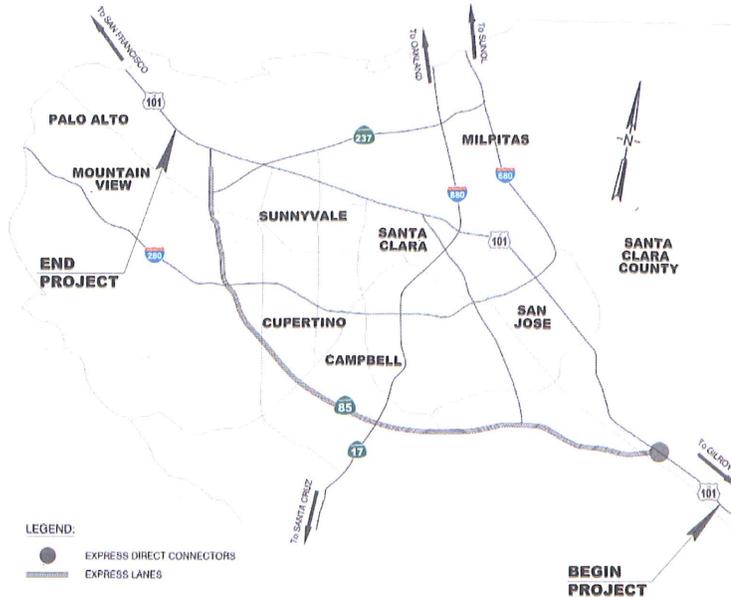


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DRAFT PROJECT REPORT

To Authorize Public Release of the Draft Environmental Document



On Route SR 85 and U.S. 101, in Santa Clara County

From Five miles south of the U.S. 101/SR 85 Separation in San Jose

To Four miles north of the U.S. 101/SR 85 Separation in Mountain View

I have reviewed the right of way information contained in this Project Report and the R/W Data Sheet attached hereto, and find the data to be complete, current, and accurate:

[Signature]

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Deputy District Director - Right of Way and Land Surveys

APPROVAL RECOMMENDED:

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FOR Fariba Zohoury
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APPROVED:

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December 27, 2013

Date

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This Draft Project Report 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.



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12/23/2013
Date



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ATTACHMENT A PROJECT LOCATION MAP
ATTACHMENT B ACCESS LOCATION MAP
ATTACHMENT C PAVEMENT DELINEATION PLANS/TYPICAL CROSS SECTIONS/CONSTRUCTION DETAILS
ATTACHMENT D CONCEPTUAL SIGNING PLANS
ATTACHMENT E COST ESTIMATE
ATTACHMENT F RIGHT OF WAY DATA SHEET
ATTACHMENT G TRANSPORTATION MANAGEMENT PLAN DATA SHEET
ATTACHMENT H RISK REGISTER
ATTACHMENT I DRAFT ENVIRONMENTAL DOCUMENT (TITLE PAGE ONLY)
ATTACHMENT K LIFE CYCLE COST ANALYSIS / PAVEMENT SELECTION REVIEW COMMITTEE CHECKLIST
ATTACHMENT L COOPERATIVE AGREEMENT

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1 Introduction

The State Route (SR) 85 Express Lanes Project proposes to convert the existing high-occupancy vehicle (HOV) lanes on SR 85 in both directions from U.S. 101 in South San Jose to U.S. 101 in Mountain View to Express Lanes, also known as High Occupancy Toll (HOT) lanes, and add a second Express Lane in both directions between SR 87 and Interstate 280 (I-280). The total length of this project is approximately 33.7 miles, which consists of the entire 24.1 miles on SR 85 (Post Mile [PM] 0.0 to 24.1), and an additional 5.5 miles on U.S. 101 in South San Jose (PM 23.1 to 28.6) and 4.1 miles on U.S. 101 in Mountain View (PM 47.9 to 52.0). See Attachment A – Project Location Map.

Express Lanes implement a roadway pricing system to allow for the use of unused capacity in the HOV lanes to provide congestion relief through more effective use of existing roadways. It provides a new mobility option for solo drivers. Access to the available capacity in the HOV lanes is made available to commuters meeting the carpool requirement and solo commuters for a fee. The fee changes dynamically in response to existing congestion levels and available capacity in the HOV lanes.

Santa Clara Valley Transportation Authority (VTA) prepared an Express Lanes feasibility study and implementation plan that evaluated several alternatives for SR 85. The study evaluated the feasibility of each alternative based on geometrics, traffic, cost, and right of way impacts. The screening analysis for the SR 85 corridor resulted in three build alternatives that were discussed in the Project Study Report (PSR) which was approved on October 26, 2010.

The three PSR alternatives, upon further evaluation based on traffic and other considerations, were reduced to one build alternative to be carried forward for full analysis during the Project Approval/Environmental Document (PA/ED) phase. The selected build alternative (Alternative Three in the PSR) consists of a combination of one-lane and two-lane Express Lanes with combined entry and exit points that follow the State of California, Department of Transportation (Caltrans) M4 weave access design details (which is similar to the southern California carpool lanes system weave access zones details). The segment between SR 87 and I-280 will be widened into the existing unpaved median to accommodate an additional Express Lane along with the conversion of the existing HOV lane to provide a two-lane Express Lanes system in both directions of SR 85, while the existing HOV lanes north of I-280 and south of SR 87 will be converted to a one-lane Express Lane. In addition, a design modification to revise Express Lane access to continuous access during PS&E phase of the project will be considered.

In the northbound direction, the Express Lane begins on U.S. 101 in South San Jose where the existing second HOV lane is introduced under the Metcalf overcrossing. Advanced Express Lane signage will be placed south of the Metcalf Road overcrossing. The Express Lane will continue onto SR 85 via the existing northbound HOV direct connector which will be converted to an Express Lane connector. The northbound Express Lane buffer ends on SR 85 approximately 1.1 miles south of the existing SR 85/U.S. 101 HOV direct

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connector in Mountain View. The northbound HOV direct connector will remain as a HOV connector in Mountain View and will not be converted to an Express Lane connector.

In the southbound direction, the Express Lane buffer begins on SR 85, approximately 1.1 miles south of the existing U.S. 101/SR 85 interchange in Mountain View. Advanced Express Lane signage will be placed on SR 85 south of the U.S. 101/SR 85 interchange, and potentially some additional Express Lane signage can be placed along the southbound direction of U.S. 101. The Express Lane continues on SR 85 and onto U.S. 101 in south San Jose via the southbound SR 85 to U.S. 101 HOV connector which will be converted to an Express Lane connector. The Express Lane facility ends on U.S. 101 under the Metcalf Road overcrossing. Signage requiring single occupant vehicles (SOVs) with FasTrak to exit the Express Lane in advance of the Metcalf Road overcrossing will be placed in that segment. Single occupant vehicles continuing in the HOV lane south of Metcalf overcrossing will be subject to citation for HOV violation by the California Highway Patrol (CHP). It is worth noting that the project limits extend north of the SR 85/U.S. 101 interchange in Mountain View to include the potential addition of advanced Express Lane signage for the southbound traffic on U.S. 101 leading to the SR 85/U.S. 101 interchange in Mountain View to advise the drivers of the upcoming Express Lane facility on SR 85.

The northbound and southbound HOV direct connectors in South San Jose will be converted to Express Lane connectors, while the northbound and southbound HOV connectors in Mountain View will remain as HOV connectors. A separate project, the U.S. 101 Express Lanes Project, will implement Express Lanes on the U.S. 101 corridor and will convert the connectors in Mountain View to Express Lane connectors. This follow on project will complete the Express Lane network for the two freeways. However, the SR 85 Express Lanes Project and the U.S. 101 Express Lanes Project can be built and operated independently of each other (See Independent Utility section later in this report).

The Express Lane facility electronic toll system (ETS) will be constructed, managed, and maintained by the VTA through a cooperative agreement with Caltrans. Agreements with other agencies such as the Bay Area Toll Authority (BATA) and the CHP will also be executed to allow for tolling and enforcement of the facility. The ETS is a combination of field and office installed equipment necessary for the electronic toll collection, traffic detection of the Express Lanes and general purpose lanes, video surveillance and enhanced tools for CHP enforcement operation. The Express Lanes will have dynamic pricing where toll rates will vary based on the level of traffic in real-time. The Level of Service (LOS) targeted for SR 85 Express Lanes is LOS "C", as defined in the Highway Capacity Manual (HCM).

The estimated total cost of the project (in 2015 dollars) is \$172 million. The cost includes project development, environmental documentation, preliminary engineering and final design, construction, and construction support for roadway improvements and ETS engineering and implementation. The project does not require any right-of-way acquisition or utility relocations.

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The project is listed in the 2009 Santa Clara Valley Transportation Plan 2035 (VTP 2035; VTA 2009), in the Metropolitan Transportation Commission's (MTC's) 2013 Regional Transportation Plan (RTP) (Association of Bay Area Governments [ABAG] and MTC 2013), and in MTC's financially constrained 2013 Transportation Improvement Program (TIP) (MTC 2013).

2 Recommendation

It is recommended that this Draft Project Report be approved, and that approval be given to publicly circulate the Initial Study with Proposed Negative Declaration / Environmental Assessment (IS-ND/EA), and schedule a public information meeting.

3 Background

3.1 Project History

Assembly Bill (AB) 2032, signed by Governor Schwarzenegger in 2004, provides legislative authority for the VTA to implement and operate two corridors of HOT lanes (referred to as Express Lanes) within Santa Clara County. These Express Lanes, a form of roadway pricing, facilitate the use of available capacity in carpool lanes by allowing solo commuters to use, for a fee, the lanes that ordinarily would have been available for only carpoolers, transit, motorcycles, and vehicles with clean air stickers. The fees would change dynamically in response to existing congestion levels in general purpose lanes and available capacity in the Express Lanes.

The VTA has followed through with the authority granted by AB 2032 to develop the Silicon Valley Express Lanes Program. The following is a brief timeline on the major developments related to this program:

- September 2003 – VTA Staff presented HOT Lanes to the VTA Board of Directors as per Ad Hoc Financial Stability Committee recommendation.
- September 2004 - Governor Schwarzenegger signs AB 2032 allowing the VTA and two other agencies to conduct, administer, and operate a value pricing program on any two transportation corridors included in the carpool lane system as a demonstration.
- November 2004 - Professor Asha Weinstein of San Jose State University prepares working paper assessing the equity implications of HOT lanes for VTA.
- September 2005 - VTA Board authorizes VTA staff to proceed to the preliminary engineering phase for the development of HOT lanes on SR 85 and/or U.S. 101 on the basis of the findings from the feasibility study.
- December 2005 - VTA staff completed the HOT Lane Feasibility Study.

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- January 2007 - VTA staff commences preliminary engineering phase for SR 85 and U.S. 101 HOT lanes with the aim of identifying the first segment for HOT lane implementation in Santa Clara County.
- October 2007 - Governor Schwarzenegger signs AB 574 allowing VTA to operate HOT lanes on a permanent basis by removing the “demonstration” status and also allowing issuance of bonds, backed by HOT lane program revenues, to finance HOT lanes construction.
- March 2008 - VTA Board approves VTP 2035 project lists for submittal to MTC, including a list of HOT lane projects.
- July 2008 - MTC approves a \$223 billion Regional Transportation Plan for the Bay Area that describes a regional network of Express Lanes (MTC Resolution 3868) consisting of about 500 miles of carpool lane conversion to Express Lane operations and another 300 miles of new Express Lanes to complete the gaps and extend the existing carpool network in the Bay Area. MTC also approved the HOT Network Implementation Principles as part of this resolution.
- December 2008 - VTA Board approved the Silicon Valley Express Lanes Program for implementation including the SR 85 Express Lanes Project.
- October 2010 – VTA prepared a Project Study Report (EA# 04-4A790K) in 2009. The PSR was reviewed and approved on October 28, 2010.

3.2 Community Interaction

The VTA began a public outreach and education program in 2008 in an effort to gauge public sentiment about the adoption of Express Lanes for SR 85 and U.S. 101 in Santa Clara County. The first phase included:

- Interviews and surveys with a polling group of approximately 750 Santa Clara County residents. This included:
 - A telephone survey of 681 SR 85 and U.S. 101 users;
 - 4 focus groups of HOV users and solo drivers who use both roadways meetings;
 - 13 one-on-one interviews with community stakeholders; and
 - An analysis of media coverage.
- VTA outreach staff participated in fifteen public events where Silicon Valley Express Lanes Program information was provided to the public.
- VTA met and presented the Express Lanes program, including the SR 85 Express Lanes Project, to business, environmental and community groups.
- VTA and Caltrans held an open house meeting on October 19, 2011 in the City of Saratoga to present the project to the communities who live along the corridor.

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The cumulative findings, analysis and outreach indicate:

- The stakeholders, business and community groups, or commuters have not expressed any negative sentiment towards the project;
- Stakeholders are supportive of the project;
- These Express Lanes will attract enough users to be financially feasible.

Community outreach efforts will continue through the PA/ED process leading to the public circulation of the environmental document. In addition, representatives from the various cities within the SR 85 corridor and Santa Clara County attended the project development team meetings and provided their comments and input on the proposed project.

3.3 Existing Facility

3.3.1 SR 85

SR 85 is a north-south freeway that begins in south San Jose and loops around the southwestern portion of Santa Clara Valley, through Saratoga, Cupertino, Los Altos, and Mountain View. SR 85 is a full access-controlled freeway consisting typically of two general purpose lanes and one HOV lane in each direction. The southern segment of the corridor (south of I-280) consists of a north and southbound roadway that is separated by an unpaved median with three-beam barrier in the median with a portion from Miyuki Drive to SR 87 separated by the VTA light rail in the median. The northern segment of the corridor (north of I-280) consists of a north and southbound roadway that is separated by a median concrete barrier.

Auxiliary lanes exist along SR 85 to facilitate merging and weaving operations between interchanges. In the northbound direction, auxiliary lanes are located between:

- Blossom Hill Road and SR 87
- SR 87 and Almaden Expressway
- Camden Avenue and Union Avenue
- Union Avenue and South Bascom Avenue
- Short segment from Winchester Road to just north of Winchester Blvd
- North of McClellan Road to Stevens Creek Boulevard
- North of The Dalles Avenue Pedestrian Overcrossing to West Fremont Avenue
- SR 237 to East Evelyn Avenue
- North of Moffett Boulevard to North Shoreline Boulevard

In the southbound direction, auxiliary lanes are located between:

- West Evelyn Boulevard and SR 237

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- South of The Dalles Avenue Pedestrian Overcrossing and I-280
- I-280 and Stevens Creek Boulevard
- Stevens Creek Boulevard and south of McClellan Road Overcrossing
- North of Winchester Boulevard Overcrossing and south of Winchester Boulevard Overcrossing
- South Bascom Ave and Union Avenue
- Short segment from north of Camden Avenue and Camden Avenue
- Almaden Expressway and SR 87
- SR 87 and Blossom Hill Road
- Short segment north of Cottle Road and Cottle Road

The general purpose lanes are typically 12-ft wide with 10-ft wide outside (right) and inside (left) shoulders throughout the entire corridor, except for 8-ft left shoulders from Miyuki Drive to SR 87. The widths of the auxiliary lanes are typically 12-ft.

SR 85 from South San Jose to Mountain View was constructed in segments beginning in 1965. The first segment of SR 85 constructed was from Homestead Road to U.S. 101 in Mountain View. In 1971, construction continued towards the south of Homestead Road from The Dalles pedestrian overcrossing to Stevens Creek Boulevard. Eight years later (1979), widening occurred at the Fremont Avenue northbound off-ramp.

In 1985, construction on SR 85 expanded to the south beginning with soundwall construction from Blossom Hill Road to SR 87. Between 1989 and 1992, majority of the rest of SR 85 was constructed and it included grading through the SR 87 interchange, construction of the light rail barrier in the median, construction of SR 85 between Santa Teresa and Winfield Boulevard, construction of the southern portion of SR 85 from SR 87 to U.S. 101 in South San Jose, grading from south of Almaden Expressway to Dent Avenue overcrossing, and construction of SR 85 through the Almaden Expressway interchange. During the same time period in 1990, widening along SR 85 occurred in the median from Homestead Road to Dana Street overcrossing.

In 1994, SR 85 from Prospect Road to Stevens Creek Boulevard and U.S. 101 in South San Jose to Great Oaks Boulevard was constructed and graded through the Saratoga Ave interchange.

One year later, in 1995, the SR 85/SR 17 Interchange was constructed and construction of SR 85 continued from Almaden Expressway to White Oaks Avenue.

In 2005, the HOV lanes were implemented from Almaden Expressway to Stevens Creek Boulevard.

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Later in 2007, the road between Stevens Creek Boulevard and The Dalles pedestrian overcrossing was widened in the median and concrete barrier replaced the metal beam guard railing in the median.

3.3.2 Bridges, Interchanges, and Overcrossings on SR 85

The following paragraphs describe the bridges, interchanges, and overcrossings along the corridor in their order of occurrence on SR 85.

In 1965, the following structures were built

- Dana Street overcrossing,
- Homestead Road overcrossing,
- Fremont Avenue undercrossing,
- Stevens Creek Bridge (two locations),
- El Camino Real overcrossing,
- Grant Road interchange (including Grant Road undercrossing, Stevens Creek Bridge (north-west connector),
- Stevens Creek Bridge (off-ramp),
- Mountain View overhead bridge (Evelyn/Railroad/Proposed Central Expressway undercrossing),
- Stevens Creek Trail undercrossing,
- Middlefield Road overcrossing,
- Moffett Boulevard undercrossing,
- Northbound SR 85 to northbound U.S. 101 overcrossing, and
- Dalles pedestrian overcrossing.

Structure construction continued in 1971 and included widening of the I-280 undercrossing and the SR 85/I-280 north connector. During that year, the SR 85/I-280 southeast connector overcrossing, east connector overcrossing, and south connector undercrossing and retaining walls from south of Cox Avenue to north of Scully Avenue were constructed.

The bridge gaps at the Fremont Avenue undercrossing, Stevens Creek Bridges (two locations), and SR 85/SR 237 Separation bridges were closed to facilitate the construction of the utility crossings at Cox and Scully Avenues in 1990.

In 1991, the Cottle Road interchange (overcrossing and on/off-ramps) and the Stevens Creek Boulevard overcrossing were built. That year, structures from SR 87 to U.S. 101 in South San Jose were also constructed including:

- Blossom Hill Light Rail Station,
- Snell Avenue Light Rail Station,
- Cottle Road Light Rail Station,
- Blossom Hill Light Rail Station pedestrian undercrossing,
- Blossom Hill Road overcrossing,
- Cottle Road overcrossing,
- Cahalan Avenue undercrossing,

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- IBM Tunnel undercrossing,
- Canoas Creek Bridge, and
- Lean Avenue overcrossing.

In 1992, the following structures were built:

- Russo Drive pedestrian overcrossing,
- Meridian Avenue overcrossing,
- Dent Ave pedestrian overcrossing,
- Via Del Oro Overhead approach,
- Perimeter Road undercrossing,
- Coyote Overhead Bridge (Great Oaks Boulevard),
- Stelling Rd overcrossing,
- McClellan Road overcrossing,
- Camden Avenue undercrossing,
- Almaden Expressway interchange,
- Ross Creek box culvert
- Almaden Expressway undercrossing, and
- Soundwalls from north of Sunnyvale-Saratoga Avenue to north of McClellan Road.

In 1993, the following structures were constructed:

- Cox Avenue overcrossing,
- Blue Hill pedestrian overcrossing,
- Southbound 87 to southbound SR 85 connector and northbound SR 85 to northbound SR 87 connector,
- Stevens Creek Boulevard on-ramp to SR 85 and I-280, and
- Soundwalls along SR 85 were constructed.

Construction continued in 1994 and it included the following:

- Saratoga-Sunnyvale Road overcrossing,
- Prospect Road overcrossing,
- Calabazas Creek Bridge,
- Saratoga-Sunnyvale Road Pumping Plant,
- Prospect Avenue Pumping Plant,
- Saratoga Avenue undercrossing,
- Saratoga Creek Bridge,
- SR 85 and U.S. 101 connectors in South San Jose,
- Quito Road overcrossing,
- Winchester Boulevard overcrossing,
- Pollard Rd Pumping Plant,
- Pollard Road undercrossing,

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- More Avenue pedestrian overcrossing,
- San Tomas Aquino Creek Bridge, and
- SR 85-Winchester Boulevard Pumping Plant.

In 1995, the following structures were built:

- Los Gatos Creek Bridges,
- SR 17/SR 85 Separations,
- SR 85/SR 17 Storm Water Pump Plant,
- Bascom Avenue off-ramp separation,
- Oka Road undercrossing,
- Union Avenue overcrossing,
- Leigh Avenue overcrossing, and
- Samaritan Place pedestrian overcrossing.

Two years later, the Mountain View overhead and the Stevens Creek bridges were widened in the median and the Moffett Boulevard undercrossing was widened to the outside.

The soundwall at Dent Avenue overcrossing was reconstructed in 2000.

In 2008, the HOV direct connectors for SR 85 and U.S. 101 in South San Jose were constructed.

3.3.3 U.S. 101 in South San Jose

U.S. 101 is a north-south freeway that begins south of Los Angeles and extends northward, through San Jose to the Oregon border.

U.S. 101 in south San Jose is a full access-controlled freeway with residential land uses on both sides of the freeway. Coyote Creek separates U.S. 101 from the residences to the west. U.S. 101 typically has three general purpose lanes and one HOV lane in each direction within the project study area.

The three general purpose, one auxiliary, and two HOV lanes are typically 11.8 ft wide with 10 ft wide outside (right) and 9.8 ft to 27.8 ft inside (left) shoulders throughout U.S. 101 in south San Jose.

In the southbound direction north of SR 85 interchange, there are two auxiliary lanes, one dedicated for the SR 85 northbound ramp and the other for the Bernal Road off-ramp. In the northbound direction, an auxiliary lane is located between Metcalf Road and SR 85.

The freeway-to-freeway junction of U.S. 101 and SR 85 in South San Jose is configured as a Modified Caltrans Type F-5 freeway-to-freeway interchange with the following features:

- A two-lane connector ramp from southbound SR 85 to southbound U.S. 101.
- A two-lane connector ramp from northbound U.S. 101 to northbound SR 85.

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- A one-lane connector ramp from southbound U.S. 101 to northbound SR 85.
- Single lane HOV direct connector from northbound U.S. 101 HOV lane to northbound SR 85 HOV lane.
- A single lane HOV direct connector from southbound SR 85 HOV lane to southbound U.S. 101 HOV lane.

The southbound HOV direct connector terminates into a second HOV lane on U.S. 101. This second lane merges into one HOV lane just north of Metcalf Road. In the northbound direction, a second HOV lane is introduced just north of Metcalf Road on U.S. 101 and terminates into the northbound SR 85 HOV direct connector.

3.3.4 U.S. 101 in Mountain View

U.S. 101 in Mountain View is also a full access-controlled freeway. Land uses in the project limits include residential, commercial and industrial uses to the east of the freeway; and commercial and residential uses to the west. It typically has three general purpose lanes and one HOV lane in each direction within the project limits. On northbound U.S. 101 north of the SR 85 interchange, there are two existing HOV lanes, one from the U.S. 101 mainline and one that is a dedicated HOV lane from the SR 85 northbound HOV lane direct connector. These two HOV lanes combine and merge into a single HOV lane at the Shoreline Boulevard interchange that continues through the project limits. On southbound U.S. 101, a second HOV lane is introduced at the Shoreline Boulevard interchange that splits from the single HOV lane continuing along southbound U.S. 101 to become a dedicated HOV lane to the SR 85 southbound HOV direct connector.

Upon completion of construction of the U.S. 101 Auxiliary Lanes Project (EA 04-4A330), U.S. 101 in Mountain View will feature two 11 ft HOV lanes, three 11 ft to 12 ft general purpose lanes, 12 ft auxiliary lanes, 6 ft to 10 ft outside (right) shoulder, and 2 ft to 10 ft wide inside (left) shoulders.

The freeway-to-freeway junction of U.S. 101 in Mountain View and SR 85 is configured as a Modified Caltrans Type F-5 freeway-to-freeway interchange with the following features:

- A two-lane connector ramp from northbound SR 85 to northbound U.S. 101.
- A two-lane connector ramp from southbound U.S. 101 to southbound SR 85.
- Single lane HOV direct connector from northbound SR 85 to northbound U.S. 101.
- Single lane HOV direct connector from southbound U.S. 101 to southbound SR 85.
- Northbound direct connector from SR 85 to Shoreline Boulevard.

3.3.5 Existing TOS Equipment Locations

The following is a preliminary list of existing TOS elements that are within or near the project limit:

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Table 3.3-1 Existing TOS Equipment

TYPE	COUNTY	ROUTE	PM	DIRECTION
Extinguishable Message Sign (EMS)	SCI	85	0.1	N
Closed Circuit Television (CCTV)	SCI	85	0.15	N
EMS	SCI	85	0.36	N
Traffic Monitoring Stations (TMS) (Loops)	SCI	85	0.60	NS
CCTV	SCI	85	0.81	N
CCTV	SCI	85	1.73	S
TMS (Loops)	SCI	85	1.80	NS
CCTV	SCI	85	2.12	N
CCTV	SCI	85	3.80	S
CCTV	SCI	85	3.88	S
CCTV	SCI	85		S
TMS (Loops)	SCI	85	5.00	NS
CCTV	SCI	85	5.18	N
CCTV	SCI	85	5.96	N
TMS (Loops)	SCI	85	6.00	NS
CCTV	SCI	85	6.10	N
Changeable Message Sign (CMS)	SCI	85	6.53	N
CMS	SCI	85	6.57	N
CCTV	SCI	85	8.06	N
CCTV	SCI	85	9.22	N
CCTV	SCI	85	9.30	N
EMS	SCI	85	9.30	N
CCTV	SCI	85	9.45	N
CCTV	SCI	85	10.48	S
EMS	SCI	85	11.10	N
CCTV	SCI	85	11.20	N
CMS	SCI	85	11.80	S
CMS	SCI	85	12.10	S
CCTV	SCI	85	13.47	N
CCTV	SCI	85	13.70	S
CCTV	SCI	85	15.03	N
CCTV	SCI	85	15.80	N
CCTV	SCI	85	17.41	S
EMS	SCI	85	17.60	S

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TYPE	COUNTY	ROUTE	PM	DIRECTION
CCTV	SCI	85	17.70	S
TMS (Loops)	SCI	85	18.45	NS
EMS	SCI	85	18.45	NS
CCTV	SCI	85	18.85	NS
TMS (Loops)	SCI	85	18.85	NS
TMS (Loops)	SCI	85	19.26	NS
TMS (Loops)	SCI	85	19.30	NS
EMS	SCI	85	19.40	N
TMS (Loops)	SCI	85	19.60	N
TMS (Loops)	SCI	85	19.85	NS
CCTV	SCI	85	19.85	NS
TMS (Loops)	SCI	85	20.29	NS
CCTV	SCI	85	20.29	NS
CCTV	SCI	85	20.46	NS
CMS	SCI	85	20.46	NS
EMS	SCI	85	20.46	NS
TMS (Loops)	SCI	85	21.20	NS
CCTV	SCI	85	21.20	S
CMS	SCI	85	21.20	S
TMS (Loops)	SCI	85	21.75	NS
TMS (Loops)	SCI	85	22.13	NS
CCTV	SCI	85	22.16	S
CCTV	SCI	85	22.49	S
TMS (Loops)	SCI	85	22.49	S
TMS (Loops)	SCI	85	22.49	NS
TMS (Loops)	SCI	85	22.90	S
CCTV	SCI	85	23.01	N
TMS (Loops)	SCI	85	23.01	NS
CCTV	SCI	85	23.48	S
TMS (Loops)	SCI	85	23.48	NS
TMS (Loops)	SCI	85	23.60	NS
CCTV	SCI	85	23.70	N
TMS (Loops)	SCI	85	23.87	S
EMS	SCI	101	25.37	S
TMS (WMVDS)	SCI	101	26.45	N
TMS (WMVDS)	SCI	101	26.53	S
TMS (Loops)	SCI	101	26.78	S

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TYPE	COUNTY	ROUTE	PM	DIRECTION
HAR	SCI	101	26.97	N
CCTV	SCI	101	27.01	N
TMS (Loops)	SCI	101	27.02	N
TMS (Loops)	SCI	101	27.22	N
TMS (WMVDS)	SCI	101	27.30	S
TMS (WMVDS)	SCI	101	27.60	N
TMS (WMVDS)	SCI	101	27.60	S
EMS	SCI	101	27.71	N
TMS (Loops)	SCI	101	28.44	S
CCTV	SCI	101	28.55	S
TMS (Loops)	SCI	101	47.82	NS
CCTV	SCI	101	47.91	S
TMS (Loops)	SCI	101	48.21	N
TMS (Loops)	SCI	101	48.52	S
TMS (Loops)	SCI	101	48.59	S
TMS (Loops)	SCI	101	48.62	S
CCTV	SCI	101	48.62	S
TMS (Loops)	SCI	101	48.69	N
TMS (Loops)	SCI	101	48.88	S
CCTV	SCI	101	48.88	S
TMS (Loops)	SCI	101	48.94	N
EMS	SCI	101	48.97	N
CCTV	SCI	101	48.99	N
CCTV	SCI	101	49.58	S
TMS (Loops)	SCI	101	49.50	S
TMS (Loops)	SCI	101	49.70	N
CCTV	SCI	101	49.70	N
CCTV	SCI	101	49.97	S
CCTV	SCI	101	50.32	N
TMS (WMVDS)	SCI	101	50.40	NS
TMS (WMVDS)	SCI	101	51.00	N
TMS (WMVDS)	SCI	101	51.40	NS
CMS	SCI	101	51.52	S
CCTV	SCI	101	51.70	N
TMS (Loops)	SCI	101	51.89	S
TMS (WMVDS)	SCI	101	51.90	N
TMS (Loops)	SCI	101	51.89	S

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TYPE	COUNTY	ROUTE	PM	DIRECTION
CCTV	SCI	101	51.95	S
HAR	SCI	101	52.20	N
TMS (WMVDS)	SCI	101	52.40	N
TMS (WMVDS)	SCI	101	52.40	S

3.3.6 Existing Ramp Metering Equipment Locations

The following is a preliminary list of existing ramp metering and vehicle detection elements that are within or near the project limit:

Table 3.3-2 Existing Ramp Metering Equipment

TYPE	COUNTY	ROUTE	PM	LOCATION	DIRECTION
Off-ramp Detection	SC1	101	25.67	NB Off-ramp to NB SR-85 HOV Flyover	N
Off-ramp Detection	SC1	101	26.237	NB Off-ramp to NB SR-85	N
Ramp Metering	SC1	101	26.688	SB On-ramp from SB SR-85	S
Ramp Metering	SC1	101	26.705	SB On-ramp from Bernal Rd	S
Off-ramp Detection	SC1	101	26.85	NB Off-ramp to Bernal Rd	N
Ramp Metering	SC1	101	27.015	NB On-ramp from EB Bernal Rd	N
Ramp Metering	SC1	101	27.218	NB On-ramp from Bernal Rd HOV	N
Off-ramp Detection	SC1	101	27.221	SB Off-ramp to Bernal Rd	S
Off-ramp Detection	SC1	101	27.444	SB Off-ramp to NB SR-85	S
Off-ramp Detection	SC1	101	28.185	NB Off-ramp to SR-82/Blossom Hill	N
Ramp Metering	SC1	85	0.0145	NB On-ramp from NB Bernal Rd	N
Ramp Metering	SC1	85	0.360	NB On-ramp from SB Bernal Rd	N
Off-ramp Detection	SC1	85	0.373	SB Off-ramp to Bernal Rd	S
Off-ramp Detection	SC1	85	0.785	SB Off-ramp to Great Oaks Blvd	S
Ramp Metering	SC1	85	0.811	NB On-ramp from Great Oaks Blvd	N
Ramp Metering	SC1	85	1.737	SB On-ramp from NB Cottle Rd	S
Off-ramp Detection	SC1	85	1.757	NB Off-ramp to Cottle Rd	N
Off-ramp Detection	SC1	85	1.899	NB Off-ramp to SB Cottle Rd	N
Ramp Metering	SC1	85	1.997	SB On-ramp from SB Cottle Rd	S
Ramp Metering	SC1	85	2.114	NB On-ramp from Cottle Rd	N
Off-ramp Detection	SC1	85	2.19	SB Off-ramp to Cottle Rd	S
Off-ramp Detection	SC1	85	3.647	NB Off-ramp to Blossom Hill Rd	N
Ramp Metering	SC1	85	3.796	SB On-ramp from EB Blossom Hill Rd	S
Ramp Metering	SC1	85	3.837	NB On-ramp from EB Blossom	N

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TYPE	COUNTY	ROUTE	PM	LOCATION	DIRECTION
				Hill	
Ramp Metering	SC1	85	4.031	NB On-ramp from WB Blossom Hill	N
Ramp Metering	SC1	85	4.043	SB On-ramp from WB Blossom Hill	S
Off-ramp Detection	SC1	85	4.189	SB Off-ramp to Blossom Hill	S
Off-ramp Detection	SC1	85	4.839	NB Off-ramp to SR-87	N
Ramp Metering	SC1	85	4.868	SB On-ramp from SR-87	S
Off-ramp Detection	SC1	85	5.032	NB Off-ramp to Santa Teresa	N
Ramp Metering	SC1	85	5.049	SB On-ramp from Santa Teresa	S
Ramp Metering	SC1	85	5.178	NB On-ramp from Santa Teresa	N
Off-ramp Detection	SC1	85	5.432	SB Off-ramp to Santa Teresa	S
Off-ramp Detection	SC1	85	5.969	NB Off-ramp to Almaden Expwy	N
Ramp Metering	SC1	85	6.102	SB On-ramp from NB Almaden Expwy	S
Ramp Metering	SC1	85	6.135	NB On-ramp from NB Almaden Expwy	N
Ramp Metering	SC1	85	6.219	SB On-ramp from SB Almaden Expwy	S
Ramp Metering	SC1	85	6.335	NB On-ramp from SB Almaden Expwy	N
Off-ramp Detection	SC1	85	6.382	SB Off-ramp to Almaden Expwy	S
Off-ramp Detection	SC1	85	7.958	NB Off-ramp to Camden Ave	N
Ramp Metering	SC1	85	7.969	SB On-ramp from Camden Ave	S
Off-ramp Detection	SC1	85	8.119	SB Off-ramp to Camden Ave	S
Ramp Metering	SC1	85	8.234	NB On-ramp from Camden Ave	N
Ramp Metering	SC1	85	9.101	SB On-ramp from Union Ave	S
Off-ramp Detection	SC1	85	9.246	NB Off-ramp to Union Ave	N
Ramp Metering	SC1	85	9.434	NB On-ramp from Union Ave	N
Off-ramp Detection	SC1	85	9.542	SB Off-ramp to Union Ave	S
Ramp Metering	SC1	85	10.065	SB On-ramp from Bascom Ave	S
Off-ramp Detection	SC1	85	10.085	NB Off-ramp to Bascom Ave	N
Ramp Metering	SC1	85	10.294	SB On-ramp from SR-17	S
Off-ramp Detection	SC1	85	10.312	NB Off-ramp to SR-17	N
Ramp Metering	SC1	85	10.466	NB On-ramp from Bascom Ave	N
Off-ramp Detection	SC1	17	9.594	SB Off-ramp to SB SR-85	S
Off-ramp Detection	SC1	17	9.081	NB Off-ramp to NB SR-85	N
Off-ramp Detection	SC1	85	10.823	SB Off-ramp to SR-17	S
Ramp Metering	SC1	85	10.875	NB On-ramp from SR-17	N
Ramp Metering	SC1	85	11.156	NB On-ramp from Winchester	N

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TYPE	COUNTY	ROUTE	PM	LOCATION	DIRECTION
				Blvd	
Off-ramp Detection	SC1	85	11.189	SB Off-ramp to Winchester Blvd	N
Off-ramp Detection	SC1	85	13.465	NB Off-ramp to Saratoga Ave	N
Ramp Metering	SC1	85	13.519	SB On-ramp from Saratoga Ave	S
Off-ramp Detection	SC1	85	13.912	SB Off-ramp to Saratoga Ave	S
Ramp Metering	SC1	85	13.982	NB On-ramp from Saratoga Ave	N
Off-ramp Detection	SC1	85	15.478	NB Off-ramp to Saratoga/Sunnyvale Rd	N
Ramp Metering	SC1	85	15.674	SB On-ramp from Saratoga/Sunnyvale Rd	S
Off-ramp Detection	SC1	85	16.003	SB Off-ramp to Saratoga/Sunnyvale Rd	S
Ramp Metering	SC1	85	16.063	NB On-ramp from Saratoga/Sunnyvale Rd	N
Ramp Metering	SC1	85	17.493	SB On-ramp from Stevens Creek Blvd	S
Off-ramp Detection	SC1	85	17.513	NB Off-ramp to Stevens Creek Blvd	N
Off-ramp Detection	SC1	85	17.843	NB Off-ramp to I-280	N
Ramp Metering	SC1	85	17.862	NB On-ramp from Stevens Creek Blvd	N
Off-ramp Detection	SC1	85	17.877	SB Off-ramp to Stevens Creek Blvd	S
Off-ramp Detection	SC1	85	18.201	NB Off-ramp to SB I-280	N
Ramp Metering	SC1	85	18.227	SB On-ramp from SB I-280	S
Off-ramp Detection	SC1	85	18.301	NB Off-ramp to NB I-280	N
Ramp Metering	SC1	85	18.377	NB On-ramp from SB I-280	N
Off-ramp Detection	SC1	280	10.771	SB Off-ramp to NB SR-85	S
Off-ramp Detection	SC1	280	10.704	NB Off-ramp to SB SR-85	N
Ramp Metering	SC1	85	18.538	SB On-ramp from NB I-280	S
Ramp Metering	SC1	85	18.667	NB On-ramp from NB I-280	N
Off-ramp Detection	SC1	85	18.671	SB Off-ramp to NB I-280	S
Off-ramp Detection	SC1	85	18.781	SB Off-ramp to I-280	S
Ramp Metering	SC1	85	18.854	NB On-ramp from Homestead Rd	N
Off-ramp Detection	SC1	85	19.071	SB Off-ramp to Homestead Rd	S
Ramp Metering	SC1	85	19.731	SB On-ramp from Fremont Ave	S
Off-ramp Detection	SC1	85	19.734	NB Off-ramp to Fremont Ave	N
Off-ramp Detection	SC1	85	20.031	SB Off-ramp to Fremont Ave	S
Ramp Metering	SC1	85	20.034	NB On-ramp from Fremont Ave	N
Off-ramp Detection	SC1	85	21.604	NB Off-ramp to SB SR-82	N
Ramp Metering	SC1	85	21.611	SB On-ramp from SB SR-82	S

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TYPE	COUNTY	ROUTE	PM	LOCATION	DIRECTION
Ramp Metering	SC1	85	21.694	NB On-ramp from SB SR-82	N
Off-ramp Detection	SC1	85	21.721	SB Off-ramp to SB SR-82	S
Off-ramp Detection	SC1	85	21.784	NB Off-ramp to NB SR-82	N
Ramp Metering	SC1	85	21.821	SB On-ramp from NB SR-82	S
Ramp Metering	SC1	85	21.864	NB On-ramp from SR-82	N
Off-ramp Detection	SC1	85	22.024	NB Off-ramp to SR-237	N
Ramp Metering	SC1	85	22.13	NB On-ramp from EB SR-237	N
Off-ramp Detection	SC1	237	0.354	EB Off-ramp to NB SR-85	E
Off-ramp Detection	SC1	237	0.411	WB Off-ramp to SB SR-85	W
Ramp Metering	SC1	85	22.197	SB On-ramp from WB SR-237	S
Off-ramp Detection	SC1	85	22.311	SB Off-ramp to WB SR-237	S
Off-ramp Detection	SC1	85	22.414	NB Off-ramp to Evelyn Ave	N
Ramp Metering	SC1	85	22.491	SB On-ramp from Evelyn Ave	S
Off-ramp Detection	SC1	85	22.861	SB Off-ramp to Central Expwy	S
Ramp Metering	SC1	85	23.014	NB On-ramp from Central Expwy	N
Off-ramp Detection	SC1	85	23.304	NB Off-ramp to Moffett Blvd	N
Ramp Metering	SC1	85	23.481	SB On-ramp from Moffett Blvd	S
Off-ramp Detection	SC1	101	47.764	NB Off-ramp to EB Moffett Blvd	N
Ramp Metering	SC1	101	47.781	SB On-ramp from EB Moffett Blvd	S
Off-ramp Detection	SC1	101	47.851	SB Off-ramp to EB Moffett Blvd	S
Ramp Metering	SC1	101	47.854	NB On-ramp from EB Moffett Blvd	N
Ramp Metering	SC1	101	47.931	SB On-ramp from WB Moffett Blvd	S
Off-ramp Detection	SC1	101	47.934	NB Off-ramp to WB Moffett Blvd	N
Off-ramp Detection	SC1	101	48.011	SB Off-ramp to WB Moffett Blvd	S
Ramp Metering	SC1	101	48.014	NB On-ramp from WB Moffett Blvd	N
Off-ramp Detection	SC1	101	48.201	SB Off-ramp to SB SR-85	S
Ramp Metering	SC1	101	48.301	NB On-ramp from NB SR-85	N
Ramp Metering	SC1	101	48.461	SB On-ramp from NB Shoreline Blvd	S
Off-ramp Detection	SC1	101	48.514	NB Off-ramp to Shoreline Blvd	N
Ramp Metering	SC1	101	48.584	NB On-ramp from NB Shoreline Blvd	N
Ramp Metering	SC1	101	48.621	SB On-ramp from SB Shoreline Blvd	S

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TYPE	COUNTY	ROUTE	PM	LOCATION	DIRECTION
Off-ramp Detection	SC1	101	48.674	NB Off-ramp to Shoreline Blvd	N
Off-ramp Detection	SC1	101	48.691	SB Off-ramp to SB Shoreline Blvd	S
Ramp Metering	SC1	101	48.714	NB On-ramp from Shoreline Blvd	N
Off-ramp Detection	SC1	101	48.824	NB Off-ramp to Middlefield	N
Ramp Metering	SC1	101	48.864	NB On-ramp from Shoreline Blvd	S
Ramp Metering	SC1	101	48.881	SB On-ramp from Middlefield Rd	S
Ramp Metering	SC1	101	49.501	SB On-ramp from N Rengstorff Ave	S
Off-ramp Detection	SC1	101	49.534	NB Off-ramp to N Rengstorff Ave	N
Off-ramp Detection	SC1	101	49.581	SB Off-ramp to N Rengstorff Ave	S
Ramp Metering	SC1	101	49.661	SB On-ramp from Charleston Rd	S
Off-ramp Detection	SC1	101	49.674	NB Off-ramp to SB N Rengstorff Ave	N
Ramp Metering	SC1	101	49.754	NB On-ramp from N Rengstorff Ave	N
Off-ramp Detection	SC1	101	50.134	NB Off-ramp to San Antonio Rd	N
Off-ramp Detection	SC1	101	50.271	SB Off-ramp to NB San Antonio Rd	S
Ramp Metering	SC1	101	50.332	NB On-ramp from NB San Antonio Rd	N
Off-ramp Detection	SC1	101	50.401	SB Off-ramp to SB San Antonio Rd	S
Ramp Metering	SC1	101	50.404	NB On-ramp from SB San Antonio Rd	N
Ramp Metering	SC1	101	51.891	SB On-ramp from Oregon Expwy	S
Ramp Metering	SC1	101	51.951	SB On-ramp from EB Oregon Expwy	S
Ramp Metering	SC1	101	52.001	SB On-ramp from WB Embarcadero Rd	S
Off-ramp Detection	SC1	101	52.061	SB Off-ramp to Oregon Expwy	S
Ramp Metering	SC1	101	52.131	SB U.S.-101 & Oregon Expwy from WB Embarcadero Rd	S
Ramp Metering	SC1	101	52.274	NB On-ramp from EB Embarcadero Rd	N
Off-ramp Detection	SC1	101	52.291	SB Off-ramp to EB Embarcadero Rd	S
Ramp Metering	SC1	101	52.344	NB On-ramp from Oregon Expwy/Embarcadero Rd	N
Off-ramp Detection	SC1	101	52.401	SB Off-ramp to Oregon Expwy/Embarcadero Rd	S

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4 Purpose and Need

4.1 Problem, Deficiencies, and Justification

4.1.1 Project Purpose

The purpose of the project is to:

- Manage traffic congestion in the congested HOV segments of the freeway between SR 87 and I-280; and
- Maintain consistency with provisions defined in AB 2032 (2004) and AB 574 (2007) to implement express lanes in an HOV lane system in Santa Clara County.

4.1.2 Project Need

4.1.2.1 Transportation Demand

The following describes the existing traffic operations on SR 85 and projected future traffic growth.

SR 85 Corridor

The SR 85 corridor provides access to residences and businesses in the western part of Santa Clara County and an alternate route to U.S. 101 for regional traffic. The six-lane SR 85 (two general purpose lanes and a single HOV lane in each direction) carries up to 144,000 vehicles per day including HOV traffic. High transportation demand in several segments¹ of the general purpose lanes leads to substantial congestion and reduced speeds for SOVs. Drivers in the HOV lanes also currently experience delays in some segments of the SR 85 corridor.

During the peak hours (7 AM to 8 AM in the northbound direction and 5 PM to 6 PM in the southbound direction), the existing freeway cannot accommodate all of the traffic demand in the corridor. In particular, between the I-280 interchange and the I-880/SR 17 interchange, the SR 85 general purpose lanes operate at capacity during the northbound AM peak and southbound PM peak. These segments of SR 85 are considered to operate at impaired Levels of Service (LOS). LOS is an indicator of operational conditions on a freeway and is defined in categories ranging from A to F. These categories can be viewed much like school grades, with A representing the best conditions and F indicating substantial congestion with stop-and-go traffic. On freeways, LOS is evaluated in terms of the ability to travel at the posted speed limit and maneuver easily among lanes.

SR 85 HOV Lanes

In addition to the current congestion in the general purpose lanes, drivers in the HOV lane also experience delays in some segments of the SR 85 corridor. Title 23, Section 166(d)(2) of the United States Code (USC) set a minimum average operating speed of 45 miles per

¹ A segment is the section of the freeway between interchanges.

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hour (mph) for HOV lanes with a speed limit of 50 mph or higher, which generally corresponds to a Level of Service (LOS) C or D and a target threshold of approximately 1,650 vph (vehicles per hour) per HOV lane.² LOS D operating conditions in the HOV lane are only allowed with written approval of Caltrans (California Streets and Highways Code Section 149.6[b]). The 1,650 vph threshold is intended to provide HOVs with reliable travel times.

With the exception of a few locations, the HOV lane segments north of I-280 and south of SR 87 are currently relatively free from congestion and operate well below the 1,650 vph threshold. Those HOV segments are currently underutilized and can provide opportunities to maximize the efficiency of the HOV lanes. However, some of the existing HOV lane segments, particularly between SR 87 and I-280, operate at peak-hour demand volumes that range from 1,000 vph to over 1,500 vph (which is near the 1,650 vph threshold). The following HOV lane segments have been observed to experience peak-hour congestion and/or reduced speeds (URS 2012a):

A.M. Northbound Direction

- Between the Almaden Expressway on-ramp and the Camden Avenue off-ramp;
- Between the Union Avenue off-ramp and on-ramp;
- Between the Winchester Boulevard lane drop and the Saratoga Avenue off-ramp;
- Between the Saratoga-Sunnyvale Road on-ramp and Stevens Creek Boulevard off-ramp; and
- Between the Fremont Avenue on-ramp and El Camino Real off-ramp.

P.M. Southbound Direction

- Between the Moffett Boulevard on-ramp and Fremont Avenue off-ramp;
- Between the SR 17 on-ramp and the Union Avenue off-ramp; and
- Between the SR 87 off-ramp and the Santa Teresa Boulevard off-ramp.

The Traffic Operational Assessment for the San Francisco Bay Area Backbone Express Lanes Network report (Caltrans 2011b) notes that by 2035, HOV lane usage is expected to increase by about 100 vph in the northbound direction and 300 vph in the southbound direction. It is expected that the segments listed above will exceed the 1,650 vph threshold by 2035 due to the growth in HOV demand, as discussed in the next section. The traffic study for the proposed project also shows that segments of the HOV lane system would operate at LOS D, E, and F (with decreased speeds and increased vehicle density LOS D and impaired traffic flow for LOS E) in 2015 and 2035.

Projected Travel Demand

² 23 USC 166(d)(2) defines “average” as “90 percent of the time over a consecutive 180-day period during morning or evening weekday peak hour periods (or both).”

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Traffic conditions are expected to worsen in the future with continued development in the region and along the SR 85 corridor. Between 2010 and 2035, Santa Clara County is predicted to grow by over 252,000 residents and 365,000 jobs, increases of 14.1 and 43.3 percent, respectively (California Department of Finance 2013; Caltrans 2012a). Commute trips within Santa Clara County are forecasted to increase by 51 percent between 2010 and 2035, and commute trips from San Francisco, San Mateo, and Alameda counties to Santa Clara County destinations are forecasted to increase by 34 to 51 percent (MTC 2008). Over the same period, the County expects to increase the capacity of the roadway system by 5 to 6 percent (VTA 2009).

Traffic on SR 85 is also projected to increase in the form of both regional trips using SR 85 to bypass U.S. 101 and local trips to and from locations on the SR 85 corridor. The ability to accommodate traffic growth will be constrained by the existing capacity of the freeway. SR 85 is bordered by residential and commercial development throughout most of the project limits. The adjoining land uses limit the potential to expand SR 85 to meet existing or future demand without resulting in substantial property acquisitions and residential and business relocations.

Growth in travel demand on SR 85 is expected to cause morning and afternoon peak traffic conditions to spread into longer periods of time when unacceptable delays persist. Congestion will increase in the general purpose lanes, and the HOV lane segments listed above will experience delays and no longer provide the travel time benefits intended for the facility.

4.1.2.2 Legislation

California Streets and Highways Code Section 149.6 allows for permanent implementation of a value pricing program within any two corridors in the Santa Clara County HOV lane system. The enabling legislation stipulates that revenue collected from the Express Lanes will support transportation improvements and transit projects within the corridor.

4.1.2.3 Independent Utility and Logical Termini

FHWA regulations require transportation projects to meet the following criteria:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope. In other words, a project must have rational end points for a transportation improvement and rational end points for a review of the environmental impacts.
- Have independent utility or independent significance (be usable and require a reasonable expenditure even if no additional transportation improvements in the area are made).
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

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As described in Section 4.1.2.1, the SR 85 corridor now has peak hour congestion in the general purpose lanes as well as some HOV lane segments. Projected growth in population and jobs through 2035 is expected to increase future congestion. To address the existing and future travel demand, the project encompasses the entire length of SR 85 and short segments of U.S. 101 adjacent to the northern and southern ends of SR 85. The project limits allow for management of traffic congestion for HOVs and SOVs within the SR 85 corridor through the implementation of Express Lanes. Moreover, the project limits allow for consideration of environmental issues associated with each project element on a corridor-wide basis. The segments of U.S. 101 that “bracket” SR 85 represent logical termini for the project in accordance with FHWA standards.

The project contains the elements needed to manage peak period congestion on SR 85 without requiring other improvements to SR 85 or adjacent roadways. A second express lane in each direction on SR 85 between I-280 and SR 87 and an auxiliary lane along a 1.1-mile segment of northbound SR 85 between South De Anza Boulevard and Stevens Creek Boulevard were included in the project because traffic studies indicated the additional lanes were needed. By using the existing state right of way and generating tolls for ongoing maintenance of the express lanes, the proposed project is a reasonable expenditure. Therefore, the project meets the FHWA’s requirement for independent utility.

The project will not prevent consideration of alternatives for other foreseeable transportation improvements on SR 85. MTC’s 2040 RTP includes planned improvements to SR 85 interchange ramps and freeway lanes at the following locations:

- Improve SR 85 ramps at the interchanges at Fremont and Bernardo Avenues, and Cottle Road.
- Construct auxiliary lanes on U.S. 101 from SR 85 in Mountain View to Embarcadero Road in Palo Alto.
- Improve SR 85 northbound to SR 237 eastbound connector ramp and construct auxiliary lane on eastbound SR 237 between SR 85 and Middlefield Road.
- Improve SR 237 westbound to SR 85 southbound connector ramp (includes widening off-ramp to SR 85 to two lanes and adding a southbound auxiliary lane between SR 237 and SR 85/El Camino Real interchange).

VTA’s VTP 2035 includes the following planned improvement:

- Add auxiliary lanes to SR 85 between El Camino Real and SR 237 and improve SR 85/El Camino Real interchange.

The proposed project will not preclude implementation of these planned improvements. For other regional projects, the addition of express lanes will be independently considered on

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SR 87 and U.S. 101 within Santa Clara County. The range of design alternatives considered for those projects would not be affected by Express Lanes on SR 85.

4.2 Regional and System Planning

4.2.1 Identify Systems

The proposed project is on the State Highway System. SR 85 is not part of the 26,098 miles (42,000 KM) Priority Network, and is not listed on the National Highway System as required by the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. Trucks over 4.5 tons are not allowed on SR 85 between U.S. 101 in San Jose and I-280 in Cupertino and therefore that segment of SR 85 is not designated to carry large trucks as per the Surface Transportation Assistance Act (STAA). The segment between I-280 and U.S. 101 in Mountain View is part of the National Network (Title 23, Section 658, Attachment A). In addition, SR 85 is not part of the State Highway Extra Legal Load (SHELL) route system, which permits transport of loads exceeding limits of length, height, or weight as stated in the California Vehicle Code (CVC), Section 15. SR 85 however, is part of the MTC HOV Master Plan and the Bay Area Express Lanes Network as published in the Bay Area High-Occupancy/Toll (HOT) Network Study Final Report.

4.2.2 State Planning

A Route Concept Report (RCR) and a Corridor System Management Plan (CSMP) for SR 85 were not available at the time of preparation of this draft Project Report. However, Caltrans finalized an HOV/Express Lanes Business Plan dated March 3, 2009. The California HOV/Express Lane Business Plan is a framework for Caltrans and its partners to focus statewide activity during 2009-2011 that will lead the State to easily implement more flexible and effective system management strategies for HOV and Express Lane, also known as HOT or Managed Lane. The ultimate vision is a transportation system offering new commute choices and more reliable travel through congested corridors; where congestion is managed and the availability of an express service option is greatly improved, and where governments at all levels work together to manage demand with effective monitoring and adjustment of operations and design. In this Business Plan, Caltrans, regional transportation agencies, Federal Highway Administration (FHWA) and the CHP, have developed a coordinated framework to guide the current and future development and operation of HOV and Express Lane throughout the state, capitalizing on strong partnerships and operating strategies already in place. For these purposes, the proposed SR 85 Express Lanes Project is consistent with Caltrans HOV/Express Lanes Business Plan.

4.2.3 Regional Planning

The project is listed in the VTP 2035 and in MTC's RTP 2040 as Reference Number 240439 for \$181M "Route 85 in Santa Clara County from U.S. 101 in Mountain View to U.S. 101 in South San Jose — convert HOV lanes to Express Lanes".

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The section titled “Price Highway Travel Demand” of MTC’s most recent RTP describes the benefits of building proposed 800-mile HOT Lanes network in the Bay Area and that “the estimated \$7.6 billion construction cost to build, finance and operate the network would be paid for with toll revenues. MTC estimates that over the 25-year plan period, the Bay Area Express Lanes Network will generate net revenues in excess of costs of approximately \$6 billion. These funds will be used to pay for additional mobility improvements in the Express Lane corridors. Net revenues will be invested in the corridors in which they are generated; pending legislation gives funding priority to cost-effective public transit improvements and projects that reduce emissions.”

The project is also included in MTC’s Regional HOT Lanes Network Feasibility Study that was initially published in September 2007 and its subsequent updates in June 2008, and December 2008. Caltrans participated and was a stakeholder in developing this study.

BATA also prepared a white paper that assessed the potential for providing continuous access along Bay Area Express Lanes. This paper provided a summary of experiences from other Express Lanes projects nationally, presented issues facing a continuous access approach, identified potential resolutions and made recommendations for a potential demonstration of this design and operational approach for the Bay Area.

The following projects have been identified within or adjacent to the limits of the SR 85 Express Lanes Project in the most recent RTP.

- SR 87 in Santa Clara County from SR 85 to U.S. 101 — convert HOV lanes to Express Lanes (Ref# 230675).
- Improve SR 85 northbound to SR 237 eastbound connector ramp and construct auxiliary lane on eastbound SR 237 between Route 85 and Middlefield Rd (Ref# 22156).
- 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) (Ref# 22162).
- Improve ramps and intersections on Fremont and Bernardo Avenues at SR 85 (Ref# 230573).
- Improve the SR 85/Cottle Rd Interchange (Ref# 230574).
- Reconfigure local roadway and interchange at U.S. 101/Blossom Hill Road in San Jose (includes widening Blossom Hill Road over U.S. 101) (Ref# 21785).

In addition, MTC is also funding the Freeway Performance Initiative (FPI) which consists of implementing ramp metering and other improvements along several freeway corridors in the Bay Area. A list of the ramps within the project corridor that are under the FPI project is provided below:

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- Southbound I-280 to southbound SR 85: Correct and move existing signal mast-arm to location downstream of limit line per Ramp Metering Design Manual (RMDM). Bring location to operational status including upgrading advance warning signs, and detection if needed.
- Southbound I-280 to northbound SR 85: Bring location to operational status including upgrading/installing advance warning signs, detection if needed.
- Southbound SR 85 to northbound SR 87: Design modifications to existing ramp metering to include additional advance warning EMS on connector ramp.
- In addition to ramp metering improvements, the SR 85 FPI project is also installing 3 CCTV cameras, 1 CMS, and additional traffic monitoring stations not directly used by the ramp metering systems.
- U.S. 101 FPI Project (EA#04-15330) in Santa Clara County from Route 85 to San Benito County line includes ramp metering and traffic operation systems installations. The project will complete ramp metering, TMS, CCTV, and CMS coverage and install count loops at all off-ramps.

4.2.4 Local Planning

General and community plans were reviewed for the jurisdictions in the project vicinity, which are Santa Clara County and the Cities of Palo Alto, Mountain View, Sunnyvale, Los Altos, Cupertino, Saratoga, Los Gatos, and San Jose. Converting underutilized HOV lanes to Express Lanes and adding a second Express Lane between SR 87 and I-280 would support local transportation policies.

The following projects that are within or adjacent to the project limits:

- U.S. 101 Auxiliary Lanes Project (EA#04-4A330) in Mountain View and Palo Alto, from SR 85 to Embarcadero Road is currently in construction and scheduled to complete construction by 2014.
- U.S. 101 Express Lanes Project (EA#04-2G7100) from Dunne Avenue in Morgan Hill to Santa Clara/San Mateo County Line is currently under PA/ED.

In addition to the above projects, the following projects are listed in VTA VTP 2035:

- H11 - SR 237 HOV/Express Lanes (Mathilda Ave to SR 85).
- B10 - Stevens Creek Trail crossing SR 85 to Mountain View High School.

The proposed project does not include construction of new connections or closure of existing connections with the local system. The local agencies and elected officials are informed through the various Advisory and Standing Committees and through the VTA Board meetings. Representatives from the cities along the corridor attended the project development team meetings and provided input and comments throughout the project development process. Their comments have been evaluated and incorporated where

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feasible. In addition, they were informed through stakeholder and community outreach meetings during the development of this project. An open house meeting to present this project will be conducted during the environmental document public circulation period of the PA/ED phase.

4.2.5 Transit Operator Planning

4.2.5.1 VTA Bus Service

Currently VTA operates the following bus service, including express bus services between Monterey, Salinas, and San Jose, which run on segments of SR 85 within the project limits:

- **Express Bus Routes that run on segments of SR 85:**
 - 102 South San Jose to Palo Alto
 - 168 Gilroy Transit Center to San Jose Diridon Transit Center
 - 182 Palo Alto to IBM/Bailey Avenue

In addition, the following services cross SR 85 corridor but do not run on SR 85:

Table 4.2-1 List of VTA Bus Service Lines Crossing SR 85

Line #	Description
Local Bus Routes	
Line 27	Good Samaritan to Kaiser San Jose
Line 68	Gilroy Transit Center to San Jose Diridon Transit Center
Line 66	Kaiser San Jose to Milpitas/ Dixon Rd. via Downtown San Jose
Line 64	Almaden Light Rail Station to McKee & White via Downtown San Jose
Line 63	Almaden Expressway & Camden to San Jose State University
Line 62	Good Samaritan Hospital to Sierra & Piedmont via Union
Line 61	Good Samaritan Hospital to Sierra & Piedmont via Bascom
Line 57	West Valley College to Great America via Quito Rd
Line 58	West Valley College to Alviso via Fruitvale
Line 53	West Valley College to Sunnyvale Transit Center
Line 51	De Anza College to Moffett Field/Ames Center
Line 32	San Antonio Shopping Center to Santa Clara Transit Center
Line 37	West Valley College to Capitol Light Rail Station
Line 48	Los Gatos Civic Center to Winchester Transit Center via Winchester Blvd.
Line 49	Los Gatos Civic Center to Winchester Transit Center via Los Gatos Blvd.
Line 65	Kooser & Meridian to Hedding and 13 th
Line 13	Almaden & McKean to Ohlone/Chynoweth Light Rail Station

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Line #	Description
Line 42	Monterey & Senter to Santa Teresa Light Rail Station
Line 304	South San Jose to Sunnyvale Transit Center via Arques
Line 330	Almaden Expwy. & Camden to Tasman Drive
Line 328	Almaden Expwy. & Camden to Lockheed Martin Transit Center/Moffett Industrial Park
Express Bus Routes	
Line 101	Camden & Highway 85 to Palo Alto
Line 103	Eastridge Transit Center to Palo Alto
Line 122	South San Jose to Lockheed Martin Transit Center/Moffett Industrial Park
Rapid 522	Palo Alto Transit Center to Eastridge Transit Center

4.2.5.2 VTA Light Rail Service

VTA operates the following light rail service within the SR 85 project limits:

- The Alum Rock – Santa Teresa Line runs in the median of SR 85 between SR 85/SR 87 interchange and the Via Del Oro undercrossing, just north of the SR 85/Great Oaks Boulevard interchange. This line includes the following light rail stations within the project limits: Cottle, Snell, and Blossom Hill stations are built in the median of the freeway while the fourth station, the Ohlone-Chynoweth Station, is built in the vicinity of the SR 85/SR 87 interchange.
- The Ohlone Chynoweth-Almaden Light Rail extension line runs a shuttle service between the Almaden Station and the Ohlone-Chynoweth Station with an intermediate station at Oakridge Mall. This line crosses under SR 85 at Winfield Blvd, just north of the SR 87/SR 85 interchange
- The Mountain View – Winchester Line crosses SR 85 at Central Expressway/Evelyn Ave interchange. The Evelyn Station is within close proximity to the SR 85 corridor.

4.2.5.3 Caltrain Service

Caltrain runs train service from San Francisco to Gilroy. The Caltrain tracks cross SR 85 corridor at two locations within the project limits: a northern crossing adjacent to Central Expressway/Evelyn Avenue interchange, and a southern crossing adjacent to Monterey Highway.

4.2.5.4 Park and Ride Facilities

The following park and ride facilities exist along the corridor.

- Evelyn Station Park and Ride: Access to Light Rail, Caltrain, and bus service

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- Camden Ave Park and Ride: Access to Bus Service
- Oakridge, Ohlone-Chynoweth, Blossom Hill, Snell, and Cottle Stations: Access to light rail and bus service

4.2.5.5 Additional Planning

The South County Circulation Study published by VTA in 2008 also recommended operational improvements to VTA's local bus service, express bus service, and bus rapid transit service. It also recommended an increase in Caltrain's service between Gilroy and San Jose.

4.3 Traffic

An Existing Conditions Report was prepared for the project and approved by Caltrans on December 22nd, 2011, a Travel Demand Forecast Memo was prepared and approved by Caltrans on February 17th, 2012 and September 5th, 2013, and a Traffic Operations Analysis Report was prepared and approved by Caltrans November 13, 2013. The findings and conclusions from the three reports are summarized below.

Based on Caltrans' 2007 HOV Lane Report, the existing HOV percentages along southbound SR 85 vary from 15 to 26%, with the highest percentage of HOV users between U.S. 101 (Mountain View) and I-280. In the northbound direction of SR 85, the HOV percentage varies from 17 to 23%, where the highest percentage of HOV users is between Almaden Expressway and I-280.

Forecasts were developed using VTA's 2005 countywide travel demand model using Association of Bay Area Governments "Projections 2009" data. The traffic operations analysis was developed using a micro-simulation model.

Overall, the traffic operations analysis results are a reflection of the project achieving its goals which are 1) improve traffic operations in the corridor, which means improving travel times in the general purpose lanes, while 2) maintaining acceptable operations in the Express Lanes. These results show that the project achieves a good balance by setting the toll at adequate levels to get the improvements desired in both general purpose and Express Lane. These results show that the dynamic pricing approach used for the forecast modeling effort which aimed at improving operations and maximizing throughput, and not to maximize revenue, is working as intended.

4.3.1 Existing Traffic Conditions

Existing conditions represent the year 2007, based on the most recent data available at the time the traffic studies began in 2010. Traffic volume data for the SR 85 corridor was derived from several sources including:

- Caltrans Traffic Census data – includes 24 hour traffic volume data from 2007/2008 for the freeway mainline and at the ramps along the study corridor. Traffic volumes were averaged for Tuesday, Wednesday and Thursday.

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Volumes for Year 2007 were used as the base for developing existing conditions traffic profile;

- Vehicle fleet composition (HOV vehicles and SOV's) was collected from Caltrans' 2007 HOV Lane Report and Caltrans Performance Measurement System (PeMS); and
- Additional traffic volume counts to determine the throughput of existing bottlenecks during the peak hours were conducted in May 2010.

Existing (2007) peak-hour traffic volumes within the project limit are summarized in Table 4.3-1.

Table 4.3-1 Northbound Existing Conditions Traffic Volumes

Northbound Mainline Segments	Existing	
	Flow (Vehicles)	
	AM Peak Hour (7 AM to 8 AM)	PM Peak Hour (5 PM to 6 PM)
Mainline Between NB Bernal on-ramp and SB Bernal on-ramp	2,172	2,249
Mainline Between SB Bernal on-ramp and SB 101 on-ramp	2,513	2,530
Mainline Between SB 101 on-ramp and Great Oaks on-ramp	2,930	2,843
Mainline Between Great Oaks on-ramp and Cottle off-ramp	3,387	3,710
Mainline Between Cottle off-ramp and on-ramp	3,297	3,372
Mainline Between Cottle on-ramp and Blossom Hill off-ramp	4,216	4,540
Mainline Between Blossom Hill off-ramp and EB Blossom Hill on-ramp	4,118	4,148
Mainline Between EB Blossom Hill on-ramp and WB Blossom Hill on-ramp	4,840	4,519
Mainline Between WB Blossom Hill on-ramp and SR 87 off-ramp	5,745	5,376
Mainline Between SR 87 off-ramp and Santa Teresa off-ramp	3,699	3,904
Mainline Between Santa Teresa off-ramp and on-ramp	3,592	3,452
Mainline Between Santa Teresa on-ramp and SR 87 on-ramp	4,092	3,868
Mainline Between SR 87 on-ramp and Almaden off-ramp	4,963	4,856
Mainline Between Almaden off-ramp and NB Almaden on-ramp	4,515	3,727
Mainline Between NB Almaden on-ramp and SB Almaden on-ramp	5,177	4,415
Mainline Between SB Almaden on-ramp and Camden off-ramp	5,641	4,760
Mainline Between Camden off-ramp and on-ramp	5,419	4,076
Mainline Between Camden on-ramp and Union off-ramp	6,584	4,994
Mainline Between Union off-ramp and on-ramp	6,204	4,521
Mainline Between Union on-ramp and Bascom off-ramp	6,731	5,260
Mainline Between Bascom off-ramp and SR 17 off-ramp	6,489	4,888
Mainline Between SR 17 off-ramp and Bascom on-ramp	4,670	2,428
Mainline Between Bascom on-ramp and SR 17 on-ramp	5,196	2,836

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Northbound Mainline Segments	Existing	
	Flow (Vehicles)	
	AM Peak Hour (7 AM to 8 AM)	PM Peak Hour (5 PM to 6 PM)
Mainline Between SR 17 on-ramp and Winchester on-ramp	5,989	4,062
Mainline Between Winchester on-ramp and Saratoga off-ramp	6,388	4,725
Mainline Between Saratoga off-ramp and on-ramp	5,659	3,324
Mainline Between Saratoga on-ramp and De Anza off-ramp	6,423	3,786
Mainline Between De Anza off-ramp and on-ramp	5,860	3,183
Mainline Between De Anza on-ramp and Stevens Creek off-ramp	6,537	3,848
Mainline Between Stevens Creek off-ramp and 280 off-ramp	6,047	3,446
Mainline Between 280 off-ramp and 280 SB LOOP on-ramp	3,726	1,919
Mainline Between 280 SB (loop) on-ramp and 280 NB on-ramp	4,218	2,371
Mainline Between 280 NB on-ramp and Homestead on-ramp	6,195	4,316
Mainline Between Homestead on-ramp and Fremont off-ramp	6,409	4,456
Mainline Between Fremont off-ramp and on-ramp	6,009	3,701
Mainline Between Fremont on-ramp and SB SR 82 off-ramp	6,839	4,035
Mainline Between SB SR 82 off-ramp and on-ramp	6,635	3,734
Mainline Between SB SR 82 on-ramp and NB SR 82 off-ramp	6,724	3,803
Mainline Between NB SR 82 off-ramp and SR 82 on-ramp	6,331	3,326
Mainline Between SR 82 on-ramp and EB SR 237 off-ramp	6,857	3,659
Mainline Between EB SR 237 off-ramp and EB SR 237 on-ramp	5,246	2,615
Mainline Between EB SR 237 on-ramp and Evelyn off-ramp	5,479	2,747
Mainline Between Evelyn off-ramp and Central on-ramp	5,208	2,472
Mainline Between Central on-ramp and Moffett off-ramp	5,508	2,678
Mainline Between Moffett off-ramp and End of HOT Lane	5,120	2,411

NB = Northbound
 SB = Southbound

Table 4.3-2 Southbound Existing Conditions Traffic Volumes

Southbound Mainline Segments	Existing	
	Flow (Vehicles)	
	AM Peak Hour (7 AM to 8 AM)	PM Peak Hour (5 PM to 6 PM)
Mainline Between Moffett on-ramp and Central off-ramp	1,477	4,328
Mainline Between Central off-ramp and Evelyn on-ramp	1,391	4,014
Mainline Between Evelyn on-ramp and 237 off-ramp	1,655	4,472
Mainline Between SR 237 off-ramp and SR 237 on-ramp	1,498	3,981
Mainline Between SR 237 on-ramp and SR 82 off-ramp	2,250	5,117
Mainline Between SR 82 off-ramp and SR 82 on-ramp	2,488	5,382
Mainline Between SR 82 on-ramp start access zone	2,331	5,118
Mainline Between end access zone and Fremont off-ramp	2,737	5,903
Mainline Between Fremont off-ramp and on-ramp	2,537	5,577

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Southbound Mainline Segments	Existing	
	Flow (Vehicles)	
	AM Peak Hour (7 AM to 8 AM)	PM Peak Hour (5 PM to 6 PM)
Mainline Between Fremont on-ramp and Homestead off-ramp	3,059	6,335
Mainline Between Homestead off-ramp and 280 off-ramp	2,928	6,139
Mainline Between 280 SB off-ramp and 280 NB on-ramp	1,136	3,616
Mainline Between 280 NB and 280 SB on-ramp	1,470	4,130
Mainline Between 280 SB on-ramp and Stevens Creek off-ramp	2,365	6,495
Mainline Between Stevens Creek off-ramp and on-ramp	1,812	5,340
Mainline Between Stevens Creek on-ramp and De Anza off-ramp	2,001	5,960
Mainline Between De Anza off-ramp and on-ramp	1,653	5,150
Mainline Between De Anza on-ramp and Saratoga off-ramp	1,949	5,987
Mainline Between Saratoga off-ramp and on-ramp	1,528	5,439
Mainline Between Saratoga on-ramp and Winchester off-ramp	2,520	6,577
Mainline Between Winchester off-ramp and SR 17 off-ramp	2,190	6,129
Mainline Between SR 17 off-ramp and Bascom off-ramp	1,482	4,995
Mainline Between Bascom off-ramp and SR 17 on-ramp	1,256	4,531
Mainline Between SR 17 on-ramp and Bascom on-ramp	2,770	6,153
Mainline Between Bascom on-ramp and Union off-ramp	3,077	6,793
Mainline Between Union off-ramp and Union on-ramp (weave)	2,714	6,158
Mainline Between Union on-ramp and Camden off-ramp	2,968	6,681
Mainline Between Camden off-ramp and on-ramp	2,565	5,634
Mainline Between Camden on-ramp and Almaden off-ramp	3,034	6,442
Mainline Between Almaden off-ramp and SB Almaden on-ramp	2,596	5,415
Mainline Between SB Almaden on-ramp and NB on-ramp	2,921	5,875
Mainline Between Almaden NB on-ramp and SR 87 off-ramp	4,026	6,774
Mainline Between SR 87 off-ramp and Santa Teresa off-ramp	3,722	6,526
Mainline Between Santa Teresa off-ramp and on-ramp	3,540	5,701
Mainline Between Santa Teresa on-ramp and SR 87 on-ramp	3,683	6,076
Mainline Between SR 87 on-ramp and Blossom Hill off-ramp	4,827	8,324
Mainline Between Blossom Hill off-ramp and WB BH on-ramp	4,355	5,818
Mainline Between BH WB on-ramp and BH EB on-ramp	4,451	5,934
Mainline Between Blossom Hill EB on-ramp and Cottle off-ramp	4,588	6,198
Mainline Between Cottle off-ramp and SB on-ramp	3,987	4,754
Mainline Between Cottle SB on-ramp and NB Cottle on-ramp	4,059	4,864
Mainline Between NB Cottle on-ramp and Great Oaks off-ramp	4,237	5,108
Mainline Between Great Oaks and Bernal off-ramp	3,611	4,516
South of Bernal off-ramp	3,199	3,565

NB = Northbound, SB = Southbound

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4.3.2 Future Traffic Conditions

As mentioned earlier in the report, traffic conditions are expected to worsen in the future with continued development in the region and along the SR 85 corridor. Between 2010 and 2035, Santa Clara County is predicted to grow by over 252,000 residents and 365,000 jobs, increases of 14.1 and 43.3 percent. Over the same period, the County expects to increase the capacity of the roadway system by 5 to 6 percent.

Future (2015 and 2035) peak-hour traffic volumes within the project limit are summarized in Table 4.3-3 through Table 4.3-6.

Table 4.3-3 Northbound 2015 Future Conditions Traffic Volumes

Northbound Mainline Segments	2015 AM Peak Hour (7 AM to 8 AM)		2015 PM Peak Hour (5 PM to 6 PM)	
	Flow (Vehicles)		Flow (Vehicles)	
	No Build	Build	No Build	Build
Mainline Between NB Bernal on-ramp and SB Bernal on-ramp	2,223	2,873	2,104	2,393
Mainline Between SB Bernal on-ramp and SB 101 on-ramp	2,574	3,202	2,386	2,687
Mainline Between SB 101 on-ramp and Great Oaks on-ramp	2,975	3,640	2,709	3,017
Mainline Between Great Oaks on-ramp and Cottle off-ramp	3,555	4,156	3,533	3,871
Mainline Between Cottle off-ramp and on-ramp	3,404	4,053	3,147	3,461
Mainline Between Cottle on-ramp and Blossom Hill off-ramp	4,370	4,944	4,567	4,844
Mainline Between Blossom Hill off-ramp and EB Blossom Hill on-ramp	4,230	4,771	4,095	4,401
Mainline Between EB Blossom Hill on-ramp and WB Blossom Hill on-ramp	4,977	5,515	4,463	4,769
Mainline Between WB Blossom Hill on-ramp and SR 87 off-ramp	5,866	6,416	5,264	5,612
Mainline Between SR 87 off-ramp and Santa Teresa off-ramp	3,851	4,310	3,739	4,135
Mainline Between Santa Teresa off-ramp and on-ramp	3,757	4,205	3,281	3,691
Mainline Between Santa Teresa on-ramp and SR 87 on-ramp	4,304	4,969	3,674	4,133
Mainline Between SR 87 on-ramp and Almaden off-ramp	5,235	5,804	4,664	5,252
Mainline Between Almaden off-ramp and NB Almaden on-ramp	4,631	5,364	3,582	4,120
Mainline Between NB Almaden on-ramp and SB Almaden on-ramp	5,431	5,998	4,290	4,824
Mainline Between SB Almaden on-ramp and Camden off-ramp	5,771	6,479	4,603	5,047
Mainline Between Camden off-ramp and on-ramp	5,349	6,142	3,880	4,348
Mainline Between Camden on-ramp and Union off-ramp	6,111	7,357	4,905	5,364
Mainline Between Union off-ramp and on-ramp	5,767	7,071	4,449	4,988
Mainline Between Union on-ramp and Bascom off-ramp	6,181	7,560	5,179	5,634
Mainline Between Bascom off-ramp and SR 17 off-ramp	5,870	7,333	4,741	5,202

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Northbound Mainline Segments	2015 AM Peak Hour (7 AM to 8 AM)		2015 PM Peak Hour (5 PM to 6 PM)	
	Flow (Vehicles)		Flow (Vehicles)	
	No Build	Build	No Build	Build
Mainline Between SR 17 off-ramp and Bascom on-ramp	4,027	5,557	2,306	2,784
Mainline Between Bascom on-ramp and SR 17 on-ramp	4,531	6,033	2,767	3,294
Mainline Between SR 17 on-ramp and Winchester on-ramp	5,370	6,792	3,999	4,580
Mainline Between Winchester on-ramp and LANE DROP	5,756	7,075	4,655	5,162
Lane Drop to End of Access Zone	5,647	6,968	4,655	5,101
End of Access Zone to Saratoga off-ramp	5,647	6,866	4,655	5,071
Mainline Between Saratoga off-ramp and on-ramp	4,861	5,908	3,243	3,729
Mainline Between Saratoga on-ramp and De Anza off-ramp	5,436	6,767	3,770	4,292
Mainline Between De Anza off-ramp and on-ramp	4,869	5,937	3,156	3,616
Mainline Between De Anza on-ramp & Stevens Creek off-ramp	5,592	6,379	3,854	4,347
Mainline Between Stevens Creek off-ramp and 280 off-ramp	5,112	5,799	3,468	3,939
Mainline Between 280 off-ramp and 280 SB LOOP on-ramp	2,902	3,274	1,751	2,095
Mainline Between 280 SB (loop) on-ramp and 280 NB on-ramp	3,435	3,722	2,275	2,563
Mainline Between 280 NB on-ramp and Homestead on-ramp	5,441	5,670	4,288	4,515
Mainline Between Homestead on-ramp and Fremont off-ramp	5,530	5,711	4,336	4,607
Mainline Between Fremont off-ramp and on-ramp	4,994	5,014	3,407	3,698
Mainline Between Fremont on-ramp and SB SR 82 off-ramp	5,542	5,693	3,734	4,031
Mainline Between SB SR 82 off-ramp and on-ramp	5,333	5,506	3,386	3,704
Mainline Between SB SR 82 on-ramp and NB SR 82 off-ramp	5,413	5,593	3,472	3,785
Mainline Between NB SR 82 off-ramp and SR 82 on-ramp	4,996	5,192	2,900	3,231
Mainline Between SR 82 on-ramp and EB SR 237 off-ramp	5,448	5,564	3,257	3,608
Mainline Between EB SR 237 off-ramp and EB SR 237 on-ramp	4,005	4,083	2,,349	2,688
Mainline Between EB SR 237 on-ramp and Evelyn off-ramp	4,257	4,359	2,507	2,844
Mainline Between Evelyn off-ramp and Central on-ramp	3,996	4,096	2,191	2,529
Mainline Between Central on-ramp and Moffett off-ramp	4,357	4,428	2,526	2,818
Mainline Between Moffett off-ramp and end of HOT lane	3,937	4,001	2,195	2,386

NB = Northbound
SB = Southbound

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Table 4.3-4 Southbound 2015 Future Conditions Traffic Volumes

Southbound Mainline Segments	2015 AM Peak Hour (7 AM to 8 AM)		2015 PM Peak Hour (5 PM to 6 PM)	
	Flow (Vehicles)		Flow (Vehicles)	
	No Build	Build	No Build	Build
SB north of Moffett	1,541	1,587	3,901	4,064
Mainline Between Moffett on-ramp and Central off-ramp	1,838	1,882	4,276	4,379
Mainline Between Central off-ramp and Evelyn on-ramp	1,683	1,708	3,843	3,927
Mainline Between Evelyn on-ramp and 237 off-ramp	1,984	2,008	4,,290	4,323
Mainline Between SR 237 off-ramp and 237 on-ramp	1,777	1,796	3,903	3,825
Mainline Between SR 237 on-ramp and SR 82 NB on-ramp	2,569	2,547	4,968	4,570
Mainline Between SR 82 NB on-ramp and SR 82 SB off-ramp	2,805	2,776	5,233	4,800
Mainline Between SR 82 SB off-ramp and SB on-ramp	2,528	2,525	4,973	4,595
Mainline Between SR 82 SB on-ramp and Fremont off-ramp	2,966	2,947	5,671	5,197
Mainline Between Fremont off-ramp and on-ramp	2,668	2,615	5,297	4,905
Mainline Between Fremont on-ramp and Homestead off-ramp	3,385	3,302	6,013	5,693
Mainline Between Homestead off-ramp and 280 off-ramp	3,170	3,077	5,836	5,579
Mainline Between 280 SB off-ramp and 280 NB on-ramp	1,316	1,297	3,501	3,468
Mainline Between 280 NB and 280 SB on-ramp	1,509	1,627	4,080	4,196
Mainline Between 280 SB on-ramp and Stevens Creek off-ramp	2,699	2,775	6,348	6,875
Mainline Between Stevens Creek off-ramp and on-ramp	2,089	2,170	5,093	5,730
Mainline Between Stevens Creek on-ramp and S/SUN off-ramp	2,294	2,385	5,663	6,388
Mainline Between Saratoga/Sunnyvale off-ramp and on-ramp	1,827	1,870	4,809	5,583
Mainline Between Saratoga/Sunnyvale on-ramp and Saratoga off-ramp	2,177	2,239	5,632	6,491
Mainline Between Saratoga off-ramp and on-ramp	1,692	1,772	5,086	5,714
Mainline Between Saratoga on-ramp and Winchester off-ramp (after access)	2,709	2,805	6,084	6,535
Mainline Between Winchester off-ramp and SR 17 off-ramp	2,300	2,310	5,595	5,864
Mainline Between SR 17 off-ramp and Bascom off-ramp	1,460	1,514	4,667	4,912
Mainline Between Bascom off-ramp and SR 17 on-ramp	1,192	1,258	4,139	4,372
Mainline Between SR 17 on-ramp and Bascom on-ramp	3,017	3,053	5,286	5,939
Mainline Between Bascom on-ramp and Union off-ramp	3,363	3,388	5,901	6,722
Mainline Between Union off-ramp and Union on-ramp	2,937	2,931	5,286	6,074
Mainline Between Union on-ramp and Camden off-ramp	3,193	3,205	5,784	6,540
Mainline Between Camden off-ramp and on-ramp	2,732	2,702	4,671	5,225
Mainline Between Camden on-ramp and Almaden off-	3,301	3,205	5,627	5,984

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Southbound Mainline Segments	2015 AM Peak Hour (7 AM to 8 AM)		2015 PM Peak Hour (5 PM to 6 PM)	
	Flow (Vehicles)		Flow (Vehicles)	
	No Build	Build	No Build	Build
ramp				
Mainline Between Almaden off-ramp and SB Almaden on-ramp	2,674	2,709	4,450	4,779
Mainline Between SB Almaden on-ramp and NB on-ramp	3,018	3,062	4,982	5,275
Mainline Between Almaden NB on-ramp and SR 87 Off	4,068	4,243	5,792	6,178
Mainline Between SR 87 off-ramp and Santa Teresa off-ramp	3,296	3,215	5,455	5,885
Mainline Between Santa Teresa off-ramp and on-ramp	3,137	3,064	4,609	5,043
Mainline Between Santa Teresa on-ramp and SR 87 on-ramp	3,330	3,266	4,987	5,455
Mainline Between SR 87 on-ramp and Blossom Hill off-ramp	4,711	4,563	6,911	7,421
Mainline Between Blossom Hill off-ramp and WB BH on-ramp	4,140	4,072	4,636	4,980
Mainline Between Blossom Hill WB on-ramp and Blossom Hill EB on-ramp	4,218	4,155	4,747	5,100
Mainline Between Blossom Hill EB on-ramp and Cottle off-ramp	4,366	4,301	5,088	5,406
Mainline Between Cottle off-ramp and SB on-ramp	3,592	3,547	3,680	4,041
Mainline Between Cottle SB on-ramp and NB Cottle on-ramp	3,683	3,643	3,790	4,182
Mainline Between NB Cottle on-ramp and Great Oaks off-ramp	3,862	3,835	4,041	4,431
Mainline Between Great Oaks and Bernal off-ramp	3,255	3,250	3,472	3,833
South of Bernal off-ramp	2,861	2,814	2,571	2,875

NB = Northbound
 SB = Southbound

Table 4.3-5 Northbound 2035 Future Conditions Traffic Volumes

Northbound Mainline Segments	2035 AM Peak Hour (7 AM to 8 AM)		2035 PM Peak Hour (5 PM to 6 PM)	
	Flow (Vehicles)		Flow (Vehicles)	
	No Build	Build	No Build	Build
Mainline Between NB and SB Bernal on-ramp	2,833	2,878	2,284	2,809
Mainline Between SB Bernal on-ramp and US 101 SB on-ramp	3,187	3,270	2,687	3,239
Mainline Between US 101 SB on-ramp and Great Oaks on-ramp	3,630	3,751	3,091	3,581
Mainline Between Great Oaks on-ramp and Cottle off-ramp	4,192	4,328	4,116	4,495
Mainline Between Cottle off-ramp and diagonal on-ramp	4,565	4,702	3,469	3,958
Mainline Between Cottle on-ramp and Blossom Hill off-ramp	5,082	5,149	5,002	5,002
Mainline Between Blossom Hill off-ramp and EB on-ramp	4,903	4,911	4,512	4,569
Mainline Between Blossom Hill EB on-ramp and WB on-ramp	5,521	5,653	4,880	4,941

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Northbound Mainline Segments	2035 AM Peak Hour (7 AM to 8 AM)		2035 PM Peak Hour (5 PM to 6 PM)	
	Flow (Vehicles)		Flow (Vehicles)	
	No Build	Build	No Build	Build
Mainline Between Blossom Hill WB on-ramp and SR 87 off-ramp	6,407	6,558	5,649	5,842
Mainline Between SR 87 off-ramp and Santa Teresa off-ramp	4,374	4,624	4,115	4,367
Mainline Between Santa Teresa off-ramp and on-ramp	4,265	4,519	3,687	3,983
Mainline Between Santa Teresa on-ramp and 87 on-ramp	4,822	5,298	4,189	4,520
Mainline Between SR 87 on-ramp and Almaden off-ramp	5,716	6,220	5,208	5,549
Mainline Between Almaden off-ramp and NB on-ramp	4,837	5,863	4,056	4,567
Mainline Between Almaden NB and SB on-ramp	5,554	6,408	4,870	5,350
Mainline Between SB Almaden on-ramp and Camden off-ramp	5,725	6,756	5,215	5,517
Mainline Between Camden off-ramp and on-ramp	5,374	6,383	4,450	4,835
Mainline Between Camden on-ramp and Union off-ramp	5,997	7,424	5,553	5,959
Mainline Between Union off-ramp and on-ramp	5,680	7,032	5,099	5,833
Mainline Between Union on-ramp and Bascom off-ramp	6,089	7,603	5,876	6,301
Mainline Between Bascom off-ramp and SR 17 off-ramp	5,754	7,343	5,354	5,789
Mainline Between SR 17 off-ramp and Bascom on-ramp	4,037	5,462	2,915	3,553
Mainline Between Bascom on-ramp and SR 17 on-ramp	4,615	5,951	3,400	4,195
Mainline Between SR 17 on-ramp and Winchester on-ramp	5,410	6,741	4,670	5,240
Mainline Between Winchester on-ramp and LANE DROP	5,782	7,134	5,231	5,595
Lane drop and Access Zone	5,638	6,900	5,231	5,378
After Access Zone and Saratoga off-ramp	5,638	6,820	5,231	5,654
Mainline Between Saratoga off-ramp and on-ramp	4,840	5,847	3,734	4,377
Mainline Between Saratoga on-ramp and De Anza off-ramp	5,479	6,714	4,279	5,036
Mainline Between De Anza off-ramp and on-ramp	4,902	5,880	3,672	4,314
Mainline Between De Anza on-ramp and Stevens Creek off-ramp	5,587	6,323	4,410	5,053
Mainline Between Stevens Creek off-ramp and 280 off-ramp	5,131	5,766	4,034	4,675
Mainline Between 280 off-ramp and 280 SB LOOP on-ramp	2,978	3,246	2,152	2,575
Mainline Between 280 SB (loop) on-ramp and 280 NB on-ramp	3,667	3,889	2,765	3,202
Mainline Between 280 NB on-ramp and Homestead on-ramp	5,164	5,583	4,742	4,909
Mainline Between Homestead on-ramp and Fremont off-ramp	5,267	5,832	4,986	5,089
Mainline Between Fremont off-ramp and Fremont on-ramp	4,619	5,003	3,847	3,977
Mainline Between Fremont on-ramp and RT 82 SB/NB	5,162	5,819	4,253	4,420

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Northbound Mainline Segments	2035 AM Peak Hour (7 AM to 8 AM)		2035 PM Peak Hour (5 PM to 6 PM)	
	Flow (Vehicles)		Flow (Vehicles)	
	No Build	Build	No Build	Build
off-ramp				
Mainline Between SR 82 SB/NB off-ramp and SR 82 SB/NB on-ramp	4,560	5,216	3,215	3,490
Mainline Between SR 82 SB/NB on-ramp and SR 237 EB off-ramp	5,194	5,775	3,990	4,357
Mainline Between SR 237 EB off-ramp and EB on-ramp	3,609	4,199	2,874	3,281
Mainline Between SR 237 EB on-ramp and Evelyn off-ramp	3,883	4,476	3,032	3,439
Mainline Between Evelyn off-ramp and Central on-ramp	3,590	4,144	2,627	2,974
Mainline Between Central on-ramp and Moffett off-ramp	4,030	4,672	2,988	3,755
Mainline Between Moffett off-ramp and NB 101 Connector	3,561	4,201	2,601	3,930

NB = Northbound
 SB = Southbound

Table 4.3-6 Southbound 2035 Future Conditions Traffic Volumes

Southbound Mainline Segments	2035 AM Peak Hour (7 AM to 8 AM)		2035 PM Peak Hour (5 PM to 6 PM)	
	Flow (Vehicles)		Flow (Vehicles)	
	No Build	Build	No Build	Build
SB North of Moffett	1,998	2,304	3,817	4,053
Mainline Between MOFETT on-ramp and Central off-ramp	2,644	2,877	4,060	4,306
Mainline Between Central off-ramp and Evelyn on-ramp	2,224	2,376	3,578	3,809
Mainline Between Evelyn on-ramp and 237 off-ramp	2,619	2,766	4,123	4,301
Mainline Between SR 237 off-ramp and SR 237 on-ramp	2,402	2,536	3,772	3,861
Mainline Between SR 237 on-ramp and SR 82 off-ramp	3,317	3,435	4,970	4,816
Mainline Between SR 82 off-ramp and SR 82 on-ramp	2,846	2,902	4,528	4,381
Mainline Between SR 82 on-ramp start Access Zone	3,772	3,749	5,456	5,212
Mainline Between end Access Zone and Fremont off-ramp	3,772	3,693	5,456	5,212
Mainline Between Fremont off-ramp and on-ramp	3,391	3,284	5,118	4,857
Mainline Between Fremont on-ramp and Homestead off-ramp	4,212	4,169	5,957	5,733
Mainline Between Homestead off-ramp and 280 off-ramp	3,956	3,951	5,818	5,624
Mainline Between 280 SB off-ramp and 280 NB on-ramp	1,815	1,867	3,902	3,598
Mainline Between 280 NB and 280 SB on-ramp	2,138	2,298	4,426	4,324
Mainline Between 280 SB on-ramp and Stevens Creek off-ramp	3,831	4,058	6,655	7,054
Mainline Between Stevens Creek off-ramp and on-ramp	3,061	3,304	5,135	5,890
Mainline Between Stevens Creek on-ramp and LANE DROP	3,294	3,556	5,551	6,668
Mainline Between Lane Drop and start Access Zone	3,294	3,556	5,551	6,668

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Southbound Mainline Segments	2035 AM Peak Hour (7 AM to 8 AM)		2035 PM Peak Hour (5 PM to 6 PM)	
	Flow (Vehicles)		Flow (Vehicles)	
	No Build	Build	No Build	Build
Mainline Between end Access Zone and De Anza off-ramp	3,294	3,499	5,551	6,668
Mainline Between De Anza off-ramp and on-ramp	2,680	2,959	4,522	5,821
Mainline Between De Anza on-ramp and Saratoga off-ramp	3,057	3,406	5,015	6,771
Mainline Between Saratoga off-ramp and on-ramp	2,594	2,882	4,358	5,779
Mainline Between Saratoga on-ramp and start Access Zone	3,687	4,176	5,034	5,564
Mainline Between end Access Zone and Winchester off-ramp	3,687	4,051	5,034	5,564
Mainline Between Winchester off-ramp and SR 17 off-ramp	3,231	3,423	4,592	5,564
Mainline Between SR 17 off-ramp and Bascom off-ramp	2,329	2,573	3,819	4,604
Mainline Between Bascom off-ramp and SR 17 on-ramp	1,927	2,147	3,321	4,016
Mainline Between SR 17 on-ramp and Bascom on-ramp	3,751	3,976	4,127	4,679
Mainline Between Bascom on-ramp and Union off-ramp	4,148	4,396	4,754	5,341
Mainline Between Union off-ramp and Union on-ramp (weave)	4,148	3,946	4,306	4,987
Mainline Between Union on-ramp and Camden off-ramp	3,916	4,200	4,839	5,432
Mainline Between Camden off-ramp and on-ramp	3,302	3,589	4,151	4,500
Mainline Between Camden on-ramp and start Access Zone	3,302	4,296	4,959	5,292
Mainline Between end Access Zone and Almaden off-ramp	3,302	4,240	4,959	5,267
Mainline Between Almaden off-ramp and SB Almaden on-ramp	3,302	3,442	4,044	4,286
Mainline Between SB Almaden on-ramp and NB on-ramp	3,711	3,870	4,696	4,880
Mainline Between Almaden NB on-ramp and SR 87 off-ramp	4,873	5,116	5,419	5,780
Mainline Between SR 87 off-ramp and Santa Teresa off-ramp	3,964	4,026	5,088	5,385
Mainline Between Santa Teresa off-ramp and on-ramp	3,834	3,874	4,267	4,602
Mainline Between Santa Teresa on-ramp and SR 87 on-ramp	4,090	4,126	4,688	5,082
Mainline Between SR 87 on-ramp and Blossom Hill off-ramp	5,892	5,988	6,675	7,090
Mainline Between Blossom Hill off-ramp and WB BH on-ramp	4,801	5,060	4,422	4,836
Mainline Between Blossom Hill WB on-ramp and BH EB on-ramp	4,871	5,127	4,608	4,983
Mainline Between Blossom Hill EB on-ramp and start Access Zone	5,025	5,312	5,183	5,459
Mainline Between end Access Zone and Cottle off-ramp	5,025	5,250	5,183	5,487
Mainline Between Cottle off-ramp and SB on-ramp	4,046	4,268	3,685	3,920
Mainline Between Cottle SB on-ramp and NB Cottle on-ramp	4,270	4,498	3,931	4,179

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Southbound Mainline Segments	2035 AM Peak Hour (7 AM to 8 AM)		2035 PM Peak Hour (5 PM to 6 PM)	
	Flow (Vehicles)		Flow (Vehicles)	
	No Build	Build	No Build	Build
Mainline Between NB Cottle on-ramp and Great Oaks off-ramp	4,580	4,761	4,278	4,472
Mainline Between Great Oaks and Bernal off-ramp	3,972	4,130	3,746	3,919
South of Bernal off-ramp	3,408	3,619	2,896	3,018

NB = Northbound
 SB = Southbound

Annual Average Daily Traffic

Traffic growth in recent years has impacted the SR 85 corridor within the project area. Between 2002 and 2012, annual average daily traffic (AADT) has increased from 2,165,000 to 2,360,500 on SR 85.

Table 4.3-7 Comparison of 2002 and 2012 in Regional Freeway Traffic

Route	Location	2002 Volume (AADT)	2012 Volume (AADT)	Change in AADT	Percent Change (increase)
SR 85	1. US 101 (San Jose) to SR 87	392,000	420,500	28,500	7.27
SR 85	2. SR 87 to I-880/SR-17	514,000	574,000	60,000	11.67
SR 85	3. I-880/SR-17 to I-280	574,000	558,000	-16,000	-2.79
SR 85	4. I-280 to US 101 (Mountain View)	685,000	808,000	123,000	17.96

Source: AADT Counts from <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/index.htm>

4.3.3 Collision Analysis

Accident data within the project limits is summarized in Table 4.3-8 for the three-year period from June 1, 2007 and May 31, 2010. The actual accident rate for all three freeway segments identified in the table is below the statewide average accident rate. As the Traffic Accident Surveillance and Analysis System (TASAS) Accident Summary shows, there were a total of 1686 accidents along SR 85 (mainline and ramps), of which 1597 reported mainline-only traffic accidents (806 in the northbound direction and 791 in the southbound direction) on SR 85 within the project area. There were 4 fatal accidents (2 in the northbound direction and 2 in the southbound direction) and 632 injury accidents (313 in the northbound direction and 319 in the southbound direction) reported within the project limits during the three years duration indicated.

According to Caltrans traffic accident data, 1006 accidents of the recorded 1597 accidents (63%), were rear-end collisions, which are typically associated with congested conditions.

In the northbound direction, 806 recorded accidents comprised of 5 head-on, 110 sideswipes, 473 rear-ends, 30 broadside, 161 hit objects, 20 overturns, 1 auto-pedestrian, 4 other types, and 2 not stated. In the southbound direction, 791 recorded accidents comprised of 2 head-on, 94 sideswipes, 533 rear-ends, 19 broadside, 115 hit objects, 18 overturns, 1 auto-pedestrian, 7 other types, and 2 not stated.

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From the total reported accidents 201 were caused by improper turning, 87 were alcohol related, 15 were due to following too close, and 1061 due to speeding, and the rest were due to other primary collision factors. Therefore, sixty-three percent of the accidents were caused by speeding and the majority resulting in rear end collision. The movement preceding the collision was primarily slowing down or stopped indicating traffic congestion conditions.

An analysis of the accident data along the SR 85 corridor revealed that these accidents are concentrated around the bottleneck and queue locations discussed in the *Executive Summary* of the *Traffic Operations Analysis Report* (URS and DKS 2013). Based on the TASAS Accident Records from June 1, 2007 and May 31, 2010, three accident concentrations locations were identified as follows:

- A concentration of accidents occurs around the Almaden Expressway, Camden Ave, and Union Ave Interchanges (19.5% of the total number of northbound accidents) in the northbound direction. During the morning peak in the northbound direction, a queue from the Union Ave bottleneck extends to the Almaden Expressway off-ramp. The majority of these accidents (72.6%) were rear-end collisions at this location further confirming the correlation between the accident data and the congested conditions.
- A concentration of accidents occurs around the Winchester Blvd/Saratoga Ave segment (13.3% of the total number of northbound accidents) in the northbound direction. During the morning peak, a queue regularly occurs from SR 17 (just south of Winchester Ave) and extends to Saratoga Ave off-ramp. The majority of these accidents (77.6%) were rear-end collisions at this location further confirming the correlation between the accident data and the congested conditions.
- A concentration of accidents occurs in the northbound direction around the Fremont Ave/El Camino Real Interchange (7.9% of the total number of northbound accidents). During the morning and afternoon peak periods, queuing conditions occur between the two interchanges. The majority of these accidents (70.3%) were rear-end collisions at this location further confirming the correlation between the accident data and the congested conditions.

According to the TASAS Accident Summary, there were a total of 255 accidents along U.S. 101 (mainline and ramps) in the southern segment of the project area, of which 141 were in the northbound direction and 114 were in the southbound direction. There were 3 fatal accidents (2 in the northbound direction and 1 in the southbound direction) and 79 injury accidents (66% in the northbound direction and 34% in the southbound direction) reported within the southern U.S. 101 segment during the three years duration indicated.

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According to Caltrans traffic accident data in the southern U.S. 101 segment, 68 accidents of the recorded 255 accidents (27%), were rear-end collisions, which are typically associated with congested conditions.

Along U.S. 101 (mainline and ramps) in the northern segment of the project area, there were a total of 826 accidents according to the TASAS Accident Summary (66% of the accidents in the northbound direction and 35% in the southbound direction). There was 1 fatal accident in the northbound direction and 217 injury accidents (76% in the northbound direction and 24% in the southbound direction) reported within the northern U.S. 101 segment during the three years duration indicated.

According to Caltrans traffic accident data in the northern U.S. 101 segment, 638 accidents of the recorded 826 accidents (77%), were rear-end collisions, which are typically associated with congested conditions.

Table 4.3-8 Summary of Accident Rates
 (From TASAS, Three-year Period: June 1, 2007 to May 31, 2010)

Location	Number of Accidents				Accident Rates (ACC/MVM)					
	Total	Fatal	Injury	F+I	Actual			Average		
					Fatal	F+I	Total	Fatal	F+I	Total
SR 85 (Post Mile: 0.000 – 24.058)	168 6	4	507	51 1	0.001	0.18	0.60	0.0 10	0.30	0.96
U.S. 101 (Post Mile:23.100 – 28.609)	255	3	79	82	0.004	0.12	0.36	0.0 10	0.30	0.93
U.S. 101 (Post Mile:47.891 – 51.995)	826	1	217	21 8	0.001	0.24	0.91	0.0 11	0.34	1.10

Source: Caltrans District 4 TASAS Table B from 06/01/2007 to 05/31/2010
 ACC/MVM: Accidents per Million Vehicle Miles of Travel

4.3.4 Safety Analysis

Per requirements of the Caltrans Traffic Operations Policy Directive (TOPD 11-02) for design of managed lanes, Caltrans conducted a safety analysis of the proposed facility and provided the following safety improvements recommendations:

1. Construction and Permanent Pavement Markings and Delineation:

Enhance the pavement markings and delineation at all locations within the corridor, where the clarity of the lane and edge lines may adversely be affected by the following construction work. Locations anticipated to be affected will be determined during the PS& E phase.

- a. Construction staging that temporary relocates (shifts) delineation.
- b. Proposals to offset/re-locate permanent delineation.

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- c. Proposals to offset/re-locate delineation from existing or proposed longitudinal and diagonal paving joints.

2. Signing & Enhanced Pavement Markings

a. Signing

Permanent signing plans will be placed in accordance with the SR 85 Express Lanes Project Agreed-To-Conceptual Signing Plans (see Attachment D). Signs and locations where additional barrier-mounted signage may be required will be determined during the PS&E phase upon consultation with the Caltrans District 4 Office of Traffic–Signing Branch (Santa Clara County).

Existing signs whose conspicuity has been compromised by the presence of the newly placed signs for the Express Lanes and whose reduced conspicuity results in driver comprehension difficulty will be replaced. These signs and their locations will be determined during the PS&E phase.

b. Enhanced Pavement Markings

The need for enhanced pavement markings (e.g., contrast treatment and additional reflective markers along buffer striping) will be evaluated during the PS&E phase.

3. Lighting

- a. Highway lighting throughout the project will be in compliance with current Caltrans standards and policies.
- b. Highway lighting throughout the weave access openings will be placed in accordance with TOPD 11-02 (Traffic Operations Policy Directive 11-02) issued on 3/23/2011.
- c. To supplement the lighting being installed within the weave access zone openings that satisfies the requirements outlined in TOPD 11-02, additional lighting in the median, downstream from the end of weave access zone openings, beyond the right shoulder and in advance of the freeway-to-freeway connector, will be further studied during the design phase and implemented accordingly. Locations that will be studied further during final design include:
 - Where the distance between the beginning of a proposed access opening and a freeway-to-freeway connector is less than the minimum distance required.
 - Where access openings are being proposed within interchanges, spaced less than a mile apart, where complex weaving will occur as a result of the non-standard distance between the freeway on-ramp and the freeway-to-freeway connector.
 - CHP enforcement areas.
 - Median widths less than 22'.
- d. Placement of continuous lighting will be considered as an alternative recommendation for the locations described in Section 5a below.

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- e. In addition to the lighting provisions specified in the TOPD 11-02, Caltrans has recommended to install lighting within the following segment locations:
- PM 6.0 to PM 10.0 – North of Almaden Expressway to north of Samaritan pedestrian overcrossing
 - PM 16.0 to PM 20.00 – North of Saratoga-Sunnyvale interchange to Fremont Avenue interchange

Additional contingency is provided to allow for any future changes to design criteria or approved state policy (Highway Design Manual, TOPD, etc.). Detailed lighting design will be performed during PS&E.

Similarly, the lighting recommendation currently included in the safety analysis will also be modified and reduced in conjunction with the increased open access and continuous striping scheme for the Express Lane system to be provided, generally as dictated by tolling operations, i.e., weave, merge, and/or decision points, such as:

- a) At start of the Express Lane;
- b) At intermediate access points, toll change zones;
- c) On toll-related sign gantries;
- d) At the end of the Express Lane.
- e) Lighting could be mitigation for non-standard conditions.

4. Express Lane Access Openings (Weave Zones)

Where a weave zone is located within a horizontal curve, locate the beginning of the opening of the weave zone upstream to place a substantial portion of the weave zone within a tangent section.

5. Median Barrier and Glare Screen

- a. Installation of (glare screen) concrete median barrier (Type 60G and 60GE) will be considered during the PS&E phase at the following locations:
 - Where there is a concentration of accidents occurring during dark driving environment.
 - Where median and inside shoulders are proposed to be reduced to nonstandard conditions.

5 Alternatives

This section describes the design alternatives that were developed by a multidisciplinary team to achieve the project's purpose and need, while avoiding or minimizing environmental impacts. Two alternatives are considered in this document: a Build Alternative that would convert the existing HOV lanes on northbound and southbound SR 85 to Express Lane facilities, and the No Build Alternative.

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5.1 No Build Alternative

The No Build Alternative assumes no modifications would be made to the current SR 85 corridor, including the continuous access HOV lane, other than routine maintenance and rehabilitation of the facility and any currently planned and programmed projects within the limits.

The No Build Alternative would not provide traffic congestion management. It would not provide managed-toll lanes that allow drivers to use the available capacity in the HOV lanes during peak periods. Drivers would remain limited to a choice of using the HOV lanes or remaining in the congested general purpose lanes. Under this scenario, traffic conditions and congestion will continue to degrade as (projected) traffic demand continues to increase without commensurate increases in freeway capacity or the implementation of travel demand management tools. With the No Build Alternative, improvements to freeway operations would be needed sooner than with the proposed Build Alternative, to minimize or avoid continued deterioration of traffic operations. Environmental impacts from the No Build Alternative could include increased air pollutant emissions associated with delayed, slower traffic and the possible need to make physical improvements such as new travel lanes.

5.2 Build Alternative

The Build Alternative would convert the existing single HOV lanes into an Express Lane facility that would have one lane between U.S. 101 in southern San Jose and SR 87, two lanes between SR 87 and I-280, and one lane between I-280 and U.S. 101 in Mountain View. Conversion of the HOV lanes to Express Lanes would allow use by SOVs with active FasTrak accounts and transponders.

5.2.1 Express Lane Access

The Express Lanes would be adjacent to the center median and separated from the general purpose lanes by a striped 2-foot-wide buffer zone. The buffer zone would have gaps in multiple locations where vehicles can enter and exit the facility (called “access points”).

Access to/from the Express Lane is through a series of combined entry/exit points, similar to the southern California carpool lanes system (M4 design/weave access). The locations of these access points were selected to serve, in order of priority, the freeway-to-freeway interchanges, the major arterials, and the local streets. The location of these access points were fine tuned to account for geometric, safety, environmental, and operational constraints in the corridor as much as possible. All access zones meet the requirement established in TOPD 11-02 for the distance from access zones to the nearest off- or on-ramps. Attachment B shows the proposed access zones locations map. Attachment C includes the pavement delineation plans, including the pavement delineation of the access zones, and the access zones pavement details.

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The project would include signage to advise Express Lane users that entering or exiting the facility anywhere other than designated buffer zones is a traffic violation. A design modification to revise Express Lane access geometry to continuous access will be considered during the PS&E phase of the project.

The Bay Area Express Lane network is an open access system (via continuous access striping) except where access is limited via buffer striping or double white solid striping, as necessary, to enhance or preserve operational efficiency and traffic safety. The project plans included in this draft project report (Attachment B and C) reflect a restrictive access scenario which will be reduced by maintaining as much of the existing continuous access striping scheme during the design phase of the project.

The open access system will include more adequate gaps in traffic stream and easier merging and weaving between the Express Lane and the general purpose lanes for vehicles and transit vehicles, specifically in segments where there is only one Express Lane is proposed, or when freeway interchanges are closely spaced. Controlled access will be provided to manage congestion where excessive weaving or conflict is expected with general purpose lanes.

