SLAGGIE ARCHITECTS INC

ARCHITECTURE
PLANNING
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GRAPHICS

KANSAS CITY, MO
4600 Madison Avenue Suite 350
Kansas City, Missouri 64112

OMAHA, NE
622 North 109th Plaza
Omaha, Nebraska 68154

888.756.1958
www.slaggie.com

February 10, 2022

Mike Weisenborn
City of Lee's Summit
Project Manager, Development Center
220 SE Green Street
Lee's Summit, MO 64063
816-969-1240

Re: Proposed Parking Requirements for K1 Speed

Dear Mr. Weisenborn:

The following analysis was used to establish the number of parking spaces required for the K1 Speed facility.

The parking count was established by using the required parking for entertainment facilities in the Lee's Summit less the area occupied by the track. The track area is only occupied by the 10 – 12 kart drivers and staff. No other occupants will be within this area at any time. To verify the assumptions, the parking counts are compared to a study conducted at the existing facility in Irvine, CA. this study shows average daily, and peak hourly trips per 1,000 sf. of space. It also establishes the peak parking load based on area as well. The study is attached for review.

The new facility in Lee's Summit is proposed to be 46,760 sf. with a track area of 31,930 sf. This will leave a remaining area of 14,830 sf. Based on a parking ratio of 6 spaces/1,000 sf. for the remaining area, the required count would be 89 spaces. The proposed parking lot will have 110 parking spaces.

In the Irvine study, the average daily trips were 5.13/1,000 sf. and a peak hourly load of 0.472 trips/1,000 sf. This would extrapolate to an average daily trip total of 239 and a peak load of 22 trips/hour. The parking ratio based on gross area including the track was one space per 1,672 sf., extrapolated count would be 29 spaces for this facility size.

Compared to the historic averages for K1 Speed facilities, the assumptions used to establish the parking count should provide enough parking to cover peak use.

PARKING STUDY PROVIDED BY OWNERSHIP GROUP FOR COMPARISON REFERENCE ONLY

June 20, 2005

LINSCOTT LAW & GREENSPAN engineers

Engineers & Planners
Traffic
Transportation
Parking

Linscott, Law & Greenspan, Engineers
1580 Corporate Drive
Suite 122
Costa Mesa, CA 92626
714.641.1587 T
714.641.0139 F
www.llgengineers.com

Pasadena
Costa Mesa
San Diego
Las Vegas

Mr. Paul Klukas
Planning Systems
1530 Faraday Avenue, Suite 100
Carlsbad, California 92008

LLG Reference No. 2.05.2629.1

Subject: **Trip Generation and Parking Rate Analysis for the Proposed K-1 Speed Indoor Kart Track**
Irvine, California

Dear Mr. Klukas:

As requested, Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit this Trip Generation and Parking Rate Analysis Letter Report for the proposed K-1 Speed Indoor Kart Track project, located in Irvine, California.

This letter report summarizes the traffic generation rates and parking demand rate for the proposed K-1 Speed Indoor Kart Track project based on a trip generation study and parking survey study conducted at an existing indoor kart racing facility in the City of Carlsbad, which is similar in size to the proposed project.

Briefly, the results of our trip generation study at the existing facility in the City of Carlsbad revealed an average weekday daily trip generation rate of 5.13 trips/1,000 square feet (SF) and an average weekday PM peak hour trip generation rate of 0.472 trips/1,000 SF. In addition, the parking survey study at the existing facility revealed a parking rate of 1 space per 1,672 SF. The aforementioned trip generation and parking rates will be applied to the proposed K-1 Speed Indoor Kart Track project to satisfy City of Irvine requirements.

Our method of analysis, findings, and conclusions are described in detail in the following sections of this report.

PROJECT DESCRIPTION AND LOCATION

The project site is an existing 86,882 SF warehouse building located at 17221 Von Karman Avenue, in the City of Irvine, California. The project site is located within the Irvine Business Center (IBC) and is identified as Project No. 668 within the City of Irvine IBC Database. ***Figure 1***, located at the end of this letter report presents a Vicinity Map, which illustrates the general location of the project and depicts the surrounding street system.

