



FINAL REVISED TRAFFIC IMPACT ANALYSIS

**ALDI FOOD MARKET**

La Habra, California  
August 29, 2016  
(original dated June 29, 2016)

*Prepared for:*

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LLG Ref. 2-15-3601-1



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## FINAL REVISED TRAFFIC IMPACT ANALYSIS

# ALDI FOOD MARKET

La Habra, California  
August 29, 2016

## 1.0 INTRODUCTION

This traffic impact analysis addresses the potential traffic impacts and circulation needs associated with the proposed Aldi Food Market Project (hereinafter referred to as Project). The proposed Project consists of the development of an 18,783 SF grocery store. The proposed Project is expected to be completed by Year 2018. The project site is comprised of two square-shaped parcels of land totaling 1.968±acres that is located north of Imperial Highway at the Wal-Mart Driveway in the City of La Habra, California.

This report documents the findings and recommendations of a traffic impact analysis conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine the potential impacts associated with the proposed Project. The traffic analysis evaluates the existing operating conditions at thirteen (13) key study intersections within the project vicinity and two (2) project driveways, estimates the trip generation potential of the proposed Project, and forecasts future operating conditions without and with the proposed Project. Where necessary, intersection improvements/mitigation measures are identified.

This traffic report satisfies the traffic impact requirements of the City of La Habra and is consistent with the most current *Congestion Management Program (CMP) for Orange County*. The Scope of Work for this traffic study, which is included in *Appendix A*, was developed in conjunction with City of La Habra Engineering Division staff.

The project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing peak hour traffic information has been collected at thirteen (13) key study intersections for use in the preparation of intersection level of service calculations. Information concerning cumulative projects (planned and/or approved) in the vicinity of the proposed Project has been researched at the City of La Habra, City of Fullerton and the City of Brea. Based on our research, there are eleven (11) cumulative projects in the City of La Habra and two (2) cumulative projects in the City of Brea within the vicinity of the subject site. As confirmed by City staff, these thirteen (13) planned and/or approved cumulative projects were considered in the cumulative traffic analysis for this project.

This traffic report analyzes existing and future weekday AM peak hour and PM peak hour traffic conditions for a near-term (Year 2018) traffic setting upon completion of the proposed Project. Peak hour traffic forecasts for the Year 2018 horizon year have been projected by increasing existing traffic volumes by an annual growth rate of 1.0% per year and adding traffic volumes generated by thirteen (13) cumulative projects.

## 1.1 Study Area

The thirteen (13) key study intersections selected for evaluation were based on discussions with City of La Habra Engineering Division staff. The thirteen (13) key study intersections listed below provide local access to the study area and define the extent of the boundaries for this traffic impact investigation.

### Key Study Intersections

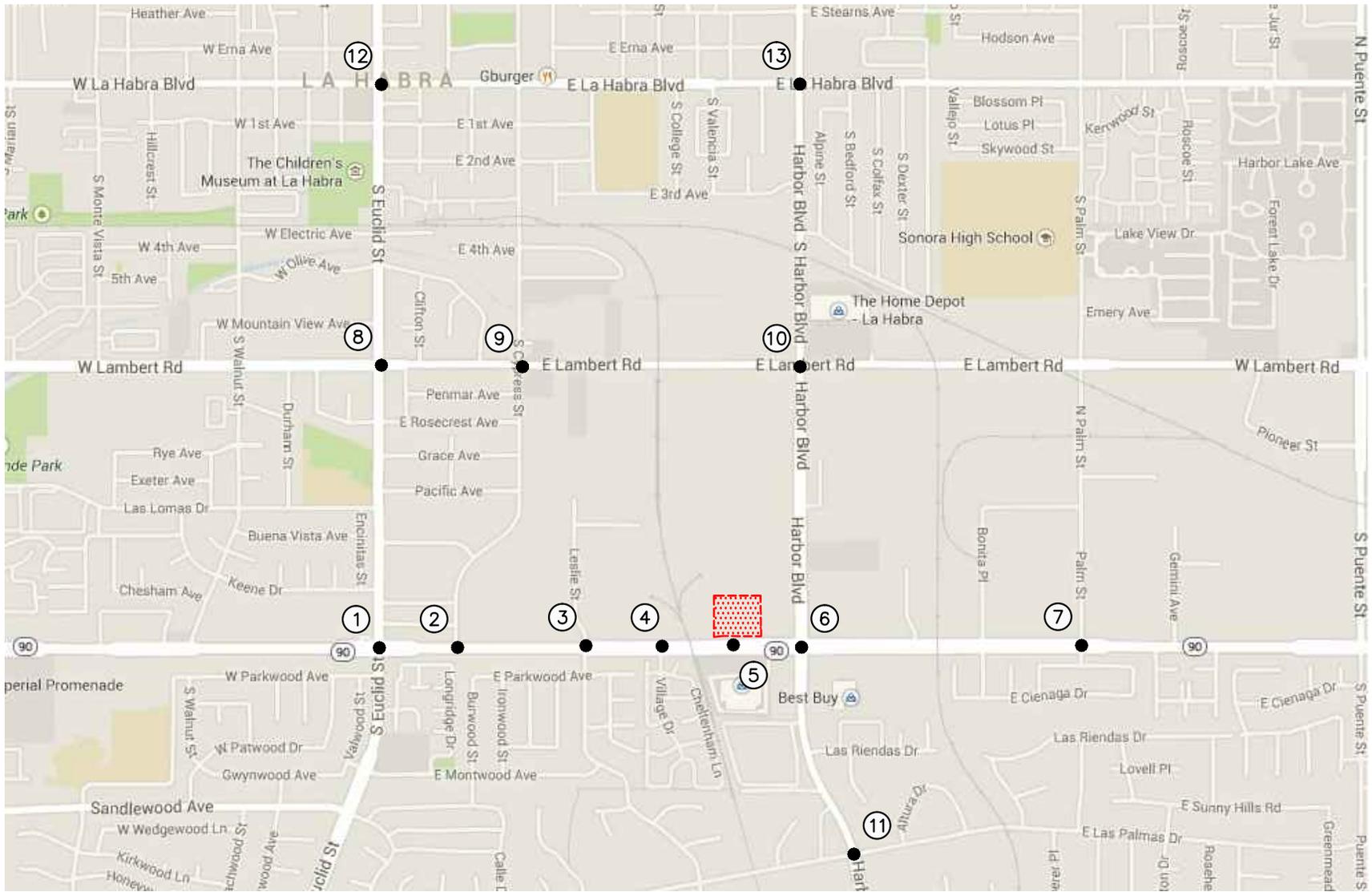
- |  |  |
|--|--|
| 1. Euclid Street at Imperial Highway<br>(La Habra/Caltrans)      | 8. Euclid Street at Lambert Road<br>(La Habra)                   |
| 2. Cypress Street at Imperial Highway<br>(La Habra/Caltrans)     | 9. Cypress Street at Lambert Road<br>(La Habra)                  |
| 3. Leslie Street at Imperial Highway<br>(La Habra/Caltrans)      | 10. Harbor Boulevard at Lambert Road<br>(La Habra/Fullerton)     |
| 4. Village Drive at Imperial Highway<br>(La Habra/Caltrans)      | 11. Harbor Boulevard at Las Palmas Drive<br>(La Habra/Fullerton) |
| 5. Wal-Mart Signal at Imperial Highway<br>(La Habra/Caltrans)    | 12. Euclid Street at La Habra Boulevard<br>(La Habra)            |
| 6. Harbor Boulevard at Imperial Highway**<br>(La Habra/Caltrans) | 13. Harbor Boulevard at La Habra Boulevard<br>(La Habra)         |
| 7. Palm Street at Imperial Highway<br>(Fullerton/Caltrans)       |  |

\*\* = denotes Orange County CMP intersection

**Figure 1-1** presents a Vicinity Map, which illustrates the general location of the proposed Project and depicts the study locations and surrounding street system. The Level of Service (LOS) investigations at these key locations were used to evaluate the potential traffic impacts associated with area growth, cumulative projects and the proposed Project. When necessary, this report recommends intersection improvements that may be required to accommodate future traffic volumes and restore/maintain an acceptable Level of Service and/or mitigate the impact of the project.

Included in this Traffic Impact Analysis are:

- Existing traffic counts,
- Estimated project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- AM and PM peak hour capacity analyses for existing conditions,
- AM and PM peak hour capacity analyses for existing plus project conditions,
- AM and PM peak hour capacity analyses for future (Year 2018) conditions without and with project traffic,
- Caltrans Analysis,
- Site Access Evaluation and Internal Circulation Assessment,
- Recommended Improvements,
- Congestion Management Program (CMP) Analysis, and
- Parking Requirements.



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SOURCE: GOOGLE

KEY

- # = STUDY INTERSECTION
- = PROJECT SITE

# FIGURE 1-1

VICINITY MAP  
ALDI FOOD MARKET, LA HABRA

## 2.0 PROJECT DESCRIPTION

The Project site is comprised of two square-shaped parcels of land totaling 1.968±acres that is located north of Imperial Highway at the Wal-Mart Driveway in the City of La Habra, California. While the subject property is currently vacant, the western half of the site is developed with a vacant 2,500 square-foot (SF) fast-food with drive-through restaurant with surface parking, previously occupied by Alberto's (closed in early 2015) and the eastern half of the site was previously developed with an entertainment venue. **Figure 2-1** presents an aerial depiction of the existing site. As shown, access to the Project site is currently provided via a signalized driveway on Imperial Highway located opposite the Walmart driveway and three (3) right-turn only driveways on Imperial Highway. Access to and from Harbor Boulevard to the subject property is also provided via an access easement/alley driveway that is located along the northerly property of the site and the adjacent properties to the east (i.e. Pepper Shaker Café and CVS Pharmacy).

**Figure 2-2** presents the proposed site plan for the Project. Review of the proposed site plan indicates that the Project includes the development of an 18,783 SF grocery store with a total of 81 surface parking spaces. **Table 2-1** summarizes the development totals for both the existing (vacant) land use and the proposed Project. The proposed Project is expected to be completed by Year 2018.

### 2.1 Site Access

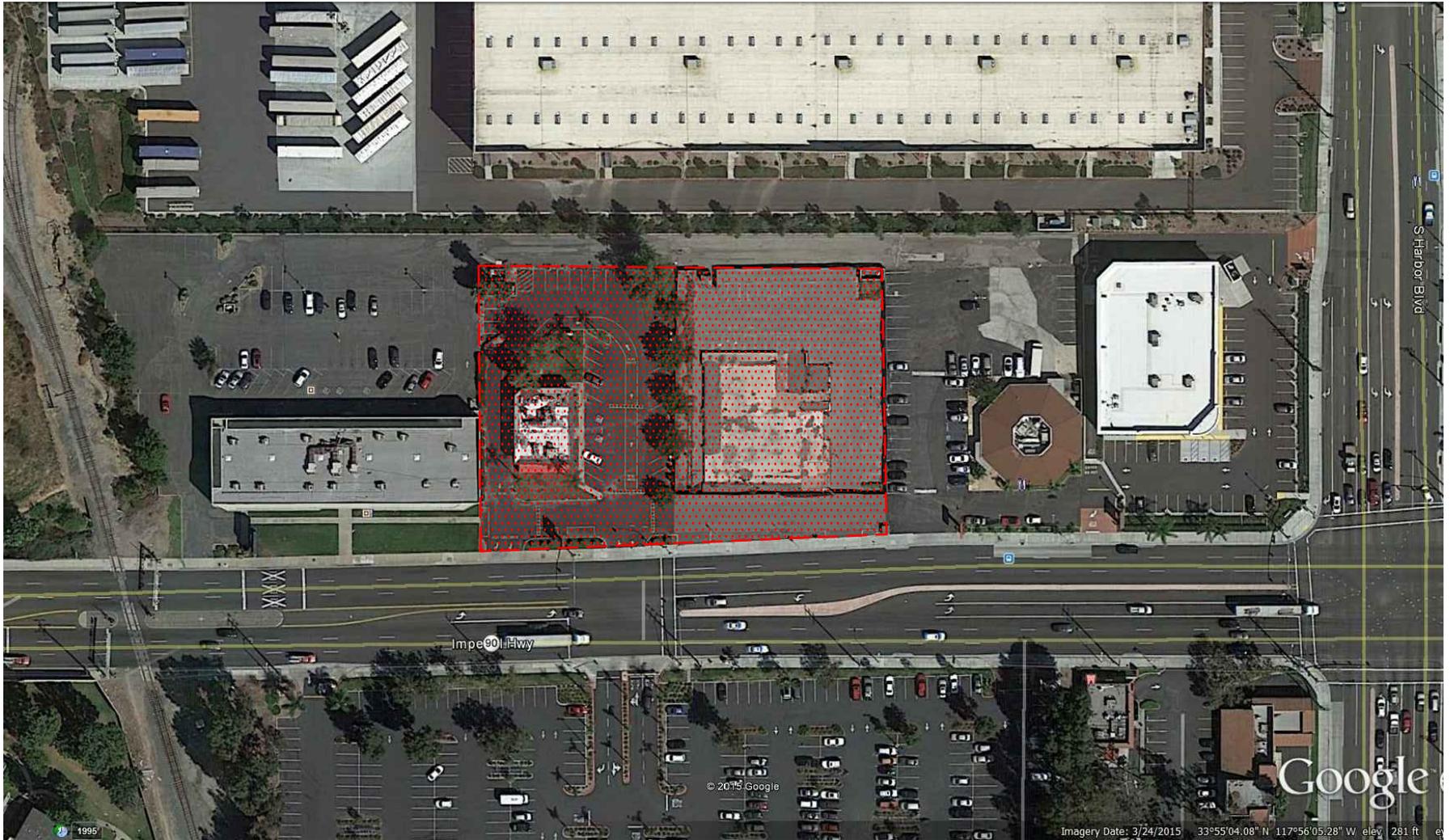
As shown in **Figure 2-2**, access to the subject property is expected to continue to be provided via the signalized driveway on Imperial Highway located opposite the Walmart driveway, referred to as Driveway A, and one (1) right-turn in/out only driveway, referred to as Driveway B. The access easement/alley driveway located along the northerly property line will continue to provide access to and from Harbor Boulevard. A review of the site plan indicates that the signalized driveway will be re-constructed as a part of the Project, which will necessitate modification of the existing traffic signal on Imperial Highway.

Potential improvements to be completed as a part of the Project at the Imperial Highway/Walmart Driveway-Project Driveway A intersection, subject to the approval of the City of La Habra and Caltrans include the following:

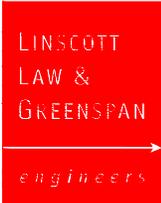
- Reconstruction of the existing site driveway to align opposite Walmart Driveway Drive to minimize offset of lanes through the intersection with a minimum paved width of 48-feet to provide a 12-foot wide southbound (outbound) left/through lane and a 13-foot wide southbound (outbound) right-turn lane and one 23-foot wide northbound (inbound) lane with a minimum curb return radii of 25-feet, and
- Modification of the existing traffic signal, to maintain permissive north-south left-turn phasing operation at the Walmart signal, subject to the approval of the City of La Habra and/or Caltrans.

## 2.2 Pedestrian Circulation

Pedestrian circulation would be provided via existing public sidewalks along Imperial Highway bordering the project site, which will connect to the project's internal walkway. The proposed Project will protect the existing sidewalk along the project frontage and if necessary repair or reconstruct sidewalks along the project frontage per the City's request.



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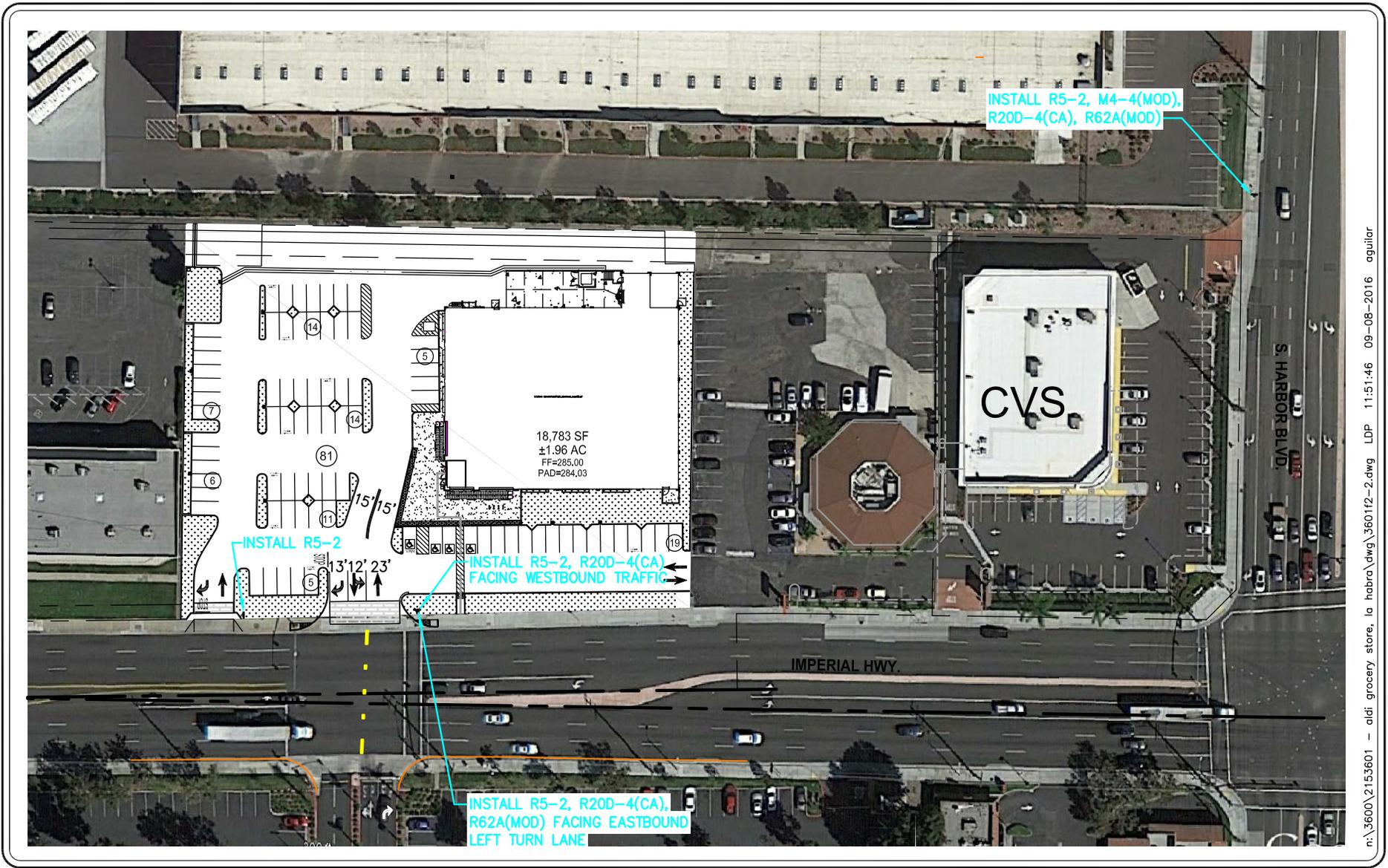
SOURCE: GOOGLE

KEY

 = PROJECT SITE

# FIGURE 2-1

EXISTING AERIAL SITE PLAN  
ALDI FOOD MARKET, LA HABRA



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**LINSCOTT  
LAW &  
GREENSPAN**  
engineers

SOURCE: GREENBERG FARROW  
PROPOSED SIGNS

M4-4(MOD)	R5-2	R20D-4(CA)	R62A(MOD)
ALDI TRUCKS		OVER 45 FT LONG	FROM 6AM-9PM DAILY

## FIGURE 2-2

PROPOSED SITE PLAN  
ALDI FOOD MARKET, LA HABRA

TABLE 2-1  
PROJECT DEVELOPMENT SUMMARY<sup>1</sup>

<b>Land Use / Project Description</b>	<b>Proposed Development Totals</b>
<b><i>Existing Development</i></b>	
<ul style="list-style-type: none"> <li>▪ Alberto's Fast-Food Restaurant with Drive-Thru</li> </ul>	2,500 SF
<b><i>Total Square-footage (SF):</i></b>	<b><i>2,500 SF</i></b>
<b><i>Proposed Project</i></b>	
<ul style="list-style-type: none"> <li>▪ Aldi Food Market</li> <li>▪ Parking Supply</li> </ul>	18,783 SF
	81 spaces

<sup>1</sup> Source: Kaiser Permanente/HMC Architects, Inc.

## 3.0 EXISTING CONDITIONS

### 3.1 Existing Street System

The principal local network of streets serving the proposed Project includes La Habra Boulevard, Lambert Road, Imperial Highway, Euclid Street, Cypress Street, Harbor Boulevard, Palm Street, and Las Palmas Drive. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

**La Habra Boulevard** is generally a four-lane, undivided roadway west of Harbor Boulevard, and a divided roadway east of Harbor Boulevard, oriented in the east-west direction. The posted speed limit on La Habra Boulevard is 35 miles per hour (mph) west of Harbor Boulevard and 40 mph east of Harbor Boulevard. Traffic signals control the study intersections of La Habra Boulevard at Euclid Street and at Harbor Boulevard.

**Lambert Road** is generally a four-lane, divided roadway, and an undivided roadway between Euclid Street and Cypress Street, oriented in the east-west direction. The posted speed limit along Lambert Street is 40 mph. A traffic signal controls the study intersection of Lambert Road at Euclid Street, Cypress Street, and at Harbor Boulevard.

**Imperial Highway (State Route 90)** is generally a six-lane, divided roadway oriented in the east-west direction. Imperial Highway borders the project site to the south and will provide access to the project site via a signalized driveway with the Wal-Mart driveway. Parking is not permitted along this roadway in the vicinity of the proposed project. The posted speed limit along Imperial Highway is 45 mph. Traffic signals control the study intersections of Imperial Highway at Euclid Street, Cypress Street, Leslie Street, Village Drive, Wal-Mart Signal, Harbor Boulevard, and Palm Street. In the Orange County Master Plan of Arterial Highways (MPAH), Imperial Highway is designated as a Smart Street. Imperial Highway is part of the Orange County Congestion Management Program Highway System (CMPHS).

**Euclid Street** is generally a four-lane, divided roadway south of Lambert Road, and undivided roadway north of Lambert Road; however it is generally a two-lane, undivided roadway north of La Habra Boulevard. It is oriented in the north-south direction. The posted speed limit on Euclid Street is 35 mph north of Imperial Highway and 45 mph south of Imperial Highway. Traffic signals control the study intersections of Euclid Street at Imperial Highway, Lambert Road and at La Habra Boulevard.

**Cypress Street** is a two-lane, undivided roadway, oriented in the north-south direction. The posted speed limit on Cypress Street is 30 mph. Traffic signals control the study intersections of Cypress Street at Imperial Highway and at Lambert Road.

**Harbor Boulevard** is generally a four-lane, divided roadway; however it is a six-lane, divided roadway between La Habra Boulevard and Imperial Highway, oriented in the north-south direction.

