

FOCUSED TRAFFIC IMPACT STUDY

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PIXIOR DISTRIBUTION CENTER

HESPERIA, CALIFORNIA

Prepared by:



DAVID EVANS
AND ASSOCIATES INC

DRAFT REPORT
October 6, 2020



October 6, 2020

Job No. PIX10000-0001

Mr. Simon Bouzaglou
55555 Amargosa LLC
5901 South Eastern Avenue
Commerce, CA 90040

RE: LEVEL OF SERVICE ASSESSMENT FOR THE PIXIOR DISTRIBUTION CENTER FOCUSED TRAFFIC IMPACT ANALYSIS, HESPERIA, CALIFORNIA

Dear Mr. Bouzaglou,

David Evans and Associates, Inc. is pleased to submit this Level of Service Assessment for the Focused Traffic Impact Study (TIS) for your proposed commercial development project in the City of Hesperia known as the Pixior Distribution Center.

Note that the VMT analysis for this project will be submitted to the City of Hesperia under separate cover.

The report examines the traffic impacts specifically for the project and presents recommended traffic improvements. The report also evaluates the impacts of overall growth within the area to assure that cumulative traffic mitigations can be addressed. The report has been prepared in coordination with the City of Hesperia consistent with the City of Hesperia Traffic Impact Analysis Report Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment dated July 2020 requirements and scope of work approved prior to this report.

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.

Sincerely,

DAVID EVANS AND ASSOCIATES, INC.

A handwritten signature in blue ink, appearing to read 'Jim Daisa', is written over the typed name.

James M. Daisa, PE
Senior Project Manager





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1 TRAFFIC IMPACT STUDY INTRODUCTION

This report identifies the traffic impacts and presents recommendations for access and traffic mitigation for the Pixior Distribution Center Project located in the City of Hesperia, California.

The proposed project is to construct a 450,000 square foot (SF) warehouse on an approximate 21.5-acre parcel. The development site fronts Amargosa Road and the Interstate 15 Freeway, as illustrated in **Figure 1**. The project site is bounded to the south and east by the California Aqueduct. To the north of the project site is an existing warehouse building and Palmeto Way. **Figure 2** shows the proposed Site Plan. Access to the site will be from two driveways along Amargosa Road.

1.1 Traffic Impact Study Scenarios

The intent of this report is to address intersection level of service deficiencies that may be caused by, or contributed to, by the proposed development and identifies the following scenarios necessary to address project specific deficiencies:

- Existing Conditions
- Existing plus Project Conditions
- Opening Day Conditions – Year 2021
- Opening Day Conditions with Project – Year 2021

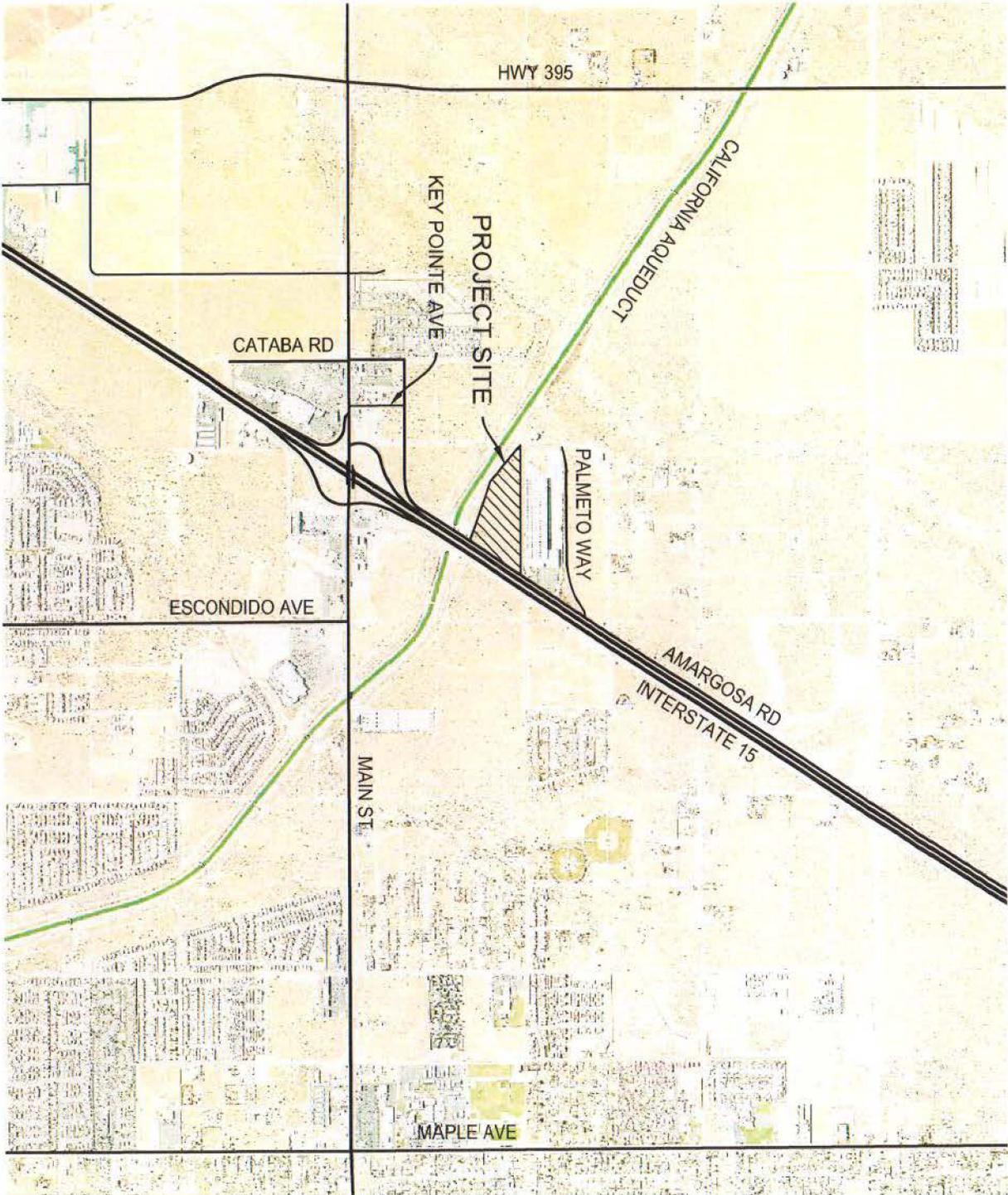
The **Existing Conditions** scenario evaluated the morning peak hour (between 7-9 AM) and afternoon peak hour (between 4-6 PM) peak hour conditions. Synchro10 Highway Capacity Manual 6th Edition methodology was utilized to analyze the study intersections of Main St / Cataba Rd (signalized), Main St / Key Pointe Ave (signalized), Amargosa Rd / Cataba Rd (side-street-stop-controlled), Amargosa Rd / Key Pointe Ave (side-street-stop-controlled), Amargosa Rd / Proposed Project Driveway “A”, and Amargosa Rd / Proposed Project Driveway “B”. This scenario represents existing transportation conditions at the time this report was prepared. Data includes traffic counts collected in 2017 and grown to 2020, current roadway, and intersection geometries. This scenario is used as the baseline condition from which to measure project-specific impacts.