Figure 2 presents the site plan for the proposed project prepared by Davy Architecture. As shown, the proposed project will re-occupy the existing 86,882 SF warehouse building with an indoor race track (approximately 1/3 of a mile in length), viewing/gathering areas, meeting/changing rooms, administration areas and a concession area serving fast food and non-alcoholic beverages. The proposed facility will operate seven days a week with the following hours of operation:

- Monday (11:00 AM to 9:00 PM)
- Tuesday through Thursday (11:00 AM to 10:00 PM)
- Friday (11:00 AM to 11:00 PM)
- Saturday (9:00 AM to 11:00 PM)
- Sunday (9:00 AM to 6:00 PM)

As shown, the proposed project will not be in operation during the typical AM peak hour (7:00 AM to 9:00 AM) and therefore the AM peak hour traffic generation will not need to be evaluated.

Vehicular access to the proposed project will be provided via two existing driveways along McGaw Avenue and one existing driveway along Von Karman Avenue. Parking will be provided via an on-site surface lot with a total of 120 spaces.

DATA COLLECTION AT EXISTING FACILITY

Traffic and parking counts were conducted at an existing indoor kart racing facility similar in size to the proposed project. The existing facility is located at 6212 Corte Del Abeto in the City of Carlsbad. The existing indoor kart racing facility is housed within a 70,220 SF industrial building and consists of an indoor race track (approximately 1/3 of a mile in length), viewing/gathering areas, meeting/changing rooms, administration areas and a concession area serving fast food and non-alcoholic beverages. The existing facility operates seven days a week with the following hours of operation:

- Monday (11:00 AM to 9:00 PM)
- Tuesday through Thursday (11:00 AM to 10:00 PM)
- Friday (11:00 AM to 11:00 PM)
- Saturday (9:00 AM to 11:00 PM)
- Sunday (9:00 AM to 6:00 PM)

Vehicular access to the existing facility is provided via one driveway located along Corte Del Abeto. Parking is provided via an on-site surface lot with a total of 147 spaces.

Vehicular counts (ins and outs) and parking counts were conducted at the existing facility by Transportation Studies on Wednesday June 8, 2005, Thursday June 9, 2005,

Friday June 10, 2005 and Saturday June 11, 2005 during the aforementioned hours of operation. The vehicular counts were conducted in fifteen-minute intervals and the parking counts were conducted in thirty-minute intervals. ***Appendix A*** summarizes the vehicular counts and parking counts conducted at the existing facility. ***Tables A-1, B-1, C-1*** and ***D-1*** present the vehicular counts and ***Tables A-2, B-2, C-2,*** and ***D-2*** present the parking counts for the four count days.

TRIP GENERATION STUDY AND PARKING STUDY RESULTS

Table 1, located at the rear of this letter report following the figures presents the results of the trip generation and parking study conducted at the existing indoor kart facility in the City of Carlsbad for a typical Wednesday, Thursday, Friday and Saturday. As shown in *Table 1*, a daily trip generation rate and a PM peak hour trip generation rate was calculated for each day of the trip generation study. The maximum observed peak parking demand for each day is also shown. An average of the three calculated weekday daily and PM peak hour trip generation rates was calculated, which identified an average weekday daily trip generation rate of 5.13 trips per 1,000 SF and an average weekday PM peak hour trip generation rate of 0.472 trips per 1,000 SF. Please note that the average weekday trip generation rates are used even though they are less than the Saturday trip generation rates because ambient traffic in the area is much greater on weekdays. Also note that an AM peak hour trip generation rate was not determined because the proposed project will not be in operation during the typical AM peak hour (7:00 AM to 9:00 AM).

Further review of *Table* 1 shows that a maximum peak parking demand of 42 spaces was observed on Saturday, which was the peak attendance day of the four count days. A parking rate of 1 space per 1,672 SF (70,220 SF divided by 42 spaces) was calculated based on an observed peak parking demand of 42 spaces at the existing indoor kart racing facility.

Appendix B presents the detailed calculations for the aforementioned trip generation rates and the parking rate.

