



January 14, 2019

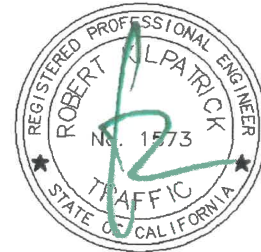
Job No. NSAM0000-0001

**MEMORANDUM**

To: Money Samra  
10415 Edgebrook Way  
Northridge, CA 91326

From: Robert Kilpatrick, PE/TE  
Senior Project Manager / Senior Associate

RE: **Traffic Scope Outline – Harvard Road Project –  
San Bernardino County, California**



This memorandum presents the scope of the traffic impact analysis for the Proposed Project consisting of a Super Convenience Market/Gas Station with 20 pumps. The proposed project is located at the southwest corner of Harvard Road and Hacienda Road in the unincorporated community of Newberry Springs in San Bernardino County, California. The purpose of the scope is to assess the requirements of a detailed Traffic Study for the project by the County of San Bernardino staff.

**A. Project Description**

The proposed project is located at the southwest corner of Harvard Road and Hacienda Road in the unincorporated community of Newberry Springs in San Bernardino County, California as illustrated in *Exhibit A*. It is bounded to the north and west by Hacienda Road and undeveloped land, to the east by Harvard Road and undeveloped land, and the I-15 Freeway to the south.

As presented, the proposed project is comprised of a Super Convenience Market/Gas Station with 20 pumps. *Exhibit B* illustrates the proposed Site Plan. As illustrated, access to the site will be obtained from one driveway along Harvard Road and two driveways along Hacienda Road.

**B. Project Trip Generation**

*Table A* summarizes the estimated trip generation for the project site during the Friday (4 – 6 PM) peak and Sunday PM (12 – 3 PM) peak periods. The generation factors for the Super Convenience Market/Gas Station with 20 pumps were obtained from the ITE Trip Generation Manual, 10th Edition based on land use type 960.

The project is highway oriented as a result of a diverted link trip reduction of 80% applied to the trip generation. The diverted link trip reduction factor is consistent with Traffic Studies completed for area projects adjoining the I-15 Freeway. It is proposed that 70% of the project trips are to be generated by Cars Only. The remaining 30% of the project trips are to be generated by Recreational Vehicles (RVs) and/or Trucks.

It is estimated that the project will generate 92 PM Total Primary Trips.



**Table A: Project Trip Generation**

	Use	Daily	PM Peak Hour		Total
			In	Out	
<b>1</b>	<b>Super Convenience Market/Gas Station</b>				
	(ITE 960) Vehicle Fueling Positions	230.52	11.48	11.48	22.96
	20 Gasoline Fueling Positions	4,610	230	230	459
	<b>Diverted Link Trips (80%)</b>	-	<b>184</b>	<b>184</b>	<b>367</b>
	<i>Cars Only (70%)</i>	-	129	129	257
	<i>RVs and Trucks (30%)</i>	-	55	55	110
	<b>Primary Trips (20%)</b>	-	<b>46</b>	<b>46</b>	<b>92</b>
	<i>Cars Only (70%)</i>	-	32	32	64
	<i>RVs and Trucks (30%)</i>	-	14	14	28

Source: "Trip Generation Manual, Institute of Transportation Engineers", 10<sup>th</sup> Edition

### C. Project Trip Distribution and Assignment

To address the impacts of the estimated entry/exit trips at the project driveways, the trips were distributed and assigned to each driveway based on the driveway restrictions. The Project Driveway "B" at Harvard Road is proposed to accommodate "Cars Only." Recreational Vehicles (RVs) and Trucks are required to proceed north to Hacienda Road and enter in either Project Driveway "A" or Project Driveway "C".

The project was distributed based on the anticipated project traffic flows and surrounding area utilization. The project trips are distributed based on the local area network streets. The distribution of the Cars Only primary project trips is illustrated in *Exhibit C1*. The distribution of the RVs and Trucks primary project trips is illustrated in *Exhibit C2*. The distribution of the Cars Only diverted links project trips is illustrated in *Exhibit C3*. The distribution of the RVs and Trucks diverted links project trips is illustrated in *Exhibit C4*. The Cars Only Primary Project Trips are illustrated on *Exhibit D1*. The RVs and Trucks Primary Project Trips are illustrated on *Exhibit D2*. The Cars Only Diverted Link Project Trips are illustrated on *Exhibit D3*. The RVs and Trucks Diverted Link Project Trips are illustrated on *Exhibit D4*. The Total Project Trips are illustrated on *Exhibit D5*.

### D. Study Intersections

The proposed project is located at the southwest corner of Harvard Road and Hacienda Road in the unincorporated community of Newberry Springs in San Bernardino County, California. We examined the trips distributed to four (4) existing intersections and two (2) future driveway intersections in the study area.

1. Harvard Road and Hacienda Road
2. Harvard Road and I-15 Freeway Southbound Ramps
3. Harvard Road and I-15 Freeway Northbound Ramps
4. Hacienda Road and Barrett Road/Project Driveway "A"
5. Harvard Road and Project Driveway "B" (Future Intersection)
6. Hacienda Road and Project Driveway "C" (Future Intersection)

All of the existing intersections are unsignalized.



## **E. Traffic Study Scenarios**

The following is an outline of the Traffic Study analysis scenarios;

1. Existing Conditions (Friday 4-6 PM peak and Sunday 12-3 PM peak periods)
2. Existing plus Project Conditions
  - a. Existing
  - b. Growth (assume growth rate of 2% per year)
  - c. Project Traffic
3. Background Conditions
  - a. Existing
  - b. Growth (assume growth rate of 2% per year)
  - c. Related Projects in the vicinity
4. Project Conditions
  - a. Existing
  - b. Growth (assume growth rate of 2% per year)
  - c. Project Traffic
  - d. Related Projects in the vicinity
5. Future Year 2040
  - a. San Bernardino Transportation Analysis Model (SBTAM)
6. Future Year 2040 With Project
  - a. San Bernardino Transportation Analysis Model (SBTAM)
  - b. Project Traffic

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 – Cars Only Primary Trip Distribution
4. Exhibit C2 – RVs and Trucks Primary Trip Distribution
5. Exhibit C3 – Cars Only Diverted Link Trip Distribution
6. Exhibit C4 – RVs and Trucks Diverted Link Trip Distribution
7. Exhibit D1 – Cars Only Primary Trips
8. Exhibit D2 – RVs and Trucks Primary Trips
9. Exhibit D3 – Cars Only Diverted Link Trips
10. Exhibit D4 – RVs and Trucks Diverted Link Trips
11. Exhibit D5 – Total Project Trips

