

Darnell & ASSOCIATES

TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

January 2, 2018

Gregory Hann
Empire Design Group
P.O. Box 944
Murrieta CA, 92564



D&A Ref. No: 181102

Subject: Revised Parking Analysis for the redevelopment of the existing Chevron Station with 8 fueling positions project to provide 12 fueling positions and a 3,800 Square Foot C-Store at the northwest corner of Riverside Drive/Lakeshore, Lake Elsinore CA.

Dear Mr. Hann,

In accordance with your authorization, Darnell & Associates has analyzed the on-site parking needs for the proposed redevelopment of the project site to determine the adequacy of the proposed 12 parking spaces to serve the 3,800 square foot C-Store and 12 fueling positions. Figure 1 presents the proposed site layout, fueling positions and access to/from the project site. The report has been revised to respond to the City of Lake Elsinore City Engineer comments dated December 19, 2018.

To determine the adequacy of the proposed site to accommodate gasoline customers and the C-Store customers we have previously conducted vehicle demands surveys at three locations in San Diego on March 15, 2017 and March 16, 2017. The survey locations included a self-service drive thru carwash. The activity at the carwash did not indicate an impact on parking needs of each site.

The parking demand surveys collected vehicle demand every ten (10) minutes from 7:30 AM to 9:30 AM, 11:30 AM to 1:30 PM and 4:30 PM to 6:30 PM. Every ten (10) minutes. We counted the number of vehicles stopped at the gasoline fueling positions and the number of vehicles parked on-site. The data was then used to access the adequacy of the proposed parking.

SURVEY SITE LOCATION AND DESCRIPTION

The three (3) sites selected are as follows;

Site 1: ARCO AM/PM located at the southwest corner of Rancho Bernardo Road at Bernardo Center Drive, San Diego.

Site 2: Shell Facility located at the northwest corner of Miramar Road at Camino Ruiz, San Diego.

Site 3: ARCO AM/PM located at the southwest corner of Magnolia Avenue at Bradley Avenue, El Cajon.

Table 1 provides a summary of each study site characteristics. The three (3) study sites were surveyed for two (2) days in March 2017 from the hours of 6:30 AM to 8:30 AM, 11:30 AM to 1:30 PM and 4:30 PM to 6:30 PM. Observations and recording of vehicle demand every 10 minutes was collected as follows:

- Vehicles stopped at fueling positions getting gas;
- Vehicles parked on-site; and
- Total vehicle demand.



16830 LAKESHORE DRIVE
LAKE ELSINORE, CA 92530
TEL: 951-261-1100
FAX: 951-261-1101
WWW.EMPIREDG.COM

AMORE ENTERPRISES, INC.

CHEVRON CANOPY RAZE & REBUILD, C-STORE
16830 LAKESHORE DRIVE
LAKE ELSINORE, CA 92530

PROJECT NO. 16830
DATE: 05/05/2010
BY: J. B. BROWN
CHECKED BY: J. B. BROWN
SCALE: 1/8" = 1'-0"



NO.	DATE	REVISION
1	05/05/2010	ISSUED FOR PERMIT

SHEET 1 OF 1

AS 1

SITE DATA

ADDRESS: 16830 LAKESHORE DRIVE, LAKE ELSINORE, CA 92530
LOT: 100
OWNER: AMORE ENTERPRISES, INC.
DESIGNER: EMPIRE DESIGN GROUP
ESTIMATED COST: \$1,111,111
ESTIMATED AREA: 1.11 AC
ZONING: C-200
PERMIT NO.: 16830-0001
DATE: 05/05/2010
PROJECT: CHEVRON CANOPY RAZE & REBUILD, C-STORE

OWNER / APPLICANT

AMORE ENTERPRISES, INC.
16830 LAKESHORE DRIVE
LAKE ELSINORE, CA 92530
TEL: 951-261-1100
FAX: 951-261-1101
WWW.AMOREENTERPRISES.COM