CONCLUSION

The results of our trip generation study at the existing facility in the City of Carlsbad revealed an average weekday daily trip generation rate of 5.13 trips/1,000 SF and an average weekday PM peak hour trip generation rate of 0.472 trips/1,000 SF. In addition, the parking study at the existing facility revealed a parking rate of 1 space per 1,672 SF. The aforementioned trip generation and parking rates can be used to forecast the potential daily and PM peak hour trips of the proposed project as well as forecast the parking demand of the proposed project.

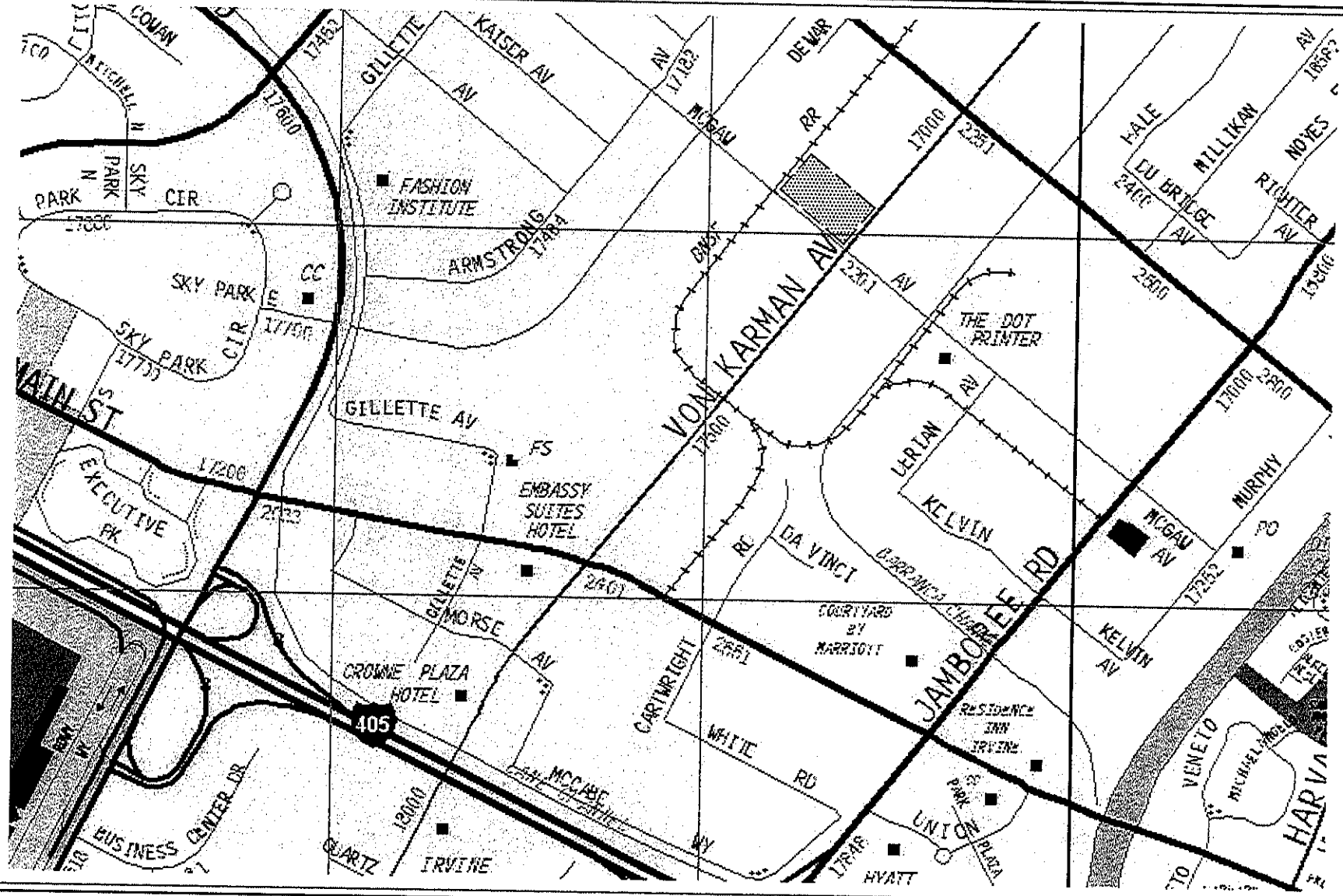
LINSCOTT LAW & GREENSPAN engineers

We appreciate the opportunity to provide this trip generation and parking assessment. Should you have any questions or comments, please call me at (714) 641-1587.

