	No
KY-04-02-MELL-07	1	No	40.4	54.4	Yes	50.3	No	No

TABLE 11: BARRIER RESULTS FOR CENTRAL 1 – EASTVIEW EAST (TOLL BOTH CROSSINGS)

Table 11: Central 1 - Eastview East (Toll Both Crossings)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	2045 PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
IN-01-01-REES-01	1	No	60.0	73.2	Yes	65.2	Yes	Yes
IN-01-01-REES-02	1	No	61.6	71.7	Yes	65.6	Yes	No
IN-01-01-REES-03	1	No	62.6	72.3	Yes	65.3	Yes	Yes
IN-01-01-REES-04	1	No	63.9	72.4	Yes	64.8	Yes	Yes
IN-01-01-REES-05	1	Yes	65.3	72.9	Yes	63.9	Yes	Yes
IN-01-01-RHEA-01	1	No	55.5	71.5	Yes	65.7	Yes	No
IN-01-01-RHEA-02	1	No	55.4	71.7	Yes	65.0	Yes	No
IN-01-01-RHEA-03	1	No	56.2	70.2	Yes	65.5	No	No
IN-01-01-RHEA-04	1	No	53.7	70.7	Yes	65.4	Yes	No
IN-01-01-SBOR-01	1	No	56.2	71.6	Yes	65.9	Yes	No
IN-01-01-SBOR-02	1	No	57.4	72.2	Yes	67.7	No	No
IN-01-01-SBOR-03	1	Yes	61.6	72.5	Yes	65.5	Yes	Yes
IN-01-01-SBOR-04	1	No	60.7	72.6	Yes	66.5	Yes	No
IN-01-01-SBOR-05	1	No	52.8	70.4	Yes	65.6	No	No
IN-01-01-SBOR-06	1	No	51.6	69.8	Yes	65.5	No	No
IN-01-01-SROD-01	1	No	59.3	71.9	Yes	65.5	Yes	No
IN-01-01-SROD-02	1	No	60.3	72.0	Yes	65.2	Yes	No
IN-01-01-SROD-03	1	No	61.4	71.9	Yes	65.4	Yes	No
IN-01-01-SROD-04	1	No	62.5	72.2	Yes	65.5	Yes	No
IN-01-01-SROD-05	1	Yes	63.6	72.1	Yes	65.1	Yes	Yes
IN-01-01-SRUA-01	1	No	56.5	68.8	Yes	65.9	No	No
IN-01-01-SRUA-02	1	No	57.1	68.7	Yes	65.9	No	No
IN-01-01-SRUA-03	1	No	57.8	68.3	Yes	65.5	No	No
IN-01-01-SRUA-04	1	No	58.6	69.0	Yes	65.8	No	No
IN-01-01-SRUA-05	1	No	59.5	70.0	Yes	65.5	No	No
IN-01-01-SRUA-06	1	No	60.4	69.8	Yes	65.4	No	No
IN-01-01-SRUA-07	1	No	61.3	69.9	Yes	65.3	No	No
IN-01-01-SRUA-08	1	No	62.5	69.8	Yes	65.3	No	No
IN-01-01-SRUA-09	1	Yes	64.1	70.6	Yes	64.9	Yes	No
IN-01-01-SSTB-01	1	No	55.5	71.2	Yes	65.5	Yes	No
IN-01-01-SSTB-02	1	No	56.0	69.1	Yes	65.4	No	No
IN-01-01-SSTB-03	1	No	56.5	71.6	Yes	65.6	Yes	No
IN-01-01-SSTB-04	1	No	57.2	71.5	Yes	65.6	Yes	No
IN-01-01-SSTB-05	1	No	57.8	71.7	Yes	65.6	Yes	No
IN-01-01-SSTB-06	1	No	58.5	70.5	Yes	65.4	Yes	No
IN-01-01-SSTB-07	1	No	58.9	70.5	Yes	65.4	Yes	No
IN-01-01-SSTB-08	1	No	60.4	70.4	Yes	65.4	Yes	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	2045 PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
IN-01-01-SSTB-09	1	No	61.5	70.5	Yes	65.3	Yes	No
IN-01-01-SSTB-10	1	No	62.9	70.0	Yes	64.6	Yes	No
IN-01-01-SSTB-11	1	Yes	64.5	70.2	Yes	64.4	Yes	No
IN-01-01-SVID-01	1	Yes	63.9	70.0	Yes	63.0	Yes	Yes
IN-01-01-SVID-02	1	No	61.7	69.4	Yes	64.3	Yes	No
IN-01-01-VNBA-01	1	Yes	49.9	68.2	Yes	64.5	No	No
IN-01-01-VNBA-02	1	No	50.1	68.4	Yes	63.7	No	No
IN-01-01-VNBA-03	1	Yes	50.1	70.0	Yes	63.0	Yes	Yes
IN-01-01-VNBA-04	1	Yes	50.7	65.9	Yes	67.5	No	No
IN-01-01-VNBA-05	1	Yes	51.3	64.3	No	64.1	No	No
IN-01-01-VNBA-06	1	Yes	52.2	66.1	No	65.9	No	No
IN-01-01-VNBA-07	1	Yes	53.2	65.9	No	65.7	No	No
IN-01-01-VNBA-08	1	No	53.6	66.5	Yes	66.4	No	No
IN-01-01-VNBA-09	1	Yes	54.3	66.8	Yes	66.5	No	No
IN-01-01-VNBA-10	1	Yes	55.4	65.5	No	65.0	No	No
IN-01-01-VNBA-11	1	Yes	58.5	71.3	Yes	71.0	No	No
IN-01-01-VNBA-12	1	Yes	59.9	73.5	Yes	73.2	No	No
IN-01-01-VNBA-13	2	Yes	59.2	73.3	Yes	66.1	Yes	Yes
IN-01-01-VNBA-15	1	Yes	60.2	71.0	Yes	65.0	Yes	No
IN-01-01-VNBA-16	1	Yes	60.8	71.2	Yes	65.4	Yes	No
IN-01-01-VNBA-17	2	Yes	61.2	71.0	Yes	65.3	Yes	No
IN-01-01-VNBA-19	1	Yes	62.8	71.6	Yes	65.5	Yes	No
IN-01-02-REES-01	1	No	61.1	72.2	Yes	65.7	Yes	No
IN-01-02-REES-02	1	No	62.5	72.5	Yes	65.4	Yes	Yes
IN-01-02-REES-03	1	Yes	64.1	70.8	Yes	64.9	Yes	No
IN-01-02-RHEA-01	1	No	51.9	69.9	Yes	64.4	Yes	No
IN-01-02-RHEA-02	1	No	52.1	67.2	Yes	64.7	No	No
IN-01-02-RHEA-03	1	No	52.7	70.5	Yes	65.1	Yes	No
IN-01-02-SBOR-01	1	No	55.6	71.8	Yes	65.6	Yes	No
IN-01-02-SRUA-01	1	No	57.5	68.4	Yes	65.3	No	No
IN-01-02-SRUA-02	1	No	59.0	68.0	Yes	65.1	No	No
IN-01-02-SRUA-03	1	No	60.1	70.0	Yes	64.3	Yes	No
IN-01-02-SRUA-04	1	No	62.0	70.0	Yes	64.6	Yes	No
IN-01-02-SRUA-05	1	No	63.6	69.8	Yes	64.9	No	No
IN-01-02-SRUA-06	1	Yes	64.7	70.3	Yes	63.3	Yes	Yes
IN-01-02-SSTB-01	1	No	55.6	69.3	Yes	64.8	No	No
IN-01-02-SSTB-02	1	No	56.2	69.7	Yes	65.3	No	No
IN-01-02-SSTB-03	1	No	56.9	68.9	Yes	65.8	No	No
IN-01-02-SSTB-04	1	No	57.5	69.3	Yes	65.6	No	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	2045 PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
IN-01-02-SSTB-05	1	No	58.2	69.4	Yes	65.6	No	No
IN-01-02-SSTB-06	1	No	59.0	67.5	Yes	65.7	No	No
IN-01-02-SSTB-07	1	No	59.9	69.0	Yes	65.9	No	No
IN-01-02-SSTB-08	1	No	60.8	69.6	Yes	65.8	No	No
IN-01-02-SSTB-09	1	No	62.0	70.1	Yes	65.7	No	No
IN-01-02-SSTB-10	1	Yes	63.5	70.1	Yes	65.3	No	No
IN-01-02-VNBA-01	1	No	56.5	72.6	Yes	65.5	Yes	Yes
IN-01-02-VNBA-02	1	No	57.1	71.9	Yes	64.6	Yes	Yes
IN-01-02-VNBA-03	1	No	57.7	70.8	Yes	65.2	Yes	No
IN-01-02-VNBA-04	1	No	55.5	72.9	Yes	69.3	No	No
IN-01-02-VNBA-05	1	No	53.2	70.3	Yes	70.0	No	No
IN-01-02-VNBA-06	1	No	54.1	66.0	No	65.6	No	No
IN-01-02-VNBA-07	1	No	54.8	70.7	Yes	70.6	No	No
IN-01-02-VNBA-08	1	No	58.2	71.4	Yes	65.9	Yes	No

TABLE 12: BARRIER RESULTS FOR CENTRAL 1 – EASTVIEW WEST (TOLL BOTH CROSSINGS)

Table 12: Central 1 - Eastview West (Toll Both Crossings)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
IN-01-01-FREA-01	1	Yes	56.1	64.7	No	67.6	No	No
IN-01-01-SWEA-01	1	No	56.2	67.9	Yes	68.7	No	No
IN-01-01-SWEA-02	1	No	57.1	67.8	Yes	68.3	No	No
IN-01-01-SWEA-03	1	Yes	58.3	66.9	Yes	68.0	No	No
IN-01-01-SWEA-04	1	No	52.6	67.0	Yes	68.0	No	No
IN-01-02-SWEA-01	1	No	59.7	69.5	Yes	68.2	No	No
IN-01-02-SWEA-02	1	Yes	62.9	65.5	No	67.5	No	No
IN-01-02-SWEA-03	1	No	52.6	68.6	Yes	69.0	No	No
IN-01-02-SWEA-04	1	No	52.6	70.9	Yes	68.9	No	No

TABLE 13: BARRIER RESULTS FOR CENTRAL 1 - TARANSAY DRIVE (TOLL I-69 ONLY)

Table 13: Central 1 - Taransay Drive (Toll I-69 Only)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	2045 PRED. NOISE LEVEL dB(A)	IMPACT ?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-04-01-BALD-01	1	Yes	40.4	52.9	Yes	45.9	Yes	No
KY-04-01-BALD-02	1	No	40.4	51.7	Yes	45.2	Yes	No
KY-04-01-BALD-03	1	No	40.4	50.9	Yes	44.8	Yes	No
KY-04-01-BALD-04	1	No	40.4	50.1	No	44.2	Yes	No
KY-04-01-BROD-01	1	No	40.4	51.6	Yes	46.2	Yes	No
KY-04-01-BROD-02	1	No	40.4	53.6	Yes	47.3	Yes	No
KY-04-01-BROD-03	1	Yes	40.4	54.9	Yes	47.9	Yes	Yes
KY-04-01-COBD-01	1	Yes	40.4	58	Yes	48.5	Yes	Yes
KY-04-01-COBD-02	1	Yes	40.4	56.1	Yes	47.7	Yes	Yes
KY-04-01-COBD-03	1	Yes	40.4	54.9	Yes	46.9	Yes	Yes
KY-04-01-COBD-04	1	Yes	40.4	53.8	Yes	46.3	Yes	Yes
KY-04-01-COBD-05	1	Yes	40.4	51.9	Yes	45.3	Yes	No
KY-04-01-COBD-06	1	Yes	40.4	51.3	Yes	44.9	Yes	No
KY-04-01-COBD-07	1	Yes	40.4	50.5	Yes	44.5	Yes	No
KY-04-02-BALD-01	1	Yes	40.4	50.6	Yes	44.6	Yes	No
KY-04-02-BROD-01	1	No	40.4	50.7	Yes	45.4	Yes	No
KY-04-02-BROD-02	1	No	40.4	52	Yes	46.0	Yes	No
KY-04-02-BROD-03	1	Yes	40.4	53.7	Yes	46.9	Yes	Yes
KY-04-02-COBD-01	1	Yes	40.4	53.1	Yes	46.1	Yes	Yes
KY-04-02-COBD-02	1	No	40.4	52.2	Yes	45.6	Yes	No
KY-04-02-COBD-03	2	No	40.4	51.6	Yes	45.2	Yes	No
KY-04-02-COBD-04	1	No	40.4	50.1	No	44.1	Yes	No
KY-04-02-COBD-05	1	No	40.4	50.2	No	44.1	Yes	No

TABLE 14: BARRIER RESULTS FOR CENTRAL 1 – US 60 TIE (TOLL I-69 ONLY)

Table 14: Central 1 - US 60 Tie (Toll I-69 Only)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT ?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-04-01-US60-01	1	Yes	61.3	62.5	No	58.1	No	No
KY-04-01-US60-02	3	Yes	65.1	66.4	Yes	57.1	Yes	No
KY-04-01-US60-03	2	Yes	62.8	63.9	No	54.3	Yes	No
KY-04-01-US60-04	3	Yes	60.2	60.9	No	53.0	Yes	No
KY-04-01-US60-05	2	Yes	58.5	59.1	No	52.8	Yes	No
KY-04-01-US60-06	3	Yes	57.0	57.8	No	53.6	No	No
KY-04-01-US60-07	2	Yes	57.1	57.8	No	53.1	No	No
KY-04-01-US60-08	1	Yes	55.7	56.7	No	52.8	No	No
KY-04-01-US60-09	1	Yes	55.5	56.6	No	52.7	No	No
KY-04-01-US60-10	1	Yes	55.4	56.5	No	52.5	No	No
KY-04-01-US60-11	1	Yes	55.4	56.3	No	52.2	No	No
KY-04-01-US60-12	1	Yes	54.9	56.3	No	51.8	No	No
KY-04-01-US60-12	1	Yes	54.9	56.4	No	52.1	No	No
KY-04-01-US60-13	1	Yes	55.3	55.8	No	51.4	No	No
KY-04-01-US60-14	1	Yes	55.2	55.1	No	50.5	No	No
KY-04-01-US60-15	1	Yes	54.7	55.2	No	50.2	Yes	No
KY-04-01-US60-16	1	Yes	53.8	54.8	No	49.8	Yes	No
KY-04-01-US60-17	1	Yes	53.8	54.7	No	49.6	Yes	No
KY-04-01-US60-18	1	Yes	53.3	54.6	No	49.3	Yes	No
KY-04-01-US60-19	1	Yes	53.1	54.6	No	48.9	Yes	No
KY-04-01-US60-20	1	Yes	52.9	54.8	No	48.9	Yes	No
KY-04-01-US60-21	1	Yes	52.6	55.1	No	48.4	Yes	No
KY-04-01-US60-22	1	Yes	53.9	54.4	No	47.0	Yes	Yes
KY-04-01-US60-23	1	Yes	53.6	53.0	No	46.0	Yes	Yes
KY-04-01-US60-24	1	Yes	52.7	51.5	No	44.8	Yes	No
KY-04-01-US60-25	1	Yes	51.3	50.1	No	46.8	No	No
KY-04-01-US60-26	1	Yes	50.1	49.6	No	46.7	No	No
KY-04-01-US60-27	1	Yes	48.9	48.8	No	46.4	No	No
KY-04-01-US60-29	1	Yes	47.2	48.1	No	46.0	No	No
KY-04-02-US60-04	1	Yes	62.0	56.1	No	55.3	No	No

TABLE 15: BARRIER RESULTS FOR CENTRAL 1 – BRAXTON PARK DRIVE (TOLL I-69 ONLY)

Table 15: Central 1 - Braxton Park Drive (Toll I-69 Only)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT ?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-04-01-BRAD-01	1	No	39.8	52.7	Yes	46.7	Yes	No
KY-04-01-BRAD-02	1	No	39.8	53.8	Yes	47.6	Yes	No
KY-04-01-BRAD-03	1	Yes	39.8	55.3	Yes	48.7	Yes	No
KY-04-01-BRAD-04	1	No	39.8	51.7	Yes	46.0	Yes	No
KY-04-01-BRAD-05	1	No	39.8	50.5	Yes	45.2	Yes	No
KY-04-01-CULC-01	1	No	39.8	52.4	Yes	46.6	Yes	No
KY-04-01-CULC-02	1	No	39.8	53.8	Yes	47.1	Yes	No
KY-04-01-CULC-03	1	Yes	39.8	55.5	Yes	48.3	Yes	Yes
KY-04-01-CULC-04	1	No	39.8	51.4	Yes	46.0	Yes	No
KY-04-01-CULC-05	1	No	39.8	50.6	Yes	45.3	Yes	No
KY-04-01-HART-01F	1	Yes	39.8	51.9	Yes	46.1	Yes	No
KY-04-01-HART-02F	1	Yes	39.8	51.9	Yes	46.2	Yes	No
KY-04-01-HART-03	1	No	39.8	50.3	Yes	45.4	No	No
KY-04-01-PRIV-01F	1	Yes	39.8	52.1	Yes	46.6	Yes	No
KY-04-01-R414-01F	1	No	39.8	49.8	Yes	45.5	No	No
KY-04-01-R414-02F	1	No	39.8	48.0	No	45.0	No	No
KY-04-01-SAND-01	1	Yes	39.8	53.6	Yes	47.9	Yes	No
KY-04-01-SAND-02	1	No	39.8	52.5	Yes	47.0	Yes	No
KY-04-01-SAND-03	1	No	39.8	51.6	Yes	46.1	Yes	No
KY-04-01-SAND-04	1	No	39.8	50.8	Yes	45.7	Yes	No
KY-04-02-BRAD-01	1	No	39.8	52.9	Yes	46.5	Yes	No
KY-04-02-BRAD-02	1	No	39.8	54.0	Yes	47.2	Yes	No
KY-04-02-BRAD-04	1	No	39.8	51.5	Yes	45.6	Yes	No
KY-04-02-BRAD-05	1	No	39.8	51.1	Yes	45.3	Yes	No
KY-04-02-CULC-01	1	No	39.8	52.8	Yes	47.2	Yes	No
KY-04-02-CULC-02	1	No	39.8	54.1	Yes	47.4	Yes	No
KY-04-02-CULC-03	1	No	39.8	51.9	No	46.4	Yes	No
KY-04-02-CULC-03a	1	Yes	39.8	56.1	Yes	48.9	Yes	Yes
KY-04-02-CULC-04	1	No	39.8	50.8	Yes	45.9	No	No
KY-04-02-CULC-05	1	No	39.8	50.0	Yes	45.4	No	No
KY-04-02-SAND-02	2	No	39.8	52.6	Yes	46.7	Yes	No
KY-04-02-SAND-03F	1	Yes	39.8	53.6	Yes	47.3	Yes	No
KY-04-02-SAND-04	1	No	39.8	50.6	Yes	45.2	Yes	No
KY-04-21-BRAD-03F	1	Yes	39.8	55.0	Yes	48.4	Yes	No

TABLE 16: BARRIER RESULTS FOR CENTRAL 1 – MELODY LANE (TOLL I-69 ONLY)

Table 16: Central 1 - Melody Lane (Toll I-69 Only)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT ?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-04-01-BOWL-01	1	Yes	39.8	61.1	Yes	51.9	Yes	Yes
KY-04-01-BOWL-02	1	Yes	39.8	56.2	Yes	49.4	Yes	No
KY-04-01-BOWL-03	1	No	39.8	53.6	Yes	47.5	Yes	No
KY-04-01-MELL-01	1	Yes	40.4	56.9	Yes	50.0	Yes	No
KY-04-01-MELL-02	1	No	40.4	54.7	Yes	48.4	Yes	No
KY-04-01-MELL-03	1	Yes	40.4	55.1	Yes	48.5	Yes	No
KY-04-02-BOWL-04	1	No	39.8	53.5	Yes	47.4	Yes	No
KY-04-02-MELL-04	1	No	40.4	51.6	Yes	46.2	Yes	No
KY-04-02-MELL-05	1	No	40.4	53.9	Yes	48.0	Yes	No
KY-04-02-MELL-06	1	No	40.4	51.3	Yes	46.5	No	No
KY-04-02-MELL-07	1	No	40.4	50.6	Yes	45.8	No	No

TABLE 17: BARRIER RESULTS FOR WEST 1 – RICHARDSON AVENUE (TOLL BOTH CROSSINGS)

Table 17: West 1 - Richardson Avenue (Toll Both Crossings)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-03-01-HERA-02	1	No	64.6	64.1	No	63.9	No	No
KY-03-01-HERA-03	1	No	62.5	62.1	No	61.8	No	No
KY-03-01-HERA-04	1	No	61.4	61.1	No	60.5	No	No
KY-03-01-HERA-05	1	No	60.2	60.0	No	59.3	No	No
KY-03-01-HERA-06	1	No	57.8	58.3	No	56.9	No	No
KY-03-01-HERA-07	1	No	56.6	57.3	No	55.5	No	No
KY-03-01-HERA-08	1	No	55.8	56.9	No	54.8	No	No
KY-03-01-HERA-09	1	No	54.9	56.5	No	53.8	No	No
KY-03-01-KIML-02	12	Yes	60.8	65.1	No	56.0	Yes	Yes
KY-03-01-KIML-03	12	Yes	64.4	68.4	Yes	58.9	Yes	Yes
KY-03-01-KIML-05	5	Yes	59.5	63.1	No	54.5	Yes	Yes
KY-03-01-KIML-06	5	Yes	58.6	63.3	No	54.6	Yes	Yes
KY-03-01-KIML-07	5	Yes	60.7	66.3	Yes	56.3	Yes	Yes
KY-03-01-KIML-08	5	Yes	61.2	64.9	No	55.5	Yes	Yes
KY-03-01-KIML-11	25	Yes	64.6	62.7	No	54.9	Yes	Yes
KY-03-01-RICA-02	1	Yes	54.3	57.8	No	53.5	No	No
KY-03-01-RICA-03	1	Yes	54.0	58.0	No	53.3	No	No
KY-03-01-RICA-04	1	Yes	54.0	58.0	No	53.0	Yes	No
KY-03-01-RICA-05	1	Yes	54.2	58.0	No	53.0	Yes	No
KY-03-01-RICA-06	1	Yes	54.5	58.2	No	53.0	Yes	No
KY-03-01-RICA-07	1	Yes	55.1	58.2	No	52.9	Yes	No
KY-03-01-RICA-08	1	Yes	55.5	58.3	No	53.0	Yes	No
KY-03-01-RICA-09	1	Yes	56.1	58.8	No	53.3	Yes	No
KY-03-01-RICA-10	1	Yes	56.3	58.8	No	53.1	Yes	No
KY-03-01-RICA-11	1	Yes	56.3	58.0	No	52.2	Yes	No
KY-03-01-RICA-12	1	Yes	57.1	59.3	No	53.3	Yes	No
KY-03-01-RICA-13	1	No	54.8	57.0	No	51.8	Yes	No
KY-03-01-VAL4-AA	9	Yes	61.3	64.0	No	53.7	Yes	Yes
KY-03-02-RICA-03	1	No	53.9	56.7	No	53.1	No	No
KY-03-02-RICA-04	1	No	53.7	56.7	No	52.8	No	No
KY-03-02-RICA-05	1	No	53.4	56.7	No	52.4	No	No
KY-03-02-RICA-06	1	No	53.4	56.7	No	52.3	No	No
KY-03-02-RICA-07	1	No	53.5	56.7	No	52.2	No	No
KY-03-02-RICA-08	1	No	53.7	56.8	No	52.2	No	No
KY-03-02-RICA-09	1	No	54.1	57.0	No	52.2	No	No
KY-03-02-RICA-10	1	No	54.3	57.0	No	52.2	No	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-03-02-RICA-11	1	No	54.9	57.2	No	52.0	Yes	No

TABLE 18: BARRIER RESULTS FOR WEST 1 – NORTH GREEN STREET (TOLL BOTH CROSSINGS)

Table 18: West 1 - North Green Street (Toll Both Crossings)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-02-NELS-09	2	Yes	66.4	66.6	Yes	58.6	Yes	Yes
KY-02-02-NELS-10	2	Yes	68.2	67.6	Yes	58.9	Yes	Yes
KY-02-02-NELS-11	4	No	62.8	63.4	No	56.9	Yes	No
KY-02-02-NELS-12	5	No	63.0	63.5	No	57.0	Yes	No
KY-02-02-NELS-13	4	No	64.3	64.3	No	57.3	Yes	No
KY-02-02-NELS-14	5	No	64.6	64.4	No	57.3	Yes	No
KY-02-02-NELS-15	5	No	66.7	65.7	No	57.7	Yes	No
KY-02-02-NELS-16	5	Yes	69.5	67.0	Yes	58.0	Yes	Yes
KY-02-02-NELS-17	5	Yes	69.8	67.4	Yes	58.2	Yes	Yes
KY-02-02-NELS-18	5	Yes	69.2	67.2	Yes	58.2	Yes	Yes
KY-02-02-NELS-19	5	Yes	66.2	65.8	No	57.5	Yes	Yes
KY-02-02-NELS-20	5	No	64.5	64.4	No	57.2	Yes	No
KY-02-02-NELS-21	5	No	62.5	62.9	No	56.4	Yes	No
KY-02-02-NELS-22	5	No	60.8	61.5	No	55.5	Yes	No
KY-02-02-NELS-23	5	No	59.3	60.2	No	54.7	Yes	No
KY-02-02-NELS-24	5	No	58.2	59.4	No	54.2	Yes	No
KY-03-01-BARD-01	1	No	58.6	58.8	No	54.7	No	No
KY-03-01-BARD-02	1	No	59.1	59.4	No	54.8	No	No
KY-03-01-BARD-03	1	No	59.9	60.0	No	55.0	Yes	No
KY-03-01-BARD-04	2	No	59.6	59.6	No	54.7	No	No
KY-03-01-BARD-05	2	No	59.3	59.1	No	54.5	No	No
KY-03-01-ELKA-01	1	No	56.6	57.0	No	54.9	No	No
KY-03-01-ELKA-02	1	No	58.3	58.3	No	56.8	No	No
KY-03-01-ELKA-03	1	No	59.2	58.9	No	57.4	No	No
KY-03-01-ELKA-04	1	Yes	60.4	59.7	No	58.2	No	No
KY-03-01-HERA-01	1	No	66.7	65.7	No	65.7	No	No
KY-03-01-HIYD-01	1	No	57.0	57.4	No	53.7	No	No
KY-03-01-HIYD-02	1	No	57.6	57.7	No	53.9	No	No
KY-03-01-NELS-01	1	Yes	62.6	62.5	No	59.2	No	No
KY-03-01-NGRS-01	2	Yes	61.7	61.7	No	55.8	Yes	No
KY-03-01-NGRS-02	1	Yes	59.2	58.8	No	54.4	No	No
KY-03-01-NGRS-03	1	Yes	58.6	58.1	No	54.4	No	No
KY-03-01-NGRS-04	1	Yes	58.1	57.2	No	54.4	No	No
KY-03-01-NGRS-06	1	Yes	60.2	59.5	No	57.4	No	No
KY-03-01-NGRS-07	2	Yes	60.8	59.8	No	57.7	No	No
KY-03-01-NGRS-08	1	No	58.8	58.2	No	56.4	No	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-03-01-NGRS-09	1	Yes	60.5	60.2	No	55.0	Yes	No
KY-03-01-NGRS-10	1	Yes	60.9	60.7	No	55.3	Yes	No
KY-03-01-NGRS-05	1	No	58.3	57.4	No	54.9	No	No
KY-03-01-RICA-01	1	Yes	60.7	61	No	60.2	No	No
KY-03-02-BARD-01	1	No	57.6	58	No	53.9	No	No
KY-03-02-BARD-02	1	No	57.4	58	No	53.8	No	No
KY-03-02-ELKA-01	1	No	57.1	57	No	56.3	No	No
KY-03-02-ELKA-02	2	No	58.3	58	No	57.5	No	No
KY-03-02-ELKA-03	2	No	59.4	59	No	58.6	No	No
KY-03-02-ELKA-04	2	No	60.8	61	No	60.1	No	No
KY-03-02-ELKA-05	2	Yes	62.0	62	No	61.3	No	No
KY-03-02-HIYD-01	1	No	57.5	57	No	54.3	No	No
KY-03-02-HIYD-02	1	No	57.6	57	No	54.2	No	No
KY-03-02-NGRS-01	12	Yes	62.8	60	No	54.6	Yes	No
KY-03-02-NGRS-02	12	Yes	62.3	58	No	54.2	No	No
KY-03-02-RICA-01	1	No	63.1	63	No	62.5	No	No
KY-03-02-RICA-02	1	No	65.6	65	No	64.5	No	No

TABLE 19: BARRIER RESULTS FOR WEST 1 – ELM STREET (TOLL BOTH CROSSINGS)

Table 19: West 1 - Elm Street (Toll Both Crossings)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-01-CANL-01	1	Yes	57.9	66.7	Yes	57.6	Yes	Yes
KY-02-01-CANL-02	2	No	60.7	63.8	No	55.9	Yes	No
KY-02-01-CANL-03	1	No	62.4	62.1	No	55.1	Yes	No
KY-02-01-HARL-01	1	Yes	59.9	66.6	Yes	57.2	Yes	Yes
KY-02-01-HARL-02	1	No	62.5	64.8	No	56.5	Yes	No
KY-02-01-HARL-03	1	No	66.6	63.9	No	55.8	Yes	No
KY-02-01-HARL-04	1	No	50.8	62.4	Yes	55.0	Yes	No
KY-02-01-HARL-05	1	No	51.4	59.9	No	53.7	Yes	No
KY-02-01-NPAD-01	1	No	64.9	58.8	No	56.9	No	No
KY-02-01-NPAD-02	1	No	55.0	59.4	No	56.0	Yes	No
KY-02-01-NPAD-03	1	No	68.2	59.4	No	55.4	No	No
KY-02-01-NPAD-04	1	No	40.5	60.0	Yes	54.6	No	No
KY-02-01-NPAD-05	1	No	66.3	60.2	No	54.2	Yes	No
KY-02-01-NPAD-06	4	No	64.6	59.4	No	53.5	Yes	No
KY-02-01-NPAD-07	4	No	63.6	59.9	No	53.9	Yes	No
KY-02-01-NPAD-08	4	No	63.2	60.8	No	54.3	Yes	No
KY-02-01-NPAD-09	4	No	63.0	61.4	No	54.6	Yes	No
KY-02-01-NPAD-10	4	No	56.7	61.9	No	54.7	Yes	No
KY-02-01-NPAD-11	4	No	58.5	62.0	No	54.9	Yes	No
KY-02-01-RETR-02	1	Yes	61.4	66.3	Yes	57.5	Yes	Yes
KY-02-01-RETR-03	1	No	52.2	65.6	Yes	57.3	Yes	No
KY-02-01-RETR-04	1	No	60.4	64.4	No	56.6	Yes	No
KY-02-01-RETR-05	1	No	61.4	63.5	No	56.2	Yes	No
KY-02-01-RETR-06	1	No	63.4	61.8	No	55.4	Yes	No
KY-02-01-RETR-07	1	No	65.0	61.0	No	55.5	Yes	No
KY-02-01-ROBR-01	1	Yes	57.8	66.7	Yes	57.6	Yes	Yes
KY-02-01-ROBR-03	1	No	61.0	63.8	No	55.7	Yes	No
KY-02-01-ROBR-04	1	No	62.7	62.0	No	54.8	Yes	No
KY-02-02-CANL-01	1	Yes	57.9	66.9	Yes	57.8	Yes	Yes
KY-02-02-CANL-02	1	No	59.9	64.7	No	56.6	Yes	No
KY-02-02-CANL-03	1	No	61.8	62.7	No	55.7	Yes	No
KY-02-02-CANL-04	1	No	64.1	61.3	No	55.0	Yes	No
KY-02-02-HARL-01	1	Yes	58.0	67.1	Yes	57.5	Yes	Yes
KY-02-02-HARL-02	1	No	59.4	65.2	No	56.6	Yes	No
KY-02-02-HARL-03	1	No	60.3	64.5	No	56.0	Yes	No
KY-02-02-HARL-04	1	No	61.4	63.6	No	55.5	Yes	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-02-HARL-05	1	No	63.6	61.3	No	54.4	Yes	No
KY-02-02-HARL-06	1	No	67.4	59.5	No	53.5	Yes	No
KY-02-02-NELS-01	1	Yes	62.8	58.4	No	54.9	No	No
KY-02-02-NELS-02	1	Yes	62.2	60.2	No	55.0	Yes	No
KY-02-02-NELS-03	1	Yes	61.9	61.8	No	55.8	Yes	No
KY-02-02-NELS-04	1	Yes	60.3	62.6	No	55.7	Yes	No
KY-02-02-NELS-05	1	Yes	61.4	62.8	No	55.3	Yes	Yes
KY-02-02-NELS-06	1	Yes	59.7	64.2	No	56.0	Yes	Yes
KY-02-02-NELS-07	1	Yes	60.5	64.5	No	55.9	Yes	Yes
KY-02-02-NELS-08	1	Yes	60.8	64.1	No	56.1	Yes	Yes
KY-02-02-RETR-01	1	Yes	58.6	67.4	Yes	58.9	Yes	Yes
KY-02-02-RETR-02	1	No	60.0	65.5	No	58.1	Yes	No
KY-02-02-RETR-03	1	No	61.2	64.2	No	57.3	Yes	No
KY-02-02-RETR-04	1	No	62.1	63.2	No	57.2	Yes	No
KY-02-02-RETR-05	1	No	64.0	61.6	No	56.0	Yes	No
KY-02-02-RETR-06	1	No	66.4	60.5	No	55.5	Yes	No
KY-02-02-ROBR-01	1	Yes	57.6	67.0	Yes	57.7	Yes	Yes
KY-02-02-ROBR-02	1	No	59.2	65.5	No	56.7	Yes	No
KY-02-02-ROBR-03	1	No	60.8	63.6	No	55.8	Yes	No
KY-02-02-ROBR-04	1	No	62.8	61.9	No	54.9	Yes	No

TABLE 20: BARRIER RESULTS FOR WEST 1 – SUNSET LANE (TOLL BOTH CROSSINGS)

Table 20: West 1 - Sunset Lane (Toll Both Crossings)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-01-BARR-01	1	No	51.1	57.2	No	53.8	No	No
KY-02-01-BARR-02	1	Yes	53.1	59.3	No	55.4	No	No
KY-02-01-BARR-03	1	Yes	53.8	59.8	No	55.9	No	No
KY-02-01-CAMC-01	1	No	51.1	62.4	Yes	54.5	Yes	No
KY-02-01-CAMC-02	1	No	50.5	60.8	Yes	53.7	Yes	No
KY-02-01-CAMC-03	1	No	50.7	60.8	Yes	53.8	Yes	No
KY-02-01-CAMD-01	1	No	49.9	60.3	Yes	53.1	Yes	No
KY-02-01-CAMD-02	1	No	50.6	62.0	Yes	54.2	Yes	No
KY-02-01-CAMD-03	1	No	51.3	63.5	Yes	55.7	Yes	No
KY-02-01-CAMD-04	1	Yes	52.0	65.0	Yes	56.3	Yes	Yes
KY-02-01-DOND-01	1	No	53.9	58.9	No	52.2	Yes	No
KY-02-01-JAMD-01	1	No	52.4	57.2	No	52.6	No	No
KY-02-01-JAMD-02	1	No	50.8	58.1	No	53.3	No	No
KY-02-01-JAMD-03	1	No	50.7	59.2	No	54.0	Yes	No
KY-02-01-JOHD-01	2	No	50.6	58.1	No	52.5	Yes	No
KY-02-01-JOHD-02	1	No	50.3	58.3	No	52.5	Yes	No
KY-02-01-JOHD-03	1	No	50.3	58.4	No	52.3	Yes	No
KY-02-01-JOHD-04	1	No	39.3	58.2	Yes	52.1	Yes	No
KY-02-01-JOHD-05	1	No	50.2	58.6	No	52.3	Yes	No
KY-02-01-JOHD-06	1	No	50.3	58.8	No	52.2	Yes	No
KY-02-01-JOHD-07	1	No	50.2	59.8	No	52.8	Yes	No
KY-02-01-JOHD-09	1	No	49.8	60.4	Yes	53.0	Yes	No
KY-02-01-LOCD-01	1	No	50.3	59.3	No	52.5	Yes	No
KY-02-01-LOCD-02	1	No	50.9	59.4	No	52.7	Yes	No
KY-02-01-LOCD-03	1	No	53.2	59.9	No	53.1	Yes	No
KY-02-01-LOCD-04	1	No	55.5	59.4	No	53.7	Yes	No
KY-02-01-NELS-01	1	Yes	56.6	64.4	No	57.4	Yes	Yes
KY-02-01-NELS-02	1	Yes	64.9	65.0	No	57.6	Yes	Yes
KY-02-01-NELS-03	1	Yes	65.9	67.5	Yes	59.2	Yes	Yes
KY-02-01-RICL-01	1	No	51.6	60.3	No	54.3	Yes	No
KY-02-01-ROOD-01	1	No	50.2	59.2	No	53.1	Yes	No
KY-02-01-ROOD-02	1	No	50.6	60.1	No	53.3	Yes	No
KY-02-01-ROOD-03	1	No	51.9	62.4	Yes	55.1	Yes	No
KY-02-01-ROOD-04	1	No	52.6	63.1	Yes	55.8	Yes	No
KY-02-01-ROOD-05	1	Yes	53.6	65.5	Yes	57.8	Yes	Yes
KY-02-01-SHEP-01	1	No	51.0	57.9	No	56.6	No	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-01-SHEP-02	2	No	51.0	57.9	No	56.5	No	No
KY-02-01-SHEP-03	2	No	51.0	57.8	No	56.3	No	No
KY-02-01-SHEP-04	2	No	51.1	57.8	No	56.1	No	No
KY-02-01-SHEP-05	1	No	51.0	57.7	No	55.9	No	No
KY-02-01-SPRD-01	1	No	50.8	57.5	No	55.3	No	No
KY-02-01-SPRD-02	1	No	51.2	58.2	No	56.0	No	No
KY-02-01-SPRD-03	1	No	51.7	58.9	No	56.4	No	No
KY-02-01-SPRD-04	1	No	52.4	59.7	No	56.5	No	No
KY-02-01-SPRD-05	1	No	53.0	60.3	No	56.6	No	No
KY-02-01-SPRD-06	1	Yes	53.9	61.4	No	56.4	Yes	No
KY-02-01-SPRR-01	1	No	51.5	57.8	No	54.4	No	No
KY-02-01-SPRR-02	1	No	51.3	57.4	No	54.0	No	No
KY-02-01-SPRR-03	1	No	51.6	57.8	No	54.2	No	No
KY-02-01-SPRWD-01	1	No	49.6	59.4	No	52.4	Yes	No
KY-02-01-SPRWD-02	1	No	50.8	61.9	Yes	54.1	Yes	No
KY-02-01-SPRWD-03	1	No	51.5	64.0	Yes	55.5	Yes	No
KY-02-01-SPRWD-04	1	Yes	52.3	65.5	Yes	56.6	Yes	Yes
KY-02-01-VILD-01	1	No	50.7	58.9	No	53.6	Yes	No
KY-02-01-VILD-02	1	No	51.5	59.9	No	54.3	Yes	No
KY-02-01-VILD-03	1	No	52.1	60.7	No	55.0	Yes	No
KY-02-01-VILD-04	1	No	52.8	61.7	No	55.5	Yes	No
KY-02-01-VILD-05	1	No	53.3	62.5	No	56.0	Yes	No
KY-02-01-VILD-06	2	No	53.9	63.5	No	56.6	Yes	No
KY-02-01-WILD-01	1	No	53.0	60.9	No	59.9	No	No
KY-02-01-WILD-02	1	No	52.2	59.8	No	58.5	No	No
KY-02-01-WILD-03	1	No	51.8	59.2	No	57.8	No	No
KY-02-01-WILD-04	1	No	51.9	59.4	No	57.7	No	No
KY-02-01-WILD-05	1	No	51.8	59.1	No	57.2	No	No
KY-02-02-BARR-01	1	No	51.1	57.2	No	53.1	No	No
KY-02-02-BARR-02	1	No	51.7	58.2	No	53.8	No	No
KY-02-02-CAMC-01	1	Yes	52.9	63.6	Yes	56.4	Yes	Yes
KY-02-02-CAMC-02	1	Yes	52.4	63.0	Yes	55.5	Yes	Yes
KY-02-02-CAMD-01	4	No	50.5	61.0	Yes	53.7	Yes	No
KY-02-02-CAMD-02	1	No	52.0	63.7	Yes	55.6	Yes	No
KY-02-02-CAMD-03	1	Yes	52.8	64.1	Yes	56.9	Yes	Yes
KY-02-02-DOND-01	1	No	49.7	59.3	No	52.3	Yes	No
KY-02-02-DOND-02	1	No	50.8	61.6	Yes	53.9	Yes	No
KY-02-02-DOND-03	1	Yes	51.8	63.6	Yes	55.5	Yes	Yes

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-02-DOND-04	1	Yes	52.4	65.4	Yes	56.5	Yes	Yes
KY-02-02-JAMD-01	1	Yes	54.3	59.7	No	56.1	No	No
KY-02-02-JAMD-02	1	Yes	54.2	60.1	No	55.5	No	No
KY-02-02-JAMD-03	1	Yes	54.9	54.5	No	48.3	Yes	No
KY-02-02-JAMD-04	1	Yes	54.7	55.4	No	50.2	Yes	No
KY-02-02-JAMD-05	1	Yes	54.3	57.0	No	53.8	No	No
KY-02-02-JAMD-06	1	Yes	53.9	60.3	No	54.5	Yes	No
KY-02-02-JAMD-07	1	No	52.6	60.6	No	54.0	Yes	No
KY-02-02-JAMD-08	1	No	51.9	59.2	No	53.4	Yes	No
KY-02-02-JAMD-09	1	No	50.4	57.3	No	52.1	Yes	No
KY-02-02-JOHD-01	1	Yes	52.9	61.5	No	54.4	Yes	Yes
KY-02-02-JOHD-02	1	Yes	53.2	61.7	No	54.7	Yes	Yes
KY-02-02-JOHD-03	2	Yes	53.0	61.9	No	54.9	Yes	Yes
KY-02-02-JOHD-05	1	Yes	52.4	62.1	No	54.9	Yes	Yes
KY-02-02-JOHD-06	2	Yes	51.7	61.7	Yes	54.4	Yes	Yes
KY-02-02-JOHD-07	1	Yes	52.1	61.3	No	54.1	Yes	Yes
KY-02-02-JOHD-08	1	Yes	51.3	62.3	Yes	54.8	Yes	Yes
KY-02-02-JOHD-09	1	Yes	51.1	61.7	Yes	54.2	Yes	Yes
KY-02-02-ROOD-01	1	No	50.9	59.5	No	53.6	Yes	No
KY-02-02-ROOD-02	1	No	51.1	60.4	No	53.9	Yes	No
KY-02-02-ROOD-03	1	No	51.8	61.2	No	54.6	Yes	No
KY-02-02-ROOD-04	1	No	52.9	62.8	No	55.9	Yes	No
KY-02-02-ROOD-05	1	Yes	53.8	65.0	Yes	57.4	Yes	Yes
KY-02-02-SPRD-01	1	No	51.5	58.0	No	54.7	No	No
KY-02-02-SPRR-01	1	Yes	53.3	60.1	No	55.4	No	No
KY-02-02-SPRR-02	1	Yes	53.6	60.2	No	55.2	Yes	No
KY-02-02-SPRR-03	1	Yes	53.3	59.8	No	55.3	No	No
KY-02-02-SPRR-04	1	Yes	53.4	59.7	No	55.2	No	No
KY-02-02-SPRR-05	1	Yes	53.4	59.6	No	55.5	No	No
KY-02-02-SPRWD-01	1	No	49.5	59.3	No	52.4	Yes	No
KY-02-02-SPRWD-02	1	No	49.9	60.4	Yes	53.0	Yes	No
KY-02-02-SPRWD-03	1	No	50.3	61.3	Yes	53.6	Yes	No
KY-02-02-SPRWD-04	1	No	51.0	63.0	Yes	55.0	Yes	No
KY-02-02-SPRWD-05	1	Yes	51.8	64.9	Yes	56.3	Yes	Yes
KY-02-02-VILD-01	1	No	51.3	59.3	No	54.1	Yes	No
KY-02-02-VILD-02	1	No	51.9	60.0	No	54.7	Yes	No
KY-02-02-VILD-03	1	No	52.7	61.1	No	55.5	Yes	No
KY-02-02-VILD-04	1	No	53.5	62.3	No	56.3	Yes	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-02-VILD-05	1	No	54.2	63.4	No	57.0	Yes	No
KY-02-02-VILD-06	1	No	54.9	64.7	No	57.6	Yes	No
KY-02-02-VILD-07	1	No	56.1	67.2	Yes	58.5	Yes	No
KY-02-02-VILD-08	1	Yes	56.8	69.3	Yes	58.8	Yes	Yes
KY-02-02-WATL-01	3	No	51.4	58.5	No	57.5	No	No
KY-02-02-WATL-02	3	No	51.4	58.6	No	57.7	No	No
KY-02-02-WATL-03	1	No	55.3	62.7	No	62.2	No	No
KY-02-02-WILD-01	1	Yes	55.9	65.4	No	64.9	No	No
KY-02-02-WILD-02	1	Yes	54.5	64.0	No	62.5	No	No
KY-02-02-WILD-03	1	Yes	54.0	62.8	No	61.0	No	No
KY-02-02-WILD-04	1	Yes	53.9	62.5	No	60.2	No	No
KY-02-02-WILD-05	1	Yes	54.2	62.4	No	59.1	No	No
KY-02-02-WILD-06	1	Yes	53.8	61.7	No	58.3	No	No
KY-02-02-WILD-07	1	No	53.0	60.6	No	57.6	No	No

TABLE 21: BARRIER RESULTS FOR WEST 1 – RICHARDSON AVENUE (TOLL I-69 ONLY)

Table 21: West 1 - Richardson Avenue (Toll I-69 Only)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-03-01-HERA-02	1	No	64.6	64.4	No	64.3	No	No
KY-03-01-HERA-03	1	No	62.5	62.4	No	62.3	No	No
KY-03-01-HERA-04	1	No	61.4	61.3	No	61.1	No	No
KY-03-01-HERA-05	1	No	60.2	60.2	No	60.0	No	No
KY-03-01-HERA-06	1	No	57.8	58.4	No	57.9	No	No
KY-03-01-HERA-07	1	No	56.6	57.4	No	56.5	No	No
KY-03-01-HERA-08	1	No	55.8	56.9	No	55.8	No	No
KY-03-01-HERA-09	1	No	54.9	56.4	No	54.8	No	No
KY-03-01-KIML-02	12	Yes	60.8	65.1	No	56.1	Yes	Yes
KY-03-01-KIML-03	12	Yes	64.4	68.4	Yes	58.9	Yes	Yes
KY-03-01-KIML-05	5	Yes	59.5	63.2	No	54.5	Yes	Yes
KY-03-01-KIML-06	5	Yes	58.6	63.3	No	54.6	Yes	Yes
KY-03-01-KIML-07	5	Yes	60.7	66.4	Yes	56.4	Yes	Yes
KY-03-01-KIML-08	5	Yes	61.2	65.0	No	55.6	Yes	Yes
KY-03-01-KIML-11	25	Yes	64.6	62.8	No	55.0	Yes	Yes
KY-03-01-RICA-02	1	Yes	54.3	57.7	No	54.1	No	No
KY-03-01-RICA-03	1	Yes	54.0	57.8	No	53.7	No	No
KY-03-01-RICA-04	1	Yes	54.0	57.9	No	53.4	No	No
KY-03-01-RICA-05	1	Yes	54.2	57.9	No	53.3	No	No
KY-03-01-RICA-06	1	Yes	54.5	58.2	No	53.2	Yes	No
KY-03-01-RICA-07	1	Yes	55.1	58.1	No	53.1	Yes	No
KY-03-01-RICA-08	1	Yes	55.5	58.3	No	53.1	Yes	No
KY-03-01-RICA-09	1	Yes	56.1	58.8	No	53.4	Yes	No
KY-03-01-RICA-10	1	Yes	56.3	58.8	No	53.2	Yes	No
KY-03-01-RICA-11	1	Yes	56.3	58.0	No	52.3	Yes	No
KY-03-01-RICA-12	1	Yes	57.1	59.3	No	53.4	Yes	No
KY-03-01-RICA-13	1	No	54.8	57.0	No	51.9	Yes	No
KY-03-01-VAL4-AA	9	Yes	61.3	63.9	No	53.7	Yes	Yes
KY-03-02-RICA-03	1	No	53.9	56.6	No	53.6	No	No
KY-03-02-RICA-04	1	No	53.7	56.6	No	53.3	No	No
KY-03-02-RICA-05	1	No	53.4	56.6	No	52.8	No	No
KY-03-02-RICA-06	1	No	53.4	56.6	No	52.6	No	No
KY-03-02-RICA-07	1	No	53.5	56.7	No	52.5	No	No
KY-03-02-RICA-08	1	No	53.7	56.8	No	52.4	No	No
KY-03-02-RICA-09	1	No	54.1	56.9	No	52.4	No	No
KY-03-02-RICA-10	1	No	54.3	56.9	No	52.3	No	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-03-02-RICA-11	1	No	54.9	57.2	No	52.1	Yes	No

TABLE 22: BARRIER RESULTS FOR WEST 1 – NORTH GREEN STREET (TOLL I-69 ONLY)

Table 22: West 1 - North Green Street (Toll I-69 Only)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-02-NELS-09	2	Yes	66.4	67.0	Yes	58.2	Yes	Yes
KY-02-02-NELS-10	2	Yes	68.2	67.9	Yes	58.6	Yes	Yes
KY-02-02-NELS-12	9	No	63.0	63.9	No	56.9	Yes	No
KY-02-02-NELS-13	4	No	64.3	64.7	No	57.1	Yes	No
KY-02-02-NELS-14	5	No	64.6	64.8	No	57.2	Yes	No
KY-02-02-NELS-15	5	No	66.7	66.1	Yes	57.6	Yes	No
KY-02-02-NELS-16	5	Yes	69.5	67.4	Yes	58.1	Yes	Yes
KY-02-02-NELS-17	5	Yes	69.8	67.7	Yes	58.4	Yes	Yes
KY-02-02-NELS-18	5	Yes	69.2	67.5	Yes	58.4	Yes	Yes
KY-02-02-NELS-19	5	Yes	66.2	66.1	Yes	57.7	Yes	Yes
KY-02-02-NELS-20	5	No	64.5	64.7	No	57.3	Yes	No
KY-02-02-NELS-21	5	No	62.5	63.2	No	56.4	Yes	No
KY-02-02-NELS-22	5	No	60.8	61.9	No	55.5	Yes	No
KY-02-02-NELS-23	5	No	59.3	60.6	No	54.7	Yes	No
KY-02-02-NELS-24	5	No	58.2	59.7	No	54.2	Yes	No
KY-03-01-BARD-01	1	No	58.6	59.0	No	54.9	No	No
KY-03-01-BARD-02	1	No	59.1	59.6	No	55.0	No	No
KY-03-01-BARD-03	1	No	59.9	60.2	No	55.2	Yes	No
KY-03-01-BARD-04	2	No	59.6	59.6	No	54.9	No	No
KY-03-01-BARD-05	2	No	59.3	59.1	No	54.8	No	No
KY-03-01-ELKA-01	1	No	56.6	57.0	No	55.7	No	No
KY-03-01-ELKA-02	1	No	58.3	58.3	No	57.6	No	No
KY-03-01-ELKA-03	1	No	59.2	58.9	No	58.3	No	No
KY-03-01-ELKA-04	1	Yes	60.4	59.6	No	59.2	No	No
KY-03-01-HERA-01	1	No	66.7	66.4	Yes	66.3	No	No
KY-03-01-HIYD-01	1	No	57.0	57.4	No	54.0	No	No
KY-03-01-HIYD-02	1	No	57.6	57.7	No	54.3	No	No
KY-03-01-NELS-01	1	Yes	62.6	62.8	No	59.6	No	No
KY-03-01-NGRS-01	2	Yes	61.7	61.8	No	56.0	Yes	No
KY-03-01-NGRS-02	1	Yes	59.2	58.7	No	54.7	No	No
KY-03-01-NGRS-03	1	Yes	58.6	57.8	No	54.7	No	No
KY-03-01-NGRS-04	1	Yes	58.1	56.9	No	54.9	No	No
KY-03-01-NGRS-05	1	Yes	58.3	57.1	No	55.7	No	No
KY-03-01-NGRS-06	1	Yes	60.2	59.2	No	58.6	No	No
KY-03-01-NGRS-07	2	Yes	60.8	59.6	No	59.1	No	No
KY-03-01-NGRS-08	1	Yes	58.8	58.1	No	57.4	No	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-03-01-NGRS-09	1	Yes	60.5	60.2	No	55.2	Yes	No
KY-03-01-NGRS-10	1	Yes	60.9	60.8	No	55.5	Yes	No
KY-03-01-RICA-01	1	No	60.7	60.9	No	60.7	No	No
KY-03-02-BARD-01	1	No	57.6	58.0	No	54.1	No	No
KY-03-02-BARD-02	1	No	57.4	57.7	No	54.1	No	No
KY-03-02-ELKA-01	1	No	57.1	57.5	No	56.9	No	No
KY-03-02-ELKA-02	2	No	58.3	58.6	No	58.2	No	No
KY-03-02-ELKA-03	2	No	59.4	59.6	No	59.3	No	No
KY-03-02-ELKA-04	2	No	60.8	60.9	No	60.7	No	No
KY-03-02-ELKA-05	2	Yes	62.0	62.0	No	61.8	No	No
KY-03-02-HIYD-01	1	No	57.5	56.9	No	55.1	No	No
KY-03-02-HIYD-02	1	No	57.6	57.0	No	54.8	No	No
KY-03-02-NGRS-01	12	Yes	62.8	58.2	No	54.6	No	No
KY-03-02-NGRS-02	12	Yes	62.3	56.4	No	54.4	No	No
KY-03-02-RICA-01	1	Yes	63.1	63.1	No	63.1	No	No
KY-03-02-RICA-02	1	No	65.6	65.0	No	65.0	No	No

TABLE 23: BARRIER RESULTS FOR WEST 1 – ELM STREET (TOLL I-69 ONLY)

Table 23: West 1 - Elm Street (Toll I-69 Only)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-01-CANL-01	1	Yes	57.9	66.6	Yes	58.0	Yes	Yes
KY-02-01-CANL-02	2	No	60.7	63.6	No	56.4	Yes	No
KY-02-01-CANL-03	1	No	62.4	62.0	No	55.8	Yes	No
KY-02-01-HARL-01	1	Yes	59.9	66.1	Yes	57.1	Yes	Yes
KY-02-01-HARL-02	1	No	62.5	64.3	No	56.4	Yes	No
KY-02-01-HARL-03	1	No	66.6	63.4	No	55.8	Yes	No
KY-02-01-HARL-04	1	No	50.8	62.0	Yes	55.1	Yes	No
KY-02-01-HARL-05	1	No	51.4	59.6	No	53.9	Yes	No
KY-02-01-NPAD-01	1	No	64.9	59.2	No	57.2	Yes	No
KY-02-01-NPAD-02	1	No	55.0	59.9	No	56.5	Yes	No
KY-02-01-NPAD-03	1	No	68.2	59.7	No	55.8	Yes	No
KY-02-01-NPAD-04	1	No	40.5	60.1	Yes	54.9	Yes	No
KY-02-01-NPAD-05	1	No	66.3	60.0	No	54.4	Yes	No
KY-02-01-NPAD-06	4	No	64.6	59.1	No	53.8	Yes	No
KY-02-01-NPAD-07	4	No	63.6	59.7	No	54.1	Yes	No
KY-02-01-NPAD-08	4	No	63.2	60.4	No	54.5	Yes	No
KY-02-01-NPAD-09	4	No	63.0	61.0	No	54.7	Yes	No
KY-02-01-NPAD-10	4	No	56.7	61.5	No	54.9	Yes	No
KY-02-01-NPAD-11	4	No	58.5	61.6	No	55.0	Yes	No
KY-02-01-RETR-02	1	Yes	61.4	66.3	Yes	58.5	Yes	Yes
KY-02-01-RETR-03	1	No	52.2	65.6	Yes	58.3	Yes	No
KY-02-01-RETR-04	1	No	60.4	64.4	No	57.7	Yes	No
KY-02-01-RETR-05	1	No	61.4	63.5	No	57.4	Yes	No
KY-02-01-RETR-06	1	No	63.4	61.9	No	56.9	Yes	No
KY-02-01-RETR-07	1	No	65.0	61.1	No	57.1	Yes	No
KY-02-01-ROBR-01	1	Yes	57.8	66.3	Yes	57.6	Yes	Yes
KY-02-01-ROBR-03	1	No	61.0	63.4	No	55.8	Yes	No
KY-02-01-ROBR-04	1	No	62.7	61.7	No	55.1	Yes	No
KY-02-02-CANL-01	1	Yes	57.9	66.9	Yes	58.6	Yes	Yes
KY-02-02-CANL-02	1	No	59.9	64.7	No	57.5	Yes	No
KY-02-02-CANL-03	1	No	61.8	62.7	No	56.8	Yes	No
KY-02-02-CANL-04	1	No	64.1	61.3	No	56.2	Yes	No
KY-02-02-HARL-01	1	Yes	58.0	66.6	Yes	57.4	Yes	Yes
KY-02-02-HARL-02	1	No	59.4	64.8	No	56.7	Yes	No
KY-02-02-HARL-03	1	No	60.3	64.1	No	56.1	Yes	No
KY-02-02-HARL-04	1	No	61.4	63.2	No	55.7	Yes	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-02-HARL-05	1	No	63.6	61.0	No	54.7	Yes	No
KY-02-02-HARL-06	1	No	67.4	59.3	No	53.9	Yes	No
KY-02-02-NELS-01	1	Yes	62.8	58.9	No	55.2	Yes	No
KY-02-02-NELS-02	1	Yes	62.2	61.0	No	55.4	Yes	No
KY-02-02-NELS-03	1	Yes	61.9	62.4	No	56.0	Yes	No
KY-02-02-NELS-04	1	Yes	60.3	63.6	No	56.0	Yes	Yes
KY-02-02-NELS-05	1	Yes	61.4	62.9	No	55.5	Yes	Yes
KY-02-02-NELS-06	1	Yes	59.7	63.9	No	56.1	Yes	Yes
KY-02-02-NELS-07	1	Yes	60.5	64.1	No	55.9	Yes	Yes
KY-02-02-NELS-08	1	Yes	60.8	63.6	No	56.0	Yes	Yes
KY-02-02-RETR-01	1	Yes	58.6	67.4	Yes	60.9	Yes	Yes
KY-02-02-RETR-02	1	No	60.0	65.6	No	60.1	Yes	No
KY-02-02-RETR-03	1	No	61.2	64.3	No	59.3	Yes	No
KY-02-02-RETR-04	1	No	62.1	63.3	No	59.3	Yes	No
KY-02-02-RETR-05	1	No	64.0	61.7	No	57.9	Yes	No
KY-02-02-RETR-06	1	No	66.4	60.7	No	57.4	Yes	No
KY-02-02-ROBR-01	1	Yes	57.6	66.8	Yes	57.9	Yes	Yes
KY-02-02-ROBR-02	1	No	59.2	65.3	No	57.0	Yes	No
KY-02-02-ROBR-03	1	No	60.8	63.4	No	56.2	Yes	No
KY-02-02-ROBR-04	1	No	62.8	61.7	No	55.5	Yes	No

TABLE 24: BARRIER RESULTS FOR WEST 1 – SUNSET LANE (TOLL I-69 ONLY)

Table 24: West 1 - Sunset Lane (Toll I-69 Only)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-01-BARR-01	1	No	51.1	57.1	No	53.4	No	No
KY-02-01-BARR-02	1	Yes	53.1	59.1	No	55.1	No	No
KY-02-01-BARR-03	1	Yes	53.8	59.6	No	55.6	No	No
KY-02-01-CAMC-01	2	No	51.1	62.3	Yes	55.0	Yes	No
KY-02-01-CAMC-03	1	No	50.7	60.8	Yes	54.3	Yes	No
KY-02-01-CAMD-01	1	No	49.9	60.3	Yes	53.5	Yes	No
KY-02-01-CAMD-02	1	No	50.6	61.9	Yes	54.5	Yes	No
KY-02-01-CAMD-03	1	No	51.3	63.5	Yes	55.9	Yes	No
KY-02-01-CAMD-04	1	Yes	52.0	64.9	Yes	56.6	Yes	Yes
KY-02-01-DOND-01	1	No	53.9	58.6	No	52.2	Yes	No
KY-02-01-JAMD-01	1	No	52.4	57.1	No	52.3	No	No
KY-02-01-JAMD-02	1	No	50.8	58.1	No	53.1	Yes	No
KY-02-01-JAMD-03	1	No	50.7	59.2	No	53.8	Yes	No
KY-02-01-JOHD-01	2	No	50.6	57.9	No	52.2	Yes	No
KY-02-01-JOHD-02	1	No	50.3	58.1	No	52.2	Yes	No
KY-02-01-JOHD-03	1	No	50.3	58.1	No	52.1	Yes	No
KY-02-01-JOHD-04	1	No	39.3	57.9	Yes	52.0	Yes	No
KY-02-01-JOHD-05	1	No	50.2	58.4	No	52.2	Yes	No
KY-02-01-JOHD-06	1	No	50.3	58.6	No	52.1	Yes	No
KY-02-01-JOHD-07	1	No	50.2	59.6	No	52.8	Yes	No
KY-02-01-JOHD-09	1	No	49.8	60.3	Yes	53.2	Yes	No
KY-02-01-LOCD-01	1	No	50.3	59.2	No	52.7	Yes	No
KY-02-01-LOCD-02	1	No	50.9	59.3	No	53.1	Yes	No
KY-02-01-LOCD-03	1	No	53.2	59.9	No	53.6	Yes	No
KY-02-01-LOCD-04	1	No	55.5	59.4	No	54.2	Yes	No
KY-02-01-NELS-01	1	Yes	56.6	64.5	No	58.6	Yes	Yes
KY-02-01-NELS-02	1	Yes	64.9	65.1	No	58.6	Yes	Yes
KY-02-01-NELS-03	1	Yes	65.9	67.6	No	60.0	Yes	Yes
KY-02-01-RICL-01	1	No	51.6	60.4	No	54.9	Yes	No
KY-02-01-ROOD-01	1	No	50.2	59.3	No	53.5	Yes	No
KY-02-01-ROOD-02	1	No	50.6	60.1	Yes	53.8	Yes	No
KY-02-01-ROOD-03	1	No	51.9	62.4	Yes	55.9	Yes	No
KY-02-01-ROOD-04	1	No	52.6	63.1	Yes	56.8	Yes	No
KY-02-01-ROOD-05	1	Yes	53.6	65.6	Yes	58.9	Yes	Yes
KY-02-01-SHEP-01	1	No	51.0	57.7	No	55.6	No	No
KY-02-01-SHEP-02	2	No	51.0	57.7	No	55.5	No	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-01-SHEP-03	2	No	51.0	57.7	No	55.3	No	No
KY-02-01-SHEP-04	2	No	51.1	57.6	No	55.1	No	No
KY-02-01-SHEP-05	1	No	51.0	57.6	No	54.9	No	No
KY-02-01-SPRD-01	1	No	50.8	57.4	No	54.4	No	No
KY-02-01-SPRD-02	1	No	51.2	58.1	No	55.0	No	No
KY-02-01-SPRD-03	1	No	51.7	58.7	No	55.3	No	No
KY-02-01-SPRD-04	1	No	52.4	59.5	No	55.5	No	No
KY-02-01-SPRD-05	1	No	53.0	60.0	No	55.6	No	No
KY-02-01-SPRD-06	1	No	53.9	61.2	No	55.4	Yes	No
KY-02-01-SPRR-01	1	No	51.5	57.6	No	53.8	No	No
KY-02-01-SPRR-02	1	No	51.3	57.3	No	53.6	No	No
KY-02-01-SPRR-03	1	No	51.6	57.7	No	53.8	No	No
KY-02-01-SPRWD-01	1	No	49.6	59.4	No	52.6	Yes	No
KY-02-01-SPRWD-02	1	No	50.8	61.8	Yes	54.3	Yes	No
KY-02-01-SPRWD-03	1	No	51.5	63.8	Yes	55.7	Yes	No
KY-02-01-SPRWD-04	1	Yes	52.3	65.3	Yes	56.7	Yes	Yes
KY-02-01-VILD-01	1	No	50.7	59.0	No	53.9	Yes	No
KY-02-01-VILD-02	1	No	51.5	60.0	No	54.7	Yes	No
KY-02-01-VILD-03	1	No	52.1	60.8	No	55.4	Yes	No
KY-02-01-VILD-04	1	No	52.8	61.7	No	56.1	Yes	No
KY-02-01-VILD-05	1	No	53.3	62.6	No	56.6	Yes	No
KY-02-01-VILD-06	2	No	53.9	63.6	No	57.3	Yes	No
KY-02-01-WILD-01	1	No	53.0	60.9	No	58.9	No	No
KY-02-01-WILD-02	1	No	52.2	59.6	No	57.5	No	No
KY-02-01-WILD-03	1	No	51.8	59.1	No	56.8	No	No
KY-02-01-WILD-04	1	No	51.9	59.3	No	56.7	No	No
KY-02-01-WILD-05	1	No	51.8	59.0	No	56.2	No	No
KY-02-02-BARR-01	1	No	51.1	57.2	No	52.9	No	No
KY-02-02-BARR-02	1	No	51.7	58.2	No	53.6	No	No
KY-02-02-CAMC-01	1	Yes	52.9	63.6	Yes	57.3	Yes	Yes
KY-02-02-CAMC-02	1	Yes	52.4	63.0	Yes	56.4	Yes	Yes
KY-02-02-CAMD-01	4	No	50.5	61.0	Yes	54.2	Yes	No
KY-02-02-CAMD-02	1	No	52.0	63.7	Yes	56.3	Yes	No
KY-02-02-CAMD-03	1	Yes	52.8	64.1	Yes	57.6	Yes	Yes
KY-02-02-DOND-01	1	No	49.7	59.1	No	52.4	Yes	No
KY-02-02-DOND-02	1	No	50.8	61.5	Yes	54.0	Yes	No
KY-02-02-DOND-03	1	Yes	51.8	63.6	Yes	55.5	Yes	Yes
KY-02-02-DOND-04	1	Yes	52.4	65.1	Yes	56.5	Yes	Yes

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-02-JAMD-01	1	Yes	54.3	60.1	No	56.3	No	No
KY-02-02-JAMD-02	1	Yes	54.2	60.6	No	55.5	Yes	No
KY-02-02-JAMD-03	1	Yes	54.9	54.8	No	50.2	No	No
KY-02-02-JAMD-04	1	Yes	54.7	55.8	No	50.7	Yes	No
KY-02-02-JAMD-05	1	Yes	54.3	57.4	No	53.5	No	No
KY-02-02-JAMD-06	1	Yes	53.9	61.4	No	54.0	Yes	No
KY-02-02-JAMD-07	1	No	52.6	60.4	No	53.6	Yes	No
KY-02-02-JAMD-08	1	No	51.9	59.0	No	53.1	Yes	No
KY-02-02-JAMD-09	1	No	50.4	57.2	No	51.9	Yes	No
KY-02-02-JOHD-01	1	Yes	52.9	61.3	No	54.1	Yes	Yes
KY-02-02-JOHD-02	1	Yes	53.2	61.5	No	54.4	Yes	Yes
KY-02-02-JOHD-03	2	Yes	53.0	61.8	No	54.7	Yes	Yes
KY-02-02-JOHD-05	1	Yes	52.4	61.9	No	54.8	Yes	Yes
KY-02-02-JOHD-06	2	Yes	51.7	61.5	No	54.2	Yes	Yes
KY-02-02-JOHD-07	1	Yes	52.1	61.0	No	53.9	Yes	Yes
KY-02-02-JOHD-08	1	Yes	51.3	62.2	Yes	54.8	Yes	Yes
KY-02-02-JOHD-09	1	Yes	51.1	61.4	Yes	54.2	Yes	Yes
KY-02-02-ROOD-01	1	No	50.9	59.6	No	54.1	Yes	No
KY-02-02-ROOD-02	1	No	51.1	60.4	No	54.5	Yes	No
KY-02-02-ROOD-03	1	No	51.8	61.3	No	55.3	Yes	No
KY-02-02-ROOD-04	1	No	52.9	62.9	Yes	56.7	Yes	No
KY-02-02-ROOD-05	1	Yes	53.8	65.1	Yes	58.5	Yes	Yes
KY-02-02-SPRD-01	1	Yes	51.5	57.8	No	54.0	No	No
KY-02-02-SPRR-01	1	Yes	53.3	59.7	No	54.7	Yes	No
KY-02-02-SPRR-02	1	Yes	53.6	59.9	No	54.8	Yes	No
KY-02-02-SPRR-03	1	Yes	53.3	59.5	No	54.8	No	No
KY-02-02-SPRR-04	1	Yes	53.4	59.5	No	54.8	No	No
KY-02-02-SPRR-05	1	Yes	53.4	59.4	No	55.2	No	No
KY-02-02-SPRWD-01	1	No	49.5	59.2	No	52.7	Yes	No
KY-02-02-SPRWD-02	1	No	49.9	60.4	Yes	53.3	Yes	No
KY-02-02-SPRWD-03	1	No	50.3	61.2	Yes	53.9	Yes	No
KY-02-02-SPRWD-04	1	No	51.0	62.9	Yes	55.3	Yes	No
KY-02-02-SPRWD-05	1	Yes	51.8	64.7	Yes	56.5	Yes	Yes
KY-02-02-VILD-01	1	No	51.3	59.4	No	54.4	Yes	No
KY-02-02-VILD-02	1	No	51.9	60.1	No	55.0	Yes	No
KY-02-02-VILD-03	1	No	52.7	61.2	No	55.8	Yes	No
KY-02-02-VILD-04	1	No	53.5	62.4	No	56.6	Yes	No
KY-02-02-VILD-05	1	No	54.2	63.5	No	57.3	Yes	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-02-VILD-06	1	No	54.9	64.8	No	57.9	Yes	No
KY-02-02-VILD-07	1	No	56.1	67.3	Yes	58.9	Yes	No
KY-02-02-VILD-08	1	Yes	56.8	69.4	Yes	59.0	Yes	Yes
KY-02-02-WATL-01	3	No	51.4	58.3	No	56.5	No	No
KY-02-02-WATL-02	3	No	51.4	58.3	No	56.7	No	No
KY-02-02-WATL-03	1	No	55.3	62.3	No	61.1	No	No
KY-02-02-WILD-01	1	Yes	55.9	65.9	Yes	63.8	No	No
KY-02-02-WILD-02	1	Yes	54.5	64.5	Yes	60.7	No	No
KY-02-02-WILD-03	1	Yes	54.0	63.2	No	59.4	No	No
KY-02-02-WILD-04	1	Yes	53.9	62.8	No	58.7	No	No
KY-02-02-WILD-05	1	Yes	54.2	62.6	No	57.6	Yes	No
KY-02-02-WILD-06	1	Yes	53.8	61.7	No	56.9	No	No
KY-02-02-WILD-07	1	No	53.0	60.4	No	56.5	No	No

TABLE 25: BARRIER RESULTS FOR WEST 2 – RICHARDSON AVENUE

Table 25: West 2 - Richardson Avenue

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-03-01-HERA-02	1	No	64.6	65.1	No	65.0	No	No
KY-03-01-HERA-03	1	No	62.5	63.0	No	63.0	No	No
KY-03-01-HERA-04	1	No	61.4	61.9	No	61.9	No	No
KY-03-01-HERA-05	1	No	60.2	60.9	No	60.8	No	No
KY-03-01-HERA-06	1	No	57.8	59.1	No	59.0	No	No
KY-03-01-HERA-07	1	No	56.6	58.1	No	57.9	No	No
KY-03-01-HERA-08	1	No	55.8	57.7	No	57.4	No	No
KY-03-01-HERA-09	1	No	54.9	57.1	No	56.8	No	No
KY-03-01-KIML-02	12	Yes	60.8	63.3	No	56.3	Yes	Yes
KY-03-01-KIML-03	12	Yes	64.4	66.8	Yes	59.3	Yes	Yes
KY-03-01-KIML-05	5	Yes	59.5	61.1	No	55.0	Yes	No
KY-03-01-KIML-06	5	Yes	58.6	60.9	No	54.9	Yes	No
KY-03-01-KIML-07	5	Yes	60.7	63.0	No	55.9	Yes	Yes
KY-03-01-KIML-08	5	Yes	61.2	63.0	No	55.7	Yes	Yes
KY-03-01-KIML-11	25	Yes	64.6	62.2	No	55.5	Yes	No
KY-03-01-RICA-02	1	Yes	54.3	58.2	No	57.7	No	No
KY-03-01-RICA-03	1	Yes	54.0	58.1	No	57.4	No	No
KY-03-01-RICA-04	1	Yes	54.0	58.1	No	57.3	No	No
KY-03-01-RICA-05	1	Yes	54.2	58.3	No	57.2	No	No
KY-03-01-RICA-06	1	Yes	54.5	58.5	No	57.2	No	No
KY-03-01-RICA-07	1	Yes	55.1	58.6	No	57.0	No	No
KY-03-01-RICA-08	2	Yes	55.5	58.8	No	56.9	No	No
KY-03-01-RICA-10	1	Yes	56.3	59.2	No	56.9	No	No
KY-03-01-RICA-11	1	No	56.3	57.7	No	54.1	No	No
KY-03-01-RICA-12	1	Yes	57.1	59.6	No	56.8	No	No
KY-03-01-RICA-13	1	No	54.8	56.8	No	53.7	No	No
KY-03-01-VAL4-AA	9	Yes	61.3	63.3	No	54.0	Yes	Yes
KY-03-02-RICA-03	1	No	53.9	57.3	No	56.6	No	No
KY-03-02-RICA-04	1	No	53.7	57.0	No	56.3	No	No
KY-03-02-RICA-05	1	No	53.4	57.0	No	56.1	No	No
KY-03-02-RICA-06	1	No	53.4	56.9	No	55.8	No	No
KY-03-02-RICA-07	1	No	53.5	57.0	No	55.7	No	No
KY-03-02-RICA-08	1	No	53.7	57.0	No	55.5	No	No
KY-03-02-RICA-09	1	No	54.1	57.1	No	55.3	No	No
KY-03-02-RICA-10	1	No	54.3	57.2	No	55.2	No	No
KY-03-02-RICA-11	1	No	54.9	57.3	No	54.6	No	No

TABLE 26: BARRIER RESULTS FOR WEST 2 – NORTH GREEN STREET

Table 26: West 2 - North Green Street

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-02-NELS-19	5	Yes	66.2	67.6	Yes	59.5	Yes	Yes
KY-02-02-NELS-20	5	No	64.5	66.1	Yes	60.1	Yes	No
KY-02-02-NELS-21	5	No	62.5	64.4	No	59.9	No	No
KY-02-02-NELS-22	5	No	60.8	63.2	No	58.9	No	No
KY-02-02-NELS-23	5	No	59.3	61.9	No	58.2	No	No
KY-02-02-NELS-24	5	No	58.2	60.9	No	57.7	No	No
KY-03-01-BARD-02	1	No	59.1	61.0	No	56.9	No	No
KY-03-01-BARD-03	1	No	59.9	61.6	No	56.7	No	No
KY-03-01-BARD-04	2	No	59.6	61.3	No	56.1	Yes	No
KY-03-01-BARD-05	2	No	59.3	60.9	No	55.7	Yes	No
KY-03-01-ELKA-01	1	No	56.6	58.2	No	54.7	No	No
KY-03-01-ELKA-02	1	No	58.3	59.6	No	55.5	No	No
KY-03-01-ELKA-03	1	No	59.2	60.2	No	55.8	No	No
KY-03-01-ELKA-04	1	Yes	60.4	61.2	No	56.2	Yes	No
KY-03-01-HERA-01	1	No	66.7	66.6	Yes	66.3	No	No
KY-03-01-HIYD-01	2	No	57.0	59.1	No	55.1	No	No
KY-03-01-NELS-01	1	Yes	62.6	63.6	No	60.7	No	No
KY-03-01-NGRS-01	2	Yes	58.3	63.0	No	57.2	Yes	No
KY-03-01-NGRS-02	1	Yes	61.7	60.9	No	55.2	Yes	No
KY-03-01-NGRS-03	1	Yes	59.2	60.3	No	54.9	Yes	No
KY-03-01-NGRS-04	1	Yes	58.6	59.7	No	54.5	Yes	No
KY-03-01-NGRS-05	1	Yes	58.1	59.8	No	54.7	Yes	No
KY-03-01-NGRS-06	1	Yes	60.2	61.3	No	55.9	Yes	No
KY-03-01-NGRS-07	2	Yes	60.8	61.8	No	56.1	Yes	No
KY-03-01-NGRS-08	1	No	58.8	60.0	No	55.3	No	No
KY-03-01-NGRS-09	1	Yes	60.5	62.2	No	56.4	Yes	No
KY-03-01-NGRS-10	1	Yes	60.9	61.9	No	56.1	Yes	No
KY-03-01-RICA-01	1	Yes	60.7	61.2	No	59.5	No	No
KY-03-02-BARD-01	1	No	57.6	59.6	No	55.9	No	No
KY-03-02-BARD-02	1	No	57.4	59.4	No	55.3	No	No
KY-03-02-ELKA-01	1	No	57.1	58.2	No	55.8	No	No
KY-03-02-ELKA-02	2	No	58.3	59.2	No	56.6	No	No
KY-03-02-ELKA-03	2	No	59.4	60.2	No	57.3	No	No
KY-03-02-ELKA-04	2	No	60.8	61.4	No	58.2	No	No
KY-03-02-ELKA-05	2	Yes	62.0	62.5	No	58.6	No	No
KY-03-02-HIYD-01	1	No	57.5	59.2	No	54.6	No	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-03-02-HIYD-02	1	No	57.6	59.4	No	54.6	No	No
KY-03-02-NGRS-01	12	Yes	62.8	63.2	No	55.4	Yes	Yes
KY-03-02-NGRS-02	12	Yes	62.3	61.7	No	54.7	Yes	Yes
KY-03-02-RICA-01	1	No	63.1	63.4	No	62.6	No	No
KY-03-02-RICA-02	1	No	65.6	65.5	No	64.6	No	No

TABLE 27: BARRIER RESULTS FOR WEST 2 – ELM STREET

Table 27: West 2 - Elm Street

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
A5	1	No	50.1	54.2	No	51.9	No	No
KY-02-01-CANL-01	1	No	57.9	62.4	No	58.0	No	No
KY-02-01-CANL-02	1	No	60.7	64.8	No	59.2	Yes	No
KY-02-01-CANL-03	1	Yes	62.4	66.7	Yes	59.3	Yes	Yes
KY-02-01-CATD-01	1	No	47.8	62.0	Yes	61.9	No	No
KY-02-01-CATD-02	1	No	47.8	61.7	Yes	61.6	No	No
KY-02-01-CATD-03	1	No	47.8	61.8	Yes	61.7	No	No
KY-02-01-CATD-04	1	No	47.8	61.6	Yes	61.5	No	No
KY-02-01-CATD-05	1	No	47.8	61.5	Yes	61.4	No	No
KY-02-01-CATD-06	1	No	47.8	61.2	Yes	61.0	No	No
KY-02-01-FRYD-01	1	No	47.8	60.7	Yes	60.4	No	No
KY-02-01-FRYD-02	1	No	47.8	60.4	Yes	60.1	No	No
KY-02-01-FRYD-03	1	No	47.8	60.2	Yes	59.8	No	No
KY-02-01-FRYD-04	1	No	47.8	59.8	Yes	59.3	No	No
KY-02-01-FRYD-05	1	No	47.8	59.7	Yes	59.0	No	No
KY-02-01-HARL-01	1	No	59.9	64.3	No	59.2	Yes	No
KY-02-01-HARL-02	1	Yes	62.5	65.9	No	60.0	Yes	No
KY-02-01-HARL-03	1	Yes	66.6	67.3	Yes	60.9	Yes	No
KY-02-01-HARL-04	1	Yes	50.8	70.0	Yes	61.7	Yes	Yes
KY-02-01-NELS-05	1	Yes	58.3	63.8	No	63.8	No	No
KY-02-01-NELS-06	1	Yes	58.3	63.8	No	63.7	No	No
KY-02-01-NELS-07	1	Yes	58.2	63.7	No	63.6	No	No
KY-02-01-NELS-08	1	Yes	58.3	63.6	No	63.6	No	No
KY-02-01-NELS-09	1	Yes	58.2	63.4	No	63.4	No	No
KY-02-01-NELS-10	1	Yes	58.2	63.4	No	63.3	No	No
KY-02-01-NELS-11	1	Yes	58.8	63.3	No	63.2	No	No
KY-02-01-NELS-12	1	Yes	58.4	62.9	No	62.7	No	No
KY-02-01-NELS-13	1	Yes	58.8	62.7	No	62.5	No	No
KY-02-01-NELS-14	1	Yes	58.5	62.2	No	61.8	No	No
KY-02-01-NELS-15	1	Yes	60.2	64.1	No	63.8	No	No
KY-02-01-NELS-16	1	Yes	58.9	62.4	No	61.7	No	No
KY-02-01-NELS-17	1	Yes	59.3	62.6	No	61.2	No	No
KY-02-01-NELS-18	1	No	58.1	61.8	No	58.7	No	No
KY-02-01-NELS-19	1	No	57.8	61.8	No	57.8	No	No
KY-02-01-NELS-20	1	No	57.6	61.8	No	57.5	No	No
KY-02-01-NELS-21	1	No	57.2	61.3	No	56.7	No	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-01-NELS-22	1	No	58.2	63.2	No	57.6	Yes	No
KY-02-01-NELS-23	1	No	57.8	63.0	No	57.2	Yes	No
KY-02-01-NELS-24	1	No	57.2	62.4	No	57.1	Yes	No
KY-02-01-NELS-25	1	No	57.3	62.6	No	57.3	Yes	No
KY-02-01-NELS-26	1	No	57.1	62.6	No	57.4	Yes	No
KY-02-01-NELS-27	1	No	56.9	62.5	No	57.5	Yes	No
KY-02-01-NELS-28	1	No	56.6	62.4	No	57.9	No	No
KY-02-01-NELS-29	1	No	56.5	62.1	No	58.1	No	No
KY-02-01-NELS-30	1	No	55.3	61.2	No	57.6	No	No
KY-02-01-NELS-31	1	No	56.2	61.8	No	58.1	No	No
KY-02-01-NELS-32	1	No	55.9	61.2	No	57.7	No	No
KY-02-01-NELS-33	1	No	55.6	60.6	No	57.3	No	No
KY-02-01-RETR-01	1	No	59.3	61.1	No	56.2	No	No
KY-02-01-RETR-02	1	No	61.4	62.5	No	57.1	Yes	No
KY-02-01-RETR-03	1	No	52.2	63.2	Yes	57.2	Yes	No
KY-02-01-RETR-04	1	No	60.4	64.0	No	57.3	Yes	No
KY-02-01-RETR-05	1	Yes	61.4	65.0	No	57.7	Yes	Yes
KY-02-01-ROBR-01	1	No	57.8	62.8	No	59.0	No	No
KY-02-01-ROBR-02	1	No	59.6	64.5	No	60.3	No	No
KY-02-01-ROBR-03	1	No	61.0	66.1	Yes	61.0	Yes	No
KY-02-01-ROBR-04	1	Yes	62.7	68.7	Yes	61.0	Yes	Yes
KY-02-02-CANL-01	1	No	57.9	62.0	No	57.0	Yes	No
KY-02-02-CANL-02	1	No	59.9	63.7	No	57.5	Yes	No
KY-02-02-CANL-03	1	Yes	61.8	65.4	No	58.1	Yes	Yes
KY-02-02-FRYD-01	1	No	57.6	62.3	No	62.1	No	No
KY-02-02-FRYD-02	1	No	57.1	61.7	No	61.4	No	No
KY-02-02-FRYD-03	1	No	57.1	61.2	No	60.8	No	No
KY-02-02-FRYD-04	1	No	57.4	61.1	No	60.5	No	No
KY-02-02-FRYD-05	1	No	57.1	60.8	No	59.9	No	No
KY-02-02-FRYD-06	1	No	57.3	60.7	No	59.2	No	No
KY-02-02-HARL-01	1	No	58.0	63.4	No	59.0	No	No
KY-02-02-HARL-02	1	No	59.4	64.7	No	60.1	No	No
KY-02-02-HARL-03	1	No	60.3	66.0	Yes	60.8	Yes	No
KY-02-02-HARL-04	1	No	61.4	67.3	Yes	61.4	Yes	No
KY-02-02-HARL-05	1	Yes	63.6	70.5	Yes	61.7	Yes	Yes
KY-02-02-NELS-01	1	Yes	62.8	67.4	Yes	59.7	Yes	Yes
KY-02-02-NELS-02	1	Yes	62.2	67.1	No	58.6	Yes	Yes
KY-02-02-NELS-03	1	Yes	61.9	67.0	Yes	58.0	Yes	Yes

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-02-NELS-04	1	Yes	60.3	64.6	No	57.5	Yes	Yes
KY-02-02-NELS-05	1	Yes	61.4	66.5	Yes	58.3	Yes	Yes
KY-02-02-NELS-06	1	Yes	59.7	64.8	No	57.8	Yes	Yes
KY-02-02-NELS-07	1	Yes	60.5	66.0	Yes	58.8	Yes	Yes
KY-02-02-NELS-08	1	Yes	60.8	66.8	Yes	59.6	Yes	Yes
KY-02-02-NELS-27	1	No	57.2	61.5	No	56.5	Yes	No
KY-02-02-NELS-28	1	No	57.5	62.0	No	56.9	Yes	No
KY-02-02-NELS-29	1	Yes	57.2	61.9	No	56.9	Yes	No
KY-02-02-NELS-30	1	Yes	56.8	61.4	No	56.8	No	No
KY-02-02-NELS-31	1	Yes	57.8	62.4	No	57.2	Yes	No
KY-02-02-NELS-32	1	Yes	57.8	62.4	No	57.3	Yes	No
KY-02-02-NELS-33	1	Yes	57.6	62.3	No	57.5	No	No
KY-02-02-NELS-34	1	No	57.8	62.6	No	57.8	No	No
KY-02-02-NELS-35	1	No	58.6	63.8	No	58.6	Yes	No
KY-02-02-NELS-36	1	Yes	60.4	65.2	No	58.6	Yes	No
KY-02-02-NELS-37	1	No	59.6	64.5	No	58.4	Yes	No
KY-02-02-NELS-38	1	Yes	59.3	64.5	No	58.9	Yes	No
KY-02-02-NELS-39	1	No	58.5	63.6	No	58.6	Yes	No
KY-02-02-NELS-40	1	Yes	61.1	67.1	Yes	61.1	Yes	No
KY-02-02-NELS-41	1	Yes	61.8	69.1	Yes	64.0	Yes	No
KY-02-02-RETR-01	1	No	58.6	62.6	No	57.0	Yes	No
KY-02-02-RETR-02	1	No	60.0	63.7	No	57.4	Yes	No
KY-02-02-ROBR-01	1	No	57.6	62.2	No	58.4	No	No
KY-02-02-ROBR-02	1	No	59.2	63.6	No	59.0	No	No
KY-02-02-ROBR-03	1	No	60.8	65.1	No	59.8	Yes	No
KY-02-02-ROBR-04	1	Yes	62.8	67.4	Yes	60.0	Yes	Yes

TABLE 28: BARRIER RESULTS FOR WEST 2 – SUNSET MOBILE HOME PARK

Table 28: West 2 - Sunset Mobile Home Park

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
A10	1	No	49.9	60.8	Yes	59.3	No	No
KY-02-01-CBTP-10	1	No	49.9	61.1	Yes	58.0	No	No
KY-02-01-CBTP-11	1	No	49.9	61.7	Yes	58.6	No	No
KY-02-01-CBTP-12	1	No	49.9	62.2	Yes	59.1	No	No
KY-02-01-CBTP-13	1	No	57.5	62.5	No	59.4	No	No
KY-02-01-CBTP-14	1	No	58.1	63.0	No	60.0	No	No
KY-02-01-CBTP-15	1	No	58.3	62.8	No	60.8	No	No
KY-02-01-CBTP-16	1	No	57.5	62.2	No	60.6	No	No
KY-02-01-TP-06	1	No	60.5	65.6	No	59.0	Yes	No
KY-02-01-TP-07	1	Yes	61.9	66.9	Yes	59.0	Yes	Yes
KY-02-01-TP-08	1	Yes	61.7	66.7	Yes	58.7	Yes	Yes
KY-02-01-TP-09	1	Yes	61.8	67.0	Yes	58.9	Yes	Yes
KY-02-01-TP-16	1	No	49.9	61.3	Yes	57.4	No	No
KY-02-01-TP-17	1	No	49.9	61.8	Yes	57.7	No	No
KY-02-01-TP-18	1	No	57.7	62.5	No	58.0	No	No
KY-02-01-TP-19	1	No	58.3	63.3	No	58.3	Yes	No
KY-02-01-TP-20	1	No	58.9	63.9	No	58.6	Yes	No
KY-02-01-TP-21	1	No	59.5	64.5	No	58.9	Yes	No
KY-02-01-TP-22	1	No	49.9	61.3	Yes	57.5	No	No
KY-02-01-TP-23	1	No	49.9	61.9	Yes	57.8	No	No
KY-02-01-TP-24	1	No	57.4	62.5	No	58.0	No	No
KY-02-01-TP-25	1	No	58.2	63.4	No	58.3	Yes	No
KY-02-01-TP-26	1	No	58.9	64.0	No	58.5	Yes	No
KY-02-01-TP-27	1	No	59.4	64.6	No	58.7	Yes	No
KY-02-01-TP-28	1	No	60.3	65.7	No	58.8	Yes	No
KY-02-01-TP-29	1	No	49.9	61.7	Yes	57.9	No	No
KY-02-01-TP-30	1	No	49.9	62.2	Yes	58.0	No	No
KY-02-01-TP-31	1	No	57.5	62.6	No	58.2	No	No
KY-02-01-TP-32	1	No	58.2	63.5	No	58.5	Yes	No
KY-02-01-TP-33	1	No	58.8	64.1	No	58.7	Yes	No
KY-02-01-TP-34	1	No	59.4	64.8	No	58.8	Yes	No
KY-02-01-TP-35	1	No	60.2	65.8	No	58.9	Yes	No
KY-02-01-TP-36	1	No	49.9	61.7	Yes	58.2	No	No
KY-02-01-TP-37	1	No	49.9	62.5	Yes	58.7	No	No
KY-02-01-TP-38	1	Yes	58.2	63.5	No	59.2	No	No
KY-02-01-TP-39	1	Yes	59.2	64.2	No	59.7	No	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-01-TP-40	1	Yes	62.8	69.4	No	69.4	No	No
KY-02-01-TP-41	1	Yes	60.3	64.9	No	60.3	No	No
KY-02-01-TP-42	1	No	57.9	63.2	No	58.8	No	No
KY-02-01-TP-43	1	No	58.3	63.6	No	58.8	No	No
KY-02-01-TP-44	1	No	58.9	64.2	No	58.9	Yes	No
KY-02-01-TP-45	1	No	59.3	64.7	No	59.0	Yes	No
KY-02-01-TP-46	1	Yes	60.2	65.6	No	59.0	Yes	No
KY-02-01-TP-47	1	No	58.6	64.0	No	59.0	Yes	No
KY-02-01-TP-48	1	No	59.3	64.7	No	59.1	Yes	No
KY-02-01-TP-49	1	Yes	60.1	65.3	No	59.2	Yes	No
KY-02-02-STPD-04	1	No	56.3	61.7	No	61.2	No	No
KY-02-02-STPD-05	1	No	56.5	61.7	No	61.3	No	No
KY-02-02-STPD-06	1	No	56.9	61.9	No	61.6	No	No
KY-02-02-STPD-07	1	No	58.7	63.0	No	62.9	No	No

TABLE 29: BARRIER RESULTS FOR WEST 2 – SHADYTREE MOBILE HOME PARK

Table 29: West 2 - Shadytree Mobile Home Park

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-01-COLED-01	1	No	57.1	60.5	No	55.5	Yes	No
KY-02-01-COLED-02	1	No	57.4	60.8	No	55.5	Yes	No
KY-02-01-COLED-03	1	No	57.4	60.8	No	55.5	Yes	No
KY-02-01-COLED-04	1	No	57.5	61.0	No	55.5	Yes	No
KY-02-01-COLED-05	1	No	57.6	61.2	No	55.6	Yes	No
KY-02-01-COLED-06	1	No	57.6	61.1	No	55.6	Yes	No
KY-02-01-COLED-07	1	No	58.3	61.3	No	55.7	Yes	No
KY-02-01-COLED-08	1	No	58.5	61.5	No	56.0	Yes	No
KY-02-01-COLED-09	1	No	58.5	61.6	No	56.0	Yes	No
KY-02-01-COLED-10	1	No	58.4	61.5	No	56.2	Yes	No
KY-02-01-COLED-11	1	No	58.6	61.7	No	56.5	Yes	No
KY-02-01-COLED-12	1	No	58.7	61.7	No	56.5	Yes	No
KY-02-01-COLED-13	1	No	59.2	62.3	No	56.8	Yes	No
KY-02-01-COLED-14	1	No	59.8	63.1	No	56.9	Yes	No
KY-02-01-COLED-15	1	No	60.4	64.2	No	57.4	Yes	No
KY-02-01-COLED-16	1	No	61.1	65.1	No	57.7	Yes	No
KY-02-01-COLED-17	1	No	56.7	67.4	Yes	58.3	Yes	No
KY-02-01-COLED-18	1	Yes	55.7	69.1	Yes	58.7	Yes	Yes
KY-02-01-RTTP-01	1	No	61.2	65.8	No	57.5	Yes	No
KY-02-01-RTTP-02	1	No	61.5	66.4	Yes	57.7	Yes	No
KY-02-01-RTTP-03	1	No	62.7	68.1	Yes	58.0	Yes	No
KY-02-01-RTTP-04	1	No	63.6	69.3	Yes	58.7	Yes	No
KY-02-01-RTTP-05	1	No	64.7	70.6	Yes	58.7	Yes	Yes
KY-02-02-COLED-01	1	Yes	58.6	62.6	No	56.4	Yes	No
KY-02-02-COLED-02	1	Yes	58.9	62.9	No	56.5	Yes	No
KY-02-02-COLED-03	1	Yes	58.9	62.9	No	56.3	Yes	No
KY-02-02-COLED-04	1	Yes	58.8	62.9	No	56.2	Yes	No
KY-02-02-COLED-05	1	Yes	58.9	63.0	No	56.3	Yes	No
KY-02-02-COLED-06	1	Yes	59.0	63.2	No	56.6	Yes	No
KY-02-02-COLED-07	1	Yes	63.0	68.2	Yes	58.2	Yes	Yes
KY-02-02-MIMD-03	1	No	57.4	60.1	No	56.0	No	No
KY-02-02-RTTP-01	1	Yes	60.3	64.4	No	56.9	Yes	Yes
KY-02-02-RTTP-02	1	Yes	59.8	63.8	No	56.8	Yes	Yes
KY-02-02-RTTP-03	1	No	60.1	64.1	No	56.9	Yes	No
KY-02-02-RTTP-04	1	No	59.7	63.6	No	56.8	Yes	No
KY-02-02-RTTP-05	1	Yes	60.1	64.2	No	57.1	Yes	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-02-02-RTTP-06	1	No	60.8	65.3	No	57.6	Yes	No
KY-02-02-RTTP-07	1	No	62.0	67.0	Yes	58.0	Yes	No
KY-02-02-RTTP-08	1	Yes	63.8	69.2	Yes	59.2	Yes	Yes

TABLE 30: BARRIER RESULTS FOR US 41 (KY 351 TO KY 425) – SOUTH ARLINGTON DRIVE (ALL ALTERNATIVES, BOTH TOLLING SCENARIOS)

Table 30: US 41 (KY 351 to KY 425) - South Arlington Drive (All Alternatives, Both Tolling Scenarios)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-05-01-ARLC-01	1	Yes	67.9	72.4	Yes	62.2	Yes	Yes
KY-05-01-ARLC-02	1	No	62.2	67.3	Yes	61.6	Yes	No
KY-05-01-ARLD-07	1	Yes	54.9	58.3	No	56.5	No	No
KY-05-01-ARLD-08	1	Yes	58.3	63.5	No	56.0	Yes	Yes
KY-05-01-ARLD-09	1	Yes	58.2	63.9	No	56.8	Yes	Yes
KY-05-01-ARLD-10	1	Yes	59.0	64.7	No	57.9	Yes	No
KY-05-01-ARLD-11	1	Yes	60.5	66.2	Yes	59.6	Yes	No
KY-05-01-ARLD-12	1	Yes	62.5	68.0	Yes	60.4	Yes	Yes
KY-05-01-ARLD-13	1	Yes	64.0	69.4	Yes	61.4	Yes	Yes
KY-05-01-ARLD-14	1	Yes	65.3	70.7	Yes	62.7	Yes	Yes
KY-05-01-ARLD-15	1	Yes	69.3	74.2	Yes	64.4	Yes	Yes
KY-05-01-ARLD-16	1	Yes	71.3	75.9	Yes	66.8	Yes	Yes
KY-05-01-HCHA-01	1	No	51.6	56.7	No	53.2	No	No
KY-05-01-HCHA-02	1	No	54.1	59.1	No	54.8	No	No
KY-05-01-HCHA-03	1	No	56.2	61.0	No	57.1	No	No
KY-05-01-HCHA-04	1	No	57.9	62.9	No	59.3	No	No
KY-05-02-ARLD-11	1	No	51.4	55.8	No	53.6	No	No
KY-05-02-ARLD-12	1	Yes	52.1	56.7	No	53.5	No	No
KY-05-02-ARLD-13	1	Yes	53.1	57.9	No	53.9	No	No
KY-05-02-ARLD-14	1	Yes	53.7	58.7	No	54.2	No	No
KY-05-02-ARLD-15	1	Yes	54.0	59.1	No	54.7	No	No
KY-05-02-ARLD-16	1	No	54.6	59.8	No	54.8	Yes	No
KY-05-02-ARLD-17	1	No	54.9	60.3	No	54.9	Yes	No
KY-05-02-ARLD-18	1	No	55.6	60.9	No	55.2	Yes	No
KY-05-02-ARLD-19	1	No	55.9	61.2	No	55.6	Yes	No
KY-05-02-ARLD-20	1	No	56.1	61.4	No	55.8	Yes	No
KY-05-02-ARLD-21	1	No	57.2	62.6	No	56.7	Yes	No
KY-05-02-ARLD-22	1	No	57.7	63.1	No	57.5	Yes	No
KY-05-02-ARLD-23	1	No	58.7	64.0	No	58.3	Yes	No
KY-05-02-ARLD-24	1	No	59.5	64.7	No	59.5	Yes	No
KY-05-02-ARLD-25	1	No	60.9	66.0	Yes	60.7	Yes	No
KY-05-02-ARLD-26	1	No	61.5	66.5	Yes	61.2	Yes	No

TABLE 31: BARRIER RESULTS FOR US 41 (KY 351 TO KY 425) – MELWOOD DRIVE (ALL ALTERNATIVES, BOTH TOLLING SCENARIOS)

Table 31: US 41 (KY 351 to KY 425) - Melwood Drive (All Alternatives, Both Tolling Scenarios)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-05-01-ARLD-01	1	No	58.5	60.2	No	59.9	No	No
KY-05-01-ARLD-05	1	Yes	52.6	56.8	No	55.4	No	No
KY-05-01-ARLD-06	3	Yes	53.7	57.5	No	56.9	No	No
KY-05-01-ARLD-07	1	Yes	54.9	58.3	No	58.1	No	No
KY-05-01-GRED-01	2	Yes	65.3	72.5	Yes	62.6	Yes	Yes
KY-05-01-GRED-03	1	No	65.9	67.0	Yes	60.7	Yes	No
KY-05-01-GRED-04	1	No	61.2	65.6	No	60.2	Yes	No
KY-05-01-GRED-06	1	No	58.0	63.0	No	59.2	No	No
KY-05-01-GRED-07	2	No	57.0	61.9	No	58.6	No	No
KY-05-01-GRED-08	1	No	56.0	60.6	No	58.0	No	No
KY-05-01-GRED-09	1	No	55.5	60.0	No	57.7	No	No
KY-05-01-GRED-10	1	No	54.8	59.1	No	57.1	No	No
KY-05-01-GRED-11	1	No	54.4	58.6	No	56.7	No	No
KY-05-01-GRED-12	1	No	54.0	58.0	No	56.4	No	No
KY-05-01-GRED-13	1	No	53.6	57.4	No	56.1	No	No
KY-05-01-GRED-14	1	No	53.2	56.9	No	55.7	No	No
KY-05-01-LEXD-01	1	No	53.6	58.7	No	55.3	No	No
KY-05-01-LEXD-02	1	No	55.3	60.8	No	55.8	Yes	No
KY-05-01-MELP-01	1	Yes	65.9	69.0	Yes	62.4	Yes	No
KY-05-01-MELP-02	1	Yes	69.5	72.3	Yes	62.1	Yes	Yes
KY-05-01-MELP-03	1	Yes	68.7	72.2	Yes	61.7	Yes	Yes
KY-05-01-MELP-04	1	Yes	68.1	71.9	Yes	61.7	Yes	Yes
KY-05-01-MELP-05	1	Yes	67.6	71.8	Yes	61.9	Yes	Yes
KY-05-01-MELP-06	1	Yes	67.1	71.9	Yes	64.1	Yes	Yes
KY-05-01-MELP-07	1	Yes	66.4	71.7	Yes	62.7	Yes	Yes
KY-05-01-MELP-08	1	Yes	67.3	72.2	Yes	61.9	Yes	Yes
KY-05-01-MELP-09	1	Yes	67.5	72.3	Yes	61.5	Yes	Yes
KY-05-01-MELP-10	1	Yes	69.4	73.8	No	62.1	Yes	Yes
KY-05-01-MELP-11	1	Yes	69.6	73.8	Yes	62.4	Yes	Yes
KY-05-01-MELP-12	1	Yes	66.4	70.7	Yes	61.8	Yes	Yes
KY-05-01-MELP-13	1	Yes	64.6	69.1	Yes	61.6	Yes	Yes
KY-05-01-MELP-14	1	Yes	62.1	66.8	Yes	60.2	Yes	No
KY-05-01-MELP-15	1	Yes	59.4	64.7	No	58.5	Yes	No
KY-05-01-MELP-16	1	Yes	57.7	63.0	No	57.3	Yes	No
KY-05-01-MELP-17	1	Yes	56.5	61.8	No	56.5	Yes	No
KY-05-01-MELP-18	1	Yes	55.5	60.7	No	55.7	Yes	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-05-01-MELP-19	1	Yes	54.4	59.3	No	55.0	No	No
KY-05-01-MELP-20	1	Yes	53.8	58.2	No	54.3	No	No
KY-05-01-MELP-21	2	Yes	53.7	58.3	No	55.7	No	No
KY-05-01-WENA-01	1	No	60.5	66.6	Yes	60.1	Yes	No
KY-05-01-WENA-02	1	No	59.6	65.8	No	59.6	Yes	No
KY-05-01-WENA-03	1	No	58.4	64.4	No	59.0	Yes	No
KY-05-02-351-01	1	Yes	68.0	70.9	Yes	69.8	No	No
KY-05-02-351-02	1	No	66.6	69.2	Yes	67.6	No	No
KY-05-02-351-03	1	No	62.4	65.4	No	63.3	No	No
KY-05-02-351-04	1	No	61.3	64.4	No	62.7	No	No
KY-05-02-351-05	2	No	59.7	63.3	No	62.5	No	No
KY-05-02-351-07	1	No	62.3	63.9	No	63.5	No	No
KY-05-02-351-08	1	No	59.7	61.8	No	61.1	No	No
KY-05-02-351-09	1	No	60.0	61.8	No	61.3	No	No
KY-05-02-351-10	1	No	59.4	61.2	No	60.8	No	No
KY-05-02-ARLD-01	1	No	63.2	64.2	No	64.1	No	No
KY-05-02-ARLD-02	1	No	58.5	60.0	No	59.7	No	No
KY-05-02-ARLD-03	1	No	56.5	58.4	No	58.0	No	No
KY-05-02-ARLD-04	1	No	54.1	56.8	No	56.2	No	No
KY-05-02-ARLD-05	1	No	52.7	56.1	No	55.2	No	No
KY-05-02-ARLD-06	1	No	50.7	54.9	No	53.6	No	No
KY-05-02-ARLD-07	1	No	50.7	54.9	No	53.7	No	No
KY-05-02-ARLD-08	1	No	50.9	55.1	No	54.0	No	No
KY-05-02-ARLD-09	1	No	50.9	55.2	No	54.2	No	No
KY-05-02-ARLD-10	1	No	51.1	55.4	No	54.5	No	No
KY-05-02-ARLD-11	1	No	51.4	55.9	No	55.3	No	No
KY-05-02-ARLD-12	1	No	52.1	56.8	No	56.4	No	No
KY-05-02-GRED-01	1	Yes	69.7	73.6	Yes	66.1	Yes	Yes
KY-05-02-GRED-02	1	No	66.1	71.1	Yes	64.7	Yes	No
KY-05-02-GRED-03	1	No	61.3	67.3	Yes	61.7	Yes	No
KY-05-02-GRED-04	1	No	59.2	65.2	No	60.2	Yes	No
KY-05-02-LEXD-03	2	No	53.2	58.2	No	55.1	No	No
KY-05-02-MELP-01	1	No	62.3	66.7	Yes	61.6	Yes	No
KY-05-02-MELP-02	1	No	61.8	66.8	Yes	61.0	Yes	No
KY-05-02-MELP-03	1	No	61.4	66.6	Yes	60.6	Yes	No
KY-05-02-MELP-04	1	No	61.2	66.7	Yes	60.5	Yes	No
KY-05-02-MELP-05	1	No	60.5	66.2	Yes	58.6	Yes	No
KY-05-02-MELP-06	1	No	58.7	64.6	No	57.8	Yes	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-05-02-MELP-07	1	No	57.5	63.2	No	57.0	Yes	No
KY-05-02-MELP-08	1	No	56.5	62.0	No	56.4	Yes	No
KY-05-02-MELP-09	1	No	55.8	61.3	No	56.0	Yes	No
KY-05-02-MELP-10	1	No	53.8	59.1	No	55.2	No	No
KY-05-02-MELP-11	1	No	53.3	58.3	No	55.4	No	No
KY-05-02-MELP-12	1	No	52.8	57.5	No	55.1	No	No
KY-05-02-MELP-13	1	No	52.0	56.6	No	54.5	No	No
KY-05-02-WENA-01	1	No	61.6	67.4	Yes	59.5	Yes	No
KY-05-02-WENA-02	1	No	60.2	66.1	Yes	58.7	Yes	No
KY-05-02-WENA-03	1	No	58.6	64.6	No	58.0	Yes	No
KY-05-02-WENA-05	2	No	56.6	63.2	No	57.4	Yes	No
KY-05-02-WENA-06	1	No	55.5	61.1	No	56.0	Yes	No

TABLE 32: BARRIER RESULTS FOR US 41 (KY 351 TO KY 425) – VANGUARD AVENUE (ALL ALTERNATIVES, BOTH TOLLING SCENARIOS)

Table 32: US 41 (KY 351 to KY 425) - Vanguard Avenue (All Alternatives, Both Tolling Scenarios)

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-05-01-AUGD-01	1	No	59.7	65.8	No	62.3	No	No
KY-05-01-AUGD-04	1	No	50.8	55.1	No	53.4	No	No
KY-05-01-AUGD-05	1	No	50.8	55.0	No	53.5	No	No
KY-05-01-AUGD-06	1	No	50.9	54.9	No	53.5	No	No
KY-05-01-AUGD-07	1	No	51.1	54.7	No	53.5	No	No
KY-05-01-AUGD-08	1	No	51.5	54.6	No	53.5	No	No
KY-05-01-AUGD-09	1	No	50.9	54.4	No	53.3	No	No
KY-05-01-AUGD-10	4	No	51.3	53.8	No	52.9	No	No
KY-05-01-CHED-01	2	No	58.7	64.6	No	56.8	Yes	No
KY-05-01-CHED-02	2	No	58.1	63.8	No	56.5	Yes	No
KY-05-01-CHED-03	2	No	57.4	62.9	No	55.9	Yes	No
KY-05-01-CHED-04	2	No	56.7	62.4	No	55.5	Yes	No
KY-05-01-CHED-05	1	No	56.2	61.8	No	55.4	Yes	No
KY-05-01-CHED-06	1	No	55.5	61.0	No	55.2	Yes	No
KY-05-01-GARL-01	1	Yes	47.8	71.1	Yes	62.9	Yes	Yes
KY-05-01-HALD-01	1	No	52.2	56.9	No	53.9	No	No
KY-05-01-HUBL-01	1	Yes	70.4	75.5	Yes	61.7	Yes	Yes
KY-05-01-HUBL-02	1	Yes	67.1	72.9	Yes	61.9	Yes	Yes
KY-05-01-HUBL-03	1	Yes	64.3	70.6	Yes	60.7	Yes	Yes
KY-05-01-HUBL-04	1	Yes	63.2	69.6	Yes	60.1	Yes	Yes
KY-05-01-HUBL-05	1	Yes	61.2	67.4	Yes	59.0	Yes	Yes
KY-05-01-HUBL-06	1	Yes	59.7	65.6	No	58.6	Yes	Yes
KY-05-01-HUBL-07	1	No	58.9	64.5	No	58.1	Yes	No
KY-05-01-TRER-01	1	No	50.8	54.8	No	53.4	No	No
KY-05-01-TRER-02	1	No	50.5	54.4	No	53.2	No	No
KY-05-01-VANA-01	2	Yes	49.2	72.8	Yes	64.3	Yes	Yes
KY-05-01-VANA-02	2	No	67.3	68.3	No	62.8	Yes	No
KY-05-01-VANA-03	1	No	62.1	65.1	No	59.2	Yes	No
KY-05-01-VANA-04	1	No	58.3	63.9	Yes	58.0	Yes	No
KY-05-01-VANA-05	1	No	56.5	61.8	Yes	56.2	Yes	No
KY-05-01-VANA-06	1	No	54.7	60.1	No	55.0	Yes	No
KY-05-01-VANA-07	1	No	53.4	58.2	No	53.9	No	No
KY-05-01-VANA-08	1	No	53.1	57.4	No	53.6	No	No
KY-05-01-VANA-09	1	No	53.1	56.5	No	53.8	No	No
KY-05-02-AUGD-01	1	No	51.4	56.0	No	53.8	No	No
KY-05-02-AUGD-02	1	No	51.2	55.5	No	53.7	No	No

RECEIVER	NUMBER OF RECEPTORS	FRONT ROW?	EX. NOISE LEVEL dB(A)	PRED. NOISE LEVEL dB(A)	IMPACT?	PREDICTED NOISE LEVEL WITH BARRIER dB(A)	BENEFITED WITH 5dB(A) or MORE REDUCTION?	MEET DESIGN GOAL: FRONT ROW WITH 7dB(A) or MORE REDUCTION?
KY-05-02-AUGD-03	1	No	51.5	55.3	No	53.5	No	No
KY-05-02-AUGD-04	4	No	52.5	55.2	No	53.7	No	No
KY-05-02-AUGD-05	2	No	55.9	56.4	No	55.7	No	No
KY-05-02-AUGD-06	2	No	56.6	57.0	No	56.6	No	No
KY-05-02-AUGD-07	2	No	55.2	56.1	No	55.7	No	No
KY-05-02-CHED-01	2	No	55.1	59.7	No	54.2	Yes	No
KY-05-02-CHED-02	2	No	54.7	59.4	No	54.4	Yes	No
KY-05-02-CHED-03	1	No	54.3	59.0	No	54.2	No	No
KY-05-02-CHED-04	1	No	53.7	58.1	No	53.9	No	No
KY-05-02-GARL-01	1	Yes	63.7	69.9	Yes	60.3	Yes	Yes
KY-05-02-HUBL-01	1	Yes	61.5	68.0	Yes	59.4	Yes	Yes
KY-05-02-HUBL-02	1	No	61.8	68.4	Yes	59.1	Yes	No
KY-05-02-HUBL-03	1	No	59.1	65.2	No	57.5	Yes	No
KY-05-02-HUBL-04	1	No	58.3	64.1	No	56.7	Yes	No
KY-05-02-HUBL-05	1	No	57.6	63.1	No	56.2	Yes	No
KY-05-02-HUBL-06	1	No	57.0	62.5	No	56.0	Yes	No
KY-05-02-HUBL-07	1	No	57.0	62.3	No	56.4	Yes	No
KY-05-02-TRER-01	1	No	51.0	54.6	No	53.4	No	No
KY-05-02-TRER-02	1	No	50.7	54.2	No	53.1	No	No
KY-05-02-TRER-03	1	No	50.4	54.0	No	53.0	No	No
KY-05-02-TRER-04	1	No	50.1	53.7	No	52.7	No	No
KY-05-02-VANA-01	1	Yes	67.3	72.8	Yes	68.7	No	No
KY-05-02-VANA-02	1	No	63.7	69.7	Yes	65.7	No	No
KY-05-02-VANA-04	3	No	57.9	63.5	No	59.3	No	No
KY-05-02-VANA-05	1	No	52.9	57.8	No	54.2	No	No
KY-05-02-VANA-06	1	No	52.6	57.2	No	53.8	No	No
KY-05-02-VANA-07	1	No	52.0	56.2	No	53.2	No	No
KY-05-02-VANA-08	1	No	51.9	55.7	No	53.4	No	No
KY-05-02-VANA-09	2	No	52.7	55.5	No	53.6	No	No

APPENDIX C

Field Data Sheets

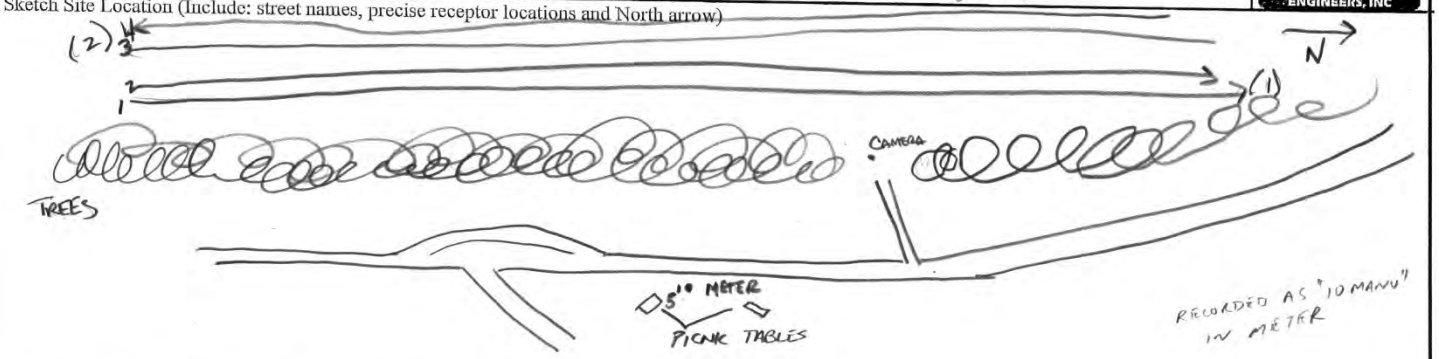
Noise Sampling Field Monitoring Data

Location (Street Address) V1 AUDUBON CAMPGROUND Time: 8:00 AM/PM Duration: ~~10~~ min. 15 min

Date: 10/25/17 Temperature/Wind Speed: 0.5-1 MPH 42.8°F 2.7 MAX Speed Limit _____ mph Noise Level: 56.5 dBA Leq

HMB PROFESSIONAL ENGINEERS, INC

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



SPEED LIMIT MAY BE DIFF. THAN POSTED SPEED

PLAYGROUND >500' FROM MAJOR NOISE SURVEY

63 INDIVIDUAL CAMPING SITES

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	~~MHT~~
1		1220	32	108	
2		988	12	80	4
3					
4					

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

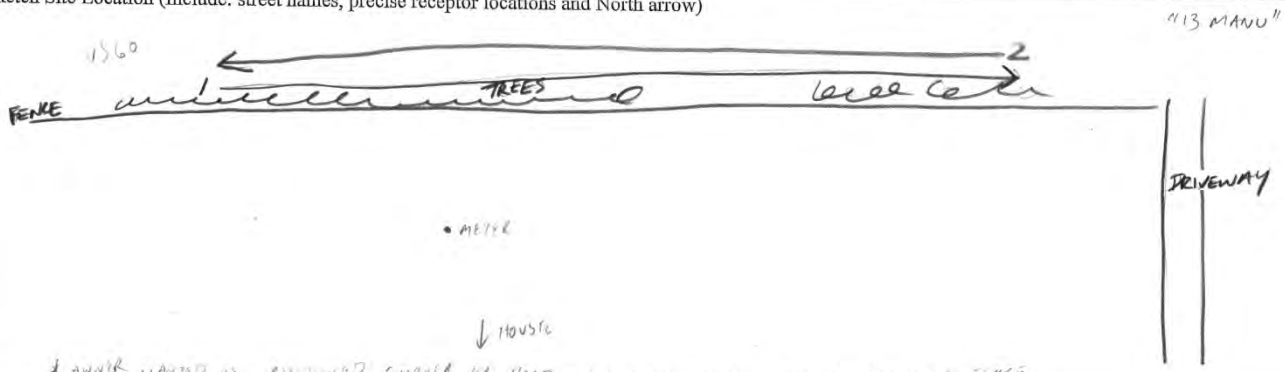
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) V2 HISTORIC (EAST ALT) Time: 9:24 AM/PM Duration: ~~10 min.~~ 15

Date: 10/25/17 Temperature/Wind Speed: 1.4 MPH 45.7 °F Speed Limit _____ mph Noise Level: 56.5 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1		156	4	
2		200	4	
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

Additional Comments (e.g. Major intrusive events): _____

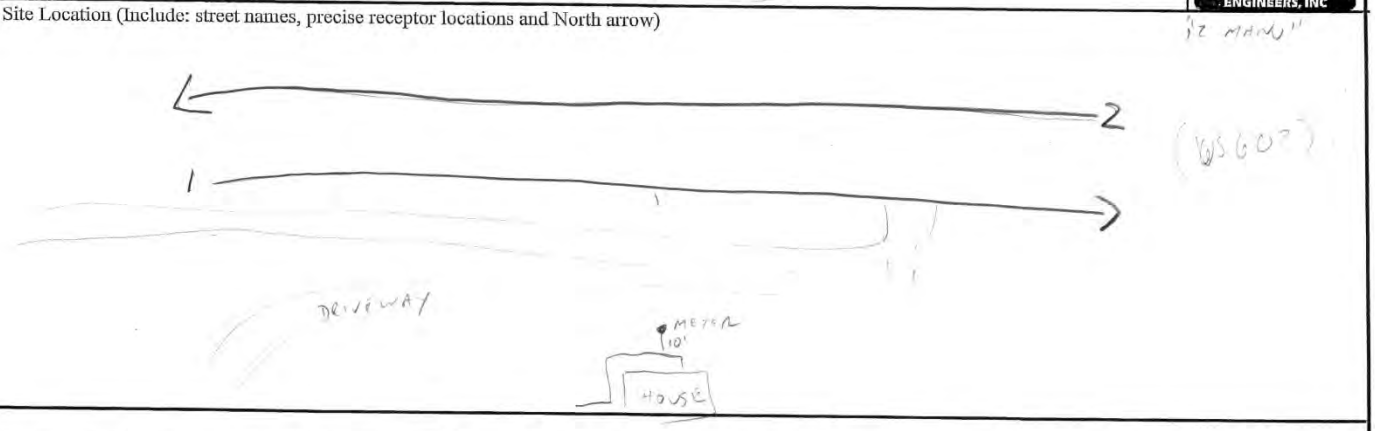
Noise Sampling Field Monitoring Data

Location (Street Address) V3 HISTORIC (RESALT) Time: 9:00 AM/PM Duration: ~~10 min.~~ 15

Date: 10/25/17 Temperature/Wind Speed: 6.7 MAX MPH -7.7 46.9°F Speed Limit _____ mph Noise Level: 56.0 dBA Leq

HMB PROFESSIONAL ENGINEERS, INC

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1		172		2
2		172		2
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

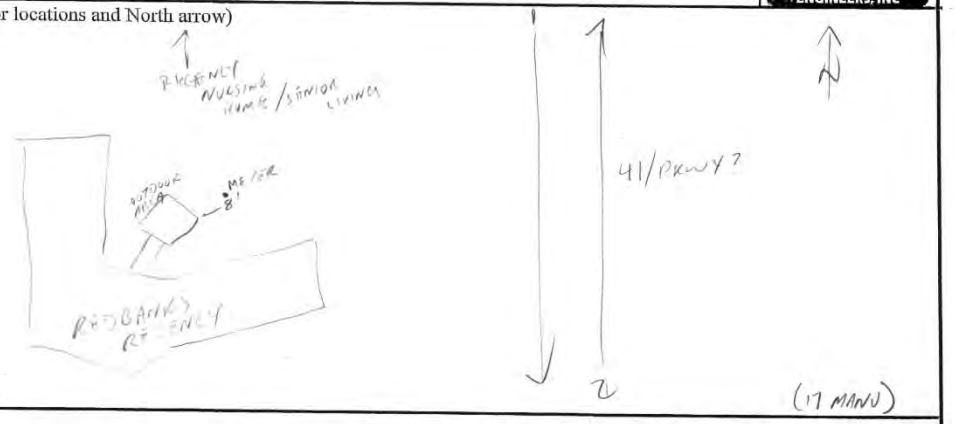
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) V4 LEBANON REGENCY Time: 4:20 AM/PM Duration: ~~10 min.~~ 15

Date: 10/25/17 Temperature/Wind Speed: 74 MPH NW, 56.4°F Speed Limit 55 mph Noise Level: 57.9 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	BUS
1		1296	24	148	16
2		1136	16	108	
3					
4					

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

Additional Comments (e.g. Major intrusive events): _____

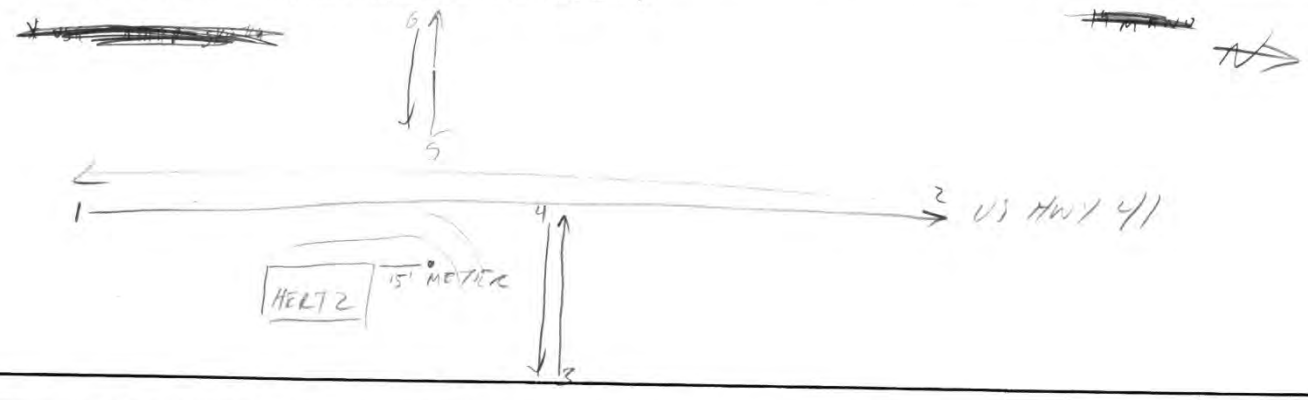
Noise Sampling Field Monitoring Data

Location (Street Address) US HERTZ Time: 8:07 AM/PM Duration: 10 ~~min.~~ 15

Date: 10/26/17 Temperature/Wind Speed: 29 MPH (MAX) 43.1 Speed Limit 45 mph Noise Level: 70.9 dBA Leq

HMB PROFESSIONAL ENGINEERS, INC

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	Buses
1		940	24	140	
2		800	36	76	4
3					
4					

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

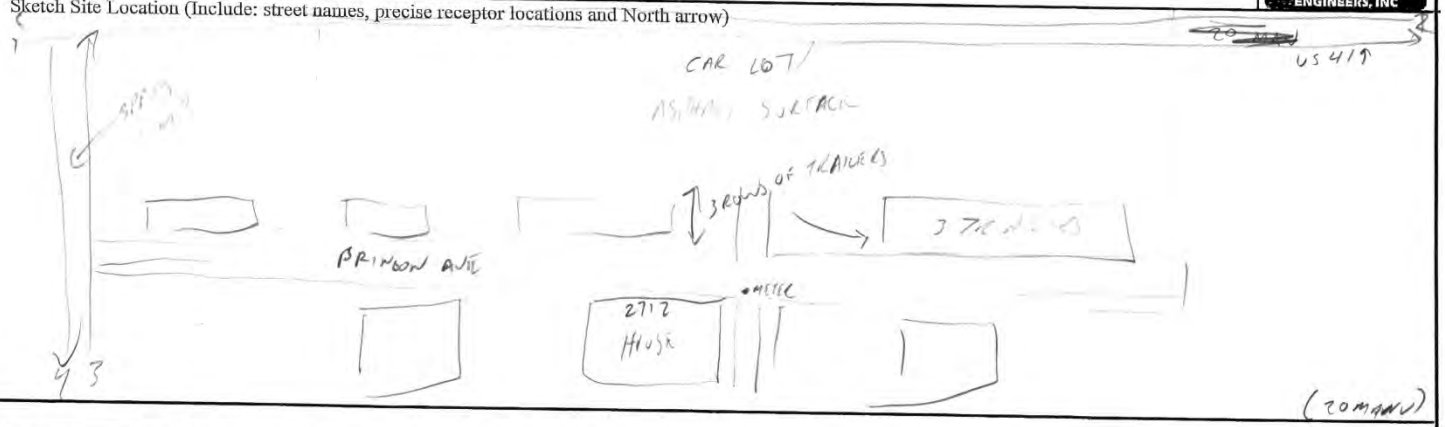
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) V6 2712 BRINSON AVE (HOUS) Time: 8:30 AM/PM Duration: 10 min. 15

Date: 10/26/17 Temperature/Wind Speed: 1.0 mph (MAX) 43.9°F Speed Limit 45 mph Noise Level: 54.2 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	BUS	MDH
1		900	36	108		4
2		780	40	112	4	
3		260	8			4
4		144				4

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

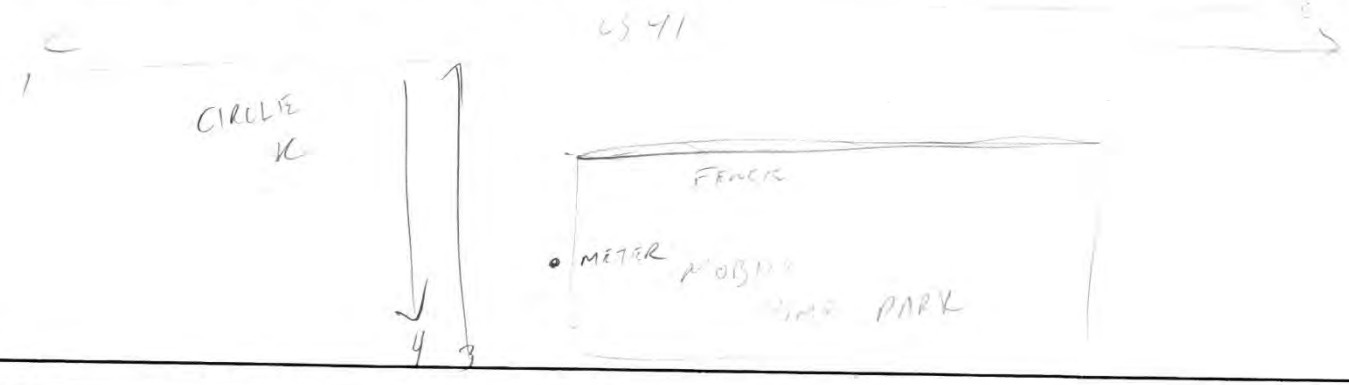
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) V7 Time: 9:00 AM/PM Duration: ~~10 min.~~ 15

Date: 10/26/17 Temperature/Wind Speed: 1.9 (MAX) 49.2°F Speed Limit 45 mph Noise Level: 63.4 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	NOTE
1		845	16	120	
2		904	32	108	4
3					
4					

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

Additional Comments (e.g. Major intrusive events): _____

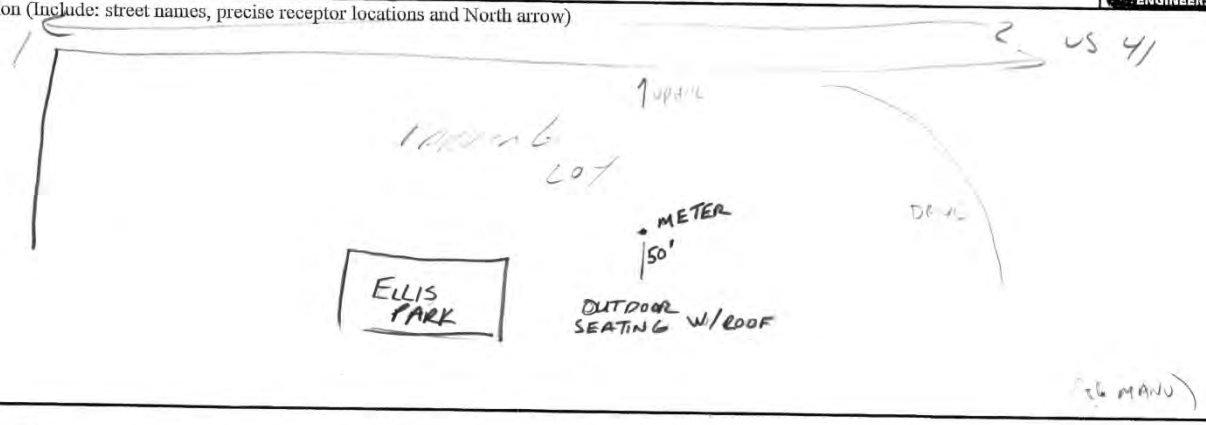
Noise Sampling Field Monitoring Data

Location (Street Address) V8 ELLIS PARK Time: 2:51 AM/PM Duration: 10 min. 15

Date: 10/20/17 Temperature/Wind Speed: 8.9 mph (MAX) 65°F Speed Limit 45 mph 35 (CONSTRUCTION) Noise Level: 59.7 dBA Leq

HMB PROFESSIONAL ENGINEERS, INC

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1		1164	8	128
2		1444	20	44
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

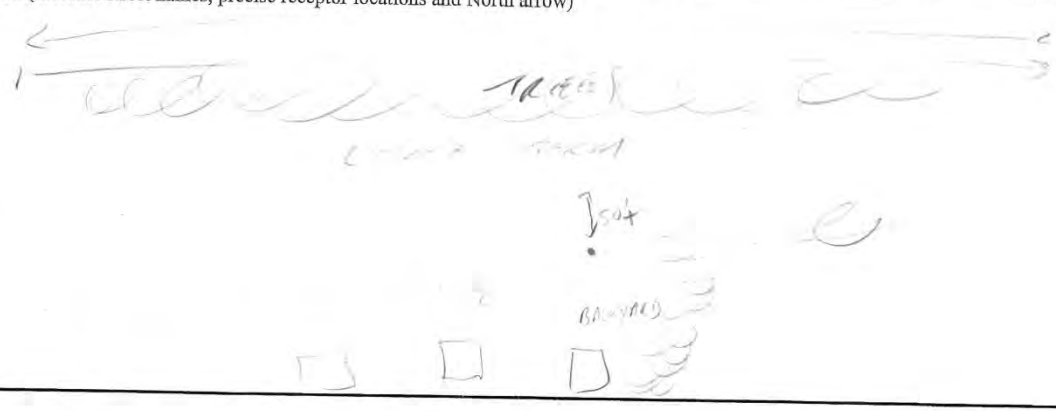
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) V9 (IN) Time: 2:55 AM/PM Duration: ~~10~~ min. 15

Date: 10/30/17 Temperature/Wind Speed: 52.5 °F 2.7 MPH MAX Speed Limit 60? I69 mph Noise Level: 50.4 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	105
1		660	16	52	
2		660	40	28	
3					
4					

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

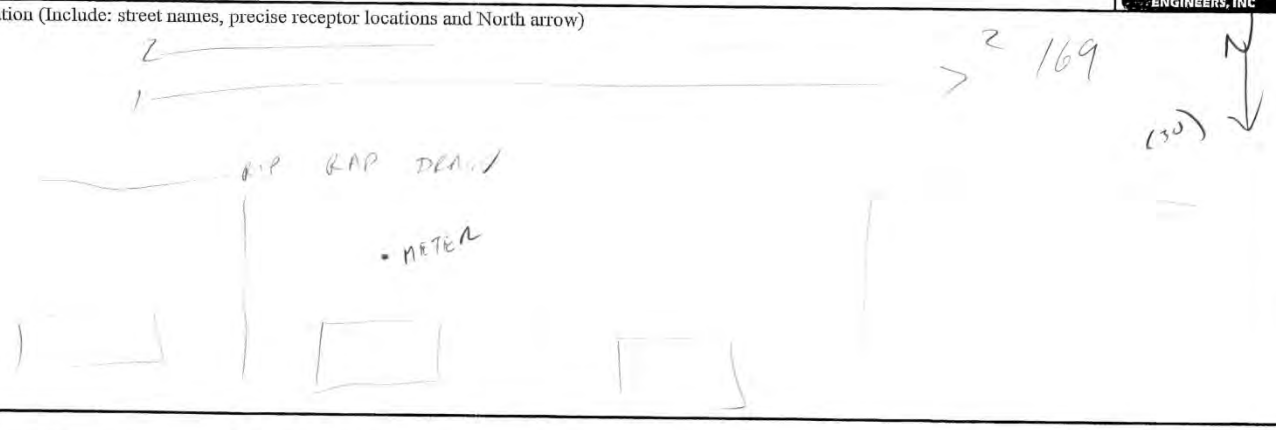
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) V10 Time: 3:25 AM/PM Duration: ~~10 min.~~ 15

Date: 10/30/17 Temperature/Wind Speed: 4.9 MPH 52.5°F MAH Speed Limit 60 ? mph Noise Level: 59.2 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	Bus
1		864	36	28	4
2		1068	16	56	
3					
4					

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

Additional Comments (e.g. Major intrusive events): _____

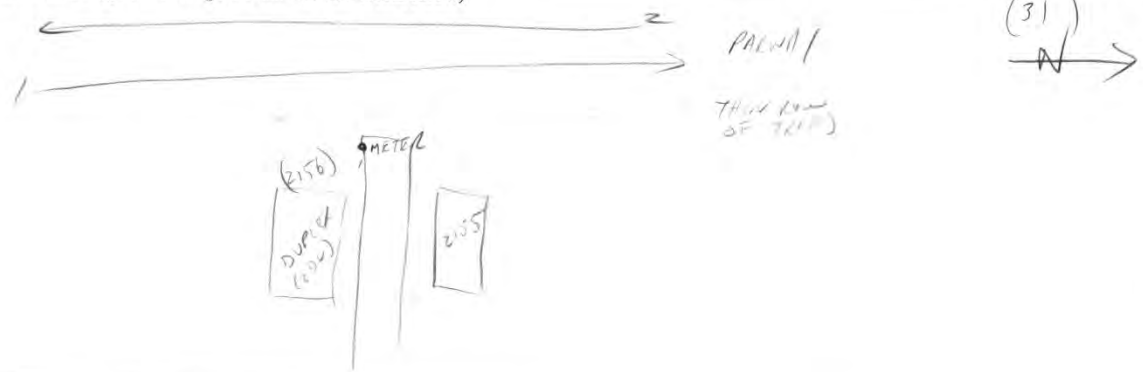
Noise Sampling Field Monitoring Data

Location (Street Address) V11 (2156 GLENBRIAR) Time: 4:05 AM/~~PM~~ Duration: 10 ~~min.~~ 15

Date: 10/30/17 Temperature/Wind Speed: 2.7 MPH (MAX) 52.5°F Speed Limit 60-75? mph Noise Level: 70.9 dBA Leq

HMB PROFESSIONAL ENGINEERS, INC

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	(N)
1		440	36	88	4
2		1092	16	76	8
3					
4					

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

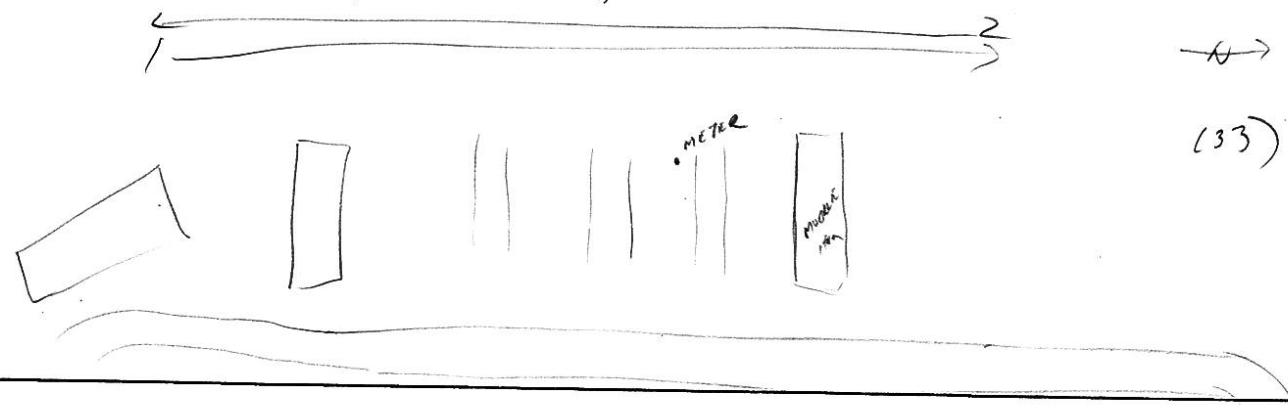
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) V13 Time: 8:00 AM/PM Duration: 10 ~~min.~~ 15

Date: 10/31/17 Temperature/Wind Speed: 0.5mph 34°F Speed Limit 60 ~~X~~ 65? mph Noise Level: 65.6 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

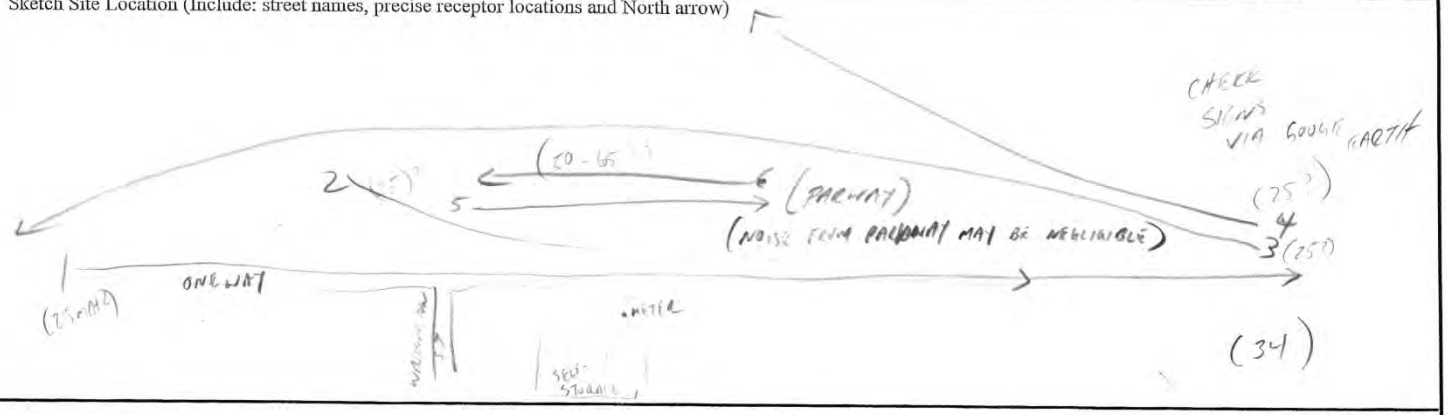
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) V14 (SPACE RENTAL CO) Time: 8:35 AM/PM Duration: 10 ~~min.~~ 15

Date: 10/31/17 Temperature/Wind Speed: 14 mph 34°F Speed Limit _____ mph Noise Level: 62.4 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	Bus
1		112		8	8
2		104	4	8	
3		136	8	4	
4					

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	Bus
~~1~~ 5		1092	16	76	8
~~2~~ 6		880	36	89	4
~~3~~					
~~4~~					

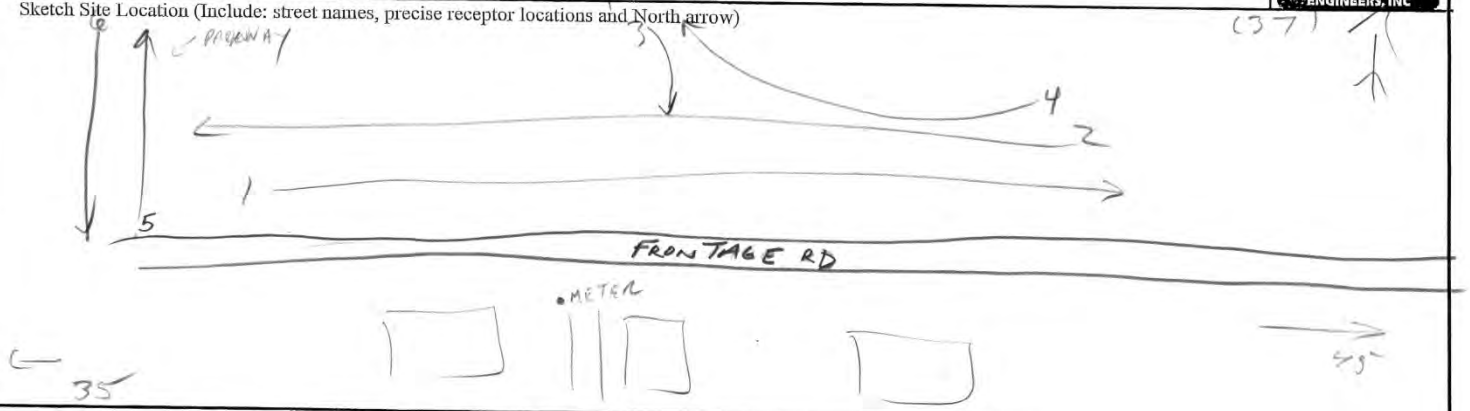
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) V15 Time: 2:45 AM/PM Duration: 10 ~~min.~~ 15

Date: 10/31/17 Temperature/Wind Speed: 4.4 MPH 45°F Speed Limit 35/45 mph Noise Level: 66.6 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	Buses
1		748	8	8	8
2		616			
3		160	4	8	
4		292	8	4	4

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	Buses
~~1~~ 5		772	28	148	
~~2~~ 6		600	16	68	4
~~3~~					
~~4~~					

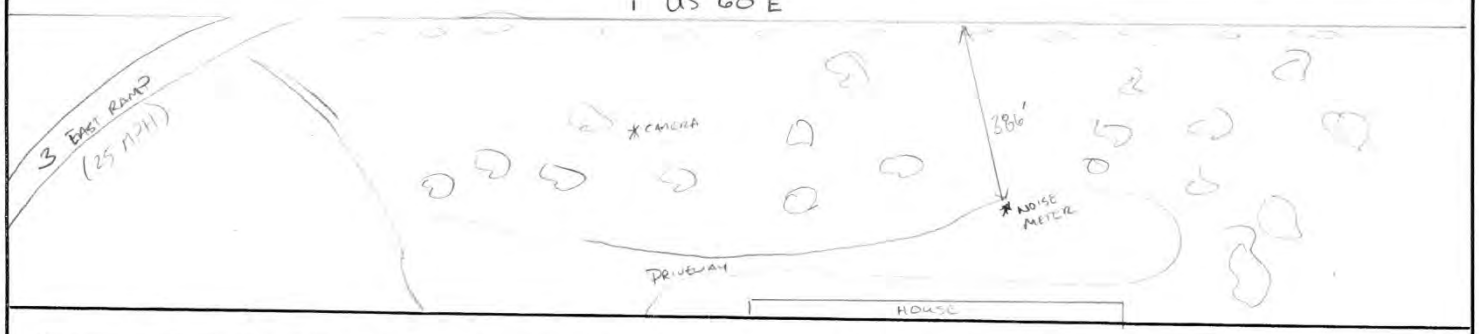
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) V116 2000 BARRET BLVD Time: 3:20 AM/PM Duration: ~~10~~ 15 min. _____

Date: 1-24-2018 Temperature/Wind Speed: 41°/3.5 Speed Limit 45 mph Noise Level: 60.9 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks	Bus
1		958	8	8	8
2		920	8	12	4
3		308			4
4					

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

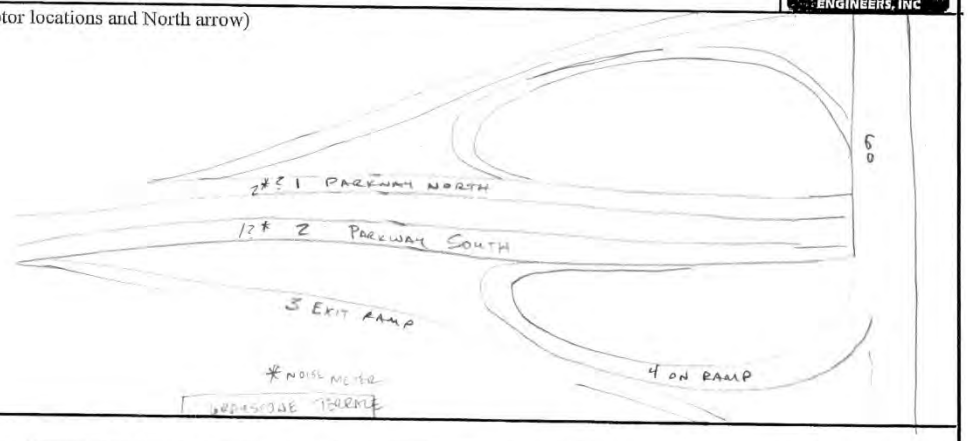
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) 117 Time: 352 AM/PM Duration: ~~10~~ 15 min.

Date: 1-24-2018 Temperature/Wind Speed: 41°/2.7 Speed Limit 55 mph Noise Level: 61.4 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1		1112	12	120
2		308	16	116
3		504		8
4		300	4	

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) A1 "CARDINAL SHELTER" AUDUBON Time: 8:20 AM/PM Duration: ~~10 min.~~ 15 min

Date: 10/25/17 Temperature/Wind Speed: 0.1 MPH 45.2 MPH Speed Limit _____ mph Noise Level: 45.7 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

Additional Comments (e.g. Major intrusive events): _____

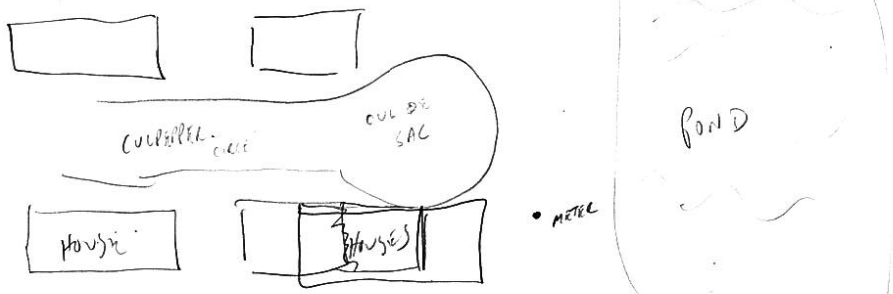
Noise Sampling Field Monitoring Data

Location (Street Address) A2 (CENTRALT) Time: 9:45 AM/PM Duration: ~~10 min.~~ 15 min

Date: 10/25/17 Temperature/Wind Speed: 6.4 MAX/MIN 48.5°F Speed Limit _____ mph Noise Level: 39.6 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)

(14 MANU)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

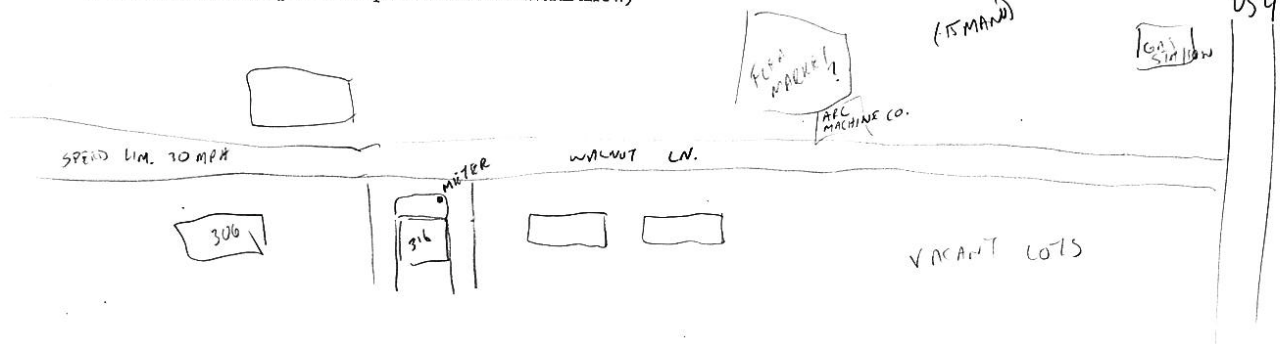
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) A3 house # 316 WALNUT LN. Time: 10:45 AM/PM Duration: ~~10 min.~~ 15 MIN

Date: 10/25/17 Temperature/Wind Speed: 4.7 mph MAP 55.8°F Speed Limit 30 mph Noise Level: 48.7 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

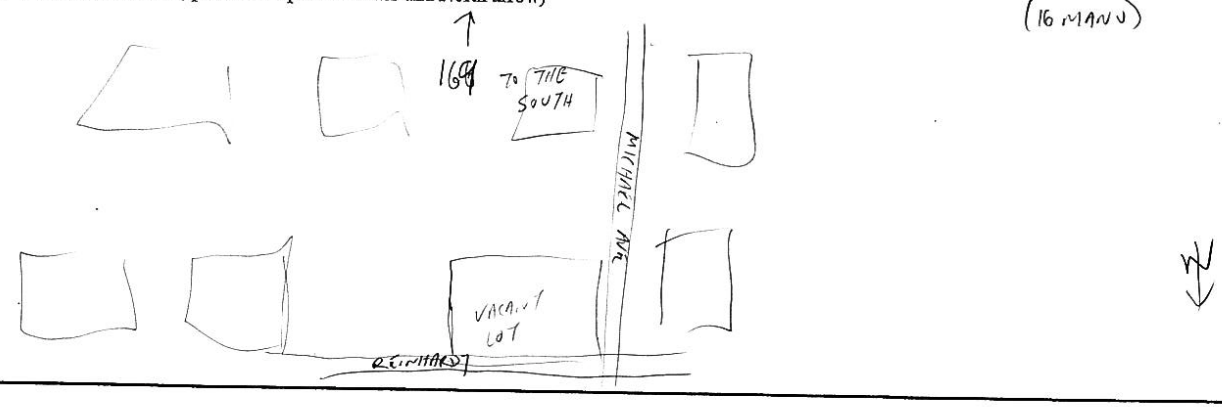
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) A4 VACANT LOT (IN) Time: 1:00 ~~AM~~/PM Duration: ~~10 min.~~ 15

Date: 10/25/17 Temperature/Wind Speed: 58.5°F 22 MPH MAP Speed Limit _____ mph Noise Level: 52.6 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

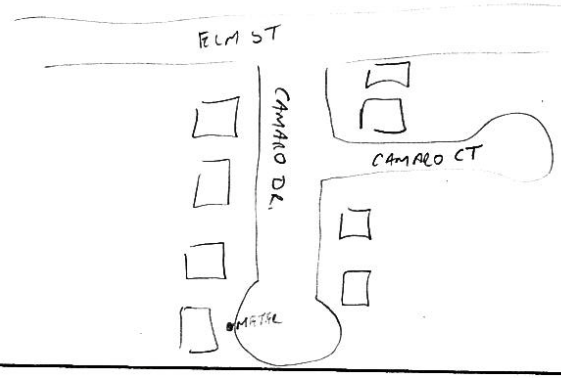
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) A5 701 CAMARO DR/JR Time: 10:00 AM/PM Duration: ~~10 min.~~ 15

Date: 10/26/17 Temperature/Wind Speed: 3.7 MPH 54.4°F (MAP) Speed Limit _____ mph Noise Level: 50.1 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



(22 MANV)

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

Additional Comments (e.g. Major intrusive events): _____

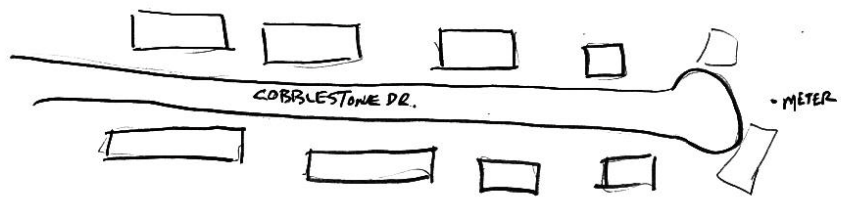
Noise Sampling Field Monitoring Data

Location (Street Address) A6 (COBBLESTONE DRIVE (CENT ALT)) Time: 10:30 AM/PM Duration: 10 ~~min.~~ 15

Date: 10/26/17 Temperature/Wind Speed: 19 MPH (MAX) 56.4 °F Speed Limit _____ mph Noise Level: 40.4 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)

(23 MANU)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

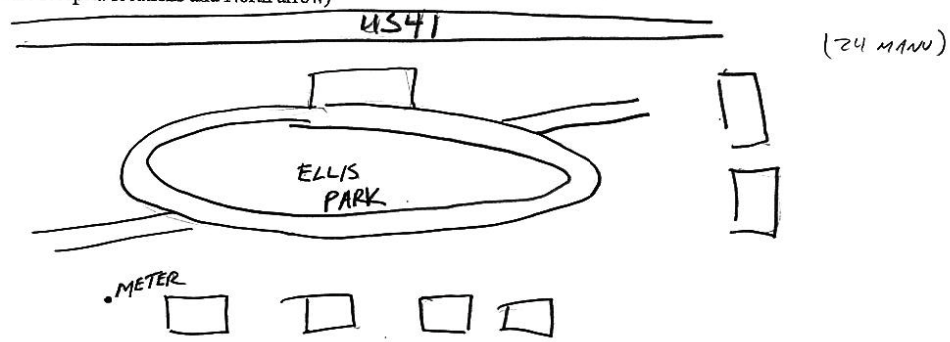
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) A7 ELLIS PARK BACKSIDE Time: 2:05 AM/PM Duration: ~~10 min.~~ 15

Date: 10/26/17 Temperature/Wind Speed: 3.5 MPH MAX 65°F Speed Limit _____ mph Noise Level: 45.1 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

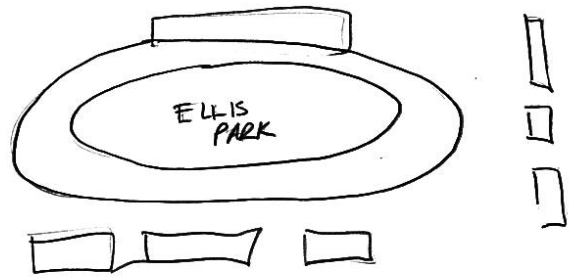
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) A8 ELLIS PARK EAST Time: 2:25 AM/PM Duration: 10 ~~min.~~ 15

Date: 10/26/17 Temperature/Wind Speed: 9.6 MPH (MAX) 65°F Speed Limit 45 (35 CONSTRUCTION) mph Noise Level: 51.6 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



(25 MANU)

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

Additional Comments (e.g. Major intrusive events): _____

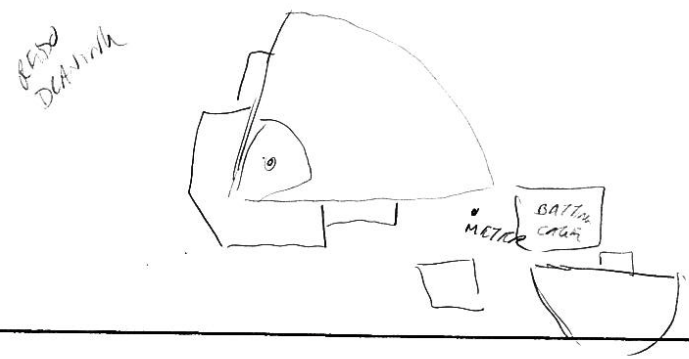
Noise Sampling Field Monitoring Data

Location (Street Address) A9 BALL PARK Time: 10:55 AM/PM Duration: 10 ~~min.~~ 15

Date: 10/30/17 Temperature/Wind Speed: 7.7 MPH (MAX) 53°F Speed Limit 45 (US 41) mph Noise Level: 50.5 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)

(26 MANU)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) A10

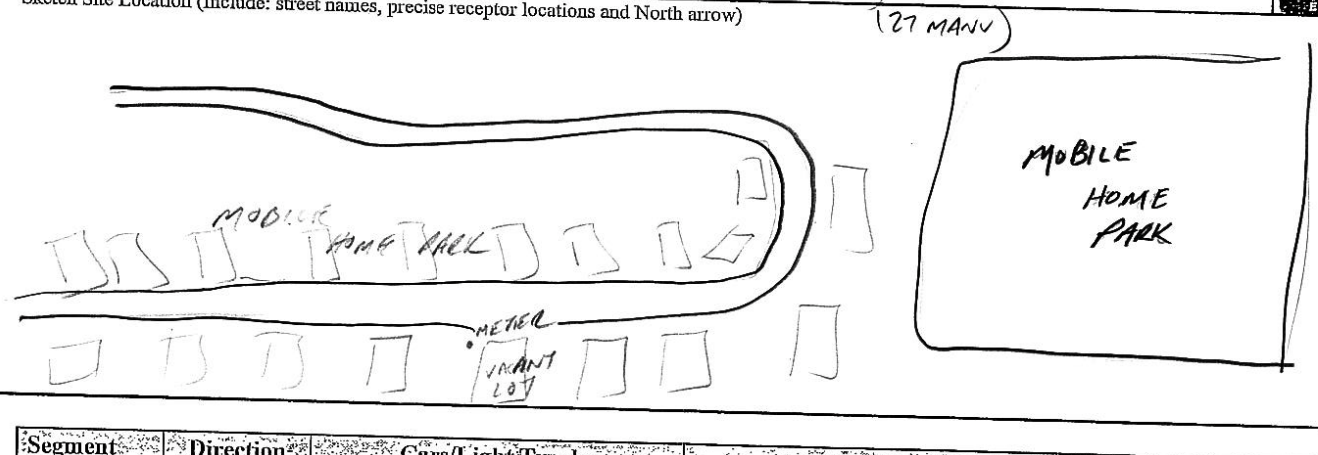
Time: 12:20 AM/PM Duration: 10 ~~min.~~ 15

Date: 10/30/17 Temperature/Wind Speed: 9.7 MPH MAX 53.5°F

Speed Limit 45 mph (US41) (27 MANV)

Noise Level: 49.9 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

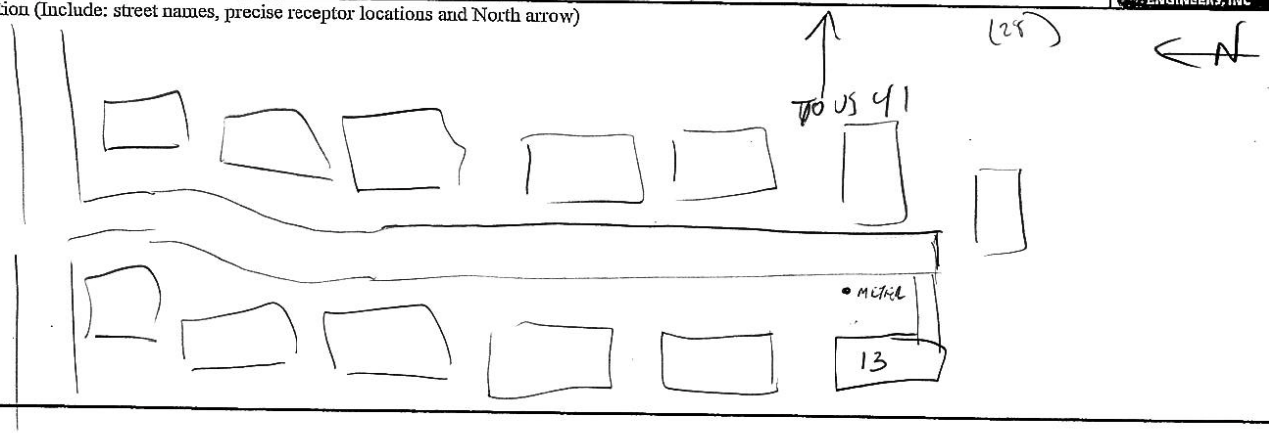
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) All Time: 12:45 AM/PM Duration: ~~10 min.~~ 15 min

Date: 10/30/17 Temperature/Wind Speed: 3.4 mph, 53.6°F Speed Limit 45 (US 41) mph Noise Level: 47.8 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

Additional Comments (e.g. Major intrusive events): _____

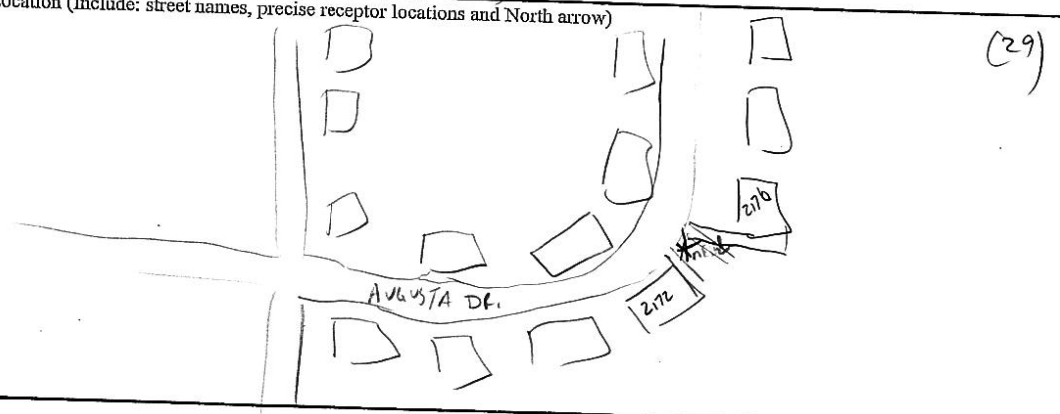
Noise Sampling Field Monitoring Data

Location (Street Address) A12 (2172 AUGUSTA DR. Time: 1:25 AM/PM Duration: 10 ~~min.~~ 15

Date: 10/30/17 Temperature/Wind Speed: 6.2 MPH (MAX) 53.5°F Speed Limit _____ mph Noise Level: 53.9 dBA Leq

HMB PROFESSIONAL ENGINEERS, INC

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

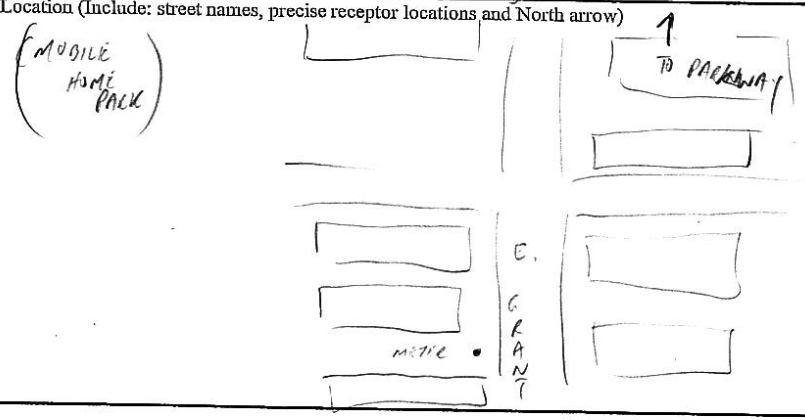
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) A13 C3 E. GRANT Time: 11:40 AM/PM Duration: 10 min. 15

Date: 10/31/17 Temperature/Wind Speed: 3.7 MPH MAX 43° F Speed Limit _____ mph Noise Level: 51.3 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

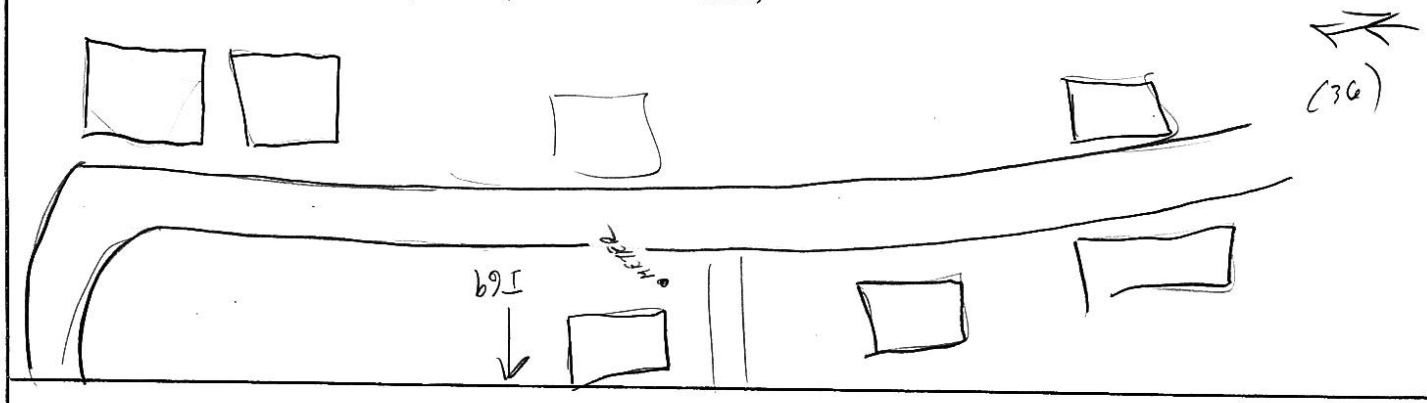
Additional Comments (e.g. Major intrusive events): _____

Noise Sampling Field Monitoring Data

Location (Street Address) A14 (IN) Time: 12:05 AM/PM Duration: ~~10 min.~~ 15

Date: 10/31/17 Temperature/Wind Speed: 3.2 mph (MAX) 45°F Speed Limit _____ mph Noise Level: 47.1 dBA Leq

Sketch Site Location (Include: street names, precise receptor locations and North arrow)



Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

#2Date: _____ Temperature/Wind Speed: _____ Speed Limit _____ Noise Level: _____ dBA Leq

Segment	Direction	Cars/Light Trucks	Medium Trucks	Heavy Trucks
1				
2				
3				
4				

Additional Comments (e.g. Major intrusive events): _____

APPENDIX D

Noise Meter Calibration Certification

Scantek, Inc.
CALIBRATION LABORATORY
ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

Calibration Certificate No.37641

Instrument:	**Sound Level Meter**	*Date Calibrated:* **1/9/2017**	*Cal Due:* **1/9/2019**
Model:	**NL20**	*Status:*	**Received** / **Sent**
Manufacturer:	**Rion**	*In tolerance:*	**X** / **X**
Serial number:	**00110039**	*Out of tolerance:*	
Tested with:	**Microphone UC52 s/n 77412**	*See comments:*	
	Preamplifier NH21 s/n 00177	*Contains non-accredited tests:* __Yes _X_ No	
Type (class):	**2**	*Calibration service:* __ Basic _X_ Standard	
Customer:	**HMB Professional Engineers, Inc.**	*Address:*	**3 HMB Circle US 460**
Tel/Fax:	**502-695-9800 / 502-695-9810**		**Frankfort, KY 40601**

Tested in accordance with the following procedures and standards:
Calibration of Sound Level Meters, Scantek Inc., Rev. 6/26/2015
SLM & Dosimeters – Acoustical Tests, Scantek Inc., Rev. 7/6/2011

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence Cal. Lab / Accreditation	Cal. Due
483B-Norsonic	SME Cal Unit	31052	Oct 26, 2016	Scantek, Inc./ NVLAP	Oct 26, 2017
DS-360-SRS	Function Generator	33584	Oct 20, 2015	ACR Env./ A2LA	Oct 20, 2017
34401A-Agilent Technologies	Digital Voltmeter	US36120731	Oct 12, 2016	ACR Env. / A2LA	Oct 12, 2017
HM30-Thommen	Meteo Station	1040170/39633	Nov 1, 2016	ACR Env./ A2LA	Nov 1, 2017
PC Program 1019 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
1251-Norsonic	Calibrator	30878	Nov 10, 2016	Scantek, Inc./ NVLAP	Nov 10, 2017
4226-Brüel&Kjær	Multifunction calibrator	2305103	Jul 25, 2016	Scantek, Inc./ NVLAP	Jul 25, 2017

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK).

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.3	102.34	40.1

Calibrated by:	Jeremy Gotwalt	**Authorized signatory:**	Steven E. Marshall
Signature	[signature]	Signature	Steven E Marshall
Date	1/9/17	Date	1/10/2017

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Results summary: Device complies with following clauses of mentioned specifications:

CLAUSES[1] FROM IEC/ANSI STANDARDS REFERENCED IN PROCEDURES:	RESULT[2,3]	EXPANDED UNCERTAINTY (coverage factor 2) [dB]
INDICATION AT THE CALIBRATION CHECK FREQUENCY - IEC61672-3 ED.2 CLAUSE 10	Passed	0.15
SELF-GENERATED NOISE - IEC 61672-3 ED.2 CLAUSE 11	Passed	0.30
ACOUSTICAL TEST OF A FREQUENCY WEIGHTING - IEC 61672-3 ED.2.0 CLAUSE 12	Passed	0.30
FREQUENCY WEIGHTINGS: A NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: C NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY WEIGHTINGS: Z NETWORK - IEC 61672-3 ED.2.0 CLAUSE 13	Passed	0.20
FREQUENCY AND TIME WEIGHTINGS AT 1 KHZ IEC 61672-3 ED.2.0 CLAUSE 14	Passed	0.20
LEVEL LINEARITY ON THE REFERENCE LEVEL RANGE - IEC 61672-3 ED.2 CLAUSE 16	Passed	0.25
LEVEL LINEARITY INCLUDING THE LEVEL RANGE CONTROL - IEC 61672-3 ED.2.0 CLAUSE 17	Passed	0.25
TONEBURST RESPONSE - IEC 61672-3 ED.2.0 CLAUSE 18	Passed	0.30
OVERLOAD INDICATION - IEC 61672-3 ED.2.0 CLAUSE 20	Passed	0.25
HIGH LEVEL STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 21	Passed	0.10
LONG TERM STABILITY TEST - IEC 61672-3 ED.2.0 CLAUSE 15	Passed	0.10

1 The results of this calibration apply only to the instrument type with serial number identified in this report.

2 Parameters are certified at actual environmental conditions.

3 The tests marked with (*) are not covered by the current NVLAP accreditation.

Comments: The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3, for the environmental conditions under which the tests were performed. However, No general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1 because evidence was not publicly available, from an independent testing organization responsible for pattern approvals, to demonstrate that the model of sound level meter fully conforms to the requirements of IEC 61672-1:2002, and because the periodic tests of IEC 61672-3 cover only a limited subset of the specifications in IEC 61672-1.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.
Compliance with any standard cannot be claimed based solely on the periodic tests.

Tests made with the following attachments to the instrument:

Microphone: Rion UC52 s/n 77412 for acoustical test
Preamplifier: Rion NH21 s/n 00177 for all tests
Other: line adaptor ADP005 (18pF) for electrical tests
Accompanying acoustical calibrator: Rion NC-73 s/n 10417585
Windscreen: Rion WS-10

Measured Data: in Test Report # 37641 of nine pages.

Place of Calibration: Scantek, Inc.
6430 Dobbin Road, Suite C
Columbia, MD 21045 USA
Ph/Fax: 410-290-7726/ -9167
callab@scantekinc.com

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Summary of Test Report No.:37641

Rion Type: NL20 Serial no: 00110039

Customer:	**HMB Professional Engineers, Inc.**
Address:	**3 HMB Circle US 460 Frankfort, KY 40601**
Contact Person:	**Mitchell Green**
Phone No.:	**502-695-9800**
Fax No.:	**502-695-9810**

Microphone:	Rion	Type: UC52	Serial no: 77412	Sens:dB
Preamplifier	Rion	Type: NH21	Serial no: 00177	
Calibrator:	Rion	Type: NC-73	Serial no: 10417585	Level:93.97dB
Wind screen	Rion	Type: WS-10		

Measurement Results:

Indication at the calibration check frequency - IEC61672-3 Ed.2 Clause 10	Passed
Self-generated noise - IEC 61672-3 Ed.2 Clause 11	Passed
Acoustical test of a frequency weighting - IEC 61672-3 Ed.2.0 Clause 12	Passed
Frequency weightings: A Network - IEC 61672-3 Ed.2.0 Clause 13	Passed
Frequency weightings: C Network - IEC 61672-3 Ed.2.0 Clause 13	Passed
Frequency weightings: Z Network - IEC 61672-3 Ed.2.0 Clause 13	Passed
Frequency and time weightings at 1 kHz IEC 61672-3 Ed.2.0 Clause 14	Passed
Level linearity on the reference level range - IEC 61672-3 Ed.2 Clause 16	Passed
Level linearity including the level range control - IEC 61672-3 Ed.2.0 Clause 17	Passed
Toneburst response - IEC 61672-3 Ed.2.0 Clause 18	Passed
Overload indication - IEC 61672-3 Ed.2.0 Clause 20	Passed
High level stability test - IEC 61672-3 Ed.2.0 Clause 21	Passed
Long term stability test - IEC 61672-3 Ed.2.0 Clause 15	Passed

Environmental conditions:

Pressure:	Temperature:	Relative humidity:
102.34	23.3	40.1

Date of calibration: 1/9/2017
Date of issue: 1/9/2017
Supervisor: Steven E. Marshall
Measurements performed by:

Jeremy Gotwalt

Software version: 6.1 T

Scantek, Inc.
6430 Dobbin Rd., Suite C, Columbia, MD 21045
Ph: 410-290-7726 eMail: callab@scantekinc.com

Test Report No.:37641

Manufacturer:	Rion
Instrument type:	NL20
Serial no:	00110039
Customer:	HMB Professional Engineers, Inc.
Department:	
Order No:	
Contact Person:	Mitchell Green
Address:	3 HMB Circle US 460 Frankfort, KY 40601

Environmental conditions:

Pressure:	102.34
Temperature:	23.3
Relative humidity:	40.1

Supervisor	Steven E. Marshall
Engineer	Jeremy Gotwalt
Date:	1/9/2017

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Measurement Results:

Indication at the calibration check frequency - IEC61672-3 Ed.2 Clause 10

```
Reference Calibrator: WSC4 - NOR1251-30878
Reference calibrator level: 114.00
Before calibration:
  Environmental corrections: 0.00
  Other corrections: -0.2
  Notional level: 113.80
Reference calibrator level before calibration: 113.9
After calibration:
  Environmental corrections: 0.00
  Other corrections: -0.2
  Notional level: 113.80
Reference calibrator level after calibration: 113.8
Associated Calibrator: Rion - NC-73 - 10417585
Associated calibrator level: 93.97
Initial level check:
  Environmental corrections: 0.00
  Other corrections: -0.2
  Notional level: 93.77
Indicated level before calibration: 93.9
Final level statement:
  Environmental corrections after calibration: 0.00
  Other corrections: -0.2
  Notional level: 93.77
Indicated level after calibration: 93.8
This value shall be used for adjusting the sound level meter in the future.
Test Passed
```

Self-generated noise - IEC 61672-3 Ed.2 Clause 11

Network	Level (dB)	Max (dB)	Uncert. (dB)	Result	Comment
A	12.2	20.0	0.3	P	Equivalent capacity
C	17.7	27.0	0.3	P	Equivalent capacity
Z	24.8	32.0	0.3	P	Equivalent capacity

Test Passed

Acoustical test of a frequency weighting - IEC 61672-3 Ed.2.0 Clause 12

A-Weighted results: free field response

Frequency	Response (dB)	Tol. (dB)	(dB)	Uncert. (dB)	Result
125 Hz	-0.2	1.5	-1.5	0.2	P
1 kHz	0.0	1.0	-1.0	0.2	P
4 kHz	-1.3	3.0	-3.0	0.3	P
8 kHz	-1.8	5.0	-5.0	0.5	P

Test Passed

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```
Acoustical test of a frequency weighting - IEC 61672-3 Ed.2.0 Clause 12

The overall frequency response of the sound level meter, typical wind
screen response and microphone response has shown to conform with the
requirements in IEC 61672-3 for a class 2 sound level meter.
Frequency response test using multi frequency calibrator.
Sources for correction data:
Calibrator levels and uncertainty: Scantek - SCL
Microphone field corrections and uncertainty:
Case reflections and uncertainty:
Wind screen corrections and uncertainty:
Tabular information
Calibrator =  WSC4 at 94dB
txtMFCL125 =  94.07
txtMFCLU125 =                0.11
txtSU125 =    0.20
txtM125_1 =   78.1
txtM125_2 =   78.1
txtM125_3 =   78.1
txtMFCL1k =   94.07
txtMFCLU1k =  0.11
txtSU1k =     0.15
txtM1k_1 =    93.9
txtM1k_2 =    93.9
txtM1k_3 =    93.9
txtMFCL4k =   94.02
txtMFCLU4k =  0.11
txtSU4k =     0.40
txtM4k_1 =    93.6
txtM4k_2 =    93.6
txtM4k_3 =    93.6
txtMFCL8k =   93.88
txtMFCLU8k =  0.14
txtSU8k =     0.50
txtM8k_1 =    88.6
txtM8k_2 =    88.6
txtM8k_3 =    88.6
txtSLM125 =   78.1
txtNC125 =    16.1
txtSLMU125 =  0.1
txtMic125 =   0.0
txtMicU125 =  0.05
txtCR125 =
txtCRU125 =
txtWS125 =    0.0
txtWSU125 =   0.1
txtSLM1k =    93.9
txtNC1k =     0
txtSLMU1k =   0.1
txtMFCL1k =   94.07
txtMFCLU1k =  0.11
txtMic1k =    0.4
txtMicU1k =   0.1
txtCR1k =
txtCRU1k =
txtWS1k =     0.1
txtWSU1k =    0.1
txtSLM4k =    93.6
txtNC4k =     -1.0
txtSLMU4k =   0.1
txtMFCL4k =   94.02


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```

Frequency weightings: Z Network - IEC 61672-3 Ed.2.0 Clause 13

Freq (Hz)	Ref. Level (dB)	Meas. Value (dB)	Tol. (dB)	Tol. (dB)	Uncert. (dB)	Dev. (dB)	Result
63.1	83.0	83.0	2.0	-2.0	0.2	0.0	P
125.9	83.0	83.0	1.5	-1.5	0.2	0.0	P
251.2	83.0	83.0	1.5	-1.5	0.2	0.0	P
501.2	83.0	83.0	1.5	-1.5	0.2	0.0	P
1000.0	83.0	83.1	1.0	-1.0	0.2	0.1	P
1995.3	83.0	83.1	2.0	-2.0	0.2	0.1	P
3981.1	83.0	83.1	3.0	-3.0	0.2	0.1	P
7943.3	83.0	83.1	5.0	-5.0	0.2	0.1	P

Test Passed

Frequency and time weightings at 1 kHz IEC 61672-3 Ed.2.0 Clause 14

Weightings Time	Netw	Ref. (dB)	Measured (dB)	Tol. (dB)	Tol. (dB)	Uncert. (dB)	Dev. (dB)	Result
Fast	A	94.0	94.0	0.1	-0.1	0.2	0.0	P
Fast	C	94.0	94.1	0.1	-0.1	0.2	0.1	P
Fast	Z	94.0	94.1	0.1	-0.1	0.2	0.1	P
Fast	Flat	94.0	94.1	0.1	-0.1	0.2	0.1	P
Slow	A	94.0	94.0	0.1	-0.1	0.2	0.0	P
Leq	A	94.0	94.0	0.1	-0.1	0.2	0.0	P
SEL	A	104.0	104.0	0.1	-0.1	0.2	0.0	P

Test Passed

Level linearity on the reference level range - IEC 61672-3 Ed.2 Clause 16

Ref. (dB)	Measured (dB)	Tol. (dB)	Tol. (dB)	Uncert. (dB)	Dev. (dB)	Result
Full scale setting: 120dB						
The following measurements are SPL measurements						
Measured at 31.5 Hz						
74.0	74.0	1.1	-1.1	0.25	0.0	P
79.0	79.0	1.1	-1.1	0.25	0.0	P
84.6	84.6	1.1	-1.1	0.25	0.0	P
85.6	85.6	1.1	-1.1	0.25	0.0	P
86.6	86.6	1.1	-1.1	0.25	0.0	P
87.6	87.6	1.1	-1.1	0.25	0.0	P
88.6	88.6	1.1	-1.1	0.25	0.0	P
74.0	74.6	1.1	-1.1	0.25	0.6	P
69.0	69.1	1.1	-1.1	0.25	0.1	P
64.0	64.0	1.1	-1.1	0.25	0.0	P
59.0	59.1	1.1	-1.1	0.25	0.1	P
54.0	54.1	1.1	-1.1	0.25	0.1	P
49.0	49.1	1.1	-1.1	0.25	0.1	P
44.0	43.9	1.1	-1.1	0.25	-0.1	P
39.0	38.9	1.1	-1.1	0.25	-0.1	P
37.0	37.0	1.1	-1.1	0.25	0.0	P
36.0	35.9	1.1	-1.1	0.25	-0.1	P
35.0	35.0	1.1	-1.1	0.25	0.0	P

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Acoustical test of a frequency weighting - IEC 61672-3 Ed.2.0 Clause 12

```
txtMFCLU4k =  0.11
txtMic4k =    0.2
txtMicU4k =   0.2
txtCR4k =
txtCRU4k =
txtWS4k =     0.3
txtWSU4k =    0.2
txtSLM8k =    88.6
txtNC8k =     1.1
txtSLMU8k =   0.1
txtMFCL8k =   93.88
txtMFCLU8k =  0.14
txtMic8k =    2.7
txtMicU8k =   0.4
txtCR8k =
txtCRU8k =
txtWS8k =     0.0
txtWSU8k =    0.3
```

Frequency weightings: A Network - IEC 61672-3 Ed.2.0 Clause 13

Freq (Hz)	Ref. (dB)	Meas. (dB)	Tol. (dB)	Tol. (dB)	Uncert. (dB)	Dev. (dB)	Result
63.1	83.0	83.0	2.0	-2.0	0.2	0.0	P
125.9	83.0	82.9	1.5	-1.5	0.2	-0.1	P
251.2	83.0	82.9	1.5	-1.5	0.2	-0.1	P
501.2	83.0	82.9	1.5	-1.5	0.2	-0.1	P
1000.0	83.0	83.0	1.0	-1.0	0.2	0.0	P
1995.3	83.0	83.1	2.0	-2.0	0.2	0.1	P
3981.1	83.0	83.1	3.0	-3.0	0.2	0.1	P
7943.3	83.0	83.2	5.0	-5.0	0.2	0.2	P

Test Passed

Frequency weightings: C Network - IEC 61672-3 Ed.2.0 Clause 13

Freq (Hz)	Ref. Level (dB)	Meas. Value (dB)	Tol. (dB)	Tol. (dB)	Uncert. (dB)	Dev. (dB)	Result
63.1	83.0	83.0	2.0	-2.0	0.2	0.0	P
125.9	83.0	83.0	1.5	-1.5	0.2	0.0	P
251.2	83.0	83.0	1.5	-1.5	0.2	0.0	P
501.2	83.0	83.0	1.5	-1.5	0.2	0.0	P
1000.0	83.0	83.0	1.0	-1.0	0.2	0.0	P
1995.3	83.0	83.1	2.0	-2.0	0.2	0.1	P
3981.1	83.0	83.1	3.0	-3.0	0.2	0.1	P
7943.3	83.0	83.2	5.0	-5.0	0.2	0.2	P

Test Passed

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Level linearity on the reference level range - IEC 61672-3 Ed.2 Clause 16

Ref. (dB)	Measured (dB)	Tol. (dB)	Tol. (dB)	Uncert. (dB)	Dev. (dB)	Result
34.0	33.9	1.1	-1.1	0.25	-0.1	P
33.0	32.9	1.1	-1.1	0.25	-0.1	P
Measured at 1 kHz						
94.0	94.0	1.1	-1.1	0.25	0.0	P
99.0	99.0	1.1	-1.1	0.25	0.0	P
104.0	104.0	1.1	-1.1	0.25	0.0	P
109.0	109.0	1.1	-1.1	0.25	0.0	P
114.0	114.0	1.1	-1.1	0.25	0.0	P
119.0	119.0	1.1	-1.1	0.25	0.0	P
124.0	124.0	1.1	-1.1	0.25	0.0	P
125.0	125.0	1.1	-1.1	0.25	0.0	P
126.0	126.0	1.1	-1.1	0.25	0.0	P
127.0	127.1	1.1	-1.1	0.25	0.1	P
128.0	128.1	1.1	-1.1	0.25	0.1	P
94.0	94.0	1.1	-1.1	0.25	0.0	P
89.0	89.0	1.1	-1.1	0.25	0.0	P
84.0	84.0	1.1	-1.1	0.25	0.0	P
79.0	79.0	1.1	-1.1	0.25	0.0	P
74.0	74.0	1.1	-1.1	0.25	0.0	P
69.0	69.0	1.1	-1.1	0.25	0.0	P
64.0	64.0	1.1	-1.1	0.25	0.0	P
59.0	59.0	1.1	-1.1	0.25	0.0	P
54.0	54.0	1.1	-1.1	0.25	0.0	P
49.0	49.0	1.1	-1.1	0.25	0.0	P
44.0	44.0	1.1	-1.1	0.25	0.0	P
39.0	38.9	1.1	-1.1	0.25	-0.1	P
37.0	37.0	1.1	-1.1	0.25	0.0	P
36.0	36.0	1.1	-1.1	0.25	0.0	P
35.0	35.0	1.1	-1.1	0.25	0.0	P
34.0	33.9	1.1	-1.1	0.25	-0.1	P
33.0	33.0	1.1	-1.1	0.25	0.0	P
Measured at 8 kHz						
94.0	94.0	1.1	-1.1	0.25	0.0	P
99.0	99.0	1.1	-1.1	0.25	0.0	P
104.0	104.0	1.1	-1.1	0.25	0.0	P
109.0	109.0	1.1	-1.1	0.25	0.0	P
114.0	114.0	1.1	-1.1	0.25	0.0	P
119.0	119.0	1.1	-1.1	0.25	0.0	P
122.9	122.9	1.1	-1.1	0.25	0.0	P
123.9	123.9	1.1	-1.1	0.25	0.0	P
124.9	124.9	1.1	-1.1	0.25	0.0	P
125.9	126.0	1.1	-1.1	0.25	0.1	P
94.0	94.0	1.1	-1.1	0.25	0.0	P
89.0	89.0	1.1	-1.1	0.25	0.0	P
84.0	84.0	1.1	-1.1	0.25	0.0	P
79.0	79.0	1.1	-1.1	0.25	0.0	P
74.0	74.0	1.1	-1.1	0.25	0.0	P
69.0	69.0	1.1	-1.1	0.25	0.0	P
64.0	64.0	1.1	-1.1	0.25	0.0	P
59.0	59.0	1.1	-1.1	0.25	0.0	P
54.0	54.0	1.1	-1.1	0.25	0.0	P
49.0	49.0	1.1	-1.1	0.25	0.0	P
44.0	44.1	1.1	-1.1	0.25	0.1	P
39.0	39.0	1.1	-1.1	0.25	0.0	P
37.0	37.0	1.1	-1.1	0.25	0.0	P
36.0	36.0	1.1	-1.1	0.25	0.0	P
35.0	35.0	1.1	-1.1	0.25	0.0	P

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Level linearity on the reference level range - IEC 61672-3 Ed.2 Clause 16

Ref. (dB)	Measured (dB)	Tol. (dB)	Tol. (dB)	Uncert. (dB)	Dev. (dB)	Result
34.0	34.0	1.1	-1.1	0.25	0.0	P
33.0	33.0	1.1	-1.1	0.25	0.0	P

Test Passed

Level linearity including the level range control - IEC 61672-3 Ed.2.0 Clause 17

Full Scale (dB)	Ref. Value (dB)	Measured Value (dB)	Tol. Value (dB)	Uncert. (dB)	Dev. (dB)	Result
Measured at 1 kHz						
The following measurements are SPL measurements						
Measuring the reference level on the available ranges.						
130	94.0	94.0	1.1	0.25	0.0	P
120	94.0	94.0	1.1	0.25	0.0	P
110	94.0	94.0	1.1	0.25	0.0	P
100	94.0	94.0	1.1	0.25	0.0	P
Measuring 5 dB below full scale on all available ranges.						
130	125.0	125.0	1.1	0.25	0.0	P
120	115.0	115.0	1.1	0.25	0.0	P
110	105.0	105.0	1.1	0.25	0.0	P
100	95.0	95.0	1.1	0.25	0.0	P
90	85.0	85.0	1.1	0.25	0.0	P
80	75.0	75.0	1.1	0.25	0.0	P

Test Passed

Toneburst response - IEC 61672-3 Ed.2.0 Clause 18

Burst type	Ref. (dB)	Measured (dB)	Tol. (dB)	Tol. (dB)	Uncert. (dB)	Dev. (dB)	Result
Fast 200 mSec	125.0	125.0	1.0	-1.0	0.3	0.0	P
Fast 2.0 mSec	108.0	108.0	1.0	-2.5	0.3	0.0	P
Fast 0.25 mSec	99.0	98.9	1.5	-5.0	0.3	-0.1	P
Slow 200 mSec	118.6	118.6	1.0	-1.0	0.3	0.0	P
Slow 2.0 mSec	99.0	99.0	1.0	-5.0	0.3	0.0	P
SEL 200 mSec	119.0	119.0	1.0	-1.0	0.3	0.0	P
SEL 2.0 mSec	99.0	99.0	1.0	-2.5	0.3	0.0	P
SEL 0.25 mSec	90.0	89.9	1.8	-5.0	0.3	-0.1	P

Test Passed

Rion Type NL20 SNo.: 00110039 Certificate No.:37641 Page 7
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Overload indication - IEC 61672-3 Ed.2.0 Clause 20

	Measured (dB)	Tol. (+/-dB)	Uncert. (dB)	Result
Level difference of positive and negative pulses:	0.1	1.5	0.25	P

Positive 1/2 cycle 4 kHz. Overload occurred at: 139.3
Negative 1/2 cycle 4 kHz. Overload occurred at: 139.2
Test Passed

High level stability test - IEC 61672-3 Ed.2.0 Clause 21

Test signal: Sine wave at 1 kHz

Initial level (dB)	Final level (dB)	Diff. (dB)	Tol. value (dB)	Uncert. (dB)	Result
137.0	137.1	0.1	0.3	0.10	P

Test Passed

Long term stability test - IEC 61672-3 Ed.2.0 Clause 15

Test signal: Sine wave at 1 kHz

Time inteval (mm:SS)	StartLevel (dB)	StopLevel (dB)	Difference (dB)	Tolerence (dB)	Result
26:24	94.0	94.0	0.0	0.3	P

Test Passed

JDb

Rion Type NL20 SNo.: 00110039 Certificate No.:37641 Page 8
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Scantek, Inc.
CALIBRATION LABORATORY
ISO 17025: 2005, ANSI/NCSL Z540:1994 Part 1
ACCREDITED by NVLAP (an ILAC MRA signatory)

NVLAP®
CALIBRATION
NVLAP Lab Code: 200625-0

Calibration Certificate No.37640

Instrument:	**Acoustical Calibrator**	*Date Calibrated:* **1/9/2017**	*Cal Due:* **1/9/2019**		
Model:	**NC-73**	*Status:*	**Received**	**Sent**	
Manufacturer:	**Rion**	*In tolerance:*	**X**	**X**	
Serial number:	**10417585**	*Out of tolerance:*			
Class (IEC 60942):	**2**	*See comments:*			
Barometer type:		*Contains non-accredited tests:* __Yes _X_ No			
Barometer s/n:					

Customer: **HMB Professional Engineers, Inc.** *Address:* **3 HMB Circle US 460**
Tel/Fax: **502-695-9800 / 502-695-9810** **Frankfort, KY 40601**

Tested in accordance with the following procedures and standards:
Calibration of Acoustical Calibrators, Scantek Inc., Rev. 10/1/2010

Instrumentation used for calibration: Nor-1504 Norsonic Test System:

Instrument - Manufacturer	Description	S/N	Cal. Date	Traceability evidence Cal. Lab / Accreditation	Cal. Due
483B-Norsonic	SME Cal Unit	31052	Oct 26, 2016	Scantek, Inc./ NVLAP	Oct 26, 2017
DS-360-SRS	Function Generator	33584	Oct 20, 2015	ACR Env./ A2LA	Oct 20, 2017
34401A-Agilent Technologies	Digital Voltmeter	US36120731	Oct 12, 2016	ACR Env. / A2LA	Oct 12, 2017
HM30-Thommen	Meteo Station	1040170/39633	Nov 1, 2016	ACR Env./ A2LA	Nov 1, 2017
140-Norsonic	Real Time Analyzer	1406423	Oct 29, 2016	Scantek / NVLAP	Oct 29, 2017
PC Program 1018 Norsonic	Calibration software	v.6.1T	Validated Nov 2014	Scantek, Inc.	-
4134-Brüel&Kjær	Microphone	173368	Nov 10, 2016	Scantek, Inc. / NVLAP	Nov 10, 2017
1203-Norsonic	Preamplifier	14052	Aug 24, 2016	Scantek, Inc./ NVLAP	Aug 24, 2017

Instrumentation and test results are traceable to SI (International System of Units) through standards maintained by NIST (USA) and NPL (UK)

Calibrated by:	Jeremy Gotwalt	**Authorized signatory:**	Steven E. Marshall
Signature	[signature]	Signature	Steven E. Marshall
Date	1/9/17	Date	1/10/2017

Calibration Certificates or Test Reports shall not be reproduced, except in full, without written approval of the laboratory.
This Calibration Certificate or Test Reports shall not be used to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the federal government.
Document stored as: Z:\Calibration Lab\Cal 2017\RIONNC73_10417585_M1.doc Page 1 of 2

Results summary: Device was tested and complies with following clauses of mentioned specifications:

CLAUSES[1] FROM STANDARDS REFERENCED IN PROCEDURES:	MET[2]	NOT MET	COMMENTS
Manufacturer specifications			
Manufacturer specifications: Sound pressure level	X		
Manufacturer specifications: Frequency	X		
Manufacturer specifications: Total harmonic distortion	X		
Current standards			
ANSI S1.40:2006 B.3 / IEC 60942: 2003 B.2 - Preliminary inspection	X		
ANSI S1.40:2006 B.4.4 / IEC 60942: 2003 B.3.4 - Sound pressure level	X		
ANSI S1.40:2006 A.5.4 / IEC 60942: 2003 A.4.4 - Sound pressure level stability	X		
ANSI S1.40:2006 B.4.5 / IEC 60942: 2003 B.3.5 - Frequency	X		
ANSI S1.40:2006 B.4.6 / IEC 60942: 2003 B.3.6 - Total harmonic distortion	X		

1 The results of this calibration apply only to the instrument type with serial number identified in this report.

2 The tests marked with (*) are not covered by the current NVLAP accreditation.

Main measured parameters [3]:

Measured[4]/Acceptable[5] Tone frequency (Hz):	Measured[4]/Acceptable[5] Total Harmonic Distortion (%):	Measured [4]/Acceptable Level[5] (dB):
995.32 ± 1.0/1000.0 ± 20.0	0.18 ± 0.10/ < 4	93.97 ± 0.12/94.0 ± 0.75

3 The stated level is valid at measurement conditions.

4 The above expanded uncertainties for frequency and distortion are calculated with a coverage factor k=2; for level k=2.00

5 Acceptable parameters values are from the current standards

Environmental conditions:

Temperature (°C)	Barometric pressure (kPa)	Relative Humidity (%)
23.2 ± 1.1	102.51 ± 0.000	38.2 ± 2.7

Tests made with following attachments to instrument:

Calibrator ½" Adaptor Type: Rion NC-71-S02
Other:

Adjustments: Unit was not adjusted.
Comments: The instrument was tested and met all specifications found in the referenced procedures.

Note: The instrument was tested for the parameters listed in the table above, using the test methods described in the listed standards. All tests were performed around the reference conditions. The test results were compared with the manufacturer's or with the standard's specifications, whichever are larger.
Compliance with any standard cannot be claimed based solely on the periodic tests.

Measured Data: in Acoustical Calibrator Test Report # 37640 of one page.

Place of Calibration: Scantek, Inc.
6430 Dobbin Road, Suite C
Columbia, MD 21045 USA
Ph/Fax: 410-290-7726/ -9167
callab@scantekinc.com

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Test Report No.:37640

Manufacturer: Rion
Type: NC-73
Serial no: 10417585

Customer: HMB Professional Engineers, Inc.
Department:
Address: 3 HMB Circle US 460 Frankfort, KY 40601
Order No:
Contact Person: Mitchell Green
Phone No.: 502-695-9800
Fax No.: 502-695-9810

Measurement Results:

	Level: (dB)	P. Stab : (dB)	Frequency: (Hz)	F. Stab : (%)	Distortion: (% TD)
1:	93.97	0.02	995.30	0.01	0.18
2:	93.97	0.01	995.33	0.01	0.18
3:	93.97	0.01	995.34	0.01	0.18
Result (Average):	**93.97**	**0.01**	**995.32**	**0.01**	**0.18**
Expanded Uncertainty:	0.12	0.02	1.00	0.01	0.10
Degree of Freedom:	>100	>100	>100	7	>100
Coverage Factor:	2.00	2.00	2.00	2.43	2.00

The stated levels are relative to 20µPa.

The stated level is valid at measurement conditions.
Reference microphone: 4134-173368. Volume correction: 0.000 dB
Records:Z:\Calibration Lab\Cal 2017\RIONNC73_10417585_M1.nmf

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA publication EA-4/02.