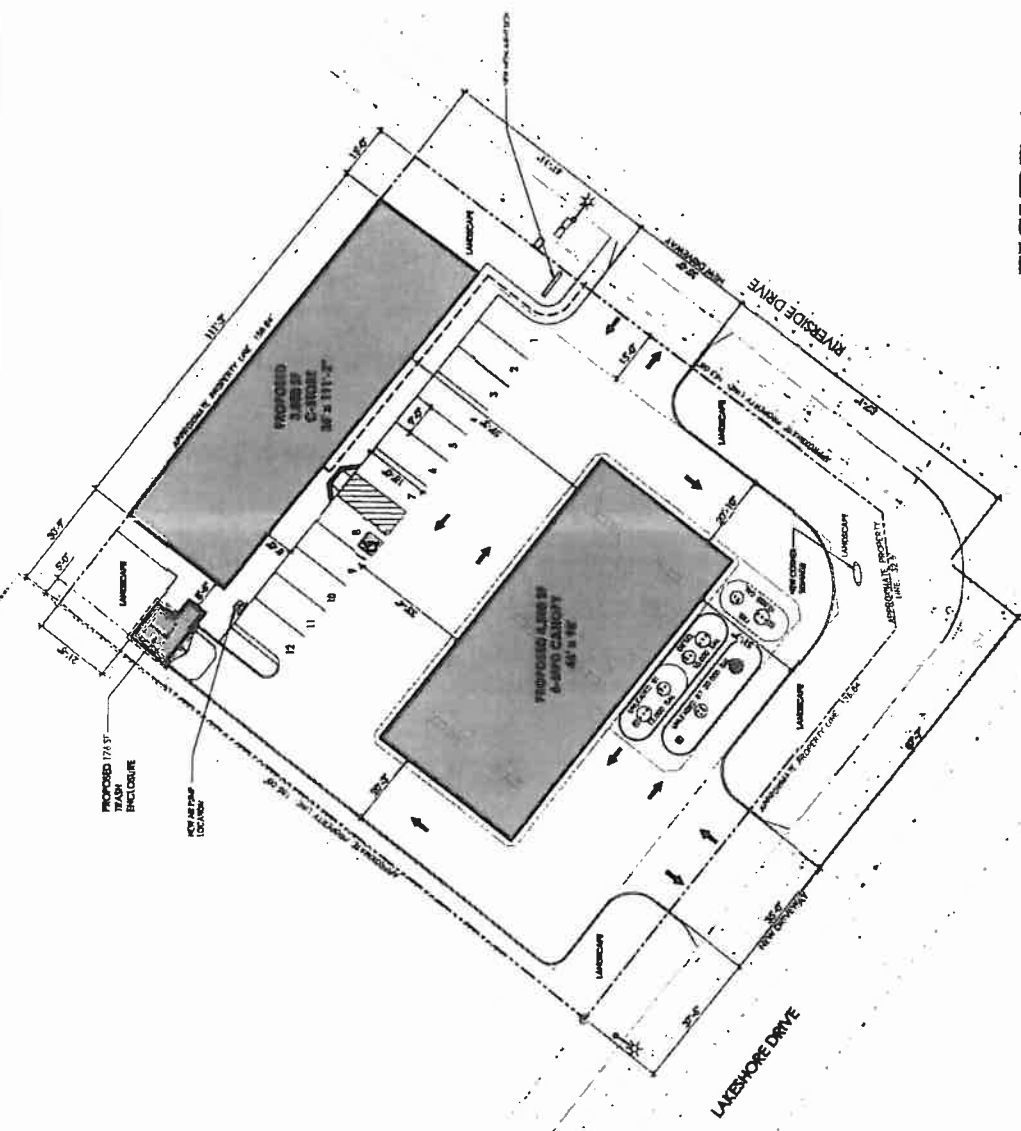
ARCHITECT / APPLICANTS' REP.

EMPIRE DESIGN GROUP
16830 LAKESHORE DRIVE
LAKE ELSINORE, CA 92530
TEL: 951-261-1100
FAX: 951-261-1101
WWW.EMPIREDG.COM

VICINITY MAP



SITE



**FIGURE 1
PROPOSED PROJECT SITE PLAN**

ARCHITECTURAL CONCEPTUAL SITE PLAN

SCALE: 1/8" = 1'-0"

Aerial photographs for each site are presented on Figures 2, 3 and 4 respectively. The characteristics of each site are presented in Table 1. Table 1 provides a summary of the C-Store square footage, fueling positions, marked parking stalls on-site.

Table 1 Summary of Survey Sites Facilities				
Survey Site Location	C-Store Square Footage	Fueling Positions	On-Site Marked Parking Stalls	Total Vehicle Parking and Fueling Positions
Site 1: ARCO AM/PM Bernardo Road at Bernardo Center Drive, San Diego	2,400	12	8	20
Site 2: Shell Miramar Road at Camino Ruiz, San Diego	3,444	12	17	29
Site 3: ARCO AM/PM Magnolia Avenue at Bradley Avenue, El Cajon/ San Diego County,	2,805	12	10	22

Site 1: ARCO AM/PM at Rancho Bernardo Road at Bernardo Center Drive, San Diego:

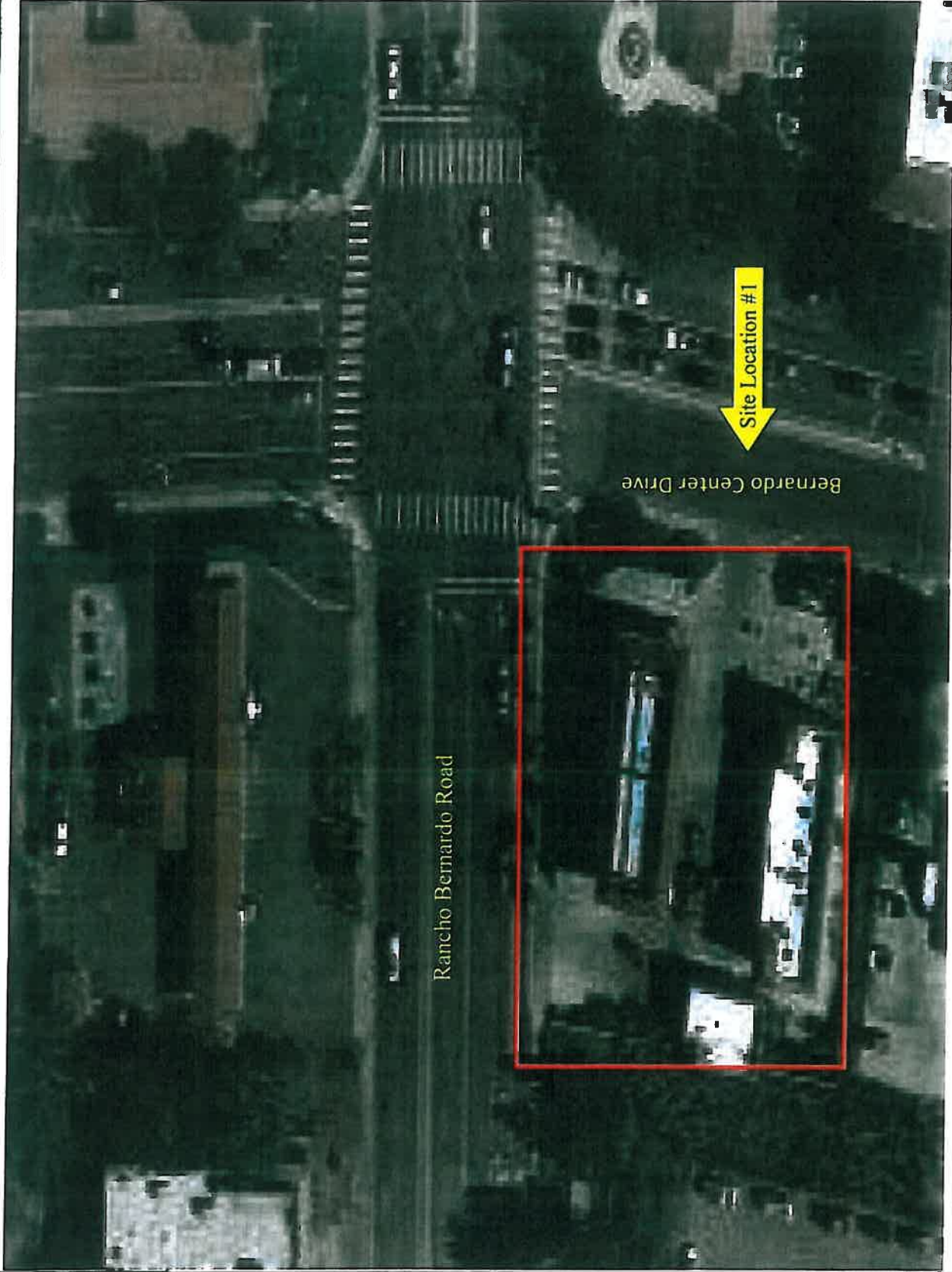
Table 2 presents the survey data for Rancho Bernardo Road at Bernardo Center Drive. Table 2 presents the on-site parking demands for each ten (10) minute time period. Review of Table 2 identifies the maximum use of on-site parking to be four (4) spaces for both days surveyed. Table 2 also provides a summary of parked vehicles and vehicles at the fueling positions getting gas. The maximum total demand was for fifteen (15) vehicles on Wednesday March 15, 2017 and Thursday March 16, 2017. Also presented on Table 2 is the C-Store occupied parking demand, the total vehicle parking and fueling position parking demand per thousand square feet (KSF) of the C-Store.