Parking is generally not permitted along this roadway in the vicinity of the proposed project. The posted speed limit on Harbor Boulevard is 40 mph north of Lambert Road and 45 mph south of Lambert Road. Traffic signals control the study intersections of Harbor Boulevard at Las Palmas Drive, Imperial Highway, Lambert Road and at La Habra Boulevard.

**Palm Street** is a two-lane, undivided roadway north of La Habra Boulevard, a four-lane, undivided roadway between La Habra Boulevard and Lambert Road, and a four-lane, divided roadway south of Lambert Road. It is oriented in the north-south direction. The posted speed limit on Palm Street is 30 mph north of La Habra Boulevard, 35 mph between La Habra Boulevard and Lambert Road, and 40 mph south of Lambert Road. Traffic signals control the study intersection of Palm Street and Imperial Highway.

**Las Palmas Drive** is generally a two-lane, undivided roadway, oriented in the east-west direction. The posted speed limit on Las Palmas Drive is 25 mph. Traffic signals control the study intersection of Las Palmas Drive and Harbor Boulevard.

*Figure 3-1* presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. This figure identifies the number of travel lanes for key arterials, as well as intersection configurations and controls for the key area study intersections.



## 3.2 Existing Traffic Volumes

Thirteen (13) key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of potential project-related traffic will pass through each of these intersections, and their analysis will reveal the expected relative impacts of the project. These key intersections were selected for evaluation based on discussions with City of La Habra Engineering Division staff.

Existing AM and PM peak hour traffic volumes for the thirteen (13) key study intersections evaluated in this report were obtained from manual peak hour turning movement counts conducted by National Data & Surveying Services in October 2015. **Figures 3-2** and **3-3** illustrate the existing AM and PM peak hour traffic volumes at the thirteen (13) key study intersections evaluated in this report, respectively. **Appendix B** contains the detailed peak hour count sheets for the key intersections evaluated in this report.

## 3.3 Existing Intersection Conditions

Existing AM and PM peak hour operating conditions for the thirteen (13) key study intersections were evaluated using the *Intersection Capacity Utilization* (ICU) methodology for signalized intersections and the methodology outlined in the *Highway Capacity Manual* (HCM) for unsignalized intersections (i.e. proposed project driveways).

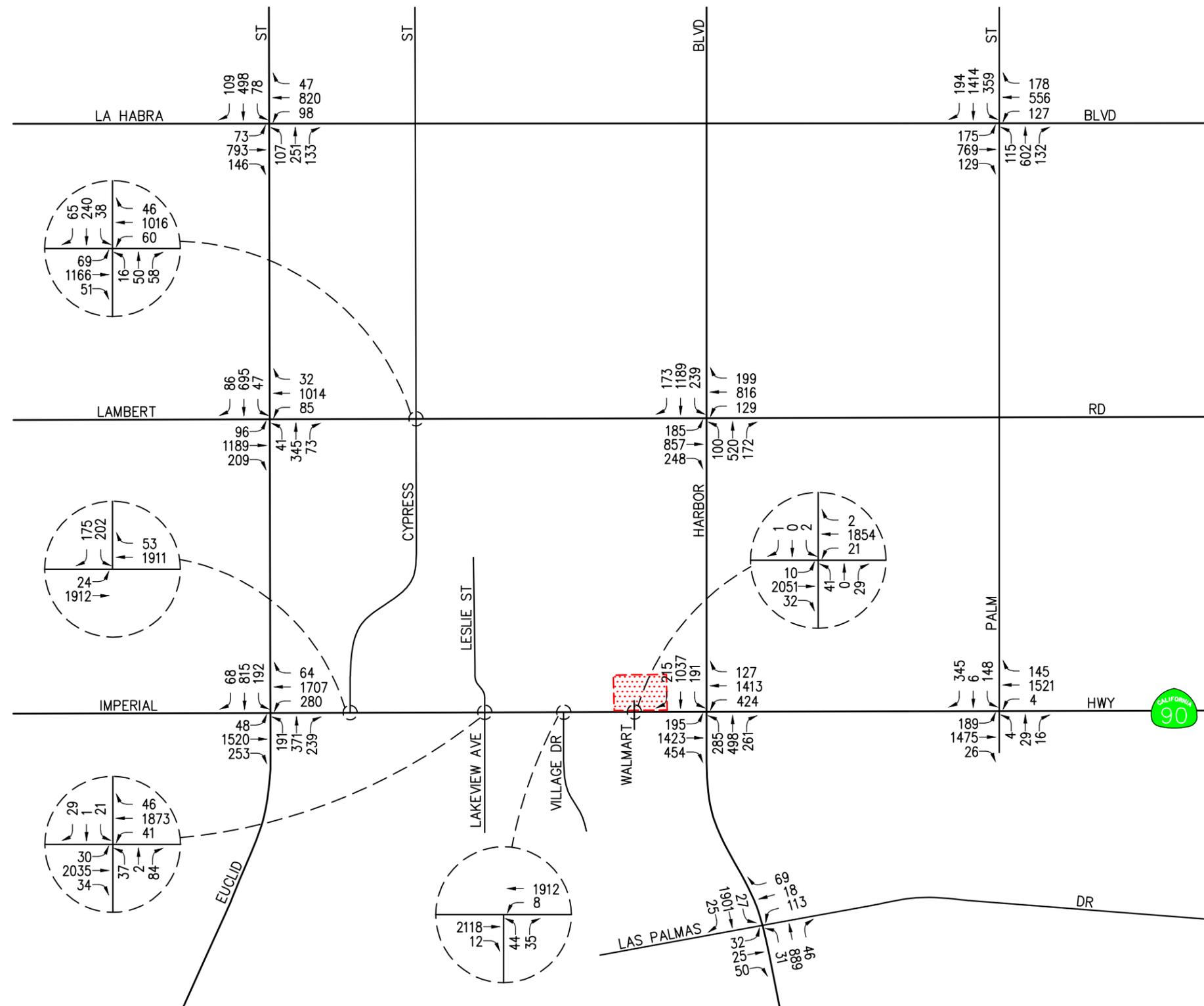
### 3.3.1 *Intersection Capacity Utilization (ICU) Method of Analysis (Signalized Intersections)*

In conformance with the City of La Habra General Plan and the City's traffic study requirements, existing AM and PM peak hour operating conditions for the key signalized study intersections were evaluated using the Intersection Capacity Utilization (ICU) method. The ICU technique is intended for signalized intersection analysis and estimates the volume to capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements.

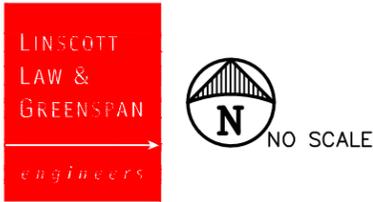
The ICU numerical value represents the percent signal (green) time, and thus capacity, required by existing and/or future traffic. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

Per City of La Habra requirements, the ICU calculations use a lane capacity of 1,700 vehicles per hour (vph) for through and all turn lanes. A clearance adjustment factor of 0.05 was added to each Level of Service calculation.

The ICU value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The ICU value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements. The six qualitative categories of Level of Service have been defined along with the corresponding ICU value range and are shown in **Table 3-1**.



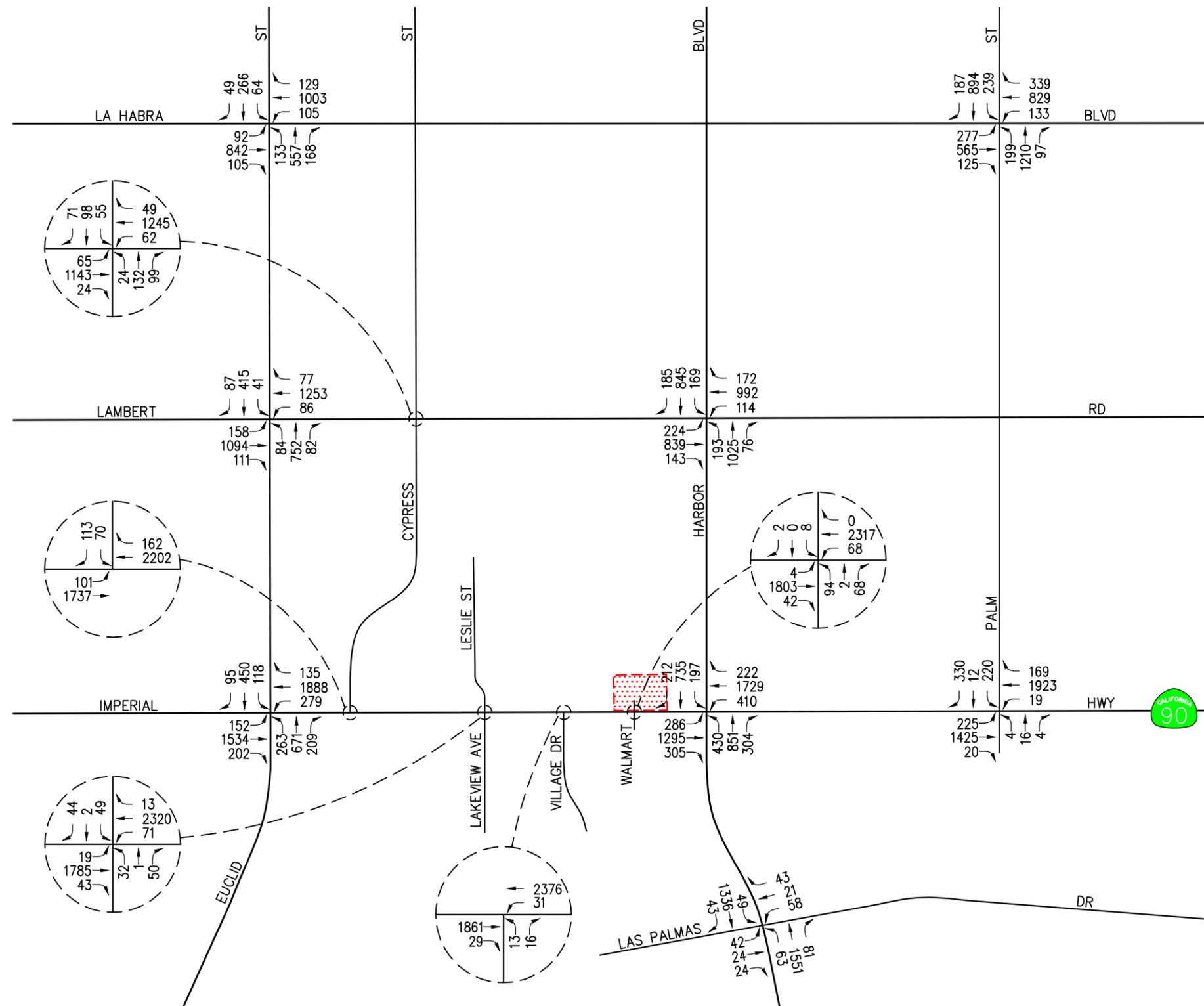
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KEY  
 = PROJECT SITE

FIGURE 3-2

EXISTING AM PEAK HOUR TRAFFIC VOLUMES  
 ALDI FOOD MARKET, LA HABRA



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### 3.3.2 Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)

The HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections (i.e. proposed project driveways). This methodology estimates the average control delay for each of the subject movements and determines the level of service for each movement. For all-way stop controlled intersections, the overall average control delay measured in seconds per vehicle, and level of service is then calculated for the entire intersection. For one-way and two-way stop-controlled (minor street stop-controlled) intersections, this methodology estimates the worst side street delay, measured in seconds per vehicle and determines the level of service for that approach. The HCM control delay value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding HCM control delay value range, as shown in **Table 3-2**.

### 3.3.3 Level of Service Criteria

The City of La Habra has established LOS D as its criterion for acceptable level of service at all intersections within the City, except those on the CMPHS of Orange County, where LOS E is defined in the CMP for Orange County as the acceptable limit and is acceptable for State Highway intersections.

According to the City of Fullerton, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours.

The following summarizes the LOS required for each key study intersection:

<b><u>LOS "E" Requirements</u></b>	
1. Euclid Street at Imperial Highway	5. Wal-Mart Signal at Imperial Highway
2. Cypress Street at Imperial Highway	6. Harbor Boulevard at Imperial Highway <sup>2</sup>
3. Leslie Street at Imperial Highway	7. Palm Street at Imperial Highway
4. Village Drive at Imperial Highway	
<b><u>LOS "D" Requirements</u></b>	
8. Euclid Street at Lambert Road	11. Harbor Boulevard at Las Palmas Drive
9. Cypress Street at Lambert Road	12. Euclid Street at La Habra Boulevard
10. Harbor Boulevard at Lambert Road	13. Harbor Boulevard at La Habra Boulevard

<sup>2</sup> Orange County CMP intersection.

TABLE 3-1  
LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS<sup>3</sup>

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	Level of Service Description
A	$\leq 0.60$	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.61 – 0.70	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.71 – 0.80	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.81 – 0.90	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.91 – 1.00	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	$> 1.00$	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

<sup>3</sup> Source: *Transportation Research Board Circular 212 – Interim Materials on Highway Capacity.*

TABLE 3-2  
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS<sup>4</sup>

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	$\leq 10.0$	Little or no delay
B	$> 10.0$ and $\leq 15.0$	Short traffic delays
C	$> 15.0$ and $\leq 25.0$	Average traffic delays
D	$> 25.0$ and $\leq 35.0$	Long traffic delays
E	$> 35.0$ and $\leq 50.0$	Very long traffic delays
F	$> 50.0$	Severe congestion

<sup>4</sup> Source: *Highway Capacity Manual*, (Unsignalized Intersections).

### 3.4 Existing Level of Service Results

**Table 3-3** summarizes the existing peak hour service level calculations for the thirteen (13) key study intersections based on existing traffic volumes and current street geometry. Review of **Table 3-3** indicates that all of the thirteen (13) key study intersections currently operate at an acceptable level of service during the AM and PM peak hours based on current intersection geometry and baseline traffic counts collected in October 2015.

**Appendix C** presents the ICU/LOS calculations for the thirteen (13) key study intersections for the AM peak hour and PM peak hour.

TABLE 3-3  
EXISTING PEAK HOUR LEVELS OF SERVICE

Key Intersections		Minimum Acceptable LOS	Jurisdiction	Time Period	Control Type	ICU	LOS
1.	Euclid Street at Imperial Highway	E	La Habra/ Caltrans	AM	8Ø Traffic	0.796	C
				PM	Signal	0.729	C
2.	Cypress Street at Imperial Highway	E	La Habra/ Caltrans	AM	3Ø Traffic	0.671	B
				PM	Signal	0.681	B
3.	Leslie Street at Imperial Highway	E	La Habra/ Caltrans	AM	5Ø Traffic	0.543	A
				PM	Signal	0.577	A
4.	Village Drive at Imperial Highway	E	La Habra/ Caltrans	AM	3Ø Traffic	0.498	A
				PM	Signal	0.525	A
5.	Wal-Mart Signal at Imperial Highway	E	La Habra/ Caltrans	AM	5Ø Traffic	0.495	A
				PM	Signal	0.568	A
6.	Harbor Boulevard at Imperial Highway	E	La Habra/ Caltrans	AM	8Ø Traffic	0.830	D
				PM	Signal	0.755	C
7.	Palm Street at Imperial Highway	E	Fullerton/ Caltrans	AM	5Ø Traffic	0.693	B
				PM	Signal	0.789	C
8.	Euclid Street at Lambert Road	D	La Habra	AM	3Ø Traffic	0.704	C
				PM	Signal	0.781	C
9.	Cypress Street at Lambert Road	D	La Habra	AM	6Ø Traffic	0.718	C
				PM	Signal	0.751	C
10.	Harbor Boulevard at Lambert Road	D	La Habra/ Fullerton	AM	8Ø Traffic	0.641	B
				PM	Signal	0.666	B
11.	Harbor Boulevard at Las Palmas Drive	D	La Habra/ Fullerton	AM	5Ø Traffic	0.735	C
				PM	Signal	0.632	B
12.	Euclid Street at La Habra Boulevard	D	La Habra	AM	2Ø Traffic	0.625	B
				PM	Signal	0.688	B
13.	Harbor Boulevard at La Habra Boulevard	D	La Habra	AM	8Ø Traffic	0.663	B
				PM	Signal	0.702	C

Notes:

- ICU = Intersection Capacity Utilization
- LOS = Level of Service, please refer to *Tables 3-1* and *3-2* for the LOS definitions
- Ø = Phase
- **LOS** indicates unacceptable service level

## 4.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic impact characteristics of the proposed Project, a multi-step process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is trip distribution, which identifies the origins and destinations of inbound and outbound project traffic. These origins and destinations are typically based on demographics and existing/anticipated travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the proposed Project is isolated by comparing operational (LOS) conditions at selected key intersections using expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated and the significance of the project's impacts identified.

## 5.0 PROJECT TRAFFIC CHARACTERISTICS

### 5.1 Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are found in the 9<sup>th</sup> Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2012].

**Table 5-1** summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed Project and also presents the project's forecast peak hour and daily traffic volumes. As shown, the trip generation potential of the existing (vacant) land use and proposed Project was estimated using ITE Land Use 850: Supermarket and ITE Land Use 934: Fast-Food Restaurant with Drive-Through Window.

Review of the top portion of *Table 5-1* shows that the existing Alberto's restaurant, which is now vacant, has a trip generation potential of 1,116 daily trips, with 58 trips (30 inbound, 28 outbound) produced in the AM peak hour and 41 trips (21 inbound, 20 outbound) produced in the PM peak hour. This trip forecast is provided for informational purposes only.

The lower portion of *Table 5-1* presents the proposed Project generation which is forecast to generate 1,728 daily trips, with 58 trips (36 inbound, 22 outbound) produced in the AM peak hour and 114 trips (58 inbound, 56 outbound) produced in the PM peak hour.

It should be noted that since the existing land use/development is currently vacant, no "existing trip credit" was applied in this traffic analysis. Therefore, the forecast Project trips (i.e., 58 AM trips and 114 PM trips) were used to evaluate the Project's potential traffic impacts.

### 5.2 Project Traffic Distribution and Assignment

**Figure 5-1** illustrates the general, directional traffic distribution pattern for the proposed Project. Project traffic volumes both entering and exiting the project site have been distributed and assigned to the adjacent street system based on the following considerations:

- the site's proximity to major traffic carriers (i.e. Imperial Hwy, Euclid St, Harbor Blvd, etc.),
- expected localized traffic flow patterns based on adjacent street channelization and presence of traffic signals,
- existing intersection traffic volumes,
- ingress/egress availability at the project site, inclusive of the alley access on Harbor Boulevard, and
- input from City staff.

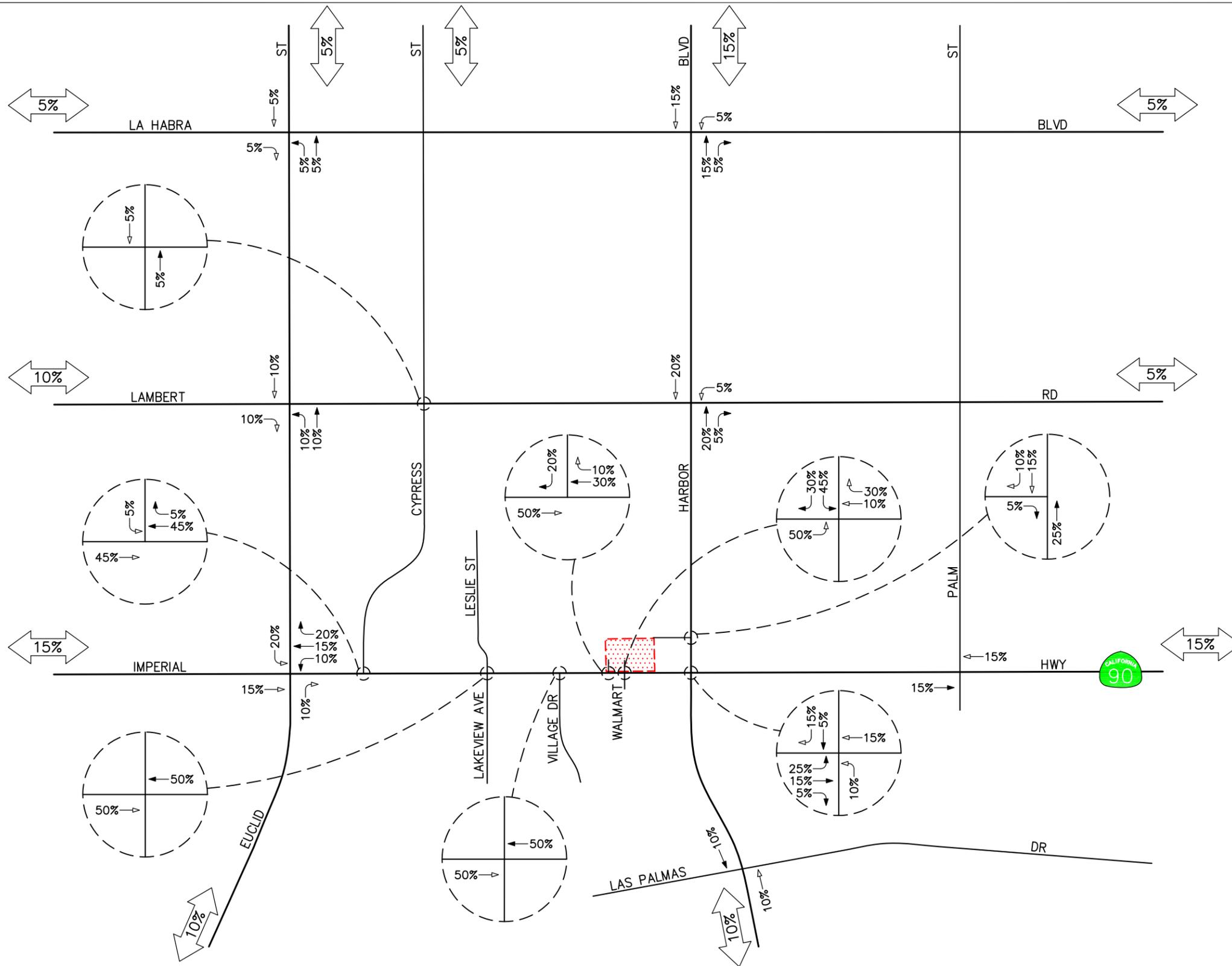
The anticipated AM and PM peak hour traffic volumes associated with the proposed Project are presented in **Figures 5-2** and **5-3**, respectively. The traffic volume assignments presented in **Figures 5-2** and **5-3** reflect the traffic distribution characteristics shown in **Figure 5-1** and the traffic generation forecast of the proposed Project presented in **Table 5-1**.

