



LSC TRANSPORTATION CONSULTANTS, INC.
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December 14, 2021

Mr. Jim Byers
Challenger Homes
8605 Explorer Drive, Suite 250
Colorado Springs, CO 80920

RE: Copper Chase at Sterling Ranch
Noise Impact Study
El Paso County, Colorado
LSC #184991

Dear Mr. Byers:

In response to your request, LSC Transportation Consultants, Inc. has completed a detailed analysis of the noise impacts of Marksheffel Road and Vollmer Road on the proposed Copper Chase at Sterling Ranch residential development. The site is located northeast of the future intersection of Marksheffel Road and Vollmer Road in Colorado Springs, Colorado. LSC has completed an evaluation of the noise exposure for submittal to El Paso County in accordance with the Federal Highway Administration (FHWA) requirements.

LSC used the software program Traffic Noise Model Version 2.5 — developed by FHWA — to predict the noise levels for all of the lots on the south side of the development closest to Marksheffel Road and on the west side of the development closest to Vollmer Road. The locations are shown in Figure 1. An elevation of five feet was assumed for the receivers.

The input data for the noise predictions included traffic volumes, roadway geometry, topographic elevations, and the locations of the receivers. The analysis was completed using projected 2040 afternoon peak-hour traffic volumes. These volumes are estimates by LSC based on the 2040 afternoon peak-hour traffic volumes referenced in the *Copper Chase at Sterling Ranch Traffic Technical Memorandum* (December 14, 2021). This December 1 traffic memo for this development refers to traffic volumes from the *Sterling Ranch Filing No. 2 and Sterling Ranch Phase 2 Traffic Impact Study* by LSC dated June 23, 2021.

The results of the noise prediction show that in the year 2040, several of the receiver locations have predicted noise levels that would exceed 66 decibels Leq. If a six-foot-high noise barrier is constructed at the locations shown in Figure 1, all noise-receiver locations are predicted to be below the threshold. This barrier should be made of a rigid material with a density of at least four

pounds per square foot and should have no gaps. The noise-analysis inputs and outputs are attached.

* * * * *

Please contact me if you have any questions or need further assistance.

Respectfully submitted,

LSC TRANSPORTATION CONSULTANTS, INC.