Additional benefits to open access includes:

- Reduce signage clutter
- Better public acceptance
- More drivers familiarity
- Eliminates the 2-foot buffer.
- Enhanced maneuverability and easier access specifically during off-peak hours
- Regional Express Lane consistency

5.2.2 Proposed Typical Section

The proposed typical section for SR 85 from U.S. 101 in South San Jose to SR 87 consists of a one-lane Express Lane facility with VTA Light Rail in the median. The Express Lane would be separated from the general purpose lanes by a two-foot buffer, delineated with solid stripes, which will be created by reducing the width of the Express Lane and the left most general purpose lane to 11 ft. The existing inside shoulder and outside shoulder widths will be maintained.

In the SR 85 section between SR 87 and I-280, the proposed typical section consists of a two-lane Express Lanes facility. Where the median width is approximately 46 ft, additional pavement will be added by widening into the median to accommodate the second Express Lane, leaving a median width of 22 ft. The median will be paved and the existing thrie-beam barrier will be replaced with a concrete barrier Type 60. A concrete barrier Type 60GE will be provided at the locations where overhead signs are proposed. The general purpose lanes are proposed to be a standard 12-foot width and the Express Lane are proposed to be a non-standard 11-foot widths with 10-foot inside and outside shoulder widths.

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A one-lane Express Lane facility is proposed between I-280 and U.S. 101 in Mountain View with the typical section being similar to the segment from U.S. 101 in South San Jose to SR 87. The Express Lane would be separated from the general purpose lanes by a two-foot buffer, delineated with solid stripes, which will be created by reducing the width of the Express Lane and the left most general purpose lane to 11 ft. The existing inside shoulder and outside shoulder widths will be maintained.

Attachment C includes the typical cross sections proposed for the various segments of the project.

5.2.3 Buffer Width

The project proposes a 2-foot buffer zone delineated by solid striping to provide separation between the Express Lanes and the adjacent general purpose lanes. In order to accommodate the second Express Lane, the 2-foot buffer, and meet Caltrans Highway Design Manual (HDM) shoulder width standards, the following SR 85 bridges are proposed to be widened to the inside: Almaden Expressway (northbound side only), Camden Avenue, Oka Road, Pollard Road, Saratoga Avenue, San Tomas Aquino Creek, and Saratoga Creek. The project considered but did not implement a 4-foot buffer because the existing median width is limited, additional outside widening of many bridges and crossings throughout the corridor (including bridges within the single Express Lane segments) would be needed in order to implement the wider buffer throughout the project corridor in both directions, and the additional widening would result in significant environmental and right-of-way impacts. In addition, implementing a 4-foot buffer section would also require replacement of the existing shoulder pavement sections for the entire length of the corridor, because the existing outside shoulder along SR 85 does not feature a full depth pavement section that is adequate to carry traffic loads, and therefore the costs and environmental impacts would increase significantly.

5.2.4 Horizontal and Vertical Alignment

The alignment of the widened facility will conform to the horizontal and vertical control established for the existing roadway.

5.2.5 Access Control Requirements

The project would not displace or relocate any residents, change any existing community boundaries, physically divide an established community, or create a new barrier to movement within the project corridor. Therefore, access to and from the project corridor and nearby streets would not change as a result of this project.

5.2.6 U.S. 101/SR 85 Direct Connectors

At the south end of the project in southern San Jose, both the northbound and southbound HOV direct connectors from SR 85 to U.S. 101 will be converted to Express Lane connectors, allowing SOVs with valid FasTrak devices to use the direct connectors for a

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fee. The southern end of the proposed Express Lanes on U.S. 101 will coincide with the beginning/ending of the double HOV lanes under the Metcalf overcrossing.

At the north end of the project in Mountain View, the buffer stripe will end on SR 85 shortly before the U.S. 101/SR 85 interchange. The direct connectors at this location will not be converted to Express Lane connectors and will remain as HOV-only connectors. In the northbound direction on SR 85, the Express Lane would terminate in advance of the direct connectors, allowing enough distance for SOVs to exit the lane and merge across the general purpose lanes to use the general purpose ramp from northbound SR 85 to northbound U.S. 101. In the southbound direction, the Express Lane would start shortly after the direct connector terminates on SR 85, allowing enough distance for SOVs entering southbound SR 85 from the general purpose ramp to merge across the general purpose lanes and enter the Express Lane.

5.2.7 U.S. 101 “Wing” Segments

The proposed project limits include two segments of U.S. 101 in southern San Jose and in Mountain View. The U.S. 101 segment in southern San Jose runs from Bailey Ave (PM 23.1) to Blossom Hill Rd (PM 28.6) while the northern segment runs from Moffett Blvd (PM 47.9) to Oregon Expressway (PM 52.0). The project does not propose any change in the existing striping within these two segments. The project is proposing Express Lane signage both in the northbound and southbound directions in the southern segments. Signage within the northern segments limits will be determined during the design phase.

5.2.8 Express Lane Signage

Static and dynamic overhead signs as well as barrier-mounted signs would provide drivers the necessary information to make decisions. Each access zone would typically have the following signs:

- One advance information sign placed approximately 1-mile ahead of the access zone.
- One dynamic message sign showing the toll amount to the downstream destination, placed approximately ¼ mile ahead of the access zone.
- One local exits sign providing drivers with advance information of the downstream off-ramp destinations served by the upcoming access zone and the distance to the access zone. This sign will be mounted to the Dynamic Message Sign (DMS) pole, approximately ¼ mile ahead of the access zone.
- One Express Lane entrance sign placed at the beginning of each access zone with an arrow pointing left.
- One local exits sign mounted to the Express Lane entrance sign pole showing the name of the exit ramps served by this access zone.

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Overhead Express Lane signs will match overhead Express Lane signage on nearby routes in appearance to maintain visual consistency, including color and shape of the poles and signs.

A copy of the Express Lanes signage concept is attached in Attachment D. This signage concept will be subject to further discussions and refinements during the design phase of the project.

5.2.9 Non-Standard Mandatory and Advisory Design Features

The proposed project meets all of the Caltrans mandatory and advisory design standards for freeway facilities on SR 85, with the exceptions listed below:

Mandatory Design Exceptions

- Standard stopping sight distance on horizontal curves is not provided at 23 locations. The proposed project is maintaining the existing sight distances along the corridor from U.S. 101 in South San Jose to SR 87 and from I-280 to U.S. 101 in Mountain View, except at spot locations where the overhead signs are proposed in the median. Proposed stopping sight distances within those segments range from 488 to 788 ft, providing design speeds no lower than 54 mph. Proposed stopping sight distances from SR 87 to I-280 range from 552 to 794 ft, providing design speeds no lower than 58 mph.
- Standard horizontal curve radius is not provided at 5 locations. The proposed project is maintaining the existing horizontal curve radius. The existing radii range from 1,997 ft to 2,975 ft (compared to the standard 3,000-foot curve) on SR 85, and provide design speeds no lower than 69 mph.
- Standard traveled way width is not provided in the Express Lanes and at spot locations through the corridor. The proposed project is providing 11-foot lanes where standard 12-foot lanes are not provided.
- Standard shoulder width is not provided within some segments of the corridor. Existing non-standard inside and outside shoulder widths will remain along the corridor. Proposed new non-standard inside shoulder widths are proposed at spot locations within the segment.
- Standard median width is not provided within some segments of the corridor. The median width ranges from 11.7 feet to 22 feet (compared to the standard 22 foot median width for the mandatory) on SR 85.

Advisory Design Exceptions

- Standard median width is not provided within some segments of the corridor. The median width ranges from 22 feet to 36 feet (compared to the standard 36 foot median width for the advisory) on SR 85.

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The request for Mandatory Design Exceptions has been submitted for review. These exceptions will be considered during the review period of the Draft Project Report and Environmental Document. A risk assessment has been performed by the HQ Design Coordinator, Lawrence Moore, and he has determined that the risk of not approving these exceptions is low subject to the incorporation of the safety features outlined in the Safety Analysis Memorandum to the maximum extent feasible.

The request for Advisory Design Exceptions has been submitted for review. These exceptions will be considered during the review period of the Draft Project Report and Environmental Document.

5.2.10 Express Lane Operations

Express Lane operations would be tightly integrated with monitoring of traffic speed and density, enforcement, incident management, and other subsystems to maintain free-flow conditions. Traffic monitoring stations utilizing electromagnetic and/or microwave sensors will be located along GP and Express Lanes on SR 85 to continually record and monitor certain parameters that can include traffic volume, density, and speed.

Static overhead signs would be installed to advise qualified HOV and SOV users as they approach an Express Lane entrance point. An overhead DMS located just before each entrance point would display the current toll rates. The DMS would display the price to a minimum of two downstream destinations served by the next exit from the Express Lanes facility. These toll amounts displayed can be a combination of the next downstream off-ramps served by the exit, the downstream major system freeway interchange, and/or the final destination at the end of the facility.

The toll rates on the DMS would be updated every 3 to 6 minutes to reflect changing speed and traffic density measured at intervals along the Express Lanes. The toll rate displayed when a user enters the facility would be “locked” for that user for travel to any destination that is either explicit or implicit within the displayed destinations.

After entering the facility, all users would pass through a tolling zone. In each zone, an antenna mounted on an overhead structure would enable communication with FasTrak transponders and a transaction indicator beacon to convey user type paying user or non-paying user (which can be an eligible HOV or a violating SOV).

5.2.11 Customer Service and Account Management

Prospective SOV users would be able to apply for a transponder through BATA’s Regional Customer Service Center (RCSC), FasTrak website, a partnering retail outlet, or a toll agency and, if approved, immediately receive a transponder. FasTrak accounts are maintained and managed at the RCSC by BATA’s service provider.

5.2.12 SOV Transaction Processing

To use the Express Lanes as an SOV, the user would need to mount a FasTrak transponder to the vehicle windshield. Upon entering the Express Lanes and then after passing

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underneath the tolling antennas, transaction records would be sent in near-real time from each toll zone controller to the Central Processing System (CPS) for processing and configuring trips in a specified format for communicating with the RCSC.

5.2.13 HOV Transaction Processing

All existing eligible HOVs would continue to be exempt from paying a toll in the SR 85 Express Lanes. Eligible HOVs consist of:

- Passenger cars with two or more occupants (also known as carpool vehicles),
- Transit or para-transit vehicles with no axle count limitation,
- Motorcycles,
- Inherently Low Emission Vehicles (ILEVs) with a Department of Motor Vehicles (DMV)-issued white decal, and
- Advanced Technology Partial Zero Emission Vehicles (AT PZEVs) with DMV issued green decal.

HOVs do not require a transponder to use the Express Lanes. Vehicles without a transponder would trigger an indicator light on the highway. CHP officers would monitor the indicator light and observe from a distance whether the identified vehicle is a qualified HOV.

5.2.14 Violation Processing

When the monitored “tag status” for a vehicle in the Express Lanes is invalid, the electronic monitoring information is processed to determine if a violation has occurred.

5.2.15 California Highway Patrol Enforcement Areas

Adequate enforcement of the Express Lanes system is a fundamental element for the system’s success and needs to be considered during all phases of development. The design team met with the CHP on April 16 and October 18, 2012 and discussed preliminary enforcement locations, enforcement observation point details, the enforcement vehicle to be used at each location, and the number and position of beacon lights that will be used to assist CHP officer in identifying potential violating vehicles. The locations of these proposed CHP enforcement areas and the typical enforcement cross-sections are shown in Attachment C. Where possible, these enforcement zones are located on tangent sections and an adequate sight distance is provided. The geometric design of these enforcement zones and any associated design exceptions have been developed and discussed with Caltrans and the CHP.

Where it is physically feasible, CHP observation points would be created downstream of the access points (tolling zone) and at intermediate locations between access points (tolling zones) where additional enforcement gantries would be provided. Typical observation points would include provision of offset barrier to protect the CHP officer and vehicle from oncoming traffic and would be positioned approximately 164 ft downstream of the tolling gantry. A beacon light mounted on the barrier will identify vehicles without a FasTrak

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transponder and helping identify potential violators. The CHP officer then will visually verify the occupancy in the suspect vehicle and determine whether it is a SOV in violation or a legitimate HOV. The officer will then pursue the violator or, if two officers operating in tandem, will radio the second officer downstream to pursue them, and direct them to a safe stopping place. The violating SOVs will be pulled over to the right shoulder and cited for the appropriate violation of the vehicle code.

Until technology advancement allows for fully automated enforcement and occupancy verification, it is proposed that the SR 85 Express Lane facility be enforced manually by visual observation of the occupancy level and the indicator lights on the gantries.

Lighting at CHP enforcement areas will comply with Caltrans Managed Lanes Guidelines and CHP recommendations.

5.2.16 Traffic System Management/Traffic Demand Management

Traffic Systems Management (TSM) strategies increase the efficiency of existing facilities by accommodating a greater number of vehicle trips on a facility without increasing the number of through lanes. Traffic Demand Management (TDM) focuses on regional means of reducing the number of vehicle trips and vehicle miles traveled (VMT) as well as increasing vehicle occupancy. TSM encourages transit use and ridesharing, which the proposed project would continue to facilitate. The project would increase the efficiency of the existing SR 85 facility by allowing for more vehicles to travel within this corridor while minimizing expansion of the freeway.

5.2.17 Traffic Operations Analysis

The information from this section is based on the *Traffic Operations Analysis Report* (URS and DKS 2013) completed in November 2013.

The traffic study area consists of the entire length of SR 85, including on- and off-ramps, and U.S. 101 adjacent to the southern end of SR 85 from Bernal Road to Bailey Avenue in San Jose and adjacent to the northern end of SR 85 from Ellis Street in Mountain View to Oregon Expressway in Palo Alto. The project corridor has been divided into four “segment groups,” which represent major system interchanges within the corridor and include all freeway segments within that group. The four segment groups are the same for northbound and southbound and are numbered sequentially in the southbound direction from the northern limit of SR 85, as shown below.

<u>Segment Group No.</u>	<u>Segment Group</u>
<i>Southbound</i>	
1	Northern Limit (just south of the SR 85/US 101 interchange in Mountain View) to I-280
2	I-280 to SR 17
3	SR 17 to SR 87
4	SR 87 to Southern Limit (SR 85/US 101 interchange in San Jose)

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Northbound

4	SR 87 to Southern Limit (SR 85/US 101 interchange in San Jose)
3	SR 17 to SR 87
2	I-280 to SR 17
1	Northern Limit (just south of the SR 85/US 101 interchange in Mountain View) to I-280

The traffic study analyzed peak period conditions, defined as 6 AM to 9 AM (AM peak) and 3 PM to 7 PM (PM peak), and peak hour conditions within the peak periods (7 AM to 8 AM and 5 PM to 6 PM). The primary travel direction is northbound in the AM peak and southbound in the PM peak.

The traffic forecast and operational analysis was conducted for existing conditions, a project opening year of 2015, and a horizon year of 2035. Existing conditions represent the year 2007, based on the most recent data available at the time the traffic studies began in 2010. Existing conditions reflect Caltrans traffic volume data from 2007/2008, vehicle fleet composition from the Caltrans 2007 HOV Report and Caltrans Performance Maintenance System, and additional traffic volume counts conducted in May 2010 at bottleneck areas.

The traffic analysis studied existing and future (2015 and 2035) conditions both with and without the proposed project. For future conditions, the Build Alternative is compared to No Build conditions. Future No Build conditions represent changes that will occur with or without the project. This comparison shows a complete picture of the future transportation environment that accounts for traffic from planned future development in the approved general plans of the cities in Santa Clara County. This comparison also accounts for planned growth in the region, as well as planned improvements to the transportation network.

5.2.17.1 Existing Conditions

The LOS ratings for both the general purpose and HOV lanes for existing conditions are shown in Table 5.2-1 for the northbound AM peak hour and Table 5.2-2 for the southbound PM peak hour. During the AM peak, the northbound general purpose lanes in several segments between SR 87 and the SR 85/U.S. 101 interchange in Mountain View operate at impaired levels of service (LOS E and F; Table 5.2-1, Segment Groups 1 through 3). During the PM peak, the southbound general purpose lanes in several segments between the SR 85/U.S. 101 interchange in Mountain View and Blossom Hill Road also operate at LOS E and F (Table 5.2-2, Segment Groups 1 through 4). All segments operate at LOS D or better for the northbound PM peak hour and the southbound AM peak hour; therefore, the LOS ratings are not included here.

Most HOV lanes in all northbound and southbound segment groups operate at free-flow LOS C or better. However, seven northbound HOV lane segments in Segment Groups 2 and 3 during the AM peak (Table 5.2-1) and two southbound HOV lane segments in

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Segment Group 3 during the PM peak (Table 5.2-2) operate at LOS D, with slightly decreased speeds and increased vehicle density.

Travel times in all northbound and southbound HOV segments are lower than in the corresponding general purpose segments (Table 5.2-3). HOV lane travel times through the project corridor are 9.8 minutes less than the general purpose lanes in the northbound direction in the AM peak hour and 13.9 minutes less in the southbound direction in the PM peak hour. Average travel times for each HOV lane segment group are close to the average “free-flow” times, defined as the number of minutes required to travel through the segment group at the posted speed limit of 65 mph (Table 5.2-3).

Table 5.2-1 Peak Hour Travel Conditions, Existing Conditions, Northbound AM

Segment	General Purpose	HOV
<i>Segment Group 4 (SR 87 to Southern Limit)</i>		
NB Bernal on-ramp and SB Bernal on-ramp	B	A
SB Bernal on-ramp and SB US 101 on-ramp	B	A
SB US 101 on-ramp and Great Oaks on-ramp	B	A
Great Oaks on-ramp and Cottle off-ramp	C	B
Cottle off-ramp and Cottle on-ramp	B	B
Cottle on-ramp and Blossom Hill off-ramp	C	B
Blossom Hill off-ramp and EB Blossom Hill on-ramp	C	B
EB Blossom Hill on-ramp and WB Blossom Hill on-ramp	D	C
WB Blossom Hill on-ramp and SR 87 off-ramp	D	B
SR 87 off-ramp and Santa Teresa off-ramp	C	B
<i>Segment Group 3 (SR 17 to SR 87)</i>		
Santa Teresa off-ramp and Santa Teresa on-ramp	C	B
Santa Teresa on-ramp and SR 87 on-ramp	C	B
SR 87 on-ramp and Almaden Expy off-ramp	C	B
Almaden Expy off-ramp and NB Almaden Expy on-ramp	E	B
NB Almaden Expy on-ramp and SB Almaden Expy on-ramp	F	D
SB Almaden Expy on-ramp and Camden off-ramp	E	C
Camden off-ramp and Camden on-ramp	D	C
Camden on-ramp and Union off-ramp	E	C
Union off-ramp and Union on-ramp	E	D
Union on-ramp and Bascom off-ramp	D	C
Bascom off-ramp and SR 17 off-ramp	D	B
SR 17 off-ramp and Bascom on-ramp	E	B
<i>Segment Group 2 (I-280 to SR 17)</i>		
Bascom on-ramp and SR 17 on-ramp	F	C
SR 17 on-ramp and Winchester on-ramp	F	D
Winchester on-ramp and Lane drop	F	D
Lane drop and Saratoga off-ramp	E	C
Saratoga off-ramp and Saratoga on-ramp	E	C

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Segment	General Purpose	HOV
Saratoga on-ramp and Sunnyvale/Saratoga off-ramp	F	D
Sunnyvale/Saratoga off-ramp and Sunnyvale/Saratoga on-ramp	F	D
Sunnyvale/Saratoga on-ramp and Stevens Creek off-ramp	E	D
Stevens Creek off-ramp and I-280 off-ramp	D	B
I-280 off-ramp and SB I-280 on-ramp	B	A
<i>Segment Group 1 (Northern Limit to I-280)</i>		
SB I-280 on-ramp and I-280/Stevens Creek on-ramp	C	B
I-280/Stevens Creek on-ramp and Homestead on-ramp	C	B
Homestead on-ramp and Fremont off-ramp	F	C
Fremont off-ramp and Fremont on-ramp	F	C
Fremont on-ramp and SB SR 82 off-ramp	E	C
SB SR 82 off-ramp and SB SR 82 on-ramp	E	B
SB SR 82 on-ramp and NB SR 82 off-ramp	E	B
NB SR 82 off-ramp and SR 82 on-ramp	E	B
SR 82 on-ramp and EB SR 237 off-ramp	E	B
EB SR 237 off-ramp and EB SR 237 on-ramp	C	B
EB SR 237 on-ramp and Evelyn off-ramp	C	B
Evelyn off-ramp and Central Expy on-ramp	C	B
Central Expy on-ramp and Moffett off-ramp	D	B
Moffett off-ramp and NB SR 85/NB US 101 Connector	C	B

Notes: EB = eastbound, NB = northbound, SB = southbound, WB = westbound
Boldfaced LOS have high vehicle densities and impaired traffic flow.

Table 5.2-2 Peak Hour Travel Conditions, Existing Conditions, Southbound PM

Segment	General Purpose	HOV
<i>Segment Group 1 (Northern Limit to I-280)</i>		
SR 85 Connector /Shoreline on-ramp and Moffett on-ramp	D	B
Moffett on-ramp and Central Expy off-ramp	E	C
Central Expy off-ramp and Evelyn on-ramp	F	C
Evelyn on-ramp and SR 237 off-ramp	F	C
SR 237 off-ramp and SR 237 on-ramp	F	C
SR 237 on-ramp and NB SR 82 on-ramp	F	C
NB SR 82 on-ramp and SR 82 off-ramp	F	C
SR 82 off-ramp and SB SR 82 on-ramp	F	C
SB SR 82 on-ramp and Fremont off-ramp	E	C
Fremont off-ramp and Fremont on-ramp	F	C
Fremont on-ramp and Homestead off-ramp	E	C
Homestead off-ramp and I-280 off-ramp	D	B
<i>Segment Group 2 (I-280 to SR 17)</i>		
I-280 off-ramp and NB I-280 on-ramp	C	B
NB I-280 on-ramp and SB I-280 on-ramp	C	B
SB I-280 on-ramp and Stevens Creek off-ramp	D	A
Stevens Creek off-ramp and Stevens Creek on-ramp	C	C
Stevens Creek on-ramp and lane drop	E	C
Lane drop and De Anza off-ramp	E	C
De Anza off-ramp and De Anza on-ramp	D	B

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Segment	General Purpose	HOV
De Anza on-ramp and Saratoga off-ramp	E	C
Saratoga off-ramp and Saratoga on-ramp	F	C
Saratoga on-ramp and Winchester off-ramp	E	C
Winchester off-ramp and SR 17 off-ramp	D	B
SR 17 off-ramp and Bascom off-ramp	D	B
<i>Segment Group 3 (SR 17 to SR 87)</i>		
Bascom Off – Ramp and SR 17 on-ramp	D	B
SR 17 on-ramp and Bascom on-ramp	F	D
Bascom on-ramp and Union/Samaritan off-ramp	F	D
Union/Samaritan off-ramp and Union on-ramp	F	C
Union on-ramp and Camden off-ramp	E	B
Camden off-ramp and Camden on-ramp	D	B
Camden on-ramp and Almaden Expy off-ramp	E	C
Almaden Expy off-ramp and SB Almaden Expy on-ramp	D	B
SB Almaden Expy on-ramp and NB Almaden Expy on-ramp	D	B
NB Almaden Expy on-ramp and SR 87 off-ramp	E	B
SR 87 off-ramp and Santa Teresa off-ramp	F	B
<i>Segment Group 4 (SR 87 to Southern Limit)</i>		
Santa Teresa off-ramp and Santa Teresa on-ramp	F	B
Santa Teresa on-ramp and SR 87 on-ramp	F	B
SR 87 on-ramp and Blossom Hill off-ramp	E	B
Blossom Hill off-ramp and WB Blossom Hill on-ramp	D	B
WB Blossom Hill on-ramp and EB Blossom Hill on-ramp	D	B
EB Blossom Hill on-ramp and Cottle off-ramp	D	A
Cottle off-ramp and SB Cottle on-ramp	C	A
SB Cottle on-ramp and NB Cottle on-ramp	C	A
NB Cottle on-ramp and Great Oaks off-ramp	D	A
Great Oaks Blvd off-ramp and Bernal off-ramp	C	A
Bernal off-ramp and SR 85 Split	B	A

Notes: EB = eastbound, Expy = Expressway; NB = northbound, SB = southbound, WB = westbound
Boldfaced LOS have high vehicle densities and impaired traffic flow.

Table 5.2-3 Peak Hour Travel Times (in minutes), Existing Conditions

Lane Type	Segment Group	Free Flow ²	Existing
AM Northbound			
General Purpose	1. Northern Limit to I-280	4.8	7.3
	2. I-280 to SR 17	7.3	14.4
	3. SR 17 to SR 87	5.0	6.7
	4. SR 87 to Southern Limit	4.7	5.2
	<i>Total</i>	<i>21.8</i>	<i>33.7</i>
HOV/Express	1. Northern Limit to I-280	4.8	5.5
	2. I-280 to SR 17	7.3	8.0
	3. SR 17 to SR 87	5.0	5.5
	4. SR 87 to Southern Limit	4.7	4.9
	<i>Total</i>	<i>21.8</i>	<i>23.9</i>
AM Southbound			
General Purpose	1. Northern Limit to I-280	4.8	5.8
	2. I-280 to SR 17	7.3	7.8

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Lane Type	Segment Group	Free Flow ²	Existing
	3. SR 17 to SR 87	5.0	5.3
	4. SR 87 to Southern Limit	4.7	4.6
	<i>Total</i>	<i>21.8</i>	<i>23.6</i>
HOV/Express	1. Northern Limit to I-280	4.8	5.2
	2. I-280 to SR 17	7.3	6.9
	3. SR 17 to SR 87	5.0	4.5
	4. SR 87 to Southern Limit	4.7	4.0
	<i>Total</i>	<i>21.8</i>	<i>20.7</i>
PM Northbound			
General Purpose	1. Northern Limit to I-280	4.8	5.3
	2. I-280 to SR 17	7.3	7.0
	3. SR 17 to SR 87	5.0	5.5
	4. SR 87 to Southern Limit	4.7	5.4
	<i>Total</i>	<i>21.8</i>	<i>23.0</i>
HOV/Express	1. Northern Limit to I-280	4.8	4.8
	2. I-280 to SR 17	7.3	6.3
	3. SR 17 to SR 87	5.0	5.0
	4. SR 87 to Southern Limit	4.7	4.9
	<i>Total</i>	<i>21.8</i>	<i>21.0</i>
PM Southbound			
General Purpose	1. Northern Limit to I-280	4.8	12.9
	2. I-280 to SR 17	7.3	10.1
	3. SR 17 to SR 87	5.0	9.6
	4. SR 87 to Southern Limit	4.7	4.8
	<i>Total</i>	<i>21.8</i>	<i>37.4</i>
HOV/Express	1. Northern Limit to I-280	4.8	6.4
	2. I-280 to SR 17	7.3	7.6
	3. SR 17 to SR 87	5.0	5.3
	4. SR 87 to Southern Limit	4.7	4.1
	<i>Total</i>	<i>21.8</i>	<i>23.5</i>

Notes:
 1. AM peak hour defined as 7:00 to 8:00 AM. PM peak hour defined as 5:00 to 6:00 PM.
 2. Free flow travel time is based on an assumed speed of 65 mph. In some cases, speeds may exceed 65 mph producing travel times that are less than free flow.
 HOV = high-occupancy vehicle

5.2.17.2 Opening Year (2015) Operational Analysis

SR 85

With the No Build Alternative, most segments of the northbound general purpose lanes from the SR 85/U.S. 101 interchange in Mountain View to SR 87 are projected to have high vehicle densities and impaired traffic flow during the 2015 AM peak hour (Segment Groups 1 through 3, LOS E and F; Table 5.2-4). In the PM peak hour, the northbound direction is less heavily traveled, and all but one segment would operate at LOS D or better (in Segment Group 3, LOS E; Table 5.2-4).

In the 2015 PM peak hour, the southbound general purpose lanes would also operate at LOS E and F in most segments (Table 5.2-5). In the 2015 AM peak hour, the southbound direction is less heavily traveled, and all segments would operate at LOS D or better (Table 5.2-5).

Table 5.2-4 Peak Hour Travel Conditions, 2015 Northbound No Build and Build

Segment	AM peak hour (7 to 8 AM)	PM peak hour (5 to 6 PM)
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	General Purpose		HOV/Express		General Purpose		HOV/Express	
	No Build	Build ¹	No Build	Build ¹	No Build	Build ¹	No Build	Build ¹
<i>Segment Group 4 (SR 87 to Southern Limit)</i>								
NB and SB Bernal on-ramp	B	A	A	C	B	B	A	A
SB Bernal on-ramp and US 101 SB on-ramp	B	B	B	C	B	B	A	A
US 101 SB on-ramp and Great Oaks on-ramp	B	B	B	C	B	C	A	A
Great Oaks on-ramp and Cottle off-ramp	C	C	B	C	C	D	A	A
Cottle off-ramp and on-ramp	C	B	B	C	C	D	A	A
Cottle on-ramp and Blossom Hill off-ramp	C	D (D)	C	C (C)	D	D (D)	B	A (A)
Blossom Hill off-ramp and EB on-ramp	C	C	B	C	C	D	B	A
Blossom Hill EB on-ramp and WB on-ramp	D	E	C	C	D	E	B	A
Blossom Hill WB on-ramp and 87 off-ramp	D	D	B	C	D	D	B	A
SR 87 off-ramp and Santa Teresa off-ramp	C	C	B	C	C	D	B	A
<i>Segment Group 3 (SR 17 to SR 87)</i>								
Santa Teresa off-ramp and on-ramp	C	C	B	C	C	C	B	A
Santa Teresa on-ramp and 87 on-ramp	D	D	B	C	C	D	B	A
SR 87 on-ramp and Almaden Expy off-ramp	C	C	B	C	C	D	B	A
Almaden Expy off-ramp and NB on-ramp	E	B (C)	C	C (C)	C	B (C)	B	A (A)
Almaden Expy NB and SB on-ramp	F	E	D	B	E	F	C	B
SB Almaden Expy on-ramp and Camden off-ramp	E	D	D	B	D	E	B	B
Camden off-ramp and on-ramp	F	D	C	B	C	D	B	B
Camden on-ramp and Union off-ramp	F	E	D	B	C	C	B	B
Union off-ramp and on-ramp	F	F (E)	D	B (C)	D	D (D)	B	B (A)
Union on-ramp and Bascom off-ramp	F	D	E	B	D	D	B	B
Bascom off-ramp and SR 17 off-ramp	F	D	E	B	C	C	A	B
SR 17 off-ramp and Bascom on-ramp	F	C	D	B	B	B	A	B
<i>Segment Group 2 (I-280 to SR 17)</i>								
Bascom on-ramp and SR 17 on-ramp	F	E	C	B	B	C	A	B
SR 17 on-ramp and Winchester on-ramp	F	F	D	B	C	C	B	B
Winchester on-ramp and lane drop	F	F	D	B	D	F	B	B
(Express lane access zone only, between Winchester on-ramp and Saratoga off-ramp)		(F)		(C)		(C)		(A)
Lane drop and Saratoga off-ramp	F	E	D	C	D	E	B	B
Saratoga off-ramp and on-ramp	F	C	C	C	B	C	B	B
Saratoga on-ramp and De Anza off-ramp	F	D	D	C	C	D	B	B
De Anza off-ramp and on-ramp	F	C	D	C	C	C	B	B
De Anza on-ramp and Stevens Creek off-ramp	F	C (C)	F	C (B)	C	B (C)	B	B (A)
Stevens Creek off-ramp and 280 off-ramp	D	C	B	C	C	C	A	A
280 off-ramp and 280 SB loop on-ramp	B	B	B	C	A	B	A	A
<i>Segment Group 1 (Northern Limit to I-280)</i>								
280 SB loop on-ramp and 280 NB on-ramp	C	C	B	C	B	B	A	A
280 NB on-ramp and Homestead on-ramp	E	F	B	C	C	D	A	A
Homestead on-ramp and Fremont off-ramp	F	E (F)	D	C (C)	D	D (C)	B	A (A)
Fremont off-ramp and Fremont on-ramp	F	F	D	C	C	D	B	A
Fremont on-ramp and SR 82 SB off-ramp	F	E	D	C	C	D	B	A
SR 82 SB off-ramp and SR 82 SB on-ramp	E	E	B	C	C	D	A	A
SR 82 SB on-ramp and SR 82 NB off-ramp	E	E	B	C	C	C	A	A
SR 82 NB off-ramp and SR 82 NB on-ramp	E	E	B	C	C	C	A	A
SR 82 NB on-ramp and SR 237 EB off-ramp	E	E	C	C	B	C	A	A
SR 237 EB off-ramp and EB on-ramp	C	C	B	C	B	C	A	A
SR 237 EB on-ramp and Evelyn off-ramp	D	B	B	C	B	B	A	A
Evelyn off-ramp and Central Expy on-ramp	C	C	B	C	B	B	A	A
Central Expy on-ramp and Moffett off-ramp	E	D (C)	B	C (A)	B	C (A)	A	A (A)
Moffett off-ramp and SR 85/US 101 connector	C	B	B	C	B	A	A	A

Notes:

1. For segments that contain access zones where vehicles may enter and/or exit the express lane(s), the LOS in parentheses indicates the level of service for that access movement.

EB = eastbound, Expy = Expressway; NB = northbound, SB = southbound, WB = westbound

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Boldfaced LOS have high vehicle densities and impaired traffic flow, as shown in Table 2.1.3-1.

Table 5.2-5 Peak Hour Travel Conditions, 2015 Southbound No Build and Build

Segment	2015 AM peak hour (7 to 8 AM)				2015 PM peak hour (5 to 6 PM)			
	General Purpose		HOV/Express		General Purpose		HOV/Express	
	No Build	Build ¹	No Build	Build ¹	No Build	Build ¹	No Build	Build ¹
<i>Segment Group 1 (Northern Limit to I-280)</i>								
SR 85/US 101 connector and Moffett on-ramp	A	A	A	A	F	E	B	C
Moffett on-ramp and Central Expy off-ramp	A	A (A)	A	A (A)	F	F (F)	E	C (C)
Central Expy off-ramp and Evelyn on-ramp	A	A	A	A	F	F	C	C
Evelyn on-ramp and SR 237 off-ramp	B	A	A	A	F	F	D	C
SR 237 off-ramp and on-ramp	A	A	A	A	F	F	C	C
SR 237 on-ramp and NB SR 82 on-ramp	B	B	A	A	F	F	C	C
NB SR 82 on-ramp and SB SR 82 off-ramp	C	B	A	A	F	F	D	C
SB SR 82 off-ramp and SB SR 82 on-ramp	B	B	A	A	F	F	C	C
SB SR 82 on-ramp and Fremont off-ramp	C	C (C)	A	A (A)	F	F (F)	C	C (D)
Fremont off-ramp and on-ramp	B	B	A	A	F	F	C	C
Fremont on-ramp and Homestead off-ramp	C	C	A	A	F	E	C	C
Homestead off-ramp and SR 280 off-ramp	B	B	A	A	D	C	C	C
<i>Segment Group 2 (I-280 to SR 17)</i>								
280 off-ramp and NB 280 on-ramp	A	A	A	A	B	B	B	C
NB 280 on-ramp and SB 280 on-ramp	A	A	A	A	C	C	B	C
SB 280 on-ramp and Stevens Creek off-ramp	A	A	A	A	D	D	B	C
Stevens Creek off-ramp and on-ramp	A	A (A)	A	A (A)	C	C (B)	B	C (C)
Stevens Creek on-ramp and De Anza off-ramp	B	B (B)	A	A (A)	E	D (D)	C	C (C)
De Anza off-ramp and on-ramp	A	A	A	A	D	C	C	C
De Anza on-ramp and Saratoga off-ramp	B	B	A	A	D	D	C	C
Saratoga off-ramp and on-ramp	A	A	A	A	F	D	D	C
Saratoga on-ramp and Winchester off-ramp	B	B (C)	A	A (A)	E	F (F)	D	C (D)
Winchester off-ramp and SR 17 off-ramp	B	A	A	A	E	C	C	B
SR 17 off-ramp and Bascom off-ramp	A	A	A	A	E	C	C	B
<i>Segment Group 3 (SR 17 to SR 87)</i>								
Bascom off-ramp and SR 17 on-ramp	A	A	A	A	F	B	C	B
SR 17 on-ramp and Bascom on-ramp	B	B	A	A	F	C	E	B
Bascom on-ramp and Union/Samaritan off-ramp	C	B	A	A	F	C	E	B
Union/Samaritan off-ramp and Union on-ramp	C	C (C)	A	A (A)	F	D (D)	D	C (C)
Union on-ramp and Camden off-ramp	C	C	A	A	F	E	D	B
Camden off-ramp and on-ramp	B	B	A	A	F	C	C	B
Camden on-ramp and Almaden Expy off-ramp	C	A (C)	A	A (A)	F	C (F)	C	B (B)
Almaden Expy off-ramp and SB Almaden Expy on-ramp	B	B	A	A	F	D	B	C
SB Almaden Expy on-ramp and NB Almaden Expy on-ramp	B	B	A	A	F	C	B	C
NB Almaden Expy on-ramp and SR 87 off-ramp	B	C	A	A	F	C	C	C
SR 87 off-ramp and Santa Teresa off-ramp	B	B	A	A	F	E	D	C
<i>Segment Group 4 (SR 87 to Southern Limit)</i>								
Santa Teresa off-ramp and on-ramp	C	C	A	A	F	D	B	C
Santa Teresa on-ramp and SR 87 on-ramp	C	C	A	A	F	E	B	C
SR 87 on-ramp and Blossom Hill off-ramp	D	C	A	A	F	D	C	C
Blossom Hill off-ramp and WB Blossom Hill on-ramp	D	D	A	A	D	D	B	C
WB Blossom Hill on-ramp and EB Blossom Hill on-ramp	D	D	A	A	E	D	B	C
EB Blossom Hill on-ramp and Cottle off-ramp	D	B (D)	A	A (A)	E	C (E)	A	C (C)
Cottle off-ramp and SB Cottle on-ramp	C	C	A	A	C	C	A	C
SB Cottle on-ramp and NB Cottle on-ramp	C	C	A	A	C	C	A	C
NB Cottle on-ramp and Great Oaks off-ramp	D	D	A	A	D	C	A	C
Great Oaks off-ramp and Bernal off-ramp	C	C	A	A	C	C	A	C
Bernal off-ramp and SR 85/US 101 connector	C	C	A	A	B	B	A	C

Notes:

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1. For segments that contain access zones where vehicles may enter and/or exit the express lane(s), the LOS in parentheses indicates the level of service for that access movement.

EB = eastbound, Expy = Expressway; NB = northbound, SB = southbound, WB = westbound

Boldfaced LOS have high vehicle densities and impaired traffic flow, as shown in Table 2.1.3-1.

Most HOV lane segments would operate at free-flow LOS C or better in the 2015 No Build Condition. However, during the AM peak, several northbound HOV lane segments in Segment Groups 1 through 3 would operate at LOS D, with decreased speeds and increased vehicle density (Table 5.2-4). In addition, three HOV lane segments would operate at LOS E or F, with impaired traffic flow (Segment Group 3, between the Union Avenue on-ramp and Bascom Avenue off-ramp and between the Bascom Avenue off-ramp and the SR 17 off-ramp; and Segment Group 2, between the De Anza Boulevard on-ramp and the Stevens Creek Boulevard off-ramp; Table 5.2-4). During the PM peak, three southbound HOV lane segments would operate at impaired LOS E, and seven would operate at LOS D (Segment Groups 1 through 3; Table 5.2-5). The LOS E and F segments would fail to meet the statutory requirement of LOS C/D for HOV lanes, and some corrective action, independent of the proposed project, would be needed to address the condition.

Travel times in all 2015 No Build Alternative northbound and southbound HOV segments are predicted to remain lower than in the corresponding general purpose lane segments. HOV lane travel times through the project corridor are projected to be 15.3 minutes less than the general purpose lanes in the northbound direction in the AM peak hour and 11.9 minutes less in southbound direction in the PM peak hour (Table 5.2-6).

As shown in Tables 5.2-4 and 5.2-5, the Build Alternative would improve some general purpose lane levels of service compared with the No Build Alternative in 2015. All four segment groups in the northbound direction during the AM peak hour and in the southbound direction during the PM peak hour would still contain segments that operate at impaired LOS E or F. However, the Build Alternative would reduce the number of LOS E and F segments between I-280 and SR 87 in the northbound AM peak and southbound PM peak, compared with No Build (Segment Groups 2 and 3, Tables 5.2-4 and 5.2-5).

In 2015, in the northbound AM peak hour, general purpose lane travel time between I-280 and SR 17 would decrease by 10.9 minutes compared with No Build (Segment Group 2, Table 5.2-6). In the No Build condition, the traffic backups due to two separate bottlenecks (between the South De Anza Boulevard on-ramp and Stevens Creek Boulevard off-ramps, and between the Winchester Boulevard lane drop and the Saratoga Avenue off-ramp) would combine and cause backups as far south as Camden Avenue during the peak hour. With the Build Alternative, the conversion of the existing single HOV lane to two express lanes would significantly decrease congestion in Segment Group 2.

Overall, the Build Alternative would improve general purpose lane travel times through the project corridor during both the northbound AM peak hour (by 14.2 minutes) and the southbound PM peak hour (by 5.1 minutes) compared with No Build (Table 5.2-6).

In the express lanes, 2015 Build Alternative levels of service would remain at LOS C or better in both directions throughout both the AM and PM peak hours, except for two

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segments where the access zones are forecast to operate at LOS D in the southbound PM peak (Segment Group 1, between the southbound SR 82 on-ramp and the Fremont Avenue off-ramp, and Segment Group 2, between the Saratoga Avenue on-ramp and the Winchester Boulevard off-ramp, Table 5.2-5). The access zones are where lane-changing movements for vehicles entering and exiting the express lanes are concentrated and traffic flow is most likely break down. Overall, the express lanes are expected to meet the statutory requirements of 45 mph and LOS C/D during both peak periods and in both directions. The Build Alternative would generally improve conditions compared to the No Build scenario, in which the HOV lane would contain several segments that would operate at impaired LOS D and E.

The Build Alternative would also improve express lane travel times through the four segment groups during both the northbound AM peak hour (by 3.4 minutes) and the southbound PM peak hour (by 1.6 minutes) compared with No Build HOV lane travel times (Table 5.2-6).

Table 5.2-6 Peak Hour Travel Times (Minutes), 2015 No Build and Build

Lane Type	Segment Group	Free Flow ²	No Build	Build	Build – No Build Difference
AM Northbound					
General Purpose	1. Northern Limit to I-280	4.8	6.7	6.3	-0.4
	2. I-280 to SR 17	7.3	20.3	9.4	-10.9
	3. SR 17 to SR 87	5.0	8.6	5.7	-2.9
	4. SR 87 to Southern Limit	4.7	4.9	4.9	0.0
	<i>Total</i>	<i>21.8</i>	<i>40.5</i>	<i>26.3</i>	<i>-14.2</i>
HOV/Express	1. Northern Limit to I-280	4.8	5.2	5.0	-0.2
	2. I-280 to SR 17	7.3	9.3	7.1	-2.2
	3. SR 17 to SR 87	5.0	6.1	5.0	-1.1
	4. SR 87 to Southern Limit	4.7	4.6	4.7	0.1
	<i>Total</i>	<i>21.8</i>	<i>25.2</i>	<i>21.8</i>	<i>-3.4</i>
AM Southbound					
General Purpose	1. Northern Limit to I-280	4.8	5.1	5.0	-0.1
	2. I-280 to SR 17	7.3	7.3	7.3	0.0
	3. SR 17 to SR 87	5.0	5.1	5.1	0.0
	4. SR 87 to Southern Limit	4.7	4.9	4.9	-0.1
	<i>Total</i>	<i>21.8</i>	<i>22.4</i>	<i>22.3</i>	<i>-0.1</i>
HOV/Express	1. Northern Limit to I-280	4.8	4.9	4.9	0.0
	2. I-280 to SR 17	7.3	7.3	7.3	0.0
	3. SR 17 to SR 87	5.0	5.0	5.0	0.0
	4. SR 87 to Southern Limit	4.7	4.7	4.7	0.0
	<i>Total</i>	<i>21.8</i>	<i>21.9</i>	<i>21.9</i>	<i>0.0</i>
PM Northbound					
General Purpose	1. Northern Limit to I-280	4.8	5.3	5.3	0.0
	2. I-280 to SR 17	7.3	7.6	7.7	0.1
	3. SR 17 to SR 87	5.0	5.5	5.5	0.0
	4. SR 87 to Southern Limit	4.7	5.0	5.0	0.0
	<i>Total</i>	<i>21.8</i>	<i>23.4</i>	<i>23.5</i>	<i>0.1</i>
HOV/Express	1. Northern Limit to I-280	4.8	4.7	4.7	0.0
	2. I-280 to SR 17	7.3	7.0	7.0	0.0
	3. SR 17 to SR 87	5.0	4.9	4.9	0.0
	4. SR 87 to Southern Limit	4.7	4.5	4.5	0.0

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Lane Type	Segment Group	Free Flow ²	No Build	Build	Build – No Build Difference
	<i>Total</i>	<i>21.8</i>	<i>21.1</i>	<i>21.1</i>	<i>0.0</i>
PM Southbound					
General Purpose	1. Northern Limit to I-280	4.8	11.1	11.2	0.1
	2. I-280 to SR 17	7.3	9.0	8.4	-0.6
	3. SR 17 to SR 87	5.0	10.3	5.9	-4.4
	4. SR 87 to Southern Limit	4.7	5.2	5.0	-0.2
	<i>Total</i>	<i>21.8</i>	<i>35.6</i>	<i>30.5</i>	<i>-5.1</i>
HOV/Express	1. Northern Limit to I-280	4.8	6.0	5.0	-1.0
	2. I-280 to SR 17	7.3	7.5	7.3	-0.2
	3. SR 17 to SR 87	5.0	5.7	5.0	-0.7
	4. SR 87 to Southern Limit	4.7	4.5	4.8	0.3
	<i>Total</i>	<i>21.8</i>	<i>23.7</i>	<i>22.1</i>	<i>-1.6</i>

Notes:

1. AM peak hour defined as 7:00 to 8:00 AM. PM peak hour defined as 5:00 to 6:00 PM.
 2. Free flow travel time is based on an assumed speed of 65 mph. In some cases, speeds may exceed 65 mph producing travel times that are less than free flow.
- HOV = high-occupancy vehicle

With the Build Alternative in 2015, total peak hour travel times through the four segment groups in both the northbound and southbound express lanes would remain lower than in the general purpose lanes (Table 5.2-6). Express lane travel times through each segment group are projected to range from 0 to 2.2 minutes less than travel times for HOV lanes under No Build, with one exception (Table 5.2-6). During the PM peak, the southbound express lane travel time for Segment Group 4 would be 0.3 minute higher than the HOV lane travel time, but only 0.1 minute higher than the free-flow travel time for that segment (Table 5.2-6).

Table 5.2-7 summarizes the 2015 peak period network performance measure results for the project corridor for the No Build and Build alternatives. The performance measures are as follows:

- Total distance traveled, expressed as vehicles miles traveled (VMT);
- Total travel time, expressed vehicle hours traveled (VHT);
- Total delay, expressed as vehicle hours of delay (VHD);
- Average delay per vehicle, in seconds; and
- Average speed, in mph.

With the project, in the peak direction for each period (northbound AM and southbound PM), average speed would increase, and total delay and average delay per vehicle would decrease. Compared with No Build, the Build Alternative would reduce total delay within the project corridor by 58 percent in the northbound direction during the AM peak period and by 6 percent in the southbound direction during the PM peak period. VMT would increase for Build compared with No Build, because the Build condition would serve more demand. By increasing speed, reducing delay, and serving a higher volume of traffic, the

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project can reasonably be expected to attract some vehicles that would otherwise divert to local roadways to avoid peak period congestion on SR 85. This could improve peak period conditions on other facilities in the network.

In the off-peak direction in each period (AM southbound and PM northbound), No Build and Build conditions are comparable. This reflects the lack of congestion and generally free-flow speeds in the off-peak direction.

Table 5.2-7 2015 Peak Period Network Performance Measure Comparison

Performance Measure	No Build	Build	Build – No Build	
			Difference	% Difference ²
AM Northbound				
Total Distance Traveled (VMT) (mi)	359,911	408,928	49,017	14%
Total Travel Time (VHT) (hr) ¹	9,811	7,752	-2,059	-21%
Total Delay (VHD) (hr)	4,603	1,917	-2,686	-58%
Average Delay per Vehicle (sec)	312	127	-185	-59%
Average Speed (mph)	37	53	16	43%
AM Southbound				
Total Distance Traveled (VMT) (mi)	200,617	205,373	4,755	2%
Total Travel Time (VHT) (hr) ¹	3,244	3,311	67	2%
Total Delay (VHD) (hr)	264	261	-3	-1%
Average Delay per Vehicle (sec)	24	24	0	-1%
Average Speed (mph)	62	62	0	0%
PM Northbound				
Total Distance Traveled (VMT) (mi)	344,853	367,092	22,239	6%
Total Travel Time (VHT) (hr) ¹	5,801	6,134	333	6%
Total Delay (VHD) (hr)	806	729	-77	-10%
Average Delay per Vehicle (sec)	43	38	-5	-11%
Average Speed (mph)	59	60	1	1%
PM Southbound				
Total Distance Traveled (VMT) (mi)	527,858	557,672	29,814	6%
Total Travel Time (VHT) (hr) ¹	13,235	13,367	132	1%
Total Delay (VHD) (hr)	5,453	5,143	-310	-6%
Average Delay per Vehicle (sec)	236	218	-18	-8%
Average Speed (mph)	40	42	2	4%

Note:

1. Travel times shown in this table reflect peak period vehicle hours traveled, rather than the peak hour travel times in minutes shown in Table 5.2-6.

2. Percentage differences are based on unrounded data and may vary from calculations based on rounded data shown in this table.

U.S. 101

In the 2015 AM peak period (6 AM to 9 AM), conditions on northbound U.S. 101 adjacent to the northern end of SR 85 would be slightly better with the No Build Alternative than with the Build Alternative. The project would add an average of 12 seconds of delay per vehicle and would decrease average speed by 3 mph compared to the No Build condition. This change would result from the higher volume of traffic that is able to reach U.S. 101 from northbound SR 85, notably in the first hour of the peak period (6 AM to 7 AM). With the No Build Alternative, bottlenecks and congestion on northbound SR 85 would effectively “meter” the volume of traffic that can reach U.S. 101 in Mountain View and Palo Alto. With the Build Alternative, the slight increase in delay time per vehicle on U.S. 101 (12 seconds) would be more than offset by the 59 percent reduction in delay time per vehicle on SR 85 (-185 seconds).

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In the southbound direction during the AM peak period, conditions on U.S. 101 to the north and south of SR 85 in San Jose would be similar with both alternatives. The project would add an average of 2 seconds of delay per vehicle compared to the No Build condition, and average speed would decrease by 1 mph. With both alternatives, average speeds would remain just over 50 mph.

In the 2015 PM peak period (3 PM to 7 PM), conditions on northbound U.S. 101 adjacent to the northern end of SR 85 would improve slightly under the Build alternative. The average delay time per vehicle would decrease by 8.1 seconds, and average speed would increase by 1.8 mph.

In the southbound direction during the PM peak period, conditions on U.S. 101 to the north and south of SR 85 in San Jose would be essentially the same with both alternatives, with less than a second of difference in delay time per vehicle and a 0.2 mph increase in speed with the project.

5.2.17.3 Design Year (2035) Operational Analysis

SR 85

With the No Build Alternative, most northbound general purpose lane segments between I-280 and SR 87 and about half of the segments between I-280 and U.S. 101 in Mountain View would operate at impaired LOS E or F during the 2035 AM peak hour (Segment Groups 1 through 3, Table 5.2-8). Most southbound general purpose lane segments between U.S. 101 in Mountain View and SR 87 and about half of the segments from SR 87 to U.S. 101 in San Jose would operate at impaired LOS E or F during the 2035 PM peak hour (Segment Groups 1 through 4, Table 5.2-9).

In the 2035 No Build condition, seven northbound HOV lane segments would also operate at LOS E or F during the AM peak period (in Segment Groups 2 and 3, Table 5.2-8). In addition, three southbound HOV lane segments would operate at LOS E or F (in Segment Groups 1 and 2, Table 5.2-9). These segments would fail to meet the statutory requirement of LOS C/D for HOV lanes, and some corrective action, independent of the proposed project, would be needed to address the condition.

In the 2035 No Build condition, travel times in all northbound and southbound HOV segments would continue to remain lower than in the corresponding general purpose segments (Table 5.2-10). HOV lane travel times through the project corridor are projected to be 13.2 minutes less than the general purpose lanes in the northbound direction in the AM peak hour and 21.1 minutes less in southbound direction in the PM peak hour (Table 5.2-10).

Table 5.2-8 Peak Hour Travel Conditions, 2035 Northbound No Build and Build

Segment	2035 AM peak hour (7 to 8 AM)				2035 PM peak hour (5 to 6 PM)			
	General Purpose		HOV/Express		General Purpose		HOV/Express	
	No Build	Build ¹	No Build	Build ¹	No Build	Build ¹	No Build	Build ¹
<i>Segment Group 4 (SR 87 to Southern Limit)</i>								
NB and SB Bernal on-ramp	B	A	B	C	B	B	A	B
SB Bernal on-ramp and US 101 SB on-ramp	B	B	B	C	B	C	A	B
US 101 SB on-ramp and Great Oaks on-ramp	C	B	B	C	C	C	A	B

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Segment	2035 AM peak hour (7 to 8 AM)				2035 PM peak hour (5 to 6 PM)			
	General Purpose		HOV/Express		General Purpose		HOV/Express	
	No Build	Build ¹	No Build	Build ¹	No Build	Build ¹	No Build	Build ¹
Great Oaks on-ramp and Cottle off-ramp	C	C	B	C	D	D	B	B
Cottle off-ramp and on-ramp	C	C	B	C	C	B	B	B
Cottle on-ramp and Blossom Hill off-ramp	D	D (D)	C	D (C)	D	D (D)	C	B (B)
Blossom Hill off-ramp and EB on-ramp	D	D	C	D	D	D	B	B
Blossom Hill EB on-ramp and WB on-ramp	E	E	D	D	D	D	B	B
Blossom Hill WB on-ramp and 87 off-ramp	D	D	C	D	C	D	B	B
SR 87 off-ramp and Santa Teresa off-ramp	C	C	C	D	D	D	B	B
<i>Segment Group 3 (SR 17 to SR 87)</i>								
Santa Teresa off-ramp and on-ramp	C	C	C	D	C	C	B	B
Santa Teresa on-ramp and 87 on-ramp	D	E	C	D	B	D	C	B
87 on-ramp and Almaden Expy off-ramp	D	C	C	D	C	D	B	B
Almaden Expy off-ramp and NB on-ramp	F	D (E)	D	D (D)	D	B (C)	B	B (B)
Almaden Expy NB and SB on-ramp	F	F	E	C	E	F	C	B
SB Almaden Expy on-ramp and Camden off-ramp	F	F	E	C	E	D	C	B
Camden off-ramp and on-ramp	F	F	D	C	D	C	C	B
Camden on-ramp and Union off-ramp	F	F	E	C	C	C	B	B
Union off-ramp and on-ramp	F	F (F)	E	B (C)	D	D (D)	C	A (B)
Union on-ramp and Bascom off-ramp	F	D	F	B	D	C	B	A
Bascom off-ramp and SR 17 off-ramp	F	D	F	B	C	C	A	A
SR 17 off-ramp and Bascom on-ramp	F	D	D	B	B	B	A	A
<i>Segment Group 2 (I-280 to SR 17)</i>								
Bascom on-ramp and SR 17 on-ramp	F	F	D	B	C	C	B	A
SR 17 on-ramp and Winchester on-ramp	F	F	D	B	C	C	B	A
Winchester on-ramp and lane drop	F	F	D	C	F	F	C	A
(Express lane access zone only, between Winchester on-ramp and Saratoga off-ramp)		(F)		(C)		(F)		(C)
Lane drop and Saratoga off-ramp	F	E	D	C	F	D	C	B
Saratoga on-ramp and off-ramp	F	C	D	C	C	C	B	B
Saratoga on-ramp and De Anza off-ramp	F	D	E	C	D	C	B	B
De Anza off-ramp and on-ramp	F	C	D	C	C	C	B	B
De Anza on-ramp and Stevens Creek off-ramp	D	C (C)	C	B (B)	D	B (C)	B	B (A)
Stevens Creek off-ramp and 280 off-ramp	C	C	B	C	B	C	A	B
280 off-ramp and 280 SB loop on-ramp	B	B	B	C	B	B	A	B
<i>Segment Group 1 (Northern Limit to I-280)</i>								
280 SB loop on-ramp and 280 NB on-ramp	D	C	B	C	B	C	A	B
280 NB on-ramp and Homestead on-ramp	F	F	D	C	C	F	B	B
Homestead on-ramp and Fremont off-ramp	F	F (F)	D	C (C)	D	D (E)	C	B (B)
Fremont off-ramp and Fremont on-ramp	F	F	D	C	C	D	B	B
Fremont on-ramp and SR 82 SB off-ramp	F	E	C	C	C	D	B	B
SR 82 SB off-ramp and SR 82 SB on-ramp	D	D	B	C	C	C	A	B
SR 82 SB/NB on-ramp and SR 237 EB off-ramp	C	D	B	C	B	C	A	B
SR 237 EB off-ramp and EB on-ramp	C	C	B	C	B	C	A	B
SR 237 EB on-ramp and Evelyn off-ramp	C	B	B	C	A	B	A	B
Evelyn off-ramp and Central Expy on-ramp	C	C	B	C	B	B	A	B
Central Expy on-ramp and Moffett off-ramp	E	D (C)	C	C (C)	C	D (A)	A	B (B)
Moffett off-ramp and SR 85/US 101 connector	B	B	B	B	B	B	A	C

Notes:

1. For segments that contain access zones where vehicles may enter and/or exit the express lane(s), the LOS in parentheses indicates the level of service for that access movement.

EB = eastbound, Expy = Expressway; NB = northbound, SB = southbound, WB = westbound

Boldfaced LOS have high vehicle densities and impaired traffic flow.

Table 5.2-9 Peak Hour Travel Conditions, 2035 Southbound No Build and Build

Segment	2035 AM peak hour (7 to 8 AM)		2035 PM peak hour (5 to 6 PM)	
	GP	HOV/Express	GP	HOV/Express

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	No Build	Build ¹						
<i>Segment Group 1 (Northern Limit to I-280)</i>								
SR 85/US 101 connector and Moffett on-ramp	A	A	A	A	F	F	D	C
Moffett on-ramp and Central Expy off-ramp	B	B (A)	A	A (A)	F	F (F)	D	C (C)
Central Expy off-ramp and Evelyn on-ramp	B	A	A	A	F	F	D	C
Evelyn on-ramp and 237 off-ramp	B	B	A	A	F	F	F	C
SR 237 off-ramp and SR 237 on-ramp	B	B	A	A	F	F	C	C
SR 237 on-ramp and SR 82 off-ramp	B	C	A	A	F	F	E	C
SR 82 off-ramp and on-ramp	C	B	A	A	F	F	C	C
SR 82 on-ramp and and Fremont off-ramp	D	C (C)	B	A (A)	E	F (F)	C	C (E)
Fremont off-ramp and on-ramp	C	C	A	B	F	F	C	C
Fremont on-ramp and Homestead off-ramp	D	D	A	B	F	E	C	C
Homestead off-ramp and 280 off-ramp	C	B	A	B	D	C	A	C
<i>Segment Group 2 (I-280 to SR 17)</i>								
280 SB off-ramp and 280 NB on-ramp	A	A	A	B	C	B	A	C
280 NB and 280 SB on-ramp	B	B	B	B	C	C	B	C
280 SB on-ramp and Stevens Creek off-ramp	B	B	A	B	D	D	A	C
Stevens Creek off-ramp and on-ramp	B	B (B)	A	A (A)	D	C (B)	B	C (C)
Stevens Creek on-ramp and lane drop	B	B	A	A	F	D	C	D
(Express lane access zone only, between Stevens Creek on-ramp and De Anza off-ramp)		(B)		(A)		(D)		(C)
Lane drop and De Anza off-ramp	C	B	A	A	F	F	C	C
De Anza off-ramp and on-ramp	B	B	A	A	F	C	B	C
De Anza on-ramp and Saratoga off-ramp	C	B	A	A	F	E	C	C
Saratoga off-ramp and on-ramp	B	B	A	A	F	F	C	C
Saratoga on-ramp and Winchester off-ramp	C	C (C)	A	A (B)	F	F (F)	C	C (F)
Winchester off-ramp and SR 17 off-ramp	B	B	A	A	F	F	D	B
SR 17 off-ramp and Bascom off-ramp	B	B	A	A	F	F	E	B
<i>Segment Group 3 (SR 17 to SR 87)</i>								
Bascom off-ramp and SR 17 on-ramp	B	A	A	A	F	F	B	B
SR 17 on-ramp and Bascom on-ramp	B	B	A	A	F	F	B	B
Bascom on-ramp and Union off-ramp	C	B	A	A	F	F	C	B
Union off-ramp and Union on-ramp	C	B (C)	A	A (A)	F	F (F)	B	B (D)
Union on-ramp and Camden off-ramp	D	D	A	A	F	F	B	B
Camden off-ramp and on-ramp	C	B	A	A	F	F	B	B
Camden on-ramp and Almaden Expy off-ramp	D	D (C)	A	A (A)	F	F (F)	B	C (C)
Almaden Expy off-ramp and SB Almaden Expy on-ramp	C	C	A	B	F	F	B	C
SB Almaden Expy on-ramp and NB on-ramp	C	B	A	B	F	F	B	C
Almaden Expy NB on-ramp and SR 87 Off	C	C	A	B	F	F	C	C
SR 87 Off and Santa Teresa off-ramp	C	B	A	B	F	F	C	C
<i>Segment Group 4 (SR 87 to Southern Limit)</i>								
Santa Teresa off-ramp and on-ramp	C	C	A	B	F	F	B	C
Santa Teresa on-ramp and SR87 on-ramp	D	C	A	B	F	F	B	C
SR 87 on-ramp and Blossom Hill off-ramp	E	D	A	B	F	F	B	C
Blossom Hill off-ramp and WB Blossom Hill on-ramp	D	D	A	B	D	F	B	C
Blossom Hill WB on-ramp and Blossom Hill EB on-ramp	D	E	A	B	E	F	B	C
Blossom Hill EB on-ramp and Cottle off-ramp	E	D (E)	A	B (B)	F	F (F)	B	C (F)
Cottle off-ramp and SB on-ramp	D	D	A	B	C	C	A	B
Cottle SB on-ramp and NB Cottle on-ramp	D	D	A	B	D	C	A	B
NB Cottle on-ramp and Great Oaks off-ramp	E	D	A	B	D	D	A	B
Great Oaks and Bernal off-ramp	D	D	A	B	D	C	A	B
South of Bernal off-ramp	C	C	A	B	C	B	A	B

1. For segments that contain access zones where vehicles may enter and/or exit the express lane(s), the LOS in parentheses indicates the level of service for that access movement.

EB = eastbound, Expy = Expressway; NB = northbound, SB = southbound, WB = westbound
Boldfaced LOS have high vehicle densities and impaired traffic flow.

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Table 5.2-10 Peak Hour Travel Times (Minutes), 2035 No Build and Build

Lane Type	Segment Group	Free Flow ²	No Build	Build	Build – No Build Difference
AM Northbound					
General Purpose	1. Northern Limit to I-280	4.9	7.1	5.9	-1.2
	2. I-280 to SR 17	7.3	17.6	9.7	-7.9
	3. SR 17 to SR 87	5.0	9.9	7.2	-2.7
	4. SR 87 to Southern Limit	4.7	5.1	5.0	-0.1
	<i>Total</i>	<i>21.9</i>	<i>39.7</i>	<i>27.8</i>	<i>-11.9</i>
HOV/Express	1. Northern Limit to I-280	4.9	5.4	5.1	-0.3
	2. I-280 to SR 17	7.3	9.5	7.1	-2.4
	3. SR 17 to SR 87	5.0	6.9	5.2	-1.7
	4. SR 87 to Southern Limit	4.7	4.7	4.8	0.1
	<i>Total</i>	<i>21.9</i>	<i>26.5</i>	<i>22.2</i>	<i>-4.3</i>
AM Southbound					
General Purpose	1. Northern Limit to I-280	4.9	5.2	5.1	-0.1
	2. I-280 to SR 17	7.3	7.5	7.6	0.1
	3. SR 17 to SR 87	5.0	5.3	5.3	0.0
	4. SR 87 to Southern Limit	4.7	5.1	5.0	-0.1
	<i>Total</i>	<i>21.9</i>	<i>23.1</i>	<i>23</i>	<i>-0.1</i>
HOV/Express	1. Northern Limit to I-280	4.9	4.4	4.6	0.2
	2. I-280 to SR 17	7.3	6.8	7.0	0.2
	3. SR 17 to SR 87	5.0	4.6	4.8	0.2
	4. SR 87 to Southern Limit	4.7	4.6	4.8	0.2
	<i>Total</i>	<i>21.9</i>	<i>20.4</i>	<i>21.2</i>	<i>0.8</i>
PM Northbound					
General Purpose	1. Northern Limit to I-280	4.8	5.2	5.6	0.4
	2. I-280 to SR 17	7.3	8.3	8.3	0
	3. SR 17 to SR 87	5.0	5.9	5.5	-0.4
	4. SR 87 to Southern Limit	4.7	5.1	5.0	-0.1
	<i>Total</i>	<i>21.8</i>	<i>24.5</i>	<i>24.4</i>	<i>-0.1</i>
HOV/Express	1. Northern Limit to I-280	4.8	4.9	5.1	0.2
	2. I-280 to SR 17	7.3	7.3	7.5	0.2
	3. SR 17 to SR 87	5.0	5.1	5.2	0.1
	4. SR 87 to Southern Limit	4.7	4.6	4.8	0.2
	<i>Total</i>	<i>21.8</i>	<i>21.9</i>	<i>22.6</i>	<i>0.7</i>
PM Southbound					
General Purpose	1. Northern Limit to I-280	4.8	13.0	7.7	-5.3
	2. I-280 to SR 17	7.3	13.1	11.6	-1.5
	3. SR 17 to SR 87	5.0	13.5	10.8	-2.7
	4. SR 87 to Southern Limit	4.7	6.3	6.4	0.1
	<i>Total</i>	<i>21.8</i>	<i>45.9</i>	<i>36.5</i>	<i>-9.4</i>
HOV/Express	1. Northern Limit to I-280	4.8	7.0	5.1	-1.9
	2. I-280 to SR 17	7.3	7.7	7.5	-0.2
	3. SR 17 to SR 87	5.0	5.4	5.5	0.1
	4. SR 87 to Southern Limit	4.7	4.7	5.2	0.5
	<i>Total</i>	<i>21.8</i>	<i>24.8</i>	<i>23.3</i>	<i>-1.5</i>

Notes:

1. AM peak hour defined as 7:00 to 8:00 AM. PM peak hour defined as 5:00 to 6:00 PM.
 2. Free flow travel time is based on an assumed speed of 65 mph. In some cases, speeds may exceed 65 mph producing travel times that are less than free flow.
- HOV = high-occupancy vehicle

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As shown in Tables 5.2-8 and 5.2-9, most northbound and southbound general purpose lane segments would continue to operate at impaired LOS E or F in 2035 with the project, compared with the No Build condition. However, total travel times would decrease compared with No Build: by 11.9 minutes during the northbound AM peak hour, and by 9.4 minutes during the PM peak hour (Table 5.2-10).

In the express lanes, the Build Alternative would maintain LOS C/D or better operations in most 2035 AM and PM peak segments, although some segments would operate at LOS E or F and/or have a decrease in level of service compared with No Build (Tables 5.2-8 and 5.2-9). This reflects a higher density of vehicles in the express lanes than in the HOV lanes. The single northbound HOV lane that would operate at LOS E or F in several segments between SR 87 and SR 17 in the AM peak hour under No Build would become two express lanes that operate at LOS B or C (Segment Group 2, Table 5.2-8). In the express lane access zones, where lane-changing movements for vehicles entering and exiting the express lanes are concentrated and traffic flow is most likely break down, one northbound segment in the AM peak hour and five southbound segments in the PM peak hour would operate at LOS D, E, or F (Tables 5.2-8 and 5.2-9). Overall, however, the express lanes are expected to meet the statutory requirement of 45 mph.

Travel times in all northbound and southbound express lane segment groups would be lower than in the corresponding general purpose lane segment groups (Table 5.2-10). Total travel times for the express lanes are projected to be 5.6 minutes less than the general purpose lanes in the northbound direction in the AM peak hour and 13.2 minutes less in the southbound direction in the PM peak hour (Table 5.2-10). With the Build Alternative, express lane travel times would also be slightly lower than No Build HOV lane travel times during the northbound AM peak hour (4.3 minutes less) and the southbound PM peak hour (1.5 minutes less; Table 5.2-10).

Table 5.2-11 summarizes the 2035 peak period network performance measure results for the complete project corridor with the No Build and Build alternatives. The network performance measures are the same as those described above for Table 5.2-7.

Table 5.2-11 2035 Peak Period Network Performance Measure Comparison

Performance Measure	No Build	Build	Build – No Build	
			Difference	% Difference ²
AM Northbound				
Total Distance Traveled (VMT) (mi)	367,024	418,602	51,578	14%
Total Travel Time (VHT) (hr) ¹	12,400	9,287	-3,113	-25%
Total Delay (VHD) (hr)	7,097	3,318	-3,779	-53%
Average Delay per Vehicle (sec)	463	212	-251	-54%
Average Speed (mph)	30	45	15	52%
AM Southbound				
Total Distance Traveled (VMT) (mi)	260,794	278,199	17,405	5%
Total Travel Time (VHT) (hr) ¹	4,485	4,663	178	3%
Total Delay (VHD) (hr)	593	562	-31	-4%
Average Delay per Vehicle (sec)	44	40	-4	-5%
Average Speed (mph)	58	60	2	2%
PM Northbound				
Total Distance Traveled (VMT) (mi)	398,216	436,357	38,140	10%

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Performance Measure	No Build	Build	Build – No Build	
			Difference	% Difference ²
Total Travel Time (VHT) (hr) ¹	7,853	8,460	607	8%
Total Delay (VHD) (hr)	2,095	2,031	-64	-3%
Average Delay per Vehicle (sec)	102	92	-9	-9%
Average Speed (mph)	51	52	1	2%
PM Southbound				
Total Distance Traveled (VMT) (mi)	520,663	557,778	37,114	7%
Total Travel Time (VHT) (hr) ¹	21,830	18,340	-3,491	-16%
Total Delay (VHD) (hr)	14,168	10,119	-4,049	-29%
Average Delay per Vehicle (sec)	597	416	-181	-30%
Average Speed (mph)	24	31	7	27%

Note:

1. Travel times shown in this table reflect peak period vehicle hours traveled, rather than the peak hour travel times in minutes shown in Table 5.2-10.
2. Percentage differences are based on unrounded data and may vary from calculations based on rounded data shown in this table.

As with the 2015 scenario, the proposed project would improve traffic conditions in the northbound direction in the AM peak compared with No Build, reducing total delay by 53 percent and increasing speed by 52 percent. In the southbound direction during the PM peak period, the Build condition would reduce total delay by 29 percent and increase speed by 27 percent. VMT with the project would increase by 14 percent in the northbound AM peak and 7 percent in the southbound PM peak compared to No Build. As with 2015, the additional demand can be expected to include some vehicles that would otherwise divert to local roadways to avoid peak period congestion on SR 85, theoretically improving conditions elsewhere in the network.

In the off-peak direction in each period (AM southbound and PM northbound), No Build and Build conditions are comparable. This reflects the lack of congestion and generally free-flow speeds in the off-peak direction.

U.S. 101

In the 2035 AM peak period (6 AM to 9 AM), conditions on northbound U.S. 101 adjacent to the northern end of SR 85 would improve slightly with the Build Alternative. The project would reduce delay per vehicle by 21 seconds compared to the No Build condition, and average speed would increase by 1 mph. This is because the travel demand on northbound U.S. 101 in Mountain View would be slightly lower as a result of some vehicles shifting to SR 85 to use the express lanes. In addition, by 2035, the U.S. 101 Express Lanes Project will have converted the HOV-only direct connectors between SR 85 and U.S. 101 in Mountain View to express lane direct connectors, and the HOV lanes on U.S. 101 adjacent to SR 85 to express lanes. The vehicles entering northbound U.S. 101 from SR 85 via the HOV/express connector rather than the general purpose lane connector would further reduce congestion on U.S. 101, most notably in the last hour of the peak period.

In the southbound direction during the 2035 AM peak period, conditions on U.S. 101 to the north and south of SR 85 in San Jose would be essentially the same with both alternatives.

In the 2035 PM peak period (3 PM to 7 PM), conditions on northbound U.S. 101 adjacent to the northern end of SR 85 would be similar for both alternatives. The Build Alternative would

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reduce the average delay time per vehicle by 0.2 seconds and decrease the average speed by 3.1 mph; however, the average speed for both alternatives would be above 55 mph.

In the southbound direction during the PM peak period, conditions on U.S. 101 to the north and south of SR 85 in San Jose would deteriorate very slightly with the Build Alternative, with an increase of 6.8 seconds of delay time per vehicle and a 0.4 mph decrease in speed.

5.2.18 Interim Features

Interim improvements are not proposed for this project.

5.2.19 Ramp Metering / Traffic Operations System (TOS)

The project does not propose to alter or remove any existing ramp metering along the corridor or install any new ramp metering equipment in the corridor. The FPI project (EA# 04-154204) currently under construction will install and activate ramp metering on several ramps along SR 85 between I-280 and U.S. 101 in Mountain View to complete the ramp metering system in both directions along SR 85. It is assumed that ramp metering will be turned on in both peak and off-peak directions for the entire length of SR 85 by the time this project is constructed.

It is worth noting that some TOS equipment such as traffic monitoring stations, Closed Circuit Televisions, cabinets, and controllers would be installed by the SR 85 Express Lanes project along the outside edge of pavement within the existing right-of-way. The specific locations of these features would be developed during final project design. The data feed from these count stations and from the CCTV will be sent back to the Traffic Management Center (TMC) at Caltrans district headquarters in Oakland for monitoring and incident response. TOS elements installed as replacement of existing TOS elements within Caltrans right-of-way will be owned and operated by Caltrans. TOS elements installed for the purpose of operating the express lanes will be owned and operated by VTA. An encroachment permit application will be prepared during the design phase to document these TOS elements and a maintenance agreement will be executed with Caltrans to cover required maintenance activities (See Section 7.5 Other Agreements).

All existing and operational TOS elements and ramp metering equipment must be kept operational throughout the construction. Any TOS or ramp meter elements that may be affected by this project must be relocated, modified, or fully replaced as necessary.

Currently a project (Project No. 04-0002-0304; EA 15330) is being developed to complete ramp metering, TMS, CCTV, and CMS coverage of U.S. 101 between San Benito County line and SR 85 interchange (PM 0.0/26.4). Count loops will also be installed at all off-ramps within those limits.

The near-term goal is to complete TOS in the corridor:

Type	Approximate Quantity	Total Estimate
CCTV	5	\$ 750,000

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CMS	3		900,000
TMS	36	\$	2,340,000

Conduit for future fiber optics on SCI-85 and SCI-101 (PM 25.3/28.6 only) will be completed with empty lateral crossovers to existing and proposed TOS and RM elements.

27.4 miles \$ 7,700,000

5.2.20 Park and Ride Facilities

The project does not propose any changes in access or configuration to the existing park and ride facilities along corridor listed under Section 4.2.5.4.

5.2.21 Highway Planting

Based on consultation between the Project Development Team and Caltrans Landscape Architecture, a landscape concept plan for the corridor is not required. Impacts to existing planting and irrigation are likely, and will be assessed during design. When identifying locations for new facilities and construction staging areas, existing planted areas will be avoided when possible to minimize impacts.

In kind, restoration or replacement of planting and irrigation facilities with identified impacts will be included in the design. During Construction, protective measures such as fencing will be employed to protect existing planting. In particular, trees near construction activities will be enclosed with protective fencing at the drip line.

5.2.22 Erosion Control

The project would avoid Environmentally Sensitive Areas (ESAs) in or adjacent to the project limits. The proposed ESAs include designated biological habitat and wetlands, and other waters of the U.S. and the state. Measures would be employed to prevent construction material or debris from entering surface waters or their channels. Best Management Practices (BMPs) for erosion control would be implemented and be in place prior to, during, and after construction in order to ensure that no silt or sediment enters surface waters.

Erosion control measures will be applied to all exposed areas during construction, including the trapping of sediments within the construction area through the placing of barriers, such as silt fences, at the perimeter of downstream drainage point or through the construction of temporary detention basins. Other methods of minimizing erosion impacts include the implementation of hydro-mulching and/or limiting the amount and length of exposure of graded soil.

Permanent erosion control measures applied to all new or exposed slopes in consideration of downstream effects. Permanent erosion control BMPs would be addressed as part of the project design process.

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Further discussion of temporary and permanent erosion control measures proposed for use with other BMPs that avoid/minimize impacts to water quality can be found in the Storm Water Data Report prepared for this project.

5.2.23 Noise Barriers

Existing sound walls along this corridor provide attenuation of freeway noise. The Noise Study Report evaluated several soundwalls, and found them feasible but not reasonable. As a result, no soundwalls are proposed for this project.

5.2.24 Non-Motorized and Pedestrian Features

The existing SR 85 corridor does not provide new pedestrian or bicycle facilities and does not modify or alter access to existing ones. Pedestrian and bicycle facilities exist along the local street interchanges within the project limits.

5.2.25 Needed Roadway Rehabilitation and Upgrading

In the segment of SR 85 between SR 87 and I-280, where the median width is approximately 46 feet, pavement widening would be conducted in the median to accommodate the second Express Lane.

The calculated mainline Traffic Index (TI) for a 20-Year design life is 10.0, and for a 40-Year design life is 11.0. The R-value assumed for the sub-grade is 15, except for the portion of the project between Rodeo Creek and Stelling Road/Regnart Creek (Sta 1434+00 to 1517+00), where the R-value is assumed to be 5. As outlined in Caltrans HDM, Topic 623.1, a rigid pavement requires subgrade to have an R-value greater than 10. Based on Caltrans HDM, Topic 614.5, the use of subgrade enhancement geotextile (SEG) over subgrade with R-value less than 20 could raise the effective R-value to 20. SEG is selected in the pavement section to counter the presence of weak subgrade soils at the project site. Where an auxiliary lane would be added between the existing South De Anza Boulevard on-ramp and Stevens Creek Boulevard off-ramp, the outside pavement (northeast) would be widened by up to 14 feet.

As a result, the life cycle cost analysis shows that the proposed widening where the existing pavement is rigid would have a structural section that consists of 0.80 ft of jointed plain concrete pavement (JPCP), 0.25 ft of Hot Mix Asphalt (HMA) (Type A), 0.60 ft of class 4 aggregate subbase (AS), and SEG (Class B1). Where the existing pavement is flexible, the proposed widening would have a structural section that consists of 0.15 ft of Rubberized Hot Mix Asphalt – Gap Graded (RHMA-G), 0.35 ft of HMA (Type A), 0.85 ft of class 3 aggregate base (AB) 0.75 ft of class 4 AS, and SEG (Class B1). The life cycle cost analysis which was approved in November 2012, can be found in Attachment K.

5.2.26 Needed Structure Rehabilitation and Upgrading

The project proposes to widen several bridges along SR 85 to close the existing spaces between the separate northbound and southbound bridges. Inside widening and space

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closure is proposed at the SR 85 bridges over Camden Avenue, Oka Road, Pollard Road, and Saratoga Avenue, as well as at the San Tomas Aquino Creek and Saratoga Creek crossings. The project will also widen the Almaden Expressway northbound bridge only.

At each bridge location, the bridge decks would likely be extended in width from the existing structures using precast, pre-stressed concrete beams and supported by new abutments on either end to free-span the roads or creeks underneath.

Table 5.2-12 lists the proposed bridge widening at each of the seven bridges. The proposed inside widening ranges from 12 to 45 feet and is approximately 23 feet in most locations. No new bridge supports are proposed to be added in the roadway medians or in the creeks underneath the bridges. The project also proposes to close the existing abutments under the McClellan Road and Stelling Road overcrossings using standard tie-back walls in order to accommodate the additional widening needed.

Table 5.2-12 Proposed SR 85 Bridge Widening Locations and Dimensions

Bridge No.	Bridge Location	Existing Bridge Dimensions (feet; approximate)	Proposed Inside Widening (feet; approximate)
37-0530R	Almaden Expressway (Northbound only)	237 x 83 (width varies) (NB)	12
37-0481	Camden Avenue	208 x 60 (NB) 204 x 90-113 (varies) (SB)	45
37-0537	Oka Road	97 x 62 (average) (NB) 102 x 60 (average) (SB)	33
37-0520	Pollard Road	183 x 60 (NB) 196 x 60 (SB)	23
37-0524	San Tomas Aquino Creek	105 x 60 (both NB and SB)	23
37-0499	Saratoga Avenue	192 x 60 (NB) 190 x 60 (SB)	23
37-0500	Saratoga Creek	100 x 56 (both NB and SB)	23

NB = northbound
 SB = southbound

5.2.27 Cost Estimate

The attached cost estimate (Attachment E) includes all known costs for this project. The total project cost estimate of the Build Alternative is provided in Table 5.2-13 .

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Table 5.2-13 Cost Estimate

Item	Cost
Roadway Items	\$121 M
Structure Items	\$11 M
Escalation to Construction mid-point (2015) at 3% per year	\$9 M
Right-of-way & Utility Relocation	<u>\$0 M</u>
Capital Total	\$141 M*
Project Report and Environmental Document	\$5 M
Design Phase (PS&E)	\$11 M
Construction Administration	<u>\$15 M</u>
Support Total	\$31 M
PROJECT TOTAL	\$172 M

* Includes 20% contingency on roadway items and 25% on structures.

5.2.28 Right-of-Way Data

Right of way acquisition is not anticipated as part of this project since all the widening and improvements takes place within state right of way. The Right of Way Data Sheet can be found in Attachment F.

5.2.29 Effect on Projects Funded by Others on SR 85

The project has no impact on projects funded by others along SR 85.

5.2.30 Future Construction

The following projects that are within or adjacent to the project limits:

- U.S. 101 Auxiliary Lanes Project (EA#04-4A330) in Mountain View and Palo Alto, from Route 85 to Embarcadero Rd is currently in construction and scheduled to complete construction by 2013.
- The City of Mountain View has a project planned to provide a new pedestrian overcrossing adjacent to Permanente Creek. The project is currently under construction and is expected to be completed in late 2012.
- U.S. 101 Express Lanes Project (EA#04-2G710K) from Dunne Avenue in Morgan Hill to Santa Clara/San Mateo County Line is currently under PA/ED.

There are no other programmed projects at this time to further improve this segment of SR 85. However, the following projects have been identified within or adjacent to the limits of the SR 85 Express Lanes Project in the 2009 MTC RTP.

- SR 87 in Santa Clara County from SR 85 to U.S. 101 — convert HOV lanes to Express Lanes (Ref# 230675).

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- Improve SR 85 northbound to SR 237 eastbound connector ramp and construct auxiliary lane on eastbound SR 237 between SR 85 and Middlefield Road (Ref# 22156).
- 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) (Ref# 22162).
- Improve ramps and intersections on Fremont and Bernardo Avenues at SR 85 (Ref# 230573).
- Improve the SR 85/Cottle Road interchange (Ref# 230574).

In addition to the above projects, the following projects are listed in VTA VTP 2035:

- H11 - SR 237 HOV/Express Lanes (Mathilda Ave to SR 85)
- B10 - Stevens Creek Trail crossing SR 85 to Mountain View High School

5.3 Rejected Alternatives

Several alternatives were considered during the early stages of project development but were eliminated because they did not meet the project's purpose and need or would have unacceptable environmental impacts. The following describes these alternatives and why they were not advanced for further evaluation.

5.3.1 Single Express Lane/Separate Access Points

A single Express Lane with separate access points would involve converting the existing northbound and southbound SR 85 HOV lanes into a single Express Lane facility, extending from U.S. 101 in southern San Jose to U.S. 101 in Mountain View. The Express Lane would be separated from the general purpose lanes by a two-foot buffer which will be created by reducing the width of the Express Lane and the left most general purpose lane to 11 feet except for the segment of SR 85 between SR 87 and I-280 where the buffer will be created by either widening the freeway into the median or by utilizing two feet from the existing 10 foot inside shoulder. The inside shoulder would be reduced to 8 feet. The two-foot buffer consists of two 8-inch solid white stripes separated by an 8 inch gap.

The two-foot buffer zone, delineated with solid stripes, will have designated openings to provide access into and out of the Express Lane facility. The access configuration consists of entrance-only and exit-only access points with a transition lane to accommodate the merging activity into and out of the Express Lane and the general purpose lanes. The additional transition lane will be approximately 1300 ft in length in order to minimize impacts to both the Express Lane and the mainline traffic operations.

The striping detail is a modified version of the M-5 Detail "Typical Ingress/Egress for HOV facilities with Buffers 3.6m or wider" provided in Caltrans' High-Occupancy Vehicle Guidelines for Planning, Design and Operations manual (2003 Edition). For this project,

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the detail is modified to accommodate the two-foot buffer and to provide merging lanes at each exit and entrance to and from the Express Lane facility.

In the SR 85 section from SR 87 and I-280, where the median width is approximately 46 feet, additional pavement widening towards the median would be necessary to accommodate the transition lane at every ingress and egress location and restore full geometrics, leaving a median width ranging from 22 feet to 34 feet at every ingress or egress location. The existing three-beam barrier will be replaced with a concrete barrier Type 60 at these locations because the median width would be reduced to less than 36 feet.

In the SR 85 section south of SR 87, where the VTA Light Rail runs in the median, outside widening within the right of way to provide 10-foot inside shoulders will be provided to accommodate the transition lane at every ingress and egress location. Where space is not available for outside widening, the median shoulders will be narrowed to as little as 2 feet to accommodate the transition lane.

Similarly, in the SR 85 section north of I-280, where the median width is approximately 22 feet, and where no space is available for outside widening, the inside shoulders will be narrowed to as little as 2 feet to accommodate a transition lane at the ingress and egress locations.

The single-lane alternative was eliminated because it would preclude the future construction of a second Express Lane in the SR 85 corridor. The separate ingress/egress option would not have the same access points as a two-lane facility. Therefore, transitioning to two Express Lanes in the future (which is the ultimate vision for SR 85) would require reconstruction of all overhead sign structures, electronic toll equipment, and access zones in new locations. In addition, expansion from one to two Express Lanes would have to occur while maintaining operations of the single Express Lane. The relocation of the signs and toll equipment would require a second phase of excavation and disturbance within the corridor. It would also potentially increase risk and congestion while drivers become accustomed to the new lane striping and signage configuration. This alternative's infrastructure would be cost prohibitive, it would not serve the public, and the adverse conditions and impacts would be avoided with the proposed Build Alternative.

5.3.2 Single Express Lane/Shared Access Points

The Single Lane/Shared Access Points Alternative is the same as the Single Express Lane/Separate Access Points Alternative described above, with the exception of the access points. With this alternative, the 2-foot buffer zone would have designated combined entrance and exit openings to provide access into and out of the Express Lane facility. It was considered and dropped from further consideration because it was determined that any build alternative should include a second Express Lane between SR 87 and I-280 to meet the design year operational performance expectations for the facility.

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6 Considerations Requiring Discussion

6.1 Hazardous Waste

The 2011 Initial Site Assessment (ISA) and the 2013 Supplement to the ISA for the proposed project included the following:

- An Environmental Data Resources, Inc. (EDR) environmental information database search for known potential hazardous materials sites, including underground storage tanks (USTs); landfills; hazardous waste generation, treatment, storage, and disposal facilities; and subsurface contamination within a study area extending up to 1 mile from the project area (the right-of-way and adjacent areas within the project limits). This EDR report was performed for the entire project corridor as well as for portions of U.S. 101 both north of the SR 85/U.S. 101 interchange in Mountain View and south of the SR 85/U.S. 101 interchange in South San Jose;
- A review of several existing initial site assessments that address portions of the study area (project area plus a 1-mile radius);
- A site reconnaissance of the project area and surrounding area conducted from points of public access, including freeways and adjacent ramps, and a drive-by survey of the surrounding and adjacent properties;
- A review of historical aerial photographs, Google Earth, and topographic maps covering the project area; and
- A review of available files from the Envirostor and Geotracker databases maintained by the California Department of Toxic Substances Control (DTSC) and San Francisco Bay Regional Water Quality Control Board (RWQCB) to obtain additional information on sites identified in the EDR report that are within or near the project area.

The assessment did not include soil or groundwater sampling or sampling for asbestos, radon, lead-based paint, or lead in drinking water.

Five potential hazardous materials sites were identified outside of the project area but within the study area, as shown in **Error! Reference source not found.**

Table 6.1-1 Potential Hazardous Materials Sites Impacting the Project Area

Site No.	Source of Information	Owner or Occupant/ Address	Description
1A and 1B	EDR report USEPA Region 9 Superfund website	1A - Teledyne Semiconductors Inc. 1300 Terra Bella Ave, Mountain View, CA 94043 1B - Spectra-Physics Inc. 1250 W Middlefield	Manufactured semiconductors since 1962; CRWQCB (lead); NPL site. The site has used a variety of toxic chemicals, primary chlorinated organic solvents which contaminate ground water. Investigation in June 1984 revealed that contaminants had migrated to the north and had affected approx. 50 private domestic wells. Teledyne is planning on pumping the contaminated ground water in upper aquifer to the surface for subsequent treatment. The Teledyne NPL site is being managed in conjunction with the Spectra-Physics

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Site No.	Source of Information	Owner or Occupant/ Address	Description
		Road, Mountain View, CA 94042	NPL site, as the contaminant plumes have merged.
2A and 2B	EDR report URS Corporation Supplemental Environmental Investigation for the Former Vector Control Yard Facility, 750 Moffett Blvd.	2A - Intel Corporation 365 Middlefield Rd, Mountain View, CA 94040 2B - Former Vector Control Yard Site 750 Moffett Blvd.	Intel Site: RWQCB- lead; VOCs (TCE, DCE, and Vinyl Chloride) have been detected in soil and shallow groundwater at the site and in shallow groundwater down gradient of the site. Since 1982 Intel has been pumping groundwater and treating by carbon adsorption. This is part of the MEW (Middlefield, Ellis, Whisman) joint NPL cleanup site. Site believed to be currently occupied by Opcode, World Energy Labs and Skywatch Energy. Former Vector Control Yard Site: Investigations performed by URS Corporation suggest that VOCs may have been spread to interchange of SR 85/U.S. 101 via utility corridors. Investigations suggest a potential source is the MEW plume.
3	EDR report	Conoco Phillips #6080 21530 Stevens Creek Blvd, Cupertino, CA 95014	Preliminary site assessment underway; LUST. Site believed to be currently occupied by a Union 76 gas station (Conoco Phillips).
4	Site Reconnaissance	Caltrans Maintenance Yard, Intersection of Bernal and SR 85	Caltrans maintenance yard where vehicle fueling and maintenance operations may take place.
5	Site Reconnaissance	PG&E Substation, Intersection of Metcalf Road and U.S. 101	Large PG&E substation.

Notes: CRWQCB=California Regional Water Quality Control Board; NPL= National Priorities List; VOCs = volatile organic compounds; TCE= trichloroethylene; DCE=dichloroethylene; MEW= Middlefield-Ellis-Whisman Study Area; LUST= leaking underground storage tank

Based upon the findings of the ISA and the Supplement, additional investigation is recommended if dewatering is planned down gradient of the properties listed in **Error! Reference source not found.** or near the SR 85/U.S. 101 interchange in Mountain View. In addition, soil sampling for aerially deposited lead is recommended at interchanges only along SR 85 between I-280 and U.S. 101 in southern San Jose, and where surface soils will be excavated elsewhere along U.S. 101 and SR 85. Soil sampling for aerially deposited lead and naturally occurring asbestos is recommended at each of the proposed bridge widening locations. If dewatering is planned (to be determined during the final design phase), groundwater samples should be collected to evaluate whether the known petroleum hydrocarbon and solvent releases would affect project construction activities.

6.2 Value Analysis

Value Analysis principles have been used throughout the development of this project. A Value Analysis Study was completed in November 2012. The recommendations were summarized in a subsequent report completed in November 2012. There were no Value Analysis alternatives that changed the design, only two that affected the project cost. The two items were:

- Reduce Minor Items % in the cost estimate.

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- Reduce contingency from 25% to 15%.

Recommendations made by the Value Analysis team and agreed to by the design team have been incorporated.

6.3 Resource Conservation

The energy impacts of transportation projects are typically divided into two areas: (1) the direct energy required for ongoing operations, in this case, the use of petroleum-based fuels and alternative fuels for motor vehicle travel within the project area, and (2) the indirect energy required to produce the materials for and to carry out construction of the project. In the long term, the direct, or operating, energy requirements are usually greater and of primary importance.

The proposed project will improve traffic operations and facilitate traffic movements through the project area. The lessening of congestion and related traffic delay is associated with faster average travel speeds and more efficient vehicle operation compared to no-build conditions. Improved operations are likely to reduce vehicle energy use, whether in the form of petroleum fuels or alternative sources of energy. For these reasons, the proposed project would be anticipated to have a beneficial or, at worst case, neutral effect on direct energy use.

No major facilities can be salvaged or relocated from this project. However, whenever possible, existing roadway items such as signs, light standards, guardrails, and other associated hardware will be relocated or stockpiled to be used at a later date. Removal of existing asphalt concrete pavement and concrete is anticipated to be negligible for this project.

6.4 Right of Way

6.4.1 General

The project would be constructed entirely within the existing state right of way. In the segment of SR 85 between SR 87 and I-280, where the median width is approximately 46 feet, pavement widening would occur in the median to accommodate a second Express Lane. The median would be paved, and the existing thrie-beam barrier would be replaced with a Type 60 concrete barrier.

SR 85 bridge decks would be widened to inside at Almaden Expressway (northbound side only), Camden Avenue, Oka Road, Pollard Road, and Saratoga Avenue, as well as at the San Tomas Aquino Creek and Saratoga Creek crossings. The existing gaps between the northbound and southbound bridges at these locations would be closed except at Almaden Expressway, where the northbound bridge would be widened on the inside (toward the median).

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6.4.2 Relocation Impact Studies

For the Build Alternative, no person or business is being displaced.

6.4.3 Airspace Lease Areas

For the Build Alternative, there is insufficient area, either open or under the proposed structure areas that would allow for an airspace lease.

6.4.4 Railroad Involvement

Work within operating railroad right of way is not anticipated as part of this project. A short clause will be added to the special provisions during the design phase notifying the contractor to stay out of the railroad right of way or to establish the applicable requirements for working adjacent to an operating rail such as the VTA Light Rail, Caltrain, or UPRR.

Joint Use and Maintenance Agreement (JUMA) by and between Caltrans and VTA allows for temporary access to VTA light rail transit facilities during construction with advanced notification. JUMA states that “future additions, extensions, enlargements or other modifications of State’s facilities shall not preclude the use of, or unreasonably interfere with, VTA’s facilities in the State Highway right of way. Caltrans and VTA shall explore all reasonable alternatives for accommodating Caltrans’ proposed expanded use(s) without interfering with VTA’s facilities.”

6.4.5 Utility and Other Owner Involvement

The project area contains overhead electric and communications lines and underground electric, gas, sanitary sewer, water, reclaimed water, communications, and fiber optic lines. Utilities in the project area were identified through site visits and reviews of utility plans obtained from Caltrans, VTA, utility providers, and local municipalities. Utility providers in the project area are listed below by category:

- Gas and electric—PG&E and City of Palo Alto.
- Communications—AT&T, Comcast, Level 3, Verizon, Nextlink, and MCI.
- Water—San Jose Water Company, Santa Clara Valley Water District, California Water Service Company, Great Oaks Water Company, City of Sunnyvale Water Division, City of Mountain View Water Division, and City of Palo Alto Water Division.
- Sanitary—City of San Jose, West Valley Sanitation District, City of Cupertino, City of Mountain View, and City of Palo Alto.

No utility impacts have been identified as a result of this project. Verifications of utilities will be required. The need for positive location (potholing) as prescribed by the Policy on High and Low Risk Underground Facilities Within Highway Rights of Way (January,

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1997) will be ascertained once utility facilities have been plotted. Utility relocations are not anticipated.

New conduits to bring power and communication to the Electronic Toll System (ETS), the Express Lane overhead signs and tolling signs will require longitudinal and transverse encroachment exceptions as the express lane will be operated by VTA. VTA will be responsible to maintain all ETS infrastructure and equipment.

In consultation with Caltrans, District and Headquarters the UPVR will be processed during the design phase.

6.5 Environmental

The IS-ND/EA has been prepared in accordance with Caltrans environmental procedures, as well as State environmental regulations, and is the appropriate document for the proposal. The Draft IS-ND/EA was approved by Caltrans on December 27, 2013. Attachment I includes the title page of the draft IS-ND/EA.

The following subsections are a summary of the required environmental findings and issues related to project design and construction.

6.5.1 Wetlands and Floodplain

No permanent or temporary impacts are anticipated to wetlands or waters of the United States. Abutment construction for bridge widening would have minimal impacts on riparian areas at San Tomas Aquino and Saratoga Creeks. During bridge widening, the construction contractor will be required to stay out of the ordinary high water of both creeks, which will be marked with environmentally sensitive area (ESA) fencing. Cast-in-place prestressed concrete box girder bridges will be constructed on falsework to span the creeks with supports located above the high water mark. New bent and falsework construction at San Tomas Aquino and Saratoga Creeks will take place below the bridge deck. Small construction equipment such as a backhoe, bobcat, crane, dump truck, and compressor may be used within the construction areas. Construction will take place within the riparian zones of the creeks but above the ordinary high water marks.

Compensatory mitigation for impacts to riparian areas will be provided through payment of a fee to the Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP) or through other mitigation determined in coordination with the Regional Water Quality Control Board.

Construction activities could cause temporary impacts to water quality. All areas that have been temporarily affected will be restored to approximately their original condition. Measures will be employed to prevent construction material or debris from entering surface waters or their channels. Best management practices (BMPs) for erosion control will be implemented and will be in place prior to, during, and after construction to avoid silt or sediment entering surface waters.

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All proposed construction will be limited to the defined project area. ESAs adjacent to the project area will be identified on contract plans and discussed in the Special Provisions. The ESAs will include areas designated in the environmental document, biological reports, and cultural resources reports as sites that have been specifically identified to avoid during construction. ESA provisions may include, but are not limited to, the use of temporary orange fencing to delineate the proposed limit of work in areas adjacent to sensitive resources, or to delineate and exclude sensitive resources from potential construction impacts. Contractor encroachment into ESAs will be prohibited (including the staging/operation of heavy equipment or casting of excavation materials). ESA provisions will be implemented as a first order of work and remain in place until all construction is completed.

Twenty areas of the project corridor are in Federal Emergency Management Agency delineated floodplains. Of the twenty floodplains, twelve are outside of areas of roadway widening or re-grading and therefore would not be affected by the project. Of the remaining eight floodplains, three are at bridges that would not be widened as part of this project: Calabazas Creek, Los Gatos Creek, and Guadalupe River. The Saratoga Creek and San Tomas Aquino Creek floodplains are at bridges that would be widened as part of this project. The remaining three floodplains are at cross culverts where all widening would take place in the median. These culverts are at the crossings of Rodeo, Vasona, and Ross Creeks. Rodeo and Ross Creeks are known to be contained within the culvert at their respective crossings, while water surface elevations at the Vasona Creek crossing are not known. There would be minimal grading at these culverts.

The project would increase the amount of impervious surfaces by 40.1 acres along SR 85 between I-280 and SR 87 as a result of median widening and the addition of an auxiliary lane between South De Anza Boulevard and Stevens Creek Boulevard. The average increase in roadway runoff, however, would be minimal compared to the overall watershed drainage areas for the creeks. The project would not result in significant increases in water surface elevations

The project would maintain the existing roadway profile. The effects to the floodplain would be minimal because of the relatively minor increases in impervious area compared to the total watershed areas.

Note: This section is based on the Location Hydrology Study Report, which was completed in March 2013.

6.5.2 Cultural Resources

Twenty prehistoric and historic sites, including three built environment resources and a reburial area are within the project's archaeological area of potential effects. No construction activities would take place in any previously determined eligible and unevaluated sites, and no surface deposits related to the sites were identified during the field surveys. Previously determined eligible and unevaluated sites would be designated as ESAs for the duration of the project and excluded from construction access and subsurface

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disturbance. An archaeologist will conduct field reviews of the ESAs to ensure that they remain intact and are not compromised. With this standard condition, no effects to cultural resources would occur.

If cultural materials are unearthed during construction, work will be halted in the area until a qualified archaeologist can assess the find. If human remains are encountered, the procedures described in State law will be implemented.

6.5.3 Water Quality and Storm Water Runoff

Project construction could have temporary impacts to water quality and storm water runoff from increased erosion and subsequent transport of sediment to surface waters. Spills and fluid leaks from construction vehicles, equipment, or materials may also occur during construction. The project would have a disturbed soil area of approximately 75.4 acres and would increase impervious surface areas by approximately 40.1 acres. Impacts to water quality, storm water runoff, and groundwater recharge would not be substantial in comparison to the overall watershed and groundwater area.

Temporary and permanent erosion control BMPs will be included in the project to prevent an adverse change in downstream water quality. Measures will include feasible temporary (short-term) and permanent (long-term) BMPs. Potentially feasible treatment BMPs that will be considered during final design include biofiltration devices, infiltration devices, media filters, and detention devices. The required Storm Water Pollution Prevention Plan will include storm water BMPs for temporary soil stabilization, sediment control, tracking control, wind erosion control, non-storm water management, and waste management/materials pollution control. The signature page of the approved SWDR for the project can be found in Attachment J.

6.5.4 Paleontology

Roadway widening, grading, and trenching may affect sensitive Pleistocene alluvial fan deposits and the Santa Clara Formation where those geologic units are exposed at or near the surface. Based on Caltrans standards, the units are considered to have high sensitivity to contain significant vertebrate, invertebrate, or plant fossils.

Due to the presence of sensitive geologic formations within the project limits, a Paleontological Mitigation Plan was prepared to address potential discoveries during project construction. Implementation of resource stewardship measures, such as Caltrans Standard Specification 14-7.02 and a specification in the construction contract requiring paleontological monitoring, would avoid potential impacts to sensitive paleontological resources, if present.

6.5.5 Biological Resources

The project area is dominated by pavement, various kinds of urban development, and landscaping. Roadway and bridge widening, construction of signs and tolling devices, and

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associated utility work in the project area would result in permanent and temporary impacts to vegetation, some of which provides habitat for special-status species, as well as removal of a small number of trees. The project would not result in habitat fragmentation or impacts to fish passage and wildlife corridors.

A project landscaping plan will be developed during final design and will include tree planting ratios of 1:1 or greater. Tree removal would take place before the start of the nesting season for protected raptors and migratory birds (February 15). Vegetation would be preserved in areas of the project limits where no construction is planned. Preconstruction surveys for serpentine grasslands, nesting migratory birds and raptors, and bat roosts will be conducted and ESAs will be established as described in the Natural Environment Study (NES) for the project.

The proposed project has the potential to affect four special-status animal and plant species that are protected by the Federal Endangered Species Act and/or the California Endangered Species Act: California red-legged frog (CRLF), California tiger salamander (CTS), bay checkerspot butterfly, and Metcalf Canyon jewel-flower. Caltrans will request a Letter of Concurrence from the U.S. Fish and Wildlife Service that addresses project-related effects to those species.

Preconstruction surveys, exclusion fencing, use of appropriate erosion control materials, and biological monitoring would minimize effects to CRLF and CTS. Preconstruction surveys and exclusion fencing for the host plant for bay checkerspot butterfly and regular watering of exposed soils would avoid effects to the species. With implementation of the reasonable and prudent measures described in the NES, compensatory mitigation is not proposed.

Detailed information about impacts to biological resources and proposed avoidance, minimization, and mitigation measures is available in the NES.

6.5.6 Highway Drainage

Between I-280 and SR 87, there would be an increase in impervious area due to the widening in the median and the addition of an auxiliary lane between South De Anza Boulevard and Stevens Creek Boulevard. No culvert extensions or additional right-of-way would be required.

The widening would result in increases to peak stormwater runoff and a reduction in the amount of pervious surfaces available for infiltration of stormwater runoff. Concentrated flow conveyance systems, such as ditches, berms, swales, flared end sections and outlet protection and velocity dissipation devices would be considered for this project. Outlet protection and velocity dissipation BMPs would be placed at all outlets of drainage systems that discharge into earth-lined ditches/basins. The existing roadway drainage facilities would either be modified to fit with new drainage systems or be removed and replaced by

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new systems. The change in drainage would result in changes in the interception of surface runoff. The proposed drainage systems will be developed during the design phase.

At various areas, there will be wet pavement issues caused by subsurface water. Such issues will be investigated and addressed during the design phase.

6.6 Air Quality Conformity

The proposed project is listed in the 2013 *Plan Bay Area* Regional Transportation Plan (ABAG and MTC 2013, RTP ID 240439), which was found to conform by MTC on July 18, 2013, and FHWA and Federal Transit Authority (FTA) made a regional conformity determination on August 12, 2013. The project is also included in MTC's financially constrained 2013 Transportation Improvement Program (TIP) (MTC 2013, page S3-239, TIP ID SCL090030). The MTC's 2013 Transportation Improvement Program was determined to conform by FHWA and FTA on August 12, 2013.

The design concept and scope of the proposed project is consistent with the project description in the 2013 RTP, the 2013 TIP, and the open to traffic assumptions of the MTC's regional emissions analysis. The project is in conformity with the SIP and will not otherwise interfere with timely implementation of any Transportation Control Measures (TCM) in the applicable SIP.

The project team conducted consultation with MTC Air Quality Conformity Task Force for PM_{2.5} conformity analysis on October 27, 2011 and was determined that it is not a project of air quality concern. On February 28, 2013, the Task Force confirmed that the project, as revised to include the auxiliary lane between South De Anza Boulevard and Stevens Creek Boulevard, is not a project of air quality concern. The findings of that determination will be circulated to the public in conjunction with the public circulation of the environmental document, and a 30-calendar-day review period will be provided to allow for public comments.

6.7 Title VI Considerations

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans' commitment to upholding the mandates of Title VI is evidenced by its Title VI Policy Statement, signed by the Director, which can be found in the IS-ND/EA.

6.8 Noise Abatement Decision Report

Title 23, Code of Federal Regulations (CFR), Part 772 of the FHWA standards (23 CFR 772) and the Caltrans Traffic Noise Analysis Protocol (Protocol) require that noise abatement be considered for projects that are predicted to result in traffic noise impacts.

The preliminary noise abatement decision is included in the draft environmental document, which will be circulated for public review.

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6.8.1 Result of the Noise Study Report

The Noise Study Report for this project was prepared by Illingworth and Rodkin in April 2012 and approved by Caltrans on September 18, 2012. The study was conducted to assess noise impacts at sensitive receivers in the project vicinity and to identify preliminary noise abatement measures necessary for the project to comply with state and federal noise abatement/mitigation requirements. A Supplement to the Noise Study Report and Noise Abatement Decision Report was approved by Caltrans in February 2013.

Table 6.8-1 lists the noise abatement criteria for use in the NEPA-23 CFR 772 analysis.

Table 6.8-1 Noise Abatement Criteria

Activity Category	NAC, Hourly A- Weighted Noise Level, $L_{eq}(h)$	Description of Activities
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ¹	67 (Exterior)	Residential.
C ¹	67 (Exterior)	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A–D or F.
F	No NAC—reporting only	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical, etc.), and warehousing.
G	No NAC—reporting only	Undeveloped lands that are not permitted.

¹ Includes undeveloped lands permitted for this activity category.

² The $L_{eq}(h)$ activity criteria values are for impact determination only and are not design standards for noise abatement measures. All values are A-weighted decibels (dBA).

To better characterize the noise environment and existing barriers along the project corridor, the study area was divided into 15 segments. The segments, existing barriers, and land uses by activity category are summarized in Table 6.8-2. Noise impacts were identified for outdoor use areas as well by the number of affected units, or receptors. The study area has existing noise barriers in the form of sound walls and berms along the majority of SR 85 and along parts of U.S. 101 in Mountain View and San Jose.

Table 6.8-2 Noise Study Area Summary by Segment

Segment	Segment Description	Existing Barrier Heights (feet)	Land Uses by Activity Category
A	U.S. 101 – Oregon Expressway to SR 85 (Palo Alto and Mountain View)	10 to 16	B, C, and D

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Segment	Segment Description	Existing Barrier Heights (feet)	Land Uses by Activity Category
1	SR 85 – U.S. 101 to Central Expressway (Mountain View)	14	B, C
2	SR 85 – Central Expressway to El Camino Real (Mountain View)	12, 16	B, D
3	SR 85 – El Camino Real to Fremont Avenue (Mountain View, Sunnyvale, and Los Altos)	12, 16	B, C, and D
4	SR 85 – Fremont Avenue to Interstate 280 (Sunnyvale and Cupertino)	12–16	B
5	SR 85 – Interstate 280 to South De Anza Boulevard (Cupertino)	12–16	B, C, and D
6	SR 85 – South De Anza Boulevard to Saratoga Avenue (San Jose and Saratoga)	12, 14	B, C
7	SR 85 – Saratoga Avenue to Winchester Boulevard (Saratoga, San Jose, Campbell, and Los Gatos)	6–16	B, C
8	SR 85 – Winchester Boulevard to Union Avenue (Los Gatos, Campbell, and San Jose)	10–16	B, C, and D
9	SR 85 – Union Avenue to Camden Avenue (San Jose)	5–14	B
10	SR 85 – Camden Avenue to Almaden Expressway (San Jose)	10–14	B, C
11	SR 85 – Almaden Expressway to Blossom Hill Road (San Jose)	6–16	B, C
12	SR 85 – Blossom Hill Road to Cottle Road (San Jose)	12, 14	B
13	SR 85 – Cottle Road to South of SR 85/U.S. 101 Interchange (San Jose)	12–16	B, C
B	U.S. 101 – South of SR 85/U.S. 101 Interchange to Bailey Avenue (San Jose)	Berms	B, C

Note: Activity category descriptions are shown in Table 6.8-1.