TABLE 5-1  
PROJECT TRAFFIC GENERATION FORECAST<sup>5</sup>

ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
<b><i>Generation Factors:</i></b>							
▪ 850: Supermarket (TE/1000 SF)	102.24	62%	38%	3.40	51%	49%	9.48
▪ 934: Fast Food with Drive-Thru (TE/1000 SF)	496.12	51%	49%	45.42	52%	48%	32.65
<b><i>Generation Forecast:</i></b>							
<i>Existing Land Use - Alberto's (Vacant):</i>							
▪ Fast Food with Drive-Thru (2,500 SF)	1,240	58	56	114	43	39	82
Pass-by Trips <sup>6</sup>	<u>-124</u>	<u>-28</u>	<u>-28</u>	<u>-56</u>	<u>-22</u>	<u>-19</u>	<u>-41</u>
Existing Land Use Trip Generation	1,116	30	28	58	21	20	41
<b><i>Proposed Project:</i></b>							
▪ Aldi Food Market (18,783 SF)	1,920	40	24	64	91	87	178
Pass-by Trips <sup>6</sup>	<u>-192</u>	<u>-4</u>	<u>-2</u>	<u>-6</u>	<u>-33</u>	<u>-31</u>	<u>-64</u>
<b><i>Total Project Trip Generation Forecast</i></b>	<b>1,728</b>	<b>36</b>	<b>22</b>	<b>58</b>	<b>58</b>	<b>56</b>	<b>114</b>

<sup>5</sup> Source: *Trip Generation*, 9<sup>th</sup> Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2012).

<sup>6</sup> Consistent with the *Trip Generation Handbook*, 3<sup>rd</sup> Edition, Institute of Transportation Engineers, (ITE) [Washington, D.C. (2014)]. Pass-by reductions for fast food with drive-thru consist of the following: estimated 10% daily, 49% AM and 50% PM. Pass-by reductions for supermarket use consists of the follows: estimated 10% daily, estimated 10% AM and 36% PM.



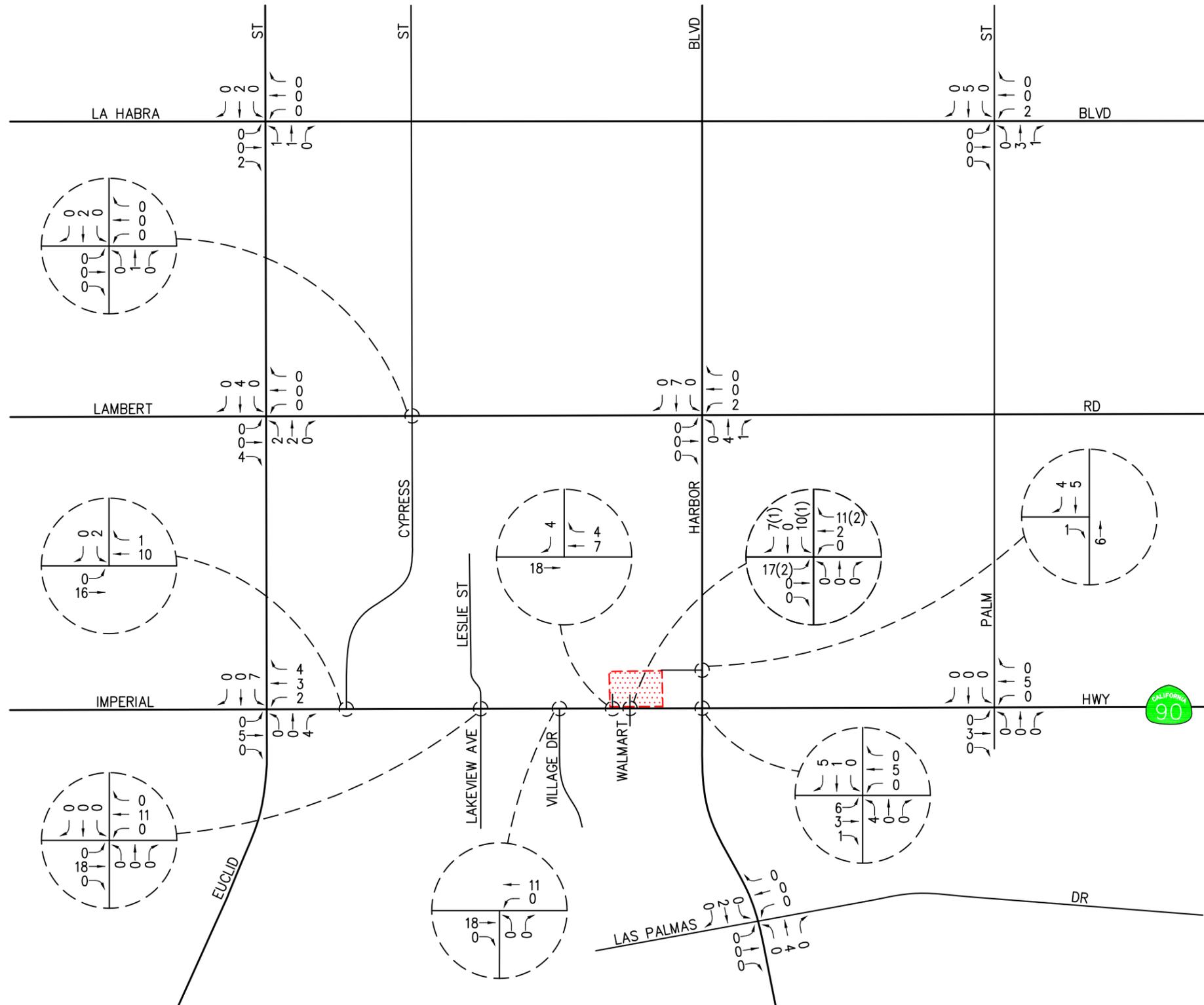
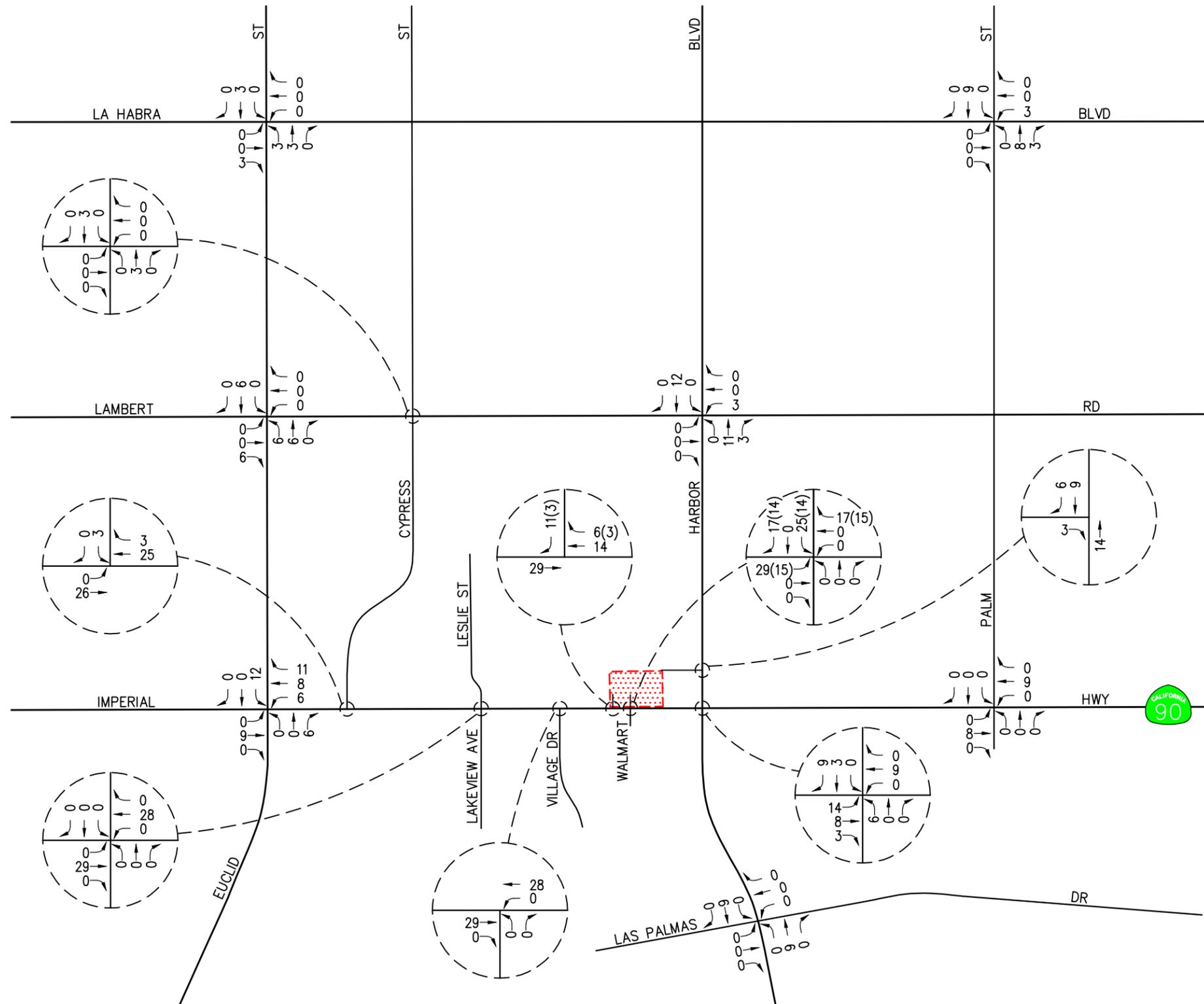


FIGURE 5-2

AM PEAK HOUR PROJECT TRAFFIC VOLUMES  
ALDI FOOD MARKET, LA HABRA



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FIGURE 5-3

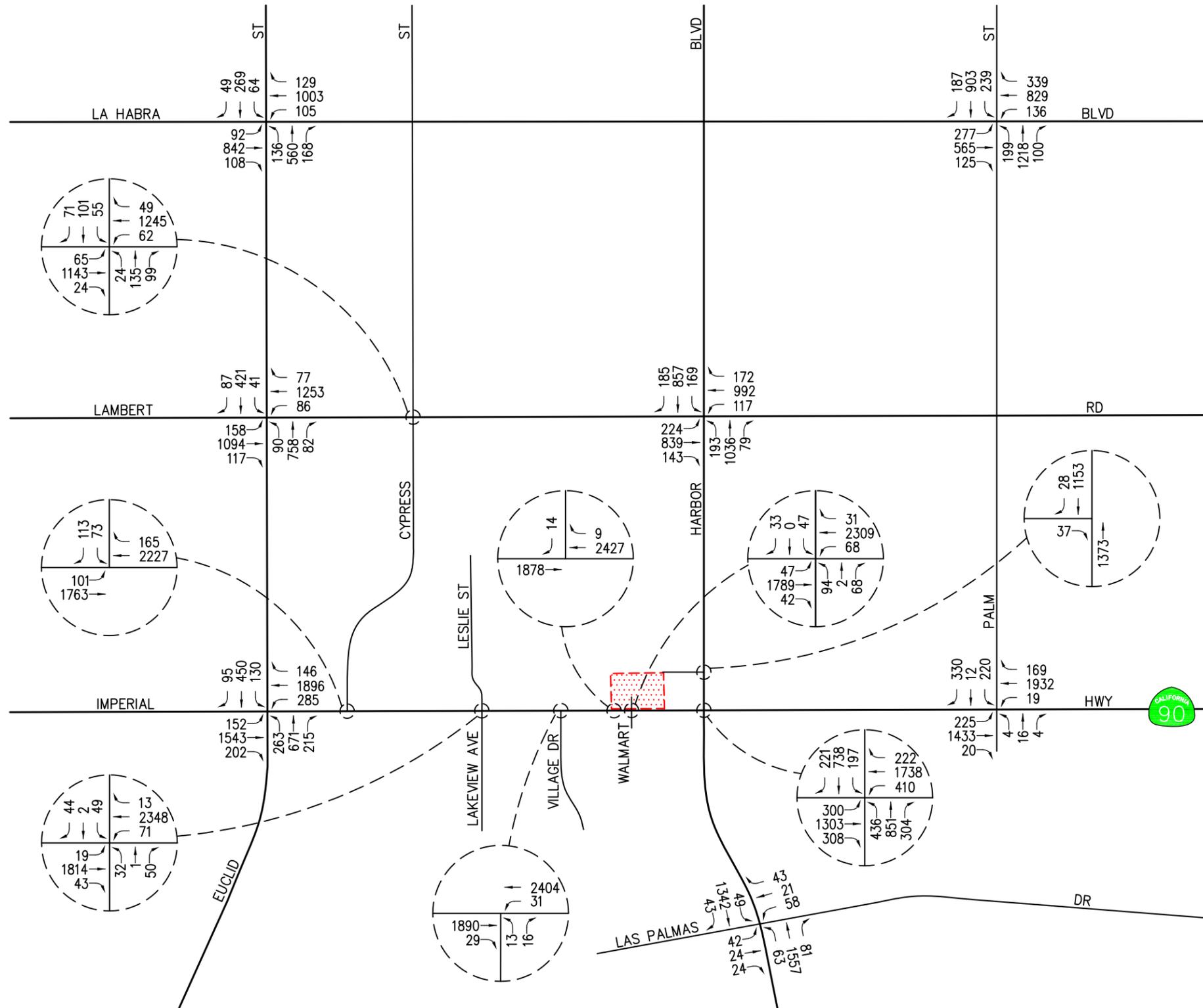
PM PEAK HOUR PROJECT TRAFFIC VOLUMES  
 ALDI FOOD MARKET, LA HABRA

### 5.3 Existing Plus Project Traffic Conditions

The existing plus project traffic conditions have been generated based upon existing conditions and the estimated project traffic. These forecast traffic conditions have been prepared pursuant to the California Environmental Quality Act (CEQA) guidelines, which require that the potential impacts of a Project be evaluated upon the circulation system as it currently exists. This traffic volume scenario and the related intersection capacity analyses will identify the roadway improvements necessary to mitigate the direct traffic impacts of the Project, if any.

**Figures 5-4** and **5-5** present projected AM and PM peak hour traffic volumes at the thirteen (13) key study intersections with the addition of the trips generated by the proposed Project to existing traffic volumes, respectively.





**FIGURE 5-5**  
 EXISTING PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES  
 ALDI FOOD MARKET, LA HABRA

## 6.0 FUTURE TRAFFIC CONDITIONS

### 6.1 Ambient Traffic Growth

Horizon year, background traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future cumulative projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at one percent (1.0%) per year. Applied to the Year 2015 existing traffic volumes, this factor results in a 3.0% growth in existing volumes to the near-term horizon year 2018.

### 6.2 Cumulative Projects Description and Location

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed Project, the status of other known development projects (cumulative projects) in the vicinity of the proposed Project has been researched at the City of La Habra, City of Brea, and City of Fullerton. With this information, the potential impact of the proposed Project can be evaluated within the context of the cumulative impact of all ongoing development. Based on our research and confirmed by City staff, there are eleven (11) cumulative projects in the City of La Habra and two (2) cumulative projects in the City of Brea within the vicinity of the subject site that have either been built, but not yet fully occupied, or are being processed for approval. These thirteen (13) cumulative projects have been included as part of the cumulative background setting.

*Table 6-1* provides the location and a brief description for each of the thirteen (13) cumulative projects. *Figure 6-1* graphically illustrates the location of the cumulative projects. These cumulative projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

### 6.3 Cumulative Projects Trip Generation and Assignment

*Table 6-2* summarizes the trip generation potential for all thirteen (13) cumulative projects. As shown, the cumulative projects are forecast to generate a total of 15,176 daily trips, with 1,124 trips (447 inbound and 677 outbound) forecast during the AM peak hour and 1,457 trips (803 inbound and 654 outbound) forecast during the PM peak hour.

Distribution patterns for each of the cumulative projects were developed based on the location of the trip attractors, type of land use, the site's proximity to major traffic carriers and freeways and previously completed traffic studies. The AM and PM peak hour traffic volumes of the thirteen (13) cumulative projects in the Year 2018 are presented in *Figures 6-2* and *6-3*, respectively.

### 6.4 Year 2018 Cumulative Traffic Volumes

*Figures 6-4* and *6-5* present the Year 2018 AM and PM peak hour cumulative traffic volumes at the thirteen (13) key study intersections, respectively. Please note that the cumulative traffic volumes represent the accumulation of existing traffic, ambient growth traffic and cumulative projects traffic.

*Figures 6-6* and *6-7* illustrate the Year 2018 forecast AM and PM peak hour traffic volumes with the inclusion of the trips generated by the proposed Project, respectively.

TABLE 6-1  
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS<sup>7</sup>

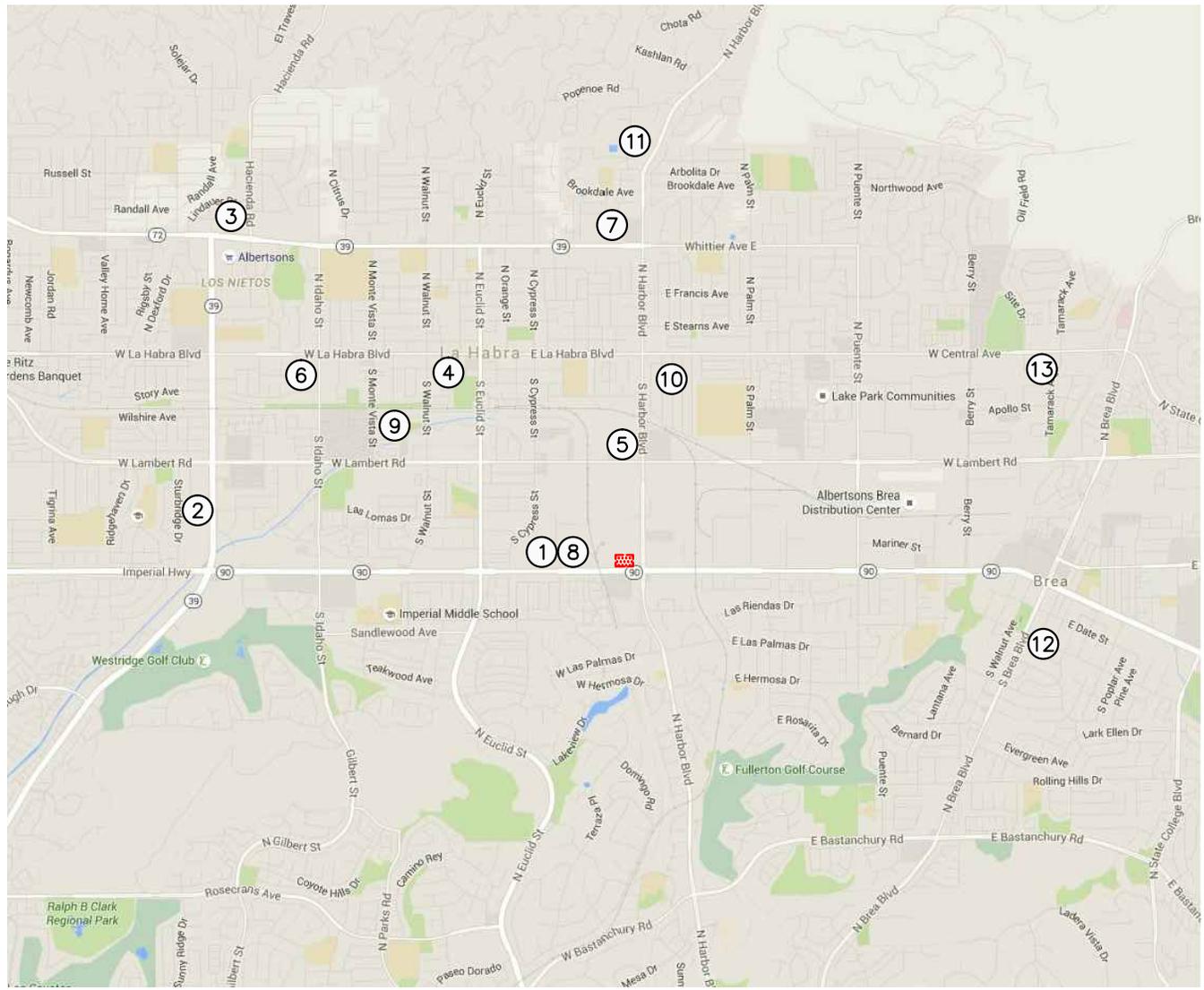
No.	Description	Location/Address	Size
<b><u>City of La Habra</u></b>			
1.	Kaiser Permanente MOB	601 East Imperial Highway	28,257 SF Medical-Dental Office Building
2.	951 S. Beach Blvd Residential	951 South Beach Boulevard	335 DU Apartments
3.	Whittier Boulevard/Hacienda Road Commercial	1701-1901 West Whittier Boulevard	22,945 SF Commercial
4.	City Hall Relocation/City Ventures Residential Development	Southwest corner of Euclid Street and La Habra Boulevard	9 DU Single Family Homes 62 DU Condominium/ Townhomes
5.	Self-Storage	999 East Lambert Road	133.512 KSF Self Storage
6.	Urban Village	1220-1240 W. La Habra Boulevard	32 DU Condominiums
7.	Cervetto Village Project	1001 E. Whittier Boulevard	32 DU SFDR
8.	701 E. Imperial Highway Mixed-Use Development	North of Imperial Highway at Village Drive, east of Leslie Street	124-room hotel, with 4,750 SF of fast-food with drive-thru, and 10,000 SF day care center
9.	Condominiums	306 South Monte Vista Street	12 DU Condominiums
10.	G&M Oil	110 South Harbor Boulevard	1,000 SF Convenience Store and Pump Islands
11.	Pinnacle Residential	1101 N. Harbor Boulevard	8 DU SFDR
<b><u>City of Brea</u></b>			
12.	South Brea Lofts	500 S. Brea Boulevard	37 DU live/work 10 DU condominiums 7,500 SF commercial
13.	Central Park Village	340-420 W. Central Avenue	83 DU townhomes 369 DU apartments 31,000 SF retail 35,000 SF MOB

<sup>7</sup> Source: City of La Habra and City of Brea Planning Departments.

TABLE 6-2  
CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST<sup>8</sup>

No.	Cumulative Project Description	Daily Two-Way	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
1.	Kaiser Permanente MOB	1,021	54	14	68	28	73	101
2.	951 South Beach Boulevard Residential	2,228	34	137	171	135	73	208
3.	Whittier Blvd/Hacienda Rd Commercial	1,690	44	37	81	92	96	188
4.	City Hall Relocation/Residential	673	10	42	52	42	21	63
5.	Self-Storage	334	10	9	19	18	17	35
6.	Urban Village	186	2	12	14	11	6	17
7.	Cervetto Village Project	305	6	18	24	20	12	32
8.	701 E. Imperial Highway	3,428	158	134	292	134	135	269
9.	Condominiums	70	1	4	5	4	2	6
10.	G&M Oil	215	16	15	31	22	21	43
11.	Pinnacle Residential	76	2	4	6	5	3	8
12.	South Brea Lofts	771	34	24	58	30	41	71
13.	Central Park Village	4,179	76	227	303	262	154	416
<b>Total Cumulative Projects Trip Generation Potential</b>		<b>15,176</b>	<b>447</b>	<b>677</b>	<b>1,124</b>	<b>803</b>	<b>654</b>	<b>1,457</b>

<sup>8</sup> Source: *Trip Generation*, 9<sup>th</sup> Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2012), unless otherwise noted.



