FOCUSED TRAFFIC IMPACT ANALYSIS REPORT

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DOS PALMAS ROAD AND HIGHWAY 395 COMMERCIAL CENTER DEVELOPMENT

VICTORVILLE, CALIFORNIA

Prepared by:

DAVID EVANS AND ASSOCIATES INC.

DRAFT REPORT
July 12, 2022

DAVID EVANS AND ASSOCIATES INC.

July 12, 2022 Job No. BHBA0000-0002

Mr. Sumit Brahmbhatt
Brahmbhatt Architects
980 Corporate Center Drive
Pomona, CA. 91768

RE: THIRD SUBMITTAL OF DRAFT FOCUSED TRAFFIC IMPACT ANALYSIS – DOS PALMAS ROAD AND HIGHWAY 395 COMMERCIAL DEVELOPMENT – VICTORVILLE, CALIFORNIA

Dear Mr. Brahmbhatt,

David Evans and Associates, Inc. is submitting this 3rd Draft Focused Traffic Impact Analysis Report (TIA) integrating refinements to the site plan. The second submittal (June 17, 2022) contained responses to the City of Victorville's April 5, 2022, comments on the 1st submittal dated March 15, 2022. As a reminder, we deferred submitting the draft report to Caltrans so that you could move forward with the city's application and entitlement process expeditiously. This study will remain a draft until we receive Caltrans comments on this study.

Reason for a Third Submittal of the Draft Focused Traffic Impact Analysis

Recent refinements to the site plan consist of minor changes in the floor area of some of the buildings in construction Phase I. Changes in floor area can affect trip generation so this version of the study calculates the net change in trip generation and evaluates whether the changes will affect the intersection capacity analyses and level of service.

The change in floor area consists of increases and decreases in building floor areas with the largest change being a reduction in the size of one of the fast-food restaurants by 100 square feet. When combined, the changes result in a small net decrease in trips daily, and in both peak hours. Table 4-2 (Phase I Trip Generation) is based on the new floor areas and identifies the buildings where changes have occurred. Because the effect of the site plan refinements is a net decrease as opposed to a net increase in trips, the change in trips was not reanalyzed.

Summary of Responses to City of Victorville Comments on First Drat Submittal

For convenience, the sections of the report containing responses to the City's comments are identified below:

Comment 1: The report needs to indicate that the city will require this project, rather than "by others", to widen and improve both 395 and Dos Palmas to their ultimate width. *Section 1.3 (Proposed Project-Specific Access, Roadway, and Off-Site Roadway and Intersection Improvements) describes the extent of improvements the project proposes to implement with Phase I of the development which includes the ultimate width from curb to curb and the city's standard frontage improvements on the project's side of the Highway 395 and Dos Palmas Road as shown in the proposed geometric plan in Figure ES-1. Section 1.3 and Section 8 (Future Plus Project Conditions in Year 2034) recommend that the city condition Phase II of the project to implement the reconfiguration of Highway 395 as shown in the ultimate geometric plan in Figure ES-1, improvements which only require changes to the pavement markings.*

Comment 2: The City of Victorville defers their final comments, especially for SR 395, until Caltrans completes their review and comments. *The comment is noted, and this introductory letter confirms the applicant's and consultant's awareness that Caltrans has yet to comment on this report and that the city may have additional comments as a result.*

Comment 3: Does Caltrans require bike lanes? *Section 1.3 (Proposed Project-Specific Access, Roadway, and Off-Site Roadway and Intersection Improvements) describes the geometric plans and the reasoning behind the decision to add bike lanes.*

Comment 4: The TIA did not detail the safety enhancements of the internal intersection, per the City's January 5, 2022, memo. *Figure 2 (Site Plan) in Section 2 (Introduction) illustrates the improved design for the internal all-way stop intersection.*

Comment 5: VMT screening is still required. *The VMT Screening Assessment from the approved scoping agreement dated November 2, 2021, is included in this report as Section 9. In addition, Section 1.5 summarizes the conclusion of the screening assessment.*

We are pleased to have been of assistance to you in processing and obtaining approval for the project. If you have any questions or comments, please feel free to contact me at 909-912-7304.

Respectfully submitted,

DAVID EVANS AND ASSOCIATES, INC.

James M. Daisa, P.E.
Senior Project Manager

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1 EXECUTIVE SUMMARY

This executive summary presents the findings and recommendations of this study.

1.1 Project Description

The project site is located on the southeast corner of Highway 395 and Dos Palmas Road in the City of Victorville, California. The proposed project consists of two construction phases.

- Construction Phase I includes the super convenience market/gas station, retail uses, and an automated carwash in the northwest quadrant of the site, two fast food restaurants with drive-through windows in the southwest quadrant, and a hotel in the southeast quadrant of the site. Construction Phase I is anticipated to be constructed in the opening year of 2024.
- Construction Phase II includes an office building in the northeast quadrant of the site. Construction Phase II is anticipated to be constructed about five years after Phase I.

The project site is currently vacant and undeveloped property. It is bounded to the north by Dos Palmas Road and vacant/undeveloped properties, to the south by vacant/undeveloped properties, to the west by Highway 395 and residential properties, and to the east by Cantina Drive, vacant/undeveloped properties, and a residential subdivision.

Access to the site is proposed from Highway 395 and Dos Palmas Road in Phase I. In Phase II an additional access is proposed on Cantina Drive.

1.2 City of Victorville Level of Service Standard

The City's peak hour level of service standard is LOS D. An intersection found to operate at a LOS E with an Intersection Capacity Utilization (ICU) value greater than 0.95 or Highway Capacity Manual (HCM) delay worse than LOS D (i.e., LOS E or F) is considered deficient.

If a development project would worsen the peak hour level of service to a LOS E or LOS F, it is considered an impact that requires improvement to return the level of service to pre-project conditions. If a development project would worsen the level of service at an already deficient intersection by two percent or more, it is considered a significant impact that requires improvement to return the level of service to pre-project conditions.

1.3 Proposed Project-Specific Access, Roadway, and Off-Site Roadway and Intersection Improvements

The project proposes to construct several roadway and intersection improvements on Highway 395 and Dos Palmas Road concurrent with the construction of the project. These improvements include right-of-way dedication and widening of the Highway 395 and Dos Palmas Road frontages to meet Caltrans and city cross-section standards for each road's functional classification and access driveways including turning lanes as needed to safely accommodate entering traffic.

The dedication of right-of-way and widening of Dos Palmas Road and Highway 395 along the project's frontages allows for additional lanes at the intersection of these two roads and at the intersection of Dos Palmas Road and Cantina Drive. Because the project would not be constructed without these proposed improvements, the level of service analysis of project conditions includes the proposed improvements.

Project-specific access, roadway, and intersection frontage improvements are shown in **Figure ES-1**. The improvements extend beyond the project's frontages and are shown in detail in the attached proposed and ultimate conceptual geometric plans. **Figure ES-1** includes two conceptual geometric plans:

1) **Proposed geometric plan** includes the right of way dedication, widening to the Victorville's and Caltrans' ultimate half-width cross-sections on the project side of the streets based on the city's

General Plan long-range street designations, bicycle lanes[1], frontage improvements (curb, gutter, sidewalk, and landscaping) to agency standards, driveway access and associated left and right turn lanes, and necessary lane configurations for the intersection of Highway 395 and Dos Palmas Road to meet level of service standards projected by opening day of the project. **The project proposes to implement these improvements as part of the project.**

2) **Ultimate geometric plan** identifies the long-range geometry of Highway 395 and its intersection with Dos Palmas Road necessary to mitigate the cumulative impacts under future conditions. The ultimate geometric plan identifies a reconfiguration of Highway 395 within the proposed right of way dedicated by the project under opening day conditions. The ultimate geometry can be implemented with pavement markings and does not require widening. **This improvement should be conditioned to be implemented by Phase II of the project.**

1.4 Level of Service Comparison With and Without the Proposed Project

1.4.1 Determination of Project-Specific Impacts

A comparison of level of service between existing and existing plus project conditions is used to identify impacts caused by the project and for which the project is responsible for mitigating. These two scenarios exclude any estimated traffic from planned and approved, but not yet built, developments allowing for an unadulterated assessment of project impacts, but do include the proposed project improvements.

Table 1-1 compares the existing and existing plus project conditions (see Chapters 3 and 4) weekday peak hour LOS at the study intersections.

Under existing plus project conditions, the level of service of the intersection of Highway 395 / Dos Palmas Road is anticipated to operate at LOS D in the AM and PM peak hours with the proposed project-specific improvements.

Table 1-1: Comparison of Existing and Existing + Project (Phase I) Intersection Levels of Service

Intersection	Intersection Control Type	Existing Condition				Existing + Project Condition [1]			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Highway 395 / Dos Palmas Rd	TS	54.8	D	**72.4**	**E**	48.5	D	48.3	D
2. Highway 395 / Luna Rd	TS	34.4	C	23.7	C	39.8	D	26.6	C
3. Luna Road / Cantina Dr	SSSC	14.5	B	12.6	B	18.1	C	14.5	B
4. Cantina Dr / Dos Palmas Rd [2]	SSSC	Not Applicable				Not Applicable			
5. Highway 395 / Project Driveway “A" [3]	Rt-In-Only					Not Applicable			
6. Highway 395 / Project Driveway “B”	SSSC					22.2	C	26.6	D

Notes:
[1] The existing plus project scenario assumes the project-specific improvements to the intersection of Highway 395 / Dos Palmas Road.
[2] The extension of Cantina Drive to Dos Palmas Road is not assumed until Phase II of the project.
[3] Project Driveway “A” is a right turn in only intersection. No level of service is reported for this type of intersection.
Abbreviations:
TS – Traffic signal-controlled intersection
SSSC – Side-street stop-controlled intersection
Delay – seconds per vehicle
LOS – Level of Service

1 Section 403.6 of the Caltrans Highway Design Manual states that locations with right-turn-only lanes should provide a minimum 4-foot width for bicycle use between the right-turn and through lane when bikes are permitted. Bike lanes are provided along the project’s northbound Highway 395 frontage to help bicyclists navigate the sequence of proposed right-turn-only lanes.

1.4.2 Determination of Cumulative Impacts

A comparison of level of service between background and project conditions (opening day scenario) is used to identify impacts that are cumulative in nature due to the contribution of traffic from planned and approved, but not yet built, developments (see Chapters 5 through 8). A cumulative impact is typically mitigated by developments sharing in the cost of the mitigation measure.

Table 1-2 compares the background and project conditions weekday peak hour level of service at the study intersections. Background conditions represent the project's opening year of 2024 and includes growth in ambient traffic from regional and local development equaling 3.5 percent annually. In the year 2024 scenario, the study intersections operate at a LOS D or better during the peak hours with implementation of the proposed project-specific improvements.

Table 1-2: Comparison of Background and Project (Phase I) Intersection Levels of Service

Intersection	Intersection Control Type	Background Condition				Project Condition [1]			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Highway 395 / Dos Palmas Rd	TS	47.4	D	50.8	D	53.9	D	54.3	D
2. Highway 395 / Luna Rd	TS	27.8	C	20.2	C	39.7	D	23.9	C
3. Luna Road / Cantina Dr	SSSC	12.3	B	12.1	B	14.6	B	14.3	B
4. Cantina Dr / Dos Palmas Rd [2]	SSSC	Not Applicable				Not Applicable			
5. Highway 395 / Project Driveway "A" [3]	Rt-In-Only					Not Applicable			
6. Highway 395 / Project Driveway "B"	SSSC					22.2	C	26.6	D

Notes:
[1] The existing plus project (Phase I) scenario assumes the project-specific improvements to the intersection of Highway 395 / Dos Palmas Road. See proposed geometric plan.
[2] The extension of Cantina Drive to Dos Palmas Road is not assumed until Phase II of the project.
[3] Project Driveway "A" is a right turn in only intersection. No level of service is reported for this type of intersection.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, Delay – seconds per vehicle, LOS – Level of Service

The comparison of future and future plus project conditions shows that the intersection of Highway 395 / Dos Palmas operating below the City's peak hour level of service standard. **The increase in delay anticipated at the intersection of Highway 395 / Dos Palmas exceeds the City's peak hour level of service standard resulting in a cumulative impact at the intersection.**

Table 1-3 compares the future and future plus project (with Phase II development) conditions weekday peak hour level of service at the study intersections. Future conditions represent the horizon year of 2034 and includes growth in ambient traffic from regional and local development equaling 3.5 percent annually. An analysis of the ultimate improvements applied to the intersection shows the intersection of Highway 395 and Dos Palmas Road operating at LOS D during the AM and PM peak hours.

1.5 Vehicle Miles of Travel Screening Assessment

The proposed project is screened out from having to conduct a VMT analysis based on the City of Victorville's "project type" criterion as defined in the city's *Vehicle Miles Traveled (VMT) Analysis Guidelines*. This criterion identifies specific land use types and a maximum size threshold deemed too small to cause a significant increase in VMT or they are considered "locally-serving" types of land uses that reduce VMT by providing nearby opportunities for employment, shopping, and services.

The proposed project's retail (Phase I) and office (Phase II) land uses fall under the size threshold in the city's guidelines and are, therefore, screened from being required to conduct a VMT analysis. Refer to Section 9 for details.

Table 1-3: Comparison of Future and Future + Project (Phase II) Intersection Levels of Service

Intersection	Intersection Control Type	Future Condition				Future + Project Condition [1]			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Highway 395 / Dos Palmas Rd	TS	67.4	E	77.5	E	99.9*	F	99.9*	F
Mitigation: Reconfiguration of Hwy 395 approach lanes (see ultimate geometric plan in Figure ES-1)		N/A				53.0	D	49.4	D
2. Highway 395 / Luna Rd	TS	49.0	D	22.6	C	44.1	D	25.1	C
3. Luna Road / Cantina Dr	SSSC	15.8	C	12.7	B	14.8	B	14.6	B
4. Cantina Dr / Dos Palmas Rd [2]	SSSC	Not Applicable				9.3	A	9.1	A
5. Highway 395 / Project Driveway “A" [3]	Rt-In-Only					Not Applicable			
6. Highway 395 / Project Driveway “B” [4]	SSSC					20.8	C	25.7	D

Notes:
[1] The future plus project scenario assumes the Phase I project-specific improvements to the intersection of Highway 395 / Dos Palmas Road. The LOS deficiency identified in this table can be improved by implementing the lane configurations at Highway 395 / Dos Palmas Road shown in the ultimate geometric plan in Figure ES-1. The improvements, which can be implemented with pavement marking changes, includes reconfiguring Highway 395 to accommodate three through lanes in each direction, and converting the northbound and southbound dual left turn lanes to single left turn lanes. See ultimate geometric plan.
[2] The extension of Cantina Drive to Dos Palmas Road is assumed in Phase II of the project. Widening of Dos Palmas Road occurs in Phase I of the project. See proposed geometric plan.
[3] Project Driveway “A” is a right turn in only intersection. No level of service is reported for this type of intersection.
[4] The level of service at Highway 395 / Project Driveway “B” assumes the widening of Highway 395. See ultimate geometric plan.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, Delay – seconds per vehicle, LOS – Level of Service

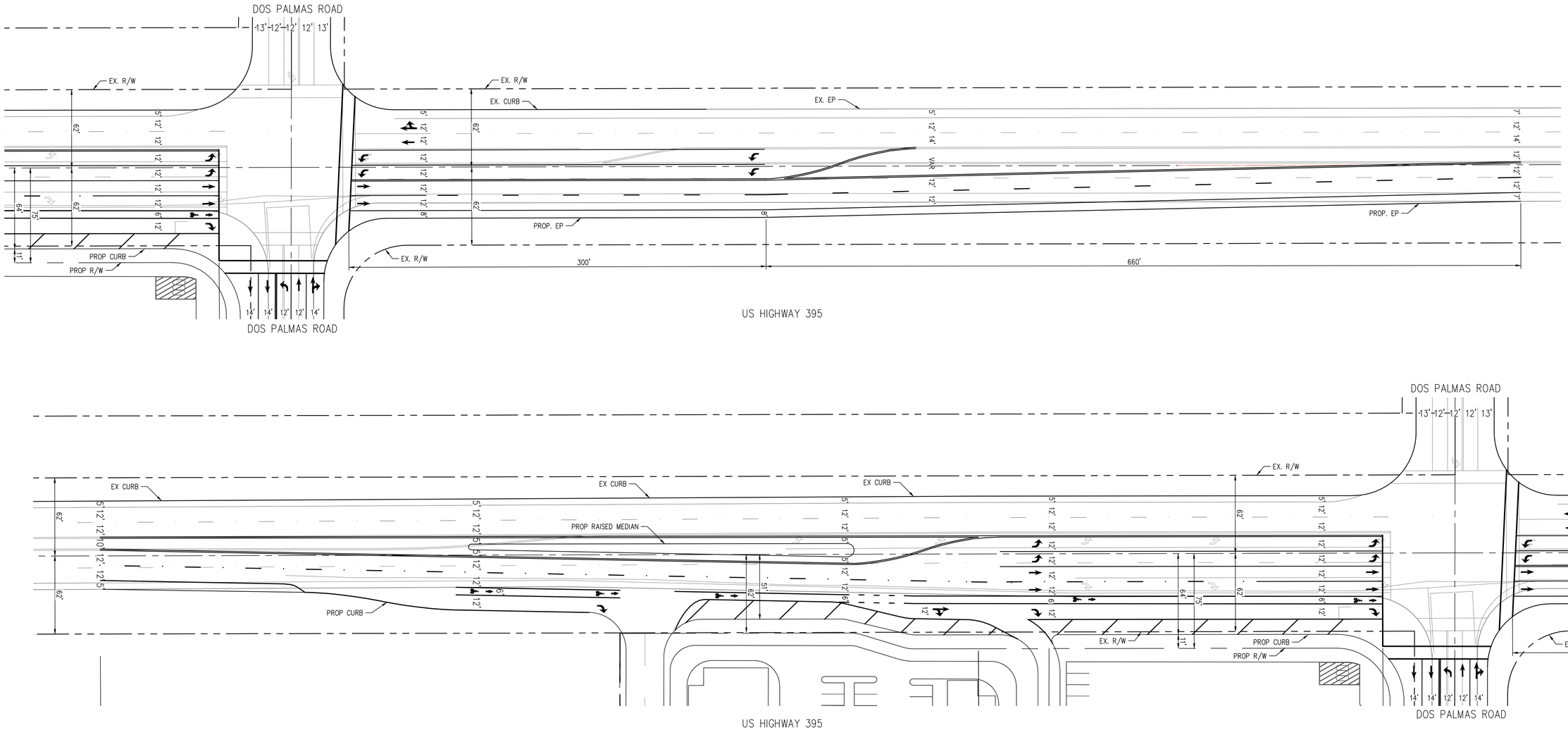

Figure ES-1: Proposed Geometric Plan

scale 1"= 50' feet

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CITY OF VICTORVILLE
PROPOSED CONCEPTUAL GEOMETRIC PLAN
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CHECKED BY:
DOS PALMAS ROAD AND US HIGHWAY 395
COMMERCIAL DEVELOPMENT
DATE: 3/11/2022
SHT NO.: 1 OF 2

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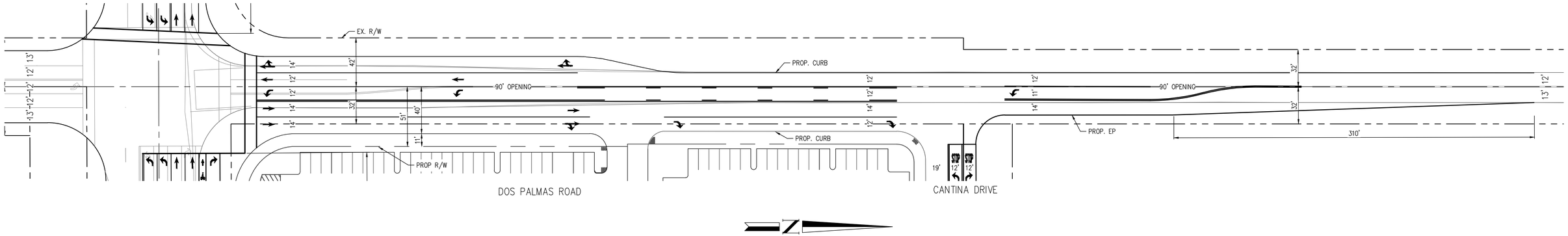

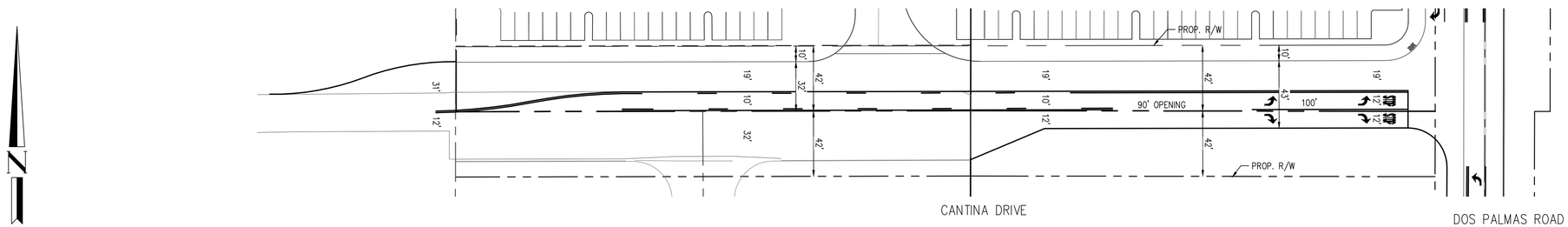

Figure ES-1: Proposed Geometric Plan (Continued)

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scale 1"= 50' feet

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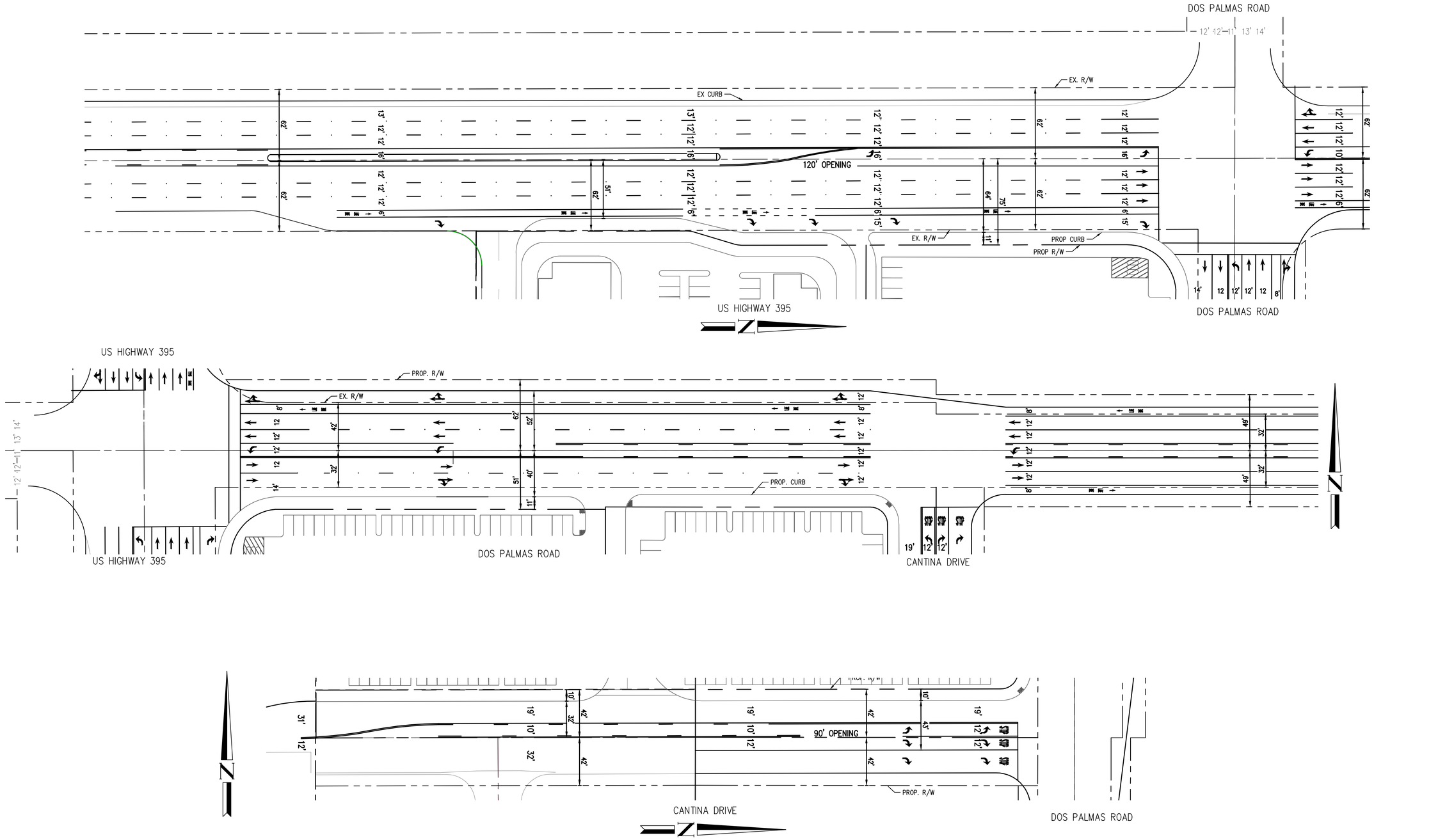

Figure ES-2: Ultimate Geometric Plan

scale 50 0 50 100 feet
1"= 50'

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CITY OF VICTORVILLE
ULTIMATE CONCEPTUAL GEOMETRIC PLAN

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2 INTRODUCTION

This report identifies traffic impacts and recommends traffic mitigation for the proposed development project located at the southeast corner of Dos Palmas Road and Highway 395 in the City of Victorville, California. **Figure 1** illustrates the vicinity map, and **Figure 2** illustrates the proposed project site plan. The proposed project consists of two construction phases.

- Construction Phase I includes the super convenience market/gas station, retail uses, and an automated carwash in the northwest quadrant of the site, two fast food restaurants with drive-through windows in the southwest quadrant, and a hotel in the southeast quadrant of the site. Construction Phase I is anticipated to be constructed in the Opening Year of 2024.
- Construction Phase II includes an office building in the northeast quadrant of the site. Construction Phase II is anticipated to be constructed about five years after Phase II.

The intent of this report is to evaluate potentially significant traffic impacts caused by the proposed development in accordance with the City of Victorville's traffic impact study requirements and under the following scenarios as outlined in the traffic scope approved by the City's Department of Public Works:

- Existing Conditions - **Chapter 0**
- Existing plus Project Conditions - **Chapter 4**
- Background Conditions (Year 2024) - **Chapter 5**
- Background plus Project Conditions- **Chapter 6**
- Future Conditions (Year 2034) - **Chapter 7**
- Future plus Project Conditions (Year 2034) - **Chapter 8**

2.1 Scenario Definitions

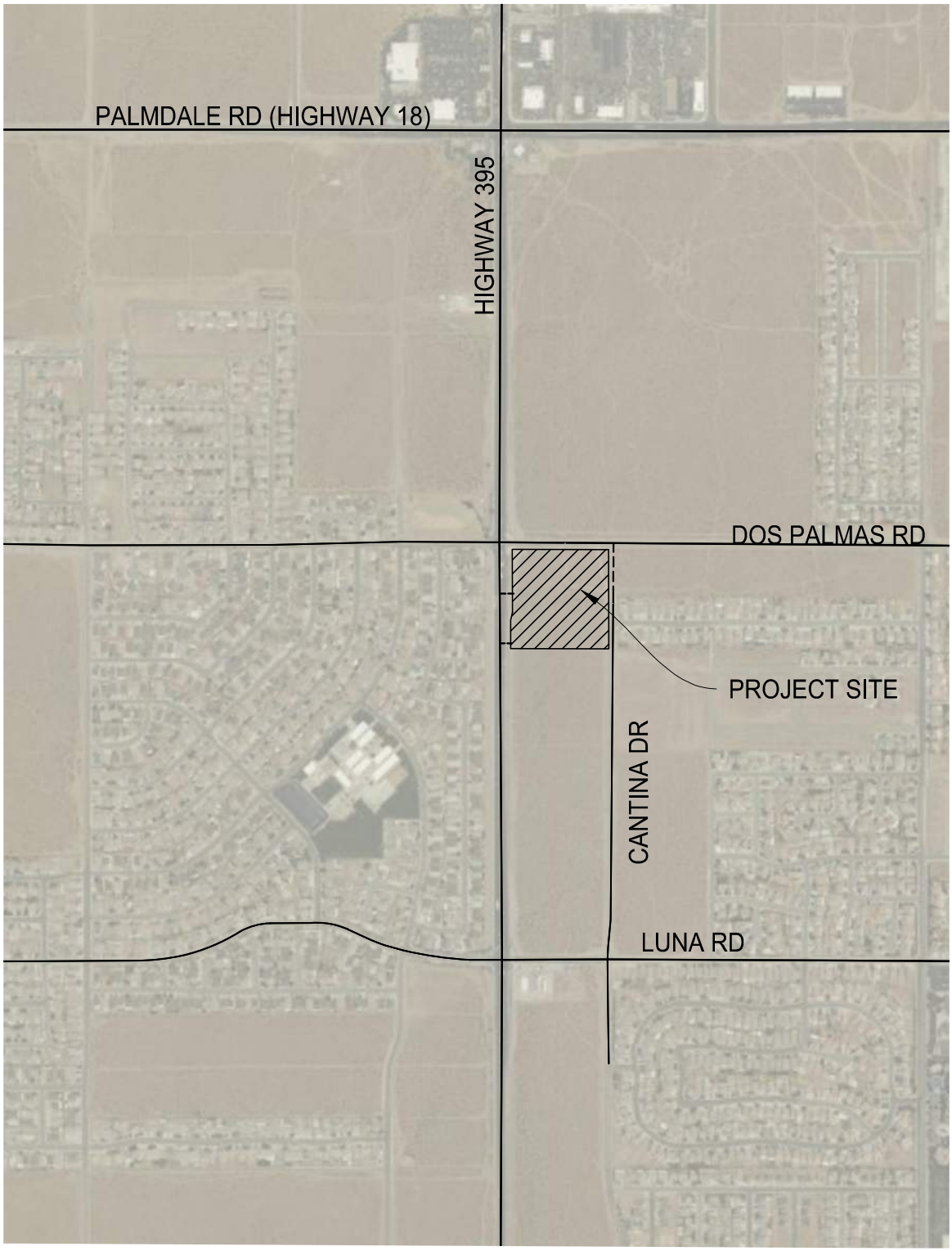
Existing Conditions. This scenario represents existing traffic conditions at the time this report was prepared. Data includes traffic counts collected in January and February 2022. This scenario is used as the baseline condition from which to measure project-specific impacts.

Existing Plus Project Conditions. This scenario represents transportation conditions as if the Project Phase I were built and occupied today. This scenario is intended to identify potentially significant impact (requiring mitigation) when compared to existing conditions without any unrelated transportation system improvements (except the project-specific improvements) or other development. Impacts identified in this scenario are considered "project-specific"—impacts that are the sole responsibility of the project to mitigate.

Background Conditions (Year 2024). This scenario represents conditions at the time Phase I of the project is anticipated to be fully constructed and occupied (known as buildout Year 2024) but without traffic generated by the project. This scenario is comprised of an ambient growth, a general rate of growth in traffic from overall regional growth but not specific to any nearby development (assumed to be 3.5% annually for this study).

Project Conditions (Year 2024). This scenario adds Phase I of the project's estimated traffic generation at buildout (2024) to background conditions described above. Impacts identified in this near-term scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any mitigation measures.

Future Conditions (Year 2034). This scenario represents conditions at the horizon Year 2034 but without traffic generated by the project. This scenario is comprised of an ambient growth, a general rate of growth in traffic from overall regional growth but not specific to any nearby development (assumed to be 3.5% annually for this study).



N
NOT TO SCALE

DAVID EVANS AND ASSOCIATES INC.

FIGURE 1: VICINITY MAP
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

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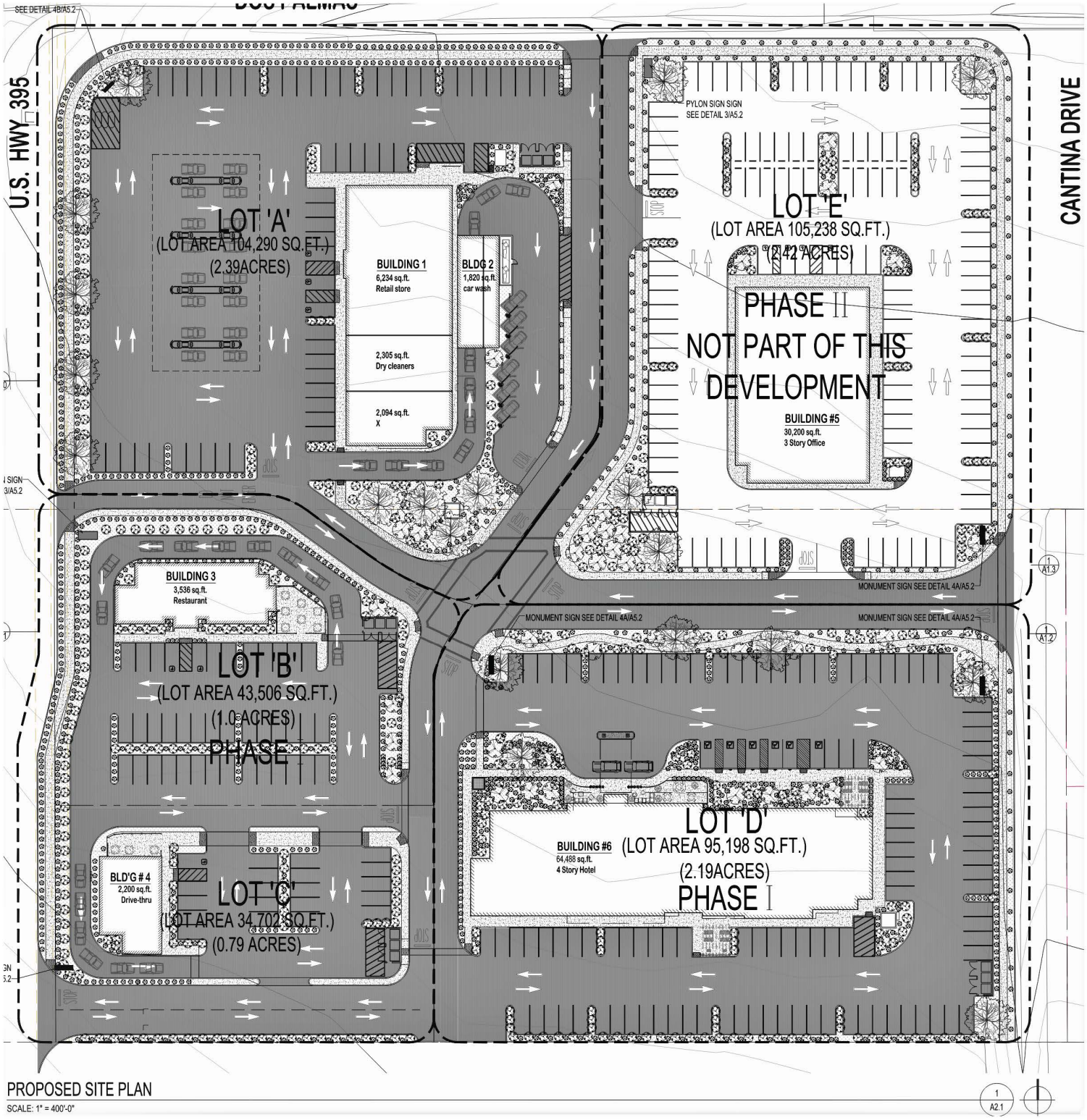

PROPOSED SITE PLAN

SCALE: 1" = 400'-0"

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FIGURE 2: SITE PLAN
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

Future with Project Conditions (Year 2034). This scenario adds the combined Phase I and Phase II project's estimated traffic generation to the Future Conditions scenario described above. Impacts identified in this scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any mitigation measures.

3 EXISTING CONDITIONS

The project site is currently vacant and undeveloped property. It is bounded to the north by Dos Palmas Road and vacant/undeveloped properties, to the south by vacant/undeveloped properties, to the west by Highway 395 and residential properties, and to the east by vacant/undeveloped properties.

3.1 Existing Street System

The following roadways provide local and regional access to the project within the study area:

Highway 395 is a major north-south primarily four-lane road (two lanes in each direction with a striped median or double-double yellow median, and with turn pockets) in the project area. Highway 395 is identified as a super arterial on the City of Victorville Circulation Plan. The posted speed limit within the project area is 55 mph. Highway 395 will provide direct access to the project site.

Dos Palmas Road is identified as an arterial street, in the project area, on the City of Victorville circulation map. East of Highway 395, it is an east-west two-lane road (one lane each direction and turn pockets at key intersections) in the project area study area. Posted speed limit of 40 mph in the project area study area. Dos Palmas Road will provide direct access to the project site.

Luna Road is identified as an arterial street, in the project area, on the City of Victorville circulation map. East of Highway 395, it is an east-west two-lane road (one lane each direction and turn pockets at key intersections) in the project area study area. Posted speed limit of 40 mph in the project area study area.

Cantina Drive is identified as an arterial street, in the project area, on the City of Victorville circulation map. It is a local north-south two-lane (one in each direction) street. Cantina Drive will provide direct access to the project site.

3.2 Study Intersections

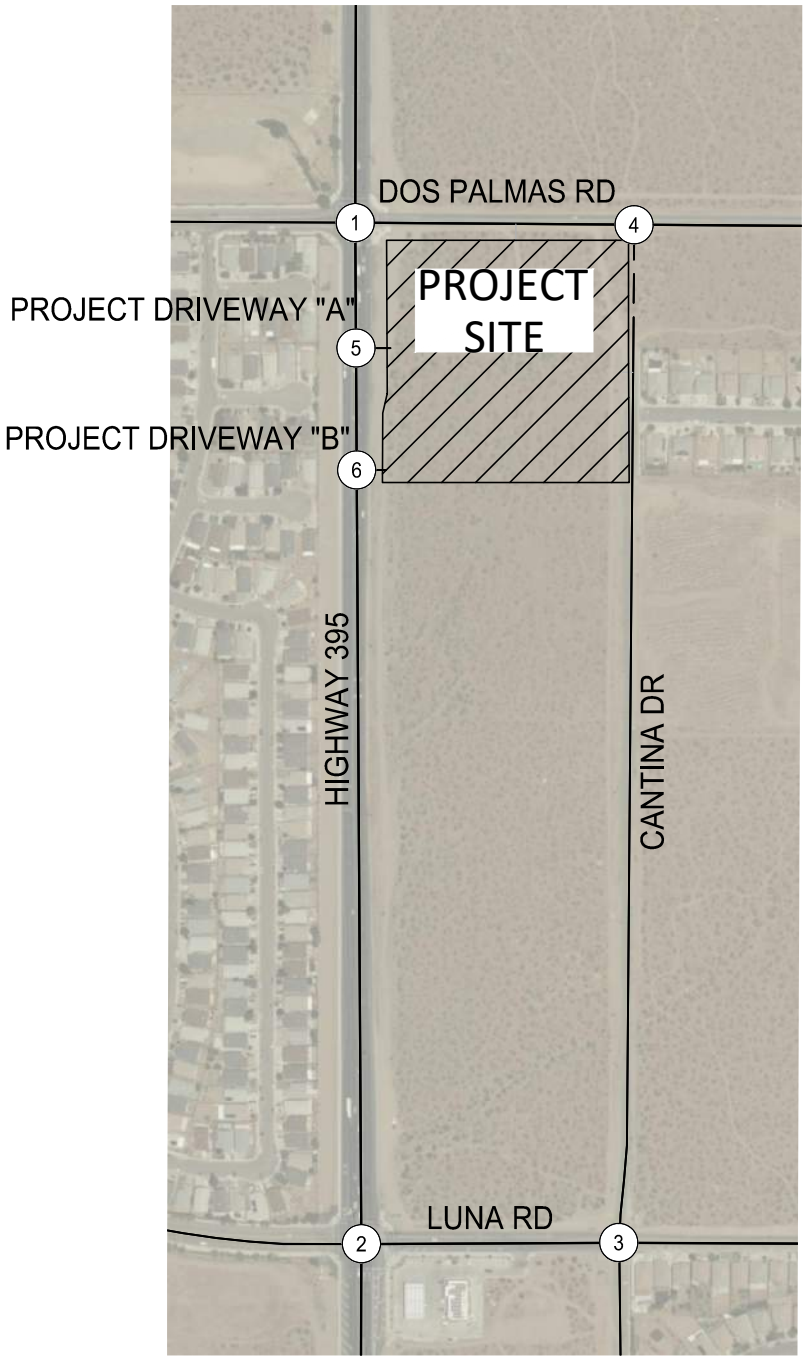
The study area for determining level of service impacts in construction Phase I includes three existing intersections, a future intersection, and two future project driveway intersections:

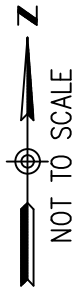
1. Highway 395 / Dos Palmas Road
2. Highway 395 / Luna Road
3. Luna Road / Cantina Drive
4. Dos Palmas Road / Cantina Drive (future intersection in Phase II)
5. Highway 395 / Project Driveway "A"
6. Highway 395 / Project Driveway "B"

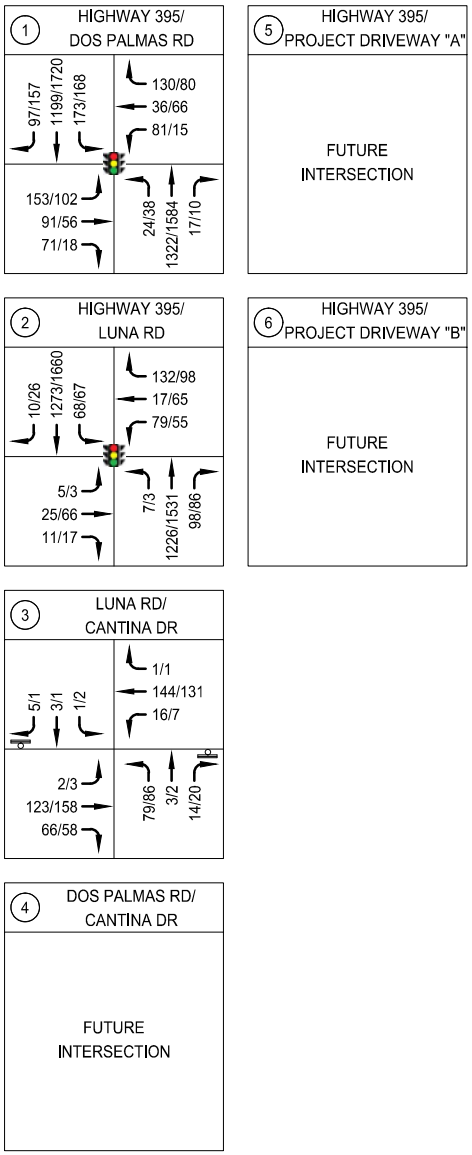
The intersections of Highway 395 at Dos Palmas Road and Highway 395 at Luna Road are signalized. The existing and future intersections of Luna Road at Cantina Drive and Dos Palmas Road are side-street stop controlled.

3.3 Existing Traffic Volumes

Turn movement counts were conducted in January and February 2022 by Newport Traffic Studies, an independent traffic data collection company. These counts were collected during the AM (7:00-9:00 AM) and PM (4:00-6:00 PM) peak periods. The raw turning movement counts are included in **Appendix A** of this study. **Figure 3** illustrates the existing peak hour traffic volumes in the study area.







LEGEND

XX/XX - AM/PM PEAK HOUR VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

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FIGURE 3: EXISTING TRAFFIC VOLUMES HIGHWAY 395 AND DOS PALMAS ROAD COMMERCIAL CENTER DEVELOPMENT VICTORVILLE, CALIFORNIA

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3.4 Capacity Analysis Methodology

Intersection capacity analyses were conducted using Synchro software[2], which implements the methods of the Highway Capacity Manual, 6th Edition (HCM 6)[3] used in this report. The intersection capacity analyses utilize existing intersection geometrics and existing and forecasted traffic volumes in analyzing AM and PM peak hour intersection operating conditions. The traffic analysis methodology concepts presented in Chapters 19 and 20 of the Highway Capacity Manual (HCM 6) were utilized to calculate intersection Level of Service (LOS) based on the average control delay (in seconds per vehicle) of vehicles utilizing the intersections.

The analysis determines a LOS that quantitatively describes the operating characteristics of signalized intersections. **Table 3-1** provides LOS thresholds for signalized intersections as provided in the HCM 6 Chapter 19.

