Appendix A

HH201302-1011 Received 2/6/13

04-SCL-82 PM 18.7 to PM 19.1
04 - SCL - 85 - PM R21.8 to PM R22.5
04 - SCL - 237 PM M1.4 to PM M1.7
0400002048 EA 04-4A290K
December 2012

PROJECT STUDY REPORT
PROJECT DEVELOPMENT SUPPORT
(PSR-PDS)

To

Request Programming for Capital Support
(Project Approval and Environmental Document Phase)

On SR 82
Between 0.1 mile west
And 0.3 mile east of SR 82/SR 85 Separation

and

On SR 85
Between 0.3 mile south
And 0.4 mile north of SR 85/SR 82 Separation

and

On SR 237
Between 0.3 mile west
And 0.2 mile east of SR 237/Middlefield Road Separation

APPROVAL RECOMMENDED:

JOHN H. RISTOW, CHIEF CMA OFFICER, VTA
Accepts risks as identified in this PSR-PDS and attached Risk Register

APPROVAL RECOMMENDED:

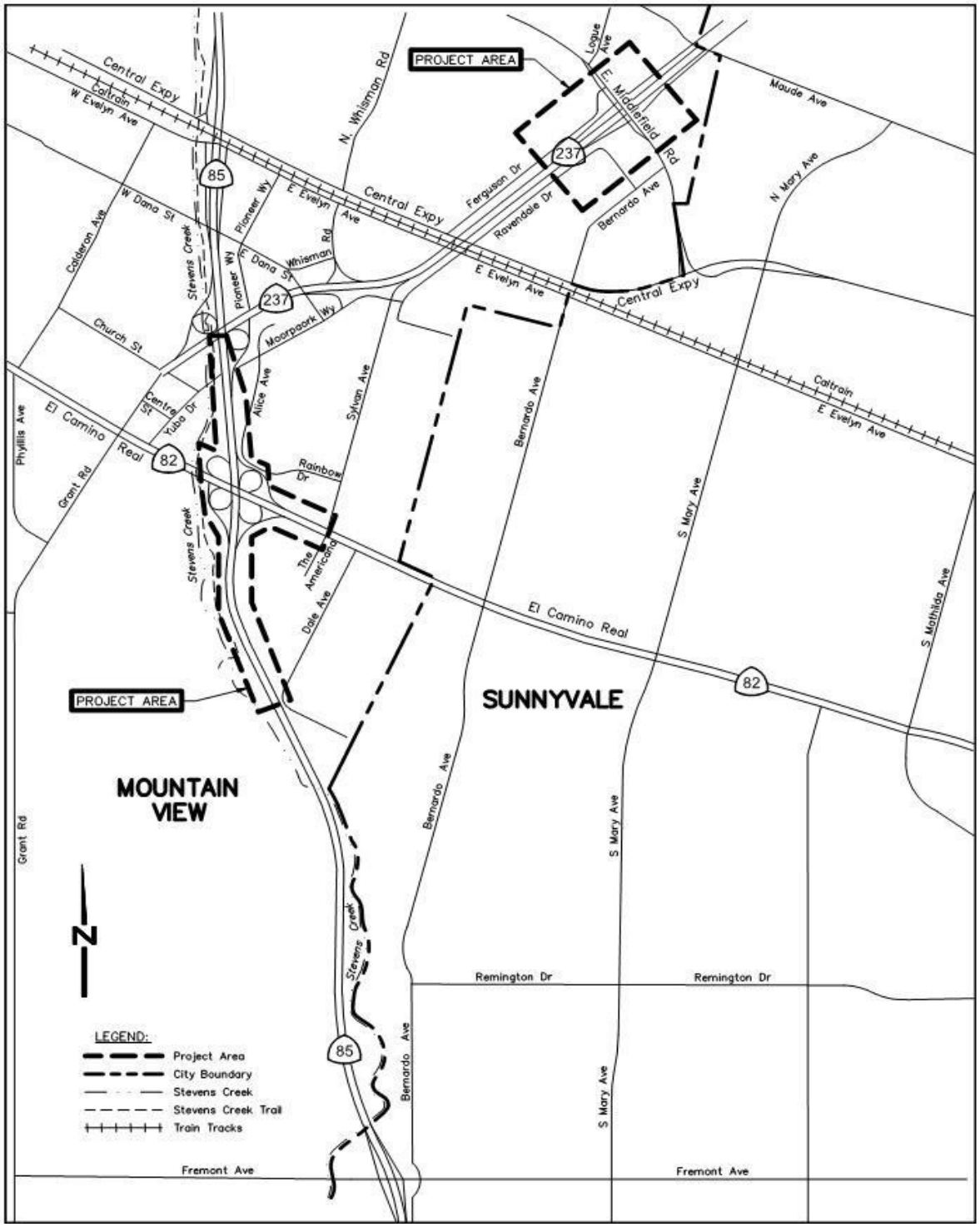
FARIBA ZOHOURY, PROJECT MANAGER

APPROVED:

BIJAN SARTIPI, DISTRICT DIRECTOR

1-11-13
DATE

VICINITY MAP



On SR 82 between 0.1 mile west and 0.3 mile east of SR 82/SR 85 Separation, and on SR 85 between 0.3 mile south and 0.4 mile north of SR 85/SR 82 Separation, and on SR 237 between 0.3 mile west and 0.2 mile east of SR 237/Middlefield Road Separation.

This project study report-project development support has been prepared under the direction of the following registered civil engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

Suzanne Sarro

REGISTERED CIVIL ENGINEER

December 20, 2012

DATE

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1. INTRODUCTION

The Project Study Report – Project Development Support (PSR-PDS) discusses alternatives for improving traffic operations on State Route (SR) 85 between SR 82 (El Camino Real) and SR 237; on the SR 85/El Camino Real interchange, and at Middlefield Road at SR 237 in the City of Mountain View, for the purpose of programming project support costs.

The SR85/SR237 interchange lies between the improvements being considered at the SR237/Middlefield Road interchange and the SR85/El Camino Real interchange and is within the anticipated environmental study limits of both sets of improvements. During the Project Approval – Environmental Documentation (PA/ED) phase, long-term capacity and operational improvements at the system interchange (including the provision for general purpose, HOV and Express Lanes direct connectors) will be considered to ensure that future improvements are not precluded. Also, construction phasing/packaging will be analyzed during the PA/ED phase to determine what and when certain improvements should be constructed. Due to the close proximity and operational influences of the two sets of improvements they are being studied together in this PSR-PDS; the PA/ED will be used to select the preferred alternative.

Currently, merge maneuvers along the non-standard weave/merge distance on SR 85 between El Camino Real and SR 237 combined with an already congested mainline contribute to bottlenecks in both directions on SR 85 in the project area.

To improve weaving and merging on SR 85 in the project area, the Santa Clara Valley Transportation Authority (VTA) and the City of Mountain View propose to evaluate alternatives including adding auxiliary lanes on SR 85 in both northbound and southbound directions between El Camino Real and SR 237, and converting the existing modified partial cloverleaf interchange at SR 85 and El Camino Real to a signalized, modified L-8 interchange on the south side of El Camino Real. Work in this area is likely to require replacement of the El Camino Real bridge over SR 85 with a longer, wider structure.

To improve operations and decrease the collision rate along Middlefield Road at SR 237, VTA and the City of Mountain View propose to evaluate alternatives including elimination of one signal by constructing a loop ramp from northbound Middlefield Road to westbound SR 237. Further modifications at Middlefield Road may include widening both sides to accommodate the new ramp and fill in gaps along the existing Class 2 bike lanes, and realigning the existing westbound frontage road to form an intersection at Ferguson Drive, just north of SR 237.

In order to complete the PA/ED phase, California, Department of Transportation (Caltrans) resources would be required to review roadway design, structures, environmental impacts, safety, maintenance, and constructability.

The PA/ED phase of the project is estimated to begin in July 2013 and be complete in 18 to 24 months. Construction of project elements would be phased. Construction of all approved phases is expected to be complete in 2019, although project funding is not yet identified.

In order to provide a range of capital construction costs and phaseable work, a two-part alternative to be studied with phases having construction costs of approximately $9 million and $34 million is evaluated in this document. It is anticipated that funding will come from the State Transportation Improvement Program (STIP) and local sources.

Project Limits (Dist., Co., Rte., PM)	04 - SCl - 85 - PM R21.8 to R22.5 04 - SCl - 237 PM M1.4 to M1.7 04 - SCl - 82 - PM 18.7 to 19.1
Number of Build Alternatives:	4-8 alternatives considered at each project location
Alternative Recommended for Programming:	1
Capital Outlay Support for PA/ED	$3,000,000
Capital Construction Cost Range:	$40,000,000 - $50,000,000
Right of Way Cost Range:	$5,000,000-$15,000,000
Funding Source:	STIP and local sources
Type of Facility (conventional, expressway, freeway):	SR 85 and 237: Freeway El Camino Real (SR 82): Conventional Highway Middlefield Road: Local Arterial
Number of Structures:	1
Anticipated Environmental Determination/Document	Initial Study/Mitigated Negative Declaration
Legal Description	On SR 82 between 0.1 mile west and 0.3 mile east of SR 82/SR 85 Separation, and on SR 85 between 0.3 mile south and 0.4 mile north of SR 85/SR 82 Separation, and on SR 237 between 0.3 mile west and 0.2 mile east of SR 237/Middlefield Road Separation
Project Category	4B

The remaining support, right of way and construction components of the project are preliminary estimates and are not suitable for programming purposes. A Project Report will serve as the programming document for the remaining support and capital components of the project. A Project Report will serve as approval of the "selected" alternative.

2. BACKGROUND

SR 82 (El Camino Real) is a flat six-lane highway that operates as a major urban arterial, with driveway access to adjacent commercial, residential, hotel and mobile home sites. It is a portion of California's historic Mission Trail, linking 21 missions along approximately 500 miles of El Camino Real from San Diego to Sonoma.

The existing SR 85 modified partial cloverleaf interchange with El Camino Real serves all connecting movements except access from southbound SR 85 to northbound El Camino Real.

Stevens Creek parallels SR 85 between West Fremont Avenue south of the interchange and El Camino Real, and crosses SR 85 at two locations. Just south of the project area, The Dalles Avenue pedestrian/bicycle structure crosses over SR 85 south of West Fremont Avenue, and the Stevens Creek Trail and Wildlife Corridor pedestrian/bicycle path parallels SR 85 to the west through the project area.

SR 85 is a flat, urban six-lane freeway including two mixed-flow lanes and one HOV lane in each direction carrying commuters from residential south San Jose to jobs in the City of Mountain View and beyond. The project study segment connects to the route's interchange with SR 237, which serves the high tech corridor along SR 237 from the City of Mountain View to Milpitas and Fremont, as well as to high tech development along the I-880 corridor, to which SR 237 now connects via express lanes.

Within the Project limits, SR 237 is a flat, urban four-lane freeway with no HOV lanes. East of the study area, SR 237 east of Mathilda Avenue is a flat, urban six-lane freeway with a high occupancy vehicle lane in each direction.

Middlefield Road is a four-lane, commercially-zoned local road, with four signalized intersections spaced approximately 300 feet apart: eastbound SR 237 off-ramp/frontage road; westbound on-ramp/frontage road; Ferguson Drive; and Logue Avenue. The Middlefield Road partial interchange operates as one with the adjacent Maude Avenue partial interchange. Vehicles westbound on SR 237 accessing Middlefield Road exit at Maude Avenue and head west on a frontage road to Middlefield Road. Vehicles eastbound on SR 237 accessing Maude Avenue exit at Middlefield Road and head east on a frontage road to Maude Avenue. Likewise vehicles on Middlefield Road or Maude Avenue accessing SR 237 now use the frontage roads to reach the westbound ramp at Middlefield Road or the eastbound ramp at Maude Avenue.

When the project was initiated in 2006 by project sponsors VTA and City of Mountain View as a follow up to the May 2005 *SR 85 / Interstate 280 Study Final Report* and the October 2004 *SR 237 Corridor Study*, the primary project purpose was improvement of the SR 85/SR 237 interchange, particularly to address the AM peak northbound-to-eastbound movement.

This report describes some of the improvements to the SR 85/SR 237 interchange that the design team considered during the study. The team looked at widening the connectors along their current alignments; widening and realigning the connectors; replacing the Dana Street bridge to accommodate a wider section of SR 237; accommodating the future HOV direct connector; eliminating Whisman Road and Dana Street access to SR 237 because of their proximity to the SR 85 connectors; adding auxiliary lanes to SR 237 in both directions between Middlefield Road and SR 237; eliminating access to El Camino Real from southbound SR 85; introducing braided ramps upstream of the Dana Street offramp from eastbound SR 237 and upstream of the El Camino Real offramp from southbound SR 85.

Conceptual studies concluded that the improvement of the SR 85/SR 237 interchange had too great an impact to local properties, local traffic, and the Stevens Creek Trail and Wildlife

Corridor, in addition to significant cost increases, that resulted in the determination that they are not considered as viable improvements at this time. Improvements to the interchange were deferred in favor of context-sensitive operational improvements that would not preclude the future improvement to the interchange. Future improvements to the system interchange may include an HOV direct connector, collector-distributors, a realigned and widened northbound-to-eastbound connector with a structure, and a widened, eastbound-to-southbound flyover connector. The project now focuses on two major improvements: one at the SR 82/SR 85 interchange and one at the SR 237/Middlefield Road interchange.

Improvements to the SR 85/SR 237 interchange are in VTP2040. The PA/ED work for the alternatives to be studied would include planning for the SR 85/SR 237 improvements so that structures and geometrics constructed to improve SR 85/El Camino Real and SR 237/Middlefield Road would not preclude improvement to SR 85/SR 237 interchange, and would minimize throw-away features.

On May 16, 2012, VTA, City of Mountain View and their design consultant met with Caltrans at the District 4 Office and agreed that the alternatives described in this report are for programming purposes only.

The Project Development Team is working closely with the City of Mountain View to ensure that impacts to public spaces, including the nearby Stevens Creek Trail and Wildlife Corridor, are avoided and that pedestrian and bicycle access to local facilities are improved as a part of the project. By improving pedestrian and bicycle access in the area, the project will improve overall access to vital public spaces within the City of Mountain View.

3. PURPOSE AND NEED STATEMENT

Purpose: The existing transportation and circulation system in the project area is characterized by heavy commuter traffic, frequent congestion, and substantial vehicular delays. The purpose of the SR 85 / SR 82-El Camino Real / SR 237 / Middlefield Road Project is to address these issues by providing operational and safety improvements on SR 85 (at El Camino Real and between El Camino Real and SR 237) and at the SR 237 / Middlefield Road interchange.

Specifically, the purpose of the Project is to:

- Improve traffic operations at the SR 85/SR 82 El Camino Real interchange
- Improve weaving operations on SR 85 in both directions between El Camino Real and SR 237
- Improve traffic operations and safety along Middlefield Road from the Logue Drive intersection to 400 feet south of the eastbound SR 237 off-ramp intersection
- Maintain and enhance pedestrian and bicycle safety and access in the project area

Need: Localized congestion on SR 85 at the El Camino Real interchange between the SR 237 and El Camino Real interchanges contribute to congestion and queuing on SR 85.

Weave lengths on SR 85 between SR 237 and El Camino Real are non-standard in both directions. In addition, the existing freeway access at SR 85 and El Camino Real has unsignalized free right turn ramp configurations which are not easily navigated by pedestrians and cyclists.

On Middlefield Road in the project area, the close proximity of the four signalized intersections contributes to a high broadside accident rate because of red light violations. The four signals are all within 1000 feet along Middlefield Road at Logue Avenue, Ferguson Drive, and both SR 237 ramp termini.

4. TRAFFIC ENGINEERING ASSESSMENT

Existing and forecasted traffic data in this PSR-PDS is derived from several sources including Caltrans traffic count census, VTA's *2010 Annual Monitoring & Conformance Report* (May 2011), the *SR 85/Interstate 280 Study Final Report* (May 2005), the *SR 237 Corridor Study* (October 2004), the *Traffic Accident Surveillance and Analysis Systems* (TASAS) database, City of Mountain View traffic accident records, and recent traffic impact studies for developments in the project area.

SR 85 / SR 82 Existing Operations

During the AM peak hour, the primary bottleneck on northbound SR 85 occurs in the segment between the Fremont Avenue on-ramp south of the project area and the off-ramp to southbound El Camino Real. The queue from this bottleneck extends as far south as the I-280 junction (approximately 2 miles). This segment operates at Level of Service (LOS) F during the AM peak hour. Downstream of this bottleneck, there is also a slow down at the weaving segment between the on-ramp to SR 85 from northbound El Camino Real and the off-ramp to eastbound SR 237. This slowdown may be attributed to the short length of this segment, high demand for the eastbound SR 237 connector, capacity constraints on the connector itself, and the arrival of platoons of traffic on the northbound El Camino Real on-ramp. According to VTA's *2010 Annual Monitoring & Conformance Report*, this segment operates at LOS E during the AM peak hour. Analysis conducted previously for the *SR 85/Interstate 280 Study Final Report* showed this weave segment as operating at LOS F. Eastbound SR 237 operates at LOS D during this period. No significant congestion occurs on southbound SR 85 or on SR 237 during the AM peak.

During the PM peak, demand exceeds capacity and a bottleneck on southbound SR 85 occurs south of the project area at the on-ramp from Fremont Avenue. The queue from the bottleneck extends approximately three miles along southbound SR 85 and reaches the off-ramp to Central Expressway. At the westbound SR 237 to southbound SR 85 loop connector, congestion occurs due to high demand of SR 237 vehicles merging onto southbound SR 85. Congestion occurs at the El Camino Real interchange due to the short auxiliary lane between the southbound on and off-ramps accessing El Camino Real. These segments of southbound SR 85 operate at LOS F according to VTA's *2010 Annual Monitoring & Conformance Report.* No significant congestion occurs on northbound SR 85 during the PM peak.

Congestion on westbound SR 237 was observed at the off-ramp to southbound SR 85. The congestion is due to the high demand for this movement, capacity constraints on the ramp, and spillback of queues resulting from merge constraints and mainline congestion on SR 85. According to VTA's *2010 Annual Monitoring & Conformance Report*, the segment of westbound SR 237 from El Camino Real to US 101 operates at LOS F during the PM peak hour. Eastbound SR 237 in this area operates at LOS C during this period.

Analysis documented in the May 2005 *SR 85 / Interstate 280 Study Final Report* showed that expected year 2035 peak period travel demand within the study area would increase congestion and travel times especially in the peak directions. On SR 85 during the AM peak period, congested traffic conditions with average speeds lower than 15 miles per hour are forecast in the northbound direction and during the PM peak period, southbound SR 85 will operate at LOS F. The morning northbound commute queues would extend from SR 237 to south of the I-280 connector (a distance of approximately 3.8 miles). Lower travel speeds and congestion are also anticipated in the non-peak directions (AM non-peak-southbound SR 85 and PM non-peak-northbound SR 85), but analysis results indicate service levels, on average, would be at LOS D or better.

The ramp termini at the SR 85/El Camino Real interchange are currently unsignalized. According to VTA's *2010 Annual Monitoring & Conformance Report,* the adjacent intersection of El Camino Real/SR 237-Grant Road operates at LOS D during the PM peak.

El Camino Real does not have bike lanes and has 4-foot to 6-foot sidewalks within the project limits. The existing modified partial clover-leaf configuration has five locations at which pedestrians and bicycles must cross merging or free-right turn lanes.

Middlefield Road at SR 237 Existing Operations

On Middlefield Road, all intersections within the project area (at Logue Avenue, at Ferguson Drive, at SR 237 westbound, and at SR 237 eastbound) currently operate at LOS C or better during both the AM and PM peak hours according to analysis conducted for the *575 Middlefield Road Traffic Impact Analysis.*

Accident Assessment

Freeway mainline and ramp accident rates for the study segment of SR 85 and SR 237 are summarized in Table 5.1. These rates are reported from the Traffic Accident Surveillance and Analysis Systems (TASAS) database, and cover the period between April 2006 and March 2009. As shown in this table, the mainline accident rates for SR 85 and SR 237 within the study area are below the Statewide rate. However, one northbound ramp on SR 85 experiences accident rates higher than the Statewide average for similar locations. One ramp on eastbound SR 237 and two ramps on westbound SR 237 also experience accident rates higher than the statewide average for similar locations.

On Middlefield Road at SR 237, data from the City of Mountain View shows that there was an average of 8 accidents per year between January 1, 2007 and December 31, 2011. This compares to an average of 13 accidents per year for the five-year period from 2002 through 2006. While there were minor changes made in the location of the detectors and the length of yellow light phases after 2006, traffic volumes also decreased in 2007 due to the economic slowdown. This suggests that without any further changes, Middlefield Road collision rates will likely increase as volumes grow back to and exceed 2006 levels Of the 26 accidents that occurred during 2005 and 2006 (the latest years for which detailed data was available), 20 were broadside accidents.

Preliminary Project Scope of Work - SR 82/SR 85

The preliminary project scope of work would include increasing the weave length on SR 85 between SR 82 and SR 237 by combining access movements and constructing auxiliary lanes in both directions, and metering traffic from SR 82 onto SR 85.

The preliminary project scope of work would widen sidewalks to 6 feet minimum, eliminate two pedestrian crossings of ramp termini and reconfigure and signalize two ramp termini. Bike lanes would be added within the project area along El Camino Real.

Preliminary Project Scope of Work - Middlefield Road at SR 237

The preliminary project scope of work would include eliminating one signal on Middlefield Road between Logue Avenue and the eastbound SR 237 ramp terminus. Although other alternatives would be considered during PA/ED, the alternative to be studied would extend the median along Middlefield Road at the westbound SR 237 on-ramp, eliminate one signal, and add a loop on-ramp to retain westbound access to SR 237 from northbound Middlefield Road.

PA/ED Traffic Study

During the PA/ED phase, an expanded analysis of traffic operations would be conducted.

The traffic study area limits would be:

- **SR 82:** Grant Road to Sylvan Avenue/The Americana (inclusive)
- **SR 85:** Fremont Avenue interchange to Evelyn Avenue interchange (inclusive)
- **SR 237:** El Camino Real to Maude Avenue, including the SR 85/SR 237 interchange, and including the first intersection beyond each ramp terminus between those limits (at Moorpark Way, Whisman Road, and Dana Street)
- **At Middlefield Road:** Logue Avenue to Bernardo Avenue (inclusive)

As part of the PA/ED effort, new data would be collected to reflect the most current conditions. New traffic forecasts would be developed using the latest version of the VTA countywide travel demand model. The safety analysis would be updated with a more detailed examination of accident rates within the weave segments of the freeways, as well as at the Middlefield Road interchange. A Transportation Management Plan (TMP) would be

prepared that identifies potential traffic impacts during construction and proposes methods to minimize traffic delay and maximize the safety of the public.

5. DEFICIENCIES

SR 85

As described in the previous section, SR 85 in the study area currently experiences significant congestion northbound in the AM and southbound in the PM. While this may be attributed largely to bottlenecks just outside the project area, the high ramp demands, short weave lengths, and ramp/merge constraints contribute to congestion and queuing on SR 85.

Weave lengths on SR 85 between SR 237 and El Camino Real are non-standard in both directions. In addition, the existing freeway access at SR 85 and El Camino Real has unsignalized free-right-turn ramp configurations, which are not easily navigated by pedestrians and cyclists.

During the AM peak hour, the northbound mainline mixed-flow travel lanes operate at capacity levels. The northbound SR 85 project area includes two weaving sections with high ramp volumes: between the El Camino Real on and off ramps (beneath El Camino Real), and between the northbound El Camino Real on-ramp to the eastbound SR 237 off-ramp. Northbound SR 85 operates at LOS E/F in the project area.

At the westbound SR 237 to southbound SR 85 loop connector during the PM peak hour, congestion occurs due to high demand of SR 237 vehicles merging onto southbound SR 85. Southbound SR 85 operates at LOS F in the project area.

Traffic conditions are expected to worsen in the future with continued development in the region and along SR 85 within the project limits. Over the next 25 years, Santa Clara County (County) is predicted to grow by over 500,000 residents and 400,000 jobs, increases of 27.5 and 45.6 percent, respectively. Over the same period, the County expects to increase the capacity of the roadway system by 5 to 6 percent.

TABLE 5.1

SR 85 and SR 237 Mainline and Ramp Accident Rates						
Location	**Accident Rate**			**Statewide Accident Rate**		
	Fatal	**Fatal + Injury**	**Total**	**Fatal**	**Fatal + Injury**	**Total**
SR 85						
Mainline [1]	0.000	0.21	0.98	0.01	0.31	1.01
Northbound Ramps						
NB off to SB El Camino Real	0.000	**0.19**	**0.58**	0.005	0.15	0.45
NB on from SB El Camino Real	0.000	0.00	0.00	0.003	0.19	0.65
NB off to NB El Camino Real	0.000	**0.34**	0.46	0.004	0.21	0.75
NB on from NB El Camino Real	0.000	**0.15**	0.29	0.003	0.11	0.35
NB off to EB SR 237	0.000	**0.16**	0.33	0.005	0.15	0.45
Southbound Ramps						
SB off to WB SR 237	0.000	0.00	0.00	0.005	0.15	0.45
SB on from NB El Camino Real	0.000	0.00	0.00	0.003	0.19	0.65
SB off to SB El Camino Real	0.000	0.00	0.39	0.004	0.21	0.75
SB on from SB El Camino Real	0.000	0.00	0.31	0.003	0.11	0.35
SR 237						
Mainline [2]	0.016	0.26	0.56	0.012	0.44	1.1
Eastbound Ramps						
EB off to NB SR 85	0.000	0.00	0.00	0.004	0.21	0.75
EB off to Moorpark/E. Dana Street	0.000	0.00	0.70	0.004	0.28	0.95
EB on from Sylvan Avenue	0.000	**0.19**	0.19	0.002	0.16	0.55
EB off to Middlefield Road	0.000	**0.51**	**1.70**	0.004	0.42	1.20
EB on from Middlefield Road	0.000	0.00	0.13	0.001	0.07	0.25
Westbound Ramps						
WB off to Middlefield Road	0.000	**0.15**	**1.08**	0.001	0.07	0.25
WB on from Middlefield Road	0.000	**1.01**	**2.82**	0.002	0.26	0.75
WB off to Whisman Road	0.000	0.22	0.22	0.004	0.26	0.85
WB on from Whisman Road	0.000	0.00	0.00	0.002	0.14	0.45
WB off to SB SR 85	0.000	0.00	0.00	0.004	0.21	0.75

Source: TASAS (April 1, 2006 to March 31, 2009)
[1]The SR 85 segment is between PM R21.8 and R22.3
[2] The SR 237 segment is between PM 0.00 and 1.68

SR 237/Middlefield Road

The eastbound SR 237 off-ramps to Middlefield Road carry more than 1,000 vph in the AM peak hour. The Middlefield Road on-ramp to westbound SR 237 carries over 1,300 vph in the PM peak hour. The peak direction on SR 237 within the study limits is eastbound and westbound in the AM and PM peak hours, respectively.

On Middlefield Road in the project area, the close proximity of the four signalized intersections contributes to a high broadside accident rate because of red light violations. The four signals are all within 1000 feet along Middlefield Road at Logue Avenue, Ferguson Drive, and both SR 237 ramp termini.

6. CORRIDOR AND SYSTEM COORDINATION

The Metropolitan Transportation Commission (MTC) *Transportation 2035 Plan for the San Francisco Bay Area*, "Change in Motion", adopted April 22, 2009 includes the following:

MTC ID No.	Project
22156	Improve SR 85 northbound to SR 237 eastbound connector ramp and construct auxiliary lane on eastbound SR 237 between SR 85 and Middlefield Road
22162	Improve SR 237 westbound to SR 85 southbound connector ramp (includes widening off-ramp to SR 85 to 2 lanes and adding a southbound auxiliary lane between SR 237 and El Camino Real interchange on SR 85)

The *Valley Transportation Plan* (VTP) is the county-wide long range transportation plan for Santa Clara County and includes the following:

VTP ID No.	Project
H237-04	SR 237 westbound on-ramp at Middlefield Road
H85-04	SR 85 Auxiliary Lanes between El Camino Real and SR 237 and SR 85/El Camino Real Interchange improvements

VTA and Santa Clara County cities along El Camino Real are currently evaluating Bus Rapid Transit (BRT) along El Camino Real. BRT would change the lanes nearest the median from conventional mixed flow lanes to exclusive bus lanes, leaving two mixed flow lanes remaining in each direction. Design development during PA/ED would coordinate with BRT, if it were proposed for the project area.

The purpose of the SR 85 / SR 82-El Camino Real / SR 237 / Middlefield Road Project is to provide operational and safety improvements on SR 85 (at El Camino Real and between El

Camino Real and SR 237) and at the SR 237 / Middlefield Road interchange. The work considered in this PSR-PDS is focused on improvements at local interchanges which will benefit city streets operations and safety, along with improving freeway operations at the local connections. This project has independent utility.

Because of the proximity of the various improvements along the two corridors: express lanes, interchange improvements, and future system interchange improvements, the alternatives proposed for study at the SR 237/Middlefield Road and SR 85/El Camino Real interchanges are being studied in a single document. This provides an additional level of assurance that this work will not preclude work on future improvements in the corridor. While direct connectors at the SR85 / SR 237 interchange will be considered as a part of the planning effort, they are not a part of this project. The alternatives at the local interchanges function with complete independence regardless of whether or not the system interchange direct connectors are built.

The future work related to the SR 85 / SR 237 direct connectors would improve regional connections and provide motorists with additional options related to use of express lanes. The direct connector has a different purpose and need than the current project and, if implemented, would also have independent utility.

East of the project area, conversion of existing HOV lanes to express lanes on I-880 and SR 237 was completed and opened in spring 2012. The I-880/SR 237 project includes an express lane direct connector. Design development during PA/ED would evaluate the continuation of HOV and/or express lanes on SR 237.

Traffic operations analysis during PA/ED would consider and include Caltrans Traffic Systems and the ramp metering that Caltrans will install starting in fall, 2012 along SR 85 between I-280 and US 101 (EA 15420). Activation of ramp metering elements will begin in 2014.

During PA/ED, modifications to existing or development of new maintenance or freeway agreements would be evaluated and documented.

Improving safety for bicycles along El Camino Real between Grant Road/SR 237 and Sylvan Avenue by reconfiguring free-right freeway on and off-ramps to signal-controlled 90 degree ramps on the southbound side and eliminating them on the northbound side is consistent with the key concepts for transportation interconnection outlined in *VTP 2030*. Currently, the VTA's bike route map advises bicyclists to use extreme caution on El Camino Real between Phyllis Avenue (just north of Grant Road/SR 237) and Sylvan Avenue. From the access to the Stevens Creek Trail and Wildlife Corridor, adjacent to the southbound SR 85 connector from El Camino Real, cyclists can reach the Downtown Mountain View Transit Center.

VTA's bike route map shows Middlefield Road as a Class II bike route (bike lanes in street right of way), which the proposed improvements would retain.

Route adoption dates for SR 85, SR 237, and SR 82 are given below.

Route	Adoption Date
SR 85	1956/57
SR 237	1959
SR 82	1964

7. ALTERNATIVES

The Project Development Team (PDT) considered several alternatives at each project interchange before selecting one at each location for programming PA/ED support costs.