**KEY**

1. KASIER PERMANENTE MOB
2. 951 S. BEACH BLVD RESIDENTIAL
3. WHITTIER BLVD/HACIENDA ROAD COMMERCIAL
4. CITY HALL RELOCATION/CITY VENTURES RESIDENTIAL DEVELOPMENT
5. SELF STORAGE
6. URBAN VILLAGE
7. CERVETTO VILLAGE PROJECT
8. 701 E. IMPERIAL HIGHWAY
9. CONDOMINIUMS
10. G&M OIL
11. PINNACLE RESIDENTIAL
12. SOUTH BREA LOFTS
13. CENTRAL PARK VILLAGE

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**LINSCOTT  
LAW &  
GREENSPAN**  
engineers

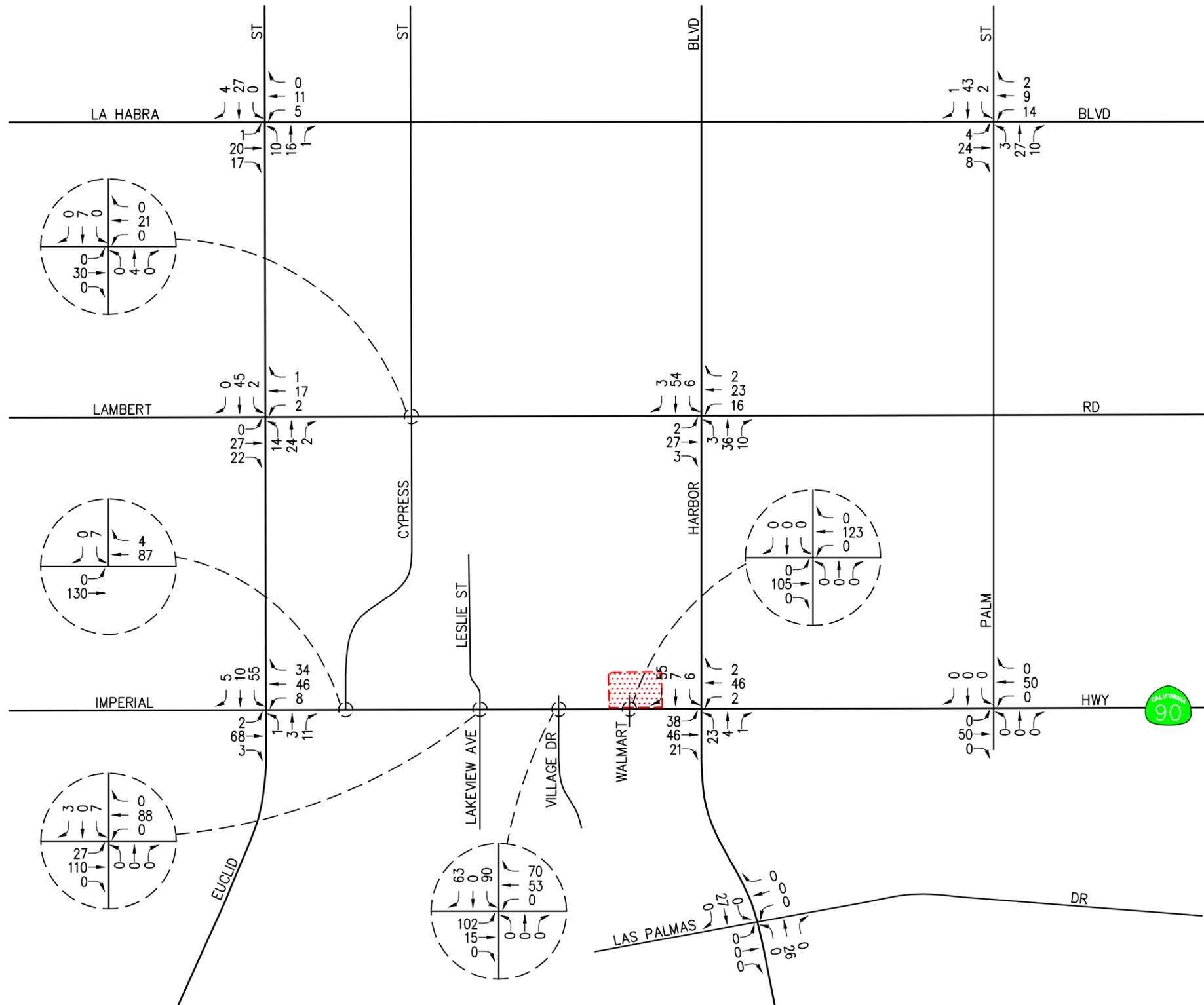
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**KEY**

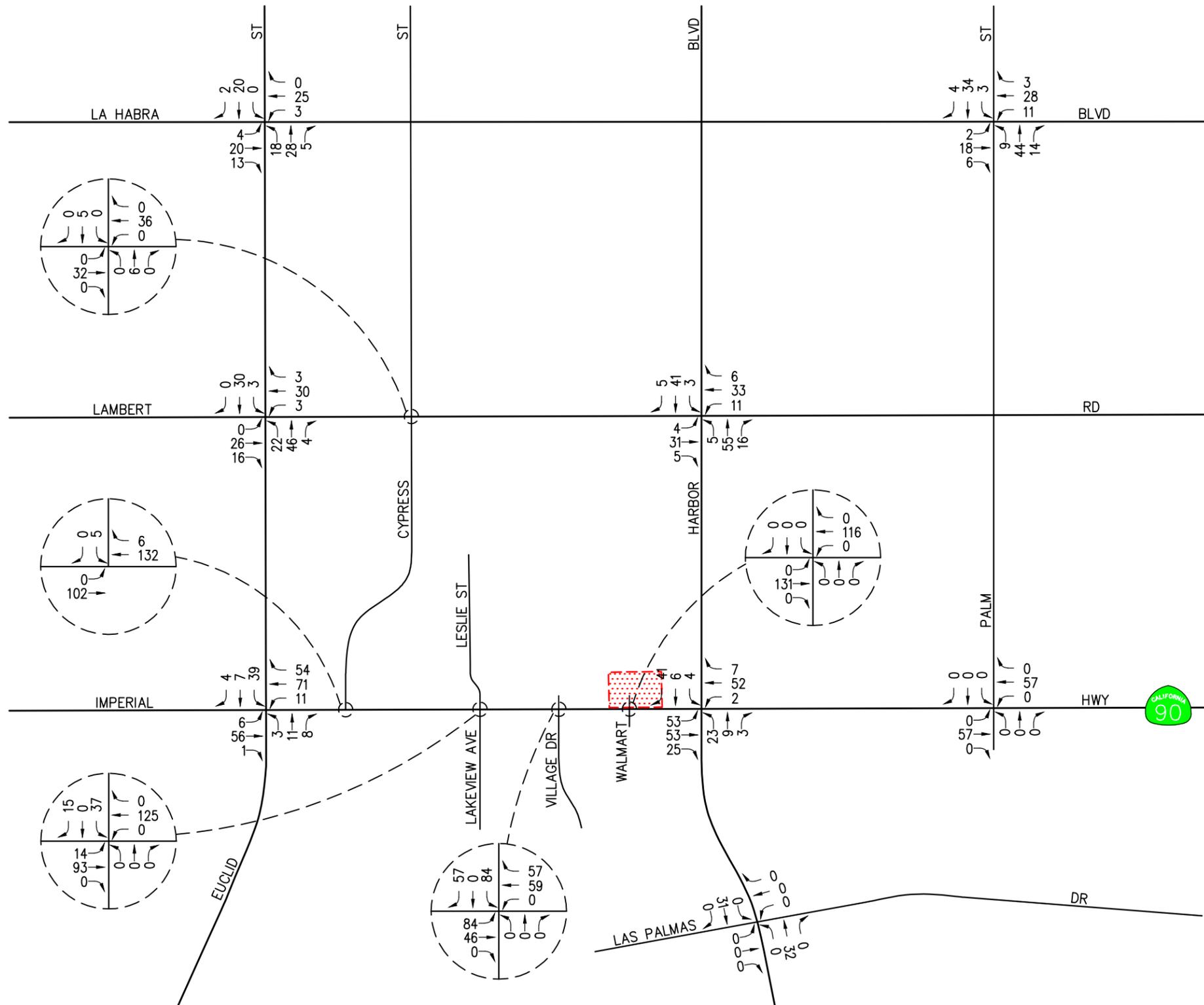
- = CUMULATIVE PROJECT LOCATION
- = PROJECT SITE

**FIGURE 6-1**

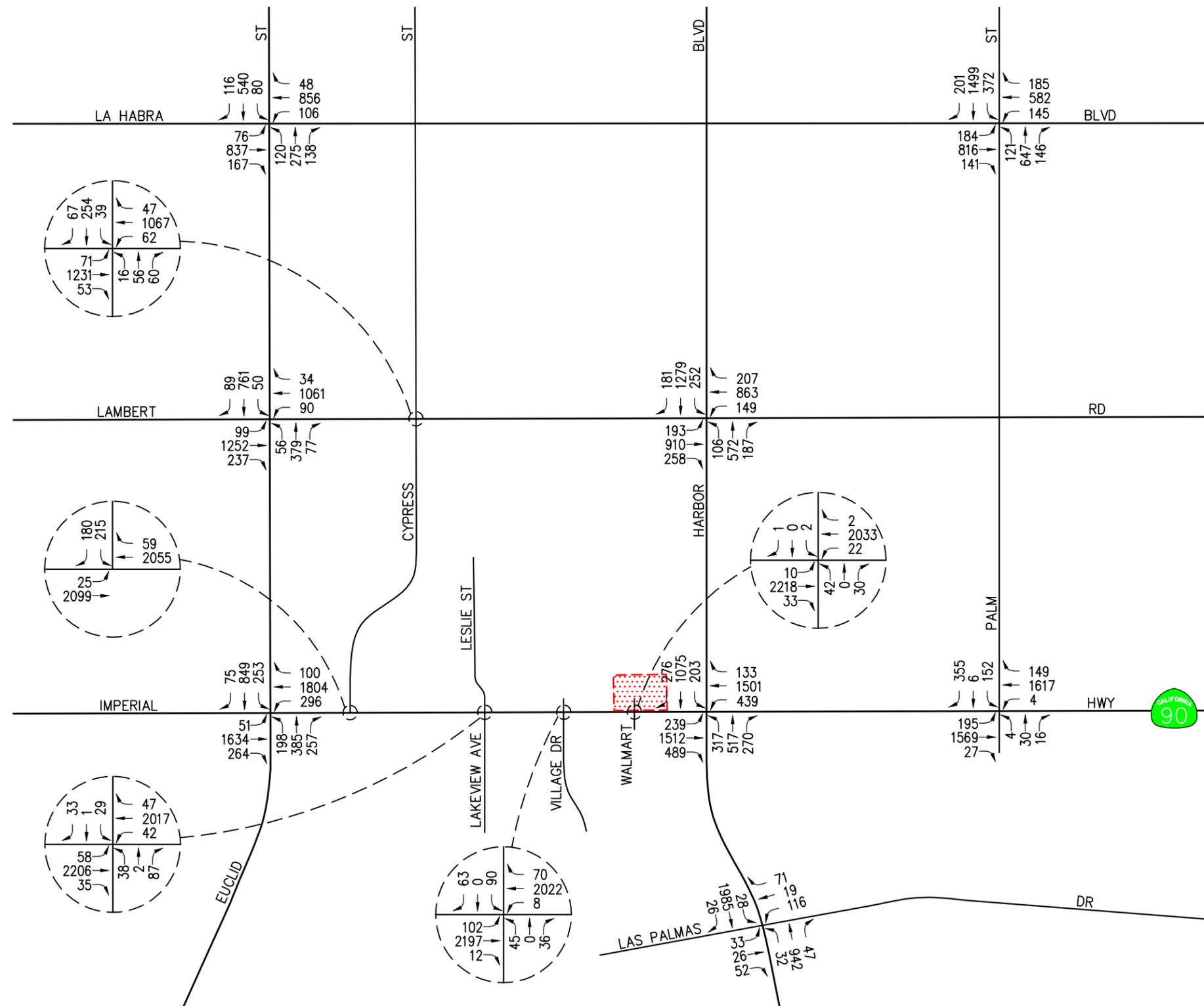
**CUMULATIVE PROJECT LOCATION MAP  
ALDI FOOD MARKET, LA HABRA**



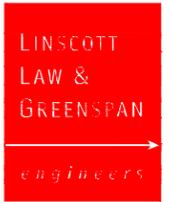
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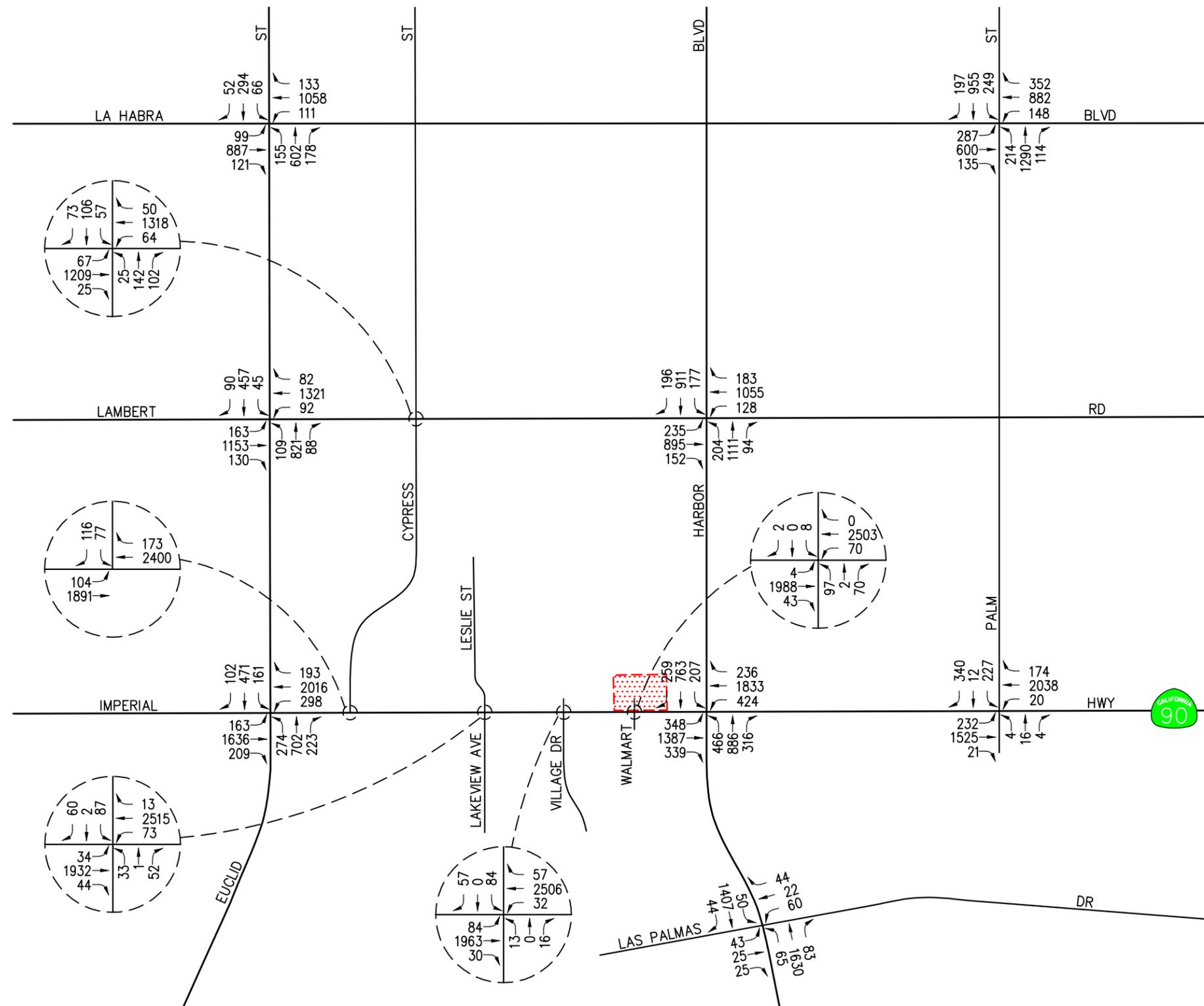
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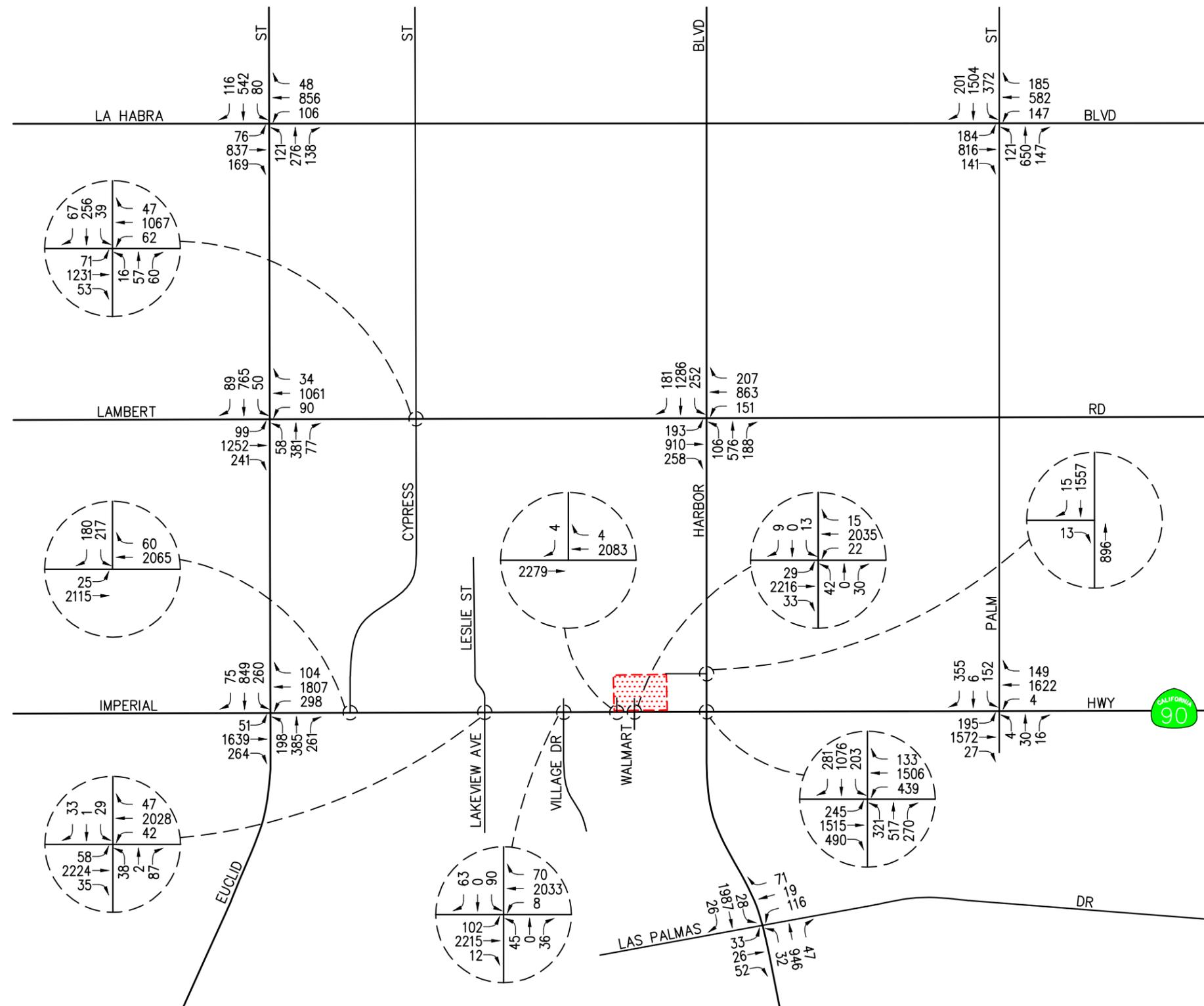
KEY  
 = PROJECT SITE

FIGURE 6-4

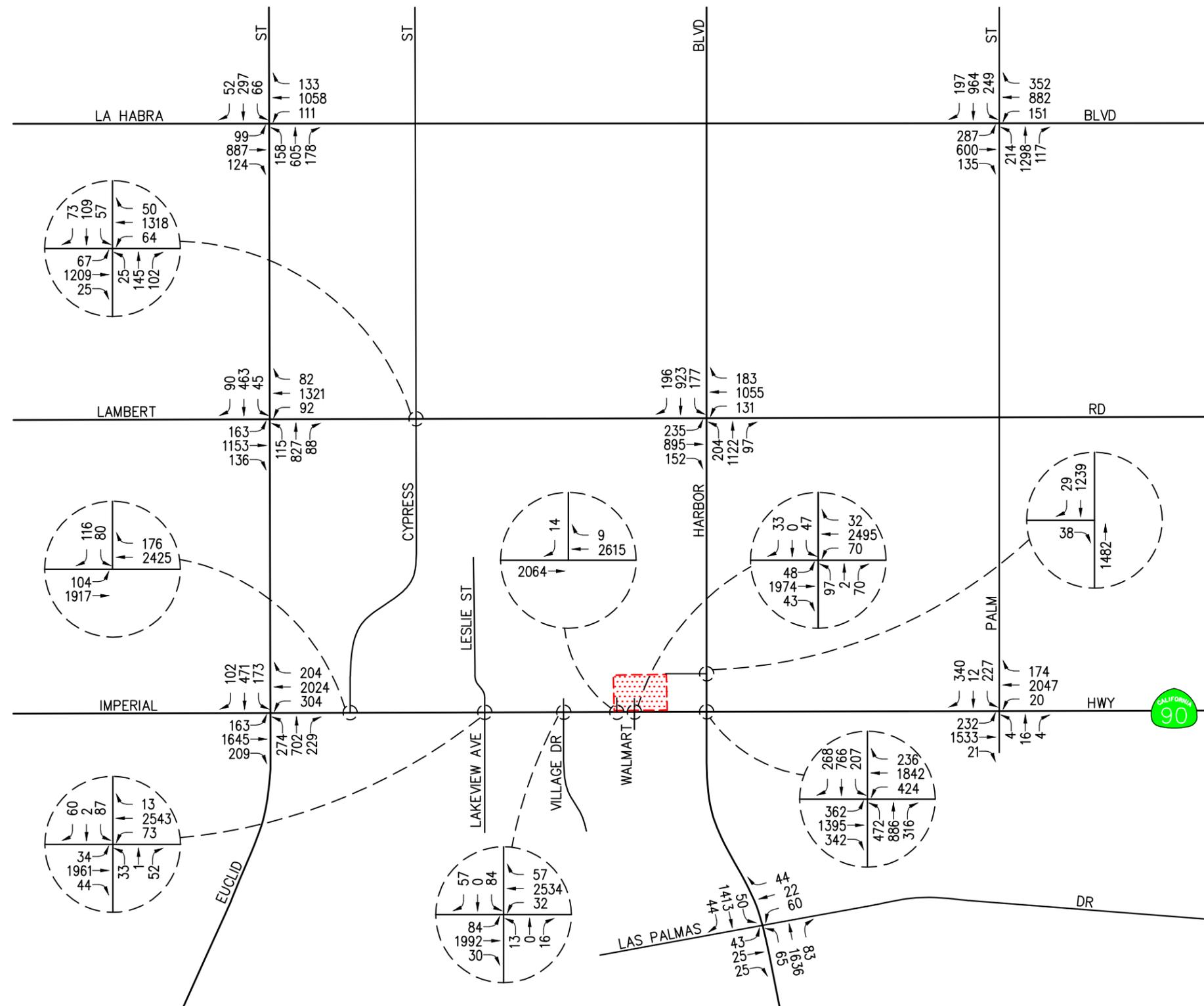
YEAR 2018 CUMULATIVE AM PEAK HOUR TRAFFIC VOLUMES  
 ALDI FOOD MARKET, LA HABRA



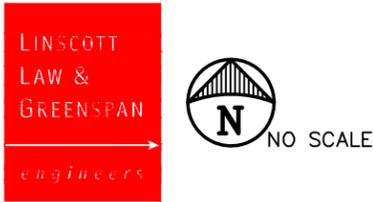
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KEY  
 = PROJECT SITE

**FIGURE 6-7**

YEAR 2018 CUMULATIVE PLUS PROJECT  
 PM PEAK HOUR TRAFFIC VOLUMES  
 ALDI FOOD MARKET, LA HABRA

## 7.0 TRAFFIC IMPACT ANALYSIS METHODOLOGY

The relative impact of the proposed Project during the AM peak hour/PM peak hour was evaluated based on analysis of future operating conditions at the thirteen (13) key study intersections without, then with the proposed Project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential impacts of the Project at each key intersection was then evaluated using the following traffic impact criteria.