By: Kirstin D. Ferrin, P.E.
Senior Transportation Engineer

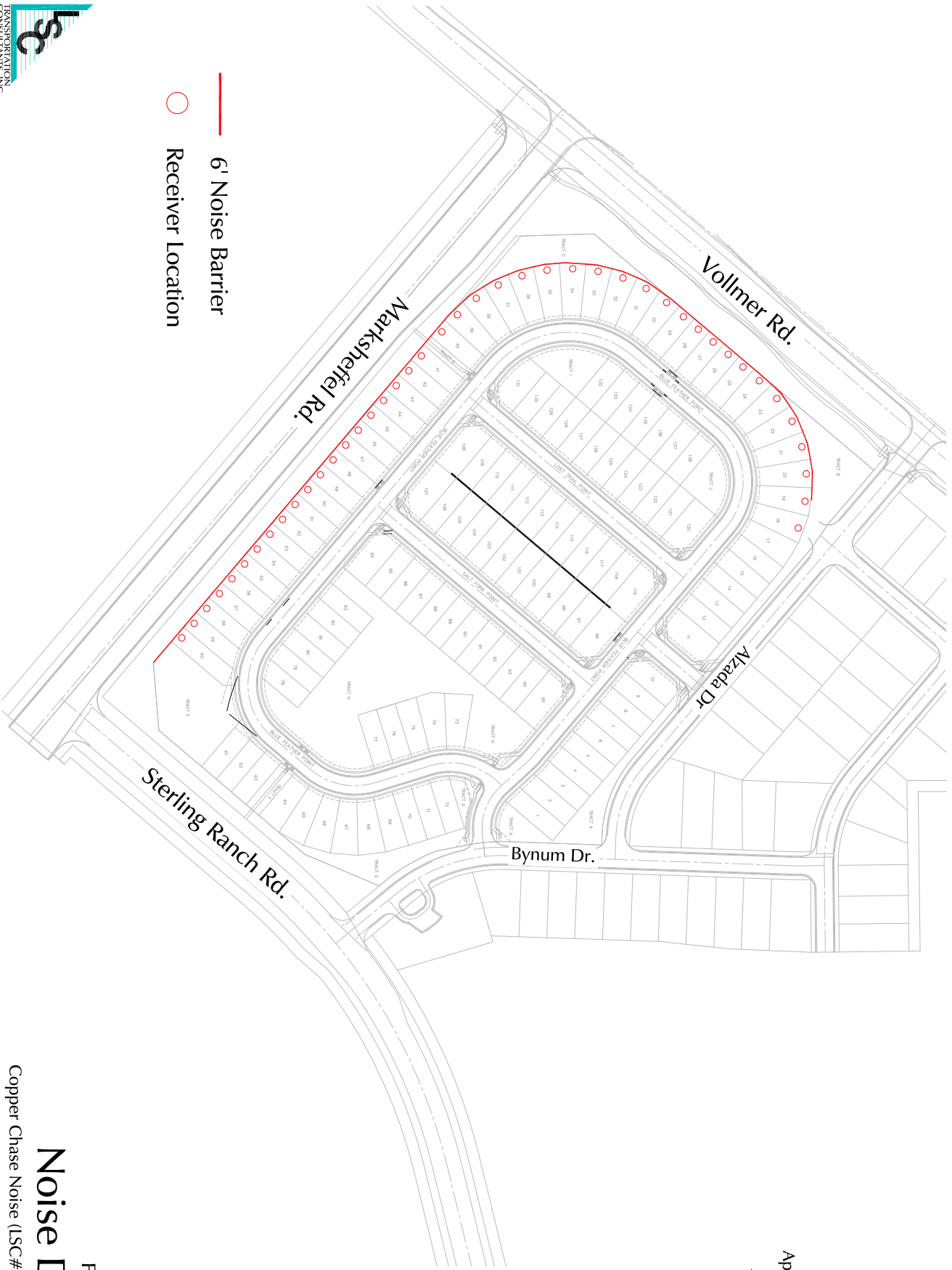
KDF/JCH:jas

Enclosures: Figure 1
Noise Analysis Inputs/Outputs

Figures



- 6' Noise Barrier
- Receiver Location



Approximate
Scale
1"=250'

Noise Data

Copper Chase Noise (LSC# 184991)

Figure 1

Noise Analysis Inputs/Outputs



RESULTS: SOUND LEVELS

Copper Chase at Sterling Ranch

Lot 42	26	1	0.0	69.9	66	69.9	10	Snd Lvl	61.4	8.5	8	0.5
Lot 43	27	1	0.0	69.9	66	69.9	10	Snd Lvl	61.2	8.7	8	0.7
Lot 44	28	1	0.0	69.9	66	69.9	10	Snd Lvl	61.5	8.4	8	0.4
Lot 45	29	1	0.0	69.9	66	69.9	10	Snd Lvl	61.3	8.6	8	0.6
Lot 46	30	1	0.0	69.9	66	69.9	10	Snd Lvl	61.5	8.4	8	0.4
Lot 47	31	1	0.0	69.9	66	69.9	10	Snd Lvl	61.4	8.5	8	0.5
Lot 48	32	1	0.0	69.8	66	69.8	10	Snd Lvl	61.2	8.6	8	0.6
Lot 49	33	1	0.0	69.8	66	69.8	10	Snd Lvl	61.5	8.3	8	0.3
Lot 50	34	1	0.0	69.7	66	69.7	10	Snd Lvl	61.9	7.8	8	-0.2
Lot 51	35	1	0.0	69.7	66	69.7	10	Snd Lvl	61.5	8.2	8	0.2
Lot 52	36	1	0.0	69.7	66	69.7	10	Snd Lvl	61.5	8.2	8	0.2
Lot 53	37	1	0.0	69.6	66	69.6	10	Snd Lvl	61.5	8.1	8	0.1
Lot 54	38	1	0.0	69.6	66	69.6	10	Snd Lvl	61.8	7.8	8	-0.2
Lot 55	39	1	0.0	69.7	66	69.7	10	Snd Lvl	61.4	8.3	8	0.3
Lot 56	40	1	0.0	69.6	66	69.6	10	Snd Lvl	61.8	7.8	8	-0.2
Lot 57	41	1	0.0	69.6	66	69.6	10	Snd Lvl	61.4	8.2	8	0.2
Lot 58	45	1	0.0	69.5	66	69.5	10	Snd Lvl	61.9	7.6	8	-0.4
Lot 59	46	1	0.0	69.5	66	69.5	10	Snd Lvl	62.0	7.5	8	-0.5
Lot 60	47	1	0.0	69.5	66	69.5	10	Snd Lvl	64.9	4.6	8	-3.4
Lot 61	48	1	0.0	69.5	66	69.5	10	Snd Lvl	64.7	4.8	8	-3.2
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		44	0.2	6.2	8.7							
All Impacted		36	4.4	7.2	8.7							
All that meet NR Goal		17	8.1	8.4	8.7							