Alternatives considered included:

SR 85/El Camino Real Interchange

- Eliminating various loop connections and signalizing and reconfiguring to eliminate free right turns or merges on ramp termini that remained
- Constructing northbound collector-distributor from SR 85 and braiding with El Camino Real connectors to eliminate or improve weave/merge

WB SR 237 to SB SR 85

- Widening loop connector to two lanes with and without replacing Dana Street bridge to accommodate future direct connector and auxiliary lane
- Widening loop connector to two lanes; eliminate southbound SR 85 access to El Camino Real
- Constructing 2-lane flyover, with and without braided ramps; and closing Whisman Road at SR 237
- Adding auxiliary lanes to SR 237 between SR 85 and Middlefield Road

NB SR 85 between SR 237 and El Camino Real

- Widening connector and eliminating some Dana Street access to SR 237, with and without replacing Dana Street bridge to accommodate future direct connector and auxiliary lane
- Braiding connector and Dana Street access
- Adding auxiliary lanes to SR 237 between SR 85 and Middlefield Road

Middlefield Road at SR 237

- Constructing a roundabout on Middlefield Road north/west of SR 237 in place of two existing signals
- Constructing two roundabouts, one on each side of SR 237, in place of three signals.
- Urban interchange
- Diverging Diamond interchange

A matrix summarizing conceptual analysis of alternatives considered by the PDT is included as Attachment G.

For programming purposes, one two-phase alternative was selected as representative of a fundable improvement that meets the project purpose and need. The two phases of the alternative to be studied have independent utility. The staging and phasing of the projects will be determined during PA/ED, and documented in the project report and environmental document.

The alternative to be studied has not undergone a fatal flaw analysis. A fatal flaw analysis will be performed during the PA/ED phase of the project. Tables 7.1 and 7.2 include a partial list of the anticipated design exceptions included in the alternative to be studied. Deferring approval of these design exceptions (and the approval of the geometric features of the interchange(s) per Index 503.2 of the Highway Design Manual (HDM), along with the fatal flaw analysis may render the alternative to be studied as not viable.

Approval of this document represents approval of the purpose and need and of the range of alternatives to be studied. Approval of this document does not signify approval of a conceptual alternative.

No-Build Alternative

The No-Build Alternative would offer a basis for comparison with the alternative to be studied in the future analysis year of 2035.

In and around the project area, No Build analysis would assume:

- the conversion of the HOV lanes on SR 85 into express lanes,
- the addition of HOV lanes to SR 237,
- the addition of a right turn lane for eastbound Grant Road to southbound El Camino Real,
- the addition of a right turn lane for southbound El Camino Real to westbound Grant Road, and
- recently-completed signal modifications at the El Camino Real/Sylvan Avenue intersection.

Alternative to be studied at SR 85 at SR 82 El Camino Real: Modified L-8 at El Camino Real, auxiliary lanes, connector reconstruction and bridge replacement

In this alternative:

- To lengthen the merge/weave distance on SR 85, an auxiliary lane would be added on southbound SR 85 between the loop connector from westbound SR 237 and the El Camino Real loop exit.
- The El Camino Real loop exit would be realigned to terminate at a signalized 90 degree intersection which allows access to southbound or northbound El Camino Real.
- The southbound El Camino Real connector to southbound SR 85 would be widened to three lanes, metered, and would have a standard merge with southbound SR 85.
- The existing diagonal connector from northbound El Camino Real to northbound SR 85 would be eliminated, as would be the loop connector from northbound SR 85 to northbound El Camino Real.
- Eliminated movements would be served via a realigned loop connector with three metered lanes and a realigned diagonal connector on the south side of El Camino Real, which would meet El Camino Real at a 90 degree signalized intersection and allow access to and from both directions on El Camino Real.
- The El Camino Real separation structure over SR 85 would be replaced with a bridge sufficiently wide to accommodate 10-foot sidewalks, six through lanes, a southbound auxiliary lane, 5-foot bike lanes in each direction and two left-turn lanes to the connector to southbound SR 85 and would be sufficiently long to accommodate two express lanes, three mixed-flow lanes and one auxiliary lane in each direction on SR 85, in addition to the approach to a future express/HOV direct connector to SR 237.
- El Camino Real east of the bridge would be widened to allow two left-turn lanes to serve the northbound SR 85 connector.
- An auxiliary lane would be added to northbound SR 85 beginning at the El Camino Real connector, ending at the existing connector to eastbound SR 237.

The alternative to be studied would address the project purpose by lengthening the available weave length along SR 85 between El Camino Real and SR 237 by approximately 500 feet, and by completely eliminating the short weaves beneath the grade separation in both directions where connector loops begin and end.

Wider sidewalks, bike lanes on El Camino Real and elimination of free right turns at the ramp termini on El Camino Real would address the project purpose by enhancing travel for bikes and pedestrians.

During the PA/ED phase, operations throughout the project area would be evaluated. The SR 85/SR 237 connectors would be part of PA/ED analysis and design alternatives that include them may be evaluated.

PA/ED operations analysis of the alternative to be studied would include evaluation of added vehicular conflict and collision created by the proposed signals on El Camino Real.

In addition to interchange spacing, the alternative to be studied would retain other existing geometry, conformance to which would require design exceptions to the current HDM including minimum deceleration length, minimum vertical clearance beneath the El Camino Real bridge, minimum length of tangent between reversing curves, super elevation transition exceptions, and minimum lane drop tapers. During PA/ED, these exceptions would be either eliminated by design changes (and possible increased impacts) or fact sheets would be prepared and approved.

TABLE 7.1

SR 82/SR 85 Alternative to be Studied Mandatory Standard Design Exceptions		
Mandatory Standard	**Design Requirement**	**Location of possible exception**
HDM 504.2(2) - Deceleration Length	Minimum 570 feet	At the SB SR 85 exit to SR 82
HDM 501.3 - Interchange Spacing	Minimum 2.0 miles (existing 0.41 mile)	Between SR 82/85 and SR 85/237 interchanges
HDM 504.7 – Weaving Section	NB required: 5000 feet SB required: 5000 feet	NB 85, between NB 85 on from Route 82 and NB 85 to EB 237 connector ramp
SR 82/SR 85 Alternative to be Studied Advisory Standard Design Exceptions		
Advisory Standard	**Design Requirement**	**Location of possible exception**
HDM 203.6 – Reversing Curves	Length of tangents between reversing curves	NB SR 85 to SR 82 exit ramp
		SR 82 to SB SR 85 entrance ramp
HDM 202.5(1) - SE Transition	Minimum 300 feet	NB SR 85 to SR 82 exit ramp
		SR 82 to SB SR 85 entrance ramp
HDM 202.5(2) SE Runout	2/3-1/3 split of runoff on tangent and curve	SR 82 entrance to SB SR 85
HDM 504.3(1)(d) Lane drops	Minimum 30:1 taper	SR 82 entrance to NB SR 85

The key environmental issues associated with the proposed project are biological resources (nesting birds), cultural resources, visual/aesthetic resources, community impacts, and noise impacts.

During PA/ED, life-cycle cost analysis for the 20 or 40 year designs would be performed for the pavement section of the auxiliary lanes on SR 85 and the widening of Middlefield Road.

There are no major constructability issues anticipated with this alternative to be studied. There would be traffic delays associated with ramp reconstruction as well as the removal and reconstruction of the SR 82 / SR 85 separation, which would be expected to be constructed in southbound and northbound segments to minimize the impacts to through traffic on SR 82. Detour routes would be provided for ramp closures. A Transportation Management Plan (TMP) would be developed during PA/ED and completed during PS&E. The TMP would address pedestrian, bicycle and motorist movements.

Alternative to be studied at Middlefield Road at SR 237: Add loop ramp and realign Frontage Road for standard intersection

To increase distance between signalized intersections, the alternative to be studied would widen northbound Middlefield Road between the SR 237 on- and off-ramps and eliminate the northbound-to-westbound left turn.

- The westbound-only Frontage Road, which primarily serves as the westbound exit from SR 237 to Middlefield Road and the entrance to SR 237 from Maude Avenue, would be realigned to form an intersection with Ferguson Drive at Middlefield Road, accommodating a new loop ramp from northbound Middlefield Road to westbound SR 237.
- Throughout the project limits, Middlefield Road would be widened to provide 5 feet wide Class II Bike Lanes where there are gaps.

One signal would be eliminated, doubling the distance between one pair of the three remaining signals.

The proposed signal would include coordination with existing or new inductance loops on SR 237 off-ramps and with Caltrans traffic monitoring systems. Improvements would also include closed circuit TV for Caltrans traffic monitoring.

VTA's October 2004 *SR 237 Corridor Study - Final Report* included this Middlefield Road alternative to be studied.

These two ramp-end intersections are currently and would continue operating at LOS D or better under the 2025 No Project Conditions. By 2025, peak hour traffic on Middlefield Road would increase by 300 vph-700 vph, an increase of approximately 40%. The added capacity and separation of ramp movements is expected to improve the overall safety at this location. The relocation of the ramp eliminates the need for a traffic signal thus reducing the number of conflict points near the interchange and would improve the overall safety of the interchange.

During the PA/ED phase, operations throughout the project area would be evaluated for the alternative to be studied and other alternatives.

Design exceptions for the alternative to be studied are shown in the table below. In addition to interchange spacing, the alternative to be studied would retain other existing geometry, conformance to which would require design exceptions to the current HDM including super elevation transition exceptions, access rights acquisition and minimum lane drop tapers. During PA/ED, these exceptions would be either eliminated by design changes (and possible increased impacts) or fact sheets would be prepared.

TABLE 7.2

Middlefield Road at SR 237 Alternative to be Studied Mandatory Standard Design Exceptions		
Mandatory Standard	**Design Requirement**	**Location of possible exception**
HDM 101.1 – Design Speed	35 mph for a facility connecting to a freeway, existing 25 mph	Ferguson Drive, opposite the proposed loop ramp entrance
HDM 501.3 - Interchange Spacing	Minimum 1.0 mile (existing 0.23 mile)	Between Maude Avenue and Middlefield Road interchanges on SR 237
HDM 501.3 - Interchange Spacing	Minimum 1 mile (existing 0.90 mile)	Between Middlefield Road and Dana Street interchanges on SR 237
HDM 504.3(3) Intersection Spacing	Minimum 400 feet (existing 110 feet)	On Middlefield Road, between WB SR 237 diagonal on and Ferguson Drive
HDM 504.3(3) Intersection Spacing	Minimum 400 feet	On Middlefield Road, between Frontage Road / WB SR 237 loop on and Logue Avenue
HDM 504.8 Access Control	Access rights not acquired opposite ramp terminal	Middlefield Road at WB SR 237 loop on
Middlefield Road at SR 237 Alternative to be Studied Advisory Standard Design Exceptions		
Advisory Standard	**Design Requirement**	**Location of possible exception**
HDM 202.5(1) - SE Transition	Minimum 300 feet	NB Middlefield Road entrance to WB 237
HDM 504.3(1)(d) Lane drops	Minimum 30:1 taper	NB Middlefield Road entrance to WB SR 237

Minor retaining walls are proposed where there would be widening over embankment, and to tie back slopes under the undercrossing.

Designs that included roundabouts at the frontage road intersection with Middlefield Road were considered by the PDT and not carried forward. Although the PDT considered driver unfamiliarity to be an issue for roundabout alternatives, an operations analysis of the draft designs was performed (October 2007), as a follow up to the conceptual alternatives assessment. The analysis showed the roundabouts to be operationally infeasible for this application, primarily because the volume of left turn movements is so high that traffic stays in the roundabout too long for successful operation.

Urban interchange and diverging diamond interchange alternatives were considered at Middlefield Road and were not carried forward because neither feasibly served a high through volume across Middlefield Road.

A Transportation Management Plan (TMP) would be developed during the PA/ED phase and completed during development of the PS&E.

PA/ED efforts for alternative to be studied:

The PA/ED area of study (traffic operations and area of potential effects) would be:

- **SR 82:** Grant Road to Sylvan Avenue/The Americana (inclusive) and adjacent properties within 20 feet
- **SR 85:** Fremont Avenue interchange to Evelyn Avenue interchange, Stevens Creek, and adjacent properties within 20 feet
- **SR 237:** El Camino Real to Maude Avenue, including the SR 85/SR 237 interchange, adjacent properties within 20 feet on the west side and entire fronting parcels on the east side (in the Sylvan Avenue neighborhood), and including the first intersection beyond each ramp terminus between those limits (at Moorpark Way, Whisman Road, and Dana Street)
- **At Middlefield Road:** Logue Avenue to Bernardo Avenue (inclusive) and adjacent properties within 20 feet and all of the 690 Middlefield Road property where the new loop is proposed

It is anticipated that the proposed project would require Caltrans review of the following technical studies during PA/ED:

- Community Impact Assessment
- Community Character and Cohesion Report
- Visual Impact Assessment (including a tree survey)
- Cultural resources studies (including an Archaeological Survey Report, Historic Resources Evaluation Report, and Historic Resources Compliance Report)
- Location Hydraulic Study and Water Quality Report
- Geotechnical and Engineering Geologic Report
- Paleontological Identification Report
- Hazardous waste/materials studies (including an Initial Site Assessment and a Preliminary Site Investigation)
- Air Quality Study
- Noise and Vibration Report
- Natural Environment Study
- Cumulative Impacts Assessment
- Traffic Operations Report

The project PEAR (Attachment C) details the need for each of these environmental evaluations during PA/ED.

Figure 7.1 Project Study Area

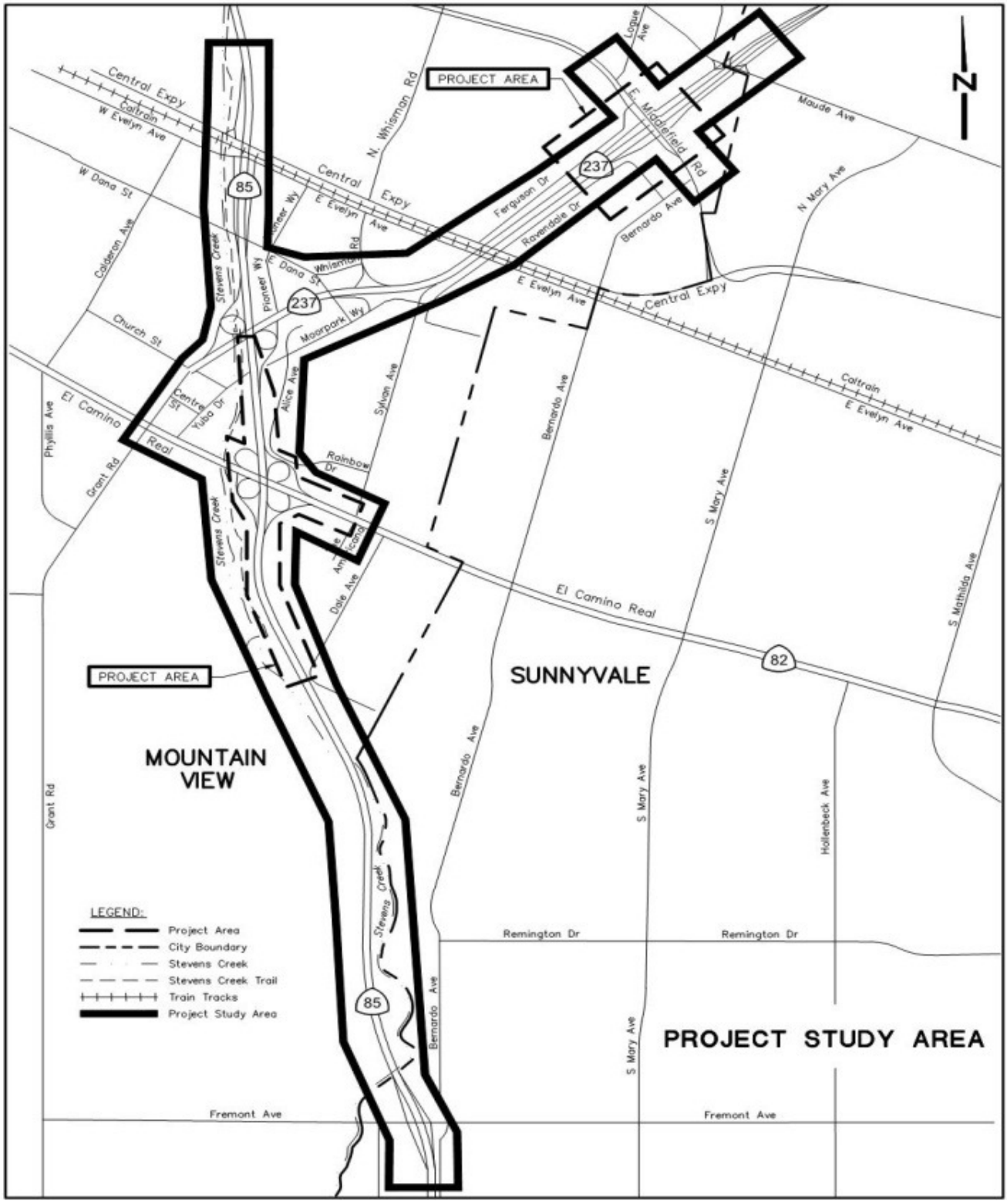
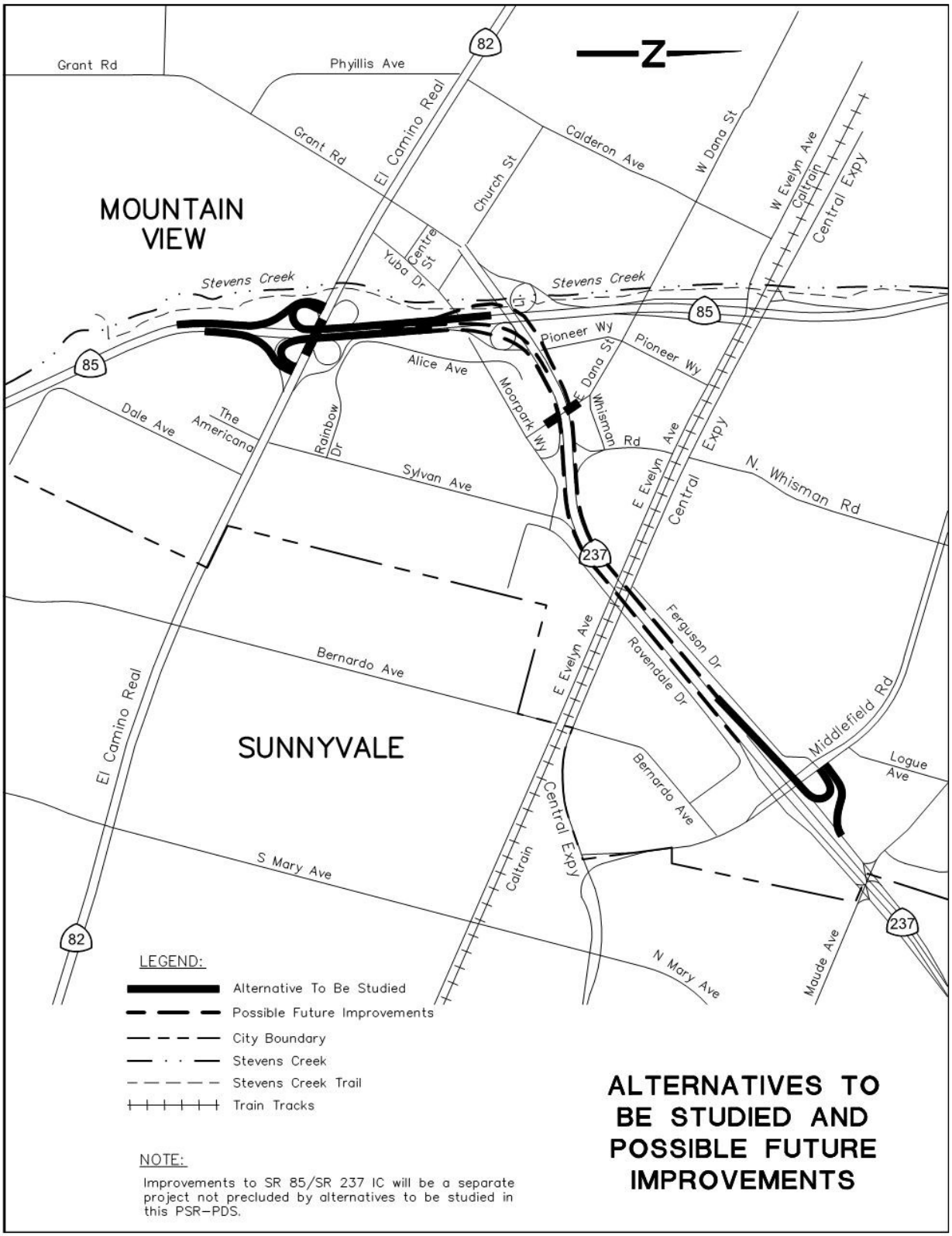


Figure 7.2 Alternatives To Be Studied and Future Possible Improvements



As discussed in Section 2, "Background", PA/ED efforts would include consideration of VTA's future improvement to the SR 85/SR 237 interchange, so that the projects initiated with this document would not preclude improvements at SR 85/SR 237. Planning to insure compatibility with future improvements would include geometric and traffic operations study and express lane coordination.

Potential improvements in the interchange area that would require further evaluation during PA/ED could include:

- Access Changes
  - closure of the eastbound SR 237 exit to Dana Street and the Moorpark Way on-ramp
  - closure of the northbound SR 85 access to Dana Street
  - closure of the eastbound SR 237 to northbound SR85 loop
  - closure or modification of the Whisman Avenue access to SR 237
  - replacement of the Dana Street bridge over SR 237
  - construction of a realigned connector with a bridge over the existing eastbound SR 237 to the northbound SR 85 loop
- Future planned direct connectors from SR 85 to SR 237
  - Northbound to eastbound
  - Westbound to southbound
- Evaluation of environmental impacts to
  - Stevens Creek Trail and Wildlife Corridor
  - Stevens Creek

The projects used for programming represent initial steps, having independent utility, toward the ultimate solution.

The project would be in the jurisdiction of San Francisco Bay (Region 2) Regional Water Quality Control Board. No work is proposed in Stevens Creek and the stormwater discharge from the project during construction would be covered by Caltrans NPDES permit and no 401 certification is anticipated. Permitting requirements would be further evaluated during the PA/ED phase. The Santa Clara Valley Water District's website indicates that the Stevens Creek Fish Passage Modifications Project is in the planning phases and would not be impacted by SR 85/El Camino Real-Middlefield project.

The project improvements would increase the impervious area and could potentially create permanent water quality impacts. To minimize the impacts, the guidelines in the *Caltrans Storm Water Quality Handbook: Project Planning and Design Guide* (PPDG) would be implemented. The total estimated Disturbed Soil Area (DSA) for the alternative to be studied is 32 acres (24 acres at the SR 85/El Camino Real intersection and 8 acres at Middlefield Road). The project will be required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. The risk level assessment has been determined to be Level 2 for the construction period between June 2015 and June 2017. It is recommended that the PA/ED study area include the SR 85/SR 237 interchange because if it becomes part of the project during PA/ED, work in Stevens Creek may be introduced, which would trigger additional permit requirements.

The estimated new impervious area for the alternative to be studied would be 6 acres (4 acres at the SR 85/El Camino Real interchange and 2 acres at Middlefield Road). Per the Evaluation Documentation Form, the project would require the incorporation of Treatment BMPs. Biofiltration swales and strips would be proposed as the Permanent BMPs. Stevens Creek is listed under State and Regional Water Boards 303(d) list for Trash, per *Statewide 2010 Integrated Report* (Clean Water Act Section 3030(d) List / 305(b) Report). Hence there is a need to study the feasibility of Gross Solids Removal Devices (GSRDs). The project would create steep slopes at the loop ramps and bridge embankments, and proper erosion control measures would be adopted during and after construction. Fiber rolls and hydro seeding are anticipated. There is likely to be aerially deposited lead-tainted soils in the project vicinity; its characterization and reusability would be evaluated during the PA/ED phase.

Cost estimate for temporary BMPs is $648,000 (1.35% of the total project cost, including structures), and cost estimate for the permanent BMPs is $787,500 ($175,000 per additional lane mile, 4.5 lane miles).

8. RIGHT OF WAY

The SR 82/SR 85 interchange reconfiguration is anticipated to require slivers of acquisitions from single family parcels, commercial/industrial parcels, and property owned by the City of Mountain View. Alternative to be studied right of way costs are estimated to be approximately $500,000 for acquisition and $500,000 for utility relocation.

The SR 237/Middlefield Road interchange reconfiguration is anticipated to require a substantial right of way acquisition from commercial/industrial property. Alternative to be studied right of way costs are estimated to be approximately $4,600,000 for acquisition and $15,000 for utility relocation.

Approximately 50% of the utility relocation has been assumed to be a project cost; relocation cost liability will be further evaluated during PA/ED.

Replacement/relocation of utilities in the SR 82/SR 85 interchange separation would require long-lead coordination.

No railroad involvement is expected because the UPRR crossing of SR 237 is not part of the alternative to be studied.

A right of way conceptual Cost Estimate is involved here as Attachment E.

9. STAKEHOLDER INVOLVEMENT

Project sponsors VTA and City of Mountain View attended regular PDT meetings from 2007 to 2010. City of Mountain View staff participated in the development of the project purpose and need statement and have kept the Mountain View council apprised of the project.

It is anticipated that public outreach would be a component of PA/ED, so that proposed traffic changes and visual changes would be presented to the public early, to allow time to incorporate public input into the design.

10. ENVIRONMENTAL DETERMINATION/DOCUMENT

A Preliminary Environmental Analysis Report (PEAR) has been prepared in compliance with Caltrans' *Guidelines for Preparation of the Preliminary Environmental Analysis Report (PEAR) Handbook*. The PEAR is based on reconnaissance-level site visits (i.e., windshield surveys), and review of existing information, including design drawings, the *City of Mountain View General Plan*, and literature reviews and record searches. The PEAR is included here as Attachment C.

Caltrans would be the California Environmental Quality Act (CEQA) lead agency. The Santa Clara Valley Transportation Agency (VTA) and the City of Mountain View would be responsible agencies under CEQA. Caltrans' role is to oversee the CEQA process and decision-making, and the development and approval of the environmental documentation being produced for this project. Because the project has the potential to result in environmental effects that can be mitigated, the anticipated environmental document to comply with CEQA is an Initial Study/Mitigated Negative Declaration (IS/MND).

The environmental studies that will be needed for the project are:

- Community Impact Assessment
- Community Character and Cohesion Report
- Visual Impact Assessment (including a tree survey)
- Cultural resources studies (including an Archaeological Survey Report, Historic Resources Evaluation Report, and Historic Resources Compliance Report)
- Location Hydraulic Study and Water Quality Report
- Geotechnical and Engineering Geologic Report
- Paleontological Identification Report
- Hazardous waste/materials studies (including an Initial Site Assessment and a Preliminary Site Investigation)
- Air Quality Study
- Noise and Vibration Report
- Natural Environment Study
- Cumulative Impacts Assessment
- Traffic Operations Report

Environmental commitments are likely to include soundwalls. The number, length, and height of the soundwalls will be determined during preparation of the noise report. In addition, tree replacement will be required due to loss of trees at several locations within the project footprint.

It is not anticipated that permits will be required from federal agencies, such as the US Army Corp of Engineers or the US Fish and Wildlife Service. Since there will be no federal funding or discretionary actions (such as permits), no National Environmental Policy Act (NEPA) analysis is required.

VTA will prepare a NEPA document in the event federal funds are used for any project phase.

11. FUNDING

Capital Cost Estimate for the alternative to be studied is shown below.

Capital Outlay Estimate				
Alternative to be studied	Construction Cost Range	ROW Cost Range	STIP Funds	Fund Source "A"
Alternative to be studied	$40,000,000 - $50,000,000	$5,000,000 - $15,000,000	100%	0%

Based on the cost range in the Capital Outlay Estimate table, the proposed support and capital funds estimates are shown below.

ACTIVITY	%		2012 DOLLARS	DATE OF OUTLAY	ESCALA-TION RATE	ESCALATED COST
PA/ED	7%	of Construction	$2,975,000	7/15/13; 7/15/14		$2,975,000
PS&E	14%	of Construction	$5,950,000	7/15/15	3.50%	$6,597,000
R/W SUPPORT	10%	of R/W	$560,000	7/15/15	3.00%	$612,000
R/W ACQUISITION	100%	of R/W	$5,600,000	7/15/15	3.00%	$6,120,000
CONSTRUCTION SUPPORT	15%	of Construction	$6,375,000	7/15/16	5.00%	$7,749,000
CONSTRUCTION	100%	of Construction	$42,500,000	7/15/16	5.00%	$51,660,000
TOTAL			**$63,960,000**			**$75,713,000**

The level of detail available to develop these capital cost estimates is only accurate to within the above ranges and is useful for long-range planning purposes only. The capital costs should not be used to program or commit capital funds. The project report will serve as the appropriate document from which the remaining support and capital components of the project will be programmed.

ACTIVITY	FY 13-14	FY 14-15	FY 15-16	FY 16-17	TOTAL
PA/ED	$1,487,500	$1,487,500			$2,975,000
PS&E			$6,597,000		$6,597,000
R/W SUPPORT			$612,000		$612,000
CONSTRUCTION SUPPORT				$7,749,000	$7,749,000
TOTAL, ESCALATED:	**$1,487,500**	**$1,487,500**	**$7,209,000**	**$7,749,000**	**$17,933,000**

The anticipated funding fiscal year for construction is not determined.

12. SCHEDULE

Project Milestones	Delivery Date (Month, Year)
Begin Environmental	July, 2013
Circulate DED	January, 2015
PA/ED	July, 2015

13. RISK

Risks currently considered "High" include the timing of HOV-to-express lane conversion on SR 85 relative to PA/ED studies; lack of project funding; and, during PS&E and construction: slow utility cooperation and slow completion of maintenance co-operative agreement between City of Mountain View and Caltrans. The maintenance co-op is expected to be complex because of El Camino Real's function as an arterial.

"Medium" PA/ED risks are related to VTA/Caltrans co-operative agreement for PA/ED; traffic operations analysis results; potential conflict between local and regional traffic operations goals; design exceptions; accurate identification of construction staging area and right of way needs; and realistic identification of project construction costs lacking a construction year. Construction year requirements and conditions for the disposal of aerially deposited lead contribute to cost evaluation risk. The risk of federal funding entering into any phase of the project, triggering the requirement of a NEPA document, is considered medium.

Further along in project development, medium risks include timely completion of the VTA/Caltrans co-operative agreements for both PS&E and Construction phases.

Project risks, triggers and strategies are shown in the Risk Register in Attachment F.

14. FHWA COORDINATION

No federal-aid funding is anticipated and no FHWA action is required for this project. VTA will prepare a NEPA document in the event federal funds are used for any project phase.