Potential abatement measures were considered for receptors with noise levels that exceed state or federal thresholds and areas of frequent human use where a lowered noise level would be of benefit. According to the Protocol, noise abatement must be predicted to provide at least a 5 dB minimum reduction to be considered feasible. Additionally, the Protocol acoustical design goal states that the noise barrier must provide at least 7 dB of noise reduction at one or more benefited receptors. Noise abatement measures that provide noise reduction of more than 5 dB are encouraged as long as they meet the reasonableness guidelines. Reasonableness is determined based on whether a proposed noise abatement measure is acceptable to the benefited receptors and the cost per benefited receptor. The cost is based on a current allowance per benefited receptor of \$55,000. Noise barriers were evaluated at the most acoustically effective location within the State right-of-way .

Table 6.8-3 Summary of Barrier Evaluation from Noise Study Report

Sound Wall ID	Approximate Stationing / Location	Type of Analysis	Barrier Height (feet)	Insertion Loss (dBA)	Number of Benefited Receptors	Total Reasonable Monetary Allowance
101-SW1	SB 51+00 to 59+00	New Wall	12	6 to 7	4	\$220,000
			14	7 to 8	4	\$220,000
			16	7 to 8	4	\$220,000
101-SW3	SB 169+50 to	New Wall	10	7 to 8	4	\$220,000

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Sound Wall ID	Approximate Stationing / Location	Type of Analysis	Barrier Height (feet)	Insertion Loss (dBA)	Number of Benefited Receptors	Total Reasonable Monetary Allowance
	177+50		12	9	4	\$220,000
			14	10	4	\$220,000
			16	11	4	\$220,000
SW1	SB ROW El Camino Real to Existing Noise Barrier (2,925 feet)	New Wall	10	6 to 7	29	\$1,595,000
			12	6 to 9	43	\$2,365,000
			14	7 to 10	43	\$2,365,000
			16	8 to 11	43	\$2,365,000
SW2	Northbound On-Ramp Fremont Avenue to Existing Noise Barrier (450 feet)	New Wall	16	7	1	\$55,000
SW5	Northbound ROW McClellan Road to Stevens Creek Boulevard (2,490 feet)	New Wall	10	7	1	\$55,000
			12	5 to 7	2	\$110,000
			14	5 to 8	2	\$110,000
			16	6 to 9	2	\$110,000
SW17	Northbound ROW SR 85 to SR 87 Connector (1,675 feet)	New Wall	10	5 to 7	20	\$1,100,000
			12	5 to 8	21	\$1,155,000
			14	5 to 9	21	\$1,155,000
			16	5 to 10	21	\$1,155,000

Note: Station locations are shown in Attachment C of the Noise Study Report (Illingworth and Rodkin 2012).

6.8.2 Factors in the Noise Abatement Decision Report Section

Table 6.8-4 lists the potential barriers that met the Protocol acoustical design goal (at least 7 dB of noise reduction at one or more benefited receptors) in areas where the NAC was approached or exceeded. Table 6.8-4 also identifies the total reasonableness allowance for each barrier and the estimated barrier construction cost. The total reasonableness allowance for each feasible barrier ranged from \$55,000 to \$2,365,000 depending on the barrier height and number of benefited receptors. In all cases, the estimated construction costs of the walls well exceeded the combined reasonableness allowance for the benefited receptors. None of the barriers evaluated meet both the feasibility and reasonableness criteria, as shown in Table 6.8-4.

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Table 6.8-4 Summary of Key Abatement Information

Sound Wall ID	Height (feet)	Acoustically Feasible?	Number of Benefited Receptors	Total Reasonableness Allowance	Estimated Construction Cost	Cost Less than Allowance?
101-SW1	12	Yes	4	\$220,000	\$960,000	No
	14	Yes	4	\$220,000	\$1,120,000	No
	16	Yes	4	\$220,000	\$1,280,000	No
101-SW3	10	Yes	4	\$220,000	\$800,000	No
	12	Yes	4	\$220,000	\$960,000	No
	14	Yes	4	\$220,000	\$1,120,000	No
	16	Yes	4	\$220,000	\$1,280,000	No
SW1	10	Yes	29	\$1,595,000	\$2,925,000	No
	12	Yes	43	\$2,365,000	\$3,510,000	No
	14	Yes	43	\$2,365,000	\$4,095,000	No
	16	Yes	43	\$2,365,000	\$4,680,000	No
SW2	16	Yes	1	\$55,000	\$720,000	No
SW5	10	Yes	1	\$55,000	\$2,490,000	No
	12	Yes	2	\$110,000	\$2,988,000	No
	14	Yes	2	\$110,000	\$3,486,000	No
	16	Yes	2	\$110,000	\$3,984,000	No
SW17	10	Yes	20	\$1,100,000	\$1,675,000	No
	12	Yes	21	\$1,155,000	\$2,010,000	No
	14	Yes	21	\$1,155,000	\$2,345,000	No
	16	Yes	21	\$1,155,000	\$2,680,000	No

6.8.3 Non-acoustical Factors Relating to Feasibility

Noise abatement is considered to be acoustically feasible if it provides noise reduction of at least 5 A-weighted decibels (dBA) at receptors subject to noise impacts. Other non-acoustical factors relating to geometric standards (e.g., sight distances), safety, maintenance, and security can also affect feasibility. Additionally, the Protocol acoustical design goal states that a noise barrier must provide at least 7 dB of noise reduction at one or more benefited receptors.

6.8.4 Preliminary Noise Abatement Decision

As none of the barriers evaluated meet the feasibility and reasonableness criteria established by 23 CFR 772, no noise abatement is proposed. The preliminary noise abatement decision is based on preliminary project alignments and profiles, which may be

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subject to change. In addition, other projects have identified commitments to construct noise barriers and the conclusions in this analysis assume that those barriers will be completed independent of the SR 85 Express Lanes Project. As such, the physical characteristics of noise abatement described herein also may be subject to change. If pertinent parameters change substantially during the final project design, the preliminary noise abatement decision may be changed or eliminated from the final project design. A final decision to construct noise abatement will be made upon completion of the project design.

6.8.5 Secondary Effects of Abatements

No noise abatement is recommended in the preliminary noise abatement decision. Therefore, no secondary effects on cultural resources, scenic views, hazardous materials, biology, or other resources would occur.

7 Other Considerations As Appropriate

7.1 Public Hearing Process

In addition to the public outreach effort documented under section 3.2 of this report, the public outreach effort included participation from the local cities and the county in the project development team meetings and several workshop and presentations to stakeholders in order to seek input/feedback on the proposed project. It is recommended that a public meeting, in the “open house” format, be scheduled presenting the preferred viable alternative for public review and comment.

7.2 Route Matters

7.2.1 Freeway Agreements and New Connections

The overall ETS for the Express Lanes facility will be constructed, operated and maintained by VTA. A longitudinal encroachment exception will be obtained for the Express Lanes tolling system located within State Right of Way during the design phase.

The project does not modify the existing access to the freeway and therefore an update to the freeway agreement is not anticipated. Other agreements that will be needed for the project are listed under Section 7.5 – Other Agreements.

7.2.2 Route Adoptions

All improvements associated with the proposed project would occur within the existing right-of-way and is substantially contiguous to the existing freeway. Therefore, the project does not require any route adoption.

7.2.3 Relinquishments

There is no relinquishment anticipated as part of this project.

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7.3 Permits

7.3.1 Environmental Permits

The following permits, reviews, and approvals would be required for project construction:

Table 7.3-1 Permits and Approvals Required

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service (USFWS)	Section 7 consultation for threatened and endangered species.	● Request for Letter of Concurrence will be submitted to the USFWS to address species protected under Section 7 of the FESA [date will be inserted when available].
Federal Highway Administration (FHWA)	Concurrence with project's conformity to Clean Air Act and other requirements.	● Air quality studies will be submitted for FHWA concurrence after public review of this IS/EA.
State Historic Preservation Officer (SHPO)	Notification of finding of "No Adverse Effect with Standard Conditions – ESAs" under the Section 106 Programmatic Agreement	● Cultural studies were submitted for SHPO notification purposes on June 21, 2013. ● A Section 106 completion memo was issued on August 22, 2013.
California Department of Fish and Wildlife	Section 1602 Lake and Streambed Alteration Permit and Incidental Take Permit	● Permit application will be submitted during the project design phase.
San Francisco Bay Regional Water Quality Control Board (RWQCB)	Waste discharge requirements under the Porter-Cologne Water Quality Control Act; National Pollutant Discharge Elimination System (NPDES) approval for work greater than one acre.	● Joint "Application for 401 Water Quality Certification and/or Report of Waste Discharge" will be submitted during the project design phase. NPDES permit application will be submitted during the project design phase. ● A Notice of Intent and Storm Water Pollution Prevention Plan will be prepared/submitted prior to construction.
City of Saratoga	Permit for removal of protected tree	● Permit application will be submitted during the project design phase.

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7.4 Cooperative Agreements

A Cooperative Agreement addressing the PA/ED, Design, and Right of Way clearance has been executed between Caltrans and the VTA using the Cooperative Agreement Report (CAR) as the authorizing document. The executed Cooperative Agreement dated November 9, 2009 and amendment to this agreement signed on May 10, 2013 are attached in Attachment L.

7.5 Other Agreements

The following agreements will be executed during the design phase (PS&E):

Construction Cooperative Agreement between VTA and Caltrans will be required for the project and needs to be executed prior to beginning of construction.

Joint Use Maintenance and Operations Agreement (VTA and Caltrans) will be executed in order to identify utility cost sharing, Freeway Service Patrol and towing operations, accident clearance, responsibilities, roles and limits of responsibilities.

Customer Service and Toll Collection Agreement (VTA and BATA) to establish the customer service, toll collection, and transaction processing responsibilities and the associated cost sharing and funds transfer between BATA and VTA.

Reimbursable services agreements (VTA and CHP) will be executed to provide Express Lanes enforcement.

Tolling Agreement (VTA, ET, and FHWA) will be executed to authorize use of federal funds for tolling on SR 85.

7.6 Involvement with a Navigable Waterway

Consultations with the U.S. Coast Guard and the California State Lands Commission have shown that there are no Navigable Waterways within the project limits.

7.7 Transportation Management Plan for Use during Construction

A Transportation Management Plan (TMP) will be required during the construction of proposed improvements to minimize delay and inconvenience to the traveling public. The TMP for the project will be developed and refined during the design phase, supported by detailed traffic studies to evaluate traffic operations. The proposed construction includes roadway work that will require lane closures and/or detouring and that will require K-rail during construction to provide safety to workers and to isolate the work zone from the adjacent traffic. The need for necessary lane closures during off-peak hours or at night, or short-term detour routes for ramp closures will be identified during the design phase. No full closures, ramp closures, or local street closures for extended periods of time are anticipated. The TMP will include briefing local public officials and a public information program to inform the public of project progress and upcoming closures and detours. The

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TMP will also include a press release to notify and inform motorist, business, community groups, local entities, emergency services, and politicians of upcoming closures or detours.

Other aspects of the TMP may include coordination with ridesharing agencies, transit operators, emergency services, and neighborhood and special interest groups; consideration of construction strategies and contract incentives; CHP and local law enforcement involvement and development of contingency plans. Various TMP elements such as portable Changeable Message Signs and a CHP Construction Zone Enhanced Enforcement Program (COZEEP) may be utilized to alleviate and minimize delay to the traveling public.

A copy of the TMP Data Sheet prepared for the project is included in Attachment G.

7.8 Stage Construction

Due to the high-traffic volumes and existing delays, any construction activity on SR 85 requires that stage construction be considered to minimize impacts to the traveling public. Through a multi-stage approach, the existing number of lanes would be maintained and shoulder widths would vary from a minimum of 2-ft to 10-ft, where feasible. Temporary concrete railing (K-rail) and temporary traffic screen will be utilized for traffic and worker safety.

Five stages of construction are anticipated to complete the project. The inside pavement and bridge widening will be completed in the first stage. The second stage will involve installation of overhead signs and toll gantries and the third stage will involve installation of barrier mounted signs. Pavement delineation will be completed in the fourth stage. The last stage will involve implementation of system integrators. Several construction ‘phases’ may be associated with each construction stage. Individual phases of construction would be developed as detailed design progresses.

During construction, lane closures will be required, but full freeway closures are not expected to be necessary.

7.9 Accommodation of Oversize Loads

No trucks are allowed on SR 85 between the SR 85/U.S. 101 interchange in South San Jose (PM 0.00) and the SR 85/I-280 interchange in Sunnyvale (PM 18.42). Trucks are allowed North of I-280. Existing vertical clearances have been checked with ground survey and as-builts throughout the project limits, and all of the existing structures meet these minimum clearances, with the exception of the Dana Street OC and the Middlefield Road OC where the existing and proposed vertical clearance does not meet the minimum vertical clearance requirement. In these segments, trucks are restricted to the rightmost general purpose lane where the project is not proposing any changes to the existing geometry. Trucks are not allowed in the HOV lane under the current conditions, and will not be allowed in the express lane under the future build scenario. During the design phase, Caltrans standard signs will be used to mark the structures and alert drivers of the revised vertical clearance.

7.10 Graffiti Control

Generally, this project is located in an urban area and therefore it is considered a graffiti-prone area. The project does not propose any new retaining walls, soundwalls or concrete surfaces. However because the project proposes a significant number of overhead signs for the Express Lanes, graffiti control features such as anti-graffiti coatings on bridge railings and overhead signs that allow easier clean-up and maintenance will be incorporated into the design.

7.11 Risk Management Plan

A risk management plan and associated risk register (Attachment H) was prepared for the project and will be maintained through the entire project development process. A Risk Management Workshop was conducted by the Project Development Team on September 12, 2013.

8 Programming

8.1 Programming

In October 2007, Governor Schwarzenegger signed AB 574 allowing VTA to operate Express Lanes on a permanent basis by removing the “demonstration” status and allowing issuance of bonds, backed by Express Lanes program revenues, to finance Express Lanes construction.

Project is funded through environmental clearance phase from federal Earmark, American Recovery and Reinvestment Act, and VTA Local funding sources. VTA is working with local, state, and federal agencies to identify funding sources for design, right of way, and construction of the Express Lanes Project.

The anticipated total project cost breakdown by phase and fiscal year is shown in the table below.

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Table 8.1-1 Funding by Fiscal Year and Project Phase

Fiscal Year	PA&ED	PS&E	Construction Capital Cost	Construction Support	Total
Prior Fiscal Years	\$4,500,000				\$4,500,000
FY13 –FY14	\$500,000	\$4,000,000			\$4,500,000
FY14 –FY15		\$7,000,000		\$3,500,000	\$10,500,000
FY15 – FY16			\$21,000,000	\$8,000,000	\$29,000,000
FY16 – FY17			\$120,000,000	\$3,500,000	\$123,500,000
Total	\$5,000,000	\$11,000,000	\$141,000,000	\$15,000,000	\$172,000,000

8.2 Funding

The anticipated total project cost breakdown by phase and fiscal year is shown in the table below.

Table 8.2-1 Capital Support Estimate

Funding Source	PA&ED	PS&E	Construction Support	Capital Construction Costs	Total
Local Revenue	\$1,000,000				\$1,000,000
ARRA Funding	\$2,000,000	\$1,300,000			\$3,300,000
Demonstration Project Earmark	\$1,490,000				\$1,490,000
TBD	\$510,000	\$9,700,000	\$15,000,000	\$141,000,000	\$166,210,000
Total	\$5,000,000	\$11,000,000	\$15,000,000	\$141,000,000	\$172,000,000

8.3 Schedule

The following is the current major milestone schedule for the project:

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Table 8.3-1 Project Schedule – Major Milestones

Project Milestones	Delivery Date (Month/ Year)
PA & ED	04/2014
Project PS&E	04/2015
Right of Way Certification	04/2015
Ready to List	04/2015
Contract Completion Acceptance	01/2017

9 Reviews

9.1 GeD Review

Larry Moore (and previously Mike Thomas), HQ Project Development Coordinator (Acting), has reviewed and provided comments to the preliminary GeD on March 2, 2012, July 13, 2012, August 7, 2012, January 3, 2013, and May 27, 2013. The noted mandatory design exceptions have been reviewed and must be approved by Larry Moore prior to project approval, and the noted advisory design exceptions have been reviewed and must be approved by Tung Ly, District Design Office Chief, prior to project approval.

On January 31, 2013 and December 17, 2013, comments to the Draft Project Report were received from Larry Moore, HQ Design Reviewer and were subsequently incorporated.

9.2 District 4 Functional Units Review

Other District 4 Functional Units have reviewed the Draft Project Report and comments have been incorporated.

9.3 Program Advisor Review

Nick Saleh, the CMIA District Program Advisor, reviewed the Draft Project Report on January, 2013. Fariba Zohoury, Caltrans Regional Project Manager, reviewed the Draft Project Report on December 13, 2013.

9.4 Other Review

Constructability Review: Mario J. Jerez of District 4 Constructability Review has reviewed this Draft Project Report on December 6, 2012 and comments have been addressed in the report. Further Constructability Reviews will be performed at the 65% and 95% of PS&E phase. Comments and recommendations from those reviews will be incorporated into the final PS&E.

04-SCI-85, PM 0.0/R24.1
04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

December 2013

Pavement Strategy Review: The proposed pavement structural sections have been developed. Life Cycle Cost Analysis for 40-yr design pavement was prepared and is attached as Attachment K for reference. Caltrans has reviewed the analysis and provided concurrence. The Pavement Selection Review Committee Check List is included in Attachment K for reference.

December 2013

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04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Project Personnel

Project Manager	Fariba Zohoury	(510) 286-6355
Caltrans District Design Office Chief	Tung Ly	(510) 286-5076
Caltrans Senior Transportation Engineer	Hassan Nikzad	(510) 622-0767
Caltrans Design	Caroline Pineda	(510) 622-0773
HQ Project Development Coordinator (Acting)	Larry Moore	(916) 653-2647
HQ Geometric Review Coordinator	Larry Moore	(916) 653-2647
Caltrans Environmental Analysis	Cristin Hallissy	(510) 622-8717
VTA Project Manager	Darrell Vice	(408) 952-4214
VTA Environmental Manager	Tom Fitzwater	(408) 321-5705
VTA Senior Environmental Planner	Roy Molseed	(408) 321-5784
URS Principal in Charge	Ramsey Hissen	(408) 961-8426
URS Project Manager	Ray Akkawi	(408) 961-8419
URS Project Engineer	Sarah Christensen	(408) 297-9585
URS Environmental Manager	Jeff Zimmerman	(510) 874-3005
URS Assistant Environmental Manager	Lynn McIntyre	(510) 874-3149

December 2013

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04-SCI-101, PM 47.9/52.0
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RU: 04-235
Program ID: N/A

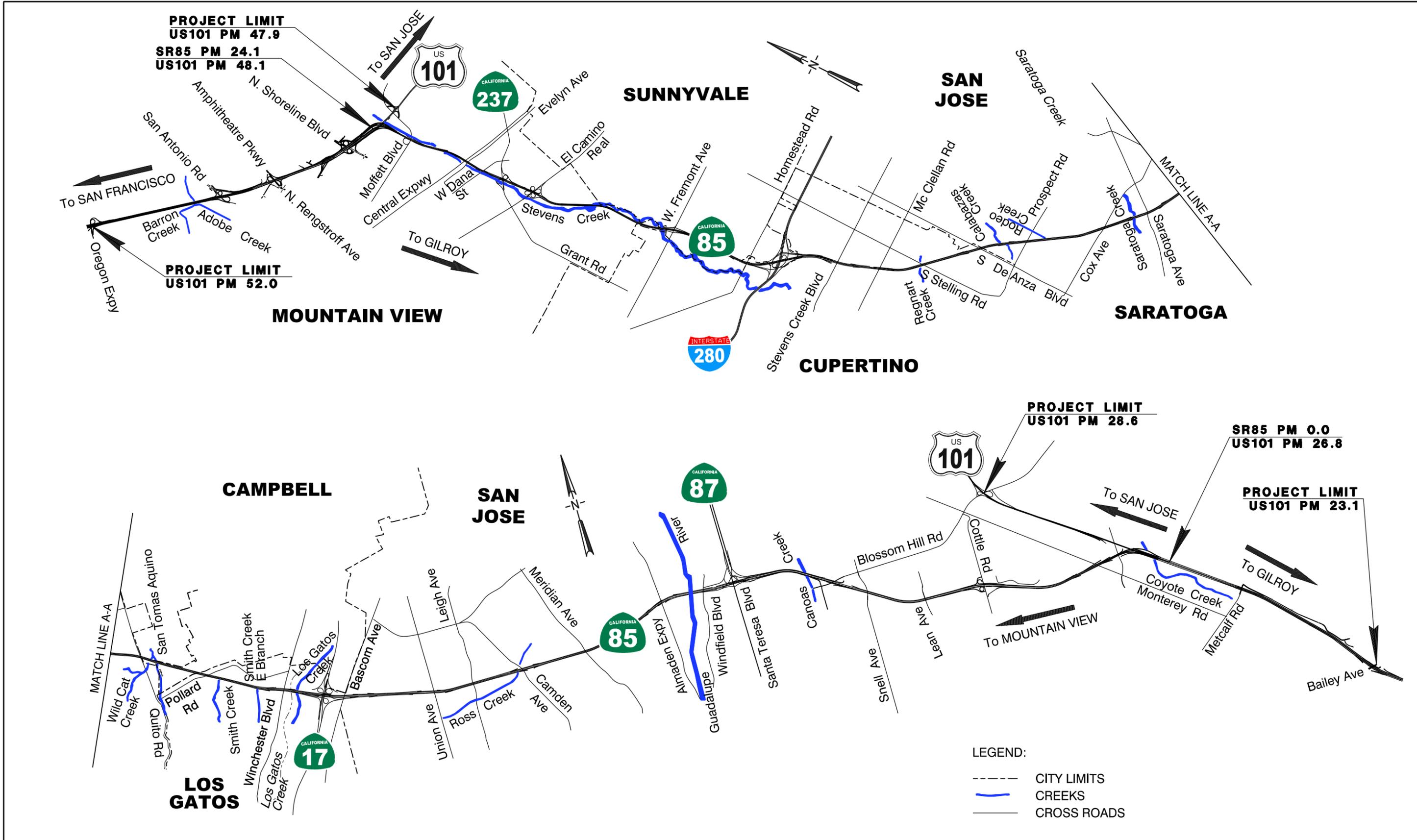
Attachments

Attachment A	Project Location Map
Attachment B	Access Location Map
Attachment C	Pavement Delineation Plans/Typical Cross Sections/Construction Details
Attachment D	Conceptual Signing Plans
Attachment E	Cost Estimate
Attachment F	Right of Way Data Sheet
Attachment G	Transportation Management Plan Data Sheet
Attachment H	Risk Register
Attachment I	Draft Environmental Document (Title Page Only)
Attachment J	Storm Water Data Report (Signature Page Only)
Attachment K	Life Cycle Cost Analysis / Pavement Selection Review Committee Checklist
Attachment L	Cooperative Agreement

December 2013

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04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment A
Project Location Map



SR 85 Express Lanes Project
US 101 (SOUTH SAN JOSE) TO US 101 (MOUNTAIN VIEW)
SITE LOCATION MAP

NOT TO SCALE
 Figure
A
 March 2013

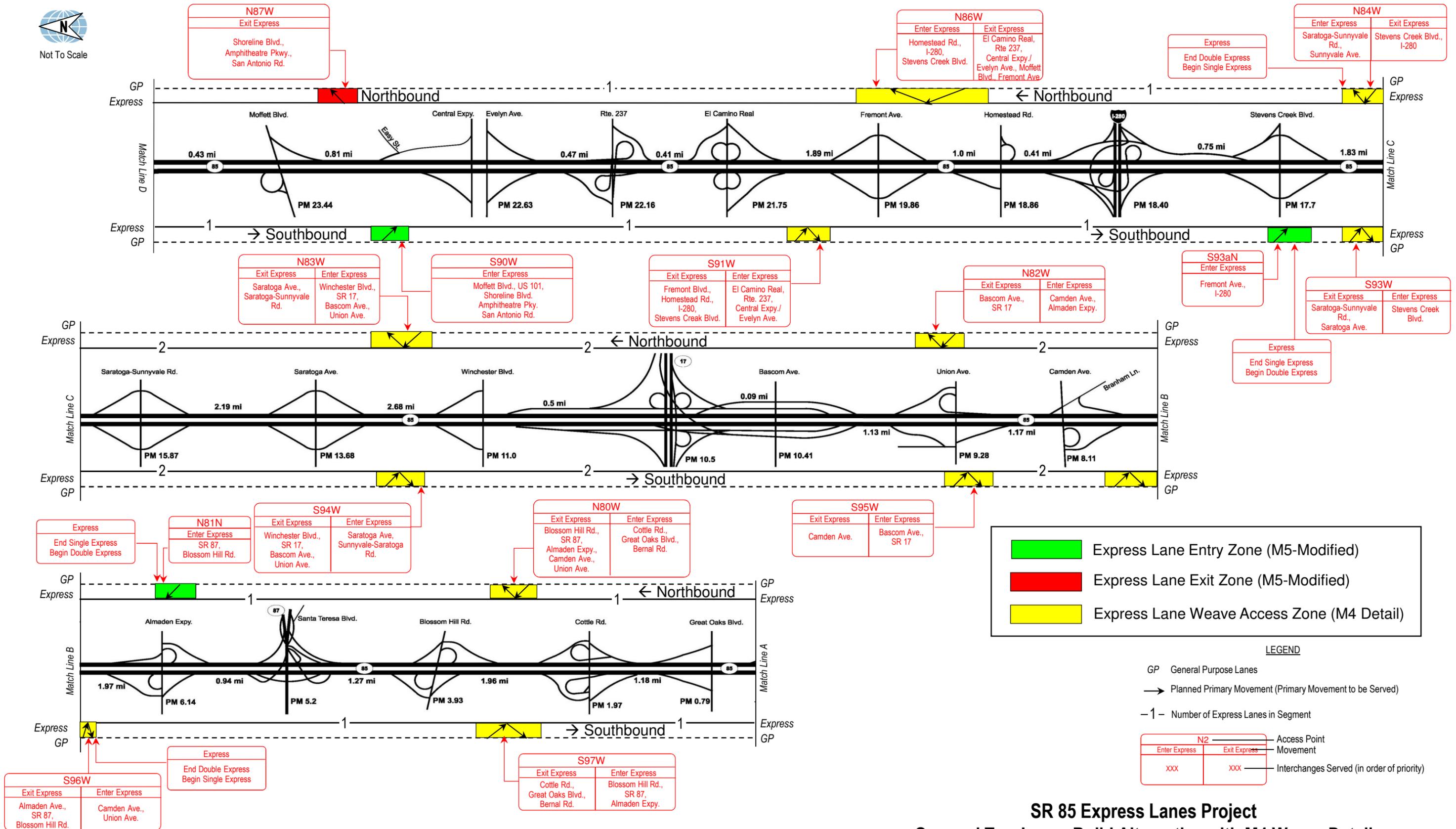
December 2013

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04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment B
Access Location Map



Not To Scale



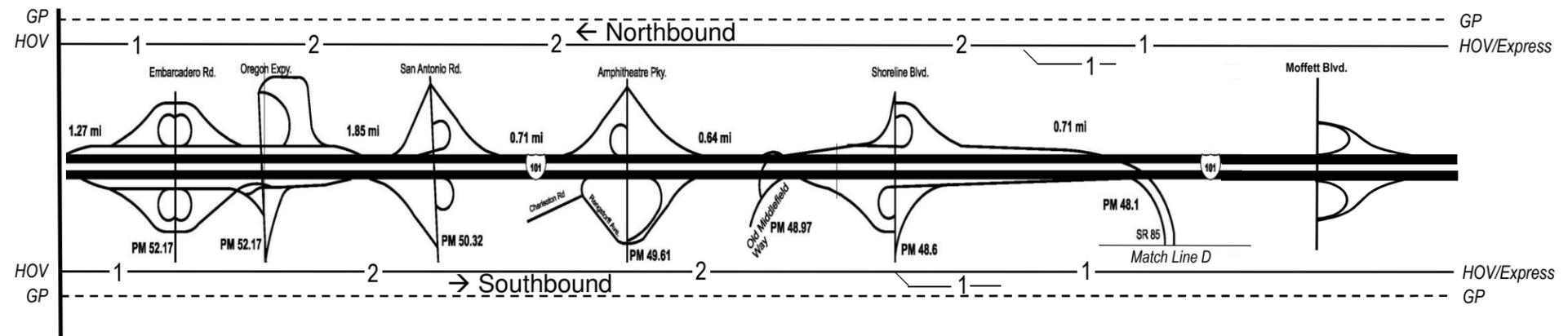
SR 85 Express Lanes Project
One and Two Lanes Build Alternative with M4 Weave Detail



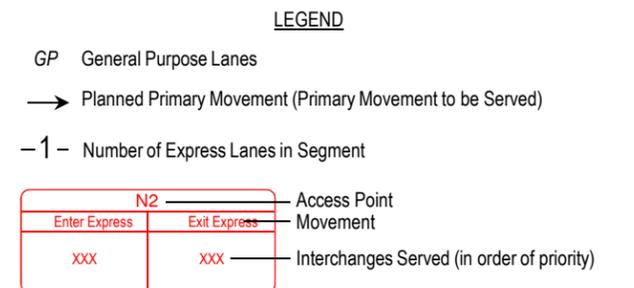
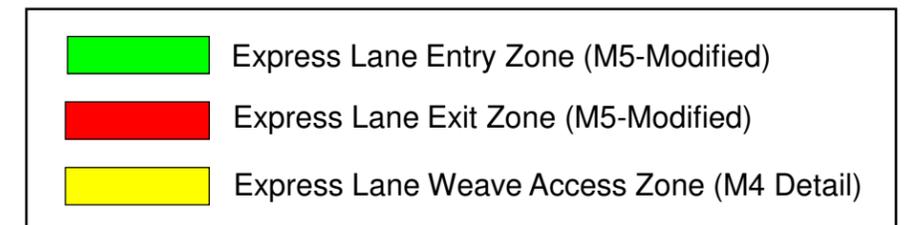
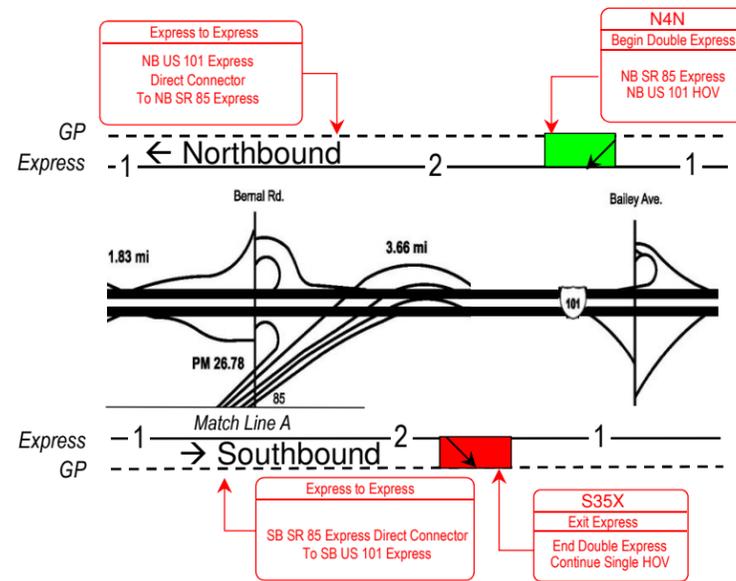
Not To Scale

**Santa Clara /
San Mateo
County Line**

**US 101
North of SR 85**



**US 101
South of SR 85**



**SR 85 Express Lanes Project
One and Two Lanes Build Alternative with M4 Weave Detail**

December 2013

04-SCI-85, PM 0.0/R24.1
04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment C
Pavement Delineation Plans/Typical Cross Sections/Construction Details

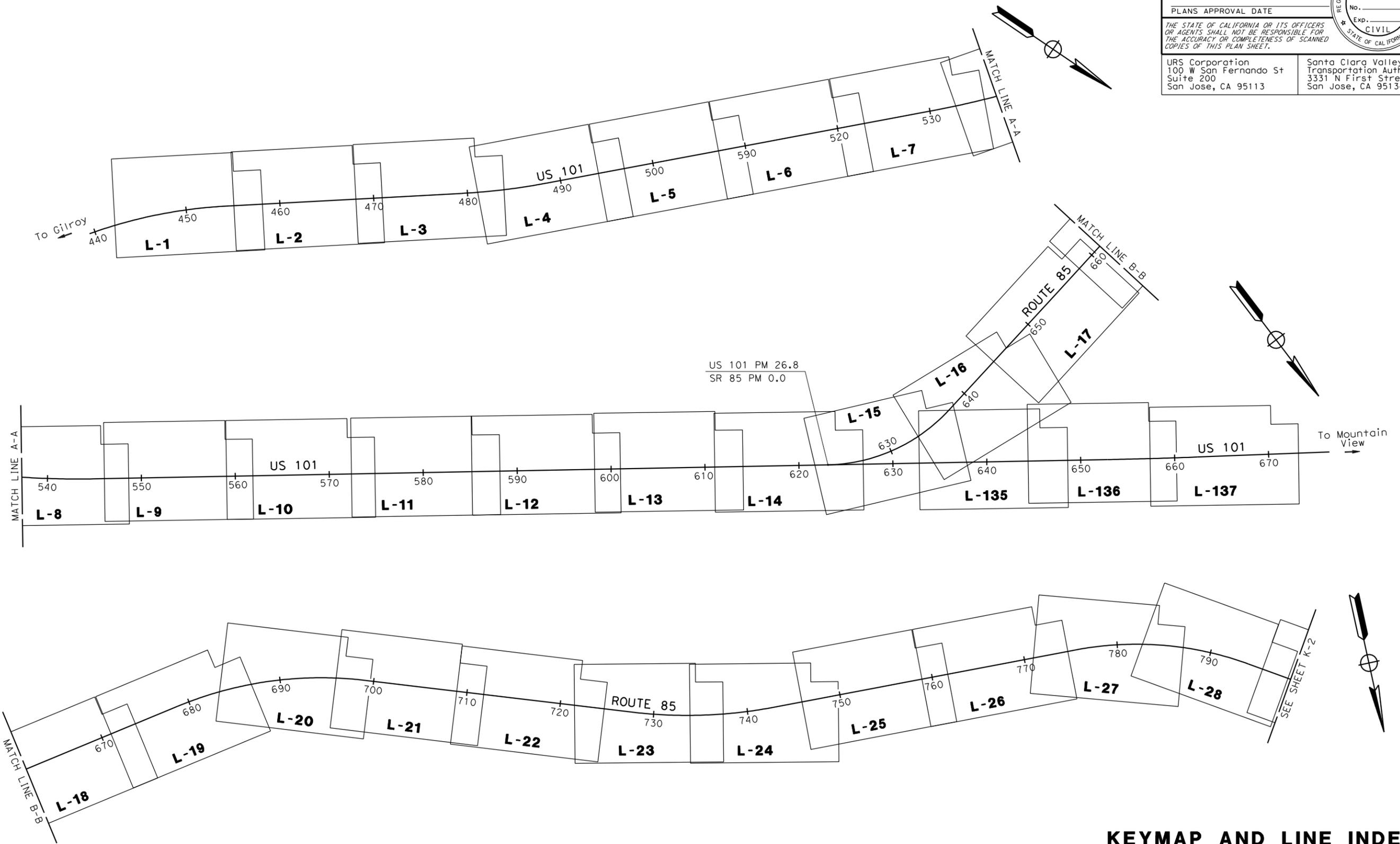
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REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

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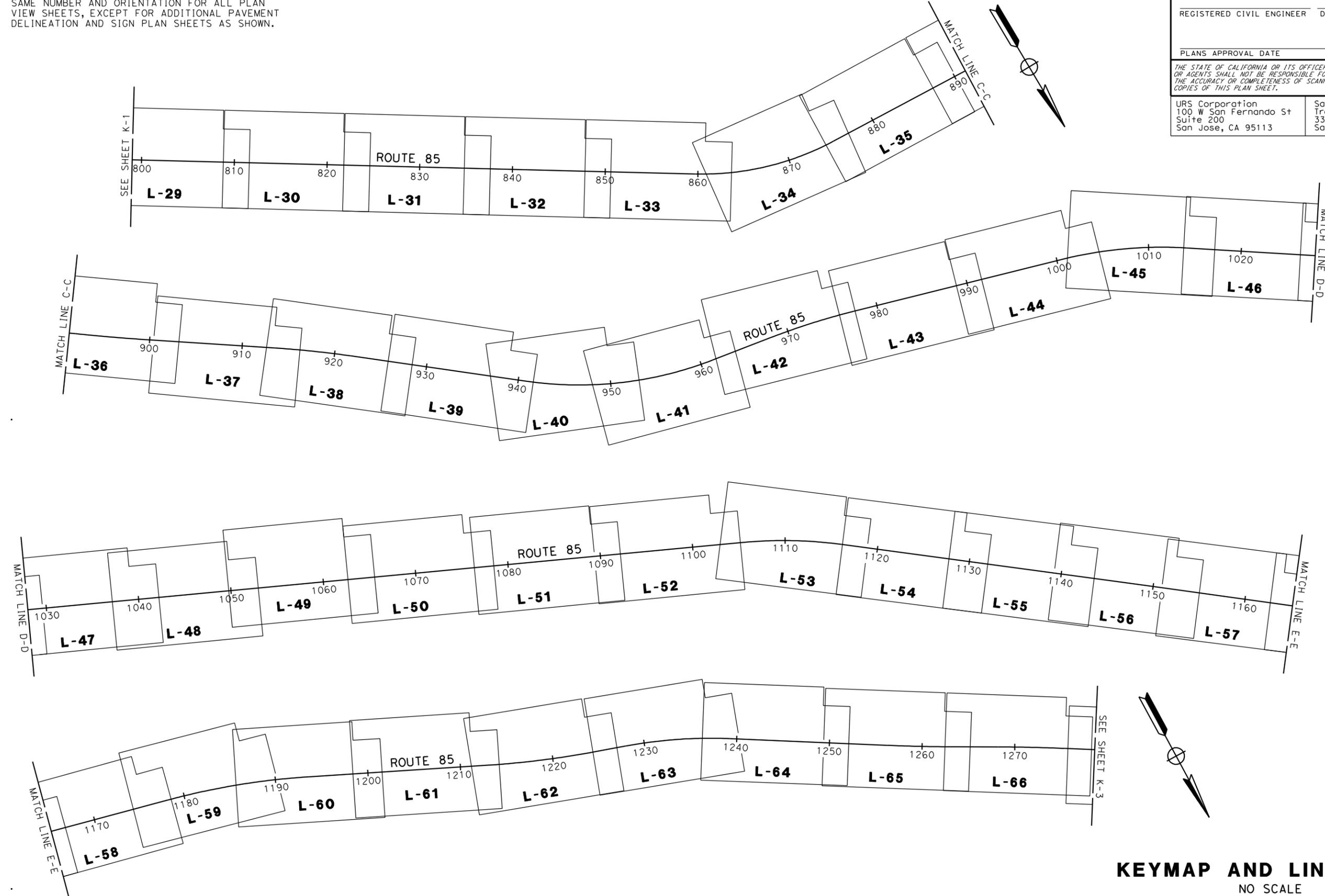
KEYMAP AND LINE INDEX
NO SCALE
K-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
CONSULTANT FUNCTIONAL SUPERVISOR: Chad'i Chazbek
CHECKED BY: Chad'i Chazbek
DESIGNED BY: Minyoung Kim
REVISOR: Chad'i Chazbek
DATE REVISED: XX/XX/12

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			CIVIL		
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St. Gibbons
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 CHECKED BY: Chadi Chazbek
 DESIGNED BY: Minyoung Kim
 REVISIONS:
 XX XX/XX/12
 REVISOR: XX
 DATE: XX/XX/12

KEYMAP AND LINE INDEX
 NO SCALE
K-2

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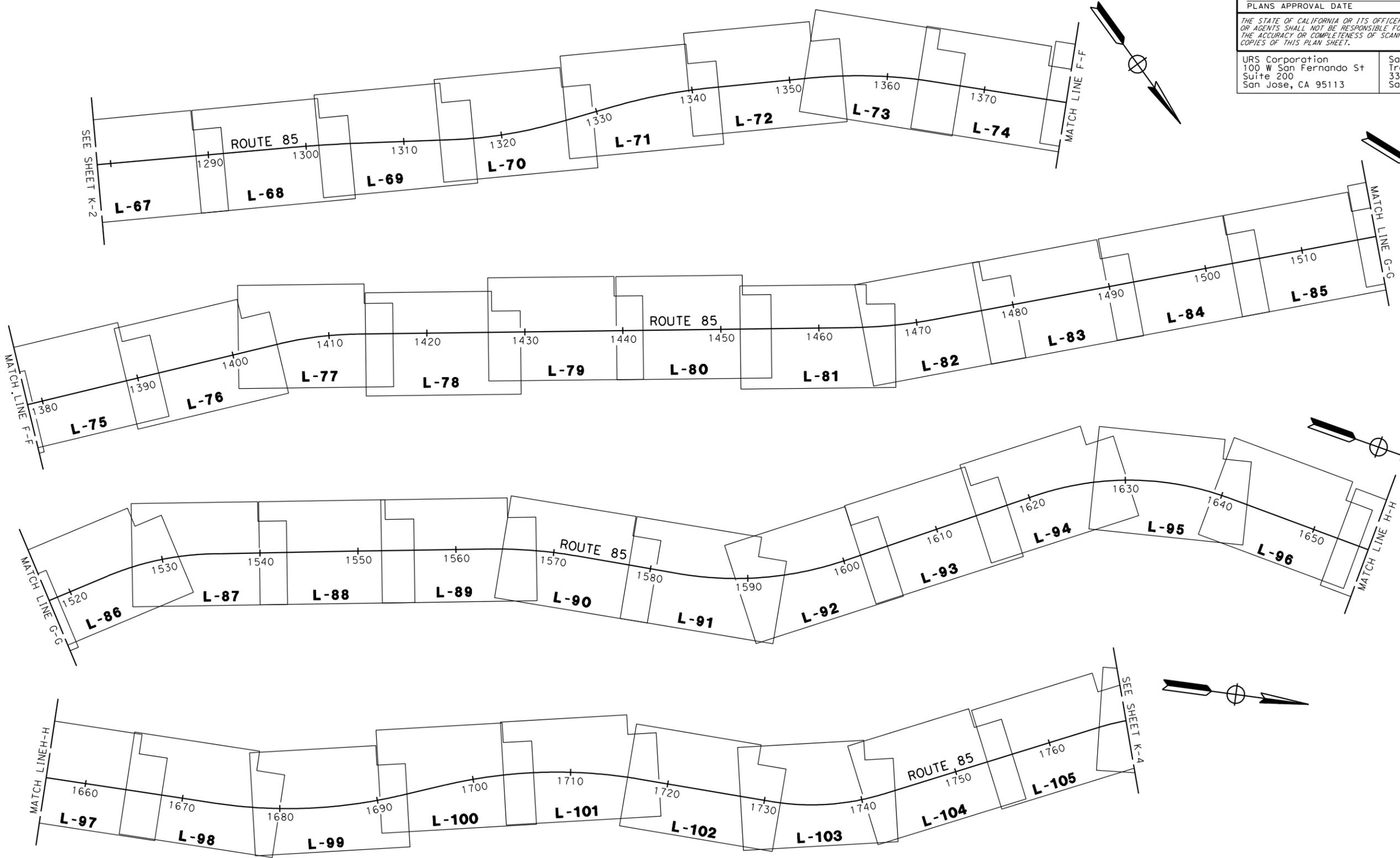
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PLANS APPROVAL DATE	

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St. Gibbons
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 CALCULATED-DESIGNED BY: Chadi Chazbek
 REVISOR: Minyoung Kim
 REVISION: XX
 DATE: XX/XX/12

KEYMAP AND LINE INDEX
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K-3

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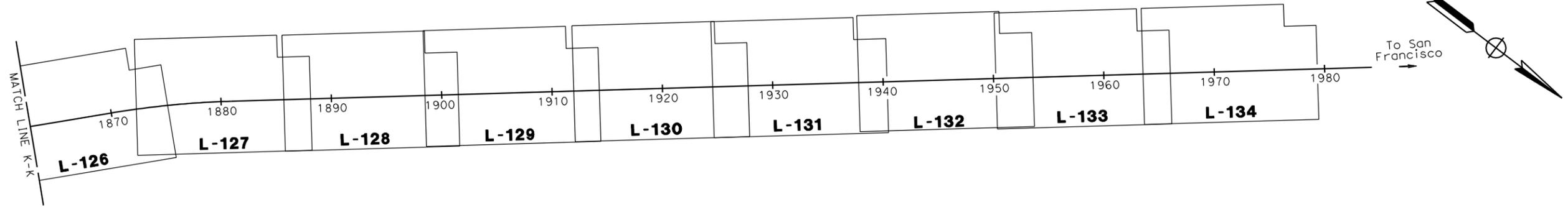
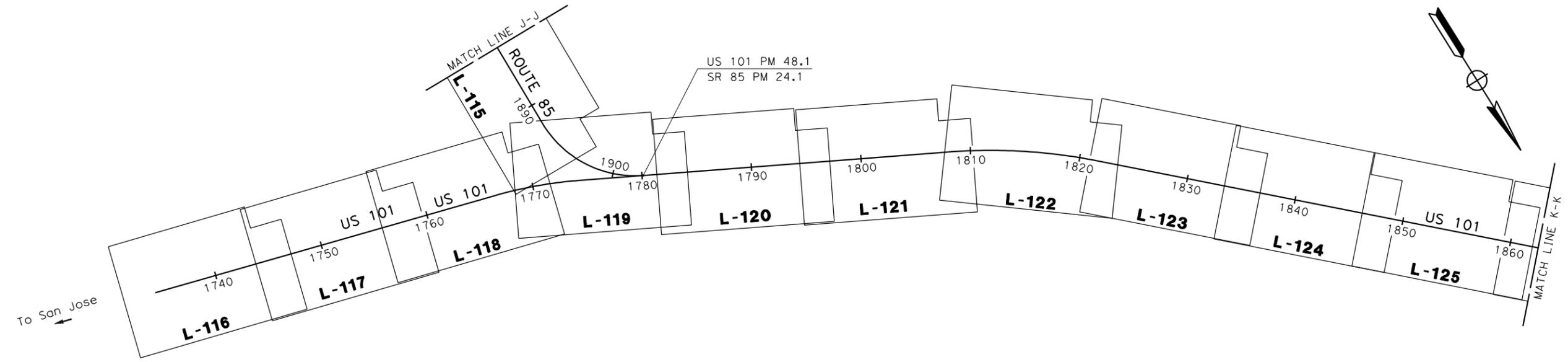
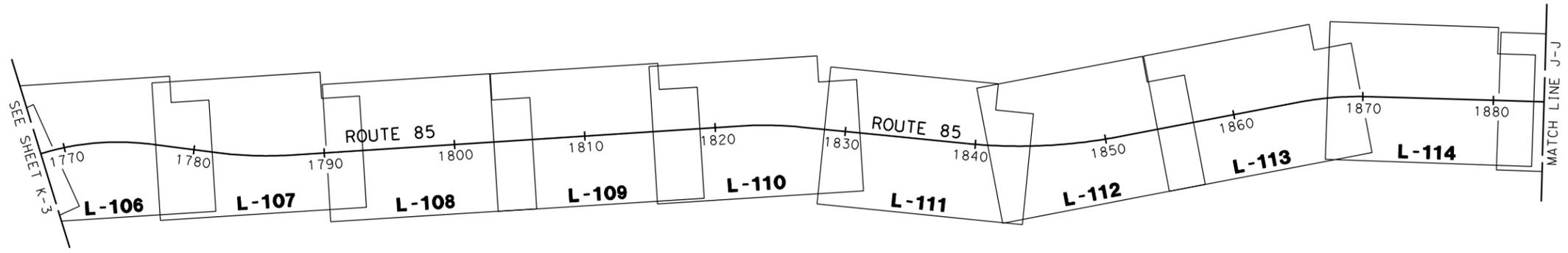
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PLANS APPROVAL DATE	

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KEYMAP AND LINE INDEX
NO SCALE
K-4

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St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadí Chazbek
 CALCULATED-DESIGNED BY: Chadí Chazbek
 CHECKED BY:
 REVISOR: Minyoung Kim
 DATE REVISED: XX/XX/12

BORDER LAST REVISED 7/2/2010

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UNIT xxxx

PROJECT NUMBER & PHASE 0400001163

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St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISED BY: XX
 DATE REVISED: XX/XX/11

NOTES:

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- ALL STRIPES AND PAVEMENT MARKINGS ARE TO BE THERMOPLASTIC, EXCEPT FOR THOSE MARKED PAINT.
- CONTRACTOR SHALL REMOVE ANY EXISTING CONFLICTING STRIPING, PAVEMENT MARKERS, MARKINGS, AND DELINEATORS.
- FOR OVERHEAD SIGN DETAILS, REFER TO CONCEPTUAL SIGNING PLANS (PROJECT REPORT - APPENDIX D)

LEGEND:

- | | | | |
|-----|--|--|---------------------------------|
| No. | STANDARD PAVEMENT DELINEATION DETAIL No. | | TYPE II (R OR L) ARROW |
| | CHANGE OF PAVEMENT DELINEATION DETAIL | | TYPE III (R OR L) ARROW |
| | HOV LANE | | TYPE VI ARROW |
| | DELINEATOR (CLASS 1) WITH TYPE DESIGNATION | | TYPE V ARROW |
| | DELINEATOR (CLASS 1) WITH TYPE DESIGNATION | | CONCRETE MEDIAN BARRIER MARKER |
| | OM-3R OR OM-3L MARKERS | | MEDIAN BARRIER POSTMILE MARKING |
| | TYPE I 18' ARROW | | DIRECTIONAL ARROW |

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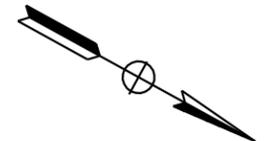
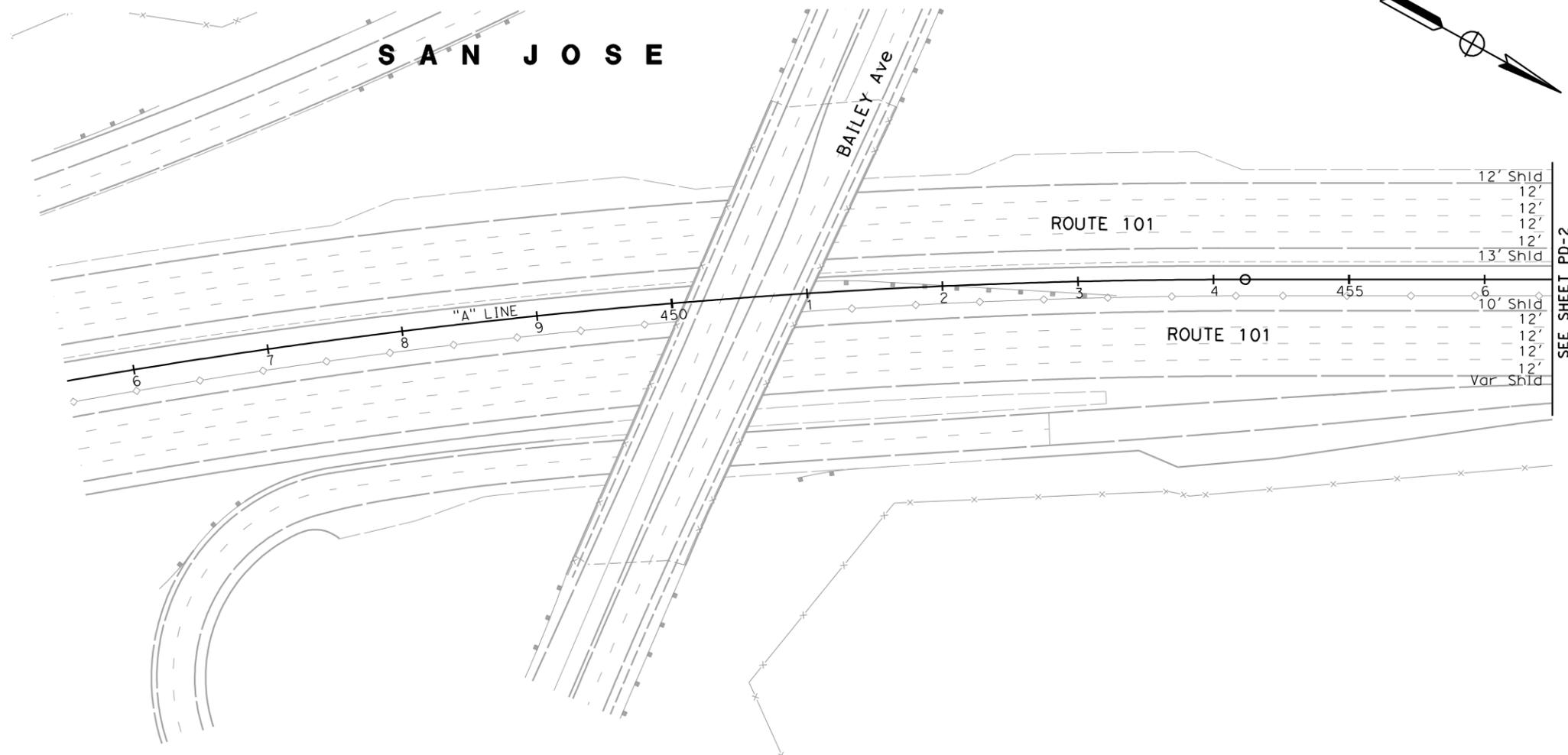
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LOCATIONS OF CONSTRUCTION

No	COUNTY	ROUTE	PM
①	SCI	85	0.0-24.1
②	SCI	101	23.1-28.6
③	Sci	101	47.9-52.0

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-1

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

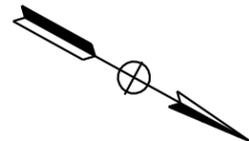
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SEE SHEET PD-2

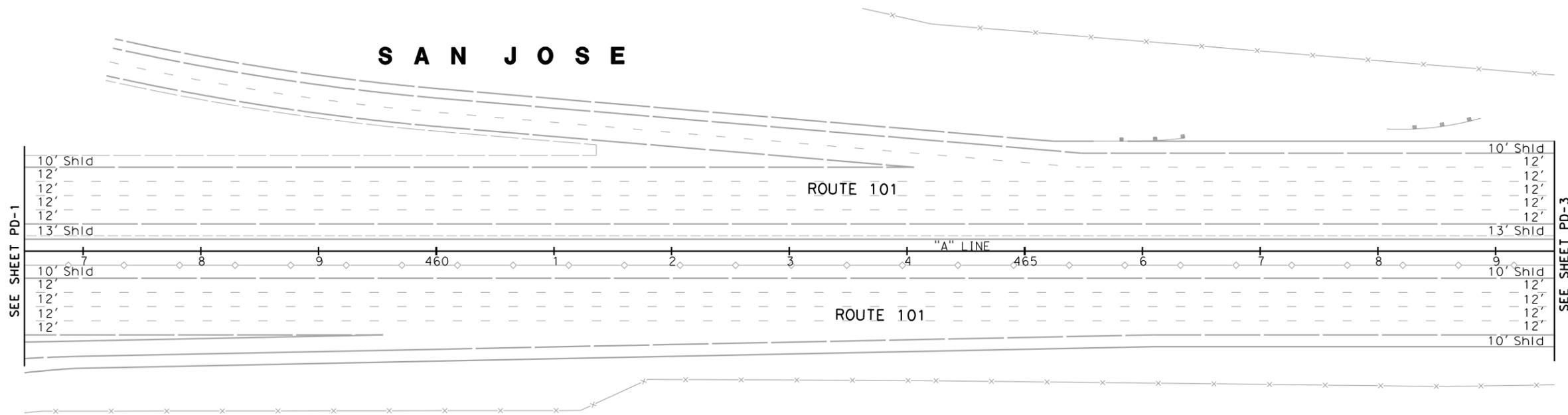
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SEE SHEET PD-1

SEE SHEET PD-3

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-2

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	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
		Cassidy Grillon	REVISOR	DATE
		Chadi Chazbek	REVISOR	DATE

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UNIT xxxx

PROJECT NUMBER & PHASE

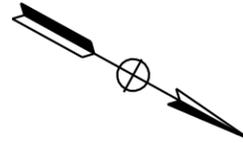
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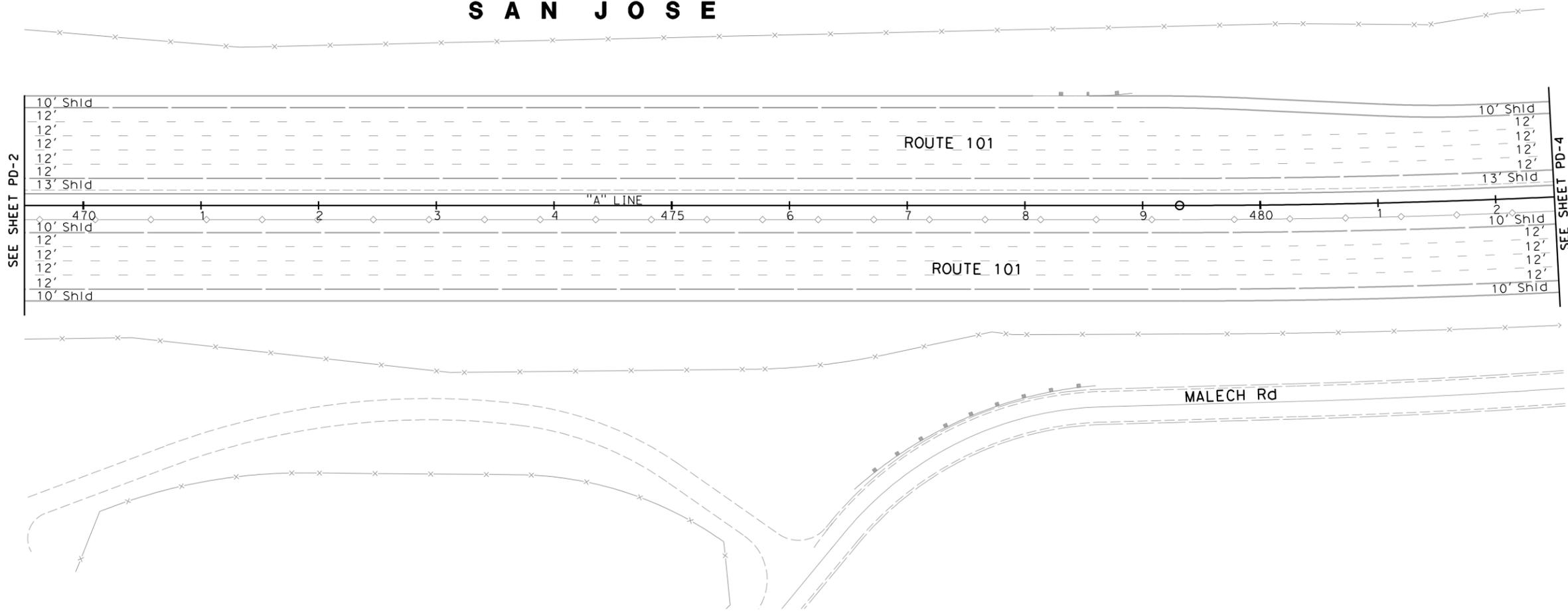
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SAN JOSE



SEE SHEET PD-2

SEE SHEET PD-4

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			REVISOR	DATE

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-3

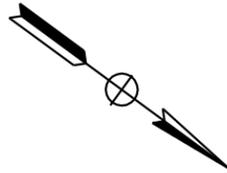
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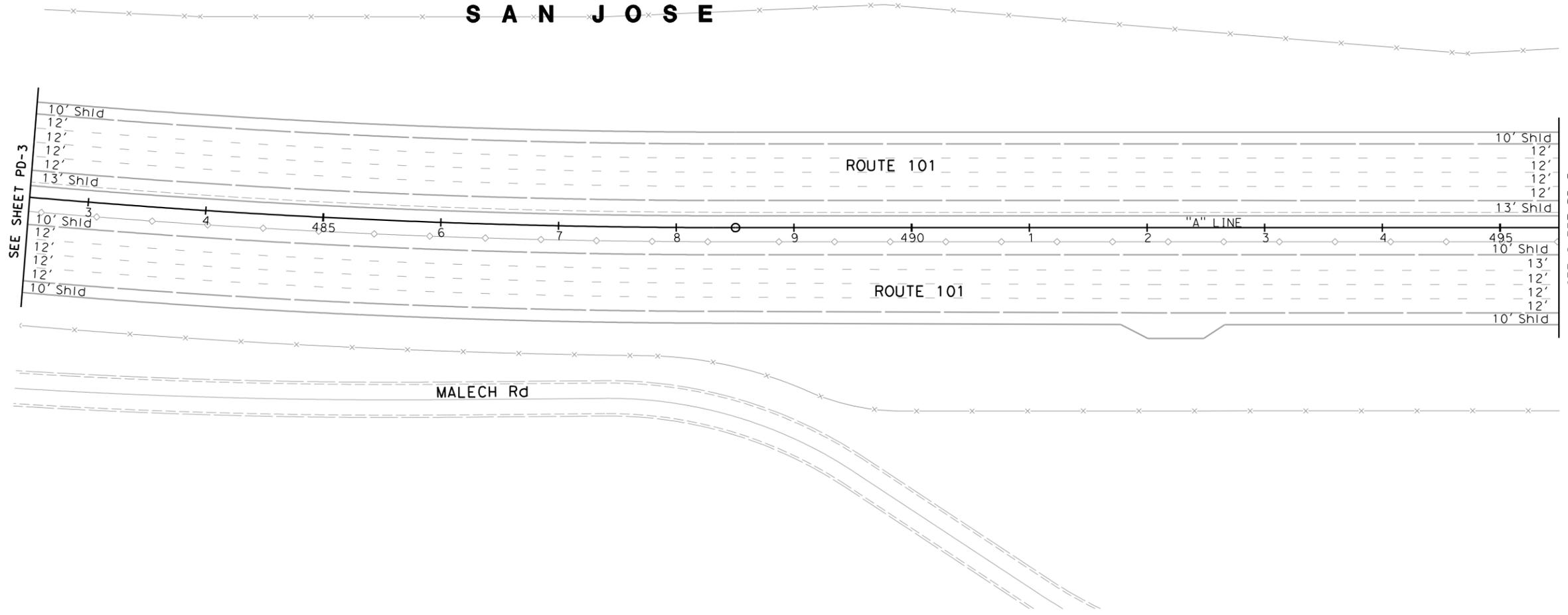
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	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11



SEE SHEET PD-3

SEE SHEET PD-5

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-4

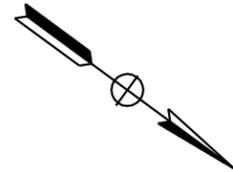
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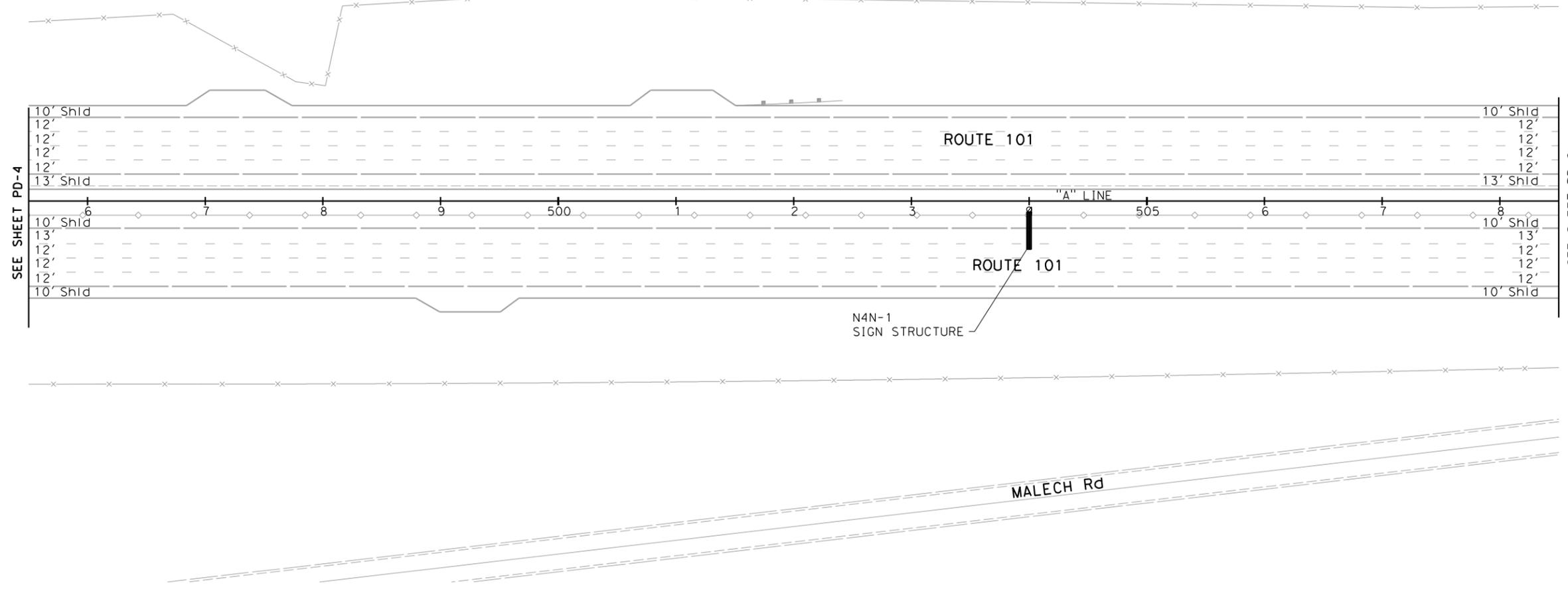
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4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
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SEE SHEET PD-4

SEE SHEET PD-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
			REVISOR	DATE
			XX	XX/XX/11

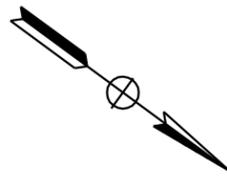
PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-5

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

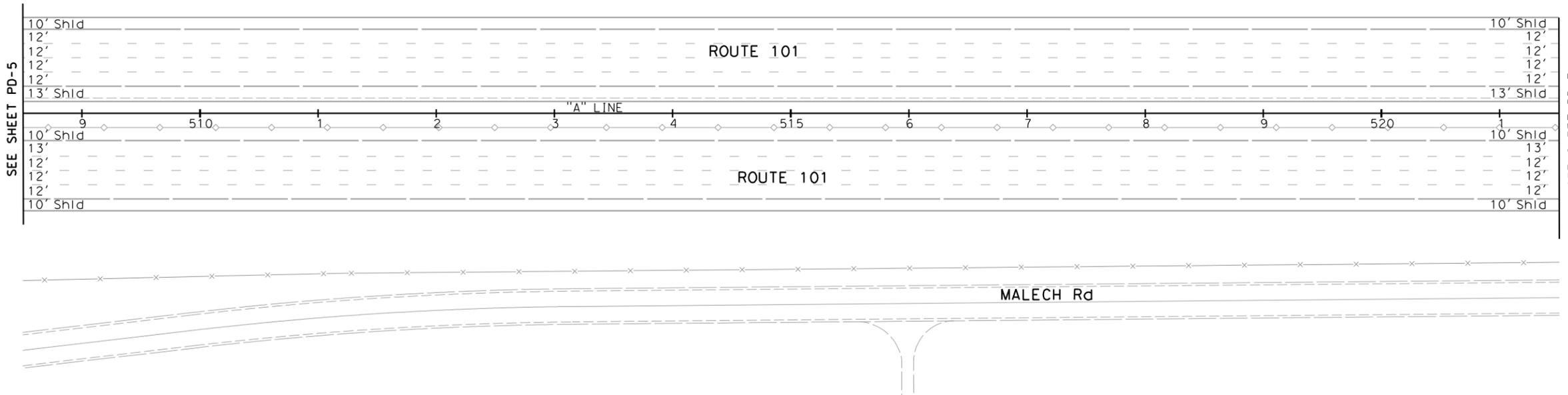
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
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S A N J O S E



SEE SHEET PD-5

SEE SHEET PD-7

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	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
	Chadi Chazbek	Cassidy Grillon	REVISOR	DATE
			XX	XX/XX/11

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

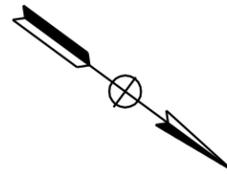
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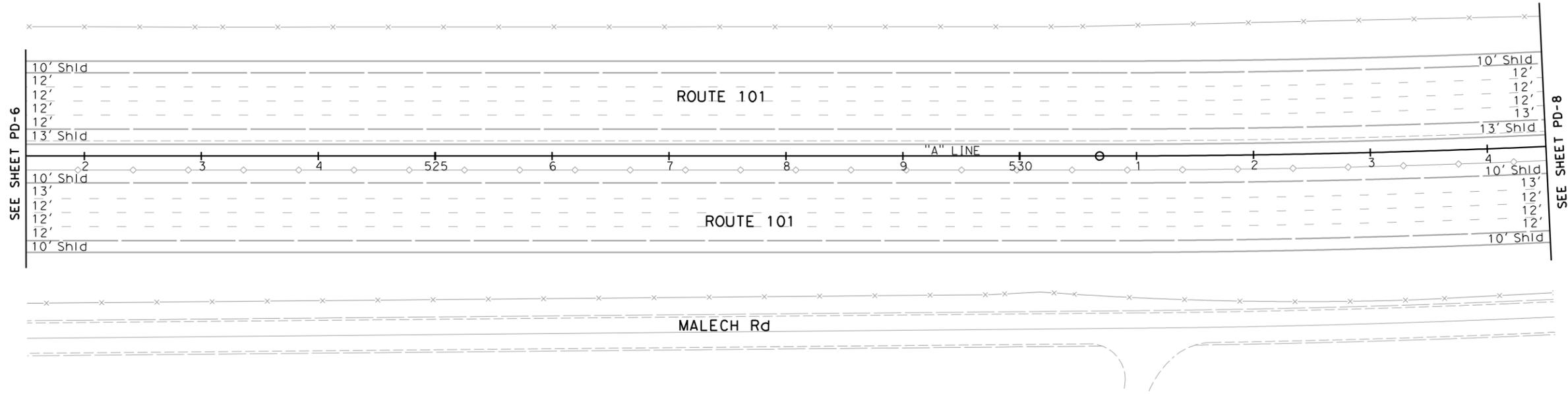
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
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S A N J O S E



SEE SHEET PD-6

SEE SHEET PD-8

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	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
			REVISOR	DATE
			Chadi Chazbek	

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

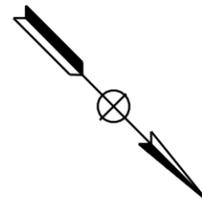
PD-7

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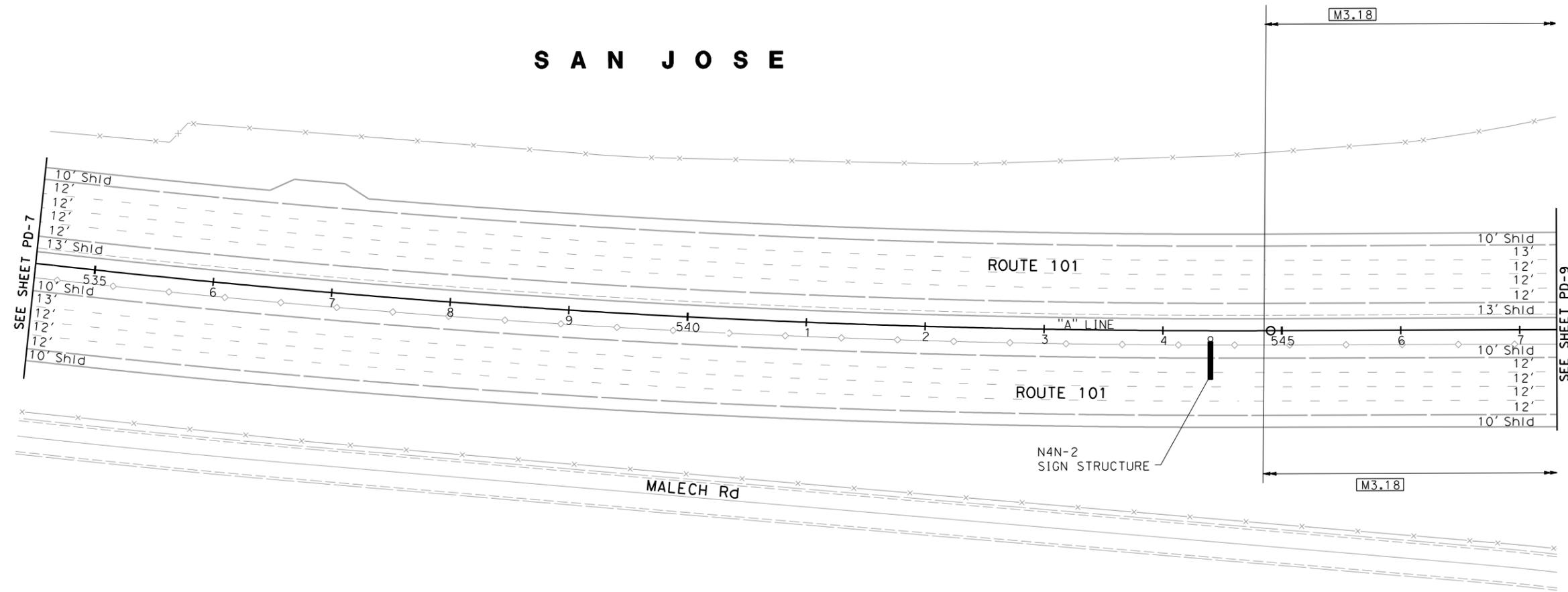
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4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SAN JOSE



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
	Chadi Chazbek	Cassidy Grillon		
			REVISOR	DATE

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

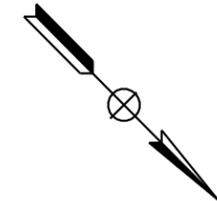
PD-8

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

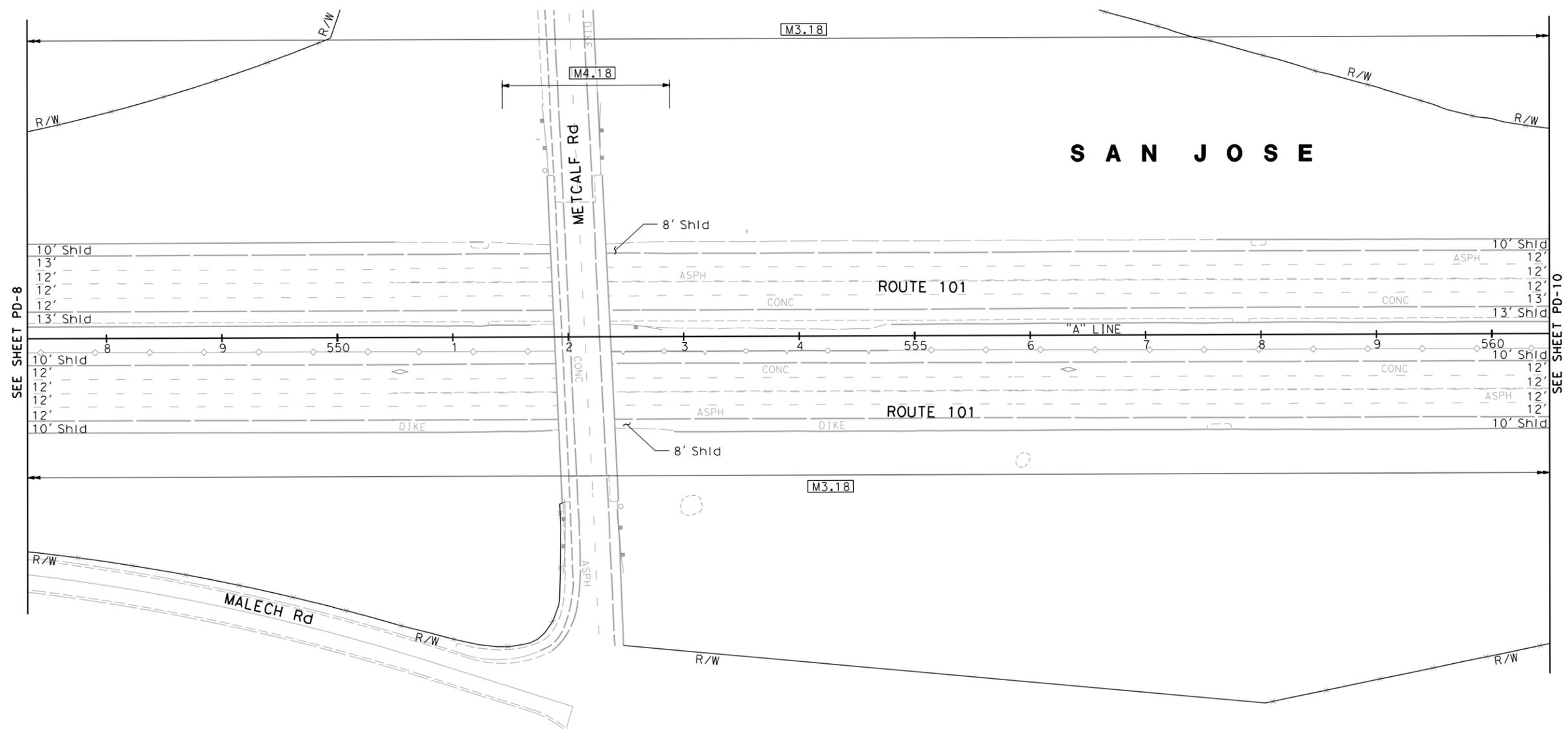
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4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
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URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
St. Gobran	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
		Cassidy Grillon	REVISOR	DATE
		Chadi Chazbek	XX	XX/XX/11



SAN JOSE

SEE SHEET PD-8

SEE SHEET PD-10

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-9

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:23:20 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

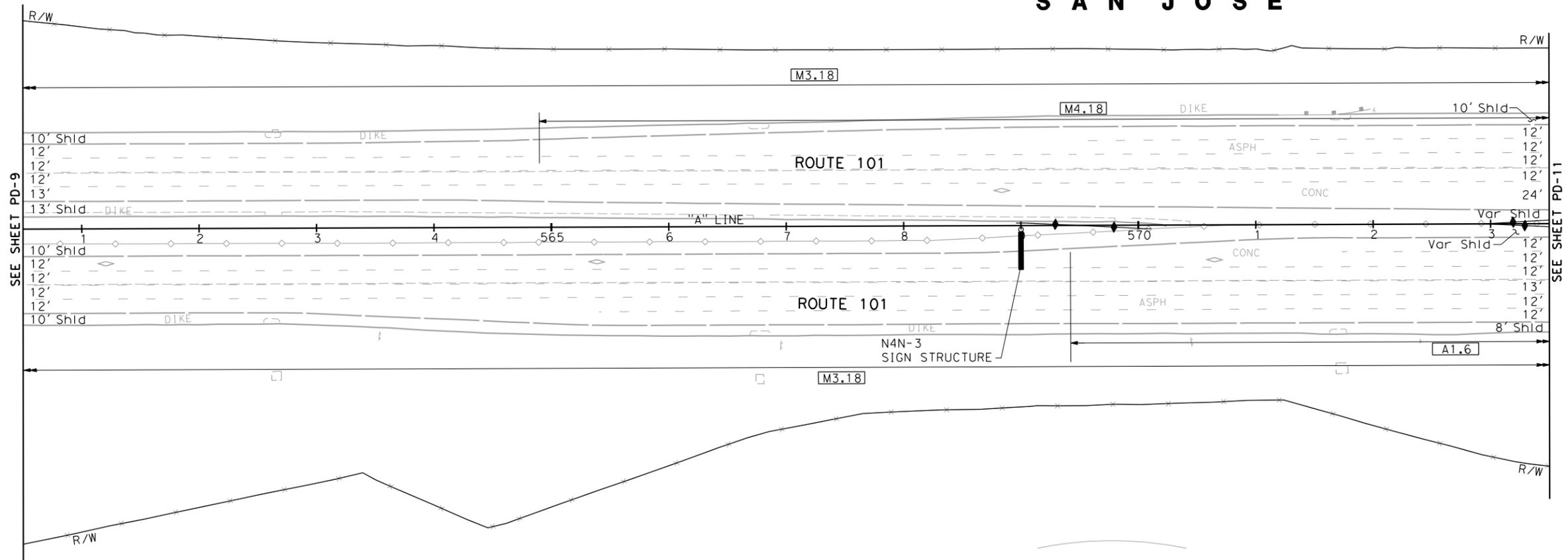
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
---	--

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S A N J O S E



SEE SHEET PD-9

SEE SHEET PD-11

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-10

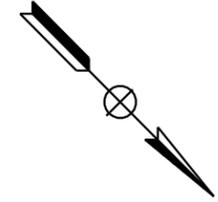
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobans
CONSULTANT FUNCTIONAL SUPERVISOR: Cassidy Grillon
CHECKED BY: Chadi Chazbek
DESIGNED BY: Chadi Chazbek
REVISOR: XX
DATE REVISED: XX/XX/11

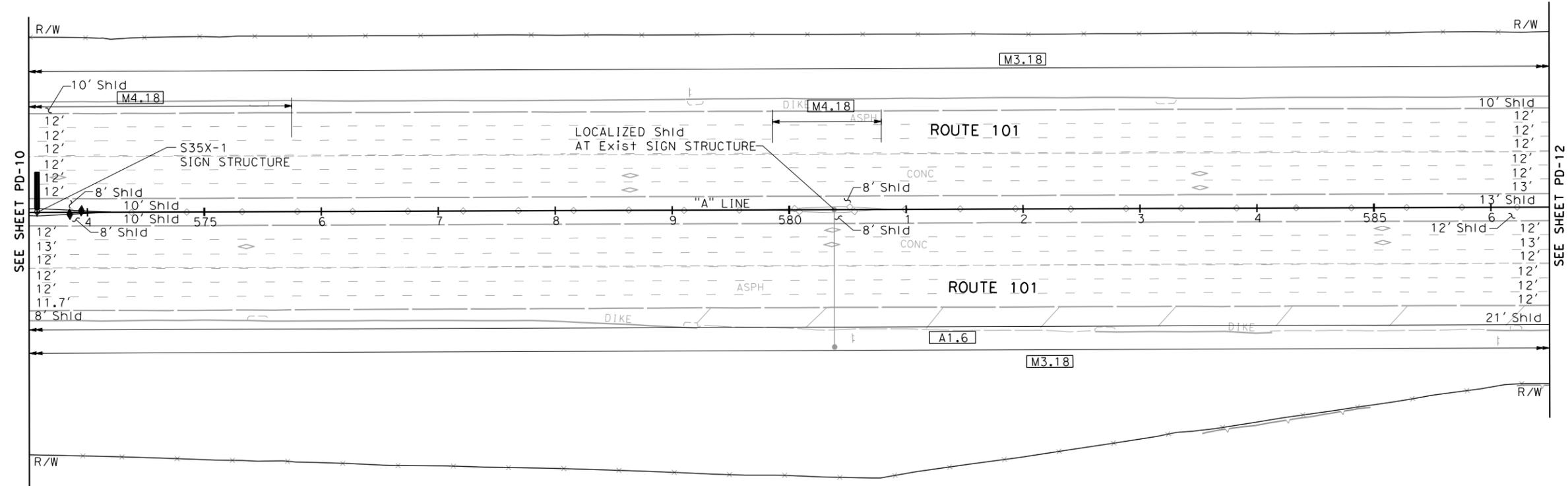
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4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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S A N J O S E



SEE SHEET PD-10

SEE SHEET PD-12

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-11

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION


REVISOR: XX
 DATE: XX/XX/11

REVISOR: CHAZBEK
 DATE: CHAZBEK

DESIGNED BY: GRILLON
 CHECKED BY: CHAZBEK

DESIGNED BY: CHAZBEK
 CHECKED BY: CHAZBEK

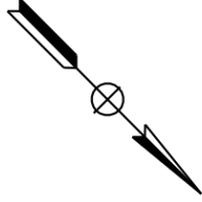
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 CHECKED BY: CHAZBEK

DESIGNED BY: CHAZBEK
 CHECKED BY: CHAZBEK

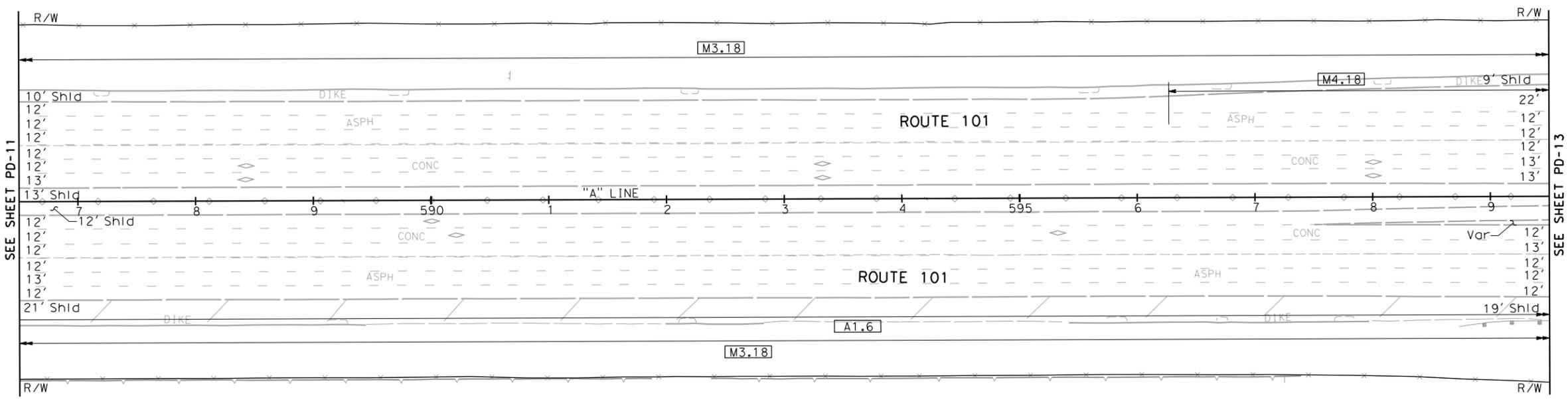
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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S A N J O S E



SEE SHEET PD-11

SEE SHEET PD-13

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-12

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

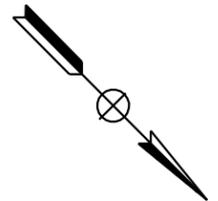
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISIONS: XX XX/XX/11

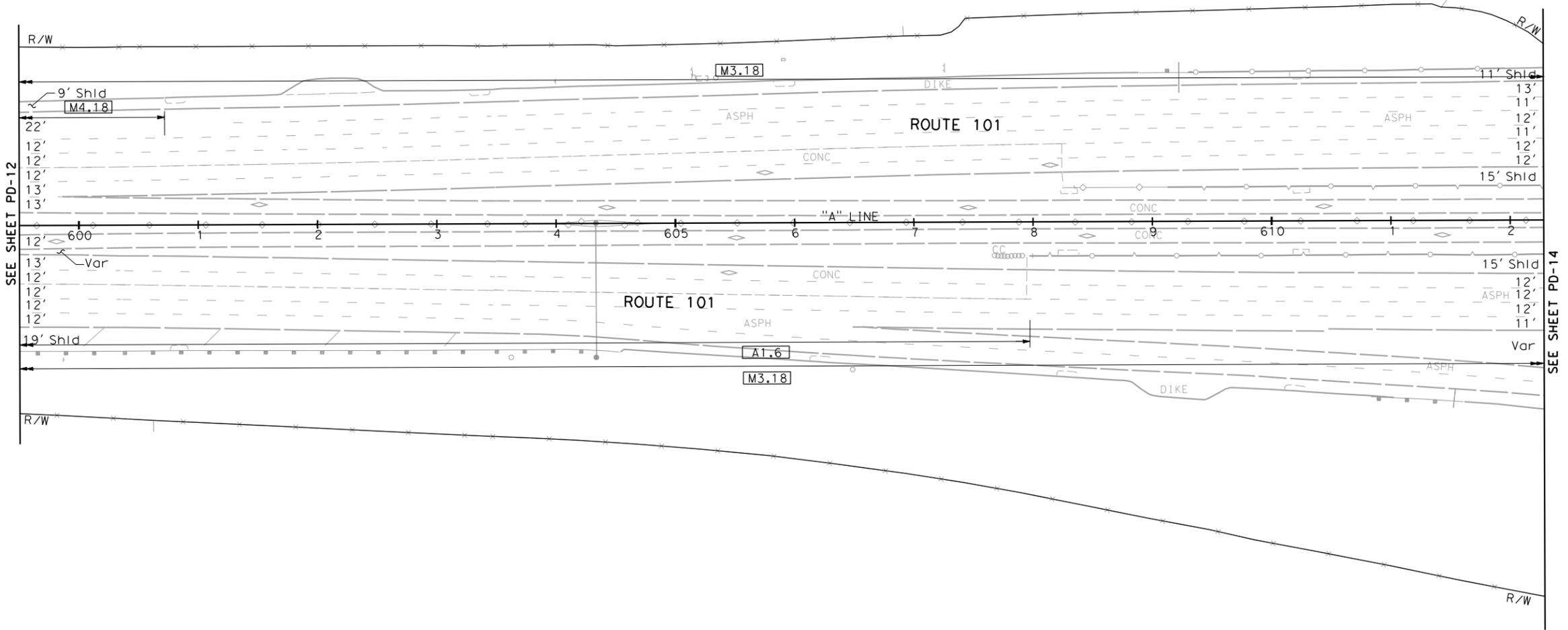
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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S A N J O S E



SEE SHEET PD-12

SEE SHEET PD-14

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-13

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

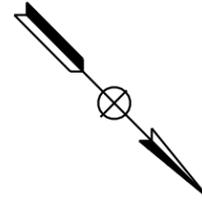
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 REVISED BY: XX
 DATE REVISED: XX/XX/11

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:23:25 PM
 03-25-11

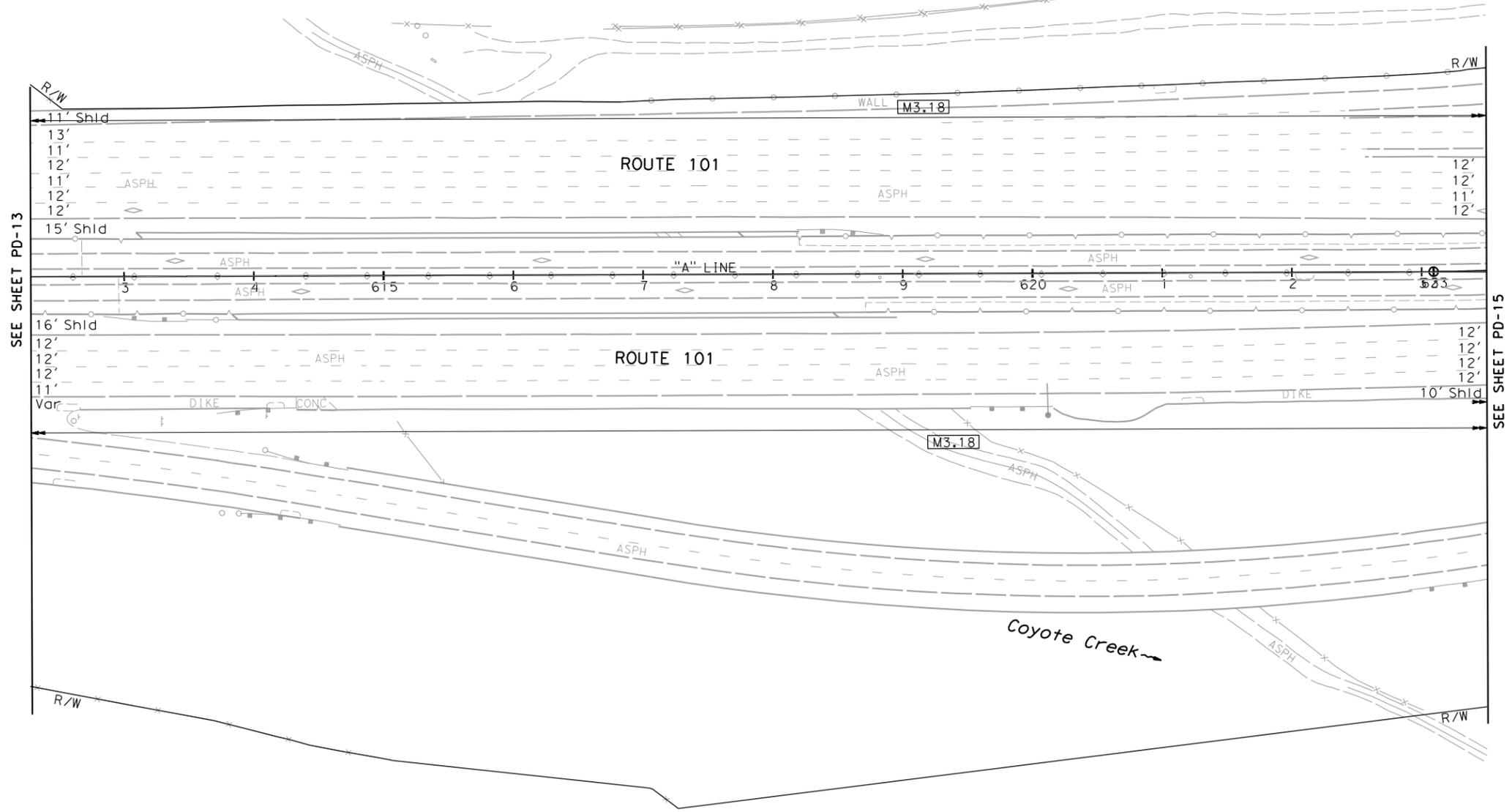
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>			<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		
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S A N J O S E



SEE SHEET PD-13

SEE SHEET PD-15

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-14

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION


REVISOR: XX
 DATE: XX/XX/11

DESIGNER: Cassidy Grillon
 CHECKER: Chadi Chazbek

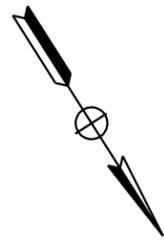
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 CHECKED BY: [Blank]

CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek

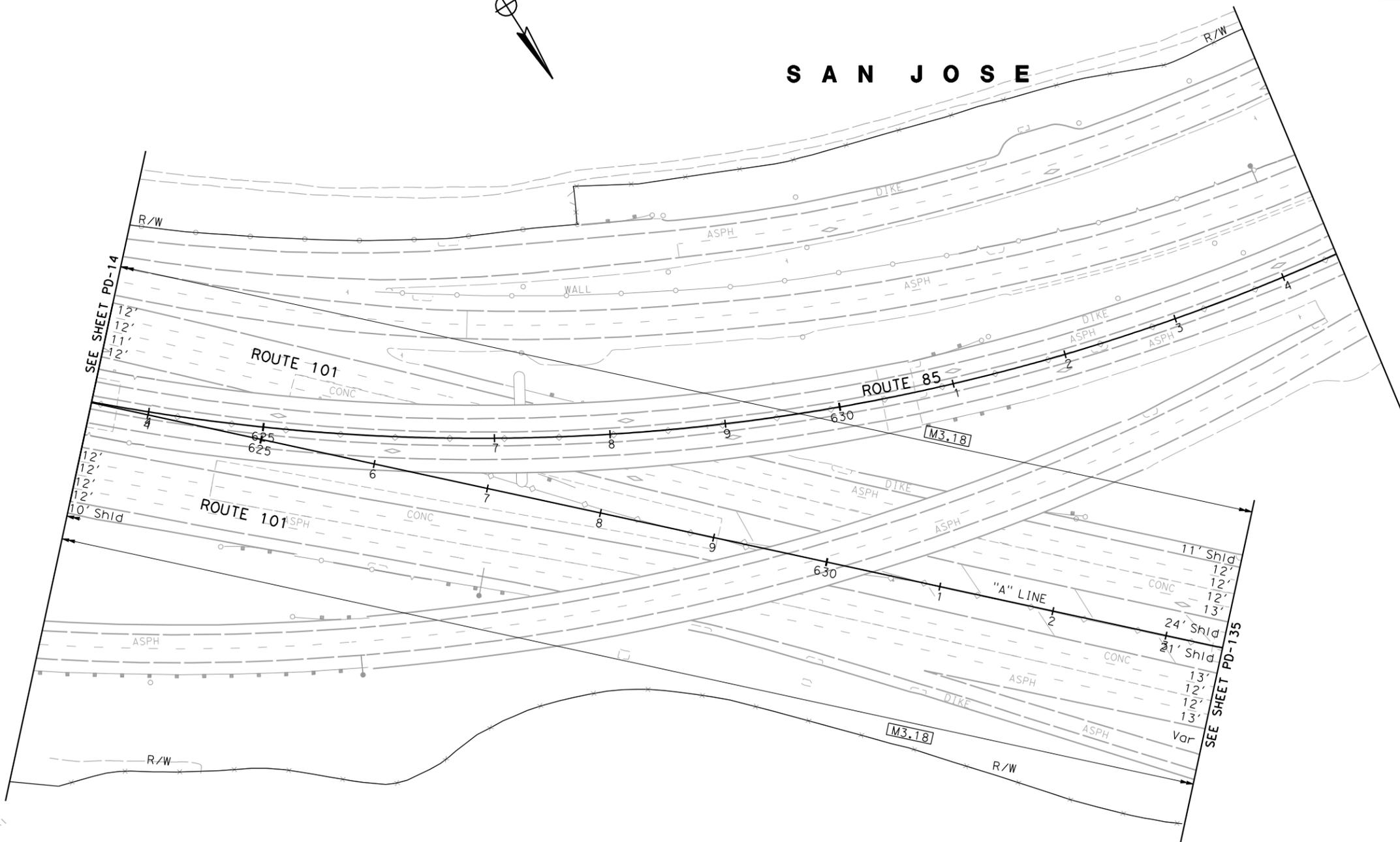
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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SEE SHEET PD-14

SEE SHEET PD-135

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-15

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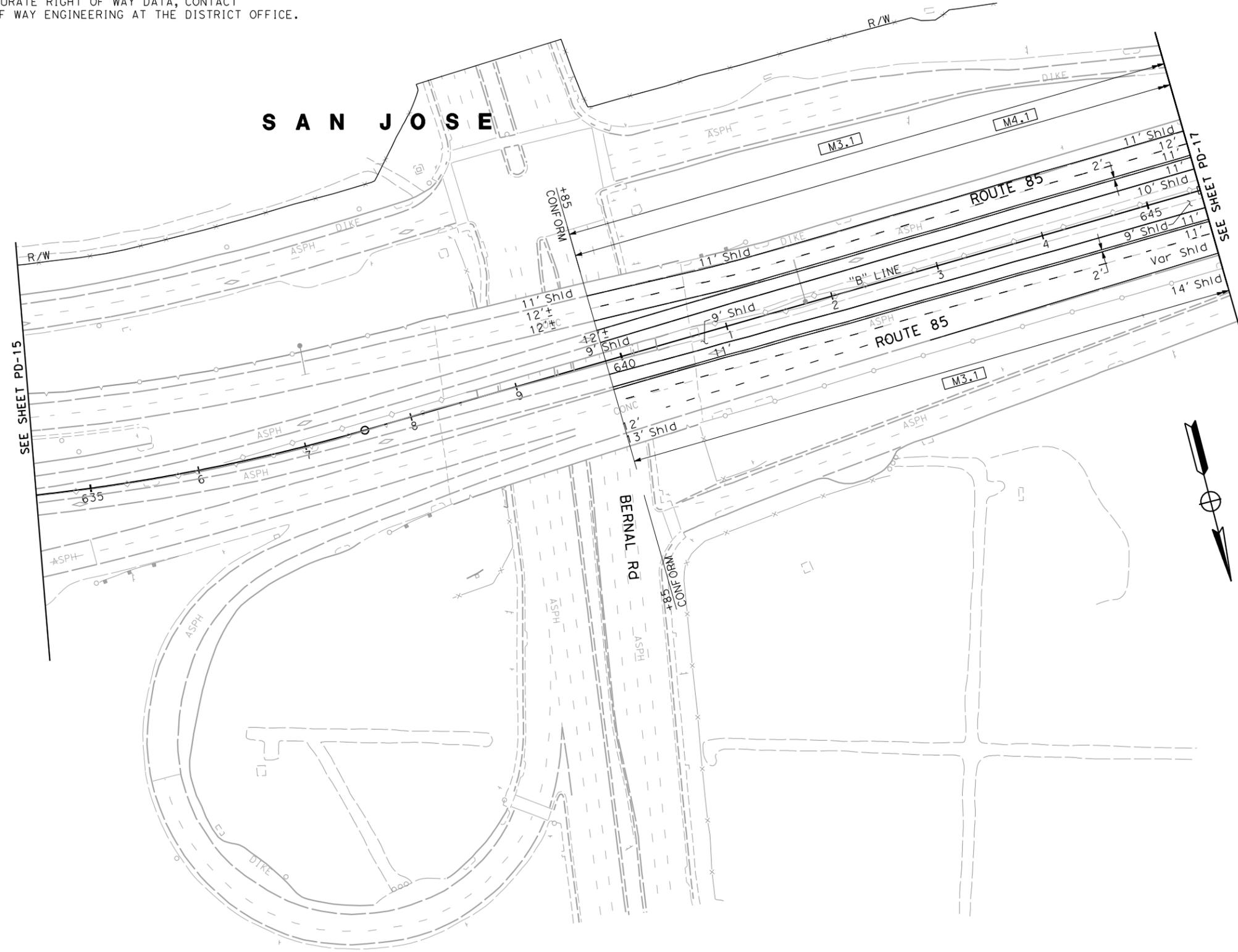
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	REVISOR BY	DATE
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX/XX/11

DATE PLOTTED => 7/3/2013
TIME PLOTTED => 4:23:27 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-16

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX/XX/11
		CHECKED BY	DATE REVISED	

BORDER LAST REVISED 7/2/2010

USERNAME => minyoung_kim
DGN FILE => ...\\044a7900ea016.dgn



UNIT xxxx

PROJECT NUMBER & PHASE

0400001163

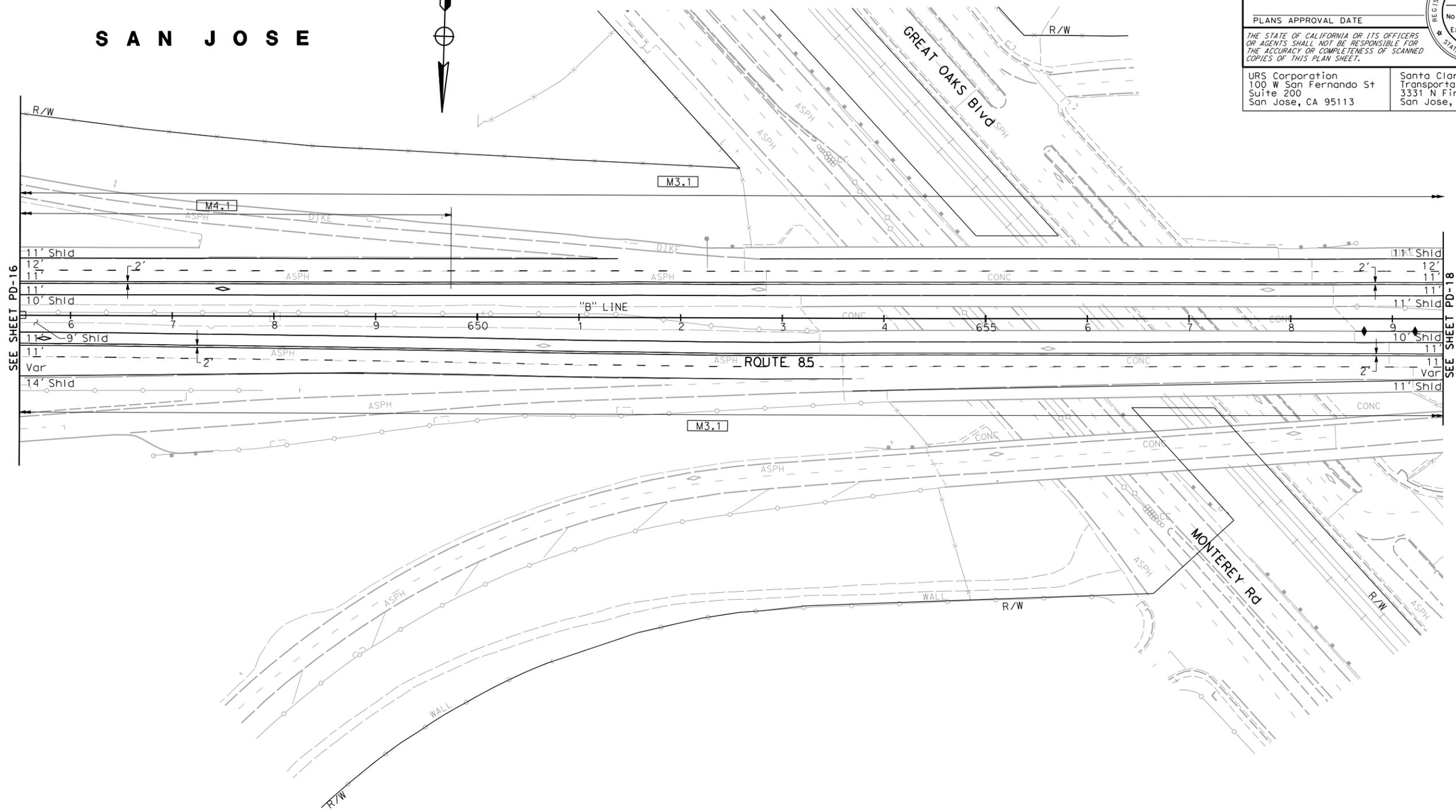
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TIME PLOTTED => 4:23:28 PM

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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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SAN JOSE



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-17

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED-DESIGNED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISOR: Chadi Chazbek
 DATE: XX/XX/11

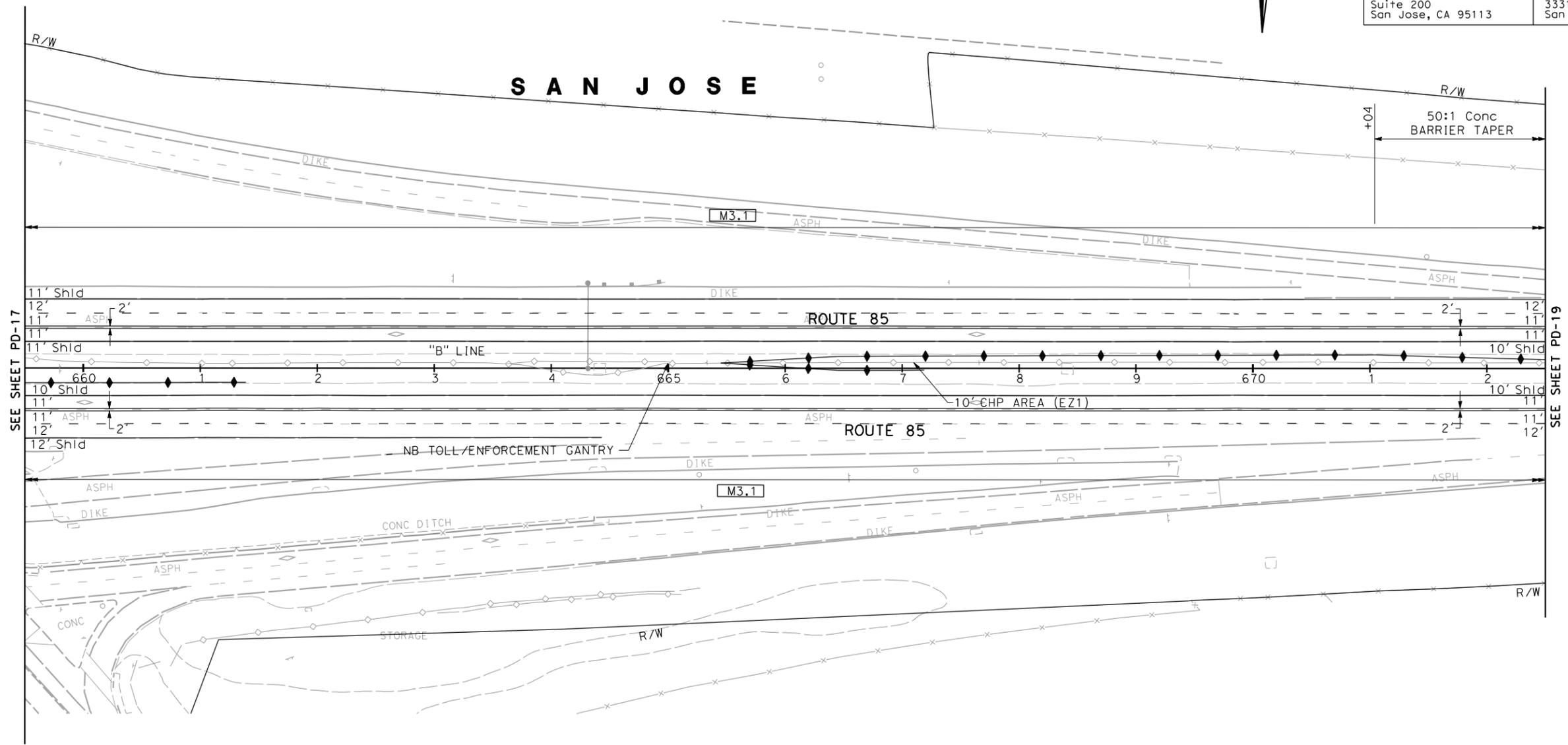
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 REVISOR: Chadi Chazbek
 REVISION: XX
 DATE: XX/XX/11