INPUT: BARRIERS

Copper Chase at Sterling Ranch

LSC	17 November 2021
KDF	TNM 2.5

INPUT: BARRIERS

PROJECT/CONTRACT: Copper Chase at Sterling Ranch
 RUN: 2040 PM Peak Hour

Barrier									Points									
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment			
		Min	Max	\$ per Unit	\$ per Unit	Top Width	Run:Rise	\$ per Unit			X	Y	Z	at Point	Seg Ht	Perturbs	On	Important
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft			ft	ft	ft	ft	ft			
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	233,618.4	410,027.8	6,994.00	6.00	6.00	1	0	
									point3	3	233,580.1	410,060.4	6,996.00	6.00	6.00	1	0	
									point4	4	233,558.7	410,078.6	6,998.00	6.00	6.00	1	0	
									point5	5	233,498.3	410,129.9	7,000.00	6.00	6.00	1	0	
									point6	6	233,429.4	410,188.4	7,002.00	6.00	6.00	1	0	
									point7	7	233,354.9	410,251.8	7,004.00	6.00	6.00	1	0	
									point8	8	233,281.4	410,314.2	7,006.00	6.00	6.00	1	0	
									point9	9	233,210.3	410,374.6	7,008.00	6.00	6.00	1	0	
									point10	10	233,162.6	410,415.2	7,010.00	6.00	6.00	1	0	
									point11	11	233,123.3	410,448.6	7,012.00	6.00	6.00	1	0	
									point12	12	233,056.5	410,505.3	7,014.00	6.00	6.00	1	0	
									point13	13	232,994.7	410,557.9	7,015.00	6.00	6.00	1	0	
									point14	14	232,959.9	410,594.4	7,016.00	6.00	6.00	1	0	
									point15	15	232,933.0	410,637.7	7,017.00	6.00	6.00	1	0	
									point23	23	232,914.9	410,681.8	7,018.00	6.00	6.00	1	0	
									point24	24	232,904.0	410,728.3	7,018.00	6.00	6.00	1	0	
									point25	25	232,900.8	410,767.0	7,018.00	6.00	6.00	1	0	
									point26	26	232,904.7	410,823.4	7,018.00	6.00	6.00	1	0	
									point27	27	232,916.4	410,869.7	7,018.50	6.00	6.00	1	0	
									point28	28	232,935.3	410,913.6	7,019.00	6.00	6.00	1	0	
									point16	16	232,966.0	410,956.8	7,019.50	6.00	6.00	1	0	
									point17	17	233,005.8	411,004.0	7,020.00	6.00	6.00	1	0	
									point18	18	233,100.5	411,116.1	7,022.00	6.00	6.00	1	0	
									point19	19	233,134.4	411,153.9	7,022.50	6.00				

INPUT: TRAFFIC FOR LAeq1h Volumes

Copper Chase at Sterling Ranch

LSC		17 November 2021												
KDF		TNM 2.5												
INPUT: TRAFFIC FOR LAeq1h Volumes														
PROJECT/CONTRACT:		Copper Chase at Sterling Ranch												
RUN:		2040 PM Peak Hour												
Roadway	Points													
Name	Name	No.	Segment		MTrucks		HTrucks		Buses		Motorcycles			
			Autos		V	S	V	S	V	S	V	S	V	S
					veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Marksheffel NW RT @ Sterling Ranch	point1	1	452	45	19	45	5	45	0	0	0	0	0	0
	point3	3	452	45	19	45	5	45	0	0	0	0	0	0
	point2	2												
Marksheffel NW S/O Sterling Ranch RT	point4	4	1296	45	84	45	28	45	0	0	0	0	0	0
	point6	6	1296	45	84	45	28	45	0	0	0	0	0	0
	point7	7	1296	45	84	45	28	45	0	0	0	0	0	0
Marksheffel NW S/O Sterling Ranch	point5	5												
	point8	8	857	45	56	45	19	45	0	0	0	0	0	0
	point10	10	857	45	56	45	19	45	0	0	0	0	0	0
Marksheffel NW N/O Sterling Ranch	point9	9												
	point11	11	1056	45	69	45	23	45	0	0	0	0	0	0
	point13	13	1056	45	69	45	23	45	0	0	0	0	0	0
	point14	14	1056	45	69	45	23	45	0	0	0	0	0	0
	point15	15	1056	45	69	45	23	45	0	0	0	0	0	0
	point16	16	1056	45	69	45	23	45	0	0	0	0	0	0
	point17	17	1056	45	69	45	23	45	0	0	0	0	0	0
	point18	18	1056	45	69	45	23	45	0	0	0	0	0	0
point19	19	1056	45	69	45	23	45	0	0	0	0	0	0	
point20	20	1056	45	69	45	23	45	0	0	0	0	0	0	
point21	21	1056	45	69	45	23	45	0	0	0	0	0	0	
point22	22	1056	45	69	45	23	45	0	0	0	0	0	0	
point23	23	1056	45	69	45	23	45	0	0	0	0	0	0	
point12	12													

INPUT: TRAFFIC FOR LAeq1h Volumes

Copper Chase at Sterling Ranch

Marksheffel NW S/O Vollmer RT Lane	point24	24	1056	45	69	45	23	45	0	0	0	0
	point27	27										
Marksheffel NW S/O Vollmer	point28	28	697	45	45	45	15	45	0	0	0	0
	point30	30	697	45	45	45	15	45	0	0	0	0
	point31	31	697	45	45	45	15	45	0	0	0	0
	point29	29										
Marksheffel NW N/O Vollmer	point32	32	1111	45	72	45	24	45	0	0	0	0
	point35	35	1111	45	72	45	24	45	0	0	0	0
	point36	36	1111	45	72	45	24	45	0	0	0	0
	point37	37	1111	45	72	45	24	45	0	0	0	0
	point38	38	1111	45	72	45	24	45	0	0	0	0
	point39	39	1111	45	72	45	24	45	0	0	0	0
	point40	40	1111	45	72	45	24	45	0	0	0	0
	point41	41	1111	45	72	45	24	45	0	0	0	0
	point42	42	1111	45	72	45	24	45	0	0	0	0
	point43	43	1111	45	72	45	24	45	0	0	0	0
	point44	44	1111	45	72	45	24	45	0	0	0	0
	point45	45	1111	45	72	45	24	45	0	0	0	0
	point33	33										
Marksheffel NW LT @Vollmer	point46	46	183	45	8	45	4	45	0	0	0	0
	point48	48	183	45	8	45	4	45	0	0	0	0
	point49	49	183	45	8	45	4	45	0	0	0	0
	point50	50	183	45	8	45	4	45	0	0	0	0
	point51	51	183	45	8	45	4	45	0	0	0	0
	point52	52	183	45	8	45	4	45	0	0	0	0
	point53	53	183	45	8	45	4	45	0	0	0	0
	point47	47										
Marksheffel NW RT @Vollmer	point54	54	184	45	8	45	4	45	0	0	0	0
	point56	56	184	45	8	45	4	45	0	0	0	0
	point57	57	184	45	8	45	4	45	0	0	0	0
	point55	55										
Marksheffel SE LT @Vollmer	point58	58	272	45	12	45	6	45	0	0	0	0
	point60	60	272	45	12	45	6	45	0	0	0	0
	point61	61	272	45	12	45	6	45	0	0	0	0
	point62	62	272	45	12	45	6	45	0	0	0	0
	point63	63	272	45	12	45	6	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Copper Chase at Sterling Ranch