15. PROJECT CONTACTS

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Nick Saleh	Caltrans, District Division Chief	510 286-6355	nick_saleh@dot.ca.gov
Darrell Vice	VTA, Project Manager	408-952-4214	darrell.vice@vta.org
Helen Kim	City of Mountain View, Project Manager	650-903-6523	helen.kim@ci.mtnview.ca.us

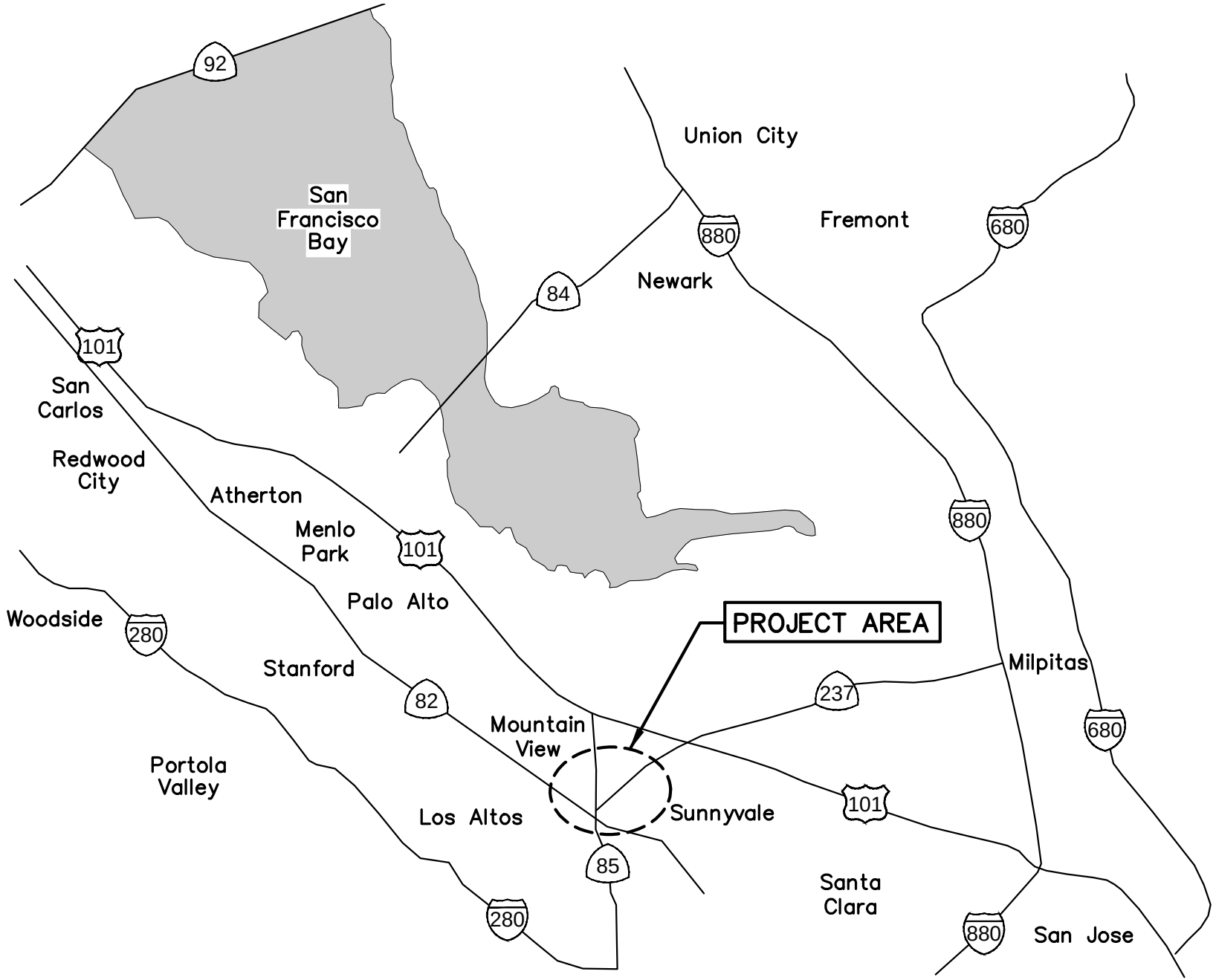
16. PROJECT REVIEWS

Larry Moore, Headquarter's Design Reviewer, reviewed the PSR-PDS on August 21, 2012. Other District 4 Functional Units reviewed the PSR-PDS on September 13, 2012 and their comments have been incorporated.

17. ATTACHMENTS

A. Project Location Map/Schematics (22 pages)
B. Cost Estimate (3 pages)
C. Preliminary Environmental Analysis Report (31 pages)
D. Transportation Planning Scoping Information Sheet (8 pages)
E. Right of Way Conceptual Cost Estimate Component (2 pages)
F. Risk Register (2 page)
G. Conceptual Alternatives Analysis Matrix (2 page)

Attachment A: Project Location Map/Schematics



PROJECT LOCATION MAP/SCHEMATICS
ATTACHMENT A

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER P. METZGER No. 40947 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
3331 N. FIRST STREET
SAN JOSE, CA 95134

NOLTE ASSOCIATES, INC.
1731 NORTH FIRST STREET, SUITE A
SAN JOSE, CA 95112

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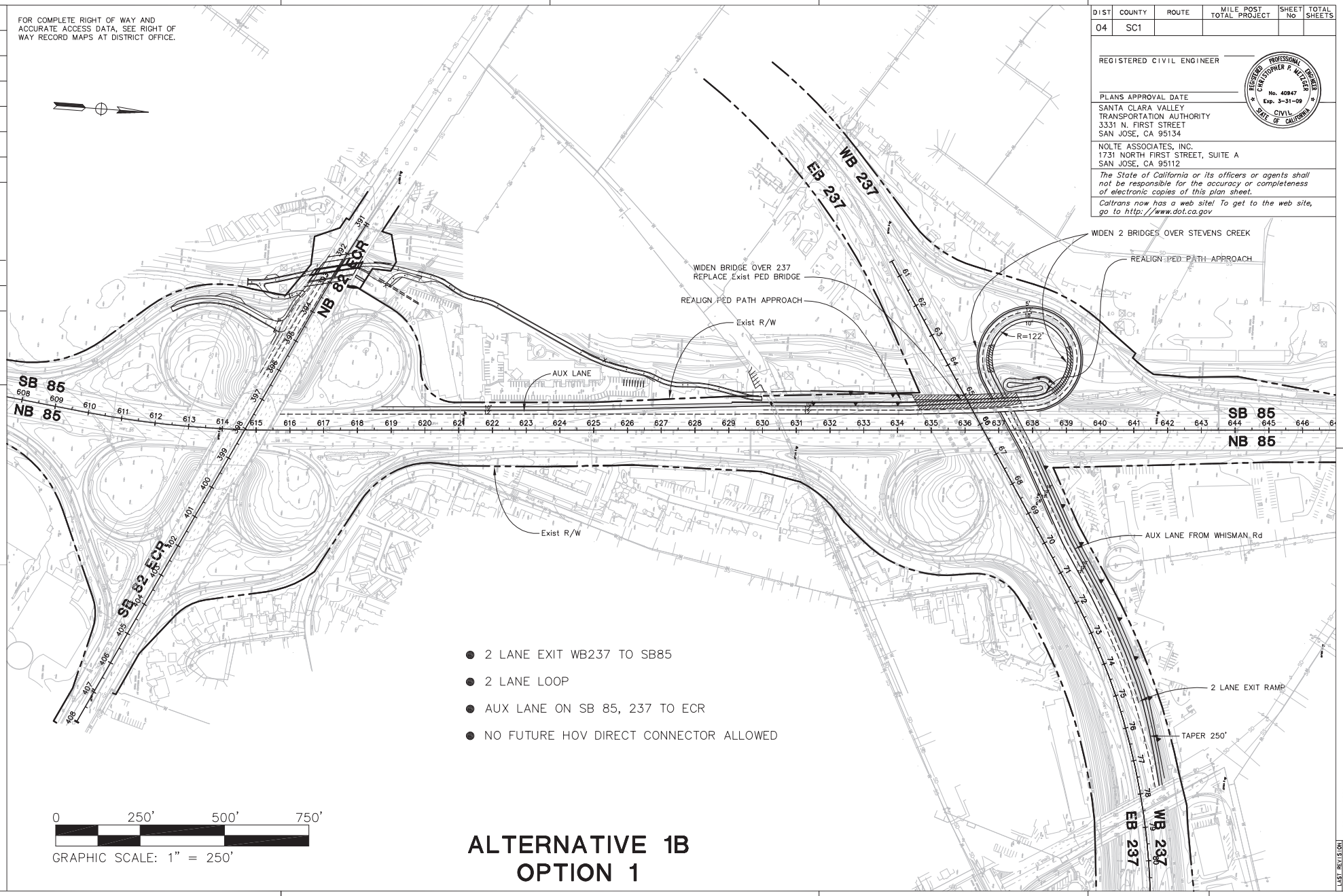

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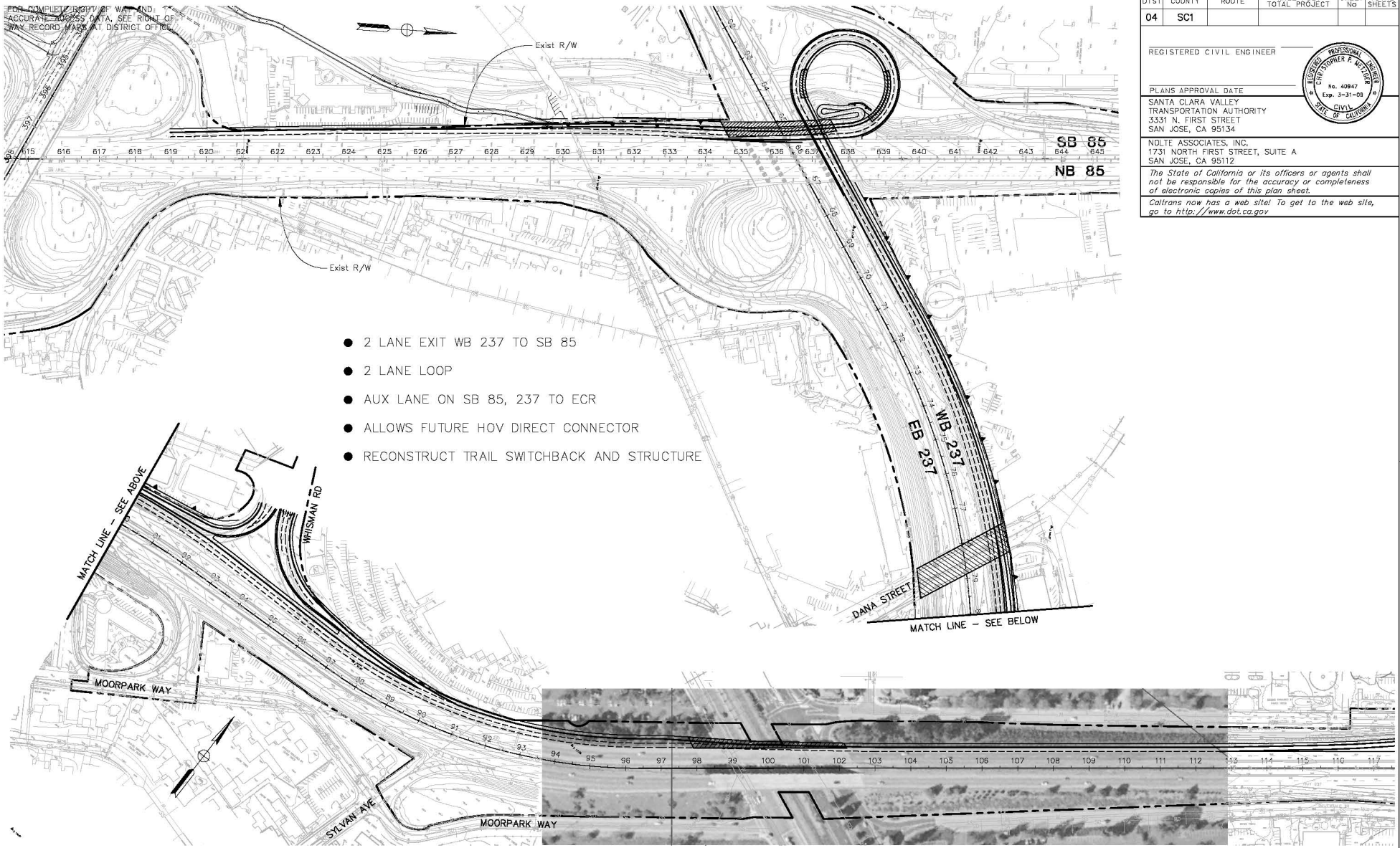

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DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
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FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER P. METZGER No. 40947 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

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WB 237

EB 237

WIDEN BRIDGE OVER 237
REPLACE PED BRIDGE

WIDEN 2 BRIDGES OVER STEVENS CREEK

REALIGN LOOP FOR MERGE WITH AUX LANE
WIDEN Exist 13' WIDE LANE TO 18'

NB 87 ECR

R=122'

REALIGN PED PATH APPROACH

Exist R/W

REALIGN PED PATH APPROACH

R=122'

SB 85
NB 85

SB 85
NB 85

AUX LANE FROM WHISMAN

Exist R/W

SB 82 ECR

- 2 LANE EXIT WB237 TO SB85
- 2 LANE LOOP
- NO FUTURE HOV DIRECT CONNECTOR ALLOWED

TAPER 250'

WB 237

EB 237

WHISMAN RD

0 300' 600' 900'

GRAPHIC SCALE: 1" = 300'

ALTERNATIVE 1C

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EA –

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER P. METZGER No. 40947 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
3331 N. FIRST STREET
SAN JOSE, CA 95134

NOLTE ASSOCIATES, INC.
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- 2 LANE EXIT WB237 TO SB85
- 2 LANE FLYOVER BRIDGE
- 2 LANE STANDARD MERGE
- REMOVE LOOP WB237 TO SB85
- REMOVE LOOP SB85 TO SB ECR (838 VPH PEAK)
- REMOVE LOOP NB ECR TO SB85
- REMOVE ON-RAMP WHISMAN RD TO WB237 (550 VPH PEAK)

0 300' 600' 900'

GRAPHIC SCALE: 1" = 300'

ALTERNATIVE 1D
OPTION 1

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DGN FILE =>

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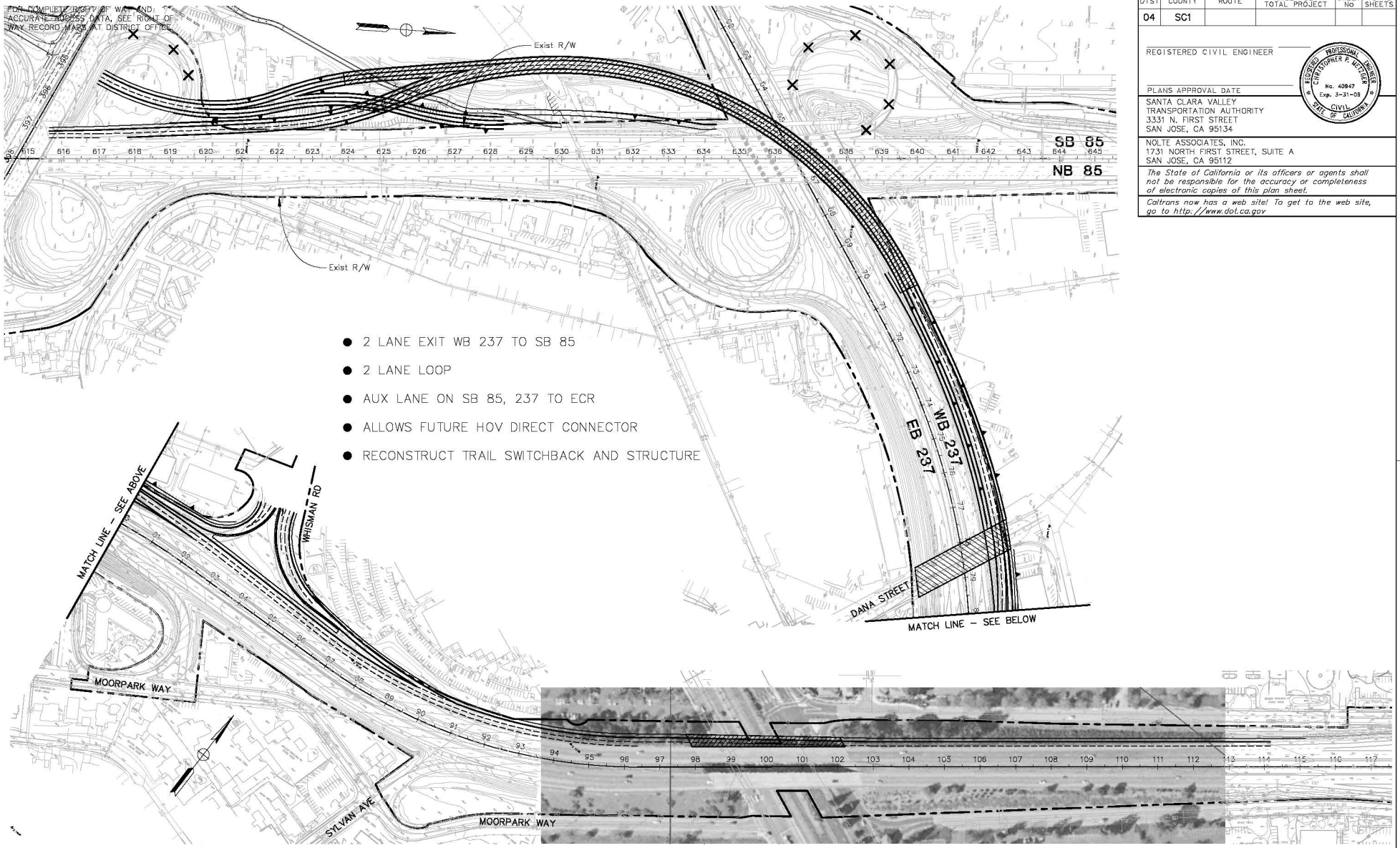

- 2 LANE EXIT WB 237 TO SB 85
- 2 LANE LOOP
- AUX LANE ON SB 85, 237 TO ECR
- ALLOWS FUTURE HOV DIRECT CONNECTOR
- RECONSTRUCT TRAIL SWITCHBACK AND STRUCTURE

ALTERNATIVE 1D
OPTION 2

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER P. METZGER No. 40947 Exp. 3-31-08 CIVIL STATE OF CALIFORNIA

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DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

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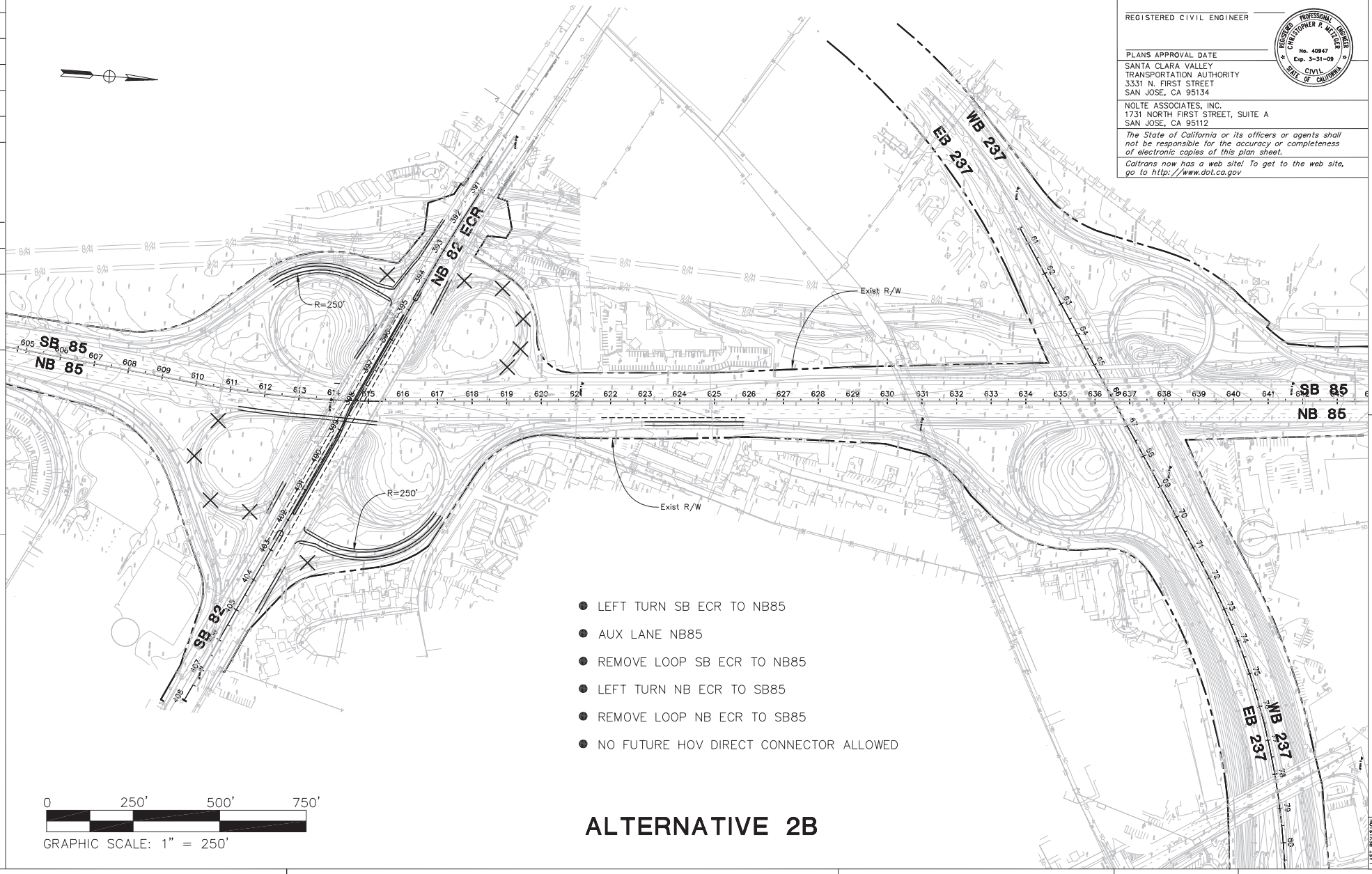

- LEFT TURN SB ECR TO NB85
- AUX LANE NB85
- REMOVE LOOP SB ECR TO NB85
- LEFT TURN NB ECR TO SB85
- REMOVE LOOP NB ECR TO SB85
- NO FUTURE HOV DIRECT CONNECTOR ALLOWED

0 250' 500' 750'

GRAPHIC SCALE: 1" = 250'

ALTERNATIVE 2B

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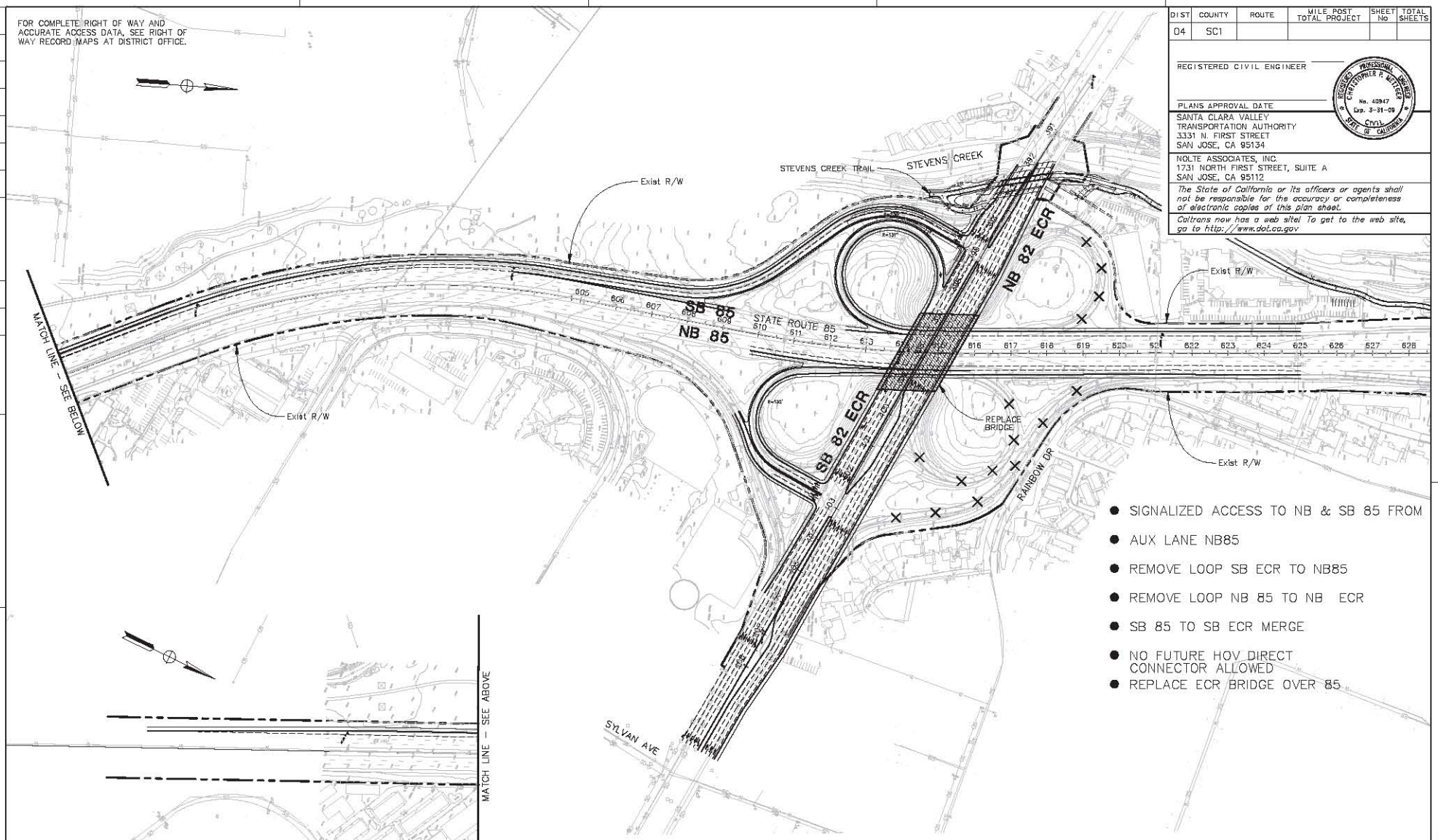

- SIGNALIZED ACCESS TO NB & SB 85 FROM
- AUX LANE NB85
- REMOVE LOOP SB ECR TO NB85
- REMOVE LOOP NB 85 TO NB ECR
- SB 85 TO SB ECR MERGE
- NO FUTURE HOV DIRECT CONNECTOR ALLOWED
- REPLACE ECR BRIDGE OVER 85

0 250' 500'

GRAPHIC SCALE: 1" = 250'

ALTERNATIVE 2G
OPTION 1

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

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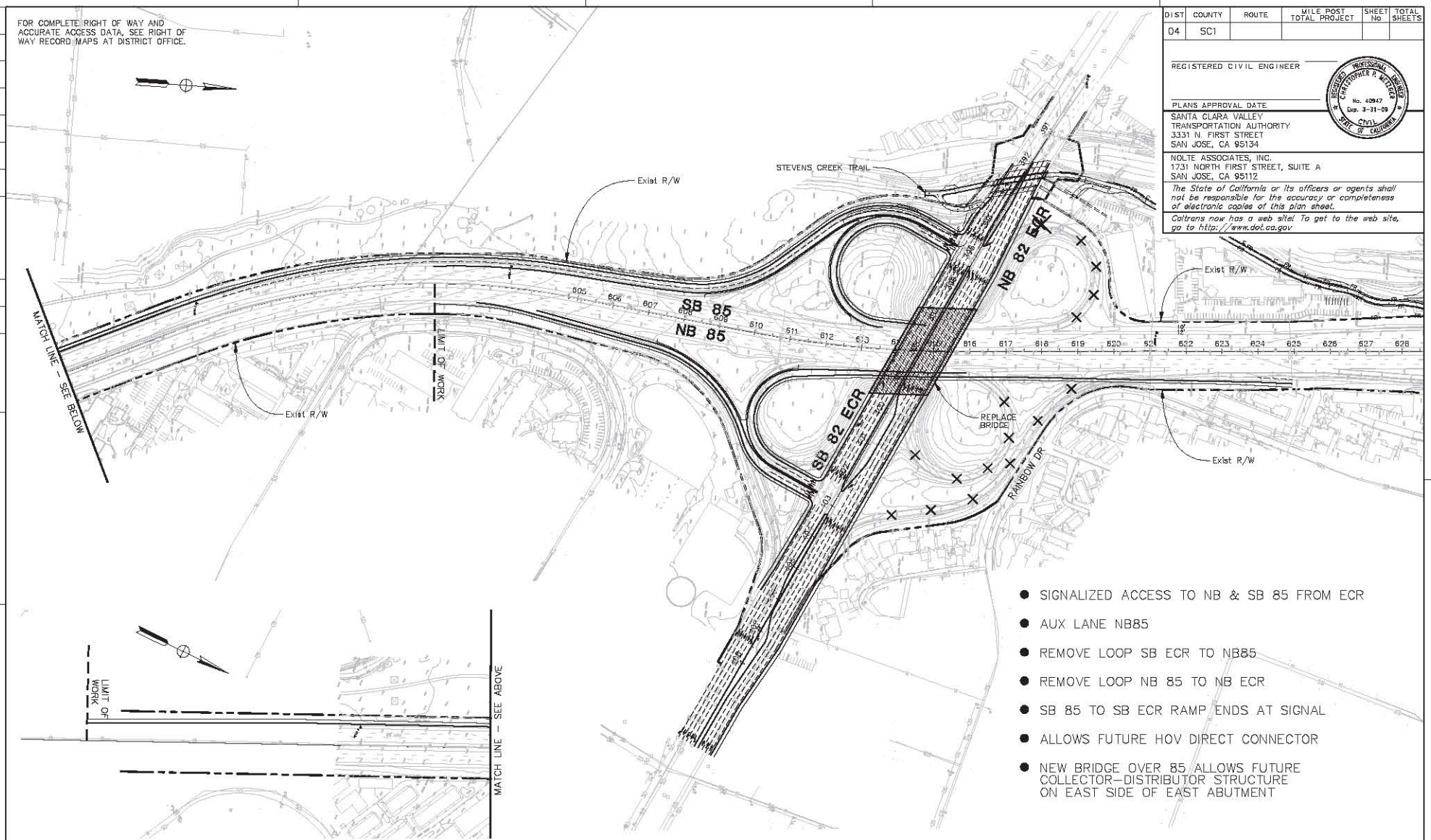

- SIGNALIZED ACCESS TO NB & SB 85 FROM ECR
- AUX LANE NB85
- REMOVE LOOP SB ECR TO NB85
- REMOVE LOOP NB 85 TO NB ECR
- SB 85 TO SB ECR RAMP ENDS AT SIGNAL
- ALLOWS FUTURE HOV DIRECT CONNECTOR
- NEW BRIDGE OVER 85 ALLOWS FUTURE COLLECTOR–DISTRIBUTOR STRUCTURE ON EAST SIDE OF EAST ABUTMENT

0 250' 500'

GRAPHIC SCALE: 1" = 250'

ALTERNATIVE 2G
OPTION 2

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

PROFESSIONAL ENGINEER CHRISTOPHER R. METZGER No. 42947 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

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DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

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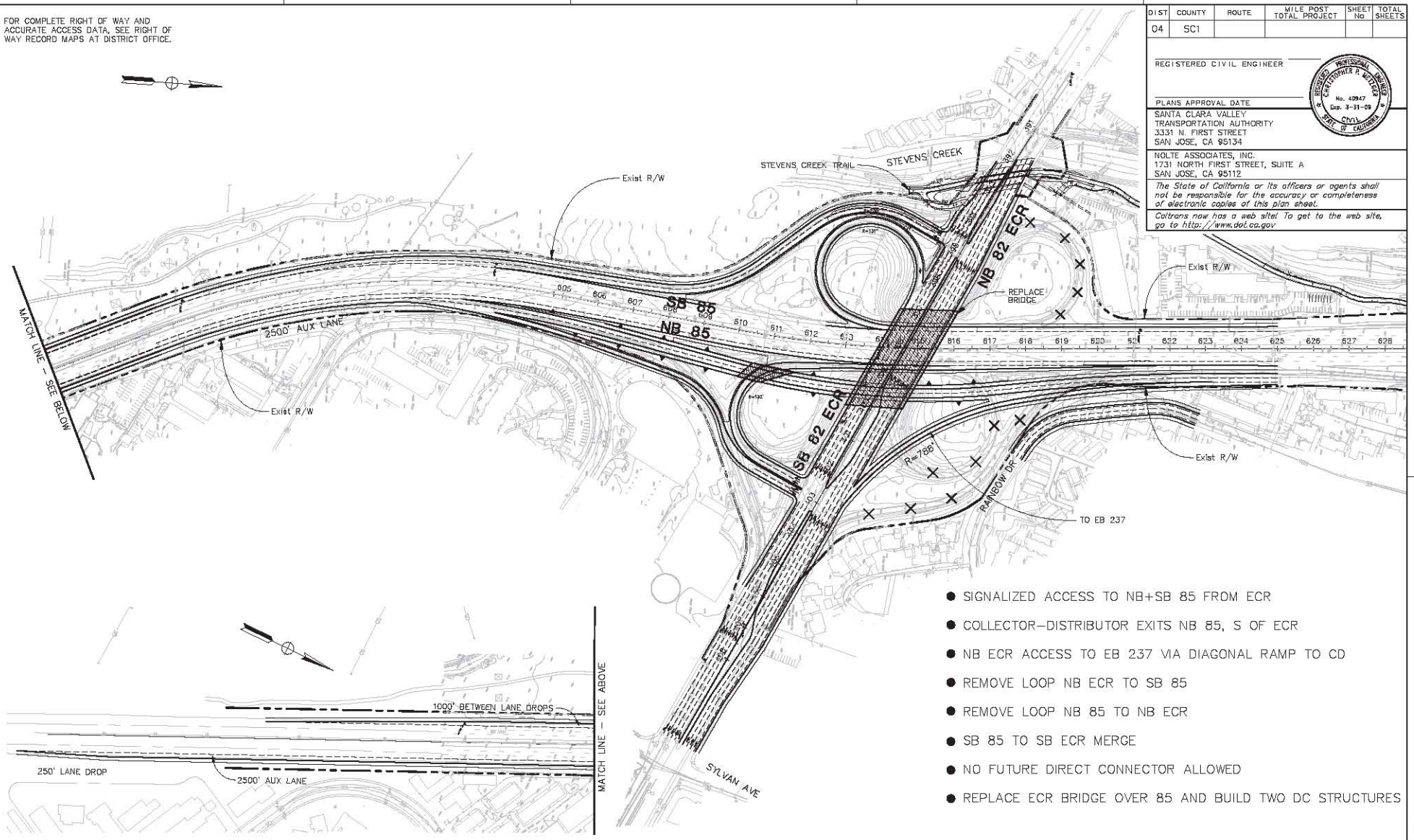