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-18

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:23:31 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

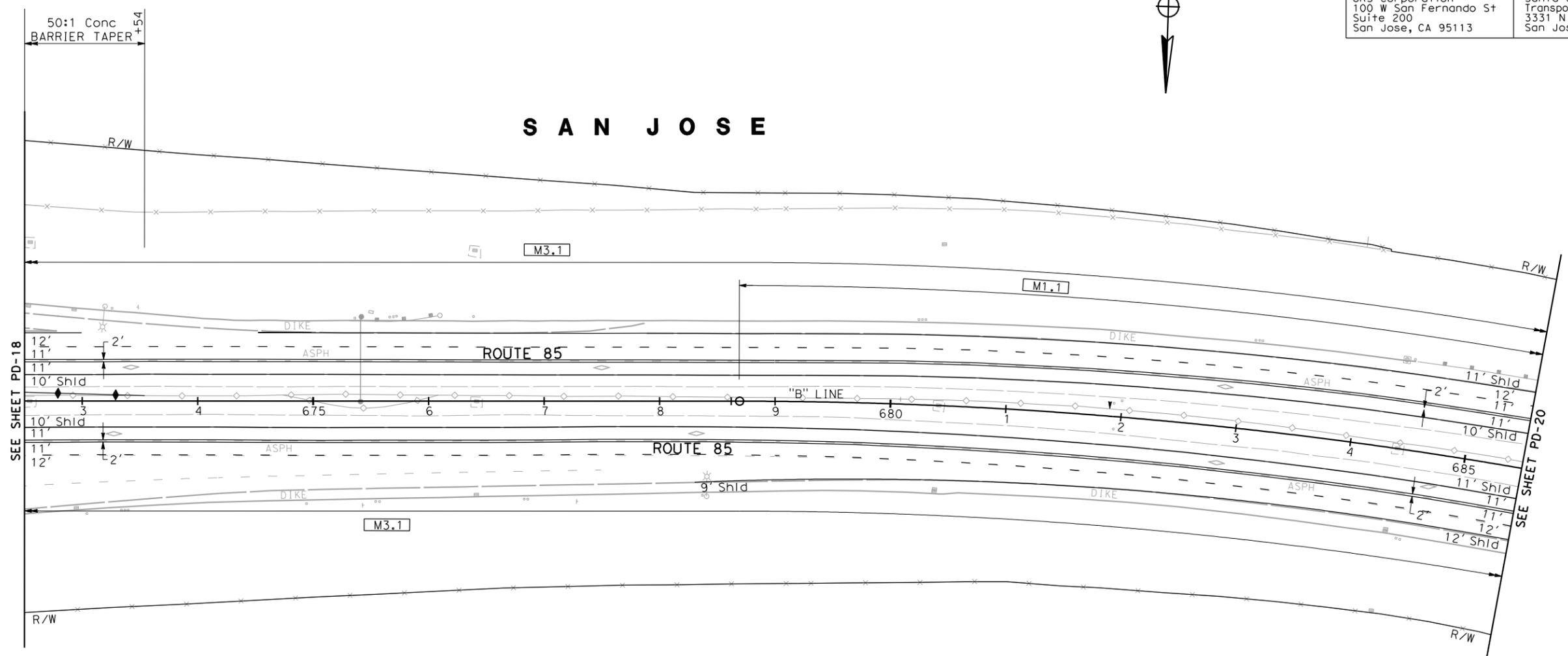


NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



S A N J O S E



SEE SHEET PD-18

SEE SHEET PD-20

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-19

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobran

REVISOR: XX
DATE: XX/XX/11
REVISOR: CHADY GRILLON
DATE: CHADI CHAZBEK
CHECKED BY: CHADI CHAZBEK
DESIGNED BY: CHADI CHAZBEK
SUPERVISOR: CHADI CHAZBEK

USERNAME => minyoung_kim
DGN FILE => ...\\044a7900ea019.dgn

RELATIVE BORDER SCALE IS IN INCHES
0 1 2 3

UNIT xxxx

PROJECT NUMBER & PHASE

0400001163

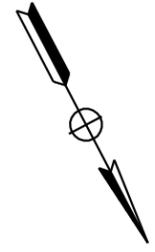
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DATE PLOTTED => 7/3/2013
TIME PLOTTED => 4:23:33 PM

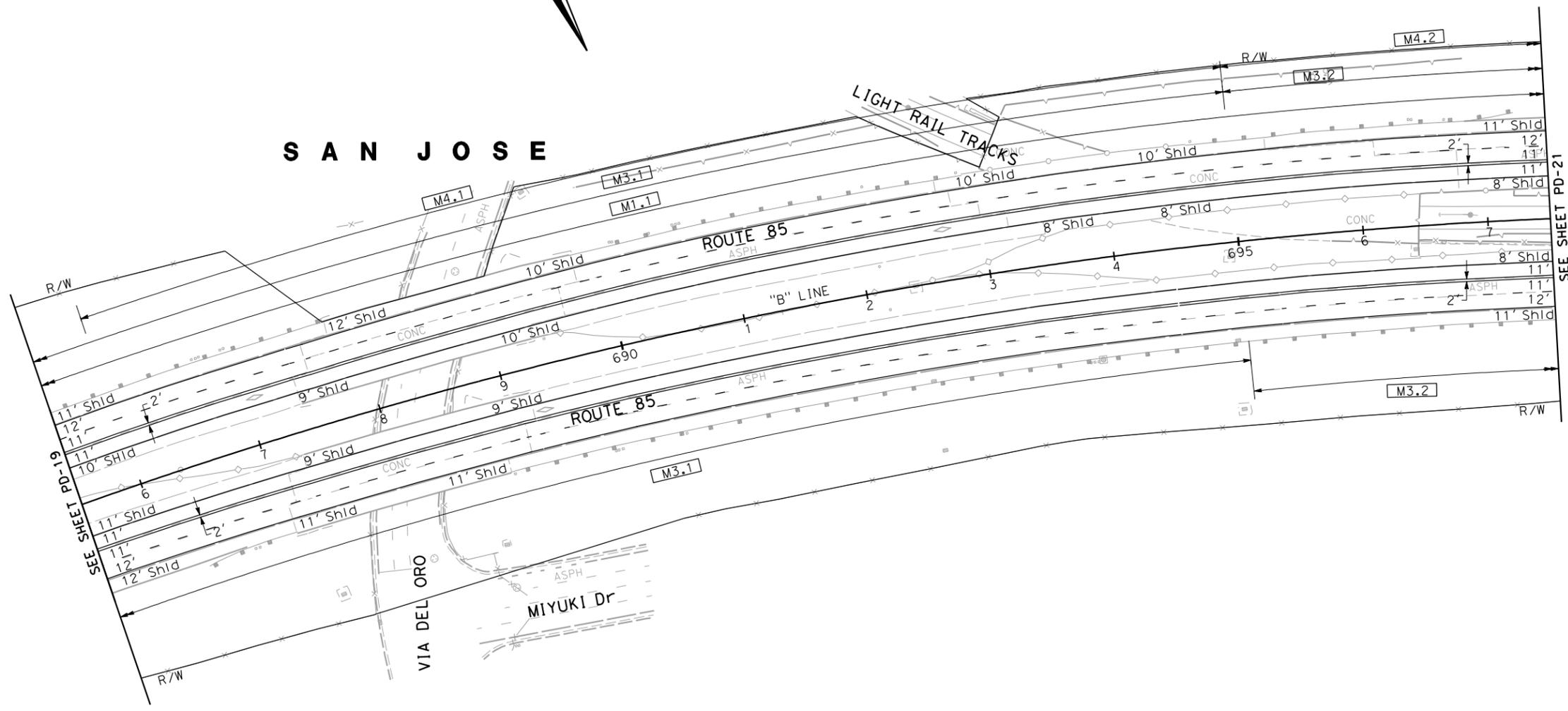
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>			<small>URSA Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113</small>		
<small>Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134</small>					

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FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SAN JOSE



SEE SHEET PD-19

SEE SHEET PD-21

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-20

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

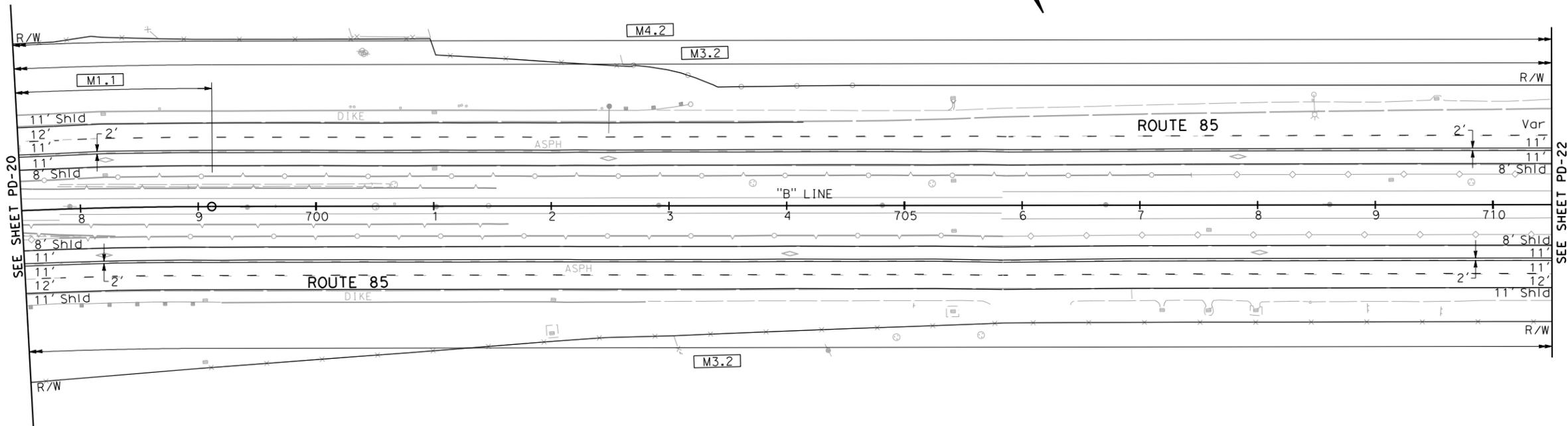
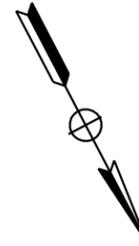
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE	BY
	XX	XX/XX/11	XX
	Cassidy Grillon	Chadi Chazbek	
CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY	REVISOR
Chadi Chazbek			

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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SAN JOSE



SEE SHEET PD-20

SEE SHEET PD-22

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-21

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

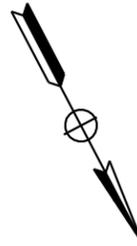
 CONSULTANT FUNCTIONAL SUPERVISOR: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 DESIGNED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISIONS: DATE REVISIONED

DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:23:35 PM

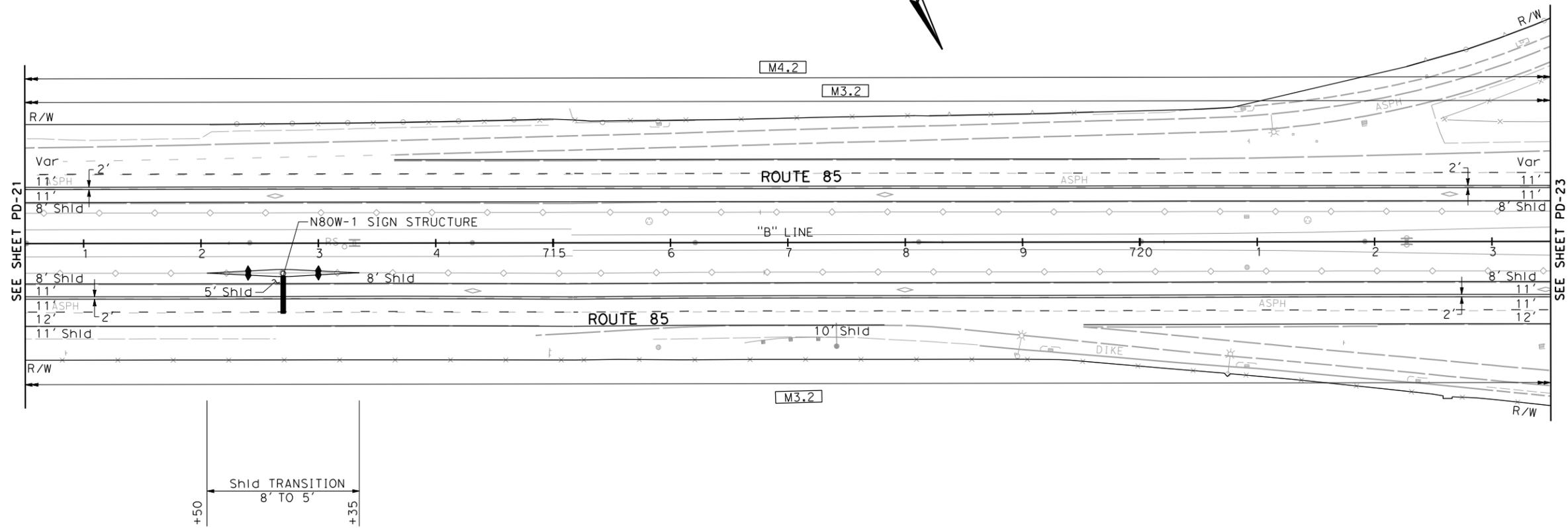
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
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NOTE:

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S A N J O S E



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED-DESIGNED BY: Cassidy Grillon
 REVISOR: Chadi Chazbek
 REVISION: XX
 DATE: XX/XX/11

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-22

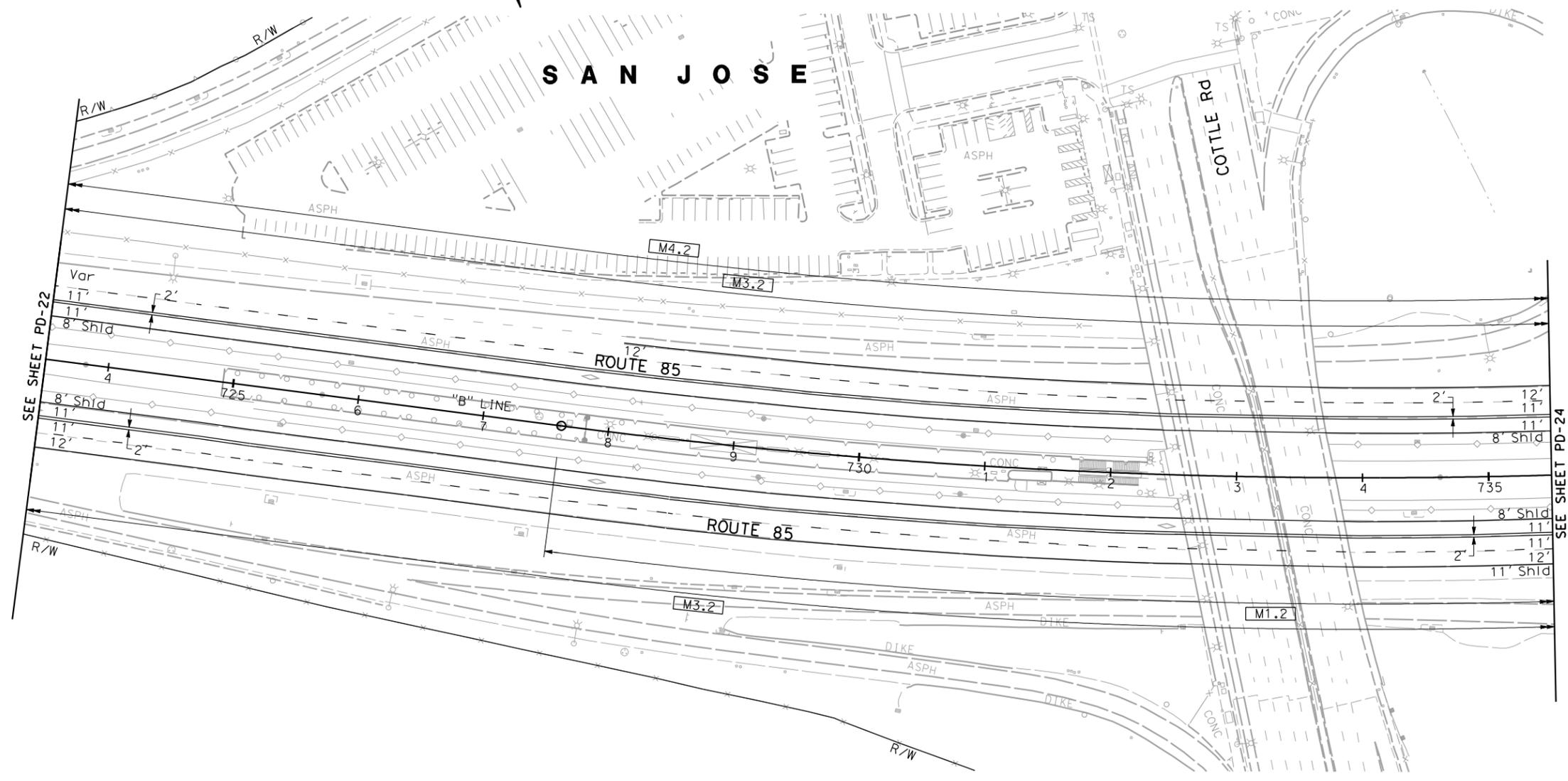
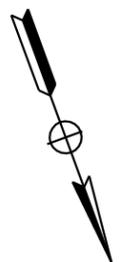
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		



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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
	Cassidy Grillon	Chadi Chazbek		

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-23

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:23:37 PM

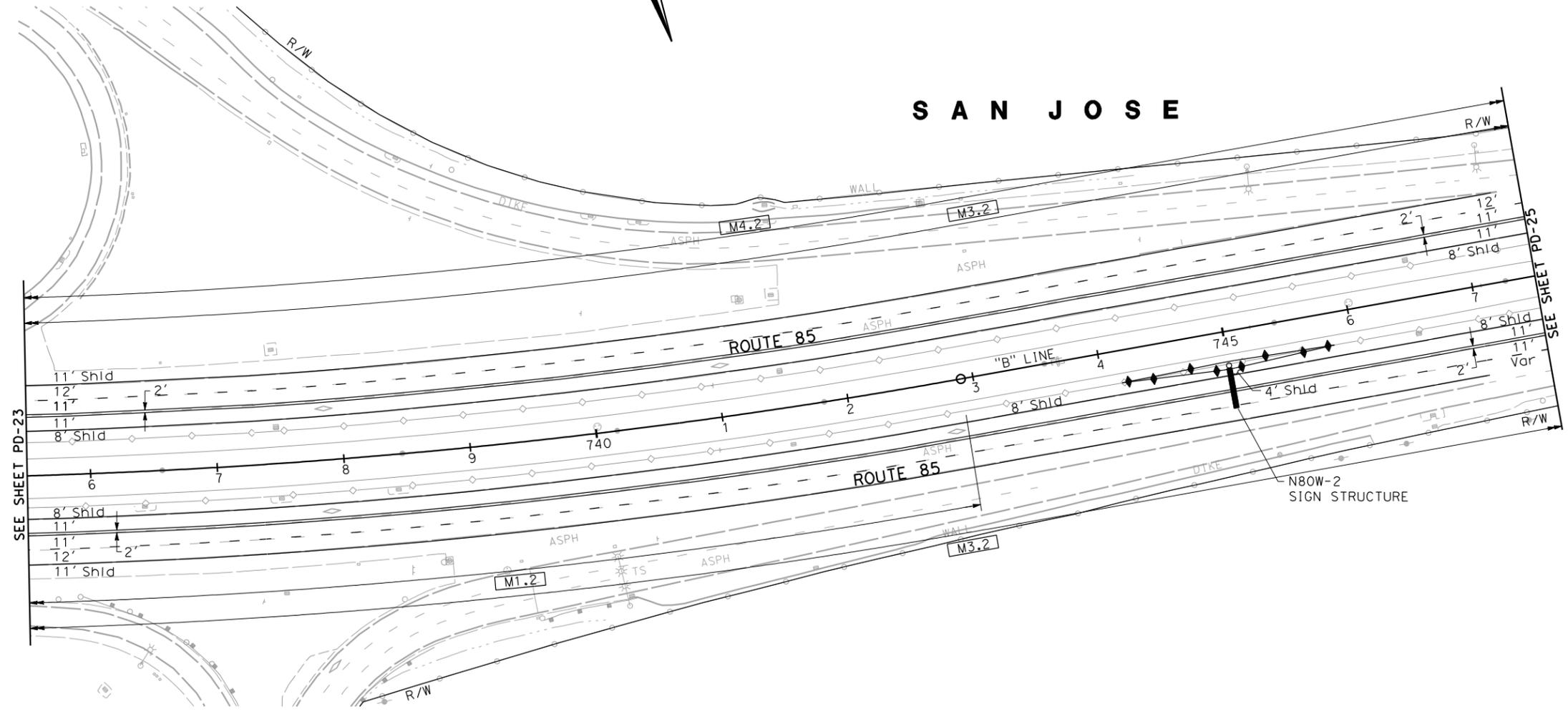
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4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SAN JOSE



SEE SHEET PD-23

SEE SHEET PD-25

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-24

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR BY	DATE
St. Gobran	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
		Cassidy Grillon	REVISOR BY	DATE
		Chadi Chazbek	DATE	REVISOR

BORDER LAST REVISED 7/2/2010

USERNAME => minyoung_kim
DGN FILE => ...044a7900ea024.dgn



UNIT xxxx

PROJECT NUMBER & PHASE

0400001163

DATE PLOTTED => 7/5/2013
TIME PLOTTED => 11:19:44 AM

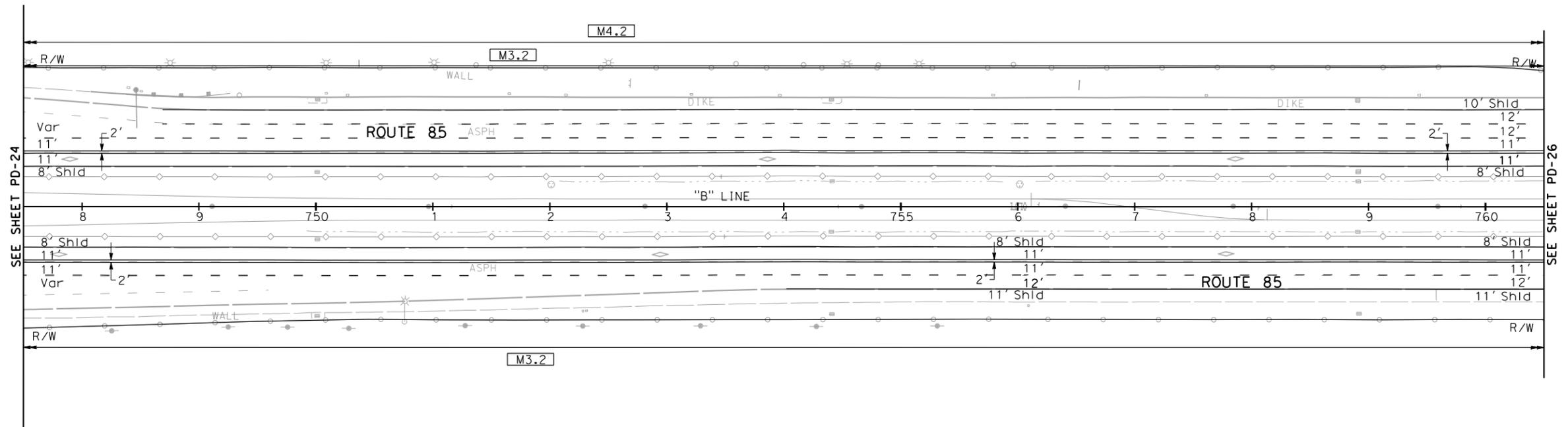
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4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		



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FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

S A N J O S E



SEE SHEET PD-24

SEE SHEET PD-26

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-25

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

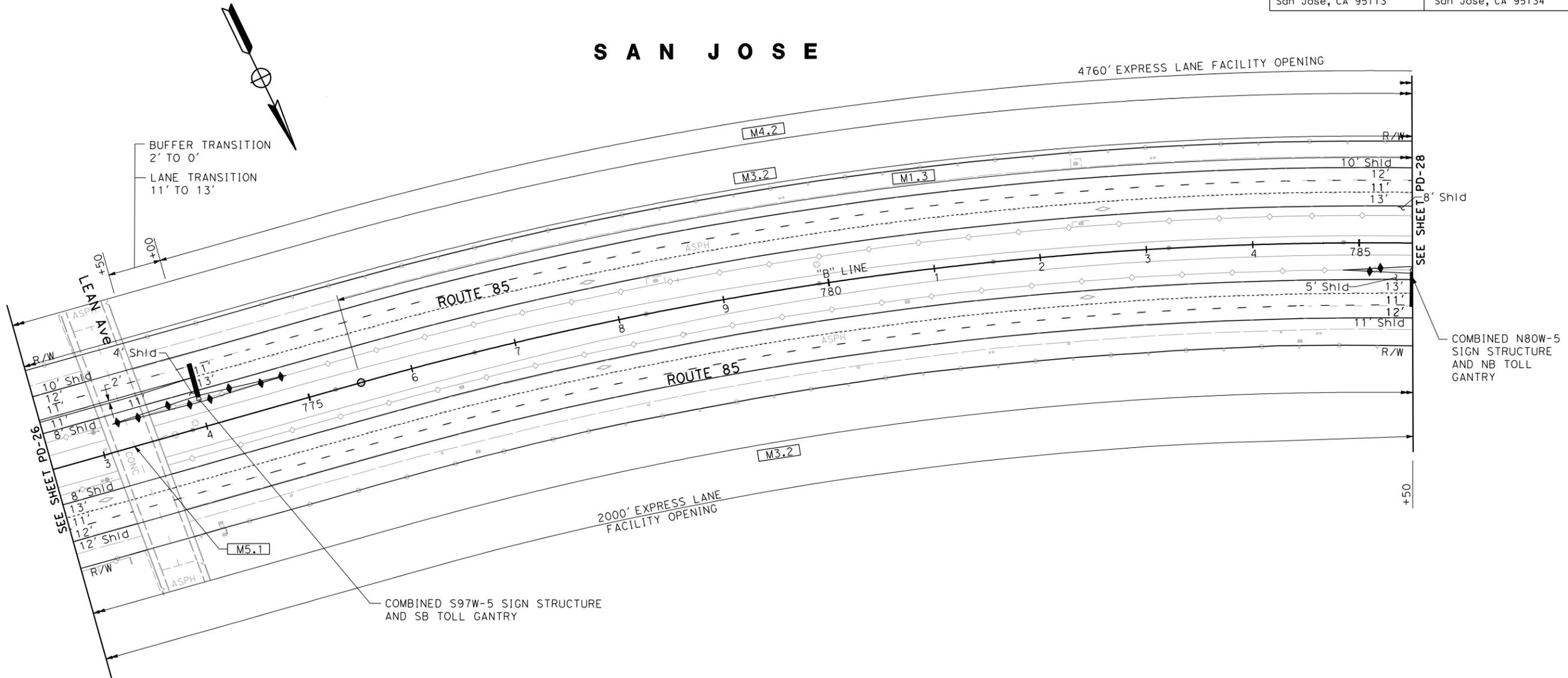
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
---	---

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

SAN JOSE



BUFFER TRANSITION
2' TO 0'
LANE TRANSITION
11' TO 13'

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'
PD-27

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Gibbons

REVISOR
XX
XX/XX/11

REVISOR
DATE
REVISED

DESIGNED BY
CHECKED BY
Cassidy Grillon
Chadi Chazbek

DESIGNED BY
CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
Chadi Chazbek

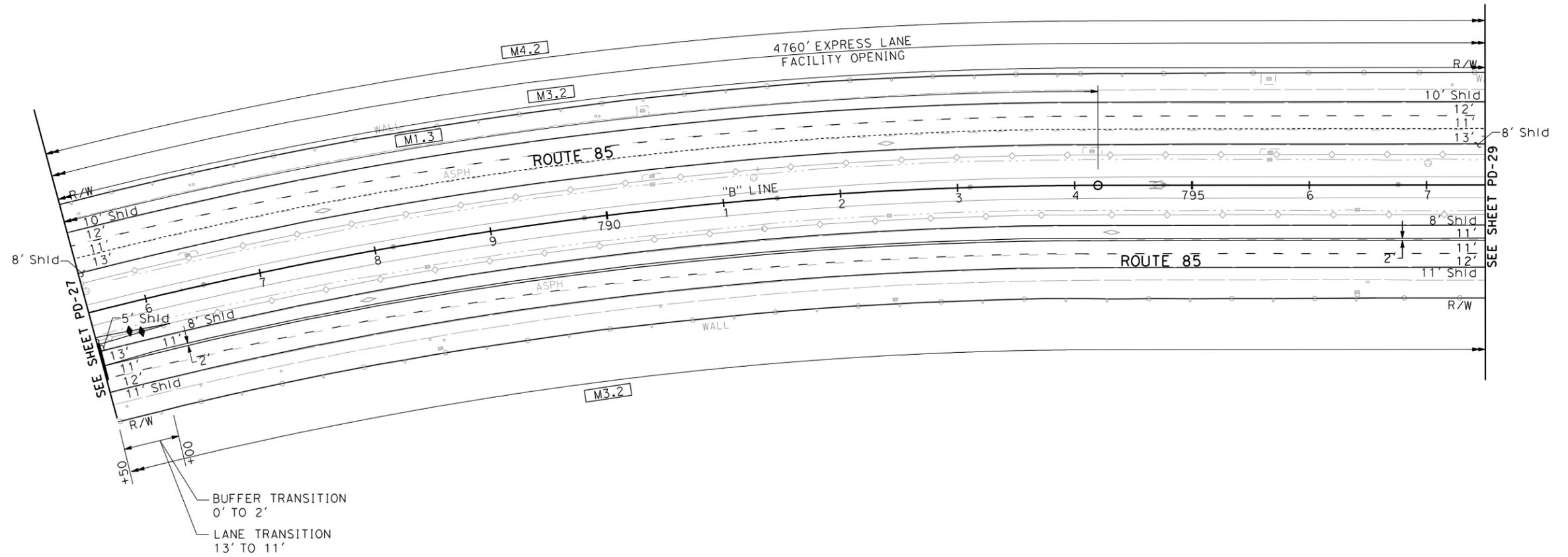
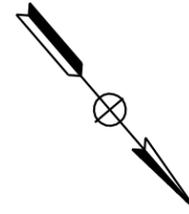
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TIME PLOTTED => 4:23:42 PM

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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

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S A N J O S E



BUFFER TRANSITION
 0' TO 2'
 LANE TRANSITION
 13' TO 11'

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-28

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 CHADJI CHAZBEK
 CHECKED BY
 CHADI CHAZBEK
 CALCULATED-DESIGNED BY
 CHADI CHAZBEK
 REVISOR BY
 CHADI CHAZBEK
 DATE REVISOR
 XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

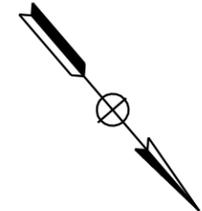
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
---	--

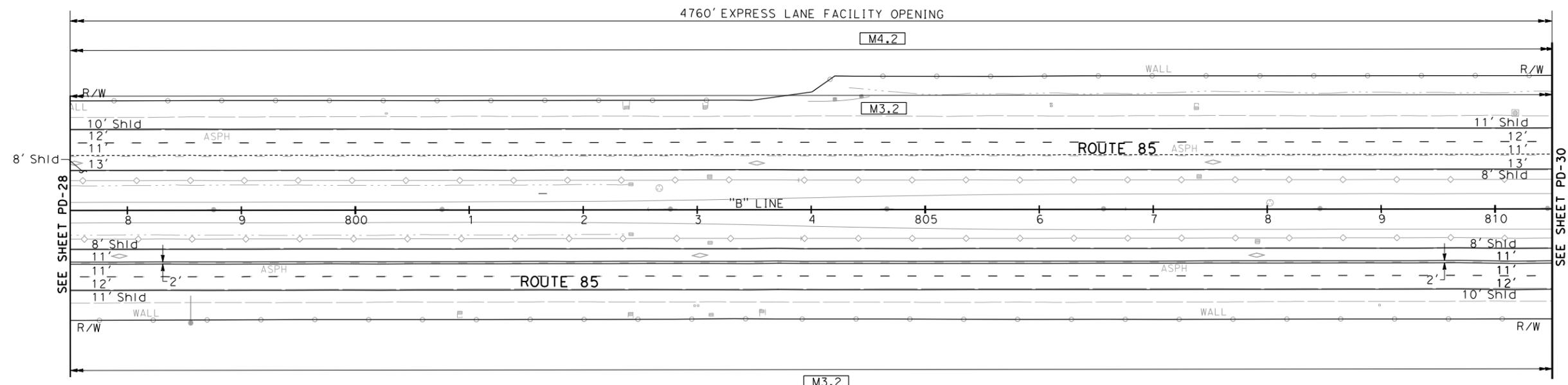
NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISED BY: XX
 DATE REVISED: XX/XX/11



S A N J O S E



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-29

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

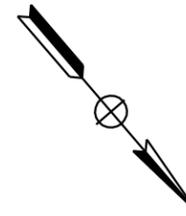
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

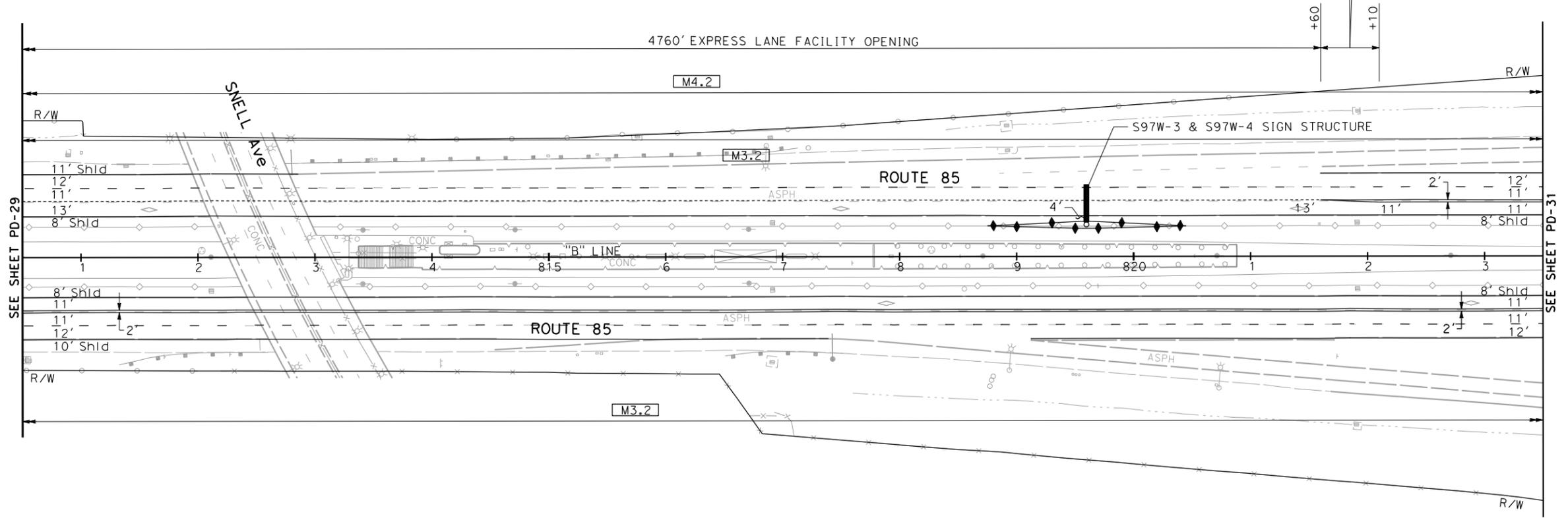


NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



S A N J O S E



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-30

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons

REVISOR
XX
XX/XX/11

DESIGNED BY
Cassidy Grillon

CHECKED BY
Chadi Chazbek

CONSULTANT FUNCTIONAL SUPERVISOR
Chadi Chazbek

DATE
XX/XX/11

BORDER LAST REVISED 7/2/2010

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DGN FILE => ...\\044a7900ea030.dgn

RELATIVE BORDER SCALE IS IN INCHES

UNIT xxxx

PROJECT NUMBER & PHASE

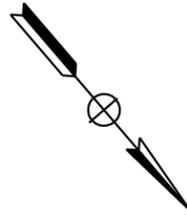
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TIME PLOTTED => 11:19:45 AM

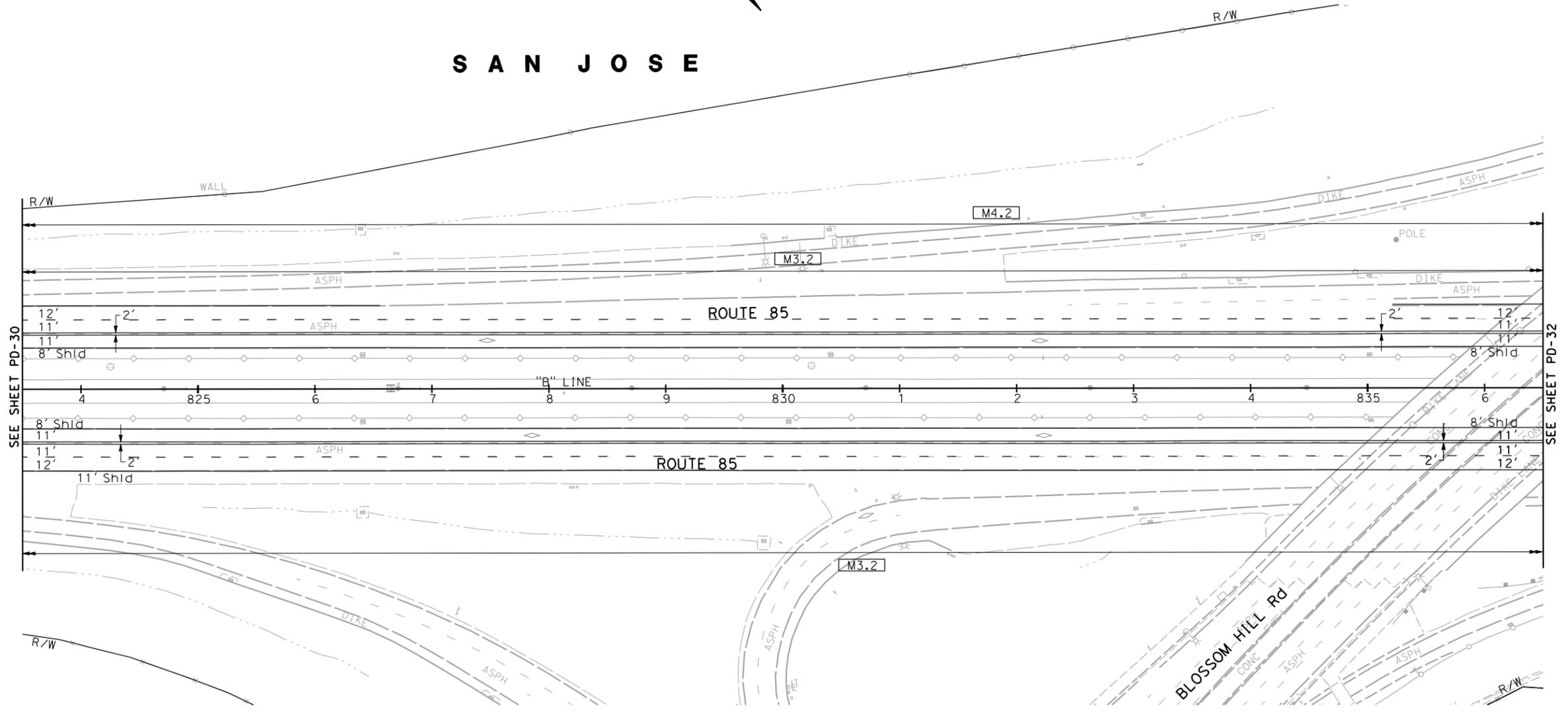
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

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S A N J O S E



SEE SHEET PD-30

SEE SHEET PD-32

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-31

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: [Blank]
 CHECKED BY: [Blank]
 REVISOR: XX
 DATE: XX/XX/11

BORDER LAST REVISED 7/2/2010

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 DGN FILE => ...\\044a7900ea031.dgn



UNIT xxxx

PROJECT NUMBER & PHASE

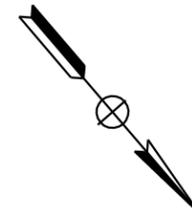
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LAST REVISION: 03-25-11
 DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:23:46 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

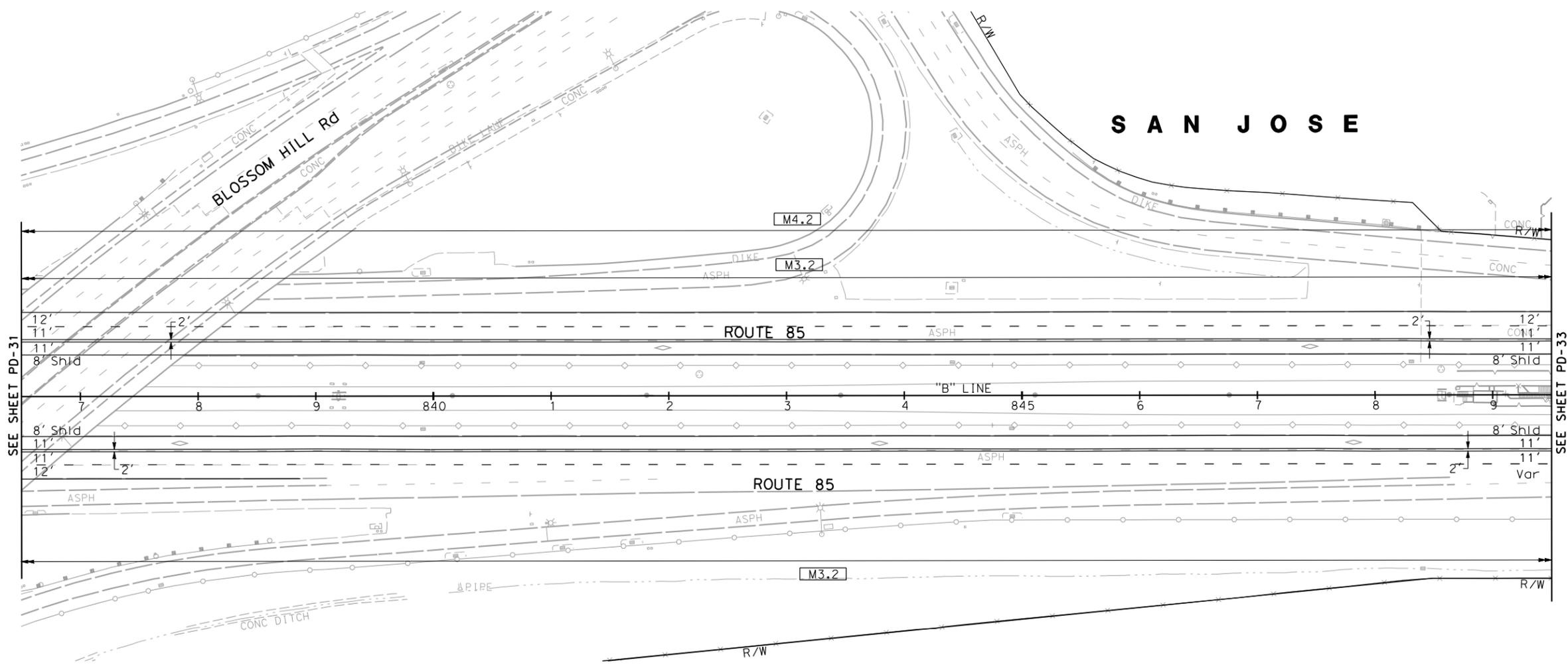
NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISOR: Cassidy Grillon
 DATE: Chadi Chazbek



SEE SHEET PD-31

SEE SHEET PD-33

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-32

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

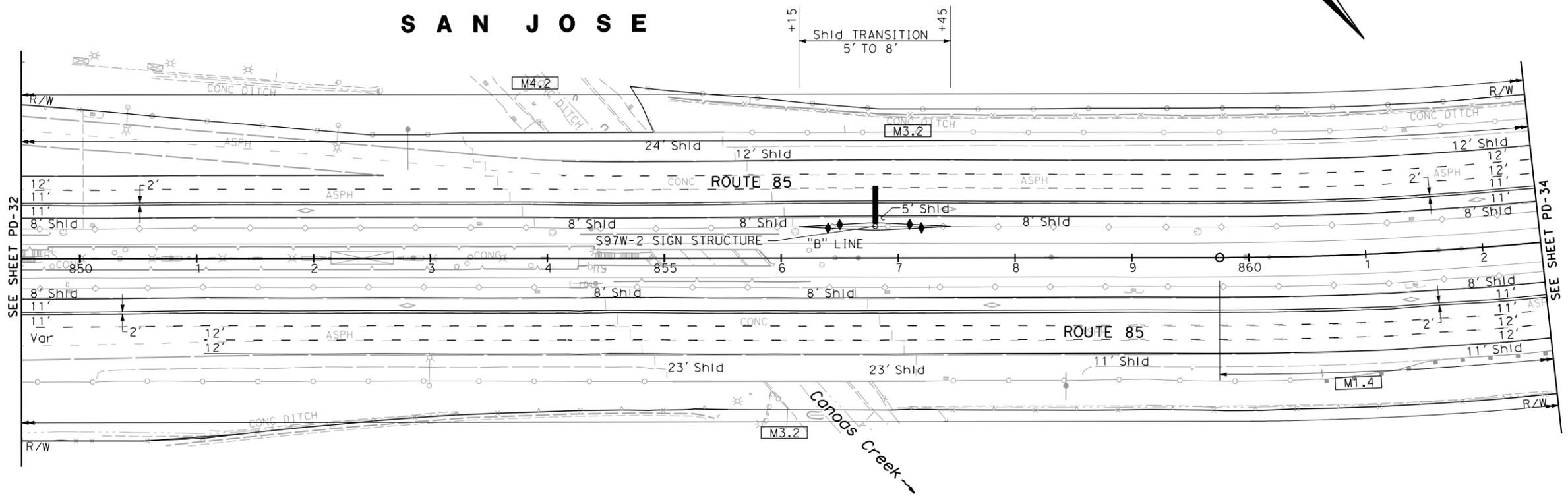
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REGISTERED CIVIL ENGINEER			DATE		
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<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE
	XX	XX/XX/11
	REVISOR	DATE
CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY
Chadi Chazbek	Chadi Chazbek	Cassidy Grillon



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-33

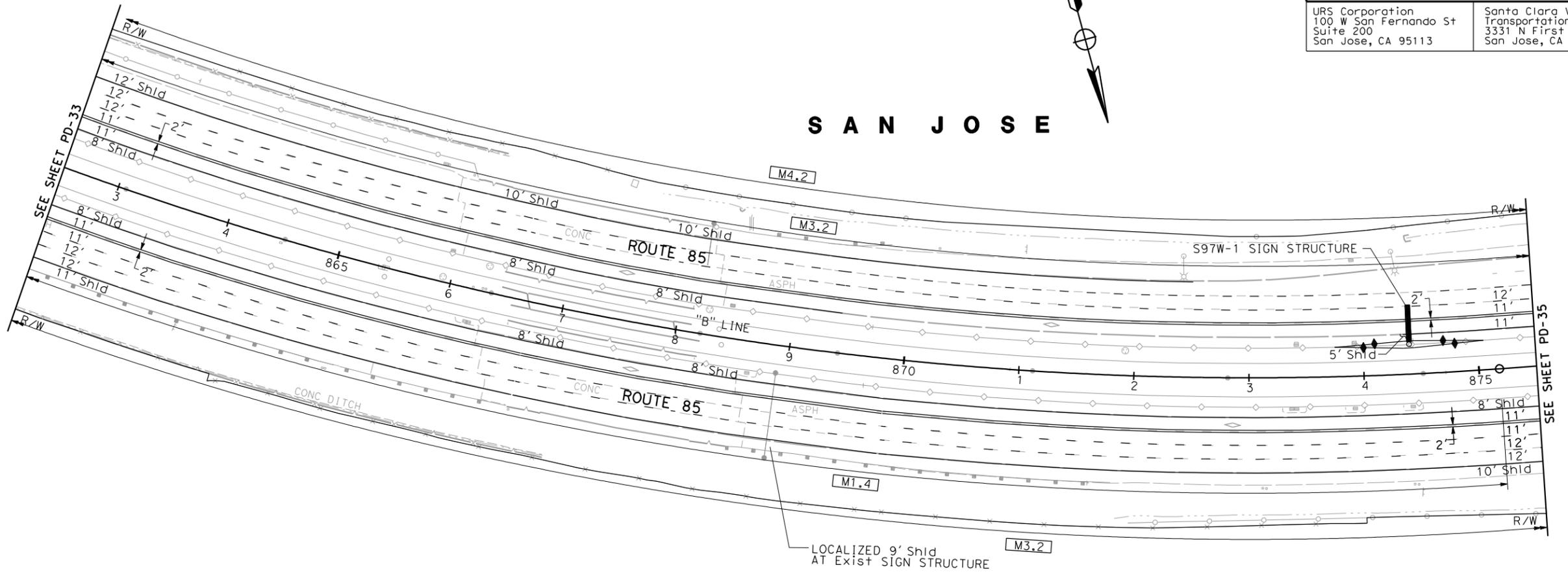
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY	REVISIONS
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX XX/XX/11

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'

PD-34

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:23:50 PM

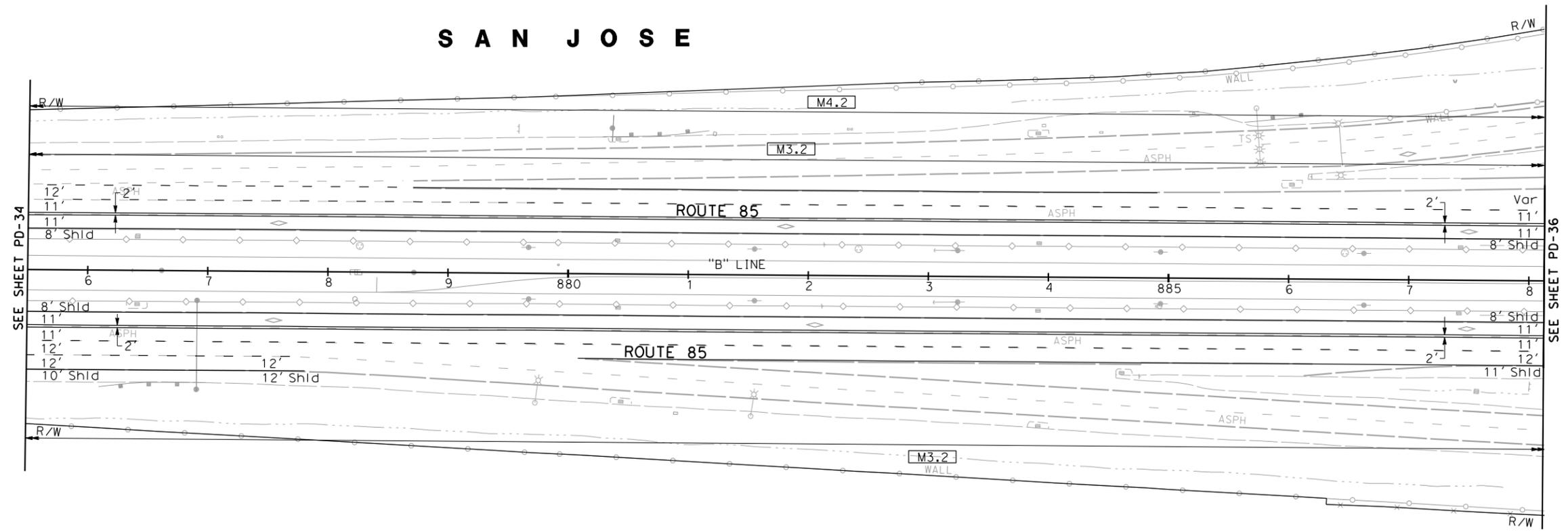
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4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



S A N J O S E



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-35

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobans
CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
CALCULATED/DESIGNED BY: [Blank]
CHECKED BY: [Blank]
REVISOR: XX
DATE REVISED: XX/XX/11
DESIGNER: Cassidy Grillon
DATE: Chadi Chazbek

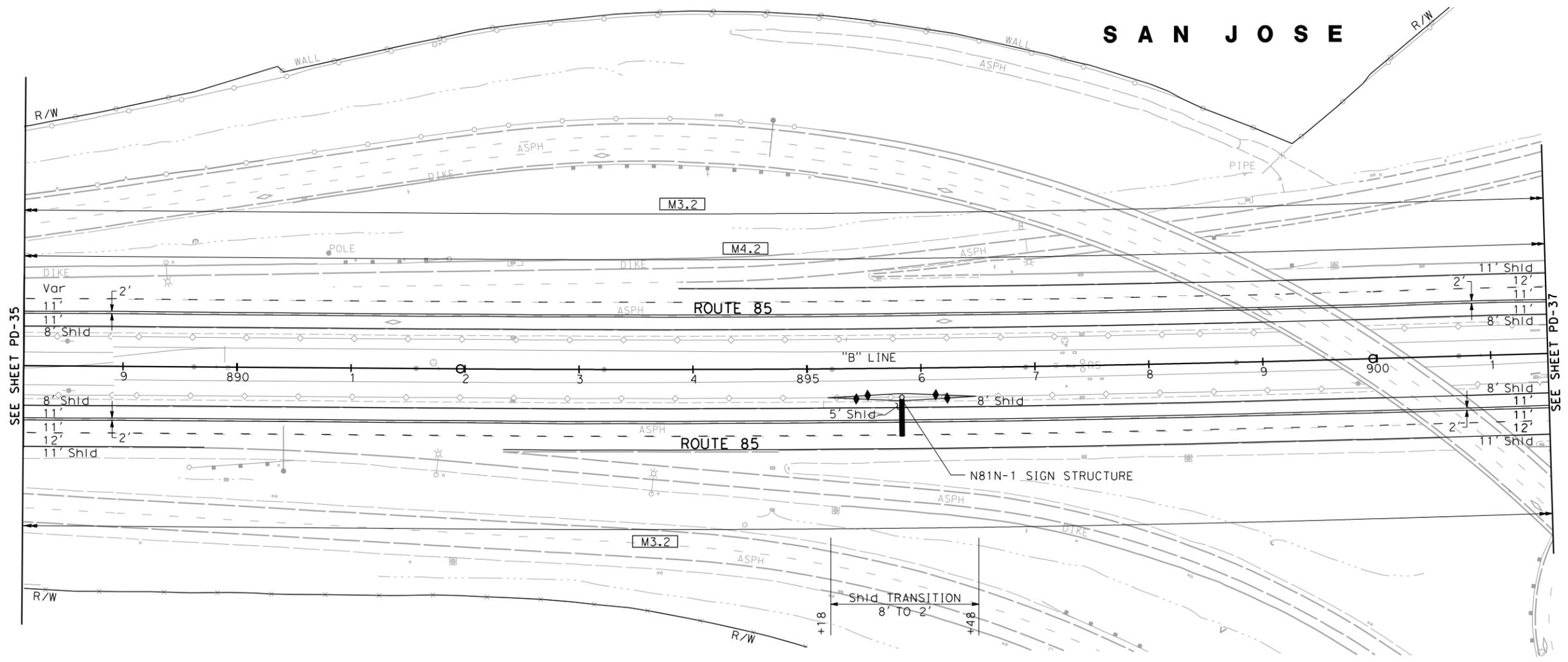
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4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 CHADJI CHAZBEK
 CHECKED BY
 CHADJI CHAZBEK
 CALCULATED-DESIGNED BY
 CHADJI CHAZBEK
 REVISIONS
 XX
 XX/XX/11
 REVISOR
 CHADJI CHAZBEK
 DATE
 XX/XX/11



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-36

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>			<small>URSA CORPORATION</small> 100 W San Fernando St Suite 200 San Jose, CA 95113		
<small>Santa Clara Valley Transportation Authority</small> 3331 N First Street San Jose, CA 95134					

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

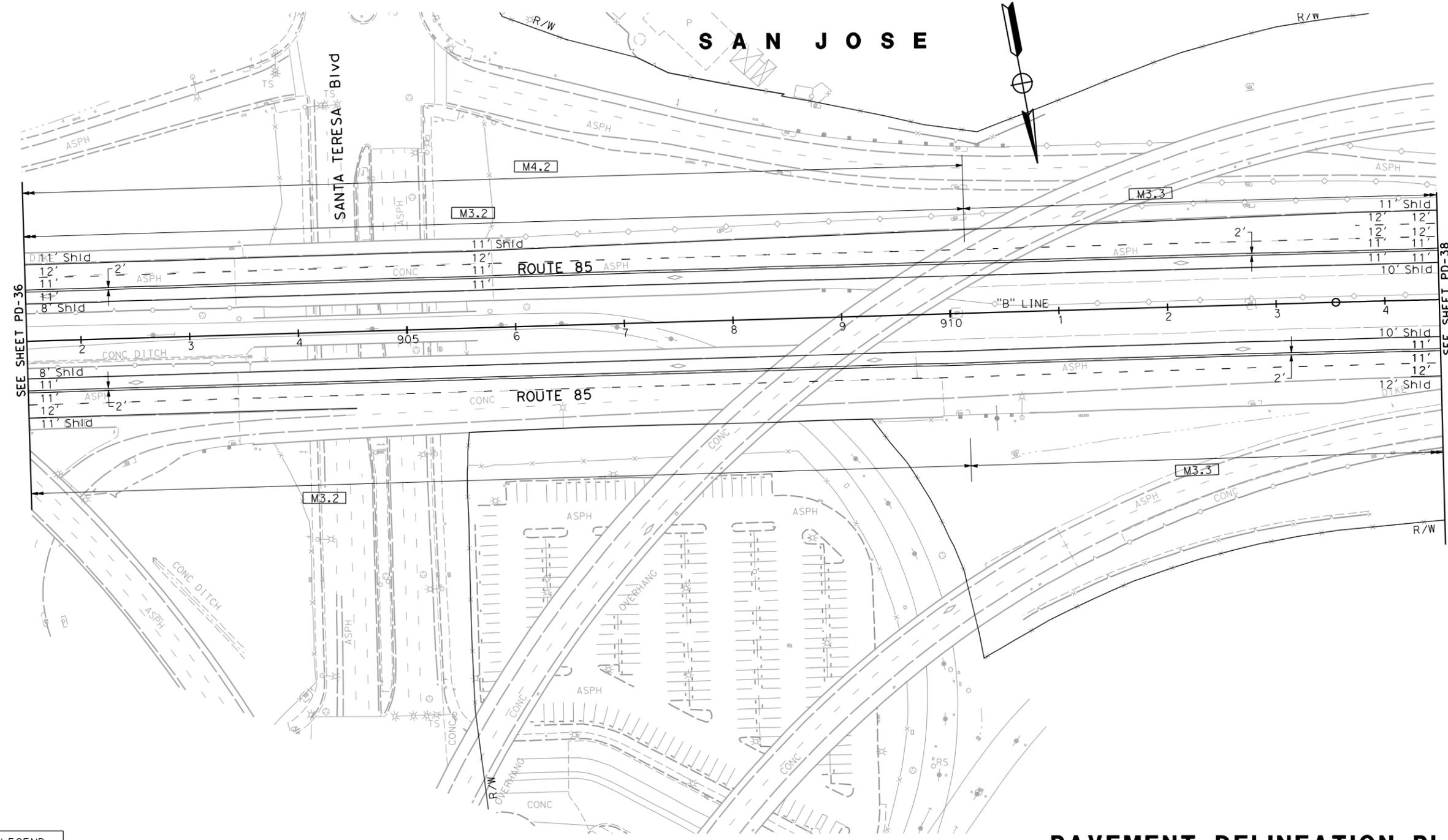
REVISOR: XX
DATE: XX/XX/11

REVISOR: Cassidy Grillon
DATE: Chadi Chazbek

CHECKED BY: Chadi Chazbek

CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

SEE SHEET PD-36

SEE SHEET PD-38

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-37

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

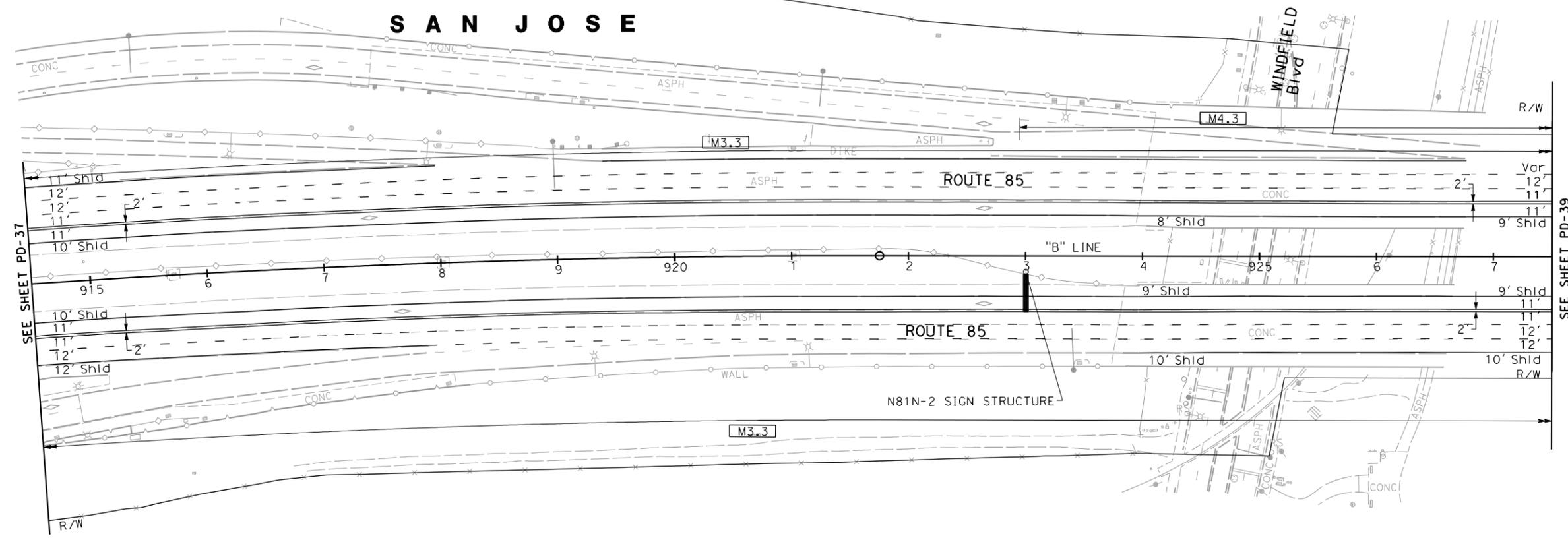
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SAN JOSE



SEE SHEET PD-37

SEE SHEET PD-39

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-38

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION


REVISOR: XX
 DATE: XX/XX/11

DESIGNER: Cassidy Grillon
 CHECKER: Chadi Chazbek

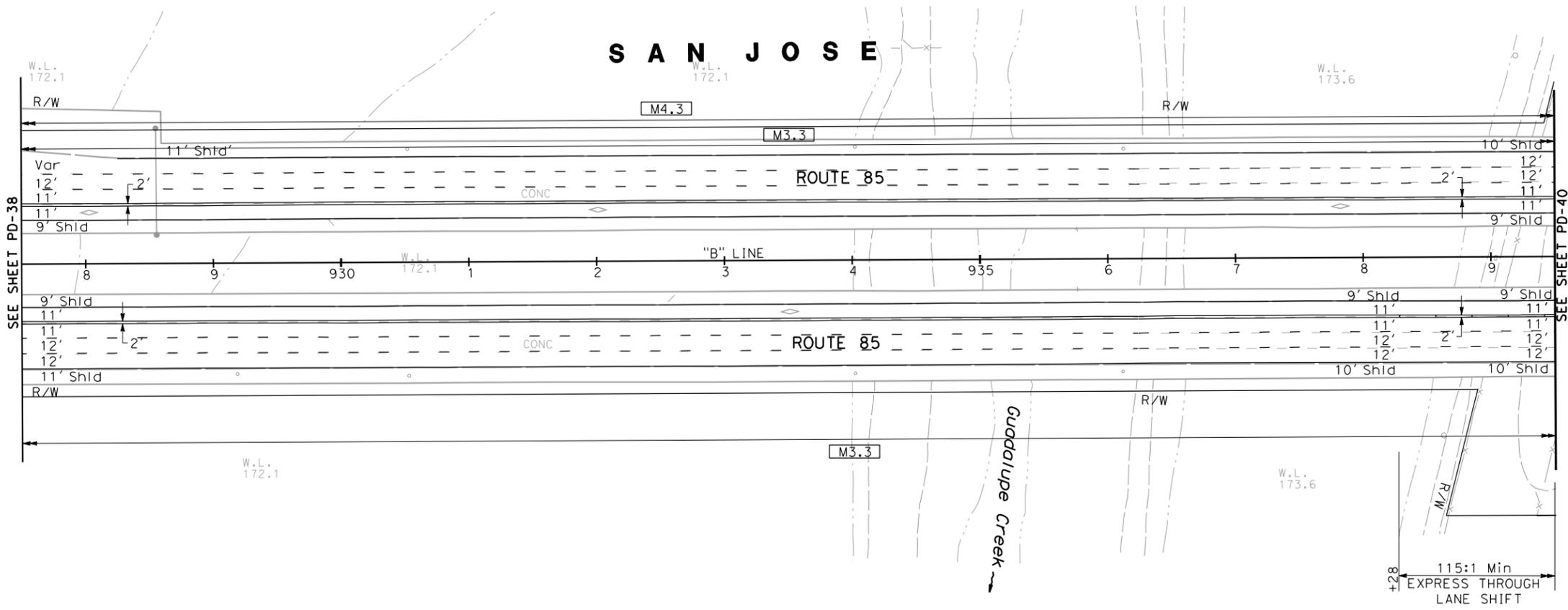
CALCULATED BY: [Blank]
 CHECKED BY: [Blank]

CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SEE SHEET PD-38

SEE SHEET PD-40

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-39

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION


REVISOR
 XX XX/XX/11

DESIGNED BY
 Cassidy Grillon

CHECKED BY
 Chadi Chazbek

CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

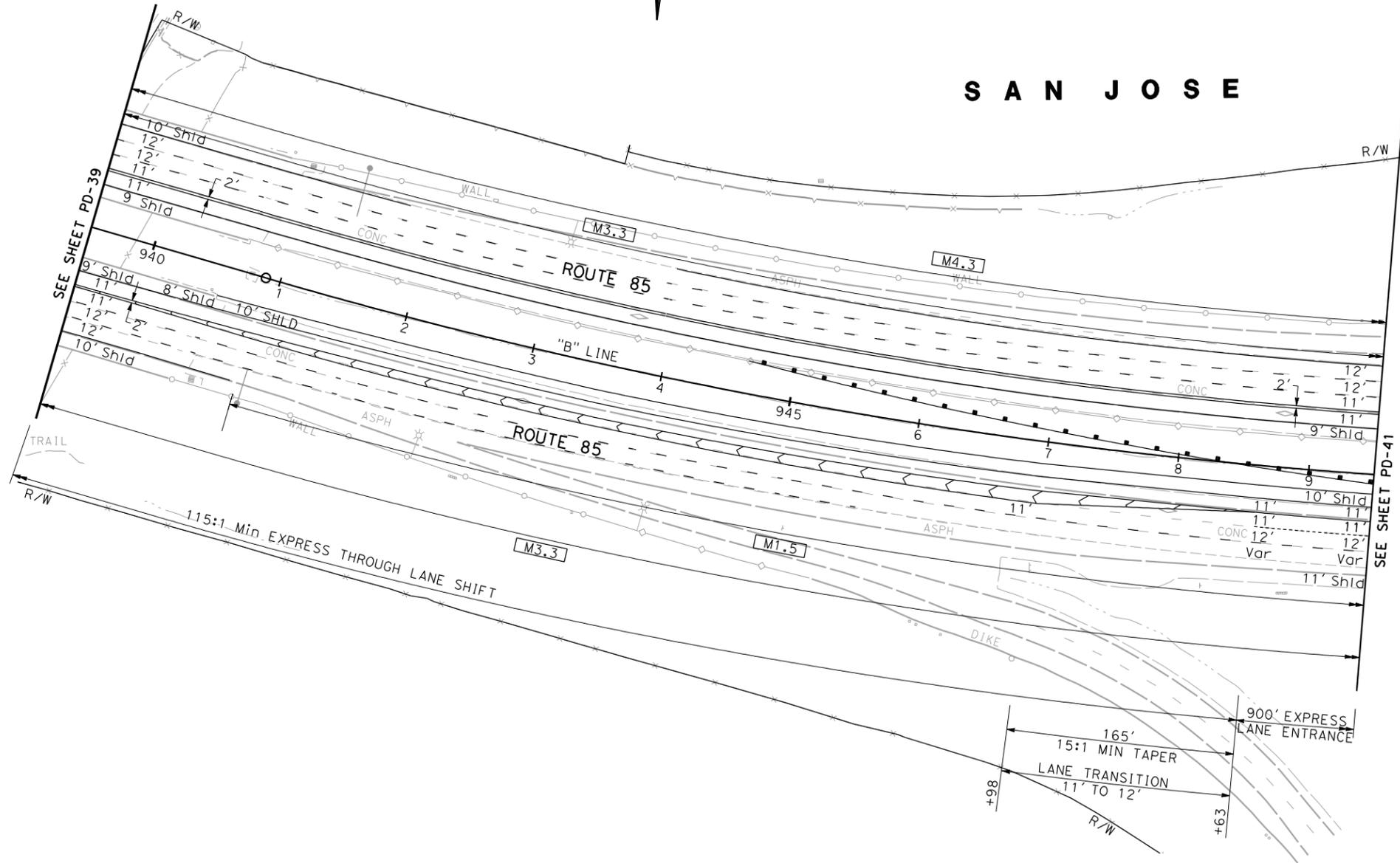
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
---	--

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



S A N J O S E



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-40

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

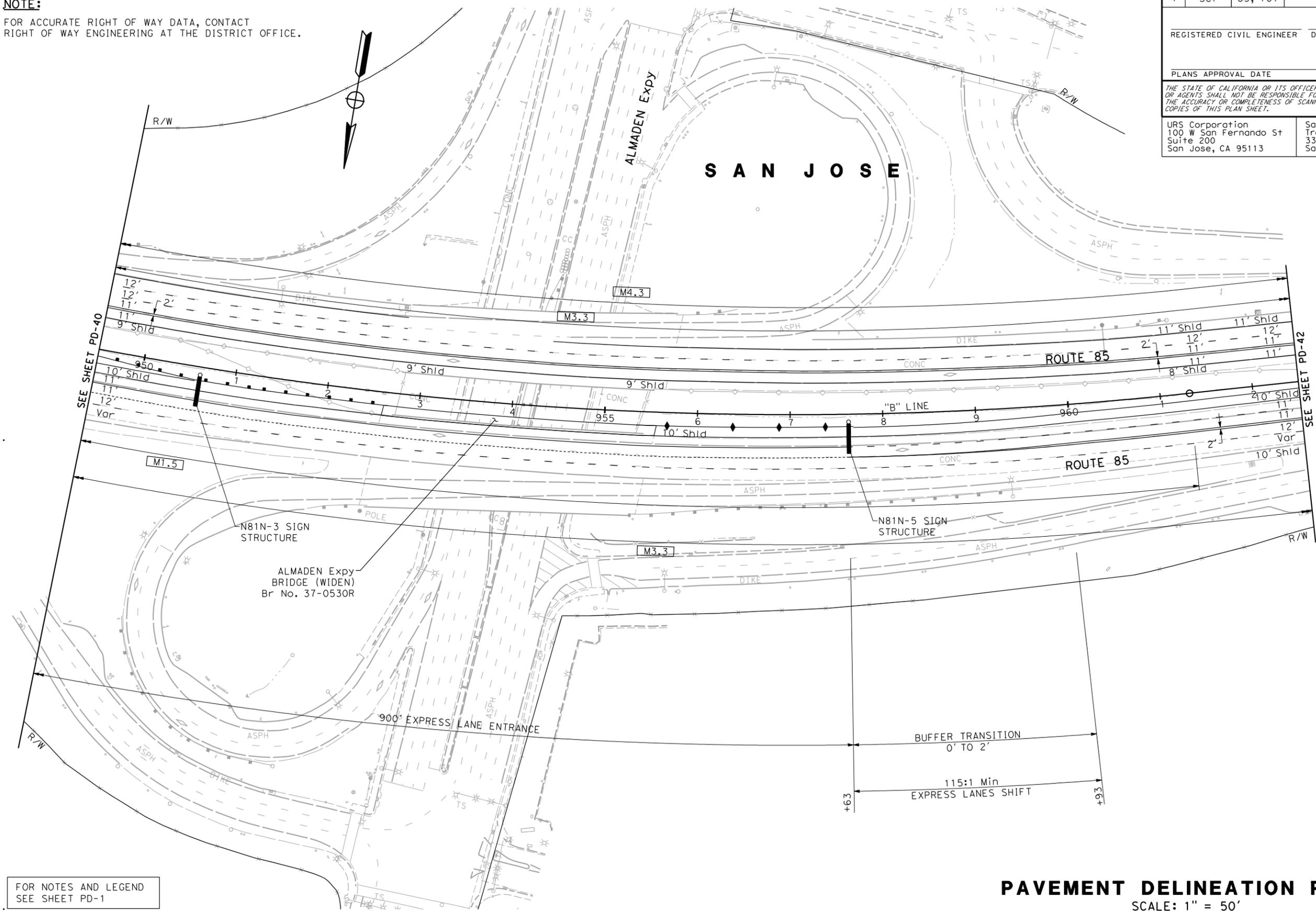
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
St. Gobran	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX/XX/11

LAST REVISION DATE PLOTTED => 7/3/2013
03-25-11 TIME PLOTTED => 4:23:57 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
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THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-41

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobans
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED-DESIGNED BY: Cassidy Grillon
 REVISOR: Chadi Chazbek
 REVISION: XX
 DATE: XX/XX/11

BORDER LAST REVISED 7/2/2010

USERNAME => minyoung_kim
 DGN FILE => ...\\044a7900ea041.dgn

RELATIVE BORDER SCALE IS IN INCHES
 0 1 2 3

UNIT xxxx

PROJECT NUMBER & PHASE

0400001163

LAST REVISION: 03-25-11
 DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:23:59 PM

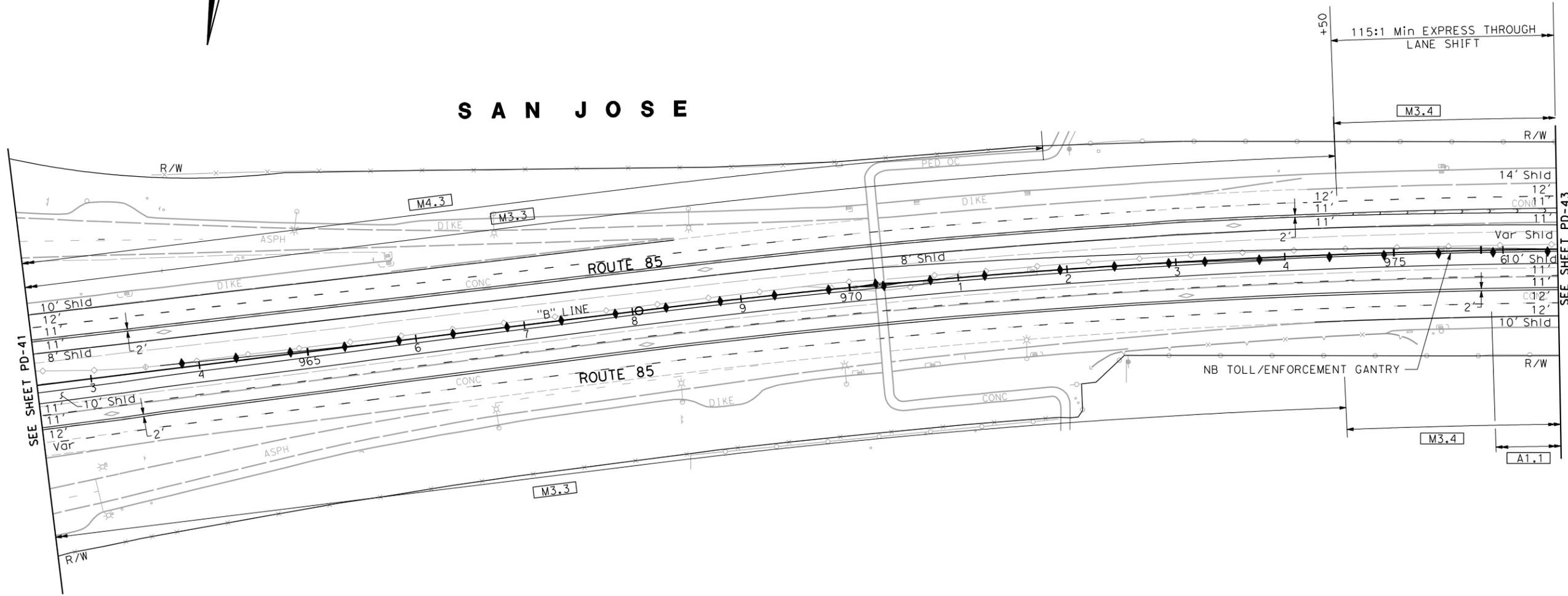
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SAN JOSE



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-42

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY	REVISIONS
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX XX/XX/11

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:00 PM

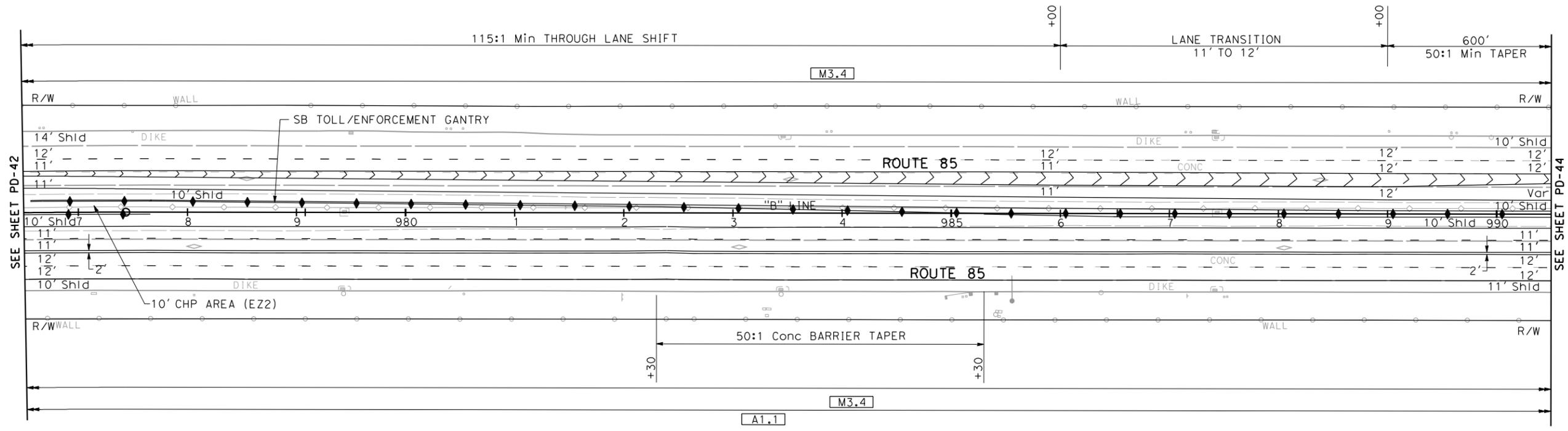
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SAN JOSE



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-43

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobran
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISIONS: DATE REVISIONS: DATE

LAST REVISION: 03-25-11
 DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:24:01 PM

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

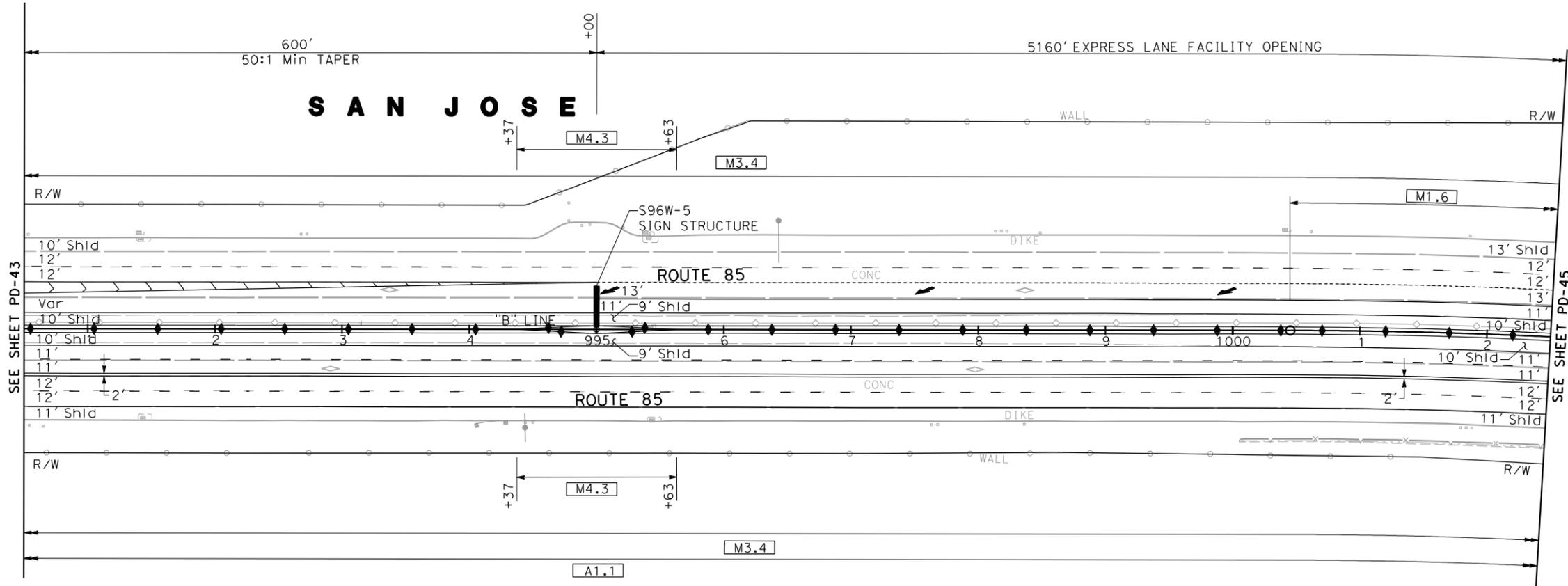
REGISTERED CIVIL ENGINEER DATE _____

PLANS APPROVAL DATE _____

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'

PD-44

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

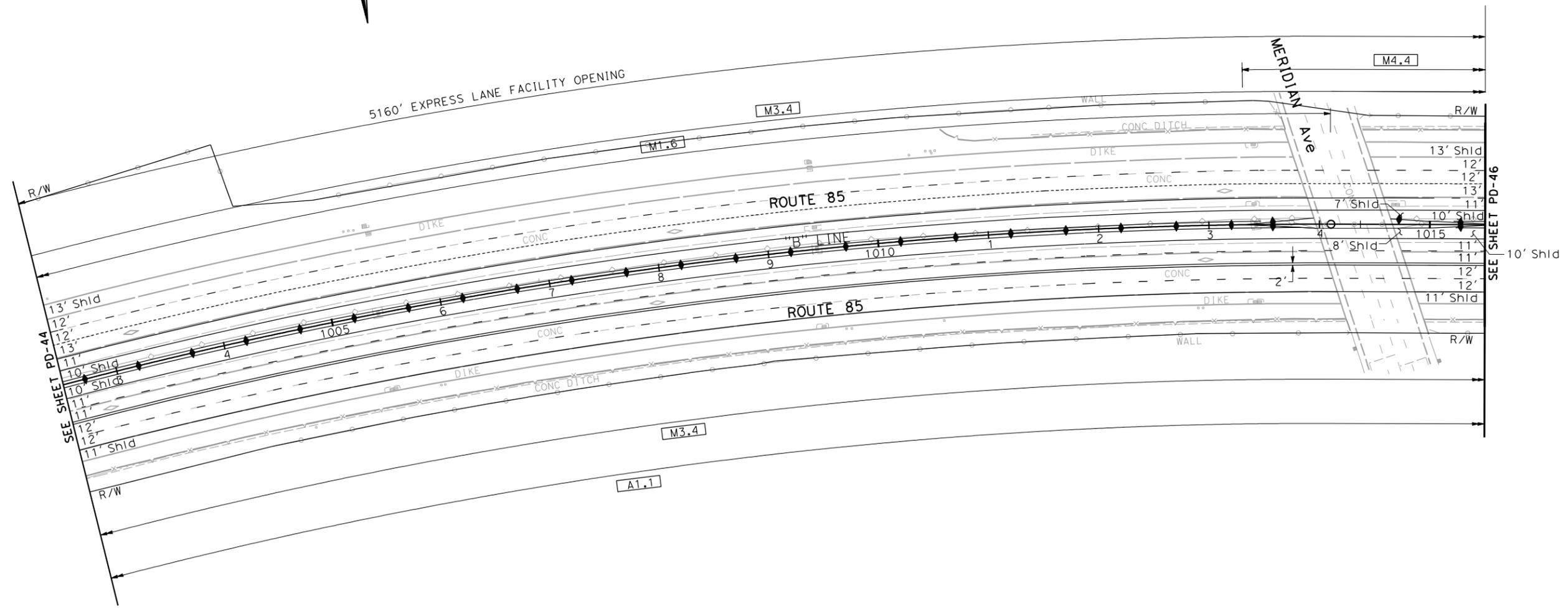
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE	REGISTERED PROFESSIONAL ENGINEER	
PLANS APPROVAL DATE				No. _____	
				Exp. _____	
				CIVIL	
				STATE OF CALIFORNIA	
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SAN JOSE



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-45

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR: Chadí Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 CHECKED BY: Chadí Chazbek
 REVISIONS: XX XX/XX/11
 REVISOR: DATE
 REVISOR: DATE

USERNAME => minyoung_kim
 DGN FILE => ...\\044a7900ea045.dgn

RELATIVE BORDER SCALE IS IN INCHES

UNIT xxxx

PROJECT NUMBER & PHASE

0400001163

BORDER LAST REVISED 7/2/2010

DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:24:03 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE	REGISTERED PROFESSIONAL ENGINEER	
PLANS APPROVAL DATE				No. _____	
				Exp. _____	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

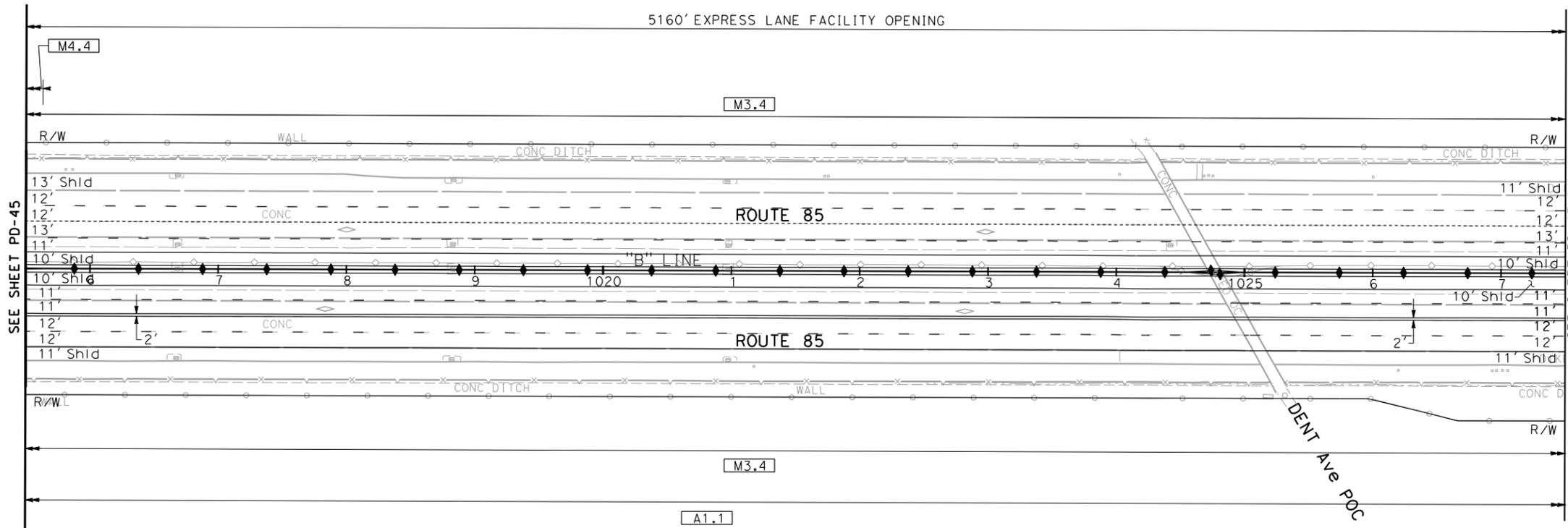
NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



S A N J O S E

5160' EXPRESS LANE FACILITY OPENING



SEE SHEET PD-45

SEE SHEET PD-47

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-46

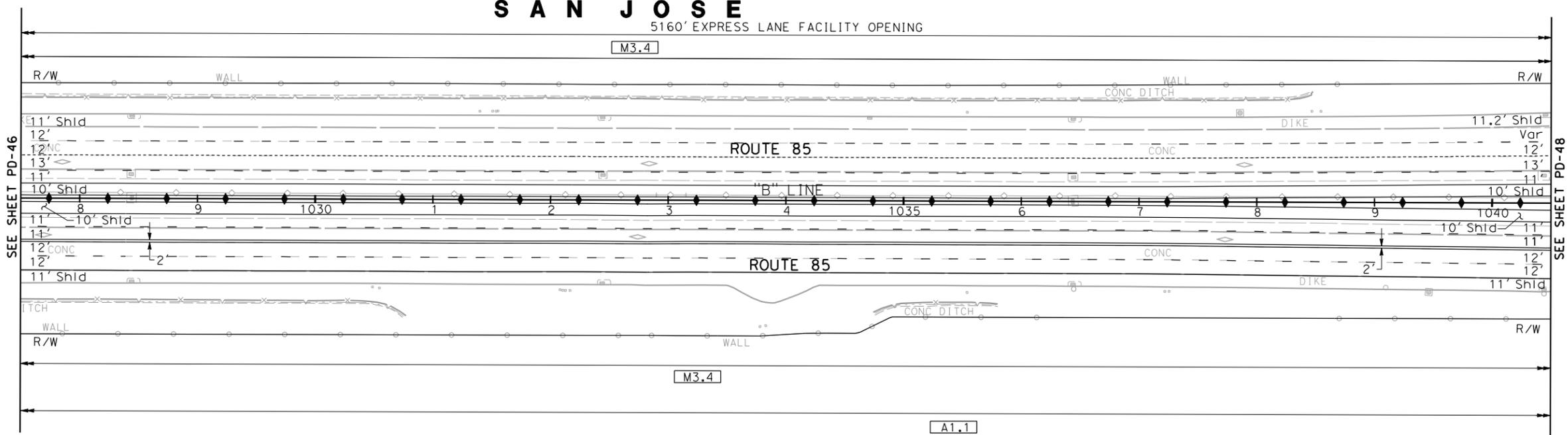
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
		Cassidy Grillon		



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'
PD-47

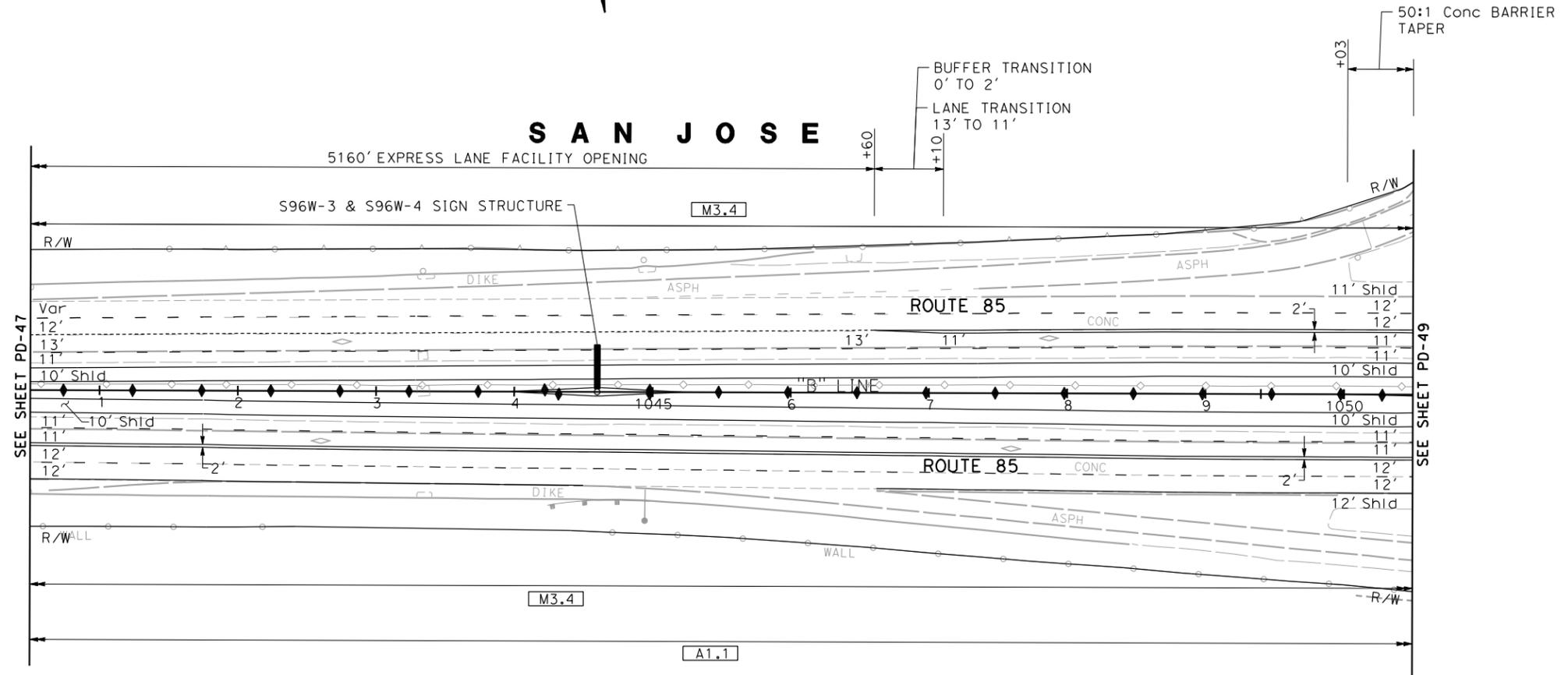
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION 03-25-11 DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:06 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE
	XX	XX/XX/11
	REVISOR	DATE
CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY
Chadi Chazbek	Chadi Chazbek	Cassidy Grillon

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-48

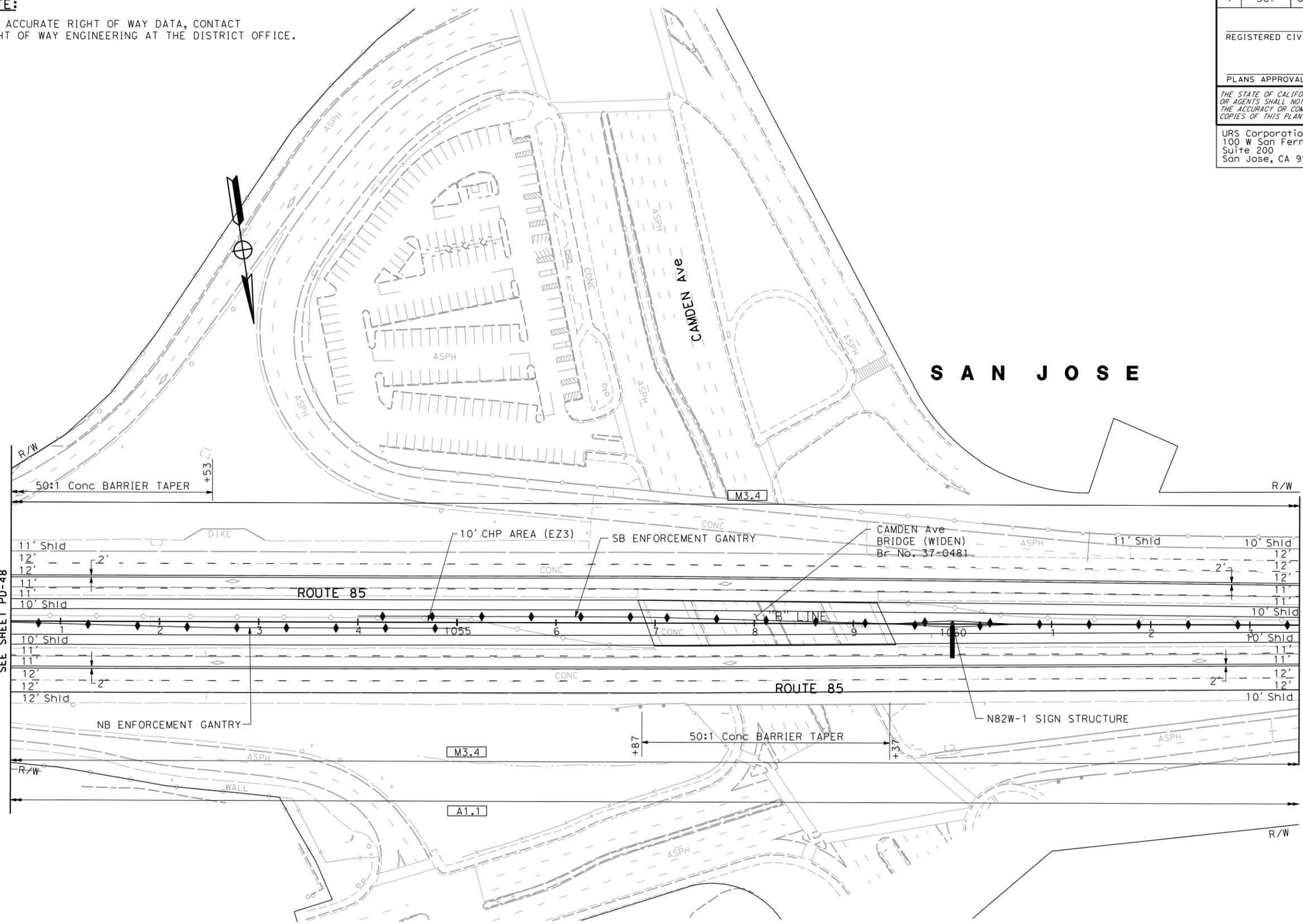
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:07 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SAN JOSE

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-49

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 CHADY GRILLION
 CHADI CHAZBEK
 REVISIONS: XX XX/XX/11
 REVISOR: CHADI CHAZBEK
 DATE: [REDACTED]

BORDER LAST REVISED 7/2/2010

USERNAME => minyoung_kim
 DGN FILE => ... \044a7900ea049.dgn

RELATIVE BORDER SCALE IS IN INCHES

UNIT xxxx

PROJECT NUMBER & PHASE

0400001163

DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:24:08 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

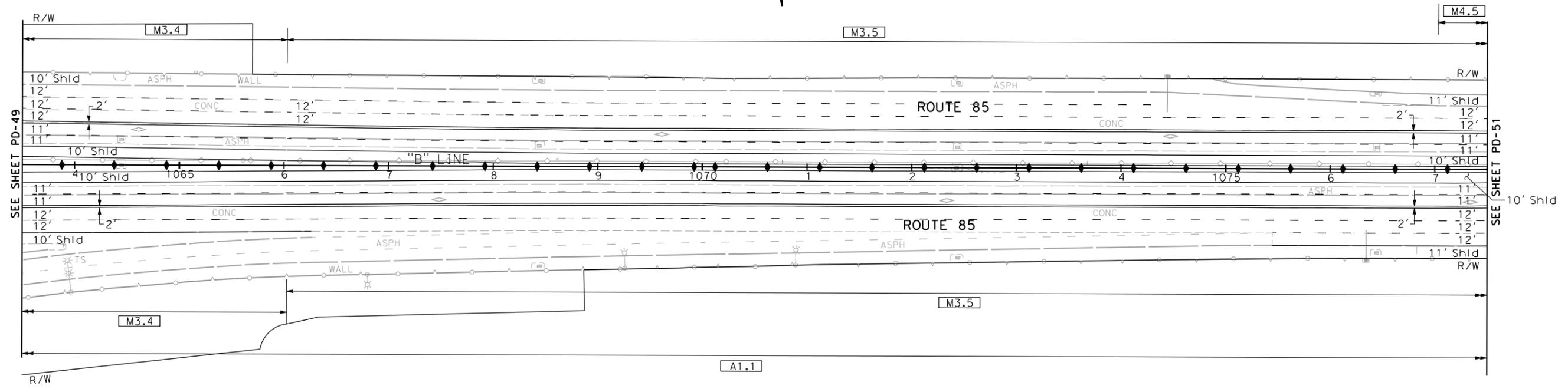
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
---	--

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SAN JOSE



SEE SHEET PD-49

SEE SHEET PD-51

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-50

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISIONS: DATE REVISIONS

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:10 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

REVISOR: XX
DATE: XX/XX/11

REVISOR: CHAZBEK
DATE: REVISED

DESIGNER: GRILLON
CHECKER: CHAZBEK

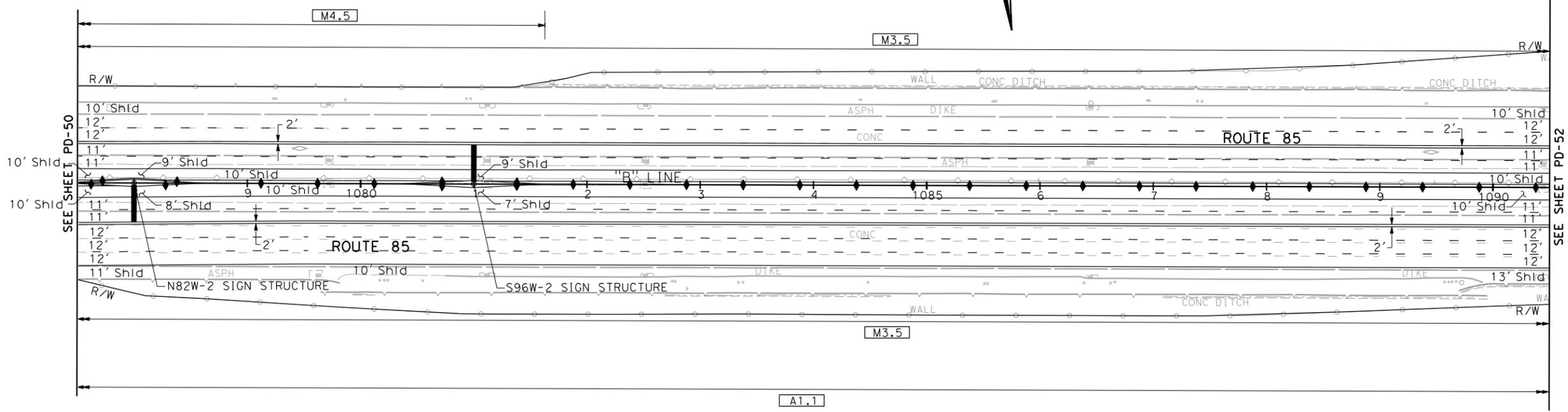
CALCULATED BY: CHAZBEK
DESIGNED BY: CHAZBEK

CONSULTANT FUNCTIONAL SUPERVISOR: CHAZBEK

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobran



SAN JOSE



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-51

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

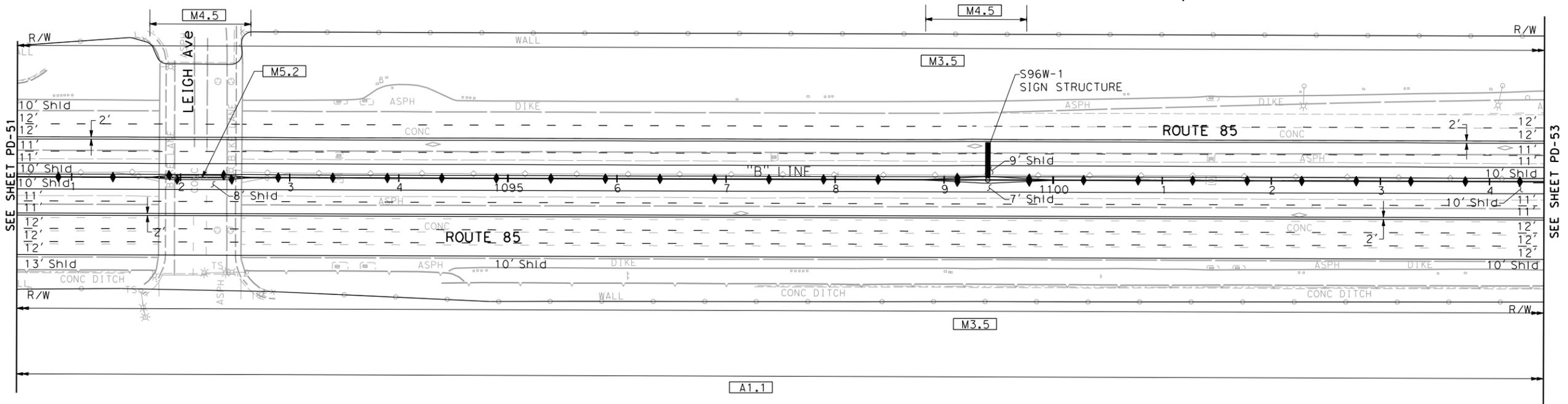
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
---	--

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISED BY: XX
 DATE REVISED: XX/XX/11

SAN JOSE



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-52

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:12 PM

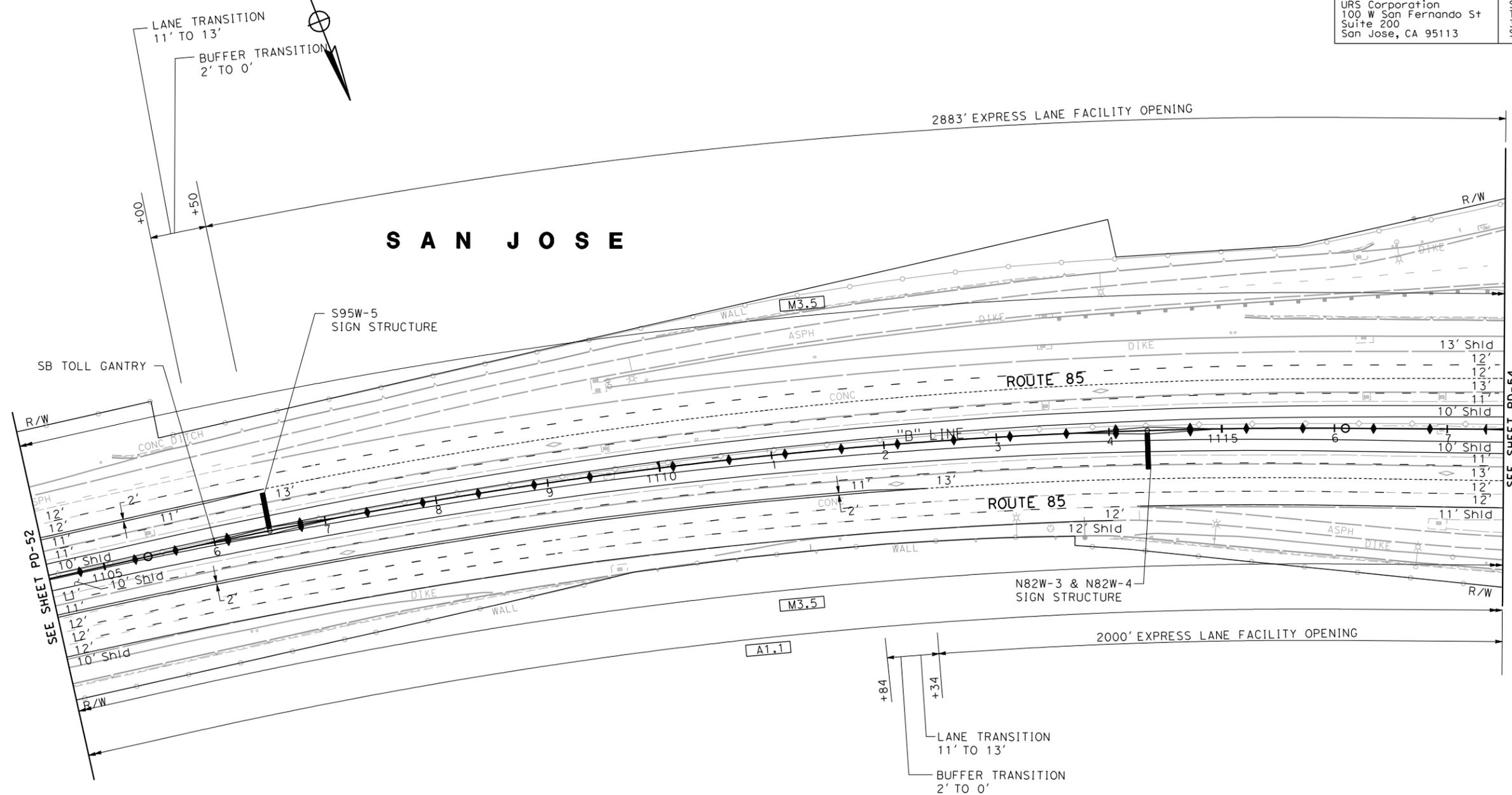
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX/XX/11
			Chadi Chazbek	DATE REVISED