	point64	64	272	45	12	45	6	45	0	0	0	0
	point65	65	272	45	12	45	6	45	0	0	0	0
	point66	66	272	45	12	45	6	45	0	0	0	0
	point67	67	272	45	12	45	6	45	0	0	0	0
	point68	68	272	45	12	45	6	45	0	0	0	0
	point59	59										
Marksheffel SE RT @Vollmer	point69	69	84	45	4	45	2	45	0	0	0	0
	point71	71	84	45	4	45	2	45	0	0	0	0
	point72	72	84	45	4	45	2	45	0	0	0	0
	point73	73	84	45	4	45	2	45	0	0	0	0
	point74	74	84	45	4	45	2	45	0	0	0	0
	point75	75	84	45	4	45	2	45	0	0	0	0
	point76	76	84	45	4	45	2	45	0	0	0	0
	point77	77	84	45	4	45	2	45	0	0	0	0
	point70	70										
Marksheffel SE N/O Vollmer	point78	78	866	45	57	45	19	45	0	0	0	0
	point80	80	866	45	57	45	19	45	0	0	0	0
	point81	81	866	45	57	45	19	45	0	0	0	0
	point82	82	866	45	57	45	19	45	0	0	0	0
	point83	83	866	45	57	45	19	45	0	0	0	0
	point84	84	866	45	57	45	19	45	0	0	0	0
	point85	85	866	45	57	45	19	45	0	0	0	0
	point86	86	866	45	57	45	19	45	0	0	0	0
	point87	87	866	45	57	45	19	45	0	0	0	0
	point88	88	866	45	57	45	19	45	0	0	0	0
	point79	79										
Marksheffel SE S/O Vollmer	point89	89	1138	45	74	45	25	45	0	0	0	0
	point91	91	1138	45	74	45	25	45	0	0	0	0
	point92	92	1138	45	74	45	25	45	0	0	0	0
	point93	93	1138	45	74	45	25	45	0	0	0	0
	point94	94	1138	45	74	45	25	45	0	0	0	0
	point95	95	1138	45	74	45	25	45	0	0	0	0
	point96	96	1138	45	74	45	25	45	0	0	0	0
	point97	97	1138	45	74	45	25	45	0	0	0	0
	point98	98	1138	45	74	45	25	45	0	0	0	0
	point99	99	1138	45	74	45	25	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Copper Chase at Sterling Ranch

	point100	100	1138	45	74	45	25	45	0	0	0	0
	point101	101	1138	45	74	45	25	45	0	0	0	0
	point90	90										
Marksheffel SE N/O Sterling Ranch	point102	102	881	45	57	45	19	45	0	0	0	0
	point104	104	881	45	57	45	19	45	0	0	0	0
	point105	105	881	45	57	45	19	45	0	0	0	0
	point106	106	881	45	57	45	19	45	0	0	0	0
	point107	107	881	45	57	45	19	45	0	0	0	0
	point108	108	881	45	57	45	19	45	0	0	0	0
	point103	103										
Marksheffel SE S/O Sterling Ranch	point109	109	1146	45	75	45	25	45	0	0	0	0
	point111	111	1146	45	75	45	25	45	0	0	0	0
	point112	112	1146	45	75	45	25	45	0	0	0	0
	point113	113	1146	45	75	45	25	45	0	0	0	0
	point110	110										
Marksheffel SE LT @Sterling Ranch	point114	114	269	45	11	45	3	45	0	0	0	0
	point116	116	269	45	11	45	3	45	0	0	0	0
	point117	117	269	45	11	45	3	45	0	0	0	0
	point118	118	269	45	11	45	3	45	0	0	0	0
	point119	119	269	45	11	45	3	45	0	0	0	0
	point120	120	269	45	11	45	3	45	0	0	0	0
	point115	115										
Vollmer NE RT @Marksheffel	point121	121	141	45	6	45	3	45	0	0	0	0
	point122	122										
Vollmer NE LT @Marksheffel	point123	123	151	45	6	45	3	45	0	0	0	0
	point125	125	151	45	6	45	3	45	0	0	0	0
	point126	126	151	45	6	45	3	45	0	0	0	0
	point124	124										
Vollmer NE S/O Marksheffel	point127	127	559	45	24	45	12	45	0	0	0	0
	point128	128										
Vollmer NE N/O Marksheffel	point129	129	1016	45	43	45	22	45	0	0	0	0
	point131	131	1016	45	43	45	22	45	0	0	0	0
	point132	132	1016	45	43	45	22	45	0	0	0	0
	point133	133	1016	45	43	45	22	45	0	0	0	0
	point134	134	1016	45	43	45	22	45	0	0	0	0
	point135	135	1016	45	43	45	22	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Copper Chase at Sterling Ranch