- SIGNALIZED ACCESS TO NB+SB 85 FROM ECR
- COLLECTOR–DISTRIBUTOR EXITS NB 85, S OF ECR
- NB ECR ACCESS TO EB 237 VIA DIAGONAL RAMP TO CD
- REMOVE LOOP NB ECR TO SB 85
- REMOVE LOOP NB 85 TO NB ECR
- SB 85 TO SB ECR MERGE
- NO FUTURE DIRECT CONNECTOR ALLOWED
- REPLACE ECR BRIDGE OVER 85 AND BUILD TWO DC STRUCTURES

0 250' 500'

GRAPHIC SCALE: 1" = 250'

ALTERNATIVE 2i
OPTION 1

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DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

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REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER R. METZGER No. 40947 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

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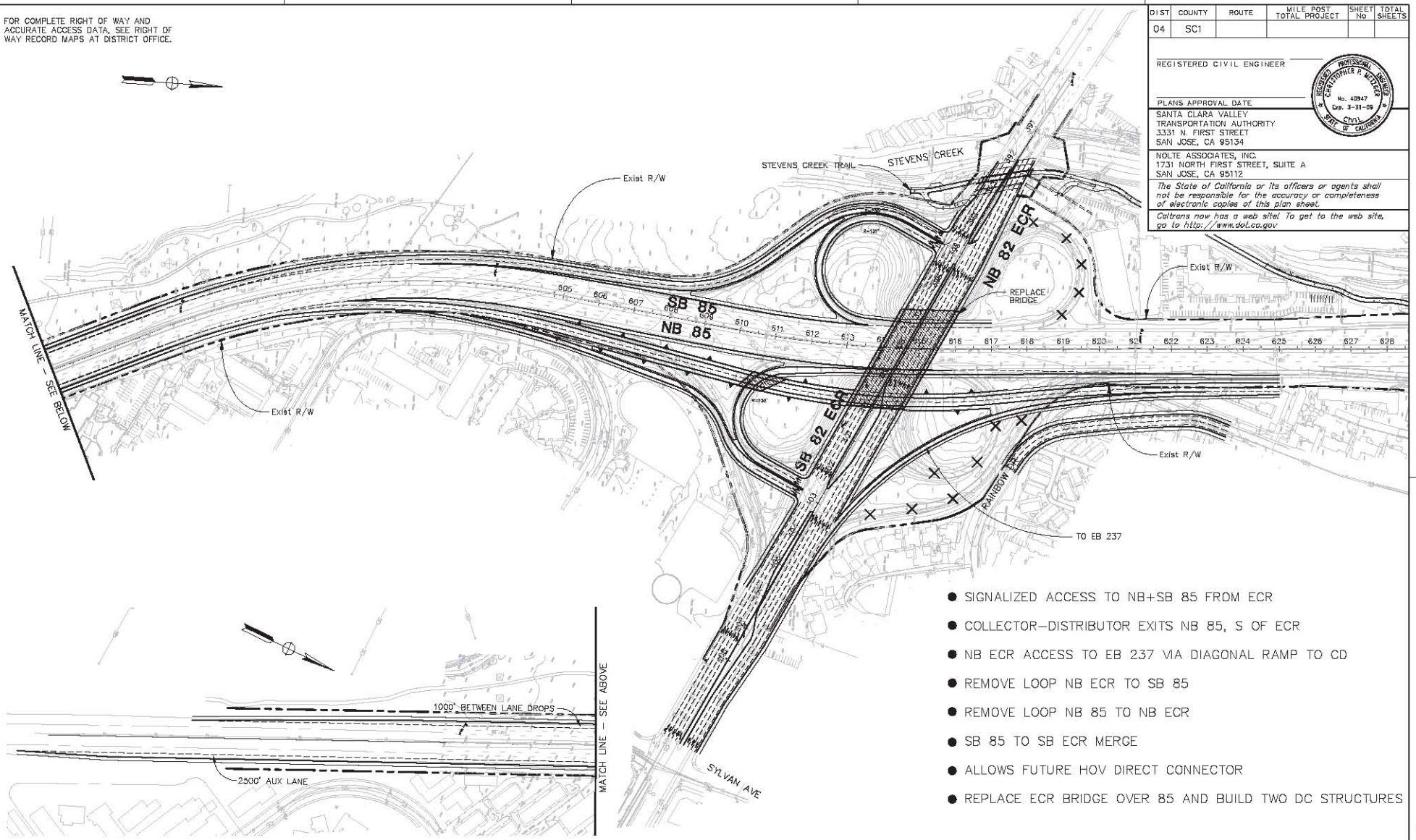

- SIGNALIZED ACCESS TO NB+SB 85 FROM ECR
- COLLECTOR–DISTRIBUTOR EXITS NB 85, S OF ECR
- NB ECR ACCESS TO EB 237 VIA DIAGONAL RAMP TO CD
- REMOVE LOOP NB ECR TO SB 85
- REMOVE LOOP NB 85 TO NB ECR
- SB 85 TO SB ECR MERGE
- ALLOWS FUTURE HOV DIRECT CONNECTOR
- REPLACE ECR BRIDGE OVER 85 AND BUILD TWO DC STRUCTURES

0 250' 500'

GRAPHIC SCALE: 1" = 250'

ALTERNATIVE 2i
OPTION 2

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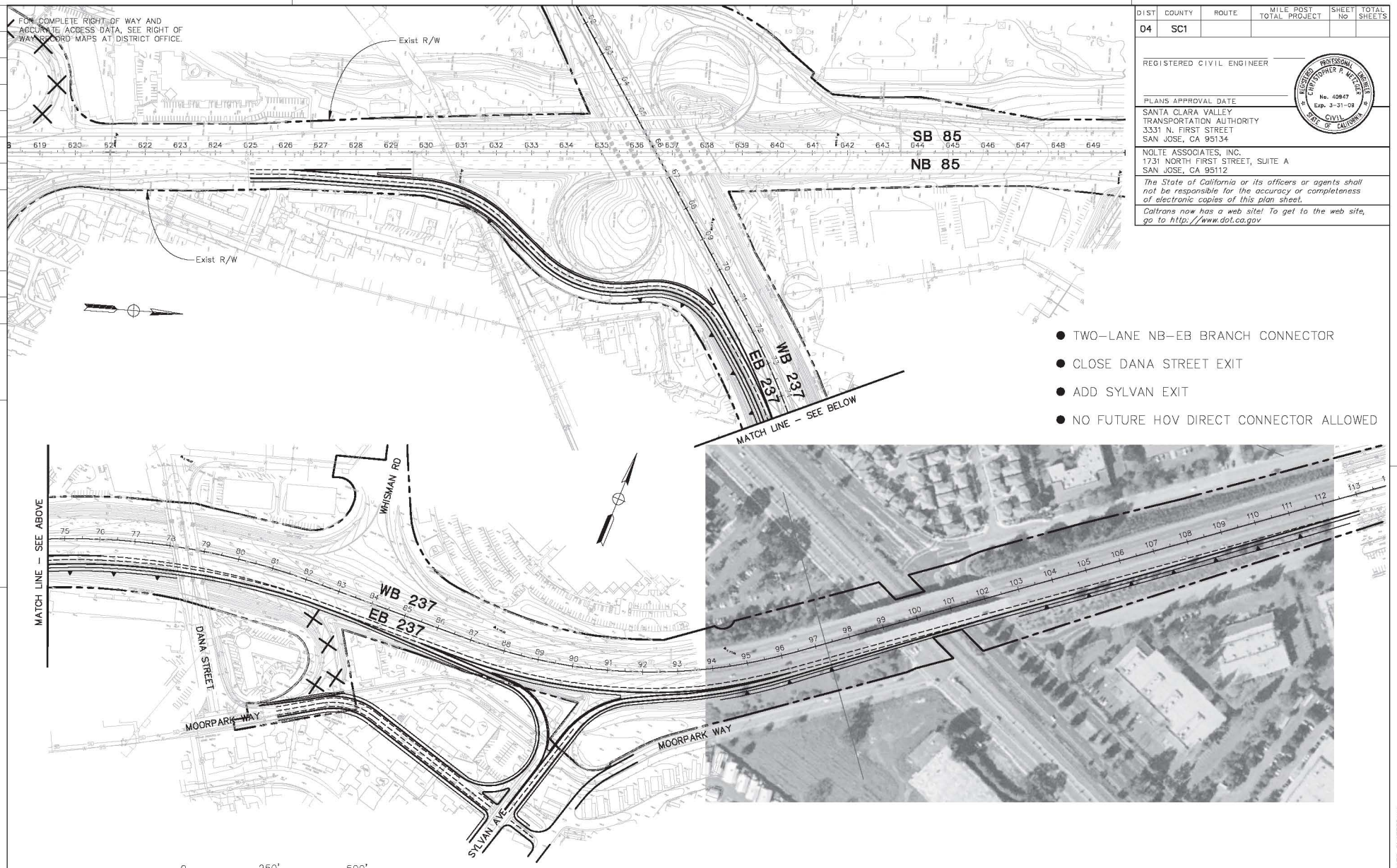

- TWO–LANE NB–EB BRANCH CONNECTOR
- CLOSE DANA STREET EXIT
- ADD SYLVAN EXIT
- NO FUTURE HOV DIRECT CONNECTOR ALLOWED

ALTERNATIVE 4B

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER R. METZGER No. 40947 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

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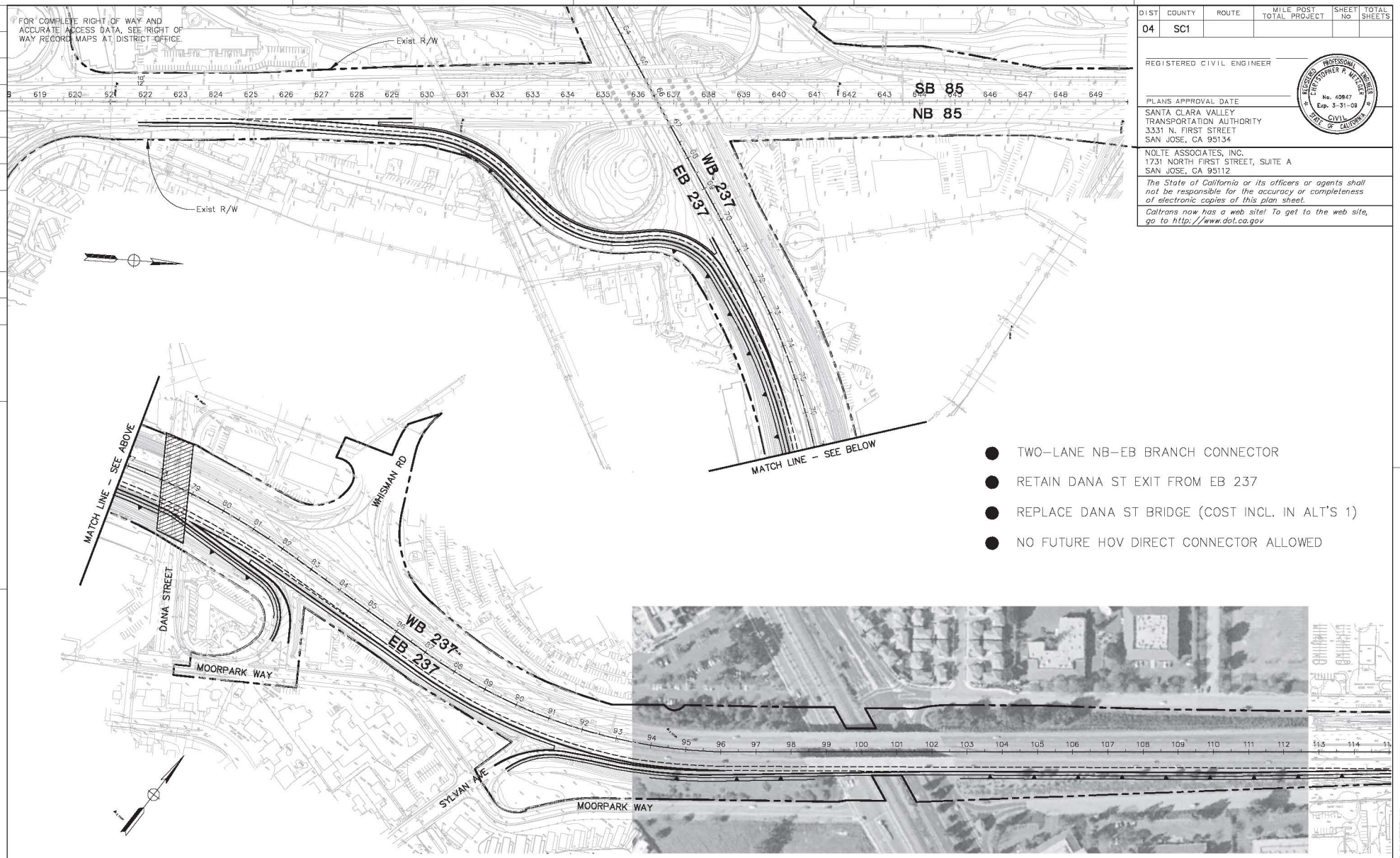

ALTERNATIVE 4C

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

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REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER R. METZGER No. 40947 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

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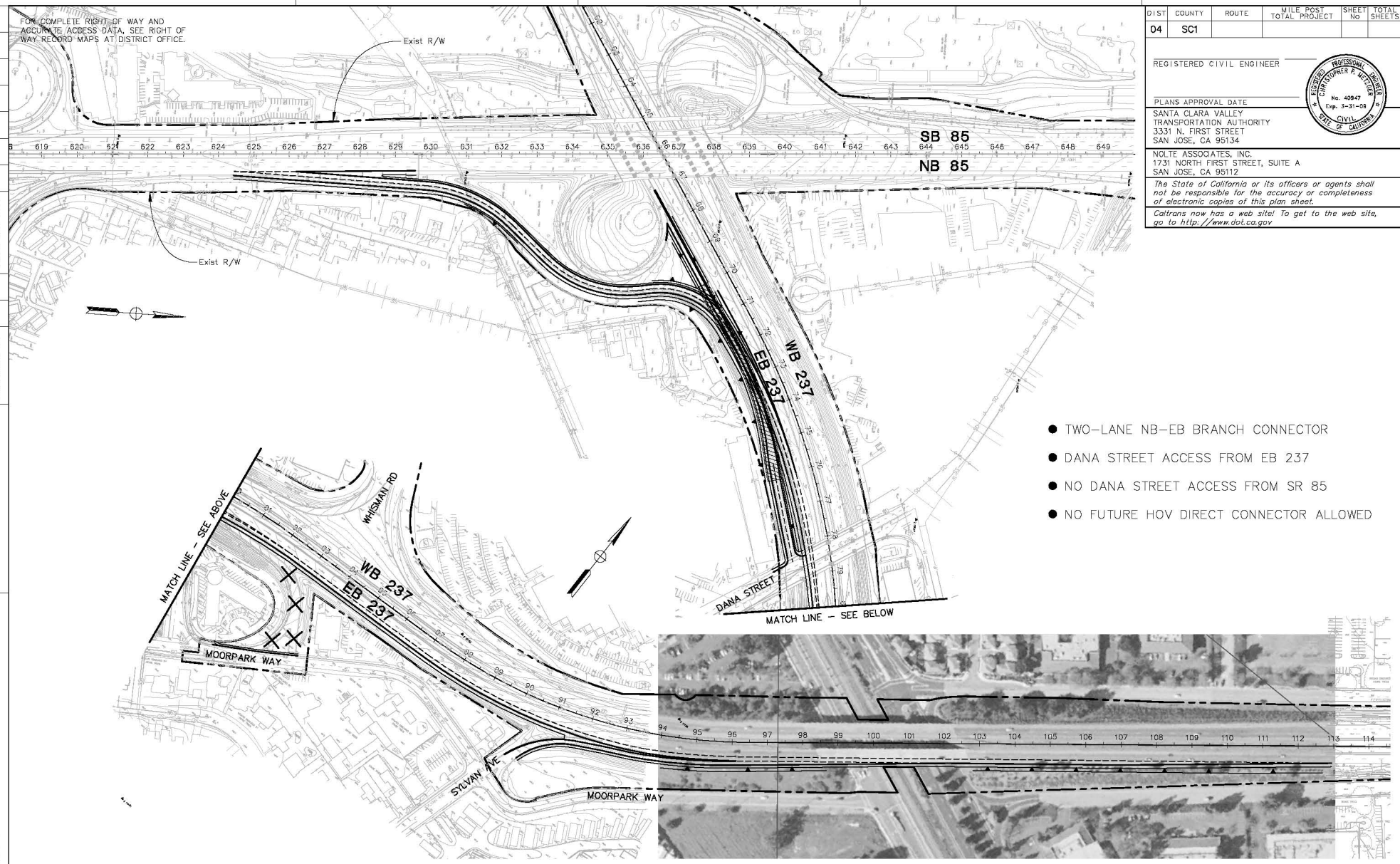

ALTERNATIVE 4D
OPTION 1

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

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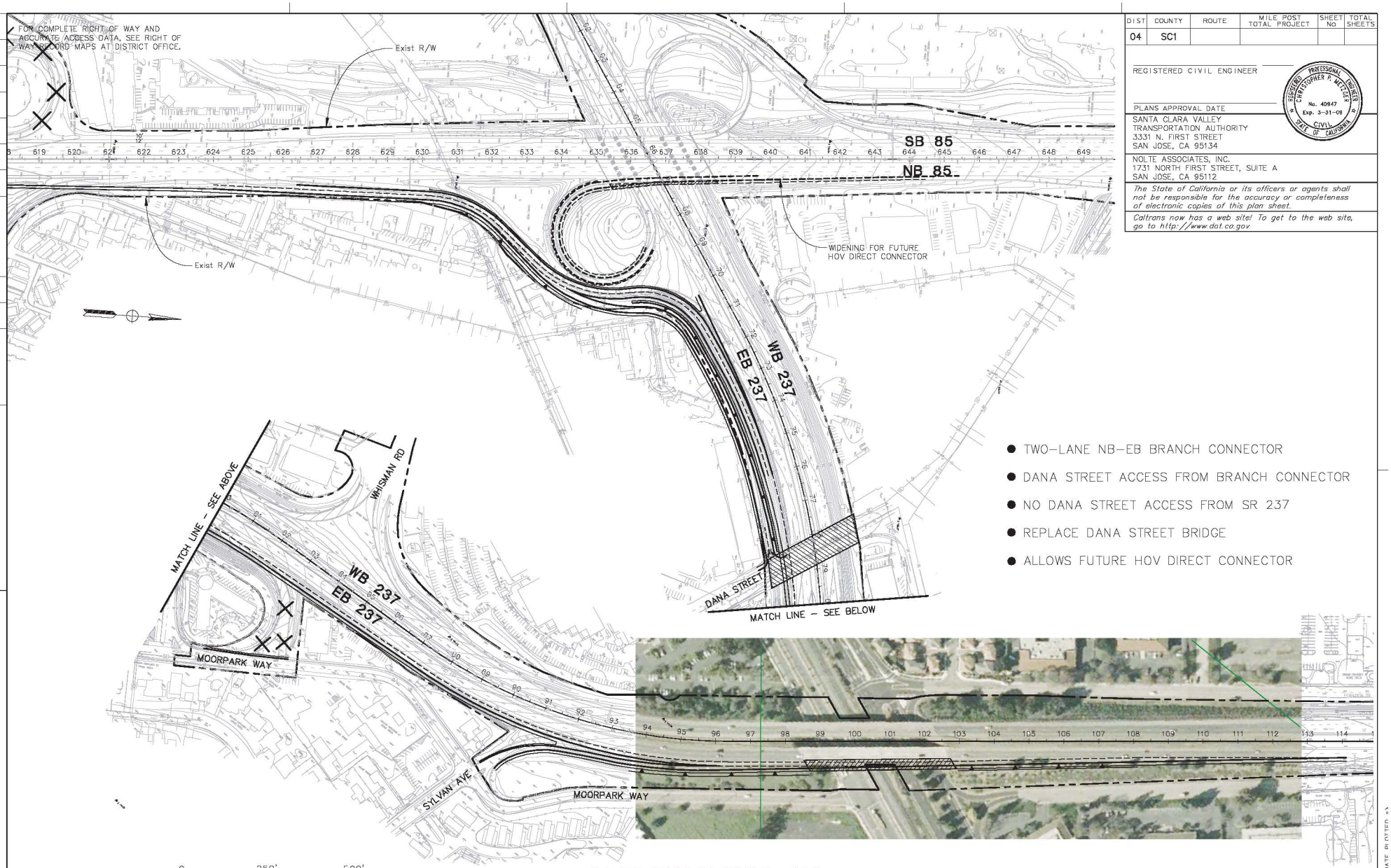

- TWO–LANE NB–EB BRANCH CONNECTOR
- DANA STREET ACCESS FROM BRANCH CONNECTOR
- NO DANA STREET ACCESS FROM SR 237
- REPLACE DANA STREET BRIDGE
- ALLOWS FUTURE HOV DIRECT CONNECTOR

ALTERNATIVE 4D
OPTION 2

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

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DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

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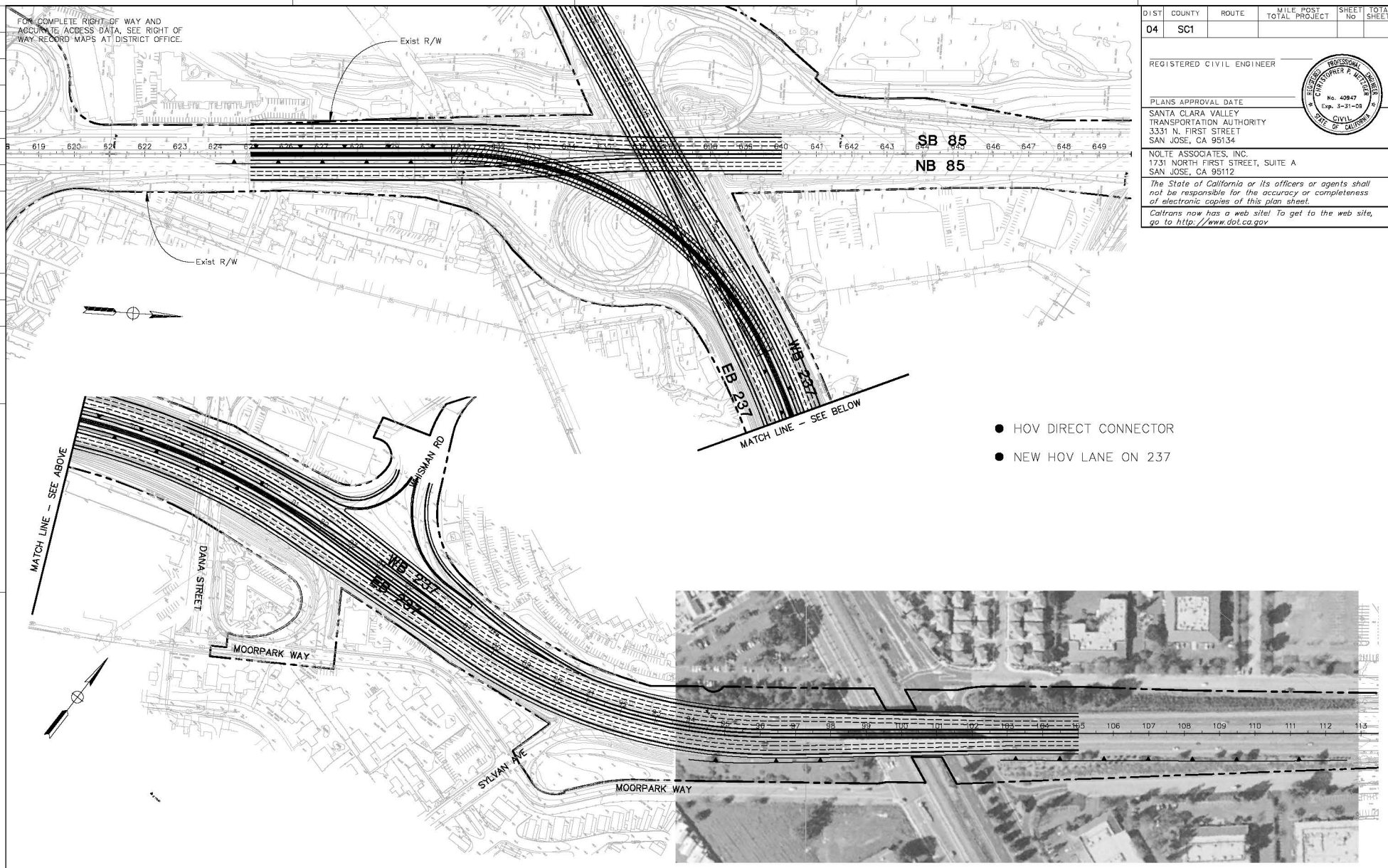

ALTERNATIVE 4E

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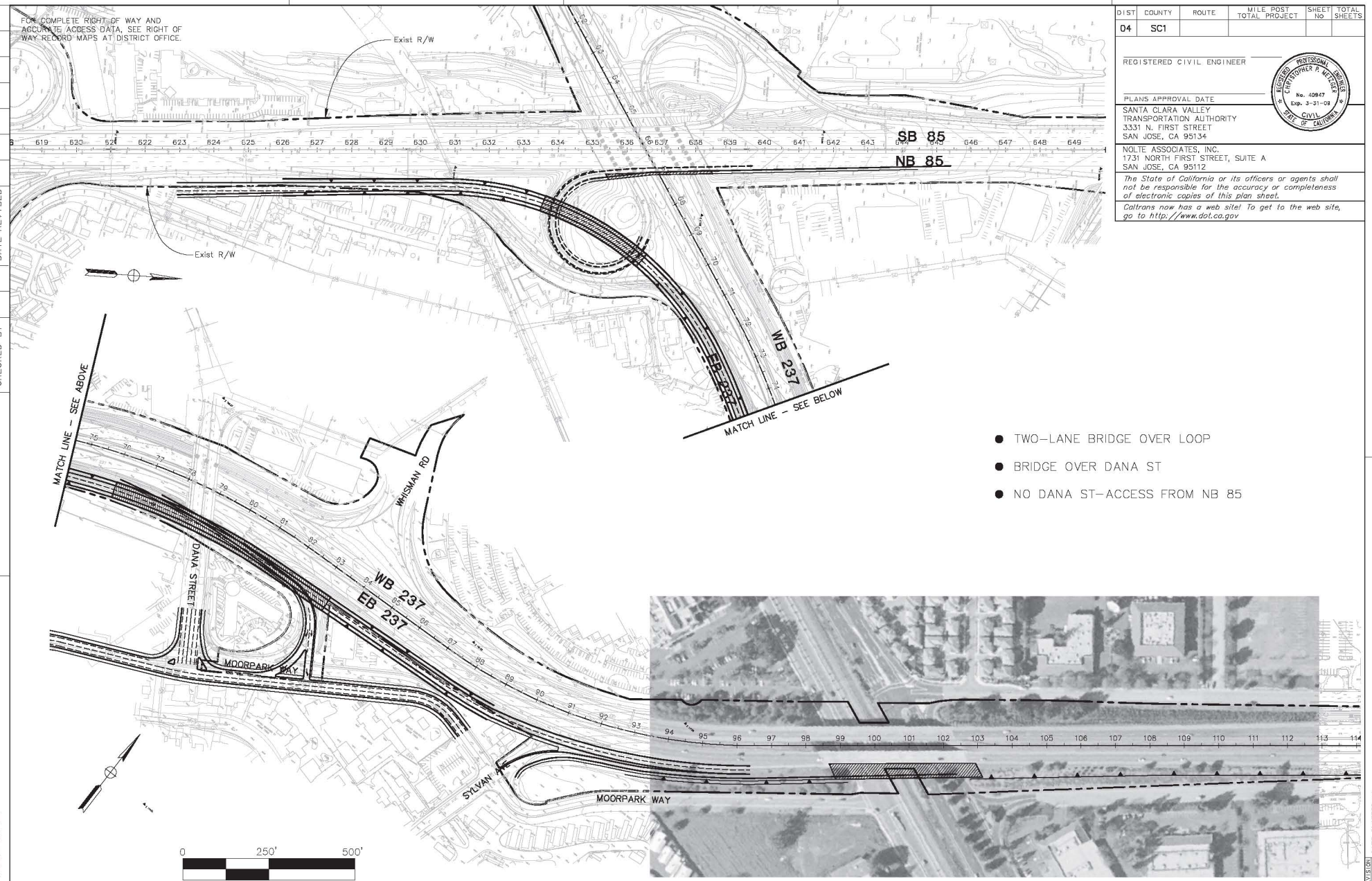