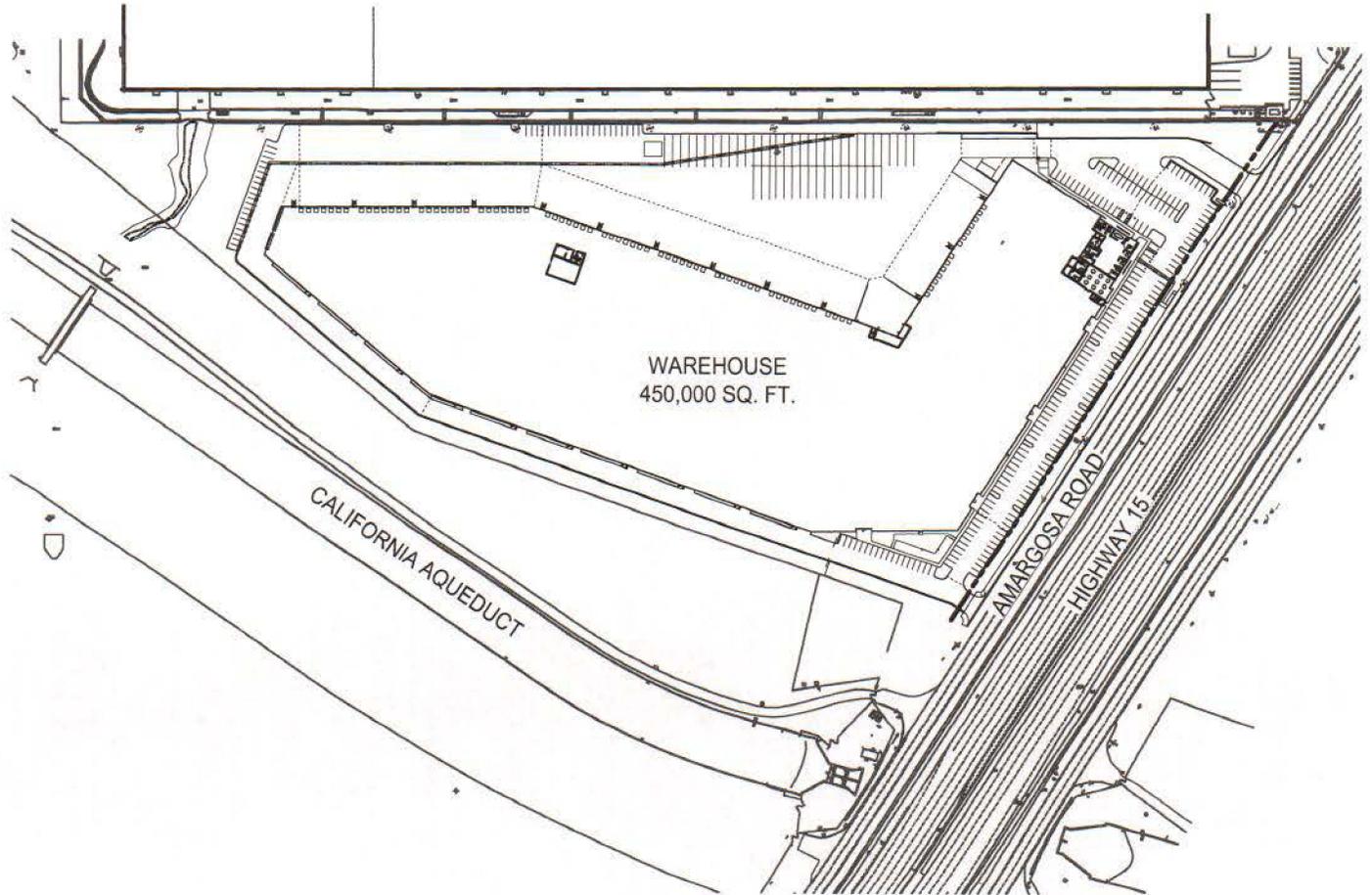
The **Existing plus Opening Day with Project Conditions** scenario represents transportation conditions as if the project were built and occupied today. This scenario is intended to identify potentially significant impact (requiring mitigation) when compared to existing conditions without any unrelated transportation system improvements, ambient growth, or other nearby development. Impacts identified in this scenario are considered “project-specific” impacts—impacts that are the sole responsibility of the project to mitigate.

The **Opening Day Conditions** scenario evaluates conditions at the time the project is anticipated to be fully constructed and occupied (known as opening day which is the year 2021 for this project) but without traffic generated by the project. The ambient growth is a general rate of growth in traffic from overall regional growth (assumed to be 2% annually for this study) and traffic generated by other nearby development (assumed to be 1.5% annually for this study). As approved by the City of Hesperia Staff, this scenario is comprised of a conservative estimate of the combined area growth and traffic to be generated by nearby development, 3.5% ambient growth annually.

The **Opening Day Conditions with Project** scenario evaluates the potential cumulative impacts to the area network due to ambient growth and other area project trips up to the opening day of 2021 with the addition of project traffic. This scenario adds the project’s estimated traffic generation at opening day (2021) to the Opening Day Conditions scenario 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.

FIGURE 1: VICINITY MAP
PIXIOR DISTRIBUTION CENTER
HESPERIA, CALIFORNIA







 NOT TO SCALE

FIGURE 2: SITE PLAN
 PIXIOR DISTRIBUTION CENTER
 HESPERIA, CALIFORNIA



2 EXISTING CONDITIONS

Currently, the project site is comprised of a vacant and undeveloped land. It is bounded to the north by an existing warehouse building and Palmeto Way, to the west by Amargosa Road and Interstate 15 Freeway, to the south and east by the California Aqueduct.

2.1 Local and Major Roadways

The street fronting the project property, Amargosa Road, is paved. Amargosa Road ranges in pavement width between 30 to 40 feet and the pavement of the street is in good to fair condition.

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

Amargosa Road is identified as an arterial on the City of Hesperia circulation map and is a north-south two-lane road (one in each direction) in the project study area. Amargosa Road provides direct access to the project site. Amargosa Road terminates at a "T" intersection with Cataba Road.

Cataba Road is identified as a local street on the City of Hesperia circulation map and is a north-south primarily four-lane road (two lanes in each direction with turn lanes at key intersections) in the project study area. Cataba Road connects the terminus of Amargosa Road to Main Street, which provide access to Interstate 15.

Key Pointe Avenue is identified as a secondary arterial on the City of Hesperia circulation map and is a north-south four-lane road (two lanes in each direction with turn lanes at key intersections) in the project study area. Key Point Avenue provides local access to the project site and connects Amargosa Road to Main Street with access to Interstate 15 (I-15).

Main Street, between Highway 395 and I-15, is identified as a major arterial on the City of Hesperia circulation map and is an east-west six-lane (three lanes in each direction with turn lanes at key intersections) in the project study area. Main Street provides direct access to I-15 via a partial cloverleaf interchange located immediately east of Key Pointe Avenue.

Site Access

Access to the site is proposed as full access at two driveways along Amargosa Road.

Study Intersections

As approved in the Focused Traffic Study scope, the potential traffic impacts to the area roadways within the study area identified for analysis include four existing intersections and two future driveway intersections:

1. Main St / Cataba Rd (City of Hesperia Jurisdiction)
2. Main St / Key Pointe Ave (City of Hesperia Jurisdiction)
3. Amargosa Rd / Cataba Rd (City of Hesperia Jurisdiction)
4. Amargosa Rd / Key Pointe Ave (City of Hesperia Jurisdiction)
5. Amargosa Rd / Proposed Project Driveway "A" (City of Hesperia Jurisdiction)
6. Amargosa Rd / Proposed Project Driveway "B" (City of Hesperia Jurisdiction)

The intersections of Main St / Cataba Rd and Main St / Key Pointe Ave are signalized. The intersections of Amargosa Rd / Cataba Rd, Amargosa Rd / Key Pointe Ave, Amargosa Rd / Proposed Project Driveway "A", and Amargosa Rd / Proposed Project Driveway "B" are side street stop controlled.

2.2 Existing Traffic Volumes

Due to the impact of COVID-19 on travel, it was agreed in the approved scope that Existing (Year 2017) Traffic Counts (1), provided in **Appendix B**, were used to develop existing (Year 2020) turn movement volumes. An ambient growth rate of 2% annually is applied to the existing (Year 2017) traffic counts to develop the existing (Year 2020) turning movement counts. **Figure 3** and **Appendix C** provide the existing intersection traffic volumes.

2.3 Intersection Capacity Analysis Methodology and Assumptions

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 intersections.

The analysis determines a LOS that quantitatively describes the operating characteristics of signalized intersections. **Table 2-1** provides LOS thresholds for signalized intersections as provided in the HCM 6 Chapter 19. **Table 2-2** provides the Two Way Stop Controlled (TWSC) intersection HCM 6 LOS thresholds.