The LOS for a Two-Way Stop Controlled (TWSC) intersection is determined by the computed or measured control delay. The LOS is determined for each minor street movement (or shared movement) by using the criteria provided in

Table 3-2 referenced from HCM 6 Chapter 20.

The Existing Conditions capacity analysis will utilize the PHF from the existing traffic counts. To account for forecasted traffic volumes the Background and Future Conditions capacity analysis will utilize a PHF of 0.95.

Table 3-1: HCM 6 – LOS Criteria for Signalized Intersections

Control Delay (seconds /veh)	**LOS by Volume-to-Capacity Ratio [a]**	
	≤1.0	**>1.0**
≤ 10	A	F
> 10 - 20	B	F
> 20 - 35	C	F
> 35 - 55	D	F
> 55 - 80	E	F
> 80	F	F

Note: [a] For approach-based and intersection-wide assessments, LOS is defined solely by control delay.
Source: Highway Capacity Manual 6th Edition, Exhibit 19-8.

Table 3-2: HCM 6 – LOS Criteria for TWSC

Control Delay (seconds/vehicle)	**LOS by Volume-to-Capacity Ratio**	
	Volume / Capacity Ratio ≤ 0.99	**Volume / Capacity Ratio < 1.0**
0 - 10	A	F
> 10 -15	B	F
> 15 - 25	C	F
> 25 - 35	D	F
> 35 - 50	E	F
> 50	F	F

Note: The LOS criteria apply to each lane on each approach of the stop-controlled minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.

Source: Highway Capacity Manual 6th Edition, Exhibit 20-2.

2 Trafficware Ltd, Version 10.
3 Transportation Research Board, Washington D.C., 2010.

3.5 Current City Policy on Intersection Performance

The City's peak hour level of service standard is LOS D. An intersection found to operate at a LOS E with an Intersection Capacity Utilization (ICU) value greater than 0.95 or Highway Capacity Manual (HCM) delay worse than LOS D (i.e., LOS E or F) is considered deficient.

If a development project would worsen an intersection peak hour LOS to E or worse, it is considered a significant impact that must be mitigated. If a development project would worsen an already deficient intersection by two percent or more, it is considered a significant impact that must be mitigated.

3.6 Existing Traffic Analysis

Existing intersection capacity and LOS analyses are based on the existing intersection geometrics and the AM and PM peak hour traffic volumes discussed earlier. The results of the analysis are shown in **Table 3-3** and provided in **Appendix C**. As shown in **Table 3-3** under Existing Conditions, the study intersections operate at LOS D or better, except for the intersection of Highway 395 at Dos Palmas Road during the PM peak hour which operates at a LOS E. The existing geometrics are illustrated in **Figure 4**.

Table 3-3: Intersection Capacity Analysis – Existing Conditions

Intersection	Intersection Control Type	AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
1. Highway 395 / Dos Palmas Rd	TS	54.8	D	**72.4**	**E**
2. Highway 395 / Luna Rd	TS	34.4	C	23.7	C
3. Luna Road / Cantina Dr	SSSC	14.5	B	12.6	B
Abbreviations: TS – Traffic signal-controlled intersection SSSC – Side-street stop-controlled intersection Delay – seconds per vehicle LOS – Level of Service					

4 EXISTING PLUS PROJECT CONDITIONS

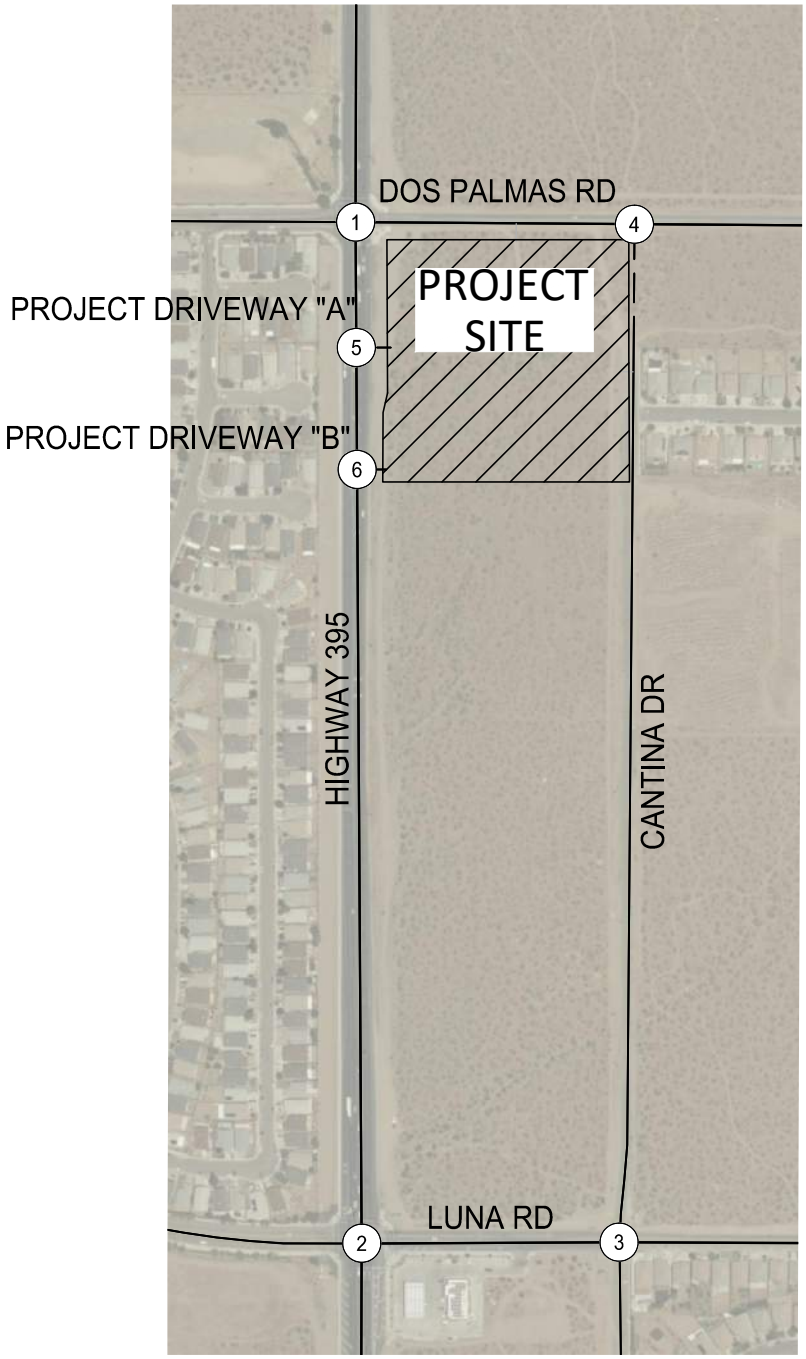
Existing Plus Project Conditions identifies impacts to the City's level of service standards when compared to Existing Conditions without any unrelated transportation system improvements or other development. Impacts identified in this scenario are considered "project-specific"—impacts that are the sole responsibility of the project to mitigate.

4.1 Site Access and Project-Specific Roadway Improvements

Access to the site is proposed via driveways along Highway 395, Dos Palmas Road, and on an extension of Cantina Drive south of Dos Palmas Road.

The proposed Highway 395 driveways include (refer to conceptual geometric plan):

- A right turn in only access driveway is proposed at Project Driveway "A" on Highway 395 located about 331 feet south of Dos Palmas Road. Proposed improvements to Highway 395 include widening the east side of the road and restriping the lanes to provide a northbound through-right lane into Project Driveway "A" and trapping to right turn lane at Dos Palmas Road.
- A right in / right out only access driveway is proposed at Project Driveway "B" on Highway 395 located about 638 feet south of Dos Palmas Road. Proposed improvements to Highway 395 include widening the east side of the road and restriping the lanes to provide a northbound right turn lane into Project Driveway "B".
- A raised curbed median is proposed on Highway 395 along the project frontage extending approximately 150 feet south of Driveway "B".



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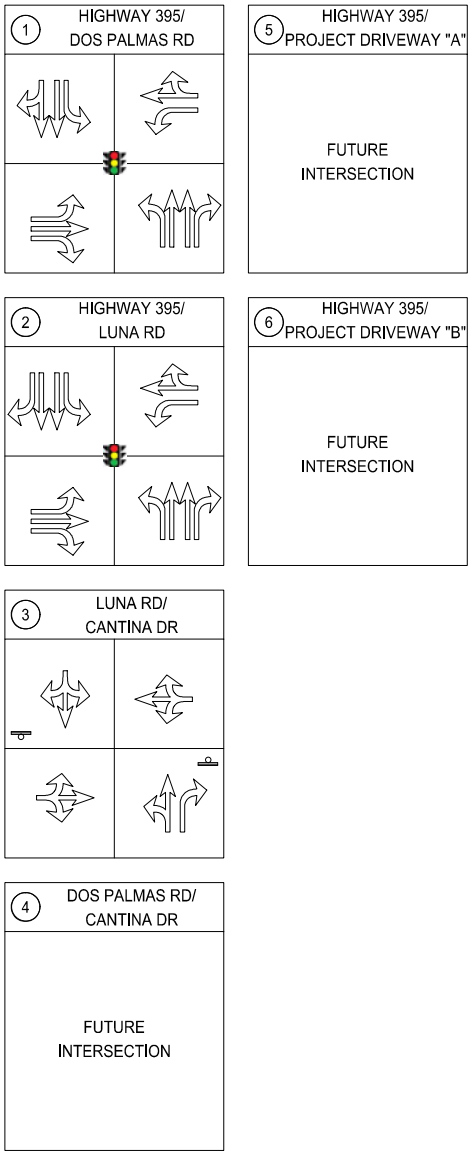

LEGEND

- EXISTING GEOMETRICS
- # - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

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FIGURE 4: EXISTING INTERSECTION GEOMETRICS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

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The proposed Dos Palmas Road driveways include (refer to conceptual geometric plan):

- A full access driveway is proposed at Project Driveway "C" about 400 feet east of Highway 395. Proposed improvements to Dos Palmas Road include widening the south side of the road to provide an eastbound right turn lane into the Project Driveway and trapping to a right turn lane at Cantina Drive.
- The project proposes to extend Cantina Drive south of Dos Palmas Road along the project's eastern frontage and construct driveway curb cuts accessing the site. A three-leg intersection created by the extension of Cantina Drive is proposed to provide full access to the project in construction Phase II.
- Improvements to Dos Palmas Road include widening the south side of the road to provide an eastbound right turn lane and a westbound left turn lane into Cantina Drive.

Project-Specific Roadway Improvements

1. <u>Frontage Improvements on Dos Palmas Road</u>.

Project Access Intersection Improvements

The project proposes to construct the following access intersections on the improved frontages of Dos Palmas Road and Highway 395.

1. Project Driveway "A" on Highway 395. The project proposes to construct the east leg to provide a right turn in only project driveway as described under Project Access.
    a. Construct a dedicated northbound through-right lane into the Project Driveway "A" which continues north and traps to a right turn lane at Dos Palmas Road.
    b. Construct a raised curbed median on Highway 395.
2. Project Driveway "B" on Highway 395. The project proposes to construct the east leg to provide a right turn in / right turn out only project driveway as described under Project Access.
    a. Construct a northbound right turn lane into Project Driveway "B".
    b. Construct an eastbound right turn lane to Highway 395.
    c. Construct a raised curbed median on Highway 395.
3. Project Driveway "C" on Dos Palmas Road. The project proposes to construct a right in/right out only driveway on Dos Palmas Road as described under Project Access.
    a. Construct a dedicated eastbound through-right lane into Project Driveway "D" which continues east and traps to a right turn lane at Cantina Drive.

Project-Specific Off-Site Intersection Improvements

The dedication of right-of-way and widening of Dos Palmas Road and Highway 395 along the project's frontage allows for improvements at the off-site intersection of these two roads and at the intersection of Dos Palmas Road and Cantina Drive. **Table 4-1** describes the lane geometry and traffic control improvements as used in the capacity analyses of project conditions.

Table 4-1: Proposed Project-Specific Off-Site Intersection Improvements

Intersection	Lane Geometry Improvements
Dos Palmas Road / Highway 395 (Phase I)	<u>South Approach of Highway 395</u> • Dedication of right-of-way to accommodate the ultimate widening of Highway 395 (see attached ultimate geometric plan). • Widening the east side of Highway 395 to accommodate the following (see attached proposed geometric plan): ○ Dual 12-foot-wide northbound left turn lanes ○ Two 12-foot wide northbound through lanes ○ A 6-foot-wide northbound bike lane ○ A 12-foot-wide northbound right turn lane beginning south of the project's northerly right-turn-in only driveway and terminating at Dos Palmas Road ○ Reconstruction of the curb return on the southeast corner of Highway 395 and Dos Palmas Road including relocation / replacement of traffic signal equipment to accommodate proposed widening ○ A 12-foot-wide right turn lane beginning south of the project's southerly right turn in / right turn out driveway at the southern edge of the project's property line including a 6-foot-wide bike lane outside of the right turn lane ○ A raised median to enforce the right turn in / right turn out driveway beginning south of the southerly driveway and terminating at the beginning of the dual northbound left turn lanes ○ Appropriate transitions and tapers adhering to Caltrans standards <u>North Approach of Highway 395</u> • Widening the east side of Highway 395 (12-feet for approximately 300 feet with 660 feet of transition back to existing right-of-way) to accommodate the following (see attached proposed geometric plan): ○ Dual 12-foot-wide southbound left turn lanes ○ Two 12-foot wide northbound through lanes ○ An 8-foot-wide northbound shoulder ○ Reconstruction of the curb return on the northeast corner of Highway 395 and Dos Palmas Road including relocation / replacement of traffic signal equipment to accommodate proposed widening <u>East Approach of Dos Palmas Road</u> • Dedication of right-of-way to accommodate the widening of Dos Palmas Road. • Widening the south side of Dos Palmas Road to accommodate the following (see attached proposed geometric plan): ○ Two 14-foot wide eastbound through lanes ○ Marking of the outside through lane into an eastbound right turn lane (12-feet wide) into Cantina Drive. ○ A 12-foot-wide westbound left turn lane at Highway 395 transitioning into a two-way left turn lane for the length of the project frontage ○ A 12-foot-wide westbound through lane ○ A 12-foot wide westbound through-right turn lane transitioning back to the existing curb line of Dos Palmas Road
Dos Palmas Road / Cantina Drive (Phase II)	• Construct a dedicated eastbound right turn lane into Cantina Drive from Dos Palmas Road • Provide a westbound left turn lane into Cantina Drive from Dos Palmas Road • Construct the south leg of the intersection • Construct a northbound left turn lane • Construct a northbound right turn lane • Construct a two-way-left-turn lane along Cantina Drive.

4.2 Phase I Project Trip Generation

The trip generation rates for the site were obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. Opening year for Phase I of the project is 2024.

Land use categories for estimating trips include Super Convenience Market/Gas Station (ITE Land Use Category 960), Shopping Center (ITE Land Use Category 820), Automated Carwash (ITE Land Use Category 948), Hotel (ITE Land Use Category 310), and Fast-Food Restaurant with Drive-Through Window (ITE Land Use Category 934). Pass-by factors for the Super Convenience Market/Gas Station and fast-food restaurant with drive-through window were obtained from the City of Victorville staff. A reduction in trips of 10% for internal capture is assumed for the development.

As presented in Error! Not a valid bookmark self-reference. the Phase I of the proposed project is estimated to generate 4,316 primary daily trips, 393 primary AM peak hour, and 391 primary PM peak hour trips.

Table 4-2: Construction Phase I Project Trip Generation

and Use		Size	Daily	AM Peak Hour			PM Peak Hour		
Construction Phase I				In	Out	Total	In	Out	Total
1	**Super Convenience Market/Gas Station Land Use Category (ITE 960) [1]**								
	Market Floor Area (Sq. Ft. GLA)	6,234	-	-	-	-	-	-	-
	Trips Per Fueling Position	16	230.52	14.04	14.04	28.08	11.48	11.48	22.96
	Trips		3,689	225	225	450	184	184	368
	Internal Trips (10%)		369	23	22	45	18	19	37
	Subtotal Trips		3,320	202	203	405	166	165	331
	Pass-By Trips (50%, 45%)		1,577	101	101	202	74	75	149
	Primary Trips (50%, 55%)		1,743	101	102	203	92	90	182
2	**Shopping Center Land Use Category (ITE 820) [2]**								
	Per 1,000 Sq. Ft. GLA	4,399	37.75	0.58	0.36	0.94	1.83	1.98	3.81
	Trips		167	3	2	5	9	9	18
	Internal Trips (10%)		17	0	0	0	1	1	2
	Subtotal Trips		150	3	2	5	8	8	16
3	**Automated Car-Wash Land Use Category (ITE 948)**								
	Trips Per 1,000 Sq. Ft. GLA	1,820	0	0	0	0	7.10	7.10	14.20
	Trips		0	0	0	0	13	13	26
	Internal Trips (10%)		0	0	0	0	1	2	3
	Subtotal Trips		0	0	0	0	12	11	23
4	**Hotel Land Use Category (ITE 310) [3]**								
	Hotel Floor Area (Sq. Ft. GLA)	64,488	-	-	-	-	-	-	-
	Trips Per Room	112	8.36	0.28	0.19	0.47	0.31	0.29	0.60
	Trips		937	31	22	53	34	33	67
	Internal Trips (10%)		94	3	2	5	4	3	7
	Subtotal Trips		843	28	20	48	30	30	60
5	**Fast-Food Restaurant with Drive-Through Window - Land Use Category (ITE 934) [4]**								
	Per 1,000 Sq. Ft. GLA	3,536	470.95	20.50	19.69	40.19	16.99	15.68	32.67
	Trips		1,666	73	70	143	61	56	117
	Internal Trips (10%)		167	7	7	14	6	6	12
	Subtotal Trips		1,499	66	63	129	55	50	105
	Pass-By Trips (35%, 35%)		525	23	22	45	19	18	37
	Primary Trips (65%, 65%)		974	43	41	84	36	32	68
6	**Fast-Food Restaurant with Drive-Through Window - Land Use Category (ITE 934) [5]**								
	Per 1,000 Sq. Ft. GLA	2,200	470.95	20.50	19.69	40.19	16.99	15.68	32.67
	Trips		1,037	46	44	90	38	35	73
	Internal Trips (10%)		104	5	4	9	4	4	8
	Subtotal Trips		933	41	40	81	34	31	65
	Pass-By Trips (35%, 35%)		327	14	14	28	12	11	23
	Primary Trips (65%, 65%)		606	27	26	53	22	20	42
Construction Phase I Subtotal Project Trips			6,745	340	328	668	305	295	600
Pass-By Trips			2,429	138	137	275	105	104	209
Primary Trips			**4,316**	202	191	**393**	200	191	**391**
	Construction Phase I Total Building Floor Area (Refer to Figure 2 - Site Plan):						82,677	Sq. Ft.	

Notes:
[1] Trips for the Super Convenience Market/Gas Station land use category are estimated using number of fueling positions (16).
[2] Refinement of the site plan since preparation of the previous draft traffic impact study changed the size of the retail component of Building 1 in Lot A. The retail floor area has changed from 4,167 SF to 4,399 SF resulting in a net increase in trips of 8 trips per day and 1 trip in the PM peak hour.
[3] The floor area of the hotel has changed from 64,800 SF to 64,488 SF. This change does not affect trip estimation since trip generation for hotels is based on number of rooms which has not changed.
[4] The floor area of the fast food restaurant in Building 3 has changed from 3,528 SF to 3,536 SF resulting in a net increase in trips of 3 trips per day and 1 trip in the PM peak hour.
[5] The floor area of the fast food restaurant in Building 4 has changed from 2,300 SF to 2,200 SF resulting in a net decrease in trips of 3 trips per day 2 trips in the AM peak hour 3 trips in the PM peak hour.
The overall impact on trip generation from the minor floor area adjustments described above is a net decrease in trips of 16 per day, 3 in AM peak hour and 3 in the PM peak hour. This small decrease in trip generation is not reflected in the intersection capacity analysis.
Source: "Trip Generation Manual, Institute of Transportation Engineers", 10th Edition

4.3 Project Trip Distribution and Assignment

The estimated project trips are distributed by direction and assigned to the local network of streets. **Figure 5** distribution of the Phase I project trips. **Figure 6** illustrates the assignment of Phase I primary project trips to study intersections. **Figure 7** illustrates the assignment of Phase I pass-by project trips to study intersections. **Figure 8** illustrates the assignment of Phase I total project trips to study intersections.

4.4 Existing Plus Project Traffic Analysis

The project trip generation, traffic distribution and assignment patterns were used in the intersection capacity analyses to assess potential project impacts to level of service. The project trips were added to existing traffic volumes to derive Existing Plus Project Conditions. This scenario's traffic volumes are illustrated in **Figure 9**. Intersection capacity analysis for the study intersections uses the existing lanes geometries and project access driveway improvements. The results of the analysis are shown in Error! Not a valid bookmark self-reference. and provided in **Appendix C**.

Table 4-3: Intersection Capacity Analysis – Existing Plus Project Conditions

Intersection	Intersection Control Type	Existing Condition				Existing + Project Condition [1]			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Highway 395 / Dos Palmas Rd	TS	54.8	D	**72.4**	**E**	48.5	D	48.3	D
2. Highway 395 / Luna Rd	TS	34.4	C	23.7	C	39.8	D	26.6	C
3. Luna Road / Cantina Dr	SSSC	14.5	B	12.6	B	18.1	C	14.5	B
4. Cantina Dr / Dos Palmas Rd [2]	SSSC	Not Applicable				Not Applicable			
5. Highway 395 / Project Driveway "A" [3]	Rt-In-Only					Not Applicable			
6. Highway 395 / Project Driveway "B"	SSSC					22.2	C	26.6	D

Notes:
[1] The existing plus project scenario assumes the project-specific improvements to the intersection of Highway 395 / Dos Palmas Road.
[2] The extension of Cantina Drive to Dos Palmas Road is not assumed until Phase II of the project.
[3] Project Driveway "A" is a right turn in only intersection. No level of service is reported for this type of intersection.
Abbreviations:
TS – Traffic signal-controlled intersection
SSSC – Side-street stop-controlled intersection
Delay – seconds per vehicle
LOS – Level of Service

As presented in **Project Trip** Distribution and Assignment
The estimated project trips are distributed by direction and assigned to the local network of streets. **Figure 5** distribution of the Phase I project trips. **Figure 6** illustrates the assignment of Phase I primary project trips to study intersections. **Figure 7** illustrates the assignment of Phase I pass-by project trips to study intersections. **Figure 8** illustrates the assignment of Phase I total project trips to study intersections.

4.5 Existing Plus Project Traffic Analysis

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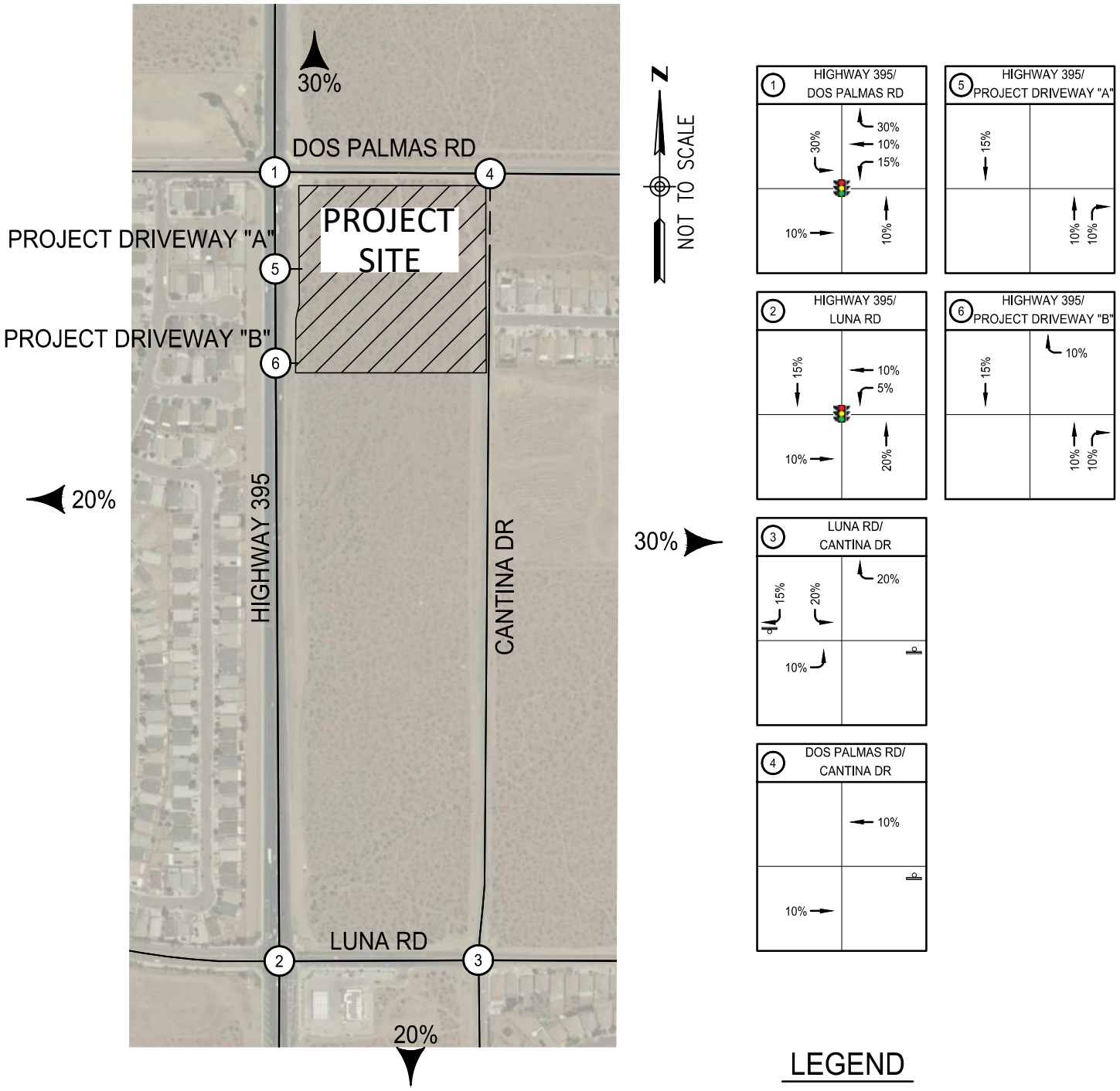
Table 4-3, under Existing Plus Project Conditions, the study intersections would operate at LOS D or better with the proposed project-specific improvements. The existing and proposed project geometrics are illustrated in **Figure 10**.



LEGEND

XX% - GENERAL PROJECT TRIP DISTRIBUTION

XX% - SPECIFIC PROJECT TRIP PERCENTAGE

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

FIGURE 5: CONSTRUCTION PHASE - I
PROJECT TRIP DISTRIBUTION
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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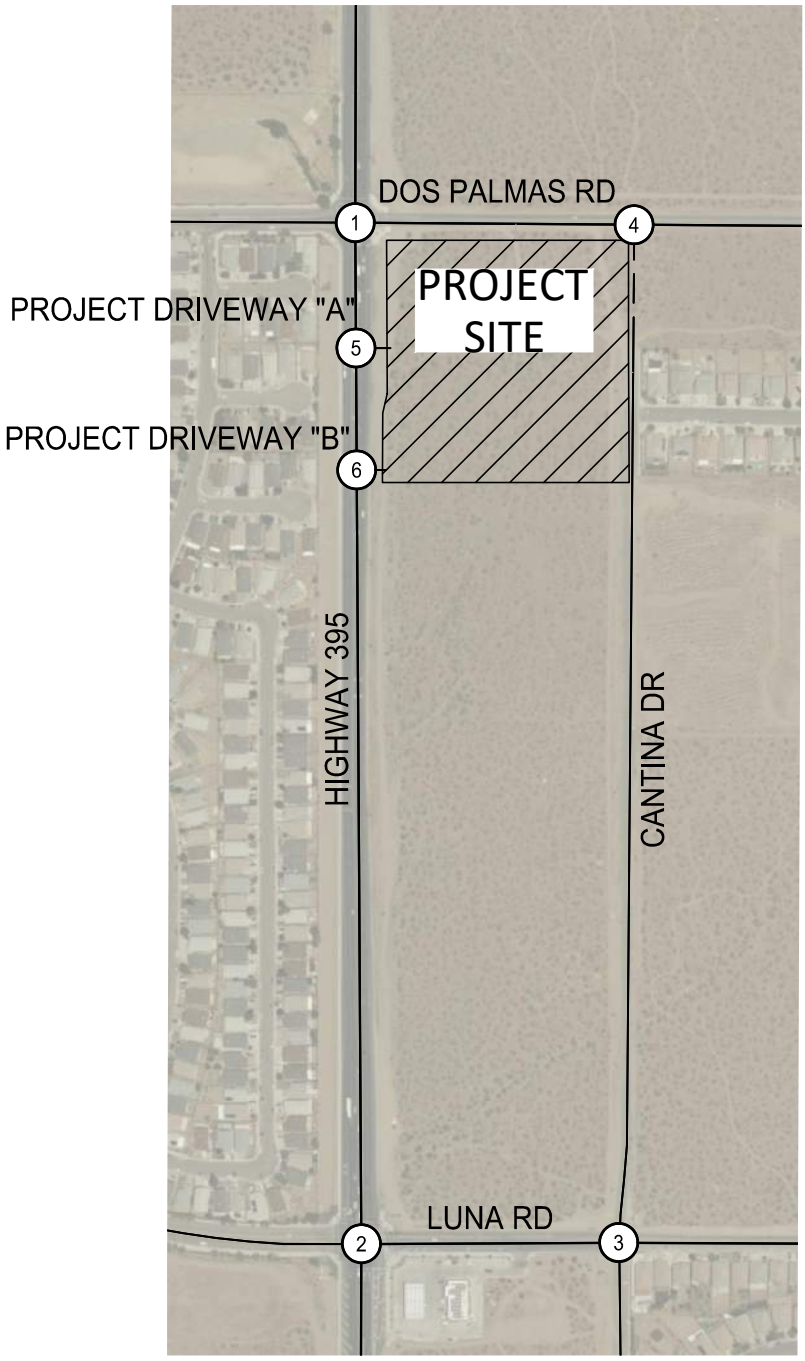

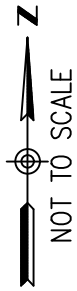

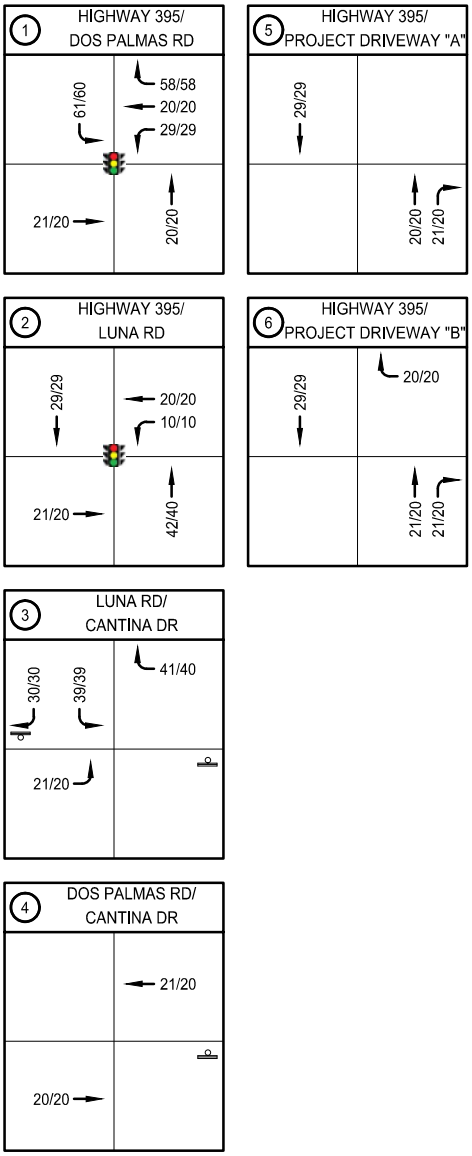

PRIMARY PROJECT TRIPS

AM PEAK HOUR	-	203 IN / 192 OUT
PM PEAK HOUR	-	200 IN / 192 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIP

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

FIGURE 6: CONSTRUCTION PHASE - I
PRIMARY PROJECT TRIPS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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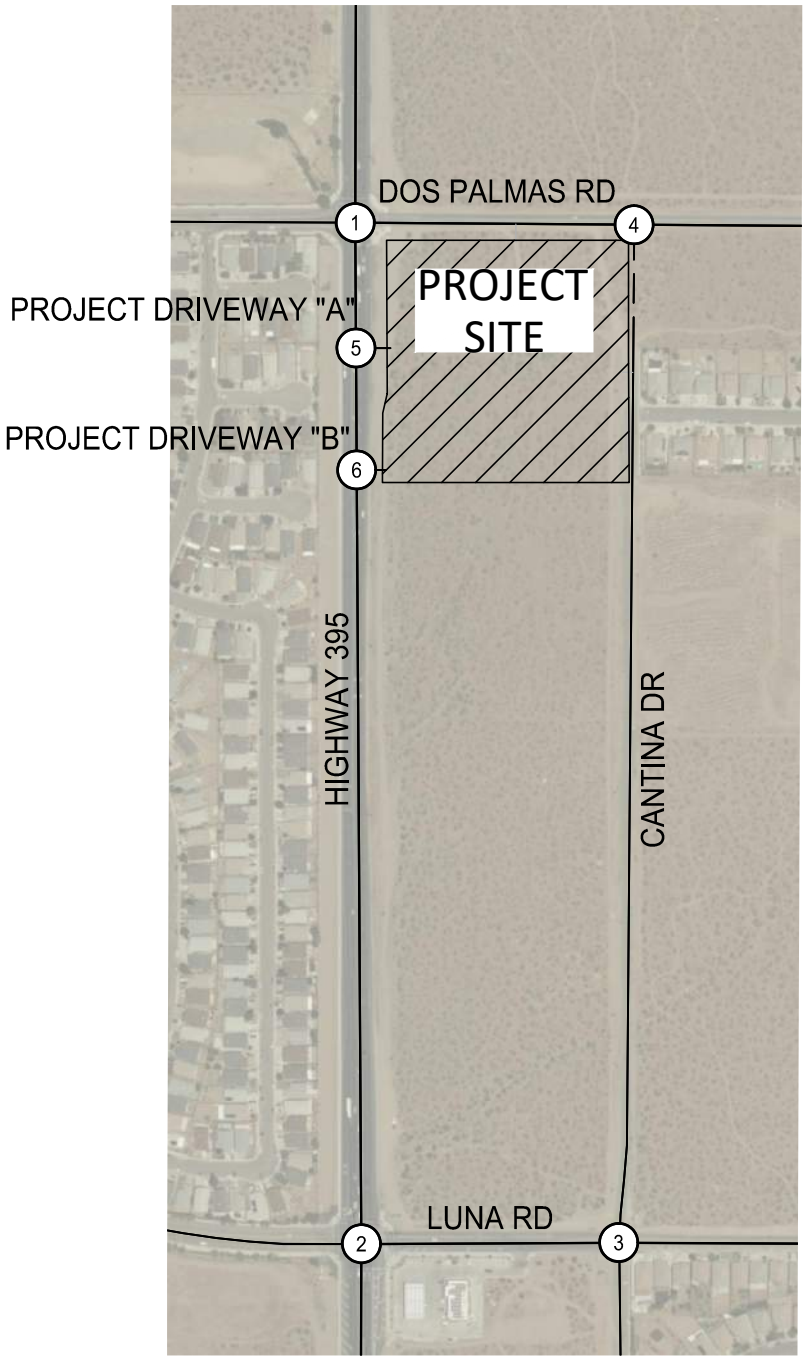

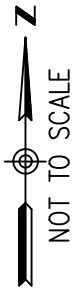

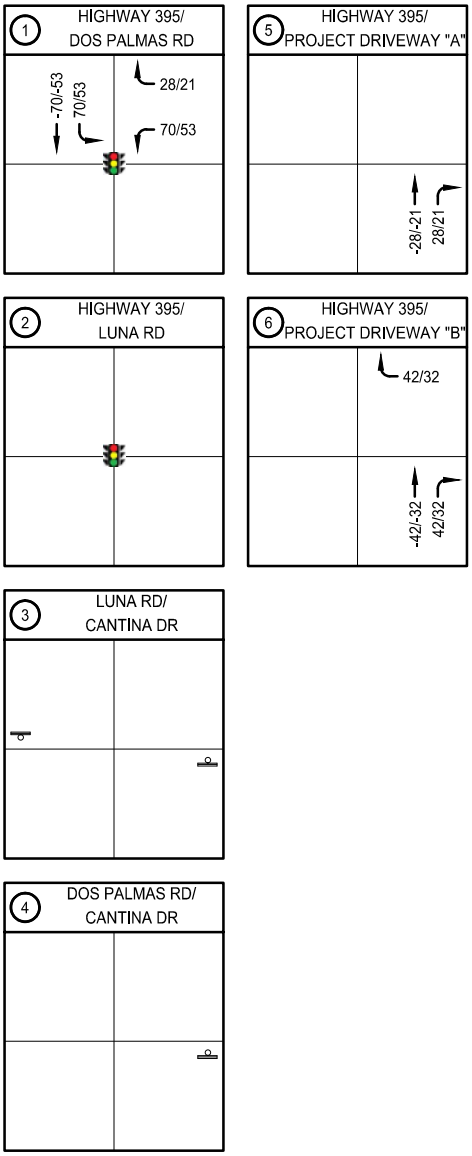

PASS-BY PROJECT TRIPS

AM PEAK HOUR	-	139 IN / 137 OUT
PM PEAK HOUR	-	105 IN / 105 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIP

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

FIGURE 7: CONSTRUCTION PHASE - I
PASS-BY PROJECT TRIPS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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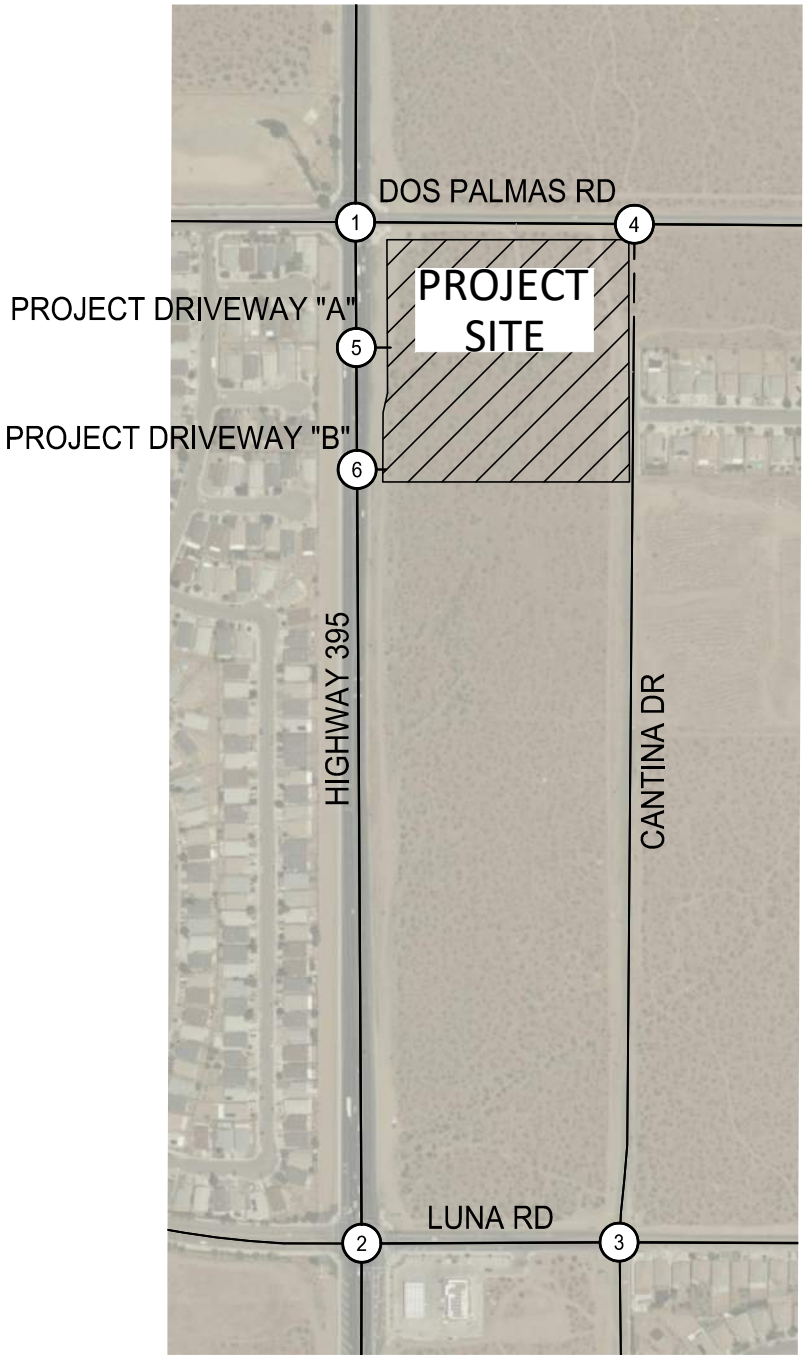

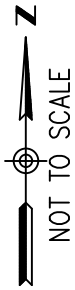

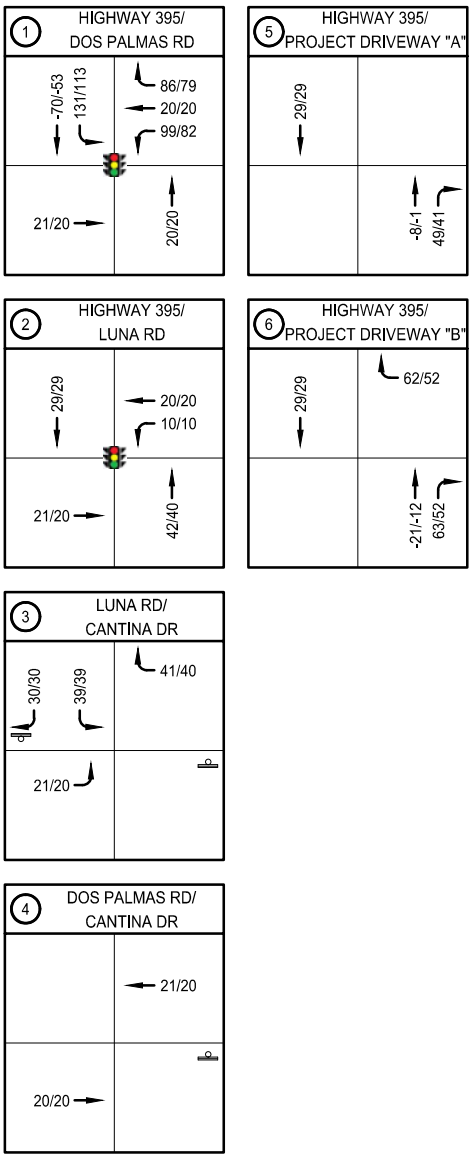

TOTAL PROJECT TRIPS

AM PEAK HOUR	-	342 IN / 329 OUT
PM PEAK HOUR	-	305 IN / 297 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIP

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

FIGURE 8: CONSTRUCTION PHASE - I
TOTAL PROJECT TRIPS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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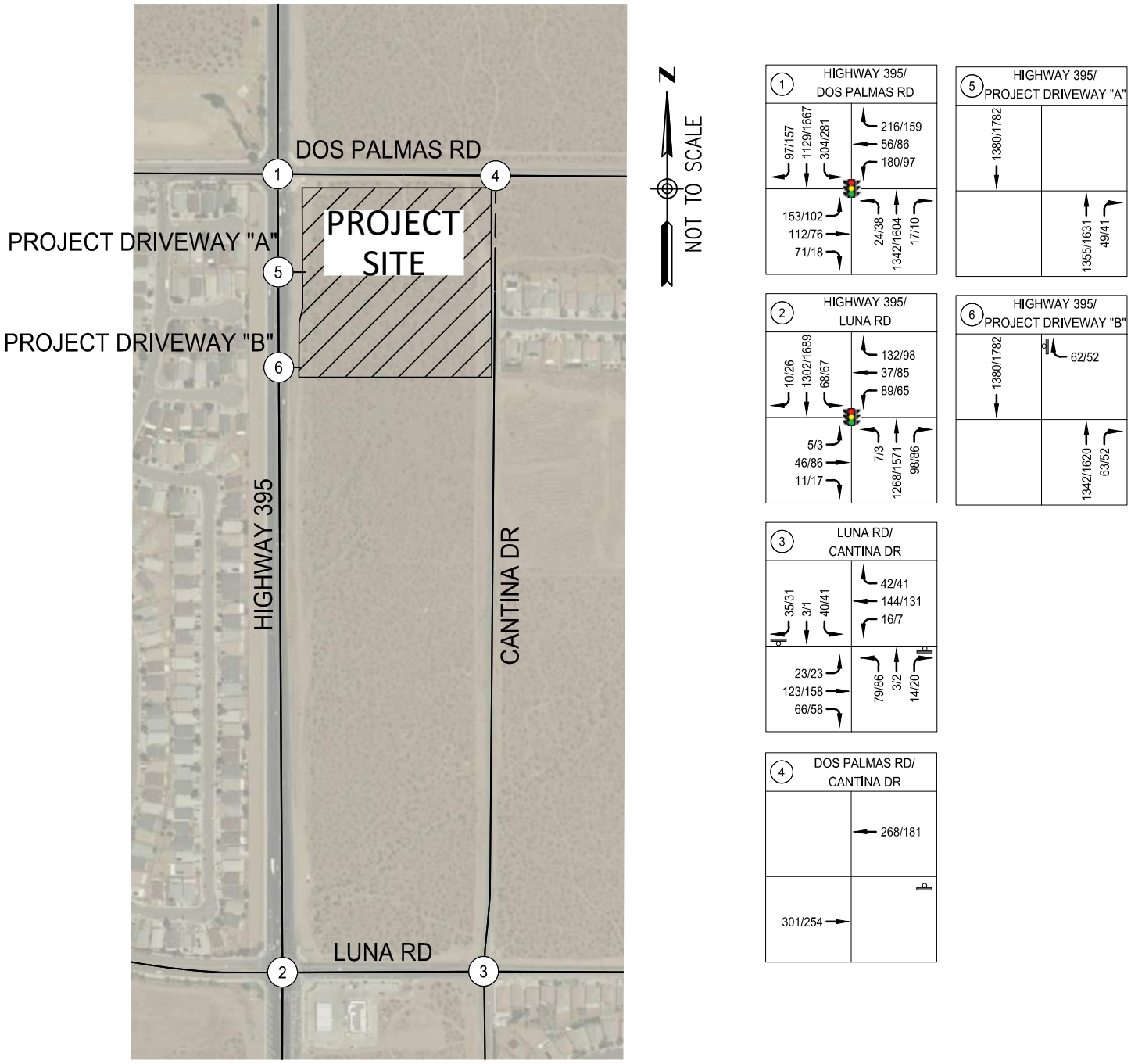

LEGEND

XX/XX - AM/PM PEAK HOUR VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

FIGURE 9: EXISTING PLUS PROJECT TRAFFIC VOLUMES
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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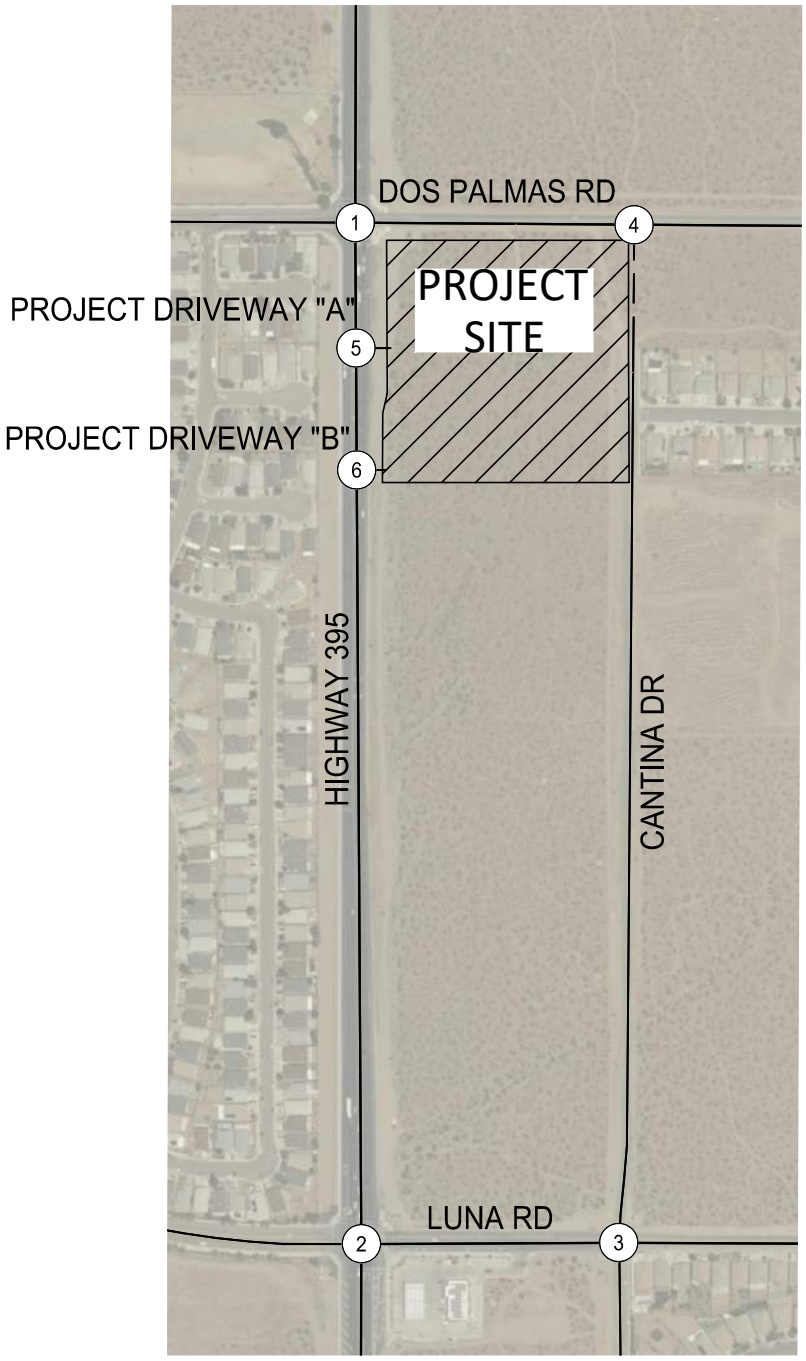

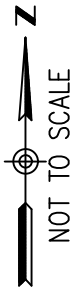

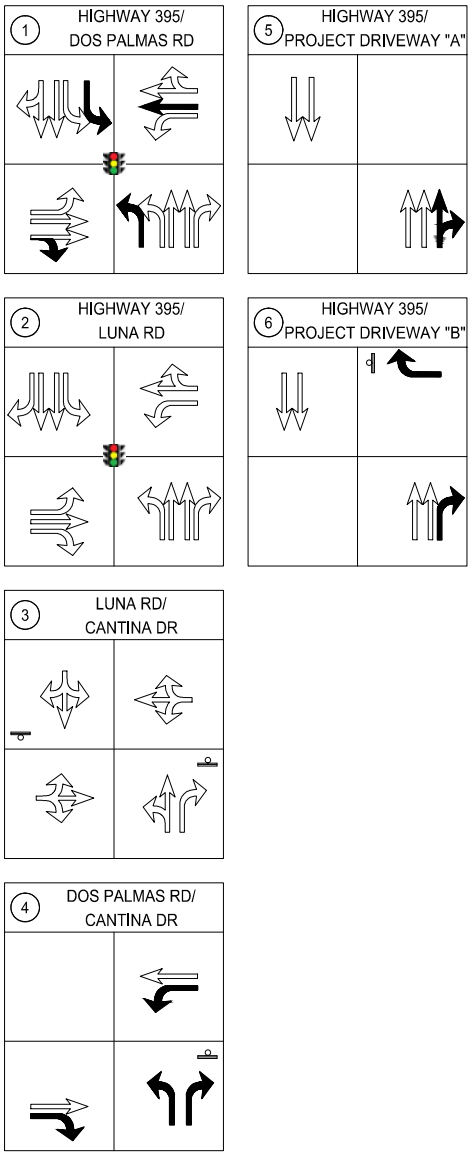

LEGEND

- EXISTING GEOMETRICS
- PROPOSED GEOMETRICS
- # - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

FIGURE 10: EXISTING PLUS PROJECT INTERSECTION GEOMETRICS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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5 BACKGROUND CONDITIONS (YEAR 2024)

This scenario represents conditions at the time the Phase I Project is anticipated to be fully constructed and occupied (known as buildout which is the Year 2024 for this project) but without traffic generated by the project. This scenario is comprised of Ambient growth—a general rate of growth in traffic from overall regional growth but not specific to any nearby development.

5.1 Ambient Growth Projections

The Proposed Phase I Project is anticipated to be constructed and occupied in the Year 2024. As stated earlier in this report near-term growth in traffic is comprised of regional ambient growth and other area projects expected to be completed within the same timeframe. Ambient growth is estimated as a 3.5% annual increase.

5.2 Background Conditions (Year 2024) Traffic Analysis

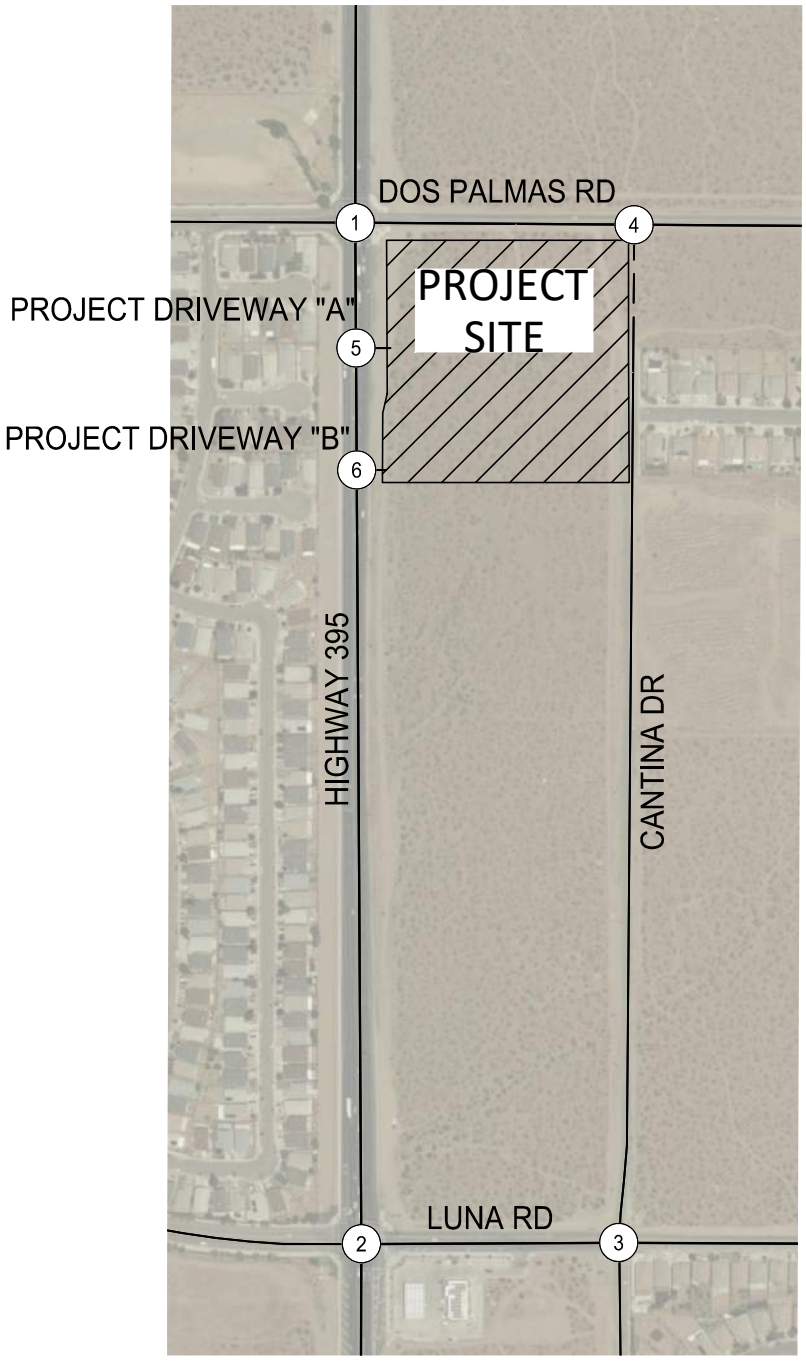
The Background Conditions traffic volumes are illustrated in **Figure 11.** Intersection capacity analysis for this scenario uses existing lanes geometries. To account for forecasted traffic volumes the analysis utilized a PHF of 0.95 for all intersections. The results of the analysis are shown in **Table 5-1** and provided in **Appendix C.**

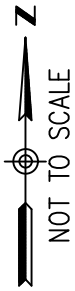
Table 5-1: Intersection Capacity Analysis – Background Conditions

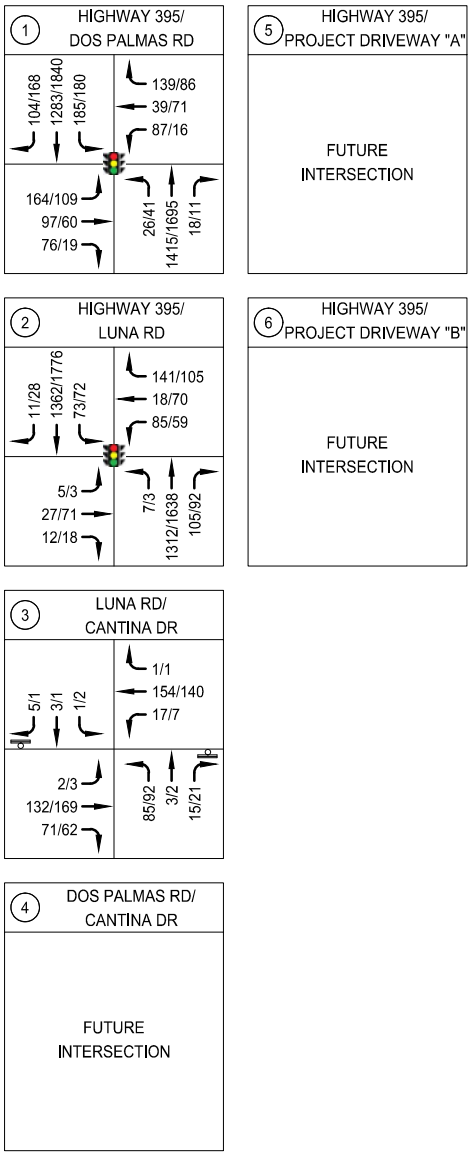
Intersection	Intersection Control Type	AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
1. Highway 395 / Dos Palmas Rd	TS	47.4	D	50.8	D
2. Highway 395 / Luna Rd	TS	27.8	C	20.2	C
3. Luna Road / Cantina Dr	SSSC	12.3	B	12.1	B
Abbreviations: TS – Traffic signal-controlled intersection SSSC – Side-street stop-controlled intersection Delay – seconds per vehicle LOS – Level of Service					

As presented in **Table 5-1***,* under the background conditions, the study intersections are anticipated to operate at LOS D or better.

The background conditions level of service shows a reduction in delay compared to existing conditions due to the use of a peak hour factor (PHF) of 0.95 for all intersections, as specified in the city's guidelines for forecasted traffic volumes.







LEGEND

XX/XX - AM/PM PEAK HOUR VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

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FIGURE 11: BACKGROUND TRAFFIC VOLUMES
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

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6 PROJECT TRAFFIC CONDITIONS

This scenario adds the project's estimated traffic generation at buildout (2024) to the background conditions scenario described above. Level of service impacts identified in this scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any mitigation measures.

6.1 Project Traffic Analysis

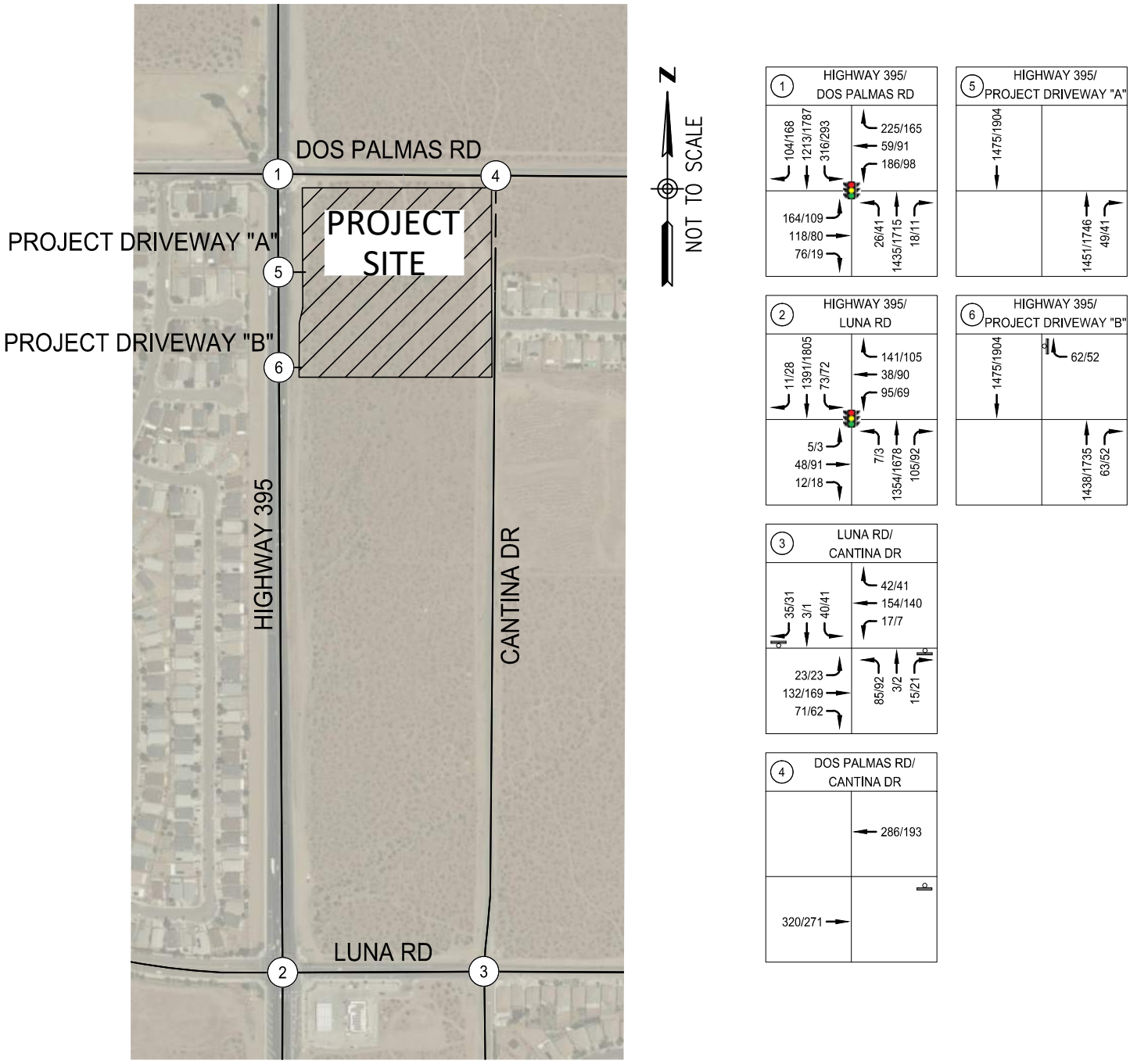
The traffic volumes under this scenario are illustrated in **Figure 12**. Intersection capacity analysis for the study intersections uses existing lanes geometries and the proposed project-specific access, roadway, and off-site intersection improvements described earlier. To account for forecasted traffic volumes the analysis utilized a PHF of 0.95 for all intersections, as specified in the city's guidelines for forecasted traffic volumes. The results of the analysis are shown in **Table 6-1** and provided in **Appendix C.**

Table 6-1: Intersection Capacity Analysis – Project Conditions

Intersection	Intersection Control Type	Background Condition				Project Condition [1]			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Highway 395 / Dos Palmas Rd	TS	47.4	D	50.8	D	53.9	D	54.3	D
2. Highway 395 / Luna Rd	TS	27.8	C	20.2	C	39.7	D	23.9	C
3. Luna Road / Cantina Dr	SSSC	12.3	B	12.1	B	14.6	B	14.3	B
4. Cantina Dr / Dos Palmas Rd [2]	SSSC	Not Applicable				Not Applicable			
5. Highway 395 / Project Driveway "A" [3]	Rt-In-Only					Not Applicable			
6. Highway 395 / Project Driveway "B"	SSSC					22.2	C	26.6	D

Notes:
[1] The background plus project (Phase I) scenario assumes the project-specific improvements to the intersection of Highway 395 / Dos Palmas Road. See proposed geometric plan.
[2] The extension of Cantina Drive to Dos Palmas Road is not assumed until Phase II of the project.
[3] Project Driveway "A" is a right turn in only intersection. No level of service is reported for this type of intersection.
Abbreviations:
TS – Traffic signal-controlled intersection
SSSC – Side-street stop-controlled intersection
Delay – seconds per vehicle
LOS – Level of Service

As presented in **Table 6-1**, under project conditions, the study intersections would operate at LOS D or better with the proposed project-specific improvements.



LEGEND

XX/XX - AM/PM PEAK HOUR VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

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FIGURE 12: PROJECT TRAFFIC VOLUMES
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

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7 FUTURE CONDITIONS (YEAR 2034)

The future conditions scenario represents conditions at the planning horizon Year 2034 without traffic generated by the project. This scenario is comprised of ambient growth—a rate of growth in traffic reflecting regional growth but not specific to any nearby development (assumed to be 3.5% annually for this study).

7.1 Future Traffic Analysis

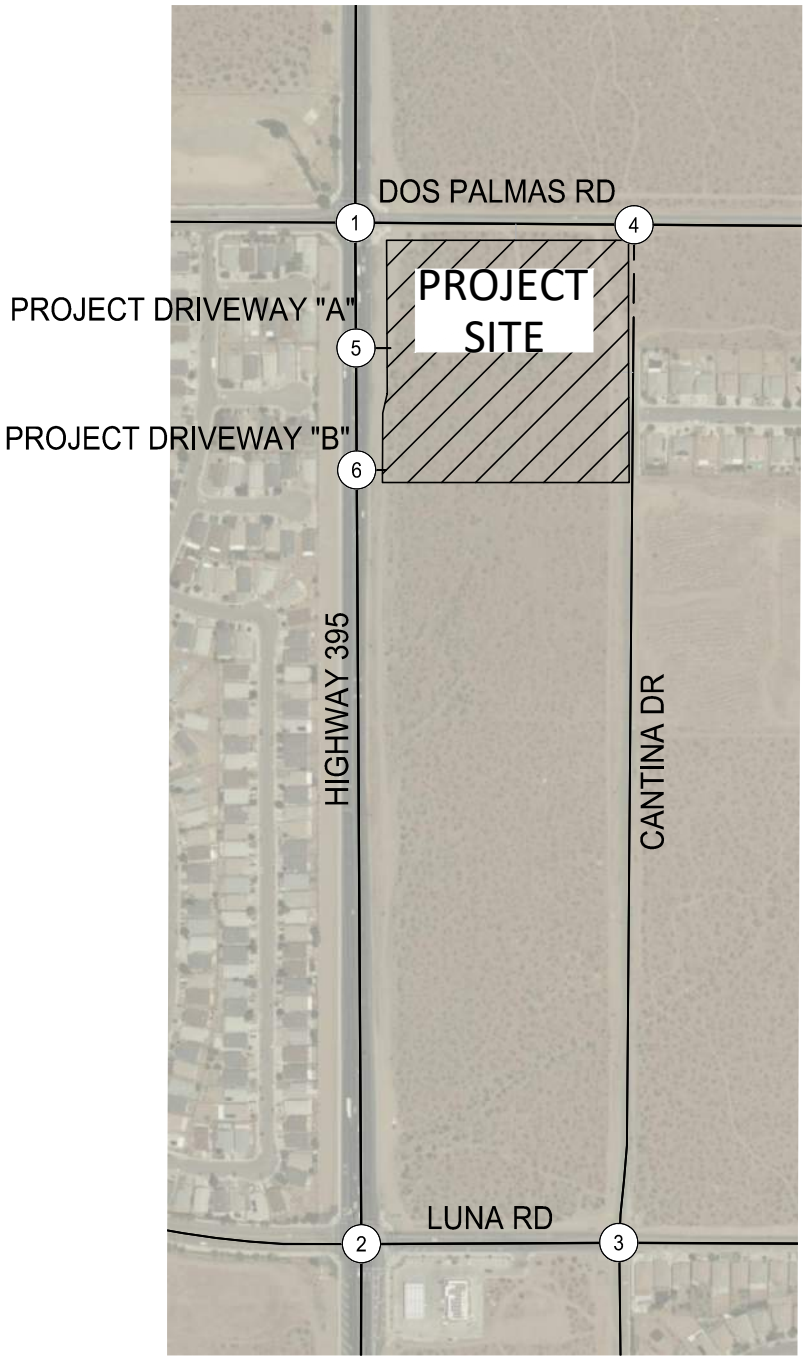
The future conditions (Year 2034) forecasted traffic volumes are illustrated in **Figure 13.** Intersection capacity analysis for the study intersections uses existing lanes geometries. As specified in the city's guidelines for analyzing forecasted traffic volumes, the analysis utilized a Peak Hour Factor (PHF) of 0.95 for all intersections. The results of the analysis are shown in **Table 7-1** and provided in **Appendix C.**

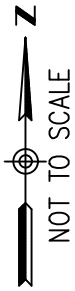
Table 7-1: Intersection Capacity Analysis – Future Conditions (Year 2034)

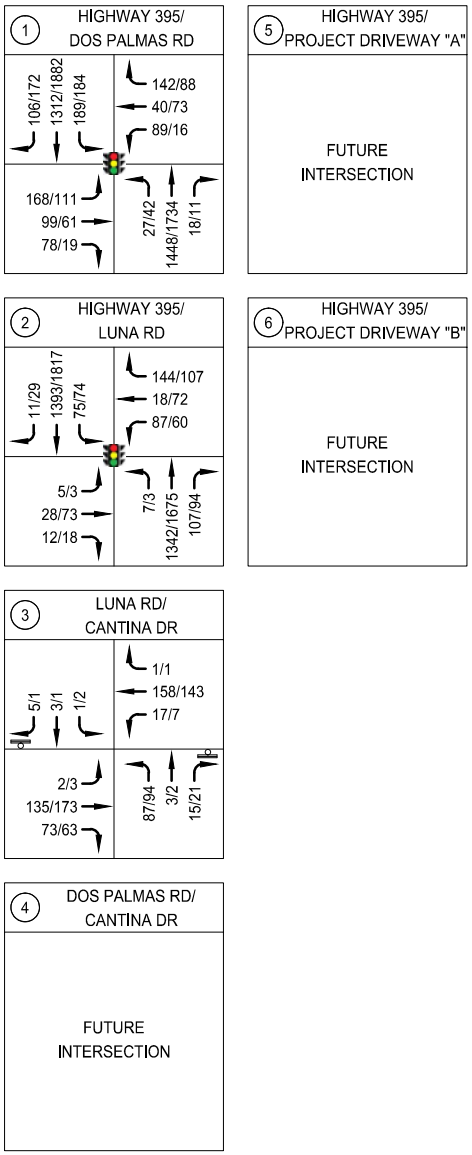
Intersection	Intersection Control Type	AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
1. Highway 395 / Dos Palmas Rd	TS	**67.4**	**E**	**77.5**	**E**
2. Highway 395 / Luna Rd	TS	49.0	D	22.6	C
3. Luna Road / Cantina Dr	SSSC	15.8	C	12.7	B
Abbreviations: TS – Traffic signal-controlled intersection SSSC – Side-street stop-controlled intersection Delay – seconds per vehicle LOS – Level of Service					

As presented in under the **Table 7-1**, under future conditions, the study intersections would operate at LOS D or better, except for the intersection of Highway 395 at Dos Palmas Rd, which would operate at LOS E in both peak hours.

The intersection of Highway 395 at Dos Palmas Rd is anticipated to operate below the city's peak hour level of service standard. As a result, the impacts to the intersection of Highway 395 at Dos Palmas Rd are identified as cumulative impacts.







LEGEND

XX/XX - AM/PM PEAK HOUR VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

DAVID EVANS AND ASSOCIATES INC.

FIGURE 13: FUTURE TRAFFIC VOLUMES
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

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8 FUTURE PLUS PROJECT CONDITIONS (YEAR 2034)

The future plus project conditions scenario adds the combined Phase I and Phase II project's estimated traffic generation to the future condition scenario described in **Chapter 7**.

Impacts identified in this scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any mitigation measures.

8.1 Phase II Project Trip Generation

The trip generation rates for the site were obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. Land use categories for estimating trips include Office (ITE Land Use Category 710). **Table 8-1** summarizes the daily, AM peak hour, and PM peak hour trip generation for Phase II.

Table 8-1: Construction Phase II Project Trip Generation

Use		Size/ Quantity	Daily Weekday	AM Peak Hour			PM Peak Hour		
Construction Phase II									
1	**Office Land Use Category (ITE 710)**			In	Out	Total	In	Out	Total
	Per 1,000 Sq. Ft. GLA	30,200	9.74	1.00	0.16	1.16	0.18	0.97	1.15
	Trips		295	31	5	36	6	30	36
	Internal Trips (10%)		33	3	0	3	1	3	4
	Subtotal Trips		**265**	28	5	**33**	5	27	**32**

Source: "Trip Generation Manual, Institute of Transportation Engineers", 10th Edition

As presented in **Table 8 1** the Phase II of the proposed project is estimated to generate 265 primary daily trips, 33 primary AM peak hour, and 32 primary PM peak hour trips. **Table 8-2** combines the trip generation estimates from Phase I and Phase II. When built out, the project is estimated to generate 4,537 primary daily trips, 424 primary AM peak hour trips, and 421 primary PM peak hour trips.

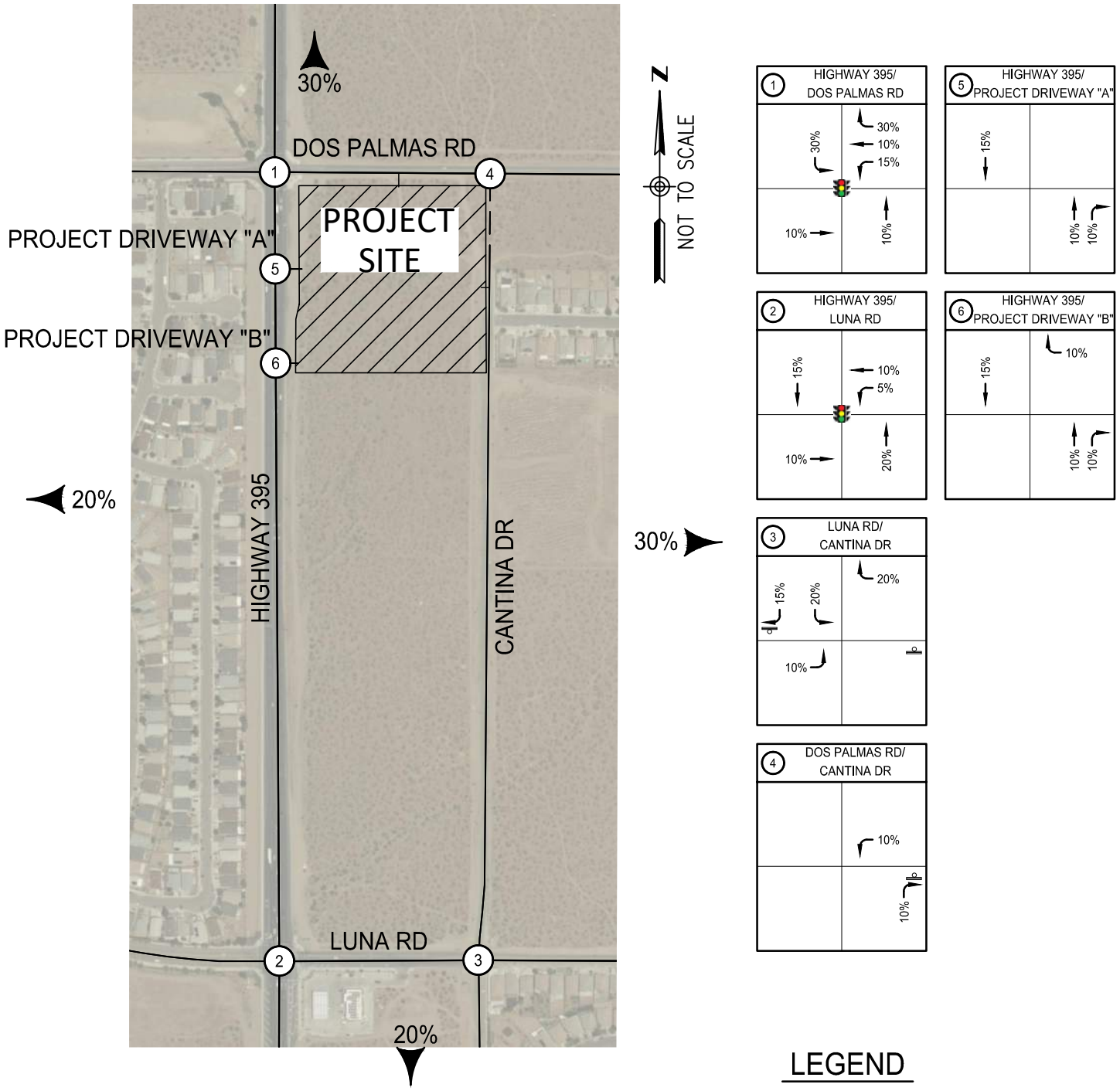
Table 8-2: Total Project Trip Generation

Construction Phase	Daily Weekday	AM Peak Hour			PM Peak Hour		
		In	**Out**	**Total**	**In**	**Out**	**Total**
Phase I Subtotal Project Trips	6,745	340	328	668	305	295	600
Pass-By Trips	2,429	138	137	275	105	104	209
Primary Trips	4,316	202	191	393	200	191	391
Phase II Subtotal Project Trips	265	28	5	33	5	27	32
Grand Total Project Trips (Phase I + Phase II)	7,010	368	333	701	310	322	632
Pass-By Trips	2,429	138	137	275	105	104	209
Primary Trips	4,581	230	196	426	205	218	423

Source: "Trip Generation Manual, Institute of Transportation Engineers", 10th Edition

8.2 Project Trip Distribution and Assignment

The estimated project trips are distributed by direction and assigned to the local network of streets. **Figure 14** distribution of the Phase II project trips. **Figure 15** illustrates the assignment of Phase II primary project trips to study intersections. **Figure 16** illustrates the assignment of total project trips to study intersections.



LEGEND

XX% - GENERAL PROJECT TRIP DISTRIBUTION

XX% - SPECIFIC PROJECT TRIP PERCENTAGE

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

FIGURE 14: CONSTRUCTION PHASE - II
PROJECT TRIP DISTRIBUTION
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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PRIMARY PROJECT TRIPS

AM PEAK HOUR - 30 IN / 5 OUT
PM PEAK HOUR - 5 IN / 28 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

FIGURE 15: CONSTRUCTION PHASE - II
PRIMARY PROJECT TRIPS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

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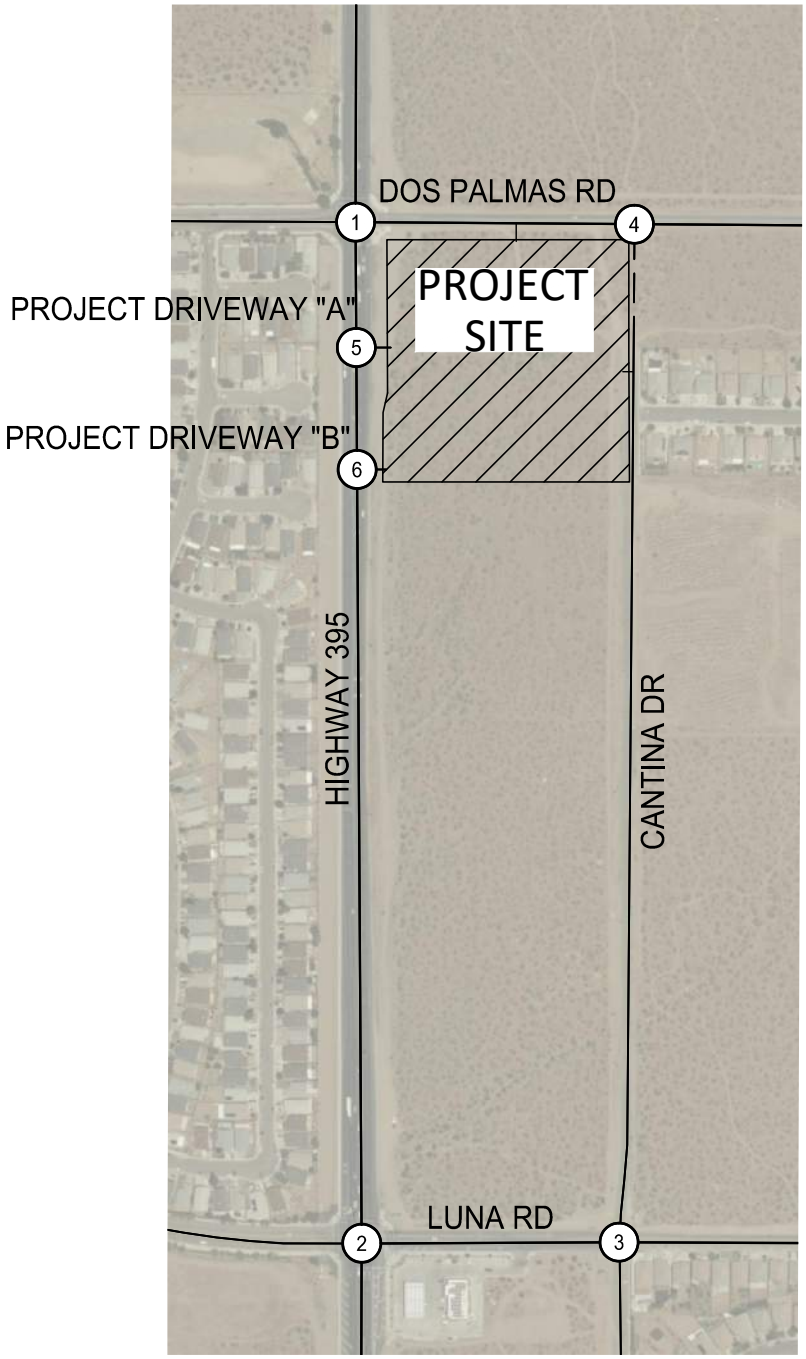

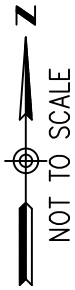

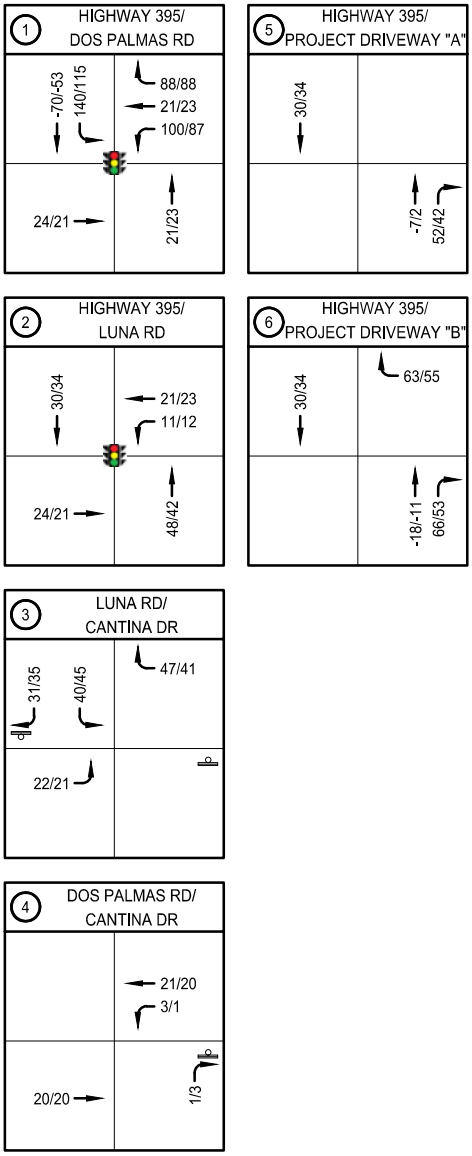

TOTAL PROJECT TRIPS

AM PEAK HOUR - 372 IN / 334 OUT
PM PEAK HOUR - 310 IN / 325 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

DAVID EVANS AND ASSOCIATES INC.

FIGURE 16: COMBINED - TOTAL PROJECT TRIPS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

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8.3 Future Plus Project Traffic Analysis

The forecasted volumes for this scenario (Phase I and Phase II) are illustrated in **Figure 17**. The results of the intersection capacity analysis are shown in **Table 8-3** and provided in **Appendix C.**

Table 8-3: Intersection Capacity Analysis – Future Plus Project (Phase II) Conditions (Year 2034)

Intersection	Intersection Control Type	Future Condition				Future + Project Condition [1]			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Highway 395 / Dos Palmas Rd	TS	67.4	E	77.5	E	99.9*	F	99.9*	F
Mitigation: Reconfiguration of Hwy 395 approach lanes (see ultimate geometric plan in Figure ES-1)		N/A				53.0	D	49.4	D
2. Highway 395 / Luna Rd	TS	49.0	D	22.6	C	44.1	D	25.1	C
3. Luna Road / Cantina Dr	SSSC	15.8	C	12.7	B	14.8	B	14.6	B
4. Cantina Dr / Dos Palmas Rd [2]	SSSC	Not Applicable				9.3	A	9.1	A
5. Highway 395 / Project Driveway "A" [3]	Rt-In-Only					Not Applicable			
6. Highway 395 / Project Driveway "B" [4]	SSSC					20.8	C	25.7	D

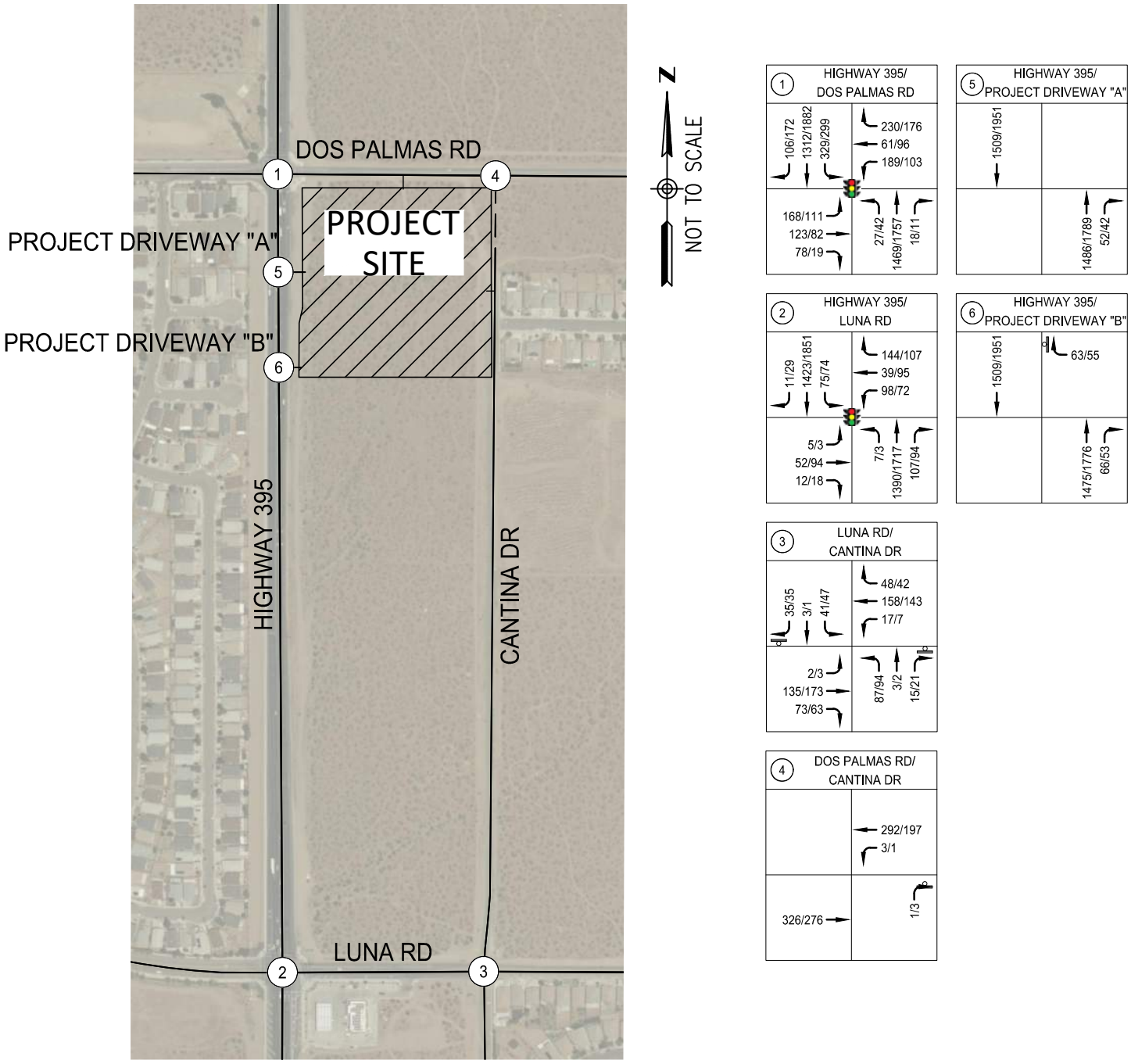
Notes:
[1] The future plus project scenario assumes the Phase I project-specific improvements to the intersection of Highway 395 / Dos Palmas Road. The LOS deficiency identified in this table can be improved by implementing the lane configurations at Highway 395 / Dos Palmas Road shown in the ultimate geometric plan in Figure ES-1. The improvements, which can be implemented with pavement marking changes, includes reconfiguring Highway 395 to accommodate three through lanes in each direction, and converting the northbound and southbound dual left turn lanes to single left turn lanes. See ultimate geometric plan.
[2] The extension of Cantina Drive to Dos Palmas Road is assumed in Phase II of the project. Widening of Dos Palmas Road occurs in Phase I of the project. See proposed geometric plan.
[3] Project Driveway "A" is a right turn in only intersection. No level of service is reported for this type of intersection.
[4] The level of service at Highway 395 / Project Driveway "B" assumes the widening of Highway 395. See ultimate geometric plan.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, Delay – seconds per vehicle, LOS – Level of Service

The addition of Phase II project traffic does cause a deficiency in level of service (from LOS E to LOS F in both peak hours) at the intersection of Highway 395 / Dos Palmas Road. The deficiency can be improved to a LOS D in both peak hours by reconfiguring the approach lanes on Highway 395 within the curb-to-curb width implemented by the project under opening day conditions. The reconfiguration of Highway 395 provides three lanes in each direction and converts the northbound and southbound dual left turn lanes proposed under opening day conditions to single left turn lanes as shown in **Figure 18**. These improvements can be implemented with changes to pavement markings. Refer to the ultimate geometric plans in **Figure ES-1** or the larger plans submitted with this report for detailed plans.