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-53

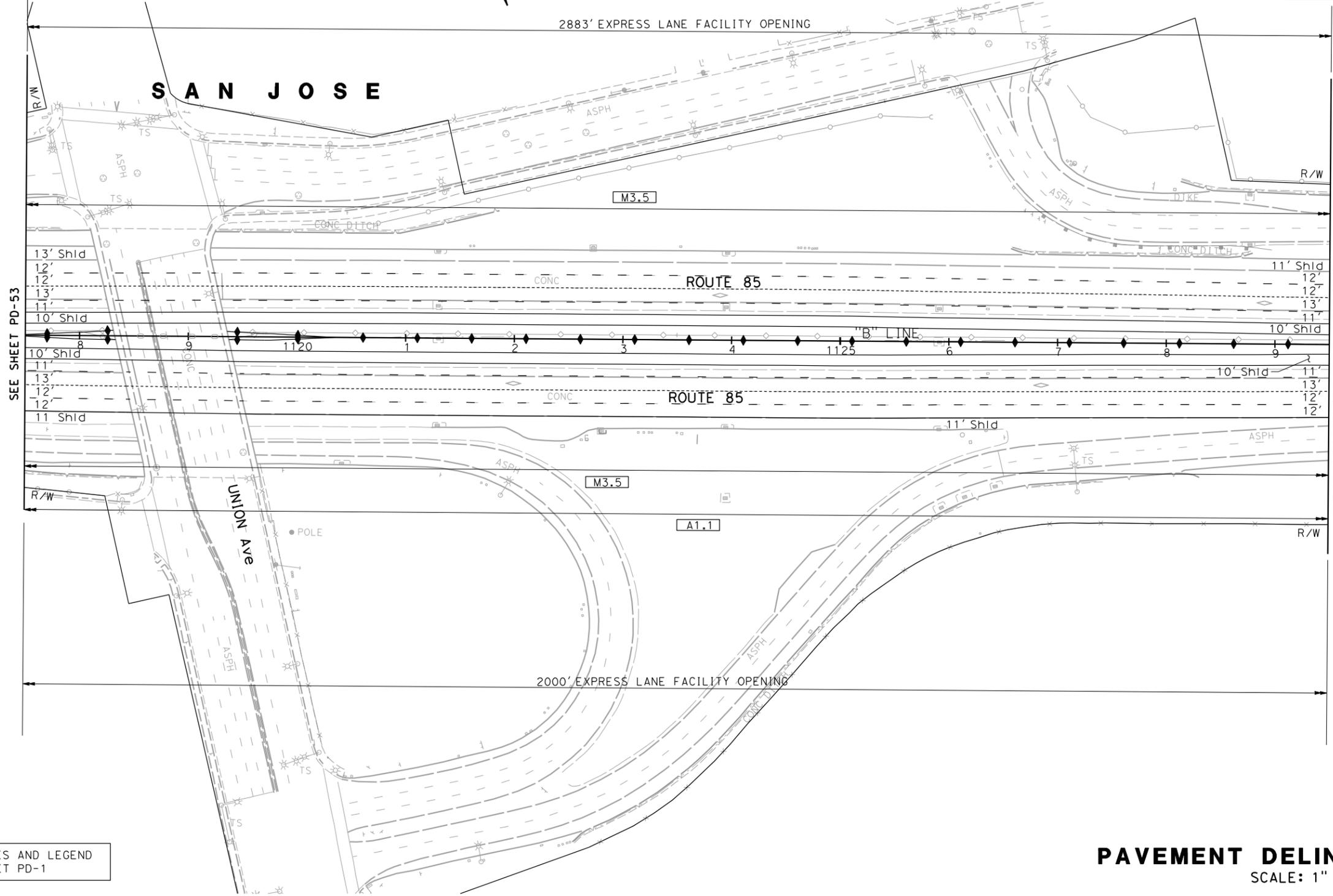
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:13 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
Exp.			CIVIL		
STATE OF CALIFORNIA			REGISTERED PROFESSIONAL ENGINEER		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SEE SHEET PD-53

SEE SHEET PD-55

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-54

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

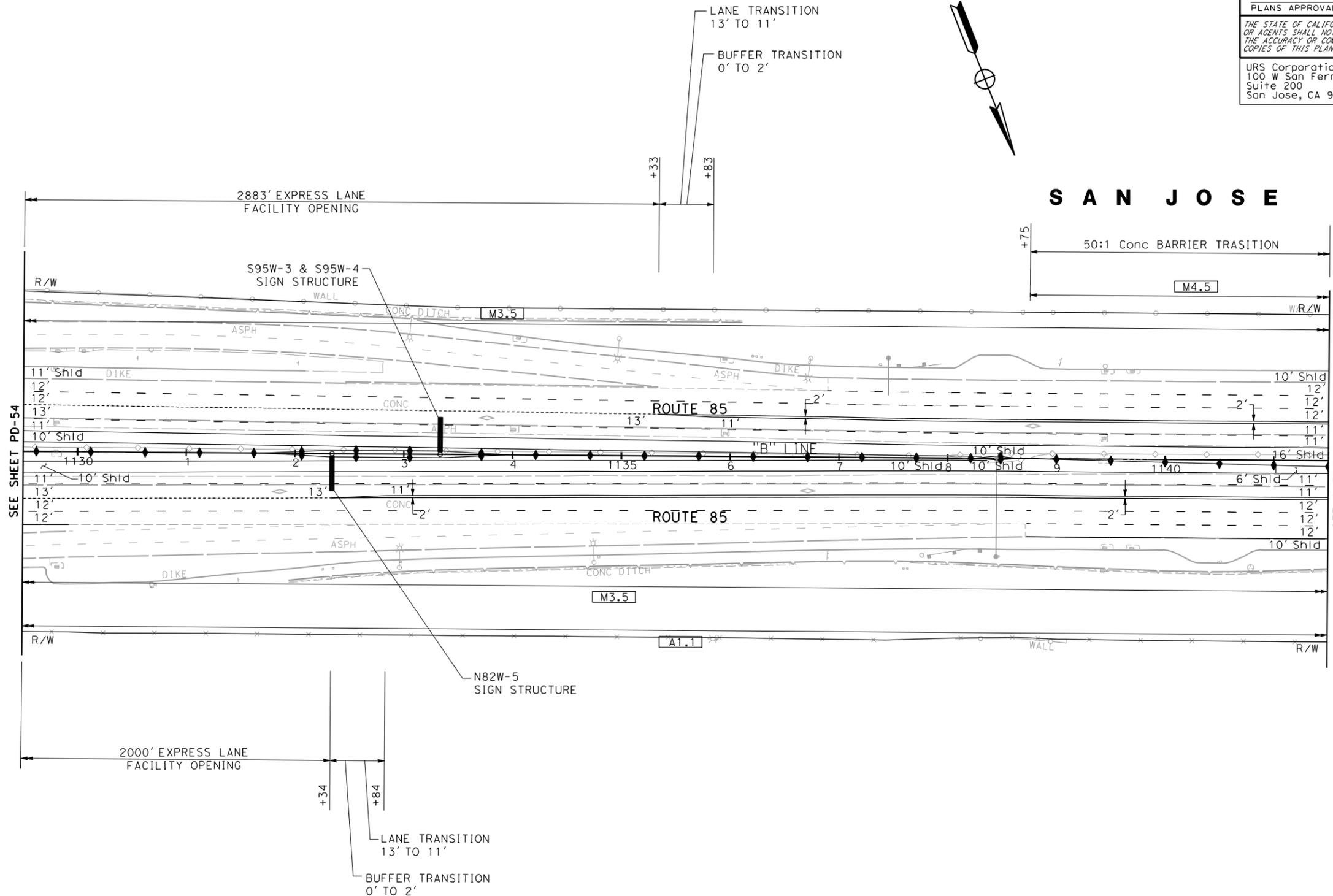
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 REVISOR: Chadi Chazbek
 REVISION: XX
 DATE: XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
Exp.			CIVIL		
STATE OF CALIFORNIA			REGISTERED PROFESSIONAL ENGINEER		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113		Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134			

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISOR: Chadi Chazbek
 DATE: XX/XX/11



SAN JOSE

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-55

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

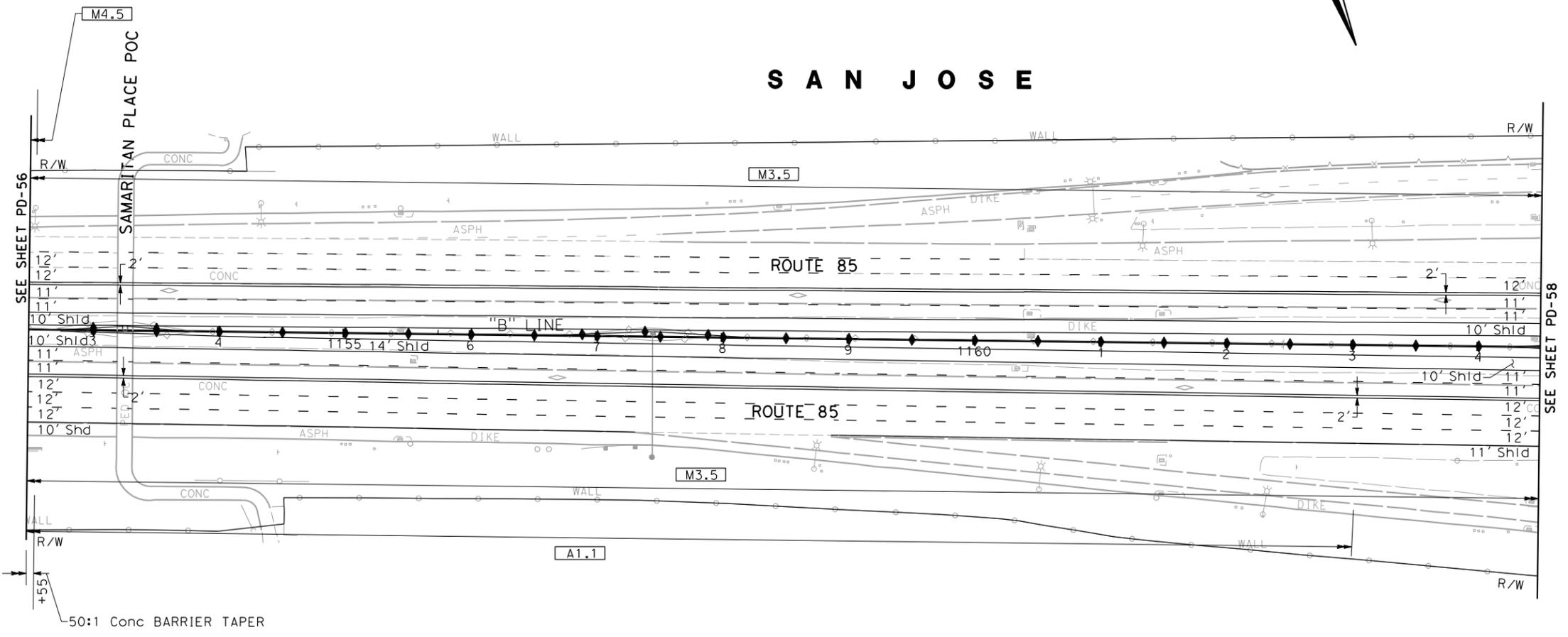
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE	REGISTERED PROFESSIONAL ENGINEER	
PLANS APPROVAL DATE			No. _____		
EXP. _____			CIVIL		
STATE OF CALIFORNIA			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGNED BY	REVISOR	DATE
	Cassidy Grillon	XX	XX/XX/11
	Chadi Chazbek	XX/XX/11	
CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	REVISOR	DATE
Chadi Chazbek	Chadi Chazbek		



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'
PD-57

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:18 PM

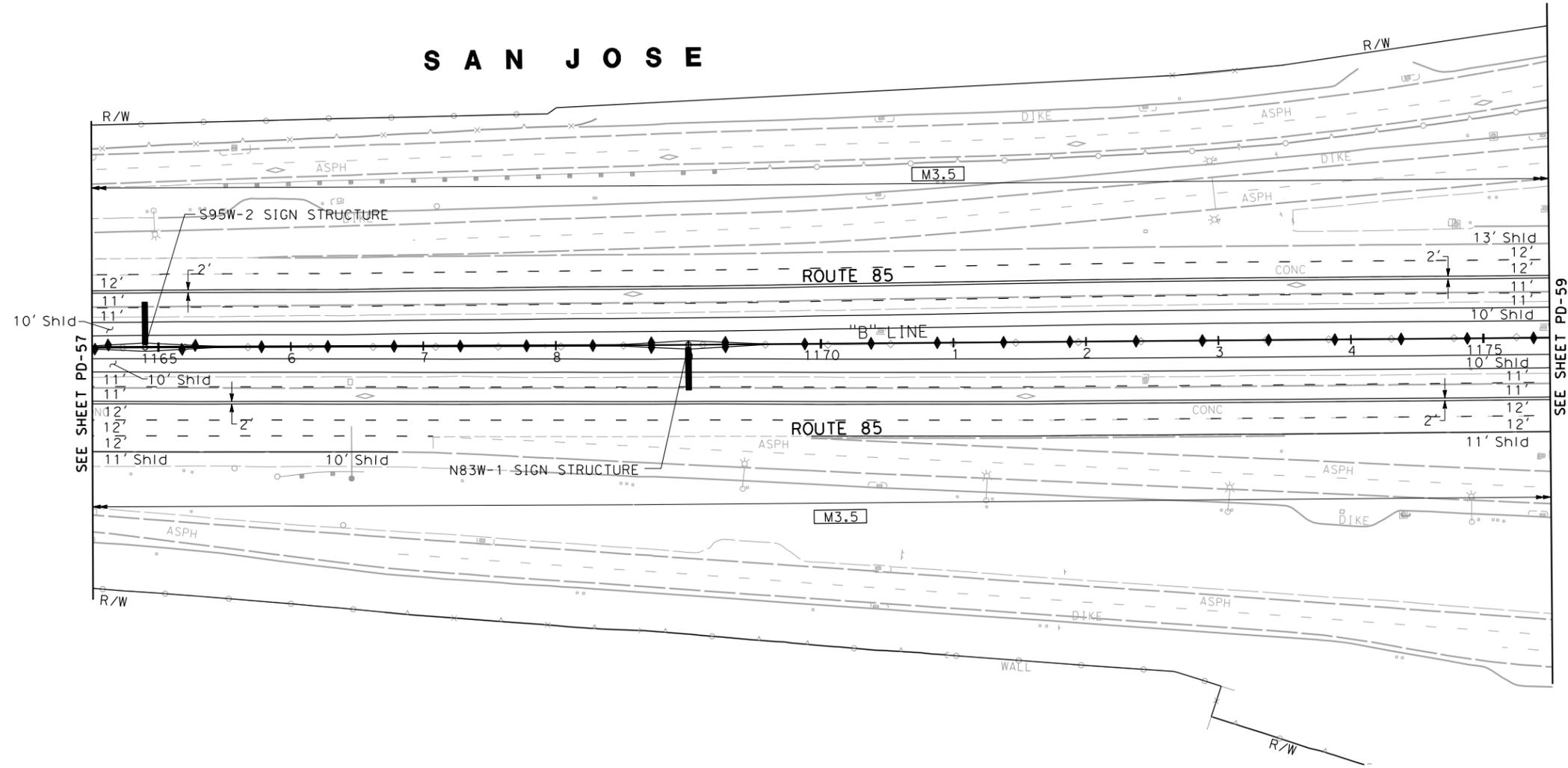
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SAN JOSE



SEE SHEET PD-57

SEE SHEET PD-59

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-58

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE
	XX	XX/XX/11
	REVISOR	DATE
CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY
Chadi Chazbek	Chadi Chazbek	Cassidy Grillon

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:19 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE	REGISTERED PROFESSIONAL ENGINEER	
PLANS APPROVAL DATE			No. _____		
			Exp. _____		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

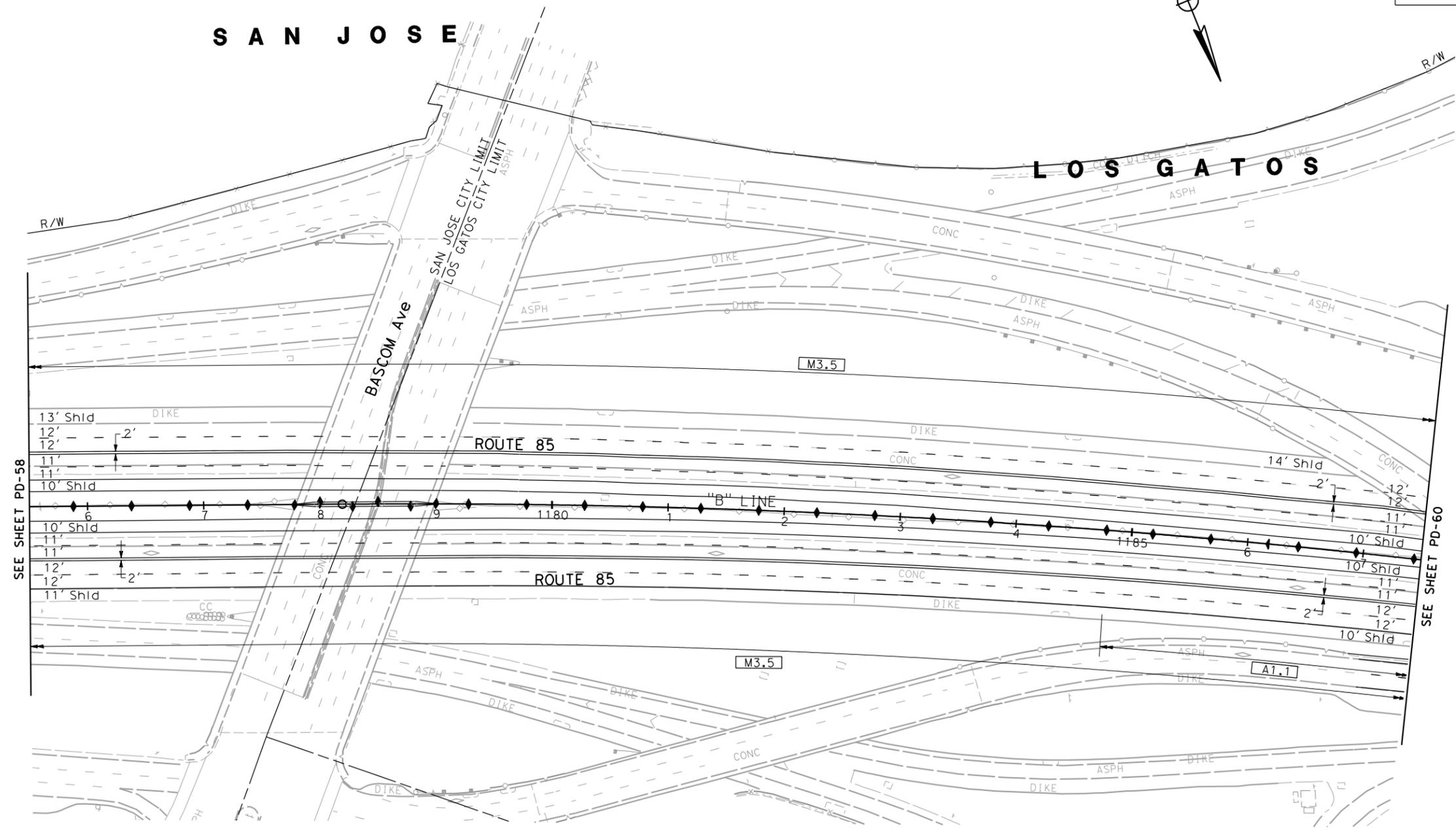
NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SAN JOSE

LOS GATOS



SEE SHEET PD-58

SEE SHEET PD-60

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-59

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	REVISOR BY	DATE
St. Gobran	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX
			Chadi Chazbek	XX/XX/11

BORDER LAST REVISED 7/2/2010

USERNAME => minyoung_kim
DGN FILE => ... \044a7900ea059.dgn



UNIT xxxx

PROJECT NUMBER & PHASE

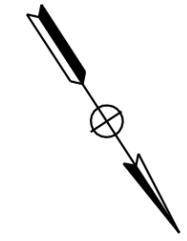
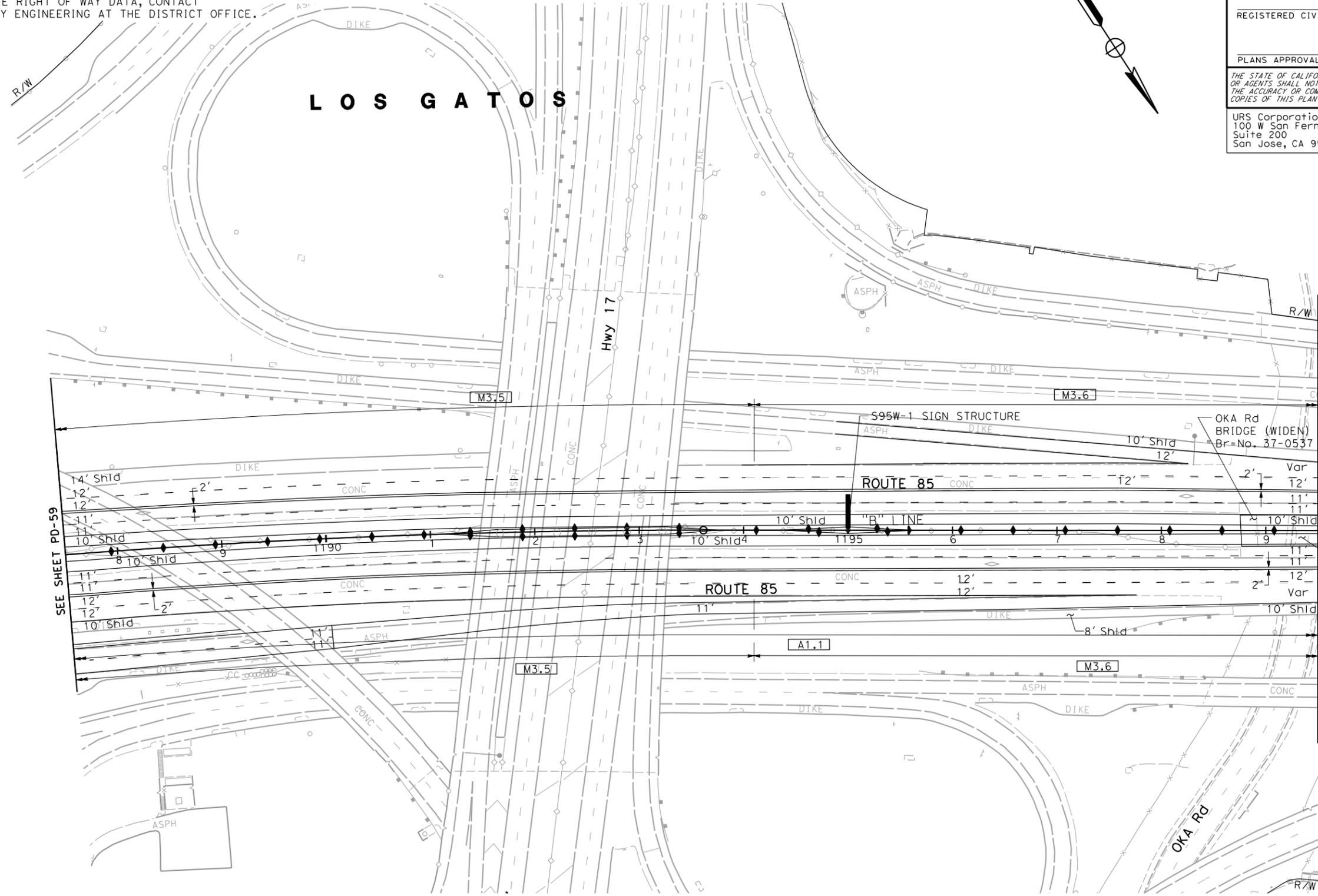
0400001163

DATE PLOTTED => 7/3/2013
TIME PLOTTED => 4:24:21 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISIONS:
 XX XX/XX/11
 REVISOR: Chadi Chazbek
 DATE: [REDACTED]

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-60

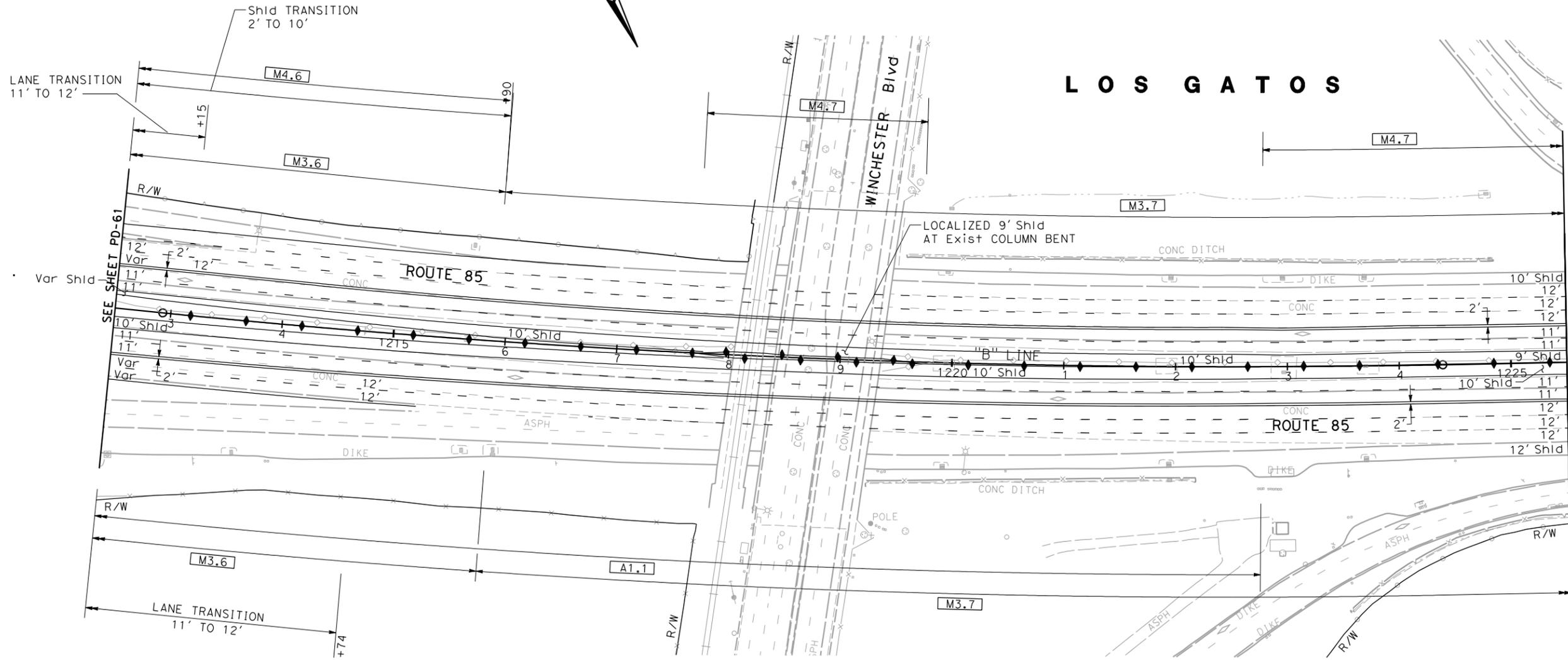
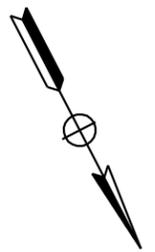
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 03-25-11 TIME PLOTTED => 4:24:22 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISOR: Cassidy Grillon
 DATE: CHAZBEK

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-62

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

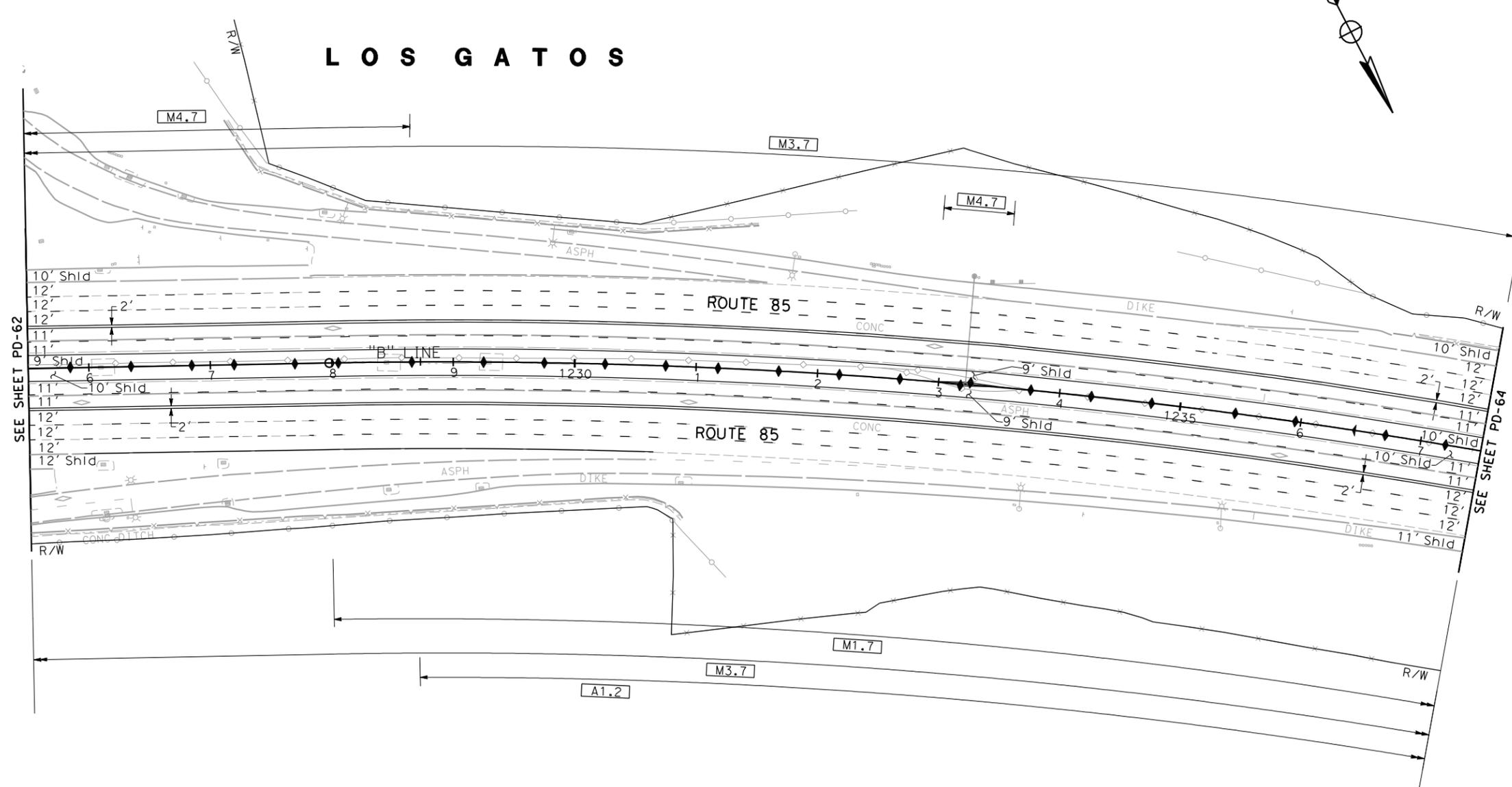
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 TIME PLOTTED => 4:24:26 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISOR: Chadi Chazbek
 DATE: XX/XX/11



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-63

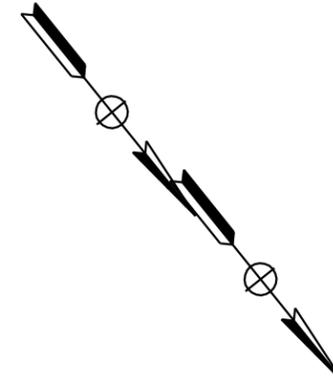
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:27 PM

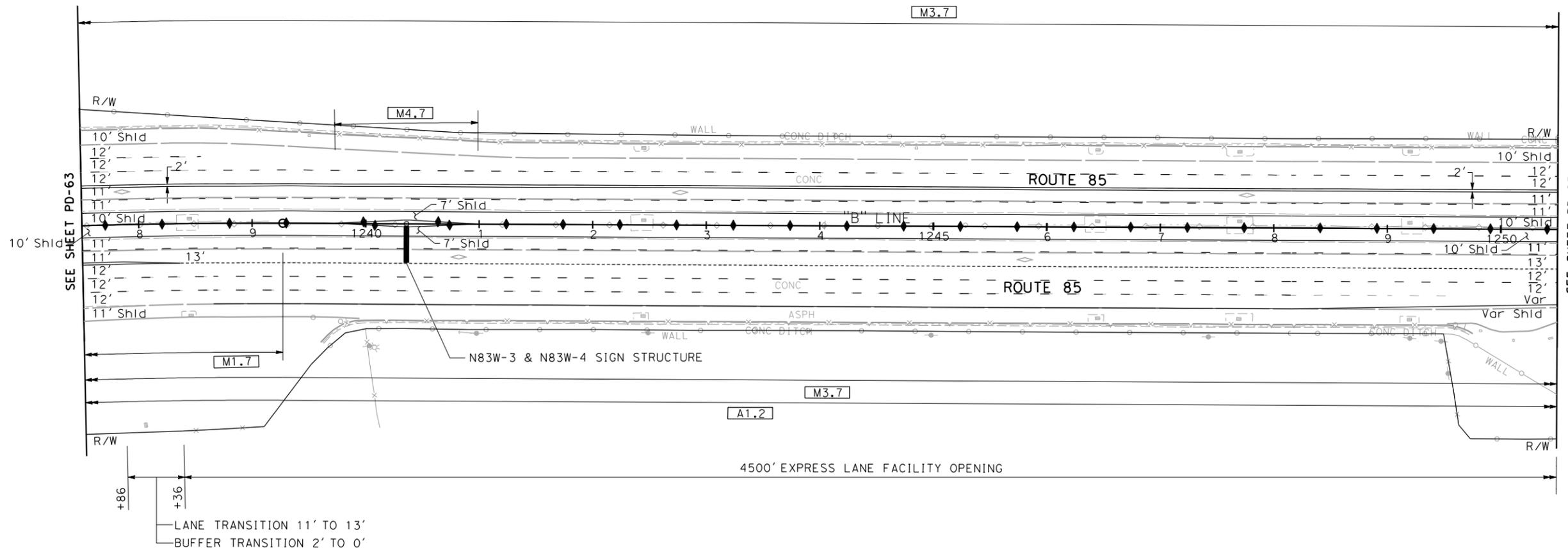
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE	REGISTERED PROFESSIONAL ENGINEER	
PLANS APPROVAL DATE				No. _____	
				Exp. _____	
				CIVIL	
				STATE OF CALIFORNIA	
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



L O S G A T O S



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-64

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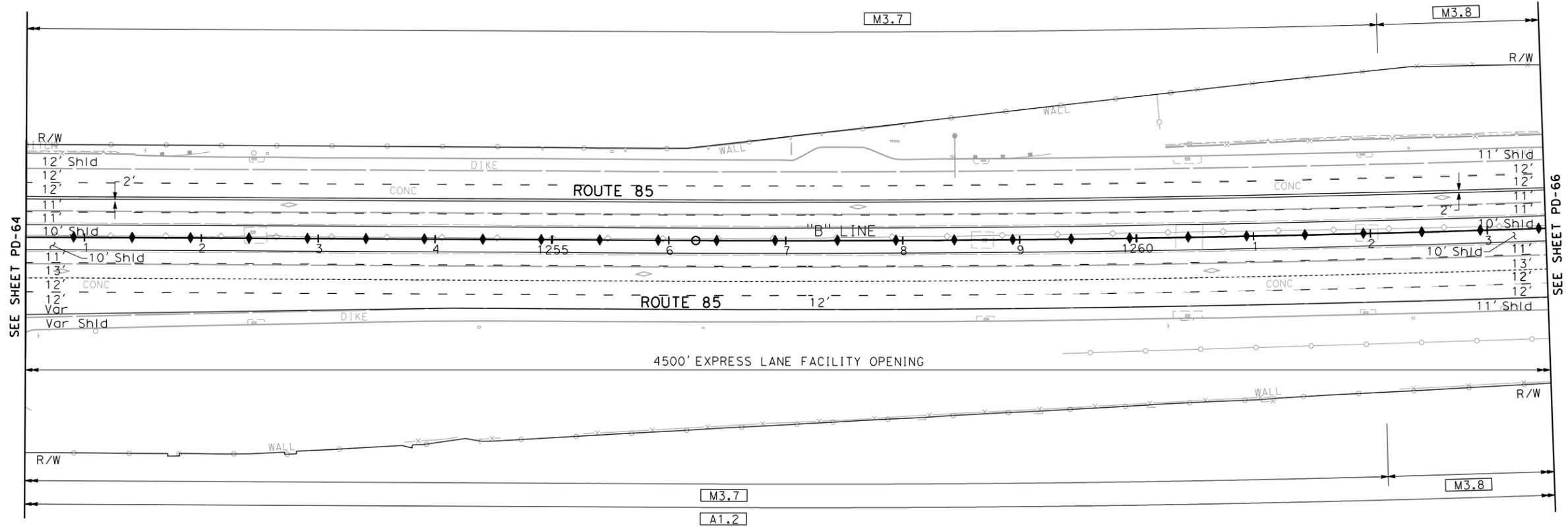
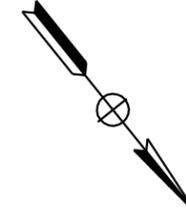
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Chad Chazbek
Cassidy Grillon
Chadi Chazbek

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
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L O S G A T O S



SEE SHEET PD-64

SEE SHEET PD-66

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-65

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

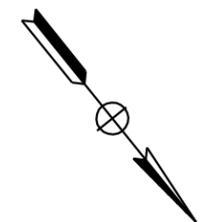
 CONSULTANT FUNCTIONAL SUPERVISOR: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISIONS: DATE REVISIONS

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:30 PM

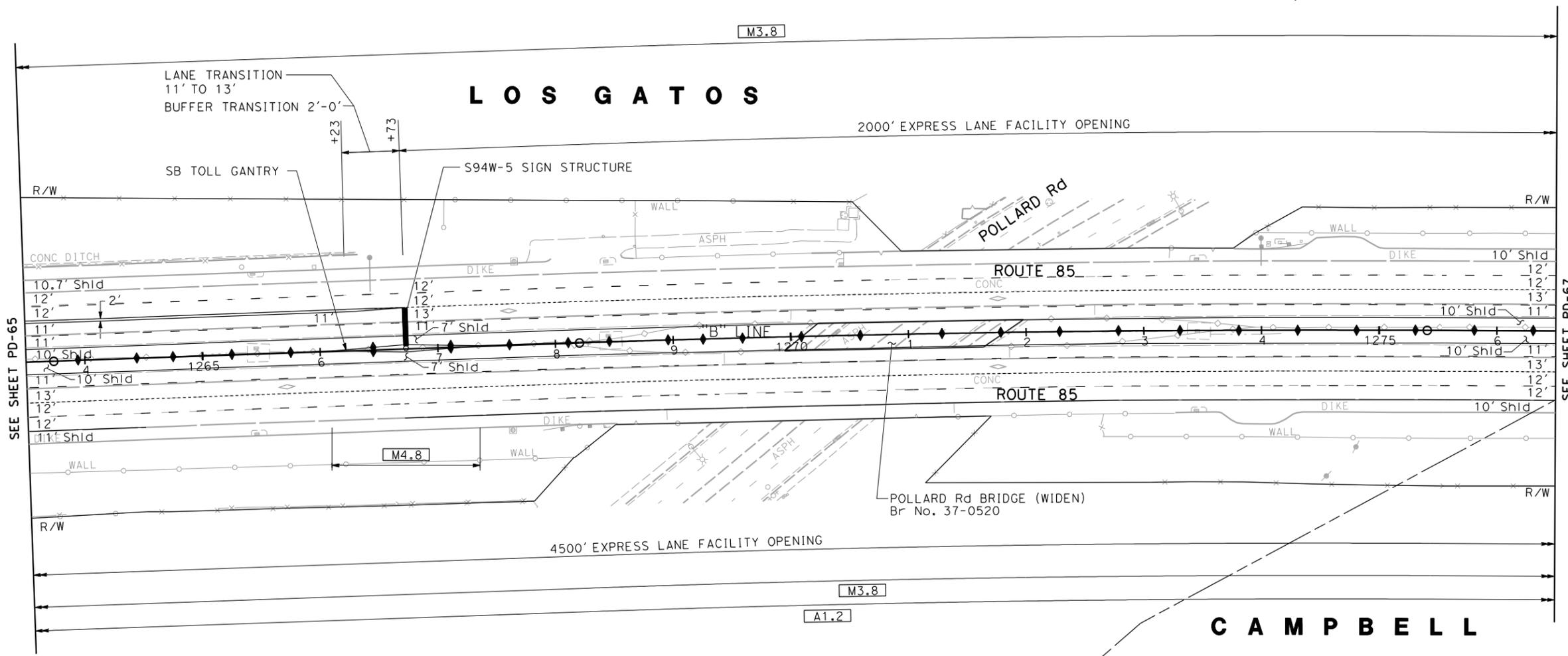
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobans
 CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek
 CALCULATED-DESIGNED BY
 Chadi Chazbek
 CHECKED BY
 Chadi Chazbek
 REVISOR BY
 Cassidy Grillon
 Chadi Chazbek
 XX
 XX/XX/11
 DATE REVISED



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-66

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

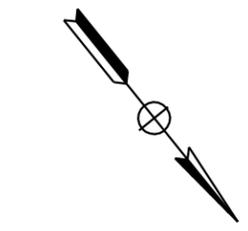
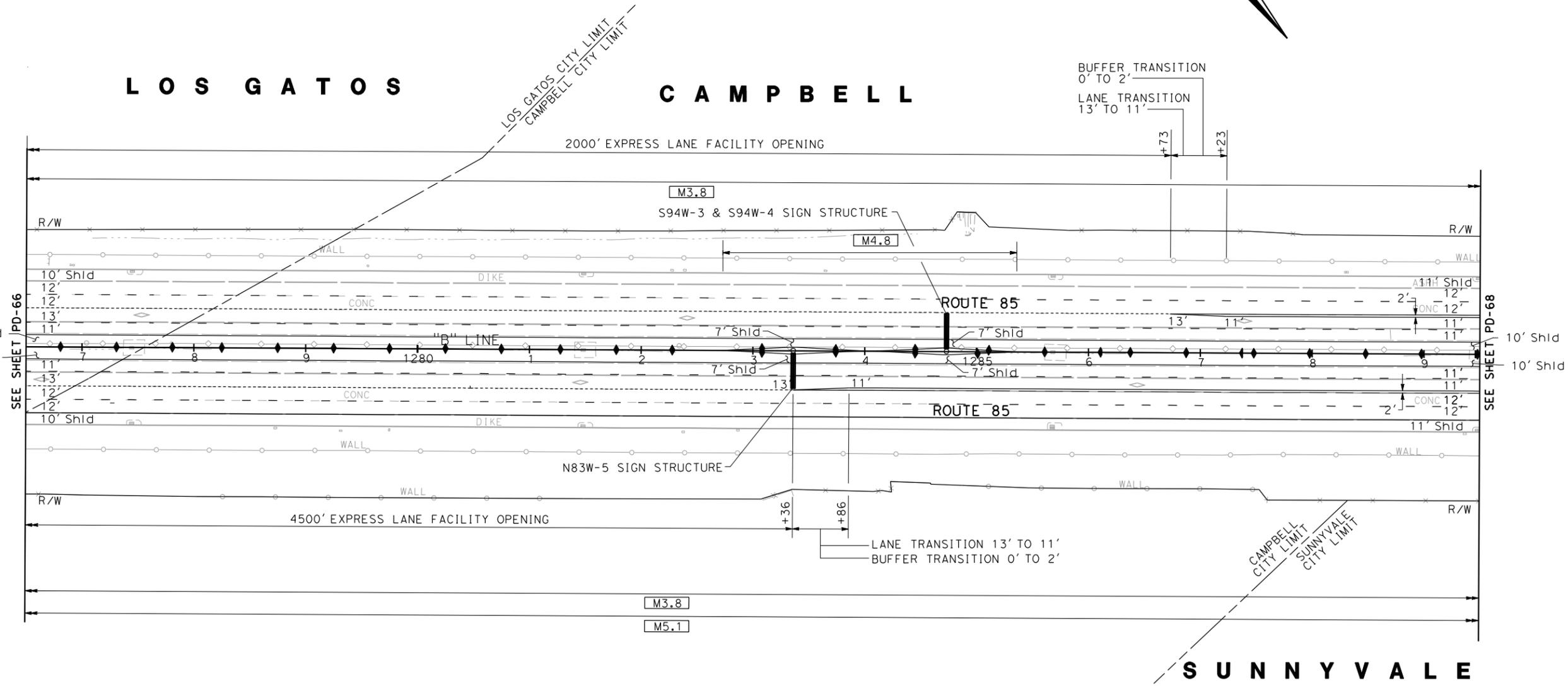
LAST REVISION
 DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:24:31 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
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REVISOR	DATE	REVISION
XX	XX/XX/11	
REVISOR	DATE	REVISION
Cassidy Grillon	Chadi Chazbek	
CALCULATED-DRAWN	CHECKED BY	
Chadi Chazbek	Chadi Chazbek	
CONSULTANT FUNCTIONAL SUPERVISOR		
Chadi Chazbek		
DEPARTMENT OF TRANSPORTATION		
STATE OF CALIFORNIA		



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-67

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DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:32 PM

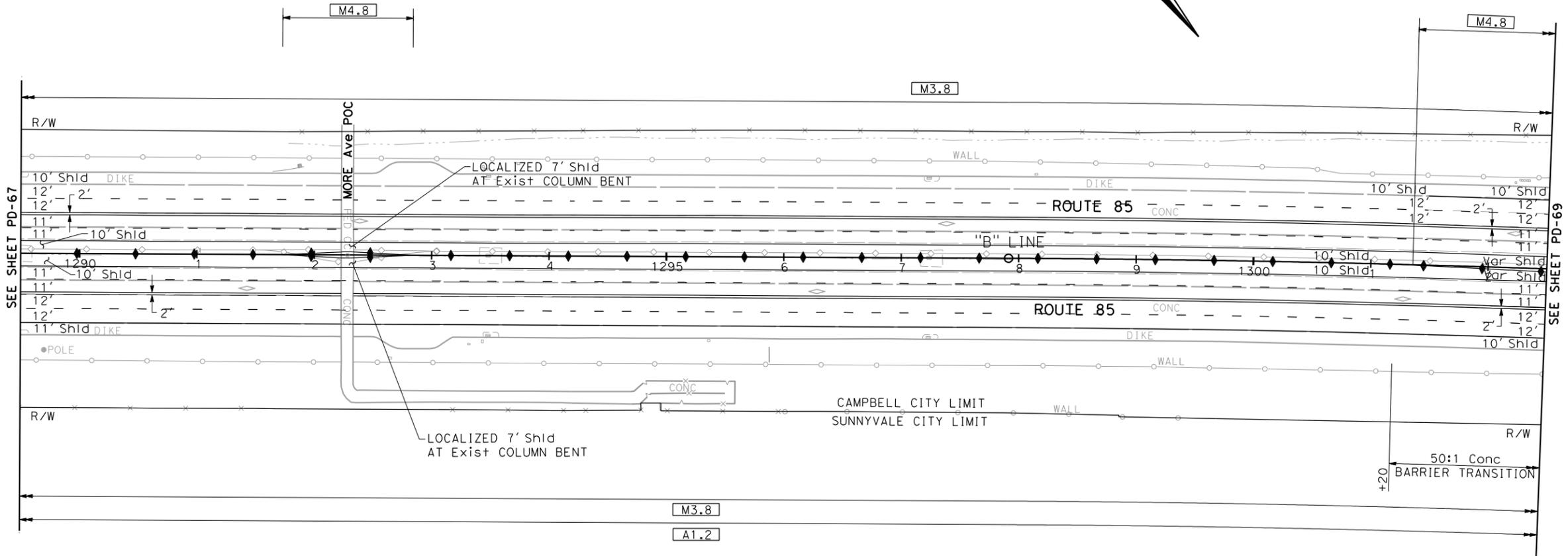
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER			DATE	REGISTERED PROFESSIONAL ENGINEER	
PLANS APPROVAL DATE			No. _____		
Exp. _____			CIVIL		
STATE OF CALIFORNIA			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

C A M P B E L L

S U N N Y V A L E



SEE SHEET PD-67

SEE SHEET PD-69

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-68

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

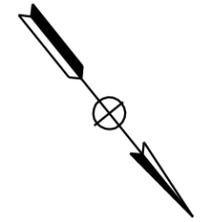
REVISIONS:
 XX XX/XX/11
 REVISOR: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 SUPERVISOR: Chadi Chazbek

DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:33 PM

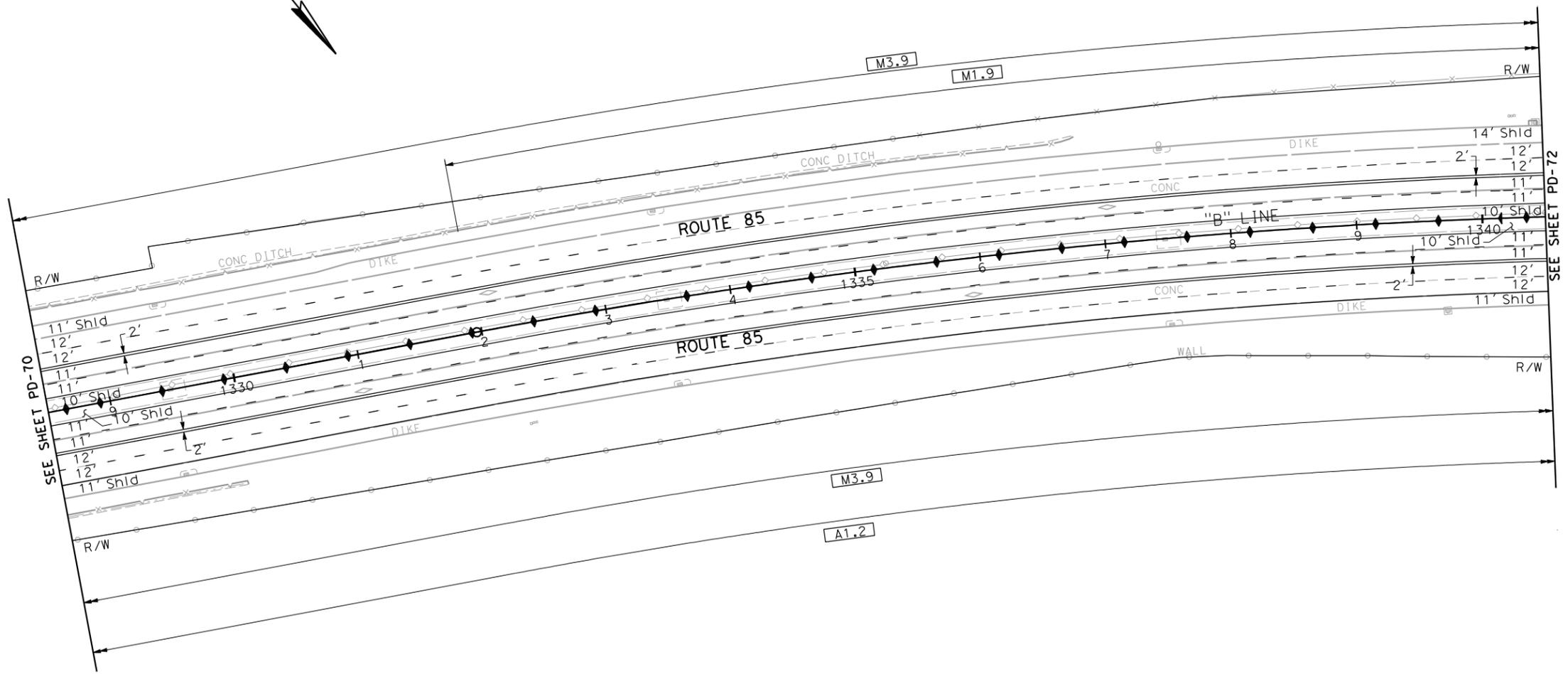
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
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SAN JOSE



SEE SHEET PD-70

SEE SHEET PD-72

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-71

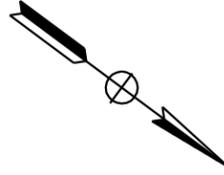
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR BY	DATE
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX/XX/11
		CHECKED BY	DATE REVISED	

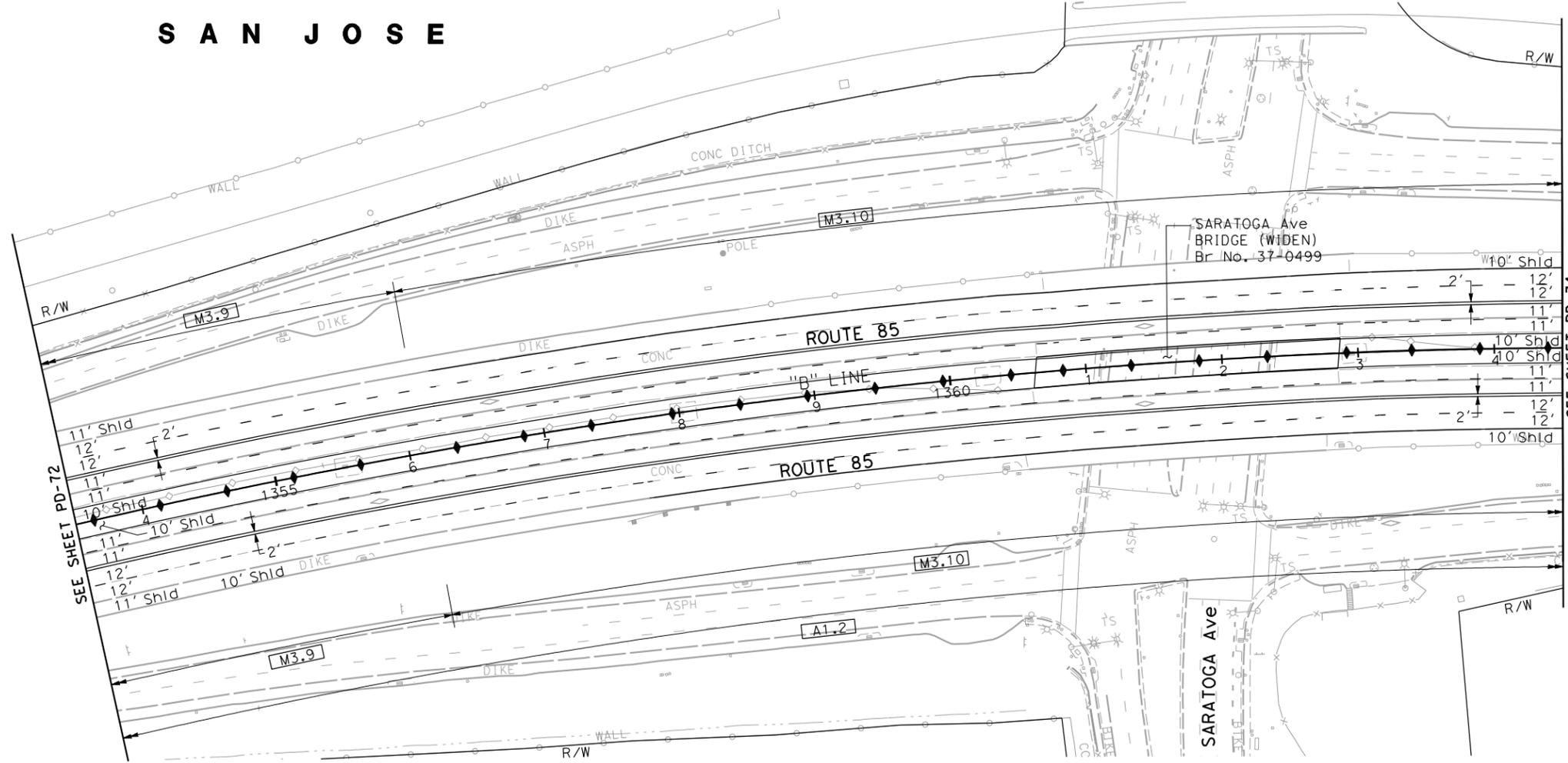
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

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S A N J O S E



SEE SHEET PD-72

SEE SHEET PD-74

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-73

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobans

DESIGNED BY	Cassidy Grillon
CHECKED BY	Chadi Chazbek
CALCULATED BY	
DESIGNED BY	
REVISIONS	XX XX/XX/11
REVISOR	
DATE	
REVISIONS	
REVISOR	
DATE	
REVISIONS	
REVISOR	
DATE	
REVISIONS	
REVISOR	
DATE	

BORDER LAST REVISED 7/2/2010

USERNAME => minyoung_kim
DGN FILE => ...\\044a7900ea073.dgn



UNIT xxxx

PROJECT NUMBER & PHASE

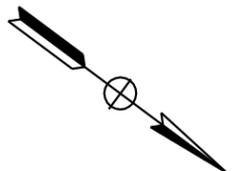
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DATE PLOTTED => 7/3/2013
TIME PLOTTED => 4:24:39 PM

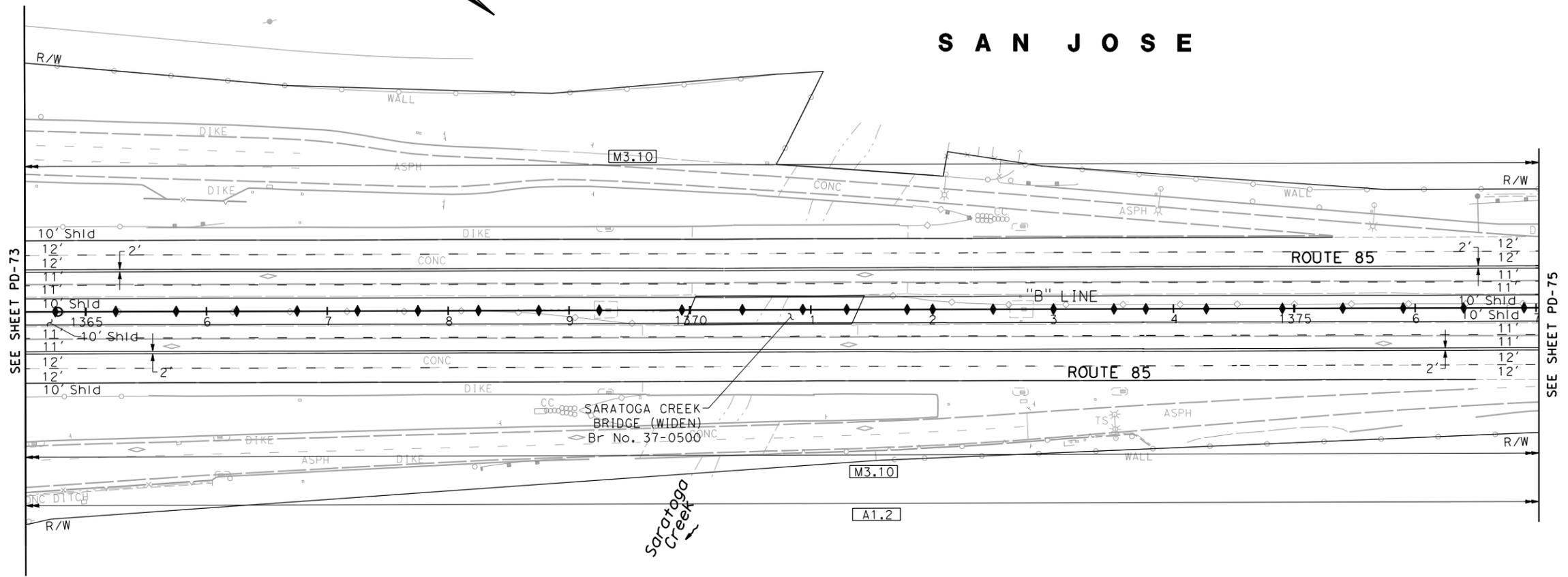
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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SAN JOSE



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED-DESIGNED BY: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISED BY: XX
 DATE REVISED: XX/XX/11

FOR NOTES AND LEGEND
 SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-74

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

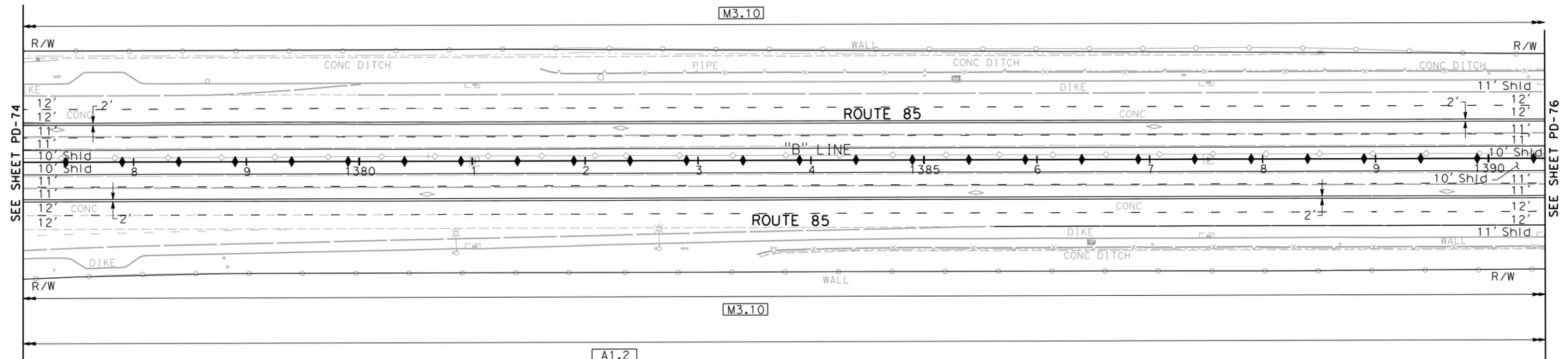
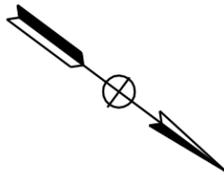
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 03-25-11

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PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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S A N J O S E



SEE SHEET PD-74

SEE SHEET PD-76

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-75

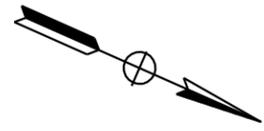
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobans
CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
CALCULATED-DESIGNED BY: Chadi Chazbek
CHECKED BY: Chadi Chazbek
REVISOR: Cassidy Grillon
REVISION: XX
DATE: XX/XX/11

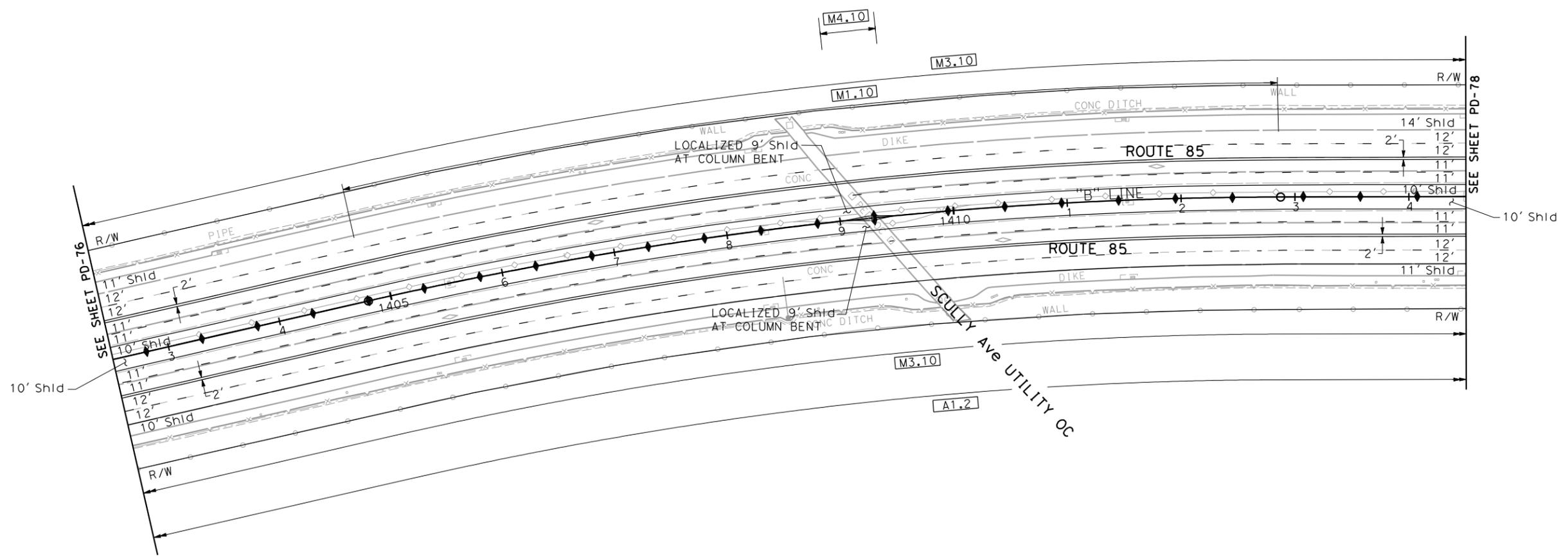
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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S A N J O S E



SEE SHEET PD-76

SEE SHEET PD-78

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-77

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons

REVISOR
XX
XX/XX/11

DESIGNER
Cassidy Grillon
CHECKER
Chadi Chazbek

DESIGNED BY
CHECKED BY

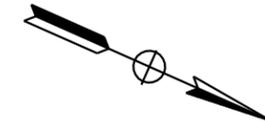
CONSULTANT FUNCTIONAL SUPERVISOR
Chadi Chazbek

DATE PLOTTED => 7/3/2013
TIME PLOTTED => 4:24:44 PM

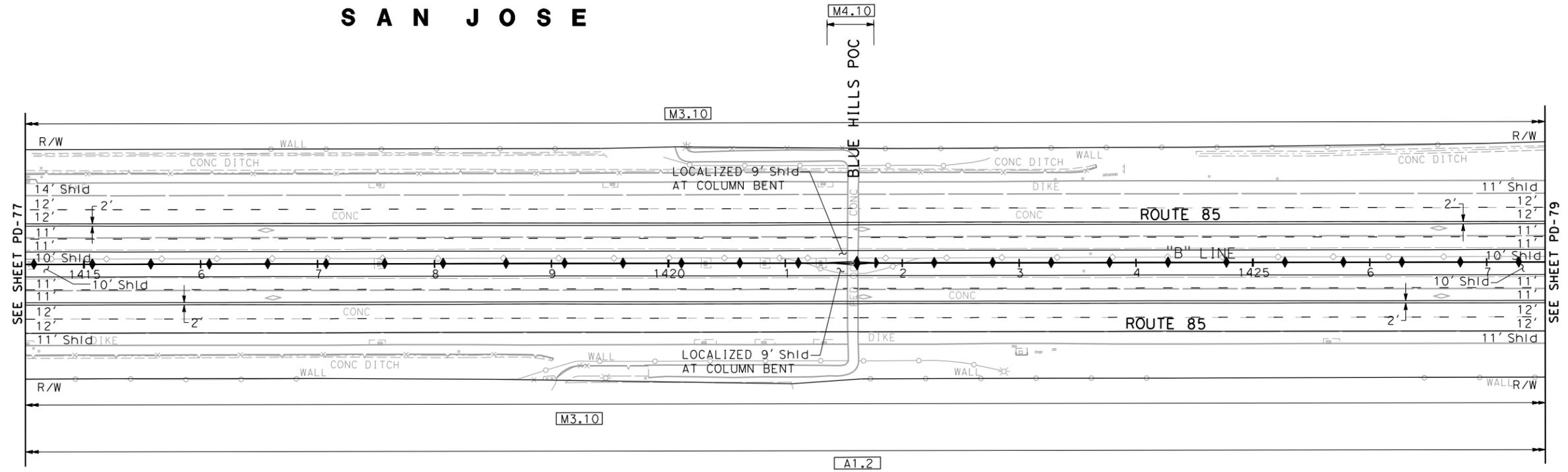
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE	REGISTERED PROFESSIONAL ENGINEER	
PLANS APPROVAL DATE			No. _____		
			Exp. _____		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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S A N J O S E



SEE SHEET PD-77

SEE SHEET PD-79

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-78

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

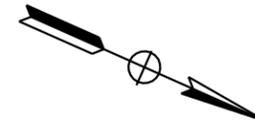
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED-DESIGNED BY: Cassidy Grillon
 REVISOR: Chadi Chazbek
 REVISED BY: XX
 DATE REVISED: XX/XX/11

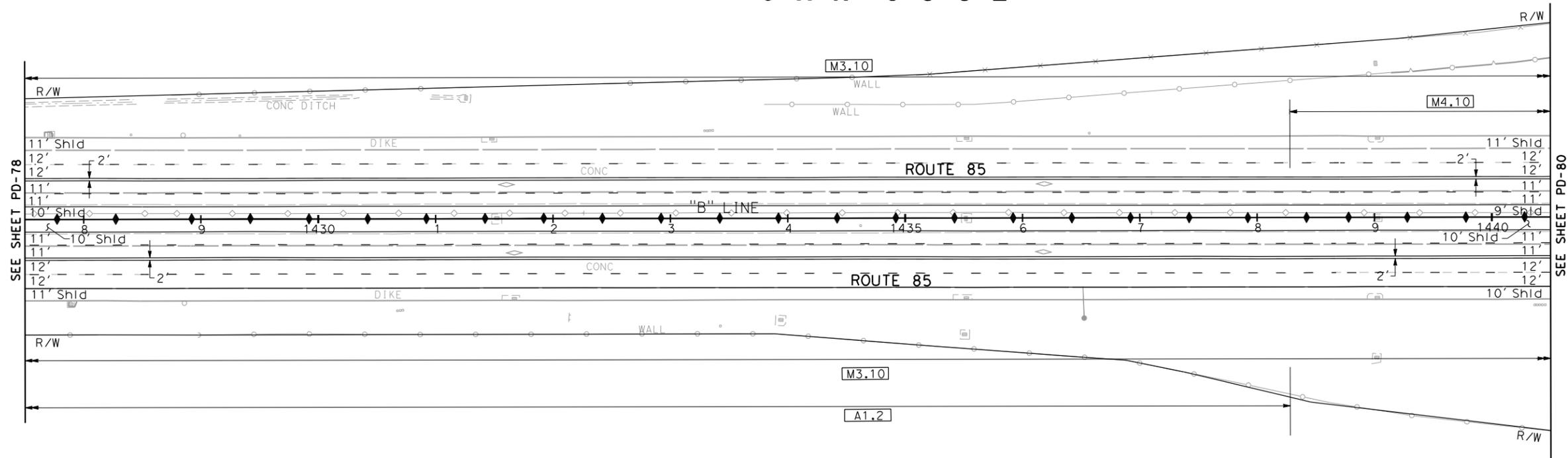
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



S A N J O S E



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-79

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

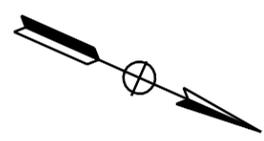
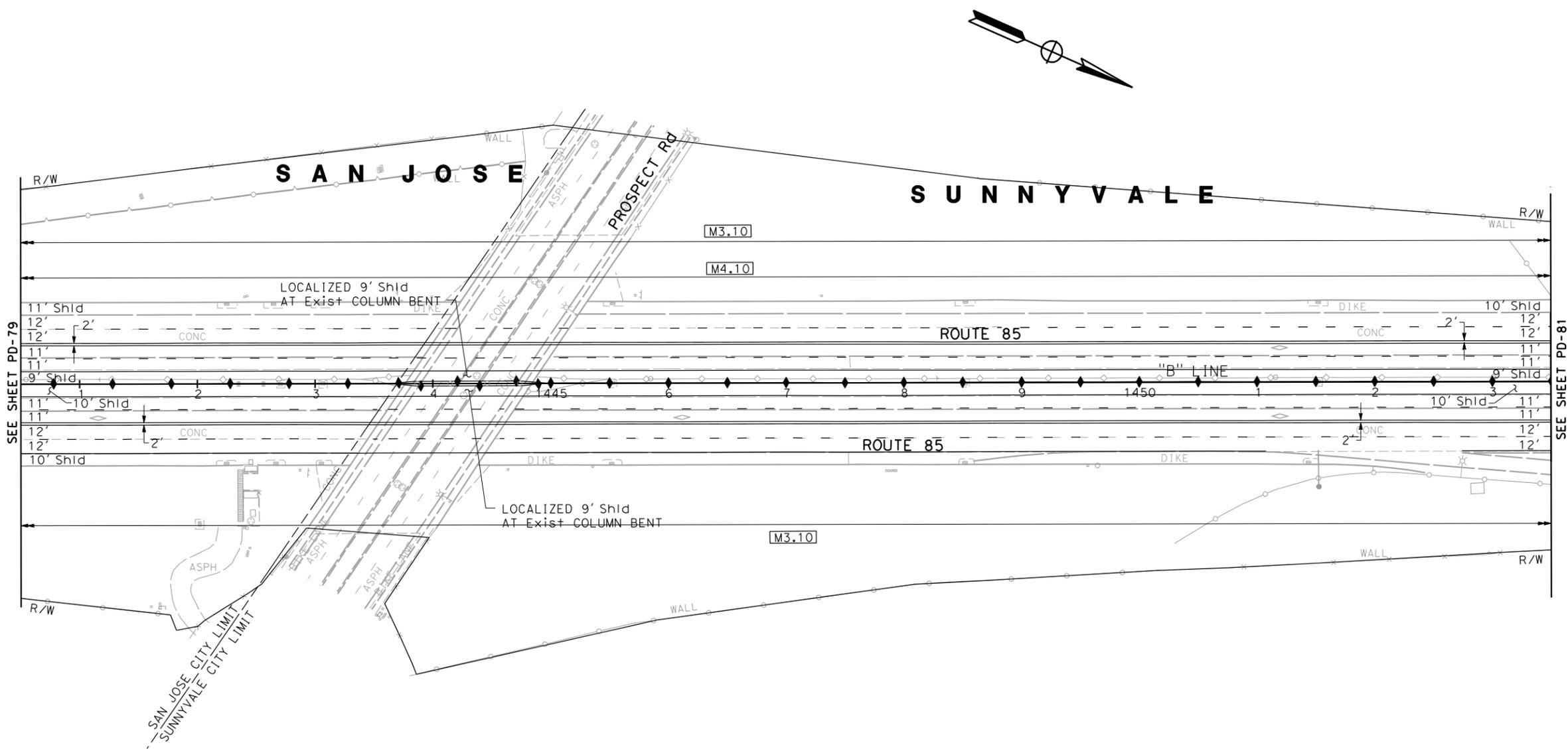
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISED BY: XX
 DATE REVISED: XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
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URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
		Cassidy Grillon		
		CHECKED BY	DATE REVISED	
		Chadi Chazbek		



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-80

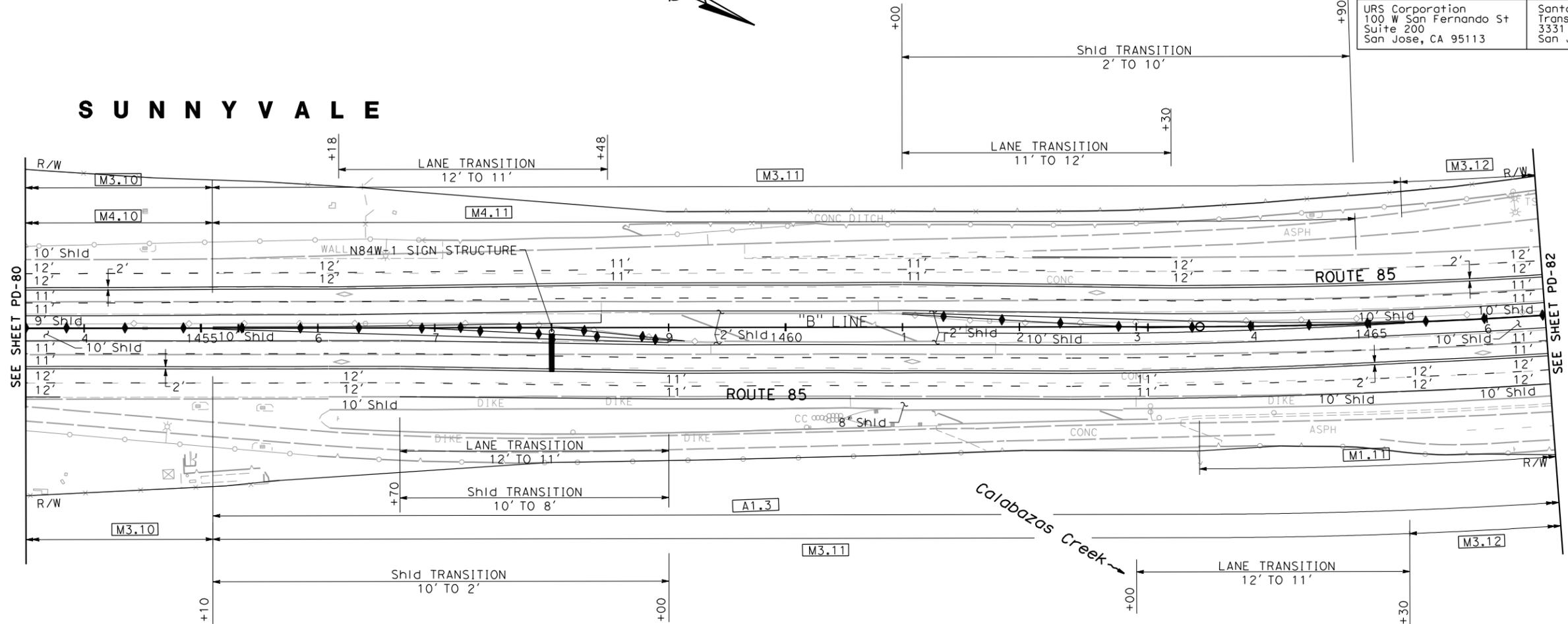
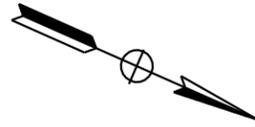
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013
 03-25-11 TIME PLOTTED => 4:24:48 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>			URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113		
			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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SEE SHEET PD-80

SEE SHEET PD-82

SUNNYVALE

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-81

FOR NOTES AND LEGEND SEE SHEET PD-1

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

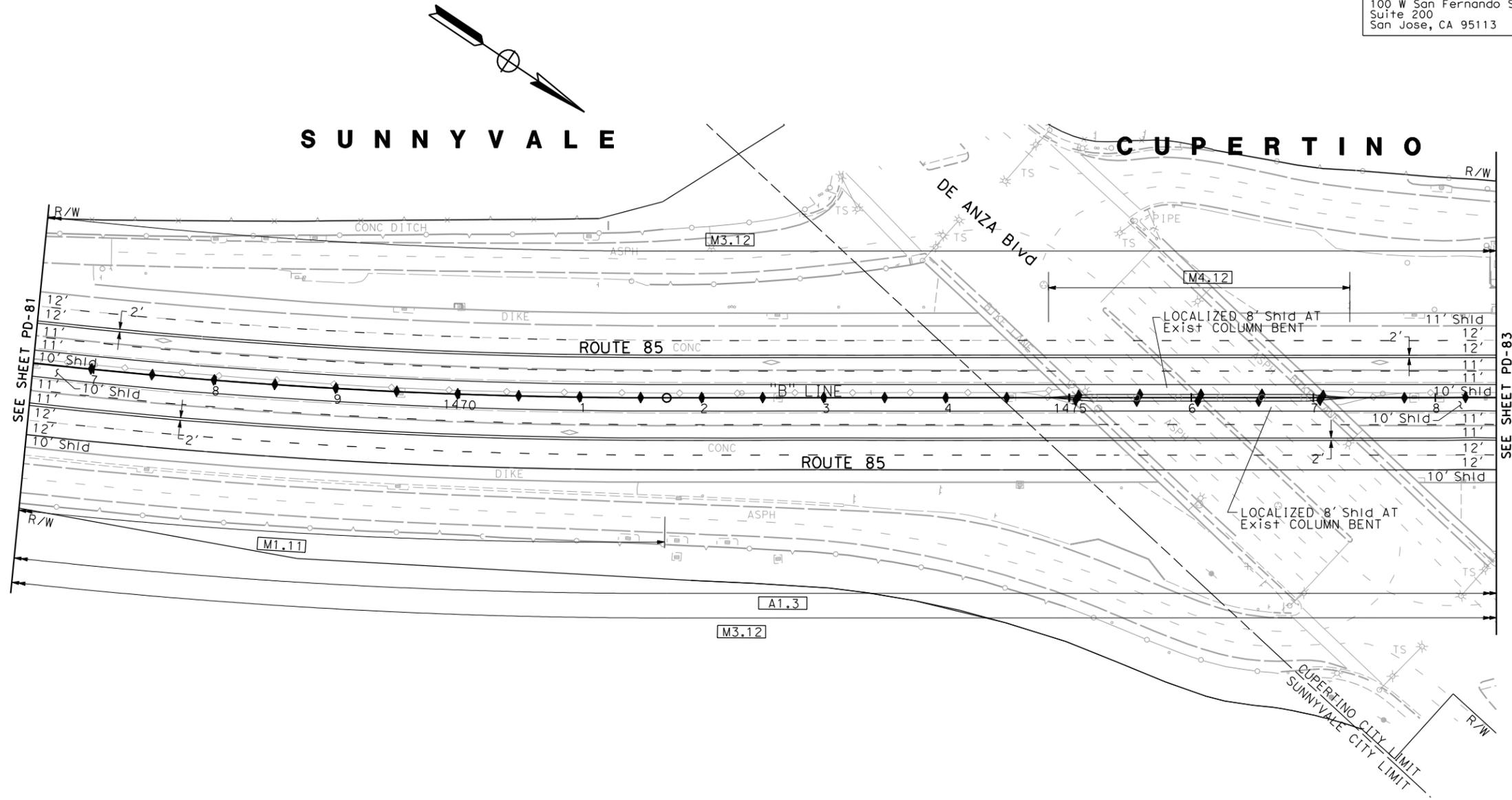
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 REVISOR: Chadi Chazbek
 REVISION: XX
 DATE: XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Cassidy Grillon
 Chadi Chazbek
 Chadi Chazbek
 Chadi Chazbek



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-82

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

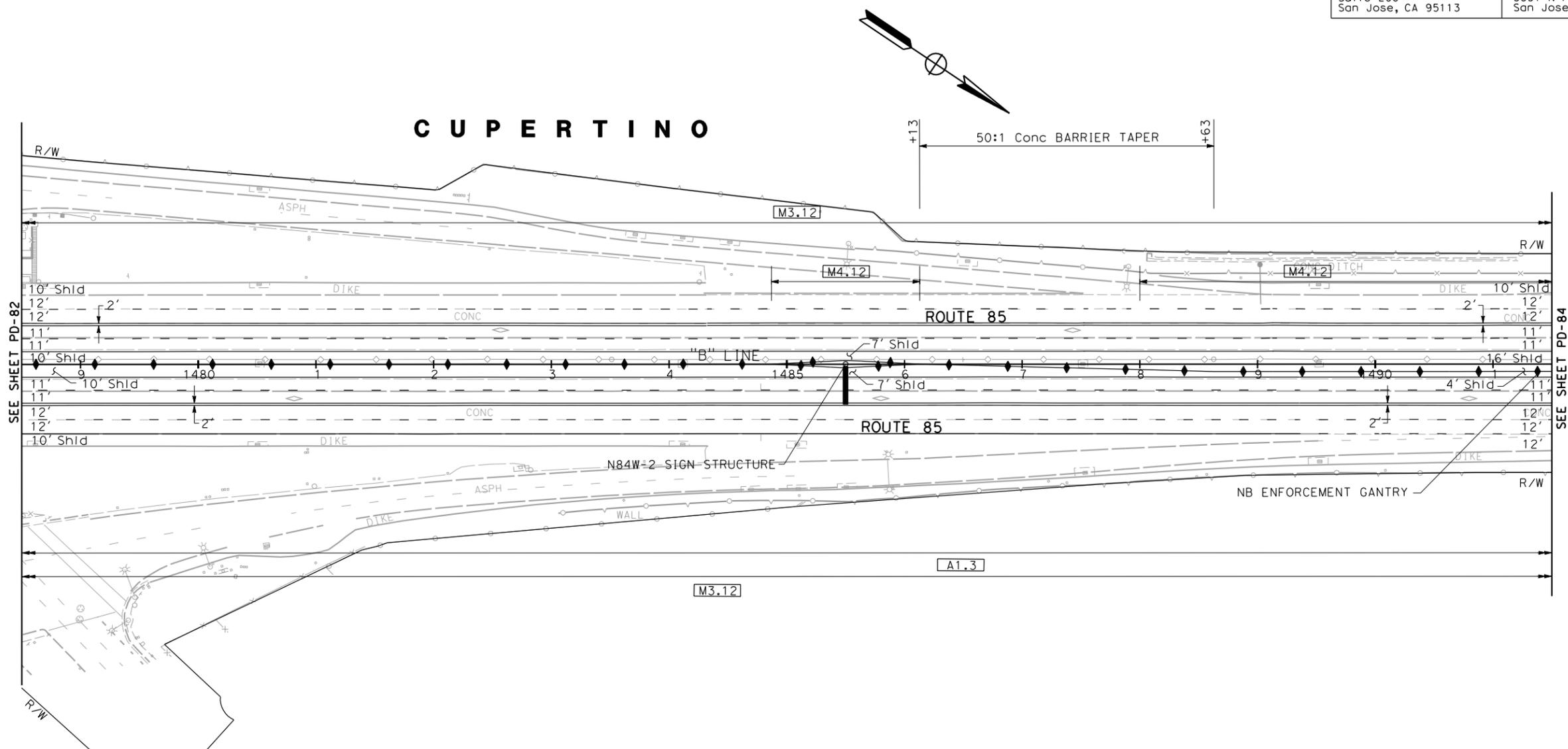
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX	XX/XX/11
	Chadi Chazbek	Chadi Chazbek	Chadi Chazbek		



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-83

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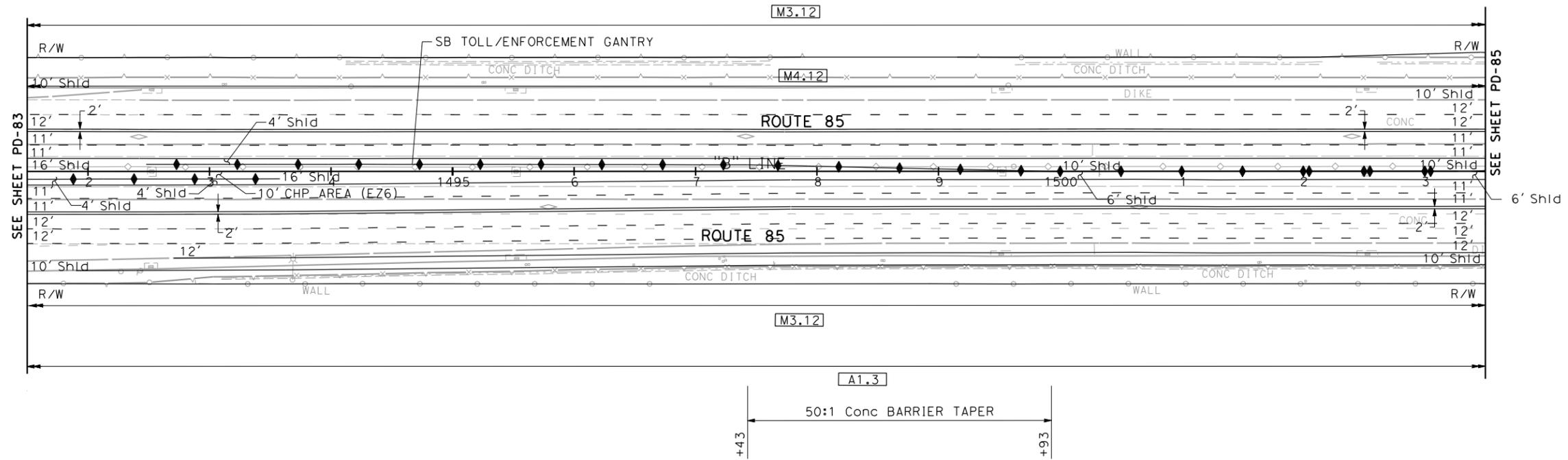
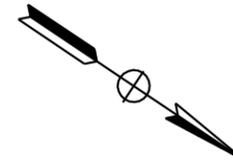
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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C U P E R T I N O



SEE SHEET PD-83

SEE SHEET PD-85

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-84

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REVISOR
 XX
 XX/XX/11

DESIGNED BY
 Cassidy Grillon

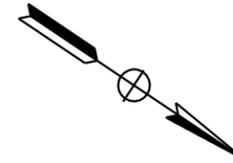
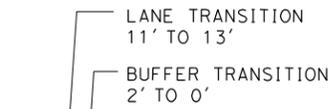
CHECKED BY
 Chadi Chazbek

CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek

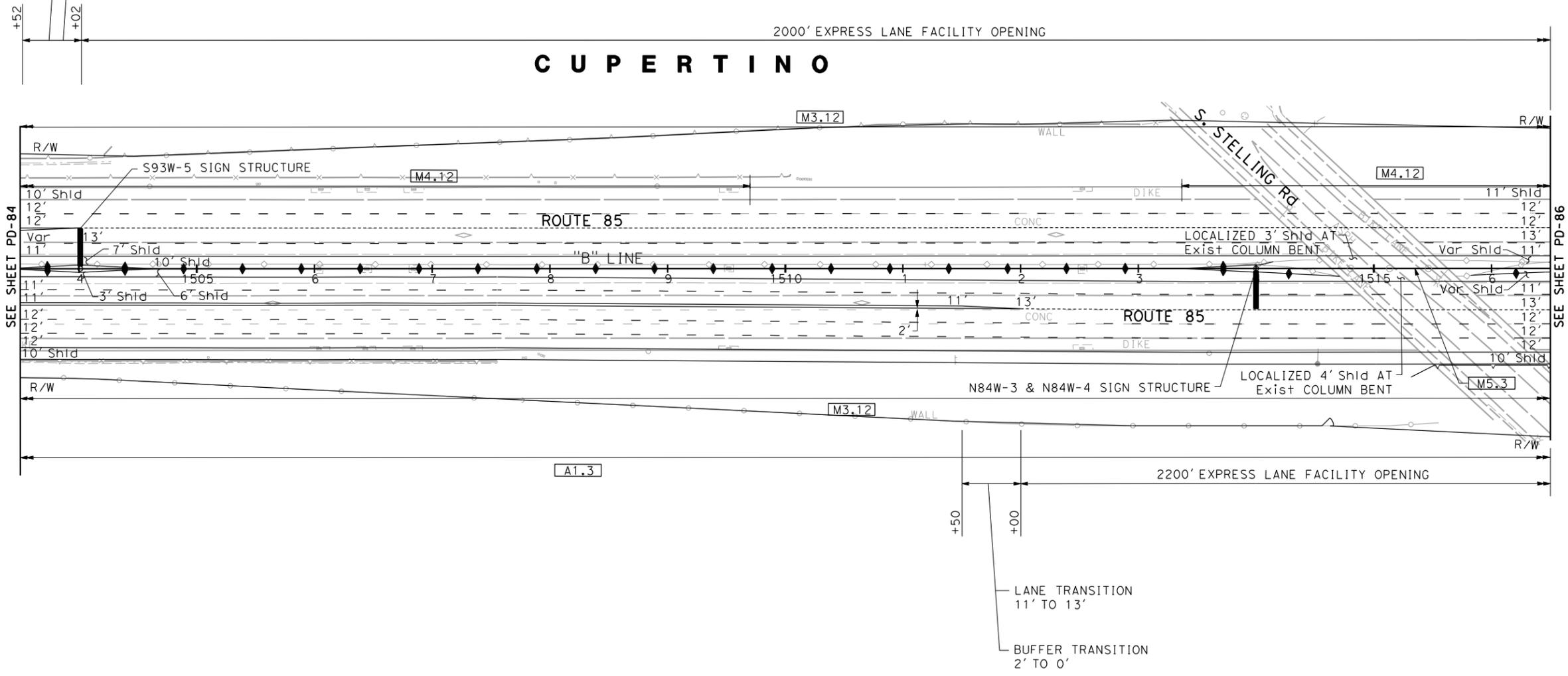
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4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 CHECKED BY
 DESIGNED BY
 REVISIONS
 REVISION NO. DATE BY
 XX XX/XX/11
 CHADI CHAZBEK
 CHADI CHAZBEK
 CHADI CHAZBEK
 CHADI CHAZBEK



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'
PD-85

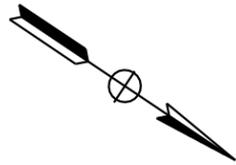
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LAST REVISION
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 TIME PLOTTED => 4:24:54 PM

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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>			<small>STATE OF CALIFORNIA</small>		
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NOTE:

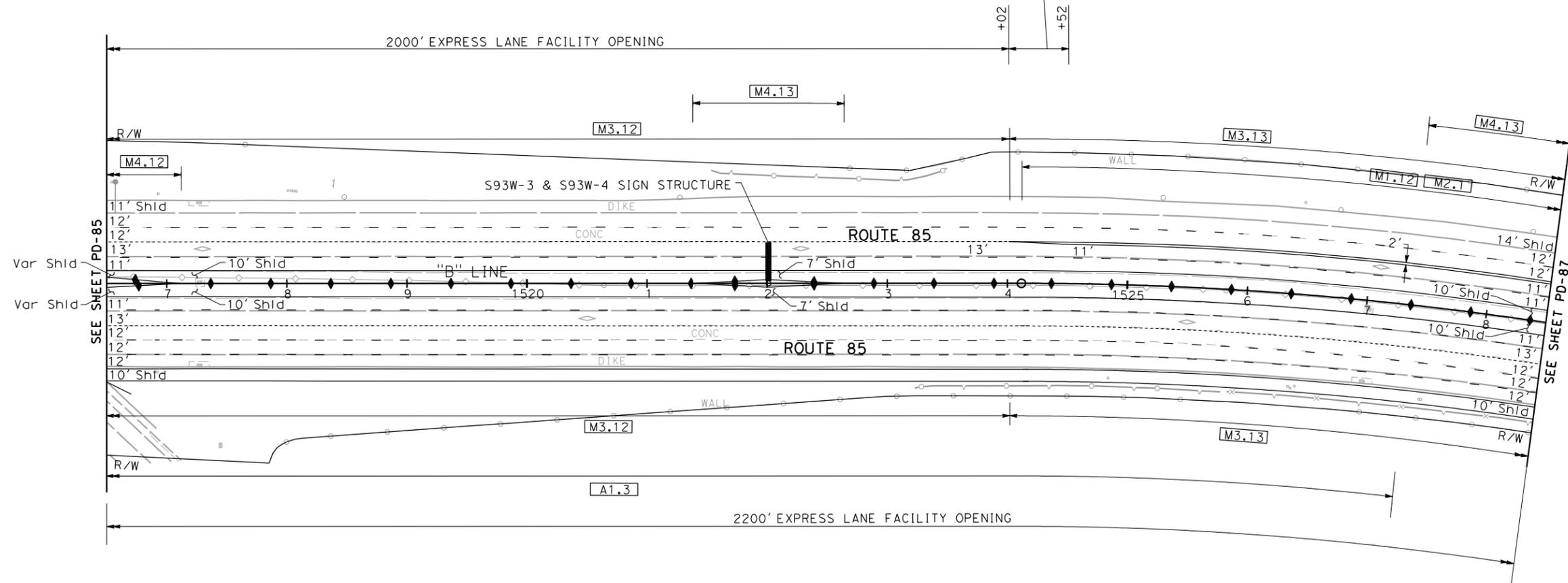
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



BUFFER TRANSITION
0' TO 2'

LANE TRANSITION
13' TO 11'

C U P E R T I N O



SEE SHEET PD-85

SEE SHEET PD-87

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-86

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REVISOR
XX
XX/XX/11

REVISOR
DATE
REVISED

DESIGNED BY
Cassidy Grillon

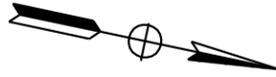
CHECKED BY
Chadi Chazbek

CONSULTANT FUNCTIONAL SUPERVISOR
Chadi Chazbek

DATE PLOTTED => 7/3/2013
TIME PLOTTED => 4:24:55 PM

NOTE:

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

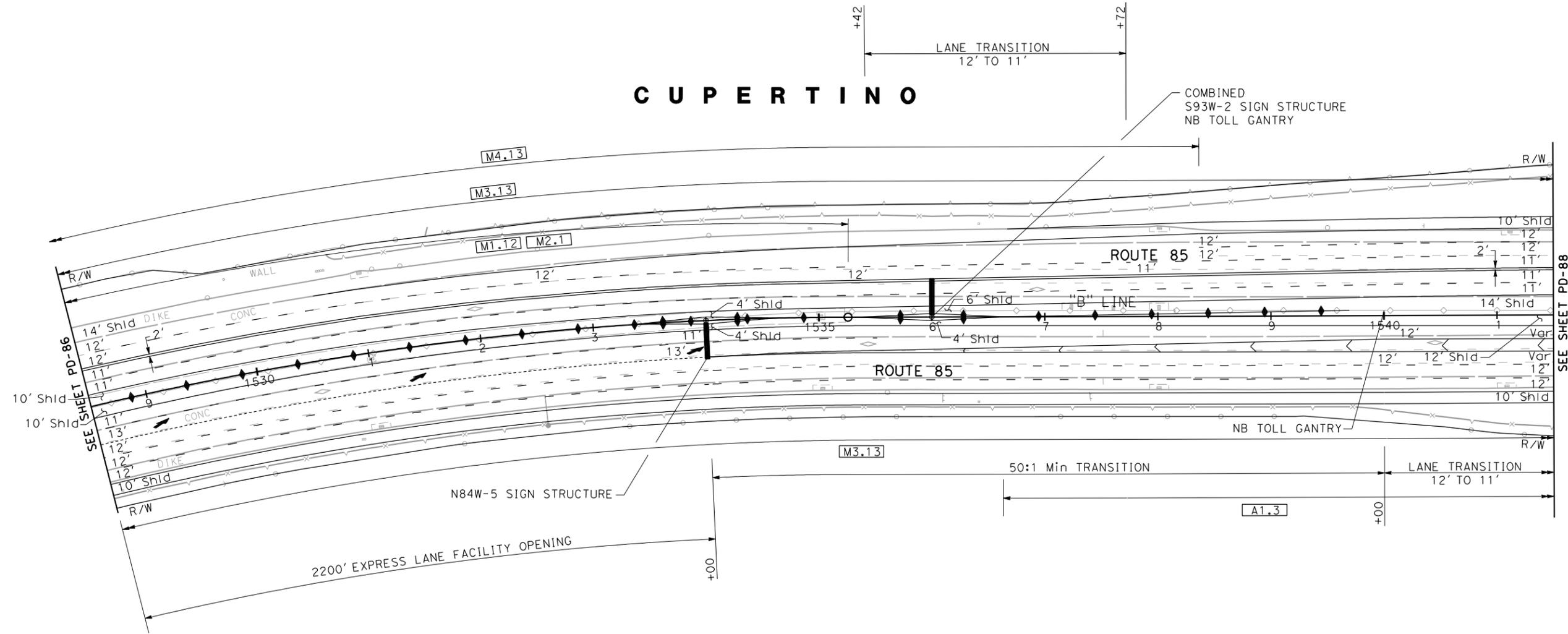


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

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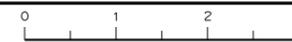
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
Caltrans	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX/XX/11
	Chadi Chazbek	Chadi Chazbek		

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'

PD-87

APPROVED FOR PAVEMENT DELINEATION WORK ONLY



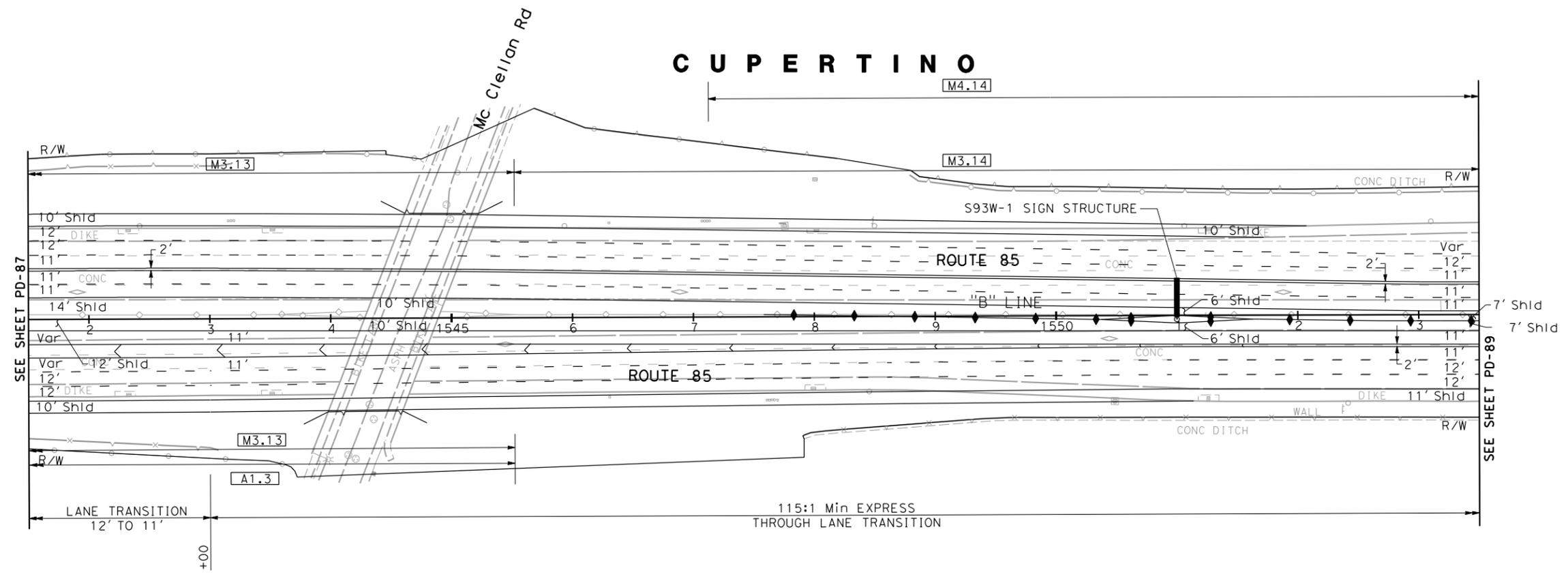
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
St. Gobans	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
			REVISOR	DATE
			XX	XX/XX/11



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'

PD-88

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DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:58 PM

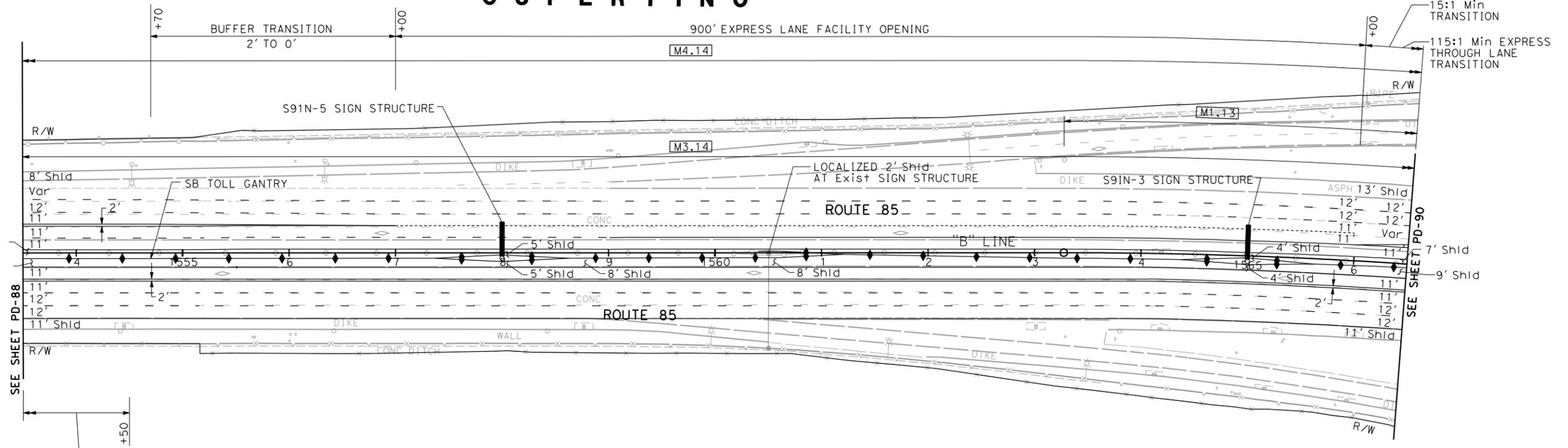
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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C U P E R T I N O



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR BY	DATE
	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
	Chadi Chazbek	Chadi Chazbek	DATE	REVISED

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-89

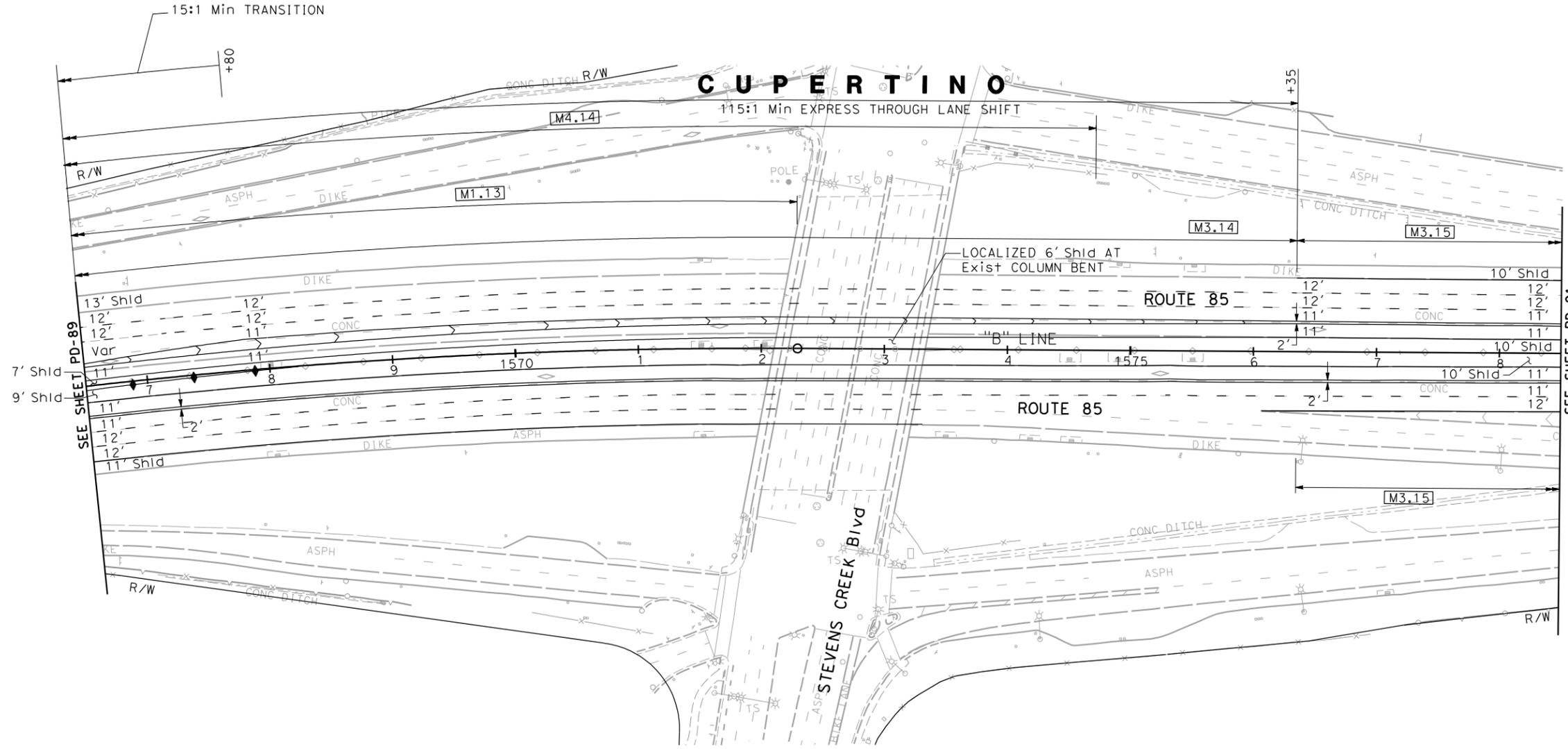
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DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:24:59 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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SEE SHEET PD-89

SEE SHEET PD-91

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-90

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION


CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED/DESIGNED BY: Chadi Chazbek
 REVISOR: Chadi Chazbek
 REVISIONS: XX XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