Table 2-1: HCM 6 – LOS Criteria for Signalized Intersections

Control Delay (s/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 2-2: HCM 6 – LOS Criteria for Two Way Stop Controlled (TWSC) Intersections

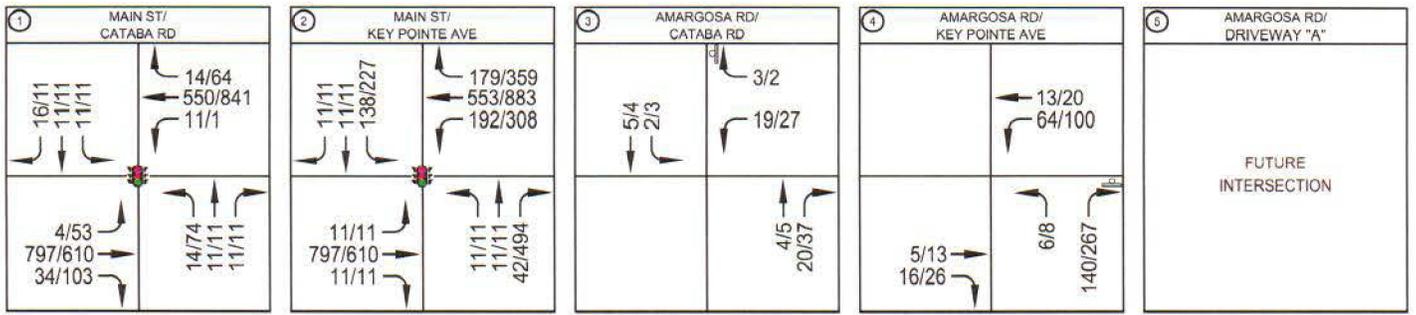
Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio	
	v/c ≤1.0	v/c >1.0
0 - 10	A	F
> 10 - 15	B	F
> 15 - 25	C	F
> 25 - 35	D	F
> 35 - 50	E	F
> 50	F	F

Note: The LOS criteria apply to each lane on a given approach and to each approach on the 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.

1 Service Station at Northwest Corner of Phelan Road and Highway 395 Traffic Impact Analysis, by Albert Wilson & Associates, dated January 22, 2018

2 Trafficware Ltd, Version 10.

3 Transportation Research Board, Washington D.C., 2010.



LEGEND

- XX/XX ↗ - AM/PM PROJECT TRIP
- ⊕ - STUDY INTERSECTIONS
- 🚦 - SIGNALIZED INTERSECTION
- ⏸ - STOP CONTROLLED APPROACH

**FIGURE 3: EXISTING TRAFFIC VOLUMES
PIXIOR DISTRIBUTION CENTER
HESPERIA, CALIFORNIA**

Intersection Capacity Analysis Assumptions

- Intersection signal timing/phasing is optimized for each study scenario.
- A PHF of 0.95 is used for each study scenario.
- The adjusted saturation flow rates of 1,800 vehicles per hour green per lane (vphgpl) for exclusive through lanes and exclusive right turn lane, and 1,700 vphgpl for exclusive left turn lanes are used for each study scenario.

Level of Service Threshold

The Congestion Management Program (CMP) Guidelines establish a roadway network Level of Service threshold LOS E or better operation within the CMP network. The City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS) Guidelines establish the City's Level of Service threshold as a **minimum LOS D** within its jurisdictional boundaries.

2.4 Existing Traffic Analysis

Existing intersection geometrics and existing AM and PM peak hour traffic counts are used in analyzing existing intersection capacity. **Table 2-3** and **Appendix C** provide the results of the analysis. **Figure 4** illustrates the existing intersection geometrics utilized in the capacity analysis.

Table 2-3: Intersection Capacity Analysis – Existing Conditions

Intersection		AM Peak Hour		PM Peak Hour	
		Delay (1)	LOS (2)	Delay (1)	LOS (2)
1	Main St / Catapa Rd	21.4	C	14.7	B
2	Main St / Key Pointe Ave	21.6	C	37.4	D
3	Amargosa Rd / Catapa Rd (3)	9.0	A	9.1	A
4	Amargosa Rd / Key Pointe Ave (3)	9.6	A	10.4	B

- (1) Delay – In seconds per vehicle
 (2) LOS – Level of Service
 (3) Side - Street Stop Controlled Intersection

Source: David Evans and Associates, Inc.

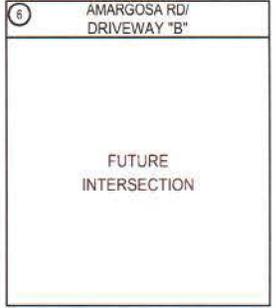
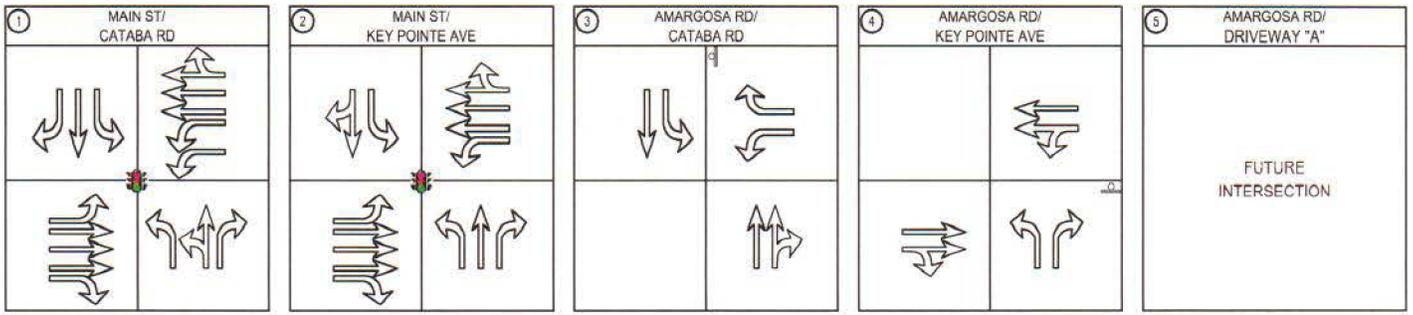
As presented in **Table 2-3**, under Existing Conditions, the study intersections are currently meet the City of Hesperia target level of service (LOS).

3 EXISTING PLUS PROJECT CONDITIONS

The Existing plus Project Conditions scenario represents existing transportation conditions at the time this report was prepared. Data includes traffic counts collected in 2017 and factored to 2020 conditions and current roadway and intersection geometries. This scenario is used as the baseline condition from which to measure project-specific impacts.

3.1 Project Trip Generation

The source of the trip generation rates is the Institute of Transportation Engineers' (ITE) Trip Generation manual, 10th Edition. Land use category 150 (Warehousing) was selected to derive the traffic generation per 1,000 square feet of gross floor area for the **Peak Hour of the Adjacent Street Traffic** (between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM).



LEGEND

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



**FIGURE 4: EXISTING INTERSECTION
GEOMETRICS
PIXIOR DISTRIBUTION CENTER
HESPERIA, CALIFORNIA**

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The source of the mode share split between passenger cars and trucks is the Fontana Truck Trip Generation Study. The mode share split is provided for Warehouse Uses (ITE Land Use Category 150).

The source of the Passenger Car Equivalents (PCE) factor is the City of Hesperia Traffic Impact Analysis Report Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment dated July 2020. The Passenger Car Equivalents (PCE) factors are provided by vehicle type.

Table 3-1 summarizes the estimated passenger car equivalent trip generation for the proposed project for average daily (ADT), morning peak hour (between 7-9 AM) and afternoon peak hour (between 4-6 PM).

Table 3-1: Project Trip Generation

Land Use	Gross Floor Area (KSF)	Average Daily Traffic	AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
			Street Traffic			Street Traffic		
			In	Out	Total	In	Out	Total
Warehouse (ITE Land Use Category 150)	450	Vehicle Trip Generation Rates (Trips Per 1,000 Square Feet of Gross Floor Area)						
		1.74	0.13	0.04	0.17	0.05	0.14	0.19
		Total Vehicle Trip Generation						
		783	59	18	77	23	63	86
	Mode Share	Total Project Trip Generation by Vehicle Type						
Passenger Cars (Percent of Total)	79.57%	623	47	14	61	18	50	68
2-Axle Trucks (Percent of Total)	3.46%	27	2	1	3	1	2	3
3-Axle Trucks (Percent of Total)	4.64%	36	3	1	4	1	3	4
4-Axle Trucks (Percent of Total)	12.33%	97	7	2	9	3	8	11
Total		783	59	18	77	23	63	86
	PCE Factor	Total Project Trip Generation in Passenger Car Equivalents (PCE)						
Passenger Cars)	1	623	47	14	61	18	50	68
2-Axle Trucks	1.5	41	3	2	5	2	3	5
3-Axle Trucks (Percent of Total)	2	72	6	2	8	2	6	8
4-Axle Trucks (Percent of Total)	3	291	21	6	27	9	24	33
Total		1,027	77	24	101	31	83	114
Notes:								
KSF = Thousands of Square Feet.								
AM / PM Peak Hour of Adjacent Street Traffic = Trip generation coinciding with the highest hourly volumes of traffic on the adjacent streets during the AM (7:00 AM and 9:00 AM) and PM (4:00 PM and 6:00 PM) commuter peak periods.								
Source of trip generation rates: Institute of Transportation Engineers (ITE) Trip Generation (10th Edition). Average rates for land use category 150 (warehousing).								
Source of passenger car / truck mode share (percentage of total): Fontana Truck Trip Generation Study for Heavy Warehouse Uses (August 2003).								
Source of PCE factors: City of Hesperia Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS), July 2020								

As presented in **Table 3-1** the project would generate 1,027 daily PCE trips, 101 AM PCE trips, 114 PM PCE trips.