Very truly yours,
LINSCOTT, LAW & GREENSPAN, ENGINEERS

Keil D. Maberry, P.E.
Associate Principal

Daniel A. Kloos, P.E.
Transportation Engineer III



LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: THOMAS BROS.

KEY

PROJECT SITE

FIGURE 1

VICINITY MAP

K1 SPEED INDOOR KART TRACK, IRVINE

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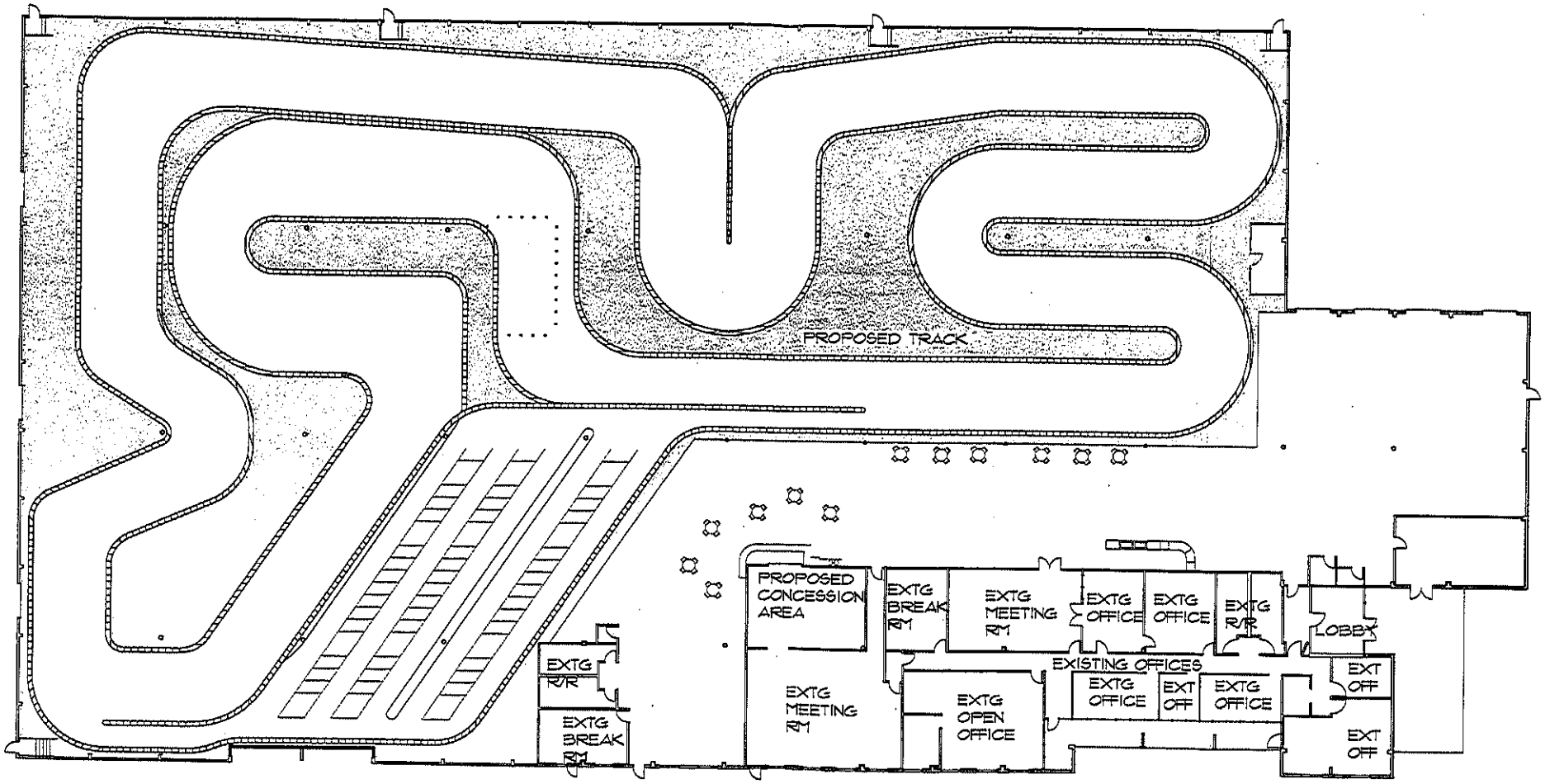
TABLE 1