The improvements described above are necessary with Phase II of the project under future conditions in 2030. However, the reconfiguration of Highway 395 does not improve the level of service deficiency under opening day project conditions which is mitigated by providing northbound and southbound dual left turn lanes and only two through lanes in each direction of Highway 395. The growth in through traffic on Highway 395 between opening day (2024) conditions and future 2030 conditions trigger the reconfiguration.

Implementing the Ultimate Geometric Plan

The traffic generated by the office building in Phase II of the proposed project, combined with ambient growth on Highway 395, cause the level of service deficiency at Highway 395 and Dos Palmas Road. Since there is no mechanism in place for the city or Caltrans to collect fair share contributions from development and establish and monitor an improvement fund for an individual intersection improvement, the city should condition Phase II of the project to implement the reconfiguration of Highway 395.



LEGEND

XX/XX - AM/PM PEAK HOUR VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

FIGURE 17: FUTURE PLUS PROJECT TRAFFIC VOLUMES
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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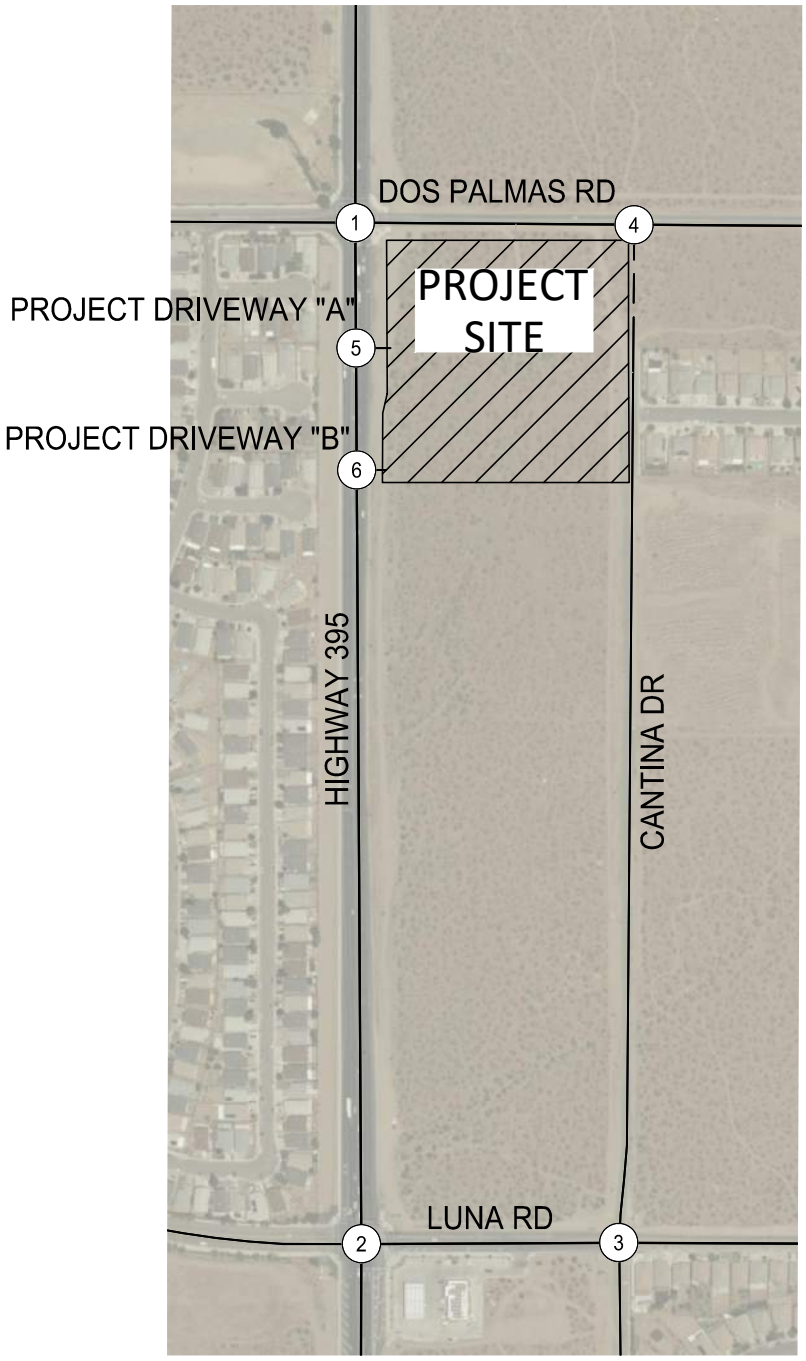

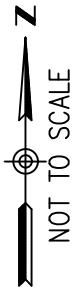

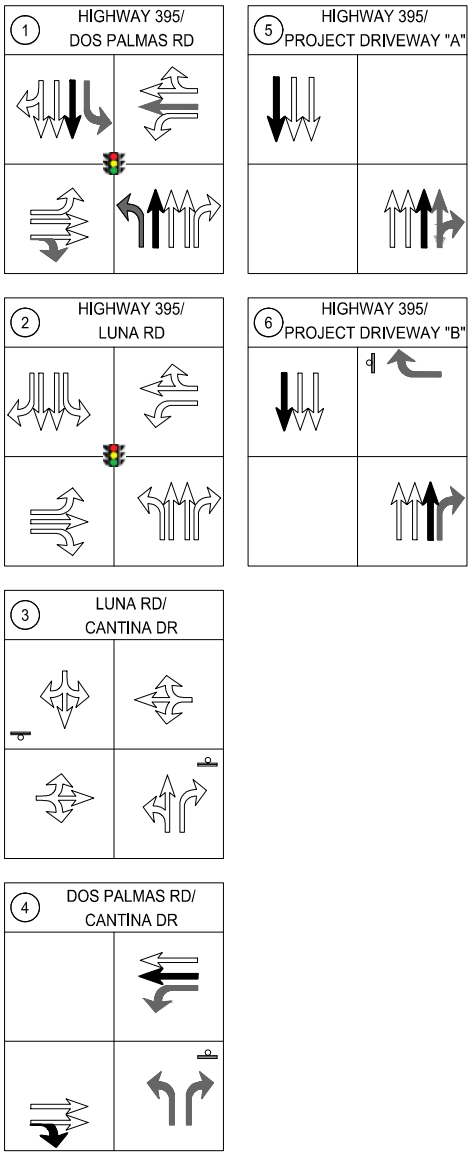

LEGEND

- EXISTING GEOMETRICS
- PROPOSED GEOMETRICS
- ULTIMATE GEOMETRICS
- # - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

FIGURE 18: FUTURE PLUS PROJECT INTERSECTION GEOMETRICS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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9 VEHICLE MILES TRAVELED (VMT) SCREENING

The following is a screening assessment of the project based on criteria in the City of Victorville's Vehicle Miles Traveled (VMT) Analysis Guidelines adopted by the City in June of 2020 through Resolution 20-031 and in conformance with SB 743.

Project Screening from Conducting VMT Analyses

Victorville uses screening criteria to determine if a development project is required to conduct a VMT analysis. If a project satisfies the criteria described below it is considered to have a less than significant impact on VMT and does not require an analysis.

Victorville has two criteria for screening projects from requiring a VMT analysis. The first criterion is based on the project's net daily increase in vehicle trips—if the project's net daily traffic generation is equal to or less than the City's threshold of 1,285 trips per day, it is exempt from a VMT analysis.

The second criterion is comprised of a list of specific land uses types and a maximum size threshold in terms of dwelling units for residential projects and floor area for non-residential projects. The listed types of land uses are deemed too small to cause a significant increase in VMT or they are considered "locally-serving" types of land uses that reduce VMT by providing nearby opportunities for employment, shopping, and services. Proposed projects matching the "project type" and falling within the size thresholds are exempt from a VMT analysis.

1. Screening for Net Increase in Daily Vehicle Trips

As shown in Table 8.2 in Section 8.1 (Total Project Trip Generation), the project's net increase in daily vehicle trips is 4,581 which exceeds the threshold of 1,285 daily trips in the City's guidelines. Based on this criterion, the project <u>is not</u> screened from requiring a VMT.

2. Project Type Screening

According to the City of Victorville's VMT guidelines, the following type of land uses or development with the specified maximum size are exempt from having to conduct a VMT analysis:

- Single Family or Multifamily Residential – 136 dwelling units or less
- **Office — 227,000 square feet or less**
- **Retail — 122,000 square feet or less**
- Warehousing — 829,000 square feet or less
- Light Industrial — 296,000 square feet or less
- K-12 Public School
- Daycare/Childcare/Pre-K
- Affordable Housing
- Student Housing
- Community Institutions, Social Services and Public Buildings

The proposed project is comprised of retail uses (super convenience market/gas station, retail units, automated carwash, hotel, and two fast-food restaurants with drive-through window) and an office building.

The combined retail building square footage (82,677 SF) of the proposed retail uses is below the City's retail size threshold of 122,000 square feet of retail floor area. The office building floor area of 30,200 SF is below the City's threshold of 227,000 square feet of office land use. Based on this criterion, the project <u>is screened</u> from being required to conduct a VMT analysis.

10 APPENDICES

Appendix A: Approved City Scope Agreement
Appendix B: Turn Movement Count Volumes
Appendix C: Intersection Capacity Analysis Calculations

Appendix A: Approved City Scope Agreement

Trisha Munoz

From: Anwar Wagdy <awagdy@victorvilleca.gov>
Sent: Wednesday, January 5, 2022 9:34 AM
To: Trisha Munoz
Cc: Jim Daisa; Fredy Bonilla
Subject: RE: Project Scoping Memorandum for Proposed Highway 395 and Dos Palmas Road Commercial Center Development

Trisha,
The submitted scoping memorandum is acceptable, subject to the following additions:

- Only one driveway on Dos Palmas Rd will be allowed. Eliminate the westerly one.
- The configuration of the on-site intersection, as depicted on Exhibit B, is awkward and raises a safety concern. Please pay close attention to maintain good sight-distance, proper crosswalk locations, landscape limitation, Stop signs, etc.

Thanks,

ANWAR WAGDY, P.E.
City Traffic Engineer
Public Works Dept./Engineering
(760) 955-5160

From: Trisha Munoz <TMunoz@deainc.com>
Sent: Monday, January 3, 2022 12:17 PM
To: Fredy Bonilla <fbonilla@victorvilleca.gov>
Cc: Anwar Wagdy <awagdy@victorvilleca.gov>; Jim Daisa <Jim.Daisa@deainc.com>
Subject: Project Scoping Memorandum for Proposed Highway 395 and Dos Palmas Road Commercial Center Development

[EXTERNAL EMAIL]: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Freddy,

I trust this email finds you well.

Please see attached the Traffic Study Scope Memorandum, Proposed Conceptual Geometric Plans for Project Frontage, and Ultimate Conceptual Geometric Plans for Project Frontage for the Proposed Highway 395 and Dos Palmas Road Commercial Center Development located on the southeast corner of Highway 395 and Dos Palmas Road in the City of Victorville, California. This memorandum provides our assumptions for completing the Focused Traffic Impact Analysis

Report (TIA Report)for review and approval (or commenting) by the affected jurisdictions including the City of Victorville and Caltrans District 8 IGR Planning.

The Memorandum is concurrently submitted to Caltrans District 8 IGR Planning.

If you have any questions, please do not hesitate to contact us.

Trisha Munoz, EIT | Engineering Designer II, Transportation
David Evans and Associates, Inc.
18484 Outer Highway 18 North, Suite 225 | Apple Valley, CA, 92307 | www.deainc.com
d: 760.524.9120 | c: 760.686.1215 | Cisco: 39120 | tnm@deainc.com

ENERGY | LAND DEVELOPMENT | MARINE SERVICES | SURVEYING AND GEOMATICS | TRANSPORTATION | WATER AND ENVIRONMENT

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DAVID EVANS AND ASSOCIATES INC.

November 2, 2021 Job No. BHBA0000-0002

MEMORANDUM

To: Mr. Sumit Brahmbhatt
Brahmbhatt Architects
980 Corporate Center Drive
Pomona, CA. 91768

From: James M. Daisa, PE
Senior Transportation Project Manager

RE: Traffic Study Scope and Vehicle Miles Traveled (VMT) Screening for the Highway 395 and Dos Palmas Road Commercial Center Development, Victorville, California

This memorandum presents key elements of the scope of work for the proposed Focused Traffic Impact Analysis Report (TIA Report) evaluating the above referenced development project. The purpose of this memorandum is to present our traffic study assumptions and methodologies to the City of Victorville for their review and approval.

A. Project Description

The project site is located on the southeast corner of Highway 395 and Dos Palmas Road in the City of Victorville, California, as illustrated in **Exhibit A**.

The proposed project consists of two construction phases.

- Construction Phase I includes the super convenience market/gas station, retail uses, and an automated carwash in the northwest quadrant of the site, two fast food restaurants with drive-through windows in the southwest quadrant, and a hotel in the southeast quadrant of the site.
- Construction Phase II includes an office building in the northeast quadrant of the site.

The proposed project is bounded to the north by Dos Palmas Rd and vacant/undeveloped properties, to the south by vacant/undeveloped properties, to the east by Cantina Street and vacant/undeveloped properties, and to the west by vacant/undeveloped properties. **Exhibit B** illustrates the proposed site plan.

Access to the site is proposed from Highway 395 and Dos Palmas Road in Phase I. In Phase II an additional access is proposed on Cantina Street.

B. Project Trip Generation

Table A summarizes the estimated trip generation for Phase I of the proposed project for an average weekday, weekday AM (7-9 AM) and PM (4-6 PM) peak hours. The source of the rates (trips / independent variable) used to estimate trips is the Institute of Transportation Engineers (ITE) Trip Generation manual, 10th Edition. Opening year for Phase I of the project is 2023.

The rates selected for the proposed land uses include super convenience market/gas station (ITE Land Use Category 960), shopping center (ITE Land Use Category 820), Automated Carwash (ITE Land Use Category 948), Hotel (ITE Land Use Category 310), Fast-Food Restaurant with Drive-Through Window (ITE Land Use Category 934), and Office (ITE Land Use Category 710).

Pass-by factors for the Super Convenience Market/Gas Station and fast-food restaurant with drive-through window were obtained from the City of Victorville Staff. A reduction in trips of 10% for internal capture is

assumed for the development. Phase I of the proposed project is estimated to generate 4,272 primary daily trips, 391 primary AM peak hour, and 389 primary PM peak hour trips.

Table A: Construction Phase I Project Trip Generation

Use		Size/ Quantity	Daily Weekday	AM Peak Hour			PM Peak Hour		
Construction Phase - I									
1	**Super Convenience Market/Gas Station Land Use Category (ITE 960)**								
				In	Out	Total	In	Out	Total
	Per Fueling Position	16	230.52	14.04	14.04	28.08	11.48	11.48	22.96
	Trips		3,689	225	225	450	184	184	368
	Internal Trips (10%)		369	23	22	45	18	19	37
	Subtotal Trips		3,320	202	203	405	166	165	331
	Pass-By Trips (50%, 45%)		1,577	101	101	202	74	75	149
	Primary Trips (50%, 55%)		1,743	101	102	203	92	90	182
2	**Shopping Center Land Use Category (ITE 820)**								
	Per 1,000 Sq. Ft. GLA	4,167	37.75	0.58	0.36	0.94	1.83	1.98	3.81
	Trips		158	3	2	5	8	9	17
	Internal Trips (10%)		16	0	0	0	1	1	2
	Subtotal Trips		142	3	2	5	7	8	15
3	**Automated Carwash Land Use Category (ITE 948)**								
	Per 1,000 Sq. Ft. GLA	1,820	0	0	0	0	7.10	7.10	14.20
	Trips		0	0	0	0	13	13	26
	Internal Trips (10%)		0	0	0	0	1	2	3
	Subtotal Trips		0	0	0	0	12	11	23
4	**Hotel Land Use Category (ITE 310)**								
	Per Rooms	104	8.36	0.28	0.19	0.47	0.31	0.29	0.60
	Trips		870	29	20	49	32	31	63
	Internal Trips (10%)		87	3	2	5	3	3	6
	Subtotal Trips		783	26	18	44	29	28	57
5	**Fast-Food Restaurant with Drive-Through Window Land Use Category (ITE 934)**								
	Per 1,000 Sq. Ft. GLA	3,528	470.95	20.50	19.69	40.19	16.99	15.68	32.67
	Trips		1,662	73	70	143	60	56	116
	Internal Trips (10%)		167	7	7	14	6	6	12
	Subtotal Trips		1,495	66	63	129	54	50	104
	Pass-By Trips (35%, 35%)		524	23	22	45	19	18	37
	Primary Trips (65%, 65%)		971	43	41	84	35	32	67
6	**Fast-Food Restaurant with Drive-Through Window Land Use Category (ITE 934)**								
	Per 1,000 Sq. Ft. GLA	2,300	470.95	20.50	19.69	40.19	16.99	15.68	32.67
	Trips		1,084	48	46	94	40	37	77
	Internal Trips (10%)		109	5	5	10	4	4	8
	Subtotal Trips		975	43	41	84	36	33	69
	Pass-By Trips (35%, 35%)		342	15	14	29	12	12	24
	Primary Trips (65%, 65%)		633	28	27	55	24	21	45
Construction Phase - I Subtotal Project Trips			6,715	340	327	667	304	295	599
Pass-By Trips			2,443	139	137	276	105	105	210
Primary Trips			**4,272**	201	190	**391**	199	190	**389**

Source: "Trip Generation Manual, Institute of Transportation Engineers", 10th Edition

Construction Phase II is anticipated to be constructed about five years after opening year (2023). **Table B** summarizes the daily, AM peak hour, and PM peak hour trip generation for Phase II.

Table B: Construction Phase II Project Trip Generation

Use		Size/ Quantity	Daily Weekday	AM Peak Hour			PM Peak Hour		
Construction Phase II									
1	**Office Land Use Category (ITE 710)**			In	Out	Total	In	Out	Total
	Per 1,000 Sq. Ft. GLA	30,200	9.74	1.00	0.16	1.16	0.18	0.97	1.15
	Trips		295	31	5	36	6	30	36
	Internal Trips (10%)		33	3	0	3	1	3	4
	Subtotal Trips		**265**	28	5	**33**	5	27	**32**

Source: "Trip Generation Manual, Institute of Transportation Engineers", 10th Edition

Phase II of the project is estimated to generate 265 primary daily trips, 33 primary AM peak hour, and 32 primary PM peak hour trips. **Table C** combines the trip generation estimates from Phase I and Phase II. When built out, the project is estimated to generate 4,537 primary daily trips, 424 primary AM peak hour trips, and 421 primary PM peak hour trips.

Table C: Total Project Trip Generation

Construction Phase	Daily Weekday	AM Peak Hour			PM Peak Hour		
Phase I Subtotal Project Trips	6,715	340	327	667	304	295	599
Pass-By Trips	2,443	139	137	276	105	105	210
Primary Trips	4,272	201	190	391	199	190	389
Phase II Subtotal Project Trips	265	28	5	33	5	27	32
Grand Total Project Trips (Phase I + Phase II)	6,980	368	332	700	309	322	631
Pass-By Trips	2,443	139	137	276	105	105	210
Primary Trips	4,537	229	195	**424**	204	217	**421**

Source: "Trip Generation Manual, Institute of Transportation Engineers", 10th Edition

C. Project Trip Distribution and Assignment

To address the impacts of the estimated project traffic, the trips were distributed by direction towards` major commute routes and concentrations of residential and commercial / employment centers. Once the distribution pattern was established, project trips were assigned to the streets that serve the project.

The distribution of the Phase I project trips is illustrated in **Exhibit C-1**. The distribution of the Phase II project trips is illustrated in **Exhibit C-2**.

The assignment of Phase I primary project trips to study intersections is illustrated in **Exhibit D1**. The assignment of Phase I pass-by project trips to study intersections is illustrated in **Exhibit D2**. The assignment of Phase I total project trips to study intersections is illustrated in **Exhibit D3**. The assignment of Phase II primary project trips to study intersections is illustrated in **Exhibit D4**. Finally, the assignment of the combined total project trips to study intersections is illustrated in **Exhibit E**.

D. Study Intersections

Based on the location of the project at the southeast corner of Highway 395 and Dos Palmas Road with access points on Highway 395 and Dos Palmas Road and, ultimately, on Cantina Drive in Phase II, the proposed study intersections include three existing intersections, one future intersection, and two key future driveways as listed below:

1. Highway 395 at Dos Palmas Road
2. Highway 395 at Luna Road
3. Luna Road at Cantina Drive
4. Cantina Drive at Dos Palmas Road (future intersection)
5. Highway 395 at Driveway "A" (future intersection)
6. Highway 395 at Driveway "B" (future intersection)

The intersections of Highway 395 at Dos Palmas Road and Highway 395 at Luna Road are signalized intersections. The intersection of Luna Road at Cantina Drive is a side-street-stop-controlled intersection, with Cantina Drive being stop-controlled. The future intersection of Cantina Drive at Dos Palmas Road is assumed to be side-street-stop-controlled.

Site Access

In Phase I, access to the site is proposed with a right turn in only entrance at Driveway "A" on Highway 395 located about 260-feet south of Dos Palmas Road (measured from face of curb to face of curb). A second, full access driveway, is proposed on Highway 395 about 560-feet south of Dos Palmas Road and aligned with the southern edge of the property. In addition, two driveways are proposed on Dos Palmas Road. One is located approximately 195-feet east of Highway 395 and the second is located about 305-feet east of Highway 395.

In Phase II, a new driveway is proposed on Cantina Drive located about 320-feet south of Dos Palmas Road.

Proposed Frontage Improvements

Exhibit F illustrates the proposed conceptual geometric plans for the project frontages on Highway 395, Dos Palmas Road, and Cantina Drive after Phase II is completed. The exhibit shows the proposed driveway locations and interim channelization on Highway 395 and reservation of right-of-way until Highway 395 is widened to its ultimate width.

Exhibit G shows a conceptual geometric plan for the project's frontage on Highway 395 with Highway 395 widened to its ultimate 6-lane width.

E. Level of Service Methodology

Level of service will be calculated using the Highway Capacity Manual (HCM6) methodologies for signalized and non-signalized intersections. All study intersections will be analyzed to identify deficiencies in the City's Level of Service (LOS) policy. The capacity analysis will reflect trucks as a percentage of the total traffic volumes.

F. Traffic Study Scenarios

Scenarios analyzed in this study are consistent with San Bernardino County Congestion Management Program (CMP) requirements and include:

1. Existing Conditions (AM (7-9 AM) and PM (4-6 PM) peak)
2. Existing plus Project Conditions
    a. Existing + Phase I Project Traffic
3. Background Conditions (Year 2023)
    a. Existing + Ambient Growth (assuming a growth rate of 3.5% per year)
4. Project Conditions (Year 2023)

   a. Existing + Ambient Growth + Phase I Project Traffic

5. Future Horizon Year 2033 without project
   a. Background + Ambient Growth (assuming a growth rate of 3.5% per year)
6. Future plus Project (Horizon Year 2033)
   a. Background + Ambient Growth + Phase I and II Project Traffic

G. Vehicle Miles Traveled (VMT) Screening

The following is a screening assessment of the project based on criteria in the City of Victorville's Vehicle Miles Traveled (VMT) Analysis Guidelines adopted by the City in June of 2020 in conformance with SB 743.

Project Screening from Conducting VMT Analyses

Victorville uses screening criteria to determine if a development project is required to conduct a VMT analysis. If a project satisfies the criteria described below it is considered to have a less than significant impact on VMT and does not require an analysis.

Victorville has two criteria for screening projects from requiring a VMT analysis. The first criterion is based on the project's net daily increase in vehicle trips—if the project's net daily traffic generation is equal to or less than the City's threshold of 1,285 trips per day, it is exempt from a VMT analysis.

The second criterion is comprised of a list of specific land uses types and a maximum size threshold in terms of dwelling units for residential projects and floor area for non-residential projects. The listed types of land uses are deemed too small to cause a significant increase in VMT or they are considered "locally-serving" types of land uses that reduce VMT by providing nearby opportunities for employment, shopping, and services. Proposed projects matching the "project type" and falling within the size thresholds are exempt from a VMT analysis.

1. Screening for Net Increase in Daily Vehicle Trips

As shown in **Table A**, the project's net increase in daily vehicle trips is 4,555 which exceeds the threshold of 1,285 daily trips in the City's guidelines. Based on this criterion, the project <u>is not</u> screened from requiring a VMT.

2. Project Type Screening

According to the City of Victorville's VMT guidelines, the following types of land uses or development with the specified maximum size are exempt from having to conduct a VMT analysis:

- Single Family or Multifamily Residential – 136 dwelling units or less
- **Office — 227,000 square feet or less**
- **Retail — 122,000 square feet or less**
- Warehousing — 829,000 square feet or less
- Light Industrial — 296,000 square feet or less
- K-12 Public School
- Daycare/Childcare/Pre-K
- Affordable Housing
- Student Housing
- Community Institutions, Social Services and Public Buildings

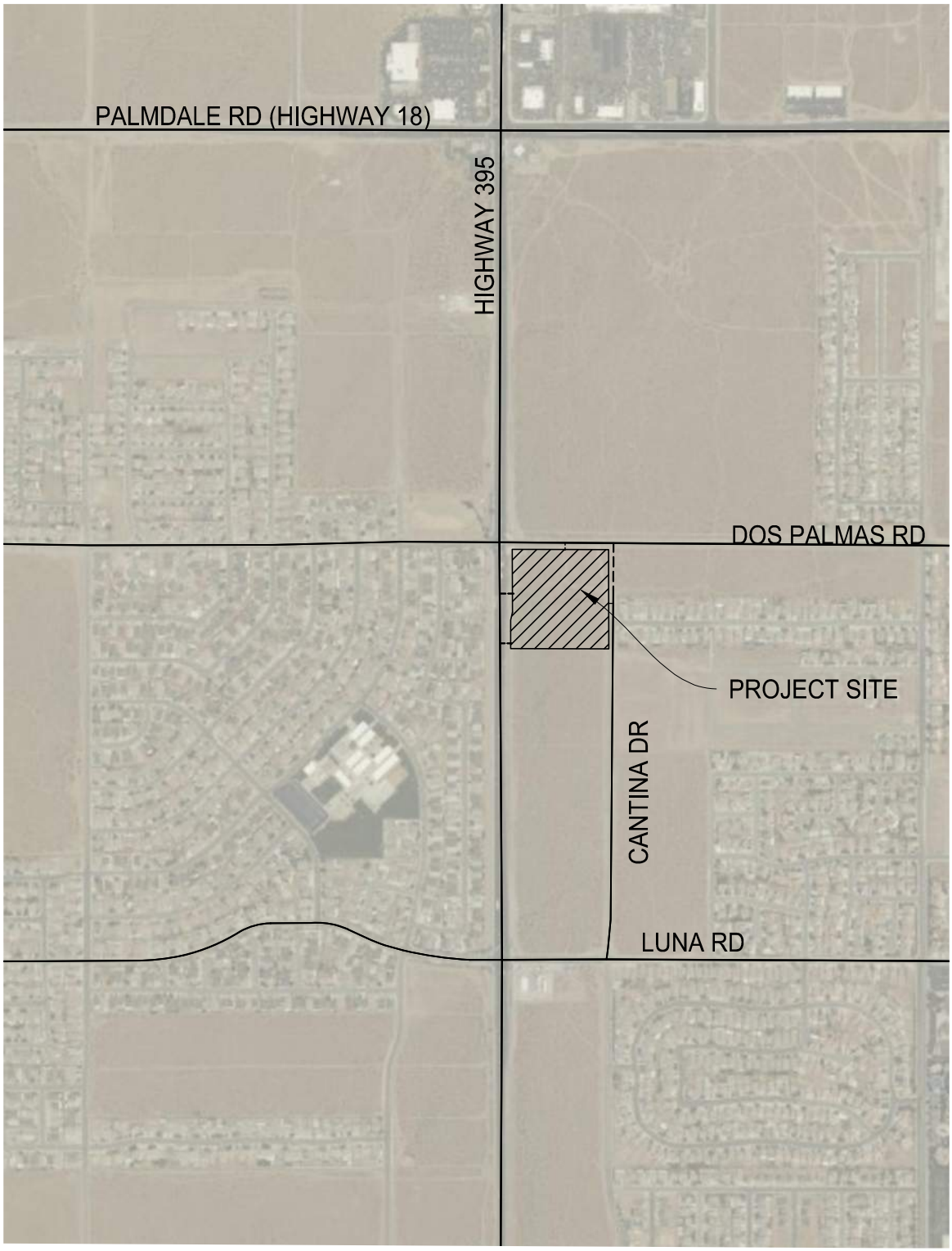
The proposed project is comprised of retail uses (super convenience market/gas station, retail units, automated carwash, hotel, and two fast-food restaurants with drive-through window) and an office building.

The combined retail building square footage (78,850 SF) of the proposed retail uses is below the City's retail size threshold of 122,000 square feet of retail floor area. The office building floor area of 30,200 SF is below the City's threshold of 227,000 square feet of office land use. Based on this criterion, the project is screened from being required to conduct a VMT analysis.

If you have any questions or comments, please feel free to contact us.

Attachments

1. Exhibit A – Vicinity Map
2. Exhibit B – Site Plan
3. Exhibit C1 – Construction Phase – I – Project Trip Distribution
4. Exhibit C2 – Construction Phase – II – Project Trip Distribution
5. Exhibit D1 – Construction Phase – I – Primary Project Trips
6. Exhibit D2 – Construction Phase – I – Pass-by Project Trips
7. Exhibit D3 – Construction Phase – I – Total Project Trips
8. Exhibit D4 – Construction Phase – II – Primary Project Trips
9. Exhibit E – Combined Project – Total Project Trips
10. Exhibit F – Proposed Conceptual Geometric Plans for Project Frontages
11. Exhibit G – Ultimate Conceptual Geometric Plans for Project Frontages



N
NOT TO SCALE

DAVID EVANS AND ASSOCIATES INC.

EXHIBIT A: VICINITY MAP
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

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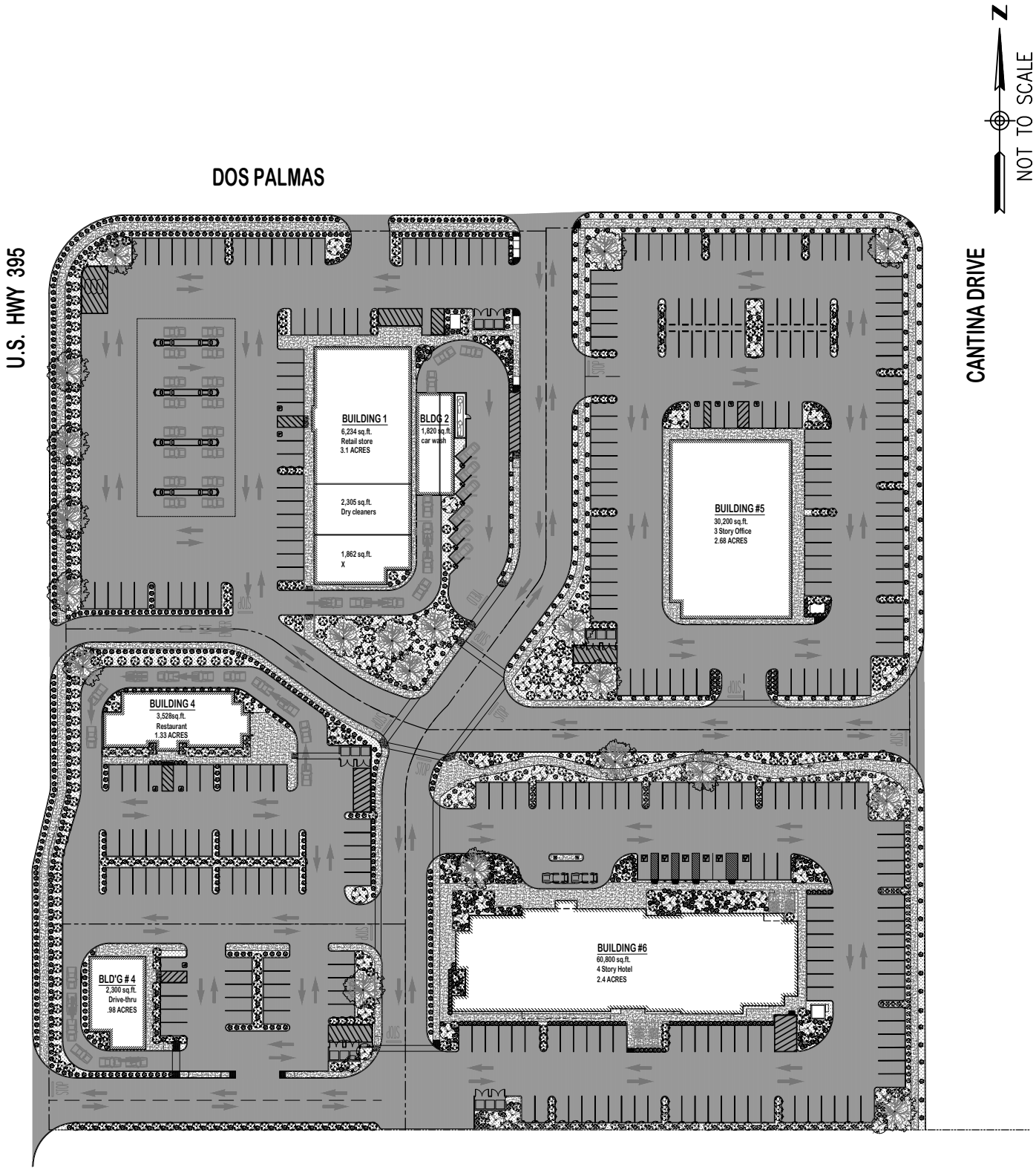

DAVID EVANS AND ASSOCIATES INC.

EXHIBIT B: SITE PLAN
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

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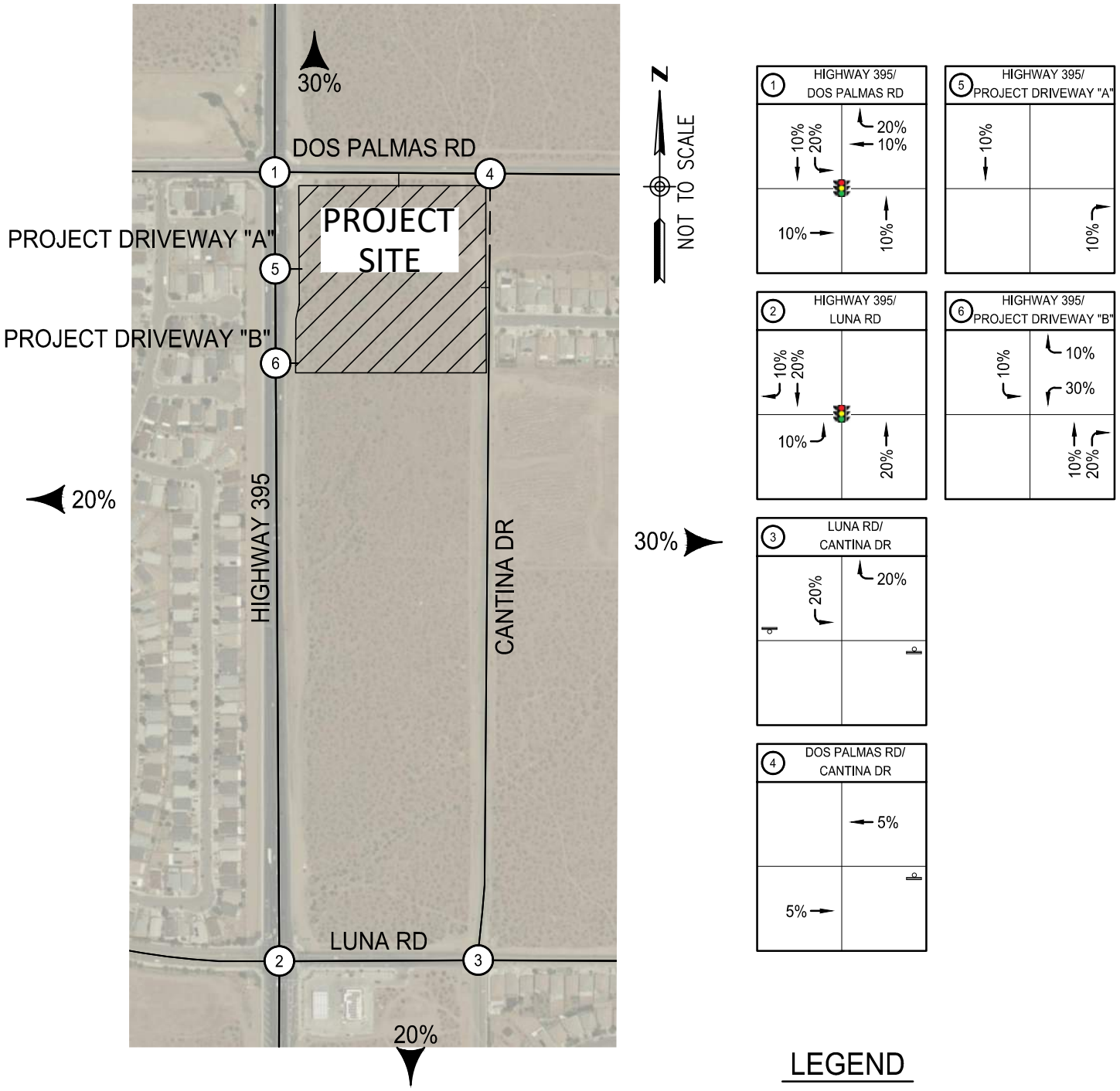

LEGEND

XX% - GENERAL PROJECT TRIP DISTRIBUTION

XX% - SPECIFIC PROJECT TRIP PERCENTAGE

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

EXHIBIT C1: CONSTRUCTION PHASE - I
PROJECT TRIP DISTRIBUTION
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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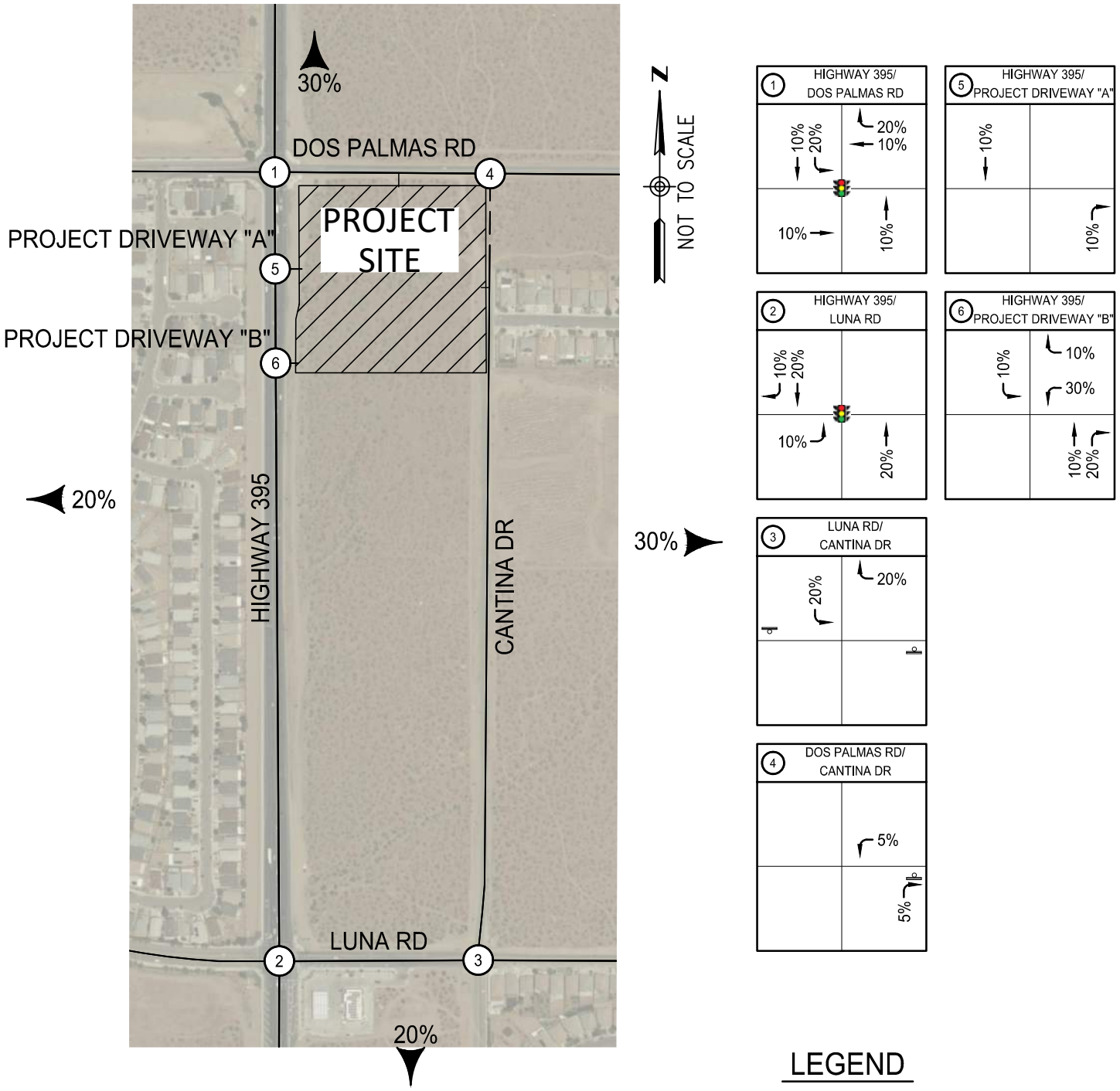