3.2 Project Trip Distribution and Assignment

To address the impacts of the estimated project traffic, the trips were distributed and assigned to the surrounding streets and study intersections. The directional distribution patterns (east, west, north and south) are consistent with concentrations of housing and commercial uses (primarily in the Hesperia, Oak Hills, Phelan, and General Victor Valley area) then assigned to the street system based on the most direct route on major streets. The project truck traffic was distributed based on the estimated directional approach and departure—predominantly from Highway 395 and I-15 Freeway. This distribution reflects local traffic

distribution as well. Once the distribution pattern was established, project trips were assigned to the area streets that serve the project.

Figure 5 illustrates the distribution of the project auto trips. **Figure 6** illustrates the distribution of the project truck trips. **Figure 7** illustrates the project auto trip assignment to the adjoining intersections. **Figure 8** illustrates the project truck trip assignment to the adjoining intersections. **Figure 9** illustrates the total project trip assignment to the adjoining intersections.

3.3 Project Access

The project is accessed through two full access drive to Amargosa Road. The proposed access driveway and associated modifications to Amargosa Road are illustrated in the conceptual geometric plan shown in **Figure 10**.

3.4 Existing plus Project Traffic Analysis

The intersection capacity analysis of Existing plus Project Conditions utilized existing intersection geometrics and the AM and PM peak hour traffic volumes shown in **Figure 11**. **Figure 12** illustrates the existing plus project intersection geometrics. **Table 3-2** and **Appendix C** provide the results of the analysis.

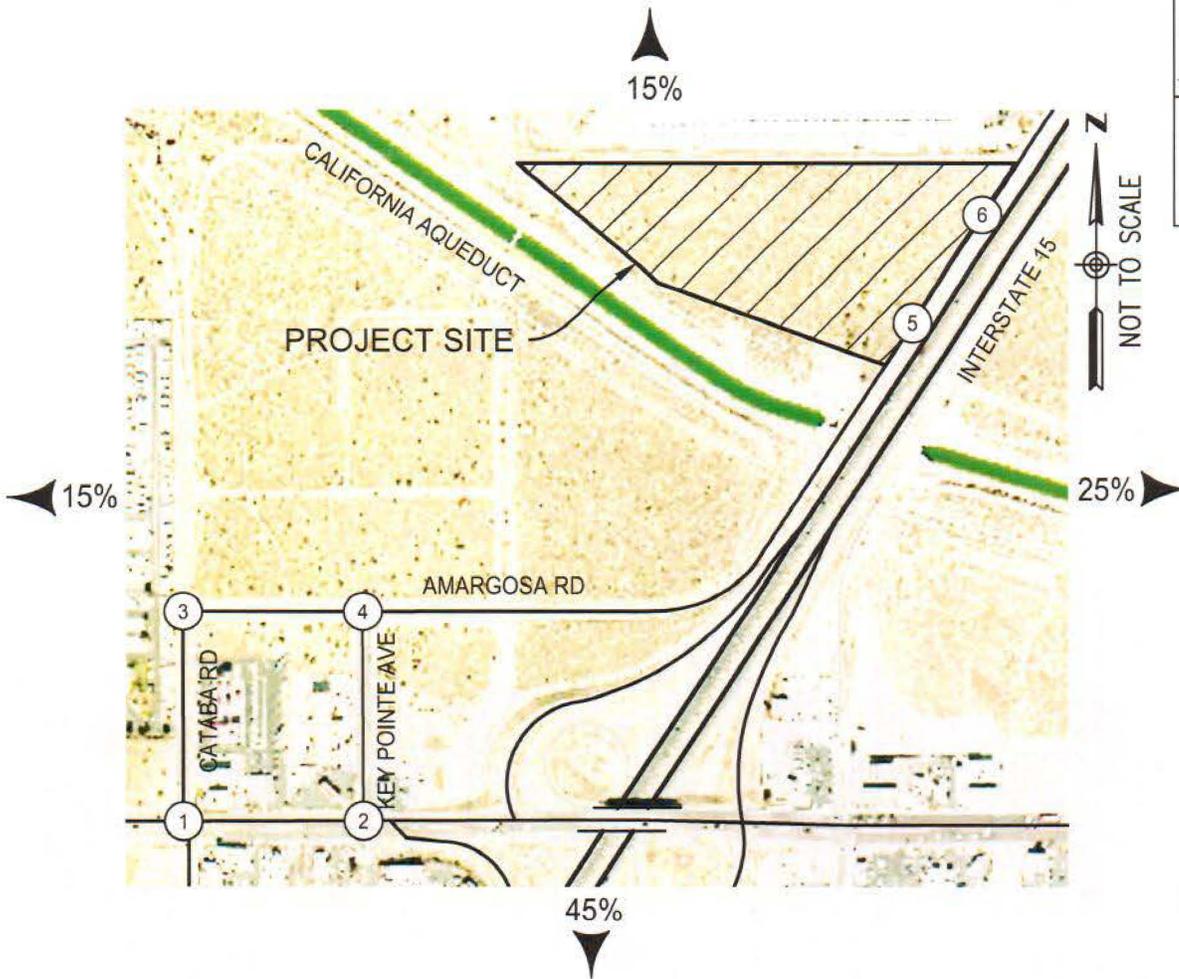
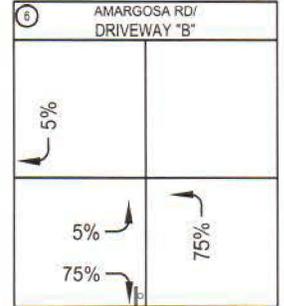
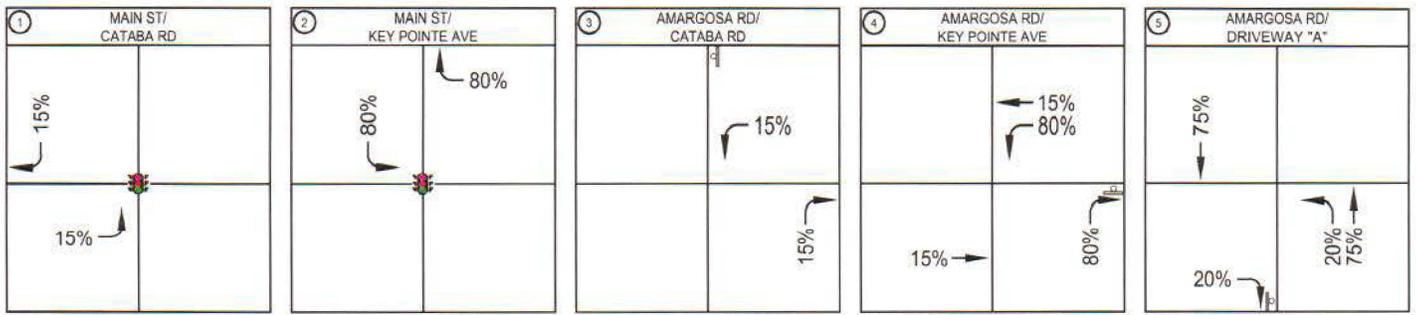
Table 3-2: Intersection Capacity Analysis – Existing Plus Project Conditions

Intersection		AM Peak Hour		PM Peak Hour	
		Delay (1)	LOS (2)	Delay (1)	LOS (2)
1	Main St / Cataba Rd	25.8	C	18.6	B
2	Main St / Key Pointe Ave	21.7	C	37.5	D
3	Amargosa Rd / Cataba Rd (3)	9.1	A	9.2	A
4	Amargosa Rd / Key Pointe Ave (3)	10.0	B	11.9	B
5	Amargosa Rd / Project Driveway "A" (4)	8.8	A	9.3	A
6	Amargosa Rd / Project Driveway "B" (4)	9.0	A	9.4	A

- (1) Delay – In seconds per vehicle
- (2) LOS – Level of Service
- (3) Side - Street Stop Controlled Intersection
- (4) Side - Street Stop Controlled Full Access Driveway

Source: David Evans and Associates, Inc.