- TWO–LANE BRIDGE OVER LOOP
- BRIDGE OVER DANA ST
- NO DANA ST–ACCESS FROM NB 85

ALTERNATIVE 4F

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

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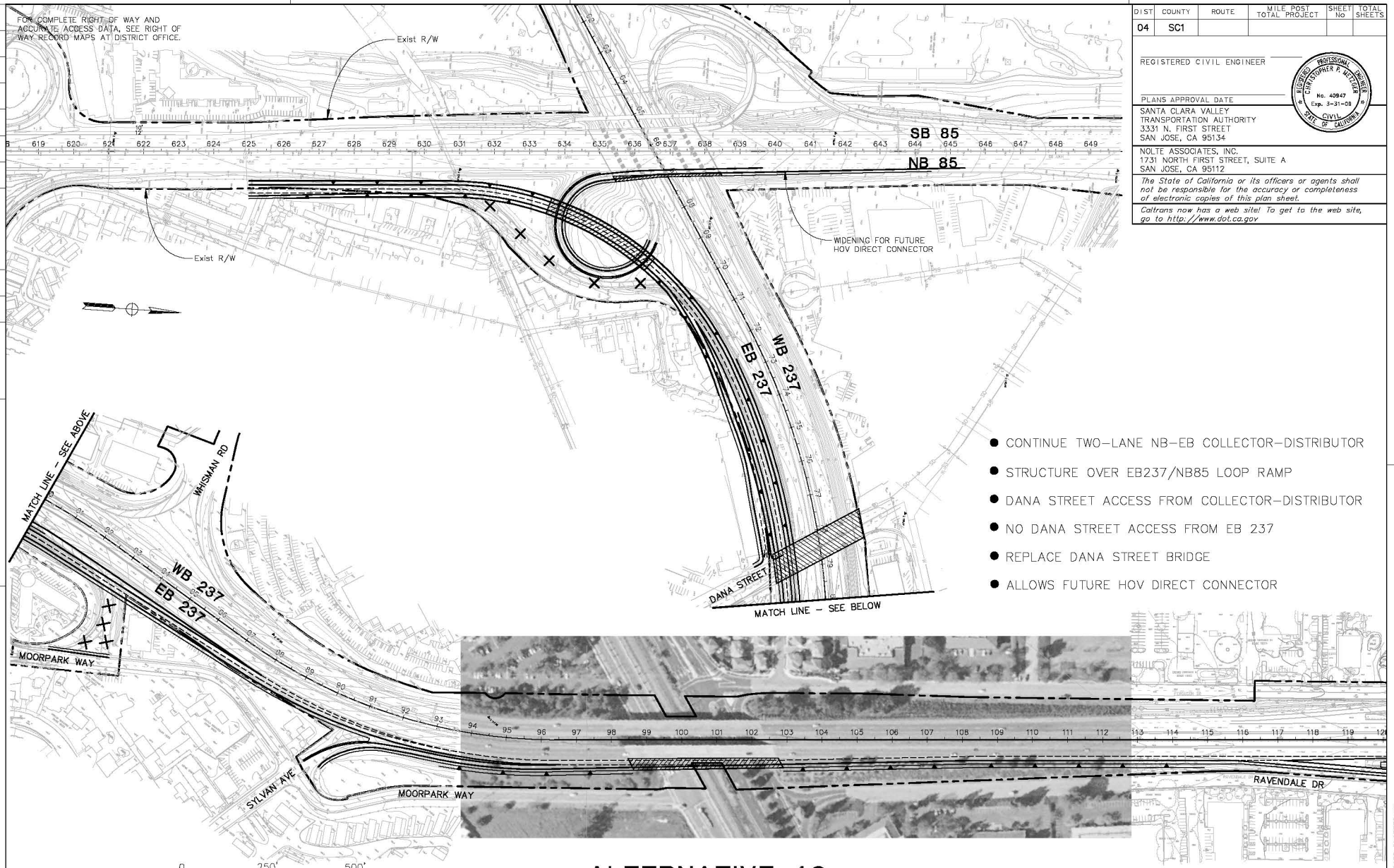

- CONTINUE TWO–LANE NB–EB COLLECTOR–DISTRIBUTOR
- STRUCTURE OVER EB237/NB85 LOOP RAMP
- DANA STREET ACCESS FROM COLLECTOR–DISTRIBUTOR
- NO DANA STREET ACCESS FROM EB 237
- REPLACE DANA STREET BRIDGE
- ALLOWS FUTURE HOV DIRECT CONNECTOR

ALTERNATIVE 4G
OPTION 2

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER P. METZGER No. 40947 Exp. 3-31-08 CIVIL STATE OF CALIFORNIA

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USERNAME =>
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EA –

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER P. METZGER
No. 40947
Exp. 3-31-09
CIVIL
STATE OF CALIFORNIA

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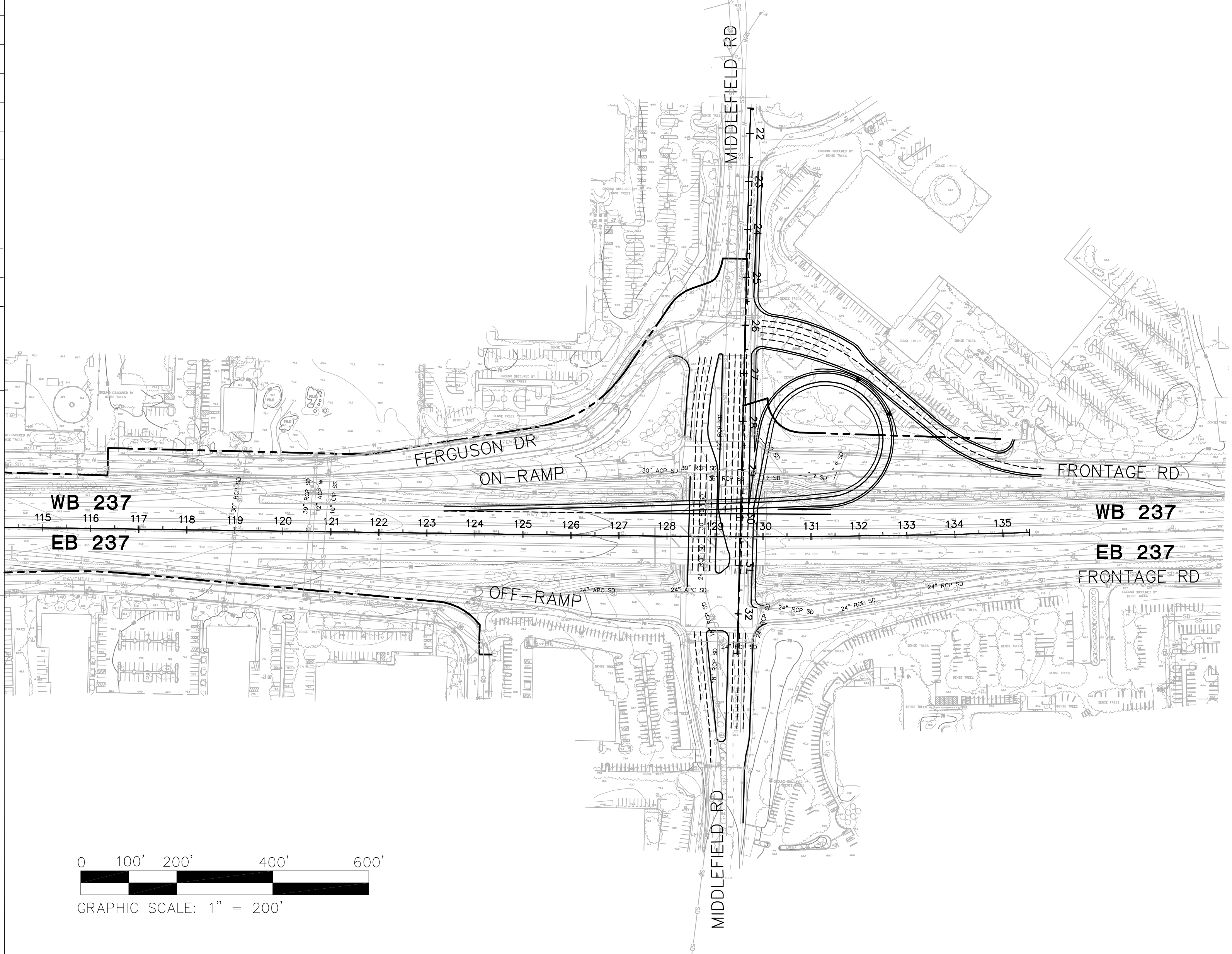
ACCURATE ACCESS DATA, SEE RIGHT OF
WAY RECORD MAPS AT DISTRICT OFFICE.



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Caltrans

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DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER P. METZGER
No. 40947
Exp. 3-31-09
CIVIL
STATE OF CALIFORNIA

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY
3331 N. FIRST STREET
SAN JOSE, CA 95134

NOLTE ASSOCIATES, INC.
1731 NORTH FIRST STREET, SUITE A
SAN JOSE, CA 95112

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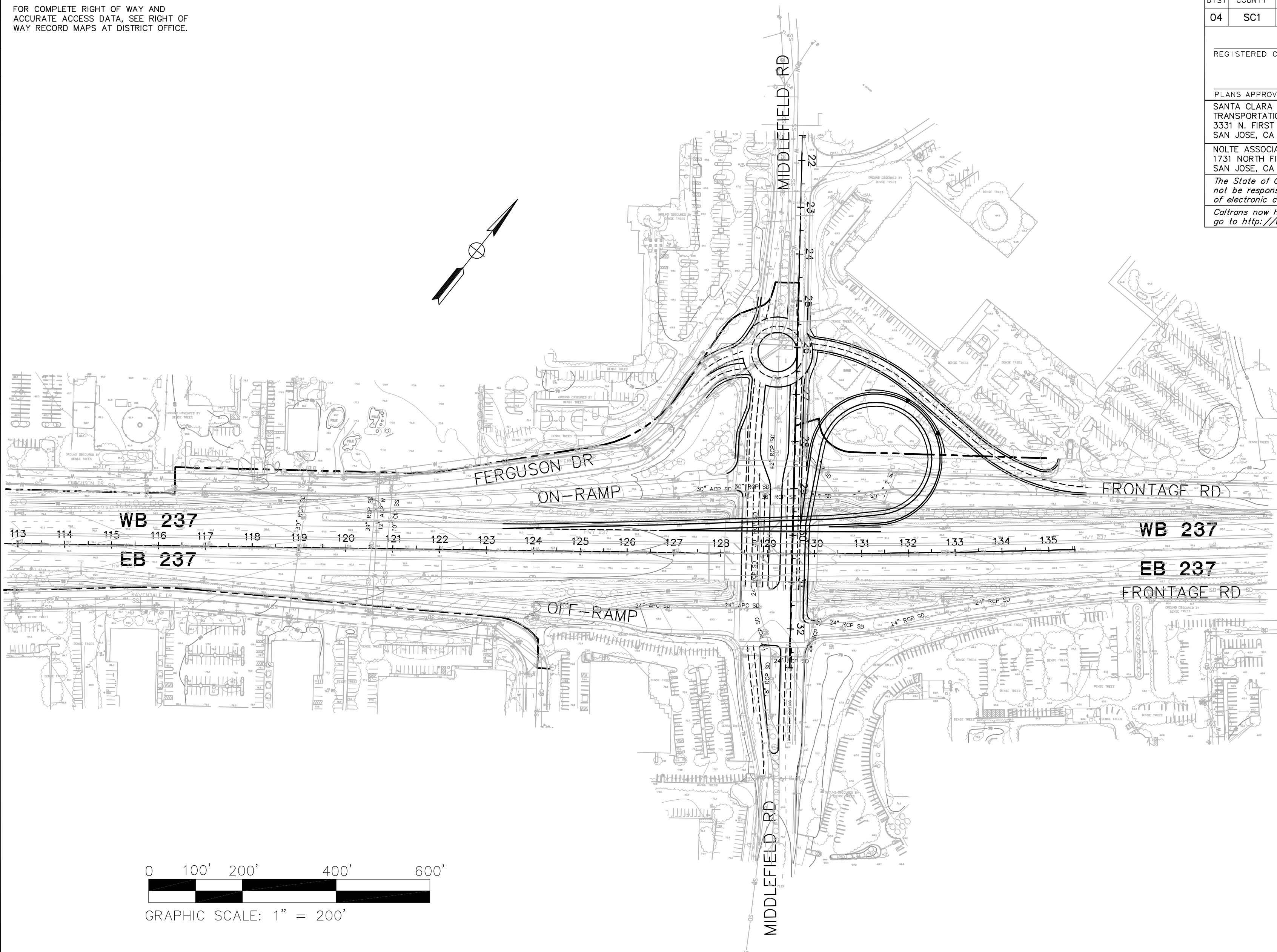
WAY RECORD MAPS AT DISTRICT OFFICE.



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DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER P. METZGER No. 40947 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
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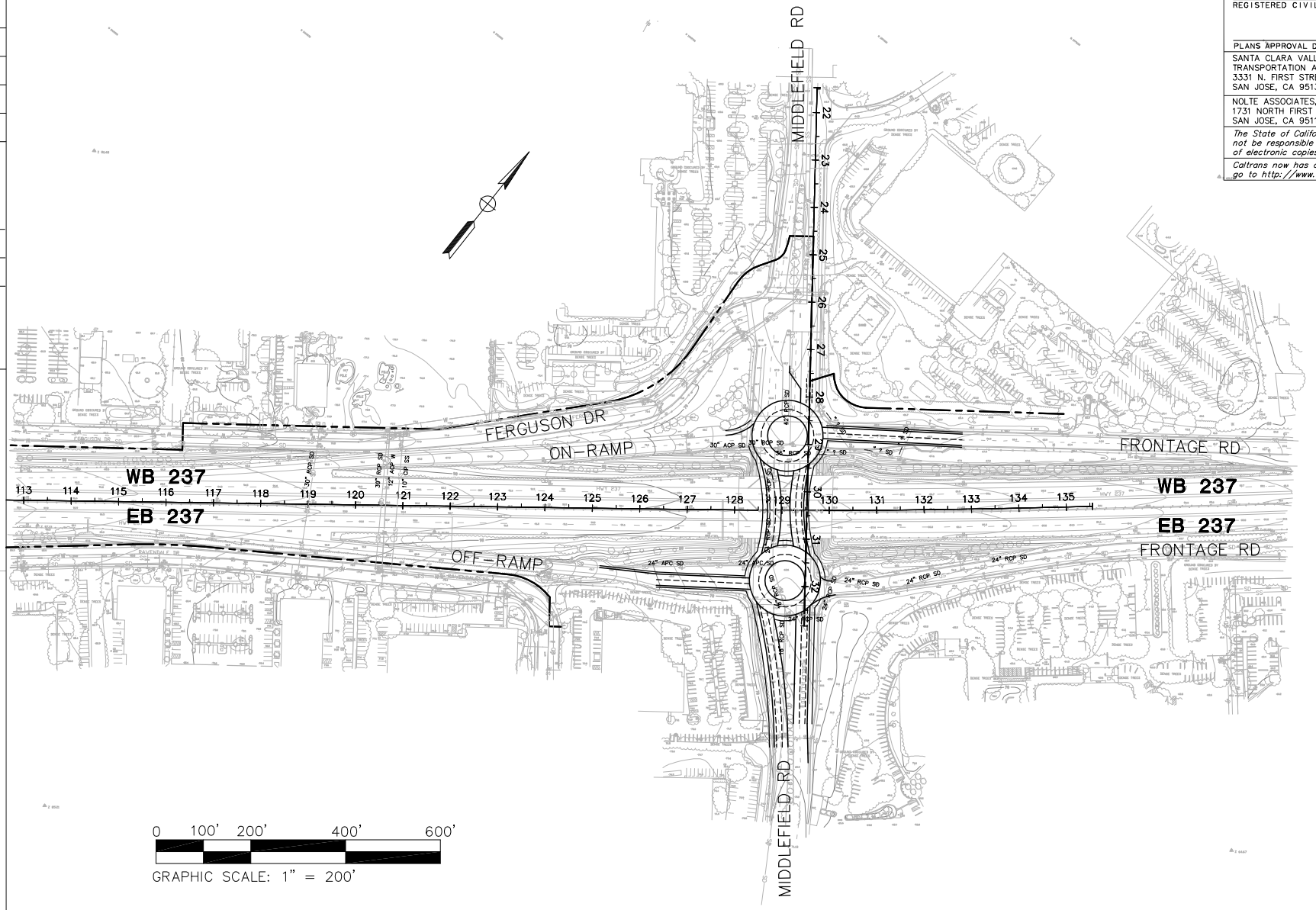

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DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SC1				

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER CHRISTOPHER P. METZGER No. 40947 Exp. 3-31-09 CIVIL STATE OF CALIFORNIA

SANTA CLARA VALLEY
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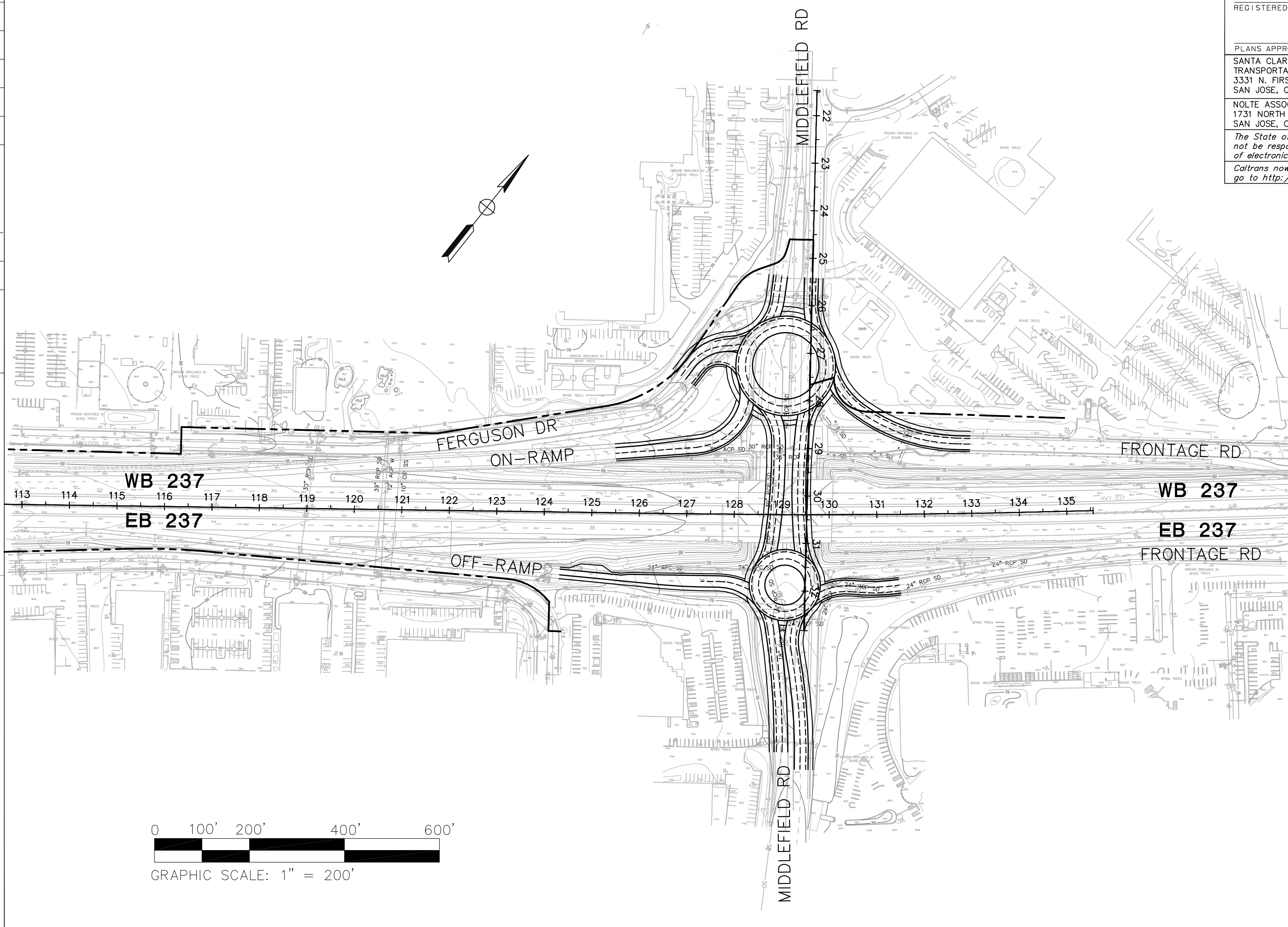

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Attachment B: Cost Estimate

Project Study Report – Project Development Support Cost Estimate

PROJECT DESCRIPTION:

Limits: On State Route 85 from 0.40 mile north to 0.34 mile south of El Camino Real Interchange and on State Route 237 from 0.21 mile east to 0.27 mile west of Middlefield Road Interchange.

Proposed Improvement (Scope): Reconstruct SR 82/SR 85 interchange as modified L-8 with auxiliary lanes to SR 237; Modify SR 237/Middlefield Road interchange to add WB loop on-ramp and re-align WB frontage road.

Alternate: Alternative to be Studied

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$ 27,000,000
TOTAL STRUCTURE ITEMS	$ 15,000,000
TOTAL ENVIRONMENTAL MITIGATION ITEMS	$ 500,000
SUBTOTAL CONSTRUCTION COSTS	$ 42,500,000
TOTAL RIGHT OF WAY ITEMS	$ 5,600,000
TOTAL PROJECT CAPITAL OUTLAY COSTS	$ 48,100,000

I. ROADWAY ITEMS

	Average Cost per Lane Mile	Number of Miles	Total Cost
Total Cost of Lane Miles	$6,000,000	4.5	$27,000,000

Included in the average cost per lane mile is clearing and grubbing, roadway excavation, pavement structural section, drainage, stormwater management, retaining walls, barriers and guardrails, median island, concrete curb, gutter and sidewalk, traffic management plan, traffic control system, traffic signals, ramp metering, lighting, and signs, along with miscellaneous minor items, mobilization and supplemental work.

II. STRUCTURE ITEMS

	Structure (1)
Bridge Name	SR 82/85 Separation
Total Cost for Structure	$15,000,000

TOTAL STRUCTURE ITEMS $15,000,000
(Sum of Total Cost for Structures)

The grade separation is assumed to be a prestress/post-tension reinforced concrete box, 205 ft wide and approximately 311 ft long, with pile footings.

III. ENVIRONMENTAL MITIGATION

	Quantity	Unit	Unit Price	Item Cost
Environmental Mitigation	1	LS	$500,000	$500,000

No water-related permit costs are expected. Mitigation costs include handling of ADL material at $400,000, and biological and paleontological monitoring at $50,000 each. Compensatory mitigation (trees, habitat) has been included in ROW cost estimate at $100,000.

IV. RIGHT OF WAY ITEMS		ESCALATED VALUE
A.	Acquisition, including excess lands, damages to remainder(s) and Goodwill	$ 5,100,000
B.	Utility Relocation (Project share)	$ 515,000

TOTAL RIGHT OF WAY ITEMS (Escalated Value)	$ 5,615,000
Anticipated Date of Right of Way Certification (Date to which values are escalated)	May 1, 2016

See Conceptual Cost Estimate - Right of Way Component (Attachment E)

Attachment C: Preliminary Environmental Analysis Report

PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

1. Project Information

District	County	Route	PM	EA	DATE
4	Santa Clara	82, 85, 237	04-SCL-82 PM 18.7 to PM 19.1 04 - SCL - 85 - PM R21.8 to PM R22.5 04 - SCL - 237 PM M1.4 to PM M1.7	0400002048 EA 04-4A290K	December 2012

Project Title: SR 85/El Camino Real/SR 237 Middlefield Road Improvements Project	
Project Manager Darrell Vice, P.E. Valley Transportation Authority	Phone # 408.952.4214
Project Manager Suzanne Sarro, P.E., NV5	Phone # 408.392.7243
Environmental Office Chief/Manager Tom Fitzwater, Valley Transportation Authority	Phone # 408.321.5705
PEAR Preparer Samantha Swan, Valley Transportation Authority	Phone # 408.231.5785
Caltrans Oversight Project Manager Fariba Zohoury, P.E.	Phone # 510.286.7239

Introduction

The Santa Clara Valley Transportation Authority (VTA), in partnership with the California Department of Transportation, is evaluating the feasibility of implementing improvements to address transportation deficiencies on State Routes 82 (El Camino Real), 85, 237 and Middlefield Road in the City of Mountain View in northwestern Santa Clara County. This Preliminary Environmental Analysis Report (PEAR) has been prepared for the Improvements Project in support of the Project Study Report-Project Development Support (PSR-PDS) and provides the initial evaluation of the environmental constraints that may affect project design, alternatives, cost, schedule, and delivery. The PEAR is based on reconnaissance-level site visits (i.e., windshield surveys), and review of existing information, including design drawings, the Mountain View General Plan, and literature reviews and record searches.

2. Project Description

Purpose and Need

Purpose: The existing transportation and circulation system in the Project area is characterized by heavy commuter traffic, frequent congestion, and substantial vehicular delays. The purpose of the State Route 85 (SR 85)/State Route 82-El Camino Real/State Route 237 (SR 237)/Middlefield Road Project is to address these issues by providing operational and safety improvements on SR 85 (at El Camino Real and between El Camino Real and SR 237) and at the SR 237/ Middlefield Road interchange.

Specifically, the purpose of the Project is to:

- Improve traffic operations at the SR 85/El Camino Real interchange.
- Improve weaving operations on SR 85 in both directions between El Camino Real and SR 237.
- Improve traffic operations and safety along Middlefield Road from the Logue Drive intersection to 400 feet south of the eastbound SR 237 off-ramp intersection.

- Maintain and enhance pedestrian and bicycle safety and access in the project area.

Need: Localized congestion on SR 85 at the El Camino Real interchange and the non-standard 0.4 mile spacing between the SR 237 and El Camino Real interchanges contribute to congestion and queuing on SR 85.

Weave lengths on SR 85 between SR 237 and El Camino Real are non-standard in both directions. In addition, the existing freeway access at SR 85 and El Camino Real has unsignalized free-right-turn ramp configurations which are not easily navigated by pedestrians and cyclists.

On Middlefield Road in the project area, the close proximity of the four signalized intersections contributes to a high broadside accident rate because of red light violations. The four signals are all within 1000 feet along Middlefield Road at Logue Avenue, Ferguson Drive, and both SR 237 ramp termini.

Project Description

There is a broad range of possible improvements to reduce congestion and improve operations and safety in the proposed project limits that could satisfy the Purpose and Need. For a list of the potential improvements at the project location, see Attachment G of the PSR-PDS. For the purposes of identifying preliminary environmental information, two representative sets of improvements have been selected for the PEAR. These two representative improvements were selected because they represent a conservative estimate of the footprint of possible project improvements and show a broad range of impacts. The first set of improvements is the construction of a partial cloverleaf interchange at the SR 85/SR 82 Interchange and associated improvements; the second set of improvements is the addition of a loop ramp and realigned Frontage Road at Middlefield Road at SR 237. The improvements are described as follows:

Part I: Construct a partial cloverleaf interchange at the SR 85/ El Camino Real Interchange, improvements to existing connectors and standard auxiliary lanes between El Camino Real and SR 237:

At the El Camino Real /SR 85 Interchange, the existing connectors on the north side of El Camino Real would be eliminated to lengthen the merge/weave distance on SR 85 between El Camino Real and SR 237. The eliminated movements would be served via realigned loop and diagonal connectors on the south side of El Camino Real. The reconfigured connectors would meet El Camino Real at signalized intersections and allow access to and from both directions on El Camino Real. The El Camino Real bridge structure over SR 85 would be replaced with a bridge sufficiently wide to accommodate six through lanes, a southbound (SB) auxiliary lane, two bike lanes and left-turn lanes to the connector to SB SR 85. The bridge structure would allow for future widening of SR85. El Camino Real south of the bridge would be widened to allow left-turn lanes to serve the northbound (NB) SR 85 connector.

The diagonal connector from SB El Camino Real to SB SR 85 would be widened and reconstructed to serve both the NB and SB directions of El Camino Real. The connector would have a standard merge with SB SR 85. The signal would also control the terminus of the SB SR 85/ El Camino Real loop connector.

The SB El Camino Real connector to NB SR 85 would be widened and reconfigured to form a 90-degree signalized intersection at El Camino Real, serving both directions, and would end in a new auxiliary lane. The signal would also control the terminus of the diagonal connector from NB SR 85 to El Camino Real.

The SR 85/ El Camino Real intersections would be bicycle/pedestrian friendly 90-degree intersections.

Several loop connections would be reconfigured or eliminated.

SR 85 would be widened in both directions to add auxiliary lanes between its interchanges with El Camino Real and SR 237, to improve merge and weave operations.

Part II: Add loop ramp and realign Frontage Road for standard intersection at Middlefield Road at SR 237:

This project proposes to widen Middlefield Road from Logue Avenue to 600 feet south of SR 237, and would eliminate the existing NB Middlefield-to-westbound SR 237 left turn and its signal. The WB-only frontage road would be realigned and widened to form a signal-controlled intersection with Ferguson Drive at Middlefield Road, accommodating a new loop ramp from Middlefield Road to westbound SR 237. The Ferguson Drive leg of the intersection would have no eastbound through movement, and would be configured to force eastbound traffic to turn right or left onto Middlefield Road. Traffic access will be maintained during construction of the project. A specific Transportation Management Plan will be prepared during Project Development and will include considerations of pedestrians, bicyclists and motorists.

Alternatives

A broad range of potential improvements has been developed for study during PA/ED. For a list of the potential improvements at the project location see Attachment G of the PSR-PDS.

The No Build Alternative would consist of not constructing any of the above-described improvements. No build would include these programmed or recently completed improvements:

- the conversion of the HOV lanes on SR 85 into Express lanes,
- the addition of HOV lanes to SR 237,
- the addition of a right turn lane for eastbound Grant Road to southbound El Camino Real,
- the addition of a right turn lane for southbound El Camino Real to westbound Grant Road, and
- recently-completed signal modifications at the El Camino Real/Sylvan Avenue intersection.

Several other build alternatives were initially evaluated but were eliminated from further study; see the discussion in the PSR-PDS.

3. Anticipated Environmental Approval

CEQA		NEPA	N/A
Environmental Determination			
Statutory Exemption	☐		
Categorical Exemption	☐	Categorical Exclusion	☐
Environmental Document			
Initial Study or Focused Initial Study with proposed Negative Declaration (ND) or Mitigated ND	☒	Routine Environmental Assessment with proposed Finding of No Significant Impact Complex Environmental Assessment with proposed Finding of No Significant Impact	☐ ☐
Environmental Impact Report	☐	Environmental Impact Statement	☐
CEQA Lead Agency (if determined):		Caltrans	
Estimated length of time (months) to obtain environmental approval:		18 months	
Estimated person hours to complete identified tasks:			

No federal agency is involved and no federal action or permit is required; therefore there is no federal nexus and a NEPA analysis will not be prepared for this project. Because the project has the potential to result in environmental effects that can be mitigated, the anticipated environmental document to comply with CEQA is an Initial Study/Mitigated Negative Declaration (IS/MND). More detailed studies or changes in project characteristics may change these conclusions.

Because the project is on the State Highway System and Caltrans is the owner/operator of the State Highway System, Caltrans would be the California Environmental Quality Act (CEQA) lead agency. The VTA and City of Mountain View would be responsible agencies under CEQA. Assuming preparation of an IS/MND, it is estimated that approximately 18 months would be required to conduct the technical studies, prepare and circulate the environmental document for public review, and obtain environmental approvals.

4. Special Environmental Considerations

The key environmental issues associated with the proposed project are biological resources (nesting birds), cultural resources, visual/aesthetic resources, community impacts, and noise impacts. It is anticipated that the proposed project would require preparation of the following technical studies: Community Impact Assessment, Community Character and Cohesion Report, Visual Impact Assessment (including a tree survey), cultural resources studies (including an Archaeological Survey Report, Historic Resources Evaluation Report, and Historic Resources Compliance Report), Location Hydraulic Study and Water Quality Report, Geotechnical and Engineering Geologic Report, Paleontological Identification Report, hazardous waste/materials studies (including an Initial Site Assessment and a Preliminary Site Investigation), Air Quality Study, Noise and Vibration Report, Natural Environment Study, Cumulative Impacts Assessment, and Traffic Operations Report.

The source of funding has not been identified and the project delivery and scheduling will be affected by identification of future funding sources.

5. Anticipated Environmental Commitments

New soundwalls are likely to be warranted because noise levels at sensitive receptors could approach or exceed the Noise Abatement Criteria. Tree replacement will be required due to the loss of trees at several locations throughout the project footprint.

6. Permits and Approvals

No permits from any resource agencies are anticipated to be needed for the project.

7. Level of Effort: Risks and Assumptions

From an environmental impact perspective, the proposed project is not anticipated to require any extraordinary effort. There are no known environmental issues that pose a substantial risk.

8. PEAR Technical Summaries

8.1 LAND USE

8.1.1 Existing and Future Land Use. The study area is located in the City of Mountain View in Santa Clara County, California which is situated in the southern end of the San Francisco Bay Area. The city is almost fully built out, with few undeveloped areas. Within the project area, land uses include single- and multi-residential, commercial, industrial, and recreational uses.

8.1.2 Consistency with State, Regional, and Local Plans. The project is consistent with state, regional and local plans. This project is listed in the Transportation Improvement Program of the State, MTC's Transportation 2035 Plan, and VTP 2035.