LEGEND

XX% - GENERAL PROJECT TRIP DISTRIBUTION

XX% - SPECIFIC PROJECT TRIP PERCENTAGE

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

EXHIBIT C2: CONSTRUCTION PHASE - II
PROJECT TRIP DISTRIBUTION
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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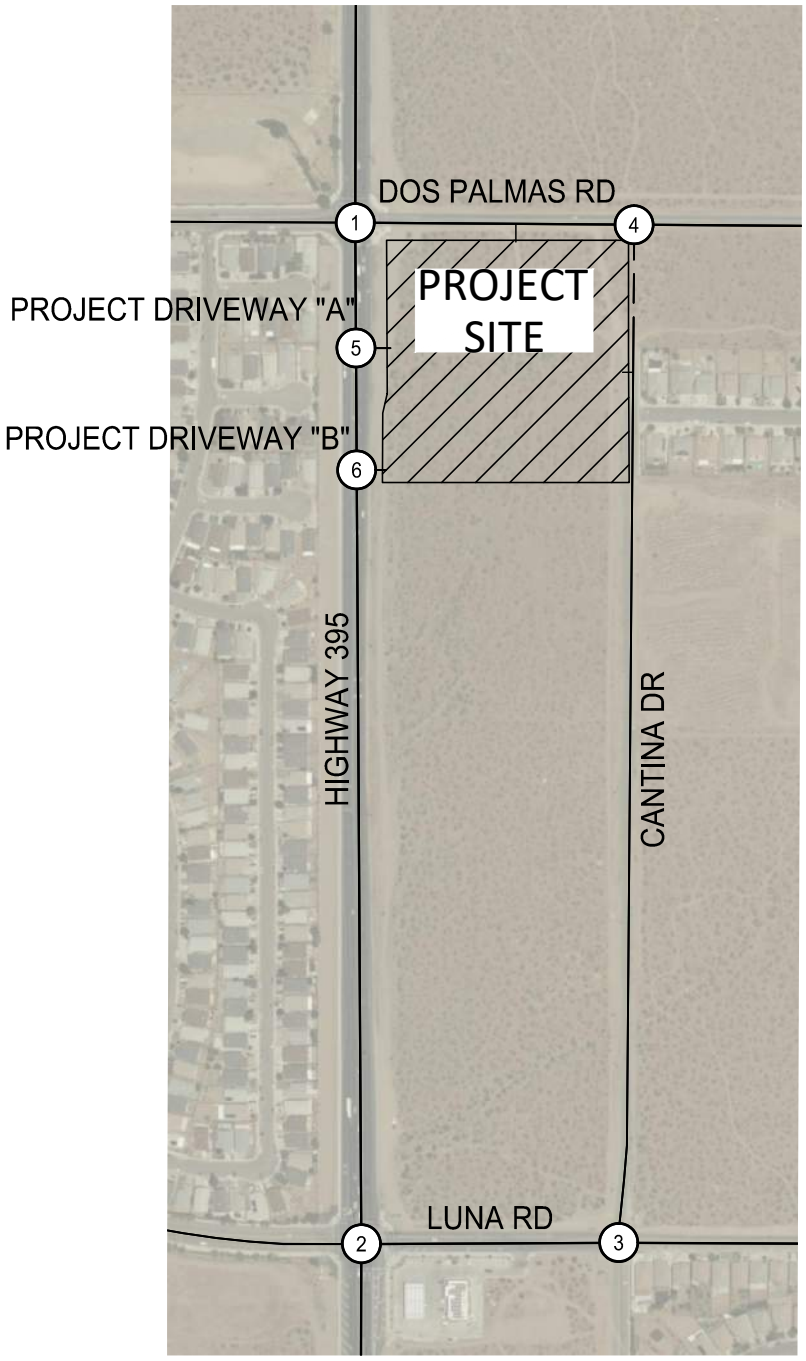
Last Opened: Nov 04, 2021 - 6:04pm by: Tnm



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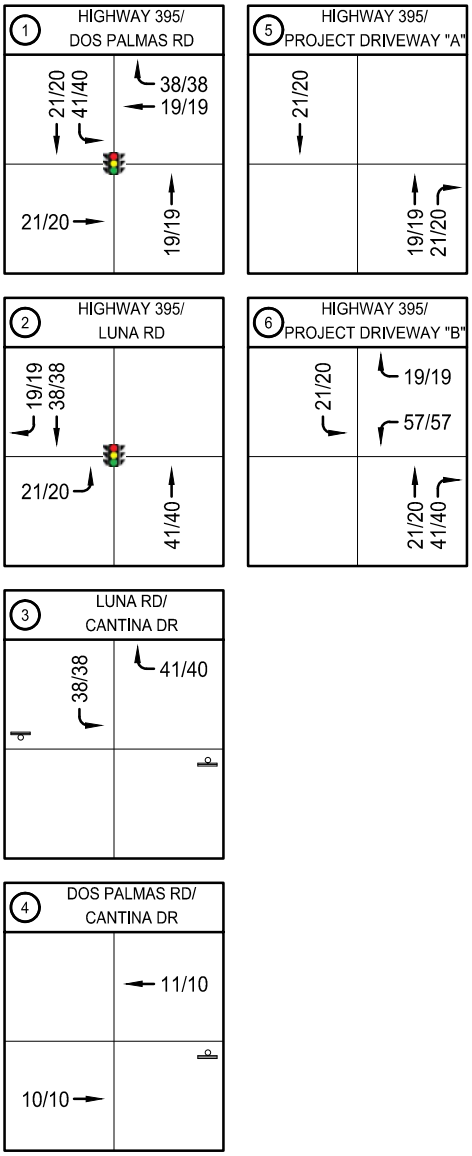
NOT TO SCALE



PRIMARY PROJECT TRIPS

AM PEAK HOUR	-	201 IN / 190 OUT
PM PEAK HOUR	-	199 IN / 190 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

EXHIBIT D1: CONSTRUCTION PHASE - I
PRIMARY PROJECT TRIPS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

Drawing Name: P:\B\BHBA00000002\0400CAD\TTIE\EXHIBITS\Scope\Exhibit D1.dwg
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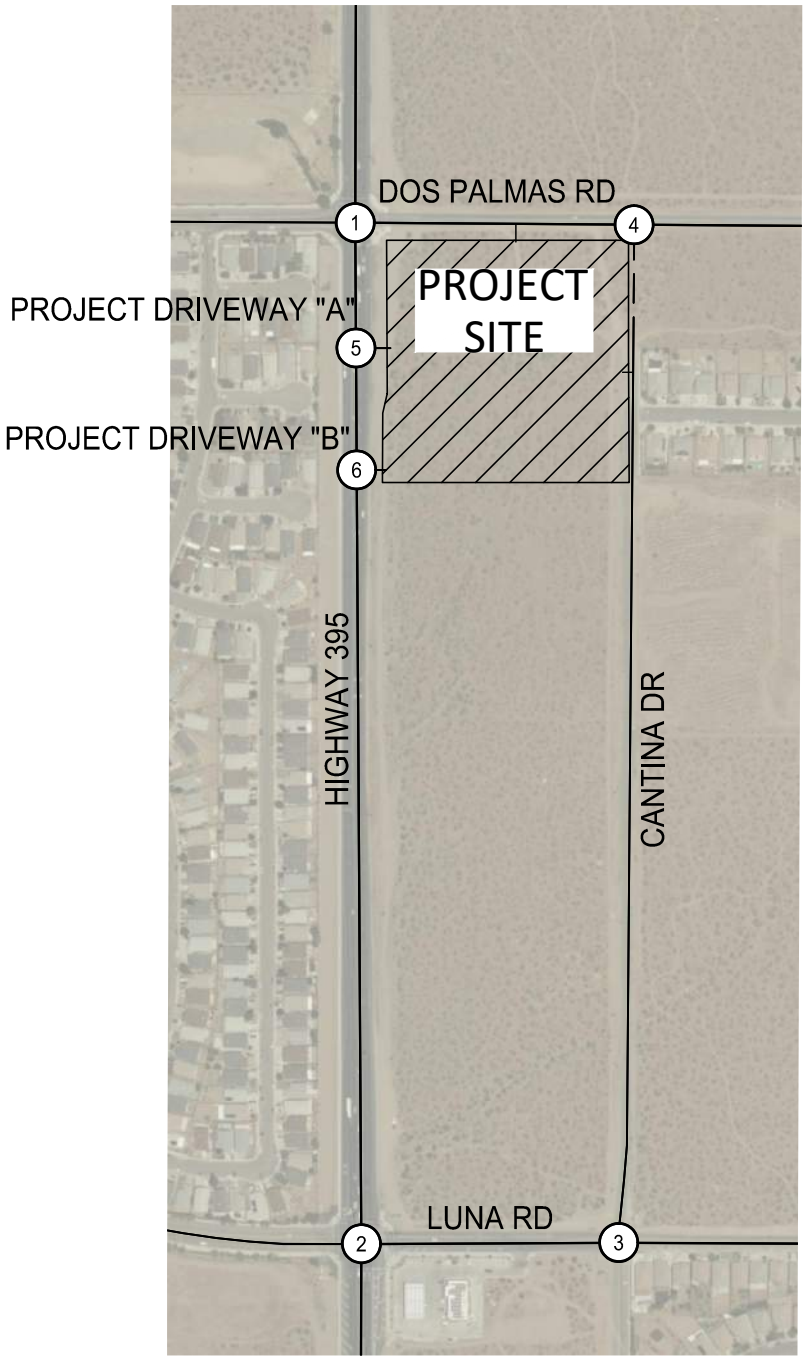
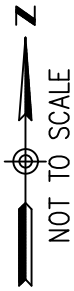
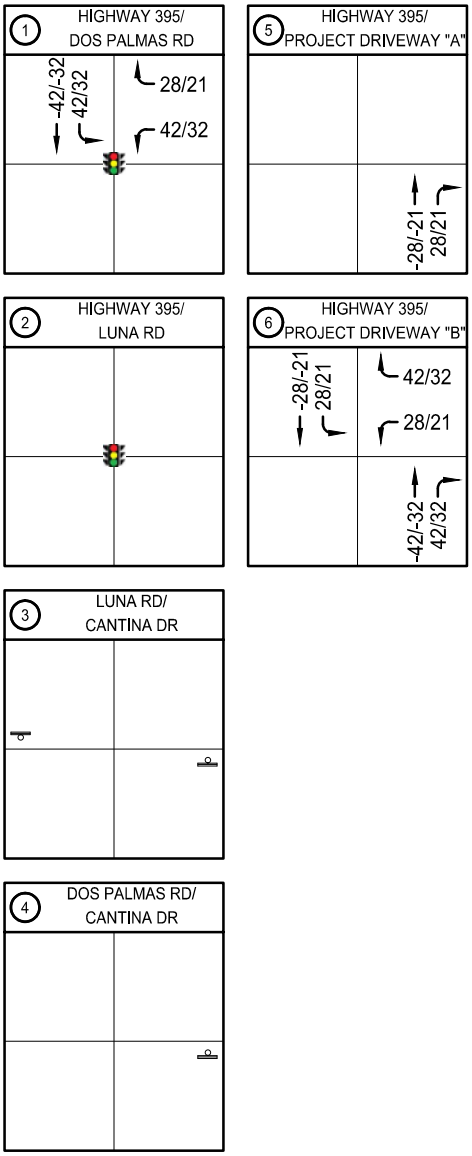






PASS-BY PROJECT TRIPS

AM PEAK HOUR	-	139 IN / 137 OUT
PM PEAK HOUR	-	105 IN / 105 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIP

(#) - STUDY INTERSECTIONS

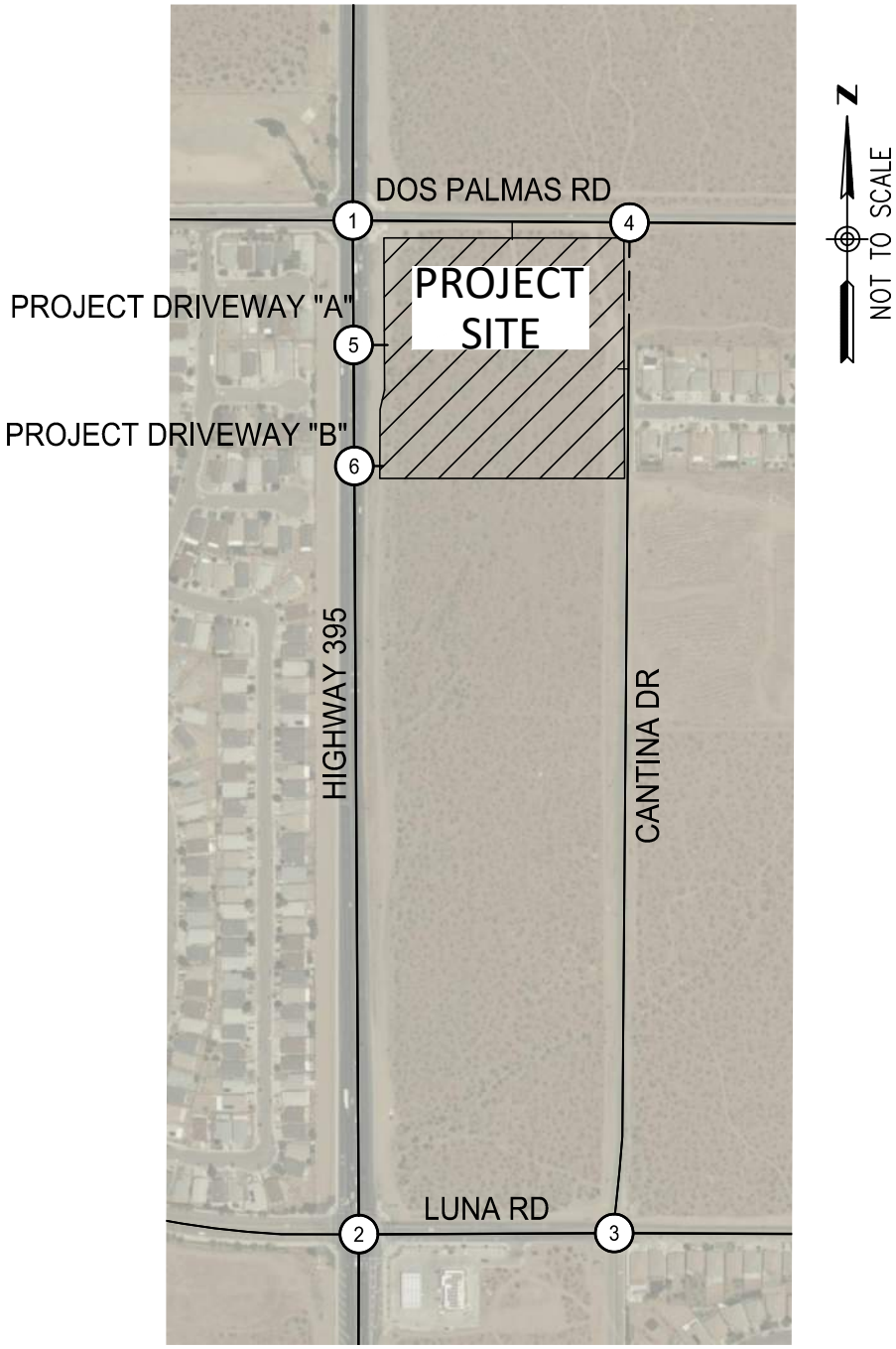
- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

EXHIBIT D2: CONSTRUCTION PHASE - I
PASS-BY PROJECT TRIPS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

Drawing Name: P:\B\BHBA00000002\0400CAD\TTIE\EXHIBITS\Scope\Exhibit D2.dwg
Last Opened: Nov 04, 2021 - 6:05pm by: Trim



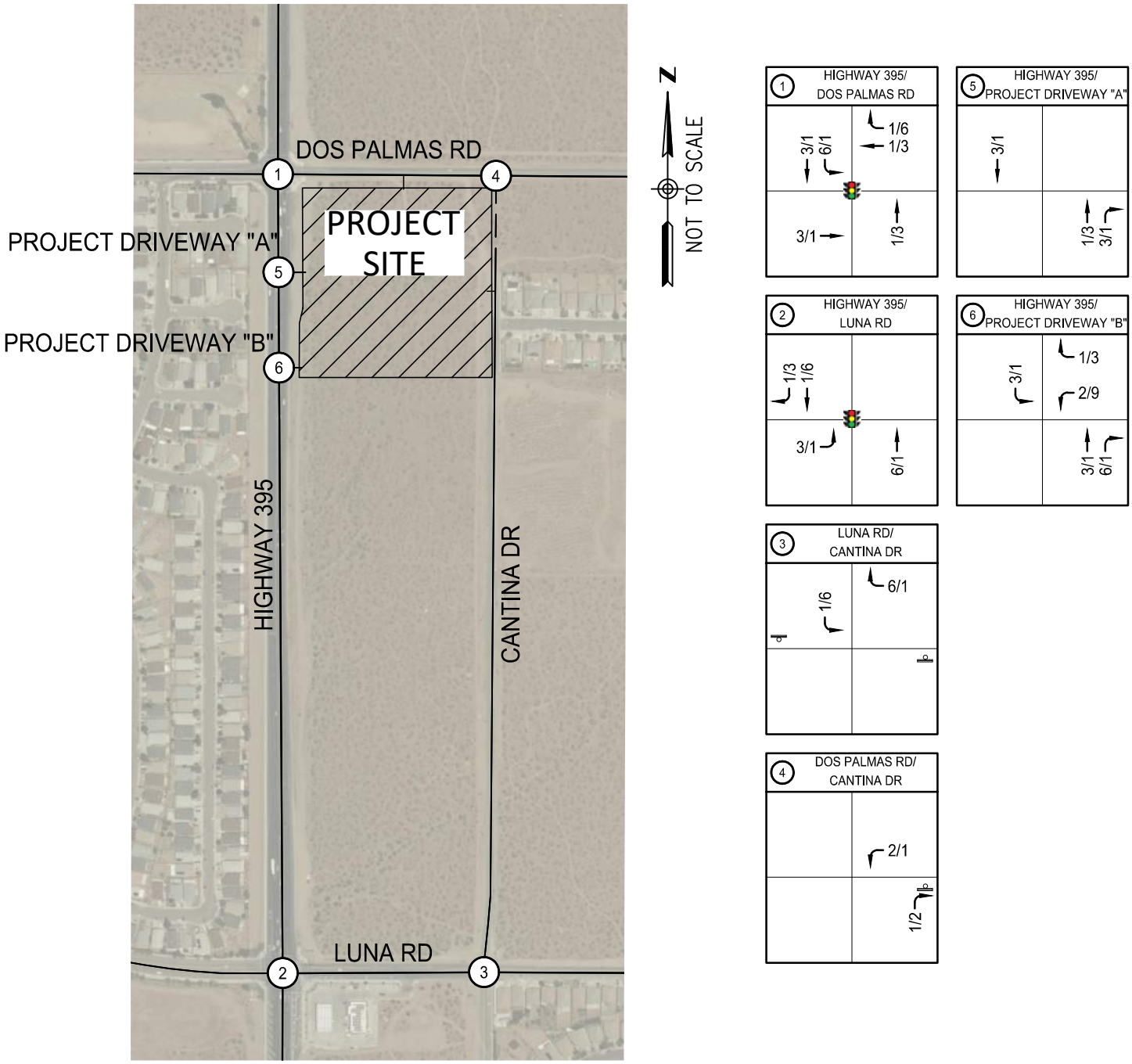
TOTAL PROJECT TRIPS

AM PEAK HOUR - 340 IN / 327 OUT
PM PEAK HOUR - 304 IN / 295 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

EXHIBIT D3: CONSTRUCTION PHASE - I
TOTAL PROJECT TRIPS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA



PRIMARY PROJECT TRIPS

AM PEAK HOUR - 30 IN / 5 OUT
PM PEAK HOUR - 5 IN / 28 OUT

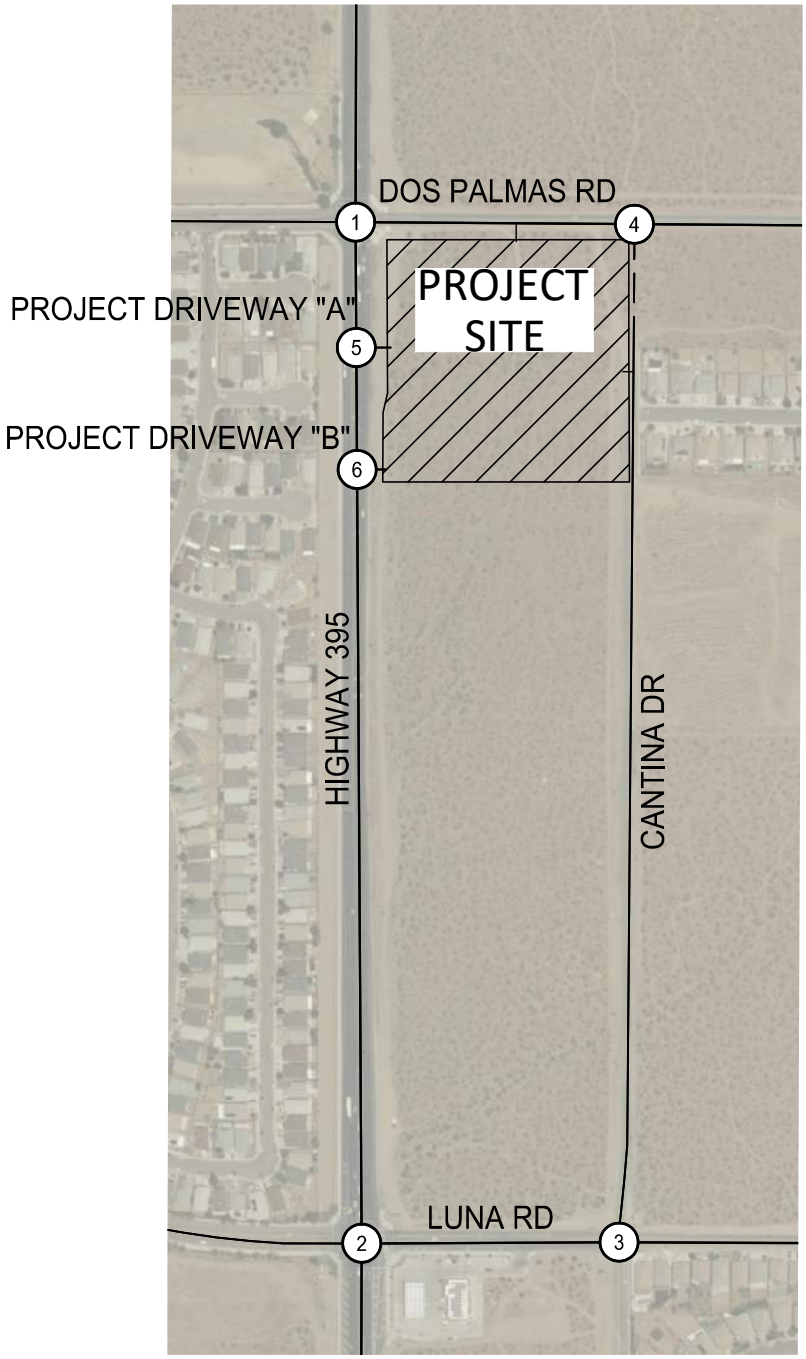
LEGEND

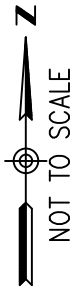
XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

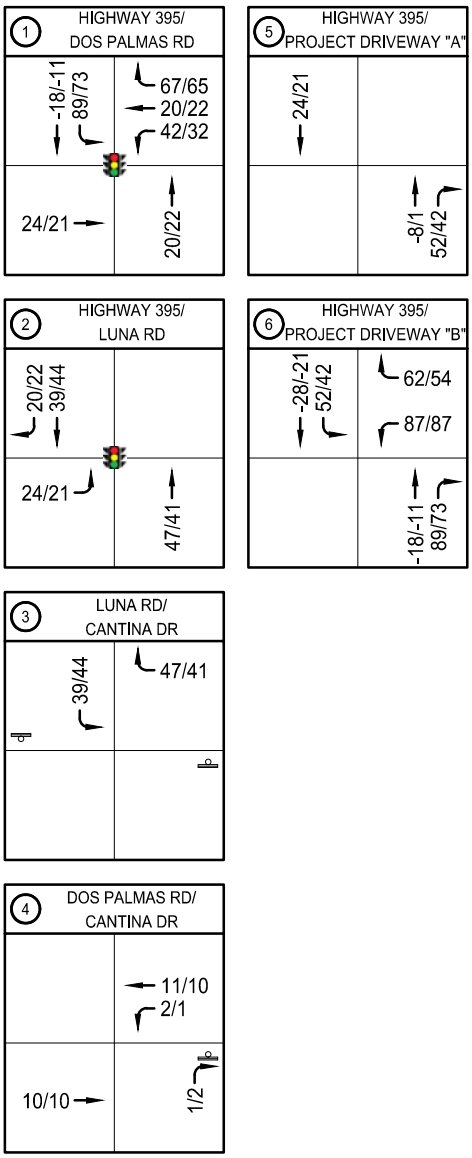
EXHIBIT D4: CONSTRUCTION PHASE - II
PRIMARY PROJECT TRIPS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

Drawing Name: P:\B\BHBA00000002\0400CAD\TTIE\EXHIBITS\Scope\Exhibit D4.dwg
Last Opened: Nov 04, 2021 - 6:06pm by: Tnm







TOTAL PROJECT TRIPS

AM PEAK HOUR - 370 IN / 332 OUT
PM PEAK HOUR - 309 IN / 323 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

DAVID EVANS AND ASSOCIATES INC.

EXHIBIT E: COMBINED - TOTAL PROJECT TRIPS
HIGHWAY 395 AND DOS PALMAS ROAD
COMMERCIAL CENTER DEVELOPMENT
VICTORVILLE, CALIFORNIA

Drawing Name: C:\Users\tnm\AppData\Local\Temp\AcPublish_38596\Exhibit E.dwg
Last Opened: Nov 04, 2021 - 6:06pm by: Tnm

Appendix B: Turn Movement Count Volumes

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : HWY 395 VICTORVILLE

EAST-WEST STREET : DOS PALMAS RD 02-16-22

BEGINNING TIME : 07:00AM

AUTOS			LARGE 2 AXLE			3 AXLE			4(+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
						NORTH LEG						
16	228	42	0	3	0	0	3	0	0	15	0	307
23	289	69	0	4	0	0	0	0	0	8	0	393
20	278	33	0	4	0	0	2	0	0	16	0	353
33	327	55	0	3	0	0	2	0	0	22	0	442
21	230	16	0	4	0	0	0	0	0	10	0	281
20	212	29	0	5	0	0	1	0	0	13	0	280
19	246	30	0	4	0	0	3	0	0	23	0	325
15	234	15	0	4	1	0	0	0	0	22	0	291
167	2044	289	0	31	1	0	11	0	0	129	0	2672
						SOUTH LEG						
4	256	5	0	3	0	0	0	0	0	18	0	286
4	287	2	0	4	0	0	2	0	0	21	0	320
4	374	10	0	3	0	0	2	0	0	20	0	413
7	321	8	0	5	0	0	1	0	0	16	0	358
0	246	4	2	5	0	0	0	0	0	15	0	272
3	240	4	0	3	0	0	1	0	0	20	0	271
3	271	5	0	3	0	0	0	0	0	16	0	298
2	228	3	1	4	0	0	1	0	0	21	0	260
27	2223	41	3	30	0	0	7	0	0	147	0	2478
						EAST LEG						
24	6	5	0	0	0	0	0	0	0	0	0	35
33	10	5	0	0	0	0	0	0	0	0	0	48
31	7	14	0	0	0	0	0	0	0	0	0	52
50	11	10	0	0	0	0	0	0	0	0	0	71
16	8	52	0	0	0	0	0	0	0	0	0	76
31	10	2	0	0	0	0	0	0	0	0	0	43
20	10	2	0	0	0	0	0	0	0	0	0	32
15	9	5	0	0	0	0	0	0	0	0	0	29
220	71	95	0	0	0	0	0	0	0	0	0	386
						WEST LEG						
10	13	30	0	0	0	0	0	0	0	0	0	53
13	25	19	2	0	0	0	0	0	0	0	0	59
14	22	43	2	0	0	1	0	0	0	0	0	82
22	29	55	2	0	0	1	0	0	0	0	0	109
14	15	36	0	0	0	0	0	0	0	0	0	65
19	16	22	0	0	2	0	0	0	0	0	0	59
16	12	19	0	0	0	0	0	0	0	0	0	47
10	10	20	0	0	0	0	0	0	0	0	0	40
118	142	244	6	0	2	2	0	0	0	0	0	514

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: DOS PALMAS RD

TIME: 07:00AM-08:00AM DATE: 02-16-22

NORTH LEG

Rt	Thru	Lt	
92	1204	199	Total
16	249	42	1st
23	301	69	2nd
20	300	33	3rd
33	354	55	4th

	1st	2nd	3rd	4th	Total
Rt	24	33	31	50	138
Thru	6	10	7	11	34
Lt	5	5	14	10	34

Total	1st	2nd	3rd	4th	
147	30	19	43	55	Lt
89	13	25	22	29	Thru
67	10	15	17	25	Rt

	Lt	Thru	Rt
1st	5	277	4
2nd	2	314	4
3rd	10	399	4
4th	8	343	7
Total	25	1333	19

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: DOS PALMAS RD

TIME: 08:00AM-09:00AM DATE: 02-16-22

NORTH LEG

Rt	Thru	Lt	
75	1011	91	Total
21	244	16	1st
20	231	29	2nd
19	276	30	3rd
15	260	16	4th

	1st	2nd	3rd	4th	Total
Rt	16	31	20	15	82
Thru	8	10	10	9	37
Lt	52	2	2	5	61

Total	1st	2nd	3rd	4th	
99	36	24	19	20	Lt
53	15	16	12	10	Thru
59	14	19	16	10	Rt

	Lt	Thru	Rt
1st	4	266	2
2nd	4	264	3
3rd	5	290	3
4th	3	254	3
Total	16	1074	11

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : HWY 395 VICTORVILLE

EAST-WEST STREET : DOS PALMAS RD 02-16-22

BEGINNING TIME : 04:00PM

AUTOS			LARGE 2 AXLE			3 AXLE			4(+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
						NORTH LEG						
30	367	33	0	2	0	0	2	0	0	16	0	450
42	381	40	0	4	2	0	0	0	0	15	0	484
40	417	38	0	4	2	0	0	0	0	10	0	511
51	475	60	0	4	0	0	0	0	0	10	0	600
24	380	25	0	4	1	0	2	0	0	14	0	450
20	336	26	0	5	0	0	0	0	0	21	0	408
30	346	22	1	4	0	0	1	0	0	15	0	419
21	271	12	0	5	0	0	0	0	0	14	0	323
258	2973	256	1	32	5	0	5	0	0	115	0	3645
						SOUTH LEG						
2	275	14	0	3	0	0	2	0	0	10	0	306
3	321	10	0	2	0	0	2	0	0	15	0	353
0	368	5	1	6	0	0	1	0	0	23	0	404
0	417	6	1	5	0	0	1	0	0	21	0	451
4	344	16	1	5	0	0	0	0	0	15	0	3[illegible]5
5	376	23	0	2	0	0	2	0	0	12	0	4[illegible]
4	373	15	0	4	0	0	2	0	0	11	0	4[illegible]9
0	348	6	3	6	0	0	1	0	0	10	0	3[illegible]4
18	2822	95	6	33	0	0	11	0	0	117	0	31[illegible]2
						EAST LEG						
16	16	5	0	0	0	0	0	0	0	0	0	[illegible]7
21	23	3	0	0	2	0	0	0	0	0	0	[illegible]9
26	10	1	0	0	2	0	0	0	0	0	0	[illegible]9
19	12	4	0	0	0	0	0	0	0	0	0	[illegible]5
14	21	3	0	0	0	0	0	0	0	0	0	[illegible]8
21	16	1	0	0	1	0	0	0	0	0	0	[illegible]9
30	16	0	0	0	0	0	0	0	0	0	0	46
16	16	1	0	0	1	0	0	0	0	0	0	[illegible]
163	130	18	0	0	6	0	0	0	0	0	0	3[illegible]7
						WEST LEG						
5	18	15	0	0	1	0	0	0	0	0	0	[illegible]9
4	10	23	1	0	0	0	0	0	0	0	0	[illegible]3
0	20	30	1	0	0	0	0	0	0	0	0	[illegible]
4	16	17	0	0	2	0	0	0	0	0	0	[illegible]9
8	10	30	0	0	0	0	0	0	0	0	0	[illegible]3
7	9	31	1	0	0	0	0	0	0	0	0	[illegible]3
4	6	21	1	0	1	0	0	0	0	0	0	[illegible]3
1	6	21	1	0	0	0	0	0	0	0	0	[illegible]
33	95	188	5	0	4	0	0	0	0	0	0	3[illegible]5

Prepared by Newport Traffic St[illegible]lies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: DOS PALMAS RD

TIME: 04:00PM-05:00PM DATE: 02-16-22

NORTH LEG

Rt	Thru	Lt	
163	1707	175	Total
30	387	33	1st
42	400	42	2nd
40	431	40	3rd
51	489	60	4th

	1st	2nd	3rd	4th	Total
Rt	16	21	26	19	82
Thru	16	23	10	12	61
Lt	5	5	3	4	17

Total	1st	2nd	3rd	4th	
88	16	23	30	19	Lt
64	18	10	20	16	Thru
15	5	5	1	4	Rt

	Lt	Thru	Rt
1st	14	290	2
2nd	10	340	3
3rd	5	398	1
4th	6	444	1
Total	35	1472	7

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: DOS PALMAS RD

TIME: 05:00PM-06:00PM DATE: 02-16-22

NORTH LEG

	Rt	Thru	Lt
Total	96	1418	86
1st	24	400	26
2nd	20	362	26
3rd	31	366	22
4th	21	290	12

	1st	2nd	3rd	4th	Total
Rt	14	21	30	16	81
Thru	21	16	16	16	69
Lt	3	2	0	2	7

	Total	1st	2nd	3rd	4th
Lt	104	30	31	22	21
Thru	31	10	9	6	6
Rt	23	8	8	5	2

	Lt	Thru	Rt
1st	16	364	5
2nd	23	392	5
3rd	15	390	4
4th	6	365	3
Total	60	1511	17

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : HWY 395 VICTORVILLE

EAST-WEST STREET : LUNA RD 02-16-22

BEGINNING TIME : 07:00AM

AUTOS			LARGE 2 AXLE			3 AXLE			4(+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
						NORTH LEG						
3	224	16	0	3	0	0	3	0	0	14	0	263
1	286	20	0	4	0	0	0	0	0	9	0	320
4	291	14	0	4	0	0	2	0	0	16	0	331
2	338	21	0	3	0	0	2	0	0	23	0	389
3	231	10	0	5	0	0	0	0	0	10	0	259
5	211	15	0	4	1	0	1	0	0	14	0	251
4	237	22	0	3	1	0	3	0	0	23	0	293
4	227	20	0	5	0	0	0	0	0	20	0	276
26	2045	138	0	31	2	0	11	0	0	129	0	2382
						SOUTH LEG						
22	236	1	0	3	1	0	0	0	0	16	0	279
30	248	2	1	4	0	0	2	0	0	23	0	310
23	344	1	3	3	0	0	2	0	0	20	0	396
23	300	1	2	5	0	0	1	0	0	15	0	347
16	238	1	0	5	2	0	1	0	0	15	0	278
16	220	5	0	3	0	0	1	0	0	21	0	266
10	268	5	0	3	0	0	0	0	0	16	0	302
8	220	2	0	4	0	0	1	0	0	21	0	256
148	2074	18	6	30	3	0	8	0	0	147	0	2434
						EAST LEG						
31	5	21	0	0	0	0	0	0	0	0	0	57
40	2	16	0	0	0	0	0	0	0	0	0	58
44	5	20	0	0	0	0	0	0	0	0	0	69
38	5	27	0	0	0	0	0	0	0	0	0	70
10	5	16	0	0	0	0	0	0	0	0	0	31
23	6	10	0	0	0	0	0	0	0	0	0	39
10	6	15	0	0	0	0	0	0	0	0	0	31
14	4	8	0	0	0	0	0	0	0	0	0	26
210	38	133	0	0	0	0	0	0	0	0	0	381
						WEST LEG						
2	6	0	0	0	0	0	0	0	0	0	0	8
3	4	1	0	0	0	0	0	0	0	0	0	8
4	8	1	0	0	0	0	0	0	0	0	0	13
0	8	0	2	0	0	0	0	0	0	0	0	10
0	5	3	2	0	0	0	0	0	0	0	0	10
3	5	4	0	0	0	0	0	0	0	0	0	12
1	0	0	1	0	0	0	0	0	0	0	0	2
2	1	1	0	0	0	0	0	0	0	0	0	4
15	37	10	5	0	0	0	0	0	0	0	0	67

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: LUNA RD

TIME: 07:00AM-08:00AM DATE: 02-16-22

NORTH LEG

Rt	Thru	Lt	
10	1222	71	Total
3	244	16	1st
1	299	20	2nd
4	313	14	3rd
2	366	21	4th

	1st	2nd	3rd	4th	Total
Rt	31	40	44	38	153
Thru	5	2	5	5	17
Lt	21	16	20	27	84

Total	1st	2nd	3rd	4th	
2	0	1	1	0	Lt
26	6	4	8	8	Thru
11	2	3	4	2	Rt

	Lt	Thru	Rt
1st	2	255	22
2nd	2	277	31
3rd	1	369	26
4th	1	321	25
Total	6	1222	104

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: LUNA RD

TIME: 08:00AM-09:00AM DATE: 02-16-22

NORTH LEG

Rt	Thru	Lt	
16	994	69	Total
3	246	10	1st
5	230	16	2nd
4	266	23	3rd
4	252	20	4th

	1st	2nd	3rd	4th	Total
Rt	10	23	10	14	57
Thru	5	6	6	4	21
Lt	16	10	15	8	49

Total	1st	2nd	3rd	4th	
8	3	4	0	1	Lt
11	5	5	0	1	Thru
9	2	3	2	2	Rt

	Lt	Thru	Rt
1st	3	259	16
2nd	5	245	16
3rd	5	287	10
4th	2	246	8
Total	15	1037	50

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : HWY 395 VICTORVILLE

EAST-WEST STREET : LUNA RD 02-16-12

BEGINNING TIME : 04:00PM

AUTOS			LARGE 2 AXLE			3 AXLE			4(+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
						NORTH LEG						
14	346	15	0	2	0	0	2	0	0	16	0	3[illegible]5
8	371	11	0	3	1	0	0	0	0	15	0	4[illegible]9
6	396	20	0	4	0	0	0	0	0	10	0	4[illegible]5
6	461	12	0	4	1	0	2	0	0	10	0	4[illegible]
6	360	21	0	5	1	0	3	0	0	14	0	4[illegible]
6	308	31	0	4	0	0	0	0	0	21	0	3[illegible]
5	327	19	0	5	1	0	0	0	0	15	0	3[illegible]2
6	252	16	0	4	0	0	1	0	0	14	0	2[illegible]
57	2821	145	0	31	4	0	8	0	0	115	0	31[illegible]
						SOUTH LEG						
16	273	1	0	3	0	0	2	0	0	10	0	3[illegible]
20	346	0	0	2	0	0	2	0	0	16	0	3[illegible]
20	350	1	0	5	0	0	2	0	0	22	0	4[illegible]
14	401	1	0	5	0	0	0	0	0	20	0	4[illegible]1
21	340	1	0	4	0	0	0	0	0	16	0	3[illegible]
16	372	3	0	3	0	0	3	0	0	12	0	4[illegible]
20	361	2	0	4	0	0	1	0	0	10	0	3[illegible]
10	327	1	0	5	0	0	1	0	0	11	0	3[illegible]
137	2770	10	0	31	0	0	11	0	0	117	0	30[illegible]
						EAST LEG						
20	6	12	0	0	0	0	0	0	0	0	[illegible]	[illegible]
25	14	15	0	0	0	0	0	0	0	0	[illegible]	[illegible]
22	13	9	0	0	1	0	0	0	0	0		[illegible]
25	10	9	0	0	1	0	0	0	0	0	0	[illegible]
26	10	5	0	0	0	0	0	0	0	0	0	[illegible]
29	16	5	0	0	0	0	0	0	0	0	0	[illegible]
33	16	7	0	0	0	0	0	0	0	0	0	[illegible]
28	9	1	0	0	2	0	0	0	0	0	[illegible]	
208	94	63	0	0	4	0	0	0	0	0	0	3[illegible]
						WEST LEG						
4	10	0	0	0	0	0	0	0	0	0	0	[illegible]
4	16	0	0	0	0	0	0	0	0	0	0	[illegible]
2	14	2	1	0	0	0	0	0	0	0	[illegible]	[illegible]
4	10	1	0	0	0	0	0	0	0	0	0	[illegible]
5	16	0	1	0	0	0	0	0	0	0	[illegible]	[illegible]
6	20	1	0	0	0	0	0	0	0	0	[illegible]	[illegible]
14	15	1	0	0	0	0	0	0	0	0	0	[illegible]
9	15	0	1	0	0	0	0	0	0	0	0	[illegible]
48	116	5	3	0	0	0	0	0	0	0	0	1[illegible]

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: LUNA RD

TIME: 04:00PM-05:00PM DATE: 02-16-22

NORTH LEG

Rt	Thru	Lt	
34	1642	60	Total
14	366	15	1st
8	389	12	2nd
6	410	20	3rd
6	477	13	4th

	1st	2nd	3rd	4th	Total
Rt	20	25	22	25	92
Thru	6	14	13	10	43
Lt	12	15	10	10	47

Total	1st	2nd	3rd	4th	
3	0	0	2	1	Lt
50	10	16	14	10	Thru
15	4	4	3	4	Rt

	Lt	Thru	Rt
1st	1	288	16
2nd	0	366	20
3rd	1	379	20
4th	1	426	14
Total	3	1459	70

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: LUNA RD

TIME: 05:00PM-06:00PM DATE: 02-16-22

NORTH LEG

Rt	Thru	Lt	
23	1333	89	Total
6	382	22	1st
6	333	31	2nd
5	347	20	3rd
6	271	16	4th

	1st	2nd	3rd	4th	Total
Rt	26	29	33	28	116
Thru	10	16	16	9	51
Lt	5	5	7	3	20

Total	1st	2nd	3rd	4th	
2	0	1	1	0	Lt
66	16	20	15	15	Thru
36	6	6	14	10	Rt

	Lt	Thru	Rt
1st	1	360	21
2nd	3	390	16
3rd	2	376	20
4th	1	344	10
Total	7	1470	67

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : CANTINA DR — VICTORVILLE

EAST-WEST STREET : LUNA RD — 01-19-22

BEGINNING TIME : 07:00AM

AUTOS			LARGE 2 AXLE			3 AXLE			4(+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
						NORTH LEG						
1	1	0	0	0	0	0	0	0	0	0	0	2
3	0	1	0	0	0	0	0	0	0	0	0	4
2	2	0	0	0	0	0	0	0	0	0	0	4
1	2	0	0	0	0	0	0	0	0	0	0	3
0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0	0	0	0	0	2
11	7	1	0	0	0	0	0	0	0	0	0	19
						SOUTH LEG						
1	4	25	0	0	0	0	0	0	0	0	0	30
1	0	41	0	0	0	0	0	0	0	0	0	42
3	0	38	0	0	1	0	0	0	0	0	0	42
11	1	20	0	0	1	0	0	1	0	0	0	34
1	1	18	0	0	0	0	0	0	0	0	0	20
1	1	9	0	0	0	0	0	0	0	0	0	11
1	0	15	0	0	0	0	0	0	0	0	0	16
4	1	9	0	0	0	0	0	0	0	0	0	14
23	8	175	0	0	2	0	0	1	0	0	0	209
						EAST LEG						
0	33	7	0	1	0	0	0	0	0	0	0	41
0	47	1	0	2	0	0	0	0	0	0	0	50
0	54	3	0	2	0	0	0	0	0	0	0	59
0	43	4	0	0	0	0	0	0	0	0	0	47
0	27	4	0	0	0	0	0	0	0	0	0	31
0	19	4	0	0	0	0	0	0	0	0	0	23
1	28	4	0	0	0	0	0	0	0	0	0	33
0	11	1	0	0	0	0	0	0	0	0	0	12
1	262	28	0	5	0	0	0	0	0	0	0	296
						WEST LEG						
18	40	0	0	0	0	0	0	0	0	0	0	58
25	22	1	1	0	0	0	0	0	0	0	0	49
29	29	0	1	1	0	0	0	0	0	0	0	60
21	36	0	0	0	0	0	0	0	0	0	0	57
17	34	1	0	0	0	0	0	0	0	0	0	52
13	30	1	0	0	0	0	0	0	0	0	0	44
14	20	0	0	0	0	0	0	0	0	0	0	34
6	20	0	0	0	0	0	0	0	0	0	0	26
143	231	3	2	1	0	0	0	0	0	0	0	380

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: CANTINA DR

EAST-WEST STREET: LUNA RD

TIME: 07:00AM-08:00AM DATE: 01-19-22

NORTH LEG

Rt	Thru	Lt	
7	5	1	Total
1	1	0	1st
3	0	1	2nd
2	2	0	3rd
1	2	0	4th

	1st	2nd	3rd	4th	Total
Rt	0	0	0	0	0
Thru	34	49	56	43	182
Lt	7	1	3	4	15

Total	1st	2nd	3rd	4th	
1	0	1	0	0	Lt
128	40	22	30	36	Thru
95	18	26	30	21	Rt

	Lt	Thru	Rt
1st	25	4	1
2nd	41	0	1
3rd	39	0	3
4th	22	1	11
Total	127	5	16

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: CANTINA DR

EAST-WEST STREET: LUNA RD

TIME: 08:00AM-09:00AM DATE: 01-19-22

NORTH LEG

Rt	Thru	Lt	
4	2	0	Total
0	0	0	1st
3	1	0	2nd
0	0	0	3rd
1	1	0	4th

	1st	2nd	3rd	4th	Total
Rt	0	0	1	0	1
Thru	27	19	28	11	85
Lt	4	4	4	1	13

Total	1st	2nd	3rd	4th	
2	1	1	0	0	Lt
104	34	30	20	20	Thru
50	17	13	14	6	Rt

	Lt	Thru	Rt
1st	18	1	1
2nd	9	1	1
3rd	15	0	1
4th	9	1	4
Total	51	3	7

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : CANTINA DR — VICTORVILLE

EAST-WEST STREET : LUNA RD — 01-19-22

BEGINNING TIME : 04:00PM

AUTOS			LARGE 2 AXLE			3 AXLE			4(+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
						NORTH LEG						
0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	1	0	0	0	0	0	0	0	0	0	2
0	0	1	0	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	0	0	0	0	0	2
3	1	0	0	0	0	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	1	0	0	0	0	0	0	0	0	0	3
6	3	3	0	0	0	0	0	0	0	0	0	12
						SOUTH LEG						
5	0	20	0	0	0	0	0	0	0	0	0	25
4	0	22	0	0	0	0	0	0	0	0	0	26
8	0	23	0	0	0	0	0	0	0	0	0	31
3	2	21	0	0	0	0	0	0	0	0	0	26
6	2	33	0	0	0	0	0	0	0	0	0	41
1	1	22	0	0	0	0	0	0	0	0	0	24
4	3	22	0	0	0	0	0	0	0	0	0	29
6	2	33	0	0	0	0	0	0	0	0	0	41
37	10	196	0	0	0	0	0	0	0	0	0	243
						EAST LEG						
0	26	0	0	0	0	0	0	0	0	0	0	26
0	41	3	0	0	0	0	0	0	0	0	0	44
0	32	2	0	0	0	0	0	0	0	0	0	34
0	32	2	0	0	0	0	0	0	0	0	0	34
0	32	4	0	0	0	0	0	0	0	0	0	36
0	38	0	0	0	0	0	0	0	0	1	0	39
0	31	4	0	0	0	0	0	0	0	0	0	35
0	29	3	0	0	0	0	0	0	0	0	0	32
0	261	18	0	0	0	0	0	0	0	1	0	280
						WEST LEG						
11	31	0	0	0	0	0	0	0	0	0	0	42
10	46	1	0	0	0	0	0	0	0	0	0	57
16	48	0	0	1	0	0	0	0	0	0	0	65
21	32	2	0	0	0	0	0	0	0	0	0	55
26	34	0	0	1	0	0	0	0	0	0	0	61
25	43	2	0	0	0	0	0	0	0	0	0	70
20	40	0	0	0	0	0	0	0	0	0	0	60
25	36	1	0	0	0	0	0	0	0	0	0	62
154	310	6	0	2	0	0	0	0	0	0	0	472

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: CANTINA DR

EAST-WEST STREET: LUNA RD

TIME: 04:00PM-05:00PM DATE: 01-19-22

NORTH LEG

Rt	Thru	Lt	
0	1	2	Total
0	0	0	1st
0	1	1	2nd
0	0	1	3rd
0	0	0	4th

	1st	2nd	3rd	4th	Total
Rt	0	0	0	0	0
Thru	26	41	32	32	131
Lt	0	3	2	2	7

Total	1st	2nd	3rd	4th	
3	0	1	0	2	Lt
158	31	46	49	32	Thru
58	11	10	16	21	Rt

	Lt	Thru	Rt
1st	20	0	5
2nd	22	0	4
3rd	23	0	8
4th	21	2	3
Total	86	2	20

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: CANTINA DR

EAST-WEST STREET: LUNA RD

TIME: 05:00PM-06:00PM DATE: 01-19-22

NORTH LEG

	Rt	Thru	Lt
Total	6	2	1
1st	1	1	0
2nd	3	1	0
3rd	0	0	0
4th	2	0	1

	1st	2nd	3rd	4th	Total
Rt	0	0	0	0	0
Thru	32	39	31	29	131
Lt	4	0	4	3	11

	Total	1st	2nd	3rd	4th
Lt	3	0	2	0	1
Thru	154	35	43	40	36
Rt	96	26	25	20	25

	Lt	Thru	Rt
1st	33	2	6
2nd	22	1	1
3rd	22	3	4
4th	33	2	6
Total	110	8	17

Prepared by NEWPORT TRAFFIC STUDIES

DAVID EVANS AND ASSOCIATES INC.