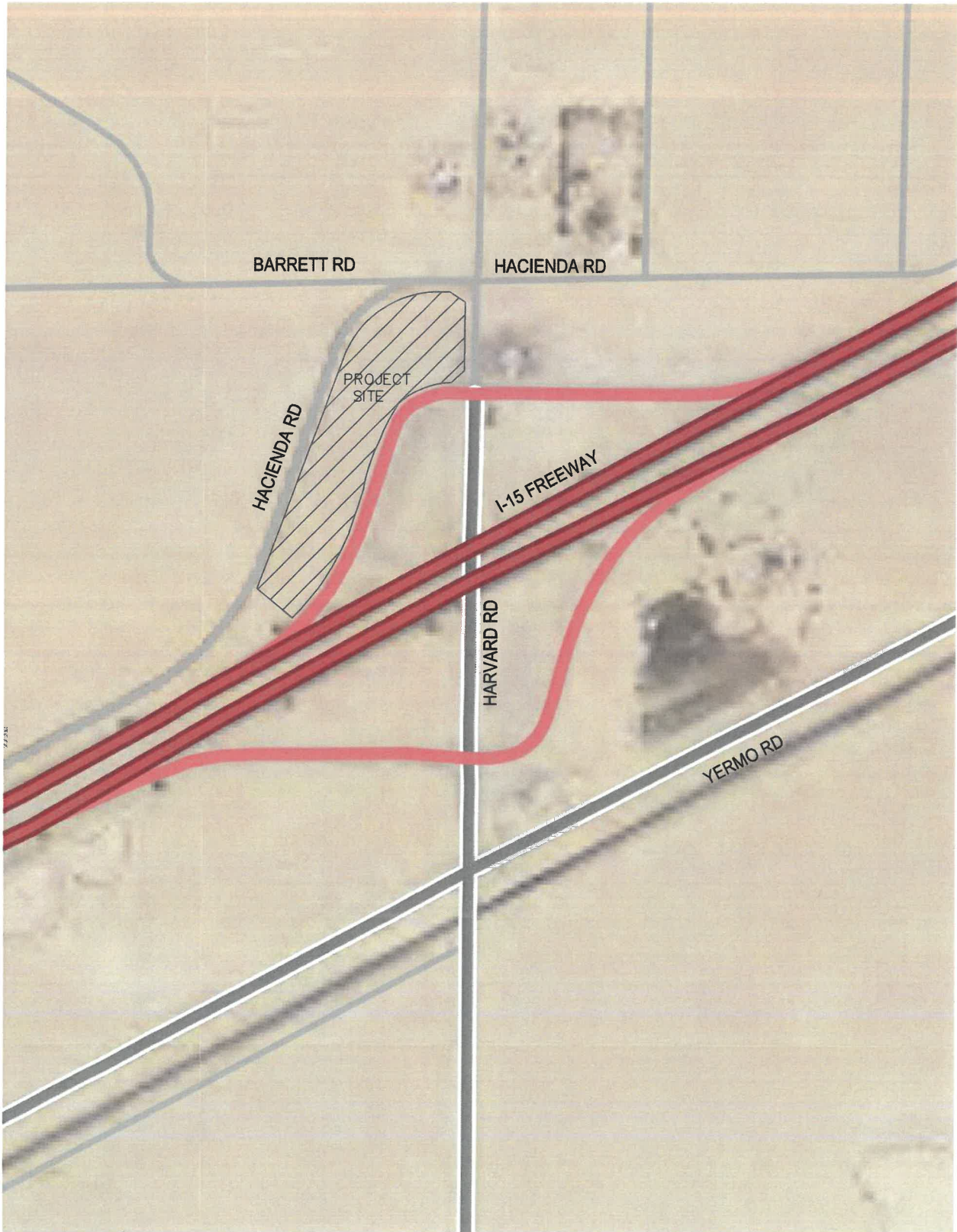


EXHIBIT A: VICINITY MAP  
HARVARD ROAD PROJECT  
NEWBERRY SPRINGS, CALIFORNIA

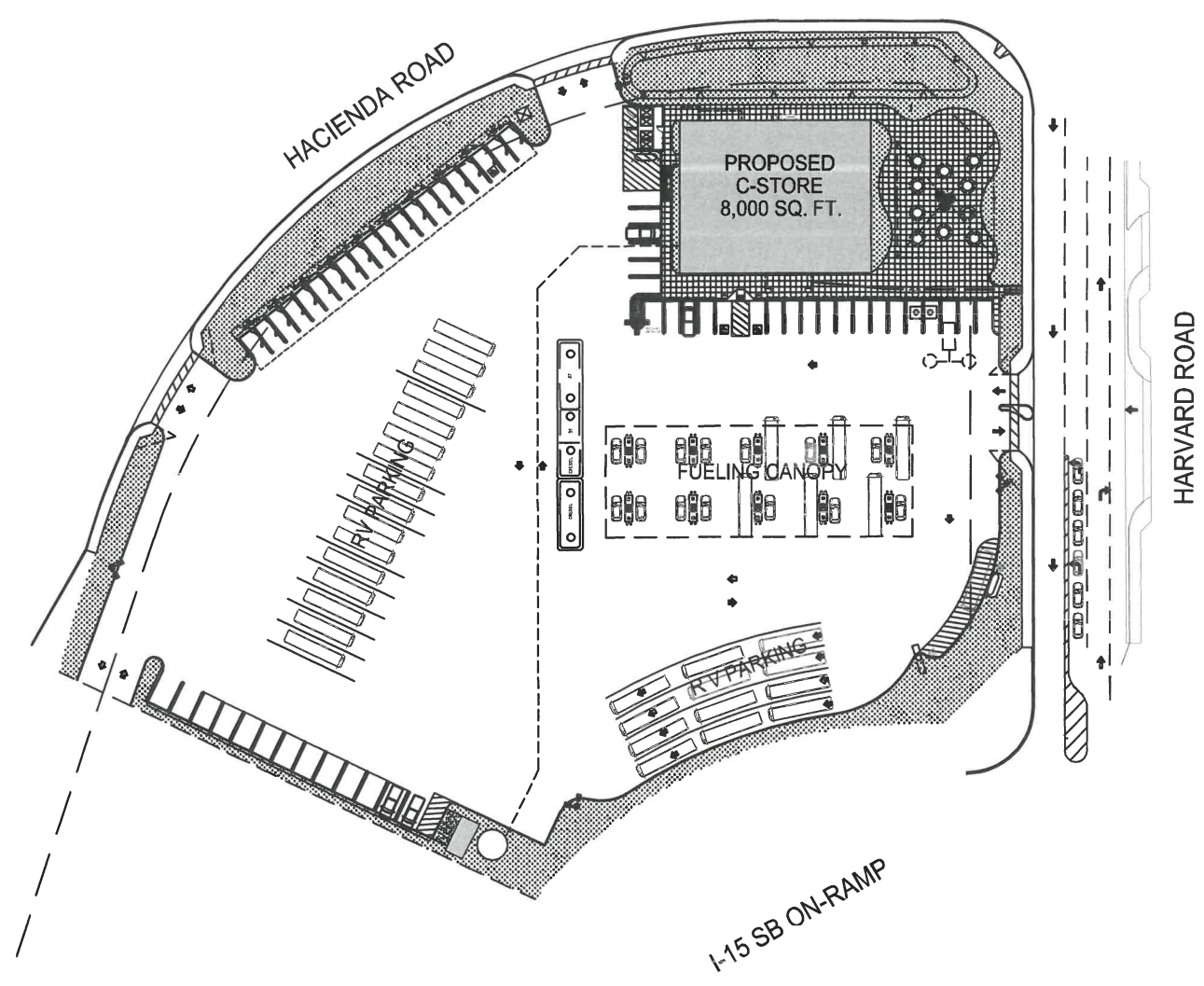
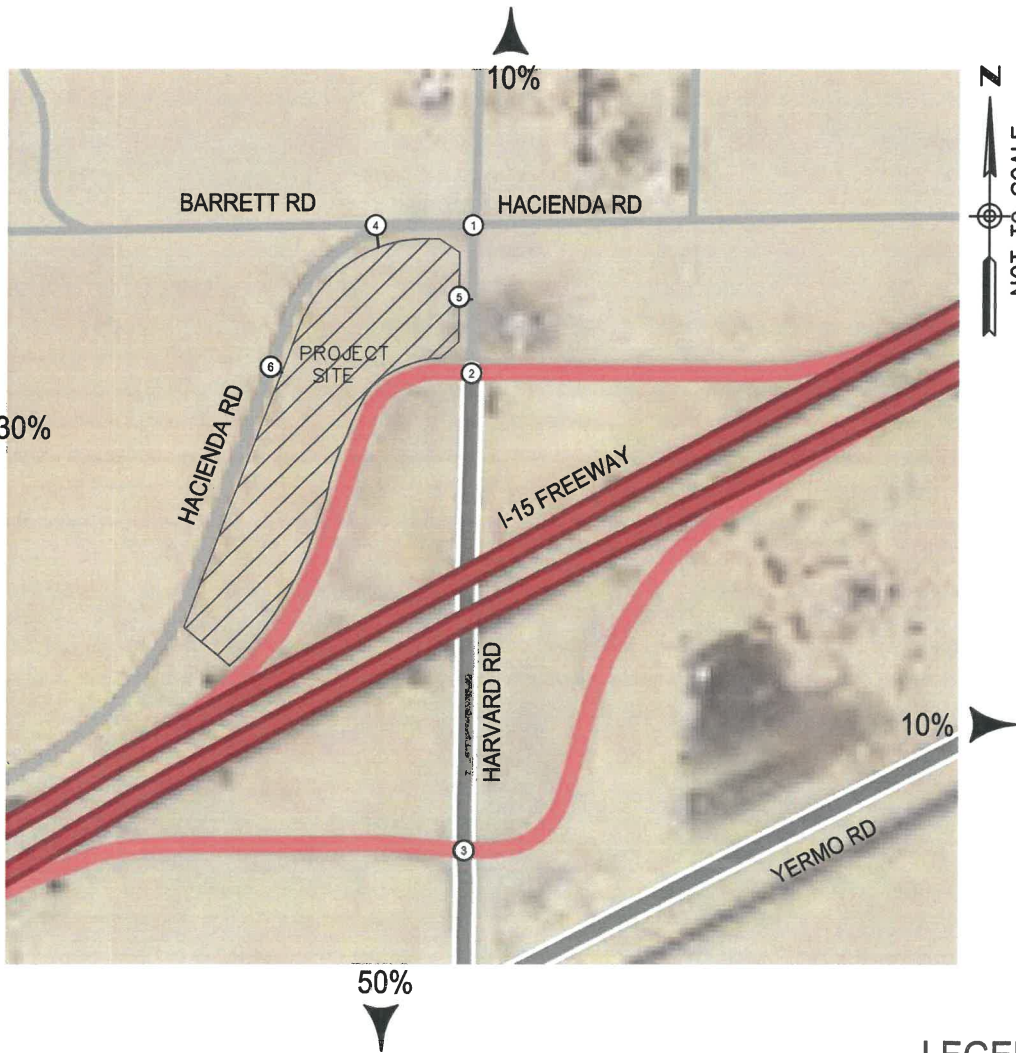
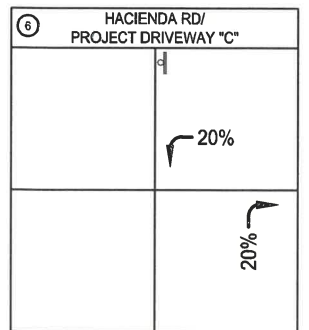
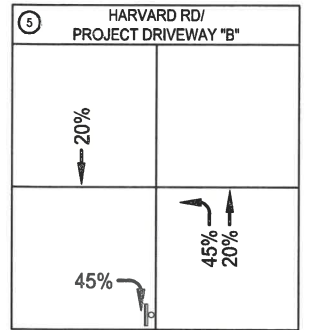
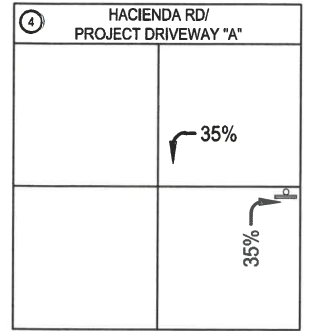
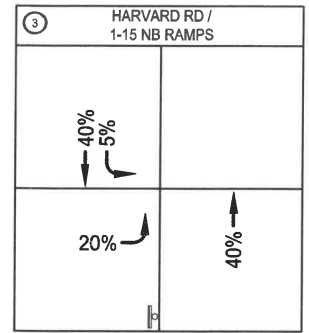