8.1.3 Parks and Recreation. Stevens Creek Trail and Wildlife Corridor is a heavily used recreational trail that is west of and runs parallel to SR 85 within the project area. According to the Mountain View General Plan, Stevens Creek Trail and Wildlife Corridor is an important recreational trail linking the city's network of parks and recreational opportunities. No temporary or permanent impacts to this trail are anticipated.

8.2 GROWTH

According to the Association of Bay Area Governments (ABAG) *2009 Projections,* Mountain View's population was 71,800 with 31,860 households in 2005. ABAG projects that Mountain View's population will grow to 90,600 and the number of households will increase to 42,120 by the year 2035 (ABAG, 2009). While the project would improve traffic operations on existing highway and roadway infrastructure; it does not provide new access or a new alignment. The project would not induce unplanned growth within the project area.

8.3 FARMLANDS/TIMBERLANDS

According to the City of Mountain View's Zoning Map, there are areas designated for Agricultural use near the project area. The first area is located near the SR 237/Middlefield Road interchange. The area is parallel to and southwest of Middlefield Road, and north of SR 237. The area appears to be an old orchard and a fallow field that is not currently active in an agricultural use. However, the project would neither acquire nor impact this property. The second area is

located adjacent to and south of SR 237 between East Dana Street and Moorpark Way. Although this area is designated on the Zoning Map for an Agricultural use, the area is developed with Kid's Korner Christian Child Care Center, St. Stephen Lutheran School, a residence, and a landscaping area. None of this area is of an agricultural use. The project would not impact the existing or future agricultural uses of these areas. A memo to the file will be prepared regarding Farmlands to document the project's effects to farmland. The project area consists of a highly urbanized area with no timberlands in or near the project. No impacts or issues are anticipated with these resources, so no further study is warranted.

8.4 COMMUNITY IMPACTS

Some inconveniences associated with construction activities, such as traffic delays, noise, and dust, can be expected to occur, but these impacts would be temporary. A community impact assessment (CIA) would be required to document the project's effects on the existing community.

8.4.1 Community Character and Cohesion. The project will provide operational improvements to existing highways and roadways for the communities in and around the project. No new access or facility will be constructed that would alter the neighborhood or divide existing communities. The project would not result in a change in neighborhoods or community character or cohesion. A Community Character and Cohesion Report will be prepared to document the project's effects on the existing community.

8.4.2 Relocations. The project would require partial acquisition of approximately 8 properties to accommodate new right-of-way. No relocations or displacements of existing land uses are anticipated for the project. Therefore, a Relocation Impact Report (RIR) will not be necessary. A memo to the file will be prepared to document the partial acquisitions of the approximately 8 properties affected by the need for new right-of-way.

8.4.3 Environmental Justice. This project will be funded through state and local sources. No federal funding is anticipated, no federal permits are required. Therefore, there is no federal nexus and an environmental justice analysis is not warranted.

8.4.4 Utilities/Emergency Services/Public Facilities. The project would not affect any utilities or emergency services. The project will improve traffic operations on existing highways, which will shorten travel times and improve emergency response time.

8.5 VISUAL AND AESTHETICS

The visual landscape of the City of Mountain View includes the Santa Cruz Mountains to the south, the Diablo Mountain Range to the north, San Francisco Bay to the northwest, and Stevens Creek to the west. The project area is dominated by commercial and residential uses and 115 kV towers and electrical lines to the west. Commercial uses range from large shopping centers and research/business parks to individual businesses, gas stations, and smaller-scale industrial areas that vary in size, type of business, and appearance. Residential uses include single family and multi-family units and a mobile home park. Other land uses include industrial and a recreational trail in the project area.

Vegetation in the project area includes a significant amount of ornamental landscaping along roadways, characterized by street trees, shrubs, grass, and parkway strips. Various stands of tall trees occur within proximity to the roadways and serve as screens between residences and adjacent roadways. Stevens Creek Trail and Wildlife Corridor is elevated where it crosses the

intersection of SR85/SR 237; as a result, the interchange is directly visible from this segment of the trail and the visual quality of the area is already dominated by the roadway network. Most utilities in commercial and residential areas are underground except for the large 115 kV towers and transmission lines that parallel SR85 on the west.

The project would remove existing landscaping trees and would increase pavement by adding auxiliary lanes along both directions of SR 85 between SR 237 and El Camino Real, by widening the ramps and creating new intersections at the SR 85/El Camino Real interchange, and by realigning and widening the WB-only frontage road at the Middlefield Road and SR 237 interchange, and creating a new loop ramp from Middlefield Road to WB SR 237. A visual impact assessment report will be prepared to evaluate potential project effects.

None of the freeways within the project are designated as scenic highways. Nor is the proposed project located within state coastal jurisdiction.

8.6 CULTURAL RESOURCES

An archaeologist and architectural historian conducted preliminary assessments to determine the cultural resource sensitivity of the project study area. In addition, record searches were conducted at the Northwest Information Center of the California Historical Resources Information System (NWIC) on April 01, 2008 and August 10, 2011. The record searches reviewed pertinent NWIC base maps that reference cultural resources records and reports, historic-period maps, and literature for Santa Clara County in and around the project area.

Archaeological Resources. According to the NWIC records search, no cultural resources were recorded within the project limits. However, a cluster of possible Nelson mounds are located within 800 meters (0.5 mile) to the east of the project study area. The NWIC review also indicates the possibility of historic-period archaeological resources within the project area.

Architectural Resources. Based upon a windshield survey of the corridor and the adjacent setting, many of the buildings date from the recent past. Although most of the individual buildings do not appear to be architecturally significant, there is a possibility that some may be considered historic (older than 50 years old) and would need to be further assessed to determine if they are eligible for the National Register of Historic Places (NRHP) and/or California Register of Historical Resources (CRHR).

Native American Coordination. Native American consultation was initiated by faxing a letter requesting a Sacred Lands File check to the Native American Heritage Commission (NAHC) on April 4, 2008. A follow-up letter was faxed to the NAHC on August 9, 2011. The NAHC responded with a letter on August 30, 2011. Their search of the sacred lands file failed to indicate the presence of Native American cultural resources within the immediate project area. However, they provided a list of Native American individuals/organizations to contact to request further information about the possibility of Native America cultural resources within and around the project area. Letters were sent to the individuals on the list on September 19, 2011. Follow-up phone calls were made in October 2011.

Consultation with the State Historic Preservation Officer (SHPO). The project is not located on or near tribal lands and will not affect tribal lands, no federal agency is involved, no federal permits will be acquired, and no federal funding is anticipated. Therefore, there is no federal nexus that would require a Section 106 analysis.

Public Resources Code Section 5024(f), however, requires that Caltrans provide notification to and consult with the SHPO if the project has the potential to affect state-owned historical resources listed in or potentially eligible for inclusion in the NRHP and/or CRHR or registered as or eligible for registration as a California Historical Landmark (CHL).

Although no cultural resources that are eligible for the NRHP/CRHR are identified in the project area, these assessments indicate that there is a moderate to high possibility of identifying Native American archaeological resources and a high possibility of identifying historic-period archaeological resources in the project area. The following cultural resources procedures and studies are recommended:

- Complete an Archaeological Survey Report (ASR) and possibly an Extended Phase I (XPI) Report and/or Archaeological Evaluation (Phase II) Report (AER) to document efforts to identify buried archaeological resources, identify the potential for previously unrecorded buried archaeological resources, determine whether the resources are eligible for listing on the NRHP and/or CRHR, and assess whether any eligible resources would be adversely affected by the project.
- Conduct subsurface testing and geoarchaeological studies to both qualify the general sensitivity of various landforms within the project limits, and to test for presence/absence of buried resources then document the results of the testing and studies in the ASR and/or XPI report.
- Continue Native American consultation with letters, emails, and/or telephone calls to request input on the project design and construction details and possible effects to cultural resources.
- Conduct additional historical research and architectural surveys in accordance with CEQA to determine whether individual historic buildings that are eligible for listing on the NRHP and/or CRHR are present and to assess whether any historic resources would be adversely affected by the project.
- Complete a Historic Resources Evaluation Report (HRER) to document historical research and results of architectural surveys.
- Prepare a Historical Resources Compliance Report (HRCR) to summarize the results of the ASR, XPI, AER, and HRCR, document the CEQA impact findings and state-owned historical resources findings, and describe the mitigation plan, if applicable.
- Consult with the State Historic Preservation Officer (SHPO) if State-owned resources are identified within the project limits.

8.7 HYDROLOGY AND FLOODPLAIN

Stevens Creek and its associated trail within the project area lie within the 100-year Flood Zone (City of Mountain View, 1992). The proposed project could encroach upon this floodplain area; therefore, preparation of a Location Hydraulic Study will be required. The project area is outside of the flood hazard area related to failure and inundation of Stevens Creek Dam. (City of Mountain View, 1992).

8.8 WATER QUALITY AND STORMWATER RUNOFF

The project area is located within the Stevens Creek watershed. Stevens Creek originates in the Santa Cruz Mountains, and flows through Stevens Canyon and then through Cupertino, Los Altos, Sunnyvale, and Mountain View, on its way to join the San Francisco Bay. In Mountain View it flows northward roughly parallel to SR 85 until it reaches Highway 101 where it flows

into the South San Francisco Bay between Moffett Field to the south and Shoreline Park to the north. The total length of Stevens Creek is more than 20 miles.

The City collects and disposes its storm water via a storm drainage network consisting of catch basins, conveyance piping, pump stations, and outfalls to creeks. Storm water collection efforts are managed by the City's Public Works Department's Public Services Division – Wastewater Section. (City of Mountain View, 1992).

The project may have short-term effects on surface water quality associated with project construction, equipment and material sites, staging areas, disposal sites, and potentially drainage retention or detention areas; however, implementation of standard water quality control measures during construction would ensure that construction activities would not result in adverse effects on water quality. The project would be adding new impervious surface areas, and could potentially contribute to long-term water quality degradation. The preparation of a water quality report would be required. The water quality report should also address potential impacts to groundwater. The project would disturb more than 1 acre of ground surface area. For projects that disturb 1 or more acres of ground, the Clean Water Act requires that a Notice of Intent for construction activities, associated Permit Registration Documents, and a permit registration fee must be submitted to the Regional Water Quality Control Board to obtain coverage under the Statewide National Pollutant Discharge Elimination System permit (Order No. 2009-0009-DWQ, NPDES CAS000002. A Storm Water Pollution Prevention Plan would also need to be prepared.

8.9 GEOLOGY, SOILS, SEISMIC, AND TOPOGRAPHY

Mountain View is underlain by soils of the Sunnyvale-Castro-Clear Lake association. The association has 40 percent Sunnyvale soils, 25 percent Castro soils, and 20 percent Clear Lake soils, 10 percent Willow soils, and 5 percent Bayshore soils. These soils were deposited in different geological eras and contain different amounts of sand, gravel, clay, and organic matter. The soils found in the project area have a high shrink-swell potential. Soil erosion potential is low (Santa Clara County, 1992).

The State of California identifies two primary seismic hazards: surface fault rupture (disruption at the ground surface as a result of fault activity) and seismic groundshaking. No state-zoned faults occur in the project alignment. The nearest faults to the project area are the San Andreas (6 miles, west), Hayward (10 miles, east) and Calaveras (15 miles, east) (Santa Clara County 1992). Because, the project area is located in a seismically active region, the site is likely to be affected by strong groundshaking during its lifespan.

Secondary seismic hazards refer to liquefaction and related types of ground failure, as well as seismically induced landsliding. The State of California maps areas subject to secondary seismic hazards pursuant to the Seismic Hazards Mapping Act of 1990. To date, this effort has focused on areas such as the Los Angeles Basin–Orange County region and the San Francisco Bay region. The project area is located in an area prone to liquefaction. However, the project site is not in an area considered to have a high risk for landslides or other slope stability hazards (Santa Clara County, 2008).

A geotechnical and engineering geologic report will be prepared to address the seismic and soils-related issues found at the project site, including potential for impacts related to strong ground shaking, liquefaction, and expansive soils.

8.10 PALEONTOLOGY

There are 40 records of paleontological resources in Santa Clara County. Seventeen of these are vertebrate fossils, which are all either Miocene or Pleistocene in age (University of California Museum of Paleontology 2007). The paleontological sensitivity of the site is unknown, but it is possible that the study area is sensitive due to previously identified records of paleontological resources.

A paleontological identification report will need to be prepared to identify the project site's paleontological sensitivity and to assess potential impacts to paleontological resources. If the paleontological assessment determines that any of the substrate units that would be affected by the planned activity are highly sensitive for paleontological resources, the report will also need to include recommendations for appropriate and feasible procedures to avoid or minimize damage to any resources present. Proposed mitigation will need to be consistent with SVP guidelines and Caltrans in-house guidelines for paleontological resources.

8.11 HAZARDOUS WASTE/MATERIALS

A Phase I Initial Site Assessment Report (ISA) was prepared for the project study area by Parikh Consultants (Parikh Consultants, 2008). Based on the ISA, potential sources of hazardous materials in the study area include the following:

- Aerially Deposited Lead (ADL). The study area has supported vehicular activities since the 1960's when leaded gasoline was used. The exhaust of cars burning leaded gasoline can be deposited in surface soils. The lead levels in surface soils along highways can reach concentrations in excess of the hazardous waste thresholds. ADL is known to exist along the California state highway system, including heavily traveled roadways, such as SR 85/ El Camino Real /SR 237.
- Asbestos Containing Materials and Lead Based Paint (ACM). The existing freeway overpass bridges in the project study area were constructed prior to 1980, when ACM and lead based paints were in use. Therefore, there is potential for these contaminants to be present.
- Contaminants from Past Farm Operations. Prior to the 1960's, the area surrounding the project corridor was an agricultural area, with orchards and farmland. It is likely that the existing underlying soils contain pesticides and herbicides, including arsenic, as a result of these past farm practices.
- Groundwater Contamination. An existing site within the project study area is listed as a Superfund site for presence of a groundwater treatment system for the regional groundwater plume present in Santa Clara County. Potential contaminants in the shallow groundwater bearing zone could include trichlorothene (TCE); potential contaminants in the deeper water bearing zone may include chlorinated solvents.

Recommendations for further study to determine presence of these potential sources of hazardous waste include the following:

- Soil sampling to determine presence of lead, and pesticides (including arsenic and herbicides)
- Groundwater sampling to determine presence of volatile organic compounds
- An ACM investigation to determine presence (performed by an inspector certified by AHERA under the TSCA Title II and certified by OSHA)

- Surveys for lead based paint prior to demolition of structures within the right of way
- A Preliminary Site Investigation (PSI)

8.12 AIR QUALITY

The project site is located in Santa Clara County, which is within the San Francisco Bay Area Air Basin (SFBAAB). The Bay Area Air Quality Management District (BAAQMD) has jurisdiction over air quality throughout the SFBAAB.

The California Air Resources Board (CARB) has designated Santa Clara County as a serious nonattainment area for the state 1-hour ozone standard, 8-hour ozone, PM10, and PM2.5 standards. The U.S. Environmental Protection Agency (EPA) has designated Santa Clara County as a marginal nonattainment area for the federal 8-hour ozone standard and a nonattainment area for the federal PM2.5 standard.

Within the project area, land uses are primarily commercial and residential. Nearby sensitive receptors include the Mountain View Center - Palo Alto Medical Foundation, Kingdom Hall of Jehovah's Witnesses, Edith Landers Elementary School, Kids Corner Christian Child Care, St. Stephens Lutheran School and Church, single- and multi-family residences, and a mobile park home.

The project must comply with the county Regional Transportation Plan (RTP) and will address ozone, CO, PM10 and 2.5, Hot Spot Analysis, and Construction PM10. An air quality technical report consistent with Caltrans' requirements would be required to document compliance. The air quality technical report would document conformity with regards to the Clean Air Act State Implementation Plan, CO, PM10, and PM2.5 hotspots, as well as compliance with mobile source air toxics (MSAT) effects.

8.13 NOISE AND VIBRATION

Within the project area, land uses are primarily commercial and residential. Noise sensitive receptors include the Mountain View Center - Palo Alto Medical Foundation, Kingdom Hall of Jehovah's Witnesses, Edith Landers Elementary School, Kids Corner Christian Child Care, St. Stephens Lutheran School and Church, single- and multi-family residences, and a mobile park home.

The major source of mobile noise in the project area is from vehicle traffic on SR 85/ El Camino Real /SR 237 and other roadways in the vicinity. Nearby commercial and industrial uses are stationary sources and noise can be generated by work activities, manufacturing processes, patrons, and deliveries as part of the day-to-day operations of businesses.

The *Caltrans Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects* (Protocol) discusses federal and state regulations, standards, and policies relating to traffic noise (Caltrans 2011). It also discusses procedures for implementing title 23, part 772 of the Code of Federal Regulations "Procedures for Abatement of Highway Traffic Noise" (23 CFR 772). Because the proposed project will add an auxiliary lane, the project is considered a Type 1 project according to the Protocol. To satisfy the requirements of 23 CFR 772, an assessment of whether construction or traffic noise impacts would occur at noise sensitive land uses and the determination as to whether noise abatement would be feasible and reasonable would need to be performed in accordance with Caltrans' *Protocol* and documented in a noise technical report.

Since there are sensitive receptors along El Camino Real and along both sides of SR 85, the noise analysis would determine if soundwalls are needed and feasible and reasonable in these areas.

8.14 ENERGY AND CLIMATE CHANGE

This project is not of sufficient size and magnitude to be considered a major project for the consumption of energy during construction or operation. Therefore, an energy technical report is not required.

The project as proposed is intended to improve traffic operations. The traffic studies will be used to evaluate the changes in total traffic volume and congestion-related delays associated with the build and no-build alternatives. The air quality analysis will use the CARB's Emissions Factors model (EMFAC) to generate emissions rates of CO2. Combining these two sets of results for each of the alternatives will allow for a comparison of the net effects on GHG emissions across the build and no-build alternatives.

8.15 BIOLOGICAL ENVIRONMENT

This discussion assumes the project would not directly impact Stevens Creek, Stevens Creek Trail and Wildlife Corridor, or the riparian corridor.

An official species list of threatened, endangered, and other special status species from the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) was generated online (August 2011) for the project and surrounding area, which includes the Mountain View, Cupertino, Palo Alto, and Milpitas USGS Quadrangles. A California Department of Fish and Game (CDFG) species list was generated from the California Natural Diversity Database (August 2011) for the same USGS quadrangles. These agency letters and/or species lists are included in Appendix A. Other sources reviewed for the project area included the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants, National Wetland Inventory (NWI) maps, and environmental documents that have been prepared for other projects in the general area. Reconnaissance-level surveys were conducted in March 2008 and August 2011 to assess the suitability of habitat in the project area for special status species identified in the record searches.

Thirty special status plant species were evaluated for their potential to occur in the project area (Appendix A). Only Congdon's tarplant potentially occurs in the project area based on the likely presence of suitable habitat. Congdon's tarplant is endemic to grasslands in alkaline or saline soils and tolerates a high degree of disturbance, such as roadsides.

Forty special status animal species were evaluated for their potential to occur in the project area (Appendix A). Five species have a moderate potential to occur in the project area and may occasionally pass through or forage within the area but are not known or expected to breed at the project site. These species include western pond turtle, Cooper's hawk, white-tailed kite, great blue heron, and snowy egret. The Central California Coast steelhead is known to occur in Stevens Creek, and Stevens Creek is designated as Critical Habitat in the project area.

Vegetation in the project area includes a variety of habitat types and land cover types including non-native grassland, riparian, aquatic, ornamental/landscaped, developed area (road alignments, Stevens Creek Trail and Wildlife Corridor, and commercial and residential buildings), and bare ground. Trees and shrubs present within the project site include coast live oak, pepper tree, eucalyptus, and ice plant. Many of the oaks appear to qualify as heritage trees.

During the PA/ED phase, focused-level special status plant and animal surveys would be conducted, mapped, and documented in a Natural Environment Study or Natural Environment Study/Minimal Impacts document (which may suffice for this project). A tree survey would be conducted to document the species and sizes of the trees to be removed. As no bridgework would occur south of the Stevens Creek Trail and Wildlife Corridor tunnel undercrossing, a Fish Passage Assessment would not be required.

Mitigation would address potential impacts to water quality, special status plants and animals, nesting birds, loss of trees, and introduction of invasive plants. Impacts and mitigation applicable to water quality are described in the Water Quality section. Preconstruction surveys would identify the presence of special status plant and animal species, including migratory birds. Where feasible, establishment of Environmentally Sensitive Areas would avoid impacts to special status plant species and habitats that support special status animal species. Removal of vegetation during the non-nesting season or establishment of buffer zones would avoid impacts to nesting birds in the project area.

No work would occur within the riparian corridor or Stevens Creek channel. Therefore, an Army Corps of Engineers Section 404 permit, a Regional Water Quality Control Board Section 401 Water Quality Certification, and a California Department of Fish and Game Lake and Streambed Alteration Agreement would not be required. It is also anticipated that an incidental take permit pursuant to Section 10 of the federal Endangered Species Act would not be required.

8.16 CUMULATIVE IMPACTS

When funding is identified to move this project into the PA/ED phase, a cumulative impacts assessment will be prepared to identify the cumulative impacts of this project.

8.17 CONTEXT SENSITIVE SOLUTIONS

VTA in coordination with the City of Mountain View (City) is including Context Sensitive Solutions in the planning efforts of the project. In particular, the project team is working closely with the City to ensure that impacts to public spaces including the nearby Stevens Creek Trail and Wildlife Corridor are avoided, impacts during construction are minimized, and that pedestrian and bicycle access to local facilities are improved as a part of the project. By improving pedestrian and bicycle access in the area, the project hopes to improve overall access to vital public spaces within the City.

9. Summary Statement for PSR or PSR-PDS

The environmental studies that will be needed for the project are as follows: Community Impact Assessment, Community Character and Cohesion Report, Visual Impact Assessment (including a tree survey), cultural resources studies (including an Archaeological Survey Report, Historic Resources Evaluation Report, and Historic Resources Compliance Report), Location Hydraulic Study and Water Quality Report, Geotechnical and Engineering Geologic Report, Paleontological Identification Report, hazardous waste/materials studies (including an Initial Site Assessment and a Preliminary Site Investigation), Air Quality Study, Noise and Vibration Report, Natural Environment Study, Cumulative Impacts Assessment, and Traffic Operations Report.

Environmental commitments are likely to include soundwalls. The number, length, and height of the soundwalls will be determined during preparation of the noise report. In addition, tree replacement will be required due to loss of trees at several locations within the project footprint.

10. Disclaimer

This Preliminary Environmental Analysis Report (PEAR) provides information to support programming of the proposed project. It is not an environmental determination or document. Preliminary analysis, determinations, and estimates of mitigation costs are based on the project description provided in the Project Study Report – Project Development Support (PSR-PDS) The estimates and conclusions in the PEAR are approximate and are based on cursory analyses of probable effects. A reevaluation of the PEAR will be needed for changes in project scope or alternatives, or in environmental laws, regulations, or guidelines.

11. List of Preparers

Cultural Resources specialist Alisa Reynolds, Senior Archaeologist, ICF Lauren Bobadilla, Senior Environmental Planner, VTA	Date: 2008 Updated August 2011
Biologist Ann Calnan, Senior Environmental Planner, VTA	Date: August 2011
Community Impacts specialist N/A	Date: N/A
Noise and Vibration specialist Tom Fitzwater, Environmental Planning Manager	Date: August 2011
Air Quality specialist N/A	Date: N/A
Paleontology specialist/liaison N/A	Date: N/A
Water Quality specialist N/A	Date: N/A
Hydrology and Floodplain specialist Darrell Vice P.E., Project Manager, VTA	Date: August 2011
Hazardous Waste/Materials specialist Parikh Consultants	Date: October 8, 2008
Visual/Aesthetics specialist N/A	Date: N/A
Energy and Climate Change specialist N/A	Date: N/A
Other: N/A	Date: N/A
PEAR Preparer Samantha Swan, Environmental Planner III, VTA	Date: August 26, 2011

12. Review and Approval

I confirm that environmental cost, scope, and schedule have been satisfactorily completed and that the PEAR meets all Caltrans requirements. Also, if the project is scoped as a routine EA, complex EA, or EIS, I verify that the HQ DEA Coordinator has concurred in the Class of Action.

Howell Chan — Date: 23 October 2012

Howell Chan, Environmental Branch Chief

Fariba Zohoury — Date: 10/23/12

Fariba Zohoury, P.E., Project Manager

- Appendix A: USFWS and CNNDB Species List Requests
- Appendix B: References Cited
- Attachment A: PEAR Environmental Studies Checklist
- Attachment B: Schedule (Gantt Chart)

Appendix A.

USFWS and CNNDB Species List Requests

Appendix A. Special-status Plant Species, Their Status, Habitat Description, and Rationale for Occurrence within the Project Area

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	RATIONALE
Federal or State Endangered and Threatened Species				
(Crystal Springs) fountain thistle	Cirsium fontinale var. fontinale	FE, SE, CNPS List 1B.1	Chaparral (openings), cismontane woodland, valley and foothill grassland often found in seasonal and perennial drainages on serpentinite (seeps), elevation 46-175 meters; blooms May to October.	No potential. Habitat is not present in the project area.
California seablite	Suaeda californica	FE, CNPS List 1B.1	Marshes and swamps (coastal salt); elevation 0-15 meters; blooms July to October.	No potential. Habitat is not present in the project area.
Contra Costa goldfields	Lasthenia conjugens	FE, Critical Habitat, CNPS List 1B.1	Valley and foothill grassland and cismontane woodland in vernal pools, swales, and moist depressions (alkaline). Extirpated from most of its range; elevation 0-470 meters; blooms March to June.	No potential. Habitat is not present in the project area. There are two occurrences within 10 miles, both populations are presumed extant and occur within seasonal wetlands/vernal pools ans swales in grassland in Fremont. Critical habitat is not located in project area.
Fragrant fritillary	Fritillaria liliacea	CNPS 1B.2	Coastal scrub, valley and foothill grassland, coastal prairie, often on serpentine.	No potential. Habitat is not present in the project area.
Marin western flax	Hesperolinon congestum	FT, ST, CNPS List 1B.1	Chaparral, valley and foothill grassland; in serpentine barrens and serpentine grassland; elevation 5-370 meters; blooms April to July.	No potential. Habitat is not present in the project area.
robust spineflower	Chorizanthe robusta var. robusta	FE, CNPS List 1B.1	Cismontane woodland, coastal dunes, coastal scrub; sandy terraces and bluffs or in loose sand; elevation 3-300 meters; blooms May to September, sometimes as early as April.	No potential. Habitat is not present in the project area. Most populations extirpated. There is an 1882 CNDDB record within approximately 10 miles in San Jose.
San Mateo thorn-mint	Acanthomintha duttonii	FE, SE, CNPS List 1B.1	Chaparral, valley and foothill grassland, coastal scrub; serpentinite soils; elevation 50-300 meters; blooms April to June.	No potential. Habitat is not present in the project area.
California Native Plant Society Species				
alkali milk-vetch	Astragalus tener var. tener	CNPS List 1B.2	Alkali playas, valley and foothill grassland (adobe clay), vernal pools/alkaline; elevation 1-60 meters; blooms March to June.	Low potential. Most areas on-site are not likely to be sufficiently alkaline. There are four historical occurrences within approximately 10 miles, one of which is possibly extant in Fremont approximately 8 miles east, and a possibly extirpated occurrence from 1905 noted near an old cannery near Mayfield Slough in Palo Alto.
Anderson's manzanita	Arctostaphylos andersonii	CNPS List 1B.2	Openings, edges, broadleafed upland forest, chaparral, north coast coniferous forest; elevation 60-760 meters; blooms November to May.	No potential. Habitat is not present in the project area.
arcuate bush-mallow	Malacothamnus arcuatus	CNPS List 1B.2	Chaparral, gravelly alluvium; elevation 15-355 meters; blooms April to September.	No potential. Habitat is not present in the project area.
Ben Lomond buckwheat	Eriogonum nudum var. decurrens	CNPS List 1B.1	Chaparral, cismontane woodland, lower montane coniferous forest (ponderosa pine sandhills); elevation 50-800 meters; blooms June to October.	No potential. Habitat is not present in the project area.
brittlescale	Atriplex depressa	CNPS List	Chenopod scrub, meadows and seeps, playas, valley	No potential. Habitat is not present in the project area.

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	RATIONALE
		1B.2	and foothill grassland, vernal pools; alkaline, clay; elevation 1-320 meters blooms April to October.	Closest CNDDB occurrence is a presumed extant record that is in the Don Edwards National Wildlife Refuge in Fremont.
Congdon's tarplant	Centromadia parryi ssp. congdonii	CNPS List 1B.2	Valley and foothill grasslands, alkaline soils, sometimes described as heavy white clay; elevation 1-230 meters; blooms May-October (sometimes into November).	Moderate potential. Marginal habitat may be found within the project area along disturbed roads and possibly elsewhere. There are eight CNDDB occurrences within approximately 10 miles, six of the populations are presumed extant and two are presumed extinct.
Davidson's bush-mallow	Malacothamnus davidsonii	CNPS List 1B.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland; elevation 185-855 meters; blooms June to January.	No potential. Habitat is not present in the project area. All known records of the species are at higher elevations from Stanford and Los Altos.
Franciscan onion	Allium peninsulare var. franciscanum	CNPS List 1B.2	Cismontane woodland, valley and foothill grassland on clay, volcanic soils, often serpentinite; elevation 52-300 meters; blooms May to June.	No potential. Habitat is not present in the project area. Closest known population occurs off Page Mill Road in Palo Alto.
Hall's bush-mallow	Malacothamnus hallii	CNPS List 1B.2	Chaparral, coastal scrub; some populations on serpentine; elevation 10-760 meters; blooms May-September (sometimes into October).	No potential. Marginal habitat may be found along the earthen banks of Stevens Creek corridor near salt marsh areas. There is one occurrence within approximately 10 miles along Alviso Slough approximately 5 miles east.
Hoover's button-celery	Eryngium aristulatum var. hooveri	CNPS List 1B.1	Alkaline depressions, vernal pools, roadside ditches, and other wet places near the coast; elevation 3-45 meters; blooms in July.	No potential. No vernal pools onsite, all mesic habitat highly disturbed. There are five historical occurrences of this plant within approximately 10 miles, one of which is possibly extant in Fremont approximately 8 miles east.
Kings Mountain manzanita	Arctostaphylos regismontana	CNPS List 1B.2	Broadleaved upland forest, chaparral, North Coast coniferous forest, granitic or sandstone outcrops, elevation 305-730 meters; blooms January to April.	No potential. Habitat is not present in the project area. One occurrence in the Don Edwards National Wildlife Refuge in Fremont in vernal pool grassland on alkali soil.
lesser saltscale	Atriplex minuscula	CNPS List 1B.1	Chenopod scrub, playas, valley and foothill grassland; alkali sink and grassland in sandy, alkali soils; elevation 15-200 meters; blooms May to October.	No potential. Habitat is not present in the project area.
Loma Prieta hoita	Hoita strobilina	CNPS List 1B.1	Chaparral, cismontane woodland, riparian woodland; usually serpentinitic, mesic; elevation 30-600 meters; blooms May to October.	No potential. Habitat is not present in the project area.
lost thistle	Cirsium praeteriens	CNPS List 1A	Habitat requirements unknown; elevation 0-100 meters; blooms June to July.	No potential. The one record from the CNDDB is from an extinct population in Palo Alto last seen in 1901.
Point Reyes bird's-beak	Chloropyron maritimum ssp. palustre	CNPS List 1B.2	Marshes and swamps (coastal salt), usually in coastal salt marsh with Salicornia, Distichlis, Jaumea and Spartina; elevation 0-10 meters; blooms June to October.	No potential. Habitat is not present in the project area.
prostrate vernal pool navarretia	Navarretia prostrata	CNPS List 1B.1	Coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools; alkaline soils in grassland, or in vernal pools; mesic; elevation 15-700 meters; blooms April to July.	No potential. Habitat not present in project area. There are two occurrences within 10 miles, both of the populations are presumed extant and occur within vernal pools in Fremont.
robust monardella	Monardella villosa ssp. globosa	CNPS List 1B.2	Broad-leafed upland forest (openings), chaparral (openings), cismontane woodland, coastal scrub, valley and foothill grassland/chaparral, oak woodland, and California annual grassland; elevation 100-915 meters; blooms June to August.	No potential. Habitat not present in project area. One occurrence in Rancho San Antonio Open Space Preserve in Cupertino at an elevation of approximately 200 meters.
San Francisco	Collinsia multicolor	CNPS List	Closed-cone coniferous forest, coastal scrub,	No potential. Habitat not present in project area.