Site 2: Shell at Miramar Road at Camino Ruiz, San Diego:

Table 3 summarize the parking data collected for the Miramar Road at Camino Ruiz, San Diego site. Review of Table 3 shows the maximum vehicles parked on-site was nine (9) vehicles at 7:30 AM on Thursday March 16, 2017 and the maximum total demand for parked vehicles and vehicles stopped at the fueling positions was eighteen (18) vehicles for that same time period. It is noted that no vehicles were observed to park off-site and enter the C-Store during the survey time. Table 3 also shows the C-Store occupied parking demand, the total vehicle parking and fueling position parking demand per thousand square feet (KSF) of the C-Store.

Site 3: ARCO AM/PM at Magnolia Avenue at Bradley Avenue, El Cajon:

Table 4 presents the survey data collected for the Magnolia Avenue at Bradley Avenue, El Cajon site. Table 4 summarizes the on-site parking demands during the survey time periods. Review of Table 4 shows the maximum on- site parking demand was ten (10) vehicles on Thursday March 16, 2017 at 12:30 PM. Also Presented on Table 4 is the total on-site vehicle demand for vehicles parking and stopping at the fueling positions. The peak demand was eighteen (18) vehicles at 6:20 PM on March 16, 2017. Table 4 summarizes the C-Store occupied parking demand, the total vehicle parking and fueling position parking demand per thousand square feet (KSF) of the C-Store.



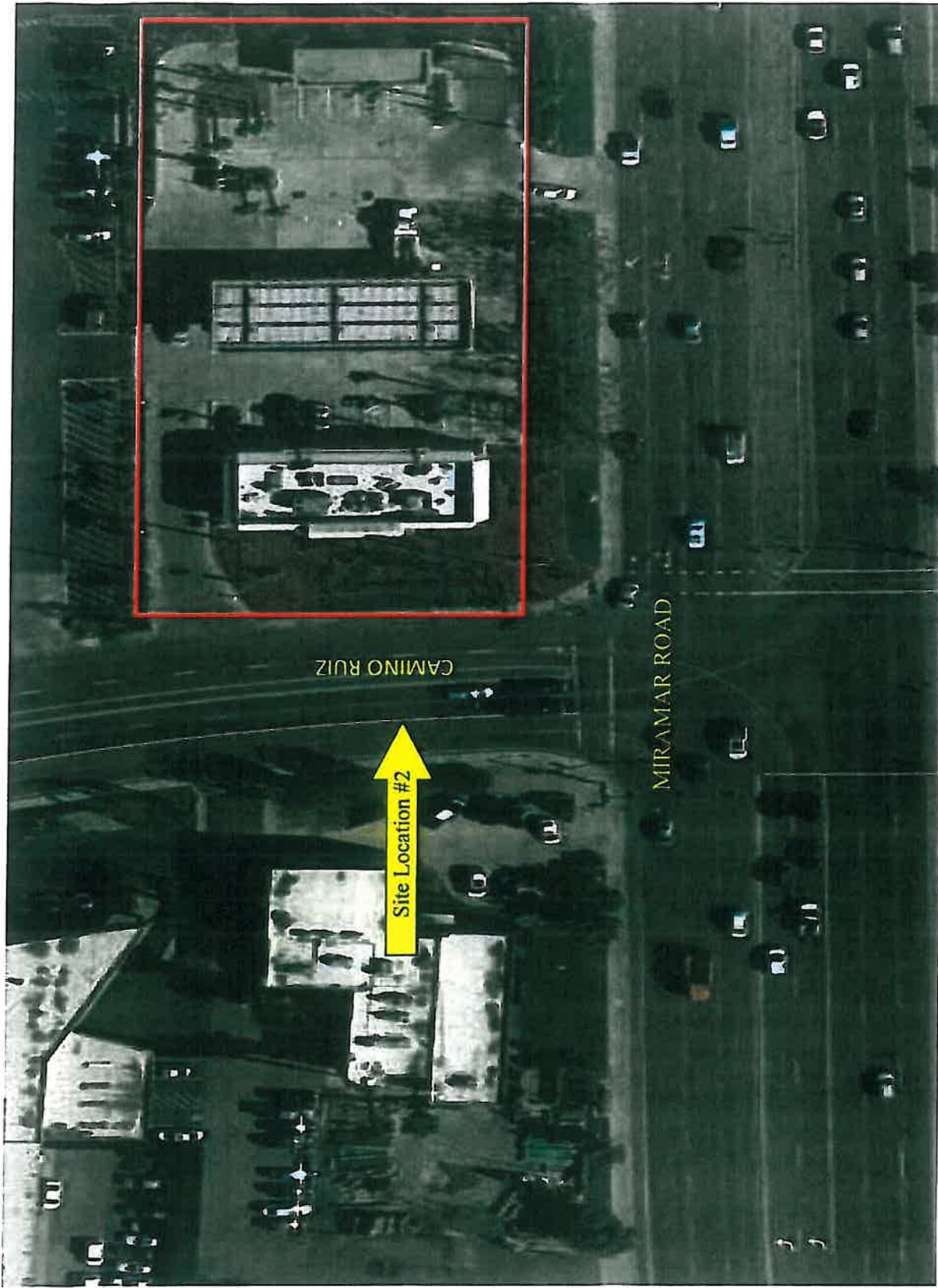
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181102-AA.dwg