	point130	130										
Vollmer NE S/O Alzada	point136	136	1000	45	43	45	21	45	0	0	0	0
	point138	138	1000	45	43	45	21	45	0	0	0	0
	point139	139	1000	45	43	45	21	45	0	0	0	0
	point137	137										
Vollmer NE N/O Alzada	point140	140	1005	45	43	45	21	45	0	0	0	0
	point142	142	1005	45	43	45	21	45	0	0	0	0
	point143	143	1005	45	43	45	21	45	0	0	0	0
	point141	141										
Vollmer NE RT @Alzada	point144	144	16	45	1	45	0	0	0	0	0	0
	point146	146	16	45	1	45	0	0	0	0	0	0
	point147	147	16	45	1	45	0	0	0	0	0	0
	point145	145										
Vollmer SW N/O Alzada	point151	151	721	45	31	45	15	45	0	0	0	0
	point153	153	721	45	31	45	15	45	0	0	0	0
	point154	154										
Vollmer SW S/O Alzada	point156	156	721	45	31	45	15	45	0	0	0	0
	point158	158	721	45	31	45	15	45	0	0	0	0
	point159	159	721	45	31	45	15	45	0	0	0	0
	point160	160	721	45	31	45	15	45	0	0	0	0
	point161	161	721	45	31	45	15	45	0	0	0	0
	point162	162	721	45	31	45	15	45	0	0	0	0
	point157	157										
Vollmer SW N/O Marksheffel	point163	163	312	45	13	45	7	0	0	0	0	0
	point165	165	312	45	13	45	7	45	0	0	0	0
	point166	166	312	45	13	45	7	45	0	0	0	0
	point167	167	312	45	13	45	7	45	0	0	0	0
	point164	164										
Vollmer SW S/O Marksheffel	point168	168	580	45	25	45	12	45	0	0	0	0
	point170	170	580	45	25	45	12	45	0	0	0	0
	point171	171	580	45	25	45	12	45	0	0	0	0
	point169	169										
Vollmer SW LT @Marksheffel	point172	172	136	45	6	45	3	45	0	0	0	0
	point174	174	136	45	6	45	3	45	0	0	0	0
	point175	175	136	45	6	45	3	45	0	0	0	0
	point176	176	136	45	6	45	3	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes**Copper Chase at Sterling Ranch**

	point173	173										
Vollmer SW RT @Marksheffel	point190	190	272	45	12	45	6	45	0	0	0	0
	point192	192	272	45	12	45	6	45	0	0	0	0
	point193	193	272	45	12	45	6	45	0	0	0	0
	point191	191										

INPUT: ROADWAYS

Copper Chase at Sterling Ranch

Marksheffel NW S/O Vollmer	36.0	point28	28	232,876.1	410,579.3	7,006.00				Average
		point30	30	232,811.2	410,634.4	7,006.00				Average
		point31	31	232,741.0	410,694.3	7,008.00				Average
		point29	29	232,710.2	410,719.9	7,010.00				
Marksheffel NW N/O Vollmer	36.0	point32	32	232,708.6	410,721.6	7,010.00	Signal	0.00	50	Average
		point35	35	232,703.3	410,726.6	7,012.00				Average
		point36	36	232,695.6	410,732.6	7,014.00				Average
		point37	37	232,688.4	410,738.8	7,016.00				Average
		point38	38	232,681.4	410,744.7	7,018.00				Average
		point39	39	232,655.5	410,766.7	7,020.00				Average
		point40	40	232,638.3	410,781.7	7,022.00				Average
		point41	41	232,611.0	410,804.4	7,022.00				Average
		point42	42	232,572.4	410,837.3	7,022.00				Average
		point43	43	232,512.6	410,888.2	7,022.00				Average
		point44	44	232,467.4	410,926.5	7,024.00				Average
		point45	45	232,434.8	410,954.3	7,026.00				Average
		point33	33	232,340.4	411,034.7	7,028.00				
Marksheffel NW LT @Vollmer	12.0	point46	46	233,035.0	410,415.3	7,004.00				Average
		point48	48	232,777.9	410,634.0	7,006.00				Average
		point49	49	232,705.2	410,695.6	7,008.00				Average
		point50	50	232,694.1	410,705.0	7,010.00				Average
		point51	51	232,687.0	410,711.0	7,012.00				Average
		point52	52	232,680.3	410,717.4	7,014.00				Average
		point53	53	232,672.9	410,723.1	7,016.00				Average
		point47	47	232,665.9	410,729.0	7,018.00				
Marksheffel NW RT @Vollmer	12.0	point54	54	232,895.7	410,591.5	7,006.00				Average
		point56	56	232,767.2	410,700.6	7,008.00				Average
		point57	57	232,727.2	410,734.7	7,010.00				Average
		point55	55	232,719.2	410,741.1	7,012.00				
Marksheffel SE LT @Vollmer	12.0	point58	58	232,312.1	411,024.4	7,028.00				Average
		point60	60	232,392.4	410,956.6	7,026.00				Average
		point61	61	232,444.4	410,912.0	7,024.00				Average
		point62	62	232,510.5	410,855.7	7,022.00				Average
		point63	63	232,516.1	410,850.5	7,022.00				Average
		point64	64	232,548.8	410,823.3	7,022.00				Average
		point65	65	232,577.0	410,799.2	7,020.00				Average
		point66	66	232,587.1	410,790.6	7,020.00				Average
		point67	67	232,595.5	410,783.5	7,022.00				Average
		point68	68	232,620.4	410,763.1	7,022.00				Average