As presented in **Table 3-2**, under Existing plus Project Conditions, the study intersections are anticipated to continue to meet at the City of Hesperia target level of service (LOS).

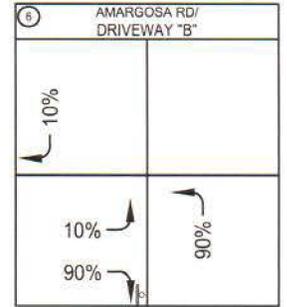
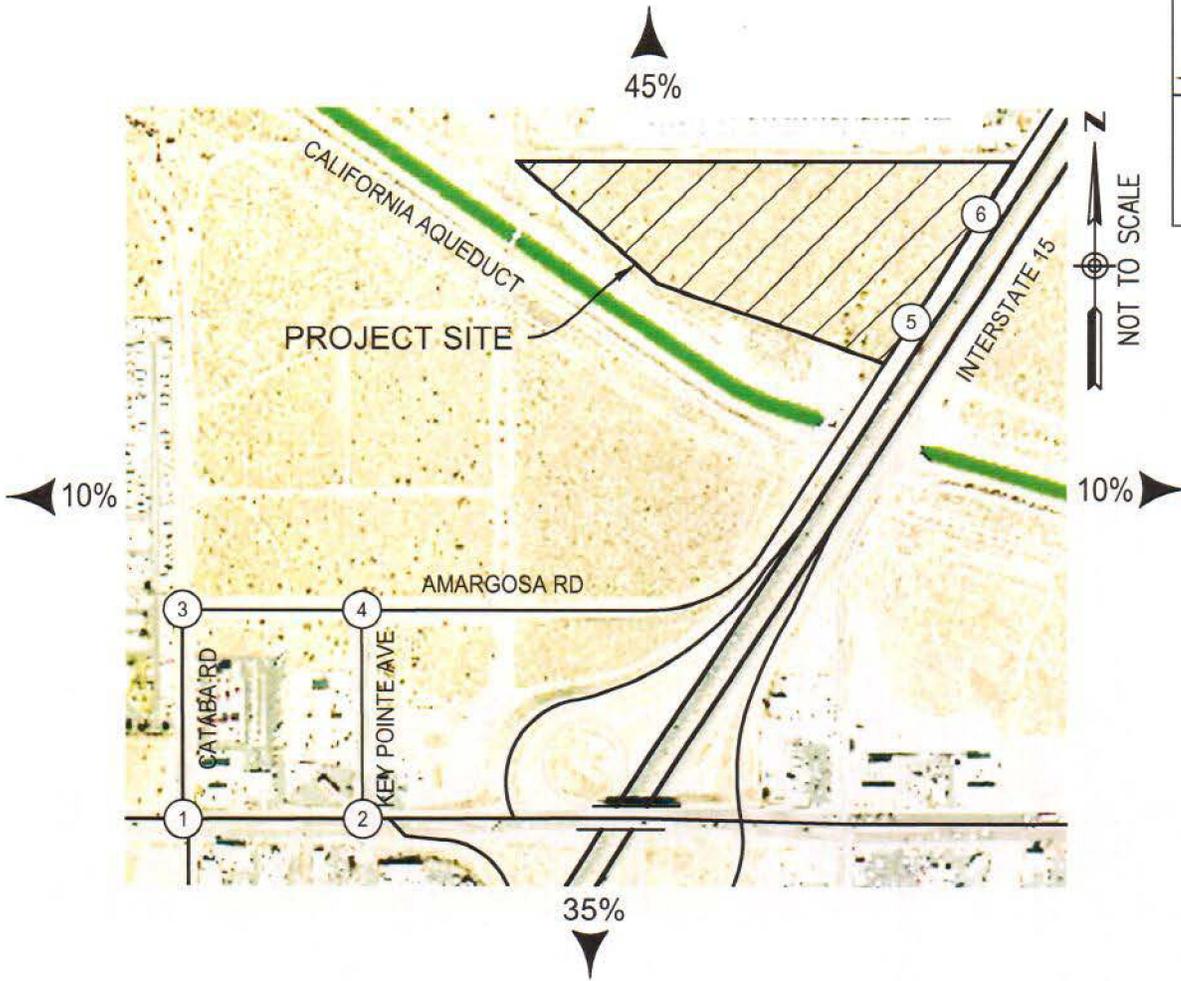
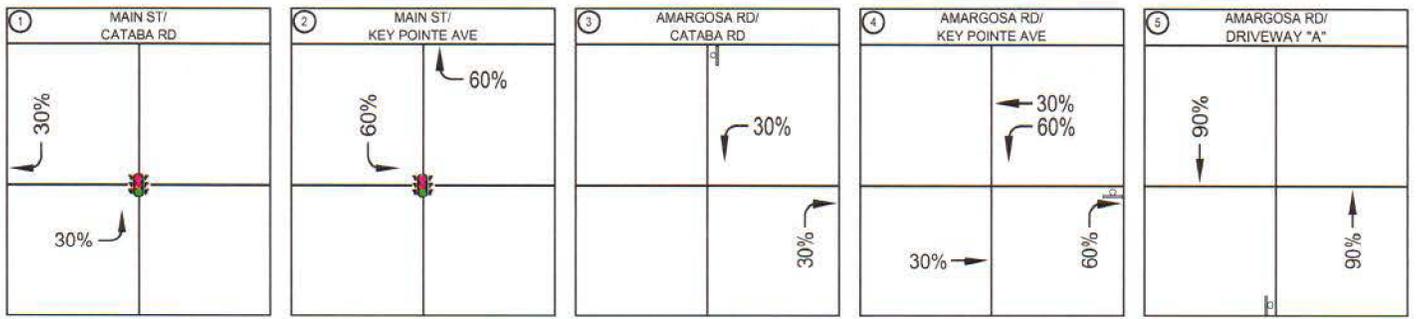


LEGEND

- XX% - GENERAL PROJECT TRIP DISTRIBUTION
- XX% - SPECIFIC PROJECT TRIP PERCENTAGE
- ① - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH



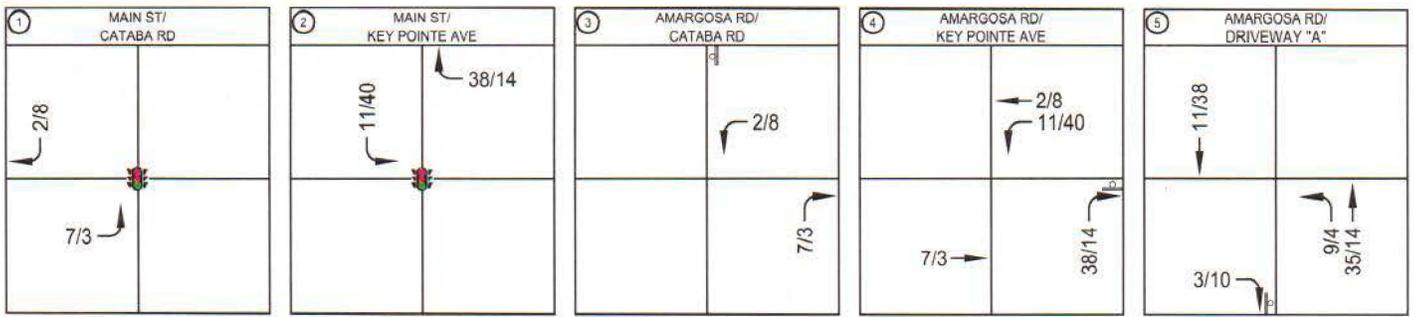
**FIGURE 5: PROJECT AUTO TRIP DISTRIBUTION
PIXIOR DISTRIBUTION CENTER
HESPERIA, CALIFORNIA**



LEGEND

- XX% - GENERAL PROJECT TRIP DISTRIBUTION
- XX% - SPECIFIC PROJECT TRIP PERCENTAGE
- # - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