12-05-2018 JAM

FIGURE 2

**Aerial Photo Study Site Location #1
Bernardo Rd/ Bernardo Center Drive ARCO AM/PM**



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181102-AA.dwg

12-05-2018

JAM

FIGURE 3

**Aerial Photo Study Site Location #2
Miramar Rd/ Camino Ruiz Shell AM/PM**



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181102-AA.dwg

12-05-2018 JAM

FIGURE 4

**Aerial Photo Study Site Location #3
Magnolia Ave/ Bradley Ave. Arco AM/PM**

Table 2 - Parking Summary for the Rancho Bernardo Road 2,400 S.F. Convenience Store , Gas Station and Carwash (Arco)										
Date:		Wednesday, March 15, 2017					Thursday, March 16, 2017			
Time:	Occupied Pumps	Occupied Parking	Total	Occupied Parking Demand Per KSF of C-Store	Total Parking Demand per KSF of C-Store	Occupied Pumps	Occupied Parking	Total	Occupied Parking Demand Per KSF of C-Store	Total Parking Demand per KSF of C-Store
7:30 AM	8	4	12	600	per KSF	6	3	9	800	per KSF
7:40 AM	6	3	9	800	per KSF	6	4	10	600	per KSF
7:50 AM	7	2	9	1200	per KSF	7	3	10	800	per KSF
8:00 AM	8	3	11	800	per KSF	8	4	12	600	per KSF
8:10 AM	5	2	7	1200	per KSF	8	2	10	1200	per KSF
8:20 AM	6	3	9	800	per KSF	4	2	6	1200	per KSF
8:30 AM	7	2	9	1200	per KSF	6	2	8	1200	per KSF
8:40 AM	5	1	6	2400	per KSF	5	1	6	2400	per KSF
8:50 AM	4	3	7	800	per KSF	4	2	6	1200	per KSF
9:00 AM	9	4	13	600	per KSF	4	1	5	2400	per KSF
9:10 AM	9	4	13	600	per KSF	5	4	9	600	per KSF
9:20 AM	4	4	8	600	per KSF	5	3	8	800	per KSF
9:30 AM	5	2	7	1200	per KSF	2	1	3	2400	per KSF
11:30 AM	7	1	8	2400	per KSF	4	4	8	600	per KSF
11:40 PM	9	3	12	800	per KSF	3	2	5	1200	per KSF
11:50 PM	8	1	9	2400	per KSF	4	3	7	800	per KSF
Noon	10	1	11	2400	per KSF	8	4	12	600	per KSF
12:10 PM	5	1	6	2400	per KSF	10	4	14	600	per KSF
12:20 PM	7	3	10	800	per KSF	7	2	9	1200	per KSF
12:30 PM	4	2	6	1200	per KSF	3	3	6	800	per KSF
12:40 PM	5	3	8	800	per KSF	5	4	9	600	per KSF
12:50 PM	6	4	10	600	per KSF	7	3	10	800	per KSF
1:00 PM	8	4	12	600	per KSF	6	4	10	600	per KSF
1:10 PM	12	1	13	2400	per KSF	4	1	5	2400	per KSF
1:20 PM	7	2	9	1200	per KSF	7	3	10	800	per KSF
1:30 PM	4	1	5	2400	per KSF	5	2	7	1200	per KSF
4:30 PM	5	3	8	800	per KSF	4	1	5	2400	per KSF
4:40 PM	6	1	7	2400	per KSF	5	3	8	800	per KSF
4:50 PM	7	2	9	1200	per KSF	8	2	10	1200	per KSF
5:00 PM	9	1	10	2400	per KSF	7	0	7	2400	per KSF
5:10 PM	12 *	3	15**	800	per KSF	7	2	9	1200	per KSF
5:20 PM	12*	3	15**	800	per KSF	11*	1	12	2400	per KSF
5:30 PM	10	1	11	2400	per KSF	10	1	11	2400	per KSF
5:40 PM	8	2	10	1200	per KSF	9	3	12	800	per KSF
5:50 PM	9	3	12	800	per KSF	10	1	11	2400	per KSF
6:00 PM	11	4	15**	600	per KSF	11*	4	15**	600	per KSF
6:10 PM	9	4	13	600	per KSF	10	3	13	800	per KSF
6:20 PM	7	3	10	800	per KSF	8	3	11	800	per KSF
6:30 PM	7	3	10	800	per KSF	7	4	11	600	per KSF

ksf = 1,000 square foot, * = Identifies Max On-Site Parking Demand, ** = Identifies Mak parked vehicles plus vehicles parked at fueling positions.

kSF = 1,000 square foot, * = Identifies Max On-Site Parking Demand, ** = Identifies Max parked vehicles plus vehicles parked at fueling positions.

