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April 30, 2020

Mr. Bill Guman
William Guman & Associates, Ltd.
731 North Weber Street, Suite 10
Colorado Springs, CO 80903

RE: Saddlehorn Ranch
Noise Impact Study
El Paso County, Colorado
LSC #204340

Dear Mr. Guman:

In response to your request, LSC Transportation Consultants, Inc. has completed a detailed analysis of the noise impacts of Curtis Road on the proposed Saddlehorn Ranch residential development to be located southeast of the intersection of Curtis Road and Judge Orr Road in El Paso County, 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 within the proposed development. A noise receiver was modeled for each of the sixteen lots adjacent to Curtis Road. The receivers were placed at the midpoint of the western boundary of the proposed building envelope of each lot. An elevation of five feet was assumed for the height of the receivers. The receiver locations are shown in Figure 1.

The input data for the noise predictions included traffic volumes, roadway geometry, roadway topographic elevations, and the location and proposed topographic elevation of the receivers. The analysis assumed Curtis Road widened to a 4-Lane Rural Principal Arterial cross section symmetrical about the existing center line. The analysis was completed using projected 2040 afternoon peak-hour traffic volumes taken from the *Saddlehorn Ranch Traffic Impact Analysis* by LSC dated March 11, 2020. A copy of the figure showing the projected 2040 total traffic volumes from that report has been attached.

The results of the noise prediction show that in the year 2040 all locations have predicted noise levels that would **not** exceed 67 decibels Leq. Based on the criteria contained in the El Paso County *Engineering Criteria Manual* no noise mitigation would be required. 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