INPUT: ROADWAYS

Copper Chase at Sterling Ranch

		point59	59	232,634.2	410,750.7	7,020.00					
Marksheffel SE RT @Vollmer	12.0	point69	69	232,281.1	411,003.5	7,028.00					Average
		point71	71	232,349.5	410,945.4	7,026.00					Average
		point72	72	232,438.6	410,869.2	7,024.00					Average
		point73	73	232,509.8	410,809.4	7,022.00					Average
		point74	74	232,551.0	410,773.9	7,020.00					Average
		point75	75	232,565.4	410,761.9	7,020.00					Average
		point76	76	232,575.5	410,753.9	7,022.00					Average
		point77	77	232,587.4	410,743.2	7,022.00					Average
		point70	70	232,603.9	410,729.2	7,020.00					
Marksheffel SE N/O Vollmer	36.0	point78	78	232,297.1	411,013.6	7,028.00					Average
		point80	80	232,369.9	410,951.7	7,026.00					Average
		point81	81	232,442.2	410,890.2	7,024.00					Average
		point82	82	232,510.1	410,832.6	7,022.00					Average
		point83	83	232,518.8	410,825.2	7,022.00					Average
		point84	84	232,524.5	410,819.9	7,022.00					Average
		point85	85	232,564.3	410,786.4	7,020.00					Average
		point86	86	232,576.6	410,776.0	7,020.00					Average
		point87	87	232,584.8	410,769.1	7,022.00					Average
		point88	88	232,607.4	410,749.7	7,022.00					Average
		point79	79	232,618.0	410,740.8	7,020.00					
Marksheffel SE S/O Vollmer	36.0	point89	89	232,620.2	410,739.0	7,020.00	Signal	0.00	50		Average
		point91	91	232,649.3	410,714.3	7,018.00					Average
		point92	92	232,657.6	410,707.2	7,016.00					Average
		point93	93	232,664.7	410,701.1	7,014.00					Average
		point94	94	232,671.7	410,694.8	7,012.00					Average
		point95	95	232,679.1	410,688.9	7,010.00					Average
		point96	96	232,686.0	410,683.1	7,008.00					Average
		point97	97	232,747.8	410,630.6	7,006.00					Average
		point98	98	232,938.5	410,468.5	7,004.00					Average
		point99	99	233,180.1	410,263.1	7,002.00					Average
		point100	100	233,389.3	410,085.4	7,000.00					Average
		point101	101	233,413.4	410,064.3	6,998.00					Average
		point90	90	233,437.8	410,044.0	6,996.00					
Marksheffel SE N/O Sterling Ranch	36.0	point102	102	233,440.5	410,041.9	6,996.00					Average
		point104	104	233,459.7	410,025.6	6,994.00					Average
		point105	105	233,498.3	409,992.8	6,992.00					Average
		point106	106	233,524.7	409,970.3	6,992.00					Average
		point107	107	233,546.2	409,952.1	6,992.00					Average