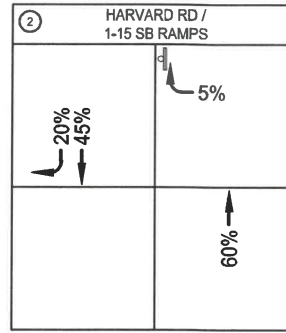
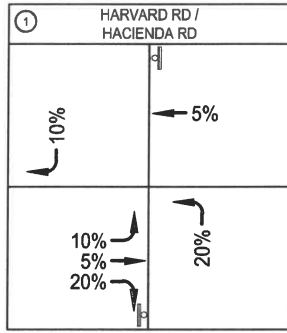
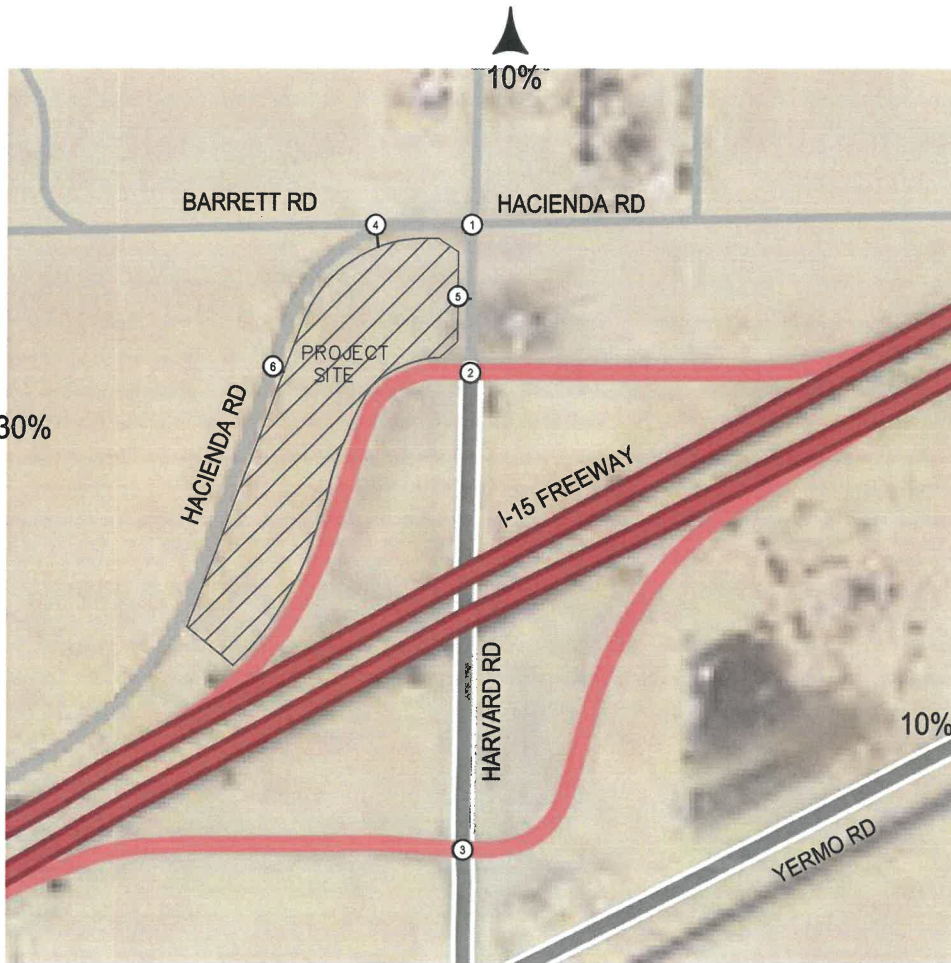
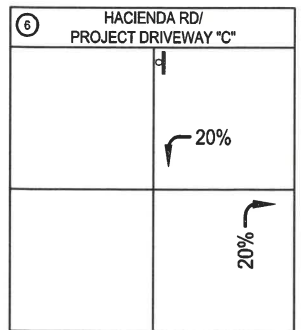
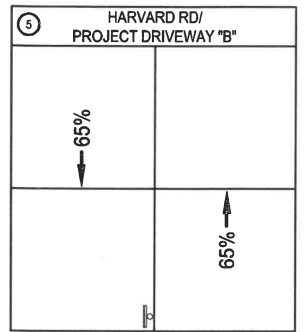
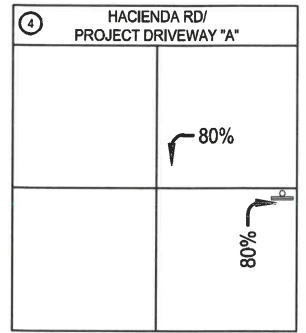
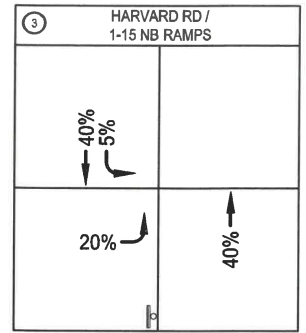
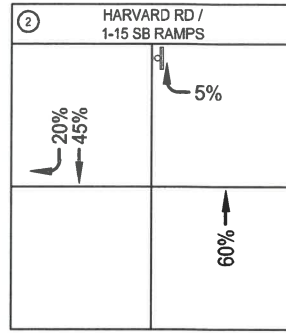
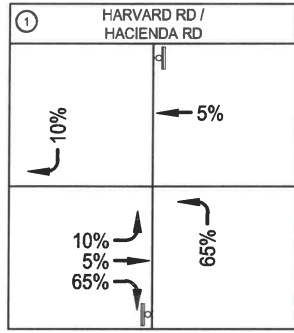