EXISTING FACILITY DATA SUMMARY

Count Date	ADT Rate (Trips per 1,000 SF)	PM Peak Hour Rate (Trips per 1,000 SF)	Peak Parking Demand
Wednesday June 8, 2005	4.06 trips/1,000 SF	0.471 trips/1,000 SF	32 spaces
Thursday June 9, 2005	4.57 trips/1,000 SF	0.315 trips/1,000 SF	27 spaces
Friday June 10, 2005	6.76 trips/1,000 SF	0.629 trips/1,000 SF	38 spaces
Saturday June 11, 2005	7.73 trips/1,000 SF	0.495 trips/1,000 SF	42 spaces
Average Weekday Rate	**5.13 trips/1,000 SF**	**0.472 trips/1,000 SF**	---
Peak Parking Demand	---	---	**42 spaces**



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NO SCALE

FIGURE 2

PROPOSED SITE PLAN
K1 SPEED INDOOR KART TRACK, IRVINE

APPENDIX A

EXISTING VEHICULAR COUNTS AND PARKING COUNTS

Table A-1
Trip Generation Study Traffic Data
Wednesday June 8, 2005 (11:00 AM to 10:00 PM)

Time Began	Vehicles In	Vehicles Out	Total Vehicles	Peak Hour Total
10:00 AM	0	0	0	
10:15 AM	1	2	3	
10:30 AM	0	0	0	
10:45 AM	6	0	6	9
11:00 AM	0	4	4	13
11:15 AM	0	0	0	10
11:30 AM	2	0	2	12
11:45 AM	8	2	10	16
12:00 PM	4	0	4	16
12:15 PM	6	1	7	23
12:30 PM	4	2	6	27
12:45 PM	11	1	12	29
1:00 PM	4	0	4	29
1:15 PM	4	4	8	30
1:30 PM	4	6	10	34
1:45 PM	8	0	8	30
2:00 PM	4	6	10	36
2:15 PM	0	7	7	35
2:30 PM	0	0	0	25
2:45 PM	7	5	12	29
3:00 PM	2	4	6	25
3:15 PM	2	6	8	26
3:30 PM	2	2	4	30
3:45 PM	0	3	3	21
4:00 PM	1	2	3	18
4:15 PM	10	8	18	28
4:30 PM	6	2	8	32
4:45 PM	0	0	0	29
5:00 PM	2	5	7	33
5:15 PM	1	4	5	20
5:30 PM	2	3	5	17
5:45 PM	2	7	9	26
6:00 PM	3	2	5	24
6:15 PM	0	2	2	21
6:30 PM	1	5	6	22
6:45 PM	6	6	12	25
7:00 PM	0	0	0	20
7:15 PM	0	0	0	18
7:30 PM	9	2	11	23
7:45 PM	3	8	11	22
8:00 PM	2	2	4	26
8:15 PM	2	6	8	34
8:30 PM	0	3	3	26
8:45 PM	0	1	1	16
9:00 PM	0	2	2	14
9:15 PM	2	0	2	8
9:30 PM	0	4	4	9
9:45 PM	2	8	10	18
10:00 PM	0	0	0	16
10:15 PM	1	2	3	17
10:30 PM	3	9	12	25
10:45 PM	0	0	0	15
Total	137	148	285	

Table A-2
Parking Study Traffic Data
Wednesday June 8, 2005 (11:00 AM to 10:00 PM)