INPUT: ROADWAYS

Copper Chase at Sterling Ranch

		point108	108	233,575.9	409,926.8	6,990.00				Average
		point103	103	233,664.9	409,851.6	6,988.00				
Marksheffel SE S/O Sterling Ranch	36.0	point109	109	233,667.4	409,849.0	6,988.00	Signal	0.00	50	Average
		point111	111	233,894.2	409,656.3	6,986.00				Average
		point112	112	233,970.7	409,590.1	6,984.00				Average
		point113	113	234,029.5	409,529.5	6,982.00				Average
		point110	110	234,064.5	409,486.6	6,980.00				
Marksheffel SE LT @Sterling Ranch	12.0	point114	114	233,455.1	410,051.7	6,695.50				Average
		point116	116	233,471.7	410,037.9	6,694.00				Average
		point117	117	233,505.2	410,009.2	6,692.00				Average
		point118	118	233,549.1	409,971.9	6,692.00				Average
		point119	119	233,562.5	409,960.6	6,692.00				Average
		point120	120	233,594.3	409,933.8	6,690.00				Average
		point115	115	233,645.6	409,889.8	6,689.00				
Vollmer NE RT @Marksheffel	12.0	point121	121	232,470.3	410,470.8	7,012.50				Average
		point122	122	232,636.7	410,666.6	7,013.50				
Vollmer NE LT @Marksheffel	12.0	point123	123	232,433.8	410,474.1	7,016.00				Average
		point125	125	232,547.8	410,608.3	7,018.00				Average
		point126	126	232,569.0	410,633.3	7,018.00				Average
		point124	124	232,640.7	410,717.7	7,018.50				
Vollmer NE S/O Marksheffel	24.0	point127	127	232,460.9	410,487.8	7,016.00				Average
		point128	128	232,649.8	410,709.8	7,017.50				
Vollmer NE N/O Marksheffel	24.0	point129	129	232,682.7	410,748.5	7,018.00	Signal	0.00	50	Average
		point131	131	232,738.1	410,814.0	7,020.00				Average
		point132	132	232,785.0	410,868.4	7,022.00				Average
		point133	133	232,831.3	410,923.1	7,024.00				Average
		point134	134	232,927.5	411,036.7	7,026.00				Average
		point135	135	233,012.0	411,135.4	7,028.00				Average
		point130	130	233,046.1	411,176.4	7,030.00				
Vollmer NE S/O Alzada	24.0	point136	136	233,047.9	411,178.8	7,030.00				Average
		point138	138	233,083.2	411,220.3	7,032.00				Average
		point139	139	233,122.5	411,267.0	7,034.00				Average
		point137	137	233,232.4	411,395.0	7,034.00				
Vollmer NE N/O Alzada	24.0	point140	140	233,234.0	411,397.3	7,034.00				Average
		point142	142	233,309.7	411,486.3	7,036.00				Average
		point143	143	233,414.8	411,609.9	7,038.00				Average
		point141	141	233,488.3	411,697.3	7,040.00				
Vollmer NE RT @Alzada	12.0	point144	144	233,054.7	411,158.5	7,026.50				Average
		point146	146	233,086.7	411,196.1	7,028.00				Average

INPUT: RECEIVERS

Copper Chase at Sterling Ranch

							6 December 2021					
							TNM 2.5					
INPUT: RECEIVERS												
PROJECT/CONTRACT:			Copper Chase at Sterling Ranch									
RUN:			2040 PM Peak Hour									
Receiver												
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.	
			X	Y	Z		Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal		
			ft	ft	ft	ft	dBA	dBA	dB	dB		
Lot 18	1	1	233,376.8	411,184.7	7,023.50	4.92	0.00	67	10.0	8.0	Y	
Lot 19	2	1	233,328.7	411,197.1	7,023.50	4.92	0.00	67	10.0	8.0	Y	
Lot 20	3	1	233,279.6	411,199.3	7,023.50	4.92	0.00	66	10.0	8.0	Y	
Lot 21	4	1	233,231.1	411,191.4	7,023.50	4.92	0.00	66	10.0	8.0	Y	
Lot 22	5	1	233,185.3	411,173.8	7,023.00	4.92	0.00	66	10.0	8.0	Y	
Lot 23	6	1	233,144.6	411,146.6	7,022.50	4.92	0.00	66	10.0	8.0	Y	
Lot 24	7	1	233,112.5	411,114.8	7,022.00	4.92	0.00	66	10.0	8.0	Y	
Lot 25	8	1	233,088.0	411,085.8	7,021.50	4.92	0.00	66	10.0	8.0	Y	
Lot 26	9	1	233,065.4	411,059.0	7,021.00	4.92	0.00	66	10.0	8.0	Y	
Lot 27	10	1	233,042.8	411,032.2	7,020.50	4.92	0.00	66	10.0	8.0	Y	
Lot 28	11	1	233,020.2	411,005.5	7,020.00	4.92	0.00	66	10.0	8.0	Y	
Lot 29	12	1	232,997.6	410,978.8	7,019.50	4.92	0.00	66	10.0	8.0	Y	
Lot 30	13	1	232,972.3	410,948.8	7,019.00	4.92	0.00	66	10.0	8.0	Y	
Lot 31	14	1	232,947.0	410,912.1	7,018.50	4.92	0.00	66	10.0	8.0	Y	
Lot 32	15	1	232,928.2	410,870.3	7,018.25	4.92	0.00	66	10.0	8.0	Y	
Lot 33	16	1	232,916.3	410,825.9	7,017.50	4.92	0.00	66	10.0	8.0	Y	
Lot 34	17	1	232,911.6	410,780.1	7,017.50	4.92	0.00	66	10.0	8.0	Y	
Lot 35	18	1	232,914.2	410,734.2	7,017.50	4.92	0.00	66	10.0	8.0	Y	
Lot 36	19	1	232,924.0	410,689.3	7,017.50	4.92	0.00	66	10.0	8.0	Y	
Lot 37	20	1	232,940.8	410,646.6	7,017.00	4.92	0.00	66	10.0	8.0	Y	
Lot 38	21	1	232,964.5	410,607.3	7,015.50	4.92	0.00	66	10.0	8.0	Y	
Lot 39	22	1	232,994.1	410,573.3	7,015.00	4.92	0.00	66	10.0	8.0	Y	