Environmental conditions:

Pressure:	Temperature:	Relative humidity:
102.510 ± 0.020 kPa	23.2 ± 1.1 °C	38.2 ± 2.7 %RH

Date of calibration: 1/9/2017
Date of issue: 1/9/2017

Supervisor : Steven E. Marshall
Measurements performed by:

Jeremy Gotwalt
Software version: 6.1T

Scantek, Inc.
6430 Dobbin Rd., Suite C, Columbia, MD 21045
Ph: 410-290-7726 eMail: callab@scantekinc.com

APPENDIX E

TNM Output

TNM OUTPUT FOR CENTRAL 1 - TARANSAY DRIVE (TOLL BOTH CROSSINGS)

HMB Professional Engineers 12 June 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_TollAll_Barriers A/B
BARRIER DESIGN: C1_TollAll_Taransay_Updated
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-04-02-COBD-02	115	1	40.4	56.7	66	16.3	10	Sub'l Inc	49.9	6.8	8	-1.2
KY-04-01-BALD-02	15	1	40.4	56.1	66	15.7	10	Sub'l Inc	49.7	6.4	8	-1.6
KY-04-02-COBD-03	154	1	40.4	56.0	66	15.6	10	Sub'l Inc	49.5	6.5	8	-1.5
KY-04-01-BALD-03	16	1	40.4	55.3	66	14.9	10	Sub'l Inc	49.2	6.1	8	-1.9
KY-04-01-BALD-04	157	1	40.4	54.5	66	14.1	10	Sub'l Inc	48.6	5.9	8	-2.1
KY-04-02-COBD-04	155	1	40.4	54.4	66	14.0	10	Sub'l Inc	48.4	6.0	8	-2.0
KY-04-02-COBD-05	156	1	40.4	54.5	66	14.1	10	Sub'l Inc	48.2	6.3	8	-1.7
KY-04-02-BROD-02	111	1	40.4	56.4	66	16.0	10	Sub'l Inc	50.1	6.3	8	-1.7
KY-04-01-BROD-02	26	1	40.4	57.8	66	17.4	10	Sub'l Inc	51.5	6.3	8	-1.7
KY-04-01-BROD-01	25	1	40.4	55.9	66	15.5	10	Sub'l Inc	50.3	5.6	8	-2.4
KY-04-02-BROD-01	110	1	40.4	55.1	66	14.7	10	Sub'l Inc	49.4	5.7	8	-2.3
KY-04-01-COBD-07	35	1	40.4	54.9	66	14.5	10	Sub'l Inc	48.6	6.3	8	-1.7
KY-04-01-COBD-06	34	1	40.4	55.6	66	15.2	10	Sub'l Inc	48.9	6.7	8	-1.3
KY-04-01-COBD-05	33	1	40.4	56.3	66	15.9	10	Sub'l Inc	49.4	6.9	8	-1.1
KY-04-01-COBD-04	113	1	40.4	58.1	66	17.7	10	Sub'l Inc	50.5	7.6	8	-0.4
KY-04-01-COBD-03	30	1	40.4	59.1	66	18.7	10	Sub'l Inc	51.0	8.1	8	0.1
KY-04-01-COBD-02	29	1	40.4	60.2	66	19.8	10	Sub'l Inc	51.9	8.3	8	0.3
KY-04-01-COBD-01	28	1	40.4	61.9	66	21.5	10	Sub'l Inc	52.7	9.2	8	1.2
KY-04-02-COBD-01	114	1	40.4	57.5	66	17.1	10	Sub'l Inc	50.5	7.0	8	-1.0
KY-04-01-BALD-01	14	1	40.4	57.3	66	16.9	10	Sub'l Inc	50.5	6.8	8	-1.2
KY-04-02-BALD-01	107	1	40.4	55.1	66	14.7	10	Sub'l Inc	49.3	5.8	8	-2.2
KY-04-02-BROD-03	112	1	40.4	58.0	66	17.6	10	Sub'l Inc	51.0	7.0	8	-1.0
KY-04-01-BROD-03	27	1	40.4	59.1	66	18.7	10	Sub'l Inc	52.0	7.1	8	-0.9

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	23	5.6	6.7	9.2
All Impacted	23	5.6	6.7	9.2
All that meet NR Goal	3	8.1	8.5	9.2

HMB Professional Engineers 12 June 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_TollAll_Barriers A/B
BARRIER DESIGN: C1_TollAll_Taransay_Updated

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Goal	Calc-Goal	Barrier Reviewed	Important Segments Name	No.	Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-04-02-COBD-02	115	49.9	6.8	8	-1.2	Barrier13	BarA-96	589	20.0	29.4
						Barrier13	BarA-101	593	20.0	29.4
						Barrier13	BarA-99	592	20.0	29.3
						Barrier13	BarA-100	492	20.0	29.3
						Barrier13	BarA-97	590	20.0	29.3
						Barrier13	BarA-102	594	20.0	29.3
						Barrier13	BarA-98	591	20.0	29.3
						Barrier13	BarA-94	587	20.0	29.3
						Barrier13	BarA-103	595	20.0	29.3
						Barrier13	BarA-91	584	20.0	29.3
KY-04-01-BALD-02	15	49.7	6.4	8	-1.6	Barrier13	BarA-96	589	20.0	28.9
						Barrier13	BarA-91	584	20.0	28.8
						Barrier13	BarA-101	593	20.0	28.8
						Barrier13	BarA-94	587	20.0	28.8
						Barrier13	BarA-98	591	20.0	28.8
						Barrier13	BarA-100	492	20.0	28.8
						Barrier13	BarA-87	580	20.0	28.8
						Barrier13	BarA-95	588	20.0	28.7
						Barrier13	BarA-99	592	20.0	28.7
						Barrier13	BarA-97	590	20.0	28.7
KY-04-02-COBD-03	154	49.5	6.5	8	-1.5	Barrier13	BarA-101	593	20.0	28.8

						Barrier13	BarA-103	595	20.0	28.8
						Barrier13	BarA-105	597	20.0	28.8
						Barrier13	BarA-104	596	20.0	28.7
						Barrier13	BarA-102	594	20.0	28.7
						Barrier13	BarA-106	598	20.0	28.7
						Barrier13	BarA-99	592	20.0	28.7
						Barrier13	BarA-96	589	20.0	28.7
						Barrier13	BarA-100	492	20.0	28.7
						Barrier13	BarA-98	591	20.0	28.6
KY-04-01-BALD-03	16	49.2	6.1	8	-1.9	Barrier13	BarA-101	593	20.0	28.0
						Barrier13	BarA-105	597	20.0	28.0
						Barrier13	BarA-103	595	20.0	27.9
						Barrier13	BarA-96	589	20.0	27.9
						Barrier13	BarA-102	594	20.0	27.9
						Barrier13	BarA-104	596	20.0	27.9
						Barrier13	BarA-100	492	20.0	27.9
						Barrier13	BarA-99	592	20.0	27.9
						Barrier13	BarA-106	598	20.0	27.9
						Barrier13	BarA-36	529	0.0	27.9
KY-04-01-BALD-04	157	48.6	5.9	8	-2.1	Barrier13	BarA-105	597	20.0	27.0
						Barrier13	BarA-106	598	20.0	27.0
						Barrier13	BarA-104	596	20.0	27.0
						Barrier13	BarA-108	600	20.0	27.0
						Barrier13	BarA-101	593	20.0	26.9
						Barrier13	BarA-107	599	20.0	26.9
						Barrier13	BarA-103	595	20.0	26.9
						Barrier13	BarA-102	594	20.0	26.9
						Barrier13	BarA-109	601	20.0	26.9
						Barrier13	BarA-36	529	0.0	26.9
KY-04-02-COBD-04	155	48.4	6.0	8	-2.0	Barrier13	BarA-110	602	20.0	26.9
						Barrier13	BarA-106	598	20.0	26.8
						Barrier13	BarA-109	601	20.0	26.8
						Barrier13	BarA-107	599	20.0	26.8
						Barrier13	BarA-108	600	20.0	26.8
						Barrier13	BarA-105	597	20.0	26.8
						Barrier13	BarA-104	596	20.0	26.6

						Barrier13	BarA-101	593	20.0	26.6
						Barrier13	BarA-103	595	20.0	26.6
						Barrier13	BarA-102	594	20.0	26.5
KY-04-02-COBD-05	156	48.2	6.3	8	-1.7	Barrier13	BarA-229	720	0.0	27.5
						Barrier13	BarA-110	602	20.0	26.9
						Barrier13	BarA-228	719	0.0	26.8
						Barrier13	BarA-227	718	0.0	26.7
						Barrier13	BarA-119	611	20.0	26.7
						Barrier13	BarA-109	601	20.0	26.7
						Barrier13	BarA-111	603	20.0	26.6
						Barrier13	BarA-108	600	20.0	26.6
						Barrier13	BarA-114	606	20.0	26.6
						Barrier13	BarA-107	599	20.0	26.5
KY-04-02-BROD-02	111	50.1	6.3	8	-1.7	Barrier13	BarA-225	716	0.0	33.9
						Barrier13	BarA-226	717	0.0	33.8
						Barrier13	BarA-223	714	0.0	31.5
						Barrier13	BarA-224	715	0.0	31.1
						Barrier13	BarA-231	722	0.0	30.8
						Barrier13	BarA-230	721	0.0	30.6
						Barrier13	BarA-232	723	0.0	30.6
						Barrier13	BarA-227	718	0.0	30.2
						Barrier13	BarA-233	724	0.0	30.2
						Barrier13	BarA-238	729	0.0	30.0
KY-04-01-BROD-02	26	51.5	6.3	8	-1.7	Barrier13	BarA-222	713	0.0	36.1
						Barrier13	BarA-223	714	0.0	36.0
						Barrier13	BarA-232	723	0.0	34.9
						Barrier13	BarA-224	715	0.0	34.8
						Barrier13	BarA-226	717	0.0	33.3
						Barrier13	BarA-231	722	0.0	33.2
						Barrier13	BarA-233	724	0.0	33.1
						Barrier13	BarA-225	716	0.0	33.0
						Barrier13	BarA-227	718	0.0	32.7
						Barrier13	BarA-254	745	0.0	32.7
KY-04-01-BROD-01	25	50.3	5.6	8	-2.4	Barrier13	BarA-226	717	0.0	33.6
						Barrier13	BarA-233	724	0.0	33.0
						Barrier13	BarA-225	716	0.0	32.8

						Barrier13	BarA-223	714	0.0	32.7
						Barrier13	BarA-227	718	0.0	32.6
						Barrier13	BarA-222	713	0.0	32.3
						Barrier13	BarA-234	725	0.0	32.3
						Barrier13	BarA-224	715	0.0	31.8
						Barrier13	BarA-242	733	0.0	31.8
						Barrier13	BarA-239	730	0.0	31.5
KY-04-02-BROD-01	110	49.4	5.7	8	-2.3	Barrier13	BarA-227	718	0.0	31.1
						Barrier13	BarA-223	714	0.0	30.3
						Barrier13	BarA-226	717	0.0	30.3
						Barrier13	BarA-224	715	0.0	30.0
						Barrier13	BarA-228	719	0.0	29.7
						Barrier13	BarA-222	713	0.0	29.0
						Barrier13	BarA-233	724	0.0	28.9
						Barrier13	BarA-225	716	0.0	28.7
						Barrier13	BarA-239	730	0.0	28.3
						Barrier13	BarA-236	727	0.0	28.2
KY-04-01-COBD-07	35	48.6	6.3	8	-1.7	Barrier13	BarA-228	719	0.0	27.3
						Barrier13	BarA-229	720	0.0	27.1
						Barrier13	BarA-128	620	20.0	27.0
						Barrier13	BarA-129	621	20.0	27.0
						Barrier13	BarA-130	622	20.0	26.9
						Barrier13	BarA-119	611	20.0	26.9
						Barrier13	BarA-131	623	20.0	26.9
						Barrier13	BarA-124	616	20.0	26.9
						Barrier13	BarA-127	619	20.0	26.9
						Barrier13	BarA-122	614	20.0	26.8
KY-04-01-COBD-06	34	48.9	6.7	8	-1.3	Barrier13	BarA-119	611	20.0	28.0
						Barrier13	BarA-128	620	20.0	27.9
						Barrier13	BarA-120	612	20.0	27.9
						Barrier13	BarA-122	614	20.0	27.9
						Barrier13	BarA-121	613	20.0	27.9
						Barrier13	BarA-124	616	20.0	27.8
						Barrier13	BarA-123	615	20.0	27.8
						Barrier13	BarA-129	621	20.0	27.8
						Barrier13	BarA-130	622	20.0	27.8

						Barrier13	BarA-125	617	20.0	27.8
KY-04-01-COBD-05	33	49.4	6.9	8	-1.1	Barrier13	BarA-01	491	0.0	29.9
						Barrier13	BarA-119	611	20.0	28.8
						Barrier13	BarA-122	614	20.0	28.6
						Barrier13	BarA-118	610	20.0	28.6
						Barrier13	BarA-121	613	20.0	28.5
						Barrier13	BarA-124	616	20.0	28.5
						Barrier13	BarA-117	609	20.0	28.5
						Barrier13	BarA-110	602	20.0	28.5
						Barrier13	BarA-111	603	20.0	28.5
						Barrier13	BarA-123	615	20.0	28.4
KY-04-01-COBD-04	113	50.5	7.6	8	-0.4	Barrier13	BarA-110	602	20.0	31.2
						Barrier13	BarA-04	497	0.0	31.1
						Barrier13	BarA-109	601	20.0	31.0
						Barrier13	BarA-108	600	20.0	30.9
						Barrier13	BarA-111	603	20.0	30.8
						Barrier13	BarA-107	599	20.0	30.8
						Barrier13	BarA-114	606	20.0	30.8
						Barrier13	BarA-119	611	20.0	30.7
						Barrier13	BarA-112	604	20.0	30.7
						Barrier13	BarA-105	597	20.0	30.7
KY-04-01-COBD-03	30	51.0	8.1	8	0.1	Barrier13	BarA-110	602	20.0	32.2
						Barrier13	BarA-109	601	20.0	32.0
						Barrier13	BarA-108	600	20.0	32.0
						Barrier13	BarA-107	599	20.0	31.9
						Barrier13	BarA-105	597	20.0	31.9
						Barrier13	BarA-106	598	20.0	31.8
						Barrier13	BarA-111	603	20.0	31.7
						Barrier13	BarA-112	604	20.0	31.7
						Barrier13	BarA-114	606	20.0	31.7
						Barrier13	BarA-104	596	20.0	31.6
KY-04-01-COBD-02	29	51.9	8.3	8	0.3	Barrier13	BarA-11	504	0.0	33.4
						Barrier13	BarA-09	502	0.0	33.3
						Barrier13	BarA-107	599	20.0	33.2
						Barrier13	BarA-105	597	20.0	33.2
						Barrier13	BarA-104	596	20.0	33.2

						Barrier13	BarA-106	598	20.0	33.2
						Barrier13	BarA-108	600	20.0	33.2
						Barrier13	BarA-109	601	20.0	33.1
						Barrier13	BarA-103	595	20.0	33.1
						Barrier13	BarA-102	594	20.0	33.0
KY-04-01-COBD-01	28	52.7	9.2	8	1.2	Barrier13	BarA-101	593	20.0	34.7
						Barrier13	BarA-102	594	20.0	34.7
						Barrier13	BarA-100	492	20.0	34.7
						Barrier13	BarA-103	595	20.0	34.6
						Barrier13	BarA-99	592	20.0	34.6
						Barrier13	BarA-104	596	20.0	34.6
						Barrier13	BarA-105	597	20.0	34.6
						Barrier13	BarA-98	591	20.0	34.5
						Barrier13	BarA-96	589	20.0	34.4
						Barrier13	BarA-97	590	20.0	34.4
KY-04-02-COBD-01	114	50.5	7.0	8	-1.0	Barrier13	BarA-91	584	20.0	30.3
						Barrier13	BarA-87	580	20.0	30.3
						Barrier13	BarA-88	581	20.0	30.3
						Barrier13	BarA-90	583	20.0	30.3
						Barrier13	BarA-89	582	20.0	30.3
						Barrier13	BarA-92	585	20.0	30.3
						Barrier13	BarA-96	589	20.0	30.3
						Barrier13	BarA-94	587	20.0	30.2
						Barrier13	BarA-86	579	20.0	30.2
						Barrier13	BarA-93	586	20.0	30.2
KY-04-01-BALD-01	14	50.5	6.8	8	-1.2	Barrier13	BarA-87	580	20.0	30.1
						Barrier13	BarA-91	584	20.0	30.1
						Barrier13	BarA-88	581	20.0	30.1
						Barrier13	BarA-86	579	20.0	30.0
						Barrier13	BarA-89	582	20.0	30.0
						Barrier13	BarA-37	530	0.0	30.0
						Barrier13	BarA-90	583	20.0	30.0
						Barrier13	BarA-96	589	20.0	30.0
						Barrier13	BarA-92	585	20.0	29.9
						Barrier13	BarA-93	586	20.0	29.9
KY-04-02-BALD-01	107	49.3	5.8	8	-2.2	Barrier13	BarA-37	530	0.0	29.7

						Barrier13	BarA-35	528	0.0	29.6
						Barrier13	BarA-36	529	0.0	29.6
						Barrier13	BarA-34	527	0.0	29.2
						Barrier13	BarA-33	526	0.0	29.0
						Barrier13	BarA-32	525	0.0	29.0
						Barrier13	BarA-31	524	0.0	28.9
						Barrier13	BarA-30	523	0.0	28.5
						Barrier13	BarA-29	522	0.0	28.4
						Barrier13	BarA-28	521	0.0	28.3
KY-04-02-BROD-03	112	51.0	7.0	8	-1.0	Barrier13	BarA-225	716	0.0	34.7
						Barrier13	BarA-224	715	0.0	34.3
						Barrier13	BarA-226	717	0.0	33.4
						Barrier13	BarA-222	713	0.0	32.7
						Barrier13	BarA-223	714	0.0	32.7
						Barrier13	BarA-237	728	0.0	31.3
						Barrier13	BarA-231	722	0.0	31.1
						Barrier13	BarA-230	721	0.0	30.9
						Barrier13	BarA-175	667	20.0	30.9
						Barrier13	BarA-170	662	20.0	30.8
KY-04-01-BROD-03	27	52.0	7.1	8	-0.9	Barrier13	BarA-222	713	0.0	37.1
						Barrier13	BarA-224	715	0.0	34.8
						Barrier13	BarA-231	722	0.0	34.6
						Barrier13	BarA-223	714	0.0	34.5
						Barrier13	BarA-225	716	0.0	34.5
						Barrier13	BarA-233	724	0.0	34.4
						Barrier13	BarA-227	718	0.0	34.0
						Barrier13	BarA-230	721	0.0	33.9
						Barrier13	BarA-226	717	0.0	33.5
						Barrier13	BarA-232	723	0.0	33.0
Total Cost, All Barriers (including additional cost(s))					$2195763					

HMB Professional Engineers				**12 June 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**Central 1_TollAll_Barriers A/B**									
BARRIER DESIGN:	**C1_TollAll_Taransay_Updated**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier13	W	16.00	19.89	24.00	3679	73192				2195763
									Total Cost:	2195763

HMB Professional Engineers 12 June 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_TollAll_Barriers A/B
BARRIER DESIGN: C1_TollAll_Taransay_Updated

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier13	W	BarA-01	491	0.00	0.00	0.00	0	0				0
		BarA-02	495	0.00	0.00	0.00	0	0				0
		BarA-03	496	0.00	0.00	0.00	0	0				0
		BarA-04	497	0.00	0.00	0.00	0	0				0
		BarA-05	498	0.00	0.00	0.00	0	0				0
		BarA-06	499	0.00	0.00	0.00	0	0				0
		BarA-07	500	0.00	0.00	0.00	0	0				0
		BarA-08	501	0.00	0.00	0.00	0	0				0
		BarA-09	502	0.00	0.00	0.00	0	0				0
		BarA-10	503	0.00	0.00	0.00	0	0				0
		BarA-11	504	0.00	0.00	0.00	0	0				0
		BarA-12	505	0.00	0.00	0.00	0	0				0
		BarA-13	506	0.00	0.00	0.00	0	0				0
		BarA-14	507	0.00	0.00	0.00	0	0				0
		BarA-15	508	0.00	0.00	0.00	0	0				0
		BarA-16	509	0.00	0.00	0.00	0	0				0
		BarA-17	510	0.00	0.00	0.00	0	0				0
		BarA-18	511	0.00	0.00	0.00	0	0				0
		BarA-19	512	0.00	0.00	0.00	0	0				0
		BarA-20	513	0.00	0.00	0.00	0	0				0
		BarA-21	514	0.00	0.00	0.00	0	0				0
		BarA-22	515	0.00	0.00	0.00	0	0				0
		BarA-23	516	0.00	0.00	0.00	0	0				0
		BarA-24	517	0.00	0.00	0.00	0	0				0
		BarA-25	518	0.00	0.00	0.00	0	0				0
		BarA-26	519	0.00	0.00	0.00	0	0				0

		BarA-27	520	0.00	0.00	0.00	0	0				0
		BarA-28	521	0.00	0.00	0.00	0	0				0
		BarA-29	522	0.00	0.00	0.00	0	0				0
		BarA-30	523	0.00	0.00	0.00	0	0				0
		BarA-31	524	0.00	0.00	0.00	0	0				0
		BarA-32	525	0.00	0.00	0.00	0	0				0
		BarA-33	526	0.00	0.00	0.00	0	0				0
		BarA-34	527	0.00	0.00	0.00	0	0				0
		BarA-35	528	0.00	0.00	0.00	0	0				0
		BarA-36	529	0.00	0.00	0.00	0	0				0
		BarA-37	530	0.00	0.00	0.00	0	0				0
		BarA-38	531	20.00	20.00	20.00	20	398				11955
		BarA-39	532	20.00	20.00	20.00	20	397				11911
		BarA-40	533	20.00	20.00	20.00	20	408				12241
		BarA-41	534	20.00	20.00	20.00	20	397				11911
		BarA-42	535	20.00	20.00	20.00	20	398				11955
		BarA-43	536	20.00	20.00	20.00	20	398				11955
		BarA-44	537	24.00	24.00	24.00	20	476				14293
		BarA-45	538	24.00	24.00	24.00	20	490				14690
		BarA-46	539	20.00	20.00	20.00	20	397				11911
		BarA-47	540	20.00	20.00	20.00	20	398				11955
		BarA-48	541	20.00	20.00	20.00	20	398				11955
		BarA-49	542	20.00	20.00	20.00	20	407				12198
		BarA-50	543	20.00	20.00	20.00	20	398				11955
		BarA-51	544	20.00	20.00	20.00	20	397				11911
		BarA-52	545	20.00	20.00	20.00	20	398				11955
		BarA-53	546	20.00	20.00	20.00	20	398				11955
		BarA-54	547	20.00	20.00	20.00	20	407				12198
		BarA-55	548	20.00	20.00	20.00	20	398				11955
		BarA-56	549	20.00	20.00	20.00	20	397				11911
		BarA-57	550	20.00	20.00	20.00	20	398				11955
		BarA-58	551	20.00	20.00	20.00	20	398				11955
		BarA-59	552	20.00	20.00	20.00	20	407				12198
		BarA-60	553	20.00	20.00	20.00	20	398				11955
		BarA-61	554	20.00	20.00	20.00	20	397				11911
		BarA-62	555	20.00	20.00	20.00	20	398				11955
		BarA-63	556	20.00	20.00	20.00	20	408				12241
		BarA-64	557	20.00	20.00	20.00	20	397				11911
		BarA-65	558	20.00	20.00	20.00	20	398				11955

		BarA-66	559	20.00	20.00	20.00	20	398				11955
		BarA-67	560	20.00	20.00	20.00	20	397				11911
		BarA-68	561	20.00	20.00	20.00	20	408				12241
		BarA-69	562	20.00	20.00	20.00	20	398				11955
		BarA-70	563	20.00	20.00	20.00	20	397				11911
		BarA-71	564	20.00	20.00	20.00	20	398				11955
		BarA-72	565	20.00	20.00	20.00	20	397				11911
		BarA-73	566	20.00	20.00	20.00	20	408				12241
		BarA-74	567	20.00	20.00	20.00	20	398				11955
		BarA-75	568	20.00	20.00	20.00	20	397				11911
		BarA-76	569	20.00	20.00	20.00	20	398				11955
		BarA-77	570	20.00	20.00	20.00	20	407				12198
		BarA-78	571	20.00	20.00	20.00	20	398				11955
		BarA-79	572	20.00	20.00	20.00	20	398				11955
		BarA-80	573	20.00	20.00	20.00	20	397				11911
		BarA-81	574	20.00	20.00	20.00	20	398				11955
		BarA-82	575	20.00	20.00	20.00	20	407				12198
		BarA-83	576	20.00	20.00	20.00	20	398				11955
		BarA-84	577	20.00	20.00	20.00	20	398				11955
		BarA-85	578	20.00	20.00	20.00	20	397				11911
		BarA-86	579	20.00	20.00	20.00	20	398				11955
		BarA-87	580	20.00	20.00	20.00	20	407				12198
		BarA-88	581	20.00	20.00	20.00	20	398				11955
		BarA-89	582	20.00	20.00	20.00	20	398				11955
		BarA-90	583	20.00	20.00	20.00	20	397				11911
		BarA-91	584	20.00	20.00	20.00	20	408				12241
		BarA-92	585	20.00	20.00	20.00	20	397				11911
		BarA-93	586	20.00	20.00	20.00	20	398				11955
		BarA-94	587	20.00	20.00	20.00	20	398				11955
		BarA-95	588	20.00	20.00	20.00	20	397				11911
		BarA-96	589	20.00	20.00	20.00	20	408				12241
		BarA-97	590	20.00	20.00	20.00	20	397				11911
		BarA-98	591	20.00	20.00	20.00	20	398				11955
		BarA-99	592	20.00	20.00	20.00	20	398				11955
		BarA-100	492	20.00	20.00	20.00	20	397				11911
		BarA-101	593	20.00	20.00	20.00	20	408				12241
		BarA-102	594	20.00	20.00	20.00	20	397				11911
		BarA-103	595	20.00	20.00	20.00	20	398				11955
		BarA-104	596	20.00	20.00	20.00	20	398				11955

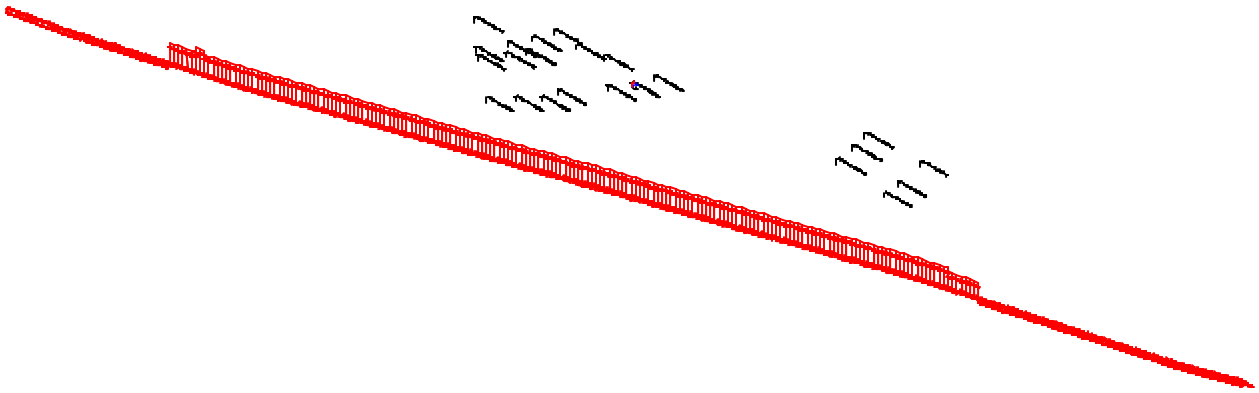
		BarA-105	597	20.00	20.00	20.00	20	407				12198
		BarA-106	598	20.00	20.00	20.00	20	398				11955
		BarA-107	599	20.00	20.00	20.00	20	397				11911
		BarA-108	600	20.00	20.00	20.00	20	398				11955
		BarA-109	601	20.00	20.00	20.00	20	398				11955
		BarA-110	602	20.00	20.00	20.00	20	408				12241
		BarA-111	603	20.00	20.00	20.00	20	397				11911
		BarA-112	604	20.00	20.00	20.00	20	398				11955
		BarA-113	605	20.00	20.00	20.00	20	397				11911
		BarA-114	606	20.00	20.00	20.00	20	408				12241
		BarA-115	607	20.00	20.00	20.00	20	398				11955
		BarA-116	608	20.00	20.00	20.00	20	397				11911
		BarA-117	609	20.00	20.00	20.00	20	398				11955
		BarA-118	610	20.00	20.00	20.00	20	397				11911
		BarA-119	611	20.00	20.00	20.00	20	408				12241
		BarA-120	612	20.00	20.00	20.00	20	398				11955
		BarA-121	613	20.00	20.00	20.00	20	397				11911
		BarA-122	614	20.00	20.00	20.00	20	398				11955
		BarA-123	615	20.00	20.00	20.00	20	397				11911
		BarA-124	616	20.00	20.00	20.00	20	408				12241
		BarA-125	617	20.00	20.00	20.00	20	398				11955
		BarA-126	618	20.00	20.00	20.00	20	397				11911
		BarA-127	619	20.00	20.00	20.00	20	398				11955
		BarA-128	620	20.00	20.00	20.00	20	407				12198
		BarA-129	621	20.00	20.00	20.00	20	398				11955
		BarA-130	622	20.00	20.00	20.00	20	398				11955
		BarA-131	623	20.00	20.00	20.00	20	397				11911
		BarA-132	624	20.00	20.00	20.00	20	398				11955
		BarA-133	625	20.00	20.00	20.00	20	407				12198
		BarA-134	626	20.00	20.00	20.00	20	398				11955
		BarA-135	627	20.00	20.00	20.00	20	398				11955
		BarA-136	628	20.00	20.00	20.00	20	397				11911
		BarA-137	629	20.00	20.00	20.00	20	398				11955
		BarA-138	630	20.00	20.00	20.00	20	407				12198
		BarA-139	631	20.00	20.00	20.00	20	398				11955
		BarA-140	632	20.00	20.00	20.00	20	398				11955
		BarA-141	633	20.00	20.00	20.00	20	397				11911
		BarA-142	634	20.00	20.00	20.00	20	408				12241
		BarA-143	635	20.00	20.00	20.00	20	397				11911

		BarA-144	636	20.00	20.00	20.00	20	398				11955
		BarA-145	637	20.00	20.00	20.00	20	398				11955
		BarA-146	638	20.00	20.00	20.00	20	397				11911
		BarA-147	639	20.00	20.00	20.00	20	408				12241
		BarA-148	640	20.00	20.00	20.00	20	397				11911
		BarA-149	641	20.00	20.00	20.00	20	398				11955
		BarA-150	642	20.00	20.00	20.00	20	398				11955
		BarA-151	643	20.00	20.00	20.00	20	398				11955
		BarA-152	644	20.00	20.00	20.00	20	407				12198
		BarA-153	645	20.00	20.00	20.00	20	398				11955
		BarA-154	646	20.00	20.00	20.00	20	397				11911
		BarA-155	647	20.00	20.00	20.00	20	398				11955
		BarA-156	648	20.00	20.00	20.00	20	408				12241
		BarA-157	649	20.00	20.00	20.00	20	397				11911
		BarA-158	650	20.00	20.00	20.00	20	398				11955
		BarA-159	651	20.00	20.00	20.00	20	397				11911
		BarA-160	652	20.00	20.00	20.00	20	398				11955
		BarA-161	653	20.00	20.00	20.00	20	408				12241
		BarA-162	654	20.00	20.00	20.00	20	397				11911
		BarA-163	655	20.00	20.00	20.00	20	398				11955
		BarA-164	656	20.00	20.00	20.00	20	397				11911
		BarA-165	657	20.00	20.00	20.00	20	398				11955
		BarA-166	658	20.00	20.00	20.00	20	408				12241
		BarA-167	659	20.00	20.00	20.00	20	397				11911
		BarA-168	660	20.00	20.00	20.00	20	398				11955
		BarA-169	661	20.00	20.00	20.00	20	397				11911
		BarA-170	662	20.00	20.00	20.00	20	408				12241
		BarA-171	663	20.00	20.00	20.00	20	398				11955
		BarA-172	664	20.00	20.00	20.00	20	397				11911
		BarA-173	665	20.00	20.00	20.00	20	398				11955
		BarA-174	666	20.00	20.00	20.00	20	397				11911
		BarA-175	667	20.00	20.00	20.00	20	408				12241
		BarA-176	668	20.00	20.00	20.00	20	398				11955
		BarA-177	669	20.00	20.00	20.00	20	397				11911
		BarA-178	670	20.00	20.00	20.00	20	398				11955
		BarA-179	671	20.00	20.00	20.00	20	397				11911
		BarA-180	672	20.00	20.00	20.00	20	408				12241
		BarA-181	673	20.00	20.00	20.00	20	398				11955
		BarA-182	674	20.00	20.00	20.00	20	397				11911

		BarA-183	675	20.00	20.00	20.00	20	398				11955
		BarA-184	676	20.00	20.00	20.00	20	407				12198
		BarA-185	677	20.00	20.00	20.00	20	398				11955
		BarA-186	678	20.00	20.00	20.00	20	398				11955
		BarA-187	679	20.00	20.00	20.00	20	397				11911
		BarA-188	680	20.00	20.00	20.00	20	398				11955
		BarA-189	681	20.00	20.00	20.00	20	407				12198
		BarA-190	682	20.00	20.00	20.00	20	398				11955
		BarA-191	683	20.00	20.00	20.00	20	398				11955
		BarA-192	684	20.00	20.00	20.00	20	398				11955
		BarA-193	685	20.00	20.00	20.00	20	397				11911
		BarA-194	686	20.00	20.00	20.00	20	408				12241
		BarA-195	687	20.00	20.00	20.00	20	397				11911
		BarA-196	688	20.00	20.00	20.00	20	398				11955
		BarA-197	689	20.00	20.00	20.00	20	398				11955
		BarA-198	690	20.00	20.00	20.00	20	407				12198
		BarA-199	493	20.00	20.00	20.00	20	398				11955
		BarA-200	691	20.00	20.00	20.00	20	397				11911
		BarA-201	692	20.00	20.00	20.00	20	398				11955
		BarA-202	693	20.00	20.00	20.00	20	398				11955
		BarA-203	694	20.00	20.00	20.00	20	407				12198
		BarA-204	695	20.00	20.00	20.00	20	398				11955
		BarA-205	696	20.00	20.00	20.00	20	397				11911
		BarA-206	697	20.00	20.00	20.00	20	398				11955
		BarA-207	698	20.00	20.00	20.00	20	398				11955
		BarA-208	699	20.00	20.00	20.00	20	407				12198
		BarA-209	700	20.00	20.00	20.00	20	398				11955
		BarA-210	701	20.00	20.00	20.00	20	397				11911
		BarA-211	702	20.00	20.00	20.00	20	398				11955
		BarA-212	703	20.00	20.00	20.00	20	408				12241
		BarA-213	704	20.00	20.00	20.00	20	397				11911
		BarA-214	705	20.00	20.00	20.00	20	398				11955
		BarA-215	706	16.00	16.00	16.00	20	318				9528
		BarA-216	707	16.00	16.00	16.00	20	319				9564
		BarA-217	708	16.00	16.00	16.00	20	326				9793
		BarA-218	709	16.00	16.00	16.00	20	318				9528
		BarA-219	710	16.00	16.00	16.00	20	319				9564
		BarA-220	711	16.00	16.00	16.00	20	318				9528
		BarA-221	712	16.00	16.00	16.00	20	319				9564

		BarA-222	713	0.00	0.00	0.00	0	0				0
		BarA-223	714	0.00	0.00	0.00	0	0				0
		BarA-224	715	0.00	0.00	0.00	0	0				0
		BarA-225	716	0.00	0.00	0.00	0	0				0
		BarA-226	717	0.00	0.00	0.00	0	0				0
		BarA-227	718	0.00	0.00	0.00	0	0				0
		BarA-228	719	0.00	0.00	0.00	0	0				0
		BarA-229	720	0.00	0.00	0.00	0	0				0
		BarA-230	721	0.00	0.00	0.00	0	0				0
		BarA-231	722	0.00	0.00	0.00	0	0				0
		BarA-232	723	0.00	0.00	0.00	0	0				0
		BarA-233	724	0.00	0.00	0.00	0	0				0
		BarA-234	725	0.00	0.00	0.00	0	0				0
		BarA-235	726	0.00	0.00	0.00	0	0				0
		BarA-236	727	0.00	0.00	0.00	0	0				0
		BarA-237	728	0.00	0.00	0.00	0	0				0
		BarA-238	729	0.00	0.00	0.00	0	0				0
		BarA-239	730	0.00	0.00	0.00	0	0				0
		BarA-240	731	0.00	0.00	0.00	0	0				0
		BarA-241	732	0.00	0.00	0.00	0	0				0
		BarA-242	733	0.00	0.00	0.00	0	0				0
		BarA-243	734	0.00	0.00	0.00	0	0				0
		BarA-244	735	0.00	0.00	0.00	0	0				0
		BarA-245	736	0.00	0.00	0.00	0	0				0
		BarA-246	737	0.00	0.00	0.00	0	0				0
		BarA-247	738	0.00	0.00	0.00	0	0				0
		BarA-248	739	0.00	0.00	0.00	0	0				0
		BarA-249	740	0.00	0.00	0.00	0	0				0
		BarA-250	741	0.00	0.00	0.00	0	0				0
		BarA-251	742	0.00	0.00	0.00	0	0				0
		BarA-252	743	0.00	0.00	0.00	0	0				0
		BarA-253	744	0.00	0.00	0.00	0	0				0
		BarA-254	745	0.00	0.00	0.00	0	0				0
		BarA-255	746	0.00	0.00	0.00	0	0				0
		BarA-256	747	0.00	0.00	0.00	0	0				0
		BarA-257	748	0.00	0.00	0.00	0	0				0
		BarA-258	749	0.00	0.00	0.00	0	0				0
		BarA-259	750	0.00	0.00	0.00	0	0				0
		BarA-260	751	0.00	0.00	0.00	0	0				0

		BarA-261	752	0.00	0.00	0.00	0	0				0
		BarA-262	753	0.00	0.00	0.00	0	0				0
		BarA-263	754	0.00	0.00	0.00	0	0				0
		BarA-264	755	0.00	0.00	0.00	0	0				0
		BarA-265	756	0.00	0.00	0.00	0	0				0
		BarA-266	757	0.00	0.00	0.00	0	0				0
		BarA-267	758	0.00	0.00	0.00	0	0				0
		BarA-268	759	0.00	0.00	0.00	0	0				0
		BarA-269	760	0.00	0.00	0.00	0	0				0
		BarA-270	761	0.00	0.00	0.00	0	0				0
		BarA-271	762	0.00	0.00	0.00	0	0				0
		BarA-272	763	0.00	0.00	0.00	0	0				0
		BarA-273	764	0.00	0.00	0.00	0	0				0
		BarA-274	765	0.00	0.00	0.00	0	0				0
		BarA-275	766	0.00	0.00	0.00	0	0				0
		BarA-276	767	0.00	0.00	0.00	0	0				0
		BarA-277	768	0.00	0.00	0.00	0	0				0
		BarA-278	769	0.00	0.00	0.00	0	0				0
		BarA-279	770	0.00	0.00	0.00	0	0				0
		BarA-280	771	0.00	0.00	0.00	0	0				0
		BarA-281	772	0.00	0.00	0.00	0	0				0



Central 1_TollAll_Barriers A/B	Sheet 1 of 1	12 Jun 2018
	HMB Professional Engineers	
Barrier View-C1_TollAll_Taransay_Updated	Project/Contract No. I-69 ORX	
Run name: C1_TollAll_Updated_A	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR CENTRAL 1 – US 60 TIE (TOLL BOTH CROSSINGS)

HMB Professional Engineers 13 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_TollAll_Barriers A/B
BARRIER DESIGN: C1_TollAll_AreaB_US60
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-04-01-US60-23	97	1	53.6	55.9	66	2.3	10	----	49.8	6.1	8	-1.9
KY-04-01-US60-24	98	1	52.7	55.3	66	2.6	10	----	48.6	6.7	8	-1.3
KY-04-01-US60-25	99	1	51.3	54.0	66	2.7	10	----	47.9	6.1	8	-1.9
KY-04-01-US60-26	100	1	50.1	52.7	66	2.6	10	----	47.0	5.7	8	-2.3
KY-04-01-US60-27	101	1	48.9	51.5	66	2.6	10	----	49.0	2.5	8	-5.5
KY-04-01-US60-28	102	1	48.4	51.1	66	2.7	10	----	48.9	2.2	8	-5.8
KY-04-01-US60-29	103	1	47.2	50.4	66	3.2	10	----	48.6	1.8	8	-6.2
KY-04-01-US60-30	105	1	46.2	49.9	66	3.7	10	----	48.2	1.7	8	-6.3
KY-04-01-US60-21	94	1	52.6	55.3	66	2.7	10	----	50.1	5.2	8	-2.8
KY-04-01-US60-20	93	1	52.9	55.3	66	2.4	10	----	50.4	4.9	8	-3.1
KY-04-01-US60-19	92	1	53.1	55.4	66	2.3	10	----	50.7	4.7	8	-3.3
KY-04-01-US60-18	91	1	53.3	55.5	66	2.2	10	----	50.8	4.7	8	-3.3
KY-04-01-US60-17	90	1	53.8	55.9	66	2.1	10	----	51.2	4.7	8	-3.3
KY-04-01-US60-16	89	1	53.8	55.7	66	1.9	10	----	51.4	4.3	8	-3.7
KY-04-01-US60-14	87	1	55.2	56.9	66	1.7	10	----	52.6	4.3	8	-3.7
KY-04-01-US60-13	86	1	55.3	57.0	66	1.7	10	----	52.8	4.2	8	-3.8
KY-04-01-US60-11	83	1	55.4	57.1	66	1.7	10	----	53.3	3.8	8	-4.2
KY-04-01-US60-10	82	1	55.4	57.2	66	1.8	10	----	53.4	3.8	8	-4.2
KY-04-01-US60-09	82	1	55.5	57.3	66	1.8	10	----	53.5	3.8	8	-4.2
KY-04-01-US60-08	81	1	55.7	57.5	66	1.8	10	----	53.8	3.7	8	-4.3
KY-04-01-US60-07	80	4	57.1	58.6	66	1.5	10	----	54.2	4.4	8	-3.6
KY-04-01-US60-06	79	4	57.0	58.4	66	1.4	10	----	53.5	4.9	8	-3.1
KY-04-01-US60-05	78	4	58.5	59.5	66	1.0	10	----	53.8	5.7	8	-2.3
KY-04-01-US60-04	77	4	60.2	61.2	66	1.0	10	----	55.0	6.2	8	-1.8

KY-04-01-US60-03	76	4	62.8	64.4	66	1.6	10	----	57.6	6.8	8	-1.2
KY-04-01-US60-22	96	1	53.9	55.6	66	1.7	10	----	50.1	5.5	8	-2.5
KY-04-01-US60-01	74	1	61.3	63.0	66	1.7	10	----	58.6	4.4	8	-3.6
KY-04-01-US60-02	75	2	65.1	66.9	66	1.8	10	Snd Lvl	60.3	6.6	8	-1.4
KY-04-02-TARD-02	168	1	40.4	42.1	66	1.7	10	----	41.8	0.3	8	-7.7
KY-04-01-US60-VAL-02	141	1	62.2	56.9	66	-5.3	10	----	56.2	0.7	8	-7.3

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	46	0.3	4.3	6.8
All Impacted	2	6.6	6.6	6.6
All that meet NR Goal	0	0.0	0.0	0.0

HMB Professional Engineers 13 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_TollAll_Barriers A/B
BARRIER DESIGN: C1_TollAll_AreaB_US60

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Goal	Calc-Goal	Barrier Reviewed	Important Segments Name	No.	Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-04-01-US60-23	97	49.8	6.1	8	-1.9	Barrier4	point385	385	20.0	38.5
						Barrier6	point453	453	0.0	37.6
						Barrier6	point452	452	0.0	37.0
						Barrier6	point454	454	0.0	36.4
						Barrier4	point386	386	20.0	34.7
						Barrier4	point384	384	20.0	34.2
						Barrier4	point377	377	20.0	33.9
						Barrier4	point383	383	20.0	33.6
						Barrier4	point376	376	20.0	33.4
						Barrier4	point378	378	20.0	33.0
KY-04-01-US60-24	98	48.6	6.7	8	-1.3	Barrier4	point388	388	20.0	38.0
						Barrier4	point387	387	20.0	34.5
						Barrier4	point389	389	20.0	34.5
						Barrier4	point381	381	20.0	34.3
						Barrier4	point382	382	20.0	34.2
						Barrier4	point386	386	20.0	33.5
						Barrier4	point380	380	20.0	32.8
						Barrier4	point385	385	20.0	32.3
						Barrier4	point379	379	20.0	32.0
						Barrier6	point450	450	20.0	31.1
KY-04-01-US60-25	99	47.9	6.1	8	-1.9	Barrier4	point392	392	20.0	37.1

						Barrier4	point391	391	20.0	34.7
						Barrier4	point385	385	20.0	32.6
						Barrier4	point390	390	20.0	32.6
						Barrier4	point384	384	20.0	32.2
						Barrier4	point393	393	20.0	31.7
						Barrier4	point386	386	20.0	31.7
						Barrier4	point383	383	20.0	31.5
						Barrier4	point389	389	20.0	30.9
						Barrier4	point382	382	20.0	30.4
KY-04-01-US60-26	100	47.0	5.7	8	-2.3	Barrier4	point395	395	20.0	35.0
						Barrier4	point394	394	20.0	32.3
						Barrier4	point390	390	20.0	30.6
						Barrier6	point450	450	20.0	30.3
						Barrier4	point396	396	20.0	30.1
						Barrier4	point389	389	20.0	29.9
						Barrier4	point388	388	20.0	29.3
						Barrier4	point387	387	20.0	28.4
						Barrier4	point393	393	20.0	28.3
						Barrier4	point386	386	20.0	28.3
KY-04-01-US60-27	101	49.0	2.5	8	-5.5	Barrier6	point448	448	20.0	29.9
						Barrier5	point413	413	20.0	28.9
						Barrier4	point392	392	20.0	28.8
						Barrier5	point418	418	20.0	28.7
						Barrier5	point417	417	20.0	28.7
						Barrier5	point421	421	20.0	28.6
						Barrier5	point419	419	20.0	28.6
						Barrier5	point414	414	20.0	28.6
						Barrier5	point420	420	20.0	28.6
						Barrier5	point416	416	20.0	28.5
KY-04-01-US60-28	102	48.9	2.2	8	-5.8	Barrier6	point448	448	20.0	29.2
						Barrier5	point419	419	20.0	28.6
						Barrier6	point449	449	20.0	28.5
						Barrier5	point421	421	20.0	28.4
						Barrier5	point420	420	20.0	28.4
						Barrier5	point417	417	20.0	28.4
						Barrier5	point418	418	20.0	28.2

						Barrier5	point413	413	20.0	28.2
						Barrier5	point422	422	20.0	28.2
						Barrier5	point416	416	20.0	28.1
KY-04-01-US60-29	103	48.6	1.8	8	-6.2	Barrier6	point447	447	20.0	29.1
						Barrier6	point452	452	0.0	28.0
						Barrier6	point448	448	20.0	27.6
						Barrier5	point418	418	20.0	27.5
						Barrier5	point417	417	20.0	27.4
						Barrier5	point409	409	20.0	27.3
						Barrier5	point416	416	20.0	27.3
						Barrier5	point415	415	20.0	27.3
						Barrier5	point421	421	20.0	27.2
						Barrier5	point413	413	20.0	27.2
KY-04-01-US60-30	105	48.2	1.7	8	-6.3	Barrier6	point446	446	20.0	28.8
						Barrier6	point452	452	0.0	28.0
						Barrier6	point447	447	20.0	26.7
						Barrier5	point418	418	20.0	26.6
						Barrier5	point417	417	20.0	26.6
						Barrier5	point419	419	20.0	26.6
						Barrier5	point416	416	20.0	26.5
						Barrier5	point421	421	20.0	26.5
						Barrier5	point420	420	20.0	26.4
						Barrier5	point410	410	20.0	26.4
KY-04-01-US60-21	94	50.1	5.2	8	-2.8	Barrier6	point453	453	0.0	39.3
						Barrier6	point452	452	0.0	39.1
						Barrier6	point454	454	0.0	36.3
						Barrier4	point381	381	20.0	35.5
						Barrier4	point382	382	20.0	35.4
						Barrier7	point472	472	0.0	34.0
						Barrier7	point471	471	0.0	33.6
						Barrier4	point383	383	20.0	32.2
						Barrier6	point442	442	20.0	31.6
						Barrier6	point461	461	20.0	31.3
KY-04-01-US60-20	93	50.4	4.9	8	-3.1	Barrier6	point452	452	0.0	39.8
						Barrier6	point453	453	0.0	39.6
						Barrier6	point454	454	0.0	38.2

						Barrier4	point380	380	20.0	35.8
						Barrier7	point471	471	0.0	34.9
						Barrier7	point472	472	0.0	34.8
						Barrier4	point381	381	20.0	32.6
						Barrier6	point439	439	20.0	31.5
						Barrier6	point462	462	20.0	31.3
						Barrier6	point461	461	20.0	31.3
KY-04-01-US60-19	92	50.7	4.7	8	-3.3	Barrier6	point452	452	0.0	40.2
						Barrier6	point453	453	0.0	39.6
						Barrier6	point454	454	0.0	39.3
						Barrier7	point471	471	0.0	35.5
						Barrier7	point472	472	0.0	35.2
						Barrier4	point379	379	20.0	33.1
						Barrier6	point460	460	20.0	31.1
						Barrier6	point457	457	20.0	31.1
						Barrier6	point459	459	20.0	31.0
						Barrier4	point380	380	20.0	30.9
KY-04-01-US60-18	91	50.8	4.7	8	-3.3	Barrier6	point452	452	0.0	40.2
						Barrier6	point454	454	0.0	39.6
						Barrier6	point453	453	0.0	39.5
						Barrier7	point472	472	0.0	37.4
						Barrier7	point471	471	0.0	36.8
						Barrier7	point474	474	0.0	32.7
						Barrier4	point378	378	20.0	31.7
						Barrier6	point457	457	20.0	30.8
						Barrier6	point455	455	20.0	30.6
						Barrier6	point456	456	20.0	30.5
KY-04-01-US60-17	90	51.2	4.7	8	-3.3	Barrier6	point452	452	0.0	40.6
						Barrier6	point454	454	0.0	39.8
						Barrier6	point453	453	0.0	39.3
						Barrier7	point472	472	0.0	38.1
						Barrier7	point471	471	0.0	38.0
						Barrier7	point474	474	0.0	33.0
						Barrier4	point377	377	20.0	31.3
						Barrier7	point470	470	20.0	30.9
						Barrier6	point455	455	20.0	30.5

						Barrier6	point451	451	20.0	30.3
KY-04-01-US60-16	89	51.4	4.3	8	-3.7	Barrier6	point454	454	0.0	39.4
						Barrier6	point452	452	0.0	39.4
						Barrier6	point453	453	0.0	39.3
						Barrier7	point471	471	0.0	38.7
						Barrier7	point472	472	0.0	38.6
						Barrier7	point474	474	0.0	34.1
						Barrier4	point376	376	20.0	30.3
						Barrier6	point439	439	20.0	30.0
						Barrier6	point448	448	20.0	30.0
						Barrier6	point451	451	20.0	29.8
KY-04-01-US60-14	87	52.6	4.3	8	-3.7	Barrier7	point472	472	0.0	41.0
						Barrier7	point471	471	0.0	40.9
						Barrier6	point453	453	0.0	38.7
						Barrier6	point454	454	0.0	38.5
						Barrier6	point452	452	0.0	37.9
						Barrier7	point474	474	0.0	36.2
						Barrier6	point441	441	20.0	30.6
						Barrier4	point373	373	20.0	30.5
						Barrier6	point439	439	20.0	30.5
						Barrier6	point442	442	20.0	30.4
KY-04-01-US60-13	86	52.8	4.2	8	-3.8	Barrier7	point472	472	0.0	41.3
						Barrier7	point471	471	0.0	41.1
						Barrier6	point453	453	0.0	37.9
						Barrier6	point454	454	0.0	37.8
						Barrier7	point474	474	0.0	37.5
						Barrier6	point452	452	0.0	37.2
						Barrier9	point488	488	20.0	31.1
						Barrier6	point439	439	20.0	30.9
						Barrier6	point440	440	20.0	30.7
						Barrier6	point441	441	20.0	30.5
KY-04-01-US60-11	83	53.3	3.8	8	-4.2	Barrier7	point471	471	0.0	41.3
						Barrier7	point472	472	0.0	41.3
						Barrier7	point474	474	0.0	37.9
						Barrier6	point453	453	0.0	36.9
						Barrier6	point454	454	0.0	36.8

						Barrier6	point452	452	0.0	36.4
						Barrier9	point484	484	20.0	31.3
						Barrier6	point439	439	20.0	30.8
						Barrier6	point437	437	20.0	30.5
						Barrier9	point485	485	20.0	30.3
KY-04-01-US60-10	82	53.4	3.8	8	-4.2	Barrier7	point471	471	0.0	41.7
						Barrier7	point472	472	0.0	41.6
						Barrier7	point474	474	0.0	37.8
						Barrier6	point453	453	0.0	36.3
						Barrier6	point454	454	0.0	36.2
						Barrier6	point452	452	0.0	35.9
						Barrier9	point483	483	20.0	30.9
						Barrier7	point473	473	20.0	30.6
						Barrier6	point437	437	20.0	30.5
						Barrier4	point371	371	20.0	30.5
KY-04-01-US60-09	82	53.5	3.8	8	-4.2	Barrier7	point472	472	0.0	41.7
						Barrier7	point471	471	0.0	41.2
						Barrier7	point474	474	0.0	37.6
						Barrier6	point453	453	0.0	35.9
						Barrier6	point454	454	0.0	35.8
						Barrier6	point452	452	0.0	35.6
						Barrier4	point371	371	20.0	30.7
						Barrier7	point473	473	20.0	30.6
						Barrier9	point481	481	20.0	30.5
						Barrier7	point469	469	20.0	30.2
KY-04-01-US60-08	81	53.8	3.7	8	-4.3	Barrier7	point472	472	0.0	41.5
						Barrier7	point471	471	0.0	41.4
						Barrier7	point474	474	0.0	37.0
						Barrier6	point454	454	0.0	35.7
						Barrier6	point453	453	0.0	35.5
						Barrier6	point452	452	0.0	35.0
						Barrier7	point469	469	20.0	30.7
						Barrier7	point470	470	20.0	30.7
						Barrier4	point370	370	20.0	30.6
						Barrier7	point467	467	20.0	30.4
KY-04-01-US60-07	80	54.2	4.4	8	-3.6	Barrier7	point471	471	0.0	42.9

						Barrier7	point472	472	0.0	42.8
						Barrier6	point453	453	0.0	40.3
						Barrier6	point454	454	0.0	40.0
						Barrier7	point474	474	0.0	39.7
						Barrier6	point452	452	0.0	39.2
						Barrier4	point371	371	20.0	32.1
						Barrier8	point475	475	20.0	32.0
						Barrier6	point440	440	20.0	31.8
						Barrier6	point439	439	20.0	31.6
KY-04-01-US60-06	79	53.5	4.9	8	-3.1	Barrier7	point471	471	0.0	41.9
						Barrier7	point472	472	0.0	41.8
						Barrier6	point454	454	0.0	40.8
						Barrier6	point452	452	0.0	39.6
						Barrier7	point474	474	0.0	38.5
						Barrier6	point453	453	0.0	33.3
						Barrier6	point442	442	20.0	31.6
						Barrier6	point440	440	20.0	31.4
						Barrier6	point439	439	20.0	31.4
						Barrier8	point478	478	20.0	31.4
KY-04-01-US60-05	78	53.8	5.7	8	-2.3	Barrier6	point452	452	0.0	43.6
						Barrier7	point472	472	0.0	42.4
						Barrier6	point453	453	0.0	42.3
						Barrier6	point454	454	0.0	42.0
						Barrier7	point471	471	0.0	41.7
						Barrier7	point474	474	0.0	37.3
						Barrier4	point367	367	20.0	32.8
						Barrier4	point371	371	20.0	32.6
						Barrier6	point447	447	20.0	32.5
						Barrier6	point449	449	20.0	32.5
KY-04-01-US60-04	77	55.0	6.2	8	-1.8	Barrier6	point452	452	0.0	46.0
						Barrier6	point453	453	0.0	44.9
						Barrier6	point454	454	0.0	44.5
						Barrier7	point472	472	0.0	42.9
						Barrier7	point471	471	0.0	42.5
						Barrier7	point474	474	0.0	39.6
						Barrier4	point367	367	20.0	34.5

						Barrier6	point448	448	20.0	34.0
						Barrier6	point449	449	20.0	33.9
						Barrier6	point447	447	20.0	33.9
KY-04-01-US60-03	76	57.6	6.8	8	-1.2	Barrier6	point452	452	0.0	50.9
						Barrier6	point453	453	0.0	50.2
						Barrier6	point454	454	0.0	50.1
						Barrier7	point472	472	0.0	43.9
						Barrier7	point471	471	0.0	43.4
						Barrier7	point474	474	0.0	40.7
						Barrier4	point367	367	20.0	37.1
						Barrier6	point450	450	20.0	36.9
						Barrier6	point449	449	20.0	36.8
						Barrier4	point365	365	20.0	36.8
KY-04-01-US60-22	96	50.1	5.5	8	-2.5	Barrier6	point453	453	0.0	39.2
						Barrier6	point452	452	0.0	38.9
						Barrier4	point382	382	20.0	37.7
						Barrier6	point454	454	0.0	37.1
						Barrier4	point383	383	20.0	34.4
						Barrier4	point374	374	20.0	33.4
						Barrier7	point472	472	0.0	33.3
						Barrier4	point375	375	20.0	33.2
						Barrier7	point471	471	0.0	32.9
						Barrier4	point381	381	20.0	32.7
KY-04-01-US60-01	74	58.6	4.4	8	-3.6	Barrier7	point471	471	0.0	46.7
						Barrier7	point472	472	0.0	45.9
						Barrier7	point474	474	0.0	41.1
						Barrier6	point452	452	0.0	37.6
						Barrier6	point453	453	0.0	37.2
						Barrier6	point454	454	0.0	36.9
						Barrier4	point365	365	20.0	35.4
						Barrier8	point479	479	20.0	35.1
						Barrier8	point475	475	20.0	35.1
						Barrier8	point477	477	20.0	35.0
KY-04-01-US60-02	75	60.3	6.6	8	-1.4	Barrier6	point452	452	0.0	54.6
						Barrier6	point453	453	0.0	54.5
						Barrier6	point454	454	0.0	53.6

						Barrier7	point472	472	0.0	42.2
						Barrier7	point471	471	0.0	42.2
						Barrier4	point365	365	20.0	42.1
						Barrier7	point474	474	0.0	41.0
						Barrier6	point451	451	20.0	39.4
						Barrier6	point450	450	20.0	39.4
						Barrier6	point449	449	20.0	39.4
KY-04-02-TARD-02	168	41.8	0.3	8	-7.7	Barrier5	point413	413	20.0	16.1
						Barrier5	point412	412	20.0	15.9
						Barrier5	point410	410	20.0	15.8
						Barrier5	point409	409	20.0	15.8
						Barrier5	point414	414	20.0	15.6
						Barrier5	point411	411	20.0	15.6
						Barrier5	point408	408	20.0	15.5
						Barrier5	point407	407	20.0	15.2
						Barrier5	point406	406	20.0	15.2
						Barrier5	point405	405	20.0	15.0
KY-04-01-US60-VAL-02	141	56.2	0.7	8	-7.3	Barrier4	point368	368	20.0	31.7
						Barrier5	point436	436	20.0	31.5
						Barrier4	point367	367	20.0	31.3
						Barrier4	point365	365	20.0	29.6
						Barrier5	point435	435	20.0	25.7
						Barrier5	point434	434	20.0	25.6
						Barrier5	point413	413	20.0	25.5
						Barrier5	point433	433	20.0	25.5
						Barrier5	point412	412	20.0	25.4
						Barrier5	point429	429	20.0	25.4
Total Cost, All Barriers (including additional cost(s))					$1323913					

HMB Professional Engineers **13 March 2018**
MG/mdg **TNM 2.5**

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT: **I-69 ORX**
RUN: **Central 1_TollAll_Barriers A/B**
BARRIER DESIGN: **C1_TollAll_AreaB_US60**

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	$
Barrier5	W	20.00	20.00	20.00	779	15577				467301
Barrier4	W	20.00	20.00	20.00	614	12271				368142
Barrier6	W	20.00	20.00	20.00	501	10028				300841
Barrier7	W	20.00	20.00	20.00	80	1606				48183
Barrier8	W	20.00	20.00	20.00	91	1817				54512
Barrier9	W	20.00	20.00	20.00	142	2831				84935
									Total Cost:	1323913

HMB Professional Engineers 13 March 2018
MG/mdg TNM 2.5

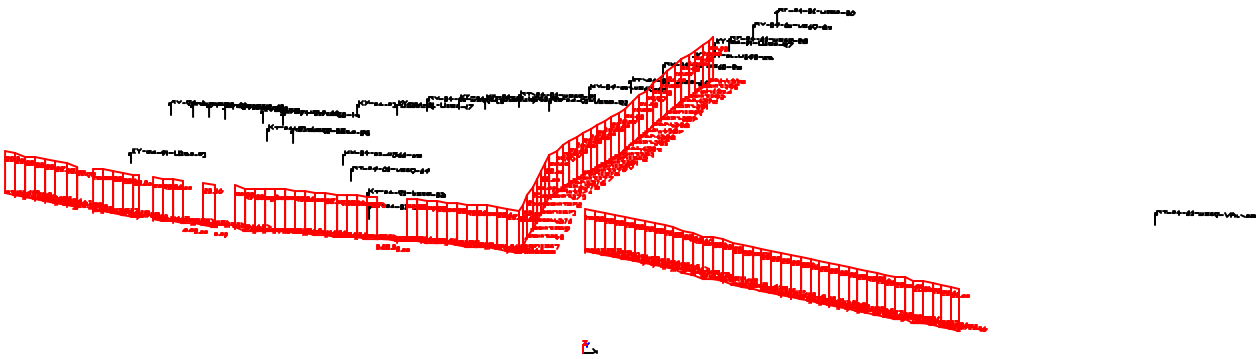
RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_TollAll_Barriers A/B
BARRIER DESIGN: C1_TollAll_AreaB_US60

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier5	W	point397	397	20.00	20.00	20.00	20	403				12093
		point399	399	20.00	20.00	20.00	20	395				11838
		point400	400	20.00	20.00	20.00	20	404				12113
		point401	401	20.00	20.00	20.00	20	395				11861
		point402	402	20.00	20.00	20.00	20	404				12134
		point403	403	20.00	20.00	20.00	20	396				11887
		point404	404	20.00	20.00	20.00	20	405				12157
		point405	405	20.00	20.00	20.00	20	397				11914
		point406	406	20.00	20.00	20.00	20	397				11914
		point407	407	20.00	20.00	20.00	20	397				11914
		point408	408	20.00	20.00	20.00	20	408				12238
		point409	409	20.00	20.00	20.00	20	398				11944
		point410	410	20.00	20.00	20.00	20	400				12007
		point411	411	20.00	20.00	20.00	20	399				11975
		point412	412	20.00	20.00	20.00	20	400				12007
		point413	413	20.00	20.00	20.00	20	401				12042
		point414	414	20.00	20.00	20.00	20	400				12007
		point415	415	20.00	20.00	20.00	20	393				11788
		point416	416	20.00	20.00	20.00	20	403				12078
		point417	417	20.00	20.00	20.00	20	404				12117
		point418	418	20.00	20.00	20.00	20	394				11827
		point419	419	20.00	20.00	20.00	20	405				12156
		point420	420	20.00	20.00	20.00	20	396				11868
		point421	421	20.00	20.00	20.00	20	405				12156
		point422	422	20.00	20.00	20.00	20	398				11955
		point423	423	20.00	20.00	20.00	20	397				11911

		point424	424	20.00	20.00	20.00	20	398				11955
		point425	425	20.00	20.00	20.00	20	400				12001
		point426	426	20.00	20.00	20.00	20	400				12001
		point427	427	20.00	20.00	20.00	20	402				12049
		point428	428	20.00	20.00	20.00	20	402				12049
		point429	429	20.00	20.00	20.00	20	403				12098
		point430	430	20.00	20.00	20.00	20	394				11816
		point431	431	20.00	20.00	20.00	20	405				12149
		point432	432	20.00	20.00	20.00	20	396				11868
		point433	433	20.00	20.00	20.00	20	407				12202
		point434	434	20.00	20.00	20.00	20	397				11922
		point435	435	20.00	20.00	20.00	20	397				11922
		point436	436	20.00	20.00	20.00	19	379				11365
Barrier4	W	point365	365	20.00	20.00	20.00	20	400				12008
		point367	367	20.00	20.00	20.00	20	404				12117
		point368	368	20.00	20.00	20.00	20	400				12008
		point369	369	20.00	20.00	20.00	20	396				11868
		point370	370	20.00	20.00	20.00	20	400				12008
		point371	371	20.00	20.00	20.00	20	400				12008
		point372	372	20.00	20.00	20.00	20	400				12008
		point373	373	20.00	20.00	20.00	20	395				11861
		point374	374	20.00	20.00	20.00	20	405				12149
		point375	375	20.00	20.00	20.00	20	398				11945
		point376	376	20.00	20.00	20.00	20	402				12065
		point377	377	20.00	20.00	20.00	20	396				11880
		point378	378	20.00	20.00	20.00	20	402				12065
		point379	379	20.00	20.00	20.00	20	402				12065
		point380	380	20.00	20.00	20.00	20	396				11880
		point381	381	20.00	20.00	20.00	20	402				12065
		point382	382	20.00	20.00	20.00	20	396				11880
		point383	383	20.00	20.00	20.00	20	406				12182
		point384	384	20.00	20.00	20.00	20	398				11947
		point385	385	20.00	20.00	20.00	20	400				12000
		point386	386	20.00	20.00	20.00	20	402				12065
		point387	387	20.00	20.00	20.00	20	396				11880
		point388	388	20.00	20.00	20.00	20	402				12065
		point389	389	20.00	20.00	20.00	20	402				12065
		point390	390	20.00	20.00	20.00	20	396				11880

		point391	391	20.00	20.00	20.00	20	402				12065
		point392	392	20.00	20.00	20.00	20	402				12065
		point393	393	20.00	20.00	20.00	20	396				11880
		point394	394	20.00	20.00	20.00	20	402				12065
		point395	395	20.00	20.00	20.00	20	396				11880
		point396	396	20.00	20.00	20.00	14	274				8223
Barrier6	W	point437	437	20.00	20.00	20.00	20	401				12034
		point439	439	20.00	20.00	20.00	20	402				12046
		point440	440	20.00	20.00	20.00	20	402				12046
		point441	441	20.00	20.00	20.00	20	402				12046
		point442	442	20.00	20.00	20.00	20	402				12046
		point443	443	20.00	20.00	20.00	20	402				12046
		point444	444	20.00	20.00	20.00	20	392				11747
		point445	445	20.00	20.00	20.00	20	402				12046
		point446	446	20.00	20.00	20.00	20	402				12046
		point447	447	20.00	20.00	20.00	20	402				12046
		point448	448	20.00	20.00	20.00	20	402				12046
		point449	449	20.00	20.00	20.00	20	402				12046
		point450	450	20.00	20.00	20.00	20	392				11747
		point451	451	20.00	20.00	20.00	20	402				12046
		point452	452	0.00	0.00	0.00	0	0				0
		point453	453	0.00	0.00	0.00	0	0				0
		point454	454	0.00	0.00	0.00	0	0				0
		point455	455	20.00	20.00	20.00	20	402				12046
		point456	456	20.00	20.00	20.00	20	392				11747
		point457	457	20.00	20.00	20.00	20	402				12046
		point458	458	20.00	20.00	20.00	20	402				12046
		point459	459	20.00	20.00	20.00	20	402				12046
		point460	460	20.00	20.00	20.00	20	402				12046
		point461	461	20.00	20.00	20.00	20	402				12046
		point462	462	20.00	20.00	20.00	20	402				12046
		point463	463	20.00	20.00	20.00	20	391				11735
		point464	464	20.00	20.00	20.00	20	402				12060
		point465	465	20.00	20.00	20.00	20	401				12034
		point466	466	20.00	20.00	20.00	2	30				912
Barrier7	W	point467	467	20.00	20.00	20.00	20	402				12046
		point469	469	20.00	20.00	20.00	20	402				12046

		point470	470	20.00	20.00	20.00	20	402				12046
		point471	471	0.00	0.00	0.00	0	0				0
		point472	472	0.00	0.00	0.00	0	0				0
		point473	473	20.00	20.00	20.00	20	402				12046
		point474	474	0.00	0.00	0.00	0	0				0
Barrier8	W	point475	475	20.00	20.00	20.00	20	402				12046
		point477	477	20.00	20.00	20.00	20	402				12046
		point478	478	20.00	20.00	20.00	20	392				11747
		point479	479	20.00	20.00	20.00	20	402				12046
		point480	480	20.00	20.00	20.00	11	221				6627
Barrier9	W	point481	481	20.00	20.00	20.00	20	392				11747
		point483	483	20.00	20.00	20.00	20	402				12046
		point484	484	20.00	20.00	20.00	20	402				12046
		point485	485	20.00	20.00	20.00	20	402				12046
		point486	486	20.00	20.00	20.00	20	402				12046
		point487	487	20.00	20.00	20.00	20	402				12046
		point488	488	20.00	20.00	20.00	20	402				12046
		point489	489	20.00	20.00	20.00	2	30				912



Central 1_TollAll_Barriers A/B		Sheet 1 of 1	13 Mar 2018
		HMB Professional Engineers	
Barrier View-C1_TollAll_AreaB_US60		Project/Contract No. I-69 ORX	
Run name: C1_04_TollAll_AB		TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>		Analysis By: MG/mdg	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR CENTRAL 1 – BRAXTON PARK DRIVE (TOLL BOTH CROSSINGS)

HMB 4 March 2018
MG/MDG TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: 1294.11 I-69 Central 1 Toll All-B
BARRIER DESIGN: BraxtonParkDrTAll
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-04-01-R414-02F	173	1	39.8	51.5	66	11.7	10	Sub'l Inc	49.8	1.7	8	-6.3
KY-04-01-R414-01F	172	1	39.8	53.5	66	13.7	10	Sub'l Inc	50.6	2.9	8	-5.1
KY-04-01-HART-03	160	1	39.8	54.2	66	14.4	10	Sub'l Inc	49.4	4.8	8	-3.2
KY-04-01-SAND-04	156	1	39.8	54.8	66	15.0	10	Sub'l Inc	49.5	5.3	8	-2.7
KY-04-01-SAND-03	157	1	39.8	55.7	66	15.9	10	Sub'l Inc	49.9	5.8	8	-2.2
KY-04-01-SAND-02	61	1	39.8	56.8	66	17.0	10	Sub'l Inc	50.8	6.0	8	-2.0
KY-04-02-SAND-04	155	1	39.8	54.7	66	14.9	10	Sub'l Inc	49.1	5.6	8	-2.4
KY-04-02-SAND-02	134	1	39.8	56.9	66	17.1	10	Sub'l Inc	50.5	6.4	8	-1.6
KY-04-01-BRAD-05	163	1	39.8	54.5	66	14.7	10	Sub'l Inc	49.1	5.4	8	-2.6
KY-04-01-BRAD-04	162	1	39.8	55.8	66	16.0	10	Sub'l Inc	49.8	6.0	8	-2.0
KY-04-01-BRAD-01	22	1	39.8	57.0	66	17.2	10	Sub'l Inc	50.4	6.6	8	-1.4
KY-04-01-BRAD-02	23	1	39.8	58.2	66	18.4	10	Sub'l Inc	51.3	6.9	8	-1.1
KY-04-02-BRAD-05	166	1	39.8	55.0	66	15.2	10	Sub'l Inc	49.2	5.8	8	-2.2
KY-04-02-BRAD-04	165	1	39.8	55.5	66	15.7	10	Sub'l Inc	49.5	6.0	8	-2.0
KY-04-02-BRAD-01	108	1	39.8	57.1	66	17.3	10	Sub'l Inc	50.4	6.7	8	-1.3
KY-04-02-BRAD-02	109	1	39.8	58.2	66	18.4	10	Sub'l Inc	51.0	7.2	8	-0.8
KY-04-01-CULC-05	168	1	39.8	54.6	66	14.8	10	Sub'l Inc	49.1	5.5	8	-2.5
KY-04-01-CULC-04	167	1	39.8	55.4	66	15.6	10	Sub'l Inc	49.8	5.6	8	-2.4
KY-04-01-CULC-01	38	1	39.8	56.5	66	16.7	10	Sub'l Inc	50.2	6.3	8	-1.7
KY-04-01-CULC-02	39	1	39.8	57.9	66	18.1	10	Sub'l Inc	50.9	7.0	8	-1.0
KY-04-02-CULC-05	171	1	39.8	54.0	66	14.2	10	Sub'l Inc	49.2	4.8	8	-3.2
KY-04-02-CULC-04	170	1	39.8	54.9	66	15.1	10	Sub'l Inc	49.6	5.3	8	-2.7
KY-04-02-CULC-03	169	1	39.8	56.0	66	16.2	10	Sub'l Inc	50.2	5.8	8	-2.2
KY-04-02-CULC-01	116	1	39.8	57.0	66	17.2	10	Sub'l Inc	51.0	6.0	8	-2.0

KY-04-02-CULC-02	117	1	39.8	58.2	66	18.4	10	Sub'l Inc	51.2	7.0	8	-1.0
KY-04-02-CULC-03	104	1	39.8	60.1	66	20.3	10	Sub'l Inc	52.6	7.5	8	-0.5
KY-04-02-CULC-AMB-02	146	1	39.8	61.0	66	21.2	10	Sub'l Inc	53.1	7.9	8	-0.1
KY-04-01-CULC-03	40	1	39.8	59.6	66	19.8	10	Sub'l Inc	52.2	7.4	8	-0.6
KY-04-21-BRAD-03F	164	1	39.8	59.3	66	19.5	10	Sub'l Inc	52.2	7.1	8	-0.9
KY-04-01-BRAD-03	24	1	39.8	59.7	66	19.9	10	Sub'l Inc	52.3	7.4	8	-0.6
KY-04-02-SAND-03F	154	1	39.8	57.9	66	18.1	10	Sub'l Inc	50.9	7.0	8	-1.0
KY-04-01-SAND-01	60	1	39.8	58.0	66	18.2	10	Sub'l Inc	51.6	6.4	8	-1.6
KY-04-01-HART-01F	158	1	39.8	55.9	66	16.1	10	Sub'l Inc	50.0	5.9	8	-2.1
KY-04-01-HART-02F	159	1	39.8	56.0	66	16.2	10	Sub'l Inc	50.1	5.9	8	-2.1
KY-04-01-PRIV-01F	161	1	39.8	56.0	66	16.2	10	Sub'l Inc	50.7	5.3	8	-2.7

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	35	1.7	6.0	7.9
All Impacted	35	1.7	6.0	7.9
All that meet NR Goal	0	0.0	0.0	0.0

HMB								4 March 2018		
MG/MDG								TNM 2.5		
								Calculated with TNM 2.5		
RESULTS: BARRIER DESIGN										
PROJECT/CONTRACT:		I-69 ORX								
RUN:		1294.11 I-69 Central 1 Toll All-B								
BARRIER DESIGN:		BraxtonParkDrTAll								
ATMOSPHERICS:		68 deg F, 50% RH								
Selected Receivers										
Name	No.									
		Calc	Noise Reduction			Barrier Reviewed	Important Segments			Partial
		LAeq1h	Calc	Goal	Calc-Goal		Name	No.	Height	LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-04-01-R414-02F	173	49.8	1.7	8	-6.3	Barrier4-Barrier 4 C	point364	364	0.0	32.7
						Barrier4-Barrier 4 C	point363	363	0.0	32.4
						Barrier4-Barrier 4 C	point355	355	0.0	32.2
						Barrier4-Barrier 4 C	point357	357	0.0	32.1
						Barrier4-Barrier 4 C	point356	356	0.0	32.0
						Barrier4-Barrier 4 C	point354	354	0.0	31.7
						Barrier4-Barrier 4 C	point353	353	0.0	31.6
						Barrier4-Barrier 4 C	point358	358	0.0	31.5
						Barrier4-Barrier 4 C	point359	359	0.0	31.3
						Barrier4-Barrier 4 C	point362	362	0.0	31.2
KY-04-01-R414-01F	172	50.6	2.9	8	-5.1	Barrier4-Barrier 4 C	point357	357	0.0	34.2
						Barrier4-Barrier 4 C	point364	364	0.0	34.0
						Barrier4-Barrier 4 C	point359	359	0.0	34.0
						Barrier4-Barrier 4 C	point360	360	0.0	33.8
						Barrier4-Barrier 4 C	point363	363	0.0	33.5
						Barrier4-Barrier 4 C	point358	358	0.0	33.4
						Barrier4-Barrier 4 C	point362	362	0.0	33.2
						Barrier4-Barrier 4 C	point361	361	0.0	33.2
						Barrier4-Barrier 4 C	point354	354	0.0	33.1
						Barrier4-Barrier 4 C	point356	356	0.0	32.8
KY-04-01-HART-03	160	49.4	4.8	8	-3.2	Barrier4-Barrier 4 C	point362	362	0.0	28.7

						Barrier4-Barrier 4 C	point377	377	20.0	28.6
						Barrier4-Barrier 4 C	point156	156	0.0	28.5
						Barrier4-Barrier 4 C	point157	157	0.0	28.4
						Barrier4-Barrier 4 C	point158	158	0.0	28.2
						Barrier4-Barrier 4 C	point160	160	0.0	28.0
						Barrier4-Barrier 4 C	point159	159	0.0	27.9
						Barrier4-Barrier 4 C	point376	376	20.0	27.9
						Barrier4-Barrier 4 C	point161	161	0.0	27.8
						Barrier4-Barrier 4 C	point162	162	0.0	27.7
KY-04-01-SAND-04	156	49.5	5.3	8	-2.7	Barrier4-Barrier 4 C	point53	53	20.0	30.4
						Barrier4-Barrier 4 C	point375	375	20.0	29.9
						Barrier4-Barrier 4 C	point362	362	0.0	28.5
						Barrier4-Barrier 4 C	point374	374	20.0	28.4
						Barrier4-Barrier 4 C	point28	28	20.0	28.2
						Barrier4-Barrier 4 C	point12	12	20.0	27.6
						Barrier4-Barrier 4 C	point97	97	20.0	27.4
						Barrier4-Barrier 4 C	point96	96	20.0	27.3
						Barrier4-Barrier 4 C	point156	156	0.0	27.3
						Barrier4-Barrier 4 C	point95	95	20.0	27.3
KY-04-01-SAND-03	157	49.9	5.8	8	-2.2	Barrier4-Barrier 4 C	point52	52	20.0	30.5
						Barrier4-Barrier 4 C	point11	11	20.0	28.5
						Barrier4-Barrier 4 C	point97	97	20.0	28.4
						Barrier4-Barrier 4 C	point96	96	20.0	28.4
						Barrier4-Barrier 4 C	point95	95	20.0	28.3
						Barrier4-Barrier 4 C	point99	99	20.0	28.3
						Barrier4-Barrier 4 C	point98	98	20.0	28.3
						Barrier4-Barrier 4 C	point100	100	20.0	28.3
						Barrier4-Barrier 4 C	point94	94	20.0	28.3
						Barrier4-Barrier 4 C	point102	102	20.0	28.3
KY-04-01-SAND-02	61	50.8	6.0	8	-2.0	Barrier4-Barrier 4 C	point382	382	20.0	30.3
						Barrier4-Barrier 4 C	point97	97	20.0	30.1
						Barrier4-Barrier 4 C	point95	95	20.0	30.1
						Barrier4-Barrier 4 C	point99	99	20.0	30.0
						Barrier4-Barrier 4 C	point98	98	20.0	30.0
						Barrier4-Barrier 4 C	point94	94	20.0	30.0
						Barrier4-Barrier 4 C	point102	102	20.0	29.9

						Barrier4-Barrier 4 C	point101	101	20.0	29.9
						Barrier4-Barrier 4 C	point100	100	20.0	29.9
						Barrier4-Barrier 4 C	point93	93	20.0	29.9
KY-04-02-SAND-04	155	49.1	5.6	8	-2.4	Barrier4-Barrier 4 C	point352	352	0.0	32.3
						Barrier4-Barrier 4 C	point356	356	0.0	27.6
						Barrier4-Barrier 4 C	point355	355	0.0	27.2
						Barrier4-Barrier 4 C	point85	85	20.0	27.1
						Barrier4-Barrier 4 C	point86	86	20.0	27.1
						Barrier4-Barrier 4 C	point84	84	20.0	27.0
						Barrier4-Barrier 4 C	point82	82	20.0	27.0
						Barrier4-Barrier 4 C	point83	83	20.0	27.0
						Barrier4-Barrier 4 C	point87	87	20.0	27.0
						Barrier4-Barrier 4 C	point77	77	20.0	27.0
KY-04-02-SAND-02	134	50.5	6.4	8	-1.6	Barrier4-Barrier 4 C	point85	85	20.0	30.0
						Barrier4-Barrier 4 C	point84	84	20.0	29.9
						Barrier4-Barrier 4 C	point82	82	20.0	29.9
						Barrier4-Barrier 4 C	point87	87	20.0	29.9
						Barrier4-Barrier 4 C	point86	86	20.0	29.9
						Barrier4-Barrier 4 C	point83	83	20.0	29.9
						Barrier4-Barrier 4 C	point77	77	20.0	29.8
						Barrier4-Barrier 4 C	point79	79	20.0	29.7
						Barrier4-Barrier 4 C	point78	78	20.0	29.7
						Barrier4-Barrier 4 C	point80	80	20.0	29.7
KY-04-01-BRAD-05	163	49.1	5.4	8	-2.6	Barrier4-Barrier 4 C	point351	351	0.0	28.9
						Barrier4-Barrier 4 C	point350	350	0.0	27.2
						Barrier4-Barrier 4 C	point85	85	20.0	27.0
						Barrier4-Barrier 4 C	point84	84	20.0	26.9
						Barrier4-Barrier 4 C	point77	77	20.0	26.9
						Barrier4-Barrier 4 C	point82	82	20.0	26.9
						Barrier4-Barrier 4 C	point86	86	20.0	26.9
						Barrier4-Barrier 4 C	point365	365	8.0	26.9
						Barrier4-Barrier 4 C	point83	83	20.0	26.9
						Barrier4-Barrier 4 C	point87	87	20.0	26.9
KY-04-01-BRAD-04	162	49.8	6.0	8	-2.0	Barrier4-Barrier 4 C	point29	29	20.0	31.3
						Barrier4-Barrier 4 C	point360	360	0.0	31.2
						Barrier4-Barrier 4 C	point27	27	20.0	30.8

						Barrier4-Barrier 4 C	point372	372	20.0	30.8
						Barrier4-Barrier 4 C	point361	361	0.0	30.5
						Barrier4-Barrier 4 C	point373	373	20.0	30.3
						Barrier4-Barrier 4 C	point84	84	20.0	28.4
						Barrier4-Barrier 4 C	point85	85	20.0	28.4
						Barrier4-Barrier 4 C	point77	77	20.0	28.3
						Barrier4-Barrier 4 C	point82	82	20.0	28.3
KY-04-01-BRAD-01	22	50.4	6.6	8	-1.4	Barrier4-Barrier 4 C	point379	379	20.0	30.3
						Barrier4-Barrier 4 C	point378	378	20.0	29.8
						Barrier4-Barrier 4 C	point85	85	20.0	29.8
						Barrier4-Barrier 4 C	point82	82	20.0	29.8
						Barrier4-Barrier 4 C	point77	77	20.0	29.8
						Barrier4-Barrier 4 C	point84	84	20.0	29.8
						Barrier4-Barrier 4 C	point83	83	20.0	29.7
						Barrier4-Barrier 4 C	point78	78	20.0	29.7
						Barrier4-Barrier 4 C	point86	86	20.0	29.7
						Barrier4-Barrier 4 C	point79	79	20.0	29.7
KY-04-01-BRAD-02	23	51.3	6.9	8	-1.1	Barrier4-Barrier 4 C	point382	382	20.0	33.0
						Barrier4-Barrier 4 C	point52	52	20.0	32.6
						Barrier4-Barrier 4 C	point83	83	20.0	31.3
						Barrier4-Barrier 4 C	point84	84	20.0	31.3
						Barrier4-Barrier 4 C	point85	85	20.0	31.3
						Barrier4-Barrier 4 C	point82	82	20.0	31.3
						Barrier4-Barrier 4 C	point77	77	20.0	31.3
						Barrier4-Barrier 4 C	point86	86	20.0	31.3
						Barrier4-Barrier 4 C	point78	78	20.0	31.3
						Barrier4-Barrier 4 C	point79	79	20.0	31.2
KY-04-02-BRAD-05	166	49.2	5.8	8	-2.2	Barrier4-Barrier 4 C	point49	49	20.0	29.6
						Barrier4-Barrier 4 C	point360	360	0.0	27.9
						Barrier4-Barrier 4 C	point68	68	20.0	27.2
						Barrier4-Barrier 4 C	point67	67	20.0	27.2
						Barrier4-Barrier 4 C	point72	72	20.0	27.2
						Barrier4-Barrier 4 C	point70	70	20.0	27.2
						Barrier4-Barrier 4 C	point66	66	20.0	27.2
						Barrier4-Barrier 4 C	point71	71	20.0	27.1
						Barrier4-Barrier 4 C	point73	73	20.0	27.1

						Barrier4-Barrier 4 C	point64	64	20.0	27.1
KY-04-02-BRAD-04	165	49.5	6.0	8	-2.0	Barrier4-Barrier 4 C	point360	360	0.0	29.5
						Barrier4-Barrier 4 C	point361	361	0.0	28.7
						Barrier4-Barrier 4 C	point364	364	0.0	28.6
						Barrier4-Barrier 4 C	point362	362	0.0	28.4
						Barrier4-Barrier 4 C	point363	363	0.0	28.2
						Barrier4-Barrier 4 C	point67	67	20.0	28.1
						Barrier4-Barrier 4 C	point70	70	20.0	28.1
						Barrier4-Barrier 4 C	point68	68	20.0	28.1
						Barrier4-Barrier 4 C	point359	359	0.0	28.1
						Barrier4-Barrier 4 C	point66	66	20.0	28.1
KY-04-02-BRAD-01	108	50.4	6.7	8	-1.3	Barrier4-Barrier 4 C	point360	360	0.0	34.3
						Barrier4-Barrier 4 C	point371	371	20.0	31.9
						Barrier4-Barrier 4 C	point52	52	20.0	30.4
						Barrier4-Barrier 4 C	point372	372	20.0	30.3
						Barrier4-Barrier 4 C	point67	67	20.0	30.2
						Barrier4-Barrier 4 C	point68	68	20.0	30.2
						Barrier4-Barrier 4 C	point66	66	20.0	30.1
						Barrier4-Barrier 4 C	point72	72	20.0	30.1
						Barrier4-Barrier 4 C	point65	65	20.0	30.1
						Barrier4-Barrier 4 C	point70	70	20.0	30.1
KY-04-02-BRAD-02	109	51.0	7.2	8	-0.8	Barrier4-Barrier 4 C	point361	361	0.0	32.2
						Barrier4-Barrier 4 C	point67	67	20.0	31.7
						Barrier4-Barrier 4 C	point68	68	20.0	31.7
						Barrier4-Barrier 4 C	point72	72	20.0	31.7
						Barrier4-Barrier 4 C	point71	71	20.0	31.7
						Barrier4-Barrier 4 C	point69	69	20.0	31.6
						Barrier4-Barrier 4 C	point66	66	20.0	31.5
						Barrier4-Barrier 4 C	point70	70	20.0	31.5
						Barrier4-Barrier 4 C	point65	65	20.0	31.5
						Barrier4-Barrier 4 C	point73	73	20.0	31.5
KY-04-01-CULC-05	168	49.1	5.5	8	-2.5	Barrier4-Barrier 4 C	point359	359	0.0	27.8
						Barrier4-Barrier 4 C	point363	363	0.0	27.4
						Barrier4-Barrier 4 C	point67	67	20.0	27.1
						Barrier4-Barrier 4 C	point64	64	20.0	27.1
						Barrier4-Barrier 4 C	point62	62	20.0	27.1

						Barrier4-Barrier 4 C	point63	63	20.0	27.0
						Barrier4-Barrier 4 C	point66	66	20.0	27.0
						Barrier4-Barrier 4 C	point68	68	20.0	27.0
						Barrier4-Barrier 4 C	point61	61	20.0	27.0
						Barrier4-Barrier 4 C	point65	65	20.0	27.0
KY-04-01-CULC-04	167	49.8	5.6	8	-2.4	Barrier4-Barrier 4 C	point53	53	20.0	34.2
						Barrier4-Barrier 4 C	point74	74	20.0	34.0
						Barrier4-Barrier 4 C	point52	52	20.0	32.8
						Barrier4-Barrier 4 C	point75	75	20.0	32.3
						Barrier4-Barrier 4 C	point76	76	20.0	32.2
						Barrier4-Barrier 4 C	point359	359	0.0	29.3
						Barrier4-Barrier 4 C	point362	362	0.0	28.5
						Barrier4-Barrier 4 C	point360	360	0.0	28.4
						Barrier4-Barrier 4 C	point364	364	0.0	28.4
						Barrier4-Barrier 4 C	point363	363	0.0	28.2
KY-04-01-CULC-01	38	50.2	6.3	8	-1.7	Barrier4-Barrier 4 C	point53	53	20.0	34.7
						Barrier4-Barrier 4 C	point52	52	20.0	34.7
						Barrier4-Barrier 4 C	point51	51	20.0	32.8
						Barrier4-Barrier 4 C	point357	357	0.0	32.2
						Barrier4-Barrier 4 C	point66	66	20.0	29.5
						Barrier4-Barrier 4 C	point67	67	20.0	29.5
						Barrier4-Barrier 4 C	point68	68	20.0	29.5
						Barrier4-Barrier 4 C	point61	61	20.0	29.4
						Barrier4-Barrier 4 C	point63	63	20.0	29.4
						Barrier4-Barrier 4 C	point62	62	20.0	29.4
KY-04-01-CULC-02	39	50.9	7.0	8	-1.0	Barrier4-Barrier 4 C	point80	80	20.0	34.0
						Barrier4-Barrier 4 C	point362	362	0.0	33.7
						Barrier4-Barrier 4 C	point375	375	20.0	32.3
						Barrier4-Barrier 4 C	point25	25	20.0	31.7
						Barrier4-Barrier 4 C	point67	67	20.0	31.2
						Barrier4-Barrier 4 C	point66	66	20.0	31.1
						Barrier4-Barrier 4 C	point68	68	20.0	31.1
						Barrier4-Barrier 4 C	point65	65	20.0	31.0
						Barrier4-Barrier 4 C	point63	63	20.0	31.0
						Barrier4-Barrier 4 C	point61	61	20.0	31.0
KY-04-02-CULC-05	171	49.2	4.8	8	-3.2	Barrier4-Barrier 4 C	point76	76	20.0	32.6

						Barrier4-Barrier 4 C	point77	77	20.0	32.6
						Barrier4-Barrier 4 C	point79	79	20.0	30.0
						Barrier4-Barrier 4 C	point78	78	20.0	28.9
						Barrier4-Barrier 4 C	point360	360	0.0	28.6
						Barrier4-Barrier 4 C	point361	361	0.0	27.6
						Barrier4-Barrier 4 C	point362	362	0.0	27.5
						Barrier4-Barrier 4 C	point357	357	0.0	27.2
						Barrier4-Barrier 4 C	point363	363	0.0	27.2
						Barrier4-Barrier 4 C	point364	364	0.0	27.1
KY-04-02-CULC-04	170	49.6	5.3	8	-2.7	Barrier4-Barrier 4 C	point78	78	20.0	33.2
						Barrier4-Barrier 4 C	point79	79	20.0	32.9
						Barrier4-Barrier 4 C	point355	355	0.0	28.0
						Barrier4-Barrier 4 C	point363	363	0.0	27.6
						Barrier4-Barrier 4 C	point56	56	20.0	27.5
						Barrier4-Barrier 4 C	point55	55	20.0	27.5
						Barrier4-Barrier 4 C	point51	51	20.0	27.5
						Barrier4-Barrier 4 C	point54	54	20.0	27.4
						Barrier4-Barrier 4 C	point58	58	20.0	27.4
						Barrier4-Barrier 4 C	point46	46	20.0	27.4
KY-04-02-CULC-03	169	50.2	5.8	8	-2.2	Barrier4-Barrier 4 C	point77	77	20.0	33.0
						Barrier4-Barrier 4 C	point90	90	20.0	32.6
						Barrier4-Barrier 4 C	point91	91	20.0	31.9
						Barrier4-Barrier 4 C	point92	92	20.0	31.7
						Barrier4-Barrier 4 C	point80	80	20.0	31.4
						Barrier4-Barrier 4 C	point79	79	20.0	30.1
						Barrier4-Barrier 4 C	point359	359	0.0	29.4
						Barrier4-Barrier 4 C	point360	360	0.0	29.2
						Barrier4-Barrier 4 C	point358	358	0.0	29.0
						Barrier4-Barrier 4 C	point56	56	20.0	28.7
KY-04-02-CULC-01	116	51.0	6.0	8	-2.0	Barrier4-Barrier 4 C	point75	75	20.0	35.7
						Barrier4-Barrier 4 C	point79	79	20.0	35.5
						Barrier4-Barrier 4 C	point76	76	20.0	35.4
						Barrier4-Barrier 4 C	point81	81	20.0	32.7
						Barrier4-Barrier 4 C	point82	82	20.0	32.6
						Barrier4-Barrier 4 C	point364	364	0.0	31.7
						Barrier4-Barrier 4 C	point89	89	20.0	31.6

						Barrier4-Barrier 4 C	point363	363	0.0	31.2
						Barrier4-Barrier 4 C	point362	362	0.0	30.7
						Barrier4-Barrier 4 C	point360	360	0.0	30.7
KY-04-02-CULC-02	117	51.2	7.0	8	-1.0	Barrier4-Barrier 4 C	point358	358	0.0	33.3
						Barrier4-Barrier 4 C	point359	359	0.0	33.2
						Barrier4-Barrier 4 C	point62	62	20.0	32.7
						Barrier4-Barrier 4 C	point78	78	20.0	32.6
						Barrier4-Barrier 4 C	point90	90	20.0	31.8
						Barrier4-Barrier 4 C	point55	55	20.0	31.4
						Barrier4-Barrier 4 C	point54	54	20.0	31.4
						Barrier4-Barrier 4 C	point58	58	20.0	31.3
						Barrier4-Barrier 4 C	point56	56	20.0	31.3
						Barrier4-Barrier 4 C	point52	52	20.0	31.3
KY-04-02-CULC-03	104	52.6	7.5	8	-0.5	Barrier4-Barrier 4 C	point76	76	20.0	38.1
						Barrier4-Barrier 4 C	point75	75	20.0	35.7
						Barrier4-Barrier 4 C	point87	87	20.0	35.1
						Barrier4-Barrier 4 C	point56	56	20.0	33.9
						Barrier4-Barrier 4 C	point61	61	20.0	33.9
						Barrier4-Barrier 4 C	point57	57	20.0	33.9
						Barrier4-Barrier 4 C	point62	62	20.0	33.8
						Barrier4-Barrier 4 C	point55	55	20.0	33.8
						Barrier4-Barrier 4 C	point63	63	20.0	33.8
						Barrier4-Barrier 4 C	point58	58	20.0	33.7
KY-04-02-CULC-AMB-02	146	53.1	7.9	8	-0.1	Barrier4-Barrier 4 C	point56	56	20.0	35.0
						Barrier4-Barrier 4 C	point59	59	20.0	35.0
						Barrier4-Barrier 4 C	point58	58	20.0	35.0
						Barrier4-Barrier 4 C	point61	61	20.0	35.0
						Barrier4-Barrier 4 C	point55	55	20.0	35.0
						Barrier4-Barrier 4 C	point57	57	20.0	35.0
						Barrier4-Barrier 4 C	point54	54	20.0	34.9
						Barrier4-Barrier 4 C	point60	60	20.0	34.8
						Barrier4-Barrier 4 C	point64	64	20.0	34.8
						Barrier4-Barrier 4 C	point53	53	20.0	34.8
KY-04-01-CULC-03	40	52.2	7.4	8	-0.6	Barrier4-Barrier 4 C	point88	88	20.0	35.4
						Barrier4-Barrier 4 C	point80	80	20.0	34.6
						Barrier4-Barrier 4 C	point66	66	20.0	33.5

						Barrier4-Barrier 4 C	point67	67	20.0	33.5
						Barrier4-Barrier 4 C	point68	68	20.0	33.4
						Barrier4-Barrier 4 C	point64	64	20.0	33.4
						Barrier4-Barrier 4 C	point65	65	20.0	33.4
						Barrier4-Barrier 4 C	point70	70	20.0	33.4
						Barrier4-Barrier 4 C	point69	69	20.0	33.4
						Barrier4-Barrier 4 C	point63	63	20.0	33.4
KY-04-21-BRAD-03F	164	52.2	7.1	8	-0.9	Barrier4-Barrier 4 C	point67	67	20.0	33.7
						Barrier4-Barrier 4 C	point68	68	20.0	33.6
						Barrier4-Barrier 4 C	point70	70	20.0	33.6
						Barrier4-Barrier 4 C	point69	69	20.0	33.6
						Barrier4-Barrier 4 C	point71	71	20.0	33.4
						Barrier4-Barrier 4 C	point65	65	20.0	33.4
						Barrier4-Barrier 4 C	point64	64	20.0	33.4
						Barrier4-Barrier 4 C	point63	63	20.0	33.3
						Barrier4-Barrier 4 C	point62	62	20.0	33.3
						Barrier4-Barrier 4 C	point66	66	20.0	33.3
KY-04-01-BRAD-03	24	52.3	7.4	8	-0.6	Barrier4-Barrier 4 C	point82	82	20.0	33.3
						Barrier4-Barrier 4 C	point84	84	20.0	33.2
						Barrier4-Barrier 4 C	point85	85	20.0	33.2
						Barrier4-Barrier 4 C	point83	83	20.0	33.2
						Barrier4-Barrier 4 C	point77	77	20.0	33.2
						Barrier4-Barrier 4 C	point79	79	20.0	33.2
						Barrier4-Barrier 4 C	point80	80	20.0	33.2
						Barrier4-Barrier 4 C	point78	78	20.0	33.2
						Barrier4-Barrier 4 C	point81	81	20.0	33.2
						Barrier4-Barrier 4 C	point7	7	20.0	33.2
KY-04-02-SAND-03F	154	50.9	7.0	8	-1.0	Barrier4-Barrier 4 C	point85	85	20.0	31.0
						Barrier4-Barrier 4 C	point86	86	20.0	30.9
						Barrier4-Barrier 4 C	point84	84	20.0	30.9
						Barrier4-Barrier 4 C	point87	87	20.0	30.9
						Barrier4-Barrier 4 C	point83	83	20.0	30.9
						Barrier4-Barrier 4 C	point82	82	20.0	30.9
						Barrier4-Barrier 4 C	point88	88	20.0	30.7
						Barrier4-Barrier 4 C	point77	77	20.0	30.7
						Barrier4-Barrier 4 C	point81	81	20.0	30.7

						Barrier4-Barrier 4 C	point80	80	20.0	30.7
KY-04-01-SAND-01	60	51.6	6.4	8	-1.6	Barrier4-Barrier 4 C	point28	28	20.0	32.0
						Barrier4-Barrier 4 C	point94	94	20.0	31.6
						Barrier4-Barrier 4 C	point95	95	20.0	31.6
						Barrier4-Barrier 4 C	point96	96	20.0	31.6
						Barrier4-Barrier 4 C	point92	92	20.0	31.5
						Barrier4-Barrier 4 C	point87	87	20.0	31.5
						Barrier4-Barrier 4 C	point93	93	20.0	31.5
						Barrier4-Barrier 4 C	point97	97	20.0	31.5
						Barrier4-Barrier 4 C	point91	91	20.0	31.5
						Barrier4-Barrier 4 C	point86	86	20.0	31.4
KY-04-01-HART-01F	158	50.0	5.9	8	-2.1	Barrier4-Barrier 4 C	point379	379	20.0	29.4
						Barrier4-Barrier 4 C	point97	97	20.0	28.5
						Barrier4-Barrier 4 C	point102	102	20.0	28.5
						Barrier4-Barrier 4 C	point101	101	20.0	28.5
						Barrier4-Barrier 4 C	point99	99	20.0	28.5
						Barrier4-Barrier 4 C	point380	380	20.0	28.5
						Barrier4-Barrier 4 C	point103	103	20.0	28.5
						Barrier4-Barrier 4 C	point100	100	20.0	28.5
						Barrier4-Barrier 4 C	point96	96	20.0	28.5
						Barrier4-Barrier 4 C	point98	98	20.0	28.5
KY-04-01-HART-02F	159	50.1	5.9	8	-2.1	Barrier4-Barrier 4 C	point381	381	20.0	29.1
						Barrier4-Barrier 4 C	point156	156	0.0	28.9
						Barrier4-Barrier 4 C	point157	157	0.0	28.8
						Barrier4-Barrier 4 C	point158	158	0.0	28.7
						Barrier4-Barrier 4 C	point102	102	20.0	28.6
						Barrier4-Barrier 4 C	point104	104	20.0	28.6
						Barrier4-Barrier 4 C	point101	101	20.0	28.6
						Barrier4-Barrier 4 C	point106	106	20.0	28.6
						Barrier4-Barrier 4 C	point103	103	20.0	28.6
						Barrier4-Barrier 4 C	point105	105	20.0	28.6
KY-04-01-PRIV-01F	161	50.7	5.3	8	-2.7	Barrier4-Barrier 4 C	point156	156	0.0	31.5
						Barrier4-Barrier 4 C	point157	157	0.0	31.3
						Barrier4-Barrier 4 C	point158	158	0.0	31.1
						Barrier4-Barrier 4 C	point159	159	0.0	30.9
						Barrier4-Barrier 4 C	point160	160	0.0	30.8

						Barrier4-Barrier 4 C	point161	161	0.0	30.5
						Barrier4-Barrier 4 C	point155	155	8.0	30.2
						Barrier4-Barrier 4 C	point163	163	0.0	30.1
						Barrier4-Barrier 4 C	point162	162	0.0	30.0
						Barrier4-Barrier 4 C	point164	164	0.0	30.0
Total Cost, All Barriers (including additional cost(s))					$1979880					

HMB				4 March 2018						
MG/MDG				TNM 2.5						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	I-69 ORX									
RUN:	1294.11 I-69 Central 1 Toll All-B									
BARRIER DESIGN:	BraxtonParkDrTAll									
Barriers										
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top	Run:Rise	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier4-Barrier 4 C	W	8.00	19.16	20.00	3444	65996				1979880
									Total Cost:	1979880

HMB 4 March 2018
MG/MDG TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: 1294.11 I-69 Central 1 Toll All-B
BARRIER DESIGN: BraxtonParkDrTAll

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier4-Barrier 4 C	W	point336	336	0.00	0.00	0.00	0	0				0
		point338	338	0.00	0.00	0.00	0	0				0
		point339	339	0.00	0.00	0.00	0	0				0
		point340	340	0.00	0.00	0.00	0	0				0
		point341	341	0.00	0.00	0.00	0	0				0
		point342	342	0.00	0.00	0.00	0	0				0
		point343	343	0.00	0.00	0.00	0	0				0
		point344	344	0.00	0.00	0.00	0	0				0
		point345	345	0.00	0.00	0.00	0	0				0
		point346	346	0.00	0.00	0.00	0	0				0
		point347	347	0.00	0.00	0.00	0	0				0
		point348	348	0.00	0.00	0.00	0	0				0
		point349	349	0.00	0.00	0.00	0	0				0
		point350	350	0.00	0.00	0.00	0	0				0
		point351	351	0.00	0.00	0.00	0	0				0
		point352	352	0.00	0.00	0.00	0	0				0
		point353	353	0.00	0.00	0.00	0	0				0
		point354	354	0.00	0.00	0.00	0	0				0
		point355	355	0.00	0.00	0.00	0	0				0
		point356	356	0.00	0.00	0.00	0	0				0
		point357	357	0.00	0.00	0.00	0	0				0
		point358	358	0.00	0.00	0.00	0	0				0
		point359	359	0.00	0.00	0.00	0	0				0
		point360	360	0.00	0.00	0.00	0	0				0
		point361	361	0.00	0.00	0.00	0	0				0
		point362	362	0.00	0.00	0.00	0	0				0

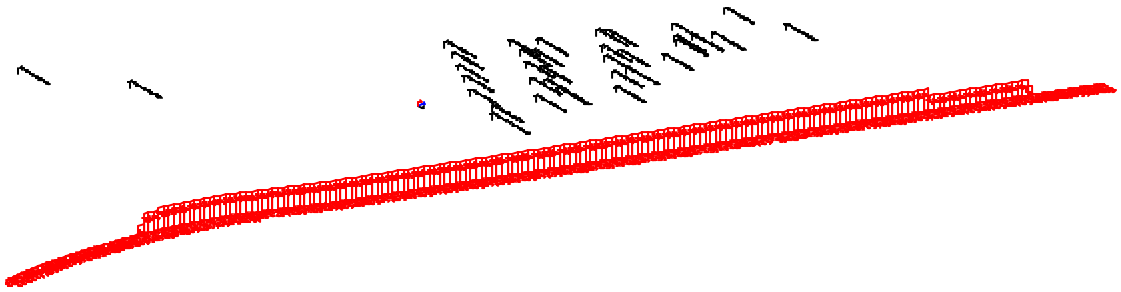
		point363	363	0.00	0.00	0.00	0	0				0
		point364	364	0.00	0.00	0.00	0	0				0
		point365	365	8.00	8.00	8.00	20	161				4837
		point366	366	18.00	18.00	18.00	20	359				10760
		point367	367	18.00	18.00	18.00	20	363				10884
		point368	368	18.00	18.00	18.00	20	358				10749
		point369	369	20.00	20.00	20.00	20	399				11956
		point370	370	20.00	20.00	20.00	20	398				11944
		point371	371	20.00	20.00	20.00	20	407				12209
		point372	372	20.00	20.00	20.00	20	394				11808
		point373	373	20.00	20.00	20.00	20	402				12075
		point374	374	20.00	20.00	20.00	20	398				11941
		point375	375	20.00	20.00	20.00	20	403				12079
		point376	376	20.00	20.00	20.00	20	398				11941
		point377	377	20.00	20.00	20.00	20	398				11947
		point378	378	20.00	20.00	20.00	20	403				12079
		point379	379	20.00	20.00	20.00	20	403				12093
		point380	380	20.00	20.00	20.00	20	399				11963
		point381	381	20.00	20.00	20.00	20	403				12093
		point382	382	20.00	20.00	20.00	20	394				11834
		point383	383	20.00	20.00	20.00	20	399				11963
		point384	384	20.00	20.00	20.00	20	404				12117
		point385	385	20.00	20.00	20.00	20	400				11989
		point386	386	20.00	20.00	20.00	4	76				2290
		point4	4	20.00	20.00	20.00	20	405				12149
		point7	7	20.00	20.00	20.00	20	400				11989
		point8	8	20.00	20.00	20.00	20	400				11989
		point9	9	20.00	20.00	20.00	20	400				11989
		point10	10	20.00	20.00	20.00	20	395				11861
		point11	11	20.00	20.00	20.00	20	405				12149
		point12	12	20.00	20.00	20.00	20	400				11989
		point13	13	20.00	20.00	20.00	20	400				11989
		point14	14	20.00	20.00	20.00	20	400				11989
		point15	15	20.00	20.00	20.00	20	400				11989
		point16	16	20.00	20.00	20.00	20	405				12149
		point17	17	20.00	20.00	20.00	20	395				11861
		point18	18	20.00	20.00	20.00	20	400				11989
		point19	19	20.00	20.00	20.00	20	400				11989
		point20	20	20.00	20.00	20.00	20	400				11989

		point21	21	20.00	20.00	20.00	20	405				12149
		point22	22	20.00	20.00	20.00	20	395				11861
		point23	23	20.00	20.00	20.00	20	400				11989
		point24	24	20.00	20.00	20.00	20	400				11989
		point25	25	20.00	20.00	20.00	20	400				11989
		point26	26	20.00	20.00	20.00	20	405				12149
		point27	27	20.00	20.00	20.00	20	400				11989
		point28	28	20.00	20.00	20.00	20	400				11989
		point29	29	20.00	20.00	20.00	20	395				11861
		point30	30	20.00	20.00	20.00	20	400				11989
		point31	31	20.00	20.00	20.00	20	405				12149
		point32	32	20.00	20.00	20.00	20	400				11989
		point33	33	20.00	20.00	20.00	20	400				11989
		point34	34	20.00	20.00	20.00	20	395				11861
		point35	35	20.00	20.00	20.00	20	400				11989
		point36	36	20.00	20.00	20.00	20	405				12149
		point37	37	20.00	20.00	20.00	20	400				11989
		point38	38	20.00	20.00	20.00	20	400				11989
		point39	39	20.00	20.00	20.00	20	400				11989
		point40	40	20.00	20.00	20.00	20	400				11989
		point41	41	20.00	20.00	20.00	20	401				12023
		point42	42	20.00	20.00	20.00	20	400				11989
		point43	43	20.00	20.00	20.00	20	400				11989
		point44	44	20.00	20.00	20.00	20	400				11989
		point45	45	20.00	20.00	20.00	20	400				11989
		point46	46	20.00	20.00	20.00	20	401				12023
		point47	47	20.00	20.00	20.00	20	400				11989
		point48	48	20.00	20.00	20.00	20	400				11989
		point49	49	20.00	20.00	20.00	20	400				11989
		point50	50	20.00	20.00	20.00	20	400				11989
		point51	51	20.00	20.00	20.00	20	405				12149
		point52	52	20.00	20.00	20.00	20	400				11989
		point53	53	20.00	20.00	20.00	20	395				11861
		point54	54	20.00	20.00	20.00	20	400				11989
		point55	55	20.00	20.00	20.00	20	400				11989
		point56	56	20.00	20.00	20.00	20	405				12149
		point57	57	20.00	20.00	20.00	20	395				11861
		point58	58	20.00	20.00	20.00	20	400				11989
		point59	59	20.00	20.00	20.00	20	400				11989

		point60	60	20.00	20.00	20.00	20	400				11989
		point61	61	20.00	20.00	20.00	20	405				12149
		point62	62	20.00	20.00	20.00	20	400				11989
		point63	63	20.00	20.00	20.00	20	400				11989
		point64	64	20.00	20.00	20.00	20	400				11989
		point65	65	20.00	20.00	20.00	20	395				11861
		point66	66	20.00	20.00	20.00	20	400				11989
		point67	67	20.00	20.00	20.00	20	405				12149
		point68	68	20.00	20.00	20.00	20	400				11989
		point69	69	20.00	20.00	20.00	20	395				11861
		point70	70	20.00	20.00	20.00	20	400				11989
		point71	71	20.00	20.00	20.00	20	400				11989
		point72	72	20.00	20.00	20.00	20	405				12149
		point73	73	20.00	20.00	20.00	20	400				11989
		point74	74	20.00	20.00	20.00	20	400				11989
		point75	75	20.00	20.00	20.00	20	400				11989
		point76	76	20.00	20.00	20.00	20	395				11861
		point77	77	20.00	20.00	20.00	20	405				12149
		point78	78	20.00	20.00	20.00	20	400				11989
		point79	79	20.00	20.00	20.00	20	400				11989
		point80	80	20.00	20.00	20.00	20	400				11989
		point81	81	20.00	20.00	20.00	20	395				11861
		point82	82	20.00	20.00	20.00	20	405				12149
		point83	83	20.00	20.00	20.00	20	400				11989
		point84	84	20.00	20.00	20.00	20	400				11989
		point85	85	20.00	20.00	20.00	20	400				11989
		point86	86	20.00	20.00	20.00	20	400				11989
		point87	87	20.00	20.00	20.00	20	405				12149
		point88	88	20.00	20.00	20.00	20	395				11861
		point89	89	20.00	20.00	20.00	20	400				11989
		point90	90	20.00	20.00	20.00	20	400				11989
		point91	91	20.00	20.00	20.00	20	400				11989
		point92	92	20.00	20.00	20.00	20	405				12149
		point93	93	20.00	20.00	20.00	20	395				11861
		point94	94	20.00	20.00	20.00	20	400				11989
		point95	95	20.00	20.00	20.00	20	400				11989
		point96	96	20.00	20.00	20.00	20	400				11989
		point97	97	20.00	20.00	20.00	20	405				12149
		point98	98	20.00	20.00	20.00	20	400				11989

		point99	99	20.00	20.00	20.00	20	400				11989
		point100	100	20.00	20.00	20.00	20	395				11861
		point101	101	20.00	20.00	20.00	20	400				11989
		point102	102	20.00	20.00	20.00	20	405				12149
		point103	103	20.00	20.00	20.00	20	400				11989
		point104	104	20.00	20.00	20.00	20	400				11989
		point6	6	20.00	20.00	20.00	20	395				11861
		point105	105	20.00	20.00	20.00	20	400				11989
		point106	106	20.00	20.00	20.00	20	405				12149
		point107	107	20.00	20.00	20.00	20	400				11989
		point108	108	20.00	20.00	20.00	20	400				11989
		point109	109	20.00	20.00	20.00	20	400				11989
		point110	110	20.00	20.00	20.00	20	400				11989
		point111	111	20.00	20.00	20.00	20	401				12023
		point112	112	20.00	20.00	20.00	20	400				11989
		point113	113	20.00	20.00	20.00	20	400				11989
		point114	114	20.00	20.00	20.00	20	400				11989
		point115	115	20.00	20.00	20.00	20	400				11989
		point116	116	20.00	20.00	20.00	20	401				12023
		point117	117	20.00	20.00	20.00	20	400				11989
		point118	118	20.00	20.00	20.00	20	400				11989
		point119	119	20.00	20.00	20.00	20	400				11989
		point120	120	20.00	20.00	20.00	20	400				11989
		point121	121	20.00	20.00	20.00	20	405				12149
		point122	122	20.00	20.00	20.00	20	400				11989
		point123	123	20.00	20.00	20.00	20	395				11861
		point124	124	20.00	20.00	20.00	20	400				11989
		point125	125	20.00	20.00	20.00	20	400				11989
		point126	126	20.00	20.00	20.00	20	405				12149
		point127	127	20.00	20.00	20.00	20	400				11989
		point128	128	20.00	20.00	20.00	20	395				11861
		point129	129	20.00	20.00	20.00	20	400				11989
		point130	130	20.00	20.00	20.00	20	400				11989
		point131	131	20.00	20.00	20.00	20	405				12149
		point132	132	20.00	20.00	20.00	20	400				11989
		point133	133	20.00	20.00	20.00	20	400				11989
		point134	134	20.00	20.00	20.00	20	400				11989
		point135	135	20.00	20.00	20.00	20	395				11861
		point136	136	14.00	14.00	14.00	20	283				8504

		point137	137	14.00	14.00	14.00	20	280				8392
		point138	138	14.00	14.00	14.00	20	280				8392
		point139	139	14.00	14.00	14.00	20	280				8392
		point140	140	14.00	14.00	14.00	20	277				8303
		point141	141	14.00	14.00	14.00	20	283				8504
		point142	142	14.00	14.00	14.00	20	280				8392
		point143	143	14.00	14.00	14.00	20	280				8392
		point144	144	14.00	14.00	14.00	20	280				8392
		point145	145	14.00	14.00	14.00	20	280				8392
		point146	146	14.00	14.00	14.00	20	283				8504
		point147	147	14.00	14.00	14.00	20	277				8303
		point148	148	14.00	14.00	14.00	20	280				8392
		point149	149	14.00	14.00	14.00	20	280				8392
		point150	150	14.00	14.00	14.00	20	280				8392
		point151	151	14.00	14.00	14.00	20	281				8416
		point152	152	14.00	14.00	14.00	20	280				8392
		point153	153	14.00	14.00	14.00	20	280				8392
		point154	154	14.00	14.00	14.00	20	280				8392
		point155	155	8.00	8.00	8.00	20	160				4795
		point156	156	0.00	0.00	0.00	0	0				0
		point157	157	0.00	0.00	0.00	0	0				0
		point158	158	0.00	0.00	0.00	0	0				0
		point159	159	0.00	0.00	0.00	0	0				0
		point160	160	0.00	0.00	0.00	0	0				0
		point161	161	0.00	0.00	0.00	0	0				0
		point162	162	0.00	0.00	0.00	0	0				0
		point163	163	0.00	0.00	0.00	0	0				0
		point164	164	0.00	0.00	0.00	0	0				0
		point165	165	0.00	0.00	0.00	0	0				0
		point166	166	0.00	0.00	0.00	0	0				0
		point167	167	0.00	0.00	0.00	0	0				0
		point168	168	0.00	0.00	0.00	0	0				0
		point169	169	0.00	0.00	0.00	0	0				0



1294.11 I-69 Central 1 Toll All-B	Sheet 1 of 1	4 Mar 2018
	HMB	
Barrier View-BraxtonParkDrTAll	Project/Contract No. I-69 ORX	
Run name: C1_TollAll_4_CD	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/MDG	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR CENTRAL 1 – MELODY LANE (TOLL BOTH CROSSINGS)

HMB 4 March 2018
MG/MDG TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: 1294.11 I-69 Central 1 Toll All-B
BARRIER DESIGN: MelodyLnTAll
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-04-02-BOWL-04	178	1	39.8	57.6	66	17.8	10	Sub'l Inc	51.8	5.8	8	-2.2
KY-04-01-BOWL-03	20	1	39.8	57.7	66	17.9	10	Sub'l Inc	52.1	5.6	8	-2.4
KY-04-02-MELL-07	177	1	40.4	54.4	66	14.0	10	Sub'l Inc	50.3	4.1	8	-3.9
KY-04-02-MELL-04	174	1	40.4	55.5	66	15.1	10	Sub'l Inc	50.8	4.7	8	-3.3
KY-04-02-MELL-06	176	1	40.4	55.3	66	14.9	10	Sub'l Inc	51.5	3.8	8	-4.2
KY-04-02-MELL-05	175	1	40.4	58.2	66	17.8	10	Sub'l Inc	53.1	5.1	8	-2.9
KY-04-01-MELL-02	46	1	40.4	59.0	66	18.6	10	Sub'l Inc	52.9	6.1	8	-1.9
KY-04-01-MELL-01	45	1	40.4	61.1	66	20.7	10	Sub'l Inc	55.5	5.6	8	-2.4
KY-04-01-MELL-03	47	1	40.4	59.4	66	19.0	10	Sub'l Inc	52.7	6.7	8	-1.3
KY-04-01-BOWL-02	19	1	39.8	60.5	66	20.7	10	Sub'l Inc	53.5	7.0	8	-1.0
KY-04-01-BOWL-01	18	1	39.8	64.7	66	24.9	10	Sub'l Inc	56.4	8.3	8	0.3

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	11	3.8	5.7	8.3
All Impacted	11	3.8	5.7	8.3
All that meet NR Goal	1	8.3	8.3	8.3

HMB								4 March 2018		
MG/MDG								TNM 2.5		
								Calculated with TNM 2.5		
RESULTS: BARRIER DESIGN										
PROJECT/CONTRACT:		I-69 ORX								
RUN:		1294.11 I-69 Central 1 Toll All-B								
BARRIER DESIGN:		MelodyLnTAll								
ATMOSPHERICS:		68 deg F, 50% RH								
Selected Receivers										
Name	No.									
		Calc	Noise Reduction			Barrier Reviewed	Important Segments			Partial
		LAeq1h	Calc	Goal	Calc-Goal		Name	No.	Height	LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-04-02-BOWL-04	178	51.8	5.8	8	-2.2	Barrier5-Barrier 4 D	point290	290	0.0	30.8
						Barrier5-Barrier 4 D	point237	237	20.0	30.6
						Barrier5-Barrier 4 D	point235	235	20.0	30.6
						Barrier5-Barrier 4 D	point236	236	20.0	30.6
						Barrier5-Barrier 4 D	point238	238	20.0	30.6
						Barrier5-Barrier 4 D	point239	239	20.0	30.6
						Barrier5-Barrier 4 D	point240	240	20.0	30.5
						Barrier5-Barrier 4 D	point291	291	0.0	30.5
						Barrier5-Barrier 4 D	point233	233	20.0	30.5
						Barrier5-Barrier 4 D	point234	234	20.0	30.5
KY-04-01-BOWL-03	20	52.1	5.6	8	-2.4	Barrier5-Barrier 4 D	point290	290	0.0	32.6
						Barrier5-Barrier 4 D	point291	291	0.0	32.6
						Barrier5-Barrier 4 D	point292	292	0.0	32.2
						Barrier5-Barrier 4 D	point295	295	0.0	32.0
						Barrier5-Barrier 4 D	point296	296	0.0	32.0
						Barrier5-Barrier 4 D	point297	297	0.0	32.0
						Barrier5-Barrier 4 D	point294	294	0.0	31.9
						Barrier5-Barrier 4 D	point298	298	0.0	31.7
						Barrier5-Barrier 4 D	point299	299	0.0	31.7
						Barrier5-Barrier 4 D	point289	289	8.0	31.4
KY-04-02-MELL-07	177	50.3	4.1	8	-3.9	Barrier5-Barrier 4 D	point422	422	0.0	28.9

						Barrier5-Barrier 4 D	point417	417	0.0	28.6
						Barrier5-Barrier 4 D	point421	421	0.0	28.6
						Barrier5-Barrier 4 D	point416	416	0.0	28.4
						Barrier5-Barrier 4 D	point420	420	0.0	28.3
						Barrier5-Barrier 4 D	point418	418	0.0	28.3
						Barrier5-Barrier 4 D	point415	415	0.0	28.2
						Barrier5-Barrier 4 D	point419	419	0.0	28.0
						Barrier5-Barrier 4 D	point423	423	8.0	27.7
						Barrier5-Barrier 4 D	point414	414	0.0	27.6
KY-04-02-MELL-04	174	50.8	4.7	8	-3.3	Barrier5-Barrier 4 D	point422	422	0.0	29.1
						Barrier5-Barrier 4 D	point421	421	0.0	28.8
						Barrier5-Barrier 4 D	point416	416	0.0	28.7
						Barrier5-Barrier 4 D	point415	415	0.0	28.7
						Barrier5-Barrier 4 D	point417	417	0.0	28.7
						Barrier5-Barrier 4 D	point418	418	0.0	28.4
						Barrier5-Barrier 4 D	point420	420	0.0	28.4
						Barrier5-Barrier 4 D	point419	419	0.0	28.3
						Barrier5-Barrier 4 D	point405	405	0.0	28.2
						Barrier5-Barrier 4 D	point423	423	8.0	28.2
KY-04-02-MELL-06	176	51.5	3.8	8	-4.2	Barrier5-Barrier 4 D	point422	422	0.0	32.0
						Barrier5-Barrier 4 D	point421	421	0.0	31.7
						Barrier5-Barrier 4 D	point417	417	0.0	31.5
						Barrier5-Barrier 4 D	point420	420	0.0	31.4
						Barrier5-Barrier 4 D	point416	416	0.0	31.3
						Barrier5-Barrier 4 D	point418	418	0.0	31.3
						Barrier5-Barrier 4 D	point419	419	0.0	31.1
						Barrier5-Barrier 4 D	point415	415	0.0	31.1
						Barrier5-Barrier 4 D	point423	423	8.0	31.0
						Barrier5-Barrier 4 D	point433	433	14.0	30.9
KY-04-02-MELL-05	175	53.1	5.1	8	-2.9	Barrier5-Barrier 4 D	point422	422	0.0	33.8
						Barrier5-Barrier 4 D	point174	174	14.0	33.7
						Barrier5-Barrier 4 D	point173	173	14.0	33.6
						Barrier5-Barrier 4 D	point183	183	14.0	33.6
						Barrier5-Barrier 4 D	point177	177	14.0	33.4
						Barrier5-Barrier 4 D	point421	421	0.0	33.4
						Barrier5-Barrier 4 D	point170	170	14.0	33.4

						Barrier5-Barrier 4 D	point175	175	14.0	33.3
						Barrier5-Barrier 4 D	point176	176	14.0	33.3
						Barrier5-Barrier 4 D	point429	429	14.0	33.3
KY-04-01-MELL-02	46	52.9	6.1	8	-1.9	Barrier5-Barrier 4 D	point211	211	20.0	32.7
						Barrier5-Barrier 4 D	point210	210	20.0	32.7
						Barrier5-Barrier 4 D	point209	209	20.0	32.6
						Barrier5-Barrier 4 D	point208	208	20.0	32.6
						Barrier5-Barrier 4 D	point213	213	20.0	32.5
						Barrier5-Barrier 4 D	point207	207	20.0	32.5
						Barrier5-Barrier 4 D	point206	206	20.0	32.4
						Barrier5-Barrier 4 D	point214	214	20.0	32.4
						Barrier5-Barrier 4 D	point205	205	20.0	32.4
						Barrier5-Barrier 4 D	point215	215	20.0	32.4
KY-04-01-MELL-01	45	55.5	5.6	8	-2.4	Barrier5-Barrier 4 D	point183	183	14.0	38.8
						Barrier5-Barrier 4 D	point182	182	14.0	38.5
						Barrier5-Barrier 4 D	point181	181	14.0	38.2
						Barrier5-Barrier 4 D	point180	180	14.0	37.9
						Barrier5-Barrier 4 D	point176	176	14.0	37.7
						Barrier5-Barrier 4 D	point179	179	14.0	37.7
						Barrier5-Barrier 4 D	point178	178	14.0	37.4
						Barrier5-Barrier 4 D	point175	175	14.0	37.4
						Barrier5-Barrier 4 D	point177	177	14.0	37.3
						Barrier5-Barrier 4 D	point174	174	14.0	37.2
KY-04-01-MELL-03	47	52.7	6.7	8	-1.3	Barrier5-Barrier 4 D	point220	220	20.0	33.1
						Barrier5-Barrier 4 D	point221	221	20.0	33.1
						Barrier5-Barrier 4 D	point223	223	20.0	33.0
						Barrier5-Barrier 4 D	point219	219	20.0	33.0
						Barrier5-Barrier 4 D	point222	222	20.0	33.0
						Barrier5-Barrier 4 D	point225	225	20.0	33.0
						Barrier5-Barrier 4 D	point224	224	20.0	33.0
						Barrier5-Barrier 4 D	point218	218	20.0	33.0
						Barrier5-Barrier 4 D	point215	215	20.0	32.9
						Barrier5-Barrier 4 D	point216	216	20.0	32.9
KY-04-01-BOWL-02	19	53.5	7.0	8	-1.0	Barrier5-Barrier 4 D	point237	237	20.0	34.7
						Barrier5-Barrier 4 D	point238	238	20.0	34.6
						Barrier5-Barrier 4 D	point240	240	20.0	34.6

						Barrier5-Barrier 4 D	point236	236	20.0	34.6
						Barrier5-Barrier 4 D	point239	239	20.0	34.6
						Barrier5-Barrier 4 D	point235	235	20.0	34.5
						Barrier5-Barrier 4 D	point241	241	20.0	34.4
						Barrier5-Barrier 4 D	point234	234	20.0	34.4
						Barrier5-Barrier 4 D	point233	233	20.0	34.4
						Barrier5-Barrier 4 D	point242	242	20.0	34.3
KY-04-01-BOWL-01	18	56.4	8.3	8	0.3	Barrier5-Barrier 4 D	point252	252	20.0	39.0
						Barrier5-Barrier 4 D	point251	251	20.0	39.0
						Barrier5-Barrier 4 D	point250	250	20.0	38.8
						Barrier5-Barrier 4 D	point253	253	20.0	38.8
						Barrier5-Barrier 4 D	point254	254	20.0	38.6
						Barrier5-Barrier 4 D	point249	249	20.0	38.6
						Barrier5-Barrier 4 D	point255	255	20.0	38.5
						Barrier5-Barrier 4 D	point248	248	20.0	38.4
						Barrier5-Barrier 4 D	point256	256	20.0	38.2
						Barrier5-Barrier 4 D	point247	247	20.0	38.2
Total Cost, All Barriers (including additional cost(s))					$1429050					

HMB				4 March 2018						
MG/MDG				TNM 2.5						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	I-69 ORX									
RUN:	1294.11 I-69 Central 1 Toll All-B									
BARRIER DESIGN:	MelodyLnTAll									
Barriers										
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top	Run:Rise	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier5-Barrier 4 D	W	8.00	18.20	20.00	2617	47635				1429050
									Total Cost:	1429050

HMB 4 March 2018
MG/MDG TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: 1294.11 I-69 Central 1 Toll All-B
BARRIER DESIGN: MelodyLnTAll

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier5-Barrier 4 D	W	point387	387	0.00	0.00	0.00	0	0				0
		point389	389	0.00	0.00	0.00	0	0				0
		point390	390	0.00	0.00	0.00	0	0				0
		point391	391	0.00	0.00	0.00	0	0				0
		point392	392	0.00	0.00	0.00	0	0				0
		point393	393	0.00	0.00	0.00	0	0				0
		point394	394	0.00	0.00	0.00	0	0				0
		point395	395	0.00	0.00	0.00	0	0				0
		point396	396	0.00	0.00	0.00	0	0				0
		point397	397	0.00	0.00	0.00	0	0				0
		point398	398	0.00	0.00	0.00	0	0				0
		point399	399	0.00	0.00	0.00	0	0				0
		point400	400	0.00	0.00	0.00	0	0				0
		point401	401	0.00	0.00	0.00	0	0				0
		point402	402	0.00	0.00	0.00	0	0				0
		point403	403	0.00	0.00	0.00	0	0				0
		point404	404	0.00	0.00	0.00	0	0				0
		point405	405	0.00	0.00	0.00	0	0				0
		point406	406	0.00	0.00	0.00	0	0				0
		point407	407	0.00	0.00	0.00	0	0				0
		point408	408	0.00	0.00	0.00	0	0				0
		point409	409	0.00	0.00	0.00	0	0				0
		point410	410	0.00	0.00	0.00	0	0				0
		point411	411	0.00	0.00	0.00	0	0				0
		point412	412	0.00	0.00	0.00	0	0				0
		point413	413	0.00	0.00	0.00	0	0				0

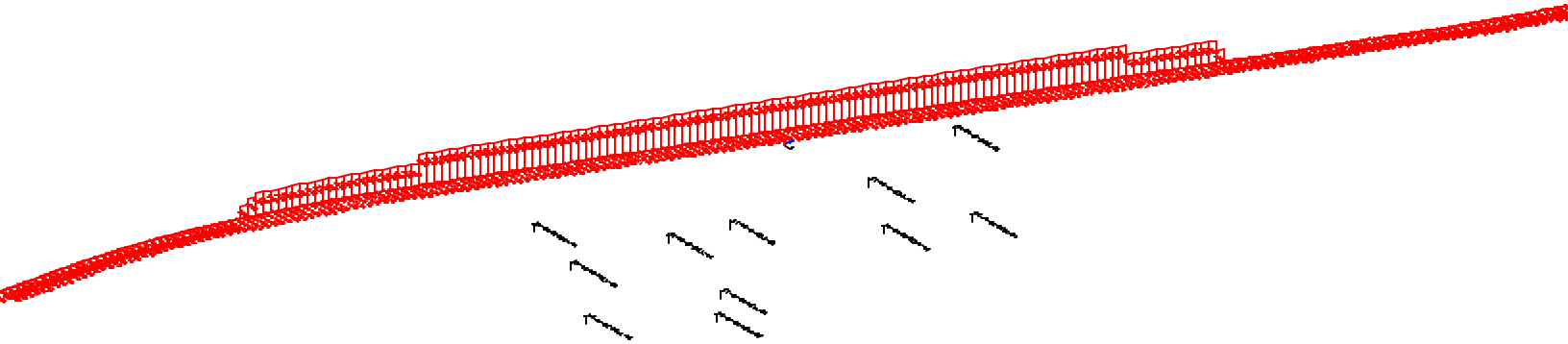
		point414	414	0.00	0.00	0.00	0	0				0
		point415	415	0.00	0.00	0.00	0	0				0
		point416	416	0.00	0.00	0.00	0	0				0
		point417	417	0.00	0.00	0.00	0	0				0
		point418	418	0.00	0.00	0.00	0	0				0
		point419	419	0.00	0.00	0.00	0	0				0
		point420	420	0.00	0.00	0.00	0	0				0
		point421	421	0.00	0.00	0.00	0	0				0
		point422	422	0.00	0.00	0.00	0	0				0
		point423	423	8.00	8.00	8.00	20	159				4776
		point424	424	12.00	12.00	12.00	20	241				7245
		point425	425	14.00	14.00	14.00	20	279				8363
		point426	426	14.00	14.00	14.00	20	282				8456
		point427	427	14.00	14.00	14.00	20	279				8363
		point428	428	14.00	14.00	14.00	20	282				8465
		point429	429	14.00	14.00	14.00	20	276				8271
		point430	430	14.00	14.00	14.00	20	282				8465
		point431	431	14.00	14.00	14.00	20	283				8482
		point432	432	14.00	14.00	14.00	20	276				8284
		point433	433	14.00	14.00	14.00	20	283				8482
		point434	434	14.00	14.00	14.00	17	236				7079
		point170	170	14.00	14.00	14.00	20	280				8392
		point173	173	14.00	14.00	14.00	20	280				8392
		point174	174	14.00	14.00	14.00	20	280				8392
		point175	175	14.00	14.00	14.00	20	281				8416
		point176	176	14.00	14.00	14.00	20	280				8392
		point177	177	14.00	14.00	14.00	20	280				8392
		point178	178	14.00	14.00	14.00	20	280				8392
		point179	179	14.00	14.00	14.00	20	280				8392
		point180	180	14.00	14.00	14.00	20	283				8504
		point181	181	14.00	14.00	14.00	20	280				8392
		point182	182	14.00	14.00	14.00	20	277				8303
		point183	183	14.00	14.00	14.00	20	280				8392
		point184	184	20.00	20.00	20.00	20	400				11989
		point185	185	20.00	20.00	20.00	20	405				12149
		point186	186	20.00	20.00	20.00	20	400				11989
		point187	187	20.00	20.00	20.00	20	395				11861
		point188	188	20.00	20.00	20.00	20	400				11989
		point189	189	20.00	20.00	20.00	20	400				11989

		point190	190	20.00	20.00	20.00	20	405				12149
		point191	191	20.00	20.00	20.00	20	400				11989
		point192	192	20.00	20.00	20.00	20	400				11989
		point193	193	20.00	20.00	20.00	20	400				11989
		point194	194	20.00	20.00	20.00	20	395				11861
		point195	195	20.00	20.00	20.00	20	405				12149
		point196	196	20.00	20.00	20.00	20	400				11989
		point197	197	20.00	20.00	20.00	20	400				11989
		point198	198	20.00	20.00	20.00	20	395				11861
		point199	199	20.00	20.00	20.00	20	400				11989
		point200	200	20.00	20.00	20.00	20	405				12149
		point201	201	20.00	20.00	20.00	20	400				11989
		point202	202	20.00	20.00	20.00	20	400				11989
		point203	203	20.00	20.00	20.00	20	400				11989
		point204	204	20.00	20.00	20.00	20	400				11989
		point205	205	20.00	20.00	20.00	20	405				12149
		point206	206	20.00	20.00	20.00	20	395				11861
		point207	207	20.00	20.00	20.00	20	400				11989
		point208	208	20.00	20.00	20.00	20	400				11989
		point209	209	20.00	20.00	20.00	20	400				11989
		point210	210	20.00	20.00	20.00	20	401				12023
		point211	211	20.00	20.00	20.00	20	400				11989
		point212	212	20.00	20.00	20.00	20	400				11989
		point213	213	20.00	20.00	20.00	20	400				11989
		point214	214	20.00	20.00	20.00	20	400				11989
		point215	215	20.00	20.00	20.00	20	405				12149
		point216	216	20.00	20.00	20.00	20	400				11989
		point217	217	20.00	20.00	20.00	20	395				11861
		point218	218	20.00	20.00	20.00	20	400				11989
		point219	219	20.00	20.00	20.00	20	400				11989
		point220	220	20.00	20.00	20.00	20	405				12149
		point221	221	20.00	20.00	20.00	20	400				11989
		point222	222	20.00	20.00	20.00	20	395				11861
		point223	223	20.00	20.00	20.00	20	400				11989
		point224	224	20.00	20.00	20.00	20	400				11989
		point225	225	20.00	20.00	20.00	20	405				12149
		point226	226	20.00	20.00	20.00	20	400				11989
		point227	227	20.00	20.00	20.00	20	400				11989
		point228	228	20.00	20.00	20.00	20	400				11989

		point229	229	20.00	20.00	20.00	20	395				11861
		point230	230	20.00	20.00	20.00	20	405				12149
		point231	231	20.00	20.00	20.00	20	400				11989
		point232	232	20.00	20.00	20.00	20	400				11989
		point233	233	20.00	20.00	20.00	20	400				11989
		point234	234	20.00	20.00	20.00	20	395				11861
		point235	235	20.00	20.00	20.00	20	405				12149
		point236	236	20.00	20.00	20.00	20	400				11989
		point237	237	20.00	20.00	20.00	20	400				11989
		point238	238	20.00	20.00	20.00	20	400				11989
		point239	239	20.00	20.00	20.00	20	400				11989
		point240	240	20.00	20.00	20.00	20	405				12149
		point241	241	20.00	20.00	20.00	20	395				11861
		point242	242	20.00	20.00	20.00	20	400				11989
		point243	243	20.00	20.00	20.00	20	400				11989
		point244	244	20.00	20.00	20.00	20	400				11989
		point245	245	20.00	20.00	20.00	20	405				12149
		point246	246	20.00	20.00	20.00	20	395				11861
		point247	247	20.00	20.00	20.00	20	400				11989
		point248	248	20.00	20.00	20.00	20	400				11989
		point249	249	20.00	20.00	20.00	20	400				11989
		point250	250	20.00	20.00	20.00	20	405				12149
		point251	251	20.00	20.00	20.00	20	400				11989
		point252	252	20.00	20.00	20.00	20	400				11989
		point253	253	20.00	20.00	20.00	20	395				11861
		point254	254	20.00	20.00	20.00	20	400				11989
		point255	255	20.00	20.00	20.00	20	405				12149
		point256	256	20.00	20.00	20.00	20	400				11989
		point257	257	20.00	20.00	20.00	20	400				11989
		point258	258	20.00	20.00	20.00	20	395				11861
		point259	259	20.00	20.00	20.00	20	400				11989
		point260	260	20.00	20.00	20.00	20	405				12149
		point261	261	20.00	20.00	20.00	20	400				11989
		point262	262	20.00	20.00	20.00	20	400				11989
		point263	263	20.00	20.00	20.00	20	400				11989
		point264	264	20.00	20.00	20.00	20	400				11989
		point265	265	20.00	20.00	20.00	20	401				12023
		point266	266	20.00	20.00	20.00	20	400				11989
		point267	267	20.00	20.00	20.00	20	400				11989

		point268	268	20.00	20.00	20.00	20	400				11989
		point269	269	20.00	20.00	20.00	20	400				11989
		point270	270	20.00	20.00	20.00	20	401				12023
		point171	171	20.00	20.00	20.00	20	400				11989
		point271	271	20.00	20.00	20.00	20	400				11989
		point272	272	20.00	20.00	20.00	20	400				11989
		point273	273	20.00	20.00	20.00	20	400				11989
		point274	274	20.00	20.00	20.00	20	405				12149
		point275	275	20.00	20.00	20.00	20	400				11989
		point276	276	20.00	20.00	20.00	20	395				11861
		point277	277	14.00	14.00	14.00	20	280				8392
		point278	278	14.00	14.00	14.00	20	280				8392
		point279	279	14.00	14.00	14.00	20	283				8504
		point280	280	14.00	14.00	14.00	20	280				8392
		point281	281	14.00	14.00	14.00	20	277				8303
		point282	282	14.00	14.00	14.00	20	280				8392
		point283	283	14.00	14.00	14.00	20	280				8392
		point284	284	14.00	14.00	14.00	20	283				8504
		point285	285	14.00	14.00	14.00	20	280				8392
		point286	286	14.00	14.00	14.00	20	280				8392
		point287	287	14.00	14.00	14.00	20	280				8392
		point288	288	14.00	14.00	14.00	20	277				8303
		point289	289	8.00	8.00	8.00	20	162				4860
		point290	290	0.00	0.00	0.00	0	0				0
		point291	291	0.00	0.00	0.00	0	0				0
		point292	292	0.00	0.00	0.00	0	0				0
		point293	293	0.00	0.00	0.00	0	0				0
		point294	294	0.00	0.00	0.00	0	0				0
		point295	295	0.00	0.00	0.00	0	0				0
		point296	296	0.00	0.00	0.00	0	0				0
		point297	297	0.00	0.00	0.00	0	0				0
		point298	298	0.00	0.00	0.00	0	0				0
		point299	299	0.00	0.00	0.00	0	0				0
		point300	300	0.00	0.00	0.00	0	0				0
		point301	301	0.00	0.00	0.00	0	0				0
		point302	302	0.00	0.00	0.00	0	0				0
		point303	303	0.00	0.00	0.00	0	0				0
		point304	304	0.00	0.00	0.00	0	0				0
		point305	305	0.00	0.00	0.00	0	0				0

		point306	306	0.00	0.00	0.00	0	0				0
		point307	307	0.00	0.00	0.00	0	0				0
		point308	308	0.00	0.00	0.00	0	0				0
		point309	309	0.00	0.00	0.00	0	0				0
		point310	310	0.00	0.00	0.00	0	0				0
		point311	311	0.00	0.00	0.00	0	0				0
		point312	312	0.00	0.00	0.00	0	0				0
		point313	313	0.00	0.00	0.00	0	0				0
		point314	314	0.00	0.00	0.00	0	0				0
		point315	315	0.00	0.00	0.00	0	0				0
		point316	316	0.00	0.00	0.00	0	0				0
		point317	317	0.00	0.00	0.00	0	0				0
		point318	318	0.00	0.00	0.00	0	0				0
		point319	319	0.00	0.00	0.00	0	0				0
		point320	320	0.00	0.00	0.00	0	0				0
		point321	321	0.00	0.00	0.00	0	0				0
		point322	322	0.00	0.00	0.00	0	0				0
		point323	323	0.00	0.00	0.00	0	0				0
		point324	324	0.00	0.00	0.00	0	0				0
		point325	325	0.00	0.00	0.00	0	0				0
		point326	326	0.00	0.00	0.00	0	0				0
		point327	327	0.00	0.00	0.00	0	0				0
		point328	328	0.00	0.00	0.00	0	0				0
		point329	329	0.00	0.00	0.00	0	0				0
		point330	330	0.00	0.00	0.00	0	0				0
		point331	331	0.00	0.00	0.00	0	0				0
		point332	332	0.00	0.00	0.00	0	0				0
		point333	333	0.00	0.00	0.00	0	0				0
		point334	334	0.00	0.00	0.00	0	0				0
		point335	335	0.00	0.00	0.00	0	0				0



1294.11 I-69 Central 1 Toll All-B	Sheet 1 of 1	4 Mar 2018
	HMB	
Barrier View-MelodyLnTAll	Project/Contract No. I-69 ORX	
Run name: C1_TollAll_4_CD	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/MDG	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR CENTRAL 1 – EASTVIEW EAST (TOLL BOTH CROSSINGS)

HMB Professional Engineers
MG/mdg

30 April 2018
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_Indiana_TollAll_AllBar_Fly
BARRIER DESIGN: C1_IN_TollAll_East_3BAR
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
IN-01-01-SVID-02	42	1	61.7	69.4	66	7.7	15	Snd Lvl	64.3	5.1	8	-2.9
IN-01-02-SRUA-01	79	1	57.5	68.4	66	10.9	15	Snd Lvl	65.3	3.1	8	-4.9
IN-01-02-SRUA-02	80	1	59.0	68.0	66	9.0	15	Snd Lvl	65.1	2.9	8	-5.1
IN-01-02-SRUA-03	81	1	60.1	70.0	66	9.9	15	Snd Lvl	64.3	5.7	8	-2.3
IN-01-02-SRUA-04	82	1	62.0	70.0	66	8.0	15	Snd Lvl	64.6	5.4	8	-2.6
IN-01-02-SRUA-05	83	1	63.6	69.8	66	6.2	15	Snd Lvl	64.9	4.9	8	-3.1
IN-01-01-SRUA-01	20	1	56.5	68.8	66	12.3	15	Snd Lvl	65.9	2.9	8	-5.1
IN-01-01-SRUA-02	21	1	57.1	68.7	66	11.6	15	Snd Lvl	65.9	2.8	8	-5.2
IN-01-01-SRUA-03	23	1	57.8	68.3	66	10.5	15	Snd Lvl	65.5	2.8	8	-5.2
IN-01-01-SRUA-04	24	1	58.6	69.0	66	10.4	15	Snd Lvl	65.8	3.2	8	-4.8
IN-01-01-SRUA-05	25	1	59.5	70.0	66	10.5	15	Snd Lvl	65.5	4.5	8	-3.5
IN-01-01-SRUA-06	26	1	60.4	69.8	66	9.4	15	Snd Lvl	65.4	4.4	8	-3.6
IN-01-01-SRUA-07	27	1	61.3	69.9	66	8.6	15	Snd Lvl	65.3	4.6	8	-3.4
IN-01-01-SRUA-08	28	1	62.5	69.8	66	7.3	15	Snd Lvl	65.3	4.5	8	-3.5
IN-01-02-SSTB-01	85	1	55.6	69.3	66	13.7	15	Snd Lvl	64.8	4.5	8	-3.5
IN-01-02-SSTB-02	86	1	56.2	69.7	66	13.5	15	Snd Lvl	65.3	4.4	8	-3.6
IN-01-02-SSTB-03	87	1	56.9	68.9	66	12.0	15	Snd Lvl	65.8	3.1	8	-4.9
IN-01-02-SSTB-04	88	1	57.5	69.3	66	11.8	15	Snd Lvl	65.6	3.7	8	-4.3
IN-01-02-SSTB-05	89	1	58.2	69.4	66	11.2	15	Snd Lvl	65.6	3.8	8	-4.2
IN-01-02-SSTB-06	90	1	59.0	67.5	66	8.5	15	Snd Lvl	65.7	1.8	8	-6.2
IN-01-02-SSTB-07	91	1	59.9	69.0	66	9.1	15	Snd Lvl	65.9	3.1	8	-4.9
IN-01-02-SSTB-08	92	1	60.8	69.6	66	8.8	15	Snd Lvl	65.8	3.8	8	-4.2
IN-01-020SSTB-09	73	1	62.0	70.1	66	8.1	15	Snd Lvl	65.7	4.4	8	-3.6
IN-01-01-SSTB-01	30	1	55.5	71.2	66	15.7	15	Both	65.5	5.7	8	-2.3

IN-01-01-SSTB-02	31	1	56.0	69.1	66	13.1	15	Snd Lvl	65.4	3.7	8	-4.3
IN-01-01-SSTB-03	32	1	56.5	71.6	66	15.1	15	Both	65.6	6.0	8	-2.0
IN-01-01-SSTB-04	33	1	57.2	71.5	66	14.3	15	Snd Lvl	65.6	5.9	8	-2.1
IN-01-01-SSTB-05	34	1	57.8	71.7	66	13.9	15	Snd Lvl	65.6	6.1	8	-1.9
IN-01-01-SSTB-06	35	1	58.5	70.5	66	12.0	15	Snd Lvl	65.4	5.1	8	-2.9
IN-01-01-SSTB-07	36	1	58.9	70.5	66	11.6	15	Snd Lvl	65.4	5.1	8	-2.9
IN-01-01-SSTB-08	37	1	60.4	70.4	66	10.0	15	Snd Lvl	65.4	5.0	8	-3.0
IN-01-01-SSTB-09	38	1	61.5	70.5	66	9.0	15	Snd Lvl	65.3	5.2	8	-2.8
IN-01-01-SSTB-10	39	1	62.9	70.0	66	7.1	15	Snd Lvl	64.6	5.4	8	-2.6
IN-01-02-REES-01	74	1	61.1	72.2	66	11.1	15	Snd Lvl	65.7	6.5	8	-1.5
IN-01-02-REES-02	75	1	62.5	72.5	66	10.0	15	Snd Lvl	65.4	7.1	8	-0.9
IN-01-01-REES-01	2	1	60.0	73.2	66	13.2	15	Snd Lvl	65.2	8.0	8	0.0
IN-01-01-REES-02	3	1	61.6	71.7	66	10.1	15	Snd Lvl	65.6	6.1	8	-1.9
IN-01-01-REES-03	4	1	62.6	72.3	66	9.7	15	Snd Lvl	65.3	7.0	8	-1.0
IN-01-01-REES-04	5	1	63.9	72.4	66	8.5	15	Snd Lvl	64.8	7.6	8	-0.4
IN-01-01-SROD-04	18	1	62.5	72.2	66	9.7	15	Snd Lvl	65.5	6.7	8	-1.3
IN-01-01-SROD-03	17	1	61.4	71.9	66	10.5	15	Snd Lvl	65.4	6.5	8	-1.5
IN-01-01-SROD-02	16	1	60.3	72.0	66	11.7	15	Snd Lvl	65.2	6.8	8	-1.2
IN-01-01-SROD-01	15	1	59.3	71.9	66	12.6	15	Snd Lvl	65.5	6.4	8	-1.6
IN-01-02-VNBA-05	61	1	59.6	71.6	66	12.0	15	Snd Lvl	65.9	5.7	8	-2.3
IN-01-02-VNBA-04	59	1	58.2	71.4	66	13.2	15	Snd Lvl	65.9	5.5	8	-2.5
IN-01-02-VNBA-03	57	1	57.7	70.8	66	13.1	15	Snd Lvl	65.2	5.6	8	-2.4
IN-01-02-VNBA-02	55	1	57.1	71.9	66	14.8	15	Snd Lvl	64.6	7.3	8	-0.7
IN-01-02-SBOR-01	78	1	55.6	71.8	66	16.2	15	Both	65.6	6.2	8	-1.8
IN-01-01-RHEA-03	9	1	56.2	70.2	66	14.0	15	Snd Lvl	65.5	4.7	8	-3.3
IN-01-01-RHEA-02	8	1	55.4	71.7	66	16.3	15	Both	65.0	6.7	8	-1.3
IN-01-01-RHEA-01	7	1	55.5	71.5	66	16.0	15	Both	65.7	5.8	8	-2.2
Receiver113	188	1	52.7	70.5	66	17.8	15	Both	65.1	5.4	8	-2.6
Receiver112	187	1	52.1	67.2	66	15.1	15	Both	64.7	2.5	8	-5.5
Receiver111	186	1	51.9	69.9	66	18.0	15	Both	64.4	5.5	8	-2.5
Receiver110	185	1	53.7	70.7	66	17.0	15	Both	65.4	5.3	8	-2.7
Receiver109	184	1	51.6	69.8	66	18.2	15	Both	65.5	4.3	8	-3.7
Receiver108	183	1	52.8	70.4	66	17.6	15	Both	65.6	4.8	8	-3.2
IN-01-02-VNBA-01	52	1	56.5	72.6	66	16.1	15	Both	65.5	7.1	8	-0.9
IN-01-01-SBOR-01	10	1	56.2	71.6	66	15.4	15	Both	65.9	5.7	8	-2.3
IN-01-01-SBOR-02	12	1	57.4	72.2	66	14.8	15	Snd Lvl	67.7	4.5	8	-3.5
IN-01-02-VNBA-04	99	1	55.5	72.9	66	17.4	15	Both	69.3	3.6	8	-4.4
IN-01-02-VNBA-03	98	1	54.8	70.7	66	15.9	15	Both	70.6	0.1	8	-7.9
IN-01-02-VNBA-02	97	1	54.1	66.0	66	11.9	15	Snd Lvl	65.6	0.4	8	-7.6
IN-01-02-VNBA-01	96	1	53.2	70.3	66	17.1	15	Both	70.0	0.3	8	-7.7
Receiver107	182	1	51.8	63.8	66	12.0	15	----	67.1	-3.3	8	-11.3

IN-01-01-SBOR-04	14	1	60.7	72.6	66	11.9	15	Snd Lvl	66.5	6.1	8	-1.9
IN-01-01-VNBA-08	58	1	53.6	66.5	66	12.9	15	Snd Lvl	66.4	0.1	8	-7.9
IN-01-01-VNBA-02	48	1	50.1	68.4	66	18.3	15	Both	63.7	4.7	8	-3.3
Receiver106	180	1	50.2	69.8	66	19.6	15	Both	69.9	-0.1	8	-8.1
IN-01-01-VNBA-01	47	1	49.9	68.2	66	18.3	15	Both	64.5	3.7	8	-4.3
IN-01-01-VNBA-03	49	1	50.1	70.0	66	19.9	15	Both	63.0	7.0	8	-1.0
IN-01-01-VNBA-04	50	1	50.7	65.9	66	15.2	15	Sub'l Inc	67.5	-1.6	8	-9.6
IN-01-01-VNBA-05	51	1	51.3	64.3	66	13.0	15	----	64.1	0.2	8	-7.8
IN-01-01-VNBA-06	53	1	52.2	66.1	66	13.9	15	Snd Lvl	65.9	0.2	8	-7.8
IN-01-01-VNBA-07	56	1	53.2	65.9	66	12.7	15	----	65.7	0.2	8	-7.8
IN-01-01-VNBA-09	60	1	54.3	66.8	66	12.5	15	Snd Lvl	66.5	0.3	8	-7.7
IN-01-01-VNBA-10	62	1	55.4	65.5	66	10.1	15	----	65.0	0.5	8	-7.5
IN-01-01-VNBA-11	63	1	58.5	71.3	66	12.8	15	Snd Lvl	71.0	0.3	8	-7.7
IN-01-01-VNBA-12	64	1	59.9	73.5	66	13.6	15	Snd Lvl	73.2	0.3	8	-7.7
IN-01-01-SBOR-03	13	1	61.6	72.5	66	10.9	15	Snd Lvl	65.5	7.0	8	-1.0
IN-01-01-VNBA-13	66	1	59.2	73.3	66	14.1	15	Snd Lvl	66.1	7.2	8	-0.8
IN-01-01-VNBA-15	68	1	60.2	71.0	66	10.8	15	Snd Lvl	65.0	6.0	8	-2.0
IN-01-01-VNBA-16	69	1	60.8	71.2	66	10.4	15	Snd Lvl	65.4	5.8	8	-2.2
IN-01-01-VNBA-17	70	1	61.2	71.0	66	9.8	15	Snd Lvl	65.3	5.7	8	-2.3
IN-01-01-VNBA-19	72	1	62.8	71.6	66	8.8	15	Snd Lvl	65.5	6.1	8	-1.9
IN-01-01-SROD-05	19	1	63.6	72.1	66	8.5	15	Snd Lvl	65.1	7.0	8	-1.0
IN-01-01-REES-05	6	1	65.3	72.9	66	7.6	15	Snd Lvl	63.9	9.0	8	1.0
IN-01-02-REES-03	77	1	64.1	70.8	66	6.7	15	Snd Lvl	64.9	5.9	8	-2.1
IN-01-01-SSTB-11	40	1	64.5	70.2	66	5.7	15	Snd Lvl	64.4	5.8	8	-2.2
IN-01-02-SSTB-10	93	1	63.5	70.1	66	6.6	15	Snd Lvl	65.3	4.8	8	-3.2
IN-01-01-SRUA-09	29	1	64.1	70.6	66	6.5	15	Snd Lvl	64.9	5.7	8	-2.3
IN-01-02-SRUA-06	84	1	64.7	70.3	66	5.6	15	Snd Lvl	63.3	7.0	8	-1.0
IN-01-01-SVID-01	41	1	63.9	70.0	66	6.1	15	Snd Lvl	63.0	7.0	8	-1.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	93	-3.3	4.5	9.0
All Impacted	89	-1.6	4.7	9.0
All that meet NR Goal	2	8.0	8.5	9.0

HMB Professional Engineers 30 April 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_Indiana_TollAll_AllBar_Fly
BARRIER DESIGN: C1_IN_TollAll_East_3BAR

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
IN-01-01-SVID-02	42	64.3	5.1	8	-2.9	Barrier23	point1549	1549	24.0	63.5
						Barrier27	point2179	2179	24.0	60.7
						Barrier27	point2180	2180	24.0	60.4
						Barrier23	point1526	1526	0.0	43.3
						Barrier23	point1525	1525	0.0	43.2
						Barrier23	point1524	1524	0.0	42.7
						Barrier23	point1523	1523	0.0	42.3
						Barrier23	point1522	1522	0.0	42.0
						Barrier23	point1521	1521	0.0	41.7
						Barrier23	point1520	1520	0.0	41.2
IN-01-02-SRUA-01	79	65.3	3.1	8	-4.9	Barrier23	point1560	1560	28.0	64.9
						Barrier27	point2182	2182	24.0	62.8
						Barrier27	point2181	2181	24.0	60.8
						Barrier23	point1526	1526	0.0	39.6
						Barrier23	point1525	1525	0.0	39.3
						Barrier23	point1524	1524	0.0	38.9
						Barrier23	point1523	1523	0.0	38.6
						Barrier23	point1522	1522	0.0	38.4
						Barrier23	point1521	1521	0.0	37.9
						Barrier23	point1520	1520	0.0	37.3
IN-01-02-SRUA-02	80	65.1	2.9	8	-5.1	Barrier23	point1558	1558	20.0	64.7

						Barrier27	point2181	2181	24.0	63.8
						Barrier27	point2182	2182	24.0	57.7
						Barrier23	point1495	1495	0.0	42.6
						Barrier23	point1493	1493	0.0	41.6
						Barrier23	point1492	1492	0.0	41.0
						Barrier23	point1526	1526	0.0	40.3
						Barrier23	point1525	1525	0.0	39.9
						Barrier23	point1524	1524	0.0	39.3
						Barrier23	point1523	1523	0.0	39.1
IN-01-02-SRUA-03	81	64.3	5.7	8	-2.3	Barrier23	point1556	1556	20.0	63.8
						Barrier27	point2181	2181	24.0	63.8
						Barrier23	point1526	1526	0.0	40.8
						Barrier23	point1525	1525	0.0	40.3
						Barrier23	point1501	1501	0.0	39.9
						Barrier23	point1502	1502	0.0	39.9
						Barrier23	point1524	1524	0.0	39.6
						Barrier23	point1523	1523	0.0	39.6
						Barrier23	point1522	1522	0.0	39.4
						Barrier23	point1521	1521	0.0	39.2
IN-01-02-SRUA-04	82	64.6	5.4	8	-2.6	Barrier23	point1554	1554	20.0	64.1
						Barrier27	point2180	2180	24.0	62.1
						Barrier27	point2181	2181	24.0	59.7
						Barrier23	point1519	1519	0.0	41.5
						Barrier23	point1526	1526	0.0	41.1
						Barrier23	point1525	1525	0.0	41.0
						Barrier23	point1521	1521	0.0	40.6
						Barrier23	point1518	1518	0.0	40.5
						Barrier23	point1524	1524	0.0	40.5
						Barrier23	point1522	1522	0.0	40.5
IN-01-02-SRUA-05	83	64.9	4.9	8	-3.1	Barrier23	point1553	1553	20.0	64.4
						Barrier27	point2180	2180	24.0	63.1
						Barrier27	point2181	2181	24.0	58.2
						Barrier23	point1526	1526	0.0	43.3
						Barrier23	point1518	1518	0.0	42.5
						Barrier23	point1525	1525	0.0	42.3
						Barrier23	point1519	1519	0.0	41.0

						Barrier23	point1520	1520	0.0	40.7
						Barrier23	point1521	1521	0.0	40.6
						Barrier23	point1523	1523	0.0	40.5
IN-01-01-SRUA-01	20	65.9	2.9	8	-5.1	Barrier23	point1568	1568	28.0	65.6
						Barrier27	point2183	2183	24.0	64.9
						Barrier27	point2184	2184	24.0	57.7
						Barrier23	point1526	1526	0.0	37.2
						Barrier23	point1525	1525	0.0	36.9
						Barrier23	point1524	1524	0.0	36.4
						Barrier23	point1522	1522	0.0	36.2
						Barrier23	point1523	1523	0.0	36.1
						Barrier23	point1521	1521	0.0	35.5
						Barrier23	point1520	1520	0.0	35.3
IN-01-01-SRUA-02	21	65.9	2.8	8	-5.2	Barrier23	point1567	1567	20.0	65.7
						Barrier27	point2183	2183	24.0	65.6
						Barrier27	point2184	2184	24.0	49.4
						Barrier23	point1526	1526	0.0	37.3
						Barrier23	point1525	1525	0.0	37.0
						Barrier23	point1524	1524	0.0	36.5
						Barrier23	point1523	1523	0.0	36.2
						Barrier23	point1522	1522	0.0	36.1
						Barrier23	point1521	1521	0.0	35.8
						Barrier23	point1520	1520	0.0	35.6
IN-01-01-SRUA-03	23	65.5	2.8	8	-5.2	Barrier23	point1566	1566	28.0	65.2
						Barrier27	point2183	2183	24.0	65.2
						Barrier23	point1495	1495	0.0	40.1
						Barrier23	point1493	1493	0.0	38.1
						Barrier23	point1494	1494	0.0	37.6
						Barrier23	point1526	1526	0.0	37.6
						Barrier23	point1492	1492	0.0	37.2
						Barrier23	point1525	1525	0.0	37.1
						Barrier23	point1523	1523	0.0	36.6
						Barrier23	point1524	1524	0.0	36.6
IN-01-01-SRUA-04	24	65.8	3.2	8	-4.8	Barrier23	point1565	1565	28.0	65.5
						Barrier27	point2183	2183	24.0	64.5
						Barrier27	point2182	2182	24.0	58.6

						Barrier23	point1501	1501	0.0	38.9
						Barrier23	point1500	1500	0.0	38.8
						Barrier23	point1526	1526	0.0	37.7
						Barrier23	point1503	1503	0.0	37.5
						Barrier23	point1525	1525	0.0	37.3
						Barrier23	point1524	1524	0.0	36.8
						Barrier23	point1523	1523	0.0	36.8
IN-01-01-SRUA-05	25	65.5	4.5	8	-3.5	Barrier23	point1562	1562	20.0	65.2
						Barrier27	point2182	2182	24.0	65.2
						Barrier23	point1526	1526	0.0	38.4
						Barrier23	point1503	1503	0.0	38.3
						Barrier23	point1513	1513	0.0	38.1
						Barrier23	point1512	1512	0.0	38.1
						Barrier23	point1525	1525	0.0	38.1
						Barrier23	point1524	1524	0.0	37.8
						Barrier23	point1522	1522	0.0	37.7
						Barrier23	point1523	1523	0.0	37.7
IN-01-01-SRUA-06	26	65.4	4.4	8	-3.6	Barrier23	point1563	1563	28.0	65.0
						Barrier27	point2182	2182	24.0	64.2
						Barrier27	point2183	2183	24.0	57.2
						Barrier23	point1519	1519	0.0	39.0
						Barrier23	point1521	1521	0.0	38.8
						Barrier23	point1520	1520	0.0	38.6
						Barrier23	point1511	1511	0.0	38.5
						Barrier23	point1510	1510	0.0	38.1
						Barrier23	point1525	1525	0.0	37.9
						Barrier23	point1526	1526	0.0	37.9
IN-01-01-SRUA-07	27	65.3	4.6	8	-3.4	Barrier23	point1561	1561	28.0	64.9
						Barrier27	point2182	2182	24.0	64.9
						Barrier23	point1524	1524	0.0	40.4
						Barrier23	point1525	1525	0.0	40.4
						Barrier23	point1514	1514	0.0	40.2
						Barrier23	point1526	1526	0.0	40.0
						Barrier23	point1511	1511	0.0	39.7
						Barrier23	point1523	1523	0.0	39.5
						Barrier23	point1517	1517	0.0	39.0

						Barrier23	point1516	1516	0.0	38.7
IN-01-01-SRUA-08	28	65.3	4.5	8	-3.5	Barrier23	point1560	1560	20.0	64.9
						Barrier27	point2182	2182	24.0	63.1
						Barrier27	point2181	2181	24.0	60.2
						Barrier23	point1520	1520	0.0	41.1
						Barrier23	point1525	1525	0.0	39.7
						Barrier23	point1526	1526	0.0	39.7
						Barrier23	point1521	1521	0.0	39.6
						Barrier23	point1522	1522	0.0	39.1
						Barrier23	point1524	1524	0.0	38.9
						Barrier23	point1519	1519	0.0	38.8
IN-01-02-SSTB-01	85	64.8	4.5	8	-3.5	Barrier23	point1573	1573	28.0	64.6
						Barrier27	point2184	2184	24.0	62.2
						Barrier27	point2185	2185	24.0	60.8
						Barrier23	point1526	1526	0.0	35.6
						Barrier23	point1525	1525	0.0	35.3
						Barrier23	point1524	1524	0.0	34.9
						Barrier23	point1522	1522	0.0	34.7
						Barrier23	point1523	1523	0.0	34.7
						Barrier23	point1521	1521	0.0	34.2
						Barrier23	point1520	1520	0.0	33.9
IN-01-02-SSTB-02	86	65.3	4.4	8	-3.6	Barrier23	point1574	1574	28.0	65.1
						Barrier27	point2185	2185	24.0	62.9
						Barrier27	point2184	2184	24.0	60.7
						Barrier27	point2186	2186	24.0	49.4
						Barrier23	point1526	1526	0.0	35.5
						Barrier23	point1525	1525	0.0	35.3
						Barrier23	point1524	1524	0.0	34.7
						Barrier23	point1523	1523	0.0	34.7
						Barrier23	point1522	1522	0.0	34.5
						Barrier23	point1489	1489	0.0	34.2
IN-01-02-SSTB-03	87	65.8	3.1	8	-4.9	Barrier23	point1572	1572	28.0	65.6
						Barrier27	point2184	2184	20.0	65.6
						Barrier23	point1490	1490	0.0	37.8
						Barrier23	point1488	1488	0.0	37.4
						Barrier23	point1487	1487	0.0	36.8

						Barrier23	point1526	1526	0.0	36.0
						Barrier23	point1525	1525	0.0	35.6
						Barrier23	point1524	1524	0.0	35.3
						Barrier23	point1489	1489	0.0	35.3
						Barrier23	point1523	1523	0.0	35.2
IN-01-02-SSTB-04	88	65.6	3.7	8	-4.3	Barrier23	point1571	1571	20.0	65.4
						Barrier27	point2184	2184	24.0	65.4
						Barrier23	point1498	1498	0.0	40.4
						Barrier23	point1499	1499	0.0	37.5
						Barrier23	point1494	1494	0.0	36.4
						Barrier23	point1497	1497	0.0	36.4
						Barrier23	point1526	1526	0.0	36.2
						Barrier23	point1525	1525	0.0	35.6
						Barrier23	point1523	1523	0.0	35.4
						Barrier23	point1524	1524	0.0	35.3
IN-01-02-SSTB-05	89	65.6	3.8	8	-4.2	Barrier23	point1570	1570	20.0	65.4
						Barrier27	point2184	2184	24.0	65.4
						Barrier23	point1503	1503	0.0	37.4
						Barrier23	point1502	1502	0.0	37.3
						Barrier23	point1512	1512	0.0	37.0
						Barrier23	point1513	1513	0.0	37.0
						Barrier23	point1499	1499	0.0	36.1
						Barrier23	point1504	1504	0.0	36.0
						Barrier23	point1526	1526	0.0	35.9
						Barrier23	point1525	1525	0.0	35.6
IN-01-02-SSTB-06	90	65.7	1.8	8	-6.2	Barrier23	point1570	1570	20.0	65.5
						Barrier27	point2184	2184	24.0	64.5
						Barrier27	point2183	2183	24.0	58.4
						Barrier23	point1518	1518	0.0	38.1
						Barrier23	point1519	1519	0.0	37.6
						Barrier23	point1507	1507	0.0	37.5
						Barrier23	point1516	1516	0.0	37.0
						Barrier23	point1517	1517	0.0	36.8
						Barrier23	point1510	1510	0.0	36.4
						Barrier23	point1509	1509	0.0	36.3
IN-01-02-SSTB-07	91	65.9	3.1	8	-4.9	Barrier23	point1568	1568	28.0	65.6

						Barrier27	point2183	2183	24.0	64.2
						Barrier27	point2184	2184	24.0	60.1
						Barrier23	point1522	1522	0.0	38.9
						Barrier23	point1512	1512	0.0	38.8
						Barrier23	point1525	1525	0.0	37.9
						Barrier23	point1523	1523	0.0	37.6
						Barrier23	point1524	1524	0.0	37.1
						Barrier23	point1513	1513	0.0	37.1
						Barrier23	point1516	1516	0.0	37.0
IN-01-02-SSTB-08	92	65.8	3.8	8	-4.2	Barrier23	point1568	1568	28.0	65.5
						Barrier27	point2183	2183	24.0	64.7
						Barrier27	point2184	2184	24.0	57.8
						Barrier23	point1517	1517	0.0	39.4
						Barrier23	point1526	1526	0.0	38.2
						Barrier23	point1518	1518	0.0	38.0
						Barrier23	point1514	1514	0.0	38.0
						Barrier23	point1525	1525	0.0	37.8
						Barrier23	point1519	1519	0.0	37.6
						Barrier23	point1520	1520	0.0	37.5
IN-01-020SSTB-09	73	65.7	4.4	8	-3.6	Barrier23	point1567	1567	28.0	65.4
						Barrier27	point2183	2183	24.0	65.4
						Barrier23	point1524	1524	0.0	40.0
						Barrier23	point1523	1523	0.0	39.5
						Barrier23	point1525	1525	0.0	39.0
						Barrier23	point1520	1520	0.0	39.0
						Barrier23	point1526	1526	0.0	38.7
						Barrier23	point1557	1557	20.0	38.1
						Barrier23	point1558	1558	20.0	38.0
						Barrier23	point1560	1560	20.0	38.0
IN-01-01-SSTB-01	30	65.5	5.7	8	-2.3	Barrier27	point2064	2064	24.0	63.3
						Barrier23	point1578	1578	28.0	63.0
						Barrier23	point1579	1579	28.0	61.5
						Barrier27	point2186	2186	24.0	61.0
						Barrier17	point1473	1473	28.0	34.0
						Barrier23	point1525	1525	0.0	33.8
						Barrier23	point1526	1526	0.0	33.7

						Barrier23	point1523	1523	0.0	33.4
						Barrier23	point1524	1524	0.0	33.3
						Barrier23	point1521	1521	0.0	33.3
IN-01-01-SSTB-02	31	65.4	3.7	8	-4.3	Barrier23	point1579	1579	28.0	65.2
						Barrier27	point2064	2064	24.0	65.1
						Barrier27	point2186	2186	24.0	46.8
						Barrier23	point1492	1492	0.0	38.1
						Barrier23	point1489	1489	0.0	38.1
						Barrier23	point1490	1490	0.0	36.7
						Barrier23	point1491	1491	0.0	35.3
						Barrier23	point1493	1493	0.0	35.0
						Barrier17	point1473	1473	0.0	34.6
						Barrier23	point1526	1526	0.0	33.8
IN-01-01-SSTB-03	32	65.6	6.0	8	-2.0	Barrier23	point1578	1578	28.0	65.4
						Barrier27	point2064	2064	24.0	62.7
						Barrier27	point2186	2186	24.0	61.4
						Barrier23	point1498	1498	0.0	38.7
						Barrier23	point1499	1499	0.0	38.1
						Barrier23	point1494	1494	0.0	35.2
						Barrier23	point1497	1497	0.0	34.8
						Barrier23	point1500	1500	0.0	34.2
						Barrier17	point1473	1473	0.0	34.1
						Barrier17	point1326	1326	28.0	34.1
IN-01-01-SSTB-04	33	65.6	5.9	8	-2.1	Barrier23	point1578	1578	28.0	65.4
						Barrier27	point2186	2186	24.0	63.5
						Barrier27	point2064	2064	24.0	60.8
						Barrier23	point1502	1502	0.0	37.2
						Barrier23	point1503	1503	0.0	36.4
						Barrier23	point1512	1512	0.0	36.0
						Barrier23	point1513	1513	0.0	35.6
						Barrier17	point1326	1326	0.0	35.5
						Barrier23	point1499	1499	0.0	34.4
						Barrier23	point1507	1507	0.0	34.3
IN-01-01-SSTB-05	34	65.6	6.1	8	-1.9	Barrier23	point1476	1476	28.0	65.3
						Barrier27	point2186	2186	24.0	63.9
						Barrier27	point2064	2064	24.0	60.0

						Barrier23	point1506	1506	0.0	36.7
						Barrier23	point1518	1518	0.0	36.6
						Barrier23	point1516	1516	0.0	36.5
						Barrier23	point1519	1519	0.0	36.3
						Barrier23	point1517	1517	0.0	36.0
						Barrier23	point1502	1502	0.0	34.6
						Barrier23	point1525	1525	0.0	34.2
IN-01-01-SSTB-06	35	65.4	5.1	8	-2.9	Barrier27	point2186	2186	24.0	65.2
						Barrier23	point1577	1577	28.0	64.6
						Barrier23	point1476	1476	28.0	56.5
						Barrier23	point1511	1511	0.0	37.5
						Barrier23	point1522	1522	0.0	37.4
						Barrier23	point1512	1512	0.0	37.0
						Barrier23	point1523	1523	0.0	36.5
						Barrier23	point1525	1525	0.0	36.2
						Barrier23	point1507	1507	0.0	36.2
						Barrier23	point1524	1524	0.0	35.6
IN-01-01-SSTB-07	36	65.4	5.1	8	-2.9	Barrier23	point1577	1577	28.0	65.2
						Barrier27	point2186	2186	24.0	65.2
						Barrier23	point1513	1513	0.0	37.8
						Barrier23	point1525	1525	0.0	37.7
						Barrier23	point1524	1524	0.0	37.7
						Barrier23	point1510	1510	0.0	37.0
						Barrier23	point1526	1526	0.0	36.9
						Barrier23	point1516	1516	0.0	36.5
						Barrier23	point1514	1514	0.0	35.9
						Barrier23	point1522	1522	0.0	35.2
IN-01-01-SSTB-08	37	65.4	5.0	8	-3.0	Barrier23	point1576	1576	28.0	65.2
						Barrier27	point2186	2186	24.0	63.4
						Barrier27	point2185	2185	24.0	60.4
						Barrier23	point1522	1522	0.0	38.0
						Barrier23	point1521	1521	0.0	37.7
						Barrier23	point1519	1519	0.0	37.0
						Barrier23	point1525	1525	0.0	36.9
						Barrier23	point1523	1523	0.0	36.6
						Barrier23	point1526	1526	0.0	36.3

						Barrier23	point1518	1518	0.0	36.1
IN-01-01-SSTB-09	38	65.3	5.2	8	-2.8	Barrier23	point1574	1574	28.0	65.0
						Barrier27	point2185	2185	24.0	63.3
						Barrier27	point2184	2184	24.0	59.3
						Barrier27	point2186	2186	24.0	53.2
						Barrier23	point1526	1526	0.0	39.7
						Barrier23	point1523	1523	0.0	39.5
						Barrier23	point1566	1566	20.0	37.3
						Barrier23	point1565	1565	20.0	37.3
						Barrier23	point1564	1564	20.0	37.2
						Barrier23	point1567	1567	20.0	37.1
IN-01-01-SSTB-10	39	64.6	5.4	8	-2.6	Barrier23	point1573	1573	28.0	64.3
						Barrier27	point2184	2184	24.0	61.8
						Barrier27	point2185	2185	24.0	60.7
						Barrier23	point1566	1566	20.0	39.0
						Barrier23	point1567	1567	20.0	38.8
						Barrier23	point1568	1568	20.0	38.8
						Barrier23	point1565	1565	20.0	38.8
						Barrier23	point1569	1569	20.0	38.7
						Barrier23	point1564	1564	20.0	38.6
						Barrier23	point1571	1571	20.0	38.5
IN-01-02-REES-01	74	65.7	6.5	8	-1.5	Barrier23	point1578	1578	28.0	65.4
						Barrier27	point2186	2186	24.0	63.2
						Barrier27	point2064	2064	24.0	61.5
						Barrier23	point1525	1525	0.0	37.0
						Barrier23	point1569	1569	20.0	36.8
						Barrier23	point1570	1570	20.0	36.8
						Barrier23	point1571	1571	20.0	36.8
						Barrier23	point1524	1524	0.0	36.7
						Barrier23	point1568	1568	20.0	36.6
						Barrier23	point1572	1572	20.0	36.5
IN-01-02-REES-02	75	65.4	7.1	8	-0.9	Barrier23	point1476	1476	28.0	65.1
						Barrier27	point2186	2186	24.0	63.5
						Barrier27	point2064	2064	24.0	60.0
						Barrier23	point1571	1571	20.0	38.4
						Barrier23	point1572	1572	20.0	38.3

						Barrier23	point1570	1570	20.0	38.3
						Barrier23	point1569	1569	20.0	38.2
						Barrier23	point1568	1568	20.0	37.8
						Barrier23	point1567	1567	20.0	37.6
						Barrier23	point1566	1566	20.0	37.4
IN-01-01-REES-01	2	65.2	8.0	8	-0.0	Barrier23	point1587	1587	28.0	65.0
						Barrier27	point2067	2067	24.0	64.6
						Barrier27	point2066	2066	24.0	54.4
						Barrier23	point1524	1524	0.0	39.0
						Barrier17	point1326	1326	0.0	38.0
						Barrier23	point1525	1525	0.0	35.2
						Barrier23	point1608	1608	24.0	34.8
						Barrier23	point1572	1572	20.0	34.8
						Barrier23	point1571	1571	20.0	34.7
						Barrier17	point1474	1474	28.0	34.6
IN-01-01-REES-02	3	65.6	6.1	8	-1.9	Barrier23	point1585	1585	28.0	65.4
						Barrier27	point2066	2066	24.0	63.4
						Barrier27	point2067	2067	24.0	61.1
						Barrier23	point1579	1579	24.0	36.2
						Barrier23	point1572	1572	20.0	36.2
						Barrier23	point1578	1578	24.0	36.2
						Barrier23	point1580	1580	24.0	36.1
						Barrier23	point1476	1476	24.0	36.0
						Barrier23	point1571	1571	20.0	36.0
						Barrier23	point1577	1577	24.0	35.9
IN-01-01-REES-03	4	65.3	7.0	8	-1.0	Barrier23	point1583	1583	28.0	65.0
						Barrier27	point2066	2066	24.0	65.0
						Barrier23	point1580	1580	24.0	37.5
						Barrier23	point1578	1578	24.0	37.5
						Barrier23	point1579	1579	24.0	37.4
						Barrier23	point1476	1476	24.0	37.4
						Barrier23	point1572	1572	20.0	37.3
						Barrier23	point1577	1577	24.0	37.3
						Barrier23	point1576	1576	24.0	37.2
						Barrier23	point1575	1575	24.0	37.1
IN-01-01-REES-04	5	64.8	7.6	8	-0.4	Barrier23	point1583	1583	28.0	64.4

						Barrier27	point2066	2066	24.0	63.8
						Barrier27	point2064	2064	24.0	55.2
						Barrier23	point1579	1579	24.0	39.4
						Barrier23	point1578	1578	24.0	39.4
						Barrier23	point1580	1580	24.0	39.2
						Barrier23	point1476	1476	24.0	39.1
						Barrier23	point1577	1577	24.0	39.0
						Barrier23	point1581	1581	24.0	38.8
						Barrier23	point1576	1576	24.0	38.7
IN-01-01-SROD-04	18	65.5	6.7	8	-1.3	Barrier23	point1589	1589	28.0	65.3
						Barrier27	point2067	2067	24.0	62.8
						Barrier27	point2068	2068	24.0	61.7
						Barrier23	point1582	1582	24.0	37.2
						Barrier23	point1580	1580	24.0	37.1
						Barrier23	point1583	1583	24.0	37.1
						Barrier23	point1584	1584	24.0	37.0
						Barrier23	point1579	1579	24.0	36.9
						Barrier23	point1585	1585	24.0	36.9
						Barrier17	point1473	1473	28.0	36.9
IN-01-01-SROD-03	17	65.4	6.5	8	-1.5	Barrier23	point1589	1589	28.0	65.2
						Barrier27	point2068	2068	24.0	62.3
						Barrier27	point2067	2067	24.0	62.1
						Barrier17	point1326	1326	28.0	39.4
						Barrier23	point1582	1582	24.0	36.1
						Barrier23	point1579	1579	24.0	36.0
						Barrier23	point1580	1580	24.0	36.0
						Barrier23	point1583	1583	24.0	35.9
						Barrier23	point1607	1607	28.0	35.9
						Barrier23	point1584	1584	24.0	35.8
IN-01-01-SROD-02	16	65.2	6.8	8	-1.2	Barrier23	point1590	1590	28.0	65.0
						Barrier27	point2068	2068	24.0	64.9
						Barrier27	point2067	2067	24.0	47.0
						Barrier17	point1473	1473	0.0	39.1
						Barrier17	point1326	1326	28.0	36.6
						Barrier23	point1582	1582	24.0	34.9
						Barrier23	point1579	1579	24.0	34.9

						Barrier23	point1583	1583	24.0	34.9
						Barrier23	point1580	1580	24.0	34.8
						Barrier23	point1584	1584	24.0	34.7
IN-01-01-SROD-01	15	65.5	6.4	8	-1.6	Barrier23	point1591	1591	28.0	65.3
						Barrier27	point2068	2068	24.0	65.3
						Barrier17	point1474	1474	0.0	38.1
						Barrier23	point1525	1525	0.0	37.1
						Barrier17	point1473	1473	28.0	36.1
						Barrier23	point1611	1611	28.0	35.0
						Barrier17	point1472	1472	0.0	34.5
						Barrier17	point1326	1326	28.0	34.4
						Barrier23	point1612	1612	28.0	34.1
						Barrier23	point1582	1582	24.0	34.1
IN-01-02-VNBA-05	61	65.9	5.7	8	-2.3	Barrier23	point1595	1595	28.0	65.7
						Barrier27	point2069	2069	24.0	64.9
						Barrier27	point2070	2070	24.0	57.8
						Barrier17	point1474	1474	0.0	37.3
						Barrier17	point1469	1469	28.0	37.0
						Barrier17	point1326	1326	0.0	36.7
						Barrier17	point1473	1473	28.0	35.0
						Barrier23	point1613	1613	24.0	34.9
						Barrier17	point1470	1470	28.0	34.8
						Barrier23	point1583	1583	24.0	34.1
IN-01-02-VNBA-04	59	65.9	5.5	8	-2.5	Barrier23	point1601	1601	28.0	65.7
						Barrier27	point2071	2071	24.0	64.5
						Barrier27	point2072	2072	24.0	59.8
						Barrier17	point1329	1329	0.0	36.5
						Barrier23	point1619	1619	28.0	35.1
						Barrier23	point1526	1526	0.0	35.1
						Barrier17	point1330	1330	28.0	35.0
						Barrier17	point1470	1470	28.0	34.9
						Barrier17	point1473	1473	0.0	34.1
						Barrier17	point1474	1474	28.0	33.9
IN-01-02-VNBA-03	57	65.2	5.6	8	-2.4	Barrier23	point1603	1603	28.0	65.0
						Barrier27	point2072	2072	24.0	64.7
						Barrier27	point2073	2073	24.0	54.1

						Barrier17	point1330	1330	0.0	38.2
						Barrier23	point1621	1621	28.0	36.3
						Barrier17	point1329	1329	28.0	36.0
						Barrier23	point1526	1526	0.0	36.0
						Barrier23	point1620	1620	28.0	34.5
						Barrier17	point1332	1332	28.0	34.3
						Barrier17	point1470	1470	0.0	34.0
IN-01-02-VNBA-02	55	64.6	7.3	8	-0.7	Barrier23	point1607	1607	28.0	64.4
						Barrier27	point2073	2073	20.0	61.7
						Barrier27	point2074	2074	24.0	61.2
						Barrier17	point1332	1332	0.0	37.8
						Barrier23	point1624	1624	20.0	36.4
						Barrier17	point1333	1333	28.0	35.5
						Barrier17	point1331	1331	28.0	35.4
						Barrier17	point1334	1334	28.0	35.2
						Barrier23	point1623	1623	28.0	34.5
						Barrier23	point1525	1525	0.0	34.4
IN-01-02-SBOR-01	78	65.6	6.2	8	-1.8	Barrier23	point1606	1606	28.0	65.4
						Barrier27	point2073	2073	24.0	64.3
						Barrier27	point2074	2074	24.0	59.1
						Barrier17	point1334	1334	0.0	36.8
						Barrier17	point1333	1333	28.0	34.9
						Barrier23	point1626	1626	28.0	34.3
						Barrier23	point1625	1625	28.0	34.0
						Barrier23	point1517	1517	0.0	33.7
						Barrier23	point1518	1518	0.0	33.4
						Barrier17	point1332	1332	0.0	33.3
IN-01-01-RHEA-03	9	65.5	4.7	8	-3.3	Barrier27	point2066	2066	24.0	64.8
						Barrier23	point1585	1585	28.0	64.1
						Barrier23	point1584	1584	28.0	59.3
						Barrier27	point2067	2067	24.0	52.4
						Barrier23	point1499	1499	0.0	36.1
						Barrier23	point1501	1501	0.0	34.9
						Barrier23	point1500	1500	0.0	34.7
						Barrier17	point1474	1474	0.0	34.6
						Barrier23	point1496	1496	0.0	34.6

						Barrier23	point1502	1502	0.0	34.0
IN-01-01-RHEA-02	8	65.0	6.7	8	-1.3	Barrier23	point1589	1589	28.0	64.8
						Barrier27	point2067	2067	24.0	63.2
						Barrier27	point2068	2068	24.0	59.8
						Barrier23	point1498	1498	0.0	37.6
						Barrier23	point1494	1494	0.0	35.5
						Barrier17	point1470	1470	0.0	34.5
						Barrier23	point1499	1499	0.0	34.4
						Barrier23	point1497	1497	0.0	33.8
						Barrier17	point1472	1472	28.0	33.2
						Barrier23	point1616	1616	28.0	33.0
IN-01-01-RHEA-01	7	65.7	5.8	8	-2.2	Barrier23	point1593	1593	28.0	65.6
						Barrier27	point2069	2069	24.0	63.4
						Barrier27	point2068	2068	24.0	61.6
						Barrier23	point1515	1515	0.0	34.6
						Barrier23	point1516	1516	0.0	34.6
						Barrier23	point1504	1504	0.0	33.2
						Barrier17	point1470	1470	28.0	33.1
						Barrier23	point1502	1502	0.0	33.0
						Barrier23	point1510	1510	0.0	32.9
						Barrier23	point1503	1503	0.0	32.8
Receiver113	188	65.1	5.4	8	-2.6	Barrier23	point1594	1594	28.0	65.0
						Barrier27	point2069	2069	24.0	65.0
						Barrier17	point1332	1332	28.0	32.4
						Barrier17	point1331	1331	0.0	31.8
						Barrier23	point1623	1623	28.0	31.6
						Barrier23	point1526	1526	0.0	30.3
						Barrier17	point1334	1334	28.0	30.2
						Barrier23	point1525	1525	0.0	30.1
						Barrier17	point1330	1330	0.0	30.1
						Barrier23	point1523	1523	0.0	29.6
Receiver112	187	64.7	2.5	8	-5.5	Barrier23	point1598	1598	28.0	64.6
						Barrier27	point2070	2070	24.0	64.0
						Barrier27	point2071	2071	24.0	55.4
						Barrier17	point1334	1334	28.0	33.2
						Barrier23	point1626	1626	28.0	31.1

						Barrier17	point1333	1333	28.0	31.0
						Barrier23	point1625	1625	20.0	30.4
						Barrier17	point1336	1336	28.0	29.9
						Barrier17	point1332	1332	0.0	29.8
						Barrier23	point1526	1526	0.0	29.5
Receiver111	186	64.4	5.5	8	-2.5	Barrier23	point1602	1602	28.0	64.3
						Barrier27	point2072	2072	24.0	63.1
						Barrier27	point2071	2071	24.0	58.2
						Barrier17	point1336	1336	28.0	33.2
						Barrier23	point1628	1628	28.0	31.3
						Barrier17	point1335	1335	0.0	30.8
						Barrier17	point1337	1337	0.0	30.0
						Barrier23	point1629	1629	28.0	29.9
						Barrier17	point1338	1338	0.0	29.6
						Barrier17	point1334	1334	28.0	29.5
Receiver110	185	65.4	5.3	8	-2.7	Barrier23	point1601	1601	28.0	65.2
						Barrier27	point2071	2071	24.0	65.1
						Barrier27	point2072	2072	24.0	51.2
						Barrier23	point1499	1499	0.0	35.2
						Barrier17	point1333	1333	28.0	34.3
						Barrier23	point1501	1501	0.0	33.9
						Barrier23	point1500	1500	0.0	33.8
						Barrier23	point1625	1625	20.0	33.1
						Barrier23	point1495	1495	0.0	32.4
						Barrier23	point1498	1498	0.0	32.2
Receiver109	184	65.5	4.3	8	-3.7	Barrier23	point1615	1615	28.0	65.4
						Barrier27	point2078	2078	24.0	63.6
						Barrier27	point2077	2077	20.0	60.9
						Barrier17	point1343	1343	28.0	33.8
						Barrier23	point1499	1499	0.0	33.3
						Barrier23	point1636	1636	28.0	32.1
						Barrier23	point1501	1501	0.0	32.1
						Barrier23	point1500	1500	0.0	31.8
						Barrier17	point1342	1342	0.0	31.6
						Barrier23	point1510	1510	0.0	31.3
Receiver108	183	65.6	4.8	8	-3.2	Barrier23	point1613	1613	28.0	65.4

						Barrier27	point2077	2077	24.0	64.3
						Barrier27	point2076	2076	20.0	59.1
						Barrier23	point1614	1614	28.0	49.2
						Barrier17	point1341	1341	0.0	34.4
						Barrier17	point1469	1469	28.0	34.2
						Barrier17	point1340	1340	0.0	33.8
						Barrier23	point1633	1633	28.0	33.1
						Barrier23	point1521	1521	0.0	32.9
						Barrier17	point1339	1339	0.0	32.4
IN-01-02-VNBA-01	52	65.5	7.1	8	-0.9	Barrier23	point1610	1610	28.0	65.4
						Barrier27	point2075	2075	24.0	65.4
						Barrier17	point1335	1335	28.0	37.6
						Barrier17	point1334	1334	28.0	36.4
						Barrier23	point1523	1523	0.0	36.3
						Barrier23	point1627	1627	28.0	35.4
						Barrier17	point1336	1336	28.0	35.2
						Barrier23	point1626	1626	20.0	34.8
						Barrier17	point1333	1333	28.0	34.7
						Barrier17	point1332	1332	28.0	33.8
IN-01-01-SBOR-01	10	65.9	5.7	8	-2.3	Barrier23	point1613	1613	28.0	65.8
						Barrier27	point2077	2077	24.0	63.0
						Barrier27	point2076	2076	20.0	62.4
						Barrier17	point1337	1337	28.0	38.1
						Barrier17	point1336	1336	28.0	36.1
						Barrier23	point1629	1629	28.0	35.9
						Barrier23	point1524	1524	0.0	35.5
						Barrier17	point1338	1338	28.0	35.1
						Barrier17	point1335	1335	28.0	34.5
						Barrier23	point1628	1628	28.0	34.0
IN-01-01-SBOR-02	12	67.7	4.5	8	-3.5	Barrier23	point1616	1616	28.0	67.6
						Barrier27	point2078	2078	24.0	67.1
						Barrier27	point2079	2079	16.0	58.1
						Barrier17	point1337	1337	0.0	39.7
						Barrier17	point1336	1336	0.0	37.2
						Barrier23	point1629	1629	28.0	36.9
						Barrier17	point1338	1338	28.0	36.8

						Barrier17	point1335	1335	0.0	35.9
						Barrier17	point1334	1334	28.0	35.5
						Barrier17	point1333	1333	28.0	35.2
IN-01-02-VNBA-04	99	69.3	3.6	8	-4.4	Barrier23	point1623	1623	20.0	69.2
						Barrier27	point2083	2083	0.0	67.9
						Barrier27	point2084	2084	16.0	63.4
						Barrier17	point1343	1343	0.0	37.5
						Barrier17	point1344	1344	28.0	37.2
						Barrier17	point1342	1342	0.0	36.2
						Barrier23	point1636	1636	28.0	35.8
						Barrier17	point1341	1341	28.0	35.2
						Barrier17	point1340	1340	0.0	34.7
						Barrier17	point1339	1339	28.0	34.6
IN-01-02-VNBA-03	98	70.6	0.1	8	-7.9	Barrier17	point1341	1341	0.0	70.5
						Barrier27	point2088	2088	0.0	68.1
						Barrier27	point2087	2087	16.0	66.8
						Barrier17	point1347	1347	28.0	38.0
						Barrier17	point1335	1335	28.0	36.8
						Barrier17	point1346	1346	0.0	36.4
						Barrier17	point1345	1345	0.0	35.6
						Barrier23	point1640	1640	28.0	35.6
						Barrier17	point1342	1342	0.0	35.0
						Barrier17	point1344	1344	28.0	35.0
IN-01-02-VNBA-02	97	65.6	0.4	8	-7.6	Barrier17	point1345	1345	28.0	65.5
						Barrier27	point2093	2093	0.0	63.6
						Barrier27	point2092	2092	16.0	61.1
						Barrier17	point1351	1351	28.0	37.5
						Barrier17	point1350	1350	0.0	36.5
						Barrier17	point1349	1349	0.0	36.0
						Barrier17	point1348	1348	0.0	35.2
						Barrier17	point1347	1347	0.0	35.0
						Barrier17	point1346	1346	0.0	34.7
						Barrier23	point1644	1644	28.0	34.5
IN-01-02-VNBA-01	96	70.0	0.3	8	-7.7	Barrier17	point1351	1351	0.0	70.0
						Barrier27	point2100	2100	16.0	67.9
						Barrier27	point2101	2101	0.0	64.9

						Barrier23	point1637	1637	20.0	58.3
						Barrier27	point2102	2102	0.0	47.7
						Barrier17	point1356	1356	0.0	37.1
						Barrier17	point1355	1355	28.0	35.5
						Barrier17	point1354	1354	0.0	35.4
						Barrier17	point1353	1353	0.0	34.5
						Barrier17	point1350	1350	28.0	34.1
Receiver107	182	67.1	-3.3	8	-11.3	Barrier23	point1643	1643	20.0	67.1
						Barrier27	point2113	2113	16.0	64.7
						Barrier27	point2114	2114	16.0	63.3
						Barrier17	point1360	1360	28.0	35.4
						Barrier17	point1361	1361	0.0	35.4
						Barrier17	point1362	1362	28.0	35.1
						Barrier17	point1359	1359	0.0	33.8
						Barrier17	point1357	1357	0.0	33.0
						Barrier17	point1358	1358	0.0	32.5
						Barrier17	point1356	1356	0.0	32.4
IN-01-01-SBOR-04	14	66.5	6.1	8	-1.9	Barrier17	point1471	1471	28.0	66.3
						Barrier27	point2077	2077	24.0	65.7
						Barrier27	point2078	2078	24.0	57.4
						Barrier17	point1332	1332	0.0	42.4
						Barrier17	point1331	1331	0.0	40.2
						Barrier17	point1329	1329	0.0	39.6
						Barrier17	point1330	1330	0.0	39.6
						Barrier17	point1333	1333	28.0	39.0
						Barrier17	point1470	1470	0.0	38.8
						Barrier23	point1623	1623	28.0	38.6
IN-01-01-VNBA-08	58	66.4	0.1	8	-7.9	Barrier17	point1353	1353	28.0	66.3
						Barrier27	point2105	2105	0.0	63.3
						Barrier23	point1639	1639	28.0	61.4
						Barrier27	point2106	2106	0.0	57.7
						Barrier27	point2104	2104	0.0	51.1
						Barrier17	point1355	1355	0.0	39.9
						Barrier17	point1354	1354	0.0	39.6
						Barrier17	point1356	1356	0.0	39.2
						Barrier17	point1352	1352	28.0	37.5

						Barrier17	point1351	1351	28.0	36.8
IN-01-01-VNBA-02	48	63.7	4.7	8	-3.3	Barrier17	point1375	1375	28.0	63.6
						Barrier23	point1658	1658	28.0	63.5
						Barrier17	point1374	1374	0.0	35.6
						Barrier17	point1372	1372	0.0	34.3
						Barrier17	point1378	1378	0.0	33.7
						Barrier17	point1371	1371	28.0	33.3
						Barrier17	point1377	1377	0.0	33.0
						Barrier17	point1370	1370	28.0	32.6
						Barrier17	point1373	1373	28.0	32.3
						Barrier23	point1655	1655	28.0	32.1
Receiver106	180	69.9	-0.1	8	-8.1	Barrier17	point1374	1374	28.0	69.8
						Barrier23	point1657	1657	28.0	68.9
						Barrier23	point1658	1658	28.0	62.7
						Barrier17	point1375	1375	28.0	33.5
						Barrier23	point1666	1666	0.0	33.2
						Barrier17	point1373	1373	28.0	32.5
						Barrier23	point1654	1654	24.0	32.0
						Barrier23	point1667	1667	0.0	31.8
						Barrier27	point2148	2148	0.0	31.7
						Barrier23	point1664	1664	0.0	31.6
IN-01-01-VNBA-01	47	64.5	3.7	8	-4.3	Barrier23	point1662	1662	20.0	64.4
						Barrier17	point1380	1380	0.0	62.4
						Barrier27	point2140	2140	0.0	60.0
						Barrier17	point1379	1379	28.0	35.9
						Barrier17	point1378	1378	0.0	34.9
						Barrier17	point1383	1383	0.0	34.9
						Barrier23	point1658	1658	20.0	33.4
						Barrier17	point1377	1377	28.0	32.7
						Barrier17	point1376	1376	28.0	32.7
						Barrier17	point1375	1375	28.0	32.2
IN-01-01-VNBA-03	49	63.0	7.0	8	-1.0	Barrier17	point1372	1372	28.0	62.9
						Barrier23	point1655	1655	28.0	62.9
						Barrier17	point1374	1374	0.0	36.5
						Barrier17	point1375	1375	0.0	35.0
						Barrier17	point1373	1373	0.0	34.3

						Barrier17	point1371	1371	0.0	33.9
						Barrier17	point1367	1367	28.0	33.2
						Barrier17	point1368	1368	0.0	33.2
						Barrier17	point1366	1366	28.0	32.5
						Barrier17	point1365	1365	28.0	31.8
IN-01-01-VNBA-04	50	67.5	-1.6	8	-9.6	Barrier17	point1368	1368	0.0	67.4
						Barrier23	point1652	1652	28.0	67.4
						Barrier17	point1370	1370	0.0	36.3
						Barrier17	point1371	1371	0.0	35.8
						Barrier17	point1369	1369	0.0	35.6
						Barrier17	point1365	1365	28.0	34.5
						Barrier17	point1364	1364	28.0	33.7
						Barrier17	point1363	1363	28.0	33.0
						Barrier17	point1367	1367	0.0	33.0
						Barrier17	point1372	1372	0.0	32.6
IN-01-01-VNBA-05	51	64.1	0.2	8	-7.8	Barrier17	point1364	1364	0.0	64.0
						Barrier27	point2122	2122	0.0	63.9
						Barrier17	point1366	1366	0.0	36.4
						Barrier17	point1361	1361	28.0	34.9
						Barrier17	point1360	1360	28.0	33.9
						Barrier17	point1363	1363	0.0	33.8
						Barrier17	point1365	1365	28.0	33.8
						Barrier17	point1367	1367	0.0	33.6
						Barrier17	point1368	1368	0.0	33.1
						Barrier17	point1359	1359	28.0	33.0
IN-01-01-VNBA-06	53	65.9	0.2	8	-7.8	Barrier17	point1359	1359	0.0	65.8
						Barrier27	point2116	2116	0.0	64.0
						Barrier27	point2115	2115	0.0	61.1
						Barrier17	point1358	1358	0.0	37.2
						Barrier17	point1361	1361	0.0	36.7
						Barrier17	point1357	1357	28.0	36.3
						Barrier17	point1360	1360	0.0	35.7
						Barrier17	point1356	1356	28.0	35.4
						Barrier17	point1355	1355	28.0	34.7
						Barrier17	point1354	1354	28.0	33.9
IN-01-01-VNBA-07	56	65.7	0.2	8	-7.8	Barrier17	point1356	1356	28.0	65.6

						Barrier27	point2111	2111	0.0	64.8
						Barrier27	point2110	2110	0.0	57.8
						Barrier17	point1355	1355	28.0	39.3
						Barrier17	point1354	1354	28.0	38.1
						Barrier17	point1357	1357	28.0	37.5
						Barrier17	point1353	1353	28.0	37.0
						Barrier17	point1358	1358	0.0	36.3
						Barrier17	point1352	1352	28.0	36.0
						Barrier17	point1360	1360	0.0	35.2
IN-01-01-VNBA-09	60	66.5	0.3	8	-7.7	Barrier17	point1348	1348	28.0	66.4
						Barrier27	point2097	2097	0.0	64.4
						Barrier27	point2096	2096	0.0	62.1
						Barrier17	point1350	1350	28.0	40.9
						Barrier17	point1349	1349	0.0	40.4
						Barrier17	point1351	1351	0.0	39.7
						Barrier17	point1347	1347	28.0	38.4
						Barrier17	point1346	1346	28.0	37.7
						Barrier17	point1345	1345	28.0	36.9
						Barrier17	point1344	1344	28.0	36.0
IN-01-01-VNBA-10	62	65.0	0.5	8	-7.5	Barrier17	point1344	1344	0.0	64.8
						Barrier27	point2091	2091	0.0	62.4
						Barrier27	point2090	2090	0.0	61.1
						Barrier17	point1346	1346	0.0	42.0
						Barrier17	point1345	1345	0.0	40.9
						Barrier17	point1343	1343	28.0	39.3
						Barrier27	point2092	2092	0.0	39.0
						Barrier17	point1342	1342	28.0	38.6
						Barrier17	point1341	1341	28.0	37.7
						Barrier23	point1639	1639	28.0	37.6
IN-01-01-VNBA-11	63	71.0	0.3	8	-7.7	Barrier17	point1337	1337	0.0	71.0
						Barrier27	point2084	2084	0.0	69.4
						Barrier27	point2083	2083	0.0	65.8
						Barrier17	point1339	1339	0.0	42.6
						Barrier17	point1338	1338	0.0	41.8
						Barrier17	point1340	1340	0.0	41.4
						Barrier17	point1336	1336	28.0	39.9

						Barrier17	point1335	1335	28.0	39.1
						Barrier23	point1632	1632	20.0	39.1
						Barrier17	point1334	1334	28.0	38.5
IN-01-01-VNBA-12	64	73.2	0.3	8	-7.7	Barrier17	point1333	1333	28.0	73.2
						Barrier27	point2080	2080	0.0	70.3
						Barrier27	point2081	2081	0.0	70.1
						Barrier17	point1336	1336	0.0	43.9
						Barrier17	point1335	1335	0.0	42.7
						Barrier17	point1334	1334	0.0	42.1
						Barrier17	point1332	1332	28.0	40.5
						Barrier23	point1628	1628	28.0	39.5
						Barrier17	point1331	1331	28.0	38.5
						Barrier23	point1627	1627	28.0	38.3
IN-01-01-SBOR-03	13	65.5	7.0	8	-1.0	Barrier17	point1471	1471	28.0	65.3
						Barrier27	point2077	2077	24.0	63.0
						Barrier27	point2078	2078	24.0	61.4
						Barrier17	point1331	1331	0.0	44.0
						Barrier17	point1330	1330	0.0	43.2
						Barrier17	point1473	1473	0.0	42.2
						Barrier17	point1329	1329	0.0	41.7
						Barrier23	point1622	1622	28.0	40.1
						Barrier17	point1470	1470	28.0	38.7
						Barrier17	point1332	1332	28.0	38.3
IN-01-01-VNBA-13	66	66.1	7.2	8	-0.8	Barrier23	point1608	1608	28.0	65.9
						Barrier27	point2074	2074	24.0	65.9
						Barrier27	point2075	2075	24.0	40.2
						Barrier17	point1331	1331	28.0	39.2
						Barrier17	point1330	1330	28.0	38.1
						Barrier23	point1622	1622	28.0	37.7
						Barrier17	point1332	1332	28.0	37.3
						Barrier17	point1329	1329	0.0	36.3
						Barrier17	point1474	1474	0.0	36.0
						Barrier17	point1473	1473	28.0	35.8
IN-01-01-VNBA-15	68	65.0	6.0	8	-2.0	Barrier23	point1603	1603	28.0	64.8
						Barrier27	point2072	2072	24.0	64.6
						Barrier27	point2073	2073	24.0	51.9

						Barrier17	point1470	1470	28.0	37.6
						Barrier17	point1329	1329	28.0	37.3
						Barrier17	point1473	1473	28.0	36.5
						Barrier17	point1474	1474	28.0	36.3
						Barrier17	point1326	1326	28.0	36.1
						Barrier17	point1472	1472	28.0	35.8
						Barrier23	point1596	1596	24.0	34.6
IN-01-01-VNBA-16	69	65.4	5.8	8	-2.2	Barrier23	point1601	1601	28.0	65.2
						Barrier27	point2071	2071	24.0	63.7
						Barrier27	point2072	2072	24.0	60.1
						Barrier17	point1472	1472	28.0	39.0
						Barrier17	point1473	1473	0.0	36.8
						Barrier17	point1326	1326	28.0	36.5
						Barrier17	point1474	1474	28.0	36.5
						Barrier23	point1616	1616	28.0	36.4
						Barrier17	point1470	1470	28.0	36.2
						Barrier17	point1469	1469	0.0	35.9
IN-01-01-VNBA-17	70	65.3	5.7	8	-2.3	Barrier23	point1599	1599	28.0	65.1
						Barrier27	point2071	2071	24.0	63.4
						Barrier27	point2070	2070	24.0	60.3
						Barrier17	point1469	1469	28.0	39.1
						Barrier17	point1474	1474	28.0	37.5
						Barrier17	point1473	1473	28.0	36.9
						Barrier23	point1614	1614	28.0	36.7
						Barrier17	point1326	1326	28.0	36.7
						Barrier17	point1470	1470	0.0	35.9
						Barrier23	point1593	1593	24.0	35.5
IN-01-01-VNBA-19	72	65.5	6.1	8	-1.9	Barrier23	point1594	1594	28.0	65.3
						Barrier27	point2069	2069	24.0	65.3
						Barrier17	point1326	1326	0.0	40.3
						Barrier17	point1473	1473	0.0	38.2
						Barrier23	point1608	1608	24.0	37.4
						Barrier23	point1588	1588	24.0	37.4
						Barrier23	point1587	1587	24.0	37.2
						Barrier23	point1586	1586	24.0	37.2
						Barrier23	point1590	1590	24.0	37.2

						Barrier23	point1589	1589	24.0	37.2
IN-01-01-SROD-05	19	65.1	7.0	8	-1.0	Barrier23	point1588	1588	28.0	64.8
						Barrier27	point2067	2067	24.0	64.6
						Barrier27	point2068	2068	24.0	50.3
						Barrier23	point1583	1583	24.0	39.1
						Barrier23	point1584	1584	24.0	38.9
						Barrier23	point1582	1582	24.0	38.9
						Barrier23	point1580	1580	24.0	38.7
						Barrier23	point1581	1581	24.0	38.7
						Barrier23	point1585	1585	24.0	38.7
						Barrier23	point1586	1586	24.0	38.3
IN-01-01-REES-05	6	63.9	9.0	8	1.0	Barrier23	point1583	1583	28.0	63.4
						Barrier27	point2066	2066	24.0	62.1
						Barrier27	point2064	2064	24.0	57.4
						Barrier23	point1579	1579	24.0	41.6
						Barrier23	point1580	1580	24.0	41.4
						Barrier23	point1578	1578	24.0	41.2
						Barrier23	point1581	1581	24.0	40.8
						Barrier23	point1582	1582	28.0	40.8
						Barrier23	point1476	1476	24.0	40.6
						Barrier23	point1577	1577	24.0	40.3
IN-01-02-REES-03	77	64.9	5.9	8	-2.1	Barrier23	point1476	1476	28.0	64.5
						Barrier27	point2186	2186	24.0	64.1
						Barrier27	point2064	2064	24.0	53.4
						Barrier23	point1572	1572	20.0	40.3
						Barrier23	point1571	1571	20.0	40.2
						Barrier23	point1570	1570	20.0	39.8
						Barrier23	point1569	1569	20.0	39.6
						Barrier23	point1573	1573	24.0	39.5
						Barrier23	point1574	1574	24.0	39.4
						Barrier23	point1575	1575	24.0	39.1
IN-01-01-SSTB-11	40	64.4	5.8	8	-2.2	Barrier23	point1573	1573	28.0	64.0
						Barrier27	point2184	2184	24.0	62.1
						Barrier27	point2185	2185	24.0	59.4
						Barrier23	point1569	1569	20.0	41.1
						Barrier23	point1568	1568	20.0	41.1

						Barrier23	point1567	1567	20.0	41.0
						Barrier23	point1566	1566	20.0	40.7
						Barrier23	point1570	1570	20.0	40.7
						Barrier23	point1571	1571	20.0	40.4
						Barrier23	point1565	1565	20.0	40.2
IN-01-02-SSTB-10	93	65.3	4.8	8	-3.2	Barrier23	point1565	1565	20.0	64.9
						Barrier27	point2183	2183	24.0	64.4
						Barrier27	point2182	2182	24.0	55.2
						Barrier23	point1560	1560	20.0	40.0
						Barrier23	point1559	1559	20.0	39.9
						Barrier23	point1558	1558	20.0	39.9
						Barrier23	point1561	1561	20.0	39.8
						Barrier23	point1557	1557	20.0	39.8
						Barrier23	point1562	1562	20.0	39.6
						Barrier23	point1556	1556	20.0	39.4
IN-01-01-SRUA-09	29	64.9	5.7	8	-2.3	Barrier23	point1560	1560	20.0	64.5
						Barrier27	point2182	2182	24.0	63.7
						Barrier27	point2181	2181	24.0	56.6
						Barrier23	point1526	1526	0.0	41.6
						Barrier23	point1555	1555	20.0	41.1
						Barrier23	point1556	1556	20.0	41.0
						Barrier23	point1554	1554	20.0	41.0
						Barrier23	point1557	1557	20.0	40.6
						Barrier23	point1553	1553	20.0	40.6
						Barrier23	point1558	1558	20.0	40.3
IN-01-02-SRUA-06	84	63.3	7.0	8	-1.0	Barrier23	point1552	1552	24.0	62.7
						Barrier27	point2180	2180	24.0	62.7
						Barrier23	point1521	1521	0.0	42.2
						Barrier23	point1524	1524	0.0	40.7
						Barrier23	point1549	1549	24.0	40.4
						Barrier23	point1550	1550	24.0	40.2
						Barrier23	point1545	1545	24.0	40.2
						Barrier23	point1525	1525	0.0	40.1
						Barrier23	point1526	1526	0.0	40.0
						Barrier23	point1548	1548	28.0	39.8
IN-01-01-SVID-01	41	63.0	7.0	8	-1.0	Barrier23	point1547	1547	28.0	61.9

						Barrier27	point2179	2179	24.0	61.9
						Barrier23	point1526	1526	0.0	44.5
						Barrier23	point1525	1525	0.0	44.2
						Barrier23	point1522	1522	0.0	43.6
						Barrier23	point1521	1521	0.0	43.3
						Barrier23	point1524	1524	0.0	43.3
						Barrier23	point1523	1523	0.0	43.1
						Barrier23	point1520	1520	0.0	43.0
						Barrier23	point1513	1513	0.0	42.0
Total Cost, All Barriers (including additional cost(s))					$2093155					

HMB Professional Engineers **30 April 2018**
MG/mdg **TNM 2.5**

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT: **I-69 ORX**
RUN: **Central 1_Indiana_TollAll_AllBar_Fly**
BARRIER DESIGN: **C1_IN_TollAll_East_3BAR**

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	$
Barrier23	W	20.00	22.16	28.00	2740	60719				1821558
Barrier17	W	20.00	20.00	20.00	23	450				13501
Barrier27	W	0.00	19.10	20.00	450	8603				258096
									Total Cost:	2093155

HMB Professional Engineers 30 April 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_Indiana_TollAll_AllBar_Fly
BARRIER DESIGN: C1_IN_TollAll_East_3BAR