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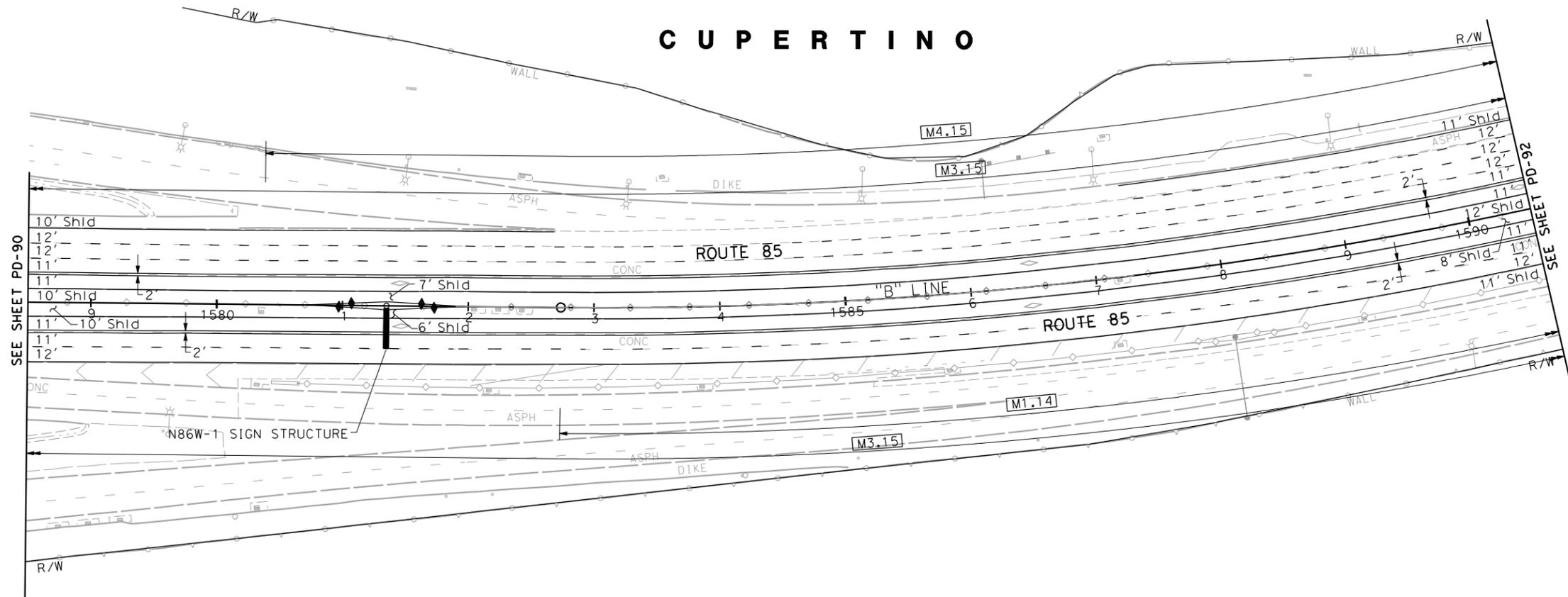
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
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NOTE:

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C U P E R T I N O



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-91

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Gibbons

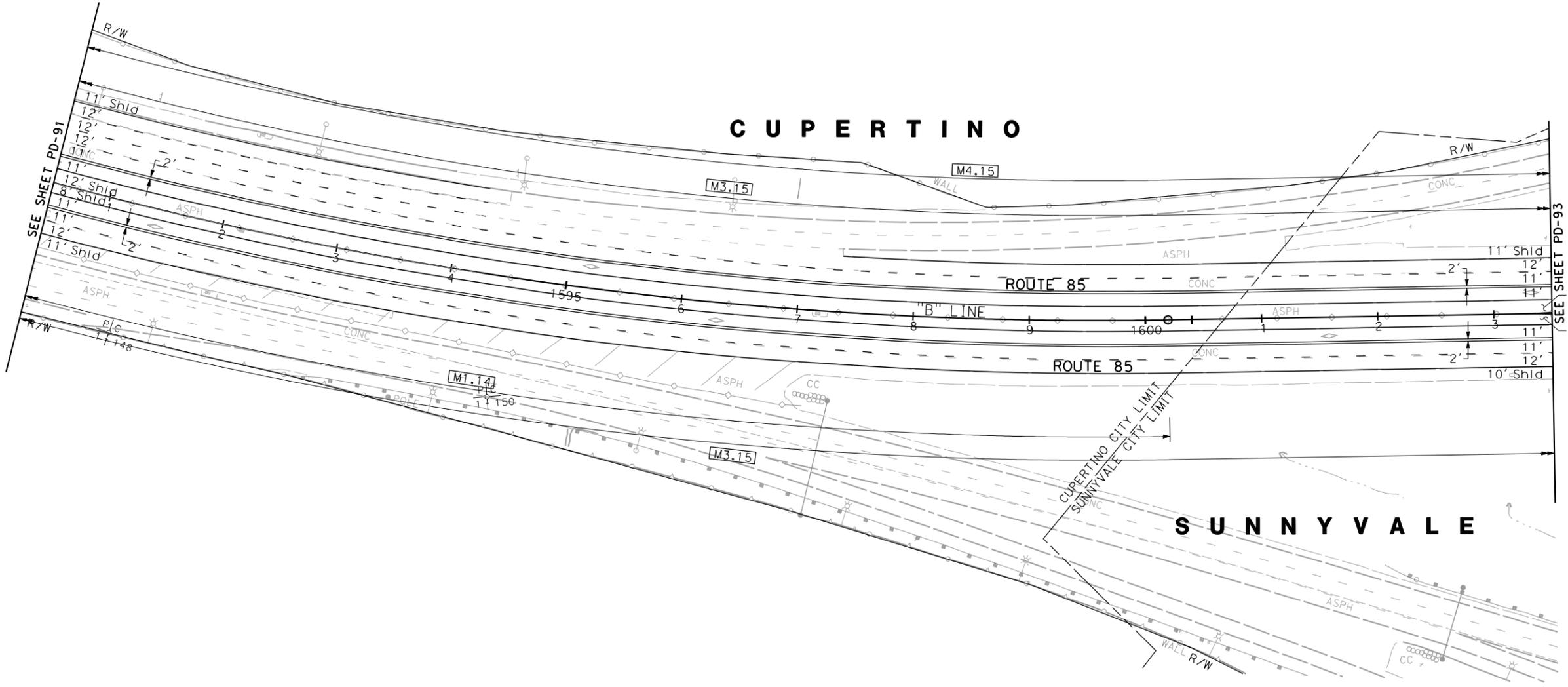
CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
CHECKED BY: Chadi Chazbek
DESIGNED BY: Cassidy Grillon
REVISOR: Chadi Chazbek
DATE REVISED: XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR BY	DATE
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX/XX/11
			Chadi Chazbek	



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'

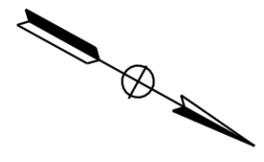
PD-92

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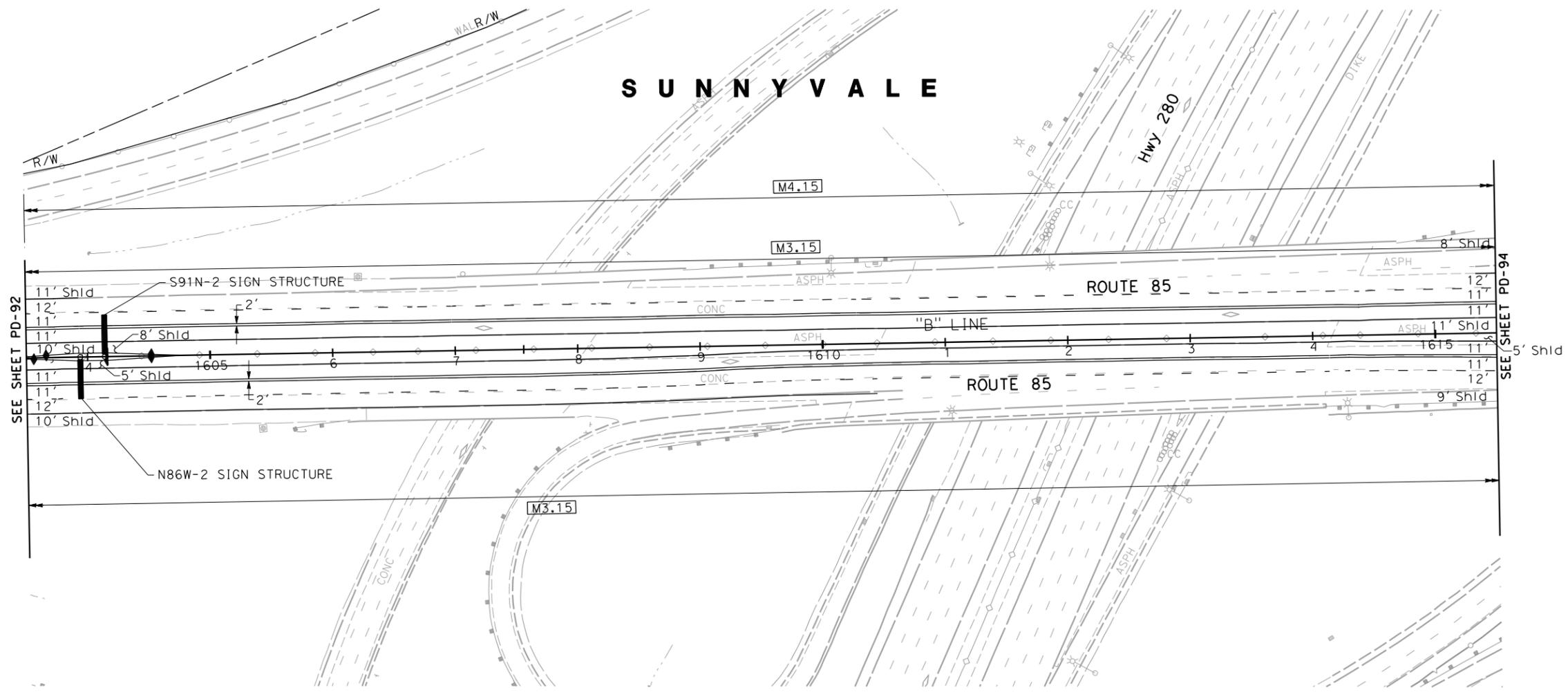
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER			DATE	REGISTERED PROFESSIONAL ENGINEER	
PLANS APPROVAL DATE				No. _____	
				Exp. _____	
				CIVIL	
				STATE OF CALIFORNIA	
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED-DESIGNED BY: Cassidy Grillon
 REVISOR: Chadi Chazbek
 REVISION: XX
 DATE: XX/XX/11



SUNNYVALE

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-93

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BORDER LAST REVISED 7/2/2010

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DGN FILE => ...\\044a7900ea093.dgn



UNIT xxxx

PROJECT NUMBER & PHASE

0400001163

DATE PLOTTED => 7/3/2013
TIME PLOTTED => 4:25:04 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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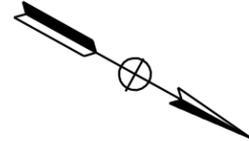
REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

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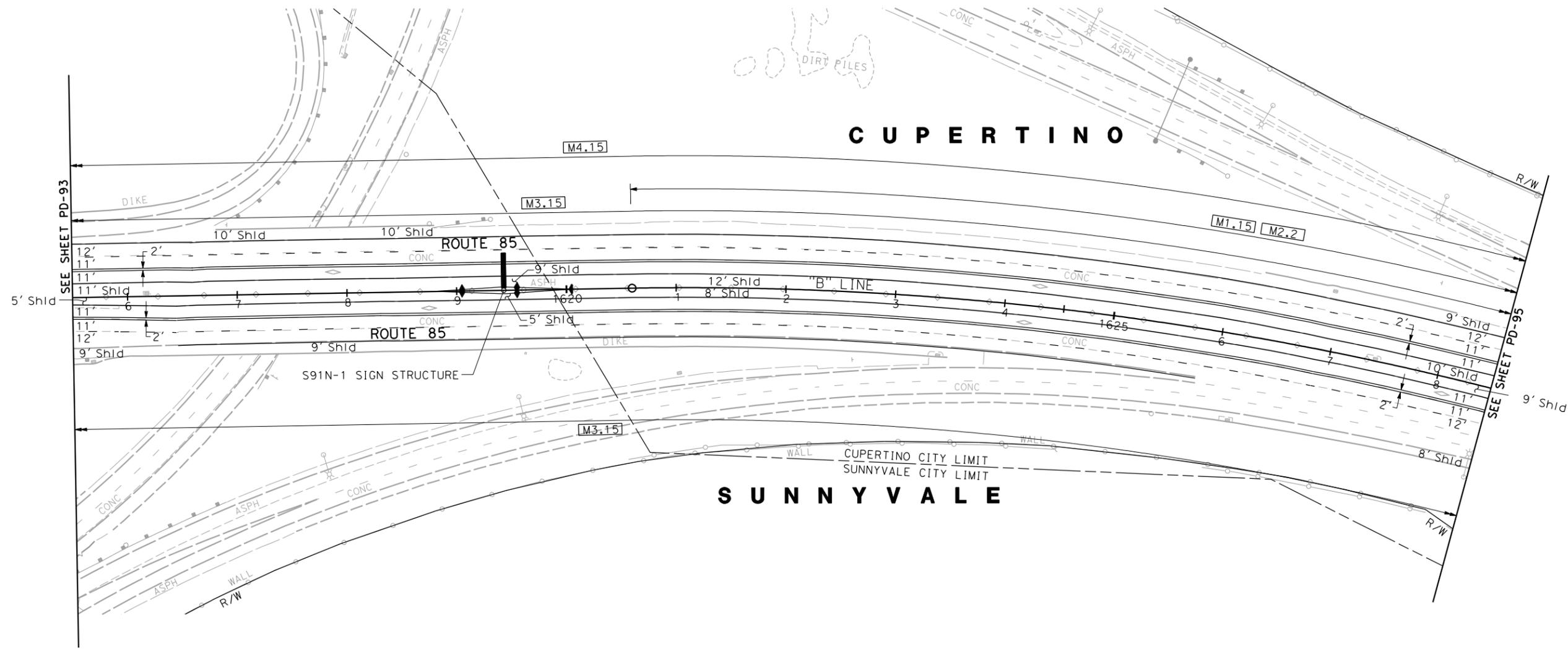
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobran
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 REVISOR: Chadi Chazbek
 REVISION: XX
 DATE: XX/XX/11



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-94

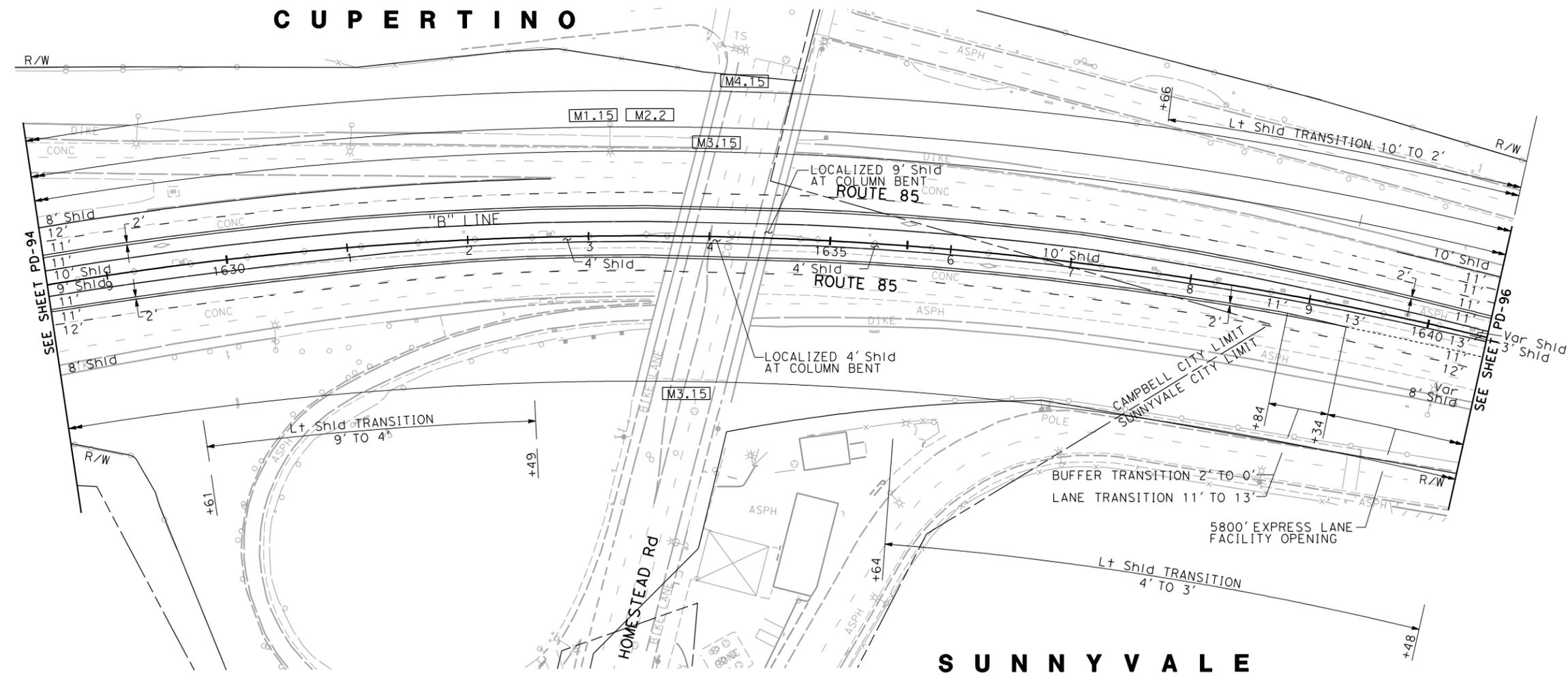
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE	BY
	XX	XX/XX/11	XX
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon
CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY	CALCULATED-DESIGNED BY
Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	Cassidy Grillon



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-95

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DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:07 PM

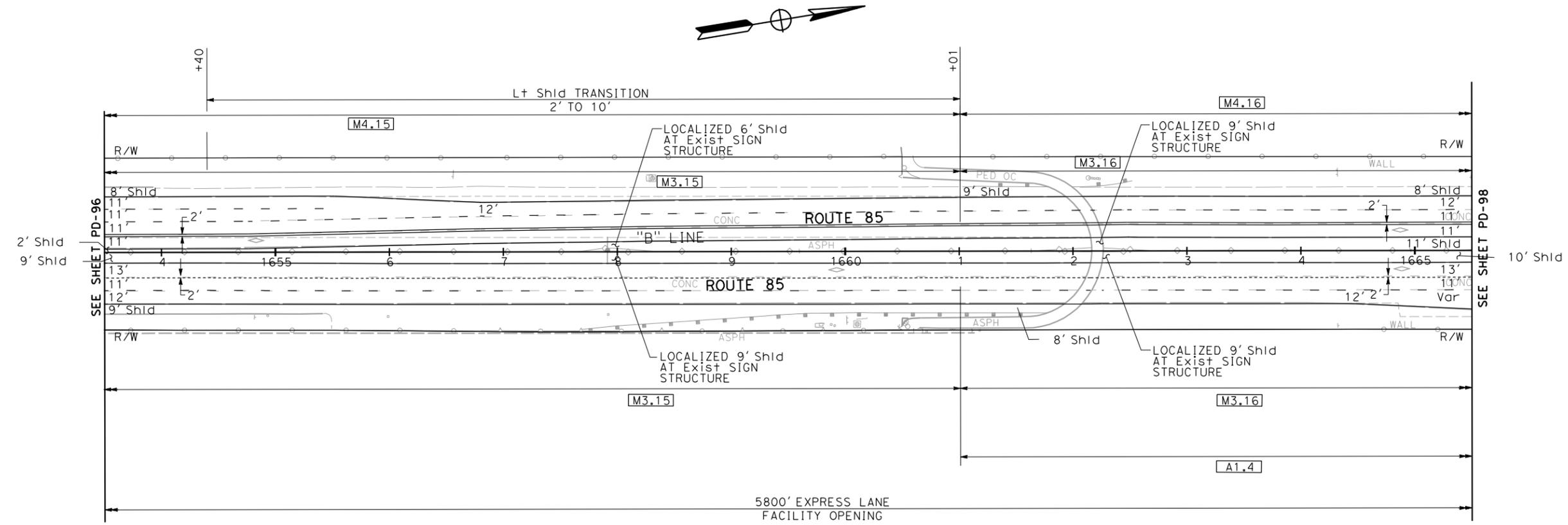
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER			DATE	REGISTERED PROFESSIONAL ENGINEER	
PLANS APPROVAL DATE				No. _____	
				Exp. _____	
				CIVIL	
				STATE OF CALIFORNIA	
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED-DESIGNED BY: Cassidy Grillon
 REVISOR: XX
 REVISION DATE: XX/XX/11

SUNNYVALE



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-97

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DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:09 PM

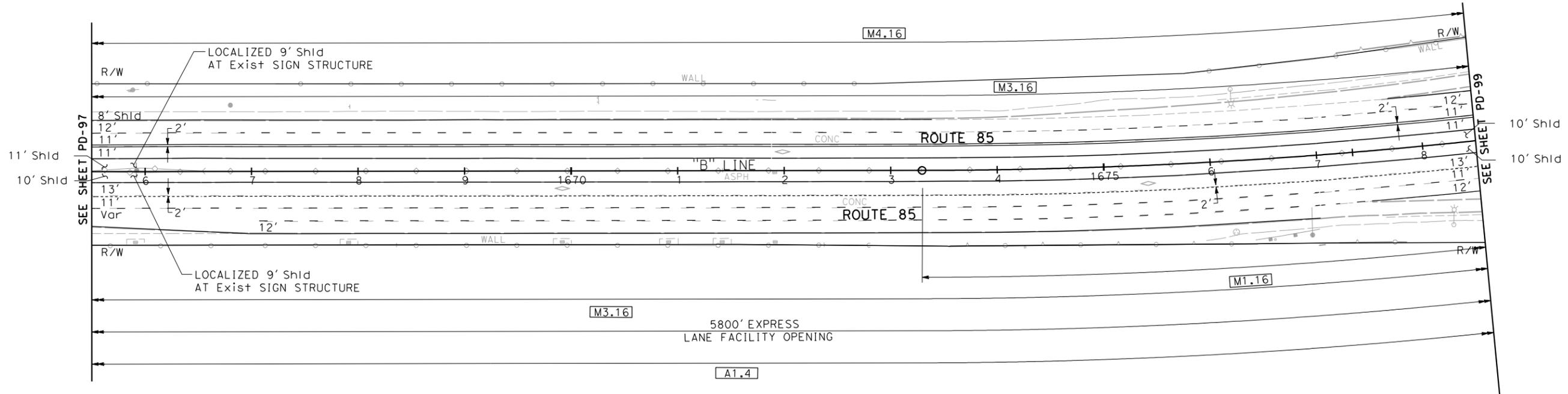
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR BY	XX
	Chadi Chazbek	Chadi Chazbek	DATE REVISED	XX/XX/11

SUNNYVALE



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-98

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:10 PM

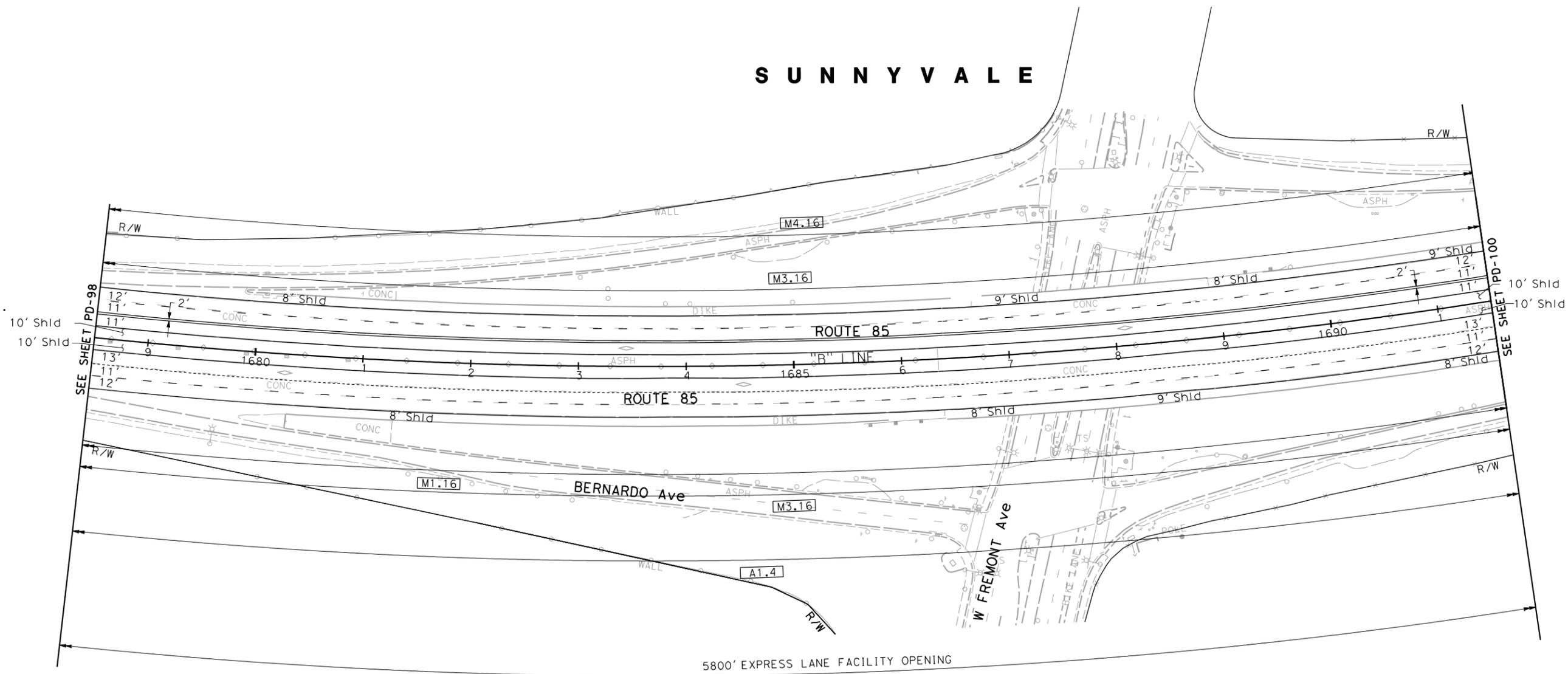
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SUNNYVALE



SEE SHEET PD-98

SEE SHEET PD-100

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-99

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REVISOR
 XX
 XX/XX/11
 REVISOR
 DATE
 REVISOR
 DATE

DESIGNED BY
 Cassidy Grillon
 CHECKED BY
 Chadi Chazbek

DESIGNED BY
 Cassidy Grillon
 CHECKED BY
 Chadi Chazbek

CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek

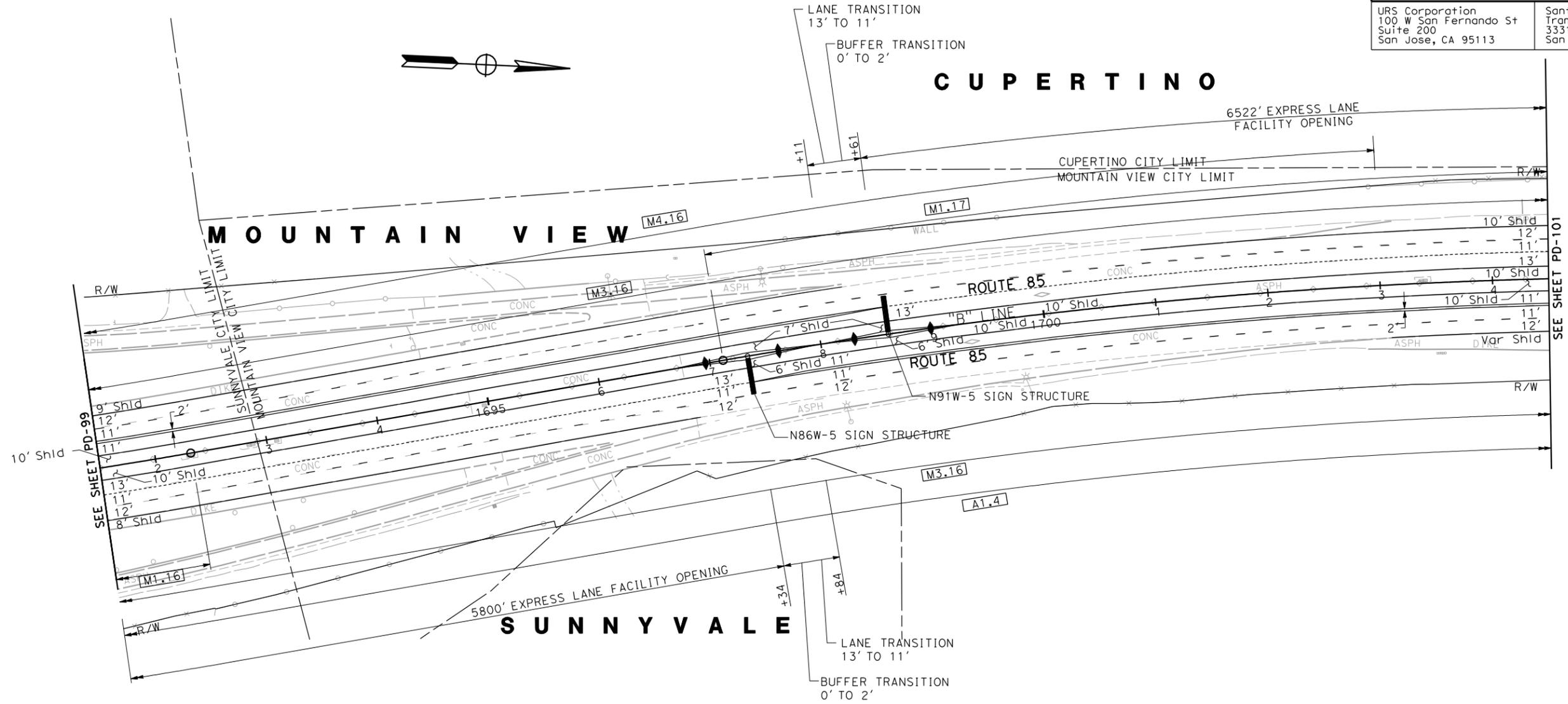
CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>			<small>URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113</small>		
<small>Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134</small>					

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE
	XX	XX/XX/11
	REVISOR	DATE
CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY
Chadi Chazbek	Chadi Chazbek	Cassidy Grillon



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'
PD-100

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:13 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

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---	---

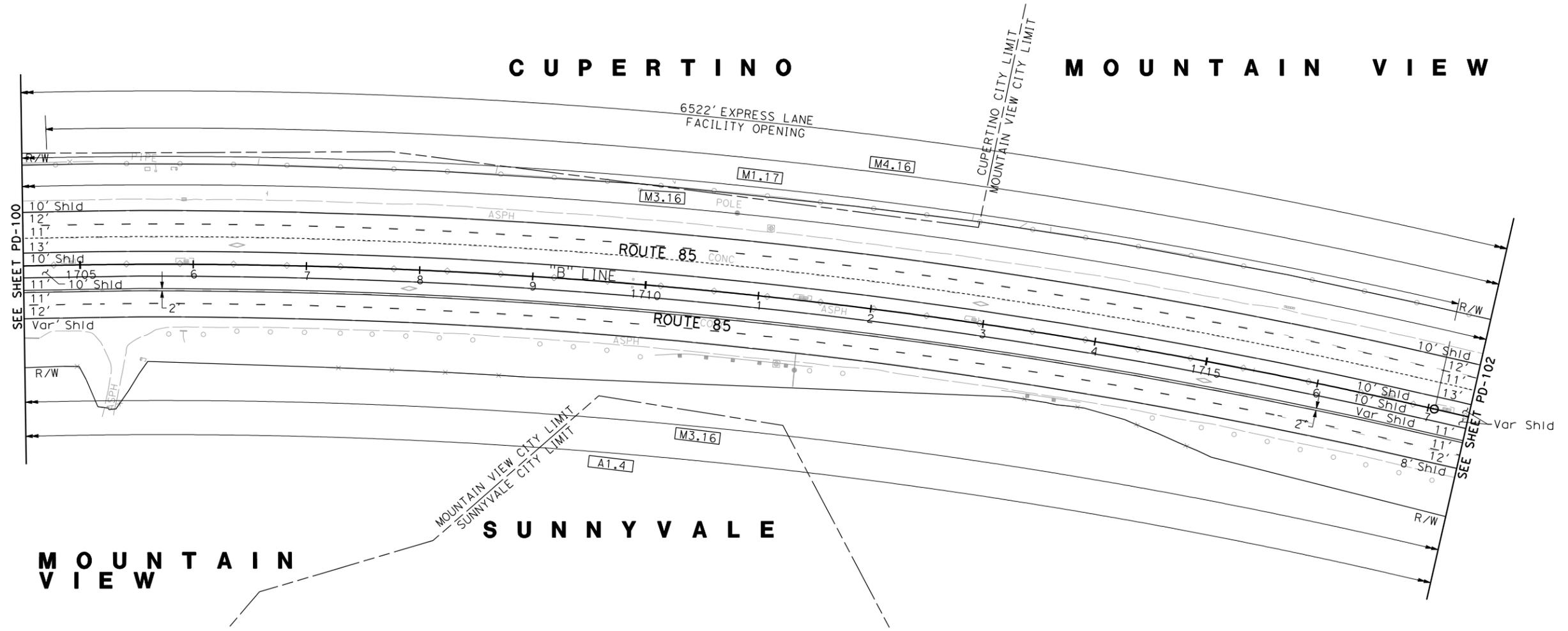
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C U P E R T I N O

M O U N T A I N V I E W



SEE SHEET PD-100

SEE SHEET PD-102

M O U N T A I N V I E W

S U N N Y V A L E

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-101

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REVISOR: XX XX/XX/11

DESIGNED BY: Cassidy Grillon

CHECKED BY: Chadi Chazbek

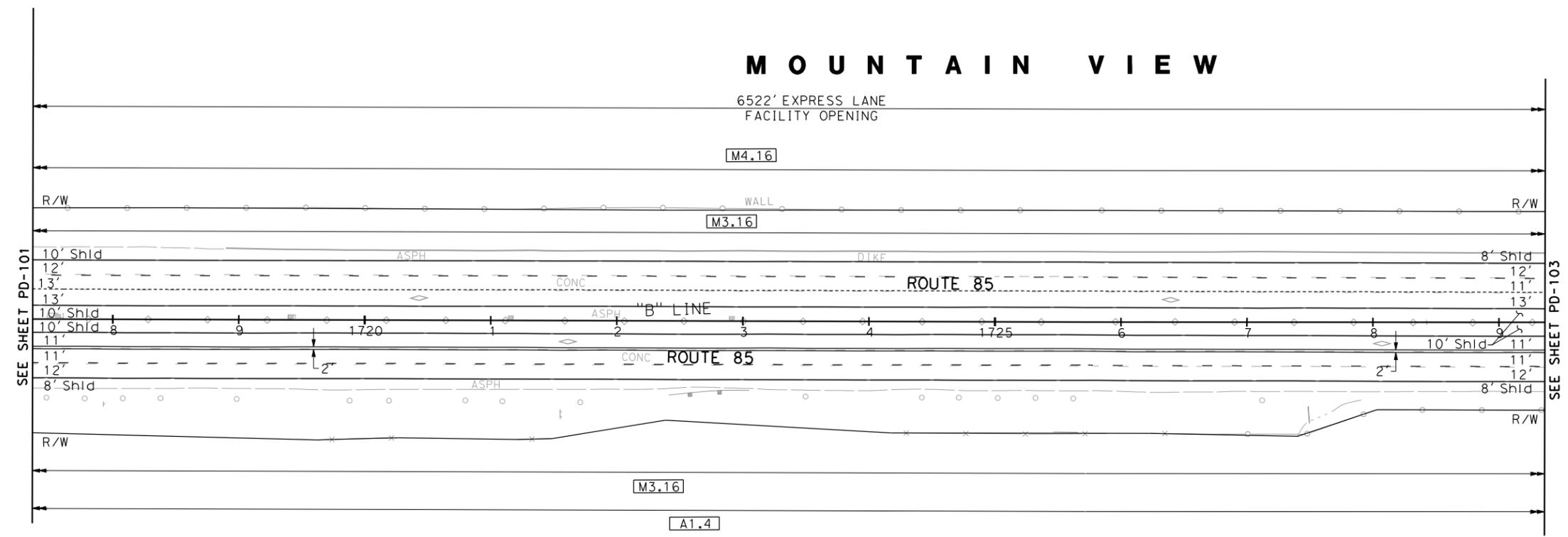
CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobans
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED-DRAWN BY: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISED BY: XX
 DATE REVISED: XX/XX/11



FOR NOTES AND LEGEND
 SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-102

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:15 PM
 03-25-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

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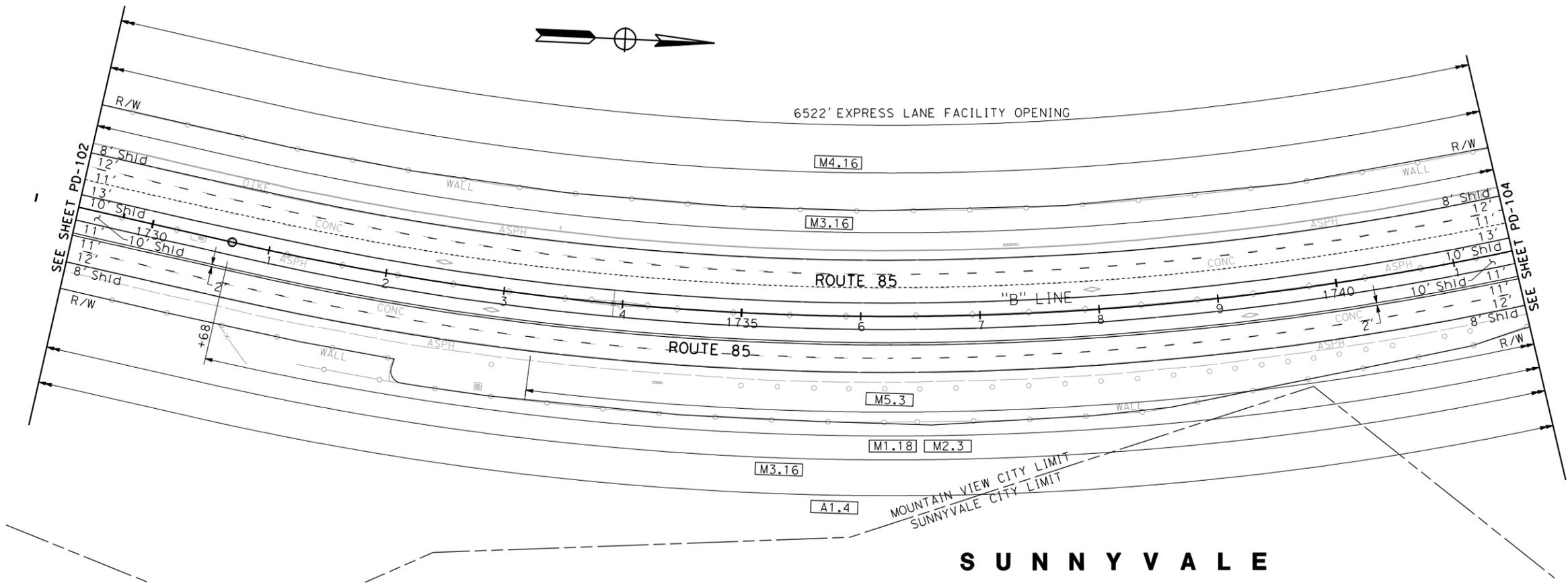
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
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NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	REVISOR BY	DATE
St. Gibbons	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX/XX/11
			Chadi Chazbek	

MOUNTAIN VIEW



SUNNYVALE

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'
PD-103

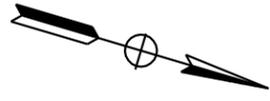
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION 03-25-11 DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:16 PM

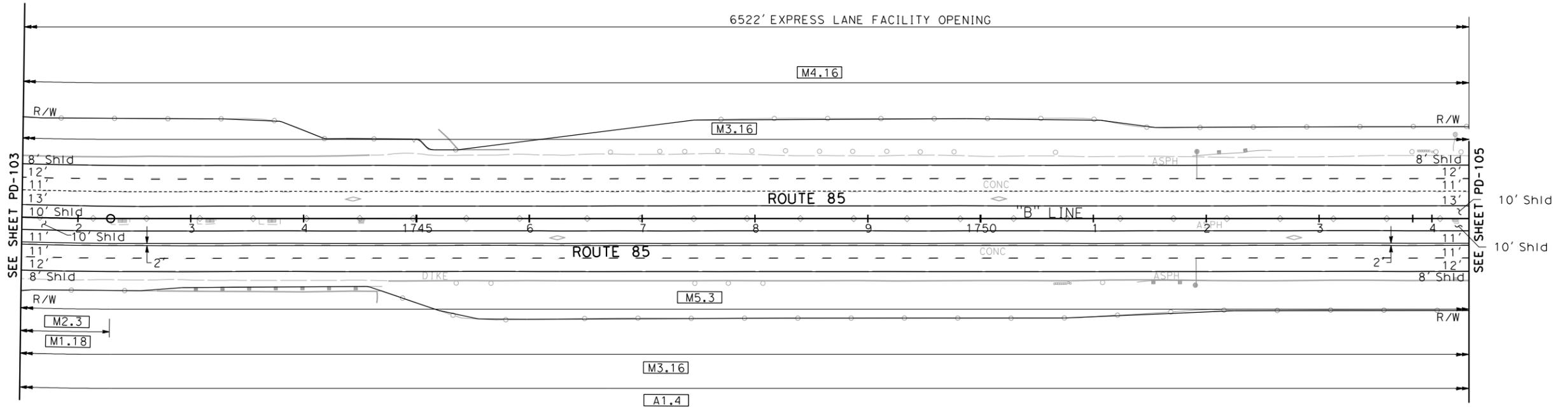
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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M O U N T A I N V I E W



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-104

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobans
CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
CALCULATED-DESIGNED BY: Cassidy Grillon
CHECKED BY: Chadi Chazbek
REVISED BY: XX
DATE REVISED: XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		



NOTE:

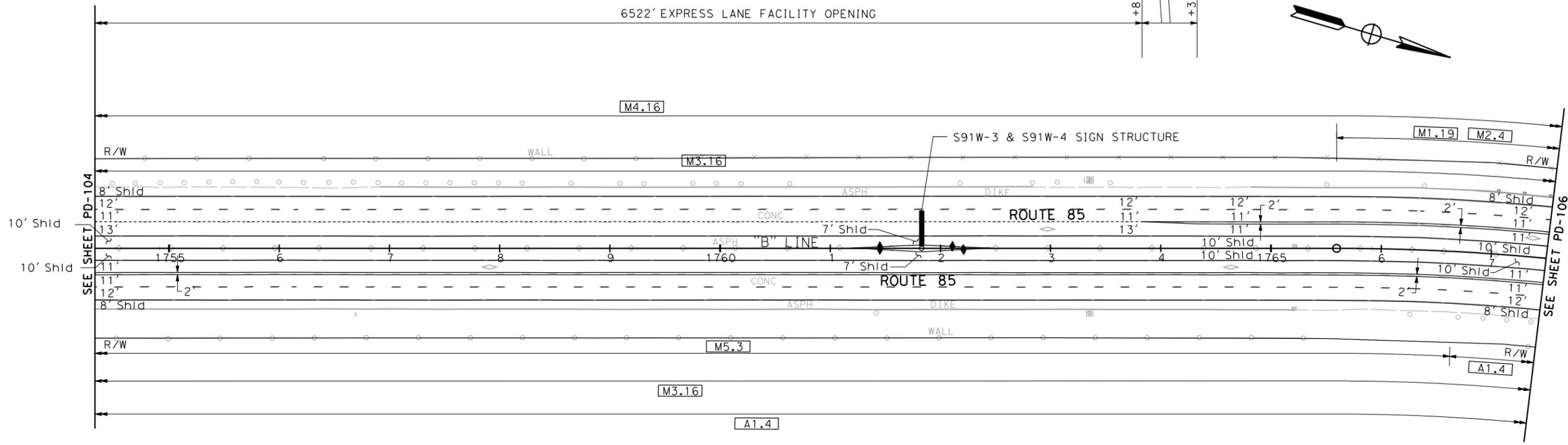
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

MOUNTAIN VIEW

BUFFER TRANSITION
0' TO 2'

LANE TRANSITION
13' TO 11'

6522' EXPRESS LANE FACILITY OPENING



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-105

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR BY	DATE
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX
			Chadi Chazbek	XX/XX/11

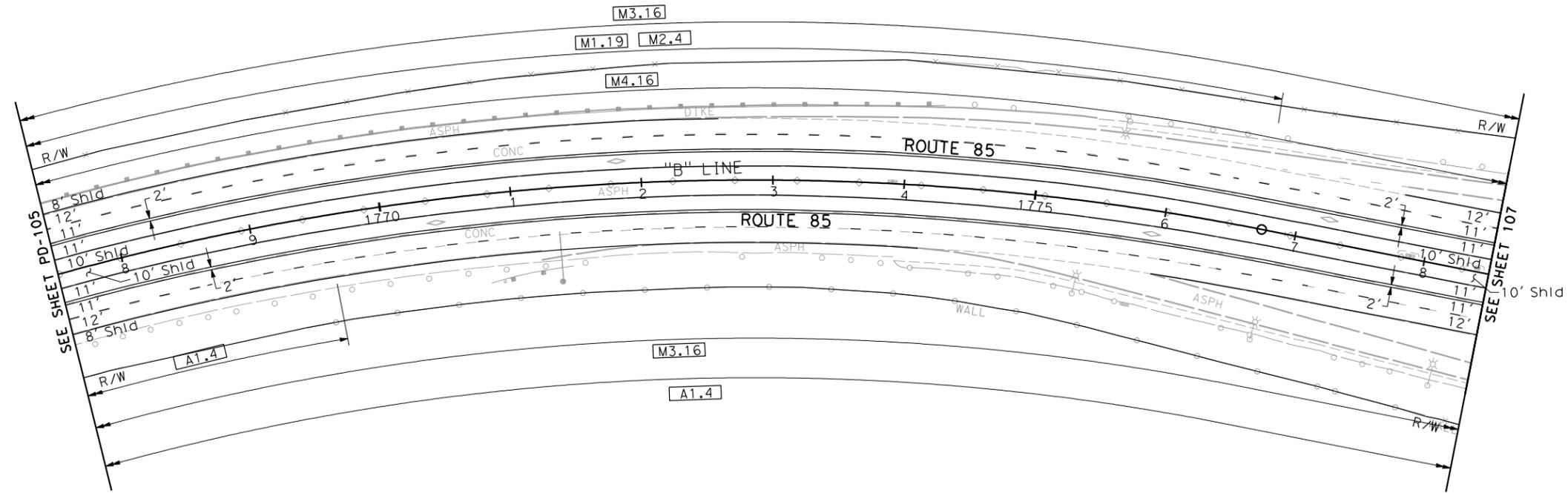
LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:19 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
			CIVIL		
			STATE OF CALIFORNIA		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

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MOUNTAIN VIEW



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-106

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED-DESIGNED BY: Cassidy Grillon
 REVISOR: XX
 DATE: XX/XX/11

USERNAME => minyoung_kim
 DGN FILE => ...\\044a7900ea106.dgn



UNIT xxxx

PROJECT NUMBER & PHASE

0400001163

BORDER LAST REVISED 7/2/2010

DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:25:20 PM

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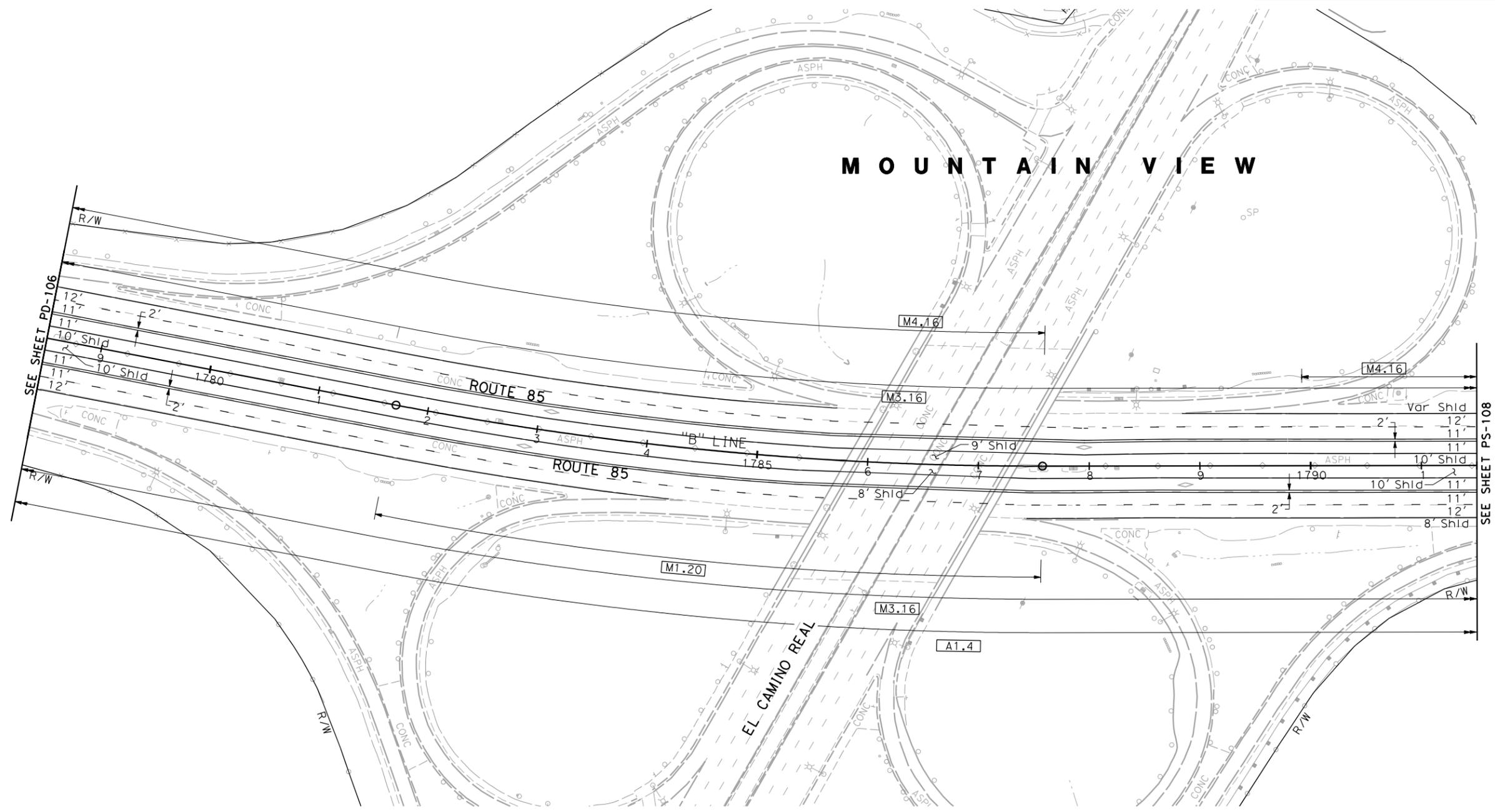
REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

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SEE SHEET PD-106

SEE SHEET PS-108

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-107

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REVISOR
 XX
 XX/XX/11

DESIGNER
 Cassidy Grillon
 Chadi Chazbek

CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek

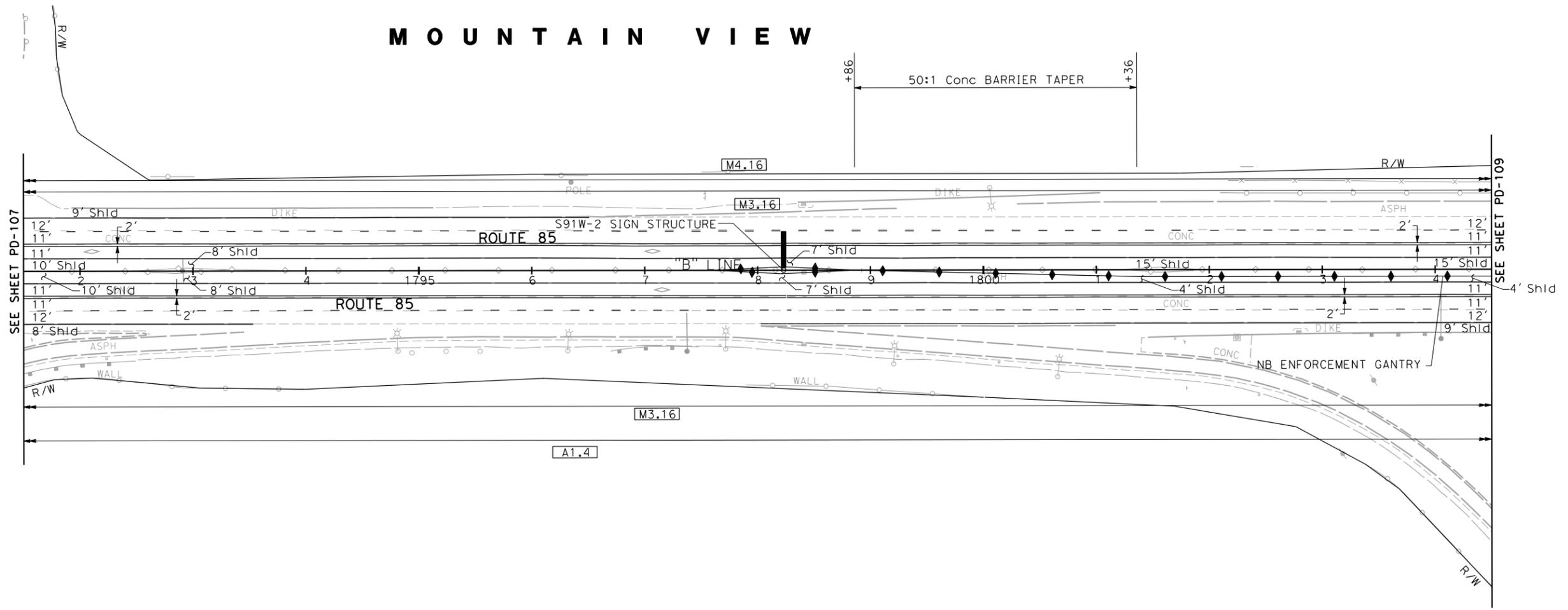
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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MOUNTAIN VIEW



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-108

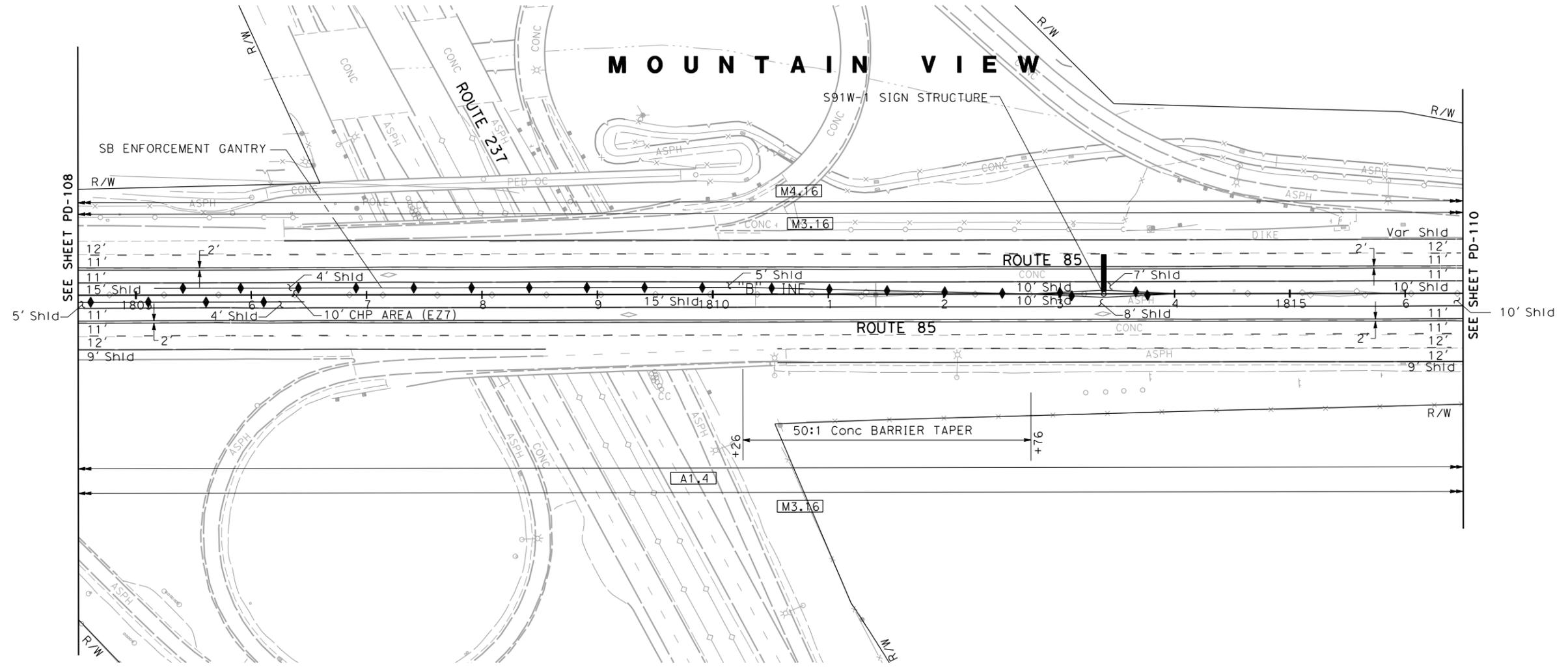
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
CHECKED BY: Chadi Chazbek
CALCULATED-DESIGNED BY: Cassidy Grillon
REVISOR: Chadi Chazbek
REVISION: XX
DATE: XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek
 CHECKED BY
 Chadi Chazbek
 CALCULATED-DESIGNED BY
 Cassidy Grillon
 Chadi Chazbek
 REVISED BY
 XX
 XX/XX/11
 DATE REVISED

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-109

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION
 03-25-11
 DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:25:23 PM

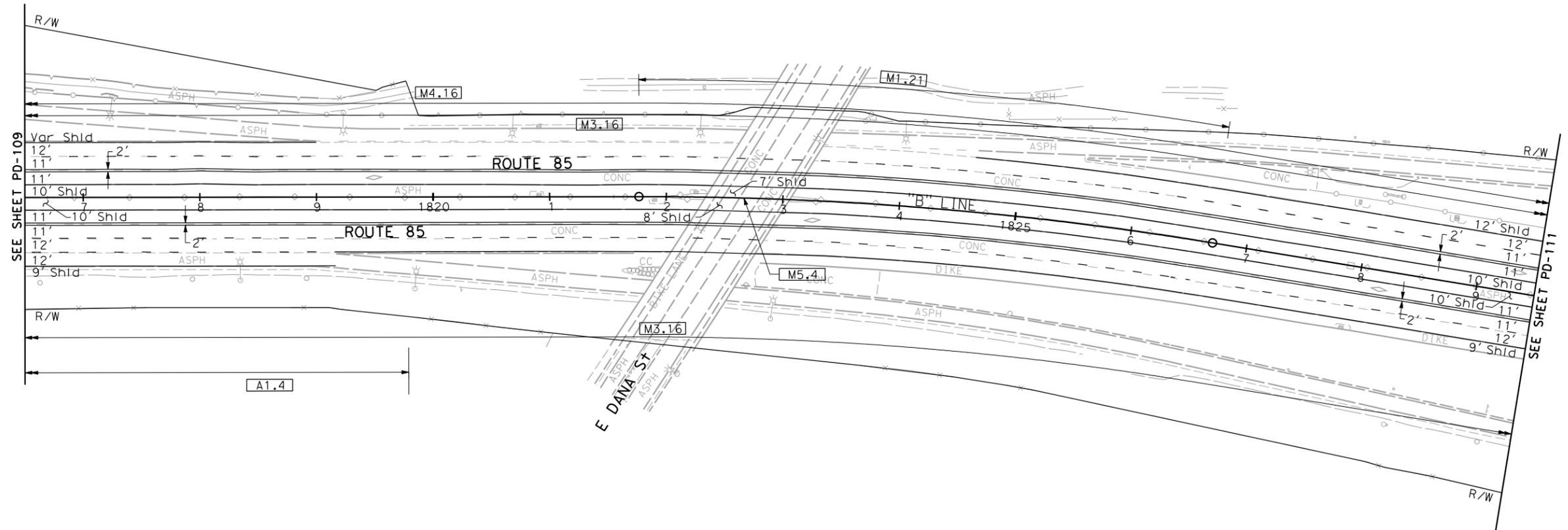
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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MOUNTAIN VIEW



SEE SHEET PD-109

SEE SHEET PD-111

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-110

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED-DESIGNED BY: Cassidy Grillon
 REVISIONS: XX XX/XX/11
 REVISOR: XX
 DATE: XX/XX/11

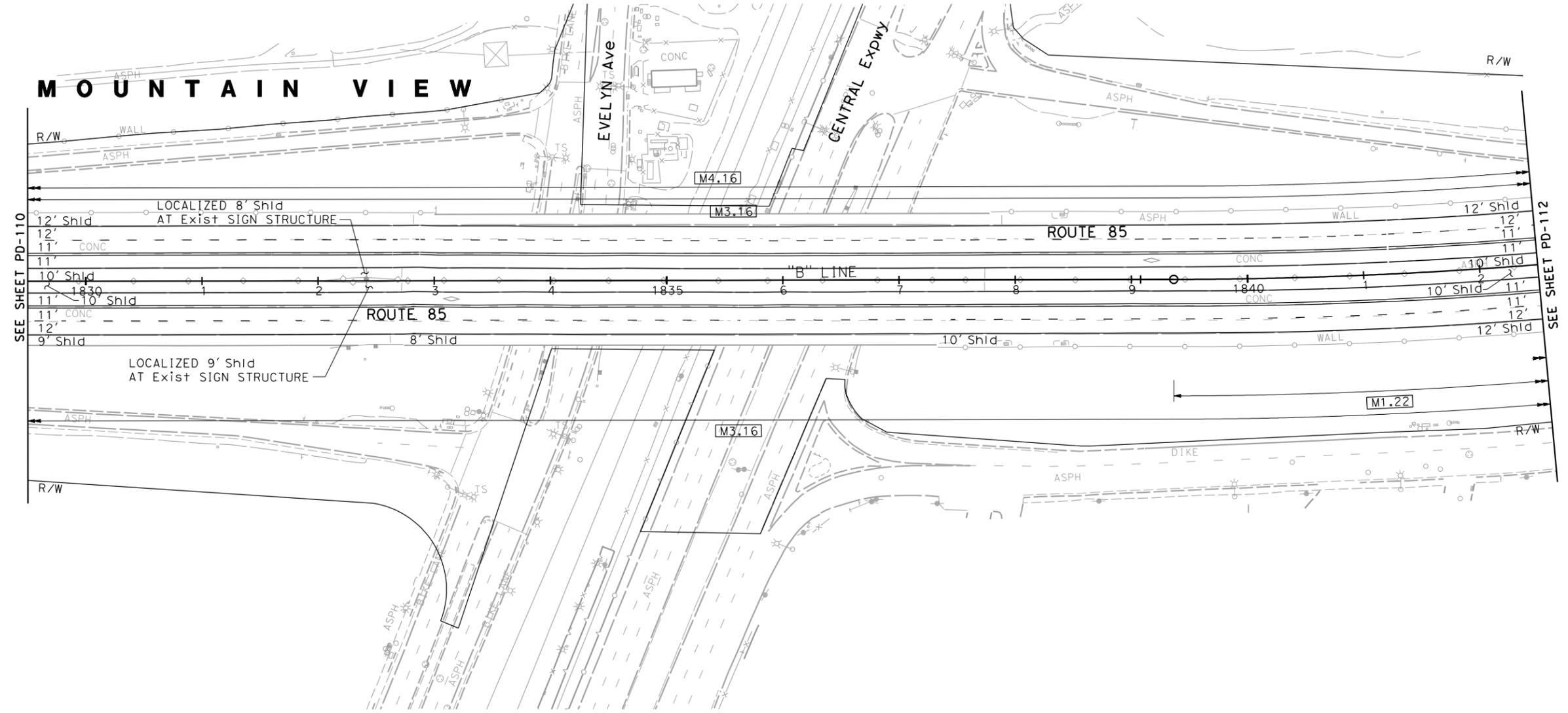
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		



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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
St. Gibbons	Chadi Chazbek	Cassidy Grillon	XX	XX/XX/11
	Chadi Chazbek	Chadi Chazbek	DATE	REVISED



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-111

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

DATE PLOTTED => 7/3/2013
TIME PLOTTED => 4:25:26 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

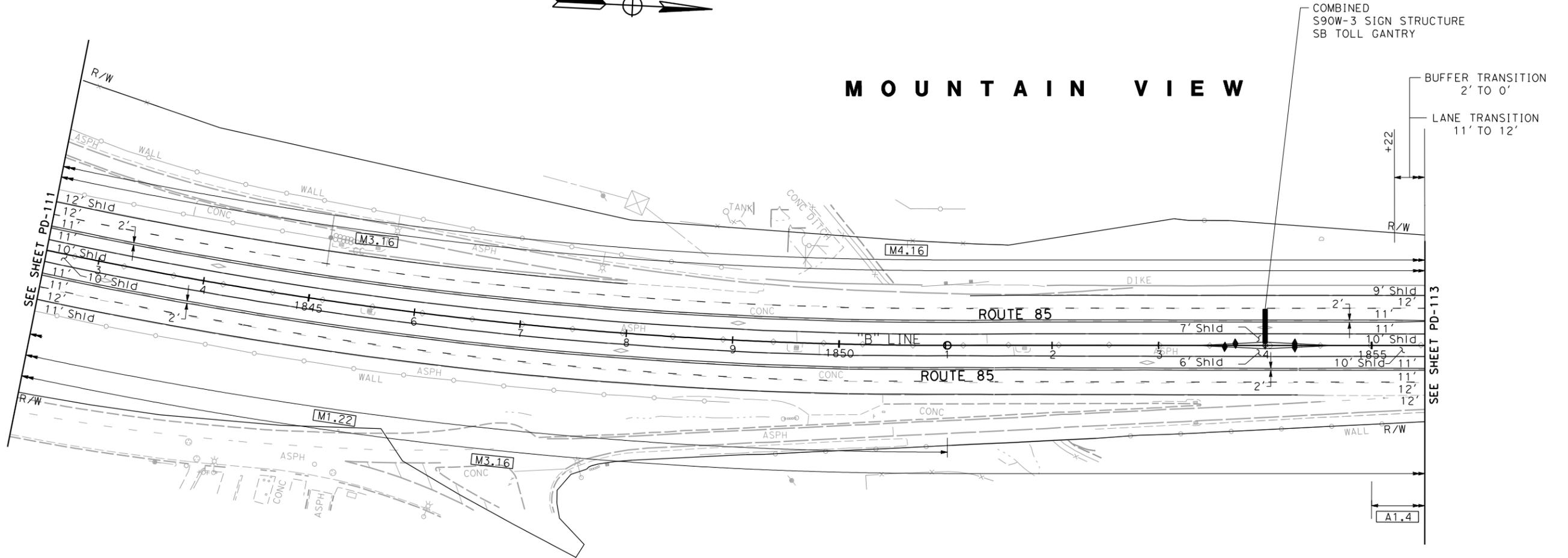
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
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NOTE:

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MOUNTAIN VIEW



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-112

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

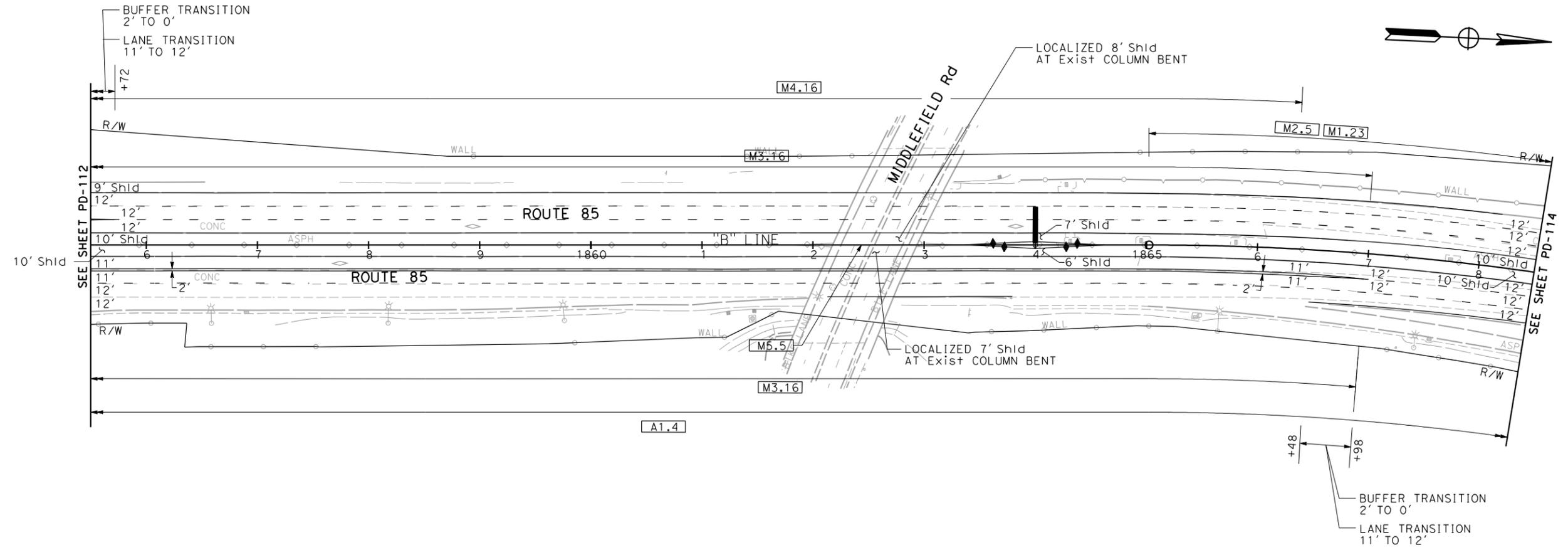
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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MOUNTAIN VIEW



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'
PD-113

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
CALCULATED/DESIGNED BY: Cassidy Grillon
CHECKED BY: Chadi Chazbek
REVISED BY: XX
DATE REVISED: XX/XX/11

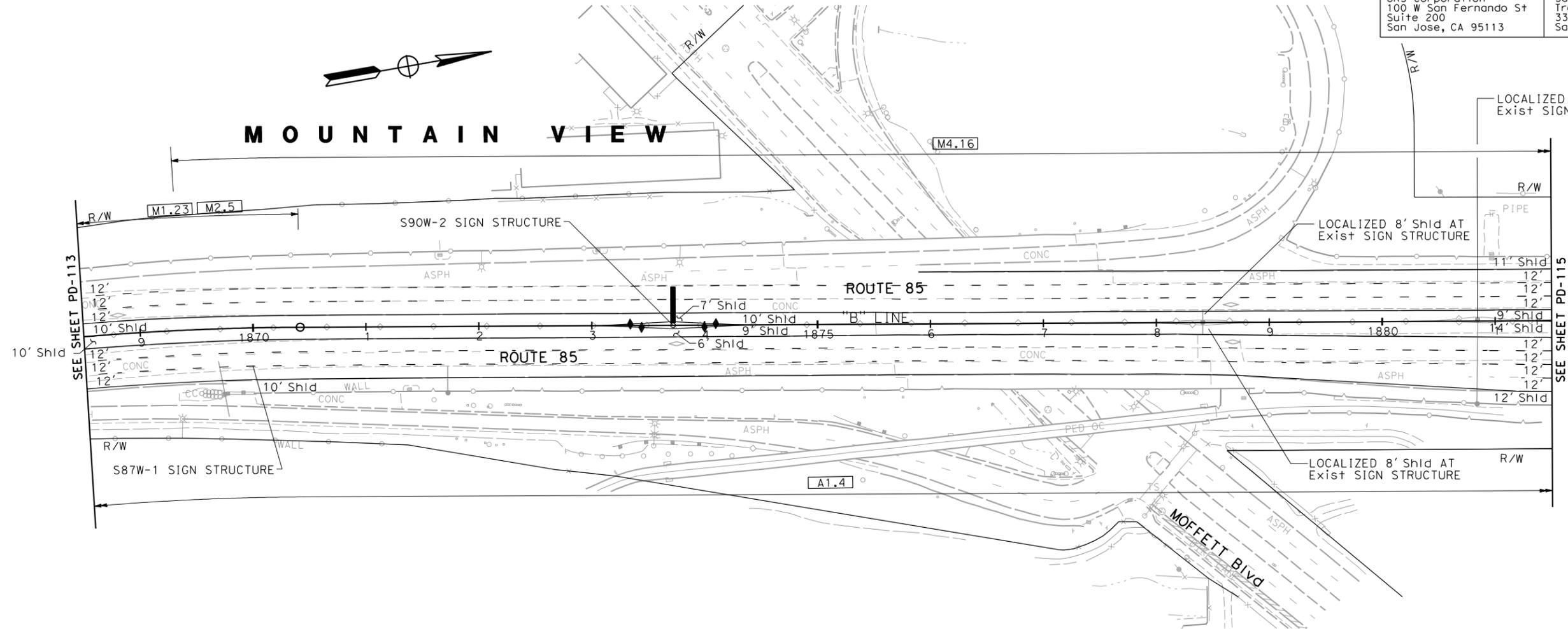
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 REVISOR: Chadi Chazbek
 REVISION: XX
 DATE: XX/XX/11



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-114

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

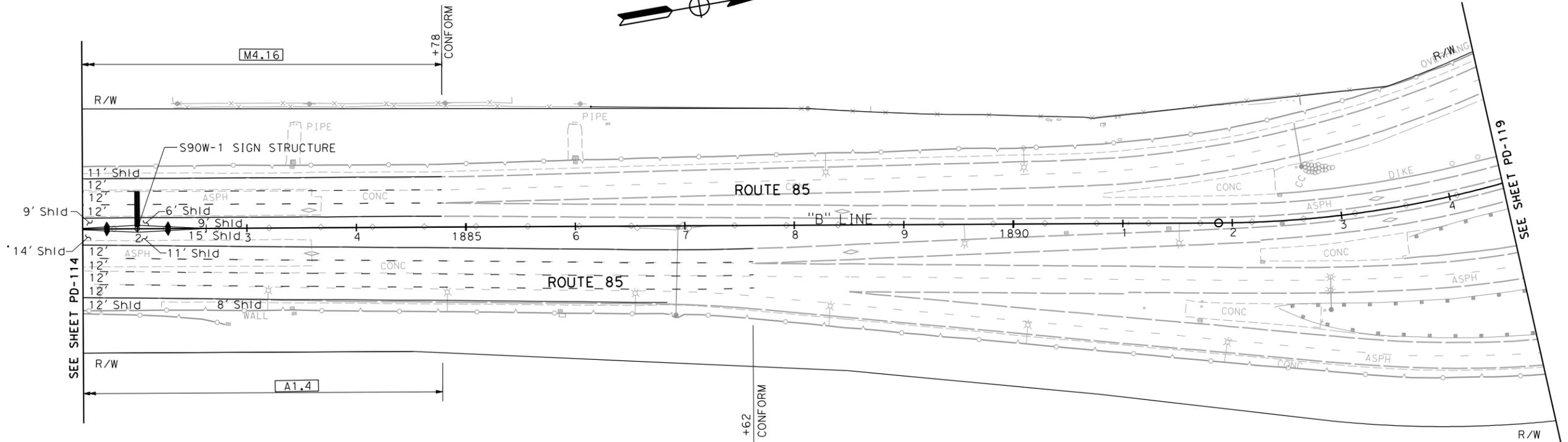
LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:30 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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MOUNTAIN VIEW



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-115

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

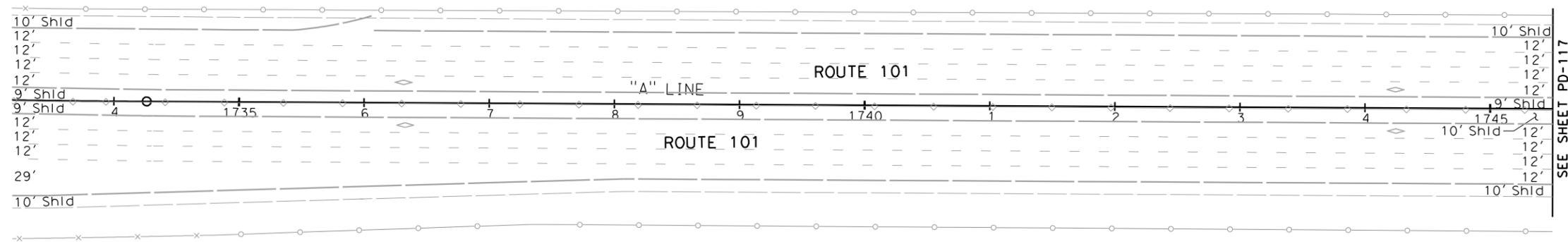
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 REVISOR: Cassidy Grillon
 REVISION: XX
 DATE: XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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M O U N T A I N V I E W



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISED BY: XX
 DATE REVISED: XX/XX/11

FOR NOTES AND LEGEND
 SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-116

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:41 PM
 03-25-11

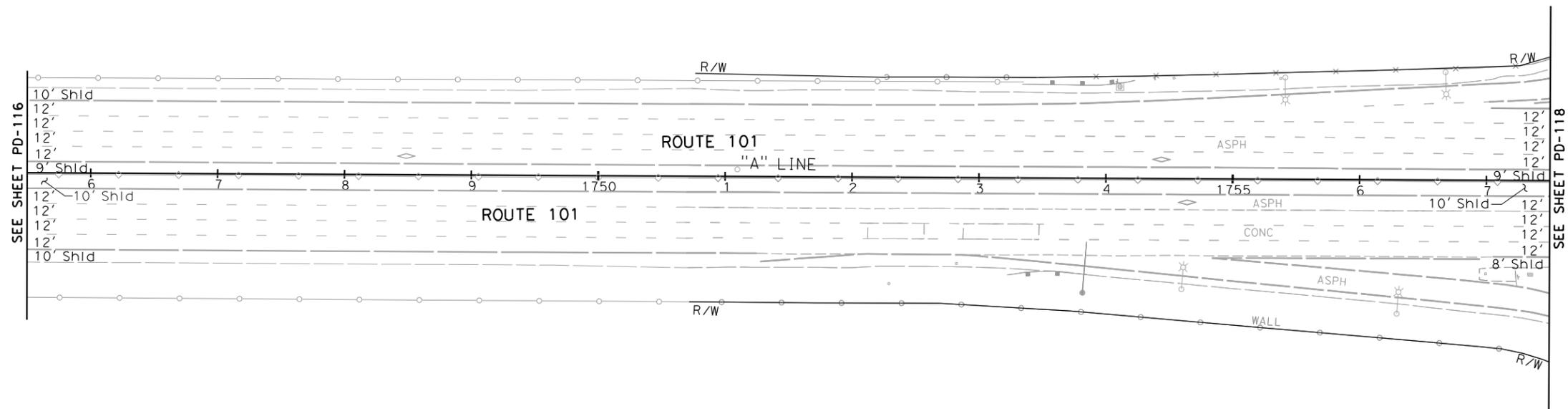
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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M O U N T A I N V I E W



SEE SHEET PD-116

SEE SHEET PD-118

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-117

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

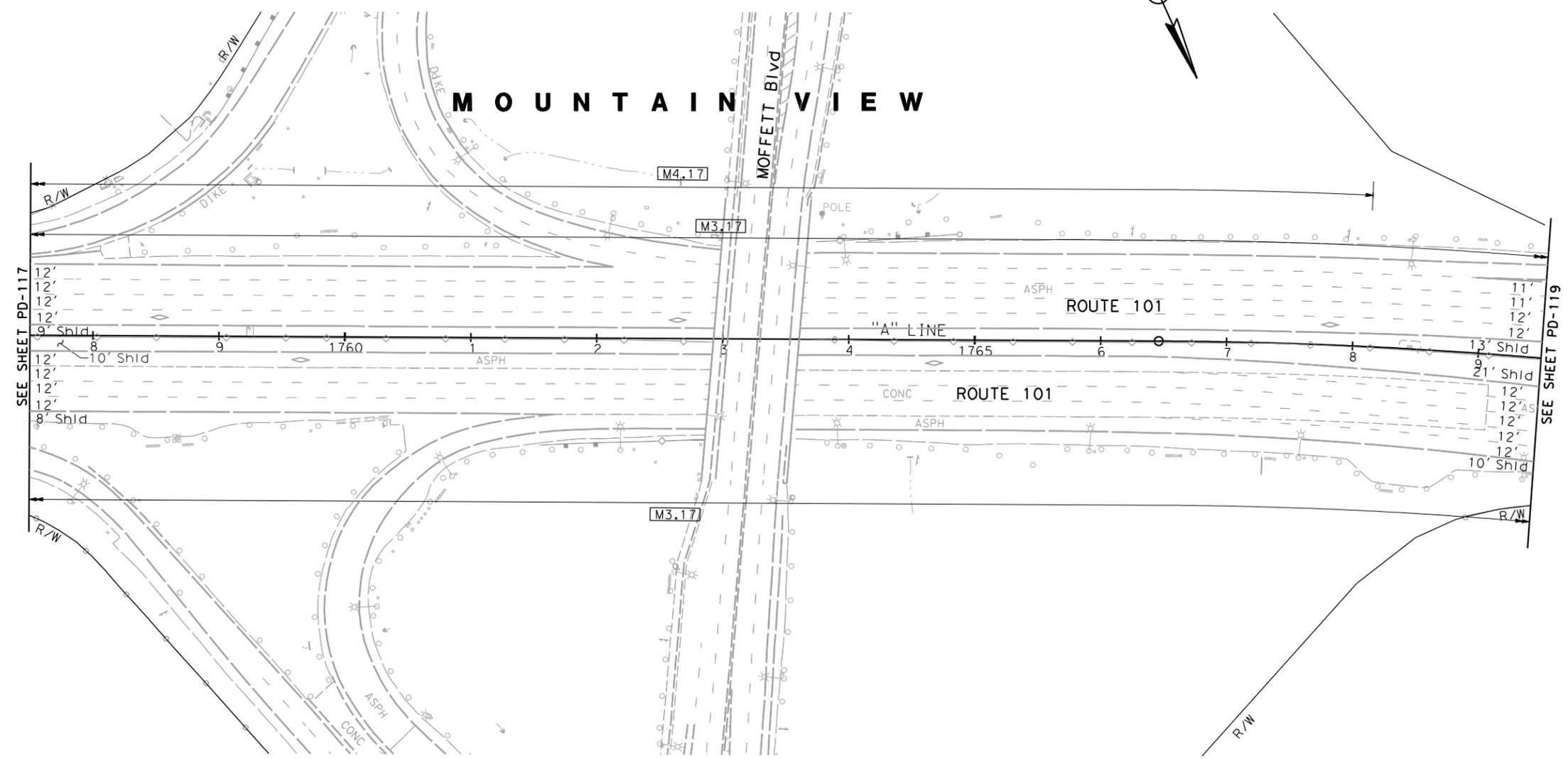
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobran
CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
CALCULATED-DESIGNED BY: Chadi Chazbek
CHECKED BY: Chadi Chazbek
REVISOR: XX
DATE REVISED: XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11
		CHECKED BY	REVISOR	DATE
		Chadi Chazbek	XX	XX/XX/11



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'
PD-118

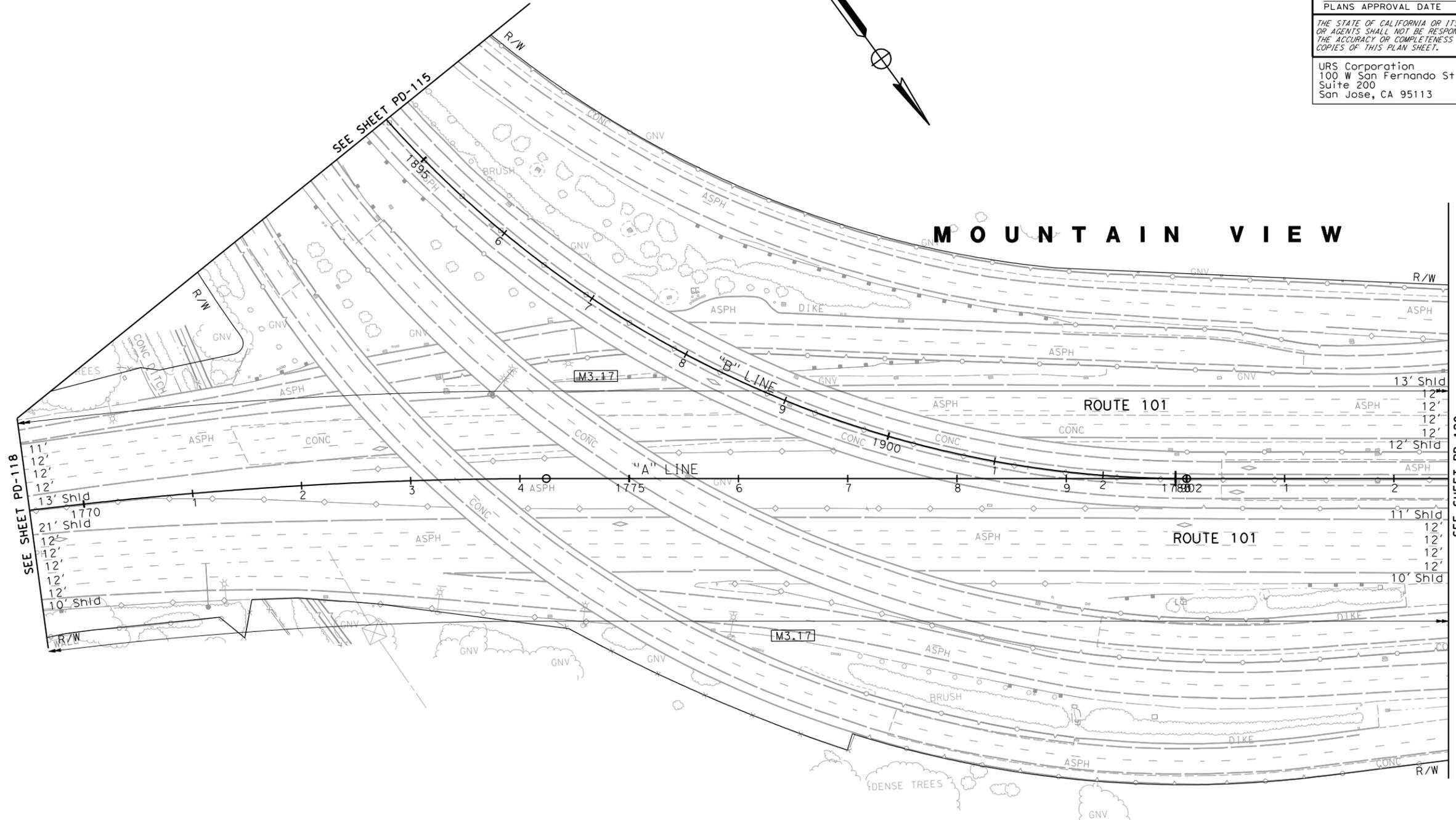
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:43 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE	BY
	XX	XX/XX/11	XX
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon
CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY	
Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	

FOR NOTES AND LEGEND SEE SHEET PD-1

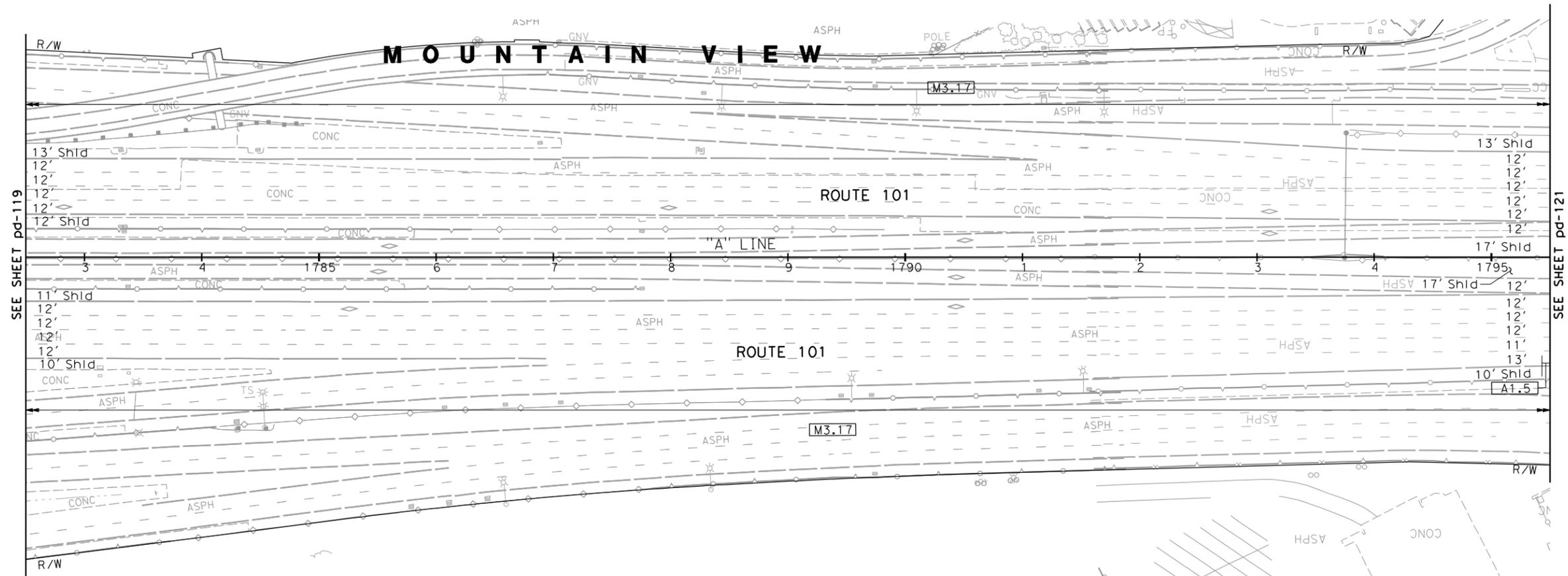
PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-119

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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SEE SHEET pd-119

SEE SHEET pd-121

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-120

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISIONS: DATE REVISIONED

BORDER LAST REVISED 7/2/2010

USERNAME => minyoung_kim
 DGN FILE => ...044a7900ea120.dgn



UNIT xxxx

PROJECT NUMBER & PHASE

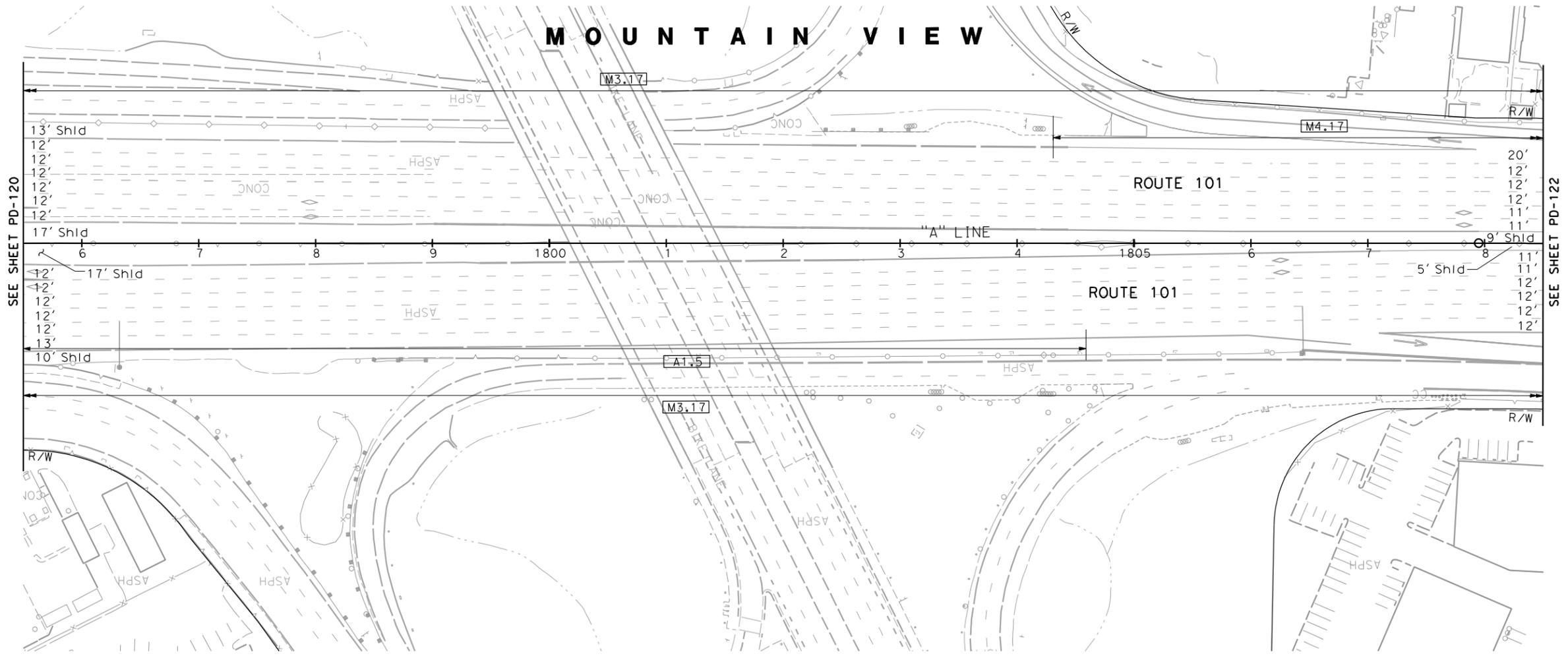
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DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:25:46 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

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SEE SHEET PD-120

SEE SHEET PD-122

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-121

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION


REVISOR: XX
 DATE: XX/XX/11

DESIGNER: Cassidy Grillon
 CHECKER: Chadi Chazbek

CALCULATED-DRAWN BY: Chadi Chazbek
 CHECKED BY:

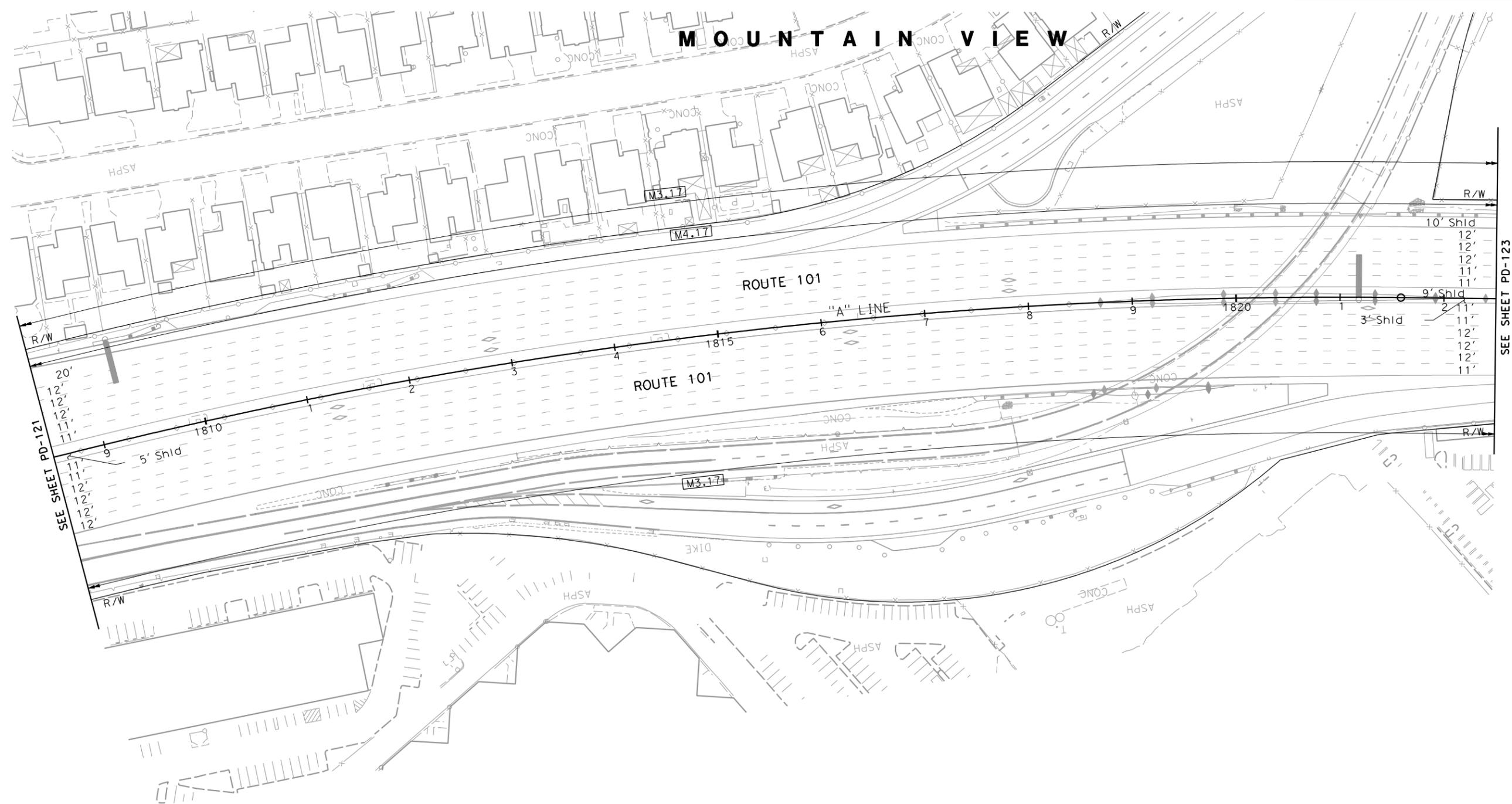
CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	REVISOR BY	DATE REVISED
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX/XX/11



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-122

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

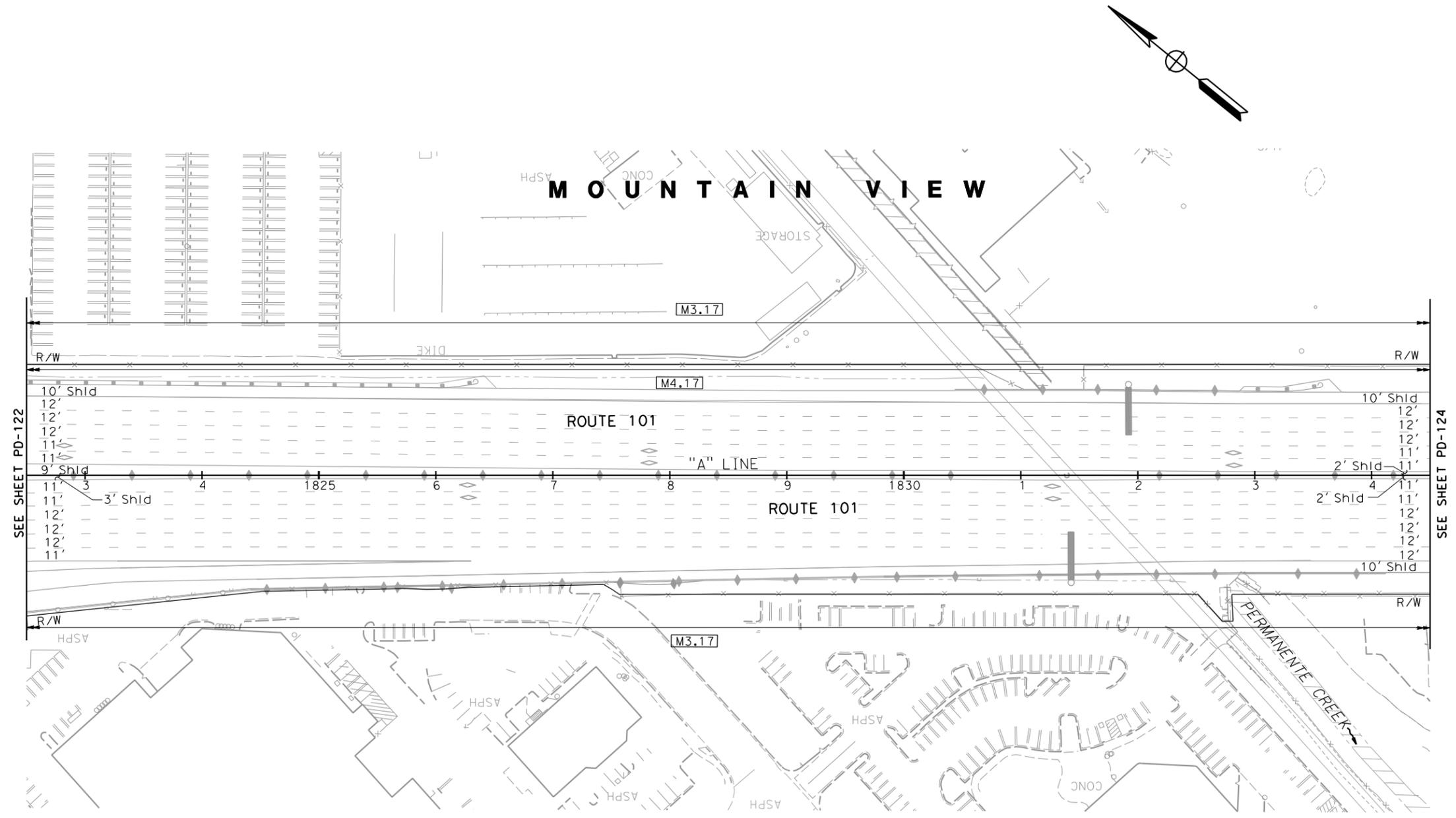
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		



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 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 CHADJI CHAZBEK
 CHECKED BY
 CHADI CHAZBEK
 REVISIONS
 XX XX/XX/11
 REVISOR
 CHADI CHAZBEK
 DATE
 XX/XX/11



FOR NOTES AND LEGEND
 SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-123

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION
 DATE PLOTTED => 7/3/2013
 03-25-11
 TIME PLOTTED => 4:25:51 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

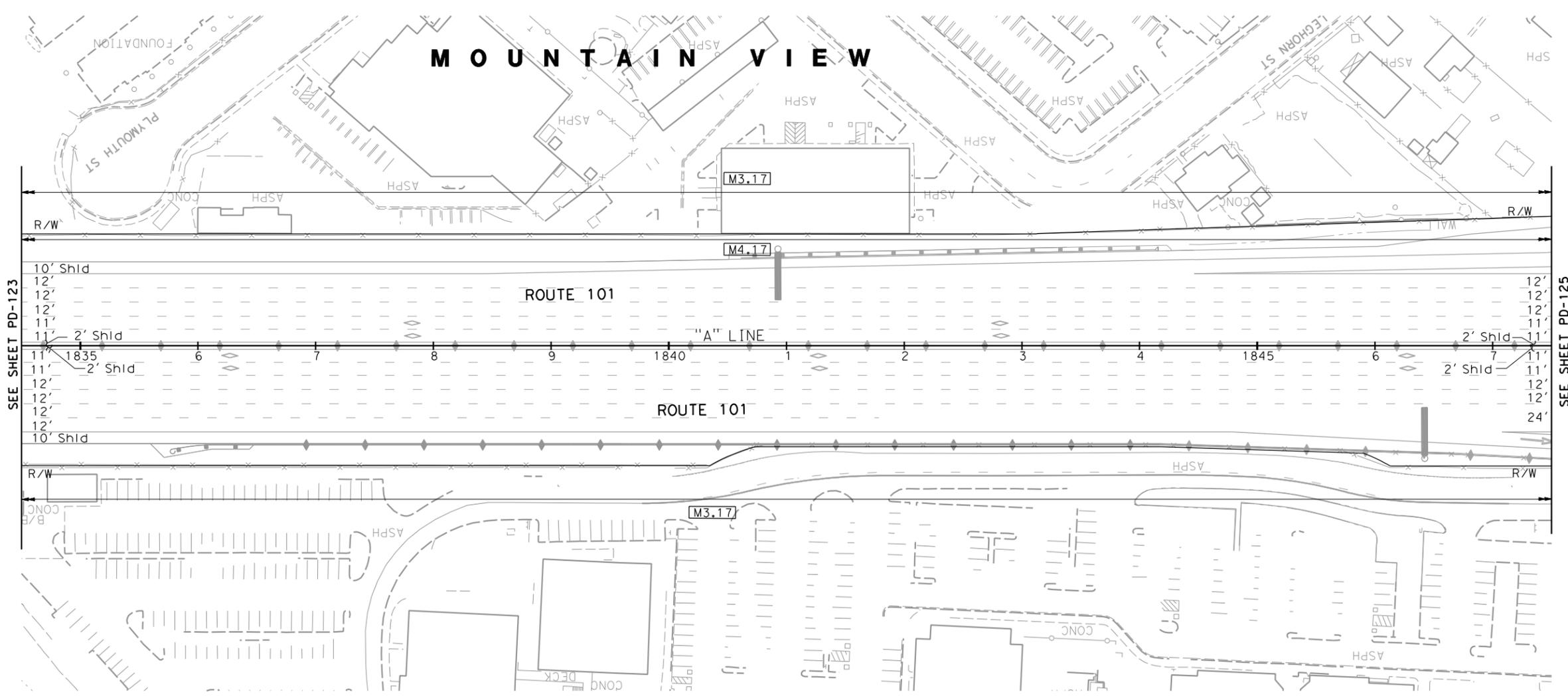
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
---	---

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek
 CALCULATED-DESIGNED BY
 CHECKED BY
 Cassidy Grillon
 Chadi Chazbek
 REVISOR BY
 DATE REVISOR
 XX
 XX/XX/11



SEE SHEET PD-123

SEE SHEET PD-125

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-124

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

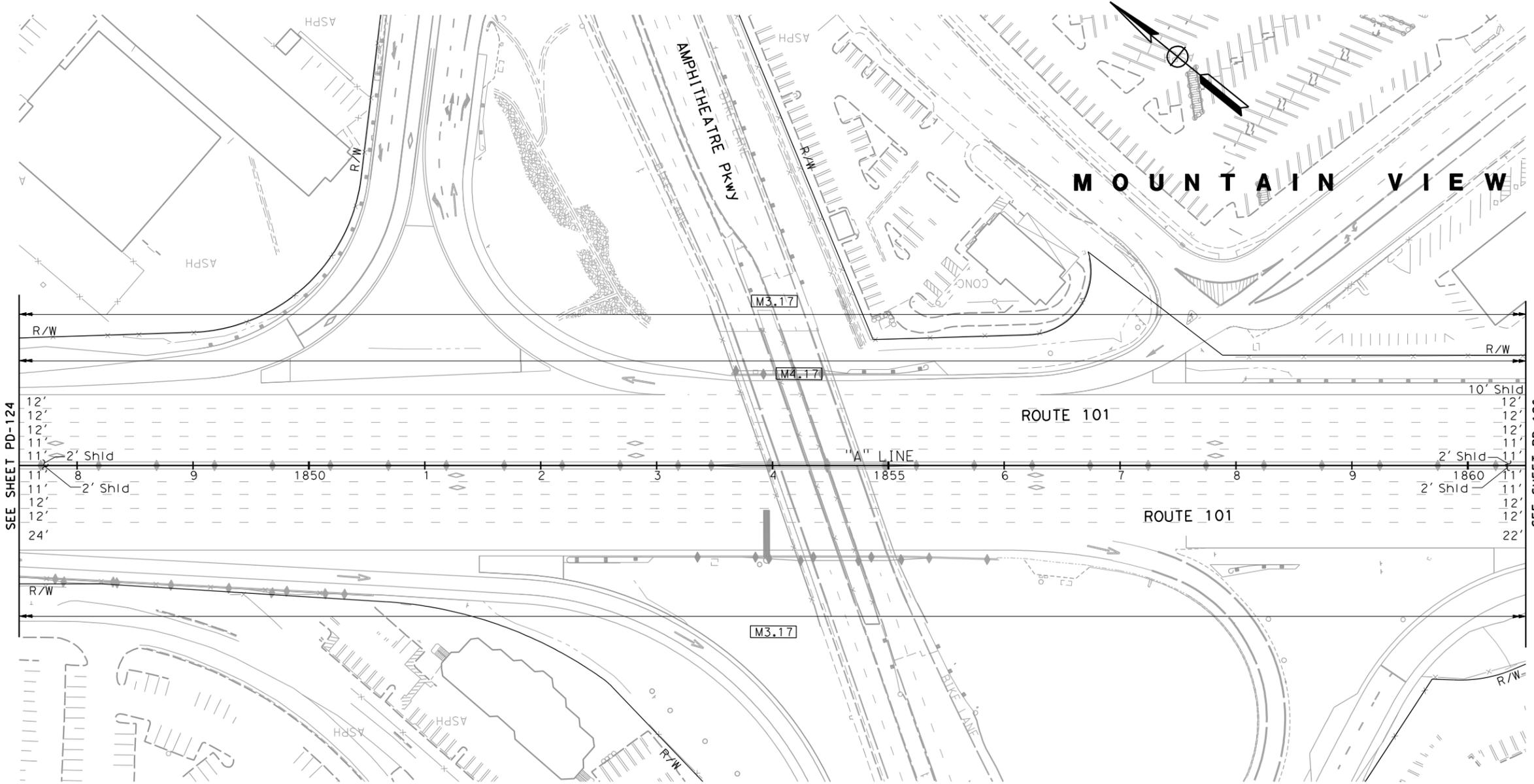
LAST REVISION
 03-25-11
 DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:25:52 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	REVISOR BY	DATE REVISED
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX/XX/11



SEE SHEET PD-124

SEE SHEET PD-126

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'
PD-125

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:58 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