INPUT: RECEIVERS**Copper Chase at Sterling Ranch**

Lot 40	24	1	233,024.7	410,545.5	7,014.50	4.92	0.00	66	10.0	8.0	Y
Lot 41	25	1	233,067.8	410,508.8	7,013.75	4.92	0.00	66	10.0	8.0	Y
Lot 42	26	1	233,094.5	410,486.2	7,013.00	4.92	0.00	66	10.0	8.0	Y
Lot 43	27	1	233,121.2	410,463.5	7,012.00	4.92	0.00	66	10.0	8.0	Y
Lot 44	28	1	233,147.8	410,440.8	7,011.00	4.92	0.00	66	10.0	8.0	Y
Lot 45	29	1	233,174.5	410,418.2	7,009.50	4.92	0.00	66	10.0	8.0	Y
Lot 46	30	1	233,201.2	410,395.5	7,008.50	4.92	0.00	66	10.0	8.0	Y
Lot 47	31	1	233,227.9	410,372.8	7,007.50	4.92	0.00	66	10.0	8.0	Y
Lot 48	32	1	233,254.5	410,350.2	7,006.50	4.92	0.00	66	10.0	8.0	Y
Lot 49	33	1	233,281.2	410,327.5	7,006.00	4.92	0.00	66	10.0	8.0	Y
Lot 50	34	1	233,307.9	410,304.8	7,005.50	4.92	0.00	66	10.0	8.0	Y
Lot 51	35	1	233,334.5	410,282.2	7,004.50	4.92	0.00	66	10.0	8.0	Y
Lot 52	36	1	233,361.2	410,259.5	7,003.75	4.92	0.00	66	10.0	8.0	Y
Lot 53	37	1	233,387.9	410,236.8	7,003.00	4.92	0.00	66	10.0	8.0	Y
Lot 54	38	1	233,414.5	410,214.2	7,002.50	4.92	0.00	66	10.0	8.0	Y
Lot 55	39	1	233,441.2	410,191.5	7,001.50	4.92	0.00	66	10.0	8.0	Y
Lot 56	40	1	233,467.9	410,168.8	7,001.00	4.92	0.00	66	10.0	8.0	Y
Lot 57	41	1	233,494.6	410,146.2	7,000.00	4.92	0.00	66	10.0	8.0	Y
Lot 58	45	1	233,521.2	410,123.5	6,999.50	4.92	0.00	66	10.0	8.0	Y
Lot 59	46	1	233,547.9	410,100.9	6,998.50	4.92	0.00	66	10.0	8.0	Y
Lot 60	47	1	233,574.0	410,078.7	6,998.25	4.92	0.00	66	10.0	8.0	Y
Lot 61	48	1	233,600.1	410,056.5	6,996.25	4.92	0.00	66	10.0	8.0	Y

INPUT: ROADWAYS

Copper Chase at Sterling Ranch

		point147	147	233,124.5	411,241.3	7,030.00				Average
		point145	145	233,206.9	411,337.5	7,030.00				
Vollmer SW N/O Alzada	24.0	point151	151	233,424.8	411,679.5	7,040.00				Average
		point153	153	233,349.1	411,591.4	7,038.00				Average
		point154	154	233,201.6	411,417.9	7,036.00				
Vollmer SW S/O Alzada	24.0	point156	156	233,198.5	411,414.1	7,036.00				Average
		point158	158	233,106.3	411,306.2	7,036.00				Average
		point159	159	233,056.5	411,247.1	7,034.00				Average
		point160	160	233,005.1	411,186.0	7,032.00				Average
		point161	161	232,967.7	411,141.6	7,030.00				Average
		point162	162	232,909.5	411,074.1	7,028.00				Average
		point157	157	232,857.6	411,013.0	7,027.00				
Vollmer SW N/O Marksheffel	24.0	point163	163	232,855.0	411,009.9	7,027.00				Average
		point165	165	232,819.9	410,969.0	7,026.00				Average
		point166	166	232,769.6	410,909.1	7,024.00				Average
		point167	167	232,724.9	410,856.8	7,022.00				Average
		point164	164	232,653.3	410,772.6	7,020.50				
Vollmer SW S/O Marksheffel	24.0	point168	168	232,621.2	410,734.8	7,019.50	Signal	0.00	50	Average
		point170	170	232,497.4	410,589.7	7,020.00				Average
		point171	171	232,483.3	410,572.8	7,020.00				Average
		point169	169	232,434.7	410,514.5	7,018.00				
Vollmer SW LT @Marksheffel	12.0	point172	172	232,872.2	411,000.8	7,026.50				Average
		point174	174	232,849.9	410,975.4	7,026.00				Average
		point175	175	232,791.1	410,905.4	7,024.00				Average
		point176	176	232,743.5	410,849.3	7,022.00				Average
		point173	173	232,691.3	410,788.4	7,020.00				
Vollmer SW RT @Marksheffel	12.0	point190	190	232,841.3	411,021.6	7,026.50				Average
		point192	192	232,797.7	410,970.8	7,026.00				Average
		point193	193	232,731.3	410,892.5	7,024.00				Average
		point191	191	232,686.5	410,839.5	7,022.50				