### 7.1 Impact Criteria and Thresholds

Per City of La Habra criteria, impacts to local and regional transportation systems are considered significant if:

- An unacceptable peak hour Level of Service (LOS) at any of the key signalized intersections is projected. LOS D has been established by the City of La Habra as the criterion for acceptable level of service condition during the morning and evening peak commute hours on all intersections within the City of La Habra, except those on the CMPHS of Orange County, where LOS E is defined in the CMP for Orange County as the acceptable limit and is acceptable for State Highway intersections.

As noted earlier, according to the City of Fullerton, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours. Based on the above, the following summarizes the LOS required for each key study intersection:

<b><u>LOS "E" Requirements</u></b>	
1. Euclid Street at Imperial Highway	5. Wal-Mart Signal at Imperial Highway
2. Cypress Street at Imperial Highway	6. Harbor Boulevard at Imperial Highway <sup>9</sup>
3. Leslie Street at Imperial Highway	7. Palm Street at Imperial Highway
4. Village Drive at Imperial Highway	
<b><u>LOS "D" Requirements</u></b>	
8. Euclid Street at Lambert Road	11. Harbor Boulevard at Las Palmas Drive
9. Cypress Street at Lambert Road	12. Euclid Street at La Habra Boulevard
10. Harbor Boulevard at Lambert Road	13. Harbor Boulevard at La Habra Boulevard

- A Project's impact is considered significant if the Project increases traffic demand at a key signalized study intersection by 0.010 or greater, where the final (future) LOS is unacceptable.
- Note, any incremental traffic impact (ICU increase) at intersections that are a part of the planned Citywide Improvements within the City of La Habra are considered and addressed through the City's Citywide Fee and Phasing Ordinances<sup>10</sup>. "Fair Share" contributions can be required, even if the impacts are less than significant (0.010). These fair share contributions are based on the recommended methodology contained in the Orange County CMP TIA procedures.

<sup>9</sup> Orange County CMP intersection.

<sup>10</sup> Source: City of La Habra Traffic Improvement Fee Resolution No. 4193, passed, approved, and adopted on June 3, 1993, City of La Habra Traffic Improvement Fee Ordinance No. 1452, and Traffic Phasing Plan Ordinance No. 1453 passed, approved and adopted on June 17, 1993.

## 7.2 Traffic Impact Analysis Scenarios

Per the requirements of the City of La Habra, the following scenarios are those for which volume/capacity calculations have been performed at the thirteen (13) key study intersections for existing plus project and near-term (Year 2018) traffic conditions:

- (a) Existing Traffic Conditions;
- (b) Existing Plus Project Traffic Conditions;
- (c) Scenario (B) with Improvements, if necessary;
- (d) Near-Term (Year 2018) Cumulative Traffic Conditions,
- (e) Near-Term (Year 2018) Cumulative plus Project Traffic Conditions; and
- (f) Scenario (E) with Improvements, if necessary.

## 8.0 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

### 8.1 Existing Plus Project Traffic Conditions

*Table 8-1* summarizes the peak hour level of service results at the thirteen (13) key study intersections for Existing plus Project traffic conditions. The first column (1) of ICU/LOS values in *Table 8-1* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-3*). The second column (2) lists existing plus project traffic conditions. The third column (3) shows the increase in ICU value due to the added peak hour project trips and indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report. The fourth column (4) indicates the anticipated level of service with planned City improvements.

#### 8.1.1 Existing Traffic Conditions

As previously presented in *Table 3-3*, all of the thirteen (13) key study intersections currently operate at an acceptable level of service during the AM and PM peak hours.

#### 8.1.2 Existing Plus Project Traffic Conditions

Review of columns 2 and 3 of *Table 8-1* indicates that traffic associated with the proposed Project ***will not*** significantly impact any of the thirteen (13) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. All thirteen (13) key study intersections are forecast to operate at acceptable level of service during the AM and PM peak hours.

*Appendix C* presents the existing plus project ICU/LOS calculations for the thirteen (13) key study intersections for the AM peak hour and PM peak hour.

TABLE 8-1  
EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Project Significant Impact		(4) With Planned Improvements <sup>11</sup>	
			ICU	LOS	ICU	LOS	ICU Increase	Yes/No	ICU	LOS
1. Euclid Street at Imperial Highway	E	AM	0.796	C	0.797	C	0.001	No	--	--
		PM	0.729	C	0.731	C	0.002	No	--	--
2. Cypress Street at Imperial Highway	E	AM	0.671	B	0.674	B	0.003	No	--	--
		PM	0.681	B	0.688	B	0.007	No	--	--
3. Leslie Street at Imperial Highway	E	AM	0.543	A	0.546	A	0.003	No	--	--
		PM	0.577	A	0.583	A	0.006	No	--	--
4. Village Drive at Imperial Highway	E	AM	0.498	A	0.502	A	0.004	No	--	--
		PM	0.525	A	0.531	A	0.006	No	--	--
5. Wal-Mart Signal/Project Driveway A at Imperial Highway	E	AM	0.495	A	0.500	A	0.005	No	--	--
		PM	0.568	A	0.621	B	0.053	No	--	--
6. Harbor Boulevard at Imperial Highway	E	AM	0.830	D	0.832	D	0.002	No	--	--
		PM	0.755	C	0.759	C	0.004	No	--	--
7. Palm Street at Imperial Highway	E	AM	0.693	B	0.694	B	0.001	No	--	--
		PM	0.789	C	0.791	C	0.002	No	--	--
8. Euclid Street at Lambert Road	D	AM	0.704	C	0.706	C	0.002	No	--	--
		PM	0.781	C	0.783	C	0.002	No	--	--
9. Cypress Street at Lambert Road	D	AM	0.718	C	0.720	C	0.002	No	--	--
		PM	0.751	C	0.754	C	0.003	No	--	--

Notes:

- **BOLD ICU/LOS** indicates unacceptable service level

<sup>11</sup> Source: City of La Habra Engineering Division staff.

TABLE 8-1 (CONTINUED)  
EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Project Significant Impact		(4) With Planned Improvements <sup>12</sup>	
			ICU	LOS	ICU	LOS	ICU Increase	Yes/No	ICU	LOS
10. Harbor Boulevard at Lambert Road	D	AM	0.641	B	0.642	B	0.001	No	--	--
		PM	0.666	B	0.669	B	0.003	No	--	--
11. Harbor Boulevard at Las Palmas Drive	D	AM	0.735	C	0.735	C	0.000	No	--	--
		PM	0.632	B	0.634	B	0.002	No	--	--
12. Euclid Street at La Habra Boulevard	D	AM	0.625	B	0.627	B	0.002	No	--	--
		PM	0.688	B	0.689	B	0.001	No	--	--
13. Harbor Boulevard at La Habra Boulevard	D	AM	0.663	B	0.664	B	0.001	No	--	--
		PM	0.702	C	0.704	C	0.002	No	--	--

Notes:

- **BOLD ICU/LOS** indicates unacceptable service level

<sup>12</sup> Source: City of La Habra Engineering Division staff.

## 8.2 Year 2018 Cumulative Traffic Analysis

**Table 8-2** summarizes the peak hour level of service results at the thirteen (13) key study intersections for the Year 2018. The first column (1) of ICU/LOS values in **Table 8-2** presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in **Table 3-3**). The second column (2) lists forecast 2018 cumulative conditions (existing traffic plus ambient growth traffic plus cumulative project traffic) based on existing intersection geometry, but without any traffic generated from the proposed Project. The third column (3) presents future forecast traffic conditions with the addition of traffic generated by the proposed Project. The fourth column (4) shows the increase in ICU value due to the added peak hour project trips and indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report. The fifth column (5) indicates the anticipated level of service with planned City improvements.

### 8.2.1 Year 2018 Cumulative Traffic Conditions

An analysis of future (Year 2018) cumulative traffic conditions indicates that the addition of ambient traffic growth and cumulative project traffic will not cumulatively impact any of the thirteen (13) key study intersections. All thirteen (13) key study intersections will continue to operate at acceptable levels of service during the AM and PM peak hours with the addition of ambient traffic growth and cumulative project traffic.

### 8.2.2 Year 2018 Cumulative Plus Project Traffic Conditions

Review of columns 2 and 3 of **Table 8-2** indicates that traffic associated with the proposed Project ***will not*** significantly impact any of the thirteen (13) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. All thirteen (13) key study intersections are expected to operate at an acceptable LOS with the addition of Project generated traffic in the Year 2018.

*Appendix C* presents the Year 2018 plus project ICU/LOS calculations for the thirteen (13) key study intersections for the AM peak hour and PM peak hour.

TABLE 8-2  
YEAR 2018 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2018 Cumulative Traffic Conditions		(3) Year 2018 Cumulative Plus Project Traffic Conditions		(4) Project Significant Impact		(5) With Planned Improvements <sup>13</sup>	
			ICU	LOS	ICU	LOS	ICU	LOS	ICU Increase	Yes/No	ICU	LOS
1. Euclid Street at Imperial Highway	E	AM	0.796	C	0.839	D	0.841	D	0.002	No	--	--
		PM	0.729	C	0.785	C	0.792	C	0.007	No	--	--
2. Cypress Street at Imperial Highway	E	AM	0.671	B	0.712	C	0.715	C	0.003	No	--	--
		PM	0.681	B	0.729	C	0.736	C	0.007	No	--	--
3. Leslie Street at Imperial Highway	E	AM	0.543	A	0.584	A	0.587	A	0.003	No	--	--
		PM	0.577	A	0.648	B	0.654	B	0.006	No	--	--
4. Village Drive at at Imperial Highway	E	AM	0.498	A	0.594	A	0.596	A	0.002	No	--	--
		PM	0.525	A	0.661	B	0.666	B	0.005	No	--	--
5. Wal-Mart Signal/Project Driveway A at Imperial Highway	E	AM	0.495	A	0.529	A	0.534	A	0.005	No	--	--
		PM	0.568	A	0.606	B	0.659	B	0.053	No	--	--
6. Harbor Boulevard at Imperial Highway	E	AM	0.830	D	0.875	D	0.878	D	0.003	No	--	--
		PM	0.755	C	0.800	C	0.814	D	0.014	No	--	--
7. Palm Street at Imperial Highway	E	AM	0.693	B	0.722	C	0.723	C	0.001	No	--	--
		PM	0.789	C	0.823	D	0.824	D	0.001	No	--	--
8. Euclid Street at Lambert Road	D	AM	0.704	C	0.754	C	0.756	C	0.002	No	--	--
		PM	0.781	C	0.828	D	0.830	D	0.002	No	--	--

Notes:

- **BOLD ICU/LOS** indicates unacceptable service level

<sup>13</sup> Source: City of La Habra Engineering Division Department staff.

TABLE 8-2 (CONTINUED)  
YEAR 2018 PEAK HOUR INTERSECTION CAPACITY ANALYSIS

Key Intersections	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2018 Cumulative Traffic Conditions		(3) Year 2018 Cumulative Plus Project Traffic Conditions		(4) Project Significant Impact		(5) With Planned Improvements <sup>14</sup>	
			ICU	LOS	ICU	LOS	ICU	LOS	ICU Increase	Yes/No	ICU	LOS
9. Cypress Street at Lambert Road	D	AM	0.777	C	0.754	C	0.755	C	0.001	No	--	--
		PM	0.789	C	0.789	C	0.792	C	0.003	No	--	--
10. Harbor Boulevard at Lambert Road	D	AM	0.641	B	0.678	B	0.679	B	0.001	No	--	--
		PM	0.666	B	0.706	C	0.709	C	0.003	No	--	--
11. Harbor Boulevard at Las Palmas Drive	D	AM	0.625	B	0.763	C	0.764	C	0.001	No	--	--
		PM	0.688	B	0.659	B	0.660	B	0.001	No	--	--
12. Euclid Street at La Habra Boulevard	D	AM	0.663	B	0.671	B	0.673	B	0.002	No	--	--
		PM	0.702	C	0.727	C	0.728	C	0.001	No	--	--
13. Harbor Boulevard at La Habra Boulevard	D	AM	0.777	C	0.702	C	0.703	C	0.001	No	--	--
		PM	0.789	C	0.742	C	0.745	C	0.003	No	--	--

Notes:

- **BOLD ICU/LOS** indicates unacceptable service level

<sup>14</sup> Source: City of La Habra Engineering Division Department staff.

## 9.0 STATE OF CALIFORNIA (CALTRANS) METHODOLOGY

In conformance with the current Caltrans *Guide for the Preparation of Traffic Impact Studies*, existing and projected peak hour operating conditions at the seven (7) state-controlled study intersections within the study area have been evaluated using the *Highway Capacity Manual* (HCM for signalized intersections) operations method of analysis; the method of analysis is also required by the City of Fullerton for those signalized intersections under their jurisdiction. These state-controlled locations include the following seven of thirteen study intersections:

1. Euclid Street at Imperial Highway
2. Cypress Street at Imperial Highway
3. Leslie Street at Imperial Highway
4. Village Drive at Imperial Highway
5. Wal-Mart Signal at Imperial Highway
6. Harbor Boulevard at Imperial Highway
7. Palm Street at Imperial Highway

Caltrans “endeavors to maintain a target LOS at the transition between LOS “C” and LOS “D” on State highway facilities”; it does not require that LOS “D” (shall) be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. Since the intersections within Caltrans right-of-way are under the jurisdiction of the City of La Habra, the City is the lead agency and the City’s level of service standard should be used. The City acknowledges that it may be difficult and expensive to maintain LOS “D” on State facilities, such as Imperial Highway, since their primary function is to serve regional traffic due to the lack of nearby freeways.

According to City of La Habra criteria, LOS D is the level of service goal that has been established for the morning and evening peak commute hours on all City intersections, except those on the Congestion Management Program Highway System (CMPHS) of Orange County, where LOS E is defined in the CMP for Orange County as the acceptable limit and is acceptable for State Highway intersections. Within the project study area, Imperial Highway and Harbor Boulevard are part of the CMPHS for Orange County. Based on the above-stated LOS standard, LOS E is considered acceptable at the seven state-controlled intersections.

### 9.1 Highway Capacity Manual (HCM) Method of Analysis (Signalized Intersections)

Based on the HCM operations method of analysis, level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometries, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of any incidents, and when there are no other vehicles on the road.

In the HCM, only the portion of total delay attributed to the control facility is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Specifically, LOS criteria for traffic signals are stated in

terms of the average control delay per vehicle. The six qualitative categories of Level of Service that have been defined along with the corresponding HCM control delay value range for signalized intersections are shown in **Table 9-1**.

## 9.2 Existing Plus Project Traffic Conditions

**Table 9-2** summarizes the peak hour *Highway Capacity Manual* level of service results at the seven state-controlled study intersections within the study area for Existing plus Project traffic conditions. The first column (1) of HCM/LOS values in **Table 9-2** presents a summary of existing traffic conditions. The second column (2) presents existing plus project traffic conditions based on existing intersection geometry. The third column (3) indicates whether added peak hour Project trips will have a significant impact based on the significant impact criteria defined in this report.

### 9.2.1 Existing Traffic Conditions

All seven (7) state-controlled study intersections currently operate at an acceptable LOS during the AM and PM peak hours.

### 9.2.2 Existing Plus Project Traffic Conditions

Review of Columns 2 and 3 of **Table 9-2** indicates that traffic associated with the proposed Project ***will not*** significantly impact any of the seven (7) state-controlled study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The seven (7) state-controlled study intersections are forecast to continue to operate at an acceptable LOS with the addition of Project generated traffic to existing traffic.

## 9.3 Year 2018 Plus Project Traffic Conditions

**Table 9-3** summarizes the peak hour *Highway Capacity Manual* level of service results at the seven state-controlled study intersections within the study area for the 2018 horizon year. The first column (1) of HCM/LOS values in **Table 9-3** presents a summary of existing traffic conditions. The second column (2) presents Year 2018 cumulative traffic conditions based on existing intersection geometry, but without any Project generated traffic. The third column (3) presents future forecast traffic conditions with the addition of project traffic. The fourth column (4) indicates whether added peak hour Project trips will have a significant impact based on the significant impact criteria defined in this report.

**TABLE 9-1**  
**LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (HCM METHODOLOGY)<sup>15</sup>**

Level of Service (LOS)	Control Delay Per Vehicle (seconds/vehicle)	Level of Service Description
A	$\leq 10.0$	<p>This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.</p>
B	$> 10.0$ and $\leq 20.0$	<p>This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.</p>
C	$> 20.0$ and $\leq 35.0$	<p>Average traffic delays. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.</p>
D	$> 35.0$ and $\leq 55.0$	<p>Long traffic delays. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high <math>v/c</math> ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.</p>
E	$> 55.0$ and $\leq 80.0$	<p>Very long traffic delays. This level is considered by many agencies (i.e. SANBAG) to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high <math>v/c</math> ratios. Individual cycle failures are frequent occurrences.</p>
F	$\geq 80.0$	<p>Severe congestion. This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high <math>v/c</math> ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such delay levels.</p>

<sup>15</sup> Source: *Highway Capacity Manual* (Signalized Intersections).

**TABLE 9-2**  
**EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS**

Key Intersections	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Impact
			HCM	LOS	HCM	LOS	Yes/No
1. Euclid Street at Imperial Highway	E	AM	41.2 sec/veh	D	48.4 sec/veh	D	No
		PM	36.9 sec/veh	D	49.1 sec/veh	D	No
2. Cypress Street at Imperial Highway	E	AM	21.4 sec/veh	C	32.3 sec/veh	C	No
		PM	5.4 sec/veh	A	10.2 sec/veh	B	No
3. Leslie Street at Imperial Highway	E	AM	19.2 sec/veh	B	22.3 sec/veh	C	No
		PM	21.7 sec/veh	C	24.3 sec/veh	C	No
4. Village Drive at Imperial Highway	E	AM	1.8 sec/veh	A <sup>16</sup>	3.6 sec/veh <sup>16</sup>	A	No
		PM	1.6 sec/veh	A	2.9 sec/veh	A	No
5. Wal-Mart Signal/Project Driveway A at Imperial Highway	E	AM	25.3 sec/veh	C	25.8 sec/veh	C	No
		PM	25.9 sec/veh	C	28.8 sec/veh	C	No
6. Harbor Boulevard at Imperial Highway	E	AM	76.0 sec/veh	E	78.0 sec/veh	E	No
		PM	70.7 sec/veh	E	74.5 sec/veh	E	No
7. Palm Street at Imperial Highway	E	AM	36.7 sec/veh	D	38.9 sec/veh	D	No
		PM	41.7 sec/veh	D	44.8 sec/veh	D	No

<sup>16</sup> HCM 2010 methodology does not recognize half signals, therefore the level of service results utilize HCM 2000 methodology.

**TABLE 9-3**  
**YEAR 2018 PEAK HOUR INTERSECTION CAPACITY ANALYSIS – CALTRANS**

Key Intersections	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2018 Cumulative Traffic Conditions		(3) Year 2018 Cumulative Plus Project Traffic Conditions		(4) Impact
			HCM	LOS	HCM	LOS	HCM	LOS	Yes/No
1. Euclid Street at Imperial Highway	E	AM	41.2 sec/veh	D	59.8 sec/veh	E	60.2 sec/veh	E	No
		PM	36.9 sec/veh	D	52.2 sec/veh	D	53.0 sec/veh	D	No
2. Cypress Street at Imperial Highway	E	AM	21.4 sec/veh	C	24.8 sec/veh	C	25.3 sec/veh	C	No
		PM	5.4 sec/veh	A	5.9 sec/veh	A	6.0 sec/veh	A	No
3. Leslie Street at Imperial Highway	E	AM	19.2 sec/veh	B	20.9 sec/veh	C	21.4 sec/veh	C	No
		PM	21.7 sec/veh	C	25.1 sec/veh	C	27.3 sec/veh	C	No
4. Village Drive at Imperial Highway	E	AM	1.8 sec/veh	A <sup>17</sup>	16.4 sec/veh	B	16.9 sec/veh	B	No
		PM	1.6 sec/veh	A	7.0 sec/veh	A	8.7 sec/veh	A	No
5. Wal-Mart Signal/Project Driveway A at Imperial Highway	E	AM	25.3 sec/veh	C	29.8 sec/veh	C	32.5 sec/veh	C	No
		PM	25.9 sec/veh	C	26.6 sec/veh	C	29.3 sec/veh	C	No
6. Harbor Boulevard at Imperial Highway	E	AM	76.0 sec/veh	E	76.9 sec/veh	E	79.1 sec/veh	E	No
		PM	70.7 sec/veh	E	78.6 sec/veh	E	78.8 sec/veh	E	No
7. Palm Street at Imperial Highway	E	AM	36.7 sec/veh	D	38.2 sec/veh	D	41.3 sec/veh	D	No
		PM	41.7 sec/veh	D	45.9 sec/veh	D	46.7 sec/veh	D	No

<sup>17</sup> HCM 2010 methodology does not recognize half signals, therefore the level of service results utilize HCM 2000 methodology.

### 9.3.1 Year 2018 Cumulative Traffic Conditions

An analysis of future (Year 2018) cumulative traffic conditions indicates that the addition of ambient traffic growth and cumulative projects traffic ***will not*** adversely impact any of the seven (7) state-controlled study intersections. The seven state-controlled study intersections are forecast to operate at an acceptable LOS during the AM and PM peak hours with the addition of ambient traffic growth and cumulative projects traffic.