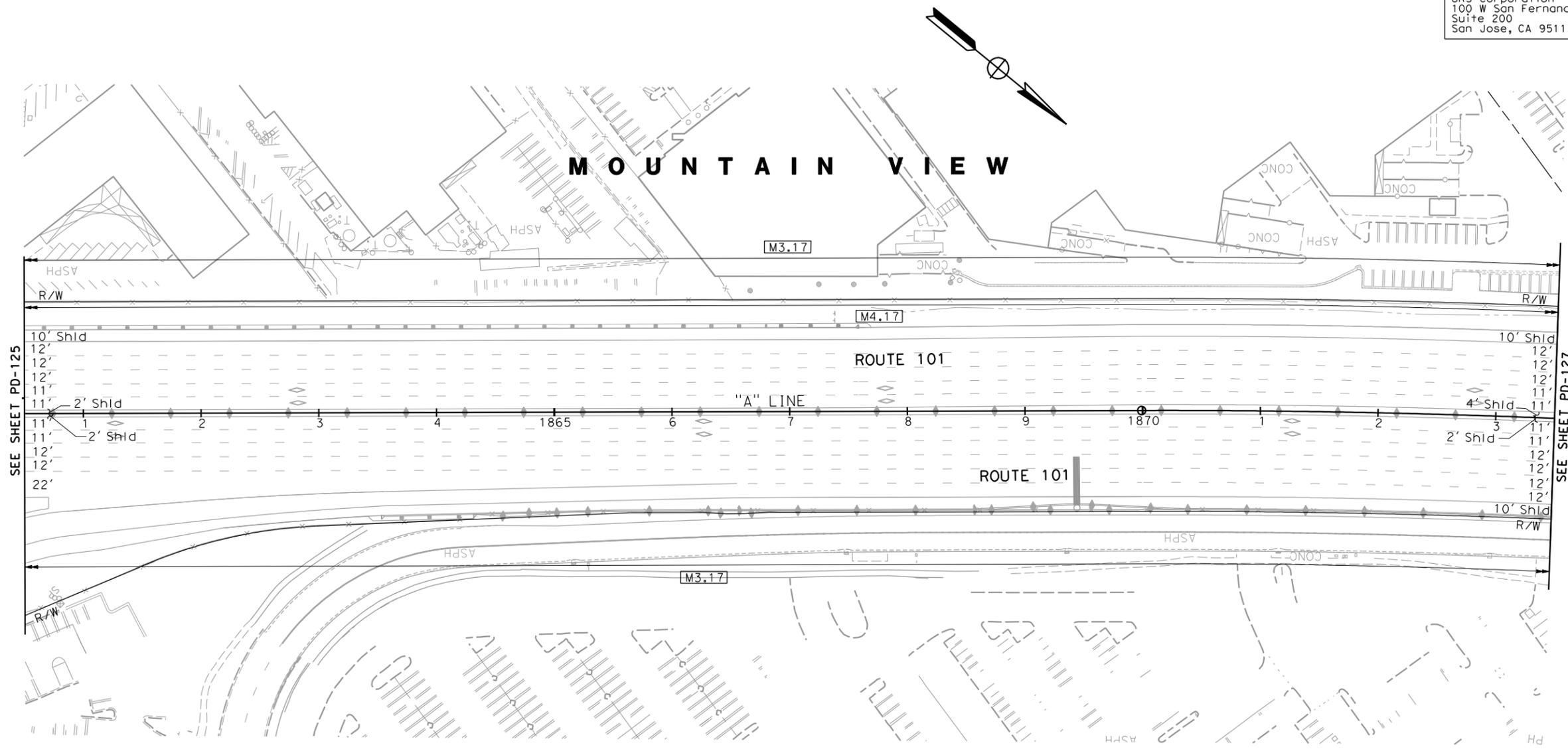
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
---	---

NOTE:

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISOR: Chadi Chazbek
 DATE: XX/XX/11



FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-126

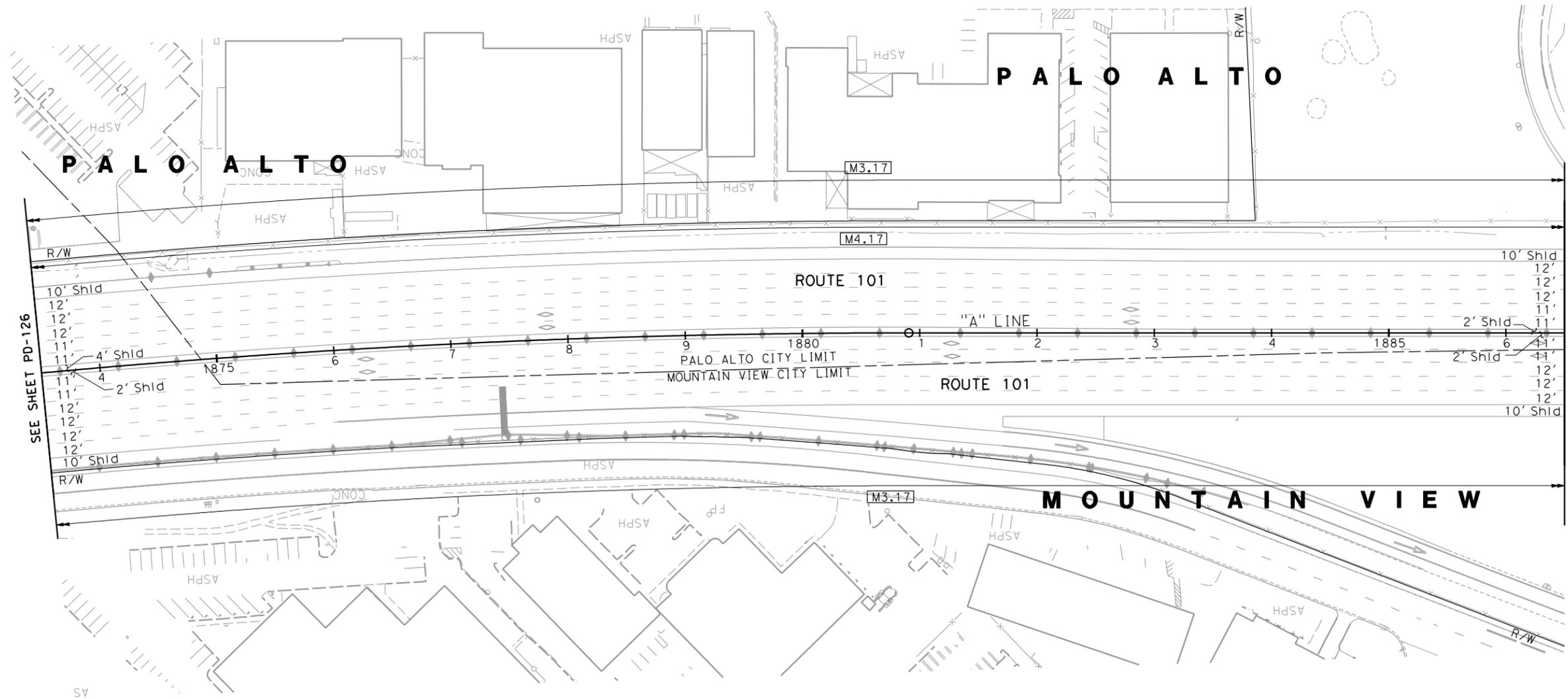
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:25:59 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>			<small>STATE OF CALIFORNIA</small> <small>CIVIL</small>		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SEE SHEET PD-126

SEE SHEET PD-128

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-127

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

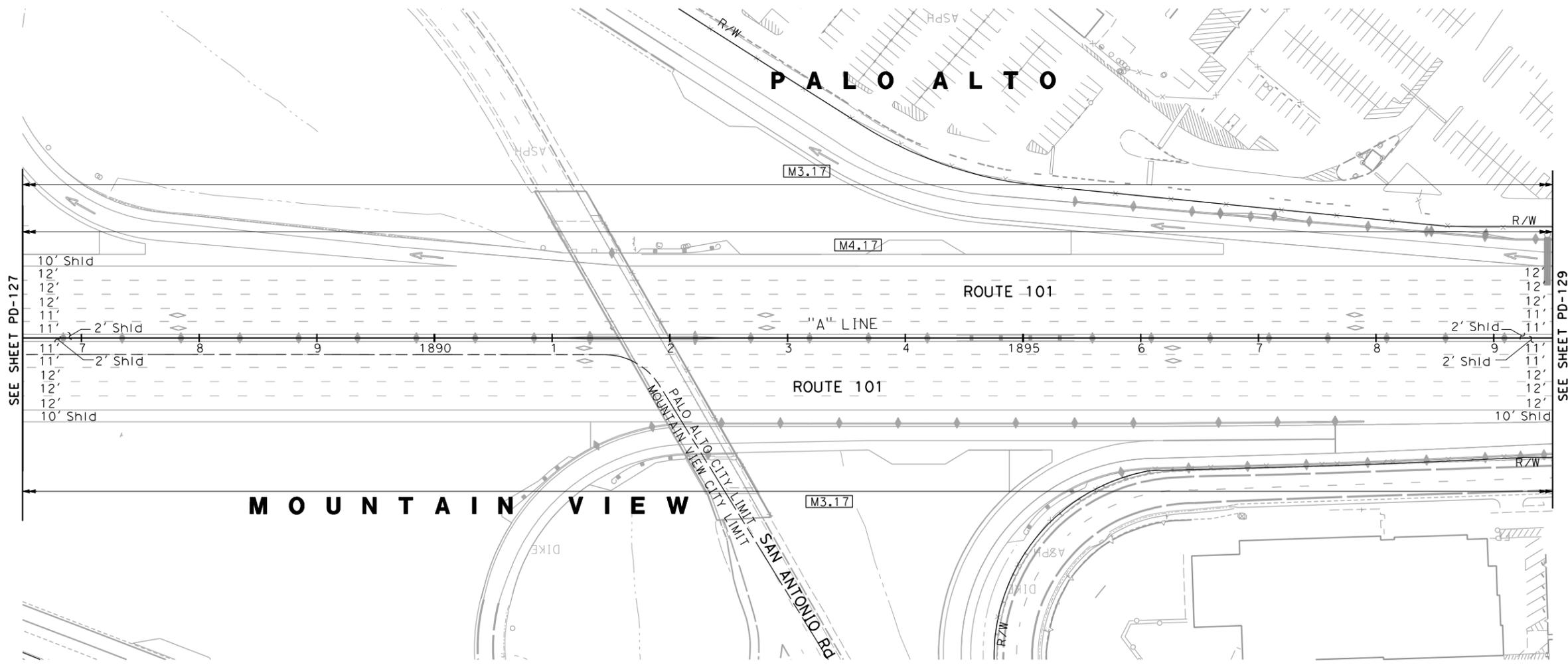
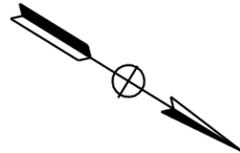
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek
 CALCULATED-DESIGNED BY
 Cassidy Grillon
 CHECKED BY
 Chadi Chazbek
 REVISED BY
 XX
 DATE REVISED
 XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

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SEE SHEET PD-127

SEE SHEET PD-129

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-128

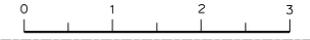
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 REVISOR: XX
 DATE: XX/XX/11

BORDER LAST REVISED 7/2/2010

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 DGN FILE => ...\\044a7900ea128.dgn

RELATIVE BORDER SCALE IS IN INCHES


UNIT xxxx

PROJECT NUMBER & PHASE

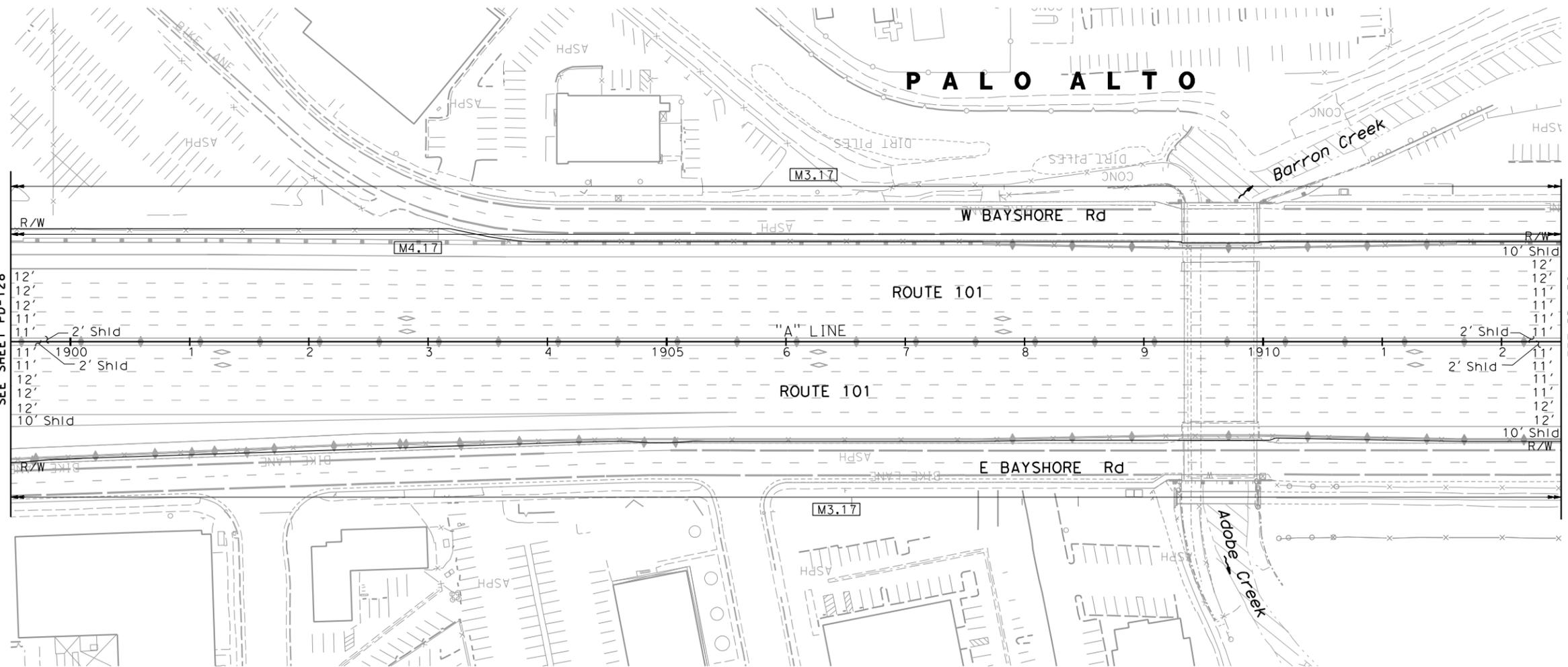
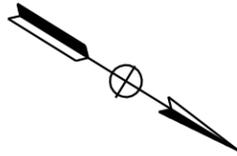
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LAST REVISION: 03-25-11
 DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:26:02 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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SEE SHEET PD-128

SEE SHEET PD-130

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-129

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

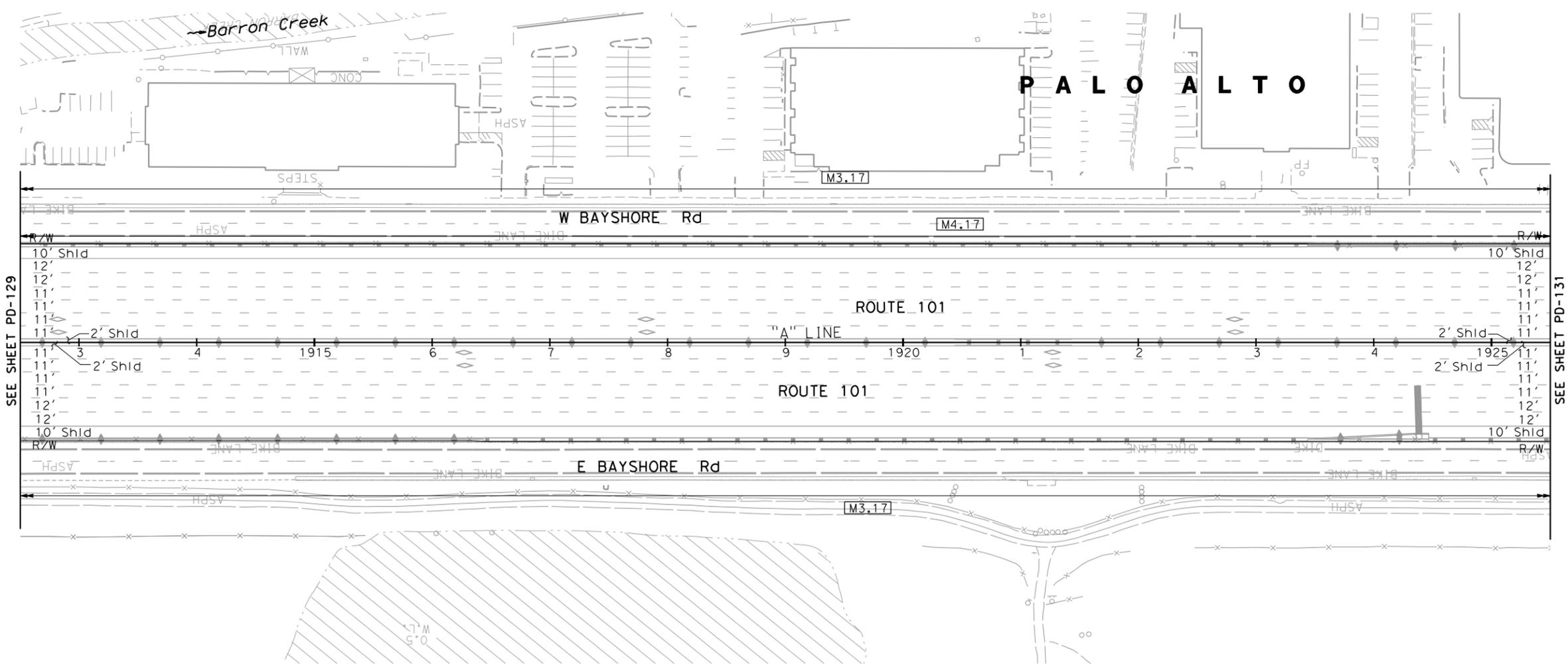
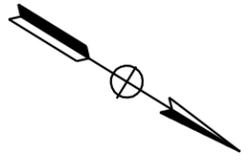
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 REVISIONS: XX XX/XX/11
 REVISIONS: XX XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
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NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SEE SHEET PD-129

SEE SHEET PD-131

FOR NOTES AND LEGEND SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-130

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

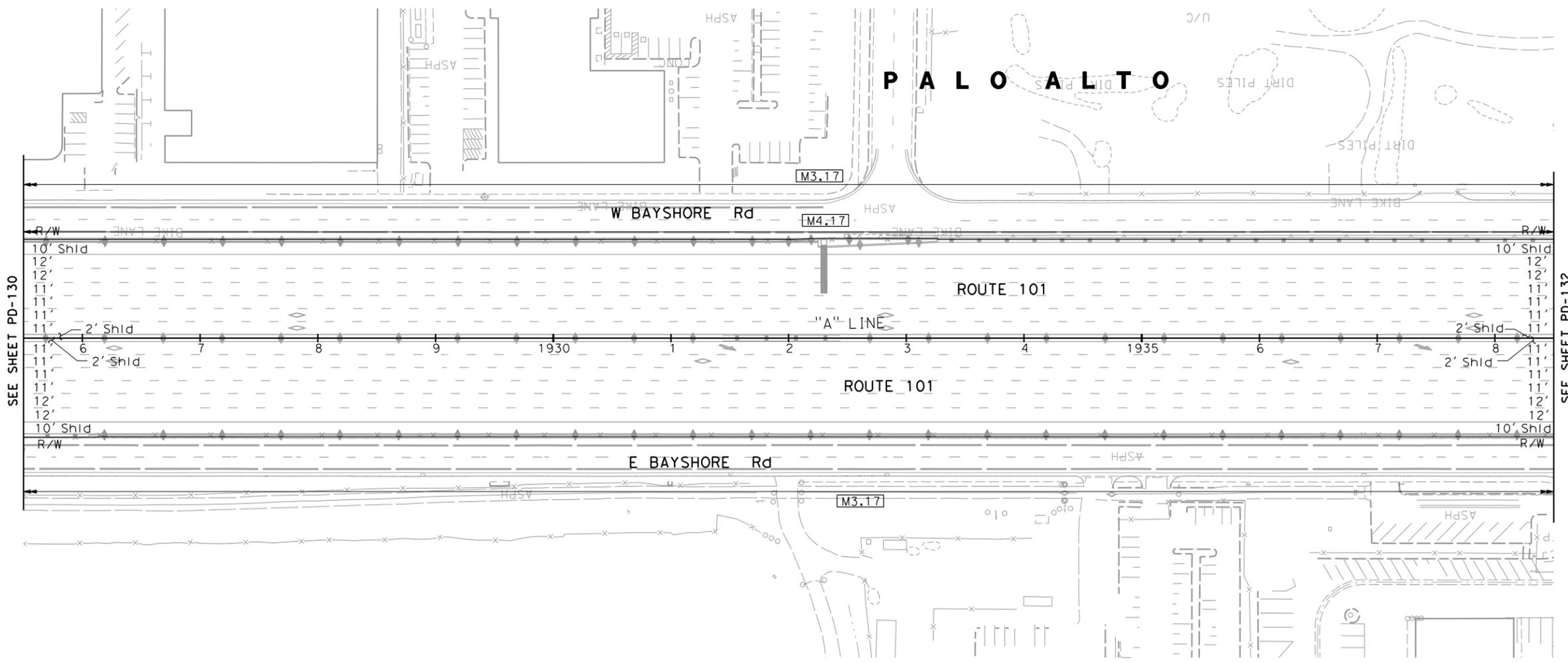
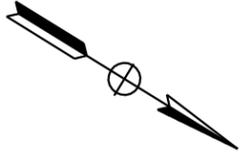
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek
 CALCULATED-DESIGNED BY
 Chadi Chazbek
 REVISIONS
 XX
 XX/XX/11
 REVISOR
 Chadi Chazbek
 DATE
 XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SEE SHEET PD-130

SEE SHEET PD-132

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-131

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

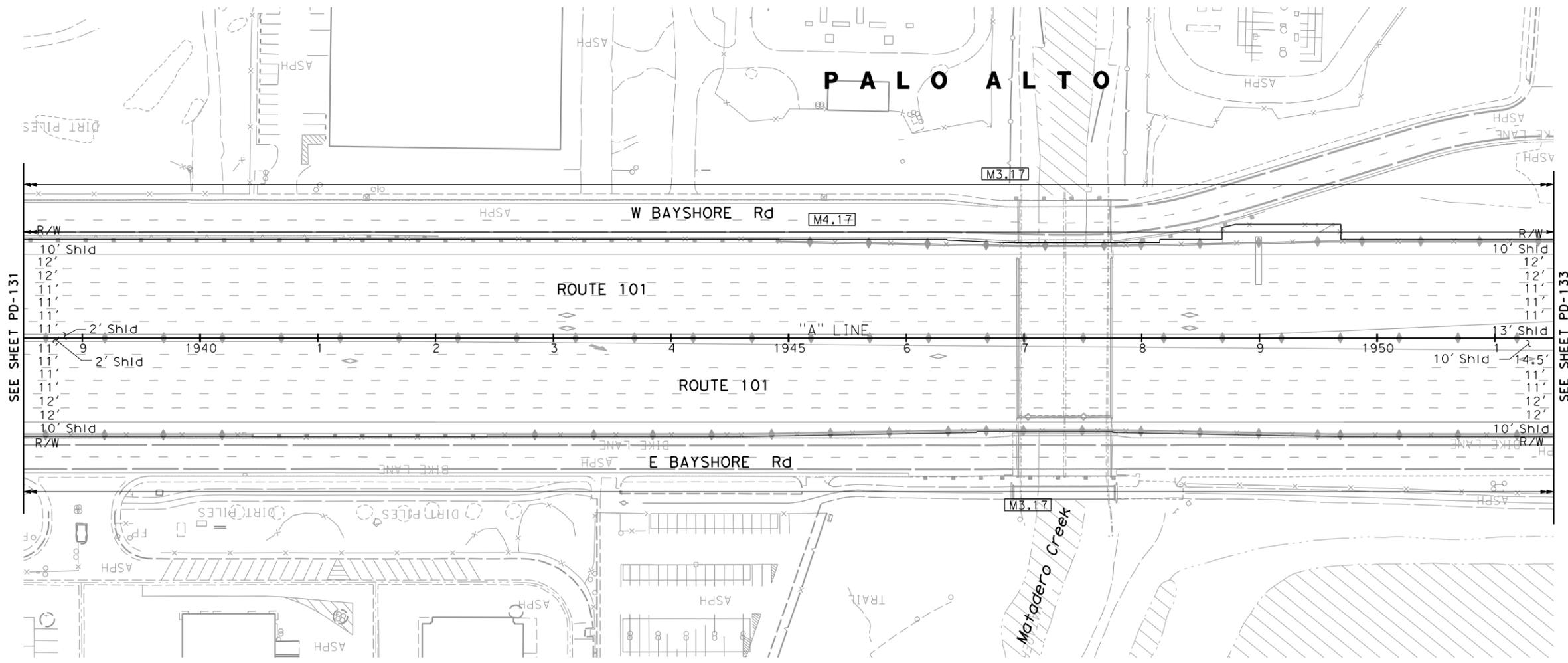
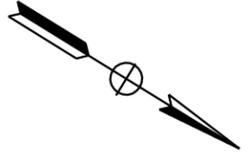
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Cassidy Grillon
 CHECKED BY: Chadi Chazbek
 REVISED BY: XX
 DATE REVISED: XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85	xxxxxxx		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	REVISOR	DATE
	XXXXXXXXXXXXXXXXXXXX	XX	XX/XX/11
	XXXXXXXXXXXXXXXXXXXX	REVISOR	DATE
	XXXXXXXXXXXXXXXXXXXX	REVISOR	DATE

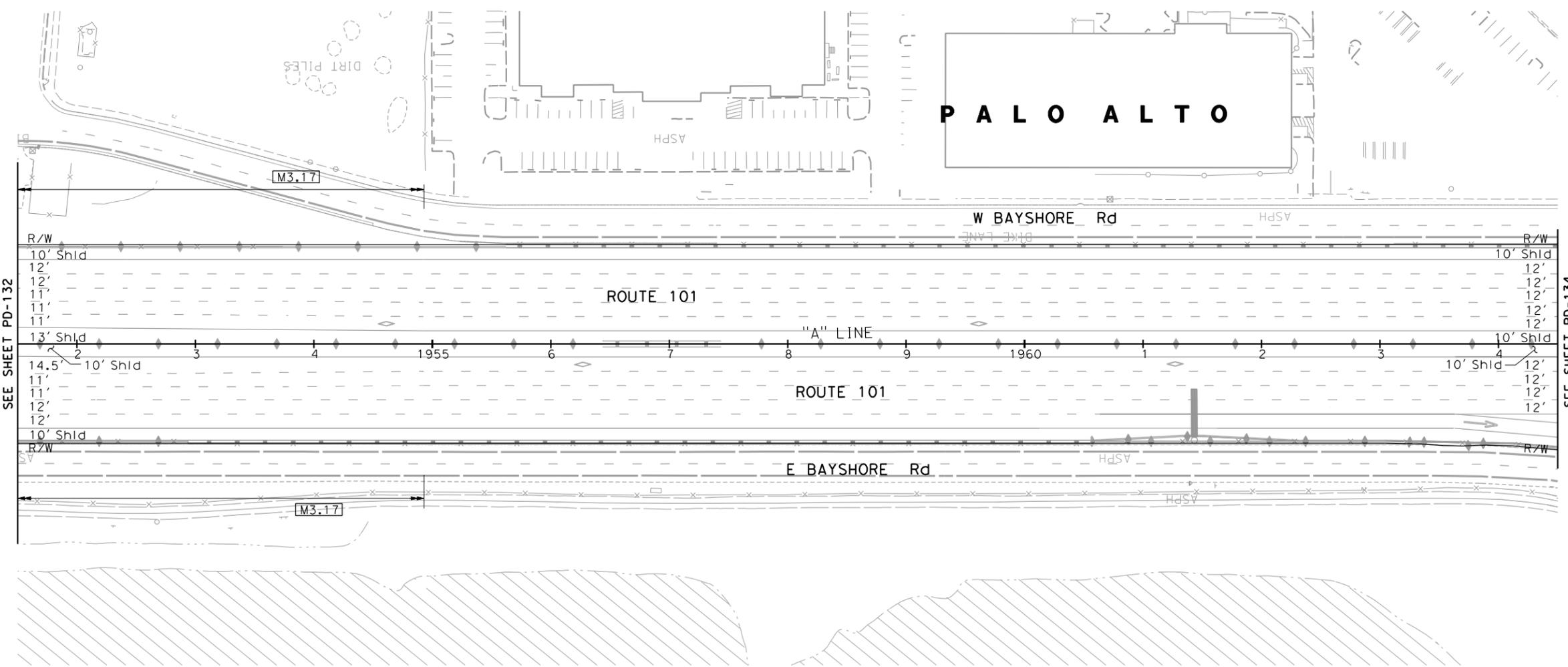
PAVEMENT DELINEATION PLAN
 SCALE: 1" = 50'
PD-132

LAST REVISION DATE PLOTTED => 7/3/2013 TIME PLOTTED => 4:26:12 PM
 03-25-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SEE SHEET PD-132

SEE SHEET PD-134

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-133

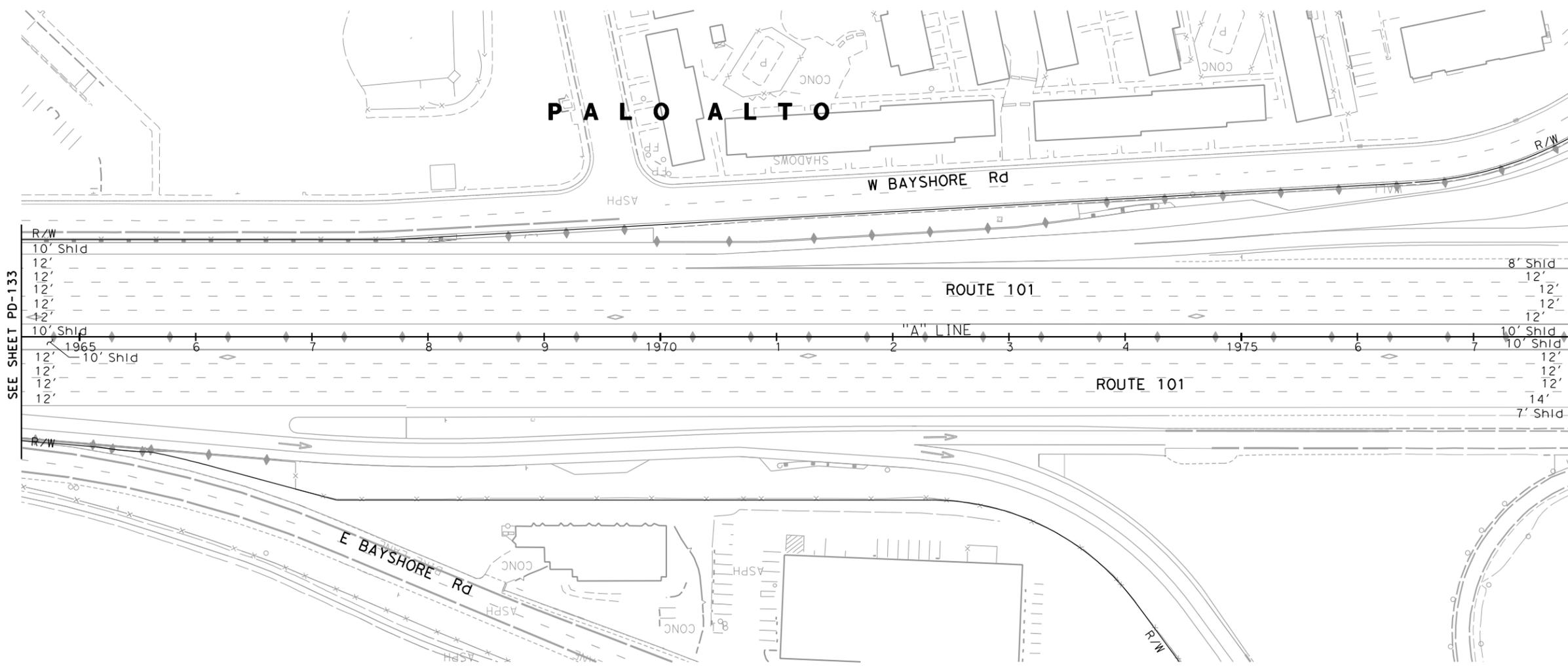
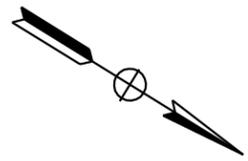
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CHECKED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	XX	XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SEE SHEET PD-133

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-134

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

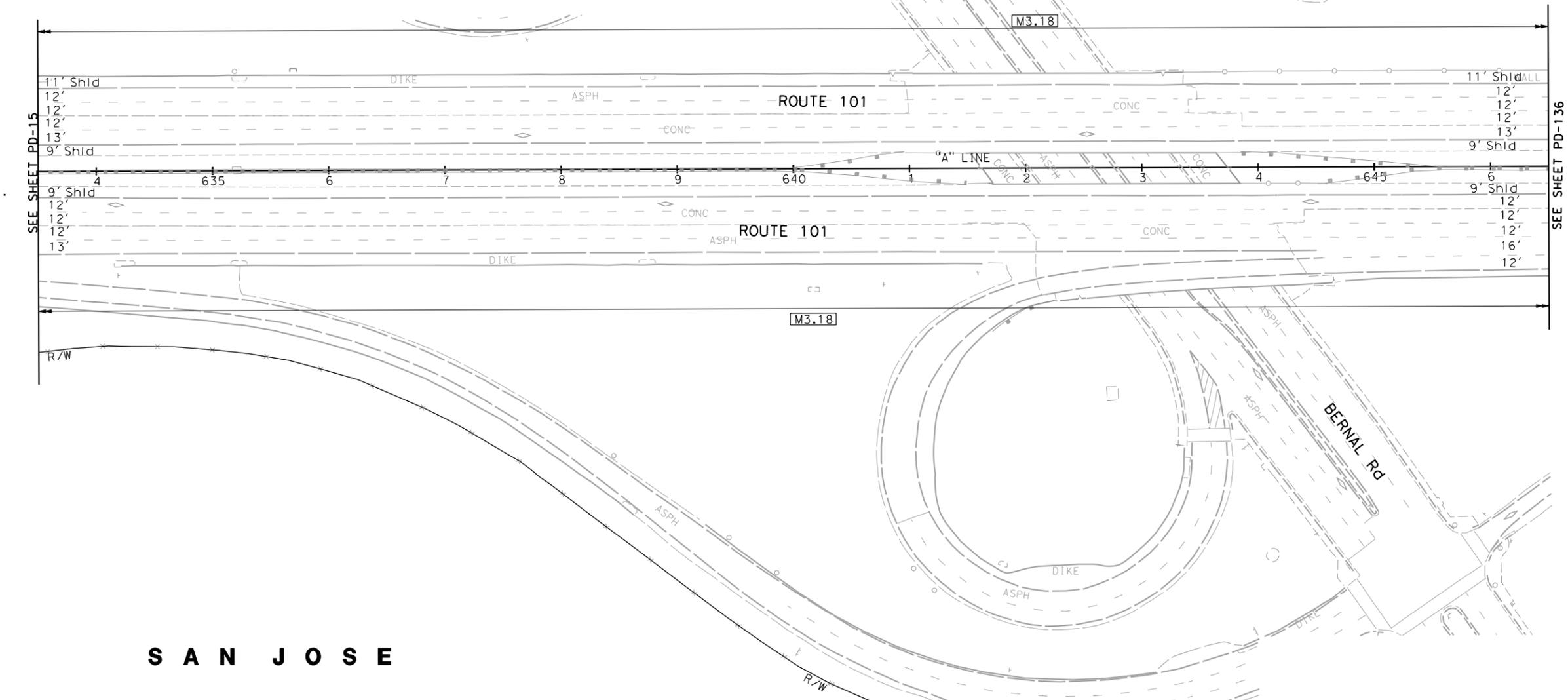
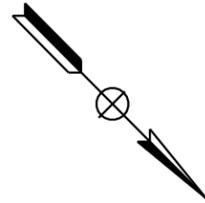
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek
 CHECKED BY
 Cassidy Grillon
 Chadi Chazbek
 REVISOR
 XX
 XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SEE SHEET PD-15

SEE SHEET PD-136

SAN JOSE

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-135

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
	Chadi Chazbek	Chadi Chazbek	Cassidy Grillon	XX
			Chadi Chazbek	XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		

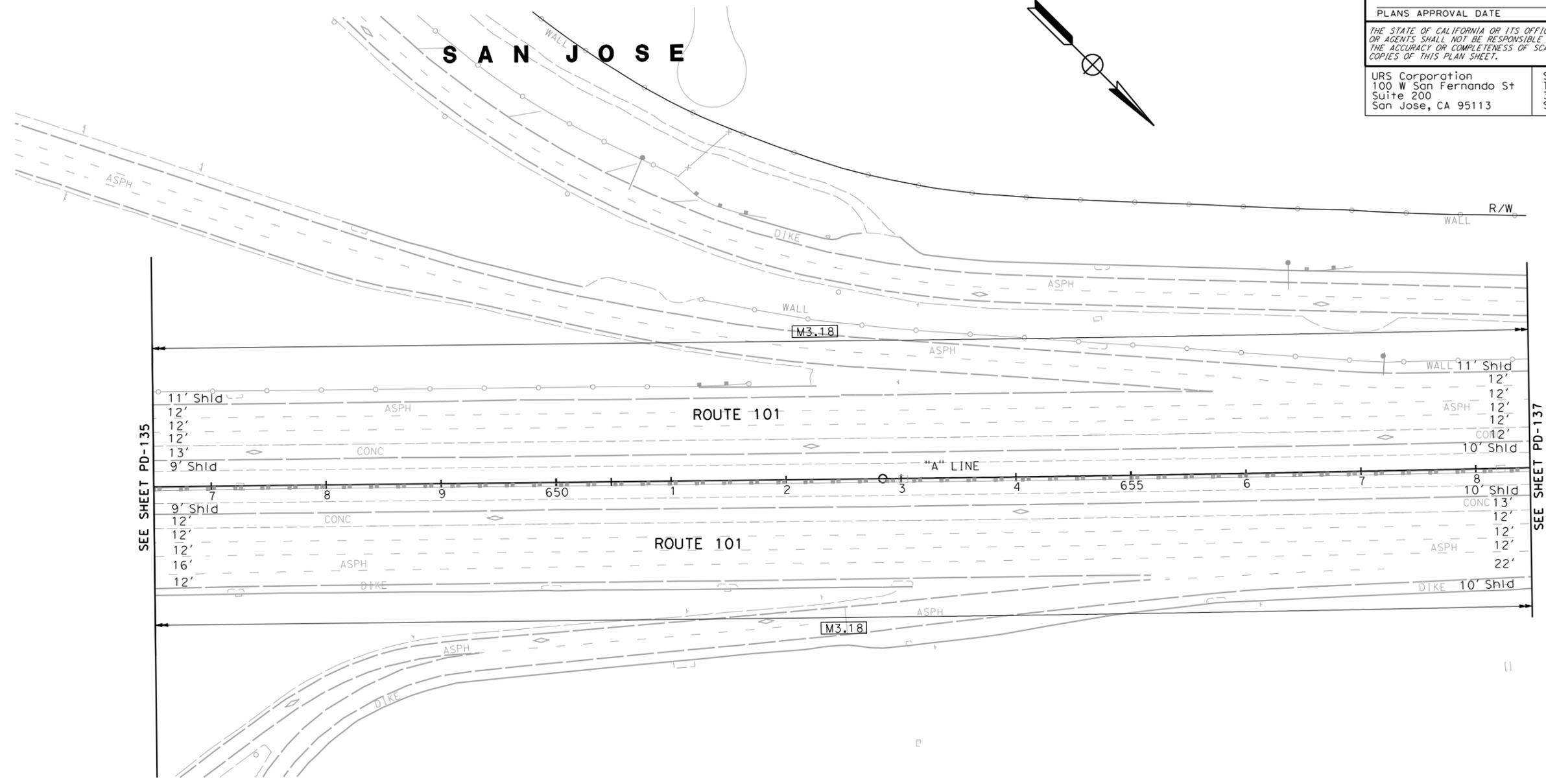
REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113	Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134
---	---

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SEE SHEET PD-135

SEE SHEET PD-137

FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN

SCALE: 1" = 50'

PD-136

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

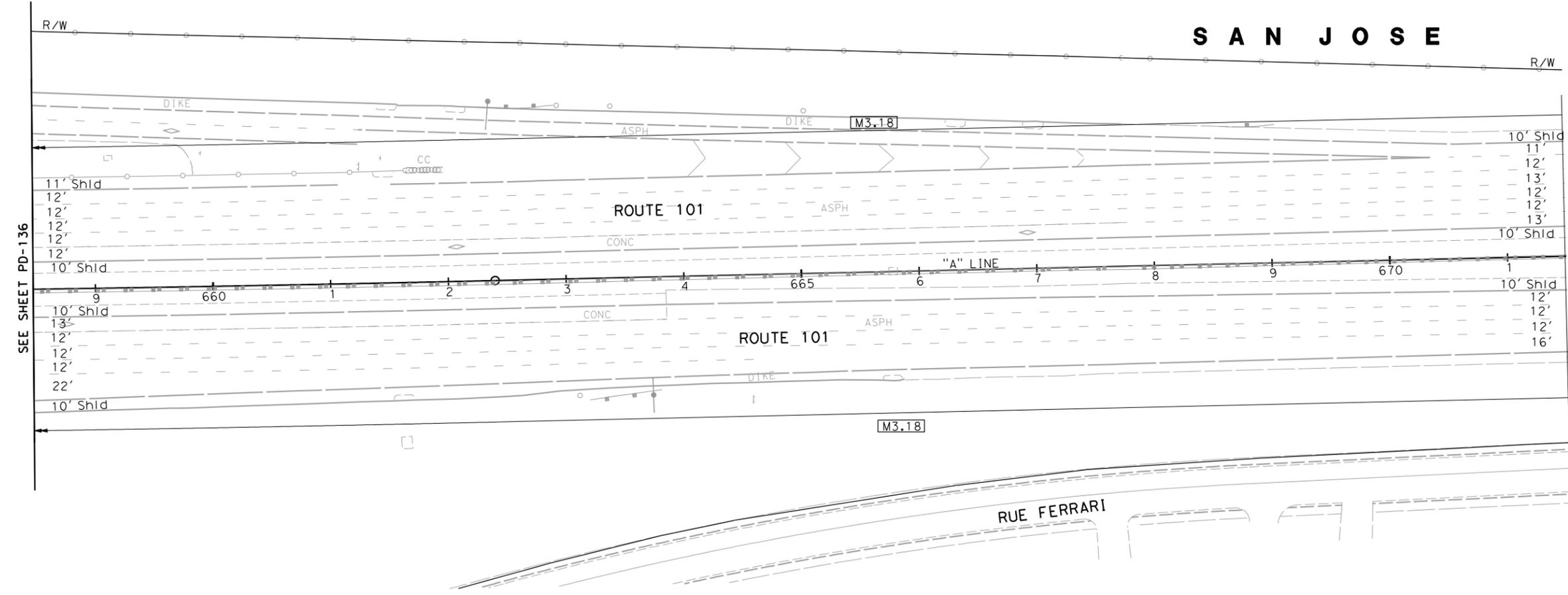
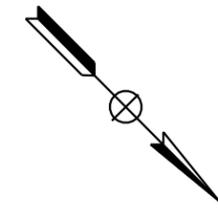
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 CALCULATED-DESIGNED BY: Cassidy Grillon
 REVISOR: Chadi Chazbek
 REVISION: XX/XX/11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES AND LEGEND
SEE SHEET PD-1

PAVEMENT DELINEATION PLAN
SCALE: 1" = 50'
PD-137

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gobans
CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
CHECKED BY: Chadi Chazbek
DESIGNED BY: Cassidy Grillon
REVISOR: Chadi Chazbek
DATE REVISED: XX/XX/11
XX

BORDER LAST REVISED 7/2/2010

USERNAME => minyoung_kim
DGN FILE => ...\\044a7900ea137.dgn

RELATIVE BORDER SCALE IS IN INCHES
0 1 2 3

UNIT xxxx

PROJECT NUMBER & PHASE

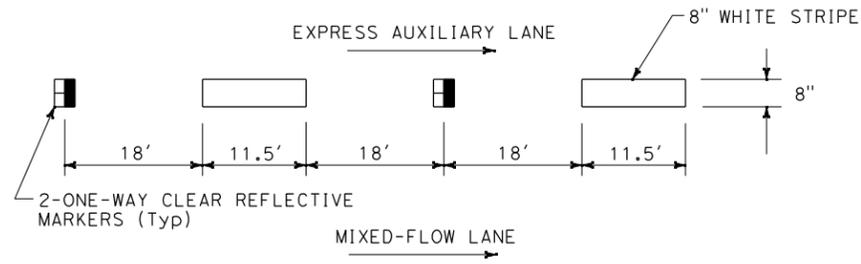
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LAST REVISION: 03-25-11
DATE PLOTTED => 7/3/2013
TIME PLOTTED => 4:26:19 PM

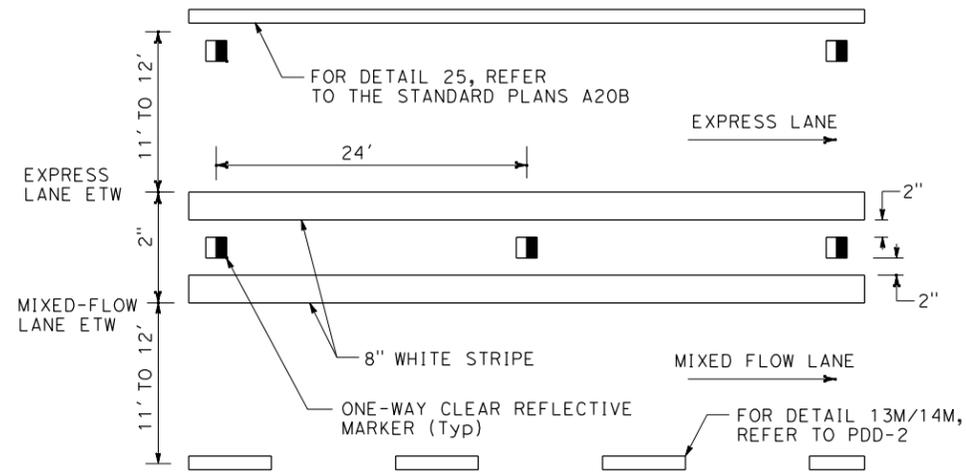
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

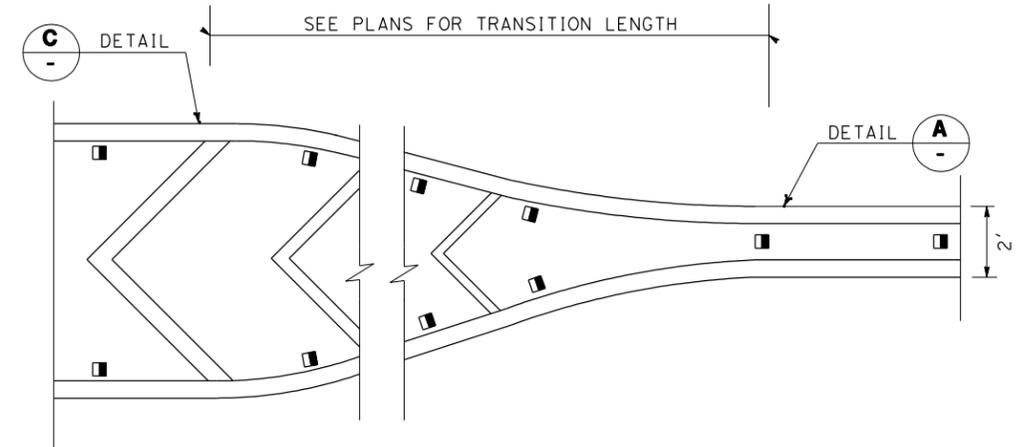
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



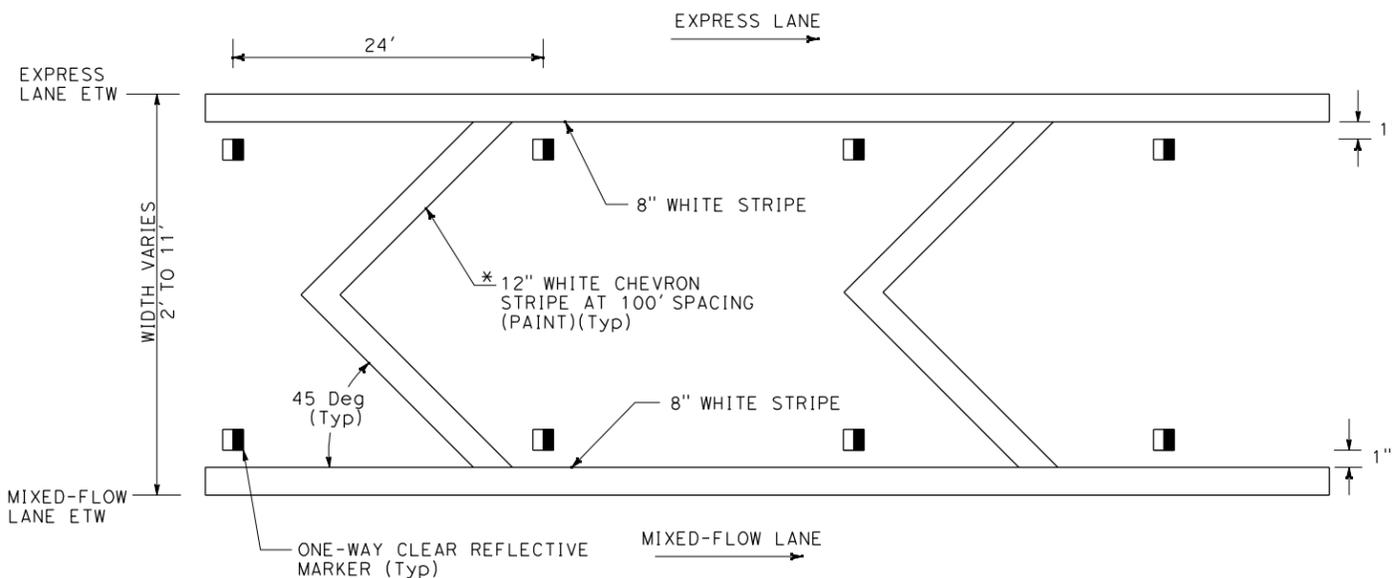
STRIPING DETAIL BETWEEN EXPRESS LANE AND MIXED-FLOW LANE (B)



BUFFER STRIPING DETAIL BUFFER WIDTH 2' (A)

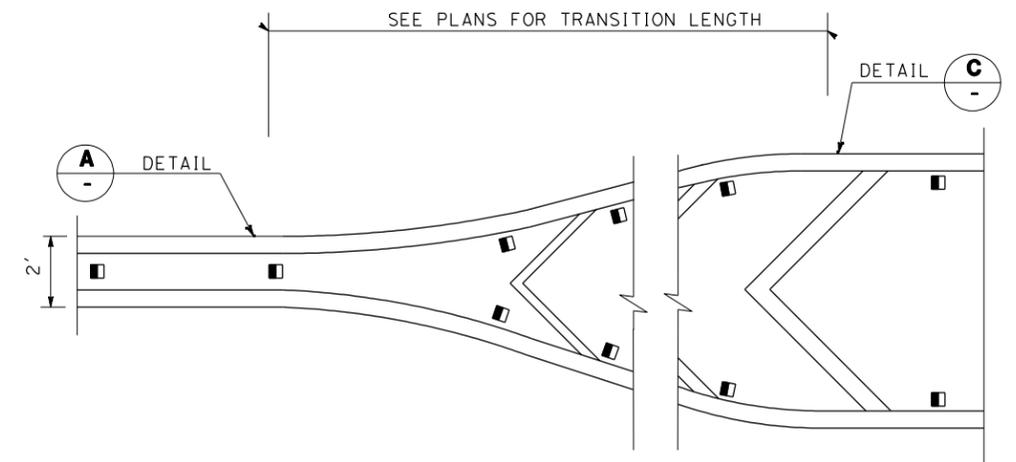


TRANSITION FROM DETAIL C TO DETAIL A



* NOTE: CHEVRON STRIPES TO BE PLACED WHEN THE SPACING BETWEEN THE 8" WHITE STRIPES EXCEEDS 4'

BUFFER ISLAND STRIPING DETAIL (C)



TRANSITION FROM DETAIL A TO DETAIL C

PAVEMENT DELINEATION DETAILS

NO SCALE

PDD-1

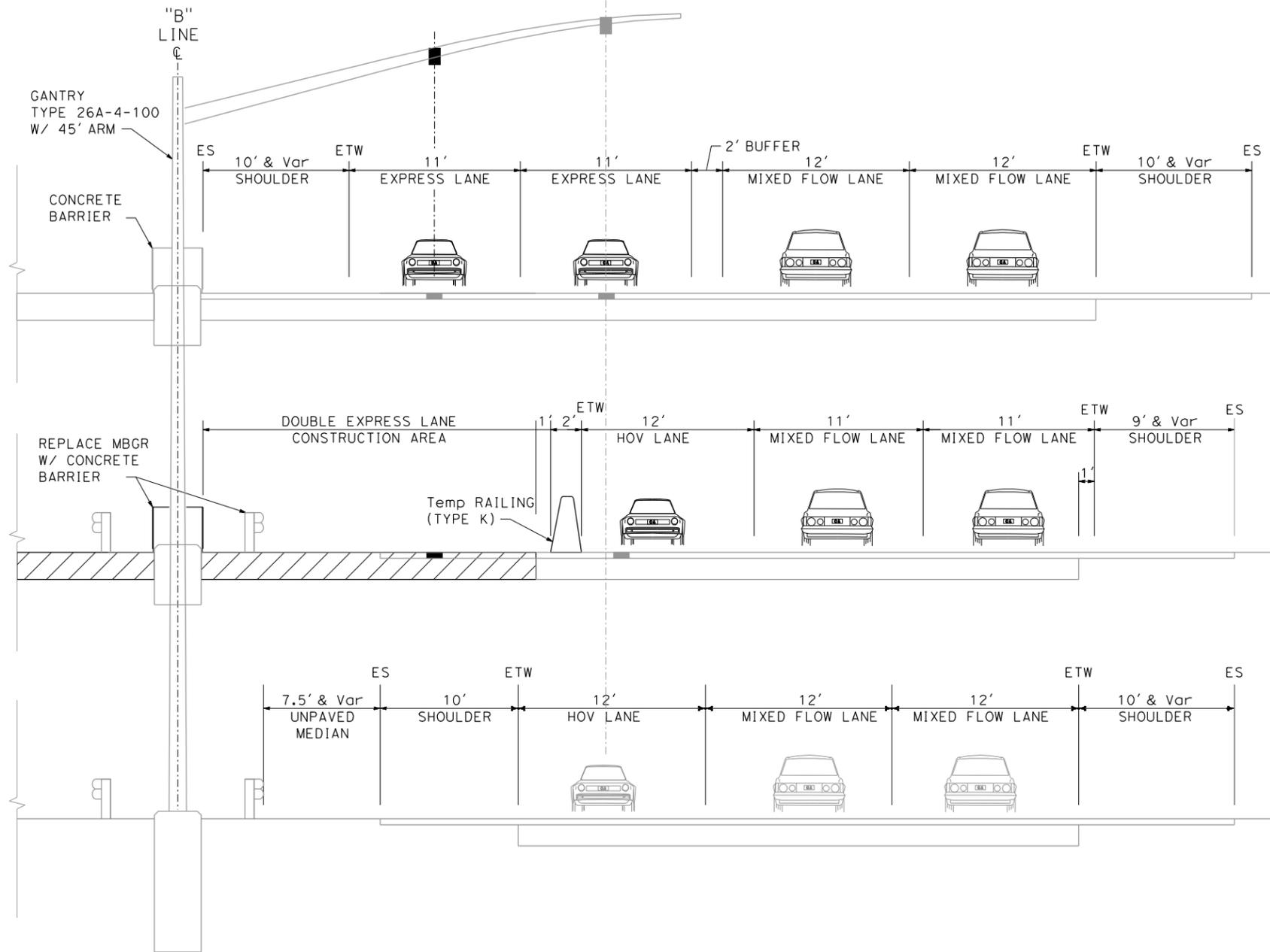
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR: Chad Chazbek
 DESIGNED BY: Cassidy Grillon
 CHECKED BY: Chad Chazbek
 REVISIONS: XX XX/XX/11
 REVISED BY: DATE REVISED

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
			Exp.		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



**CONCEPTUAL STAGE CONSTRUCTION
TYPICAL SECTION**

NORTHBOUND/SOUTHBOUND

PAVEMENT DELINEATION DETAILS

NO SCALE

PDD-2

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 GIBBONS

REVISOR
 XX
 XX/XX/11

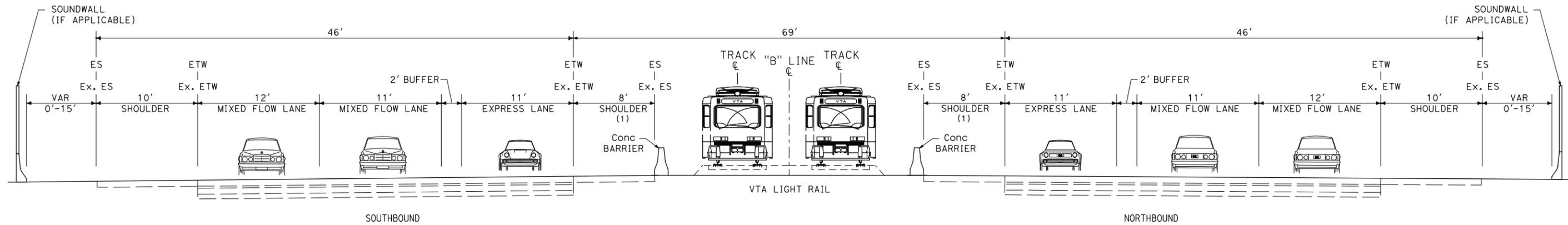
REVISOR
 DATE REVISED

DESIGNED BY
 Cassidy Grillon

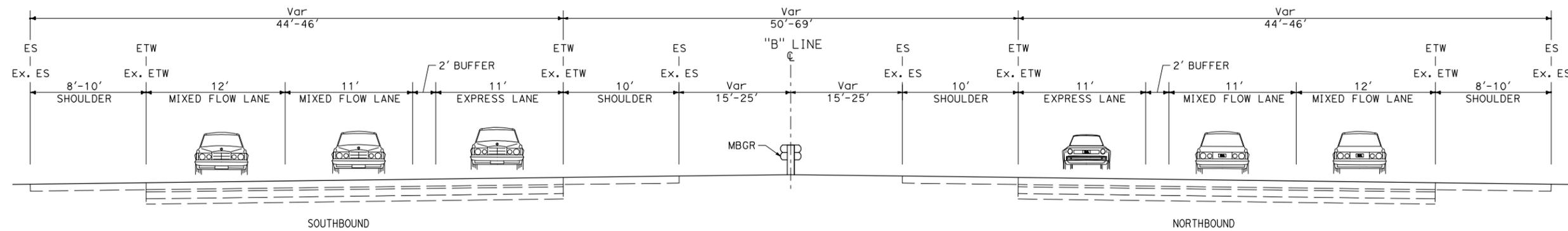
CHECKED BY
 Chadi Chazbek

CONSULTANT FUNCTIONAL SUPERVISOR
 Chadi Chazbek

DATE PLOTTED => 7/3/2013
 TIME PLOTTED => 4:26:21 PM



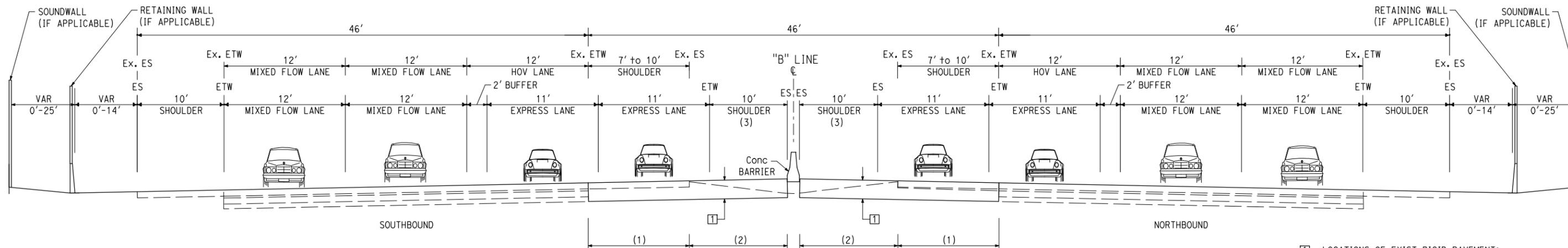
TYPICAL SECTION WITH 2' BUFFER (WITH LIGHT RAIL IN MEDIAN)



TYPICAL SECTION WITH 2' BUFFER (WITHOUT LIGHT RAIL IN MEDIAN)

NOT TO SCALE DIMENSIONS IN FEET

Notes:
 (1) Refer to the Mandatory Design Exceptions Fact Sheet for further detail on shoulder widths.



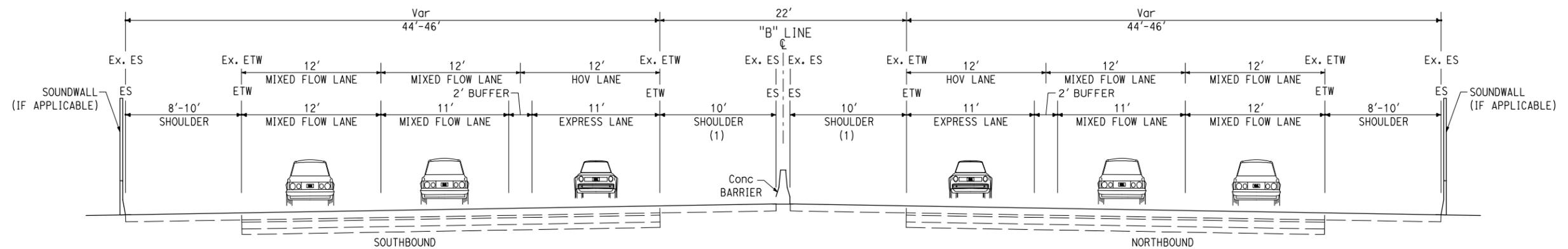
TYPICAL SECTION WITH 2' BUFFER

▣ LOCATIONS OF EXIST RIGID PAVEMENT:
 0.80' JPCP
 0.25' HMA-A
 0.60' CI 4 AS
 SEG (CI B1)

LOCATIONS OF EXIST RIGID FLEXIBLE PAVEMENT:
 0.15' RHMA-G
 0.35' HMA-A
 0.85' CI 3 AB
 0.75' CI 4 AS
 SEG (CI B1)

- Notes:
- (1) Replace existing inside shoulder with full-depth structural section.
 - (2) Widen inside median.
 - (3) Refer to the Mandatory Design Exceptions Fact Sheet for further detail on shoulder widths.

NOT TO SCALE DIMENSIONS IN FEET



TYPICAL SECTION WITH 2' BUFFER

Notes:
 (1) Refer to the Mandatory Design Exceptions Fact Sheet for further detail on shoulder widths.

NOT TO SCALE DIMENSIONS IN FEET



SR 85 Express Lanes Project

I-280 to US 101 (North)

Figure
X-3

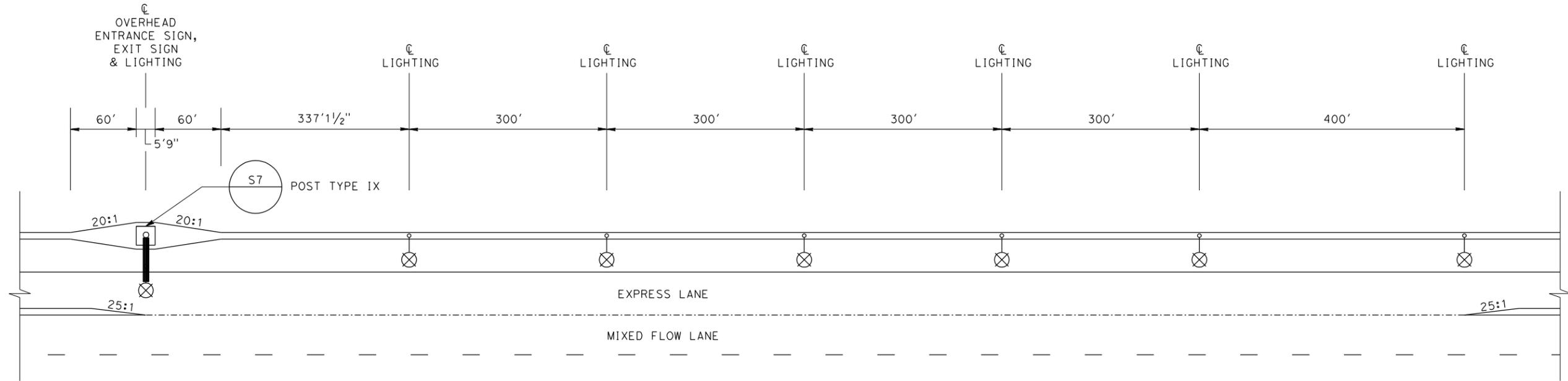
March 2013

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadi Chazbek
 CALCULATED/DESIGNED BY: Chadi Chazbek
 CHECKED BY: Chadi Chazbek
 REVISIONS:
 XX XX/XX/12
 REVISOR: Minyoung Kim
 DATE: XX/XX/12

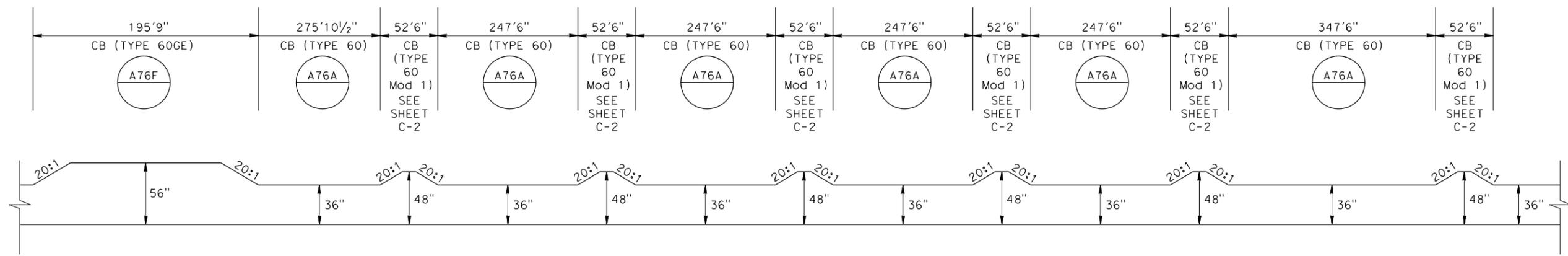
NOTES:

1. FOR DETAILS NOT SHOWN, REFER TO THE CALTRANS STANDARD PLANS.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		



PLAN



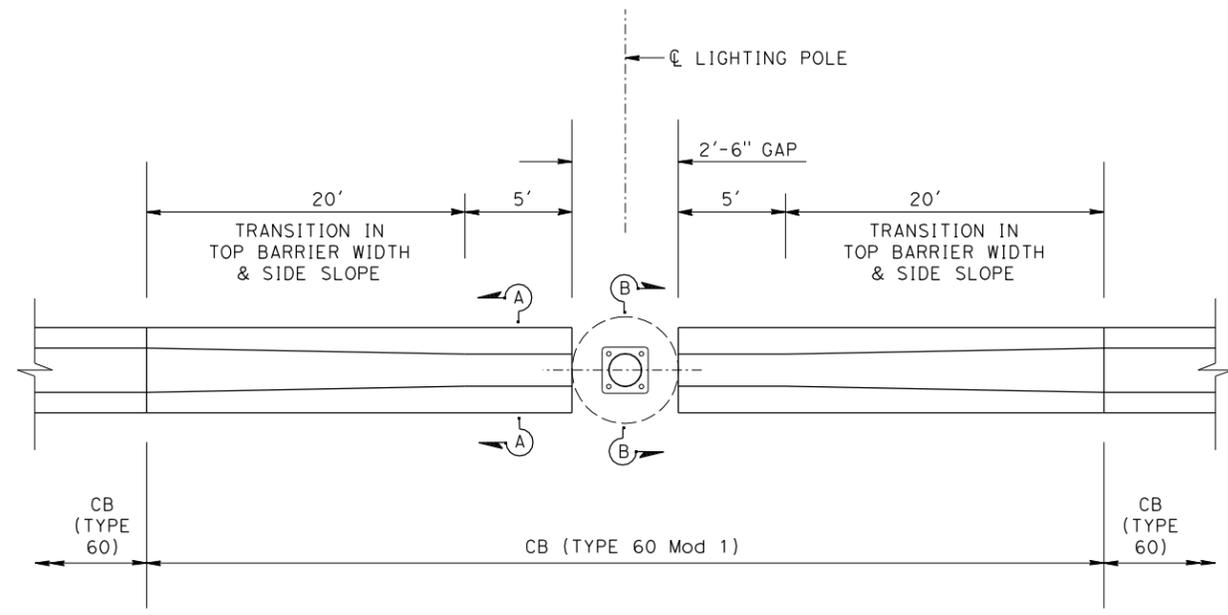
ELEVATION

CONSTRUCTION DETAIL
BARRIER AT ACCESS LOCATION
 NO SCALE **C-1**

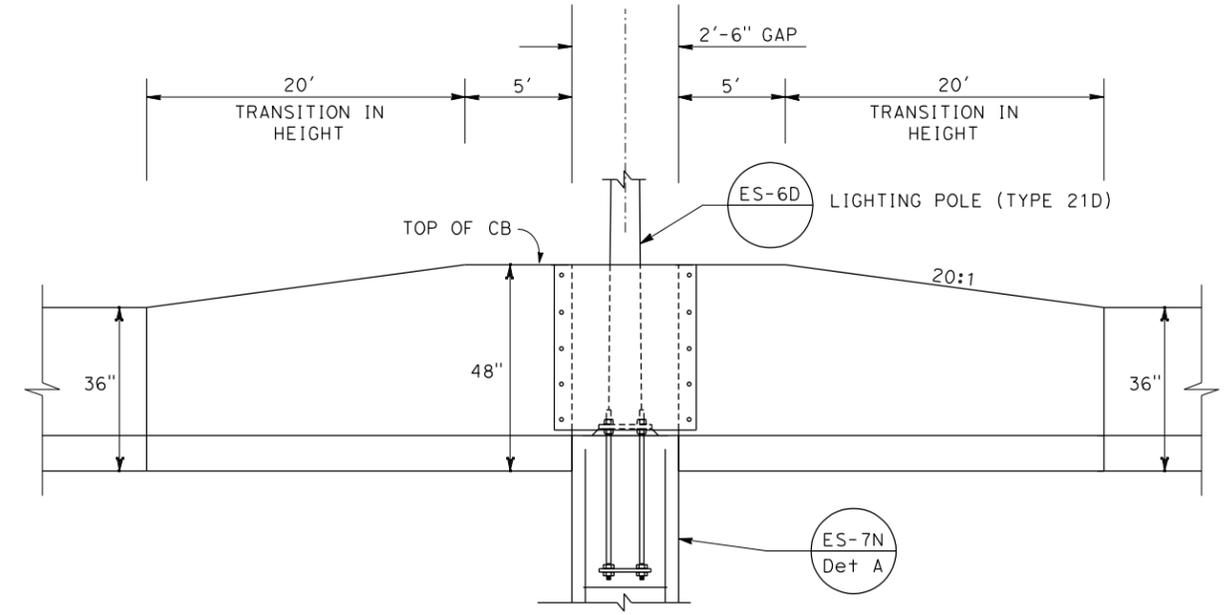
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
St. Gibbons
 CONSULTANT FUNCTIONAL SUPERVISOR: Chadí Chazbek
 CALCULATED-DRAWN BY: Chadí Chazbek
 CHECKED BY: Minyoung Kim
 REVISIONS: XX/XX/12
 REVISIONS: XX/XX/12

NOTES:

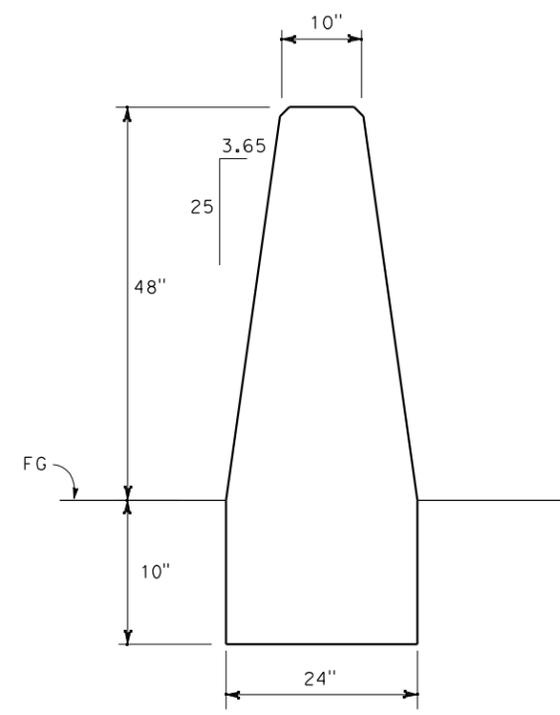
1. FOR MEDIAN LIGHTING TYPE 21D WITH SLANTED 1/2" THICK STEEL PLATE.



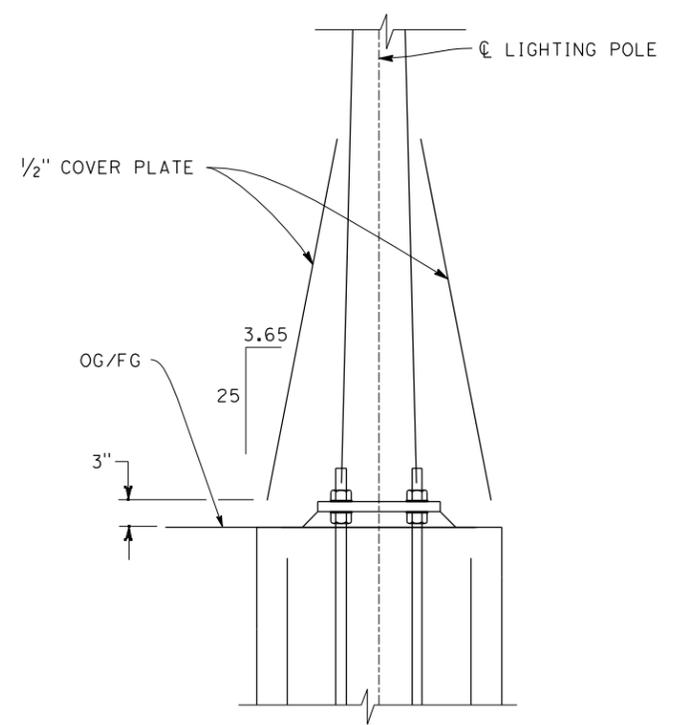
PLAN



ELEVATION



SECTION A-A

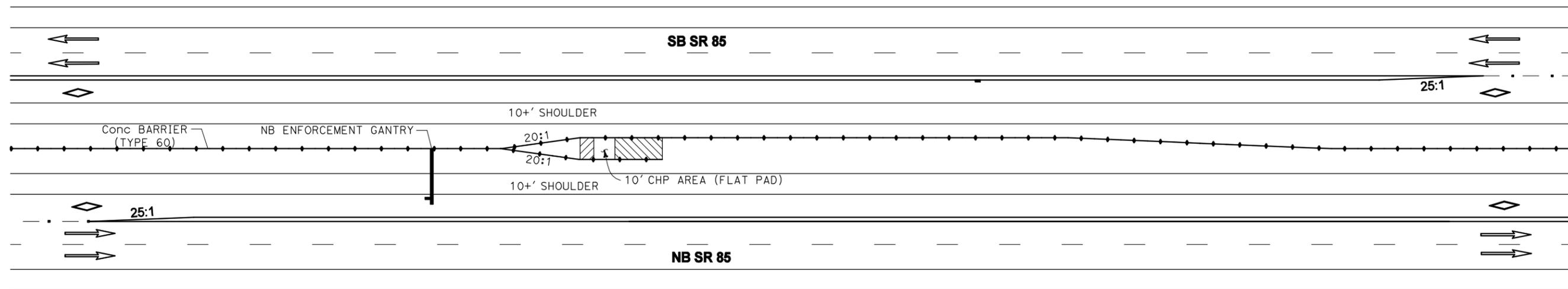


SECTION B-B

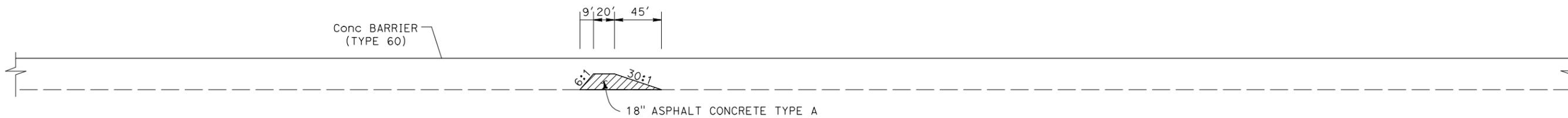
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	85, 101	Var		
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No.		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			Exp.		
URS Corporation 100 W San Fernando St Suite 200 San Jose, CA 95113			Santa Clara Valley Transportation Authority 3331 N First Street San Jose, CA 95134		

CONSTRUCTION DETAIL
CONCRETE BARRIER (TYPE 60 MOD 1)

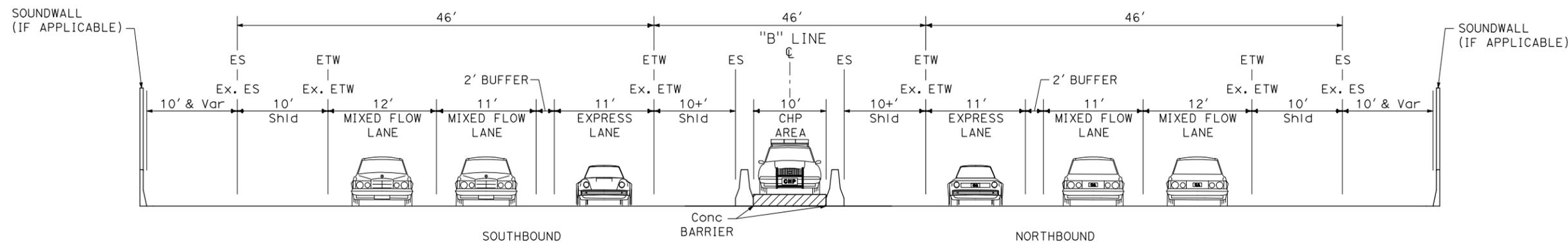
NO SCALE **C-2**



PLAN VIEW CHP MEDIAN OBSERVATION POINT



PROFILE VIEW CHP MEDIAN OBSERVATION POINT



TYPICAL SECTION CHP MEDIAN OBSERVATION POINT

NOT TO SCALE DIMENSIONS IN FEET

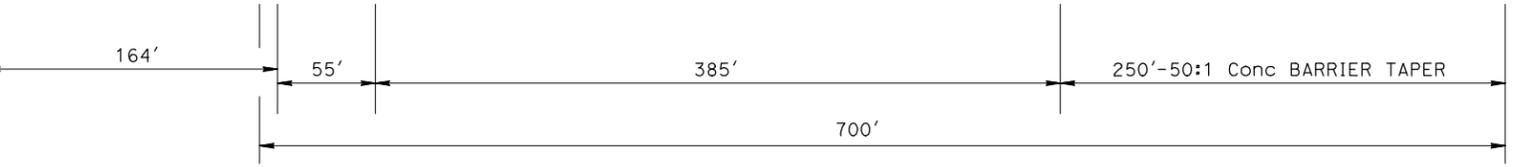
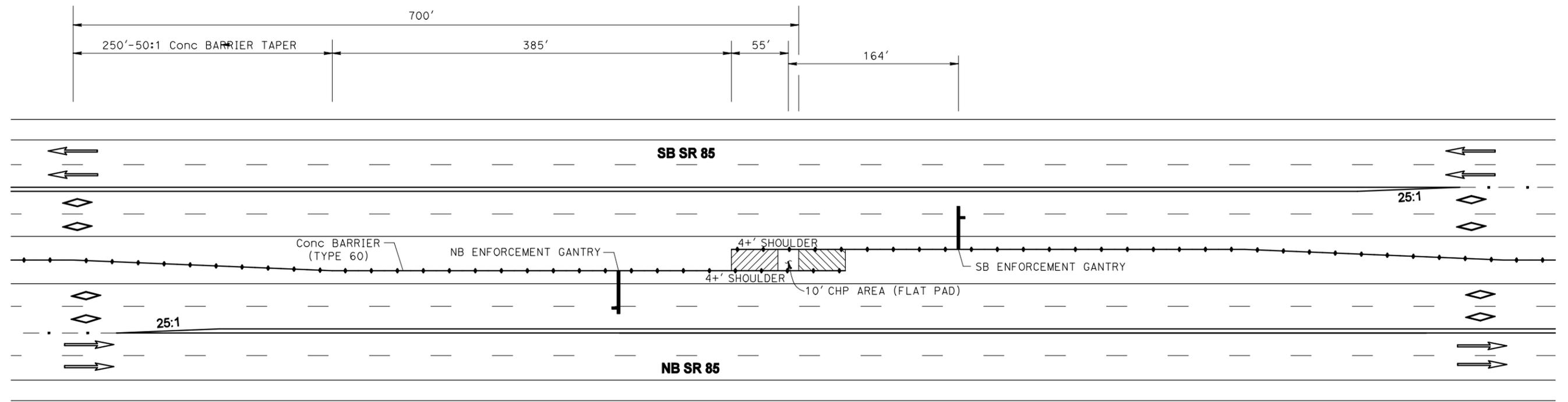


**PRELIMINARY STUDY
FOR DISCUSSION ONLY**

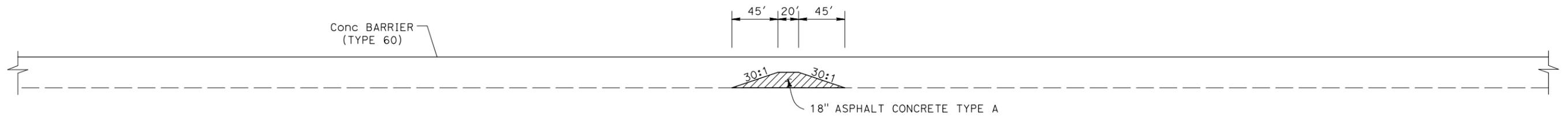
SR 85 Express Lanes Project

**US 101 (South) to SR 87 - Single Express Lane
CHP Median Observation Point**

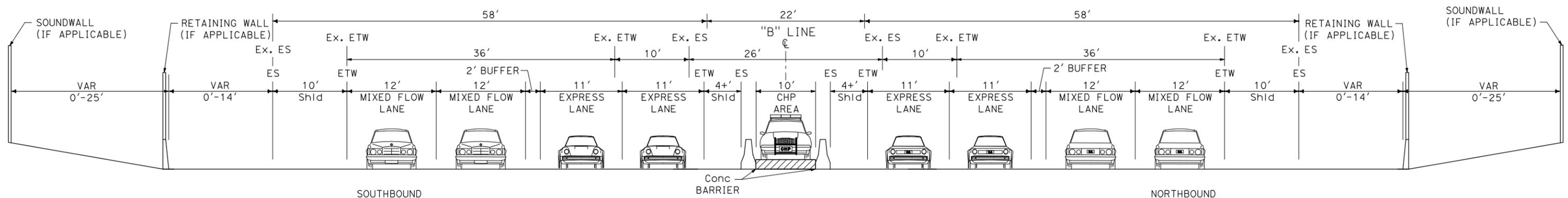
Figure
CHP-2
JUNE 2013



PLAN VIEW CHP MEDIAN OBSERVATION POINT



PROFILE VIEW CHP MEDIAN OBSERVATION POINT



TYPICAL SECTION CHP MEDIAN OBSERVATION POINT

NOT TO SCALE DIMENSIONS IN FEET

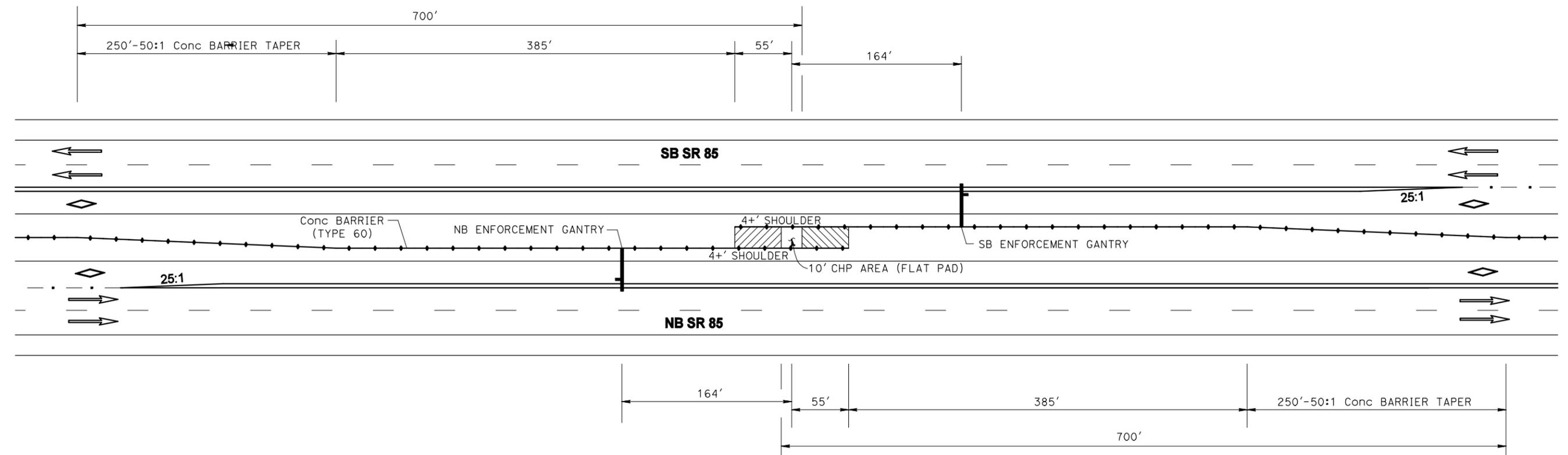


**PRELIMINARY STUDY
FOR DISCUSSION ONLY**

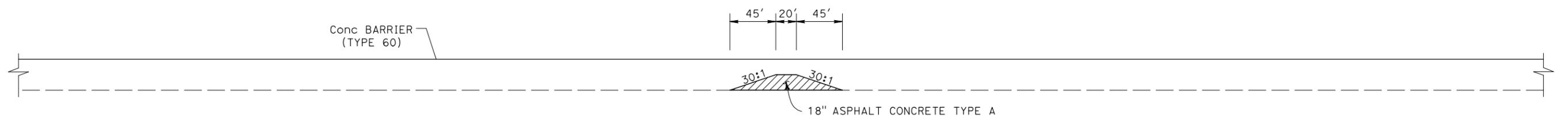
SR 85 Express Lanes Project

**SR 87 to I-280 - Double Express Lanes
CHP Median Observation Point**

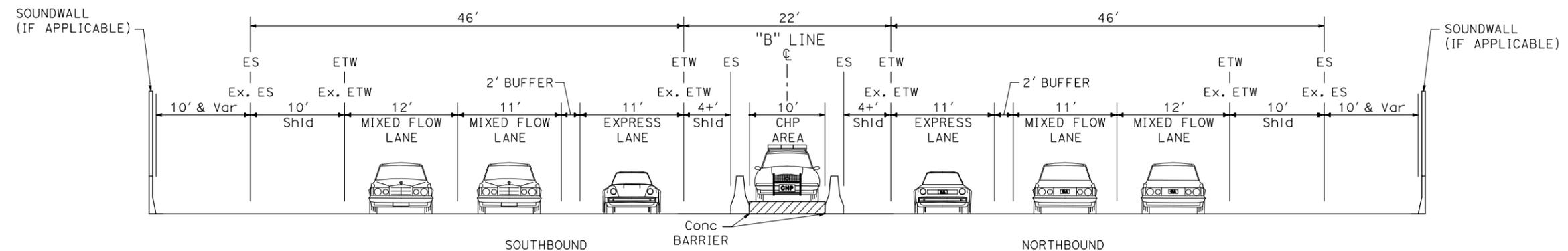
Figure
CHP-3
JUNE 2013



PLAN VIEW CHP MEDIAN OBSERVATION POINT



PROFILE VIEW CHP MEDIAN OBSERVATION POINT



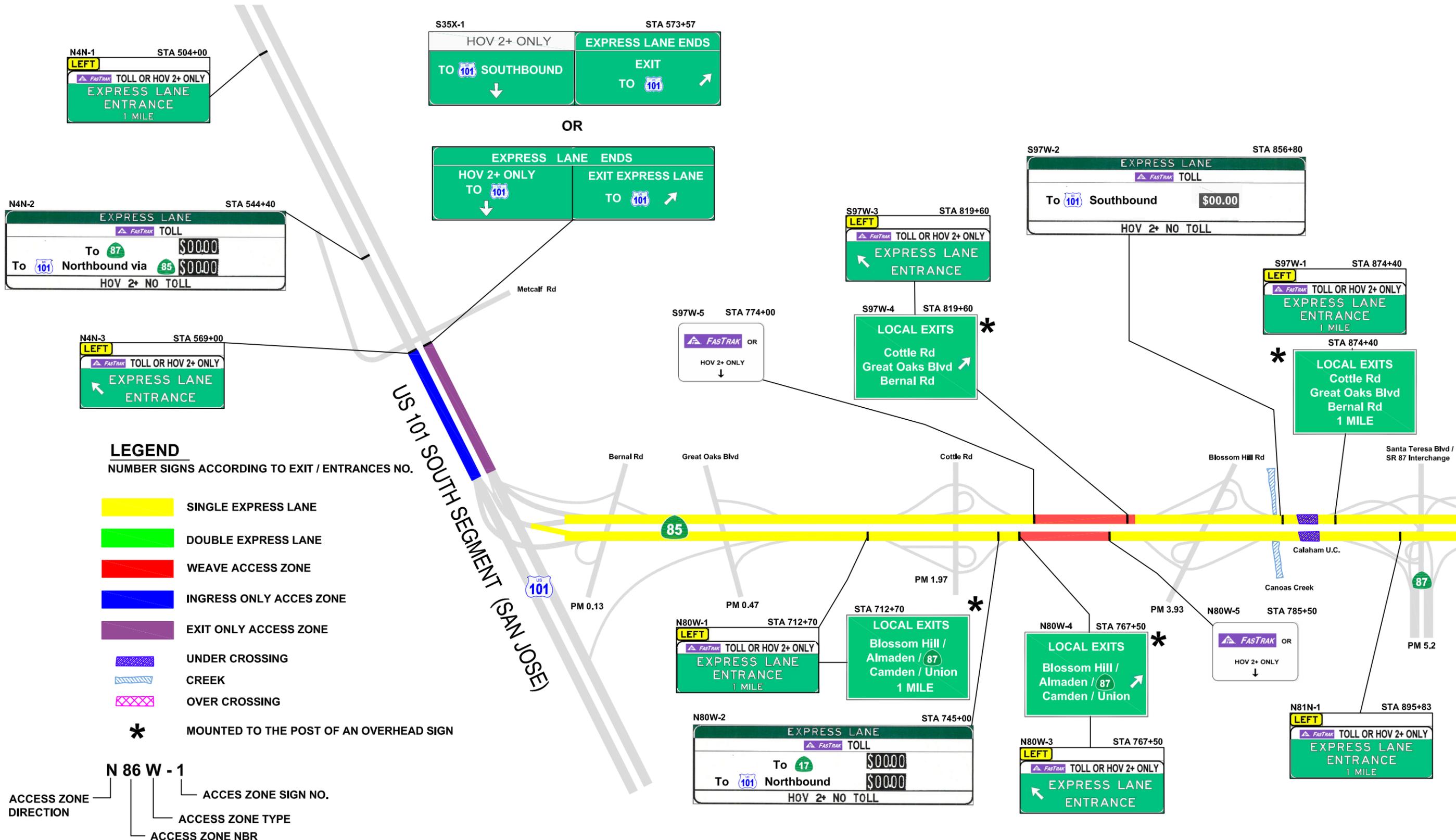
TYPICAL SECTION CHP MEDIAN OBSERVATION POINT

NOT TO SCALE

December 2013

04-SCI-85, PM 0.0/R24.1
04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment D
Conceptual Signing Plans



LEGEND

NUMBER SIGNS ACCORDING TO EXIT / ENTRANCES NO.

- SINGLE EXPRESS LANE
- DOUBLE EXPRESS LANE
- WEAVE ACCESS ZONE
- INGRESS ONLY ACCES ZONE
- EXIT ONLY ACCESS ZONE
- UNDER CROSSING
- CREEK
- OVER CROSSING
- * MOUNTED TO THE POST OF AN OVERHEAD SIGN

N 86 W - 1

ACCESS ZONE DIRECTION

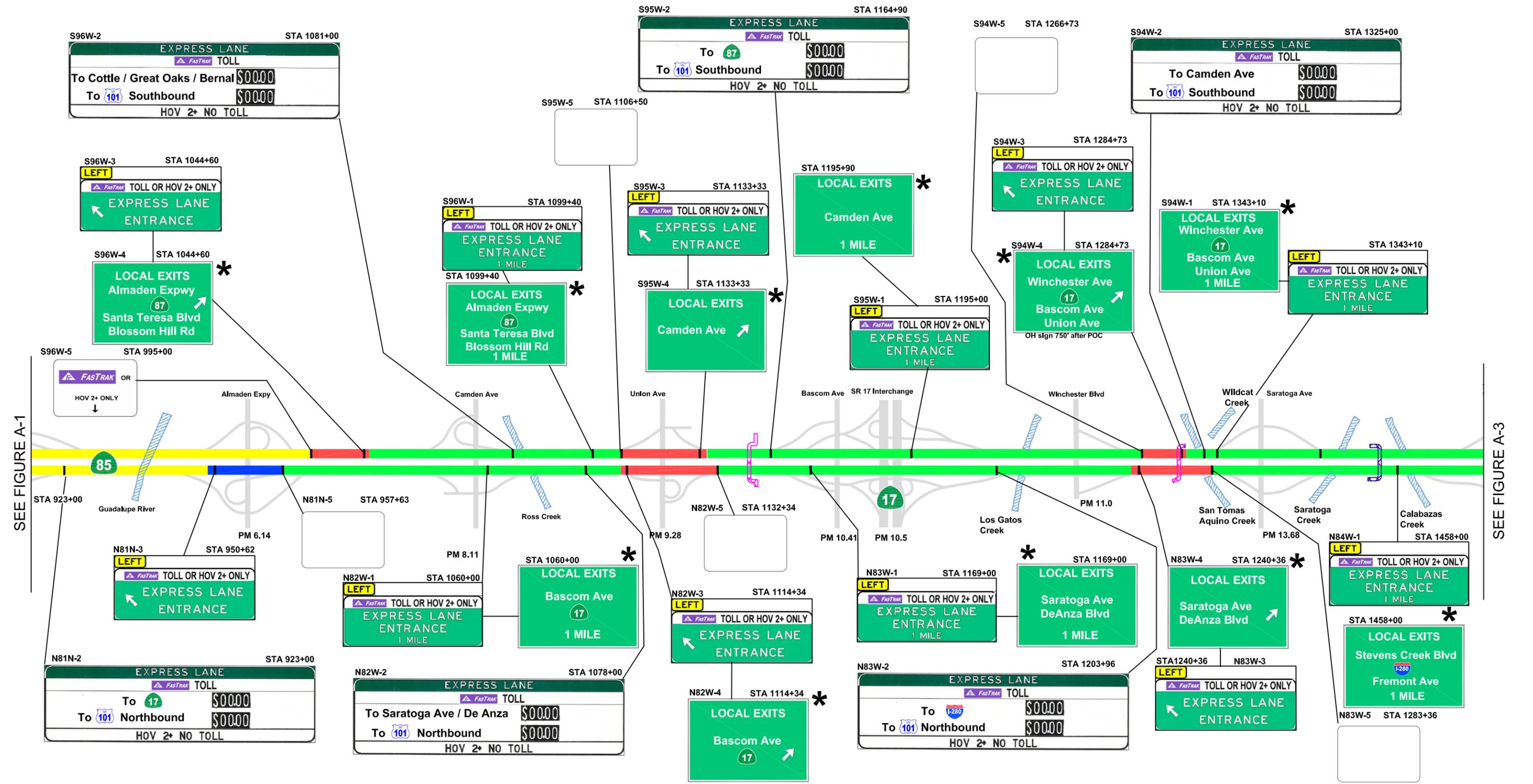
ACCESS ZONE SIGN NO.

ACCESS ZONE TYPE

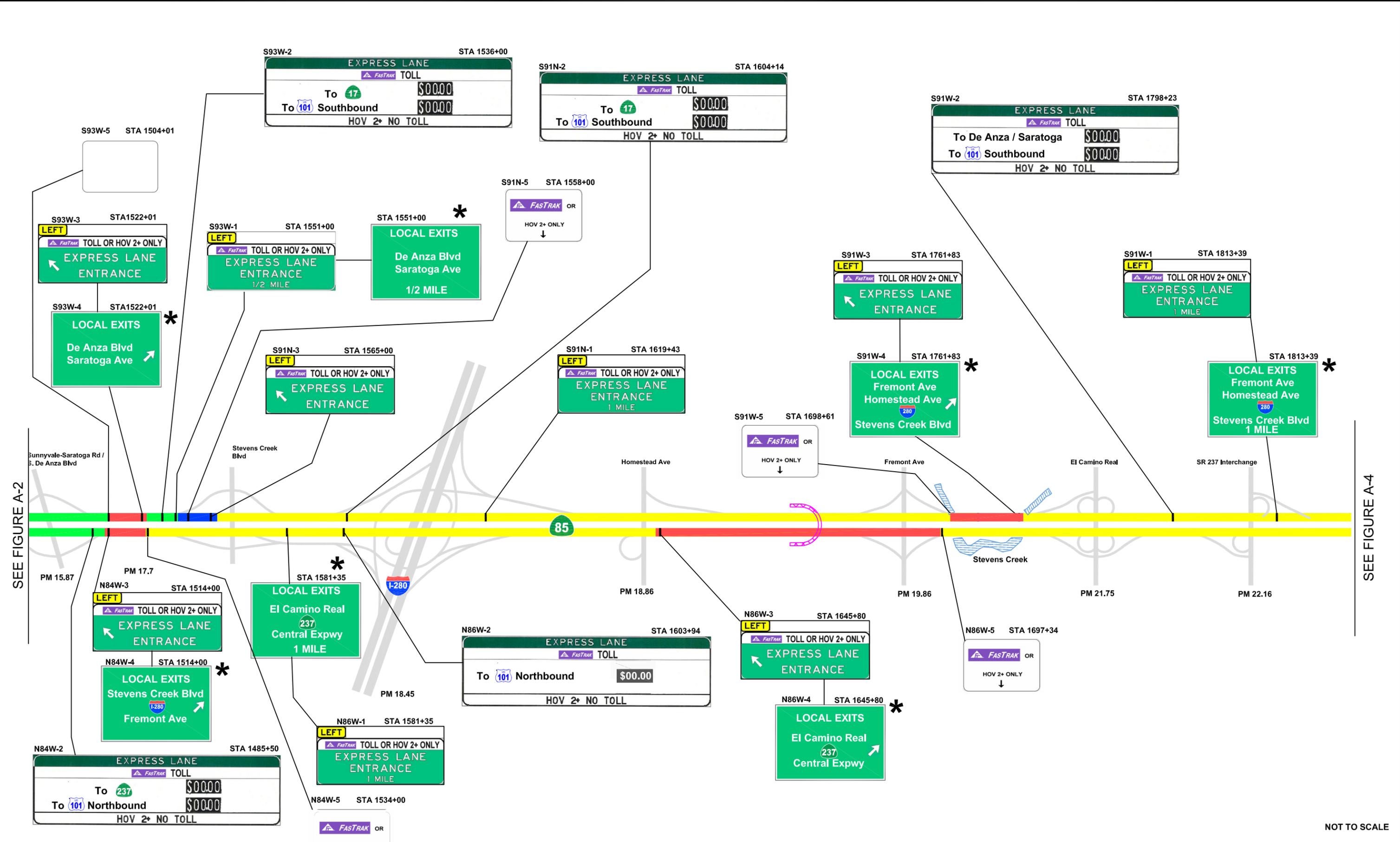
ACCESS ZONE NBR

SEE FIGURE A-2

NOT TO SCALE



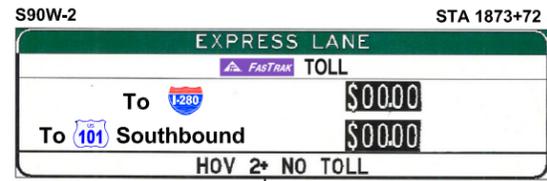
NOT TO SCALE



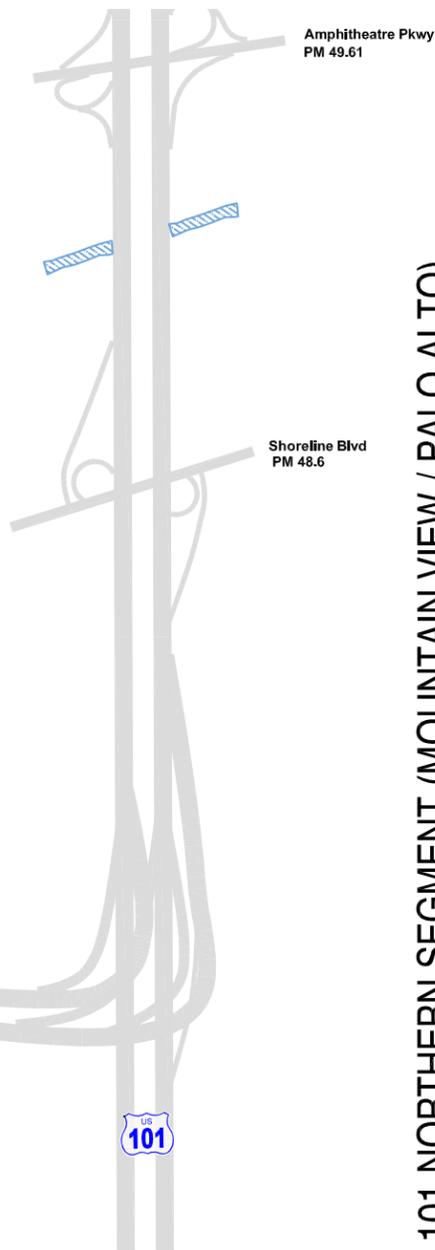
SEE FIGURE A-2

SEE FIGURE A-4

NOT TO SCALE



OR



US 101 NORTHERN SEGMENT (MOUNTAIN VIEW / PALO ALTO)

SEE FIGURE A-3

NOT TO SCALE



SR 85 Express Lanes Project
EA# 04-4A7900

Conceptual Sign Plans

DECEMBER 2013

Figure
D-4

December 2013

04-SCI-85, PM 0.0/R24.1
04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment E
Cost Estimate

PA/ED COST ESTIMATE

District-County_Route: 04-SCI-85
 Type of Estimate: PAED
0.0/R24.1, 23.1/28.6,
 PM: 47.9/52.0
 EA: 04-4A7900
 Program Code: HB-5

Project Description:

Limits: On Route 85, in Santa Clara County between the US 101 Interchange at the south end
and the US 101 Interchange at the north end of the route. Segments on US 101 in Mountain
View from Moffett Blvd to Oregon Expy and US 101 in South San Jose from Bailey Ave to
Blossom Hill Rd.

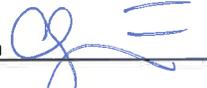
Proposed Improvement (Scope):

The Project would convert the existing single HOV lanes on northbound and southbound SR 85
into express lane facilities that would have one lane between US 101 in southern San Jose and
SR 87, two lanes between SR 87 and I-280, and one lane between I-280 and US 101 in Mountain
View. The project would include multiple intermediate access points between the express lanes
and the adjacent mixed-flow lanes.