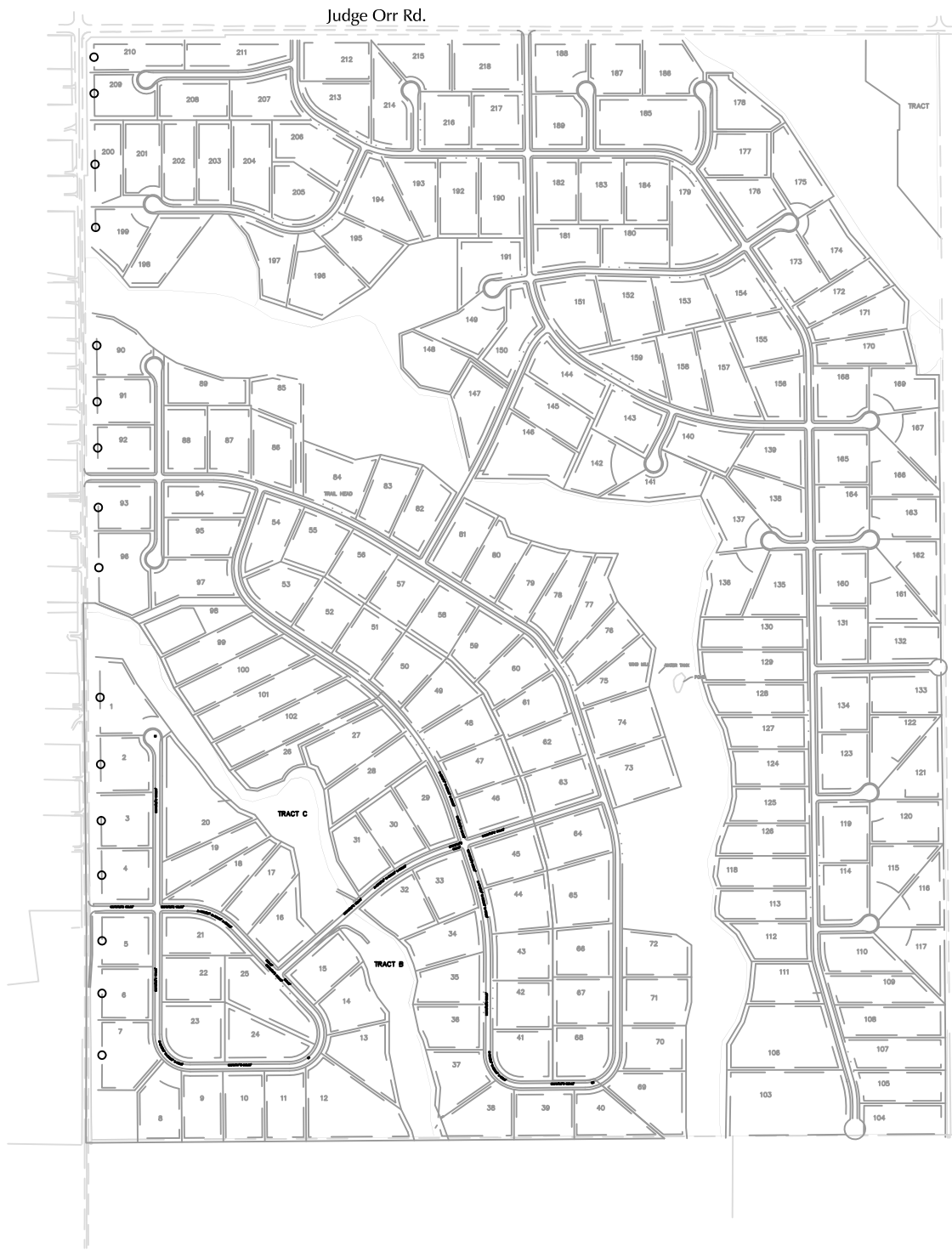


KDF:jas

Enclosures: Figure 1
Figure 9 *Saddlehorn Ranch Traffic Impact Study*
by LSC dated March 11, 2020
Noise Analysis Inputs/Outputs

Figure 1





Approximate Scale
Scale: 1" = 1,000'