### 9.3.2 Year 2018 Cumulative Plus Project Traffic Conditions

Review of Columns 3 and 4 of *Table 9-3* indicates that traffic associated with the proposed Project ***will not*** significantly impact any of the seven (7) state-controlled study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The seven (7) state-controlled study intersections are forecast to operate at an acceptable LOS with the addition of project generated traffic in Year 2018.

***Appendix D*** presents the existing plus project and Year 2018 plus project HCM/LOS calculations for the seven state-controlled study intersections.

## 10.0 SITE ACCESS EVALUATION

### 10.1 Level of Service Analysis For Project Access Locations

As previously shown in *Figure 2-2*, access to the proposed Project will be provided via the signalized driveway on Imperial Highway located opposite the Walmart driveway, referred to as Driveway A, and one (1) right-turn in/out only driveway, referred to as Driveway B. In addition, access from Harbor Boulevard to the subject property is also provided via an access easement/alley driveway that is located along the northerly property of the site and the adjacent properties to the east (i.e. Pepper Shaker Café and CVS Pharmacy).

*Table 10-1* summarizes the intersection operations for the two project driveways for Year 2018 traffic conditions with the proposed Project. Review of *Table 10-1* shows that the two project driveways and alley access on Harbor Boulevard are forecast to operate at acceptable LOS C or better during the AM and PM peak hours in the Year 2018. As such, motorists entering and exiting the Project site will be able to do so comfortably, safely, and without undue congestion.

*Appendix E* contains the detailed level of service calculation worksheets for the Project site driveways.

### 10.2 Queuing Analysis For Project Access Locations

Stacking/storage requirements at the Project driveways were evaluated using *Synchro 9.0 Percentile Delay Methodology*. The queuing evaluation was conducted based on Year 2018 plus Project peak hour driveway traffic volumes.

Wal-Mart Signal/Project Driveway A at Imperial Highway: Based on the *Synchro 9.0* worksheets, which calculates a critical (Synchro 95<sup>th</sup> percentile) queue value in feet, the AM peak hour and PM peak hour queue length is not more than 27 feet and 68 feet for the southbound (outbound) shared left/thru and right movements, respectively. The queue length for the eastbound left-turn (inbound) movement at proposed Driveway A is not more than 66 feet. Review of the proposed site plan indicates that Driveway A provides two outbound lanes with stacking sufficient enough to accommodate the proposed queue (SB left/through lane storage totals approx. 80 feet, whereas SB right-turn lane storage totals approx.. 40 feet). The existing eastbound left-turn lane on Imperial Highway provides a storage length that measures approximately 95 feet with a 90-foot transition, which is sufficient enough to accommodate the forecast queue of vehicles.

Project Driveway B at Imperial Highway: The AM peak hour and PM peak hour queue length is not more than 22 feet for the southbound (outbound) movements at proposed Driveway B. Review of the proposed site plan indicates that Driveway B provides one outbound lane with stacking sufficient enough to accommodate the forecast queue.

**TABLE 10-1**  
**YEAR 2018 PEAK HOUR LEVELS OF SERVICE SUMMARY AT THE PROJECT DRIVEWAYS**

<b>Project Driveways</b>	<b>Time Period</b>	<b>Control Type</b>	<b>HCM</b>	<b>LOS</b>
Wal-Mart Signal/Project Driveway A at Imperial Highway	AM	5Ø Traffic	32.5 sec/veh	C
	PM	Signal	29.3 sec/veh	C
Project Driveway B at Imperial Highway <sup>18</sup>	AM	One – Way	9.1 sec/veh	A
	PM	Stop	10.1 sec/veh	B
Alley Access Driveway at Harbor Boulevard <sup>19</sup>	AM	One – Way	12.8 sec/veh	B
	PM	Stop	12.0 sec/veh	B

<sup>18</sup> Results for Project Driveway B at Imperial Highway are based on *HCM 2000* methodology, which yields a more realistic result compared to the *HCM 2010* methodology.

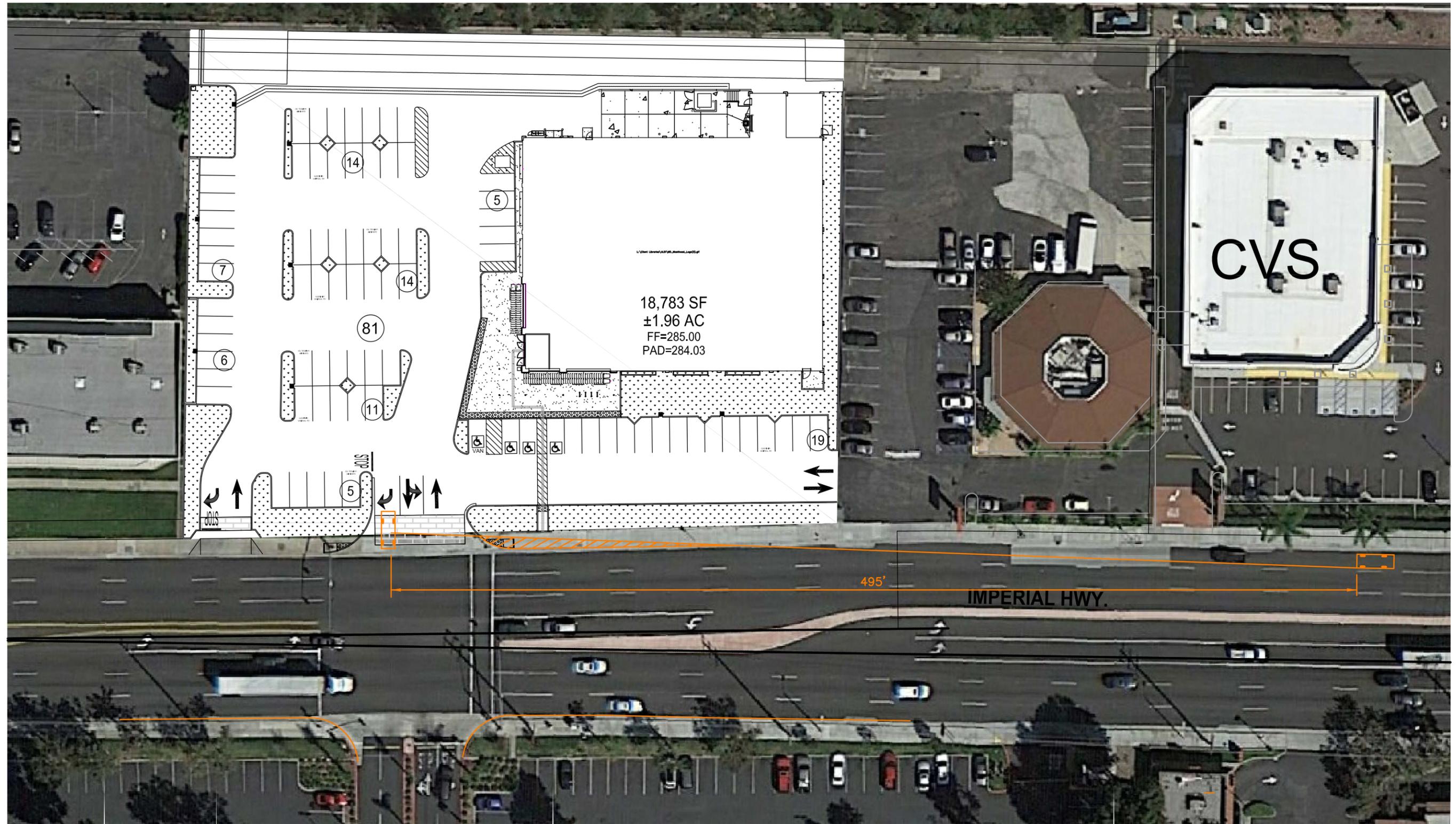
<sup>19</sup> Results for Alley Access at Harbor Boulevard are based on *HCM 2000* methodology, which yields a more realistic result compared to the *HCM 2010* methodology.

### 10.3 Sight Distance Evaluation

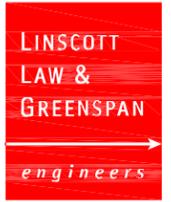
At intersections and/or project driveways, a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either cross all lanes of through traffic, cross the near lanes and turn left, or turn right, without requiring through traffic to radically alter their speed. A sight distance evaluation has been performed for both the signalized driveway (Driveway A) and the unsignalized driveway (Driveway B) along Imperial Highway.

The Sight Distance Evaluation prepared for the both Project Driveways are based on the criteria and procedures set forth by the California Department of Transportation (Caltrans) in the State's *Highway Design Manual (HDM)*. Per the direction of City staff, corner sight distance was utilized for the evaluation. Corner sight distance is defined in the Caltrans HDM to be the distance required by the driver of a vehicle, traveling at a given speed, to maneuver their vehicle and avoid an object without radically altering their speed. Line of sight for corner sight distance is to be determined from a 3½ foot height at the location of the driver of a vehicle on a minor road to a 4¼ foot object height in the center of the approaching lane of the major road. Based on the criteria set forth in Table 405.1A - Corner Sight Distance (7½ Second Criteria) of the Caltrans HDM and a posted speed limit of 45 mph, a corner sight distance of 495 feet is required for both Project Driveways on Imperial Highway, respectively.

**Figure 10-1A** and **Figure 10-1B** presents a schematic of the sight distance evaluation performed at Project Driveway A and Project Driveway B which illustrates the actual sight distances and corresponding limited use areas. A review of this figure indicates that the sight lines at Project Driveway A and Project Driveway B are expected to be adequate provided obstructions within the sight triangles are minimized. A field review of existing conditions on Imperial Highway along project frontage east of Project Driveway B, as well as east of Project Driveway A (signalized driveway) indicate that obstructions along the sidewalks are minimal. Therefore, any landscaping and/or hardscapes (i.e. monument signs) should be designed such that a driver's clear line of sight is not obstructed.



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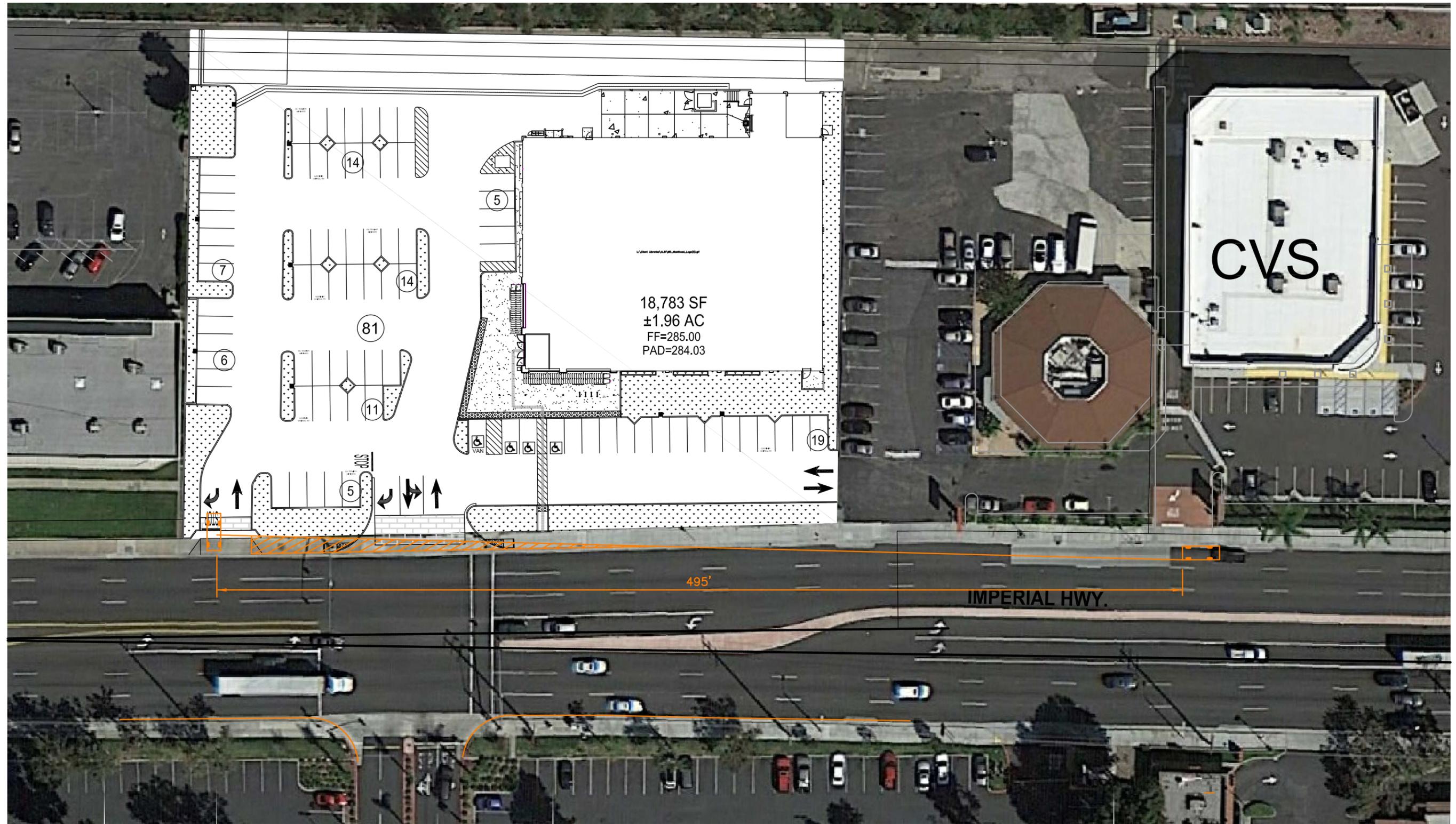


**N**  
SCALE: 1"=50'

CORNER SIGHT DISTANCE	
DESIGN SPEED LIMIT:	45 MPH
REQUIRED CORNER SIGHT DISTANCE:	495 FEET

**LEGEND**  
 LIMITED USE AREA: TO ENSURE ADEQUATE SIGHT DISTANCE, HARDSCAPE AND/OR LANDSCAPE SHALL NOT BE HIGHER THAN 30 INCHES. NO FENCES OR WALLS IN LIMITED USE AREA.

**FIGURE 10-1A**  
 SIGHT DISTANCE EVALUATION FOR  
 PROJECT DRIVEWAY "A" AT IMPERIAL HIGHWAY  
 ALDI FOOD MARKET, LA HABRA



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CORNER SIGHT DISTANCE	
DESIGN SPEED LIMIT:	45 MPH
REQUIRED CORNER SIGHT DISTANCE:	495 FEET

**LEGEND**  
 LIMITED USE AREA: TO ENSURE ADEQUATE SIGHT DISTANCE, HARDSCAPE AND/OR LANDSCAPE SHALL NOT BE HIGHER THAN 30 INCHES. NO FENCES OR WALLS IN LIMITED USE AREA.

**FIGURE 10-1B**  
 SIGHT DISTANCE EVALUATION FOR  
 PROJECT DRIVEWAY "B" AT IMPERIAL HIGHWAY  
 ALDI FOOD MARKET, LA HABRA

## 10.4 Internal Circulation Evaluation

The on-site circulation layout of the proposed Project, based upon review of the conceptual site plan prepared by Greenberg Farrow, on an overall basis is generally adequate. Our evaluation of the on-site circulation shown on the preliminary site plans was performed using the *Turning Vehicle Templates*, developed by Jack E. Leisch & Associates and *AutoTURN for AutoCAD* computer software that simulates turning maneuvers for various types of vehicles. The turning templates were utilized to ensure that the turning requirements of various types of full-size trucks (WB-40, WB-50, and WB-67), small service/delivery trucks (SU-30 or equivalent) (i.e., UPS, FedEx, and trash trucks), fire trucks and passenger vehicles could properly access and circulate through the Project site. A small truck (SU-30) turning template, fire truck turning template, and large truck turning template for various types of full-size trucks (WB-40, WB-50 and WB-67) was utilized in this evaluation.

Based on our evaluation, the curb return radii for the project driveways on Imperial Highway and the alley driveway on Harbor Boulevard have been reviewed and are adequate.

### 10.4.1 SU-30 and Fire Truck Assessment

**Figures 10-2** and **10-3** present the turning movements required of a small service/delivery truck (SU-30 or equivalent) and a fire truck to access and circulate throughout the site, respectively. A review of *Figure 10-2* indicates that access for a SU-30 type truck, used frequently by some vendors of the Project, can be accommodated and circulate the site without inhibiting internal traffic flow.

Hence, no turn restrictions or delivery hour restrictions are necessary or recommended for small service/delivery trucks (SU-30 or equivalent) that will service the Project, with the exception of access via Project Driveway B; no truck access should be allowed at this location.

In addition, as shown in *Figure 10-3*, access for a fire truck can be accommodated.

### 10.4.2 WB-40 Mid-Size Truck Assessment

**Figures 10-4** and **10-5** present the turning movements required of a mid-size delivery truck (WB-40 or equivalent) and circulate throughout the site via the signalized entry on Imperial Highway and the alley driveway on Harbor Boulevard, respectively. A review of *Figures 10-4* and *10-5* indicate that access for a WB-40 type truck, also used frequently by vendors of the Project (i.e. beer, soda, wine & spirits, dairy, water, etc.) can be accommodated, inclusive of the eastbound left-turn movement and westbound right-turn movement at the Walmart/Project Driveway A and Imperial Highway intersection. Further, a WB-40 type truck can circulate the site without inhibiting internal traffic flow.

Hence, no turn restrictions or delivery hour restrictions are necessary or recommended for mid-size delivery trucks (WB-40 or equivalent) that will service the Project, with the exception of access via Project Driveway B; no truck access should be allowed at this location.

### 10.4.3 WB-50 and WB-67 Full-Size Trucks Assessment

**Figures 10-6, 10-7, 10-8 and 10-9** present the turning movements required of various types of full-size trucks (WB-50 and WB-67, respectively) to access and circulate throughout the site. According to the project applicant, these large trucks are of the type which is used by Aldi when making daily deliveries to the grocery store.

Relative to large truck access (WB-50 and WB-67) for the Project, *Figures 10-4, 10-5, 10-6 and 10-7* present the turning movements at they enter and/or exit the site from Driveway A (Wal-Mart driveway) and the access alley on Harbor Boulevard. It should be noted that large truck (WB-50, and WB-67) access at Driveway A and Driveway B for trucks originating from the east (i.e. SR-57 Freeway) that are traveling westbound on Imperial Highway is recommended to be restricted by the Project given large truck turning requirements for WB-50 and WB-67 trucks at these driveways cannot be accommodated based on assessment of these driveways.

Hence, inbound truck movements for a WB-50 and WB-67 truck approaching the site from the east (i.e. SR-57 Freeway) should be limited to access via the alleyway off Harbor Boulevard and Aldi should direct large delivery truck to enter the site via a southbound right-turn off of Harbor Boulevard. It should be noted that full-size (WB-50 and WB-67) trucks accessing the site from Harbor Boulevard will likely infringe on the outbound travel lanes.

Relative to the eastbound left-turn movement on Imperial Highway at Driveway A (Wal-Mart driveway), a review of *Figure 10-6* indicates that a WB-50 full-size truck can access the site and circulate the drive aisle in front of the market to arrive at the loading dock. However, given a WB-67 full-size truck accessing the site via the eastbound left-turn on Imperial Highway will impede the southbound drive aisle in front of the market, truck deliveries for this size of truck should be limited to non-peak business hours to minimize any possible conflicts.

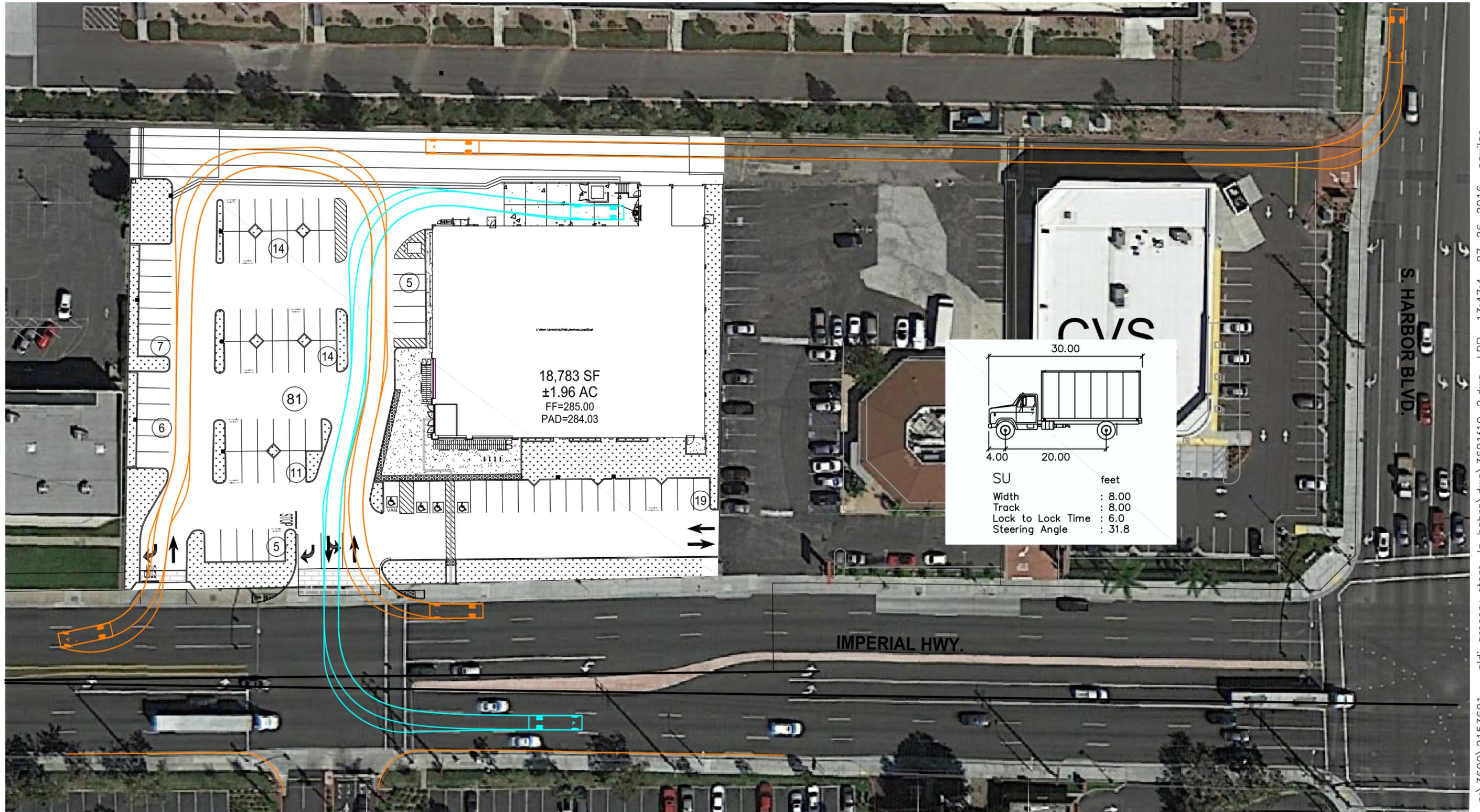
Therefore, truck deliveries for a WB-67 full-size truck should be limited to non-peak business hours to minimize any possible conflicts and congestion at the main signalized entry (Driveway A) on Imperial Highway, as well as the alley driveway on Harbor Boulevard.