Appendix C: Intersection Capacity Analysis Calculations

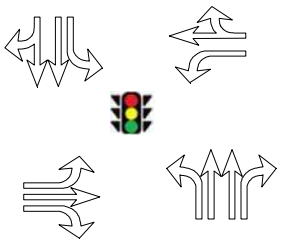
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

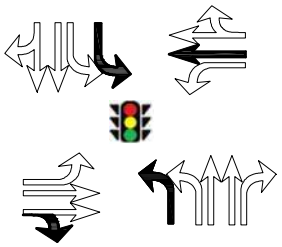
E/W STREET : DOS PALMAS ROAD
N/S STREET : HIGHWAY 395
CONDITION : AM PEAK HOUR

INTERSECTION : 1
PROJECTED GROWTH PER YEAR : 3.5%

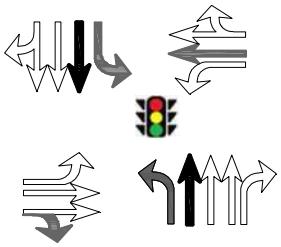
CONDITION DIAGRAMS



EXISTING GEOMETRICS



PROPOSED GEOMETRICS



ULTIMATE GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Combined Project Trips	Future + Project Condition
Scenario #	1		3		5	7		9		11
DOS PALMAS ROAD										
EB LEFT	153	0	153	11	164	164	4	168	0	168
EB THRU	91	21	112	6	97	118	2	99	24	123
EB RIGHT	71	0	71	5	76	76	2	78	0	78
WB LEFT	81	99	180	6	87	186	2	89	100	189
WB THRU	36	20	56	3	39	59	1	40	21	61
WB RIGHT	130	86	216	9	139	225	3	142	88	230
HIGHWAY 395										
NB LEFT	24	0	24	2	26	26	1	27	0	27
NB THRU	1322	20	1342	93	1415	1435	33	1448	21	1469
NB RIGHT	17	0	17	1	18	18	0	18	0	18
SB LEFT	173	131	304	12	185	316	4	189	140	329
SB THRU	1199	-70	1129	84	1283	1213	29	1312	-70	1242
SB RIGHT	97	0	97	7	104	104	2	106	0	106
TOTALS	**3394**	**307**	**3701**	**239**	**3633**	**3940**	**83**	**3716**	**324**	**4040**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TM	11-Mar-22	BHBA0000-0002	2	OF 2

E/W STREET : DOS PALMAS ROAD
N/S STREET : HIGHWAY 395
CONDITION : AM PEAK HOUR
PHF : 0.87

NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
23	289	69	0	4	0	0	0	0	0	8	0
20	278	33	0	4	0	0	2	0	0	16	0
33	327	55	0	3	0	0	2	0	0	22	0
21	230	16	0	4	0	0	0	0	0	10	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
4	287	2	0	4	0	0	2	0	0	21	0
4	374	10	0	3	0	0	2	0	0	20	0
7	321	8	0	5	0	0	1	0	0	16	0
0	246	4	2	5	0	0	0	0	0	15	0

EAST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
33	10	5	0	0	0	0	0	0	0	0	0
31	7	14	0	0	0	0	0	0	0	0	0
50	11	10	0	0	0	0	0	0	0	0	0
16	8	52	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
13	25	19	2	0	0	0	0	0	0	0	0
14	22	43	2	0	0	1	0	0	0	0	0
22	29	55	2	0	0	1	0	0	0	0	0
14	15	36	0	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
DOS PALMAS ROAD					
EB LEFT	0	153	**153**	**0%**	**153**
EB THRU	0	91	**91**	**0%**	**91**
EB RIGHT	8	63	**71**	**11%**	**71**
WB LEFT	0	81	**81**	**0%**	**81**
WB THRU	0	36	**36**	**0%**	**36**
WB RIGHT	0	130	**130**	**0%**	**130**
HIGHWAY 395					
NB LEFT	0	24	**24**	**0%**	**24**
NB THRU	94	1228	**1,322**	**7%**	**1,322**
NB RIGHT	2	15	**17**	**12%**	**17**
SB LEFT	0	173	**173**	**0%**	**173**
SB THRU	75	1124	**1,199**	**6%**	**1,199**
SB RIGHT	0	97	**97**	**0%**	**97**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	91	71	81	36	130	24	1322	17	173	1199	97
Future Volume (veh/h)	153	91	71	81	36	130	24	1322	17	173	1199	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1768	1800	1646	1768	1800	1800	1768	1702	1632	1768	1716	1800
Adj Flow Rate, veh/h	176	105	82	93	41	149	28	1520	20	199	1378	111
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	11	0	0	0	0	7	12	0	6	0
Cap, veh/h	151	289	224	113	47	171	255	1806	772	174	1560	125
Arrive On Green	0.09	0.16	0.16	0.07	0.14	0.14	0.15	0.56	0.56	0.10	0.51	0.51
Sat Flow, veh/h	1684	1800	1395	1684	340	1237	1684	3233	1383	1684	3056	245
Grp Volume(v), veh/h	176	105	82	93	0	190	28	1520	20	199	732	757
Grp Sat Flow(s),veh/h/ln	1684	1800	1395	1684	0	1577	1684	1617	1383	1684	1630	1672
Q Serve(g_s), s	13.0	7.5	5.7	7.9	0.0	17.1	2.1	56.8	0.9	15.0	57.9	58.7
Cycle Q Clear(g_c), s	13.0	7.5	5.7	7.9	0.0	17.1	2.1	56.8	0.9	15.0	57.9	58.7
Prop In Lane	1.00		1.00	1.00		0.78	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	151	289	224	113	0	218	255	1806	772	174	832	853
V/C Ratio(X)	1.17	0.36	0.37	0.82	0.00	0.87	0.11	0.84	0.03	1.14	0.88	0.89
Avail Cap(c_a), veh/h	151	447	346	151	0	392	255	1806	772	174	832	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.0	54.2	30.8	66.8	0.0	61.2	53.1	26.7	14.3	65.0	31.6	31.8
Incr Delay (d2), s/veh	124.8	0.8	1.0	23.0	0.0	10.3	0.1	3.8	0.0	111.7	12.9	13.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	3.5	2.7	4.1	0.0	7.4	0.9	20.7	0.3	11.6	23.8	24.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	190.8	55.0	31.8	89.8	0.0	71.6	53.2	30.5	14.4	176.7	44.4	44.9
LnGrp LOS	F	E	C	F	A	E	D	C	B	F	D	D
Approach Vol, veh/h		363			283			1568			1688	
Approach Delay, s/veh		115.6			77.6			30.7			60.2	
Approach LOS		F			E			C			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	85.0	13.7	27.3	26.0	78.0	17.0	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	65.0	13.0	36.0	6.0	74.0	13.0	36.0
Max Q Clear Time (g_c+I1), s	17.0	58.8	9.9	9.5	4.1	60.7	15.0	19.1
Green Ext Time (p_c), s	0.0	4.4	0.0	0.8	0.0	7.3	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	54.8
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	112	71	180	56	216	24	1342	17	304	1129	97
Future Volume (veh/h)	153	112	71	180	56	216	24	1342	17	304	1129	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1768	1800	1646	1768	1800	1800	1768	1702	1632	1768	1716	1800
Adj Flow Rate, veh/h	176	129	82	207	64	248	28	1543	20	349	1298	111
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	11	0	0	0	0	7	12	0	6	0
Cap, veh/h	151	385	299	151	69	268	127	1560	667	174	1551	132
Arrive On Green	0.09	0.21	0.21	0.09	0.21	0.21	0.08	0.48	0.48	0.10	0.51	0.51
Sat Flow, veh/h	1684	1800	1395	1684	323	1252	1684	3233	1383	1684	3040	259
Grp Volume(v), veh/h	176	129	82	207	0	312	28	1543	20	349	694	715
Grp Sat Flow(s),veh/h/ln	1684	1800	1395	1684	0	1575	1684	1617	1383	1684	1630	1669
Q Serve(g_s), s	13.0	8.8	5.9	13.0	0.0	28.2	2.3	68.5	1.1	15.0	52.7	53.2
Cycle Q Clear(g_c), s	13.0	8.8	5.9	13.0	0.0	28.2	2.3	68.5	1.1	15.0	52.7	53.2
Prop In Lane	1.00		1.00	1.00		0.79	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	151	385	299	151	0	337	127	1560	667	174	832	852
V/C Ratio(X)	1.17	0.33	0.27	1.37	0.00	0.93	0.22	0.99	0.03	2.00	0.83	0.84
Avail Cap(c_a), veh/h	151	447	346	151	0	391	127	1560	667	174	832	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.0	48.2	33.1	66.0	0.0	55.8	63.0	37.1	19.7	65.0	30.3	30.4
Incr Delay (d2), s/veh	124.8	0.5	0.5	203.2	0.0	25.7	0.9	20.3	0.1	471.4	9.7	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	4.0	2.5	14.0	0.0	13.4	1.0	29.3	0.4	29.0	21.2	21.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	190.8	48.7	33.6	269.2	0.0	81.5	63.9	57.5	19.8	536.4	39.9	40.1
LnGrp LOS	F	D	C	F	A	F	E	E	B	F	D	D
Approach Vol, veh/h		387			519			1591			1758	
Approach Delay, s/veh		110.1			156.4			57.1			138.6	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	74.0	17.0	35.0	15.0	78.0	17.0	35.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	65.0	13.0	36.0	6.0	74.0	13.0	36.0
Max Q Clear Time (g_c+I1), s	17.0	70.5	15.0	10.8	4.3	55.2	15.0	30.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	8.4	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	107.7
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	112	71	180	56	216	24	1342	17	304	1129	97
Future Volume (veh/h)	153	112	71	180	56	216	24	1342	17	304	1129	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1754	1786	1646	1754	1786	1786	1754	1702	1632	1754	1716	1786
Adj Flow Rate, veh/h	161	118	75	189	59	227	25	1413	18	320	1188	102
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	11	1	1	1	1	7	12	1	6	1
Cap, veh/h	167	331	197	178	286	255	56	1649	705	373	1846	158
Arrive On Green	0.10	0.16	0.16	0.11	0.17	0.17	0.02	0.51	0.51	0.12	0.61	0.61
Sat Flow, veh/h	1671	2047	1216	1671	1697	1514	3241	3233	1383	3241	3038	260
Grp Volume(v), veh/h	161	96	97	189	59	227	25	1413	18	320	636	654
Grp Sat Flow(s),veh/h/ln	1671	1697	1567	1671	1697	1514	1621	1617	1383	1621	1630	1669
Q Serve(g_s), s	14.4	7.6	8.3	16.0	4.5	22.0	1.1	57.1	1.0	14.5	37.7	37.9
Cycle Q Clear(g_c), s	14.4	7.6	8.3	16.0	4.5	22.0	1.1	57.1	1.0	14.5	37.7	37.9
Prop In Lane	1.00		0.78	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	167	274	253	178	286	255	56	1649	705	373	991	1014
V/C Ratio(X)	0.96	0.35	0.38	1.06	0.21	0.89	0.45	0.86	0.03	0.86	0.64	0.64
Avail Cap(c_a), veh/h	167	396	366	178	407	363	130	1649	705	562	991	1014
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.2	55.9	56.2	67.0	53.7	61.0	73.0	32.0	18.3	65.2	18.9	19.0
Incr Delay (d2), s/veh	58.7	0.8	0.9	84.4	0.4	17.5	5.5	6.0	0.1	8.4	3.2	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	3.3	3.3	10.9	1.9	9.6	0.5	22.0	0.3	6.3	13.8	14.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	125.9	56.6	57.1	151.4	54.1	78.5	78.5	38.0	18.3	73.5	22.1	22.1
LnGrp LOS	F	E	E	F	D	E	E	D	B	E	C	C
Approach Vol, veh/h		354			475			1456			1610	
Approach Delay, s/veh		88.3			104.5			38.4			32.3	
Approach LOS		F			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	80.5	20.0	28.3	6.6	95.2	19.0	29.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	57.0	16.0	35.0	6.0	77.0	15.0	36.0
Max Q Clear Time (g_c+I1), s	16.5	59.1	18.0	10.3	3.1	39.9	16.4	24.0
Green Ext Time (p_c), s	0.7	0.0	0.0	1.0	0.0	9.3	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	48.5
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	91	71	81	36	130	24	1322	17	173	1199	97
Future Volume (veh/h)	153	91	71	81	36	130	24	1322	17	173	1199	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1768	1800	1646	1768	1800	1800	1768	1702	1632	1768	1716	1800
Adj Flow Rate, veh/h	161	96	75	85	38	137	25	1392	18	182	1262	102
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	11	0	0	0	0	7	12	0	6	0
Cap, veh/h	151	281	218	104	44	159	272	1837	786	174	1559	126
Arrive On Green	0.09	0.16	0.16	0.06	0.13	0.13	0.16	0.57	0.57	0.10	0.51	0.51
Sat Flow, veh/h	1684	1800	1395	1684	343	1235	1684	3233	1383	1684	3055	246
Grp Volume(v), veh/h	161	96	75	85	0	175	25	1392	18	182	672	692
Grp Sat Flow(s),veh/h/ln	1684	1800	1395	1684	0	1578	1684	1617	1383	1684	1630	1671
Q Serve(g_s), s	13.0	6.9	5.2	7.2	0.0	15.8	1.8	47.3	0.8	15.0	49.8	50.2
Cycle Q Clear(g_c), s	13.0	6.9	5.2	7.2	0.0	15.8	1.8	47.3	0.8	15.0	49.8	50.2
Prop In Lane	1.00		1.00	1.00		0.78	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	151	281	218	104	0	203	272	1837	786	174	832	853
V/C Ratio(X)	1.07	0.34	0.34	0.82	0.00	0.86	0.09	0.76	0.02	1.04	0.81	0.81
Avail Cap(c_a), veh/h	151	447	346	151	0	392	272	1837	786	174	832	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.0	54.5	30.2	67.2	0.0	62.0	51.8	23.7	13.7	65.0	29.6	29.7
Incr Delay (d2), s/veh	92.1	0.7	0.9	19.4	0.0	10.4	0.1	2.5	0.0	80.5	8.3	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	3.2	2.4	3.6	0.0	6.8	0.8	17.0	0.3	10.1	19.9	20.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	158.1	55.3	31.1	86.6	0.0	72.4	51.9	26.2	13.7	145.5	37.9	37.9
LnGrp LOS	F	E	C	F	A	E	D	C	B	F	D	D
Approach Vol, veh/h		332			260			1435			1546	
Approach Delay, s/veh		99.7			77.0			26.5			50.6	
Approach LOS		F			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	86.4	13.0	26.6	27.4	78.0	17.0	22.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	65.0	13.0	36.0	6.0	74.0	13.0	36.0
Max Q Clear Time (g_c+I1), s	17.0	49.3	9.2	8.9	3.8	52.2	15.0	17.8
Green Ext Time (p_c), s	0.0	8.1	0.0	0.7	0.0	8.6	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	47.4
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	118	76	186	59	225	26	1435	18	316	1213	104
Future Volume (veh/h)	164	118	76	186	59	225	26	1435	18	316	1213	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1768	1800	1646	1768	1800	1800	1768	1702	1632	1768	1716	1800
Adj Flow Rate, veh/h	173	124	80	196	62	237	27	1511	19	333	1277	109
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	11	0	0	0	0	7	12	0	6	0
Cap, veh/h	151	371	288	151	67	258	140	1585	678	174	1552	132
Arrive On Green	0.09	0.21	0.21	0.09	0.21	0.21	0.08	0.49	0.49	0.10	0.51	0.51
Sat Flow, veh/h	1684	1800	1395	1684	327	1249	1684	3233	1383	1684	3040	259
Grp Volume(v), veh/h	173	124	80	196	0	299	27	1511	19	333	683	703
Grp Sat Flow(s),veh/h/ln	1684	1800	1395	1684	0	1575	1684	1617	1383	1684	1630	1669
Q Serve(g_s), s	13.0	8.5	5.8	13.0	0.0	27.0	2.2	64.9	1.0	15.0	51.2	51.7
Cycle Q Clear(g_c), s	13.0	8.5	5.8	13.0	0.0	27.0	2.2	64.9	1.0	15.0	51.2	51.7
Prop In Lane	1.00		1.00	1.00		0.79	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	151	371	288	151	0	325	140	1585	678	174	832	852
V/C Ratio(X)	1.15	0.33	0.28	1.30	0.00	0.92	0.19	0.95	0.03	1.91	0.82	0.83
Avail Cap(c_a), veh/h	151	447	346	151	0	391	140	1585	678	174	832	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.0	49.0	33.0	66.0	0.0	56.4	61.9	35.4	19.1	65.0	29.9	30.0
Incr Delay (d2), s/veh	117.9	0.5	0.5	174.2	0.0	24.1	0.7	13.9	0.1	430.9	8.9	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	3.9	2.4	12.8	0.0	12.7	0.9	26.5	0.3	27.1	20.5	21.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	183.9	49.6	33.5	240.2	0.0	80.4	62.6	49.3	19.2	495.9	38.9	39.0
LnGrp LOS	F	D	C	F	A	F	E	D	B	F	D	D
Approach Vol, veh/h		377			495			1557			1719	
Approach Delay, s/veh		107.8			143.7			49.2			127.5	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	75.1	17.0	33.9	16.1	78.0	17.0	33.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	65.0	13.0	36.0	6.0	74.0	13.0	36.0
Max Q Clear Time (g_c+I1), s	17.0	66.9	15.0	10.5	4.2	53.7	15.0	29.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	8.5	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	98.2
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	118	76	186	59	225	26	1435	18	316	1213	104
Future Volume (veh/h)	164	118	76	186	59	225	26	1435	18	316	1213	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1754	1786	1646	1754	1786	1786	1754	1702	1632	1754	1716	1786
Adj Flow Rate, veh/h	173	124	80	196	62	237	27	1511	19	333	1277	109
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	11	1	1	1	1	7	12	1	6	1
Cap, veh/h	167	342	207	178	297	265	58	1615	690	386	1826	155
Arrive On Green	0.10	0.17	0.17	0.11	0.17	0.17	0.02	0.50	0.50	0.12	0.60	0.60
Sat Flow, veh/h	1671	2034	1228	1671	1697	1514	3241	3233	1383	3241	3040	259
Grp Volume(v), veh/h	173	102	102	196	62	237	27	1511	19	333	683	703
Grp Sat Flow(s),veh/h/ln	1671	1697	1565	1671	1697	1514	1621	1617	1383	1621	1630	1669
Q Serve(g_s), s	15.0	8.0	8.7	16.0	4.7	23.0	1.2	65.9	1.0	15.1	43.2	43.6
Cycle Q Clear(g_c), s	15.0	8.0	8.7	16.0	4.7	23.0	1.2	65.9	1.0	15.1	43.2	43.6
Prop In Lane	1.00		0.78	1.00		1.00	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	167	285	263	178	297	265	58	1615	690	386	979	1002
V/C Ratio(X)	1.04	0.36	0.39	1.10	0.21	0.90	0.46	0.94	0.03	0.86	0.70	0.70
Avail Cap(c_a), veh/h	167	396	365	178	407	363	130	1615	690	562	979	1002
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	55.2	55.5	67.0	53.0	60.5	72.9	35.3	19.1	64.9	20.6	20.7
Incr Delay (d2), s/veh	79.3	0.8	0.9	96.7	0.3	18.9	5.6	11.6	0.1	9.2	4.1	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	3.5	3.5	11.5	2.0	10.1	0.5	26.5	0.4	6.6	16.0	16.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	146.8	56.0	56.4	163.7	53.3	79.4	78.5	46.9	19.1	74.1	24.7	24.8
LnGrp LOS	F	E	E	F	D	E	E	D	B	E	C	C
Approach Vol, veh/h		377			495			1557			1719	
Approach Delay, s/veh		97.8			109.5			47.1			34.3	
Approach LOS		F			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.9	78.9	20.0	29.2	6.7	94.1	19.0	30.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	26.0	57.0	16.0	35.0	6.0	77.0	15.0	36.0
Max Q Clear Time (g_c+I1), s	17.1	67.9	18.0	10.7	3.2	45.6	17.0	25.0
Green Ext Time (p_c), s	0.7	0.0	0.0	1.0	0.0	10.1	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	53.9
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	99	78	89	40	142	27	1448	18	189	1312	106
Future Volume (veh/h)	168	99	78	89	40	142	27	1448	18	189	1312	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1768	1800	1646	1768	1800	1800	1768	1702	1632	1768	1716	1800
Adj Flow Rate, veh/h	193	114	90	102	46	163	31	1664	21	217	1508	122
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	11	0	0	0	0	7	12	0	6	0
Cap, veh/h	151	301	233	122	52	185	235	1767	755	174	1560	125
Arrive On Green	0.09	0.17	0.17	0.07	0.15	0.15	0.14	0.55	0.55	0.10	0.51	0.51
Sat Flow, veh/h	1684	1800	1395	1684	347	1231	1684	3233	1383	1684	3056	246
Grp Volume(v), veh/h	193	114	90	102	0	209	31	1664	21	217	800	830
Grp Sat Flow(s),veh/h/ln	1684	1800	1395	1684	0	1578	1684	1617	1383	1684	1630	1672
Q Serve(g_s), s	13.0	8.2	6.4	8.7	0.0	18.8	2.3	69.7	1.0	15.0	68.4	70.0
Cycle Q Clear(g_c), s	13.0	8.2	6.4	8.7	0.0	18.8	2.3	69.7	1.0	15.0	68.4	70.0
Prop In Lane	1.00		1.00	1.00		0.78	1.00		1.00	1.00		0.15
Lane Grp Cap(c), veh/h	151	301	233	122	0	237	235	1767	755	174	832	853
V/C Ratio(X)	1.28	0.38	0.39	0.83	0.00	0.88	0.13	0.94	0.03	1.25	0.96	0.97
Avail Cap(c_a), veh/h	151	447	346	151	0	392	235	1767	755	174	832	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.69	0.69	0.69	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.0	53.7	31.6	66.4	0.0	60.4	54.7	30.7	15.1	65.0	34.1	34.5
Incr Delay (d2), s/veh	166.5	0.8	1.0	26.7	0.0	12.3	0.2	8.6	0.0	149.4	23.2	24.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	3.7	2.9	4.6	0.0	8.2	1.0	26.6	0.3	13.5	30.0	31.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	232.5	54.5	32.6	93.1	0.0	72.7	54.9	39.3	15.2	214.4	57.3	59.5
LnGrp LOS	F	D	C	F	A	E	D	D	B	F	E	E
Approach Vol, veh/h		397			311			1716			1847	
Approach Delay, s/veh		136.1			79.4			39.3			76.7	
Approach LOS		F			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	83.2	14.5	28.2	24.2	78.0	17.0	25.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	65.0	13.0	36.0	6.0	74.0	13.0	36.0
Max Q Clear Time (g_c+I1), s	17.0	71.7	10.7	10.2	4.3	72.0	15.0	20.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	1.6	0.0	1.0

Intersection Summary	
HCM 6th Ctrl Delay	67.4
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	123	78	189	61	230	27	1469	18	329	1242	106
Future Volume (veh/h)	168	123	78	189	61	230	27	1469	18	329	1242	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1768	1800	1646	1768	1800	1800	1768	1702	1632	1768	1716	1800
Adj Flow Rate, veh/h	177	129	82	199	64	242	28	1546	19	346	1307	112
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	11	0	0	0	0	7	12	0	6	0
Cap, veh/h	151	379	293	151	69	262	133	1572	672	174	1551	133
Arrive On Green	0.09	0.21	0.21	0.09	0.21	0.21	0.08	0.49	0.49	0.10	0.51	0.51
Sat Flow, veh/h	1684	1800	1395	1684	330	1246	1684	3233	1383	1684	3039	260
Grp Volume(v), veh/h	177	129	82	199	0	306	28	1546	19	346	699	720
Grp Sat Flow(s),veh/h/ln	1684	1800	1395	1684	0	1576	1684	1617	1383	1684	1630	1669
Q Serve(g_s), s	13.0	8.8	5.9	13.0	0.0	27.6	2.3	68.3	1.0	15.0	53.3	53.9
Cycle Q Clear(g_c), s	13.0	8.8	5.9	13.0	0.0	27.6	2.3	68.3	1.0	15.0	53.3	53.9
Prop In Lane	1.00		1.00	1.00		0.79	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	151	379	293	151	0	332	133	1572	672	174	832	852
V/C Ratio(X)	1.17	0.34	0.28	1.32	0.00	0.92	0.21	0.98	0.03	1.99	0.84	0.85
Avail Cap(c_a), veh/h	151	447	346	151	0	391	133	1572	672	174	832	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.0	48.7	33.1	66.0	0.0	56.1	62.5	36.7	19.4	65.0	30.4	30.6
Incr Delay (d2), s/veh	127.1	0.5	0.5	182.0	0.0	24.9	0.8	19.1	0.1	463.8	10.0	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	4.0	2.5	13.2	0.0	13.1	1.0	28.9	0.3	28.7	21.6	22.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	193.1	49.2	33.6	248.0	0.0	81.0	63.3	55.8	19.5	528.8	40.4	40.6
LnGrp LOS	F	D	C	F	A	F	E	E	B	F	D	D
Approach Vol, veh/h		388			505			1593			1765	
Approach Delay, s/veh		111.6			146.8			55.5			136.3	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	74.5	17.0	34.5	15.5	78.0	17.0	34.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	65.0	13.0	36.0	6.0	74.0	13.0	36.0
Max Q Clear Time (g_c+I1), s	17.0	70.3	15.0	10.8	4.3	55.9	15.0	29.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.9	0.0	8.3	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	105.0
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	123	78	189	61	230	27	1469	18	329	1242	106
Future Volume (veh/h)	168	123	78	189	61	230	27	1469	18	329	1242	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1768	1800	1646	1768	1800	1800	1768	1702	1632	1768	1716	1800
Adj Flow Rate, veh/h	177	129	82	199	64	242	28	1546	19	346	1307	112
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	11	0	0	0	0	7	12	0	6	0
Cap, veh/h	191	364	217	191	302	269	35	1905	567	326	2561	219
Arrive On Green	0.11	0.18	0.18	0.11	0.18	0.18	0.02	0.41	0.41	0.19	0.58	0.58
Sat Flow, veh/h	1684	2061	1228	1684	1710	1525	1684	4646	1383	1684	4394	377
Grp Volume(v), veh/h	177	106	105	199	64	242	28	1546	19	346	929	490
Grp Sat Flow(s),veh/h/ln	1684	1710	1579	1684	1710	1525	1684	1549	1383	1684	1561	1648
Q Serve(g_s), s	15.6	8.1	8.8	17.0	4.8	23.3	2.5	44.1	1.2	29.0	26.5	26.5
Cycle Q Clear(g_c), s	15.6	8.1	8.8	17.0	4.8	23.3	2.5	44.1	1.2	29.0	26.5	26.5
Prop In Lane	1.00		0.78	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	191	302	279	191	302	269	35	1905	567	326	1820	961
V/C Ratio(X)	0.93	0.35	0.38	1.04	0.21	0.90	0.81	0.81	0.03	1.06	0.51	0.51
Avail Cap(c_a), veh/h	191	399	368	191	399	356	67	1905	567	326	1820	961
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.9	54.2	54.5	66.5	52.8	60.4	73.2	39.1	26.5	60.5	18.6	18.6
Incr Delay (d2), s/veh	45.0	0.7	0.8	76.9	0.3	20.4	33.8	3.9	0.1	67.5	1.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	3.5	3.6	11.3	2.1	10.4	1.4	16.6	0.4	18.0	9.1	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.9	54.9	55.3	143.4	53.2	80.8	106.9	43.0	26.6	128.0	19.6	20.5
LnGrp LOS	F	D	E	F	D	F	F	D	C	F	B	C
Approach Vol, veh/h		388			505			1593			1765	
Approach Delay, s/veh		80.5			102.0			43.9			41.1	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	65.5	21.0	30.5	7.1	91.4	21.0	30.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	29.0	53.0	17.0	35.0	6.0	76.0	17.0	35.0
Max Q Clear Time (g_c+I1), s	31.0	46.1	19.0	10.8	4.5	28.5	17.6	25.3
Green Ext Time (p_c), s	0.0	4.8	0.0	1.1	0.0	11.2	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	53.0
HCM 6th LOS	D

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

E/W STREET : DOS PALMAS ROAD
N/S STREET : HIGHWAY 395
CONDITION : PM PEAK HOUR

INTERSECTION : 1
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Phase II Project Trips	Future + Project Condition
Scenario #	2		4		6	8		10		12
DOS PALMAS ROAD										
EB LEFT	102	0	102	7	109	109	2	111	0	111
EB THRU	56	20	76	4	60	80	1	61	21	82
EB RIGHT	18	0	18	1	19	19	0	19	0	19
WB LEFT	15	82	97	1	16	98	0	16	87	103
WB THRU	66	20	86	5	71	91	2	73	23	96
WB RIGHT	80	79	159	6	86	165	2	88	88	176
HIGHWAY 395										
NB LEFT	38	0	38	3	41	41	1	42	0	42
NB THRU	1584	20	1604	111	1695	1715	39	1734	23	1757
NB RIGHT	10	0	10	1	11	11	0	11	0	11
SB LEFT	168	113	281	12	180	293	4	184	115	299
SB THRU	1720	-53	1667	120	1840	1787	42	1882	-53	1829
SB RIGHT	157	0	157	11	168	168	4	172	0	172
TOTALS	**4014**	**281**	**4295**	**282**	**4296**	**4577**	**97**	**4393**	**304**	**4697**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TM	11-Mar-22	BHBA0000-0002	2	OF 2

E/W STREET : DOS PALMAS ROAD
N/S STREET : HIGHWAY 395
CONDITION : PM PEAK HOUR
PHF : 0.88

NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
42	381	40	0	4	2	0	0	0	0	15	0
40	417	38	0	4	2	0	0	0	0	10	0
51	475	60	0	4	0	0	0	0	0	10	0
24	380	25	0	4	1	0	2	0	0	14	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
3	321	10	0	2	0	0	2	0	0	15	0
0	368	5	1	6	0	0	1	0	0	23	0
0	417	6	1	5	0	0	1	0	0	21	0
4	344	16	1	5	0	0	0	0	0	15	0

EAST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
21	23	3	0	0	2	0	0	0	0	0	0
26	10	1	0	0	2	0	0	0	0	0	0
19	12	4	0	0	0	0	0	0	0	0	0
14	21	3	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
4	10	23	1	0	0	0	0	0	0	0	0
0	20	30	1	0	0	0	0	0	0	0	0
4	16	17	0	0	2	0	0	0	0	0	0
8	10	30	0	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
DOS PALMAS ROAD					
EB LEFT	2	100	**102**	**2%**	**102**
EB THRU	0	56	**56**	**0%**	**56**
EB RIGHT	2	16	**18**	**11%**	**18**
WB LEFT	4	11	**15**	**27%**	**15**
WB THRU	0	66	**66**	**0%**	**66**
WB RIGHT	0	80	**80**	**0%**	**80**
HIGHWAY 395					
NB LEFT	0	37	**37**	**0%**	**38**
NB THRU	96	1450	**1,546**	**6%**	**1,584**
NB RIGHT	3	7	**10**	**30%**	**10**
SB LEFT	5	163	**168**	**3%**	**168**
SB THRU	67	1653	**1,720**	**4%**	**1,720**
SB RIGHT	0	157	**157**	**0%**	**157**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	56	18	15	66	80	38	1584	10	168	1720	157
Future Volume (veh/h)	102	56	18	15	66	80	38	1584	10	168	1720	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1740	1786	1646	1396	1786	1786	1754	1716	1379	1727	1744	1786
Adj Flow Rate, veh/h	116	64	20	17	75	91	43	1800	11	191	1955	178
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	1	11	27	1	1	1	6	30	3	4	1
Cap, veh/h	114	309	241	18	86	105	242	1711	613	310	1749	157
Arrive On Green	0.07	0.17	0.17	0.01	0.12	0.12	0.29	1.00	1.00	0.19	0.57	0.57
Sat Flow, veh/h	1658	1786	1395	1329	734	891	1671	3260	1168	1644	3075	276
Grp Volume(v), veh/h	116	64	20	17	0	166	43	1800	11	191	1039	1094
Grp Sat Flow(s),veh/h/ln	1658	1786	1395	1329	0	1626	1671	1630	1168	1644	1657	1694
Q Serve(g_s), s	11.0	4.9	1.5	2.0	0.0	16.1	3.1	0.0	0.0	17.1	91.0	91.0
Cycle Q Clear(g_c), s	11.0	4.9	1.5	2.0	0.0	16.1	3.1	0.0	0.0	17.1	91.0	91.0
Prop In Lane	1.00		1.00	1.00		0.55	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	114	309	241	18	0	191	242	1711	613	310	942	964
V/C Ratio(X)	1.02	0.21	0.08	0.95	0.00	0.87	0.18	1.05	0.02	0.62	1.10	1.14
Avail Cap(c_a), veh/h	114	402	314	91	0	366	242	1711	613	310	942	964
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.59	0.59	0.59	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.5	56.8	32.4	78.9	0.0	69.4	49.7	0.0	0.0	59.6	34.5	34.5
Incr Delay (d2), s/veh	89.2	0.3	0.1	86.6	0.0	11.3	0.2	32.4	0.0	3.6	61.7	73.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	2.2	0.7	1.1	0.0	7.2	1.3	7.7	0.0	7.2	49.2	53.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	163.7	57.1	32.6	165.4	0.0	80.6	49.9	32.4	0.0	63.2	96.2	108.3
LnGrp LOS	F	E	C	F	A	F	D	F	A	E	F	F
Approach Vol, veh/h		200			183			1854			2324	
Approach Delay, s/veh		116.5			88.5			32.6			99.2	
Approach LOS		F			F			C			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.2	88.0	6.1	31.7	27.2	95.0	15.0	22.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	84.0	11.0	36.0	6.0	91.0	11.0	36.0
Max Q Clear Time (g_c+I1), s	19.1	2.0	4.0	6.9	5.1	93.0	13.0	18.1
Green Ext Time (p_c), s	0.0	22.7	0.0	0.3	0.0	0.0	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	72.4
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	76	18	97	86	159	38	1604	10	281	1667	157
Future Volume (veh/h)	102	76	18	97	86	159	38	1604	10	281	1667	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1740	1786	1646	1396	1786	1786	1754	1716	1379	1727	1744	1786
Adj Flow Rate, veh/h	116	86	20	110	98	181	43	1823	11	319	1894	178
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	1	11	27	1	1	1	6	30	3	4	1
Cap, veh/h	114	338	264	91	106	196	123	1711	613	193	1744	161
Arrive On Green	0.07	0.19	0.19	0.07	0.19	0.19	0.15	1.00	1.00	0.12	0.57	0.57
Sat Flow, veh/h	1658	1786	1395	1329	562	1037	1671	3260	1168	1644	3066	284
Grp Volume(v), veh/h	116	86	20	110	0	279	43	1823	11	319	1009	1063
Grp Sat Flow(s),veh/h/ln	1658	1786	1395	1329	0	1599	1671	1630	1168	1644	1657	1693
Q Serve(g_s), s	11.0	6.6	1.6	11.0	0.0	27.4	3.7	0.0	0.0	18.8	91.0	91.0
Cycle Q Clear(g_c), s	11.0	6.6	1.6	11.0	0.0	27.4	3.7	0.0	0.0	18.8	91.0	91.0
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	114	338	264	91	0	302	123	1711	613	193	942	963
V/C Ratio(X)	1.02	0.25	0.08	1.20	0.00	0.92	0.35	1.07	0.02	1.65	1.07	1.10
Avail Cap(c_a), veh/h	114	402	314	91	0	360	123	1711	613	193	942	963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.5	55.3	38.4	74.5	0.0	63.7	64.8	0.0	0.0	70.6	34.5	34.5
Incr Delay (d2), s/veh	89.2	0.4	0.1	158.8	0.0	26.3	1.7	41.5	0.1	316.6	50.4	61.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	3.0	0.7	7.8	0.0	13.3	1.6	9.9	0.0	24.6	46.3	50.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	163.7	55.7	38.5	233.3	0.0	90.0	66.5	41.5	0.1	387.2	84.9	96.2
LnGrp LOS	F	E	D	F	A	F	E	F	A	F	F	F
Approach Vol, veh/h		222			389			1877			2391	
Approach Delay, s/veh		110.6			130.6			41.8			130.2	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.8	88.0	15.0	34.2	15.8	95.0	15.0	34.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	84.0	11.0	36.0	6.0	91.0	11.0	36.0
Max Q Clear Time (g_c+I1), s	20.8	2.0	13.0	8.6	5.7	93.0	13.0	29.4
Green Ext Time (p_c), s	0.0	23.3	0.0	0.4	0.0	0.0	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	95.4
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	76	18	97	86	159	38	1604	10	281	1667	157
Future Volume (veh/h)	102	76	18	97	86	159	38	1604	10	281	1667	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1740	1786	1646	1396	1786	1786	1754	1716	1379	1727	1744	1786
Adj Flow Rate, veh/h	107	80	19	102	91	167	40	1688	11	296	1755	165
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	11	27	1	1	1	6	30	3	4	1
Cap, veh/h	88	355	82	71	220	196	70	2033	729	276	2111	196
Arrive On Green	0.05	0.13	0.13	0.05	0.13	0.13	0.02	0.62	0.62	0.09	0.69	0.69
Sat Flow, veh/h	1658	2739	630	1329	1697	1514	3241	3260	1168	3190	3066	284
Grp Volume(v), veh/h	107	49	50	102	91	167	40	1688	11	296	936	984
Grp Sat Flow(s),veh/h/ln	1658	1697	1673	1329	1697	1514	1621	1630	1168	1595	1657	1693
Q Serve(g_s), s	8.0	3.8	4.1	8.0	7.4	16.2	1.8	60.6	0.5	13.0	60.7	64.8
Cycle Q Clear(g_c), s	8.0	3.8	4.1	8.0	7.4	16.2	1.8	60.6	0.5	13.0	60.7	64.8
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	88	220	217	71	220	196	70	2033	729	276	1141	1166
V/C Ratio(X)	1.21	0.22	0.23	1.44	0.41	0.85	0.57	0.83	0.02	1.07	0.82	0.84
Avail Cap(c_a), veh/h	88	396	390	71	396	353	130	2033	729	276	1141	1166
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	58.5	58.6	71.0	60.0	63.9	72.7	22.0	10.7	68.5	16.7	17.4
Incr Delay (d2), s/veh	162.8	0.5	0.5	260.6	1.2	9.9	7.1	4.1	0.0	74.1	6.7	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	1.7	1.7	7.8	3.2	6.7	0.8	21.6	0.1	8.0	21.4	23.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	233.8	59.0	59.1	331.6	61.3	73.7	79.8	26.1	10.8	142.6	23.4	24.9
LnGrp LOS	F	E	E	F	E	E	E	C	B	F	C	C
Approach Vol, veh/h		206			360			1739			2216	
Approach Delay, s/veh		149.8			143.6			27.3			40.0	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	97.6	12.0	23.4	7.2	107.3	12.0	23.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	78.0	8.0	35.0	6.0	85.0	8.0	35.0
Max Q Clear Time (g_c+I1), s	15.0	62.6	10.0	6.1	3.8	66.8	10.0	18.2
Green Ext Time (p_c), s	0.0	9.8	0.0	0.5	0.0	12.2	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	48.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	56	18	15	66	80	38	1584	10	168	1720	157
Future Volume (veh/h)	102	56	18	15	66	80	38	1584	10	168	1720	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1740	1786	1646	1396	1786	1786	1754	1716	1379	1727	1744	1786
Adj Flow Rate, veh/h	107	59	19	16	69	84	40	1667	11	177	1811	165
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	11	27	1	1	1	6	30	3	4	1
Cap, veh/h	114	296	231	17	80	98	256	1711	613	324	1749	157
Arrive On Green	0.07	0.17	0.17	0.01	0.11	0.11	0.31	1.00	1.00	0.20	0.57	0.57
Sat Flow, veh/h	1658	1786	1395	1329	733	892	1671	3260	1168	1644	3075	276
Grp Volume(v), veh/h	107	59	19	16	0	153	40	1667	11	177	963	1013
Grp Sat Flow(s),veh/h/ln	1658	1786	1395	1329	0	1625	1671	1630	1168	1644	1657	1694
Q Serve(g_s), s	10.3	4.6	1.4	1.9	0.0	14.8	2.8	0.0	0.0	15.5	91.0	91.0
Cycle Q Clear(g_c), s	10.3	4.6	1.4	1.9	0.0	14.8	2.8	0.0	0.0	15.5	91.0	91.0
Prop In Lane	1.00		1.00	1.00		0.55	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	114	296	231	17	0	178	256	1711	613	324	942	964
V/C Ratio(X)	0.94	0.20	0.08	0.95	0.00	0.86	0.16	0.97	0.02	0.55	1.02	1.05
Avail Cap(c_a), veh/h	114	402	314	91	0	366	256	1711	613	324	942	964
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.2	57.6	32.3	78.9	0.0	70.0	48.0	0.0	0.0	57.8	34.5	34.5
Incr Delay (d2), s/veh	65.2	0.3	0.2	87.6	0.0	11.4	0.2	13.2	0.0	1.9	34.9	43.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	2.1	0.7	1.1	0.0	6.7	1.1	3.1	0.0	6.5	42.2	45.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	139.3	57.9	32.5	166.5	0.0	81.4	48.2	13.2	0.0	59.8	69.4	78.0
LnGrp LOS	F	E	C	F	A	F	D	B	A	E	F	F
Approach Vol, veh/h		185			169			1718			2153	
Approach Delay, s/veh		102.4			89.5			13.9			72.7	
Approach LOS		F			F			B			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.5	88.0	6.0	30.5	28.5	95.0	15.0	21.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	84.0	11.0	36.0	6.0	91.0	11.0	36.0
Max Q Clear Time (g_c+I1), s	17.5	2.0	3.9	6.6	4.8	93.0	12.3	16.8
Green Ext Time (p_c), s	0.0	19.1	0.0	0.3	0.0	0.0	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	50.8
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	80	19	98	91	165	41	1715	11	293	1787	168
Future Volume (veh/h)	109	80	19	98	91	165	41	1715	11	293	1787	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1740	1786	1646	1396	1786	1786	1754	1716	1379	1727	1744	1786
Adj Flow Rate, veh/h	115	84	20	103	96	174	43	1805	12	308	1881	177
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	11	27	1	1	1	6	30	3	4	1
Cap, veh/h	114	328	256	91	104	189	132	1711	613	202	1744	161
Arrive On Green	0.07	0.18	0.18	0.07	0.18	0.18	0.16	1.00	1.00	0.12	0.57	0.57
Sat Flow, veh/h	1658	1786	1395	1329	569	1031	1671	3260	1168	1644	3065	284
Grp Volume(v), veh/h	115	84	20	103	0	270	43	1805	12	308	1003	1055
Grp Sat Flow(s),veh/h/ln	1658	1786	1395	1329	0	1600	1671	1630	1168	1644	1657	1693
Q Serve(g_s), s	11.0	6.4	1.6	11.0	0.0	26.5	3.7	0.0	0.0	19.6	91.0	91.0
Cycle Q Clear(g_c), s	11.0	6.4	1.6	11.0	0.0	26.5	3.7	0.0	0.0	19.6	91.0	91.0
Prop In Lane	1.00		1.00	1.00		0.64	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	114	328	256	91	0	294	132	1711	613	202	942	963
V/C Ratio(X)	1.01	0.26	0.08	1.13	0.00	0.92	0.33	1.05	0.02	1.53	1.06	1.10
Avail Cap(c_a), veh/h	114	402	314	91	0	360	132	1711	613	202	942	963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.5	56.0	38.4	74.5	0.0	64.1	63.6	0.0	0.0	70.2	34.5	34.5
Incr Delay (d2), s/veh	86.8	0.4	0.1	132.6	0.0	25.0	1.4	37.8	0.1	260.7	47.9	58.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	2.9	0.7	7.1	0.0	12.7	1.5	9.0	0.0	22.6	45.7	49.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	161.3	56.4	38.5	207.1	0.0	89.2	65.0	37.8	0.1	330.9	82.4	93.4
LnGrp LOS	F	E	D	F	A	F	E	F	A	F	F	F
Approach Vol, veh/h		219			373			1860			2366	
Approach Delay, s/veh		109.8			121.7			38.2			119.7	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.6	88.0	15.0	33.4	16.6	95.0	15.0	33.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	84.0	11.0	36.0	6.0	91.0	11.0	36.0
Max Q Clear Time (g_c+I1), s	21.6	2.0	13.0	8.4	5.7	93.0	13.0	28.5
Green Ext Time (p_c), s	0.0	22.8	0.0	0.4	0.0	0.0	0.0	0.9