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	RATIONALE
collinsia		1B.2	sometimes serpentinite, decomposed shale (mudstone) mixed with humus; elevation 30-250 meters; blooms March to May.	
San Joaquin spearscale	Atriplex joaquiniana	CNPS List 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland; in seasonal alkali wetlands or alkali sink scrub; elevation 1-835 meters; blooms April to October.	No potential. Habitat not present in project area.
Santa Clara red ribbons	Clarkia concinna ssp. automixa	CNPS List 4.3	Chaparral, cismontane woodland; on slopes and near drainages; elevation 90-1,500 meters; blooms April to July.	No potential. Habitat not present in project area. One occurrence in 1953 in the vicinity of Saratoga Summit along Highway 35.
slender-leaved pondweed	Stuckenia filiformis	CNPS List 2.2	Marshes, and swamps; clear, shallow freshwater in lakes and drainage channels; elevation 300-2,150 meters; blooms May to July.	No potential. Habitat not present in project area. Last seen in Palo Alto area in 1899.
western leatherwood	Dirca occidentalis	CNPS List 1B.2	Broadleaved upland forest, closed cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian scrub, riparian woodland; mesic sites; elevation 50-395 meters; blooms January to April.	Low potential. Potentially suitable habitat is highly disturbed.
woodland woollythreads	Monolopia gracilens	CNPS List 1B.2	Chaparral, valley and foothill grasslands (serpentine), cismontane woodland, broadleafed upland forest (openings), North Coast coniferous forest (openings); elevation 100-1,200 meters; blooms February to July.	No potential. Habitat not present in project area.

Key to Abbreviations:
Status: Federal Endangered (FE); State Endangered (SE); State Threatened (ST); California Native Plant Society (CNPS)

Notes:
[1] "Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Four Vernal Pool Crustaceans and Eleven Vernal Pool Plants," 71 Federal Register 28 (10 February 2006), pp. 7118-7316.

Appendix A. Special-status Animal Species, Their Status, Habitat Description, and Rationale for Occurrence within the Project Area

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	RATIONALE
Fish				
Central California Coast steelhead	Oncorhynchus mykiss	FT, Critical Habitat	Moderate to fast flowing, well oxygenated waters for breeding	High potential. Known to occur in Stevens Creek.[1] Critical habitat includes Steven Creek.
Central Valley spring-run Chinook salmon	Oncorhynchus tshawytscha	FT, SE	Cool streams that reach the ocean and that have shallow partially shaded, pools, riffles, and runs; Sacramento River tributaries.	No potential. Project area is not within the known range of species.
Central Valley steelhead	Oncorhynchus mykiss	FT, ST	Cool streams that reach the ocean and that have shallow partially shaded, pools, riffles, and runs. Sacramento and San Joaquin River tributaries, excludes San Francisco Bay and tributaries.	No potential. Project area is not within the known range of species.

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	RATIONALE
Coho salmon (Central California Coast)	Oncorhynchus kisutch	FE, SE	Coastal streams from Punta Gorda in northern California down to and including the San Lorenzo River in central California, as well as some tributaries to San Francisco Bay.	Low potential. Species last recorded from San Francisco Bay tributary during early-to-mid 1980s.[2]
Delta smelt	Hypomesus transpacificus	FT, ST	Shallow, tidal water in Sacramento/San Joaquin River Delta.	No potential. Project area is not within the known range of species.
green sturgeon	Acipenser medirostris	FT, CSC	Oceanic waters, bays, and estuaries; spawns in deep pools in large, turbulent freshwater river mainstems; known to forage in estuaries and bays from San Francisco Bay to British Columbia.	No potential. Suitable habitat is not present in project area.
winter-run Chinook salmon, Sacramento River	Oncorhynchus tshawytscha	FE, SE	Cool streams that reach the ocean and that have shallow partially shaded, pools, riffles, and runs. Sacramento River tributaries.	No potential. Project area is not within the known range of species.
Amphibians and Reptiles				
Alameda whipsnake (=striped racer)	Masticophis lateralis euryxanthus	FT	South-facing slopes and ravines; mosaic habitat of shrubs, oaks, and grasslands.	No potential. Suitable habitat is not present in project area.
California red-legged frog	Rana draytonii	FT, CSC	Lowland and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation; must have access to aestivation habitat.	Low potential. Foraging/aestivation habitat present. No breeding habitat present.
California tiger salamander (central population)	Ambystoma californiense	FT, ST, CSC	Grasslands and foothills that contain small mammal burrows (for dry-season retreats) and seasonal ponds and pools (for breeding during the rainy season).	Low potential. Known to occur in upper reaches of Permanente Creek.
San Francisco garter snake	Thamnophis sirtalis tetrataenia	FE, SE, FP	Freshwater marshes, ponds, and slow-moving streams in San Mateo County and extreme northern Santa Cruz County; prefers dense cover and water depths of at least one foot.	No potential. Project area is not within the known range of species.
western pond turtle	Emys marmorata	CSC	Ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation; need basking sites and suitable upland habitat for nesting.	Moderate potential. May occur in Stevens Creek where suitable basking sites (sandy banks and rocks) are present.
Birds				
Alameda song sparrow	Melospiza melodia pusillula	CSC	Tidal salt marshes dominated by pickleweed; nests primarily in pickleweed and marsh gumplant.	No potential. Suitable habitat not present in project area.
burrowing owl	Athene cunicularia	CSC	Open, flat sites such as vacant fields, golf courses and airports where ground squirrels provide nest burrows.	Low potential. Only small isolated patches of habitat on site.
California black rail	Laterallus jamaicensis coturniculus	ST, FP	Salt marshes bordering larger bays, also found in wet meadows, brackish and freshwater marshes.	No potential. Suitable habitat not present in project area.
California brown pelican	Pelecanus occidentalis californicus	FE, SE, FP	Coastal shorelines and bays.	No potential. Suitable habitat not present in project area.
California clapper rail	Rallus longirostris obsoletus	FE, SE, FP	Saltwater and brackish marshes, tidal sloughs.	No potential. Suitable habitat not present in project area.
California least tern	Sternula antillarum browni	FE, SE, FP	Sandy beaches, alkali flats, hardpan surfaces (salt ponds).	No potential. Suitable habitat not present in project area.

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	RATIONALE
Cooper's hawk	Accipiter cooperii	CSC	Dense stands of riparian habitat or live oak and deciduous forests near water.	Moderate potential. Habitat is present in the project area.
great blue heron	Ardea herodias	SA	Fresh and saltwater marshes, meadows, lake edges or shorelines, rivers and streams; usually nests in trees or bushes	Moderate potential. May occur in freshwater habitat along Stevens Creek.
marbled murrelet	Brachyramphus marmoratus	FT, SE	Nests in old-growth forests, forages in coastal waters.	No potential. Suitable habitat not present in project area.
northern harrier	Circus cyaneus	CSC	Nests in coast and freshwater marshes and wet fields, forages in marshes, grasslands, and ruderal habitats.	Low potential. Only small, isolated patches of foraging habitat in the project area.
saltmarsh common yellowthroat	Geothlypis trichas sinuosa	CSC	Salt, brackish, and freshwater marshes; riparian woodlands; nests on or near ground in low vegetation.	Low potential. Only small, isolated patches of habitat in the project area.
snowy egret	Egretta thula	SA	Shores of coastal estuaries, fresh and saline emergent wetlands, ponds, slow-moving rivers, irrigation ditches, and wet fields; nests in marshes and trees.	Moderate potential. May occur in freshwater habitat along Stevens Creek.
tricolored blackbird	Agelaius tricolor	CSC	Nests colonially in cattails or other emergent vegetation around freshwater ponds; forages in grasslands and agricultural fields.	No potential. Suitable habitat not present in project area.
western snowy plover	Charadrius alexandrinus nivosus	FT	Sandy beaches, salt ponds, salt pond levees; shores of alkali lakes; needs sandy, gravelly, or friable soils for nesting.	No potential. Suitable habitat not present in project area.
white-tailed kite	Elanus leucurus	FP	Riparian habitats adjacent to open fields, oak woodland, meadows, and/or grassland habitats; requires dense-topped trees or shrubs for nesting and perching.	Moderate potential. Habitat is present in the project area.
Mammals				
American badger	Taxidea taxus	CSC	Open habitats with friable soils; burrows in open grasslands.	No potential. Suitable habitat not present in project area.
hoary bat	Lasiurus cinereus	CSC	Primarily forests, woodlands, and wooded riparian habitat; open habitats or habitat mosaics with access to trees for cover and open areas or habitat edges for feeding; roosts in dense foliage of medium to large trees.	Low potential. Some habitat present within project area.
pallid bat	Antrozous pallidus	CSC	Arid, low-elevation regions; deserts, grasslands, shrublands, woodlands and forests; most common in open, dry habitats with rocky areas for roosting; roosts in deep crevices in rock faces, also roosts in tree hollows and/or bark, buildings, and bridges.	Low potential. Some habitat present within project area.
salt-marsh harvest mouse	Reithrodontomys raviventris	FE, SE, FP	Tidal salt marshes of San Francisco Bay and its tributaries. Pickleweed is primary habitat.	No potential. Suitable habitat not present in project area.
salt-marsh wandering shrew	Sorex vagrans halicoetes	CSC	Salt marshes; tidal marshes with abundant driftwood and other debris (for shelter and foraging).	No potential. Suitable habitat not present in project area.
San Francisco dusky-footed woodrat	Neotoma fuscipes annectens	CSC	Variety of brushy and wooded habitats with dense understory; constructs nests of shredded grass, leaves, trigs, and other materials.	Low potential. Some suitable habitat present.
San Joaquin kit fox	Vulpes macrotis mutica	FE, ST	Flat or gently sloping grasslands on the margins of the San Joaquin Valley and adjacent valleys.	No potential. Project area is not within the known range of species.

COMMON NAME	SCIENTIFIC NAME	STATUS	GENERAL HABITAT DESCRIPTION	RATIONALE
Santa Cruz kangaroo rat	Dipodomys venustus venustus	SA	Chaparral habitat in the low foothills of the Santa Cruz Mountains, on substrates of sands, loams, and sandy loams.	No potential. Suitable habitat not present in project area.
Yuma myotis	Myotis yumanensis	CSC	Open forests and woodlands with sources of water over which to feed; roosts in caves, crevices, buildings, bridges, and trees.	Low potential. Maternity colony identified in 2008 at Matadero Creek bridge roosting in a crevice, approximately 5 miles northwest of the project area.
Invertebrates				
bay checkerspot butterfly	Euphydryas editha bayensis	FT, Critical Habitat	Shallow, serpentine soils that support larval host plants (Plantago erecta).	No potential. Suitable habitat not present in project area. Critical habitat is not located in project area.
conservancy fairy shrimp	Branchinecta conservatio	FE	Vernal pools, seasonal wetlands, and other seasonal freshwater habitats.	No potential. Suitable habitat not present in project area.
mimic tryonia (=California brackishwater snail)	Tryonia imitator	SA	Inhabits coastal lagoons, estuaries, and salt marshes found only in permanently submerged areas in a variety of sediment types.	No potential. Suitable habitat not present in project area.
vernal pool tadpole shrimp	Lepidurus packardi	FE, Critical Habitat	Vernal pools, swales, and low depressions in open grasslands.	No potential. Suitable habitat not present in project area. Critical habitat is not located in project area.

Key to Abbreviations:
Status: Federally Endangered (FE); Federally Threatened (FT); California species of special concern (CSC); California Fully Protected (FP), a California Department of Fish and Game "Special Animal" (SA)

Notes:
[1] Leidy, R. A., G. S. Becker, and B. N. Harvey. (2005). Historical distribution and current status of steelhead/rainbow trout (Oncorhynchus mykiss) in streams of the San Francisco Estuary, California. Center for Ecosystem and Restoration, Oakland, California.

[2] Leidy, R. A. (2007). Ecology, Assemblage Structure, Distribution, and Status of Fishes in Streams Tributary to the San Francisco Estuary California. San Francisco Estuary Institute Contribution No. 530. San Francisco Estuary Institute, Oakland, California

Appendix B.

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Attachment A.

PEAR Environmental Studies Checklist

Attachment A: PEAR Environmental Studies Checklist

Rev. 11/08

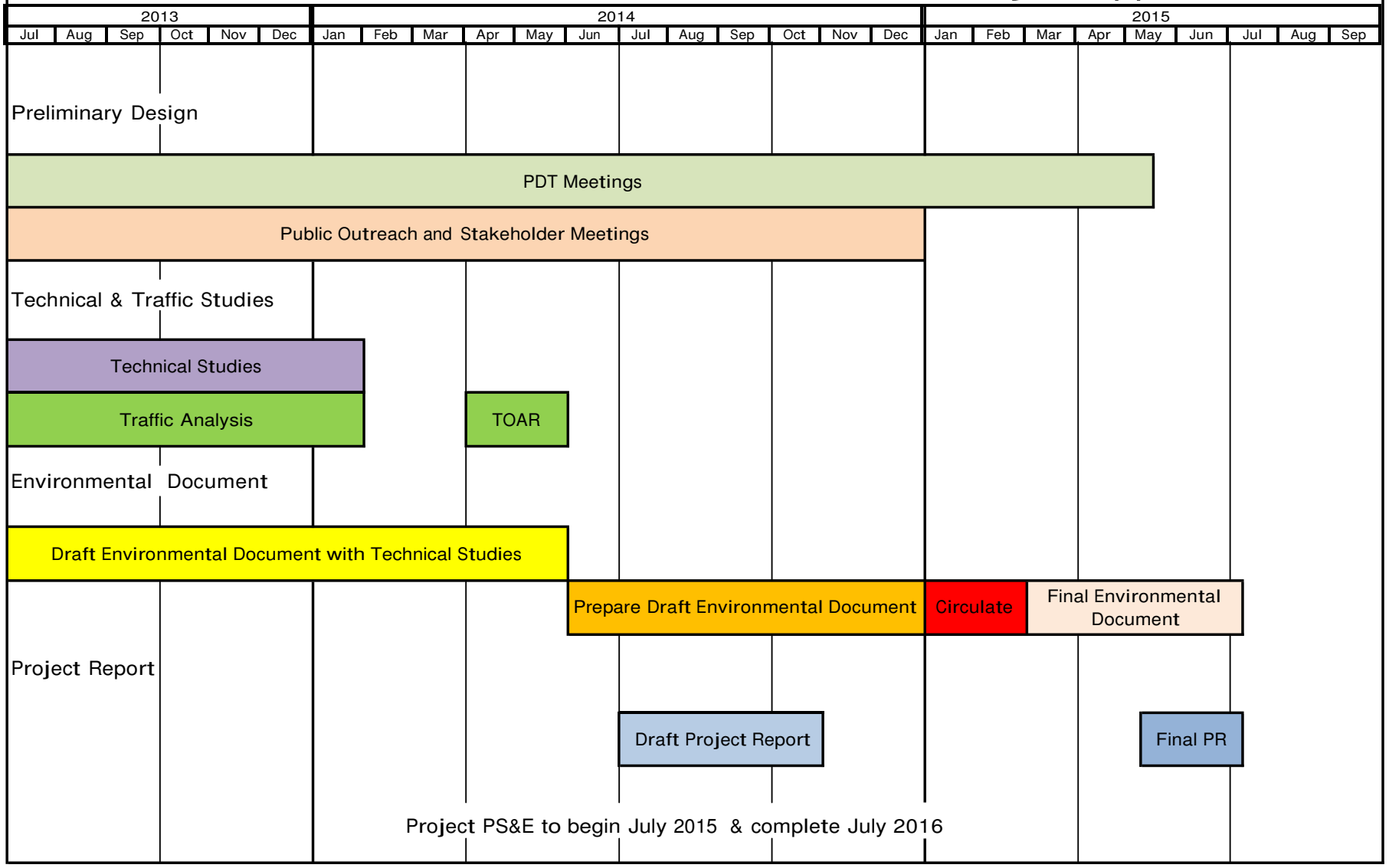
Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Land Use	☒	☐	☐	**L**	
Growth	☒	☐	☐	**L**	
Farmlands/Timberlands	☐	☒	☐	**L**	
Community Impacts	☐	☐	☒	**L**	
Community Character and Cohesion	☐	☐	☒	**L**	
Relocations	☐	☒	☐	**M**	
Environmental Justice	☒	☐	☐	**L**	
Utilities/Emergency Services	☒	☐	☐	**L**	
Visual/Aesthetics	☐	☐	☒	**M**	
Cultural Resources:	☐	☐	☒	**L**	
Archaeological Survey Report	☐	☐	☒	**L**	
Historic Resources Evaluation Report	☐	☐	☒	**L**	
Historic Property Survey Report	☒	☐	☐	**L**	
Historic Resource Compliance Report	☐	☐	☒	**L**	
Section 106 / PRC 5024 & 5024.5	☐	☐	☒	**L**	
Native American Coordination	☐	☐	☒	**L**	
Finding of Effect	☐	☐	☒	**L**	
Data Recovery Plan	☒	☐	☐	**L**	
Memorandum of Agreement	☒	☐	☐	**L**	
Other:	☒	☐	☐	**L**	
Hydrology and Floodplain	☐	☐	☒	**L**	
Water Quality and Stormwater Runoff	☐	☐	☒	**L**	
Geology, Soils, Seismic and Topography	☐	☐	☒	**L**	
Paleontology	☐	☐	☒	**L**	
PER	☐	☐	☒	**L**	
PMP	☒	☐	☐	**L**	
Hazardous Waste/Materials:	☐	☐	☒	**L**	
ISA (Additional)	☐	☐	☒	**L**	
PSI	☐	☐	☒	**L**	
Other:	☒	☐	☐	**L**	
Air Quality	☐	☐	☒	**L**	
Noise and Vibration	☐	☐	☒	**M**	
Energy and Climate Change	☒	☐	☐	**L**	
Biological Environment	☒	☐	☐	**L**	
Natural Environment Study	☐	☐	☒	**L**	
Section 7:	☒	☐	☐	**L**	
Formal	☒	☐	☐	**L**	
Informal	☒	☐	☐	**L**	
No effect	☒	☐	☐	**L**	
Section 10	☒	☐	☐	**L**	
USFWS Consultation	☒	☐	☐	**L**	
NMFS Consultation	☒	☐	☐	**L**	
Species of Concern (CNPS, USFS, BLM, S, F)	☒	☐	☐	**L**	

Environmental Studies for PA&ED Checklist					
	Not anticipated	Memo to file	Report required	Risk* L M H	Comments
Wetlands & Other Waters/Delineation	☒	☐	☐	L	
404(b)(1) Alternatives Analysis	☒	☐	☐	L	
Invasive Species	☒	☐	☐	L	
Wild & Scenic River Consistency	☒	☐	☐	L	
Coastal Management Plan	☒	☐	☐	L	
HMMP	☒	☐	☐	L	
DFG Consistency Determination	☒	☐	☐	L	
2081	☒	☐	☐	L	
Other:	☒	☐	☐	L	
Cumulative Impacts	☐	☐	☒	L	
Context Sensitive Solutions	☒	☐	☐	L	
Section 4(f) Evaluation	☒	☐	☐	L	
Permits:					
401 Certification Coordination	☒	☐	☐	L	
404 Permit Coordination, IP, NWP, or LOP	☒	☐	☐	L	
1602 Agreement Coordination	☒	☐	☐	L	
Local Coastal Development Permit Coordination	☒	☐	☐	L	
State Coastal Development Permit Coordination	☒	☐	☐	L	
NPDES Coordination	☐	☐	☒	L	
US Coast Guard (Section 10)	☒	☐	☐	L	
TRPA	☒	☐	☐	L	
BCDC	☒	☐	☐	L	

Attachment B.

Schedule (Gantt Chart)

SR 85/El Camino Real/Middlefield Rd/ SR 237 Project Approval



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Attachment D: Transportation Planning Scoping Information Sheet

Transportation Planning Scoping Information Sheet

PROJECT INFORMATION

District	County	Route	Post Miles	Project ID No/ Expenditure Authorization No.
04	*SCl*	*85*	*PM R21.8 to PM R22.5*	*04-4A290K*
04	*SCl*	*237*	*PM M1.4 to PM M1.7*	
04	*SCl*	*82*	*PM 18.7 to PM 19.1*	

Project Name and Description : *State Route 85 / State Route 82-El Camino Real (ECR) / State Route 237 / Middlefield Road Project*

To address project purpose and need and for purposes of budgeting PA/ED support funds, VTA and the City of Mountain View propose to proceed to PA/ED phase and evaluate the design described here along with others developed during PA/ED:

At State Route 85 / State Route 82-El Camino Real (ECR): Add auxiliary lanes on State Route 85 in both northbound and southbound directions between State Route 82, known as El Camino Real (ECR) and State Route 237 and convert the existing modified partial cloverleaf interchange at State Route 85 and ECR to a signalized, modified L-8 interchange on the south side of ECR. Work in this area would require replacement of the ECR bridge over State Route 85 with a longer, wider structure.

At State Route 237/Middlefield Road:Construct a loop ramp from northbound Middlefield Road to westbound State Route 237. Further modifications at Middlefield Road include widening both sides to accommodate the new ramp and bike lanes, and realignment of the existing westbound frontage road to form an intersection at Ferguson Drive, just north of State Route 237.

Prepared by:

District Information Sheet Point of Contact*:	Name: *Fariba Zohoury* *D4 Project Management South*	SPONSORING AGENCY:	*VTA*

* The District Information Sheet Point of Contact is responsible for completing Project Information, PDT Team and Stakeholder Information, and coordinating the completion of project-related information with the Transportation Planning Stakeholders. Upon completion, provides the Transportation Planning PDT Representative and Project Manager with a copy of the Information Sheet.

Project Development Team (PDT) Information		
Title	**Name**	**Phone Number**
Project Manager - VTA	*Darrell Vice*	*408-952-4214*
Project Manager – NV5	*Suzanne Sarro*	*408-392-7243*
Project Manager - Caltrans	*Fariba Zohoury*	*510-286-7239*

Transportation Planning Stakeholder Information		
Title	**Name**	**Phone Number**
Regional Planner (VTA)	*Eugene Maeda*	*(408) 952-4298*
Local Planner (Mountain View)	*Helen Kim*	*(650) 903-6523*
Bicycle and Pedestrian Coordinator (VTA)	*Michelle DiRobertis*	*(408) 321-5716*

Park and Ride Coordinator	*tbd*	
Native American Liaison	*NA*	
Other Coordinators:	*tbd*	

Project Purpose and Need –**

Purpose: *The existing transportation and circulation system in the project area is characterized by heavy commuter traffic, frequent congestion, and substantial vehicular delays. The purpose of the SR 85 / SR 82-ECR / SR 237 / Middlefield Road Project is to address these issues by providing operational and safety improvements on SR 85 (at ECR and between ECR and SR 237) and at the SR 237 / Middlefield Road interchange.*

Specifically, the purpose of the Project is to:

Improve traffic operations at the SR 85/SR 82 ECR interchange.
Improve weaving operations on SR 85 in both directions between ECR and SR 237.
Improve traffic operations and safety along Middlefield Road from the Logue Drive intersection to 400 feet south of the eastbound SR 237 off-ramp intersection.
Maintain and enhance pedestrian and bicycle safety and access in the project area.

Need: Localized congestion on SR 85 at the ECR interchange and the non-standard 0.4 mile spacing between the SR 237 and ECR interchanges contribute to congestion and queuing on SR 85.

Weave lengths on SR 85 between SR 237 and ECR are non-standard in both directions. Accident rates are higher than the State average on this segment of SR 85. In addition, the existing freeway access at SR 85 and ECR has unsignalized high-speed ramp configurations, which are not easily navigated by pedestrians and cyclists.

On Middlefield Road in the project area, the close proximity of the four signalized intersections contributes to a high broadside accident rate because of red light violations. Drivers pass through a green phase at one intersection, and do not expect a red light only 300 feet ahead, or drivers are looking at the signal 600 feet ahead, instead of the one at the intersection they are entering.

** The Transportation Planning PDT Representative is responsible for providing the PDT with the system-wide and corridor level deficiencies identified by Transportation Planning. The PDT uses the information provided by Transportation Planning to develop the purpose and need with contributions from other Caltrans functional units and external stakeholders at the initiation of the Project Initiation Document (PID) and is refined throughout the PID process. As the project moves past the project initiation stage and more data becomes available, the purpose and need is refined. For additional information on purpose and need see: www.dot.ca.gov/hq/env/emo/purpose_need.htm

1. Project Funding:

a	List all known and potential funding sources and percent splits: (ie. State Transportation Improvement Program (STIP)/State Highway Operations and Protection Program (SHOPP)/Transportation Enhancement (TE)/Environmental Enhancement and Mitigation (EEM)/Safe Routes to School (SR2S)/etc.).
	STIP and Local.
b	Is this a measure project? Yes__/No *X*. If yes, name and describe the measure.
	STIP and Local.

2. Regional Planning:

a	Name of and contact information for Metropolitan Planning Organization (MPO) or Regional Transportation Planning Agency (RTPA).
	Darrell Vice, VTA, 408-952-4214
b	Name of and contact information for local jurisdiction (City or County)
	Helen Kim, City of Mountain View, 650-903-6523
c	Provide the page number and project description as identified in the Regional Transportation Plan (RTP) and the date of adoption, or provide an explanation if not in RTP.
	MTC Efficiency Project 22995 "Improvement of SR 85 Corridor" *VTP 2030 Project no. H237-04 "SR 237 WB on-ramp at Middlefield Road* *VTA 2030 Project no. H85-04 "SR 85 Auxiliary Lanes between ECR and SR 237, and SR 85/ECR IC Improvements"*
d	*Provide nexus between the RTP objectives and the project to establish the basis for the project purpose and need.*
	New loop at Middlefield Road eliminates one signal and increases length between signalized intersections. *SR82/SR85 interchange reconfiguration increases weaving length on SR 85 between ECR and SR 237, and auxiliary lanes also improve weaving and merging operations.*
e	Is the project located in an area susceptible to sea-level rise?
	No
f	Name of Air Quality Management District (AQMD)
	Bay Area Air Quality Management District [BAAQMD]
g	If the project is located in a federal non-attainment or attainment-maintenance area is the project:
	• Regionally Significant? (per 40 (Code of Federal Regulations (CFR) 93.101) Y_X_/N__
	• Exempt from conformity? (per 40 CFR 93.126 and 93.128) Y__/N_X_
	• Exempt from regional analysis? (per 40 CFR 93.127) Y_X_/N__
	• Not exempt from conformity (must meet all requirements)? Y_X_/N

3. Native American Consultation and Coordination:

a	If project is within or near an Indian Reservation or Rancheria? If so, provide the name of Tribe.
	No
b	Has/have the Tribal Government(s) been consulted? Y___/N_X_. If no, why not?
	Project is not on or near tribal land.
c	If the project requires Caltrans to use right-of-way on trust or allotted lands, this information needs to be included as soon as possible as a key topic in the consultation with the Tribe(s). Has the Tribe been consulted on this topic? Y___/N X.If no, why not?
	No right of way on trust or allotted lands.
d	Has the Bureau of Indian Affairs (BIA) been notified? Y__/N X
	Project is not on or near tribal land.
e	Have all applicable Tribal laws, ordinances and regulations [Tribal Employment Rights Ordinances (TERO), etc.] been reviewed for required contract language and coordination?
	Not applicable.
f	If the Tribe has a TERO, is there a related Memorandum of Understanding between the District and the Tribe?
	Not applicable.
g	Has the area surrounding the project been checked for prehistoric, archeological, cultural, spiritual, or ceremonial sites, or areas of potentially high sensitivity? If such areas exist, has the Tribe, Native

	American Heritage Commission or other applicable persons or entities been consulted?
	Cultural resources studies and Native American consultations will be initiated and completed when funding for the environmental documentation phase of the project becomes available.
h	If a Native American monitor is required for this project, will this cost be reflected in cost estimates?
	Yes
i	In the event of project redesign, will the changes impact a Native American community as described above in d, e, or h?
	No

4. System Planning:

a	Is the project consistent with the DSMP? Y__/N__. If yes document approval date. If no, explain.
	N/A – DSMP scheduled to begin in 2012.
b	Is the project identified in the TSDP? Y__/N__? If yes, document approval date____. If no, explain.
	N/A – in progress and incomplete.
c	Is the project identified in the TCR/RCR or CSMP? Y_X_/N__. If yes, document approval date__*1988 [SR 237], 1985 [SR 82], 1986 [SR 85]*_. If no, explain. Is the project consistent with the future route concept? Y X N__. If no, explain.
d	Provide the Concept Level of Service (LOS) through project area.
	There is no recorded Concept LOS in project area.
e	Provide the Concept Facility – include the number of lanes. Does the Concept Facility include High Occupancy Vehicle lanes? Y X /N__.
	There is no "concept" available. *For SR 82 in the project area, there are three mixed-flow lanes in each direction, with right-turn lanes, left-turn lanes and a southbound auxiliary lane at the SR 82/SR 85 separation. Bus Rapid Transit is being evaluated for ECR in the project area.* *For SR 85, VTA plans one Express lane, two mixed-flow lanes and one auxiliary lane in each direction between ECR and SR 237. The new Express lanes will be converted HOV lanes.* *For SR 237, VTA plans one Express lane, and two mixed flow lanes in each direction. Auxiliary lanes would be included where warranted.*
f	Provide the Ultimate Transportation Corridor (UTC) – include the number of lanes. Does the UTC include High Occupancy Vehicle Lanes? Y__/N__.
	There is no UTC available. Express lanes are planned for SR 85 and SR 237.
g	Describe the physical characteristics of the corridor through the project area (i.e. flat, rolling or mountainous terrain...).
	Flat
h	Is the highway in an urban or rural area? Urban X /Rural__. Provide Functional Classification.
	SR 85: Other freeway or expressway; SR 82: Other principal arterial; SR 237: Other freeway or expressway
i	Is facility a freeway, expressway or conventional highway?
	SR 237: Freeway and Expressway; SR 85: Freeway; SR 82: conventional highway
j	Provide Route Designations: (i.e. Interregional Transportation Strategic Plan (ITSP) High Emphasis or Focus Route, Surface Transportation Assistance Act (STAA) Route, Scenic Route…).
	N/A
k	Describe the land uses adjacent to project limits (i.e. agricultural, industrial…).
	Commercial, industrial, residential
l	Describe any park and ride facility needs identified in the TCR/CSMP, local plans, and RTP.
	No new park and rides are planned in the project area.

m	Describe the Forecasted 10 and 20-year Vehicle Miles Traveled (VMT), Annual Average Daily Traffic (AADT), and Peak Hour truck data in the TCR. Include the source and year of Forecast, and names and types of traffic and travel demand analysis tools used.
	N/A – TCRs not complete.
n	Has analysis on Daily Vehicle Hours of Delay (DVHD) from the Highway Congestion Monitoring Program (HICOMP) been completed and included? Y__/N_*X*_.

5. Local Development – Intergovernmental Review (LD-IGR):

List LD-IGR projects that may directly or indirectly impact the proposed Caltrans project or that the proposed Caltrans project may impact. (Attach additional project information if needed.)