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier23	W	point1475	1475	0.00	0.00	0.00	0	0				0
		point1480	1480	0.00	0.00	0.00	0	0				0
		point1481	1481	0.00	0.00	0.00	0	0				0
		point1482	1482	0.00	0.00	0.00	0	0				0
		point1483	1483	0.00	0.00	0.00	0	0				0
		point1484	1484	0.00	0.00	0.00	0	0				0
		point1485	1485	0.00	0.00	0.00	0	0				0
		point1486	1486	0.00	0.00	0.00	0	0				0
		point1487	1487	0.00	0.00	0.00	0	0				0
		point1488	1488	0.00	0.00	0.00	0	0				0
		point1489	1489	0.00	0.00	0.00	0	0				0
		point1490	1490	0.00	0.00	0.00	0	0				0
		point1491	1491	0.00	0.00	0.00	0	0				0
		point1492	1492	0.00	0.00	0.00	0	0				0
		point1493	1493	0.00	0.00	0.00	0	0				0
		point1494	1494	0.00	0.00	0.00	0	0				0
		point1495	1495	0.00	0.00	0.00	0	0				0
		point1496	1496	0.00	0.00	0.00	0	0				0
		point1497	1497	0.00	0.00	0.00	0	0				0
		point1498	1498	0.00	0.00	0.00	0	0				0
		point1499	1499	0.00	0.00	0.00	0	0				0
		point1500	1500	0.00	0.00	0.00	0	0				0
		point1501	1501	0.00	0.00	0.00	0	0				0
		point1502	1502	0.00	0.00	0.00	0	0				0
		point1503	1503	0.00	0.00	0.00	0	0				0
		point1504	1504	0.00	0.00	0.00	0	0				0

		point1505	1505	0.00	0.00	0.00	0	0				0
		point1506	1506	0.00	0.00	0.00	0	0				0
		point1507	1507	0.00	0.00	0.00	0	0				0
		point1508	1508	0.00	0.00	0.00	0	0				0
		point1509	1509	0.00	0.00	0.00	0	0				0
		point1510	1510	0.00	0.00	0.00	0	0				0
		point1511	1511	0.00	0.00	0.00	0	0				0
		point1512	1512	0.00	0.00	0.00	0	0				0
		point1513	1513	0.00	0.00	0.00	0	0				0
		point1514	1514	0.00	0.00	0.00	0	0				0
		point1515	1515	0.00	0.00	0.00	0	0				0
		point1516	1516	0.00	0.00	0.00	0	0				0
		point1517	1517	0.00	0.00	0.00	0	0				0
		point1518	1518	0.00	0.00	0.00	0	0				0
		point1519	1519	0.00	0.00	0.00	0	0				0
		point1520	1520	0.00	0.00	0.00	0	0				0
		point1521	1521	0.00	0.00	0.00	0	0				0
		point1522	1522	0.00	0.00	0.00	0	0				0
		point1523	1523	0.00	0.00	0.00	0	0				0
		point1524	1524	0.00	0.00	0.00	0	0				0
		point1525	1525	0.00	0.00	0.00	0	0				0
		point1526	1526	0.00	0.00	0.00	0	0				0
		point1527	1527	24.00	24.00	24.00	20	487				14619
		point1528	1528	24.00	24.00	24.00	20	477				14297
		point1529	1529	24.00	24.00	24.00	20	477				14297
		point1530	1530	24.00	24.00	24.00	20	490				14685
		point1531	1531	24.00	24.00	24.00	20	478				14332
		point1532	1532	24.00	24.00	24.00	20	478				14332
		point1533	1533	24.00	24.00	24.00	20	478				14332
		point1534	1534	24.00	24.00	24.00	20	478				14332
		point1535	1535	24.00	24.00	24.00	20	480				14409
		point1536	1536	24.00	24.00	24.00	20	480				14409
		point1537	1537	24.00	24.00	24.00	20	482				14451
		point1538	1538	24.00	24.00	24.00	20	480				14409
		point1539	1539	24.00	24.00	24.00	20	480				14409
		point1540	1540	24.00	24.00	24.00	20	482				14451
		point1541	1541	24.00	24.00	24.00	20	483				14494
		point1542	1542	24.00	24.00	24.00	20	472				14146
		point1543	1543	24.00	24.00	24.00	20	483				14494

		point1544	1544	24.00	24.00	24.00	20	483				14494
		point1545	1545	24.00	24.00	24.00	20	473				14193
		point1546	1546	28.00	28.00	28.00	20	567				17019
		point1547	1547	28.00	28.00	28.00	20	554				16615
		point1548	1548	28.00	28.00	28.00	20	567				17019
		point1549	1549	24.00	24.00	24.00	20	473				14193
		point1550	1550	24.00	24.00	24.00	20	486				14588
		point1551	1551	24.00	24.00	24.00	20	476				14293
		point1552	1552	24.00	24.00	24.00	20	480				14401
		point1553	1553	20.00	20.00	20.00	20	398				11955
		point1554	1554	20.00	20.00	20.00	20	400				12001
		point1555	1555	20.00	20.00	20.00	20	400				12001
		point1556	1556	20.00	20.00	20.00	20	402				12049
		point1557	1557	20.00	20.00	20.00	20	405				12149
		point1558	1558	20.00	20.00	20.00	20	396				11868
		point1559	1559	20.00	20.00	20.00	20	396				11868
		point1560	1560	20.00	20.00	20.00	20	405				12149
		point1561	1561	20.00	20.00	20.00	20	396				11868
		point1562	1562	20.00	20.00	20.00	20	405				12149
		point1563	1563	20.00	20.00	20.00	20	396				11868
		point1564	1564	20.00	20.00	20.00	20	405				12149
		point1565	1565	20.00	20.00	20.00	20	396				11868
		point1566	1566	20.00	20.00	20.00	20	405				12149
		point1567	1567	20.00	20.00	20.00	20	397				11922
		point1568	1568	20.00	20.00	20.00	20	396				11868
		point1569	1569	20.00	20.00	20.00	20	407				12202
		point1570	1570	20.00	20.00	20.00	20	396				11868
		point1571	1571	20.00	20.00	20.00	20	405				12149
		point1572	1572	20.00	20.00	20.00	20	397				11922
		point1573	1573	24.00	24.00	24.00	20	477				14306
		point1574	1574	24.00	24.00	24.00	20	486				14579
		point1575	1575	24.00	24.00	24.00	20	477				14306
		point1576	1576	24.00	24.00	24.00	20	477				14306
		point1577	1577	24.00	24.00	24.00	20	486				14579
		point1476	1476	24.00	24.00	24.00	20	478				14346
		point1578	1578	24.00	24.00	24.00	20	475				14242
		point1579	1579	24.00	24.00	24.00	20	486				14579
		point1580	1580	24.00	24.00	24.00	20	477				14306
		point1581	1581	24.00	24.00	24.00	20	477				14306

		point1582	1582	24.00	24.00	24.00	20	486				14579
		point1583	1583	24.00	24.00	24.00	20	477				14306
		point1584	1584	24.00	24.00	24.00	20	477				14306
		point1585	1585	24.00	24.00	24.00	20	486				14579
		point1586	1586	24.00	24.00	24.00	20	477				14306
		point1587	1587	24.00	24.00	24.00	20	477				14306
		point1588	1588	24.00	24.00	24.00	20	486				14579
		point1589	1589	24.00	24.00	24.00	20	477				14306
		point1590	1590	24.00	24.00	24.00	20	486				14579
		point1591	1591	24.00	24.00	24.00	20	477				14306
		point1592	1592	24.00	24.00	24.00	20	475				14242
		point1593	1593	24.00	24.00	24.00	20	488				14642
		point1594	1594	24.00	24.00	24.00	20	477				14306
		point1595	1595	24.00	24.00	24.00	20	475				14242
		point1596	1596	24.00	24.00	24.00	20	490				14707
		point1597	1597	24.00	24.00	24.00	20	477				14306
		point1598	1598	24.00	24.00	24.00	20	479				14373
		point1599	1599	24.00	24.00	24.00	20	481				14442
		point1600	1600	24.00	24.00	24.00	20	470				14110
		point1601	1601	24.00	24.00	24.00	20	484				14512
		point1602	1602	24.00	24.00	24.00	20	486				14584
		point1603	1603	28.00	28.00	28.00	20	554				16632
		point1604	1604	24.00	24.00	24.00	20	478				14332
		point1605	1605	24.00	24.00	24.00	20	481				14442
		point1606	1606	24.00	24.00	24.00	20	479				14373
		point1607	1607	24.00	24.00	24.00	20	479				14373
		point1608	1608	24.00	24.00	24.00	20	488				14642
		point1609	1609	24.00	24.00	24.00	20	477				14306
		point1610	1610	24.00	24.00	24.00	20	477				14306
		point1611	1611	24.00	24.00	24.00	20	477				14306
		point1612	1612	24.00	24.00	24.00	20	490				14707
		point1613	1613	24.00	24.00	24.00	20	477				14306
		point1614	1614	20.00	20.00	20.00	20	397				11922
		point1615	1615	20.00	20.00	20.00	20	397				11922
		point1616	1616	20.00	20.00	20.00	20	407				12202
		point1617	1617	20.00	20.00	20.00	20	397				11922
		point1618	1618	20.00	20.00	20.00	20	397				11922
		point1619	1619	20.00	20.00	20.00	20	405				12149
		point1620	1620	20.00	20.00	20.00	20	397				11922

		point1621	1621	20.00	20.00	20.00	20	397				11922
		point1622	1622	20.00	20.00	20.00	20	397				11922
		point1623	1623	20.00	20.00	20.00	20	402				12049
		point1624	1624	20.00	20.00	20.00	20	397				11911
		point1625	1625	20.00	20.00	20.00	20	403				12098
		point1626	1626	20.00	20.00	20.00	20	397				11922
		point1627	1627	20.00	20.00	20.00	20	405				12149
		point1628	1628	20.00	20.00	20.00	20	397				11922
		point1629	1629	20.00	20.00	20.00	20	397				11922
		point1630	1630	20.00	20.00	20.00	20	405				12149
		point1631	1631	20.00	20.00	20.00	20	397				11922
		point1632	1632	20.00	20.00	20.00	20	407				12202
		point1633	1633	20.00	20.00	20.00	20	396				11868
		point1634	1634	20.00	20.00	20.00	20	397				11922
		point1635	1635	20.00	20.00	20.00	20	407				12202
		point1636	1636	20.00	20.00	20.00	20	396				11868
		point1637	1637	20.00	20.00	20.00	20	397				11922
		point1638	1638	20.00	20.00	20.00	20	407				12202
		point1639	1639	20.00	20.00	20.00	20	396				11868
		point1640	1640	20.00	20.00	20.00	20	397				11922
		point1641	1641	20.00	20.00	20.00	20	405				12149
		point1642	1642	20.00	20.00	20.00	20	397				11922
		point1643	1643	20.00	20.00	20.00	20	396				11868
		point1644	1644	20.00	20.00	20.00	20	407				12202
		point1645	1645	20.00	20.00	20.00	20	397				11922
		point1646	1646	20.00	20.00	20.00	20	396				11868
		point1647	1647	20.00	20.00	20.00	20	407				12202
		point1648	1648	20.00	20.00	20.00	20	397				11922
		point1649	1649	20.00	20.00	20.00	20	396				11868
		point1650	1650	20.00	20.00	20.00	20	407				12202
		point1651	1651	20.00	20.00	20.00	20	397				11922
		point1652	1652	20.00	20.00	20.00	20	396				11868
		point1653	1653	20.00	20.00	20.00	20	407				12202
		point1654	1654	24.00	24.00	24.00	20	477				14306
		point1655	1655	24.00	24.00	24.00	20	475				14242
		point1656	1656	20.00	20.00	20.00	20	407				12202
		point1657	1657	20.00	20.00	20.00	20	397				11922
		point1658	1658	20.00	20.00	20.00	20	405				12149
		point1659	1659	20.00	20.00	20.00	20	397				11922

		point1660	1660	20.00	20.00	20.00	20	396				11868
		point1661	1661	20.00	20.00	20.00	20	407				12202
		point1662	1662	20.00	20.00	20.00	20	396				11868
		point1663	1663	0.00	0.00	0.00	0	0				0
		point1664	1664	0.00	0.00	0.00	0	0				0
		point1665	1665	0.00	0.00	0.00	0	0				0
		point1666	1666	0.00	0.00	0.00	0	0				0
		point1667	1667	0.00	0.00	0.00	0	0				0
		point1668	1668	0.00	0.00	0.00	0	0				0
		point1669	1669	0.00	0.00	0.00	0	0				0
		point1670	1670	0.00	0.00	0.00	0	0				0
		point1671	1671	0.00	0.00	0.00	0	0				0
		point1672	1672	0.00	0.00	0.00	0	0				0
		point1673	1673	0.00	0.00	0.00	0	0				0
		point1674	1674	0.00	0.00	0.00	0	0				0
		point1675	1675	0.00	0.00	0.00	0	0				0
		point1477	1477	0.00	0.00	0.00	0	0				0
		point1676	1676	0.00	0.00	0.00	0	0				0
		point1677	1677	0.00	0.00	0.00	0	0				0
		point1678	1678	0.00	0.00	0.00	0	0				0
		point1679	1679	0.00	0.00	0.00	0	0				0
		point1680	1680	0.00	0.00	0.00	0	0				0
		point1681	1681	0.00	0.00	0.00	0	0				0
		point1682	1682	0.00	0.00	0.00	0	0				0
		point1683	1683	0.00	0.00	0.00	0	0				0
		point1684	1684	0.00	0.00	0.00	0	0				0
		point1685	1685	0.00	0.00	0.00	0	0				0
		point1686	1686	0.00	0.00	0.00	0	0				0
		point1687	1687	0.00	0.00	0.00	0	0				0
		point1688	1688	0.00	0.00	0.00	0	0				0
		point1689	1689	0.00	0.00	0.00	0	0				0
		point1690	1690	0.00	0.00	0.00	0	0				0
		point1691	1691	0.00	0.00	0.00	0	0				0
		point1692	1692	0.00	0.00	0.00	0	0				0
		point1693	1693	0.00	0.00	0.00	0	0				0
		point1694	1694	0.00	0.00	0.00	0	0				0
		point1695	1695	0.00	0.00	0.00	0	0				0
		point1696	1696	0.00	0.00	0.00	0	0				0
		point1697	1697	0.00	0.00	0.00	0	0				0

		point1698	1698	0.00	0.00	0.00	0	0				0
		point1699	1699	0.00	0.00	0.00	0	0				0
		point1700	1700	0.00	0.00	0.00	0	0				0
		point1701	1701	0.00	0.00	0.00	0	0				0
		point1702	1702	0.00	0.00	0.00	0	0				0
		point1703	1703	0.00	0.00	0.00	0	0				0
		point1704	1704	0.00	0.00	0.00	0	0				0
		point1705	1705	0.00	0.00	0.00	0	0				0
		point1706	1706	0.00	0.00	0.00	0	0				0
		point1707	1707	0.00	0.00	0.00	0	0				0
		point1708	1708	0.00	0.00	0.00	0	0				0
		point1709	1709	0.00	0.00	0.00	0	0				0
		point1710	1710	0.00	0.00	0.00	0	0				0
		point1711	1711	0.00	0.00	0.00	0	0				0
		point1712	1712	0.00	0.00	0.00	0	0				0
		point1713	1713	0.00	0.00	0.00	0	0				0
		point1714	1714	0.00	0.00	0.00	0	0				0
		point1715	1715	0.00	0.00	0.00	0	0				0
		point1716	1716	0.00	0.00	0.00	0	0				0
		point1717	1717	0.00	0.00	0.00	0	0				0
		point1718	1718	0.00	0.00	0.00	0	0				0
		point1719	1719	0.00	0.00	0.00	0	0				0
		point1720	1720	0.00	0.00	0.00	0	0				0
		point1721	1721	0.00	0.00	0.00	0	0				0
		point1722	1722	0.00	0.00	0.00	0	0				0
		point1723	1723	0.00	0.00	0.00	0	0				0
		point1724	1724	0.00	0.00	0.00	0	0				0
		point1725	1725	0.00	0.00	0.00	0	0				0
		point1726	1726	0.00	0.00	0.00	0	0				0
		point1727	1727	0.00	0.00	0.00	0	0				0
		point1728	1728	0.00	0.00	0.00	0	0				0
		point1729	1729	0.00	0.00	0.00	0	0				0
		point1730	1730	0.00	0.00	0.00	0	0				0
		point1731	1731	0.00	0.00	0.00	0	0				0
		point1732	1732	0.00	0.00	0.00	0	0				0
		point1733	1733	0.00	0.00	0.00	0	0				0
		point1734	1734	0.00	0.00	0.00	0	0				0
		point1735	1735	0.00	0.00	0.00	0	0				0
		point1736	1736	0.00	0.00	0.00	0	0				0

		point1737	1737	0.00	0.00	0.00	0	0				0
		point1738	1738	0.00	0.00	0.00	0	0				0
		point1739	1739	0.00	0.00	0.00	0	0				0
		point1740	1740	0.00	0.00	0.00	0	0				0
		point1741	1741	0.00	0.00	0.00	0	0				0
		point1742	1742	0.00	0.00	0.00	0	0				0
		point1743	1743	0.00	0.00	0.00	0	0				0
		point1744	1744	0.00	0.00	0.00	0	0				0
		point1745	1745	0.00	0.00	0.00	0	0				0
		point1746	1746	0.00	0.00	0.00	0	0				0
		point1747	1747	0.00	0.00	0.00	0	0				0
		point1748	1748	0.00	0.00	0.00	0	0				0
		point1749	1749	0.00	0.00	0.00	0	0				0
		point1750	1750	0.00	0.00	0.00	0	0				0
		point1837	1837	0.00	0.00	0.00	0	0				0
		point1751	1751	0.00	0.00	0.00	0	0				0
		point1752	1752	0.00	0.00	0.00	0	0				0
		point1753	1753	0.00	0.00	0.00	0	0				0
		point1754	1754	0.00	0.00	0.00	0	0				0
		point1755	1755	0.00	0.00	0.00	0	0				0
		point1756	1756	0.00	0.00	0.00	0	0				0
		point1757	1757	0.00	0.00	0.00	0	0				0
		point1758	1758	0.00	0.00	0.00	0	0				0
		point1759	1759	0.00	0.00	0.00	0	0				0
		point1760	1760	0.00	0.00	0.00	0	0				0
		point1761	1761	0.00	0.00	0.00	0	0				0
		point1762	1762	0.00	0.00	0.00	0	0				0
		point1763	1763	0.00	0.00	0.00	0	0				0
		point1764	1764	0.00	0.00	0.00	0	0				0
		point1765	1765	0.00	0.00	0.00	0	0				0
		point1766	1766	0.00	0.00	0.00	0	0				0
		point1767	1767	0.00	0.00	0.00	0	0				0
		point1768	1768	0.00	0.00	0.00	0	0				0
		point1769	1769	0.00	0.00	0.00	0	0				0
		point1770	1770	0.00	0.00	0.00	0	0				0
		point1771	1771	0.00	0.00	0.00	0	0				0
		point1772	1772	0.00	0.00	0.00	0	0				0
		point1773	1773	0.00	0.00	0.00	0	0				0
		point1478	1478	0.00	0.00	0.00	0	0				0

		point1774	1774	0.00	0.00	0.00	0	0				0
		point1775	1775	0.00	0.00	0.00	0	0				0
		point1776	1776	0.00	0.00	0.00	0	0				0
		point1777	1777	0.00	0.00	0.00	0	0				0
		point1778	1778	0.00	0.00	0.00	0	0				0
		point1779	1779	0.00	0.00	0.00	0	0				0
		point1780	1780	0.00	0.00	0.00	0	0				0
		point1781	1781	0.00	0.00	0.00	0	0				0
		point1782	1782	0.00	0.00	0.00	0	0				0
		point1783	1783	0.00	0.00	0.00	0	0				0
		point1784	1784	0.00	0.00	0.00	0	0				0
		point1785	1785	0.00	0.00	0.00	0	0				0
		point1786	1786	0.00	0.00	0.00	0	0				0
		point1787	1787	0.00	0.00	0.00	0	0				0
		point1788	1788	0.00	0.00	0.00	0	0				0
		point1789	1789	0.00	0.00	0.00	0	0				0
		point1790	1790	0.00	0.00	0.00	0	0				0
		point1791	1791	0.00	0.00	0.00	0	0				0
		point1792	1792	0.00	0.00	0.00	0	0				0
		point1793	1793	0.00	0.00	0.00	0	0				0
		point1794	1794	0.00	0.00	0.00	0	0				0
		point1795	1795	0.00	0.00	0.00	0	0				0
		point1796	1796	0.00	0.00	0.00	0	0				0
		point1797	1797	0.00	0.00	0.00	0	0				0
		point1798	1798	0.00	0.00	0.00	0	0				0
		point1799	1799	0.00	0.00	0.00	0	0				0
		point1800	1800	0.00	0.00	0.00	0	0				0
		point1801	1801	0.00	0.00	0.00	0	0				0
		point1802	1802	0.00	0.00	0.00	0	0				0
		point1803	1803	0.00	0.00	0.00	0	0				0
		point1804	1804	0.00	0.00	0.00	0	0				0
		point1805	1805	0.00	0.00	0.00	0	0				0
		point1806	1806	0.00	0.00	0.00	0	0				0
		point1807	1807	0.00	0.00	0.00	0	0				0
		point1808	1808	0.00	0.00	0.00	0	0				0
		point1809	1809	0.00	0.00	0.00	0	0				0
		point1810	1810	0.00	0.00	0.00	0	0				0
		point1811	1811	0.00	0.00	0.00	0	0				0
		point1812	1812	0.00	0.00	0.00	0	0				0

		point1813	1813	0.00	0.00	0.00	0	0				0
		point1814	1814	0.00	0.00	0.00	0	0				0
		point1815	1815	0.00	0.00	0.00	0	0				0
		point1816	1816	0.00	0.00	0.00	0	0				0
		point1817	1817	0.00	0.00	0.00	0	0				0
		point1818	1818	0.00	0.00	0.00	0	0				0
		point1819	1819	0.00	0.00	0.00	0	0				0
		point1820	1820	0.00	0.00	0.00	0	0				0
		point1821	1821	0.00	0.00	0.00	0	0				0
		point1822	1822	0.00	0.00	0.00	0	0				0
		point1823	1823	0.00	0.00	0.00	0	0				0
		point1824	1824	0.00	0.00	0.00	0	0				0
		point1825	1825	0.00	0.00	0.00	0	0				0
		point1826	1826	0.00	0.00	0.00	0	0				0
		point1827	1827	0.00	0.00	0.00	0	0				0
		point1828	1828	0.00	0.00	0.00	0	0				0
		point1829	1829	0.00	0.00	0.00	0	0				0
		point1830	1830	0.00	0.00	0.00	0	0				0
		point1831	1831	0.00	0.00	0.00	0	0				0
		point1832	1832	0.00	0.00	0.00	0	0				0
		point1833	1833	0.00	0.00	0.00	0	0				0
		point1834	1834	0.00	0.00	0.00	0	0				0
		point1835	1835	0.00	0.00	0.00	0	0				0
		point1836	1836	0.00	0.00	0.00	0	0				0
Barrier17	W	point1326	1326	0.00	0.00	0.00	0	0				0
		point1473	1473	0.00	0.00	0.00	0	0				0
		point1474	1474	0.00	0.00	0.00	0	0				0
		point1469	1469	0.00	0.00	0.00	0	0				0
		point1472	1472	0.00	0.00	0.00	0	0				0
		point1470	1470	0.00	0.00	0.00	0	0				0
		point1471	1471	20.00	20.00	20.00	23	450				13501
		point1329	1329	0.00	0.00	0.00	0	0				0
		point1330	1330	0.00	0.00	0.00	0	0				0
		point1331	1331	0.00	0.00	0.00	0	0				0
		point1332	1332	0.00	0.00	0.00	0	0				0
		point1333	1333	0.00	0.00	0.00	0	0				0
		point1334	1334	0.00	0.00	0.00	0	0				0
		point1335	1335	0.00	0.00	0.00	0	0				0

		point1336	1336	0.00	0.00	0.00	0	0				0
		point1337	1337	0.00	0.00	0.00	0	0				0
		point1338	1338	0.00	0.00	0.00	0	0				0
		point1339	1339	0.00	0.00	0.00	0	0				0
		point1340	1340	0.00	0.00	0.00	0	0				0
		point1341	1341	0.00	0.00	0.00	0	0				0
		point1342	1342	0.00	0.00	0.00	0	0				0
		point1343	1343	0.00	0.00	0.00	0	0				0
		point1344	1344	0.00	0.00	0.00	0	0				0
		point1345	1345	0.00	0.00	0.00	0	0				0
		point1346	1346	0.00	0.00	0.00	0	0				0
		point1347	1347	0.00	0.00	0.00	0	0				0
		point1348	1348	0.00	0.00	0.00	0	0				0
		point1349	1349	0.00	0.00	0.00	0	0				0
		point1350	1350	0.00	0.00	0.00	0	0				0
		point1351	1351	0.00	0.00	0.00	0	0				0
		point1352	1352	0.00	0.00	0.00	0	0				0
		point1353	1353	0.00	0.00	0.00	0	0				0
		point1354	1354	0.00	0.00	0.00	0	0				0
		point1355	1355	0.00	0.00	0.00	0	0				0
		point1356	1356	0.00	0.00	0.00	0	0				0
		point1357	1357	0.00	0.00	0.00	0	0				0
		point1358	1358	0.00	0.00	0.00	0	0				0
		point1359	1359	0.00	0.00	0.00	0	0				0
		point1360	1360	0.00	0.00	0.00	0	0				0
		point1361	1361	0.00	0.00	0.00	0	0				0
		point1362	1362	0.00	0.00	0.00	0	0				0
		point1363	1363	0.00	0.00	0.00	0	0				0
		point1364	1364	0.00	0.00	0.00	0	0				0
		point1365	1365	0.00	0.00	0.00	0	0				0
		point1366	1366	0.00	0.00	0.00	0	0				0
		point1367	1367	0.00	0.00	0.00	0	0				0
		point1368	1368	0.00	0.00	0.00	0	0				0
		point1369	1369	0.00	0.00	0.00	0	0				0
		point1370	1370	0.00	0.00	0.00	0	0				0
		point1371	1371	0.00	0.00	0.00	0	0				0
		point1372	1372	0.00	0.00	0.00	0	0				0
		point1373	1373	0.00	0.00	0.00	0	0				0
		point1374	1374	0.00	0.00	0.00	0	0				0

		point1375	1375	0.00	0.00	0.00	0	0				0
		point1376	1376	0.00	0.00	0.00	0	0				0
		point1377	1377	0.00	0.00	0.00	0	0				0
		point1378	1378	0.00	0.00	0.00	0	0				0
		point1379	1379	0.00	0.00	0.00	0	0				0
		point1380	1380	0.00	0.00	0.00	0	0				0
		point1381	1381	0.00	0.00	0.00	0	0				0
		point1382	1382	0.00	0.00	0.00	0	0				0
		point1383	1383	0.00	0.00	0.00	0	0				0
		point1384	1384	0.00	0.00	0.00	0	0				0
		point1385	1385	0.00	0.00	0.00	0	0				0
		point1386	1386	0.00	0.00	0.00	0	0				0
		point1387	1387	0.00	0.00	0.00	0	0				0
		point1388	1388	0.00	0.00	0.00	0	0				0
		point1389	1389	0.00	0.00	0.00	0	0				0
		point1390	1390	0.00	0.00	0.00	0	0				0
		point1391	1391	0.00	0.00	0.00	0	0				0
		point1392	1392	0.00	0.00	0.00	0	0				0
		point1393	1393	0.00	0.00	0.00	0	0				0
		point1394	1394	0.00	0.00	0.00	0	0				0
		point1395	1395	0.00	0.00	0.00	0	0				0
		point1396	1396	0.00	0.00	0.00	0	0				0
		point1397	1397	0.00	0.00	0.00	0	0				0
		point1398	1398	0.00	0.00	0.00	0	0				0
		point1399	1399	0.00	0.00	0.00	0	0				0
		point1400	1400	0.00	0.00	0.00	0	0				0
		point1401	1401	0.00	0.00	0.00	0	0				0
		point1402	1402	0.00	0.00	0.00	0	0				0
		point1403	1403	0.00	0.00	0.00	0	0				0
		point1404	1404	0.00	0.00	0.00	0	0				0
		point1405	1405	0.00	0.00	0.00	0	0				0
		point1406	1406	0.00	0.00	0.00	0	0				0
		point1407	1407	0.00	0.00	0.00	0	0				0
		point1408	1408	0.00	0.00	0.00	0	0				0
		point1409	1409	0.00	0.00	0.00	0	0				0
		point1410	1410	0.00	0.00	0.00	0	0				0
		point1411	1411	0.00	0.00	0.00	0	0				0
		point1412	1412	0.00	0.00	0.00	0	0				0
		point1413	1413	0.00	0.00	0.00	0	0				0

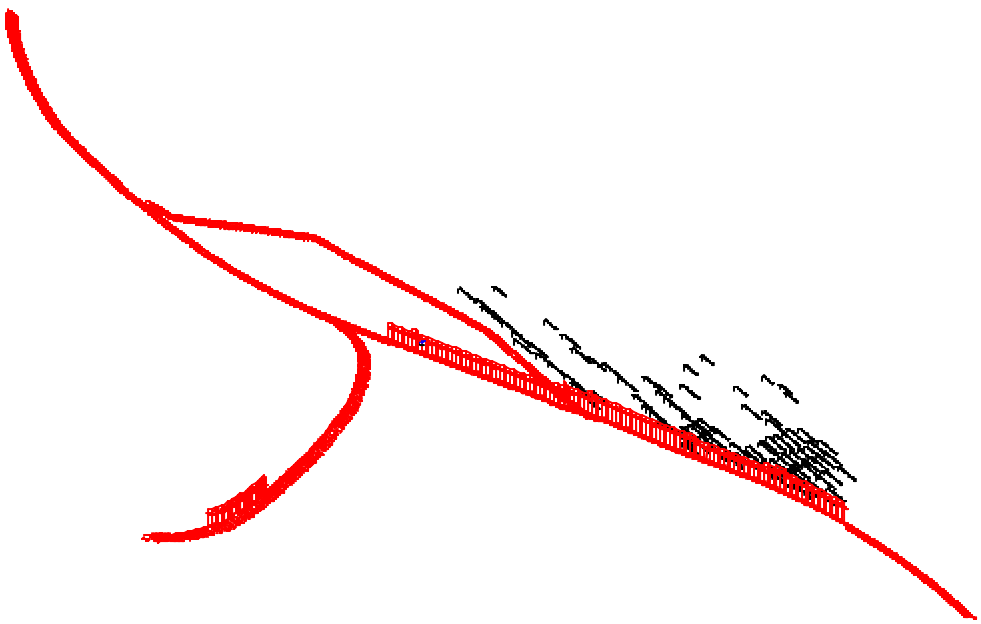
		point1414	1414	0.00	0.00	0.00	0	0				0
		point1415	1415	0.00	0.00	0.00	0	0				0
		point1416	1416	0.00	0.00	0.00	0	0				0
		point1417	1417	0.00	0.00	0.00	0	0				0
		point1418	1418	0.00	0.00	0.00	0	0				0
		point1419	1419	0.00	0.00	0.00	0	0				0
		point1420	1420	0.00	0.00	0.00	0	0				0
		point1421	1421	0.00	0.00	0.00	0	0				0
		point1422	1422	0.00	0.00	0.00	0	0				0
		point1423	1423	0.00	0.00	0.00	0	0				0
		point1424	1424	0.00	0.00	0.00	0	0				0
		point1425	1425	0.00	0.00	0.00	0	0				0
		point1426	1426	0.00	0.00	0.00	0	0				0
		point1328	1328	0.00	0.00	0.00	0	0				0
		point1427	1427	0.00	0.00	0.00	0	0				0
		point1428	1428	0.00	0.00	0.00	0	0				0
		point1429	1429	0.00	0.00	0.00	0	0				0
		point1430	1430	0.00	0.00	0.00	0	0				0
		point1431	1431	0.00	0.00	0.00	0	0				0
		point1432	1432	0.00	0.00	0.00	0	0				0
		point1433	1433	0.00	0.00	0.00	0	0				0
		point1434	1434	0.00	0.00	0.00	0	0				0
		point1435	1435	0.00	0.00	0.00	0	0				0
		point1436	1436	0.00	0.00	0.00	0	0				0
		point1437	1437	0.00	0.00	0.00	0	0				0
		point1438	1438	0.00	0.00	0.00	0	0				0
		point1439	1439	0.00	0.00	0.00	0	0				0
		point1440	1440	0.00	0.00	0.00	0	0				0
		point1441	1441	0.00	0.00	0.00	0	0				0
		point1442	1442	0.00	0.00	0.00	0	0				0
		point1443	1443	0.00	0.00	0.00	0	0				0
		point1444	1444	0.00	0.00	0.00	0	0				0
		point1445	1445	0.00	0.00	0.00	0	0				0
		point1446	1446	0.00	0.00	0.00	0	0				0
		point1447	1447	0.00	0.00	0.00	0	0				0
		point1448	1448	0.00	0.00	0.00	0	0				0
		point1449	1449	0.00	0.00	0.00	0	0				0
		point1450	1450	0.00	0.00	0.00	0	0				0
		point1451	1451	0.00	0.00	0.00	0	0				0

		point1452	1452	0.00	0.00	0.00	0	0				0
		point1453	1453	0.00	0.00	0.00	0	0				0
		point1454	1454	0.00	0.00	0.00	0	0				0
		point1455	1455	0.00	0.00	0.00	0	0				0
		point1456	1456	0.00	0.00	0.00	0	0				0
		point1457	1457	0.00	0.00	0.00	0	0				0
		point1458	1458	0.00	0.00	0.00	0	0				0
		point1459	1459	0.00	0.00	0.00	0	0				0
		point1460	1460	0.00	0.00	0.00	0	0				0
		point1461	1461	0.00	0.00	0.00	0	0				0
		point1462	1462	0.00	0.00	0.00	0	0				0
		point1463	1463	0.00	0.00	0.00	0	0				0
		point1464	1464	0.00	0.00	0.00	0	0				0
Barrier27	W	3	2063	0.00	0.00	0.00	0	0				0
		point2164	2164	0.00	0.00	0.00	0	0				0
		point2165	2165	0.00	0.00	0.00	0	0				0
		point2166	2166	0.00	0.00	0.00	0	0				0
		point2167	2167	0.00	0.00	0.00	0	0				0
		point2168	2168	0.00	0.00	0.00	0	0				0
		point2169	2169	0.00	0.00	0.00	0	0				0
		point2170	2170	0.00	0.00	0.00	0	0				0
		point2171	2171	0.00	0.00	0.00	0	0				0
		point2172	2172	0.00	0.00	0.00	0	0				0
		point2173	2173	0.00	0.00	0.00	0	0				0
		point2174	2174	0.00	0.00	0.00	0	0				0
		point2175	2175	0.00	0.00	0.00	0	0				0
		point2176	2176	0.00	0.00	0.00	0	0				0
		point2177	2177	0.00	0.00	0.00	0	0				0
		point2178	2178	0.00	0.00	0.00	0	0				0
		point2179	2179	20.00	20.00	20.00	20	402				12060
		point2180	2180	20.00	20.00	20.00	20	401				12034
		point2181	2181	20.00	20.00	20.00	20	400				12004
		point2182	2182	20.00	20.00	20.00	20	400				12004
		point2183	2183	20.00	20.00	20.00	20	400				12015
		point2184	2184	20.00	20.00	20.00	20	397				11911
		point2185	2185	20.00	20.00	20.00	10	201				6030
		point2186	2186	20.00	20.00	20.00	20	398				11945
		point2064	2064	20.00	20.00	20.00	20	401				12035

		point2066	2066	20.00	20.00	20.00	20	400				12007
		point2067	2067	20.00	20.00	20.00	20	398				11933
		point2068	2068	20.00	20.00	20.00	20	403				12098
		point2069	2069	20.00	20.00	20.00	20	397				11907
		point2070	2070	20.00	20.00	20.00	20	400				12008
		point2071	2071	20.00	20.00	20.00	20	404				12117
		point2072	2072	20.00	20.00	20.00	20	400				12008
		point2073	2073	20.00	20.00	20.00	20	396				11868
		point2074	2074	20.00	20.00	20.00	20	400				12008
		point2075	2075	20.00	20.00	20.00	20	404				12117
		point2076	2076	20.00	20.00	20.00	20	400				12008
		point2077	2077	20.00	20.00	20.00	20	396				11868
		point2078	2078	16.00	16.00	16.00	20	323				9693
		point2079	2079	0.00	0.00	0.00	0	0				0
		point2080	2080	0.00	0.00	0.00	0	0				0
		point2081	2081	0.00	0.00	0.00	0	0				0
		point2082	2082	0.00	0.00	0.00	0	0				0
		point2083	2083	0.00	0.00	0.00	0	0				0
		point2084	2084	0.00	0.00	0.00	0	0				0
		point2085	2085	0.00	0.00	0.00	0	0				0
		point2086	2086	0.00	0.00	0.00	0	0				0
		point2087	2087	0.00	0.00	0.00	0	0				0
		point2088	2088	0.00	0.00	0.00	0	0				0
		point2089	2089	0.00	0.00	0.00	0	0				0
		point2090	2090	0.00	0.00	0.00	0	0				0
		point2091	2091	0.00	0.00	0.00	0	0				0
		point2092	2092	0.00	0.00	0.00	0	0				0
		point2093	2093	0.00	0.00	0.00	0	0				0
		point2094	2094	0.00	0.00	0.00	0	0				0
		point2095	2095	0.00	0.00	0.00	0	0				0
		point2096	2096	0.00	0.00	0.00	0	0				0
		point2097	2097	0.00	0.00	0.00	0	0				0
		point2098	2098	0.00	0.00	0.00	0	0				0
		point2099	2099	0.00	0.00	0.00	0	0				0
		point2100	2100	0.00	0.00	0.00	0	0				0
		point2101	2101	0.00	0.00	0.00	0	0				0
		point2102	2102	0.00	0.00	0.00	0	0				0
		point2103	2103	0.00	0.00	0.00	0	0				0
		point2104	2104	0.00	0.00	0.00	0	0				0

		point2105	2105	0.00	0.00	0.00	0	0				0
		point2106	2106	0.00	0.00	0.00	0	0				0
		point2107	2107	0.00	0.00	0.00	0	0				0
		point2108	2108	0.00	0.00	0.00	0	0				0
		point2109	2109	0.00	0.00	0.00	0	0				0
		point2110	2110	0.00	0.00	0.00	0	0				0
		point2111	2111	0.00	0.00	0.00	0	0				0
		point2112	2112	0.00	0.00	0.00	0	0				0
		point2113	2113	0.00	0.00	0.00	0	0				0
		point2114	2114	0.00	0.00	0.00	0	0				0
		point2115	2115	0.00	0.00	0.00	0	0				0
		point2116	2116	0.00	0.00	0.00	0	0				0
		point2117	2117	0.00	0.00	0.00	0	0				0
		point2118	2118	0.00	0.00	0.00	0	0				0
		point2119	2119	0.00	0.00	0.00	0	0				0
		point2120	2120	0.00	0.00	0.00	0	0				0
		point2121	2121	0.00	0.00	0.00	0	0				0
		point2122	2122	0.00	0.00	0.00	0	0				0
		point2123	2123	0.00	0.00	-8.00	0	0				0
		point2124	2124	0.00	0.00	0.00	0	0	Y			0
		point2125	2125	0.00	0.00	0.00	0	0	Y			0
		point2126	2126	0.00	0.00	0.00	0	0	Y			0
		point2127	2127	0.00	0.00	0.00	0	0	Y			0
		point2128	2128	0.00	0.00	0.00	0	0	Y			0
		point2129	2129	0.00	0.00	0.00	0	0	Y			0
		point2130	2130	0.00	0.00	0.00	0	0	Y			0
		point2131	2131	0.00	0.00	0.00	0	0	Y			0
		point2132	2132	0.00	0.00	0.00	0	0	Y			0
		point2133	2133	0.00	0.00	0.00	0	0	Y			0
		point2134	2134	0.00	0.00	0.00	0	0	Y			0
		point2135	2135	0.00	0.00	0.00	0	0	Y			0
		point2136	2136	0.00	0.00	0.00	0	0	Y			0
		point2137	2137	0.00	0.00	0.00	0	0	Y			0
		point2138	2138	0.00	0.00	0.00	0	0	Y			0
		point2139	2139	0.00	4.00	8.00	20	81	Y			2419
		point2140	2140	0.00	0.00	0.00	0	0				0
		point2141	2141	0.00	0.00	0.00	0	0				0
		point2142	2142	0.00	0.00	0.00	0	0				0
		point2143	2143	0.00	0.00	0.00	0	0				0

		point2144	2144	0.00	0.00	0.00	0	0				0
		point2145	2145	0.00	0.00	0.00	0	0				0
		point2146	2146	0.00	0.00	0.00	0	0				0
		point2147	2147	0.00	0.00	0.00	0	0				0
		point2148	2148	0.00	0.00	0.00	0	0				0
		point2149	2149	0.00	0.00	0.00	0	0				0
		point2150	2150	0.00	0.00	0.00	0	0				0
		point2151	2151	0.00	0.00	0.00	0	0				0
		point2152	2152	0.00	0.00	0.00	0	0				0
		point2153	2153	0.00	0.00	0.00	0	0				0
		point2154	2154	0.00	0.00	0.00	0	0				0
		point2155	2155	0.00	0.00	0.00	0	0				0
		point2156	2156	0.00	0.00	0.00	0	0				0
		point2157	2157	0.00	0.00	0.00	0	0				0
		point2158	2158	0.00	0.00	0.00	0	0				0
		point2159	2159	0.00	0.00	0.00	0	0				0
		point2160	2160	0.00	0.00	0.00	0	0				0
		point2161	2161	0.00	0.00	0.00	0	0				0
		point2162	2162	0.00	0.00	0.00	0	0				0
		point2163	2163	0.00	0.00	0.00	0	0				0



Central 1_Indiana_TollAll_AllBar_Fly	Sheet 1 of 1	30 Apr 2018
	HMB Professional Engineers	
Barrier View-C1_IN_TollAll_East_3BAR	Project/Contract No. I-69 ORX	
Run name: C1_Fly_BAR_Added	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

HMB Professional Engineers 30 April 2018
MG/mdg TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_Indiana_TollAll_AllBar_Fly

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	#Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier17	W	0.00	99.99	30.00				0.00	point1326	1326	4,410,736.5	3,870,064.8	387.21	20.00	4.00	2	2		
									point1473	1473	4,410,707.0	3,870,064.2	387.04	20.00	4.00	2	2		
									point1474	1474	4,410,677.0	3,870,063.5	386.87	20.00	4.00	2	2		
									point1469	1469	4,410,647.5	3,870,063.0	386.70	20.00	4.00	2	2		
									point1472	1472	4,410,625.0	3,870,062.5	386.57	20.00	4.00	2	2		
									point1470	1470	4,410,603.0	3,870,062.0	386.45	20.00	4.00	2	2		
									point1471	1471	4,410,581.0	3,870,061.5	386.32	20.00	4.00	2	2		
									point1329	1329	4,410,558.5	3,870,061.2	386.19	20.00	4.00	2	2		
									point1330	1330	4,410,538.5	3,870,061.8	385.07	20.00	4.00	2	2		
									point1331	1331	4,410,518.5	3,870,062.2	384.83	20.00	4.00	2	2		
									point1332	1332	4,410,498.5	3,870,063.0	384.90	20.00	4.00	2	2		
									point1333	1333	4,410,478.5	3,870,063.5	385.16	20.00	4.00	2	2		
									point1334	1334	4,410,458.5	3,870,064.0	385.79	20.00	4.00	2	2		
									point1335	1335	4,410,438.5	3,870,064.5	385.95	20.00	4.00	2	2		
									point1336	1336	4,410,418.5	3,870,065.0	385.61	20.00	4.00	2	2		
									point1337	1337	4,410,398.5	3,870,065.5	385.90	20.00	4.00	2	2		
									point1338	1338	4,410,378.5	3,870,066.0	385.88	20.00	4.00	2	2		
									point1339	1339	4,410,358.5	3,870,066.5	386.32	20.00	4.00	2	2		
									point1340	1340	4,410,338.5	3,870,067.0	386.40	20.00	4.00	2	2		
									point1341	1341	4,410,318.5	3,870,067.5	386.30	20.00	4.00	2	2		
									point1342	1342	4,410,298.5	3,870,068.0	386.50	20.00	4.00	2	2		
									point1343	1343	4,410,278.5	3,870,068.5	386.80	20.00	4.00	2	2		
									point1344	1344	4,410,258.5	3,870,069.0	386.81	20.00	4.00	2	2		
									point1345	1345	4,410,238.5	3,870,069.2	386.96	20.00	4.00	2	2		
									point1346	1346	4,410,218.5	3,870,069.5	386.86	20.00	4.00	2	2		
									point1347	1347	4,410,198.5	3,870,069.5	386.98	20.00	4.00	2	2		
									point1348	1348	4,410,178.5	3,870,069.8	387.17	20.00	4.00	2	2		
									point1349	1349	4,410,158.5	3,870,070.0	386.91	20.00	4.00	2	2		
									point1350	1350	4,410,138.5	3,870,070.0	386.88	20.00	4.00	2	2		
									point1351	1351	4,410,118.5	3,870,070.2	386.63	20.00	4.00	2	2		
									point1352	1352	4,410,098.5	3,870,070.5	386.65	20.00	4.00	2	2		
									point1353	1353	4,410,078.5	3,870,070.5	386.67	20.00	4.00	2	2		
									point1354	1354	4,410,058.5	3,870,070.8	386.82	20.00	4.00	2	2		
									point1355	1355	4,410,038.5	3,870,071.0	386.86	20.00	4.00	2	2		
									point1356	1356	4,410,018.5	3,870,071.0	386.78	20.00	4.00	2	2		

									point1357	1357	4,409,998.5	3,870,071.2	387.36	20.00	4.00	2	2		
									point1358	1358	4,409,978.5	3,870,071.8	387.28	20.00	4.00	2	2		
									point1359	1359	4,409,958.5	3,870,072.5	387.25	20.00	4.00	2	2		
									point1360	1360	4,409,938.5	3,870,073.2	387.26	20.00	4.00	2	2		
									point1361	1361	4,409,918.5	3,870,074.0	387.06	20.00	4.00	2	2		
									point1362	1362	4,409,898.5	3,870,074.5	387.34	20.00	4.00	2	2		
									point1363	1363	4,409,878.5	3,870,075.2	387.59	20.00	4.00	2	2		
									point1364	1364	4,409,858.5	3,870,072.5	387.16	20.00	4.00	2	2		
									point1365	1365	4,409,839.0	3,870,069.2	387.35	20.00	4.00	2	2		
									point1366	1366	4,409,819.5	3,870,066.0	387.33	20.00	4.00	2	2		
									point1367	1367	4,409,799.5	3,870,062.5	387.13	20.00	4.00	2	2		
									point1368	1368	4,409,780.0	3,870,059.2	386.91	20.00	4.00	2	2		
									point1369	1369	4,409,760.0	3,870,056.0	386.90	20.00	4.00	2	2		
									point1370	1370	4,409,740.5	3,870,052.8	386.70	20.00	4.00	2	2		
									point1371	1371	4,409,721.0	3,870,048.2	387.27	20.00	4.00	2	2		
									point1372	1372	4,409,701.5	3,870,043.8	387.60	20.00	4.00	2	2		
									point1373	1373	4,409,682.0	3,870,039.2	387.60	20.00	4.00	2	2		
									point1374	1374	4,409,662.5	3,870,034.8	387.60	20.00	4.00	2	2		
									point1375	1375	4,409,643.0	3,870,030.2	387.47	20.00	4.00	2	2		
									point1376	1376	4,409,623.5	3,870,025.8	387.75	20.00	4.00	2	2		
									point1377	1377	4,409,604.0	3,870,021.0	387.66	20.00	4.00	2	2		
									point1378	1378	4,409,584.5	3,870,016.5	387.91	20.00	4.00	2	2		
									point1379	1379	4,409,565.0	3,870,012.0	388.03	20.00	4.00	2	2		
									point1380	1380	4,409,545.5	3,870,007.5	387.93	20.00	4.00	2	2		
									point1381	1381	4,409,526.0	3,870,003.0	388.27	20.00	4.00	2	2		
									point1382	1382	4,409,506.5	3,869,998.5	388.38	20.00	4.00	2	2		
									point1383	1383	4,409,487.0	3,869,994.0	388.03	20.00	4.00	2	2		
									point1384	1384	4,409,467.5	3,869,989.5	388.14	20.00	4.00	2	2		
									point1385	1385	4,409,448.0	3,869,985.0	388.07	20.00	4.00	2	2		
									point1386	1386	4,409,428.5	3,869,980.2	388.06	20.00	4.00	2	2		
									point1387	1387	4,409,409.0	3,869,975.8	388.24	20.00	4.00	2	2		
									point1388	1388	4,409,389.5	3,869,971.8	388.08	20.00	4.00	2	2		
									point1389	1389	4,409,370.0	3,869,967.8	388.06	20.00	4.00	2	2		
									point1390	1390	4,409,350.5	3,869,963.8	388.20	20.00	4.00	2	2		
									point1391	1391	4,409,331.0	3,869,959.5	388.18	20.00	4.00	2	2		
									point1392	1392	4,409,311.5	3,869,955.5	387.91	20.00	4.00	2	2		
									point1393	1393	4,409,291.5	3,869,951.5	387.71	20.00	4.00	2	2		
									point1394	1394	4,409,272.0	3,869,947.5	387.81	20.00	4.00	2	2		
									point1395	1395	4,409,252.5	3,869,943.5	387.51	20.00	4.00	2	2		
									point1396	1396	4,409,233.0	3,869,939.5	387.48	20.00	4.00	2	2		
									point1397	1397	4,409,213.5	3,869,935.5	387.30	20.00	4.00	2	2		
									point1398	1398	4,409,194.0	3,869,931.2	387.55	20.00	4.00	2	2		
									point1399	1399	4,409,174.0	3,869,927.2	387.63	20.00	4.00	2	2		
									point1400	1400	4,409,154.5	3,869,923.2	387.33	20.00	4.00	2	2		
									point1401	1401	4,409,135.0	3,869,919.2	387.46	20.00	4.00	2	2		
									point1402	1402	4,409,115.5	3,869,915.0	387.35	20.00	4.00	2	2		
									point1403	1403	4,409,096.0	3,869,911.0	387.46	20.00	4.00	2	2		
									point1404	1404	4,409,076.5	3,869,907.0	387.41	20.00	4.00	2	2		
									point1405	1405	4,409,056.5	3,869,903.0	387.38	20.00	4.00	2	2		

									point1406	1406	4,409,037.0	3,869,899.0	386.89	20.00	4.00	2	2		
									point1407	1407	4,409,017.5	3,869,895.0	386.54	20.00	4.00	2	2		
									point1408	1408	4,408,998.0	3,869,891.0	386.42	20.00	4.00	2	2		
									point1409	1409	4,408,978.5	3,869,886.8	386.58	20.00	4.00	2	2		
									point1410	1410	4,408,959.0	3,869,882.8	386.25	20.00	4.00	2	2		
									point1411	1411	4,408,939.0	3,869,878.8	386.24	20.00	4.00	2	2		
									point1412	1412	4,408,919.5	3,869,875.0	386.72	20.00	4.00	2	2		
									point1413	1413	4,408,900.0	3,869,871.0	387.15	20.00	4.00	2	2		
									point1414	1414	4,408,880.5	3,869,867.0	387.16	20.00	4.00	2	2		
									point1415	1415	4,408,861.0	3,869,863.0	387.21	20.00	4.00	2	2		
									point1416	1416	4,408,841.0	3,869,859.0	387.43	20.00	4.00	2	2		
									point1417	1417	4,408,821.5	3,869,855.0	387.39	20.00	4.00	2	2		
									point1418	1418	4,408,802.0	3,869,851.0	387.51	20.00	4.00	2	2		
									point1419	1419	4,408,782.5	3,869,847.2	387.37	20.00	4.00	2	2		
									point1420	1420	4,408,763.0	3,869,843.2	387.31	20.00	4.00	2	2		
									point1421	1421	4,408,743.0	3,869,839.2	386.67	20.00	4.00	2	2		
									point1422	1422	4,408,725.0	3,869,832.8	386.79	20.00	4.00	2	2		
									point1423	1423	4,408,710.0	3,869,819.5	386.96	20.00	4.00	2	2		
									point1424	1424	4,408,694.5	3,869,806.5	386.71	20.00	4.00	2	2		
									point1425	1425	4,408,679.5	3,869,793.2	386.34	20.00	4.00	2	2		
									point1426	1426	4,408,664.5	3,869,780.0	386.11	20.00	4.00	2	2		
									point1328	1328	4,408,649.5	3,869,767.0	386.41	20.00	4.00	2	2		
									point1427	1427	4,408,634.5	3,869,753.8	386.53	20.00	4.00	2	2		
									point1428	1428	4,408,619.5	3,869,740.5	386.70	20.00	4.00	2	2		
									point1429	1429	4,408,604.5	3,869,727.2	387.07	20.00	4.00	2	2		
									point1430	1430	4,408,589.5	3,869,714.2	387.11	20.00	4.00	2	2		
									point1431	1431	4,408,574.5	3,869,701.0	386.77	20.00	4.00	2	2		
									point1432	1432	4,408,559.5	3,869,687.8	386.96	20.00	4.00	2	2		
									point1433	1433	4,408,544.5	3,869,674.5	387.06	20.00	4.00	2	2		
									point1434	1434	4,408,529.5	3,869,661.5	387.08	20.00	4.00	2	2		
									point1435	1435	4,408,514.5	3,869,648.2	386.88	20.00	4.00	2	2		
									point1436	1436	4,408,499.0	3,869,635.0	387.37	20.00	4.00	2	2		
									point1437	1437	4,408,484.0	3,869,622.0	387.20	20.00	4.00	2	2		
									point1438	1438	4,408,469.0	3,869,608.5	387.11	20.00	4.00	2	2		
									point1439	1439	4,408,454.5	3,869,595.2	387.41	20.00	4.00	2	2		
									point1440	1440	4,408,439.5	3,869,582.0	387.05	20.00	4.00	2	2		
									point1441	1441	4,408,424.5	3,869,568.5	386.99	20.00	4.00	2	2		
									point1442	1442	4,408,410.0	3,869,555.0	386.87	20.00	4.00	2	2		
									point1443	1443	4,408,395.0	3,869,541.5	387.35	20.00	4.00	2	2		
									point1444	1444	4,408,380.0	3,869,528.2	387.11	20.00	4.00	2	2		
									point1445	1445	4,408,365.5	3,869,514.8	387.11	20.00	4.00	2	2		
									point1446	1446	4,408,350.5	3,869,501.5	386.88	20.00	4.00	2	2		
									point1447	1447	4,408,335.5	3,869,488.0	386.93	20.00	4.00	2	2		
									point1448	1448	4,408,321.0	3,869,474.5	386.97	20.00	4.00	2	2		
									point1449	1449	4,408,306.0	3,869,461.0	387.00	20.00	4.00	2	2		
									point1450	1450	4,408,291.0	3,869,447.8	387.05	20.00	4.00	2	2		
									point1451	1451	4,408,275.5	3,869,435.0	387.06	20.00	4.00	2	2		
									point1452	1452	4,408,260.0	3,869,423.0	387.11	20.00	4.00	2	2		
									point1453	1453	4,408,244.0	3,869,410.8	386.89	20.00	4.00	2	2		

									point1454	1454	4,408,228.0	3,869,398.8	387.03	20.00	4.00	2	2		
									point1455	1455	4,408,212.0	3,869,386.8	386.74	20.00	4.00	2	2		
									point1456	1456	4,408,195.5	3,869,375.8	386.83	20.00	4.00	2	2		
									point1457	1457	4,408,177.5	3,869,367.0	386.74	20.00	4.00	2	2		
									point1458	1458	4,408,158.5	3,869,361.0	386.90	20.00	4.00	2	2		
									point1459	1459	4,408,138.5	3,869,358.0	387.00	20.00	4.00	2	2		
									point1460	1460	4,408,119.0	3,869,354.8	387.20	20.00	4.00	2	2		
									point1461	1461	4,408,099.0	3,869,351.8	387.40	20.00	4.00	2	2		
									point1462	1462	4,408,079.5	3,869,348.8	387.46	20.00	4.00	2	2		
									point1463	1463	4,408,059.5	3,869,345.8	387.39	20.00	4.00	2	2		
									point1464	1464	4,408,040.0	3,869,342.8	387.23	20.00	4.00	2	2		
									point1327	1327	4,408,026.5	3,869,340.5	386.84	20.00					
Barrier23	W	0.00	99.99	30.00				0.00	point1475	1475	4,413,191.0	3,870,609.0	389.38	20.00	4.00	2	2		
									point1480	1480	4,413,171.0	3,870,610.5	389.15	20.00	4.00	2	2		
									point1481	1481	4,413,151.0	3,870,612.2	389.14	20.00	4.00	2	2		
									point1482	1482	4,413,131.0	3,870,614.0	389.08	20.00	4.00	2	2		
									point1483	1483	4,413,111.0	3,870,614.5	388.88	20.00	4.00	2	2		
									point1484	1484	4,413,091.0	3,870,615.2	389.02	20.00	4.00	2	2		
									point1485	1485	4,413,071.0	3,870,616.0	389.06	20.00	4.00	2	2		
									point1486	1486	4,413,051.0	3,870,616.8	389.21	20.00	4.00	2	2		
									point1487	1487	4,413,031.0	3,870,617.5	389.12	20.00	4.00	2	2		
									point1488	1488	4,413,011.0	3,870,618.2	388.93	20.00	4.00	2	2		
									point1489	1489	4,412,991.0	3,870,618.5	388.85	20.00	4.00	2	2		
									point1490	1490	4,412,971.0	3,870,618.5	389.21	20.00	4.00	2	2		
									point1491	1491	4,412,951.0	3,870,619.0	389.24	20.00	4.00	2	2		
									point1492	1492	4,412,931.0	3,870,619.2	389.38	20.00	4.00	2	2		
									point1493	1493	4,412,911.0	3,870,619.5	389.26	20.00	4.00	2	2		
									point1494	1494	4,412,891.0	3,870,619.8	389.12	20.00	4.00	2	2		
									point1495	1495	4,412,871.0	3,870,619.5	389.13	20.00	4.00	2	2		
									point1496	1496	4,412,851.0	3,870,619.2	389.24	20.00	4.00	2	2		
									point1497	1497	4,412,831.0	3,870,619.0	388.97	20.00	4.00	2	2		
									point1498	1498	4,412,811.0	3,870,618.8	389.39	20.00	4.00	2	2		
									point1499	1499	4,412,791.0	3,870,617.8	389.33	20.00	4.00	2	2		
									point1500	1500	4,412,771.0	3,870,616.5	389.45	20.00	4.00	2	2		
									point1501	1501	4,412,751.0	3,870,615.5	389.32	20.00	4.00	2	2		
									point1502	1502	4,412,731.5	3,870,614.2	389.45	20.00	4.00	2	2		
									point1503	1503	4,412,711.5	3,870,613.2	389.60	20.00	4.00	2	2		
									point1504	1504	4,412,691.5	3,870,612.2	389.48	20.00	4.00	2	2		
									point1505	1505	4,412,671.5	3,870,611.2	389.55	20.00	4.00	2	2		
									point1506	1506	4,412,651.5	3,870,610.0	389.41	20.00	4.00	2	2		
									point1507	1507	4,412,631.5	3,870,608.5	389.31	20.00	4.00	2	2		
									point1508	1508	4,412,611.5	3,870,607.0	389.33	20.00	4.00	2	2		
									point1509	1509	4,412,591.5	3,870,605.8	389.20	20.00	4.00	2	2		
									point1510	1510	4,412,571.5	3,870,604.2	389.34	20.00	4.00	2	2		
									point1511	1511	4,412,551.5	3,870,602.5	389.24	20.00	4.00	2	2		
									point1512	1512	4,412,532.0	3,870,600.5	389.07	20.00	4.00	2	2		
									point1513	1513	4,412,512.0	3,870,598.2	389.18	20.00	4.00	2	2		
									point1514	1514	4,412,492.0	3,870,596.2	389.13	20.00	4.00	2	2		
									point1515	1515	4,412,472.0	3,870,594.0	389.08	20.00	4.00	2	2		

									point1516	1516	4,412,452.5	3,870,592.0	389.02	20.00	4.00	2	2		
									point1517	1517	4,412,432.5	3,870,589.2	388.97	20.00	4.00	2	2		
									point1518	1518	4,412,412.5	3,870,586.5	388.87	20.00	4.00	2	2		
									point1519	1519	4,412,393.0	3,870,584.0	388.76	20.00	4.00	2	2		
									point1520	1520	4,412,373.0	3,870,581.2	388.87	20.00	4.00	2	2		
									point1521	1521	4,412,353.0	3,870,578.5	389.09	20.00	4.00	2	2		
									point1522	1522	4,412,333.5	3,870,575.5	388.89	20.00	4.00	2	2		
									point1523	1523	4,412,313.5	3,870,572.5	389.32	20.00	4.00	2	2		
									point1524	1524	4,412,294.0	3,870,569.5	389.35	20.00	4.00	2	2		
									point1525	1525	4,412,274.0	3,870,566.5	389.12	20.00	4.00	2	2		
									point1526	1526	4,412,254.5	3,870,562.8	389.16	20.00	4.00	2	2		
									point1527	1527	4,412,235.0	3,870,559.0	389.36	20.00	4.00	2	2		
									point1528	1528	4,412,215.0	3,870,555.5	389.34	20.00	4.00	2	2		
									point1529	1529	4,412,195.5	3,870,551.8	389.47	20.00	4.00	2	2		
									point1530	1530	4,412,176.0	3,870,548.0	389.45	20.00	4.00	2	2		
									point1531	1531	4,412,156.0	3,870,544.0	389.38	20.00	4.00	2	2		
									point1532	1532	4,412,136.5	3,870,540.0	389.63	20.00	4.00	2	2		
									point1533	1533	4,412,117.0	3,870,536.0	389.47	20.00	4.00	2	2		
									point1534	1534	4,412,097.5	3,870,532.0	389.43	20.00	4.00	2	2		
									point1535	1535	4,412,078.0	3,870,528.0	389.58	20.00	4.00	2	2		
									point1536	1536	4,412,058.5	3,870,523.5	389.22	20.00	4.00	2	2		
									point1537	1537	4,412,039.0	3,870,519.0	389.49	20.00	4.00	2	2		
									point1538	1538	4,412,019.5	3,870,514.2	389.56	20.00	4.00	2	2		
									point1539	1539	4,412,000.0	3,870,509.8	389.34	20.00	4.00	2	2		
									point1540	1540	4,411,980.5	3,870,505.2	389.44	20.00	4.00	2	2		
									point1541	1541	4,411,961.0	3,870,500.5	389.38	20.00	4.00	2	2		
									point1542	1542	4,411,941.5	3,870,495.5	389.24	20.00	4.00	2	2		
									point1543	1543	4,411,922.5	3,870,490.5	389.13	20.00	4.00	2	2		
									point1544	1544	4,411,903.0	3,870,485.5	389.27	20.00	4.00	2	2		
									point1545	1545	4,411,883.5	3,870,480.5	388.95	20.00	4.00	2	2		
									point1546	1546	4,411,864.5	3,870,475.2	388.72	20.00	4.00	2	2		
									point1547	1547	4,411,845.0	3,870,469.8	388.84	20.00	4.00	2	2		
									point1548	1548	4,411,826.0	3,870,464.2	388.99	20.00	4.00	2	2		
									point1549	1549	4,411,806.5	3,870,458.8	388.47	20.00	4.00	2	2		
									point1550	1550	4,411,787.5	3,870,453.5	388.93	20.00	4.00	2	2		
									point1551	1551	4,411,768.0	3,870,448.0	388.80	20.00	4.00	2	2		
									point1552	1552	4,411,749.0	3,870,442.2	389.00	20.00	4.00	2	2		
									point1553	1553	4,411,730.0	3,870,436.0	389.05	20.00	4.00	2	2		
									point1554	1554	4,411,711.0	3,870,430.0	389.07	20.00	4.00	2	2		
									point1555	1555	4,411,692.0	3,870,423.8	389.04	20.00	4.00	2	2		
									point1556	1556	4,411,673.0	3,870,417.5	389.14	20.00	4.00	2	2		
									point1557	1557	4,411,654.0	3,870,411.0	389.08	20.00	4.00	2	2		
									point1558	1558	4,411,635.0	3,870,404.0	388.88	20.00	4.00	2	2		
									point1559	1559	4,411,616.5	3,870,397.0	388.80	20.00	4.00	2	2		
									point1560	1560	4,411,598.0	3,870,390.0	389.13	20.00	4.00	2	2		
									point1561	1561	4,411,579.0	3,870,383.0	388.75	20.00	4.00	2	2		
									point1562	1562	4,411,560.5	3,870,376.0	388.47	20.00	4.00	2	2		
									point1563	1563	4,411,541.5	3,870,369.0	388.84	20.00	4.00	2	2		
									point1564	1564	4,411,523.0	3,870,362.0	388.75	20.00	4.00	2	2		

									point1565	1565	4,411,504.0	3,870,355.0	388.60	20.00	4.00	2	2		
									point1566	1566	4,411,485.5	3,870,348.0	388.25	20.00	4.00	2	2		
									point1567	1567	4,411,466.5	3,870,341.0	388.70	20.00	4.00	2	2		
									point1568	1568	4,411,448.0	3,870,333.8	388.38	20.00	4.00	2	2		
									point1569	1569	4,411,429.5	3,870,326.8	388.20	20.00	4.00	2	2		
									point1570	1570	4,411,410.5	3,870,319.5	387.92	20.00	4.00	2	2		
									point1571	1571	4,411,392.0	3,870,312.5	387.94	20.00	4.00	2	2		
									point1572	1572	4,411,373.0	3,870,305.5	388.15	20.00	4.00	2	2		
									point1573	1573	4,411,354.5	3,870,298.2	388.03	20.00	4.00	2	2		
									point1574	1574	4,411,336.0	3,870,291.0	387.85	20.00	4.00	2	2		
									point1575	1575	4,411,317.0	3,870,284.0	387.64	20.00	4.00	2	2		
									point1576	1576	4,411,298.5	3,870,276.8	387.61	20.00	4.00	2	2		
									point1577	1577	4,411,280.0	3,870,269.5	387.46	20.00	4.00	2	2		
									point1476	1476	4,411,261.0	3,870,262.5	387.53	20.00	4.00	2	2		
									point1578	1578	4,411,242.0	3,870,256.5	386.81	20.00	4.00	2	2		
									point1579	1579	4,411,223.5	3,870,249.5	386.81	20.00	4.00	2	2		
									point1580	1580	4,411,204.5	3,870,242.5	386.79	20.00	4.00	2	2		
									point1581	1581	4,411,186.0	3,870,235.2	386.81	20.00	4.00	2	2		
									point1582	1582	4,411,167.5	3,870,228.0	386.77	20.00	4.00	2	2		
									point1583	1583	4,411,148.5	3,870,221.0	386.76	20.00	4.00	2	2		
									point1584	1584	4,411,130.0	3,870,213.8	386.76	20.00	4.00	2	2		
									point1585	1585	4,411,111.5	3,870,206.5	386.97	20.00	4.00	2	2		
									point1586	1586	4,411,092.5	3,870,199.5	387.12	20.00	4.00	2	2		
									point1587	1587	4,411,074.0	3,870,192.2	387.26	20.00	4.00	2	2		
									point1588	1588	4,411,055.5	3,870,185.0	387.47	20.00	4.00	2	2		
									point1589	1589	4,411,036.5	3,870,178.0	387.61	20.00	4.00	2	2		
									point1590	1590	4,411,018.0	3,870,170.8	387.72	20.00	4.00	2	2		
									point1591	1591	4,410,999.0	3,870,163.8	387.85	20.00	4.00	2	2		
									point1592	1592	4,410,980.5	3,870,156.5	388.00	20.00	4.00	2	2		
									point1593	1593	4,410,962.0	3,870,149.5	388.16	20.00	4.00	2	2		
									point1594	1594	4,410,943.0	3,870,142.2	388.30	20.00	4.00	2	2		
									point1595	1595	4,410,924.5	3,870,135.0	388.45	20.00	4.00	2	2		
									point1596	1596	4,410,906.0	3,870,128.0	388.59	20.00	4.00	2	2		
									point1597	1597	4,410,887.0	3,870,120.5	388.74	20.00	4.00	2	2		
									point1598	1598	4,410,868.5	3,870,113.2	388.92	20.00	4.00	2	2		
									point1599	1599	4,410,850.0	3,870,105.8	389.07	20.00	4.00	2	2		
									point1600	1600	4,410,831.5	3,870,098.0	389.21	20.00	4.00	2	2		
									point1601	1601	4,410,813.5	3,870,090.2	389.24	20.00	4.00	2	2		
									point1602	1602	4,410,795.0	3,870,082.2	389.23	20.00	4.00	2	2		
									point1603	1603	4,410,776.5	3,870,074.0	389.24	20.00	4.00	2	2		
									point1604	1604	4,410,758.5	3,870,065.8	389.24	20.00	4.00	2	2		
									point1605	1605	4,410,740.5	3,870,057.2	389.17	20.00	4.00	2	2		
									point1606	1606	4,410,722.0	3,870,049.5	389.11	20.00	4.00	2	2		
									point1607	1607	4,410,703.5	3,870,042.0	388.87	20.00	4.00	2	2		
									point1608	1608	4,410,685.0	3,870,034.5	388.58	20.00	4.00	2	2		
									point1609	1609	4,410,666.0	3,870,027.2	388.26	20.00	4.00	2	2		
									point1610	1610	4,410,647.5	3,870,020.0	387.91	20.00	4.00	2	2		
									point1611	1611	4,410,629.0	3,870,012.8	387.53	20.00	4.00	2	2		
									point1612	1612	4,410,610.5	3,870,005.5	387.13	20.00	4.00	2	2		

									point1613	1613	4,410,591.5	3,869,998.0	386.70	20.00	4.00	2	2		
									point1614	1614	4,410,573.0	3,869,990.8	386.58	20.00	4.00	2	2		
									point1615	1615	4,410,554.5	3,869,983.5	386.86	20.00	4.00	2	2		
									point1616	1616	4,410,536.0	3,869,976.2	387.45	20.00	4.00	2	2		
									point1617	1617	4,410,517.0	3,869,969.0	386.34	20.00	4.00	2	2		
									point1618	1618	4,410,498.5	3,869,961.8	388.28	20.00	4.00	2	2		
									point1619	1619	4,410,480.0	3,869,954.5	388.18	20.00	4.00	2	2		
									point1620	1620	4,410,461.0	3,869,947.5	388.10	20.00	4.00	2	2		
									point1621	1621	4,410,442.5	3,869,940.2	388.02	20.00	4.00	2	2		
									point1622	1622	4,410,424.0	3,869,933.0	387.93	20.00	4.00	2	2		
									point1623	1623	4,410,405.5	3,869,925.8	387.83	20.00	4.00	2	2		
									point1624	1624	4,410,386.5	3,869,919.2	387.64	20.00	4.00	2	2		
									point1625	1625	4,410,367.5	3,869,913.5	387.27	20.00	4.00	2	2		
									point1626	1626	4,410,348.5	3,869,906.8	387.15	20.00	4.00	2	2		
									point1627	1627	4,410,330.0	3,869,899.5	387.09	20.00	4.00	2	2		
									point1628	1628	4,410,311.0	3,869,892.5	387.03	20.00	4.00	2	2		
									point1629	1629	4,410,292.5	3,869,885.2	386.97	20.00	4.00	2	2		
									point1630	1630	4,410,274.0	3,869,878.0	386.91	20.00	4.00	2	2		
									point1631	1631	4,410,255.0	3,869,871.0	386.85	20.00	4.00	2	2		
									point1632	1632	4,410,236.5	3,869,863.8	386.79	20.00	4.00	2	2		
									point1633	1633	4,410,217.5	3,869,856.5	386.72	20.00	4.00	2	2		
									point1634	1634	4,410,199.0	3,869,849.5	386.67	20.00	4.00	2	2		
									point1635	1635	4,410,180.5	3,869,842.2	386.61	20.00	4.00	2	2		
									point1636	1636	4,410,161.5	3,869,835.0	386.55	20.00	4.00	2	2		
									point1637	1637	4,410,143.0	3,869,828.0	386.49	20.00	4.00	2	2		
									point1638	1638	4,410,124.5	3,869,820.8	386.43	20.00	4.00	2	2		
									point1639	1639	4,410,105.5	3,869,813.5	386.37	20.00	4.00	2	2		
									point1640	1640	4,410,087.0	3,869,806.5	386.31	20.00	4.00	2	2		
									point1641	1641	4,410,068.5	3,869,799.2	386.25	20.00	4.00	2	2		
									point1642	1642	4,410,049.5	3,869,792.2	386.19	20.00	4.00	2	2		
									point1643	1643	4,410,031.0	3,869,785.0	386.12	20.00	4.00	2	2		
									point1644	1644	4,410,012.5	3,869,778.0	386.07	20.00	4.00	2	2		
									point1645	1645	4,409,993.5	3,869,770.8	386.01	20.00	4.00	2	2		
									point1646	1646	4,409,975.0	3,869,763.5	385.95	20.00	4.00	2	2		
									point1647	1647	4,409,956.5	3,869,756.5	385.89	20.00	4.00	2	2		
									point1648	1648	4,409,937.5	3,869,749.2	385.82	20.00	4.00	2	2		
									point1649	1649	4,409,919.0	3,869,742.0	385.77	20.00	4.00	2	2		
									point1650	1650	4,409,900.5	3,869,735.0	385.71	20.00	4.00	2	2		
									point1651	1651	4,409,881.5	3,869,727.8	385.65	20.00	4.00	2	2		
									point1652	1652	4,409,863.0	3,869,720.5	385.58	20.00	4.00	2	2		
									point1653	1653	4,409,844.5	3,869,713.5	385.53	20.00	4.00	2	2		
									point1654	1654	4,409,825.5	3,869,706.2	385.47	20.00	4.00	2	2		
									point1655	1655	4,409,807.0	3,869,699.0	385.41	20.00	4.00	2	2		
									point1656	1656	4,409,788.5	3,869,692.0	385.35	20.00	4.00	2	2		
									point1657	1657	4,409,769.5	3,869,684.8	385.29	20.00	4.00	2	2		
									point1658	1658	4,409,751.0	3,869,677.5	385.23	20.00	4.00	2	2		
									point1659	1659	4,409,732.0	3,869,670.5	385.17	20.00	4.00	2	2		
									point1660	1660	4,409,713.5	3,869,663.2	385.11	20.00	4.00	2	2		
									point1661	1661	4,409,695.0	3,869,656.2	385.05	20.00	4.00	2	2		

									point1662	1662	4,409,676.0	3,869,649.0	384.99	20.00	4.00	2	2		
									point1663	1663	4,409,657.5	3,869,642.0	384.93	20.00	4.00	2	2		
									point1664	1664	4,409,639.0	3,869,634.8	384.87	20.00	4.00	2	2		
									point1665	1665	4,409,620.0	3,869,627.5	384.81	20.00	4.00	2	2		
									point1666	1666	4,409,601.5	3,869,620.5	384.75	20.00	4.00	2	2		
									point1667	1667	4,409,583.0	3,869,613.2	384.70	20.00	4.00	2	2		
									point1668	1668	4,409,564.0	3,869,606.0	384.65	20.00	4.00	2	2		
									point1669	1669	4,409,545.5	3,869,599.0	384.62	20.00	4.00	2	2		
									point1670	1670	4,409,527.0	3,869,591.8	384.59	20.00	4.00	2	2		
									point1671	1671	4,409,508.0	3,869,584.5	384.57	20.00	4.00	2	2		
									point1672	1672	4,409,489.5	3,869,577.5	384.57	20.00	4.00	2	2		
									point1673	1673	4,409,471.0	3,869,570.2	384.58	20.00	4.00	2	2		
									point1674	1674	4,409,452.0	3,869,563.0	384.60	20.00	4.00	2	2		
									point1675	1675	4,409,433.5	3,869,556.0	384.63	20.00	4.00	2	2		
									point1477	1477	4,409,415.0	3,869,548.8	384.66	20.00	4.00	2	2		
									point1676	1676	4,409,396.0	3,869,541.5	384.71	20.00	4.00	2	2		
									point1677	1677	4,409,377.5	3,869,534.5	384.77	20.00	4.00	2	2		
									point1678	1678	4,409,359.0	3,869,527.2	384.84	20.00	4.00	2	2		
									point1679	1679	4,409,340.0	3,869,520.2	384.92	20.00	4.00	2	2		
									point1680	1680	4,409,321.5	3,869,513.0	385.01	20.00	4.00	2	2		
									point1681	1681	4,409,303.0	3,869,505.8	385.11	20.00	4.00	2	2		
									point1682	1682	4,409,284.0	3,869,498.8	385.22	20.00	4.00	2	2		
									point1683	1683	4,409,265.5	3,869,491.5	385.34	20.00	4.00	2	2		
									point1684	1684	4,409,246.5	3,869,484.5	385.47	20.00	4.00	2	2		
									point1685	1685	4,409,228.0	3,869,477.5	385.57	20.00	4.00	2	2		
									point1686	1686	4,409,209.0	3,869,470.8	385.71	20.00	4.00	2	2		
									point1687	1687	4,409,190.5	3,869,464.0	385.88	20.00	4.00	2	2		
									point1688	1688	4,409,171.5	3,869,457.5	386.05	20.00	4.00	2	2		
									point1689	1689	4,409,152.5	3,869,451.0	386.23	20.00	4.00	2	2		
									point1690	1690	4,409,133.5	3,869,444.5	386.42	20.00	4.00	2	2		
									point1691	1691	4,409,114.5	3,869,438.0	386.63	20.00	4.00	2	2		
									point1692	1692	4,409,095.5	3,869,432.0	386.83	20.00	4.00	2	2		
									point1693	1693	4,409,076.5	3,869,425.8	387.03	20.00	4.00	2	2		
									point1694	1694	4,409,057.5	3,869,419.8	387.23	20.00	4.00	2	2		
									point1695	1695	4,409,038.5	3,869,413.8	387.43	20.00	4.00	2	2		
									point1696	1696	4,409,019.5	3,869,408.0	387.63	20.00	4.00	2	2		
									point1697	1697	4,409,000.0	3,869,402.2	387.83	20.00	4.00	2	2		
									point1698	1698	4,408,981.0	3,869,396.8	388.03	20.00	4.00	2	2		
									point1699	1699	4,408,961.5	3,869,391.0	388.23	20.00	4.00	2	2		
									point1700	1700	4,408,942.5	3,869,385.8	388.43	20.00	4.00	2	2		
									point1701	1701	4,408,923.0	3,869,380.5	388.63	20.00	4.00	2	2		
									point1702	1702	4,408,904.0	3,869,375.2	388.83	20.00	4.00	2	2		
									point1703	1703	4,408,884.5	3,869,370.0	389.03	20.00	4.00	2	2		
									point1704	1704	4,408,865.0	3,869,365.0	389.23	20.00	4.00	2	2		
									point1705	1705	4,408,846.0	3,869,360.2	389.43	20.00	4.00	2	2		
									point1706	1706	4,408,826.5	3,869,355.5	389.63	20.00	4.00	2	2		
									point1707	1707	4,408,807.0	3,869,350.8	389.83	20.00	4.00	2	2		
									point1708	1708	4,408,787.5	3,869,346.2	390.03	20.00	4.00	2	2		
									point1709	1709	4,408,768.0	3,869,341.8	390.23	20.00	4.00	2	2		

									point1710	1710	4,408,748.5	3,869,337.2	390.43	20.00	4.00	2	2		
									point1711	1711	4,408,729.0	3,869,333.0	390.64	20.00	4.00	2	2		
									point1712	1712	4,408,709.5	3,869,329.0	390.84	20.00	4.00	2	2		
									point1713	1713	4,408,690.0	3,869,324.8	391.29	20.00	4.00	2	2		
									point1714	1714	4,408,670.0	3,869,322.5	391.63	20.00	4.00	2	2		
									point1715	1715	4,408,650.0	3,869,320.5	391.40	20.00	4.00	2	2		
									point1716	1716	4,408,630.0	3,869,318.8	391.07	20.00	4.00	2	2		
									point1717	1717	4,408,610.0	3,869,317.0	390.67	20.00	4.00	2	2		
									point1718	1718	4,408,590.5	3,869,315.0	390.39	20.00	4.00	2	2		
									point1719	1719	4,408,570.5	3,869,312.0	390.50	20.00	4.00	2	2		
									point1720	1720	4,408,551.0	3,869,308.5	390.79	20.00	4.00	2	2		
									point1721	1721	4,408,531.0	3,869,305.5	391.16	20.00	4.00	2	2		
									point1722	1722	4,408,511.5	3,869,302.5	391.54	20.00	4.00	2	2		
									point1723	1723	4,408,491.5	3,869,299.5	392.53	20.00	4.00	2	2		
									point1724	1724	4,408,471.5	3,869,296.5	392.76	20.00	4.00	2	2		
									point1725	1725	4,408,452.0	3,869,293.5	393.54	20.00	4.00	2	2		
									point1726	1726	4,408,432.0	3,869,290.5	393.72	20.00	4.00	2	2		
									point1727	1727	4,408,412.5	3,869,288.0	393.97	20.00	4.00	2	2		
									point1728	1728	4,408,392.5	3,869,285.8	394.34	20.00	4.00	2	2		
									point1729	1729	4,408,372.5	3,869,283.5	394.61	20.00	4.00	2	2		
									point1730	1730	4,408,352.5	3,869,281.5	394.95	20.00	4.00	2	2		
									point1731	1731	4,408,333.0	3,869,279.5	394.96	20.00	4.00	2	2		
									point1732	1732	4,408,313.0	3,869,277.5	394.92	20.00	4.00	2	2		
									point1733	1733	4,408,293.0	3,869,275.8	395.37	20.00	4.00	2	2		
									point1734	1734	4,408,273.0	3,869,274.0	395.70	20.00	4.00	2	2		
									point1735	1735	4,408,253.0	3,869,272.5	395.73	20.00	4.00	2	2		
									point1736	1736	4,408,233.0	3,869,270.8	395.92	20.00	4.00	2	2		
									point1737	1737	4,408,213.5	3,869,269.0	396.51	20.00	4.00	2	2		
									point1738	1738	4,408,193.5	3,869,267.5	396.95	20.00	4.00	2	2		
									point1739	1739	4,408,173.5	3,869,266.2	397.17	20.00	4.00	2	2		
									point1740	1740	4,408,153.5	3,869,265.2	397.11	20.00	4.00	2	2		
									point1741	1741	4,408,133.5	3,869,264.5	397.60	20.00	4.00	2	2		
									point1742	1742	4,408,113.5	3,869,263.5	397.91	20.00	4.00	2	2		
									point1743	1743	4,408,093.5	3,869,262.5	398.06	20.00	4.00	2	2		
									point1744	1744	4,408,073.5	3,869,261.5	398.24	20.00	4.00	2	2		
									point1745	1745	4,408,053.5	3,869,261.0	398.00	20.00	4.00	2	2		
									point1746	1746	4,408,033.5	3,869,260.8	397.75	20.00	4.00	2	2		
									point1747	1747	4,408,013.5	3,869,260.8	397.50	20.00	4.00	2	2		
									point1748	1748	4,407,993.5	3,869,260.8	397.00	20.00	4.00	2	2		
									point1749	1749	4,407,973.5	3,869,260.5	396.00	20.00	4.00	2	2		
									point1750	1750	4,407,953.5	3,869,260.5	396.12	20.00	4.00	2	2		
									point1837	1837	4,407,933.5	3,869,260.5	396.25	20.00	4.00	2	2		
									point1751	1751	4,407,913.5	3,869,260.5	396.40	20.00	4.00	2	2		
									point1752	1752	4,407,893.5	3,869,260.5	397.39	20.00	4.00	2	2		
									point1753	1753	4,407,873.5	3,869,261.8	397.19	20.00	4.00	2	2		
									point1754	1754	4,407,853.5	3,869,264.0	396.94	20.00	4.00	2	2		
									point1755	1755	4,407,834.0	3,869,266.2	397.68	20.00	4.00	2	2		
									point1756	1756	4,407,814.0	3,869,268.2	397.59	20.00	4.00	2	2		
									point1757	1757	4,407,794.0	3,869,270.2	397.55	20.00	4.00	2	2		

									point1758	1758	4,407,774.0	3,869,272.2	397.12	20.00	4.00	2	2		
									point1759	1759	4,407,754.0	3,869,274.0	397.10	20.00	4.00	2	2		
									point1760	1760	4,407,734.5	3,869,275.8	396.35	20.00	4.00	2	2		
									point1761	1761	4,407,714.5	3,869,277.8	396.01	20.00	4.00	2	2		
									point1762	1762	4,407,694.5	3,869,279.5	395.11	20.00	4.00	2	2		
									point1763	1763	4,407,674.5	3,869,281.5	395.25	20.00	4.00	2	2		
									point1764	1764	4,407,654.5	3,869,283.5	394.70	20.00	4.00	2	2		
									point1765	1765	4,407,635.0	3,869,285.5	394.41	20.00	4.00	2	2		
									point1766	1766	4,407,615.0	3,869,287.5	394.06	20.00	4.00	2	2		
									point1767	1767	4,407,595.0	3,869,289.5	394.04	20.00	4.00	2	2		
									point1768	1768	4,407,575.0	3,869,292.0	393.60	20.00	4.00	2	2		
									point1769	1769	4,407,555.5	3,869,294.5	393.45	20.00	4.00	2	2		
									point1770	1770	4,407,535.5	3,869,297.0	393.05	20.00	4.00	2	2		
									point1771	1771	4,407,515.5	3,869,299.5	392.44	20.00	4.00	2	2		
									point1772	1772	4,407,496.0	3,869,302.0	392.49	20.00	4.00	2	2		
									point1773	1773	4,407,476.0	3,869,304.5	392.35	20.00	4.00	2	2		
									point1478	1478	4,407,456.0	3,869,307.2	391.98	20.00	4.00	2	2		
									point1774	1774	4,407,436.5	3,869,310.5	391.99	20.00	4.00	2	2		
									point1775	1775	4,407,416.5	3,869,313.5	390.94	20.00	4.00	2	2		
									point1776	1776	4,407,397.0	3,869,317.0	390.06	20.00	4.00	2	2		
									point1777	1777	4,407,377.0	3,869,320.2	390.48	20.00	4.00	2	2		
									point1778	1778	4,407,357.5	3,869,323.8	389.77	20.00	4.00	2	2		
									point1779	1779	4,407,338.0	3,869,327.5	389.28	20.00	4.00	2	2		
									point1780	1780	4,407,318.0	3,869,331.2	389.07	20.00	4.00	2	2		
									point1781	1781	4,407,298.5	3,869,335.0	388.85	20.00	4.00	2	2		
									point1782	1782	4,407,279.0	3,869,339.0	388.26	20.00	4.00	2	2		
									point1783	1783	4,407,259.5	3,869,342.8	388.08	20.00	4.00	2	2		
									point1784	1784	4,407,240.0	3,869,347.0	386.74	20.00	4.00	2	2		
									point1785	1785	4,407,220.5	3,869,351.5	385.61	20.00	4.00	2	2		
									point1786	1786	4,407,201.0	3,869,356.0	385.66	20.00	4.00	2	2		
									point1787	1787	4,407,181.5	3,869,360.8	384.99	20.00	4.00	2	2		
									point1788	1788	4,407,162.0	3,869,365.8	384.58	20.00	4.00	2	2		
									point1789	1789	4,407,143.0	3,869,371.0	384.72	20.00	4.00	2	2		
									point1790	1790	4,407,123.5	3,869,376.0	384.39	20.00	4.00	2	2		
									point1791	1791	4,407,104.0	3,869,381.2	384.36	20.00	4.00	2	2		
									point1792	1792	4,407,085.0	3,869,386.5	384.41	20.00	4.00	2	2		
									point1793	1793	4,407,065.5	3,869,391.8	384.39	20.00	4.00	2	2		
									point1794	1794	4,407,046.0	3,869,397.0	383.98	20.00	4.00	2	2		
									point1795	1795	4,407,027.0	3,869,402.5	384.53	20.00	4.00	2	2		
									point1796	1796	4,407,007.5	3,869,407.8	384.37	20.00	4.00	2	2		
									point1797	1797	4,406,988.5	3,869,413.2	384.52	20.00	4.00	2	2		
									point1798	1798	4,406,969.5	3,869,419.5	383.82	20.00	4.00	2	2		
									point1799	1799	4,406,950.5	3,869,425.5	384.05	20.00	4.00	2	2		
									point1800	1800	4,406,931.5	3,869,431.8	383.57	20.00	4.00	2	2		
									point1801	1801	4,406,912.5	3,869,438.0	383.95	20.00	4.00	2	2		
									point1802	1802	4,406,893.5	3,869,444.0	383.86	20.00	4.00	2	2		
									point1803	1803	4,406,874.5	3,869,450.5	383.51	20.00	4.00	2	2		
									point1804	1804	4,406,855.5	3,869,456.8	383.34	20.00	4.00	2	2		
									point1805	1805	4,406,836.5	3,869,463.0	383.45	20.00	4.00	2	2		

									point1806	1806	4,406,817.5	3,869,469.5	383.27	20.00	4.00	2	2		
									point1807	1807	4,406,798.5	3,869,475.8	383.83	20.00	4.00	2	2		
									point1808	1808	4,406,779.5	3,869,482.5	383.48	20.00	4.00	2	2		
									point1809	1809	4,406,761.0	3,869,489.8	383.23	20.00	4.00	2	2		
									point1810	1810	4,406,742.5	3,869,497.0	383.02	20.00	4.00	2	2		
									point1811	1811	4,406,724.0	3,869,504.2	383.26	20.00	4.00	2	2		
									point1812	1812	4,406,705.0	3,869,511.5	383.00	20.00	4.00	2	2		
									point1813	1813	4,406,686.5	3,869,519.0	383.04	20.00	4.00	2	2		
									point1814	1814	4,406,668.0	3,869,526.5	382.97	20.00	4.00	2	2		
									point1815	1815	4,406,649.5	3,869,534.2	383.00	20.00	4.00	2	2		
									point1816	1816	4,406,631.0	3,869,542.0	382.50	20.00	4.00	2	2		
									point1817	1817	4,406,612.5	3,869,549.8	382.84	20.00	4.00	2	2		
									point1818	1818	4,406,594.5	3,869,557.5	382.46	20.00	4.00	2	2		
									point1819	1819	4,406,576.0	3,869,565.2	382.61	20.00	4.00	2	2		
									point1820	1820	4,406,558.0	3,869,573.8	382.45	20.00	4.00	2	2		
									point1821	1821	4,406,539.5	3,869,582.2	382.68	20.00	4.00	2	2		
									point1822	1822	4,406,521.5	3,869,590.5	382.27	20.00	4.00	2	2		
									point1823	1823	4,406,503.5	3,869,599.0	382.30	20.00	4.00	2	2		
									point1824	1824	4,406,485.5	3,869,608.0	382.16	20.00	4.00	2	2		
									point1825	1825	4,406,467.5	3,869,616.8	382.04	20.00	4.00	2	2		
									point1826	1826	4,406,449.5	3,869,625.8	381.84	20.00	4.00	2	2		
									point1827	1827	4,406,432.0	3,869,634.8	381.54	20.00	4.00	2	2		
									point1828	1828	4,406,414.5	3,869,644.5	381.35	20.00	4.00	2	2		
									point1829	1829	4,406,397.0	3,869,654.5	380.83	20.00	4.00	2	2		
									point1830	1830	4,406,379.5	3,869,664.5	380.89	20.00	4.00	2	2		
									point1831	1831	4,406,362.5	3,869,674.5	380.83	20.00	4.00	2	2		
									point1832	1832	4,406,345.5	3,869,685.0	380.39	20.00	4.00	3	2		
									point1833	1833	4,406,328.5	3,869,696.0	380.29	20.00	4.00	2	2		
									point1834	1834	4,406,312.0	3,869,707.2	380.15	20.00	4.00	2	2		
									point1835	1835	4,406,295.5	3,869,718.2	380.39	20.00	4.00	2	2		
									point1836	1836	4,406,279.0	3,869,729.8	381.23	20.00	4.00	2	2		
									point1479	1479	4,406,263.5	3,869,742.5	381.08	20.00					
Barrier27	W	0.00	99.99	30.00				0.00	3	2063	4,410,352.0	3,867,702.5	388.10	20.00	4.00	1	3		
									point2164	2164	4,410,365.5	3,867,717.0	388.15	20.00	4.00	1	3		
									point2165	2165	4,410,379.0	3,867,732.2	389.93	20.00	4.00	1	3		
									point2166	2166	4,410,391.5	3,867,747.8	390.25	20.00	4.00	1	3		
									point2167	2167	4,410,403.0	3,867,763.8	390.61	20.00	4.00	1	3		
									point2168	2168	4,410,414.5	3,867,780.5	390.09	20.00	4.00	1	3		
									point2169	2169	4,410,425.0	3,867,797.2	390.00	20.00	4.00	1	3		
									point2170	2170	4,410,435.0	3,867,814.8	389.43	20.00	4.00	1	3		
									point2171	2171	4,410,444.0	3,867,832.5	390.89	20.00	4.00	1	3		
									point2172	2172	4,410,452.5	3,867,850.8	390.50	20.00	4.00	1	3		
									point2173	2173	4,410,460.0	3,867,869.0	390.08	20.00	4.00	1	3		
									point2174	2174	4,410,467.0	3,867,888.0	390.76	20.00	4.00	1	3		
									point2175	2175	4,410,473.0	3,867,907.0	390.90	20.00	4.00	1	3		
									point2176	2176	4,410,478.5	3,867,926.2	391.06	20.00	4.00	1	3		
									point2177	2177	4,410,483.0	3,867,945.8	391.10	20.00	4.00	1	3		
									point2178	2178	4,410,487.0	3,867,965.2	391.18	20.00	4.00	1	3		
									point2179	2179	4,410,490.0	3,867,985.0	392.06	20.00	4.00	1	3		

									point2180	2180	4,410,492.0	3,868,005.0	390.97	20.00	4.00	1	3		
									point2181	2181	4,410,493.5	3,868,025.0	391.91	20.00	4.00	1	3		
									point2182	2182	4,410,494.0	3,868,045.0	390.70	20.00	4.00	1	3		
									point2183	2183	4,410,493.5	3,868,065.0	390.57	20.00	4.00	1	3		
									point2184	2184	4,410,492.5	3,868,085.0	390.14	20.00	4.00	1	3		
									point2185	2185	4,410,490.5	3,868,104.8	391.67	20.00	4.00	1	3		
									point2186	2186	4,410,489.5	3,868,114.8	391.67	20.00	4.00	1	3		
									point2064	2064	4,410,487.0	3,868,134.5	392.00	20.00	4.00	1	3		
									point2066	2066	4,410,483.5	3,868,154.2	393.14	20.00	4.00	1	3		
									point2067	2067	4,410,479.0	3,868,173.8	393.00	20.00	4.00	1	3		
									point2068	2068	4,410,474.0	3,868,193.0	391.90	20.00	4.00	1	3		
									point2069	2069	4,410,468.0	3,868,212.2	390.93	20.00	4.00	1	3		
									point2070	2070	4,410,461.5	3,868,231.0	391.97	20.00	4.00	1	3		
									point2071	2071	4,410,454.5	3,868,249.8	391.07	20.00	4.00	1	3		
									point2072	2072	4,410,447.0	3,868,268.5	391.50	20.00	4.00	1	3		
									point2073	2073	4,410,440.0	3,868,287.2	391.03	20.00	4.00	1	3		
									point2074	2074	4,410,433.0	3,868,305.8	389.95	20.00	4.00	1	3		
									point2075	2075	4,410,426.0	3,868,324.5	390.61	20.00	4.00	1	3		
									point2076	2076	4,410,418.5	3,868,343.2	390.47	20.00	4.00	1	3		
									point2077	2077	4,410,411.5	3,868,362.0	390.02	20.00	4.00	1	3		
									point2078	2078	4,410,404.5	3,868,380.5	390.70	20.00	4.00	1	3		
									point2079	2079	4,410,397.0	3,868,399.2	390.20	20.00	4.00	1	3		
									point2080	2080	4,410,390.0	3,868,418.0	390.00	20.00	4.00	1	3		
									point2081	2081	4,410,383.0	3,868,436.5	389.83	20.00	4.00	1	3		
									point2082	2082	4,410,376.0	3,868,455.2	389.57	20.00	4.00	1	3		
									point2083	2083	4,410,368.5	3,868,474.0	390.76	20.00	4.00	1	3		
									point2084	2084	4,410,361.5	3,868,492.5	390.30	20.00	4.00	1	3		
									point2085	2085	4,410,354.5	3,868,511.2	391.96	20.00	4.00	1	3		
									point2086	2086	4,410,347.0	3,868,530.0	390.83	20.00	4.00	1	3		
									point2087	2087	4,410,340.0	3,868,548.8	391.00	20.00	4.00	1	3		
									point2088	2088	4,410,333.0	3,868,567.5	391.14	20.00	4.00	1	3		
									point2089	2089	4,410,326.0	3,868,586.0	392.15	20.00	4.00	1	3		
									point2090	2090	4,410,318.5	3,868,604.8	391.56	20.00	4.00	1	3		
									point2091	2091	4,410,311.5	3,868,623.5	392.65	20.00	4.00	1	3		
									point2092	2092	4,410,304.5	3,868,642.0	391.61	20.00	4.00	1	3		
									point2093	2093	4,410,297.5	3,868,660.8	392.96	20.00	4.00	1	3		
									point2094	2094	4,410,290.0	3,868,679.5	392.45	20.00	4.00	1	3		
									point2095	2095	4,410,283.0	3,868,698.0	393.00	20.00	4.00	1	3		
									point2096	2096	4,410,276.0	3,868,716.8	393.10	20.00	4.00	1	3		
									point2097	2097	4,410,268.5	3,868,735.5	393.34	20.00	4.00	1	3		
									point2098	2098	4,410,261.5	3,868,754.2	394.65	20.00	4.00	1	3		
									point2099	2099	4,410,254.5	3,868,772.8	394.58	20.00	4.00	1	3		
									point2100	2100	4,410,247.5	3,868,791.5	396.66	20.00	4.00	1	3		
									point2101	2101	4,410,240.0	3,868,810.2	396.46	20.00	4.00	1	3		
									point2102	2102	4,410,233.0	3,868,829.0	396.90	20.00	4.00	1	3		
									point2103	2103	4,410,226.0	3,868,847.5	397.50	20.00	4.00	1	3		
									point2104	2104	4,410,218.5	3,868,866.2	398.08	20.00	4.00	1	3		
									point2105	2105	4,410,211.5	3,868,885.0	399.81	20.00	4.00	1	3		
									point2106	2106	4,410,204.5	3,868,903.5	401.41	20.00	4.00	1	3		

									point2107	2107	4,410,197.5	3,868,922.2	402.39	20.00	4.00	1	3		
									point2108	2108	4,410,190.0	3,868,941.0	404.30	20.00	4.00	1	3		
									point2109	2109	4,410,182.5	3,868,959.5	405.48	20.00	4.00	1	3		
									point2110	2110	4,410,174.5	3,868,977.8	405.42	20.00	4.00	1	3		
									point2111	2111	4,410,166.0	3,868,995.8	406.00	20.00	4.00	1	3		
									point2112	2112	4,410,157.0	3,869,013.5	407.00	20.00	4.00	1	3		
									point2113	2113	4,410,147.5	3,869,031.2	408.05	20.00	4.00	1	3		
									point2114	2114	4,410,137.5	3,869,048.5	408.48	20.00	4.00	1	3		
									point2115	2115	4,410,127.0	3,869,065.8	408.32	20.00	4.00	1	3		
									point2116	2116	4,410,116.5	3,869,082.8	409.17	20.00	4.00	1	3		
									point2117	2117	4,410,105.5	3,869,099.2	409.96	20.00	4.00	1	3		
									point2118	2118	4,410,093.5	3,869,115.5	411.74	20.00	4.00	1	3		
									point2119	2119	4,410,082.0	3,869,131.5	411.54	20.00	4.00	1	3		
									point2120	2120	4,410,069.5	3,869,147.2	413.47	20.00	4.00	1	3		
									point2121	2121	4,410,056.5	3,869,162.8	414.05	20.00	4.00	1	3		
									point2122	2122	4,410,043.5	3,869,178.0	415.33	20.00	4.00	1	3		
									point2123	2123	4,410,030.0	3,869,192.5	414.99	20.00	4.00	1	3		
									point2124	2124	4,410,016.5	3,869,207.0	415.47	12.00	4.00	0	3	Y	
									point2125	2125	4,410,002.0	3,869,221.0	416.43	12.00	4.00	0	3	Y	
									point2126	2126	4,409,987.5	3,869,235.0	416.29	12.00	4.00	0	3	Y	
									point2127	2127	4,409,972.5	3,869,248.2	415.69	12.00	4.00	0	3	Y	
									point2128	2128	4,409,957.5	3,869,261.2	415.74	12.00	4.00	0	3	Y	
									point2129	2129	4,409,942.0	3,869,273.8	414.94	12.00	4.00	0	3	Y	
									point2130	2130	4,409,926.0	3,869,286.0	417.13	12.00	4.00	0	3	Y	
									point2131	2131	4,409,910.0	3,869,298.0	415.82	12.00	4.00	0	3	Y	
									point2132	2132	4,409,893.5	3,869,309.2	416.39	12.00	4.00	0	3	Y	
									point2133	2133	4,409,877.0	3,869,320.2	416.66	12.00	4.00	0	3	Y	
									point2134	2134	4,409,860.0	3,869,331.0	415.41	12.00	4.00	0	3	Y	
									point2135	2135	4,409,842.5	3,869,341.0	416.85	12.00	4.00	0	3	Y	
									point2136	2136	4,409,825.0	3,869,350.8	416.61	12.00	4.00	0	3	Y	
									point2137	2137	4,409,807.5	3,869,360.0	414.63	12.00	4.00	0	3	Y	
									point2138	2138	4,409,789.5	3,869,369.0	413.64	12.00	4.00	0	3	Y	
									point2139	2139	4,409,771.5	3,869,377.2	413.58	12.00	4.00	0	3	Y	
									point2140	2140	4,409,753.0	3,869,385.2	412.53	20.00	4.00	1	3		
									point2141	2141	4,409,734.5	3,869,392.8	411.98	20.00	4.00	1	3		
									point2142	2142	4,409,716.0	3,869,399.8	411.72	20.00	4.00	1	3		
									point2143	2143	4,409,697.0	3,869,406.2	411.48	20.00	4.00	1	3		
									point2144	2144	4,409,678.0	3,869,412.5	410.34	20.00	4.00	1	3		
									point2145	2145	4,409,658.5	3,869,418.0	409.20	20.00	4.00	1	3		
									point2146	2146	4,409,639.5	3,869,423.2	408.70	20.00	4.00	1	3		
									point2147	2147	4,409,620.0	3,869,427.8	408.24	20.00	4.00	1	3		
									point2148	2148	4,409,600.5	3,869,432.0	407.66	20.00	4.00	1	3		
									point2149	2149	4,409,580.5	3,869,435.8	406.89	20.00	4.00	1	3		
									point2150	2150	4,409,561.0	3,869,439.0	405.39	20.00	4.00	1	3		
									point2151	2151	4,409,541.0	3,869,441.5	404.58	20.00	4.00	1	3		
									point2152	2152	4,409,521.0	3,869,443.8	403.82	20.00	4.00	1	3		
									point2153	2153	4,409,501.5	3,869,445.5	403.23	20.00	4.00	1	3		
									point2154	2154	4,409,481.5	3,869,446.8	403.04	20.00	4.00	1	3		
									point2155	2155	4,409,461.5	3,869,447.5	402.24	20.00	4.00	1	3		

									point2156	2156	4,409,441.5	3,869,447.8	401.28	20.00	4.00	1	3			
									point2157	2157	4,409,421.5	3,869,447.5	400.71	20.00	4.00	1	3			
									point2158	2158	4,409,401.5	3,869,446.8	399.95	20.00	4.00	1	3			
									point2159	2159	4,409,381.5	3,869,445.5	398.99	20.00	4.00	1	3			
									point2160	2160	4,409,361.5	3,869,443.5	398.39	20.00	4.00	1	3			
									point2161	2161	4,409,341.5	3,869,441.5	397.51	20.00	4.00	1	3			
									point2162	2162	4,409,322.0	3,869,438.8	396.14	20.00	4.00	1	3			
									point2163	2163	4,409,302.0	3,869,435.5	395.71	20.00	4.00	1	3			
									point2065	2065	4,409,284.0	3,869,432.0	394.00	20.00						

TNM OUTPUT FOR CENTRAL 1 – EASTVIEW WEST (TOLL BOTH CROSSINGS)

HMB 5 March 2018
MG/MDG TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: 1294.11 I69 ORX C1-IN TollAll-E
BARRIER DESIGN: C1_IN_TollAll_West
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
IN-01-01-SWEA-01	44	1	56.2	67.9	66	11.7	15	Snd Lvl	68.7	-0.8	8	-8.8
IN-01-01-SWEA-02	45	1	57.1	67.8	66	10.7	15	Snd Lvl	68.3	-0.5	8	-8.5
IN-01-02-SWEA-01	94	1	59.7	69.5	66	9.8	15	Snd Lvl	68.2	1.3	8	-6.7
Receiver118	118	1	0.0	67.0	66	67.0	15	Snd Lvl	68.0	-1.0	8	-9.0
Receiver116	116	1	52.6	70.9	66	18.3	15	Both	68.9	2.0	8	-6.0
Receiver114	114	1	52.6	68.6	66	16.0	15	Both	69.0	-0.4	8	-8.4
IN-01-01-FREA-01	1	1	56.6	64.7	66	8.1	15	----	67.6	-2.9	8	-10.9
IN-01-01-SWEA-03	46	1	58.3	66.9	66	8.6	15	Snd Lvl	68.0	-1.1	8	-9.1
IN-01-02-SWEA-02	95	1	62.9	65.5	66	2.6	15	----	67.5	-2.0	8	-10.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	9	-2.9	-0.6	2.0
All Impacted	7	-1.1	-0.1	2.0
All that meet NR Goal	0	0.0	0.0	0.0

HMB								5 March 2018		
MG/MDG								TNM 2.5		
								Calculated with TNM 2.5		
RESULTS: BARRIER DESIGN										
PROJECT/CONTRACT:		I-69 ORX								
RUN:		1294.11 I69 ORX C1-IN TollAll-E								
BARRIER DESIGN:		C1_IN_TollAll_West								
ATMOSPHERICS:		68 deg F, 50% RH								
Selected Receivers										
Name	No.									
		Calc	Noise Reduction			Barrier Reviewed	Important Segments			Partial
		LAeq1h	Calc	Goal	Calc-Goal		Name	No.	Height	LAeq1h
		dBA	dB	dB	dB				ft	dBA
IN-01-01-SWEA-01	44	68.7	-0.8	8	-8.8	Barrier E	point973	973	20.0	66.3
						Barrier E	point972	972	20.0	64.8
						Barrier E	point998	998	20.0	31.3
						Barrier E	point1005	1005	20.0	29.6
						Barrier E	point993	993	20.0	29.6
						Barrier E	point990	990	20.0	29.4
						Barrier E	point992	992	20.0	29.4
						Barrier E	point991	991	20.0	29.4
						Barrier E	point1015	1015	20.0	29.3
						Barrier E	point1016	1016	20.0	29.3
IN-01-01-SWEA-02	45	68.3	-0.5	8	-8.5	Barrier E	point975	975	20.0	67.1
						Barrier E	point976	976	20.0	61.8
						Barrier E	point998	998	20.0	32.2
						Barrier E	point999	999	20.0	32.0
						Barrier E	point1005	1005	20.0	30.5
						Barrier E	point1008	1008	20.0	30.3
						Barrier E	point1016	1016	20.0	30.3
						Barrier E	point1015	1015	20.0	30.3
						Barrier E	point1007	1007	20.0	30.3
						Barrier E	point1014	1014	20.0	30.2
IN-01-02-SWEA-01	94	68.2	1.3	8	-6.7	Barrier E	point975	975	20.0	68.1

						Barrier E	point1003	1003	20.0	38.4
						Barrier E	point1002	1002	20.0	37.3
						Barrier E	point1004	1004	20.0	34.6
						Barrier E	point987	987	20.0	33.6
						Barrier E	point996	996	20.0	33.3
						Barrier E	point988	988	20.0	33.2
						Barrier E	point989	989	20.0	33.0
						Barrier E	point985	985	20.0	32.9
						Barrier E	point990	990	20.0	32.8
Receiver118	118	68.0	-1.0	8	-9.0	Barrier E	point970	970	20.0	68.0
						Barrier E	point998	998	20.0	30.2
						Barrier E	point989	989	20.0	28.7
						Barrier E	point992	992	20.0	28.7
						Barrier E	point990	990	20.0	28.6
						Barrier E	point993	993	20.0	28.5
						Barrier E	point988	988	20.0	28.4
						Barrier E	point1016	1016	20.0	28.4
						Barrier E	point1005	1005	20.0	28.3
						Barrier E	point1015	1015	20.0	28.3
Receiver116	116	68.9	2.0	8	-6.0	Barrier E	point1317	1317	20.0	67.6
						Barrier E	point1318	1318	20.0	62.9
						Barrier E	point1003	1003	20.0	31.6
						Barrier E	point1292	1292	20.0	30.0
						Barrier E	point976	976	20.0	29.8
						Barrier E	point975	975	20.0	29.8
						Barrier E	point974	974	20.0	29.8
						Barrier E	point1004	1004	20.0	29.4
						Barrier E	point973	973	20.0	29.4
						Barrier E	point1002	1002	20.0	29.4
Receiver114	114	69.0	-0.4	8	-8.4	Barrier E	point1324	1324	20.0	69.0
						Barrier E	point1004	1004	20.0	30.2
						Barrier E	point1003	1003	20.0	29.8
						Barrier E	point984	984	20.0	29.7
						Barrier E	point1293	1293	20.0	29.6
						Barrier E	point997	997	20.0	29.6
						Barrier E	point983	983	20.0	29.3

						Barrier E	point1294	1294	20.0	29.3
						Barrier E	point1322	1322	20.0	29.2
						Barrier E	point988	988	20.0	29.2
IN-01-01-FREA-01	1	67.6	-2.9	8	-10.9	Barrier E	point983	983	20.0	67.5
						Barrier E	point1000	1000	20.0	36.2
						Barrier E	point1001	1001	20.0	32.9
						Barrier E	point1024	1024	20.0	30.8
						Barrier E	point1020	1020	20.0	30.8
						Barrier E	point1011	1011	20.0	30.8
						Barrier E	point1019	1019	20.0	30.8
						Barrier E	point1023	1023	20.0	30.7
						Barrier E	point1021	1021	20.0	30.7
						Barrier E	point1022	1022	20.0	30.7
IN-01-01-SWEA-03	46	68.0	-1.1	8	-9.1	Barrier E	point980	980	20.0	67.1
						Barrier E	point979	979	20.0	60.5
						Barrier E	point999	999	20.0	35.5
						Barrier E	point1000	1000	20.0	32.3
						Barrier E	point1015	1015	20.0	31.5
						Barrier E	point1016	1016	20.0	31.5
						Barrier E	point1014	1014	20.0	31.5
						Barrier E	point1008	1008	20.0	31.5
						Barrier E	point1012	1012	20.0	31.5
						Barrier E	point1011	1011	20.0	31.4
IN-01-02-SWEA-02	95	67.5	-2.0	8	-10.0	Barrier E	point983	983	20.0	67.4
						Barrier E	point1002	1002	20.0	41.7
						Barrier E	point1003	1003	20.0	41.7
						Barrier E	point1004	1004	20.0	37.1
						Barrier E	point997	997	20.0	36.6
						Barrier E	point993	993	20.0	36.2
						Barrier E	point992	992	20.0	36.2
						Barrier E	point1001	1001	20.0	36.1
						Barrier E	point991	991	20.0	36.1
						Barrier E	point990	990	20.0	36.0
Total Cost, All Barriers (including additional cost(s))					$6489564					

HMB				5 March 2018						
MG/MDG				TNM 2.5						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	I-69 ORX									
RUN:	1294.11 I69 ORX C1-IN TollAll-E									
BARRIER DESIGN:	C1_IN_TollAll_West									
Barriers										
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top	Run:Rise	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier E	W	20.00	20.00	20.00	10816	216319				6489564
									Total Cost:	6489564

HMB 5 March 2018
MG/MDG TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: 1294.11 I69 ORX C1-IN TollAll-E
BARRIER DESIGN: C1_IN_TollAll_West

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier E	W	point782	782	20.00	20.00	20.00	20	403				12076
		point785	785	20.00	20.00	20.00	20	393				11778
		point786	786	20.00	20.00	20.00	20	403				12076
		point787	787	20.00	20.00	20.00	20	403				12093
		point788	788	20.00	20.00	20.00	20	393				11778
		point789	789	20.00	20.00	20.00	20	403				12093
		point790	790	20.00	20.00	20.00	20	403				12093
		point791	791	20.00	20.00	20.00	20	403				12076
		point792	792	20.00	20.00	20.00	20	393				11796
		point793	793	20.00	20.00	20.00	20	403				12076
		point794	794	20.00	20.00	20.00	20	403				12076
		point795	795	20.00	20.00	20.00	20	393				11796
		point796	796	20.00	20.00	20.00	20	403				12076
		point797	797	20.00	20.00	20.00	20	403				12076
		point798	798	20.00	20.00	20.00	20	403				12093
		point799	799	20.00	20.00	20.00	20	393				11778
		point800	800	20.00	20.00	20.00	20	403				12076
		point801	801	20.00	20.00	20.00	20	403				12093
		point802	802	20.00	20.00	20.00	20	393				11778
		point803	803	20.00	20.00	20.00	20	403				12093
		point804	804	20.00	20.00	20.00	20	403				12076
		point805	805	20.00	20.00	20.00	20	403				12093
		point806	806	20.00	20.00	20.00	20	393				11796
		point807	807	20.00	20.00	20.00	20	403				12093
		point808	808	20.00	20.00	20.00	20	403				12076
		point809	809	20.00	20.00	20.00	20	393				11778

		point810	810	20.00	20.00	20.00	20	403				12093
		point811	811	20.00	20.00	20.00	20	403				12076
		point812	812	20.00	20.00	20.00	20	403				12076
		point813	813	20.00	20.00	20.00	20	393				11778
		point814	814	20.00	20.00	20.00	20	403				12076
		point815	815	20.00	20.00	20.00	20	403				12076
		point816	816	20.00	20.00	20.00	20	403				12093
		point817	817	20.00	20.00	20.00	20	393				11796
		point818	818	20.00	20.00	20.00	20	403				12076
		point819	819	20.00	20.00	20.00	20	403				12093
		point820	820	20.00	20.00	20.00	20	393				11796
		point821	821	20.00	20.00	20.00	20	403				12076
		point822	822	20.00	20.00	20.00	20	403				12093
		point823	823	20.00	20.00	20.00	20	393				11778
		point824	824	20.00	20.00	20.00	20	403				12093
		point825	825	20.00	20.00	20.00	20	403				12093
		point826	826	20.00	20.00	20.00	20	403				12076
		point827	827	20.00	20.00	20.00	20	393				11796
		point828	828	20.00	20.00	20.00	20	403				12076
		point829	829	20.00	20.00	20.00	20	403				12093
		point830	830	20.00	20.00	20.00	20	393				11778
		point831	831	20.00	20.00	20.00	20	403				12076
		point832	832	20.00	20.00	20.00	20	403				12093
		point833	833	20.00	20.00	20.00	20	403				12076
		point834	834	20.00	20.00	20.00	20	393				11778
		point835	835	20.00	20.00	20.00	20	403				12093
		point836	836	20.00	20.00	20.00	20	403				12076
		point837	837	20.00	20.00	20.00	20	403				12076
		point838	838	20.00	20.00	20.00	20	393				11778
		point839	839	20.00	20.00	20.00	20	403				12076
		point840	840	20.00	20.00	20.00	20	403				12076
		point841	841	20.00	20.00	20.00	20	393				11778
		point842	842	20.00	20.00	20.00	20	403				12076
		point843	843	20.00	20.00	20.00	20	403				12076
		point844	844	20.00	20.00	20.00	20	403				12093
		point845	845	20.00	20.00	20.00	20	393				11796
		point846	846	20.00	20.00	20.00	20	403				12093
		point847	847	20.00	20.00	20.00	20	403				12093
		point848	848	20.00	20.00	20.00	20	393				11796

		point849	849	20.00	20.00	20.00	20	403				12076
		point850	850	20.00	20.00	20.00	20	402				12060
		point851	851	20.00	20.00	20.00	20	403				12076
		point852	852	20.00	20.00	20.00	20	392				11761
		point853	853	20.00	20.00	20.00	20	402				12060
		point854	854	20.00	20.00	20.00	20	403				12076
		point855	855	20.00	20.00	20.00	20	402				12060
		point856	856	20.00	20.00	20.00	20	402				12046
		point857	857	20.00	20.00	20.00	20	392				11761
		point858	858	20.00	20.00	20.00	20	402				12060
		point859	859	20.00	20.00	20.00	20	402				12046
		point860	860	20.00	20.00	20.00	20	402				12060
		point861	861	20.00	20.00	20.00	20	402				12046
		point862	862	20.00	20.00	20.00	20	402				12046
		point863	863	20.00	20.00	20.00	20	392				11747
		point864	864	20.00	20.00	20.00	20	401				12034
		point865	865	20.00	20.00	20.00	20	402				12046
		point866	866	20.00	20.00	20.00	20	402				12046
		point867	867	20.00	20.00	20.00	20	400				12004
		point868	868	20.00	20.00	20.00	20	400				12008
		point869	869	20.00	20.00	20.00	20	400				12008
		point870	870	20.00	20.00	20.00	20	400				12008
		point871	871	20.00	20.00	20.00	20	400				12008
		point872	872	20.00	20.00	20.00	20	400				12008
		point873	873	20.00	20.00	20.00	20	400				12001
		point874	874	20.00	20.00	20.00	20	400				12000
		point875	875	20.00	20.00	20.00	20	400				12004
		point876	876	20.00	20.00	20.00	20	400				12001
		point877	877	20.00	20.00	20.00	20	400				12001
		point878	878	20.00	20.00	20.00	20	400				12001
		point879	879	20.00	20.00	20.00	20	400				12001
		point880	880	20.00	20.00	20.00	20	400				12001
		point881	881	20.00	20.00	20.00	20	400				12001
		point882	882	20.00	20.00	20.00	20	400				12001
		point783	783	20.00	20.00	20.00	20	400				12015
		point883	883	20.00	20.00	20.00	20	401				12023
		point884	884	20.00	20.00	20.00	20	400				12015
		point885	885	20.00	20.00	20.00	20	391				11724
		point886	886	20.00	20.00	20.00	20	400				12015

		point887	887	20.00	20.00	20.00	20	400				12015
		point888	888	20.00	20.00	20.00	20	400				12015
		point889	889	20.00	20.00	20.00	20	401				12023
		point890	890	20.00	20.00	20.00	20	401				12034
		point891	891	20.00	20.00	20.00	20	401				12034
		point892	892	20.00	20.00	20.00	20	401				12023
		point893	893	20.00	20.00	20.00	20	401				12034
		point894	894	20.00	20.00	20.00	20	402				12046
		point895	895	20.00	20.00	20.00	20	392				11761
		point896	896	20.00	20.00	20.00	20	403				12076
		point897	897	20.00	20.00	20.00	20	402				12060
		point898	898	20.00	20.00	20.00	20	403				12076
		point899	899	20.00	20.00	20.00	20	392				11761
		point900	900	20.00	20.00	20.00	20	404				12113
		point901	901	20.00	20.00	20.00	20	404				12113
		point902	902	20.00	20.00	20.00	20	393				11796
		point903	903	20.00	20.00	20.00	20	404				12113
		point904	904	20.00	20.00	20.00	20	404				12113
		point905	905	20.00	20.00	20.00	20	395				11838
		point906	906	20.00	20.00	20.00	20	404				12134
		point907	907	20.00	20.00	20.00	20	395				11838
		point908	908	20.00	20.00	20.00	20	404				12134
		point909	909	20.00	20.00	20.00	20	397				11914
		point910	910	20.00	20.00	20.00	20	397				11914
		point911	911	20.00	20.00	20.00	20	406				12182
		point912	912	20.00	20.00	20.00	20	397				11914
		point913	913	20.00	20.00	20.00	20	397				11914
		point914	914	20.00	20.00	20.00	20	408				12238
		point915	915	20.00	20.00	20.00	20	398				11944
		point916	916	20.00	20.00	20.00	20	398				11944
		point917	917	20.00	20.00	20.00	20	398				11944
		point918	918	20.00	20.00	20.00	20	398				11944
		point919	919	20.00	20.00	20.00	20	400				12007
		point920	920	20.00	20.00	20.00	20	400				12007
		point921	921	20.00	20.00	20.00	20	401				12042
		point922	922	20.00	20.00	20.00	20	400				12007
		point923	923	20.00	20.00	20.00	20	400				12007
		point924	924	20.00	20.00	20.00	20	401				12042
		point925	925	20.00	20.00	20.00	20	403				12078

		point926	926	20.00	20.00	20.00	20	393				11788
		point927	927	20.00	20.00	20.00	20	403				12078
		point928	928	20.00	20.00	20.00	20	403				12078
		point929	929	20.00	20.00	20.00	20	394				11827
		point930	930	20.00	20.00	20.00	20	405				12156
		point931	931	20.00	20.00	20.00	20	396				11868
		point932	932	20.00	20.00	20.00	20	405				12156
		point933	933	20.00	20.00	20.00	20	394				11827
		point934	934	20.00	20.00	20.00	20	405				12156
		point935	935	20.00	20.00	20.00	20	397				11911
		point936	936	20.00	20.00	20.00	20	400				12001
		point937	937	20.00	20.00	20.00	20	398				11955
		point938	938	20.00	20.00	20.00	20	400				12001
		point939	939	20.00	20.00	20.00	20	400				12001
		point940	940	20.00	20.00	20.00	20	402				12049
		point941	941	20.00	20.00	20.00	20	405				12149
		point942	942	20.00	20.00	20.00	20	396				11868
		point943	943	20.00	20.00	20.00	20	396				11868
		point944	944	20.00	20.00	20.00	20	405				12149
		point945	945	20.00	20.00	20.00	20	396				11868
		point946	946	20.00	20.00	20.00	20	405				12149
		point947	947	20.00	20.00	20.00	20	396				11868
		point948	948	20.00	20.00	20.00	20	405				12149
		point949	949	20.00	20.00	20.00	20	396				11868
		point950	950	20.00	20.00	20.00	20	405				12149
		point951	951	20.00	20.00	20.00	20	397				11922
		point952	952	20.00	20.00	20.00	20	396				11868
		point953	953	20.00	20.00	20.00	20	407				12202
		point954	954	20.00	20.00	20.00	20	396				11868
		point955	955	20.00	20.00	20.00	20	405				12149
		point956	956	20.00	20.00	20.00	20	397				11922
		point957	957	20.00	20.00	20.00	20	397				11922
		point958	958	20.00	20.00	20.00	20	405				12149
		point959	959	20.00	20.00	20.00	20	397				11922
		point960	960	20.00	20.00	20.00	20	397				11922
		point961	961	20.00	20.00	20.00	20	405				12149
		point962	962	20.00	20.00	20.00	20	398				11955
		point1189	1189	20.00	20.00	20.00	20	396				11868
		point1192	1192	20.00	20.00	20.00	20	405				12149

		point1193	1193	20.00	20.00	20.00	20	397				11922
		point1194	1194	20.00	20.00	20.00	20	397				11922
		point1195	1195	20.00	20.00	20.00	20	405				12149
		point1196	1196	20.00	20.00	20.00	20	397				11922
		point1197	1197	20.00	20.00	20.00	20	397				11922
		point1198	1198	20.00	20.00	20.00	20	405				12149
		point1199	1199	20.00	20.00	20.00	20	397				11922
		point1200	1200	20.00	20.00	20.00	20	397				11922
		point1201	1201	20.00	20.00	20.00	20	405				12149
		point1202	1202	20.00	20.00	20.00	20	397				11922
		point1203	1203	20.00	20.00	20.00	20	405				12149
		point1204	1204	20.00	20.00	20.00	20	397				11922
		point1205	1205	20.00	20.00	20.00	20	396				11868
		point1206	1206	20.00	20.00	20.00	20	407				12202
		point1207	1207	20.00	20.00	20.00	20	397				11922
		point1208	1208	20.00	20.00	20.00	20	396				11868
		point1209	1209	20.00	20.00	20.00	20	409				12256
		point1210	1210	20.00	20.00	20.00	20	397				11922
		point1211	1211	20.00	20.00	20.00	20	399				11977
		point1212	1212	20.00	20.00	20.00	20	401				12035
		point1213	1213	20.00	20.00	20.00	20	392				11759
		point1214	1214	20.00	20.00	20.00	20	403				12093
		point1215	1215	20.00	20.00	20.00	20	405				12154
		point1216	1216	20.00	20.00	20.00	20	396				11880
		point1217	1217	20.00	20.00	20.00	20	398				11944
		point1218	1218	20.00	20.00	20.00	20	401				12035
		point1219	1219	20.00	20.00	20.00	20	399				11977
		point1220	1220	20.00	20.00	20.00	20	399				11977
		point1221	1221	20.00	20.00	20.00	20	407				12202
		point1222	1222	20.00	20.00	20.00	20	397				11922
		point1223	1223	20.00	20.00	20.00	20	397				11922
		point1224	1224	20.00	20.00	20.00	20	397				11922
		point1225	1225	20.00	20.00	20.00	20	409				12256
		point1226	1226	20.00	20.00	20.00	20	397				11922
		point1227	1227	20.00	20.00	20.00	20	397				11922
		point1228	1228	20.00	20.00	20.00	20	397				11922
		point1229	1229	20.00	20.00	20.00	20	407				12202
		point1230	1230	20.00	20.00	20.00	20	397				11922
		point1231	1231	20.00	20.00	20.00	20	397				11922

		point1232	1232	20.00	20.00	20.00	20	405				12149
		point1233	1233	20.00	20.00	20.00	20	397				11922
		point1234	1234	20.00	20.00	20.00	20	397				11922
		point1235	1235	20.00	20.00	20.00	20	397				11922
		point1236	1236	20.00	20.00	20.00	20	402				12049
		point1237	1237	20.00	20.00	20.00	20	397				11911
		point1238	1238	20.00	20.00	20.00	20	403				12098
		point1239	1239	20.00	20.00	20.00	20	397				11922
		point1240	1240	20.00	20.00	20.00	20	405				12149
		point1241	1241	20.00	20.00	20.00	20	397				11922
		point1242	1242	20.00	20.00	20.00	20	397				11922
		point1243	1243	20.00	20.00	20.00	20	405				12149
		point1244	1244	20.00	20.00	20.00	20	397				11922
		point1245	1245	20.00	20.00	20.00	20	407				12202
		point1246	1246	20.00	20.00	20.00	20	396				11868
		point1247	1247	20.00	20.00	20.00	20	397				11922
		point1248	1248	20.00	20.00	20.00	20	407				12202
		point1249	1249	20.00	20.00	20.00	20	396				11868
		point1250	1250	20.00	20.00	20.00	20	397				11922
		point1251	1251	20.00	20.00	20.00	20	407				12202
		point1252	1252	20.00	20.00	20.00	20	396				11868
		point1253	1253	20.00	20.00	20.00	20	397				11922
		point1254	1254	20.00	20.00	20.00	20	405				12149
		point1255	1255	20.00	20.00	20.00	20	397				11922
		point1256	1256	20.00	20.00	20.00	20	396				11868
		point1257	1257	20.00	20.00	20.00	20	407				12202
		point1258	1258	20.00	20.00	20.00	20	397				11922
		point1259	1259	20.00	20.00	20.00	20	396				11868
		point1260	1260	20.00	20.00	20.00	20	407				12202
		point1261	1261	20.00	20.00	20.00	20	397				11922
		point1262	1262	20.00	20.00	20.00	20	396				11868
		point1263	1263	20.00	20.00	20.00	20	407				12202
		point1264	1264	20.00	20.00	20.00	20	397				11922
		point1265	1265	20.00	20.00	20.00	20	396				11868
		point1266	1266	20.00	20.00	20.00	20	407				12202
		point1267	1267	20.00	20.00	20.00	20	397				11922
		point1268	1268	20.00	20.00	20.00	20	396				11868
		point1269	1269	20.00	20.00	20.00	20	407				12202
		point1270	1270	20.00	20.00	20.00	20	397				11922

		point1271	1271	20.00	20.00	20.00	20	405				12149
		point1272	1272	20.00	20.00	20.00	20	397				11922
		point1273	1273	20.00	20.00	20.00	20	396				11868
		point1274	1274	20.00	20.00	20.00	20	407				12202
		point1275	1275	20.00	20.00	20.00	20	396				11868
		point1276	1276	20.00	20.00	20.00	20	397				11922
		point1277	1277	20.00	20.00	20.00	20	407				12202
		point1278	1278	20.00	20.00	20.00	20	396				11868
		point1279	1279	20.00	20.00	20.00	20	397				11922
		point1280	1280	20.00	20.00	20.00	20	407				12202
		point1281	1281	20.00	20.00	20.00	20	396				11868
		point1282	1282	20.00	20.00	20.00	20	397				11922
		point1283	1283	20.00	20.00	20.00	20	407				12202
		point1284	1284	20.00	20.00	20.00	20	396				11868
		point1285	1285	20.00	20.00	20.00	20	397				11922
		point1286	1286	20.00	20.00	20.00	20	407				12202
		point1287	1287	20.00	20.00	20.00	20	396				11868
		point1288	1288	20.00	20.00	20.00	20	397				11922
		point1289	1289	20.00	20.00	20.00	20	407				12202
		point1190	1190	20.00	20.00	20.00	20	396				11868
		point1290	1290	20.00	20.00	20.00	20	397				11922
		point1291	1291	20.00	20.00	20.00	20	405				12149
		point1292	1292	20.00	20.00	20.00	20	397				11922
		point1293	1293	20.00	20.00	20.00	20	397				11922
		point1294	1294	20.00	20.00	20.00	20	405				12149
		point1295	1295	20.00	20.00	20.00	20	397				11922
		point1296	1296	20.00	20.00	20.00	20	405				12149
		point1297	1297	20.00	20.00	20.00	20	396				11868
		point1298	1298	20.00	20.00	20.00	20	403				12098
		point1299	1299	20.00	20.00	20.00	20	394				11816
		point1300	1300	20.00	20.00	20.00	20	402				12049
		point1301	1301	20.00	20.00	20.00	20	402				12049
		point1302	1302	20.00	20.00	20.00	20	402				12049
		point1303	1303	20.00	20.00	20.00	20	402				12049
		point1304	1304	20.00	20.00	20.00	20	398				11955
		point1305	1305	20.00	20.00	20.00	20	400				12001
		point1306	1306	20.00	20.00	20.00	20	398				11955
		point1307	1307	20.00	20.00	20.00	20	398				11955
		point1308	1308	20.00	20.00	20.00	20	397				11911

		point1309	1309	20.00	20.00	20.00	20	407				12198
		point1310	1310	20.00	20.00	20.00	20	396				11868
		point1311	1311	20.00	20.00	20.00	20	407				12198
		point1312	1312	20.00	20.00	20.00	20	394				11827
		point1313	1313	20.00	20.00	20.00	20	404				12117
		point1314	1314	20.00	20.00	20.00	20	394				11827
		point1315	1315	20.00	20.00	20.00	20	404				12117
		point1316	1316	20.00	20.00	20.00	20	403				12078
		point1317	1317	20.00	20.00	20.00	20	392				11751
		point1318	1318	20.00	20.00	20.00	20	401				12042
		point1319	1319	20.00	20.00	20.00	20	401				12042
		point1320	1320	20.00	20.00	20.00	20	400				12007
		point1321	1321	20.00	20.00	20.00	20	400				12007
		point1322	1322	20.00	20.00	20.00	20	400				12007
		point1323	1323	20.00	20.00	20.00	20	399				11975
		point1324	1324	20.00	20.00	20.00	20	398				11944
		point1325	1325	20.00	20.00	20.00	20	399				11975
		point963	963	20.00	20.00	20.00	20	403				12076
		point967	967	20.00	20.00	20.00	20	402				12060
		point968	968	20.00	20.00	20.00	20	402				12046
		point969	969	20.00	20.00	20.00	20	402				12046
		point970	970	20.00	20.00	20.00	20	392				11761
		point971	971	20.00	20.00	20.00	20	404				12134
		point972	972	20.00	20.00	20.00	20	396				11887
		point973	973	20.00	20.00	20.00	20	404				12134
		point974	974	20.00	20.00	20.00	20	395				11838
		point975	975	20.00	20.00	20.00	20	404				12134
		point976	976	20.00	20.00	20.00	20	404				12134
		point977	977	20.00	20.00	20.00	20	395				11838
		point978	978	20.00	20.00	20.00	20	404				12134
		point979	979	20.00	20.00	20.00	20	393				11796
		point980	980	20.00	20.00	20.00	20	403				12076
		point981	981	20.00	20.00	20.00	20	403				12076
		point982	982	20.00	20.00	20.00	20	402				12060
		point983	983	20.00	20.00	20.00	20	392				11761
		point984	984	20.00	20.00	20.00	20	402				12060
		point985	985	20.00	20.00	20.00	20	402				12046
		point986	986	20.00	20.00	20.00	20	402				12046
		point987	987	20.00	20.00	20.00	20	401				12034

		point988	988	20.00	20.00	20.00	20	402				12046
		point989	989	20.00	20.00	20.00	20	392				11747
		point990	990	20.00	20.00	20.00	20	401				12034
		point991	991	20.00	20.00	20.00	20	401				12023
		point992	992	20.00	20.00	20.00	20	400				12015
		point993	993	20.00	20.00	20.00	20	400				12008
		point994	994	20.00	20.00	20.00	20	400				12015
		point995	995	20.00	20.00	20.00	20	400				12015
		point996	996	20.00	20.00	20.00	20	400				12015
		point997	997	20.00	20.00	20.00	20	400				12004
		point998	998	20.00	20.00	20.00	20	400				12001
		point999	999	20.00	20.00	20.00	20	400				12000
		point1000	1000	20.00	20.00	20.00	20	400				12000
		point1001	1001	20.00	20.00	20.00	20	400				12001
		point1002	1002	20.00	20.00	20.00	20	400				12000
		point1003	1003	20.00	20.00	20.00	20	400				12000
		point1004	1004	20.00	20.00	20.00	20	400				12000
		point1005	1005	20.00	20.00	20.00	20	400				12000
		point1006	1006	20.00	20.00	20.00	20	401				12023
		point1007	1007	20.00	20.00	20.00	20	403				12076
		point1008	1008	20.00	20.00	20.00	20	393				11778
		point1009	1009	20.00	20.00	20.00	20	402				12060
		point1010	1010	20.00	20.00	20.00	20	402				12060
		point1011	1011	20.00	20.00	20.00	20	402				12060
		point1012	1012	20.00	20.00	20.00	20	402				12046
		point1013	1013	20.00	20.00	20.00	20	392				11747
		point1014	1014	20.00	20.00	20.00	20	402				12060
		point1015	1015	20.00	20.00	20.00	20	402				12046
		point1016	1016	20.00	20.00	20.00	20	402				12060
		point1017	1017	20.00	20.00	20.00	20	402				12060
		point1018	1018	20.00	20.00	20.00	20	392				11761
		point1019	1019	20.00	20.00	20.00	20	402				12060
		point1020	1020	20.00	20.00	20.00	20	402				12060
		point1021	1021	20.00	20.00	20.00	20	403				12093
		point1022	1022	20.00	20.00	20.00	20	393				11796
		point1023	1023	20.00	20.00	20.00	20	403				12093
		point1024	1024	20.00	20.00	20.00	20	403				12093
		point1025	1025	20.00	20.00	20.00	20	393				11796
		point1026	1026	20.00	20.00	20.00	20	403				12093

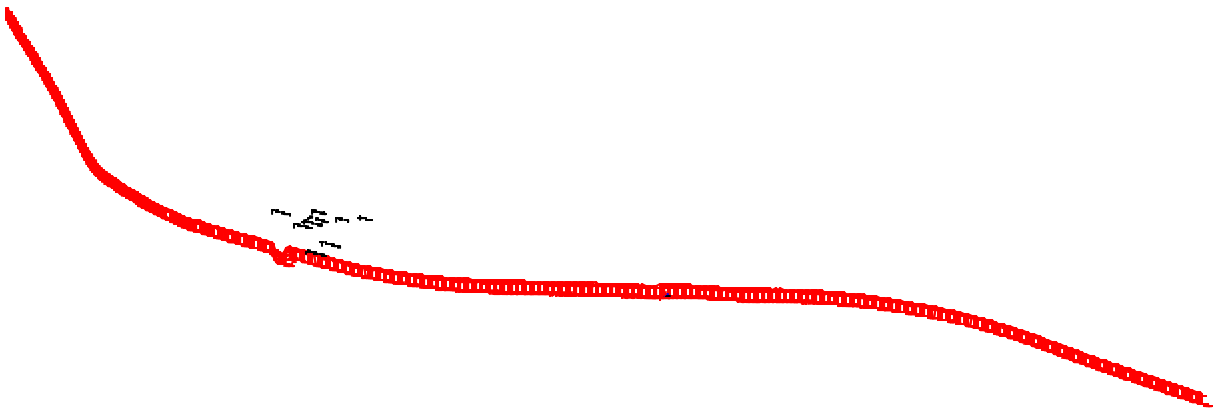
		point1027	1027	20.00	20.00	20.00	20	404				12113
		point1028	1028	20.00	20.00	20.00	20	395				11861
		point1029	1029	20.00	20.00	20.00	20	404				12134
		point1030	1030	20.00	20.00	20.00	20	396				11887
		point1031	1031	20.00	20.00	20.00	20	405				12157
		point1032	1032	20.00	20.00	20.00	20	396				11887
		point1188	1188	20.00	20.00	20.00	20	397				11914
		point1033	1033	20.00	20.00	20.00	20	407				12209
		point1034	1034	20.00	20.00	20.00	20	397				11914
		point1035	1035	20.00	20.00	20.00	20	398				11944
		point1036	1036	20.00	20.00	20.00	20	397				11914
		point1037	1037	20.00	20.00	20.00	20	399				11975
		point1038	1038	20.00	20.00	20.00	20	400				12007
		point1039	1039	20.00	20.00	20.00	20	400				12007
		point1040	1040	20.00	20.00	20.00	20	401				12042
		point1041	1041	20.00	20.00	20.00	20	403				12078
		point1042	1042	20.00	20.00	20.00	20	394				11827
		point1043	1043	20.00	20.00	20.00	20	403				12078
		point1044	1044	20.00	20.00	20.00	20	404				12117
		point1045	1045	20.00	20.00	20.00	20	394				11827
		point1046	1046	20.00	20.00	20.00	20	404				12117
		point1047	1047	20.00	20.00	20.00	20	404				12117
		point1048	1048	20.00	20.00	20.00	20	396				11868
		point1049	1049	20.00	20.00	20.00	20	404				12117
		point1050	1050	20.00	20.00	20.00	20	396				11868
		point1051	1051	20.00	20.00	20.00	20	400				12001
		point1052	1052	20.00	20.00	20.00	20	398				11955
		point1053	1053	20.00	20.00	20.00	20	400				12001
		point1054	1054	20.00	20.00	20.00	20	400				12001
		point1055	1055	20.00	20.00	20.00	20	398				11955
		point1056	1056	20.00	20.00	20.00	20	402				12049
		point1057	1057	20.00	20.00	20.00	20	400				12001
		point1058	1058	20.00	20.00	20.00	20	400				12001
		point1059	1059	20.00	20.00	20.00	20	402				12049
		point1060	1060	20.00	20.00	20.00	20	400				12001
		point1061	1061	20.00	20.00	20.00	20	403				12098
		point1062	1062	20.00	20.00	20.00	20	397				11922
		point1063	1063	20.00	20.00	20.00	20	397				11922
		point1064	1064	20.00	20.00	20.00	20	397				11922

		point964	964	20.00	20.00	20.00	20	407				12202
		point1065	1065	20.00	20.00	20.00	20	399				11977
		point1066	1066	20.00	20.00	20.00	20	399				11977
		point1067	1067	20.00	20.00	20.00	20	401				12035
		point1068	1068	20.00	20.00	20.00	20	401				12035
		point1069	1069	20.00	20.00	20.00	20	401				12035
		point1070	1070	20.00	20.00	20.00	20	392				11759
		point1071	1071	20.00	20.00	20.00	20	401				12035
		point1072	1072	20.00	20.00	20.00	20	398				11944
		point1073	1073	20.00	20.00	20.00	20	407				12216
		point1074	1074	20.00	20.00	20.00	20	396				11880
		point1075	1075	20.00	20.00	20.00	20	398				11944
		point1076	1076	20.00	20.00	20.00	20	402				12075
		point1077	1077	20.00	20.00	20.00	20	400				12008
		point1078	1078	20.00	20.00	20.00	20	402				12075
		point1079	1079	20.00	20.00	20.00	20	394				11807
		point1080	1080	20.00	20.00	20.00	20	401				12020
		point1081	1081	20.00	20.00	20.00	20	403				12093
		point1082	1082	20.00	20.00	20.00	20	403				12093
		point1083	1083	20.00	20.00	20.00	20	394				11834
		point1084	1084	20.00	20.00	20.00	20	400				11989
		point1085	1085	20.00	20.00	20.00	20	405				12149
		point1086	1086	20.00	20.00	20.00	20	399				11982
		point1087	1087	20.00	20.00	20.00	20	397				11898
		point1088	1088	20.00	20.00	20.00	20	402				12067
		point1089	1089	20.00	20.00	20.00	20	401				12042
		point1090	1090	20.00	20.00	20.00	20	394				11812
		point1091	1091	20.00	20.00	20.00	20	405				12138
		point1092	1092	20.00	20.00	20.00	20	401				12042
		point1093	1093	20.00	20.00	20.00	20	396				11887
		point1094	1094	20.00	20.00	20.00	20	400				11986
		point1095	1095	20.00	20.00	20.00	20	400				11986
		point1096	1096	20.00	20.00	20.00	20	400				11986
		point1097	1097	20.00	20.00	20.00	20	400				11986
		point1098	1098	20.00	20.00	20.00	20	403				12093
		point1099	1099	20.00	20.00	20.00	20	400				11997
		point1100	1100	20.00	20.00	20.00	20	404				12108
		point1101	1101	20.00	20.00	20.00	20	393				11797
		point1102	1102	20.00	20.00	20.00	20	404				12108

		point1103	1103	20.00	20.00	20.00	20	404				12108
		point1104	1104	20.00	20.00	20.00	20	393				11797
		point1105	1105	20.00	20.00	20.00	20	404				12108
		point1106	1106	20.00	20.00	20.00	20	400				11997
		point1107	1107	20.00	20.00	20.00	20	397				11910
		point1108	1108	20.00	20.00	20.00	20	404				12108
		point1109	1109	20.00	20.00	20.00	20	400				11997
		point1110	1110	20.00	20.00	20.00	20	397				11910
		point1111	1111	20.00	20.00	20.00	20	401				12023
		point1112	1112	20.00	20.00	20.00	20	405				12138
		point1113	1113	20.00	20.00	20.00	20	397				11910
		point1114	1114	20.00	20.00	20.00	20	400				11997
		point1115	1115	20.00	20.00	20.00	20	400				11997
		point1116	1116	20.00	20.00	20.00	20	397				11910
		point1117	1117	20.00	20.00	20.00	20	404				12108
		point1118	1118	20.00	20.00	20.00	20	397				11910
		point1119	1119	20.00	20.00	20.00	20	397				11910
		point1120	1120	20.00	20.00	20.00	20	407				12220
		point1121	1121	20.00	20.00	20.00	20	397				11910
		point1122	1122	20.00	20.00	20.00	20	401				12023
		point1123	1123	20.00	20.00	20.00	20	397				11910
		point1124	1124	20.00	20.00	20.00	20	404				12108
		point1125	1125	20.00	20.00	20.00	20	397				11910
		point1126	1126	20.00	20.00	20.00	20	400				11997
		point1127	1127	20.00	20.00	20.00	20	404				12108
		point1128	1128	20.00	20.00	20.00	20	393				11797
		point1129	1129	20.00	20.00	20.00	20	404				12108
		point1130	1130	20.00	20.00	20.00	20	404				12108
		point1131	1131	20.00	20.00	20.00	20	400				11997
		point1132	1132	20.00	20.00	20.00	20	400				11997
		point1133	1133	20.00	20.00	20.00	20	397				11910
		point1134	1134	20.00	20.00	20.00	20	400				11997
		point1135	1135	20.00	20.00	20.00	20	400				11997
		point1136	1136	20.00	20.00	20.00	20	400				11997
		point1137	1137	20.00	20.00	20.00	20	400				11997
		point1138	1138	20.00	20.00	20.00	20	400				11997
		point1139	1139	20.00	20.00	20.00	20	403				12093
		point1140	1140	20.00	20.00	20.00	20	396				11887
		point1141	1141	20.00	20.00	20.00	20	403				12093

		point1142	1142	20.00	20.00	20.00	20	396				11887
		point1143	1143	20.00	20.00	20.00	20	400				11986
		point1144	1144	20.00	20.00	20.00	20	403				12093
		point1145	1145	20.00	20.00	20.00	20	400				11986
		point1146	1146	20.00	20.00	20.00	20	400				11986
		point1147	1147	20.00	20.00	20.00	20	403				12093
		point1148	1148	20.00	20.00	20.00	20	400				11986
		point1149	1149	20.00	20.00	20.00	20	400				11986
		point1150	1150	20.00	20.00	20.00	20	396				11887
		point1151	1151	20.00	20.00	20.00	20	400				11986
		point1152	1152	20.00	20.00	20.00	20	400				11986
		point1153	1153	20.00	20.00	20.00	20	403				12093
		point1154	1154	20.00	20.00	20.00	20	400				11986
		point1155	1155	20.00	20.00	20.00	20	403				12093
		point1156	1156	20.00	20.00	20.00	20	400				11986
		point1157	1157	20.00	20.00	20.00	20	396				11879
		point1158	1158	20.00	20.00	20.00	20	403				12093
		point1159	1159	20.00	20.00	20.00	20	400				11986
		point1160	1160	20.00	20.00	20.00	20	396				11879
		point1161	1161	20.00	20.00	20.00	20	407				12198
		point1162	1162	20.00	20.00	20.00	20	396				11879
		point965	965	20.00	20.00	20.00	20	403				12093
		point1163	1163	20.00	20.00	20.00	20	396				11879
		point1164	1164	20.00	20.00	20.00	20	400				11990
		point1165	1165	20.00	20.00	20.00	20	403				12093
		point1166	1166	20.00	20.00	20.00	20	396				11879
		point1167	1167	20.00	20.00	20.00	20	407				12198
		point1168	1168	20.00	20.00	20.00	20	396				11879
		point1169	1169	20.00	20.00	20.00	20	396				11879
		point1170	1170	20.00	20.00	20.00	20	403				12093
		point1171	1171	20.00	20.00	20.00	20	400				11986
		point1172	1172	20.00	20.00	20.00	20	403				12093
		point1173	1173	20.00	20.00	20.00	20	400				11986
		point1174	1174	20.00	20.00	20.00	20	396				11879
		point1175	1175	20.00	20.00	20.00	20	403				12093
		point1176	1176	20.00	20.00	20.00	20	396				11879
		point1177	1177	20.00	20.00	20.00	20	403				12093
		point1178	1178	20.00	20.00	20.00	20	396				11879
		point1179	1179	20.00	20.00	20.00	20	403				12093

		point1180	1180	20.00	20.00	20.00	20	396				11879
		point1181	1181	20.00	20.00	20.00	20	403				12093
		point1182	1182	20.00	20.00	20.00	20	403				12093
		point1183	1183	20.00	20.00	20.00	20	396				11879
		point1184	1184	20.00	20.00	20.00	20	403				12093
		point1185	1185	20.00	20.00	20.00	20	396				11879
		point1186	1186	20.00	20.00	20.00	20	403				12093
		point1187	1187	20.00	20.00	20.00	17	339				10182



1294.11 I69 ORX C1-IN TollAll-E	Sheet 1 of 1	5 Mar 2018
	HMB	
Barrier View-C1_IN_TollAll_West	Project/Contract No. I-69 ORX	
Run name: C1_IN_TollAll_E	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/MDG	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR CENTRAL 1 - TARANSAY DRIVE (TOLL I-69 ONLY)

HMB Professional Engineers 12 June 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_Toll69_Updated Barrier
BARRIER DESIGN: C1_Taransay_Updated
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-04-02-COBD-02	115	1	40.4	52.2	66	11.8	10	Sub'l Inc	45.6	6.6	8	-1.4
KY-04-01-BALD-02	15	1	40.4	51.7	66	11.3	10	Sub'l Inc	45.2	6.5	8	-1.5
KY-04-02-COBD-03	154	1	40.4	51.6	66	11.2	10	Sub'l Inc	45.2	6.4	8	-1.6
KY-04-01-BALD-03	16	1	40.4	50.9	66	10.5	10	Sub'l Inc	44.8	6.1	8	-1.9
KY-04-01-BALD-04	157	1	40.4	50.1	66	9.7	10	----	44.2	5.9	8	-2.1
KY-04-02-COBD-04	155	1	40.4	50.1	66	9.7	10	----	44.1	6.0	8	-2.0
KY-04-02-COBD-05	156	1	40.4	50.2	66	9.8	10	----	44.1	6.1	8	-1.9
KY-04-02-BROD-02	111	1	40.4	52.0	66	11.6	10	Sub'l Inc	46.0	6.0	8	-2.0
KY-04-01-BROD-02	26	1	40.4	53.6	66	13.2	10	Sub'l Inc	47.3	6.3	8	-1.7
KY-04-01-BROD-01	25	1	40.4	51.6	66	11.2	10	Sub'l Inc	46.2	5.4	8	-2.6
KY-04-02-BROD-01	110	1	40.4	50.7	66	10.3	10	Sub'l Inc	45.4	5.3	8	-2.7
KY-04-01-COBD-07	35	1	40.4	50.5	66	10.1	10	Sub'l Inc	44.5	6.0	8	-2.0
KY-04-01-COBD-06	34	1	40.4	51.3	66	10.9	10	Sub'l Inc	44.9	6.4	8	-1.6
KY-04-01-COBD-05	33	1	40.4	51.9	66	11.5	10	Sub'l Inc	45.3	6.6	8	-1.4
KY-04-01-COBD-04	113	1	40.4	53.8	66	13.4	10	Sub'l Inc	46.3	7.5	8	-0.5
KY-04-01-COBD-03	30	1	40.4	54.9	66	14.5	10	Sub'l Inc	46.9	8.0	8	0.0
KY-04-01-COBD-02	29	1	40.4	56.1	66	15.7	10	Sub'l Inc	47.7	8.4	8	0.4
KY-04-01-COBD-01	28	1	40.4	58.0	66	17.6	10	Sub'l Inc	48.5	9.5	8	1.5
KY-04-02-COBD-01	114	1	40.4	53.1	66	12.7	10	Sub'l Inc	46.1	7.0	8	-1.0
KY-04-01-BALD-01	14	1	40.4	52.9	66	12.5	10	Sub'l Inc	45.9	7.0	8	-1.0
KY-04-02-BALD-01	107	1	40.4	50.6	66	10.2	10	Sub'l Inc	44.6	6.0	8	-2.0
KY-04-02-BROD-03	112	1	40.4	53.7	66	13.3	10	Sub'l Inc	46.9	6.8	8	-1.2
KY-04-01-BROD-03	27	1	40.4	54.9	66	14.5	10	Sub'l Inc	47.9	7.0	8	-1.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	23	5.3	6.6	9.5
All Impacted	20	5.3	6.7	9.5
All that meet NR Goal	3	8.0	8.6	9.5

HMB Professional Engineers 12 June 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN

PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_Toll69_Updated Barrier
BARRIER DESIGN: C1_Taransay_Updated

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Goal	Calc-Goal	Barrier Reviewed	Important Segments Name	No.	Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-04-02-COBD-02	115	45.6	6.6	8	-1.4	Barrier13	BarA-99	592	20.0	25.4
						Barrier13	BarA-101	593	20.0	25.4
						Barrier13	BarA-97	590	20.0	25.4
						Barrier13	BarA-98	591	20.0	25.4
						Barrier13	BarA-100	492	20.0	25.4
						Barrier13	BarA-102	594	20.0	25.3
						Barrier13	BarA-103	595	20.0	25.3
						Barrier13	BarA-105	597	20.0	25.3
						Barrier13	BarA-87	580	20.0	25.3
						Barrier13	BarA-88	581	20.0	25.2
KY-04-01-BALD-02	15	45.2	6.5	8	-1.5	Barrier13	BarA-98	591	20.0	24.8
						Barrier13	BarA-99	592	20.0	24.8
						Barrier13	BarA-97	590	20.0	24.8
						Barrier13	BarA-100	492	20.0	24.8
						Barrier13	BarA-101	593	20.0	24.8
						Barrier13	BarA-87	580	20.0	24.8
						Barrier13	BarA-88	581	20.0	24.7
						Barrier13	BarA-102	594	20.0	24.7
						Barrier13	BarA-103	595	20.0	24.7
						Barrier13	BarA-86	579	20.0	24.6
KY-04-02-COBD-03	154	45.2	6.4	8	-1.6	Barrier13	BarA-101	593	20.0	24.9

						Barrier13	BarA-103	595	20.0	24.8
						Barrier13	BarA-99	592	20.0	24.8
						Barrier13	BarA-105	597	20.0	24.8
						Barrier13	BarA-100	492	20.0	24.8
						Barrier13	BarA-104	596	20.0	24.8
						Barrier13	BarA-102	594	20.0	24.7
						Barrier13	BarA-98	591	20.0	24.7
						Barrier13	BarA-106	598	20.0	24.7
						Barrier13	BarA-97	590	20.0	24.7
KY-04-01-BALD-03	16	44.8	6.1	8	-1.9	Barrier13	BarA-101	593	20.0	24.0
						Barrier13	BarA-100	492	20.0	24.0
						Barrier13	BarA-105	597	20.0	24.0
						Barrier13	BarA-99	592	20.0	24.0
						Barrier13	BarA-103	595	20.0	23.9
						Barrier13	BarA-102	594	20.0	23.9
						Barrier13	BarA-97	590	20.0	23.9
						Barrier13	BarA-104	596	20.0	23.9
						Barrier13	BarA-98	591	20.0	23.9
						Barrier13	BarA-106	598	20.0	23.9
KY-04-01-BALD-04	157	44.2	5.9	8	-2.1	Barrier13	BarA-105	597	20.0	23.0
						Barrier13	BarA-101	593	20.0	23.0
						Barrier13	BarA-106	598	20.0	23.0
						Barrier13	BarA-104	596	20.0	23.0
						Barrier13	BarA-100	492	20.0	23.0
						Barrier13	BarA-110	602	20.0	23.0
						Barrier13	BarA-108	600	20.0	23.0
						Barrier13	BarA-99	592	20.0	22.9
						Barrier13	BarA-103	595	20.0	22.9
						Barrier13	BarA-107	599	20.0	22.9
KY-04-02-COBD-04	155	44.1	6.0	8	-2.0	Barrier13	BarA-110	602	20.0	23.0
						Barrier13	BarA-106	598	20.0	22.9
						Barrier13	BarA-109	601	20.0	22.8
						Barrier13	BarA-114	606	20.0	22.8
						Barrier13	BarA-105	597	20.0	22.8
						Barrier13	BarA-111	603	20.0	22.8
						Barrier13	BarA-107	599	20.0	22.8

						Barrier13	BarA-119	611	20.0	22.8
						Barrier13	BarA-108	600	20.0	22.8
						Barrier13	BarA-113	605	20.0	22.8
KY-04-02-COBD-05	156	44.1	6.1	8	-1.9	Barrier13	BarA-229	720	0.0	23.9
						Barrier13	BarA-228	719	0.0	23.3
						Barrier13	BarA-119	611	20.0	23.1
						Barrier13	BarA-114	606	20.0	23.0
						Barrier13	BarA-120	612	20.0	23.0
						Barrier13	BarA-117	609	20.0	22.9
						Barrier13	BarA-110	602	20.0	22.9
						Barrier13	BarA-112	604	20.0	22.9
						Barrier13	BarA-118	610	20.0	22.9
						Barrier13	BarA-115	607	20.0	22.9
KY-04-02-BROD-02	111	46.0	6.0	8	-2.0	Barrier13	BarA-231	722	0.0	27.2
						Barrier13	BarA-230	721	0.0	27.0
						Barrier13	BarA-232	723	0.0	26.9
						Barrier13	BarA-233	724	0.0	26.5
						Barrier13	BarA-238	729	0.0	26.3
						Barrier13	BarA-229	720	0.0	25.6
						Barrier13	BarA-175	667	20.0	25.2
						Barrier13	BarA-180	672	20.0	25.2
						Barrier13	BarA-170	662	20.0	25.2
						Barrier13	BarA-173	665	20.0	25.1
KY-04-01-BROD-02	26	47.3	6.3	8	-1.7	Barrier13	BarA-232	723	0.0	31.2
						Barrier13	BarA-231	722	0.0	29.5
						Barrier13	BarA-233	724	0.0	29.5
						Barrier13	BarA-254	745	0.0	29.3
						Barrier13	BarA-253	744	0.0	28.9
						Barrier13	BarA-235	726	0.0	28.8
						Barrier13	BarA-230	721	0.0	28.6
						Barrier13	BarA-234	725	0.0	28.5
						Barrier13	BarA-252	743	0.0	28.4
						Barrier13	BarA-238	729	0.0	28.4
KY-04-01-BROD-01	25	46.2	5.4	8	-2.6	Barrier13	BarA-233	724	0.0	29.4
						Barrier13	BarA-234	725	0.0	28.6
						Barrier13	BarA-242	733	0.0	28.2

						Barrier13	BarA-239	730	0.0	27.8
						Barrier13	BarA-232	723	0.0	27.7
						Barrier13	BarA-228	719	0.0	27.0
						Barrier13	BarA-241	732	0.0	26.8
						Barrier13	BarA-231	722	0.0	26.5
						Barrier13	BarA-235	726	0.0	26.3
						Barrier13	BarA-238	729	0.0	26.3
KY-04-02-BROD-01	110	45.4	5.3	8	-2.7	Barrier13	BarA-228	719	0.0	25.8
						Barrier13	BarA-233	724	0.0	25.3
						Barrier13	BarA-239	730	0.0	24.8
						Barrier13	BarA-236	727	0.0	24.6
						Barrier13	BarA-235	726	0.0	24.6
						Barrier13	BarA-230	721	0.0	24.4
						Barrier13	BarA-229	720	0.0	24.4
						Barrier13	BarA-232	723	0.0	24.4
						Barrier13	BarA-231	722	0.0	24.4
						Barrier13	BarA-234	725	0.0	24.1
KY-04-01-COBD-07	35	44.5	6.0	8	-2.0	Barrier13	BarA-228	719	0.0	23.8
						Barrier13	BarA-229	720	0.0	23.5
						Barrier13	BarA-128	620	20.0	23.4
						Barrier13	BarA-129	621	20.0	23.4
						Barrier13	BarA-130	622	20.0	23.4
						Barrier13	BarA-124	616	20.0	23.3
						Barrier13	BarA-131	623	20.0	23.3
						Barrier13	BarA-119	611	20.0	23.3
						Barrier13	BarA-127	619	20.0	23.3
						Barrier13	BarA-132	624	20.0	23.3
KY-04-01-COBD-06	34	44.9	6.4	8	-1.6	Barrier13	BarA-119	611	20.0	24.4
						Barrier13	BarA-128	620	20.0	24.4
						Barrier13	BarA-120	612	20.0	24.3
						Barrier13	BarA-122	614	20.0	24.3
						Barrier13	BarA-121	613	20.0	24.3
						Barrier13	BarA-124	616	20.0	24.3
						Barrier13	BarA-129	621	20.0	24.2
						Barrier13	BarA-123	615	20.0	24.2
						Barrier13	BarA-130	622	20.0	24.2

						Barrier13	BarA-125	617	20.0	24.2
KY-04-01-COBD-05	33	45.3	6.6	8	-1.4	Barrier13	BarA-01	491	0.0	25.6
						Barrier13	BarA-119	611	20.0	25.2
						Barrier13	BarA-122	614	20.0	25.0
						Barrier13	BarA-118	610	20.0	25.0
						Barrier13	BarA-121	613	20.0	25.0
						Barrier13	BarA-124	616	20.0	24.9
						Barrier13	BarA-117	609	20.0	24.9
						Barrier13	BarA-123	615	20.0	24.9
						Barrier13	BarA-114	606	20.0	24.9
						Barrier13	BarA-128	620	20.0	24.8
KY-04-01-COBD-04	113	46.3	7.5	8	-0.5	Barrier13	BarA-110	602	20.0	27.2
						Barrier13	BarA-114	606	20.0	27.2
						Barrier13	BarA-112	604	20.0	27.1
						Barrier13	BarA-111	603	20.0	27.1
						Barrier13	BarA-113	605	20.0	27.1
						Barrier13	BarA-115	607	20.0	27.1
						Barrier13	BarA-119	611	20.0	27.1
						Barrier13	BarA-109	601	20.0	27.0
						Barrier13	BarA-116	608	20.0	27.0
						Barrier13	BarA-117	609	20.0	27.0
KY-04-01-COBD-03	30	46.9	8.0	8	0.0	Barrier13	BarA-110	602	20.0	28.3
						Barrier13	BarA-111	603	20.0	28.1
						Barrier13	BarA-112	604	20.0	28.1
						Barrier13	BarA-109	601	20.0	28.1
						Barrier13	BarA-108	600	20.0	28.1
						Barrier13	BarA-114	606	20.0	28.1
						Barrier13	BarA-113	605	20.0	28.0
						Barrier13	BarA-107	599	20.0	28.0
						Barrier13	BarA-105	597	20.0	27.9
						Barrier13	BarA-106	598	20.0	27.9
KY-04-01-COBD-02	29	47.7	8.4	8	0.4	Barrier13	BarA-107	599	20.0	29.3
						Barrier13	BarA-105	597	20.0	29.3
						Barrier13	BarA-104	596	20.0	29.3
						Barrier13	BarA-106	598	20.0	29.3
						Barrier13	BarA-110	602	20.0	29.3

						Barrier13	BarA-108	600	20.0	29.3
						Barrier13	BarA-109	601	20.0	29.2
						Barrier13	BarA-103	595	20.0	29.2
						Barrier13	BarA-101	593	20.0	29.1
						Barrier13	BarA-102	594	20.0	29.1
KY-04-01-COBD-01	28	48.5	9.5	8	1.5	Barrier13	BarA-101	593	20.0	30.9
						Barrier13	BarA-100	492	20.0	30.9
						Barrier13	BarA-102	594	20.0	30.9
						Barrier13	BarA-99	592	20.0	30.8
						Barrier13	BarA-103	595	20.0	30.8
						Barrier13	BarA-104	596	20.0	30.7
						Barrier13	BarA-105	597	20.0	30.7
						Barrier13	BarA-98	591	20.0	30.7
						Barrier13	BarA-97	590	20.0	30.6
						Barrier13	BarA-106	598	20.0	30.5
KY-04-02-COBD-01	114	46.1	7.0	8	-1.0	Barrier13	BarA-87	580	20.0	26.4
						Barrier13	BarA-88	581	20.0	26.4
						Barrier13	BarA-86	579	20.0	26.3
						Barrier13	BarA-98	591	20.0	26.2
						Barrier13	BarA-97	590	20.0	26.2
						Barrier13	BarA-85	578	20.0	26.1
						Barrier13	BarA-99	592	20.0	26.1
						Barrier13	BarA-101	593	20.0	26.0
						Barrier13	BarA-84	577	20.0	26.0
						Barrier13	BarA-100	492	20.0	26.0
KY-04-01-BALD-01	14	45.9	7.0	8	-1.0	Barrier13	BarA-87	580	20.0	26.2
						Barrier13	BarA-88	581	20.0	26.1
						Barrier13	BarA-86	579	20.0	26.1
						Barrier13	BarA-85	578	20.0	25.9
						Barrier13	BarA-84	577	20.0	25.8
						Barrier13	BarA-97	590	20.0	25.8
						Barrier13	BarA-98	591	20.0	25.8
						Barrier13	BarA-83	576	20.0	25.7
						Barrier13	BarA-99	592	20.0	25.7
						Barrier13	BarA-82	575	20.0	25.6
KY-04-02-BALD-01	107	44.6	6.0	8	-2.0	Barrier13	BarA-87	580	20.0	23.8

						Barrier13	BarA-86	579	20.0	23.7
						Barrier13	BarA-85	578	20.0	23.6
						Barrier13	BarA-88	581	20.0	23.6
						Barrier13	BarA-84	577	20.0	23.6
						Barrier13	BarA-82	575	20.0	23.6
						Barrier13	BarA-83	576	20.0	23.5
						Barrier13	BarA-81	574	20.0	23.4
						Barrier13	BarA-79	572	20.0	23.3
						Barrier13	BarA-77	570	20.0	23.3
KY-04-02-BROD-03	112	46.9	6.8	8	-1.2	Barrier13	BarA-237	728	0.0	27.8
						Barrier13	BarA-231	722	0.0	27.4
						Barrier13	BarA-230	721	0.0	27.3
						Barrier13	BarA-175	667	20.0	26.9
						Barrier13	BarA-170	662	20.0	26.9
						Barrier13	BarA-173	665	20.0	26.8
						Barrier13	BarA-180	672	20.0	26.8
						Barrier13	BarA-232	723	0.0	26.8
						Barrier13	BarA-238	729	0.0	26.8
						Barrier13	BarA-171	663	20.0	26.8
KY-04-01-BROD-03	27	47.9	7.0	8	-1.0	Barrier13	BarA-231	722	0.0	30.9
						Barrier13	BarA-233	724	0.0	30.9
						Barrier13	BarA-230	721	0.0	30.2
						Barrier13	BarA-232	723	0.0	29.4
						Barrier13	BarA-228	719	0.0	29.1
						Barrier13	BarA-238	729	0.0	28.6
						Barrier13	BarA-239	730	0.0	28.3
						Barrier13	BarA-252	743	0.0	28.0
						Barrier13	BarA-229	720	0.0	28.0
						Barrier13	BarA-234	725	0.0	28.0
Total Cost, All Barriers (including additional cost(s))					$2627872					

HMB Professional Engineers				12 June 2018						
MG/mdg				TNM 2.5						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	I-69 ORX									
RUN:	Central 1_Toll69_Updated Barrier									
BARRIER DESIGN:	C1_Taransay_Updated									
Barriers										
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top	Run:Rise	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier13	W	8.00	19.47	24.00	4500	87596				2627872
									Total Cost:	2627872

HMB Professional Engineers 12 June 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_Toll69_Updated Barrier
BARRIER DESIGN: C1_Taransay_Updated

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier13	W	BarA-01	491	0.00	0.00	0.00	0	0				0
		BarA-02	495	0.00	0.00	0.00	0	0				0
		BarA-03	496	8.00	8.00	8.00	20	163				4879
		BarA-04	497	16.00	16.00	16.00	20	319				9564
		BarA-05	498	16.00	16.00	16.00	20	318				9528
		BarA-06	499	16.00	16.00	16.00	20	319				9564
		BarA-07	500	16.00	16.00	16.00	20	326				9793
		BarA-08	501	16.00	16.00	16.00	20	318				9528
		BarA-09	502	16.00	16.00	16.00	20	319				9564
		BarA-10	503	20.00	20.00	20.00	20	397				11911
		BarA-11	504	20.00	20.00	20.00	20	398				11955
		BarA-12	505	20.00	20.00	20.00	20	408				12241
		BarA-13	506	20.00	20.00	20.00	20	397				11911
		BarA-14	507	20.00	20.00	20.00	20	398				11955
		BarA-15	508	20.00	20.00	20.00	20	397				11911
		BarA-16	509	20.00	20.00	20.00	20	398				11955
		BarA-17	510	20.00	20.00	20.00	20	408				12241
		BarA-18	511	20.00	20.00	20.00	20	397				11911
		BarA-19	512	20.00	20.00	20.00	20	398				11955
		BarA-20	513	20.00	20.00	20.00	20	397				11911
		BarA-21	514	20.00	20.00	20.00	20	408				12241
		BarA-22	515	20.00	20.00	20.00	20	398				11955
		BarA-23	516	20.00	20.00	20.00	20	397				11911
		BarA-24	517	20.00	20.00	20.00	20	398				11955
		BarA-25	518	20.00	20.00	20.00	20	398				11955
		BarA-26	519	20.00	20.00	20.00	20	407				12198

		BarA-27	520	20.00	20.00	20.00	20	398				11955
		BarA-28	521	20.00	20.00	20.00	20	398				11955
		BarA-29	522	20.00	20.00	20.00	20	397				11911
		BarA-30	523	20.00	20.00	20.00	20	398				11955
		BarA-31	524	20.00	20.00	20.00	20	407				12198
		BarA-32	525	20.00	20.00	20.00	20	398				11955
		BarA-33	526	20.00	20.00	20.00	20	398				11955
		BarA-34	527	20.00	20.00	20.00	20	397				11911
		BarA-35	528	20.00	20.00	20.00	20	408				12241
		BarA-36	529	20.00	20.00	20.00	20	397				11911
		BarA-37	530	20.00	20.00	20.00	20	398				11955
		BarA-38	531	20.00	20.00	20.00	20	398				11955
		BarA-39	532	20.00	20.00	20.00	20	397				11911
		BarA-40	533	20.00	20.00	20.00	20	408				12241
		BarA-41	534	20.00	20.00	20.00	20	397				11911
		BarA-42	535	20.00	20.00	20.00	20	398				11955
		BarA-43	536	20.00	20.00	20.00	20	398				11955
		BarA-44	537	20.00	20.00	20.00	20	397				11911
		BarA-45	538	20.00	20.00	20.00	20	408				12241
		BarA-46	539	20.00	20.00	20.00	20	397				11911
		BarA-47	540	20.00	20.00	20.00	20	398				11955
		BarA-48	541	20.00	20.00	20.00	20	398				11955
		BarA-49	542	20.00	20.00	20.00	20	407				12198
		BarA-50	543	20.00	20.00	20.00	20	398				11955
		BarA-51	544	20.00	20.00	20.00	20	397				11911
		BarA-52	545	20.00	20.00	20.00	20	398				11955
		BarA-53	546	20.00	20.00	20.00	20	398				11955
		BarA-54	547	20.00	20.00	20.00	20	407				12198
		BarA-55	548	20.00	20.00	20.00	20	398				11955
		BarA-56	549	20.00	20.00	20.00	20	397				11911
		BarA-57	550	20.00	20.00	20.00	20	398				11955
		BarA-58	551	20.00	20.00	20.00	20	398				11955
		BarA-59	552	20.00	20.00	20.00	20	407				12198
		BarA-60	553	20.00	20.00	20.00	20	398				11955
		BarA-61	554	20.00	20.00	20.00	20	397				11911
		BarA-62	555	20.00	20.00	20.00	20	398				11955
		BarA-63	556	20.00	20.00	20.00	20	408				12241
		BarA-64	557	20.00	20.00	20.00	20	397				11911
		BarA-65	558	20.00	20.00	20.00	20	398				11955

		BarA-66	559	20.00	20.00	20.00	20	398				11955
		BarA-67	560	20.00	20.00	20.00	20	397				11911
		BarA-68	561	20.00	20.00	20.00	20	408				12241
		BarA-69	562	20.00	20.00	20.00	20	398				11955
		BarA-70	563	20.00	20.00	20.00	20	397				11911
		BarA-71	564	20.00	20.00	20.00	20	398				11955
		BarA-72	565	20.00	20.00	20.00	20	397				11911
		BarA-73	566	20.00	20.00	20.00	20	408				12241
		BarA-74	567	20.00	20.00	20.00	20	398				11955
		BarA-75	568	20.00	20.00	20.00	20	397				11911
		BarA-76	569	20.00	20.00	20.00	20	398				11955
		BarA-77	570	20.00	20.00	20.00	20	407				12198
		BarA-78	571	20.00	20.00	20.00	20	398				11955
		BarA-79	572	20.00	20.00	20.00	20	398				11955
		BarA-80	573	20.00	20.00	20.00	20	397				11911
		BarA-81	574	20.00	20.00	20.00	20	398				11955
		BarA-82	575	20.00	20.00	20.00	20	407				12198
		BarA-83	576	20.00	20.00	20.00	20	398				11955
		BarA-84	577	20.00	20.00	20.00	20	398				11955
		BarA-85	578	20.00	20.00	20.00	20	397				11911
		BarA-86	579	20.00	20.00	20.00	20	398				11955
		BarA-87	580	20.00	20.00	20.00	20	407				12198
		BarA-88	581	20.00	20.00	20.00	20	398				11955
		BarA-89	582	24.00	24.00	24.00	20	478				14346
		BarA-90	583	24.00	24.00	24.00	20	476				14293
		BarA-91	584	24.00	24.00	24.00	20	490				14690
		BarA-92	585	24.00	24.00	24.00	20	476				14293
		BarA-93	586	24.00	24.00	24.00	20	478				14346
		BarA-94	587	24.00	24.00	24.00	20	478				14346
		BarA-95	588	24.00	24.00	24.00	20	476				14293
		BarA-96	589	24.00	24.00	24.00	20	490				14690
		BarA-97	590	20.00	20.00	20.00	20	397				11911
		BarA-98	591	20.00	20.00	20.00	20	398				11955
		BarA-99	592	20.00	20.00	20.00	20	398				11955
		BarA-100	492	20.00	20.00	20.00	20	397				11911
		BarA-101	593	20.00	20.00	20.00	20	408				12241
		BarA-102	594	20.00	20.00	20.00	20	397				11911
		BarA-103	595	20.00	20.00	20.00	20	398				11955
		BarA-104	596	20.00	20.00	20.00	20	398				11955

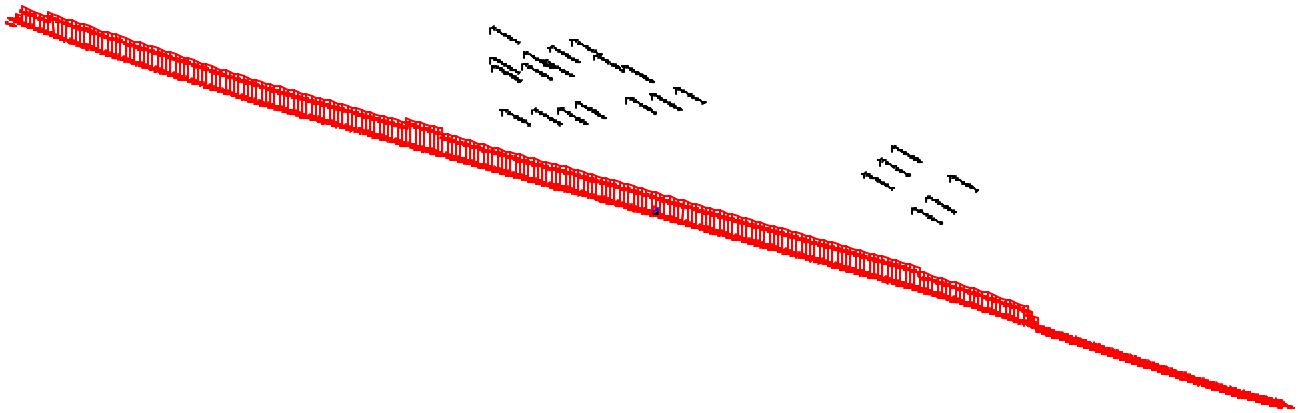
		BarA-105	597	20.00	20.00	20.00	20	407				12198
		BarA-106	598	20.00	20.00	20.00	20	398				11955
		BarA-107	599	20.00	20.00	20.00	20	397				11911
		BarA-108	600	20.00	20.00	20.00	20	398				11955
		BarA-109	601	20.00	20.00	20.00	20	398				11955
		BarA-110	602	20.00	20.00	20.00	20	408				12241
		BarA-111	603	20.00	20.00	20.00	20	397				11911
		BarA-112	604	20.00	20.00	20.00	20	398				11955
		BarA-113	605	20.00	20.00	20.00	20	397				11911
		BarA-114	606	20.00	20.00	20.00	20	408				12241
		BarA-115	607	20.00	20.00	20.00	20	398				11955
		BarA-116	608	20.00	20.00	20.00	20	397				11911
		BarA-117	609	20.00	20.00	20.00	20	398				11955
		BarA-118	610	20.00	20.00	20.00	20	397				11911
		BarA-119	611	20.00	20.00	20.00	20	408				12241
		BarA-120	612	20.00	20.00	20.00	20	398				11955
		BarA-121	613	20.00	20.00	20.00	20	397				11911
		BarA-122	614	20.00	20.00	20.00	20	398				11955
		BarA-123	615	20.00	20.00	20.00	20	397				11911
		BarA-124	616	20.00	20.00	20.00	20	408				12241
		BarA-125	617	20.00	20.00	20.00	20	398				11955
		BarA-126	618	20.00	20.00	20.00	20	397				11911
		BarA-127	619	20.00	20.00	20.00	20	398				11955
		BarA-128	620	20.00	20.00	20.00	20	407				12198
		BarA-129	621	20.00	20.00	20.00	20	398				11955
		BarA-130	622	20.00	20.00	20.00	20	398				11955
		BarA-131	623	20.00	20.00	20.00	20	397				11911
		BarA-132	624	20.00	20.00	20.00	20	398				11955
		BarA-133	625	20.00	20.00	20.00	20	407				12198
		BarA-134	626	20.00	20.00	20.00	20	398				11955
		BarA-135	627	20.00	20.00	20.00	20	398				11955
		BarA-136	628	20.00	20.00	20.00	20	397				11911
		BarA-137	629	20.00	20.00	20.00	20	398				11955
		BarA-138	630	20.00	20.00	20.00	20	407				12198
		BarA-139	631	20.00	20.00	20.00	20	398				11955
		BarA-140	632	20.00	20.00	20.00	20	398				11955
		BarA-141	633	20.00	20.00	20.00	20	397				11911
		BarA-142	634	20.00	20.00	20.00	20	408				12241
		BarA-143	635	20.00	20.00	20.00	20	397				11911

		BarA-144	636	20.00	20.00	20.00	20	398				11955
		BarA-145	637	20.00	20.00	20.00	20	398				11955
		BarA-146	638	20.00	20.00	20.00	20	397				11911
		BarA-147	639	20.00	20.00	20.00	20	408				12241
		BarA-148	640	20.00	20.00	20.00	20	397				11911
		BarA-149	641	20.00	20.00	20.00	20	398				11955
		BarA-150	642	20.00	20.00	20.00	20	398				11955
		BarA-151	643	20.00	20.00	20.00	20	398				11955
		BarA-152	644	20.00	20.00	20.00	20	407				12198
		BarA-153	645	20.00	20.00	20.00	20	398				11955
		BarA-154	646	20.00	20.00	20.00	20	397				11911
		BarA-155	647	20.00	20.00	20.00	20	398				11955
		BarA-156	648	20.00	20.00	20.00	20	408				12241
		BarA-157	649	20.00	20.00	20.00	20	397				11911
		BarA-158	650	20.00	20.00	20.00	20	398				11955
		BarA-159	651	20.00	20.00	20.00	20	397				11911
		BarA-160	652	20.00	20.00	20.00	20	398				11955
		BarA-161	653	20.00	20.00	20.00	20	408				12241
		BarA-162	654	20.00	20.00	20.00	20	397				11911
		BarA-163	655	20.00	20.00	20.00	20	398				11955
		BarA-164	656	20.00	20.00	20.00	20	397				11911
		BarA-165	657	20.00	20.00	20.00	20	398				11955
		BarA-166	658	20.00	20.00	20.00	20	408				12241
		BarA-167	659	20.00	20.00	20.00	20	397				11911
		BarA-168	660	20.00	20.00	20.00	20	398				11955
		BarA-169	661	20.00	20.00	20.00	20	397				11911
		BarA-170	662	20.00	20.00	20.00	20	408				12241
		BarA-171	663	20.00	20.00	20.00	20	398				11955
		BarA-172	664	20.00	20.00	20.00	20	397				11911
		BarA-173	665	20.00	20.00	20.00	20	398				11955
		BarA-174	666	20.00	20.00	20.00	20	397				11911
		BarA-175	667	20.00	20.00	20.00	20	408				12241
		BarA-176	668	20.00	20.00	20.00	20	398				11955
		BarA-177	669	20.00	20.00	20.00	20	397				11911
		BarA-178	670	20.00	20.00	20.00	20	398				11955
		BarA-179	671	20.00	20.00	20.00	20	397				11911
		BarA-180	672	20.00	20.00	20.00	20	408				12241
		BarA-181	673	20.00	20.00	20.00	20	398				11955
		BarA-182	674	20.00	20.00	20.00	20	397				11911

		BarA-183	675	20.00	20.00	20.00	20	398				11955
		BarA-184	676	20.00	20.00	20.00	20	407				12198
		BarA-185	677	20.00	20.00	20.00	20	398				11955
		BarA-186	678	20.00	20.00	20.00	20	398				11955
		BarA-187	679	20.00	20.00	20.00	20	397				11911
		BarA-188	680	20.00	20.00	20.00	20	398				11955
		BarA-189	681	20.00	20.00	20.00	20	407				12198
		BarA-190	682	20.00	20.00	20.00	20	398				11955
		BarA-191	683	20.00	20.00	20.00	20	398				11955
		BarA-192	684	20.00	20.00	20.00	20	398				11955
		BarA-193	685	20.00	20.00	20.00	20	397				11911
		BarA-194	686	20.00	20.00	20.00	20	408				12241
		BarA-195	687	20.00	20.00	20.00	20	397				11911
		BarA-196	688	20.00	20.00	20.00	20	398				11955
		BarA-197	689	20.00	20.00	20.00	20	398				11955
		BarA-198	690	20.00	20.00	20.00	20	407				12198
		BarA-199	493	20.00	20.00	20.00	20	398				11955
		BarA-200	691	20.00	20.00	20.00	20	397				11911
		BarA-201	692	20.00	20.00	20.00	20	398				11955
		BarA-202	693	16.00	16.00	16.00	20	319				9564
		BarA-203	694	16.00	16.00	16.00	20	325				9758
		BarA-204	695	16.00	16.00	16.00	20	319				9564
		BarA-205	696	16.00	16.00	16.00	20	318				9528
		BarA-206	697	16.00	16.00	16.00	20	319				9564
		BarA-207	698	16.00	16.00	16.00	20	319				9564
		BarA-208	699	16.00	16.00	16.00	20	325				9758
		BarA-209	700	16.00	16.00	16.00	20	319				9564
		BarA-210	701	16.00	16.00	16.00	20	318				9528
		BarA-211	702	16.00	16.00	16.00	20	319				9564
		BarA-212	703	16.00	16.00	16.00	20	326				9793
		BarA-213	704	16.00	16.00	16.00	20	318				9528
		BarA-214	705	16.00	16.00	16.00	20	319				9564
		BarA-215	706	16.00	16.00	16.00	20	318				9528
		BarA-216	707	16.00	16.00	16.00	20	319				9564
		BarA-217	708	16.00	16.00	16.00	20	326				9793
		BarA-218	709	16.00	16.00	16.00	20	318				9528
		BarA-219	710	16.00	16.00	16.00	20	319				9564
		BarA-220	711	16.00	16.00	16.00	20	318				9528
		BarA-221	712	16.00	16.00	16.00	20	319				9564

		BarA-222	713	16.00	16.00	16.00	20	326				9793
		BarA-223	714	16.00	16.00	16.00	20	318				9528
		BarA-224	715	16.00	16.00	16.00	20	319				9564
		BarA-225	716	16.00	16.00	16.00	20	318				9528
		BarA-226	717	12.00	12.00	12.00	20	245				7345
		BarA-227	718	8.00	8.00	8.00	20	159				4782
		BarA-228	719	0.00	0.00	0.00	0	0				0
		BarA-229	720	0.00	0.00	0.00	0	0				0
		BarA-230	721	0.00	0.00	0.00	0	0				0
		BarA-231	722	0.00	0.00	0.00	0	0				0
		BarA-232	723	0.00	0.00	0.00	0	0				0
		BarA-233	724	0.00	0.00	0.00	0	0				0
		BarA-234	725	0.00	0.00	0.00	0	0				0
		BarA-235	726	0.00	0.00	0.00	0	0				0
		BarA-236	727	0.00	0.00	0.00	0	0				0
		BarA-237	728	0.00	0.00	0.00	0	0				0
		BarA-238	729	0.00	0.00	0.00	0	0				0
		BarA-239	730	0.00	0.00	0.00	0	0				0
		BarA-240	731	0.00	0.00	0.00	0	0				0
		BarA-241	732	0.00	0.00	0.00	0	0				0
		BarA-242	733	0.00	0.00	0.00	0	0				0
		BarA-243	734	0.00	0.00	0.00	0	0				0
		BarA-244	735	0.00	0.00	0.00	0	0				0
		BarA-245	736	0.00	0.00	0.00	0	0				0
		BarA-246	737	0.00	0.00	0.00	0	0				0
		BarA-247	738	0.00	0.00	0.00	0	0				0
		BarA-248	739	0.00	0.00	0.00	0	0				0
		BarA-249	740	0.00	0.00	0.00	0	0				0
		BarA-250	741	0.00	0.00	0.00	0	0				0
		BarA-251	742	0.00	0.00	0.00	0	0				0
		BarA-252	743	0.00	0.00	0.00	0	0				0
		BarA-253	744	0.00	0.00	0.00	0	0				0
		BarA-254	745	0.00	0.00	0.00	0	0				0
		BarA-255	746	0.00	0.00	0.00	0	0				0
		BarA-256	747	0.00	0.00	0.00	0	0				0
		BarA-257	748	0.00	0.00	0.00	0	0				0
		BarA-258	749	0.00	0.00	0.00	0	0				0
		BarA-259	750	0.00	0.00	0.00	0	0				0
		BarA-260	751	0.00	0.00	0.00	0	0				0

		BarA-261	752	0.00	0.00	0.00	0	0				0
		BarA-262	753	0.00	0.00	0.00	0	0				0
		BarA-263	754	0.00	0.00	0.00	0	0				0
		BarA-264	755	0.00	0.00	0.00	0	0				0
		BarA-265	756	0.00	0.00	0.00	0	0				0
		BarA-266	757	0.00	0.00	0.00	0	0				0
		BarA-267	758	0.00	0.00	0.00	0	0				0
		BarA-268	759	0.00	0.00	0.00	0	0				0
		BarA-269	760	0.00	0.00	0.00	0	0				0
		BarA-270	761	0.00	0.00	0.00	0	0				0
		BarA-271	762	0.00	0.00	0.00	0	0				0
		BarA-272	763	0.00	0.00	0.00	0	0				0
		BarA-273	764	0.00	0.00	0.00	0	0				0
		BarA-274	765	0.00	0.00	0.00	0	0				0
		BarA-275	766	0.00	0.00	0.00	0	0				0
		BarA-276	767	0.00	0.00	0.00	0	0				0
		BarA-277	768	0.00	0.00	0.00	0	0				0
		BarA-278	769	0.00	0.00	0.00	0	0				0
		BarA-279	770	0.00	0.00	0.00	0	0				0
		BarA-280	771	0.00	0.00	0.00	0	0				0
		BarA-281	772	0.00	0.00	0.00	0	0				0



Central 1_Toll69_Updated Barrier	Sheet 1 of 1	12 Jun 2018
	HMB Professional Engineers	
Barrier View-C1_Taransay_Updated	Project/Contract No. I-69 ORX	
Run name: C1_TOLL69_UPDATED_A	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR CENTRAL 1 – US 60 TIE (TOLL I-69 ONLY)

HMB Professional Engineers 13 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_Toll I-69 Only Barrier 4A/B
BARRIER DESIGN: C1_Toll69Only_Area B
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-04-01-US60-27	101	1	48.9	48.8	66	-0.1	10	----	46.4	2.4	8	-5.6
KY-04-01-US60-26	100	1	50.1	49.6	66	-0.5	10	----	46.7	2.9	8	-5.1
KY-04-01-US60-25	99	1	51.3	50.1	66	-1.2	10	----	46.8	3.3	8	-4.7
KY-04-01-US60-24	98	1	52.7	51.5	66	-1.2	10	----	44.8	6.7	8	-1.3
KY-04-01-US60-23	97	1	53.6	53.0	66	-0.6	10	----	46.0	7.0	8	-1.0
KY-04-01-US60-22	96	1	53.9	54.4	66	0.5	10	----	47.0	7.4	8	-0.6
KY-04-01-US60-21	94	1	52.6	55.1	66	2.5	10	----	48.4	6.7	8	-1.3
KY-04-01-US60-29	103	1	47.2	48.1	66	0.9	10	----	46.0	2.1	8	-5.9
KY-04-01-US60-20	93	1	52.9	54.8	66	1.9	10	----	48.9	5.9	8	-2.1
KY-04-01-US60-19	92	1	53.1	54.6	66	1.5	10	----	48.9	5.7	8	-2.3
KY-04-01-US60-18	91	1	53.3	54.6	66	1.3	10	----	49.3	5.3	8	-2.7
KY-04-01-US60-17	90	1	53.8	54.7	66	0.9	10	----	49.6	5.1	8	-2.9
KY-04-01-US60-16	89	1	53.8	54.8	66	1.0	10	----	49.8	5.0	8	-3.0
KY-04-01-US60-15	88	1	54.7	55.2	66	0.5	10	----	50.2	5.0	8	-3.0
KY-04-01-US60-14	87	1	55.2	55.1	66	-0.1	10	----	50.5	4.6	8	-3.4
KY-04-01-US60-13	86	1	55.3	55.8	66	0.5	10	----	51.4	4.4	8	-3.6
KY-04-01-US60-12	85	1	54.9	56.3	66	1.4	10	----	51.8	4.5	8	-3.5
KY-04-01-US60-12	85	1	54.9	56.4	66	1.5	10	----	52.1	4.3	8	-3.7
KY-04-01-US60-11	83	1	55.4	56.3	66	0.9	10	----	52.2	4.1	8	-3.9
KY-04-01-US60-10	82	1	55.4	56.5	66	1.1	10	----	52.5	4.0	8	-4.0
KY-04-01-US60-09	82	1	55.5	56.6	66	1.1	10	----	52.7	3.9	8	-4.1
KY-04-01-US60-08	81	1	55.7	56.7	66	1.0	10	----	52.8	3.9	8	-4.1
KY-04-01-US60-07	80	4	57.1	56.9	66	-0.2	10	----	53.1	3.8	8	-4.2
KY-04-01-US60-06	79	4	57.0	58.0	66	1.0	10	----	53.6	4.4	8	-3.6

KY-04-01-US60-05	78	4	58.5	57.9	66	-0.6	10	----	52.8	5.1	8	-2.9
KY-04-01-US60-04	77	4	60.2	59.0	66	-1.2	10	----	53.0	6.0	8	-2.0
KY-04-01-US60-03	76	4	62.8	60.7	66	-2.1	10	----	54.3	6.4	8	-1.6
KY-04-01-US60-02	75	2	65.1	63.9	66	-1.2	10	----	57.1	6.8	8	-1.2
KY-04-02-US60-04	138	1	62.0	56.1	66	-5.9	10	----	55.3	0.8	8	-7.2
KY-04-01-TARD-11	72	1	40.4	62.5	66	22.1	10	Sub'l Inc	58.1	4.4	8	-3.6
KY-04-01-US60-01	74	1	61.3	66.4	66	5.1	10	Snd Lvl	59.8	6.6	8	-1.4

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	47	0.8	4.8	7.4
All Impacted	2	4.4	5.5	6.6
All that meet NR Goal	0	0.0	0.0	0.0

HMB Professional Engineers 13 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_Toll I-69 Only Barrier 4A/B
BARRIER DESIGN: C1_Toll69Only_Area B

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-04-01-US60-27	101	46.4	2.4	8	-5.6	Barrier6	point452	452	0.0	26.3
						Barrier7	point472	472	0.0	24.7
						Barrier7	point471	471	0.0	24.7
						Barrier5	point418	418	20.0	24.5
						Barrier5	point409	409	20.0	24.4
						Barrier5	point417	417	20.0	24.4
						Barrier5	point416	416	20.0	24.3
						Barrier5	point408	408	20.0	24.2
						Barrier5	point415	415	20.0	24.2
						Barrier5	point413	413	20.0	24.2
KY-04-01-US60-26	100	46.7	2.9	8	-5.1	Barrier4	point394	394	20.0	27.0
						Barrier7	point472	472	0.0	25.7
						Barrier7	point471	471	0.0	25.6
						Barrier5	point419	419	20.0	25.4
						Barrier5	point417	417	20.0	25.3
						Barrier4	point393	393	20.0	25.3
						Barrier5	point420	420	20.0	25.3
						Barrier5	point421	421	20.0	25.2
						Barrier5	point413	413	20.0	25.1
						Barrier5	point416	416	20.0	25.1
KY-04-01-US60-25	99	46.8	3.3	8	-4.7	Barrier4	point392	392	20.0	27.8

						Barrier4	point391	391	20.0	27.2
						Barrier7	point472	472	0.0	26.2
						Barrier7	point471	471	0.0	26.1
						Barrier4	point389	389	20.0	26.1
						Barrier4	point390	390	20.0	26.0
						Barrier5	point413	413	20.0	25.8
						Barrier4	point388	388	20.0	25.6
						Barrier5	point418	418	20.0	25.6
						Barrier5	point417	417	20.0	25.6
KY-04-01-US60-24	98	44.8	6.7	8	-1.3	Barrier4	point395	395	20.0	33.5
						Barrier4	point390	390	20.0	29.7
						Barrier4	point394	394	20.0	29.5
						Barrier4	point389	389	20.0	29.0
						Barrier4	point396	396	20.0	28.6
						Barrier4	point388	388	20.0	28.3
						Barrier7	point471	471	0.0	27.4
						Barrier4	point387	387	20.0	27.4
						Barrier4	point386	386	20.0	27.3
						Barrier7	point472	472	0.0	27.2
KY-04-01-US60-23	97	46.0	7.0	8	-1.0	Barrier4	point392	392	20.0	35.7
						Barrier4	point391	391	20.0	32.6
						Barrier4	point385	385	20.0	31.8
						Barrier4	point384	384	20.0	31.3
						Barrier4	point386	386	20.0	30.9
						Barrier4	point383	383	20.0	30.6
						Barrier4	point393	393	20.0	30.1
						Barrier4	point390	390	20.0	29.8
						Barrier4	point382	382	20.0	29.6
						Barrier4	point381	381	20.0	29.0
KY-04-01-US60-22	96	47.0	7.4	8	-0.6	Barrier4	point388	388	20.0	36.8
						Barrier4	point381	381	20.0	33.4
						Barrier4	point382	382	20.0	33.2
						Barrier4	point389	389	20.0	33.2
						Barrier4	point387	387	20.0	32.0
						Barrier4	point380	380	20.0	32.0
						Barrier4	point379	379	20.0	31.2

						Barrier4	point386	386	20.0	30.5
						Barrier7	point472	472	0.0	30.5
						Barrier7	point471	471	0.0	30.5
KY-04-01-US60-21	94	48.4	6.7	8	-1.3	Barrier4	point385	385	20.0	37.6
						Barrier6	point453	453	0.0	36.8
						Barrier6	point452	452	0.0	36.2
						Barrier6	point454	454	0.0	35.5
						Barrier4	point386	386	20.0	33.5
						Barrier4	point377	377	20.0	32.9
						Barrier4	point376	376	20.0	32.3
						Barrier4	point384	384	20.0	32.3
						Barrier4	point378	378	20.0	31.9
						Barrier7	point471	471	0.0	31.7
KY-04-01-US60-29	103	46.0	2.1	8	-5.9	Barrier6	point452	452	0.0	26.6
						Barrier6	point453	453	0.0	24.0
						Barrier7	point472	472	0.0	23.9
						Barrier7	point471	471	0.0	23.9
						Barrier5	point418	418	20.0	23.5
						Barrier5	point417	417	20.0	23.5
						Barrier5	point410	410	20.0	23.5
						Barrier5	point419	419	20.0	23.4
						Barrier5	point409	409	20.0	23.4
						Barrier5	point416	416	20.0	23.4
KY-04-01-US60-20	93	48.9	5.9	8	-2.1	Barrier6	point453	453	0.0	38.6
						Barrier6	point452	452	0.0	38.2
						Barrier4	point382	382	20.0	36.9
						Barrier6	point454	454	0.0	36.4
						Barrier4	point383	383	20.0	33.2
						Barrier7	point472	472	0.0	32.9
						Barrier7	point471	471	0.0	32.4
						Barrier4	point374	374	20.0	32.4
						Barrier4	point375	375	20.0	32.0
						Barrier4	point384	384	20.0	31.0
KY-04-01-US60-19	92	48.9	5.7	8	-2.3	Barrier6	point453	453	0.0	38.7
						Barrier6	point452	452	0.0	38.5
						Barrier6	point454	454	0.0	35.3

						Barrier4	point381	381	20.0	34.7
						Barrier4	point382	382	20.0	34.5
						Barrier7	point472	472	0.0	33.4
						Barrier7	point471	471	0.0	33.2
						Barrier4	point383	383	20.0	31.0
						Barrier6	point461	461	20.0	29.8
						Barrier4	point373	373	20.0	29.8
KY-04-01-US60-18	91	49.3	5.3	8	-2.7	Barrier6	point452	452	0.0	39.2
						Barrier6	point453	453	0.0	39.0
						Barrier6	point454	454	0.0	37.6
						Barrier4	point380	380	20.0	35.1
						Barrier7	point471	471	0.0	34.3
						Barrier7	point472	472	0.0	34.2
						Barrier4	point381	381	20.0	31.5
						Barrier7	point474	474	0.0	30.3
						Barrier6	point462	462	20.0	29.7
						Barrier6	point461	461	20.0	29.7
KY-04-01-US60-17	90	49.6	5.1	8	-2.9	Barrier6	point452	452	0.0	39.6
						Barrier6	point453	453	0.0	39.0
						Barrier6	point454	454	0.0	38.7
						Barrier7	point471	471	0.0	35.0
						Barrier7	point472	472	0.0	34.7
						Barrier4	point379	379	20.0	32.5
						Barrier4	point380	380	20.0	30.0
						Barrier7	point474	474	0.0	29.6
						Barrier6	point460	460	20.0	29.5
						Barrier6	point457	457	20.0	29.5
KY-04-01-US60-16	89	49.8	5.0	8	-3.0	Barrier6	point452	452	0.0	39.7
						Barrier6	point454	454	0.0	39.0
						Barrier6	point453	453	0.0	38.9
						Barrier7	point471	471	0.0	36.1
						Barrier7	point472	472	0.0	36.0
						Barrier7	point474	474	0.0	31.8
						Barrier4	point378	378	20.0	31.1
						Barrier6	point457	457	20.0	29.2
						Barrier6	point455	455	20.0	29.2

						Barrier4	point379	379	20.0	29.2
KY-04-01-US60-15	88	50.2	5.0	8	-3.0	Barrier6	point452	452	0.0	40.0
						Barrier6	point454	454	0.0	39.1
						Barrier6	point453	453	0.0	38.7
						Barrier7	point472	472	0.0	37.4
						Barrier7	point471	471	0.0	37.2
						Barrier7	point474	474	0.0	32.3
						Barrier4	point377	377	20.0	30.7
						Barrier6	point455	455	20.0	29.0
						Barrier6	point456	456	20.0	28.8
						Barrier6	point457	457	20.0	28.8
KY-04-01-US60-14	87	50.5	4.6	8	-3.4	Barrier6	point454	454	0.0	38.8
						Barrier6	point452	452	0.0	38.8
						Barrier6	point453	453	0.0	38.7
						Barrier7	point472	472	0.0	38.1
						Barrier7	point471	471	0.0	38.0
						Barrier7	point474	474	0.0	33.5
						Barrier4	point376	376	20.0	29.6
						Barrier6	point448	448	20.0	28.4
						Barrier6	point455	455	20.0	28.4
						Barrier6	point447	447	20.0	28.3
KY-04-01-US60-13	86	51.4	4.4	8	-3.6	Barrier7	point472	472	0.0	39.3
						Barrier7	point471	471	0.0	39.2
						Barrier6	point454	454	0.0	37.9
						Barrier6	point453	453	0.0	37.7
						Barrier6	point452	452	0.0	37.7
						Barrier7	point474	474	0.0	36.1
						Barrier4	point374	374	20.0	29.2
						Barrier6	point439	439	20.0	28.9
						Barrier6	point440	440	20.0	28.9
						Barrier6	point441	441	20.0	28.8
KY-04-01-US60-12	85	51.8	4.5	8	-3.5	Barrier7	point472	472	0.0	40.4
						Barrier7	point471	471	0.0	40.4
						Barrier6	point453	453	0.0	38.1
						Barrier6	point454	454	0.0	37.9
						Barrier6	point452	452	0.0	37.3

						Barrier7	point474	474	0.0	35.7
						Barrier4	point373	373	20.0	29.8
						Barrier6	point439	439	20.0	29.4
						Barrier6	point440	440	20.0	29.3
						Barrier6	point441	441	20.0	29.3
KY-04-01-US60-12	85	52.1	4.3	8	-3.7	Barrier7	point472	472	0.0	40.8
						Barrier7	point471	471	0.0	40.6
						Barrier6	point453	453	0.0	37.3
						Barrier6	point454	454	0.0	37.2
						Barrier7	point474	474	0.0	37.0
						Barrier6	point452	452	0.0	36.6
						Barrier6	point439	439	20.0	29.5
						Barrier6	point440	440	20.0	29.3
						Barrier6	point437	437	20.0	29.3
						Barrier6	point441	441	20.0	29.2
KY-04-01-US60-11	83	52.2	4.1	8	-3.9	Barrier7	point471	471	0.0	40.8
						Barrier7	point472	472	0.0	40.4
						Barrier7	point474	474	0.0	36.6
						Barrier6	point453	453	0.0	36.5
						Barrier6	point454	454	0.0	36.4
						Barrier6	point452	452	0.0	36.0
						Barrier4	point372	372	20.0	29.7
						Barrier6	point437	437	20.0	29.2
						Barrier6	point439	439	20.0	29.2
						Barrier6	point440	440	20.0	29.0
KY-04-01-US60-10	82	52.5	4.0	8	-4.0	Barrier7	point471	471	0.0	40.8
						Barrier7	point472	472	0.0	40.8
						Barrier7	point474	474	0.0	37.4
						Barrier6	point453	453	0.0	36.4
						Barrier6	point454	454	0.0	36.2
						Barrier6	point452	452	0.0	35.7
						Barrier4	point372	372	20.0	29.3
						Barrier6	point439	439	20.0	29.3
						Barrier6	point437	437	20.0	29.1
						Barrier7	point473	473	20.0	29.1
KY-04-01-US60-09	82	52.7	3.9	8	-4.1	Barrier7	point471	471	0.0	41.2

						Barrier7	point472	472	0.0	41.1
						Barrier7	point474	474	0.0	37.3
						Barrier6	point453	453	0.0	35.7
						Barrier6	point454	454	0.0	35.6
						Barrier6	point452	452	0.0	35.3
						Barrier4	point371	371	20.0	29.9
						Barrier7	point473	473	20.0	29.1
						Barrier6	point437	437	20.0	29.1
						Barrier7	point469	469	20.0	28.9
KY-04-01-US60-08	81	52.8	3.9	8	-4.1	Barrier7	point472	472	0.0	41.2
						Barrier7	point471	471	0.0	40.6
						Barrier7	point474	474	0.0	37.1
						Barrier6	point453	453	0.0	35.3
						Barrier6	point454	454	0.0	35.3
						Barrier6	point452	452	0.0	35.0
						Barrier4	point371	371	20.0	30.1
						Barrier7	point473	473	20.0	29.2
						Barrier7	point469	469	20.0	29.1
						Barrier7	point467	467	20.0	29.1
KY-04-01-US60-07	80	53.1	3.8	8	-4.2	Barrier7	point472	472	0.0	41.0
						Barrier7	point471	471	0.0	40.8
						Barrier7	point474	474	0.0	36.5
						Barrier6	point454	454	0.0	35.2
						Barrier6	point453	453	0.0	34.9
						Barrier6	point452	452	0.0	34.4
						Barrier4	point370	370	20.0	30.0
						Barrier7	point469	469	20.0	29.3
						Barrier7	point467	467	20.0	29.3
						Barrier7	point470	470	20.0	29.2
KY-04-01-US60-06	79	53.6	4.4	8	-3.6	Barrier7	point471	471	0.0	42.4
						Barrier7	point472	472	0.0	42.3
						Barrier6	point453	453	0.0	39.8
						Barrier6	point454	454	0.0	39.4
						Barrier7	point474	474	0.0	39.2
						Barrier6	point452	452	0.0	38.7
						Barrier4	point371	371	20.0	31.5

						Barrier6	point439	439	20.0	30.6
						Barrier6	point440	440	20.0	30.6
						Barrier6	point437	437	20.0	30.4
KY-04-01-US60-05	78	52.8	5.1	8	-2.9	Barrier7	point471	471	0.0	41.4
						Barrier7	point472	472	0.0	41.3
						Barrier6	point454	454	0.0	40.3
						Barrier6	point452	452	0.0	39.0
						Barrier7	point474	474	0.0	38.0
						Barrier6	point453	453	0.0	32.5
						Barrier6	point439	439	20.0	30.4
						Barrier6	point440	440	20.0	30.4
						Barrier4	point367	367	20.0	30.4
						Barrier6	point441	441	20.0	30.3
KY-04-01-US60-04	77	53.0	6.0	8	-2.0	Barrier6	point452	452	0.0	42.9
						Barrier7	point472	472	0.0	41.6
						Barrier6	point453	453	0.0	41.5
						Barrier6	point454	454	0.0	41.3
						Barrier7	point471	471	0.0	41.2
						Barrier7	point474	474	0.0	36.5
						Barrier4	point371	371	20.0	32.0
						Barrier4	point367	367	20.0	32.0
						Barrier6	point447	447	20.0	31.4
						Barrier4	point365	365	20.0	31.4
KY-04-01-US60-03	76	54.3	6.4	8	-1.6	Barrier6	point452	452	0.0	45.3
						Barrier6	point453	453	0.0	44.1
						Barrier6	point454	454	0.0	43.8
						Barrier7	point472	472	0.0	42.4
						Barrier7	point471	471	0.0	42.0
						Barrier7	point474	474	0.0	39.2
						Barrier4	point367	367	20.0	33.8
						Barrier6	point447	447	20.0	33.1
						Barrier4	point365	365	20.0	33.1
						Barrier6	point448	448	20.0	33.0
KY-04-01-US60-02	75	57.1	6.8	8	-1.2	Barrier6	point452	452	0.0	50.4
						Barrier6	point453	453	0.0	49.6
						Barrier6	point454	454	0.0	49.5