Time Began	Number of Parked Cars
11:00 AM	22
11:30 AM	22
12:00 PM	21
12:30 PM	21
1:00 PM	23
1:30 PM	19
2:00 PM	25
2:30 PM	24
3:00 PM	25
3:30 PM	22
4:00 PM	25
4:30 PM	29
5:00 PM	31
5:30 PM	29
6:00 PM	31
6:30 PM	32
7:00 PM	25
7:30 PM	19
8:00 PM	16
8:30 PM	12
9:00 PM	10
9:30 PM	14
10:00 PM	11

Table B-1
Trip Generation Study Traffic Data
Thursday June 9, 2005 (11:00 AM to 10:00 PM)

Time Began	Vehicles In	Vehicles Out	Total Vehicles	Peak Hour Total
10:00 AM	0	0	0	
10:15 AM	4	4	8	
10:30 AM	2	4	6	
10:45 AM	4	5	9	23
11:00 AM	13	4	17	40
11:15 AM	0	2	2	34
11:30 AM	0	0	0	28
11:45 AM	6	4	10	29
12:00 PM	4	4	8	20
12:15 PM	2	1	3	21
12:30 PM	4	4	8	29
12:45 PM	12	4	16	35
1:00 PM	6	4	10	37
1:15 PM	6	4	10	44
1:30 PM	3	2	5	41
1:45 PM	12	4	16	41
2:00 PM	8	8	16	47
2:15 PM	4	4	8	45
2:30 PM	10	6	16	56
2:45 PM	8	8	16	56
3:00 PM	2	4	6	46
3:15 PM	4	4	8	46
3:30 PM	0	4	4	34
3:45 PM	4	2	6	24
4:00 PM	6	0	6	24
4:15 PM	0	4	4	20
4:30 PM	2	2	4	20
4:45 PM	2	3	5	19
5:00 PM	2	4	6	19
5:15 PM	0	6	6	21
5:30 PM	2	3	5	22
5:45 PM	0	1	1	18
6:00 PM	0	4	4	16
6:15 PM	0	2	2	12
6:30 PM	0	3	3	10
6:45 PM	6	0	6	15
7:00 PM	0	6	6	17
7:15 PM	6	1	7	22
7:30 PM	4	5	9	28
7:45 PM	0	1	1	23
8:00 PM	6	1	7	24
8:15 PM	2	0	2	19
8:30 PM	2	2	4	14
8:45 PM	0	2	2	15
9:00 PM	0	6	6	14
9:15 PM	0	1	1	13
9:30 PM	0	0	0	9
9:45 PM	10	6	16	23
10:00 PM	0	0	0	17
10:15 PM	0	0	0	16
10:30 PM	0	0	0	16
10:45 PM	0	0	0	0
Total	168	153	321	

Table B-2
Parking Study Traffic Data
Thursday June 9, 2005 (11:00 AM to 10:00 PM)

Time Began	Number of Parked Cars
11:00 AM	21
11:30 AM	26
12:00 PM	27
12:30 PM	23
1:00 PM	23
1:30 PM	26
2:00 PM	27
2:30 PM	26
3:00 PM	25
3:30 PM	20
4:00 PM	19
4:30 PM	17
5:00 PM	15
5:30 PM	15
6:00 PM	14
6:30 PM	14
7:00 PM	14
7:30 PM	18
8:00 PM	16
8:30 PM	18
9:00 PM	15
9:30 PM	12
10:00 PM	9

Table C-1
Trip Generation Study Traffic Data
Friday June 10, 2005 (11:00 AM to 11:00 PM)