Table 3 - Parking Summary for the Miramar Road 3,444 S. F. Convenience Store, Gas Station and Carwash										
Date:	Wednesday, March 15, 2017					Thursday, March 16, 2017				
Time:	Occupied Pumps	Occupied Parking	Total	Occupied Parking Demand Per KSF of C-Store	Total Parking Demand per KSF of C-Store	Occupied Pumps	Occupied Parking	Total	Occupied Parking Demand Per KSF of C-Store	Total Parking Demand per KSF of C-Store
7:30 AM	8	8*	16**	431 per KSF	215 per KSF	9	9*	18**	383 per KSF	191 per KSF
7:40 AM	6	8*	16**	431 per KSF	215 per KSF	5	8	13	431 per KSF	265 per KSF
7:50 AM	7	7	14	492 per KSF	246 per KSF	5	6	11	574 per KSF	313 per KSF
8:00 AM	8	8*	16**	431 per KSF	215 per KSF	3	5	8	689 per KSF	431 per KSF
8:10 AM	5	6	11	574 per KSF	313 per KSF	8	6	14	574 per KSF	246 per KSF
8:20 AM	5	6	11	574 per KSF	313 per KSF	5	3	8	1148 per KSF	431 per KSF
8:30 AM	3	4	7	861 per KSF	492 per KSF	6	4	10	861 per KSF	344 per KSF
8:40 AM	2	3	5	1148 per KSF	689 per KSF	6	5	11	689 per KSF	313 per KSF
8:50 AM	4	3	7	1148 per KSF	492 per KSF	5	3	8	1148 per KSF	431 per KSF
9:00 AM	6	5	11	689 per KSF	313 per KSF	6	3	9	1148 per KSF	383 per KSF
9:10 AM	6	4	10	861 per KSF	344 per KSF	7	4	11	861 per KSF	313 per KSF
9:20 AM	7	4	11	861 per KSF	313 per KSF	9	5	14	689 per KSF	246 per KSF
9:30 AM	5	5	10	689 per KSF	344 per KSF	3	7	10	492 per KSF	344 per KSF
11:30 AM	3	4	7	861 per KSF	492 per KSF	4	7	11	492 per KSF	313 per KSF
11:40 PM	2	5	7	689 per KSF	492 per KSF	4	6	10	574 per KSF	344 per KSF
11:50 PM	2	4	6	861 per KSF	574 per KSF	8	5	13	689 per KSF	265 per KSF
Noon	6	3	9	1148 per KSF	383 per KSF	1	3	4	1148 per KSF	861 per KSF
12:10 PM	5	5	10	689 per KSF	344 per KSF	2	8	10	431 per KSF	344 per KSF
12:20 PM	6	5	11	689 per KSF	313 per KSF	4	4	8	861 per KSF	431 per KSF
12:30 PM	5	5	10	689 per KSF	344 per KSF	3	2	5	1722 per KSF	689 per KSF
12:40 PM	7	6	13	574 per KSF	265 per KSF	3	4	7	861 per KSF	492 per KSF
12:50 PM	3	3	6	1148 per KSF	574 per KSF	6	4	10	861 per KSF	344 per KSF
1:00 PM	1	4	5	861 per KSF	689 per KSF	4	3	7	1148 per KSF	492 per KSF
1:10 PM	2	5	7	689 per KSF	492 per KSF	9	5	14	689 per KSF	246 per KSF
1:20 PM	4	4	8	861 per KSF	431 per KSF	5	5	10	689 per KSF	344 per KSF
1:30 PM	3	4	7	861 per KSF	492 per KSF	2	5	7	689 per KSF	492 per KSF
4:30 PM	6	3	9	1148 per KSF	383 per KSF	3	2	5	1722 per KSF	689 per KSF
4:40 PM	3	2	5	1722 per KSF	689 per KSF	3	4	7	861 per KSF	492 per KSF
4:50 PM	8	4	12	861 per KSF	287 per KSF	6	5	11	689 per KSF	313 per KSF
5:00 PM	5	2	7	1722 per KSF	492 per KSF	6	1	7	3444 per KSF	492 per KSF
5:10 PM	5	5	10	689 per KSF	344 per KSF	6	1	7	3444 per KSF	492 per KSF
5:20 PM	6	4	10	861 per KSF	344 per KSF	4	3	7	1148 per KSF	492 per KSF
5:30 PM	8	3	11	1148 per KSF	313 per KSF	7	3	10	1148 per KSF	344 per KSF
5:40 PM	7	3	10	1148 per KSF	344 per KSF	5	2	7	1722 per KSF	492 per KSF
5:50 PM	6	1	7	3444 per KSF	492 per KSF	5	1	6	3444 per KSF	574 per KSF
6:00 PM	8	4	12	861 per KSF	287 per KSF	6	1	7	3444 per KSF	492 per KSF
6:10 PM	7	3	10	1148 per KSF	344 per KSF	7	2	9	1722 per KSF	383 per KSF
6:20 PM	6	2	8	1722 per KSF	431 per KSF	5	1	6	3444 per KSF	574 per KSF
6:30 PM	6	1	7	3444 per KSF	492 per KSF	3	2	5	1722 per KSF	689 per KSF