**FIGURE 6: PROJECT TRUCK TRIP DISTRIBUTION
 PIXIOR DISTRIBUTION CENTER
 HESPERIA, CALIFORNIA**



PROJECT AUTO TRIPS

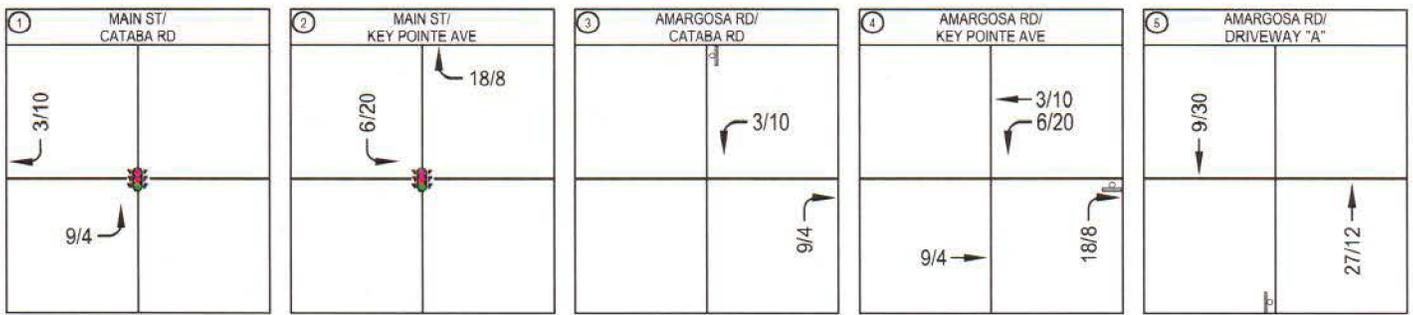
AM PEAK - 47 IN / 14 OUT
 PM PEAK - 18 IN / 50 OUT

LEGEND

- XX/XX ↗ - AM/PM PROJECT AUTO TRIP
- Ⓜ - STUDY INTERSECTIONS
- 🚦 - SIGNALIZED INTERSECTION
- Ⓜ - STOP CONTROLLED APPROACH



**FIGURE 7: PROJECT AUTO TRIPS
 PIXIOR DISTRIBUTION CENTER
 HESPERIA, CALIFORNIA**



PROJECT TRUCK PCE TRIPS

AM PEAK - 30 IN / 10 OUT
 PM PEAK - 13 IN / 33 OUT

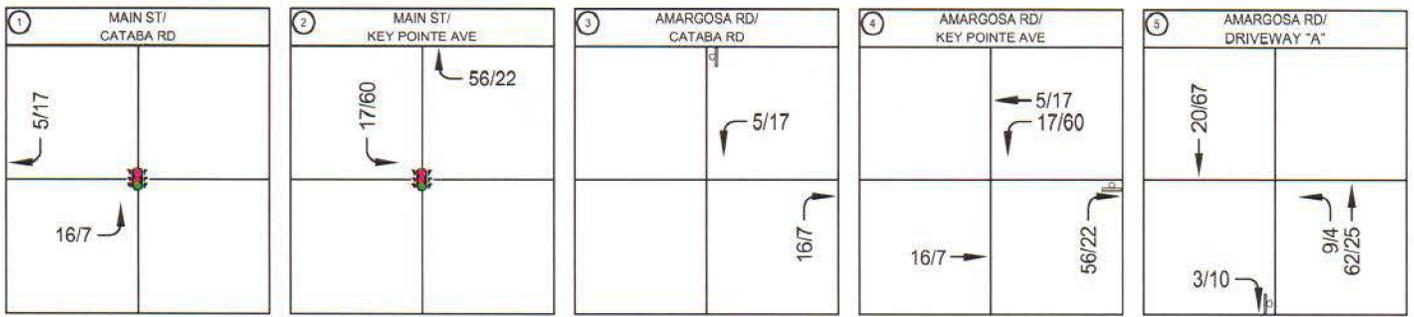
LEGEND

- XX/XX ↗ - AM/PM PROJECT TRUCK PCE TRIP
- Ⓝ - STUDY INTERSECTIONS
- 🚦 - SIGNALIZED INTERSECTION
- Ⓜ - STOP CONTROLLED APPROACH



**FIGURE 8: PROJECT TRUCK PCE TRIPS
PIXIOR DISTRIBUTION CENTER
HESPERIA, CALIFORNIA**

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PROJECT TRIPS

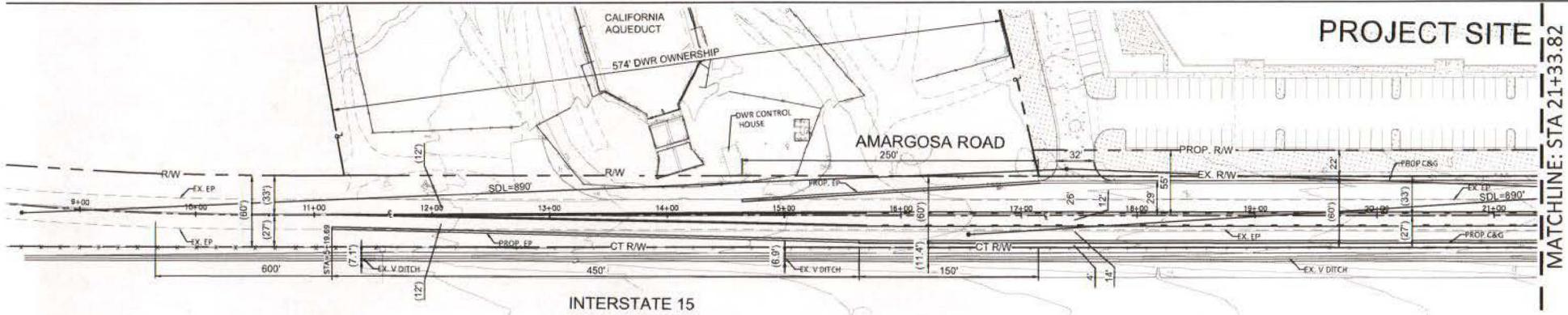
AM PEAK - 77 IN / 24 OUT
 PM PEAK - 31 IN / 83 OUT

LEGEND

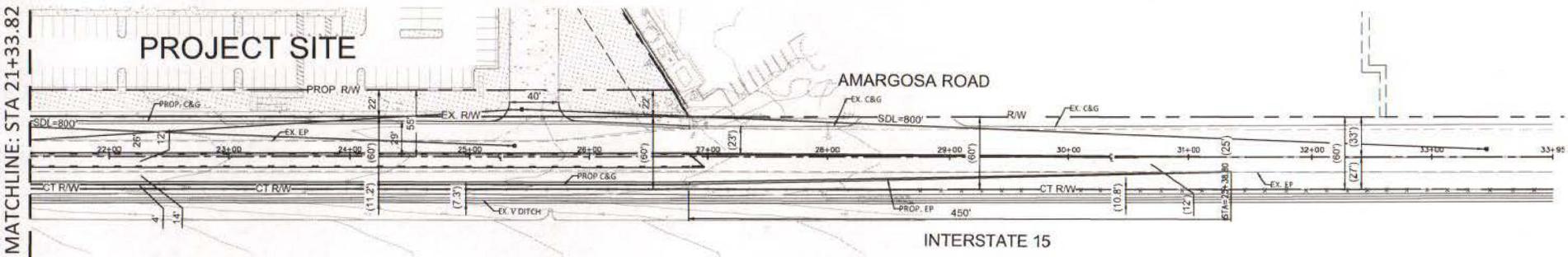
- XX/XX ↗ - AM/PM PROJECT TRIP
- Ⓢ - STUDY INTERSECTIONS
- 🚦 - SIGNALIZED INTERSECTION
- Ⓜ - STOP CONTROLLED APPROACH



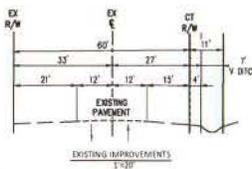
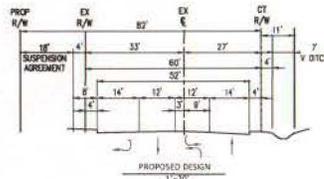
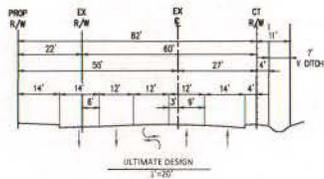
**FIGURE 9: TOTAL PROJECT TRIPS
PIXIOR DISTRIBUTION CENTER
HESPERIA, CALIFORNIA**



MATCHLINE: STA 21+33.82



MATCHLINE: STA 21+33.82



3.5 Queuing Analysis

A queuing analysis for the Existing plus Project Conditions was performed at the intersection of Amargosa Rd / Project Driveway "A" and Amargosa Rd / Project Driveway "B". The queuing analysis was performed utilizing the Trafficware SimTraffic10 software package. The 95th percentile maximum queue length results for the Existing plus Project Conditions for the turn lanes accessing the project driveways are shown in **Table 3-3** and provided in **Appendix D**.