EXHIBIT B: SITE PLAN  
HARVARD ROAD PROJECT  
NEWBERRY SPRINGS, CALIFORNIA



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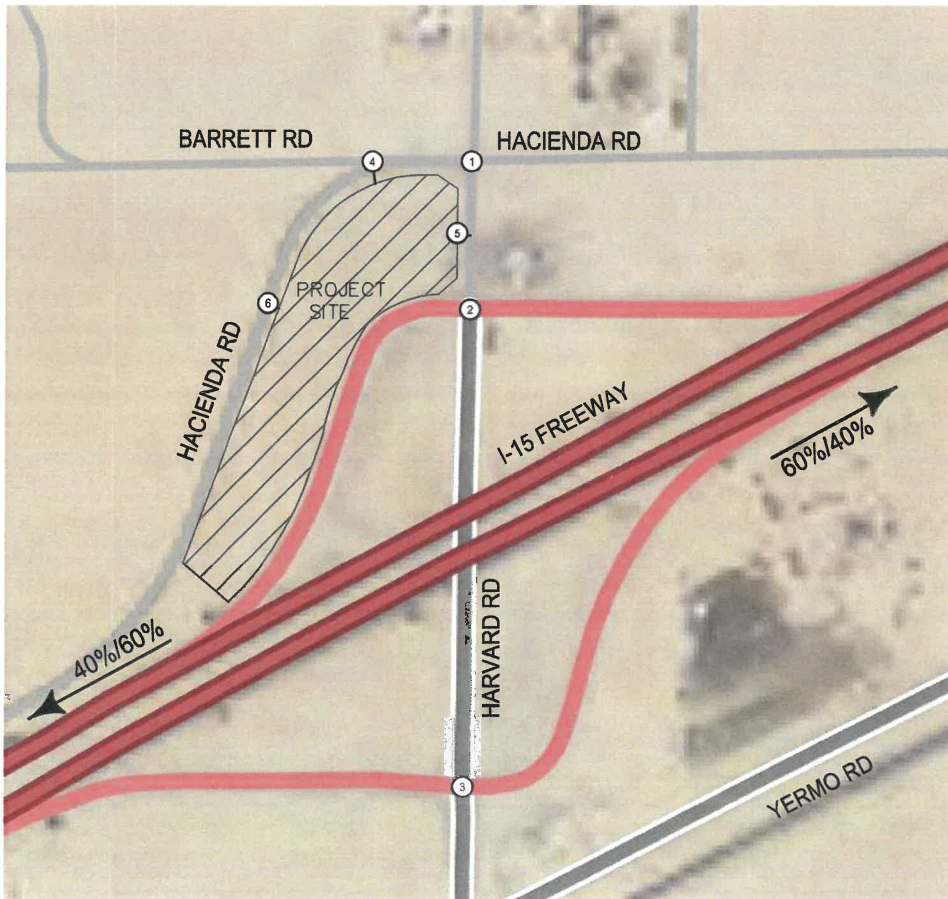
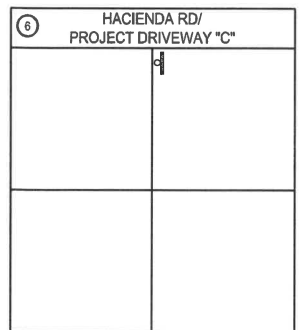
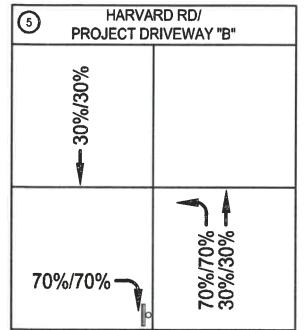
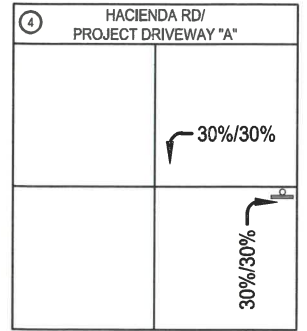
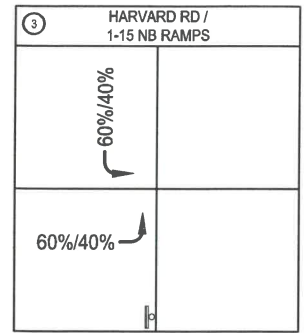
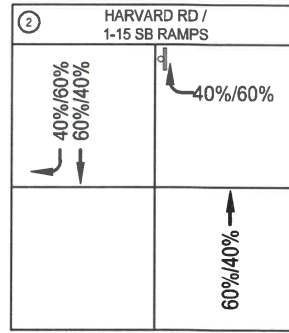
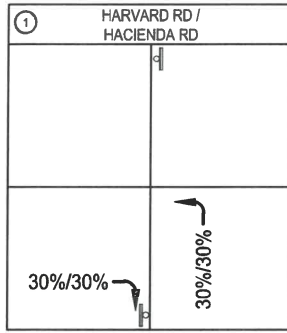
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- XX% - SPECIFIC PROJECT TRIP PERCENTAGE
- ① - STUDY INTERSECTION
- ⊥ - STOP CONTROLLED INTERSECTION