kSF = 1,000 square foot, * = Identifies Max On-Site Parking Demand, ** = Identifies Max parked vehicles plus vehicles parked at fueling positions.

Table 4 - Parking Summary for the Magnolia Avenue 2,805 S. F. Convenience Store , Gas Station and Carwash (Arco)											
Date:	Wednesday, March 15, 2017						Thursday, March 16, 2017				
Time:	Occupied Pumps	Occupied Parking	Total	Occupied Parking Demand Per KSF of C-Store	Total Parking Demand per KSF of C-Store	Occupied Pumps	Occupied Parking	Total	Occupied Parking Demand Per KSF of C-Store	Total Parking Demand per KSF of C-Store	
7:30 AM	8	4	12	701 per KSF	234 per KSF	6	7	13	401 per KSF	216 per KSF	
7:40 AM	6	8	14	351 per KSF	200 per KSF	8	8	16	351 per KSF	175 per KSF	
7:50 AM	6	5	11	561 per KSF	255 per KSF	7	7	14	401 per KSF	200 per KSF	
8:00 AM	9	7	16	401 per KSF	175 per KSF	10	5	15	561 per KSF	187 per KSF	
8:10 AM	11	5	16	561 per KSF	175 per KSF	8	9	17	312 per KSF	165 per KSF	
8:20 AM	8	3	11	935 per KSF	255 per KSF	6	7	13	401 per KSF	216 per KSF	
8:30 AM	6	8	14	351 per KSF	200 per KSF	5	9	14	312 per KSF	200 per KSF	
8:40 AM	5	7	12	401 per KSF	234 per KSF	6	7	13	401 per KSF	216 per KSF	
8:50 AM	6	5	11	561 per KSF	255 per KSF	4	5	9	561 per KSF	312 per KSF	
9:00 AM	2	6	8	468 per KSF	351 per KSF	2	8	10	351 per KSF	281 per KSF	
9:10 AM	6	6	12	468 per KSF	234 per KSF	3	5	8	561 per KSF	351 per KSF	
9:20 AM	7	6	13	468 per KSF	216 per KSF	2	6	8	468 per KSF	351 per KSF	
9:30 AM	5	6	11	468 per KSF	255 per KSF	4	5	9	561 per KSF	312 per KSF	
11:30 AM	6	3	9	935 per KSF	312 per KSF	5	7	12	401 per KSF	234 per KSF	
11:40 PM	6	9	15	312 per KSF	187 per KSF	3	6	9	468 per KSF	312 per KSF	
11:50 PM	8	8	16	351 per KSF	175 per KSF	8	9	17**	312 per KSF	165 per KSF	
Noon	9	8	17	351 per KSF	165 per KSF	8	7	15	401 per KSF	187 per KSF	
12:10 PM	8	10*	18**	281 per KSF	156 per KSF	7	8	15	351 per KSF	187 per KSF	
12:20 PM	6	7	11	401 per KSF	255 per KSF	8	8	16	351 per KSF	175 per KSF	
12:30 PM	6	9	15	312 per KSF	187 per KSF	5	10	15	281 per KSF	187 per KSF	
12:40 PM	5	9	14	312 per KSF	200 per KSF	6	9	15	312 per KSF	187 per KSF	
12:50 PM	5	7	12	401 per KSF	234 per KSF	8	9	17**	312 per KSF	165 per KSF	
1:00 PM	7	8	15	351 per KSF	187 per KSF	6	8	14	351 per KSF	200 per KSF	
1:10 PM	4	7	11	401 per KSF	255 per KSF	8	8	16	351 per KSF	175 per KSF	
1:20 PM	4	9	13	312 per KSF	216 per KSF	7	6	13	468 per KSF	216 per KSF	
1:30 PM	11	8	18**	351 per KSF	156 per KSF	5	5	10	561 per KSF	281 per KSF	
4:30 PM	3	9	12	312 per KSF	234 per KSF	5	8	13	351 per KSF	216 per KSF	
4:40 PM	4	7	11	401 per KSF	255 per KSF	6	8	14	351 per KSF	200 per KSF	
4:50 PM	2	7	9	401 per KSF	312 per KSF	4	7	11	401 per KSF	255 per KSF	
5:00 PM	8	5	13	561 per KSF	216 per KSF	6	9	15	312 per KSF	187 per KSF	
5:10 PM	7	8	15	351 per KSF	187 per KSF	6	9	15	312 per KSF	187 per KSF	
5:20 PM	8	8	16	351 per KSF	175 per KSF	4	8	12	351 per KSF	234 per KSF	
5:30 PM	9	8	17	351 per KSF	165 per KSF	8	6	14	468 per KSF	200 per KSF	
5:40 PM	10	7	17	401 per KSF	165 per KSF	9	8	17**	351 per KSF	165 per KSF	
5:50 PM	9	8	17	351 per KSF	165 per KSF	9	8	17**	351 per KSF	165 per KSF	
6:00 PM	8	7	15	401 per KSF	187 per KSF	8	9	17**	312 per KSF	165 per KSF	
6:10 PM	7	8	15	351 per KSF	187 per KSF	5	9	14	312 per KSF	200 per KSF	
6:20 PM	8	8	16	351 per KSF	175 per KSF	10	7	17**	401 per KSF	165 per KSF	
6:30 PM	5	7	12	401 per KSF	234 per KSF	6	9	15	312 per KSF	187 per KSF	