						Barrier7	point472	472	0.0	43.4
						Barrier7	point471	471	0.0	43.0
						Barrier7	point474	474	0.0	40.3
						Barrier4	point367	367	20.0	36.6
						Barrier4	point365	365	20.0	36.2
						Barrier6	point449	449	20.0	36.1
						Barrier6	point450	450	20.0	36.1
KY-04-02-US60-04	138	55.3	0.8	8	-7.2	Barrier4	point368	368	20.0	31.2
						Barrier4	point367	367	20.0	30.9
						Barrier4	point365	365	20.0	29.2
						Barrier5	point436	436	20.0	25.6
						Barrier5	point428	428	20.0	25.5
						Barrier5	point417	417	20.0	25.4
						Barrier5	point418	418	20.0	25.4
						Barrier5	point419	419	20.0	25.4
						Barrier5	point429	429	20.0	25.3
						Barrier5	point421	421	20.0	25.3
KY-04-01-TARD-11	72	58.1	4.4	8	-3.6	Barrier7	point471	471	0.0	46.3
						Barrier7	point472	472	0.0	45.4
						Barrier7	point474	474	0.0	40.6
						Barrier6	point452	452	0.0	37.1
						Barrier6	point453	453	0.0	36.7
						Barrier6	point454	454	0.0	36.5
						Barrier4	point365	365	20.0	34.9
						Barrier8	point479	479	20.0	34.3
						Barrier8	point475	475	20.0	34.2
						Barrier8	point477	477	20.0	34.2
KY-04-01-US60-01	74	59.8	6.6	8	-1.4	Barrier6	point452	452	0.0	54.1
						Barrier6	point453	453	0.0	54.0
						Barrier6	point454	454	0.0	53.1
						Barrier7	point472	472	0.0	41.8
						Barrier7	point471	471	0.0	41.7
						Barrier4	point365	365	20.0	41.7
						Barrier7	point474	474	0.0	40.6
						Barrier6	point450	450	20.0	38.8
						Barrier6	point449	449	20.0	38.8

						Barrier6	point451	451	20.0	38.8
Total Cost, All Barriers (including additional cost(s))					$1323913					

HMB Professional Engineers 13 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_Toll I-69 Only Barrier 4A/B
BARRIER DESIGN: C1_Toll69Only_Area B

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	$
Barrier5	W	20.00	20.00	20.00	779	15577				467301
Barrier4	W	20.00	20.00	20.00	614	12271				368142
Barrier6	W	20.00	20.00	20.00	501	10028				300841
Barrier7	W	20.00	20.00	20.00	80	1606				48183
Barrier8	W	20.00	20.00	20.00	91	1817				54512
Barrier9	W	20.00	20.00	20.00	142	2831				84935
									Total Cost:	1323913

HMB Professional Engineers 13 March 2018
MG/mdg TNM 2.5

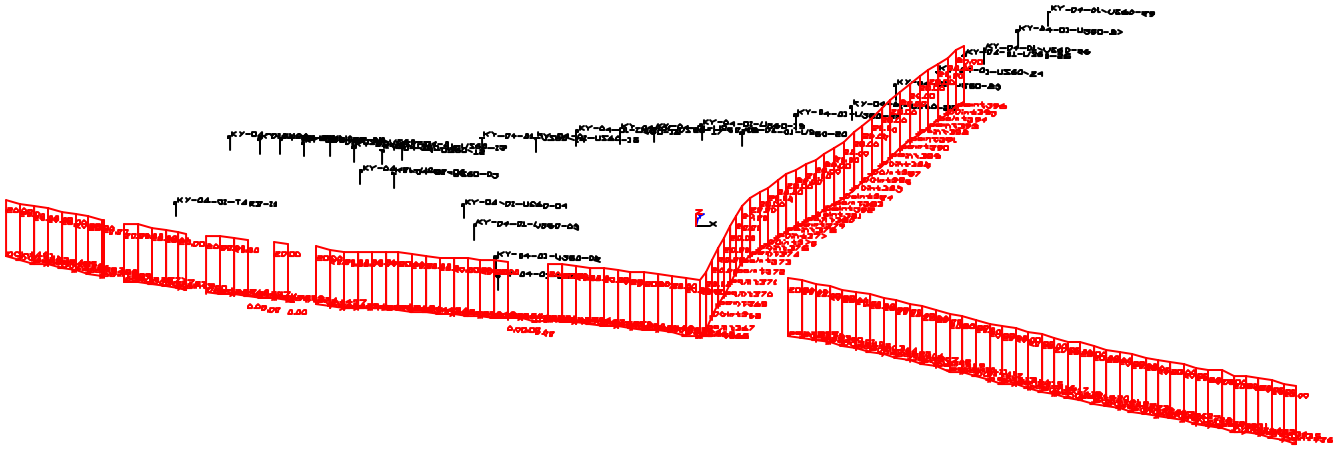
RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: Central 1_Toll I-69 Only Barrier 4A/B
BARRIER DESIGN: C1_Toll69Only_Area B

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier5	W	point397	397	20.00	20.00	20.00	20	403				12093
		point399	399	20.00	20.00	20.00	20	395				11838
		point400	400	20.00	20.00	20.00	20	404				12113
		point401	401	20.00	20.00	20.00	20	395				11861
		point402	402	20.00	20.00	20.00	20	404				12134
		point403	403	20.00	20.00	20.00	20	396				11887
		point404	404	20.00	20.00	20.00	20	405				12157
		point405	405	20.00	20.00	20.00	20	397				11914
		point406	406	20.00	20.00	20.00	20	397				11914
		point407	407	20.00	20.00	20.00	20	397				11914
		point408	408	20.00	20.00	20.00	20	408				12238
		point409	409	20.00	20.00	20.00	20	398				11944
		point410	410	20.00	20.00	20.00	20	400				12007
		point411	411	20.00	20.00	20.00	20	399				11975
		point412	412	20.00	20.00	20.00	20	400				12007
		point413	413	20.00	20.00	20.00	20	401				12042
		point414	414	20.00	20.00	20.00	20	400				12007
		point415	415	20.00	20.00	20.00	20	393				11788
		point416	416	20.00	20.00	20.00	20	403				12078
		point417	417	20.00	20.00	20.00	20	404				12117
		point418	418	20.00	20.00	20.00	20	394				11827
		point419	419	20.00	20.00	20.00	20	405				12156
		point420	420	20.00	20.00	20.00	20	396				11868
		point421	421	20.00	20.00	20.00	20	405				12156
		point422	422	20.00	20.00	20.00	20	398				11955
		point423	423	20.00	20.00	20.00	20	397				11911

		point424	424	20.00	20.00	20.00	20	398				11955
		point425	425	20.00	20.00	20.00	20	400				12001
		point426	426	20.00	20.00	20.00	20	400				12001
		point427	427	20.00	20.00	20.00	20	402				12049
		point428	428	20.00	20.00	20.00	20	402				12049
		point429	429	20.00	20.00	20.00	20	403				12098
		point430	430	20.00	20.00	20.00	20	394				11816
		point431	431	20.00	20.00	20.00	20	405				12149
		point432	432	20.00	20.00	20.00	20	396				11868
		point433	433	20.00	20.00	20.00	20	407				12202
		point434	434	20.00	20.00	20.00	20	397				11922
		point435	435	20.00	20.00	20.00	20	397				11922
		point436	436	20.00	20.00	20.00	19	379				11365
Barrier4	W	point365	365	20.00	20.00	20.00	20	400				12008
		point367	367	20.00	20.00	20.00	20	404				12117
		point368	368	20.00	20.00	20.00	20	400				12008
		point369	369	20.00	20.00	20.00	20	396				11868
		point370	370	20.00	20.00	20.00	20	400				12008
		point371	371	20.00	20.00	20.00	20	400				12008
		point372	372	20.00	20.00	20.00	20	400				12008
		point373	373	20.00	20.00	20.00	20	395				11861
		point374	374	20.00	20.00	20.00	20	405				12149
		point375	375	20.00	20.00	20.00	20	398				11945
		point376	376	20.00	20.00	20.00	20	402				12065
		point377	377	20.00	20.00	20.00	20	396				11880
		point378	378	20.00	20.00	20.00	20	402				12065
		point379	379	20.00	20.00	20.00	20	402				12065
		point380	380	20.00	20.00	20.00	20	396				11880
		point381	381	20.00	20.00	20.00	20	402				12065
		point382	382	20.00	20.00	20.00	20	396				11880
		point383	383	20.00	20.00	20.00	20	406				12182
		point384	384	20.00	20.00	20.00	20	398				11947
		point385	385	20.00	20.00	20.00	20	400				12000
		point386	386	20.00	20.00	20.00	20	402				12065
		point387	387	20.00	20.00	20.00	20	396				11880
		point388	388	20.00	20.00	20.00	20	402				12065
		point389	389	20.00	20.00	20.00	20	402				12065
		point390	390	20.00	20.00	20.00	20	396				11880

		point391	391	20.00	20.00	20.00	20	402				12065
		point392	392	20.00	20.00	20.00	20	402				12065
		point393	393	20.00	20.00	20.00	20	396				11880
		point394	394	20.00	20.00	20.00	20	402				12065
		point395	395	20.00	20.00	20.00	20	396				11880
		point396	396	20.00	20.00	20.00	14	274				8223
Barrier6	W	point437	437	20.00	20.00	20.00	20	401				12034
		point439	439	20.00	20.00	20.00	20	402				12046
		point440	440	20.00	20.00	20.00	20	402				12046
		point441	441	20.00	20.00	20.00	20	402				12046
		point442	442	20.00	20.00	20.00	20	402				12046
		point443	443	20.00	20.00	20.00	20	402				12046
		point444	444	20.00	20.00	20.00	20	392				11747
		point445	445	20.00	20.00	20.00	20	402				12046
		point446	446	20.00	20.00	20.00	20	402				12046
		point447	447	20.00	20.00	20.00	20	402				12046
		point448	448	20.00	20.00	20.00	20	402				12046
		point449	449	20.00	20.00	20.00	20	402				12046
		point450	450	20.00	20.00	20.00	20	392				11747
		point451	451	20.00	20.00	20.00	20	402				12046
		point452	452	0.00	0.00	0.00	0	0				0
		point453	453	0.00	0.00	0.00	0	0				0
		point454	454	0.00	0.00	0.00	0	0				0
		point455	455	20.00	20.00	20.00	20	402				12046
		point456	456	20.00	20.00	20.00	20	392				11747
		point457	457	20.00	20.00	20.00	20	402				12046
		point458	458	20.00	20.00	20.00	20	402				12046
		point459	459	20.00	20.00	20.00	20	402				12046
		point460	460	20.00	20.00	20.00	20	402				12046
		point461	461	20.00	20.00	20.00	20	402				12046
		point462	462	20.00	20.00	20.00	20	402				12046
		point463	463	20.00	20.00	20.00	20	391				11735
		point464	464	20.00	20.00	20.00	20	402				12060
		point465	465	20.00	20.00	20.00	20	401				12034
		point466	466	20.00	20.00	20.00	2	30				912
Barrier7	W	point467	467	20.00	20.00	20.00	20	402				12046
		point469	469	20.00	20.00	20.00	20	402				12046

		point470	470	20.00	20.00	20.00	20	402				12046
		point471	471	0.00	0.00	0.00	0	0				0
		point472	472	0.00	0.00	0.00	0	0				0
		point473	473	20.00	20.00	20.00	20	402				12046
		point474	474	0.00	0.00	0.00	0	0				0
Barrier8	W	point475	475	20.00	20.00	20.00	20	402				12046
		point477	477	20.00	20.00	20.00	20	402				12046
		point478	478	20.00	20.00	20.00	20	392				11747
		point479	479	20.00	20.00	20.00	20	402				12046
		point480	480	20.00	20.00	20.00	11	221				6627
Barrier9	W	point481	481	20.00	20.00	20.00	20	392				11747
		point483	483	20.00	20.00	20.00	20	402				12046
		point484	484	20.00	20.00	20.00	20	402				12046
		point485	485	20.00	20.00	20.00	20	402				12046
		point486	486	20.00	20.00	20.00	20	402				12046
		point487	487	20.00	20.00	20.00	20	402				12046
		point488	488	20.00	20.00	20.00	20	402				12046
		point489	489	20.00	20.00	20.00	2	30				912



Central 1_Toll I-69 Only Barrier 4A/B	Sheet 1 of 1	13 Mar 2018
	HMB Professional Engineers	
Barrier View-C1_Toll69Only_Area B	Project/Contract No. I-69 ORX	
Run name: C1_04-Toll69_AB	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR CENTRAL 1 – BRAXTON PARK DRIVE (TOLL I-69 ONLY)

HMB 4 March 2018
MG/MDG TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: 1294.11 Central 1 Toll Only 6 Barrier 4C/D
BARRIER DESIGN: BraxtonParkT69
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-04-01-R414-02F	173	1	39.8	48.0	66	8.2	10	----	45.0	3.0	8	-5.0
KY-04-01-R414-01F	172	1	39.8	49.8	66	10.0	10	Sub'l Inc	45.5	4.3	8	-3.7
KY-04-01-HART-03	160	1	39.8	50.3	66	10.5	10	Sub'l Inc	45.4	4.9	8	-3.1
KY-04-01-SAND-04	156	1	39.8	50.8	66	11.0	10	Sub'l Inc	45.7	5.1	8	-2.9
KY-04-01-SAND-03	157	1	39.8	51.6	66	11.8	10	Sub'l Inc	46.1	5.5	8	-2.5
KY-04-01-SAND-02	61	1	39.8	52.5	66	12.7	10	Sub'l Inc	47.0	5.5	8	-2.5
KY-04-02-SAND-04	155	1	39.8	50.6	66	10.8	10	Sub'l Inc	45.2	5.4	8	-2.6
KY-04-02-SAND-02	133	1	39.8	52.6	66	12.8	10	Sub'l Inc	46.7	5.9	8	-2.1
KY-04-01-BRAD-05	163	1	39.8	50.5	66	10.7	10	Sub'l Inc	45.2	5.3	8	-2.7
KY-04-01-BRAD-04	162	1	39.8	51.7	66	11.9	10	Sub'l Inc	46.0	5.7	8	-2.3
KY-04-01-BRAD-01	22	1	39.8	52.7	66	12.9	10	Sub'l Inc	46.7	6.0	8	-2.0
KY-04-01-BRAD-02	23	1	39.8	53.8	66	14.0	10	Sub'l Inc	47.6	6.2	8	-1.8
KY-04-02-BRAD-05	166	1	39.8	51.1	66	11.3	10	Sub'l Inc	45.3	5.8	8	-2.2
KY-04-02-BRAD-04	165	1	39.8	51.5	66	11.7	10	Sub'l Inc	45.6	5.9	8	-2.1
KY-04-02-BRAD-01	107	1	39.8	52.9	66	13.1	10	Sub'l Inc	46.5	6.4	8	-1.6
KY-04-02-BRAD-02	108	1	39.8	54.0	66	14.2	10	Sub'l Inc	47.2	6.8	8	-1.2
KY-04-01-CULC-05	168	1	39.8	50.6	66	10.8	10	Sub'l Inc	45.3	5.3	8	-2.7
KY-04-01-CULC-04	167	1	39.8	51.4	66	11.6	10	Sub'l Inc	46.0	5.4	8	-2.6
KY-04-01-CULC-01	38	1	39.8	52.4	66	12.6	10	Sub'l Inc	46.6	5.8	8	-2.2
KY-04-01-CULC-02	39	1	39.8	53.8	66	14.0	10	Sub'l Inc	47.1	6.7	8	-1.3
KY-04-02-CULC-05	171	1	39.8	50.0	66	10.2	10	Sub'l Inc	45.4	4.6	8	-3.4
KY-04-02-CULC-04	170	1	39.8	50.8	66	11.0	10	Sub'l Inc	45.9	4.9	8	-3.1
KY-04-02-CULC-03	169	1	39.8	51.9	66	12.1	10	Sub'l Inc	46.4	5.5	8	-2.5
KY-04-02-CULC-01	115	1	39.8	52.8	66	13.0	10	Sub'l Inc	47.2	5.6	8	-2.4

KY-04-02-CULC-02	116	1	39.8	54.1	66	14.3	10	Sub'l Inc	47.4	6.7	8	-1.3
KY-04-02-CULC-03	103	1	39.8	56.1	66	16.3	10	Sub'l Inc	48.9	7.2	8	-0.8
KY-04-02-CULC-AMB-02	144	1	39.8	57.1	66	17.3	10	Sub'l Inc	49.2	7.9	8	-0.1
KY-04-01-CULC-03	40	1	39.8	55.5	66	15.7	10	Sub'l Inc	48.3	7.2	8	-0.8
KY-04-21-BRAD-03F	164	1	39.8	55.0	66	15.2	10	Sub'l Inc	48.4	6.6	8	-1.4
KY-04-01-BRAD-03	24	1	39.8	55.3	66	15.5	10	Sub'l Inc	48.7	6.6	8	-1.4
KY-04-02-SAND-03F	154	1	39.8	53.6	66	13.8	10	Sub'l Inc	47.3	6.3	8	-1.7
KY-04-01-SAND-01	60	1	39.8	53.6	66	13.8	10	Sub'l Inc	47.9	5.7	8	-2.3
KY-04-01-HART-02F	159	1	39.8	51.9	66	12.1	10	Sub'l Inc	46.2	5.7	8	-2.3
KY-04-01-HART-01F	158	1	39.8	51.9	66	12.1	10	Sub'l Inc	46.1	5.8	8	-2.2
KY-04-01-PRIV-01F	161	1	39.8	52.1	66	12.3	10	Sub'l Inc	46.6	5.5	8	-2.5

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	35	3.0	5.8	7.9
All Impacted	34	4.3	5.9	7.9
All that meet NR Goal	0	0.0	0.0	0.0

HMB 4 March 2018
MG/MDG TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: 1294.11 Central 1 Toll Only 6 Barrier 4C/D
BARRIER DESIGN: BraxtonParkT69

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-04-01-R414-02F	173	45.0	3.0	8	-5.0	Barrier5-Barrier 4 C	point76	76	20.0	20.4
						Barrier5-Barrier 4 C	point90	90	20.0	20.0
						Barrier5-Barrier 4 C	point88	88	20.0	19.8
						Barrier5-Barrier 4 C	point92	92	20.0	19.7
						Barrier5-Barrier 4 C	point356	356	20.0	19.6
						Barrier5-Barrier 4 C	point363	363	20.0	19.6
						Barrier5-Barrier 4 C	point364	364	20.0	19.5
						Barrier5-Barrier 4 C	point355	355	20.0	19.5
						Barrier5-Barrier 4 C	point368	368	20.0	19.5
						Barrier5-Barrier 4 C	point367	367	20.0	19.5
KY-04-01-R414-01F	172	45.5	4.3	8	-3.7	Barrier5-Barrier 4 C	point87	87	20.0	22.4
						Barrier5-Barrier 4 C	point380	380	20.0	22.0
						Barrier5-Barrier 4 C	point379	379	20.0	21.9
						Barrier5-Barrier 4 C	point372	372	20.0	21.9
						Barrier5-Barrier 4 C	point385	385	20.0	21.9
						Barrier5-Barrier 4 C	point376	376	20.0	21.9
						Barrier5-Barrier 4 C	point381	381	20.0	21.9
						Barrier5-Barrier 4 C	point382	382	20.0	21.9
						Barrier5-Barrier 4 C	point378	378	20.0	21.9
						Barrier5-Barrier 4 C	point4	4	20.0	21.9
KY-04-01-HART-03	160	45.4	4.9	8	-3.1	Barrier5-Barrier 4 C	point28	28	20.0	25.3

						Barrier5-Barrier 4 C	point10	10	20.0	24.7
						Barrier5-Barrier 4 C	point378	378	20.0	23.7
						Barrier5-Barrier 4 C	point377	377	20.0	23.7
						Barrier5-Barrier 4 C	point11	11	20.0	23.3
						Barrier5-Barrier 4 C	point106	106	20.0	23.2
						Barrier5-Barrier 4 C	point105	105	20.0	23.2
						Barrier5-Barrier 4 C	point107	107	20.0	23.2
						Barrier5-Barrier 4 C	point103	103	20.0	23.2
						Barrier5-Barrier 4 C	point104	104	20.0	23.1
KY-04-01-SAND-04	156	45.7	5.1	8	-2.9	Barrier5-Barrier 4 C	point53	53	20.0	28.0
						Barrier5-Barrier 4 C	point28	28	20.0	25.9
						Barrier5-Barrier 4 C	point376	376	20.0	25.4
						Barrier5-Barrier 4 C	point12	12	20.0	25.2
						Barrier5-Barrier 4 C	point24	24	20.0	24.0
						Barrier5-Barrier 4 C	point101	101	20.0	23.9
						Barrier5-Barrier 4 C	point102	102	20.0	23.9
						Barrier5-Barrier 4 C	point103	103	20.0	23.8
						Barrier5-Barrier 4 C	point104	104	20.0	23.8
						Barrier5-Barrier 4 C	point375	375	20.0	23.8
KY-04-01-SAND-03	157	46.1	5.5	8	-2.5	Barrier5-Barrier 4 C	point52	52	20.0	28.1
						Barrier5-Barrier 4 C	point11	11	20.0	26.1
						Barrier5-Barrier 4 C	point101	101	20.0	24.9
						Barrier5-Barrier 4 C	point102	102	20.0	24.9
						Barrier5-Barrier 4 C	point103	103	20.0	24.8
						Barrier5-Barrier 4 C	point104	104	20.0	24.8
						Barrier5-Barrier 4 C	point97	97	20.0	24.8
						Barrier5-Barrier 4 C	point96	96	20.0	24.8
						Barrier5-Barrier 4 C	point100	100	20.0	24.7
						Barrier5-Barrier 4 C	point99	99	20.0	24.7
KY-04-01-SAND-02	61	47.0	5.5	8	-2.5	Barrier5-Barrier 4 C	point102	102	20.0	26.5
						Barrier5-Barrier 4 C	point101	101	20.0	26.5
						Barrier5-Barrier 4 C	point97	97	20.0	26.4
						Barrier5-Barrier 4 C	point95	95	20.0	26.4
						Barrier5-Barrier 4 C	point103	103	20.0	26.4
						Barrier5-Barrier 4 C	point99	99	20.0	26.4
						Barrier5-Barrier 4 C	point98	98	20.0	26.3

						Barrier5-Barrier 4 C	point94	94	20.0	26.3
						Barrier5-Barrier 4 C	point100	100	20.0	26.3
						Barrier5-Barrier 4 C	point104	104	20.0	26.3
KY-04-02-SAND-04	155	45.2	5.4	8	-2.6	Barrier5-Barrier 4 C	point353	353	20.0	26.2
						Barrier5-Barrier 4 C	point357	357	20.0	23.6
						Barrier5-Barrier 4 C	point85	85	20.0	23.3
						Barrier5-Barrier 4 C	point86	86	20.0	23.3
						Barrier5-Barrier 4 C	point84	84	20.0	23.3
						Barrier5-Barrier 4 C	point82	82	20.0	23.3
						Barrier5-Barrier 4 C	point87	87	20.0	23.2
						Barrier5-Barrier 4 C	point83	83	20.0	23.2
						Barrier5-Barrier 4 C	point77	77	20.0	23.2
						Barrier5-Barrier 4 C	point71	71	20.0	23.2
KY-04-02-SAND-02	133	46.7	5.9	8	-2.1	Barrier5-Barrier 4 C	point85	85	20.0	26.2
						Barrier5-Barrier 4 C	point82	82	20.0	26.1
						Barrier5-Barrier 4 C	point87	87	20.0	26.1
						Barrier5-Barrier 4 C	point84	84	20.0	26.1
						Barrier5-Barrier 4 C	point86	86	20.0	26.1
						Barrier5-Barrier 4 C	point83	83	20.0	26.1
						Barrier5-Barrier 4 C	point77	77	20.0	26.0
						Barrier5-Barrier 4 C	point79	79	20.0	26.0
						Barrier5-Barrier 4 C	point80	80	20.0	26.0
						Barrier5-Barrier 4 C	point78	78	20.0	26.0
KY-04-01-BRAD-05	163	45.2	5.3	8	-2.7	Barrier5-Barrier 4 C	point85	85	20.0	23.2
						Barrier5-Barrier 4 C	point71	71	20.0	23.2
						Barrier5-Barrier 4 C	point84	84	20.0	23.2
						Barrier5-Barrier 4 C	point77	77	20.0	23.2
						Barrier5-Barrier 4 C	point82	82	20.0	23.2
						Barrier5-Barrier 4 C	point86	86	20.0	23.1
						Barrier5-Barrier 4 C	point72	72	20.0	23.1
						Barrier5-Barrier 4 C	point70	70	20.0	23.1
						Barrier5-Barrier 4 C	point87	87	20.0	23.1
						Barrier5-Barrier 4 C	point83	83	20.0	23.1
KY-04-01-BRAD-04	162	46.0	5.7	8	-2.3	Barrier5-Barrier 4 C	point27	27	20.0	28.5
						Barrier5-Barrier 4 C	point29	29	20.0	28.4
						Barrier5-Barrier 4 C	point373	373	20.0	26.2

						Barrier5-Barrier 4 C	point374	374	20.0	25.9
						Barrier5-Barrier 4 C	point84	84	20.0	24.6
						Barrier5-Barrier 4 C	point85	85	20.0	24.6
						Barrier5-Barrier 4 C	point77	77	20.0	24.6
						Barrier5-Barrier 4 C	point82	82	20.0	24.6
						Barrier5-Barrier 4 C	point78	78	20.0	24.6
						Barrier5-Barrier 4 C	point83	83	20.0	24.6
KY-04-01-BRAD-01	22	46.7	6.0	8	-2.0	Barrier5-Barrier 4 C	point82	82	20.0	26.1
						Barrier5-Barrier 4 C	point85	85	20.0	26.0
						Barrier5-Barrier 4 C	point77	77	20.0	26.0
						Barrier5-Barrier 4 C	point84	84	20.0	26.0
						Barrier5-Barrier 4 C	point83	83	20.0	26.0
						Barrier5-Barrier 4 C	point79	79	20.0	26.0
						Barrier5-Barrier 4 C	point78	78	20.0	26.0
						Barrier5-Barrier 4 C	point86	86	20.0	26.0
						Barrier5-Barrier 4 C	point72	72	20.0	26.0
						Barrier5-Barrier 4 C	point80	80	20.0	25.9
KY-04-01-BRAD-02	23	47.6	6.2	8	-1.8	Barrier5-Barrier 4 C	point52	52	20.0	30.0
						Barrier5-Barrier 4 C	point383	383	20.0	28.7
						Barrier5-Barrier 4 C	point83	83	20.0	27.6
						Barrier5-Barrier 4 C	point84	84	20.0	27.6
						Barrier5-Barrier 4 C	point82	82	20.0	27.6
						Barrier5-Barrier 4 C	point85	85	20.0	27.6
						Barrier5-Barrier 4 C	point77	77	20.0	27.6
						Barrier5-Barrier 4 C	point78	78	20.0	27.5
						Barrier5-Barrier 4 C	point86	86	20.0	27.5
						Barrier5-Barrier 4 C	point81	81	20.0	27.5
KY-04-02-BRAD-05	166	45.3	5.8	8	-2.2	Barrier5-Barrier 4 C	point49	49	20.0	25.6
						Barrier5-Barrier 4 C	point67	67	20.0	23.6
						Barrier5-Barrier 4 C	point68	68	20.0	23.6
						Barrier5-Barrier 4 C	point66	66	20.0	23.6
						Barrier5-Barrier 4 C	point70	70	20.0	23.5
						Barrier5-Barrier 4 C	point64	64	20.0	23.5
						Barrier5-Barrier 4 C	point69	69	20.0	23.5
						Barrier5-Barrier 4 C	point65	65	20.0	23.5
						Barrier5-Barrier 4 C	point63	63	20.0	23.5

						Barrier5-Barrier 4 C	point61	61	20.0	23.4
KY-04-02-BRAD-04	165	45.6	5.9	8	-2.1	Barrier5-Barrier 4 C	point67	67	20.0	24.5
						Barrier5-Barrier 4 C	point68	68	20.0	24.5
						Barrier5-Barrier 4 C	point70	70	20.0	24.5
						Barrier5-Barrier 4 C	point66	66	20.0	24.5
						Barrier5-Barrier 4 C	point69	69	20.0	24.4
						Barrier5-Barrier 4 C	point63	63	20.0	24.4
						Barrier5-Barrier 4 C	point61	61	20.0	24.4
						Barrier5-Barrier 4 C	point62	62	20.0	24.4
						Barrier5-Barrier 4 C	point65	65	20.0	24.3
						Barrier5-Barrier 4 C	point64	64	20.0	24.3
KY-04-02-BRAD-01	107	46.5	6.4	8	-1.6	Barrier5-Barrier 4 C	point372	372	20.0	27.3
						Barrier5-Barrier 4 C	point67	67	20.0	26.6
						Barrier5-Barrier 4 C	point66	66	20.0	26.5
						Barrier5-Barrier 4 C	point68	68	20.0	26.5
						Barrier5-Barrier 4 C	point52	52	20.0	26.4
						Barrier5-Barrier 4 C	point65	65	20.0	26.4
						Barrier5-Barrier 4 C	point63	63	20.0	26.4
						Barrier5-Barrier 4 C	point64	64	20.0	26.4
						Barrier5-Barrier 4 C	point69	69	20.0	26.3
						Barrier5-Barrier 4 C	point70	70	20.0	26.3
KY-04-02-BRAD-02	108	47.2	6.8	8	-1.2	Barrier5-Barrier 4 C	point67	67	20.0	27.9
						Barrier5-Barrier 4 C	point68	68	20.0	27.9
						Barrier5-Barrier 4 C	point69	69	20.0	27.8
						Barrier5-Barrier 4 C	point66	66	20.0	27.7
						Barrier5-Barrier 4 C	point65	65	20.0	27.7
						Barrier5-Barrier 4 C	point64	64	20.0	27.7
						Barrier5-Barrier 4 C	point70	70	20.0	27.7
						Barrier5-Barrier 4 C	point72	72	20.0	27.7
						Barrier5-Barrier 4 C	point71	71	20.0	27.6
						Barrier5-Barrier 4 C	point61	61	20.0	27.6
KY-04-01-CULC-05	168	45.3	5.3	8	-2.7	Barrier5-Barrier 4 C	point67	67	20.0	23.5
						Barrier5-Barrier 4 C	point64	64	20.0	23.5
						Barrier5-Barrier 4 C	point66	66	20.0	23.4
						Barrier5-Barrier 4 C	point62	62	20.0	23.4
						Barrier5-Barrier 4 C	point63	63	20.0	23.4

						Barrier5-Barrier 4 C	point68	68	20.0	23.4
						Barrier5-Barrier 4 C	point65	65	20.0	23.4
						Barrier5-Barrier 4 C	point61	61	20.0	23.4
						Barrier5-Barrier 4 C	point69	69	20.0	23.3
						Barrier5-Barrier 4 C	point59	59	20.0	23.3
KY-04-01-CULC-04	167	46.0	5.4	8	-2.6	Barrier5-Barrier 4 C	point53	53	20.0	31.8
						Barrier5-Barrier 4 C	point74	74	20.0	31.2
						Barrier5-Barrier 4 C	point52	52	20.0	30.3
						Barrier5-Barrier 4 C	point75	75	20.0	29.6
						Barrier5-Barrier 4 C	point76	76	20.0	29.1
						Barrier5-Barrier 4 C	point67	67	20.0	24.5
						Barrier5-Barrier 4 C	point66	66	20.0	24.5
						Barrier5-Barrier 4 C	point64	64	20.0	24.4
						Barrier5-Barrier 4 C	point61	61	20.0	24.4
						Barrier5-Barrier 4 C	point63	63	20.0	24.4
KY-04-01-CULC-01	38	46.6	5.8	8	-2.2	Barrier5-Barrier 4 C	point53	53	20.0	32.2
						Barrier5-Barrier 4 C	point52	52	20.0	32.1
						Barrier5-Barrier 4 C	point51	51	20.0	30.2
						Barrier5-Barrier 4 C	point358	358	20.0	27.8
						Barrier5-Barrier 4 C	point66	66	20.0	25.9
						Barrier5-Barrier 4 C	point67	67	20.0	25.9
						Barrier5-Barrier 4 C	point68	68	20.0	25.9
						Barrier5-Barrier 4 C	point61	61	20.0	25.8
						Barrier5-Barrier 4 C	point63	63	20.0	25.8
						Barrier5-Barrier 4 C	point64	64	20.0	25.8
KY-04-01-CULC-02	39	47.1	6.7	8	-1.3	Barrier5-Barrier 4 C	point80	80	20.0	30.8
						Barrier5-Barrier 4 C	point25	25	20.0	29.2
						Barrier5-Barrier 4 C	point376	376	20.0	28.2
						Barrier5-Barrier 4 C	point26	26	20.0	28.2
						Barrier5-Barrier 4 C	point67	67	20.0	27.4
						Barrier5-Barrier 4 C	point66	66	20.0	27.4
						Barrier5-Barrier 4 C	point68	68	20.0	27.3
						Barrier5-Barrier 4 C	point65	65	20.0	27.3
						Barrier5-Barrier 4 C	point61	61	20.0	27.3
						Barrier5-Barrier 4 C	point63	63	20.0	27.3
KY-04-02-CULC-05	171	45.4	4.6	8	-3.4	Barrier5-Barrier 4 C	point76	76	20.0	30.3

						Barrier5-Barrier 4 C	point77	77	20.0	30.3
						Barrier5-Barrier 4 C	point79	79	20.0	27.0
						Barrier5-Barrier 4 C	point78	78	20.0	25.8
						Barrier5-Barrier 4 C	point51	51	20.0	22.9
						Barrier5-Barrier 4 C	point56	56	20.0	22.9
						Barrier5-Barrier 4 C	point55	55	20.0	22.9
						Barrier5-Barrier 4 C	point54	54	20.0	22.8
						Barrier5-Barrier 4 C	point46	46	20.0	22.8
						Barrier5-Barrier 4 C	point58	58	20.0	22.8
KY-04-02-CULC-04	170	45.9	4.9	8	-3.1	Barrier5-Barrier 4 C	point78	78	20.0	30.9
						Barrier5-Barrier 4 C	point79	79	20.0	30.6
						Barrier5-Barrier 4 C	point56	56	20.0	23.9
						Barrier5-Barrier 4 C	point55	55	20.0	23.9
						Barrier5-Barrier 4 C	point51	51	20.0	23.9
						Barrier5-Barrier 4 C	point54	54	20.0	23.8
						Barrier5-Barrier 4 C	point58	58	20.0	23.8
						Barrier5-Barrier 4 C	point60	60	20.0	23.8
						Barrier5-Barrier 4 C	point57	57	20.0	23.8
						Barrier5-Barrier 4 C	point59	59	20.0	23.8
KY-04-02-CULC-03	169	46.4	5.5	8	-2.5	Barrier5-Barrier 4 C	point90	90	20.0	30.3
						Barrier5-Barrier 4 C	point77	77	20.0	30.1
						Barrier5-Barrier 4 C	point91	91	20.0	29.6
						Barrier5-Barrier 4 C	point92	92	20.0	29.3
						Barrier5-Barrier 4 C	point80	80	20.0	28.9
						Barrier5-Barrier 4 C	point79	79	20.0	26.5
						Barrier5-Barrier 4 C	point56	56	20.0	25.1
						Barrier5-Barrier 4 C	point54	54	20.0	25.1
						Barrier5-Barrier 4 C	point57	57	20.0	25.0
						Barrier5-Barrier 4 C	point58	58	20.0	25.0
KY-04-02-CULC-01	115	47.2	5.6	8	-2.4	Barrier5-Barrier 4 C	point75	75	20.0	33.4
						Barrier5-Barrier 4 C	point76	76	20.0	33.1
						Barrier5-Barrier 4 C	point79	79	20.0	33.1
						Barrier5-Barrier 4 C	point81	81	20.0	30.1
						Barrier5-Barrier 4 C	point82	82	20.0	30.0
						Barrier5-Barrier 4 C	point89	89	20.0	28.6
						Barrier5-Barrier 4 C	point78	78	20.0	27.1

						Barrier5-Barrier 4 C	point80	80	20.0	26.8
						Barrier5-Barrier 4 C	point55	55	20.0	26.4
						Barrier5-Barrier 4 C	point56	56	20.0	26.4
KY-04-02-CULC-02	116	47.4	6.7	8	-1.3	Barrier5-Barrier 4 C	point90	90	20.0	29.2
						Barrier5-Barrier 4 C	point78	78	20.0	29.0
						Barrier5-Barrier 4 C	point62	62	20.0	28.9
						Barrier5-Barrier 4 C	point55	55	20.0	27.7
						Barrier5-Barrier 4 C	point56	56	20.0	27.6
						Barrier5-Barrier 4 C	point54	54	20.0	27.6
						Barrier5-Barrier 4 C	point58	58	20.0	27.6
						Barrier5-Barrier 4 C	point52	52	20.0	27.6
						Barrier5-Barrier 4 C	point57	57	20.0	27.6
						Barrier5-Barrier 4 C	point59	59	20.0	27.6
KY-04-02-CULC-03	103	48.9	7.2	8	-0.8	Barrier5-Barrier 4 C	point76	76	20.0	35.6
						Barrier5-Barrier 4 C	point75	75	20.0	32.8
						Barrier5-Barrier 4 C	point87	87	20.0	32.0
						Barrier5-Barrier 4 C	point56	56	20.0	30.0
						Barrier5-Barrier 4 C	point61	61	20.0	30.0
						Barrier5-Barrier 4 C	point57	57	20.0	30.0
						Barrier5-Barrier 4 C	point62	62	20.0	29.9
						Barrier5-Barrier 4 C	point55	55	20.0	29.9
						Barrier5-Barrier 4 C	point63	63	20.0	29.8
						Barrier5-Barrier 4 C	point54	54	20.0	29.8
KY-04-02-CULC-AMB-02	144	49.2	7.9	8	-0.1	Barrier5-Barrier 4 C	point56	56	20.0	31.1
						Barrier5-Barrier 4 C	point59	59	20.0	31.1
						Barrier5-Barrier 4 C	point58	58	20.0	31.1
						Barrier5-Barrier 4 C	point61	61	20.0	31.0
						Barrier5-Barrier 4 C	point55	55	20.0	31.0
						Barrier5-Barrier 4 C	point57	57	20.0	31.0
						Barrier5-Barrier 4 C	point54	54	20.0	30.9
						Barrier5-Barrier 4 C	point60	60	20.0	30.9
						Barrier5-Barrier 4 C	point53	53	20.0	30.8
						Barrier5-Barrier 4 C	point64	64	20.0	30.8
KY-04-01-CULC-03	40	48.3	7.2	8	-0.8	Barrier5-Barrier 4 C	point88	88	20.0	32.3
						Barrier5-Barrier 4 C	point80	80	20.0	30.8
						Barrier5-Barrier 4 C	point67	67	20.0	29.6

						Barrier5-Barrier 4 C	point66	66	20.0	29.6
						Barrier5-Barrier 4 C	point68	68	20.0	29.5
						Barrier5-Barrier 4 C	point64	64	20.0	29.5
						Barrier5-Barrier 4 C	point65	65	20.0	29.5
						Barrier5-Barrier 4 C	point69	69	20.0	29.5
						Barrier5-Barrier 4 C	point63	63	20.0	29.4
						Barrier5-Barrier 4 C	point61	61	20.0	29.4
KY-04-21-BRAD-03F	164	48.4	6.6	8	-1.4	Barrier5-Barrier 4 C	point67	67	20.0	29.7
						Barrier5-Barrier 4 C	point68	68	20.0	29.7
						Barrier5-Barrier 4 C	point70	70	20.0	29.7
						Barrier5-Barrier 4 C	point69	69	20.0	29.7
						Barrier5-Barrier 4 C	point14	14	20.0	29.6
						Barrier5-Barrier 4 C	point65	65	20.0	29.5
						Barrier5-Barrier 4 C	point64	64	20.0	29.5
						Barrier5-Barrier 4 C	point63	63	20.0	29.4
						Barrier5-Barrier 4 C	point71	71	20.0	29.3
						Barrier5-Barrier 4 C	point62	62	20.0	29.3
KY-04-01-BRAD-03	24	48.7	6.6	8	-1.4	Barrier5-Barrier 4 C	point82	82	20.0	29.6
						Barrier5-Barrier 4 C	point77	77	20.0	29.5
						Barrier5-Barrier 4 C	point83	83	20.0	29.5
						Barrier5-Barrier 4 C	point84	84	20.0	29.5
						Barrier5-Barrier 4 C	point79	79	20.0	29.5
						Barrier5-Barrier 4 C	point80	80	20.0	29.5
						Barrier5-Barrier 4 C	point85	85	20.0	29.5
						Barrier5-Barrier 4 C	point81	81	20.0	29.5
						Barrier5-Barrier 4 C	point78	78	20.0	29.5
						Barrier5-Barrier 4 C	point86	86	20.0	29.4
KY-04-02-SAND-03F	154	47.3	6.3	8	-1.7	Barrier5-Barrier 4 C	point85	85	20.0	27.3
						Barrier5-Barrier 4 C	point86	86	20.0	27.2
						Barrier5-Barrier 4 C	point84	84	20.0	27.2
						Barrier5-Barrier 4 C	point87	87	20.0	27.2
						Barrier5-Barrier 4 C	point83	83	20.0	27.2
						Barrier5-Barrier 4 C	point82	82	20.0	27.1
						Barrier5-Barrier 4 C	point88	88	20.0	27.0
						Barrier5-Barrier 4 C	point90	90	20.0	27.0
						Barrier5-Barrier 4 C	point81	81	20.0	27.0

						Barrier5-Barrier 4 C	point80	80	20.0	27.0
KY-04-01-SAND-01	60	47.9	5.7	8	-2.3	Barrier5-Barrier 4 C	point28	28	20.0	29.7
						Barrier5-Barrier 4 C	point94	94	20.0	28.0
						Barrier5-Barrier 4 C	point95	95	20.0	27.9
						Barrier5-Barrier 4 C	point96	96	20.0	27.9
						Barrier5-Barrier 4 C	point92	92	20.0	27.9
						Barrier5-Barrier 4 C	point93	93	20.0	27.8
						Barrier5-Barrier 4 C	point97	97	20.0	27.8
						Barrier5-Barrier 4 C	point91	91	20.0	27.8
						Barrier5-Barrier 4 C	point87	87	20.0	27.7
						Barrier5-Barrier 4 C	point101	101	20.0	27.7
KY-04-01-HART-02F	159	46.2	5.7	8	-2.3	Barrier5-Barrier 4 C	point102	102	20.0	25.2
						Barrier5-Barrier 4 C	point104	104	20.0	25.2
						Barrier5-Barrier 4 C	point106	106	20.0	25.2
						Barrier5-Barrier 4 C	point103	103	20.0	25.2
						Barrier5-Barrier 4 C	point101	101	20.0	25.2
						Barrier5-Barrier 4 C	point105	105	20.0	25.2
						Barrier5-Barrier 4 C	point5	5	20.0	25.1
						Barrier5-Barrier 4 C	point107	107	20.0	25.1
						Barrier5-Barrier 4 C	point108	108	20.0	25.0
						Barrier5-Barrier 4 C	point109	109	20.0	25.0
KY-04-01-HART-01F	158	46.1	5.8	8	-2.2	Barrier5-Barrier 4 C	point380	380	20.0	26.1
						Barrier5-Barrier 4 C	point102	102	20.0	25.1
						Barrier5-Barrier 4 C	point101	101	20.0	25.1
						Barrier5-Barrier 4 C	point103	103	20.0	25.1
						Barrier5-Barrier 4 C	point104	104	20.0	25.0
						Barrier5-Barrier 4 C	point5	5	20.0	25.0
						Barrier5-Barrier 4 C	point106	106	20.0	24.9
						Barrier5-Barrier 4 C	point105	105	20.0	24.9
						Barrier5-Barrier 4 C	point97	97	20.0	24.9
						Barrier5-Barrier 4 C	point99	99	20.0	24.9
KY-04-01-PRIV-01F	161	46.6	5.5	8	-2.5	Barrier5-Barrier 4 C	point115	115	20.0	25.3
						Barrier5-Barrier 4 C	point116	116	20.0	25.3
						Barrier5-Barrier 4 C	point114	114	20.0	25.3
						Barrier5-Barrier 4 C	point117	117	20.0	25.3
						Barrier5-Barrier 4 C	point118	118	20.0	25.2

						Barrier5-Barrier 4 C	point113	113	20.0	25.2
						Barrier5-Barrier 4 C	point112	112	20.0	25.2
						Barrier5-Barrier 4 C	point120	120	20.0	25.2
						Barrier5-Barrier 4 C	point119	119	20.0	25.2
						Barrier5-Barrier 4 C	point121	121	20.0	25.2
Total Cost, All Barriers (including additional cost(s))					$2565805					

HMB				4 March 2018						
MG/MDG				TNM 2.5						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	I-69 ORX									
RUN:	1294.11 Central 1 Toll Only 6 Barrier 4C/D									
BARRIER DESIGN:	BraxtonParkT69									
Barriers										
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top	Run:Rise	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier5-Barrier 4 C	W	20.00	20.00	20.00	4276	85527				2565805
									Total Cost:	2565805

HMB 4 March 2018
MG/MDG TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: 1294.11 Central 1 Toll Only 6 Barrier 4C/D
BARRIER DESIGN: BraxtonParkT69

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier5-Barrier 4 C	W	point337	337	20.00	20.00	20.00	20	398				11944
		point339	339	20.00	20.00	20.00	20	403				12091
		point340	340	20.00	20.00	20.00	20	398				11944
		point341	341	20.00	20.00	20.00	20	398				11944
		point342	342	20.00	20.00	20.00	20	400				12007
		point343	343	20.00	20.00	20.00	20	400				12007
		point344	344	20.00	20.00	20.00	20	400				12007
		point345	345	20.00	20.00	20.00	20	403				12078
		point346	346	20.00	20.00	20.00	20	398				11933
		point347	347	20.00	20.00	20.00	20	398				11933
		point348	348	20.00	20.00	20.00	20	405				12156
		point349	349	20.00	20.00	20.00	20	393				11788
		point350	350	20.00	20.00	20.00	20	403				12098
		point351	351	20.00	20.00	20.00	20	400				12012
		point352	352	20.00	20.00	20.00	20	398				11955
		point353	353	20.00	20.00	20.00	20	403				12098
		point354	354	20.00	20.00	20.00	20	398				11955
		point355	355	20.00	20.00	20.00	20	398				11955
		point356	356	20.00	20.00	20.00	20	402				12049
		point357	357	20.00	20.00	20.00	20	397				11907
		point358	358	20.00	20.00	20.00	20	405				12149
		point359	359	20.00	20.00	20.00	20	397				11907
		point360	360	20.00	20.00	20.00	20	400				12008
		point361	361	20.00	20.00	20.00	20	404				12117
		point362	362	20.00	20.00	20.00	20	396				11868
		point363	363	20.00	20.00	20.00	20	404				12117

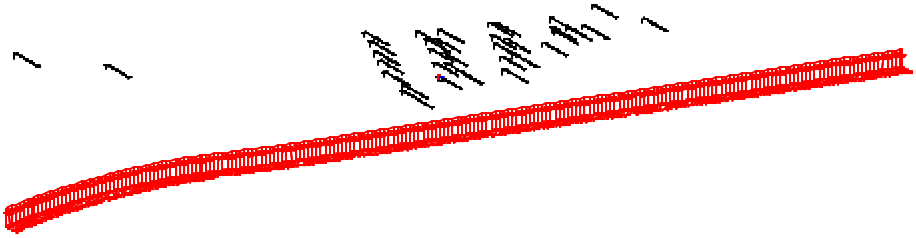
		point364	364	20.00	20.00	20.00	20	399				11977
		point365	365	20.00	20.00	20.00	20	395				11839
		point366	366	20.00	20.00	20.00	20	403				12093
		point367	367	20.00	20.00	20.00	20	399				11956
		point368	368	20.00	20.00	20.00	20	403				12093
		point369	369	20.00	20.00	20.00	20	398				11944
		point370	370	20.00	20.00	20.00	20	399				11956
		point371	371	20.00	20.00	20.00	20	398				11944
		point372	372	20.00	20.00	20.00	20	407				12209
		point373	373	20.00	20.00	20.00	20	394				11808
		point374	374	20.00	20.00	20.00	20	402				12075
		point375	375	20.00	20.00	20.00	20	398				11941
		point376	376	20.00	20.00	20.00	20	403				12079
		point377	377	20.00	20.00	20.00	20	398				11941
		point378	378	20.00	20.00	20.00	20	398				11947
		point379	379	20.00	20.00	20.00	20	403				12079
		point380	380	20.00	20.00	20.00	20	403				12093
		point381	381	20.00	20.00	20.00	20	399				11963
		point382	382	20.00	20.00	20.00	20	403				12093
		point383	383	20.00	20.00	20.00	20	394				11834
		point384	384	20.00	20.00	20.00	20	399				11963
		point385	385	20.00	20.00	20.00	20	404				12117
		point386	386	20.00	20.00	20.00	20	400				11989
		point387	387	20.00	20.00	20.00	4	76				2290
		point4	4	20.00	20.00	20.00	20	405				12149
		point7	7	20.00	20.00	20.00	20	400				11989
		point8	8	20.00	20.00	20.00	20	400				11989
		point9	9	20.00	20.00	20.00	20	400				11989
		point10	10	20.00	20.00	20.00	20	395				11861
		point11	11	20.00	20.00	20.00	20	405				12149
		point12	12	20.00	20.00	20.00	20	400				11989
		point13	13	20.00	20.00	20.00	20	400				11989
		point14	14	20.00	20.00	20.00	20	400				11989
		point15	15	20.00	20.00	20.00	20	400				11989
		point16	16	20.00	20.00	20.00	20	405				12149
		point17	17	20.00	20.00	20.00	20	395				11861
		point18	18	20.00	20.00	20.00	20	400				11989
		point19	19	20.00	20.00	20.00	20	400				11989
		point20	20	20.00	20.00	20.00	20	400				11989

		point21	21	20.00	20.00	20.00	20	405				12149
		point22	22	20.00	20.00	20.00	20	395				11861
		point23	23	20.00	20.00	20.00	20	400				11989
		point24	24	20.00	20.00	20.00	20	400				11989
		point25	25	20.00	20.00	20.00	20	400				11989
		point26	26	20.00	20.00	20.00	20	405				12149
		point27	27	20.00	20.00	20.00	20	400				11989
		point28	28	20.00	20.00	20.00	20	400				11989
		point29	29	20.00	20.00	20.00	20	395				11861
		point30	30	20.00	20.00	20.00	20	400				11989
		point31	31	20.00	20.00	20.00	20	405				12149
		point32	32	20.00	20.00	20.00	20	400				11989
		point33	33	20.00	20.00	20.00	20	400				11989
		point34	34	20.00	20.00	20.00	20	395				11861
		point35	35	20.00	20.00	20.00	20	400				11989
		point36	36	20.00	20.00	20.00	20	405				12149
		point37	37	20.00	20.00	20.00	20	400				11989
		point38	38	20.00	20.00	20.00	20	400				11989
		point39	39	20.00	20.00	20.00	20	400				11989
		point40	40	20.00	20.00	20.00	20	400				11989
		point41	41	20.00	20.00	20.00	20	401				12023
		point42	42	20.00	20.00	20.00	20	400				11989
		point43	43	20.00	20.00	20.00	20	400				11989
		point44	44	20.00	20.00	20.00	20	400				11989
		point45	45	20.00	20.00	20.00	20	400				11989
		point46	46	20.00	20.00	20.00	20	401				12023
		point47	47	20.00	20.00	20.00	20	400				11989
		point48	48	20.00	20.00	20.00	20	400				11989
		point49	49	20.00	20.00	20.00	20	400				11989
		point50	50	20.00	20.00	20.00	20	400				11989
		point51	51	20.00	20.00	20.00	20	405				12149
		point52	52	20.00	20.00	20.00	20	400				11989
		point53	53	20.00	20.00	20.00	20	395				11861
		point54	54	20.00	20.00	20.00	20	400				11989
		point55	55	20.00	20.00	20.00	20	400				11989
		point56	56	20.00	20.00	20.00	20	405				12149
		point57	57	20.00	20.00	20.00	20	395				11861
		point58	58	20.00	20.00	20.00	20	400				11989
		point59	59	20.00	20.00	20.00	20	400				11989

		point60	60	20.00	20.00	20.00	20	400				11989
		point61	61	20.00	20.00	20.00	20	405				12149
		point62	62	20.00	20.00	20.00	20	400				11989
		point63	63	20.00	20.00	20.00	20	400				11989
		point64	64	20.00	20.00	20.00	20	400				11989
		point65	65	20.00	20.00	20.00	20	395				11861
		point66	66	20.00	20.00	20.00	20	400				11989
		point67	67	20.00	20.00	20.00	20	405				12149
		point68	68	20.00	20.00	20.00	20	400				11989
		point69	69	20.00	20.00	20.00	20	395				11861
		point70	70	20.00	20.00	20.00	20	400				11989
		point71	71	20.00	20.00	20.00	20	400				11989
		point72	72	20.00	20.00	20.00	20	405				12149
		point73	73	20.00	20.00	20.00	20	400				11989
		point74	74	20.00	20.00	20.00	20	400				11989
		point75	75	20.00	20.00	20.00	20	400				11989
		point76	76	20.00	20.00	20.00	20	395				11861
		point77	77	20.00	20.00	20.00	20	405				12149
		point78	78	20.00	20.00	20.00	20	400				11989
		point79	79	20.00	20.00	20.00	20	400				11989
		point80	80	20.00	20.00	20.00	20	400				11989
		point81	81	20.00	20.00	20.00	20	395				11861
		point82	82	20.00	20.00	20.00	20	405				12149
		point83	83	20.00	20.00	20.00	20	400				11989
		point84	84	20.00	20.00	20.00	20	400				11989
		point85	85	20.00	20.00	20.00	20	400				11989
		point86	86	20.00	20.00	20.00	20	400				11989
		point87	87	20.00	20.00	20.00	20	405				12149
		point88	88	20.00	20.00	20.00	20	395				11861
		point89	89	20.00	20.00	20.00	20	400				11989
		point90	90	20.00	20.00	20.00	20	400				11989
		point91	91	20.00	20.00	20.00	20	400				11989
		point92	92	20.00	20.00	20.00	20	405				12149
		point93	93	20.00	20.00	20.00	20	395				11861
		point94	94	20.00	20.00	20.00	20	400				11989
		point95	95	20.00	20.00	20.00	20	400				11989
		point96	96	20.00	20.00	20.00	20	400				11989
		point97	97	20.00	20.00	20.00	20	405				12149
		point98	98	20.00	20.00	20.00	20	400				11989

		point99	99	20.00	20.00	20.00	20	400				11989
		point100	100	20.00	20.00	20.00	20	395				11861
		point101	101	20.00	20.00	20.00	20	400				11989
		point102	102	20.00	20.00	20.00	20	405				12149
		point103	103	20.00	20.00	20.00	20	400				11989
		point104	104	20.00	20.00	20.00	20	400				11989
		point5	5	20.00	20.00	20.00	20	395				11861
		point105	105	20.00	20.00	20.00	20	400				11989
		point106	106	20.00	20.00	20.00	20	405				12149
		point107	107	20.00	20.00	20.00	20	400				11989
		point108	108	20.00	20.00	20.00	20	400				11989
		point109	109	20.00	20.00	20.00	20	400				11989
		point110	110	20.00	20.00	20.00	20	400				11989
		point111	111	20.00	20.00	20.00	20	401				12023
		point112	112	20.00	20.00	20.00	20	400				11989
		point113	113	20.00	20.00	20.00	20	400				11989
		point114	114	20.00	20.00	20.00	20	400				11989
		point115	115	20.00	20.00	20.00	20	400				11989
		point116	116	20.00	20.00	20.00	20	401				12023
		point117	117	20.00	20.00	20.00	20	400				11989
		point118	118	20.00	20.00	20.00	20	400				11989
		point119	119	20.00	20.00	20.00	20	400				11989
		point120	120	20.00	20.00	20.00	20	400				11989
		point121	121	20.00	20.00	20.00	20	405				12149
		point122	122	20.00	20.00	20.00	20	400				11989
		point123	123	20.00	20.00	20.00	20	395				11861
		point124	124	20.00	20.00	20.00	20	400				11989
		point125	125	20.00	20.00	20.00	20	400				11989
		point126	126	20.00	20.00	20.00	20	405				12149
		point127	127	20.00	20.00	20.00	20	400				11989
		point128	128	20.00	20.00	20.00	20	395				11861
		point129	129	20.00	20.00	20.00	20	400				11989
		point130	130	20.00	20.00	20.00	20	400				11989
		point131	131	20.00	20.00	20.00	20	405				12149
		point132	132	20.00	20.00	20.00	20	400				11989
		point133	133	20.00	20.00	20.00	20	400				11989
		point134	134	20.00	20.00	20.00	20	400				11989
		point135	135	20.00	20.00	20.00	20	395				11861
		point136	136	20.00	20.00	20.00	20	405				12149

		point137	137	20.00	20.00	20.00	20	400				11989
		point138	138	20.00	20.00	20.00	20	400				11989
		point139	139	20.00	20.00	20.00	20	400				11989
		point140	140	20.00	20.00	20.00	20	395				11861
		point141	141	20.00	20.00	20.00	20	405				12149
		point142	142	20.00	20.00	20.00	20	400				11989
		point143	143	20.00	20.00	20.00	20	400				11989
		point144	144	20.00	20.00	20.00	20	400				11989
		point145	145	20.00	20.00	20.00	20	400				11989
		point146	146	20.00	20.00	20.00	20	405				12149
		point147	147	20.00	20.00	20.00	20	395				11861
		point148	148	20.00	20.00	20.00	20	400				11989
		point149	149	20.00	20.00	20.00	20	400				11989
		point150	150	20.00	20.00	20.00	20	400				11989
		point151	151	20.00	20.00	20.00	20	401				12023
		point152	152	20.00	20.00	20.00	20	400				11989
		point153	153	20.00	20.00	20.00	20	400				11989
		point154	154	20.00	20.00	20.00	20	400				11989
		point155	155	20.00	20.00	20.00	20	400				11989
		point156	156	20.00	20.00	20.00	20	405				12149
		point157	157	20.00	20.00	20.00	20	400				11989
		point158	158	20.00	20.00	20.00	20	400				11989
		point159	159	20.00	20.00	20.00	20	395				11861
		point160	160	20.00	20.00	20.00	20	400				11989
		point161	161	20.00	20.00	20.00	20	405				12149
		point162	162	20.00	20.00	20.00	20	400				11989
		point163	163	20.00	20.00	20.00	20	395				11861
		point164	164	20.00	20.00	20.00	20	400				11989
		point165	165	20.00	20.00	20.00	20	400				11989
		point166	166	20.00	20.00	20.00	20	405				12149
		point167	167	20.00	20.00	20.00	20	400				11989
		point168	168	20.00	20.00	20.00	20	400				11989
		point169	169	20.00	20.00	20.00	13	251				7537



1294.11 Central 1 Toll Only 6 Barrier 4C/D	Sheet 1 of 1	4 Mar 2018
	HMB	
Barrier View-BraxtonParkT69	Project/Contract No. I-69 ORX	
Run name: C1_Toll69_4_CD	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/MDG	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR CENTRAL 1 – MELODY LANE (TOLL I-69 ONLY)

HMB							4 March 2018					
MG/MDG							TNM 2.5					
							Calculated with TNM 2.5					
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		I-69 ORX										
RUN:		1294.11 Central 1 Toll Only 6 Barrier 4C/D										
BARRIER DESIGN:		MelodyLnT69						Average pavement type shall be used unless				
								a State highway agency substantiates the use				
ATMOSPHERICS:		68 deg F, 50% RH						of a different type with approval of FHWA.				
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n	Impact	LAeq1h	Calculated	Goal	Calculated
							Sub'l Inc					minus
												Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-04-01-BOWL-03	20	1	39.8	53.6	66	13.8	10	Sub'l Inc	47.5	6.1	8	-1.9
KY-04-02-BOWL-04	178	1	39.8	53.5	66	13.7	10	Sub'l Inc	47.4	6.1	8	-1.9
KY-04-02-MELL-07	177	1	40.4	50.6	66	10.2	10	Sub'l Inc	45.8	4.8	8	-3.2
KY-04-02-MELL-04	174	1	40.4	51.6	66	11.2	10	Sub'l Inc	46.2	5.4	8	-2.6
KY-04-02-MELL-06	176	1	40.4	51.3	66	10.9	10	Sub'l Inc	46.5	4.8	8	-3.2
KY-04-02-MELL-05	175	1	40.4	53.9	66	13.5	10	Sub'l Inc	48.0	5.9	8	-2.1
KY-04-01-MELL-02	46	1	40.4	54.7	66	14.3	10	Sub'l Inc	48.4	6.3	8	-1.7
KY-04-01-MELL-01	45	1	40.4	56.9	66	16.5	10	Sub'l Inc	50.0	6.9	8	-1.1
KY-04-01-MELL-03	47	1	40.4	55.1	66	14.7	10	Sub'l Inc	48.5	6.6	8	-1.4
KY-04-01-BOWL-02	19	1	39.8	56.2	66	16.4	10	Sub'l Inc	49.4	6.8	8	-1.2
KY-04-01-BOWL-01	18	1	39.8	61.1	66	21.3	10	Sub'l Inc	51.9	9.2	8	1.2

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	11	4.8	6.3	9.2
All Impacted	11	4.8	6.3	9.2
All that meet NR Goal	1	9.2	9.2	9.2

HMB								4 March 2018		
MG/MDG								TNM 2.5		
								Calculated with TNM 2.5		
RESULTS: BARRIER DESIGN										
PROJECT/CONTRACT:		I-69 ORX								
RUN:		1294.11 Central 1 Toll Only 6 Barrier 4C/D								
BARRIER DESIGN:		MelodyLnT69								
ATMOSPHERICS:		68 deg F, 50% RH								
Selected Receivers										
Name	No.									
		Calc	Noise Reduction			Barrier Reviewed	Important Segments			Partial
		LAeq1h	Calc	Goal	Calc-Goal		Name	No.	Height	LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-04-01-BOWL-03	20	47.5	6.1	8	-1.9	Barrier 4 D-Barrier7	point250	250	20.0	26.9
						Barrier 4 D-Barrier7	point251	251	20.0	26.9
						Barrier 4 D-Barrier7	point252	252	20.0	26.9
						Barrier 4 D-Barrier7	point249	249	20.0	26.8
						Barrier 4 D-Barrier7	point253	253	20.0	26.7
						Barrier 4 D-Barrier7	point248	248	20.0	26.7
						Barrier 4 D-Barrier7	point254	254	20.0	26.7
						Barrier 4 D-Barrier7	point255	255	20.0	26.6
						Barrier 4 D-Barrier7	point247	247	20.0	26.6
						Barrier 4 D-Barrier7	point245	245	20.0	26.6
KY-04-02-BOWL-04	178	47.4	6.1	8	-1.9	Barrier 4 D-Barrier7	point235	235	20.0	27.1
						Barrier 4 D-Barrier7	point236	236	20.0	27.1
						Barrier 4 D-Barrier7	point237	237	20.0	27.0
						Barrier 4 D-Barrier7	point233	233	20.0	27.0
						Barrier 4 D-Barrier7	point234	234	20.0	27.0
						Barrier 4 D-Barrier7	point238	238	20.0	27.0
						Barrier 4 D-Barrier7	point239	239	20.0	26.9
						Barrier 4 D-Barrier7	point232	232	20.0	26.9
						Barrier 4 D-Barrier7	point240	240	20.0	26.9
						Barrier 4 D-Barrier7	point231	231	20.0	26.9
KY-04-02-MELL-07	177	45.8	4.8	8	-3.2	Barrier 4 D-Barrier7	point212	212	20.0	23.1

						Barrier 4 D-Barrier7	point211	211	20.0	23.1
						Barrier 4 D-Barrier7	point215	215	20.0	23.1
						Barrier 4 D-Barrier7	point210	210	20.0	23.0
						Barrier 4 D-Barrier7	point213	213	20.0	23.0
						Barrier 4 D-Barrier7	point209	209	20.0	23.0
						Barrier 4 D-Barrier7	point214	214	20.0	23.0
						Barrier 4 D-Barrier7	point208	208	20.0	23.0
						Barrier 4 D-Barrier7	point205	205	20.0	22.9
						Barrier 4 D-Barrier7	point216	216	20.0	22.9
KY-04-02-MELL-04	174	46.2	5.4	8	-2.6	Barrier 4 D-Barrier7	point212	212	20.0	24.4
						Barrier 4 D-Barrier7	point211	211	20.0	24.4
						Barrier 4 D-Barrier7	point210	210	20.0	24.4
						Barrier 4 D-Barrier7	point213	213	20.0	24.4
						Barrier 4 D-Barrier7	point215	215	20.0	24.3
						Barrier 4 D-Barrier7	point220	220	20.0	24.3
						Barrier 4 D-Barrier7	point214	214	20.0	24.3
						Barrier 4 D-Barrier7	point216	216	20.0	24.3
						Barrier 4 D-Barrier7	point218	218	20.0	24.2
						Barrier 4 D-Barrier7	point209	209	20.0	24.2
KY-04-02-MELL-06	176	46.5	4.8	8	-3.2	Barrier 4 D-Barrier7	point200	200	20.0	24.0
						Barrier 4 D-Barrier7	point201	201	20.0	24.0
						Barrier 4 D-Barrier7	point202	202	20.0	23.9
						Barrier 4 D-Barrier7	point205	205	20.0	23.9
						Barrier 4 D-Barrier7	point199	199	20.0	23.9
						Barrier 4 D-Barrier7	point203	203	20.0	23.9
						Barrier 4 D-Barrier7	point204	204	20.0	23.8
						Barrier 4 D-Barrier7	point198	198	20.0	23.8
						Barrier 4 D-Barrier7	point195	195	20.0	23.8
						Barrier 4 D-Barrier7	point190	190	20.0	23.7
KY-04-02-MELL-05	175	48.0	5.9	8	-2.1	Barrier 4 D-Barrier7	point200	200	20.0	27.9
						Barrier 4 D-Barrier7	point201	201	20.0	27.8
						Barrier 4 D-Barrier7	point199	199	20.0	27.8
						Barrier 4 D-Barrier7	point202	202	20.0	27.8
						Barrier 4 D-Barrier7	point197	197	20.0	27.7
						Barrier 4 D-Barrier7	point203	203	20.0	27.7
						Barrier 4 D-Barrier7	point198	198	20.0	27.7

						Barrier 4 D-Barrier7	point205	205	20.0	27.7
						Barrier 4 D-Barrier7	point195	195	20.0	27.6
						Barrier 4 D-Barrier7	point204	204	20.0	27.6
KY-04-01-MELL-02	46	48.4	6.3	8	-1.7	Barrier 4 D-Barrier7	point211	211	20.0	29.1
						Barrier 4 D-Barrier7	point210	210	20.0	29.1
						Barrier 4 D-Barrier7	point209	209	20.0	29.0
						Barrier 4 D-Barrier7	point213	213	20.0	29.0
						Barrier 4 D-Barrier7	point208	208	20.0	29.0
						Barrier 4 D-Barrier7	point207	207	20.0	28.9
						Barrier 4 D-Barrier7	point214	214	20.0	28.9
						Barrier 4 D-Barrier7	point215	215	20.0	28.9
						Barrier 4 D-Barrier7	point206	206	20.0	28.8
						Barrier 4 D-Barrier7	point205	205	20.0	28.8
KY-04-01-MELL-01	45	50.0	6.9	8	-1.1	Barrier 4 D-Barrier7	point195	195	20.0	31.6
						Barrier 4 D-Barrier7	point196	196	20.0	31.6
						Barrier 4 D-Barrier7	point197	197	20.0	31.5
						Barrier 4 D-Barrier7	point200	200	20.0	31.5
						Barrier 4 D-Barrier7	point199	199	20.0	31.5
						Barrier 4 D-Barrier7	point198	198	20.0	31.5
						Barrier 4 D-Barrier7	point193	193	20.0	31.5
						Barrier 4 D-Barrier7	point192	192	20.0	31.5
						Barrier 4 D-Barrier7	point194	194	20.0	31.5
						Barrier 4 D-Barrier7	point191	191	20.0	31.5
KY-04-01-MELL-03	47	48.5	6.6	8	-1.4	Barrier 4 D-Barrier7	point220	220	20.0	29.6
						Barrier 4 D-Barrier7	point221	221	20.0	29.5
						Barrier 4 D-Barrier7	point219	219	20.0	29.5
						Barrier 4 D-Barrier7	point223	223	20.0	29.5
						Barrier 4 D-Barrier7	point218	218	20.0	29.5
						Barrier 4 D-Barrier7	point222	222	20.0	29.5
						Barrier 4 D-Barrier7	point225	225	20.0	29.5
						Barrier 4 D-Barrier7	point224	224	20.0	29.4
						Barrier 4 D-Barrier7	point215	215	20.0	29.4
						Barrier 4 D-Barrier7	point216	216	20.0	29.4
KY-04-01-BOWL-02	19	49.4	6.8	8	-1.2	Barrier 4 D-Barrier7	point236	236	20.0	31.1
						Barrier 4 D-Barrier7	point237	237	20.0	31.1
						Barrier 4 D-Barrier7	point235	235	20.0	31.0

						Barrier 4 D-Barrier7	point238	238	20.0	31.0
						Barrier 4 D-Barrier7	point240	240	20.0	31.0
						Barrier 4 D-Barrier7	point239	239	20.0	31.0
						Barrier 4 D-Barrier7	point234	234	20.0	30.9
						Barrier 4 D-Barrier7	point233	233	20.0	30.9
						Barrier 4 D-Barrier7	point241	241	20.0	30.8
						Barrier 4 D-Barrier7	point242	242	20.0	30.7
KY-04-01-BOWL-01	18	51.9	9.2	8	1.2	Barrier 4 D-Barrier7	point252	252	20.0	35.5
						Barrier 4 D-Barrier7	point251	251	20.0	35.5
						Barrier 4 D-Barrier7	point250	250	20.0	35.3
						Barrier 4 D-Barrier7	point253	253	20.0	35.3
						Barrier 4 D-Barrier7	point254	254	20.0	35.2
						Barrier 4 D-Barrier7	point249	249	20.0	35.1
						Barrier 4 D-Barrier7	point255	255	20.0	35.0
						Barrier 4 D-Barrier7	point248	248	20.0	34.9
						Barrier 4 D-Barrier7	point256	256	20.0	34.7
						Barrier 4 D-Barrier7	point247	247	20.0	34.7
Total Cost, All Barriers (including additional cost(s))					$2960461					

HMB				4 March 2018						
MG/MDG				TNM 2.5						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	I-69 ORX									
RUN:	1294.11 Central 1 Toll Only 6 Barrier 4C/D									
BARRIER DESIGN:	MelodyLnT69									
Barriers										
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top	Run:Rise	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier 4 D-Barrier7	W	20.00	20.00	20.00	4229	84585				2960461
									Total Cost:	2960461

HMB 4 March 2018
MG/MDG TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: 1294.11 Central 1 Toll Only 6 Barrier 4C/D
BARRIER DESIGN: MelodyLnT69

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier 4 D-Barrier7	W	point388	388	20.00	20.00	20.00	20	396				13868
		point390	390	20.00	20.00	20.00	20	403				14106
		point391	391	20.00	20.00	20.00	20	398				13934
		point392	392	20.00	20.00	20.00	20	400				14009
		point393	393	20.00	20.00	20.00	20	400				14009
		point394	394	20.00	20.00	20.00	20	400				14009
		point395	395	20.00	20.00	20.00	20	400				14009
		point396	396	20.00	20.00	20.00	20	403				14092
		point397	397	20.00	20.00	20.00	20	398				13922
		point398	398	20.00	20.00	20.00	20	398				13922
		point399	399	20.00	20.00	20.00	20	400				14014
		point400	400	20.00	20.00	20.00	20	400				14014
		point401	401	20.00	20.00	20.00	20	400				14014
		point402	402	20.00	20.00	20.00	20	403				14114
		point403	403	20.00	20.00	20.00	20	398				13947
		point404	404	20.00	20.00	20.00	20	398				13947
		point405	405	20.00	20.00	20.00	20	402				14057
		point406	406	20.00	20.00	20.00	20	398				13947
		point407	407	20.00	20.00	20.00	20	402				14057
		point408	408	20.00	20.00	20.00	20	400				14010
		point409	409	20.00	20.00	20.00	20	397				13891
		point410	410	20.00	20.00	20.00	20	400				14010
		point411	411	20.00	20.00	20.00	20	404				14136
		point412	412	20.00	20.00	20.00	20	396				13846
		point413	413	20.00	20.00	20.00	20	399				13974
		point414	414	20.00	20.00	20.00	20	399				13974

		point415	415	20.00	20.00	20.00	20	403				14109
		point416	416	20.00	20.00	20.00	20	403				14109
		point417	417	20.00	20.00	20.00	20	399				13948
		point418	418	20.00	20.00	20.00	20	399				13948
		point419	419	20.00	20.00	20.00	20	403				14093
		point420	420	20.00	20.00	20.00	20	398				13934
		point421	421	20.00	20.00	20.00	20	403				14093
		point422	422	20.00	20.00	20.00	20	398				13934
		point423	423	20.00	20.00	20.00	20	398				13931
		point424	424	20.00	20.00	20.00	20	398				13931
		point425	425	20.00	20.00	20.00	20	402				14087
		point426	426	20.00	20.00	20.00	20	398				13939
		point427	427	20.00	20.00	20.00	20	403				14093
		point428	428	20.00	20.00	20.00	20	398				13939
		point429	429	20.00	20.00	20.00	20	403				14109
		point430	430	20.00	20.00	20.00	20	394				13785
		point431	431	20.00	20.00	20.00	20	403				14109
		point432	432	20.00	20.00	20.00	20	404				14136
		point433	433	20.00	20.00	20.00	20	394				13806
		point434	434	20.00	20.00	20.00	20	404				14136
		point435	435	20.00	20.00	20.00	17	337				11798
		point170	170	20.00	20.00	20.00	20	400				13987
		point173	173	20.00	20.00	20.00	20	400				13987
		point174	174	20.00	20.00	20.00	20	400				13987
		point175	175	20.00	20.00	20.00	20	401				14027
		point176	176	20.00	20.00	20.00	20	400				13987
		point177	177	20.00	20.00	20.00	20	400				13987
		point178	178	20.00	20.00	20.00	20	400				13987
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		point180	180	20.00	20.00	20.00	20	405				14174
		point181	181	20.00	20.00	20.00	20	400				13987
		point182	182	20.00	20.00	20.00	20	395				13838
		point183	183	20.00	20.00	20.00	20	400				13987
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		point189	189	20.00	20.00	20.00	20	400				13987

		point190	190	20.00	20.00	20.00	20	405				14174
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		point193	193	20.00	20.00	20.00	20	400				13987
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		point198	198	20.00	20.00	20.00	20	395				13838
		point199	199	20.00	20.00	20.00	20	400				13987
		point200	200	20.00	20.00	20.00	20	405				14174
		point201	201	20.00	20.00	20.00	20	400				13987
		point202	202	20.00	20.00	20.00	20	400				13987
		point203	203	20.00	20.00	20.00	20	400				13987
		point204	204	20.00	20.00	20.00	20	400				13987
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		point213	213	20.00	20.00	20.00	20	400				13987
		point214	214	20.00	20.00	20.00	20	400				13987
		point215	215	20.00	20.00	20.00	20	405				14174
		point216	216	20.00	20.00	20.00	20	400				13987
		point217	217	20.00	20.00	20.00	20	395				13838
		point218	218	20.00	20.00	20.00	20	400				13987
		point219	219	20.00	20.00	20.00	20	400				13987
		point220	220	20.00	20.00	20.00	20	405				14174
		point221	221	20.00	20.00	20.00	20	400				13987
		point222	222	20.00	20.00	20.00	20	395				13838
		point223	223	20.00	20.00	20.00	20	400				13987
		point224	224	20.00	20.00	20.00	20	400				13987
		point225	225	20.00	20.00	20.00	20	405				14174
		point226	226	20.00	20.00	20.00	20	400				13987
		point227	227	20.00	20.00	20.00	20	400				13987
		point228	228	20.00	20.00	20.00	20	400				13987

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		point230	230	20.00	20.00	20.00	20	405				14174
		point231	231	20.00	20.00	20.00	20	400				13987
		point232	232	20.00	20.00	20.00	20	400				13987
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		point234	234	20.00	20.00	20.00	20	395				13838
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		point239	239	20.00	20.00	20.00	20	400				13987
		point240	240	20.00	20.00	20.00	20	405				14174
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		point243	243	20.00	20.00	20.00	20	400				13987
		point244	244	20.00	20.00	20.00	20	400				13987
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		point249	249	20.00	20.00	20.00	20	400				13987
		point250	250	20.00	20.00	20.00	20	405				14174
		point251	251	20.00	20.00	20.00	20	400				13987
		point252	252	20.00	20.00	20.00	20	400				13987
		point253	253	20.00	20.00	20.00	20	395				13838
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		point270	270	20.00	20.00	20.00	20	401				14027
		point171	171	20.00	20.00	20.00	20	400				13987
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		point274	274	20.00	20.00	20.00	20	405				14174
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		point277	277	20.00	20.00	20.00	20	400				13987
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		point282	282	20.00	20.00	20.00	20	400				13987
		point283	283	20.00	20.00	20.00	20	400				13987
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		point287	287	20.00	20.00	20.00	20	400				13987
		point288	288	20.00	20.00	20.00	20	395				13838
		point289	289	20.00	20.00	20.00	20	405				14174
		point290	290	20.00	20.00	20.00	20	400				13987
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		point292	292	20.00	20.00	20.00	20	395				13838
		point293	293	20.00	20.00	20.00	20	400				13987
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		point295	295	20.00	20.00	20.00	20	400				13987
		point296	296	20.00	20.00	20.00	20	400				13987
		point297	297	20.00	20.00	20.00	20	400				13987
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		point299	299	20.00	20.00	20.00	20	405				14174
		point300	300	20.00	20.00	20.00	20	395				13838
		point301	301	20.00	20.00	20.00	20	400				13987
		point302	302	20.00	20.00	20.00	20	400				13987
		point303	303	20.00	20.00	20.00	20	400				13987
		point304	304	20.00	20.00	20.00	20	401				14027
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		point306	306	20.00	20.00	20.00	20	400				13987
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		point308	308	20.00	20.00	20.00	20	400				13987
		point309	309	20.00	20.00	20.00	20	405				14174
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		point312	312	20.00	20.00	20.00	20	400				13987
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		point314	314	20.00	20.00	20.00	20	405				14174
		point315	315	20.00	20.00	20.00	20	400				13987
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		point318	318	20.00	20.00	20.00	20	400				13987
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		point321	321	20.00	20.00	20.00	20	400				13987
		point322	322	20.00	20.00	20.00	20	400				13987
		point323	323	20.00	20.00	20.00	20	395				13838
		point324	324	20.00	20.00	20.00	20	405				14174
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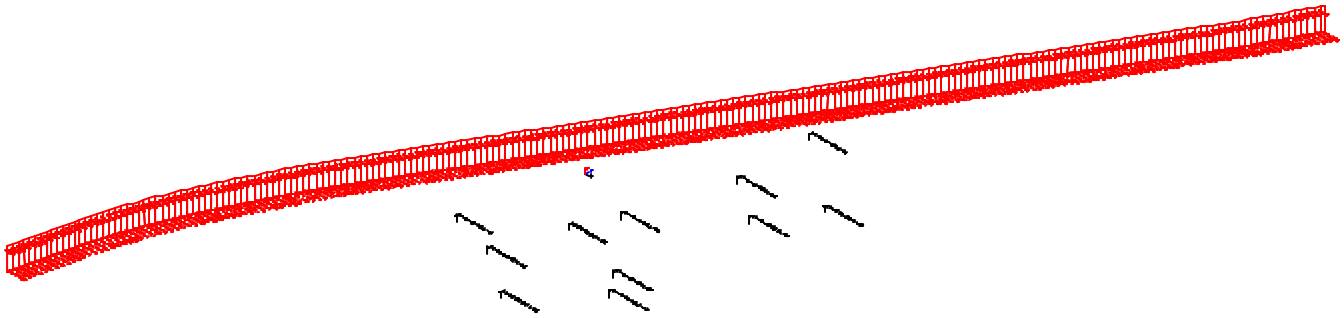
		point327	327	20.00	20.00	20.00	20	400				13987
		point328	328	20.00	20.00	20.00	20	395				13838
		point329	329	20.00	20.00	20.00	20	405				14174
		point330	330	20.00	20.00	20.00	20	400				13987
		point331	331	20.00	20.00	20.00	20	400				13987
		point332	332	20.00	20.00	20.00	20	400				13987
		point333	333	20.00	20.00	20.00	20	400				13987
		point334	334	20.00	20.00	20.00	20	405				14174
		point335	335	20.00	20.00	20.00	12	247				8644



1294.11 Central 1 Toll Only 6 Barrier 4C/D	Sheet 1 of 1	4 Mar 2018
	HMB	
Barrier View-MelodyLnT69	Project/Contract No. I-69 ORX	
Run name: C1_Toll69_4_CD	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/MDG	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 1 – RICHARDSON AVENUE (TOLL BOTH CROSSINGS)

HMB Professional Engineers 21 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: W1_TollAll_Richardson-Redbanks Area
BARRIER DESIGN: W1_TollAll_Richardson-RB_A
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-03-01-RICA-13*	313	1	54.8	57.0	66	2.2	10	----	51.8	5.2	8	-2.8
KY-03-02-RICA-11*	353	1	54.9	57.2	66	2.3	10	----	52.0	5.2	8	-2.8
KY-03-02-RICA-10*	352	1	54.3	57.0	66	2.7	10	----	52.2	4.8	8	-3.2
KY-03-02-RICA-09*	351	1	54.1	57.0	66	2.9	10	----	52.2	4.8	8	-3.2
KY-03-02-RICA-08*	350	1	53.7	56.8	66	3.1	10	----	52.2	4.6	8	-3.4
KY-03-02-RICA-07*	349	1	53.5	56.7	66	3.2	10	----	52.2	4.5	8	-3.5
KY-03-02-RICA-06*	348	1	53.4	56.7	66	3.3	10	----	52.3	4.4	8	-3.6
KY-03-02-RICA-05*	347	1	53.4	56.7	66	3.3	10	----	52.4	4.3	8	-3.7
KY-03-02-RICA-04*	346	1	53.7	56.7	66	3.0	10	----	52.8	3.9	8	-4.1
KY-03-02-RICA-03*	345	1	53.9	56.7	66	2.8	10	----	53.1	3.6	8	-4.4
KY-03-01-HERA-09*	268	1	54.9	56.5	66	1.6	10	----	53.8	2.7	8	-5.3
KY-03-01-HERA-08*	267	1	55.8	56.9	66	1.1	10	----	54.8	2.1	8	-5.9
KY-03-01-HERA-07*	266	1	56.6	57.3	66	0.7	10	----	55.5	1.8	8	-6.2
KY-03-01-HERA-06*	265	1	57.8	58.3	66	0.5	10	----	56.9	1.4	8	-6.6
KY-03-01-HERA-05*	264	1	60.2	60.0	66	-0.2	10	----	59.3	0.7	8	-7.3
KY-03-01-HERA-04*	263	1	61.4	61.1	66	-0.3	10	----	60.5	0.6	8	-7.4
KY-03-01-HERA-03*	262	1	62.5	62.1	66	-0.4	10	----	61.8	0.3	8	-7.7
KY-03-01-HERA-02*	260	1	64.6	64.1	66	-0.5	10	----	63.9	0.2	8	-7.8
KY-03-01-RICA-02*	301	1	54.3	57.8	66	3.5	10	----	53.5	4.3	8	-3.7
KY-03-01-RICA-03*	302	1	54.0	58.0	66	4.0	10	----	53.3	4.7	8	-3.3
KY-03-01-RICA-04*	303	1	54.0	58.0	66	4.0	10	----	53.0	5.0	8	-3.0
KY-03-01-RICA-05*	304	1	54.2	58.0	66	3.8	10	----	53.0	5.0	8	-3.0
KY-03-01-RICA-06*	305	1	54.5	58.2	66	3.7	10	----	53.0	5.2	8	-2.8
KY-03-01-RICA-07*	306	1	55.1	58.2	66	3.1	10	----	52.9	5.3	8	-2.7

KY-03-01-RICA-09*	308	1	56.1	58.8	66	2.7	10	----	53.3	5.5	8	-2.5
KY-03-01-RICA-08*	307	1	55.5	58.3	66	2.8	10	----	53.0	5.3	8	-2.7
KY-03-01-RICA-10*	310	1	56.3	58.8	66	2.5	10	----	53.1	5.7	8	-2.3
KY-03-01-RICA-12*	312	1	57.1	59.3	66	2.2	10	----	53.3	6.0	8	-2.0
KY-03-01-RICA-11*	311	1	56.3	58.0	66	1.7	10	----	52.2	5.8	8	-2.2
KY-03-01-KIML-11*	283	25	64.6	62.7	66	-1.9	10	----	54.9	7.8	8	-0.2
KY-03-01-KIML-06*	278	5	58.6	63.3	66	4.7	10	----	54.6	8.7	8	0.7
KY-03-01-KIML-05*	277	5	59.5	63.1	66	3.6	10	----	54.5	8.6	8	0.6
KY-03-01-KIML-08*	280	5	61.2	64.9	66	3.7	10	----	55.5	9.4	8	1.4
KY-03-01-KIML-07*	279	5	60.7	66.3	66	5.6	10	Snd Lvl	56.3	10.0	8	2.0
KY-03-01-KIML-02*	273	12	60.8	65.1	66	4.3	10	----	56.0	9.1	8	1.1
KY-03-01-KIML-03*	275	12	64.4	68.4	66	4.0	10	Snd Lvl	58.9	9.5	8	1.5
KY-03-01-VAL4-XX*	314	1	61.3	64.0	66	2.7	10	----	53.7	10.3	8	2.3

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	99	0.2	5.0	10.3
All Impacted	17	9.5	9.8	10.0
All that meet NR Goal	45	8.6	9.4	10.3

HMB Professional Engineers 21 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: W1_TollAll_Richardson-Redbanks Area
BARRIER DESIGN: W1_TollAll_Richardson-RB_A

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-03-01-RICA-13*	313	51.8	5.2	8	-2.8	Barrier A	point57	57	20.0	34.9
						Barrier A	point58	58	20.0	34.7
						Barrier A	point59	59	20.0	34.7
						Barrier A	point56	56	20.0	34.6
						Barrier A	point55	55	20.0	33.9
						Barrier A	point43	43	20.0	33.7
						Barrier A	point53	53	20.0	33.4
						Barrier A	point60	60	20.0	33.4
						Barrier A	point46	46	24.0	33.3
						Barrier A	point54	54	20.0	33.1
KY-03-02-RICA-11*	353	52.0	5.2	8	-2.8	Barrier A	point54	54	20.0	35.2
						Barrier A	point55	55	20.0	35.1
						Barrier A	point56	56	20.0	34.9
						Barrier A	point59	59	20.0	34.6
						Barrier A	point58	58	20.0	34.6
						Barrier A	point53	53	20.0	34.2
						Barrier A	point57	57	20.0	34.2
						Barrier A	point45	45	24.0	34.1
						Barrier A	point52	52	20.0	34.0
						Barrier A	point60	60	20.0	33.9
KY-03-02-RICA-10*	352	52.2	4.8	8	-3.2	Barrier A	point53	53	20.0	36.0

						Barrier A	point40	40	20.0	36.0
						Barrier A	point54	54	20.0	35.3
						Barrier A	point52	52	20.0	34.8
						Barrier A	point55	55	20.0	34.8
						Barrier A	point56	56	20.0	34.7
						Barrier A	point59	59	20.0	34.3
						Barrier A	point57	57	20.0	34.3
						Barrier A	point50	50	20.0	34.2
						Barrier A	point58	58	20.0	34.2
KY-03-02-RICA-09*	351	52.2	4.8	8	-3.2	Barrier A	point53	53	20.0	35.5
						Barrier A	point54	54	20.0	35.2
						Barrier A	point52	52	20.0	35.1
						Barrier A	point43	43	20.0	34.7
						Barrier A	point55	55	20.0	34.6
						Barrier A	point51	51	20.0	34.5
						Barrier A	point49	49	20.0	34.5
						Barrier A	point58	58	20.0	34.4
						Barrier A	point50	50	20.0	34.3
						Barrier A	point56	56	20.0	34.3
KY-03-02-RICA-08*	350	52.2	4.6	8	-3.4	Barrier A	point39	39	20.0	37.0
						Barrier A	point52	52	20.0	35.1
						Barrier A	point53	53	20.0	35.0
						Barrier A	point51	51	20.0	34.9
						Barrier A	point49	49	20.0	34.7
						Barrier A	point50	50	20.0	34.7
						Barrier A	point54	54	20.0	34.5
						Barrier A	point57	57	20.0	34.0
						Barrier A	point56	56	20.0	33.8
						Barrier A	point55	55	20.0	33.8
KY-03-02-RICA-07*	349	52.2	4.5	8	-3.5	Barrier A	point38	38	24.0	35.1
						Barrier A	point50	50	20.0	34.9
						Barrier A	point37	37	24.0	34.9
						Barrier A	point49	49	20.0	34.7
						Barrier A	point52	52	20.0	34.5
						Barrier A	point51	51	20.0	34.4
						Barrier A	point39	39	20.0	34.3

						Barrier A	point54	54	20.0	34.1
						Barrier A	point53	53	20.0	34.1
						Barrier A	point48	48	24.0	34.1
KY-03-02-RICA-06*	348	52.3	4.4	8	-3.6	Barrier A	point36	36	20.0	35.2
						Barrier A	point49	49	20.0	34.5
						Barrier A	point46	46	24.0	34.3
						Barrier A	point53	53	20.0	34.2
						Barrier A	point43	43	20.0	34.1
						Barrier A	point50	50	20.0	34.1
						Barrier A	point52	52	20.0	34.0
						Barrier A	point42	42	20.0	34.0
						Barrier A	point48	48	24.0	33.9
						Barrier A	point45	45	24.0	33.8
KY-03-02-RICA-05*	347	52.4	4.3	8	-3.7	Barrier A	point34	34	20.0	35.5
						Barrier A	point43	43	20.0	34.4
						Barrier A	point45	45	24.0	34.3
						Barrier A	point33	33	20.0	34.3
						Barrier A	point40	40	20.0	34.0
						Barrier A	point39	39	20.0	33.9
						Barrier A	point44	44	24.0	33.8
						Barrier A	point49	49	20.0	33.8
						Barrier A	point46	46	24.0	33.8
						Barrier A	point41	41	20.0	33.8
KY-03-02-RICA-04*	346	52.8	3.9	8	-4.1	Barrier A	point32	32	20.0	36.1
						Barrier A	point31	31	20.0	35.5
						Barrier A	point43	43	20.0	34.7
						Barrier A	point42	42	20.0	34.3
						Barrier A	point39	39	20.0	34.3
						Barrier A	point41	41	20.0	34.2
						Barrier A	point38	38	20.0	34.1
						Barrier A	point49	49	20.0	34.0
						Barrier A	point33	33	20.0	33.8
						Barrier A	point45	45	24.0	33.6
KY-03-02-RICA-03*	345	53.1	3.6	8	-4.4	Barrier A	point31	31	20.0	36.3
						Barrier A	point30	30	20.0	36.2
						Barrier A	point43	43	20.0	34.7

						Barrier A	point41	41	20.0	34.5
						Barrier A	point42	42	20.0	34.5
						Barrier A	point38	38	20.0	34.3
						Barrier A	point32	32	20.0	34.2
						Barrier A	point40	40	20.0	34.0
						Barrier A	point39	39	20.0	33.9
						Barrier A	point29	29	20.0	33.8
KY-03-01-HERA-09*	268	53.8	2.7	8	-5.3	Barrier A	point18	18	20.0	36.5
						Barrier A	point19	19	20.0	34.4
						Barrier A	point38	38	20.0	32.8
						Barrier A	point39	39	20.0	32.6
						Barrier A	point20	20	20.0	32.6
						Barrier A	point34	34	20.0	32.6
						Barrier A	point37	37	20.0	32.5
						Barrier A	point36	36	20.0	32.4
						Barrier A	point35	35	20.0	32.3
						Barrier A	point21	21	20.0	32.1
KY-03-01-HERA-08*	267	54.8	2.1	8	-5.9	Barrier A	point15	15	20.0	36.3
						Barrier A	point16	16	20.0	34.7
						Barrier A	point17	17	20.0	33.6
						Barrier A	point14	14	20.0	32.2
						Barrier A	point38	38	20.0	32.0
						Barrier A	point35	35	20.0	32.0
						Barrier A	point33	33	20.0	31.9
						Barrier A	point32	32	20.0	31.8
						Barrier A	point36	36	20.0	31.8
						Barrier A	point31	31	20.0	31.7
KY-03-01-HERA-07*	266	55.5	1.8	8	-6.2	Barrier A	point13	13	20.0	36.2
						Barrier A	point12	12	20.0	35.6
						Barrier A	point14	14	20.0	34.5
						Barrier A	point16	16	20.0	32.6
						Barrier A	point36	36	20.0	32.3
						Barrier A	point15	15	20.0	32.0
						Barrier A	point32	32	20.0	31.9
						Barrier A	point31	31	20.0	31.8
						Barrier A	point35	35	20.0	31.7

						Barrier A	point18	18	20.0	31.6
KY-03-01-HERA-06*	265	56.9	1.4	8	-6.6	Barrier A	point10	10	20.0	36.4
						Barrier A	point9	9	20.0	35.8
						Barrier A	point11	11	20.0	35.8
						Barrier A	point12	12	20.0	33.2
						Barrier A	point14	14	20.0	32.6
						Barrier A	point13	13	20.0	31.8
						Barrier A	point15	15	20.0	31.7
						Barrier A	point31	31	20.0	31.7
						Barrier A	point28	28	20.0	31.7
						Barrier A	point29	29	20.0	31.6
KY-03-01-HERA-05*	264	59.3	0.7	8	-7.3	Barrier A	point4	4	16.0	33.7
						Barrier A	point11	11	20.0	32.7
						Barrier A	point10	10	20.0	32.2
						Barrier A	point31	31	20.0	31.9
						Barrier A	point8	8	20.0	31.6
						Barrier A	point26	26	20.0	31.6
						Barrier A	point25	25	20.0	31.4
						Barrier A	point9	9	20.0	31.2
						Barrier A	point24	24	20.0	31.2
						Barrier A	point28	28	20.0	31.1
KY-03-01-HERA-04*	263	60.5	0.6	8	-7.4	Barrier A	point4	4	16.0	33.4
						Barrier A	point10	10	20.0	32.8
						Barrier A	point9	9	20.0	32.6
						Barrier A	point8	8	20.0	32.4
						Barrier A	point24	24	20.0	31.6
						Barrier A	point25	25	20.0	31.5
						Barrier A	point23	23	20.0	31.5
						Barrier A	point26	26	20.0	31.1
						Barrier A	point29	29	20.0	30.9
						Barrier A	point22	22	20.0	30.9
KY-03-01-HERA-03*	262	61.8	0.3	8	-7.7	Barrier A	point4	4	16.0	34.3
						Barrier A	point8	8	20.0	33.5
						Barrier A	point22	22	20.0	31.8
						Barrier A	point23	23	20.0	31.7
						Barrier A	point24	24	20.0	31.2

						Barrier A	point21	21	20.0	31.1
						Barrier A	point9	9	20.0	31.1
						Barrier A	point28	28	20.0	31.0
						Barrier A	point20	20	20.0	30.9
						Barrier A	point25	25	20.0	30.7
KY-03-01-HERA-02*	260	63.9	0.2	8	-7.8	Barrier A	point4	4	16.0	32.8
						Barrier A	point20	20	20.0	32.4
						Barrier A	point19	19	20.0	32.3
						Barrier A	point21	21	20.0	31.7
						Barrier A	point22	22	20.0	31.1
						Barrier A	point9	9	20.0	31.0
						Barrier A	point8	8	20.0	30.9
						Barrier A	point24	24	20.0	30.8
						Barrier A	point18	18	20.0	30.8
						Barrier A	point17	17	20.0	30.7
KY-03-01-RICA-02*	301	53.5	4.3	8	-3.7	Barrier A	point33	33	20.0	37.7
						Barrier A	point43	43	20.0	36.4
						Barrier A	point42	42	20.0	35.8
						Barrier A	point39	39	20.0	35.7
						Barrier A	point41	41	20.0	35.7
						Barrier A	point34	34	20.0	35.5
						Barrier A	point32	32	20.0	35.4
						Barrier A	point38	38	20.0	35.4
						Barrier A	point44	44	24.0	35.4
						Barrier A	point35	35	20.0	35.1
KY-03-01-RICA-03*	302	53.3	4.7	8	-3.3	Barrier A	point35	35	20.0	36.2
						Barrier A	point36	36	20.0	35.7
						Barrier A	point43	43	20.0	35.7
						Barrier A	point34	34	20.0	35.5
						Barrier A	point44	44	24.0	35.4
						Barrier A	point40	40	20.0	35.3
						Barrier A	point45	45	24.0	35.3
						Barrier A	point41	41	20.0	35.2
						Barrier A	point49	49	20.0	35.2
						Barrier A	point50	50	20.0	35.1
KY-03-01-RICA-04*	303	53.0	5.0	8	-3.0	Barrier A	point37	37	20.0	36.8

						Barrier A	point49	49	20.0	35.7
						Barrier A	point46	46	24.0	35.7
						Barrier A	point43	43	20.0	35.6
						Barrier A	point38	38	20.0	35.5
						Barrier A	point52	52	20.0	35.4
						Barrier A	point42	42	20.0	35.4
						Barrier A	point47	47	24.0	35.3
						Barrier A	point45	45	24.0	35.2
						Barrier A	point50	50	20.0	35.2
KY-03-01-RICA-05*	304	53.0	5.0	8	-3.0	Barrier A	point49	49	20.0	36.5
						Barrier A	point50	50	20.0	36.3
						Barrier A	point39	39	20.0	36.2
						Barrier A	point51	51	20.0	36.1
						Barrier A	point53	53	20.0	35.7
						Barrier A	point54	54	20.0	35.7
						Barrier A	point52	52	20.0	35.7
						Barrier A	point48	48	24.0	35.3
						Barrier A	point46	46	24.0	35.3
						Barrier A	point47	47	24.0	35.3
KY-03-01-RICA-06*	305	53.0	5.2	8	-2.8	Barrier A	point52	52	20.0	36.7
						Barrier A	point51	51	20.0	36.5
						Barrier A	point53	53	20.0	36.3
						Barrier A	point49	49	20.0	36.3
						Barrier A	point50	50	20.0	36.0
						Barrier A	point54	54	20.0	35.9
						Barrier A	point55	55	20.0	35.7
						Barrier A	point56	56	20.0	35.7
						Barrier A	point43	43	20.0	35.7
						Barrier A	point41	41	20.0	35.3
KY-03-01-RICA-07*	306	52.9	5.3	8	-2.7	Barrier A	point53	53	20.0	36.8
						Barrier A	point54	54	20.0	36.6
						Barrier A	point52	52	20.0	36.5
						Barrier A	point58	58	20.0	36.0
						Barrier A	point55	55	20.0	36.0
						Barrier A	point51	51	20.0	35.9
						Barrier A	point50	50	20.0	35.9

						Barrier A	point49	49	20.0	35.9
						Barrier A	point56	56	20.0	35.7
						Barrier A	point57	57	20.0	35.6
KY-03-01-RICA-09*	308	53.3	5.5	8	-2.5	Barrier A	point54	54	20.0	37.2
						Barrier A	point56	56	20.0	36.8
						Barrier A	point55	55	20.0	36.8
						Barrier A	point59	59	20.0	36.7
						Barrier A	point57	57	20.0	36.6
						Barrier A	point58	58	20.0	36.6
						Barrier A	point52	52	20.0	36.4
						Barrier A	point45	45	24.0	36.4
						Barrier A	point53	53	20.0	36.3
						Barrier A	point51	51	20.0	36.0
KY-03-01-RICA-08*	307	53.0	5.3	8	-2.7	Barrier A	point54	54	20.0	36.7
						Barrier A	point55	55	20.0	36.5
						Barrier A	point56	56	20.0	36.4
						Barrier A	point53	53	20.0	36.3
						Barrier A	point59	59	20.0	36.1
						Barrier A	point58	58	20.0	35.9
						Barrier A	point52	52	20.0	35.8
						Barrier A	point51	51	20.0	35.7
						Barrier A	point50	50	20.0	35.7
						Barrier A	point45	45	24.0	35.6
KY-03-01-RICA-10*	310	53.1	5.7	8	-2.3	Barrier A	point54	54	20.0	36.6
						Barrier A	point58	58	20.0	36.6
						Barrier A	point55	55	20.0	36.5
						Barrier A	point59	59	20.0	36.4
						Barrier A	point53	53	20.0	36.4
						Barrier A	point56	56	20.0	36.4
						Barrier A	point57	57	20.0	36.1
						Barrier A	point52	52	24.0	36.0
						Barrier A	point46	46	24.0	35.8
						Barrier A	point60	60	20.0	35.6
KY-03-01-RICA-12*	312	53.3	6.0	8	-2.0	Barrier A	point58	58	20.0	37.2
						Barrier A	point57	57	20.0	37.2
						Barrier A	point59	59	20.0	36.9

						Barrier A	point56	56	20.0	36.7
						Barrier A	point54	54	20.0	36.3
						Barrier A	point60	60	20.0	36.2
						Barrier A	point53	53	20.0	36.1
						Barrier A	point55	55	20.0	36.0
						Barrier A	point61	61	20.0	35.9
						Barrier A	point49	49	20.0	35.8
KY-03-01-RICA-11*	311	52.2	5.8	8	-2.2	Barrier A	point59	59	20.0	35.7
						Barrier A	point58	58	20.0	35.2
						Barrier A	point60	60	20.0	34.8
						Barrier A	point61	61	20.0	34.3
						Barrier A	point57	57	20.0	34.2
						Barrier A	point49	49	20.0	34.0
						Barrier A	point63	63	20.0	33.6
						Barrier A	point53	53	20.0	33.5
						Barrier A	point62	62	20.0	33.5
						Barrier A	point54	54	20.0	33.5
KY-03-01-KIML-11*	283	54.9	7.8	8	-0.2	Barrier A	point100	100	20.0	38.4
						Barrier A	point102	102	20.0	38.3
						Barrier A	point101	101	20.0	38.3
						Barrier A	point103	103	20.0	38.2
						Barrier A	point104	104	20.0	38.1
						Barrier A	point98	98	20.0	38.0
						Barrier A	point105	105	20.0	38.0
						Barrier A	point97	97	20.0	37.9
						Barrier A	point96	96	20.0	37.9
						Barrier A	point5	5	20.0	37.7
KY-03-01-KIML-06*	278	54.6	8.7	8	0.7	Barrier A	point127	127	20.0	37.8
						Barrier A	point126	126	20.0	37.7
						Barrier A	point128	128	20.0	37.5
						Barrier A	point129	129	20.0	37.4
						Barrier A	point130	130	20.0	37.2
						Barrier A	point131	131	20.0	37.2
						Barrier A	point132	132	20.0	37.0
						Barrier A	point125	125	20.0	36.9
						Barrier A	point133	133	20.0	36.8

						Barrier A	point134	134	20.0	36.5
KY-03-01-KIML-05*	277	54.5	8.6	8	0.6	Barrier A	point126	126	20.0	37.1
						Barrier A	point127	127	20.0	36.9
						Barrier A	point128	128	20.0	36.7
						Barrier A	point129	129	20.0	36.5
						Barrier A	point125	125	20.0	36.4
						Barrier A	point130	130	20.0	36.3
						Barrier A	point120	120	20.0	36.2
						Barrier A	point121	121	20.0	36.1
						Barrier A	point131	131	20.0	36.1
						Barrier A	point119	119	20.0	36.1
KY-03-01-KIML-08*	280	55.5	9.4	8	1.4	Barrier A	point126	126	20.0	38.6
						Barrier A	point127	127	20.0	38.5
						Barrier A	point120	120	20.0	38.3
						Barrier A	point128	128	20.0	38.3
						Barrier A	point118	118	20.0	38.3
						Barrier A	point119	119	20.0	38.2
						Barrier A	point125	125	20.0	38.2
						Barrier A	point121	121	20.0	38.2
						Barrier A	point117	117	20.0	38.1
						Barrier A	point116	116	20.0	37.9
KY-03-01-KIML-07*	279	56.3	10.0	8	2.0	Barrier A	point126	126	20.0	40.9
						Barrier A	point127	127	20.0	40.8
						Barrier A	point128	128	20.0	40.4
						Barrier A	point129	129	20.0	40.2
						Barrier A	point125	125	20.0	40.1
						Barrier A	point130	130	20.0	39.8
						Barrier A	point131	131	20.0	39.6
						Barrier A	point121	121	20.0	39.5
						Barrier A	point120	120	20.0	39.3
						Barrier A	point132	132	20.0	39.3
KY-03-01-KIML-02*	273	56.0	9.1	8	1.1	Barrier A	point145	145	20.0	40.8
						Barrier A	point144	144	20.0	40.7
						Barrier A	point143	143	20.0	40.6
						Barrier A	point142	142	20.0	40.4
						Barrier A	point141	141	20.0	40.4

						Barrier A	point146	146	20.0	40.3
						Barrier A	point140	140	20.0	40.1
						Barrier A	point139	139	20.0	40.0
						Barrier A	point147	147	20.0	39.9
						Barrier A	point149	149	20.0	39.8
KY-03-01-KIML-03*	275	58.9	9.5	8	1.5	Barrier A	point145	145	20.0	44.9
						Barrier A	point144	144	20.0	44.8
						Barrier A	point143	143	20.0	44.7
						Barrier A	point146	146	20.0	44.6
						Barrier A	point142	142	20.0	44.5
						Barrier A	point141	141	20.0	44.4
						Barrier A	point147	147	20.0	44.0
						Barrier A	point140	140	20.0	44.0
						Barrier A	point148	148	20.0	43.8
						Barrier A	point139	139	20.0	43.7
KY-03-01-VAL4-XX*	314	53.7	10.3	8	2.3	Barrier A	point154	154	20.0	42.0
						Barrier A	point153	153	20.0	41.9
						Barrier A	point152	152	20.0	41.8
						Barrier A	point151	151	20.0	41.6
						Barrier A	point150	150	20.0	41.4
						Barrier A	point149	149	20.0	41.3
						Barrier A	point148	148	20.0	40.7
						Barrier A	point147	147	20.0	40.4
						Barrier A	point146	146	20.0	39.9
						Barrier A	point145	145	20.0	39.6
Total Cost, All Barriers (including additional cost(s))					$2205506					

HMB Professional Engineers				**21 March 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**W1_TollAll_Richardson-Redbanks Area**									
BARRIER DESIGN:	**W1_TollAll_Richardson-RB_A**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier A	W	16.00	20.09	24.00	3660	73517				2205506
									Total Cost:	2205506

HMB Professional Engineers 21 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: W1_TollAll_Richardson-Redbanks Area
BARRIER DESIGN: W1_TollAll_Richardson-RB_A

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier A	W	point4	4	16.00	16.00	16.00	20	322				9655
		point8	8	20.00	20.00	20.00	20	402				12068
		point9	9	20.00	20.00	20.00	20	394				11834
		point10	10	20.00	20.00	20.00	20	403				12093
		point11	11	20.00	20.00	20.00	20	398				11947
		point12	12	20.00	20.00	20.00	20	402				12075
		point13	13	20.00	20.00	20.00	20	402				12075
		point14	14	20.00	20.00	20.00	20	394				11819
		point15	15	20.00	20.00	20.00	20	403				12093
		point16	16	20.00	20.00	20.00	20	401				12035
		point17	17	20.00	20.00	20.00	20	396				11868
		point18	18	20.00	20.00	20.00	20	405				12149
		point19	19	20.00	20.00	20.00	20	398				11955
		point20	20	20.00	20.00	20.00	20	400				12001
		point21	21	20.00	20.00	20.00	20	394				11827
		point22	22	20.00	20.00	20.00	20	404				12117
		point23	23	20.00	20.00	20.00	20	401				12042
		point24	24	20.00	20.00	20.00	20	399				11975
		point25	25	20.00	20.00	20.00	20	398				11944
		point26	26	20.00	20.00	20.00	20	405				12157
		point27	27	20.00	20.00	20.00	20	395				11861
		point28	28	20.00	20.00	20.00	20	403				12093
		point29	29	20.00	20.00	20.00	20	402				12060
		point30	30	20.00	20.00	20.00	20	393				11778
		point31	31	20.00	20.00	20.00	20	400				12015
		point32	32	20.00	20.00	20.00	20	400				12015

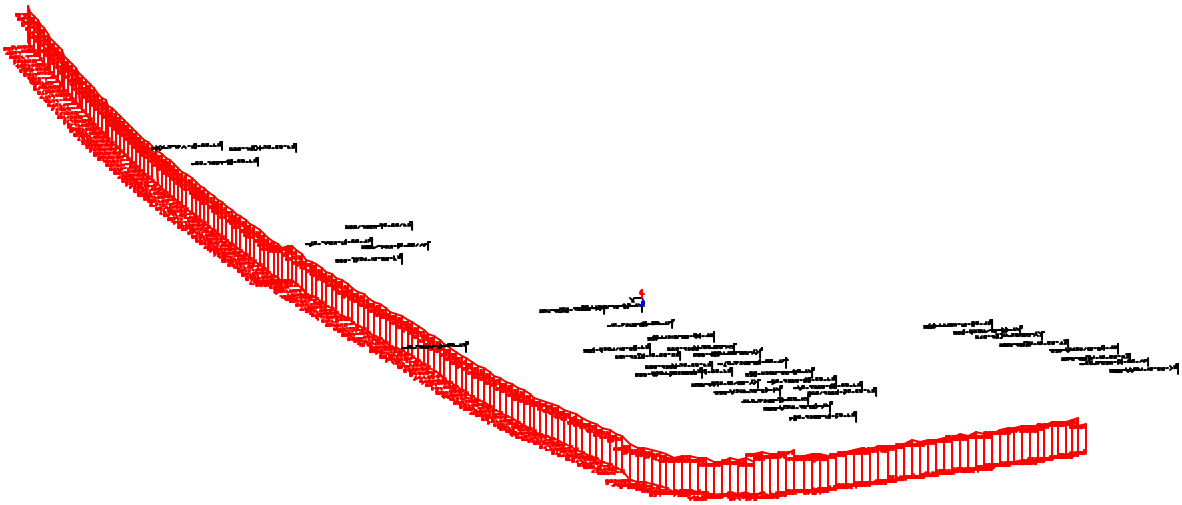
		point33	33	20.00	20.00	20.00	20	400				12004
		point34	34	20.00	20.00	20.00	20	400				12000
		point35	35	20.00	20.00	20.00	20	400				12001
		point36	36	20.00	20.00	20.00	20	400				12015
		point37	37	20.00	20.00	20.00	20	400				12015
		point38	38	20.00	20.00	20.00	20	402				12046
		point39	39	20.00	20.00	20.00	20	402				12060
		point40	40	20.00	20.00	20.00	20	393				11796
		point41	41	20.00	20.00	20.00	20	404				12134
		point42	42	20.00	20.00	20.00	20	395				11838
		point43	43	20.00	20.00	20.00	20	408				12238
		point44	44	24.00	24.00	24.00	20	479				14370
		point45	45	24.00	24.00	24.00	20	480				14409
		point46	46	24.00	24.00	24.00	20	472				14146
		point47	47	24.00	24.00	24.00	20	485				14540
		point48	48	24.00	24.00	24.00	20	478				14346
		point49	49	20.00	20.00	20.00	20	400				12001
		point50	50	20.00	20.00	20.00	20	402				12049
		point51	51	20.00	20.00	20.00	20	396				11868
		point52	52	20.00	20.00	20.00	20	409				12256
		point53	53	20.00	20.00	20.00	20	394				11819
		point54	54	20.00	20.00	20.00	20	403				12093
		point55	55	20.00	20.00	20.00	20	400				12008
		point56	56	20.00	20.00	20.00	20	400				12008
		point57	57	20.00	20.00	20.00	20	398				11947
		point58	58	20.00	20.00	20.00	20	401				12020
		point59	59	20.00	20.00	20.00	20	403				12093
		point60	60	20.00	20.00	20.00	20	394				11816
		point61	61	20.00	20.00	20.00	20	400				11989
		point62	62	20.00	20.00	20.00	20	402				12067
		point63	63	20.00	20.00	20.00	20	402				12067
		point64	64	20.00	20.00	20.00	20	397				11911
		point65	65	20.00	20.00	20.00	20	403				12091
		point66	66	20.00	20.00	20.00	20	398				11947
		point67	67	20.00	20.00	20.00	20	397				11910
		point68	68	20.00	20.00	20.00	20	405				12138
		point69	69	20.00	20.00	20.00	20	400				11990
		point70	70	20.00	20.00	20.00	20	400				11990
		point71	71	20.00	20.00	20.00	20	396				11879

		point72	72	20.00	20.00	20.00	20	407				12202
		point73	73	20.00	20.00	20.00	20	396				11887
		point74	74	20.00	20.00	20.00	20	401				12023
		point75	75	20.00	20.00	20.00	20	401				12023
		point76	76	20.00	20.00	20.00	20	394				11831
		point77	77	20.00	20.00	20.00	20	402				12065
		point78	78	20.00	20.00	20.00	20	398				11947
		point79	79	20.00	20.00	20.00	20	408				12253
		point80	80	20.00	20.00	20.00	20	392				11761
		point81	81	20.00	20.00	20.00	20	402				12065
		point82	82	20.00	20.00	20.00	20	402				12065
		point83	83	20.00	20.00	20.00	20	402				12065
		point84	84	20.00	20.00	20.00	20	396				11880
		point85	85	20.00	20.00	20.00	20	398				11947
		point86	86	20.00	20.00	20.00	20	400				12000
		point87	87	20.00	20.00	20.00	20	400				12000
		point88	88	20.00	20.00	20.00	20	400				12000
		point89	89	20.00	20.00	20.00	20	406				12182
		point90	90	20.00	20.00	20.00	20	400				12000
		point91	91	20.00	20.00	20.00	20	400				12000
		point92	92	20.00	20.00	20.00	20	394				11822
		point93	93	20.00	20.00	20.00	20	404				12120
		point94	94	20.00	20.00	20.00	20	398				11945
		point95	95	20.00	20.00	20.00	20	404				12120
		point96	96	20.00	20.00	20.00	20	398				11945
		point97	97	20.00	20.00	20.00	20	394				11822
		point98	98	20.00	20.00	20.00	20	402				12067
		point99	99	20.00	20.00	20.00	20	402				12067
		point100	100	20.00	20.00	20.00	20	402				12067
		point101	101	20.00	20.00	20.00	20	397				11898
		point102	102	20.00	20.00	20.00	20	398				11945
		point103	103	20.00	20.00	20.00	20	398				11945
		point104	104	20.00	20.00	20.00	20	404				12120
		point105	105	20.00	20.00	20.00	20	398				11945
		point5	5	20.00	20.00	20.00	20	404				12120
		point106	106	20.00	20.00	20.00	20	398				11945
		point107	107	20.00	20.00	20.00	20	398				11945
		point108	108	20.00	20.00	20.00	20	398				11945
		point109	109	20.00	20.00	20.00	20	402				12067

		point110	110	20.00	20.00	20.00	20	398				11945
		point111	111	20.00	20.00	20.00	20	402				12067
		point112	112	20.00	20.00	20.00	20	402				12067
		point113	113	20.00	20.00	20.00	20	397				11898
		point114	114	20.00	20.00	20.00	20	401				12023
		point115	115	20.00	20.00	20.00	20	402				12067
		point116	116	20.00	20.00	20.00	20	397				11898
		point117	117	20.00	20.00	20.00	20	400				11989
		point118	118	20.00	20.00	20.00	20	404				12117
		point119	119	20.00	20.00	20.00	20	399				11963
		point120	120	20.00	20.00	20.00	20	399				11963
		point121	121	20.00	20.00	20.00	20	404				12117
		point122	122	20.00	20.00	20.00	20	399				11963
		point123	123	20.00	20.00	20.00	20	399				11963
		point124	124	20.00	20.00	20.00	20	398				11947
		point125	125	20.00	20.00	20.00	20	399				11963
		point126	126	20.00	20.00	20.00	20	403				12093
		point127	127	20.00	20.00	20.00	20	398				11947
		point128	128	20.00	20.00	20.00	20	398				11947
		point129	129	20.00	20.00	20.00	20	403				12093
		point130	130	20.00	20.00	20.00	20	398				11947
		point131	131	20.00	20.00	20.00	20	403				12079
		point132	132	20.00	20.00	20.00	20	398				11947
		point133	133	20.00	20.00	20.00	20	398				11947
		point134	134	20.00	20.00	20.00	20	398				11947
		point135	135	20.00	20.00	20.00	20	403				12093
		point136	136	20.00	20.00	20.00	20	403				12079
		point137	137	20.00	20.00	20.00	20	398				11947
		point138	138	20.00	20.00	20.00	20	398				11941
		point139	139	20.00	20.00	20.00	20	403				12079
		point140	140	20.00	20.00	20.00	20	398				11941
		point141	141	20.00	20.00	20.00	20	403				12079
		point142	142	20.00	20.00	20.00	20	398				11941
		point143	143	20.00	20.00	20.00	20	398				11941
		point144	144	20.00	20.00	20.00	20	398				11941
		point145	145	20.00	20.00	20.00	20	402				12075
		point146	146	20.00	20.00	20.00	20	402				12075
		point147	147	20.00	20.00	20.00	20	402				12075
		point148	148	20.00	20.00	20.00	20	394				11808

		point149	149	20.00	20.00	20.00	20	407				12209
		point150	150	20.00	20.00	20.00	20	398				11944
		point151	151	20.00	20.00	20.00	20	398				11944
		point152	152	20.00	20.00	20.00	20	398				11944
		point153	153	20.00	20.00	20.00	20	403				12079
		point154	154	20.00	20.00	20.00	20	398				11944
		point155	155	20.00	20.00	20.00	20	399				11956
		point156	156	20.00	20.00	20.00	20	399				11956
		point157	157	20.00	20.00	20.00	20	403				12079
		point158	158	20.00	20.00	20.00	20	399				11956
		point159	159	20.00	20.00	20.00	20	403				12079
		point160	160	20.00	20.00	20.00	20	399				11977
		point161	161	20.00	20.00	20.00	20	399				11956
		point162	162	20.00	20.00	20.00	20	403				12093
		point163	163	20.00	20.00	20.00	20	395				11839
		point164	164	20.00	20.00	20.00	20	403				12093
		point165	165	20.00	20.00	20.00	20	403				12093
		point166	166	20.00	20.00	20.00	20	396				11868
		point167	167	20.00	20.00	20.00	20	399				11977
		point168	168	20.00	20.00	20.00	20	399				11977
		point169	169	20.00	20.00	20.00	20	404				12117
		point170	170	20.00	20.00	20.00	20	399				11977
		point171	171	20.00	20.00	20.00	20	404				12117
		point172	172	20.00	20.00	20.00	20	396				11868
		point173	173	20.00	20.00	20.00	20	400				12008
		point174	174	20.00	20.00	20.00	20	400				12008
		point175	175	20.00	20.00	20.00	20	396				11868
		point176	176	20.00	20.00	20.00	20	404				12117
		point177	177	20.00	20.00	20.00	20	402				12049
		point178	178	20.00	20.00	20.00	20	400				12008
		point179	179	20.00	20.00	20.00	20	397				11907
		point180	180	20.00	20.00	20.00	20	405				12149
		point181	181	20.00	20.00	20.00	20	397				11907
		point182	182	20.00	20.00	20.00	20	402				12049
		point183	183	20.00	20.00	20.00	20	397				11907
		point184	184	20.00	20.00	20.00	20	402				12049
		point185	185	20.00	20.00	20.00	20	398				11955
		point186	186	20.00	20.00	20.00	20	402				12049
		point187	187	20.00	20.00	20.00	20	402				12049

		point188	188	20.00	20.00	20.00	20	398				11955



W1_TollAll_Richardson-Redbanks Area	Sheet 1 of 1	21 Mar 2018
	HMB Professional Engineers	
Barrier View-W1_TollAll_Richardson-RB_A	Project/Contract No. I-69 ORX	
Run name: W1_02_TollAll_A	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 1 – NORTH GREEN STREET (TOLL BOTH CROSSINGS)

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_TollAll_N Green Street Area
BARRIER DESIGN: W1_TollAll_N Green St Area
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-02-02-NELS-11	171	4	62.8	63.4	66	0.6	10	----	56.9	6.5	8	-1.5
KY-02-02-NELS-12	172	5	63.0	63.5	66	0.5	10	----	57.0	6.5	8	-1.5
KY-02-02-NELS-13	173	4	64.3	64.3	66	0.0	10	----	57.3	7.0	8	-1.0
KY-02-02-NELS-14	174	5	64.6	64.4	66	-0.2	10	----	57.3	7.1	8	-0.9
KY-02-02-NELS-15	175	5	66.7	65.7	66	-1.0	10	----	57.7	8.0	8	0.0
KY-02-02-NELS-24*	185	5	58.2	59.4	66	1.2	10	----	54.2	5.2	8	-2.8
KY-02-02-NELS-23*	184	5	59.3	60.2	66	0.9	10	----	54.7	5.5	8	-2.5
KY-02-02-NELS-22*	183	5	60.8	61.5	66	0.7	10	----	55.5	6.0	8	-2.0
KY-02-02-NELS-21*	182	5	62.5	62.9	66	0.4	10	----	56.4	6.5	8	-1.5
KY-02-02-NELS-20*	181	5	64.5	64.4	66	-0.1	10	----	57.2	7.2	8	-0.8
KY-03-01-BARD-01*	249	1	58.6	58.8	66	0.2	10	----	54.7	4.1	8	-3.9
KY-03-01-BARD-02*	251	1	59.1	59.4	66	0.3	10	----	54.8	4.6	8	-3.4
KY-03-01-BARD-03*	252	1	59.9	60.0	66	0.1	10	----	55.0	5.0	8	-3.0
KY-03-02-BARD-01*	330	1	57.6	57.9	66	0.3	10	----	53.9	4.0	8	-4.0
KY-03-01-BARD-04*	253	2	59.6	59.6	66	0.0	10	----	54.7	4.9	8	-3.1
KY-03-01-BARD-05*	254	2	59.3	59.1	66	-0.2	10	----	54.5	4.6	8	-3.4
KY-03-02-BARD-02*	331	1	57.4	57.7	66	0.3	10	----	53.8	3.9	8	-4.1
KY-03-01-HIYD-01*	269	1	57.0	57.4	66	0.4	10	----	53.7	3.7	8	-4.3
KY-03-01-HIYD-02*	270	1	57.6	57.7	66	0.1	10	----	53.9	3.8	8	-4.2
KY-03-02-HIYD-02*	339	1	57.6	57.2	66	-0.4	10	----	54.2	3.0	8	-5.0
KY-03-02-HIYD-01*	338	1	57.5	57.1	66	-0.4	10	----	54.3	2.8	8	-5.2
KY-03-01-ELKA-01*	255	1	56.6	57.0	66	0.4	10	----	54.9	2.1	8	-5.9
KY-03-01-ELKA-02*	256	1	58.3	58.3	66	0.0	10	----	56.8	1.5	8	-6.5
KY-03-01-NGRS-08*	293	1	58.8	58.2	66	-0.6	10	----	56.4	1.8	8	-6.2

KY-03-01-ELKA-03*	257	1	59.2	58.9	66	-0.3	10	----	57.4	1.5	8	-6.5
KY-03-02-ELKA-01*	332	1	57.1	57.4	66	0.3	10	----	56.3	1.1	8	-6.9
KY-03-02-ELKA-02*	334	2	58.3	58.4	66	0.1	10	----	57.5	0.9	8	-7.1
KY-03-02-ELKA-03*	335	2	59.4	59.4	66	0.0	10	----	58.6	0.8	8	-7.2
KY-03-02-ELKA-04*	336	2	60.8	60.7	66	-0.1	10	----	60.1	0.6	8	-7.4
KY-03-02-RICA-01*	342	1	63.1	62.6	66	-0.5	10	----	62.5	0.1	8	-7.9
KY-03-02-RICA-02*	343	1	65.6	64.5	66	-1.1	10	----	64.5	0.0	8	-8.0
KY-03-01-HERA-01*	259	1	66.7	65.7	66	-1.0	10	----	65.7	0.0	8	-8.0
KY-02-02-NELS-09	169	2	66.4	66.6	66	0.2	10	Snd Lvl	58.6	8.0	8	0.0
KY-02-02-NELS-10	170	2	68.2	67.6	66	-0.6	10	Snd Lvl	58.9	8.7	8	0.7
KY-02-02-NELS-16	177	5	69.5	67.0	66	-2.5	10	Snd Lvl	58.0	9.0	8	1.0
KY-02-02-NELS-17	178	5	69.8	67.4	66	-2.4	10	Snd Lvl	58.2	9.2	8	1.2
KY-02-02-NELS-18	179	5	69.2	67.2	66	-2.0	10	Snd Lvl	58.2	9.0	8	1.0
KY-02-02-NELS-19*	180	5	66.2	65.8	66	-0.4	10	----	57.5	8.3	8	0.3
KY-03-01-NELS-01*	286	1	62.6	62.5	66	-0.1	10	----	59.2	3.3	8	-4.7
KY-03-01-RICA-01*	300	1	60.7	60.5	66	-0.2	10	----	60.2	0.3	8	-7.7
KY-03-02-ELKA-05*	337	2	62.0	61.8	66	-0.2	10	----	61.3	0.5	8	-7.5
KY-03-01-ELKA-04*	258	1	60.4	59.7	66	-0.7	10	----	58.2	1.5	8	-6.5
KY-03-01-NGRS-07*	292	2	60.8	59.8	66	-1.0	10	----	57.7	2.1	8	-5.9
KY-03-01-NGRS-06*	291	1	60.2	59.5	66	-0.7	10	----	57.4	2.1	8	-5.9
KY-03-01-NRGS-05*	299	1	58.3	57.4	66	-0.9	10	----	54.9	2.5	8	-5.5
KY-03-01-NGRS-04*	290	1	58.1	57.2	66	-0.9	10	----	54.4	2.8	8	-5.2
KY-03-01-NGRS-03*	289	1	58.6	58.1	66	-0.5	10	----	54.4	3.7	8	-4.3
KY-03-01-NGRS-02*	288	1	59.2	58.8	66	-0.4	10	----	54.4	4.4	8	-3.6
KY-03-01-NGRS-09*	294	1	60.5	60.2	66	-0.3	10	----	55.0	5.2	8	-2.8
KY-03-01-NGRS-10*	297	1	60.9	60.7	66	-0.2	10	----	55.3	5.4	8	-2.6
KY-03-01-NGRS-01*	287	2	61.7	61.7	66	0.0	10	----	55.8	5.9	8	-2.1
KY-03-02-NGRS-02*	341	12	62.3	58.2	66	-4.1	10	----	54.2	4.0	8	-4.0
KY-03-02-NGRS-01*	340	12	62.8	60.1	66	-2.7	10	----	54.6	5.5	8	-2.5

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	139	0.0	4.2	9.2
All Impacted	19	8.0	8.8	9.2
All that meet NR Goal	24	8.0	8.7	9.2

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_TollAll_N Green Street Area
BARRIER DESIGN: W1_TollAll_N Green St Area

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Goal	Calc-Goal	Barrier Reviewed	Important Segments Name	No.	Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-02-02-NELS-11	171	56.9	6.5	8	-1.5	Barrier C	point97	97	20.0	46.3
						Barrier C	point107	107	20.0	41.5
						Barrier C	point106	106	20.0	40.7
						Barrier C	point99	99	20.0	40.4
						Barrier C	point108	108	20.0	40.0
						Barrier C	point98	98	20.0	39.9
						Barrier C	point100	100	20.0	39.9
						Barrier C	point91	91	20.0	39.5
						Barrier C	point92	92	24.0	39.5
						Barrier C	point90	90	20.0	39.5
KY-02-02-NELS-12	172	57.0	6.5	8	-1.5	Barrier C	point97	97	20.0	46.4
						Barrier C	point107	107	20.0	41.7
						Barrier C	point108	108	20.0	41.6
						Barrier C	point99	99	20.0	40.6
						Barrier C	point98	98	20.0	40.3
						Barrier C	point100	100	20.0	40.1
						Barrier C	point92	92	20.0	39.6
						Barrier C	point90	90	20.0	39.6
						Barrier C	point91	91	20.0	39.6
						Barrier C	point93	93	20.0	39.5
KY-02-02-NELS-13	173	57.3	7.0	8	-1.0	Barrier C	point97	97	20.0	47.2

						Barrier C	point106	106	20.0	42.2
						Barrier C	point105	105	20.0	41.9
						Barrier C	point5	5	20.0	41.3
						Barrier C	point99	99	20.0	41.1
						Barrier C	point98	98	20.0	40.6
						Barrier C	point100	100	20.0	40.6
						Barrier C	point91	91	20.0	40.4
						Barrier C	point92	92	20.0	40.4
						Barrier C	point90	90	20.0	40.4
KY-02-02-NELS-14	174	57.3	7.1	8	-0.9	Barrier C	point97	97	20.0	47.4
						Barrier C	point106	106	20.0	42.5
						Barrier C	point105	105	20.0	42.0
						Barrier C	point99	99	20.0	41.3
						Barrier C	point5	5	20.0	41.0
						Barrier C	point98	98	20.0	40.8
						Barrier C	point100	100	20.0	40.8
						Barrier C	point91	91	20.0	40.5
						Barrier C	point92	92	20.0	40.4
						Barrier C	point93	93	20.0	40.4
KY-02-02-NELS-15	175	57.7	8.0	8	0.0	Barrier C	point97	97	20.0	48.7
						Barrier C	point104	104	20.0	43.1
						Barrier C	point5	5	20.0	42.9
						Barrier C	point99	99	20.0	42.4
						Barrier C	point103	103	20.0	42.0
						Barrier C	point98	98	20.0	41.9
						Barrier C	point100	100	20.0	41.6
						Barrier C	point92	92	20.0	41.5
						Barrier C	point93	93	20.0	41.5
						Barrier C	point94	94	20.0	41.4
KY-02-02-NELS-24*	185	54.2	5.2	8	-2.8	Barrier C	point97	97	20.0	41.8
						Barrier C	point13	13	0.0	37.4
						Barrier C	point5	5	20.0	36.7
						Barrier C	point104	104	20.0	36.7
						Barrier C	point99	99	20.0	36.5
						Barrier C	point103	103	20.0	36.2
						Barrier C	point105	105	20.0	36.2

						Barrier C	point14	14	0.0	36.2
						Barrier C	point100	100	20.0	36.1
						Barrier C	point15	15	0.0	36.0
KY-02-02-NELS-23*	184	54.7	5.5	8	-2.5	Barrier C	point97	97	20.0	42.8
						Barrier C	point5	5	20.0	37.8
						Barrier C	point104	104	20.0	37.7
						Barrier C	point99	99	20.0	37.5
						Barrier C	point103	103	20.0	37.2
						Barrier C	point105	105	20.0	37.2
						Barrier C	point100	100	20.0	37.1
						Barrier C	point106	106	20.0	37.0
						Barrier C	point98	98	20.0	36.8
						Barrier C	point102	102	20.0	36.8
KY-02-02-NELS-22*	183	55.5	6.0	8	-2.0	Barrier C	point97	97	20.0	44.1
						Barrier C	point5	5	20.0	39.2
						Barrier C	point104	104	20.0	39.0
						Barrier C	point99	99	20.0	38.9
						Barrier C	point103	103	20.0	38.7
						Barrier C	point100	100	20.0	38.6
						Barrier C	point105	105	20.0	38.5
						Barrier C	point106	106	20.0	38.3
						Barrier C	point98	98	20.0	38.2
						Barrier C	point107	107	20.0	38.2
KY-02-02-NELS-21*	182	56.4	6.5	8	-1.5	Barrier C	point97	97	20.0	45.5
						Barrier C	point5	5	20.0	40.8
						Barrier C	point104	104	20.0	40.7
						Barrier C	point99	99	20.0	40.5
						Barrier C	point123	123	20.0	40.4
						Barrier C	point103	103	20.0	40.3
						Barrier C	point100	100	20.0	40.2
						Barrier C	point105	105	20.0	40.1
						Barrier C	point106	106	20.0	39.9
						Barrier C	point107	107	20.0	39.7
KY-02-02-NELS-20*	181	57.2	7.2	8	-0.8	Barrier C	point97	97	20.0	46.6
						Barrier C	point5	5	20.0	42.2
						Barrier C	point99	99	20.0	41.9

						Barrier C	point103	103	20.0	41.7
						Barrier C	point100	100	20.0	41.6
						Barrier C	point104	104	20.0	41.6
						Barrier C	point105	105	20.0	41.5
						Barrier C	point106	106	20.0	41.2
						Barrier C	point102	102	20.0	41.2
						Barrier C	point101	101	20.0	41.1
KY-03-01-BARD-01*	249	54.7	4.1	8	-3.9	Barrier C	point97	97	20.0	39.8
						Barrier C	point5	5	20.0	38.8
						Barrier C	point104	104	20.0	38.4
						Barrier C	point99	99	20.0	37.3
						Barrier C	point105	105	20.0	36.9
						Barrier C	point100	100	20.0	36.7
						Barrier C	point127	127	20.0	36.2
						Barrier C	point125	125	20.0	36.1
						Barrier C	point128	128	20.0	36.0
						Barrier C	point126	126	20.0	35.9
KY-03-01-BARD-02*	251	54.8	4.6	8	-3.4	Barrier C	point97	97	20.0	39.7
						Barrier C	point99	99	20.0	37.3
						Barrier C	point5	5	20.0	37.1
						Barrier C	point128	128	20.0	36.6
						Barrier C	point100	100	20.0	36.5
						Barrier C	point127	127	20.0	36.5
						Barrier C	point104	104	20.0	36.4
						Barrier C	point129	129	20.0	36.4
						Barrier C	point130	130	20.0	36.3
						Barrier C	point132	132	20.0	36.2
KY-03-01-BARD-03*	252	55.0	5.0	8	-3.0	Barrier C	point97	97	20.0	39.5
						Barrier C	point130	130	20.0	37.2
						Barrier C	point129	129	20.0	37.2
						Barrier C	point131	131	20.0	37.1
						Barrier C	point132	132	20.0	37.0
						Barrier C	point125	125	20.0	36.8
						Barrier C	point128	128	20.0	36.8
						Barrier C	point126	126	20.0	36.8
						Barrier C	point99	99	20.0	36.8

						Barrier C	point133	133	20.0	36.7
KY-03-02-BARD-01*	330	53.9	4.0	8	-4.0	Barrier C	point97	97	20.0	37.7
						Barrier C	point140	140	20.0	34.8
						Barrier C	point139	139	20.0	34.7
						Barrier C	point127	127	20.0	34.7
						Barrier C	point131	131	20.0	34.6
						Barrier C	point132	132	20.0	34.6
						Barrier C	point99	99	20.0	34.5
						Barrier C	point141	141	20.0	34.4
						Barrier C	point135	135	20.0	34.4
						Barrier C	point138	138	20.0	34.3
KY-03-01-BARD-04*	253	54.7	4.9	8	-3.1	Barrier C	point97	97	20.0	38.9
						Barrier C	point132	132	20.0	36.8
						Barrier C	point131	131	20.0	36.7
						Barrier C	point138	138	20.0	36.6
						Barrier C	point133	133	20.0	36.6
						Barrier C	point128	128	20.0	36.6
						Barrier C	point139	139	20.0	36.6
						Barrier C	point129	129	20.0	36.5
						Barrier C	point136	136	20.0	36.5
						Barrier C	point135	135	20.0	36.4
KY-03-01-BARD-05*	254	54.5	4.6	8	-3.4	Barrier C	point97	97	20.0	38.3
						Barrier C	point139	139	20.0	36.5
						Barrier C	point140	140	20.0	36.5
						Barrier C	point130	130	20.0	36.3
						Barrier C	point133	133	20.0	36.3
						Barrier C	point138	138	20.0	36.2
						Barrier C	point141	141	20.0	36.2
						Barrier C	point136	136	20.0	36.0
						Barrier C	point132	132	20.0	36.0
						Barrier C	point135	135	20.0	36.0
KY-03-02-BARD-02*	331	53.8	3.9	8	-4.1	Barrier C	point97	97	20.0	36.8
						Barrier C	point142	142	20.0	34.9
						Barrier C	point141	141	20.0	34.7
						Barrier C	point140	140	20.0	34.6
						Barrier C	point143	143	20.0	34.6

						Barrier C	point139	139	20.0	34.3
						Barrier C	point131	131	20.0	34.3
						Barrier C	point144	144	20.0	34.3
						Barrier C	point146	146	20.0	34.2
						Barrier C	point138	138	20.0	34.2
KY-03-01-HIYD-01*	269	53.7	3.7	8	-4.3	Barrier C	point97	97	20.0	36.4
						Barrier C	point143	143	20.0	34.6
						Barrier C	point142	142	20.0	34.5
						Barrier C	point144	144	20.0	34.3
						Barrier C	point141	141	20.0	34.2
						Barrier C	point147	147	20.0	34.1
						Barrier C	point145	145	20.0	34.0
						Barrier C	point139	139	20.0	33.9
						Barrier C	point140	140	20.0	33.9
						Barrier C	point132	132	20.0	33.8
KY-03-01-HIYD-02*	270	53.9	3.8	8	-4.2	Barrier C	point97	97	20.0	37.0
						Barrier C	point143	143	20.0	35.3
						Barrier C	point144	144	20.0	35.2
						Barrier C	point142	142	20.0	35.1
						Barrier C	point147	147	20.0	34.9
						Barrier C	point145	145	20.0	34.8
						Barrier C	point140	140	20.0	34.5
						Barrier C	point139	139	20.0	34.5
						Barrier C	point141	141	20.0	34.5
						Barrier C	point146	146	20.0	34.5
KY-03-02-HIYD-02*	339	54.2	3.0	8	-5.0	Barrier C	point97	97	20.0	36.8
						Barrier C	point176	176	0.0	36.5
						Barrier C	point177	177	0.0	35.8
						Barrier C	point147	147	20.0	35.5
						Barrier C	point146	146	20.0	35.4
						Barrier C	point145	145	20.0	35.0
						Barrier C	point148	148	20.0	35.0
						Barrier C	point149	149	20.0	34.7
						Barrier C	point144	144	20.0	34.6
						Barrier C	point154	154	20.0	34.4
KY-03-02-HIYD-01*	338	54.3	2.8	8	-5.2	Barrier C	point176	176	0.0	37.0

						Barrier C	point97	97	20.0	36.4
						Barrier C	point177	177	0.0	35.7
						Barrier C	point178	178	0.0	35.6
						Barrier C	point148	148	20.0	35.2
						Barrier C	point147	147	20.0	34.9
						Barrier C	point149	149	20.0	34.9
						Barrier C	point181	181	0.0	34.7
						Barrier C	point179	179	0.0	34.7
						Barrier C	point150	150	20.0	34.5
KY-03-01-ELKA-01*	255	54.9	2.1	8	-5.9	Barrier C	point176	176	0.0	40.0
						Barrier C	point177	177	0.0	39.6
						Barrier C	point180	180	0.0	38.0
						Barrier C	point178	178	0.0	38.0
						Barrier C	point181	181	0.0	37.5
						Barrier C	point179	179	0.0	37.5
						Barrier C	point164	164	20.0	33.5
						Barrier C	point97	97	20.0	33.5
						Barrier C	point162	162	20.0	33.5
						Barrier C	point161	161	20.0	33.5
KY-03-01-ELKA-02*	256	56.8	1.5	8	-6.5	Barrier C	point177	177	0.0	42.6
						Barrier C	point176	176	24.0	42.3
						Barrier C	point180	180	0.0	41.7
						Barrier C	point181	181	0.0	41.5
						Barrier C	point179	179	0.0	41.5
						Barrier C	point178	178	0.0	41.4
						Barrier C	point182	182	0.0	35.2
						Barrier C	point163	163	20.0	34.6
						Barrier C	point164	164	20.0	34.6
						Barrier C	point165	165	20.0	34.6
KY-03-01-NGRS-08*	293	56.4	1.8	8	-6.2	Barrier C	point176	176	0.0	42.6
						Barrier C	point177	177	0.0	42.0
						Barrier C	point178	178	0.0	40.8
						Barrier C	point181	181	0.0	40.6
						Barrier C	point180	180	0.0	40.1
						Barrier C	point179	179	0.0	39.7
						Barrier C	point164	164	20.0	35.6

						Barrier C	point163	163	20.0	35.6
						Barrier C	point162	162	20.0	35.6
						Barrier C	point161	161	20.0	35.4
KY-03-01-ELKA-03*	257	57.4	1.5	8	-6.5	Barrier C	point176	176	0.0	44.2
						Barrier C	point177	177	0.0	43.8
						Barrier C	point178	178	0.0	43.4
						Barrier C	point180	180	0.0	42.5
						Barrier C	point181	181	0.0	42.2
						Barrier C	point179	179	0.0	42.0
						Barrier C	point182	182	0.0	35.5
						Barrier C	point164	164	20.0	35.4
						Barrier C	point165	165	20.0	35.2
						Barrier C	point166	166	20.0	35.2
KY-03-02-ELKA-01*	332	56.3	1.1	8	-6.9	Barrier C	point178	178	0.0	40.2
						Barrier C	point181	181	0.0	39.9
						Barrier C	point177	177	0.0	39.9
						Barrier C	point176	176	0.0	39.6
						Barrier C	point180	180	0.0	39.4
						Barrier C	point179	179	0.0	38.3
						Barrier C	point182	182	0.0	33.6
						Barrier C	point170	170	20.0	32.9
						Barrier C	point175	175	16.0	32.8
						Barrier C	point169	169	20.0	32.7
KY-03-02-ELKA-02*	334	57.5	0.9	8	-7.1	Barrier C	point177	177	0.0	41.3
						Barrier C	point180	180	0.0	41.0
						Barrier C	point176	176	0.0	40.8
						Barrier C	point178	178	0.0	40.8
						Barrier C	point179	179	0.0	40.3
						Barrier C	point181	181	0.0	37.8
						Barrier C	point182	182	0.0	35.8
						Barrier C	point175	175	16.0	33.8
						Barrier C	point171	171	20.0	33.8
						Barrier C	point169	169	20.0	33.2
KY-03-02-ELKA-03*	335	58.6	0.8	8	-7.2	Barrier C	point181	181	0.0	42.6
						Barrier C	point177	177	0.0	42.2
						Barrier C	point180	180	0.0	42.2

						Barrier C	point178	178	0.0	42.2
						Barrier C	point179	179	0.0	42.1
						Barrier C	point176	176	0.0	41.9
						Barrier C	point182	182	0.0	36.8
						Barrier C	point175	175	16.0	34.8
						Barrier C	point172	172	20.0	34.2
						Barrier C	point171	171	20.0	34.2
KY-03-02-ELKA-04*	336	60.1	0.6	8	-7.4	Barrier C	point181	181	0.0	44.6
						Barrier C	point180	180	0.0	43.8
						Barrier C	point177	177	0.0	43.7
						Barrier C	point176	176	0.0	43.5
						Barrier C	point178	178	0.0	42.9
						Barrier C	point179	179	0.0	42.8
						Barrier C	point182	182	0.0	36.3
						Barrier C	point175	175	16.0	36.2
						Barrier C	point173	173	20.0	35.0
						Barrier C	point170	170	20.0	34.9
KY-03-02-RICA-01*	342	62.5	0.1	8	-7.9	Barrier C	point179	179	0.0	40.2
						Barrier C	point181	181	0.0	39.8
						Barrier C	point178	178	0.0	39.7
						Barrier C	point177	177	0.0	38.9
						Barrier C	point180	180	0.0	38.6
						Barrier C	point176	176	0.0	38.6
						Barrier C	point175	175	16.0	34.9
						Barrier C	point182	182	0.0	33.3
						Barrier C	point174	174	20.0	33.3
						Barrier C	point170	170	20.0	32.9
KY-03-02-RICA-02*	343	64.5	0.0	8	-8.0	Barrier C	point179	179	0.0	40.6
						Barrier C	point180	180	0.0	40.6
						Barrier C	point181	181	0.0	40.3
						Barrier C	point178	178	0.0	40.3
						Barrier C	point177	177	0.0	39.2
						Barrier C	point176	176	0.0	38.6
						Barrier C	point175	175	16.0	36.1
						Barrier C	point182	182	0.0	35.4
						Barrier C	point171	171	20.0	33.8

						Barrier C	point174	174	20.0	33.7
KY-03-01-HERA-01*	259	65.7	-0.0	8	-8.0	Barrier C	point181	181	0.0	38.0
						Barrier C	point180	180	0.0	37.4
						Barrier C	point179	179	0.0	35.8
						Barrier C	point178	178	0.0	35.0
						Barrier C	point177	177	0.0	34.8
						Barrier C	point176	176	0.0	33.9
						Barrier C	point175	175	16.0	33.0
						Barrier C	point174	174	20.0	32.7
						Barrier C	point173	173	20.0	32.1
						Barrier C	point182	182	0.0	31.6
KY-02-02-NELS-09	169	58.6	8.0	8	0.0	Barrier C	point97	97	20.0	48.2
						Barrier C	point99	99	20.0	41.9
						Barrier C	point98	98	20.0	41.9
						Barrier C	point81	81	20.0	41.5
						Barrier C	point78	78	20.0	41.5
						Barrier C	point27	27	0.0	41.4
						Barrier C	point80	80	20.0	41.4
						Barrier C	point77	77	20.0	41.4
						Barrier C	point79	79	20.0	41.4
						Barrier C	point82	82	20.0	41.4
KY-02-02-NELS-10	170	58.9	8.7	8	0.7	Barrier C	point97	97	20.0	49.0
						Barrier C	point82	82	24.0	42.8
						Barrier C	point80	80	20.0	42.7
						Barrier C	point81	81	20.0	42.7
						Barrier C	point79	79	20.0	42.7
						Barrier C	point78	78	20.0	42.7
						Barrier C	point83	83	24.0	42.5
						Barrier C	point77	77	20.0	42.4
						Barrier C	point32	32	0.0	42.4
						Barrier C	point84	84	20.0	42.4
KY-02-02-NELS-16	177	58.0	9.0	8	1.0	Barrier C	point97	97	20.0	50.2
						Barrier C	point102	102	20.0	44.2
						Barrier C	point101	101	20.0	43.4
						Barrier C	point99	99	20.0	43.4
						Barrier C	point98	98	20.0	43.3

						Barrier C	point100	100	20.0	42.8
						Barrier C	point94	94	20.0	42.8
						Barrier C	point93	93	20.0	42.7
						Barrier C	point95	95	20.0	42.5
						Barrier C	point92	92	20.0	42.5
KY-02-02-NELS-17	178	58.2	9.2	8	1.2	Barrier C	point97	97	20.0	51.0
						Barrier C	point99	99	20.0	45.2
						Barrier C	point105	105	20.0	45.0
						Barrier C	point98	98	20.0	44.7
						Barrier C	point100	100	20.0	44.5
						Barrier C	point5	5	20.0	44.0
						Barrier C	point101	101	20.0	43.5
						Barrier C	point102	102	20.0	43.1
						Barrier C	point104	104	20.0	42.9
						Barrier C	point103	103	20.0	42.8
KY-02-02-NELS-18	179	58.2	9.0	8	1.0	Barrier C	point97	97	24.0	50.1
						Barrier C	point99	99	24.0	45.3
						Barrier C	point108	108	20.0	45.0
						Barrier C	point100	100	24.0	44.8
						Barrier C	point98	98	24.0	44.6
						Barrier C	point101	101	20.0	44.0
						Barrier C	point104	104	20.0	43.8
						Barrier C	point102	102	20.0	43.8
						Barrier C	point103	103	20.0	43.8
						Barrier C	point5	5	20.0	43.6
KY-02-02-NELS-19*	180	57.5	8.3	8	0.3	Barrier C	point97	97	20.0	47.6
						Barrier C	point104	104	20.0	43.3
						Barrier C	point5	5	20.0	43.3
						Barrier C	point99	99	20.0	43.0
						Barrier C	point103	103	20.0	42.9
						Barrier C	point105	105	20.0	42.7
						Barrier C	point100	100	20.0	42.7
						Barrier C	point106	106	20.0	42.4
						Barrier C	point102	102	20.0	42.3
						Barrier C	point101	101	20.0	42.3
KY-03-01-NELS-01*	286	59.2	3.3	8	-4.7	Barrier C	point97	97	20.0	47.4

						Barrier C	point5	5	20.0	44.0
						Barrier C	point104	104	20.0	43.8
						Barrier C	point106	106	20.0	43.8
						Barrier C	point105	105	20.0	43.8
						Barrier C	point107	107	20.0	43.7
						Barrier C	point103	103	20.0	43.4
						Barrier C	point102	102	20.0	43.1
						Barrier C	point99	99	20.0	42.9
						Barrier C	point100	100	20.0	42.9
KY-03-01-RICA-01*	300	60.2	0.3	8	-7.7	Barrier C	point179	179	0.0	41.3
						Barrier C	point181	181	0.0	40.7
						Barrier C	point178	178	0.0	40.6
						Barrier C	point177	177	0.0	40.5
						Barrier C	point180	180	0.0	40.2
						Barrier C	point176	176	0.0	39.7
						Barrier C	point175	175	16.0	34.6
						Barrier C	point182	182	0.0	34.5
						Barrier C	point172	172	20.0	33.2
						Barrier C	point171	171	20.0	33.1
KY-03-02-ELKA-05*	337	61.3	0.5	8	-7.5	Barrier C	point181	181	0.0	45.9
						Barrier C	point178	178	0.0	45.2
						Barrier C	point177	177	0.0	44.7
						Barrier C	point179	179	0.0	44.2
						Barrier C	point180	180	0.0	44.1
						Barrier C	point176	176	0.0	44.1
						Barrier C	point182	182	0.0	37.4
						Barrier C	point175	175	16.0	36.8
						Barrier C	point174	174	20.0	36.2
						Barrier C	point171	171	20.0	35.4
KY-03-01-ELKA-04*	258	58.2	1.5	8	-6.5	Barrier C	point176	176	0.0	45.7
						Barrier C	point177	177	0.0	45.4
						Barrier C	point178	178	0.0	44.2
						Barrier C	point181	181	0.0	44.0
						Barrier C	point180	180	0.0	43.7
						Barrier C	point179	179	0.0	43.1
						Barrier C	point182	182	0.0	37.5

						Barrier C	point168	168	20.0	36.3
						Barrier C	point165	165	20.0	36.3
						Barrier C	point170	170	20.0	36.2
KY-03-01-NGRS-07*	292	57.7	2.1	8	-5.9	Barrier C	point176	176	0.0	46.7
						Barrier C	point177	177	0.0	44.4
						Barrier C	point178	178	0.0	42.8
						Barrier C	point181	181	0.0	42.8
						Barrier C	point180	180	0.0	42.0
						Barrier C	point179	179	0.0	41.8
						Barrier C	point182	182	0.0	38.1
						Barrier C	point165	165	20.0	37.4
						Barrier C	point164	164	20.0	37.3
						Barrier C	point166	166	20.0	37.3
KY-03-01-NGRS-06*	291	57.4	2.1	8	-5.9	Barrier C	point176	176	0.0	45.2
						Barrier C	point177	177	0.0	44.0
						Barrier C	point181	181	0.0	42.6
						Barrier C	point178	178	0.0	42.4
						Barrier C	point180	180	0.0	41.9
						Barrier C	point179	179	0.0	41.1
						Barrier C	point164	164	20.0	37.2
						Barrier C	point162	162	20.0	37.1
						Barrier C	point163	163	20.0	37.1
						Barrier C	point165	165	20.0	36.9
KY-03-01-NRGS-05*	299	54.9	2.5	8	-5.5	Barrier C	point176	176	0.0	39.2
						Barrier C	point178	178	0.0	38.4
						Barrier C	point177	177	0.0	38.3
						Barrier C	point180	180	0.0	36.3
						Barrier C	point179	179	0.0	36.2
						Barrier C	point150	150	20.0	36.0
						Barrier C	point181	181	0.0	35.9
						Barrier C	point149	149	20.0	35.8
						Barrier C	point156	156	20.0	35.8
						Barrier C	point151	151	20.0	35.6
KY-03-01-NGRS-04*	290	54.4	2.8	8	-5.2	Barrier C	point178	178	0.0	37.9
						Barrier C	point176	176	0.0	37.7
						Barrier C	point177	177	0.0	37.6

						Barrier C	point147	147	20.0	36.2
						Barrier C	point146	146	20.0	35.9
						Barrier C	point148	148	20.0	35.8
						Barrier C	point97	97	20.0	35.6
						Barrier C	point149	149	20.0	35.6
						Barrier C	point145	145	20.0	35.4
						Barrier C	point154	154	20.0	35.2
KY-03-01-NGRS-03*	289	54.4	3.7	8	-4.3	Barrier C	point97	97	20.0	37.2
						Barrier C	point143	143	20.0	36.5
						Barrier C	point142	142	20.0	36.5
						Barrier C	point144	144	20.0	36.3
						Barrier C	point141	141	20.0	36.1
						Barrier C	point146	146	20.0	36.0
						Barrier C	point140	140	20.0	36.0
						Barrier C	point139	139	20.0	36.0
						Barrier C	point145	145	20.0	35.8
						Barrier C	point177	177	0.0	35.7
KY-03-01-NGRS-02*	288	54.4	4.4	8	-3.6	Barrier C	point97	97	20.0	38.6
						Barrier C	point140	140	20.0	36.8
						Barrier C	point141	141	20.0	36.8
						Barrier C	point139	139	20.0	36.7
						Barrier C	point142	142	20.0	36.5
						Barrier C	point137	137	20.0	36.3
						Barrier C	point138	138	20.0	36.3
						Barrier C	point136	136	20.0	36.2
						Barrier C	point135	135	20.0	36.2
						Barrier C	point133	133	20.0	36.1
KY-03-01-NGRS-09*	294	55.0	5.2	8	-2.8	Barrier C	point97	97	20.0	39.8
						Barrier C	point132	132	20.0	37.7
						Barrier C	point131	131	20.0	37.6
						Barrier C	point129	129	20.0	37.5
						Barrier C	point133	133	20.0	37.4
						Barrier C	point137	137	20.0	37.3
						Barrier C	point128	128	20.0	37.3
						Barrier C	point135	135	20.0	37.3
						Barrier C	point130	130	20.0	37.3

						Barrier C	point139	139	20.0	37.2
KY-03-01-NGRS-10*	297	55.3	5.4	8	-2.6	Barrier C	point97	97	20.0	39.9
						Barrier C	point131	131	20.0	38.2
						Barrier C	point130	130	20.0	38.1
						Barrier C	point127	127	20.0	38.1
						Barrier C	point132	132	20.0	38.0
						Barrier C	point129	129	20.0	37.9
						Barrier C	point128	128	20.0	37.7
						Barrier C	point133	133	20.0	37.6
						Barrier C	point134	134	20.0	37.6
						Barrier C	point136	136	20.0	37.6
KY-03-01-NGRS-01*	287	55.8	5.9	8	-2.1	Barrier C	point97	97	20.0	40.9
						Barrier C	point127	127	20.0	39.0
						Barrier C	point123	123	20.0	38.8
						Barrier C	point130	130	20.0	38.8
						Barrier C	point126	126	20.0	38.7
						Barrier C	point128	128	20.0	38.7
						Barrier C	point124	124	20.0	38.7
						Barrier C	point125	125	20.0	38.6
						Barrier C	point129	129	20.0	38.5
						Barrier C	point122	122	20.0	38.5
KY-03-02-NGRS-02*	341	54.2	4.0	8	-4.0	Barrier C	point145	145	20.0	40.9
						Barrier C	point146	146	20.0	40.8
						Barrier C	point144	144	20.0	39.9
						Barrier C	point143	143	20.0	38.7
						Barrier C	point147	147	20.0	38.6
						Barrier C	point142	142	20.0	37.8
						Barrier C	point148	148	20.0	37.7
						Barrier C	point141	141	20.0	37.1
						Barrier C	point140	140	20.0	36.7
						Barrier C	point139	139	20.0	36.4
KY-03-02-NGRS-01*	340	54.6	5.5	8	-2.5	Barrier C	point140	140	20.0	41.5
						Barrier C	point139	139	20.0	41.5
						Barrier C	point138	138	20.0	41.2
						Barrier C	point137	137	20.0	40.8
						Barrier C	point141	141	20.0	40.7

						Barrier C	point136	136	20.0	40.1
						Barrier C	point135	135	20.0	39.4
						Barrier C	point134	134	20.0	38.7
						Barrier C	point133	133	20.0	38.1
						Barrier C	point132	132	20.0	37.7
Total Cost, All Barriers (including additional cost(s))					$1746990					

HMB Professional Engineers				**19 March 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**West 1_TollAll_N Green Street Area**									
BARRIER DESIGN:	**W1_TollAll_N Green St Area**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier C	W	16.00	19.94	20.00	2920	58233				1746990
									Total Cost:	1746990

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_TollAll_N Green Street Area
BARRIER DESIGN: W1_TollAll_N Green St Area

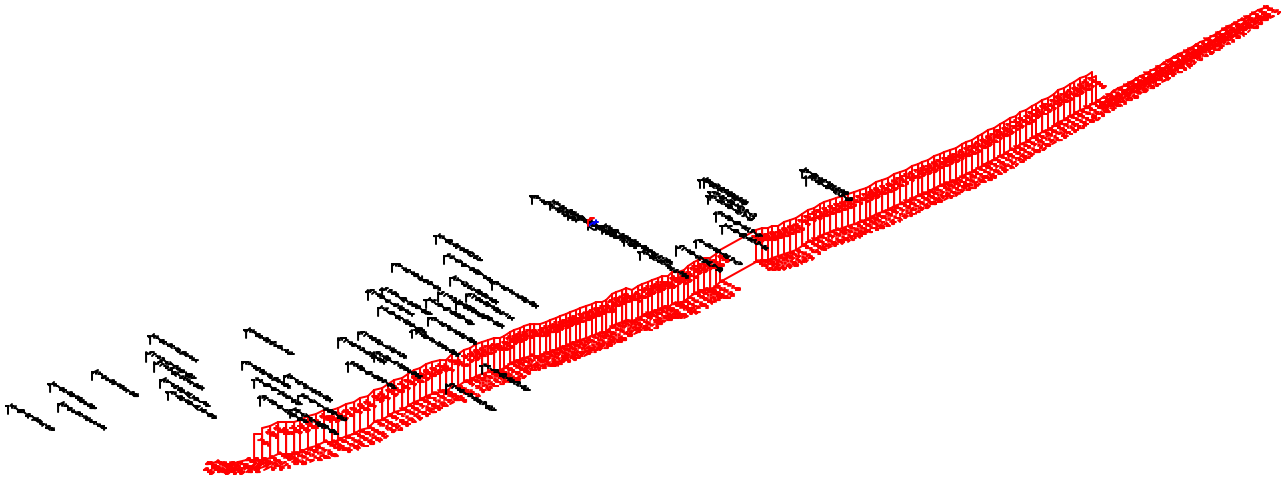
Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier C	W	point4	4	0.00	0.00	0.00	0	0				0
		point7	7	0.00	0.00	0.00	0	0				0
		point8	8	0.00	0.00	0.00	0	0				0
		point9	9	0.00	0.00	0.00	0	0				0
		point10	10	0.00	0.00	0.00	0	0				0
		point11	11	0.00	0.00	0.00	0	0				0
		point12	12	0.00	0.00	0.00	0	0				0
		point13	13	0.00	0.00	0.00	0	0				0
		point14	14	0.00	0.00	0.00	0	0				0
		point15	15	0.00	0.00	0.00	0	0				0
		point16	16	0.00	0.00	0.00	0	0				0
		point17	17	0.00	0.00	0.00	0	0				0
		point18	18	0.00	0.00	0.00	0	0				0
		point19	19	0.00	0.00	0.00	0	0				0
		point20	20	0.00	0.00	0.00	0	0				0
		point21	21	0.00	0.00	0.00	0	0				0
		point22	22	0.00	0.00	0.00	0	0				0
		point23	23	0.00	0.00	0.00	0	0				0
		point24	24	0.00	0.00	0.00	0	0				0
		point25	25	0.00	0.00	0.00	0	0				0
		point26	26	0.00	0.00	0.00	0	0				0
		point27	27	0.00	0.00	0.00	0	0				0
		point28	28	0.00	0.00	0.00	0	0				0
		point29	29	0.00	0.00	0.00	0	0				0
		point30	30	0.00	0.00	0.00	0	0				0
		point31	31	0.00	0.00	0.00	0	0				0

		point32	32	0.00	0.00	0.00	0	0				0
		point33	33	0.00	0.00	0.00	0	0				0
		point34	34	0.00	0.00	0.00	0	0				0
		point35	35	0.00	0.00	0.00	0	0				0
		point36	36	16.00	16.00	16.00	20	320				9600
		point37	37	20.00	20.00	20.00	20	400				12000
		point38	38	20.00	20.00	20.00	20	400				12004
		point39	39	20.00	20.00	20.00	20	400				12004
		point40	40	20.00	20.00	20.00	20	400				12004
		point41	41	20.00	20.00	20.00	20	400				12000
		point42	42	20.00	20.00	20.00	20	400				12004
		point43	43	20.00	20.00	20.00	20	400				12004
		point44	44	20.00	20.00	20.00	20	400				12004
		point45	45	20.00	20.00	20.00	20	400				12004
		point46	46	20.00	20.00	20.00	20	400				12000
		point47	47	20.00	20.00	20.00	20	400				12004
		point48	48	20.00	20.00	20.00	20	400				12004
		point49	49	20.00	20.00	20.00	20	400				12004
		point50	50	20.00	20.00	20.00	20	400				12004
		point51	51	20.00	20.00	20.00	20	400				12000
		point52	52	20.00	20.00	20.00	20	400				12004
		point53	53	20.00	20.00	20.00	20	400				12004
		point54	54	20.00	20.00	20.00	20	400				12004
		point55	55	20.00	20.00	20.00	20	400				12004
		point56	56	20.00	20.00	20.00	20	400				12000
		point57	57	20.00	20.00	20.00	20	400				12004
		point58	58	20.00	20.00	20.00	20	400				12004
		point59	59	20.00	20.00	20.00	20	400				12004
		point60	60	20.00	20.00	20.00	20	400				12004
		point61	61	20.00	20.00	20.00	20	400				12004
		point62	62	20.00	20.00	20.00	20	400				12000
		point63	63	20.00	20.00	20.00	20	400				12004
		point64	64	20.00	20.00	20.00	20	400				12004
		point65	65	20.00	20.00	20.00	20	400				12004
		point66	66	20.00	20.00	20.00	20	390				11700
		point67	67	20.00	20.00	20.00	20	400				12015
		point68	68	20.00	20.00	20.00	20	400				12015
		point69	69	20.00	20.00	20.00	20	400				12015
		point70	70	20.00	20.00	20.00	20	400				12015

		point71	71	20.00	20.00	20.00	20	400				12004
		point72	72	20.00	20.00	20.00	20	400				12015
		point73	73	20.00	20.00	20.00	20	400				12015
		point74	74	20.00	20.00	20.00	20	400				12015
		point75	75	20.00	20.00	20.00	20	400				12015
		point76	76	20.00	20.00	20.00	20	400				12015
		point77	77	20.00	20.00	20.00	20	400				12015
		point78	78	20.00	20.00	20.00	20	400				12004
		point79	79	20.00	20.00	20.00	20	396				11865
		point80	80	20.00	20.00	20.00	20	400				12015
		point81	81	20.00	20.00	20.00	20	400				12015
		point82	82	20.00	20.00	20.00	20	400				12015
		point83	83	20.00	20.00	20.00	20	400				12015
		point84	84	20.00	20.00	20.00	20	400				12015
		point85	85	20.00	20.00	20.00	20	400				12004
		point86	86	20.00	20.00	20.00	20	400				12015
		point87	87	20.00	20.00	20.00	20	396				11865
		point88	88	20.00	20.00	20.00	20	400				12015
		point89	89	20.00	20.00	20.00	20	400				12015
		point90	90	20.00	20.00	20.00	20	400				12015
		point91	91	20.00	20.00	20.00	20	400				12015
		point92	92	20.00	20.00	20.00	20	400				12004
		point93	93	20.00	20.00	20.00	20	400				12015
		point94	94	20.00	20.00	20.00	20	400				12015
		point95	95	20.00	20.00	20.00	20	400				12015
		point96	96	20.00	20.00	20.00	20	400				12015
		point97	97	20.00	20.00	20.00	120	2398				71926
		point98	98	20.00	20.00	20.00	20	400				12015
		point99	99	20.00	20.00	20.00	20	400				12004
		point100	100	20.00	20.00	20.00	20	400				12000
		point101	101	20.00	20.00	20.00	20	400				12004
		point102	102	20.00	20.00	20.00	20	400				12015
		point103	103	20.00	20.00	20.00	20	401				12034
		point104	104	20.00	20.00	20.00	20	396				11884
		point5	5	20.00	20.00	20.00	20	401				12034
		point105	105	20.00	20.00	20.00	20	401				12034
		point106	106	20.00	20.00	20.00	20	401				12034
		point107	107	20.00	20.00	20.00	20	401				12034
		point108	108	20.00	20.00	20.00	20	396				11884

		point109	109	20.00	20.00	20.00	20	401				12034
		point110	110	20.00	20.00	20.00	20	401				12034
		point111	111	20.00	20.00	20.00	20	401				12034
		point112	112	20.00	20.00	20.00	20	396				11884
		point113	113	20.00	20.00	20.00	20	401				12034
		point114	114	20.00	20.00	20.00	20	401				12034
		point115	115	20.00	20.00	20.00	20	401				12034
		point116	116	20.00	20.00	20.00	20	400				12015
		point117	117	20.00	20.00	20.00	20	396				11884
		point118	118	20.00	20.00	20.00	20	401				12034
		point119	119	20.00	20.00	20.00	20	401				12034
		point120	120	20.00	20.00	20.00	20	396				11884
		point121	121	20.00	20.00	20.00	20	401				12034
		point122	122	20.00	20.00	20.00	20	401				12034
		point123	123	20.00	20.00	20.00	20	401				12034
		point124	124	20.00	20.00	20.00	20	401				12034
		point125	125	20.00	20.00	20.00	20	401				12034
		point126	126	20.00	20.00	20.00	20	396				11884
		point127	127	20.00	20.00	20.00	20	401				12034
		point128	128	20.00	20.00	20.00	20	401				12034
		point129	129	20.00	20.00	20.00	20	396				11884
		point130	130	20.00	20.00	20.00	20	401				12034
		point131	131	20.00	20.00	20.00	20	401				12034
		point132	132	20.00	20.00	20.00	20	401				12034
		point133	133	20.00	20.00	20.00	20	401				12034
		point134	134	20.00	20.00	20.00	20	396				11884
		point135	135	20.00	20.00	20.00	20	401				12034
		point136	136	20.00	20.00	20.00	20	401				12034
		point137	137	20.00	20.00	20.00	20	401				12034
		point138	138	20.00	20.00	20.00	20	396				11865
		point139	139	20.00	20.00	20.00	20	400				12015
		point140	140	20.00	20.00	20.00	20	400				12004
		point141	141	20.00	20.00	20.00	20	400				12004
		point142	142	20.00	20.00	20.00	20	400				12004
		point143	143	20.00	20.00	20.00	20	400				12015
		point144	144	20.00	20.00	20.00	20	402				12060
		point145	145	20.00	20.00	20.00	20	398				11945
		point146	146	20.00	20.00	20.00	20	398				11945
		point147	147	20.00	20.00	20.00	20	404				12134

		point148	148	20.00	20.00	20.00	20	398				11945
		point149	149	20.00	20.00	20.00	20	400				11986
		point150	150	20.00	20.00	20.00	20	400				11986
		point151	151	20.00	20.00	20.00	20	400				11986
		point152	152	20.00	20.00	20.00	20	404				12134
		point153	153	20.00	20.00	20.00	20	393				11796
		point154	154	20.00	20.00	20.00	20	406				12182
		point155	155	20.00	20.00	20.00	20	395				11838
		point156	156	20.00	20.00	20.00	20	403				12091
		point157	157	20.00	20.00	20.00	20	400				12007
		point158	158	20.00	20.00	20.00	20	400				12012
		point159	159	20.00	20.00	20.00	20	400				12012
		point160	160	20.00	20.00	20.00	20	402				12049
		point161	161	20.00	20.00	20.00	20	397				11907
		point162	162	20.00	20.00	20.00	20	399				11977
		point163	163	20.00	20.00	20.00	20	403				12093
		point164	164	20.00	20.00	20.00	20	398				11944
		point165	165	20.00	20.00	20.00	20	398				11941
		point166	166	20.00	20.00	20.00	20	403				12093
		point167	167	20.00	20.00	20.00	20	399				11963
		point168	168	20.00	20.00	20.00	20	400				11989
		point169	169	20.00	20.00	20.00	20	402				12067
		point170	170	20.00	20.00	20.00	20	398				11945
		point171	171	20.00	20.00	20.00	20	396				11880
		point172	172	20.00	20.00	20.00	20	405				12138
		point173	173	20.00	20.00	20.00	20	401				12023
		point174	174	20.00	20.00	20.00	20	396				11887
		point175	175	16.00	16.00	16.00	20	322				9675
		point176	176	0.00	0.00	0.00	0	0				0
		point177	177	0.00	0.00	0.00	0	0				0
		point178	178	0.00	0.00	0.00	0	0				0
		point179	179	0.00	0.00	0.00	0	0				0
		point180	180	0.00	0.00	0.00	0	0				0
		point181	181	0.00	0.00	0.00	0	0				0
		point182	182	0.00	0.00	0.00	0	0				0



West 1_TollAll_N Green Street Area	Sheet 1 of 1	19 Mar 2018
	HMB Professional Engineers	
Barrier View-W1_TollAll_N Green St Area	Project/Contract No. I-69 ORX	
Run name: W1_02_TollAll_C	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 1 – ELM STREET (TOLL BOTH CROSSINGS)

HMB Professional Engineers 21 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_TollAll_N Elm between 69 and 41
BARRIER DESIGN: W1_TollAll_NElm_btw69-41
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-02-01-NPAD-06	53	4	64.6	59.4	66	-5.2	10	----	53.5	5.9	8	-2.1
KY-02-01-NPAD-07	54	4	63.6	59.9	66	-3.7	10	----	53.9	6.0	8	-2.0
KY-02-01-NPAD-08	55	4	63.2	60.8	66	-2.4	10	----	54.3	6.5	8	-1.5
KY-02-01-HARL-05	25	1	51.4	59.9	66	8.5	10	----	53.7	6.2	8	-1.8
KY-02-02-HARL-06	135	1	67.4	59.5	66	-7.9	10	----	53.5	6.0	8	-2.0
KY-02-01-ROBR-04*	72	1	62.7	62.0	66	-0.7	10	----	54.8	7.2	8	-0.8
KY-02-02-HARL-05*	134	1	63.6	61.3	66	-2.3	10	----	54.4	6.9	8	-1.1
KY-02-01-CANL-03*	19	1	62.4	62.1	66	-0.3	10	----	55.1	7.0	8	-1.0
KY-02-02-ROBR-04*	196	1	62.8	61.9	66	-0.9	10	----	54.9	7.0	8	-1.0
KY-02-02-CANL-03*	123	1	61.8	62.7	66	0.9	10	----	55.7	7.0	8	-1.0
KY-02-02-CANL-04	124	1	64.1	61.3	66	-2.8	10	----	55.0	6.3	8	-1.7
KY-02-01-RETR-06	65	1	63.4	61.8	66	-1.6	10	----	55.4	6.4	8	-1.6
KY-02-01-RETR-05*	64	1	0.0	63.5	66	63.5	10	----	56.2	7.3	8	-0.7
KY-02-02-RETR-06	192	1	66.4	60.5	66	-5.9	10	----	55.5	5.0	8	-3.0
KY-02-01-RETR-07	66	1	65.0	61.0	66	-4.0	10	----	55.5	5.5	8	-2.5
KY-02-02-RETR-05	191	1	64.0	61.6	66	-2.4	10	----	56.0	5.6	8	-2.4
KY-02-02-RETR-04	190	1	62.1	63.2	66	1.1	10	----	57.2	6.0	8	-2.0
KY-02-02-RETR-03	189	1	61.2	64.2	66	3.0	10	----	57.3	6.9	8	-1.1
KY-02-02-RETR-02*	188	1	60.0	65.5	66	5.5	10	----	58.1	7.4	8	-0.6
KY-02-01-RETR-04*	63	1	0.0	64.4	66	64.4	10	----	56.6	7.8	8	-0.2
KY-02-01-RETR-03*	62	1	52.2	65.6	66	13.4	10	Sub'l Inc	57.3	8.3	8	0.3
KY-02-02-CANL-02*	122	1	59.9	64.7	66	4.8	10	----	56.6	8.1	8	0.1
KY-02-01-CANL-02*	18	2	60.7	63.8	66	3.1	10	----	55.9	7.9	8	-0.1
KY-02-02-ROBR-03*	195	1	60.8	63.6	66	2.8	10	----	55.8	7.8	8	-0.2

KY-02-02-ROBR-02*	194	1	59.2	65.5	66	6.3	10	----	56.7	8.8	8	0.8
KY-02-01-ROBR-03*	70	1	61.0	63.8	66	2.8	10	----	55.7	8.1	8	0.1
KY-02-02-HARL-04*	133	1	61.4	63.6	66	2.2	10	----	55.5	8.1	8	0.1
KY-02-02-HARL-03*	132	1	60.3	64.5	66	4.2	10	----	56.0	8.5	8	0.5
KY-02-02-HARL-02*	131	1	59.4	65.2	66	5.8	10	----	56.6	8.6	8	0.6
KY-02-01-HARL-04*	24	1	50.8	62.4	66	11.6	10	Sub'l Inc	55.0	7.4	8	-0.6
KY-02-01-HARL-03*	23	1	66.6	63.9	66	-2.7	10	----	55.8	8.1	8	0.1
KY-02-01-NPAD-11	58	4	58.5	62.0	66	3.5	10	----	54.9	7.1	8	-0.9
KY-02-01-HARL-02*	22	1	62.5	64.8	66	2.3	10	----	56.5	8.3	8	0.3
KY-02-01-NPAD-10	57	4	56.7	61.9	66	5.2	10	----	54.7	7.2	8	-0.8
KY-02-01-NPAD-09	56	4	63.0	61.4	66	-1.6	10	----	54.6	6.8	8	-1.2
KY-02-01-NPAD-05	52	1	66.3	60.2	66	-6.1	10	----	54.2	6.0	8	-2.0
KY-02-01-NPAD-04	51	1	40.5	60.0	66	19.5	10	Sub'l Inc	54.6	5.4	8	-2.6
KY-02-01-NPAD-03	50	1	68.2	59.4	66	-8.8	10	----	55.4	4.0	8	-4.0
KY-02-01-NAPD-02	44	1	55.0	59.4	66	4.4	10	----	56.0	3.4	8	-4.6
KY-02-01-NPAD-01	48	1	64.9	58.8	66	-6.1	10	----	56.9	1.9	8	-6.1
KY-02-02-RETR-01*	186	1	58.6	67.4	66	8.8	10	Snd Lvl	58.9	8.5	8	0.5
KY-02-01-RETR-02*	61	1	61.4	66.3	66	4.9	10	Snd Lvl	57.5	8.8	8	0.8
KY-02-02-CANL-01*	121	1	57.9	66.9	66	9.0	10	Snd Lvl	57.8	9.1	8	1.1
KY-02-01-CANL-01*	17	1	57.9	66.7	66	8.8	10	Snd Lvl	57.6	9.1	8	1.1
KY-02-02-ROBR-01*	193	1	57.6	67.0	66	9.4	10	Snd Lvl	57.7	9.3	8	1.3
KY-02-01-ROBR-01*	68	1	57.8	66.7	66	8.9	10	Snd Lvl	57.6	9.1	8	1.1
KY-02-02-HARL-01*	130	1	58.0	67.1	66	9.1	10	Snd Lvl	57.5	9.6	8	1.6
KY-02-01-HARL-01*	21	1	59.9	66.6	66	6.7	10	Snd Lvl	57.2	9.4	8	1.4
KY-02-02-NELS-08*	168	1	60.8	64.1	66	3.3	10	----	56.1	8.0	8	0.0
KY-02-02-NELS-07*	167	1	60.5	64.5	66	4.0	10	----	55.9	8.6	8	0.6
KY-02-02-NELS-06*	166	1	59.7	64.2	66	4.5	10	----	56.0	8.2	8	0.2
KY-02-02-NELS-05*	164	1	61.4	62.8	66	1.4	10	----	55.3	7.5	8	-0.5
KY-02-02-NELS-04*	163	1	60.3	62.6	66	2.3	10	----	55.7	6.9	8	-1.1
KY-02-02-NELS-03*	162	1	61.9	61.8	66	-0.1	10	----	55.8	6.0	8	-2.0
KY-02-02-NELS-02*	161	1	62.2	60.2	66	-2.0	10	----	55.0	5.2	8	-2.8
KY-02-02-NELS-01*	160	1	62.8	58.4	66	-4.4	10	----	54.9	3.5	8	-4.5

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	75	1.9	7.1	9.6
All Impacted	11	5.4	8.5	9.6
All that meet NR Goal	20	8.0	8.6	9.6

HMB Professional Engineers 21 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_TollAll_N Elm between 69 and 41
BARRIER DESIGN: W1_TollAll_NElm_btw69-41

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Goal	Calc-Goal	Barrier Reviewed	Important Segments Name	No.	Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-02-01-NPAD-06	53	53.5	5.9	8	-2.1	Barrier2	point151	151	16.0	34.9
						Barrier2	point150	150	16.0	34.8
						Barrier2	point149	149	16.0	34.8
						Barrier2	point148	148	16.0	34.6
						Barrier2	point147	147	16.0	34.5
						Barrier2	point152	152	16.0	34.5
						Barrier2	point142	142	16.0	34.5
						Barrier2	point141	141	16.0	34.3
						Barrier2	point145	145	16.0	34.2
						Barrier2	point146	146	16.0	34.2
KY-02-01-NPAD-07	54	53.9	6.0	8	-2.0	Barrier2	point151	151	16.0	35.7
						Barrier2	point150	150	16.0	35.6
						Barrier2	point149	149	16.0	35.6
						Barrier2	point148	148	16.0	35.4
						Barrier2	point147	147	16.0	35.3
						Barrier2	point152	152	16.0	35.3
						Barrier2	point142	142	16.0	35.1
						Barrier2	point145	145	16.0	35.0
						Barrier2	point146	146	16.0	35.0
						Barrier2	point153	153	16.0	35.0
KY-02-01-NPAD-08	55	54.3	6.5	8	-1.5	Barrier2	point151	151	16.0	36.8

						Barrier2	point150	150	16.0	36.8
						Barrier2	point149	149	16.0	36.7
						Barrier2	point148	148	16.0	36.5
						Barrier2	point147	147	16.0	36.4
						Barrier2	point152	152	16.0	36.4
						Barrier2	point142	142	16.0	36.2
						Barrier2	point146	146	16.0	36.2
						Barrier2	point153	153	16.0	36.1
						Barrier2	point145	145	16.0	36.1
KY-02-01-HARL-05	25	53.7	6.2	8	-1.8	Barrier2	point139	139	16.0	35.2
						Barrier2	point140	140	16.0	35.1
						Barrier2	point138	138	16.0	34.9
						Barrier2	point137	137	16.0	34.8
						Barrier2	point141	141	16.0	34.8
						Barrier2	point142	142	16.0	34.7
						Barrier2	point136	136	16.0	34.7
						Barrier2	point135	135	16.0	34.7
						Barrier2	point134	134	16.0	34.7
						Barrier2	point143	143	16.0	34.6
KY-02-02-HARL-06	135	53.5	6.0	8	-2.0	Barrier2	point124	124	16.0	34.2
						Barrier2	point123	123	16.0	34.1
						Barrier2	point125	125	16.0	34.0
						Barrier2	point133	133	16.0	34.0
						Barrier2	point132	132	16.0	33.9
						Barrier2	point126	126	16.0	33.9
						Barrier2	point131	131	16.0	33.9
						Barrier2	point128	128	16.0	33.9
						Barrier2	point122	122	16.0	33.9
						Barrier2	point134	134	16.0	33.9
KY-02-01-ROBR-04*	72	54.8	7.2	8	-0.8	Barrier2	point124	124	16.0	37.2
						Barrier2	point123	123	16.0	37.1
						Barrier2	point125	125	16.0	37.1
						Barrier2	point122	122	16.0	36.9
						Barrier2	point126	126	16.0	36.9
						Barrier2	point128	128	16.0	36.8
						Barrier2	point130	130	16.0	36.7

						Barrier2	point132	132	16.0	36.7
						Barrier2	point131	131	16.0	36.7
						Barrier2	point129	129	16.0	36.7
KY-02-02-HARL-05*	134	54.4	6.9	8	-1.1	Barrier2	point133	133	16.0	36.3
						Barrier2	point124	124	16.0	36.2
						Barrier2	point132	132	16.0	36.2
						Barrier2	point131	131	16.0	36.1
						Barrier2	point134	134	16.0	36.1
						Barrier2	point125	125	16.0	36.1
						Barrier2	point130	130	16.0	36.1
						Barrier2	point135	135	16.0	36.1
						Barrier2	point128	128	16.0	36.0
						Barrier2	point126	126	16.0	36.0
KY-02-01-CANL-03*	19	55.1	7.0	8	-1.0	Barrier2	point112	112	16.0	36.8
						Barrier2	point113	113	16.0	36.7
						Barrier2	point111	111	16.0	36.7
						Barrier2	point114	114	16.0	36.6
						Barrier2	point110	110	16.0	36.4
						Barrier2	point115	115	16.0	36.4
						Barrier2	point116	116	16.0	36.4
						Barrier2	point118	118	16.0	36.3
						Barrier2	point117	117	16.0	36.2
						Barrier2	point120	120	16.0	36.2
KY-02-02-ROBR-04*	196	54.9	6.9	8	-1.1	Barrier2	point112	112	16.0	36.4
						Barrier2	point113	113	16.0	36.4
						Barrier2	point123	123	16.0	36.3
						Barrier2	point114	114	16.0	36.3
						Barrier2	point122	122	16.0	36.3
						Barrier2	point124	124	16.0	36.2
						Barrier2	point116	116	16.0	36.2
						Barrier2	point120	120	16.0	36.2
						Barrier2	point111	111	16.0	36.2
						Barrier2	point118	118	16.0	36.2
KY-02-02-CANL-03*	123	55.7	7.0	8	-1.0	Barrier2	point60	60	0.0	37.5
						Barrier2	point61	61	0.0	37.4
						Barrier2	point54	54	0.0	36.9

						Barrier2	point62	62	0.0	36.9
						Barrier2	point101	101	16.0	36.7
						Barrier2	point102	102	16.0	36.7
						Barrier2	point58	58	0.0	36.7
						Barrier2	point59	59	0.0	36.7
						Barrier2	point104	104	16.0	36.7
						Barrier2	point106	106	16.0	36.6
KY-02-02-CANL-04	124	55.0	6.3	8	-1.7	Barrier2	point60	60	0.0	37.4
						Barrier2	point61	61	0.0	36.6
						Barrier2	point57	57	0.0	36.4
						Barrier2	point59	59	0.0	36.4
						Barrier2	point58	58	0.0	36.2
						Barrier2	point62	62	0.0	36.0
						Barrier2	point101	101	16.0	34.8
						Barrier2	point102	102	16.0	34.8
						Barrier2	point99	99	16.0	34.8
						Barrier2	point56	56	0.0	34.7
KY-02-01-RETR-06	65	55.4	6.4	8	-1.6	Barrier2	point59	59	0.0	37.8
						Barrier2	point60	60	0.0	37.7
						Barrier2	point61	61	0.0	37.5
						Barrier2	point58	58	0.0	37.2
						Barrier2	point57	57	0.0	37.1
						Barrier2	point56	56	0.0	35.9
						Barrier2	point62	62	0.0	35.7
						Barrier2	point99	99	16.0	35.4
						Barrier2	point97	97	16.0	35.4
						Barrier2	point98	98	16.0	35.4
KY-02-01-RETR-05*	64	56.2	7.3	8	-0.7	Barrier2	point61	61	0.0	38.7
						Barrier2	point59	59	0.0	38.1
						Barrier2	point57	57	0.0	38.1
						Barrier2	point60	60	0.0	38.1
						Barrier2	point62	62	0.0	38.0
						Barrier2	point58	58	0.0	37.9
						Barrier2	point99	99	16.0	37.5
						Barrier2	point98	98	16.0	37.4
						Barrier2	point97	97	16.0	37.4

						Barrier2	point100	100	16.0	37.3
KY-02-02-RETR-06	192	55.5	5.0	8	-3.0	Barrier2	point58	58	0.0	38.8
						Barrier2	point59	59	0.0	38.6
						Barrier2	point61	61	0.0	38.4
						Barrier2	point57	57	0.0	38.4
						Barrier2	point62	62	0.0	38.3
						Barrier2	point54	54	0.0	38.3
						Barrier2	point60	60	0.0	38.2
						Barrier2	point55	55	0.0	37.8
						Barrier2	point56	56	0.0	37.7
						Barrier2	point53	53	0.0	37.2
KY-02-01-RETR-07	66	55.5	5.5	8	-2.5	Barrier2	point59	59	0.0	38.7
						Barrier2	point58	58	0.0	38.6
						Barrier2	point57	57	0.0	37.8
						Barrier2	point60	60	0.0	37.7
						Barrier2	point61	61	0.0	37.7
						Barrier2	point62	62	0.0	37.5
						Barrier2	point56	56	0.0	37.0
						Barrier2	point55	55	0.0	36.2
						Barrier2	point54	54	0.0	35.7
						Barrier2	point50	50	0.0	35.4
KY-02-02-RETR-05	191	56.0	5.6	8	-2.4	Barrier2	point59	59	0.0	39.9
						Barrier2	point58	58	0.0	39.8
						Barrier2	point60	60	0.0	39.2
						Barrier2	point61	61	0.0	39.2
						Barrier2	point57	57	0.0	39.1
						Barrier2	point62	62	0.0	38.9
						Barrier2	point56	56	0.0	38.3
						Barrier2	point55	55	0.0	37.5
						Barrier2	point54	54	0.0	37.3
						Barrier2	point63	63	12.0	36.9
KY-02-02-RETR-04	190	57.2	6.0	8	-2.0	Barrier2	point60	60	0.0	41.9
						Barrier2	point61	61	0.0	41.5
						Barrier2	point58	58	0.0	41.5
						Barrier2	point59	59	0.0	41.4
						Barrier2	point62	62	0.0	41.3

						Barrier2	point57	57	0.0	41.0
						Barrier2	point53	53	0.0	40.3
						Barrier2	point55	55	0.0	40.2
						Barrier2	point56	56	0.0	39.9
						Barrier2	point54	54	0.0	39.7
KY-02-02-RETR-03	189	57.3	6.9	8	-1.1	Barrier2	point61	61	0.0	41.6
						Barrier2	point60	60	0.0	41.3
						Barrier2	point58	58	0.0	41.2
						Barrier2	point62	62	0.0	41.0
						Barrier2	point59	59	0.0	41.0
						Barrier2	point57	57	0.0	40.4
						Barrier2	point56	56	0.0	40.0
						Barrier2	point55	55	0.0	39.4
						Barrier2	point54	54	0.0	38.8
						Barrier2	point63	63	12.0	38.2
KY-02-02-RETR-02*	188	58.1	7.4	8	-0.6	Barrier2	point61	61	0.0	42.8
						Barrier2	point60	60	0.0	42.6
						Barrier2	point57	57	0.0	42.4
						Barrier2	point62	62	0.0	42.3
						Barrier2	point59	59	0.0	42.0
						Barrier2	point58	58	0.0	41.9
						Barrier2	point56	56	0.0	41.9
						Barrier2	point54	54	0.0	41.2
						Barrier2	point55	55	0.0	40.7
						Barrier2	point53	53	0.0	39.8
KY-02-01-RETR-04*	63	56.6	7.8	8	-0.2	Barrier2	point62	62	0.0	38.7
						Barrier2	point57	57	0.0	38.7
						Barrier2	point99	99	16.0	38.5
						Barrier2	point100	100	16.0	38.5
						Barrier2	point101	101	16.0	38.4
						Barrier2	point98	98	16.0	38.4
						Barrier2	point97	97	16.0	38.4
						Barrier2	point102	102	16.0	38.4
						Barrier2	point58	58	0.0	38.2
						Barrier2	point96	96	16.0	38.2
KY-02-01-RETR-03*	62	57.3	8.3	8	0.3	Barrier2	point101	101	16.0	39.9

						Barrier2	point102	102	16.0	39.9
						Barrier2	point100	100	16.0	39.8
						Barrier2	point99	99	16.0	39.8
						Barrier2	point98	98	16.0	39.7
						Barrier2	point104	104	16.0	39.6
						Barrier2	point103	103	16.0	39.5
						Barrier2	point97	97	16.0	39.5
						Barrier2	point105	105	16.0	39.4
						Barrier2	point60	60	0.0	39.3
KY-02-02-CANL-02*	122	56.6	8.1	8	0.1	Barrier2	point104	104	16.0	39.0
						Barrier2	point106	106	16.0	39.0
						Barrier2	point105	105	16.0	39.0
						Barrier2	point102	102	16.0	38.9
						Barrier2	point101	101	16.0	38.9
						Barrier2	point5	5	16.0	38.9
						Barrier2	point103	103	16.0	38.8
						Barrier2	point107	107	16.0	38.7
						Barrier2	point100	100	16.0	38.7
						Barrier2	point110	110	16.0	38.6
KY-02-01-CANL-02*	18	55.9	7.9	8	-0.1	Barrier2	point112	112	16.0	38.7
						Barrier2	point113	113	16.0	38.6
						Barrier2	point114	114	16.0	38.6
						Barrier2	point111	111	16.0	38.5
						Barrier2	point116	116	16.0	38.4
						Barrier2	point115	115	16.0	38.4
						Barrier2	point118	118	16.0	38.3
						Barrier2	point117	117	16.0	38.3
						Barrier2	point110	110	16.0	38.2
						Barrier2	point119	119	16.0	38.1
KY-02-02-ROBR-03*	195	55.8	7.8	8	-0.2	Barrier2	point113	113	16.0	38.6
						Barrier2	point112	112	16.0	38.5
						Barrier2	point114	114	16.0	38.5
						Barrier2	point116	116	16.0	38.5
						Barrier2	point118	118	16.0	38.4
						Barrier2	point120	120	16.0	38.4
						Barrier2	point115	115	16.0	38.4

						Barrier2	point117	117	16.0	38.4
						Barrier2	point122	122	16.0	38.4
						Barrier2	point119	119	16.0	38.4
KY-02-02-ROBR-02*	194	56.7	8.8	8	0.8	Barrier2	point118	118	16.0	40.5
						Barrier2	point116	116	16.0	40.5
						Barrier2	point115	115	16.0	40.5
						Barrier2	point114	114	16.0	40.5
						Barrier2	point120	120	16.0	40.4
						Barrier2	point113	113	16.0	40.4
						Barrier2	point119	119	16.0	40.4
						Barrier2	point117	117	16.0	40.4
						Barrier2	point112	112	16.0	40.2
						Barrier2	point121	121	16.0	40.2
KY-02-01-ROBR-03*	70	55.7	8.1	8	0.1	Barrier2	point124	124	16.0	39.2
						Barrier2	point125	125	16.0	39.1
						Barrier2	point123	123	16.0	39.0
						Barrier2	point126	126	16.0	38.9
						Barrier2	point128	128	16.0	38.9
						Barrier2	point130	130	16.0	38.8
						Barrier2	point129	129	16.0	38.8
						Barrier2	point127	127	16.0	38.7
						Barrier2	point131	131	16.0	38.7
						Barrier2	point132	132	16.0	38.6
KY-02-02-HARL-04*	133	55.5	8.1	8	0.1	Barrier2	point132	132	16.0	38.7
						Barrier2	point133	133	16.0	38.7
						Barrier2	point131	131	16.0	38.7
						Barrier2	point130	130	16.0	38.7
						Barrier2	point128	128	16.0	38.6
						Barrier2	point134	134	16.0	38.6
						Barrier2	point125	125	16.0	38.6
						Barrier2	point129	129	16.0	38.5
						Barrier2	point126	126	16.0	38.5
						Barrier2	point124	124	16.0	38.5
KY-02-02-HARL-03*	132	56.0	8.5	8	0.5	Barrier2	point133	133	16.0	40.1
						Barrier2	point132	132	16.0	40.0
						Barrier2	point131	131	16.0	40.0

						Barrier2	point130	130	16.0	40.0
						Barrier2	point134	134	16.0	39.8
						Barrier2	point129	129	16.0	39.8
						Barrier2	point128	128	16.0	39.8
						Barrier2	point135	135	16.0	39.7
						Barrier2	point126	126	16.0	39.7
						Barrier2	point127	127	16.0	39.5
KY-02-02-HARL-02*	131	56.6	8.6	8	0.6	Barrier2	point133	133	16.0	41.5
						Barrier2	point132	132	16.0	41.5
						Barrier2	point131	131	16.0	41.5
						Barrier2	point130	130	16.0	41.4
						Barrier2	point134	134	16.0	41.3
						Barrier2	point129	129	16.0	41.2
						Barrier2	point128	128	16.0	41.1
						Barrier2	point135	135	16.0	41.0
						Barrier2	point126	126	16.0	40.6
						Barrier2	point127	127	16.0	40.6
KY-02-01-HARL-04*	24	55.0	7.4	8	-0.6	Barrier2	point139	139	16.0	37.9
						Barrier2	point137	137	16.0	37.8
						Barrier2	point134	134	16.0	37.7
						Barrier2	point135	135	16.0	37.7
						Barrier2	point138	138	16.0	37.7
						Barrier2	point136	136	16.0	37.7
						Barrier2	point140	140	16.0	37.6
						Barrier2	point133	133	16.0	37.6
						Barrier2	point132	132	16.0	37.5
						Barrier2	point141	141	16.0	37.3
KY-02-01-HARL-03*	23	55.8	8.1	8	0.1	Barrier2	point139	139	16.0	39.8
						Barrier2	point138	138	16.0	39.6
						Barrier2	point137	137	16.0	39.6
						Barrier2	point136	136	16.0	39.5
						Barrier2	point135	135	16.0	39.5
						Barrier2	point134	134	16.0	39.4
						Barrier2	point140	140	16.0	39.4
						Barrier2	point141	141	16.0	39.2
						Barrier2	point133	133	16.0	39.2

						Barrier2	point142	142	16.0	38.9
KY-02-01-NPAD-11	58	54.9	7.1	8	-0.9	Barrier2	point141	141	16.0	37.9
						Barrier2	point140	140	16.0	37.8
						Barrier2	point139	139	16.0	37.6
						Barrier2	point142	142	16.0	37.6
						Barrier2	point143	143	16.0	37.5
						Barrier2	point145	145	16.0	37.5
						Barrier2	point144	144	16.0	37.4
						Barrier2	point147	147	16.0	37.4
						Barrier2	point146	146	16.0	37.3
						Barrier2	point149	149	16.0	37.3
KY-02-01-HARL-02*	22	56.5	8.3	8	0.3	Barrier2	point140	140	16.0	41.9
						Barrier2	point139	139	16.0	41.9
						Barrier2	point141	141	16.0	41.6
						Barrier2	point138	138	16.0	41.4
						Barrier2	point142	142	16.0	41.4
						Barrier2	point143	143	16.0	41.2
						Barrier2	point137	137	16.0	41.1
						Barrier2	point144	144	16.0	40.7
						Barrier2	point136	136	16.0	40.7
						Barrier2	point145	145	16.0	40.6
KY-02-01-NPAD-10	57	54.7	7.2	8	-0.8	Barrier2	point149	149	16.0	37.6
						Barrier2	point142	142	16.0	37.6
						Barrier2	point148	148	16.0	37.5
						Barrier2	point147	147	16.0	37.5
						Barrier2	point141	141	16.0	37.5
						Barrier2	point150	150	16.0	37.5
						Barrier2	point145	145	16.0	37.4
						Barrier2	point144	144	16.0	37.4
						Barrier2	point143	143	16.0	37.4
						Barrier2	point151	151	16.0	37.4
KY-02-01-NPAD-09	56	54.6	6.8	8	-1.2	Barrier2	point151	151	16.0	37.6
						Barrier2	point150	150	16.0	37.5
						Barrier2	point149	149	16.0	37.5
						Barrier2	point148	148	16.0	37.2
						Barrier2	point147	147	16.0	37.2

						Barrier2	point152	152	16.0	37.2
						Barrier2	point142	142	16.0	36.9
						Barrier2	point153	153	16.0	36.9
						Barrier2	point146	146	16.0	36.8
						Barrier2	point145	145	16.0	36.8
KY-02-01-NPAD-05	52	54.2	6.0	8	-2.0	Barrier2	point152	152	16.0	36.1
						Barrier2	point155	155	16.0	36.0
						Barrier2	point151	151	16.0	36.0
						Barrier2	point153	153	16.0	36.0
						Barrier2	point154	154	16.0	35.9
						Barrier2	point150	150	16.0	35.9
						Barrier2	point149	149	16.0	35.7
						Barrier2	point148	148	16.0	35.3
						Barrier2	point147	147	16.0	35.1
						Barrier2	point156	156	16.0	34.9
KY-02-01-NPAD-04	51	54.6	5.4	8	-2.6	Barrier2	point166	166	16.0	35.4
						Barrier2	point167	167	16.0	35.4
						Barrier2	point165	165	16.0	35.4
						Barrier2	point168	168	16.0	35.4
						Barrier2	point156	156	16.0	35.3
						Barrier2	point164	164	16.0	35.3
						Barrier2	point169	169	16.0	35.2
						Barrier2	point170	170	16.0	35.2
						Barrier2	point155	155	16.0	35.2
						Barrier2	point171	171	16.0	35.1
KY-02-01-NPAD-03	50	55.4	4.0	8	-4.0	Barrier2	point175	175	16.0	35.9
						Barrier2	point176	176	16.0	35.8
						Barrier2	point174	174	16.0	35.6
						Barrier2	point173	173	16.0	35.3
						Barrier2	point177	177	16.0	35.2
						Barrier2	point172	172	16.0	35.1
						Barrier2	point171	171	16.0	35.1
						Barrier2	point178	178	16.0	35.0
						Barrier2	point179	179	16.0	34.9
						Barrier2	point180	180	16.0	34.9
KY-02-01-NAPD-02	44	56.0	3.4	8	-4.6	Barrier2	point176	176	16.0	36.3

						Barrier2	point180	180	16.0	36.3
						Barrier2	point181	181	16.0	36.2
						Barrier2	point175	175	16.0	36.1
						Barrier2	point177	177	16.0	36.1
						Barrier2	point179	179	16.0	36.0
						Barrier2	point182	182	16.0	35.9
						Barrier2	point178	178	16.0	35.8
						Barrier2	point174	174	16.0	35.5
						Barrier2	point173	173	16.0	35.1
KY-02-01-NPAD-01	48	56.9	1.9	8	-6.1	Barrier2	point180	180	16.0	35.8
						Barrier2	point179	179	16.0	35.3
						Barrier2	point182	182	16.0	35.3
						Barrier2	point183	183	16.0	35.2
						Barrier2	point181	181	16.0	35.2
						Barrier2	point178	178	16.0	34.7
						Barrier2	point177	177	16.0	34.6
						Barrier2	point176	176	16.0	34.5
						Barrier2	point175	175	16.0	34.0
						Barrier2	point174	174	16.0	33.4
KY-02-02-RETR-01*	186	58.9	8.5	8	0.5	Barrier2	point58	58	0.0	43.6
						Barrier2	point60	60	0.0	43.4
						Barrier2	point59	59	0.0	42.9
						Barrier2	point57	57	0.0	42.8
						Barrier2	point61	61	0.0	42.7
						Barrier2	point62	62	0.0	42.5
						Barrier2	point56	56	0.0	42.2
						Barrier2	point55	55	0.0	42.0
						Barrier2	point54	54	0.0	41.3
						Barrier2	point89	89	16.0	41.3
KY-02-01-RETR-02*	61	57.5	8.8	8	0.8	Barrier2	point101	101	16.0	41.0
						Barrier2	point102	102	16.0	41.0
						Barrier2	point100	100	16.0	40.8
						Barrier2	point104	104	16.0	40.8
						Barrier2	point99	99	16.0	40.7
						Barrier2	point103	103	16.0	40.7
						Barrier2	point98	98	16.0	40.5

						Barrier2	point105	105	16.0	40.5
						Barrier2	point5	5	16.0	40.4
						Barrier2	point106	106	16.0	40.2
KY-02-02-CANL-01*	121	57.8	9.1	8	1.1	Barrier2	point104	104	16.0	42.0
						Barrier2	point105	105	16.0	41.9
						Barrier2	point102	102	16.0	41.9
						Barrier2	point5	5	16.0	41.9
						Barrier2	point103	103	16.0	41.8
						Barrier2	point106	106	16.0	41.8
						Barrier2	point101	101	16.0	41.7
						Barrier2	point107	107	16.0	41.4
						Barrier2	point100	100	16.0	41.2
						Barrier2	point99	99	16.0	41.0
KY-02-01-CANL-01*	17	57.6	9.1	8	1.1	Barrier2	point112	112	16.0	42.5
						Barrier2	point113	113	16.0	42.5
						Barrier2	point111	111	16.0	42.4
						Barrier2	point114	114	16.0	42.2
						Barrier2	point110	110	16.0	42.0
						Barrier2	point115	115	16.0	42.0
						Barrier2	point116	116	16.0	41.8
						Barrier2	point109	109	16.0	41.4
						Barrier2	point117	117	16.0	41.3
						Barrier2	point108	108	16.0	41.3
KY-02-02-ROBR-01*	193	57.7	9.3	8	1.3	Barrier2	point116	116	16.0	43.1
						Barrier2	point118	118	16.0	43.1
						Barrier2	point117	117	16.0	43.1
						Barrier2	point115	115	16.0	42.9
						Barrier2	point119	119	16.0	42.9
						Barrier2	point114	114	16.0	42.8
						Barrier2	point120	120	16.0	42.7
						Barrier2	point113	113	16.0	42.5
						Barrier2	point112	112	16.0	42.3
						Barrier2	point121	121	16.0	42.2
KY-02-01-ROBR-01*	68	57.6	9.1	8	1.1	Barrier2	point124	124	16.0	44.0
						Barrier2	point125	125	16.0	43.9
						Barrier2	point123	123	16.0	43.8

						Barrier2	point126	126	16.0	43.4
						Barrier2	point122	122	16.0	43.2
						Barrier2	point127	127	16.0	42.9
						Barrier2	point128	128	16.0	42.7
						Barrier2	point121	121	16.0	42.6
						Barrier2	point129	129	16.0	42.2
						Barrier2	point120	120	16.0	42.1
KY-02-02-HARL-01*	130	57.5	9.6	8	1.6	Barrier2	point131	131	16.0	43.9
						Barrier2	point130	130	16.0	43.8
						Barrier2	point132	132	16.0	43.7
						Barrier2	point129	129	16.0	43.5
						Barrier2	point133	133	16.0	43.5
						Barrier2	point128	128	16.0	43.1
						Barrier2	point134	134	16.0	43.0
						Barrier2	point127	127	16.0	42.6
						Barrier2	point135	135	16.0	42.4
						Barrier2	point126	126	16.0	42.2
KY-02-01-HARL-01*	21	57.2	9.4	8	1.4	Barrier2	point139	139	16.0	44.1
						Barrier2	point140	140	16.0	44.0
						Barrier2	point141	141	16.0	43.5
						Barrier2	point138	138	16.0	43.5
						Barrier2	point142	142	16.0	43.2
						Barrier2	point137	137	16.0	43.1
						Barrier2	point143	143	16.0	42.8
						Barrier2	point136	136	16.0	42.6
						Barrier2	point135	135	16.0	41.9
						Barrier2	point144	144	16.0	41.9
KY-02-02-NELS-08*	168	56.1	8.0	8	-0.0	Barrier2	point149	149	16.0	41.0
						Barrier2	point148	148	16.0	40.9
						Barrier2	point147	147	16.0	40.8
						Barrier2	point150	150	16.0	40.8
						Barrier2	point151	151	16.0	40.6
						Barrier2	point146	146	16.0	40.6
						Barrier2	point145	145	16.0	40.4
						Barrier2	point143	143	16.0	40.3
						Barrier2	point142	142	16.0	40.2

						Barrier2	point144	144	16.0	40.1
KY-02-02-NELS-07*	167	55.9	8.6	8	0.6	Barrier2	point151	151	16.0	41.7
						Barrier2	point152	152	16.0	41.6
						Barrier2	point150	150	16.0	41.5
						Barrier2	point153	153	16.0	41.4
						Barrier2	point154	154	16.0	41.2
						Barrier2	point149	149	16.0	41.1
						Barrier2	point148	148	16.0	40.8
						Barrier2	point155	155	16.0	40.8
						Barrier2	point147	147	16.0	40.2
						Barrier2	point145	145	16.0	39.4
KY-02-02-NELS-06*	166	56.0	8.2	8	0.2	Barrier2	point155	155	16.0	42.9
						Barrier2	point154	154	16.0	42.5
						Barrier2	point156	156	16.0	42.1
						Barrier2	point153	153	16.0	41.9
						Barrier2	point152	152	16.0	41.3
						Barrier2	point151	151	16.0	40.7
						Barrier2	point157	157	16.0	40.4
						Barrier2	point150	150	16.0	40.2
						Barrier2	point158	158	16.0	40.1
						Barrier2	point161	161	16.0	39.9
KY-02-02-NELS-05*	164	55.3	7.5	8	-0.5	Barrier2	point156	156	16.0	39.5
						Barrier2	point155	155	16.0	39.3
						Barrier2	point162	162	16.0	39.0
						Barrier2	point163	163	16.0	38.9
						Barrier2	point164	164	16.0	38.8
						Barrier2	point154	154	16.0	38.8
						Barrier2	point161	161	16.0	38.6
						Barrier2	point165	165	16.0	38.6
						Barrier2	point153	153	16.0	38.2
						Barrier2	point152	152	16.0	38.1
KY-02-02-NELS-04*	163	55.7	6.9	8	-1.1	Barrier2	point167	167	16.0	42.4
						Barrier2	point168	168	16.0	42.1
						Barrier2	point166	166	16.0	41.8
						Barrier2	point169	169	16.0	41.5
						Barrier2	point165	165	16.0	40.8