NOT TO SCALE

**LEGEND**

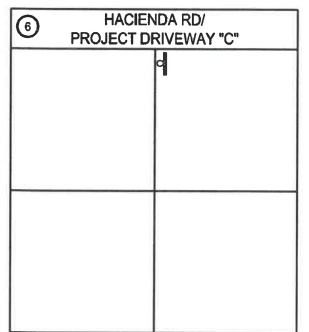
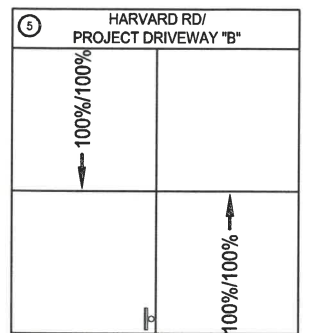
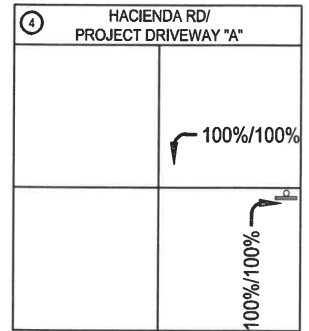
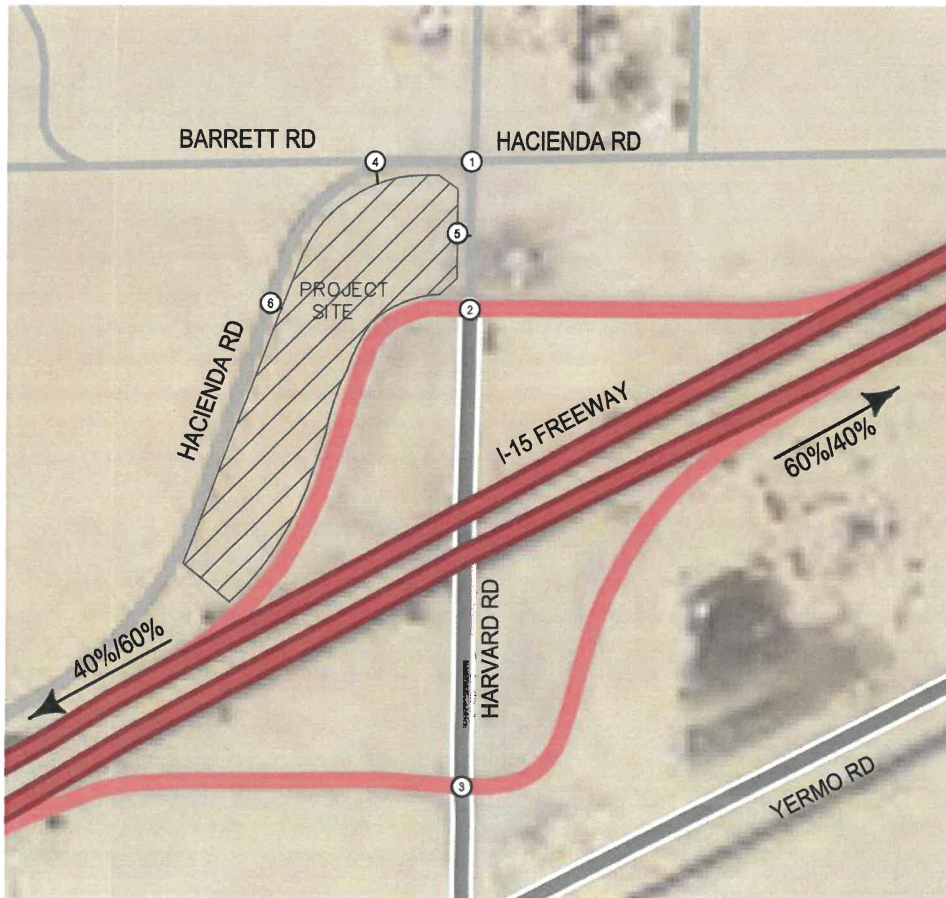
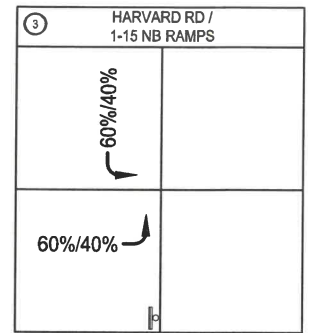
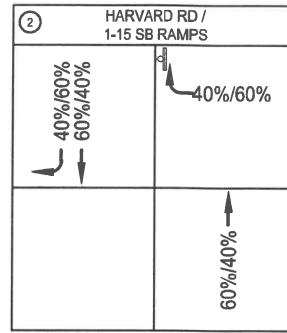
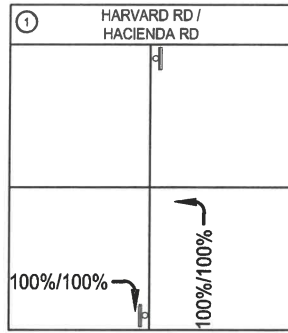
- XX% GENERAL PROJECT TRIP DISTRIBUTION
- XX% SPECIFIC PROJECT TRIP PERCENTAGE
- ① - STUDY INTERSECTION
- STOP CONTROLLED INTERSECTION



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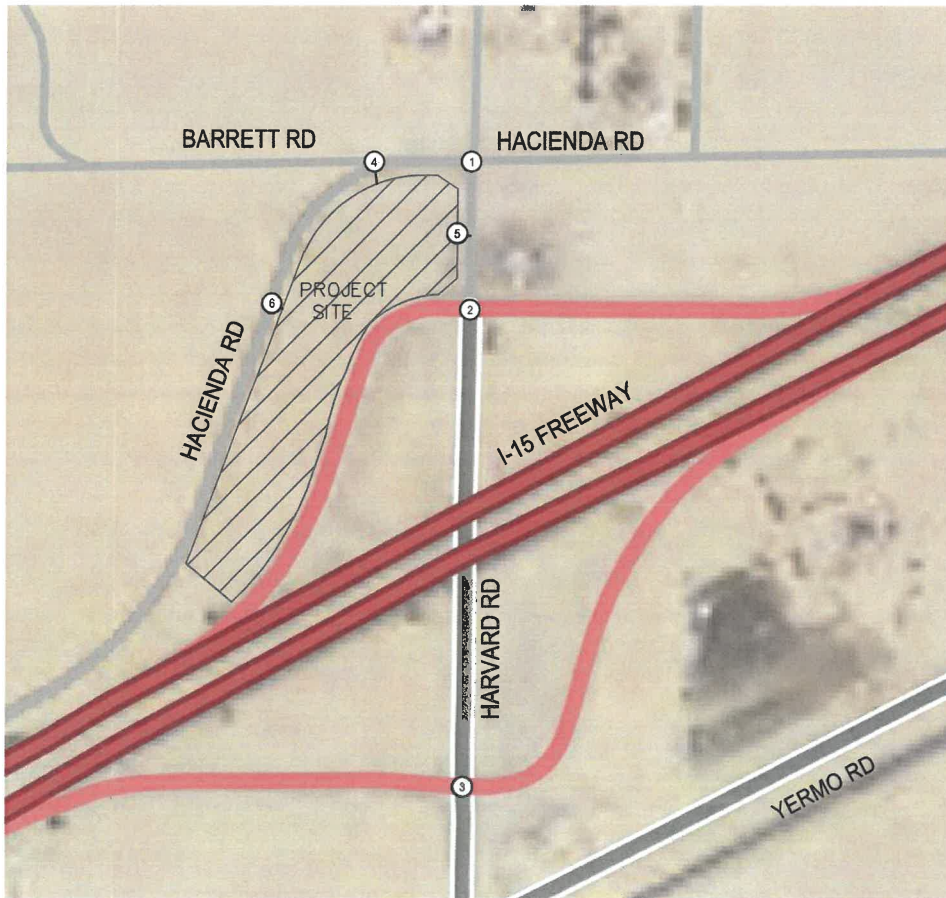
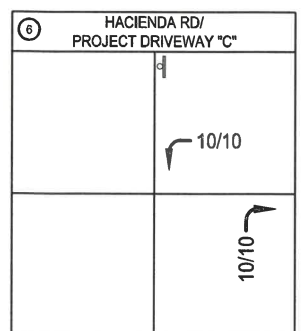
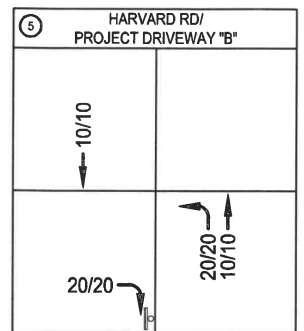
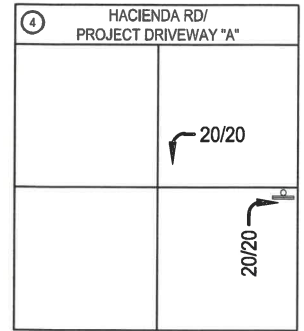
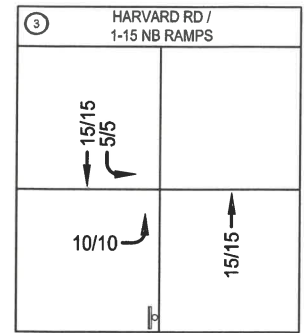
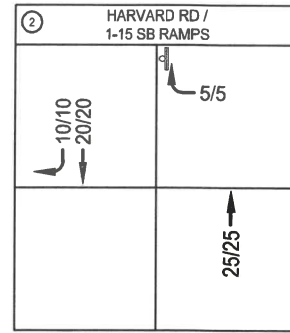
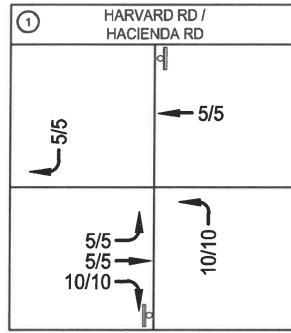
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- $\nwarrow XX\%/XX\%$  - SPECIFIC DIVERTED LINK PROJECT TRIP PERCENTAGE
- ① - STUDY INTERSECTION
- d - STOP CONTROLLED INTERSECTION