ksf = 1,000 square foot, * = Identifies Max On-Site Parking Demand, ** = Identifies Mak parked vehicles plus vehicles parked at fueling positions.

ksf = 1,000 square foot, * = Identifies Max On-Site Parking Demand, ** = Identifies Max parked vehicles plus vehicles parked at fueling positions.

PARKING ANALYSIS

Table 5 was then prepared for each site to calculate the peak site parking per square foot of C-Store divided by the maximum vehicle demand at the three (3) survey sites presented on Table 2, 3 and 4. The results will be used to calculate the peak parking demand based on the KSF of the C-Store at each site.

Table 5 – Summary of Surveyed Sites Maximum Service Station Site Parking Based on Square Footage divided by Maximum Demand			
Survey Site Location	C-store Square Footage	Peak Parking Demand	Parking Spaces per Square Feet of C- Store
Site 1: ARCO AM/PM Rancho Bernardo	2,400	4	600 sq. ft./space
Site 2: Shell Miramar Road	3,444	9	383 sq. ft./space
Site 3: ARCO AM/PM Bradley Avenue	2,805	9	312 sq. ft./space

We then calculated the peak parking space demand for the project based on the proposed 3,800 square foot C-Store with 12 fueling positions project, based on Table 5 Peak parking spaces per KSF at the three (3) sites surveyed. Table 6 presents the results.

Table 6 – Summary of the Projects C-Store Parking Demand based on the three (3) survey sites		
Survey Site Location	Table 5 Peak Parking Spaces per 1,000 Square Feet (KSF)	Total C-Store Parking (a)
Site 1: ARCO AM/PM Rancho Bernardo	1 space per 600 sq. ft.	7 spaces
Site 2: Shell Miramar Road	1 space per 383 sq. ft.	10 spaces
Site 3: ARCO AM/PM Bradley Avenue	1 space per 312 sq. ft.	12 spaces
(a) Based on 3,800 S. F. C-Store divided by space per square foot.		

Review of Table 6 shows a maximum of 12 parking spaces are required for the project based on the Site 3 data which represents the worst-case condition. Based on this analysis the proposed 12 parking spaces shown on Figure 1 Project Site Plan can be accommodated.

In summary the analysis of parking requirements for the Lake Elsinore Chevron Service Station Project presented on Figure 1 concludes that the proposed 12 parking spaces shown on the proposed site plan can accommodate the proposed project based on the surveys at the three (3) survey sites.

If you have any questions, please feel free to contact this office.

Sincerely,

Bill E. Darnell, P.E.

Firm Principal

BED/jam



Date Signed: 1/2/2019