Time Began	Vehicles In	Vehicles Out	Total Vehicles	Peak Hour Total
10:00 AM	4	2	6	
10:15 AM	4	4	8	
10:30 AM	0	8	8	
10:45 AM	0	3	3	25
11:00 AM	2	4	6	25
11:15 AM	0	2	2	19
11:30 AM	2	3	5	16
11:45 AM	0	8	8	21
12:00 PM	0	1	1	16
12:15 PM	10	1	11	25
12:30 PM	6	1	7	27
12:45 PM	12	6	18	37
1:00 PM	0	7	7	43
1:15 PM	5	9	14	46
1:30 PM	4	1	5	44
1:45 PM	6	6	12	38
2:00 PM	0	2	2	33
2:15 PM	12	3	15	34
2:30 PM	0	7	7	36
2:45 PM	2	0	2	26
3:00 PM	16	1	17	41
3:15 PM	14	6	20	46
3:30 PM	7	4	11	50
3:45 PM	2	6	8	56
4:00 PM	8	2	10	49
4:15 PM	6	6	12	41
4:30 PM	4	2	6	36
4:45 PM	6	5	11	39
5:00 PM	9	6	15	44
5:15 PM	10	1	11	43
5:30 PM	0	0	0	37
5:45 PM	2	4	6	32
6:00 PM	17	6	23	40
6:15 PM	7	8	15	44
6:30 PM	2	0	2	46
6:45 PM	10	3	13	53
7:00 PM	2	8	10	40
7:15 PM	1	8	9	34
7:30 PM	4	6	10	42
7:45 PM	2	1	3	32
8:00 PM	9	1	10	32
8:15 PM	4	6	10	33
8:30 PM	4	3	7	30
8:45 PM	4	5	9	36
9:00 PM	2	8	10	36
9:15 PM	4	2	6	32
9:30 PM	2	6	8	33
9:45 PM	0	0	0	24
10:00 PM	8	2	10	24
10:15 PM	3	9	12	30
10:30 PM	2	1	3	25
10:45 PM	0	0	0	25
11:00 PM	4	10	14	29
11:15 PM	0	9	9	26
11:30 PM	0	8	8	31
11:45 PM	0	0	0	31
Total	244	231	475	

Table C-2
Parking Study Traffic Data
Friday June 10, 2005 (11:00 AM to 11:00 PM)

Time Began	Number of Parked Cars
11:00 AM	21
11:30 AM	19
12:00 PM	21
12:30 PM	25
1:00 PM	32
1:30 PM	38
2:00 PM	30
2:30 PM	27
3:00 PM	26
3:30 PM	32
4:00 PM	32
4:30 PM	25
5:00 PM	27
5:30 PM	28
6:00 PM	30
6:30 PM	25
7:00 PM	26
7:30 PM	25
8:00 PM	28
8:30 PM	27
9:00 PM	19
9:30 PM	19
10:00 PM	18
10:30 PM	14
11:00 PM	9

Table D-1
Trip Generation Study Traffic Data
Saturday June 11, 2005 (9:00 AM to 11:00 PM)

Time Began	Vehicles In	Vehicles Out	Total Vehicles	Peak Hour Total
8:00 AM	0	4	4	
8:15 AM	2	6	8	
8:30 AM	2	6	8	
8:45 AM	3	1	4	24
9:00 AM	2	1	3	23
9:15 AM	0	2	2	17
9:30 AM	4	4	8	17
9:45 AM	2	0	2	15
10:00 AM	4	1	5	17
10:15 AM	2	8	10	25
10:30 AM	4	2	6	23
10:45 AM	4	6	10	31
11:00 AM	2	2	4	30
11:15 AM	12	8	20	40
11:30 AM	0	9	9	43
11:45 AM	8	6	14	47
12:00 PM	4	8	12	55
12:15 PM	7	9	16	51
12:30 PM	6	6	12	54
12:45 PM	5	4	9	49
1:00 PM	4	8	12	49
1:15 PM	6	8	14	47
1:30 PM	6	3	9	44
1:45 PM	11	4	15	50
2:00 PM	9	1	10	48
2:15 PM	6	6	12	46
2:30 PM	4	6	10	47
2:45 PM	8	6	14	46
3:00 PM	7	2	9	45
3:15 PM	14	4	18	51
3:30 PM	10	4	14	55
3:45 PM	4	4	8	49
4:00 PM	6	0	[illegible]	46
4:15 PM	2	6	[illegible]	36
4:30 PM	4	5	[illegible]	31
4:45 PM	11	1	[illegible]	35
5:00 PM	2	4	[illegible]	35
5:15 PM	3	2	5	32
5:30 PM	4	6	10	33
5:45 PM	4	5	9	30
6:00 PM	7	8	15	39
6:15 PM	2	6	8	42
6:30 PM	0	6	6	38
6:45 PM	4	0	4	33
7:00 PM	6	4	10	28
7:15 PM	4	8	12	32
7:30 PM	4	6	10	36
7:45 PM	6	2	8	40
8:00 PM	3	1	4	34
8:15 PM	2	2	4	26
8:30 PM	6	6	12	28
8:45 PM	0	4	4	24
9:00 PM	5	5	10	30
9:15 PM	2	5	7	33
9:30 PM	1	8	9	30
9:45 PM	4	4	8	34
10:00 PM	1	8	9	33
10:15 PM	5	9	14	40
10:30 PM	0	1	1	32
10:45 PM	0	0	0	24
11:00 PM	3	0	3	18
11:15 PM	0	9	9	13
11:30 PM	0	0	0	12
11:45 PM	0	0	0	12
Total	[illegible]	[illegible]	[illegible]	[illegible]