### LEGEND

- GENERAL DIVERTED LINK TRIP DISTRIBUTION
- SPECIFIC DIVERTED LINK PROJECT TRIP PERCENTAGE
- ① - STUDY INTERSECTION
- ⊥ - STOP CONTROLLED INTERSECTION



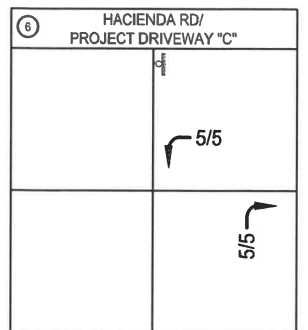
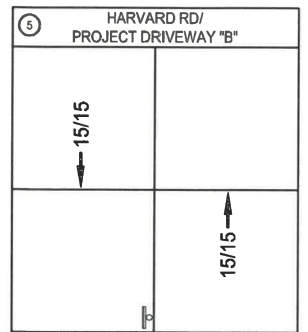
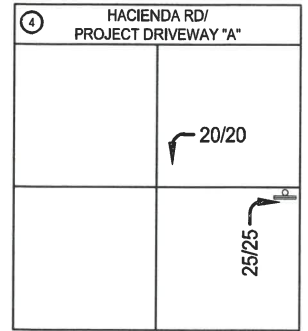
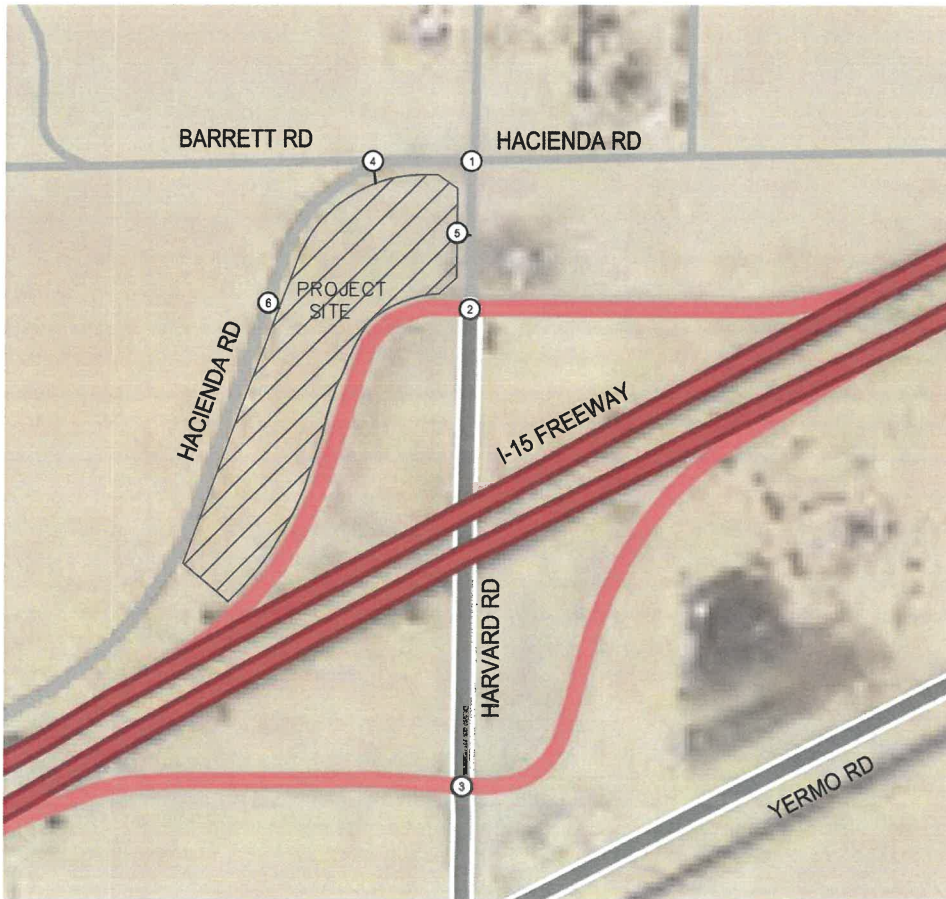
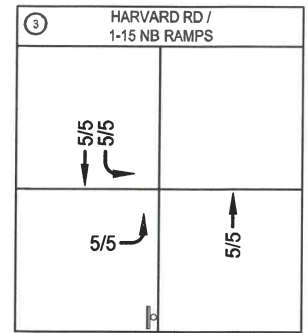
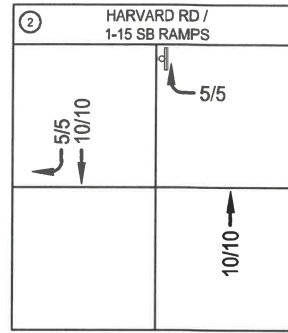
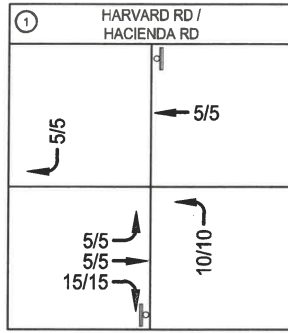
**CARS ONLY PRIMARY PROJECT TRIPS**  
 FRIDAY TRIPS - 32 IN / 32 OUT  
 SUNDAY TRIPS - 32 IN / 32 OUT