For a WB-50 full-size truck, the same restrictions should apply if this size of truck is to use the alley driveway on Harbor Boulevard. However, since a WB-50 full-size truck can access and circulate the site without inhibiting internal traffic flow via the eastbound left-turn on Imperial Highway at Driveway A (Wal-Mart Driveway), no delivery hour restrictions are necessary.

We understand that it is Aldi's policy to coordinate closely with their suppliers on delivery times and methods to insure there is no interference with the retail center operations as well as no inconvenience to the associated customers. Further, we understand that primary deliveries to the site, which would be made by either a WB-50 or WB-67 truck, are typically scheduled early in the day prior to the opening of the store to customers. According to Aldi, the grocery market is open Monday through Sunday, from 9:00 AM to 9:00 PM.

Therefore, it is recommended that the project applicant coordinate with the City of La Habra to determine the time period when full-size truck deliveries are to be permitted. Based on our assessment and the anticipated hours of operations for the proposed Aldi La Habra, it is recommended that large truck deliveries (WB-50 and WB-67) be limited to between the hours of 9:00 PM to 6:00 AM, Monday through Sunday to outside the hours when Aldi is open to customers/general public and/or avoid the weekday morning peak hour. However, since a WB-50 full-size truck can access and circulate the site without inhibiting internal traffic flow via the eastbound left-turn on Imperial Highway at Driveway A (Wal-Mart Driveway), no delivery hour restrictions are necessary if deliveries are to be made via this turning movement.

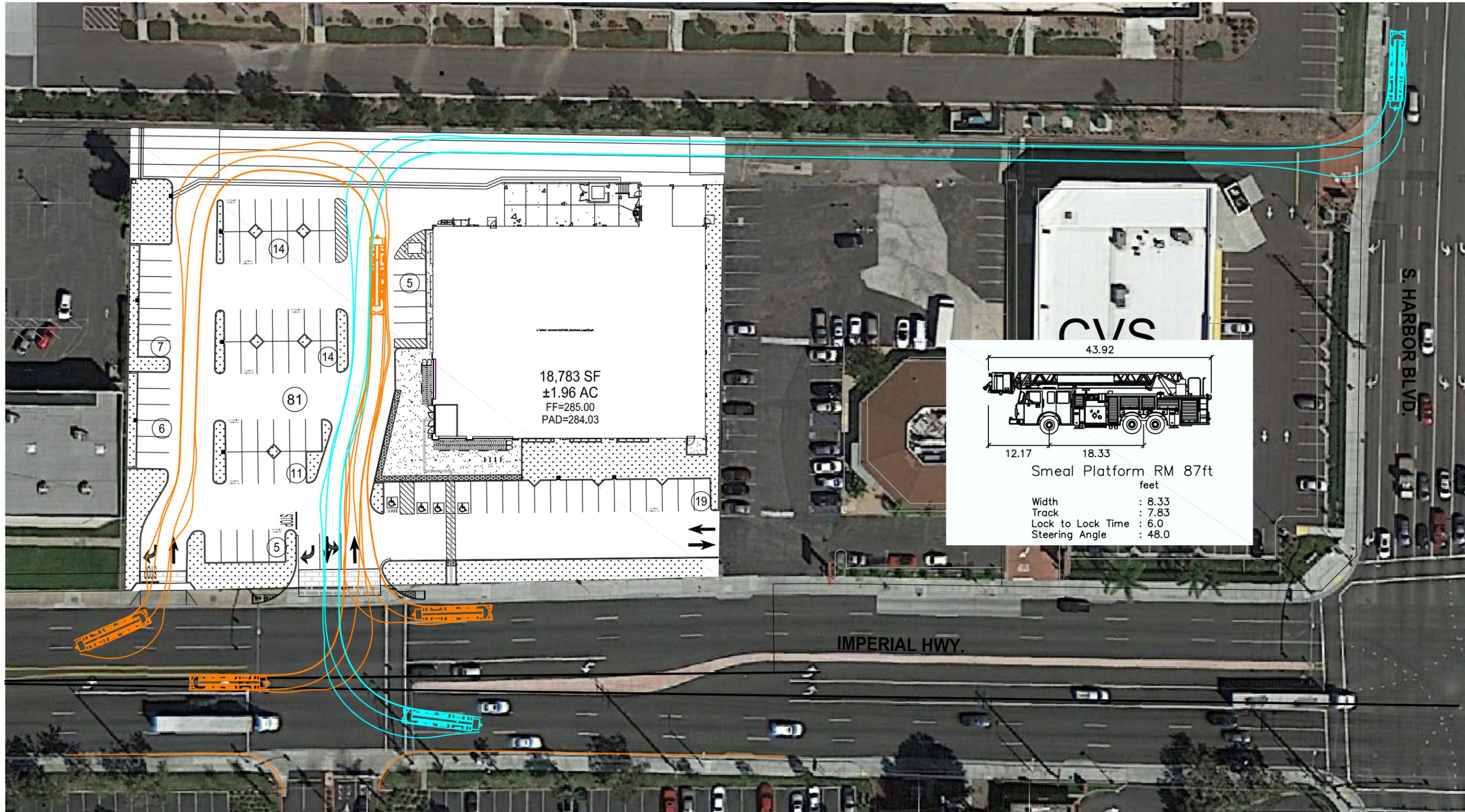
Further, it is recommended that Aldi provide written instructions that require truck deliveries utilize the alley access on Harbor Boulevard for those delivery trucks approaching the market from the east.



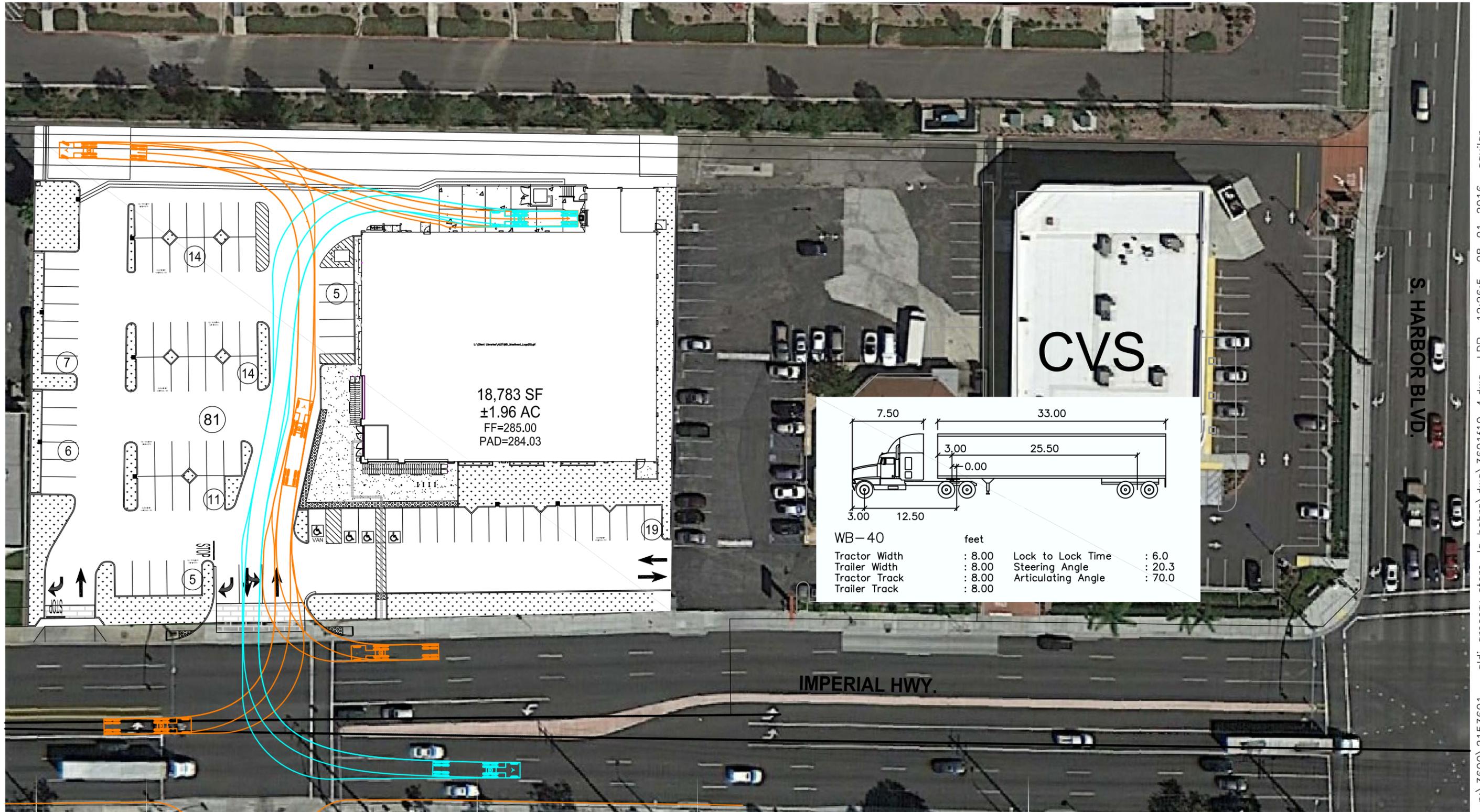
n:\3600\2153601 - aldi grocery store, la habra\dwg\3601f10-2.dwg LDP 13:47:4 07-26-2016 aguilar

FIGURE 10-2

SU-30 TRUCK TURNING MOVEMENT ANALYSIS  
ALDI FOOD MARKET, LA HABRA



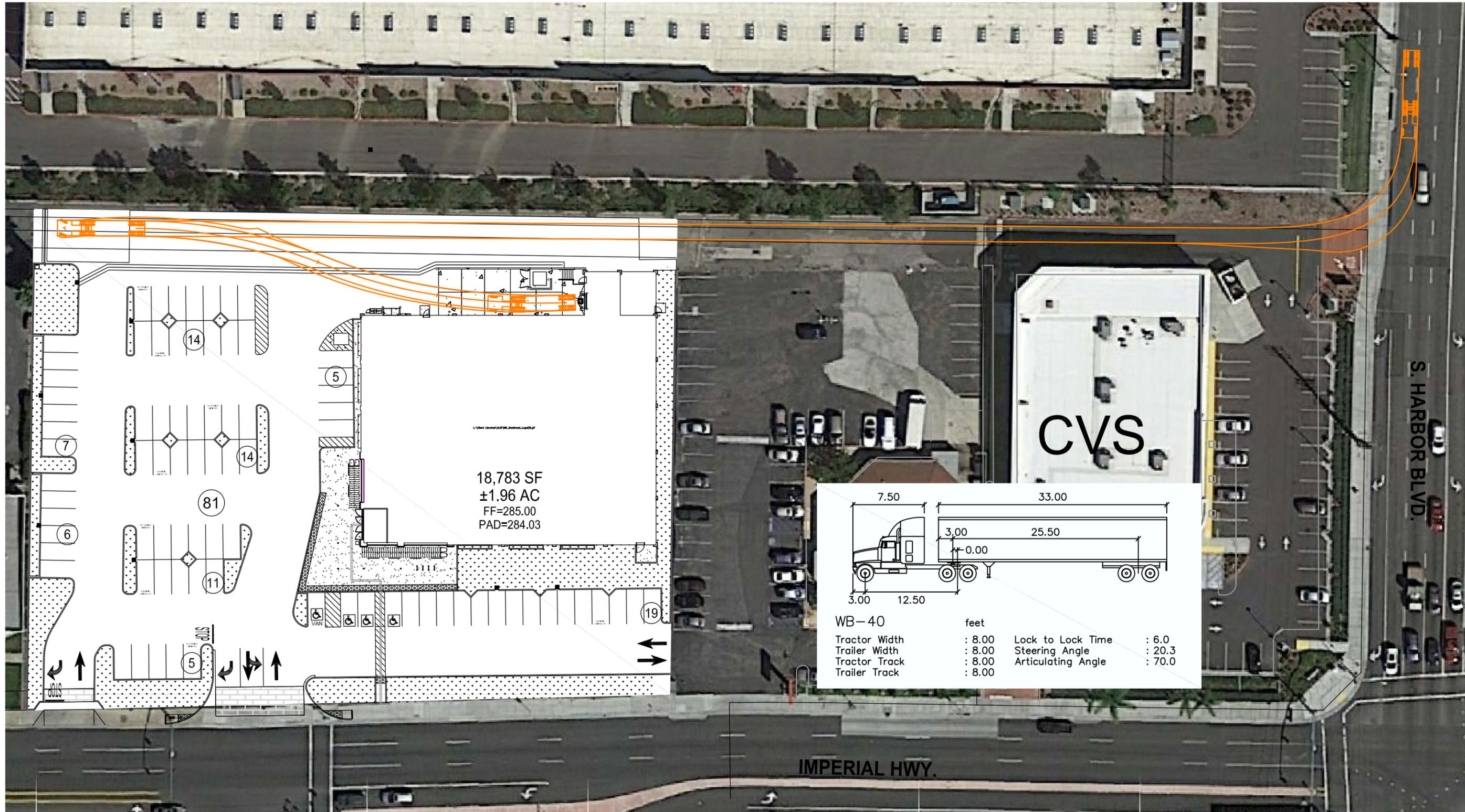
n:\3600\2153601 - aldi grocery store, la habra\dwg\3601f10-3.dwg LDP 11:53:14 08-01-2016 aguilar



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FIGURE 10-4

WB-40 TRUCK TURNING MOVEMENT ANALYSIS OFF IMPERIAL HIGHWAY  
ALDI FOOD MARKET, LA HABRA



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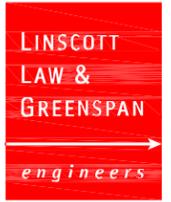
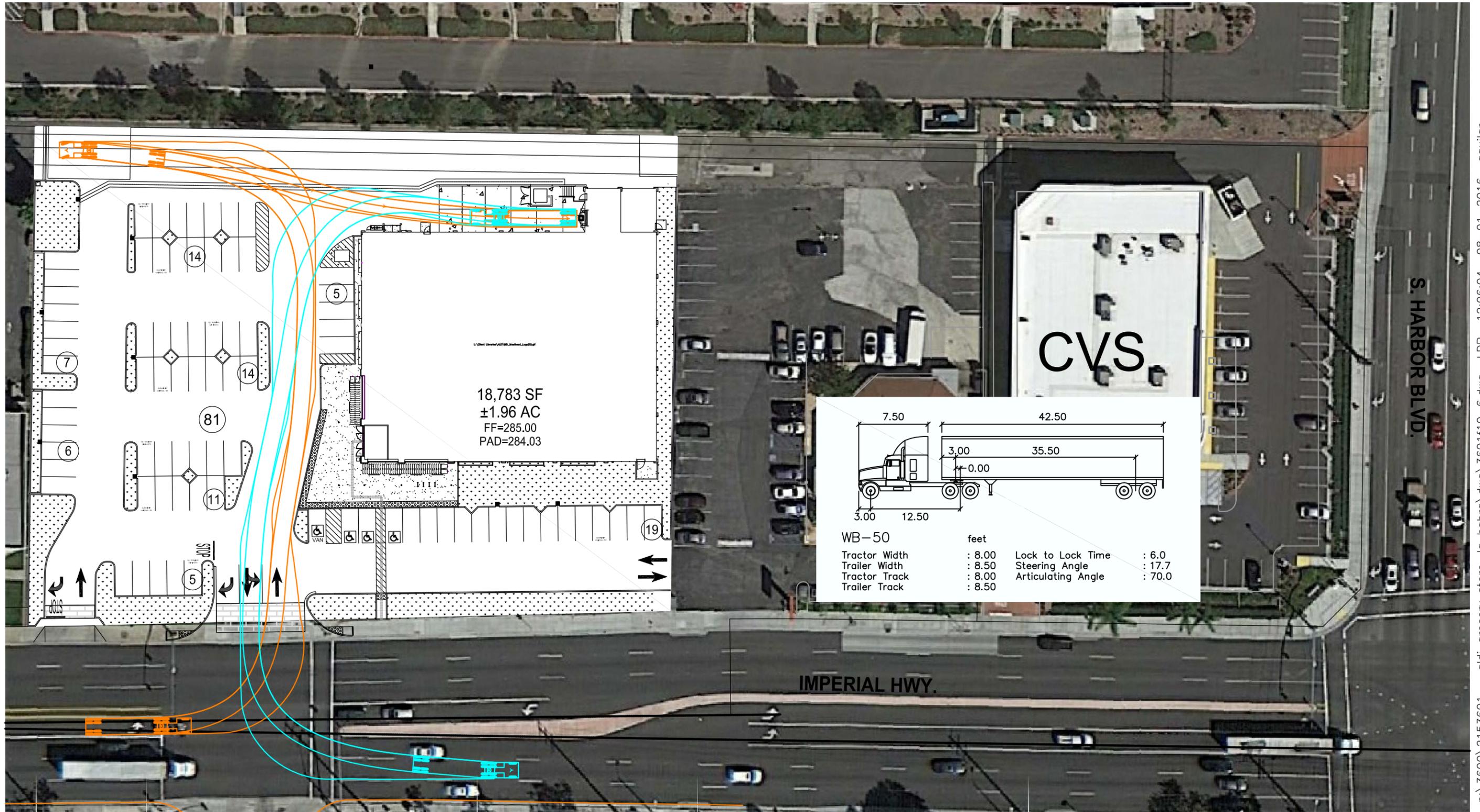


FIGURE 10-5

WB-40 TRUCK TURNING MOVEMENT ANALYSIS OFF HARBOR BOULEVARD  
ALDI FOOD MARKET, LA HABRA



n:\3600\2153601 - aldi grocery store, la habra\dwg\3601f10-6.dwg LDP 12:06:04 08-01-2016 aguilar

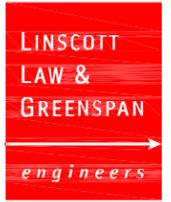
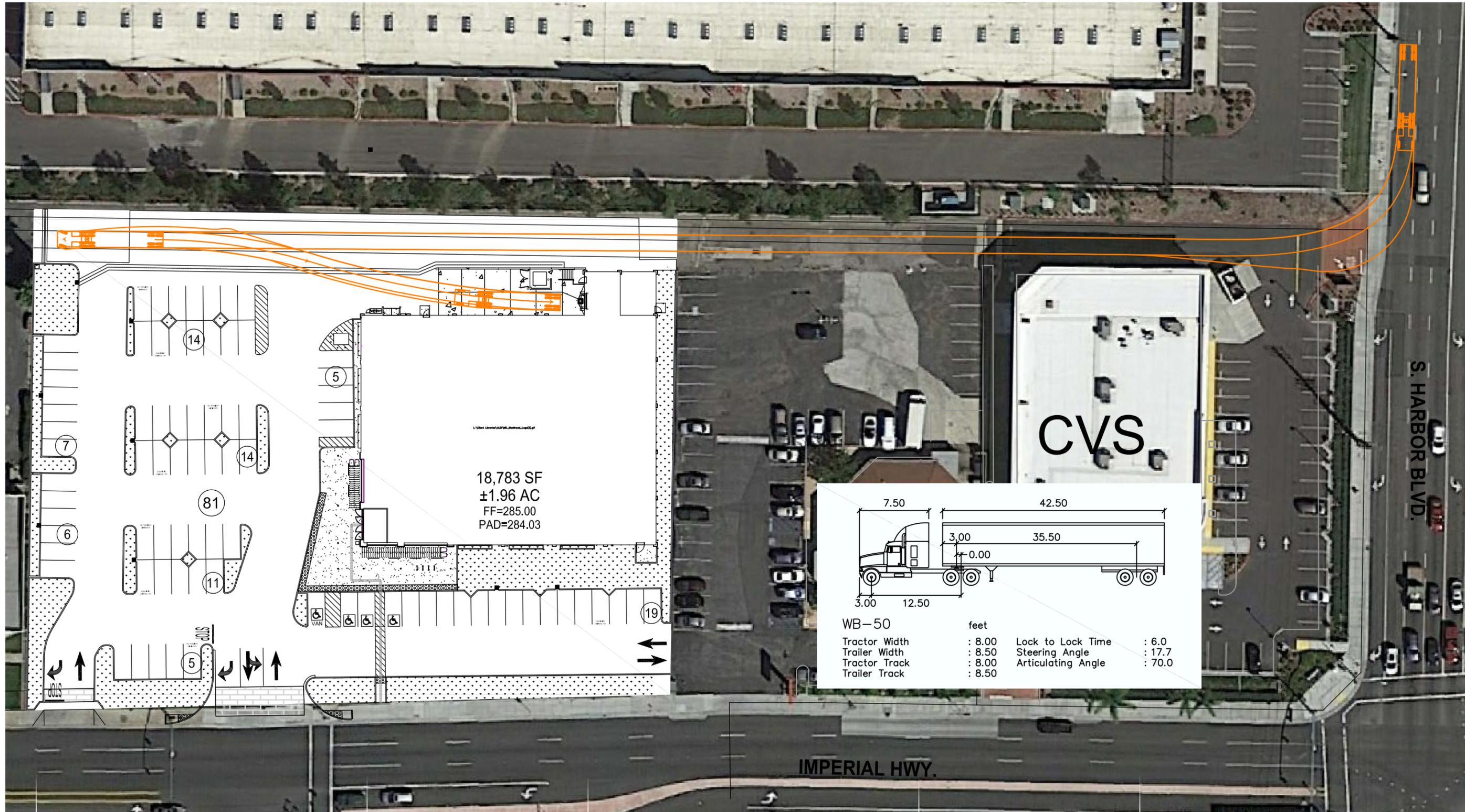


FIGURE 10-6

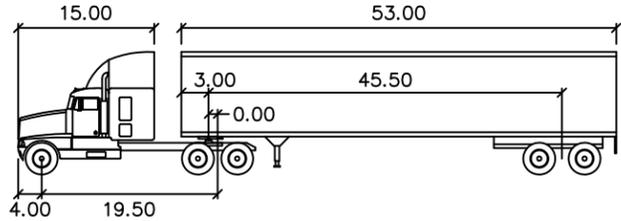
WB-50 TRUCK TURNING MOVEMENT ANALYSIS OFF IMPERIAL HIGHWAY  
ALDI FOOD MARKET, LA HABRA