						Barrier2	point170	170	16.0	40.7
						Barrier2	point164	164	16.0	39.7
						Barrier2	point171	171	16.0	39.7
						Barrier2	point172	172	16.0	38.7
						Barrier2	point163	163	16.0	38.7
KY-02-02-NELS-03*	162	55.8	6.0	8	-2.0	Barrier2	point175	175	16.0	39.8
						Barrier2	point174	174	16.0	39.7
						Barrier2	point173	173	16.0	39.6
						Barrier2	point176	176	16.0	39.4
						Barrier2	point172	172	16.0	39.2
						Barrier2	point171	171	16.0	39.0
						Barrier2	point177	177	16.0	38.7
						Barrier2	point170	170	16.0	38.6
						Barrier2	point178	178	16.0	38.1
						Barrier2	point169	169	16.0	38.0
KY-02-02-NELS-02*	161	55.0	5.2	8	-2.8	Barrier2	point181	181	16.0	39.5
						Barrier2	point180	180	16.0	39.4
						Barrier2	point182	182	16.0	39.0
						Barrier2	point179	179	16.0	39.0
						Barrier2	point178	178	16.0	38.8
						Barrier2	point177	177	16.0	38.6
						Barrier2	point176	176	16.0	38.4
						Barrier2	point175	175	16.0	37.7
						Barrier2	point183	183	16.0	37.3
						Barrier2	point174	174	16.0	36.9
KY-02-02-NELS-01*	160	54.9	3.5	8	-4.5	Barrier2	point180	180	16.0	38.2
						Barrier2	point181	181	16.0	37.8
						Barrier2	point179	179	16.0	37.6
						Barrier2	point182	182	16.0	37.5
						Barrier2	point183	183	16.0	37.3
						Barrier2	point178	178	16.0	36.9
						Barrier2	point177	177	16.0	36.7
						Barrier2	point176	176	16.0	36.4
						Barrier2	point175	175	16.0	35.9
						Barrier2	point174	174	16.0	35.2

Total Cost, All Barriers (including additional cost(s))	$1283830					

HMB Professional Engineers				**21 March 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**West 1_TollAll_N Elm between 69 and 41**									
BARRIER DESIGN:	**W1_TollAll_NElm_btw69-41**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier2	W	12.00	15.97	16.00	2680	42794				1283830
									Total Cost:	1283830

HMB Professional Engineers 21 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_TollAll_N Elm between 69 and 41
BARRIER DESIGN: W1_TollAll_NElm_btw69-41

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier2	W	point4	4	0.00	0.00	0.00	0	0				0
		point8	8	0.00	0.00	0.00	0	0				0
		point9	9	0.00	0.00	0.00	0	0				0
		point10	10	0.00	0.00	0.00	0	0				0
		point11	11	0.00	0.00	0.00	0	0				0
		point12	12	0.00	0.00	0.00	0	0				0
		point13	13	0.00	0.00	0.00	0	0				0
		point14	14	0.00	0.00	0.00	0	0				0
		point15	15	0.00	0.00	0.00	0	0				0
		point16	16	0.00	0.00	0.00	0	0				0
		point17	17	0.00	0.00	0.00	0	0				0
		point18	18	0.00	0.00	0.00	0	0				0
		point19	19	0.00	0.00	0.00	0	0				0
		point20	20	0.00	0.00	0.00	0	0				0
		point21	21	0.00	0.00	0.00	0	0				0
		point22	22	0.00	0.00	0.00	0	0				0
		point23	23	0.00	0.00	0.00	0	0				0
		point24	24	0.00	0.00	0.00	0	0				0
		point25	25	0.00	0.00	0.00	0	0				0
		point26	26	0.00	0.00	0.00	0	0				0
		point27	27	0.00	0.00	0.00	0	0				0
		point28	28	0.00	0.00	0.00	0	0				0
		point29	29	0.00	0.00	0.00	0	0				0
		point30	30	0.00	0.00	0.00	0	0				0
		point31	31	0.00	0.00	0.00	0	0				0
		point32	32	0.00	0.00	0.00	0	0				0

		point33	33	0.00	0.00	0.00	0	0				0
		point34	34	0.00	0.00	0.00	0	0				0
		point35	35	0.00	0.00	0.00	0	0				0
		point36	36	0.00	0.00	0.00	0	0				0
		point37	37	0.00	0.00	0.00	0	0				0
		point38	38	0.00	0.00	0.00	0	0				0
		point39	39	0.00	0.00	0.00	0	0				0
		point40	40	0.00	0.00	0.00	0	0				0
		point41	41	0.00	0.00	0.00	0	0				0
		point42	42	0.00	0.00	0.00	0	0				0
		point43	43	0.00	0.00	0.00	0	0				0
		point44	44	0.00	0.00	0.00	0	0				0
		point45	45	0.00	0.00	0.00	0	0				0
		point46	46	0.00	0.00	0.00	0	0				0
		point47	47	0.00	0.00	0.00	0	0				0
		point48	48	0.00	0.00	0.00	0	0				0
		point49	49	0.00	0.00	0.00	0	0				0
		point50	50	0.00	0.00	0.00	0	0				0
		point51	51	0.00	0.00	0.00	0	0				0
		point52	52	0.00	0.00	0.00	0	0				0
		point53	53	0.00	0.00	0.00	0	0				0
		point54	54	0.00	0.00	0.00	0	0				0
		point55	55	0.00	0.00	0.00	0	0				0
		point56	56	0.00	0.00	0.00	0	0				0
		point57	57	0.00	0.00	0.00	0	0				0
		point58	58	0.00	0.00	0.00	0	0				0
		point59	59	0.00	0.00	0.00	0	0				0
		point60	60	0.00	0.00	0.00	0	0				0
		point61	61	0.00	0.00	0.00	0	0				0
		point62	62	0.00	0.00	0.00	0	0				0
		point63	63	12.00	12.00	12.00	20	237				7103
		point64	64	16.00	16.00	16.00	20	325				9746
		point65	65	16.00	16.00	16.00	20	316				9470
		point66	66	16.00	16.00	16.00	20	321				9628
		point67	67	16.00	16.00	16.00	20	322				9672
		point68	68	16.00	16.00	16.00	20	318				9555
		point69	69	16.00	16.00	16.00	20	318				9555
		point70	70	16.00	16.00	16.00	20	322				9672
		point71	71	16.00	16.00	16.00	20	320				9606

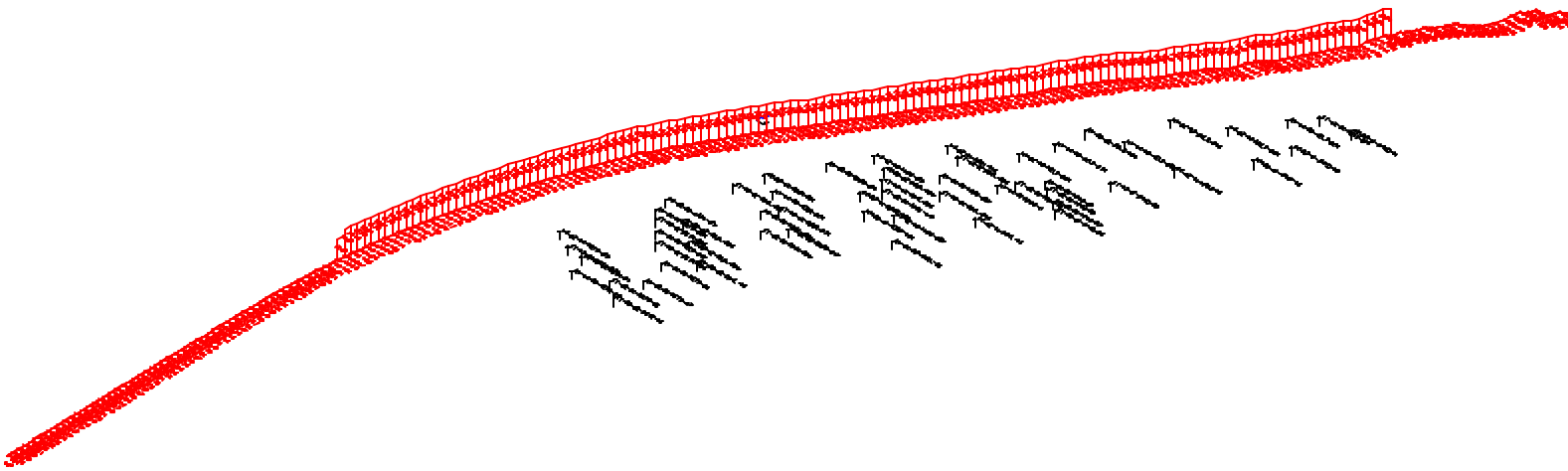
		point72	72	16.00	16.00	16.00	20	316				9489
		point73	73	16.00	16.00	16.00	20	320				9606
		point74	74	16.00	16.00	16.00	20	322				9663
		point75	75	16.00	16.00	16.00	20	318				9547
		point76	76	16.00	16.00	16.00	20	322				9663
		point77	77	16.00	16.00	16.00	20	320				9610
		point78	78	16.00	16.00	16.00	20	320				9610
		point79	79	16.00	16.00	16.00	20	316				9494
		point80	80	16.00	16.00	16.00	20	323				9678
		point81	81	16.00	16.00	16.00	20	319				9564
		point82	82	16.00	16.00	16.00	20	319				9564
		point83	83	16.00	16.00	16.00	20	321				9639
		point84	84	16.00	16.00	16.00	20	319				9564
		point85	85	16.00	16.00	16.00	20	324				9719
		point86	86	16.00	16.00	16.00	20	318				9525
		point87	87	16.00	16.00	16.00	20	320				9607
		point88	88	16.00	16.00	16.00	20	320				9607
		point89	89	16.00	16.00	16.00	20	320				9607
		point90	90	16.00	16.00	16.00	20	319				9582
		point91	91	16.00	16.00	16.00	20	319				9582
		point92	92	16.00	16.00	16.00	20	323				9693
		point93	93	16.00	16.00	16.00	20	316				9494
		point94	94	16.00	16.00	16.00	20	323				9693
		point95	95	16.00	16.00	16.00	20	316				9494
		point96	96	16.00	16.00	16.00	20	319				9582
		point97	97	16.00	16.00	16.00	20	322				9675
		point98	98	16.00	16.00	16.00	20	319				9582
		point99	99	16.00	16.00	16.00	20	322				9675
		point100	100	16.00	16.00	16.00	20	315				9455
		point101	101	16.00	16.00	16.00	20	322				9664
		point102	102	16.00	16.00	16.00	20	322				9664
		point103	103	16.00	16.00	16.00	20	318				9555
		point104	104	16.00	16.00	16.00	20	322				9660
		point105	105	16.00	16.00	16.00	20	318				9555
		point5	5	16.00	16.00	16.00	20	318				9553
		point106	106	16.00	16.00	16.00	20	322				9664
		point107	107	16.00	16.00	16.00	20	319				9571
		point108	108	16.00	16.00	16.00	20	319				9571
		point109	109	16.00	16.00	16.00	20	320				9591

		point110	110	16.00	16.00	16.00	20	320				9591
		point111	111	16.00	16.00	16.00	20	320				9591
		point112	112	16.00	16.00	16.00	20	320				9591
		point113	113	16.00	16.00	16.00	20	321				9619
		point114	114	16.00	16.00	16.00	20	321				9619
		point115	115	16.00	16.00	16.00	20	317				9519
		point116	116	16.00	16.00	16.00	20	325				9753
		point117	117	16.00	16.00	16.00	20	317				9519
		point118	118	16.00	16.00	16.00	20	322				9654
		point119	119	16.00	16.00	16.00	20	317				9519
		point120	120	16.00	16.00	16.00	20	325				9753
		point121	121	16.00	16.00	16.00	20	317				9519
		point122	122	16.00	16.00	16.00	20	322				9654
		point123	123	16.00	16.00	16.00	20	317				9519
		point124	124	16.00	16.00	16.00	20	322				9654
		point125	125	16.00	16.00	16.00	20	317				9519
		point126	126	16.00	16.00	16.00	20	322				9654
		point127	127	16.00	16.00	16.00	20	317				9519
		point128	128	16.00	16.00	16.00	20	325				9753
		point129	129	16.00	16.00	16.00	20	317				9519
		point130	130	16.00	16.00	16.00	20	322				9654
		point131	131	16.00	16.00	16.00	20	317				9519
		point132	132	16.00	16.00	16.00	20	317				9519
		point133	133	16.00	16.00	16.00	20	322				9654
		point134	134	16.00	16.00	16.00	20	321				9619
		point135	135	16.00	16.00	16.00	20	322				9654
		point136	136	16.00	16.00	16.00	20	317				9519
		point137	137	16.00	16.00	16.00	20	322				9654
		point138	138	16.00	16.00	16.00	20	317				9519
		point139	139	16.00	16.00	16.00	20	322				9654
		point140	140	16.00	16.00	16.00	20	317				9519
		point141	141	16.00	16.00	16.00	20	322				9654
		point142	142	16.00	16.00	16.00	20	321				9619
		point143	143	16.00	16.00	16.00	20	322				9654
		point144	144	16.00	16.00	16.00	20	317				9519
		point145	145	16.00	16.00	16.00	20	322				9654
		point146	146	16.00	16.00	16.00	20	317				9519
		point147	147	16.00	16.00	16.00	20	325				9753
		point148	148	16.00	16.00	16.00	20	317				9519

		point149	149	16.00	16.00	16.00	20	322				9654
		point150	150	16.00	16.00	16.00	20	317				9519
		point151	151	16.00	16.00	16.00	20	322				9654
		point152	152	16.00	16.00	16.00	20	317				9519
		point153	153	16.00	16.00	16.00	20	322				9654
		point154	154	16.00	16.00	16.00	20	317				9519
		point155	155	16.00	16.00	16.00	20	322				9654
		point156	156	16.00	16.00	16.00	20	321				9619
		point157	157	16.00	16.00	16.00	20	322				9654
		point158	158	16.00	16.00	16.00	20	317				9519
		point159	159	16.00	16.00	16.00	20	322				9654
		point160	317	16.00	16.00	16.00	20	317				9519
		point161	161	16.00	16.00	16.00	20	322				9652
		point162	162	16.00	16.00	16.00	20	323				9687
		point163	163	16.00	16.00	16.00	20	318				9528
		point164	164	16.00	16.00	16.00	20	321				9619
		point165	165	16.00	16.00	16.00	20	321				9619
		point166	166	16.00	16.00	16.00	20	317				9504
		point167	167	16.00	16.00	16.00	20	321				9619
		point168	168	16.00	16.00	16.00	20	321				9619
		point169	169	16.00	16.00	16.00	20	317				9519
		point170	170	16.00	16.00	16.00	20	321				9619
		point171	171	16.00	16.00	16.00	20	324				9719
		point172	172	16.00	16.00	16.00	20	316				9489
		point173	173	16.00	16.00	16.00	20	324				9719
		point174	174	16.00	16.00	16.00	20	316				9489
		point175	175	16.00	16.00	16.00	20	320				9591
		point176	176	16.00	16.00	16.00	20	323				9693
		point177	177	16.00	16.00	16.00	20	319				9571
		point178	178	16.00	16.00	16.00	20	320				9591
		point179	179	16.00	16.00	16.00	20	319				9571
		point180	180	16.00	16.00	16.00	20	319				9571
		point181	181	16.00	16.00	16.00	20	322				9675
		point182	182	16.00	16.00	16.00	20	319				9571
		point183	183	16.00	16.00	16.00	20	319				9571
		point184	184	16.00	16.00	16.00	20	322	Y			9675
		point185	185	16.00	16.00	16.00	20	319	Y			9558
		point186	186	16.00	16.00	16.00	20	319	Y			9558
		point187	187	16.00	16.00	16.00	20	322	Y			9675

		point188	188	16.00	16.00	16.00	20	319	Y			9558
		point189	189	16.00	16.00	16.00	20	322	Y			9675
		point190	190	16.00	16.00	16.00	20	319	Y			9558
		point191	191	16.00	16.00	16.00	20	322	Y			9675
		point192	192	16.00	16.00	16.00	20	319	Y			9558
		point193	193	16.00	16.00	16.00	20	319	Y			9558
		point194	194	16.00	16.00	16.00	20	322	Y			9675
		point195	195	16.00	16.00	16.00	20	315				9453
		point196	196	0.00	0.00	0.00	0	0				0
		point197	197	0.00	0.00	0.00	0	0				0
		point198	198	0.00	0.00	0.00	0	0				0
		point199	199	0.00	0.00	0.00	0	0				0
		point200	200	0.00	0.00	0.00	0	0				0
		point201	201	0.00	0.00	0.00	0	0				0
		point202	202	0.00	0.00	0.00	0	0				0
		point203	203	0.00	0.00	0.00	0	0				0
		point6	6	0.00	0.00	0.00	0	0				0
		point204	204	0.00	0.00	0.00	0	0				0
		point205	205	0.00	0.00	0.00	0	0				0
		point206	206	0.00	0.00	0.00	0	0				0
		point207	207	0.00	0.00	0.00	0	0				0
		point208	208	0.00	0.00	0.00	0	0				0
		point209	209	0.00	0.00	0.00	0	0				0
		point210	210	0.00	0.00	0.00	0	0				0
		point211	211	0.00	0.00	0.00	0	0				0
		point212	212	0.00	0.00	0.00	0	0				0
		point213	213	0.00	0.00	0.00	0	0				0
		point214	214	0.00	0.00	0.00	0	0				0
		point215	215	0.00	0.00	0.00	0	0				0
		point216	216	0.00	0.00	0.00	0	0				0
		point217	217	0.00	0.00	0.00	0	0				0
		point244	244	0.00	0.00	0.00	0	0				0
		point218	218	0.00	0.00	0.00	0	0				0
		point219	219	0.00	0.00	0.00	0	0				0
		point220	220	0.00	0.00	0.00	0	0				0
		point221	221	0.00	0.00	0.00	0	0				0
		point222	222	0.00	0.00	0.00	0	0				0
		point223	223	0.00	0.00	0.00	0	0				0
		point224	224	0.00	0.00	0.00	0	0				0

		point225	225	0.00	0.00	0.00	0	0				0
		point226	226	0.00	0.00	0.00	0	0				0
		point227	227	0.00	0.00	0.00	0	0				0
		point228	228	0.00	0.00	0.00	0	0				0
		point229	229	0.00	0.00	0.00	0	0				0
		point230	230	0.00	0.00	0.00	0	0				0
		point243	243	0.00	0.00	0.00	0	0				0
		point231	231	0.00	0.00	0.00	0	0				0
		point232	232	0.00	0.00	0.00	0	0				0
		point233	233	0.00	0.00	0.00	0	0				0
		point234	234	0.00	0.00	0.00	0	0				0
		point235	235	0.00	0.00	0.00	0	0				0
		point236	236	0.00	0.00	0.00	0	0				0
		point237	237	0.00	0.00	0.00	0	0				0
		point238	238	0.00	0.00	0.00	0	0				0
		point239	239	0.00	0.00	0.00	0	0				0
		point240	240	0.00	0.00	0.00	0	0				0
		point241	241	0.00	0.00	0.00	0	0				0
		point242	242	0.00	0.00	0.00	0	0				0



West 1_TollAll_N Elm between 69 and 41	Sheet 1 of 1	21 Mar 2018
	HMB Professional Engineers	
Barrier View-W1_TollAll_NElm_btw69-41	Project/Contract No. I-69 ORX	
Run name: W1_02_TollAll_E	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 1 – SUNSET LANE (TOLL BOTH CROSSINGS)

HMB Professional Engineers 27 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_TollAll_Sunset Lane Barrier
BARRIER DESIGN: W1_TollAll_Sunset Lane
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-02-02-VILD-01	219	1	51.3	59.3	66	8.0	10	----	54.1	5.2	8	-2.8
KY-02-02-VILD-02	220	1	51.9	60.0	66	8.1	10	----	54.7	5.3	8	-2.7
KY-02-02-VILD-03	221	1	52.7	61.1	66	8.4	10	----	55.5	5.6	8	-2.4
KY-02-02-VILD-04	222	1	53.5	62.3	66	8.8	10	----	56.3	6.0	8	-2.0
KY-02-02-VILD-05	225	1	54.2	63.4	66	9.2	10	----	57.0	6.4	8	-1.6
KY-02-02-VILD-06	227	1	54.9	64.7	66	9.8	10	----	57.6	7.1	8	-0.9
KY-02-02-VILD-07	228	1	56.1	67.2	66	11.1	10	Both	58.5	8.7	8	0.7
KY-02-01-VILD-01	100	1	50.7	58.9	66	8.2	10	----	53.6	5.3	8	-2.7
KY-02-01-RICL-01	67	1	51.6	60.3	66	8.7	10	----	54.3	6.0	8	-2.0
KY-02-01-VILD-02	101	1	51.5	59.9	66	8.4	10	----	54.3	5.6	8	-2.4
KY-02-01-VILD-03	102	1	52.1	60.7	66	8.6	10	----	55.0	5.7	8	-2.3
KY-02-01-VILD-04	103	1	52.8	61.7	66	8.9	10	----	55.5	6.2	8	-1.8
KY-02-01-VILD-05	104	1	53.3	62.5	66	9.2	10	----	56.0	6.5	8	-1.5
KY-02-01-VILD-06	105	1	53.9	63.5	66	9.6	10	----	56.6	6.9	8	-1.1
KY-02-02-ROOD-01	199	1	50.9	59.5	66	8.6	10	----	53.6	5.9	8	-2.1
KY-02-01-LOCD-04	43	1	55.5	59.4	66	3.9	10	----	53.7	5.7	8	-2.3
KY-02-02-ROOD-03	202	1	51.8	61.2	66	9.4	10	----	54.6	6.6	8	-1.4
KY-02-02-ROOD-04	203	1	52.9	62.8	66	9.9	10	----	55.9	6.9	8	-1.1
KY-02-02-ROOD-02	201	1	51.1	60.4	66	9.3	10	----	53.9	6.5	8	-1.5
KY-02-01-ROOD-04	76	1	52.6	63.1	66	10.5	10	Sub'l Inc	55.8	7.3	8	-0.7
KY-02-01-ROOD-03	75	1	51.9	62.4	66	10.5	10	Sub'l Inc	55.1	7.3	8	-0.7
KY-02-01-ROOD-01	73	1	50.2	59.2	66	9.0	10	----	53.1	6.1	8	-1.9
KY-02-01-ROOD-02	74	1	0.0	60.1	66	60.1	10	----	53.3	6.8	8	-1.2
KY-02-01-LOCD-03	42	1	53.2	59.9	66	6.7	10	----	53.1	6.8	8	-1.2

KY-02-01-CAMC-03	11	1	50.7	60.8	66	10.1	10	Sub'l Inc	53.8	7.0	8	-1.0
KY-02-01-CAMC-02	10	1	50.5	60.8	66	10.3	10	Sub'l Inc	53.7	7.1	8	-0.9
KY-02-01-LOCD-02	41	1	50.9	59.4	66	8.5	10	----	52.7	6.7	8	-1.3
KY-02-02-CAMD-01	118	1	50.5	61.0	66	10.5	10	Sub'l Inc	53.7	7.3	8	-0.7
KY-02-01-CAMC-01	9	1	51.1	62.4	66	11.3	10	Sub'l Inc	54.5	7.9	8	-0.1
KY-02-02-CAMD-02	119	1	52.0	63.7	66	11.7	10	Sub'l Inc	55.6	8.1	8	0.1
KY-02-01-LOCD-01	40	1	50.3	59.3	66	9.0	10	----	52.5	6.8	8	-1.2
KY-02-01-CAMD-01	12	1	49.9	60.3	66	10.4	10	Sub'l Inc	53.1	7.2	8	-0.8
KY-02-01-CAMD-02	13	1	50.6	62.0	66	11.4	10	Sub'l Inc	54.2	7.8	8	-0.2
KY-02-01-CAMD-03	14	1	51.3	63.5	66	12.2	10	Sub'l Inc	55.7	7.8	8	-0.2
KY-02-02-SPRWD-01	214	1	49.5	59.3	66	9.8	10	----	52.4	6.9	8	-1.1
KY-02-02-SPRWD-02	215	1	49.9	60.4	66	10.5	10	Sub'l Inc	53.0	7.4	8	-0.6
KY-02-02-SPRWD-03	216	1	50.3	61.3	66	11.0	10	Sub'l Inc	53.6	7.7	8	-0.3
KY-02-02-SPRWD-04	217	1	51.0	63.0	66	12.0	10	Sub'l Inc	55.0	8.0	8	0.0
KY-02-01-SPRWD-01	96	1	49.6	59.4	66	9.8	10	----	52.4	7.0	8	-1.0
KY-02-01-JOHD-09	39	1	49.8	60.4	66	10.6	10	Sub'l Inc	53.0	7.4	8	-0.6
KY-02-01-SPRWD-02	97	1	50.8	61.9	66	11.1	10	Sub'l Inc	54.1	7.8	8	-0.2
KY-02-01-SPRWD-03	98	1	51.5	64.0	66	12.5	10	Sub'l Inc	55.5	8.5	8	0.5
KY-02-02-DOND-01	125	1	49.7	59.3	66	9.6	10	----	52.3	7.0	8	-1.0
KY-02-01-RETR-01*	59	1	59.3	60.2	66	0.9	10	----	52.9	7.3	8	-0.7
KY-02-02-DOND-02	126	1	50.8	61.6	66	10.8	10	Sub'l Inc	53.9	7.7	8	-0.3
KY-02-01-DOND-01	20	1	53.9	58.9	66	5.0	10	----	52.2	6.7	8	-1.3
KY-02-01-JOHD-07	36	1	50.2	59.8	66	9.6	10	----	52.8	7.0	8	-1.0
KY-02-01-JOHD-06	35	1	50.3	58.8	66	8.5	10	----	52.2	6.6	8	-1.4
KY-02-01-JOHD-05	34	1	50.2	58.6	66	8.4	10	----	52.3	6.3	8	-1.7
KY-02-01-JOHD-04	33	1	39.3	58.2	66	18.9	10	Sub'l Inc	52.1	6.1	8	-1.9
KY-02-01-JOHD-03	32	1	50.3	58.4	66	8.1	10	----	52.3	6.1	8	-1.9
KY-02-01-JOHD-02	31	1	50.3	58.3	66	8.0	10	----	52.5	5.8	8	-2.2
KY-02-01-JOHD-01	30	2	50.6	58.1	66	7.5	10	----	52.5	5.6	8	-2.4
KY-02-02-JAMD-09	147	1	50.4	57.3	66	6.9	10	----	52.1	5.2	8	-2.8
KY-02-02-JAMD-08	146	1	51.9	59.2	66	7.3	10	----	53.4	5.8	8	-2.2
KY-02-02-JAMD-07	145	1	52.6	60.6	66	8.0	10	----	54.0	6.6	8	-1.4
KY-02-01-JAMD-01	26	1	52.4	57.2	66	4.8	10	----	52.6	4.6	8	-3.4
KY-02-02-BARR-01	113	1	51.1	57.2	66	6.1	10	----	53.1	4.1	8	-3.9
KY-02-01-JAMD-02	28	1	50.8	58.1	66	7.3	10	----	53.3	4.8	8	-3.2
KY-02-01-JAMD-03	29	1	50.7	59.2	66	8.5	10	----	54.0	5.2	8	-2.8
KY-02-02-BARR-02	114	1	51.7	58.2	66	6.5	10	----	53.8	4.4	8	-3.6
KY-02-01-SPRR-03	94	1	51.6	57.8	66	6.2	10	----	54.2	3.6	8	-4.4
KY-02-01-BARR-01	6	1	51.1	57.2	66	6.1	10	----	53.8	3.4	8	-4.6
KY-02-01-SPRR-02	92	1	51.3	57.4	66	6.1	10	----	54.0	3.4	8	-4.6
KY-02-01-SPRR-01	90	1	51.5	57.8	66	6.3	10	----	54.4	3.4	8	-4.6

KY-02-02-SPRD-01	205	1	51.5	58.0	66	6.5	10	----	54.7	3.3	8	-4.7
KY-02-02-WATL-02	231	3	51.4	58.6	66	7.2	10	----	57.7	0.9	8	-7.1
KY-02-02-WATL-01	230	3	51.4	58.5	66	7.1	10	----	57.5	1.0	8	-7.0
KY-02-01-SHEP-01	78	1	51.0	57.9	66	6.9	10	----	56.6	1.3	8	-6.7
KY-02-01-SHEP-02	79	2	51.0	57.9	66	6.9	10	----	56.5	1.4	8	-6.6
KY-02-01-SHEP-03	80	2	51.0	57.8	66	6.8	10	----	56.3	1.5	8	-6.5
KY-02-01-SHEP-04	81	2	51.1	57.8	66	6.7	10	----	56.1	1.7	8	-6.3
KY-02-01-SHEP-05	83	1	51.0	57.7	66	6.7	10	----	55.9	1.8	8	-6.2
KY-02-01-SPRD-02	85	1	51.2	58.2	66	7.0	10	----	56.0	2.2	8	-5.8
KY-02-01-SPRD-01	84	1	50.8	57.5	66	6.7	10	----	55.3	2.2	8	-5.8
KY-02-01-SPRD-03	86	1	51.7	58.9	66	7.2	10	----	56.4	2.5	8	-5.5
KY-02-01-SPRD-04	87	1	52.4	59.7	66	7.3	10	----	56.5	3.2	8	-4.8
KY-02-01-SPRD-05	88	1	53.0	60.3	66	7.3	10	----	56.6	3.7	8	-4.3
KY-02-02-WILD-07	240	1	53.0	60.6	66	7.6	10	----	57.6	3.0	8	-5.0
KY-02-01-WILD-05	112	1	51.8	59.1	66	7.3	10	----	57.2	1.9	8	-6.1
KY-02-01-WILD-04	111	1	51.9	59.4	66	7.5	10	----	57.7	1.7	8	-6.3
KY-02-01-WILD-03	110	1	51.8	59.2	66	7.4	10	----	57.8	1.4	8	-6.6
KY-02-01-WILD-02	109	1	52.2	59.8	66	7.6	10	----	58.5	1.3	8	-6.7
KY-02-01-WILD-01	108	1	53.0	60.9	66	7.9	10	----	59.9	1.0	8	-7.0
KY-02-02-WATL-03	232	1	55.3	62.7	66	7.4	10	----	62.2	0.5	8	-7.5
KY-02-02-VILD-08	229	1	56.8	69.3	66	12.5	10	Both	58.8	10.5	8	2.5
KY-02-01-NELS-03	47	1	65.9	67.5	66	1.6	10	Snd Lvl	59.2	8.3	8	0.3
KY-02-01-NELS-02	46	1	64.9	65.0	66	0.1	10	----	57.6	7.4	8	-0.6
KY-02-01-NELS-01	45	1	56.6	64.4	66	7.8	10	----	57.4	7.0	8	-1.0
KY-02-02-ROOD-05	204	1	53.8	65.0	66	11.2	10	Sub'l Inc	57.4	7.6	8	-0.4
KY-02-01-ROOD-05	77	1	53.6	65.5	66	11.9	10	Sub'l Inc	57.8	7.7	8	-0.3
KY-02-02-CAMC-02	116	1	52.4	63.0	66	10.6	10	Sub'l Inc	55.5	7.5	8	-0.5
KY-02-02-CAMC-01	115	1	52.9	63.6	66	10.7	10	Sub'l Inc	56.4	7.2	8	-0.8
KY-02-02-CAMD-03	120	1	52.8	64.1	66	11.3	10	Sub'l Inc	56.9	7.2	8	-0.8
KY-02-01-CAMD-04	15	1	52.0	65.0	66	13.0	10	Sub'l Inc	56.3	8.7	8	0.7
KY-02-02-SPRWD-05	218	1	51.8	64.9	66	13.1	10	Sub'l Inc	56.3	8.6	8	0.6
KY-02-01-SPRWD-04	99	1	52.3	65.5	66	13.2	10	Sub'l Inc	56.6	8.9	8	0.9
KY-02-02-DOND-04	129	1	52.4	65.4	66	13.0	10	Sub'l Inc	56.5	8.9	8	0.9
KY-02-02-DOND-03	127	1	51.8	63.6	66	11.8	10	Sub'l Inc	55.5	8.1	8	0.1
KY-02-02-JOHD-09	159	1	0.0	61.8	66	61.8	10	----	54.5	7.3	8	-0.7
KY-02-02-JOHD-09	158	1	51.1	61.7	66	10.6	10	Sub'l Inc	54.2	7.5	8	-0.5
KY-02-02-JOHD-08	157	1	51.3	62.3	66	11.0	10	Sub'l Inc	54.8	7.5	8	-0.5
KY-02-02-JOHD-07	156	1	52.1	61.3	66	9.2	10	----	54.1	7.2	8	-0.8
KY-02-02-JOHD-06	155	2	51.7	61.7	66	10.0	10	Sub'l Inc	54.4	7.3	8	-0.7
KY-02-02-JOHD-05	153	1	52.4	62.1	66	9.7	10	----	54.9	7.2	8	-0.8
KY-02-02-JOHD-03	150	1	53.0	61.9	66	8.9	10	----	54.9	7.0	8	-1.0

KY-02-02-JOHD-02	149	1	53.2	61.7	66	8.5	10	----	54.7	7.0	8	-1.0
KY-02-02-JOHD-01	148	1	52.9	61.5	66	8.6	10	----	54.4	7.1	8	-0.9
KY-02-02-JAMD-06	144	1	53.9	60.3	66	6.4	10	----	54.5	5.8	8	-2.2
KY-02-02-JAMD-05	143	1	54.3	57.0	66	2.7	10	----	53.8	3.2	8	-4.8
KY-02-02-JAMD-04	142	1	54.7	55.4	66	0.7	10	----	50.2	5.2	8	-2.8
KY-02-02-JAMD-03	140	1	54.9	54.5	66	-0.4	10	----	48.3	6.2	8	-1.8
KY-02-02-JAMD-02	137	1	54.2	60.1	66	5.9	10	----	55.5	4.6	8	-3.4
KY-02-02-JAMD-01	136	1	54.3	59.7	66	5.4	10	----	56.1	3.6	8	-4.4
KY-02-01-BARR-03	8	1	53.8	59.8	66	6.0	10	----	55.9	3.9	8	-4.1
KY-02-01-BARR-02	7	1	53.1	59.3	66	6.2	10	----	55.4	3.9	8	-4.1
KY-02-02-SPRR-05	212	1	53.4	59.6	66	6.2	10	----	55.5	4.1	8	-3.9
KY-02-02-SPRR-04	209	1	53.4	59.7	66	6.3	10	----	55.2	4.5	8	-3.5
KY-02-02-SPRR-03	208	1	53.3	59.8	66	6.5	10	----	55.3	4.5	8	-3.5
KY-02-02-SPRR-02	207	1	53.6	60.2	66	6.6	10	----	55.2	5.0	8	-3.0
KY-02-02-SPRR-01	206	1	53.3	60.1	66	6.8	10	----	55.4	4.7	8	-3.3
KY-02-01-SPRD-06	89	1	53.9	61.4	66	7.5	10	----	56.4	5.0	8	-3.0
KY-02-02-WILD-06	239	1	53.8	61.7	66	7.9	10	----	58.3	3.4	8	-4.6
KY-02-02-WILD-05	238	1	54.2	62.4	66	8.2	10	----	59.1	3.3	8	-4.7
KY-02-02-WILD-04	236	1	53.9	62.5	66	8.6	10	----	60.2	2.3	8	-5.7
KY-02-02-WILD-03	235	1	54.0	62.8	66	8.8	10	----	61.0	1.8	8	-6.2
KY-02-02-WILD-02	234	1	54.5	64.0	66	9.5	10	----	62.5	1.5	8	-6.5
KY-02-02-WILD-01	233	1	55.9	65.4	66	9.5	10	----	64.9	0.5	8	-7.5

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	137	0.5	5.5	10.5
All Impacted	35	6.1	7.8	10.5
All that meet NR Goal	11	8.0	8.7	10.5

HMB Professional Engineers 27 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_TollAll_Sunset Lane Barrier
BARRIER DESIGN: W1_TollAll_Sunset Lane

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Goal	Calc-Goal	Barrier Reviewed	Important Segments Name	No.	Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-02-02-VILD-01	219	54.1	5.2	8	-2.8	Barrier3	point314	314	0.0	36.3
						Barrier3	point313	313	0.0	36.2
						Barrier3	point317	317	0.0	35.9
						Barrier3	point316	316	0.0	35.9
						Barrier3	point318	318	0.0	35.9
						Barrier3	point315	315	0.0	35.7
						Barrier3	point322	322	0.0	35.6
						Barrier3	point320	320	0.0	35.4
						Barrier3	point319	319	0.0	35.4
						Barrier3	point321	321	0.0	35.1
KY-02-02-VILD-02	220	54.7	5.3	8	-2.7	Barrier3	point315	315	0.0	37.2
						Barrier3	point317	317	0.0	37.2
						Barrier3	point314	314	0.0	37.0
						Barrier3	point313	313	0.0	36.9
						Barrier3	point316	316	0.0	36.9
						Barrier3	point319	319	0.0	36.7
						Barrier3	point318	318	0.0	36.6
						Barrier3	point320	320	0.0	36.4
						Barrier3	point321	321	0.0	36.2
						Barrier3	point323	323	0.0	36.1
KY-02-02-VILD-03	221	55.5	5.6	8	-2.4	Barrier3	point313	313	0.0	38.3

						Barrier3	point314	314	0.0	38.2
						Barrier3	point317	317	0.0	38.0
						Barrier3	point316	316	0.0	37.9
						Barrier3	point318	318	0.0	37.4
						Barrier3	point319	319	0.0	37.2
						Barrier3	point322	322	0.0	37.1
						Barrier3	point320	320	0.0	37.0
						Barrier3	point321	321	0.0	37.0
						Barrier3	point323	323	0.0	36.7
KY-02-02-VILD-04	222	56.3	6.0	8	-2.0	Barrier3	point313	313	0.0	39.4
						Barrier3	point314	314	0.0	39.0
						Barrier3	point316	316	0.0	38.7
						Barrier3	point315	315	0.0	38.5
						Barrier3	point317	317	0.0	38.5
						Barrier3	point318	318	0.0	38.1
						Barrier3	point322	322	0.0	38.1
						Barrier3	point320	320	0.0	38.0
						Barrier3	point319	319	0.0	37.7
						Barrier3	point321	321	0.0	37.6
KY-02-02-VILD-05	225	57.0	6.4	8	-1.6	Barrier3	point313	313	0.0	39.9
						Barrier3	point315	315	0.0	39.8
						Barrier3	point314	314	0.0	39.5
						Barrier3	point317	317	0.0	39.5
						Barrier3	point316	316	0.0	39.1
						Barrier3	point319	319	0.0	38.9
						Barrier3	point322	322	0.0	38.8
						Barrier3	point275	275	16.0	38.8
						Barrier3	point276	276	16.0	38.7
						Barrier3	point277	277	16.0	38.7
KY-02-02-VILD-06	227	57.6	7.1	8	-0.9	Barrier3	point313	313	0.0	40.8
						Barrier3	point315	315	0.0	40.2
						Barrier3	point316	316	0.0	40.1
						Barrier3	point314	314	0.0	40.1
						Barrier3	point317	317	0.0	40.0
						Barrier3	point275	275	16.0	40.0
						Barrier3	point276	276	16.0	40.0

						Barrier3	point277	277	16.0	39.9
						Barrier3	point278	278	16.0	39.8
						Barrier3	point274	274	16.0	39.7
KY-02-02-VILD-07	228	58.5	8.7	8	0.7	Barrier3	point277	277	16.0	42.4
						Barrier3	point82	82	16.0	42.4
						Barrier3	point278	278	16.0	42.3
						Barrier3	point276	276	16.0	42.3
						Barrier3	point275	275	16.0	42.3
						Barrier3	point279	279	16.0	42.2
						Barrier3	point274	274	16.0	42.2
						Barrier3	point283	283	16.0	42.1
						Barrier3	point282	282	16.0	42.0
						Barrier3	point281	281	16.0	41.8
KY-02-01-VILD-01	100	53.6	5.3	8	-2.7	Barrier3	point315	315	0.0	34.9
						Barrier3	point313	313	0.0	34.9
						Barrier3	point317	317	0.0	34.7
						Barrier3	point316	316	0.0	34.3
						Barrier3	point319	319	0.0	34.2
						Barrier3	point318	318	0.0	34.1
						Barrier3	point314	314	0.0	34.1
						Barrier3	point321	321	0.0	33.9
						Barrier3	point252	252	16.0	33.9
						Barrier3	point322	322	0.0	33.9
KY-02-01-RICL-01	67	54.3	6.0	8	-2.0	Barrier3	point252	252	16.0	36.1
						Barrier3	point253	253	16.0	36.1
						Barrier3	point251	251	16.0	35.9
						Barrier3	point320	320	0.0	35.0
						Barrier3	point317	317	0.0	35.0
						Barrier3	point316	316	0.0	34.9
						Barrier3	point318	318	0.0	34.9
						Barrier3	point322	322	0.0	34.7
						Barrier3	point321	321	0.0	34.6
						Barrier3	point319	319	0.0	34.5
KY-02-01-VILD-02	101	54.3	5.6	8	-2.4	Barrier3	point313	313	0.0	35.7
						Barrier3	point314	314	0.0	35.7
						Barrier3	point317	317	0.0	35.6

						Barrier3	point315	315	0.0	35.4
						Barrier3	point316	316	0.0	35.2
						Barrier3	point322	322	0.0	35.1
						Barrier3	point252	252	16.0	35.1
						Barrier3	point253	253	16.0	35.0
						Barrier3	point251	251	16.0	35.0
						Barrier3	point318	318	0.0	34.9
KY-02-01-VILD-03	102	55.0	5.7	8	-2.3	Barrier3	point252	252	16.0	36.1
						Barrier3	point253	253	16.0	36.1
						Barrier3	point314	314	0.0	36.0
						Barrier3	point316	316	0.0	36.0
						Barrier3	point315	315	0.0	35.9
						Barrier3	point251	251	16.0	35.9
						Barrier3	point318	318	0.0	35.6
						Barrier3	point322	322	0.0	35.6
						Barrier3	point321	321	0.0	35.4
						Barrier3	point319	319	0.0	35.4
KY-02-01-VILD-04	103	55.5	6.2	8	-1.8	Barrier3	point253	253	16.0	37.3
						Barrier3	point252	252	16.0	37.1
						Barrier3	point251	251	16.0	36.8
						Barrier3	point317	317	0.0	36.7
						Barrier3	point319	319	0.0	36.4
						Barrier3	point322	322	0.0	36.3
						Barrier3	point318	318	0.0	36.2
						Barrier3	point320	320	0.0	36.1
						Barrier3	point262	262	20.0	35.9
						Barrier3	point263	263	20.0	35.9
KY-02-01-VILD-05	104	56.0	6.5	8	-1.5	Barrier3	point253	253	16.0	37.9
						Barrier3	point252	252	16.0	37.7
						Barrier3	point273	273	16.0	37.1
						Barrier3	point264	264	20.0	37.0
						Barrier3	point251	251	16.0	37.0
						Barrier3	point265	265	20.0	36.9
						Barrier3	point263	263	20.0	36.9
						Barrier3	point262	262	20.0	36.8
						Barrier3	point259	259	20.0	36.8

						Barrier3	point260	260	20.0	36.8
KY-02-01-VILD-06	105	56.6	6.9	8	-1.1	Barrier3	point253	253	16.0	38.6
						Barrier3	point273	273	16.0	38.3
						Barrier3	point264	264	20.0	38.2
						Barrier3	point263	263	20.0	38.2
						Barrier3	point265	265	20.0	38.1
						Barrier3	point266	266	20.0	38.0
						Barrier3	point267	267	20.0	37.9
						Barrier3	point274	274	16.0	37.9
						Barrier3	point262	262	20.0	37.8
						Barrier3	point260	260	20.0	37.8
KY-02-02-ROOD-01	199	53.6	5.9	8	-2.1	Barrier3	point252	252	16.0	35.1
						Barrier3	point251	251	16.0	35.0
						Barrier3	point253	253	16.0	34.8
						Barrier3	point317	317	0.0	34.4
						Barrier3	point322	322	0.0	33.9
						Barrier3	point319	319	0.0	33.8
						Barrier3	point321	321	0.0	33.7
						Barrier3	point250	250	20.0	33.7
						Barrier3	point249	249	20.0	33.6
						Barrier3	point318	318	0.0	33.6
KY-02-01-LOCD-04	43	53.7	5.7	8	-2.3	Barrier3	point252	252	16.0	34.8
						Barrier3	point251	251	16.0	34.7
						Barrier3	point253	253	16.0	34.6
						Barrier3	point314	314	0.0	34.5
						Barrier3	point317	317	0.0	34.3
						Barrier3	point316	316	0.0	34.2
						Barrier3	point322	322	0.0	34.2
						Barrier3	point318	318	0.0	34.1
						Barrier3	point315	315	0.0	33.9
						Barrier3	point320	320	0.0	33.8
KY-02-02-ROOD-03	202	54.6	6.6	8	-1.4	Barrier3	point252	252	16.0	37.6
						Barrier3	point251	251	16.0	37.6
						Barrier3	point253	253	16.0	37.4
						Barrier3	point250	250	20.0	36.1
						Barrier3	point249	249	20.0	35.9

						Barrier3	point248	248	20.0	35.7
						Barrier3	point254	254	20.0	35.7
						Barrier3	point255	255	20.0	35.6
						Barrier3	point256	256	20.0	35.5
						Barrier3	point247	247	20.0	35.1
KY-02-02-ROOD-04	203	55.9	6.9	8	-1.1	Barrier3	point252	252	16.0	40.2
						Barrier3	point253	253	16.0	40.2
						Barrier3	point251	251	16.0	40.1
						Barrier3	point254	254	20.0	38.3
						Barrier3	point250	250	20.0	38.2
						Barrier3	point255	255	20.0	38.2
						Barrier3	point256	256	20.0	37.9
						Barrier3	point249	249	20.0	37.9
						Barrier3	point257	257	20.0	37.8
						Barrier3	point248	248	20.0	37.3
KY-02-02-ROOD-02	201	53.9	6.5	8	-1.5	Barrier3	point251	251	16.0	36.2
						Barrier3	point252	252	16.0	36.2
						Barrier3	point253	253	16.0	35.8
						Barrier3	point248	248	20.0	34.8
						Barrier3	point250	250	20.0	34.8
						Barrier3	point249	249	20.0	34.8
						Barrier3	point247	247	20.0	34.6
						Barrier3	point254	254	20.0	34.1
						Barrier3	point232	232	16.0	34.1
						Barrier3	point246	246	20.0	34.1
KY-02-01-ROOD-04	76	55.8	7.3	8	-0.7	Barrier3	point251	251	16.0	41.2
						Barrier3	point252	252	16.0	40.9
						Barrier3	point253	253	16.0	40.3
						Barrier3	point248	248	20.0	39.9
						Barrier3	point247	247	20.0	39.8
						Barrier3	point249	249	20.0	39.8
						Barrier3	point250	250	20.0	39.7
						Barrier3	point246	246	20.0	39.3
						Barrier3	point245	245	20.0	39.1
						Barrier3	point244	244	20.0	38.9
KY-02-01-ROOD-03	75	55.1	7.3	8	-0.7	Barrier3	point251	251	16.0	38.5

						Barrier3	point252	252	16.0	38.1
						Barrier3	point246	246	20.0	38.1
						Barrier3	point239	239	20.0	37.9
						Barrier3	point240	240	20.0	37.8
						Barrier3	point247	247	20.0	37.8
						Barrier3	point248	248	20.0	37.8
						Barrier3	point241	241	20.0	37.8
						Barrier3	point243	243	20.0	37.8
						Barrier3	point242	242	20.0	37.8
KY-02-01-ROOD-01	73	53.1	6.1	8	-1.9	Barrier3	point251	251	16.0	34.0
						Barrier3	point252	252	16.0	33.9
						Barrier3	point231	231	16.0	33.6
						Barrier3	point253	253	16.0	33.5
						Barrier3	point230	230	16.0	33.4
						Barrier3	point229	229	16.0	33.1
						Barrier3	point246	246	20.0	32.9
						Barrier3	point238	238	20.0	32.9
						Barrier3	point228	228	16.0	32.9
						Barrier3	point248	248	20.0	32.9
KY-02-01-ROOD-02	74	53.3	6.8	8	-1.2	Barrier3	point232	232	16.0	35.2
						Barrier3	point251	251	16.0	34.9
						Barrier3	point231	231	16.0	34.9
						Barrier3	point252	252	16.0	34.8
						Barrier3	point253	253	16.0	34.7
						Barrier3	point230	230	16.0	34.6
						Barrier3	point229	229	16.0	34.3
						Barrier3	point238	238	20.0	34.2
						Barrier3	point237	237	20.0	34.2
						Barrier3	point236	236	20.0	34.1
KY-02-01-LOCD-03	42	53.1	6.8	8	-1.2	Barrier3	point232	232	16.0	35.1
						Barrier3	point231	231	16.0	34.8
						Barrier3	point230	230	16.0	34.6
						Barrier3	point229	229	16.0	34.4
						Barrier3	point251	251	16.0	34.2
						Barrier3	point228	228	16.0	34.1
						Barrier3	point227	227	16.0	34.1

						Barrier3	point226	226	16.0	34.0
						Barrier3	point252	252	16.0	34.0
						Barrier3	point235	235	20.0	33.8
KY-02-01-CAMC-03	11	53.8	7.0	8	-1.0	Barrier3	point232	232	16.0	36.3
						Barrier3	point231	231	16.0	36.0
						Barrier3	point230	230	16.0	35.8
						Barrier3	point229	229	16.0	35.5
						Barrier3	point236	236	20.0	35.2
						Barrier3	point227	227	16.0	35.2
						Barrier3	point237	237	20.0	35.1
						Barrier3	point238	238	20.0	35.1
						Barrier3	point235	235	20.0	35.1
						Barrier3	point226	226	16.0	35.0
KY-02-01-CAMC-02	10	53.7	7.1	8	-0.9	Barrier3	point232	232	16.0	36.6
						Barrier3	point231	231	16.0	36.4
						Barrier3	point230	230	16.0	36.2
						Barrier3	point229	229	16.0	36.0
						Barrier3	point228	228	16.0	35.7
						Barrier3	point227	227	16.0	35.7
						Barrier3	point226	226	16.0	35.6
						Barrier3	point225	225	16.0	35.4
						Barrier3	point233	233	20.0	35.3
						Barrier3	point234	234	20.0	35.3
KY-02-01-LOCD-02	41	52.7	6.7	8	-1.3	Barrier3	point232	232	16.0	34.5
						Barrier3	point231	231	16.0	34.3
						Barrier3	point230	230	16.0	34.2
						Barrier3	point229	229	16.0	34.0
						Barrier3	point227	227	16.0	33.9
						Barrier3	point226	226	16.0	33.9
						Barrier3	point228	228	16.0	33.9
						Barrier3	point225	225	16.0	33.8
						Barrier3	point224	224	16.0	33.7
						Barrier3	point223	223	16.0	33.2
KY-02-02-CAMD-01	118	53.7	7.3	8	-0.7	Barrier3	point232	232	16.0	37.0
						Barrier3	point231	231	16.0	36.8
						Barrier3	point230	230	16.0	36.6

						Barrier3	point229	229	16.0	36.4
						Barrier3	point227	227	16.0	36.2
						Barrier3	point228	228	16.0	36.2
						Barrier3	point226	226	16.0	36.2
						Barrier3	point225	225	16.0	36.1
						Barrier3	point224	224	16.0	35.8
						Barrier3	point233	233	20.0	35.6
KY-02-01-CAMC-01	9	54.5	7.9	8	-0.1	Barrier3	point232	232	16.0	39.0
						Barrier3	point231	231	16.0	38.8
						Barrier3	point230	230	16.0	38.6
						Barrier3	point229	229	16.0	38.5
						Barrier3	point227	227	16.0	38.2
						Barrier3	point228	228	16.0	38.2
						Barrier3	point226	226	16.0	38.1
						Barrier3	point225	225	16.0	37.9
						Barrier3	point233	233	20.0	37.5
						Barrier3	point224	224	16.0	37.5
KY-02-02-CAMD-02	119	55.6	8.1	8	0.1	Barrier3	point232	232	16.0	41.2
						Barrier3	point231	231	16.0	40.9
						Barrier3	point230	230	16.0	40.5
						Barrier3	point229	229	16.0	40.1
						Barrier3	point234	234	20.0	40.0
						Barrier3	point235	235	20.0	40.0
						Barrier3	point233	233	20.0	40.0
						Barrier3	point236	236	20.0	39.9
						Barrier3	point228	228	16.0	39.7
						Barrier3	point237	237	20.0	39.5
KY-02-01-LOCD-01	40	52.5	6.8	8	-1.2	Barrier3	point232	232	16.0	34.2
						Barrier3	point224	224	16.0	34.2
						Barrier3	point225	225	16.0	34.1
						Barrier3	point231	231	16.0	34.1
						Barrier3	point227	227	16.0	34.1
						Barrier3	point230	230	16.0	34.1
						Barrier3	point229	229	16.0	34.1
						Barrier3	point226	226	16.0	34.1
						Barrier3	point223	223	16.0	34.0

						Barrier3	point222	222	16.0	34.0
KY-02-01-CAMD-01	12	53.1	7.2	8	-0.8	Barrier3	point224	224	16.0	35.7
						Barrier3	point225	225	16.0	35.7
						Barrier3	point226	226	16.0	35.6
						Barrier3	point222	222	16.0	35.6
						Barrier3	point223	223	16.0	35.6
						Barrier3	point227	227	16.0	35.5
						Barrier3	point232	232	16.0	35.5
						Barrier3	point231	231	16.0	35.5
						Barrier3	point229	229	16.0	35.5
						Barrier3	point230	230	16.0	35.5
KY-02-01-CAMD-02	13	54.2	7.8	8	-0.2	Barrier3	point224	224	16.0	37.9
						Barrier3	point225	225	16.0	37.8
						Barrier3	point222	222	16.0	37.8
						Barrier3	point223	223	16.0	37.8
						Barrier3	point226	226	16.0	37.7
						Barrier3	point227	227	16.0	37.6
						Barrier3	point221	221	16.0	37.5
						Barrier3	point229	229	16.0	37.4
						Barrier3	point220	220	16.0	37.4
						Barrier3	point228	228	16.0	37.4
KY-02-01-CAMD-03	14	55.7	7.8	8	-0.2	Barrier3	point252	252	16.0	42.5
						Barrier3	point224	224	16.0	39.7
						Barrier3	point225	225	16.0	39.7
						Barrier3	point223	223	16.0	39.6
						Barrier3	point222	222	16.0	39.6
						Barrier3	point226	226	16.0	39.4
						Barrier3	point229	229	16.0	39.2
						Barrier3	point221	221	16.0	39.2
						Barrier3	point220	220	16.0	39.2
						Barrier3	point228	228	16.0	39.1
KY-02-02-SPRWD-01	214	52.4	6.9	8	-1.1	Barrier3	point221	221	16.0	34.5
						Barrier3	point222	222	16.0	34.5
						Barrier3	point223	223	16.0	34.4
						Barrier3	point224	224	16.0	34.4
						Barrier3	point225	225	16.0	34.3

						Barrier3	point220	220	16.0	34.2
						Barrier3	point214	214	16.0	34.2
						Barrier3	point218	218	16.0	34.2
						Barrier3	point226	226	16.0	34.2
						Barrier3	point215	215	16.0	34.2
KY-02-02-SPRWD-02	215	53.0	7.4	8	-0.6	Barrier3	point222	222	16.0	35.9
						Barrier3	point221	221	16.0	35.9
						Barrier3	point224	224	16.0	35.8
						Barrier3	point223	223	16.0	35.8
						Barrier3	point225	225	16.0	35.7
						Barrier3	point220	220	16.0	35.6
						Barrier3	point218	218	16.0	35.6
						Barrier3	point226	226	16.0	35.5
						Barrier3	point219	219	16.0	35.5
						Barrier3	point216	216	16.0	35.5
KY-02-02-SPRWD-03	216	53.6	7.7	8	-0.3	Barrier3	point222	222	16.0	37.0
						Barrier3	point221	221	16.0	37.0
						Barrier3	point223	223	16.0	36.8
						Barrier3	point224	224	16.0	36.8
						Barrier3	point225	225	16.0	36.7
						Barrier3	point220	220	16.0	36.6
						Barrier3	point218	218	16.0	36.6
						Barrier3	point216	216	16.0	36.6
						Barrier3	point219	219	16.0	36.5
						Barrier3	point226	226	16.0	36.5
KY-02-02-SPRWD-04	217	55.0	8.0	8	-0.0	Barrier3	point221	221	16.0	39.0
						Barrier3	point222	222	16.0	39.0
						Barrier3	point223	223	16.0	38.8
						Barrier3	point224	224	16.0	38.8
						Barrier3	point220	220	16.0	38.7
						Barrier3	point218	218	16.0	38.6
						Barrier3	point219	219	16.0	38.6
						Barrier3	point251	251	16.0	38.5
						Barrier3	point216	216	16.0	38.5
						Barrier3	point226	226	16.0	38.4
KY-02-01-SPRWD-01	96	52.4	7.0	8	-1.0	Barrier3	point213	213	16.0	34.6

						Barrier3	point212	212	16.0	34.6
						Barrier3	point270	270	20.0	34.6
						Barrier3	point219	219	16.0	34.5
						Barrier3	point214	214	16.0	34.5
						Barrier3	point211	211	16.0	34.5
						Barrier3	point210	210	16.0	34.5
						Barrier3	point220	220	16.0	34.4
						Barrier3	point216	216	16.0	34.4
						Barrier3	point221	221	16.0	34.4
KY-02-01-JOHD-09	39	53.0	7.4	8	-0.6	Barrier3	point213	213	16.0	35.7
						Barrier3	point214	214	16.0	35.7
						Barrier3	point219	219	16.0	35.6
						Barrier3	point220	220	16.0	35.6
						Barrier3	point221	221	16.0	35.6
						Barrier3	point216	216	16.0	35.6
						Barrier3	point212	212	16.0	35.5
						Barrier3	point217	217	16.0	35.5
						Barrier3	point222	222	16.0	35.5
						Barrier3	point218	218	16.0	35.4
KY-02-01-SPRWD-02	97	54.1	7.8	8	-0.2	Barrier3	point213	213	16.0	37.6
						Barrier3	point212	212	16.0	37.5
						Barrier3	point210	210	16.0	37.4
						Barrier3	point211	211	16.0	37.4
						Barrier3	point219	219	16.0	37.3
						Barrier3	point218	218	16.0	37.3
						Barrier3	point214	214	16.0	37.3
						Barrier3	point216	216	16.0	37.3
						Barrier3	point215	215	16.0	37.3
						Barrier3	point217	217	16.0	37.2
KY-02-01-SPRWD-03	98	55.5	8.5	8	0.5	Barrier3	point213	213	16.0	40.0
						Barrier3	point212	212	16.0	40.0
						Barrier3	point210	210	16.0	39.9
						Barrier3	point214	214	16.0	39.8
						Barrier3	point211	211	16.0	39.8
						Barrier3	point216	216	16.0	39.7
						Barrier3	point209	209	16.0	39.7

						Barrier3	point218	218	16.0	39.6
						Barrier3	point217	217	16.0	39.6
						Barrier3	point215	215	16.0	39.5
KY-02-02-DOND-01	125	52.3	7.0	8	-1.0	Barrier3	point252	252	16.0	35.0
						Barrier3	point212	212	16.0	34.4
						Barrier3	point213	213	16.0	34.3
						Barrier3	point211	211	16.0	34.3
						Barrier3	point210	210	16.0	34.3
						Barrier3	point218	218	16.0	34.2
						Barrier3	point219	219	16.0	34.1
						Barrier3	point206	206	16.0	34.1
						Barrier3	point209	209	16.0	34.1
						Barrier3	point215	215	16.0	34.0
KY-02-01-RETR-01*	59	52.9	7.3	8	-0.7	Barrier3	point247	247	20.0	36.1
						Barrier3	point212	212	16.0	35.4
						Barrier3	point210	210	16.0	35.4
						Barrier3	point211	211	16.0	35.3
						Barrier3	point206	206	16.0	35.2
						Barrier3	point213	213	16.0	35.2
						Barrier3	point205	205	16.0	35.2
						Barrier3	point209	209	16.0	35.2
						Barrier3	point204	204	16.0	35.2
						Barrier3	point207	207	16.0	35.2
KY-02-02-DOND-02	126	53.9	7.7	8	-0.3	Barrier3	point205	205	16.0	37.1
						Barrier3	point206	206	16.0	37.1
						Barrier3	point204	204	16.0	37.1
						Barrier3	point210	210	16.0	37.1
						Barrier3	point207	207	16.0	37.0
						Barrier3	point208	208	16.0	37.0
						Barrier3	point209	209	16.0	37.0
						Barrier3	point203	203	16.0	37.0
						Barrier3	point212	212	16.0	36.9
						Barrier3	point211	211	16.0	36.9
KY-02-01-DOND-01	20	52.2	6.7	8	-1.3	Barrier3	point200	200	16.0	34.0
						Barrier3	point198	198	16.0	33.9
						Barrier3	point199	199	16.0	33.9

						Barrier3	point201	201	16.0	33.8
						Barrier3	point202	202	16.0	33.7
						Barrier3	point203	203	16.0	33.6
						Barrier3	point219	219	16.0	33.4
						Barrier3	point204	204	16.0	33.4
						Barrier3	point205	205	16.0	33.4
						Barrier3	point240	240	20.0	33.4
KY-02-01-JOHD-07	36	52.8	7.0	8	-1.0	Barrier3	point199	199	16.0	35.2
						Barrier3	point198	198	16.0	35.2
						Barrier3	point200	200	16.0	35.1
						Barrier3	point201	201	16.0	35.1
						Barrier3	point202	202	16.0	34.9
						Barrier3	point203	203	16.0	34.7
						Barrier3	point205	205	16.0	34.6
						Barrier3	point197	197	16.0	34.6
						Barrier3	point216	216	16.0	34.5
						Barrier3	point204	204	16.0	34.5
KY-02-01-JOHD-06	35	52.2	6.6	8	-1.4	Barrier3	point198	198	16.0	33.8
						Barrier3	point199	199	16.0	33.7
						Barrier3	point200	200	16.0	33.7
						Barrier3	point197	197	16.0	33.6
						Barrier3	point190	190	16.0	33.6
						Barrier3	point191	191	16.0	33.5
						Barrier3	point192	192	16.0	33.5
						Barrier3	point188	188	16.0	33.5
						Barrier3	point189	189	16.0	33.5
						Barrier3	point196	196	16.0	33.4
KY-02-01-JOHD-05	34	52.3	6.3	8	-1.7	Barrier3	point188	188	16.0	33.5
						Barrier3	point81	81	16.0	33.5
						Barrier3	point181	181	16.0	33.5
						Barrier3	point184	184	16.0	33.5
						Barrier3	point186	186	16.0	33.5
						Barrier3	point187	187	16.0	33.4
						Barrier3	point185	185	16.0	33.4
						Barrier3	point183	183	16.0	33.4
						Barrier3	point190	190	16.0	33.4

						Barrier3	point180	180	16.0	33.3
KY-02-01-JOHD-04	33	52.1	6.1	8	-1.9	Barrier3	point174	174	16.0	33.6
						Barrier3	point175	175	16.0	33.5
						Barrier3	point172	172	16.0	33.5
						Barrier3	point173	173	16.0	33.5
						Barrier3	point176	176	16.0	33.4
						Barrier3	point177	177	16.0	33.4
						Barrier3	point179	179	16.0	33.4
						Barrier3	point81	81	16.0	33.3
						Barrier3	point181	181	16.0	33.3
						Barrier3	point180	180	16.0	33.3
KY-02-01-JOHD-03	32	52.3	6.1	8	-1.9	Barrier3	point174	174	16.0	34.3
						Barrier3	point175	175	16.0	34.3
						Barrier3	point173	173	16.0	34.3
						Barrier3	point172	172	16.0	34.3
						Barrier3	point171	171	16.0	34.1
						Barrier3	point176	176	16.0	34.1
						Barrier3	point177	177	16.0	33.9
						Barrier3	point178	178	16.0	33.9
						Barrier3	point179	179	16.0	33.8
						Barrier3	point180	180	16.0	33.7
KY-02-01-JOHD-02	31	52.5	5.8	8	-2.2	Barrier3	point173	173	16.0	34.6
						Barrier3	point172	172	16.0	34.6
						Barrier3	point174	174	16.0	34.6
						Barrier3	point175	175	16.0	34.5
						Barrier3	point171	171	16.0	34.5
						Barrier3	point176	176	16.0	34.2
						Barrier3	point177	177	16.0	33.9
						Barrier3	point178	178	16.0	33.9
						Barrier3	point180	180	16.0	33.6
						Barrier3	point81	81	16.0	33.5
KY-02-01-JOHD-01	30	52.5	5.6	8	-2.4	Barrier3	point171	171	16.0	34.7
						Barrier3	point172	172	16.0	34.7
						Barrier3	point174	174	16.0	34.6
						Barrier3	point173	173	16.0	34.6
						Barrier3	point170	170	16.0	34.6

						Barrier3	point175	175	16.0	34.3
						Barrier3	point176	176	16.0	33.9
						Barrier3	point177	177	16.0	33.7
						Barrier3	point178	178	16.0	33.6
						Barrier3	point179	179	16.0	33.5
KY-02-02-JAMD-09	147	52.1	5.2	8	-2.8	Barrier3	point171	171	16.0	33.6
						Barrier3	point170	170	16.0	33.6
						Barrier3	point172	172	16.0	33.5
						Barrier3	point169	169	16.0	33.4
						Barrier3	point173	173	16.0	33.4
						Barrier3	point174	174	16.0	33.2
						Barrier3	point175	175	16.0	33.1
						Barrier3	point191	191	16.0	32.8
						Barrier3	point176	176	16.0	32.6
						Barrier3	point177	177	16.0	32.3
KY-02-02-JAMD-08	146	53.4	5.8	8	-2.2	Barrier3	point170	170	16.0	36.7
						Barrier3	point171	171	16.0	36.7
						Barrier3	point169	169	16.0	36.7
						Barrier3	point172	172	16.0	36.6
						Barrier3	point173	173	16.0	36.3
						Barrier3	point174	174	16.0	35.9
						Barrier3	point175	175	16.0	35.8
						Barrier3	point176	176	16.0	35.2
						Barrier3	point183	183	16.0	35.1
						Barrier3	point168	168	16.0	34.8
KY-02-02-JAMD-07	145	54.0	6.6	8	-1.4	Barrier3	point170	170	16.0	38.6
						Barrier3	point169	169	16.0	38.6
						Barrier3	point171	171	16.0	38.5
						Barrier3	point172	172	16.0	38.3
						Barrier3	point173	173	16.0	38.0
						Barrier3	point174	174	16.0	37.6
						Barrier3	point175	175	16.0	37.3
						Barrier3	point176	176	16.0	36.7
						Barrier3	point168	168	16.0	36.3
						Barrier3	point177	177	16.0	36.2
KY-02-01-JAMD-01	26	52.6	4.6	8	-3.4	Barrier3	point168	168	16.0	33.2

						Barrier3	point170	170	16.0	33.1
						Barrier3	point169	169	16.0	33.1
						Barrier3	point171	171	16.0	33.0
						Barrier3	point172	172	16.0	32.8
						Barrier3	point183	183	16.0	32.7
						Barrier3	point219	219	24.0	32.5
						Barrier3	point173	173	16.0	32.5
						Barrier3	point167	167	16.0	32.3
						Barrier3	point174	174	16.0	32.2
KY-02-02-BARR-01	113	53.1	4.1	8	-3.9	Barrier3	point175	175	16.0	32.7
						Barrier3	point129	129	20.0	32.5
						Barrier3	point166	166	16.0	32.1
						Barrier3	point168	168	16.0	32.0
						Barrier3	point167	167	16.0	31.9
						Barrier3	point152	152	16.0	31.8
						Barrier3	point151	151	16.0	31.8
						Barrier3	point169	169	16.0	31.7
						Barrier3	point149	149	16.0	31.7
						Barrier3	point153	153	16.0	31.7
KY-02-01-JAMD-02	28	53.3	4.8	8	-3.2	Barrier3	point168	168	16.0	33.8
						Barrier3	point169	169	16.0	33.5
						Barrier3	point167	167	16.0	33.4
						Barrier3	point170	170	16.0	33.4
						Barrier3	point171	171	16.0	33.2
						Barrier3	point166	166	16.0	33.1
						Barrier3	point172	172	16.0	32.9
						Barrier3	point152	152	16.0	32.8
						Barrier3	point153	153	16.0	32.7
						Barrier3	point154	154	16.0	32.7
KY-02-01-JAMD-03	29	54.0	5.2	8	-2.8	Barrier3	point166	166	16.0	35.0
						Barrier3	point168	168	16.0	35.0
						Barrier3	point167	167	16.0	35.0
						Barrier3	point153	153	16.0	34.8
						Barrier3	point154	154	16.0	34.8
						Barrier3	point152	152	16.0	34.8
						Barrier3	point155	155	16.0	34.7

						Barrier3	point151	151	16.0	34.6
						Barrier3	point169	169	16.0	34.6
						Barrier3	point156	156	16.0	34.5
KY-02-02-BARR-02	114	53.8	4.4	8	-3.6	Barrier3	point129	129	20.0	33.1
						Barrier3	point152	152	16.0	33.1
						Barrier3	point151	151	16.0	33.1
						Barrier3	point149	149	16.0	33.0
						Barrier3	point153	153	16.0	32.9
						Barrier3	point150	150	16.0	32.9
						Barrier3	point166	166	16.0	32.9
						Barrier3	point154	154	16.0	32.8
						Barrier3	point167	167	16.0	32.6
						Barrier3	point148	148	16.0	32.6
KY-02-01-SPRR-03	94	54.2	3.6	8	-4.4	Barrier3	point129	129	20.0	35.2
						Barrier3	point80	80	0.0	34.3
						Barrier3	point93	93	16.0	34.3
						Barrier3	point130	130	20.0	33.9
						Barrier3	point89	89	0.0	33.9
						Barrier3	point100	100	16.0	33.8
						Barrier3	point87	87	0.0	33.7
						Barrier3	point88	88	0.0	33.7
						Barrier3	point99	99	16.0	33.7
						Barrier3	point96	96	16.0	33.7
KY-02-01-BARR-01	6	53.8	3.4	8	-4.6	Barrier3	point129	129	20.0	34.4
						Barrier3	point80	80	0.0	34.2
						Barrier3	point93	93	16.0	34.0
						Barrier3	point88	88	0.0	33.6
						Barrier3	point86	86	0.0	33.6
						Barrier3	point94	94	16.0	33.5
						Barrier3	point87	87	0.0	33.4
						Barrier3	point89	89	0.0	33.3
						Barrier3	point98	98	16.0	33.2
						Barrier3	point100	100	16.0	33.2
KY-02-01-SPRR-02	92	54.0	3.4	8	-4.6	Barrier3	point80	80	0.0	35.0
						Barrier3	point93	93	16.0	34.9
						Barrier3	point129	129	20.0	34.9

						Barrier3	point86	86	0.0	34.6
						Barrier3	point94	94	16.0	34.5
						Barrier3	point88	88	0.0	34.4
						Barrier3	point87	87	0.0	34.3
						Barrier3	point89	89	0.0	34.1
						Barrier3	point99	99	16.0	34.1
						Barrier3	point98	98	16.0	34.0
KY-02-01-SPRR-01	90	54.4	3.4	8	-4.6	Barrier3	point93	93	16.0	36.3
						Barrier3	point86	86	0.0	36.3
						Barrier3	point80	80	0.0	35.8
						Barrier3	point94	94	16.0	35.7
						Barrier3	point96	96	16.0	35.7
						Barrier3	point87	87	0.0	35.6
						Barrier3	point88	88	0.0	35.3
						Barrier3	point89	89	0.0	35.3
						Barrier3	point99	99	16.0	35.2
						Barrier3	point129	129	20.0	35.2
KY-02-02-SPRD-01	205	54.7	3.3	8	-4.7	Barrier3	point86	86	0.0	37.7
						Barrier3	point93	93	16.0	37.5
						Barrier3	point80	80	0.0	37.1
						Barrier3	point85	85	0.0	37.0
						Barrier3	point94	94	16.0	36.8
						Barrier3	point96	96	16.0	36.7
						Barrier3	point99	99	16.0	36.6
						Barrier3	point89	89	0.0	36.4
						Barrier3	point100	100	16.0	36.4
						Barrier3	point87	87	0.0	36.4
KY-02-02-WATL-02	231	57.7	0.9	8	-7.1	Barrier3	point80	80	0.0	45.6
						Barrier3	point84	84	0.0	43.2
						Barrier3	point87	87	0.0	42.1
						Barrier3	point88	88	0.0	42.0
						Barrier3	point89	89	0.0	41.7
						Barrier3	point85	85	0.0	41.7
						Barrier3	point86	86	0.0	41.6
						Barrier3	point90	90	12.0	41.1
						Barrier2	point30	30	0.0	40.4

						Barrier2	point31	31	0.0	40.3
KY-02-02-WATL-01	230	57.5	1.0	8	-7.0	Barrier3	point80	80	0.0	44.7
						Barrier3	point84	84	0.0	43.6
						Barrier3	point87	87	0.0	42.0
						Barrier3	point88	88	0.0	41.9
						Barrier3	point89	89	0.0	41.9
						Barrier3	point85	85	0.0	41.8
						Barrier3	point86	86	0.0	41.6
						Barrier3	point93	93	16.0	40.5
						Barrier3	point96	96	16.0	40.5
						Barrier2	point30	30	0.0	40.4
KY-02-01-SHEP-01	78	56.6	1.3	8	-6.7	Barrier3	point80	80	0.0	43.2
						Barrier3	point84	84	0.0	41.5
						Barrier3	point85	85	0.0	41.1
						Barrier3	point87	87	0.0	41.0
						Barrier3	point86	86	0.0	41.0
						Barrier3	point89	89	0.0	40.9
						Barrier3	point88	88	0.0	40.7
						Barrier3	point90	90	12.0	40.4
						Barrier3	point93	93	16.0	39.9
						Barrier3	point91	91	16.0	39.6
KY-02-01-SHEP-02	79	56.5	1.4	8	-6.6	Barrier3	point80	80	0.0	43.1
						Barrier3	point84	84	0.0	41.5
						Barrier3	point89	89	0.0	40.9
						Barrier3	point88	88	0.0	40.9
						Barrier3	point87	87	0.0	40.9
						Barrier3	point86	86	0.0	40.9
						Barrier3	point85	85	0.0	40.8
						Barrier3	point90	90	12.0	40.4
						Barrier3	point93	93	16.0	40.0
						Barrier3	point91	91	16.0	39.8
KY-02-01-SHEP-03	80	56.3	1.5	8	-6.5	Barrier3	point80	80	0.0	43.2
						Barrier3	point84	84	0.0	41.1
						Barrier3	point89	89	0.0	40.9
						Barrier3	point88	88	0.0	40.6
						Barrier3	point86	86	0.0	40.6

						Barrier3	point85	85	0.0	40.5
						Barrier3	point87	87	0.0	40.5
						Barrier3	point90	90	12.0	40.0
						Barrier3	point93	93	16.0	39.8
						Barrier3	point91	91	16.0	39.7
KY-02-01-SHEP-04	81	56.1	1.7	8	-6.3	Barrier3	point80	80	0.0	42.6
						Barrier3	point84	84	0.0	40.8
						Barrier3	point89	89	0.0	40.5
						Barrier3	point85	85	0.0	40.4
						Barrier3	point87	87	0.0	40.2
						Barrier3	point88	88	0.0	40.1
						Barrier3	point90	90	12.0	40.1
						Barrier3	point86	86	0.0	39.9
						Barrier3	point91	91	16.0	39.4
						Barrier3	point93	93	16.0	39.3
KY-02-01-SHEP-05	83	55.9	1.8	8	-6.2	Barrier3	point80	80	0.0	42.1
						Barrier3	point84	84	0.0	40.5
						Barrier3	point85	85	0.0	40.2
						Barrier3	point89	89	0.0	40.0
						Barrier3	point88	88	0.0	39.9
						Barrier3	point90	90	12.0	39.7
						Barrier3	point87	87	0.0	39.5
						Barrier3	point86	86	0.0	39.4
						Barrier3	point91	91	16.0	39.1
						Barrier3	point93	93	16.0	39.1
KY-02-01-SPRD-02	85	56.0	2.2	8	-5.8	Barrier3	point80	80	0.0	40.7
						Barrier3	point84	84	0.0	40.1
						Barrier3	point89	89	0.0	39.9
						Barrier3	point85	85	0.0	39.7
						Barrier3	point93	93	16.0	39.5
						Barrier3	point90	90	12.0	39.4
						Barrier3	point91	91	16.0	39.4
						Barrier3	point88	88	0.0	39.4
						Barrier3	point87	87	0.0	39.2
						Barrier3	point98	98	16.0	39.2
KY-02-01-SPRD-01	84	55.3	2.2	8	-5.8	Barrier3	point80	80	0.0	39.6

						Barrier3	point84	84	0.0	38.9
						Barrier3	point89	89	0.0	38.8
						Barrier3	point85	85	0.0	38.5
						Barrier3	point86	86	0.0	38.5
						Barrier3	point93	93	16.0	38.5
						Barrier3	point88	88	0.0	38.3
						Barrier3	point91	91	16.0	38.2
						Barrier3	point87	87	0.0	38.2
						Barrier3	point92	92	16.0	38.2
KY-02-01-SPRD-03	86	56.4	2.5	8	-5.5	Barrier3	point80	80	0.0	40.9
						Barrier3	point84	84	0.0	40.8
						Barrier3	point85	85	0.0	40.6
						Barrier3	point93	93	16.0	40.4
						Barrier3	point89	89	0.0	40.2
						Barrier3	point91	91	16.0	40.1
						Barrier3	point86	86	0.0	40.0
						Barrier3	point94	94	16.0	39.8
						Barrier3	point92	92	16.0	39.8
						Barrier3	point98	98	16.0	39.8
KY-02-01-SPRD-04	87	56.5	3.2	8	-4.8	Barrier3	point93	93	16.0	41.2
						Barrier3	point86	86	0.0	40.9
						Barrier3	point85	85	0.0	40.9
						Barrier3	point99	99	16.0	40.3
						Barrier3	point94	94	16.0	40.3
						Barrier3	point80	80	0.0	40.2
						Barrier3	point92	92	16.0	40.1
						Barrier3	point98	98	16.0	40.1
						Barrier3	point87	87	0.0	40.1
						Barrier3	point100	100	16.0	40.0
KY-02-01-SPRD-05	88	56.6	3.7	8	-4.3	Barrier3	point93	93	16.0	41.6
						Barrier3	point94	94	16.0	41.2
						Barrier3	point100	100	16.0	41.1
						Barrier3	point99	99	16.0	41.0
						Barrier3	point96	96	16.0	40.9
						Barrier3	point86	86	0.0	40.9
						Barrier3	point87	87	0.0	40.7

						Barrier3	point88	88	0.0	40.7
						Barrier3	point98	98	16.0	40.6
						Barrier3	point95	95	16.0	40.6
KY-02-02-WILD-07	240	57.6	3.0	8	-5.0	Barrier3	point94	94	16.0	43.2
						Barrier3	point93	93	16.0	43.0
						Barrier3	point86	86	0.0	42.9
						Barrier3	point85	85	0.0	42.9
						Barrier3	point98	98	16.0	42.6
						Barrier3	point99	99	16.0	42.3
						Barrier3	point96	96	16.0	42.2
						Barrier3	point92	92	16.0	42.2
						Barrier3	point97	97	16.0	42.1
						Barrier3	point95	95	16.0	42.0
KY-02-01-WILD-05	112	57.2	1.9	8	-6.1	Barrier3	point80	80	0.0	43.5
						Barrier3	point89	89	0.0	42.0
						Barrier3	point85	85	0.0	41.9
						Barrier3	point84	84	0.0	41.8
						Barrier3	point88	88	0.0	41.7
						Barrier3	point90	90	12.0	41.5
						Barrier3	point86	86	0.0	41.5
						Barrier3	point87	87	0.0	41.4
						Barrier3	point91	91	16.0	41.0
						Barrier3	point93	93	16.0	41.0
KY-02-01-WILD-04	111	57.7	1.7	8	-6.3	Barrier3	point80	80	0.0	44.6
						Barrier3	point84	84	0.0	43.0
						Barrier3	point89	89	0.0	43.0
						Barrier3	point85	85	0.0	42.7
						Barrier3	point88	88	0.0	42.6
						Barrier3	point87	87	0.0	42.3
						Barrier3	point90	90	12.0	42.1
						Barrier3	point86	86	0.0	42.0
						Barrier3	point93	93	16.0	41.8
						Barrier3	point94	94	16.0	41.6
KY-02-01-WILD-03	110	57.8	1.4	8	-6.6	Barrier3	point80	80	0.0	45.2
						Barrier3	point84	84	0.0	43.2
						Barrier3	point89	89	0.0	42.8

						Barrier3	point88	88	0.0	42.7
						Barrier3	point85	85	0.0	42.5
						Barrier3	point86	86	0.0	42.5
						Barrier3	point87	87	0.0	42.4
						Barrier3	point90	90	12.0	42.0
						Barrier3	point93	93	16.0	41.7
						Barrier3	point91	91	16.0	41.4
KY-02-01-WILD-02	109	58.5	1.3	8	-6.7	Barrier3	point80	80	0.0	45.6
						Barrier3	point84	84	0.0	44.4
						Barrier3	point89	89	0.0	43.8
						Barrier3	point85	85	0.0	43.6
						Barrier3	point88	88	0.0	43.6
						Barrier3	point87	87	0.0	43.5
						Barrier3	point86	86	0.0	43.3
						Barrier3	point90	90	12.0	42.8
						Barrier3	point93	93	16.0	42.5
						Barrier3	point94	94	16.0	42.3
KY-02-01-WILD-01	108	59.9	1.0	8	-7.0	Barrier3	point80	80	0.0	47.9
						Barrier3	point84	84	0.0	47.1
						Barrier3	point88	88	0.0	45.6
						Barrier3	point87	87	0.0	45.5
						Barrier3	point89	89	0.0	45.4
						Barrier3	point85	85	0.0	44.9
						Barrier3	point86	86	0.0	44.8
						Barrier3	point95	95	16.0	44.6
						Barrier3	point90	90	12.0	44.3
						Barrier3	point94	94	16.0	43.9
KY-02-02-WATL-03	232	62.2	0.5	8	-7.5	Barrier3	point80	80	0.0	50.1
						Barrier3	point87	87	0.0	47.4
						Barrier3	point86	86	0.0	47.1
						Barrier3	point84	84	0.0	46.9
						Barrier3	point90	90	12.0	46.8
						Barrier3	point88	88	0.0	46.4
						Barrier3	point85	85	0.0	46.3
						Barrier3	point89	89	0.0	46.2
						Barrier2	point26	26	16.0	44.8

						Barrier3	point91	91	16.0	44.7
KY-02-02-VILD-08	229	58.8	10.5	8	2.5	Barrier3	point280	280	16.0	44.3
						Barrier3	point82	82	16.0	44.2
						Barrier3	point279	279	16.0	44.0
						Barrier3	point282	282	16.0	44.0
						Barrier3	point283	283	16.0	43.9
						Barrier3	point281	281	16.0	43.9
						Barrier3	point278	278	16.0	43.8
						Barrier3	point277	277	16.0	43.5
						Barrier3	point284	284	16.0	43.3
						Barrier3	point276	276	16.0	43.2
KY-02-01-NELS-03	47	59.2	8.3	8	0.3	Barrier3	point274	274	16.0	46.8
						Barrier3	point275	275	16.0	46.6
						Barrier3	point273	273	16.0	46.5
						Barrier3	point276	276	16.0	45.5
						Barrier3	point272	272	20.0	44.5
						Barrier3	point271	271	20.0	44.3
						Barrier3	point277	277	16.0	44.2
						Barrier3	point260	260	24.0	43.7
						Barrier3	point279	279	16.0	43.7
						Barrier3	point278	278	16.0	43.6
KY-02-01-NELS-02	46	57.6	7.4	8	-0.6	Barrier3	point273	273	16.0	41.0
						Barrier3	point267	267	20.0	40.6
						Barrier3	point244	244	20.0	40.5
						Barrier3	point265	265	20.0	40.5
						Barrier3	point243	243	20.0	40.5
						Barrier3	point266	266	20.0	40.5
						Barrier3	point264	264	20.0	40.4
						Barrier3	point274	274	16.0	40.3
						Barrier3	point268	268	20.0	40.3
						Barrier3	point269	269	20.0	40.1
KY-02-01-NELS-01	45	57.4	7.0	8	-1.0	Barrier3	point242	242	20.0	42.2
						Barrier3	point262	262	20.0	41.6
						Barrier3	point260	260	20.0	41.4
						Barrier3	point263	263	20.0	41.4
						Barrier3	point253	253	16.0	41.4

						Barrier3	point259	259	20.0	41.3
						Barrier3	point264	264	20.0	41.1
						Barrier3	point261	261	20.0	41.0
						Barrier3	point258	258	20.0	41.0
						Barrier3	point265	265	20.0	40.8
KY-02-02-ROOD-05	204	57.4	7.6	8	-0.4	Barrier3	point253	253	16.0	43.3
						Barrier3	point252	252	16.0	43.2
						Barrier3	point251	251	16.0	42.9
						Barrier3	point255	255	20.0	41.7
						Barrier3	point254	254	20.0	41.6
						Barrier3	point256	256	20.0	41.6
						Barrier3	point257	257	20.0	41.3
						Barrier3	point258	258	20.0	40.7
						Barrier3	point250	250	20.0	40.5
						Barrier3	point259	259	20.0	40.2
KY-02-01-ROOD-05	77	57.8	7.7	8	-0.3	Barrier3	point262	262	20.0	45.5
						Barrier3	point246	246	20.0	44.4
						Barrier3	point245	245	20.0	44.1
						Barrier3	point244	244	20.0	44.0
						Barrier3	point247	247	20.0	43.9
						Barrier3	point243	243	20.0	43.6
						Barrier3	point248	248	20.0	43.6
						Barrier3	point242	242	20.0	43.2
						Barrier3	point251	251	16.0	43.1
						Barrier3	point241	241	20.0	42.8
KY-02-02-CAMC-02	116	55.5	7.5	8	-0.5	Barrier3	point239	239	20.0	39.9
						Barrier3	point241	241	20.0	39.8
						Barrier3	point240	240	20.0	39.7
						Barrier3	point242	242	20.0	39.7
						Barrier3	point238	238	20.0	39.7
						Barrier3	point243	243	20.0	39.5
						Barrier3	point245	245	20.0	39.5
						Barrier3	point246	246	20.0	39.5
						Barrier3	point237	237	20.0	39.4
						Barrier3	point244	244	20.0	39.3
KY-02-02-CAMC-01	115	56.4	7.2	8	-0.8	Barrier3	point237	237	20.0	42.5

						Barrier3	point238	238	20.0	42.5
						Barrier3	point236	236	20.0	42.3
						Barrier3	point239	239	20.0	42.2
						Barrier3	point240	240	20.0	41.9
						Barrier3	point235	235	20.0	41.9
						Barrier3	point232	232	16.0	41.7
						Barrier3	point241	241	20.0	41.5
						Barrier3	point234	234	20.0	41.4
						Barrier3	point242	242	20.0	41.2
KY-02-02-CAMD-03	120	56.9	7.2	8	-0.8	Barrier3	point232	232	16.0	43.8
						Barrier3	point235	235	20.0	43.4
						Barrier3	point234	234	20.0	43.3
						Barrier3	point231	231	16.0	43.2
						Barrier3	point236	236	20.0	43.2
						Barrier3	point233	233	20.0	43.0
						Barrier3	point230	230	16.0	42.5
						Barrier3	point237	237	20.0	42.4
						Barrier3	point238	238	20.0	42.0
						Barrier3	point229	229	16.0	41.7
KY-02-01-CAMD-04	15	56.3	8.7	8	0.7	Barrier3	point224	224	16.0	42.2
						Barrier3	point225	225	16.0	42.2
						Barrier3	point226	226	16.0	42.0
						Barrier3	point223	223	16.0	42.0
						Barrier3	point227	227	16.0	41.7
						Barrier3	point222	222	16.0	41.6
						Barrier3	point228	228	16.0	41.5
						Barrier3	point229	229	16.0	41.3
						Barrier3	point221	221	16.0	41.2
						Barrier3	point220	220	16.0	41.0
KY-02-02-SPRWD-05	218	56.3	8.6	8	0.6	Barrier3	point222	222	16.0	41.3
						Barrier3	point221	221	16.0	41.3
						Barrier3	point223	223	16.0	41.2
						Barrier3	point224	224	16.0	41.1
						Barrier3	point220	220	16.0	41.0
						Barrier3	point225	225	16.0	40.9
						Barrier3	point219	219	16.0	40.7

						Barrier3	point226	226	16.0	40.6
						Barrier3	point217	217	16.0	40.5
						Barrier3	point216	216	16.0	40.3
KY-02-01-SPRWD-04	99	56.6	8.9	8	0.9	Barrier3	point213	213	16.0	43.1
						Barrier3	point212	212	16.0	43.0
						Barrier3	point214	214	16.0	42.8
						Barrier3	point211	211	16.0	42.7
						Barrier3	point215	215	16.0	42.6
						Barrier3	point210	210	16.0	42.5
						Barrier3	point216	216	16.0	42.3
						Barrier3	point217	217	16.0	42.2
						Barrier3	point209	209	16.0	42.0
						Barrier3	point218	218	16.0	41.7
KY-02-02-DOND-04	129	56.5	8.9	8	0.9	Barrier3	point210	210	16.0	43.1
						Barrier3	point212	212	16.0	43.0
						Barrier3	point211	211	16.0	43.0
						Barrier3	point209	209	16.0	42.7
						Barrier3	point213	213	16.0	42.6
						Barrier3	point214	214	16.0	42.3
						Barrier3	point208	208	16.0	42.2
						Barrier3	point207	207	16.0	41.9
						Barrier3	point215	215	16.0	41.9
						Barrier3	point216	216	16.0	41.7
KY-02-02-DOND-03	127	55.5	8.1	8	0.1	Barrier3	point204	204	16.0	40.1
						Barrier3	point206	206	16.0	40.1
						Barrier3	point205	205	16.0	40.1
						Barrier3	point207	207	16.0	40.0
						Barrier3	point203	203	16.0	39.9
						Barrier3	point208	208	16.0	39.9
						Barrier3	point202	202	16.0	39.9
						Barrier3	point209	209	16.0	39.9
						Barrier3	point210	210	16.0	39.7
						Barrier3	point201	201	16.0	39.4
KY-02-02-JOHD-09	159	54.5	7.3	8	-0.7	Barrier3	point203	203	16.0	39.3
						Barrier3	point200	200	16.0	37.5
						Barrier3	point199	199	16.0	37.5

						Barrier3	point201	201	16.0	37.4
						Barrier3	point202	202	16.0	37.4
						Barrier3	point198	198	16.0	37.2
						Barrier3	point204	204	16.0	37.1
						Barrier3	point205	205	16.0	37.0
						Barrier3	point206	206	16.0	36.9
						Barrier3	point207	207	16.0	36.8
KY-02-02-JOHD-09	158	54.2	7.5	8	-0.5	Barrier3	point198	198	16.0	37.8
						Barrier3	point199	199	16.0	37.8
						Barrier3	point200	200	16.0	37.7
						Barrier3	point201	201	16.0	37.5
						Barrier3	point197	197	16.0	37.4
						Barrier3	point202	202	16.0	37.3
						Barrier3	point194	194	16.0	37.2
						Barrier3	point196	196	16.0	37.2
						Barrier3	point195	195	16.0	37.1
						Barrier3	point193	193	16.0	37.0
KY-02-02-JOHD-08	157	54.8	7.5	8	-0.5	Barrier3	point196	196	16.0	38.8
						Barrier3	point194	194	16.0	38.8
						Barrier3	point190	190	16.0	38.8
						Barrier3	point191	191	16.0	38.8
						Barrier3	point189	189	16.0	38.7
						Barrier3	point195	195	16.0	38.7
						Barrier3	point192	192	16.0	38.7
						Barrier3	point193	193	16.0	38.6
						Barrier3	point197	197	16.0	38.6
						Barrier3	point198	198	16.0	38.5
KY-02-02-JOHD-07	156	54.1	7.2	8	-0.8	Barrier3	point188	188	16.0	37.5
						Barrier3	point187	187	16.0	37.4
						Barrier3	point190	190	16.0	37.4
						Barrier3	point186	186	16.0	37.3
						Barrier3	point189	189	16.0	37.3
						Barrier3	point192	192	16.0	37.3
						Barrier3	point184	184	16.0	37.3
						Barrier3	point185	185	16.0	37.2
						Barrier3	point191	191	16.0	37.2

						Barrier3	point193	193	16.0	37.1
KY-02-02-JOHD-06	155	54.4	7.3	8	-0.7	Barrier3	point181	181	16.0	38.7
						Barrier3	point81	81	16.0	38.7
						Barrier3	point180	180	16.0	38.6
						Barrier3	point179	179	16.0	38.6
						Barrier3	point178	178	16.0	38.5
						Barrier3	point177	177	16.0	38.3
						Barrier3	point182	182	16.0	38.3
						Barrier3	point176	176	16.0	38.3
						Barrier3	point183	183	16.0	38.2
						Barrier3	point175	175	16.0	38.1
KY-02-02-JOHD-05	153	54.9	7.2	8	-0.8	Barrier3	point176	176	16.0	40.4
						Barrier3	point177	177	16.0	40.3
						Barrier3	point179	179	16.0	40.3
						Barrier3	point178	178	16.0	40.3
						Barrier3	point175	175	16.0	40.3
						Barrier3	point180	180	16.0	40.1
						Barrier3	point174	174	16.0	40.0
						Barrier3	point181	181	16.0	40.0
						Barrier3	point81	81	16.0	39.7
						Barrier3	point173	173	16.0	39.4
KY-02-02-JOHD-03	150	54.9	7.0	8	-1.0	Barrier3	point175	175	16.0	40.5
						Barrier3	point174	174	16.0	40.4
						Barrier3	point176	176	16.0	40.4
						Barrier3	point173	173	16.0	40.2
						Barrier3	point177	177	16.0	40.2
						Barrier3	point172	172	16.0	39.9
						Barrier3	point178	178	16.0	39.9
						Barrier3	point179	179	16.0	39.6
						Barrier3	point180	180	16.0	39.3
						Barrier3	point181	181	16.0	39.1
KY-02-02-JOHD-02	149	54.7	7.0	8	-1.0	Barrier3	point171	171	16.0	41.0
						Barrier3	point172	172	16.0	40.9
						Barrier3	point173	173	16.0	40.8
						Barrier3	point174	174	16.0	40.5
						Barrier3	point175	175	16.0	40.2

						Barrier3	point170	170	16.0	39.9
						Barrier3	point176	176	16.0	39.5
						Barrier3	point177	177	16.0	38.9
						Barrier3	point178	178	16.0	38.4
						Barrier3	point169	169	16.0	38.1
KY-02-02-JOHD-01	148	54.4	7.1	8	-0.9	Barrier3	point171	171	16.0	40.0
						Barrier3	point170	170	16.0	39.8
						Barrier3	point172	172	16.0	39.8
						Barrier3	point173	173	16.0	39.6
						Barrier3	point174	174	16.0	39.2
						Barrier3	point175	175	16.0	38.9
						Barrier3	point176	176	16.0	38.2
						Barrier3	point169	169	16.0	38.1
						Barrier3	point177	177	16.0	37.7
						Barrier3	point178	178	16.0	37.2
KY-02-02-JAMD-06	144	54.5	5.8	8	-2.2	Barrier3	point168	168	16.0	41.2
						Barrier3	point167	167	16.0	40.5
						Barrier3	point169	169	16.0	40.2
						Barrier3	point170	170	16.0	39.8
						Barrier3	point164	164	16.0	39.5
						Barrier3	point171	171	16.0	39.3
						Barrier3	point163	163	16.0	39.2
						Barrier3	point166	166	16.0	38.9
						Barrier3	point165	165	16.0	38.8
						Barrier3	point162	162	16.0	38.6
KY-02-02-JAMD-05	143	53.8	3.2	8	-4.8	Barrier3	point162	162	16.0	40.3
						Barrier3	point165	165	16.0	40.2
						Barrier3	point161	161	16.0	40.1
						Barrier3	point166	166	16.0	39.9
						Barrier3	point160	160	16.0	39.7
						Barrier3	point163	163	16.0	39.4
						Barrier3	point159	159	16.0	39.2
						Barrier3	point164	164	16.0	39.1
						Barrier3	point167	167	16.0	39.1
						Barrier3	point168	168	16.0	38.9
KY-02-02-JAMD-04	142	50.2	5.2	8	-2.8	Barrier3	point163	163	16.0	37.2

						Barrier3	point162	162	16.0	37.1
						Barrier3	point164	164	16.0	36.8
						Barrier3	point165	165	16.0	36.1
						Barrier3	point166	166	16.0	35.9
						Barrier3	point159	159	16.0	35.4
						Barrier3	point157	157	16.0	34.8
						Barrier3	point161	161	16.0	34.7
						Barrier3	point158	158	16.0	34.5
						Barrier3	point156	156	16.0	34.3
KY-02-02-JAMD-03	140	48.3	6.2	8	-1.8	Barrier3	point154	154	16.0	32.4
						Barrier3	point153	153	16.0	32.3
						Barrier3	point152	152	16.0	32.3
						Barrier3	point151	151	16.0	32.0
						Barrier3	point155	155	16.0	31.8
						Barrier3	point156	156	16.0	31.5
						Barrier3	point150	150	16.0	30.9
						Barrier3	point160	160	16.0	30.8
						Barrier3	point157	157	16.0	30.7
						Barrier3	point159	159	16.0	30.5
KY-02-02-JAMD-02	137	55.5	4.6	8	-3.4	Barrier3	point149	149	16.0	39.1
						Barrier3	point151	151	16.0	38.9
						Barrier3	point150	150	16.0	38.9
						Barrier3	point148	148	16.0	38.6
						Barrier3	point152	152	16.0	38.6
						Barrier3	point147	147	16.0	38.4
						Barrier3	point146	146	16.0	38.1
						Barrier3	point153	153	16.0	38.0
						Barrier3	point145	145	16.0	37.4
						Barrier3	point154	154	16.0	37.4
KY-02-02-JAMD-01	136	56.1	3.6	8	-4.4	Barrier3	point147	147	16.0	38.2
						Barrier3	point146	146	16.0	38.2
						Barrier3	point145	145	16.0	38.2
						Barrier3	point144	144	16.0	38.2
						Barrier3	point148	148	16.0	38.1
						Barrier3	point149	149	16.0	37.9
						Barrier3	point150	150	16.0	37.2

						Barrier3	point151	151	16.0	36.9
						Barrier3	point152	152	16.0	36.1
						Barrier3	point153	153	16.0	35.7
KY-02-01-BARR-03	8	55.9	3.9	8	-4.1	Barrier3	point129	129	20.0	37.2
						Barrier3	point130	130	20.0	36.3
						Barrier3	point132	132	20.0	36.0
						Barrier3	point144	144	16.0	35.6
						Barrier3	point128	128	20.0	35.4
						Barrier3	point145	145	16.0	35.2
						Barrier3	point133	133	20.0	35.1
						Barrier3	point146	146	16.0	35.0
						Barrier3	point131	131	20.0	35.0
						Barrier3	point147	147	16.0	34.9
KY-02-01-BARR-02	7	55.4	3.9	8	-4.1	Barrier3	point129	129	20.0	37.0
						Barrier3	point130	130	20.0	35.8
						Barrier3	point128	128	20.0	35.2
						Barrier3	point132	132	20.0	35.0
						Barrier3	point133	133	20.0	34.8
						Barrier3	point131	131	20.0	34.2
						Barrier3	point144	144	16.0	34.0
						Barrier3	point145	145	16.0	33.8
						Barrier3	point134	134	20.0	33.7
						Barrier3	point127	127	20.0	33.7
KY-02-02-SPRR-05	212	55.5	4.1	8	-3.9	Barrier3	point129	129	20.0	37.8
						Barrier3	point130	130	20.0	36.6
						Barrier3	point128	128	20.0	36.1
						Barrier3	point132	132	20.0	35.7
						Barrier3	point133	133	20.0	35.5
						Barrier3	point131	131	20.0	35.1
						Barrier3	point127	127	20.0	34.7
						Barrier3	point126	126	20.0	34.5
						Barrier3	point134	134	20.0	34.5
						Barrier3	point125	125	20.0	34.0
KY-02-02-SPRR-04	209	55.2	4.5	8	-3.5	Barrier3	point129	129	20.0	37.8
						Barrier3	point130	130	20.0	36.5
						Barrier3	point128	128	20.0	36.3

						Barrier3	point132	132	20.0	35.4
						Barrier3	point127	127	20.0	35.0
						Barrier3	point126	126	20.0	35.0
						Barrier3	point131	131	20.0	34.9
						Barrier3	point96	96	16.0	34.8
						Barrier3	point133	133	20.0	34.8
						Barrier3	point80	80	0.0	34.7
KY-02-02-SPRR-03	208	55.3	4.5	8	-3.5	Barrier3	point129	129	20.0	37.7
						Barrier3	point128	128	20.0	36.2
						Barrier3	point130	130	20.0	36.1
						Barrier3	point93	93	16.0	35.8
						Barrier3	point100	100	16.0	35.7
						Barrier3	point80	80	0.0	35.6
						Barrier3	point96	96	16.0	35.4
						Barrier3	point99	99	16.0	35.3
						Barrier3	point127	127	20.0	35.0
						Barrier3	point126	126	20.0	35.0
KY-02-02-SPRR-02	207	55.2	5.0	8	-3.0	Barrier3	point129	129	20.0	37.7
						Barrier3	point128	128	20.0	36.5
						Barrier3	point130	130	20.0	36.0
						Barrier3	point99	99	16.0	35.9
						Barrier3	point96	96	16.0	35.7
						Barrier3	point119	119	16.0	35.7
						Barrier3	point118	118	16.0	35.7
						Barrier3	point126	126	20.0	35.6
						Barrier3	point127	127	20.0	35.5
						Barrier3	point125	125	20.0	35.5
KY-02-02-SPRR-01	206	55.4	4.7	8	-3.3	Barrier3	point93	93	16.0	37.7
						Barrier3	point99	99	16.0	37.5
						Barrier3	point100	100	16.0	37.3
						Barrier3	point80	80	0.0	37.2
						Barrier3	point89	89	0.0	37.2
						Barrier3	point96	96	16.0	37.1
						Barrier3	point98	98	16.0	36.9
						Barrier3	point94	94	16.0	36.7
						Barrier3	point97	97	16.0	36.4

						Barrier3	point88	88	0.0	36.3
KY-02-01-SPRD-06	89	56.4	5.0	8	-3.0	Barrier3	point98	98	16.0	41.6
						Barrier3	point88	88	0.0	41.6
						Barrier3	point96	96	16.0	41.6
						Barrier3	point89	89	0.0	41.4
						Barrier3	point99	99	16.0	41.4
						Barrier3	point97	97	16.0	41.1
						Barrier3	point93	93	16.0	40.9
						Barrier3	point94	94	16.0	40.3
						Barrier3	point80	80	0.0	40.1
						Barrier2	point23	23	16.0	40.0
KY-02-02-WILD-06	239	58.3	3.4	8	-4.6	Barrier3	point98	98	16.0	44.7
						Barrier3	point99	99	16.0	44.5
						Barrier3	point86	86	0.0	44.4
						Barrier3	point93	93	16.0	44.3
						Barrier3	point97	97	16.0	44.2
						Barrier3	point94	94	16.0	44.1
						Barrier3	point96	96	16.0	44.0
						Barrier3	point87	87	0.0	44.0
						Barrier3	point88	88	0.0	43.7
						Barrier3	point89	89	0.0	43.5
KY-02-02-WILD-05	238	59.1	3.3	8	-4.7	Barrier3	point86	86	0.0	46.3
						Barrier3	point96	96	16.0	45.9
						Barrier3	point93	93	16.0	45.6
						Barrier3	point87	87	0.0	45.6
						Barrier3	point97	97	16.0	45.6
						Barrier3	point89	89	0.0	45.4
						Barrier3	point94	94	16.0	45.4
						Barrier3	point95	95	16.0	45.3
						Barrier3	point88	88	0.0	45.1
						Barrier3	point98	98	16.0	44.9
KY-02-02-WILD-04	236	60.2	2.3	8	-5.7	Barrier3	point89	89	0.0	47.7
						Barrier3	point85	85	0.0	47.2
						Barrier3	point86	86	0.0	47.1
						Barrier3	point90	90	12.0	46.8
						Barrier3	point93	93	16.0	46.7

						Barrier3	point84	84	0.0	46.6
						Barrier3	point88	88	0.0	46.4
						Barrier3	point94	94	16.0	46.3
						Barrier3	point92	92	16.0	46.2
						Barrier3	point91	91	16.0	46.2
KY-02-02-WILD-03	235	61.0	1.8	8	-6.2	Barrier3	point89	89	0.0	49.3
						Barrier3	point84	84	0.0	48.7
						Barrier3	point88	88	0.0	48.5
						Barrier3	point85	85	0.0	48.4
						Barrier3	point80	80	0.0	47.8
						Barrier3	point86	86	0.0	47.7
						Barrier3	point90	90	12.0	47.6
						Barrier3	point87	87	0.0	47.6
						Barrier3	point91	91	16.0	47.0
						Barrier3	point93	93	16.0	46.9
KY-02-02-WILD-02	234	62.5	1.5	8	-6.5	Barrier3	point89	89	0.0	51.7
						Barrier3	point88	88	0.0	51.7
						Barrier3	point80	80	0.0	51.3
						Barrier3	point84	84	0.0	50.9
						Barrier3	point87	87	0.0	50.8
						Barrier3	point85	85	0.0	50.5
						Barrier3	point86	86	0.0	50.0
						Barrier3	point90	90	12.0	49.7
						Barrier3	point91	91	16.0	48.6
						Barrier3	point92	92	16.0	47.8
KY-02-02-WILD-01	233	64.9	0.5	8	-7.5	Barrier3	point80	80	0.0	56.5
						Barrier3	point84	84	0.0	53.1
						Barrier3	point86	86	0.0	53.1
						Barrier3	point87	87	0.0	52.9
						Barrier3	point85	85	0.0	52.6
						Barrier3	point88	88	0.0	51.6
						Barrier3	point89	89	0.0	51.3
						Barrier2	point30	30	0.0	48.4
						Barrier3	point90	90	12.0	48.3
						Barrier2	point31	31	0.0	48.0

Total Cost, All Barriers (including additional cost(s))	$2280798					

HMB Professional Engineers				27 March 2018						
MG/mdg				TNM 2.5						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	I-69 ORX									
RUN:	West 1_TollAll_Sunset Lane Barrier									
BARRIER DESIGN:	W1_TollAll_Sunset Lane									
Barriers										
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top	Run:Rise	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier3	W	12.00	16.89	20.00	4502	76027				2280798
									Total Cost:	2280798

HMB Professional Engineers 27 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_TollAll_Sunset Lane Barrier
BARRIER DESIGN: W1_TollAll_Sunset Lane

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier3	W	point80	80	0.00	0.00	0.00	0	0				0
		point84	84	0.00	0.00	0.00	0	0				0
		point85	85	0.00	0.00	0.00	0	0				0
		point86	86	0.00	0.00	0.00	0	0				0
		point87	87	0.00	0.00	0.00	0	0				0
		point88	88	0.00	0.00	0.00	0	0				0
		point89	89	0.00	0.00	0.00	0	0				0
		point90	90	12.00	12.00	12.00	22	263				7894
		point91	91	16.00	16.00	16.00	20	319				9565
		point92	92	16.00	16.00	16.00	19	305				9159
		point93	93	16.00	16.00	16.00	21	336				10072
		point94	94	16.00	16.00	16.00	22	345				10340
		point95	95	16.00	16.00	16.00	20	316				9471
		point96	96	16.00	16.00	16.00	19	310				9315
		point97	97	16.00	16.00	16.00	20	319				9582
		point98	98	16.00	16.00	16.00	20	319				9582
		point99	99	16.00	16.00	16.00	20	320				9607
		point100	100	16.00	16.00	16.00	20	319				9582
		point101	101	16.00	16.00	16.00	20	323				9693
		point102	102	16.00	16.00	16.00	20	316				9494
		point103	103	16.00	16.00	16.00	20	319				9582
		point104	104	16.00	16.00	16.00	20	323				9693
		point105	105	16.00	16.00	16.00	20	316				9494
		point106	106	16.00	16.00	16.00	20	323				9693
		point107	107	16.00	16.00	16.00	20	319				9582
		point108	108	16.00	16.00	16.00	20	316				9494

		point109	109	16.00	16.00	16.00	20	323				9693
		point110	110	16.00	16.00	16.00	20	319				9582
		point111	111	16.00	16.00	16.00	20	320				9607
		point112	112	16.00	16.00	16.00	20	319				9582
		point113	113	16.00	16.00	16.00	20	320				9607
		point114	114	16.00	16.00	16.00	20	319				9582
		point115	115	16.00	16.00	16.00	20	320				9607
		point116	116	16.00	16.00	16.00	20	319				9582
		point117	117	16.00	16.00	16.00	20	323				9693
		point118	118	16.00	16.00	16.00	20	320				9607
		point119	119	16.00	16.00	16.00	20	316				9494
		point120	120	20.00	20.00	20.00	20	400				12008
		point121	121	20.00	20.00	20.00	20	400				12008
		point122	122	20.00	20.00	20.00	20	400				12008
		point123	123	20.00	20.00	20.00	20	400				12008
		point124	124	20.00	20.00	20.00	20	400				12008
		point125	125	20.00	20.00	20.00	20	404				12117
		point126	126	20.00	20.00	20.00	20	396				11868
		point127	127	20.00	20.00	20.00	20	399				11977
		point128	128	20.00	20.00	20.00	20	399				11977
		point129	129	20.00	20.00	20.00	20	399				11977
		point130	130	20.00	20.00	20.00	20	404				12117
		point131	131	20.00	20.00	20.00	20	399				11956
		point132	132	20.00	20.00	20.00	20	399				11956
		point133	133	20.00	20.00	20.00	20	403				12079
		point134	134	20.00	20.00	20.00	20	398				11944
		point135	135	16.00	16.00	16.00	20	322	Y			9660
		point136	136	16.00	16.00	16.00	20	318	Y			9555
		point137	137	16.00	16.00	16.00	20	322	Y			9660
		point138	138	16.00	16.00	16.00	20	319	Y			9558
		point139	139	16.00	16.00	16.00	20	319	Y			9558
		point140	140	16.00	16.00	16.00	20	322	Y			9664
		point141	141	16.00	16.00	16.00	20	319	Y			9558
		point142	142	16.00	16.00	16.00	20	319	Y			9571
		point143	143	16.00	16.00	16.00	20	322	Y			9675
		point144	144	16.00	16.00	16.00	20	319				9571
		point145	145	16.00	16.00	16.00	20	319				9571
		point146	146	16.00	16.00	16.00	20	319				9571
		point147	147	16.00	16.00	16.00	20	323				9693

		point148	148	16.00	16.00	16.00	20	316				9467
		point149	149	16.00	16.00	16.00	20	323				9693
		point150	150	16.00	16.00	16.00	20	316				9489
		point151	151	16.00	16.00	16.00	20	324				9719
		point152	152	16.00	16.00	16.00	20	320				9591
		point153	153	16.00	16.00	16.00	20	316				9489
		point154	154	16.00	16.00	16.00	20	321				9619
		point155	155	16.00	16.00	16.00	20	321				9619
		point156	156	16.00	16.00	16.00	20	325				9753
		point157	157	16.00	16.00	16.00	20	317				9519
		point158	158	16.00	16.00	16.00	20	321				9619
		point159	159	16.00	16.00	16.00	20	317				9519
		point160	160	16.00	16.00	16.00	20	322				9654
		point161	161	16.00	16.00	16.00	20	317				9519
		point162	162	16.00	16.00	16.00	20	325				9753
		point163	163	16.00	16.00	16.00	20	317				9519
		point164	164	16.00	16.00	16.00	20	322				9654
		point165	165	16.00	16.00	16.00	20	317				9519
		point166	166	16.00	16.00	16.00	20	322				9654
		point167	167	16.00	16.00	16.00	20	317				9519
		point168	168	16.00	16.00	16.00	20	325				9753
		point169	169	16.00	16.00	16.00	20	316				9489
		point170	170	16.00	16.00	16.00	20	320				9591
		point171	171	16.00	16.00	16.00	20	320				9591
		point172	172	16.00	16.00	16.00	20	320				9591
		point173	173	16.00	16.00	16.00	20	320				9591
		point174	174	16.00	16.00	16.00	20	320				9591
		point175	175	16.00	16.00	16.00	20	324				9719
		point176	176	16.00	16.00	16.00	20	320				9591
		point177	177	16.00	16.00	16.00	20	320				9591
		point178	178	16.00	16.00	16.00	20	320				9591
		point179	179	16.00	16.00	16.00	20	320				9591
		point180	180	16.00	16.00	16.00	20	316				9489
		point181	181	16.00	16.00	16.00	20	320				9591
		point81	81	16.00	16.00	16.00	20	324				9719
		point182	182	16.00	16.00	16.00	20	320				9591
		point183	183	16.00	16.00	16.00	20	317				9519
		point184	184	16.00	16.00	16.00	20	322				9654
		point185	185	16.00	16.00	16.00	20	317				9519

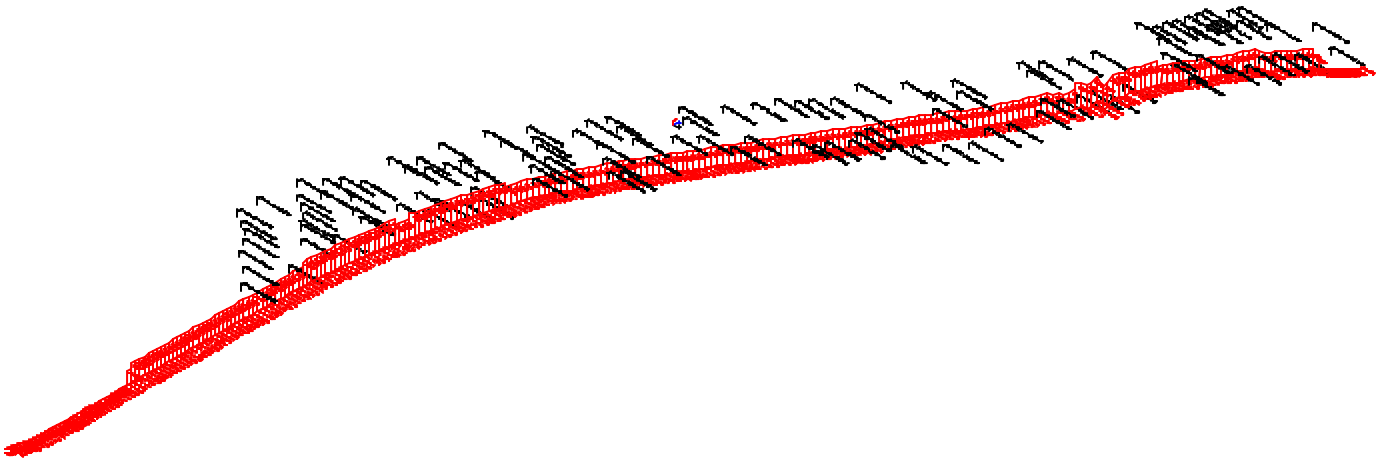
		point186	186	16.00	16.00	16.00	20	322				9654
		point187	187	16.00	16.00	16.00	20	321				9619
		point188	188	16.00	16.00	16.00	20	322				9654
		point189	189	16.00	16.00	16.00	20	317				9519
		point190	190	16.00	16.00	16.00	20	322				9654
		point191	191	16.00	16.00	16.00	20	317				9519
		point192	192	16.00	16.00	16.00	20	322				9654
		point193	193	16.00	16.00	16.00	20	317				9519
		point194	194	16.00	16.00	16.00	20	322				9654
		point195	195	16.00	16.00	16.00	20	321				9619
		point196	196	16.00	16.00	16.00	20	322				9654
		point197	197	16.00	16.00	16.00	20	317				9519
		point198	198	16.00	16.00	16.00	20	322				9654
		point199	199	16.00	16.00	16.00	20	317				9519
		point200	200	16.00	16.00	16.00	20	322				9654
		point201	201	16.00	16.00	16.00	20	321				9619
		point202	202	16.00	16.00	16.00	20	322				9654
		point203	203	16.00	16.00	16.00	20	317				9519
		point204	204	16.00	16.00	16.00	20	322				9654
		point205	205	16.00	16.00	16.00	20	317				9519
		point206	206	16.00	16.00	16.00	20	321				9619
		point207	207	16.00	16.00	16.00	20	322				9654
		point208	208	16.00	16.00	16.00	20	321				9619
		point209	209	16.00	16.00	16.00	20	317				9519
		point210	210	16.00	16.00	16.00	20	324				9719
		point211	211	16.00	16.00	16.00	20	316				9489
		point212	212	16.00	16.00	16.00	20	321				9619
		point213	213	16.00	16.00	16.00	20	320				9591
		point214	214	16.00	16.00	16.00	20	323				9693
		point215	215	16.00	16.00	16.00	20	319				9571
		point216	216	16.00	16.00	16.00	20	319				9571
		point217	217	16.00	16.00	16.00	20	319				9571
		point218	218	16.00	16.00	16.00	20	322				9675
		point219	219	16.00	16.00	16.00	20	319				9571
		point220	220	16.00	16.00	16.00	20	318				9553
		point221	221	16.00	16.00	16.00	20	319				9558
		point222	222	16.00	16.00	16.00	20	322				9664
		point223	223	16.00	16.00	16.00	20	318				9553
		point224	224	16.00	16.00	16.00	20	322				9660

		point225	225	16.00	16.00	16.00	20	318				9553
		point226	226	16.00	16.00	16.00	20	318				9555
		point227	227	16.00	16.00	16.00	20	322				9664
		point228	228	16.00	16.00	16.00	20	318				9555
		point229	229	16.00	16.00	16.00	20	322				9664
		point230	230	16.00	16.00	16.00	20	319				9565
		point231	231	16.00	16.00	16.00	20	319				9565
		point232	232	16.00	16.00	16.00	20	319				9565
		point233	233	20.00	20.00	20.00	20	403				12093
		point234	234	20.00	20.00	20.00	20	399				11977
		point235	235	20.00	20.00	20.00	20	399				11977
		point236	236	20.00	20.00	20.00	20	400				12008
		point237	237	20.00	20.00	20.00	20	400				12008
		point238	238	20.00	20.00	20.00	20	404				12117
		point239	239	20.00	20.00	20.00	20	397				11907
		point240	240	20.00	20.00	20.00	20	400				12008
		point241	241	20.00	20.00	20.00	20	402				12049
		point242	242	20.00	20.00	20.00	20	397				11907
		point243	243	20.00	20.00	20.00	20	402				12049
		point244	244	20.00	20.00	20.00	20	400				12012
		point245	245	20.00	20.00	20.00	20	398				11955
		point246	246	20.00	20.00	20.00	20	403				12098
		point247	247	20.00	20.00	20.00	20	396				11868
		point248	248	20.00	20.00	20.00	20	403				12098
		point249	249	20.00	20.00	20.00	20	398				11933
		point250	250	20.00	20.00	20.00	20	400				12012
		point251	251	16.00	16.00	16.00	20	318				9547
		point252	252	16.00	16.00	16.00	20	322				9663
		point253	253	16.00	16.00	16.00	20	320				9606
		point254	254	20.00	20.00	20.00	20	400				12007
		point255	255	20.00	20.00	20.00	20	403				12078
		point256	256	20.00	20.00	20.00	20	398				11944
		point257	257	20.00	20.00	20.00	20	398				11944
		point258	258	20.00	20.00	20.00	20	398				11944
		point259	259	20.00	20.00	20.00	20	403				12091
		point260	260	20.00	20.00	20.00	20	401				12035
		point261	261	20.00	20.00	20.00	20	396				11887
		point262	262	20.00	20.00	20.00	20	401				12035
		point263	263	20.00	20.00	20.00	20	401				12035

		point264	264	20.00	20.00	20.00	20	400				11986
		point265	265	20.00	20.00	20.00	20	400				11986
		point266	266	20.00	20.00	20.00	20	398				11945
		point267	267	20.00	20.00	20.00	20	404				12134
		point268	268	20.00	20.00	20.00	20	397				11911
		point269	269	20.00	20.00	20.00	20	403				12093
		point270	270	20.00	20.00	20.00	20	397				11911
		point271	271	20.00	20.00	20.00	20	398				11945
		point272	272	20.00	20.00	20.00	20	401				12034
		point273	273	16.00	16.00	16.00	20	322				9648
		point274	274	16.00	16.00	16.00	20	321				9627
		point275	275	16.00	16.00	16.00	20	321				9627
		point276	276	16.00	16.00	16.00	20	316				9492
		point277	277	16.00	16.00	16.00	20	320				9612
		point278	278	16.00	16.00	16.00	20	320				9612
		point279	279	16.00	16.00	16.00	20	320				9612
		point82	82	16.00	16.00	16.00	20	321				9627
		point280	280	16.00	16.00	16.00	20	319				9556
		point281	281	16.00	16.00	16.00	20	322				9675
		point282	282	16.00	16.00	16.00	20	319				9556
		point283	283	16.00	16.00	16.00	20	319				9556
		point284	284	16.00	16.00	16.00	20	321				9627
		point285	285	16.00	16.00	16.00	20	320				9600
		point286	286	16.00	16.00	16.00	20	320				9600
		point287	287	16.00	16.00	16.00	20	320				9603
		point288	288	16.00	16.00	16.00	20	320				9600
		point289	289	16.00	16.00	16.00	20	320				9603
		point290	290	16.00	16.00	16.00	20	320				9600
		point291	291	16.00	16.00	16.00	20	320				9600
		point292	292	16.00	16.00	16.00	20	320				9603
		point293	293	16.00	16.00	16.00	20	320				9600
		point294	294	16.00	16.00	16.00	20	320				9603
		point295	295	16.00	16.00	16.00	20	320				9600
		point296	296	16.00	16.00	16.00	20	320				9600
		point297	297	16.00	16.00	16.00	20	320				9603
		point298	298	16.00	16.00	16.00	20	320				9600
		point299	299	16.00	16.00	16.00	20	320				9603
		point300	300	16.00	16.00	16.00	20	320				9600
		point301	301	16.00	16.00	16.00	20	320				9603

		point302	302	16.00	16.00	16.00	20	320				9600
		point303	303	16.00	16.00	16.00	20	320				9600
		point304	304	16.00	16.00	16.00	20	320				9603
		point305	305	16.00	16.00	16.00	20	316				9480
		point306	306	16.00	16.00	16.00	20	320				9603
		point307	307	16.00	16.00	16.00	20	320				9600
		point308	308	16.00	16.00	16.00	20	320				9600
		point309	309	16.00	16.00	16.00	20	320				9603
		point310	310	16.00	16.00	16.00	20	320				9600
		point311	311	16.00	16.00	16.00	20	320				9603
		point312	312	12.00	12.00	12.00	20	240				7200
		point313	313	0.00	0.00	0.00	0	0				0
		point314	314	0.00	0.00	0.00	0	0				0
		point315	315	0.00	0.00	0.00	0	0				0
		point316	316	0.00	0.00	0.00	0	0				0
		point317	317	0.00	0.00	0.00	0	0				0
		point318	318	0.00	0.00	0.00	0	0				0
		point319	319	0.00	0.00	0.00	0	0				0
		point320	320	0.00	0.00	0.00	0	0				0
		point321	321	0.00	0.00	0.00	0	0				0
		point322	322	0.00	0.00	0.00	0	0				0
		point323	323	0.00	0.00	0.00	0	0				0
		point324	324	0.00	0.00	0.00	0	0				0
		point325	325	0.00	0.00	0.00	0	0				0
		point326	326	0.00	0.00	0.00	0	0				0
		point327	327	0.00	0.00	0.00	0	0				0
		point328	328	0.00	0.00	0.00	0	0				0
		point329	329	0.00	0.00	0.00	0	0				0
		point330	330	0.00	0.00	0.00	0	0				0
		point331	331	0.00	0.00	0.00	0	0				0
		point332	332	0.00	0.00	0.00	0	0				0
		point333	333	0.00	0.00	0.00	0	0				0
		point334	334	0.00	0.00	0.00	0	0				0
		point335	335	0.00	0.00	0.00	0	0				0
		point336	336	0.00	0.00	0.00	0	0				0
		point337	337	0.00	0.00	0.00	0	0				0
		point338	338	0.00	0.00	0.00	0	0				0
		point339	339	0.00	0.00	0.00	0	0				0
		point340	340	0.00	0.00	0.00	0	0				0

		point341	341	0.00	0.00	0.00	0	0				0
		point342	342	0.00	0.00	0.00	0	0				0



West 1_TollAll_Sunset Lane Barrier	Sheet 1 of 1	27 Mar 2018
	HMB Professional Engineers	
Barrier View-W1_TollAll_Sunset Lane	Project/Contract No. I-69 ORX	
Run name: W1_02_TollAll_D_Offset	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 1 – RICHARDSON AVENUE (TOLL I-69 ONLY)

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_Toll69_Richardson-Redbanks
BARRIER DESIGN: W1_Toll69_Richardson-Redbanks
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-03-01-RICA-13*	313	1	54.8	57.0	66	2.2	10	----	51.9	5.1	8	-2.9
KY-03-02-RICA-11*	353	1	54.9	57.2	66	2.3	10	----	52.1	5.1	8	-2.9
KY-03-02-RICA-10*	352	1	54.3	56.9	66	2.6	10	----	52.3	4.6	8	-3.4
KY-03-02-RICA-09*	351	1	54.1	56.9	66	2.8	10	----	52.4	4.5	8	-3.5
KY-03-02-RICA-08*	350	1	53.7	56.8	66	3.1	10	----	52.4	4.4	8	-3.6
KY-03-02-RICA-07*	349	1	53.5	56.7	66	3.2	10	----	52.5	4.2	8	-3.8
KY-03-02-RICA-06*	348	1	53.4	56.6	66	3.2	10	----	52.6	4.0	8	-4.0
KY-03-02-RICA-05*	347	1	53.4	56.6	66	3.2	10	----	52.8	3.8	8	-4.2
KY-03-02-RICA-04*	346	1	53.7	56.6	66	2.9	10	----	53.3	3.3	8	-4.7
KY-03-02-RICA-03*	345	1	53.9	56.6	66	2.7	10	----	53.6	3.0	8	-5.0
KY-03-01-HERA-09*	268	1	54.9	56.4	66	1.5	10	----	54.8	1.6	8	-6.4
KY-03-01-HERA-08*	267	1	55.8	56.9	66	1.1	10	----	55.8	1.1	8	-6.9
KY-03-01-HERA-07*	266	1	56.6	57.4	66	0.8	10	----	56.5	0.9	8	-7.1
KY-03-01-HERA-06*	265	1	57.8	58.4	66	0.6	10	----	57.9	0.5	8	-7.5
KY-03-01-HERA-05*	264	1	60.2	60.2	66	0.0	10	----	60.0	0.2	8	-7.8
KY-03-01-HERA-04*	263	1	61.4	61.3	66	-0.1	10	----	61.1	0.2	8	-7.8
KY-03-01-HERA-03*	262	1	62.5	62.4	66	-0.1	10	----	62.3	0.1	8	-7.9
KY-03-01-HERA-02*	260	1	64.6	64.4	66	-0.2	10	----	64.3	0.1	8	-7.9
KY-03-01-RICA-02*	301	1	54.3	57.7	66	3.4	10	----	54.1	3.6	8	-4.4
KY-03-01-RICA-03*	302	1	54.0	57.8	66	3.8	10	----	53.7	4.1	8	-3.9
KY-03-01-RICA-04*	303	1	54.0	57.9	66	3.9	10	----	53.4	4.5	8	-3.5
KY-03-01-RICA-05*	304	1	54.2	57.9	66	3.7	10	----	53.3	4.6	8	-3.4
KY-03-01-RICA-06*	305	1	54.5	58.2	66	3.7	10	----	53.2	5.0	8	-3.0
KY-03-01-RICA-07*	306	1	55.1	58.1	66	3.0	10	----	53.1	5.0	8	-3.0

KY-03-01-RICA-09*	308	1	56.1	58.8	66	2.7	10	----	53.4	5.4	8	-2.6
KY-03-01-RICA-08*	307	1	55.5	58.3	66	2.8	10	----	53.1	5.2	8	-2.8
KY-03-01-RICA-10*	310	1	56.3	58.8	66	2.5	10	----	53.2	5.6	8	-2.4
KY-03-01-RICA-12*	312	1	57.1	59.3	66	2.2	10	----	53.4	5.9	8	-2.1
KY-03-01-RICA-11*	311	1	56.3	58.0	66	1.7	10	----	52.3	5.7	8	-2.3
KY-03-01-KIML-11*	283	1	64.6	62.8	66	-1.8	10	----	55.0	7.8	8	-0.2
KY-03-01-KIML-06*	278	1	58.6	63.3	66	4.7	10	----	54.6	8.7	8	0.7
KY-03-01-KIML-05*	277	1	59.5	63.2	66	3.7	10	----	54.5	8.7	8	0.7
KY-03-01-KIML-08*	280	1	61.2	65.0	66	3.8	10	----	55.6	9.4	8	1.4
KY-03-01-KIML-07*	279	1	60.7	66.4	66	5.7	10	Snd Lvl	56.4	10.0	8	2.0
KY-03-01-KIML-02*	273	1	60.8	65.1	66	4.3	10	----	56.1	9.0	8	1.0
KY-03-01-KIML-03*	275	1	64.4	68.4	66	4.0	10	Snd Lvl	58.9	9.5	8	1.5
KY-03-01-VAL4-XX*	314	1	61.3	63.9	66	2.6	10	----	53.7	10.2	8	2.2

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	37	0.1	4.7	10.2
All Impacted	2	9.5	9.8	10.0
All that meet NR Goal	7	8.7	9.4	10.2

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_Toll69_Richardson-Redbanks
BARRIER DESIGN: W1_Toll69_Richardson-Redbanks

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-03-01-RICA-13*	313	51.9	5.1	8	-2.9	Barrier A	point57	57	20.0	34.5
						Barrier A	point56	56	20.0	34.3
						Barrier A	point59	59	20.0	34.3
						Barrier A	point58	58	20.0	34.2
						Barrier A	point43	43	20.0	33.8
						Barrier A	point55	55	20.0	33.6
						Barrier A	point46	46	20.0	33.5
						Barrier A	point53	53	20.0	33.3
						Barrier A	point47	47	20.0	33.2
						Barrier A	point60	60	20.0	33.0
KY-03-02-RICA-11*	353	52.1	5.1	8	-2.9	Barrier A	point54	54	20.0	34.9
						Barrier A	point55	55	20.0	34.9
						Barrier A	point56	56	20.0	34.5
						Barrier A	point59	59	20.0	34.4
						Barrier A	point45	45	20.0	34.4
						Barrier A	point58	58	20.0	34.3
						Barrier A	point46	46	20.0	34.2
						Barrier A	point53	53	20.0	34.0
						Barrier A	point52	52	20.0	33.9
						Barrier A	point57	57	20.0	33.8
KY-03-02-RICA-10*	352	52.3	4.6	8	-3.4	Barrier A	point40	40	20.0	36.0

						Barrier A	point53	53	20.0	35.8
						Barrier A	point54	54	20.0	34.9
						Barrier A	point52	52	20.0	34.6
						Barrier A	point44	44	20.0	34.5
						Barrier A	point56	56	20.0	34.4
						Barrier A	point45	45	20.0	34.4
						Barrier A	point55	55	20.0	34.4
						Barrier A	point59	59	20.0	34.2
						Barrier A	point58	58	20.0	34.1
KY-03-02-RICA-09*	351	52.4	4.5	8	-3.5	Barrier A	point53	53	20.0	35.1
						Barrier A	point52	52	20.0	34.9
						Barrier A	point54	54	20.0	34.7
						Barrier A	point43	43	20.0	34.7
						Barrier A	point44	44	20.0	34.4
						Barrier A	point55	55	20.0	34.4
						Barrier A	point49	49	20.0	34.3
						Barrier A	point51	51	20.0	34.3
						Barrier A	point56	56	20.0	34.3
						Barrier A	point58	58	20.0	34.2
KY-03-02-RICA-08*	350	52.4	4.4	8	-3.6	Barrier A	point39	39	20.0	36.9
						Barrier A	point53	53	20.0	34.7
						Barrier A	point48	48	20.0	34.7
						Barrier A	point49	49	20.0	34.7
						Barrier A	point52	52	20.0	34.6
						Barrier A	point51	51	20.0	34.6
						Barrier A	point50	50	20.0	34.6
						Barrier A	point47	47	20.0	34.4
						Barrier A	point45	45	20.0	34.4
						Barrier A	point46	46	20.0	34.4
KY-03-02-RICA-07*	349	52.5	4.2	8	-3.8	Barrier A	point38	38	24.0	34.9
						Barrier A	point46	46	20.0	34.9
						Barrier A	point37	37	24.0	34.8
						Barrier A	point45	45	20.0	34.7
						Barrier A	point47	47	20.0	34.7
						Barrier A	point50	50	20.0	34.7
						Barrier A	point48	48	20.0	34.5

						Barrier A	point49	49	20.0	34.5
						Barrier A	point44	44	20.0	34.3
						Barrier A	point52	52	20.0	34.3
KY-03-02-RICA-06*	348	52.6	4.0	8	-4.0	Barrier A	point36	36	20.0	35.1
						Barrier A	point46	46	20.0	34.9
						Barrier A	point45	45	20.0	34.6
						Barrier A	point47	47	20.0	34.6
						Barrier A	point44	44	20.0	34.3
						Barrier A	point48	48	20.0	34.2
						Barrier A	point49	49	20.0	34.1
						Barrier A	point43	43	20.0	34.0
						Barrier A	point50	50	20.0	33.9
						Barrier A	point52	52	20.0	33.9
KY-03-02-RICA-05*	347	52.8	3.8	8	-4.2	Barrier A	point34	34	20.0	35.5
						Barrier A	point45	45	20.0	34.7
						Barrier A	point46	46	20.0	34.5
						Barrier A	point44	44	20.0	34.5
						Barrier A	point33	33	20.0	34.3
						Barrier A	point43	43	20.0	34.2
						Barrier A	point40	40	20.0	34.0
						Barrier A	point48	48	20.0	33.9
						Barrier A	point39	39	20.0	33.8
						Barrier A	point41	41	20.0	33.8
KY-03-02-RICA-04*	346	53.3	3.3	8	-4.7	Barrier A	point32	32	20.0	36.0
						Barrier A	point31	31	20.0	35.5
						Barrier A	point43	43	20.0	34.4
						Barrier A	point42	42	20.0	34.2
						Barrier A	point39	39	20.0	34.2
						Barrier A	point44	44	20.0	34.1
						Barrier A	point41	41	20.0	34.1
						Barrier A	point45	45	20.0	34.0
						Barrier A	point10	10	0.0	34.0
						Barrier A	point38	38	20.0	33.9
KY-03-02-RICA-03*	345	53.6	3.0	8	-5.0	Barrier A	point31	31	20.0	36.3
						Barrier A	point30	30	20.0	36.2
						Barrier A	point11	11	0.0	35.3

						Barrier A	point10	10	0.0	34.9
						Barrier A	point8	8	0.0	34.8
						Barrier A	point4	4	0.0	34.7
						Barrier A	point43	43	20.0	34.5
						Barrier A	point32	32	20.0	34.5
						Barrier A	point41	41	20.0	34.4
						Barrier A	point38	38	20.0	34.2
KY-03-01-HERA-09*	268	54.8	1.6	8	-6.4	Barrier A	point18	18	0.0	40.2
						Barrier A	point4	4	0.0	37.9
						Barrier A	point17	17	0.0	37.5
						Barrier A	point19	19	0.0	37.4
						Barrier A	point20	20	0.0	36.9
						Barrier A	point8	8	0.0	36.5
						Barrier A	point16	16	0.0	35.9
						Barrier A	point10	10	0.0	35.7
						Barrier A	point9	9	0.0	35.7
						Barrier A	point15	15	0.0	35.5
KY-03-01-HERA-08*	267	55.8	1.1	8	-6.9	Barrier A	point15	15	0.0	40.2
						Barrier A	point4	4	0.0	38.6
						Barrier A	point16	16	0.0	38.5
						Barrier A	point14	14	0.0	38.5
						Barrier A	point18	18	0.0	38.3
						Barrier A	point17	17	0.0	38.1
						Barrier A	point19	19	0.0	37.7
						Barrier A	point8	8	0.0	37.0
						Barrier A	point10	10	0.0	36.9
						Barrier A	point9	9	0.0	36.8
KY-03-01-HERA-07*	266	56.5	0.9	8	-7.1	Barrier A	point13	13	0.0	40.7
						Barrier A	point12	12	0.0	40.4
						Barrier A	point4	4	0.0	39.1
						Barrier A	point17	17	0.0	38.9
						Barrier A	point18	18	0.0	38.7
						Barrier A	point16	16	0.0	38.3
						Barrier A	point14	14	0.0	38.3
						Barrier A	point8	8	0.0	37.8
						Barrier A	point9	9	0.0	37.6

						Barrier A	point10	10	0.0	37.3
KY-03-01-HERA-06*	265	57.9	0.5	8	-7.5	Barrier A	point10	10	0.0	41.3
						Barrier A	point9	9	0.0	40.9
						Barrier A	point11	11	0.0	39.9
						Barrier A	point17	17	0.0	39.4
						Barrier A	point16	16	0.0	39.3
						Barrier A	point4	4	0.0	39.1
						Barrier A	point8	8	0.0	39.0
						Barrier A	point15	15	0.0	39.0
						Barrier A	point12	12	0.0	38.9
						Barrier A	point13	13	0.0	38.9
KY-03-01-HERA-05*	264	60.0	0.2	8	-7.8	Barrier A	point4	4	0.0	40.9
						Barrier A	point8	8	0.0	40.1
						Barrier A	point15	15	0.0	39.5
						Barrier A	point10	10	0.0	39.5
						Barrier A	point9	9	0.0	39.2
						Barrier A	point14	14	0.0	39.1
						Barrier A	point11	11	0.0	39.0
						Barrier A	point12	12	0.0	38.8
						Barrier A	point16	16	0.0	38.7
						Barrier A	point13	13	0.0	38.7
KY-03-01-HERA-04*	263	61.1	0.2	8	-7.8	Barrier A	point4	4	0.0	40.8
						Barrier A	point12	12	0.0	40.1
						Barrier A	point10	10	0.0	39.9
						Barrier A	point14	14	0.0	39.8
						Barrier A	point9	9	0.0	39.7
						Barrier A	point8	8	0.0	39.5
						Barrier A	point13	13	0.0	39.4
						Barrier A	point11	11	0.0	39.3
						Barrier A	point15	15	0.0	37.7
						Barrier A	point16	16	0.0	37.4
KY-03-01-HERA-03*	262	62.3	0.1	8	-7.9	Barrier A	point10	10	0.0	40.6
						Barrier A	point4	4	0.0	40.4
						Barrier A	point9	9	0.0	40.1
						Barrier A	point8	8	0.0	39.7
						Barrier A	point12	12	0.0	39.4

						Barrier A	point11	11	0.0	39.1
						Barrier A	point13	13	0.0	36.6
						Barrier A	point14	14	0.0	36.4
						Barrier A	point17	17	0.0	35.0
						Barrier A	point19	19	0.0	35.0
KY-03-01-HERA-02*	260	64.3	0.1	8	-7.9	Barrier A	point4	4	0.0	39.5
						Barrier A	point8	8	0.0	36.5
						Barrier A	point13	13	0.0	36.0
						Barrier A	point18	18	0.0	35.3
						Barrier A	point12	12	0.0	35.2
						Barrier A	point9	9	0.0	34.9
						Barrier A	point19	19	0.0	34.9
						Barrier A	point15	15	0.0	34.7
						Barrier A	point11	11	0.0	34.6
						Barrier A	point10	10	0.0	34.3
KY-03-01-RICA-02*	301	54.1	3.6	8	-4.4	Barrier A	point33	33	20.0	37.6
						Barrier A	point43	43	20.0	36.1
						Barrier A	point44	44	20.0	35.8
						Barrier A	point45	45	20.0	35.7
						Barrier A	point15	15	0.0	35.7
						Barrier A	point39	39	20.0	35.6
						Barrier A	point42	42	20.0	35.6
						Barrier A	point34	34	20.0	35.6
						Barrier A	point41	41	20.0	35.6
						Barrier A	point32	32	20.0	35.4
KY-03-01-RICA-03*	302	53.7	4.1	8	-3.9	Barrier A	point35	35	20.0	36.1
						Barrier A	point44	44	20.0	36.0
						Barrier A	point45	45	20.0	35.9
						Barrier A	point43	43	20.0	35.6
						Barrier A	point36	36	20.0	35.6
						Barrier A	point34	34	20.0	35.5
						Barrier A	point46	46	20.0	35.5
						Barrier A	point47	47	20.0	35.4
						Barrier A	point40	40	20.0	35.3
						Barrier A	point41	41	20.0	35.2
KY-03-01-RICA-04*	303	53.4	4.5	8	-3.5	Barrier A	point37	37	20.0	36.7

						Barrier A	point46	46	20.0	36.3
						Barrier A	point45	45	20.0	36.0
						Barrier A	point47	47	20.0	35.9
						Barrier A	point44	44	20.0	35.7
						Barrier A	point48	48	20.0	35.5
						Barrier A	point49	49	20.0	35.5
						Barrier A	point43	43	20.0	35.5
						Barrier A	point38	38	20.0	35.3
						Barrier A	point42	42	20.0	35.2
KY-03-01-RICA-05*	304	53.3	4.6	8	-3.4	Barrier A	point49	49	20.0	36.3
						Barrier A	point46	46	20.0	36.1
						Barrier A	point47	47	20.0	36.1
						Barrier A	point39	39	20.0	36.0
						Barrier A	point45	45	20.0	36.0
						Barrier A	point48	48	20.0	35.8
						Barrier A	point50	50	20.0	35.8
						Barrier A	point51	51	20.0	35.8
						Barrier A	point52	52	20.0	35.6
						Barrier A	point53	53	20.0	35.6
KY-03-01-RICA-06*	305	53.2	5.0	8	-3.0	Barrier A	point52	52	20.0	36.3
						Barrier A	point48	48	20.0	36.2
						Barrier A	point49	49	20.0	36.2
						Barrier A	point51	51	20.0	36.1
						Barrier A	point53	53	20.0	36.1
						Barrier A	point46	46	20.0	36.0
						Barrier A	point45	45	20.0	36.0
						Barrier A	point47	47	20.0	36.0
						Barrier A	point50	50	20.0	35.8
						Barrier A	point43	43	20.0	35.8
KY-03-01-RICA-07*	306	53.1	5.0	8	-3.0	Barrier A	point53	53	20.0	36.4
						Barrier A	point52	52	20.0	36.3
						Barrier A	point54	54	20.0	36.2
						Barrier A	point44	44	20.0	36.1
						Barrier A	point45	45	20.0	36.0
						Barrier A	point55	55	20.0	35.8
						Barrier A	point51	51	20.0	35.8

						Barrier A	point50	50	20.0	35.8
						Barrier A	point58	58	20.0	35.8
						Barrier A	point49	49	20.0	35.7
KY-03-01-RICA-09*	308	53.4	5.4	8	-2.6	Barrier A	point54	54	20.0	36.8
						Barrier A	point45	45	20.0	36.8
						Barrier A	point58	58	20.0	36.5
						Barrier A	point59	59	20.0	36.5
						Barrier A	point55	55	20.0	36.4
						Barrier A	point56	56	20.0	36.4
						Barrier A	point46	46	20.0	36.4
						Barrier A	point57	57	20.0	36.4
						Barrier A	point52	52	20.0	36.3
						Barrier A	point53	53	20.0	36.2
KY-03-01-RICA-08*	307	53.1	5.2	8	-2.8	Barrier A	point54	54	20.0	36.3
						Barrier A	point45	45	20.0	36.1
						Barrier A	point55	55	20.0	36.1
						Barrier A	point53	53	20.0	36.1
						Barrier A	point56	56	20.0	36.1
						Barrier A	point58	58	20.0	35.9
						Barrier A	point59	59	20.0	35.8
						Barrier A	point52	52	20.0	35.7
						Barrier A	point46	46	20.0	35.6
						Barrier A	point51	51	20.0	35.5
KY-03-01-RICA-10*	310	53.2	5.6	8	-2.4	Barrier A	point54	54	20.0	36.5
						Barrier A	point58	58	20.0	36.3
						Barrier A	point46	46	20.0	36.3
						Barrier A	point59	59	20.0	36.3
						Barrier A	point53	53	20.0	36.2
						Barrier A	point55	55	20.0	36.2
						Barrier A	point56	56	20.0	35.9
						Barrier A	point52	52	24.0	35.9
						Barrier A	point47	47	20.0	35.8
						Barrier A	point57	57	20.0	35.7
KY-03-01-RICA-12*	312	53.4	5.9	8	-2.1	Barrier A	point57	57	20.0	36.9
						Barrier A	point58	58	20.0	36.8
						Barrier A	point56	56	20.0	36.7

						Barrier A	point59	59	20.0	36.5
						Barrier A	point48	48	20.0	36.4
						Barrier A	point54	54	20.0	36.1
						Barrier A	point53	53	20.0	36.0
						Barrier A	point52	52	20.0	35.9
						Barrier A	point60	60	20.0	35.9
						Barrier A	point55	55	20.0	35.9
KY-03-01-RICA-11*	311	52.3	5.7	8	-2.3	Barrier A	point59	59	20.0	35.3
						Barrier A	point58	58	20.0	34.9
						Barrier A	point60	60	20.0	34.3
						Barrier A	point57	57	20.0	34.0
						Barrier A	point61	61	20.0	34.0
						Barrier A	point49	49	20.0	33.9
						Barrier A	point53	53	20.0	33.5
						Barrier A	point54	54	20.0	33.5
						Barrier A	point48	48	20.0	33.5
						Barrier A	point50	50	20.0	33.4
KY-03-01-KIML-11*	283	55.0	7.8	8	-0.2	Barrier A	point100	100	20.0	38.8
						Barrier A	point102	102	20.0	38.7
						Barrier A	point101	101	20.0	38.7
						Barrier A	point103	103	20.0	38.6
						Barrier A	point104	104	20.0	38.5
						Barrier A	point98	98	20.0	38.4
						Barrier A	point105	105	20.0	38.4
						Barrier A	point97	97	20.0	38.2
						Barrier A	point96	96	20.0	38.2
						Barrier A	point95	95	20.0	38.0
KY-03-01-KIML-06*	278	54.6	8.7	8	0.7	Barrier A	point127	127	20.0	37.8
						Barrier A	point126	126	20.0	37.8
						Barrier A	point128	128	20.0	37.5
						Barrier A	point129	129	20.0	37.3
						Barrier A	point130	130	20.0	37.2
						Barrier A	point131	131	20.0	37.2
						Barrier A	point132	132	20.0	36.9
						Barrier A	point125	125	20.0	36.9
						Barrier A	point133	133	20.0	36.8

						Barrier A	point134	134	20.0	36.5
KY-03-01-KIML-05*	277	54.5	8.7	8	0.7	Barrier A	point126	126	20.0	37.2
						Barrier A	point127	127	20.0	36.9
						Barrier A	point128	128	20.0	36.7
						Barrier A	point125	125	20.0	36.5
						Barrier A	point129	129	20.0	36.4
						Barrier A	point130	130	20.0	36.3
						Barrier A	point120	120	20.0	36.3
						Barrier A	point121	121	20.0	36.2
						Barrier A	point119	119	20.0	36.1
						Barrier A	point118	118	20.0	36.1
KY-03-01-KIML-08*	280	55.6	9.4	8	1.4	Barrier A	point126	126	20.0	38.6
						Barrier A	point127	127	20.0	38.5
						Barrier A	point120	120	20.0	38.4
						Barrier A	point118	118	20.0	38.3
						Barrier A	point119	119	20.0	38.3
						Barrier A	point125	125	20.0	38.3
						Barrier A	point121	121	20.0	38.3
						Barrier A	point128	128	20.0	38.3
						Barrier A	point117	117	20.0	38.2
						Barrier A	point116	116	20.0	38.0
KY-03-01-KIML-07*	279	56.4	10.0	8	2.0	Barrier A	point126	126	20.0	41.0
						Barrier A	point127	127	20.0	40.8
						Barrier A	point128	128	20.0	40.4
						Barrier A	point125	125	20.0	40.2
						Barrier A	point129	129	20.0	40.1
						Barrier A	point130	130	20.0	39.8
						Barrier A	point131	131	20.0	39.6
						Barrier A	point121	121	20.0	39.5
						Barrier A	point120	120	20.0	39.4
						Barrier A	point124	124	20.0	39.3
KY-03-01-KIML-02*	273	56.1	9.0	8	1.0	Barrier A	point145	145	20.0	40.8
						Barrier A	point144	144	20.0	40.7
						Barrier A	point143	143	20.0	40.6
						Barrier A	point142	142	20.0	40.4
						Barrier A	point141	141	20.0	40.4

						Barrier A	point146	146	20.0	40.3
						Barrier A	point140	140	20.0	40.1
						Barrier A	point139	139	20.0	40.0
						Barrier A	point147	147	20.0	39.9
						Barrier A	point149	149	20.0	39.8
KY-03-01-KIML-03*	275	58.9	9.5	8	1.5	Barrier A	point145	145	20.0	44.9
						Barrier A	point144	144	20.0	44.8
						Barrier A	point143	143	20.0	44.7
						Barrier A	point146	146	20.0	44.6
						Barrier A	point142	142	20.0	44.5
						Barrier A	point141	141	20.0	44.3
						Barrier A	point147	147	20.0	44.0
						Barrier A	point140	140	20.0	44.0
						Barrier A	point148	148	20.0	43.8
						Barrier A	point139	139	20.0	43.7
KY-03-01-VAL4-XX*	314	53.7	10.2	8	2.2	Barrier A	point151	151	20.0	41.9
						Barrier A	point150	150	20.0	41.9
						Barrier A	point216	216	20.0	41.7
						Barrier A	point215	215	20.0	41.5
						Barrier A	point217	217	20.0	41.4
						Barrier A	point149	149	20.0	41.2
						Barrier A	point148	148	20.0	40.7
						Barrier A	point147	147	20.0	40.4
						Barrier A	point146	146	20.0	39.9
						Barrier A	point145	145	20.0	39.6
Total Cost, All Barriers (including additional cost(s))					$1994303					

HMB Professional Engineers				**19 March 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**West 1_Toll69_Richardson-Redbanks**									
BARRIER DESIGN:	**W1_Toll69_Richardson-Redbanks**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier A	W	12.00	19.90	20.00	3340	66477				1994303
									Total Cost:	1994303

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_Toll69_Richardson-Redbanks
BARRIER DESIGN: W1_Toll69_Richardson-Redbanks

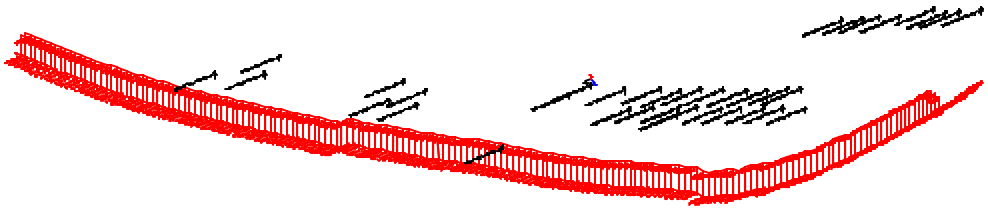
Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier A	W	point4	4	0.00	0.00	0.00	0	0				0
		point8	8	0.00	0.00	0.00	0	0				0
		point9	9	0.00	0.00	0.00	0	0				0
		point10	10	0.00	0.00	0.00	0	0				0
		point11	11	0.00	0.00	0.00	0	0				0
		point12	12	0.00	0.00	0.00	0	0				0
		point13	13	0.00	0.00	0.00	0	0				0
		point14	14	0.00	0.00	0.00	0	0				0
		point15	15	0.00	0.00	0.00	0	0				0
		point16	16	0.00	0.00	0.00	0	0				0
		point17	17	0.00	0.00	0.00	0	0				0
		point18	18	0.00	0.00	0.00	0	0				0
		point19	19	0.00	0.00	0.00	0	0				0
		point20	20	0.00	0.00	0.00	0	0				0
		point21	21	12.00	12.00	12.00	20	237				7096
		point22	22	16.00	16.00	16.00	20	323				9693
		point23	23	20.00	20.00	20.00	20	401				12042
		point24	24	20.00	20.00	20.00	20	399				11975
		point25	25	20.00	20.00	20.00	20	398				11944
		point26	26	20.00	20.00	20.00	20	405				12157
		point27	27	20.00	20.00	20.00	20	395				11861
		point28	28	20.00	20.00	20.00	20	403				12093
		point29	29	20.00	20.00	20.00	20	402				12060
		point30	30	20.00	20.00	20.00	20	393				11778
		point31	31	20.00	20.00	20.00	20	400				12015
		point32	32	20.00	20.00	20.00	20	400				12015

		point33	33	20.00	20.00	20.00	20	400				12004
		point34	34	20.00	20.00	20.00	20	400				12000
		point35	35	20.00	20.00	20.00	20	400				12001
		point36	36	20.00	20.00	20.00	20	400				12015
		point37	37	20.00	20.00	20.00	20	400				12015
		point38	38	20.00	20.00	20.00	20	402				12046
		point39	39	20.00	20.00	20.00	20	402				12060
		point40	40	20.00	20.00	20.00	20	393				11796
		point41	41	20.00	20.00	20.00	20	404				12134
		point42	42	20.00	20.00	20.00	20	395				11838
		point43	43	20.00	20.00	20.00	20	408				12238
		point44	44	20.00	20.00	20.00	20	399				11975
		point45	45	20.00	20.00	20.00	20	400				12007
		point46	46	20.00	20.00	20.00	20	393				11788
		point47	47	20.00	20.00	20.00	20	404				12117
		point48	48	20.00	20.00	20.00	20	398				11955
		point49	49	20.00	20.00	20.00	20	400				12001
		point50	50	20.00	20.00	20.00	20	402				12049
		point51	51	20.00	20.00	20.00	20	396				11868
		point52	52	20.00	20.00	20.00	20	409				12256
		point53	53	20.00	20.00	20.00	20	394				11819
		point54	54	20.00	20.00	20.00	20	403				12093
		point55	55	20.00	20.00	20.00	20	400				12008
		point56	56	20.00	20.00	20.00	20	400				12008
		point57	57	20.00	20.00	20.00	20	398				11947
		point58	58	20.00	20.00	20.00	20	401				12020
		point59	59	20.00	20.00	20.00	20	403				12093
		point60	60	20.00	20.00	20.00	20	394				11816
		point61	61	20.00	20.00	20.00	20	400				11989
		point62	62	20.00	20.00	20.00	20	402				12067
		point63	63	20.00	20.00	20.00	20	402				12067
		point64	64	20.00	20.00	20.00	20	397				11911
		point65	65	20.00	20.00	20.00	20	403				12091
		point66	66	20.00	20.00	20.00	20	398				11947
		point67	67	20.00	20.00	20.00	20	397				11910
		point68	68	20.00	20.00	20.00	20	405				12138
		point69	69	20.00	20.00	20.00	20	400				11990
		point70	70	20.00	20.00	20.00	20	400				11990
		point71	71	20.00	20.00	20.00	20	396				11879

		point72	72	20.00	20.00	20.00	20	407				12202
		point73	73	20.00	20.00	20.00	20	396				11887
		point74	74	20.00	20.00	20.00	20	401				12023
		point75	75	20.00	20.00	20.00	20	401				12023
		point76	76	20.00	20.00	20.00	20	394				11831
		point77	77	20.00	20.00	20.00	20	402				12065
		point78	78	20.00	20.00	20.00	20	398				11947
		point79	79	20.00	20.00	20.00	20	408				12253
		point80	80	20.00	20.00	20.00	20	392				11761
		point81	81	20.00	20.00	20.00	20	402				12065
		point82	82	20.00	20.00	20.00	20	402				12065
		point83	83	20.00	20.00	20.00	20	402				12065
		point84	84	20.00	20.00	20.00	20	396				11880
		point85	85	20.00	20.00	20.00	20	398				11947
		point86	86	20.00	20.00	20.00	20	400				12000
		point87	87	20.00	20.00	20.00	20	400				12000
		point88	88	20.00	20.00	20.00	20	400				12000
		point89	89	20.00	20.00	20.00	20	406				12182
		point90	90	20.00	20.00	20.00	20	400				12000
		point91	91	20.00	20.00	20.00	20	400				12000
		point92	92	20.00	20.00	20.00	20	394				11822
		point93	93	20.00	20.00	20.00	20	404				12120
		point94	94	20.00	20.00	20.00	20	398				11945
		point95	95	20.00	20.00	20.00	20	404				12120
		point96	96	20.00	20.00	20.00	20	398				11945
		point97	97	20.00	20.00	20.00	20	394				11822
		point98	98	20.00	20.00	20.00	20	402				12067
		point99	99	20.00	20.00	20.00	20	402				12067
		point100	100	20.00	20.00	20.00	20	402				12067
		point101	101	20.00	20.00	20.00	20	397				11898
		point102	102	20.00	20.00	20.00	20	398				11945
		point103	103	20.00	20.00	20.00	20	398				11945
		point104	104	20.00	20.00	20.00	20	404				12120
		point105	105	20.00	20.00	20.00	20	398				11945
		point5	5	20.00	20.00	20.00	20	404				12120
		point106	106	20.00	20.00	20.00	20	398				11945
		point107	107	20.00	20.00	20.00	20	398				11945
		point108	108	20.00	20.00	20.00	20	398				11945
		point109	109	20.00	20.00	20.00	20	402				12067

		point110	110	20.00	20.00	20.00	20	398				11945
		point111	111	20.00	20.00	20.00	20	402				12067
		point112	112	20.00	20.00	20.00	20	402				12067
		point113	113	20.00	20.00	20.00	20	397				11898
		point114	114	20.00	20.00	20.00	20	401				12023
		point115	115	20.00	20.00	20.00	20	402				12067
		point116	116	20.00	20.00	20.00	20	397				11898
		point117	117	20.00	20.00	20.00	20	400				11989
		point118	118	20.00	20.00	20.00	20	404				12117
		point119	119	20.00	20.00	20.00	20	399				11963
		point120	120	20.00	20.00	20.00	20	399				11963
		point121	121	20.00	20.00	20.00	20	404				12117
		point122	122	20.00	20.00	20.00	20	399				11963
		point123	123	20.00	20.00	20.00	20	399				11963
		point124	124	20.00	20.00	20.00	20	398				11947
		point125	125	20.00	20.00	20.00	20	399				11963
		point126	126	20.00	20.00	20.00	20	403				12093
		point127	127	20.00	20.00	20.00	20	398				11947
		point128	128	20.00	20.00	20.00	20	398				11947
		point129	129	20.00	20.00	20.00	20	403				12093
		point130	130	20.00	20.00	20.00	20	398				11947
		point131	131	20.00	20.00	20.00	20	403				12079
		point132	132	20.00	20.00	20.00	20	398				11947
		point133	133	20.00	20.00	20.00	20	398				11947
		point134	134	20.00	20.00	20.00	20	398				11947
		point135	135	20.00	20.00	20.00	20	403				12093
		point136	136	20.00	20.00	20.00	20	403				12079
		point137	137	20.00	20.00	20.00	20	398				11947
		point138	138	20.00	20.00	20.00	20	398				11941
		point139	139	20.00	20.00	20.00	20	403				12079
		point140	140	20.00	20.00	20.00	20	398				11941
		point141	141	20.00	20.00	20.00	20	403				12079
		point142	142	20.00	20.00	20.00	20	398				11941
		point143	143	20.00	20.00	20.00	20	398				11941
		point144	144	20.00	20.00	20.00	20	398				11941
		point145	145	20.00	20.00	20.00	20	402				12075
		point146	146	20.00	20.00	20.00	20	402				12075
		point147	147	20.00	20.00	20.00	20	402				12075
		point148	148	20.00	20.00	20.00	20	394				11808

		point149	149	20.00	20.00	20.00	20	407				12209
		point217	217	20.00	20.00	20.00	20	398				11944
		point215	215	20.00	20.00	20.00	20	398				11944
		point216	216	20.00	20.00	20.00	20	398				11944
		point150	150	20.00	20.00	20.00	20	403				12079
		point151	151	20.00	20.00	20.00	20	398				11944
		point152	152	20.00	20.00	20.00	20	399				11956
		point153	153	20.00	20.00	20.00	20	399				11956
		point154	154	20.00	20.00	20.00	20	403				12079
		point155	155	20.00	20.00	20.00	20	399				11956
		point156	156	20.00	20.00	20.00	20	403				12079
		point157	157	20.00	20.00	20.00	20	399				11977
		point158	158	20.00	20.00	20.00	20	399				11956
		point159	159	20.00	20.00	20.00	20	403				12093
		point160	160	20.00	20.00	20.00	20	395				11839
		point161	161	20.00	20.00	20.00	20	403				12093
		point162	162	20.00	20.00	20.00	20	403				12093
		point163	163	20.00	20.00	20.00	20	396				11868
		point164	164	20.00	20.00	20.00	20	399				11977
		point165	165	20.00	20.00	20.00	39	399				11977
		point166	166	20.00	20.00	20.00	20	404				12117
		point167	167	20.00	20.00	20.00	20	399				11977
		point168	168	20.00	20.00	20.00	20	404				12117
		point169	169	20.00	20.00	20.00	20	396				11868
		point170	170	20.00	20.00	20.00	20	400				12008
		point171	171	20.00	20.00	20.00	20	400				12008
		point172	172	20.00	20.00	20.00	20	396				11868
		point173	173	20.00	20.00	20.00	20	404				12117
		point174	174	20.00	20.00	20.00	20	402				12049
		point175	175	20.00	20.00	20.00	20	400				12008
		point176	176	20.00	20.00	20.00	20	397				11907
		point177	177	20.00	20.00	20.00	20	405				12149
		point178	178	20.00	20.00	20.00	20	397				11907
		point179	179	20.00	20.00	20.00	20	402				12049
		point180	180	20.00	20.00	20.00	20	397				11907
		point181	181	20.00	20.00	20.00	20	402				12049
		point182	182	20.00	20.00	20.00	20	398				11955
		point183	183	16.00	16.00	16.00	20	321				9639
		point184	184	0.00	0.00	0.00	0	0				0



West 1_Toll69_Richardson-Redbanks		Sheet 1 of 1	19 Mar 2018
		HMB Professional Engineers	
Barrier View-W1_Toll69_Richardson-Redbanks		Project/Contract No. I-69 ORX	
Run name: W1_02_Toll69_BarrierA		TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>		Analysis By: MG/mdg	
Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 1 – NORTH GREEN STREET (TOLL I-69 ONLY)

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: W1_Toll69_N Green Street Area
BARRIER DESIGN: W1_Toll69_NGreenSt Area
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-02-02-NELS-09	169	2	66.4	67.0	66	0.6	10	Snd Lvl	58.2	8.8	8	0.8
KY-02-02-NELS-10	170	2	68.2	67.9	66	-0.3	10	Snd Lvl	58.6	9.3	8	1.3
KY-02-02-NELS-12	172	5	63.0	63.9	66	0.9	10	----	56.9	7.0	8	-1.0
KY-02-02-NELS-13	173	4	64.3	64.7	66	0.4	10	----	57.1	7.6	8	-0.4
KY-02-02-NELS-14	174	5	64.6	64.8	66	0.2	10	----	57.2	7.6	8	-0.4
KY-02-02-NELS-15	175	5	66.7	66.1	66	-0.6	10	Snd Lvl	57.6	8.5	8	0.5
KY-02-02-NELS-24*	185	5	58.2	59.7	66	1.5	10	----	54.2	5.5	8	-2.5
KY-02-02-NELS-23*	184	5	59.3	60.6	66	1.3	10	----	54.7	5.9	8	-2.1
KY-02-02-NELS-22*	183	5	60.8	61.9	66	1.1	10	----	55.5	6.4	8	-1.6
KY-02-02-NELS-21*	182	5	62.5	63.2	66	0.7	10	----	56.4	6.8	8	-1.2
KY-02-02-NELS-20*	181	5	64.5	64.7	66	0.2	10	----	57.3	7.4	8	-0.6
KY-03-01-HIYD-01*	269	1	57.0	57.4	66	0.4	10	----	54.0	3.4	8	-4.6
KY-03-01-HIYD-02*	270	1	57.6	57.7	66	0.1	10	----	54.3	3.4	8	-4.6
KY-03-02-BARD-01*	330	1	57.6	58.0	66	0.4	10	----	54.1	3.9	8	-4.1
KY-03-02-BARD-02*	331	1	57.4	57.7	66	0.3	10	----	54.1	3.6	8	-4.4
KY-03-01-BARD-01*	249	1	58.6	59.0	66	0.4	10	----	54.9	4.1	8	-3.9
KY-03-01-BARD-02*	251	1	59.1	59.6	66	0.5	10	----	55.0	4.6	8	-3.4
KY-03-01-BARD-03*	252	1	59.9	60.2	66	0.3	10	----	55.2	5.0	8	-3.0
KY-03-01-BARD-04*	253	2	59.6	59.6	66	0.0	10	----	54.9	4.7	8	-3.3
KY-03-01-BARD-05*	254	2	59.3	59.1	66	-0.2	10	----	54.8	4.3	8	-3.7
KY-03-02-HIYD-02*	339	1	57.6	57.0	66	-0.6	10	----	54.8	2.2	8	-5.8
KY-03-02-HIYD-01*	338	1	57.5	56.9	66	-0.6	10	----	55.1	1.8	8	-6.2
KY-03-01-ELKA-01*	255	1	56.6	57.0	66	0.4	10	----	55.7	1.3	8	-6.7
KY-03-01-ELKA-02*	256	1	58.3	58.3	66	0.0	10	----	57.6	0.7	8	-7.3

KY-03-01-NGRS-08*	293	1	58.8	58.1	66	-0.7	10	----	57.4	0.7	8	-7.3
KY-03-01-ELKA-03*	257	1	59.2	58.9	66	-0.3	10	----	58.3	0.6	8	-7.4
KY-03-02-ELKA-01*	332	1	57.1	57.5	66	0.4	10	----	56.9	0.6	8	-7.4
KY-03-02-ELKA-02*	334	2	58.3	58.6	66	0.3	10	----	58.2	0.4	8	-7.6
KY-03-02-ELKA-03*	335	2	59.4	59.6	66	0.2	10	----	59.3	0.3	8	-7.7
KY-03-02-ELKA-04*	336	2	60.8	60.9	66	0.1	10	----	60.7	0.2	8	-7.8
KY-03-02-RICA-01*	342	1	63.1	63.1	66	0.0	10	----	63.1	0.0	8	-8.0
KY-03-02-RICA-02*	343	1	65.6	65.0	66	-0.6	10	----	65.0	0.0	8	-8.0
KY-03-01-HERA-01*	259	1	66.7	66.4	66	-0.3	10	Snd Lvl	66.3	0.1	8	-7.9
KY-02-02-NELS-16	177	5	69.5	67.4	66	-2.1	10	Snd Lvl	58.1	9.3	8	1.3
KY-02-02-NELS-17	178	5	69.8	67.7	66	-2.1	10	Snd Lvl	58.4	9.3	8	1.3
KY-02-02-NELS-18	179	5	69.2	67.5	66	-1.7	10	Snd Lvl	58.4	9.1	8	1.1
KY-02-02-NELS-19*	180	5	66.2	66.1	66	-0.1	10	Snd Lvl	57.7	8.4	8	0.4
KY-03-01-NELS-01*	286	1	62.6	62.8	66	0.2	10	----	59.6	3.2	8	-4.8
KY-03-01-RICA-01*	300	1	60.7	60.9	66	0.2	10	----	60.7	0.2	8	-7.8
KY-03-02-ELKA-05*	337	2	62.0	62.0	66	0.0	10	----	61.8	0.2	8	-7.8
KY-03-01-ELKA-04*	258	1	60.4	59.6	66	-0.8	10	----	59.2	0.4	8	-7.6
KY-03-01-NGRS-07*	292	2	60.8	59.6	66	-1.2	10	----	59.1	0.5	8	-7.5
KY-03-01-NGRS-06*	291	1	60.2	59.2	66	-1.0	10	----	58.6	0.6	8	-7.4
KY-03-01-NRGS-05*	299	1	58.3	57.1	66	-1.2	10	----	55.7	1.4	8	-6.6
KY-03-01-NGRS-04*	290	1	58.1	56.9	66	-1.2	10	----	54.9	2.0	8	-6.0
KY-03-01-NGRS-03*	289	1	58.6	57.8	66	-0.8	10	----	54.7	3.1	8	-4.9
KY-03-01-NGRS-02*	288	1	59.2	58.7	66	-0.5	10	----	54.7	4.0	8	-4.0
KY-03-01-NGRS-09*	294	1	60.5	60.2	66	-0.3	10	----	55.2	5.0	8	-3.0
KY-03-01-NGRS-10*	297	1	60.9	60.8	66	-0.1	10	----	55.5	5.3	8	-2.7
KY-03-01-NGRS-01*	287	2	61.7	61.8	66	0.1	10	----	56.0	5.8	8	-2.2
KY-03-02-NGRS-02*	341	12	62.3	56.4	66	-5.9	10	----	54.4	2.0	8	-6.0
KY-03-02-NGRS-01*	340	12	62.8	58.2	66	-4.6	10	----	54.6	3.6	8	-4.4

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	135	0.0	3.8	9.3
All Impacted	30	0.1	7.8	9.3
All that meet NR Goal	29	8.4	9.0	9.3

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: W1_Toll69_N Green Street Area
BARRIER DESIGN: W1_Toll69_NGreenSt Area

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Goal	Calc-Goal	Barrier Reviewed	Important Segments Name	No.	Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-02-02-NELS-09	169	58.2	8.8	8	0.8	Barrier C	point282	282	20.0	48.3
						Barrier C	point274	274	20.0	42.5
						Barrier C	point284	284	20.0	42.2
						Barrier C	point283	283	20.0	42.2
						Barrier C	point266	266	20.0	42.0
						Barrier C	point263	263	20.0	42.0
						Barrier C	point267	267	20.0	41.9
						Barrier C	point264	264	20.0	41.9
						Barrier C	point262	262	20.0	41.9
						Barrier C	point265	265	20.0	41.9
KY-02-02-NELS-10	170	58.6	9.3	8	1.3	Barrier C	point282	282	20.0	49.2
						Barrier C	point267	267	24.0	43.3
						Barrier C	point265	265	20.0	43.2
						Barrier C	point266	266	20.0	43.2
						Barrier C	point263	263	20.0	43.2
						Barrier C	point264	264	20.0	43.2
						Barrier C	point268	268	24.0	43.0
						Barrier C	point273	273	20.0	43.0
						Barrier C	point262	262	20.0	42.9
						Barrier C	point269	269	20.0	42.9
KY-02-02-NELS-12	172	56.9	7.0	8	-1.0	Barrier C	point282	282	20.0	47.4

						Barrier C	point293	293	20.0	41.5
						Barrier C	point292	292	20.0	41.5
						Barrier C	point284	284	20.0	40.7
						Barrier C	point283	283	20.0	40.6
						Barrier C	point285	285	20.0	40.1
						Barrier C	point277	277	20.0	40.0
						Barrier C	point275	275	20.0	40.0
						Barrier C	point278	278	20.0	40.0
						Barrier C	point276	276	20.0	40.0
KY-02-02-NELS-13	173	57.1	7.6	8	-0.4	Barrier C	point282	282	20.0	48.0
						Barrier C	point291	291	20.0	42.2
						Barrier C	point290	290	20.0	41.9
						Barrier C	point190	190	20.0	41.3
						Barrier C	point284	284	20.0	41.2
						Barrier C	point276	276	20.0	40.9
						Barrier C	point277	277	20.0	40.8
						Barrier C	point278	278	20.0	40.8
						Barrier C	point275	275	20.0	40.8
						Barrier C	point283	283	20.0	40.7
KY-02-02-NELS-14	174	57.2	7.6	8	-0.4	Barrier C	point282	282	20.0	48.2
						Barrier C	point291	291	20.0	42.4
						Barrier C	point290	290	20.0	41.9
						Barrier C	point284	284	20.0	41.3
						Barrier C	point190	190	20.0	41.0
						Barrier C	point283	283	20.0	41.0
						Barrier C	point285	285	20.0	40.9
						Barrier C	point276	276	20.0	40.9
						Barrier C	point278	278	20.0	40.9
						Barrier C	point277	277	20.0	40.8
KY-02-02-NELS-15	175	57.6	8.5	8	0.5	Barrier C	point282	282	20.0	49.3
						Barrier C	point289	289	20.0	43.1
						Barrier C	point190	190	20.0	42.9
						Barrier C	point284	284	20.0	42.5
						Barrier C	point283	283	20.0	42.0
						Barrier C	point278	278	20.0	42.0
						Barrier C	point288	288	20.0	42.0

						Barrier C	point277	277	20.0	41.9
						Barrier C	point279	279	20.0	41.9
						Barrier C	point276	276	20.0	41.9
KY-02-02-NELS-24*	185	54.2	5.5	8	-2.5	Barrier C	point282	282	20.0	42.3
						Barrier C	point190	190	20.0	37.5
						Barrier C	point289	289	20.0	37.3
						Barrier C	point290	290	20.0	37.1
						Barrier C	point284	284	20.0	36.9
						Barrier C	point291	291	20.0	36.8
						Barrier C	point288	288	20.0	36.8
						Barrier C	point292	292	20.0	36.7
						Barrier C	point285	285	20.0	36.6
						Barrier C	point287	287	20.0	36.3
KY-02-02-NELS-23*	184	54.7	5.9	8	-2.1	Barrier C	point282	282	20.0	43.3
						Barrier C	point190	190	20.0	38.5
						Barrier C	point289	289	20.0	38.3
						Barrier C	point290	290	20.0	38.0
						Barrier C	point284	284	20.0	37.9
						Barrier C	point291	291	20.0	37.9
						Barrier C	point288	288	20.0	37.7
						Barrier C	point292	292	20.0	37.6
						Barrier C	point285	285	20.0	37.6
						Barrier C	point287	287	20.0	37.3
KY-02-02-NELS-22*	183	55.5	6.4	8	-1.6	Barrier C	point282	282	20.0	44.6
						Barrier C	point190	190	20.0	39.9
						Barrier C	point289	289	20.0	39.7
						Barrier C	point290	290	20.0	39.3
						Barrier C	point284	284	20.0	39.3
						Barrier C	point288	288	20.0	39.2
						Barrier C	point291	291	20.0	39.0
						Barrier C	point285	285	20.0	39.0
						Barrier C	point292	292	20.0	38.9
						Barrier C	point283	283	20.0	38.6
KY-02-02-NELS-21*	182	56.4	6.8	8	-1.2	Barrier C	point282	282	20.0	45.9
						Barrier C	point190	190	20.0	41.6
						Barrier C	point289	289	20.0	41.3

						Barrier C	point284	284	20.0	40.9
						Barrier C	point290	290	20.0	40.9
						Barrier C	point288	288	20.0	40.8
						Barrier C	point308	308	20.0	40.7
						Barrier C	point291	291	20.0	40.6
						Barrier C	point285	285	20.0	40.6
						Barrier C	point292	292	20.0	40.6
KY-02-02-NELS-20*	181	57.3	7.4	8	-0.6	Barrier C	point282	282	20.0	47.1
						Barrier C	point190	190	20.0	42.9
						Barrier C	point284	284	20.0	42.4
						Barrier C	point289	289	20.0	42.2
						Barrier C	point288	288	20.0	42.2
						Barrier C	point290	290	20.0	42.2
						Barrier C	point285	285	20.0	42.0
						Barrier C	point291	291	20.0	41.9
						Barrier C	point292	292	20.0	41.7
						Barrier C	point287	287	20.0	41.6
KY-03-01-HIYD-01*	269	54.0	3.4	8	-4.6	Barrier C	point282	282	20.0	36.8
						Barrier C	point356	356	0.0	34.6
						Barrier C	point328	328	20.0	34.3
						Barrier C	point327	327	20.0	34.1
						Barrier C	point317	317	20.0	34.1
						Barrier C	point329	329	20.0	34.0
						Barrier C	point355	355	0.0	33.9
						Barrier C	point357	357	0.0	33.9
						Barrier C	point326	326	20.0	33.8
						Barrier C	point330	330	20.0	33.8
KY-03-01-HIYD-02*	270	54.3	3.4	8	-4.6	Barrier C	point282	282	20.0	37.5
						Barrier C	point328	328	20.0	35.0
						Barrier C	point354	354	0.0	34.9
						Barrier C	point329	329	20.0	34.9
						Barrier C	point358	358	0.0	34.8
						Barrier C	point327	327	20.0	34.8
						Barrier C	point355	355	0.0	34.7
						Barrier C	point356	356	0.0	34.6
						Barrier C	point330	330	20.0	34.6

						Barrier C	point332	332	20.0	34.6
KY-03-02-BARD-01*	330	54.1	3.9	8	-4.1	Barrier C	point282	282	20.0	38.1
						Barrier C	point312	312	20.0	35.2
						Barrier C	point284	284	20.0	34.8
						Barrier C	point316	316	20.0	34.8
						Barrier C	point313	313	20.0	34.7
						Barrier C	point317	317	20.0	34.7
						Barrier C	point314	314	20.0	34.7
						Barrier C	point325	325	20.0	34.5
						Barrier C	point315	315	20.0	34.5
						Barrier C	point324	324	20.0	34.4
KY-03-02-BARD-02*	331	54.1	3.6	8	-4.4	Barrier C	point282	282	20.0	37.3
						Barrier C	point316	316	20.0	34.7
						Barrier C	point327	327	20.0	34.6
						Barrier C	point355	355	0.0	34.5
						Barrier C	point326	326	20.0	34.4
						Barrier C	point317	317	20.0	34.4
						Barrier C	point328	328	20.0	34.4
						Barrier C	point325	325	20.0	34.3
						Barrier C	point320	320	20.0	34.1
						Barrier C	point329	329	20.0	34.1
KY-03-01-BARD-01*	249	54.9	4.1	8	-3.9	Barrier C	point282	282	20.0	40.2
						Barrier C	point190	190	20.0	39.0
						Barrier C	point289	289	20.0	38.7
						Barrier C	point284	284	20.0	37.6
						Barrier C	point290	290	20.0	37.3
						Barrier C	point285	285	20.0	37.0
						Barrier C	point309	309	20.0	36.5
						Barrier C	point307	307	20.0	36.5
						Barrier C	point306	306	20.0	36.4
						Barrier C	point310	310	20.0	36.3
KY-03-01-BARD-02*	251	55.0	4.6	8	-3.4	Barrier C	point282	282	20.0	40.1
						Barrier C	point284	284	20.0	37.6
						Barrier C	point190	190	20.0	37.4
						Barrier C	point289	289	20.0	36.9
						Barrier C	point285	285	20.0	36.8

						Barrier C	point308	308	20.0	36.7
						Barrier C	point310	310	20.0	36.7
						Barrier C	point312	312	20.0	36.6
						Barrier C	point309	309	20.0	36.6
						Barrier C	point313	313	20.0	36.5
KY-03-01-BARD-03*	252	55.2	5.0	8	-3.0	Barrier C	point282	282	20.0	40.1
						Barrier C	point311	311	20.0	37.3
						Barrier C	point314	314	20.0	37.2
						Barrier C	point310	310	20.0	37.2
						Barrier C	point313	313	20.0	37.1
						Barrier C	point315	315	20.0	37.1
						Barrier C	point284	284	20.0	37.0
						Barrier C	point316	316	20.0	36.8
						Barrier C	point307	307	20.0	36.7
						Barrier C	point306	306	20.0	36.7
KY-03-01-BARD-04*	253	54.9	4.7	8	-3.3	Barrier C	point282	282	20.0	39.5
						Barrier C	point314	314	20.0	36.9
						Barrier C	point313	313	20.0	36.9
						Barrier C	point316	316	20.0	36.8
						Barrier C	point317	317	20.0	36.8
						Barrier C	point315	315	20.0	36.8
						Barrier C	point324	324	20.0	36.4
						Barrier C	point318	318	20.0	36.4
						Barrier C	point323	323	20.0	36.4
						Barrier C	point325	325	20.0	36.3
KY-03-01-BARD-05*	254	54.8	4.3	8	-3.7	Barrier C	point282	282	20.0	38.9
						Barrier C	point315	315	20.0	36.6
						Barrier C	point316	316	24.0	36.3
						Barrier C	point325	325	20.0	36.3
						Barrier C	point324	324	20.0	36.3
						Barrier C	point318	318	20.0	36.3
						Barrier C	point317	317	24.0	36.2
						Barrier C	point326	326	20.0	36.0
						Barrier C	point323	323	20.0	36.0
						Barrier C	point319	319	20.0	35.9
KY-03-02-HIYD-02*	339	54.8	2.2	8	-5.8	Barrier C	point356	356	0.0	37.5

						Barrier C	point282	282	20.0	37.3
						Barrier C	point357	357	0.0	37.1
						Barrier C	point358	358	0.0	37.1
						Barrier C	point359	359	0.0	36.8
						Barrier C	point355	355	0.0	36.7
						Barrier C	point361	361	0.0	36.3
						Barrier C	point354	354	0.0	35.8
						Barrier C	point360	360	0.0	35.7
						Barrier C	point362	362	0.0	35.7
KY-03-02-HIYD-01*	338	55.1	1.8	8	-6.2	Barrier C	point357	357	0.0	39.1
						Barrier C	point359	359	0.0	38.6
						Barrier C	point358	358	0.0	38.3
						Barrier C	point360	360	0.0	38.0
						Barrier C	point356	356	0.0	37.3
						Barrier C	point282	282	20.0	36.8
						Barrier C	point361	361	0.0	36.8
						Barrier C	point355	355	0.0	36.8
						Barrier C	point354	354	0.0	36.5
						Barrier C	point353	353	0.0	36.4
KY-03-01-ELKA-01*	255	55.7	1.3	8	-6.7	Barrier C	point360	360	0.0	39.8
						Barrier C	point361	361	0.0	39.6
						Barrier C	point359	359	0.0	39.6
						Barrier C	point362	362	0.0	39.5
						Barrier C	point358	358	0.0	38.8
						Barrier C	point365	365	0.0	38.2
						Barrier C	point356	356	0.0	38.1
						Barrier C	point357	357	0.0	38.0
						Barrier C	point363	363	0.0	37.9
						Barrier C	point366	366	0.0	37.7
KY-03-01-ELKA-02*	256	57.6	0.7	8	-7.3	Barrier C	point362	362	0.0	42.5
						Barrier C	point360	360	0.0	42.3
						Barrier C	point361	361	0.0	41.8
						Barrier C	point365	365	0.0	41.8
						Barrier C	point366	366	0.0	41.6
						Barrier C	point364	364	0.0	41.4
						Barrier C	point363	363	0.0	41.3

						Barrier C	point359	359	0.0	41.2
						Barrier C	point356	356	0.0	40.5
						Barrier C	point357	357	0.0	40.4
KY-03-01-NGRS-08*	293	57.4	0.7	8	-7.3	Barrier C	point360	360	0.0	42.4
						Barrier C	point359	359	0.0	42.3
						Barrier C	point361	361	0.0	42.2
						Barrier C	point362	362	0.0	41.9
						Barrier C	point357	357	0.0	41.2
						Barrier C	point354	354	0.0	41.2
						Barrier C	point356	356	0.0	41.1
						Barrier C	point358	358	0.0	41.0
						Barrier C	point366	366	0.0	40.8
						Barrier C	point363	363	0.0	40.7
KY-03-01-ELKA-03*	257	58.3	0.6	8	-7.4	Barrier C	point362	362	0.0	43.8
						Barrier C	point361	361	0.0	43.7
						Barrier C	point363	363	0.0	43.4
						Barrier C	point360	360	0.0	43.2
						Barrier C	point365	365	0.0	42.7
						Barrier C	point359	359	0.0	42.5
						Barrier C	point366	366	0.0	42.4
						Barrier C	point364	364	0.0	41.9
						Barrier C	point358	358	0.0	41.9
						Barrier C	point355	355	0.0	41.7
KY-03-02-ELKA-01*	332	56.9	0.6	8	-7.4	Barrier C	point363	363	0.0	40.3
						Barrier C	point366	366	0.0	40.0
						Barrier C	point362	362	0.0	39.6
						Barrier C	point365	365	0.0	39.5
						Barrier C	point361	361	0.0	39.2
						Barrier C	point359	359	0.0	38.8
						Barrier C	point360	360	0.0	38.7
						Barrier C	point364	364	0.0	38.4
						Barrier C	point358	358	0.0	38.2
						Barrier C	point357	357	0.0	38.2
KY-03-02-ELKA-02*	334	58.2	0.4	8	-7.6	Barrier C	point365	365	0.0	41.1
						Barrier C	point362	362	0.0	41.0
						Barrier C	point363	363	0.0	40.7

						Barrier C	point361	361	0.0	40.3
						Barrier C	point364	364	0.0	40.3
						Barrier C	point360	360	0.0	40.1
						Barrier C	point359	359	0.0	39.7
						Barrier C	point358	358	0.0	39.0
						Barrier C	point356	356	0.0	38.4
						Barrier C	point352	352	0.0	38.2
KY-03-02-ELKA-03*	335	59.3	0.3	8	-7.7	Barrier C	point366	366	0.0	42.8
						Barrier C	point365	365	0.0	42.4
						Barrier C	point364	364	0.0	42.2
						Barrier C	point363	363	0.0	42.1
						Barrier C	point362	362	0.0	41.8
						Barrier C	point361	361	0.0	41.4
						Barrier C	point360	360	0.0	40.9
						Barrier C	point359	359	0.0	40.9
						Barrier C	point358	358	0.0	40.4
						Barrier C	point356	356	0.0	39.6
KY-03-02-ELKA-04*	336	60.7	0.2	8	-7.8	Barrier C	point366	366	0.0	44.8
						Barrier C	point365	365	0.0	44.0
						Barrier C	point362	362	0.0	43.1
						Barrier C	point361	361	0.0	42.8
						Barrier C	point364	364	0.0	42.8
						Barrier C	point363	363	0.0	42.7
						Barrier C	point360	360	0.0	42.1
						Barrier C	point356	356	0.0	40.8
						Barrier C	point357	357	0.0	40.7
						Barrier C	point359	359	0.0	40.7
KY-03-02-RICA-01*	342	63.1	0.0	8	-8.0	Barrier C	point366	366	0.0	39.9
						Barrier C	point364	364	0.0	39.2
						Barrier C	point359	359	0.0	39.0
						Barrier C	point363	363	0.0	38.7
						Barrier C	point360	360	0.0	38.7
						Barrier C	point365	365	0.0	38.5
						Barrier C	point362	362	0.0	38.1
						Barrier C	point361	361	0.0	37.7
						Barrier C	point358	358	0.0	37.7

						Barrier C	point357	357	0.0	36.8
KY-03-02-RICA-02*	343	65.0	0.0	8	-8.0	Barrier C	point366	366	0.0	39.9
						Barrier C	point364	364	0.0	39.5
						Barrier C	point365	365	0.0	39.5
						Barrier C	point363	363	0.0	39.3
						Barrier C	point362	362	0.0	38.2
						Barrier C	point361	361	0.0	37.6
						Barrier C	point360	360	0.0	36.0
						Barrier C	point358	358	0.0	35.6
						Barrier C	point367	367	0.0	35.6
						Barrier C	point357	357	0.0	34.8
KY-03-01-HERA-01*	259	66.3	0.1	8	-7.9	Barrier C	point366	366	0.0	36.7
						Barrier C	point365	365	0.0	36.1
						Barrier C	point364	364	0.0	35.2
						Barrier C	point363	363	0.0	34.4
						Barrier C	point362	362	0.0	34.1
						Barrier C	point360	360	0.0	33.9
						Barrier C	point361	361	0.0	33.2
						Barrier C	point359	359	0.0	33.0
						Barrier C	point356	356	0.0	32.5
						Barrier C	point357	357	0.0	32.3
KY-02-02-NELS-16	177	58.1	9.3	8	1.3	Barrier C	point282	282	20.0	50.7
						Barrier C	point287	287	20.0	44.3
						Barrier C	point284	284	20.0	43.5
						Barrier C	point283	283	20.0	43.4
						Barrier C	point286	286	20.0	43.4
						Barrier C	point279	279	20.0	43.2
						Barrier C	point278	278	20.0	43.1
						Barrier C	point280	280	20.0	43.0
						Barrier C	point277	277	20.0	42.9
						Barrier C	point285	285	20.0	42.9
KY-02-02-NELS-17	178	58.4	9.3	8	1.3	Barrier C	point282	282	20.0	51.4
						Barrier C	point284	284	20.0	45.8
						Barrier C	point283	283	20.0	45.3
						Barrier C	point290	290	20.0	45.0
						Barrier C	point285	285	20.0	44.8

						Barrier C	point190	190	20.0	44.0
						Barrier C	point286	286	20.0	43.6
						Barrier C	point287	287	20.0	43.2
						Barrier C	point289	289	20.0	43.0
						Barrier C	point288	288	20.0	43.0
KY-02-02-NELS-18	179	58.4	9.1	8	1.1	Barrier C	point282	282	24.0	50.5
						Barrier C	point284	284	24.0	45.7
						Barrier C	point285	285	24.0	45.3
						Barrier C	point283	283	24.0	45.0
						Barrier C	point293	293	20.0	45.0
						Barrier C	point286	286	20.0	44.6
						Barrier C	point287	287	20.0	44.4
						Barrier C	point288	288	20.0	44.1
						Barrier C	point289	289	20.0	44.0
						Barrier C	point190	190	20.0	43.7
KY-02-02-NELS-19*	180	57.7	8.4	8	0.4	Barrier C	point282	282	20.0	48.0
						Barrier C	point190	190	20.0	43.9
						Barrier C	point289	289	24.0	43.9
						Barrier C	point284	284	20.0	43.4
						Barrier C	point288	288	24.0	43.3
						Barrier C	point290	290	20.0	43.3
						Barrier C	point285	285	20.0	43.1
						Barrier C	point291	291	20.0	42.9
						Barrier C	point287	287	20.0	42.8
						Barrier C	point286	286	20.0	42.7
KY-03-01-NELS-01*	286	59.6	3.2	8	-4.8	Barrier C	point282	282	20.0	47.9
						Barrier C	point190	190	20.0	44.6
						Barrier C	point291	291	20.0	44.6
						Barrier C	point292	292	20.0	44.5
						Barrier C	point289	289	20.0	44.5
						Barrier C	point290	290	20.0	44.5
						Barrier C	point288	288	20.0	44.1
						Barrier C	point287	287	20.0	43.9
						Barrier C	point295	295	20.0	43.8
						Barrier C	point293	293	20.0	43.7
KY-03-01-RICA-01*	300	60.7	0.2	8	-7.8	Barrier C	point364	364	0.0	41.0

						Barrier C	point366	366	0.0	40.8
						Barrier C	point365	365	0.0	40.1
						Barrier C	point363	363	0.0	40.0
						Barrier C	point362	362	0.0	39.7
						Barrier C	point360	360	0.0	39.4
						Barrier C	point361	361	0.0	39.0
						Barrier C	point358	358	0.0	38.8
						Barrier C	point357	357	0.0	38.5
						Barrier C	point359	359	0.0	38.3
KY-03-02-ELKA-05*	337	61.8	0.2	8	-7.8	Barrier C	point366	366	0.0	46.1
						Barrier C	point363	363	0.0	44.9
						Barrier C	point365	365	0.0	44.3
						Barrier C	point364	364	0.0	44.2
						Barrier C	point362	362	0.0	43.9
						Barrier C	point361	361	0.0	43.2
						Barrier C	point360	360	0.0	42.7
						Barrier C	point357	357	0.0	42.1
						Barrier C	point358	358	0.0	42.1
						Barrier C	point356	356	0.0	42.0
KY-03-01-ELKA-04*	258	59.2	0.4	8	-7.6	Barrier C	point362	362	0.0	45.4
						Barrier C	point360	360	0.0	45.4
						Barrier C	point361	361	0.0	44.9
						Barrier C	point359	359	0.0	44.3
						Barrier C	point366	366	0.0	44.2
						Barrier C	point363	363	0.0	44.1
						Barrier C	point358	358	0.0	44.0
						Barrier C	point357	357	0.0	43.9
						Barrier C	point365	365	0.0	43.9
						Barrier C	point356	356	0.0	43.4
KY-03-01-NGRS-07*	292	59.1	0.5	8	-7.5	Barrier C	point358	358	0.0	47.7
						Barrier C	point359	359	0.0	46.8
						Barrier C	point361	361	0.0	46.5
						Barrier C	point360	360	0.0	45.8
						Barrier C	point362	362	0.0	44.4
						Barrier C	point357	357	0.0	43.9
						Barrier C	point366	366	0.0	43.1

						Barrier C	point363	363	0.0	42.6
						Barrier C	point353	353	0.0	42.6
						Barrier C	point365	365	0.0	42.3
KY-03-01-NGRS-06*	291	58.6	0.6	8	-7.4	Barrier C	point357	357	0.0	45.1
						Barrier C	point361	361	0.0	45.0
						Barrier C	point356	356	0.0	45.0
						Barrier C	point359	359	0.0	44.2
						Barrier C	point360	360	0.0	44.2
						Barrier C	point362	362	0.0	44.0
						Barrier C	point358	358	0.0	43.5
						Barrier C	point366	366	0.0	42.8
						Barrier C	point363	363	0.0	42.3
						Barrier C	point365	365	0.0	42.1
KY-03-01-NRGS-05*	299	55.7	1.4	8	-6.6	Barrier C	point358	358	0.0	40.4
						Barrier C	point359	359	0.0	39.8
						Barrier C	point360	360	0.0	39.6
						Barrier C	point357	357	0.0	39.2
						Barrier C	point361	361	0.0	39.1
						Barrier C	point356	356	0.0	38.5
						Barrier C	point363	363	0.0	38.3
						Barrier C	point362	362	0.0	38.2
						Barrier C	point355	355	0.0	37.5
						Barrier C	point365	365	0.0	36.5
KY-03-01-NGRS-04*	290	54.9	2.0	8	-6.0	Barrier C	point363	363	0.0	37.8
						Barrier C	point361	361	0.0	37.6
						Barrier C	point356	356	0.0	37.5
						Barrier C	point362	362	0.0	37.5
						Barrier C	point359	359	0.0	37.4
						Barrier C	point360	360	0.0	37.2
						Barrier C	point358	358	0.0	37.0
						Barrier C	point357	357	0.0	37.0
						Barrier C	point332	332	20.0	35.9
						Barrier C	point282	282	20.0	35.7
KY-03-01-NGRS-03*	289	54.7	3.1	8	-4.9	Barrier C	point282	282	20.0	37.5
						Barrier C	point328	328	20.0	36.3
						Barrier C	point327	327	20.0	36.2

						Barrier C	point329	329	20.0	36.1
						Barrier C	point326	326	20.0	35.8
						Barrier C	point324	324	20.0	35.7
						Barrier C	point323	323	20.0	35.6
						Barrier C	point325	325	20.0	35.6
						Barrier C	point330	330	20.0	35.6
						Barrier C	point331	331	20.0	35.6
KY-03-01-NGRS-02*	288	54.7	4.0	8	-4.0	Barrier C	point282	282	20.0	39.0
						Barrier C	point326	326	20.0	36.5
						Barrier C	point325	325	20.0	36.5
						Barrier C	point324	324	20.0	36.4
						Barrier C	point318	318	20.0	36.4
						Barrier C	point327	327	20.0	36.3
						Barrier C	point320	320	20.0	36.1
						Barrier C	point321	321	20.0	36.0
						Barrier C	point317	317	20.0	36.0
						Barrier C	point319	319	20.0	35.9
KY-03-01-NGRS-09*	294	55.2	5.0	8	-3.0	Barrier C	point282	282	20.0	40.3
						Barrier C	point314	314	20.0	37.8
						Barrier C	point316	316	20.0	37.6
						Barrier C	point317	317	20.0	37.6
						Barrier C	point315	315	20.0	37.5
						Barrier C	point313	313	20.0	37.5
						Barrier C	point318	318	20.0	37.1
						Barrier C	point324	324	20.0	37.1
						Barrier C	point312	312	20.0	37.1
						Barrier C	point322	322	20.0	37.0
KY-03-01-NGRS-10*	297	55.5	5.3	8	-2.7	Barrier C	point282	282	20.0	40.6
						Barrier C	point312	312	20.0	38.4
						Barrier C	point313	313	20.0	38.1
						Barrier C	point315	315	20.0	38.0
						Barrier C	point314	314	20.0	38.0
						Barrier C	point316	316	20.0	37.9
						Barrier C	point311	311	20.0	37.7
						Barrier C	point317	317	20.0	37.7
						Barrier C	point308	308	20.0	37.6

						Barrier C	point310	310	20.0	37.5
KY-03-01-NGRS-01*	287	56.0	5.8	8	-2.2	Barrier C	point282	282	20.0	41.5
						Barrier C	point308	308	20.0	39.2
						Barrier C	point309	309	20.0	39.0
						Barrier C	point312	312	20.0	39.0
						Barrier C	point310	310	20.0	38.9
						Barrier C	point307	307	20.0	38.8
						Barrier C	point311	311	20.0	38.8
						Barrier C	point304	304	20.0	38.7
						Barrier C	point305	305	20.0	38.7
						Barrier C	point306	306	20.0	38.6
KY-03-02-NGRS-02*	341	54.4	2.0	8	-6.0	Barrier C	point330	330	20.0	40.4
						Barrier C	point331	331	20.0	40.3
						Barrier C	point329	329	20.0	39.5
						Barrier C	point328	328	20.0	38.5
						Barrier C	point327	327	20.0	37.6
						Barrier C	point332	332	20.0	37.5
						Barrier C	point333	333	20.0	37.0
						Barrier C	point326	326	20.0	36.9
						Barrier C	point325	325	20.0	36.5
						Barrier C	point324	324	20.0	36.1
KY-03-02-NGRS-01*	340	54.6	3.6	8	-4.4	Barrier C	point325	325	20.0	41.2
						Barrier C	point324	324	20.0	41.1
						Barrier C	point323	323	20.0	40.8
						Barrier C	point322	322	20.0	40.2
						Barrier C	point326	326	20.0	40.2
						Barrier C	point321	321	20.0	39.6
						Barrier C	point320	320	20.0	38.9
						Barrier C	point319	319	20.0	38.3
						Barrier C	point318	318	20.0	37.8
						Barrier C	point317	317	20.0	37.5
Total Cost, All Barriers (including additional cost(s))					$1917286					

HMB Professional Engineers				19 March 2018						
MG/mdg				TNM 2.5						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	I-69 ORX									
RUN:	W1_Toll69_N Green Street Area									
BARRIER DESIGN:	W1_Toll69_NGreenSt Area									
Barriers										
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top	Run:Rise	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier C	W	12.00	19.73	20.00	3240	63910				1917286
									Total Cost:	1917286

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: W1_Toll69_N Green Street Area
BARRIER DESIGN: W1_Toll69_NGreenSt Area

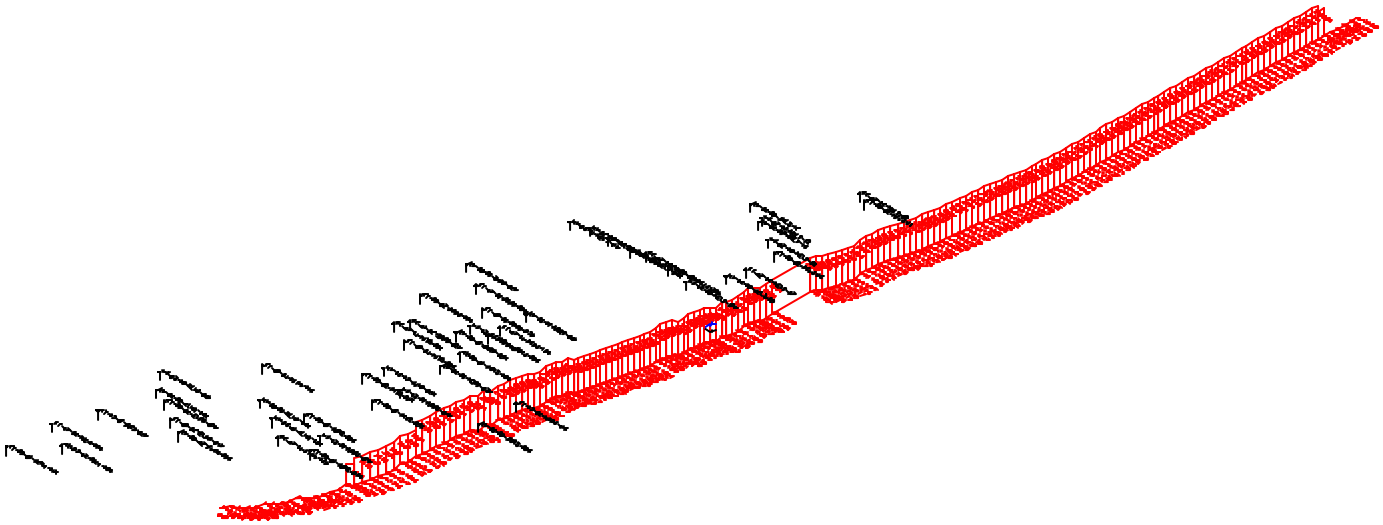
Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier C	W	point189	189	0.00	0.00	0.00	0	0				0
		point192	192	0.00	0.00	0.00	0	0				0
		point193	193	0.00	0.00	0.00	0	0				0
		point194	194	0.00	0.00	0.00	0	0				0
		point195	195	0.00	0.00	0.00	0	0				0
		point196	196	16.00	16.00	16.00	20	320				9600
		point197	197	20.00	20.00	20.00	20	400				12000
		point198	198	20.00	20.00	20.00	20	400				12004
		point199	199	20.00	20.00	20.00	20	395				11850
		point200	200	20.00	20.00	20.00	20	400				12000
		point201	201	20.00	20.00	20.00	20	400				12004
		point202	202	20.00	20.00	20.00	20	400				12000
		point203	203	20.00	20.00	20.00	20	400				12004
		point204	204	20.00	20.00	20.00	20	400				12000
		point205	205	20.00	20.00	20.00	20	400				12000
		point206	206	20.00	20.00	20.00	20	400				12004
		point207	207	20.00	20.00	20.00	20	400				12000
		point208	208	20.00	20.00	20.00	20	400				12004
		point209	209	20.00	20.00	20.00	20	400				12000
		point210	210	20.00	20.00	20.00	20	400				12004
		point211	211	20.00	20.00	20.00	20	400				12000
		point212	212	20.00	20.00	20.00	20	400				12000
		point213	213	20.00	20.00	20.00	20	400				12004
		point214	214	20.00	20.00	20.00	20	400				12000
		point215	215	20.00	20.00	20.00	20	400				12004
		point216	216	20.00	20.00	20.00	20	400				12000

		point217	217	20.00	20.00	20.00	20	400				12000
		point218	218	20.00	20.00	20.00	20	400				12004
		point219	219	20.00	20.00	20.00	20	400				12000
		point220	220	20.00	20.00	20.00	20	400				12004
		point221	221	20.00	20.00	20.00	20	400				12000
		point222	222	20.00	20.00	20.00	20	400				12000
		point223	223	20.00	20.00	20.00	20	400				12004
		point224	224	20.00	20.00	20.00	20	400				12004
		point225	225	20.00	20.00	20.00	20	400				12004
		point226	226	20.00	20.00	20.00	20	400				12000
		point227	227	20.00	20.00	20.00	20	400				12004
		point228	228	20.00	20.00	20.00	20	400				12004
		point229	229	20.00	20.00	20.00	20	400				12004
		point230	230	20.00	20.00	20.00	20	400				12004
		point231	231	20.00	20.00	20.00	20	400				12000
		point232	232	20.00	20.00	20.00	20	400				12004
		point233	233	20.00	20.00	20.00	20	400				12004
		point234	234	20.00	20.00	20.00	20	400				12004
		point235	235	20.00	20.00	20.00	20	400				12004
		point236	236	20.00	20.00	20.00	20	400				12000
		point237	237	20.00	20.00	20.00	20	400				12004
		point238	238	20.00	20.00	20.00	20	400				12004
		point239	239	20.00	20.00	20.00	20	400				12004
		point240	240	20.00	20.00	20.00	20	400				12004
		point241	241	20.00	20.00	20.00	20	400				12000
		point242	242	20.00	20.00	20.00	20	400				12004
		point243	243	20.00	20.00	20.00	20	400				12004
		point244	244	20.00	20.00	20.00	20	400				12004
		point245	245	20.00	20.00	20.00	20	400				12004
		point246	246	20.00	20.00	20.00	20	400				12004
		point247	247	20.00	20.00	20.00	20	400				12000
		point248	248	20.00	20.00	20.00	20	400				12004
		point249	249	20.00	20.00	20.00	20	400				12004
		point250	250	20.00	20.00	20.00	20	400				12004
		point251	251	20.00	20.00	20.00	20	390				11700
		point252	252	20.00	20.00	20.00	20	400				12015
		point253	253	20.00	20.00	20.00	20	400				12015
		point254	254	20.00	20.00	20.00	20	400				12015
		point255	255	20.00	20.00	20.00	20	400				12015

		point256	256	20.00	20.00	20.00	20	400				12004
		point257	257	20.00	20.00	20.00	20	400				12015
		point258	258	20.00	20.00	20.00	20	400				12015
		point259	259	20.00	20.00	20.00	20	400				12015
		point260	260	20.00	20.00	20.00	20	400				12015
		point261	261	20.00	20.00	20.00	20	400				12015
		point262	262	20.00	20.00	20.00	20	400				12015
		point263	263	20.00	20.00	20.00	20	400				12004
		point264	264	20.00	20.00	20.00	20	396				11865
		point265	265	20.00	20.00	20.00	20	400				12015
		point266	266	20.00	20.00	20.00	20	400				12015
		point267	267	20.00	20.00	20.00	20	400				12015
		point268	268	20.00	20.00	20.00	20	400				12015
		point269	269	20.00	20.00	20.00	20	400				12015
		point270	270	20.00	20.00	20.00	20	400				12004
		point271	271	20.00	20.00	20.00	20	400				12015
		point272	272	20.00	20.00	20.00	20	396				11865
		point273	273	20.00	20.00	20.00	20	400				12015
		point274	274	20.00	20.00	20.00	20	400				12015
		point275	275	20.00	20.00	20.00	20	400				12015
		point276	276	20.00	20.00	20.00	20	400				12015
		point277	277	20.00	20.00	20.00	20	400				12004
		point278	278	20.00	20.00	20.00	20	400				12015
		point279	279	20.00	20.00	20.00	20	400				12015
		point280	280	20.00	20.00	20.00	20	400				12015
		point281	281	20.00	20.00	20.00	20	400				12015
		point282	282	20.00	20.00	20.00	120	2398				71926
		point283	283	20.00	20.00	20.00	20	400				12015
		point284	284	20.00	20.00	20.00	20	400				12004
		point285	285	20.00	20.00	20.00	20	400				12000
		point286	286	20.00	20.00	20.00	20	400				12004
		point287	287	20.00	20.00	20.00	20	400				12015
		point288	288	20.00	20.00	20.00	20	401				12034
		point289	289	20.00	20.00	20.00	20	396				11884
		point190	190	20.00	20.00	20.00	20	401				12034
		point290	290	20.00	20.00	20.00	20	401				12034
		point291	291	20.00	20.00	20.00	20	401				12034
		point292	292	20.00	20.00	20.00	20	401				12034
		point293	293	20.00	20.00	20.00	20	396				11884

		point294	294	20.00	20.00	20.00	20	401				12034
		point295	295	20.00	20.00	20.00	20	401				12034
		point296	296	20.00	20.00	20.00	20	401				12034
		point297	297	20.00	20.00	20.00	20	396				11884
		point298	298	20.00	20.00	20.00	20	401				12034
		point299	299	20.00	20.00	20.00	20	401				12034
		point300	300	20.00	20.00	20.00	20	401				12034
		point301	301	20.00	20.00	20.00	20	400				12015
		point302	302	20.00	20.00	20.00	20	396				11884
		point303	303	20.00	20.00	20.00	20	401				12034
		point304	304	20.00	20.00	20.00	20	401				12034
		point305	305	20.00	20.00	20.00	20	396				11884
		point306	306	20.00	20.00	20.00	20	401				12034
		point307	307	20.00	20.00	20.00	20	401				12034
		point308	308	20.00	20.00	20.00	20	401				12034
		point309	309	20.00	20.00	20.00	20	401				12034
		point310	310	20.00	20.00	20.00	20	401				12034
		point311	311	20.00	20.00	20.00	20	396				11884
		point312	312	20.00	20.00	20.00	20	401				12034
		point313	313	20.00	20.00	20.00	20	401				12034
		point314	314	20.00	20.00	20.00	20	396				11884
		point315	315	20.00	20.00	20.00	20	401				12034
		point316	316	20.00	20.00	20.00	20	401				12034
		point317	317	20.00	20.00	20.00	20	401				12034
		point318	318	20.00	20.00	20.00	20	401				12034
		point319	319	20.00	20.00	20.00	20	396				11884
		point320	320	20.00	20.00	20.00	20	401				12034
		point321	321	20.00	20.00	20.00	20	401				12034
		point322	322	20.00	20.00	20.00	20	401				12034
		point323	323	20.00	20.00	20.00	20	396				11865
		point324	324	20.00	20.00	20.00	20	400				12015
		point325	325	20.00	20.00	20.00	20	400				12004
		point326	326	20.00	20.00	20.00	20	400				12004
		point327	327	20.00	20.00	20.00	20	400				12004
		point328	328	20.00	20.00	20.00	20	400				12015
		point329	329	20.00	20.00	20.00	20	402				12060
		point330	330	20.00	20.00	20.00	20	398				11945
		point331	331	20.00	20.00	20.00	20	398				11945
		point332	332	20.00	20.00	20.00	20	404				12134

		point333	333	20.00	20.00	20.00	20	398				11945
		point334	334	20.00	20.00	20.00	20	400				11986
		point335	335	20.00	20.00	20.00	20	400				11986
		point336	336	20.00	20.00	20.00	20	400				11986
		point337	337	20.00	20.00	20.00	20	404				12134
		point338	338	20.00	20.00	20.00	20	393				11796
		point339	339	20.00	20.00	20.00	20	406				12182
		point340	340	20.00	20.00	20.00	20	395				11838
		point341	341	20.00	20.00	20.00	20	403				12091
		point342	342	20.00	20.00	20.00	20	400				12007
		point343	343	16.00	16.00	16.00	20	320				9610
		point344	344	16.00	16.00	16.00	20	320				9610
		point345	345	16.00	16.00	16.00	20	321				9639
		point346	346	16.00	16.00	16.00	20	318				9525
		point347	347	16.00	16.00	16.00	20	319				9582
		point348	348	16.00	16.00	16.00	20	322				9675
		point349	349	16.00	16.00	16.00	20	318				9555
		point350	350	16.00	16.00	16.00	20	318				9553
		point351	351	12.00	12.00	12.00	20	242				7256
		point352	352	0.00	0.00	0.00	0	0				0
		point353	353	0.00	0.00	0.00	0	0				0
		point354	354	0.00	0.00	0.00	0	0				0
		point355	355	0.00	0.00	0.00	0	0				0
		point356	356	0.00	0.00	0.00	0	0				0
		point357	357	0.00	0.00	0.00	0	0				0
		point358	358	0.00	0.00	0.00	0	0				0
		point359	359	0.00	0.00	0.00	0	0				0
		point360	360	0.00	0.00	0.00	0	0				0
		point361	361	0.00	0.00	0.00	0	0				0
		point362	362	0.00	0.00	0.00	0	0				0
		point363	363	0.00	0.00	0.00	0	0				0
		point364	364	0.00	0.00	0.00	0	0				0
		point365	365	0.00	0.00	0.00	0	0				0
		point366	366	0.00	0.00	0.00	0	0				0
		point367	367	0.00	0.00	0.00	0	0				0