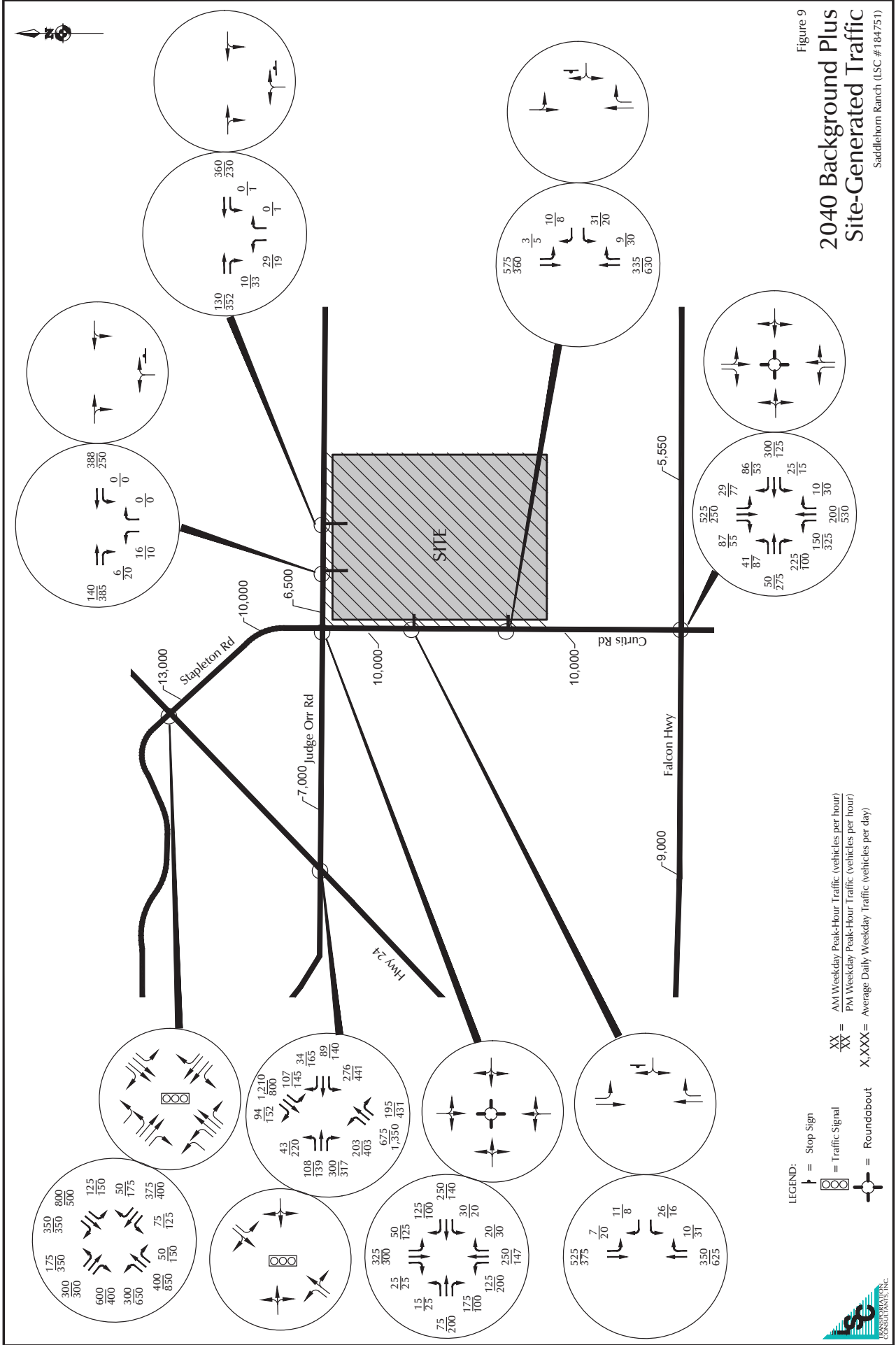
LEGEND:
○ = Receiver Location

Figure 1
Noise Analysis Data
Saddlehorn Ranch Noise Analysis (LSC #204340)

Figure 9

Saddlehorn Ranch Traffic Impact Study by LSC dated March 11, 2020





Noise Analysis Inputs/Outputs



INPUT: TRAFFIC FOR LAeq1h Volumes

Saddlehorn Ranch

LSC Transportation Consultants, Inc.			28 April 2020											
KDF			TNM 2.5											
INPUT: TRAFFIC FOR LAeq1h Volumes														
PROJECT/CONTRACT:			Saddlehorn Ranch											
RUN:			2040 PM Peak Hour (4-Lane Rural PA)											
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
NB Curtis Rd	point1	1	622	45	20	45	13	45	0	0	0	0	0	0
	point3	3	622	45	20	45	13	45	0	0	0	0	0	0
	point4	4	622	45	20	45	13	45	0	0	0	0	0	0
	point5	5	622	45	20	45	13	45	0	0	0	0	0	0
	point6	6	622	45	20	45	13	45	0	0	0	0	0	0
	point7	7	622	45	20	45	13	45	0	0	0	0	0	0
	point8	8	622	45	20	45	13	45	0	0	0	0	0	0
	point9	9	622	45	20	45	13	45	0	0	0	0	0	0
	point10	10	622	45	20	45	13	45	0	0	0	0	0	0
	point11	11	622	45	20	45	13	45	0	0	0	0	0	0
	point12	12	622	45	20	45	13	45	0	0	0	0	0	0
	point13	13	622	45	20	45	13	45	0	0	0	0	0	0
	point14	14	622	45	20	45	13	45	0	0	0	0	0	0
	point15	15	622	45	20	45	13	45	0	0	0	0	0	0
	point16	16	622	45	20	45	13	45	0	0	0	0	0	0
	point17	17	622	45	20	45	13	45	0	0	0	0	0	0
	point18	18	622	45	20	45	13	45	0	0	0	0	0	0
	point19	19	622	45	20	45	13	45	0	0	0	0	0	0
	point20	20	622	45	20	45	13	45	0	0	0	0	0	0
	point21	21	622	45	20	45	13	45	0	0	0	0	0	0
	point22	22	622	45	20	45	13	45	0	0	0	0	0	0
	point23	23	622	45	20	45	13	45	0	0	0	0	0	0
	point24	24	622	45	20	45	13	45	0	0	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes

Saddlehorn Ranch

	point25	25	622	45	20	45	13	45	0	0	0	0
	point26	26	622	45	20	45	13	45	0	0	0	0
	point27	27	622	45	20	45	13	45	0	0	0	0
	point28	28	622	45	20	45	13	45	0	0	0	0
	point29	29	622	45	20	45	13	45	0	0	0	0
	point30	30	622	45	20	45	13	45	0	0	0	0
	point31	31	622	45	20	45	13	45	0	0	0	0
	point32	32	622	45	20	45	13	45	0	0	0	0
	point2	2										
SB Curtis Rd	point33	33	399	45	13	45	8	45	0	0	0	0
	point35	35	399	45	13	45	8	45	0	0	0	0
	point36	36	399	45	13	45	8	45	0	0	0	0
	point37	37	399	45	13	45	8	45	0	0	0	0
	point38	38	399	45	13	45	8	45	0	0	0	0
	point39	39	399	45	13	45	8	45	0	0	0	0
	point40	40	399	45	13	45	8	45	0	0	0	0
	point41	41	399	45	13	45	8	45	0	0	0	0
	point42	42	399	45	13	45	8	45	0	0	0	0
	point43	43	399	45	13	45	8	45	0	0	0	0
	point44	44	399	45	13	45	8	45	0	0	0	0
	point45	45	399	45	13	45	8	45	0	0	0	0
	point46	46	399	45	13	45	8	45	0	0	0	0
	point47	47	399	45	13	45	8	45	0	0	0	0
	point48	48	399	45	13	45	8	45	0	0	0	0
	point49	49	399	45	13	45	8	45	0	0	0	0
	point50	50	399	45	13	45	8	45	0	0	0	0
	point51	51	399	45	13	45	8	45	0	0	0	0
	point52	52	399	45	13	45	8	45	0	0	0	0
	point53	53	399	45	13	45	8	45	0	0	0	0
	point54	54	399	45	13	45	8	45	0	0	0	0
	point55	55	399	45	13	45	8	45	0	0	0	0
	point56	56	399	45	13	45	8	45	0	0	0	0
	point57	57	399	45	13	45	8	45	0	0	0	0
	point58	58	399	45	13	45	8	45	0	0	0	0
	point59	59	399	45	13	45	8	45	0	0	0	0
	point60	60	399	45	13	45	8	45	0	0	0	0

INPUT: TRAFFIC FOR LAeq1h Volumes**Saddlehorn Ranch**

	point61	61	399	45	13	45	8	45	0	0	0	0
	point62	62	399	45	13	45	8	45	0	0	0	0
	point63	63	399	45	13	45	8	45	0	0	0	0
	point64	64	399	45	13	45	8	45	0	0	0	0
	point34	34										

INPUT: ROADWAYS

Saddlehorn Ranch

		point27	27	3,269,428.5	1,408,896.2	6,774.00				Average
		point28	28	3,269,427.8	1,409,002.2	6,776.00				Average
		point29	29	3,269,427.5	1,409,091.8	6,778.00				Average
		point30	30	3,269,427.2	1,409,186.8	6,780.00				Average
		point31	31	3,269,426.8	1,409,311.2	6,782.00				Average
		point32	32	3,269,426.0	1,409,600.8	6,784.00				Average
		point2	2	3,269,425.5	1,409,862.0	6,786.00				
SB Curtis Rd	24.0	point33	33	3,269,345.5	1,409,861.9	6,786.00				Average
		point35	35	3,269,346.0	1,409,600.8	6,784.00				Average
		point36	36	3,269,346.8	1,409,311.0	6,782.00				Average
		point37	37	3,269,347.2	1,409,186.6	6,780.00				Average
		point38	38	3,269,347.5	1,409,091.4	6,778.00				Average
		point39	39	3,269,347.8	1,409,001.9	6,776.00				Average
		point40	40	3,269,348.5	1,408,895.8	6,774.00				Average
		point41	41	3,269,349.5	1,408,790.4	6,772.00				Average
		point42	42	3,269,351.0	1,408,663.1	6,770.00				Average
		point43	43	3,269,353.0	1,408,481.6	6,768.00				Average
		point44	44	3,269,360.2	1,407,744.5	6,766.00				Average
		point45	45	3,269,360.2	1,407,532.8	6,764.00				Average
		point46	46	3,269,367.8	1,406,941.8	6,762.00				Average
		point47	47	3,269,371.0	1,406,635.8	6,760.00				Average
		point48	48	3,269,372.5	1,406,446.8	6,758.00				Average
		point49	49	3,269,374.0	1,406,252.4	6,756.00				Average
		point50	50	3,269,375.5	1,406,076.9	6,756.00				Average
		point51	51	3,269,375.5	1,405,960.5	6,758.00				Average
		point52	52	3,269,377.0	1,405,887.2	6,760.00				Average
		point53	53	3,269,378.0	1,405,826.9	6,762.00				Average
		point54	54	3,269,378.8	1,405,772.8	6,764.00				Average
		point55	55	3,269,379.5	1,405,715.5	6,766.00				Average
		point56	56	3,269,384.2	1,405,249.9	6,768.00				Average
		point57	57	3,269,384.2	1,405,107.6	6,770.00				Average
		point58	58	3,269,387.5	1,404,982.2	6,772.00				Average
		point59	59	3,269,389.0	1,404,844.9	6,774.00				Average
		point60	60	3,269,390.2	1,404,693.2	6,776.00				Average
		point61	61	3,269,392.0	1,404,492.6	6,778.00				Average
		point62	62	3,269,393.2	1,404,269.1	6,780.00				Average
		point63	63	3,269,392.5	1,403,456.6	6,782.00				Average
		point64	64	3,269,392.2	1,403,065.5	6,782.00				Average
		point34	34	3,269,392.5	1,402,959.4	6,780.00				