Table 3-3: Queuing Analysis - Existing Plus Project Conditions

Intersection/Movement			Storage Length (Feet)	Existing Plus Project Conditions Queue Length (Feet)	
				AM Peak Hour	PM Peak Hour
5	Amargosa Rd / Project Driveway "A"	EBLR		15	26
		NBTHL	(150 FT. TWLTL)	7	11
		SBTHR	(735 FT. TWLTL)	-	-
6	Amargosa Rd / Project Driveway "A"	EBLR		40	
		NBTHL	(735 FT. TWLTL)	17	
		SBTHR	(100 FT. TWLTL)	-	

Queue – In Feet

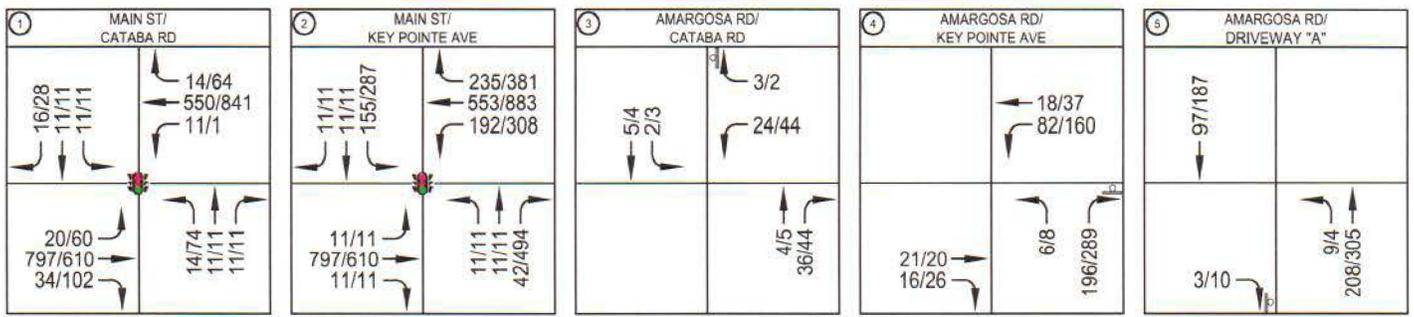
TWLTL – Two Way Left Turn Lane

(XXX) – Proposed Storage Length

95% - 95 Percentile Queue Length

Source: David Evans and Associates, Inc.

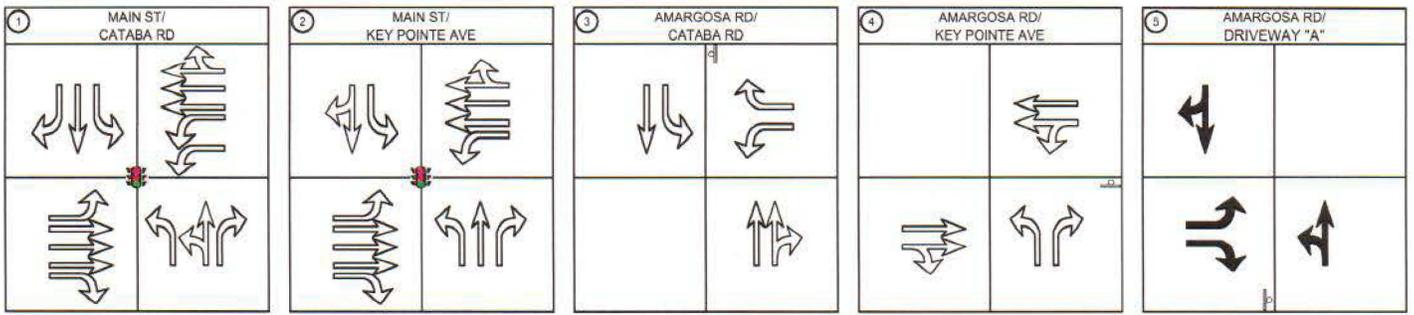
As presented in **Table 3-3**, under Existing plus Project Conditions the proposed turn bay lengths can accommodate the AM or PM peak 95th percentile traffic flows.



LEGEND

- XX/XX ↗ - AM/PM PROJECT TRIP
- Ⓝ - STUDY INTERSECTIONS
- 🚦 - SIGNALIZED INTERSECTION
- Ⓜ - STOP CONTROLLED APPROACH

FIGURE 11: EXISTING PLUS PROJECT
CONDITION TRAFFIC VOLUMES
PIXIOR DISTRIBUTION CENTER
HESPERIA, CALIFORNIA



LEGEND

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



FIGURE 12: EXISTING PLUS PROJECT GEOMETRICS
PIXIOR DISTRIBUTION CENTER
HESPERIA, CALIFORNIA

4 OPENING DAY CONDITIONS

The opening day conditions scenario evaluates conditions at the time the project is anticipated to be fully constructed and occupied (project opening day, which is the year 2021) but without traffic generated by the project. As agreed in the approved scope, the ambient growth is a general rate of growth in traffic from overall regional growth (assumed to be 2% annually for this study) and traffic generated by other nearby development (assumed to be 1.5% annually for this study) resulting in a conservative 3.5% ambient annual growth rate.

4.1 Opening Day Conditions Traffic Analysis

The Opening Day Conditions intersection capacity analysis utilized existing intersection geometrics and the projected AM and PM peak hour traffic shown in **Figure 13. Table 4-1** and **Appendix C** provides the results of the analysis.

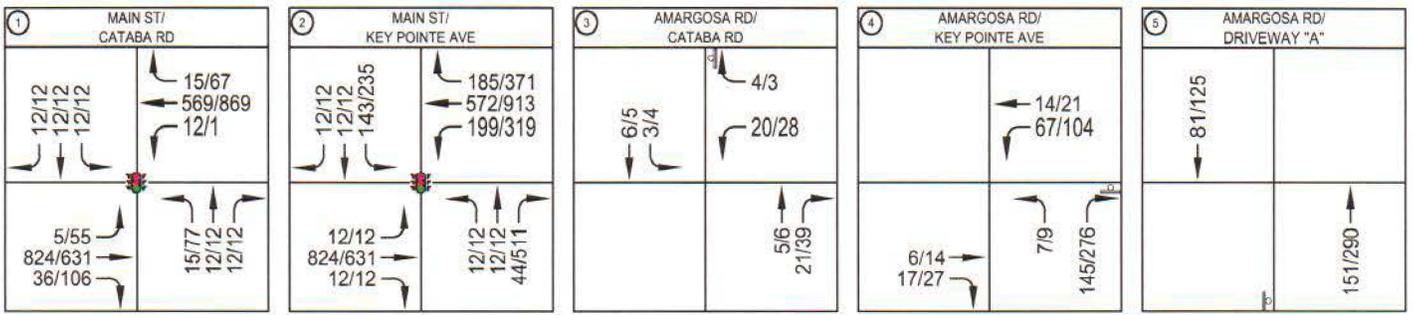
Table 4-1: Intersection Capacity Analysis – Opening Day Conditions

Intersection		AM Peak Hour		PM Peak Hour	
		Delay (1)	LOS (2)	Delay (1)	LOS (2)
1	Main St / Cataba Rd	21.7	C	14.9	B
2	Main St / Key Pointe Ave	22.0	C	39.5	D
3	Amargosa Rd / Cataba Rd (3)	9.0	A	9.1	A
4	Amargosa Rd / Key Pointe Ave (3)	9.7	A	10.5	B

- (1) Delay – In seconds per vehicle
 (2) LOS – Level of Service
 (3) Side - Street Stop Controlled Intersection

Source: David Evans and Associates, Inc.

As presented in **Table 4-1**, under Opening Day Conditions, the study intersections are anticipated to continue to meet the City of Hesperia target level of service (LOS).



LEGEND

- XX/XX ↗ - AM/PM PROJECT TRIP
- ① - STUDY INTERSECTIONS
- 🚦 - SIGNALIZED INTERSECTION
- ⏸ - STOP CONTROLLED APPROACH



**FIGURE 13: OPENING DAY CONDITION
TRAFFIC VOLUMES
PIXIOR DISTRIBUTION CENTER
HESPERIA, CALIFORNIA**



5 OPENING DAY CONDITIONS WITH PROJECT

The proposed project is planned to open in the year 2021. To determine the project impacts at the study intersections and driveway, project trips were added to opening day conditions to produce the opening day plus project volumes.