W1_Toll69_N Green Street Area	Sheet 1 of 1	19 Mar 2018
	HMB Professional Engineers	
Barrier View-W1_Toll69_NGreenSt Area	Project/Contract No. I-69 ORX	
Run name: W1_02_Toll69_C	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 1 – ELM STREET (TOLL I-69 ONLY)

HMB Professional Engineers
MG/mdg

21 March 2018
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_Toll69_N Elm Btw I-69 and US41
BARRIER DESIGN: W1_Toll69_NElm_btw69-41
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-02-02-RETR-04	190	1	62.1	63.3	66	1.2	10	----	59.3	4.0	8	-4.0
KY-02-02-RETR-06	192	1	66.4	60.7	66	-5.7	10	----	57.4	3.3	8	-4.7
KY-02-02-RETR-05	191	1	64.0	61.7	66	-2.3	10	----	57.9	3.8	8	-4.2
KY-02-01-RETR-07	66	1	65.0	61.1	66	-3.9	10	----	57.1	4.0	8	-4.0
KY-02-01-RETR-06	65	1	63.4	61.9	66	-1.5	10	----	56.9	5.0	8	-3.0
KY-02-02-CANL-04	124	1	64.1	61.3	66	-2.8	10	----	56.2	5.1	8	-2.9
KY-02-01-CANL-03*	19	1	62.4	62.0	66	-0.4	10	----	55.8	6.2	8	-1.8
KY-02-02-ROBR-04*	196	1	62.8	61.7	66	-1.1	10	----	55.5	6.2	8	-1.8
KY-02-01-ROBR-04*	72	1	62.7	61.7	66	-1.0	10	----	55.1	6.6	8	-1.4
KY-02-02-HARL-06	135	1	67.4	59.3	66	-8.1	10	----	53.9	5.4	8	-2.6
KY-02-02-HARL-05*	134	1	63.6	61.0	66	-2.6	10	----	54.7	6.3	8	-1.7
KY-02-01-HARL-05	25	1	51.4	59.6	66	8.2	10	----	53.9	5.7	8	-2.3
KY-02-01-NPAD-06	53	4	64.6	59.1	66	-5.5	10	----	53.8	5.3	8	-2.7
KY-02-01-NPAD-07	54	4	63.6	59.7	66	-3.9	10	----	54.1	5.6	8	-2.4
KY-02-01-NPAD-08	55	4	63.2	60.4	66	-2.8	10	----	54.5	5.9	8	-2.1
KY-02-02-RETR-03	189	1	61.2	64.3	66	3.1	10	----	59.3	5.0	8	-3.0
KY-02-02-RETR-02*	188	1	60.0	65.6	66	5.6	10	----	60.1	5.5	8	-2.5
KY-02-01-RETR-05*	64	1	0.0	63.5	66	63.5	10	----	57.4	6.1	8	-1.9
KY-02-01-RETR-04*	63	1	0.0	64.4	66	64.4	10	----	57.7	6.7	8	-1.3
KY-02-01-RETR-03*	62	1	52.2	65.6	66	13.4	10	Sub'l Inc	58.3	7.3	8	-0.7
KY-02-02-CANL-03*	123	1	61.8	62.7	66	0.9	10	----	56.8	5.9	8	-2.1
KY-02-02-CANL-02*	122	1	59.9	64.7	66	4.8	10	----	57.5	7.2	8	-0.8
KY-02-01-CANL-02*	18	2	60.7	63.6	66	2.9	10	----	56.4	7.2	8	-0.8
KY-02-02-ROBR-03*	195	1	60.8	63.4	66	2.6	10	----	56.2	7.2	8	-0.8

KY-02-02-ROBR-02*	194	1	59.2	65.3	66	6.1	10	----	57.0	8.3	8	0.3
KY-02-01-ROBR-03*	70	1	61.0	63.4	66	2.4	10	----	55.8	7.6	8	-0.4
KY-02-02-HARL-04*	133	1	61.4	63.2	66	1.8	10	----	55.7	7.5	8	-0.5
KY-02-02-HARL-03*	132	1	60.3	64.1	66	3.8	10	----	56.1	8.0	8	0.0
KY-02-02-HARL-02*	131	1	59.4	64.8	66	5.4	10	----	56.7	8.1	8	0.1
KY-02-01-HARL-04*	24	1	50.8	62.0	66	11.2	10	Sub'l Inc	55.1	6.9	8	-1.1
KY-02-01-HARL-03*	23	1	66.6	63.4	66	-3.2	10	----	55.8	7.6	8	-0.4
KY-02-01-NPAD-11	58	4	58.5	61.6	66	3.1	10	----	55.0	6.6	8	-1.4
KY-02-01-HARL-02*	22	1	62.5	64.3	66	1.8	10	----	56.4	7.9	8	-0.1
KY-02-01-NPAD-10	57	4	56.7	61.5	66	4.8	10	----	54.9	6.6	8	-1.4
KY-02-01-NPAD-09	56	4	63.0	61.0	66	-2.0	10	----	54.7	6.3	8	-1.7
KY-02-01-NPAD-05	52	1	66.3	60.0	66	-6.3	10	----	54.4	5.6	8	-2.4
KY-02-01-NPAD-04	51	1	40.5	60.1	66	19.6	10	Sub'l Inc	54.9	5.2	8	-2.8
KY-02-01-NPAD-03	50	1	68.2	59.7	66	-8.5	10	----	55.8	3.9	8	-4.1
KY-02-01-NAPD-02	44	1	55.0	59.9	66	4.9	10	----	56.5	3.4	8	-4.6
KY-02-01-NPAD-01	48	1	64.9	59.2	66	-5.7	10	----	57.2	2.0	8	-6.0
KY-02-02-RETR-01*	186	1	58.6	67.4	66	8.8	10	Snd Lvl	60.9	6.5	8	-1.5
KY-02-01-RETR-02*	61	1	61.4	66.3	66	4.9	10	Snd Lvl	58.5	7.8	8	-0.2
KY-02-02-CANL-01*	121	1	57.9	66.9	66	9.0	10	Snd Lvl	58.6	8.3	8	0.3
KY-02-01-CANL-01*	17	1	57.9	66.6	66	8.7	10	Snd Lvl	58.0	8.6	8	0.6
KY-02-02-ROBR-01*	193	1	57.6	66.8	66	9.2	10	Snd Lvl	57.9	8.9	8	0.9
KY-02-01-ROBR-01*	68	1	57.8	66.3	66	8.5	10	Snd Lvl	57.6	8.7	8	0.7
KY-02-02-HARL-01*	130	1	58.0	66.6	66	8.6	10	Snd Lvl	57.4	9.2	8	1.2
KY-02-01-HARL-01*	21	1	59.9	66.1	66	6.2	10	Snd Lvl	57.1	9.0	8	1.0
KY-02-02-NELS-08*	168	1	60.8	63.6	66	2.8	10	----	56.0	7.6	8	-0.4
KY-02-02-NELS-07*	167	1	60.5	64.1	66	3.6	10	----	55.9	8.2	8	0.2
KY-02-02-NELS-06*	166	1	59.7	63.9	66	4.2	10	----	56.1	7.8	8	-0.2
KY-02-02-NELS-05*	164	1	61.4	62.9	66	1.5	10	----	55.5	7.4	8	-0.6
KY-02-02-NELS-04*	163	1	60.3	63.6	66	3.3	10	----	56.0	7.6	8	-0.4
KY-02-02-NELS-03*	162	1	61.9	62.4	66	0.5	10	----	56.0	6.4	8	-1.6
KY-02-02-NELS-02*	161	1	62.2	61.0	66	-1.2	10	----	55.4	5.6	8	-2.4
KY-02-02-NELS-01*	160	1	62.8	58.9	66	-3.9	10	----	55.2	3.7	8	-4.3

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	75	2.0	6.4	9.2
All Impacted	11	5.2	7.9	9.2
All that meet NR Goal	10	8.0	8.5	9.2

HMB Professional Engineers 21 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_Toll69_N Elm Btw I-69 and US41
BARRIER DESIGN: W1_Toll69_NElm_btw69-41

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-02-02-RETR-04	190	59.3	4.0	8	-4.0	Barrier E	point117	117	0.0	45.1
						Barrier E	point116	116	0.0	44.4
						Barrier E	point114	114	0.0	43.9
						Barrier E	point115	115	0.0	43.8
						Barrier E	point112	112	0.0	42.8
						Barrier E	point113	113	0.0	42.8
						Barrier E	point111	111	0.0	42.7
						Barrier E	point123	123	12.0	42.3
						Barrier E	point122	122	12.0	42.2
						Barrier E	point110	110	0.0	42.2
KY-02-02-RETR-06	192	57.4	3.3	8	-4.7	Barrier E	point117	117	0.0	41.1
						Barrier E	point116	116	0.0	41.1
						Barrier E	point115	115	0.0	40.8
						Barrier E	point114	114	0.0	40.7
						Barrier E	point113	113	0.0	40.3
						Barrier E	point112	112	0.0	39.5
						Barrier E	point111	111	0.0	39.4
						Barrier E	point110	110	0.0	39.4
						Barrier E	point123	123	12.0	39.3
						Barrier E	point124	124	12.0	39.2
KY-02-02-RETR-05	191	57.9	3.8	8	-4.2	Barrier E	point116	116	0.0	42.1

						Barrier E	point117	117	0.0	42.1
						Barrier E	point115	115	0.0	42.0
						Barrier E	point114	114	0.0	41.5
						Barrier E	point113	113	0.0	40.7
						Barrier E	point111	111	0.0	40.6
						Barrier E	point112	112	0.0	40.3
						Barrier E	point124	124	12.0	40.2
						Barrier E	point123	123	12.0	40.1
						Barrier E	point104	104	0.0	40.0
KY-02-01-RETR-07	66	57.1	4.0	8	-4.0	Barrier E	point117	117	0.0	40.8
						Barrier E	point115	115	0.0	40.4
						Barrier E	point116	116	0.0	40.3
						Barrier E	point114	114	0.0	39.8
						Barrier E	point112	112	0.0	39.0
						Barrier E	point113	113	0.0	38.9
						Barrier E	point111	111	0.0	38.8
						Barrier E	point104	104	0.0	38.8
						Barrier E	point124	124	12.0	38.8
						Barrier E	point123	123	12.0	38.7
KY-02-01-RETR-06	65	56.9	5.0	8	-3.0	Barrier E	point116	116	0.0	40.6
						Barrier E	point117	117	0.0	40.4
						Barrier E	point115	115	0.0	40.0
						Barrier E	point113	113	0.0	39.1
						Barrier E	point112	112	0.0	39.0
						Barrier E	point114	114	0.0	38.9
						Barrier E	point124	124	12.0	38.7
						Barrier E	point111	111	0.0	38.5
						Barrier E	point123	123	12.0	38.5
						Barrier E	point122	122	12.0	38.2
KY-02-02-CANL-04	124	56.2	5.1	8	-2.9	Barrier E	point117	117	0.0	38.9
						Barrier E	point116	116	0.0	38.6
						Barrier E	point115	115	0.0	38.0
						Barrier E	point114	114	0.0	37.5
						Barrier E	point105	105	0.0	37.5
						Barrier E	point112	112	0.0	37.2
						Barrier E	point124	124	12.0	37.2

						Barrier E	point113	113	0.0	37.0
						Barrier E	point123	123	12.0	37.0
						Barrier E	point125	125	12.0	36.8
KY-02-01-CANL-03*	19	55.8	6.2	8	-1.8	Barrier E	point158	158	16.0	36.9
						Barrier E	point159	159	16.0	36.8
						Barrier E	point157	157	16.0	36.7
						Barrier E	point160	160	16.0	36.6
						Barrier E	point156	156	16.0	36.5
						Barrier E	point161	161	16.0	36.4
						Barrier E	point162	162	16.0	36.2
						Barrier E	point154	154	16.0	36.1
						Barrier E	point164	164	16.0	36.0
						Barrier E	point155	155	16.0	36.0
KY-02-02-ROBR-04*	196	55.5	6.2	8	-1.8	Barrier E	point158	158	16.0	36.4
						Barrier E	point159	159	16.0	36.4
						Barrier E	point160	160	16.0	36.3
						Barrier E	point157	157	16.0	36.2
						Barrier E	point161	161	16.0	36.2
						Barrier E	point162	162	16.0	36.1
						Barrier E	point169	169	16.0	36.0
						Barrier E	point168	168	16.0	36.0
						Barrier E	point166	166	16.0	36.0
						Barrier E	point170	170	16.0	36.0
KY-02-01-ROBR-04*	72	55.1	6.6	8	-1.4	Barrier E	point170	170	16.0	37.0
						Barrier E	point169	169	16.0	36.9
						Barrier E	point171	171	16.0	36.8
						Barrier E	point172	172	16.0	36.6
						Barrier E	point168	168	16.0	36.6
						Barrier E	point174	174	16.0	36.5
						Barrier E	point176	176	16.0	36.4
						Barrier E	point175	175	16.0	36.4
						Barrier E	point177	177	16.0	36.4
						Barrier E	point173	173	16.0	36.4
KY-02-02-HARL-06	135	53.9	5.4	8	-2.6	Barrier E	point170	170	16.0	34.0
						Barrier E	point169	169	16.0	33.9
						Barrier E	point171	171	16.0	33.8

						Barrier E	point179	179	16.0	33.7
						Barrier E	point172	172	16.0	33.7
						Barrier E	point178	178	16.0	33.6
						Barrier E	point168	168	16.0	33.6
						Barrier E	point177	177	16.0	33.6
						Barrier E	point174	174	16.0	33.6
						Barrier E	point176	176	16.0	33.6
KY-02-02-HARL-05*	134	54.7	6.3	8	-1.7	Barrier E	point179	179	16.0	36.0
						Barrier E	point170	170	16.0	35.9
						Barrier E	point178	178	16.0	35.9
						Barrier E	point171	171	16.0	35.9
						Barrier E	point177	177	16.0	35.8
						Barrier E	point180	180	16.0	35.8
						Barrier E	point176	176	16.0	35.8
						Barrier E	point174	174	16.0	35.8
						Barrier E	point181	181	16.0	35.8
						Barrier E	point172	172	16.0	35.8
KY-02-01-HARL-05	25	53.9	5.7	8	-2.3	Barrier E	point185	185	16.0	34.9
						Barrier E	point186	186	16.0	34.8
						Barrier E	point184	184	16.0	34.6
						Barrier E	point183	183	16.0	34.5
						Barrier E	point182	182	16.0	34.4
						Barrier E	point181	181	16.0	34.4
						Barrier E	point180	180	16.0	34.3
						Barrier E	point187	187	16.0	34.3
						Barrier E	point188	188	16.0	34.3
						Barrier E	point179	179	16.0	34.2
KY-02-01-NPAD-06	53	53.8	5.3	8	-2.7	Barrier E	point196	196	16.0	34.4
						Barrier E	point195	195	16.0	34.4
						Barrier E	point194	194	16.0	34.3
						Barrier E	point188	188	16.0	34.1
						Barrier E	point193	193	16.0	34.1
						Barrier E	point192	192	16.0	34.1
						Barrier E	point197	197	16.0	34.1
						Barrier E	point187	187	16.0	34.0
						Barrier E	point186	186	16.0	33.9

						Barrier E	point190	190	16.0	33.8
KY-02-01-NPAD-07	54	54.1	5.6	8	-2.4	Barrier E	point196	196	16.0	35.3
						Barrier E	point195	195	16.0	35.2
						Barrier E	point194	194	16.0	35.1
						Barrier E	point193	193	16.0	34.9
						Barrier E	point192	192	16.0	34.9
						Barrier E	point197	197	16.0	34.9
						Barrier E	point188	188	16.0	34.8
						Barrier E	point187	187	16.0	34.6
						Barrier E	point190	190	16.0	34.6
						Barrier E	point191	191	16.0	34.6
KY-02-01-NPAD-08	55	54.5	5.9	8	-2.1	Barrier E	point196	196	16.0	36.3
						Barrier E	point195	195	16.0	36.3
						Barrier E	point194	194	16.0	36.2
						Barrier E	point193	193	16.0	36.1
						Barrier E	point192	192	16.0	36.0
						Barrier E	point197	197	16.0	36.0
						Barrier E	point188	188	16.0	35.9
						Barrier E	point191	191	16.0	35.7
						Barrier E	point198	198	16.0	35.7
						Barrier E	point190	190	16.0	35.6
KY-02-02-RETR-03	189	59.3	5.0	8	-3.0	Barrier E	point117	117	0.0	45.1
						Barrier E	point116	116	0.0	44.4
						Barrier E	point115	115	0.0	44.1
						Barrier E	point114	114	0.0	43.4
						Barrier E	point113	113	0.0	43.3
						Barrier E	point112	112	0.0	42.9
						Barrier E	point111	111	0.0	42.2
						Barrier E	point106	106	0.0	41.7
						Barrier E	point120	120	12.0	41.6
						Barrier E	point110	110	0.0	41.6
KY-02-02-RETR-02*	188	60.1	5.5	8	-2.5	Barrier E	point117	117	0.0	46.7
						Barrier E	point116	116	0.0	45.3
						Barrier E	point115	115	0.0	45.1
						Barrier E	point114	114	0.0	44.8
						Barrier E	point113	113	0.0	44.4

						Barrier E	point112	112	0.0	44.1
						Barrier E	point111	111	0.0	43.5
						Barrier E	point110	110	0.0	43.4
						Barrier E	point109	109	0.0	43.3
						Barrier E	point106	106	0.0	42.9
KY-02-01-RETR-05*	64	57.4	6.1	8	-1.9	Barrier E	point117	117	0.0	41.3
						Barrier E	point115	115	0.0	40.5
						Barrier E	point114	114	0.0	40.2
						Barrier E	point116	116	0.0	40.2
						Barrier E	point113	113	0.0	39.7
						Barrier E	point112	112	0.0	39.0
						Barrier E	point106	106	0.0	38.8
						Barrier E	point111	111	0.0	38.8
						Barrier E	point110	110	0.0	38.7
						Barrier E	point135	135	12.0	38.6
KY-02-01-RETR-04*	63	57.7	6.7	8	-1.3	Barrier E	point117	117	0.0	41.8
						Barrier E	point114	114	0.0	40.7
						Barrier E	point115	115	0.0	40.3
						Barrier E	point116	116	0.0	40.1
						Barrier E	point113	113	0.0	39.6
						Barrier E	point112	112	0.0	39.5
						Barrier E	point111	111	0.0	39.4
						Barrier E	point135	135	24.0	39.2
						Barrier E	point134	134	24.0	39.0
						Barrier E	point107	107	0.0	38.8
KY-02-01-RETR-03*	62	58.3	7.3	8	-0.7	Barrier E	point117	117	0.0	41.8
						Barrier E	point115	115	0.0	41.3
						Barrier E	point111	111	0.0	40.8
						Barrier E	point114	114	0.0	40.7
						Barrier E	point112	112	0.0	40.2
						Barrier E	point113	113	0.0	40.2
						Barrier E	point116	116	0.0	40.1
						Barrier E	point146	146	16.0	40.0
						Barrier E	point147	147	16.0	39.9
						Barrier E	point145	145	16.0	39.9
KY-02-02-CANL-03*	123	56.8	5.9	8	-2.1	Barrier E	point117	117	0.0	39.8

						Barrier E	point114	114	0.0	38.5
						Barrier E	point115	115	0.0	38.5
						Barrier E	point116	116	0.0	38.2
						Barrier E	point113	113	0.0	37.9
						Barrier E	point111	111	0.0	37.6
						Barrier E	point105	105	0.0	37.6
						Barrier E	point112	112	0.0	37.5
						Barrier E	point106	106	0.0	37.5
						Barrier E	point135	135	12.0	37.2
KY-02-02-CANL-02*	122	57.5	7.2	8	-0.8	Barrier E	point117	117	0.0	39.9
						Barrier E	point114	114	0.0	39.7
						Barrier E	point115	115	0.0	39.6
						Barrier E	point110	110	0.0	39.4
						Barrier E	point111	111	0.0	39.2
						Barrier E	point149	149	16.0	39.1
						Barrier E	point152	152	16.0	39.1
						Barrier E	point150	150	16.0	39.1
						Barrier E	point147	147	16.0	39.0
						Barrier E	point146	146	16.0	39.0
KY-02-01-CANL-02*	18	56.4	7.2	8	-0.8	Barrier E	point158	158	16.0	38.7
						Barrier E	point159	159	16.0	38.7
						Barrier E	point160	160	16.0	38.6
						Barrier E	point157	157	16.0	38.6
						Barrier E	point161	161	16.0	38.4
						Barrier E	point162	162	16.0	38.3
						Barrier E	point156	156	16.0	38.2
						Barrier E	point164	164	16.0	38.0
						Barrier E	point163	163	16.0	38.0
						Barrier E	point165	165	16.0	37.9
KY-02-02-ROBR-03*	195	56.2	7.2	8	-0.8	Barrier E	point159	159	16.0	38.6
						Barrier E	point158	158	16.0	38.6
						Barrier E	point160	160	16.0	38.5
						Barrier E	point161	161	16.0	38.4
						Barrier E	point162	162	16.0	38.4
						Barrier E	point164	164	16.0	38.2
						Barrier E	point166	166	16.0	38.2

						Barrier E	point163	163	16.0	38.1
						Barrier E	point165	165	16.0	38.1
						Barrier E	point168	168	16.0	38.1
KY-02-02-ROBR-02*	194	57.0	8.3	8	0.3	Barrier E	point161	161	16.0	40.5
						Barrier E	point160	160	16.0	40.5
						Barrier E	point159	159	16.0	40.4
						Barrier E	point162	162	16.0	40.4
						Barrier E	point158	158	16.0	40.2
						Barrier E	point164	164	16.0	40.2
						Barrier E	point166	166	16.0	40.2
						Barrier E	point165	165	16.0	40.1
						Barrier E	point163	163	16.0	40.1
						Barrier E	point167	167	16.0	39.9
KY-02-01-ROBR-03*	70	55.8	7.6	8	-0.4	Barrier E	point170	170	16.0	38.9
						Barrier E	point171	171	16.0	38.9
						Barrier E	point169	169	16.0	38.7
						Barrier E	point172	172	16.0	38.7
						Barrier E	point174	174	16.0	38.6
						Barrier E	point176	176	16.0	38.5
						Barrier E	point175	175	16.0	38.5
						Barrier E	point173	173	16.0	38.4
						Barrier E	point177	177	16.0	38.4
						Barrier E	point168	168	16.0	38.4
KY-02-02-HARL-04*	133	55.7	7.5	8	-0.5	Barrier E	point178	178	16.0	38.4
						Barrier E	point179	179	16.0	38.4
						Barrier E	point177	177	16.0	38.4
						Barrier E	point176	176	16.0	38.4
						Barrier E	point174	174	16.0	38.3
						Barrier E	point171	171	16.0	38.3
						Barrier E	point172	172	16.0	38.3
						Barrier E	point175	175	16.0	38.2
						Barrier E	point180	180	16.0	38.2
						Barrier E	point170	170	16.0	38.2
KY-02-02-HARL-03*	132	56.1	8.0	8	0.0	Barrier E	point179	179	16.0	39.7
						Barrier E	point177	177	16.0	39.7
						Barrier E	point178	178	16.0	39.7

						Barrier E	point176	176	16.0	39.7
						Barrier E	point175	175	16.0	39.5
						Barrier E	point174	174	16.0	39.5
						Barrier E	point180	180	16.0	39.5
						Barrier E	point172	172	16.0	39.4
						Barrier E	point181	181	16.0	39.3
						Barrier E	point171	171	16.0	39.2
KY-02-02-HARL-02*	131	56.7	8.1	8	0.1	Barrier E	point179	179	16.0	41.2
						Barrier E	point178	178	16.0	41.2
						Barrier E	point177	177	16.0	41.1
						Barrier E	point176	176	16.0	41.0
						Barrier E	point180	180	16.0	40.9
						Barrier E	point175	175	16.0	40.9
						Barrier E	point174	174	16.0	40.7
						Barrier E	point181	181	16.0	40.7
						Barrier E	point172	172	16.0	40.3
						Barrier E	point173	173	16.0	40.2
KY-02-01-HARL-04*	24	55.1	6.9	8	-1.1	Barrier E	point185	185	16.0	37.6
						Barrier E	point183	183	16.0	37.5
						Barrier E	point181	181	16.0	37.4
						Barrier E	point180	180	16.0	37.4
						Barrier E	point184	184	16.0	37.4
						Barrier E	point182	182	16.0	37.4
						Barrier E	point179	179	16.0	37.3
						Barrier E	point186	186	16.0	37.2
						Barrier E	point178	178	16.0	37.1
						Barrier E	point187	187	16.0	36.9
KY-02-01-HARL-03*	23	55.8	7.6	8	-0.4	Barrier E	point185	185	16.0	39.5
						Barrier E	point184	184	16.0	39.2
						Barrier E	point183	183	16.0	39.2
						Barrier E	point182	182	16.0	39.2
						Barrier E	point181	181	16.0	39.1
						Barrier E	point180	180	16.0	39.0
						Barrier E	point186	186	16.0	38.9
						Barrier E	point179	179	16.0	38.8
						Barrier E	point187	187	16.0	38.7

						Barrier E	point178	178	16.0	38.5
KY-02-01-NPAD-11	58	55.0	6.6	8	-1.4	Barrier E	point187	187	16.0	37.5
						Barrier E	point186	186	16.0	37.4
						Barrier E	point185	185	16.0	37.3
						Barrier E	point88	88	16.0	37.1
						Barrier E	point188	188	16.0	37.1
						Barrier E	point190	190	16.0	37.0
						Barrier E	point189	189	16.0	37.0
						Barrier E	point192	192	16.0	37.0
						Barrier E	point184	184	16.0	36.9
						Barrier E	point194	194	16.0	36.9
KY-02-01-HARL-02*	22	56.4	7.9	8	-0.1	Barrier E	point186	186	16.0	41.5
						Barrier E	point185	185	16.0	41.5
						Barrier E	point187	187	16.0	41.2
						Barrier E	point184	184	16.0	41.1
						Barrier E	point188	188	16.0	41.0
						Barrier E	point183	183	16.0	40.8
						Barrier E	point88	88	16.0	40.8
						Barrier E	point182	182	16.0	40.4
						Barrier E	point189	189	16.0	40.3
						Barrier E	point190	190	16.0	40.2
KY-02-01-NPAD-10	57	54.9	6.6	8	-1.4	Barrier E	point194	194	16.0	37.2
						Barrier E	point187	187	16.0	37.2
						Barrier E	point188	188	16.0	37.1
						Barrier E	point192	192	16.0	37.1
						Barrier E	point193	193	16.0	37.1
						Barrier E	point195	195	16.0	37.0
						Barrier E	point186	186	16.0	37.0
						Barrier E	point190	190	16.0	37.0
						Barrier E	point189	189	16.0	36.9
						Barrier E	point191	191	16.0	36.9
KY-02-01-NPAD-09	56	54.7	6.3	8	-1.7	Barrier E	point196	196	16.0	37.1
						Barrier E	point195	195	16.0	37.1
						Barrier E	point194	194	16.0	37.0
						Barrier E	point193	193	16.0	36.8
						Barrier E	point192	192	16.0	36.7

						Barrier E	point197	197	16.0	36.7
						Barrier E	point188	188	16.0	36.5
						Barrier E	point198	198	16.0	36.5
						Barrier E	point191	191	16.0	36.4
						Barrier E	point190	190	16.0	36.4
KY-02-01-NPAD-05	52	54.4	5.6	8	-2.4	Barrier E	point197	197	16.0	35.6
						Barrier E	point200	200	16.0	35.6
						Barrier E	point196	196	16.0	35.6
						Barrier E	point198	198	16.0	35.6
						Barrier E	point199	199	16.0	35.5
						Barrier E	point195	195	16.0	35.4
						Barrier E	point194	194	16.0	35.2
						Barrier E	point207	207	16.0	35.1
						Barrier E	point208	208	16.0	35.0
						Barrier E	point209	209	16.0	35.0
KY-02-01-NPAD-04	51	54.9	5.2	8	-2.8	Barrier E	point229	229	12.0	37.4
						Barrier E	point211	211	16.0	36.1
						Barrier E	point212	212	16.0	36.1
						Barrier E	point210	210	16.0	36.0
						Barrier E	point213	213	16.0	36.0
						Barrier E	point209	209	16.0	36.0
						Barrier E	point214	214	16.0	35.9
						Barrier E	point215	215	16.0	35.8
						Barrier E	point216	216	16.0	35.7
						Barrier E	point208	208	16.0	35.7
KY-02-01-NPAD-03	50	55.8	3.9	8	-4.1	Barrier E	point229	229	12.0	39.8
						Barrier E	point220	220	16.0	36.6
						Barrier E	point221	221	16.0	36.6
						Barrier E	point219	219	16.0	36.2
						Barrier E	point222	222	16.0	36.1
						Barrier E	point218	218	16.0	36.0
						Barrier E	point223	223	16.0	35.8
						Barrier E	point225	225	16.0	35.8
						Barrier E	point240	240	0.0	35.8
						Barrier E	point224	224	16.0	35.7
KY-02-01-NAPD-02	44	56.5	3.4	8	-4.6	Barrier E	point229	229	12.0	41.7

						Barrier E	point225	225	16.0	37.2
						Barrier E	point226	226	16.0	37.2
						Barrier E	point221	221	16.0	37.0
						Barrier E	point227	227	16.0	36.9
						Barrier E	point224	224	16.0	36.9
						Barrier E	point220	220	16.0	36.8
						Barrier E	point222	222	16.0	36.8
						Barrier E	point223	223	16.0	36.6
						Barrier E	point219	219	16.0	36.3
KY-02-01-NPAD-01	48	57.2	2.0	8	-6.0	Barrier E	point229	229	12.0	42.9
						Barrier E	point225	225	16.0	36.6
						Barrier E	point228	228	16.0	36.3
						Barrier E	point227	227	16.0	36.2
						Barrier E	point226	226	16.0	36.0
						Barrier E	point224	224	16.0	36.0
						Barrier E	point223	223	16.0	35.4
						Barrier E	point222	222	16.0	35.3
						Barrier E	point221	221	16.0	35.1
						Barrier E	point220	220	16.0	34.6
KY-02-02-RETR-01*	186	60.9	6.5	8	-1.5	Barrier E	point117	117	0.0	47.0
						Barrier E	point116	116	0.0	46.0
						Barrier E	point114	114	0.0	45.5
						Barrier E	point112	112	0.0	45.2
						Barrier E	point113	113	0.0	45.1
						Barrier E	point111	111	0.0	44.8
						Barrier E	point110	110	0.0	44.0
						Barrier E	point134	134	12.0	44.0
						Barrier E	point133	133	12.0	43.9
						Barrier E	point135	135	12.0	43.9
KY-02-01-RETR-02*	61	58.5	7.8	8	-0.2	Barrier E	point117	117	0.0	41.2
						Barrier E	point146	146	16.0	41.1
						Barrier E	point147	147	16.0	41.0
						Barrier E	point145	145	16.0	40.9
						Barrier E	point149	149	16.0	40.9
						Barrier E	point144	144	16.0	40.8
						Barrier E	point148	148	16.0	40.8

						Barrier E	point143	143	16.0	40.6
						Barrier E	point150	150	16.0	40.6
						Barrier E	point151	151	16.0	40.5
KY-02-02-CANL-01*	121	58.6	8.3	8	0.3	Barrier E	point149	149	16.0	42.1
						Barrier E	point150	150	16.0	42.0
						Barrier E	point147	147	16.0	42.0
						Barrier E	point151	151	16.0	42.0
						Barrier E	point148	148	16.0	41.9
						Barrier E	point152	152	16.0	41.9
						Barrier E	point146	146	16.0	41.8
						Barrier E	point153	153	16.0	41.5
						Barrier E	point145	145	16.0	41.3
						Barrier E	point144	144	16.0	41.1
KY-02-01-CANL-01*	17	58.0	8.6	8	0.6	Barrier E	point158	158	16.0	42.6
						Barrier E	point159	159	16.0	42.5
						Barrier E	point157	157	16.0	42.4
						Barrier E	point160	160	16.0	42.3
						Barrier E	point156	156	16.0	42.1
						Barrier E	point161	161	16.0	42.0
						Barrier E	point162	162	16.0	41.6
						Barrier E	point155	155	16.0	41.4
						Barrier E	point154	154	16.0	41.4
						Barrier E	point163	163	16.0	41.1
KY-02-02-ROBR-01*	193	57.9	8.9	8	0.9	Barrier E	point162	162	16.0	43.0
						Barrier E	point161	161	16.0	42.9
						Barrier E	point164	164	16.0	42.8
						Barrier E	point163	163	16.0	42.8
						Barrier E	point160	160	16.0	42.8
						Barrier E	point165	165	16.0	42.6
						Barrier E	point159	159	16.0	42.5
						Barrier E	point166	166	16.0	42.4
						Barrier E	point158	158	16.0	42.3
						Barrier E	point167	167	16.0	41.9
KY-02-01-ROBR-01*	68	57.6	8.7	8	0.7	Barrier E	point170	170	16.0	43.8
						Barrier E	point171	171	16.0	43.6
						Barrier E	point169	169	16.0	43.5

						Barrier E	point172	172	16.0	43.1
						Barrier E	point168	168	16.0	42.9
						Barrier E	point173	173	16.0	42.6
						Barrier E	point174	174	16.0	42.3
						Barrier E	point167	167	16.0	42.3
						Barrier E	point175	175	16.0	41.8
						Barrier E	point166	166	16.0	41.7
KY-02-02-HARL-01*	130	57.4	9.2	8	1.2	Barrier E	point177	177	16.0	43.5
						Barrier E	point176	176	16.0	43.4
						Barrier E	point178	178	16.0	43.4
						Barrier E	point175	175	16.0	43.2
						Barrier E	point179	179	16.0	43.1
						Barrier E	point174	174	16.0	42.8
						Barrier E	point180	180	16.0	42.6
						Barrier E	point173	173	16.0	42.2
						Barrier E	point181	181	16.0	42.0
						Barrier E	point172	172	16.0	41.8
KY-02-01-HARL-01*	21	57.1	9.0	8	1.0	Barrier E	point185	185	16.0	43.7
						Barrier E	point186	186	16.0	43.6
						Barrier E	point184	184	16.0	43.2
						Barrier E	point187	187	16.0	43.1
						Barrier E	point188	188	16.0	42.8
						Barrier E	point183	183	16.0	42.7
						Barrier E	point88	88	16.0	42.4
						Barrier E	point182	182	16.0	42.2
						Barrier E	point181	181	16.0	41.5
						Barrier E	point189	189	16.0	41.4
KY-02-02-NELS-08*	168	56.0	7.6	8	-0.4	Barrier E	point194	194	16.0	40.6
						Barrier E	point193	193	16.0	40.5
						Barrier E	point192	192	16.0	40.4
						Barrier E	point195	195	16.0	40.4
						Barrier E	point196	196	16.0	40.2
						Barrier E	point191	191	16.0	40.2
						Barrier E	point190	190	16.0	40.0
						Barrier E	point88	88	16.0	39.9
						Barrier E	point188	188	16.0	39.8

						Barrier E	point197	197	16.0	39.6
KY-02-02-NELS-07*	167	55.9	8.2	8	0.2	Barrier E	point196	196	16.0	41.3
						Barrier E	point197	197	16.0	41.2
						Barrier E	point195	195	16.0	41.0
						Barrier E	point198	198	16.0	41.0
						Barrier E	point199	199	16.0	40.8
						Barrier E	point194	194	16.0	40.6
						Barrier E	point200	200	16.0	40.4
						Barrier E	point193	193	16.0	40.3
						Barrier E	point192	192	16.0	39.8
						Barrier E	point190	190	16.0	39.0
KY-02-02-NELS-06*	166	56.1	7.8	8	-0.2	Barrier E	point200	200	16.0	42.5
						Barrier E	point199	199	16.0	42.0
						Barrier E	point201	201	16.0	41.8
						Barrier E	point198	198	16.0	41.4
						Barrier E	point197	197	16.0	40.8
						Barrier E	point206	206	16.0	40.6
						Barrier E	point202	202	16.0	40.5
						Barrier E	point196	196	16.0	40.2
						Barrier E	point203	203	16.0	40.1
						Barrier E	point207	207	16.0	40.1
KY-02-02-NELS-05*	164	55.5	7.4	8	-0.6	Barrier E	point207	207	16.0	39.8
						Barrier E	point208	208	16.0	39.7
						Barrier E	point209	209	16.0	39.5
						Barrier E	point210	210	16.0	39.3
						Barrier E	point206	206	16.0	39.2
						Barrier E	point201	201	16.0	39.0
						Barrier E	point211	211	16.0	38.8
						Barrier E	point200	200	16.0	38.8
						Barrier E	point199	199	16.0	38.3
						Barrier E	point212	212	16.0	38.2
KY-02-02-NELS-04*	163	56.0	7.6	8	-0.4	Barrier E	point212	212	16.0	43.3
						Barrier E	point213	213	16.0	43.0
						Barrier E	point211	211	16.0	42.7
						Barrier E	point214	214	16.0	42.3
						Barrier E	point210	210	16.0	41.6

						Barrier E	point215	215	16.0	41.4
						Barrier E	point209	209	16.0	40.4
						Barrier E	point216	216	16.0	40.4
						Barrier E	point217	217	16.0	39.3
						Barrier E	point208	208	16.0	39.3
KY-02-02-NELS-03*	162	56.0	6.4	8	-1.6	Barrier E	point220	220	16.0	40.6
						Barrier E	point219	219	16.0	40.5
						Barrier E	point221	221	16.0	40.3
						Barrier E	point218	218	16.0	40.3
						Barrier E	point217	217	16.0	40.0
						Barrier E	point216	216	16.0	39.8
						Barrier E	point222	222	16.0	39.6
						Barrier E	point215	215	16.0	39.4
						Barrier E	point223	223	16.0	39.0
						Barrier E	point214	214	16.0	38.8
KY-02-02-NELS-02*	161	55.4	5.6	8	-2.4	Barrier E	point226	226	16.0	40.5
						Barrier E	point225	225	16.0	40.4
						Barrier E	point227	227	16.0	40.2
						Barrier E	point224	224	16.0	39.9
						Barrier E	point223	223	16.0	39.5
						Barrier E	point222	222	16.0	39.4
						Barrier E	point221	221	16.0	39.2
						Barrier E	point220	220	16.0	38.4
						Barrier E	point228	228	16.0	38.3
						Barrier E	point219	219	16.0	37.5
KY-02-02-NELS-01*	160	55.2	3.7	8	-4.3	Barrier E	point225	225	16.0	39.0
						Barrier E	point226	226	16.0	38.7
						Barrier E	point227	227	16.0	38.6
						Barrier E	point228	228	16.0	38.4
						Barrier E	point224	224	16.0	38.3
						Barrier E	point223	223	16.0	37.6
						Barrier E	point222	222	16.0	37.3
						Barrier E	point229	229	12.0	37.2
						Barrier E	point221	221	16.0	37.0
						Barrier E	point220	220	16.0	36.4

Total Cost, All Barriers (including additional cost(s))					$1046372					

HMB Professional Engineers **21 March 2018**
MG/mdg **TNM 2.5**

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT: **I-69 ORX**
RUN: **West 1_Toll69_N Elm Btw I-69 and US41**
BARRIER DESIGN: **W1_Toll69_NElm_btw69-41**

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	$
Barrier E	W	12.00	15.30	16.00	2280	34879				1046372
Barrier E-1	W	0.00	0.00	0.00	0	0				0
									Total Cost:	1046372

HMB Professional Engineers 21 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_Toll69_N Elm Btw I-69 and US41
BARRIER DESIGN: W1_Toll69_NElm_btw69-41

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier E	W	point87	87	0.00	0.00	0.00	0	0				0
		point290	290	0.00	0.00	0.00	0	0				0
		point291	291	0.00	0.00	0.00	0	0				0
		point292	292	0.00	0.00	0.00	0	0				0
		point293	293	0.00	0.00	0.00	0	0				0
		point294	294	0.00	0.00	0.00	0	0				0
		point295	295	0.00	0.00	0.00	0	0				0
		point296	296	0.00	0.00	0.00	0	0				0
		point297	297	0.00	0.00	0.00	0	0				0
		point298	298	0.00	0.00	0.00	0	0				0
		point299	299	0.00	0.00	0.00	0	0				0
		point300	300	0.00	0.00	0.00	0	0				0
		point301	301	0.00	0.00	0.00	0	0				0
		point302	302	0.00	0.00	0.00	0	0				0
		point303	303	0.00	0.00	0.00	0	0				0
		point304	304	0.00	0.00	0.00	0	0				0
		point305	305	0.00	0.00	0.00	0	0				0
		point306	306	0.00	0.00	0.00	0	0				0
		point307	307	0.00	0.00	0.00	0	0				0
		point308	308	0.00	0.00	0.00	0	0				0
		point309	309	0.00	0.00	0.00	0	0				0
		point310	310	0.00	0.00	0.00	0	0				0
		point311	311	0.00	0.00	0.00	0	0				0
		point312	312	0.00	0.00	0.00	0	0				0
		point313	313	0.00	0.00	0.00	0	0				0
		point314	314	0.00	0.00	0.00	0	0				0

		point315	315	0.00	0.00	0.00	0	0				0
		point316	316	0.00	0.00	0.00	0	0				0
		point317	317	0.00	0.00	0.00	0	0				0
		point318	318	0.00	0.00	0.00	0	0				0
		point319	319	0.00	0.00	0.00	0	0				0
		point320	320	0.00	0.00	0.00	0	0				0
		point321	321	0.00	0.00	0.00	0	0				0
		point322	322	0.00	0.00	0.00	0	0				0
		point323	323	0.00	0.00	0.00	0	0				0
		point324	324	0.00	0.00	0.00	0	0				0
		point325	325	0.00	0.00	0.00	0	0				0
		point326	326	0.00	0.00	0.00	0	0				0
		point327	327	0.00	0.00	0.00	0	0				0
		point91	91	0.00	0.00	0.00	0	0				0
		point92	92	0.00	0.00	0.00	0	0				0
		point93	93	0.00	0.00	0.00	0	0				0
		point94	94	0.00	0.00	0.00	0	0				0
		point95	95	0.00	0.00	0.00	0	0				0
		point96	96	0.00	0.00	0.00	0	0				0
		point97	97	0.00	0.00	0.00	0	0				0
		point98	98	0.00	0.00	0.00	0	0				0
		point99	99	0.00	0.00	0.00	0	0				0
		point100	100	0.00	0.00	0.00	0	0				0
		point101	101	0.00	0.00	0.00	0	0				0
		point102	102	0.00	0.00	0.00	0	0				0
		point103	103	0.00	0.00	0.00	0	0				0
		point104	104	0.00	0.00	0.00	0	0				0
		point105	105	0.00	0.00	0.00	0	0				0
		point106	106	0.00	0.00	0.00	0	0				0
		point107	107	0.00	0.00	0.00	0	0				0
		point108	108	0.00	0.00	0.00	0	0				0
		point109	109	0.00	0.00	0.00	0	0				0
		point110	110	0.00	0.00	0.00	0	0				0
		point111	111	0.00	0.00	0.00	0	0				0
		point112	112	0.00	0.00	0.00	0	0				0
		point113	113	0.00	0.00	0.00	0	0				0
		point114	114	0.00	0.00	0.00	0	0				0
		point115	115	0.00	0.00	0.00	0	0				0
		point116	116	0.00	0.00	0.00	0	0				0

		point117	117	0.00	0.00	0.00	0	0				0
		point118	118	12.00	12.00	12.00	20	240				7204
		point119	119	12.00	12.00	12.00	20	242				7247
		point120	120	12.00	12.00	12.00	20	239				7160
		point121	121	12.00	12.00	12.00	20	242				7247
		point122	122	12.00	12.00	12.00	20	240				7207
		point123	123	12.00	12.00	12.00	20	240				7207
		point124	124	12.00	12.00	12.00	20	237				7121
		point125	125	12.00	12.00	12.00	20	242				7259
		point126	126	12.00	12.00	12.00	20	239				7173
		point127	127	12.00	12.00	12.00	20	239				7173
		point128	128	12.00	12.00	12.00	20	241				7229
		point129	129	12.00	12.00	12.00	20	239				7173
		point130	130	12.00	12.00	12.00	20	243				7289
		point131	131	12.00	12.00	12.00	20	238				7144
		point132	132	12.00	12.00	12.00	20	240				7205
		point133	133	12.00	12.00	12.00	20	240				7205
		point134	134	12.00	12.00	12.00	20	240				7205
		point135	135	12.00	12.00	12.00	20	240				7186
		point136	136	16.00	16.00	16.00	20	319				9582
		point137	137	16.00	16.00	16.00	20	323				9693
		point138	138	16.00	16.00	16.00	20	316				9494
		point139	139	16.00	16.00	16.00	20	323				9693
		point140	140	16.00	16.00	16.00	20	316				9494
		point141	141	16.00	16.00	16.00	20	319				9582
		point142	142	16.00	16.00	16.00	20	322				9675
		point143	143	16.00	16.00	16.00	20	319				9582
		point144	144	16.00	16.00	16.00	20	322				9675
		point145	145	16.00	16.00	16.00	20	315				9455
		point146	146	16.00	16.00	16.00	20	322				9664
		point147	147	16.00	16.00	16.00	20	322				9664
		point148	148	16.00	16.00	16.00	20	318				9555
		point149	149	16.00	16.00	16.00	20	322				9660
		point150	150	16.00	16.00	16.00	20	318				9555
		point151	151	16.00	16.00	16.00	20	318				9553
		point152	152	16.00	16.00	16.00	20	322				9664
		point153	153	16.00	16.00	16.00	20	319				9571
		point154	154	16.00	16.00	16.00	20	319				9571
		point155	155	16.00	16.00	16.00	20	320				9591

		point156	156	16.00	16.00	16.00	20	320				9591
		point157	157	16.00	16.00	16.00	20	320				9591
		point158	158	16.00	16.00	16.00	20	320				9591
		point159	159	16.00	16.00	16.00	20	321				9619
		point160	160	16.00	16.00	16.00	20	321				9619
		point161	161	16.00	16.00	16.00	20	317				9519
		point162	162	16.00	16.00	16.00	20	325				9753
		point163	163	16.00	16.00	16.00	20	317				9519
		point164	164	16.00	16.00	16.00	20	322				9654
		point165	165	16.00	16.00	16.00	20	317				9519
		point166	166	16.00	16.00	16.00	20	325				9753
		point167	167	16.00	16.00	16.00	20	317				9519
		point168	168	16.00	16.00	16.00	20	322				9654
		point169	169	16.00	16.00	16.00	20	317				9519
		point170	170	16.00	16.00	16.00	20	322				9654
		point171	171	16.00	16.00	16.00	20	317				9519
		point172	172	16.00	16.00	16.00	20	322				9654
		point173	173	16.00	16.00	16.00	20	317				9519
		point174	174	16.00	16.00	16.00	20	325				9753
		point175	175	16.00	16.00	16.00	20	317				9519
		point176	176	16.00	16.00	16.00	20	322				9654
		point177	177	16.00	16.00	16.00	20	317				9519
		point178	178	16.00	16.00	16.00	20	317				9519
		point179	179	16.00	16.00	16.00	20	322				9654
		point180	180	16.00	16.00	16.00	20	321				9619
		point181	181	16.00	16.00	16.00	20	322				9654
		point182	182	16.00	16.00	16.00	20	317				9519
		point183	183	16.00	16.00	16.00	20	322				9654
		point184	184	16.00	16.00	16.00	20	317				9519
		point185	185	16.00	16.00	16.00	20	322				9654
		point186	186	16.00	16.00	16.00	20	317				9519
		point187	187	16.00	16.00	16.00	20	322				9654
		point188	188	16.00	16.00	16.00	20	321				9619
		point88	88	16.00	16.00	16.00	20	322				9654
		point189	189	16.00	16.00	16.00	20	317				9519
		point190	190	16.00	16.00	16.00	20	322				9654
		point191	191	16.00	16.00	16.00	20	317				9519
		point192	192	16.00	16.00	16.00	20	325				9753
		point193	193	16.00	16.00	16.00	20	317				9519

		point194	194	16.00	16.00	16.00	20	322				9654
		point195	195	16.00	16.00	16.00	20	317				9519
		point196	196	16.00	16.00	16.00	20	322				9654
		point197	197	16.00	16.00	16.00	20	317				9519
		point198	198	16.00	16.00	16.00	20	322				9654
		point199	199	16.00	16.00	16.00	20	317				9519
		point200	200	16.00	16.00	16.00	20	322				9654
		point201	201	16.00	16.00	16.00	20	321				9619
		point202	202	16.00	16.00	16.00	20	322				9654
		point203	203	16.00	16.00	16.00	20	317				9519
		point204	204	16.00	16.00	16.00	20	322				9654
		point205	205	16.00	16.00	16.00	20	317				9519
		point206	206	16.00	16.00	16.00	20	322				9652
		point207	207	16.00	16.00	16.00	20	323				9687
		point208	208	16.00	16.00	16.00	20	318				9528
		point209	209	16.00	16.00	16.00	20	321				9619
		point210	210	16.00	16.00	16.00	20	321				9619
		point211	211	16.00	16.00	16.00	20	317				9504
		point212	212	16.00	16.00	16.00	20	321				9619
		point213	213	16.00	16.00	16.00	20	321				9619
		point214	214	16.00	16.00	16.00	20	317				9519
		point215	215	16.00	16.00	16.00	20	321				9619
		point216	216	16.00	16.00	16.00	20	324				9719
		point217	217	16.00	16.00	16.00	20	316				9489
		point218	218	16.00	16.00	16.00	20	324				9719
		point219	219	16.00	16.00	16.00	20	316				9489
		point220	220	16.00	16.00	16.00	20	320				9591
		point221	221	16.00	16.00	16.00	20	323				9693
		point222	222	16.00	16.00	16.00	20	319				9571
		point223	223	16.00	16.00	16.00	20	320				9591
		point224	224	16.00	16.00	16.00	20	319				9571
		point225	225	16.00	16.00	16.00	20	319				9571
		point226	226	16.00	16.00	16.00	20	322				9675
		point227	227	16.00	16.00	16.00	20	319				9571
		point228	228	16.00	16.00	16.00	20	319				9571
		point229	229	12.00	12.00	12.00	20	242				7256
		point230	230	12.00	12.00	12.00	20	239	Y			7168
		point231	231	0.00	0.00	0.00	0	0	Y			0
		point232	232	0.00	0.00	0.00	0	0	Y			0

		point233	233	0.00	0.00	0.00	0	0	Y			0
		point234	234	0.00	0.00	0.00	0	0	Y			0
		point235	235	0.00	0.00	0.00	0	0	Y			0
		point236	236	0.00	0.00	0.00	0	0	Y			0
		point237	237	0.00	0.00	0.00	0	0	Y			0
		point238	238	0.00	0.00	0.00	0	0	Y			0
		point239	239	0.00	0.00	0.00	0	0	Y			0
		point240	240	0.00	0.00	0.00	0	0				0
		point241	241	0.00	0.00	0.00	0	0				0
		point242	242	0.00	0.00	0.00	0	0				0
		point243	243	0.00	0.00	0.00	0	0				0
		point244	244	0.00	0.00	0.00	0	0				0
		point245	245	0.00	0.00	0.00	0	0				0
		point246	246	0.00	0.00	0.00	0	0				0
		point247	247	0.00	0.00	0.00	0	0				0
		point248	248	0.00	0.00	0.00	0	0				0
		point249	249	0.00	0.00	0.00	0	0				0
		point250	250	0.00	0.00	0.00	0	0				0
		point251	251	0.00	0.00	0.00	0	0				0
		point252	252	0.00	0.00	0.00	0	0				0
		point253	253	0.00	0.00	0.00	0	0				0
		point254	254	0.00	0.00	0.00	0	0				0
		point255	255	0.00	0.00	0.00	0	0				0
		point256	256	0.00	0.00	0.00	0	0				0
		point257	257	0.00	0.00	0.00	0	0				0
		point258	258	0.00	0.00	0.00	0	0				0
		point259	259	0.00	0.00	0.00	0	0				0
		point260	260	0.00	0.00	0.00	0	0				0
		point261	261	0.00	0.00	0.00	0	0				0
		point262	262	0.00	0.00	0.00	0	0				0
		point263	263	0.00	0.00	0.00	0	0				0
		point264	264	0.00	0.00	0.00	0	0				0
		point265	265	0.00	0.00	0.00	0	0				0
		point266	266	0.00	0.00	0.00	0	0				0
		point267	267	0.00	0.00	0.00	0	0				0
		point268	268	0.00	0.00	0.00	0	0				0
		point269	269	0.00	0.00	0.00	0	0				0
		point270	270	0.00	0.00	0.00	0	0				0
		point271	271	0.00	0.00	0.00	0	0				0

		point272	272	0.00	0.00	0.00	0	0				0
		point273	273	0.00	0.00	0.00	0	0				0
		point274	274	0.00	0.00	0.00	0	0				0
		point275	275	0.00	0.00	0.00	0	0				0
		point276	276	0.00	0.00	0.00	0	0				0
		point277	277	0.00	0.00	0.00	0	0				0
		point278	278	0.00	0.00	0.00	0	0				0
		point279	279	0.00	0.00	0.00	0	0				0
		point280	280	0.00	0.00	0.00	0	0				0
		point281	281	0.00	0.00	0.00	0	0				0
		point282	282	0.00	0.00	0.00	0	0				0
		point283	283	0.00	0.00	0.00	0	0				0
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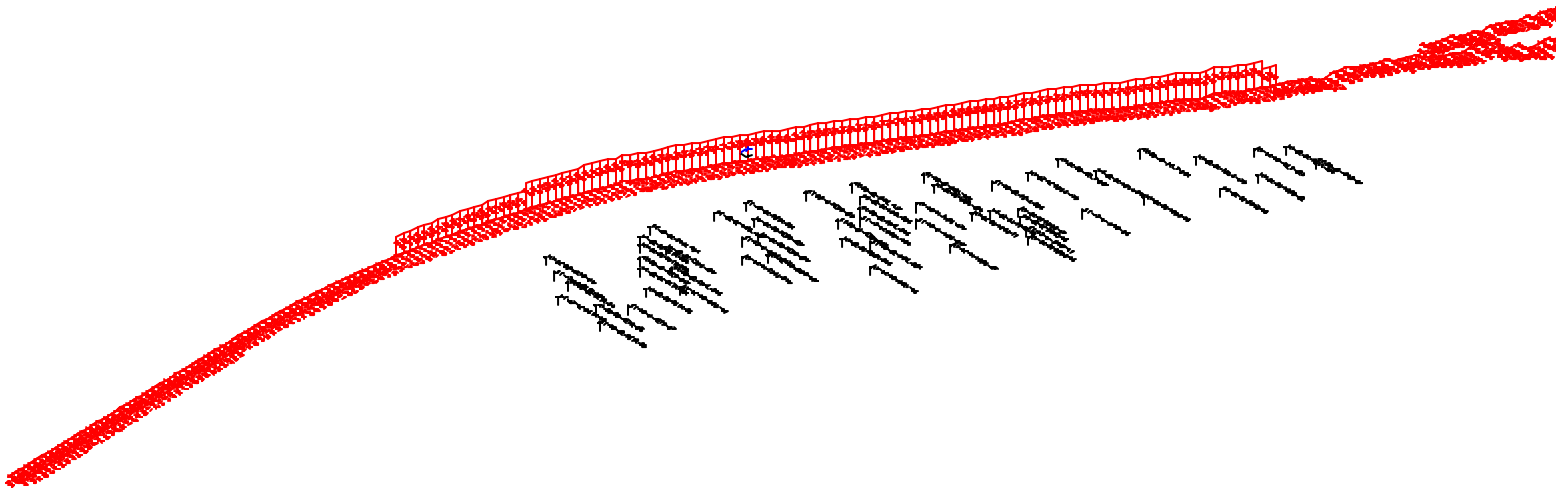
		point285	285	0.00	0.00	0.00	0	0				0
		point286	286	0.00	0.00	0.00	0	0				0
		point89	89	0.00	0.00	0.00	0	0				0
		point287	287	0.00	0.00	0.00	0	0				0
		point289	289	0.00	0.00	0.00	0	0				0
		point288	288	0.00	0.00	0.00	0	0				0
Barrier E-1	W	point4	4	0.00	0.00	0.00	0	0				0
		point6	6	0.00	0.00	0.00	0	0				0
		point7	7	0.00	0.00	0.00	0	0				0
		point8	8	0.00	0.00	0.00	0	0				0
		point9	9	0.00	0.00	0.00	0	0				0
		point10	10	0.00	0.00	0.00	0	0				0
		point11	11	0.00	0.00	0.00	0	0				0
		point12	12	0.00	0.00	0.00	0	0				0
		point13	13	0.00	0.00	0.00	0	0				0
		point14	14	0.00	0.00	0.00	0	0				0
		point15	15	0.00	0.00	0.00	0	0				0
		point16	16	0.00	0.00	0.00	0	0				0
		point17	17	0.00	0.00	0.00	0	0				0
		point18	18	0.00	0.00	0.00	0	0				0
		point19	19	0.00	0.00	0.00	0	0				0
		point20	20	0.00	0.00	0.00	0	0				0
		point21	21	0.00	0.00	0.00	0	0				0
		point22	22	0.00	0.00	0.00	0	0				0
		point23	23	0.00	0.00	0.00	0	0				0

		point24	24	0.00	0.00	0.00	0	0				0
		point25	25	0.00	0.00	0.00	0	0				0
		point26	26	0.00	0.00	0.00	0	0				0
		point27	27	0.00	0.00	0.00	0	0				0
		point28	28	0.00	0.00	0.00	0	0				0
		point29	29	0.00	0.00	0.00	0	0				0
		point30	30	0.00	0.00	0.00	0	0				0
		point31	31	0.00	0.00	0.00	0	0				0
		point32	32	0.00	0.00	0.00	0	0				0
		point33	33	0.00	0.00	0.00	0	0				0
		point34	34	0.00	0.00	0.00	0	0				0
		point35	35	0.00	0.00	0.00	0	0				0
		point36	36	0.00	0.00	0.00	0	0				0
		point37	37	0.00	0.00	0.00	0	0				0
		point38	38	0.00	0.00	0.00	0	0				0
		point39	39	0.00	0.00	0.00	0	0				0
		point40	40	0.00	0.00	0.00	0	0				0
		point41	41	0.00	0.00	0.00	0	0				0
		point42	42	0.00	0.00	0.00	0	0				0
		point43	43	0.00	0.00	0.00	0	0	Y			0
		point44	44	0.00	0.00	0.00	0	0	Y			0
		point45	45	0.00	0.00	0.00	0	0	Y			0
		point46	46	0.00	0.00	0.00	0	0	Y			0
		point47	47	0.00	0.00	0.00	0	0	Y			0
		point48	48	0.00	0.00	0.00	0	0	Y			0
		point49	49	0.00	0.00	0.00	0	0	Y			0
		point50	50	0.00	0.00	0.00	0	0	Y			0
		point51	51	0.00	0.00	0.00	0	0	Y			0
		point52	52	0.00	0.00	0.00	0	0	Y			0
		point53	53	0.00	0.00	0.00	0	0	Y			0
		point54	54	0.00	0.00	0.00	0	0	Y			0
		point55	55	0.00	0.00	0.00	0	0	Y			0
		point56	56	0.00	0.00	0.00	0	0	Y			0
		point57	57	0.00	0.00	0.00	0	0	Y			0
		point58	58	0.00	0.00	0.00	0	0				0
		point59	59	0.00	0.00	0.00	0	0				0
		point60	60	0.00	0.00	0.00	0	0				0
		point61	61	0.00	0.00	0.00	0	0				0
		point62	62	0.00	0.00	0.00	0	0				0

		point63	63	0.00	0.00	0.00	0	0				0
		point64	64	0.00	0.00	0.00	0	0				0
		point65	65	0.00	0.00	0.00	0	0				0
		point66	66	0.00	0.00	0.00	0	0				0
		point67	67	0.00	0.00	0.00	0	0				0
		point68	68	0.00	0.00	0.00	0	0				0
		point69	69	0.00	0.00	0.00	0	0				0
		point70	70	0.00	0.00	0.00	0	0				0
		point71	71	0.00	0.00	0.00	0	0				0
		point72	72	0.00	0.00	0.00	0	0				0
		point73	73	0.00	0.00	0.00	0	0				0
		point74	74	0.00	0.00	0.00	0	0				0
		point75	75	0.00	0.00	0.00	0	0				0
		point76	76	0.00	0.00	0.00	0	0				0



West 1_Toll69_N Elm Btw I-69 and US41	Sheet 1 of 1	21 Mar 2018
	HMB Professional Engineers	
Barrier View-W1_Toll69_NElm_btw69-41	Project/Contract No. I-69 ORX	
Run name: W1_02_Toll69_E	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 1 – SUNSET LANE (TOLL I-69 ONLY)

HMB Professional Engineers 27 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: W1_02_Toll69_Sunset Lane Barrier
BARRIER DESIGN: W1_Toll69_Sunset LaneF
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-02-02-VILD-07	228	1	56.1	67.3	66	11.2	10	Both	58.9	8.4	8	0.4
KY-02-02-VILD-06	227	1	54.9	64.8	66	9.9	10	----	57.9	6.9	8	-1.1
KY-02-02-VILD-05	225	1	54.2	63.5	66	9.3	10	----	57.3	6.2	8	-1.8
KY-02-02-VILD-04	222	1	53.5	62.4	66	8.9	10	----	56.6	5.8	8	-2.2
KY-02-02-VILD-03	221	1	52.7	61.2	66	8.5	10	----	55.8	5.4	8	-2.6
KY-02-02-VILD-02	220	1	51.9	60.1	66	8.2	10	----	55.0	5.1	8	-2.9
KY-02-02-VILD-01	219	1	51.3	59.4	66	8.1	10	----	54.4	5.0	8	-3.0
KY-02-01-VILD-06	105	1	53.9	63.6	66	9.7	10	----	57.3	6.3	8	-1.7
KY-02-01-VILD-05	104	1	53.3	62.6	66	9.3	10	----	56.6	6.0	8	-2.0
KY-02-01-VILD-04	103	1	52.8	61.7	66	8.9	10	----	56.1	5.6	8	-2.4
KY-02-01-VILD-03	102	1	52.1	60.8	66	8.7	10	----	55.4	5.4	8	-2.6
KY-02-01-VILD-02	101	1	51.5	60.0	66	8.5	10	----	54.7	5.3	8	-2.7
KY-02-01-VILD-01	100	1	50.7	59.0	66	8.3	10	----	53.9	5.1	8	-2.9
KY-02-01-RICL-01	67	1	51.6	60.4	66	8.8	10	----	54.9	5.5	8	-2.5
KY-02-01-LOCD-04	43	1	55.5	59.4	66	3.9	10	----	54.2	5.2	8	-2.8
KY-02-02-ROOD-01	199	1	50.9	59.6	66	8.7	10	----	54.1	5.5	8	-2.5
KY-02-02-ROOD-02	201	1	51.1	60.4	66	9.3	10	----	54.5	5.9	8	-2.1
KY-02-02-ROOD-03	202	1	51.8	61.3	66	9.5	10	----	55.3	6.0	8	-2.0
KY-02-02-ROOD-04	203	1	52.9	62.9	66	10.0	10	Sub'l Inc	56.7	6.2	8	-1.8
KY-02-01-ROOD-04	76	1	52.6	63.1	66	10.5	10	Sub'l Inc	56.8	6.3	8	-1.7
KY-02-01-ROOD-01	73	1	50.2	59.3	66	9.1	10	----	53.5	5.8	8	-2.2
KY-02-01-ROOD-02	74	1	0.0	60.1	66	60.1	10	----	53.8	6.3	8	-1.7
KY-02-01-ROOD-03	75	1	51.9	62.4	66	10.5	10	Sub'l Inc	55.9	6.5	8	-1.5
KY-02-01-LOCD-03	42	1	53.2	59.9	66	6.7	10	----	53.6	6.3	8	-1.7

KY-02-01-CAMC-03	11	1	50.7	60.8	66	10.1	10	Sub'l Inc	54.3	6.5	8	-1.5
KY-02-01-LOCD-02	41	1	50.9	59.3	66	8.4	10	----	53.1	6.2	8	-1.8
KY-02-02-CAMD-01	118	1	50.5	61.0	66	10.5	10	Sub'l Inc	54.2	6.8	8	-1.2
KY-02-01-CAMC-01	9	1	51.1	62.3	66	11.2	10	Sub'l Inc	55.0	7.3	8	-0.7
KY-02-02-CAMD-02	119	1	52.0	63.7	66	11.7	10	Sub'l Inc	56.3	7.4	8	-0.6
KY-02-01-LOCD-01	40	1	50.3	59.2	66	8.9	10	----	52.7	6.5	8	-1.5
KY-02-01-CAMD-01	12	1	49.9	60.3	66	10.4	10	Sub'l Inc	53.5	6.8	8	-1.2
KY-02-01-CAMD-02	13	1	50.6	61.9	66	11.3	10	Sub'l Inc	54.5	7.4	8	-0.6
KY-02-01-CAMD-03	14	1	51.3	63.5	66	12.2	10	Sub'l Inc	55.9	7.6	8	-0.4
KY-02-02-SPRWD-01	214	1	49.5	59.2	66	9.7	10	----	52.7	6.5	8	-1.5
KY-02-02-SPRWD-02	215	1	49.9	60.4	66	10.5	10	Sub'l Inc	53.3	7.1	8	-0.9
KY-02-02-SPRWD-03	216	1	50.3	61.2	66	10.9	10	Sub'l Inc	53.9	7.3	8	-0.7
KY-02-02-SPRWD-04	217	1	51.0	62.9	66	11.9	10	Sub'l Inc	55.3	7.6	8	-0.4
KY-02-01-SPRWD-01	96	1	49.6	59.4	66	9.8	10	----	52.6	6.8	8	-1.2
KY-02-01-JOHD-09	39	1	49.8	60.3	66	10.5	10	Sub'l Inc	53.2	7.1	8	-0.9
KY-02-01-SPRWD-02	97	1	50.8	61.8	66	11.0	10	Sub'l Inc	54.3	7.5	8	-0.5
KY-02-01-SPRWD-03	98	1	51.5	63.8	66	12.3	10	Sub'l Inc	55.7	8.1	8	0.1
KY-02-02-DOND-01	125	1	49.7	59.1	66	9.4	10	----	52.4	6.7	8	-1.3
KY-02-01-RETR-01*	59	1	59.3	60.1	66	0.8	10	----	53.1	7.0	8	-1.0
KY-02-02-DOND-02	126	1	50.8	61.5	66	10.7	10	Sub'l Inc	54.0	7.5	8	-0.5
KY-02-01-DOND-01	20	1	53.9	58.6	66	4.7	10	----	52.2	6.4	8	-1.6
KY-02-01-JOHD-07	36	1	50.2	59.6	66	9.4	10	----	52.8	6.8	8	-1.2
KY-02-01-JOHD-06	35	1	50.3	58.6	66	8.3	10	----	52.1	6.5	8	-1.5
KY-02-01-JOHD-05	34	1	50.2	58.4	66	8.2	10	----	52.2	6.2	8	-1.8
KY-02-01-JOHD-04	33	1	39.3	57.9	66	18.6	10	Sub'l Inc	52.0	5.9	8	-2.1
KY-02-01-JOHD-03	32	1	50.3	58.1	66	7.8	10	----	52.1	6.0	8	-2.0
KY-02-01-JOHD-02	31	1	50.3	58.1	66	7.8	10	----	52.2	5.9	8	-2.1
KY-02-01-JOHD-01	30	2	50.6	57.9	66	7.3	10	----	52.2	5.7	8	-2.3
KY-02-02-JAMD-09	147	1	50.4	57.2	66	6.8	10	----	51.9	5.3	8	-2.7
KY-02-02-JAMD-08	146	1	51.9	59.0	66	7.1	10	----	53.1	5.9	8	-2.1
KY-02-02-JAMD-07	145	1	52.6	60.4	66	7.8	10	----	53.6	6.8	8	-1.2
KY-02-01-JAMD-03	29	1	50.7	59.2	66	8.5	10	----	53.8	5.4	8	-2.6
KY-02-01-JAMD-02	28	1	50.8	58.1	66	7.3	10	----	53.1	5.0	8	-3.0
KY-02-01-JAMD-01	26	1	52.4	57.1	66	4.7	10	----	52.3	4.8	8	-3.2
KY-02-02-BARR-02	114	1	51.7	58.2	66	6.5	10	----	53.6	4.6	8	-3.4
KY-02-02-BARR-01	113	1	51.1	57.2	66	6.1	10	----	52.9	4.3	8	-3.7
KY-02-01-SPRR-03	94	1	51.6	57.7	66	6.1	10	----	53.8	3.9	8	-4.1
KY-02-01-BARR-01	6	1	51.1	57.1	66	6.0	10	----	53.4	3.7	8	-4.3
KY-02-01-SPRR-02	92	1	51.3	57.3	66	6.0	10	----	53.6	3.7	8	-4.3
KY-02-01-SPRR-01	90	1	51.5	57.6	66	6.1	10	----	53.8	3.8	8	-4.2
KY-02-02-SPRD-01	205	1	51.5	57.8	66	6.3	10	----	54.0	3.8	8	-4.2

KY-02-01-SPRD-05	88	1	53.0	60.0	66	7.0	10	----	55.6	4.4	8	-3.6
KY-02-01-SPRD-04	87	1	52.4	59.5	66	7.1	10	----	55.5	4.0	8	-4.0
KY-02-01-SPRD-03	86	1	51.7	58.7	66	7.0	10	----	55.3	3.4	8	-4.6
KY-02-01-SPRD-01	84	1	50.8	57.4	66	6.6	10	----	54.4	3.0	8	-5.0
KY-02-02-WILD-07	240	1	53.0	60.4	66	7.4	10	----	56.5	3.9	8	-4.1
KY-02-01-SPRD-02	85	1	51.2	58.1	66	6.9	10	----	55.0	3.1	8	-4.9
KY-02-01-SHEP-05	83	1	51.0	57.6	66	6.6	10	----	54.9	2.7	8	-5.3
KY-02-01-WILD-05	112	1	51.8	59.0	66	7.2	10	----	56.2	2.8	8	-5.2
KY-02-01-SHEP-04	81	2	51.1	57.6	66	6.5	10	----	55.1	2.5	8	-5.5
KY-02-01-WILD-04	111	1	51.9	59.3	66	7.4	10	----	56.7	2.6	8	-5.4
KY-02-01-SHEP-03	80	2	51.0	57.7	66	6.7	10	----	55.3	2.4	8	-5.6
KY-02-01-SHEP-02	79	2	51.0	57.7	66	6.7	10	----	55.5	2.2	8	-5.8
KY-02-01-WILD-03	110	1	51.8	59.1	66	7.3	10	----	56.8	2.3	8	-5.7
KY-02-01-SHEP-01	78	1	51.0	57.7	66	6.7	10	----	55.6	2.1	8	-5.9
KY-02-01-WILD-02	109	1	52.2	59.6	66	7.4	10	----	57.5	2.1	8	-5.9
KY-02-02-WATL-01	230	3	51.4	58.3	66	6.9	10	----	56.5	1.8	8	-6.2
KY-02-01-WILD-01	108	1	53.0	60.9	66	7.9	10	----	58.9	2.0	8	-6.0
KY-02-02-WATL-02	231	3	51.4	58.3	66	6.9	10	----	56.7	1.6	8	-6.4
KY-02-02-WATL-03	232	1	55.3	62.3	66	7.0	10	----	61.1	1.2	8	-6.8
KY-02-02-VILD-08	229	1	56.8	69.4	66	12.6	10	Both	59.0	10.4	8	2.4
KY-02-01-NELS-03	47	1	65.9	67.6	66	1.7	10	Snd Lvl	60.0	7.6	8	-0.4
KY-02-01-NELS-02	46	1	64.9	65.1	66	0.2	10	----	58.6	6.5	8	-1.5
KY-02-01-NELS-01	45	1	56.6	64.5	66	7.9	10	----	58.6	5.9	8	-2.1
KY-02-02-ROOD-05	204	1	53.8	65.1	66	11.3	10	Sub'l Inc	58.5	6.6	8	-1.4
KY-02-01-ROOD-05	77	1	53.6	65.6	66	12.0	10	Sub'l Inc	58.9	6.7	8	-1.3
KY-02-02-CAMC-02	116	1	52.4	63.0	66	10.6	10	Sub'l Inc	56.4	6.6	8	-1.4
KY-02-02-CAMC-01	115	1	52.9	63.6	66	10.7	10	Sub'l Inc	57.3	6.3	8	-1.7
KY-02-02-CAMD-03	120	1	52.8	64.1	66	11.3	10	Sub'l Inc	57.6	6.5	8	-1.5
KY-02-01-CAMD-04	15	1	52.0	64.9	66	12.9	10	Sub'l Inc	56.6	8.3	8	0.3
KY-02-02-SPRWD-05	218	1	51.8	64.7	66	12.9	10	Sub'l Inc	56.5	8.2	8	0.2
KY-02-01-SPRWD-04	99	1	52.3	65.3	66	13.0	10	Sub'l Inc	56.7	8.6	8	0.6
KY-02-02-DOND-04	129	1	52.4	65.1	66	12.7	10	Sub'l Inc	56.5	8.6	8	0.6
KY-02-02-DOND-03	127	1	51.8	63.6	66	11.8	10	Sub'l Inc	55.5	8.1	8	0.1
KY-02-02-JOHD-09	159	1	0.0	61.5	66	61.5	10	----	54.5	7.0	8	-1.0
KY-02-02-JOHD-09	158	1	51.1	61.4	66	10.3	10	Sub'l Inc	54.2	7.2	8	-0.8
KY-02-02-JOHD-08	157	1	51.3	62.2	66	10.9	10	Sub'l Inc	54.8	7.4	8	-0.6
KY-02-02-JOHD-07	156	1	52.1	61.0	66	8.9	10	----	53.9	7.1	8	-0.9
KY-02-02-JOHD-06	155	2	51.7	61.5	66	9.8	10	----	54.2	7.3	8	-0.7
KY-02-02-JOHD-05	153	1	52.4	61.9	66	9.5	10	----	54.8	7.1	8	-0.9
KY-02-02-JOHD-03	150	1	53.0	61.8	66	8.8	10	----	54.7	7.1	8	-0.9
KY-02-02-JOHD-02	149	1	53.2	61.5	66	8.3	10	----	54.4	7.1	8	-0.9

KY-02-02-JOHD-01	148	1	52.9	61.3	66	8.4	10	----	54.1	7.2	8	-0.8
KY-02-02-JAMD-06	144	1	53.9	61.4	66	7.5	10	----	54.0	7.4	8	-0.6
KY-02-02-JAMD-05	143	1	54.3	57.4	66	3.1	10	----	53.5	3.9	8	-4.1
KY-02-02-JAMD-04	142	1	54.7	55.8	66	1.1	10	----	50.7	5.1	8	-2.9
KY-02-02-JAMD-03	140	1	54.9	54.8	66	-0.1	10	----	50.2	4.6	8	-3.4
KY-02-02-JAMD-02	137	1	54.2	60.6	66	6.4	10	----	55.5	5.1	8	-2.9
KY-02-02-JAMD-01	136	1	54.3	60.1	66	5.8	10	----	56.3	3.8	8	-4.2
KY-02-01-BARR-02	7	1	53.1	59.1	66	6.0	10	----	55.1	4.0	8	-4.0
KY-02-01-BARR-03	8	1	53.8	59.6	66	5.8	10	----	55.6	4.0	8	-4.0
KY-02-02-SPRR-05	212	1	53.4	59.4	66	6.0	10	----	55.2	4.2	8	-3.8
KY-02-02-SPRR-04	209	1	53.4	59.5	66	6.1	10	----	54.8	4.7	8	-3.3
KY-02-02-SPRR-03	208	1	53.3	59.5	66	6.2	10	----	54.8	4.7	8	-3.3
KY-02-02-SPRR-02	207	1	53.6	59.9	66	6.3	10	----	54.8	5.1	8	-2.9
KY-02-02-SPRR-01	206	1	53.3	59.7	66	6.4	10	----	54.7	5.0	8	-3.0
KY-02-01-SPRD-06	89	1	53.9	61.2	66	7.3	10	----	55.4	5.8	8	-2.2
KY-02-02-WILD-06	239	1	53.8	61.7	66	7.9	10	----	56.9	4.8	8	-3.2
KY-02-02-WILD-05	238	1	54.2	62.6	66	8.4	10	----	57.6	5.0	8	-3.0
KY-02-02-WILD-04	236	1	53.9	62.8	66	8.9	10	----	58.7	4.1	8	-3.9
KY-02-02-WILD-03	235	1	54.0	63.2	66	9.2	10	----	59.4	3.8	8	-4.2
KY-02-02-WILD-02	234	1	54.5	64.5	66	10.0	10	Sub'l Inc	60.7	3.8	8	-4.2
KY-02-02-WILD-01	233	1	55.9	65.9	66	10.0	10	Sub'l Inc	63.8	2.1	8	-5.9

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	136	1.2	5.5	10.4
All Impacted	35	2.1	7.1	10.4
All that meet NR Goal	8	8.1	8.6	10.4

HMB Professional Engineers 27 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: W1_02_Toll69_Sunset Lane Barrier
BARRIER DESIGN: W1_Toll69_Sunset LaneF

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-02-02-VILD-07	228	58.9	8.4	8	0.4	Barrier4	point572	572	16.0	42.9
						Barrier4	point571	571	16.0	42.7
						Barrier4	point378	378	16.0	42.7
						Barrier4	point573	573	16.0	42.6
						Barrier4	point570	570	16.0	42.5
						Barrier4	point574	574	16.0	42.5
						Barrier4	point575	575	16.0	42.5
						Barrier4	point576	576	16.0	42.0
						Barrier4	point569	569	16.0	42.0
						Barrier4	point577	577	16.0	42.0
KY-02-02-VILD-06	227	57.9	6.9	8	-1.1	Barrier4	point572	572	16.0	40.5
						Barrier4	point571	571	16.0	40.4
						Barrier4	point570	570	16.0	40.3
						Barrier4	point613	613	0.0	40.3
						Barrier4	point573	573	16.0	40.2
						Barrier4	point569	569	16.0	40.2
						Barrier4	point574	574	16.0	40.0
						Barrier4	point575	575	16.0	40.0
						Barrier4	point378	378	16.0	39.9
						Barrier4	point540	540	16.0	39.8
KY-02-02-VILD-05	225	57.3	6.2	8	-1.8	Barrier4	point613	613	0.0	39.7

						Barrier4	point572	572	16.0	39.3
						Barrier4	point571	571	16.0	39.2
						Barrier4	point618	618	0.0	39.2
						Barrier4	point615	615	0.0	39.1
						Barrier4	point570	570	16.0	39.1
						Barrier4	point569	569	16.0	39.0
						Barrier4	point573	573	16.0	38.9
						Barrier4	point568	568	16.0	38.8
						Barrier4	point617	617	0.0	38.8
KY-02-02-VILD-04	222	56.6	5.8	8	-2.2	Barrier4	point613	613	0.0	38.8
						Barrier4	point618	618	0.0	38.4
						Barrier4	point614	614	0.0	38.3
						Barrier4	point616	616	0.0	38.3
						Barrier4	point620	620	0.0	38.0
						Barrier4	point615	615	0.0	38.0
						Barrier4	point572	572	16.0	37.9
						Barrier4	point617	617	0.0	37.9
						Barrier4	point571	571	16.0	37.8
						Barrier4	point619	619	0.0	37.7
KY-02-02-VILD-03	221	55.8	5.4	8	-2.6	Barrier4	point613	613	0.0	38.3
						Barrier4	point614	614	0.0	37.7
						Barrier4	point615	615	0.0	37.5
						Barrier4	point618	618	0.0	37.4
						Barrier4	point616	616	0.0	37.3
						Barrier4	point617	617	0.0	37.3
						Barrier4	point619	619	0.0	37.0
						Barrier4	point620	620	0.0	36.9
						Barrier4	point621	621	0.0	36.7
						Barrier4	point623	623	0.0	36.7
KY-02-02-VILD-02	220	55.0	5.1	8	-2.9	Barrier4	point613	613	0.0	37.5
						Barrier4	point615	615	0.0	37.0
						Barrier4	point614	614	0.0	36.9
						Barrier4	point616	616	0.0	36.7
						Barrier4	point617	617	0.0	36.5
						Barrier4	point619	619	0.0	36.4
						Barrier4	point618	618	0.0	36.3

						Barrier4	point620	620	0.0	36.1
						Barrier4	point621	621	0.0	36.0
						Barrier4	point622	622	0.0	35.6
KY-02-02-VILD-01	219	54.4	5.0	8	-3.0	Barrier4	point613	613	0.0	36.3
						Barrier4	point614	614	0.0	36.2
						Barrier4	point618	618	0.0	35.9
						Barrier4	point615	615	0.0	35.7
						Barrier4	point616	616	0.0	35.7
						Barrier4	point617	617	0.0	35.5
						Barrier4	point620	620	0.0	35.2
						Barrier4	point621	621	0.0	35.0
						Barrier4	point622	622	0.0	34.9
						Barrier4	point623	623	0.0	34.8
KY-02-01-VILD-06	105	57.3	6.3	8	-1.7	Barrier4	point560	560	16.0	40.3
						Barrier4	point559	559	16.0	40.2
						Barrier4	point561	561	16.0	40.2
						Barrier4	point563	563	16.0	40.1
						Barrier4	point556	556	16.0	40.0
						Barrier4	point562	562	16.0	40.0
						Barrier4	point558	558	16.0	39.9
						Barrier4	point564	564	16.0	39.8
						Barrier4	point555	555	16.0	39.8
						Barrier4	point557	557	16.0	39.7
KY-02-01-VILD-05	104	56.6	6.0	8	-2.0	Barrier4	point560	560	16.0	39.0
						Barrier4	point559	559	16.0	38.9
						Barrier4	point561	561	16.0	38.9
						Barrier4	point558	558	16.0	38.8
						Barrier4	point556	556	16.0	38.7
						Barrier4	point563	563	16.0	38.7
						Barrier4	point562	562	16.0	38.7
						Barrier4	point555	555	16.0	38.6
						Barrier4	point553	553	16.0	38.5
						Barrier4	point557	557	16.0	38.5
KY-02-01-VILD-04	103	56.1	5.6	8	-2.4	Barrier4	point558	558	16.0	37.8
						Barrier4	point559	559	16.0	37.7
						Barrier4	point560	560	16.0	37.6

						Barrier4	point553	553	16.0	37.6
						Barrier4	point555	555	16.0	37.6
						Barrier4	point554	554	16.0	37.5
						Barrier4	point552	552	16.0	37.5
						Barrier4	point561	561	16.0	37.5
						Barrier4	point551	551	16.0	37.4
						Barrier4	point557	557	16.0	37.4
KY-02-01-VILD-03	102	55.4	5.4	8	-2.6	Barrier4	point553	553	16.0	36.3
						Barrier4	point558	558	16.0	36.3
						Barrier4	point552	552	16.0	36.3
						Barrier4	point559	559	16.0	36.3
						Barrier4	point551	551	16.0	36.3
						Barrier4	point550	550	16.0	36.2
						Barrier4	point560	560	16.0	36.2
						Barrier4	point548	548	16.0	36.1
						Barrier4	point557	557	16.0	36.1
						Barrier4	point555	555	16.0	36.1
KY-02-01-VILD-02	101	54.7	5.3	8	-2.7	Barrier4	point613	613	0.0	35.9
						Barrier4	point551	551	16.0	35.3
						Barrier4	point615	615	0.0	35.2
						Barrier4	point614	614	0.0	35.2
						Barrier4	point616	616	0.0	35.2
						Barrier4	point618	618	0.0	35.2
						Barrier4	point553	553	16.0	35.2
						Barrier4	point550	550	16.0	35.2
						Barrier4	point552	552	16.0	35.2
						Barrier4	point548	548	16.0	35.1
KY-02-01-VILD-01	100	53.9	5.1	8	-2.9	Barrier4	point613	613	0.0	35.1
						Barrier4	point619	619	0.0	34.6
						Barrier4	point615	615	0.0	34.5
						Barrier4	point614	614	0.0	34.4
						Barrier4	point618	618	0.0	34.3
						Barrier4	point617	617	0.0	34.3
						Barrier4	point616	616	0.0	34.0
						Barrier4	point548	548	16.0	34.0
						Barrier4	point551	551	16.0	34.0

						Barrier4	point547	547	16.0	33.9
KY-02-01-RICL-01	67	54.9	5.5	8	-2.5	Barrier4	point548	548	16.0	36.2
						Barrier4	point551	551	16.0	36.1
						Barrier4	point547	547	16.0	36.1
						Barrier4	point546	546	16.0	36.0
						Barrier4	point549	549	16.0	35.9
						Barrier4	point552	552	16.0	35.9
						Barrier4	point550	550	16.0	35.9
						Barrier4	point553	553	16.0	35.9
						Barrier4	point545	545	16.0	35.8
						Barrier4	point557	557	16.0	35.6
KY-02-01-LOCD-04	43	54.2	5.2	8	-2.8	Barrier4	point548	548	16.0	34.9
						Barrier4	point547	547	16.0	34.8
						Barrier4	point613	613	0.0	34.8
						Barrier4	point546	546	16.0	34.8
						Barrier4	point545	545	16.0	34.7
						Barrier4	point551	551	16.0	34.7
						Barrier4	point550	550	16.0	34.7
						Barrier4	point544	544	16.0	34.6
						Barrier4	point549	549	16.0	34.5
						Barrier4	point552	552	16.0	34.5
KY-02-02-ROOD-01	199	54.1	5.5	8	-2.5	Barrier4	point547	547	16.0	35.2
						Barrier4	point546	546	16.0	35.2
						Barrier4	point545	545	16.0	35.1
						Barrier4	point544	544	16.0	35.1
						Barrier4	point548	548	16.0	35.1
						Barrier4	point551	551	16.0	34.9
						Barrier4	point550	550	16.0	34.9
						Barrier4	point543	543	16.0	34.9
						Barrier4	point549	549	16.0	34.8
						Barrier4	point542	542	16.0	34.7
KY-02-02-ROOD-02	201	54.5	5.9	8	-2.1	Barrier4	point543	543	16.0	36.4
						Barrier4	point544	544	16.0	36.4
						Barrier4	point546	546	16.0	36.3
						Barrier4	point545	545	16.0	36.3
						Barrier4	point547	547	16.0	36.3

						Barrier4	point548	548	16.0	36.0
						Barrier4	point542	542	16.0	36.0
						Barrier4	point549	549	16.0	36.0
						Barrier4	point550	550	16.0	35.9
						Barrier4	point536	536	16.0	35.8
KY-02-02-ROOD-03	202	55.3	6.0	8	-2.0	Barrier4	point547	547	16.0	37.8
						Barrier4	point546	546	16.0	37.7
						Barrier4	point548	548	16.0	37.6
						Barrier4	point545	545	16.0	37.6
						Barrier4	point549	549	16.0	37.5
						Barrier4	point544	544	16.0	37.4
						Barrier4	point550	550	16.0	37.4
						Barrier4	point551	551	16.0	37.4
						Barrier4	point552	552	16.0	37.1
						Barrier4	point543	543	16.0	37.0
KY-02-02-ROOD-04	203	56.7	6.2	8	-1.8	Barrier4	point548	548	16.0	40.4
						Barrier4	point547	547	16.0	40.3
						Barrier4	point549	549	16.0	40.2
						Barrier4	point546	546	16.0	40.1
						Barrier4	point550	550	16.0	40.1
						Barrier4	point551	551	16.0	40.0
						Barrier4	point552	552	16.0	39.9
						Barrier4	point545	545	16.0	39.7
						Barrier4	point553	553	16.0	39.7
						Barrier4	point556	556	16.0	39.3
KY-02-01-ROOD-04	76	56.8	6.3	8	-1.7	Barrier4	point543	543	16.0	41.7
						Barrier4	point544	544	16.0	41.6
						Barrier4	point545	545	16.0	41.5
						Barrier4	point546	546	16.0	41.5
						Barrier4	point547	547	16.0	41.3
						Barrier4	point542	542	16.0	41.2
						Barrier4	point541	541	16.0	40.9
						Barrier4	point540	540	16.0	40.9
						Barrier4	point548	548	16.0	40.8
						Barrier4	point537	537	16.0	40.7
KY-02-01-ROOD-01	73	53.5	5.8	8	-2.2	Barrier4	point542	542	16.0	34.8

						Barrier4	point543	543	16.0	34.7
						Barrier4	point544	544	16.0	34.5
						Barrier4	point535	535	16.0	34.5
						Barrier4	point534	534	16.0	34.4
						Barrier4	point531	531	16.0	34.4
						Barrier4	point533	533	16.0	34.4
						Barrier4	point530	530	16.0	34.4
						Barrier4	point532	532	16.0	34.3
						Barrier4	point546	546	16.0	34.3
KY-02-01-ROOD-02	74	53.8	6.3	8	-1.7	Barrier4	point542	542	16.0	36.0
						Barrier4	point543	543	16.0	35.9
						Barrier4	point534	534	16.0	35.8
						Barrier4	point535	535	16.0	35.7
						Barrier4	point533	533	16.0	35.7
						Barrier4	point531	531	16.0	35.7
						Barrier4	point530	530	16.0	35.7
						Barrier4	point532	532	16.0	35.7
						Barrier4	point544	544	16.0	35.6
						Barrier4	point536	536	16.0	35.6
KY-02-01-ROOD-03	75	55.9	6.5	8	-1.5	Barrier4	point542	542	16.0	40.0
						Barrier4	point535	535	16.0	39.8
						Barrier4	point543	543	16.0	39.8
						Barrier4	point536	536	16.0	39.7
						Barrier4	point544	544	16.0	39.6
						Barrier4	point537	537	16.0	39.6
						Barrier4	point538	538	16.0	39.5
						Barrier4	point534	534	16.0	39.5
						Barrier4	point539	539	16.0	39.4
						Barrier4	point540	540	16.0	39.4
KY-02-01-LOCD-03	42	53.6	6.3	8	-1.7	Barrier4	point531	531	16.0	35.4
						Barrier4	point530	530	16.0	35.4
						Barrier4	point534	534	16.0	35.4
						Barrier4	point532	532	16.0	35.4
						Barrier4	point533	533	16.0	35.3
						Barrier4	point542	542	16.0	35.3
						Barrier4	point529	529	16.0	35.2

						Barrier4	point543	543	16.0	35.1
						Barrier4	point541	541	16.0	35.1
						Barrier4	point536	536	16.0	35.1
KY-02-01-CAMC-03	11	54.3	6.5	8	-1.5	Barrier4	point530	530	16.0	36.7
						Barrier4	point531	531	16.0	36.7
						Barrier4	point534	534	16.0	36.7
						Barrier4	point532	532	16.0	36.7
						Barrier4	point533	533	16.0	36.7
						Barrier4	point542	542	16.0	36.5
						Barrier4	point536	536	16.0	36.5
						Barrier4	point529	529	16.0	36.5
						Barrier4	point541	541	16.0	36.4
						Barrier4	point535	535	16.0	36.4
KY-02-01-LOCD-02	41	53.1	6.2	8	-1.8	Barrier4	point530	530	16.0	34.7
						Barrier4	point531	531	16.0	34.6
						Barrier4	point529	529	16.0	34.5
						Barrier4	point532	532	16.0	34.5
						Barrier4	point533	533	16.0	34.4
						Barrier4	point528	528	16.0	34.2
						Barrier4	point526	526	16.0	34.1
						Barrier4	point536	536	16.0	34.1
						Barrier4	point535	535	16.0	34.0
						Barrier4	point527	527	16.0	34.0
KY-02-02-CAMD-01	118	54.2	6.8	8	-1.2	Barrier4	point530	530	16.0	37.1
						Barrier4	point529	529	16.0	37.0
						Barrier4	point531	531	16.0	37.0
						Barrier4	point532	532	16.0	36.9
						Barrier4	point528	528	16.0	36.7
						Barrier4	point533	533	16.0	36.5
						Barrier4	point526	526	16.0	36.5
						Barrier4	point527	527	16.0	36.4
						Barrier4	point525	525	16.0	36.4
						Barrier4	point535	535	16.0	36.3
KY-02-01-CAMC-01	9	55.0	7.3	8	-0.7	Barrier4	point530	530	16.0	39.1
						Barrier4	point529	529	16.0	39.0
						Barrier4	point531	531	16.0	38.9

						Barrier4	point532	532	16.0	38.7
						Barrier4	point528	528	16.0	38.7
						Barrier4	point527	527	16.0	38.5
						Barrier4	point526	526	16.0	38.5
						Barrier4	point525	525	16.0	38.4
						Barrier4	point534	534	16.0	38.2
						Barrier4	point533	533	16.0	38.2
KY-02-02-CAMD-02	119	56.3	7.4	8	-0.6	Barrier4	point530	530	16.0	41.6
						Barrier4	point531	531	16.0	41.6
						Barrier4	point532	532	16.0	41.4
						Barrier4	point529	529	16.0	41.4
						Barrier4	point533	533	16.0	41.1
						Barrier4	point534	534	16.0	40.9
						Barrier4	point528	528	16.0	40.8
						Barrier4	point535	535	16.0	40.8
						Barrier4	point536	536	16.0	40.6
						Barrier4	point527	527	16.0	40.5
KY-02-01-LOCD-01	40	52.7	6.5	8	-1.5	Barrier4	point518	518	16.0	34.2
						Barrier4	point519	519	16.0	34.2
						Barrier4	point529	529	16.0	34.1
						Barrier4	point530	530	16.0	34.1
						Barrier4	point520	520	16.0	34.1
						Barrier4	point531	531	16.0	34.0
						Barrier4	point521	521	16.0	34.0
						Barrier4	point525	525	16.0	34.0
						Barrier4	point526	526	16.0	33.9
						Barrier4	point528	528	16.0	33.9
KY-02-01-CAMD-01	12	53.5	6.8	8	-1.2	Barrier4	point518	518	16.0	35.8
						Barrier4	point519	519	16.0	35.7
						Barrier4	point520	520	16.0	35.6
						Barrier4	point521	521	16.0	35.5
						Barrier4	point530	530	16.0	35.4
						Barrier4	point529	529	16.0	35.4
						Barrier4	point525	525	16.0	35.4
						Barrier4	point517	517	16.0	35.4
						Barrier4	point516	516	16.0	35.4

						Barrier4	point513	513	16.0	35.4
KY-02-01-CAMD-02	13	54.5	7.4	8	-0.6	Barrier4	point518	518	16.0	38.1
						Barrier4	point519	519	16.0	38.0
						Barrier4	point520	520	16.0	37.8
						Barrier4	point517	517	16.0	37.8
						Barrier4	point521	521	16.0	37.7
						Barrier4	point516	516	16.0	37.6
						Barrier4	point513	513	16.0	37.6
						Barrier4	point522	522	16.0	37.4
						Barrier4	point512	512	16.0	37.4
						Barrier4	point515	515	16.0	37.4
KY-02-01-CAMD-03	14	55.9	7.6	8	-0.4	Barrier4	point547	547	16.0	41.3
						Barrier4	point518	518	16.0	39.9
						Barrier4	point519	519	16.0	39.8
						Barrier4	point520	520	16.0	39.7
						Barrier4	point521	521	16.0	39.5
						Barrier4	point517	517	16.0	39.5
						Barrier4	point516	516	16.0	39.4
						Barrier4	point522	522	16.0	39.2
						Barrier4	point513	513	16.0	39.1
						Barrier4	point525	525	16.0	39.1
KY-02-02-SPRWD-01	214	52.7	6.5	8	-1.5	Barrier4	point517	517	16.0	34.8
						Barrier4	point518	518	16.0	34.8
						Barrier4	point511	511	16.0	34.6
						Barrier4	point519	519	16.0	34.6
						Barrier4	point510	510	16.0	34.6
						Barrier4	point509	509	16.0	34.6
						Barrier4	point514	514	16.0	34.6
						Barrier4	point512	512	16.0	34.5
						Barrier4	point516	516	16.0	34.5
						Barrier4	point520	520	16.0	34.3
KY-02-02-SPRWD-02	215	53.3	7.1	8	-0.9	Barrier4	point518	518	16.0	36.2
						Barrier4	point517	517	16.0	36.2
						Barrier4	point519	519	16.0	35.9
						Barrier4	point514	514	16.0	35.9
						Barrier4	point512	512	16.0	35.9

						Barrier4	point513	513	16.0	35.9
						Barrier4	point511	511	16.0	35.9
						Barrier4	point510	510	16.0	35.9
						Barrier4	point509	509	16.0	35.8
						Barrier4	point516	516	16.0	35.8
KY-02-02-SPRWD-03	216	53.9	7.3	8	-0.7	Barrier4	point518	518	16.0	37.2
						Barrier4	point517	517	16.0	37.2
						Barrier4	point519	519	16.0	37.0
						Barrier4	point512	512	16.0	37.0
						Barrier4	point514	514	16.0	37.0
						Barrier4	point513	513	16.0	36.9
						Barrier4	point511	511	16.0	36.9
						Barrier4	point516	516	16.0	36.9
						Barrier4	point510	510	16.0	36.8
						Barrier4	point520	520	16.0	36.8
KY-02-02-SPRWD-04	217	55.3	7.6	8	-0.4	Barrier4	point547	547	16.0	40.4
						Barrier4	point517	517	16.0	39.3
						Barrier4	point518	518	16.0	39.3
						Barrier4	point519	519	16.0	39.0
						Barrier4	point514	514	16.0	39.0
						Barrier4	point516	516	16.0	38.9
						Barrier4	point512	512	16.0	38.9
						Barrier4	point513	513	16.0	38.8
						Barrier4	point511	511	16.0	38.8
						Barrier4	point515	515	16.0	38.7
KY-02-01-SPRWD-01	96	52.6	6.8	8	-1.2	Barrier4	point566	566	16.0	35.3
						Barrier4	point509	509	16.0	35.3
						Barrier4	point508	508	16.0	35.2
						Barrier4	point510	510	16.0	35.0
						Barrier4	point512	512	16.0	35.0
						Barrier4	point507	507	16.0	34.9
						Barrier4	point513	513	16.0	34.9
						Barrier4	point511	511	16.0	34.9
						Barrier4	point506	506	16.0	34.8
						Barrier4	point514	514	16.0	34.7
KY-02-01-JOHD-09	39	53.2	7.1	8	-0.9	Barrier4	point509	509	16.0	36.4

						Barrier4	point510	510	16.0	36.2
						Barrier4	point508	508	16.0	36.1
						Barrier4	point512	512	16.0	36.1
						Barrier4	point513	513	16.0	36.1
						Barrier4	point507	507	16.0	35.9
						Barrier4	point511	511	16.0	35.9
						Barrier4	point514	514	16.0	35.8
						Barrier4	point516	516	16.0	35.8
						Barrier4	point517	517	16.0	35.8
KY-02-01-SPRWD-02	97	54.3	7.5	8	-0.5	Barrier4	point509	509	16.0	38.2
						Barrier4	point508	508	16.0	38.1
						Barrier4	point511	511	16.0	37.9
						Barrier4	point510	510	16.0	37.9
						Barrier4	point507	507	16.0	37.9
						Barrier4	point512	512	16.0	37.9
						Barrier4	point506	506	16.0	37.7
						Barrier4	point513	513	16.0	37.7
						Barrier4	point514	514	16.0	37.6
						Barrier4	point515	515	16.0	37.5
KY-02-01-SPRWD-03	98	55.7	8.1	8	0.1	Barrier4	point509	509	16.0	40.7
						Barrier4	point508	508	16.0	40.6
						Barrier4	point510	510	16.0	40.4
						Barrier4	point507	507	16.0	40.3
						Barrier4	point506	506	16.0	40.2
						Barrier4	point512	512	16.0	40.2
						Barrier4	point511	511	16.0	40.2
						Barrier4	point513	513	16.0	40.1
						Barrier4	point514	514	16.0	39.9
						Barrier4	point505	505	16.0	39.7
KY-02-02-DOND-01	125	52.4	6.7	8	-1.3	Barrier4	point508	508	16.0	34.9
						Barrier4	point509	509	16.0	34.9
						Barrier4	point507	507	16.0	34.7
						Barrier4	point511	511	16.0	34.7
						Barrier4	point506	506	16.0	34.6
						Barrier4	point510	510	16.0	34.6
						Barrier4	point512	512	16.0	34.5

						Barrier4	point514	514	16.0	34.4
						Barrier4	point513	513	16.0	34.4
						Barrier4	point505	505	16.0	34.3
KY-02-01-RETR-01*	59	53.1	7.0	8	-1.0	Barrier4	point543	543	16.0	38.9
						Barrier4	point508	508	16.0	35.9
						Barrier4	point509	509	16.0	35.8
						Barrier4	point507	507	16.0	35.8
						Barrier4	point506	506	16.0	35.7
						Barrier4	point510	510	16.0	35.6
						Barrier4	point511	511	16.0	35.6
						Barrier4	point505	505	16.0	35.4
						Barrier4	point512	512	16.0	35.4
						Barrier4	point513	513	16.0	35.4
KY-02-02-DOND-02	126	54.0	7.5	8	-0.5	Barrier4	point508	508	16.0	37.4
						Barrier4	point506	506	16.0	37.4
						Barrier4	point507	507	16.0	37.3
						Barrier4	point504	504	16.0	37.2
						Barrier4	point505	505	16.0	37.2
						Barrier4	point499	499	16.0	37.1
						Barrier4	point509	509	16.0	37.1
						Barrier4	point500	500	16.0	37.1
						Barrier4	point510	510	16.0	37.1
						Barrier4	point501	501	16.0	37.0
KY-02-01-DOND-01	20	52.2	6.4	8	-1.6	Barrier4	point496	496	16.0	34.1
						Barrier4	point536	536	16.0	34.0
						Barrier4	point497	497	16.0	34.0
						Barrier4	point498	498	16.0	33.9
						Barrier4	point495	495	16.0	33.8
						Barrier4	point499	499	16.0	33.7
						Barrier4	point494	494	16.0	33.6
						Barrier4	point515	515	16.0	33.5
						Barrier4	point502	502	16.0	33.4
						Barrier4	point503	503	16.0	33.4
KY-02-01-JOHD-07	36	52.8	6.8	8	-1.2	Barrier4	point497	497	16.0	35.3
						Barrier4	point496	496	16.0	35.2
						Barrier4	point498	498	16.0	35.1

						Barrier4	point495	495	16.0	35.1
						Barrier4	point499	499	16.0	34.9
						Barrier4	point494	494	16.0	34.8
						Barrier4	point512	512	16.0	34.8
						Barrier4	point502	502	16.0	34.6
						Barrier4	point501	501	16.0	34.5
						Barrier4	point503	503	16.0	34.4
KY-02-01-JOHD-06	35	52.1	6.5	8	-1.5	Barrier4	point496	496	16.0	33.6
						Barrier4	point507	507	16.0	33.6
						Barrier4	point494	494	16.0	33.5
						Barrier4	point495	495	16.0	33.4
						Barrier4	point497	497	16.0	33.4
						Barrier4	point486	486	16.0	33.4
						Barrier4	point487	487	16.0	33.3
						Barrier4	point493	493	16.0	33.3
						Barrier4	point498	498	16.0	33.3
						Barrier4	point488	488	16.0	33.3
KY-02-01-JOHD-05	34	52.2	6.2	8	-1.8	Barrier4	point529	529	16.0	33.5
						Barrier4	point502	502	16.0	33.4
						Barrier4	point482	482	16.0	33.3
						Barrier4	point480	480	16.0	33.3
						Barrier4	point481	481	16.0	33.2
						Barrier4	point479	479	16.0	33.2
						Barrier4	point483	483	16.0	33.2
						Barrier4	point377	377	16.0	33.1
						Barrier4	point486	486	16.0	33.1
						Barrier4	point485	485	16.0	33.1
KY-02-01-JOHD-04	33	52.0	5.9	8	-2.1	Barrier4	point471	471	16.0	33.3
						Barrier4	point470	470	16.0	33.3
						Barrier4	point472	472	16.0	33.2
						Barrier4	point469	469	16.0	33.2
						Barrier4	point377	377	16.0	33.2
						Barrier4	point473	473	16.0	33.0
						Barrier4	point479	479	16.0	33.0
						Barrier4	point477	477	16.0	33.0
						Barrier4	point527	527	16.0	33.0

						Barrier4	point480	480	16.0	32.9
KY-02-01-JOHD-03	32	52.1	6.0	8	-2.0	Barrier4	point470	470	16.0	34.1
						Barrier4	point471	471	16.0	34.0
						Barrier4	point469	469	16.0	34.0
						Barrier4	point472	472	16.0	33.9
						Barrier4	point473	473	16.0	33.7
						Barrier4	point474	474	16.0	33.5
						Barrier4	point475	475	16.0	33.4
						Barrier4	point377	377	16.0	33.3
						Barrier4	point477	477	16.0	33.2
						Barrier4	point478	478	16.0	33.2
KY-02-01-JOHD-02	31	52.2	5.9	8	-2.1	Barrier4	point469	469	16.0	34.3
						Barrier4	point470	470	16.0	34.3
						Barrier4	point471	471	16.0	34.2
						Barrier4	point472	472	16.0	34.0
						Barrier4	point473	473	16.0	33.8
						Barrier4	point474	474	16.0	33.5
						Barrier4	point377	377	16.0	33.3
						Barrier4	point477	477	16.0	33.1
						Barrier4	point478	478	16.0	33.1
						Barrier4	point452	452	16.0	33.1
KY-02-01-JOHD-01	30	52.2	5.7	8	-2.3	Barrier4	point469	469	16.0	34.4
						Barrier4	point470	470	16.0	34.2
						Barrier4	point471	471	16.0	34.1
						Barrier4	point472	472	16.0	33.8
						Barrier4	point473	473	16.0	33.4
						Barrier4	point519	519	24.0	33.3
						Barrier4	point474	474	16.0	33.2
						Barrier4	point488	488	16.0	33.2
						Barrier4	point475	475	16.0	32.9
						Barrier4	point377	377	16.0	32.8
KY-02-02-JAMD-09	147	51.9	5.3	8	-2.7	Barrier4	point469	469	16.0	33.0
						Barrier4	point470	470	16.0	32.9
						Barrier4	point471	471	16.0	32.8
						Barrier4	point487	487	16.0	32.5
						Barrier4	point472	472	16.0	32.4

						Barrier4	point520	520	24.0	32.3
						Barrier4	point473	473	16.0	31.9
						Barrier4	point458	458	16.0	31.7
						Barrier4	point474	474	16.0	31.6
						Barrier4	point468	468	20.0	31.6
KY-02-02-JAMD-08	146	53.1	5.9	8	-2.1	Barrier4	point469	469	16.0	36.1
						Barrier4	point470	470	16.0	35.9
						Barrier4	point471	471	16.0	35.6
						Barrier4	point472	472	16.0	35.1
						Barrier4	point466	466	20.0	34.7
						Barrier4	point467	467	20.0	34.7
						Barrier4	point468	468	20.0	34.7
						Barrier4	point473	473	16.0	34.6
						Barrier4	point458	458	16.0	34.6
						Barrier4	point465	465	20.0	34.6
KY-02-02-JAMD-07	145	53.6	6.8	8	-1.2	Barrier4	point469	469	16.0	37.9
						Barrier4	point470	470	16.0	37.5
						Barrier4	point471	471	16.0	37.1
						Barrier4	point466	466	20.0	36.6
						Barrier4	point465	465	20.0	36.5
						Barrier4	point472	472	16.0	36.5
						Barrier4	point467	467	20.0	36.5
						Barrier4	point468	468	20.0	36.3
						Barrier4	point473	473	16.0	35.9
						Barrier4	point458	458	16.0	35.9
KY-02-01-JAMD-03	29	53.8	5.4	8	-2.6	Barrier4	point452	452	16.0	35.2
						Barrier4	point453	453	16.0	35.2
						Barrier4	point451	451	16.0	35.2
						Barrier4	point454	454	16.0	35.2
						Barrier4	point455	455	16.0	35.0
						Barrier4	point456	456	16.0	35.0
						Barrier4	point457	457	16.0	34.6
						Barrier4	point450	450	20.0	34.2
						Barrier4	point449	449	20.0	34.1
						Barrier4	point448	448	20.0	34.1
KY-02-01-JAMD-02	28	53.1	5.0	8	-3.0	Barrier4	point454	454	16.0	33.3

						Barrier4	point456	456	16.0	33.3
						Barrier4	point451	451	16.0	33.2
						Barrier4	point453	453	16.0	33.2
						Barrier4	point452	452	16.0	33.2
						Barrier4	point457	457	16.0	33.1
						Barrier4	point455	455	16.0	33.1
						Barrier4	point450	450	20.0	32.3
						Barrier4	point448	448	20.0	32.3
						Barrier4	point449	449	20.0	32.3
KY-02-01-JAMD-01	26	52.3	4.8	8	-3.2	Barrier4	point515	515	24.0	32.6
						Barrier4	point479	479	16.0	32.5
						Barrier4	point469	469	16.0	32.2
						Barrier4	point458	458	16.0	32.2
						Barrier4	point456	456	16.0	32.2
						Barrier4	point454	454	16.0	32.1
						Barrier4	point457	457	16.0	32.1
						Barrier4	point455	455	16.0	32.1
						Barrier4	point453	453	16.0	32.0
						Barrier4	point470	470	16.0	31.9
KY-02-02-BARR-02	114	53.6	4.6	8	-3.4	Barrier4	point441	441	16.0	33.1
						Barrier4	point451	451	16.0	33.1
						Barrier4	point452	452	16.0	33.1
						Barrier4	point440	440	16.0	32.9
						Barrier4	point376	376	0.0	32.9
						Barrier4	point454	454	16.0	32.9
						Barrier4	point453	453	16.0	32.8
						Barrier4	point455	455	16.0	32.8
						Barrier4	point445	445	20.0	32.7
						Barrier4	point447	447	20.0	32.7
KY-02-02-BARR-01	113	52.9	4.3	8	-3.7	Barrier4	point376	376	0.0	32.6
						Barrier4	point441	441	16.0	32.0
						Barrier4	point451	451	16.0	31.9
						Barrier4	point454	454	16.0	31.9
						Barrier4	point440	440	16.0	31.8
						Barrier4	point452	452	16.0	31.8
						Barrier4	point453	453	16.0	31.8

						Barrier4	point455	455	16.0	31.7
						Barrier4	point456	456	16.0	31.7
						Barrier4	point445	445	20.0	31.4
KY-02-01-SPRR-03	94	53.8	3.9	8	-4.1	Barrier4	point376	376	0.0	35.4
						Barrier4	point391	391	16.0	33.5
						Barrier4	point392	392	16.0	33.2
						Barrier4	point395	395	16.0	33.1
						Barrier4	point396	396	16.0	32.6
						Barrier4	point394	394	16.0	32.5
						Barrier4	point428	428	20.0	32.3
						Barrier4	point429	429	20.0	32.3
						Barrier4	point393	393	16.0	32.3
						Barrier4	point384	384	16.0	32.2
KY-02-01-BARR-01	6	53.4	3.7	8	-4.3	Barrier4	point376	376	0.0	35.4
						Barrier4	point394	394	16.0	33.2
						Barrier4	point391	391	16.0	33.0
						Barrier4	point392	392	16.0	32.6
						Barrier4	point384	384	16.0	32.4
						Barrier4	point389	389	16.0	32.2
						Barrier4	point395	395	16.0	32.1
						Barrier4	point390	390	16.0	32.1
						Barrier4	point393	393	16.0	32.0
						Barrier D-1	point319	319	0.0	31.9
KY-02-01-SPRR-02	92	53.6	3.7	8	-4.3	Barrier4	point376	376	0.0	36.0
						Barrier4	point391	391	16.0	33.9
						Barrier4	point394	394	16.0	33.8
						Barrier4	point393	393	16.0	33.7
						Barrier4	point392	392	16.0	33.4
						Barrier4	point395	395	16.0	33.1
						Barrier4	point389	389	16.0	33.1
						Barrier4	point384	384	16.0	33.1
						Barrier4	point390	390	16.0	32.9
						Barrier D-1	point320	320	0.0	32.8
KY-02-01-SPRR-01	90	53.8	3.8	8	-4.2	Barrier4	point376	376	0.0	37.1
						Barrier4	point392	392	16.0	35.3
						Barrier4	point391	391	16.0	35.1

						Barrier4	point393	393	16.0	34.9
						Barrier4	point394	394	16.0	34.6
						Barrier4	point383	383	16.0	34.5
						Barrier4	point389	389	16.0	34.4
						Barrier4	point390	390	16.0	34.2
						Barrier4	point384	384	16.0	34.1
						Barrier4	point388	388	16.0	34.1
KY-02-02-SPRD-01	205	54.0	3.8	8	-4.2	Barrier4	point376	376	0.0	38.1
						Barrier4	point392	392	16.0	36.4
						Barrier4	point391	391	16.0	36.1
						Barrier4	point393	393	16.0	35.9
						Barrier4	point382	382	12.0	35.6
						Barrier4	point389	389	16.0	35.6
						Barrier4	point383	383	16.0	35.5
						Barrier4	point388	388	16.0	35.3
						Barrier4	point390	390	16.0	35.3
						Barrier4	point394	394	16.0	35.2
KY-02-01-SPRD-05	88	55.6	4.4	8	-3.6	Barrier4	point376	376	0.0	41.6
						Barrier4	point392	392	16.0	40.5
						Barrier4	point391	391	16.0	40.3
						Barrier4	point393	393	16.0	39.7
						Barrier4	point390	390	16.0	39.6
						Barrier4	point394	394	16.0	39.4
						Barrier4	point389	389	16.0	39.3
						Barrier4	point384	384	16.0	38.9
						Barrier4	point395	395	16.0	38.9
						Barrier4	point383	383	16.0	38.8
KY-02-01-SPRD-04	87	55.5	4.0	8	-4.0	Barrier4	point376	376	0.0	41.2
						Barrier4	point391	391	16.0	39.7
						Barrier4	point389	389	16.0	39.7
						Barrier4	point392	392	16.0	39.4
						Barrier4	point382	382	12.0	39.1
						Barrier4	point393	393	16.0	39.1
						Barrier4	point388	388	16.0	39.1
						Barrier4	point390	390	16.0	38.8
						Barrier4	point394	394	16.0	38.7

						Barrier4	point387	387	16.0	38.7
KY-02-01-SPRD-03	86	55.3	3.4	8	-4.6	Barrier4	point376	376	0.0	41.4
						Barrier4	point387	387	16.0	39.6
						Barrier4	point391	391	16.0	39.2
						Barrier4	point394	394	16.0	39.2
						Barrier4	point388	388	16.0	38.8
						Barrier4	point392	392	16.0	38.8
						Barrier4	point389	389	16.0	38.7
						Barrier4	point382	382	12.0	38.6
						Barrier4	point381	381	12.0	38.6
						Barrier4	point386	386	16.0	38.5
KY-02-01-SPRD-01	84	54.4	3.0	8	-5.0	Barrier4	point376	376	0.0	39.3
						Barrier4	point380	380	0.0	37.7
						Barrier4	point385	385	16.0	37.7
						Barrier4	point387	387	16.0	37.4
						Barrier4	point388	388	16.0	37.4
						Barrier4	point386	386	16.0	37.3
						Barrier4	point381	381	12.0	37.3
						Barrier4	point383	383	16.0	37.2
						Barrier4	point382	382	12.0	37.2
						Barrier D-1	point327	327	16.0	37.0
KY-02-02-WILD-07	240	56.5	3.9	8	-4.1	Barrier4	point376	376	0.0	42.9
						Barrier4	point392	392	16.0	41.8
						Barrier4	point391	391	16.0	41.6
						Barrier4	point389	389	16.0	41.3
						Barrier4	point393	393	16.0	41.2
						Barrier4	point388	388	16.0	41.1
						Barrier4	point390	390	16.0	41.0
						Barrier4	point394	394	16.0	41.0
						Barrier4	point382	382	12.0	41.0
						Barrier4	point387	387	16.0	40.8
KY-02-01-SPRD-02	85	55.0	3.1	8	-4.9	Barrier4	point376	376	0.0	40.6
						Barrier4	point385	385	16.0	38.6
						Barrier4	point387	387	16.0	38.6
						Barrier4	point386	386	16.0	38.6
						Barrier4	point381	381	12.0	38.5

						Barrier4	point382	382	12.0	38.4
						Barrier4	point380	380	0.0	38.3
						Barrier4	point388	388	16.0	38.3
						Barrier4	point383	383	16.0	38.2
						Barrier4	point393	393	16.0	38.0
KY-02-01-SHEP-05	83	54.9	2.7	8	-5.3	Barrier4	point376	376	0.0	40.4
						Barrier4	point380	380	0.0	40.2
						Barrier4	point381	381	12.0	39.0
						Barrier4	point384	384	16.0	38.9
						Barrier4	point385	385	16.0	38.7
						Barrier4	point386	386	16.0	38.7
						Barrier4	point383	383	16.0	38.3
						Barrier4	point387	387	16.0	38.2
						Barrier4	point382	382	12.0	38.2
						Barrier D-1	point328	328	16.0	38.1
KY-02-01-WILD-05	112	56.2	2.8	8	-5.2	Barrier4	point376	376	0.0	42.4
						Barrier4	point380	380	0.0	41.3
						Barrier4	point381	381	12.0	40.7
						Barrier4	point385	385	16.0	40.6
						Barrier4	point386	386	16.0	40.5
						Barrier4	point384	384	16.0	40.4
						Barrier4	point394	394	16.0	40.3
						Barrier4	point387	387	16.0	40.2
						Barrier4	point391	391	16.0	40.1
						Barrier4	point382	382	12.0	40.0
KY-02-01-SHEP-04	81	55.1	2.5	8	-5.5	Barrier4	point380	380	0.0	41.2
						Barrier4	point376	376	0.0	40.6
						Barrier4	point383	383	16.0	39.5
						Barrier4	point381	381	12.0	39.3
						Barrier4	point385	385	16.0	39.3
						Barrier4	point386	386	16.0	38.9
						Barrier4	point384	384	16.0	38.8
						Barrier4	point382	382	12.0	38.5
						Barrier D-1	point326	326	16.0	38.5
						Barrier4	point387	387	16.0	38.4
KY-02-01-WILD-04	111	56.7	2.6	8	-5.4	Barrier4	point380	380	0.0	43.4

						Barrier4	point376	376	0.0	42.9
						Barrier4	point385	385	16.0	41.6
						Barrier4	point381	381	12.0	41.6
						Barrier4	point393	393	16.0	41.4
						Barrier4	point383	383	16.0	41.4
						Barrier4	point384	384	16.0	41.1
						Barrier4	point391	391	16.0	40.9
						Barrier4	point386	386	16.0	40.9
						Barrier4	point394	394	16.0	40.7
KY-02-01-SHEP-03	80	55.3	2.4	8	-5.6	Barrier4	point380	380	0.0	41.8
						Barrier4	point376	376	0.0	41.2
						Barrier4	point383	383	16.0	39.8
						Barrier4	point381	381	12.0	39.6
						Barrier4	point385	385	16.0	39.5
						Barrier4	point382	382	12.0	39.5
						Barrier4	point384	384	16.0	39.4
						Barrier D-1	point327	327	16.0	38.7
						Barrier D-1	point329	329	0.0	38.7
						Barrier D-1	point326	326	16.0	38.7
KY-02-01-SHEP-02	79	55.5	2.2	8	-5.8	Barrier4	point380	380	0.0	42.2
						Barrier4	point376	376	0.0	41.7
						Barrier4	point382	382	12.0	40.2
						Barrier4	point383	383	16.0	40.1
						Barrier4	point381	381	12.0	39.9
						Barrier4	point384	384	16.0	39.6
						Barrier4	point385	385	16.0	39.2
						Barrier D-1	point327	327	16.0	38.9
						Barrier4	point387	387	16.0	38.8
						Barrier D-1	point328	328	16.0	38.7
KY-02-01-WILD-03	110	56.8	2.3	8	-5.7	Barrier4	point380	380	0.0	44.0
						Barrier4	point376	376	0.0	43.1
						Barrier4	point381	381	12.0	41.5
						Barrier4	point382	382	12.0	41.4
						Barrier4	point383	383	16.0	41.4
						Barrier4	point385	385	16.0	41.2
						Barrier4	point391	391	16.0	40.7

						Barrier4	point384	384	16.0	40.6
						Barrier4	point393	393	16.0	40.5
						Barrier4	point387	387	16.0	40.5
KY-02-01-SHEP-01	78	55.6	2.1	8	-5.9	Barrier4	point380	380	0.0	42.2
						Barrier4	point376	376	0.0	41.9
						Barrier4	point381	381	12.0	40.5
						Barrier4	point383	383	16.0	40.2
						Barrier4	point382	382	12.0	40.1
						Barrier D-1	point330	330	12.0	39.3
						Barrier4	point385	385	16.0	39.1
						Barrier4	point384	384	16.0	39.0
						Barrier D-1	point329	329	16.0	38.8
						Barrier D-1	point328	328	16.0	38.8
KY-02-01-WILD-02	109	57.5	2.1	8	-5.9	Barrier4	point380	380	0.0	45.2
						Barrier4	point376	376	0.0	44.6
						Barrier4	point381	381	12.0	42.8
						Barrier4	point383	383	16.0	42.3
						Barrier4	point382	382	12.0	42.1
						Barrier4	point385	385	16.0	41.8
						Barrier4	point393	393	16.0	41.8
						Barrier4	point392	392	16.0	41.6
						Barrier4	point384	384	16.0	41.6
						Barrier4	point391	391	16.0	41.3
KY-02-02-WATL-01	230	56.5	1.8	8	-6.2	Barrier4	point380	380	0.0	45.0
						Barrier4	point376	376	0.0	44.2
						Barrier4	point381	381	12.0	41.1
						Barrier4	point383	383	16.0	40.5
						Barrier4	point382	382	12.0	40.3
						Barrier4	point384	384	16.0	40.0
						Barrier4	point385	385	16.0	40.0
						Barrier4	point392	392	16.0	39.7
						Barrier D-1	point330	330	12.0	39.6
						Barrier4	point393	393	16.0	39.5
KY-02-01-WILD-01	108	58.9	2.0	8	-6.0	Barrier4	point380	380	0.0	48.7
						Barrier4	point376	376	0.0	47.1
						Barrier4	point391	391	16.0	44.1

						Barrier4	point381	381	12.0	43.7
						Barrier4	point383	383	16.0	43.5
						Barrier4	point382	382	12.0	43.5
						Barrier4	point384	384	16.0	43.2
						Barrier4	point385	385	16.0	43.0
						Barrier4	point392	392	16.0	42.6
						Barrier D-1	point326	326	16.0	42.3
KY-02-02-WATL-02	231	56.7	1.6	8	-6.4	Barrier4	point376	376	0.0	46.0
						Barrier4	point380	380	0.0	44.7
						Barrier4	point381	381	12.0	40.7
						Barrier4	point383	383	16.0	40.7
						Barrier4	point382	382	12.0	40.5
						Barrier4	point384	384	16.0	40.0
						Barrier4	point385	385	16.0	39.7
						Barrier D-1	point330	330	0.0	39.5
						Barrier D-1	point326	326	16.0	39.3
						Barrier D-1	point327	327	16.0	39.3
KY-02-02-WATL-03	232	61.1	1.2	8	-6.8	Barrier4	point376	376	0.0	51.3
						Barrier4	point380	380	0.0	47.9
						Barrier4	point382	382	12.0	46.6
						Barrier4	point381	381	12.0	45.8
						Barrier4	point383	383	16.0	45.4
						Barrier4	point387	387	16.0	44.1
						Barrier D-1	point334	334	0.0	44.0
						Barrier D-1	point326	326	16.0	43.5
						Barrier4	point384	384	16.0	43.3
						Barrier4	point385	385	16.0	43.2
KY-02-02-VILD-08	229	59.0	10.4	8	2.4	Barrier4	point576	576	16.0	44.5
						Barrier4	point378	378	16.0	44.5
						Barrier4	point575	575	16.0	44.2
						Barrier4	point577	577	16.0	44.1
						Barrier4	point578	578	16.0	44.0
						Barrier4	point574	574	16.0	43.9
						Barrier4	point579	579	16.0	43.9
						Barrier4	point573	573	16.0	43.7
						Barrier4	point572	572	16.0	43.7

						Barrier4	point580	580	16.0	43.5
KY-02-01-NELS-03	47	60.0	7.6	8	-0.4	Barrier4	point568	568	16.0	47.1
						Barrier4	point567	567	16.0	47.0
						Barrier4	point570	570	16.0	46.9
						Barrier4	point571	571	16.0	46.9
						Barrier4	point566	566	16.0	46.4
						Barrier4	point572	572	16.0	45.9
						Barrier4	point565	565	16.0	45.8
						Barrier4	point569	569	16.0	45.3
						Barrier4	point564	564	16.0	45.0
						Barrier4	point573	573	16.0	44.5
KY-02-01-NELS-02	46	58.6	6.5	8	-1.5	Barrier4	point563	563	16.0	42.9
						Barrier4	point562	562	16.0	42.7
						Barrier4	point561	561	16.0	42.7
						Barrier4	point560	560	16.0	42.7
						Barrier4	point564	564	16.0	42.6
						Barrier4	point565	565	16.0	42.6
						Barrier4	point566	566	16.0	42.2
						Barrier4	point559	559	16.0	42.2
						Barrier4	point567	567	16.0	42.2
						Barrier4	point558	558	16.0	42.0
KY-02-01-NELS-01	45	58.6	5.9	8	-2.1	Barrier4	point558	558	16.0	43.8
						Barrier4	point559	559	16.0	43.7
						Barrier4	point556	556	16.0	43.6
						Barrier4	point557	557	16.0	43.5
						Barrier4	point560	560	16.0	43.5
						Barrier4	point555	555	16.0	43.4
						Barrier4	point554	554	16.0	43.2
						Barrier4	point553	553	16.0	43.1
						Barrier4	point561	561	16.0	43.0
						Barrier4	point538	538	16.0	42.8
KY-02-02-ROOD-05	204	58.5	6.6	8	-1.4	Barrier4	point551	551	16.0	43.7
						Barrier4	point550	550	16.0	43.6
						Barrier4	point552	552	16.0	43.6
						Barrier4	point549	549	16.0	43.5
						Barrier4	point548	548	16.0	43.3

						Barrier4	point547	547	16.0	43.0
						Barrier4	point553	553	16.0	42.9
						Barrier4	point554	554	16.0	42.5
						Barrier4	point546	546	16.0	42.5
						Barrier4	point555	555	16.0	42.4
KY-02-01-ROOD-05	77	58.9	6.7	8	-1.3	Barrier4	point542	542	16.0	46.4
						Barrier4	point543	543	16.0	46.0
						Barrier4	point541	541	16.0	45.7
						Barrier4	point540	540	16.0	45.6
						Barrier4	point544	544	16.0	45.4
						Barrier4	point539	539	16.0	45.3
						Barrier4	point538	538	16.0	45.0
						Barrier4	point537	537	16.0	44.9
						Barrier4	point545	545	16.0	44.6
						Barrier4	point536	536	16.0	44.0
KY-02-02-CAMC-02	116	56.4	6.6	8	-1.4	Barrier4	point535	535	16.0	41.7
						Barrier4	point537	537	16.0	41.5
						Barrier4	point536	536	16.0	41.5
						Barrier4	point534	534	16.0	41.4
						Barrier4	point542	542	16.0	41.4
						Barrier4	point541	541	16.0	41.4
						Barrier4	point538	538	16.0	41.4
						Barrier4	point540	540	16.0	41.2
						Barrier4	point533	533	16.0	41.2
						Barrier4	point539	539	16.0	41.2
KY-02-02-CAMC-01	115	57.3	6.3	8	-1.7	Barrier4	point533	533	16.0	44.0
						Barrier4	point534	534	16.0	44.0
						Barrier4	point532	532	16.0	43.8
						Barrier4	point535	535	16.0	43.7
						Barrier4	point536	536	16.0	43.7
						Barrier4	point531	531	16.0	43.6
						Barrier4	point537	537	16.0	43.3
						Barrier4	point530	530	16.0	43.2
						Barrier4	point538	538	16.0	43.0
						Barrier4	point539	539	16.0	42.6
KY-02-02-CAMD-03	120	57.6	6.5	8	-1.5	Barrier4	point531	531	16.0	44.8

						Barrier4	point530	530	16.0	44.8
						Barrier4	point532	532	16.0	44.6
						Barrier4	point529	529	16.0	44.3
						Barrier4	point533	533	16.0	43.9
						Barrier4	point534	534	16.0	43.7
						Barrier4	point528	528	16.0	43.5
						Barrier4	point535	535	16.0	43.2
						Barrier4	point527	527	16.0	42.9
						Barrier4	point536	536	16.0	42.8
KY-02-01-CAMD-04	15	56.6	8.3	8	0.3	Barrier4	point519	519	16.0	42.1
						Barrier4	point520	520	16.0	42.1
						Barrier4	point521	521	16.0	42.1
						Barrier4	point518	518	16.0	41.8
						Barrier4	point522	522	16.0	41.8
						Barrier4	point517	517	16.0	41.4
						Barrier4	point523	523	16.0	41.3
						Barrier4	point525	525	16.0	41.3
						Barrier4	point516	516	16.0	41.2
						Barrier4	point524	524	16.0	41.2
KY-02-02-SPRWD-05	218	56.5	8.2	8	0.2	Barrier4	point518	518	16.0	41.6
						Barrier4	point517	517	16.0	41.6
						Barrier4	point519	519	16.0	41.3
						Barrier4	point516	516	16.0	41.2
						Barrier4	point520	520	16.0	41.0
						Barrier4	point513	513	16.0	41.0
						Barrier4	point515	515	16.0	40.8
						Barrier4	point512	512	16.0	40.8
						Barrier4	point521	521	16.0	40.8
						Barrier4	point514	514	16.0	40.5
KY-02-01-SPRWD-04	99	56.7	8.6	8	0.6	Barrier4	point509	509	16.0	43.6
						Barrier4	point508	508	16.0	43.5
						Barrier4	point510	510	16.0	43.3
						Barrier4	point511	511	16.0	43.1
						Barrier4	point507	507	16.0	43.1
						Barrier4	point512	512	16.0	42.8
						Barrier4	point513	513	16.0	42.7

						Barrier4	point506	506	16.0	42.7
						Barrier4	point514	514	16.0	42.0
						Barrier4	point505	505	16.0	41.6
KY-02-02-DOND-04	129	56.5	8.6	8	0.6	Barrier4	point508	508	16.0	43.5
						Barrier4	point506	506	16.0	43.4
						Barrier4	point507	507	16.0	43.4
						Barrier4	point509	509	16.0	43.1
						Barrier4	point510	510	16.0	42.9
						Barrier4	point505	505	16.0	42.7
						Barrier4	point511	511	16.0	42.4
						Barrier4	point504	504	16.0	42.0
						Barrier4	point512	512	16.0	42.0
						Barrier4	point513	513	16.0	41.6
KY-02-02-DOND-03	127	55.5	8.1	8	0.1	Barrier4	point500	500	16.0	40.2
						Barrier4	point499	499	16.0	40.2
						Barrier4	point503	503	16.0	40.1
						Barrier4	point504	504	16.0	40.1
						Barrier4	point506	506	16.0	40.0
						Barrier4	point501	501	16.0	40.0
						Barrier4	point502	502	16.0	39.9
						Barrier4	point498	498	16.0	39.8
						Barrier4	point505	505	16.0	39.8
						Barrier4	point507	507	16.0	39.7
KY-02-02-JOHD-09	159	54.5	7.0	8	-1.0	Barrier4	point499	499	16.0	38.7
						Barrier4	point497	497	16.0	37.6
						Barrier4	point496	496	16.0	37.6
						Barrier4	point498	498	16.0	37.6
						Barrier4	point495	495	16.0	37.3
						Barrier4	point502	502	16.0	37.0
						Barrier4	point500	500	16.0	37.0
						Barrier4	point503	503	16.0	36.9
						Barrier4	point501	501	16.0	36.9
						Barrier4	point510	510	16.0	36.9
KY-02-02-JOHD-09	158	54.2	7.2	8	-0.8	Barrier4	point496	496	16.0	37.8
						Barrier4	point495	495	16.0	37.6
						Barrier4	point497	497	16.0	37.6

						Barrier4	point494	494	16.0	37.5
						Barrier4	point498	498	16.0	37.4
						Barrier4	point493	493	16.0	37.1
						Barrier4	point490	490	16.0	37.1
						Barrier4	point499	499	16.0	37.0
						Barrier4	point491	491	16.0	36.9
						Barrier4	point489	489	16.0	36.9
KY-02-02-JOHD-08	157	54.8	7.4	8	-0.6	Barrier4	point486	486	16.0	38.9
						Barrier4	point488	488	16.0	38.8
						Barrier4	point487	487	16.0	38.8
						Barrier4	point485	485	16.0	38.7
						Barrier4	point489	489	16.0	38.6
						Barrier4	point492	492	16.0	38.6
						Barrier4	point490	490	16.0	38.5
						Barrier4	point491	491	16.0	38.4
						Barrier4	point483	483	16.0	38.3
						Barrier4	point493	493	16.0	38.3
KY-02-02-JOHD-07	156	53.9	7.1	8	-0.9	Barrier4	point486	486	16.0	37.4
						Barrier4	point485	485	16.0	37.3
						Barrier4	point482	482	16.0	37.3
						Barrier4	point484	484	16.0	37.3
						Barrier4	point483	483	16.0	37.2
						Barrier4	point487	487	16.0	37.2
						Barrier4	point481	481	16.0	37.1
						Barrier4	point488	488	16.0	37.1
						Barrier4	point480	480	16.0	37.1
						Barrier4	point489	489	16.0	36.9
KY-02-02-JOHD-06	155	54.2	7.3	8	-0.7	Barrier4	point377	377	16.0	38.6
						Barrier4	point477	477	16.0	38.4
						Barrier4	point479	479	16.0	38.4
						Barrier4	point478	478	16.0	38.3
						Barrier4	point473	473	16.0	38.3
						Barrier4	point480	480	16.0	38.2
						Barrier4	point474	474	16.0	38.2
						Barrier4	point472	472	16.0	38.2
						Barrier4	point475	475	16.0	38.2

						Barrier4	point476	476	16.0	38.2
KY-02-02-JOHD-05	153	54.8	7.1	8	-0.9	Barrier4	point472	472	16.0	40.5
						Barrier4	point473	473	16.0	40.4
						Barrier4	point471	471	16.0	40.3
						Barrier4	point474	474	16.0	40.3
						Barrier4	point475	475	16.0	40.0
						Barrier4	point470	470	16.0	39.9
						Barrier4	point477	477	16.0	39.8
						Barrier4	point377	377	16.0	39.8
						Barrier4	point476	476	16.0	39.7
						Barrier4	point478	478	16.0	39.5
KY-02-02-JOHD-03	150	54.7	7.1	8	-0.9	Barrier4	point471	471	16.0	40.5
						Barrier4	point470	470	16.0	40.5
						Barrier4	point472	472	16.0	40.4
						Barrier4	point469	469	16.0	40.3
						Barrier4	point473	473	16.0	40.2
						Barrier4	point474	474	16.0	39.8
						Barrier4	point475	475	16.0	39.3
						Barrier4	point476	476	16.0	39.0
						Barrier4	point477	477	16.0	38.9
						Barrier4	point377	377	16.0	38.9
KY-02-02-JOHD-02	149	54.4	7.1	8	-0.9	Barrier4	point469	469	16.0	40.8
						Barrier4	point470	470	16.0	40.6
						Barrier4	point471	471	16.0	40.2
						Barrier4	point472	472	16.0	39.5
						Barrier4	point468	468	20.0	39.1
						Barrier4	point467	467	20.0	39.0
						Barrier4	point473	473	16.0	38.8
						Barrier4	point474	474	16.0	38.1
						Barrier4	point466	466	20.0	37.9
						Barrier4	point475	475	16.0	37.5
KY-02-02-JOHD-01	148	54.1	7.2	8	-0.8	Barrier4	point469	469	16.0	39.5
						Barrier4	point470	470	16.0	39.2
						Barrier4	point471	471	16.0	38.8
						Barrier4	point472	472	16.0	38.2
						Barrier4	point467	467	20.0	37.9

						Barrier4	point468	468	20.0	37.8
						Barrier4	point466	466	20.0	37.8
						Barrier4	point473	473	16.0	37.6
						Barrier4	point474	474	16.0	37.0
						Barrier4	point475	475	16.0	36.5
KY-02-02-JAMD-06	144	54.0	7.4	8	-0.6	Barrier4	point458	458	16.0	39.4
						Barrier4	point464	464	20.0	39.2
						Barrier4	point460	460	20.0	38.9
						Barrier4	point463	463	20.0	38.7
						Barrier4	point459	459	20.0	38.5
						Barrier4	point457	457	16.0	38.5
						Barrier4	point465	465	20.0	38.4
						Barrier4	point466	466	20.0	38.0
						Barrier4	point462	462	20.0	37.9
						Barrier4	point461	461	20.0	37.9
KY-02-02-JAMD-05	143	53.5	3.9	8	-4.1	Barrier4	point458	458	16.0	41.2
						Barrier4	point457	457	16.0	41.0
						Barrier4	point456	456	16.0	40.5
						Barrier4	point455	455	16.0	39.9
						Barrier4	point454	454	16.0	39.1
						Barrier4	point462	462	20.0	38.4
						Barrier4	point459	459	20.0	38.4
						Barrier4	point461	461	20.0	38.3
						Barrier4	point453	453	16.0	37.9
						Barrier4	point460	460	20.0	37.6
KY-02-02-JAMD-04	142	50.7	5.1	8	-2.9	Barrier4	point450	450	20.0	37.6
						Barrier4	point449	449	20.0	37.0
						Barrier4	point453	453	16.0	36.6
						Barrier4	point455	455	16.0	36.5
						Barrier4	point448	448	20.0	36.3
						Barrier4	point452	452	16.0	36.1
						Barrier4	point454	454	16.0	35.0
						Barrier4	point447	447	20.0	34.9
						Barrier4	point459	459	20.0	34.8
						Barrier4	point451	451	16.0	34.7
KY-02-02-JAMD-03	140	50.2	4.6	8	-3.4	Barrier4	point448	448	20.0	39.4

						Barrier4	point449	449	20.0	39.2
						Barrier4	point450	450	20.0	38.5
						Barrier4	point447	447	20.0	38.2
						Barrier4	point446	446	20.0	33.1
						Barrier4	point459	459	20.0	32.8
						Barrier4	point451	451	16.0	32.6
						Barrier4	point460	460	20.0	32.6
						Barrier4	point452	452	16.0	32.2
						Barrier4	point445	445	20.0	32.1
KY-02-02-JAMD-02	137	55.5	5.1	8	-2.9	Barrier4	point441	441	16.0	38.6
						Barrier4	point445	445	20.0	38.4
						Barrier4	point446	446	20.0	38.1
						Barrier4	point444	444	20.0	38.0
						Barrier4	point447	447	20.0	37.9
						Barrier4	point443	443	20.0	37.8
						Barrier4	point448	448	20.0	37.5
						Barrier4	point440	440	16.0	37.4
						Barrier4	point442	442	20.0	37.3
						Barrier4	point451	451	16.0	36.9
KY-02-02-JAMD-01	136	56.3	3.8	8	-4.2	Barrier4	point441	441	16.0	39.4
						Barrier4	point440	440	16.0	39.3
						Barrier4	point442	442	20.0	37.6
						Barrier4	point443	443	20.0	37.5
						Barrier4	point444	444	20.0	37.4
						Barrier4	point445	445	20.0	37.1
						Barrier4	point446	446	20.0	36.5
						Barrier4	point447	447	20.0	36.4
						Barrier4	point448	448	20.0	35.6
						Barrier4	point449	449	20.0	35.0
KY-02-01-BARR-02	7	55.1	4.0	8	-4.0	Barrier4	point429	429	20.0	35.5
						Barrier4	point428	428	20.0	35.5
						Barrier4	point376	376	0.0	35.0
						Barrier4	point440	440	16.0	35.0
						Barrier4	point427	427	20.0	34.9
						Barrier4	point426	426	20.0	34.8
						Barrier4	point441	441	16.0	34.7

						Barrier4	point430	430	20.0	34.6
						Barrier4	point425	425	20.0	34.5
						Barrier4	point424	424	20.0	34.4
KY-02-01-BARR-03	8	55.6	4.0	8	-4.0	Barrier4	point440	440	16.0	36.6
						Barrier4	point428	428	20.0	36.2
						Barrier4	point441	441	16.0	36.2
						Barrier4	point429	429	20.0	35.8
						Barrier4	point430	430	20.0	35.6
						Barrier4	point427	427	20.0	35.6
						Barrier4	point426	426	20.0	35.5
						Barrier4	point425	425	20.0	35.2
						Barrier4	point424	424	20.0	34.8
						Barrier4	point442	442	20.0	34.7
KY-02-02-SPRR-05	212	55.2	4.2	8	-3.8	Barrier4	point429	429	20.0	36.3
						Barrier4	point428	428	20.0	36.2
						Barrier4	point427	427	20.0	35.9
						Barrier4	point426	426	20.0	35.8
						Barrier4	point425	425	20.0	35.6
						Barrier4	point376	376	0.0	35.5
						Barrier4	point424	424	20.0	35.4
						Barrier4	point430	430	20.0	35.2
						Barrier4	point423	423	20.0	34.9
						Barrier4	point422	422	20.0	34.7
KY-02-02-SPRR-04	209	54.8	4.7	8	-3.3	Barrier4	point376	376	0.0	36.0
						Barrier4	point424	424	20.0	35.8
						Barrier4	point426	426	20.0	35.8
						Barrier4	point428	428	20.0	35.8
						Barrier4	point425	425	20.0	35.8
						Barrier4	point427	427	20.0	35.6
						Barrier4	point423	423	20.0	35.5
						Barrier4	point429	429	20.0	35.4
						Barrier4	point422	422	20.0	35.3
						Barrier4	point421	421	20.0	35.1
KY-02-02-SPRR-03	208	54.8	4.7	8	-3.3	Barrier4	point376	376	0.0	36.5
						Barrier4	point424	424	20.0	35.7
						Barrier4	point425	425	20.0	35.6

						Barrier4	point423	423	20.0	35.5
						Barrier4	point421	421	20.0	35.4
						Barrier4	point422	422	20.0	35.4
						Barrier4	point426	426	20.0	35.3
						Barrier4	point416	416	16.0	35.2
						Barrier4	point428	428	20.0	35.2
						Barrier4	point427	427	20.0	35.1
KY-02-02-SPRR-02	207	54.8	5.1	8	-2.9	Barrier4	point376	376	0.0	36.9
						Barrier4	point416	416	16.0	36.4
						Barrier4	point421	421	20.0	36.1
						Barrier4	point424	424	20.0	36.1
						Barrier4	point422	422	20.0	36.1
						Barrier4	point423	423	20.0	36.0
						Barrier4	point415	415	16.0	36.0
						Barrier4	point420	420	20.0	35.9
						Barrier4	point419	419	20.0	35.8
						Barrier4	point418	418	20.0	35.7
KY-02-02-SPRR-01	206	54.7	5.0	8	-3.0	Barrier4	point376	376	0.0	38.2
						Barrier4	point416	416	16.0	36.6
						Barrier4	point415	415	16.0	36.5
						Barrier4	point392	392	16.0	36.5
						Barrier4	point414	414	16.0	36.3
						Barrier4	point391	391	16.0	36.3
						Barrier4	point413	413	16.0	36.0
						Barrier4	point412	412	16.0	35.8
						Barrier4	point393	393	16.0	35.8
						Barrier4	point411	411	16.0	35.6
KY-02-01-SPRD-06	89	55.4	5.8	8	-2.2	Barrier4	point376	376	0.0	41.2
						Barrier4	point392	392	16.0	40.2
						Barrier4	point393	393	16.0	39.6
						Barrier4	point394	394	16.0	39.3
						Barrier4	point391	391	16.0	39.2
						Barrier4	point395	395	16.0	39.1
						Barrier4	point404	404	16.0	38.4
						Barrier4	point405	405	16.0	38.4
						Barrier4	point403	403	16.0	38.3

						Barrier4	point406	406	16.0	38.3
KY-02-02-WILD-06	239	56.9	4.8	8	-3.2	Barrier4	point376	376	0.0	44.2
						Barrier4	point392	392	16.0	42.7
						Barrier4	point389	389	16.0	42.5
						Barrier4	point391	391	16.0	42.5
						Barrier4	point393	393	16.0	42.4
						Barrier4	point383	383	16.0	42.0
						Barrier4	point390	390	16.0	41.9
						Barrier4	point394	394	16.0	41.8
						Barrier4	point387	387	16.0	41.6
						Barrier4	point388	388	16.0	41.5
KY-02-02-WILD-05	238	57.6	5.0	8	-3.0	Barrier4	point376	376	0.0	45.6
						Barrier4	point392	392	16.0	43.9
						Barrier4	point393	393	16.0	43.8
						Barrier4	point391	391	16.0	43.8
						Barrier4	point383	383	16.0	43.2
						Barrier4	point394	394	16.0	43.2
						Barrier4	point389	389	16.0	43.1
						Barrier4	point388	388	16.0	42.9
						Barrier4	point387	387	16.0	42.8
						Barrier4	point382	382	12.0	42.6
KY-02-02-WILD-04	236	58.7	4.1	8	-3.9	Barrier4	point376	376	0.0	47.0
						Barrier4	point386	386	16.0	45.5
						Barrier4	point385	385	16.0	45.3
						Barrier4	point388	388	16.0	44.9
						Barrier4	point387	387	16.0	44.9
						Barrier4	point382	382	12.0	44.8
						Barrier4	point391	391	16.0	44.8
						Barrier4	point389	389	16.0	44.7
						Barrier4	point392	392	16.0	44.4
						Barrier4	point381	381	12.0	44.2
KY-02-02-WILD-03	235	59.4	3.8	8	-4.2	Barrier4	point376	376	0.0	48.1
						Barrier4	point385	385	16.0	46.7
						Barrier4	point380	380	0.0	46.3
						Barrier4	point381	381	12.0	46.1
						Barrier4	point387	387	16.0	45.7

						Barrier4	point386	386	16.0	45.6
						Barrier4	point388	388	16.0	45.6
						Barrier4	point384	384	16.0	45.5
						Barrier4	point382	382	12.0	45.4
						Barrier4	point389	389	16.0	45.0
KY-02-02-WILD-02	234	60.7	3.8	8	-4.2	Barrier4	point380	380	0.0	50.8
						Barrier4	point376	376	0.0	50.2
						Barrier4	point381	381	12.0	48.4
						Barrier4	point385	385	16.0	47.9
						Barrier4	point384	384	16.0	47.7
						Barrier4	point383	383	16.0	47.3
						Barrier4	point387	387	16.0	47.3
						Barrier4	point386	386	16.0	47.2
						Barrier4	point382	382	12.0	47.0
						Barrier4	point388	388	16.0	46.2
KY-02-02-WILD-01	233	63.8	2.1	8	-5.9	Barrier4	point376	376	0.0	57.1
						Barrier4	point380	380	0.0	54.7
						Barrier4	point382	382	12.0	49.4
						Barrier4	point383	383	16.0	49.1
						Barrier4	point381	381	12.0	49.0
						Barrier4	point385	385	16.0	46.8
						Barrier D-1	point326	326	16.0	46.8
						Barrier4	point384	384	16.0	46.5
						Barrier D-1	point327	327	12.0	46.3
						Barrier D-1	point334	334	0.0	45.7
Total Cost, All Barriers (including additional cost(s))					$2320607					

HMB Professional Engineers				**27 March 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**W1_02_Toll69_Sunset Lane Barrier**									
BARRIER DESIGN:	**W1_Toll69_Sunset LaneF**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier4	W	12.00	16.51	20.00	4685	77354				2320607
Barrier D-1	W	0.00	0.00	0.00	0	0				0
									Total Cost:	2320607

HMB Professional Engineers 27 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: W1_02_Toll69_Sunset Lane Barrier
BARRIER DESIGN: W1_Toll69_Sunset LaneF

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier4	W	point376	376	0.00	0.00	0.00	0	0				0
		point380	380	0.00	0.00	0.00	0	0				0
		point381	381	12.00	12.00	12.00	20	246				7374
		point382	382	12.00	12.00	12.00	20	237				7121
		point383	383	16.00	16.00	16.00	23	372				11165
		point384	384	16.00	16.00	16.00	18	296				8880
		point385	385	16.00	16.00	16.00	20	326				9772
		point386	386	16.00	16.00	16.00	18	294				8825
		point387	387	16.00	16.00	16.00	21	333				9982
		point388	388	16.00	16.00	16.00	20	322				9664
		point389	389	16.00	16.00	16.00	19	309				9270
		point390	390	16.00	16.00	16.00	20	312				9360
		point391	391	16.00	16.00	16.00	24	387				11612
		point392	392	16.00	16.00	16.00	20	328				9840
		point393	393	16.00	16.00	16.00	20	319				9582
		point394	394	16.00	16.00	16.00	20	319				9582
		point395	395	16.00	16.00	16.00	20	320				9607
		point396	396	16.00	16.00	16.00	20	319				9582
		point397	397	16.00	16.00	16.00	20	323				9693
		point398	398	16.00	16.00	16.00	20	316				9494
		point399	399	16.00	16.00	16.00	20	319				9582
		point400	400	16.00	16.00	16.00	20	323				9693
		point401	401	16.00	16.00	16.00	20	316				9494
		point402	402	16.00	16.00	16.00	20	323				9693
		point403	403	16.00	16.00	16.00	20	319				9582
		point404	404	16.00	16.00	16.00	20	316				9494

		point405	405	16.00	16.00	16.00	20	323				9693
		point406	406	16.00	16.00	16.00	20	319				9582
		point407	407	16.00	16.00	16.00	20	320				9607
		point408	408	16.00	16.00	16.00	20	319				9582
		point409	409	16.00	16.00	16.00	20	320				9607
		point410	410	16.00	16.00	16.00	20	319				9582
		point411	411	16.00	16.00	16.00	20	320				9607
		point412	412	16.00	16.00	16.00	20	319				9582
		point413	413	16.00	16.00	16.00	20	323				9693
		point414	414	16.00	16.00	16.00	20	320				9607
		point415	415	16.00	16.00	16.00	20	316				9494
		point416	416	16.00	16.00	16.00	20	320				9607
		point417	417	20.00	20.00	20.00	20	400				12008
		point418	418	20.00	20.00	20.00	20	400				12008
		point419	419	20.00	20.00	20.00	20	400				12008
		point420	420	20.00	20.00	20.00	20	400				12008
		point421	421	20.00	20.00	20.00	20	404				12117
		point422	422	20.00	20.00	20.00	20	396				11868
		point423	423	20.00	20.00	20.00	20	399				11977
		point424	424	20.00	20.00	20.00	20	399				11977
		point425	425	20.00	20.00	20.00	20	399				11977
		point426	426	20.00	20.00	20.00	20	404				12117
		point427	427	20.00	20.00	20.00	20	399				11956
		point428	428	20.00	20.00	20.00	20	399				11956
		point429	429	20.00	20.00	20.00	20	403				12079
		point430	430	20.00	20.00	20.00	20	398				11944
		point431	431	16.00	16.00	16.00	20	322	Y			9660
		point432	432	16.00	16.00	16.00	20	318	Y			9555
		point433	433	16.00	16.00	16.00	20	322	Y			9660
		point434	434	16.00	16.00	16.00	20	319	Y			9558
		point435	435	16.00	16.00	16.00	20	319	Y			9558
		point436	436	16.00	16.00	16.00	20	322	Y			9664
		point437	437	16.00	16.00	16.00	20	319	Y			9558
		point438	438	16.00	16.00	16.00	20	319	Y			9571
		point439	439	16.00	16.00	16.00	20	322	Y			9675
		point440	440	16.00	16.00	16.00	20	319				9571
		point441	441	16.00	16.00	16.00	20	319				9571
		point442	442	20.00	20.00	20.00	20	399				11963
		point443	443	20.00	20.00	20.00	20	404				12117

		point444	444	20.00	20.00	20.00	20	394				11834
		point445	445	20.00	20.00	20.00	20	404				12117
		point446	446	20.00	20.00	20.00	20	395				11861
		point447	447	20.00	20.00	20.00	20	405				12149
		point448	448	20.00	20.00	20.00	20	400				11989
		point449	449	20.00	20.00	20.00	20	395				11861
		point450	450	20.00	20.00	20.00	20	401				12023
		point451	451	16.00	16.00	16.00	20	321				9619
		point452	452	16.00	16.00	16.00	20	325				9753
		point453	453	16.00	16.00	16.00	20	317				9519
		point454	454	16.00	16.00	16.00	20	321				9619
		point455	455	16.00	16.00	16.00	20	317				9519
		point456	456	16.00	16.00	16.00	20	322				9654
		point457	457	16.00	16.00	16.00	20	317				9519
		point458	458	16.00	16.00	16.00	20	325				9753
		point459	459	20.00	20.00	20.00	20	397				11898
		point460	460	20.00	20.00	20.00	20	402				12067
		point461	461	20.00	20.00	20.00	20	397				11898
		point462	462	20.00	20.00	20.00	20	402				12067
		point463	463	20.00	20.00	20.00	20	397				11898
		point464	464	20.00	20.00	20.00	20	406				12191
		point465	465	20.00	20.00	20.00	20	395				11861
		point466	466	20.00	20.00	20.00	20	400				11989
		point467	467	20.00	20.00	20.00	20	400				11989
		point468	468	20.00	20.00	20.00	20	400				11989
		point469	469	16.00	16.00	16.00	20	320				9591
		point470	470	16.00	16.00	16.00	20	320				9591
		point471	471	16.00	16.00	16.00	20	324				9719
		point472	472	16.00	16.00	16.00	20	320				9591
		point473	473	16.00	16.00	16.00	20	320				9591
		point474	474	16.00	16.00	16.00	20	320				9591
		point475	475	16.00	16.00	16.00	20	320				9591
		point476	476	16.00	16.00	16.00	20	316				9489
		point477	477	16.00	16.00	16.00	20	320				9591
		point377	377	16.00	16.00	16.00	20	324				9719
		point478	478	16.00	16.00	16.00	20	320				9591
		point479	479	16.00	16.00	16.00	20	317				9519
		point480	480	16.00	16.00	16.00	20	322				9654
		point481	481	16.00	16.00	16.00	20	317				9519

		point482	482	16.00	16.00	16.00	20	322				9654
		point483	483	16.00	16.00	16.00	20	321				9619
		point484	484	16.00	16.00	16.00	20	322				9654
		point485	485	16.00	16.00	16.00	20	317				9519
		point486	486	16.00	16.00	16.00	20	322				9654
		point487	487	16.00	16.00	16.00	20	317				9519
		point488	488	16.00	16.00	16.00	20	322				9654
		point489	489	16.00	16.00	16.00	20	317				9519
		point490	490	16.00	16.00	16.00	20	322				9654
		point491	491	16.00	16.00	16.00	20	321				9619
		point492	492	16.00	16.00	16.00	20	322				9654
		point493	493	16.00	16.00	16.00	20	317				9519
		point494	494	16.00	16.00	16.00	20	322				9654
		point495	495	16.00	16.00	16.00	20	317				9519
		point496	496	16.00	16.00	16.00	20	322				9654
		point497	497	16.00	16.00	16.00	20	321				9619
		point498	498	16.00	16.00	16.00	20	322				9654
		point499	499	16.00	16.00	16.00	20	317				9519
		point500	500	16.00	16.00	16.00	20	322				9654
		point501	501	16.00	16.00	16.00	20	317				9519
		point502	502	16.00	16.00	16.00	20	321				9619
		point503	503	16.00	16.00	16.00	20	322				9654
		point504	504	16.00	16.00	16.00	20	321				9619
		point505	505	16.00	16.00	16.00	20	317				9519
		point506	506	16.00	16.00	16.00	20	324				9719
		point507	507	16.00	16.00	16.00	20	316				9489
		point508	508	16.00	16.00	16.00	20	321				9619
		point509	509	16.00	16.00	16.00	20	320				9591
		point510	510	16.00	16.00	16.00	20	323				9693
		point511	511	16.00	16.00	16.00	20	319				9571
		point512	512	16.00	16.00	16.00	20	319				9571
		point513	513	16.00	16.00	16.00	20	319				9571
		point514	514	16.00	16.00	16.00	20	322				9675
		point515	515	16.00	16.00	16.00	20	319				9571
		point516	516	16.00	16.00	16.00	20	318				9553
		point517	517	16.00	16.00	16.00	20	319				9558
		point518	518	16.00	16.00	16.00	20	322				9664
		point519	519	16.00	16.00	16.00	20	318				9553
		point520	520	16.00	16.00	16.00	20	322				9660

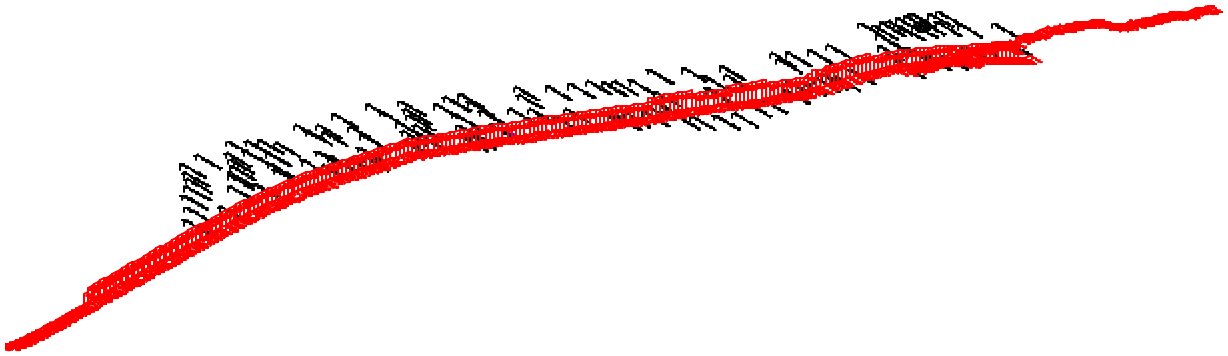
		point521	521	16.00	16.00	16.00	20	318				9553
		point522	522	16.00	16.00	16.00	20	318				9555
		point523	523	16.00	16.00	16.00	20	322				9664
		point524	524	16.00	16.00	16.00	20	318				9555
		point525	525	16.00	16.00	16.00	20	322				9664
		point526	526	16.00	16.00	16.00	20	319				9565
		point527	527	16.00	16.00	16.00	20	319				9565
		point528	528	16.00	16.00	16.00	20	319				9565
		point529	529	16.00	16.00	16.00	20	322				9675
		point530	530	16.00	16.00	16.00	20	319				9582
		point531	531	16.00	16.00	16.00	20	319				9582
		point532	532	16.00	16.00	16.00	20	320				9607
		point533	533	16.00	16.00	16.00	20	320				9607
		point534	534	16.00	16.00	16.00	20	323				9693
		point535	535	16.00	16.00	16.00	20	318				9525
		point536	536	16.00	16.00	16.00	20	320				9607
		point537	537	16.00	16.00	16.00	20	321				9639
		point538	538	16.00	16.00	16.00	20	318				9525
		point539	539	16.00	16.00	16.00	20	321				9639
		point540	540	16.00	16.00	16.00	20	320				9610
		point541	541	16.00	16.00	16.00	20	319				9564
		point542	542	16.00	16.00	16.00	20	323				9678
		point543	543	16.00	16.00	16.00	20	316				9494
		point544	544	16.00	16.00	16.00	20	323				9678
		point545	545	16.00	16.00	16.00	20	318				9547
		point546	546	16.00	16.00	16.00	20	320				9610
		point547	547	16.00	16.00	16.00	20	318				9547
		point548	548	16.00	16.00	16.00	20	322				9663
		point549	549	16.00	16.00	16.00	20	320				9606
		point550	550	16.00	16.00	16.00	20	320				9606
		point551	551	16.00	16.00	16.00	20	322				9663
		point552	552	16.00	16.00	16.00	20	318				9555
		point553	553	16.00	16.00	16.00	20	318				9555
		point554	554	16.00	16.00	16.00	20	318				9555
		point555	555	16.00	16.00	16.00	20	322				9672
		point556	556	16.00	16.00	16.00	20	321				9628
		point557	557	16.00	16.00	16.00	20	317				9510
		point558	558	16.00	16.00	16.00	20	321				9628
		point559	559	16.00	16.00	16.00	20	321				9628

		point560	560	16.00	16.00	16.00	20	320				9589
		point561	561	16.00	16.00	16.00	20	320				9589
		point562	562	16.00	16.00	16.00	20	319				9556
		point563	563	16.00	16.00	16.00	20	324				9707
		point564	564	16.00	16.00	16.00	20	318				9528
		point565	565	16.00	16.00	16.00	20	322				9675
		point566	566	16.00	16.00	16.00	20	318				9528
		point567	567	16.00	16.00	16.00	20	319				9556
		point568	568	16.00	16.00	16.00	20	321				9627
		point569	569	16.00	16.00	16.00	20	322				9648
		point570	570	16.00	16.00	16.00	20	321				9627
		point571	571	16.00	16.00	16.00	20	321				9627
		point572	572	16.00	16.00	16.00	20	316				9492
		point573	573	16.00	16.00	16.00	20	320				9612
		point574	574	16.00	16.00	16.00	20	320				9612
		point575	575	16.00	16.00	16.00	20	320				9612
		point378	378	16.00	16.00	16.00	20	321				9627
		point576	576	16.00	16.00	16.00	20	319				9556
		point577	577	16.00	16.00	16.00	20	322				9675
		point578	578	16.00	16.00	16.00	20	319				9556
		point579	579	16.00	16.00	16.00	20	319				9556
		point580	580	16.00	16.00	16.00	20	321				9627
		point581	581	16.00	16.00	16.00	20	320				9600
		point582	582	16.00	16.00	16.00	20	320				9600
		point583	583	16.00	16.00	16.00	20	320				9603
		point584	584	16.00	16.00	16.00	20	320				9600
		point585	585	16.00	16.00	16.00	20	320				9603
		point586	586	16.00	16.00	16.00	20	320				9600
		point587	587	16.00	16.00	16.00	20	320				9600
		point588	588	16.00	16.00	16.00	20	320				9603
		point589	589	16.00	16.00	16.00	20	320				9600
		point590	590	16.00	16.00	16.00	20	320				9603
		point591	591	16.00	16.00	16.00	20	320				9600
		point592	592	16.00	16.00	16.00	20	320				9600
		point593	593	16.00	16.00	16.00	20	320				9603
		point594	594	16.00	16.00	16.00	20	320				9600
		point595	595	16.00	16.00	16.00	20	320				9603
		point596	596	16.00	16.00	16.00	20	320				9600
		point597	597	16.00	16.00	16.00	20	320				9603

		point598	598	16.00	16.00	16.00	20	320				9600
		point599	599	16.00	16.00	16.00	20	320				9600
		point600	600	16.00	16.00	16.00	20	320				9603
		point601	601	16.00	16.00	16.00	20	316				9480
		point602	602	16.00	16.00	16.00	20	320				9603
		point603	603	16.00	16.00	16.00	20	320				9600
		point604	604	16.00	16.00	16.00	20	320				9600
		point605	605	16.00	16.00	16.00	20	320				9603
		point606	606	16.00	16.00	16.00	20	320				9600
		point607	607	16.00	16.00	16.00	20	320				9603
		point608	608	16.00	16.00	16.00	20	320				9600
		point609	609	16.00	16.00	16.00	20	320				9603
		point610	610	16.00	16.00	16.00	20	320				9603
		point611	611	16.00	16.00	16.00	20	320				9603
		point612	612	12.00	12.00	12.00	20	240				7202
		point613	613	0.00	0.00	0.00	0	0				0
		point614	614	0.00	0.00	0.00	0	0				0
		point615	615	0.00	0.00	0.00	0	0				0
		point616	616	0.00	0.00	0.00	0	0				0
		point617	617	0.00	0.00	0.00	0	0				0
		point618	618	0.00	0.00	0.00	0	0				0
		point619	619	0.00	0.00	0.00	0	0				0
		point620	620	0.00	0.00	0.00	0	0				0
		point621	621	0.00	0.00	0.00	0	0				0
		point622	622	0.00	0.00	0.00	0	0				0
		point623	623	0.00	0.00	0.00	0	0				0
		point624	624	0.00	0.00	0.00	0	0				0
		point625	625	0.00	0.00	0.00	0	0				0
		point626	626	0.00	0.00	0.00	0	0				0
		point627	627	0.00	0.00	0.00	0	0				0
		point628	628	0.00	0.00	0.00	0	0				0
		point629	629	0.00	0.00	0.00	0	0				0
		point630	630	0.00	0.00	0.00	0	0				0
		point631	631	0.00	0.00	0.00	0	0				0
		point632	632	0.00	0.00	0.00	0	0				0
		point633	633	0.00	0.00	0.00	0	0				0
		point634	634	0.00	0.00	0.00	0	0				0
		point635	635	0.00	0.00	0.00	0	0				0
		point636	636	0.00	0.00	0.00	0	0				0

		point637	637	0.00	0.00	0.00	0	0				0
		point638	638	0.00	0.00	0.00	0	0				0
Barrier D-1	W	point300	300	0.00	0.00	0.00	0	0				0
		point302	302	0.00	0.00	0.00	0	0				0
		point303	303	0.00	0.00	0.00	0	0				0
		point304	304	0.00	0.00	0.00	0	0				0
		point305	305	0.00	0.00	0.00	0	0				0
		point306	306	0.00	0.00	0.00	0	0				0
		point307	307	0.00	0.00	0.00	0	0				0
		point308	308	0.00	0.00	0.00	0	0				0
		point309	309	0.00	0.00	0.00	0	0				0
		point310	310	0.00	0.00	0.00	0	0				0
		point311	311	0.00	0.00	0.00	0	0				0
		point312	312	0.00	0.00	0.00	0	0				0
		point313	313	0.00	0.00	0.00	0	0				0
		point314	314	0.00	0.00	0.00	0	0				0
		point315	315	0.00	0.00	0.00	0	0				0
		point316	316	0.00	0.00	0.00	0	0				0
		point317	317	0.00	0.00	0.00	0	0				0
		point318	318	0.00	0.00	0.00	0	0				0
		point319	319	0.00	0.00	0.00	0	0				0
		point320	320	0.00	0.00	0.00	0	0				0
		point321	321	0.00	0.00	0.00	0	0				0
		point322	322	0.00	0.00	0.00	0	0				0
		point323	323	0.00	0.00	0.00	0	0				0
		point324	324	0.00	0.00	0.00	0	0				0
		point325	325	0.00	0.00	0.00	0	0				0
		point326	326	0.00	0.00	0.00	0	0				0
		point327	327	0.00	0.00	0.00	0	0				0
		point328	328	0.00	0.00	0.00	0	0				0
		point329	329	0.00	0.00	0.00	0	0				0
		point330	330	0.00	0.00	0.00	0	0				0
		point331	331	0.00	0.00	0.00	0	0	Y			0
		point332	332	0.00	0.00	0.00	0	0	Y			0
		point333	333	0.00	0.00	0.00	0	0	Y			0
		point334	334	0.00	0.00	0.00	0	0				0
		point335	335	0.00	0.00	0.00	0	0	Y			0
		point336	336	0.00	0.00	0.00	0	0	Y			0

		point337	337	0.00	0.00	0.00	0	0	Y			0
		point338	338	0.00	0.00	0.00	0	0	Y			0
		point339	339	0.00	0.00	0.00	0	0	Y			0
		point340	340	0.00	0.00	0.00	0	0	Y			0
		point341	341	0.00	0.00	0.00	0	0	Y			0
		point342	342	0.00	0.00	0.00	0	0	Y			0
		point343	343	0.00	0.00	0.00	0	0	Y			0
		point344	344	0.00	0.00	0.00	0	0	Y			0
		point345	345	0.00	0.00	0.00	0	0	Y			0
		point346	346	0.00	0.00	0.00	0	0				0
		point347	347	0.00	0.00	0.00	0	0				0
		point348	348	0.00	0.00	0.00	0	0				0
		point349	349	0.00	0.00	0.00	0	0				0
		point350	350	0.00	0.00	0.00	0	0				0
		point351	351	0.00	0.00	0.00	0	0				0
		point352	352	0.00	0.00	0.00	0	0				0
		point353	353	0.00	0.00	0.00	0	0				0
		point354	354	0.00	0.00	0.00	0	0				0
		point355	355	0.00	0.00	0.00	0	0				0
		point356	356	0.00	0.00	0.00	0	0				0
		point357	357	0.00	0.00	0.00	0	0				0
		point358	358	0.00	0.00	0.00	0	0				0
		point359	359	0.00	0.00	0.00	0	0				0
		point360	360	0.00	0.00	0.00	0	0				0
		point361	361	0.00	0.00	0.00	0	0				0
		point362	362	0.00	0.00	0.00	0	0				0
		point363	363	0.00	0.00	0.00	0	0				0
		point364	364	0.00	0.00	0.00	0	0				0
		point365	365	0.00	0.00	0.00	0	0				0
		point366	366	0.00	0.00	0.00	0	0				0
		point367	367	0.00	0.00	0.00	0	0				0
		point368	368	0.00	0.00	0.00	0	0				0
		point369	369	0.00	0.00	0.00	0	0				0
		point370	370	0.00	0.00	0.00	0	0				0
		point371	371	0.00	0.00	0.00	0	0				0
		point372	372	0.00	0.00	0.00	0	0				0
		point373	373	0.00	0.00	0.00	0	0				0
		point374	374	0.00	0.00	0.00	0	0				0



W1_02_Toll69_Sunset Lane Barrier	Sheet 1 of 1	27 Mar 2018
	HMB Professional Engineers	
Barrier View-W1_Toll69_Sunset LaneF	Project/Contract No. I-69 ORX	
Run name: W1_02_Toll69_D	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 2 – RICHARDSON AVENUE

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_Toll69_Richardson-Redbanks
BARRIER DESIGN: W1_Toll69_Richardson-Redbanks
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-03-01-RICA-13*	313	1	54.8	57.0	66	2.2	10	----	51.9	5.1	8	-2.9
KY-03-02-RICA-11*	353	1	54.9	57.2	66	2.3	10	----	52.1	5.1	8	-2.9
KY-03-02-RICA-10*	352	1	54.3	56.9	66	2.6	10	----	52.3	4.6	8	-3.4
KY-03-02-RICA-09*	351	1	54.1	56.9	66	2.8	10	----	52.4	4.5	8	-3.5
KY-03-02-RICA-08*	350	1	53.7	56.8	66	3.1	10	----	52.4	4.4	8	-3.6
KY-03-02-RICA-07*	349	1	53.5	56.7	66	3.2	10	----	52.5	4.2	8	-3.8
KY-03-02-RICA-06*	348	1	53.4	56.6	66	3.2	10	----	52.6	4.0	8	-4.0
KY-03-02-RICA-05*	347	1	53.4	56.6	66	3.2	10	----	52.8	3.8	8	-4.2
KY-03-02-RICA-04*	346	1	53.7	56.6	66	2.9	10	----	53.3	3.3	8	-4.7
KY-03-02-RICA-03*	345	1	53.9	56.6	66	2.7	10	----	53.6	3.0	8	-5.0
KY-03-01-HERA-09*	268	1	54.9	56.4	66	1.5	10	----	54.8	1.6	8	-6.4
KY-03-01-HERA-08*	267	1	55.8	56.9	66	1.1	10	----	55.8	1.1	8	-6.9
KY-03-01-HERA-07*	266	1	56.6	57.4	66	0.8	10	----	56.5	0.9	8	-7.1
KY-03-01-HERA-06*	265	1	57.8	58.4	66	0.6	10	----	57.9	0.5	8	-7.5
KY-03-01-HERA-05*	264	1	60.2	60.2	66	0.0	10	----	60.0	0.2	8	-7.8
KY-03-01-HERA-04*	263	1	61.4	61.3	66	-0.1	10	----	61.1	0.2	8	-7.8
KY-03-01-HERA-03*	262	1	62.5	62.4	66	-0.1	10	----	62.3	0.1	8	-7.9
KY-03-01-HERA-02*	260	1	64.6	64.4	66	-0.2	10	----	64.3	0.1	8	-7.9
KY-03-01-RICA-02*	301	1	54.3	57.7	66	3.4	10	----	54.1	3.6	8	-4.4
KY-03-01-RICA-03*	302	1	54.0	57.8	66	3.8	10	----	53.7	4.1	8	-3.9
KY-03-01-RICA-04*	303	1	54.0	57.9	66	3.9	10	----	53.4	4.5	8	-3.5
KY-03-01-RICA-05*	304	1	54.2	57.9	66	3.7	10	----	53.3	4.6	8	-3.4
KY-03-01-RICA-06*	305	1	54.5	58.2	66	3.7	10	----	53.2	5.0	8	-3.0
KY-03-01-RICA-07*	306	1	55.1	58.1	66	3.0	10	----	53.1	5.0	8	-3.0

KY-03-01-RICA-09*	308	1	56.1	58.8	66	2.7	10	----	53.4	5.4	8	-2.6
KY-03-01-RICA-08*	307	1	55.5	58.3	66	2.8	10	----	53.1	5.2	8	-2.8
KY-03-01-RICA-10*	310	1	56.3	58.8	66	2.5	10	----	53.2	5.6	8	-2.4
KY-03-01-RICA-12*	312	1	57.1	59.3	66	2.2	10	----	53.4	5.9	8	-2.1
KY-03-01-RICA-11*	311	1	56.3	58.0	66	1.7	10	----	52.3	5.7	8	-2.3
KY-03-01-KIML-11*	283	1	64.6	62.8	66	-1.8	10	----	55.0	7.8	8	-0.2
KY-03-01-KIML-06*	278	1	58.6	63.3	66	4.7	10	----	54.6	8.7	8	0.7
KY-03-01-KIML-05*	277	1	59.5	63.2	66	3.7	10	----	54.5	8.7	8	0.7
KY-03-01-KIML-08*	280	1	61.2	65.0	66	3.8	10	----	55.6	9.4	8	1.4
KY-03-01-KIML-07*	279	1	60.7	66.4	66	5.7	10	Snd Lvl	56.4	10.0	8	2.0
KY-03-01-KIML-02*	273	1	60.8	65.1	66	4.3	10	----	56.1	9.0	8	1.0
KY-03-01-KIML-03*	275	1	64.4	68.4	66	4.0	10	Snd Lvl	58.9	9.5	8	1.5
KY-03-01-VAL4-XX*	314	1	61.3	63.9	66	2.6	10	----	53.7	10.2	8	2.2

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	37	0.1	4.7	10.2
All Impacted	2	9.5	9.8	10.0
All that meet NR Goal	7	8.7	9.4	10.2

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_Toll69_Richardson-Redbanks
BARRIER DESIGN: W1_Toll69_Richardson-Redbanks

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Goal	Calc-Goal	Barrier Reviewed	Important Segments Name	No.	Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-03-01-RICA-13*	313	51.9	5.1	8	-2.9	Barrier A	point57	57	20.0	34.5
						Barrier A	point56	56	20.0	34.3
						Barrier A	point59	59	20.0	34.3
						Barrier A	point58	58	20.0	34.2
						Barrier A	point43	43	20.0	33.8
						Barrier A	point55	55	20.0	33.6
						Barrier A	point46	46	20.0	33.5
						Barrier A	point53	53	20.0	33.3
						Barrier A	point47	47	20.0	33.2
						Barrier A	point60	60	20.0	33.0
KY-03-02-RICA-11*	353	52.1	5.1	8	-2.9	Barrier A	point54	54	20.0	34.9
						Barrier A	point55	55	20.0	34.9
						Barrier A	point56	56	20.0	34.5
						Barrier A	point59	59	20.0	34.4
						Barrier A	point45	45	20.0	34.4
						Barrier A	point58	58	20.0	34.3
						Barrier A	point46	46	20.0	34.2
						Barrier A	point53	53	20.0	34.0
						Barrier A	point52	52	20.0	33.9
						Barrier A	point57	57	20.0	33.8
KY-03-02-RICA-10*	352	52.3	4.6	8	-3.4	Barrier A	point40	40	20.0	36.0

						Barrier A	point53	53	20.0	35.8
						Barrier A	point54	54	20.0	34.9
						Barrier A	point52	52	20.0	34.6
						Barrier A	point44	44	20.0	34.5
						Barrier A	point56	56	20.0	34.4
						Barrier A	point45	45	20.0	34.4
						Barrier A	point55	55	20.0	34.4
						Barrier A	point59	59	20.0	34.2
						Barrier A	point58	58	20.0	34.1
KY-03-02-RICA-09*	351	52.4	4.5	8	-3.5	Barrier A	point53	53	20.0	35.1
						Barrier A	point52	52	20.0	34.9
						Barrier A	point54	54	20.0	34.7
						Barrier A	point43	43	20.0	34.7
						Barrier A	point44	44	20.0	34.4
						Barrier A	point55	55	20.0	34.4
						Barrier A	point49	49	20.0	34.3
						Barrier A	point51	51	20.0	34.3
						Barrier A	point56	56	20.0	34.3
						Barrier A	point58	58	20.0	34.2
KY-03-02-RICA-08*	350	52.4	4.4	8	-3.6	Barrier A	point39	39	20.0	36.9
						Barrier A	point53	53	20.0	34.7
						Barrier A	point48	48	20.0	34.7
						Barrier A	point49	49	20.0	34.7
						Barrier A	point52	52	20.0	34.6
						Barrier A	point51	51	20.0	34.6
						Barrier A	point50	50	20.0	34.6
						Barrier A	point47	47	20.0	34.4
						Barrier A	point45	45	20.0	34.4
						Barrier A	point46	46	20.0	34.4
KY-03-02-RICA-07*	349	52.5	4.2	8	-3.8	Barrier A	point38	38	24.0	34.9
						Barrier A	point46	46	20.0	34.9
						Barrier A	point37	37	24.0	34.8
						Barrier A	point45	45	20.0	34.7
						Barrier A	point47	47	20.0	34.7
						Barrier A	point50	50	20.0	34.7
						Barrier A	point48	48	20.0	34.5

						Barrier A	point49	49	20.0	34.5
						Barrier A	point44	44	20.0	34.3
						Barrier A	point52	52	20.0	34.3
KY-03-02-RICA-06*	348	52.6	4.0	8	-4.0	Barrier A	point36	36	20.0	35.1
						Barrier A	point46	46	20.0	34.9
						Barrier A	point45	45	20.0	34.6
						Barrier A	point47	47	20.0	34.6
						Barrier A	point44	44	20.0	34.3
						Barrier A	point48	48	20.0	34.2
						Barrier A	point49	49	20.0	34.1
						Barrier A	point43	43	20.0	34.0
						Barrier A	point50	50	20.0	33.9
						Barrier A	point52	52	20.0	33.9
KY-03-02-RICA-05*	347	52.8	3.8	8	-4.2	Barrier A	point34	34	20.0	35.5
						Barrier A	point45	45	20.0	34.7
						Barrier A	point46	46	20.0	34.5
						Barrier A	point44	44	20.0	34.5
						Barrier A	point33	33	20.0	34.3
						Barrier A	point43	43	20.0	34.2
						Barrier A	point40	40	20.0	34.0
						Barrier A	point48	48	20.0	33.9
						Barrier A	point39	39	20.0	33.8
						Barrier A	point41	41	20.0	33.8
KY-03-02-RICA-04*	346	53.3	3.3	8	-4.7	Barrier A	point32	32	20.0	36.0
						Barrier A	point31	31	20.0	35.5
						Barrier A	point43	43	20.0	34.4
						Barrier A	point42	42	20.0	34.2
						Barrier A	point39	39	20.0	34.2
						Barrier A	point44	44	20.0	34.1
						Barrier A	point41	41	20.0	34.1
						Barrier A	point45	45	20.0	34.0
						Barrier A	point10	10	0.0	34.0
						Barrier A	point38	38	20.0	33.9
KY-03-02-RICA-03*	345	53.6	3.0	8	-5.0	Barrier A	point31	31	20.0	36.3
						Barrier A	point30	30	20.0	36.2
						Barrier A	point11	11	0.0	35.3

						Barrier A	point10	10	0.0	34.9
						Barrier A	point8	8	0.0	34.8
						Barrier A	point4	4	0.0	34.7
						Barrier A	point43	43	20.0	34.5
						Barrier A	point32	32	20.0	34.5
						Barrier A	point41	41	20.0	34.4
						Barrier A	point38	38	20.0	34.2
KY-03-01-HERA-09*	268	54.8	1.6	8	-6.4	Barrier A	point18	18	0.0	40.2
						Barrier A	point4	4	0.0	37.9
						Barrier A	point17	17	0.0	37.5
						Barrier A	point19	19	0.0	37.4
						Barrier A	point20	20	0.0	36.9
						Barrier A	point8	8	0.0	36.5
						Barrier A	point16	16	0.0	35.9
						Barrier A	point10	10	0.0	35.7
						Barrier A	point9	9	0.0	35.7
						Barrier A	point15	15	0.0	35.5
KY-03-01-HERA-08*	267	55.8	1.1	8	-6.9	Barrier A	point15	15	0.0	40.2
						Barrier A	point4	4	0.0	38.6
						Barrier A	point16	16	0.0	38.5
						Barrier A	point14	14	0.0	38.5
						Barrier A	point18	18	0.0	38.3
						Barrier A	point17	17	0.0	38.1
						Barrier A	point19	19	0.0	37.7
						Barrier A	point8	8	0.0	37.0
						Barrier A	point10	10	0.0	36.9
						Barrier A	point9	9	0.0	36.8
KY-03-01-HERA-07*	266	56.5	0.9	8	-7.1	Barrier A	point13	13	0.0	40.7
						Barrier A	point12	12	0.0	40.4
						Barrier A	point4	4	0.0	39.1
						Barrier A	point17	17	0.0	38.9
						Barrier A	point18	18	0.0	38.7
						Barrier A	point16	16	0.0	38.3
						Barrier A	point14	14	0.0	38.3
						Barrier A	point8	8	0.0	37.8
						Barrier A	point9	9	0.0	37.6

						Barrier A	point10	10	0.0	37.3
KY-03-01-HERA-06*	265	57.9	0.5	8	-7.5	Barrier A	point10	10	0.0	41.3
						Barrier A	point9	9	0.0	40.9
						Barrier A	point11	11	0.0	39.9
						Barrier A	point17	17	0.0	39.4
						Barrier A	point16	16	0.0	39.3
						Barrier A	point4	4	0.0	39.1
						Barrier A	point8	8	0.0	39.0
						Barrier A	point15	15	0.0	39.0
						Barrier A	point12	12	0.0	38.9
						Barrier A	point13	13	0.0	38.9
KY-03-01-HERA-05*	264	60.0	0.2	8	-7.8	Barrier A	point4	4	0.0	40.9
						Barrier A	point8	8	0.0	40.1
						Barrier A	point15	15	0.0	39.5
						Barrier A	point10	10	0.0	39.5
						Barrier A	point9	9	0.0	39.2
						Barrier A	point14	14	0.0	39.1
						Barrier A	point11	11	0.0	39.0
						Barrier A	point12	12	0.0	38.8
						Barrier A	point16	16	0.0	38.7
						Barrier A	point13	13	0.0	38.7
KY-03-01-HERA-04*	263	61.1	0.2	8	-7.8	Barrier A	point4	4	0.0	40.8
						Barrier A	point12	12	0.0	40.1
						Barrier A	point10	10	0.0	39.9
						Barrier A	point14	14	0.0	39.8
						Barrier A	point9	9	0.0	39.7
						Barrier A	point8	8	0.0	39.5
						Barrier A	point13	13	0.0	39.4
						Barrier A	point11	11	0.0	39.3
						Barrier A	point15	15	0.0	37.7
						Barrier A	point16	16	0.0	37.4
KY-03-01-HERA-03*	262	62.3	0.1	8	-7.9	Barrier A	point10	10	0.0	40.6
						Barrier A	point4	4	0.0	40.4
						Barrier A	point9	9	0.0	40.1
						Barrier A	point8	8	0.0	39.7
						Barrier A	point12	12	0.0	39.4

						Barrier A	point11	11	0.0	39.1
						Barrier A	point13	13	0.0	36.6
						Barrier A	point14	14	0.0	36.4
						Barrier A	point17	17	0.0	35.0
						Barrier A	point19	19	0.0	35.0
KY-03-01-HERA-02*	260	64.3	0.1	8	-7.9	Barrier A	point4	4	0.0	39.5
						Barrier A	point8	8	0.0	36.5
						Barrier A	point13	13	0.0	36.0
						Barrier A	point18	18	0.0	35.3
						Barrier A	point12	12	0.0	35.2
						Barrier A	point9	9	0.0	34.9
						Barrier A	point19	19	0.0	34.9
						Barrier A	point15	15	0.0	34.7
						Barrier A	point11	11	0.0	34.6
						Barrier A	point10	10	0.0	34.3
KY-03-01-RICA-02*	301	54.1	3.6	8	-4.4	Barrier A	point33	33	20.0	37.6
						Barrier A	point43	43	20.0	36.1
						Barrier A	point44	44	20.0	35.8
						Barrier A	point45	45	20.0	35.7
						Barrier A	point15	15	0.0	35.7
						Barrier A	point39	39	20.0	35.6
						Barrier A	point42	42	20.0	35.6
						Barrier A	point34	34	20.0	35.6
						Barrier A	point41	41	20.0	35.6
						Barrier A	point32	32	20.0	35.4
KY-03-01-RICA-03*	302	53.7	4.1	8	-3.9	Barrier A	point35	35	20.0	36.1
						Barrier A	point44	44	20.0	36.0
						Barrier A	point45	45	20.0	35.9
						Barrier A	point43	43	20.0	35.6
						Barrier A	point36	36	20.0	35.6
						Barrier A	point34	34	20.0	35.5
						Barrier A	point46	46	20.0	35.5
						Barrier A	point47	47	20.0	35.4
						Barrier A	point40	40	20.0	35.3
						Barrier A	point41	41	20.0	35.2
KY-03-01-RICA-04*	303	53.4	4.5	8	-3.5	Barrier A	point37	37	20.0	36.7

						Barrier A	point46	46	20.0	36.3
						Barrier A	point45	45	20.0	36.0
						Barrier A	point47	47	20.0	35.9
						Barrier A	point44	44	20.0	35.7
						Barrier A	point48	48	20.0	35.5
						Barrier A	point49	49	20.0	35.5
						Barrier A	point43	43	20.0	35.5
						Barrier A	point38	38	20.0	35.3
						Barrier A	point42	42	20.0	35.2
KY-03-01-RICA-05*	304	53.3	4.6	8	-3.4	Barrier A	point49	49	20.0	36.3
						Barrier A	point46	46	20.0	36.1
						Barrier A	point47	47	20.0	36.1
						Barrier A	point39	39	20.0	36.0
						Barrier A	point45	45	20.0	36.0
						Barrier A	point48	48	20.0	35.8
						Barrier A	point50	50	20.0	35.8
						Barrier A	point51	51	20.0	35.8
						Barrier A	point52	52	20.0	35.6
						Barrier A	point53	53	20.0	35.6
KY-03-01-RICA-06*	305	53.2	5.0	8	-3.0	Barrier A	point52	52	20.0	36.3
						Barrier A	point48	48	20.0	36.2
						Barrier A	point49	49	20.0	36.2
						Barrier A	point51	51	20.0	36.1
						Barrier A	point53	53	20.0	36.1
						Barrier A	point46	46	20.0	36.0
						Barrier A	point45	45	20.0	36.0
						Barrier A	point47	47	20.0	36.0
						Barrier A	point50	50	20.0	35.8
						Barrier A	point43	43	20.0	35.8
KY-03-01-RICA-07*	306	53.1	5.0	8	-3.0	Barrier A	point53	53	20.0	36.4
						Barrier A	point52	52	20.0	36.3
						Barrier A	point54	54	20.0	36.2
						Barrier A	point44	44	20.0	36.1
						Barrier A	point45	45	20.0	36.0
						Barrier A	point55	55	20.0	35.8
						Barrier A	point51	51	20.0	35.8

						Barrier A	point50	50	20.0	35.8
						Barrier A	point58	58	20.0	35.8
						Barrier A	point49	49	20.0	35.7
KY-03-01-RICA-09*	308	53.4	5.4	8	-2.6	Barrier A	point54	54	20.0	36.8
						Barrier A	point45	45	20.0	36.8
						Barrier A	point58	58	20.0	36.5
						Barrier A	point59	59	20.0	36.5
						Barrier A	point55	55	20.0	36.4
						Barrier A	point56	56	20.0	36.4
						Barrier A	point46	46	20.0	36.4
						Barrier A	point57	57	20.0	36.4
						Barrier A	point52	52	20.0	36.3
						Barrier A	point53	53	20.0	36.2
KY-03-01-RICA-08*	307	53.1	5.2	8	-2.8	Barrier A	point54	54	20.0	36.3
						Barrier A	point45	45	20.0	36.1
						Barrier A	point55	55	20.0	36.1
						Barrier A	point53	53	20.0	36.1
						Barrier A	point56	56	20.0	36.1
						Barrier A	point58	58	20.0	35.9
						Barrier A	point59	59	20.0	35.8
						Barrier A	point52	52	20.0	35.7
						Barrier A	point46	46	20.0	35.6
						Barrier A	point51	51	20.0	35.5
KY-03-01-RICA-10*	310	53.2	5.6	8	-2.4	Barrier A	point54	54	20.0	36.5
						Barrier A	point58	58	20.0	36.3
						Barrier A	point46	46	20.0	36.3
						Barrier A	point59	59	20.0	36.3
						Barrier A	point53	53	20.0	36.2
						Barrier A	point55	55	20.0	36.2
						Barrier A	point56	56	20.0	35.9
						Barrier A	point52	52	24.0	35.9
						Barrier A	point47	47	20.0	35.8
						Barrier A	point57	57	20.0	35.7
KY-03-01-RICA-12*	312	53.4	5.9	8	-2.1	Barrier A	point57	57	20.0	36.9
						Barrier A	point58	58	20.0	36.8
						Barrier A	point56	56	20.0	36.7

						Barrier A	point59	59	20.0	36.5
						Barrier A	point48	48	20.0	36.4
						Barrier A	point54	54	20.0	36.1
						Barrier A	point53	53	20.0	36.0
						Barrier A	point52	52	20.0	35.9
						Barrier A	point60	60	20.0	35.9
						Barrier A	point55	55	20.0	35.9
KY-03-01-RICA-11*	311	52.3	5.7	8	-2.3	Barrier A	point59	59	20.0	35.3
						Barrier A	point58	58	20.0	34.9
						Barrier A	point60	60	20.0	34.3
						Barrier A	point57	57	20.0	34.0
						Barrier A	point61	61	20.0	34.0
						Barrier A	point49	49	20.0	33.9
						Barrier A	point53	53	20.0	33.5
						Barrier A	point54	54	20.0	33.5
						Barrier A	point48	48	20.0	33.5
						Barrier A	point50	50	20.0	33.4
KY-03-01-KIML-11*	283	55.0	7.8	8	-0.2	Barrier A	point100	100	20.0	38.8
						Barrier A	point102	102	20.0	38.7
						Barrier A	point101	101	20.0	38.7
						Barrier A	point103	103	20.0	38.6
						Barrier A	point104	104	20.0	38.5
						Barrier A	point98	98	20.0	38.4
						Barrier A	point105	105	20.0	38.4
						Barrier A	point97	97	20.0	38.2
						Barrier A	point96	96	20.0	38.2
						Barrier A	point95	95	20.0	38.0
KY-03-01-KIML-06*	278	54.6	8.7	8	0.7	Barrier A	point127	127	20.0	37.8
						Barrier A	point126	126	20.0	37.8
						Barrier A	point128	128	20.0	37.5
						Barrier A	point129	129	20.0	37.3
						Barrier A	point130	130	20.0	37.2
						Barrier A	point131	131	20.0	37.2
						Barrier A	point132	132	20.0	36.9
						Barrier A	point125	125	20.0	36.9
						Barrier A	point133	133	20.0	36.8

						Barrier A	point134	134	20.0	36.5
KY-03-01-KIML-05*	277	54.5	8.7	8	0.7	Barrier A	point126	126	20.0	37.2
						Barrier A	point127	127	20.0	36.9
						Barrier A	point128	128	20.0	36.7
						Barrier A	point125	125	20.0	36.5
						Barrier A	point129	129	20.0	36.4
						Barrier A	point130	130	20.0	36.3
						Barrier A	point120	120	20.0	36.3
						Barrier A	point121	121	20.0	36.2
						Barrier A	point119	119	20.0	36.1
						Barrier A	point118	118	20.0	36.1
KY-03-01-KIML-08*	280	55.6	9.4	8	1.4	Barrier A	point126	126	20.0	38.6
						Barrier A	point127	127	20.0	38.5
						Barrier A	point120	120	20.0	38.4
						Barrier A	point118	118	20.0	38.3
						Barrier A	point119	119	20.0	38.3
						Barrier A	point125	125	20.0	38.3
						Barrier A	point121	121	20.0	38.3
						Barrier A	point128	128	20.0	38.3
						Barrier A	point117	117	20.0	38.2
						Barrier A	point116	116	20.0	38.0
KY-03-01-KIML-07*	279	56.4	10.0	8	2.0	Barrier A	point126	126	20.0	41.0
						Barrier A	point127	127	20.0	40.8
						Barrier A	point128	128	20.0	40.4
						Barrier A	point125	125	20.0	40.2
						Barrier A	point129	129	20.0	40.1
						Barrier A	point130	130	20.0	39.8
						Barrier A	point131	131	20.0	39.6
						Barrier A	point121	121	20.0	39.5
						Barrier A	point120	120	20.0	39.4
						Barrier A	point124	124	20.0	39.3
KY-03-01-KIML-02*	273	56.1	9.0	8	1.0	Barrier A	point145	145	20.0	40.8
						Barrier A	point144	144	20.0	40.7
						Barrier A	point143	143	20.0	40.6
						Barrier A	point142	142	20.0	40.4
						Barrier A	point141	141	20.0	40.4

						Barrier A	point146	146	20.0	40.3
						Barrier A	point140	140	20.0	40.1
						Barrier A	point139	139	20.0	40.0
						Barrier A	point147	147	20.0	39.9
						Barrier A	point149	149	20.0	39.8
KY-03-01-KIML-03*	275	58.9	9.5	8	1.5	Barrier A	point145	145	20.0	44.9
						Barrier A	point144	144	20.0	44.8
						Barrier A	point143	143	20.0	44.7
						Barrier A	point146	146	20.0	44.6
						Barrier A	point142	142	20.0	44.5
						Barrier A	point141	141	20.0	44.3
						Barrier A	point147	147	20.0	44.0
						Barrier A	point140	140	20.0	44.0
						Barrier A	point148	148	20.0	43.8
						Barrier A	point139	139	20.0	43.7
KY-03-01-VAL4-XX*	314	53.7	10.2	8	2.2	Barrier A	point151	151	20.0	41.9
						Barrier A	point150	150	20.0	41.9
						Barrier A	point216	216	20.0	41.7
						Barrier A	point215	215	20.0	41.5
						Barrier A	point217	217	20.0	41.4
						Barrier A	point149	149	20.0	41.2
						Barrier A	point148	148	20.0	40.7
						Barrier A	point147	147	20.0	40.4
						Barrier A	point146	146	20.0	39.9
						Barrier A	point145	145	20.0	39.6
Total Cost, All Barriers (including additional cost(s))					$1994303					

HMB Professional Engineers				**19 March 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**West 1_Toll69_Richardson-Redbanks**									
BARRIER DESIGN:	**W1_Toll69_Richardson-Redbanks**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier A	W	12.00	19.90	20.00	3340	66477				1994303
									Total Cost:	1994303

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: West 1_Toll69_Richardson-Redbanks
BARRIER DESIGN: W1_Toll69_Richardson-Redbanks