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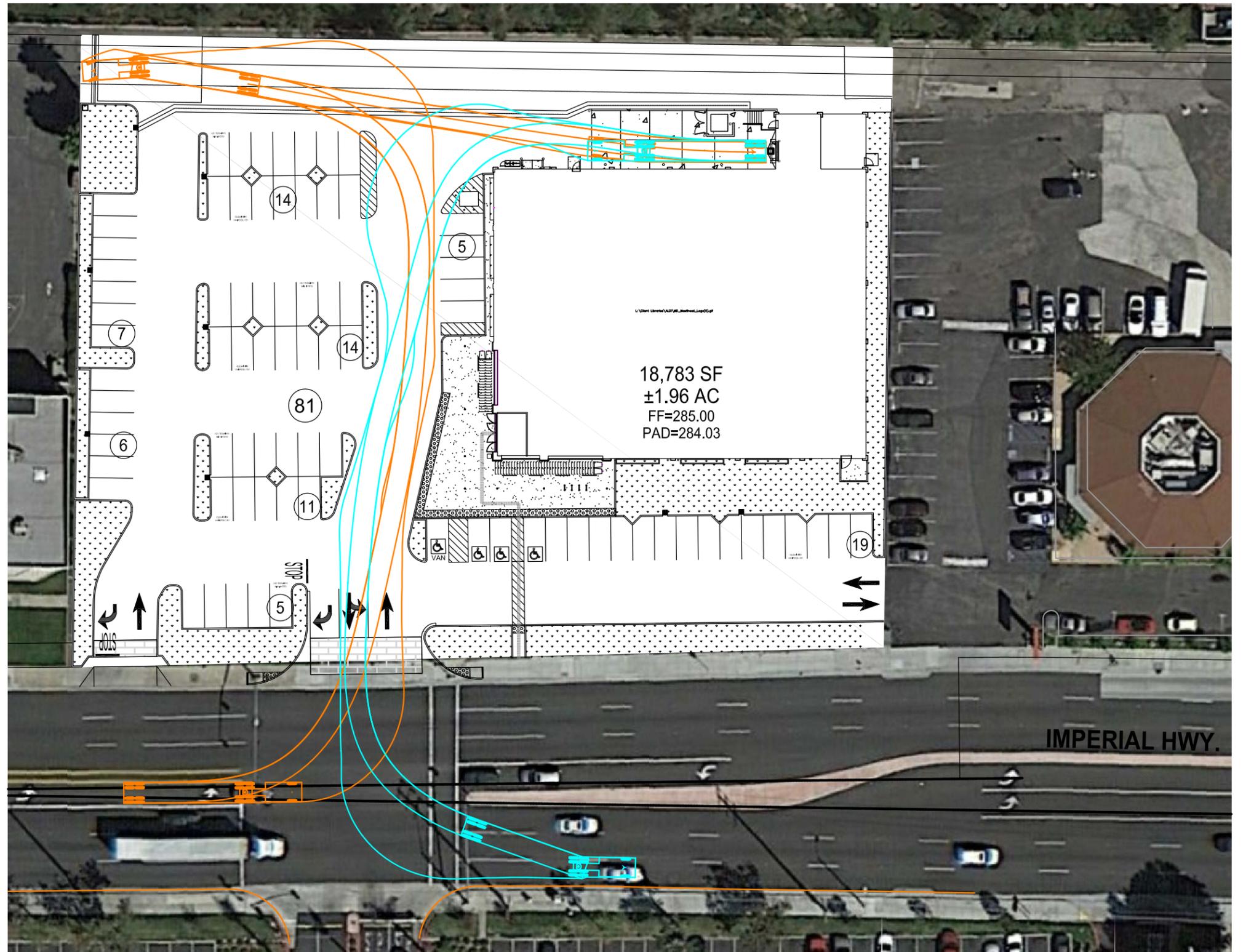
FIGURE 10-7

WB-50 TRUCK TURNING MOVEMENT ANALYSIS OFF HARBOR BOULEVARD  
ALDI FOOD MARKET, LA HABRA



WB-67

	feet		
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		



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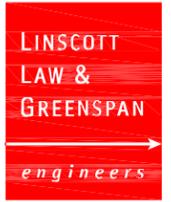
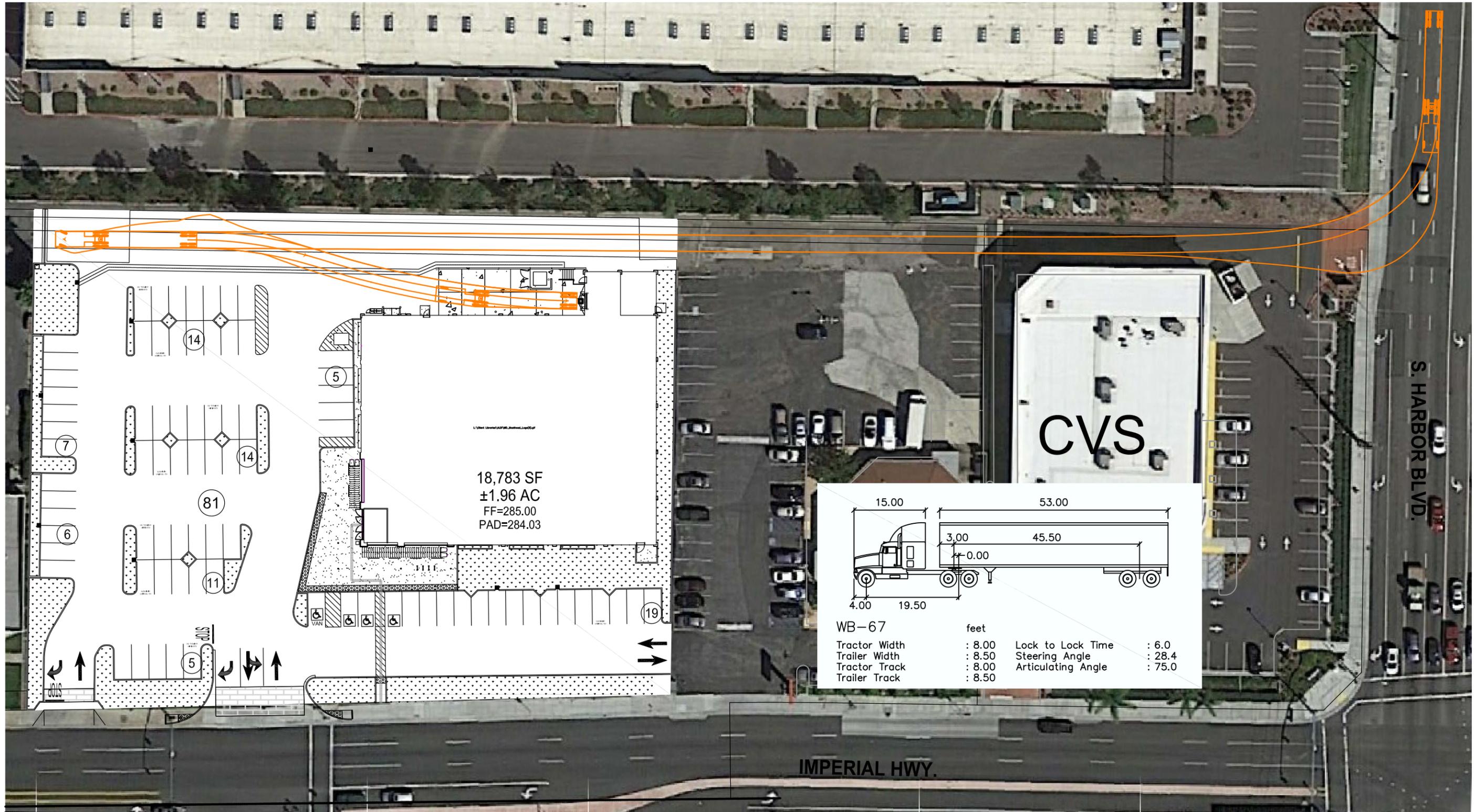


FIGURE 10-8

WB-67 TRUCK TURNING MOVEMENT ANALYSIS OFF IMPERIAL HIGHWAY  
ALDI FOOD MARKET, LA HABRA



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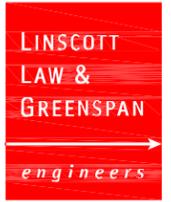


FIGURE 10-9

WB-67 TRUCK TURNING MOVEMENT ANALYSIS OFF HARBOR BOULEVARD  
ALDI FOOD MARKET, LA HABRA

## 11.0 AREA-WIDE TRAFFIC IMPROVEMENTS

For those intersections where projected traffic volumes are expected to result in poor operating conditions, this report identifies roadway improvements that change the intersection geometry to increase capacity. These capacity improvements involve roadway widening and/or restriping to reconfigure (add lanes) to specific approaches of a key intersection. The identified improvements are expected to: mitigate the impact of area-wide deficiencies and/or improve Levels of Service to an acceptable range.

### 11.1 Project Mitigation Measures

The results of the analyses summarized in *Tables 8-1, 8-2, 9-2 and 9-3* indicate that the proposed Project is not expected to have a significant impact at any of the thirteen (13) key study intersections. As there are no significant impacts, no traffic mitigation measures are required or recommended for the key study intersections.

### 11.2 Project-Specific Improvements

Subject to the review and approval of the City of La Habra Engineering Division and/or the State of California Department of Transportation (CALTRANS), the following improvements are recommended in conjunction with the development of the proposed Project to ensure that adequate ingress and egress to the project site is provided:

- Construct Project Driveway A to align opposite Walmart Driveway with a minimum paved width of 48-feet to provide a 12-foot wide southbound (outbound) left/through lane and a 13-foot wide southbound (outbound) right-turn lane and one 23-foot wide northbound (inbound) lane with a minimum curb return radii of 25-feet, and modify signal accordingly, but continue to operate existing north-south permissive left-turn phasing to ensure an efficient signal operation is maintained/achieved.
- Install a “STOP” sign, stop bar at Project Driveway B on Imperial Highway.
- Install a “No Left-Turn (R3-2)” sign at Project Driveway B facing the southbound vehicles to restrict site access to right-turn out only.
- Maintain adequate sight distance for the Project driveways by minimizing obstructions (i.e. landscaping and/or hardscape) within the “limited use area” on either side of the proposed project driveways. Landscaping and/or hardscapes should be designed such that a driver’s clear line of sight is not obstructed and does not threaten vehicular or pedestrian safety, as determined by the City Traffic Engineer.
- As noted earlier, on-site vehicular and truck circulation is adequate. However, in recognition that full-size trucks (WB-50/WB-67) entering/exiting the site will infringe into the north-south drive aisle in front of the grocery store and the outbound lane on the alleyway driveway on Harbor Boulevard while accessing the delivery area, it is recommended that truck deliveries be limited to non-peak business hours to minimize any possible conflicts, with one exception. Since a WB-50 full-size truck can access and circulate the site without inhibiting internal traffic flow via the eastbound left-turn on Imperial Highway at Driveway A (Wal-Mart Driveway), no delivery hour restrictions are necessary if deliveries are to be made via this turning movement.

Based on the anticipated hours of operations for the proposed Aldi La Habra, it is recommended that large truck deliveries be limited to between the hours of 9:00 PM to 6:00 AM, Monday through Sunday. No delivery restrictions are required for small service/delivery vehicles (SU-30 or equivalent) or mid-size truck (WB-40 or equivalent) that are used by some vendors of Aldi.

- It is recommended that Aldi provide written instructions that require truck deliveries utilize the alley access on Harbor Boulevard for those large delivery trucks (WB-50 or WB-67) approaching the market from the east (i.e. SR-57 Freeway).
- It is recommended that westbound right-turn movements from Imperial Highway at Driveway A and Driveway B be signed appropriately with “No Truck Access” signs given the design of these Project driveways (i.e. curb return and/or width) cannot accommodate the turning requirements of large trucks (WB-50 or WB-67), although a small delivery truck (SU-30) and mid-size truck (WB-40) are both able to make the westbound right-turn from Imperial Highway at Project Driveway A (*See Figure 2-2 for placement / text of conceptual signage*).
- Given access for mid-size trucks (WB-40) and large full-size trucks (WB-50 type) can be accommodated via the eastbound left-turn on Imperial Highway at Project Driveway A, no turn restrictions are required or recommended.

For large full-size trucks (WB-67 type), it is recommended that access via the eastbound left-turn on Imperial Highway at Project A be limited to the off-peak period, between the hours of 9:00 PM to 6:00 AM, Monday through Sunday (*See Figure 2-2 for placement / text of conceptual signage*)

### 11.3 Planned Improvements

Consistent with the City’s requirements, the proposed Project would be required to pay a Citywide Traffic Improvement Fee.

## 12.0 CONGESTION MANAGEMENT PROGRAM (CMP)

This analysis is consistent with the requirements and procedures outlined in the current *Orange County Congestion Management Program (CMP)*. The CMP requires that a traffic impact analysis be conducted for any project generating 2,400 or more daily trips, or 1,600 or more daily trips for projects that directly access the CMP Highway System (HS). Per the CMP guidelines, this number is based on the desire to analyze any impacts that will be 3.0% or more of the existing CMP highway system facilities' capacity. As noted in Section 5.0 of this traffic study, the proposed Project is forecast to generate approximately 1,728 daily trip-ends and thus meets the criteria requiring a CMP TIA.

The CMPHS includes specific roadways, which include State Highways and Super Streets, which are now known as Smart Streets. Therefore, the CMP TIA analysis requirements relate to the potential impacts only on the specified CMPHS, which in this case is Imperial Highway. As described in the "Radius of Development Influence" section of the CMP TIA, the study area (i.e. CMP intersections) is recommended to be defined by the CMP links which have a project impact of three percent, or more, of their daily LOS "E" capacity.

*Table 12-1* summarizes the Project percentage impact CMP analysis for two (2) key roadway segments in the vicinity of the proposed Project along Imperial Highway. Column one (1) of *Table 12-1* shows the CMP LOS "E" Capacity for each roadway segment, column two (2) shows the Project ADT for each roadway segment, column three (3) shows the Project ADT LOS "E" capacity percentages for each roadway segment and column (4) shows whether or not added project traffic meets or exceeds the "three percent" limit.

Review of *Table 12-1* shows that the three percent limit is not exceeded on any of the two (2) key roadway segments; therefore a CMP TIA analysis is not required for the proposed Project and any further analysis beyond that which is summarized in Section 8.0 of this report is not necessary.

**TABLE 12-1**  
**PROJECT PERCENTAGE RADIUS OF INFLUENCE CMP ANALYSIS**

<b>Roadway Segment</b>	<b>(1) CMP LOS ‘E’ Capacity</b>	<b>(2) Project ADT</b>	<b>(3) Percentage (3) = (2) ÷ (1)</b>	<b>(4) Radius of Influence (Yes/No)</b>
1. Imperial Highway east of Project Driveway/Walmart Driveway	56,300	778	1.4%	No
2. Imperial Highway west of Project Driveway/Walmart Driveway	56,300	864	1.5%	No

## 13.0 PARKING REQUIREMENTS

To determine the number of parking spaces required for the proposed Project, the parking demand was calculated using the parking codes per *Title 18 – Zoning, Chapter 18.14 – Off-Street Parking Requirements* in the *City of La Habra Municipal Code*. The following parking ratio was utilized:

- Grocery Store = 4 spaces per 1,000 SF gross floor area

As mentioned previously, the proposed Project will consist of an 18,783 SF grocery store. Direct application of the City's code to the proposed Project results in a total parking requirement of 76 spaces. Review of the proposed site plan indicates that the proposed Project will provide 81 spaces, thus satisfying the City's parking requirements.

## 14.0 SUMMARY OF FINDINGS AND CONCLUSIONS

- Project Description** – The Project site is comprised of two square-shaped parcels of land totaling 1.968±acres that is located north of Imperial Highway at the Wal-Mart Driveway in the City of La Habra, California. While the subject property is currently vacant, the western half of the site was previously developed with a 2,500 square-foot (SF) fast-food with drive-through restaurant (Alberto’s) with surface parking and the eastern half of the site was previously developed with an entertainment venue. The Project includes the development of an 18,783 SF grocery store with a total of 81 surface parking spaces.

Access to the subject property is expected to continue to be provided via the signalized driveway on Imperial Highway located opposite the Walmart driveway, referred to as Driveway A, and one (1) right-turn in/out only driveway, referred to as Driveway B. Access to and from Harbor Boulevard to the subject property is also provided via an access easement/alley driveway that is located along the northerly property of the site and the adjacent properties to the east (i.e. Pepper Shaker Café and CVS Pharmacy).

- Study Scope** – The thirteen (13) key study intersections listed below were selected for detailed peak hour level of service analyses under Existing Traffic Conditions, Existing plus Project Traffic Conditions, Year 2018 Cumulative Traffic Conditions and Year 2018 Cumulative plus Project Traffic Conditions.

<b><u>LOS “E” Requirements</u></b>	
1. Euclid Street at Imperial Highway	5. Wal-Mart Signal at Imperial Highway
2. Cypress Street at Imperial Highway	6. Harbor Boulevard at Imperial Highway
3. Leslie Street at Imperial Highway	7. Palm Street at Imperial Highway
4. Village Drive at Imperial Highway	
<b><u>LOS “D” Requirements</u></b>	
8. Euclid Street at Lambert Road	11. Harbor Boulevard at Las Palmas Drive
9. Cypress Street at Lambert Road	12. Euclid Street at La Habra Boulevard
10. Harbor Boulevard at Lambert Road	13. Harbor Boulevard at La Habra Boulevard

The analysis is focused on assessing potential traffic impacts during the morning and evening commute peak hours (between 7:00-9:00 AM, and 4:00-6:00 PM) on a typical weekday.

Per the City’s criteria, LOS D is the minimum acceptable condition that should be maintained during the morning and evening peak commute hours on all intersections within the City, except those on the CMPHS of Orange County, where LOS E is defined in the CMP for Orange County as the acceptable limit and acceptable for State Highway intersections. For intersections within the City of Fullerton, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours.

- Existing Traffic Conditions** – All thirteen (13) key study intersections currently operate at an acceptable level of service during the AM and PM peak hours.

- ***Project Trip Generation*** –The proposed Project generation is forecast to generate 1,728 daily trips, with 58 trips (36 inbound, 22 outbound) produced in the AM peak hour and 114 trips (58 inbound, 56 outbound) produced in the PM peak hour.
- ***Cumulative Projects Traffic Characteristics*** – The thirteen (13) cumulative projects are forecast to generate a total of 15,176 daily trips, with 1,124 trips (447 inbound and 677 outbound) forecast during the AM peak hour and 1,457 trips (803 inbound and 654 outbound) forecast during the PM peak hour.
- ***Existing Plus Project Traffic Conditions*** – the proposed Project ***will not*** significantly impact any of the thirteen (13) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. All of the thirteen (13) key study intersections are expected to operate at an acceptable LOS with the addition of Project generated traffic.
- ***Year 2018 Cumulative Plus Project Traffic Conditions*** – traffic associated with the proposed Project ***will not*** significantly impact any of the thirteen (13) key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. All of the thirteen (13) key study intersections are expected to operate at an acceptable LOS with the addition of Project generated traffic in the Year 2018.
- ***State of California (Caltrans) Methodology*** – The results of the “Existing Plus Project” and “Year 2018 Plus Project” traffic analysis using the State of California (Caltrans) Methodology indicates that traffic associated with the proposed Project ***will not*** significantly impact any of the seven state-controlled study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The seven state-controlled study intersections are forecast to continue to operate at an acceptable LOS with the addition of project generated traffic to existing traffic. The seven state-controlled study intersections are forecast to continue to operate at an acceptable LOS with the addition of project generated traffic in the Year 2018.
- ***Site Access and Internal Circulation Evaluation*** – The design of the entry/exit points of the project driveways are adequate for expected traffic volumes, and adequate stacking is provided at all project driveways. Motorists entering and exiting the Project site will be able to do so comfortably, safely, and without undue congestion. The internal circulation layout for the proposed Project has been reviewed and is adequate to accommodate fire trucks and service/delivery/trash trucks, ambulances and large trucks that would service the proposed Project subject to restrictions.
- ***Project-Related Fair Share Contribution*** – The proposed Project will be required to pay a Citywide Traffic Improvement Fee.
- ***Project Specific Improvements*** – The following improvements are recommended to ensure that adequate ingress and egress to the project site is provided:
  - Construct Project Driveway A to align opposite the Walmart Driveway with a minimum paved width of 48-feet to provide a 12-foot wide southbound (outbound) left/through lane and a 13-foot wide southbound (outbound) right-turn lane and one 23-foot wide northbound (inbound) lane with a minimum curb return radii of 25-feet, and modify signal and install all necessary striping, pavement

markings and signs per the City of La Habra/Caltrans Standard Design Guidelines and/or CA MUTCD; continue to operate existing north-south permissive left-turn phasing to ensure an efficient signal operation is maintained/achieved .

- Install a “STOP” sign, stop bar at Project Driveway B on Imperial Highway.
- Install a “No Left-Turn (R3-2)” sign at Project Driveway B facing the southbound vehicles to restrict site access to right-turn out only.
- Maintain adequate sight distance for the Project driveways by minimizing obstructions (i.e. landscaping and/or hardscape) within the “limited use area” on either side of the proposed project driveways. Landscaping and/or hardscapes should be designed such that a driver’s clear line of sight is not obstructed and does not threaten vehicular or pedestrian safety, as determined by the City Traffic Engineer.
- As noted earlier, on-site vehicular and truck circulation is adequate. However, in recognition that full-size trucks (WB-50/WB-67) entering/exiting the site will infringe into the north-south drive aisle in front of the grocery store and the outbound lane on the alleyway driveway on Harbor Boulevard while accessing the delivery area, it is recommended that truck deliveries be limited to non-peak business hours to minimize any possible conflicts, with one exception. Since a WB-50 full-size truck can access and circulate the site without inhibiting internal traffic flow via the eastbound left-turn on Imperial Highway at Driveway A (Wal-Mart Driveway), no delivery hour restrictions are necessary if deliveries are to be made via this turning movement.

Based on the anticipated hours of operations for the proposed Aldi La Habra, it is recommended that large truck deliveries be limited to between the hours of 9:00 PM to 6:00 AM, Monday through Sunday. No delivery restrictions are required for small service/delivery vehicles (SU-30 or equivalent) or mid-size truck (WB-40 or equivalent) that are used by some vendors of Aldi.

- It is recommended that Aldi provide written instructions that require truck deliveries utilize the alley access on Harbor Boulevard for those large delivery trucks (WB-50 or WB-67) approaching the market from the east (i.e. SR-57 Freeway).
- It is recommended that westbound right-turn movements from Imperial Highway at Driveway A and Driveway B be signed appropriately with “No Truck Access” signs given the design of these Project driveways (i.e. curb return and/or width) cannot accommodate the turning requirements of large trucks (WB-50 or WB-67), although a small delivery truck (SU-30) and mid-size truck (WB-40) are both able to make the westbound right-turn from Imperial Highway at Project Driveway A. Given access for mid-size trucks (WB-40) and large full-size trucks (WB-50 type) can be accommodated via the eastbound left-turn on Imperial Highway at Project Driveway A, no turn restrictions are required or recommended. For large full-size trucks (WB-67 type), it is recommended that access via the eastbound left-turn on Imperial Highway at Project A be limited to the off-peak period, between the hours of 9:00 PM to 6:00 AM, Monday through Sunday.

- **Congestion Management Program (CMP)** – The proposed Project will not have any significant traffic impacts on the Congestion Management Program Highway System.
- **Parking Requirements** – Direct application of the City’s code to the proposed Project results in a total parking requirement of 76 spaces. Review of the proposed site plan indicates that the proposed Project will provide 81 spaces, thus satisfying the City’s parking requirements.