5.1 Project Traffic Analysis

The intersection capacity analysis of Opening Day Conditions with Project utilized existing intersection geometrics and the AM and PM peak hour traffic volumes shown in **Figure 14. Table 5-1** and **Appendix C** provide the results of the analysis.

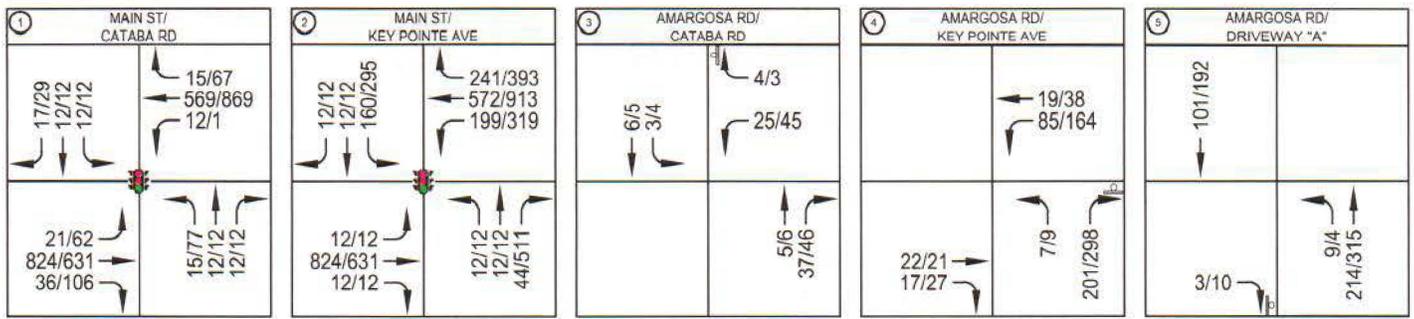
Table 5-1: Intersection Capacity Analysis – Opening Day Conditions with Project

Intersection		AM Peak Hour		PM Peak Hour	
		Delay (1)	LOS (2)	Delay (1)	LOS (2)
1	Main St / Cataba Rd	26.0	C	18.8	B
2	Main St / Key Pointe Ave	22.1	C	39.9	D
3	Amargosa Rd / Cataba Rd (3)	9.1	A	9.2	A
4	Amargosa Rd / Key Pointe Ave (3)	10.1	B	12.1	B
5	Amargosa Rd / Project Driveway "A" (4)	8.8	A	9.3	A
6	Amargosa Rd / Project Driveway "B" (4)	9.0	A	9.5	A

- (1) Delay – In seconds per vehicle
- (2) LOS – Level of Service
- (3) Side - Street Stop Controlled Intersection
- (4) Side - Street Stop Controlled Full Access Driveway

Source: David Evans and Associates, Inc.

As presented in **Table 5-1**, under Opening Day Conditions with Project, the study intersections are anticipated to continue to meet the City of Hesperia target level of service (LOS).



LEGEND

- XX/XX ↗ - AM/PM PROJECT TRIP
- Ⓜ - STUDY INTERSECTIONS
- 🚦 SIGNALIZED INTERSECTION
- Ⓜ STOP CONTROLLED APPROACH



FIGURE 14: OPENING DAY CONDITIONS WITH PROJECT TRAFFIC VOLUMES
PIXIOR DISTRIBUTION CENTER
HESPERIA, CALIFORNIA



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6 SUMMARY, PROJECT SPECIFIC IMPROVEMENTS

Overall Conclusions

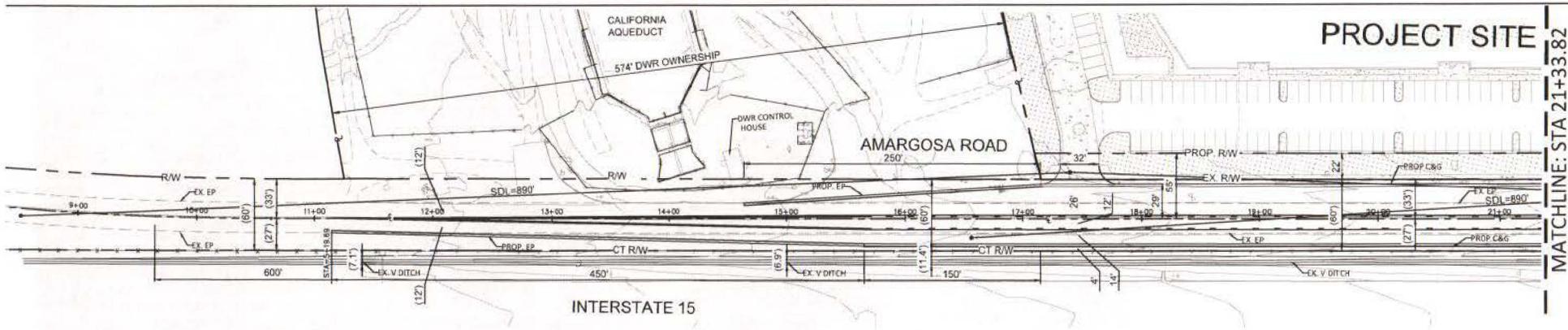
In summary, the proposed project will be required to implement project-specific improvements along its frontage with Amargosa Road and its two proposed driveway access on Amargosa Road. The project does not have project-specific impacts to level of service at off-site intersections.

6.1 Project Specific Improvements

The following improvements are the sole responsibility of the project:

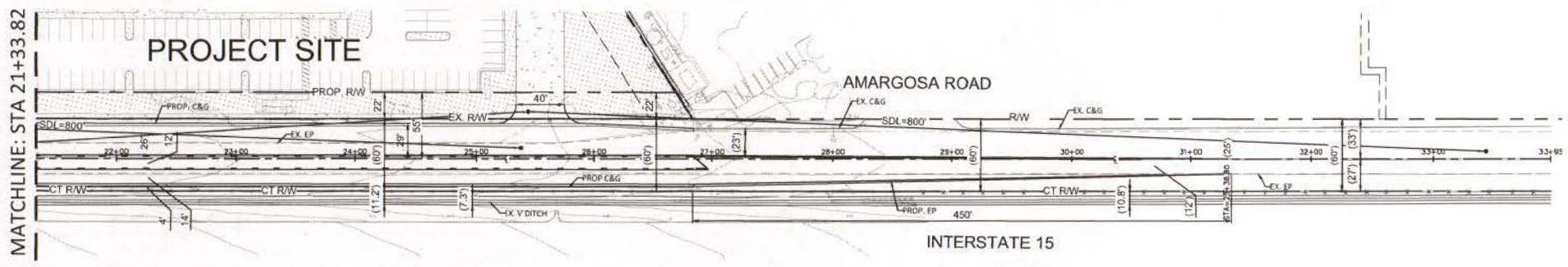
- Construct the project's frontage improvements as shown on the conceptual geometric plan and as approved by the City of Hesperia.

Figure 15 re-presents the conceptual geometric plan for the project's access driveway improvements.



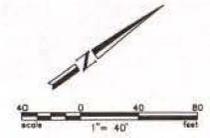
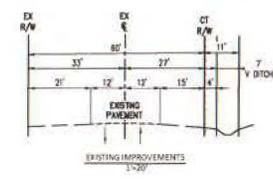
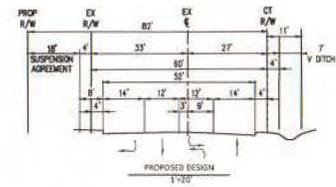
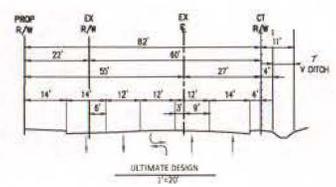
PROJECT SITE

MATCHLINE: STA 21+33.82



MATCHLINE: STA 21+33.82

PROJECT SITE





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7 APPENDICES

Appendix A: Scope Agreement

Appendix B: Existing (Year 2017) Traffic Counts from Service Station at Northwest Corner of Phelan Road and Highway 395 Traffic Impact Analysis, by Albert Wilson & Associates, dated January 22, 2018

Appendix C: Intersection Capacity Analysis Calculations

Appendix D: Queuing Analysis