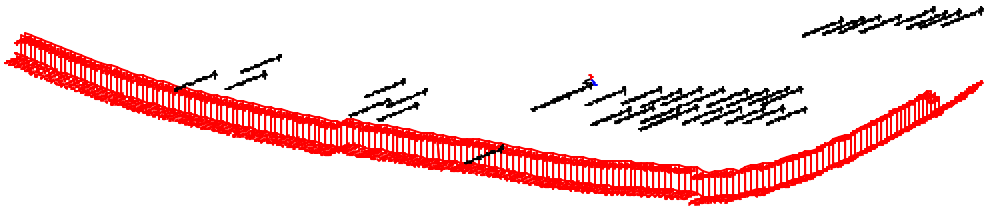
Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier A	W	point4	4	0.00	0.00	0.00	0	0				0
		point8	8	0.00	0.00	0.00	0	0				0
		point9	9	0.00	0.00	0.00	0	0				0
		point10	10	0.00	0.00	0.00	0	0				0
		point11	11	0.00	0.00	0.00	0	0				0
		point12	12	0.00	0.00	0.00	0	0				0
		point13	13	0.00	0.00	0.00	0	0				0
		point14	14	0.00	0.00	0.00	0	0				0
		point15	15	0.00	0.00	0.00	0	0				0
		point16	16	0.00	0.00	0.00	0	0				0
		point17	17	0.00	0.00	0.00	0	0				0
		point18	18	0.00	0.00	0.00	0	0				0
		point19	19	0.00	0.00	0.00	0	0				0
		point20	20	0.00	0.00	0.00	0	0				0
		point21	21	12.00	12.00	12.00	20	237				7096
		point22	22	16.00	16.00	16.00	20	323				9693
		point23	23	20.00	20.00	20.00	20	401				12042
		point24	24	20.00	20.00	20.00	20	399				11975
		point25	25	20.00	20.00	20.00	20	398				11944
		point26	26	20.00	20.00	20.00	20	405				12157
		point27	27	20.00	20.00	20.00	20	395				11861
		point28	28	20.00	20.00	20.00	20	403				12093
		point29	29	20.00	20.00	20.00	20	402				12060
		point30	30	20.00	20.00	20.00	20	393				11778
		point31	31	20.00	20.00	20.00	20	400				12015
		point32	32	20.00	20.00	20.00	20	400				12015

		point33	33	20.00	20.00	20.00	20	400				12004
		point34	34	20.00	20.00	20.00	20	400				12000
		point35	35	20.00	20.00	20.00	20	400				12001
		point36	36	20.00	20.00	20.00	20	400				12015
		point37	37	20.00	20.00	20.00	20	400				12015
		point38	38	20.00	20.00	20.00	20	402				12046
		point39	39	20.00	20.00	20.00	20	402				12060
		point40	40	20.00	20.00	20.00	20	393				11796
		point41	41	20.00	20.00	20.00	20	404				12134
		point42	42	20.00	20.00	20.00	20	395				11838
		point43	43	20.00	20.00	20.00	20	408				12238
		point44	44	20.00	20.00	20.00	20	399				11975
		point45	45	20.00	20.00	20.00	20	400				12007
		point46	46	20.00	20.00	20.00	20	393				11788
		point47	47	20.00	20.00	20.00	20	404				12117
		point48	48	20.00	20.00	20.00	20	398				11955
		point49	49	20.00	20.00	20.00	20	400				12001
		point50	50	20.00	20.00	20.00	20	402				12049
		point51	51	20.00	20.00	20.00	20	396				11868
		point52	52	20.00	20.00	20.00	20	409				12256
		point53	53	20.00	20.00	20.00	20	394				11819
		point54	54	20.00	20.00	20.00	20	403				12093
		point55	55	20.00	20.00	20.00	20	400				12008
		point56	56	20.00	20.00	20.00	20	400				12008
		point57	57	20.00	20.00	20.00	20	398				11947
		point58	58	20.00	20.00	20.00	20	401				12020
		point59	59	20.00	20.00	20.00	20	403				12093
		point60	60	20.00	20.00	20.00	20	394				11816
		point61	61	20.00	20.00	20.00	20	400				11989
		point62	62	20.00	20.00	20.00	20	402				12067
		point63	63	20.00	20.00	20.00	20	402				12067
		point64	64	20.00	20.00	20.00	20	397				11911
		point65	65	20.00	20.00	20.00	20	403				12091
		point66	66	20.00	20.00	20.00	20	398				11947
		point67	67	20.00	20.00	20.00	20	397				11910
		point68	68	20.00	20.00	20.00	20	405				12138
		point69	69	20.00	20.00	20.00	20	400				11990
		point70	70	20.00	20.00	20.00	20	400				11990
		point71	71	20.00	20.00	20.00	20	396				11879

		point72	72	20.00	20.00	20.00	20	407				12202
		point73	73	20.00	20.00	20.00	20	396				11887
		point74	74	20.00	20.00	20.00	20	401				12023
		point75	75	20.00	20.00	20.00	20	401				12023
		point76	76	20.00	20.00	20.00	20	394				11831
		point77	77	20.00	20.00	20.00	20	402				12065
		point78	78	20.00	20.00	20.00	20	398				11947
		point79	79	20.00	20.00	20.00	20	408				12253
		point80	80	20.00	20.00	20.00	20	392				11761
		point81	81	20.00	20.00	20.00	20	402				12065
		point82	82	20.00	20.00	20.00	20	402				12065
		point83	83	20.00	20.00	20.00	20	402				12065
		point84	84	20.00	20.00	20.00	20	396				11880
		point85	85	20.00	20.00	20.00	20	398				11947
		point86	86	20.00	20.00	20.00	20	400				12000
		point87	87	20.00	20.00	20.00	20	400				12000
		point88	88	20.00	20.00	20.00	20	400				12000
		point89	89	20.00	20.00	20.00	20	406				12182
		point90	90	20.00	20.00	20.00	20	400				12000
		point91	91	20.00	20.00	20.00	20	400				12000
		point92	92	20.00	20.00	20.00	20	394				11822
		point93	93	20.00	20.00	20.00	20	404				12120
		point94	94	20.00	20.00	20.00	20	398				11945
		point95	95	20.00	20.00	20.00	20	404				12120
		point96	96	20.00	20.00	20.00	20	398				11945
		point97	97	20.00	20.00	20.00	20	394				11822
		point98	98	20.00	20.00	20.00	20	402				12067
		point99	99	20.00	20.00	20.00	20	402				12067
		point100	100	20.00	20.00	20.00	20	402				12067
		point101	101	20.00	20.00	20.00	20	397				11898
		point102	102	20.00	20.00	20.00	20	398				11945
		point103	103	20.00	20.00	20.00	20	398				11945
		point104	104	20.00	20.00	20.00	20	404				12120
		point105	105	20.00	20.00	20.00	20	398				11945
		point5	5	20.00	20.00	20.00	20	404				12120
		point106	106	20.00	20.00	20.00	20	398				11945
		point107	107	20.00	20.00	20.00	20	398				11945
		point108	108	20.00	20.00	20.00	20	398				11945
		point109	109	20.00	20.00	20.00	20	402				12067

		point110	110	20.00	20.00	20.00	20	398				11945
		point111	111	20.00	20.00	20.00	20	402				12067
		point112	112	20.00	20.00	20.00	20	402				12067
		point113	113	20.00	20.00	20.00	20	397				11898
		point114	114	20.00	20.00	20.00	20	401				12023
		point115	115	20.00	20.00	20.00	20	402				12067
		point116	116	20.00	20.00	20.00	20	397				11898
		point117	117	20.00	20.00	20.00	20	400				11989
		point118	118	20.00	20.00	20.00	20	404				12117
		point119	119	20.00	20.00	20.00	20	399				11963
		point120	120	20.00	20.00	20.00	20	399				11963
		point121	121	20.00	20.00	20.00	20	404				12117
		point122	122	20.00	20.00	20.00	20	399				11963
		point123	123	20.00	20.00	20.00	20	399				11963
		point124	124	20.00	20.00	20.00	20	398				11947
		point125	125	20.00	20.00	20.00	20	399				11963
		point126	126	20.00	20.00	20.00	20	403				12093
		point127	127	20.00	20.00	20.00	20	398				11947
		point128	128	20.00	20.00	20.00	20	398				11947
		point129	129	20.00	20.00	20.00	20	403				12093
		point130	130	20.00	20.00	20.00	20	398				11947
		point131	131	20.00	20.00	20.00	20	403				12079
		point132	132	20.00	20.00	20.00	20	398				11947
		point133	133	20.00	20.00	20.00	20	398				11947
		point134	134	20.00	20.00	20.00	20	398				11947
		point135	135	20.00	20.00	20.00	20	403				12093
		point136	136	20.00	20.00	20.00	20	403				12079
		point137	137	20.00	20.00	20.00	20	398				11947
		point138	138	20.00	20.00	20.00	20	398				11941
		point139	139	20.00	20.00	20.00	20	403				12079
		point140	140	20.00	20.00	20.00	20	398				11941
		point141	141	20.00	20.00	20.00	20	403				12079
		point142	142	20.00	20.00	20.00	20	398				11941
		point143	143	20.00	20.00	20.00	20	398				11941
		point144	144	20.00	20.00	20.00	20	398				11941
		point145	145	20.00	20.00	20.00	20	402				12075
		point146	146	20.00	20.00	20.00	20	402				12075
		point147	147	20.00	20.00	20.00	20	402				12075
		point148	148	20.00	20.00	20.00	20	394				11808

		point149	149	20.00	20.00	20.00	20	407				12209
		point217	217	20.00	20.00	20.00	20	398				11944
		point215	215	20.00	20.00	20.00	20	398				11944
		point216	216	20.00	20.00	20.00	20	398				11944
		point150	150	20.00	20.00	20.00	20	403				12079
		point151	151	20.00	20.00	20.00	20	398				11944
		point152	152	20.00	20.00	20.00	20	399				11956
		point153	153	20.00	20.00	20.00	20	399				11956
		point154	154	20.00	20.00	20.00	20	403				12079
		point155	155	20.00	20.00	20.00	20	399				11956
		point156	156	20.00	20.00	20.00	20	403				12079
		point157	157	20.00	20.00	20.00	20	399				11977
		point158	158	20.00	20.00	20.00	20	399				11956
		point159	159	20.00	20.00	20.00	20	403				12093
		point160	160	20.00	20.00	20.00	20	395				11839
		point161	161	20.00	20.00	20.00	20	403				12093
		point162	162	20.00	20.00	20.00	20	403				12093
		point163	163	20.00	20.00	20.00	20	396				11868
		point164	164	20.00	20.00	20.00	20	399				11977
		point165	165	20.00	20.00	20.00	39	399				11977
		point166	166	20.00	20.00	20.00	20	404				12117
		point167	167	20.00	20.00	20.00	20	399				11977
		point168	168	20.00	20.00	20.00	20	404				12117
		point169	169	20.00	20.00	20.00	20	396				11868
		point170	170	20.00	20.00	20.00	20	400				12008
		point171	171	20.00	20.00	20.00	20	400				12008
		point172	172	20.00	20.00	20.00	20	396				11868
		point173	173	20.00	20.00	20.00	20	404				12117
		point174	174	20.00	20.00	20.00	20	402				12049
		point175	175	20.00	20.00	20.00	20	400				12008
		point176	176	20.00	20.00	20.00	20	397				11907
		point177	177	20.00	20.00	20.00	20	405				12149
		point178	178	20.00	20.00	20.00	20	397				11907
		point179	179	20.00	20.00	20.00	20	402				12049
		point180	180	20.00	20.00	20.00	20	397				11907
		point181	181	20.00	20.00	20.00	20	402				12049
		point182	182	20.00	20.00	20.00	20	398				11955
		point183	183	16.00	16.00	16.00	20	321				9639
		point184	184	0.00	0.00	0.00	0	0				0



West 1_Toll69_Richardson-Redbanks	Sheet 1 of 1	19 Mar 2018
	HMB Professional Engineers	
Barrier View-W1_Toll69_Richardson-Redbanks	Project/Contract No. I-69 ORX	
Run name: W1_02_Toll69_BarrierA	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 2 – NORTH GREEN STREET

HMB Professional Engineers 15 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_South_NGreenSt_Barrier B
BARRIER DESIGN: W2_AreaB_NGreenSt
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-03-01-ELKA-01*	143	1	56.6	58.2	66	1.6	10	----	54.7	3.5	8	-4.5
KY-03-01-ELKA-02*	144	1	58.3	59.6	66	1.3	10	----	55.5	4.1	8	-3.9
KY-03-02-ELKA-01*	210	1	57.1	58.2	66	1.1	10	----	55.8	2.4	8	-5.6
KY-03-02-ELKA-02*	211	2	58.3	59.2	66	0.9	10	----	56.6	2.6	8	-5.4
KY-03-02-ELKA-03*	212	2	59.4	60.2	66	0.8	10	----	57.3	2.9	8	-5.1
KY-03-02-RICA-01*	218	1	63.1	63.4	66	0.3	10	----	62.6	0.8	8	-7.2
KY-03-01-HERA-01*	147	1	66.7	66.6	66	-0.1	10	Snd Lvl	66.3	0.3	8	-7.7
KY-03-02-RICA-02*	221	1	65.6	65.5	66	-0.1	10	----	64.6	0.9	8	-7.1
KY-03-02-ELKA-04*	213	2	60.8	61.4	66	0.6	10	----	58.2	3.2	8	-4.8
KY-03-01-ELKA-03*	145	1	59.2	60.2	66	1.0	10	----	55.8	4.4	8	-3.6
KY-03-01-NGRS-08*	180	1	58.8	60.0	66	1.2	10	----	55.3	4.7	8	-3.3
KY-03-01-HIYD-01*	157	1	57.0	59.1	66	2.1	10	----	55.1	4.0	8	-4.0
KY-03-02-BARD-02*	207	1	57.4	59.4	66	2.0	10	----	55.3	4.1	8	-3.9
KY-03-02-BARD-01*	208	1	57.6	59.6	66	2.0	10	----	55.9	3.7	8	-4.3
KY-03-02-HIYD-01*	215	1	57.5	59.2	66	1.7	10	----	54.6	4.6	8	-3.4
KY-03-02-HIYD-02*	216	1	57.6	59.4	66	1.8	10	----	54.6	4.8	8	-3.2
KY-03-01-BARC-05*	137	5	59.8	59.5	66	-0.3	10	----	54.9	4.6	8	-3.4
KY-03-01-BARD-05*	142	2	59.3	60.9	66	1.6	10	----	55.7	5.2	8	-2.8
KY-03-01-BARD-04*	141	2	59.6	61.3	66	1.7	10	----	56.1	5.2	8	-2.8
KY-03-01-BARD-03*	140	1	59.9	61.6	66	1.7	10	----	56.7	4.9	8	-3.1
KY-03-01-BARD-02*	139	1	59.1	61.0	66	1.9	10	----	56.9	4.1	8	-3.9
KY-03-01-BARC-05*	137	5	59.8	60.5	66	0.7	10	----	57.0	3.5	8	-4.5
KY-02-02-NELS-24*	107	5	58.2	60.9	66	2.7	10	----	57.7	3.2	8	-4.8
KY-02-02-NELS-23*	106	5	59.3	61.9	66	2.6	10	----	58.2	3.7	8	-4.3

KY-02-02-NELS-22*	104	5	60.8	63.2	66	2.4	10	----	58.9	4.3	8	-3.7
KY-02-02-NELS-21*	102	5	62.5	64.4	66	1.9	10	----	59.9	4.5	8	-3.5
KY-02-02-NELS-20*	101	5	64.5	66.1	66	1.6	10	Snd Lvl	60.1	6.0	8	-2.0
V17	236	1	63.6	63.3	66	-0.3	10	----	55.1	8.2	8	0.2
KY-02-02-NELS-19*	100	5	66.2	67.6	66	1.4	10	Snd Lvl	59.5	8.1	8	0.1
KY-03-01-RICA-01*	185	1	60.7	61.2	66	0.5	10	----	59.5	1.7	8	-6.3
KY-03-02-ELKA-05*	214	2	62.0	62.5	66	0.5	10	----	58.6	3.9	8	-4.1
KY-03-01-ELKA-04*	146	1	60.4	61.2	66	0.8	10	----	56.2	5.0	8	-3.0
KY-03-01-NGRS-07*	179	2	60.8	61.8	66	1.0	10	----	56.1	5.7	8	-2.3
KY-03-01-NGRS-06*	178	1	60.2	61.3	66	1.1	10	----	55.9	5.4	8	-2.6
KY-03-01-NGRS-05*	177	1	58.1	59.8	66	1.7	10	----	54.7	5.1	8	-2.9
KY-03-01-NGRS-04*	176	1	58.6	59.7	66	1.1	10	----	54.5	5.2	8	-2.8
KY-03-01-NGRS-03*	175	1	59.2	60.3	66	1.1	10	----	54.9	5.4	8	-2.6
KY-03-01-NGRS-02*	174	1	61.7	60.9	66	-0.8	10	----	55.2	5.7	8	-2.3
KY-03-01-NGRS-10*	183	1	60.9	61.9	66	1.0	10	----	56.1	5.8	8	-2.2
KY-03-01-NGRS-09*	181	1	60.5	62.2	66	1.7	10	----	56.4	5.8	8	-2.2
KY-03-01-NRGS-01*	184	2	58.3	63.0	66	4.7	10	----	57.2	5.8	8	-2.2
KY-03-02-NGRS-02*	219	12	62.3	61.7	66	-0.6	10	----	54.7	7.0	8	-1.0
KY-03-02-NGRS-01*	217	12	62.8	63.2	66	0.4	10	----	55.4	7.8	8	-0.2
KY-03-01-NELS-01*	173	1	62.6	63.6	66	1.0	10	----	60.7	2.9	8	-5.1

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	106	0.3	4.4	8.2
All Impacted	11	0.3	4.8	8.1
All that meet NR Goal	6	8.1	8.1	8.2

HMB Professional Engineers 15 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_South_NGreenSt_Barrier B
BARRIER DESIGN: W2_AreaB_NGreenSt

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-03-01-ELKA-01*	143	54.7	3.5	8	-4.5	Barrier2	point122	122	14.0	37.6
						Barrier2	point123	123	14.0	37.0
						Barrier2	point121	121	18.0	36.9
						Barrier2	point124	124	14.0	36.0
						Barrier2	point120	120	18.0	35.8
						Barrier2	point34	34	16.0	35.7
						Barrier2	point33	33	16.0	35.7
						Barrier2	point31	31	14.0	35.6
						Barrier2	point32	32	14.0	35.5
						Barrier2	point35	35	18.0	35.3
KY-03-01-ELKA-02*	144	55.5	4.1	8	-3.9	Barrier2	point32	32	14.0	38.3
						Barrier2	point34	34	16.0	37.8
						Barrier2	point31	31	14.0	37.8
						Barrier2	point33	33	16.0	37.6
						Barrier2	point30	30	14.0	37.4
						Barrier2	point27	27	14.0	36.9
						Barrier2	point35	35	18.0	36.8
						Barrier2	point28	28	14.0	36.8
						Barrier2	point29	29	14.0	36.6
						Barrier2	point38	38	20.0	36.3
KY-03-02-ELKA-01*	210	55.8	2.4	8	-5.6	Barrier2	point130	130	0.0	36.8

						Barrier2	point128	128	14.0	36.6
						Barrier2	point32	32	14.0	36.5
						Barrier2	point31	31	14.0	36.3
						Barrier2	point132	132	0.0	36.0
						Barrier2	point129	129	12.0	36.0
						Barrier2	point30	30	14.0	35.9
						Barrier2	point127	127	14.0	35.8
						Barrier2	point34	34	16.0	35.8
						Barrier2	point33	33	16.0	35.7
KY-03-02-ELKA-02*	211	56.6	2.6	8	-5.4	Barrier2	point32	32	20.0	37.2
						Barrier2	point31	31	20.0	37.1
						Barrier2	point30	30	14.0	36.9
						Barrier2	point33	33	16.0	36.5
						Barrier2	point34	34	16.0	36.4
						Barrier2	point29	29	14.0	36.3
						Barrier2	point4	4	8.0	36.2
						Barrier2	point27	27	14.0	36.1
						Barrier2	point28	28	14.0	35.9
						Barrier2	point35	35	18.0	35.8
KY-03-02-ELKA-03*	212	57.3	2.9	8	-5.1	Barrier2	point32	32	14.0	38.4
						Barrier2	point31	31	14.0	38.3
						Barrier2	point30	30	14.0	38.0
						Barrier2	point34	34	16.0	37.6
						Barrier2	point29	29	14.0	37.5
						Barrier2	point4	4	8.0	37.5
						Barrier2	point33	33	16.0	37.5
						Barrier2	point27	27	14.0	37.2
						Barrier2	point28	28	14.0	37.0
						Barrier2	point35	35	18.0	36.8
KY-03-02-RICA-01*	218	62.6	0.8	8	-7.2	Barrier2	point4	4	8.0	43.2
						Barrier2	point31	31	14.0	39.6
						Barrier2	point30	30	14.0	39.5
						Barrier2	point32	32	14.0	39.4
						Barrier2	point7	7	14.0	39.1
						Barrier2	point9	9	14.0	39.1
						Barrier2	point8	8	14.0	39.0

						Barrier2	point10	10	14.0	38.8
						Barrier2	point29	29	14.0	38.4
						Barrier2	point11	11	14.0	38.3
KY-03-01-HERA-01*	147	66.3	0.3	8	-7.7	Barrier2	point4	4	8.0	43.9
						Barrier2	point7	7	14.0	39.3
						Barrier2	point8	8	14.0	39.0
						Barrier2	point9	9	14.0	38.5
						Barrier2	point10	10	14.0	38.3
						Barrier2	point11	11	14.0	37.8
						Barrier2	point12	12	14.0	37.6
						Barrier2	point14	14	14.0	37.1
						Barrier2	point13	13	14.0	37.0
						Barrier2	point16	16	14.0	36.9
KY-03-02-RICA-02*	221	64.6	0.9	8	-7.1	Barrier2	point4	4	8.0	46.3
						Barrier2	point8	8	14.0	40.9
						Barrier2	point7	7	14.0	40.8
						Barrier2	point9	9	14.0	40.4
						Barrier2	point10	10	14.0	40.0
						Barrier2	point11	11	14.0	39.5
						Barrier2	point28	28	14.0	39.1
						Barrier2	point29	29	14.0	39.1
						Barrier2	point12	12	14.0	38.9
						Barrier2	point13	13	14.0	38.7
KY-03-02-ELKA-04*	213	58.2	3.2	8	-4.8	Barrier2	point31	31	14.0	39.4
						Barrier2	point32	32	14.0	39.3
						Barrier2	point30	30	14.0	39.2
						Barrier2	point4	4	8.0	39.1
						Barrier2	point29	29	14.0	38.6
						Barrier2	point33	33	16.0	38.5
						Barrier2	point34	34	16.0	38.5
						Barrier2	point28	28	14.0	38.3
						Barrier2	point26	26	14.0	38.1
						Barrier2	point27	27	14.0	38.1
KY-03-01-ELKA-03*	145	55.8	4.4	8	-3.6	Barrier2	point32	32	14.0	39.2
						Barrier2	point31	31	14.0	38.7
						Barrier2	point34	34	16.0	38.7

						Barrier2	point33	33	16.0	38.5
						Barrier2	point30	30	14.0	38.2
						Barrier2	point27	27	14.0	37.8
						Barrier2	point28	28	14.0	37.8
						Barrier2	point29	29	14.0	37.8
						Barrier2	point35	35	18.0	37.6
						Barrier2	point37	37	20.0	37.0
KY-03-01-NGRS-08*	180	55.3	4.7	8	-3.3	Barrier2	point32	32	14.0	38.2
						Barrier2	point31	31	14.0	38.0
						Barrier2	point30	30	14.0	37.7
						Barrier2	point34	34	16.0	37.6
						Barrier2	point33	33	16.0	37.5
						Barrier2	point28	28	14.0	37.5
						Barrier2	point29	29	14.0	37.4
						Barrier2	point38	38	20.0	36.8
						Barrier2	point39	39	20.0	36.8
						Barrier2	point40	40	20.0	36.7
KY-03-01-HIYD-01*	157	55.1	4.0	8	-4.0	Barrier2	point123	123	14.0	40.7
						Barrier2	point124	124	14.0	39.8
						Barrier2	point122	122	14.0	39.5
						Barrier2	point125	125	14.0	39.2
						Barrier2	point121	121	18.0	38.3
						Barrier2	point130	130	0.0	38.1
						Barrier2	point126	126	14.0	38.0
						Barrier2	point120	120	18.0	37.4
						Barrier2	point127	127	14.0	37.3
						Barrier2	point119	119	18.0	37.2
KY-03-02-BARD-02*	207	55.3	4.1	8	-3.9	Barrier2	point123	123	14.0	40.8
						Barrier2	point122	122	14.0	40.3
						Barrier2	point124	124	14.0	39.8
						Barrier2	point121	121	18.0	39.2
						Barrier2	point125	125	14.0	39.0
						Barrier2	point130	130	0.0	38.2
						Barrier2	point126	126	14.0	37.9
						Barrier2	point119	119	18.0	37.8
						Barrier2	point127	127	14.0	37.7

						Barrier2	point120	120	18.0	37.5
KY-03-02-BARD-01*	208	55.9	3.7	8	-4.3	Barrier2	point130	130	0.0	42.8
						Barrier2	point131	131	0.0	41.6
						Barrier2	point129	129	12.0	41.4
						Barrier2	point132	132	0.0	41.4
						Barrier2	point128	128	14.0	41.3
						Barrier2	point133	133	0.0	40.3
						Barrier2	point127	127	14.0	39.9
						Barrier2	point134	134	0.0	39.5
						Barrier2	point126	126	14.0	38.8
						Barrier2	point125	125	14.0	38.8
KY-03-02-HIYD-01*	215	54.6	4.6	8	-3.4	Barrier2	point111	111	18.0	37.3
						Barrier2	point113	113	18.0	37.0
						Barrier2	point112	112	18.0	36.9
						Barrier2	point58	58	20.0	36.7
						Barrier2	point59	59	20.0	36.4
						Barrier2	point109	109	18.0	36.4
						Barrier2	point60	60	20.0	36.4
						Barrier2	point57	57	20.0	36.3
						Barrier2	point56	56	20.0	36.0
						Barrier2	point55	55	20.0	35.7
KY-03-02-HIYD-02*	216	54.6	4.8	8	-3.2	Barrier2	point111	111	18.0	37.8
						Barrier2	point112	112	18.0	37.5
						Barrier2	point113	113	18.0	37.5
						Barrier2	point60	60	20.0	37.1
						Barrier2	point61	61	20.0	37.0
						Barrier2	point59	59	20.0	37.0
						Barrier2	point109	109	18.0	36.7
						Barrier2	point57	57	20.0	36.7
						Barrier2	point58	58	20.0	36.6
						Barrier2	point62	62	20.0	36.2
KY-03-01-BARC-05*	137	54.9	4.6	8	-3.4	Barrier2	point117	117	18.0	39.4
						Barrier2	point118	118	18.0	39.0
						Barrier2	point116	116	18.0	38.7
						Barrier2	point119	119	18.0	37.9
						Barrier2	point115	115	18.0	37.6

						Barrier2	point63	63	20.0	37.6
						Barrier2	point66	66	20.0	37.1
						Barrier2	point62	62	20.0	37.1
						Barrier2	point61	61	20.0	37.1
						Barrier2	point60	60	20.0	36.7
KY-03-01-BARD-05*	142	55.7	5.2	8	-2.8	Barrier2	point115	115	18.0	40.6
						Barrier2	point116	116	18.0	40.4
						Barrier2	point114	114	18.0	39.6
						Barrier2	point117	117	18.0	39.3
						Barrier2	point68	68	20.0	38.8
						Barrier2	point67	67	20.0	38.6
						Barrier2	point69	69	20.0	38.6
						Barrier2	point70	70	20.0	38.5
						Barrier2	point66	66	20.0	38.4
						Barrier2	point113	113	18.0	38.3
KY-03-01-BARD-04*	141	56.1	5.2	8	-2.8	Barrier2	point116	116	18.0	40.9
						Barrier2	point117	117	18.0	40.9
						Barrier2	point115	115	18.0	40.2
						Barrier2	point118	118	18.0	39.8
						Barrier2	point71	71	20.0	39.0
						Barrier2	point69	69	20.0	38.9
						Barrier2	point70	70	20.0	38.8
						Barrier2	point68	68	20.0	38.7
						Barrier2	point67	67	20.0	38.7
						Barrier2	point114	114	18.0	38.6
KY-03-01-BARD-03*	140	56.7	4.9	8	-3.1	Barrier2	point120	120	18.0	41.8
						Barrier2	point121	121	18.0	41.5
						Barrier2	point122	122	14.0	41.3
						Barrier2	point119	119	18.0	41.0
						Barrier2	point123	123	14.0	40.9
						Barrier2	point118	118	18.0	39.6
						Barrier2	point125	125	14.0	39.6
						Barrier2	point117	117	18.0	39.5
						Barrier2	point132	132	0.0	39.3
						Barrier2	point124	124	14.0	39.3
KY-03-01-BARD-02*	139	56.9	4.1	8	-3.9	Barrier2	point130	130	0.0	43.2

						Barrier2	point131	131	0.0	42.9
						Barrier2	point129	129	12.0	42.8
						Barrier2	point128	128	14.0	42.7
						Barrier2	point132	132	0.0	42.2
						Barrier2	point127	127	14.0	42.2
						Barrier2	point133	133	0.0	41.0
						Barrier2	point125	125	14.0	40.8
						Barrier2	point126	126	14.0	40.3
						Barrier2	point138	138	0.0	39.6
KY-03-01-BARC-05*	137	57.0	3.5	8	-4.5	Barrier2	point134	134	0.0	44.9
						Barrier2	point135	135	0.0	43.6
						Barrier2	point136	136	0.0	43.0
						Barrier2	point137	137	0.0	42.2
						Barrier2	point138	138	0.0	41.2
						Barrier2	point132	132	0.0	41.2
						Barrier2	point133	133	0.0	41.1
						Barrier2	point130	130	0.0	40.2
						Barrier2	point139	139	0.0	38.9
						Barrier2	point72	72	20.0	38.9
KY-02-02-NELS-24*	107	57.7	3.2	8	-4.8	Barrier2	point130	130	0.0	41.0
						Barrier2	point132	132	0.0	40.5
						Barrier2	point157	157	0.0	40.3
						Barrier2	point138	138	0.0	40.3
						Barrier2	point156	156	0.0	40.2
						Barrier2	point134	134	0.0	40.1
						Barrier2	point155	155	0.0	40.0
						Barrier2	point158	158	0.0	39.9
						Barrier2	point131	131	0.0	39.9
						Barrier2	point133	133	0.0	39.7
KY-02-02-NELS-23*	106	58.2	3.7	8	-4.3	Barrier2	point155	155	0.0	41.7
						Barrier2	point130	130	0.0	41.5
						Barrier2	point154	154	0.0	41.5
						Barrier2	point153	153	0.0	41.4
						Barrier2	point152	152	0.0	41.4
						Barrier2	point156	156	0.0	41.3
						Barrier2	point157	157	0.0	41.2

						Barrier2	point132	132	0.0	41.2
						Barrier2	point137	137	0.0	41.1
						Barrier2	point131	131	0.0	41.0
KY-02-02-NELS-22*	104	58.9	4.3	8	-3.7	Barrier2	point148	148	0.0	44.1
						Barrier2	point153	153	0.0	43.7
						Barrier2	point147	147	0.0	43.6
						Barrier2	point146	146	0.0	43.5
						Barrier2	point152	152	0.0	43.2
						Barrier2	point154	154	0.0	42.9
						Barrier2	point139	139	0.0	42.8
						Barrier2	point138	138	0.0	42.8
						Barrier2	point137	137	0.0	42.5
						Barrier2	point132	132	0.0	42.5
KY-02-02-NELS-21*	102	59.9	4.5	8	-3.5	Barrier2	point138	138	0.0	47.9
						Barrier2	point137	137	0.0	47.5
						Barrier2	point139	139	0.0	45.9
						Barrier2	point134	134	0.0	44.9
						Barrier2	point140	140	0.0	44.3
						Barrier2	point133	133	0.0	44.0
						Barrier2	point132	132	0.0	44.0
						Barrier2	point136	136	0.0	44.0
						Barrier2	point130	130	0.0	43.8
						Barrier2	point131	131	0.0	43.2
KY-02-02-NELS-20*	101	60.1	6.0	8	-2.0	Barrier2	point131	131	0.0	49.2
						Barrier2	point132	132	0.0	48.8
						Barrier2	point133	133	0.0	47.7
						Barrier2	point130	130	0.0	47.7
						Barrier2	point134	134	0.0	46.4
						Barrier2	point138	138	0.0	44.5
						Barrier2	point137	137	0.0	44.1
						Barrier2	point135	135	0.0	44.0
						Barrier2	point136	136	0.0	43.6
						Barrier2	point129	129	12.0	42.9
V17	236	55.1	8.2	8	0.2	Barrier2	point67	67	20.0	44.2
						Barrier2	point68	68	20.0	43.4
						Barrier2	point66	66	20.0	43.4

						Barrier2	point69	69	20.0	42.1
						Barrier2	point70	70	20.0	41.2
						Barrier2	point71	71	20.0	40.4
						Barrier2	point72	72	20.0	39.4
						Barrier2	point73	73	20.0	38.4
						Barrier2	point74	74	20.0	37.6
						Barrier2	point78	78	20.0	37.5
KY-02-02-NELS-19*	100	59.5	8.1	8	0.1	Barrier2	point132	132	0.0	45.9
						Barrier2	point130	130	0.0	45.6
						Barrier2	point125	125	14.0	45.3
						Barrier2	point131	131	0.0	44.8
						Barrier2	point133	133	0.0	44.4
						Barrier2	point126	126	14.0	44.4
						Barrier2	point124	124	14.0	44.1
						Barrier2	point135	135	0.0	43.7
						Barrier2	point105	105	18.0	43.4
						Barrier2	point106	106	18.0	43.4
KY-03-01-RICA-01*	185	59.5	1.7	8	-6.3	Barrier2	point4	4	8.0	40.1
						Barrier2	point32	32	14.0	38.5
						Barrier2	point31	31	14.0	37.8
						Barrier2	point30	30	14.0	37.8
						Barrier2	point34	34	16.0	37.3
						Barrier2	point33	33	16.0	37.1
						Barrier2	point10	10	14.0	36.8
						Barrier2	point29	29	14.0	36.8
						Barrier2	point8	8	14.0	36.6
						Barrier2	point7	7	14.0	36.4
KY-03-02-ELKA-05*	214	58.6	3.9	8	-4.1	Barrier2	point31	31	14.0	40.4
						Barrier2	point32	32	14.0	40.3
						Barrier2	point4	4	8.0	40.2
						Barrier2	point30	30	14.0	40.2
						Barrier2	point29	29	14.0	39.7
						Barrier2	point28	28	14.0	39.4
						Barrier2	point33	33	16.0	39.4
						Barrier2	point26	26	14.0	39.3
						Barrier2	point34	34	16.0	39.3

						Barrier2	point27	27	14.0	39.3
KY-03-01-ELKA-04*	146	56.2	5.0	8	-3.0	Barrier2	point32	32	20.0	40.4
						Barrier2	point31	31	14.0	40.2
						Barrier2	point30	30	14.0	39.7
						Barrier2	point29	29	14.0	39.5
						Barrier2	point34	34	16.0	39.5
						Barrier2	point33	33	20.0	39.3
						Barrier2	point28	28	14.0	38.8
						Barrier2	point35	35	18.0	38.7
						Barrier2	point27	27	14.0	38.5
						Barrier2	point37	37	20.0	37.9
KY-03-01-NGRS-07*	179	56.1	5.7	8	-2.3	Barrier2	point31	31	14.0	40.6
						Barrier2	point32	32	14.0	40.6
						Barrier2	point30	30	14.0	40.3
						Barrier2	point34	34	16.0	39.5
						Barrier2	point33	33	16.0	39.4
						Barrier2	point29	29	14.0	39.0
						Barrier2	point38	38	20.0	39.0
						Barrier2	point37	37	20.0	38.8
						Barrier2	point35	35	18.0	38.8
						Barrier2	point36	36	20.0	38.6
KY-03-01-NGRS-06*	178	55.9	5.4	8	-2.6	Barrier2	point32	32	14.0	40.0
						Barrier2	point31	31	14.0	40.0
						Barrier2	point30	30	14.0	39.2
						Barrier2	point34	34	16.0	38.7
						Barrier2	point33	33	16.0	38.7
						Barrier2	point29	29	14.0	38.6
						Barrier2	point38	38	20.0	38.4
						Barrier2	point39	39	20.0	38.4
						Barrier2	point28	28	14.0	38.3
						Barrier2	point40	40	20.0	38.3
KY-03-01-NGRS-05*	177	54.7	5.1	8	-2.9	Barrier2	point56	56	20.0	37.5
						Barrier2	point57	57	20.0	37.0
						Barrier2	point55	55	20.0	36.8
						Barrier2	point46	46	20.0	36.5
						Barrier2	point54	54	20.0	36.5

						Barrier2	point45	45	20.0	36.3
						Barrier2	point58	58	20.0	36.3
						Barrier2	point60	60	20.0	36.2
						Barrier2	point47	47	20.0	36.1
						Barrier2	point61	61	20.0	36.0
KY-03-01-NGRS-04*	176	54.5	5.2	8	-2.8	Barrier2	point59	59	20.0	37.8
						Barrier2	point60	60	20.0	37.5
						Barrier2	point61	61	20.0	37.4
						Barrier2	point58	58	20.0	37.3
						Barrier2	point57	57	20.0	37.2
						Barrier2	point63	63	20.0	36.8
						Barrier2	point66	66	20.0	36.1
						Barrier2	point62	62	20.0	36.1
						Barrier2	point5	5	18.0	36.0
						Barrier2	point105	105	18.0	35.8
KY-03-01-NGRS-03*	175	54.9	5.4	8	-2.6	Barrier2	point63	63	20.0	38.7
						Barrier2	point66	66	20.0	38.5
						Barrier2	point62	62	20.0	38.2
						Barrier2	point108	108	18.0	38.2
						Barrier2	point107	107	18.0	38.1
						Barrier2	point61	61	20.0	38.1
						Barrier2	point67	67	20.0	38.0
						Barrier2	point106	106	18.0	38.0
						Barrier2	point104	104	18.0	37.3
						Barrier2	point68	68	20.0	37.2
KY-03-01-NGRS-02*	174	55.2	5.7	8	-2.3	Barrier2	point111	111	18.0	39.4
						Barrier2	point109	109	18.0	39.3
						Barrier2	point108	108	18.0	39.1
						Barrier2	point67	67	20.0	39.0
						Barrier2	point68	68	20.0	38.9
						Barrier2	point66	66	20.0	38.9
						Barrier2	point63	63	20.0	38.5
						Barrier2	point69	69	20.0	38.4
						Barrier2	point70	70	20.0	37.8
						Barrier2	point112	112	18.0	37.8
KY-03-01-NGRS-10*	183	56.1	5.8	8	-2.2	Barrier2	point113	113	18.0	41.3

						Barrier2	point112	112	18.0	40.3
						Barrier2	point114	114	18.0	40.1
						Barrier2	point70	70	20.0	39.6
						Barrier2	point111	111	18.0	39.6
						Barrier2	point72	72	20.0	39.5
						Barrier2	point71	71	20.0	39.5
						Barrier2	point69	69	20.0	39.2
						Barrier2	point68	68	20.0	39.2
						Barrier2	point115	115	18.0	39.0
KY-03-01-NGRS-09*	181	56.4	5.8	8	-2.2	Barrier2	point114	114	18.0	41.8
						Barrier2	point113	113	18.0	41.1
						Barrier2	point115	115	18.0	40.7
						Barrier2	point71	71	20.0	39.9
						Barrier2	point72	72	20.0	39.7
						Barrier2	point73	73	20.0	39.6
						Barrier2	point112	112	18.0	39.6
						Barrier2	point70	70	20.0	39.4
						Barrier2	point116	116	18.0	39.4
						Barrier2	point69	69	20.0	39.4
KY-03-01-NRGS-01*	184	57.2	5.8	8	-2.2	Barrier2	point116	116	18.0	42.6
						Barrier2	point117	117	18.0	42.1
						Barrier2	point115	115	18.0	41.6
						Barrier2	point118	118	18.0	40.7
						Barrier2	point130	130	0.0	40.2
						Barrier2	point114	114	18.0	40.2
						Barrier2	point74	74	20.0	39.9
						Barrier2	point72	72	20.0	39.9
						Barrier2	point75	75	20.0	39.8
						Barrier2	point73	73	20.0	39.7
KY-03-02-NGRS-02*	219	54.7	7.0	8	-1.0	Barrier2	point61	61	20.0	42.6
						Barrier2	point60	60	20.0	42.5
						Barrier2	point62	62	20.0	41.7
						Barrier2	point63	63	20.0	40.3
						Barrier2	point66	66	20.0	38.8
						Barrier2	point59	59	20.0	38.7
						Barrier2	point67	67	20.0	37.9

						Barrier2	point58	58	20.0	37.6
						Barrier2	point68	68	20.0	37.0
						Barrier2	point69	69	20.0	36.3
KY-03-02-NGRS-01*	217	55.4	7.8	8	-0.2	Barrier2	point68	68	20.0	43.4
						Barrier2	point67	67	20.0	43.2
						Barrier2	point69	69	20.0	42.6
						Barrier2	point70	70	20.0	42.0
						Barrier2	point71	71	20.0	41.1
						Barrier2	point66	66	20.0	40.8
						Barrier2	point72	72	20.0	40.5
						Barrier2	point73	73	20.0	39.7
						Barrier2	point74	74	20.0	38.9
						Barrier2	point75	75	20.0	38.4
KY-03-01-NELS-01*	173	60.7	2.9	8	-5.1	Barrier2	point137	137	0.0	47.3
						Barrier2	point136	136	0.0	46.3
						Barrier2	point138	138	0.0	45.7
						Barrier2	point139	139	0.0	44.6
						Barrier2	point102	102	18.0	44.1
						Barrier2	point103	103	18.0	44.0
						Barrier2	point104	104	18.0	43.8
						Barrier2	point93	93	20.0	43.5
						Barrier2	point5	5	18.0	43.4
						Barrier2	point134	134	0.0	43.3
Total Cost, All Barriers (including additional cost(s))					$1251185					

HMB Professional Engineers				**15 March 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**West 2_South_NGreenSt_Barrier B**									
BARRIER DESIGN:	**W2_AreaB_NGreenSt**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier2	W	8.00	17.81	20.00	2342	41706				1251185
									Total Cost:	1251185

HMB Professional Engineers 15 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_South_NGreenSt_Barrier B
BARRIER DESIGN: W2_AreaB_NGreenSt

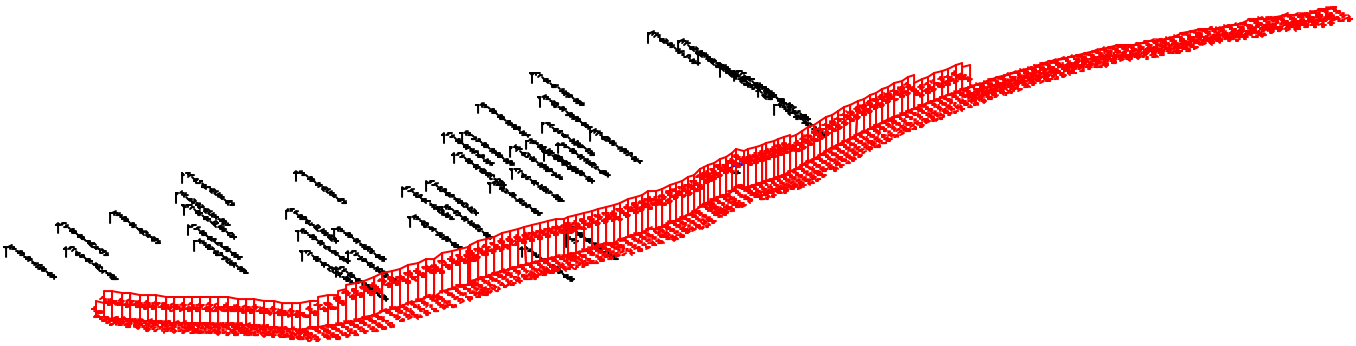
Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier2	W	point4	4	8.00	8.00	8.00	20	160				4793
		point7	7	14.00	14.00	14.00	20	278				8329
		point8	8	14.00	14.00	14.00	20	280				8388
		point9	9	14.00	14.00	14.00	20	283				8504
		point10	10	14.00	14.00	14.00	20	280				8388
		point11	11	14.00	14.00	14.00	20	278				8329
		point12	12	14.00	14.00	14.00	20	280				8388
		point13	13	14.00	14.00	14.00	20	283				8504
		point14	14	14.00	14.00	14.00	20	280				8388
		point15	15	14.00	14.00	14.00	20	278				8329
		point16	16	14.00	14.00	14.00	20	280				8388
		point17	17	14.00	14.00	14.00	20	278				8329
		point18	18	14.00	14.00	14.00	20	283				8504
		point19	19	14.00	14.00	14.00	20	280				8388
		point20	20	14.00	14.00	14.00	20	280				8388
		point21	21	14.00	14.00	14.00	3	41				1224
		point23	23	14.00	14.00	14.00	20	280				8388
		point24	24	14.00	14.00	14.00	20	278				8337
		point25	25	14.00	14.00	14.00	20	279				8363
		point26	26	14.00	14.00	14.00	20	281				8429
		point27	27	14.00	14.00	14.00	20	280				8406
		point28	28	14.00	14.00	14.00	20	280				8393
		point29	29	14.00	14.00	14.00	20	280				8390
		point30	30	14.00	14.00	14.00	20	277				8321
		point31	31	14.00	14.00	14.00	20	283				8476
		point32	32	14.00	14.00	14.00	20	279				8363

		point33	33	16.00	16.00	16.00	20	322				9652
		point34	34	16.00	16.00	16.00	20	319				9556
		point35	35	18.00	18.00	18.00	20	362				10861
		point36	36	20.00	20.00	20.00	20	401				12023
		point37	37	20.00	20.00	20.00	20	399				11963
		point38	38	20.00	20.00	20.00	20	403				12093
		point39	39	20.00	20.00	20.00	20	398				11941
		point40	40	20.00	20.00	20.00	20	398				11944
		point41	41	20.00	20.00	20.00	20	399				11956
		point42	42	20.00	20.00	20.00	20	403				12093
		point43	43	20.00	20.00	20.00	20	397				11907
		point44	44	20.00	20.00	20.00	20	402				12049
		point45	45	20.00	20.00	20.00	20	398				11955
		point46	46	20.00	20.00	20.00	20	398				11933
		point47	47	20.00	20.00	20.00	20	403				12078
		point48	48	20.00	20.00	20.00	20	403				12091
		point49	49	20.00	20.00	20.00	20	401				12035
		point50	50	20.00	20.00	20.00	8	161				4837
		point52	52	20.00	20.00	20.00	20	400				11986
		point53	53	20.00	20.00	20.00	20	400				11986
		point54	54	20.00	20.00	20.00	20	404				12134
		point55	55	20.00	20.00	20.00	20	393				11796
		point56	56	20.00	20.00	20.00	20	404				12134
		point57	57	20.00	20.00	20.00	20	400				11986
		point58	58	20.00	20.00	20.00	20	400				11986
		point59	59	20.00	20.00	20.00	20	400				11986
		point60	60	20.00	20.00	20.00	20	398				11945
		point61	61	20.00	20.00	20.00	20	404				12134
		point62	62	20.00	20.00	20.00	20	395				11838
		point63	63	20.00	20.00	20.00	20	404				12134
		point64	64	20.00	20.00	20.00	10	197				5919
		point66	66	20.00	20.00	20.00	20	403				12093
		point67	67	20.00	20.00	20.00	20	398				11945
		point68	68	20.00	20.00	20.00	20	402				12060
		point69	69	20.00	20.00	20.00	20	397				11911
		point70	70	20.00	20.00	20.00	20	401				12034
		point71	71	20.00	20.00	20.00	20	400				12015
		point72	72	20.00	20.00	20.00	20	400				12015
		point73	73	20.00	20.00	20.00	20	400				12004

		point74	74	20.00	20.00	20.00	20	400				12004
		point75	75	20.00	20.00	20.00	20	400				12000
		point76	76	20.00	20.00	20.00	20	400				12004
		point77	77	20.00	20.00	20.00	20	400				12004
		point78	78	20.00	20.00	20.00	20	396				11865
		point79	79	20.00	20.00	20.00	20	401				12034
		point80	80	20.00	20.00	20.00	20	401				12034
		point81	81	20.00	20.00	20.00	20	402				12060
		point82	82	20.00	20.00	20.00	20	397				11911
		point83	83	20.00	20.00	20.00	20	400				11986
		point84	84	20.00	20.00	20.00	20	403				12093
		point85	85	20.00	20.00	20.00	14	284				8533
		point87	87	20.00	20.00	20.00	7	141				4243
		point88	88	20.00	20.00	20.00	20	400				11986
		point89	89	20.00	20.00	20.00	20	401				12035
		point90	90	20.00	20.00	20.00	20	400				11986
		point91	91	20.00	20.00	20.00	20	400				11986
		point92	92	20.00	20.00	20.00	20	396				11887
		point93	93	20.00	20.00	20.00	20	404				12134
		point94	94	20.00	20.00	20.00	20	396				11887
		point95	95	20.00	20.00	20.00	20	404				12134
		point96	96	20.00	20.00	20.00	20	395				11838
		point97	97	20.00	20.00	20.00	20	401				12035
		point98	98	20.00	20.00	20.00	20	400				11986
		point99	99	20.00	20.00	20.00	20	401				12035
		point100	100	20.00	20.00	20.00	20	400				11986
		point101	101	20.00	20.00	20.00	20	401				12035
		point102	102	18.00	18.00	18.00	20	360				10787
		point103	103	18.00	18.00	18.00	20	360				10787
		point104	104	18.00	18.00	18.00	20	361				10831
		point5	5	18.00	18.00	18.00	20	360				10787
		point105	105	18.00	18.00	18.00	20	361				10831
		point106	106	18.00	18.00	18.00	20	360				10787
		point107	107	18.00	18.00	18.00	20	360				10787
		point108	108	18.00	18.00	18.00	20	361				10831
		point109	109	18.00	18.00	18.00	20	360				10787
		point111	111	18.00	18.00	18.00	20	361				10831
		point112	112	18.00	18.00	18.00	20	358				10750
		point113	113	18.00	18.00	18.00	20	360				10787

		point114	114	18.00	18.00	18.00	20	358				10750
		point115	115	18.00	18.00	18.00	20	363				10884
		point116	116	18.00	18.00	18.00	20	362				10854
		point117	117	18.00	18.00	18.00	20	357				10720
		point118	118	18.00	18.00	18.00	20	362				10854
		point119	119	18.00	18.00	18.00	20	357				10696
		point120	120	18.00	18.00	18.00	20	361				10830
		point121	121	18.00	18.00	18.00	20	361				10830
		point122	122	14.00	14.00	14.00	20	280				8410
		point123	123	14.00	14.00	14.00	20	280				8410
		point124	124	14.00	14.00	14.00	20	280				8403
		point125	125	14.00	14.00	14.00	20	280				8403
		point126	126	14.00	14.00	14.00	20	280				8403
		point127	127	14.00	14.00	14.00	20	280				8403
		point128	128	14.00	14.00	14.00	20	280				8400
		point129	129	12.00	12.00	12.00	20	240				7202
		point130	130	0.00	0.00	0.00	0	0				0
		point131	131	0.00	0.00	0.00	0	0				0
		point132	132	0.00	0.00	0.00	0	0				0
		point133	133	0.00	0.00	0.00	0	0				0
		point134	134	0.00	0.00	0.00	0	0				0
		point135	135	0.00	0.00	0.00	0	0				0
		point136	136	0.00	0.00	0.00	0	0				0
		point137	137	0.00	0.00	0.00	0	0				0
		point138	138	0.00	0.00	0.00	0	0				0
		point139	139	0.00	0.00	0.00	0	0				0
		point140	140	0.00	0.00	0.00	0	0				0
		point141	141	0.00	0.00	0.00	0	0				0
		point144	144	0.00	0.00	0.00	0	0				0
		point145	145	0.00	0.00	0.00	0	0				0
		point146	146	0.00	0.00	0.00	0	0				0
		point147	147	0.00	0.00	0.00	0	0				0
		point148	148	0.00	0.00	0.00	0	0				0
		point150	150	0.00	0.00	0.00	0	0				0
		point151	151	0.00	0.00	0.00	0	0				0
		point152	152	0.00	0.00	0.00	0	0				0
		point153	153	0.00	0.00	0.00	0	0				0
		point154	154	0.00	0.00	0.00	0	0				0
		point155	155	0.00	0.00	0.00	0	0				0

		point156	156	0.00	0.00	0.00	0	0				0
		point157	157	0.00	0.00	0.00	0	0				0
		point158	158	0.00	0.00	0.00	0	0				0
		point159	159	0.00	0.00	0.00	0	0				0
		point160	160	0.00	0.00	0.00	0	0				0
		point161	161	0.00	0.00	0.00	0	0				0
		point162	162	0.00	0.00	0.00	0	0				0
		point163	163	0.00	0.00	0.00	0	0				0
		point164	164	0.00	0.00	0.00	0	0				0
		point165	165	0.00	0.00	0.00	0	0				0
		point166	166	0.00	0.00	0.00	0	0				0
		point167	167	0.00	0.00	0.00	0	0				0
		point168	168	0.00	0.00	0.00	0	0				0
		point169	169	0.00	0.00	0.00	0	0				0
		point170	170	0.00	0.00	0.00	0	0				0
		point171	171	0.00	0.00	0.00	0	0				0
		point172	172	0.00	0.00	0.00	0	0				0
		point173	173	0.00	0.00	0.00	0	0				0
		point174	174	0.00	0.00	0.00	0	0				0
		point175	175	0.00	0.00	0.00	0	0				0
		point176	176	0.00	0.00	0.00	0	0				0
		point177	177	0.00	0.00	0.00	0	0				0
		point178	178	0.00	0.00	0.00	0	0				0



West 2_South_NGreenSt_Barrier B	Sheet 1 of 1	15 Mar 2018
	HMB Professional Engineers	
Barrier View-W2_AreaB_NGreenSt	Project/Contract No. I-69 ORX	
Run name: W2_02_TollAll_B	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 2 – ELM STREET

HMB Professional Engineers 15 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_West of 41_Elm to Watson Ln_C
BARRIER DESIGN: W2_West41_Elm2Watson
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-02-02-NELS-35	117	1	58.6	63.8	66	5.2	10	----	58.6	5.2	8	-2.8
KY-02-02-NELS-39	121	1	58.5	63.6	66	5.1	10	----	58.6	5.0	8	-3.0
KY-02-02-NELS-34	115	1	57.8	62.6	66	4.8	10	----	57.8	4.8	8	-3.2
KY-02-02-NELS-37	119	1	59.6	64.5	66	4.9	10	----	58.4	6.1	8	-1.9
KY-02-02-NELS-28	109	1	57.5	62.0	66	4.5	10	----	56.9	5.1	8	-2.9
KY-02-02-NELS-27	108	1	57.2	61.5	66	4.3	10	----	56.5	5.0	8	-3.0
KY-02-02-RETR-01*	124	1	58.6	62.6	66	4.0	10	----	57.0	5.6	8	-2.4
KY-02-01-RETR-01*	59	1	59.3	61.1	66	1.8	10	----	56.2	4.9	8	-3.1
KY-02-01-RETR-02*	60	1	61.4	62.5	66	1.1	10	----	57.1	5.4	8	-2.6
KY-02-01-RETR-03*	61	1	52.2	63.2	66	11.0	10	Sub'l Inc	57.2	6.0	8	-2.0
KY-02-01-RETR-04*	62	1	0.0	64.0	66	64.0	10	----	57.3	6.7	8	-1.3
KY-02-02-CANL-01*	70	1	57.9	62.0	66	4.1	10	----	57.0	5.0	8	-3.0
KY-02-02-CANL02*	71	1	59.9	63.7	66	3.8	10	----	57.5	6.2	8	-1.8
KY-02-01-CANL-01*	2	1	57.9	62.4	66	4.5	10	----	58.0	4.4	8	-3.6
KY-02-01-CANL-02*	3	1	60.7	64.8	66	4.1	10	----	59.2	5.6	8	-2.4
KY-02-01-NELS-33	58	1	55.6	60.6	66	5.0	10	----	57.3	3.3	8	-4.7
KY-02-02-ROBR-01*	126	1	57.6	62.2	66	4.6	10	----	58.4	3.8	8	-4.2
KY-02-02-ROBR-02*	128	1	59.2	63.6	66	4.4	10	----	59.0	4.6	8	-3.4
KY-02-02-ROBR-03*	129	1	60.8	65.1	66	4.3	10	----	59.8	5.3	8	-2.7
KY-02-01-NELS-32	57	1	55.9	61.2	66	5.3	10	----	57.7	3.5	8	-4.5
KY-02-01-ROBR-01*	64	1	57.8	62.8	66	5.0	10	----	59.0	3.8	8	-4.2
KY-02-01-ROBR-02*	65	1	59.6	64.5	66	4.9	10	----	60.3	4.2	8	-3.8
KY-02-01-ROBR-03*	66	1	61.0	66.1	66	5.1	10	Snd Lvl	61.0	5.1	8	-2.9
KY-02-01-NELS-30	54	1	55.3	61.2	66	5.9	10	----	57.6	3.6	8	-4.4

KY-02-01-NELS-31	55	1	56.2	61.8	66	5.6	10	----	58.1	3.7	8	-4.3
KY-02-02-HARL-01*	84	1	58.0	63.4	66	5.4	10	----	59.0	4.4	8	-3.6
KY-02-02-HARL-02*	85	1	59.4	64.7	66	5.3	10	----	60.1	4.6	8	-3.4
KY-02-02-HARL-03*	86	1	60.3	65.7	66	5.4	10	----	60.8	4.9	8	-3.1
KY-02-02-HARL-04*	87	1	61.4	67.3	66	5.9	10	Snd Lvl	61.4	5.9	8	-2.1
KY-02-01-NELS-29	53	1	56.5	62.1	66	5.6	10	----	58.1	4.0	8	-4.0
KY-02-01-HARL-01*	18	1	59.9	64.3	66	4.4	10	----	59.2	5.1	8	-2.9
KY-02-01-NELS-28	52	1	56.6	62.4	66	5.8	10	----	57.9	4.5	8	-3.5
KY-02-01-NELS-27	51	1	56.9	62.5	66	5.6	10	----	57.5	5.0	8	-3.0
KY-02-01-NELS-26	50	1	57.1	62.6	66	5.5	10	----	57.4	5.2	8	-2.8
KY-02-01-NELS-25	49	1	57.3	62.6	66	5.3	10	----	57.3	5.3	8	-2.7
KY-02-01-NELS-24	48	1	57.2	62.4	66	5.2	10	----	57.1	5.3	8	-2.7
KY-02-01-NELS-23	47	1	57.8	63.0	66	5.2	10	----	57.2	5.8	8	-2.2
KY-02-01-NELS-22	46	1	58.2	63.2	66	5.0	10	----	57.6	5.6	8	-2.4
KY-02-01-NELS-21	44	1	57.2	61.3	66	4.1	10	----	56.7	4.6	8	-3.4
KY-02-01-NELS-20	43	1	57.6	61.8	66	4.2	10	----	57.5	4.3	8	-3.7
KY-02-01-NELS-19	42	1	57.8	61.8	66	4.0	10	----	57.8	4.0	8	-4.0
KY-02-01-NELS-18	41	1	58.1	61.8	66	3.7	10	----	58.7	3.1	8	-4.9
KY-02-02-FRYD-06	82	1	57.3	60.7	66	3.4	10	----	59.2	1.5	8	-6.5
KY-02-02-FRYD-05	79	1	57.1	60.8	66	3.7	10	----	59.9	0.9	8	-7.1
KY-02-01-FRYD-05	16	1	47.8	59.7	66	11.9	10	Sub'l Inc	59.0	0.7	8	-7.3
KY-02-02-FRYD-04	77	1	57.4	61.1	66	3.7	10	----	60.5	0.6	8	-7.4
KY-02-01-FRYD-04	15	1	47.8	59.8	66	12.0	10	Sub'l Inc	59.3	0.5	8	-7.5
KY-02-02-FRYD-03	75	1	57.1	61.2	66	4.1	10	----	60.8	0.4	8	-7.6
KY-02-01-FRYD-03	14	1	47.8	60.2	66	12.4	10	Sub'l Inc	59.8	0.4	8	-7.6
KY-02-02-FRYD-02	74	1	57.1	61.7	66	4.6	10	----	61.4	0.3	8	-7.7
KY-02-01-FRYD-02	13	1	47.8	60.4	66	12.6	10	Sub'l Inc	60.1	0.3	8	-7.7
KY-02-02-FRYD-01	73	1	57.6	62.3	66	4.7	10	----	62.1	0.2	8	-7.8
KY-02-01-FRYD-01	12	1	47.8	60.7	66	12.9	10	Sub'l Inc	60.4	0.3	8	-7.7
KY-02-01-CATD-06	10	1	47.8	61.2	66	13.4	10	Sub'l Inc	61.0	0.2	8	-7.8
KY-02-01-CATD-05	9	1	47.8	61.5	66	13.7	10	Sub'l Inc	61.4	0.1	8	-7.9
KY-02-01-CATD-04	8	1	47.8	61.6	66	13.8	10	Sub'l Inc	61.5	0.1	8	-7.9
KY-02-01-CATD-03	7	1	47.8	61.8	66	14.0	10	Sub'l Inc	61.7	0.1	8	-7.9
KY-02-01-CATD-02	6	1	47.8	61.7	66	13.9	10	Sub'l Inc	61.6	0.1	8	-7.9
KY-02-01-CATD-01	5	1	47.8	62.0	66	14.2	10	Sub'l Inc	61.9	0.1	8	-7.9
A5	234	1	50.1	54.2	66	4.1	10	----	51.9	2.3	8	-5.7
KY-02-02-NELS-41	123	1	61.8	69.1	66	7.3	10	Snd Lvl	64.0	5.1	8	-2.9
KY-02-02-NELS-40	122	1	61.1	67.1	66	6.0	10	Snd Lvl	61.1	6.0	8	-2.0
KY-02-02-NELS-38	120	1	59.3	64.5	66	5.2	10	----	58.9	5.6	8	-2.4
KY-02-02-NELS-36	118	1	60.4	65.2	66	4.8	10	----	58.6	6.6	8	-1.4
KY-02-02-NELS-33	114	1	57.6	62.3	66	4.7	10	----	57.5	4.8	8	-3.2

KY-02-02-NELS-32	113	1	57.8	62.4	66	4.6	10	----	57.3	5.1	8	-2.9
KY-02-02-NELS-31	112	1	57.8	62.4	66	4.6	10	----	57.2	5.2	8	-2.8
KY-02-02-NELS-30	111	1	56.8	61.4	66	4.6	10	----	56.8	4.6	8	-3.4
KY-02-02-NELS-29	110	1	57.2	61.9	66	4.7	10	----	56.9	5.0	8	-3.0
KY-02-02-RETR-02*	125	1	60.0	63.7	66	3.7	10	----	57.4	6.3	8	-1.7
KY-02-01-RETR-05*	63	1	0.0	65.0	66	65.0	10	----	57.7	7.3	8	-0.7
KY-02-02-CANL-03*	72	1	61.8	65.4	66	3.6	10	----	58.1	7.3	8	-0.7
KY-02-01-CANL-03*	4	1	62.4	66.7	66	4.3	10	Snd Lvl	59.3	7.4	8	-0.6
KY-02-02-ROBR-04*	130	1	62.8	67.4	66	4.6	10	Snd Lvl	60.0	7.4	8	-0.6
KY-02-01-ROBR-04*	69	1	62.7	68.7	66	6.0	10	Snd Lvl	61.0	7.7	8	-0.3
KY-02-02-HARL-05*	88	1	63.6	70.5	66	6.9	10	Snd Lvl	61.7	8.8	8	0.8
KY-02-01-HARL-04*	22	1	50.8	70.0	66	19.2	10	Both	61.7	8.3	8	0.3
KY-02-01-HARL-03*	21	1	66.6	67.3	66	0.7	10	Snd Lvl	60.9	6.4	8	-1.6
KY-02-01-HARL-02*	20	1	62.5	65.9	66	3.4	10	----	60.0	5.9	8	-2.1
KY-02-02-NELS-08*	99	1	60.8	66.8	66	6.0	10	Snd Lvl	59.6	7.2	8	-0.8
KY-02-02-NELS-07*	98	1	60.5	66.0	66	5.5	10	Snd Lvl	58.8	7.2	8	-0.8
KY-02-02-NELS-06*	97	1	59.7	64.8	66	5.1	10	----	57.8	7.0	8	-1.0
KY-02-02-NELS-05*	96	1	61.4	66.5	66	5.1	10	Snd Lvl	58.3	8.2	8	0.2
KY-02-02-NELS-04*	95	1	60.3	64.6	66	4.3	10	----	57.5	7.1	8	-0.9
KY-02-02-NELS-03*	93	1	61.9	65.1	66	3.2	10	----	58.0	7.1	8	-0.9
KY-02-02-NELS-02*	91	1	62.2	64.2	66	2.0	10	----	58.6	5.6	8	-2.4
KY-02-02-NELS-01*	90	1	62.8	64.4	66	1.6	10	----	59.7	4.7	8	-3.3
KY-02-01-NELS-17	40	1	59.3	62.6	66	3.3	10	----	61.2	1.4	8	-6.6
KY-02-01-NELS-16	39	1	58.9	62.4	66	3.5	10	----	61.7	0.7	8	-7.3
KY-02-01-NELS-15	38	1	60.2	64.1	66	3.9	10	----	63.8	0.3	8	-7.7
KY-02-01-NELS-14	37	1	58.5	62.2	66	3.7	10	----	61.8	0.4	8	-7.6
KY-02-01-NELS-13	36	1	58.8	62.7	66	3.9	10	----	62.5	0.2	8	-7.8
KY-02-01-NELS-12	35	1	58.4	62.9	66	4.5	10	----	62.7	0.2	8	-7.8
KY-02-01-NELS-11	33	1	58.8	63.3	66	4.5	10	----	63.2	0.1	8	-7.9
KY-02-01-NELS-10	32	1	58.2	63.4	66	5.2	10	----	63.3	0.1	8	-7.9
KY-02-01-NELS-09	31	1	58.2	63.4	66	5.2	10	----	63.4	0.0	8	-8.0
KY-02-01-NELS-08	30	1	58.3	63.6	66	5.3	10	----	63.6	0.0	8	-8.0
KY-02-01-NELS-07	29	1	58.2	63.7	66	5.5	10	----	63.6	0.1	8	-7.9
KY-02-01-NELS-06	28	1	58.3	63.8	66	5.5	10	----	63.7	0.1	8	-7.9
KY-02-01-NELS-05	27	1	58.3	63.8	66	5.5	10	----	63.8	0.0	8	-8.0

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	100	0.0	3.9	8.8
All Impacted	25	0.1	4.0	8.8
All that meet NR Goal	3	8.2	8.4	8.8

HMB Professional Engineers 15 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_West of 41_Elm to Watson Ln_C
BARRIER DESIGN: W2_West41_Elm2Watson

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-02-02-NELS-35	117	58.6	5.2	8	-2.8	Barrier2	point51	51	14.0	41.4
						Barrier2	point52	52	14.0	41.3
						Barrier2	point4	4	0.0	41.1
						Barrier2	point8	8	0.0	40.8
						Barrier2	point50	50	14.0	40.7
						Barrier2	point53	53	14.0	40.4
						Barrier2	point41	41	14.0	39.8
						Barrier2	point40	40	14.0	39.6
						Barrier2	point28	28	14.0	39.4
						Barrier2	point49	49	14.0	39.2
KY-02-02-NELS-39	121	58.6	5.0	8	-3.0	Barrier2	point4	4	0.0	41.5
						Barrier2	point8	8	0.0	41.0
						Barrier2	point51	51	14.0	41.0
						Barrier2	point52	52	14.0	41.0
						Barrier2	point50	50	14.0	40.4
						Barrier2	point41	41	14.0	39.7
						Barrier2	point53	53	14.0	39.7
						Barrier2	point40	40	14.0	39.6
						Barrier2	point28	28	14.0	39.4
						Barrier2	point9	9	8.0	39.0
KY-02-02-NELS-34	115	57.8	4.8	8	-3.2	Barrier2	point52	52	14.0	40.9

						Barrier2	point51	51	14.0	40.6
						Barrier2	point4	4	0.0	39.9
						Barrier2	point8	8	0.0	39.6
						Barrier2	point53	53	14.0	39.5
						Barrier2	point50	50	14.0	39.2
						Barrier2	point41	41	14.0	38.4
						Barrier2	point40	40	14.0	38.3
						Barrier2	point67	67	14.0	38.0
						Barrier2	point68	68	14.0	37.8
KY-02-02-NELS-37	119	58.4	6.1	8	-1.9	Barrier2	point4	4	0.0	42.3
						Barrier2	point8	8	0.0	41.8
						Barrier2	point51	51	14.0	41.5
						Barrier2	point53	53	14.0	40.8
						Barrier2	point50	50	14.0	40.0
						Barrier2	point9	9	8.0	39.9
						Barrier2	point49	49	14.0	39.5
						Barrier2	point54	54	14.0	39.4
						Barrier2	point48	48	14.0	39.3
						Barrier2	point41	41	14.0	39.1
KY-02-02-NELS-28	109	56.9	5.1	8	-2.9	Barrier2	point76	76	14.0	40.0
						Barrier2	point77	77	14.0	40.0
						Barrier2	point72	72	14.0	39.1
						Barrier2	point71	71	14.0	39.0
						Barrier2	point70	70	14.0	38.9
						Barrier2	point75	75	14.0	38.8
						Barrier2	point78	78	14.0	38.8
						Barrier2	point73	73	14.0	38.8
						Barrier2	point74	74	14.0	38.6
						Barrier2	point69	69	14.0	38.6
KY-02-02-NELS-27	108	56.5	5.0	8	-3.0	Barrier2	point81	81	14.0	38.7
						Barrier2	point77	77	14.0	38.6
						Barrier2	point78	78	14.0	38.5
						Barrier2	point80	80	14.0	38.5
						Barrier2	point82	82	14.0	38.4
						Barrier2	point83	83	14.0	38.4
						Barrier2	point76	76	14.0	38.3

						Barrier2	point84	84	14.0	38.3
						Barrier2	point79	79	14.0	38.3
						Barrier2	point86	86	14.0	38.3
KY-02-02-RETR-01*	124	57.0	5.6	8	-2.4	Barrier2	point77	77	14.0	40.1
						Barrier2	point81	81	14.0	40.1
						Barrier2	point78	78	14.0	40.0
						Barrier2	point80	80	14.0	39.9
						Barrier2	point76	76	14.0	39.9
						Barrier2	point79	79	14.0	39.8
						Barrier2	point82	82	14.0	39.7
						Barrier2	point83	83	14.0	39.7
						Barrier2	point86	86	14.0	39.5
						Barrier2	point84	84	14.0	39.5
KY-02-01-RETR-01*	59	56.2	4.9	8	-3.1	Barrier2	point102	102	14.0	38.7
						Barrier2	point103	103	14.0	38.2
						Barrier2	point81	81	14.0	37.8
						Barrier2	point104	104	14.0	37.7
						Barrier2	point82	82	14.0	37.7
						Barrier2	point85	85	14.0	37.7
						Barrier2	point84	84	14.0	37.6
						Barrier2	point83	83	14.0	37.6
						Barrier2	point105	105	14.0	37.6
						Barrier2	point86	86	14.0	37.6
KY-02-01-RETR-02*	60	57.1	5.4	8	-2.6	Barrier2	point102	102	14.0	41.3
						Barrier2	point103	103	14.0	40.8
						Barrier2	point104	104	14.0	40.3
						Barrier2	point105	105	14.0	40.1
						Barrier2	point99	99	16.0	39.8
						Barrier2	point5	5	14.0	39.8
						Barrier2	point98	98	16.0	39.6
						Barrier2	point100	100	16.0	39.5
						Barrier2	point97	97	16.0	39.3
						Barrier2	point92	92	16.0	39.0
KY-02-01-RETR-03*	61	57.2	6.0	8	-2.0	Barrier2	point102	102	14.0	41.0
						Barrier2	point104	104	14.0	40.7
						Barrier2	point105	105	14.0	40.5

						Barrier2	point103	103	14.0	40.3
						Barrier2	point99	99	16.0	40.3
						Barrier2	point98	98	16.0	40.1
						Barrier2	point92	92	16.0	39.9
						Barrier2	point100	100	16.0	39.9
						Barrier2	point97	97	16.0	39.9
						Barrier2	point91	91	16.0	39.8
KY-02-01-RETR-04*	62	57.3	6.7	8	-1.3	Barrier2	point91	91	16.0	41.2
						Barrier2	point92	92	16.0	41.0
						Barrier2	point90	90	16.0	40.9
						Barrier2	point93	93	16.0	40.9
						Barrier2	point94	94	16.0	40.8
						Barrier2	point99	99	16.0	40.7
						Barrier2	point98	98	16.0	40.7
						Barrier2	point86	86	14.0	40.7
						Barrier2	point84	84	14.0	40.7
						Barrier2	point85	85	14.0	40.6
KY-02-02-CANL-01*	70	57.0	5.0	8	-3.0	Barrier2	point102	102	14.0	41.2
						Barrier2	point103	103	14.0	41.0
						Barrier2	point104	104	14.0	40.6
						Barrier2	point105	105	14.0	40.2
						Barrier2	point5	5	14.0	39.9
						Barrier2	point99	99	16.0	39.7
						Barrier2	point106	106	14.0	39.5
						Barrier2	point100	100	16.0	39.4
						Barrier2	point98	98	16.0	39.3
						Barrier2	point107	107	14.0	39.1
KY-02-02-CANL02*	71	57.5	6.2	8	-1.8	Barrier2	point102	102	14.0	42.5
						Barrier2	point99	99	16.0	41.5
						Barrier2	point105	105	14.0	41.4
						Barrier2	point98	98	16.0	41.3
						Barrier2	point100	100	16.0	41.3
						Barrier2	point103	103	14.0	41.2
						Barrier2	point97	97	16.0	41.0
						Barrier2	point96	96	16.0	40.7
						Barrier2	point104	104	14.0	40.7

						Barrier2	point101	101	16.0	40.6
KY-02-01-CANL-01*	2	58.0	4.4	8	-3.6	Barrier2	point105	105	14.0	43.6
						Barrier2	point103	103	14.0	43.5
						Barrier2	point104	104	14.0	43.5
						Barrier2	point102	102	14.0	43.5
						Barrier2	point5	5	14.0	43.3
						Barrier2	point106	106	14.0	42.4
						Barrier2	point109	109	14.0	42.0
						Barrier2	point110	110	14.0	41.9
						Barrier2	point112	112	14.0	41.8
						Barrier2	point107	107	14.0	41.7
KY-02-01-CANL-02*	3	59.2	5.6	8	-2.4	Barrier2	point105	105	14.0	46.6
						Barrier2	point104	104	14.0	46.4
						Barrier2	point5	5	14.0	46.2
						Barrier2	point102	102	14.0	45.6
						Barrier2	point103	103	14.0	45.6
						Barrier2	point106	106	14.0	44.9
						Barrier2	point109	109	14.0	44.1
						Barrier2	point110	110	14.0	43.8
						Barrier2	point107	107	14.0	43.5
						Barrier2	point108	108	14.0	43.3
KY-02-01-NELS-33	58	57.3	3.3	8	-4.7	Barrier2	point105	105	14.0	41.6
						Barrier2	point5	5	14.0	41.5
						Barrier2	point106	106	14.0	41.1
						Barrier2	point104	104	14.0	41.1
						Barrier2	point110	110	14.0	41.0
						Barrier2	point108	108	14.0	41.0
						Barrier2	point113	113	14.0	40.9
						Barrier2	point112	112	14.0	40.9
						Barrier2	point109	109	14.0	40.9
						Barrier2	point111	111	14.0	40.9
KY-02-02-ROBR-01*	126	58.4	3.8	8	-4.2	Barrier2	point5	5	14.0	44.1
						Barrier2	point105	105	14.0	44.0
						Barrier2	point104	104	14.0	43.4
						Barrier2	point109	109	14.0	43.2
						Barrier2	point106	106	14.0	43.1

						Barrier2	point113	113	14.0	43.1
						Barrier2	point103	103	14.0	43.0
						Barrier2	point110	110	14.0	43.0
						Barrier2	point108	108	14.0	42.9
						Barrier2	point112	112	14.0	42.9
KY-02-02-ROBR-02*	128	59.0	4.6	8	-3.4	Barrier2	point105	105	14.0	45.4
						Barrier2	point104	104	14.0	45.1
						Barrier2	point5	5	14.0	45.0
						Barrier2	point103	103	14.0	44.5
						Barrier2	point102	102	14.0	44.5
						Barrier2	point113	113	14.0	44.1
						Barrier2	point106	106	14.0	44.1
						Barrier2	point108	108	14.0	43.9
						Barrier2	point109	109	14.0	43.9
						Barrier2	point112	112	14.0	43.9
KY-02-02-ROBR-03*	129	59.8	5.3	8	-2.7	Barrier2	point5	5	14.0	46.8
						Barrier2	point105	105	14.0	46.8
						Barrier2	point104	104	14.0	46.4
						Barrier2	point103	103	14.0	46.1
						Barrier2	point109	109	14.0	45.9
						Barrier2	point102	102	14.0	45.7
						Barrier2	point106	106	14.0	45.4
						Barrier2	point110	110	14.0	45.3
						Barrier2	point108	108	14.0	45.2
						Barrier2	point112	112	20.0	44.8
KY-02-01-NELS-32	57	57.7	3.5	8	-4.5	Barrier2	point5	5	14.0	41.9
						Barrier2	point105	105	14.0	41.9
						Barrier2	point117	117	14.0	41.8
						Barrier2	point116	116	14.0	41.8
						Barrier2	point118	118	14.0	41.6
						Barrier2	point113	113	14.0	41.6
						Barrier2	point106	106	14.0	41.6
						Barrier2	point115	115	14.0	41.6
						Barrier2	point114	114	14.0	41.5
						Barrier2	point112	112	14.0	41.5
KY-02-01-ROBR-01*	64	59.0	3.8	8	-4.2	Barrier2	point116	116	14.0	44.2

						Barrier2	point115	115	14.0	44.2
						Barrier2	point117	117	14.0	44.2
						Barrier2	point114	114	14.0	44.2
						Barrier2	point113	113	14.0	44.2
						Barrier2	point118	118	14.0	44.1
						Barrier2	point112	112	14.0	44.0
						Barrier2	point111	111	14.0	43.9
						Barrier2	point119	119	14.0	43.9
						Barrier2	point110	110	14.0	43.8
KY-02-01-ROBR-02*	65	60.3	4.2	8	-3.8	Barrier2	point116	116	14.0	46.9
						Barrier2	point117	117	14.0	46.8
						Barrier2	point115	115	14.0	46.7
						Barrier2	point118	118	14.0	46.7
						Barrier2	point114	114	14.0	46.6
						Barrier2	point113	113	14.0	46.5
						Barrier2	point119	119	14.0	46.2
						Barrier2	point112	112	14.0	45.8
						Barrier2	point120	120	14.0	45.5
						Barrier2	point110	110	14.0	45.4
KY-02-01-ROBR-03*	66	61.0	5.1	8	-2.9	Barrier2	point116	116	14.0	48.4
						Barrier2	point117	117	14.0	48.3
						Barrier2	point115	115	14.0	48.3
						Barrier2	point118	118	14.0	48.2
						Barrier2	point114	114	14.0	47.6
						Barrier2	point119	119	14.0	47.4
						Barrier2	point113	113	14.0	46.8
						Barrier2	point112	112	14.0	46.4
						Barrier2	point111	111	14.0	46.0
						Barrier2	point120	120	14.0	45.9
KY-02-01-NELS-30	54	57.6	3.6	8	-4.4	Barrier2	point118	118	14.0	41.5
						Barrier2	point117	117	14.0	41.5
						Barrier2	point119	119	14.0	41.5
						Barrier2	point116	116	14.0	41.4
						Barrier2	point120	120	14.0	41.4
						Barrier2	point115	115	14.0	41.2
						Barrier2	point114	114	14.0	41.1

						Barrier2	point113	113	14.0	41.0
						Barrier2	point121	121	14.0	40.9
						Barrier2	point124	124	14.0	40.9
KY-02-01-NELS-31	55	58.1	3.7	8	-4.3	Barrier2	point117	117	14.0	42.6
						Barrier2	point118	118	14.0	42.6
						Barrier2	point116	116	14.0	42.4
						Barrier2	point119	119	14.0	42.3
						Barrier2	point115	115	14.0	42.2
						Barrier2	point114	114	14.0	42.1
						Barrier2	point113	113	14.0	42.1
						Barrier2	point120	120	14.0	42.0
						Barrier2	point121	121	14.0	41.9
						Barrier2	point112	112	14.0	41.8
KY-02-02-HARL-01*	84	59.0	4.4	8	-3.6	Barrier2	point120	120	14.0	44.6
						Barrier2	point119	119	14.0	44.6
						Barrier2	point118	118	14.0	44.5
						Barrier2	point117	117	14.0	44.4
						Barrier2	point116	116	14.0	44.3
						Barrier2	point121	121	14.0	44.1
						Barrier2	point115	115	14.0	44.1
						Barrier2	point114	114	14.0	43.9
						Barrier2	point113	113	14.0	43.7
						Barrier2	point112	112	14.0	43.3
KY-02-02-HARL-02*	85	60.1	4.6	8	-3.4	Barrier2	point119	119	14.0	46.5
						Barrier2	point118	118	14.0	46.4
						Barrier2	point117	117	14.0	46.3
						Barrier2	point120	120	14.0	46.1
						Barrier2	point116	116	14.0	46.1
						Barrier2	point115	115	14.0	45.7
						Barrier2	point114	114	14.0	45.4
						Barrier2	point113	113	14.0	45.2
						Barrier2	point121	121	14.0	45.1
						Barrier2	point112	112	14.0	44.8
KY-02-02-HARL-03*	86	60.8	4.9	8	-3.1	Barrier2	point118	118	14.0	48.0
						Barrier2	point117	117	14.0	47.9
						Barrier2	point119	119	14.0	47.7

						Barrier2	point116	116	14.0	47.7
						Barrier2	point115	115	14.0	47.3
						Barrier2	point120	120	14.0	47.1
						Barrier2	point114	114	14.0	47.0
						Barrier2	point113	113	14.0	46.7
						Barrier2	point121	121	14.0	45.9
						Barrier2	point112	112	14.0	45.7
KY-02-02-HARL-04*	87	61.4	5.9	8	-2.1	Barrier2	point118	118	14.0	49.2
						Barrier2	point117	117	14.0	49.1
						Barrier2	point116	116	14.0	48.9
						Barrier2	point119	119	14.0	48.6
						Barrier2	point115	115	14.0	48.4
						Barrier2	point114	114	14.0	48.1
						Barrier2	point120	120	14.0	47.8
						Barrier2	point113	113	14.0	47.7
						Barrier2	point121	121	14.0	46.6
						Barrier2	point112	112	14.0	46.5
KY-02-01-NELS-29	53	58.1	4.0	8	-4.0	Barrier2	point118	118	14.0	42.5
						Barrier2	point119	119	14.0	42.4
						Barrier2	point124	124	14.0	42.4
						Barrier2	point117	117	14.0	42.4
						Barrier2	point123	123	14.0	42.3
						Barrier2	point120	120	14.0	42.3
						Barrier2	point122	122	14.0	42.2
						Barrier2	point116	116	14.0	42.2
						Barrier2	point121	121	14.0	42.1
						Barrier2	point115	115	14.0	41.7
KY-02-01-HARL-01*	18	59.2	5.1	8	-2.9	Barrier2	point124	124	14.0	44.8
						Barrier2	point123	123	14.0	44.3
						Barrier2	point125	125	14.0	44.2
						Barrier2	point121	121	14.0	44.1
						Barrier2	point122	122	14.0	44.1
						Barrier2	point120	120	14.0	44.0
						Barrier2	point119	119	14.0	43.9
						Barrier2	point118	118	14.0	43.8
						Barrier2	point117	117	14.0	43.6

						Barrier2	point129	129	14.0	43.3
KY-02-01-NELS-28	52	57.9	4.5	8	-3.5	Barrier2	point125	125	14.0	42.3
						Barrier2	point124	124	14.0	42.1
						Barrier2	point120	120	14.0	42.0
						Barrier2	point119	119	14.0	41.9
						Barrier2	point123	123	14.0	41.9
						Barrier2	point121	121	14.0	41.8
						Barrier2	point122	122	14.0	41.7
						Barrier2	point118	118	14.0	41.6
						Barrier2	point117	117	14.0	41.4
						Barrier2	point129	129	14.0	41.2
KY-02-01-NELS-27	51	57.5	5.0	8	-3.0	Barrier2	point125	125	14.0	41.4
						Barrier2	point124	124	14.0	41.4
						Barrier2	point123	123	14.0	41.1
						Barrier2	point122	122	14.0	40.9
						Barrier2	point121	121	14.0	40.8
						Barrier2	point126	126	14.0	40.7
						Barrier2	point120	120	14.0	40.7
						Barrier2	point129	129	14.0	40.7
						Barrier2	point128	128	14.0	40.4
						Barrier2	point119	119	14.0	40.4
KY-02-01-NELS-26	50	57.4	5.2	8	-2.8	Barrier2	point125	125	14.0	41.0
						Barrier2	point124	124	14.0	40.8
						Barrier2	point123	123	14.0	40.6
						Barrier2	point126	126	14.0	40.4
						Barrier2	point122	122	14.0	40.3
						Barrier2	point129	129	14.0	40.1
						Barrier2	point121	121	14.0	39.9
						Barrier2	point128	128	14.0	39.9
						Barrier2	point120	120	14.0	39.8
						Barrier2	point119	119	14.0	39.5
KY-02-01-NELS-25	49	57.3	5.3	8	-2.7	Barrier2	point125	125	14.0	40.5
						Barrier2	point124	124	14.0	40.2
						Barrier2	point123	123	14.0	40.1
						Barrier2	point126	126	14.0	40.1
						Barrier2	point122	122	14.0	39.8

						Barrier2	point129	129	14.0	39.7
						Barrier2	point121	121	14.0	39.3
						Barrier2	point120	120	14.0	39.2
						Barrier2	point128	128	14.0	39.2
						Barrier2	point127	127	14.0	39.2
KY-02-01-NELS-24	48	57.1	5.3	8	-2.7	Barrier2	point126	126	14.0	39.6
						Barrier2	point125	125	14.0	39.6
						Barrier2	point124	124	14.0	39.1
						Barrier2	point123	123	14.0	39.0
						Barrier2	point128	128	14.0	38.9
						Barrier2	point129	129	14.0	38.8
						Barrier2	point127	127	14.0	38.8
						Barrier2	point122	122	14.0	38.7
						Barrier2	point120	120	14.0	38.4
						Barrier2	point121	121	14.0	38.2
KY-02-01-NELS-23	47	57.2	5.8	8	-2.2	Barrier2	point128	128	14.0	39.1
						Barrier2	point126	126	14.0	39.1
						Barrier2	point125	125	14.0	39.0
						Barrier2	point127	127	14.0	39.0
						Barrier2	point129	129	14.0	38.5
						Barrier2	point124	124	14.0	38.4
						Barrier2	point151	151	16.0	38.3
						Barrier2	point152	152	16.0	38.2
						Barrier2	point153	153	16.0	38.2
						Barrier2	point123	123	14.0	38.2
KY-02-01-NELS-22	46	57.6	5.6	8	-2.4	Barrier2	point208	208	0.0	39.1
						Barrier2	point185	185	0.0	38.5
						Barrier2	point209	209	0.0	38.4
						Barrier2	point153	153	16.0	38.3
						Barrier2	point207	207	0.0	38.3
						Barrier2	point212	212	0.0	38.2
						Barrier2	point154	154	16.0	38.2
						Barrier2	point162	162	14.0	38.2
						Barrier2	point155	155	16.0	38.2
						Barrier2	point210	210	0.0	38.2
KY-02-01-NELS-21	44	56.7	4.6	8	-3.4	Barrier2	point185	185	0.0	39.5

						Barrier2	point186	186	0.0	39.2
						Barrier2	point210	210	0.0	38.8
						Barrier2	point187	187	0.0	38.4
						Barrier2	point212	212	0.0	38.4
						Barrier2	point209	209	0.0	38.3
						Barrier2	point208	208	0.0	38.2
						Barrier2	point214	214	0.0	38.1
						Barrier2	point213	213	0.0	38.1
						Barrier2	point215	215	0.0	38.0
KY-02-01-NELS-20	43	57.5	4.3	8	-3.7	Barrier2	point185	185	0.0	41.3
						Barrier2	point186	186	0.0	40.8
						Barrier2	point187	187	0.0	40.2
						Barrier2	point209	209	0.0	39.9
						Barrier2	point210	210	0.0	39.8
						Barrier2	point212	212	0.0	39.7
						Barrier2	point211	211	0.0	39.6
						Barrier2	point188	188	0.0	39.5
						Barrier2	point213	213	0.0	39.2
						Barrier2	point208	208	0.0	39.0
KY-02-01-NELS-19	42	57.8	4.0	8	-4.0	Barrier2	point185	185	0.0	42.4
						Barrier2	point186	186	0.0	42.0
						Barrier2	point187	187	0.0	41.4
						Barrier2	point188	188	0.0	40.7
						Barrier2	point211	211	0.0	40.6
						Barrier2	point210	210	0.0	40.5
						Barrier2	point208	208	0.0	40.4
						Barrier2	point189	189	0.0	40.1
						Barrier2	point212	212	0.0	40.1
						Barrier2	point209	209	0.0	40.1
KY-02-01-NELS-18	41	58.7	3.1	8	-4.9	Barrier2	point185	185	0.0	44.1
						Barrier2	point186	186	0.0	43.8
						Barrier2	point187	187	0.0	43.4
						Barrier2	point188	188	0.0	42.9
						Barrier2	point189	189	0.0	42.3
						Barrier2	point208	208	0.0	41.9
						Barrier2	point190	190	0.0	41.8

						Barrier2	point210	210	0.0	41.7
						Barrier2	point212	212	0.0	41.7
						Barrier2	point213	213	0.0	41.5
KY-02-02-FRYD-06	82	59.2	1.5	8	-6.5	Barrier2	point199	199	0.0	43.8
						Barrier2	point188	188	0.0	43.7
						Barrier2	point187	187	0.0	43.6
						Barrier2	point200	200	0.0	43.6
						Barrier2	point189	189	0.0	43.5
						Barrier2	point186	186	0.0	43.5
						Barrier2	point185	185	0.0	43.3
						Barrier2	point190	190	0.0	43.1
						Barrier2	point191	191	0.0	42.9
						Barrier2	point198	198	0.0	42.9
KY-02-02-FRYD-05	79	59.9	0.9	8	-7.1	Barrier2	point200	200	0.0	45.2
						Barrier2	point199	199	0.0	44.9
						Barrier2	point201	201	0.0	44.3
						Barrier2	point198	198	0.0	43.9
						Barrier2	point197	197	0.0	43.6
						Barrier2	point214	214	0.0	43.5
						Barrier2	point210	210	0.0	43.5
						Barrier2	point202	202	0.0	43.3
						Barrier2	point196	196	0.0	43.3
						Barrier2	point213	213	0.0	43.2
KY-02-01-FRYD-05	16	59.0	0.7	8	-7.3	Barrier2	point211	211	0.0	42.6
						Barrier2	point200	200	0.0	42.4
						Barrier2	point212	212	0.0	42.4
						Barrier2	point215	215	0.0	42.4
						Barrier2	point201	201	0.0	42.3
						Barrier2	point216	216	0.0	42.3
						Barrier2	point217	217	0.0	42.2
						Barrier2	point219	219	0.0	42.1
						Barrier2	point218	218	0.0	42.1
						Barrier2	point213	213	0.0	42.1
KY-02-02-FRYD-04	77	60.5	0.6	8	-7.4	Barrier2	point200	200	0.0	45.9
						Barrier2	point201	201	0.0	45.3
						Barrier2	point199	199	0.0	45.1

						Barrier2	point210	210	0.0	44.8
						Barrier2	point202	202	0.0	44.7
						Barrier2	point212	212	0.0	44.5
						Barrier2	point214	214	0.0	44.5
						Barrier2	point211	211	0.0	44.4
						Barrier2	point209	209	0.0	44.3
						Barrier2	point198	198	0.0	44.3
KY-02-01-FRYD-04	15	59.3	0.5	8	-7.5	Barrier2	point218	218	0.0	43.1
						Barrier2	point216	216	0.0	42.9
						Barrier2	point219	219	0.0	42.9
						Barrier2	point217	217	0.0	42.8
						Barrier2	point213	213	0.0	42.7
						Barrier2	point212	212	0.0	42.7
						Barrier2	point215	215	0.0	42.6
						Barrier2	point211	211	0.0	42.6
						Barrier2	point214	214	0.0	42.5
						Barrier2	point210	210	0.0	42.4
KY-02-02-FRYD-03	75	60.8	0.4	8	-7.6	Barrier2	point211	211	0.0	45.6
						Barrier2	point212	212	0.0	45.6
						Barrier2	point215	215	0.0	45.5
						Barrier2	point216	216	0.0	45.3
						Barrier2	point213	213	0.0	45.2
						Barrier2	point214	214	0.0	45.2
						Barrier2	point210	210	0.0	45.1
						Barrier2	point201	201	0.0	44.8
						Barrier2	point209	209	0.0	44.7
						Barrier2	point200	200	0.0	44.7
KY-02-01-FRYD-03	14	59.8	0.4	8	-7.6	Barrier2	point218	218	0.0	44.2
						Barrier2	point217	217	0.0	43.7
						Barrier2	point219	219	0.0	43.6
						Barrier2	point213	213	0.0	43.5
						Barrier2	point216	216	0.0	43.5
						Barrier2	point212	212	0.0	43.4
						Barrier2	point214	214	0.0	43.4
						Barrier2	point215	215	0.0	43.3
						Barrier2	point221	221	0.0	43.1

						Barrier2	point211	211	0.0	43.0
KY-02-02-FRYD-02	74	61.4	0.3	8	-7.7	Barrier2	point216	216	0.0	46.7
						Barrier2	point211	211	0.0	46.6
						Barrier2	point213	213	0.0	46.5
						Barrier2	point212	212	0.0	46.4
						Barrier2	point214	214	0.0	46.3
						Barrier2	point217	217	0.0	46.3
						Barrier2	point215	215	0.0	46.2
						Barrier2	point218	218	0.0	45.9
						Barrier2	point210	210	0.0	45.5
						Barrier2	point219	219	0.0	45.4
KY-02-01-FRYD-02	13	60.1	0.3	8	-7.7	Barrier2	point217	217	0.0	44.5
						Barrier2	point219	219	0.0	44.2
						Barrier2	point218	218	0.0	44.1
						Barrier2	point222	222	0.0	44.0
						Barrier2	point216	216	0.0	43.9
						Barrier2	point221	221	0.0	43.7
						Barrier2	point227	227	0.0	43.7
						Barrier2	point220	220	0.0	43.7
						Barrier2	point213	213	0.0	43.6
						Barrier2	point223	223	0.0	43.6
KY-02-02-FRYD-01	73	62.1	0.2	8	-7.8	Barrier2	point217	217	0.0	47.9
						Barrier2	point216	216	0.0	47.8
						Barrier2	point212	212	0.0	47.5
						Barrier2	point215	215	0.0	47.4
						Barrier2	point218	218	0.0	47.4
						Barrier2	point214	214	0.0	47.3
						Barrier2	point213	213	0.0	47.3
						Barrier2	point211	211	0.0	47.1
						Barrier2	point219	219	0.0	46.9
						Barrier2	point220	220	0.0	46.5
KY-02-01-FRYD-01	12	60.4	0.3	8	-7.7	Barrier2	point223	223	0.0	44.8
						Barrier2	point222	222	0.0	44.6
						Barrier2	point218	218	0.0	44.6
						Barrier2	point220	220	0.0	44.5
						Barrier2	point219	219	0.0	44.4

						Barrier2	point217	217	0.0	44.3
						Barrier2	point231	231	0.0	44.3
						Barrier2	point216	216	0.0	44.3
						Barrier2	point221	221	0.0	44.1
						Barrier2	point230	230	0.0	44.1
KY-02-01-CATD-06	10	61.0	0.2	8	-7.8	Barrier2	point221	221	0.0	45.8
						Barrier2	point222	222	0.0	45.7
						Barrier2	point223	223	0.0	45.7
						Barrier2	point231	231	0.0	45.3
						Barrier2	point227	227	0.0	45.2
						Barrier2	point220	220	0.0	45.2
						Barrier2	point232	232	0.0	45.1
						Barrier2	point230	230	0.0	45.1
						Barrier2	point219	219	0.0	45.0
						Barrier2	point224	224	0.0	45.0
KY-02-01-CATD-05	9	61.4	0.1	8	-7.9	Barrier2	point222	222	0.0	46.3
						Barrier2	point223	223	0.0	46.1
						Barrier2	point231	231	0.0	46.0
						Barrier2	point232	232	0.0	46.0
						Barrier2	point221	221	0.0	45.8
						Barrier2	point226	226	0.0	45.8
						Barrier2	point230	230	0.0	45.8
						Barrier2	point220	220	0.0	45.8
						Barrier2	point227	227	0.0	45.7
						Barrier2	point224	224	0.0	45.5
KY-02-01-CATD-04	8	61.5	0.1	8	-7.9	Barrier2	point232	232	0.0	46.3
						Barrier2	point233	233	0.0	46.2
						Barrier2	point222	222	0.0	46.1
						Barrier2	point223	223	0.0	46.1
						Barrier2	point224	224	0.0	46.1
						Barrier2	point226	226	0.0	45.9
						Barrier2	point231	231	0.0	45.9
						Barrier2	point227	227	0.0	45.9
						Barrier2	point230	230	0.0	45.8
						Barrier2	point225	225	0.0	45.7
KY-02-01-CATD-03	7	61.7	0.1	8	-7.9	Barrier2	point233	233	0.0	47.0

						Barrier2	point231	231	0.0	46.6
						Barrier2	point232	232	0.0	46.6
						Barrier2	point234	234	0.0	46.6
						Barrier2	point225	225	0.0	46.5
						Barrier2	point230	230	0.0	46.1
						Barrier2	point235	235	0.0	46.1
						Barrier2	point226	226	0.0	46.1
						Barrier2	point240	240	0.0	45.9
						Barrier2	point223	223	0.0	45.8
KY-02-01-CATD-02	6	61.6	0.1	8	-7.9	Barrier2	point235	235	0.0	46.6
						Barrier2	point241	241	0.0	46.5
						Barrier2	point233	233	0.0	46.1
						Barrier2	point236	236	0.0	46.1
						Barrier2	point234	234	0.0	46.0
						Barrier2	point250	250	0.0	45.9
						Barrier2	point232	232	0.0	45.9
						Barrier2	point251	251	0.0	45.8
						Barrier2	point242	242	0.0	45.8
						Barrier2	point249	249	0.0	45.7
KY-02-01-CATD-01	5	61.9	0.1	8	-7.9	Barrier2	point240	240	0.0	46.7
						Barrier2	point235	235	0.0	46.6
						Barrier2	point239	239	0.0	46.5
						Barrier2	point242	242	0.0	46.4
						Barrier2	point236	236	0.0	46.4
						Barrier2	point241	241	0.0	46.4
						Barrier2	point250	250	0.0	46.4
						Barrier2	point249	249	0.0	46.3
						Barrier2	point251	251	0.0	46.3
						Barrier2	point245	245	0.0	46.2
A5	234	51.9	2.3	8	-5.7	Barrier2	point82	82	14.0	31.4
						Barrier2	point104	104	14.0	31.4
						Barrier2	point102	102	14.0	31.4
						Barrier2	point103	103	14.0	31.3
						Barrier2	point105	105	14.0	31.2
						Barrier2	point77	77	14.0	31.0
						Barrier2	point83	83	14.0	30.9

						Barrier2	point99	99	16.0	30.9
						Barrier2	point100	100	16.0	30.8
						Barrier2	point76	76	14.0	30.8
KY-02-02-NELS-41	123	64.0	5.1	8	-2.9	Barrier2	point8	8	0.0	52.0
						Barrier2	point4	4	0.0	51.7
						Barrier2	point9	9	8.0	49.3
						Barrier2	point17	17	14.0	46.8
						Barrier2	point18	18	14.0	46.6
						Barrier2	point16	16	14.0	46.6
						Barrier2	point15	15	14.0	46.4
						Barrier2	point14	14	14.0	46.1
						Barrier2	point19	19	14.0	45.8
						Barrier2	point13	13	14.0	45.5
KY-02-02-NELS-40	122	61.1	6.0	8	-2.0	Barrier2	point4	4	0.0	46.8
						Barrier2	point8	8	0.0	46.6
						Barrier2	point9	9	8.0	43.6
						Barrier2	point27	27	14.0	43.4
						Barrier2	point28	28	14.0	43.2
						Barrier2	point29	29	14.0	42.5
						Barrier2	point26	26	14.0	42.0
						Barrier2	point30	30	14.0	42.0
						Barrier2	point31	31	14.0	41.9
						Barrier2	point25	25	14.0	41.8
KY-02-02-NELS-38	120	58.9	5.6	8	-2.4	Barrier2	point4	4	0.0	42.2
						Barrier2	point51	51	14.0	41.7
						Barrier2	point52	52	14.0	41.5
						Barrier2	point8	8	0.0	41.1
						Barrier2	point50	50	14.0	40.5
						Barrier2	point53	53	14.0	40.0
						Barrier2	point41	41	14.0	39.9
						Barrier2	point40	40	14.0	39.8
						Barrier2	point9	9	8.0	39.8
						Barrier2	point28	28	14.0	39.6
KY-02-02-NELS-36	118	58.6	6.6	8	-1.4	Barrier2	point8	8	0.0	42.3
						Barrier2	point52	52	14.0	41.7
						Barrier2	point4	4	0.0	41.5

						Barrier2	point53	53	14.0	41.1
						Barrier2	point50	50	14.0	40.8
						Barrier2	point49	49	14.0	40.6
						Barrier2	point54	54	14.0	40.3
						Barrier2	point48	48	14.0	40.2
						Barrier2	point9	9	8.0	40.0
						Barrier2	point47	47	14.0	39.9
KY-02-02-NELS-33	114	57.5	4.8	8	-3.2	Barrier2	point52	52	14.0	40.3
						Barrier2	point51	51	14.0	40.2
						Barrier2	point4	4	0.0	39.6
						Barrier2	point53	53	14.0	39.1
						Barrier2	point68	68	14.0	39.1
						Barrier2	point8	8	0.0	39.0
						Barrier2	point50	50	14.0	39.0
						Barrier2	point69	69	14.0	38.8
						Barrier2	point67	67	14.0	38.8
						Barrier2	point70	70	14.0	38.7
KY-02-02-NELS-32	113	57.3	5.1	8	-2.9	Barrier2	point52	52	14.0	40.4
						Barrier2	point4	4	0.0	40.3
						Barrier2	point70	70	14.0	39.7
						Barrier2	point67	67	14.0	39.6
						Barrier2	point71	71	14.0	39.6
						Barrier2	point68	68	14.0	39.5
						Barrier2	point8	8	0.0	39.4
						Barrier2	point69	69	14.0	39.3
						Barrier2	point51	51	14.0	39.3
						Barrier2	point53	53	14.0	39.2
KY-02-02-NELS-31	112	57.2	5.2	8	-2.8	Barrier2	point68	68	14.0	40.4
						Barrier2	point70	70	14.0	40.3
						Barrier2	point69	69	14.0	40.3
						Barrier2	point71	71	14.0	40.1
						Barrier2	point67	67	14.0	39.8
						Barrier2	point4	4	0.0	39.5
						Barrier2	point9	9	8.0	39.1
						Barrier2	point52	52	14.0	38.6
						Barrier2	point51	51	14.0	38.6

						Barrier2	point72	72	14.0	38.4
KY-02-02-NELS-30	111	56.8	4.6	8	-3.4	Barrier2	point71	71	14.0	40.0
						Barrier2	point70	70	14.0	39.8
						Barrier2	point4	4	0.0	39.5
						Barrier2	point68	68	14.0	39.2
						Barrier2	point69	69	14.0	39.2
						Barrier2	point67	67	14.0	39.2
						Barrier2	point8	8	0.0	38.8
						Barrier2	point52	52	14.0	38.7
						Barrier2	point72	72	14.0	38.4
						Barrier2	point51	51	14.0	37.9
KY-02-02-NELS-29	110	56.9	5.0	8	-3.0	Barrier2	point70	70	14.0	40.2
						Barrier2	point71	71	14.0	40.2
						Barrier2	point69	69	14.0	39.4
						Barrier2	point68	68	14.0	39.3
						Barrier2	point4	4	0.0	39.1
						Barrier2	point67	67	14.0	39.1
						Barrier2	point76	76	14.0	38.7
						Barrier2	point72	72	14.0	38.7
						Barrier2	point8	8	0.0	38.6
						Barrier2	point73	73	14.0	38.1
KY-02-02-RETR-02*	125	57.4	6.3	8	-1.7	Barrier2	point78	78	14.0	41.5
						Barrier2	point77	77	14.0	41.5
						Barrier2	point80	80	14.0	41.5
						Barrier2	point81	81	14.0	41.4
						Barrier2	point79	79	14.0	41.3
						Barrier2	point76	76	14.0	41.2
						Barrier2	point82	82	14.0	41.1
						Barrier2	point83	83	14.0	41.0
						Barrier2	point85	85	14.0	40.8
						Barrier2	point86	86	14.0	40.8
KY-02-01-RETR-05*	63	57.7	7.3	8	-0.7	Barrier2	point91	91	16.0	42.3
						Barrier2	point90	90	16.0	42.1
						Barrier2	point92	92	16.0	42.0
						Barrier2	point89	89	16.0	41.9
						Barrier2	point86	86	14.0	41.8

						Barrier2	point93	93	16.0	41.8
						Barrier2	point88	88	16.0	41.7
						Barrier2	point85	85	14.0	41.7
						Barrier2	point84	84	14.0	41.6
						Barrier2	point94	94	16.0	41.6
KY-02-02-CANL-03*	72	58.1	7.3	8	-0.7	Barrier2	point94	94	16.0	43.0
						Barrier2	point98	98	16.0	43.0
						Barrier2	point97	97	16.0	43.0
						Barrier2	point95	95	16.0	42.9
						Barrier2	point93	93	16.0	42.9
						Barrier2	point99	99	16.0	42.9
						Barrier2	point96	96	16.0	42.9
						Barrier2	point92	92	16.0	42.6
						Barrier2	point100	100	16.0	42.4
						Barrier2	point91	91	16.0	42.3
KY-02-01-CANL-03*	4	59.3	7.4	8	-0.6	Barrier2	point103	103	14.0	46.7
						Barrier2	point104	104	14.0	46.6
						Barrier2	point102	102	14.0	46.6
						Barrier2	point105	105	14.0	46.3
						Barrier2	point5	5	14.0	45.5
						Barrier2	point101	101	16.0	44.9
						Barrier2	point100	100	16.0	44.9
						Barrier2	point106	106	14.0	44.8
						Barrier2	point99	99	16.0	44.5
						Barrier2	point107	107	14.0	44.2
KY-02-02-ROBR-04*	130	60.0	7.4	8	-0.6	Barrier2	point105	105	14.0	47.9
						Barrier2	point5	5	14.0	47.8
						Barrier2	point104	104	14.0	47.2
						Barrier2	point106	106	14.0	47.0
						Barrier2	point103	103	14.0	46.7
						Barrier2	point107	107	14.0	46.5
						Barrier2	point102	102	14.0	46.1
						Barrier2	point108	108	14.0	46.1
						Barrier2	point109	109	14.0	45.9
						Barrier2	point110	110	14.0	45.3
KY-02-01-ROBR-04*	69	61.0	7.7	8	-0.3	Barrier2	point116	116	14.0	48.5

						Barrier2	point115	115	14.0	48.4
						Barrier2	point114	114	14.0	48.3
						Barrier2	point117	117	14.0	48.2
						Barrier2	point113	113	14.0	47.9
						Barrier2	point118	118	14.0	47.7
						Barrier2	point112	112	14.0	47.3
						Barrier2	point111	111	14.0	46.8
						Barrier2	point119	119	14.0	46.7
						Barrier2	point110	110	14.0	46.5
KY-02-02-HARL-05*	88	61.7	8.8	8	0.8	Barrier2	point118	118	14.0	51.1
						Barrier2	point117	117	14.0	50.8
						Barrier2	point119	119	14.0	50.5
						Barrier2	point116	116	14.0	50.0
						Barrier2	point120	120	14.0	49.5
						Barrier2	point115	115	14.0	48.8
						Barrier2	point121	121	14.0	48.4
						Barrier2	point114	114	14.0	47.9
						Barrier2	point113	113	14.0	47.3
						Barrier2	point122	122	14.0	47.1
KY-02-01-HARL-04*	22	61.7	8.3	8	0.3	Barrier2	point119	119	14.0	48.8
						Barrier2	point118	118	14.0	48.7
						Barrier2	point117	117	14.0	48.2
						Barrier2	point124	124	14.0	48.2
						Barrier2	point120	120	14.0	48.0
						Barrier2	point125	125	14.0	47.9
						Barrier2	point123	123	14.0	47.8
						Barrier2	point122	122	14.0	47.5
						Barrier2	point116	116	14.0	47.4
						Barrier2	point121	121	14.0	47.3
KY-02-01-HARL-03*	21	60.9	6.4	8	-1.6	Barrier2	point124	124	14.0	47.2
						Barrier2	point119	119	14.0	47.2
						Barrier2	point120	120	14.0	47.2
						Barrier2	point118	118	14.0	47.0
						Barrier2	point121	121	14.0	46.9
						Barrier2	point117	117	14.0	46.6
						Barrier2	point125	125	14.0	46.4

						Barrier2	point123	123	14.0	46.2
						Barrier2	point116	116	14.0	46.1
						Barrier2	point122	122	14.0	46.0
KY-02-01-HARL-02*	20	60.0	5.9	8	-2.1	Barrier2	point124	124	14.0	45.8
						Barrier2	point123	123	14.0	45.5
						Barrier2	point121	121	14.0	45.5
						Barrier2	point122	122	14.0	45.4
						Barrier2	point120	120	14.0	45.2
						Barrier2	point125	125	14.0	45.0
						Barrier2	point119	119	14.0	45.0
						Barrier2	point118	118	14.0	44.8
						Barrier2	point117	117	14.0	44.7
						Barrier2	point129	129	14.0	44.4
KY-02-02-NELS-08*	99	59.6	7.2	8	-0.8	Barrier2	point124	124	14.0	44.4
						Barrier2	point125	125	14.0	44.3
						Barrier2	point123	123	14.0	44.1
						Barrier2	point129	129	14.0	43.8
						Barrier2	point122	122	14.0	43.7
						Barrier2	point138	138	14.0	43.4
						Barrier2	point139	139	14.0	43.3
						Barrier2	point134	134	14.0	43.3
						Barrier2	point135	135	14.0	43.3
						Barrier2	point130	130	14.0	43.3
KY-02-02-NELS-07*	98	58.8	7.2	8	-0.8	Barrier2	point139	139	14.0	42.6
						Barrier2	point138	138	14.0	42.4
						Barrier2	point125	125	14.0	42.1
						Barrier2	point124	124	14.0	42.1
						Barrier2	point137	137	14.0	42.0
						Barrier2	point135	135	14.0	41.6
						Barrier2	point122	122	14.0	41.6
						Barrier2	point136	136	14.0	41.6
						Barrier2	point129	129	14.0	41.5
						Barrier2	point134	134	14.0	41.4
KY-02-02-NELS-06*	97	57.8	7.0	8	-1.0	Barrier2	point125	125	14.0	40.6
						Barrier2	point148	148	16.0	40.5
						Barrier2	point139	139	14.0	40.5

						Barrier2	point149	149	16.0	40.4
						Barrier2	point150	150	16.0	40.4
						Barrier2	point147	147	16.0	40.3
						Barrier2	point151	151	16.0	40.3
						Barrier2	point138	138	14.0	40.2
						Barrier2	point124	124	14.0	40.2
						Barrier2	point123	123	14.0	40.1
KY-02-02-NELS-05*	96	58.3	8.2	8	0.2	Barrier2	point152	152	16.0	42.4
						Barrier2	point153	153	16.0	42.4
						Barrier2	point151	151	16.0	42.3
						Barrier2	point150	150	16.0	42.1
						Barrier2	point154	154	16.0	42.1
						Barrier2	point149	149	16.0	42.0
						Barrier2	point148	148	16.0	41.8
						Barrier2	point155	155	16.0	41.7
						Barrier2	point147	147	16.0	41.4
						Barrier2	point156	156	16.0	41.3
KY-02-02-NELS-04*	95	57.5	7.1	8	-0.9	Barrier2	point162	162	14.0	40.3
						Barrier2	point163	163	14.0	40.1
						Barrier2	point155	155	16.0	39.9
						Barrier2	point156	156	16.0	39.9
						Barrier2	point158	158	16.0	39.8
						Barrier2	point154	154	16.0	39.8
						Barrier2	point164	164	14.0	39.8
						Barrier2	point153	153	16.0	39.8
						Barrier2	point157	157	16.0	39.8
						Barrier2	point165	165	14.0	39.6
KY-02-02-NELS-03*	93	58.0	7.1	8	-0.9	Barrier2	point166	166	14.0	42.2
						Barrier2	point167	167	14.0	42.1
						Barrier2	point165	165	14.0	42.0
						Barrier2	point168	168	14.0	42.0
						Barrier2	point164	164	14.0	41.9
						Barrier2	point169	169	14.0	41.7
						Barrier2	point163	163	14.0	41.6
						Barrier2	point170	170	14.0	41.3
						Barrier2	point162	162	14.0	41.1

						Barrier2	point185	185	0.0	41.1
KY-02-02-NELS-02*	91	58.6	5.6	8	-2.4	Barrier2	point185	185	0.0	45.7
						Barrier2	point186	186	0.0	44.9
						Barrier2	point187	187	0.0	44.2
						Barrier2	point188	188	0.0	44.1
						Barrier2	point189	189	0.0	42.8
						Barrier2	point174	174	14.0	42.1
						Barrier2	point175	175	14.0	42.0
						Barrier2	point173	173	14.0	41.9
						Barrier2	point178	178	14.0	41.9
						Barrier2	point172	172	14.0	41.7
KY-02-02-NELS-01*	90	59.7	4.7	8	-3.3	Barrier2	point185	185	0.0	49.5
						Barrier2	point186	186	0.0	48.3
						Barrier2	point188	188	0.0	47.1
						Barrier2	point187	187	0.0	47.0
						Barrier2	point189	189	0.0	45.5
						Barrier2	point190	190	0.0	43.8
						Barrier2	point180	180	14.0	43.3
						Barrier2	point181	181	14.0	43.1
						Barrier2	point179	179	14.0	43.0
						Barrier2	point197	197	0.0	42.7
KY-02-01-NELS-17	40	61.2	1.4	8	-6.6	Barrier2	point199	199	0.0	46.5
						Barrier2	point188	188	0.0	46.4
						Barrier2	point189	189	0.0	46.2
						Barrier2	point187	187	0.0	46.2
						Barrier2	point186	186	0.0	45.9
						Barrier2	point190	190	0.0	45.8
						Barrier2	point200	200	0.0	45.8
						Barrier2	point185	185	0.0	45.8
						Barrier2	point210	210	0.0	45.7
						Barrier2	point191	191	0.0	45.6
KY-02-01-NELS-16	39	61.7	0.7	8	-7.3	Barrier2	point200	200	0.0	47.7
						Barrier2	point199	199	0.0	47.4
						Barrier2	point201	201	0.0	46.7
						Barrier2	point212	212	0.0	46.6
						Barrier2	point211	211	0.0	46.4

						Barrier2	point213	213	0.0	46.4
						Barrier2	point198	198	0.0	46.1
						Barrier2	point214	214	0.0	45.9
						Barrier2	point197	197	0.0	45.8
						Barrier2	point215	215	0.0	45.6
KY-02-01-NELS-15	38	63.8	0.3	8	-7.7	Barrier2	point201	201	0.0	51.4
						Barrier2	point200	200	0.0	51.4
						Barrier2	point212	212	0.0	49.9
						Barrier2	point211	211	0.0	49.6
						Barrier2	point210	210	0.0	49.5
						Barrier2	point199	199	0.0	49.4
						Barrier2	point213	213	0.0	49.4
						Barrier2	point202	202	0.0	49.1
						Barrier2	point214	214	0.0	48.7
						Barrier2	point209	209	0.0	48.6
KY-02-01-NELS-14	37	61.8	0.4	8	-7.6	Barrier2	point213	213	0.0	47.5
						Barrier2	point210	210	0.0	47.5
						Barrier2	point211	211	0.0	47.3
						Barrier2	point212	212	0.0	47.0
						Barrier2	point201	201	0.0	46.9
						Barrier2	point215	215	0.0	46.8
						Barrier2	point209	209	0.0	46.6
						Barrier2	point202	202	0.0	46.6
						Barrier2	point200	200	0.0	46.6
						Barrier2	point203	203	0.0	46.1
KY-02-01-NELS-13	36	62.5	0.2	8	-7.8	Barrier2	point216	216	0.0	48.7
						Barrier2	point212	212	0.0	48.6
						Barrier2	point213	213	0.0	48.6
						Barrier2	point215	215	0.0	48.5
						Barrier2	point214	214	0.0	48.4
						Barrier2	point211	211	0.0	48.4
						Barrier2	point217	217	0.0	48.0
						Barrier2	point210	210	0.0	47.5
						Barrier2	point218	218	0.0	46.9
						Barrier2	point209	209	0.0	46.8
KY-02-01-NELS-12	35	62.7	0.2	8	-7.8	Barrier2	point215	215	0.0	48.8

						Barrier2	point216	216	0.0	48.7
						Barrier2	point214	214	0.0	48.6
						Barrier2	point217	217	0.0	48.5
						Barrier2	point218	218	0.0	48.3
						Barrier2	point213	213	0.0	48.2
						Barrier2	point211	211	0.0	48.2
						Barrier2	point219	219	0.0	48.1
						Barrier2	point212	212	0.0	48.0
						Barrier2	point220	220	0.0	47.7
KY-02-01-NELS-11	33	63.2	0.1	8	-7.9	Barrier2	point218	218	0.0	49.6
						Barrier2	point217	217	0.0	49.5
						Barrier2	point216	216	0.0	49.4
						Barrier2	point219	219	0.0	49.2
						Barrier2	point221	221	0.0	49.0
						Barrier2	point222	222	0.0	49.0
						Barrier2	point220	220	0.0	49.0
						Barrier2	point215	215	0.0	48.8
						Barrier2	point223	223	0.0	48.6
						Barrier2	point212	212	0.0	48.3
KY-02-01-NELS-10	32	63.3	0.1	8	-7.9	Barrier2	point221	221	0.0	49.9
						Barrier2	point222	222	0.0	49.7
						Barrier2	point223	223	0.0	49.6
						Barrier2	point220	220	0.0	49.5
						Barrier2	point219	219	0.0	49.1
						Barrier2	point224	224	0.0	49.0
						Barrier2	point218	218	0.0	48.7
						Barrier2	point231	231	0.0	48.5
						Barrier2	point225	225	0.0	48.3
						Barrier2	point227	227	0.0	48.2
KY-02-01-NELS-09	31	63.4	0.0	8	-8.0	Barrier2	point232	232	0.0	49.7
						Barrier2	point231	231	0.0	49.7
						Barrier2	point230	230	0.0	49.6
						Barrier2	point233	233	0.0	48.9
						Barrier2	point225	225	0.0	48.8
						Barrier2	point224	224	0.0	48.7
						Barrier2	point226	226	0.0	48.7

						Barrier2	point223	223	0.0	48.6
						Barrier2	point227	227	0.0	48.6
						Barrier2	point222	222	0.0	48.5
KY-02-01-NELS-08	30	63.6	0.0	8	-8.0	Barrier2	point232	232	0.0	50.4
						Barrier2	point233	233	0.0	50.3
						Barrier2	point231	231	0.0	50.2
						Barrier2	point230	230	0.0	49.6
						Barrier2	point234	234	0.0	49.2
						Barrier2	point235	235	0.0	49.0
						Barrier2	point227	227	0.0	48.9
						Barrier2	point226	226	0.0	48.7
						Barrier2	point236	236	0.0	48.6
						Barrier2	point225	225	0.0	48.5
KY-02-01-NELS-07	29	63.6	0.1	8	-7.9	Barrier2	point234	234	0.0	50.5
						Barrier2	point233	233	0.0	50.3
						Barrier2	point232	232	0.0	50.2
						Barrier2	point235	235	0.0	49.8
						Barrier2	point236	236	0.0	49.3
						Barrier2	point242	242	0.0	49.1
						Barrier2	point231	231	0.0	49.1
						Barrier2	point239	239	0.0	48.9
						Barrier2	point240	240	0.0	48.5
						Barrier2	point227	227	0.0	48.4
KY-02-01-NELS-06	28	63.7	0.1	8	-7.9	Barrier2	point235	235	0.0	50.1
						Barrier2	point236	236	0.0	50.1
						Barrier2	point241	241	0.0	49.8
						Barrier2	point234	234	0.0	49.8
						Barrier2	point239	239	0.0	49.5
						Barrier2	point240	240	0.0	49.5
						Barrier2	point233	233	0.0	49.5
						Barrier2	point243	243	0.0	49.3
						Barrier2	point242	242	0.0	49.1
						Barrier2	point249	249	0.0	48.8
KY-02-01-NELS-05	27	63.8	0.0	8	-8.0	Barrier2	point241	241	0.0	50.1
						Barrier2	point250	250	0.0	50.0
						Barrier2	point242	242	0.0	49.9

						Barrier2	point249	249	0.0	49.9
						Barrier2	point240	240	0.0	49.7
						Barrier2	point248	248	0.0	49.6
						Barrier2	point239	239	0.0	49.6
						Barrier2	point251	251	0.0	49.5
						Barrier2	point243	243	0.0	49.5
						Barrier2	point245	245	0.0	49.4
Total Cost, All Barriers (including additional cost(s))					$1464417					

HMB Professional Engineers **15 March 2018**
MG/mdg **TNM 2.5**

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT: **I-69 ORX**
RUN: **West 2_West of 41_Elm to Watson Ln_C**
BARRIER DESIGN: **W2_West41_Elm2Watson**

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	$
Barrier2	W	8.00	14.33	16.00	3406	48814				1464417
Barrier3	W	0.00	0.00	0.00	0	0				0
									Total Cost:	1464417

HMB Professional Engineers 15 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_West of 41_Elm to Watson Ln_C
BARRIER DESIGN: W2_West41_Elm2Watson

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier2	W	point4	4	0.00	0.00	0.00	0	0				0
		point8	8	0.00	0.00	0.00	0	0				0
		point9	9	8.00	8.00	8.00	20	159				4777
		point10	10	14.00	14.00	14.00	20	282				8456
		point11	11	14.00	14.00	14.00	20	279				8369
		point12	12	14.00	14.00	14.00	20	279				8361
		point13	13	14.00	14.00	14.00	20	282				8456
		point14	14	14.00	14.00	14.00	20	279				8369
		point15	15	14.00	14.00	14.00	20	279				8361
		point16	16	14.00	14.00	14.00	20	282				8456
		point17	17	14.00	14.00	14.00	20	279				8369
		point18	18	14.00	14.00	14.00	20	282				8456
		point19	19	14.00	14.00	14.00	20	282				8456
		point20	20	14.00	14.00	14.00	20	276				8273
		point21	21	14.00	14.00	14.00	20	282				8456
		point22	22	14.00	14.00	14.00	20	282				8456
		point23	23	14.00	14.00	14.00	20	276				8273
		point24	24	14.00	14.00	14.00	20	282				8456
		point25	25	14.00	14.00	14.00	20	282				8456
		point26	26	14.00	14.00	14.00	20	276				8273
		point27	27	14.00	14.00	14.00	20	282				8456
		point28	28	14.00	14.00	14.00	20	282				8456
		point29	29	14.00	14.00	14.00	20	279				8369
		point30	30	14.00	14.00	14.00	20	279				8361
		point31	31	14.00	14.00	14.00	20	282				8456
		point32	32	14.00	14.00	14.00	20	279				8369

		point33	33	14.00	14.00	14.00	20	282				8456
		point34	34	14.00	14.00	14.00	20	279				8361
		point35	35	14.00	14.00	14.00	20	279				8369
		point36	36	14.00	14.00	14.00	20	282				8456
		point37	37	14.00	14.00	14.00	20	279				8361
		point38	38	14.00	14.00	14.00	20	279				8369
		point39	39	14.00	14.00	14.00	20	282				8456
		point40	40	14.00	14.00	14.00	20	279				8361
		point41	41	14.00	14.00	14.00	20	279				8369
		point42	42	14.00	14.00	14.00	20	282				8456
		point43	43	14.00	14.00	14.00	20	282				8456
		point44	44	14.00	14.00	14.00	20	279				8369
		point45	45	14.00	14.00	14.00	20	279				8361
		point46	46	14.00	14.00	14.00	20	282				8456
		point47	47	14.00	14.00	14.00	20	279				8369
		point48	48	14.00	14.00	14.00	20	279				8361
		point49	49	14.00	14.00	14.00	20	282				8456
		point50	50	14.00	14.00	14.00	20	279				8369
		point51	51	14.00	14.00	14.00	20	279				8361
		point52	52	14.00	14.00	14.00	20	282				8456
		point53	53	14.00	14.00	14.00	20	279				8369
		point54	54	14.00	14.00	14.00	20	279				8361
		point55	55	14.00	14.00	14.00	20	282				8456
		point56	56	14.00	14.00	14.00	20	279				8369
		point57	57	14.00	14.00	14.00	20	282				8456
		point58	58	14.00	14.00	14.00	20	282				8456
		point59	59	14.00	14.00	14.00	20	276				8273
		point60	60	14.00	14.00	14.00	20	282				8456
		point61	61	14.00	14.00	14.00	20	282				8456
		point62	62	14.00	14.00	14.00	20	276				8273
		point63	63	14.00	14.00	14.00	20	282				8456
		point64	64	14.00	14.00	14.00	20	282				8456
		point65	65	14.00	14.00	14.00	20	276				8273
		point66	66	14.00	14.00	14.00	20	282				8456
		point67	67	14.00	14.00	14.00	20	282				8456
		point68	68	14.00	14.00	14.00	20	279				8369
		point69	69	14.00	14.00	14.00	20	279				8361
		point70	70	14.00	14.00	14.00	20	282				8456
		point71	71	14.00	14.00	14.00	20	279				8369

		point72	72	14.00	14.00	14.00	20	282				8456
		point73	73	14.00	14.00	14.00	20	279				8361
		point74	74	14.00	14.00	14.00	20	279				8369
		point75	75	14.00	14.00	14.00	20	282				8456
		point76	76	14.00	14.00	14.00	20	279				8361
		point77	77	14.00	14.00	14.00	20	279				8369
		point78	78	14.00	14.00	14.00	20	282				8456
		point79	79	14.00	14.00	14.00	20	279				8361
		point80	80	14.00	14.00	14.00	20	279				8369
		point81	81	14.00	14.00	14.00	20	282				8456
		point82	82	14.00	14.00	14.00	20	282				8456
		point83	83	14.00	14.00	14.00	20	279				8369
		point84	84	14.00	14.00	14.00	20	279				8361
		point85	85	14.00	14.00	14.00	20	282				8456
		point86	86	14.00	14.00	14.00	20	279				8369
		point87	87	16.00	16.00	16.00	20	318				9555
		point88	88	16.00	16.00	16.00	20	322				9664
		point89	89	16.00	16.00	16.00	20	319				9565
		point90	90	16.00	16.00	16.00	20	318				9555
		point91	91	16.00	16.00	16.00	20	322				9664
		point92	92	16.00	16.00	16.00	20	319				9565
		point93	93	16.00	16.00	16.00	20	318				9555
		point94	94	16.00	16.00	16.00	20	322				9664
		point95	95	16.00	16.00	16.00	20	319				9565
		point96	96	16.00	16.00	16.00	20	322				9664
		point97	97	16.00	16.00	16.00	20	322				9664
		point98	98	16.00	16.00	16.00	20	315				9455
		point99	99	16.00	16.00	16.00	20	322				9664
		point100	100	16.00	16.00	16.00	20	322				9664
		point101	101	16.00	16.00	16.00	20	315				9455
		point102	102	14.00	14.00	14.00	20	282				8456
		point103	103	14.00	14.00	14.00	20	282				8456
		point104	104	14.00	14.00	14.00	20	276				8273
		point105	105	14.00	14.00	14.00	20	282				8456
		point5	5	14.00	14.00	14.00	20	282				8456
		point106	106	14.00	14.00	14.00	20	279				8369
		point107	107	14.00	14.00	14.00	20	279				8361
		point108	108	14.00	14.00	14.00	20	282				8456
		point109	109	14.00	14.00	14.00	20	279				8369

		point110	110	14.00	14.00	14.00	20	282				8456
		point111	111	14.00	14.00	14.00	20	279				8361
		point112	112	14.00	14.00	14.00	20	279				8369
		point113	113	14.00	14.00	14.00	20	282				8456
		point114	114	14.00	14.00	14.00	20	279				8361
		point115	115	14.00	14.00	14.00	20	279				8369
		point116	116	14.00	14.00	14.00	20	282				8456
		point117	117	14.00	14.00	14.00	20	279				8361
		point118	118	14.00	14.00	14.00	20	279				8369
		point119	119	14.00	14.00	14.00	20	282				8456
		point120	120	14.00	14.00	14.00	20	282				8456
		point121	121	14.00	14.00	14.00	20	279				8369
		point122	122	14.00	14.00	14.00	20	279				8361
		point123	123	14.00	14.00	14.00	20	282				8456
		point124	124	14.00	14.00	14.00	20	279				8369
		point125	125	14.00	14.00	14.00	20	279				8361
		point126	126	14.00	14.00	14.00	20	282				8456
		point127	127	14.00	14.00	14.00	20	279				8369
		point128	128	14.00	14.00	14.00	20	279				8361
		point129	129	14.00	14.00	14.00	20	282				8456
		point130	130	14.00	14.00	14.00	20	279				8369
		point131	131	14.00	14.00	14.00	20	282				8456
		point132	132	14.00	14.00	14.00	20	279				8361
		point133	133	14.00	14.00	14.00	20	279				8369
		point134	134	14.00	14.00	14.00	20	282				8456
		point135	135	14.00	14.00	14.00	20	282				8456
		point136	136	14.00	14.00	14.00	20	276				8273
		point137	137	14.00	14.00	14.00	20	282				8456
		point138	138	14.00	14.00	14.00	20	282				8456
		point139	139	14.00	14.00	14.00	20	276				8273
		point140	140	16.00	16.00	16.00	20	322				9664
		point141	141	16.00	16.00	16.00	6	93				2791
		point144	144	16.00	16.00	16.00	20	319				9582
		point145	145	16.00	16.00	16.00	20	319				9582
		point146	146	16.00	16.00	16.00	20	319				9582
		point147	147	16.00	16.00	16.00	20	319				9582
		point148	148	16.00	16.00	16.00	20	322				9675
		point149	149	16.00	16.00	16.00	20	319				9582
		point150	150	16.00	16.00	16.00	20	319				9582

		point151	151	16.00	16.00	16.00	20	319				9582
		point152	152	16.00	16.00	16.00	20	319				9582
		point153	153	16.00	16.00	16.00	20	322				9675
		point154	154	16.00	16.00	16.00	20	319				9582
		point155	155	16.00	16.00	16.00	20	319				9582
		point156	156	16.00	16.00	16.00	20	319				9582
		point157	157	16.00	16.00	16.00	20	319				9582
		point158	158	16.00	16.00	16.00	21	330				9895
		point161	161	16.00	16.00	16.00	20	318				9555
		point162	162	14.00	14.00	14.00	20	279				8369
		point163	163	14.00	14.00	14.00	20	282				8456
		point164	164	14.00	14.00	14.00	20	279				8361
		point165	165	14.00	14.00	14.00	20	279				8369
		point166	166	14.00	14.00	14.00	20	282				8456
		point167	167	14.00	14.00	14.00	20	279				8361
		point168	168	14.00	14.00	14.00	20	279				8369
		point169	169	14.00	14.00	14.00	20	282				8456
		point170	170	14.00	14.00	14.00	20	282				8456
		point171	171	14.00	14.00	14.00	20	276				8273
		point172	172	14.00	14.00	14.00	20	282				8456
		point173	173	14.00	14.00	14.00	20	282				8456
		point174	174	14.00	14.00	14.00	20	279				8369
		point175	175	14.00	14.00	14.00	20	276				8266
		point178	178	14.00	14.00	14.00	20	282				8465
		point179	179	14.00	14.00	14.00	20	279				8369
		point180	180	14.00	14.00	14.00	20	282				8465
		point181	181	14.00	14.00	14.00	20	276				8287
		point182	182	14.00	14.00	14.00	20	279				8369
		point183	183	14.00	14.00	14.00	20	282				8465
		point184	184	12.00	12.00	12.00	20	239				7174
		point185	185	0.00	0.00	0.00	0	0				0
		point186	186	0.00	0.00	0.00	0	0				0
		point187	187	0.00	0.00	0.00	0	0				0
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		point194	194	0.00	0.00	0.00	0	0				0

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		point197	197	0.00	0.00	0.00	0	0				0
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		point6	6	0.00	0.00	0.00	0	0				0
		point204	204	0.00	0.00	0.00	0	0				0
		point206	206	0.00	0.00	0.00	0	0				0
		point207	207	0.00	0.00	0.00	0	0				0
		point208	208	0.00	0.00	0.00	0	0				0
		point209	209	0.00	0.00	0.00	0	0				0
		point210	210	0.00	0.00	0.00	0	0				0
		point211	211	0.00	0.00	0.00	0	0				0
		point212	212	0.00	0.00	0.00	0	0				0
		point213	213	0.00	0.00	0.00	0	0				0
		point214	214	0.00	0.00	0.00	0	0				0
		point215	215	0.00	0.00	0.00	0	0				0
		point216	216	0.00	0.00	0.00	0	0				0
		point217	217	0.00	0.00	0.00	0	0				0
		point218	218	0.00	0.00	0.00	0	0				0
		point219	219	0.00	0.00	0.00	0	0				0
		point220	220	0.00	0.00	0.00	0	0				0
		point221	221	0.00	0.00	0.00	0	0				0
		point222	222	0.00	0.00	0.00	0	0				0
		point223	223	0.00	0.00	0.00	0	0				0
		point224	224	0.00	0.00	0.00	0	0				0
		point225	225	0.00	0.00	0.00	0	0				0
		point226	226	0.00	0.00	0.00	0	0				0
		point227	227	0.00	0.00	0.00	0	0				0
		point229	229	0.00	0.00	0.00	0	0				0
		point230	230	0.00	0.00	0.00	0	0				0
		point231	231	0.00	0.00	0.00	0	0				0
		point232	232	0.00	0.00	0.00	0	0				0
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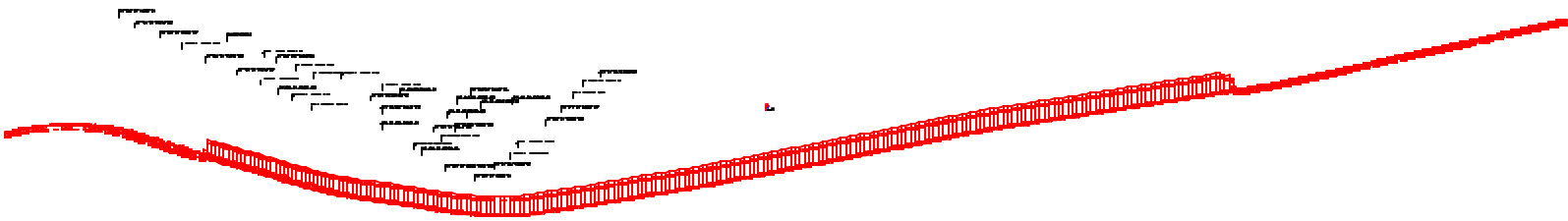
		point234	234	0.00	0.00	0.00	0	0				0

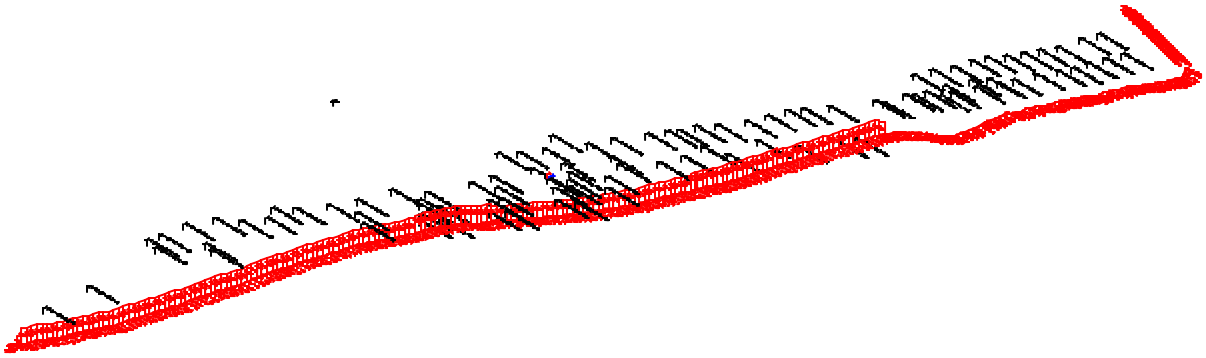
		point235	235	0.00	0.00	0.00	0	0				0
		point236	236	0.00	0.00	0.00	0	0				0
		point238	238	0.00	0.00	0.00	0	0				0
		point239	239	0.00	0.00	0.00	0	0				0
		point240	240	0.00	0.00	0.00	0	0				0
		point241	241	0.00	0.00	0.00	0	0				0
		point242	242	0.00	0.00	0.00	0	0				0
		point243	243	0.00	0.00	0.00	0	0				0
		point244	244	0.00	0.00	0.00	0	0				0
		point245	245	0.00	0.00	0.00	0	0				0
		point246	246	0.00	0.00	0.00	0	0				0
		point248	248	0.00	0.00	0.00	0	0				0
		point249	249	0.00	0.00	0.00	0	0				0
		point250	250	0.00	0.00	0.00	0	0				0
		point251	251	0.00	0.00	0.00	0	0				0
		point252	252	0.00	0.00	0.00	0	0				0
		point253	253	0.00	0.00	0.00	0	0				0
Barrier3	W	point254	254	0.00	0.00	0.00	0	0				0
		point256	256	0.00	0.00	0.00	0	0				0
		point257	257	0.00	0.00	0.00	0	0				0
		point258	258	0.00	0.00	0.00	0	0				0
		point259	259	0.00	0.00	0.00	0	0				0
		point260	260	0.00	0.00	0.00	0	0				0
		point261	261	0.00	0.00	0.00	0	0				0
		point262	262	0.00	0.00	0.00	0	0				0
		point263	263	0.00	0.00	0.00	0	0				0
		point264	264	0.00	0.00	0.00	0	0				0
		point265	265	0.00	0.00	0.00	0	0				0
		point266	266	0.00	0.00	0.00	0	0				0
		point267	267	0.00	0.00	0.00	0	0				0
		point268	268	0.00	0.00	0.00	0	0				0
		point269	269	0.00	0.00	0.00	0	0				0
		point270	270	0.00	0.00	0.00	0	0				0
		point271	271	0.00	0.00	0.00	0	0				0
		point272	272	0.00	0.00	0.00	0	0				0
		point273	273	0.00	0.00	0.00	0	0				0
		point274	274	0.00	0.00	0.00	0	0				0
		point275	275	0.00	0.00	0.00	0	0				0

		point276	276	0.00	0.00	0.00	0	0				0



1294.11 KY Cent All Rates* Barrier 4A/B	Sheet 1 of 1	12 Mar 2018
	HMB Professional Engineers	
Barrier View-C1_TollAll_AreaA	Project/Contract No. I-69	
Run name: C1_04_TollAll_AB	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: Mark Gavula	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	



West 2_West of 41_Elm to Watson Ln_C	Sheet 1 of 1	15 Mar 2018
	HMB Professional Engineers	
Barrier View-W2_West41_Elm2Watson	Project/Contract No. I-69 ORX	
Run name: W2_02_TollAll_C	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 2 – SUNSET MOBILE HOME PARK

HMB Professional Engineers 15 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_Barrier Area D
BARRIER DESIGN: W2_Sunset Mobile Home Park_D1
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-02-02-STPD-07	118	1	58.7	63.0	66	4.3	10	----	62.9	0.1	8	-7.9
KY-02-02-STPD-06	117	1	56.9	61.9	66	5.0	10	----	61.6	0.3	8	-7.7
KY-02-02-STPD-05	116	1	56.5	61.7	66	5.2	10	----	61.3	0.4	8	-7.6
KY-02-02-STPD-04	115	1	56.3	61.7	66	5.4	10	----	61.2	0.5	8	-7.5
KY-02-01-CBTP-16	17	1	57.5	62.2	66	4.7	10	----	60.6	1.6	8	-6.4
KY-02-01-CBTP-15	16	1	58.3	62.8	66	4.5	10	----	60.8	2.0	8	-6.0
KY-02-01-TP-36	71	1	49.9	61.7	66	11.8	10	Sub'l Inc	58.2	3.5	8	-4.5
KY-02-01-TP-29	63	1	49.9	61.7	66	11.8	10	Sub'l Inc	57.9	3.8	8	-4.2
KY-02-01-TP-22	55	1	49.9	61.3	66	11.4	10	Sub'l Inc	57.5	3.8	8	-4.2
KY-02-01-TP-16	49	1	49.9	61.3	66	11.4	10	Sub'l Inc	57.4	3.9	8	-4.1
KY-02-01-TP-30	64	1	49.9	62.2	66	12.3	10	Sub'l Inc	58.0	4.2	8	-3.8
KY-02-01-TP-23	56	1	49.9	61.9	66	12.0	10	Sub'l Inc	57.8	4.1	8	-3.9
KY-02-01-TP-17	50	1	49.9	61.8	66	11.9	10	Sub'l Inc	57.7	4.1	8	-3.9
KY-02-01-TP-18	51	1	57.7	62.5	66	4.8	10	----	58.0	4.5	8	-3.5
KY-02-01-TP-24	57	1	57.4	62.5	66	5.1	10	----	58.0	4.5	8	-3.5
KY-02-01-TP-31	65	1	57.5	62.6	66	5.1	10	----	58.2	4.4	8	-3.6
KY-02-01-TP-37	72	1	49.9	62.5	66	12.6	10	Sub'l Inc	58.7	3.8	8	-4.2
KY-02-01-TP-42	77	1	57.9	63.2	66	5.3	10	----	58.8	4.4	8	-3.6
KY-02-01-TP-32	66	1	58.2	63.5	66	5.3	10	----	58.5	5.0	8	-3.0
KY-02-01-TP-25	58	1	58.2	63.4	66	5.2	10	----	58.3	5.1	8	-2.9
KY-02-01-TP-19	52	1	58.3	63.3	66	5.0	10	----	58.3	5.0	8	-3.0
KY-02-01-TP-20	53	1	58.9	63.9	66	5.0	10	----	58.6	5.3	8	-2.7
KY-02-01-TP-26	60	1	58.9	64.0	66	5.1	10	----	58.5	5.5	8	-2.5
KY-02-01-TP-33	67	1	58.8	64.1	66	5.3	10	----	58.7	5.4	8	-2.6

KY-02-01-TP-43	78	1	58.3	63.6	66	5.3	10	----	58.8	4.8	8	-3.2
KY-02-01-CBTP-10	10	1	49.9	61.1	66	11.2	10	Sub'l Inc	58.0	3.1	8	-4.9
KY-02-01-CBTP-11	11	1	49.9	61.7	66	11.8	10	Sub'l Inc	58.6	3.1	8	-4.9
KY-02-01-CBTP-12	12	1	49.9	62.2	66	12.3	10	Sub'l Inc	59.1	3.1	8	-4.9
KY-02-01-CBTP-13	13	1	57.5	62.5	66	5.0	10	----	59.4	3.1	8	-4.9
KY-02-01-CBTP-14	15	1	58.1	63.0	66	4.9	10	----	60.0	3.0	8	-5.0
KY-02-01-TP-47	83	1	58.6	64.0	66	5.4	10	----	59.0	5.0	8	-3.0
KY-02-01-TP-44	79	1	58.9	64.2	66	5.3	10	----	58.9	5.3	8	-2.7
KY-02-01-TP-34	68	1	59.4	64.8	66	5.4	10	----	58.8	6.0	8	-2.0
KY-02-01-TP-27	61	1	59.4	64.6	66	5.2	10	----	58.7	5.9	8	-2.1
KY-02-01-TP-21	54	1	59.5	64.5	66	5.0	10	----	58.9	5.6	8	-2.4
KY-02-01-TP-48	84	1	59.3	64.7	66	5.4	10	----	59.1	5.6	8	-2.4
KY-02-01-TP-45	80	1	59.3	64.7	66	5.4	10	----	59.0	5.7	8	-2.3
KY-02-01-TP-35	69	1	60.2	65.8	66	5.6	10	----	58.9	6.9	8	-1.1
KY-02-01-TP-28	62	1	60.3	65.7	66	5.4	10	----	58.8	6.9	8	-1.1
KY-02-01-TP-06*	44	1	60.5	65.6	66	5.1	10	----	59.0	6.6	8	-1.4
A10	124	1	49.9	60.8	66	10.9	10	Sub'l Inc	59.3	1.5	8	-6.5
KY-02-01-NELS-04	38	1	61.0	65.4	66	4.4	10	----	65.2	0.2	8	-7.8
KY-02-02-NELS-26	105	1	63.1	67.1	66	4.0	10	Snd Lvl	66.2	0.9	8	-7.1
KY-02-02-NELS-25	104	1	62.7	66.2	66	3.5	10	Snd Lvl	64.6	1.6	8	-6.4
KY-02-01-TP-41	76	1	60.3	64.9	66	4.6	10	----	60.3	4.6	8	-3.4
KY-02-01-TP-40	75	1	62.8	69.4	66	6.6	10	Snd Lvl	69.4	0.0	8	-8.0
KY-02-01-TP-39	74	1	59.2	64.2	66	5.0	10	----	59.7	4.5	8	-3.5
KY-02-01-TP-38	73	1	58.2	63.5	66	5.3	10	----	59.2	4.3	8	-3.7
KY-02-01-TP-49	85	1	60.1	65.3	66	5.2	10	----	59.2	6.1	8	-1.9
KY-02-01-TP-46	82	1	60.2	65.6	66	5.4	10	----	59.0	6.6	8	-1.4
KY-02-01-TP-09*	47	1	61.8	67.0	66	5.2	10	Snd Lvl	58.9	8.1	8	0.1
KY-02-01-TP-08*	46	1	61.7	66.7	66	5.0	10	Snd Lvl	58.7	8.0	8	0.0
KY-02-01-TP-07*	45	1	61.9	66.9	66	5.0	10	Snd Lvl	59.0	7.9	8	-0.1

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	53	0.0	4.1	8.1
All Impacted	18	0.0	3.8	8.1
All that meet NR Goal	1	8.1	8.1	8.1

HMB Professional Engineers 15 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_Barrier Area D
BARRIER DESIGN: W2_Sunset Mobile Home Park_D1

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-02-02-STPD-07	118	62.9	0.1	8	-7.9	Barrier D-01	point10	10	14.0	45.5
						Barrier D-01	point6	6	0.0	45.4
						Barrier D-01	point7	7	12.0	45.2
						Barrier D-01	point12	12	14.0	45.2
						Barrier D-01	point9	9	14.0	45.1
						Barrier D-01	point13	13	14.0	45.0
						Barrier D-01	point14	14	12.0	44.7
						Barrier D-01	point15	15	12.0	44.7
						Barrier D-01	point8	8	14.0	44.6
						Barrier D-01	point16	16	14.0	44.6
KY-02-02-STPD-06	117	61.6	0.3	8	-7.7	Barrier D-01	point7	7	12.0	45.6
						Barrier D-01	point12	12	14.0	45.3
						Barrier D-01	point8	8	14.0	45.1
						Barrier D-01	point6	6	0.0	45.1
						Barrier D-01	point9	9	14.0	44.9
						Barrier D-01	point10	10	14.0	44.9
						Barrier D-01	point15	15	12.0	44.8
						Barrier D-01	point13	13	14.0	44.8
						Barrier D-01	point14	14	12.0	44.7
						Barrier D-01	point16	16	14.0	44.6
KY-02-02-STPD-05	116	61.3	0.4	8	-7.6	Barrier D-01	point8	8	14.0	45.7

						Barrier D-01	point7	7	12.0	45.4
						Barrier D-01	point6	6	0.0	45.4
						Barrier D-01	point10	10	14.0	45.1
						Barrier D-01	point18	18	14.0	45.1
						Barrier D-01	point13	13	14.0	45.0
						Barrier D-01	point12	12	14.0	45.0
						Barrier D-01	point5	5	0.0	44.9
						Barrier D-01	point14	14	12.0	44.9
						Barrier D-01	point16	16	14.0	44.9
KY-02-02-STPD-04	115	61.2	0.5	8	-7.5	Barrier D-01	point8	8	14.0	45.7
						Barrier D-01	point6	6	0.0	45.4
						Barrier D-01	point9	9	14.0	45.3
						Barrier D-01	point16	16	14.0	45.2
						Barrier D-01	point19	19	14.0	45.2
						Barrier D-01	point24	24	14.0	45.1
						Barrier D-01	point17	17	14.0	45.1
						Barrier D-01	point18	18	14.0	45.1
						Barrier D-01	point12	12	14.0	45.1
						Barrier D-01	point7	7	12.0	45.0
KY-02-01-CBTP-16	17	60.6	1.6	8	-6.4	Barrier D-01	point30	30	18.0	45.9
						Barrier D-01	point26	26	14.0	45.7
						Barrier D-01	point31	31	20.0	45.6
						Barrier D-01	point22	22	14.0	45.3
						Barrier D-01	point25	25	14.0	45.3
						Barrier D-01	point28	28	18.0	45.0
						Barrier D-01	point27	27	18.0	45.0
						Barrier D-01	point23	23	14.0	44.9
						Barrier D-01	point32	32	20.0	44.8
						Barrier D-01	point24	24	14.0	44.8
KY-02-01-CBTP-15	16	60.8	2.0	8	-6.0	Barrier D-01	point30	30	18.0	46.6
						Barrier D-01	point31	31	20.0	46.3
						Barrier D-01	point26	26	14.0	46.1
						Barrier D-01	point32	32	20.0	46.0
						Barrier D-01	point28	28	18.0	45.7
						Barrier D-01	point27	27	18.0	45.7
						Barrier D-01	point25	25	14.0	45.6

						Barrier D-01	point23	23	14.0	45.5
						Barrier D-01	point24	24	14.0	45.3
						Barrier D-01	point22	22	14.0	45.3
KY-02-01-TP-36	71	58.2	3.5	8	-4.5	Barrier D-01	point34	34	20.0	42.2
						Barrier D-01	point32	32	20.0	42.2
						Barrier D-01	point31	31	20.0	42.1
						Barrier D-01	point33	33	20.0	42.0
						Barrier D-01	point36	36	20.0	41.4
						Barrier D-01	point35	35	20.0	41.3
						Barrier D-01	point30	30	18.0	41.1
						Barrier D-01	point26	26	14.0	40.7
						Barrier D-01	point39	39	20.0	40.7
						Barrier D-01	point28	28	18.0	40.6
KY-02-01-TP-29	63	57.9	3.8	8	-4.2	Barrier D-01	point34	34	20.0	41.1
						Barrier D-01	point32	32	20.0	41.0
						Barrier D-01	point33	33	20.0	40.9
						Barrier D-01	point31	31	20.0	40.8
						Barrier D-01	point36	36	20.0	40.6
						Barrier D-01	point35	35	20.0	40.5
						Barrier D-01	point30	30	18.0	40.4
						Barrier D-01	point39	39	20.0	39.8
						Barrier D-01	point28	28	18.0	39.7
						Barrier D-01	point40	40	20.0	39.4
KY-02-01-TP-22	55	57.5	3.8	8	-4.2	Barrier D-01	point34	34	20.0	40.2
						Barrier D-01	point32	32	20.0	40.1
						Barrier D-01	point33	33	20.0	40.0
						Barrier D-01	point31	31	20.0	40.0
						Barrier D-01	point36	36	20.0	39.8
						Barrier D-01	point35	35	20.0	39.6
						Barrier D-01	point30	30	18.0	39.5
						Barrier D-01	point39	39	20.0	39.0
						Barrier D-01	point28	28	18.0	38.9
						Barrier D-01	point40	40	20.0	38.8
KY-02-01-TP-16	49	57.4	3.9	8	-4.1	Barrier D-01	point34	34	20.0	39.5
						Barrier D-01	point32	32	20.0	39.4
						Barrier D-01	point36	36	20.0	39.3

						Barrier D-01	point33	33	20.0	39.3
						Barrier D-01	point31	31	20.0	39.2
						Barrier D-01	point30	30	18.0	38.8
						Barrier D-01	point35	35	20.0	38.8
						Barrier D-01	point39	39	20.0	38.8
						Barrier D-01	point40	40	20.0	38.2
						Barrier D-01	point28	28	18.0	38.1
KY-02-01-TP-30	64	58.0	4.2	8	-3.8	Barrier D-01	point34	34	20.0	41.3
						Barrier D-01	point32	32	20.0	41.0
						Barrier D-01	point33	33	20.0	40.9
						Barrier D-01	point31	31	20.0	40.9
						Barrier D-01	point36	36	20.0	40.6
						Barrier D-01	point35	35	20.0	40.5
						Barrier D-01	point39	39	20.0	40.1
						Barrier D-01	point30	30	18.0	40.0
						Barrier D-01	point28	28	18.0	39.7
						Barrier D-01	point40	40	20.0	39.7
KY-02-01-TP-23	56	57.8	4.1	8	-3.9	Barrier D-01	point34	34	20.0	40.5
						Barrier D-01	point32	32	20.0	40.3
						Barrier D-01	point33	33	20.0	40.2
						Barrier D-01	point31	31	20.0	40.2
						Barrier D-01	point36	36	20.0	39.9
						Barrier D-01	point35	35	20.0	39.8
						Barrier D-01	point30	30	18.0	39.4
						Barrier D-01	point39	39	20.0	39.2
						Barrier D-01	point28	28	18.0	39.1
						Barrier D-01	point40	40	20.0	38.9
KY-02-01-TP-17	50	57.7	4.1	8	-3.9	Barrier D-01	point34	34	20.0	39.5
						Barrier D-01	point32	32	20.0	39.3
						Barrier D-01	point33	33	20.0	39.3
						Barrier D-01	point36	36	20.0	39.2
						Barrier D-01	point31	31	20.0	39.1
						Barrier D-01	point35	35	20.0	38.9
						Barrier D-01	point30	30	18.0	38.6
						Barrier D-01	point39	39	20.0	38.5
						Barrier D-01	point100	100	0.0	38.3

						Barrier D-01	point104	104	0.0	38.2
KY-02-01-TP-18	51	58.0	4.5	8	-3.5	Barrier D-01	point100	100	0.0	39.6
						Barrier D-01	point103	103	0.0	39.6
						Barrier D-01	point34	34	20.0	39.6
						Barrier D-01	point2	2	0.0	39.2
						Barrier D-01	point36	36	20.0	39.1
						Barrier D-01	point33	33	20.0	39.1
						Barrier D-01	point32	32	20.0	39.1
						Barrier D-01	point35	35	20.0	38.8
						Barrier D-01	point31	31	20.0	38.7
						Barrier D-01	point58	58	14.0	38.7
KY-02-01-TP-24	57	58.0	4.5	8	-3.5	Barrier D-01	point34	34	20.0	40.4
						Barrier D-01	point33	33	20.0	40.2
						Barrier D-01	point31	31	20.0	40.0
						Barrier D-01	point35	35	20.0	39.7
						Barrier D-01	point36	36	20.0	39.6
						Barrier D-01	point39	39	20.0	39.3
						Barrier D-01	point58	58	14.0	39.3
						Barrier D-01	point56	56	14.0	39.3
						Barrier D-01	point30	30	18.0	39.1
						Barrier D-01	point40	40	20.0	39.1
KY-02-01-TP-31	65	58.2	4.4	8	-3.6	Barrier D-01	point34	34	20.0	41.3
						Barrier D-01	point32	32	20.0	41.0
						Barrier D-01	point33	33	20.0	41.0
						Barrier D-01	point36	36	20.0	40.5
						Barrier D-01	point39	39	20.0	40.3
						Barrier D-01	point30	30	18.0	40.0
						Barrier D-01	point56	56	14.0	39.8
						Barrier D-01	point58	58	14.0	39.8
						Barrier D-01	point28	28	18.0	39.7
						Barrier D-01	point31	31	20.0	39.6
KY-02-01-TP-37	72	58.7	3.8	8	-4.2	Barrier D-01	point34	34	20.0	43.0
						Barrier D-01	point32	32	20.0	42.9
						Barrier D-01	point33	33	20.0	42.8
						Barrier D-01	point31	31	20.0	42.7
						Barrier D-01	point36	36	20.0	42.2

						Barrier D-01	point30	30	18.0	41.9
						Barrier D-01	point35	35	20.0	41.8
						Barrier D-01	point26	26	14.0	41.4
						Barrier D-01	point39	39	20.0	41.4
						Barrier D-01	point28	28	18.0	41.1
KY-02-01-TP-42	77	58.8	4.4	8	-3.6	Barrier D-01	point34	34	20.0	42.5
						Barrier D-01	point33	33	20.0	42.3
						Barrier D-01	point32	32	20.0	42.3
						Barrier D-01	point31	31	20.0	42.1
						Barrier D-01	point36	36	20.0	41.8
						Barrier D-01	point35	35	20.0	41.4
						Barrier D-01	point39	39	20.0	41.4
						Barrier D-01	point30	30	18.0	41.1
						Barrier D-01	point56	56	14.0	40.7
						Barrier D-01	point40	40	20.0	40.6
KY-02-01-TP-32	66	58.5	5.0	8	-3.0	Barrier D-01	point34	34	20.0	41.3
						Barrier D-01	point58	58	14.0	40.8
						Barrier D-01	point33	33	20.0	40.8
						Barrier D-01	point32	32	20.0	40.7
						Barrier D-01	point56	56	14.0	40.7
						Barrier D-01	point36	36	20.0	40.6
						Barrier D-01	point59	59	14.0	40.4
						Barrier D-01	point31	31	20.0	40.4
						Barrier D-01	point66	66	14.0	40.4
						Barrier D-01	point39	39	20.0	40.2
KY-02-01-TP-25	58	58.3	5.1	8	-2.9	Barrier D-01	point34	34	20.0	40.5
						Barrier D-01	point58	58	14.0	40.3
						Barrier D-01	point56	56	14.0	40.2
						Barrier D-01	point59	59	14.0	40.1
						Barrier D-01	point66	66	14.0	40.0
						Barrier D-01	point33	33	20.0	40.0
						Barrier D-01	point32	32	20.0	39.7
						Barrier D-01	point60	60	14.0	39.6
						Barrier D-01	point62	62	14.0	39.5
						Barrier D-01	point39	39	20.0	39.5
KY-02-01-TP-19	52	58.3	5.0	8	-3.0	Barrier D-01	point100	100	0.0	40.7

						Barrier D-01	point103	103	0.0	39.9
						Barrier D-01	point2	2	0.0	39.8
						Barrier D-01	point58	58	14.0	39.2
						Barrier D-01	point60	60	14.0	39.2
						Barrier D-01	point104	104	0.0	39.1
						Barrier D-01	point34	34	20.0	39.1
						Barrier D-01	point110	110	0.0	39.1
						Barrier D-01	point59	59	14.0	39.0
						Barrier D-01	point92	92	8.0	38.9
KY-02-01-TP-20	53	58.6	5.3	8	-2.7	Barrier D-01	point100	100	0.0	41.0
						Barrier D-01	point110	110	0.0	40.6
						Barrier D-01	point103	103	0.0	40.4
						Barrier D-01	point2	2	0.0	40.1
						Barrier D-01	point60	60	14.0	39.8
						Barrier D-01	point58	58	14.0	39.7
						Barrier D-01	point92	92	8.0	39.6
						Barrier D-01	point104	104	0.0	39.6
						Barrier D-01	point59	59	14.0	39.6
						Barrier D-01	point56	56	14.0	39.5
KY-02-01-TP-26	60	58.5	5.5	8	-2.5	Barrier D-01	point58	58	14.0	40.8
						Barrier D-01	point59	59	14.0	40.7
						Barrier D-01	point60	60	14.0	40.7
						Barrier D-01	point66	66	14.0	40.6
						Barrier D-01	point56	56	14.0	40.5
						Barrier D-01	point62	62	14.0	40.4
						Barrier D-01	point65	65	14.0	40.1
						Barrier D-01	point61	61	14.0	40.0
						Barrier D-01	point34	34	20.0	39.7
						Barrier D-01	point2	2	0.0	39.7
KY-02-01-TP-33	67	58.7	5.4	8	-2.6	Barrier D-01	point58	58	14.0	41.6
						Barrier D-01	point56	56	14.0	41.5
						Barrier D-01	point59	59	14.0	41.3
						Barrier D-01	point66	66	14.0	41.3
						Barrier D-01	point34	34	20.0	40.8
						Barrier D-01	point62	62	14.0	40.7
						Barrier D-01	point65	65	14.0	40.6

						Barrier D-01	point60	60	14.0	40.6
						Barrier D-01	point61	61	14.0	40.5
						Barrier D-01	point55	55	16.0	40.4
KY-02-01-TP-43	78	58.8	4.8	8	-3.2	Barrier D-01	point34	34	20.0	42.3
						Barrier D-01	point32	32	20.0	42.1
						Barrier D-01	point33	33	20.0	42.1
						Barrier D-01	point36	36	20.0	41.8
						Barrier D-01	point31	31	20.0	41.7
						Barrier D-01	point56	56	14.0	41.3
						Barrier D-01	point58	58	14.0	41.2
						Barrier D-01	point35	35	20.0	41.1
						Barrier D-01	point39	39	20.0	40.9
						Barrier D-01	point30	30	18.0	40.6
KY-02-01-CBTP-10	10	58.0	3.1	8	-4.9	Barrier D-01	point32	32	20.0	42.6
						Barrier D-01	point34	34	20.0	42.5
						Barrier D-01	point31	31	20.0	42.5
						Barrier D-01	point33	33	20.0	42.4
						Barrier D-01	point30	30	18.0	42.0
						Barrier D-01	point35	35	20.0	41.5
						Barrier D-01	point26	26	14.0	41.4
						Barrier D-01	point36	36	20.0	41.1
						Barrier D-01	point25	25	14.0	41.0
						Barrier D-01	point28	28	18.0	40.9
KY-02-01-CBTP-11	11	58.6	3.1	8	-4.9	Barrier D-01	point32	32	20.0	43.5
						Barrier D-01	point34	34	20.0	43.4
						Barrier D-01	point31	31	20.0	43.4
						Barrier D-01	point33	33	20.0	43.4
						Barrier D-01	point30	30	18.0	42.9
						Barrier D-01	point36	36	20.0	42.1
						Barrier D-01	point26	26	14.0	42.1
						Barrier D-01	point35	35	20.0	42.1
						Barrier D-01	point25	25	14.0	41.6
						Barrier D-01	point28	28	18.0	41.6
KY-02-01-CBTP-12	12	59.1	3.1	8	-4.9	Barrier D-01	point32	32	20.0	44.1
						Barrier D-01	point31	31	20.0	44.0
						Barrier D-01	point33	33	20.0	44.0

						Barrier D-01	point34	34	20.0	43.9
						Barrier D-01	point30	30	18.0	43.6
						Barrier D-01	point35	35	20.0	42.8
						Barrier D-01	point36	36	20.0	42.5
						Barrier D-01	point26	26	14.0	42.5
						Barrier D-01	point28	28	18.0	42.3
						Barrier D-01	point25	25	14.0	42.3
KY-02-01-CBTP-13	13	59.4	3.1	8	-4.9	Barrier D-01	point31	31	20.0	44.7
						Barrier D-01	point32	32	20.0	44.5
						Barrier D-01	point30	30	18.0	44.4
						Barrier D-01	point33	33	20.0	44.3
						Barrier D-01	point34	34	20.0	44.3
						Barrier D-01	point35	35	20.0	43.3
						Barrier D-01	point26	26	14.0	43.2
						Barrier D-01	point28	28	18.0	43.1
						Barrier D-01	point36	36	20.0	43.0
						Barrier D-01	point24	24	14.0	43.0
KY-02-01-CBTP-14	15	60.0	3.0	8	-5.0	Barrier D-01	point30	30	18.0	45.6
						Barrier D-01	point32	32	20.0	45.5
						Barrier D-01	point31	31	20.0	45.4
						Barrier D-01	point34	34	20.0	45.1
						Barrier D-01	point33	33	20.0	45.1
						Barrier D-01	point26	26	14.0	44.5
						Barrier D-01	point24	24	14.0	44.5
						Barrier D-01	point23	23	14.0	44.4
						Barrier D-01	point28	28	18.0	44.3
						Barrier D-01	point27	27	18.0	44.0
KY-02-01-TP-47	83	59.0	5.0	8	-3.0	Barrier D-01	point34	34	20.0	42.9
						Barrier D-01	point33	33	20.0	42.6
						Barrier D-01	point32	32	20.0	42.5
						Barrier D-01	point35	35	20.0	42.2
						Barrier D-01	point31	31	20.0	42.1
						Barrier D-01	point36	36	20.0	42.0
						Barrier D-01	point30	30	18.0	41.8
						Barrier D-01	point56	56	14.0	41.8
						Barrier D-01	point58	58	14.0	41.1

						Barrier D-01	point55	55	16.0	41.0
KY-02-01-TP-44	79	58.9	5.3	8	-2.7	Barrier D-01	point56	56	14.0	42.1
						Barrier D-01	point58	58	14.0	42.0
						Barrier D-01	point34	34	20.0	41.9
						Barrier D-01	point33	33	20.0	41.4
						Barrier D-01	point55	55	16.0	41.3
						Barrier D-01	point35	35	20.0	41.1
						Barrier D-01	point54	54	16.0	41.0
						Barrier D-01	point32	32	20.0	41.0
						Barrier D-01	point59	59	14.0	41.0
						Barrier D-01	point65	65	14.0	41.0
KY-02-01-TP-34	68	58.8	6.0	8	-2.0	Barrier D-01	point58	58	14.0	42.3
						Barrier D-01	point66	66	14.0	42.2
						Barrier D-01	point59	59	14.0	42.1
						Barrier D-01	point56	56	14.0	42.0
						Barrier D-01	point60	60	14.0	41.6
						Barrier D-01	point62	62	14.0	41.6
						Barrier D-01	point65	65	14.0	41.5
						Barrier D-01	point61	61	14.0	41.3
						Barrier D-01	point55	55	16.0	41.0
						Barrier D-01	point54	54	16.0	40.7
KY-02-01-TP-27	61	58.7	5.9	8	-2.1	Barrier D-01	point60	60	14.0	41.3
						Barrier D-01	point58	58	14.0	41.2
						Barrier D-01	point59	59	14.0	41.1
						Barrier D-01	point66	66	14.0	41.1
						Barrier D-01	point62	62	14.0	41.0
						Barrier D-01	point56	56	14.0	40.9
						Barrier D-01	point65	65	14.0	40.8
						Barrier D-01	point61	61	14.0	40.6
						Barrier D-01	point100	100	0.0	40.2
						Barrier D-01	point55	55	16.0	40.1
KY-02-01-TP-21	54	58.9	5.6	8	-2.4	Barrier D-01	point100	100	0.0	41.4
						Barrier D-01	point2	2	0.0	40.9
						Barrier D-01	point103	103	0.0	40.4
						Barrier D-01	point104	104	0.0	40.3
						Barrier D-01	point109	109	0.0	40.2

						Barrier D-01	point92	92	8.0	40.2
						Barrier D-01	point60	60	14.0	40.1
						Barrier D-01	point75	75	16.0	40.1
						Barrier D-01	point61	61	14.0	40.0
						Barrier D-01	point62	62	14.0	40.0
KY-02-01-TP-48	84	59.1	5.6	8	-2.4	Barrier D-01	point56	56	14.0	42.8
						Barrier D-01	point34	34	20.0	42.8
						Barrier D-01	point33	33	20.0	42.3
						Barrier D-01	point55	55	16.0	42.1
						Barrier D-01	point53	53	16.0	42.0
						Barrier D-01	point54	54	16.0	42.0
						Barrier D-01	point58	58	14.0	41.9
						Barrier D-01	point32	32	20.0	41.9
						Barrier D-01	point52	52	16.0	41.7
						Barrier D-01	point35	35	20.0	41.4
KY-02-01-TP-45	80	59.0	5.7	8	-2.3	Barrier D-01	point56	56	14.0	42.7
						Barrier D-01	point58	58	14.0	42.7
						Barrier D-01	point55	55	16.0	41.9
						Barrier D-01	point34	34	20.0	41.9
						Barrier D-01	point59	59	14.0	41.6
						Barrier D-01	point54	54	16.0	41.6
						Barrier D-01	point65	65	14.0	41.5
						Barrier D-01	point53	53	16.0	41.5
						Barrier D-01	point60	60	14.0	41.5
						Barrier D-01	point62	62	14.0	41.4
KY-02-01-TP-35	69	58.9	6.9	8	-1.1	Barrier D-01	point66	66	14.0	43.4
						Barrier D-01	point58	58	14.0	42.9
						Barrier D-01	point59	59	14.0	42.9
						Barrier D-01	point60	60	14.0	42.8
						Barrier D-01	point62	62	14.0	42.7
						Barrier D-01	point56	56	14.0	42.6
						Barrier D-01	point65	65	14.0	42.5
						Barrier D-01	point61	61	14.0	42.4
						Barrier D-01	point55	55	16.0	41.6
						Barrier D-01	point67	67	18.0	41.3
KY-02-01-TP-28	62	58.8	6.9	8	-1.1	Barrier D-01	point60	60	14.0	42.0

						Barrier D-01	point66	66	14.0	41.9
						Barrier D-01	point61	61	14.0	41.8
						Barrier D-01	point59	59	14.0	41.8
						Barrier D-01	point62	62	14.0	41.7
						Barrier D-01	point65	65	14.0	41.7
						Barrier D-01	point58	58	14.0	41.7
						Barrier D-01	point70	70	18.0	41.3
						Barrier D-01	point69	69	18.0	41.2
						Barrier D-01	point68	68	18.0	41.2
KY-02-01-TP-06*	44	59.0	6.6	8	-1.4	Barrier D-01	point74	74	16.0	41.9
						Barrier D-01	point75	75	16.0	41.4
						Barrier D-01	point107	107	0.0	41.3
						Barrier D-01	point62	62	14.0	41.2
						Barrier D-01	point73	73	18.0	41.2
						Barrier D-01	point61	61	14.0	41.2
						Barrier D-01	point72	72	18.0	41.1
						Barrier D-01	point71	71	18.0	41.1
						Barrier D-01	point76	76	16.0	41.1
						Barrier D-01	point2	2	0.0	40.9
A10	124	59.3	1.5	8	-6.5	Barrier D-01	point26	26	14.0	44.0
						Barrier D-01	point31	31	20.0	43.6
						Barrier D-01	point30	30	18.0	43.6
						Barrier D-01	point25	25	14.0	43.4
						Barrier D-01	point22	22	14.0	43.3
						Barrier D-01	point23	23	14.0	43.2
						Barrier D-01	point27	27	18.0	43.2
						Barrier D-01	point32	32	20.0	43.0
						Barrier D-01	point28	28	18.0	42.9
						Barrier D-01	point24	24	14.0	42.8
KY-02-01-NELS-04	38	65.2	0.2	8	-7.8	Barrier D-01	point6	6	0.0	52.2
						Barrier D-01	point5	5	0.0	52.1
						Barrier D-01	point7	7	12.0	51.9
						Barrier D-01	point1	1	0.0	51.6
						Barrier D-01	point8	8	14.0	50.8
						Barrier D-01	point12	12	14.0	50.8
						Barrier D-01	point9	9	14.0	50.7

						Barrier D-01	point10	10	14.0	50.4
						Barrier D-01	point13	13	14.0	50.4
						Barrier D-01	point14	14	12.0	49.9
KY-02-02-NELS-26	105	66.2	0.9	8	-7.1	Barrier D-01	point16	16	14.0	58.0
						Barrier D-01	point15	15	12.0	57.9
						Barrier D-01	point14	14	12.0	56.7
						Barrier D-01	point17	17	14.0	56.5
						Barrier D-01	point13	13	14.0	55.2
						Barrier D-01	point18	18	14.0	54.7
						Barrier D-01	point12	12	14.0	53.3
						Barrier D-01	point10	10	14.0	52.4
						Barrier D-01	point19	19	14.0	51.7
						Barrier D-01	point9	9	14.0	51.5
KY-02-02-NELS-25	104	64.6	1.6	8	-6.4	Barrier D-01	point22	22	14.0	55.4
						Barrier D-01	point23	23	14.0	54.9
						Barrier D-01	point21	21	14.0	54.9
						Barrier D-01	point20	20	14.0	53.7
						Barrier D-01	point24	24	14.0	53.6
						Barrier D-01	point19	19	14.0	52.3
						Barrier D-01	point25	25	14.0	51.4
						Barrier D-01	point18	18	14.0	51.0
						Barrier D-01	point26	26	14.0	50.5
						Barrier D-01	point16	16	14.0	50.2
KY-02-01-TP-41	76	60.3	4.6	8	-3.4	Barrier D-01	point23	23	14.0	47.2
						Barrier D-01	point26	26	14.0	47.0
						Barrier D-01	point25	25	14.0	46.5
						Barrier D-01	point22	22	14.0	46.2
						Barrier D-01	point24	24	14.0	46.0
						Barrier D-01	point32	32	20.0	45.5
						Barrier D-01	point30	30	18.0	45.4
						Barrier D-01	point33	33	20.0	45.4
						Barrier D-01	point31	31	20.0	45.3
						Barrier D-01	point28	28	18.0	45.3
KY-02-01-TP-40	75	69.4	-0.0	8	-8.0	Barrier D-01	point36	36	20.0	55.6
						Barrier D-01	point41	41	20.0	55.6
						Barrier D-01	point42	42	20.0	55.5

						Barrier D-01	point39	39	20.0	55.4
						Barrier D-01	point43	43	20.0	55.4
						Barrier D-01	point44	44	20.0	55.1
						Barrier D-01	point35	35	20.0	54.9
						Barrier D-01	point34	34	20.0	54.8
						Barrier D-01	point45	45	20.0	54.7
						Barrier D-01	point46	46	20.0	54.3
KY-02-01-TP-39	74	59.7	4.5	8	-3.5	Barrier D-01	point31	31	20.0	44.8
						Barrier D-01	point32	32	20.0	44.8
						Barrier D-01	point30	30	18.0	44.6
						Barrier D-01	point33	33	20.0	44.5
						Barrier D-01	point25	25	14.0	44.4
						Barrier D-01	point34	34	20.0	44.4
						Barrier D-01	point26	26	14.0	44.0
						Barrier D-01	point23	23	14.0	44.0
						Barrier D-01	point24	24	14.0	43.8
						Barrier D-01	point28	28	18.0	43.3
KY-02-01-TP-38	73	59.2	4.3	8	-3.7	Barrier D-01	point32	32	20.0	43.7
						Barrier D-01	point34	34	20.0	43.7
						Barrier D-01	point31	31	20.0	43.5
						Barrier D-01	point33	33	20.0	43.5
						Barrier D-01	point35	35	20.0	43.0
						Barrier D-01	point30	30	18.0	43.0
						Barrier D-01	point36	36	20.0	42.8
						Barrier D-01	point26	26	14.0	42.8
						Barrier D-01	point25	25	14.0	42.1
						Barrier D-01	point28	28	18.0	41.9
KY-02-01-TP-49	85	59.2	6.1	8	-1.9	Barrier D-01	point56	56	14.0	44.0
						Barrier D-01	point55	55	16.0	43.3
						Barrier D-01	point58	58	14.0	43.2
						Barrier D-01	point54	54	16.0	43.2
						Barrier D-01	point53	53	16.0	43.1
						Barrier D-01	point52	52	16.0	42.6
						Barrier D-01	point62	62	14.0	42.5
						Barrier D-01	point59	59	14.0	42.4
						Barrier D-01	point60	60	14.0	42.2

						Barrier D-01	point61	61	14.0	42.0
KY-02-01-TP-46	82	59.0	6.6	8	-1.4	Barrier D-01	point58	58	14.0	44.0
						Barrier D-01	point56	56	14.0	43.9
						Barrier D-01	point59	59	14.0	43.2
						Barrier D-01	point60	60	14.0	42.9
						Barrier D-01	point55	55	16.0	42.9
						Barrier D-01	point65	65	14.0	42.8
						Barrier D-01	point62	62	14.0	42.8
						Barrier D-01	point61	61	14.0	42.6
						Barrier D-01	point66	66	14.0	42.6
						Barrier D-01	point54	54	16.0	42.5
KY-02-01-TP-09*	47	58.9	8.1	8	0.1	Barrier D-01	point66	66	14.0	46.7
						Barrier D-01	point65	65	14.0	45.7
						Barrier D-01	point62	62	14.0	45.6
						Barrier D-01	point61	61	14.0	45.1
						Barrier D-01	point60	60	14.0	45.0
						Barrier D-01	point67	67	18.0	44.9
						Barrier D-01	point59	59	14.0	44.2
						Barrier D-01	point68	68	18.0	44.1
						Barrier D-01	point58	58	14.0	43.6
						Barrier D-01	point69	69	18.0	43.6
KY-02-01-TP-08*	46	58.7	8.0	8	0.0	Barrier D-01	point70	70	18.0	44.7
						Barrier D-01	point69	69	18.0	44.5
						Barrier D-01	point71	71	18.0	44.3
						Barrier D-01	point68	68	18.0	44.0
						Barrier D-01	point62	62	14.0	43.9
						Barrier D-01	point72	72	18.0	43.8
						Barrier D-01	point66	66	14.0	43.6
						Barrier D-01	point65	65	14.0	43.3
						Barrier D-01	point67	67	18.0	43.0
						Barrier D-01	point73	73	18.0	42.7
KY-02-01-TP-07*	45	59.0	7.9	8	-0.1	Barrier D-01	point74	74	16.0	45.0
						Barrier D-01	point73	73	18.0	44.5
						Barrier D-01	point75	75	16.0	44.3
						Barrier D-01	point72	72	18.0	44.3
						Barrier D-01	point71	71	18.0	43.8

						Barrier D-01	point76	76	16.0	43.7
						Barrier D-01	point70	70	18.0	43.0
						Barrier D-01	point77	77	16.0	42.8
						Barrier D-01	point2	2	0.0	42.8
						Barrier D-01	point100	100	0.0	42.7
Total Cost, All Barriers (including additional cost(s))					$779798					

HMB Professional Engineers				**15 March 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**West 2_Barrier Area D**									
BARRIER DESIGN:	**W2_Sunset Mobile Home Park_D1**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier D-01	W	8.00	15.34	20.00	1695	25993				779798
									Total Cost:	779798

HMB Professional Engineers 15 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_Barrier Area D
BARRIER DESIGN: W2_Sunset Mobile Home Park_D1

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier D-01	W	point1	1	0.00	0.00	0.00	0	0				0
		point5	5	0.00	0.00	0.00	0	0				0
		point6	6	0.00	0.00	0.00	0	0				0
		point7	7	12.00	12.00	12.00	20	240				7193
		point8	8	14.00	14.00	14.00	20	280				8390
		point9	9	14.00	14.00	14.00	20	280				8392
		point10	10	14.00	14.00	14.00	20	282				8456
		point12	12	14.00	14.00	14.00	20	279				8369
		point13	13	14.00	14.00	14.00	20	282				8456
		point14	14	12.00	12.00	12.00	20	239				7166
		point15	15	12.00	12.00	12.00	20	239				7174
		point16	16	14.00	14.00	14.00	20	282				8456
		point17	17	14.00	14.00	14.00	20	279				8361
		point18	18	14.00	14.00	14.00	20	279				8369
		point19	19	14.00	14.00	14.00	20	282				8456
		point20	20	14.00	14.00	14.00	20	279				8361
		point21	21	14.00	14.00	14.00	20	279				8369
		point22	22	14.00	14.00	14.00	20	282				8456
		point23	23	14.00	14.00	14.00	20	282				8456
		point24	24	14.00	14.00	14.00	20	279				8369
		point25	25	14.00	14.00	14.00	20	279				8361
		point26	26	14.00	14.00	14.00	20	282				8456
		point27	27	18.00	18.00	18.00	17	310				9298
		point28	28	18.00	18.00	18.00	17	299				8960
		point30	30	18.00	18.00	18.00	20	359				10767
		point31	31	20.00	20.00	20.00	20	400				11989

		point32	32	20.00	20.00	20.00	20	404				12117
		point33	33	20.00	20.00	20.00	20	394				11834
		point34	34	20.00	20.00	20.00	20	404				12117
		point35	35	20.00	20.00	20.00	20	402				12075
		point36	36	20.00	20.00	20.00	22	434				13015
		point39	39	20.00	20.00	20.00	20	398				11947
		point40	40	20.00	20.00	20.00	20	394				11807
		point41	41	20.00	20.00	20.00	20	402				12075
		point42	42	20.00	20.00	20.00	20	398				11944
		point43	43	20.00	20.00	20.00	20	398				11944
		point44	44	20.00	20.00	20.00	20	402				12075
		point45	45	20.00	20.00	20.00	20	398				11944
		point46	46	20.00	20.00	20.00	20	402				12075
		point47	47	20.00	20.00	20.00	20	398				11941
		point48	48	20.00	20.00	20.00	20	398				11944
		point49	49	18.00	18.00	18.00	20	362				10867
		point50	50	18.00	18.00	18.00	20	358				10747
		point51	51	18.00	18.00	18.00	20	362				10867
		point52	52	16.00	16.00	16.00	20	318				9555
		point53	53	16.00	16.00	16.00	20	318				9553
		point54	54	16.00	16.00	16.00	20	318				9553
		point55	55	16.00	16.00	16.00	20	322				9660
		point56	56	14.00	14.00	14.00	19	272				8171
		point58	58	14.00	14.00	14.00	20	282				8452
		point59	59	14.00	14.00	14.00	20	279				8361
		point60	60	14.00	14.00	14.00	20	282				8452
		point61	61	14.00	14.00	14.00	20	279				8361
		point62	62	14.00	14.00	14.00	21	294				8828
		point65	65	14.00	14.00	14.00	20	279				8359
		point66	66	14.00	14.00	14.00	20	282				8452
		point67	67	18.00	18.00	18.00	20	358				10747
		point68	68	18.00	18.00	18.00	20	358				10747
		point69	69	18.00	18.00	18.00	20	358				10747
		point70	70	18.00	18.00	18.00	20	362				10867
		point71	71	18.00	18.00	18.00	20	362				10871
		point72	72	18.00	18.00	18.00	20	358				10747
		point73	73	18.00	18.00	18.00	20	362				10867
		point74	74	16.00	16.00	16.00	20	318				9553
		point75	75	16.00	16.00	16.00	20	318				9553

		point76	76	16.00	16.00	16.00	20	322				9660
		point77	77	16.00	16.00	16.00	20	318				9553
		point78	78	16.00	16.00	16.00	20	318				9553
		point79	79	16.00	16.00	16.00	20	322				9660
		point81	81	16.00	16.00	16.00	20	318				9553
		point82	82	16.00	16.00	16.00	20	322				9660
		point83	83	14.00	14.00	14.00	20	279				8359
		point84	84	14.00	14.00	14.00	20	282				8452
		point85	85	14.00	14.00	14.00	20	282				8452
		point86	86	14.00	14.00	14.00	20	276				8266
		point87	87	14.00	14.00	14.00	20	282				8452
		point88	88	14.00	14.00	14.00	20	279				8361
		point89	89	14.00	14.00	14.00	20	282				8452
		point90	90	12.00	12.00	12.00	20	239				7166
		point91	91	12.00	12.00	12.00	20	239				7166
		point92	92	8.00	8.00	8.00	20	163				4884
		point93	93	8.00	8.00	8.00	20	159				4777
		point94	94	8.00	8.00	8.00	20	159				4777
		point95	95	8.00	8.00	8.00	20	161				4832
		point96	96	8.00	8.00	8.00	20	159				4777
		point97	97	8.00	8.00	8.00	20	159				4782
		point98	98	8.00	8.00	8.00	20	161				4832
		point99	99	8.00	8.00	8.00	19	150				4509
		point100	100	0.00	0.00	0.00	0	0				0
		point2	2	0.00	0.00	0.00	0	0				0
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		point120	120	0.00	0.00	0.00	0	0				0
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		point123	123	0.00	0.00	0.00	0	0				0
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		point125	125	0.00	0.00	0.00	0	0				0
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		point154	154	0.00	0.00	0.00	0	0				0
		point155	155	0.00	0.00	0.00	0	0				0
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		point159	159	0.00	0.00	0.00	0	0				0

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		point180	180	0.00	0.00	0.00	0	0				0
		point181	181	0.00	0.00	0.00	0	0				0
		point182	182	0.00	0.00	0.00	0	0				0
		point183	183	0.00	0.00	0.00	0	0				0
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		point192	192	0.00	0.00	0.00	0	0				0
		point193	193	0.00	0.00	0.00	0	0				0
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		point200	200	0.00	0.00	0.00	0	0				0
		point3	3	0.00	0.00	0.00	0	0				0
		point203	203	0.00	0.00	0.00	0	0				0
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		point223	223	0.00	0.00	0.00	0	0				0
		point224	224	0.00	0.00	0.00	0	0				0
		point227	227	0.00	0.00	0.00	0	0				0
		point228	228	0.00	0.00	0.00	0	0				0
		point229	229	0.00	0.00	0.00	0	0				0
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		point244	244	0.00	0.00	0.00	0	0				0
		point245	245	0.00	0.00	0.00	0	0				0
		point246	246	0.00	0.00	0.00	0	0				0
		point247	247	0.00	0.00	0.00	0	0				0
		point248	248	0.00	0.00	0.00	0	0				0
		point249	249	0.00	0.00	0.00	0	0				0
		point250	250	0.00	0.00	0.00	0	0				0
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		point252	252	0.00	0.00	0.00	0	0				0
		point253	253	0.00	0.00	0.00	0	0				0
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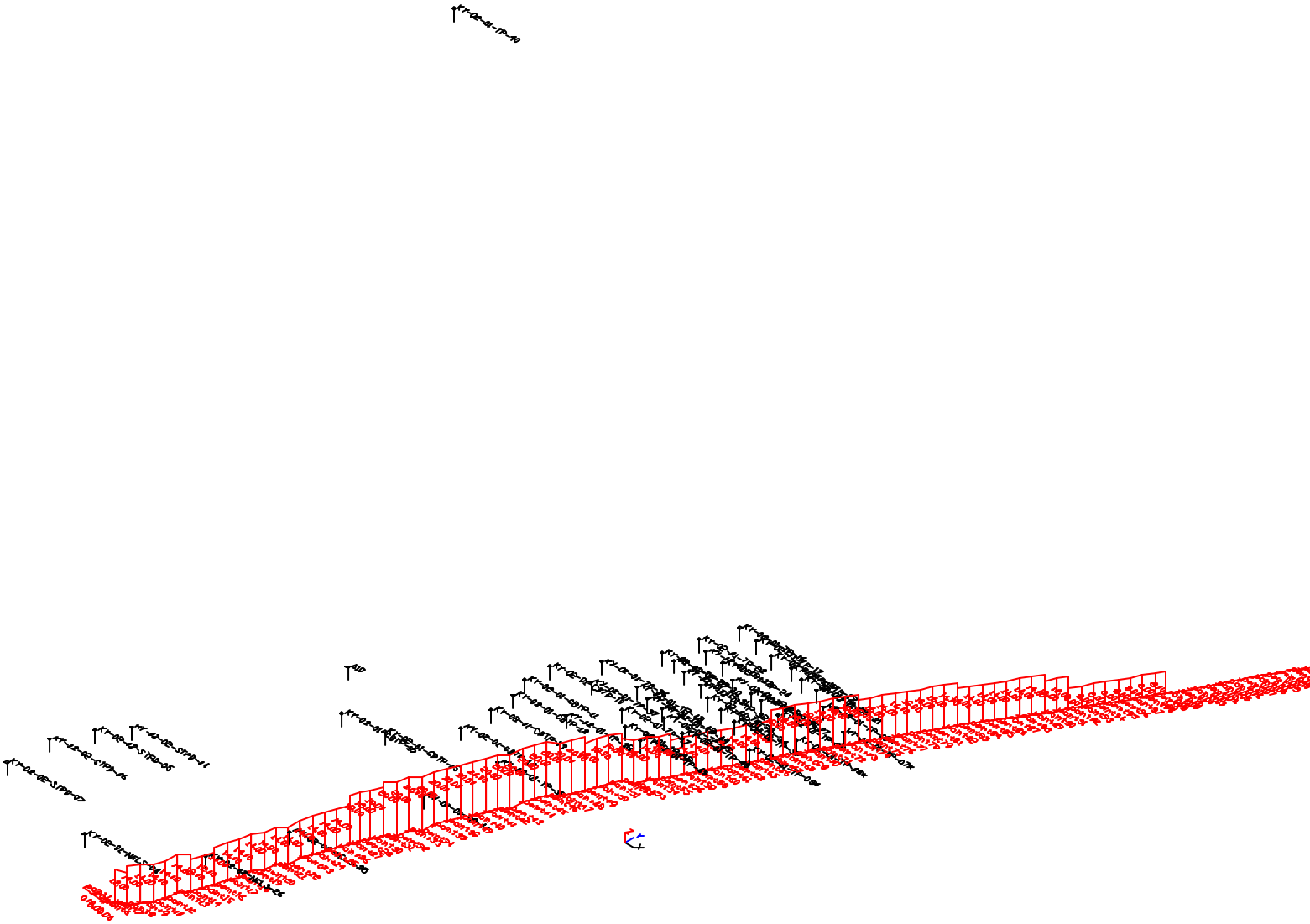


West 2_Barrier Area D	Sheet 1 of 1	15 Mar 2018
	HMB Professional Engineers	
Barrier View-W2_Sunset Mobile Home Park_D	Project/Contract No. I-69 ORX	
Run name: W2_02_TollAll_D	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR WEST 2 – SHADYTREE MOBILE HOME PARK

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_Barrier Area D_Shadytree Bar
BARRIER DESIGN: W2_Shadytree Mobile Home Park
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-02-01-RTTP-02*	40	1	61.5	66.4	66	4.9	10	Snd Lvl	57.7	8.7	8	0.7
KY-02-01-RTTP-04*	42	1	63.6	69.3	66	5.7	10	Snd Lvl	58.7	10.6	8	2.6
KY-02-01-COLED-17*	35	1	56.7	67.4	66	10.7	10	Both	58.3	9.1	8	1.1
KY-02-01-COLED-16	34	1	61.1	65.1	66	4.0	10	----	57.7	7.4	8	-0.6
KY-02-02-RTTP-07*	112	1	62.0	67.0	66	5.0	10	Snd Lvl	58.0	9.0	8	1.0
KY-02-01-RTTP-03*	41	1	62.7	68.1	66	5.4	10	Snd Lvl	58.0	10.1	8	2.1
KY-02-01-RTTP-01	39	1	61.2	65.8	66	4.6	10	----	57.5	8.3	8	0.3
KY-02-01-COLED-15	33	1	60.4	64.2	66	3.8	10	----	57.4	6.8	8	-1.2
KY-02-02-RTTP-06	111	1	60.8	65.3	66	4.5	10	----	57.6	7.7	8	-0.3
KY-02-02-RTTP-05	110	1	60.1	64.2	66	4.1	10	----	57.1	7.1	8	-0.9
KY-02-02-RTTP-04	109	1	59.7	63.6	66	3.9	10	----	56.8	6.8	8	-1.2
KY-02-02-RTTP-03	108	1	60.1	64.1	66	4.0	10	----	56.9	7.2	8	-0.8
KY-02-01-COLED-14	32	1	59.8	63.1	66	3.3	10	----	56.9	6.2	8	-1.8
KY-02-01-COLED-13	31	1	59.2	62.3	66	3.1	10	----	56.8	5.5	8	-2.5
KY-02-01-COLED-12	30	1	58.7	61.7	66	3.0	10	----	56.5	5.2	8	-2.8
KY-02-01-COLED-11	29	1	58.6	61.7	66	3.1	10	----	56.5	5.2	8	-2.8
KY-02-01-COLED-10	28	1	58.4	61.5	66	3.1	10	----	56.2	5.3	8	-2.7
KY-02-02-MIMD-03*	102	1	57.4	60.1	66	2.7	10	----	56.0	4.1	8	-3.9
KY-02-01-COLED-09	27	1	58.5	61.6	66	3.1	10	----	56.0	5.6	8	-2.4
KY-02-01-COLED-08	26	1	58.5	61.5	66	3.0	10	----	56.0	5.5	8	-2.5
KY-02-01-COLED-07	24	1	58.3	61.3	66	3.0	10	----	55.7	5.6	8	-2.4
KY-02-01-COLED-06	23	1	57.6	61.1	66	3.5	10	----	55.6	5.5	8	-2.5
KY-02-01-COLED-05	22	1	57.6	61.2	66	3.6	10	----	55.6	5.6	8	-2.4
KY-02-01-COLED-04	21	1	57.5	61.0	66	3.5	10	----	55.5	5.5	8	-2.5

KY-02-01-COLED-03	20	1	57.4	60.8	66	3.4	10	----	55.5	5.3	8	-2.7
KY-02-01-COLED-02	19	1	57.4	60.8	66	3.4	10	----	55.5	5.3	8	-2.7
KY-02-01-COLED-01	18	1	57.1	60.5	66	3.4	10	----	55.5	5.0	8	-3.0
V7	128	1	61.8	67.0	66	5.2	10	Snd Lvl	57.7	9.3	8	1.3
KY-02-02-COLED-01	95	1	58.6	62.6	66	4.0	10	----	56.4	6.2	8	-1.8
KY-02-02-COLED-02	96	1	58.9	62.9	66	4.0	10	----	56.5	6.4	8	-1.6
KY-02-02-COLED-03	97	1	58.9	62.9	66	4.0	10	----	56.3	6.6	8	-1.4
KY-02-02-COLED-04	98	1	58.8	62.9	66	4.1	10	----	56.2	6.7	8	-1.3
KY-02-02-COLED-05	99	1	58.9	63.0	66	4.1	10	----	56.3	6.7	8	-1.3
KY-02-02-COLED-06	100	1	59.0	63.2	66	4.2	10	----	56.6	6.6	8	-1.4
KY-02-02-RTTP-01	106	1	60.3	64.4	66	4.1	10	----	56.9	7.5	8	-0.5
KY-02-02-RTTP-02	107	1	59.8	63.8	66	4.0	10	----	56.8	7.0	8	-1.0
KY-02-01-RTTP-05*	43	1	64.7	70.6	66	5.9	10	Snd Lvl	58.7	11.9	8	3.9
KY-02-02-RTTP-08*	113	1	0.0	69.2	66	69.2	10	Snd Lvl	59.2	10.0	8	2.0
KY-02-02-COLED-07*	101	1	63.0	68.2	66	5.2	10	Snd Lvl	58.2	10.0	8	2.0
KY-02-01-COLED-18*	37	1	55.7	69.1	66	13.4	10	Both	58.7	10.4	8	2.4

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	40	4.1	7.1	11.9
All Impacted	10	8.7	9.9	11.9
All that meet NR Goal	11	8.3	9.8	11.9

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_Barrier Area D_Shadytree Bar
BARRIER DESIGN: W2_Shadytree Mobile Home Park

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-02-01-RTTP-02*	40	57.7	8.7	8	0.7	Barrier D-01	point170	170	20.0	40.6
						Barrier D-01	point171	171	20.0	40.4
						Barrier D-01	point172	172	20.0	40.4
						Barrier D-01	point169	169	20.0	40.2
						Barrier D-01	point168	168	20.0	40.1
						Barrier D-01	point173	173	20.0	40.0
						Barrier D-01	point167	167	20.0	39.9
						Barrier D-01	point165	165	20.0	39.8
						Barrier D-01	point166	166	20.0	39.8
						Barrier D-01	point162	162	20.0	39.7
KY-02-01-RTTP-04*	42	58.7	10.6	8	2.6	Barrier D-01	point167	167	20.0	43.0
						Barrier D-01	point168	168	20.0	43.0
						Barrier D-01	point166	166	20.0	42.9
						Barrier D-01	point165	165	20.0	42.9
						Barrier D-01	point170	170	20.0	42.8
						Barrier D-01	point169	169	20.0	42.8
						Barrier D-01	point164	164	20.0	42.5
						Barrier D-01	point171	171	20.0	42.4
						Barrier D-01	point162	162	20.0	42.3
						Barrier D-01	point163	163	20.0	42.3
KY-02-01-COLED-17*	35	58.3	9.1	8	1.1	Barrier D-01	point156	156	20.0	41.3

						Barrier D-01	point158	158	20.0	41.3
						Barrier D-01	point157	157	20.0	41.3
						Barrier D-01	point159	159	20.0	41.3
						Barrier D-01	point150	150	16.0	41.1
						Barrier D-01	point155	155	20.0	41.1
						Barrier D-01	point160	160	20.0	41.0
						Barrier D-01	point161	161	20.0	40.9
						Barrier D-01	point154	154	20.0	40.7
						Barrier D-01	point149	149	16.0	40.6
KY-02-01-COLED-16	34	57.7	7.4	8	-0.6	Barrier D-01	point150	150	16.0	39.8
						Barrier D-01	point149	149	16.0	39.6
						Barrier D-01	point116	116	0.0	39.6
						Barrier D-01	point114	114	0.0	39.6
						Barrier D-01	point128	128	0.0	39.5
						Barrier D-01	point111	111	0.0	39.5
						Barrier D-01	point148	148	16.0	39.3
						Barrier D-01	point156	156	20.0	39.3
						Barrier D-01	point157	157	20.0	39.3
						Barrier D-01	point158	158	20.0	39.2
KY-02-02-RTTP-07*	112	58.0	9.0	8	1.0	Barrier D-01	point161	161	20.0	41.2
						Barrier D-01	point162	162	20.0	41.1
						Barrier D-01	point160	160	20.0	40.9
						Barrier D-01	point159	159	20.0	40.8
						Barrier D-01	point163	163	20.0	40.8
						Barrier D-01	point164	164	20.0	40.7
						Barrier D-01	point165	165	20.0	40.5
						Barrier D-01	point158	158	20.0	40.4
						Barrier D-01	point166	166	20.0	40.2
						Barrier D-01	point167	167	20.0	40.0
KY-02-01-RTTP-03*	41	58.0	10.1	8	2.1	Barrier D-01	point170	170	20.0	41.9
						Barrier D-01	point169	169	20.0	41.7
						Barrier D-01	point168	168	20.0	41.7
						Barrier D-01	point167	167	20.0	41.6
						Barrier D-01	point165	165	20.0	41.6
						Barrier D-01	point166	166	20.0	41.6
						Barrier D-01	point171	171	20.0	41.5

						Barrier D-01	point164	164	20.0	41.4
						Barrier D-01	point162	162	20.0	41.3
						Barrier D-01	point172	172	20.0	41.3
KY-02-01-RTTP-01	39	57.5	8.3	8	0.3	Barrier D-01	point170	170	20.0	39.8
						Barrier D-01	point171	171	20.0	39.7
						Barrier D-01	point172	172	20.0	39.6
						Barrier D-01	point169	169	20.0	39.5
						Barrier D-01	point161	161	20.0	39.4
						Barrier D-01	point168	168	20.0	39.4
						Barrier D-01	point162	162	20.0	39.4
						Barrier D-01	point165	165	20.0	39.3
						Barrier D-01	point167	167	20.0	39.3
						Barrier D-01	point164	164	20.0	39.3
KY-02-01-COLED-15	33	57.4	6.8	8	-1.2	Barrier D-01	point114	114	0.0	39.3
						Barrier D-01	point116	116	0.0	38.8
						Barrier D-01	point150	150	16.0	38.8
						Barrier D-01	point128	128	0.0	38.7
						Barrier D-01	point115	115	0.0	38.6
						Barrier D-01	point158	158	20.0	38.4
						Barrier D-01	point148	148	16.0	38.4
						Barrier D-01	point159	159	20.0	38.4
						Barrier D-01	point161	161	20.0	38.4
						Barrier D-01	point156	156	20.0	38.3
KY-02-02-RTTP-06	111	57.6	7.7	8	-0.3	Barrier D-01	point161	161	20.0	39.6
						Barrier D-01	point162	162	20.0	39.5
						Barrier D-01	point159	159	20.0	39.4
						Barrier D-01	point160	160	20.0	39.3
						Barrier D-01	point163	163	20.0	39.2
						Barrier D-01	point158	158	20.0	39.1
						Barrier D-01	point164	164	20.0	39.1
						Barrier D-01	point165	165	20.0	38.9
						Barrier D-01	point114	114	0.0	38.8
						Barrier D-01	point157	157	20.0	38.7
KY-02-02-RTTP-05	110	57.1	7.1	8	-0.9	Barrier D-01	point114	114	0.0	38.6
						Barrier D-01	point161	161	20.0	38.4
						Barrier D-01	point162	162	20.0	38.3

						Barrier D-01	point159	159	20.0	38.3
						Barrier D-01	point160	160	20.0	38.2
						Barrier D-01	point111	111	0.0	38.1
						Barrier D-01	point163	163	20.0	38.0
						Barrier D-01	point164	164	20.0	38.0
						Barrier D-01	point170	170	20.0	38.0
						Barrier D-01	point158	158	20.0	37.9
KY-02-02-RTTP-04	109	56.8	6.8	8	-1.2	Barrier D-01	point128	128	0.0	37.9
						Barrier D-01	point161	161	20.0	37.8
						Barrier D-01	point162	162	20.0	37.7
						Barrier D-01	point114	114	0.0	37.7
						Barrier D-01	point116	116	0.0	37.7
						Barrier D-01	point159	159	20.0	37.6
						Barrier D-01	point160	160	20.0	37.6
						Barrier D-01	point163	163	20.0	37.4
						Barrier D-01	point170	170	20.0	37.4
						Barrier D-01	point164	164	20.0	37.4
KY-02-02-RTTP-03	108	56.9	7.2	8	-0.8	Barrier D-01	point161	161	20.0	38.2
						Barrier D-01	point170	170	20.0	38.2
						Barrier D-01	point162	162	20.0	38.1
						Barrier D-01	point171	171	20.0	38.1
						Barrier D-01	point172	172	20.0	38.0
						Barrier D-01	point160	160	20.0	37.9
						Barrier D-01	point163	163	20.0	37.9
						Barrier D-01	point164	164	20.0	37.9
						Barrier D-01	point169	169	20.0	37.8
						Barrier D-01	point165	165	20.0	37.8
KY-02-01-COLED-14	32	56.9	6.2	8	-1.8	Barrier D-01	point128	128	0.0	38.3
						Barrier D-01	point127	127	0.0	37.8
						Barrier D-01	point150	150	16.0	37.8
						Barrier D-01	point149	149	16.0	37.7
						Barrier D-01	point126	126	0.0	37.7
						Barrier D-01	point114	114	0.0	37.6
						Barrier D-01	point148	148	16.0	37.6
						Barrier D-01	point125	125	0.0	37.3
						Barrier D-01	point158	158	20.0	37.3

						Barrier D-01	point111	111	0.0	37.3
KY-02-01-COLED-13	31	56.8	5.5	8	-2.5	Barrier D-01	point127	127	0.0	38.2
						Barrier D-01	point128	128	0.0	38.2
						Barrier D-01	point126	126	0.0	37.7
						Barrier D-01	point114	114	0.0	37.3
						Barrier D-01	point115	115	0.0	37.2
						Barrier D-01	point150	150	16.0	37.0
						Barrier D-01	point149	149	16.0	36.9
						Barrier D-01	point148	148	16.0	36.9
						Barrier D-01	point125	125	0.0	36.8
						Barrier D-01	point109	109	0.0	36.8
KY-02-01-COLED-12	30	56.5	5.2	8	-2.8	Barrier D-01	point127	127	0.0	37.5
						Barrier D-01	point128	128	0.0	37.3
						Barrier D-01	point126	126	0.0	36.7
						Barrier D-01	point115	115	0.0	36.6
						Barrier D-01	point114	114	0.0	36.5
						Barrier D-01	point150	150	16.0	36.1
						Barrier D-01	point149	149	16.0	36.0
						Barrier D-01	point108	108	0.0	36.0
						Barrier D-01	point111	111	0.0	36.0
						Barrier D-01	point148	148	16.0	36.0
KY-02-01-COLED-11	29	56.5	5.2	8	-2.8	Barrier D-01	point127	127	0.0	37.1
						Barrier D-01	point128	128	0.0	37.1
						Barrier D-01	point114	114	0.0	36.7
						Barrier D-01	point115	115	0.0	36.7
						Barrier D-01	point126	126	0.0	36.2
						Barrier D-01	point111	111	0.0	36.0
						Barrier D-01	point161	161	20.0	36.0
						Barrier D-01	point159	159	20.0	36.0
						Barrier D-01	point150	150	16.0	35.9
						Barrier D-01	point120	120	0.0	35.9
KY-02-01-COLED-10	28	56.2	5.3	8	-2.7	Barrier D-01	point128	128	0.0	36.4
						Barrier D-01	point127	127	0.0	35.7
						Barrier D-01	point161	161	20.0	35.7
						Barrier D-01	point115	115	0.0	35.7
						Barrier D-01	point159	159	20.0	35.7

						Barrier D-01	point162	162	20.0	35.6
						Barrier D-01	point114	114	0.0	35.6
						Barrier D-01	point111	111	0.0	35.6
						Barrier D-01	point160	160	20.0	35.5
						Barrier D-01	point158	158	20.0	35.4
KY-02-02-MIMD-03*	102	56.0	4.1	8	-3.9	Barrier D-01	point121	121	0.0	37.1
						Barrier D-01	point127	127	0.0	36.1
						Barrier D-01	point128	128	0.0	36.1
						Barrier D-01	point114	114	0.0	36.1
						Barrier D-01	point126	126	0.0	35.7
						Barrier D-01	point103	103	0.0	35.6
						Barrier D-01	point132	132	12.0	35.4
						Barrier D-01	point125	125	0.0	35.4
						Barrier D-01	point2	2	0.0	35.4
						Barrier D-01	point115	115	0.0	35.3
KY-02-01-COLED-09	27	56.0	5.6	8	-2.4	Barrier D-01	point115	115	0.0	36.2
						Barrier D-01	point114	114	0.0	36.0
						Barrier D-01	point111	111	0.0	36.0
						Barrier D-01	point128	128	0.0	35.8
						Barrier D-01	point161	161	20.0	35.7
						Barrier D-01	point170	170	20.0	35.7
						Barrier D-01	point162	162	20.0	35.6
						Barrier D-01	point172	172	20.0	35.6
						Barrier D-01	point159	159	20.0	35.6
						Barrier D-01	point171	171	20.0	35.6
KY-02-01-COLED-08	26	56.0	5.5	8	-2.5	Barrier D-01	point114	114	0.0	36.1
						Barrier D-01	point115	115	0.0	35.8
						Barrier D-01	point172	172	20.0	35.7
						Barrier D-01	point170	170	20.0	35.7
						Barrier D-01	point171	171	20.0	35.6
						Barrier D-01	point111	111	0.0	35.6
						Barrier D-01	point161	161	20.0	35.5
						Barrier D-01	point173	173	20.0	35.5
						Barrier D-01	point116	116	0.0	35.4
						Barrier D-01	point162	162	20.0	35.4
KY-02-01-COLED-07	24	55.7	5.6	8	-2.4	Barrier D-01	point172	172	20.0	35.7

						Barrier D-01	point171	171	20.0	35.6
						Barrier D-01	point170	170	20.0	35.6
						Barrier D-01	point173	173	20.0	35.5
						Barrier D-01	point114	114	0.0	35.4
						Barrier D-01	point174	174	20.0	35.4
						Barrier D-01	point175	175	20.0	35.3
						Barrier D-01	point176	176	20.0	35.2
						Barrier D-01	point161	161	20.0	35.2
						Barrier D-01	point116	116	0.0	35.2
KY-02-01-COLED-06	23	55.6	5.5	8	-2.5	Barrier D-01	point172	172	20.0	35.5
						Barrier D-01	point191	191	16.0	35.5
						Barrier D-01	point176	176	20.0	35.5
						Barrier D-01	point177	177	20.0	35.4
						Barrier D-01	point175	175	20.0	35.4
						Barrier D-01	point174	174	20.0	35.4
						Barrier D-01	point173	173	20.0	35.4
						Barrier D-01	point192	192	16.0	35.3
						Barrier D-01	point171	171	20.0	35.2
						Barrier D-01	point170	170	20.0	35.2
KY-02-01-COLED-05	22	55.6	5.6	8	-2.4	Barrier D-01	point191	191	16.0	36.2
						Barrier D-01	point192	192	16.0	36.0
						Barrier D-01	point193	193	16.0	35.8
						Barrier D-01	point176	176	20.0	35.5
						Barrier D-01	point177	177	20.0	35.5
						Barrier D-01	point194	194	16.0	35.4
						Barrier D-01	point175	175	20.0	35.4
						Barrier D-01	point172	172	20.0	35.4
						Barrier D-01	point174	174	20.0	35.3
						Barrier D-01	point114	114	0.0	35.3
KY-02-01-COLED-04	21	55.5	5.5	8	-2.5	Barrier D-01	point191	191	16.0	36.4
						Barrier D-01	point192	192	16.0	36.3
						Barrier D-01	point193	193	16.0	36.1
						Barrier D-01	point194	194	16.0	35.9
						Barrier D-01	point3	3	14.0	35.3
						Barrier D-01	point195	195	16.0	35.2
						Barrier D-01	point176	176	20.0	35.2

						Barrier D-01	point177	177	20.0	35.2
						Barrier D-01	point223	223	0.0	35.1
						Barrier D-01	point199	199	14.0	35.0
KY-02-01-COLED-03	20	55.5	5.3	8	-2.7	Barrier D-01	point191	191	16.0	36.6
						Barrier D-01	point192	192	16.0	36.5
						Barrier D-01	point193	193	16.0	36.4
						Barrier D-01	point194	194	16.0	36.1
						Barrier D-01	point3	3	14.0	35.7
						Barrier D-01	point195	195	16.0	35.5
						Barrier D-01	point199	199	14.0	35.4
						Barrier D-01	point223	223	0.0	35.4
						Barrier D-01	point200	200	14.0	35.3
						Barrier D-01	point198	198	14.0	35.2
KY-02-01-COLED-02	19	55.5	5.3	8	-2.7	Barrier D-01	point191	191	16.0	37.0
						Barrier D-01	point192	192	16.0	37.0
						Barrier D-01	point193	193	16.0	36.9
						Barrier D-01	point194	194	16.0	36.7
						Barrier D-01	point3	3	14.0	36.3
						Barrier D-01	point195	195	16.0	36.1
						Barrier D-01	point199	199	14.0	36.0
						Barrier D-01	point200	200	14.0	35.9
						Barrier D-01	point198	198	14.0	35.8
						Barrier D-01	point207	207	14.0	35.5
KY-02-01-COLED-01	18	55.5	5.0	8	-3.0	Barrier D-01	point191	191	16.0	36.9
						Barrier D-01	point192	192	16.0	36.8
						Barrier D-01	point193	193	16.0	36.8
						Barrier D-01	point194	194	16.0	36.6
						Barrier D-01	point3	3	14.0	36.6
						Barrier D-01	point230	230	0.0	36.3
						Barrier D-01	point199	199	14.0	36.3
						Barrier D-01	point200	200	14.0	36.1
						Barrier D-01	point195	195	16.0	36.1
						Barrier D-01	point198	198	14.0	36.0
V7	128	57.7	9.3	8	1.3	Barrier D-01	point172	172	20.0	41.6
						Barrier D-01	point171	171	20.0	41.4
						Barrier D-01	point173	173	20.0	41.3