Table D-2
Parking Study Traffic Data
June 11, 2005 (9:00 AM to 11:00 PM)

Time Began	Number of Parked Cars
9:00 AM	12
9:30 AM	9
10:00 AM	15
10:30 AM	22
11:00 AM	25
11:30 AM	31
12:00 PM	29
12:30 PM	28
1:00 PM	26
1:30 PM	29
2:00 PM	31
2:30 PM	32
3:00 PM	38
3:30 PM	42
4:00 PM	32
4:30 PM	27
5:00 PM	27
5:30 PM	21
6:00 PM	19
6:30 PM	25
7:00 PM	24
7:30 PM	19
8:00 PM	24
8:30 PM	21
9:00 PM	23
9:30 PM	26
10:00 PM	18
10:30 PM	8
11:00 PM	7

APPENDIX B

TRIP GENERATION AND PARKING STUDY CALCULATIONS

TRIP GENERATION STUDY (K-1 SPEED CARLSBAD)

LINSCOTT LAW & GREENSPAN engineers

* Carlsbad Facility = 70,220 SF

* Wednesday - June 8, 2005

- ADT = 285 cars (137 inbound and 148 outbound)

- ADT rate = $\frac{285}{70,220}(1000) = 4.06 \frac{\text{trips}}{1000\,SF}$

- PM Peak Hour Rate = $\frac{33}{285} = 11.6\% \Rightarrow 0.471 \frac{\text{trips}}{1000\,SF}$

- Peak Parking Demand = 32 occupied spaces

---

* Thursday - June 9, 2005

- ADT = 321 cars (168 inbound and 153 outbound)

- ADT rate = $\frac{321}{70,220}(1000) = 4.57 \frac{\text{trips}}{1000\,SF}$

- PM Peak Hour Rate = $\frac{22}{321} = 6.9\% \Rightarrow 0.315 \frac{\text{trips}}{1000\,SF}$

- Peak Parking Demand = 29 occupied spaces

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* Friday - June 10, 2005

- ADT = 475 trips (244 inbound and 231 outbound)

- ADT rate = $\frac{475}{70,220}(1000) = 6.76 \frac{\text{trips}}{1000\,SF}$

- PM Peak Hour Rate = $\frac{44}{475} = 9.3\% \Rightarrow 0.629 \frac{\text{trips}}{1000\,SF}$

- Peak Parking Demand = 38 occupied spaces

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* Saturday - June 11, 2005

- ADT = 543 trips (243 inbound and 290 outbound)

- ADT rate = $\frac{543}{70,220}(1000) = 7.73 \frac{\text{trips}}{1000\,SF}$

- PM Peak Hour Rate = $\frac{35}{543} = 6.4\% \Rightarrow 0.495 \frac{\text{trips}}{1000\,SF}$

- Peak Parking Demand = 42 occupied spaces

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* Weekday Average Rate = $\frac{4.06 + 4.57 + 6.76}{3} = \boxed{5.13 \frac{\text{trips}}{1000\,SF}}$

* PM Peak Hour Average Rate = $\frac{0.471 + 0.315 + 0.629}{3} = \boxed{0.472 \frac{\text{trips}}{1000\,SF}}$

* Peak Parking Rate = $\frac{70,220}{42} \Rightarrow \boxed{1 \text{ space per } 1672\,SF}$