INPUT: RECEIVERS

Saddlehorn Ranch

LSC Transportation Consultants, Inc. KDF							28 April 2020 TNM 2.5					
INPUT: RECEIVERS												
PROJECT/CONTRACT:							Saddlehorn Ranch					
RUN:							2040 PM Peak Hour (4-Lane Rural PA)					
Receiver												
Name	No.	#DUs	Coordinates (ground)			Height above Ground	Input Sound Levels and Criteria				Active in Calc.	
			X	Y	Z		Existing LAeq1h	Impact Criteria		NR		
									Sub'l	Goal		
			ft	ft	ft		ft	dBA	dBA	dB		dB
Lot 210	1	1	3,269,477.2	1,409,704.9	6,782.00	4.92	0.00	67	10.0	8.0	Y	
Lot 209	2	1	3,269,478.0	1,409,482.8	6,780.00	4.92	0.00	67	10.0	8.0	Y	
Lot 200	3	1	3,269,483.2	1,409,048.1	6,778.00	4.92	0.00	67	10.0	8.0	Y	
Lot 199	4	1	3,269,487.0	1,408,661.8	6,768.00	4.92	0.00	67	10.0	8.0	Y	
Lot 90	5	1	3,269,493.8	1,407,938.1	6,764.00	4.92	0.00	67	10.0	8.0	Y	
Lot 91	6	1	3,269,496.0	1,407,593.0	6,762.00	4.92	0.00	67	10.0	8.0	Y	
Lot 92	7	1	3,269,499.8	1,407,310.6	6,761.50	4.92	0.00	67	10.0	8.0	Y	
Lot 93	8	1	3,269,503.2	1,406,945.6	6,760.00	4.92	0.00	67	10.0	8.0	Y	
Lot 96	9	1	3,269,506.8	1,406,576.9	6,756.50	4.92	0.00	67	10.0	8.0	Y	
Lot 1	10	1	3,269,514.2	1,405,781.9	6,760.00	4.92	0.00	67	10.0	8.0	Y	
Lot 2	11	1	3,269,518.0	1,405,371.4	6,761.00	4.92	0.00	67	10.0	8.0	Y	
Lot 3	12	1	3,269,521.2	1,405,026.2	6,766.00	4.92	0.00	67	10.0	8.0	Y	
Lot 4	13	1	3,269,524.5	1,404,692.4	6,770.00	4.92	0.00	67	10.0	8.0	Y	
Lot 5	14	1	3,269,526.5	1,404,290.2	6,774.00	4.92	0.00	67	10.0	8.0	Y	
Lot 6	15	1	3,269,526.5	1,403,968.1	6,775.00	4.92	0.00	67	10.0	8.0	Y	
Lot 7	16	1	3,269,526.2	1,403,589.9	6,776.00	4.92	0.00	67	10.0	8.0	Y	