						Barrier D-01	point170	170	20.0	41.2
						Barrier D-01	point174	174	20.0	41.1
						Barrier D-01	point175	175	20.0	40.9
						Barrier D-01	point176	176	20.0	40.7
						Barrier D-01	point169	169	20.0	40.6
						Barrier D-01	point177	177	20.0	40.4
						Barrier D-01	point168	168	20.0	40.3
KY-02-02-COLED-01	95	56.4	6.2	8	-1.8	Barrier D-01	point193	193	16.0	39.5
						Barrier D-01	point191	191	16.0	39.5
						Barrier D-01	point192	192	16.0	39.4
						Barrier D-01	point194	194	16.0	39.2
						Barrier D-01	point3	3	14.0	38.8
						Barrier D-01	point195	195	16.0	38.7
						Barrier D-01	point199	199	14.0	38.5
						Barrier D-01	point198	198	14.0	38.5
						Barrier D-01	point200	200	14.0	38.3
						Barrier D-01	point196	196	16.0	38.1
KY-02-02-COLED-02	96	56.5	6.4	8	-1.6	Barrier D-01	point191	191	16.0	39.6
						Barrier D-01	point192	192	16.0	39.5
						Barrier D-01	point193	193	16.0	39.4
						Barrier D-01	point194	194	16.0	39.1
						Barrier D-01	point195	195	16.0	38.4
						Barrier D-01	point3	3	14.0	38.3
						Barrier D-01	point199	199	14.0	38.1
						Barrier D-01	point198	198	14.0	38.0
						Barrier D-01	point200	200	14.0	37.9
						Barrier D-01	point196	196	16.0	37.8
KY-02-02-COLED-03	97	56.3	6.6	8	-1.4	Barrier D-01	point191	191	16.0	38.8
						Barrier D-01	point192	192	16.0	38.6
						Barrier D-01	point193	193	16.0	38.4
						Barrier D-01	point194	194	16.0	38.0
						Barrier D-01	point195	195	16.0	37.3
						Barrier D-01	point177	177	20.0	37.1
						Barrier D-01	point3	3	14.0	37.0
						Barrier D-01	point178	178	20.0	36.9
						Barrier D-01	point176	176	20.0	36.9

						Barrier D-01	point183	183	20.0	36.9
KY-02-02-COLED-04	98	56.2	6.7	8	-1.3	Barrier D-01	point191	191	16.0	38.1
						Barrier D-01	point192	192	16.0	37.9
						Barrier D-01	point193	193	16.0	37.5
						Barrier D-01	point177	177	20.0	37.4
						Barrier D-01	point176	176	20.0	37.4
						Barrier D-01	point194	194	16.0	37.2
						Barrier D-01	point178	178	20.0	37.2
						Barrier D-01	point175	175	20.0	37.1
						Barrier D-01	point174	174	20.0	37.0
						Barrier D-01	point179	179	20.0	36.9
KY-02-02-COLED-05	99	56.3	6.7	8	-1.3	Barrier D-01	point176	176	20.0	37.6
						Barrier D-01	point177	177	20.0	37.6
						Barrier D-01	point175	175	20.0	37.5
						Barrier D-01	point191	191	16.0	37.4
						Barrier D-01	point172	172	20.0	37.4
						Barrier D-01	point173	173	20.0	37.3
						Barrier D-01	point192	192	16.0	37.3
						Barrier D-01	point178	178	20.0	37.2
						Barrier D-01	point174	174	20.0	37.1
						Barrier D-01	point171	171	20.0	37.0
KY-02-02-COLED-06	100	56.6	6.6	8	-1.4	Barrier D-01	point172	172	20.0	37.7
						Barrier D-01	point176	176	20.0	37.7
						Barrier D-01	point175	175	20.0	37.6
						Barrier D-01	point177	177	20.0	37.6
						Barrier D-01	point173	173	20.0	37.6
						Barrier D-01	point174	174	20.0	37.6
						Barrier D-01	point171	171	20.0	37.4
						Barrier D-01	point170	170	20.0	37.3
						Barrier D-01	point178	178	20.0	37.2
						Barrier D-01	point191	191	16.0	36.9
KY-02-02-RTTP-01	106	56.9	7.5	8	-0.5	Barrier D-01	point172	172	20.0	38.9
						Barrier D-01	point171	171	20.0	38.8
						Barrier D-01	point170	170	20.0	38.7
						Barrier D-01	point173	173	20.0	38.7
						Barrier D-01	point174	174	20.0	38.5

						Barrier D-01	point175	175	20.0	38.5
						Barrier D-01	point176	176	20.0	38.3
						Barrier D-01	point169	169	20.0	38.2
						Barrier D-01	point177	177	20.0	38.1
						Barrier D-01	point168	168	20.0	38.0
KY-02-02-RTTP-02	107	56.8	7.0	8	-1.0	Barrier D-01	point170	170	20.0	38.0
						Barrier D-01	point172	172	20.0	37.9
						Barrier D-01	point171	171	20.0	37.9
						Barrier D-01	point173	173	20.0	37.6
						Barrier D-01	point169	169	20.0	37.6
						Barrier D-01	point162	162	20.0	37.5
						Barrier D-01	point168	168	20.0	37.4
						Barrier D-01	point174	174	20.0	37.4
						Barrier D-01	point165	165	20.0	37.4
						Barrier D-01	point164	164	20.0	37.4
KY-02-01-RTTP-05*	43	58.7	11.9	8	3.9	Barrier D-01	point166	166	20.0	44.9
						Barrier D-01	point167	167	20.0	44.8
						Barrier D-01	point165	165	20.0	44.7
						Barrier D-01	point168	168	20.0	44.5
						Barrier D-01	point164	164	20.0	44.2
						Barrier D-01	point169	169	20.0	44.1
						Barrier D-01	point170	170	20.0	43.9
						Barrier D-01	point163	163	20.0	43.8
						Barrier D-01	point162	162	20.0	43.4
						Barrier D-01	point171	171	20.0	43.0
KY-02-02-RTTP-08*	113	59.2	10.0	8	2.0	Barrier D-01	point162	162	20.0	43.3
						Barrier D-01	point163	163	20.0	43.3
						Barrier D-01	point164	164	20.0	43.2
						Barrier D-01	point161	161	20.0	43.1
						Barrier D-01	point165	165	20.0	43.0
						Barrier D-01	point160	160	20.0	42.6
						Barrier D-01	point166	166	20.0	42.5
						Barrier D-01	point159	159	20.0	42.2
						Barrier D-01	point167	167	20.0	42.1
						Barrier D-01	point168	168	20.0	41.8
KY-02-02-COLED-07*	101	58.2	10.0	8	2.0	Barrier D-01	point161	161	20.0	42.5

						Barrier D-01	point159	159	20.0	42.4
						Barrier D-01	point162	162	20.0	42.3
						Barrier D-01	point160	160	20.0	42.3
						Barrier D-01	point158	158	20.0	41.9
						Barrier D-01	point163	163	20.0	41.8
						Barrier D-01	point164	164	20.0	41.5
						Barrier D-01	point157	157	20.0	41.5
						Barrier D-01	point165	165	20.0	41.1
						Barrier D-01	point156	156	20.0	41.1
KY-02-01-COLED-18*	37	58.7	10.4	8	2.4	Barrier D-01	point157	157	20.0	43.9
						Barrier D-01	point158	158	20.0	43.8
						Barrier D-01	point156	156	20.0	43.8
						Barrier D-01	point159	159	20.0	43.6
						Barrier D-01	point155	155	20.0	43.4
						Barrier D-01	point160	160	20.0	43.0
						Barrier D-01	point154	154	20.0	42.8
						Barrier D-01	point161	161	20.0	42.8
						Barrier D-01	point153	153	20.0	42.3
						Barrier D-01	point150	150	16.0	42.0
Total Cost, All Barriers (including additional cost(s))					$911202					

HMB Professional Engineers				**19 March 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**West 2_Barrier Area D_Shadytree Bar**									
BARRIER DESIGN:	**W2_Shadytree Mobile Home Park**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier D-01	W	8.00	16.76	20.00	1812	30373				911202
									Total Cost:	911202

HMB Professional Engineers 19 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: West 2_Barrier Area D_Shadytree Bar
BARRIER DESIGN: W2_Shadytree Mobile Home Park

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier D-01	W	point1	1	0.00	0.00	0.00	0	0				0
		point5	5	0.00	0.00	0.00	0	0				0
		point6	6	0.00	0.00	0.00	0	0				0
		point7	7	0.00	0.00	0.00	0	0				0
		point8	8	0.00	0.00	0.00	0	0				0
		point9	9	0.00	0.00	0.00	0	0				0
		point10	10	0.00	0.00	0.00	0	0				0
		point12	12	0.00	0.00	0.00	0	0				0
		point13	13	0.00	0.00	0.00	0	0				0
		point14	14	0.00	0.00	0.00	0	0				0
		point15	15	0.00	0.00	0.00	0	0				0
		point16	16	0.00	0.00	0.00	0	0				0
		point17	17	0.00	0.00	0.00	0	0				0
		point18	18	0.00	0.00	0.00	0	0				0
		point19	19	0.00	0.00	0.00	0	0				0
		point20	20	0.00	0.00	0.00	0	0				0
		point21	21	0.00	0.00	0.00	0	0				0
		point22	22	0.00	0.00	0.00	0	0				0
		point23	23	0.00	0.00	0.00	0	0				0
		point24	24	0.00	0.00	0.00	0	0				0
		point25	25	0.00	0.00	0.00	0	0				0
		point26	26	0.00	0.00	0.00	0	0				0
		point27	27	0.00	0.00	0.00	0	0				0
		point28	28	0.00	0.00	0.00	0	0				0
		point30	30	0.00	0.00	0.00	0	0				0
		point31	31	0.00	0.00	0.00	0	0				0

		point32	32	0.00	0.00	0.00	0	0				0
		point33	33	0.00	0.00	0.00	0	0				0
		point34	34	0.00	0.00	0.00	0	0				0
		point35	35	0.00	0.00	0.00	0	0				0
		point36	36	0.00	0.00	0.00	0	0				0
		point39	39	0.00	0.00	0.00	0	0				0
		point40	40	0.00	0.00	0.00	0	0				0
		point41	41	0.00	0.00	0.00	0	0				0
		point42	42	0.00	0.00	0.00	0	0				0
		point43	43	0.00	0.00	0.00	0	0				0
		point44	44	0.00	0.00	0.00	0	0				0
		point45	45	0.00	0.00	0.00	0	0				0
		point46	46	0.00	0.00	0.00	0	0				0
		point47	47	0.00	0.00	0.00	0	0				0
		point48	48	0.00	0.00	0.00	0	0				0
		point49	49	0.00	0.00	0.00	0	0				0
		point50	50	0.00	0.00	0.00	0	0				0
		point51	51	0.00	0.00	0.00	0	0				0
		point52	52	0.00	0.00	0.00	0	0				0
		point53	53	0.00	0.00	0.00	0	0				0
		point54	54	0.00	0.00	0.00	0	0				0
		point55	55	0.00	0.00	0.00	0	0				0
		point56	56	0.00	0.00	0.00	0	0				0
		point58	58	0.00	0.00	0.00	0	0				0
		point59	59	0.00	0.00	0.00	0	0				0
		point60	60	0.00	0.00	0.00	0	0				0
		point61	61	0.00	0.00	0.00	0	0				0
		point62	62	0.00	0.00	0.00	0	0				0
		point65	65	0.00	0.00	0.00	0	0				0
		point66	66	0.00	0.00	0.00	0	0				0
		point67	67	0.00	0.00	0.00	0	0				0
		point68	68	0.00	0.00	0.00	0	0				0
		point69	69	0.00	0.00	0.00	0	0				0
		point70	70	0.00	0.00	0.00	0	0				0
		point71	71	0.00	0.00	0.00	0	0				0
		point72	72	0.00	0.00	0.00	0	0				0
		point73	73	0.00	0.00	0.00	0	0				0
		point74	74	0.00	0.00	0.00	0	0				0
		point75	75	0.00	0.00	0.00	0	0				0

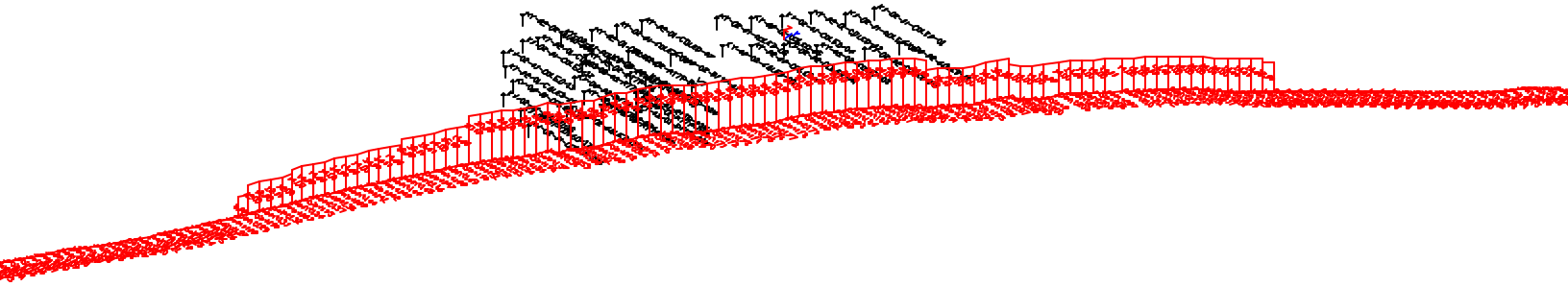
		point76	76	0.00	0.00	0.00	0	0				0
		point77	77	0.00	0.00	0.00	0	0				0
		point78	78	0.00	0.00	0.00	0	0				0
		point79	79	0.00	0.00	0.00	0	0				0
		point81	81	0.00	0.00	0.00	0	0				0
		point82	82	0.00	0.00	0.00	0	0				0
		point83	83	0.00	0.00	0.00	0	0				0
		point84	84	0.00	0.00	0.00	0	0				0
		point85	85	0.00	0.00	0.00	0	0				0
		point86	86	0.00	0.00	0.00	0	0				0
		point87	87	0.00	0.00	0.00	0	0				0
		point88	88	0.00	0.00	0.00	0	0				0
		point89	89	0.00	0.00	0.00	0	0				0
		point90	90	0.00	0.00	0.00	0	0				0
		point91	91	0.00	0.00	0.00	0	0				0
		point92	92	0.00	0.00	0.00	0	0				0
		point93	93	0.00	0.00	0.00	0	0				0
		point94	94	0.00	0.00	0.00	0	0				0
		point95	95	0.00	0.00	0.00	0	0				0
		point96	96	0.00	0.00	0.00	0	0				0
		point97	97	0.00	0.00	0.00	0	0				0
		point98	98	0.00	0.00	0.00	0	0				0
		point99	99	0.00	0.00	0.00	0	0				0
		point100	100	0.00	0.00	0.00	0	0				0
		point2	2	0.00	0.00	0.00	0	0				0
		point103	103	0.00	0.00	0.00	0	0				0
		point104	104	0.00	0.00	0.00	0	0				0
		point105	105	0.00	0.00	0.00	0	0				0
		point106	106	0.00	0.00	0.00	0	0				0
		point107	107	0.00	0.00	0.00	0	0				0
		point108	108	0.00	0.00	0.00	0	0				0
		point109	109	0.00	0.00	0.00	0	0				0
		point110	110	0.00	0.00	0.00	0	0				0
		point111	111	0.00	0.00	0.00	0	0				0
		point114	114	0.00	0.00	0.00	0	0				0
		point115	115	0.00	0.00	0.00	0	0				0
		point116	116	0.00	0.00	0.00	0	0				0
		point117	117	0.00	0.00	0.00	0	0				0
		point119	119	0.00	0.00	0.00	0	0				0

		point120	120	0.00	0.00	0.00	0	0				0
		point121	121	0.00	0.00	0.00	0	0				0
		point122	122	0.00	0.00	0.00	0	0				0
		point123	123	0.00	0.00	0.00	0	0				0
		point124	124	0.00	0.00	0.00	0	0				0
		point125	125	0.00	0.00	0.00	0	0				0
		point126	126	0.00	0.00	0.00	0	0				0
		point127	127	0.00	0.00	0.00	0	0				0
		point128	128	0.00	0.00	0.00	0	0				0
		point129	129	8.00	8.00	8.00	20	161				4832
		point130	130	12.00	12.00	12.00	20	239				7174
		point131	131	12.00	12.00	12.00	20	242				7248
		point132	132	12.00	12.00	12.00	20	242				7248
		point133	133	12.00	12.00	12.00	20	236				7091
		point134	134	14.00	14.00	14.00	17	244				7327
		point135	135	14.00	14.00	14.00	20	282				8456
		point137	137	14.00	14.00	14.00	20	282				8456
		point138	138	14.00	14.00	14.00	20	279				8361
		point139	139	14.00	14.00	14.00	20	279				8361
		point140	140	14.00	14.00	14.00	20	279				8361
		point141	141	14.00	14.00	14.00	20	282				8452
		point142	142	14.00	14.00	14.00	20	282				8452
		point143	143	14.00	14.00	14.00	20	276				8266
		point144	144	14.00	14.00	14.00	20	282				8452
		point145	145	16.00	16.00	16.00	20	322				9664
		point146	146	16.00	16.00	16.00	20	318				9553
		point147	147	16.00	16.00	16.00	20	318				9553
		point148	148	16.00	16.00	16.00	20	322				9664
		point149	149	16.00	16.00	16.00	20	322				9664
		point150	150	16.00	16.00	16.00	20	319				9558
		point151	151	20.00	20.00	20.00	20	398				11947
		point152	152	20.00	20.00	20.00	20	403				12079
		point153	153	20.00	20.00	20.00	20	398				11947
		point154	154	20.00	20.00	20.00	20	399				11963
		point155	155	20.00	20.00	20.00	20	403				12093
		point156	156	20.00	20.00	20.00	20	399				11963
		point157	157	20.00	20.00	20.00	20	403				12093
		point158	158	20.00	20.00	20.00	20	399				11963
		point159	159	20.00	20.00	20.00	20	399				11963

		point160	160	20.00	20.00	20.00	20	394				11834
		point161	161	20.00	20.00	20.00	20	404				12117
		point162	162	20.00	20.00	20.00	20	400				11989
		point163	163	20.00	20.00	20.00	20	400				11989
		point164	164	20.00	20.00	20.00	20	400				11989
		point165	165	20.00	20.00	20.00	20	400				11989
		point166	166	20.00	20.00	20.00	20	400				11989
		point167	167	20.00	20.00	20.00	20	401				12023
		point168	168	20.00	20.00	20.00	20	405				12149
		point169	169	20.00	20.00	20.00	20	391				11735
		point170	170	20.00	20.00	20.00	20	405				12149
		point171	171	20.00	20.00	20.00	20	397				11898
		point172	172	20.00	20.00	20.00	20	406				12191
		point173	173	20.00	20.00	20.00	20	397				11898
		point174	174	20.00	20.00	20.00	20	402				12067
		point175	175	20.00	20.00	20.00	20	397				11898
		point176	176	20.00	20.00	20.00	20	398				11945
		point177	177	20.00	20.00	20.00	20	402				12067
		point178	178	20.00	20.00	20.00	20	398				11945
		point179	179	20.00	20.00	20.00	20	398				11945
		point180	180	20.00	20.00	20.00	20	404				12120
		point181	181	20.00	20.00	20.00	20	398				11945
		point182	182	20.00	20.00	20.00	20	400				12000
		point183	183	20.00	20.00	20.00	20	404				12120
		point184	184	20.00	20.00	20.00	20	400				12000
		point185	185	20.00	20.00	20.00	20	400				12000
		point186	186	20.00	20.00	20.00	20	396				11880
		point187	187	20.00	20.00	20.00	20	400				12000
		point188	188	20.00	20.00	20.00	20	402				12065
		point189	189	20.00	20.00	20.00	20	402				12065
		point190	190	20.00	20.00	20.00	20	396				11880
		point191	191	16.00	16.00	16.00	20	319				9558
		point192	192	16.00	16.00	16.00	20	322				9652
		point193	193	16.00	16.00	16.00	20	324				9710
		point194	194	16.00	16.00	16.00	20	319				9558
		point195	195	16.00	16.00	16.00	20	315				9465
		point196	196	16.00	16.00	16.00	20	324				9710
		point197	197	16.00	16.00	16.00	20	321				9619
		point198	198	14.00	14.00	14.00	20	281				8416

		point199	199	14.00	14.00	14.00	20	281				8416
		point200	200	14.00	14.00	14.00	20	278				8337
		point3	3	14.00	14.00	14.00	25	352				10569
		point203	203	14.00	14.00	14.00	20	281				8416
		point204	204	14.00	14.00	14.00	20	278				8337
		point205	205	14.00	14.00	14.00	20	285				8554
		point206	206	14.00	14.00	14.00	20	278				8337
		point207	207	14.00	14.00	14.00	30	418				12530
		point210	210	14.00	14.00	14.00	20	279				8363
		point211	211	14.00	14.00	14.00	20	282				8445
		point212	212	14.00	14.00	14.00	20	279				8363
		point213	213	14.00	14.00	14.00	20	282				8445
		point214	214	14.00	14.00	14.00	20	279				8363
		point215	215	14.00	14.00	14.00	20	279				8363
		point216	216	14.00	14.00	14.00	20	282				8445
		point217	217	14.00	14.00	14.00	20	279				8363
		point218	218	14.00	14.00	14.00	20	282				8445
		point219	219	14.00	14.00	14.00	20	279				8363
		point220	220	14.00	14.00	14.00	20	279				8363
		point221	221	14.00	14.00	14.00	20	282				8445
		point222	222	12.00	12.00	12.00	20	239				7168
		point223	223	0.00	0.00	0.00	0	0				0
		point224	224	0.00	0.00	0.00	0	0				0
		point227	227	0.00	0.00	0.00	0	0				0
		point228	228	0.00	0.00	0.00	0	0				0
		point229	229	0.00	0.00	0.00	0	0				0
		point230	230	0.00	0.00	0.00	0	0				0
		point231	231	0.00	0.00	0.00	0	0				0
		point232	232	0.00	0.00	0.00	0	0				0
		point233	233	0.00	0.00	0.00	0	0				0
		point234	234	0.00	0.00	0.00	0	0				0
		point235	235	0.00	0.00	0.00	0	0				0
		point236	236	0.00	0.00	0.00	0	0				0
		point237	237	0.00	0.00	0.00	0	0				0
		point238	238	0.00	0.00	0.00	0	0				0
		point239	239	0.00	0.00	0.00	0	0				0
		point240	240	0.00	0.00	0.00	0	0				0
		point241	241	0.00	0.00	0.00	0	0				0
		point242	242	0.00	0.00	0.00	0	0				0

		point243	243	0.00	0.00	0.00	0	0				0
		point244	244	0.00	0.00	0.00	0	0				0
		point245	245	0.00	0.00	0.00	0	0				0
		point246	246	0.00	0.00	0.00	0	0				0
		point247	247	0.00	0.00	0.00	0	0				0
		point248	248	0.00	0.00	0.00	0	0				0
		point249	249	0.00	0.00	0.00	0	0				0
		point250	250	0.00	0.00	0.00	0	0				0
		point251	251	0.00	0.00	0.00	0	0				0
		point252	252	0.00	0.00	0.00	0	0				0
		point253	253	0.00	0.00	0.00	0	0				0
		point254	254	0.00	0.00	0.00	0	0				0
		point255	255	0.00	0.00	0.00	0	0				0



West 2_Barrier Area D_Shadytree Bar	Sheet 1 of 1	19 Mar 2018
	HMB Professional Engineers	
Barrier View-W2_Shadytree Mobile Home Park	Project/Contract No. I-69 ORX	
Run name: W2_02_TollAll_Shadytree	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR US 41 (KY 351 TO KY 425) – SOUTH ARLINGTON DRIVE (ALL ALTERNATIVES, BOTH TOLLING SCENARIOS)

HMB Professional Engineers 21 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: Pennyrile_TollAll_S Arlington Dr Area Bar
BARRIER DESIGN: W1_TollAll_SArlingtonDr
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-05-01-ARLC-02	18	1	62.2	67.3	66	5.1	10	Snd Lvl	61.6	5.7	8	-2.3
KY-05-02-ARLD-26	256	1	61.5	66.5	66	5.0	10	Snd Lvl	61.2	5.3	8	-2.7
KY-05-02-ARLD-25	255	1	60.9	66.0	66	5.1	10	Snd Lvl	60.7	5.3	8	-2.7
KY-05-02-ARLD-24	254	1	59.5	64.7	66	5.2	10	----	59.5	5.2	8	-2.8
KY-05-02-ARLD-23	253	1	58.7	64.0	66	5.3	10	----	58.3	5.7	8	-2.3
KY-05-02-ARLD-22	252	1	57.7	63.1	66	5.4	10	----	57.5	5.6	8	-2.4
KY-05-02-ARLD-21	251	1	57.2	62.6	66	5.4	10	----	56.7	5.9	8	-2.1
KY-05-02-ARLD-20	250	1	56.1	61.4	66	5.3	10	----	55.8	5.6	8	-2.4
KY-05-02-ARLD-19	249	1	55.9	61.2	66	5.3	10	----	55.6	5.6	8	-2.4
KY-05-02-ARLD-18	248	1	55.6	60.9	66	5.3	10	----	55.2	5.7	8	-2.3
KY-05-02-ARLD-17	247	1	54.9	60.3	66	5.4	10	----	54.9	5.4	8	-2.6
KY-05-02-ARLD-16	245	1	54.6	59.8	66	5.2	10	----	54.8	5.0	8	-3.0
KY-05-02-ARLD-11	238	1	51.4	55.8	66	4.4	10	----	53.6	2.2	8	-5.8
KY-05-01-HCHA-04	116	1	57.9	62.9	66	5.0	10	----	59.3	3.6	8	-4.4
KY-05-01-HCHA-03	115	1	56.2	61.0	66	4.8	10	----	57.1	3.9	8	-4.1
KY-05-01-HCHA-02	114	1	54.1	59.1	66	5.0	10	----	54.8	4.3	8	-3.7
KY-05-01-HCHA-01	113	1	51.6	56.7	66	5.1	10	----	53.2	3.5	8	-4.5
KY-05-01-ARLC-01	16	1	67.9	72.4	66	4.5	10	Snd Lvl	62.2	10.2	8	2.2
KY-05-01-ARLD-16	35	1	71.3	75.9	66	4.6	10	Snd Lvl	66.8	9.1	8	1.1
KY-05-01-ARLD-15	34	1	69.3	74.2	66	4.9	10	Snd Lvl	64.4	9.8	8	1.8
KY-05-01-ARLD-14	33	1	65.3	70.7	66	5.4	10	Snd Lvl	62.7	8.0	8	0.0
KY-05-01-ARLD-13	32	1	64.0	69.4	66	5.4	10	Snd Lvl	61.4	8.0	8	0.0
KY-05-01-ARLD-12	31	1	62.5	68.0	66	5.5	10	Snd Lvl	60.4	7.6	8	-0.4
KY-05-01-ARLD-11	30	1	60.5	66.2	66	5.7	10	Snd Lvl	59.6	6.6	8	-1.4

KY-05-01-ARLD-10	29	1	59.0	64.7	66	5.7	10	----	57.9	6.8	8	-1.2
KY-05-01-ARLD-09	27	1	58.2	63.9	66	5.7	10	----	56.8	7.1	8	-0.9
KY-05-01-ARLD-08	26	1	58.3	63.5	66	5.2	10	----	56.0	7.5	8	-0.5
KY-05-02-ARLD-15	242	1	54.0	59.1	66	5.1	10	----	54.7	4.4	8	-3.6
KY-05-02-ARLD-14	241	1	53.7	58.7	66	5.0	10	----	54.2	4.5	8	-3.5
KY-05-02-ARLD-13	240	1	53.1	57.9	66	4.8	10	----	53.9	4.0	8	-4.0
KY-05-02-ARLD-12	239	1	52.1	56.7	66	4.6	10	----	53.5	3.2	8	-4.8
KY-05-01-ARLD-07	25	1	54.9	58.3	66	3.4	10	----	56.5	1.8	8	-6.2

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	32	1.8	5.7	10.2
All Impacted	10	5.3	7.6	10.2
All that meet NR Goal	4	8.0	9.3	10.2

HMB Professional Engineers 21 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: Pennyrile_TollAll_S Arlington Dr Area Bar
BARRIER DESIGN: W1_TollAll_SArlingtonDr

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-05-01-ARLC-02	18	61.6	5.7	8	-2.3	Barrier3	point113	113	0.0	48.8
						Barrier3	point112	112	0.0	47.7
						Barrier3	point114	114	0.0	47.4
						Barrier3	point116	116	0.0	47.3
						Barrier3	point110	110	0.0	47.2
						Barrier3	point111	111	0.0	47.1
						Barrier3	point115	115	0.0	46.9
						Barrier3	point109	109	0.0	46.5
						Barrier3	point140	140	12.0	46.2
						Barrier3	point136	136	12.0	46.0
KY-05-02-ARLD-26	256	61.2	5.3	8	-2.7	Barrier3	point114	114	0.0	48.6
						Barrier3	point116	116	0.0	48.5
						Barrier3	point115	115	0.0	47.5
						Barrier3	point113	113	0.0	45.5
						Barrier3	point145	145	12.0	44.7
						Barrier3	point144	144	12.0	44.5
						Barrier3	point143	143	12.0	44.5
						Barrier3	point142	142	12.0	44.3
						Barrier3	point139	139	12.0	44.3
						Barrier3	point141	141	12.0	44.2
KY-05-02-ARLD-25	255	60.7	5.3	8	-2.7	Barrier3	point116	116	0.0	50.2

						Barrier3	point123	123	12.0	45.7
						Barrier3	point121	121	16.0	44.1
						Barrier3	point122	122	16.0	44.0
						Barrier3	point117	117	16.0	43.5
						Barrier3	point124	124	12.0	43.5
						Barrier3	point145	145	12.0	43.4
						Barrier3	point140	140	12.0	43.3
						Barrier3	point144	144	12.0	42.9
						Barrier3	point118	118	16.0	42.9
KY-05-02-ARLD-24	254	59.5	5.2	8	-2.8	Barrier3	point115	115	0.0	47.8
						Barrier3	point116	116	0.0	45.7
						Barrier3	point114	114	0.0	43.8
						Barrier3	point123	123	12.0	42.3
						Barrier3	point117	117	16.0	41.5
						Barrier3	point121	121	16.0	41.3
						Barrier4	point310	310	0.0	40.9
						Barrier3	point140	140	12.0	40.8
						Barrier3	point122	122	16.0	40.8
						Barrier3	point124	124	12.0	40.7
KY-05-02-ARLD-23	253	58.3	5.7	8	-2.3	Barrier3	point116	116	0.0	42.0
						Barrier3	point118	118	16.0	41.9
						Barrier3	point117	117	16.0	41.8
						Barrier3	point123	123	12.0	41.6
						Barrier4	point310	310	0.0	41.3
						Barrier3	point124	124	12.0	41.2
						Barrier4	point309	309	0.0	41.1
						Barrier4	point311	311	0.0	40.7
						Barrier4	point313	313	0.0	40.5
						Barrier4	point312	312	0.0	40.3
KY-05-02-ARLD-22	252	57.5	5.6	8	-2.4	Barrier3	point115	115	0.0	45.9
						Barrier4	point309	309	0.0	41.9
						Barrier4	point310	310	0.0	41.7
						Barrier3	point116	116	0.0	40.6
						Barrier4	point311	311	0.0	40.5
						Barrier3	point123	123	12.0	38.9
						Barrier3	point117	117	16.0	38.7

						Barrier3	point168	168	16.0	38.4
						Barrier4	point312	312	0.0	38.4
						Barrier3	point169	169	16.0	38.4
KY-05-02-ARLD-21	251	56.7	5.9	8	-2.1	Barrier4	point309	309	0.0	40.9
						Barrier4	point310	310	0.0	39.6
						Barrier3	point117	117	16.0	39.3
						Barrier3	point116	116	0.0	38.9
						Barrier3	point118	118	16.0	38.5
						Barrier3	point124	124	12.0	38.3
						Barrier3	point123	123	12.0	38.1
						Barrier3	point169	169	16.0	38.1
						Barrier3	point168	168	16.0	38.0
						Barrier3	point170	170	16.0	38.0
KY-05-02-ARLD-20	250	55.8	5.6	8	-2.4	Barrier3	point114	114	0.0	41.5
						Barrier3	point116	116	0.0	39.9
						Barrier4	point299	299	16.0	37.9
						Barrier3	point190	190	12.0	37.9
						Barrier4	point302	302	16.0	37.8
						Barrier3	point115	115	0.0	37.7
						Barrier4	point300	300	16.0	37.4
						Barrier4	point301	301	16.0	37.2
						Barrier4	point298	298	16.0	37.0
						Barrier3	point113	113	0.0	36.9
KY-05-02-ARLD-19	249	55.6	5.6	8	-2.4	Barrier3	point116	116	0.0	43.7
						Barrier4	point300	300	16.0	38.7
						Barrier4	point297	297	16.0	38.7
						Barrier4	point299	299	16.0	38.6
						Barrier3	point190	190	12.0	38.4
						Barrier4	point298	298	16.0	38.4
						Barrier4	point301	301	16.0	37.9
						Barrier4	point302	302	16.0	37.3
						Barrier4	point296	296	16.0	36.7
						Barrier3	point184	184	16.0	36.6
KY-05-02-ARLD-18	248	55.2	5.7	8	-2.3	Barrier4	point297	297	16.0	39.9
						Barrier4	point296	296	16.0	39.4
						Barrier4	point295	295	16.0	39.4

						Barrier3	point190	190	12.0	39.2
						Barrier4	point298	298	16.0	39.2
						Barrier4	point294	294	16.0	38.8
						Barrier4	point299	299	16.0	38.5
						Barrier3	point191	191	12.0	37.8
						Barrier4	point300	300	16.0	37.8
						Barrier4	point301	301	16.0	36.8
KY-05-02-ARLD-17	247	54.9	5.4	8	-2.6	Barrier4	point294	294	16.0	40.1
						Barrier4	point293	293	16.0	39.6
						Barrier4	point295	295	16.0	39.6
						Barrier3	point190	190	12.0	39.6
						Barrier4	point193	193	16.0	39.4
						Barrier4	point292	292	12.0	39.4
						Barrier4	point296	296	16.0	38.9
						Barrier4	point288	288	12.0	38.2
						Barrier4	point297	297	16.0	38.2
						Barrier3	point191	191	12.0	37.8
KY-05-02-ARLD-16	245	54.8	5.0	8	-3.0	Barrier4	point292	292	12.0	42.4
						Barrier4	point291	291	12.0	41.1
						Barrier4	point193	193	16.0	40.2
						Barrier3	point190	190	12.0	39.8
						Barrier4	point293	293	16.0	39.5
						Barrier4	point290	290	12.0	38.8
						Barrier4	point294	294	16.0	38.7
						Barrier3	point191	191	12.0	38.0
						Barrier4	point288	288	12.0	37.6
						Barrier4	point314	314	24.0	37.3
KY-05-02-ARLD-11	238	53.6	2.2	8	-5.8	Barrier4	point281	281	0.0	41.5
						Barrier4	point280	280	0.0	38.5
						Barrier4	point279	279	0.0	38.1
						Barrier4	point277	277	0.0	36.9
						Barrier4	point278	278	0.0	36.6
						Barrier4	point317	317	0.0	36.3
						Barrier4	point276	276	0.0	36.2
						Barrier4	point316	316	0.0	35.9
						Barrier3	point190	190	24.0	34.3

						Barrier3	point120	120	16.0	33.3
KY-05-01-HCHA-04	116	59.3	3.6	8	-4.4	Barrier3	point116	116	0.0	45.7
						Barrier3	point115	115	0.0	45.1
						Barrier3	point114	114	0.0	44.9
						Barrier3	point113	113	0.0	44.5
						Barrier3	point112	112	0.0	43.4
						Barrier3	point109	109	0.0	43.1
						Barrier3	point111	111	0.0	43.0
						Barrier3	point110	110	0.0	43.0
						Barrier3	point108	108	0.0	42.8
						Barrier3	point106	106	0.0	42.5
KY-05-01-HCHA-03	115	57.1	3.9	8	-4.1	Barrier3	point116	116	0.0	40.9
						Barrier3	point114	114	0.0	40.5
						Barrier3	point113	113	0.0	40.4
						Barrier3	point115	115	0.0	40.4
						Barrier3	point112	112	0.0	39.6
						Barrier3	point111	111	0.0	39.5
						Barrier3	point110	110	0.0	39.5
						Barrier3	point136	136	12.0	39.0
						Barrier3	point108	108	0.0	39.0
						Barrier3	point134	134	12.0	39.0
KY-05-01-HCHA-02	114	54.8	4.3	8	-3.7	Barrier3	point111	111	0.0	36.2
						Barrier4	point311	311	0.0	36.0
						Barrier3	point113	113	0.0	35.7
						Barrier3	point110	110	0.0	35.3
						Barrier3	point140	140	12.0	35.2
						Barrier4	point310	310	0.0	35.2
						Barrier3	point112	112	0.0	35.1
						Barrier3	point114	114	0.0	35.1
						Barrier3	point116	116	0.0	34.9
						Barrier3	point139	139	12.0	34.8
KY-05-01-HCHA-01	113	53.2	3.5	8	-4.5	Barrier4	point292	292	12.0	36.2
						Barrier4	point288	288	12.0	36.0
						Barrier4	point291	291	12.0	35.7
						Barrier3	point190	190	12.0	34.8
						Barrier4	point193	193	16.0	34.8

						Barrier4	point293	293	16.0	34.3
						Barrier4	point289	289	12.0	33.8
						Barrier4	point294	294	16.0	33.8
						Barrier4	point295	295	16.0	33.4
						Barrier3	point191	191	12.0	33.3
KY-05-01-ARLC-01	16	62.2	10.2	8	2.2	Barrier3	point140	140	12.0	51.2
						Barrier3	point131	131	12.0	50.6
						Barrier3	point141	141	12.0	50.6
						Barrier3	point139	139	12.0	50.3
						Barrier3	point143	143	12.0	50.0
						Barrier3	point142	142	12.0	49.7
						Barrier3	point144	144	12.0	49.7
						Barrier3	point145	145	12.0	49.0
						Barrier3	point138	138	12.0	48.7
						Barrier3	point137	137	12.0	48.1
KY-05-01-ARLD-16	35	66.8	9.1	8	1.1	Barrier3	point145	145	12.0	57.4
						Barrier3	point152	152	16.0	55.3
						Barrier3	point151	151	16.0	55.1
						Barrier3	point144	144	12.0	54.8
						Barrier3	point153	153	16.0	54.1
						Barrier3	point150	150	16.0	53.9
						Barrier3	point142	142	12.0	53.7
						Barrier3	point154	154	16.0	52.5
						Barrier3	point149	149	16.0	51.6
						Barrier3	point140	140	12.0	51.4
KY-05-01-ARLD-15	34	64.4	9.8	8	1.8	Barrier3	point145	145	12.0	52.4
						Barrier3	point155	155	16.0	51.5
						Barrier3	point156	156	16.0	51.1
						Barrier3	point154	154	16.0	51.1
						Barrier3	point153	153	16.0	50.9
						Barrier3	point157	157	16.0	50.9
						Barrier3	point158	158	16.0	50.7
						Barrier3	point152	152	16.0	50.2
						Barrier3	point142	142	12.0	50.2
						Barrier3	point159	159	16.0	49.8
KY-05-01-ARLD-14	33	62.7	8.0	8	0.0	Barrier3	point144	144	12.0	48.8

						Barrier3	point143	143	12.0	48.3
						Barrier3	point161	161	16.0	48.2
						Barrier3	point145	145	12.0	47.8
						Barrier3	point162	162	16.0	47.7
						Barrier3	point160	160	16.0	47.7
						Barrier3	point158	158	16.0	47.6
						Barrier3	point159	159	16.0	47.5
						Barrier3	point157	157	16.0	47.1
						Barrier3	point142	142	12.0	47.0
KY-05-01-ARLD-13	32	61.4	8.0	8	-0.0	Barrier3	point162	162	16.0	46.3
						Barrier3	point161	161	16.0	46.2
						Barrier3	point164	164	16.0	46.1
						Barrier3	point168	168	16.0	46.0
						Barrier3	point163	163	16.0	45.9
						Barrier3	point166	166	16.0	45.9
						Barrier3	point165	165	16.0	45.9
						Barrier3	point169	169	16.0	45.6
						Barrier3	point160	160	16.0	45.6
						Barrier3	point167	167	16.0	45.6
KY-05-01-ARLD-12	31	60.4	7.6	8	-0.4	Barrier3	point168	168	16.0	45.2
						Barrier3	point169	169	16.0	45.1
						Barrier3	point170	170	16.0	44.9
						Barrier3	point167	167	16.0	44.8
						Barrier3	point171	171	16.0	44.7
						Barrier3	point166	166	16.0	44.5
						Barrier4	point312	312	0.0	44.2
						Barrier3	point172	172	16.0	44.2
						Barrier4	point311	311	0.0	44.2
						Barrier3	point165	165	16.0	44.1
KY-05-01-ARLD-11	30	59.6	6.6	8	-1.4	Barrier4	point310	310	0.0	45.3
						Barrier4	point311	311	0.0	45.2
						Barrier4	point309	309	0.0	45.0
						Barrier4	point312	312	0.0	44.6
						Barrier3	point171	171	16.0	43.1
						Barrier3	point170	170	16.0	43.1
						Barrier4	point313	313	0.0	43.0

						Barrier3	point169	169	16.0	42.9
						Barrier3	point168	168	16.0	42.8
						Barrier3	point172	172	16.0	42.7
KY-05-01-ARLD-10	29	57.9	6.8	8	-1.2	Barrier3	point190	190	12.0	43.3
						Barrier4	point301	301	16.0	42.2
						Barrier4	point303	303	16.0	42.2
						Barrier4	point302	302	16.0	41.8
						Barrier3	point184	184	16.0	41.4
						Barrier3	point183	183	16.0	41.3
						Barrier3	point191	191	12.0	41.3
						Barrier3	point179	179	16.0	41.2
						Barrier3	point185	185	16.0	41.2
						Barrier3	point186	186	16.0	41.1
KY-05-01-ARLD-09	27	56.8	7.1	8	-0.9	Barrier3	point190	190	12.0	43.8
						Barrier4	point298	298	16.0	43.5
						Barrier4	point297	297	16.0	43.0
						Barrier4	point299	299	16.0	42.9
						Barrier3	point191	191	12.0	41.8
						Barrier4	point300	300	16.0	41.8
						Barrier4	point295	295	16.0	41.6
						Barrier3	point186	186	16.0	40.6
						Barrier3	point185	185	16.0	40.5
						Barrier3	point184	184	16.0	40.5
KY-05-01-ARLD-08	26	56.0	7.5	8	-0.5	Barrier4	point295	295	16.0	45.1
						Barrier3	point190	190	12.0	43.9
						Barrier4	point294	294	16.0	43.5
						Barrier4	point296	296	16.0	43.1
						Barrier4	point293	293	16.0	43.0
						Barrier3	point191	191	12.0	41.5
						Barrier4	point314	314	24.0	41.3
						Barrier4	point312	312	24.0	40.9
						Barrier4	point313	313	24.0	40.6
						Barrier3	point184	184	16.0	40.2
KY-05-02-ARLD-15	242	54.7	4.4	8	-3.6	Barrier4	point288	288	12.0	41.9
						Barrier4	point291	291	12.0	40.9
						Barrier4	point289	289	12.0	40.8

						Barrier4	point292	292	12.0	40.5
						Barrier3	point115	115	0.0	40.4
						Barrier3	point190	190	12.0	39.3
						Barrier4	point279	279	0.0	39.3
						Barrier4	point290	290	12.0	39.1
						Barrier4	point287	287	12.0	39.0
						Barrier3	point191	191	12.0	37.3
KY-05-02-ARLD-14	241	54.2	4.5	8	-3.5	Barrier4	point288	288	12.0	42.0
						Barrier4	point286	286	12.0	41.5
						Barrier4	point287	287	12.0	41.4
						Barrier4	point285	285	12.0	39.8
						Barrier3	point190	190	24.0	38.9
						Barrier4	point284	284	12.0	37.7
						Barrier4	point314	314	24.0	37.1
						Barrier3	point191	191	24.0	36.8
						Barrier4	point281	281	0.0	36.7
						Barrier4	point315	315	12.0	36.7
KY-05-02-ARLD-13	240	53.9	4.0	8	-4.0	Barrier4	point284	284	12.0	40.4
						Barrier4	point285	285	12.0	40.2
						Barrier4	point283	283	12.0	40.2
						Barrier4	point281	281	0.0	40.1
						Barrier4	point282	282	12.0	38.7
						Barrier3	point190	190	24.0	37.9
						Barrier4	point314	314	24.0	36.6
						Barrier4	point315	315	24.0	36.3
						Barrier3	point191	191	24.0	35.9
						Barrier4	point280	280	0.0	35.7
KY-05-02-ARLD-12	239	53.5	3.2	8	-4.8	Barrier4	point281	281	0.0	41.8
						Barrier4	point282	282	12.0	38.9
						Barrier4	point283	283	12.0	38.7
						Barrier4	point280	280	0.0	37.2
						Barrier4	point279	279	0.0	35.8
						Barrier3	point190	190	24.0	35.6
						Barrier4	point272	272	0.0	34.6
						Barrier4	point314	314	24.0	34.5
						Barrier4	point315	315	24.0	34.2

						Barrier4	point284	284	12.0	34.0
KY-05-01-ARLD-07	25	56.5	1.8	8	-6.2	Barrier4	point277	277	0.0	51.0
						Barrier4	point278	278	24.0	50.3
						Barrier4	point279	279	0.0	44.0
						Barrier4	point276	276	0.0	42.9
						Barrier4	point280	280	24.0	42.5
						Barrier4	point274	274	0.0	41.5
						Barrier4	point317	317	0.0	40.8
						Barrier4	point275	275	0.0	39.8
						Barrier4	point316	316	0.0	39.4
						Barrier3	point190	190	24.0	38.5
Total Cost, All Barriers (including additional cost(s))					$898539					

HMB Professional Engineers				**21 March 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**Pennyrile_TollAll_S Arlington Dr Area Bar**									
BARRIER DESIGN:	**W1_TollAll_SArlingtonDr**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier3	W	12.00	14.68	16.00	1494	21925				657739
Barrier4	W	12.00	14.44	16.00	556	8027				240800
									Total Cost:	898539

HMB Professional Engineers 21 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: Pennyrile_TollAll_S Arlington Dr Area Bar
BARRIER DESIGN: W1_TollAll_SArlingtonDr

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier3	W	point97	97	0.00	0.00	0.00	0	0				0
		point99	99	0.00	0.00	0.00	0	0				0
		point100	100	0.00	0.00	0.00	0	0				0
		point101	101	0.00	0.00	0.00	0	0				0
		point102	102	0.00	0.00	0.00	0	0				0
		point103	103	0.00	0.00	0.00	0	0				0
		point104	104	0.00	0.00	0.00	0	0				0
		point105	105	0.00	0.00	0.00	0	0				0
		point106	106	0.00	0.00	0.00	0	0				0
		point107	107	0.00	0.00	0.00	0	0				0
		point108	108	0.00	0.00	0.00	0	0				0
		point109	109	0.00	0.00	0.00	0	0				0
		point110	110	0.00	0.00	0.00	0	0				0
		point111	111	0.00	0.00	0.00	0	0				0
		point112	112	0.00	0.00	0.00	0	0				0
		point113	113	0.00	0.00	0.00	0	0				0
		point114	114	0.00	0.00	0.00	0	0				0
		point115	115	0.00	0.00	0.00	0	0				0
		point116	116	0.00	0.00	0.00	0	0				0
		point117	117	16.00	16.00	16.00	20	321				9627
		point118	118	16.00	16.00	16.00	20	321				9627
		point119	119	16.00	16.00	16.00	20	321				9627
		point120	120	16.00	16.00	16.00	20	317				9507
		point121	121	16.00	16.00	16.00	20	322				9675
		point122	122	16.00	16.00	16.00	20	319				9556
		point123	123	12.00	12.00	12.00	20	242				7256

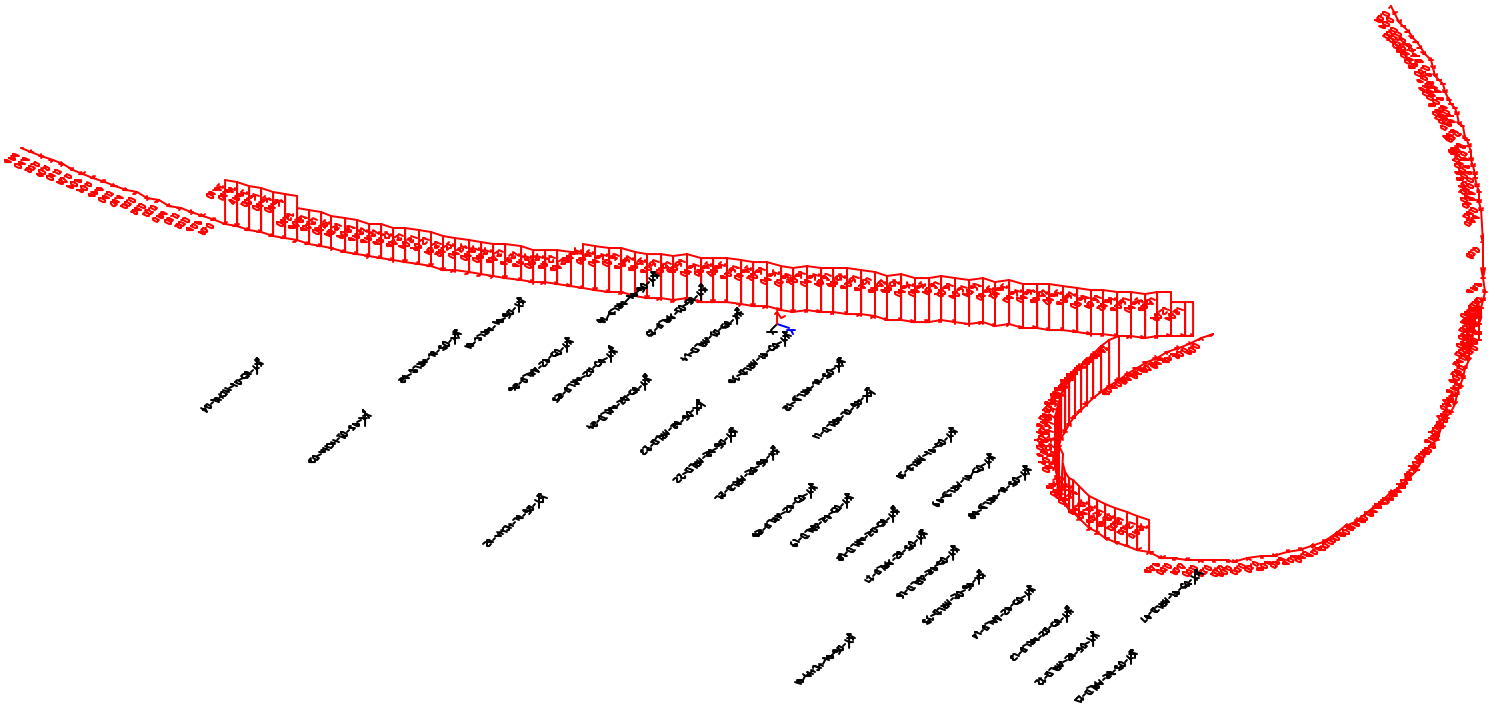
		point124	124	12.00	12.00	12.00	20	239				7167
		point125	125	12.00	12.00	12.00	20	239				7167
		point126	126	12.00	12.00	12.00	20	240				7192
		point127	127	12.00	12.00	12.00	20	241				7221
		point128	128	12.00	12.00	12.00	20	241				7221
		point129	129	12.00	12.00	12.00	20	240				7192
		point130	130	12.00	12.00	12.00	20	239				7160
		point131	131	12.00	12.00	12.00	20	242				7247
		point132	132	12.00	12.00	12.00	20	239				7160
		point133	133	12.00	12.00	12.00	20	242				7247
		point134	134	12.00	12.00	12.00	21	248				7435
		point135	135	12.00	12.00	12.00	19	223				6690
		point136	136	12.00	12.00	12.00	21	258				7732
		point137	137	12.00	12.00	12.00	20	236				7078
		point138	138	12.00	12.00	12.00	19	226				6767
		point139	139	12.00	12.00	12.00	21	249				7459
		point140	140	12.00	12.00	12.00	23	275				8258
		point141	141	12.00	12.00	12.00	20	236				7078
		point142	142	12.00	12.00	12.00	18	215				6452
		point143	143	12.00	12.00	12.00	20	240				7207
		point144	144	12.00	12.00	12.00	20	239				7160
		point145	145	12.00	12.00	12.00	20	240				7207
		point146	146	16.00	16.00	16.00	20	320				9610
		point147	147	16.00	16.00	16.00	20	321				9639
		point148	148	16.00	16.00	16.00	20	320				9607
		point149	149	16.00	16.00	16.00	20	318				9525
		point150	150	16.00	16.00	16.00	20	321				9639
		point151	151	16.00	16.00	16.00	20	324				9719
		point152	152	16.00	16.00	16.00	20	316				9471
		point153	153	16.00	16.00	16.00	20	322				9664
		point154	154	16.00	16.00	16.00	20	318				9555
		point155	155	16.00	16.00	16.00	20	318				9555
		point156	156	16.00	16.00	16.00	20	322				9664
		point157	157	16.00	16.00	16.00	20	318				9555
		point158	158	16.00	16.00	16.00	20	322				9664
		point159	159	16.00	16.00	16.00	20	318				9555
		point160	160	16.00	16.00	16.00	20	322				9664
		point161	161	16.00	16.00	16.00	20	318				9555
		point162	162	16.00	16.00	16.00	20	322				9664

		point163	163	16.00	16.00	16.00	20	319				9558
		point164	164	16.00	16.00	16.00	20	319				9571
		point165	165	16.00	16.00	16.00	20	319				9571
		point166	166	16.00	16.00	16.00	20	319				9571
		point167	167	16.00	16.00	16.00	20	319				9571
		point168	168	16.00	16.00	16.00	20	323				9693
		point169	169	16.00	16.00	16.00	20	319				9571
		point170	170	16.00	16.00	16.00	20	319				9571
		point171	171	16.00	16.00	16.00	20	320				9591
		point172	172	16.00	16.00	16.00	20	325				9753
		point173	173	16.00	16.00	16.00	20	317				9519
		point174	174	16.00	16.00	16.00	20	321				9619
		point175	175	16.00	16.00	16.00	20	321				9619
		point176	176	16.00	16.00	16.00	20	317				9519
		point177	177	16.00	16.00	16.00	20	321				9619
		point178	178	16.00	16.00	16.00	20	321				9619
		point179	179	16.00	16.00	16.00	20	321				9619
		point180	180	16.00	16.00	16.00	20	321				9619
		point181	181	16.00	16.00	16.00	20	317				9519
		point182	182	16.00	16.00	16.00	20	321				9619
		point183	183	16.00	16.00	16.00	20	321				9619
		point184	184	16.00	16.00	16.00	20	317				9519
		point185	185	16.00	16.00	16.00	20	321				9619
		point186	186	16.00	16.00	16.00	20	321				9619
		point187	187	16.00	16.00	16.00	20	321				9619
		point188	188	16.00	16.00	16.00	20	321				9619
		point189	189	16.00	16.00	16.00	20	319				9558
		point190	190	12.00	12.00	12.00	20	241				7239
		point191	191	12.00	12.00	12.00	13	158				4752
Barrier4	W	point192	192	0.00	0.00	0.00	0	0				0
		point195	195	0.00	0.00	0.00	0	0				0
		point196	196	0.00	0.00	0.00	0	0				0
		point197	197	0.00	0.00	0.00	0	0				0
		point198	198	0.00	0.00	0.00	0	0				0
		point199	199	0.00	0.00	0.00	0	0				0
		point200	200	0.00	0.00	0.00	0	0				0
		point201	201	0.00	0.00	0.00	0	0				0
		point202	202	0.00	0.00	0.00	0	0				0

		point203	203	0.00	0.00	0.00	0	0				0
		point204	204	0.00	0.00	0.00	0	0				0
		point205	205	0.00	0.00	0.00	0	0				0
		point206	206	0.00	0.00	0.00	0	0				0
		point207	207	0.00	0.00	0.00	0	0				0
		point208	208	0.00	0.00	0.00	0	0				0
		point209	209	0.00	0.00	0.00	0	0				0
		point210	210	0.00	0.00	0.00	0	0				0
		point211	211	0.00	0.00	0.00	0	0				0
		point212	212	0.00	0.00	0.00	0	0				0
		point213	213	0.00	0.00	0.00	0	0				0
		point214	214	0.00	0.00	0.00	0	0				0
		point215	215	0.00	0.00	0.00	0	0				0
		point216	216	0.00	0.00	0.00	0	0				0
		point217	217	0.00	0.00	0.00	0	0				0
		point218	218	0.00	0.00	0.00	0	0				0
		point219	219	0.00	0.00	0.00	0	0				0
		point220	220	0.00	0.00	0.00	0	0				0
		point221	221	0.00	0.00	0.00	0	0				0
		point222	222	0.00	0.00	0.00	0	0				0
		point223	223	0.00	0.00	0.00	0	0				0
		point224	224	0.00	0.00	0.00	0	0				0
		point225	225	0.00	0.00	0.00	0	0				0
		point226	226	0.00	0.00	0.00	0	0				0
		point227	227	0.00	0.00	0.00	0	0	Y			0
		point228	228	0.00	0.00	0.00	0	0	Y			0
		point229	229	0.00	0.00	0.00	0	0	Y			0
		point230	230	0.00	0.00	0.00	0	0	Y			0
		point231	231	0.00	0.00	0.00	0	0	Y			0
		point232	232	0.00	0.00	0.00	0	0	Y			0
		point233	233	0.00	0.00	0.00	0	0	Y			0
		point234	234	0.00	0.00	0.00	0	0	Y			0
		point235	235	0.00	0.00	0.00	0	0	Y			0
		point236	236	0.00	0.00	0.00	0	0				0
		point237	237	0.00	0.00	0.00	0	0				0
		point238	238	0.00	0.00	0.00	0	0				0
		point239	239	0.00	0.00	0.00	0	0				0
		point240	240	0.00	0.00	0.00	0	0				0
		point241	241	0.00	0.00	0.00	0	0				0

		point242	242	0.00	0.00	0.00	0	0				0
		point243	243	0.00	0.00	0.00	0	0				0
		point244	244	0.00	0.00	0.00	0	0				0
		point245	245	0.00	0.00	0.00	0	0				0
		point246	246	0.00	0.00	0.00	0	0				0
		point247	247	0.00	0.00	0.00	0	0				0
		point248	248	0.00	0.00	0.00	0	0				0
		point249	249	0.00	0.00	0.00	0	0				0
		point250	250	0.00	0.00	0.00	0	0				0
		point251	251	0.00	0.00	0.00	0	0				0
		point252	252	0.00	0.00	0.00	0	0				0
		point253	253	0.00	0.00	0.00	0	0				0
		point254	254	0.00	0.00	0.00	0	0				0
		point255	255	0.00	0.00	0.00	0	0				0
		point256	256	0.00	0.00	0.00	0	0				0
		point257	257	0.00	0.00	0.00	0	0				0
		point258	258	0.00	0.00	0.00	0	0				0
		point259	259	0.00	0.00	0.00	0	0				0
		point260	260	0.00	0.00	0.00	0	0				0
		point261	261	0.00	0.00	0.00	0	0				0
		point262	262	0.00	0.00	0.00	0	0				0
		point263	263	0.00	0.00	0.00	0	0				0
		point264	264	0.00	0.00	0.00	0	0				0
		point265	265	0.00	0.00	0.00	0	0				0
		point266	266	0.00	0.00	0.00	0	0				0
		point267	267	0.00	0.00	0.00	0	0				0
		point268	268	0.00	0.00	0.00	0	0				0
		point269	269	0.00	0.00	0.00	0	0				0
		point270	270	0.00	0.00	0.00	0	0				0
		point271	271	0.00	0.00	0.00	0	0				0
		point272	272	0.00	0.00	0.00	0	0				0
		point273	273	0.00	0.00	0.00	0	0				0
		point274	274	0.00	0.00	0.00	0	0				0
		point275	275	0.00	0.00	0.00	0	0				0
		point276	276	0.00	0.00	0.00	0	0				0
		point277	277	0.00	0.00	0.00	0	0				0
		point278	278	0.00	0.00	0.00	0	0				0
		point279	279	0.00	0.00	0.00	0	0				0
		point280	280	0.00	0.00	0.00	0	0				0

		point281	281	0.00	0.00	0.00	0	0				0
		point282	282	12.00	12.00	12.00	20	241				7220
		point283	283	12.00	12.00	12.00	20	237				7110
		point284	284	12.00	12.00	12.00	20	241				7220
		point285	285	12.00	12.00	12.00	20	240				7192
		point286	286	12.00	12.00	12.00	20	240				7204
		point287	287	12.00	12.00	12.00	20	241				7229
		point288	288	12.00	12.00	12.00	28	331				9944
		point289	289	12.00	12.00	12.00	17	201				6041
		point290	290	12.00	12.00	12.00	12	143				4276
		point291	291	12.00	12.00	12.00	20	240				7200
		point292	292	12.00	12.00	12.00	20	239				7168
		point193	193	16.00	16.00	16.00	20	320				9598
		point293	293	16.00	16.00	16.00	20	320				9592
		point294	294	16.00	16.00	16.00	20	321				9634
		point295	295	16.00	16.00	16.00	20	316				9483
		point296	296	16.00	16.00	16.00	20	324				9719
		point297	297	16.00	16.00	16.00	20	316				9467
		point298	298	16.00	16.00	16.00	20	322				9660
		point299	299	16.00	16.00	16.00	20	322				9675
		point300	300	16.00	16.00	16.00	20	315				9453
		point301	301	16.00	16.00	16.00	20	324				9725
		point302	302	16.00	16.00	16.00	20	321				9634
		point303	303	16.00	16.00	16.00	20	316				9489
		point304	304	16.00	16.00	16.00	20	322				9661
		point305	305	16.00	16.00	16.00	20	320				9612
		point306	306	16.00	16.00	16.00	20	320				9600
		point307	307	16.00	16.00	16.00	20	320				9607
		point308	308	16.00	16.00	16.00	20	313				9388
		point309	309	0.00	0.00	0.00	0	0				0
		point310	310	0.00	0.00	0.00	0	0				0
		point311	311	0.00	0.00	0.00	0	0				0
		point312	312	0.00	0.00	0.00	0	0				0
		point313	313	0.00	0.00	0.00	0	0				0
		point314	314	0.00	0.00	0.00	0	0				0
		point315	315	0.00	0.00	0.00	0	0				0
		point316	316	0.00	0.00	0.00	0	0				0
		point317	317	0.00	0.00	0.00	0	0				0



Pennyrile_TollAll_S Arlington Dr Area Bar	Sheet 1 of 1	21 Mar 2018
	HMB Professional Engineers	
Barrier View-W1_TollAll_SArlingtonDr	Project/Contract No. I-69 ORX	
Run name: P_TollAll_Barrier_B	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR US 41 (KY 351 TO KY 425) – MELWOOD DRIVE (ALL ALTERNATIVES, BOTH TOLLING SCENARIOS)

HMB Professional Engineers 22 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: Pennyrile Upgrades_Mellwood Barrier
BARRIER DESIGN: Pennyrile_Mellwood_Bar
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-05-02-ARLD-07	234	1	50.7	54.9	66	4.2	10	----	53.7	1.2	8	-6.8
KY-05-02-ARLD-06	232	1	50.7	54.9	66	4.2	10	----	53.6	1.3	8	-6.7
KY-05-02-MELP-13	329	1	52.0	56.6	66	4.6	10	----	54.5	2.1	8	-5.9
KY-05-02-LEXD-03	313	1	53.2	58.2	66	5.0	10	----	55.1	3.1	8	-4.9
KY-05-01-LEXD-02	142	1	55.3	60.8	66	5.5	10	----	55.8	5.0	8	-3.0
KY-05-02-WENA-06	369	1	55.5	61.1	66	5.6	10	----	56.0	5.1	8	-2.9
KY-05-01-GRED-06	102	1	58.0	63.0	66	5.0	10	----	59.2	3.8	8	-4.2
KY-05-01-GRED-07	103	1	57.0	61.9	66	4.9	10	----	58.6	3.3	8	-4.7
KY-05-01-GRED-08	104	1	56.0	60.6	66	4.6	10	----	58.0	2.6	8	-5.4
KY-05-01-GRED-09	105	1	55.5	60.0	66	4.5	10	----	57.7	2.3	8	-5.7
KY-05-01-GRED-10	107	1	54.8	59.1	66	4.3	10	----	57.1	2.0	8	-6.0
KY-05-01-GRED-11	108	1	54.4	58.6	66	4.2	10	----	56.7	1.9	8	-6.1
KY-05-01-GRED-12	109	1	54.0	58.0	66	4.0	10	----	56.4	1.6	8	-6.4
KY-05-01-GRED-13	110	1	53.6	57.4	66	3.8	10	----	56.1	1.3	8	-6.7
KY-05-01-GRED-14	111	1	53.2	56.9	66	3.7	10	----	55.7	1.2	8	-6.8
KY-05-02-ARLD-05	228	1	52.7	56.1	66	3.4	10	----	55.2	0.9	8	-7.1
KY-05-02-ARLD-04	226	1	54.1	56.8	66	2.7	10	----	56.2	0.6	8	-7.4
KY-05-02-ARLD-03	225	1	56.5	58.4	66	1.9	10	----	58.0	0.4	8	-7.6
KY-05-02-ARLD-02	224	1	58.5	60.0	66	1.5	10	----	59.7	0.3	8	-7.7
KY-05-02-ARLD-01	223	1	63.2	64.2	66	1.0	10	----	64.1	0.1	8	-7.9
KY-05-01-ARLD-01	19	1	58.5	60.2	66	1.7	10	----	59.9	0.3	8	-7.7
KY-05-02-351-10	222	1	59.4	61.2	66	1.8	10	----	60.8	0.4	8	-7.6
KY-05-02-351-09	221	1	60.0	61.8	66	1.8	10	----	61.3	0.5	8	-7.5
KY-05-02-351-08	220	1	59.7	61.8	66	2.1	10	----	61.1	0.7	8	-7.3

KY-05-02-351-07	219	1	62.3	63.9	66	1.6	10	----	63.5	0.4	8	-7.6
KY-05-02-351-05	205	1	59.7	63.3	66	3.6	10	----	62.5	0.8	8	-7.2
KY-05-02-351-04	215	1	61.3	64.4	66	3.1	10	----	62.7	1.7	8	-6.3
KY-05-02-351-03	214	1	62.4	65.4	66	3.0	10	----	63.3	2.1	8	-5.9
KY-05-02-351-02	213	1	66.6	69.2	66	2.6	10	Snd Lvl	67.6	1.6	8	-6.4
KY-05-02-MELP-01	316	1	62.3	66.7	66	4.4	10	Snd Lvl	61.6	5.1	8	-2.9
KY-05-02-MELP-02	317	1	61.8	66.8	66	5.0	10	Snd Lvl	61.0	5.8	8	-2.2
KY-05-02-MELP-03	318	1	61.4	66.6	66	5.2	10	Snd Lvl	60.6	6.0	8	-2.0
KY-05-02-MELP-04	319	1	61.2	66.7	66	5.5	10	Snd Lvl	60.5	6.2	8	-1.8
KY-05-01-GRED-04	100	1	61.2	65.6	66	4.4	10	----	60.2	5.4	8	-2.6
KY-05-01-GRED-03	99	1	65.9	67.0	66	1.1	10	Snd Lvl	60.7	6.3	8	-1.7
KY-05-02-GRED-04	302	1	59.2	65.2	66	6.0	10	----	60.2	5.0	8	-3.0
KY-05-02-GRED-03	300	1	61.3	67.3	66	6.0	10	Snd Lvl	61.7	5.6	8	-2.4
KY-05-02-GRED-02	299	1	66.1	71.1	66	5.0	10	Snd Lvl	64.7	6.4	8	-1.6
KY-05-01-WENA-03	210	1	58.4	64.4	66	6.0	10	----	59.0	5.4	8	-2.6
KY-05-01-WENA-02	209	1	59.6	65.8	66	6.2	10	----	59.6	6.2	8	-1.8
KY-05-01-WENA-01	208	1	60.5	66.6	66	6.1	10	Snd Lvl	60.1	6.5	8	-1.5
KY-05-02-WENA-05	367	1	56.6	63.2	66	6.6	10	----	57.4	5.8	8	-2.2
KY-05-02-WENA-01	363	1	61.6	67.4	66	5.8	10	Snd Lvl	59.5	7.9	8	-0.1
KY-05-02-WENA-03	365	1	58.6	64.6	66	6.0	10	----	58.0	6.6	8	-1.4
KY-05-02-WENA-02	364	1	60.2	66.1	66	5.9	10	Snd Lvl	58.7	7.4	8	-0.6
KY-05-02-MELP-05	320	1	60.5	66.2	66	5.7	10	Snd Lvl	58.6	7.6	8	-0.4
KY-05-02-MELP-06	321	1	58.7	64.6	66	5.9	10	----	57.8	6.8	8	-1.2
KY-05-02-MELP-07	322	1	57.5	63.2	66	5.7	10	----	57.0	6.2	8	-1.8
KY-05-02-MELP-08	324	1	56.5	62.0	66	5.5	10	----	56.4	5.6	8	-2.4
KY-05-02-MELP-09	325	1	55.8	61.3	66	5.5	10	----	56.0	5.3	8	-2.7
KY-05-02-MELP-10	326	1	53.8	59.1	66	5.3	10	----	55.2	3.9	8	-4.1
KY-05-02-MELP-11	327	1	53.3	58.3	66	5.0	10	----	55.4	2.9	8	-5.1
KY-05-02-MELP-12	328	1	52.8	57.5	66	4.7	10	----	55.1	2.4	8	-5.6
KY-05-02-ARLD-08	235	1	50.9	55.1	66	4.2	10	----	54.0	1.1	8	-6.9
KY-05-02-ARLD-09	236	1	50.9	55.2	66	4.3	10	----	54.2	1.0	8	-7.0
KY-05-02-ARLD-10	237	1	51.1	55.4	66	4.3	10	----	54.5	0.9	8	-7.1
KY-05-02-ARLD-11	238	1	51.4	55.9	66	4.5	10	----	55.3	0.6	8	-7.4
KY-05-02-ARLD-12	239	1	52.1	56.8	66	4.7	10	----	56.4	0.4	8	-7.6
KY-05-01-LEXD-01	141	1	53.6	58.7	66	5.1	10	----	55.3	3.4	8	-4.6
KY-05-01-ARLD-07	25	1	54.9	58.3	66	3.4	10	----	58.1	0.2	8	-7.8
KY-05-01-ARLD-06	24	1	53.7	57.5	66	3.8	10	----	56.9	0.6	8	-7.4
KY-05-01-ARLD-05	23	1	52.6	56.8	66	4.2	10	----	55.4	1.4	8	-6.6
KY-05-01-MELP-21	167	1	53.7	58.3	66	4.6	10	----	55.7	2.6	8	-5.4
KY-05-01-MELP-20	166	1	53.8	58.2	66	4.4	10	----	54.3	3.9	8	-4.1
KY-05-01-MELP-19	165	1	54.4	59.3	66	4.9	10	----	55.0	4.3	8	-3.7

KY-05-01-MELP-18	164	1	55.5	60.7	66	5.2	10	----	55.7	5.0	8	-3.0
KY-05-01-MELP-17	163	1	56.5	61.8	66	5.3	10	----	56.5	5.3	8	-2.7
KY-05-01-MELP-16	161	1	57.7	63.0	66	5.3	10	----	57.3	5.7	8	-2.3
KY-05-01-MELP-15	160	1	59.4	64.7	66	5.3	10	----	58.5	6.2	8	-1.8
KY-05-01-MELP-14	159	1	62.1	66.8	66	4.7	10	Snd Lvl	60.2	6.6	8	-1.4
KY-05-01-MELP-13	158	1	64.6	69.1	66	4.5	10	Snd Lvl	61.6	7.5	8	-0.5
KY-05-01-MELP-12	157	1	66.4	70.7	66	4.3	10	Snd Lvl	61.8	8.9	8	0.9
KY-05-01-MELP-11	156	1	69.6	73.8	66	4.2	10	Snd Lvl	62.4	11.4	8	3.4
KY-05-01-MELP-10	155	1	69.4	73.8	66	4.4	10	Snd Lvl	62.1	11.7	8	3.7
KY-05-01-MELP-09	154	1	67.5	72.3	66	4.8	10	Snd Lvl	61.5	10.8	8	2.8
KY-05-01-MELP-08	153	1	67.3	72.2	66	4.9	10	Snd Lvl	61.9	10.3	8	2.3
KY-05-01-MELP-07	152	1	66.4	71.7	66	5.3	10	Snd Lvl	62.7	9.0	8	1.0
KY-05-01-MELP-06	150	1	67.1	71.9	66	4.8	10	Snd Lvl	64.1	7.8	8	-0.2
KY-05-02-GRED-01	298	1	69.7	73.6	66	3.9	10	Snd Lvl	66.1	7.5	8	-0.5
KY-05-01-GRED-01	97	1	65.3	72.5	66	7.2	10	Snd Lvl	62.6	9.9	8	1.9
KY-05-01-MELP-05	150	1	67.6	71.8	66	4.2	10	Snd Lvl	61.9	9.9	8	1.9
KY-05-01-MELP-04	149	1	68.1	71.9	66	3.8	10	Snd Lvl	61.7	10.2	8	2.2
KY-05-01-MELP-03	148	1	68.7	72.2	66	3.5	10	Snd Lvl	61.7	10.5	8	2.5
KY-05-01-MELP-02	147	1	69.5	72.3	66	2.8	10	Snd Lvl	62.1	10.2	8	2.2
KY-05-01-MELP-01	146	1	65.9	69.0	66	3.1	10	Snd Lvl	62.4	6.6	8	-1.4
KY-05-02-351-01	212	1	68.0	70.9	66	2.9	10	Snd Lvl	69.8	1.1	8	-6.9

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	86	0.1	4.4	11.7
All Impacted	29	1.1	7.7	11.7
All that meet NR Goal	11	8.9	10.3	11.7

HMB Professional Engineers 22 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: Pennyrile Upgrades_Mellwood Barrier
BARRIER DESIGN: Pennyrile_Mellwood_Bar

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Noise Reduction Goal	Noise Reduction Calc-Goal	Barrier Reviewed	Important Segments Name	Important Segments No.	Important Segments Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-05-02-ARLD-07	234	53.7	1.2	8	-6.8	Barrier1	point83	83	0.0	37.9
						Barrier1	point82	82	0.0	37.7
						Barrier1	point81	81	0.0	36.5
						Barrier1	point78	78	0.0	36.4
						Barrier1	point79	79	0.0	36.3
						Barrier1	point77	77	0.0	36.1
						Barrier1	point80	80	0.0	35.9
						Barrier1	point89	89	0.0	35.6
						Barrier1	point90	90	0.0	34.7
						Barrier1	point76	76	0.0	34.5
KY-05-02-ARLD-06	232	53.6	1.3	8	-6.7	Barrier1	point81	81	0.0	36.8
						Barrier1	point80	80	0.0	35.3
						Barrier1	point82	82	0.0	35.1
						Barrier1	point76	76	0.0	35.1
						Barrier1	point79	79	0.0	35.0
						Barrier1	point87	87	0.0	34.9
						Barrier1	point88	88	0.0	34.8
						Barrier1	point86	86	0.0	34.7
						Barrier1	point75	75	0.0	34.5
						Barrier1	point78	78	0.0	34.4
KY-05-02-MELP-13	329	54.5	2.1	8	-5.9	Barrier1	point76	76	0.0	39.1

						Barrier1	point75	75	0.0	38.9
						Barrier1	point81	81	0.0	38.9
						Barrier1	point74	74	0.0	38.8
						Barrier1	point77	77	0.0	38.5
						Barrier1	point82	82	0.0	37.6
						Barrier1	point73	73	0.0	37.4
						Barrier1	point80	80	0.0	37.4
						Barrier1	point83	83	0.0	37.3
						Barrier1	point78	78	0.0	37.2
KY-05-02-LEXD-03	313	55.1	3.1	8	-4.9	Barrier1	point76	76	0.0	41.8
						Barrier1	point75	75	0.0	41.0
						Barrier1	point74	74	0.0	39.8
						Barrier1	point77	77	0.0	39.5
						Barrier1	point105	105	0.0	39.3
						Barrier1	point73	73	0.0	38.5
						Barrier1	point72	72	0.0	38.1
						Barrier1	point106	106	0.0	38.0
						Barrier1	point71	71	0.0	37.8
						Barrier1	point110	110	0.0	37.6
KY-05-01-LEXD-02	142	55.8	5.0	8	-3.0	Barrier1	point67	67	0.0	38.7
						Barrier1	point66	66	0.0	38.5
						Barrier1	point64	64	0.0	38.3
						Barrier2	point127	127	12.0	38.3
						Barrier1	point65	65	0.0	37.7
						Barrier2	point144	144	16.0	36.7
						Barrier2	point145	145	16.0	36.7
						Barrier2	point140	140	16.0	36.7
						Barrier2	point141	141	16.0	36.7
						Barrier2	point138	138	16.0	36.6
KY-05-02-WENA-06	369	56.0	5.1	8	-2.9	Barrier1	point66	66	0.0	37.9
						Barrier2	point127	127	12.0	37.7
						Barrier2	point172	172	16.0	37.4
						Barrier1	point65	65	0.0	37.4
						Barrier2	point145	145	16.0	36.8
						Barrier2	point144	144	16.0	36.7
						Barrier1	point64	64	0.0	36.6

						Barrier2	point141	141	16.0	36.6
						Barrier1	point63	63	0.0	36.5
						Barrier2	point140	140	16.0	36.5
KY-05-01-GRED-06	102	59.2	3.8	8	-4.2	Barrier2	point209	209	16.0	41.8
						Barrier2	point210	210	16.0	41.6
						Barrier2	point211	211	16.0	41.6
						Barrier2	point212	212	16.0	41.3
						Barrier2	point213	213	16.0	41.0
						Barrier2	point214	214	16.0	40.6
						Barrier2	point193	193	16.0	40.6
						Barrier2	point226	226	0.0	40.5
						Barrier3	point249	249	0.0	40.4
						Barrier2	point215	215	16.0	40.4
KY-05-01-GRED-07	103	58.6	3.3	8	-4.7	Barrier2	point209	209	16.0	40.1
						Barrier2	point210	210	16.0	40.0
						Barrier3	point249	249	0.0	39.9
						Barrier3	point250	250	0.0	39.9
						Barrier2	point211	211	16.0	39.8
						Barrier3	point248	248	0.0	39.8
						Barrier2	point212	212	16.0	39.8
						Barrier2	point213	213	16.0	39.7
						Barrier3	point251	251	0.0	39.6
						Barrier3	point247	247	0.0	39.5
KY-05-01-GRED-08	104	58.0	2.6	8	-5.4	Barrier3	point250	250	0.0	39.9
						Barrier3	point247	247	0.0	39.6
						Barrier3	point248	248	0.0	39.6
						Barrier3	point249	249	0.0	39.5
						Barrier3	point251	251	0.0	39.5
						Barrier3	point246	246	0.0	39.5
						Barrier2	point241	241	0.0	39.2
						Barrier2	point240	240	0.0	38.8
						Barrier2	point239	239	0.0	38.7
						Barrier2	point236	236	0.0	38.4
KY-05-01-GRED-09	105	57.7	2.3	8	-5.7	Barrier3	point248	248	0.0	39.3
						Barrier3	point249	249	0.0	39.3
						Barrier2	point239	239	0.0	39.2

						Barrier3	point250	250	0.0	39.1
						Barrier3	point247	247	0.0	39.1
						Barrier3	point246	246	0.0	39.0
						Barrier2	point240	240	0.0	38.9
						Barrier2	point238	238	0.0	38.9
						Barrier3	point251	251	0.0	38.8
						Barrier2	point241	241	0.0	38.7
KY-05-01-GRED-10	107	57.1	2.0	8	-6.0	Barrier2	point239	239	0.0	38.7
						Barrier3	point250	250	0.0	38.7
						Barrier3	point249	249	0.0	38.7
						Barrier3	point248	248	0.0	38.5
						Barrier2	point238	238	0.0	38.4
						Barrier3	point247	247	0.0	38.3
						Barrier2	point240	240	0.0	38.3
						Barrier3	point246	246	0.0	38.2
						Barrier3	point254	254	0.0	38.1
						Barrier2	point237	237	0.0	38.1
KY-05-01-GRED-11	108	56.7	1.9	8	-6.1	Barrier3	point250	250	0.0	38.5
						Barrier3	point249	249	0.0	38.3
						Barrier3	point248	248	0.0	38.2
						Barrier2	point239	239	0.0	38.1
						Barrier2	point238	238	0.0	38.1
						Barrier2	point241	241	0.0	38.0
						Barrier3	point247	247	0.0	37.9
						Barrier3	point254	254	0.0	37.9
						Barrier2	point240	240	0.0	37.9
						Barrier3	point246	246	0.0	37.8
KY-05-01-GRED-12	109	56.4	1.6	8	-6.4	Barrier3	point249	249	0.0	38.0
						Barrier2	point238	238	0.0	37.9
						Barrier2	point239	239	0.0	37.9
						Barrier3	point248	248	0.0	37.7
						Barrier2	point240	240	0.0	37.7
						Barrier2	point241	241	0.0	37.6
						Barrier3	point250	250	0.0	37.5
						Barrier3	point253	253	0.0	37.4
						Barrier3	point247	247	0.0	37.3

						Barrier3	point251	251	0.0	37.3
KY-05-01-GRED-13	110	56.1	1.3	8	-6.7	Barrier2	point241	241	0.0	37.4
						Barrier3	point250	250	0.0	37.4
						Barrier3	point248	248	0.0	37.4
						Barrier2	point239	239	0.0	37.4
						Barrier3	point249	249	0.0	37.4
						Barrier2	point240	240	0.0	37.2
						Barrier2	point238	238	0.0	37.2
						Barrier2	point237	237	0.0	37.2
						Barrier3	point254	254	0.0	36.9
						Barrier3	point251	251	0.0	36.8
KY-05-01-GRED-14	111	55.7	1.2	8	-6.8	Barrier2	point241	241	0.0	36.9
						Barrier2	point239	239	0.0	36.8
						Barrier3	point249	249	0.0	36.8
						Barrier2	point240	240	0.0	36.7
						Barrier3	point250	250	0.0	36.7
						Barrier3	point248	248	0.0	36.6
						Barrier3	point247	247	0.0	36.5
						Barrier2	point237	237	0.0	36.5
						Barrier2	point238	238	0.0	36.5
						Barrier3	point254	254	0.0	36.3
KY-05-02-ARLD-05	228	55.2	0.9	8	-7.1	Barrier2	point239	239	0.0	35.8
						Barrier2	point240	240	0.0	35.7
						Barrier3	point254	254	0.0	35.7
						Barrier3	point248	248	0.0	35.5
						Barrier3	point249	249	0.0	35.5
						Barrier3	point250	250	0.0	35.5
						Barrier2	point237	237	0.0	35.2
						Barrier3	point246	246	0.0	35.2
						Barrier3	point253	253	0.0	35.2
						Barrier3	point247	247	0.0	35.1
KY-05-02-ARLD-04	226	56.2	0.6	8	-7.4	Barrier2	point238	238	0.0	36.1
						Barrier2	point239	239	0.0	36.1
						Barrier2	point241	241	0.0	36.0
						Barrier2	point237	237	0.0	35.9
						Barrier2	point240	240	0.0	35.8

						Barrier3	point254	254	0.0	35.7
						Barrier3	point249	249	0.0	35.7
						Barrier3	point248	248	0.0	35.6
						Barrier2	point236	236	0.0	35.5
						Barrier3	point250	250	0.0	35.3
KY-05-02-ARLD-03	225	58.0	0.4	8	-7.6	Barrier2	point236	236	0.0	36.3
						Barrier2	point237	237	0.0	36.3
						Barrier2	point238	238	0.0	36.2
						Barrier2	point239	239	0.0	36.2
						Barrier2	point241	241	0.0	36.1
						Barrier2	point240	240	0.0	35.9
						Barrier3	point249	249	0.0	35.6
						Barrier3	point254	254	0.0	35.4
						Barrier3	point253	253	0.0	35.4
						Barrier3	point250	250	0.0	35.3
KY-05-02-ARLD-02	224	59.7	0.3	8	-7.7	Barrier2	point236	236	0.0	36.6
						Barrier2	point241	241	0.0	36.2
						Barrier2	point237	237	0.0	36.2
						Barrier2	point239	239	0.0	35.9
						Barrier2	point240	240	0.0	35.9
						Barrier2	point238	238	0.0	35.9
						Barrier3	point253	253	0.0	35.6
						Barrier3	point252	252	0.0	35.0
						Barrier3	point250	250	0.0	35.0
						Barrier3	point249	249	0.0	35.0
KY-05-02-ARLD-01	223	64.1	0.1	8	-7.9	Barrier2	point237	237	0.0	36.4
						Barrier2	point236	236	0.0	36.3
						Barrier2	point239	239	0.0	36.3
						Barrier2	point238	238	0.0	36.2
						Barrier2	point241	241	0.0	36.1
						Barrier2	point240	240	0.0	36.1
						Barrier3	point253	253	0.0	36.0
						Barrier3	point249	249	0.0	35.6
						Barrier3	point252	252	0.0	35.5
						Barrier3	point248	248	0.0	35.4
KY-05-01-ARLD-01	19	59.9	0.3	8	-7.7	Barrier2	point236	236	0.0	37.8

						Barrier2	point237	237	0.0	37.7
						Barrier2	point239	239	0.0	37.5
						Barrier2	point238	238	0.0	37.5
						Barrier2	point241	241	0.0	37.4
						Barrier2	point240	240	0.0	37.3
						Barrier3	point249	249	0.0	37.1
						Barrier3	point253	253	0.0	36.9
						Barrier3	point254	254	0.0	36.7
						Barrier3	point246	246	0.0	36.6
KY-05-02-351-10	222	60.8	0.4	8	-7.6	Barrier2	point239	239	0.0	38.9
						Barrier2	point237	237	0.0	38.7
						Barrier2	point236	236	0.0	38.6
						Barrier2	point238	238	0.0	38.6
						Barrier3	point249	249	0.0	38.5
						Barrier2	point241	241	0.0	38.5
						Barrier2	point240	240	0.0	38.4
						Barrier3	point248	248	0.0	38.4
						Barrier3	point247	247	0.0	38.1
						Barrier3	point250	250	0.0	37.9
KY-05-02-351-09	221	61.3	0.5	8	-7.5	Barrier2	point236	236	0.0	39.3
						Barrier2	point237	237	0.0	39.3
						Barrier3	point249	249	0.0	39.2
						Barrier3	point248	248	0.0	39.1
						Barrier2	point240	240	0.0	39.1
						Barrier2	point238	238	0.0	39.0
						Barrier2	point239	239	0.0	38.8
						Barrier3	point247	247	0.0	38.8
						Barrier3	point250	250	0.0	38.6
						Barrier3	point253	253	0.0	38.4
KY-05-02-351-08	220	61.1	0.7	8	-7.3	Barrier2	point236	236	0.0	39.7
						Barrier2	point238	238	0.0	39.6
						Barrier3	point248	248	0.0	39.6
						Barrier2	point239	239	0.0	39.6
						Barrier3	point247	247	0.0	39.5
						Barrier2	point240	240	0.0	39.4
						Barrier2	point241	241	0.0	39.3

						Barrier3	point249	249	0.0	39.3
						Barrier3	point246	246	0.0	39.3
						Barrier2	point237	237	0.0	39.2
KY-05-02-351-07	219	63.5	0.4	8	-7.6	Barrier2	point236	236	0.0	40.8
						Barrier2	point237	237	0.0	40.7
						Barrier2	point238	238	0.0	40.6
						Barrier2	point239	239	0.0	40.4
						Barrier2	point240	240	0.0	40.2
						Barrier2	point241	241	0.0	40.1
						Barrier3	point249	249	0.0	40.1
						Barrier3	point248	248	0.0	39.9
						Barrier2	point226	226	0.0	39.7
						Barrier3	point247	247	0.0	39.7
KY-05-02-351-05	205	62.5	0.8	8	-7.2	Barrier2	point226	226	0.0	42.1
						Barrier2	point236	236	0.0	41.9
						Barrier2	point237	237	0.0	41.4
						Barrier2	point239	239	0.0	41.4
						Barrier2	point238	238	0.0	41.4
						Barrier2	point240	240	0.0	41.3
						Barrier2	point225	225	0.0	41.3
						Barrier3	point249	249	0.0	41.2
						Barrier3	point248	248	0.0	41.1
						Barrier3	point250	250	0.0	41.0
KY-05-02-351-04	215	62.7	1.7	8	-6.3	Barrier2	point226	226	0.0	46.0
						Barrier2	point225	225	0.0	45.7
						Barrier2	point224	224	0.0	45.7
						Barrier2	point223	223	12.0	44.2
						Barrier3	point252	252	0.0	44.0
						Barrier2	point219	219	16.0	43.5
						Barrier2	point218	218	16.0	43.4
						Barrier2	point236	236	0.0	43.3
						Barrier2	point220	220	16.0	43.3
						Barrier2	point221	221	16.0	43.2
KY-05-02-351-03	214	63.3	2.1	8	-5.9	Barrier2	point225	225	0.0	48.5
						Barrier2	point226	226	0.0	48.4
						Barrier2	point224	224	0.0	48.4

						Barrier2	point223	223	12.0	46.2
						Barrier2	point237	237	0.0	44.7
						Barrier2	point219	219	16.0	44.3
						Barrier2	point220	220	16.0	44.2
						Barrier2	point218	218	16.0	44.2
						Barrier2	point221	221	16.0	44.1
						Barrier2	point217	217	16.0	44.0
KY-05-02-351-02	213	67.6	1.6	8	-6.4	Barrier2	point225	225	0.0	57.6
						Barrier2	point226	226	0.0	57.5
						Barrier2	point224	224	0.0	57.2
						Barrier2	point223	223	12.0	49.5
						Barrier2	point222	222	16.0	46.8
						Barrier2	point221	221	16.0	46.8
						Barrier2	point220	220	16.0	46.2
						Barrier2	point219	219	16.0	46.0
						Barrier2	point236	236	0.0	45.6
						Barrier2	point238	238	0.0	45.6
KY-05-02-MELP-01	316	61.6	5.1	8	-2.9	Barrier2	point209	209	16.0	47.0
						Barrier2	point210	210	16.0	46.5
						Barrier2	point211	211	16.0	46.2
						Barrier2	point212	212	16.0	46.0
						Barrier2	point226	226	0.0	45.8
						Barrier2	point213	213	16.0	45.5
						Barrier2	point225	225	0.0	45.4
						Barrier2	point214	214	16.0	44.4
						Barrier2	point217	217	16.0	44.4
						Barrier2	point224	224	0.0	44.2
KY-05-02-MELP-02	317	61.0	5.8	8	-2.2	Barrier2	point209	209	16.0	46.3
						Barrier2	point210	210	16.0	45.8
						Barrier2	point211	211	16.0	45.5
						Barrier2	point226	226	0.0	44.7
						Barrier2	point212	212	16.0	44.7
						Barrier2	point213	213	16.0	44.3
						Barrier2	point225	225	0.0	44.1
						Barrier2	point214	214	16.0	43.8
						Barrier2	point215	215	16.0	43.4

						Barrier2	point217	217	16.0	43.3
KY-05-02-MELP-03	318	60.6	6.0	8	-2.0	Barrier2	point209	209	16.0	45.5
						Barrier2	point210	210	16.0	44.8
						Barrier2	point211	211	16.0	44.4
						Barrier2	point212	212	16.0	43.9
						Barrier2	point213	213	16.0	43.6
						Barrier2	point226	226	0.0	43.6
						Barrier2	point193	193	16.0	43.1
						Barrier2	point225	225	0.0	43.0
						Barrier2	point214	214	16.0	42.9
						Barrier2	point215	215	16.0	42.6
KY-05-02-MELP-04	319	60.5	6.2	8	-1.8	Barrier2	point209	209	16.0	44.8
						Barrier2	point193	193	16.0	44.8
						Barrier2	point210	210	16.0	44.3
						Barrier2	point211	211	16.0	43.9
						Barrier2	point212	212	16.0	43.1
						Barrier2	point192	192	16.0	42.8
						Barrier2	point191	191	16.0	42.8
						Barrier2	point226	226	0.0	42.8
						Barrier2	point213	213	16.0	42.6
						Barrier2	point190	190	16.0	42.4
KY-05-01-GRED-04	100	60.2	5.4	8	-2.6	Barrier2	point193	193	16.0	44.4
						Barrier2	point209	209	16.0	43.4
						Barrier2	point191	191	16.0	43.3
						Barrier2	point210	210	16.0	43.1
						Barrier2	point211	211	16.0	42.7
						Barrier2	point192	192	16.0	42.6
						Barrier2	point212	212	16.0	42.2
						Barrier2	point190	190	16.0	42.2
						Barrier2	point213	213	16.0	42.0
						Barrier2	point180	180	16.0	41.7
KY-05-01-GRED-03	99	60.7	6.3	8	-1.7	Barrier2	point193	193	16.0	45.3
						Barrier2	point191	191	16.0	45.1
						Barrier2	point172	172	16.0	44.0
						Barrier2	point192	192	16.0	43.9
						Barrier2	point190	190	16.0	43.7

						Barrier2	point180	180	16.0	43.5
						Barrier2	point177	177	16.0	43.4
						Barrier2	point185	185	16.0	43.3
						Barrier2	point184	184	16.0	43.2
						Barrier2	point188	188	16.0	43.0
KY-05-02-GRED-04	302	60.2	5.0	8	-3.0	Barrier2	point177	177	16.0	44.5
						Barrier2	point172	172	16.0	44.4
						Barrier2	point180	180	16.0	44.4
						Barrier2	point183	183	16.0	43.5
						Barrier2	point185	185	16.0	43.5
						Barrier2	point184	184	16.0	43.5
						Barrier2	point181	181	16.0	43.2
						Barrier2	point190	190	16.0	43.2
						Barrier2	point176	176	16.0	43.1
						Barrier2	point179	179	16.0	43.1
KY-05-02-GRED-03	300	61.7	5.6	8	-2.4	Barrier2	point177	177	16.0	47.7
						Barrier2	point172	172	16.0	47.6
						Barrier2	point180	180	16.0	47.5
						Barrier2	point176	176	16.0	46.0
						Barrier2	point179	179	16.0	45.9
						Barrier2	point181	181	16.0	45.8
						Barrier2	point183	183	16.0	45.7
						Barrier2	point185	185	16.0	45.6
						Barrier2	point178	178	16.0	45.5
						Barrier2	point184	184	16.0	45.4
KY-05-02-GRED-02	299	64.7	6.4	8	-1.6	Barrier2	point177	177	16.0	52.9
						Barrier2	point180	180	16.0	52.1
						Barrier2	point172	172	16.0	52.1
						Barrier2	point176	176	16.0	51.1
						Barrier2	point178	178	16.0	51.1
						Barrier2	point179	179	16.0	51.1
						Barrier2	point181	181	16.0	50.6
						Barrier2	point173	173	16.0	50.1
						Barrier2	point184	184	16.0	49.9
						Barrier2	point183	183	16.0	49.9
KY-05-01-WENA-03	210	59.0	5.4	8	-2.6	Barrier2	point172	172	16.0	43.6

						Barrier2	point177	177	16.0	42.7
						Barrier2	point180	180	16.0	42.6
						Barrier2	point190	190	16.0	41.3
						Barrier2	point176	176	16.0	41.3
						Barrier2	point173	173	16.0	41.3
						Barrier2	point179	179	16.0	41.2
						Barrier2	point181	181	16.0	41.2
						Barrier2	point183	183	16.0	41.1
						Barrier2	point185	185	16.0	41.1
KY-05-01-WENA-02	209	59.6	6.2	8	-1.8	Barrier2	point172	172	16.0	45.6
						Barrier2	point177	177	16.0	43.9
						Barrier2	point180	180	16.0	43.7
						Barrier2	point173	173	16.0	42.4
						Barrier2	point176	176	16.0	42.2
						Barrier2	point184	184	16.0	41.9
						Barrier2	point185	185	16.0	41.8
						Barrier2	point183	183	16.0	41.7
						Barrier2	point179	179	16.0	41.7
						Barrier2	point178	178	16.0	41.6
KY-05-01-WENA-01	208	60.1	6.5	8	-1.5	Barrier2	point172	172	16.0	46.8
						Barrier2	point177	177	16.0	44.7
						Barrier2	point180	180	16.0	44.4
						Barrier2	point173	173	16.0	43.7
						Barrier2	point178	178	16.0	43.1
						Barrier2	point176	176	16.0	42.9
						Barrier2	point179	179	16.0	42.7
						Barrier2	point183	183	16.0	42.4
						Barrier2	point181	181	16.0	42.4
						Barrier2	point184	184	16.0	42.3
KY-05-02-WENA-05	367	57.4	5.8	8	-2.2	Barrier2	point172	172	16.0	40.3
						Barrier2	point145	145	16.0	38.8
						Barrier2	point141	141	16.0	38.7
						Barrier2	point144	144	16.0	38.6
						Barrier2	point127	127	12.0	38.6
						Barrier2	point180	180	16.0	38.6
						Barrier2	point177	177	16.0	38.5

						Barrier2	point142	142	16.0	38.4
						Barrier2	point143	143	16.0	38.4
						Barrier2	point140	140	16.0	38.0
KY-05-02-WENA-01	363	59.5	7.9	8	-0.1	Barrier2	point172	172	16.0	43.5
						Barrier2	point145	145	16.0	41.2
						Barrier2	point160	160	20.0	40.9
						Barrier2	point161	161	20.0	40.9
						Barrier2	point144	144	16.0	40.8
						Barrier2	point156	156	20.0	40.8
						Barrier2	point158	158	20.0	40.7
						Barrier2	point162	162	20.0	40.7
						Barrier2	point157	157	20.0	40.6
						Barrier2	point163	163	20.0	40.4
KY-05-02-WENA-03	365	58.0	6.6	8	-1.4	Barrier2	point172	172	16.0	41.7
						Barrier2	point145	145	16.0	40.0
						Barrier2	point144	144	16.0	39.9
						Barrier2	point142	142	16.0	39.7
						Barrier2	point141	141	16.0	39.7
						Barrier2	point177	177	16.0	39.6
						Barrier2	point143	143	16.0	39.4
						Barrier2	point127	127	12.0	39.4
						Barrier2	point180	180	16.0	39.1
						Barrier2	point140	140	16.0	39.1
KY-05-02-WENA-02	364	58.7	7.3	8	-0.7	Barrier2	point172	172	16.0	42.8
						Barrier2	point177	177	16.0	40.4
						Barrier2	point145	145	16.0	40.4
						Barrier2	point144	144	16.0	40.3
						Barrier2	point180	180	16.0	40.0
						Barrier2	point143	143	16.0	40.0
						Barrier2	point141	141	16.0	39.9
						Barrier2	point127	127	12.0	39.9
						Barrier2	point142	142	16.0	39.8
						Barrier2	point173	173	16.0	39.8
KY-05-02-MELP-05	320	58.6	7.6	8	-0.4	Barrier2	point145	145	16.0	41.4
						Barrier2	point172	172	16.0	41.4
						Barrier2	point144	144	16.0	41.2

						Barrier2	point127	127	12.0	41.1
						Barrier2	point143	143	16.0	40.9
						Barrier2	point142	142	16.0	40.8
						Barrier2	point141	141	16.0	40.7
						Barrier2	point140	140	16.0	40.2
						Barrier2	point139	139	16.0	40.0
						Barrier2	point138	138	16.0	39.6
KY-05-02-MELP-06	321	57.8	6.8	8	-1.2	Barrier2	point127	127	12.0	40.8
						Barrier2	point172	172	16.0	40.3
						Barrier2	point141	141	16.0	40.0
						Barrier2	point145	145	16.0	39.9
						Barrier2	point144	144	16.0	39.7
						Barrier2	point142	142	16.0	39.5
						Barrier2	point140	140	16.0	39.5
						Barrier2	point143	143	16.0	39.5
						Barrier2	point139	139	16.0	39.3
						Barrier2	point138	138	16.0	39.1
KY-05-02-MELP-07	322	57.0	6.2	8	-1.8	Barrier2	point127	127	12.0	40.7
						Barrier2	point141	141	16.0	39.4
						Barrier2	point145	145	16.0	39.1
						Barrier2	point144	144	16.0	39.0
						Barrier2	point139	139	16.0	38.8
						Barrier2	point140	140	16.0	38.8
						Barrier2	point172	172	16.0	38.7
						Barrier2	point138	138	16.0	38.6
						Barrier2	point142	142	16.0	38.4
						Barrier2	point143	143	16.0	38.3
KY-05-02-MELP-08	324	56.4	5.6	8	-2.4	Barrier2	point127	127	12.0	40.3
						Barrier1	point63	63	0.0	39.2
						Barrier2	point141	141	16.0	38.5
						Barrier2	point145	145	16.0	38.4
						Barrier2	point144	144	16.0	38.4
						Barrier2	point142	142	16.0	38.3
						Barrier2	point143	143	16.0	38.0
						Barrier2	point139	139	16.0	38.0
						Barrier2	point140	140	16.0	37.8

						Barrier2	point138	138	16.0	37.8
KY-05-02-MELP-09	325	56.0	5.3	8	-2.7	Barrier2	point127	127	12.0	40.2
						Barrier1	point65	65	0.0	39.6
						Barrier1	point64	64	0.0	38.6
						Barrier1	point63	63	0.0	38.5
						Barrier2	point139	139	16.0	37.8
						Barrier2	point141	141	16.0	37.7
						Barrier2	point142	142	16.0	37.7
						Barrier2	point140	140	16.0	37.7
						Barrier2	point145	145	16.0	37.6
						Barrier2	point144	144	16.0	37.6
KY-05-02-MELP-10	326	55.2	3.9	8	-4.1	Barrier1	point73	73	0.0	42.1
						Barrier1	point72	72	0.0	41.9
						Barrier1	point71	71	0.0	40.8
						Barrier1	point70	70	0.0	40.0
						Barrier1	point69	69	0.0	39.7
						Barrier1	point68	68	0.0	39.3
						Barrier1	point108	108	0.0	38.7
						Barrier2	point127	127	12.0	38.2
						Barrier1	point67	67	0.0	37.9
						Barrier1	point109	109	0.0	37.3
KY-05-02-MELP-11	327	55.4	2.9	8	-5.1	Barrier1	point77	77	0.0	44.0
						Barrier1	point76	76	0.0	43.4
						Barrier1	point75	75	0.0	41.8
						Barrier1	point74	74	0.0	41.2
						Barrier1	point78	78	0.0	41.1
						Barrier1	point73	73	0.0	40.6
						Barrier1	point72	72	0.0	40.2
						Barrier1	point108	108	0.0	40.1
						Barrier1	point71	71	0.0	39.6
						Barrier1	point104	104	0.0	39.4
KY-05-02-MELP-12	328	55.1	2.4	8	-5.6	Barrier1	point77	77	0.0	42.0
						Barrier1	point76	76	0.0	41.5
						Barrier1	point82	82	0.0	41.3
						Barrier1	point78	78	0.0	41.2
						Barrier1	point75	75	0.0	40.8

						Barrier1	point79	79	0.0	40.7
						Barrier1	point74	74	0.0	40.5
						Barrier1	point81	81	0.0	40.0
						Barrier1	point80	80	0.0	39.8
						Barrier1	point73	73	0.0	39.6
KY-05-02-ARLD-08	235	54.0	1.1	8	-6.9	Barrier1	point85	85	0.0	39.4
						Barrier1	point90	90	0.0	38.1
						Barrier1	point81	81	0.0	38.0
						Barrier1	point83	83	0.0	37.9
						Barrier1	point82	82	0.0	37.6
						Barrier1	point80	80	0.0	37.5
						Barrier1	point89	89	0.0	37.3
						Barrier1	point86	86	0.0	37.2
						Barrier1	point112	112	0.0	36.8
						Barrier1	point84	84	0.0	36.7
KY-05-02-ARLD-09	236	54.2	1.0	8	-7.0	Barrier1	point85	85	0.0	40.1
						Barrier1	point82	82	0.0	38.7
						Barrier1	point86	86	0.0	38.7
						Barrier1	point83	83	0.0	38.4
						Barrier1	point81	81	0.0	38.0
						Barrier1	point94	94	0.0	37.5
						Barrier1	point93	93	0.0	37.3
						Barrier1	point90	90	0.0	37.2
						Barrier1	point92	92	0.0	37.2
						Barrier1	point91	91	0.0	36.7
KY-05-02-ARLD-10	237	54.5	0.9	8	-7.1	Barrier1	point91	91	0.0	39.3
						Barrier1	point86	86	0.0	39.1
						Barrier1	point83	83	0.0	39.0
						Barrier1	point90	90	0.0	38.8
						Barrier1	point85	85	0.0	38.7
						Barrier1	point93	93	0.0	38.4
						Barrier1	point94	94	0.0	38.4
						Barrier1	point92	92	0.0	38.3
						Barrier1	point82	82	0.0	37.9
						Barrier1	point87	87	0.0	37.6
KY-05-02-ARLD-11	238	55.3	0.6	8	-7.4	Barrier1	point91	91	0.0	42.1

						Barrier1	point90	90	0.0	41.9
						Barrier1	point93	93	0.0	41.3
						Barrier1	point94	94	0.0	41.1
						Barrier1	point92	92	0.0	41.0
						Barrier1	point95	95	0.0	40.7
						Barrier1	point96	96	0.0	39.5
						Barrier1	point97	97	0.0	39.0
						Barrier1	point89	89	0.0	38.5
						Barrier1	point88	88	0.0	38.1
KY-05-02-ARLD-12	239	56.4	0.4	8	-7.6	Barrier1	point92	92	0.0	44.3
						Barrier1	point91	91	0.0	43.4
						Barrier1	point93	93	0.0	43.4
						Barrier1	point97	97	0.0	43.2
						Barrier1	point94	94	0.0	42.8
						Barrier1	point95	95	0.0	42.4
						Barrier1	point96	96	0.0	42.3
						Barrier1	point90	90	0.0	41.8
						Barrier1	point113	113	0.0	38.4
						Barrier1	point114	114	0.0	38.4
KY-05-01-LEXD-01	141	55.3	3.4	8	-4.6	Barrier1	point74	74	0.0	40.8
						Barrier1	point73	73	0.0	38.9
						Barrier1	point72	72	0.0	38.4
						Barrier1	point107	107	0.0	38.3
						Barrier1	point71	71	0.0	38.2
						Barrier1	point108	108	0.0	37.1
						Barrier1	point70	70	0.0	36.6
						Barrier1	point69	69	0.0	36.4
						Barrier1	point68	68	0.0	36.1
						Barrier3	point250	250	0.0	36.1
KY-05-01-ARLD-07	25	58.1	0.2	8	-7.8	Barrier1	point87	87	0.0	53.1
						Barrier1	point86	86	24.0	51.0
						Barrier1	point88	88	0.0	50.5
						Barrier1	point89	89	0.0	46.4
						Barrier1	point85	85	24.0	41.7
						Barrier1	point110	110	0.0	41.5
						Barrier1	point112	112	0.0	41.3

						Barrier1	point111	111	0.0	41.2
						Barrier1	point124	124	0.0	41.2
						Barrier1	point125	125	0.0	41.2
KY-05-01-ARLD-06	24	56.9	0.6	8	-7.4	Barrier1	point85	85	0.0	49.9
						Barrier1	point86	86	0.0	48.9
						Barrier1	point84	84	0.0	47.1
						Barrier1	point83	83	0.0	46.7
						Barrier1	point87	87	0.0	45.3
						Barrier1	point88	88	0.0	43.3
						Barrier1	point82	82	0.0	41.3
						Barrier1	point89	89	0.0	40.4
						Barrier1	point113	113	0.0	40.4
						Barrier1	point112	112	0.0	40.3
KY-05-01-ARLD-05	23	55.4	1.4	8	-6.6	Barrier1	point80	80	0.0	44.6
						Barrier1	point83	83	0.0	44.1
						Barrier1	point79	79	0.0	43.2
						Barrier1	point85	85	0.0	43.2
						Barrier1	point82	82	0.0	43.1
						Barrier1	point84	84	0.0	42.4
						Barrier1	point81	81	0.0	42.2
						Barrier1	point86	86	0.0	42.0
						Barrier1	point78	78	0.0	40.5
						Barrier1	point87	87	0.0	40.3
KY-05-01-MELP-21	167	55.7	2.6	8	-5.4	Barrier1	point77	77	0.0	47.4
						Barrier1	point76	76	0.0	47.4
						Barrier1	point75	75	0.0	46.1
						Barrier1	point74	74	0.0	45.2
						Barrier1	point73	73	0.0	42.0
						Barrier1	point107	107	0.0	40.6
						Barrier1	point108	108	0.0	40.3
						Barrier1	point105	105	0.0	40.0
						Barrier1	point110	110	0.0	39.6
						Barrier1	point111	111	0.0	39.4
KY-05-01-MELP-20	166	54.3	3.9	8	-4.1	Barrier1	point74	74	0.0	45.3
						Barrier1	point75	75	0.0	42.0
						Barrier1	point73	73	0.0	41.7

						Barrier1	point72	72	0.0	38.9
						Barrier1	point115	115	0.0	37.4
						Barrier1	point71	71	0.0	37.2
						Barrier1	point110	110	0.0	37.2
						Barrier1	point69	69	0.0	37.1
						Barrier1	point106	106	0.0	37.0
						Barrier1	point107	107	0.0	36.7
KY-05-01-MELP-19	165	55.0	4.3	8	-3.7	Barrier1	point70	70	0.0	42.8
						Barrier1	point69	69	0.0	42.6
						Barrier1	point71	71	0.0	41.6
						Barrier1	point68	68	0.0	40.0
						Barrier2	point127	127	12.0	39.9
						Barrier1	point67	67	0.0	36.5
						Barrier1	point118	118	0.0	36.4
						Barrier2	point141	141	16.0	36.2
						Barrier2	point137	137	16.0	36.2
						Barrier2	point138	138	16.0	36.2
KY-05-01-MELP-18	164	55.7	5.0	8	-3.0	Barrier1	point66	66	0.0	43.1
						Barrier2	point127	127	12.0	41.8
						Barrier1	point65	65	0.0	40.6
						Barrier2	point137	137	16.0	38.0
						Barrier2	point139	139	16.0	37.9
						Barrier2	point138	138	16.0	37.8
						Barrier2	point140	140	16.0	37.7
						Barrier2	point145	145	16.0	37.6
						Barrier2	point141	141	16.0	37.6
						Barrier2	point144	144	16.0	37.5
KY-05-01-MELP-17	163	56.5	5.3	8	-2.7	Barrier2	point127	127	12.0	43.2
						Barrier1	point63	63	0.0	42.5
						Barrier2	point139	139	16.0	39.2
						Barrier2	point141	141	16.0	39.1
						Barrier2	point140	140	16.0	38.9
						Barrier2	point142	142	16.0	38.9
						Barrier2	point138	138	16.0	38.8
						Barrier2	point143	143	16.0	38.7
						Barrier2	point136	136	16.0	38.7

						Barrier2	point137	137	16.0	38.6
KY-05-01-MELP-16	161	57.3	5.7	8	-2.3	Barrier2	point127	127	12.0	44.6
						Barrier1	point60	60	0.0	40.3
						Barrier2	point139	139	16.0	40.1
						Barrier2	point141	141	16.0	39.9
						Barrier2	point140	140	16.0	39.8
						Barrier2	point138	138	16.0	39.8
						Barrier2	point137	137	16.0	39.8
						Barrier2	point136	136	16.0	39.7
						Barrier2	point145	145	16.0	39.6
						Barrier2	point144	144	16.0	39.4
KY-05-01-MELP-15	160	58.5	6.2	8	-1.8	Barrier2	point127	127	12.0	45.9
						Barrier2	point137	137	16.0	41.5
						Barrier2	point139	139	16.0	41.4
						Barrier2	point138	138	16.0	41.4
						Barrier2	point136	136	16.0	41.3
						Barrier2	point141	141	16.0	41.3
						Barrier2	point140	140	16.0	41.2
						Barrier2	point142	142	16.0	41.0
						Barrier2	point134	134	16.0	40.8
						Barrier2	point143	143	16.0	40.8
KY-05-01-MELP-14	159	60.2	6.6	8	-1.4	Barrier2	point127	127	12.0	47.6
						Barrier2	point139	139	16.0	43.6
						Barrier2	point137	137	16.0	43.6
						Barrier2	point138	138	16.0	43.5
						Barrier2	point141	141	16.0	43.4
						Barrier2	point140	140	16.0	43.4
						Barrier2	point136	136	16.0	43.4
						Barrier1	point45	45	0.0	43.2
						Barrier2	point142	142	16.0	43.1
						Barrier2	point143	143	16.0	42.9
KY-05-01-MELP-13	158	61.6	7.5	8	-0.5	Barrier2	point127	127	12.0	47.4
						Barrier2	point139	139	16.0	45.6
						Barrier2	point141	141	16.0	45.6
						Barrier2	point140	140	16.0	45.5
						Barrier2	point142	142	16.0	45.4

						Barrier2	point137	137	16.0	45.3
						Barrier2	point143	143	16.0	45.3
						Barrier2	point144	144	16.0	45.2
						Barrier2	point145	145	16.0	45.0
						Barrier2	point136	136	16.0	44.9
KY-05-01-MELP-12	157	61.8	8.9	8	0.9	Barrier2	point141	141	16.0	47.1
						Barrier2	point142	142	16.0	46.9
						Barrier2	point143	143	16.0	46.8
						Barrier2	point144	144	16.0	46.8
						Barrier2	point140	140	16.0	46.8
						Barrier2	point145	145	16.0	46.7
						Barrier2	point139	139	16.0	46.6
						Barrier2	point138	138	16.0	46.1
						Barrier2	point127	127	12.0	45.7
						Barrier2	point137	137	16.0	45.6
KY-05-01-MELP-11	156	62.4	11.4	8	3.4	Barrier2	point145	145	16.0	49.3
						Barrier2	point148	148	20.0	48.9
						Barrier2	point147	147	20.0	48.8
						Barrier2	point149	149	20.0	48.3
						Barrier2	point144	144	16.0	48.3
						Barrier2	point146	146	20.0	47.7
						Barrier2	point150	150	20.0	47.4
						Barrier2	point143	143	16.0	47.0
						Barrier2	point151	151	20.0	46.6
						Barrier2	point142	142	16.0	46.3
KY-05-01-MELP-10	155	62.1	11.7	8	3.7	Barrier2	point154	154	20.0	48.9
						Barrier2	point155	155	20.0	48.8
						Barrier2	point153	153	20.0	48.6
						Barrier2	point156	156	20.0	48.4
						Barrier2	point152	152	20.0	47.9
						Barrier2	point157	157	20.0	47.3
						Barrier2	point151	151	20.0	47.2
						Barrier2	point158	158	20.0	46.1
						Barrier2	point150	150	20.0	45.7
						Barrier2	point159	159	20.0	45.6
KY-05-01-MELP-09	154	61.5	10.8	8	2.8	Barrier2	point159	159	20.0	47.3

						Barrier2	point160	160	20.0	47.0
						Barrier2	point158	158	20.0	46.8
						Barrier2	point161	161	20.0	46.8
						Barrier2	point162	162	20.0	46.4
						Barrier2	point157	157	20.0	46.3
						Barrier2	point156	156	20.0	45.9
						Barrier2	point163	163	20.0	45.9
						Barrier2	point155	155	20.0	45.3
						Barrier2	point164	164	20.0	45.2
KY-05-01-MELP-08	153	61.9	10.3	8	2.3	Barrier2	point163	163	20.0	47.3
						Barrier2	point162	162	20.0	47.3
						Barrier2	point164	164	20.0	47.2
						Barrier2	point161	161	20.0	47.0
						Barrier2	point165	165	20.0	46.9
						Barrier2	point166	166	20.0	46.9
						Barrier2	point172	172	16.0	46.3
						Barrier2	point167	167	20.0	46.3
						Barrier2	point160	160	20.0	46.3
						Barrier2	point159	159	20.0	46.0
KY-05-01-MELP-07	152	62.7	9.0	8	1.0	Barrier2	point172	172	16.0	51.4
						Barrier2	point173	173	16.0	47.7
						Barrier2	point167	167	20.0	47.0
						Barrier2	point166	166	20.0	47.0
						Barrier2	point177	177	16.0	46.7
						Barrier2	point165	165	20.0	46.5
						Barrier2	point168	168	20.0	46.5
						Barrier2	point170	170	20.0	46.4
						Barrier2	point169	169	20.0	46.4
						Barrier2	point164	164	20.0	46.2
KY-05-01-MELP-06	150	64.1	7.8	8	-0.2	Barrier2	point172	172	16.0	54.2
						Barrier2	point173	173	16.0	51.2
						Barrier2	point177	177	16.0	51.2
						Barrier2	point176	176	16.0	49.6
						Barrier2	point180	180	16.0	49.1
						Barrier2	point178	178	16.0	48.7
						Barrier2	point174	174	16.0	48.4

						Barrier2	point170	170	20.0	48.2
						Barrier2	point171	171	20.0	48.1
						Barrier2	point179	179	16.0	48.1
KY-05-02-GRED-01	298	66.1	7.5	8	-0.5	Barrier2	point177	177	16.0	56.7
						Barrier2	point176	176	16.0	54.7
						Barrier2	point172	172	16.0	54.7
						Barrier2	point180	180	16.0	54.3
						Barrier2	point178	178	16.0	53.9
						Barrier2	point173	173	16.0	52.9
						Barrier2	point179	179	16.0	52.9
						Barrier2	point175	175	16.0	52.8
						Barrier2	point174	174	16.0	51.9
						Barrier2	point181	181	16.0	51.4
KY-05-01-GRED-01	97	62.6	9.9	8	1.9	Barrier2	point190	190	16.0	49.5
						Barrier2	point188	188	16.0	49.5
						Barrier2	point189	189	16.0	49.4
						Barrier2	point191	191	16.0	49.2
						Barrier2	point187	187	16.0	49.0
						Barrier2	point193	193	16.0	48.7
						Barrier2	point192	192	16.0	48.6
						Barrier2	point186	186	16.0	48.3
						Barrier2	point185	185	16.0	48.1
						Barrier2	point184	184	16.0	47.6
KY-05-01-MELP-05	150	61.9	9.9	8	1.9	Barrier2	point193	193	16.0	48.8
						Barrier2	point192	192	16.0	48.3
						Barrier2	point191	191	16.0	48.1
						Barrier2	point190	190	16.0	47.4
						Barrier2	point189	189	16.0	46.7
						Barrier2	point195	195	20.0	46.4
						Barrier2	point194	194	20.0	46.3
						Barrier2	point188	188	16.0	46.3
						Barrier2	point196	196	20.0	46.1
						Barrier2	point197	197	20.0	46.0
KY-05-01-MELP-04	149	61.7	10.2	8	2.2	Barrier2	point193	193	16.0	47.8
						Barrier2	point198	198	20.0	47.5
						Barrier2	point197	197	20.0	47.5

						Barrier2	point192	192	16.0	46.9
						Barrier2	point199	199	20.0	46.8
						Barrier2	point196	196	20.0	46.7
						Barrier2	point195	195	20.0	46.7
						Barrier2	point200	200	20.0	46.4
						Barrier2	point194	194	20.0	46.2
						Barrier2	point191	191	16.0	46.1
KY-05-01-MELP-03	148	61.7	10.5	8	2.5	Barrier2	point198	198	20.0	48.3
						Barrier2	point199	199	20.0	48.3
						Barrier2	point200	200	20.0	48.2
						Barrier2	point201	201	20.0	47.8
						Barrier2	point197	197	20.0	47.4
						Barrier2	point202	202	20.0	47.0
						Barrier2	point196	196	20.0	46.7
						Barrier2	point203	203	20.0	46.5
						Barrier2	point193	193	16.0	46.3
						Barrier2	point204	204	20.0	45.7
KY-05-01-MELP-02	147	62.1	10.2	8	2.2	Barrier2	point203	203	20.0	49.7
						Barrier2	point204	204	20.0	49.6
						Barrier2	point202	202	20.0	49.3
						Barrier2	point205	205	20.0	48.9
						Barrier2	point201	201	20.0	48.4
						Barrier2	point206	206	20.0	48.2
						Barrier2	point209	209	16.0	48.1
						Barrier2	point207	207	20.0	47.5
						Barrier2	point210	210	16.0	47.0
						Barrier2	point200	200	20.0	46.9
KY-05-01-MELP-01	146	62.4	6.6	8	-1.4	Barrier2	point226	226	0.0	49.1
						Barrier2	point209	209	16.0	48.6
						Barrier2	point210	210	16.0	48.6
						Barrier2	point211	211	16.0	48.4
						Barrier2	point225	225	0.0	48.2
						Barrier2	point224	224	0.0	48.0
						Barrier2	point212	212	16.0	47.9
						Barrier2	point213	213	16.0	47.5
						Barrier2	point214	214	16.0	46.8

						Barrier2	point215	215	16.0	46.4
KY-05-02-351-01	212	69.8	1.1	8	-6.9	Barrier2	point226	226	0.0	62.2
						Barrier2	point225	225	0.0	61.8
						Barrier2	point224	224	0.0	60.9
						Barrier2	point223	223	12.0	50.9
						Barrier2	point222	222	16.0	48.5
						Barrier2	point221	221	16.0	47.8
						Barrier2	point220	220	16.0	46.8
						Barrier2	point236	236	0.0	46.2
						Barrier2	point219	219	16.0	45.9
						Barrier2	point237	237	0.0	45.1
Total Cost, All Barriers (including additional cost(s))					$1005495					

HMB Professional Engineers **22 March 2018**
MG/mdg **TNM 2.5**

RESULTS: BARRIER DESCRIPTIONS

PROJECT/CONTRACT: **I-69 ORX**
RUN: **Pennyrile Upgrades_Mellwood Barrier**
BARRIER DESIGN: **Pennyrile_Mellwood_Bar**

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	$
Barrier2	W	12.00	17.64	20.00	1900	33516				1005495
Barrier3	W	0.00	0.00	0.00	0	0				0
Barrier5	W	0.00	0.00	0.00	0	0				0
Barrier1	W	0.00	0.00	0.00	0	0				0
									Total Cost:	1005495

HMB Professional Engineers 22 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: Pennyrile Upgrades_Mellwood Barrier
BARRIER DESIGN: Pennyrile_Mellwood_Bar

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier2	W	point127	127	12.00	12.00	12.00	20	238				7139
		point130	130	16.00	16.00	16.00	20	322				9654
		point131	131	16.00	16.00	16.00	20	321				9619
		point132	132	16.00	16.00	16.00	20	321				9619
		point133	133	16.00	16.00	16.00	20	320				9591
		point134	134	16.00	16.00	16.00	20	320				9591
		point135	135	16.00	16.00	16.00	20	316				9467
		point136	136	16.00	16.00	16.00	20	322				9675
		point137	137	16.00	16.00	16.00	20	322				9675
		point138	138	16.00	16.00	16.00	20	319				9571
		point139	139	16.00	16.00	16.00	20	322				9664
		point140	140	16.00	16.00	16.00	20	315				9446
		point141	141	16.00	16.00	16.00	20	322				9664
		point142	142	16.00	16.00	16.00	20	322				9660
		point143	143	16.00	16.00	16.00	20	318				9555
		point144	144	16.00	16.00	16.00	20	318				9555
		point145	145	16.00	16.00	16.00	20	322				9664
		point146	146	20.00	20.00	20.00	20	399				11956
		point147	147	20.00	20.00	20.00	20	399				11956
		point148	148	20.00	20.00	20.00	20	403				12093
		point149	149	20.00	20.00	20.00	20	399				11977
		point150	150	20.00	20.00	20.00	20	396				11868
		point151	151	20.00	20.00	20.00	20	404				12117
		point152	152	20.00	20.00	20.00	20	400				12008
		point153	153	20.00	20.00	20.00	20	397				11907
		point154	154	20.00	20.00	20.00	20	402				12049

		point155	155	20.00	20.00	20.00	20	400				12008
		point156	156	20.00	20.00	20.00	20	400				12012
		point157	157	20.00	20.00	20.00	20	398				11955
		point158	158	20.00	20.00	20.00	20	403				12098
		point159	159	20.00	20.00	20.00	20	400				12012
		point160	160	20.00	20.00	20.00	20	398				11933
		point161	161	20.00	20.00	20.00	20	400				12012
		point162	162	20.00	20.00	20.00	20	398				11933
		point163	163	20.00	20.00	20.00	20	400				12007
		point164	164	20.00	20.00	20.00	20	400				12007
		point165	165	20.00	20.00	20.00	20	400				12007
		point166	166	20.00	20.00	20.00	20	401				12035
		point167	167	20.00	20.00	20.00	20	403				12091
		point168	168	20.00	20.00	20.00	20	396				11887
		point169	169	20.00	20.00	20.00	20	401				12035
		point170	170	20.00	20.00	20.00	20	400				11986
		point171	171	20.00	20.00	20.00	20	400				11986
		point172	172	16.00	16.00	16.00	20	320				9589
		point173	173	16.00	16.00	16.00	20	322				9675
		point174	174	16.00	16.00	16.00	20	319				9556
		point175	175	16.00	16.00	16.00	20	318				9528
		point176	176	16.00	16.00	16.00	20	322				9648
		point177	177	16.00	16.00	16.00	20	321				9627
		point178	178	16.00	16.00	16.00	20	321				9627
		point179	179	16.00	16.00	16.00	20	317				9507
		point180	180	16.00	16.00	16.00	20	320				9612
		point181	181	16.00	16.00	16.00	20	320				9603
		point182	182	16.00	16.00	16.00	20	320				9612
		point183	183	16.00	16.00	16.00	20	320				9600
		point184	184	16.00	16.00	16.00	20	320				9603
		point185	185	16.00	16.00	16.00	20	320				9600
		point186	186	16.00	16.00	16.00	20	320				9603
		point187	187	16.00	16.00	16.00	20	320				9603
		point188	188	16.00	16.00	16.00	20	320				9603
		point189	189	16.00	16.00	16.00	20	320				9603
		point190	190	16.00	16.00	16.00	20	321				9627
		point191	191	16.00	16.00	16.00	20	317				9507
		point192	192	16.00	16.00	16.00	20	321				9627
		point193	193	16.00	16.00	16.00	20	321				9627

		point194	194	20.00	20.00	20.00	20	403				12093
		point195	195	20.00	20.00	20.00	20	397				11911
		point196	196	20.00	20.00	20.00	20	397				11911
		point197	197	20.00	20.00	20.00	20	404				12134
		point198	198	20.00	20.00	20.00	20	400				11986
		point199	199	20.00	20.00	20.00	20	398				11945
		point200	200	20.00	20.00	20.00	20	401				12035
		point201	201	20.00	20.00	20.00	20	401				12035
		point202	202	20.00	20.00	20.00	20	396				11887
		point203	203	20.00	20.00	20.00	20	403				12091
		point204	204	20.00	20.00	20.00	20	400				12007
		point205	205	20.00	20.00	20.00	20	398				11944
		point206	206	20.00	20.00	20.00	20	400				12007
		point207	207	20.00	20.00	20.00	20	400				12007
		point208	208	20.00	20.00	20.00	20	400				12007
		point209	209	16.00	16.00	16.00	20	318				9547
		point210	210	16.00	16.00	16.00	20	320				9606
		point211	211	16.00	16.00	16.00	20	320				9606
		point212	212	16.00	16.00	16.00	20	320				9606
		point213	213	16.00	16.00	16.00	20	322				9663
		point214	214	16.00	16.00	16.00	20	320				9606
		point215	215	16.00	16.00	16.00	20	320				9606
		point216	216	16.00	16.00	16.00	20	320				9606
		point217	217	16.00	16.00	16.00	20	318				9547
		point218	218	16.00	16.00	16.00	20	320				9606
		point219	219	16.00	16.00	16.00	20	320				9606
		point220	220	16.00	16.00	16.00	20	320				9606
		point221	221	16.00	16.00	16.00	20	316				9489
		point222	222	16.00	16.00	16.00	20	322				9663
		point223	223	12.00	12.00	12.00	20	240				7204
		point224	224	0.00	0.00	0.00	0	0				0
		point225	225	0.00	0.00	0.00	0	0				0
		point226	226	0.00	0.00	0.00	0	0				0
		point227	227	0.00	0.00	0.00	0	0	Y			0
		point128	128	0.00	0.00	0.00	0	0	Y			0
		point228	228	0.00	0.00	0.00	0	0	Y			0
		point229	229	0.00	0.00	0.00	0	0	Y			0
		point230	230	0.00	0.00	0.00	0	0	Y			0
		point231	231	0.00	0.00	0.00	0	0	Y			0

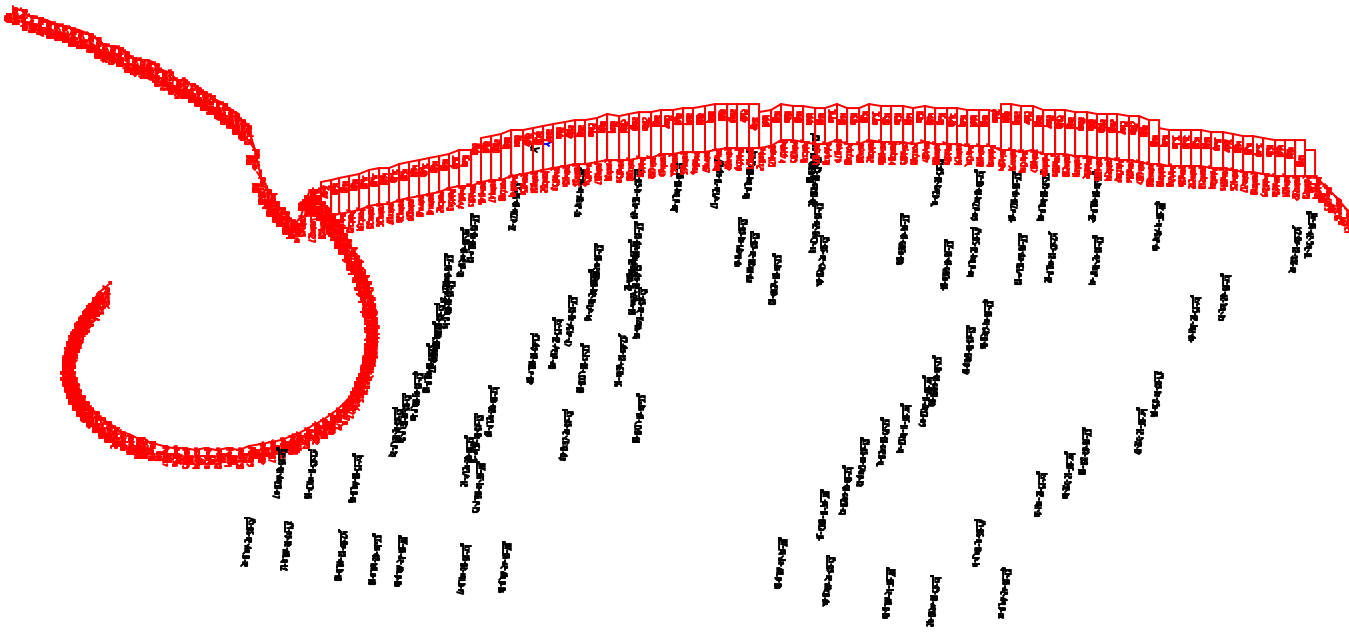
		point232	232	0.00	0.00	0.00	0	0	Y			0
		point233	233	0.00	0.00	0.00	0	0	Y			0
		point234	234	0.00	0.00	0.00	0	0	Y			0
		point235	235	0.00	0.00	0.00	0	0	Y			0
		point236	236	0.00	0.00	0.00	0	0				0
		point237	237	0.00	0.00	0.00	0	0				0
		point238	238	0.00	0.00	0.00	0	0				0
		point239	239	0.00	0.00	0.00	0	0				0
		point240	240	0.00	0.00	0.00	0	0				0
		point241	241	0.00	0.00	0.00	0	0				0
		point242	242	0.00	0.00	0.00	0	0				0
Barrier3	W	point243	243	0.00	0.00	0.00	0	0				0
		point245	245	0.00	0.00	0.00	0	0				0
		point246	246	0.00	0.00	0.00	0	0				0
		point247	247	0.00	0.00	0.00	0	0				0
		point248	248	0.00	0.00	0.00	0	0				0
		point249	249	0.00	0.00	0.00	0	0				0
		point250	250	0.00	0.00	0.00	0	0				0
		point251	251	0.00	0.00	0.00	0	0				0
		point252	252	0.00	0.00	0.00	0	0				0
		point253	253	0.00	0.00	0.00	0	0				0
		point254	254	0.00	0.00	0.00	0	0				0
		point255	255	0.00	0.00	0.00	0	0				0
Barrier5	W	point257	257	0.00	0.00	0.00	0	0				0
		point259	259	0.00	0.00	0.00	0	0				0
		point260	260	0.00	0.00	0.00	0	0				0
		point261	261	0.00	0.00	0.00	0	0				0
		point262	262	0.00	0.00	0.00	0	0				0
		point263	263	0.00	0.00	0.00	0	0				0
		point264	264	0.00	0.00	0.00	0	0				0
		point265	265	0.00	0.00	0.00	0	0				0
		point266	266	0.00	0.00	0.00	0	0				0
		point267	267	0.00	0.00	0.00	0	0				0
		point268	268	0.00	0.00	0.00	0	0				0
		point269	269	0.00	0.00	0.00	0	0				0
		point270	270	0.00	0.00	0.00	0	0				0
		point271	271	0.00	0.00	0.00	0	0				0

		point272	272	0.00	0.00	0.00	0	0				0
Barrier1	W	point1	1	0.00	0.00	0.00	0	0				0
		point4	4	0.00	0.00	0.00	0	0				0
		point5	5	0.00	0.00	0.00	0	0				0
		point6	6	0.00	0.00	0.00	0	0				0
		point7	7	0.00	0.00	0.00	0	0				0
		point8	8	0.00	0.00	0.00	0	0				0
		point9	9	0.00	0.00	0.00	0	0				0
		point10	10	0.00	0.00	0.00	0	0				0
		point11	11	0.00	0.00	0.00	0	0				0
		point12	12	0.00	0.00	0.00	0	0				0
		point13	13	0.00	0.00	0.00	0	0				0
		point14	14	0.00	0.00	0.00	0	0				0
		point15	15	0.00	0.00	0.00	0	0				0
		point16	16	0.00	0.00	0.00	0	0				0
		point17	17	0.00	0.00	0.00	0	0				0
		point18	18	0.00	0.00	0.00	0	0				0
		point19	19	0.00	0.00	0.00	0	0				0
		point20	20	0.00	0.00	0.00	0	0				0
		point21	21	0.00	0.00	0.00	0	0				0
		point22	22	0.00	0.00	0.00	0	0				0
		point23	23	0.00	0.00	0.00	0	0				0
		point24	24	0.00	0.00	0.00	0	0				0
		point25	25	0.00	0.00	0.00	0	0				0
		point26	26	0.00	0.00	0.00	0	0				0
		point27	27	0.00	0.00	0.00	0	0				0
		point28	28	0.00	0.00	0.00	0	0				0
		point29	29	0.00	0.00	0.00	0	0				0
		point30	30	0.00	0.00	0.00	0	0				0
		point31	31	0.00	0.00	0.00	0	0				0
		point32	32	0.00	0.00	0.00	0	0				0
		point33	33	0.00	0.00	0.00	0	0				0
		point34	34	0.00	0.00	0.00	0	0				0
		point35	35	0.00	0.00	0.00	0	0				0
		point36	36	0.00	0.00	0.00	0	0	Y			0
		point37	37	0.00	0.00	0.00	0	0	Y			0
		point38	38	0.00	0.00	0.00	0	0	Y			0
		point39	39	0.00	0.00	0.00	0	0	Y			0

		point40	40	0.00	0.00	0.00	0	0	Y			0
		point41	41	0.00	0.00	0.00	0	0	Y			0
		point42	42	0.00	0.00	0.00	0	0	Y			0
		point43	43	0.00	0.00	0.00	0	0	Y			0
		point44	44	0.00	0.00	0.00	0	0	Y			0
		point45	45	0.00	0.00	0.00	0	0				0
		point46	46	0.00	0.00	0.00	0	0				0
		point47	47	0.00	0.00	0.00	0	0				0
		point48	48	0.00	0.00	0.00	0	0				0
		point49	49	0.00	0.00	0.00	0	0				0
		point50	50	0.00	0.00	0.00	0	0				0
		point51	51	0.00	0.00	0.00	0	0				0
		point52	52	0.00	0.00	0.00	0	0				0
		point53	53	0.00	0.00	0.00	0	0				0
		point54	54	0.00	0.00	0.00	0	0				0
		point55	55	0.00	0.00	0.00	0	0				0
		point56	56	0.00	0.00	0.00	0	0				0
		point57	57	0.00	0.00	0.00	0	0				0
		point58	58	0.00	0.00	0.00	0	0				0
		point59	59	0.00	0.00	0.00	0	0				0
		point60	60	0.00	0.00	0.00	0	0				0
		point61	61	0.00	0.00	0.00	0	0				0
		point62	62	0.00	0.00	0.00	0	0				0
		point63	63	0.00	0.00	0.00	0	0				0
		point64	64	0.00	0.00	0.00	0	0				0
		point65	65	0.00	0.00	0.00	0	0				0
		point66	66	0.00	0.00	0.00	0	0				0
		point67	67	0.00	0.00	0.00	0	0				0
		point68	68	0.00	0.00	0.00	0	0				0
		point69	69	0.00	0.00	0.00	0	0				0
		point70	70	0.00	0.00	0.00	0	0				0
		point71	71	0.00	0.00	0.00	0	0				0
		point72	72	0.00	0.00	0.00	0	0				0
		point73	73	0.00	0.00	0.00	0	0				0
		point74	74	0.00	0.00	0.00	0	0				0
		point75	75	0.00	0.00	0.00	0	0				0
		point76	76	0.00	0.00	0.00	0	0				0
		point77	77	0.00	0.00	0.00	0	0				0
		point78	78	0.00	0.00	0.00	0	0				0

		point79	79	0.00	0.00	0.00	0	0				0
		point80	80	0.00	0.00	0.00	0	0				0
		point81	81	0.00	0.00	0.00	0	0				0
		point82	82	0.00	0.00	0.00	0	0				0
		point83	83	0.00	0.00	0.00	0	0				0
		point84	84	0.00	0.00	0.00	0	0				0
		point85	85	0.00	0.00	0.00	0	0				0
		point86	86	0.00	0.00	0.00	0	0				0
		point87	87	0.00	0.00	0.00	0	0				0
		point88	88	0.00	0.00	0.00	0	0				0
		point89	89	0.00	0.00	0.00	0	0				0
		point90	90	0.00	0.00	0.00	0	0				0
		point91	91	0.00	0.00	0.00	0	0				0
		point92	92	0.00	0.00	0.00	0	0				0
		point93	93	0.00	0.00	0.00	0	0				0
		point94	94	0.00	0.00	0.00	0	0				0
		point95	95	0.00	0.00	0.00	0	0				0
		point96	96	0.00	0.00	0.00	0	0				0
		point97	97	0.00	0.00	0.00	0	0				0
		point98	98	0.00	0.00	0.00	0	0				0
		point99	99	0.00	0.00	0.00	0	0				0
		point100	100	0.00	0.00	0.00	0	0				0
		point101	101	0.00	0.00	0.00	0	0				0
		point2	2	0.00	0.00	0.00	0	0				0
		point102	102	0.00	0.00	0.00	0	0				0
		point103	103	0.00	0.00	0.00	0	0				0
		point104	104	0.00	0.00	0.00	0	0				0
		point105	105	0.00	0.00	0.00	0	0				0
		point106	106	0.00	0.00	0.00	0	0				0
		point107	107	0.00	0.00	0.00	0	0				0
		point108	108	0.00	0.00	0.00	0	0				0
		point109	109	0.00	0.00	0.00	0	0				0
		point110	110	0.00	0.00	0.00	0	0				0
		point111	111	0.00	0.00	0.00	0	0				0
		point112	112	0.00	0.00	0.00	0	0				0
		point113	113	0.00	0.00	0.00	0	0				0
		point114	114	0.00	0.00	0.00	0	0				0
		point115	115	0.00	0.00	0.00	0	0				0
		point116	116	0.00	0.00	0.00	0	0				0

		point117	117	0.00	0.00	0.00	0	0				0
		point118	118	0.00	0.00	0.00	0	0				0
		point119	119	0.00	0.00	0.00	0	0				0
		point120	120	0.00	0.00	0.00	0	0				0
		point121	121	0.00	0.00	0.00	0	0				0
		point122	122	0.00	0.00	0.00	0	0				0
		point123	123	0.00	0.00	0.00	0	0				0
		point124	124	0.00	0.00	0.00	0	0				0
		point125	125	0.00	0.00	0.00	0	0				0
		point126	126	0.00	0.00	0.00	0	0				0



Pennyrile Upgrades_Mellwood Barrier	Sheet 1 of 1	22 Mar 2018
	HMB Professional Engineers	
Barrier View-Pennyrile_Mellwood_Bar	Project/Contract No. I-69 ORX	
Run name: P_TollAll_Barrier_C	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	

TNM OUTPUT FOR US 41 (KY 351 TO KY 425) – VANGUARD AVENUE (ALL ALTERNATIVES, BOTH TOLLING SCENARIOS)

HMB Professional Engineers
MG/mdg

28 March 2018
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: I-69 ORX
RUN: Pennyrile Parkway_Vanguard Barrier
BARRIER DESIGN: P_Vanguard_BAR_A
ATMOSPHERICS: 68 deg F, 50% RH

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

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Noise Reduction Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
KY-05-01-AUGD-07	43	1	51.1	54.7	66	3.6	10	----	53.5	1.2	8	-6.8
KY-05-01-AUGD-06	42	1	50.9	54.9	66	4.0	10	----	53.5	1.4	8	-6.6
KY-05-01-AUGD-05	41	1	50.8	55.0	66	4.2	10	----	53.5	1.5	8	-6.5
KY-05-01-AUGD-04	40	1	50.8	55.1	66	4.3	10	----	53.4	1.7	8	-6.3
KY-05-01-POWS-06	182	1	47.9	55.1	66	7.2	10	----	53.6	1.5	8	-6.5
KY-05-02-TRER-01	338	1	51.0	54.6	66	3.6	10	----	53.4	1.2	8	-6.8
KY-05-02-TRER-02	339	1	50.7	54.2	66	3.5	10	----	53.1	1.1	8	-6.9
KY-05-02-TRER-03	340	1	50.4	54.0	66	3.6	10	----	53.0	1.0	8	-7.0
KY-05-01-TRER-01	183	1	50.8	54.8	66	4.0	10	----	53.4	1.4	8	-6.6
KY-05-01-TRER-02	185	1	50.5	54.4	66	3.9	10	----	53.2	1.2	8	-6.8
KY-05-02-TRER-04	341	1	50.1	53.7	66	3.6	10	----	52.7	1.0	8	-7.0
KY-05-01-AUGD-08	44	1	51.5	54.6	66	3.1	10	----	53.5	1.1	8	-6.9
KY-05-01-AUGD-09	45	1	50.9	54.4	66	3.5	10	----	53.3	1.1	8	-6.9
KY-05-01-AUGD-10	46	4	51.3	53.8	66	2.5	10	----	52.9	0.9	8	-7.1
KY-05-02-AUGD-07	264	2	55.2	56.1	66	0.9	10	----	55.7	0.4	8	-7.6
KY-05-02-AUGD-06	263	2	56.6	57.0	66	0.4	10	----	56.6	0.4	8	-7.6
KY-05-02-AUGD-05	262	2	55.9	56.4	66	0.5	10	----	55.7	0.7	8	-7.3
KY-05-02-AUGD-04	261	4	52.5	55.2	66	2.7	10	----	53.7	1.5	8	-6.5
KY-05-02-AUGD-03	260	1	51.5	55.3	66	3.8	10	----	53.5	1.8	8	-6.2
KY-05-02-AUGD-02	259	1	51.2	55.5	66	4.3	10	----	53.7	1.8	8	-6.2
KY-05-02-AUGD-01	258	1	51.4	56.0	66	4.6	10	----	53.8	2.2	8	-5.8
KY-05-01-HALD-01	112	1	52.2	56.9	66	4.7	10	----	53.9	3.0	8	-5.0
KY-05-02-VANA-09	355	1	52.7	55.5	66	2.8	10	----	53.6	1.9	8	-6.1
KY-05-02-VANA-08	354	1	51.9	55.7	66	3.8	10	----	53.4	2.3	8	-5.7

KY-05-02-VANA-07	353	1	52.0	56.2	66	4.2	10	----	53.2	3.0	8	-5.0
KY-05-02-VANA-06	352	1	52.6	57.2	66	4.6	10	----	53.8	3.4	8	-4.6
KY-05-02-VANA-05	351	1	52.9	57.8	66	4.9	10	----	54.2	3.6	8	-4.4
KY-05-01-VANA-08	200	1	53.1	56.5	66	3.4	10	----	53.8	2.7	8	-5.3
KY-05-01-VANA-07	199	1	53.4	57.4	66	4.0	10	----	53.6	3.8	8	-4.2
KY-05-01-VANA-06	198	1	54.7	58.2	66	3.5	10	----	53.9	4.3	8	-3.7
KY-05-02-CHED-04	269	1	53.7	58.1	66	4.4	10	----	53.9	4.2	8	-3.8
KY-05-02-CHED-03	267	1	54.3	59.0	66	4.7	10	----	54.2	4.8	8	-3.2
KY-05-02-CHED-02	266	1	54.7	59.4	66	4.7	10	----	54.4	5.0	8	-3.0
KY-05-02-CHED-01	265	1	55.1	59.7	66	4.6	10	----	54.2	5.5	8	-2.5
KY-05-01-CHED-06	61	1	55.5	61.0	66	5.5	10	----	55.2	5.8	8	-2.2
KY-05-01-VANA-05	197	1	56.5	60.1	66	3.6	10	----	55.0	5.1	8	-2.9
KY-05-01-VANA-04	195	1	58.3	61.8	66	3.5	10	----	56.2	5.6	8	-2.4
KY-05-02-HUBL-07	309	1	57.0	62.3	66	5.3	10	----	56.4	5.9	8	-2.1
KY-05-01-CHED-05	60	1	56.2	61.8	66	5.6	10	----	55.4	6.4	8	-1.6
KY-05-02-HUBL-06	308	1	57.0	62.5	66	5.5	10	----	56.0	6.5	8	-1.5
KY-05-01-CHED-04	59	1	56.7	62.4	66	5.7	10	----	55.5	6.9	8	-1.1
KY-05-02-HUBL-05	307	1	57.6	63.1	66	5.5	10	----	56.2	6.9	8	-1.1
KY-05-01-CHED-03	58	1	57.4	62.9	66	5.5	10	----	55.9	7.0	8	-1.0
KY-05-02-HUBL-04	306	1	58.3	64.1	66	5.8	10	----	56.7	7.4	8	-0.6
KY-05-01-CHED-02	57	1	58.1	63.8	66	5.7	10	----	56.5	7.3	8	-0.7
KY-05-02-HUBL-03	305	1	59.1	65.2	66	6.1	10	----	57.5	7.7	8	-0.3
KY-05-01-CHED-01	56	1	58.7	64.6	66	5.9	10	----	56.8	7.8	8	-0.2
KY-05-02-HUBL-02	304	1	61.8	68.4	66	6.6	10	Snd Lvl	59.1	9.3	8	1.3
KY-05-01-HUBL-07	127	1	58.9	64.5	66	5.6	10	----	58.1	6.4	8	-1.6
KY-05-01-VANA-02	192	1	62.1	65.1	66	3.0	10	----	59.2	5.9	8	-2.1
KY-05-01-VANA-01	191	1	67.3	68.3	66	1.0	10	Snd Lvl	62.5	5.8	8	-2.2
KY-05-02-VANA-04	350	1	57.9	63.5	66	5.6	10	----	59.3	4.2	8	-3.8
KY-05-01-AUGD-01	36	1	59.7	65.8	66	6.1	10	----	62.3	3.5	8	-4.5
KY-05-02-VANA-02	349	1	63.7	69.7	66	6.0	10	Snd Lvl	65.7	4.0	8	-4.0
Receiver194	194	1	0.0	63.9	66	63.9	10	----	58.0	5.9	8	-2.1
KY-05-01-TRER-07	190	1	49.2	72.8	66	23.6	10	Both	64.3	8.5	8	0.5
KY-05-02-VANA-01	348	1	67.3	72.8	66	5.5	10	Snd Lvl	68.7	4.1	8	-3.9
KY-05-01-GARL-01	96	1	47.8	71.1	66	23.3	10	Both	62.9	8.2	8	0.2
KY-05-01-HUBL-06	126	1	59.7	65.6	66	5.9	10	----	58.6	7.0	8	-1.0
KY-05-01-HUBL-05	125	1	61.2	67.4	66	6.2	10	Snd Lvl	59.0	8.4	8	0.4
KY-05-02-GARL-01	297	1	63.7	69.9	66	6.2	10	Snd Lvl	60.3	9.6	8	1.6
KY-05-01-HUBL-04	124	1	63.2	69.6	66	6.4	10	Snd Lvl	60.1	9.5	8	1.5
KY-05-01-HUBL-03	123	1	64.3	70.6	66	6.3	10	Snd Lvl	60.7	9.9	8	1.9
KY-05-01-HUBL-02	122	1	67.1	72.9	66	5.8	10	Snd Lvl	61.9	11.0	8	3.0
KY-05-01-HUBL-01	121	1	70.4	75.5	66	5.1	10	Snd Lvl	61.7	13.8	8	5.8

KY-05-02-HUBL-01	303	1	61.5	68.0	66	6.5	10	Snd Lvl	59.4	8.6	8	0.6

Dwelling Units	**# DUs**	**Noise Reduction**		
		Min	**Avg**	**Max**
		dB	**dB**	**dB**
All Selected	75	0.4	4.6	13.8
All Impacted	13	4.0	8.5	13.8
All that meet NR Goal	10	8.2	9.7	13.8

HMB Professional Engineers 28 March 2018
MG/mdg TNM 2.5
Calculated with TNM 2.5

RESULTS: BARRIER DESIGN
PROJECT/CONTRACT: I-69 ORX
RUN: Pennyrile Parkway_Vanguard Barrier
BARRIER DESIGN: P_Vanguard_BAR_A

ATMOSPHERICS: 68 deg F, 50% RH

Selected Receivers

Name	No.	Calc LAeq1h	Noise Reduction Calc	Goal	Calc-Goal	Barrier Reviewed	Important Segments Name	No.	Height	Partial LAeq1h
		dBA	dB	dB	dB				ft	dBA
KY-05-01-AUGD-07	43	53.5	1.2	8	-6.8	Barrier C	point4	4	0.0	35.7
						Barrier C	point1	1	0.0	35.4
						Barrier C	point5	5	0.0	32.8
						Barrier C	point10	10	0.0	32.5
						Barrier A	point190	190	0.0	32.0
						Barrier A	point191	191	0.0	32.0
						Barrier A	point192	192	0.0	31.8
						Barrier A	point193	193	0.0	31.5
						Barrier A	point196	196	0.0	31.5
						Barrier A	point194	194	0.0	31.5
KY-05-01-AUGD-06	42	53.5	1.4	8	-6.6	Barrier C	point5	5	0.0	40.2
						Barrier C	point4	4	0.0	40.1
						Barrier C	point6	6	0.0	38.6
						Barrier C	point7	7	0.0	38.3
						Barrier C	point1	1	0.0	38.3
						Barrier C	point8	8	0.0	37.6
						Barrier C	point9	9	0.0	35.9
						Barrier C	point10	10	0.0	35.1
						Barrier C	point11	11	0.0	34.6
						Barrier A	point190	190	0.0	32.9
KY-05-01-AUGD-05	41	53.5	1.5	8	-6.5	Barrier C	point8	8	0.0	40.1

						Barrier C	point6	6	0.0	40.0
						Barrier C	point7	7	0.0	39.7
						Barrier C	point9	9	0.0	37.7
						Barrier C	point10	10	0.0	37.1
						Barrier C	point11	11	0.0	35.0
						Barrier C	point12	12	0.0	34.7
						Barrier A	point190	190	0.0	33.3
						Barrier A	point191	191	0.0	33.2
						Barrier A	point192	192	0.0	33.1
KY-05-01-AUGD-04	40	53.4	1.7	8	-6.3	Barrier C	point16	16	0.0	35.6
						Barrier C	point12	12	0.0	34.8
						Barrier C	point15	15	0.0	34.4
						Barrier A	point190	190	0.0	34.2
						Barrier A	point191	191	0.0	34.2
						Barrier A	point192	192	0.0	34.0
						Barrier A	point196	196	0.0	33.9
						Barrier A	point193	193	0.0	33.9
						Barrier A	point200	200	0.0	33.8
						Barrier A	point194	194	0.0	33.8
KY-05-01-POWS-06	182	53.6	1.5	8	-6.5	Barrier A	point191	191	0.0	34.1
						Barrier A	point190	190	0.0	34.1
						Barrier A	point192	192	0.0	34.1
						Barrier A	point200	200	0.0	34.1
						Barrier A	point193	193	0.0	34.1
						Barrier A	point196	196	0.0	34.1
						Barrier A	point199	199	0.0	34.0
						Barrier A	point194	194	0.0	34.0
						Barrier A	point197	197	0.0	34.0
						Barrier A	point198	198	0.0	34.0
KY-05-02-TRER-01	338	53.4	1.2	8	-6.8	Barrier C	point1	1	0.0	34.7
						Barrier C	point4	4	0.0	34.6
						Barrier C	point10	10	0.0	32.7
						Barrier A	point190	190	0.0	31.8
						Barrier A	point192	192	0.0	31.6
						Barrier A	point191	191	0.0	31.6
						Barrier A	point193	193	0.0	31.3

						Barrier A	point196	196	0.0	31.3
						Barrier A	point200	200	0.0	31.2
						Barrier A	point194	194	0.0	31.2
KY-05-02-TRER-02	339	53.1	1.1	8	-6.9	Barrier C	point4	4	0.0	34.0
						Barrier C	point1	1	0.0	33.7
						Barrier A	point190	190	0.0	31.5
						Barrier A	point191	191	0.0	31.5
						Barrier C	point5	5	0.0	31.3
						Barrier A	point192	192	0.0	31.3
						Barrier A	point193	193	0.0	31.0
						Barrier A	point200	200	0.0	31.0
						Barrier A	point196	196	0.0	31.0
						Barrier A	point201	201	0.0	30.9
KY-05-02-TRER-03	340	53.0	1.0	8	-7.0	Barrier C	point4	4	0.0	33.6
						Barrier C	point1	1	0.0	33.6
						Barrier C	point5	5	0.0	32.7
						Barrier A	point191	191	0.0	31.2
						Barrier A	point190	190	0.0	31.2
						Barrier A	point192	192	0.0	31.1
						Barrier A	point200	200	0.0	30.8
						Barrier A	point193	193	0.0	30.8
						Barrier A	point196	196	0.0	30.8
						Barrier A	point201	201	0.0	30.8
KY-05-01-TRER-01	183	53.4	1.4	8	-6.6	Barrier C	point16	16	0.0	33.9
						Barrier A	point200	200	0.0	33.6
						Barrier A	point191	191	0.0	33.5
						Barrier A	point210	210	0.0	33.5
						Barrier A	point201	201	0.0	33.5
						Barrier A	point209	209	0.0	33.5
						Barrier A	point196	196	0.0	33.5
						Barrier A	point212	212	0.0	33.5
						Barrier A	point199	199	0.0	33.4
						Barrier A	point211	211	0.0	33.4
KY-05-01-TRER-02	185	53.2	1.2	8	-6.8	Barrier C	point12	12	0.0	33.8
						Barrier C	point16	16	0.0	33.7
						Barrier A	point212	212	0.0	33.1

						Barrier A	point211	211	0.0	33.0
						Barrier A	point210	210	0.0	33.0
						Barrier A	point209	209	0.0	33.0
						Barrier A	point200	200	0.0	33.0
						Barrier A	point201	201	0.0	33.0
						Barrier A	point213	213	0.0	33.0
						Barrier A	point208	208	0.0	33.0
KY-05-02-TRER-04	341	52.7	1.0	8	-7.0	Barrier C	point4	4	0.0	32.6
						Barrier C	point1	1	0.0	32.4
						Barrier C	point5	5	0.0	31.3
						Barrier A	point190	190	0.0	30.9
						Barrier A	point191	191	0.0	30.9
						Barrier A	point192	192	0.0	30.6
						Barrier A	point200	200	0.0	30.5
						Barrier A	point201	201	0.0	30.5
						Barrier A	point209	209	0.0	30.5
						Barrier A	point212	212	0.0	30.5
KY-05-01-AUGD-08	44	53.5	1.1	8	-6.9	Barrier A	point190	190	0.0	31.4
						Barrier A	point191	191	0.0	31.3
						Barrier A	point192	192	0.0	31.2
						Barrier A	point193	193	0.0	31.1
						Barrier A	point194	194	0.0	31.1
						Barrier A	point196	196	0.0	30.8
						Barrier A	point200	200	0.0	30.8
						Barrier A	point197	197	0.0	30.7
						Barrier A	point195	195	0.0	30.7
						Barrier A	point198	198	0.0	30.6
KY-05-01-AUGD-09	45	53.3	1.1	8	-6.9	Barrier A	point190	190	0.0	31.0
						Barrier A	point191	191	0.0	30.9
						Barrier A	point192	192	0.0	30.9
						Barrier A	point194	194	0.0	30.8
						Barrier A	point196	196	0.0	30.5
						Barrier A	point197	197	0.0	30.4
						Barrier A	point200	200	0.0	30.3
						Barrier A	point195	195	0.0	30.3
						Barrier A	point201	201	0.0	30.3

						Barrier A	point198	198	0.0	30.3
KY-05-01-AUGD-10	46	52.9	0.9	8	-7.1	Barrier A	point190	190	0.0	30.1
						Barrier A	point191	191	0.0	30.0
						Barrier A	point194	194	0.0	30.0
						Barrier A	point193	193	0.0	29.9
						Barrier A	point192	192	0.0	29.9
						Barrier A	point196	196	0.0	29.6
						Barrier A	point201	201	0.0	29.6
						Barrier A	point200	200	0.0	29.5
						Barrier A	point210	210	0.0	29.5
						Barrier A	point209	209	0.0	29.5
KY-05-02-AUGD-07	264	55.7	0.4	8	-7.6	Barrier A	point190	190	0.0	29.1
						Barrier A	point191	191	0.0	29.0
						Barrier A	point193	193	0.0	28.9
						Barrier A	point192	192	0.0	28.8
						Barrier A	point194	194	0.0	28.7
						Barrier A	point195	195	0.0	28.7
						Barrier A	point196	196	0.0	28.6
						Barrier A	point201	201	0.0	28.5
						Barrier A	point200	200	0.0	28.4
						Barrier A	point197	197	0.0	28.4
KY-05-02-AUGD-06	263	56.6	0.4	8	-7.6	Barrier A	point190	190	0.0	29.8
						Barrier A	point194	194	0.0	29.5
						Barrier A	point193	193	0.0	29.4
						Barrier A	point191	191	0.0	29.4
						Barrier A	point192	192	0.0	29.3
						Barrier A	point195	195	0.0	29.1
						Barrier A	point196	196	0.0	29.0
						Barrier A	point200	200	0.0	28.8
						Barrier A	point197	197	0.0	28.8
						Barrier A	point201	201	0.0	28.7
KY-05-02-AUGD-05	262	55.7	0.7	8	-7.3	Barrier A	point190	190	0.0	30.6
						Barrier A	point194	194	0.0	30.2
						Barrier A	point193	193	0.0	30.2
						Barrier A	point191	191	0.0	30.1
						Barrier A	point192	192	0.0	30.1

						Barrier A	point195	195	0.0	29.9
						Barrier A	point196	196	0.0	29.6
						Barrier A	point200	200	0.0	29.5
						Barrier A	point197	197	0.0	29.4
						Barrier A	point198	198	0.0	29.3
KY-05-02-AUGD-04	261	53.7	1.5	8	-6.5	Barrier A	point190	190	0.0	31.8
						Barrier A	point191	191	0.0	31.4
						Barrier A	point193	193	0.0	31.4
						Barrier A	point192	192	0.0	31.4
						Barrier A	point194	194	0.0	31.4
						Barrier A	point195	195	0.0	31.2
						Barrier C	point5	5	0.0	31.1
						Barrier A	point196	196	0.0	30.8
						Barrier A	point197	197	0.0	30.7
						Barrier A	point200	200	0.0	30.7
KY-05-02-AUGD-03	260	53.5	1.8	8	-6.2	Barrier C	point1	1	0.0	38.9
						Barrier C	point4	4	0.0	38.8
						Barrier C	point5	5	0.0	37.4
						Barrier C	point6	6	0.0	35.1
						Barrier A	point190	190	0.0	32.9
						Barrier A	point191	191	0.0	32.8
						Barrier A	point193	193	0.0	32.8
						Barrier A	point192	192	0.0	32.7
						Barrier A	point194	194	0.0	32.7
						Barrier A	point195	195	0.0	32.4
KY-05-02-AUGD-02	259	53.7	1.8	8	-6.2	Barrier C	point8	8	0.0	41.3
						Barrier C	point7	7	0.0	41.0
						Barrier C	point6	6	0.0	39.2
						Barrier C	point9	9	0.0	38.1
						Barrier C	point10	10	0.0	37.1
						Barrier C	point11	11	0.0	35.4
						Barrier C	point12	12	0.0	35.0
						Barrier A	point190	190	0.0	33.8
						Barrier A	point191	191	0.0	33.7
						Barrier A	point193	193	0.0	33.6
KY-05-02-AUGD-01	258	53.8	2.2	8	-5.8	Barrier A	point190	190	0.0	35.6

						Barrier A	point191	191	0.0	35.6
						Barrier A	point192	192	0.0	35.4
						Barrier A	point193	193	0.0	35.4
						Barrier A	point194	194	0.0	35.4
						Barrier C	point16	16	0.0	35.2
						Barrier A	point196	196	0.0	35.2
						Barrier A	point195	195	0.0	35.1
						Barrier A	point200	200	0.0	35.1
						Barrier A	point197	197	0.0	34.9
KY-05-01-HALD-01	112	53.9	3.0	8	-5.0	Barrier A	point190	190	0.0	36.2
						Barrier A	point191	191	0.0	36.0
						Barrier A	point192	192	0.0	36.0
						Barrier A	point193	193	0.0	36.0
						Barrier A	point194	194	0.0	35.9
						Barrier A	point195	195	0.0	35.7
						Barrier A	point196	196	0.0	35.5
						Barrier A	point200	200	0.0	35.3
						Barrier A	point197	197	0.0	35.2
						Barrier A	point199	199	0.0	35.1
KY-05-02-VANA-09	355	53.6	1.9	8	-6.1	Barrier A	point190	190	0.0	32.6
						Barrier A	point210	210	0.0	32.5
						Barrier A	point191	191	0.0	32.4
						Barrier A	point192	192	0.0	32.4
						Barrier A	point193	193	0.0	32.2
						Barrier A	point194	194	0.0	31.7
						Barrier A	point209	209	0.0	31.5
						Barrier A	point195	195	0.0	31.5
						Barrier A	point203	203	0.0	31.4
						Barrier A	point202	202	0.0	31.4
KY-05-02-VANA-08	354	53.4	2.3	8	-5.7	Barrier C	point4	4	0.0	42.5
						Barrier C	point5	5	0.0	40.4
						Barrier C	point1	1	0.0	38.5
						Barrier C	point6	6	0.0	36.4
						Barrier C	point7	7	0.0	34.2
						Barrier A	point190	190	0.0	33.5
						Barrier A	point210	210	0.0	33.4

						Barrier A	point191	191	0.0	33.3
						Barrier A	point192	192	0.0	33.3
						Barrier A	point193	193	0.0	33.2
KY-05-02-VANA-07	353	53.2	3.0	8	-5.0	Barrier C	point10	10	0.0	37.5
						Barrier C	point9	9	0.0	36.7
						Barrier C	point12	12	0.0	35.3
						Barrier A	point190	190	0.0	34.7
						Barrier C	point13	13	0.0	34.6
						Barrier C	point11	11	0.0	34.6
						Barrier A	point191	191	0.0	34.5
						Barrier A	point192	192	0.0	34.4
						Barrier A	point193	193	0.0	34.1
						Barrier A	point194	194	0.0	33.9
KY-05-02-VANA-06	352	53.8	3.4	8	-4.6	Barrier A	point190	190	0.0	36.1
						Barrier C	point16	16	0.0	36.0
						Barrier A	point191	191	0.0	35.8
						Barrier A	point192	192	0.0	35.7
						Barrier A	point194	194	0.0	35.5
						Barrier A	point193	193	0.0	35.5
						Barrier A	point195	195	0.0	35.3
						Barrier C	point17	17	0.0	35.3
						Barrier A	point196	196	0.0	35.0
						Barrier A	point197	197	0.0	34.8
KY-05-02-VANA-05	351	54.2	3.6	8	-4.4	Barrier A	point190	190	0.0	36.8
						Barrier A	point191	191	0.0	36.6
						Barrier A	point192	192	0.0	36.5
						Barrier A	point194	194	0.0	36.3
						Barrier A	point193	193	0.0	36.3
						Barrier A	point195	195	0.0	36.2
						Barrier A	point196	196	0.0	35.8
						Barrier A	point197	197	0.0	35.6
						Barrier A	point198	198	0.0	35.5
						Barrier A	point199	199	0.0	35.5
KY-05-01-VANA-08	200	53.8	2.7	8	-5.3	Barrier C	point1	1	0.0	42.9
						Barrier C	point4	4	0.0	42.2
						Barrier C	point5	5	0.0	39.9

						Barrier C	point6	6	0.0	36.5
						Barrier C	point8	8	0.0	33.8
						Barrier A	point190	190	0.0	33.2
						Barrier C	point7	7	0.0	33.2
						Barrier A	point191	191	0.0	33.1
						Barrier A	point192	192	0.0	33.0
						Barrier A	point193	193	0.0	32.8
KY-05-01-VANA-07	199	53.6	3.8	8	-4.2	Barrier C	point11	11	0.0	38.5
						Barrier C	point10	10	0.0	37.9
						Barrier C	point12	12	0.0	37.4
						Barrier C	point13	13	0.0	37.3
						Barrier C	point14	14	0.0	35.9
						Barrier A	point190	190	0.0	34.3
						Barrier A	point191	191	0.0	34.1
						Barrier A	point192	192	0.0	34.0
						Barrier A	point193	193	0.0	33.9
						Barrier A	point194	194	0.0	33.8
KY-05-01-VANA-06	198	53.9	4.3	8	-3.7	Barrier C	point15	15	0.0	37.8
						Barrier C	point16	16	0.0	37.5
						Barrier C	point14	14	0.0	37.1
						Barrier C	point17	17	0.0	36.7
						Barrier C	point18	18	0.0	35.5
						Barrier A	point190	190	0.0	35.3
						Barrier A	point191	191	0.0	35.1
						Barrier A	point192	192	0.0	35.0
						Barrier C	point19	19	0.0	34.9
						Barrier A	point193	193	0.0	34.7
KY-05-02-CHED-04	269	53.9	4.2	8	-3.8	Barrier C	point12	12	0.0	39.6
						Barrier C	point13	13	0.0	38.7
						Barrier C	point14	14	0.0	38.1
						Barrier C	point11	11	0.0	36.7
						Barrier C	point15	15	0.0	36.1
						Barrier A	point190	190	0.0	34.2
						Barrier A	point191	191	0.0	34.0
						Barrier A	point192	192	0.0	33.9
						Barrier A	point193	193	0.0	33.7

						Barrier A	point194	194	0.0	33.6
KY-05-02-CHED-03	267	54.2	4.8	8	-3.2	Barrier C	point14	14	0.0	40.1
						Barrier C	point16	16	0.0	39.3
						Barrier C	point15	15	0.0	39.0
						Barrier C	point17	17	0.0	37.2
						Barrier C	point13	13	0.0	36.3
						Barrier A	point190	190	0.0	34.2
						Barrier A	point147	147	16.0	34.1
						Barrier A	point191	191	0.0	34.0
						Barrier A	point146	146	16.0	34.0
						Barrier A	point145	145	16.0	33.9
KY-05-02-CHED-02	266	54.4	5.0	8	-3.0	Barrier C	point14	14	0.0	41.3
						Barrier C	point15	15	0.0	40.9
						Barrier C	point16	16	0.0	39.3
						Barrier C	point17	17	0.0	36.9
						Barrier C	point13	13	0.0	34.8
						Barrier A	point147	147	16.0	34.6
						Barrier A	point146	146	16.0	34.5
						Barrier A	point145	145	16.0	34.5
						Barrier A	point148	148	16.0	34.3
						Barrier A	point150	150	16.0	33.9
KY-05-02-CHED-01	265	54.2	5.5	8	-2.5	Barrier C	point16	16	0.0	39.8
						Barrier C	point14	14	0.0	39.6
						Barrier C	point15	15	0.0	39.5
						Barrier A	point147	147	16.0	35.1
						Barrier A	point145	145	16.0	35.1
						Barrier A	point146	146	16.0	35.0
						Barrier A	point148	148	16.0	34.8
						Barrier A	point149	149	16.0	34.6
						Barrier A	point150	150	16.0	34.4
						Barrier A	point151	151	16.0	33.9
KY-05-01-CHED-06	61	55.2	5.8	8	-2.2	Barrier A	point190	190	0.0	37.6
						Barrier A	point191	191	0.0	37.3
						Barrier A	point192	192	0.0	37.1
						Barrier A	point193	193	0.0	36.9
						Barrier A	point194	194	0.0	36.6

						Barrier A	point195	195	0.0	36.5
						Barrier A	point196	196	0.0	36.3
						Barrier A	point197	197	0.0	36.0
						Barrier A	point147	147	16.0	35.8
						Barrier A	point198	198	0.0	35.6
KY-05-01-VANA-05	197	55.0	5.1	8	-2.9	Barrier A	point190	190	0.0	37.5
						Barrier A	point191	191	0.0	37.2
						Barrier A	point192	192	0.0	37.0
						Barrier C	point22	22	0.0	36.8
						Barrier A	point193	193	0.0	36.8
						Barrier A	point194	194	0.0	36.7
						Barrier A	point195	195	0.0	36.5
						Barrier A	point196	196	0.0	36.3
						Barrier C	point23	23	0.0	36.3
						Barrier A	point197	197	0.0	36.0
KY-05-01-VANA-04	195	56.2	5.6	8	-2.4	Barrier A	point190	190	0.0	39.1
						Barrier A	point191	191	0.0	38.8
						Barrier A	point194	194	0.0	38.7
						Barrier A	point192	192	0.0	38.6
						Barrier A	point195	195	0.0	38.6
						Barrier A	point196	196	0.0	38.4
						Barrier A	point193	193	0.0	38.3
						Barrier A	point197	197	0.0	38.0
						Barrier A	point198	198	0.0	37.8
						Barrier A	point199	199	0.0	37.3
KY-05-02-HUBL-07	309	56.4	5.9	8	-2.1	Barrier A	point190	190	0.0	39.0
						Barrier A	point191	191	0.0	38.7
						Barrier A	point192	192	0.0	38.4
						Barrier A	point196	196	0.0	38.4
						Barrier A	point195	195	0.0	38.4
						Barrier A	point193	193	0.0	38.2
						Barrier A	point194	194	0.0	38.1
						Barrier A	point197	197	0.0	38.0
						Barrier C	point29	29	0.0	38.0
						Barrier A	point198	198	0.0	37.7
KY-05-01-CHED-05	60	55.4	6.4	8	-1.6	Barrier A	point147	147	16.0	36.9

						Barrier A	point146	146	16.0	36.7
						Barrier A	point148	148	16.0	36.7
						Barrier A	point149	149	16.0	36.6
						Barrier A	point145	145	16.0	36.6
						Barrier A	point150	150	16.0	36.6
						Barrier A	point191	191	0.0	36.5
						Barrier A	point190	190	0.0	36.3
						Barrier A	point153	153	16.0	36.3
						Barrier A	point194	194	0.0	36.3
KY-05-02-HUBL-06	308	56.0	6.5	8	-1.5	Barrier A	point190	190	0.0	37.7
						Barrier A	point147	147	16.0	37.6
						Barrier A	point148	148	16.0	37.4
						Barrier A	point150	150	16.0	37.4
						Barrier A	point191	191	0.0	37.4
						Barrier A	point149	149	16.0	37.4
						Barrier A	point146	146	16.0	37.4
						Barrier A	point145	145	16.0	37.3
						Barrier A	point153	153	16.0	37.3
						Barrier A	point192	192	0.0	37.1
KY-05-01-CHED-04	59	55.5	6.9	8	-1.1	Barrier A	point147	147	16.0	37.6
						Barrier A	point146	146	16.0	37.5
						Barrier A	point145	145	16.0	37.4
						Barrier A	point148	148	16.0	37.4
						Barrier A	point149	149	16.0	37.3
						Barrier A	point150	150	16.0	37.2
						Barrier C	point27	27	0.0	36.8
						Barrier C	point25	25	0.0	36.8
						Barrier A	point151	151	16.0	36.8
						Barrier C	point29	29	0.0	36.7
KY-05-02-HUBL-05	307	56.2	6.9	8	-1.1	Barrier A	point147	147	16.0	38.7
						Barrier A	point146	146	16.0	38.5
						Barrier A	point148	148	16.0	38.5
						Barrier A	point145	145	16.0	38.4
						Barrier A	point149	149	16.0	38.4
						Barrier A	point150	150	16.0	38.3
						Barrier C	point29	29	0.0	38.0

						Barrier A	point151	151	16.0	38.0
						Barrier A	point153	153	16.0	37.9
						Barrier A	point152	152	16.0	37.7
KY-05-01-CHED-03	58	55.9	7.0	8	-1.0	Barrier A	point147	147	16.0	38.6
						Barrier C	point29	29	0.0	38.5
						Barrier A	point146	146	16.0	38.5
						Barrier A	point145	145	16.0	38.4
						Barrier A	point149	149	16.0	38.2
						Barrier A	point150	150	16.0	37.9
						Barrier A	point148	148	16.0	37.5
						Barrier C	point26	26	0.0	37.5
						Barrier A	point151	151	16.0	37.4
						Barrier A	point153	153	16.0	37.3
KY-05-02-HUBL-04	306	56.7	7.4	8	-0.6	Barrier C	point29	29	0.0	40.8
						Barrier A	point147	147	16.0	39.9
						Barrier A	point146	146	16.0	39.8
						Barrier A	point145	145	16.0	39.7
						Barrier A	point148	148	16.0	39.7
						Barrier A	point149	149	16.0	39.6
						Barrier A	point150	150	16.0	39.4
						Barrier C	point28	28	0.0	39.4
						Barrier C	point30	30	0.0	39.0
						Barrier A	point151	151	16.0	38.9
KY-05-01-CHED-02	57	56.5	7.3	8	-0.7	Barrier A	point147	147	16.0	39.7
						Barrier A	point145	145	16.0	39.7
						Barrier A	point146	146	16.0	39.6
						Barrier A	point148	148	16.0	39.2
						Barrier A	point149	149	16.0	39.0
						Barrier C	point29	29	0.0	38.9
						Barrier A	point150	150	16.0	38.7
						Barrier C	point27	27	0.0	38.6
						Barrier A	point151	151	16.0	38.1
						Barrier A	point139	139	20.0	38.1
KY-05-02-HUBL-03	305	57.5	7.7	8	-0.3	Barrier C	point29	29	0.0	43.5
						Barrier C	point30	30	0.0	41.5
						Barrier A	point145	145	16.0	41.1

						Barrier A	point147	147	16.0	41.0
						Barrier A	point146	146	16.0	41.0
						Barrier A	point148	148	16.0	40.6
						Barrier A	point149	149	16.0	40.3
						Barrier C	point28	28	0.0	40.1
						Barrier C	point31	31	0.0	40.1
						Barrier A	point150	150	16.0	40.0
KY-05-01-CHED-01	56	56.8	7.8	8	-0.2	Barrier A	point145	145	16.0	40.2
						Barrier A	point146	146	16.0	40.0
						Barrier A	point147	147	16.0	39.9
						Barrier A	point148	148	16.0	39.5
						Barrier A	point149	149	16.0	39.2
						Barrier A	point139	139	20.0	39.1
						Barrier A	point136	136	20.0	39.1
						Barrier A	point138	138	20.0	39.0
						Barrier A	point135	135	20.0	39.0
						Barrier A	point137	137	20.0	39.0
KY-05-02-HUBL-02	304	59.1	9.3	8	1.3	Barrier A	point145	145	16.0	43.7
						Barrier A	point146	146	16.0	43.4
						Barrier C	point33	33	0.0	43.3
						Barrier A	point147	147	16.0	43.3
						Barrier A	point148	148	16.0	42.6
						Barrier A	point149	149	16.0	42.3
						Barrier A	point139	139	20.0	42.3
						Barrier A	point138	138	20.0	42.1
						Barrier A	point142	142	20.0	42.1
						Barrier A	point140	140	20.0	42.1
KY-05-01-HUBL-07	127	58.1	6.4	8	-1.6	Barrier A	point190	190	0.0	40.7
						Barrier A	point196	196	0.0	40.3
						Barrier A	point191	191	0.0	40.2
						Barrier A	point192	192	0.0	40.0
						Barrier A	point197	197	0.0	40.0
						Barrier A	point195	195	0.0	39.8
						Barrier A	point193	193	0.0	39.7
						Barrier A	point194	194	0.0	39.5
						Barrier A	point198	198	0.0	39.5

						Barrier A	point153	153	16.0	39.1
KY-05-01-VANA-02	192	59.2	5.9	8	-2.1	Barrier A	point190	190	0.0	43.9
						Barrier A	point191	191	0.0	43.5
						Barrier A	point192	192	0.0	43.1
						Barrier A	point193	193	0.0	42.6
						Barrier A	point194	194	0.0	42.6
						Barrier A	point195	195	0.0	42.3
						Barrier A	point196	196	0.0	42.2
						Barrier A	point197	197	0.0	42.0
						Barrier A	point198	198	0.0	41.6
						Barrier A	point200	200	0.0	41.1
KY-05-01-VANA-01	191	62.5	5.8	8	-2.2	Barrier A	point190	190	0.0	49.6
						Barrier A	point191	191	0.0	49.0
						Barrier A	point192	192	0.0	48.7
						Barrier A	point193	193	0.0	48.2
						Barrier A	point194	194	0.0	47.9
						Barrier A	point195	195	0.0	47.5
						Barrier A	point196	196	0.0	47.2
						Barrier A	point197	197	0.0	46.4
						Barrier A	point189	189	12.0	46.2
						Barrier A	point198	198	0.0	45.1
KY-05-02-VANA-04	350	59.3	4.2	8	-3.8	Barrier A	point190	190	0.0	44.7
						Barrier A	point191	191	0.0	44.4
						Barrier A	point192	192	0.0	44.3
						Barrier A	point194	194	0.0	44.2
						Barrier A	point195	195	0.0	44.1
						Barrier A	point193	193	0.0	44.0
						Barrier A	point196	196	0.0	43.5
						Barrier A	point199	199	0.0	43.3
						Barrier A	point197	197	0.0	43.3
						Barrier A	point198	198	0.0	43.2
KY-05-01-AUGD-01	36	62.3	3.5	8	-4.5	Barrier A	point190	190	0.0	49.4
						Barrier A	point191	191	0.0	49.1
						Barrier A	point192	192	0.0	48.9
						Barrier A	point193	193	0.0	48.6
						Barrier A	point194	194	0.0	48.4

						Barrier A	point195	195	0.0	48.1
						Barrier A	point196	196	0.0	47.9
						Barrier A	point197	197	0.0	47.6
						Barrier A	point198	198	0.0	47.3
						Barrier A	point199	199	0.0	46.8
KY-05-02-VANA-02	349	65.7	4.0	8	-4.0	Barrier A	point190	190	0.0	54.8
						Barrier A	point191	191	0.0	54.4
						Barrier A	point192	192	0.0	53.9
						Barrier A	point193	193	0.0	53.4
						Barrier A	point194	194	0.0	53.0
						Barrier A	point195	195	0.0	52.5
						Barrier A	point196	196	0.0	52.0
						Barrier A	point197	197	0.0	51.5
						Barrier A	point189	189	12.0	51.2
						Barrier A	point198	198	0.0	51.0
Receiver194	194	58.0	5.9	8	-2.1	Barrier A	point190	190	0.0	41.3
						Barrier A	point191	191	0.0	41.0
						Barrier A	point195	195	0.0	41.0
						Barrier A	point196	196	0.0	40.9
						Barrier A	point194	194	0.0	40.7
						Barrier A	point197	197	0.0	40.6
						Barrier A	point193	193	0.0	40.4
						Barrier A	point198	198	0.0	40.3
						Barrier A	point192	192	0.0	40.0
						Barrier A	point200	200	0.0	39.4
KY-05-01-TRER-07	190	64.3	8.5	8	0.5	Barrier A	point190	190	0.0	51.1
						Barrier A	point191	191	0.0	50.4
						Barrier A	point192	192	0.0	49.9
						Barrier A	point193	193	0.0	49.3
						Barrier A	point174	174	16.0	49.0
						Barrier A	point175	175	16.0	49.0
						Barrier A	point176	176	16.0	48.9
						Barrier A	point194	194	0.0	48.8
						Barrier A	point173	173	16.0	48.7
						Barrier A	point177	177	16.0	48.6
KY-05-02-VANA-01	348	68.7	4.1	8	-3.9	Barrier A	point190	190	0.0	59.1

						Barrier A	point191	191	0.0	58.3
						Barrier A	point192	192	0.0	57.6
						Barrier A	point193	193	0.0	56.7
						Barrier A	point194	194	0.0	56.1
						Barrier A	point189	189	12.0	55.4
						Barrier A	point195	195	0.0	55.4
						Barrier A	point196	196	0.0	54.6
						Barrier A	point197	197	0.0	53.9
						Barrier A	point198	198	0.0	52.5
KY-05-01-GARL-01	96	62.9	8.2	8	0.2	Barrier A	point191	191	0.0	47.8
						Barrier A	point190	190	0.0	47.7
						Barrier A	point192	192	0.0	47.4
						Barrier A	point193	193	0.0	47.0
						Barrier A	point171	171	16.0	46.7
						Barrier A	point194	194	0.0	46.6
						Barrier A	point170	170	16.0	46.5
						Barrier A	point169	169	16.0	46.5
						Barrier A	point168	168	16.0	46.4
						Barrier A	point172	172	16.0	46.3
KY-05-01-HUBL-06	126	58.6	7.0	8	-1.0	Barrier A	point153	153	16.0	40.5
						Barrier A	point154	154	16.0	40.4
						Barrier A	point150	150	16.0	40.4
						Barrier A	point156	156	16.0	40.3
						Barrier A	point157	157	16.0	40.3
						Barrier A	point155	155	16.0	40.2
						Barrier A	point151	151	16.0	40.2
						Barrier A	point159	159	16.0	40.1
						Barrier A	point149	149	16.0	40.1
						Barrier A	point158	158	16.0	40.1
KY-05-01-HUBL-05	125	59.0	8.4	8	0.4	Barrier A	point153	153	16.0	42.7
						Barrier A	point150	150	16.0	42.6
						Barrier A	point149	149	16.0	42.5
						Barrier A	point154	154	16.0	42.4
						Barrier A	point148	148	16.0	42.4
						Barrier A	point151	151	16.0	42.3
						Barrier A	point152	152	16.0	42.3

						Barrier A	point147	147	16.0	42.2
						Barrier A	point156	156	16.0	42.1
						Barrier A	point155	155	16.0	42.1
KY-05-02-GARL-01	297	60.3	9.6	8	1.6	Barrier A	point153	153	16.0	44.9
						Barrier A	point154	154	16.0	44.8
						Barrier A	point156	156	16.0	44.7
						Barrier A	point155	155	16.0	44.5
						Barrier A	point151	151	16.0	44.5
						Barrier A	point157	157	16.0	44.4
						Barrier A	point150	150	16.0	44.4
						Barrier A	point152	152	16.0	44.4
						Barrier A	point158	158	16.0	44.1
						Barrier A	point149	149	16.0	43.9
KY-05-01-HUBL-04	124	60.1	9.5	8	1.5	Barrier A	point150	150	16.0	44.9
						Barrier A	point147	147	16.0	44.9
						Barrier A	point148	148	16.0	44.9
						Barrier A	point149	149	16.0	44.8
						Barrier A	point151	151	16.0	44.7
						Barrier A	point153	153	16.0	44.6
						Barrier A	point146	146	16.0	44.5
						Barrier A	point152	152	16.0	44.4
						Barrier A	point154	154	16.0	44.1
						Barrier A	point145	145	16.0	44.0
KY-05-01-HUBL-03	123	60.7	9.9	8	1.9	Barrier A	point147	147	16.0	46.4
						Barrier A	point146	146	16.0	46.2
						Barrier A	point148	148	16.0	46.1
						Barrier A	point145	145	16.0	46.1
						Barrier A	point149	149	16.0	46.0
						Barrier A	point150	150	16.0	45.8
						Barrier A	point151	151	16.0	45.3
						Barrier A	point152	152	16.0	44.8
						Barrier A	point153	153	16.0	44.6
						Barrier A	point154	154	16.0	43.8
KY-05-01-HUBL-02	122	61.9	11.0	8	3.0	Barrier A	point145	145	16.0	49.0
						Barrier A	point146	146	16.0	48.8
						Barrier A	point147	147	16.0	48.4

						Barrier A	point148	148	16.0	47.4
						Barrier A	point144	144	20.0	47.0
						Barrier A	point149	149	16.0	46.9
						Barrier A	point143	143	20.0	46.9
						Barrier A	point142	142	20.0	46.5
						Barrier A	point150	150	16.0	46.2
						Barrier A	point141	141	20.0	45.8
KY-05-01-HUBL-01	121	61.7	13.8	8	5.8	Barrier A	point141	141	20.0	52.3
						Barrier A	point142	142	20.0	51.9
						Barrier A	point140	140	20.0	51.2
						Barrier A	point143	143	20.0	50.3
						Barrier A	point139	139	20.0	50.0
						Barrier A	point145	145	16.0	49.0
						Barrier A	point144	144	20.0	48.4
						Barrier A	point138	138	20.0	47.8
						Barrier A	point146	146	16.0	47.5
						Barrier A	point147	147	16.0	46.7
KY-05-02-HUBL-01	303	59.4	8.6	8	0.6	Barrier C	point31	31	0.0	43.4
						Barrier A	point134	134	20.0	42.7
						Barrier A	point135	135	20.0	42.6
						Barrier A	point136	136	20.0	42.5
						Barrier C	point32	32	0.0	42.4
						Barrier A	point137	137	20.0	42.2
						Barrier A	point133	133	20.0	42.1
						Barrier A	point138	138	20.0	42.0
						Barrier A	point139	139	20.0	41.8
						Barrier A	point145	145	16.0	41.8
Total Cost, All Barriers (including additional cost(s))					$621077					

HMB Professional Engineers				**28 March 2018**						
MG/mdg				**TNM 2.5**						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	**I-69 ORX**									
RUN:	**Pennyrile Parkway_Vanguard Barrier**									
BARRIER DESIGN:	**P_Vanguard_BAR_A**									
Barriers										
Name	**Type**	**Heights along Barrier**			**Length**	**If Wall**	**If Berm**			**Cost**
		Min	**Avg**	**Max**		**Area**	**Volume**	**Top**	**Run:Rise**	
								Width		
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Barrier A	W	12.00	16.98	20.00	1219	20703				621077
Barrier C	W	0.00	0.00	0.00	0	0				0
									Total Cost:	621077

HMB Professional Engineers 28 March 2018
MG/mdg TNM 2.5

RESULTS: BARRIER-SEGMENT DESCRIPTIONS
PROJECT/CONTRACT: I-69 ORX
RUN: Pennyrile Parkway_Vanguard Barrier
BARRIER DESIGN: P_Vanguard_BAR_A

Barriers		Segments										
Name	Type	Name	No.	Heights			Length	If Wall			If Berm	Cost
				First Point	Average	Second Point		Area	On Struc?	Important Reflections?	Volume	
				ft	ft	ft	ft	sq ft			cu yd	$
Barrier A	W	point127	127	20.00	20.00	20.00	20	400				12000
		point130	130	20.00	20.00	20.00	20	398				11945
		point131	131	20.00	20.00	20.00	20	400				12000
		point132	132	20.00	20.00	20.00	20	404				12120
		point133	133	20.00	20.00	20.00	20	398				11945
		point134	134	20.00	20.00	20.00	20	400				12000
		point135	135	20.00	20.00	20.00	20	394				11822
		point136	136	20.00	20.00	20.00	20	404				12120
		point137	137	20.00	20.00	20.00	20	404				12120
		point138	138	20.00	20.00	20.00	20	394				11822
		point139	139	20.00	20.00	20.00	20	400				12000
		point140	140	20.00	20.00	20.00	20	404				12120
		point141	141	20.00	20.00	20.00	20	398				11945
		point142	142	20.00	20.00	20.00	20	400				12000
		point143	143	20.00	20.00	20.00	20	404				12120
		point144	144	20.00	20.00	20.00	20	394				11822
		point145	145	16.00	16.00	16.00	20	323				9696
		point146	146	16.00	16.00	16.00	20	320				9600
		point147	147	16.00	16.00	16.00	20	319				9556
		point148	148	16.00	16.00	16.00	20	320				9600
		point149	149	16.00	16.00	16.00	20	319				9556
		point150	150	16.00	16.00	16.00	20	320				9600
		point151	151	16.00	16.00	16.00	20	323				9696
		point152	152	16.00	16.00	16.00	20	315				9458
		point153	153	16.00	16.00	16.00	20	323				9696
		point154	154	16.00	16.00	16.00	20	320				9600

		point155	155	16.00	16.00	16.00	20	320				9600
		point156	156	16.00	16.00	16.00	20	320				9600
		point157	157	16.00	16.00	16.00	20	320				9600
		point158	158	16.00	16.00	16.00	20	320				9600
		point159	159	16.00	16.00	16.00	20	317				9504
		point160	160	16.00	16.00	16.00	20	325				9746
		point161	161	16.00	16.00	16.00	20	320				9600
		point162	162	16.00	16.00	16.00	20	315				9458
		point163	163	16.00	16.00	16.00	20	320				9600
		point164	164	16.00	16.00	16.00	20	323				9696
		point165	165	16.00	16.00	16.00	20	314				9419
		point166	166	16.00	16.00	16.00	20	321				9619
		point167	167	16.00	16.00	16.00	20	321				9619
		point168	168	16.00	16.00	16.00	20	316				9489
		point169	169	16.00	16.00	16.00	20	324				9719
		point170	170	16.00	16.00	16.00	20	316				9467
		point171	171	16.00	16.00	16.00	20	323				9693
		point172	172	16.00	16.00	16.00	20	312				9364
		point173	173	16.00	16.00	16.00	20	319				9558
		point174	174	16.00	16.00	16.00	20	322				9675
		point175	175	16.00	16.00	16.00	20	319				9558
		point176	176	16.00	16.00	16.00	20	322				9664
		point177	177	16.00	16.00	16.00	20	318				9553
		point178	178	16.00	16.00	16.00	20	318				9555
		point179	179	16.00	16.00	16.00	20	322				9660
		point180	180	16.00	16.00	16.00	20	318				9555
		point181	181	16.00	16.00	16.00	20	318				9555
		point182	182	16.00	16.00	16.00	20	322				9675
		point183	183	16.00	16.00	16.00	20	322				9664
		point184	184	16.00	16.00	16.00	20	316				9471
		point185	185	16.00	16.00	16.00	20	319				9582
		point186	186	16.00	16.00	16.00	20	319				9582
		point187	187	16.00	16.00	16.00	20	324				9719
		point188	188	16.00	16.00	16.00	20	316				9494
		point189	189	12.00	12.00	12.00	20	240				7205
		point190	190	0.00	0.00	0.00	0	0				0
		point191	191	0.00	0.00	0.00	0	0				0
		point192	192	0.00	0.00	0.00	0	0				0
		point193	193	0.00	0.00	0.00	0	0				0

		point194	194	0.00	0.00	0.00	0	0				0
		point195	195	0.00	0.00	0.00	0	0				0
		point196	196	0.00	0.00	0.00	0	0				0
		point197	197	0.00	0.00	0.00	0	0				0
		point198	198	0.00	0.00	0.00	0	0				0
		point199	199	0.00	0.00	0.00	0	0				0
		point200	200	0.00	0.00	0.00	0	0				0
		point201	201	0.00	0.00	0.00	0	0				0
		point202	202	0.00	0.00	0.00	0	0				0
		point203	203	0.00	0.00	0.00	0	0				0
		point204	204	0.00	0.00	0.00	0	0				0
		point205	205	0.00	0.00	0.00	0	0				0
		point206	206	0.00	0.00	0.00	0	0				0
		point207	207	0.00	0.00	0.00	0	0				0
		point208	208	0.00	0.00	0.00	0	0				0
		point209	209	0.00	0.00	0.00	0	0				0
		point210	210	0.00	0.00	0.00	0	0				0
		point211	211	0.00	0.00	0.00	0	0				0
		point212	212	0.00	0.00	0.00	0	0				0
		point213	213	0.00	0.00	0.00	0	0				0
		point214	214	0.00	0.00	0.00	0	0				0
		point215	215	0.00	0.00	0.00	0	0				0
		point216	216	0.00	0.00	0.00	0	0				0
		point217	217	0.00	0.00	0.00	0	0				0
		point218	218	0.00	0.00	0.00	0	0				0
		point219	219	0.00	0.00	0.00	0	0				0
		point220	220	0.00	0.00	0.00	0	0				0
		point221	221	0.00	0.00	0.00	0	0				0
		point222	222	0.00	0.00	0.00	0	0				0
		point223	223	0.00	0.00	0.00	0	0				0
		point224	224	0.00	0.00	0.00	0	0				0
		point225	225	0.00	0.00	0.00	0	0				0
		point226	226	0.00	0.00	0.00	0	0				0
		point227	227	0.00	0.00	0.00	0	0				0
		point128	128	0.00	0.00	0.00	0	0				0
		point228	228	0.00	0.00	0.00	0	0				0
		point229	229	0.00	0.00	0.00	0	0				0
		point230	230	0.00	0.00	0.00	0	0				0
		point231	231	0.00	0.00	0.00	0	0				0

		point232	232	0.00	0.00	0.00	0	0				0
		point233	233	0.00	0.00	0.00	0	0				0
		point234	234	0.00	0.00	0.00	0	0				0
		point235	235	0.00	0.00	0.00	0	0				0
		point236	236	0.00	0.00	0.00	0	0				0
		point237	237	0.00	0.00	0.00	0	0				0
		point238	238	0.00	0.00	0.00	0	0				0
		point239	239	0.00	0.00	0.00	0	0				0
		point240	240	0.00	0.00	0.00	0	0				0
		point241	241	0.00	0.00	0.00	0	0				0
		point242	242	0.00	0.00	0.00	0	0				0
		point243	243	0.00	0.00	0.00	0	0				0
		point244	244	0.00	0.00	0.00	0	0				0
		point245	245	0.00	0.00	0.00	0	0				0
		point246	246	0.00	0.00	0.00	0	0				0
		point247	247	0.00	0.00	0.00	0	0				0
		point248	248	0.00	0.00	0.00	0	0				0
		point249	249	0.00	0.00	0.00	0	0				0
		point250	250	0.00	0.00	0.00	0	0				0
		point251	251	0.00	0.00	0.00	0	0				0
		point252	252	0.00	0.00	0.00	0	0				0
		point253	253	0.00	0.00	0.00	0	0				0
		point254	254	0.00	0.00	0.00	0	0				0
		point255	255	0.00	0.00	0.00	0	0				0
		point256	256	0.00	0.00	0.00	0	0				0
		point257	257	0.00	0.00	0.00	0	0				0
		point258	258	0.00	0.00	0.00	0	0				0
		point259	259	0.00	0.00	0.00	0	0				0
		point260	260	0.00	0.00	0.00	0	0				0
		point261	261	0.00	0.00	0.00	0	0				0
		point262	262	0.00	0.00	0.00	0	0				0
		point263	263	0.00	0.00	0.00	0	0				0
		point264	264	0.00	0.00	0.00	0	0				0
		point265	265	0.00	0.00	0.00	0	0				0
		point266	266	0.00	0.00	0.00	0	0				0
		point267	267	0.00	0.00	0.00	0	0				0
		point268	268	0.00	0.00	0.00	0	0				0
		point269	269	0.00	0.00	0.00	0	0				0
		point270	270	0.00	0.00	0.00	0	0				0

		point271	271	0.00	0.00	0.00	0	0				0
		point272	272	0.00	0.00	0.00	0	0				0
		point273	273	0.00	0.00	0.00	0	0				0
		point274	274	0.00	0.00	0.00	0	0				0
		point275	275	0.00	0.00	0.00	0	0				0
		point276	276	0.00	0.00	0.00	0	0				0
		point277	277	0.00	0.00	0.00	0	0				0
		point278	278	0.00	0.00	0.00	0	0				0
		point279	279	0.00	0.00	0.00	0	0				0
		point280	280	0.00	0.00	0.00	0	0				0
		point281	281	0.00	0.00	0.00	0	0				0
Barrier C	W	point1	1	0.00	0.00	0.00	0	0				0
		point4	4	0.00	0.00	0.00	0	0				0
		point5	5	0.00	0.00	0.00	0	0				0
		point6	6	0.00	0.00	0.00	0	0				0
		point7	7	0.00	0.00	0.00	0	0				0
		point8	8	0.00	0.00	0.00	0	0				0
		point9	9	0.00	0.00	0.00	0	0				0
		point10	10	0.00	0.00	0.00	0	0				0
		point11	11	0.00	0.00	0.00	0	0				0
		point12	12	0.00	0.00	0.00	0	0				0
		point13	13	0.00	0.00	0.00	0	0				0
		point14	14	0.00	0.00	0.00	0	0				0
		point15	15	0.00	0.00	0.00	0	0				0
		point16	16	0.00	0.00	0.00	0	0				0
		point17	17	0.00	0.00	0.00	0	0				0
		point18	18	0.00	0.00	0.00	0	0				0
		point19	19	0.00	0.00	0.00	0	0				0
		point20	20	0.00	0.00	0.00	0	0				0
		point21	21	0.00	0.00	0.00	0	0				0
		point22	22	0.00	0.00	0.00	0	0				0
		point23	23	0.00	0.00	0.00	0	0				0
		point24	24	0.00	0.00	0.00	0	0				0
		point25	25	0.00	0.00	0.00	0	0				0
		point26	26	0.00	0.00	0.00	0	0				0
		point27	27	0.00	0.00	0.00	0	0				0
		point28	28	0.00	0.00	0.00	0	0				0
		point29	29	0.00	0.00	0.00	0	0				0

		point30	30	0.00	0.00	0.00	0	0				0
		point31	31	0.00	0.00	0.00	0	0				0
		point32	32	0.00	0.00	0.00	0	0				0
		point33	33	0.00	0.00	0.00	0	0				0
		point34	34	0.00	0.00	0.00	0	0				0
		point35	35	0.00	0.00	0.00	0	0				0
		point36	36	0.00	0.00	0.00	0	0	Y			0
		point37	37	0.00	0.00	0.00	0	0	Y			0
		point38	38	0.00	0.00	0.00	0	0	Y			0
		point39	39	0.00	0.00	0.00	0	0	Y			0
		point40	40	0.00	0.00	0.00	0	0	Y			0
		point41	41	0.00	0.00	0.00	0	0	Y			0
		point42	42	0.00	0.00	0.00	0	0	Y			0
		point43	43	0.00	0.00	0.00	0	0	Y			0
		point44	44	0.00	0.00	0.00	0	0	Y			0
		point45	45	0.00	0.00	0.00	0	0				0
		point46	46	0.00	0.00	0.00	0	0				0
		point47	47	0.00	0.00	0.00	0	0				0
		point48	48	0.00	0.00	0.00	0	0				0
		point49	49	0.00	0.00	0.00	0	0				0
		point50	50	0.00	0.00	0.00	0	0				0
		point51	51	0.00	0.00	0.00	0	0				0
		point52	52	0.00	0.00	0.00	0	0				0
		point53	53	0.00	0.00	0.00	0	0				0
		point54	54	0.00	0.00	0.00	0	0				0
		point55	55	0.00	0.00	0.00	0	0				0
		point56	56	0.00	0.00	0.00	0	0				0
		point57	57	0.00	0.00	0.00	0	0				0
		point58	58	0.00	0.00	0.00	0	0				0
		point59	59	0.00	0.00	0.00	0	0				0
		point60	60	0.00	0.00	0.00	0	0				0
		point61	61	0.00	0.00	0.00	0	0				0
		point62	62	0.00	0.00	0.00	0	0				0
		point63	63	0.00	0.00	0.00	0	0				0
		point64	64	0.00	0.00	0.00	0	0				0
		point65	65	0.00	0.00	0.00	0	0				0
		point66	66	0.00	0.00	0.00	0	0				0
		point67	67	0.00	0.00	0.00	0	0				0
		point68	68	0.00	0.00	0.00	0	0				0

		point69	69	0.00	0.00	0.00	0	0				0
		point70	70	0.00	0.00	0.00	0	0				0
		point71	71	0.00	0.00	0.00	0	0				0
		point72	72	0.00	0.00	0.00	0	0				0
		point73	73	0.00	0.00	0.00	0	0				0
		point74	74	0.00	0.00	0.00	0	0				0
		point75	75	0.00	0.00	0.00	0	0				0
		point76	76	0.00	0.00	0.00	0	0				0
		point77	77	0.00	0.00	0.00	0	0				0
		point78	78	0.00	0.00	0.00	0	0				0
		point79	79	0.00	0.00	0.00	0	0				0
		point80	80	0.00	0.00	0.00	0	0				0
		point81	81	0.00	0.00	0.00	0	0				0
		point82	82	0.00	0.00	0.00	0	0				0
		point83	83	0.00	0.00	0.00	0	0				0
		point84	84	0.00	0.00	0.00	0	0				0
		point85	85	0.00	0.00	0.00	0	0				0
		point86	86	0.00	0.00	0.00	0	0				0
		point87	87	0.00	0.00	0.00	0	0				0
		point88	88	0.00	0.00	0.00	0	0				0
		point89	89	0.00	0.00	0.00	0	0				0
		point90	90	0.00	0.00	0.00	0	0				0
		point91	91	0.00	0.00	0.00	0	0				0
		point92	92	0.00	0.00	0.00	0	0				0
		point93	93	0.00	0.00	0.00	0	0				0
		point94	94	0.00	0.00	0.00	0	0				0
		point95	95	0.00	0.00	0.00	0	0				0
		point96	96	0.00	0.00	0.00	0	0				0
		point97	97	0.00	0.00	0.00	0	0				0
		point98	98	0.00	0.00	0.00	0	0				0
		point99	99	0.00	0.00	0.00	0	0				0
		point100	100	0.00	0.00	0.00	0	0				0
		point101	101	0.00	0.00	0.00	0	0				0
		point2	2	0.00	0.00	0.00	0	0				0
		point102	102	0.00	0.00	0.00	0	0				0
		point103	103	0.00	0.00	0.00	0	0				0
		point104	104	0.00	0.00	0.00	0	0				0
		point105	105	0.00	0.00	0.00	0	0				0
		point106	106	0.00	0.00	0.00	0	0				0

		point107	107	0.00	0.00	0.00	0	0				0
		point108	108	0.00	0.00	0.00	0	0				0
		point109	109	0.00	0.00	0.00	0	0				0
		point110	110	0.00	0.00	0.00	0	0				0
		point111	111	0.00	0.00	0.00	0	0				0
		point112	112	0.00	0.00	0.00	0	0				0
		point113	113	0.00	0.00	0.00	0	0				0
		point114	114	0.00	0.00	0.00	0	0				0
		point115	115	0.00	0.00	0.00	0	0				0
		point116	116	0.00	0.00	0.00	0	0				0
		point117	117	0.00	0.00	0.00	0	0				0
		point118	118	0.00	0.00	0.00	0	0				0
		point119	119	0.00	0.00	0.00	0	0				0
		point120	120	0.00	0.00	0.00	0	0				0
		point121	121	0.00	0.00	0.00	0	0				0
		point122	122	0.00	0.00	0.00	0	0				0
		point123	123	0.00	0.00	0.00	0	0				0
		point124	124	0.00	0.00	0.00	0	0				0
		point125	125	0.00	0.00	0.00	0	0				0
		point126	126	0.00	0.00	0.00	0	0				0

Pennyrile Parkway_Vanguard Barrier	Sheet 1 of 1	28 Mar 2018
	HMB Professional Engineers	
Barrier View-P_Vanguard_BAR_A	Project/Contract No. I-69 ORX	
Run name: P_TollAll_Barrier_A	TNM Version 2.5, Feb 2004	
Scale: <DNA - due to perspective>	Analysis By: MG/mdg	

Roadway:		Ground Zone:	polygon
Receiver:		Tree Zone:	dashed polygon
Barrier:		Contour Zone:	polygon
Building Row:		Parallel Barrier:	
Terrain Line:		Skew Section:	