**LEGEND**

- XX/XX - CARS ONLY PRIMARY PROJECT TRIPS
- ① - STUDY INTERSECTION
- ⊥ - STOP CONTROLLED INTERSECTION



**EXHIBIT D1: CARS ONLY PRIMARY TRIPS  
 HARVARD ROAD PROJECT  
 NEWBERRY SPRINGS, CALIFORNIA**

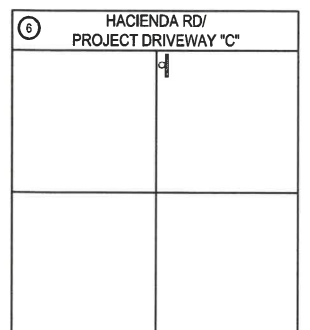
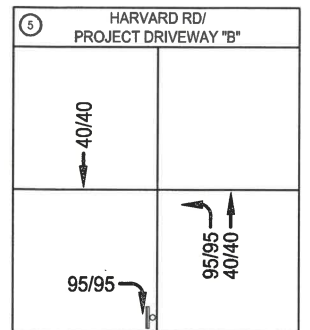
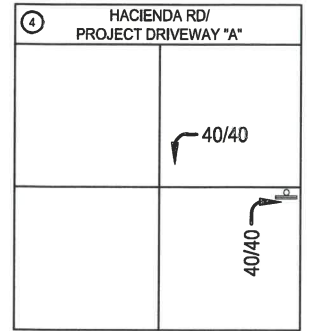
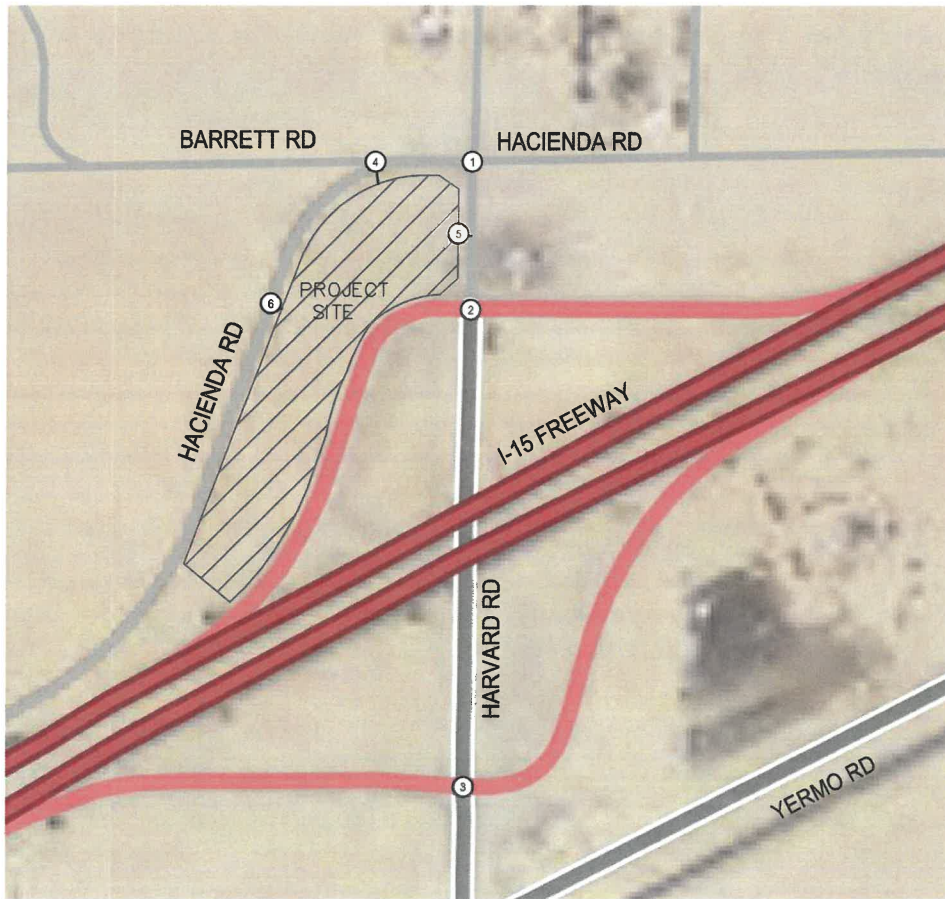
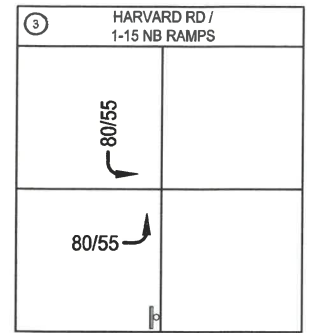
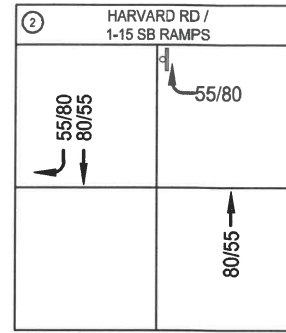
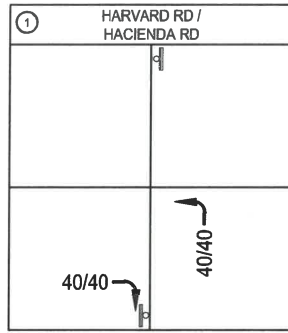


**RVS AND TRUCKS PRIMARY PROJECT TRIPS**

FRIDAY TRIPS - 14 IN / 14 OUT  
 SUNDAY TRIPS - 14 IN / 14 OUT

**LEGEND**

- xx/xx - RVS AND TRUCK PRIMARY PROJECT TRIPS
- ⊕ - STUDY INTERSECTION
- ⊓ - STOP CONTROLLED INTERSECTION



**CARS ONLY DIVERTED LINK PROJECT TRIPS**

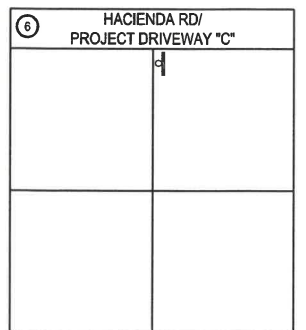
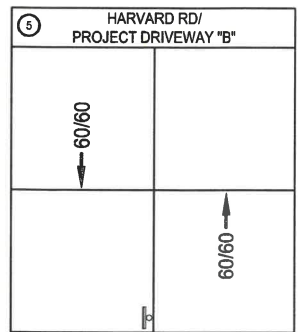
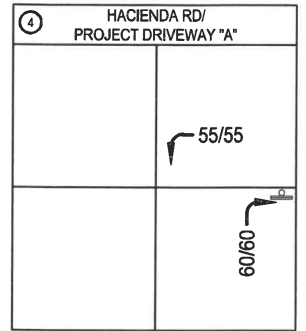
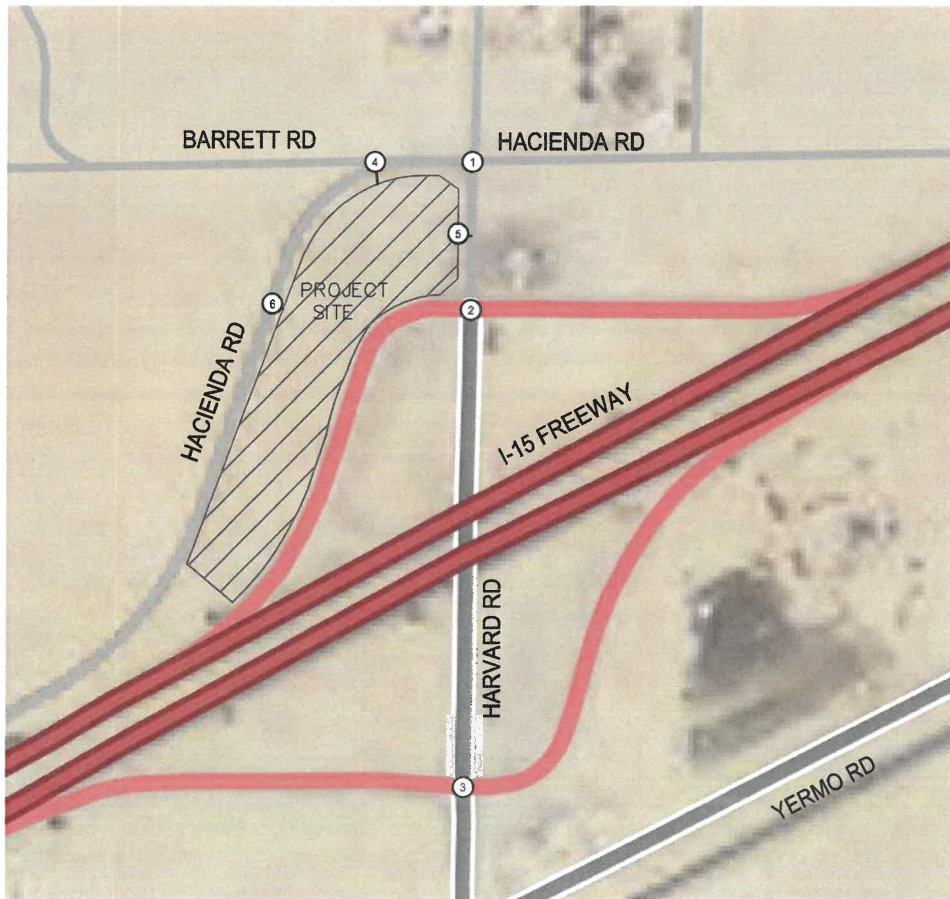
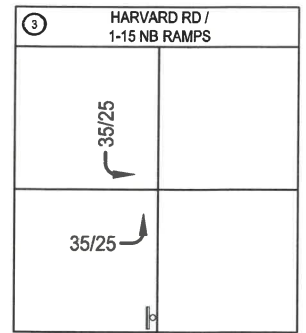
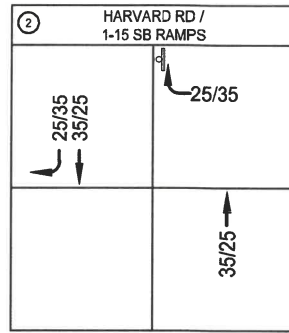
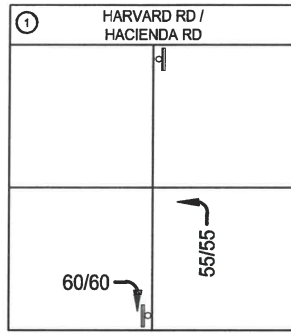
FRIDAY TRIPS - 129 IN / 129 OUT  
SUNDAY TRIPS - 129 IN / 129 OUT