LD-IGR Project Information		**Project**
a	County-Route-Postmile & Distance to Development.	*Northeast quandrant of SR 237/Middlefield Road IC*
b	Development name, type, and size.	*690 Middlefield Road; commercial building*
c	Local agency and/or private sponsor, and contact information.	*City of Mountain View reviewing currently reviewing plan*
d	California Environmental Quality Act (CEQA) status and Implementation Date.	NA
e	If project includes federal funding, National Environmental Policy Act (NEPA) status.	NA
f	All vehicular and non-vehicular unmitigated impacts and planned mitigation measures including Transportation Demand Management (TDM) and Transportation System Management (TSM) that would affect Caltrans facilities.	TBD
g	Approved mitigation measures and implementing party.	TBD
h	Value of constructed mitigation and/or amount of funds provided.	TBD
i	Encroachment Permit, Transportation Permit, Traffic Management Plan, or California Transportation Commission (CTC) Access approvals needed.	TBD
j	Describe relationship to Regional Blueprint, General Plans, or County Congestion Management Plans.	INCLUDED
k	Inclusion in a Regional Transportation Plan Sustainable Community Strategy or Alternative Planning Strategy?	NO
l	Regional or local mitigation fee program in place?	YES

6. Community Planning:

	INITIAL PID INFORMATION
a	Has lead agency staff worked with any neighborhood/community groups in the area of the proposed improvements? Y__/N_*X* .If yes, summarize the process and its results including any commitments made to the community. If no, why not?
	The community would be involved during the PAED process.

b	Are any active/completed/proposed Environmental Justice (EJ) or Community-Based Transportation (CBTP) Planning Grants in the project area? Y__/N X. If yes, summarize the project, its location, and whether/how it may interact with the proposed project.
c	Describe any community participation plans for this PID including how recommendations will be incorporated and/or addressed. Has a context sensitive solutions (CSS) approach been applied? Y X /N__
	No community participation is planned for this PID phase. Especially on SR 82, integration of transportation modes has been taken into consideration. Community participation is anticipated during PA&ED.
	FINAL PID INFORMATION
d	How will the proposed transportation improvements impact the local community? Is the project likely to create or exacerbate existing environmental or other issues, including public health and safety, air quality, water quality, noise, environmental justice or social equity? Y_X_/N__. Describe issues, concerns, and recommendations (from sources including neighborhood/community groups) and what measures will be taken to reduce existing or potential negative effects.
	Short-term construction impacts may include noise and air quality. No significant permanent impacts are expected. See attached PEAR.
e	Does this highway serve as a main street? Y__/N_X. If yes, what main street functions and features need to be protected or preserved?

7. Freight Planning:

	INITIAL PID INFORMATION
a	Identify all modal and intermodal facilities that may affect or be affected by the project.
	None.
	FINAL PID INFORMATION
b	Describe how the design of this project could facilitate or impede Goods Movement and relieve choke points both locally and statewide through grade separations, lane separations, or other measures (e.g., special features to accommodate truck traffic and at-grade railroad crossings).
	Auxiliary lanes to facilitate merging, particularly by trucks, to be added.
c	Describe how the project integrates and interconnects with other modes (rail, maritime, air, etc.). Do possibilities exist for an intermodal facility or other features to improve long-distance hauling, farm-to-market transportation and/or accessibility between warehouses, storage facilities, and terminals?
	No possibilities exist.
d	Is the project located in a high priority goods movement area, included in the Goods Movement Action Plan (GMAP) or on a Global Gateways Development Program (GGDP) route? Y__/N_X_. If yes, describe.
e	Is the project on a current and/or projected high truck volume route [e.g., Average Annual Daily Truck Traffic (AADTT) of 5 axle trucks is greater than 3000]? Yes__/N X. If yes, describe how the project addresses this demand.
f	If the project is located near an airport, seaport, or railroad depot, describe how circulation (including truck parking) needs are addressed.
	Moffett Field, NASA airfield. No impacts due to the airfield.
g	Describe any other freight issues.
	None.

8. Transit (bus, light rail, commuter rail, intercity rail, high speed rail):

	INITIAL PID INFORMATION
a	List all local transit providers that operate within the corridor.

	Valley Transportation Authority [VTA]
b	Have transit agencies been contacted for possible project coordination? Y *X* /N__. If no, why not?
c	Describe existing transit services and transit features (bus stops, train crossings, and transit lines) within the corridor.
	Local service bus routes, no stops in project area.
d	Describe transit facility needs identified in short- and long-range transit plans and RTP. Describe how these future plans affect the corridor.
	Bus Rapid Transit (BRT) is being evaluated on SR 82 in Santa Clara County. BRT would occupy the lane nearest the median in both directions. Widening may be required at left turn pockets. Express/HOV on SRs 85 and 237 lanes would be open to transit.
	FINAL PID INFORMATION
e	Describe how the proposed project integrates transit and addresses impacts to transit services and transit facilities.
	The SR 82 / SR 85 separation structure will provide for future Express lanes. No major impacts to transit are expected from minor interchange reconstructions.
f	Have transit alternatives and improvement features been considered in this project? Y__/N *X* If yes, describe. If no, why not?
	This project purpose and need does not include transit improvements.

9. Bicycle:

	INITIAL PID INFORMATION
a	Does the facility provide for bicyclist safety and mobility needs? If no, please explain.
	Yes.
b	Are any improvements for bicyclist safety and mobility proposed for this facility by any local agencies or included in bicycle master plans? If yes, describe (including location, time frame, funding, etc.).
	No.
c	Are there any external bicycle advocacy groups and bicycle advisory committees that should be included in the project stakeholder list? If so, provide contact information.
	Mountain View BPAC - bpac@mountainview.gov
	FINAL PID INFORMATION
d	Will bicycle travel deficiencies be corrected? How or why not?
	On SR 82, the number of ramp crossings for bikes will be reduced to zero on the northbound side, and on the southbound side, high-speed, free-right turns will be eliminated and replaced with 90 degree, signalized ramp termini.
e	How will this project affect local agency plans for bicycle safety and mobility improvements?
	N/A
f	If the project is the construction of a new freeway or modification to an existing freeway, will it sever or destroy existing provisions for bicycle travel? If yes, describe how bicycle travel provisions will be included in this project.
	It will not remove any bicycle provisions.

10. Pedestrian including Americans with Disabilities Act (ADA):

	INITIAL PID INFORMATION
a	Does this facility provide for pedestrian safety and mobility needs? If so, describe pedestrian facilities. Do continuous and well-maintained sidewalks exist? Are pedestrians forced to walk in the roadway at any locations due to lack of adequate pedestrian facilities? Please explain.
	The existing ECR includes sidewalks, and multiple crossings of ramp termini. There are few crossings of

	ECR itself. Peds are prohibited on SR 237 and SR 85.
b	Are pedestrian crossings located at reasonable intervals?
	Currently, no (see above).
c	Are all pedestrian facilities within the corridor ADA accessible and in compliance with Federal and State ADA laws and regulations?
	Existing facilities are not compliant with the current ADA requirements.
	FINAL PID INFORMATION
d	Will pedestrian travel deficiencies be corrected? How or why not?
	On SR 82, the number of ramp crossings for pedestrians will be reduced to zero on the northbound side, and on the southbound side, high-speed, free-right turns will be eliminated and replaced with 90 degree, signalized ramp termini. Additionally, sidewalks will be widened and two signalized crossing added.
e	How will this project affect local agency plans for pedestrian safety and mobility improvements?
	Project will widen bike lanes on ECR to 5 feet.
f	If the project is the construction of a new freeway or modification to an existing freeway, will it sever or destroy existing provisions for pedestrian travel? If yes, describe how pedestrian travel provisions will be included in this project.
	It will not remove any pedestrian provisions.
g	Are there any external pedestrian advocacy groups and advisory committees that should be included in the project stakeholder list? If so, provide contact information.
	Mountain View BPAC - bpac@mountainview.gov
h	Have ADA barriers as noted in the District's ADA Transition Plan been identified within the project limits? If not included in the project, provide justification and indicate whether District Design coordinator approval was obtained.
	ADA barriers have not been identified within the project. The project will be ADA compliant.

11. Equestrian:

	INITIAL PID INFORMATION
a	If this corridor accommodates equestrian traffic, describe any project features that are being considered to improve safety for equestrian and vehicular traffic?
	N/A
	FINAL PID INFORMATION
b	Have features that accommodate equestrian traffic been identified? If so, are they included a part of this project? Describe. If no, why not?
	N/A

12. Intelligent Transportation Systems (ITS):

	INITIAL PID INFORMATION
a	Have ITS features such as closed-circuit television cameras, signal timing, multi-jurisdictional or multimodal system coordination been considered in the project? Y *X*/N__. If yes, describe. If no, explain.
	Signals along ECR would have ITS features. Metering of connectors would be evaluated during PA&ED.
	FINAL PID INFORMATION
b	Have ITS features been identified? If so, are they included as part of this project? Describe. If no, why not?
	It is expected that ITS features would be evaluated during PAED.

Attachment E: Right of Way Conceptual Cost Estimate Component

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: Fariba Zohoury, Caltrans District 4

From: VTA

Date: December 2012

Dist-Co-Rte-PM: 04-SCL-82 PM 18.7 to PM 19.1
04 - SCL - 85 - PM R21.8 to PM R22.5
04 - SCL - 237 PM M1.4 to PM M1.7

EA: 04-4A290K

Project Description: SR 82/85 Interchange SR 237/ Middlefield Road Interchange Improvements

A Field Review was conducted ____Yes _X_No

Scope of the Right of Way

Provide a general description of the right of way including the location attributes.
Right of Way Required _X_Yes ____No
Number of Parcels _X_1-10 ____ 11-25 ____26-50 ____51-100 ____>100
_X_Urban ____Rural
Land Area: Fee_X_ Easement_____
Displaced Persons/Businesses ____Yes _X_No
Demolition/Clearance ____Yes _X_No
Railroad Involvement ____Yes _X_No
Utility Involvements _X_Yes ____No _5_Number of Utilities in area

Cost Estimates

Support Costs	____$0-$25,000	_X_$500,001-$1,000,000
	____$25,001-$100,000	____$1,000,001-$5,000,000
	____$100,001-$250,000	____$5,000,001-$10,000,000
	____$250,001-$500,000	____>$10,000,000
Capital Costs	____$0-$100,000	_X_$5,000,001-$15,000,000
	____$100,001-$500,000	____$15,000,001-$50,000,000
	____$500,001-$1,000,000	____$50,000,001-$100,000,000
	____$1,000,001-$5,000,000	____>$100,000,000

Schedule

Right of Way will require 12 months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of May 1, 2016.

Areas of Concern

Replacement/relocation of utilities in the SR 82/85 separation and a gas line relocation at Middlefield Road will require long-lead coordination.

Assumptions and Limiting Conditions

SR 82/85 interchange reconfiguration is estimated to require slivers of acquisitions from three single family parcels, three commercial/industrial parcels, and one parcel owned by the City of Mountain View.

Programming alternative ROW costs estimated to be approximately $500,000 of acquisition and $500,000 of utility relocation.

SR 237/Middlefield Road interchange reconfiguration is estimated to require a substantial take from commercial/industrial parcel or parcels. Programming alternative ROW costs estimated to be approximately $4,600,000 of acquisition and $15,000 of utility relocation.

Approximately 50% of the utility relocation has been assumed to be a project cost; relocation cost liability will be further examined during PA&ED.

Attachment F: Risk Register

DIST- EA 04-4A290K					Project Name: 85-237-ECR Middlefield PSR-PDS Co - Rte - PM: 04-SCL-82 PM 18.7 to PM 19.1 04 - SCL - 85 - PM R21.8 to PM R22.5 04 - SCL - 237 PM M1.4 to PM M1.7			Project Manager: Darrell Vice - VTA; Suzanne Sarro - NV5 Telephone: 408 392-7200					Date Created: 10/09/07	Last Updated: 11/21/12
ID #	Status	Threat / Opportunity	Category	Date Risk Identified	Risk Description	Root Causes	Primary Objective	Overall Risk Rating	Risk Owner	Risk Trigger	Strategy	Response Actions w/ Pros & Cons	WBS Item	Status Date and Review Comments
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(k)	(l)	(m)	(n)	(p)	(q)
04-4A290K-01	Active	Opportunity	DESIGN	06/18/08	Status of HOT Lanes on SR85	Requirement	TIME	Probability 5=Very High (60-99%) High Impact 4 =Med	VTA (408) 952-4214 Darrell.Vice@vta.org	HOT Lane conversaion decision not made before PAED	AVOID	Plan for widest SR 85 section	165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
04-4A290K-02	Active	Threat	DESIGN	06/18/08	Traffic Ops Report shows poor ECR ops	Complexity and Interface	TIME	Probability 3=Med (20-39%) Med Impact 4 =Med	NV5 (408) 392-7200 Suzanne.Sarro@NV5.com	Report not getting CMV approval	MITIGATE	Involve CMV and provide adequate responses and analysis	165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
04-4A290K-03	Active	Threat	DESIGN	06/18/08	Traffic Ops Report shows poor SR 237 ops	Complexity and Interface	TIME	Probability 3=Med (20-39%) Med Impact 4 =Med	NV5 (408) 392-7200 Suzanne.Sarro@NV5.com	Ops Report not getting Caltrans Approval	MITIGATE	Revise design to improve operations	165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
04-4A290K-04	Active	Threat	PM	06/18/08	No agreement on local vs. regional operations	Requirement	SCOPE	Probability 3=Med (20-39%) Med Impact 4 =Med	VTA (408) 952-4214 Darrell.Vice@vta.org	Traffic Ops Report shows regional local imbalance	MITIGATE	Provide adequate responses and analysis	165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
04-4A290K-05	Active	Threat	DESIGN	06/18/08	No agreement on design exceptions	Requirement	SCOPE	Probability 3=Med (20-39%) Med Impact 4 =Med	NV5 (408) 392-7200 Suzanne.Sarro@NV5.com	Caltrans does not approve conceptual DE's	ACCEPT	Evaluate DE S in PAED	165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
04-4A290K-06	Active	Threat	ORG	06/18/08	CT-CMV PAED + ROW Co-Op	Project Dependencies	TIME	Probability 3=Med (20-39%) Med Impact 4 =Med	VTA (408) 952-4214 Darrell.Vice@vta.org	VTA & Caltrans not moving forward on agreement	ACCEPT	Show Co-op of Project Schedule	175 CIRCULATE DRAFT ENVIRONMENTAL DOCUMENT AND SELECT PREFERRED PROJECT ALTERNATIVE IDENTIFICATION	
04-4A290K-07	Active	Threat	ORG	06/18/08	CT-CMV Construction Co-Op	Project Dependencies	TIME	Probability 3=Med (20-39%) Med Impact 4 =Med	VTA (408) 952-4214 Darrell.Vice@vta.org	VTA & Caltrans not moving forward on agreement	ACCEPT	Show Co-op of Project Schedule	230 PREPARE DRAFT PS&E	

DIST- EA 04-4A290K

Project Name: 85-237-ECR Middlefield PSR-PDS

Co - Rte - PM: 04-SCL-82 PM 18.7 to PM 19.1 04 - SCL - 85 - PM R21.8 to PM R22.5 04 - SCL - 237 PM M1.4 to PM M1.7

Project Manager: Darrell Vice - VTA; Suzanne Sarro - NV5

Telephone: 408 392-7200

Date Created: 10/09/07

Last Updated: 11/21/12

ID #	Status	Threat / Opportunity	Category	Date Risk Identified	Risk Description	Root Causes	Primary Objective	Overall Risk Rating	Risk Owner	Risk Trigger	Strategy	Response Actions w/ Pros & Cons	WBS Item	Status Date and Review Comments
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(k)	(l)	(m)	(n)	(p)	(q)
04-4A290K-08	Active	Threat	ORG	09/19/07	CMV-CT Maintenance agreements	Project Dependencies	TIME	Probability 4=High (40-59%) High Impact 4 =Med	CMV (650) 903-6228 Peter.Skinner@MountainView.gov	Caltrans and City not moving toward agreement	ACCEPT	Show Co-op of Project Schedule	205 OBTAIN PERMITS, AGREEMENTS, AND ROUTE ADOPTIONS	
04-4A290K-09	Active	Threat	ORG	09/19/07	Funding availability	Funding	TIME	Probability 5=Very High (60-99%) High Impact 16 =Very High	VTA (408) 952-4214 Darrell.Vice@vta.org	No funding	ACCEPT	Phase Project	165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
04-4A290K-10	Active	Threat	CON	09/19/07	Temporary const easements/const staging	Requirement	TIME	Probability 3=Med (20-39%) Med Impact 4 =Med	NV5 (408) 392-7200 Suzanne.Sarro@NV5.com	Staging space not available or identified during design	MITIGATE	Define needs so that VTA can start early with contacts and negotiations	165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
04-4A290K-11	Active	Threat	CON	09/19/07	Late utility company response	Performance and Reliability	COST	Probability 4=High (40-59%) High Impact 8 =High	NV5 (408) 392-7200 Suzanne.Sarro@NV5.com	Construction impact issues	MITIGATE	identify potential utility impacts then follow up with owners.	200 UTILITY RELOCATION	
04-4A290K-12	Active	Threat	EXT	09/19/07	Construction Cost Escalation	Market	COST	Probability 3=Med (20-39%) Med Impact 4 =Med	NV5 (408) 392-7200 Suzanne.Sarro@NV5.com	Economy improves; more projects bid at same time	ACCEPT	Follow Construction Trends; provide contingency if unit prices are an issue	165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
04-4A290K-13	Active	Threat	ENV	09/19/07	ADL impacts	Requirement	COST	Probability 3=Med (20-39%) Med Impact 4 =Med	NV5 (408) 392-7200 Suzanne.Sarro@NV5.com	Env. Document Process	MITIGATE	Follow up with Env. Report discoveries and determine proper mitigation	165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	
04-4A290K-14	Active	Threat	Env	06/29/12	NEPA documentation is required	Requirement	TIME	Probability 2=Low (10-19%) Med Impact 4 =Med	VTA (408) 952-4214 Darrell.Vice@vta.org	VTA uses federal funds on any project phase	ACCEPT	Prepare NEPA document	165 PERFORM ENVIRONMENTAL STUDIES AND PREPARE DRAFT ENVIRONMENTAL DOCUMENT	

Attachment G: Conceptual Alternatives Analysis Matrix

SR 85/ECR/SR 237 Alternative Matrix

		Engineering Impacts											Environmental Impacts			Community Impacts			
									Design Exceptions										
Movement	**Alt # Shaded = alternative used for programming support costs**	Structures	ROW	Movements gained	Movements lost	Approx Cost	Local Roads	Footprint	Horizontal	Vertical	Traffic	Other Constraints or conflicts	Sensitive Sites	Adjacent paths	Vegetation	Housing	Commercial & Industrial	Bikes/Peds	Comments
		# replace, # widen	Approx. AC	#	#	OOM**	Y/N	Delta AC	Which ones?	Which ones?	I-5		describe	Y= Impact N= No impact	Lose/Gain	Y/N	Y/N	I-5	
WB 237 to SB 85	1A no build										1								
	1B Option 1: 2-Lane Loop, WB aux from Whisman to loop, no future HOV direct connector allowed, no work to Dana St. bridge; SB aux to ECR	widen 3 bridges, add retaining walls; replace SCT switchback overcrossing	0	0	0	$12.5 million	N	1.6	Advis. Fig 504.4 L=2500' not met; Mandatory 302.1: Shoulder under bridge		2	Conflict w/300' SCT, switchback, and OC structure; Gas Mains vs. Ret Wall foundations at 630+50. If shoulder exception not granted, 85/237 bridge must be replaced: $6.5 million	2 bridges at Stevens Creek	Realign Stevens Creek Trail and switchback and replace crossing structure	Lose	N		N/A	No HOV allowed
	1B Option 2: 2-Lane Loop, WB aux from Whisman to loop, allows future HOV direct connector, replace Dana St. bridge; SB aux to ECR	widen 3 bridges, add 2 retaining walls, replace Dana bridge and widen Central expwy	1.9	0	0	$36.5 million	N	6.3	Weave between Whisman and WB exit to SB 85 short; Mandatory 302.1: Shoulder under bridge		3	Conflict w/300' SCT, switchback, and OC structure; Gas Mains vs. Ret Wall foundations at 630+50. If shoulder exception not granted, 85/237 bridge must be replaced: $6.5 million	2 bridges at Stevens Creek	Realign Stevens Creek Trail and switchback and replace crossing structure	Lose	N	Y- PG&E storage facilities @633+00	N/A	most vehicles will not access WB 237 from Whisman
	1C 2-Lane Loop: Aux from Whisman, no exit to ECR, no future HOV direct connector allowed	widen 3 bridges, add retaining walls, replace SCT overcrossing	0	0	SB85 to SB82 (838 vph peak)	no est.	N	1.6	Advis. Fig 504.4 L=2500' not met		2	Conflict w/300' SCT, switchback, and OC structure; Gas Mains vs. Ret Wall foundations at 630+50. If shoulder exception not granted, 85/237 bridge must be replaced: $6.5 million	2 bridges at Stevens Creek	Realign Stevens Creek Trail and switchback and replace crossing structure	Closed loop probably would be developed and landscaped	N	Y- PG&E storage facilities @633+00	N/A	Lost move-ments not acceptable. (838 vph); and no HOV DC allowed; overlaps with Alt 2's
	1D Option 1: 2- Lane Flyover, closes Whisman, no exit to ECR, no future HOV direct connector allowed	1 bridge retaining walls Replace Dana Bridge	1.9 ac	0	SB85 to SB82; Whisman Rd to WB237	no est.	Y	3.6	Advis. Fig 504.4 L=2500' not met	crest / sag design speed =33 MPH based on stopping sight distance	2	PG&E towers conflict. Foundations must accommodate high-risk utils at 630+00	visual impact	Realign Stevens Creek Trail and switchback and replace crossing structure	Add veg at removed loop	N	SW corner 85/237 impact to buildings under bridge, North of 237 impact to parking & cul de sac	N/A	Lost move-ments not acceptable. (838 vph); and no HOV DC allowed
	1D Flyover - Option 2: Flyover with braid to ECR	1 bridge 1800', replace Dana Bridge, widen Central Expwy	6.0 ac	SB85 to NB ECR	Whisman to WB 237	$88.5 million	Pioneer Way, Yuba Dr	9.9	Advis. Fig 504.3a; superelevation		4	remove hotel at ECR, PG&E towers conflict; Foundations must accommodate high-risk utils at 630+00	bridge over SCreek	realign SC ped path to cross under bridge	Add veg at removed loop	N	relocate PG&E storage facilities, imp. 2 bldg at Dana	N/A	
SR 85/ECR I/C	2A no build										1								
	2B ParClo - both sides ECR	0	0	0	0	no est.	N	no calc	NB82 ECR to NB85Std. not met for m		2		N	N	Closed loops probably would be developed and landscaped	N	N	N/A	Eliminates ECR on/off weave. Does not improve NB weave; single left turn lane to on-ramp from ECR inadequate
	2C ECR single left turn lane to SB 85 on-ramp, SB85 to ECR merge vs. signal, close NB 82 to SB 85, no bridge widening	0	0	0	0	no est.	N	no calc	not checked	not checked	2		N	N	Closed loops probably would be developed and landscaped	N	N	4	single left is inadequate (520 vph)
	2D CD from ECR to NB85 2 lanes from NB85 to EB237, under braid	Braid structure; widen 85 o	0	0	82 to 237	no est.	Y	no calc	not checked	not checked	2	Remove and replace soundwall		N		Y	N	4	same cost as 2i, no operational benefit
	2E NOT USED	0																	
	2F ECR single left turn lane to SB 85 on-ramp, signalized SB85 off-ramp vs. SB-only merge, close NB82 to SB85 loop, no bridge widening	0	0	0	0	no est.	N	no calc	not checked	not checked	2			N	Closed loops probably would be developed and landscaped			5	single left is inadequate (520 vph)
	2G Option 1: SB85 to SB82 merge, double left turn lanes to 85, close 2 loop ramps, 1-lane on-ramp to NB 85, NB aux lane to EB 237 No future HOV direct connector allowed	replace ECR bridge	0.3 ac	0	0	$19 million	N		Loop radii do not meet design speed p		3			N	Closed loops probably would be developed and landscaped	N	N	4	lengthens NB weave by approx 900
	2G Option 2: SB85 to ECR at signal, double left turn lanes to 85, all movements signalized, close 2 loop ramps, 1-lane on-ramp to NB 85, NB aux lane to EB 237; allows future HOV direct connector	replace ECR bridge allowing future CD on the east side of bridge	0.3 ac	SB 85 to NB 82	0	$21 million	Y	3.1	Loop radii do not meet design speed per 504.3a; superelevation		3	Remove and replace soundwall could be avoided until HOV DC installation.		N	N- Closed loops probably would be developed and landscaped	N	N	4	lengthens NB weave by approx 700', lengthens SB weave by XXX, eliminates ECR weave
	2H - Like 2G Option 1, but with two-lane on ramp	replace ECR bridge	0	0	0	no est.	N	no calc	not checked	not checked	3			N	N- Closed loops probably would be developed and landscaped	N	N	4	2-lane on-ramp wider than forecast need (1170 vph)
	2I Option 1: Collector distributor + Braid NB 85/ECR/237; no future HOV direct connector allowed	CD & new braid structures, retaining walls, replace ECR bridge	1.9 ac	0	0	$38.5 million	Alice Ave Rainbow Dr		superelevation		3	Remove and replace soundwall		N	Lose	Y	N	4	eliminates weave on NB 85 between ECR and 237. Requires relocations of renters and mobile homes
	2I Option 2: Collector distributor + Braid NB 85/ECR/237; allows future direct connector	CD & new braid structures, retaining walls, replace ECR bridge	3.3 ac	SB 85 to NB 82	0	$50 million	Alice Ave Rainbow Dr		superelevation		4	Remove and replace soundwall		N	Lose	Y	N	4	eliminates weave on NB 85 between ECR and 237. Requires relocations of renters and mobile homes
	2J Like 2I Option 1, but without NB82 to CD; no future HOV direct connector	CD & new braid structures, retaining walls, replace ECR bridge	1.9 ac	0	NB82 to EB237	no est.	Alice Ave Rainbow Dr	no calc	not checked	not checked	3	Remove and replace soundwall		N	Lose	Y	N	4	Lost movement not acceptable
AUX LANES SR 85	3A no build	0	0	0	0	0	N				1								

SR 85/ECR/SR 237 Alternative Matrix

December 2012
04 - SCL - 85 - PM R021.8 to PM R022.5
04 - SCL - 237 PM M1.4 to M1.7
04-SCL-82 PM 18.7 to 19.1
0400002048K EA 04-4A290K

Movement	Alt # Shaded = alternative used for programming support costs	Structures	ROW	Movements gained	Movements lost	Approx Cost	Local Roads	Footprint	Horizontal	Vertical	Traffic	Other Constraints or conflicts	Sensitive Sites	Adjacent paths	Vegetation	Housing	Commercial & Industrial	Bikes/Peds	Comments
		# replace, # widen	Approx. AC	#	#	OOM**	Y/N	Delta AC	Which ones?	Which ones?	I-5		describe	Y= Impact N= No impact	Lose/Gain	Y/N	Y/N	I-5	
NB 85 TO EB 237	4A no build	0	0	0	0	0	N				1								
	4B double exit lane, remove Dana St off-ramp, add Sylvan Ave off-ramp, no future HOV direct connector allowed	widen Central Exwy OC	Sylvan St off-ramp		Dana St off-ramp	no est.	Y	no calc	Advis. Fig 504.4 L=2500' not met; sup		2	Sylvan exit requires acquisition and relocation. Remove and replace soundwalls on eastside of 85.	N	N	L	Y	Y	N/A	removing Dana and adding Sylan is high-risk
	4C double exit lane, no future HOV direct connector allowed	widen Central Exwy OC; replace Dana St. bridge (cost of bridge in Alt 1B)		0	0	no est.	N	no calc	not checked	not checked	2	Remove and replace soundwalls on eastside of 85.	N	N	L	N	N	N/A	Dana too close to on-ramp
	4D Option 1: Corridor study Project 9 braid to Dana St; no future HOV direct connector allowed	new braid structure, retaining walls 1750'	0	0	NB85 to Dana St	$17.5 million*	N	2.3	not checked	not checked	2	Close enough to apts. to require acquisition Remove and replace soundwalls on eastside of 85..	N	N	L	Y	N	N/A	Majority of vehicles exiting at Dana come from NB 85
	4D Option 2: Like Option 1, but keep NB 85 to Dana St. bridge and delete Dana exit from EB 237; allow future HOV direct connector	Replace Dana Bridge (cost of bridge in Alt 1B), widen Central Exwy OC, retaining walls 1750'	1.5	0	EB 237 to Dana	$25.5 million	N	4.9	Decel length 504.2B; superelevation		3	Close enough to apts. to require acquisition Remove and replace soundwalls on eastside of 85..	N	N	L	Y	N	N/A	Most of Dana exit vehicles are served
	4E HOV direct connector	replace Dana Bridge	0.7	0	0	no est.		no calc	not checked	not checked									Does not address need
	4F Keep Dana exit, pass branch connector over Dana St., allow future HOV direct connector	New bridge over loop, new bridge over Dana St. bridge	no calc	0	NB85 to Dana St	no est.	Y	no calc	not checked	not checked	2	Realigned Moorpark requires acquisition and relocation	N	N	L	Y	Y	N/A	Majority of vehicles exiting at Dana come from NB 85, relocations on Moorpark undesirable
	4G - Option 1: Continue CD, structure over EB 237/NB 85 loop; connect to Dana St. bridge and delete Dana exit from EB 237; No future HOV direct connector	widen Central Exwy OC		0	EB 237 to Dana	no est.	N	no calc	not checked	not checked	4	not checked	N	N	L	Y	N	N/A	
	4G - Option 2: Continue CD, structure over EB 237/NB 85 loop; connect to Dana St. bridge and delete Dana exit from EB 237; Allows future HOV direct connector	widen Central Exwy OC	1.8	0	EB 237 to Dana	$36.5 million	N	7.0			4	Close enough to apts. to require acquisition Remove and replace soundwalls on eastside of 85..	N	N	L	Y	N	N/A	Most of Dana exit vehicles are served
SR 237/Middlefield	5A no build	0	0	0	0	0	N												
	5B Realign Frontage for standard intersection; eliminates one signal	widen Middlefield Rd OC	1.8	0	0	$11 million	N	0.8	Loop radius does not meet design speed per 504.3a		3		N	N	New loop area likely to be landscaped	N	Y	3	The two WB on-ramps are close
	5C one roundabout NW of 237; eliminates two signals	widen Middlefield Rd OC	1.8	0	0	$11 million	N	0.5			1		N	N	New loop area likely to be landscaped	N	N	2	The two WB on-ramps are close.
	5D two roundabouts, both sides of 237; eliminates two signals	0	0	0	0	$2 million	N	0			1		N	N	landscaping inside roundabout	N	N	2	Roundabouts unfamiliar to locals. Analysis 10/07 showed roundabout operations as not feasible because of high volume of left turns relative to through movements
	5E two roundabouts, both sides of 237, North side 5 legs; eliminates 3 signals	0	0.5	0	0	$5.5 million	Ferguson Dr	0.2			1		N	N	landscaping inside roundabout	N	N	2	Same as 5D.
	5F Divergent Diamond	2	not evaluated	0	0	no est.	Ferguson Dr	not evaluated	not checked	not checked	1		N	not evaluated	not evaluated	N	Y	1	Not evaluated in detail because this alternative would not serve high volume of through movements across Middlefield Road
	5G Urban IC	1	not evaluated	0	0	no est.	Ferguson Dr	not evaluated	not checked	not checked	1		N	not evaluated	not evaluated	N	Y	1	Not evaluated in detail because this alternative would not serve high volume of through movements across Middlefield Road

*Does not include Dana St. bridge replacement
**OOM=Order of Magnitude construction cost, rounded to $ 0.5M

Traffic Rubric
1 - Worse than existing
2 - Slight improvement
3 - Clearly improves at least one route
4 - Likely to improve LOS on downstream and upstream routes. Has exceptions
5 - Likely to improve LOS on downstream and upstream routes. No exceptions.