Intersection Summary	
HCM 6th Ctrl Delay	87.9
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	109	80	19	98	91	165	41	1715	11	293	1787	168
Future Volume (veh/h)	109	80	19	98	91	165	41	1715	11	293	1787	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1740	1786	1646	1396	1786	1786	1754	1716	1379	1727	1744	1786
Adj Flow Rate, veh/h	115	84	20	103	96	174	43	1805	12	308	1881	177
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	11	27	1	1	1	6	30	3	4	1
Cap, veh/h	88	368	85	71	228	204	72	2017	723	276	2095	194
Arrive On Green	0.05	0.13	0.13	0.05	0.13	0.13	0.02	0.62	0.62	0.09	0.68	0.68
Sat Flow, veh/h	1658	2738	631	1329	1697	1514	3241	3260	1168	3190	3065	284
Grp Volume(v), veh/h	115	51	53	103	96	174	43	1805	12	308	1003	1055
Grp Sat Flow(s),veh/h/ln	1658	1697	1672	1329	1697	1514	1621	1630	1168	1595	1657	1693
Q Serve(g_s), s	8.0	4.0	4.2	8.0	7.8	16.9	2.0	70.9	0.6	13.0	72.8	78.7
Cycle Q Clear(g_c), s	8.0	4.0	4.2	8.0	7.8	16.9	2.0	70.9	0.6	13.0	72.8	78.7
Prop In Lane	1.00		0.38	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	88	228	225	71	228	204	72	2017	723	276	1132	1157
V/C Ratio(X)	1.30	0.22	0.24	1.45	0.42	0.86	0.60	0.89	0.02	1.11	0.89	0.91
Avail Cap(c_a), veh/h	88	396	390	71	396	353	130	2017	723	276	1132	1157
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.0	57.9	58.0	71.0	59.6	63.5	72.7	24.4	11.0	68.5	19.1	20.0
Incr Delay (d2), s/veh	196.2	0.5	0.5	266.2	1.2	9.8	7.7	6.6	0.0	88.3	10.3	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	1.8	1.8	7.9	3.4	7.0	0.9	25.9	0.2	8.5	26.6	29.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	267.2	58.4	58.6	337.2	60.8	73.3	80.3	31.1	11.0	156.8	29.3	32.3
LnGrp LOS	F	E	E	F	E	E	F	C	B	F	C	C
Approach Vol, veh/h		219			373			1860			2366	
Approach Delay, s/veh		168.1			142.9			32.1			47.3	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	96.8	12.0	24.2	7.3	106.5	12.0	24.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	78.0	8.0	35.0	6.0	85.0	8.0	35.0
Max Q Clear Time (g_c+I1), s	15.0	72.9	10.0	6.2	4.0	80.7	10.0	18.9
Green Ext Time (p_c), s	0.0	4.1	0.0	0.5	0.0	3.8	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	54.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	61	19	16	73	88	42	1734	11	184	1882	172
Future Volume (veh/h)	111	61	19	16	73	88	42	1734	11	184	1882	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1740	1786	1646	1396	1786	1786	1754	1716	1379	1727	1744	1786
Adj Flow Rate, veh/h	117	64	20	17	77	93	44	1825	12	194	1981	181
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	11	27	1	1	1	6	30	3	4	1
Cap, veh/h	114	313	245	18	88	107	238	1711	613	306	1748	157
Arrive On Green	0.07	0.18	0.18	0.01	0.12	0.12	0.28	1.00	1.00	0.19	0.57	0.57
Sat Flow, veh/h	1658	1786	1395	1329	736	889	1671	3260	1168	1644	3074	277
Grp Volume(v), veh/h	117	64	20	17	0	170	44	1825	12	194	1053	1109
Grp Sat Flow(s),veh/h/ln	1658	1786	1395	1329	0	1626	1671	1630	1168	1644	1657	1694
Q Serve(g_s), s	11.0	4.9	1.5	2.0	0.0	16.4	3.2	0.0	0.0	17.4	91.0	91.0
Cycle Q Clear(g_c), s	11.0	4.9	1.5	2.0	0.0	16.4	3.2	0.0	0.0	17.4	91.0	91.0
Prop In Lane	1.00		1.00	1.00		0.55	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	114	313	245	18	0	195	238	1711	613	306	942	963
V/C Ratio(X)	1.03	0.20	0.08	0.95	0.00	0.87	0.18	1.07	0.02	0.63	1.12	1.15
Avail Cap(c_a), veh/h	114	402	314	91	0	366	238	1711	613	306	942	963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.61	0.61	0.61	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.5	56.4	32.4	78.9	0.0	69.2	50.2	0.0	0.0	60.1	34.5	34.5
Incr Delay (d2), s/veh	91.6	0.3	0.1	86.6	0.0	11.2	0.2	38.0	0.0	4.2	67.3	79.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	2.2	0.7	1.1	0.0	7.4	1.3	9.0	0.0	7.4	50.7	55.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	166.1	56.7	32.6	165.4	0.0	80.4	50.4	38.0	0.0	64.3	101.8	114.4
LnGrp LOS	F	E	C	F	A	F	D	F	A	E	F	F
Approach Vol, veh/h		201			187			1881			2356	
Approach Delay, s/veh		118.0			88.1			38.0			104.7	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.8	88.0	6.1	32.1	26.8	95.0	15.0	23.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	84.0	11.0	36.0	6.0	91.0	11.0	36.0
Max Q Clear Time (g_c+I1), s	19.4	2.0	4.0	6.9	5.2	93.0	13.0	18.4
Green Ext Time (p_c), s	0.0	23.4	0.0	0.3	0.0	0.0	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	77.5
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	82	19	103	96	176	42	1757	11	299	1829	172
Future Volume (veh/h)	111	82	19	103	96	176	42	1757	11	299	1829	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1740	1786	1646	1396	1786	1786	1754	1716	1379	1727	1744	1786
Adj Flow Rate, veh/h	117	86	20	108	101	185	44	1849	12	315	1925	181
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	11	27	1	1	1	6	30	3	4	1
Cap, veh/h	114	345	269	91	109	200	116	1711	613	186	1744	161
Arrive On Green	0.07	0.19	0.19	0.07	0.19	0.19	0.14	1.00	1.00	0.11	0.57	0.57
Sat Flow, veh/h	1658	1786	1395	1329	565	1035	1671	3260	1168	1644	3066	284
Grp Volume(v), veh/h	117	86	20	108	0	286	44	1849	12	315	1026	1080
Grp Sat Flow(s),veh/h/ln	1658	1786	1395	1329	0	1600	1671	1630	1168	1644	1657	1693
Q Serve(g_s), s	11.0	6.5	1.6	11.0	0.0	28.1	3.8	0.0	0.0	18.1	91.0	91.0
Cycle Q Clear(g_c), s	11.0	6.5	1.6	11.0	0.0	28.1	3.8	0.0	0.0	18.1	91.0	91.0
Prop In Lane	1.00		1.00	1.00		0.65	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	114	345	269	91	0	309	116	1711	613	186	942	963
V/C Ratio(X)	1.03	0.25	0.07	1.18	0.00	0.93	0.38	1.08	0.02	1.69	1.09	1.12
Avail Cap(c_a), veh/h	114	402	314	91	0	360	116	1711	613	186	942	963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	74.5	54.7	38.4	74.5	0.0	63.4	65.8	0.0	0.0	70.9	34.5	34.5
Incr Delay (d2), s/veh	91.6	0.4	0.1	151.1	0.0	27.2	2.0	47.0	0.1	333.6	56.6	68.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	3.0	0.7	7.6	0.0	13.7	1.6	11.2	0.0	24.7	47.9	52.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	166.1	55.1	38.5	225.6	0.0	90.7	67.8	47.0	0.1	404.6	91.1	103.1
LnGrp LOS	F	E	D	F	A	F	E	F	A	F	F	F
Approach Vol, veh/h		223			394			1905			2421	
Approach Delay, s/veh		111.9			127.7			47.2			137.2	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.1	88.0	15.0	34.9	15.1	95.0	15.0	34.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	84.0	11.0	36.0	6.0	91.0	11.0	36.0
Max Q Clear Time (g_c+I1), s	20.1	2.0	13.0	8.5	5.8	93.0	13.0	30.1
Green Ext Time (p_c), s	0.0	24.1	0.0	0.4	0.0	0.0	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	100.6
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	82	19	103	96	176	42	1757	11	299	1829	172
Future Volume (veh/h)	111	82	19	103	96	176	42	1757	11	299	1829	172
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1740	1786	1646	1396	1786	1786	1754	1716	1379	1727	1744	1786
Adj Flow Rate, veh/h	117	86	20	108	101	185	44	1849	12	315	1925	181
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	11	27	1	1	1	6	30	3	4	1
Cap, veh/h	133	390	88	106	241	215	253	2302	574	296	2303	215
Arrive On Green	0.08	0.14	0.14	0.08	0.14	0.14	0.15	0.49	0.49	0.18	0.52	0.52
Sat Flow, veh/h	1658	2751	620	1329	1697	1514	1671	4684	1168	1644	4429	414
Grp Volume(v), veh/h	117	52	54	108	101	185	44	1849	12	315	1376	730
Grp Sat Flow(s),veh/h/ln	1658	1697	1674	1329	1697	1514	1671	1561	1168	1644	1587	1669
Q Serve(g_s), s	10.5	4.1	4.3	12.0	8.1	17.9	3.4	49.7	0.8	27.0	55.1	55.9
Cycle Q Clear(g_c), s	10.5	4.1	4.3	12.0	8.1	17.9	3.4	49.7	0.8	27.0	55.1	55.9
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	133	241	238	106	241	215	253	2302	574	296	1650	868
V/C Ratio(X)	0.88	0.22	0.23	1.02	0.42	0.86	0.17	0.80	0.02	1.06	0.83	0.84
Avail Cap(c_a), veh/h	133	396	391	106	396	353	253	2302	574	296	1650	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.3	57.0	57.1	69.0	58.7	62.9	55.5	32.0	19.6	61.5	30.5	30.7
Incr Delay (d2), s/veh	44.9	0.4	0.5	91.5	1.2	11.2	0.3	3.1	0.1	70.3	5.1	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	1.8	1.8	6.7	3.6	7.5	1.4	18.1	0.2	16.7	20.6	23.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.2	57.4	57.6	160.5	59.9	74.1	55.8	35.1	19.7	131.8	35.6	40.4
LnGrp LOS	F	E	E	F	E	E	E	D	B	F	D	D
Approach Vol, veh/h		223			394			1905			2421	
Approach Delay, s/veh		86.7			94.2			35.5			49.6	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	77.7	16.0	25.3	26.7	82.0	16.0	25.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	27.0	60.0	12.0	35.0	9.0	78.0	12.0	35.0
Max Q Clear Time (g_c+I1), s	29.0	51.7	14.0	6.3	5.4	57.9	12.5	19.9
Green Ext Time (p_c), s	0.0	6.3	0.0	0.5	0.0	13.5	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	49.4
HCM 6th LOS	D

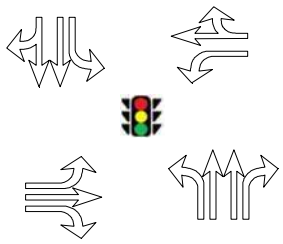
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

E/W STREET : LUNA ROAD
N/S STREET : HIGHWAY 395
CONDITION : AM PEAK HOUR

INTERSECTION : 2
PROJECTED GROWTH PER YEAR : 3.5%

CONDITION DIAGRAMS



EXISTING GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Combined Project Trips	Future + Project Condition
Scenario #	1		3		5	7		9		11
LUNA ROAD										
EB LEFT	5	0	5	0	5	5	0	5	0	5
EB THRU	25	21	46	2	27	48	1	28	24	52
EB RIGHT	11	0	11	1	12	12	0	12	0	12
WB LEFT	79	10	89	6	85	95	2	87	11	98
WB THRU	17	20	37	1	18	38	0	18	21	39
WB RIGHT	132	0	132	9	141	141	3	144	0	144
HIGHWAY 395										
NB LEFT	7	0	7	0	7	7	0	7	0	7
NB THRU	1226	42	1268	86	1312	1354	30	1342	48	1390
NB RIGHT	98	0	98	7	105	105	2	107	0	107
SB LEFT	68	0	68	5	73	73	2	75	0	75
SB THRU	1273	29	1302	89	1362	1391	31	1393	30	1423
SB RIGHT	10	0	10	1	11	11	0	11	0	11
TOTALS	**2951**	**122**	**3073**	**207**	**3158**	**3280**	**71**	**3229**	**134**	**3363**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TM	11-Mar-22	BHBA0000-0002	2	OF 2

E/W STREET : LUNA ROAD
CONDITION : AM PEAK HOUR

N/S STREET : HIGHWAY 395
PHF : 0.89

NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
1	286	20	0	4	0	0	0	0	0	9	0
4	291	14	0	4	0	0	2	0	0	16	0
2	338	21	0	3	0	0	2	0	0	23	0
3	231	10	0	5	0	0	0	0	0	10	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
30	248	2	1	4	0	0	2	0	0	23	0
23	344	1	3	3	0	0	2	0	0	20	0
23	300	1	2	5	0	0	1	0	0	15	0
16	238	1	0	5	2	0	1	0	0	15	0

EAST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
40	2	16	0	0	0	0	0	0	0	0	0
44	5	20	0	0	0	0	0	0	0	0	0
38	5	27	0	0	0	0	0	0	0	0	0
10	5	16	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
3	4	1	0	0	0	0	0	0	0	0	0
4	8	1	0	0	0	0	0	0	0	0	0
0	8	0	2	0	0	0	0	0	0	0	0
0	5	3	2	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
LUNA ROAD					
EB LEFT	0	5	**5**	**0%**	**5**
EB THRU	0	25	**25**	**0%**	**25**
EB RIGHT	4	7	**11**	**36%**	**11**
WB LEFT	0	79	**79**	**0%**	**79**
WB THRU	0	17	**17**	**0%**	**17**
WB RIGHT	0	132	**132**	**0%**	**132**
HIGHWAY 395					
NB LEFT	2	5	**7**	**29%**	**7**
NB THRU	96	1130	**1226**	**8%**	**1,226**
NB RIGHT	6	92	**98**	**6%**	**98**
SB LEFT	0	65	**65**	**0%**	**68**
SB THRU	78	1146	**1224**	**6%**	**1,273**
SB RIGHT	0	10	**10**	**0%**	**10**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	25	11	79	17	132	7	1226	98	68	1273	10
Future Volume (veh/h)	5	25	11	79	17	132	7	1226	98	68	1273	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1295	1872	1872	1768	1393	1688	1685	1800	1716	1800
Adj Flow Rate, veh/h	6	28	12	89	19	148	8	1378	110	76	1430	11
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	36	0	0	0	29	8	6	0	6	0
Cap, veh/h	106	235	144	238	24	187	11	1344	598	576	2435	1139
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.01	0.42	0.42	0.34	0.75	0.75
Sat Flow, veh/h	1238	1800	1097	1444	184	1431	1327	3207	1428	1714	3260	1525
Grp Volume(v), veh/h	6	28	12	89	0	167	8	1378	110	76	1430	11
Grp Sat Flow(s),veh/h/ln	1238	1800	1097	1444	0	1614	1327	1603	1428	1714	1630	1525
Q Serve(g_s), s	0.5	1.4	1.0	6.1	0.0	10.5	0.6	44.0	5.1	3.2	20.8	0.2
Cycle Q Clear(g_c), s	11.0	1.4	1.0	7.5	0.0	10.5	0.6	44.0	5.1	3.2	20.8	0.2
Prop In Lane	1.00		1.00	1.00		0.89	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	235	144	238	0	211	11	1344	598	576	2435	1139
V/C Ratio(X)	0.06	0.12	0.08	0.37	0.00	0.79	0.76	1.03	0.18	0.13	0.59	0.01
Avail Cap(c_a), veh/h	451	737	449	640	0	661	76	1344	598	576	2435	1139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.71	0.71	0.71
Uniform Delay (d), s/veh	49.6	40.3	40.1	43.6	0.0	44.2	52.0	30.5	19.2	24.2	6.0	3.4
Incr Delay (d2), s/veh	0.2	0.2	0.2	1.0	0.0	6.5	70.9	31.3	0.7	0.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.6	0.3	2.2	0.0	4.5	0.4	20.8	1.7	1.2	4.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	40.5	40.3	44.6	0.0	50.8	122.9	61.8	19.9	24.3	6.7	3.4
LnGrp LOS	D	D	D	D	A	D	F	F	B	C	A	A
Approach Vol, veh/h		46			256			1496			1517	
Approach Delay, s/veh		41.7			48.6			59.0			7.6	
Approach LOS		D			D			E			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	89.3	48.0		17.7	4.8	82.4		17.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	44.0		43.0	6.0	44.0		43.0
Max Q Clear Time (g_c+I1), s	15.2	46.0		13.0	2.6	22.8		12.5
Green Ext Time (p_c), s	0.0	0.0		0.1	0.0	9.9		1.2

Intersection Summary	
HCM 6th Ctrl Delay	34.4
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	46	11	89	37	132	7	1268	98	68	1302	10
Future Volume (veh/h)	5	46	11	89	37	132	7	1268	98	68	1302	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1295	1872	1872	1768	1393	1688	1685	1800	1716	1800
Adj Flow Rate, veh/h	6	52	12	100	42	148	8	1425	110	76	1463	11
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	36	0	0	0	29	8	6	0	6	0
Cap, veh/h	108	259	158	236	52	184	11	1344	598	553	2392	1119
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.01	0.42	0.42	0.32	0.73	0.73
Sat Flow, veh/h	1212	1800	1097	1413	363	1279	1327	3207	1428	1714	3260	1525
Grp Volume(v), veh/h	6	52	12	100	0	190	8	1425	110	76	1463	11
Grp Sat Flow(s),veh/h/ln	1212	1800	1097	1413	0	1642	1327	1603	1428	1714	1630	1525
Q Serve(g_s), s	0.5	2.7	1.0	7.0	0.0	11.8	0.6	44.0	5.1	3.3	22.8	0.2
Cycle Q Clear(g_c), s	12.3	2.7	1.0	9.7	0.0	11.8	0.6	44.0	5.1	3.3	22.8	0.2
Prop In Lane	1.00		1.00	1.00		0.78	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	259	158	236	0	237	11	1344	598	553	2392	1119
V/C Ratio(X)	0.06	0.20	0.08	0.42	0.00	0.80	0.76	1.06	0.18	0.14	0.61	0.01
Avail Cap(c_a), veh/h	429	737	449	611	0	672	76	1344	598	553	2392	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	39.6	38.9	43.9	0.0	43.5	52.0	30.5	19.2	25.2	6.8	3.8
Incr Delay (d2), s/veh	0.2	0.4	0.2	1.2	0.0	6.3	70.9	42.3	0.7	0.1	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.2	0.3	2.5	0.0	5.1	0.4	22.9	1.7	1.3	5.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.6	40.0	39.1	45.1	0.0	49.7	122.9	72.8	19.9	25.3	7.9	3.8
LnGrp LOS	D	D	D	D	A	D	F	F	B	C	A	A
Approach Vol, veh/h		70			290			1543			1550	
Approach Delay, s/veh		40.6			48.1			69.3			8.8	
Approach LOS		D			D			E			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	37.9	48.0		19.1	4.8	81.0		19.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	44.0		43.0	6.0	44.0		43.0
Max Q Clear Time (g_c+I1), s	15.3	46.0		14.3	2.6	24.8		13.8
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	9.6		1.4

Intersection Summary	
HCM 6th Ctrl Delay	39.8
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	25	11	79	17	132	7	1226	98	68	1273	10
Future Volume (veh/h)	5	25	11	79	17	132	7	1226	98	68	1273	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1295	1872	1872	1768	1393	1688	1685	1800	1716	1800
Adj Flow Rate, veh/h	5	26	12	83	18	139	7	1291	103	72	1340	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	36	0	0	0	29	8	6	0	6	0
Cap, veh/h	106	223	136	230	23	177	9	1344	598	587	2460	1151
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.01	0.42	0.42	0.34	0.75	0.75
Sat Flow, veh/h	1249	1800	1097	1447	185	1430	1327	3207	1428	1714	3260	1525
Grp Volume(v), veh/h	5	26	12	83	0	157	7	1291	103	72	1340	11
Grp Sat Flow(s),veh/h/ln	1249	1800	1097	1447	0	1615	1327	1603	1428	1714	1630	1525
Q Serve(g_s), s	0.4	1.3	1.0	5.7	0.0	9.9	0.6	41.1	4.7	3.0	18.0	0.2
Cycle Q Clear(g_c), s	10.3	1.3	1.0	7.0	0.0	9.9	0.6	41.1	4.7	3.0	18.0	0.2
Prop In Lane	1.00		1.00	1.00		0.89	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	106	223	136	230	0	200	9	1344	598	587	2460	1151
V/C Ratio(X)	0.05	0.12	0.09	0.36	0.00	0.78	0.75	0.96	0.17	0.12	0.54	0.01
Avail Cap(c_a), veh/h	462	737	449	643	0	661	76	1344	598	587	2460	1151
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.77	0.77	0.77
Uniform Delay (d), s/veh	49.6	40.9	40.7	44.0	0.0	44.6	52.0	29.7	19.1	23.7	5.4	3.2
Incr Delay (d2), s/veh	0.2	0.2	0.3	1.0	0.0	6.6	75.0	16.8	0.6	0.1	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.6	0.3	2.0	0.0	4.2	0.4	17.1	1.5	1.1	3.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	41.1	41.0	44.9	0.0	51.2	127.1	46.5	19.7	23.8	6.0	3.2
LnGrp LOS	D	D	D	D	A	D	F	D	B	C	A	A
Approach Vol, veh/h		43			240			1401			1423	
Approach Delay, s/veh		42.1			49.0			44.9			6.9	
Approach LOS		D			D			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.0	48.0		17.0	4.7	83.2		17.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	44.0		43.0	6.0	44.0		43.0
Max Q Clear Time (g_c+I1), s	5.0	43.1		12.3	2.6	20.0		11.9
Green Ext Time (p_c), s	0.0	0.7		0.1	0.0	9.6		1.1

Intersection Summary	
HCM 6th Ctrl Delay	27.8
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	48	12	95	38	141	7	1354	105	73	1391	11
Future Volume (veh/h)	5	48	12	95	38	141	7	1354	105	73	1391	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1295	1872	1872	1768	1393	1688	1685	1800	1716	1800
Adj Flow Rate, veh/h	5	51	13	100	40	148	7	1425	111	77	1464	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	36	0	0	0	29	8	6	0	6	0
Cap, veh/h	107	257	157	235	50	185	9	1344	598	555	2398	1122
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.01	0.42	0.42	0.32	0.74	0.74
Sat Flow, veh/h	1214	1800	1097	1413	349	1291	1327	3207	1428	1714	3260	1525
Grp Volume(v), veh/h	5	51	13	100	0	188	7	1425	111	77	1464	12
Grp Sat Flow(s),veh/h/ln	1214	1800	1097	1413	0	1640	1327	1603	1428	1714	1630	1525
Q Serve(g_s), s	0.4	2.6	1.1	7.1	0.0	11.7	0.6	44.0	5.1	3.3	22.6	0.2
Cycle Q Clear(g_c), s	12.1	2.6	1.1	9.7	0.0	11.7	0.6	44.0	5.1	3.3	22.6	0.2
Prop In Lane	1.00		1.00	1.00		0.79	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	257	157	235	0	235	9	1344	598	555	2398	1122
V/C Ratio(X)	0.05	0.20	0.08	0.42	0.00	0.80	0.75	1.06	0.19	0.14	0.61	0.01
Avail Cap(c_a), veh/h	431	737	449	612	0	671	76	1344	598	555	2398	1122
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	39.7	39.0	43.9	0.0	43.6	52.0	30.5	19.2	25.1	6.7	3.7
Incr Delay (d2), s/veh	0.2	0.4	0.2	1.2	0.0	6.3	75.0	42.3	0.7	0.1	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.2	0.3	2.5	0.0	5.0	0.4	22.9	1.7	1.3	5.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.6	40.1	39.2	45.2	0.0	49.8	127.1	72.8	19.9	25.3	7.8	3.7
LnGrp LOS	D	D	D	D	A	D	F	F	B	C	A	A
Approach Vol, veh/h		69			288			1543			1553	
Approach Delay, s/veh		40.6			48.2			69.3			8.7	
Approach LOS		D			D			E			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	38.0	48.0		19.0	4.7	81.2		19.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	44.0		43.0	6.0	44.0		43.0
Max Q Clear Time (g_c+I1), s	15.3	46.0		14.1	2.6	24.6		13.7
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	9.7		1.4

Intersection Summary	
HCM 6th Ctrl Delay	39.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	28	12	87	18	144	7	1342	107	75	1393	11
Future Volume (veh/h)	5	28	12	87	18	144	7	1342	107	75	1393	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1295	1872	1872	1768	1393	1688	1685	1800	1716	1800
Adj Flow Rate, veh/h	6	31	13	98	20	162	8	1508	120	84	1565	12
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	36	0	0	0	29	8	6	0	6	0
Cap, veh/h	107	254	155	250	25	202	11	1344	598	558	2402	1124
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.01	0.42	0.42	0.33	0.74	0.74
Sat Flow, veh/h	1221	1800	1097	1439	177	1436	1327	3207	1428	1714	3260	1525
Grp Volume(v), veh/h	6	31	13	98	0	182	8	1508	120	84	1565	12
Grp Sat Flow(s),veh/h/ln	1221	1800	1097	1439	0	1613	1327	1603	1428	1714	1630	1525
Q Serve(g_s), s	0.5	1.6	1.1	6.7	0.0	11.5	0.6	44.0	5.6	3.6	25.5	0.2
Cycle Q Clear(g_c), s	12.0	1.6	1.1	8.3	0.0	11.5	0.6	44.0	5.6	3.6	25.5	0.2
Prop In Lane	1.00		1.00	1.00		0.89	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	254	155	250	0	227	11	1344	598	558	2402	1124
V/C Ratio(X)	0.06	0.12	0.08	0.39	0.00	0.80	0.76	1.12	0.20	0.15	0.65	0.01
Avail Cap(c_a), veh/h	435	737	449	636	0	661	76	1344	598	558	2402	1124
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.62	0.62	0.62
Uniform Delay (d), s/veh	49.5	39.4	39.2	43.1	0.0	43.7	52.0	30.5	19.3	25.1	7.0	3.7
Incr Delay (d2), s/veh	0.2	0.2	0.2	1.0	0.0	6.4	70.9	65.4	0.8	0.1	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.7	0.3	2.4	0.0	4.9	0.4	27.2	1.8	1.4	5.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.7	39.6	39.4	44.1	0.0	50.1	122.9	95.9	20.1	25.2	7.9	3.7
LnGrp LOS	D	D	D	D	A	D	F	F	C	C	A	A
Approach Vol, veh/h		50			280			1636			1661	
Approach Delay, s/veh		40.8			48.0			90.4			8.7	
Approach LOS		D			D			F			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	38.2	48.0		18.8	4.8	81.4		18.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	44.0		43.0	6.0	44.0		43.0
Max Q Clear Time (g_c+I1), s	15.6	46.0		14.0	2.6	27.5		13.5
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	9.5		1.3

Intersection Summary	
HCM 6th Ctrl Delay	49.0
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	52	12	98	39	144	7	1390	107	75	1423	11
Future Volume (veh/h)	5	52	12	98	39	144	7	1390	107	75	1423	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1295	1872	1872	1768	1393	1688	1685	1800	1716	1800
Adj Flow Rate, veh/h	5	55	13	103	41	152	7	1463	113	79	1498	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	36	0	0	0	29	8	6	0	6	0
Cap, veh/h	108	263	161	237	51	189	9	1344	598	549	2387	1117
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.01	0.42	0.42	0.32	0.73	0.73
Sat Flow, veh/h	1209	1800	1097	1408	348	1291	1327	3207	1428	1714	3260	1525
Grp Volume(v), veh/h	5	55	13	103	0	193	7	1463	113	79	1498	12
Grp Sat Flow(s),veh/h/ln	1209	1800	1097	1408	0	1640	1327	1603	1428	1714	1630	1525
Q Serve(g_s), s	0.4	2.8	1.1	7.3	0.0	12.0	0.6	44.0	5.2	3.4	23.9	0.2
Cycle Q Clear(g_c), s	12.4	2.8	1.1	10.1	0.0	12.0	0.6	44.0	5.2	3.4	23.9	0.2
Prop In Lane	1.00		1.00	1.00		0.79	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	108	263	161	237	0	240	9	1344	598	549	2387	1117
V/C Ratio(X)	0.05	0.21	0.08	0.44	0.00	0.80	0.75	1.09	0.19	0.14	0.63	0.01
Avail Cap(c_a), veh/h	426	737	449	607	0	671	76	1344	598	549	2387	1117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	39.5	38.7	43.9	0.0	43.4	52.0	30.5	19.2	25.4	7.0	3.8
Incr Delay (d2), s/veh	0.2	0.4	0.2	1.3	0.0	6.2	75.0	52.5	0.7	0.1	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.3	0.3	2.6	0.0	5.1	0.4	24.8	1.7	1.3	5.7	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.5	39.9	38.9	45.2	0.0	49.6	127.1	83.0	19.9	25.5	8.2	3.8
LnGrp LOS	D	D	D	D	A	D	F	F	B	C	A	A
Approach Vol, veh/h		73			296			1583			1589	
Approach Delay, s/veh		40.4			48.1			78.7			9.0	
Approach LOS		D			D			E			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	37.6	48.0		19.4	4.7	80.9		19.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	44.0		43.0	6.0	44.0		43.0
Max Q Clear Time (g_c+I1), s	15.4	46.0		14.4	2.6	25.9		14.0
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	9.6		1.4

Intersection Summary	
HCM 6th Ctrl Delay	44.1
HCM 6th LOS	D

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

E/W STREET : LUNA ROAD
N/S STREET : HIGHWAY 395
CONDITION : PM PEAK HOUR

INTERSECTION : 2
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Phase II Project Trips	Future + Project Condition
Scenario #	2		4		6	8		10		12
LUNA ROAD										
EB LEFT	3	0	3	0	3	3	0	3	0	3
EB THRU	66	20	86	5	71	91	2	73	21	94
EB RIGHT	17	0	17	1	18	18	0	18	0	18
WB LEFT	55	10	65	4	59	69	1	60	12	72
WB THRU	65	20	85	5	70	90	2	72	23	95
WB RIGHT	98	0	98	7	105	105	2	107	0	107
HIGHWAY 395										
NB LEFT	3	0	3	0	3	3	0	3	0	3
NB THRU	1531	40	1571	107	1638	1678	37	1675	42	1717
NB RIGHT	86	0	86	6	92	92	2	94	0	94
SB LEFT	67	0	67	5	72	72	2	74	0	74
SB THRU	1660	29	1689	116	1776	1805	41	1817	34	1851
SB RIGHT	26	0	26	2	28	28	1	29	0	29
TOTALS	**3677**	**119**	**3796**	**258**	**3935**	**4054**	**90**	**4025**	**132**	**4157**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TM	11-Mar-22	BHBA0000-0002	2	OF 2

E/W STREET : LUNA ROAD
CONDITION : PM PEAK HOUR

N/S STREET : HIGHWAY 395
PHF : 0.91

NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
8	371	11	0	3	1	0	0	0	0	15	0
6	396	20	0	4	0	0	0	0	0	10	0
6	461	12	0	4	1	0	2	0	0	10	0
6	360	21	0	5	1	0	3	0	0	14	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
20	346	0	0	2	0	0	2	0	0	16	0
20	350	1	0	5	0	0	2	0	0	22	0
14	401	1	0	5	0	0	0	0	0	20	0
21	340	1	0	4	0	0	0	0	0	16	0

EAST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
25	14	15	0	0	0	0	0	0	0	0	0
22	13	9	0	0	1	0	0	0	0	0	0
25	10	9	0	0	1	0	0	0	0	0	0
26	10	5	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
4	16	0	0	0	0	0	0	0	0	0	0
2	14	2	1	0	0	0	0	0	0	0	0
4	10	1	0	0	0	0	0	0	0	0	0
5	16	0	1	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
LUNA ROAD					
EB LEFT	0	3	**3**	**0%**	**3**
EB THRU	0	56	**56**	**0%**	**66**
EB RIGHT	2	15	**17**	**12%**	**17**
WB LEFT	2	38	**40**	**5%**	**55**
WB THRU	0	47	**47**	**0%**	**65**
WB RIGHT	0	98	**98**	**0%**	**98**
HIGHWAY 395					
NB LEFT	0	3	**3**	**0%**	**3**
NB THRU	94	1437	**1531**	**6%**	**1,531**
NB RIGHT	0	75	**75**	**0%**	**86**
SB LEFT	3	64	**67**	**4%**	**67**
SB THRU	70	1588	**1658**	**4%**	**1,660**
SB RIGHT	0	26	**26**	**0%**	**26**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	66	17	55	65	98	3	1531	86	67	1660	26
Future Volume (veh/h)	3	66	17	55	65	98	3	1531	86	67	1660	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1632	1799	1872	1768	1800	1716	1768	1744	1744	1800
Adj Flow Rate, veh/h	4	78	20	65	76	115	4	1801	101	79	1953	31
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	12	5	0	0	0	6	0	4	4	0
Cap, veh/h	69	236	181	166	88	133	7	1936	890	333	2617	1205
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.00	0.59	0.59	0.40	1.00	1.00
Sat Flow, veh/h	1211	1800	1383	1317	672	1017	1714	3260	1498	1661	3313	1525
Grp Volume(v), veh/h	4	78	20	65	0	191	4	1801	101	79	1953	31
Grp Sat Flow(s),veh/h/ln	1211	1800	1383	1317	0	1689	1714	1630	1498	1661	1657	1525
Q Serve(g_s), s	0.5	6.3	2.0	7.5	0.0	17.7	0.4	80.2	4.7	5.0	0.0	0.0
Cycle Q Clear(g_c), s	18.2	6.3	2.0	13.8	0.0	17.7	0.4	80.2	4.7	5.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	236	181	166	0	221	7	1936	890	333	2617	1205
V/C Ratio(X)	0.06	0.33	0.11	0.39	0.00	0.86	0.57	0.93	0.11	0.24	0.75	0.03
Avail Cap(c_a), veh/h	236	484	372	347	0	454	64	1936	890	333	2617	1205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.24	0.24	0.24
Uniform Delay (d), s/veh	77.1	63.2	61.3	69.4	0.0	68.1	79.5	29.5	14.2	39.9	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.8	0.3	1.5	0.0	9.6	57.5	9.5	0.3	0.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.9	0.7	2.6	0.0	8.2	0.3	30.8	1.6	1.9	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.4	64.0	61.6	71.0	0.0	77.8	137.1	39.0	14.4	39.9	0.5	0.0
LnGrp LOS	E	E	E	E	A	E	F	D	B	D	A	A
Approach Vol, veh/h		102			256			1906			2063	
Approach Delay, s/veh		64.0			76.0			37.9			2.0	
Approach LOS		E			E			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	36.0	99.0		25.0	4.7	130.4		25.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	95.0		43.0	6.0	99.0		43.0
Max Q Clear Time (g_c+I1), s	7.0	82.2		20.2	2.4	2.0		19.7
Green Ext Time (p_c), s	0.0	9.2		0.4	0.0	28.5		1.2

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	86	17	65	85	98	3	1571	86	67	1689	26
Future Volume (veh/h)	3	86	17	65	85	98	3	1571	86	67	1689	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1632	1799	1872	1768	1800	1716	1768	1744	1744	1800
Adj Flow Rate, veh/h	4	101	20	76	100	115	4	1848	101	79	1987	31
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	0	12	5	0	0	0	6	0	4	4	0
Cap, veh/h	70	260	200	166	115	132	7	1936	890	310	2573	1185
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.00	0.59	0.59	0.37	1.00	1.00
Sat Flow, veh/h	1185	1800	1383	1290	794	913	1714	3260	1498	1661	3313	1525
Grp Volume(v), veh/h	4	101	20	76	0	215	4	1848	101	79	1987	31
Grp Sat Flow(s),veh/h/ln	1185	1800	1383	1290	0	1708	1714	1630	1498	1661	1657	1525
Q Serve(g_s), s	0.5	8.1	2.0	9.1	0.0	19.7	0.4	85.1	4.7	5.3	0.0	0.0
Cycle Q Clear(g_c), s	20.3	8.1	2.0	17.2	0.0	19.7	0.4	85.1	4.7	5.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.53	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	70	260	200	166	0	246	7	1936	890	310	2573	1185
V/C Ratio(X)	0.06	0.39	0.10	0.46	0.00	0.87	0.57	0.95	0.11	0.25	0.77	0.03
Avail Cap(c_a), veh/h	217	484	372	326	0	459	64	1936	890	310	2573	1185
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.9	62.1	59.4	69.9	0.0	67.0	79.5	30.5	14.2	42.4	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.9	0.2	2.0	0.0	9.3	57.5	12.3	0.3	0.4	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.8	0.7	3.1	0.0	9.2	0.3	33.2	1.6	2.1	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.3	63.0	59.6	71.8	0.0	76.3	137.1	42.7	14.4	42.8	2.3	0.0
LnGrp LOS	E	E	E	E	A	E	F	D	B	D	A	A
Approach Vol, veh/h		125			291			1953			2097	
Approach Delay, s/veh		62.9			75.1			41.5			3.8	
Approach LOS		E			E			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	33.9	99.0		27.1	4.7	128.3		27.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	95.0		43.0	6.0	99.0		43.0
Max Q Clear Time (g_c+I1), s	7.3	87.1		22.3	2.4	2.0		21.7
Green Ext Time (p_c), s	0.0	6.3		0.5	0.0	29.7		1.4

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	66	17	55	65	98	3	1531	86	67	1660	26
Future Volume (veh/h)	3	66	17	55	65	98	3	1531	86	67	1660	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1632	1799	1872	1768	1800	1716	1768	1744	1744	1800
Adj Flow Rate, veh/h	3	69	18	58	68	103	3	1612	91	71	1747	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	12	5	0	0	0	6	0	4	4	0
Cap, veh/h	69	214	164	156	80	121	5	1936	890	353	2661	1225
Arrive On Green	0.12	0.12	0.12	0.12	0.12	0.12	0.00	0.59	0.59	0.43	1.00	1.00
Sat Flow, veh/h	1233	1800	1383	1330	672	1017	1714	3260	1498	1661	3313	1525
Grp Volume(v), veh/h	3	69	18	58	0	171	3	1612	91	71	1747	27
Grp Sat Flow(s),veh/h/ln	1233	1800	1383	1330	0	1689	1714	1630	1498	1661	1657	1525
Q Serve(g_s), s	0.4	5.6	1.9	6.7	0.0	15.9	0.3	63.6	4.2	4.3	0.0	0.0
Cycle Q Clear(g_c), s	16.3	5.6	1.9	12.3	0.0	15.9	0.3	63.6	4.2	4.3	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	214	164	156	0	200	5	1936	890	353	2661	1225
V/C Ratio(X)	0.04	0.32	0.11	0.37	0.00	0.85	0.56	0.83	0.10	0.20	0.66	0.02
Avail Cap(c_a), veh/h	254	484	372	356	0	454	64	1936	890	353	2661	1225
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.40	0.40	0.40
Uniform Delay (d), s/veh	77.1	64.6	63.0	70.3	0.0	69.1	79.6	26.1	14.1	37.4	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.9	0.3	1.5	0.0	9.8	68.8	4.4	0.2	0.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.6	0.7	2.3	0.0	7.4	0.2	23.5	1.4	1.7	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.4	65.5	63.3	71.7	0.0	79.0	148.5	30.5	14.3	37.5	0.5	0.0
LnGrp LOS	E	E	E	E	A	E	F	C	B	D	A	A
Approach Vol, veh/h		90			229			1706			1845	
Approach Delay, s/veh		65.4			77.2			29.8			1.9	
Approach LOS		E			E			C			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.0	99.0		23.0	4.5	132.5		23.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	95.0		43.0	6.0	99.0		43.0
Max Q Clear Time (g_c+I1), s	16.3	65.6		18.3	2.3	2.0		17.9
Green Ext Time (p_c), s	0.0	14.0		0.3	0.0	21.6		1.1