**LEGEND**

- XX/XX ↘ - CARS ONLY DIVERTED LINK PROJECT TRIPS
- ④ - STUDY INTERSECTION
- ⊕ - STOP CONTROLLED INTERSECTION



**EXHIBIT D3: CARS ONLY DIVERTED  
LINK TRIPS  
HARVARD ROAD PROJECT  
NEWBERRY SPRINGS, CALIFORNIA**

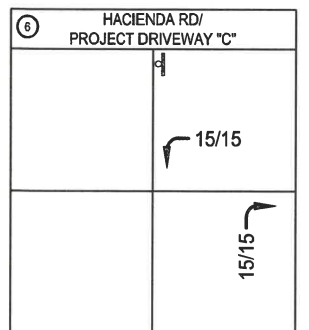
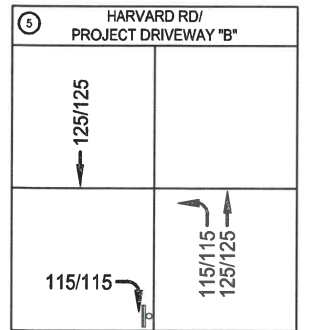
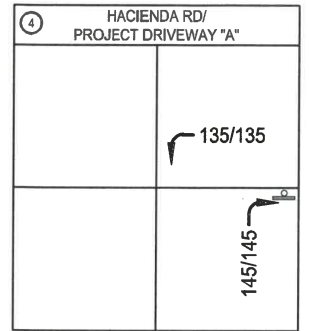
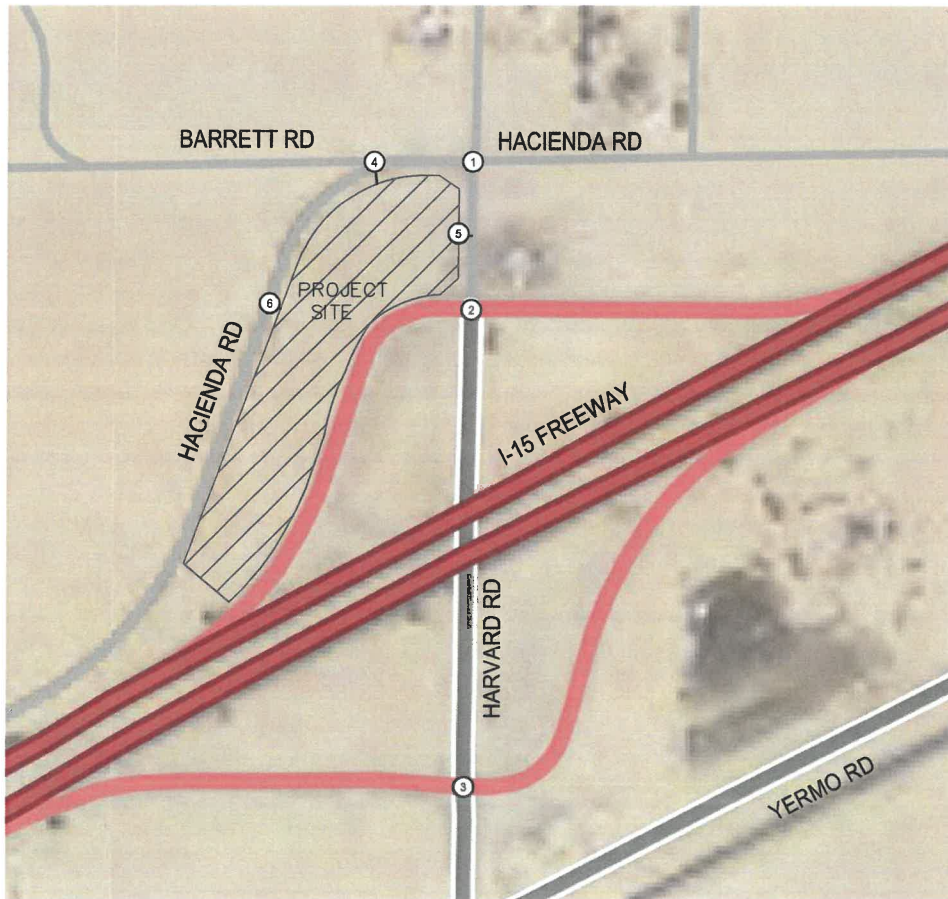
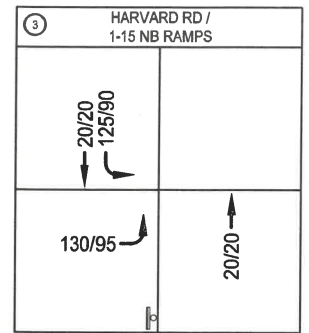
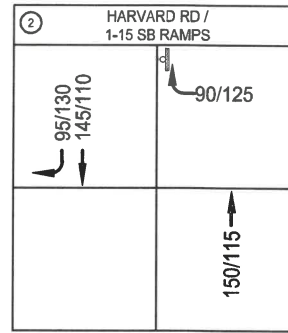
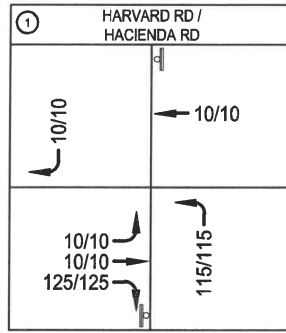


**RVS AND TRUCKS DIVERTED LINK PROJECT TRIPS**

FRIDAY TRIPS - 55 IN / 55 OUT  
 SUNDAY TRIPS - 55 IN / 55 OUT

**LEGEND**

- xx/xx ↗ - RVS AND TRUCK DIVERTED LINK PROJECT TRIPS
- ① - STUDY INTERSECTION
- ⊥ - STOP CONTROLLED INTERSECTION



**PROJECT TRIPS**

FRIDAY TRIPS - 230 IN / 230 OUT  
 SUNDAY TRIPS - 230 IN / 230 OUT

**LEGEND**

- XXXX ↗ - PROJECT TRIPS
- ① - STUDY INTERSECTION
- ⊓ - STOP CONTROLLED INTERSECTION



**EXHIBIT D5: PROJECT TRIPS  
 HARVARD ROAD PROJECT  
 NEWBERRY SPRINGS, CALIFORNIA**