Intersection Summary	
HCM 6th Ctrl Delay	20.2
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	91	18	69	90	105	3	1678	92	72	1805	28
Future Volume (veh/h)	3	91	18	69	90	105	3	1678	92	72	1805	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1632	1799	1872	1768	1800	1716	1768	1744	1744	1800
Adj Flow Rate, veh/h	3	96	19	73	95	111	3	1766	97	76	1900	29
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	12	5	0	0	0	6	0	4	4	0
Cap, veh/h	70	250	192	162	109	128	5	1936	890	319	2594	1194
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.00	0.59	0.59	0.38	1.00	1.00
Sat Flow, veh/h	1195	1800	1383	1297	787	920	1714	3260	1498	1661	3313	1525
Grp Volume(v), veh/h	3	96	19	73	0	206	3	1766	97	76	1900	29
Grp Sat Flow(s),veh/h/ln	1195	1800	1383	1297	0	1706	1714	1630	1498	1661	1657	1525
Q Serve(g_s), s	0.4	7.8	1.9	8.7	0.0	18.9	0.3	76.8	4.5	5.0	0.0	0.0
Cycle Q Clear(g_c), s	19.3	7.8	1.9	16.4	0.0	18.9	0.3	76.8	4.5	5.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.54	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	70	250	192	162	0	237	5	1936	890	319	2594	1194
V/C Ratio(X)	0.04	0.38	0.10	0.45	0.00	0.87	0.56	0.91	0.11	0.24	0.73	0.02
Avail Cap(c_a), veh/h	225	484	372	331	0	459	64	1936	890	319	2594	1194
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.9	62.7	60.1	70.1	0.0	67.5	79.6	28.8	14.1	41.3	0.0	0.0
Incr Delay (d2), s/veh	0.3	1.0	0.2	1.9	0.0	9.4	68.8	8.0	0.2	0.4	1.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.6	0.7	3.0	0.0	8.8	0.2	29.2	1.5	1.9	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.2	63.6	60.4	72.1	0.0	76.8	148.5	36.9	14.4	41.7	1.9	0.0
LnGrp LOS	E	E	E	E	A	E	F	D	B	D	A	A
Approach Vol, veh/h		118			279			1866			2005	
Approach Delay, s/veh		63.4			75.6			35.9			3.4	
Approach LOS		E			E			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	34.8	99.0		26.2	4.5	129.3		26.2
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	95.0		43.0	6.0	99.0		43.0
Max Q Clear Time (g_c+I1), s	17.3	78.8		21.3	2.3	2.0		20.9
Green Ext Time (p_c), s	0.0	10.8		0.5	0.0	26.5		1.3

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	73	18	60	72	107	3	1675	94	74	1817	29
Future Volume (veh/h)	3	73	18	60	72	107	3	1675	94	74	1817	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1632	1799	1872	1768	1800	1716	1768	1744	1744	1800
Adj Flow Rate, veh/h	3	77	19	63	76	113	3	1763	99	78	1913	31
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	12	5	0	0	0	6	0	4	4	0
Cap, veh/h	69	233	179	165	88	131	5	1936	890	335	2625	1209
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.00	0.59	0.59	0.40	1.00	1.00
Sat Flow, veh/h	1213	1800	1383	1319	680	1010	1714	3260	1498	1661	3313	1525
Grp Volume(v), veh/h	3	77	19	63	0	189	3	1763	99	78	1913	31
Grp Sat Flow(s),veh/h/ln	1213	1800	1383	1319	0	1690	1714	1630	1498	1661	1657	1525
Q Serve(g_s), s	0.4	6.2	1.9	7.3	0.0	17.5	0.3	76.6	4.6	4.9	0.0	0.0
Cycle Q Clear(g_c), s	17.9	6.2	1.9	13.5	0.0	17.5	0.3	76.6	4.6	4.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.60	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	233	179	165	0	219	5	1936	890	335	2625	1209
V/C Ratio(X)	0.04	0.33	0.11	0.38	0.00	0.86	0.56	0.91	0.11	0.23	0.73	0.03
Avail Cap(c_a), veh/h	238	484	372	348	0	454	64	1936	890	335	2625	1209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.21	0.21	0.21
Uniform Delay (d), s/veh	77.0	63.3	61.5	69.5	0.0	68.2	79.6	28.8	14.1	39.6	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.8	0.3	1.5	0.0	9.7	68.8	7.9	0.3	0.1	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	0.7	2.5	0.0	8.1	0.2	29.1	1.5	1.9	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.3	64.1	61.7	70.9	0.0	77.9	148.5	36.7	14.4	39.7	0.4	0.0
LnGrp LOS	E	E	E	E	A	E	F	D	B	D	A	A
Approach Vol, veh/h		99			252			1865			2022	
Approach Delay, s/veh		64.1			76.1			35.7			1.9	
Approach LOS		E			E			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	36.3	99.0		24.7	4.5	130.8		24.7
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	95.0		43.0	6.0	99.0		43.0
Max Q Clear Time (g_c+I1), s	16.9	78.6		19.9	2.3	2.0		19.5
Green Ext Time (p_c), s	0.0	11.0		0.4	0.0	27.0		1.2

Intersection Summary	
HCM 6th Ctrl Delay	22.6
HCM 6th LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	94	18	72	95	107	3	1717	94	74	1851	29
Future Volume (veh/h)	3	94	18	72	95	107	3	1717	94	74	1851	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1800	1800	1632	1799	1872	1768	1800	1716	1768	1744	1744	1800
Adj Flow Rate, veh/h	3	99	19	76	100	113	3	1807	99	78	1948	31
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	12	5	0	0	0	6	0	4	4	0
Cap, veh/h	70	257	198	166	115	130	5	1936	890	313	2581	1188
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.00	0.59	0.59	0.38	1.00	1.00
Sat Flow, veh/h	1187	1800	1383	1293	802	907	1714	3260	1498	1661	3313	1525
Grp Volume(v), veh/h	3	99	19	76	0	213	3	1807	99	78	1948	31
Grp Sat Flow(s),veh/h/ln	1187	1800	1383	1293	0	1709	1714	1630	1498	1661	1657	1525
Q Serve(g_s), s	0.4	8.0	1.9	9.1	0.0	19.5	0.3	80.8	4.6	5.2	0.0	0.0
Cycle Q Clear(g_c), s	19.9	8.0	1.9	17.0	0.0	19.5	0.3	80.8	4.6	5.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.53	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	70	257	198	166	0	244	5	1936	890	313	2581	1188
V/C Ratio(X)	0.04	0.38	0.10	0.46	0.00	0.87	0.56	0.93	0.11	0.25	0.75	0.03
Avail Cap(c_a), veh/h	219	484	372	328	0	459	64	1936	890	313	2581	1188
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.9	62.2	59.6	69.9	0.0	67.1	79.6	29.6	14.1	42.1	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.9	0.2	2.0	0.0	9.3	68.8	9.8	0.3	0.4	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.7	0.7	3.1	0.0	9.1	0.2	31.1	1.5	2.0	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.1	63.1	59.8	71.9	0.0	76.4	148.5	39.5	14.4	42.5	2.1	0.0
LnGrp LOS	E	E	E	E	A	E	F	D	B	D	A	A
Approach Vol, veh/h		121			289			1909			2057	
Approach Delay, s/veh		62.9			75.2			38.3			3.6	
Approach LOS		E			E			D			A	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	34.1	99.0		26.9	4.5	128.6		26.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	10.0	95.0		43.0	6.0	99.0		43.0
Max Q Clear Time (g_c+I1), s	7.2	82.8		21.9	2.3	2.0		21.5
Green Ext Time (p_c), s	0.0	8.9		0.5	0.0	28.3		1.4

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C

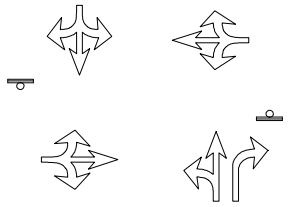
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

E/W STREET : LUNA ROAD
N/S STREET : CANTINA DRIVE
CONDITION : AM PEAK HOUR

INTERSECTION : 3
PROJECTED GROWTH PER YEAR : 3.5%

CONDITION DIAGRAMS



EXISTING GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Combined Project Trips	Future + Project Condition
Scenario #	1		3		5	7		9		11
LUNA ROAD										
EB LEFT	2	21	23	0	2	23	0	2	21	23
EB THRU	123	0	123	9	132	132	3	135	0	135
EB RIGHT	66	0	66	5	71	71	2	73	0	73
WB LEFT	16	0	16	1	17	17	0	17	0	17
WB THRU	144	0	144	10	154	154	4	158	0	158
WB RIGHT	1	41	42	0	1	42	0	1	47	48
CANTINA DRIVE										
NB LEFT	79	0	79	6	85	85	2	87	0	87
NB THRU	3	0	3	0	3	3	0	3	0	3
NB RIGHT	14	0	14	1	15	15	0	15	0	15
SB LEFT	1	39	40	0	1	40	0	1	40	41
SB THRU	3	0	3	0	3	3	0	3	0	3
SB RIGHT	5	30	35	0	5	35	0	5	30	35
TOTALS	**457**	**131**	**588**	**32**	**489**	**620**	**11**	**500**	**138**	**638**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TM	11-Mar-22	BHBA0000-0002	2	OF 2

E/W STREET : LUNA ROAD
CONDITION : AM PEAK HOUR

N/S STREET : CANTINA DRIVE
PHF : 0.73

NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
1	2	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
11	1	20	0	0	1	0	0	1	0	0	0
1	1	18	0	0	0	0	0	0	0	0	0
1	1	9	0	0	0	0	0	0	0	0	0
1	0	15	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	43	4	0	0	0	0	0	0	0	0	0
0	27	4	0	0	0	0	0	0	0	0	0
0	19	4	0	0	0	0	0	0	0	0	0
1	28	4	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
21	36	0	0	0	0	0	0	0	0	0	0
17	34	1	0	0	0	0	0	0	0	0	0
13	30	1	0	0	0	0	0	0	0	0	0
14	20	0	0	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
LUNA ROAD					
EB LEFT	0	2	**2**	**0%**	**2**
EB THRU	0	120	**120**	**0%**	**123**
EB RIGHT	0	65	**65**	**0%**	**66**
WB LEFT	0	16	**16**	**0%**	**16**
WB THRU	0	117	**117**	**0%**	**144**
WB RIGHT	0	1	**1**	**0%**	**1**
CANTINA DRIVE					
NB LEFT	2	62	**64**	**3%**	**79**
NB THRU	0	3	**3**	**0%**	**3**
NB RIGHT	0	14	**14**	**0%**	**14**
SB LEFT	0	0	**0**	**0%**	**1**
SB THRU	0	3	**3**	**0%**	**3**
SB RIGHT	0	4	**4**	**0%**	**5**

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	123	66	16	144	1	79	3	14	1	3	5
Future Vol, veh/h	2	123	66	16	144	1	79	3	14	1	3	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0	3	0	0	0	0	0
Mvmt Flow	3	168	90	22	197	1	108	4	19	1	4	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	198	0	0	258	0	0	466	461	213	473	506	198
Stage 1	-	-	-	-	-	-	219	219	-	242	242	-
Stage 2	-	-	-	-	-	-	247	242	-	231	264	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1387	-	-	1318	-	-	505	500	832	505	472	848
Stage 1	-	-	-	-	-	-	781	726	-	766	709	-
Stage 2	-	-	-	-	-	-	755	709	-	776	694	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1387	-	-	1318	-	-	489	489	832	482	462	848
Mov Cap-2 Maneuver	-	-	-	-	-	-	489	489	-	482	462	-
Stage 1	-	-	-	-	-	-	779	724	-	764	696	-
Stage 2	-	-	-	-	-	-	730	696	-	752	692	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.8	13.8	10.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	489	832	1387	-	-	1318	-	-	622
HCM Lane V/C Ratio	0.23	0.023	0.002	-	-	0.017	-	-	0.02
HCM Control Delay (s)	14.5	9.4	7.6	0	-	7.8	0	-	10.9
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.9	0.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	123	66	16	144	42	79	3	14	40	3	35
Future Vol, veh/h	23	123	66	16	144	42	79	3	14	40	3	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0	3	0	0	0	0	0
Mvmt Flow	32	168	90	22	197	58	108	4	19	55	4	48

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	255	0	0	258	0	0	573	576	213	559	592	226
Stage 1	-	-	-	-	-	-	277	277	-	270	270	-
Stage 2	-	-	-	-	-	-	296	299	-	289	322	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1322	-	-	1318	-	-	429	431	832	443	422	818
Stage 1	-	-	-	-	-	-	727	685	-	740	690	-
Stage 2	-	-	-	-	-	-	710	670	-	723	655	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1322	-	-	1318	-	-	386	410	832	414	402	818
Mov Cap-2 Maneuver	-	-	-	-	-	-	386	410	-	414	402	-
Stage 1	-	-	-	-	-	-	706	665	-	719	676	-
Stage 2	-	-	-	-	-	-	651	657	-	682	636	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.6	16.8	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	387	832	1322	-	-	1318	-	-	531
HCM Lane V/C Ratio	0.29	0.023	0.024	-	-	0.017	-	-	0.201
HCM Control Delay (s)	18.1	9.4	7.8	0	-	7.8	0	-	13.5
HCM Lane LOS	C	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.2	0.1	0.1	-	-	0.1	-	-	0.7

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	123	66	16	144	1	79	3	14	1	3	5
Future Vol, veh/h	2	123	66	16	144	1	79	3	14	1	3	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	3	0	0	0	0	0
Mvmt Flow	2	129	69	17	152	1	83	3	15	1	3	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	153	0	0	198	0	0	359	355	164	364	389	153
Stage 1	-	-	-	-	-	-	168	168	-	187	187	-
Stage 2	-	-	-	-	-	-	191	187	-	177	202	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1440	-	-	1387	-	-	595	574	886	596	549	898
Stage 1	-	-	-	-	-	-	832	763	-	819	749	-
Stage 2	-	-	-	-	-	-	808	749	-	829	738	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1440	-	-	1387	-	-	582	565	886	577	541	898
Mov Cap-2 Maneuver	-	-	-	-	-	-	582	565	-	577	541	-
Stage 1	-	-	-	-	-	-	830	761	-	817	739	-
Stage 2	-	-	-	-	-	-	789	739	-	810	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.8	11.8	10.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	581	886	1440	-	-	1387	-	-	701
HCM Lane V/C Ratio	0.149	0.017	0.001	-	-	0.012	-	-	0.014
HCM Control Delay (s)	12.3	9.1	7.5	0	-	7.6	0	-	10.2
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	132	71	17	154	42	85	3	15	40	3	35
Future Vol, veh/h	23	132	71	17	154	42	85	3	15	40	3	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	3	0	0	0	0	0
Mvmt Flow	24	139	75	18	162	44	89	3	16	42	3	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	206	0	0	214	0	0	465	467	177	454	482	184
Stage 1	-	-	-	-	-	-	225	225	-	220	220	-
Stage 2	-	-	-	-	-	-	240	242	-	234	262	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1377	-	-	1368	-	-	506	496	871	520	487	864
Stage 1	-	-	-	-	-	-	775	721	-	787	725	-
Stage 2	-	-	-	-	-	-	761	709	-	774	695	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1377	-	-	1368	-	-	469	479	871	495	470	864
Mov Cap-2 Maneuver	-	-	-	-	-	-	469	479	-	495	470	-
Stage 1	-	-	-	-	-	-	760	707	-	771	714	-
Stage 2	-	-	-	-	-	-	714	698	-	741	681	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.6	13.8	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	469	871	1377	-	-	1368	-	-	611
HCM Lane V/C Ratio	0.198	0.018	0.018	-	-	0.013	-	-	0.134
HCM Control Delay (s)	14.6	9.2	7.7	0	-	7.7	0	-	11.8
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0.1	0.1	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	135	73	17	158	1	87	3	15	1	3	5
Future Vol, veh/h	2	135	73	17	158	1	87	3	15	1	3	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	73	73	73	73	73	73	73	73	73
Heavy Vehicles, %	0	0	0	0	0	0	3	0	0	0	0	0
Mvmt Flow	3	185	100	23	216	1	119	4	21	1	4	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	217	0	0	285	0	0	509	504	235	517	554	217
Stage 1	-	-	-	-	-	-	241	241	-	263	263	-
Stage 2	-	-	-	-	-	-	268	263	-	254	291	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1365	-	-	1289	-	-	473	473	809	472	443	828
Stage 1	-	-	-	-	-	-	760	710	-	747	694	-
Stage 2	-	-	-	-	-	-	735	694	-	755	675	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1365	-	-	1289	-	-	457	462	809	449	433	828
Mov Cap-2 Maneuver	-	-	-	-	-	-	457	462	-	449	433	-
Stage 1	-	-	-	-	-	-	758	708	-	745	680	-
Stage 2	-	-	-	-	-	-	710	680	-	729	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.8	14.9	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	457	809	1365	-	-	1289	-	-	592
HCM Lane V/C Ratio	0.27	0.025	0.002	-	-	0.018	-	-	0.021
HCM Control Delay (s)	15.8	9.6	7.6	0	-	7.8	0	-	11.2
HCM Lane LOS	C	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.1	0.1	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	135	73	17	158	48	87	3	15	41	3	35
Future Vol, veh/h	23	135	73	17	158	48	87	3	15	41	3	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	0	3	0	0	0	0	0
Mvmt Flow	24	142	77	18	166	51	92	3	16	43	3	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	217	0	0	219	0	0	477	482	181	466	495	192
Stage 1	-	-	-	-	-	-	229	229	-	228	228	-
Stage 2	-	-	-	-	-	-	248	253	-	238	267	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.13	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1365	-	-	1362	-	-	497	487	867	510	479	855
Stage 1	-	-	-	-	-	-	772	718	-	779	719	-
Stage 2	-	-	-	-	-	-	754	701	-	770	692	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1365	-	-	1362	-	-	461	470	867	485	462	855
Mov Cap-2 Maneuver	-	-	-	-	-	-	461	470	-	485	462	-
Stage 1	-	-	-	-	-	-	757	704	-	763	708	-
Stage 2	-	-	-	-	-	-	708	690	-	738	678	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.6	14	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	461	867	1365	-	-	1362	-	-	599
HCM Lane V/C Ratio	0.206	0.018	0.018	-	-	0.013	-	-	0.139
HCM Control Delay (s)	14.8	9.2	7.7	0	-	7.7	0	-	12
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0.1	0.1	-	-	0	-	-	0.5

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

E/W STREET : LUNA ROAD
N/S STREET : CANTINA DRIVE
CONDITION : PM PEAK HOUR

INTERSECTION : 3
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Phase II Project Trips	Future + Project Condition
Scenario #	2		4		6	8		10		12
LUNA ROAD										
EB LEFT	3	20	23	0	3	23	0	3	21	24
EB THRU	158	0	158	11	169	169	4	173	0	173
EB RIGHT	58	0	58	4	62	62	1	63	0	63
WB LEFT	7	0	7	0	7	7	0	7	0	7
WB THRU	131	0	131	9	140	140	3	143	0	143
WB RIGHT	1	40	41	0	1	41	0	1	41	42
CANTINA DRIVE										
NB LEFT	86	0	86	6	92	92	2	94	0	94
NB THRU	2	0	2	0	2	2	0	2	0	2
NB RIGHT	20	0	20	1	21	21	0	21	0	21
SB LEFT	2	39	41	0	2	41	0	2	45	47
SB THRU	1	0	1	0	1	1	0	1	0	1
SB RIGHT	1	30	31	0	1	31	0	1	34	35
TOTALS	**470**	**129**	**599**	**31**	**501**	**630**	**10**	**511**	**141**	**652**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TM	11-Mar-22	BHBA0000-0002	2	OF 2

E/W STREET : LUNA ROAD
CONDITION : PM PEAK HOUR

N/S STREET : CANTINA DRIVE
PHF : 0.89

NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	1	1	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
5	0	20	0	0	0	0	0	0	0	0	0
4	0	22	0	0	0	0	0	0	0	0	0
8	0	23	0	0	0	0	0	0	0	0	0
3	2	21	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	26	0	0	0	0	0	0	0	0	0	0
0	41	3	0	0	0	0	0	0	0	0	0
0	32	2	0	0	0	0	0	0	0	0	0
0	32	2	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
11	31	0	0	0	0	0	0	0	0	0	0
10	46	1	0	0	0	0	0	0	0	0	0
16	48	0	0	1	0	0	0	0	0	0	0
21	32	2	0	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
LUNA ROAD					
EB LEFT	0	3	**3**	**0%**	**3**
EB THRU	1	157	**158**	**1%**	**158**
EB RIGHT	0	58	**58**	**0%**	**58**
WB LEFT	0	7	**7**	**0%**	**7**
WB THRU	0	131	**131**	**0%**	**131**
WB RIGHT	0	0	**0**	**0%**	**1**
CANTINA DRIVE					
NB LEFT	0	86	**86**	**0%**	**86**
NB THRU	0	2	**2**	**0%**	**2**
NB RIGHT	0	20	**20**	**0%**	**20**
SB LEFT	0	2	**2**	**0%**	**2**
SB THRU	0	1	**1**	**0%**	**1**
SB RIGHT	0	0	**0**	**0%**	**1**

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	158	58	7	131	1	86	2	20	2	1	1
Future Vol, veh/h	3	158	58	7	131	1	86	2	20	2	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	178	65	8	147	1	97	2	22	2	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	148	0	0	243	0	0	382	381	211	393	413	148
Stage 1	-	-	-	-	-	-	217	217	-	164	164	-
Stage 2	-	-	-	-	-	-	165	164	-	229	249	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1446	-	-	1335	-	-	580	555	834	570	532	904
Stage 1	-	-	-	-	-	-	790	727	-	843	766	-
Stage 2	-	-	-	-	-	-	842	766	-	778	704	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1446	-	-	1335	-	-	574	550	834	549	527	904
Mov Cap-2 Maneuver	-	-	-	-	-	-	574	550	-	549	527	-
Stage 1	-	-	-	-	-	-	788	726	-	841	761	-
Stage 2	-	-	-	-	-	-	834	761	-	753	703	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	12	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	573	834	1446	-	-	1335	-	-	602
HCM Lane V/C Ratio	0.173	0.027	0.002	-	-	0.006	-	-	0.007
HCM Control Delay (s)	12.6	9.4	7.5	0	-	7.7	0	-	11
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	158	58	7	131	41	86	2	20	41	1	31
Future Vol, veh/h	23	158	58	7	131	41	86	2	20	41	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	26	178	65	8	147	46	97	2	22	46	1	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	193	0	0	243	0	0	467	472	211	461	481	170
Stage 1	-	-	-	-	-	-	263	263	-	186	186	-
Stage 2	-	-	-	-	-	-	204	209	-	275	295	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1392	-	-	1335	-	-	509	493	834	514	487	879
Stage 1	-	-	-	-	-	-	747	694	-	820	750	-
Stage 2	-	-	-	-	-	-	803	733	-	736	673	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1392	-	-	1335	-	-	477	479	834	487	473	879
Mov Cap-2 Maneuver	-	-	-	-	-	-	477	479	-	487	473	-
Stage 1	-	-	-	-	-	-	731	679	-	802	745	-
Stage 2	-	-	-	-	-	-	765	728	-	698	658	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	13.6	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	477	834	1392	-	-	1335	-	-	600
HCM Lane V/C Ratio	0.207	0.027	0.019	-	-	0.006	-	-	0.137
HCM Control Delay (s)	14.5	9.4	7.6	0	-	7.7	0	-	11.9
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0.1	0.1	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	158	58	7	131	1	86	2	20	2	1	1
Future Vol, veh/h	3	158	58	7	131	1	86	2	20	2	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	166	61	7	138	1	91	2	21	2	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	139	0	0	227	0	0	357	356	197	367	386	139
Stage 1	-	-	-	-	-	-	203	203	-	153	153	-
Stage 2	-	-	-	-	-	-	154	153	-	214	233	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1457	-	-	1353	-	-	602	573	849	593	551	915
Stage 1	-	-	-	-	-	-	804	737	-	854	775	-
Stage 2	-	-	-	-	-	-	853	775	-	793	716	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1457	-	-	1353	-	-	597	568	849	573	547	915
Mov Cap-2 Maneuver	-	-	-	-	-	-	597	568	-	573	547	-
Stage 1	-	-	-	-	-	-	802	736	-	852	770	-
Stage 2	-	-	-	-	-	-	846	770	-	770	715	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	11.6	10.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	596	849	1457	-	-	1353	-	-	624
HCM Lane V/C Ratio	0.155	0.025	0.002	-	-	0.005	-	-	0.007
HCM Control Delay (s)	12.1	9.3	7.5	0	-	7.7	0	-	10.8
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	169	62	7	140	41	92	2	21	41	1	31
Future Vol, veh/h	23	169	62	7	140	41	92	2	21	41	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	24	178	65	7	147	43	97	2	22	43	1	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	190	0	0	243	0	0	459	463	211	454	474	169
Stage 1	-	-	-	-	-	-	259	259	-	183	183	-
Stage 2	-	-	-	-	-	-	200	204	-	271	291	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1396	-	-	1335	-	-	516	499	834	520	492	880
Stage 1	-	-	-	-	-	-	750	697	-	823	752	-
Stage 2	-	-	-	-	-	-	806	737	-	739	675	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1396	-	-	1335	-	-	486	486	834	495	479	880
Mov Cap-2 Maneuver	-	-	-	-	-	-	486	486	-	495	479	-
Stage 1	-	-	-	-	-	-	735	683	-	807	747	-
Stage 2	-	-	-	-	-	-	770	733	-	703	662	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	13.4	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	486	834	1396	-	-	1335	-	-	608
HCM Lane V/C Ratio	0.204	0.027	0.017	-	-	0.006	-	-	0.126
HCM Control Delay (s)	14.3	9.4	7.6	0	-	7.7	0	-	11.8
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0.1	0.1	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	173	63	7	143	1	94	2	21	2	1	1
Future Vol, veh/h	3	173	63	7	143	1	94	2	21	2	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	3	182	66	7	151	1	99	2	22	2	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	152	0	0	248	0	0	388	387	215	399	420	152
Stage 1	-	-	-	-	-	-	221	221	-	166	166	-
Stage 2	-	-	-	-	-	-	167	166	-	233	254	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1441	-	-	1330	-	-	574	551	830	565	528	900
Stage 1	-	-	-	-	-	-	786	724	-	841	765	-
Stage 2	-	-	-	-	-	-	840	765	-	775	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1441	-	-	1330	-	-	569	547	830	545	524	900
Mov Cap-2 Maneuver	-	-	-	-	-	-	569	547	-	545	524	-
Stage 1	-	-	-	-	-	-	784	723	-	839	760	-
Stage 2	-	-	-	-	-	-	833	760	-	751	700	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.4	12.1	11.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	569	830	1441	-	-	1330	-	-	598
HCM Lane V/C Ratio	0.178	0.027	0.002	-	-	0.006	-	-	0.007
HCM Control Delay (s)	12.7	9.5	7.5	0	-	7.7	0	-	11.1
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	173	63	7	143	42	94	2	21	47	1	35
Future Vol, veh/h	24	173	63	7	143	42	94	2	21	47	1	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	1	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	25	182	66	7	151	44	99	2	22	49	1	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	195	0	0	248	0	0	471	474	215	464	485	173
Stage 1	-	-	-	-	-	-	265	265	-	187	187	-
Stage 2	-	-	-	-	-	-	206	209	-	277	298	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1390	-	-	1330	-	-	506	492	830	512	485	876
Stage 1	-	-	-	-	-	-	745	693	-	819	749	-
Stage 2	-	-	-	-	-	-	801	733	-	734	671	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1390	-	-	1330	-	-	474	479	830	486	472	876
Mov Cap-2 Maneuver	-	-	-	-	-	-	474	479	-	486	472	-
Stage 1	-	-	-	-	-	-	729	678	-	802	745	-
Stage 2	-	-	-	-	-	-	762	729	-	697	657	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	13.7	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	474	830	1390	-	-	1330	-	-	598
HCM Lane V/C Ratio	0.213	0.027	0.018	-	-	0.006	-	-	0.146
HCM Control Delay (s)	14.6	9.5	7.6	0	-	7.7	0	-	12
HCM Lane LOS	B	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0.1	0.1	-	-	0	-	-	0.5

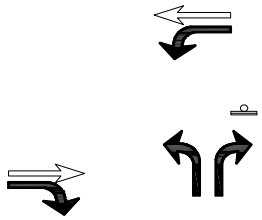
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

E/W STREET : DOS PALMAS ROAD
N/S STREET : CANTINA DRIVE
CONDITION : AM PEAK HOUR

INTERSECTION : 4
PROJECTED GROWTH PER YEAR : 3.5%

CONDITION DIAGRAMS



PROPOSED GEOMETRICS **ULTIMATE GEOMETRICS**

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Combined Project Trips	Future + Project Condition
Scenario #	1		3		5	7		9		11
DOS PALMAS ROAD										
EB LEFT	0	0	0	0	0	0	0	0	0	0
EB THRU	281	20	301	19	300	320	6	306	20	326
EB RIGHT	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	0	0	0	0	0	0	3	3
WB THRU	247	21	268	18	265	286	6	271	21	292
WB RIGHT	0	0	0	0	0	0	0	0	0	0
CANTINA DRIVE										
NB LEFT	0	0	0	0	0	0	0	0	0	0
NB THRU	0	0	0	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0	0	1	1
SB LEFT	0	0	0	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	0	0	0	0	0	0
TOTALS	**528**	**41**	**569**	**37**	**565**	**606**	**12**	**577**	**45**	**622**

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	326	0	3	292	0	1
Future Vol, veh/h	326	0	3	292	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	190	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	343	0	3	307	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	343	0	656	343
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	313	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1216	-	430	700
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1216	-	429	700
Mov Cap-2 Maneuver	-	-	-	-	529	-
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	740	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	700	-	-	1216	-
HCM Lane V/C Ratio	-	0.002	-	-	0.003	-
HCM Control Delay (s)	0	10.2	-	-	8	-
HCM Lane LOS	A	B	-	-	A	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	326	0	3	292	0	1
Future Vol, veh/h	326	0	3	292	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	2	1	1
Mvmt Flow	343	0	3	307	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	343	0	503	172
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	160	-
Critical Hdwy	-	-	4.12	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.21	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	1220	-	500	845
Stage 1	-	-	-	-	693	-
Stage 2	-	-	-	-	855	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1220	-	499	845
Mov Cap-2 Maneuver	-	-	-	-	570	-
Stage 1	-	-	-	-	693	-
Stage 2	-	-	-	-	853	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	845	-	-	1220	-
HCM Lane V/C Ratio	-	0.001	-	-	0.003	-
HCM Control Delay (s)	0	9.3	-	-	8	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

E/W STREET : DOS PALMAS ROAD
N/S STREET : CANTINA DRIVE
CONDITION : PM PEAK HOUR

INTERSECTION : 4
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Phase II Project Trips	Future + Project Condition
Scenario #	2		4		6	8		10		12
DOS PALMAS ROAD										
EB LEFT	0	0	0	0	0	0	0	0	0	0
EB THRU	234	20	254	17	251	271	5	256	20	276
EB RIGHT	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	0	0	0	0	0	0	1	1
WB THRU	161	20	181	12	173	193	4	177	20	197
WB RIGHT	0	0	0	0	0	0	0	0	0	0
CANTINA DRIVE										
NB LEFT	0	0	0	0	0	0	0	0	0	0
NB THRU	0	0	0	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0	0	3	3
SB LEFT	0	0	0	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	0	0	0	0	0	0
TOTALS	**395**	**40**	**435**	**29**	**424**	**464**	**9**	**433**	**44**	**477**

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱	↰	↑	↰	↱
Traffic Vol, veh/h	276	0	1	197	0	3
Future Vol, veh/h	276	0	1	197	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	190	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	291	0	1	207	0	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	291	0	500	291
Stage 1	-	-	-	-	291	-
Stage 2	-	-	-	-	209	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1271	-	530	748
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	826	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1271	-	529	748
Mov Cap-2 Maneuver	-	-	-	-	601	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	825	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	748	-	-	1271	-
HCM Lane V/C Ratio	-	0.004	-	-	0.001	-
HCM Control Delay (s)	0	9.8	-	-	7.8	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	276	0	1	197	0	3
Future Vol, veh/h	276	0	1	197	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	291	0	1	207	0	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	291	0	397	146
Stage 1	-	-	-	-	291	-
Stage 2	-	-	-	-	106	-
Critical Hdwy	-	-	4.12	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	-	-	2.21	-	3.51	3.31
Pot Cap-1 Maneuver	-	-	1275	-	583	878
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	910	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1275	-	582	878
Mov Cap-2 Maneuver	-	-	-	-	627	-
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	909	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	878	-	-	1275	-
HCM Lane V/C Ratio	-	0.004	-	-	0.001	-
HCM Control Delay (s)	0	9.1	-	-	7.8	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-

DAVID EVANS AND ASSOCIATES INC.

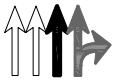
SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

E/W STREET : PROJECT DRIVEWAY "A"
N/S STREET : HIGHWAY 395
CONDITION : AM PEAK HOUR

INTERSECTION : 5
PROJECTED GROWTH PER YEAR : 3.5%

CONDITION DIAGRAMS

PROJECT GEOMETRICS



ULTIMATE GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Combined Project Trips	Future + Project Condition
Scenario #	1		3		5	7		9		11
PROJECT DRIVEWAY '										
EB LEFT	0	0	0	0	0	0	0	0	0	0
EB THRU	0	0	0	0	0	0	0	0	0	0
EB RIGHT	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	0	0	0	0	0	0	0	0
WB THRU	0	0	0	0	0	0	0	0	0	0
WB RIGHT	0	0	0	0	0	0	0	0	0	0
HIGHWAY 395										
NB LEFT	0	0	0	0	0	0	0	0	0	0
NB THRU	1363	-8	1355	96	1459	1451	34	1493	-7	1486
NB RIGHT	0	49	49	0	0	49	0	0	52	52
SB LEFT	0	0	0	0	0	0	0	0	0	0
SB THRU	1351	29	1380	95	1446	1475	33	1479	30	1509
SB RIGHT	0	0	0	0	0	0	0	0	0	0
TOTALS	**2714**	**70**	**2784**	**191**	**2905**	**2975**	**67**	**2972**	**75**	**3047**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

E/W STREET : PROJECT DRIVEWAY "A"
N/S STREET : HIGHWAY 395
CONDITION : PM PEAK HOUR

INTERSECTION : 5
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Phase II Project Trips	Future + Project Condition
Scenario #	2		4		6	8		10		12
PROJECT DRIVEWAY '										
EB LEFT	0	0	0	0	0	0	0	0	0	0
EB THRU	0	0	0	0	0	0	0	0	0	0
EB RIGHT	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	0	0	0	0	0	0	0	0
WB THRU	0	0	0	0	0	0	0	0	0	0
WB RIGHT	0	0	0	0	0	0	0	0	0	0
HIGHWAY 395										
NB LEFT	0	0	0	0	0	0	0	0	0	0
NB THRU	1632	-1	1631	115	1747	1746	40	1787	2	1789
NB RIGHT	0	41	41	0	0	41	0	0	42	42
SB LEFT	0	0	0	0	0	0	0	0	0	0
SB THRU	1753	29	1782	122	1875	1904	42	1917	34	1951
SB RIGHT	0	0	0	0	0	0	0	0	0	0
TOTALS	**3385**	**69**	**3454**	**237**	**3622**	**3691**	**82**	**3704**	**78**	**3782**

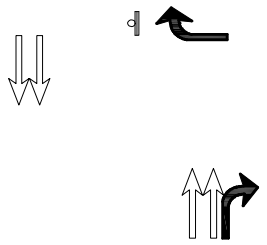
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

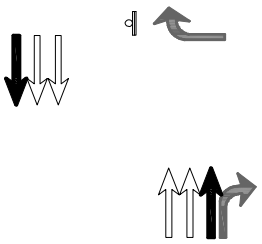
E/W STREET : PROJECT DRIVEWAY "B"
N/S STREET : HIGHWAY 395
CONDITION : AM PEAK HOUR

INTERSECTION : 6
PROJECTED GROWTH PER YEAR : 3.5%

CONDITION DIAGRAMS



PROJECT GEOMETRICS



ULTIMATE GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Combined Project Trips	Future + Project Condition
Scenario #	1		3		5	7		9		11
PROJECT DRIVEWAY '										
EB LEFT	0	0	0	0	0	0	0	0	0	0
EB THRU	0	0	0	0	0	0	0	0	0	0
EB RIGHT	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	0	0	0	0	0	0	0	0
WB THRU	0	0	0	0	0	0	0	0	0	0
WB RIGHT	0	62	62	0	0	62	0	0	63	63
HIGHWAY 395										
NB LEFT	0	0	0	0	0	0	0	0	0	0
NB THRU	1363	-21	1342	96	1459	1438	34	1493	-18	1475
NB RIGHT	0	63	63	0	0	63	0	0	66	66
SB LEFT	0	0	0	0	0	0	0	0	0	0
SB THRU	1351	29	1380	95	1446	1475	33	1479	30	1509
SB RIGHT	0	0	0	0	0	0	0	0	0	0
TOTALS	**2714**	**133**	**2847**	**191**	**2905**	**3038**	**67**	**2972**	**141**	**3113**

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	62	1342	63	0	1380
Future Vol, veh/h	0	62	1342	63	0	1380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	1	1	7	1	1	6
Mvmt Flow	0	71	1543	72	0	1586

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	808	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-	-
Pot Cap-1 Maneuver	0	280	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	280	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	280	-
HCM Lane V/C Ratio	-	-	0.255	-
HCM Control Delay (s)	-	-	22.2	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	1	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑↑	↱		↑↑
Traffic Vol, veh/h	0	62	1342	63	0	1380
Future Vol, veh/h	0	62	1342	63	0	1380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	65	1413	66	0	1453

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	707	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	378	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	378	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	378	-
HCM Lane V/C Ratio	-	-	0.173	-
HCM Control Delay (s)	-	-	16.5	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.6	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	62	1438	63	0	1475
Future Vol, veh/h	0	62	1438	63	0	1475
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	7	1	1	6
Mvmt Flow	0	65	1514	66	0	1553

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	790	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-	-
Pot Cap-1 Maneuver	0	288	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	288	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	288	-
HCM Lane V/C Ratio	-	-	0.227	-
HCM Control Delay (s)	-	-	21.1	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.9	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑↑	↱		↑↑
Traffic Vol, veh/h	0	62	1438	63	0	1475
Future Vol, veh/h	0	62	1438	63	0	1475
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	65	1514	66	0	1553

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	757	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	350	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	350	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	350	-
HCM Lane V/C Ratio	-	-	0.186	-
HCM Control Delay (s)	-	-	17.6	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.7	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	63	1475	66	0	1509
Future Vol, veh/h	0	63	1475	66	0	1509
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	7	1	1	6
Mvmt Flow	0	66	1553	69	0	1588

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	811	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-	-
Pot Cap-1 Maneuver	0	279	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	279	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	279	-
HCM Lane V/C Ratio	-	-	0.238	-
HCM Control Delay (s)	-	-	21.9	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.9	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑↑↑	↱		↑↑↑
Traffic Vol, veh/h	0	63	1475	66	0	1509
Future Vol, veh/h	0	63	1475	66	0	1509
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	7	1	1	6
Mvmt Flow	0	66	1553	69	0	1588

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	777	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-	-
Pot Cap-1 Maneuver	0	293	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	293	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	293	-
HCM Lane V/C Ratio	-	-	0.226	-
HCM Control Delay (s)	-	-	20.8	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.9	-

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	11-Mar-22	BHBA0000-0002	1 OF 2

E/W STREET : PROJECT DRIVEWAY "B"
N/S STREET : HIGHWAY 395
CONDITION : PM PEAK HOUR

INTERSECTION : 6
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Phase I Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2034 Ambient Growth	Future Condition	Phase II Project Trips	Future + Project Condition
Scenario #	2		4		6	8		10		12
PROJECT DRIVEWAY '										
EB LEFT	0	0	0	0	0	0	0	0	0	0
EB THRU	0	0	0	0	0	0	0	0	0	0
EB RIGHT	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	0	0	0	0	0	0	0	0
WB THRU	0	0	0	0	0	0	0	0	0	0
WB RIGHT	0	52	52	0	0	52	0	0	55	55
HIGHWAY 395										
NB LEFT	0	0	0	0	0	0	0	0	0	0
NB THRU	1632	-12	1620	115	1747	1735	40	1787	-11	1776
NB RIGHT	0	52	52	0	0	52	0	0	53	53
SB LEFT	0	0	0	0	0	0	0	0	0	0
SB THRU	1753	29	1782	122	1875	1904	42	1917	34	1951
SB RIGHT	0	0	0	0	0	0	0	0	0	0
TOTALS	**3385**	**121**	**3506**	**237**	**3622**	**3743**	**82**	**3704**	**131**	**3835**

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	52	1620	52	0	1782
Future Vol, veh/h	0	52	1620	52	0	1782
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	1	1	6	1	1	4
Mvmt Flow	0	59	1841	59	0	2025

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	950	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-	-
Pot Cap-1 Maneuver	0	225	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	225	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.6	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	225	-
HCM Lane V/C Ratio	-	-	0.263	-
HCM Control Delay (s)	-	-	26.6	-
HCM Lane LOS	-	-	D	-
HCM 95th %tile Q(veh)	-	-	1	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑↑	↱		↑↑
Traffic Vol, veh/h	0	52	1620	52	0	1782
Future Vol, veh/h	0	52	1620	52	0	1782
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	5	1	1	6
Mvmt Flow	0	55	1705	55	0	1876

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	853	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.92	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.31	-	-	-	-
Pot Cap-1 Maneuver	0	305	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	305	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	305	-
HCM Lane V/C Ratio	-	-	0.179	-
HCM Control Delay (s)	-	-	19.4	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.6	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	52	1735	52	0	1904
Future Vol, veh/h	0	52	1735	52	0	1904
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	6	1	1	4
Mvmt Flow	0	55	1826	55	0	2004

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	941	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-	-
Pot Cap-1 Maneuver	0	229	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	229	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.6	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	229	-
HCM Lane V/C Ratio	-	-	0.239	-
HCM Control Delay (s)	-	-	25.6	-
HCM Lane LOS	-	-	D	-
HCM 95th %tile Q(veh)	-	-	0.9	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑↑	↱		↑↑
Traffic Vol, veh/h	0	52	1735	52	0	1904
Future Vol, veh/h	0	52	1735	52	0	1904
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	5	1	1	6
Mvmt Flow	0	55	1826	55	0	2004

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	913	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.92	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.31	-	-	-	-
Pot Cap-1 Maneuver	0	278	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	278	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	278	-
HCM Lane V/C Ratio	-	-	0.197	-
HCM Control Delay (s)	-	-	21.1	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.7	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	55	1776	53	0	1951
Future Vol, veh/h	0	55	1776	53	0	1951
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	6	1	1	4
Mvmt Flow	0	58	1869	56	0	2054

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	963	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-	-
Pot Cap-1 Maneuver	0	221	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	221	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	221	-
HCM Lane V/C Ratio	-	-	0.262	-
HCM Control Delay (s)	-	-	27	-
HCM Lane LOS	-	-	D	-
HCM 95th %tile Q(veh)	-	-	1	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↱	↑↑↑	↱		↑↑↑
Traffic Vol, veh/h	0	55	1776	53	0	1951
Future Vol, veh/h	0	55	1776	53	0	1951
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	150	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	6	1	1	4
Mvmt Flow	0	58	1869	56	0	2054

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	935	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.91	-	-	-	-
Pot Cap-1 Maneuver	0	231	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	231	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.7	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	231	-
HCM Lane V/C Ratio	-	-	0.251	-
HCM Control Delay (s)	-	-	25.7	-
HCM Lane LOS	-	-	D	-
HCM 95th %tile Q(veh)	-	-	1	-

Appendix A: Approved City Scope Agreement

Appendix B: Turn Movement Count Volumes

Appendix C: Intersection Capacity Analysis Calculations