SUMMARY OF PROJECT COST ESTIMATE

	Costs
TOTAL ROADWAY ITEMS	\$ 121,000,000
TOTAL STRUCTURE ITEMS	\$ 11,000,000
SUBTOTAL CONSTRUCTION COSTS	\$ 132,000,000
ESCALATION TO 2015	\$ 9,000,000 ⁽¹⁾
TOTAL CONSTRUCTION COSTS	\$ 141,000,000
TOTAL RIGHT OF WAY & UTILITY ITEMS (Current Value) (Includes Est for BCDC Mitigation)	\$ -
TOTAL PROJECT CAPITAL OUTLAY COST	\$ 141,000,000
Project Report and Enviro Doc	\$ 5,000,000 ⁽²⁾
Design Phase (PS&E)	\$ 11,000,000 ⁽³⁾
Construction Administration	\$ 15,000,000 ⁽⁴⁾
TOTAL SUPPORT COST	\$ 31,000,000
TOTAL PROJECT COST	\$ 172,000,000

- Note 1: Based on escalation rate of 3.00% per year for two years
- Note 2: 3.50% of Total Construction Cost (non-escalated)
- Note 3: 8.00% of Total Construction Cost (non-escalated)
- Note 4: 10.00% of Total Construction Cost

Reviewed by: Casidy Grillon 

Approved by Project Manager: Ray Akkawi 

Date: December 20, 2013

Phone No.: 408-297-9585

PA/ED COST ESTIMATE

District-County_Route: 04-SCI-85
 Type of Estimate: PAED
 0.0/R24.1, 23.1/28.6,
 PM: 47.9/52.0
 EA: 04-4A7900

I. ROADWAY ITEMS

Section 1 Earthwork	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Unit Cost</u>	<u>Section Cost</u>
Roadway Excavation	183,203	CY	\$ 35.00	\$ 6,412,105	
Clearing & Grubbing	1	LS	\$ 10,000.00	\$ 10,000	
Develop Water Supply	1	LS	\$ 50,000.00	\$ 50,000	
				Subtotal Earthwork	\$ 6,472,105

Section 2 Pavement Structural Section

RHMA-G	11,680	TON	\$ 110.00	\$ 1,284,800	
JPCP	49,680	CY	\$ 160.00	\$ 7,948,800	
HMA (Type A)	58,700	TON	\$ 100.00	\$ 5,870,000	
Class 3 Aggregate Base	32,690	CY	\$ 35.00	\$ 1,144,150	
Class 4 Aggregate Subbase	66,100	CY	\$ 28.00	\$ 1,850,800	
SEG (Class B1)	301,700	SY	\$ 2.70	\$ 814,590	
				Subtotal Pavement Structural Section	\$ 18,913,140

Section 3 Drainage

Relocate and Modify Drainage Facilities	1	LS	\$ 3,400,000.00	\$ 3,400,000	
Underdrains	129,000	LF	\$ 25.00	\$ 3,225,000	
				Subtotal Drainage	\$ 6,625,000

PA/ED COST ESTIMATE

District-County_Route: 04-SCI-85
 Type of Estimate: PAED
 0.0/R24.1, 23.1/28.6,
 PM: 47.9/52.0
 EA: 04-4A7900

Section 4 Specialty Items	<u>Quantity</u>	<u>Unit</u>	<u>Unit Price</u>	<u>Unit Cost</u>	<u>Section Cost</u>
Erosion Control (1%)	1	LS	\$ 1,310,000.00	\$ 1,310,000	
Water Pollution Control (2.5%)	1	LS	\$ 3,275,000.00	\$ 3,275,000	
Permanent Treatment BMP (2%)	1	LS	\$ 2,620,000.00	\$ 2,620,000	
Irrigation	1	LS	\$ 100,000.00	\$ 100,000	
Highway Planting	1	LS	\$ 60,000.00	\$ 60,000	
Prepare SWPPP	1	LS	\$ 50,000.00	\$ 50,000	
Remove Misc	1	LS	\$ 40,000.00	\$ 40,000	
Concrete Barrier (Type 60)	61,988	LF	\$ 80.00	\$ 4,959,040	
Concrete Barrier (Type 60 Mod)	3,465	LF	\$ 260.00	\$ 900,900	
Concrete Barrier (Type 60GE)	5,533	LF	\$ 280.00	\$ 1,549,240	
Concrete Barrier for Barrier Mounted Sign	50	EA	\$4,500	\$ 225,000	
Mitigation and Monitoring	1	LS	\$ 1,000,000.00	\$ 1,000,000	
					Subtotal Specialty Items
					\$ 16,089,180
Section 5 Traffic Items					
Traffic Delineation Items	1	LS	\$ 2,100,000.00	\$ 2,100,000	
Overhead Sign Structures	61	EA	\$ 150,000.00	\$ 9,150,000	
Barrier Mounted Signs	1	LS	\$ 500,000.00	\$ 500,000	
Traffic Control System	1	LS	\$ 5,240,000.00	\$ 5,240,000	
Traffic Management Plan	1	LS	\$ 816,500.00	\$ 816,500	
ETS Design & Install	1	LS	\$ 11,708,800.00	\$ 11,708,800	
Freeway Lighting	1	LS	\$ 1,300,000.00	\$ 1,300,000	
					Subtotal Traffic Items
					\$ 30,815,300
					TOTAL SECTIONS 1-5
					\$ 78,914,725

PA/ED COST ESTIMATE

District-County_Route: 04-SCI-85
 Type of Estimate: PAED
 0.0/R24.1, 23.1/28.6,
 PM: 47.9/52.0
 EA: 04-4A7900

Section 6 Minor Items

Subtotal Sections 1 - 5	\$ 78,914,725	x	2%	<u>\$ 1,578,294.50</u>
Total Minor Items				<u>\$ 1,579,000</u>

Section 7 Roadway Mobilization

Subtotal Sections 1 - 5	\$ 78,914,725			
Minor Items	<u>\$ 1,579,000</u>			
Subtotal Sections 1 - 6	\$ 80,493,725	x	10%	<u>\$ 8,049,373</u>
Total Roadway Mobilization				<u>\$ 8,050,000</u>

Section 8 Roadway Additions

Supplemental Work	\$ 80,493,725	x	10%	<u>\$ 8,049,373</u>
Contingencies	\$ 96,593,098	x	25%	<u>\$ 24,148,275</u>
Total Roadway Additions				<u>\$ 32,198,000</u>
Total Roadway Items (Total of Sections 1-8)				<u>\$ 121,000,000</u>

Estimate Prepared by: Cassidy Grillon Phone: 408-297-9585 Date: December 20, 2013
 Estimate Checked by: Minyoung Kim Phone: 408-297-9585 Date: December 20, 2013

PA/ED COST ESTIMATE

District-County_Route: 04-SCI-85
 Type of Estimate: PAED
 0.0/R24.1, 23.1/28.6,
 PM: 47.9/52.0
 EA: 04-4A7900

II. STRUCTURES ITEMS

	<u>Structure 1</u>	<u>Structure 2</u>	<u>Structure 3</u>	<u>Structure 4</u>
Bridge Name:	Almaden	Camden	Pollard	San Tomas Aquino
Structure Type:				
Lengths - (ft)	234.8	204.6	187.7	104.8
Width - (ft)	12.0	45.0	22.5	22.5
Total Area - (ft ²)	2,817	9,207	4,223	2,359
Footing Type (pile/spread)	Pile	Pile	Pile	Pile
Cost Per ft ²	\$ 297.00	\$ 212	\$ 479	\$ 369
Bridge Total Cost (25% Contingencies)	\$ 836,649	\$ 1,950,963	\$ 2,023,781	\$ 871,059
Total Cost for Structure	<u>\$ 837,000</u>	<u>\$ 1,951,000</u>	<u>\$ 2,024,000</u>	<u>\$ 871,000</u>

	<u>Structure 5</u>	<u>Structure 6</u>	<u>Structure 7</u>	<u>Structure 8</u>
Bridge Name:	Saratoga Ave	Saratoga Creek	Oka Rd	McClellan Rd
Structure Type:				
Lengths - (ft)	190.7	99.9	99.6	100.0
Width - (ft)	22.5	22.5	29.5	50.0
Total Area - (ft ²)	4,290	2,248	2,937	5,000
Footing Type (pile/spread)	Pile	Pile	Pile	
Cost Per ft ²	\$ 293	\$ 332	\$ 337	225
Bridge Total Cost (25% Contingencies)	\$ 1,256,134	\$ 746,627	\$ 990,657	\$ 1,125,000
Total Cost for Structure	<u>\$ 1,256,000</u>	<u>\$ 747,000</u>	<u>\$ 991,000</u>	<u>\$ 1,125,000</u>

(Sum of Total Cost for Structures) \$ 9,802,000

Comments:

Estimate Prepared by: Cassidy Grillon Phone: 408-297-9585 Date: December 20, 2013

PA/ED COST ESTIMATE

District-County_Route: 04-SCI-85
 Type of Estimate: PAED
 0.0/R24.1, 23.1/28.6,
 PM: 47.9/52.0
 EA: 04-4A7900

II. STRUCTURES ITEMS (Continued)

	<u>Structure 9</u>	
Bridge Name:	Stelling Rd	
Structure Type:		
Lengths - (ft)	68.0	
Width - (ft)	30.0	
Total Area - (ft ²)	2,040	
Footing Type (pile/spread)	Pile	
Cost Per ft ²	\$ 225.00	
Bridge Total Cost (25% Contingencies)	\$ 459,000	
Bridge Removal (25% Contingencies)	\$ -	
Total Cost for Structure	\$ 459,000	

Bridge Name:	
Structure Type:	
Lengths - (ft)	
Width - (ft)	
Total Area - (ft ²)	
Footing Type (pile/spread)	
Cost Per ft ²	
Bridge Total Cost (25% Contingencies)	
Bridge Removal (25% Contingencies)	
Total Cost for Structure	

(Sum of Total Cost for Structures) \$ 459,000

Railroad Related Costs: \$ -

Subtotal Railroad Items \$ -

Total Structures Items \$ 11,000,000
(Sum of Structures Items plus Railroad Items)

Comments:

Estimate Prepared by: Cassidy Grillon Phone: 408-297-9585 Date: December 20, 2013

PA/ED COST ESTIMATE

District-County_Route: 04-SCI-85
 Type of Estimate: PAED
 0.0/R24.1, 23.1/28.6,
 PM: 47.9/52.0
 EA: 04-4A7900

II. RIGHT OF WAY ITEMS

	Current Value 2012	Escalation Rate Per Year	Escalated Value 2012
A. Acquisition, including excess lands, damages to remainder(s) and Goodwill	\$ -	-	\$ -
B. Utility Relocation (State Share)	\$ -	-	\$ -
C. Relocation Assistance	\$ -	-	\$ -
D. Clearance/Demolition	\$ -	-	\$ -
E. TCE/Permit to Enter	\$ -	-	\$ -
F. BCDC Mitigation	\$ -	-	\$ -
	<hr/>	<hr/>	<hr/>
Total Right of Way & Utilities (Current Value)	\$ -	Total Esc. Value	\$ -
		Rounded	\$ -

Anticipated Date of Right of Way Certification
(Date to which Values are Escalated) _____

F. Construction Contract Work
 Brief Description of Work

Right of Way Branch Cost Estimate for Work \$ -

Comments:

Estimate Prepared by: Cassidy Grillon Phone: 408-297-9585 Date: December 20, 2013

December 2013

04-SCI-85, PM 0.0/R24.1
04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment F
Right of Way Data Sheet

To: District Office Chief
R/W Local Public Agency Services

Date: December 26, 2013

Co. Santa Clara Rte. 85 PM 0.0/24.1
Co. Santa Clara Rte. 101 PM 23.1/28.6
Co. Santa Clara Rte. 101 PM 47.9/52.0
Expense Authorization: 04-4A7900

Attention: District Branch Chief
Local Public Agency Services

Subject: **RIGHT OF WAY DATA SHEET- LOCAL PUBLIC AGENCY SERVICES**

Project Description: SR 85 Express Lanes Project

Right of way necessary for the subject project will be the responsibility of Santa Clara Valley Transportation Authority (VTA).

The information in this data sheet was developed by URS Corporation.

I. **Right of Way Engineering**

Will right of way engineering be required for this project?

- No
- Yes (Submit a copy of the *Right of Way Engineering, Surveys and Mapping Services checklist for Special Funded Projects*. This checklist includes but is not limited to the following items.)
 - Hard copy (base map)
 - Appraisal map
 - Acquisition Documents
 - Property Transfer Documents
 - R/W Record Map
 - Record of Survey

II. **Engineering Surveys**

1. Is any surveying or photogrammetric mapping required?

No Yes (Complete the following)

2. **Datum Requirements**

Yes The project will adhere to the following criteria.

- Horizontal datum - policy is CCS 83, CA-HPGN, TBD, and imperial units
- Vertical datum - policy is NAVD 88
- Units - imperial is required

No Provide an explanation on additional page.

3. Will land survey monument perpetuation be scoped into the project, if required?

Yes

No Provide explanation on additional page.

III. Parcel Information (Land and Improvements)

Are there any property rights required within the proposed project limits?

No Yes _____ (Complete the following)

	Part Take	Full Take	Estimate \$
A. Number of Vacant Land Parcels	_____	_____	\$ _____
B. Number of Single Family Residential Units	_____	_____	\$ _____
C. Number of Multi-Family Residential Units	_____	_____	\$ _____
D. Number of Commercial/Industrial Parcels	_____	_____	\$ _____
E. Number of Farm/Agricultural Parcels	_____	_____	\$ _____
F. Permanent and/or Temporary Easements	_____	_____	\$ _____
G. Other Parcels (define in "Remarks" section)	_____	_____	\$ _____
Totals	_____	_____	\$ _____

Provide a general description of the right of way and excess lands required (zoning, use, improvements, critical, or sensitive parcels, etc.).

IV. Dedications

Are there any property rights that have been acquired, or anticipate will be acquired, through the "dedication" process for the Project?

No Yes _____ (Complete the following)

Number of dedicated parcels

Have the dedication parcel(s) been accepted by the municipality involved ?

V. Excess Lands / Relinquishments

Are there Caltrans property rights which may become excess lands or potential relinquishment areas?

No Yes _____ (Provide an explanation on additional page.)

VI. Relocation Information

Are relocation displacements anticipated?

No Yes _____ (Complete the following)

A. Number of Single Family Residential Units	_____	
Estimated RAP Payments		\$ _____
B. Number of Multi-Family Residential Units	_____	
Estimated RAP Payments		\$ _____
C. Number of Business/Nonprofit	_____	
Estimated RAP Payments		\$ _____
D. Number of Farms	_____	
Estimated RAP Payments		\$ _____
E. Other (define in the "Remarks" section)	_____	
Estimated RAP Payments		\$ _____
Totals	_____	\$ _____

VII. Utility Relocation Information

Anticipate any utility facilities or utility rights of way to be affected?

No Yes _____ (Complete the following)

Facility	Owner	Estimated Relocation Expense		
		State Obligation	Local Obligation	Utility Owner Obligation
A.		\$ _____	\$ _____	\$ _____
B.		\$ _____	\$ _____	\$ _____
C.		\$ _____	\$ _____	\$ _____
D.		\$ _____	\$ _____	\$ _____
E.		\$ _____	\$ _____	\$ _____
F.		\$ _____	\$ _____	\$ _____
Totals				
Number of facilities		\$ _____	* _____	\$ _____

*This amount reflects the estimated total financial obligation by the State.

Additional information concerning utility involvement on this project? No utility impacts have been identified as a result of this project. Utility potholing will be conducted during the design phase of the project per Caltrans Policy on High and Low Risk Underground Facilities Within Highway Rights of Way.

VIII. Rail Information

Are railroad facilities or railroad rights of way affected?

No _____ Yes X (Complete the following)

Describe railroad facilities or railroad rights of way affected.

Owner's Name	Transverse Crossing	Longitudinal Encroachment
A. Santa Clara VTA		Light Rail Transit Facilities

Discuss types of agreements and rights required from the railroads. Are grade crossings requiring services contracts, or grade separations requiring construction and maintenance agreements involved?

Joint Use and Maintenance Agreement (JUMA) by and between Caltrans and VTA allows for temporary access during construction with advanced notification. JUMA states that "future additions, extensions, enlargements or other modifications of State's facilities shall not preclude the use of, or unreasonably interfere with, VTA's facilities in the State Highway right of way. State and VTA shall explore all reasonable alternatives for accommodating State's proposed expanded use(s) without interfering with VTA's facilities."

The joint use of portions of State Highway right of way at designated encroachment locations include:

- Parcel Number J-4, within State Route 85 from Miyuki Drive to Cottle Road
- Parcel Number J-7, within State Route 85 from Cottle Road to Snell Road
- Parcel Number J-10, within State Route 85 from Snell Road to Canoas Creek
- Parcel Number J-13, within State Route 85 at Canoas Creek Culvert
- Parcel Number J-15, within State Route 85 from Canoas Creek to Cahalan Ave
- Parcel Number J-18, within State Route 85 from Cahalan Ave to Santa Teresa Blvd
- Parcel Number J-22, within State Route 85 at west of Santa Teresa Blvd

IX. Clearance Information

Are there improvements that require clearance?

No X Yes _____ (Complete the following)

A. Number of Structures to be demolished _____ \$
 Estimated Cost of Demolition

X. Hazardous Materials/Waste

Are there any site(s) and/or improvements(s) in the Project Limits that are known to contain hazardous materials? None X Yes _____ (Explain in the "Remarks" section)

Are there any site(s) and/or improvement(s) in the Project Limits that are suspected to contain hazardous waste? None X Yes _____ (Explain in the "Remarks" section)

XI. Project Scheduling

	Proposed lead time	Completion date
* Preliminary Engineering, Surveys	_____ (months)	<u>N/A</u>
* R/W Engineering Submittals	_____ (months)	<u>N/A</u>
* R/W Appraisals/Acquisition	_____ (months)	<u>N/A</u>
Proposed Environmental Clearance		<u>03/2014</u>
Proposed R/W Certification		<u>03/2015</u>

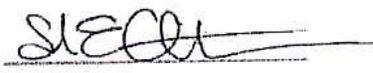
XII. *Proposed Funding*

	Local	State	Federal	Other
Acquisition	_____	_____	_____	_____
Utilities	_____	_____	_____	_____
Relocation Assistance Program	_____	_____	_____	_____
R/W Support	_____	_____	_____	_____
Cost (Eng. Appraisals, etc.)	_____	_____	_____	_____

XIII. *Remarks*

Project Sponsor Consultant

Prepared by:
Sarah Christensen, URS Corporation



Project Engineer
Title

12/26/2013
Date

Project Sponsor

Reviewed and Approved by:
Darrell Vice, VTA



Project Manager
Title

12/26/13
Date

R/W Professional (ie: qualified consultant or agency)

Reviewed and Approved by:
Bijal Patel, VTA

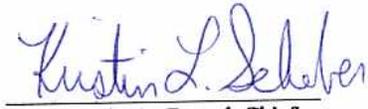


DEPUTY DIRECTOR
Title

12/27/13
Date

Caltrans

Reviewed and approved based on information provided to date:



Caltrans District Branch Chief

Local Public Agency Services

Division of Right of Way

12/27/13
Date

December 2013

04-SCI-85, PM 0.0/R24.1
04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment G
Transportation Management Plan Data Sheet

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

(Preliminary TMP Elements and Costs)

Co/Rte/PM	04-SCL-85-PM 0.0/R24.1 04-SCL-101 PM 23.1/28.6 04-SCL-101 PM 47.9/52.0	EA	04-4A7900	Project Manager	Chadi Chazbek(URS) Nick Saleh(CT)
Project Limit	Between 5.5 miles south of US 101/SR 85 Interchange in South San Jose and 4.1 miles north of the US 101/SR 85 Interchange in City of Mountain View.				
Project Description	The State Route (SR) 85 Express Lanes Project proposes to convert the existing high-occupancy vehicle (HOV) lanes on SR 85 in both directions from U.S. 101 in South San Jose to U.S. 101 in Mountain View to express lanes, also known as High Occupancy Toll (HOT) lanes.				

1) Public Information

<input type="checkbox"/>	a. Brochures and Mailers	
<input checked="" type="checkbox"/>	b. Press Release	\$ 10,000
<input type="checkbox"/>	c. Paid Advertising	\$
<input type="checkbox"/>	d. Public Information Center/Kiosk	\$
<input type="checkbox"/>	e. Public Meeting/Speakers Bureau	
<input type="checkbox"/>	f. Telephone Hotline	
<input type="checkbox"/>	g. Internet, E-mail	
<input checked="" type="checkbox"/>	h. Notification to impacted groups (i.e. bicycle users, pedestrians with disabilities, others...)	\$ 5,000
<input type="checkbox"/>	i. Others	TOTALS \$ 15,000

2) Motorist Information Strategies

<input type="checkbox"/>	a. Changeable Message Signs (Fixed)	\$
<input checked="" type="checkbox"/>	b. Changeable Message Signs (Portable)	\$ 120,000
<input checked="" type="checkbox"/>	c. Ground Mounted Signs	\$ 50,000
<input type="checkbox"/>	d. Highway Advisory Radio	\$
<input type="checkbox"/>	e. Caltrans Highway Information Network (CHIN)	
<input type="checkbox"/>	f. Detour maps (i.e. bicycle, vehicle, pedestrian...etc)	
<input type="checkbox"/>	g. Revised Transit Schedules/maps	
<input type="checkbox"/>	h. Bicycle community information	
<input type="checkbox"/>	i. Others	
	TOTALS	\$ 170,000

3) Incident Management

<input checked="" type="checkbox"/>	a. Construction Zone Enhanced Enforcement Program (COZEEP)	\$ 800,000
<input checked="" type="checkbox"/>	b. Freeway Service Patrol	\$ 100,000
<input checked="" type="checkbox"/>	c. Traffic Management Team	\$50,000
<input type="checkbox"/>	d. Helicopter Surveillance	\$
<input type="checkbox"/>	e. Traffic Surveillance Stations (Loop Detector and CCTV)	\$
<input type="checkbox"/>	f. Others	
	TOTALS	\$ 950,000

December 2013

04-SCI-85, PM 0.0/R24.1
04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment H
Risk Register

LEVEL 3 - RISK REGISTER		Project Name:		SR 85 Express Lane Project PA/ED Phase		DIST- EA	04-4A7900	Project Manager	Ray Akkawi (URS Corporation)												
Risk Identification						Risk Assessment										Risk Response					
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Probability		Cost Impact (\$)				Time Impact (days)				Rationale	Risk Response		Risk Owner	Updated	Risk Rating
						Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable		Strategy	Response Actions			
Active	001	Environmental	Total Maximum Daily Load (TMDL) Standards change.	New standards could result in a revised scope of work, cost changes and project delays. Revised scope could require additional environmental work that could impact the PS&E schedule. The changes could be positive or negative.		0	10	\$ 20,000	\$ 50,000	\$ 250,000	\$ 5,000	30	60	90	3		MITIGATE	Work with SF Bay RWQCB to monitor TMDL standards. If TMDL standards change, provide additional BMP's to minimize project impacts.	Darrell Vice	1/28/2010	Low
Active	002	DESIGN Roadway	Hazardous Material Encountered	The project will involve soil disturbance along the existing highway. Because relatively recent freeway construction, it is not anticipated that any sites will be identified needing additional investigation causing project costs to increase. Findings of any hazardous materials may result in the schedule and/or cost of the project needing to be updated.		0	10	\$ 50,000	\$ 500,000	\$ 5,000,000	\$ 93,000						MITIGATE	CT Initial Site Assessment checklist will be completed, and a memorandum prepared that summarizes the assessment steps and findings.	Darrell Vice	1/28/2010	Low
Active	003	PM	Timely reviews by Department	Assigned Caltrans staff may be reassigned to higher priority projects or transfer to other units, or be unavailable. This may result in schedule delays.	The PDT reviews the submittal register and identifies outstanding reviews early to avoid schedule delay.	60	100	\$ -	\$ 50,000	\$ 100,000	\$ 40,000	60	180	360	160		MITIGATE	Ensure that team members are aware of deadlines and their importance. Distribute current schedule at monthly PDT meetings and draw attention to critical path items. Steering Committee to monitor using the list of deliverables. Project schedule assumes 4 weeks for CT review cycles.	Nick Saleh	1/28/2010	High
Active	004	PM	Deliverables contain errors.	Deliverables (R/W Data Sheet, ED, PS&E, etc.) could contain significant errors. Correcting these errors could increase project costs and cause schedule delays due to additional CT review times that will be needed.		10	20	\$ -	\$ 25,000	\$ 50,000	\$ 4,000	0	15	30	2		MITIGATE	All deliverables will be reviewed utilizing the approved QC/QA plan, errors will be corrected prior to delivery. Schedule will allow adequate time for quality submittals and reviews, and will account for the experience level of the assigned staff.	Darrell Vice	1/28/2010	Low
Active	005	PM	Timely funding.	Project funded through environmental clearance phase only. VTA working on identifying funding sources for designing roadway and construction of project.		20	40					60	180	360	60		MITIGATE	Periodically review potential funding sources and confirm direction through the Executive Steering Committee.	Darrell Vice	1/28/2010	Med
Active	006	PM	New stakeholder needs.	New stakeholders and/or new stakeholder needs could be identified late in the project. As a result, the scope, cost, and/or schedule could be affected.		10	20	\$ 100,000	\$ 1,000,000	\$ 5,000,000	\$ 305,000	60	90	120	14		MITIGATE	Obtain major stakeholder buy-in during PA&ED phase including CT Maintenance. Hold public workshops to get input.	Darrell Vice/Nick Saleh	1/28/2010	Low
Active	007	PM	Unexpected environmental issues during construction	Unexpected environmental issues (archaeological, biological, etc.) could lead to schedule delays and increased mitigation costs.		0	10	\$ 250,000	\$ 1,000,000	\$ 10,000,000	\$ 188,000	30	60	90	3		MITIGATE	Perform detailed environmental field studies and early involvement from resource agencies.	Darrell Vice	1/28/2010	Low
Active	008	DESIGN Roadway	Man-made Buried objects.	Construction crews may encounter buried man-made objects that are not shown on the plans. The contractor will need to be compensated for handling such items, resulting in increased costs.		0	10	\$ 50,000	\$ 150,000	\$ 500,000	\$ 12,000	10	30	120	3		ACCEPT	Every effort should be made to discover these objects during the planning and design phases. Added cost for those that are not found until construction should be covered by the 5% contingencies.	Darrell Vice	1/28/2010	Low
Active	009	PM	Migratory birds.	No habitat is expected to be present in the median and no vegetation to be removed. If nesting birds are found, designated areas of the construction site could be off limits, which could cause construction delays.		0	10	\$ 10,000	\$ 50,000	\$ 100,000	\$ 3,000						ACCEPT	Early investigation of nesting bird habitat will be included in the Minimal Impact NES to try to identify any habitats and avoid if possible.	Darrell Vice	1/28/2010	Low

LEVEL 3 - RISK REGISTER		Project Name:		SR 85 Express Lane Project PA/ED Phase		DIST- EA	04-4A7900	Project Manager	Ray Akkawi (URS Corporation)												
Risk Identification						Risk Assessment										Risk Response					
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Probability		Cost Impact (\$)				Time Impact (days)				Rationale	Strategy	Response Actions	Risk Owner	Updated	Risk Rating
						Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable						
Active	010	R/W	Electrical facility designs do not reflect field conditions	Work will need to be done to connect vehicle sensors, highway lighting, & highway signs to electrical and communication services. As built may not reflect accurate field conditions of existing electrical and communication facilities, necessitating field changes that would increase project cost and schedule delays.		10	20	\$ 100,000	\$ 250,000	\$ 500,000	\$ 43,000	30	60	120	11		ACCEPT	Early coordination with CT, PG&E, and AT&T for identification of existing utilities and connection availability in order to reposition any equipment is necessary to avoid delays and additional costs. Potholing will be conducted during PA/ED and PS&E phases.	Darrell Vice	1/28/2010	Med
Active	011	DESIGN Roadway	Conflicts with VTA Light Rail Infrastructure	Electrical conduit & equipment installed next to VTA Light Rail (located in the southern portion of the project) requires VTA coordination.		10	20					10	30	60	5		ACCEPT	Proposed design in this area will be done with respect to the existing Light Rail. Prioritize this work so that coordination can start as early as possible.	Darrell Vice	1/28/2010	Low
Active	012	DESIGN Roadway	Providing justification for Design Standards Exceptions	Exceptions from Design Standards will be required to keep the project within scope/schedule and budget. Some potential issues may be lane width, median width, interchange spacing, local access, and tolling/enforcement zones.		0	10	\$ -	\$ 250,000	\$ 1,000,000	\$ 21,000	30	60	90	3		ACCEPT	Early coordination with Caltrans Design Reviewers, with regular follow-up and close out meetings.	Darrell Vice	12/26/2013	Low
Active	013	DESIGN Roadway	Floodplain issues and median barrier treatment.	Project vulnerability to flooding is not likely. If found, additional project costs and schedule delays can occur.		0	10	\$ -	\$ -	\$ 3,000,000	\$ 50,000	10	30	60	2		ACCEPT	Early assessment of alignment's vulnerability to flooding will be developed through LHS during PA/ED phase.	Darrell Vice	1/28/2010	Low
Active	014	DESIGN Roadway	Geotechnical site conditions reveal poor soil conditions for sign structures	Geotechnical testing could encounter vulnerability to geologic hazards, soil-related hazards, unsuitable materials, &/or other impacts which would have an impact on the project cost and may delay schedule.		0	10	\$ 250,000	\$ 500,000	\$ 5,000,000	\$ 96,000	30	60	90	3		ACCEPT	Geotechnical Assessment Report (GAR) will be prepared during PA/ED to provide recommendations for design accompanied by a memorandum or document assessing any impacts.	Darrell Vice	1/28/2010	Low
Active	015	PM	Express Lanes Concept	Elements of operations of the facility, such as hours of operations, signage, striping, and access locations, may cause driver confusion, decrease utilization, and/or opposition for initiation.		20	40	\$ -	\$ -	\$ -	\$ -						AVOID	Develop signing plan that will allow for evolution of message provided to motorists & conduct focus group studies.	Darrell Vice	1/28/2010	Low
Active	016	PM	Coordination with other projects.	Other planned and proposed projects in the area could impact the scope, schedule and cost of the project. Some of these potential projects are: SR 87 Convert HOV to Express Lane, SR 85/SR 237 ramp improvement & AUX lane construction, US 101 (North) AUX Lane construction, Ramp/Intersection improvements at SR 85/Fremont & Fremont/Bernardo, SR 85/Cottle Rd Ramp Improvement		20	40	\$ 50,000	\$ 100,000	\$ 250,000	\$ 40,000	30	60	90	18		MITIGATE	Periodically review potential conflicting projects and confirm their direction through the Executive Steering Committee.	Darrell Vice	1/28/2010	Med
Active	017	PM	Competing construction projects.	Due to CMIA funding opportunity, many projects in the area will be on a very aggressive and similar schedule. These projects could be competing for bid services from contractors and material sources, potentially raising prices.		20	40	\$ 2,500,000	\$ 5,000,000	\$10,000,000	\$ 1,750,000						MITIGATE	Track competing projects and try to schedule construction with them in mind.	Darrell Vice	1/28/2010	Med

LEVEL 3 - RISK REGISTER		Project Name:		SR 85 Express Lane Project PA/ED Phase		DIST- EA	04-4A7900	Project Manager	Ray Akkawi (URS Corporation)												
Risk Identification						Risk Assessment										Risk Response					
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Probability		Cost Impact (\$)				Time Impact (days)				Rationale	Strategy	Response Actions	Risk Owner	Updated	Risk Rating
						Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable						
Active	018	Environmental	Conceptual Environmental Mitigation Issues & Cultural Resources Issues	Working with resource agencies to agree on reasonable mitigation ratios & on-going Native American Consultation Process during the environmental and construction phases.		0	10	\$ -	\$ 500,000	\$ 2,000,000	\$ 42,000	90	120	360	10		ACCEPT	Early coordination with resource agencies & Native American Groups. Continue VTA discussions on programmatic permitting (HCP) and mitigation banking.	Darrell Vice	1/28/2010	Low
Active	019	Construction	Traffic Operations: Pull-out Locations are not ideally situated	A lack of maintenance vehicle &/or enforcement pull-outs may impede operations by causing more closures than planned & loss of citations. If MVPs required, there is a chance the ED would not be sufficient and costs would increase to redesign the facility and purchase R/W.		10	20	\$ 250,000	\$ 1,000,000	\$ 2,500,000	\$ 188,000						ACCEPT	Begin early communication with CT about feasibility and need for pull-outs. Pull-out areas will be identified in collaboration with the CHP and CT Maintenance during the early stages of design. Co-locate facilities with ramp metering facilities.	Darrell Vice	1/28/2010	Low
Active	020	Environmental	ETS Implementation & Testing Schedule	Contractor & Integrator must coordinate installation activities to successfully open the express lane. Lack of coordination will cause delays of roadway or ETS construction and/or installation, could result in claims from the roadway and ETS contractor, loss of revenue collection and additional project costs.		10	20	\$ 100,000	\$ 500,000	\$ 1,000,000	\$ 80,000						ACCEPT	Provide RFP & specification language to define interface. VTA to develop construction CPM schedule & incorporate windows in roadway contractor contract. Consider a reserve to pay for acceleration of integrator and/or contractor.	Darrell Vice	1/28/2010	Med
Active	021	DESIGN Structures	Using existing sign structures & bridges to mount equipment	Because of the high number of sign structures & bridges along the corridor, equipment may be mounted on them which would require a lengthy review process.		10	20					60	90	120	14		AVOID	Will avoid using existing sign structures & bridges for mounting equipment.	Darrell Vice	1/28/2010	Low
Active	022	DESIGN Roadway	ETS, VDS, & RTMS Equipment Locations too far from power and communication sources	ETS, VDS, & RTMS equipment locations may require costly power and communication runs if cannot be placed near existing sources.		20	40	\$ 150,000	\$ 300,000	\$ 500,000	\$ 95,000						ACCEPT	Will position equipment in order to minimize costs.	Darrell Vice	1/28/2010	Med
Active	023	DESIGN Roadway	Unforeseen utility conflicts	Utility relocations could be needed due to conflict of policy (clear recovery) when no utility relocations are anticipated; delay of R/W Certification & project delivery.		20	40	\$ 250,000	\$ 500,000	\$ 1,000,000	\$ 175,000	60	90	180	33		ACCEPT	Early identification and coordination of utilities within the project limits. Adjust locations of facilities if conflicts arise. Potholing will be conducted during PA/ED phase to minimize conflicts.	Darrell Vice	1/28/2010	Med
Active	024	DESIGN Roadway	Late Express Lane Sign Changes	Express lane signing is still being finalized. New standards could result in cost changes & project delays.		10	20	\$ 500,000	\$ 1,000,000	\$ 5,000,000	\$ 325,000	30	60	90	9		ACCEPT	Close coordination with CT needs to be maintained in order to be following current design standards.	Darrell Vice	1/28/2010	Med
Active	025	DESIGN Roadway	UPVR Approval	UPVR approval not received on schedule.		40	60					30	60	90	30		MITIGATE	Work closely with CT to seek approval.	Darrell Vice	12/20/2013	Low

December 2013

04-SCI-85, PM 0.0/R24.1
04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment I
Draft Environmental Document (Title Page Only)

State Route 85 Express Lanes Project

SANTA CLARA COUNTY, CALIFORNIA

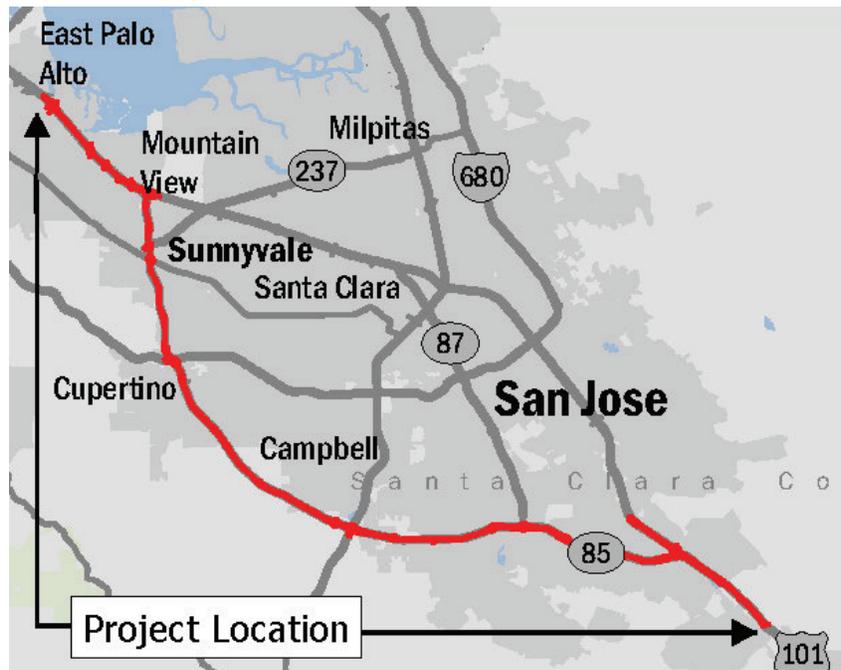
DISTRICT 4 – SCL – 85 (PM 0.0/R24.1)

4 – SCL – 101 (PM 23.1/28.6)

4 – SCL – 101 (PM 47.9/52.0)

4A7900/0400001163

Initial Study with Proposed Negative Declaration/Environmental Assessment



Prepared by the
State of California Department of Transportation
in Cooperation with the Santa Clara Valley Transportation Authority

The environmental review, consultation, and any other action required in accordance with applicable federal laws for this project is being, or has been, carried out by Caltrans under its assumption of responsibility pursuant to 23 USC 327.



December 2013

December 2013

04-SCI-85, PM 0.0/R24.1
04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment J
Storm Water Data Report (Signature Page Only)

Long Form - Storm Water Data Report



Dist-County-Route: 04-SCI-85; 101
 Post Mile Limits: 0.0/24.1; 23.1/28.6 & 47.9/52.0
 Project Type: Express Lanes Project
 Project ID (or EA): (04-4A7900)
 Program Identification: HB-5
 Phase: PID
 PA/ED
 PS&E

Regional Water Quality Control Board(s): San Francisco Bay (2)

Is the Project required to consider Treatment BMPs? Yes No
 If yes, can Treatment BMPs be incorporated into the project? Yes No
 If No, a Technical Data Report must be submitted to the RWQCB
 at least 30 days prior to the projects RTL date. List RTL Date: _____

Total Disturbed Soil Area: 75.4 acres Risk Level: 2
 Estimated: Construction Start Date: Jan. 2016 Construction Completion Date: June 2017
 Notification of Intent (NOI) Date to be submitted: December 2015

Erosivity Waiver Yes Date: _____ No
 Notification of ADL reuse (if Yes, provide date) Yes Date: _____ No
 Separate Dewatering Permit (if yes, permit number) Yes Permit # TBD No

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

Analette Ochoa 12/4/13
Date
 [Analette Ochoa], P.E., Registered Project Engineer

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

Fariba Zohoury 12/9/13
Date
 [Fariba Zohoury], Project Manager

Robert W. Braga 12/10/13
Date
 [Bob Braga], Designated Maintenance Representative

David Yam 12/18/13
Date
 [David Yam], Designated Landscape Architect Representative

Norman Gonsalves 12.27.13
Date
 [Stamp Required for PS&E only] [Norman Gonsalves], District/Regional Design SW Coordinator or Designee

December 2013

04-SCI-85, PM 0.0/R24.1
04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment K
Life Cycle Cost Analysis / Pavement Selection Review Committee
Checklist

SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)

EA 04-4A7900

11/08/2012

URS

David Salladay, PE
Caltrans-District 4
Design Santa Clara B
111 Grand Avenue
Oakland, CA 94623-0660

Subject: Life Cycle Cost Analysis for SR 85 Express Lanes Project US 101/SR 85 Separation in South San Jose to US 101/SR 85 Separation in Mountain View.

04-SCL-85 PM 0.0/R24.1, 04-SCL-101 PM 23.1/28.6, 04-SCL-101 PM 47.9/52.0.

Dear Mr. Salladay,

The Life Cycle Cost Analysis for the SR 85 Express Lanes Project was performed under the guidelines of the Caltrans Highway Design Manual and the latest Caltrans Life Cycle Cost Analysis Procedures Manual. Using the Real Cost software, the life cycle cost analysis was done by making the same assumptions between equivalent alternatives in order to determine the most cost effective strategy.

For each structural section alternative proposed a TI value of 11 was used for 40-year designs and a TI value of 10 was used for 20-year designs.

The analysis is divided into two cases: Case 1, an area covering approximately 7.55 miles of the project where the existing pavement is rigid, and Case 2, an area covering approximately 4.65 miles of the project where the existing pavement is flexible. Three alternatives were analyzed for each case. For a summary of the selected alternatives, please see Attachment A - Life Cycle Cost Analysis Design Assumptions.

For Case 1 (existing rigid pavement), alternatives 1 & 2 are based on a 20 year design life. Alternative 1 proposes rigid pavement, while Alternative 2 proposes flexible pavement. Alternative 3 is based on a 40 year design life, and proposes rigid pavement.

For Case 2 (existing flexible pavement), alternatives 4 & 5 are based on a 20 year design life. Alternative 4 proposes flexible pavement with Class 3 AB, and Alternative 5 proposes flexible pavement with lean concrete base. Alternative 6 is based on a 40 year design life and proposes flexible pavement.

SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)

EA 04-4A7900

The results for the life cycle cost analysis in terms of present day values indicated that for Case 1 (existing rigid pavement) Alternative 3 (rigid pavement with a 40 year design life) is the most effective strategy and has the lowest total (agency plus user) costs.

For Case 2 (existing flexible pavement), Alternative 4 (flexible pavement with a 20 year design life) has the lowest total cost and represents the most effective strategy.

The Life Cycle Cost Analysis is submitted for review and approval. Please feel free to give me a call if you have any questions regarding this analysis or calculations thereof.

Sincerely,
Chadi Chazbek, PE
Senior Project Manager
URS Corporation

SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)

EA 04-4A7900

Pavement Life Cycle Cost Analysis Summary

Case 1 - Alternative #1

This pavement section will widen to the inside with Jointed Plane Concrete Pavement (JPCP). The design is based on a 20-year design life.

Widening Pavement Section:

0.75' JPCP
0.25' HMA (Type A)
0.50' Class 4 AS
SEG (Class B1)

Pavement Design Life: 20 Years

R-value: 20

Initial Construction Costs: \$ 15,206,881

Initial Project Support Costs: \$ 3,649,652

TOTAL AGENCY COSTS: \$ 24,294,710

USER COSTS: \$ 9,466,450

TOTAL COSTS: \$ 33,761,160

SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)

EA 04-4A7900

Pavement Life Cycle Cost Analysis Summary

Case 1 - Alternative #2

This pavement section will widen to the inside with RHMA-G over HMA (Type A). The design is based on a 20-year design life.

Widening Pavement Section:

0.15' RHMA-G
0.35' HMA
0.85' Class 3 AB
0.75' Class 4 AS
SEG (Class B1)

Pavement Design Life: 20 Years

R-value: 20

Initial Construction Costs: \$ 12,234,394

Initial Project Support Costs: \$ 2,936,255

TOTAL AGENCY COSTS: \$ 19,066,170

USER COSTS: \$ 8,956,360

TOTAL COSTS: \$ 28,022,530

SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)

EA 04-4A7900

Pavement Life Cycle Cost Analysis Summary

Case 1 - Alternative #3

This pavement section will widen to the inside with Jointed Plane Concrete Pavement (JPCP). The design is based on a 40-year design life.

Widening Pavement Section:

0.80' JPCP
0.25' HMA (Type A)
0.60' Class 4 AS
SEG (Class B1)

Pavement Design Life: 40 Years

R-value: 20

Initial Construction Costs: \$ 16,057,964

Initial Project Support Costs: \$ 3,853,911

TOTAL AGENCY COSTS: \$ 20,631,590

USER COSTS: \$ 371,980

TOTAL COSTS: \$ 21,003,570

SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)

EA 04-4A7900

Pavement Life Cycle Cost Analysis Summary

Case 2 - Alternative #4

This pavement section will widen to the inside with RHMA-G over HMA (Type A). The design is based on a 20-year design life.

Widening Pavement Section:

0.15' RHMA-G
0.35' HMA (Type A)
0.85' Class 3 AB
0.75' Class 4 AS
SEG (Class B1)

Pavement Design Life: 20 Years

R-value: 20

Initial Construction Costs: \$ 7,575,318

Initial Project Support Costs: \$ 1,818,076

TOTAL AGENCY COSTS: \$ 10,126,510

USER COSTS: \$ 5,646,670

TOTAL COSTS: \$ 15,773,180

SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)

EA 04-4A7900

Pavement Life Cycle Cost Analysis Summary

Case 2 - Alternative #5

This pavement section will widen to the inside with RHMA-G over HMA (Type A) with Lean Concrete Base (LCB). The design is based on a 20-year design life.

Widening Pavement Section:

0.15' RHMA-G
0.35' HMA (Type A)
0.50' LCB
0.75' Class 4 AS
SEG (Class B1)

Pavement Design Life: 20 Years

R-value: 20

Initial Construction Costs: \$ 9,297,799

Initial Project Support Costs: \$ 2,231,472

TOTAL AGENCY COSTS: \$ 11,849,500

USER COSTS: \$ 5,646,670

TOTAL COSTS: \$ 17,496,170

SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)

EA 04-4A7900

Pavement Life Cycle Cost Analysis Summary

Case 2 - Alternative #6

This pavement section will widen to the inside with RHMA-G over HMA (Type A). The design is based on a 40-year design life.

Widening Pavement Section:

0.10' OGFC
0.15' RHMA-G
1.15' HMA (Type A)
0.50' Class 3 AB
SEG (Class B1)

Pavement Design Life: 40 Years

R-value: 20

Initial Construction Costs: \$ 14,704,767

Initial Project Support Costs: \$ 3,529,144

TOTAL AGENCY COSTS: \$ 16,275,860

USER COSTS: \$ 1,747,780

TOTAL COSTS: \$ 18,023,640

ATTACHMENTS

Attachment A - LCCA Inputs and M&R Schedules
Attachment B - RealCost Deterministic Results
Attachment C - LCCA Assumption Memo
Attachment D - Geotechnical Memo

SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)
EA 04-4A7900

Attachment A

LCCA Inputs and M&R Schedules

SR-85 EXPRESS LANES Pavement Life Cycle Cost (LCC) Analysis Input Data 20-Year

Alternative 1

20-Year Design Life Rigid Widening (JPCP with HMA)

at year 0

0.75' JPCP	46,580 CY	Price	\$160.00	Cost	\$7,452,800
0.25' HMA (Type A)	31,440 TON		\$100.00		\$3,144,000
0.50' Class 4 AS	31,050 CY		\$28.00		\$869,400
SEG (Class B1)	186,300 SY		\$2.70		\$503,010
		Subtotal			\$11,969,210
		Time Related Overhead			\$1,196,921
		Mobilization			\$1,316,613
		Contingencies			\$724,137
		Support Costs			\$3,649,652
		Total			\$18,856,533

Annual Maintenance Cost per Lane Mile \$700
Annual Maintenance Cost \$10,570

at year 25

CapM (5 Year Design Life)

CPR C

Project Length (mile)	7.55
No. Lanes	2
Cost per Lane Mile	\$89,000

Subtotal \$1,343,900

Support Costs \$255,341
Total \$1,599,241

Annual Maintenance Cost per Lane Mile \$3,000
Annual Maintenance Cost \$45,300

Lane Miles per Closure 16.00
No. of Closures 0.94

at year 30

CapM (10-Year Design Life)

CPR B

Project Length (mile)	7.55
No. Lanes	2
Cost per Lane Mile	\$106,000

Subtotal \$1,600,600

Support Costs \$304,114
Total \$1,904,714

Annual Maintenance Cost per Lane Mile \$1,500
Annual Maintenance Cost \$22,650

Lane Miles per Closure 6.40
No. of Closures 2.36

SR-85 EXPRESS LANES Pavement Life Cycle Cost (LCC) Analysis Input Data 20-Year
Alternative 1 (cont'd)

at year 40

CapM (5-Year Design Life)
 CPR A

Project Length (mile) 7.55
 No. Lanes 2
 Cost per Lane Mile \$148,000

Subtotal \$2,234,800

Support Costs \$335,220
 Total \$2,570,020

Annual Maintenance Cost per Lane Mile \$3,100
 Annual Maintenance Cost \$46,810

Lane Miles per Closure 4.57
 No. of Closures 3.30

at year 45

Rehab (20-Year Design Life)
 Lane Replacement

Project Length (mile) 7.55
 No. Lanes 2
 Cost per Lane Mile \$1,854,000

Subtotal \$27,995,400

Support Costs \$5,319,126
 Total \$33,314,526

Annual Maintenance Cost per Lane Mile \$700
 Annual Maintenance Cost \$10,570

Lane Miles per Closure 0.18
 No. of Closures 83.89

SR-85 EXPRESS LANES Pavement Life Cycle Cost (LCC) Analysis Input Data 20-Year

Alternative 2

20-Year Design Life Flexible Widening (RHMA-G, HMA with CI 3 AB)

at year 0

	Price	Cost
0.15' RHMA-G	18,870 TON	\$110.00 \$2,075,700
0.35' HMA	44,020 TON	\$100.00 \$4,402,000
0.85' Class 3 AB	52,790 CY	\$35.00 \$1,847,650
0.75' Class 4 AS	46,580 CY	\$28.00 \$1,304,240
SEG (Class B1)	186,300 SY	\$2.70 \$503,010

Subtotal	\$9,629,590
Time Related Overhead	\$962,959
Mobilization	\$1,059,255
Contingencies	\$582,590
Support Costs	\$2,936,255
Total	\$15,170,649

Annual Maintenance Cost per Lane Mile	\$2,700
Annual Maintenance Cost	\$40,770

at year 23

CapM (10 Year Design Life)

HMA w/ RAC (Overlay)

Project Length (mile)	7.55
No. Lanes	2
Cost per Lane Mile	\$161,000

Subtotal \$2,431,100

Support Costs	\$364,665
Total	\$2,795,765

Annual Maintenance Cost per Lane Mile	\$3,500
Annual Maintenance Cost	\$52,850

Lane Miles per Closure	1.74
No. of Closures	8.68

at year 33

Rehab (20-Year Design Life)

HMA w/ RAC (Overlay)

Project Length (mile)	7.55
No. Lanes	2
Cost per Lane Mile	\$394,000

Subtotal \$5,949,400

Support Costs	\$773,422
Total	\$6,722,822

Annual Maintenance Cost per Lane Mile	\$3,500
Annual Maintenance Cost	\$52,850

Lane Miles per Closure	0.63
No. of Closures	23.97

SR-85 EXPRESS LANES Pavement Life Cycle Cost (LCC) Analysis Input Data 40-Year

Alternative 3

40-Year Design Life Rigid Widening (JPCP with HMA)

at year 0

0.80' JPCP	49,680 CY	Price	Cost
0.25' HMA (Type A)	31,440 TON	\$160.00	\$7,948,800
0.60' Class 4 AS	37,260 CY	\$100.00	\$3,144,000
SEG (Class B1)	186,300 SY	\$28.00	\$1,043,280
		\$2.70	\$503,010

Subtotal	\$12,639,090
Time Related Overhead	\$1,263,909
Mobilization	\$1,390,300
Contingencies	\$764,665
Support Costs	\$3,853,911
Total	\$19,911,875

Annual Maintenance Cost per Lane Mile	\$800
Annual Maintenance Cost	\$12,080

at year 45

CapM (5 Year Design Life)

CPR C

Project Length (mile)	7.55
No. Lanes	2
Cost per Lane Mile	\$89,000

Subtotal \$1,343,900

Support Costs	\$255,341
Total	\$1,599,241

Annual Maintenance Cost per Lane Mile	\$3,000
Annual Maintenance Cost	\$45,300

Lane Miles per Closure	16.00
No. of Closures	0.94

at year 50

CapM (10 Year Design Life)

CPR B

Project Length (mile)	7.55
No. Lanes	2
Cost per Lane Mile	\$106,000

Subtotal \$1,600,600

Support Costs	\$304,114
Total	\$1,904,714

Annual Maintenance Cost per Lane Mile	\$1,500
Annual Maintenance Cost	\$22,650

Lane Miles per Closure	6.40
No. of Closures	2.36

SR-85 EXPRESS LANES Pavement Life Cycle Cost (LCC) Analysis Input Data 20-Year

Alternative 4

20-Year Design Life Flexible Widening (RHMA-G, HMA with CI 3 AB)

at year 23

CapM (10 Year Design Life)
HMA w/ RAC (Overlay)

at year 33

Rehab (20-Year Design Life)
HMA w/ RAC (Overlay)

0.15' RHMA-G	11,680 TON	Price	\$110.00	Cost	\$1,284,800
0.35' HMA	27,260 TON		\$100.00		\$2,726,000
0.85' Class 3 AB	32,690 CY		\$35.00		\$1,144,150
0.75' Class 4 AS	28,840 CY		\$28.00		\$807,520
SEG (Class B1)	115,400 SY		\$2.70		\$311,580
		Subtotal			\$5,962,470
		Time Related Overhead			\$596,247
		Mobilization			\$655,872
		Contingencies			\$360,729
		Support Costs			\$1,818,076
		Total			\$9,393,394

Annual Maintenance Cost per Lane Mile \$2,700
Annual Maintenance Cost \$25,110

Project Length (mile) 4.65
No. Lanes 2
Cost per Lane Mile \$161,000

Subtotal \$1,497,300

Support Costs \$284,487
Total \$1,781,787

Annual Maintenance Cost per Lane Mile \$3,500
Annual Maintenance Cost \$32,550

Lane Miles per Closure 1.74
No. of Closures 5.34

Project Length (mile) 4.65
No. Lanes 2
Cost per Lane Mile \$394,000

Subtotal \$3,664,200

Support Costs \$952,692
Total \$4,616,892

Annual Maintenance Cost per Lane Mile \$3,500
Annual Maintenance Cost \$32,550

Lane Miles per Closure 0.63
No. of Closures 14.76

SR-85 EXPRESS LANES Pavement Life Cycle Cost (LCC) Analysis Input Data 20-Year

Alternative 5

20-Year Design Life Flexible Widening (RHMA-G, HMA with LCB)

at year 0

0.15' RHMA-G	11,680 TON	Price	\$110.00	Cost	\$1,284,800
0.35' HMA	27,260 TON		\$100.00		\$2,726,000
0.50' LCB	19,230 CY		\$130.00		\$2,499,900
0.75' Class 4 AS	28,840 CY		\$28.00		\$807,520
SEG (Class B1)	115,400 SY		\$2.70		\$311,580
		Subtotal			\$7,318,220
		Time Related Overhead			\$731,822
		Mobilization			\$805,004
		Contingencies			\$442,752
		Support Costs			\$2,231,472
		Total			\$11,529,270

Annual Maintenance Cost per Lane Mile \$2,700
Annual Maintenance Cost \$25,110

at year 23

CapM (10 Year Design Life)

HMA w/ RAC (Overlay)

	Project Length (mile)	4.65
	No. Lanes	2
	Cost per Lane Mile	\$161,000

Subtotal \$1,497,300

Support Costs \$284,487
Total \$1,781,787

Annual Maintenance Cost per Lane Mile \$3,500
Annual Maintenance Cost \$32,550

Lane Miles per Closure 1.74
No. of Closures 5.34

at year 33

Rehab (20-Year Design Life)

HMA w/ RAC (Overlay)

	Project Length (mile)	4.65
	No. Lanes	2
	Cost per Lane Mile	\$394,000

Subtotal \$3,664,200

Support Costs \$952,692
Total \$4,616,892

Annual Maintenance Cost per Lane Mile \$3,500
Annual Maintenance Cost \$32,550

Lane Miles per Closure 0.63
No. of Closures 14.76

SR-85 EXPRESS LANES Pavement Life Cycle Cost (LCC) Analysis Input Data 40-Year

Alternative 6

40-Year Design Life Flexible Widening (OGFC, RHMA-G, HMA)

at year 0

0.10' OGFC	7,790 TON	Price	Cost
0.15' RHMA-G	11,680 TON	\$85.00	\$662,150
1.15' HMA (Type A)	89,540 TON	\$110.00	\$1,284,800
0.50' CI 3 AB	19,230 CY	\$100.00	\$8,954,000
SEG (Class B1)	115,400 SY	\$35.00	\$673,050
		\$2.70	\$311,580
		Subtotal	\$11,574,000
		Time Related Overhead	\$1,157,400
		Mobilization	\$1,273,140
		Contengencies	\$700,227
		Support Costs	\$3,529,144
		Total	\$18,233,911
		Annual Maintenance Cost per Lane Mile	\$5,200
		Annual Maintenance Cost	\$48,360

at year 40

CapM (10 Year Design Life)
HMA w/ OGFC (Overlay)

Project Length (mile)	4.65
No. Lanes	2
Cost per Lane Mile	\$146,000
Subtotal	\$1,357,800
Support Costs	\$257,982
Total	\$1,615,782
Annual Maintenance Cost per Lane Mile	\$3,700
Annual Maintenance Cost	\$34,410
Lane Miles per Closure	1.74
No. of Closures	5.34

at year 50

Rehab (20 Year Design Life)
HMA w/ OGFC (Overlay)

Project Length (mile)	4.65
No. Lanes	2
Cost per Lane Mile	\$379,000
Subtotal	\$3,524,700
Support Costs	\$916,422
Total	\$4,441,122
Annual Maintenance Cost per Lane Mile	\$2,300
Annual Maintenance Cost	\$21,390
Lane Miles per Closure	0.63
No. of Closures	14.76

SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)
EA 04-4A7900

Attachment B

RealCost Deterministic Results

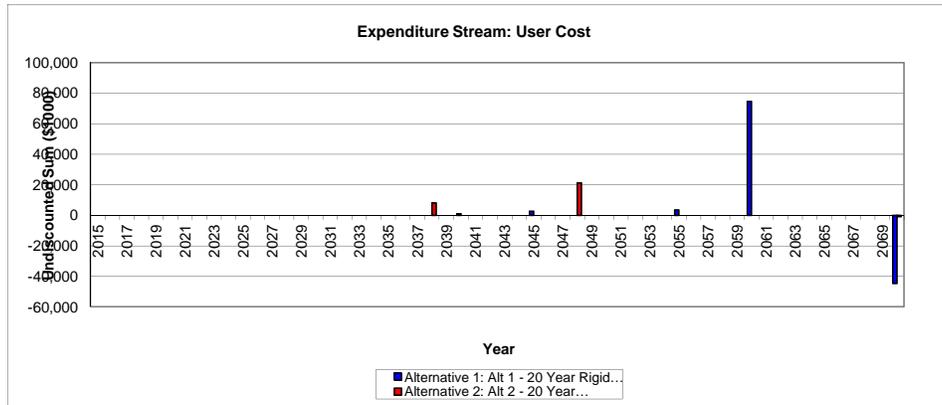
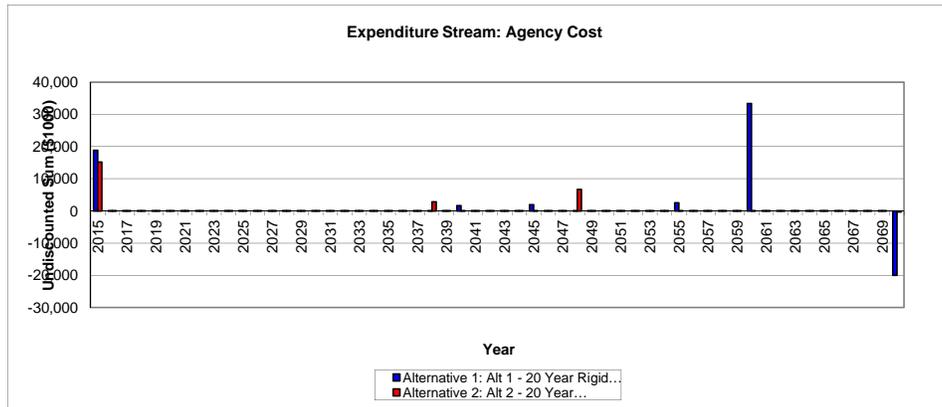
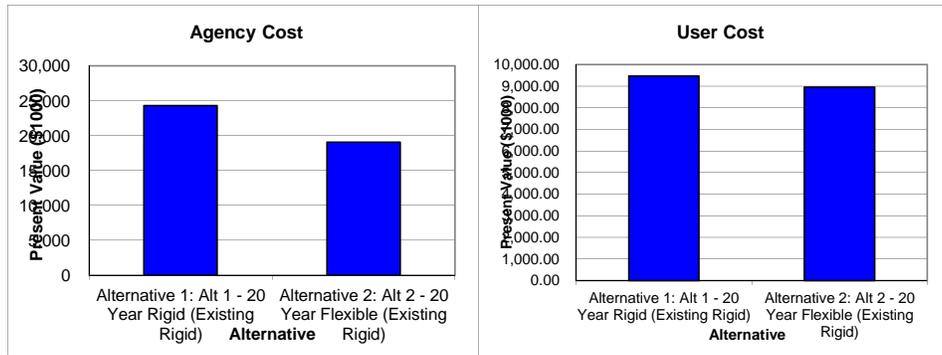
Probabilistic Life Cycle Cost Analysis Worksheet

Update Results

Total Cost				
Total Cost	Alternative 1: Alt 1 - 20 Year Rigid (Existing Rigid)		Alternative 2: Alt 2 - 20 Year Flexible (Existing Rigid)	
	Agency Cost (\$1000)	User Cost (\$1000)	Agency Cost (\$1000)	User Cost (\$1000)
Undiscounted Sum	\$39,178.12	\$36,856.29	\$26,880.11	\$28,312.47
Present Value	\$24,294.71	\$9,466.45	\$19,066.17	\$8,956.36
EUAC	\$1,098.88	\$428.18	\$862.39	\$405.11
Lowest Present Value Agency Cost	Alternative 2: Alt 2 - 20 Year Flexible (Existing Rigid)			
Lowest Present Value User Cost	Alternative 2: Alt 2 - 20 Year Flexible (Existing Rigid)			

Expenditure Stream				
Year	Alternative 1: Alt 1 - 20 Year Rigid (Existing Rigid)		Alternative 2: Alt 2 - 20 Year Flexible (Existing Rigid)	
	Agency Cost (\$1000)	User Cost (\$1000)	Agency Cost (\$1000)	User Cost (\$1000)
2015	\$18,857.00		\$15,171.00	
2016	\$10.57		\$40.77	
2017	\$10.57		\$40.77	
2018	\$10.57		\$40.77	
2019	\$10.57		\$40.77	
2020	\$10.57		\$40.77	
2021	\$10.57		\$40.77	
2022	\$10.57		\$40.77	
2023	\$10.57		\$40.77	
2024	\$10.57		\$40.77	
2025	\$10.57		\$40.77	
2026	\$10.57		\$40.77	
2027	\$10.57		\$40.77	
2028	\$10.57		\$40.77	
2029	\$10.57		\$40.77	
2030	\$10.57		\$40.77	
2031	\$10.57		\$40.77	
2032	\$10.57		\$40.77	
2033	\$10.57		\$40.77	
2034	\$10.57		\$40.77	
2035	\$10.57		\$40.77	
2036	\$10.57		\$40.77	
2037	\$10.57		\$40.77	
2038	\$10.57		\$2,796.00	\$7,973.72
2039	\$10.57		\$52.85	
2040	\$1,599.00	\$885.97	\$52.85	
2041	\$45.30		\$52.85	
2042	\$45.30		\$52.85	
2043	\$45.30		\$52.85	
2044	\$45.30		\$52.85	
2045	\$1,905.00	\$2,657.91	\$52.85	
2046	\$22.65		\$52.85	
2047	\$22.65		\$52.85	
2048	\$22.65		\$6,723.00	\$21,263.24
2049	\$22.65		\$52.85	
2050	\$22.65		\$52.85	
2051	\$22.65		\$52.85	
2052	\$22.65		\$52.85	
2053	\$22.65		\$52.85	
2054	\$22.65		\$52.85	
2055	\$2,570.00	\$3,543.87	\$52.85	
2056	\$46.81		\$52.85	
2057	\$46.81		\$52.85	
2058	\$46.81		\$52.85	
2059	\$46.81		\$52.85	
2060	\$33,315.00	\$74,421.35	\$52.85	
2061	\$10.57		\$52.85	
2062	\$10.57		\$52.85	
2063	\$10.57		\$52.85	
2064	\$10.57		\$52.85	
2065	\$10.57		\$52.85	
2066	\$10.57		\$52.85	
2067	\$10.57		\$52.85	
2068	\$10.57		\$52.85	
2069	\$10.57		\$52.85	
2070	(\$19,989.00)	(\$44,652.81)	(\$292.30)	(\$924.49)

Probabilistic Life Cycle Cost Analysis Worksheet



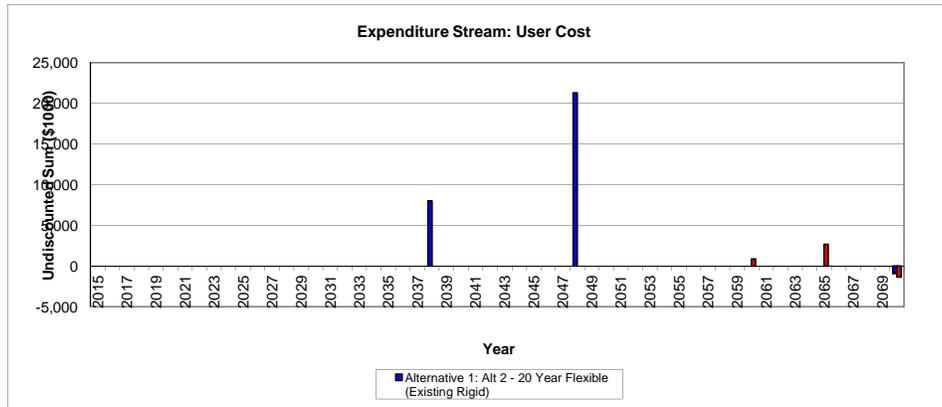
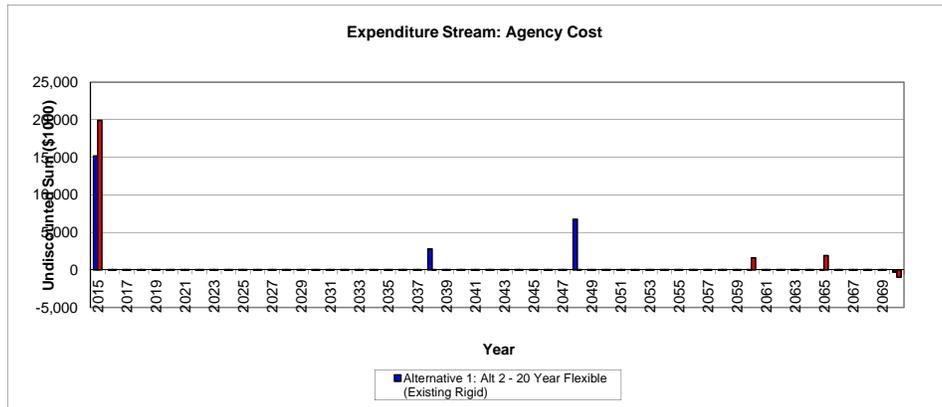
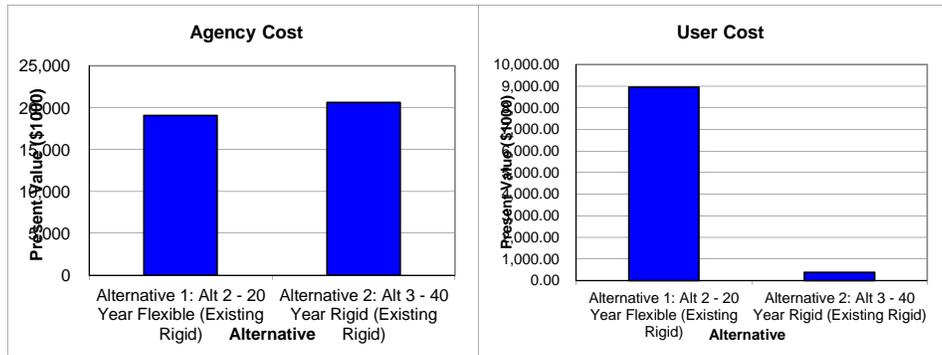
Probabilistic Life Cycle Cost Analysis Worksheet

Update Results

Total Cost				
Total Cost	Alternative 1: Alt 2 - 20 Year Flexible (Existing Rigid)		Alternative 2: Alt 3 - 40 Year Rigid (Existing Rigid)	
	Agency Cost (\$1000)	User Cost (\$1000)	Agency Cost (\$1000)	User Cost (\$1000)
Undiscounted Sum	\$26,880.11	\$28,312.47	\$23,266.83	\$2,214.92
Present Value	\$19,066.17	\$8,956.36	\$20,631.59	\$371.98
EUAC	\$862.39	\$405.11	\$933.19	\$16.82
Lowest Present Value Agency Cost	Alternative 1: Alt 2 - 20 Year Flexible (Existing Rigid)			
Lowest Present Value User Cost	Alternative 2: Alt 3 - 40 Year Rigid (Existing Rigid)			

Expenditure Stream				
Year	Alternative 1: Alt 2 - 20 Year Flexible (Existing Rigid)		Alternative 2: Alt 3 - 40 Year Rigid (Existing Rigid)	
	Agency Cost (\$1000)	User Cost (\$1000)	Agency Cost (\$1000)	User Cost (\$1000)
2015	\$15,171.00		\$19,912.00	
2016	\$40.77		\$12.08	
2017	\$40.77		\$12.08	
2018	\$40.77		\$12.08	
2019	\$40.77		\$12.08	
2020	\$40.77		\$12.08	
2021	\$40.77		\$12.08	
2022	\$40.77		\$12.08	
2023	\$40.77		\$12.08	
2024	\$40.77		\$12.08	
2025	\$40.77		\$12.08	
2026	\$40.77		\$12.08	
2027	\$40.77		\$12.08	
2028	\$40.77		\$12.08	
2029	\$40.77		\$12.08	
2030	\$40.77		\$12.08	
2031	\$40.77		\$12.08	
2032	\$40.77		\$12.08	
2033	\$40.77		\$12.08	
2034	\$40.77		\$12.08	
2035	\$40.77		\$12.08	
2036	\$40.77		\$12.08	
2037	\$40.77		\$12.08	
2038	\$2,796.00	\$7,973.72	\$12.08	
2039	\$52.85		\$12.08	
2040	\$52.85		\$12.08	
2041	\$52.85		\$12.08	
2042	\$52.85		\$12.08	
2043	\$52.85		\$12.08	
2044	\$52.85		\$12.08	
2045	\$52.85		\$12.08	
2046	\$52.85		\$12.08	
2047	\$52.85		\$12.08	
2048	\$6,723.00	\$21,263.24	\$12.08	
2049	\$52.85		\$12.08	
2050	\$52.85		\$12.08	
2051	\$52.85		\$12.08	
2052	\$52.85		\$12.08	
2053	\$52.85		\$12.08	
2054	\$52.85		\$12.08	
2055	\$52.85		\$12.08	
2056	\$52.85		\$12.08	
2057	\$52.85		\$12.08	
2058	\$52.85		\$12.08	
2059	\$52.85		\$12.08	
2060	\$52.85		\$1,599.00	\$885.97
2061	\$52.85		\$45.30	
2062	\$52.85		\$45.30	
2063	\$52.85		\$45.30	
2064	\$52.85		\$45.30	
2065	\$52.85		\$1,905.00	\$2,657.91
2066	\$52.85		\$22.65	
2067	\$52.85		\$22.65	
2068	\$52.85		\$22.65	
2069	\$52.85		\$22.65	
2070	(\$292.30)	(\$924.49)	(\$952.50)	(\$1,328.95)

Probabilistic Life Cycle Cost Analysis Worksheet



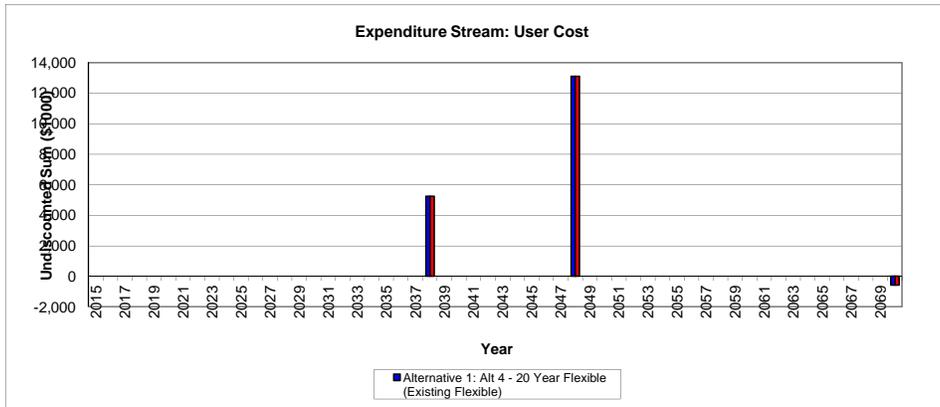
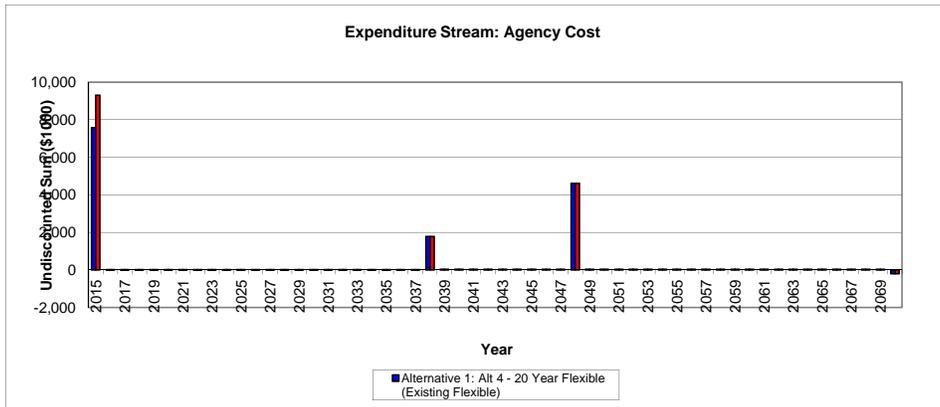
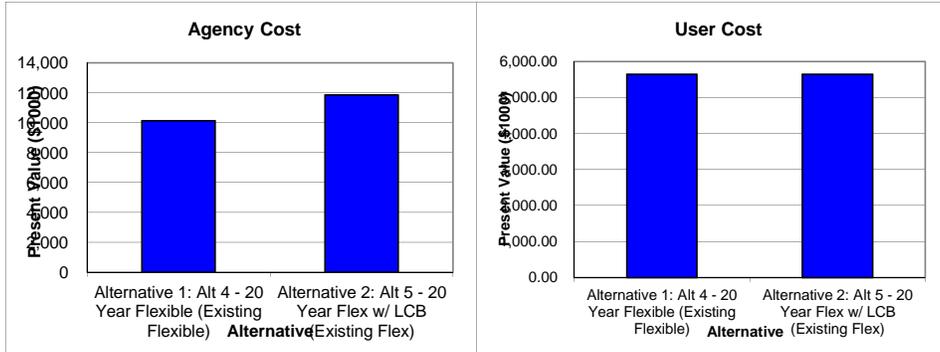
Probabilistic Life Cycle Cost Analysis Worksheet

Update Results

Total Cost				
Total Cost	Alternative 1: Alt 4 - 20 Year Flexible (Existing Flexible)		Alternative 2: Alt 5 - 20 Year Flex w/ LCB (Existing Flex)	
	Agency Cost (\$1000)	User Cost (\$1000)	Agency Cost (\$1000)	User Cost (\$1000)
Undiscounted Sum	\$15,302.17	\$17,757.57	\$17,025.20	\$17,757.57
Present Value	\$10,126.51	\$5,646.67	\$11,849.50	\$5,646.67
EUAC	\$458.03	\$255.41	\$535.97	\$255.41
Lowest Present Value Agency Cost	Alternative 1: Alt 4 - 20 Year Flexible (Existing Flexible)			
Lowest Present Value User Cost	Alternative 1: Alt 4 - 20 Year Flexible (Existing Flexible)			

Expenditure Stream				
Year	Alternative 1: Alt 4 - 20 Year Flexible (Existing Flexible)		Alternative 2: Alt 5 - 20 Year Flex w/ LCB (Existing Flex)	
	Agency Cost (\$1000)	User Cost (\$1000)	Agency Cost (\$1000)	User Cost (\$1000)
2015	\$7,575.00		\$9,298.00	
2016	\$25.11		\$25.11	
2017	\$25.11		\$25.11	
2018	\$25.11		\$25.11	
2019	\$25.11		\$25.11	
2020	\$25.11		\$25.11	
2021	\$25.11		\$25.11	
2022	\$25.11		\$25.11	
2023	\$25.11		\$25.11	
2024	\$25.11		\$25.11	
2025	\$25.11		\$25.11	
2026	\$25.11		\$25.11	
2027	\$25.11		\$25.11	
2028	\$25.11		\$25.11	
2029	\$25.11		\$25.11	
2030	\$25.11		\$25.11	
2031	\$25.11		\$25.11	
2032	\$25.11		\$25.11	
2033	\$25.11		\$25.11	
2034	\$25.11		\$25.11	
2035	\$25.11		\$25.11	
2036	\$25.11		\$25.11	
2037	\$25.11		\$25.11	
2038	\$1,782.00	\$5,236.21	\$1,782.00	\$5,236.21
2039	\$32.55		\$32.55	
2040	\$32.55		\$32.55	
2041	\$32.55		\$32.55	
2042	\$32.55		\$32.55	
2043	\$32.55		\$32.55	
2044	\$32.55		\$32.55	
2045	\$32.55		\$32.55	
2046	\$32.55		\$32.55	
2047	\$32.55		\$32.55	
2048	\$4,617.00	\$13,090.51	\$4,617.00	\$13,090.51
2049	\$32.55		\$32.55	
2050	\$32.55		\$32.55	
2051	\$32.55		\$32.55	
2052	\$32.55		\$32.55	
2053	\$32.55		\$32.55	
2054	\$32.55		\$32.55	
2055	\$32.55		\$32.55	
2056	\$32.55		\$32.55	
2057	\$32.55		\$32.55	
2058	\$32.55		\$32.55	
2059	\$32.55		\$32.55	
2060	\$32.55		\$32.55	
2061	\$32.55		\$32.55	
2062	\$32.55		\$32.55	
2063	\$32.55		\$32.55	
2064	\$32.55		\$32.55	
2065	\$32.55		\$32.55	
2066	\$32.55		\$32.55	
2067	\$32.55		\$32.55	
2068	\$32.55		\$32.55	
2069	\$32.55		\$32.55	
2070	(\$200.74)	(\$569.15)	(\$200.74)	(\$569.15)

Probabilistic Life Cycle Cost Analysis Worksheet



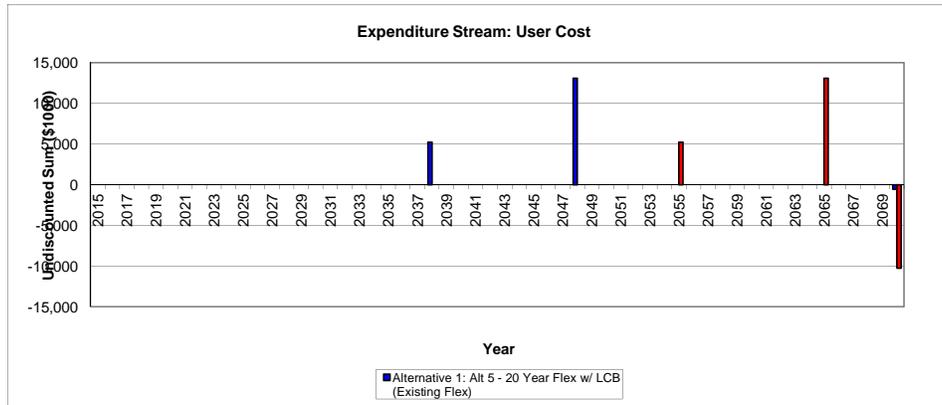
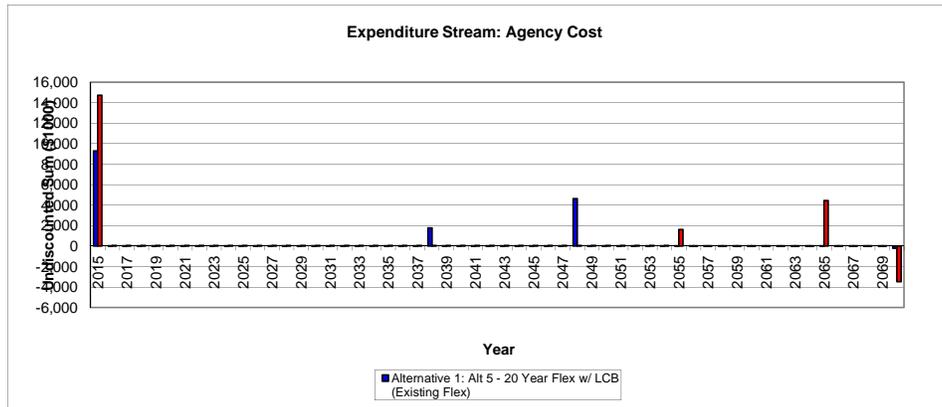
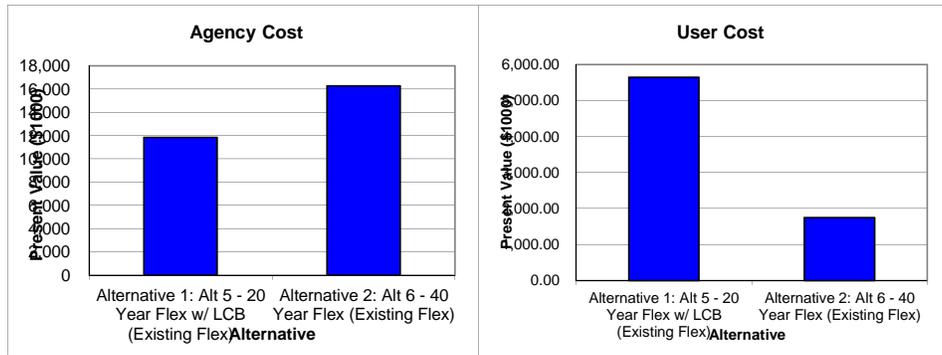
Probabilistic Life Cycle Cost Analysis Worksheet

Update Results

Total Cost				
Total Cost	Alternative 1: Alt 5 - 20 Year Flex w/ LCB (Existing Flex)		Alternative 2: Alt 6 - 40 Year Flex (Existing Flex)	
	Agency Cost (\$1000)	User Cost (\$1000)	Agency Cost (\$1000)	User Cost (\$1000)
Undiscounted Sum	\$17,025.20	\$17,757.57	\$19,567.74	\$8,081.97
Present Value	\$11,849.50	\$5,646.67	\$16,275.86	\$1,747.78
EUAC	\$535.97	\$255.41	\$736.18	\$79.05
Lowest Present Value Agency Cost	Alternative 1: Alt 5 - 20 Year Flex w/ LCB (Existing Flex)			
Lowest Present Value User Cost	Alternative 2: Alt 6 - 40 Year Flex (Existing Flex)			

Expenditure Stream				
Year	Alternative 1: Alt 5 - 20 Year Flex w/ LCB (Existing Flex)		Alternative 2: Alt 6 - 40 Year Flex (Existing Flex)	
	Agency Cost (\$1000)	User Cost (\$1000)	Agency Cost (\$1000)	User Cost (\$1000)
2015	\$9,298.00		\$14,705.00	
2016	\$25.11		\$48.36	
2017	\$25.11		\$48.36	
2018	\$25.11		\$48.36	
2019	\$25.11		\$48.36	
2020	\$25.11		\$48.36	
2021	\$25.11		\$48.36	
2022	\$25.11		\$48.36	
2023	\$25.11		\$48.36	
2024	\$25.11		\$48.36	
2025	\$25.11		\$48.36	
2026	\$25.11		\$48.36	
2027	\$25.11		\$48.36	
2028	\$25.11		\$48.36	
2029	\$25.11		\$48.36	
2030	\$25.11		\$48.36	
2031	\$25.11		\$48.36	
2032	\$25.11		\$48.36	
2033	\$25.11		\$48.36	
2034	\$25.11		\$48.36	
2035	\$25.11		\$48.36	
2036	\$25.11		\$48.36	
2037	\$25.11		\$48.36	
2038	\$1,782.00	\$5,236.21	\$48.36	
2039	\$32.55		\$48.36	
2040	\$32.55		\$48.36	
2041	\$32.55		\$48.36	
2042	\$32.55		\$48.36	
2043	\$32.55		\$48.36	
2044	\$32.55		\$48.36	
2045	\$32.55		\$48.36	
2046	\$32.55		\$48.36	
2047	\$32.55		\$48.36	
2048	\$4,617.00	\$13,090.51	\$48.36	
2049	\$32.55		\$48.36	
2050	\$32.55		\$48.36	
2051	\$32.55		\$48.36	
2052	\$32.55		\$48.36	
2053	\$32.55		\$48.36	
2054	\$32.55		\$48.36	
2055	\$32.55		\$1,616.00	\$5,236.21
2056	\$32.55		\$34.41	
2057	\$32.55		\$34.41	
2058	\$32.55		\$34.41	
2059	\$32.55		\$34.41	
2060	\$32.55		\$34.41	
2061	\$32.55		\$34.41	
2062	\$32.55		\$34.41	
2063	\$32.55		\$34.41	
2064	\$32.55		\$34.41	
2065	\$32.55		\$4,441.00	\$13,090.51
2066	\$32.55		\$21.39	
2067	\$32.55		\$21.39	
2068	\$32.55		\$21.39	
2069	\$32.55		\$21.39	
2070	(\$200.74)	(\$569.15)	(\$3,475.57)	(\$10,244.75)

Probabilistic Life Cycle Cost Analysis Worksheet



SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)
EA 04-4A7900

Attachment C

LCCA Assumption Memo

TECHNICAL MEMORANDUM

Project Name:	SR 85 Express Lanes Project		
Subject:	LCCA Design Assumptions for Real Cost Version 2.2 Input		
Revision No:	1.2	Task Order:	
Prepared by:	Joel Dickerson	Date:	09/26/2012
Checked by:	Minyoung Kim	Date:	09/27/2012

INTRODUCTION

The California Department of Transportation (Department), in cooperation with the Santa Clara Valley Transportation Authority (VTA), proposes to convert the existing High-Occupancy Vehicle (HOV) lanes on State Route 85 (SR 85) to High-Occupancy Toll (HOT) lanes (hereafter known as express lanes). The express lanes would allow HOVs to continue to use the lanes without cost and eligible single-occupant vehicles (SOVs) to pay a toll. The express lanes would be implemented on northbound and southbound SR 85 from US 101 in southern San Jose to US 101 in Mountain View in Santa Clara County (see Figures 1 and 2). The express lanes would continue for 5.5 miles on US 101 in southern San Jose. Express lane advance notification signage would also be added in a 4.1-mile segment of US 101 in Mountain View, for a total project length of 33.7 miles. Work on the US 101 segments would mainly include striping and signing and would not include widening or change in system or HOV lane access. The project would not require any right-of-way acquisition.

SR 85 is a 24.1-mile long freeway that connects Mountain View to southern San Jose. SR 85 passes through Cupertino, Saratoga, Campbell, Los Gatos, Sunnyvale, Los Altos, Mountain View, and San Jose. SR 85 also intersects with SR 237, Interstate 280 (I-280), SR 17, and SR 87. Trucks over 9,000 pounds are prohibited on SR 85 between US 101 and I-280, except for maintenance and emergency vehicles, buses, and recreational vehicles. SR 85 typically has three lanes in each direction: two mixed-flow lanes and one HOV lane.

In the section between SR 87 and I-280, where the median width is approximately 46 feet, pavement widening would be conducted in the median to accommodate the second express lane. The median would be paved, and the existing three-beam barrier would be replaced with a Type 60 concrete barrier. In the areas where the median width is less than 46 feet, widening would occur in the available median width.

An auxiliary lane would be added to a 1.1-mile segment of northbound SR 85 between the existing South De Anza Boulevard on-ramp and Stevens Creek Road off-ramp. The purpose of the auxiliary lane is to maintain peak-period traffic flow where the two express lanes become a single express lane south of the SR 85/I-280 interchange. The existing pavement would be widened by up to 14 feet to the outside (northeast). To accommodate the auxiliary lane, the existing embankments at the abutments of the South Stelling Road and McClellan Road overcrossings adjacent to northbound SR 85 would be replaced with retaining walls.

SR 85 bridge decks would be widened at Almaden Expressway (northbound side only), Camden Avenue, Oka Road, Pollard Road, and Saratoga Avenue, as well as at the San Tomas Aquino Creek and Saratoga Creek crossings. The existing gaps between the northbound and southbound bridges at these locations would be closed except at Almaden Expressway, where the northbound bridge would be widened on the inside (toward the median).

Conversion of the HOV lanes into single express lanes on SR 85 between US 101 in southern San Jose and SR 87 and between I-280 and US 101 in Mountain View would include restriping and installation of overhead signs and tolling devices in the median. The single express lane would continue in both directions of US 101 in southern San Jose and would include the installation of overhead signs in the median.

During construction, some lane closures could be required, but full freeway closures are not expected to be necessary.

The purpose of this memo is to document the design assumptions for developing the Life Cycle Cost Analysis (LCCA).

1. Design Life

Pavement Design Life for a Widening Project must match remaining service life of adjacent roadway, but not less than project design period = 20 years minimum. The LCCA must compare 20 year design life to 40 year design life.

2. Existing Pavement Sections

See attached spreadsheet "2012-08-24_Existing Structural Section.xls".

3. LCCA Alternatives

The calculated mainline TI for a 20-Year design life is 10.0, and for a 40-Year design life is 11.0. The R-value assumed for the sub-grade is 15, except for the portion of the project between Rodeo Creek and Stelling Road/Regnart Creek (Sta 1434+00 to 1517+00), where the R-value is assumed to be 5. As outlined in Highway Design Manual, Topic 623.1, a rigid pavement requires subgrade to have an R-value greater than 10. Based on Highway Design Manual (HDM), Topic 614.5, the use of subgrade enhancement geotextile (SEG) over subgrade with R-value less than 20 could raise the effective R-value to 20. Therefore, we recommend using SEG to provide a consistent subgrade for the pavement structural sections along the proposed widening. Due to the length of this project and the significant variation of existing pavement sections, performing an LCCA for every specific area of the project is not

feasible. Rather, we propose to analyze two cases: 1) existing pavement is rigid, and 2) existing pavement is flexible. For each case, we will propose alternatives based on Table 1 in the LCCA manual. Based on this criteria, possible alternatives for the SR 85 Express Lanes Project are:

Case 1 - Existing Rigid Pavement

Alternative 1 - Rigid Pavement (20-year design life)

Design Factors are TI = 10.0, R-value = 20, Table 623.1E (Type II, Central Coast Climate Region)

Section Component	Thickness
	(feet)
JPCP	0.75
HMA (Type A)	0.25
CI 4 AS	0.50
SEG (Class B1)	--
Total	1.50

Alternative 2 – Flexible Pavement (20-year design life)

Design Factors are TI = 10.0, R-value = 20, GE (required) = 2.56

Section Component	Thickness	Gravel Equivalent
	(feet)	(feet)
RHMA-G	0.15	0.90
HMA (Type A)	0.35	
CI 3 AB	0.85	0.94
CI 4 AS	0.75	0.75
SEG (Class B1)		--
Total		2.59

Alternative 3 – Rigid Pavement (40-year design life)

Design Factors are TI = 11.0, R-value = 20, Table 623.1E (Type II, Central Coast Climate Region)

Section Component	Thickness
	(feet)
JPCP	0.80
HMA (Type A)	0.25
CI 4 AS	0.60
SEG (Class B1)	--
Total	1.85

Case 2 - Existing Flexible Pavement

Alternative 4 - Flexible Pavement (20-year design life)

Design Factors are TI = 10.0, R-value = 20, GE (required) = 2.56

Section Component	Thickness	Gravel Equivalent
	(feet)	(feet)
RHMA-G	0.15	0.90
HMA (Type A)	0.35	
CI 3 AB	0.85	0.94
CI 4 AS	0.75	0.75
SEG (Class B1)		--
Total		2.59

Alternative 5 – Flexible Pavement (20-year design life)

Design Factors are TI = 10.0, R-value = 20, GE (required) = 2.56

Section Component	Thickness	Gravel Equivalent
	(feet)	(feet)
RHMA-G	0.15	0.90
HMA (Type A)	0.35	
LCB	0.50	0.95
CI 4 AS	0.75	0.75
SEG (Class B1)		--
Total		2.60

Alternative 6 – Flexible Pavement (40-year design life)

Design Factors are TI = 11.0, R-value = 20, GE (required) = 2.82

Section Component	Thickness	Gravel Equivalent
	(feet)	(feet)
OGFC	0.10	--
RHMA-G	0.15	2.99
HMA	1.15	
Class 3 AB	0.50	Ignored
SEG (Class B1)		--
Total		2.99

4. Analysis Period

Based on Table 2 in the LCCA manual, because we are comparing 20-year and 40-year design lives, the analysis period should be **55 years**.

5. Discount Rate

From the LCCA manual Section 2.3 Discount Rate: “Caltrans currently uses a discount rate of 4%” in the LCCA of Pavement Structures.

6. Maintenance and Rehabilitation (M & R) Sequences

Existing Pavement = Rigid or Flexible, as shown on as-built

Pavement Climate Region = Central Coast

Final Surface Type = As described for each pavement option

Pavement Design Life = Design Life being analyzed

Maintenance Service Level = MSL 1 (Urban Interstate)

7. Construction Costs

These costs should only be the cost of widening, and should exclude structures, retaining walls, sound walls and work on the ramps and frontage road. URS will separate these costs from the overall PR cost estimate. Project support costs shall follow the multiplier shown in LCCA Manual Table 3, in addition contingency and mobilization costs will be added to the estimate.

8. Traffic Inputs

- AADT for construction year (2015) - 133,000
- Single Unit truck percentage - (0.5%)
- Combination truck percentage - (0.0%)
- Annual Traffic Growth Rate - (1.44%)
- Normal operating speed (65 mph)
- Number of lanes open (3)

(from Table 6)

- Free Flow Capacity (2,170 - assuming “level” multi-lane highway)
- Queue Dissipation Capacity (1,700 - assuming “level”)
- Max AADT per lane (53,773 - assuming “level”)
- Work Zone Capacity (1,510 - assuming “level”)
- Expected max queue length (5.0 miles)

(from Table 8)

- Work Zone Duration
 - For initial construction work zone duration is zero for widening
 - For future rehabilitation LCCA Procedures included in the Productivity Rate Table (Table 8 & 9) will be followed.
 - Average lane-mile completed per closure is selected assuming Continuous Closure (16 hr/day operation) of the single inside lane.

9. Other Assumptions

- No LCCA will be performed for ramps
- No LCCA will be performed for local streets

- No mainline pavement rehabilitation is needed according to the Caltrans Pavement Condition Survey Inventory Report
- No lane closures are required for inside lane widening, because temp K-rails will be placed between travel lane and work zone (inside widening).
- The Traffic Index was calculated based on the procedures outlined in the Highway Design Manual
- Estimated Truck Percentage = 0.5% (Per Caltrans 2009 Truck Data)

Attachments: Excel spreadsheet showing existing pavement sections

**SR 85 Express Lanes
Existing Structural Section**

Index No.	Post Miles	Contract No.	Project Name	As-Built Date	Direction	As Built Stationing		85 HOT Lane Stationing		SB Existing Structural Section			Median Width (not including Shld)	NB Existing Structural Section			
						From	To	From	To	Right Shoulder	Mainline	Left Shoulder	NB+Barrier+SB	Left Shoulder	Mainline	Right Shoulder	
21	5.5/6.2	04-437514	Construction on State Highway	12/8/1992	SB	B 390+21	BN 115+50	940+63	965+93		0.30' AC (Type A), VAR Cl 3 AB, 0.80' Cl 4 AS (10' Wide)	0.75' PCC, 0.25' ATPB, 0.80' Cl 4 AS (36' & 48' Wide)	0.30' AC (Type A), VAR Cl 3 AB, 0.80' Cl 4 AS (8' Wide)	(Var 9'-27') SB Median Only Var 20' to 27'	0.30' AC (Type A), VAR Cl 3 AB, 0.80' Cl 4 AS (8' Wide)	0.75' PCC, 0.25' ATPB, 0.80' Cl 4 AS (36' Wide)	0.30' AC (Type A), VAR Cl 3 AB, 0.80' Cl 4 AS (10' Wide)
					NB	B 390+15	BN 112+30	940+57	963+43								
24	6.1/9.8	04-437754	Construction on State Highway	12/29/1995	NB	113+00	198+68	963+45	1049+13		0.30' AC (Type A) VAR Cl 3 AB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (10' Wide)	0.30' AC (Type A) VAR Cl 3 AB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (Var 36' to 48' Wide)	0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (Var 8' to 14')	NB - Var 11' to 27' SB - Var 11' to 27'	0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (Var 8' to 14' Wide)	0.75' PCC, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (Var 36' to 48' Wide)	0.75' PCC, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (10' Wide)
					SB	115+50	199+24	965+95	1049+69								
24	6.1/9.8	04-437754	Construction on State Highway	12/29/1995	NB	198+68	206+48	1049+13	1056+93								
	6.1/9.8	04-437754	Construction on State Highway	12/29/1995	SB	199+24	206+14	1049+69	1056+59		0.30' AC (Type A), VAR Cl 3 AB, 0.80' Cl 4 AS (10' Wide)	0.75' PCC, 0.25' ATPB, 0.80' Cl 4 AS (36' to 48' Wide)	0.30' AC (Type A), 0.70' Cl 3 AB, 0.80' Cl 4 AS (8' Wide)	NB - Var 11' to 27' SB - Var 11' to 27'	0.30' AC (Type A), 0.70' Cl 3 AB, 0.80' Cl 4 AS (8' Wide)	0.75' PCC, 0.25' ATPB, 0.80' Cl 4 AS (36' Wide)	0.30' AC (Type A), VAR Cl 3 AB, 0.80' Cl 4 AS (10' Wide)
	6.1/9.8	04-437754	Construction on State Highway	12/29/1995	NB	209+36	220+70	1059+81	1071+15								
	6.1/9.8	04-437754	Construction on State Highway	12/29/1995	SB	208+87	220+70	1059+32	1071+15								
24	6.1/9.8	04-437754	Construction on State Highway	12/29/1995	NB/SB	220+70	268+00	1071+15	1118+45		0.75' PCC, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (10' Wide)	0.75' PCC, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (36' + Var 12' to 0' Wide)	0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (Var 8' to 14')		0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (Var 8' to 14' Wide)	0.75' PCC, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (36' + Var 3', 4' to 0' + Var 0' to 12' Wide)	0.75' PCC, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (8' to 10' Wide)
24	6.1/9.8	04-437754	Construction on State Highway	12/29/1995	NB	268+00	305+00	1118+45	1155+45		0.30' AC (Type A) VAR Cl 3 AB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (10' Wide)	0.30' AC (Type A) VAR Cl 3 AB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (Var 36' to 48' Wide)	0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (Var 8' to 14')	Var 11' to 27'	0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (Var 8' to 14' Wide)	0.75' PCC, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (Var 36' to 48' Wide)	0.75' PCC, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' PM (Blanket) (10' Wide)
					SB												
29	9.8/10.9	04-437454	Construction on State Highway	4/28/1992	NB/SB	305+00	321+85	1155+42	1172+27		0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (10' Wide)	0.75' Concrete Pavement, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (36' & 48' Wide)	0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (8' Wide)	(35.5' & Varies) + 16'	0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (8' Wide)	0.75' Concrete Pavement, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (36' Wide)	0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (10' Wide)
BN 321+85						BN 347+00	1172+27	1197+42		(18.5', 35.5' & Var) + (16', 18.5' & Var)							
B3 360+91						B3 365+50	1211+85	1216+44		(18.5', 35.5' & Var) + (16', 18.5' & Var)							
29	9.8/10.9	04-437454	Construction on State Highway	4/28/1992	NB	BN 346+30	BN 342+10	1196+72	1192+52		0.30' AC (Type A), 0.70' & VAR Cl 3 AB, 0.80' Cl 4 AS (10' Wide)	0.75' Concrete Pavement, 0.25' ATPB, 0.80' Cl 4 AS (36' & Var Wide)	0.30' AC (Type A), 0.70' & VAR Cl 3 AB, 0.80' Cl 4 AS (8' Wide)	17.5', 18.5' & Var (NB only)	0.30' AC (Type A), 0.70' & VAR Cl 3 AB, 0.80' Cl 4 AS (8' Wide)	0.75' Concrete Pavement, 0.25' ATPB, 0.80' Cl 4 AS (36' & Var Wide)	0.30' AC (Type A), 0.70' & VAR Cl 3 AB, 0.80' Cl 4 AS (8' & 10' Wide)
						BN 349+74	B3 358+60	1199+68	1209+54								
						SB	BN 347+00	BN 348+26	1197+42	1198+68							
						BN 349+93	B3 358+40	1200+87	1209+34								
29	9.8/10.9	04-437454	Construction on State Highway	4/28/1992	SB	360+85.18	365+50	1211+79	1216+44		0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (10' Wide)	0.75' Concrete Pavement, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (36' & Var Wide)	0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (8' Wide)	17.5' (SB only) 17' (NB only)	0.30' AC (Type A), 0.70' Cl 3 AB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (8' Wide)	0.75' Concrete Pavement, 0.25' ATPB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (36' & Var Wide)	0.30' AC (Type A), Var Cl 3 AB, 0.35' Cl 4 AS, 0.67' Permeable Material (Blanket) (10' Wide)
29	9.8/10.9	04-437454	Construction on State Highway	4/28/1992	NB	360+93.43	365+50	1211+87	1216+44								
	10.9/15.0	No As-Built Data for Structural Sections. Assuming PCC segment ends at 1285+00. According to Geotech Report, dated 06/30/2010, design R-value=5 from Sta 1517+00 (Stelling Road/Regnard Creek) to Rodeo Creek (1285+00), west of Prospect Rd. According to Stephen Huang, rigid section (JPCP) cannot be used for R-value=5. Will need to include 18" lime treatment section underneath the flexible (RHMA) proposed section for R-value=5.						1216+44	1285+00								
							1216+44	1435+53									

**SR 85 Express Lanes
Existing Structural Section**

Index No.	Post Miles	Contract No.	Project Name	As-Built Date	Direction	As Built Stationing		85 HOT Lane Stationing		SB Existing Structural Section				Median Width (not including Shld)	NB Existing Structural Section				
						From	To	From	To	Right Shoulder	Mainline	Left Shoulder	NB+Barrier+SB	Left Shoulder	Mainline	Right Shoulder			
54	15.0/17.8	04-437764	Construction on State Highway	9/27/1994	NB/SB	485+00	501+50	1435+53	1452+03	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (0' & 10' Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (36' Wide)	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' & Var Wide)	13' + 13'	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (36' Wide)	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)			
						519+20	526+50	1469+73	1477+03										
						526+50	568+91	1477+03	1519+44										
54	15.0/17.8	04-437764	Construction on State Highway	9/27/1994	NB/SB	568+91	571+21	1519+44	1521+74	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (36' Wide)	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (14' & Var Wide)	13' + (9' & Var)	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (36' Wide)	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)			
54	15.0/17.8	04-437764	Construction on State Highway	9/27/1994	NB/SB	571+21	585+06	1521+74	1535+59	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (36' & Var Wide)	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' & Var Wide)	(13' to 9') + CB + (9' to 3')	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' to 14' Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (36' or 48' Wide)	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)			
54					NB/SB	585+06	587+46	1535+59	1537+99								(9' or 3') + CB + (10' & Var)		
54	15.0/17.8	04-437764	Construction on State Highway	9/27/1994	NB/SB	587+46	611+44	1537+99	1561+97	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (48' & Var Wide)	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)	(9' & Var) + CB + (3.75' & Var)	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (14' & Var Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (36' to 48' Wide)	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)			
54	15.0/17.8	04-437764	Construction on State Highway (Speed Change Lanes)	9/27/1994	NB/SB	611+44	622+50	1561+97	1573+03	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (48' & Var Wide)	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' & Var Wide)	(9' or 3') + CB + (10' & Var)	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (14' or 10' Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (36' or 48' Wide)	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)			
54	15.0/17.8	04-437764	Construction on State Highway	9/27/1994	NB/SB	622+50	629+66	1573+03	1580+19	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (48' & Var Wide)	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)	(9' & Var) + CB + (3.75' & Var)	0.30' AC (Type A), 0.70' CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (14' & Var Wide)	0.75' PCC, 0.25' ATPB, 0.35' CI 4 AS, 0.67' CI 3 PM (36' to 48' Wide)	0.30' AC (Type A), VAR CI 3 AB, 0.35' CI 4 AS, 0.67' CI 3 PM (10' Wide)			
121	17.7/19.5	04-121174	Construction on State Highway	8/6/1971	NB/SB	408+00	495+00	1580+18	1667+18	Shoulder: 0.45' AC (Type A), 0.85' PMCTB (CI A), 0.50' AS (CI 4) (10' Wide)	Ramp: 0.45' AC (Type A), 0.85' PMCTB (CI A), 0.50' AS (CI 4) (12' & Var Wide)	0.70' PCC, 0.45' RMCTB (CI A), 0.50' AS (CI 4) (48' Wide)	0.25' AC (Type B), 0.90' AB (CI 2), 0.5' AS (CI 4) (8' Wide)	0.25' AC (Type B), 1.4' AS (CI 4) (3' Wide)	Double Metal Beam Barrier	0.25' AC (Type B), 1.4' AS (CI 4) (3' Wide)	0.25' AC (Type B), 0.90' AB (CI 2), 0.5' AS (CI 4) (8' Wide)	0.70' PCC, 0.45' RMCTB (CI A), 0.50' AS (CI 4) (36' & 60' Wide)	0.30' AC (Type B), 0.85' AB (CI 2), 0.50' AS (CI 4) (10' Wide)

SR 85 Express Lanes Project
Life Cycle Cost Analysis Summary Report (PA&ED)
EA 04-4A7900

Attachment D
Geotechnical Memo



Technical Memorandum

Date: September 28, 2012

Project No. 28645170.15010

To: Chadi Chazbek

From: Stephen Huang

Subject: Structural Pavement Design
SR 85 Express Lane Project
Santa Clara County, California
(04-SCI-85, PM 0.0/R24.059
04-SCI-101, PM 25.311/28.609
04-SCI-101, PM 47.891/51.995)

This memorandum provides the basis for design alternatives of the structural pavement section proposed for the widening of SR 85 to accommodate proposed express lanes in Santa Clara County, California. The preliminary design alternatives presented herein are of preliminary nature with the level of details consistent with the need for Life Cycle Cost Analysis (LCCA).

PREVIOUS STUDY

A preliminary geotechnical evaluation of roadway subgrade for the proposed SR 85 Express Lanes project is presented in a report titled "Preliminary Geotechnical Report, State Route 85 Express Lane Project," dated March 30, 2011.

APPROACH

It is standard practice to:

- Calculate the TI based on traffic surveys or the prescriptive values presented in Table 613.5A of the Caltrans Highway Design Manual (HDM) for ramps and connectors if specific traffic survey data are not available;
- Estimate design R-value based on testing or soil classifications;
- Estimate pavement component thicknesses based on design TI and R-values in accordance with the HDM
- Adjust component thicknesses to match pavement drain and underdrain sections of adjacent existing pavement sections.

TRAFFIC INDEX (TI)

We understand for the life cycle cost analysis of pavement alternatives, the design TI for this project should be as follows:

Design Life	TI
20 years	10.0
40 years	11.0

SUBGRADE R-VALUE

As discussed in the March 30, 2011 Preliminary Geotechnical Report (PGR), new pavement for the widening in the median or shoulders should be anticipated to have a subgrade design R-value higher than 15. For the segment between Stelling Road/Regnart Creek and Rodeo Creek, west of Prospect Road, the design R-value should be expected on the order of 5. As outlined in Highway Design Manual, Topic 623.1, a rigid pavement requires subgrade to have an R-value greater than 10. Based on Highway Design Manual (HDM), Topic 614.5, the use of subgrade enhancement geotextile (SEG) over subgrade with R-value less than 20 could raise the effective R-value to 20. Therefore, we recommend using SEG to provide a consistent subgrade for the pavement structural sections along the proposed widening.

EXISTING PAVEMENT SECTIONS WITH UNDERDRAINS

Based on available as-built data, the mainline roadway sections that consist of underdrains are as follows:

B-Line Station	Pavement Component	Thickness (feet)
965+95 to 1049+69 Southbound lanes	AC (Type A)	0.30
	Class 3 AB	Varying thickness
	Class 4 AS	0.35
	Permeable Material (Perm)	0.67
963+45 to 1049+13 Northbound lanes 1071+15 to 1118+45 Both directions 1155+42 to 1197+42 Both directions 1211+79 to 1216+44 Southbound lanes 1211+87 to 1216+44 Northbound lanes 1215+94 to 1452+03 Both directions 1519+44 to 1580+19 Both directions	PCC	0.75
	ATPB	0.25
	Class 4 AS	0.35
	Perm	0.67

B-Line Station	Pavement Component	Thickness (feet)
1775+89 to 1797+04 Both directions	PCC	0.67
	AC Base	0.50
	Class 4 AS	0.50
	Perm	0.67

Along the above segments, the pavement sections were based on a minimum R-value of 15.

RECOMMENDED STRUCTURAL PAVEMENT SECTION ALTERNATIVES FOR LCCA

Existing Rigid Pavement

Alternative 1 – Rigid Pavement (Design life of 20 years)

Design Factors are TI = 10.0, R-value = 20, Table 623.1E (Type II, Central Coast Climate Region, without lateral support)

Section Component	Thickness
	(feet)
JPCP	0.75
HMA-A	0.25
Class 2 AS	0.50
SEG (Class B1)	--

Alternative 2 – Flexible Pavement (Design life of 20 years)

Design Factors are TI = 10.0, R-value = 20, GE (required) = 2.56

Section Component	Thickness	Gravel Equivalent
	(feet)	(feet)
RHMA-G	0.15	0.90
HMA	0.35	
Class 3 AB	0.85	0.94
Class 4 AS	0.75	0.75
SEG (Class B1)		--
Total		2.59

Alternative 3 – Rigid Pavement (Design life of 40 years)

Design Factors are TI = 11.0, R-value = 20, Table 623.1E (Type II, Central Coast Climate Region, without lateral support)

Section Component	Thickness
	(feet)
JPCP	0.80
HMA-A	0.25
Class 2 AS	0.60
SEG (Class B1)	--

Existing Flexible Pavement

Alternative 4 – Flexible Pavement (Design life of 20 years)

Design Factors are TI = 10.0, R-value = 20, GE (required) = 2.56

Section Component	Thickness	Gravel Equivalent
	(feet)	(feet)
RHMA-G	0.15	0.90
HMA	0.35	
Class 3 AB	0.85	0.94
Class 4 AS	0.75	0.75
SEG (Class B1)		--
Total		2.59

Alternative 5 – Flexible Pavement (Design life of 20 years)

Design Factors are TI = 10.0, R-value = 20, GE (required) = 2.56

Section Component	Thickness	Gravel Equivalent
	(feet)	(feet)
RHMA-G	0.15	0.90
HMA	0.35	
LCB	0.50	0.95
Class 4 AS	0.75	0.75
SEG (Class B1)		--
Total		2.60

Alternative 6 – Flexible Pavement (Design life of 40 years)

Based on HDM, Topic 633.1(3), the following enhancements should be incorporated into flexible pavement alternatives:

- Use the procedures for full depth hot mix asphalt to determine the minimum thickness for flexible pavement.
- Place a minimum 0.5 foot of aggregate base underneath the flexible pavement.
- Use a non-structural wearing course above the surface layer.
- Use rubberized hot mix asphalt for the top of the surface layer.

Design Factors are TI = 11.0, R-value = 20, GE (required) = 2.82

Section Component	Thickness	Gravel Equivalent
	(feet)	(feet)
OGFC	0.10	--
RHMA-G	0.15	2.99
HMA	1.15	
Class 3 AB	0.50	Ignored
SEG (Class B1)		--
Total		2.99

Existing Rigid Pavement with Permeable Material

Alternative 7 – Rigid Pavement (Design life of 20 years)

Design Factors are TI = 10.0, R-value = 20, Table 623.1E (Type II, Central Coast Climate Region, without lateral support)

Section Component	Thickness
	(feet)
JPCP	0.75
ATPB	0.25
HMA-A	0.25
Class 2 AS	0.35
Class 3 Perm	0.67

Alternative 8 – Rigid Pavement (Design life of 40 years)

Design Factors are TI = 11.0, R-value = 20, Table 623.1E (Type II, Central Coast Climate Region, without lateral support)

Section Component	Thickness
	(feet)
JPCP	0.80
ATPB*	0.25
HMA-A	0.25
Class 3 Perm*	0.67

*For this alternative, Class 3 Perm is to substitute the need for subbase pursuant to Table 623.1E. Detail matching of ATPB and Class 3 Permeable Material will be evaluated during PS&E design phase.

LIMITATIONS

The conclusions and recommendations presented in this report are based on the assumption that the subsurface soil and groundwater conditions do not deviate appreciably from those assumed.

The recommendations presented in this report were developed with the standard of care commonly used as state of the practice in the profession. No other warranties are included, either express or implied, as to the professional advice included in this report.

September 28, 2012
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RHMA-G/HMA/AB/AS

Design Life = 20 years

TI = 10.0

Design subgrade R-value = 20 (with SEG)

(a) Determine required total gravel equivalent (GE):

$$\begin{aligned} GE_{Total} &= 0.0032 \times TI \times (100 - R_{Subgrade}) \\ &= 0.0032 \times 10 \times (100 - 20) \\ &= 2.56 \text{ feet} \end{aligned}$$

(b) Determine the GE for HMA with an R-value of Class 3 AB = 78:

$$\begin{aligned} GE_{HMA} &= 0.0032 \times 10 \times (100 - 78) \\ &= 0.70 \text{ foot} \end{aligned}$$

(c) Determine the required GE of HMA by adding a safety factor.

$$\begin{aligned} GE_{min_HMA} &= GE_{HMA} + 0.2 \\ &= 0.90 \text{ foot} \end{aligned}$$

(d) Determine actual thickness of HMA from Table 633.1 of the HDM.

The closest GE corresponds to an HMA thickness of 0.5 foot (GE = 0.9 feet).

(e) Determine the GE of the AB layer, with an R-value of Class 4 AS = 50:

$$\begin{aligned} GE_{AB} &= GE_{HMA+AB} + SafetyFactor - GE_{HMA} \\ &= 1.6 + 0.2 - 0.9 \\ &= 0.9 \text{ foot} \end{aligned}$$

(f) The closet GE is 0.94 which corresponds to an AB layer thickness of 0.85 feet.

(g) Determine GE of the AS layer:

$$\begin{aligned} GE_{AS} &= 2.56 - 0.9 - 0.94 \\ &= 0.72 \text{ foot} \end{aligned}$$

(h) The pavement structural layer thicknesses are as follows:

Layer	Thickness (feet)	Gravel Equivalent
RHMA-G*	0.15	0.90
HMA	0.35	
Class 3 AB	0.85	0.94
Class 4 AS	0.75	0.75
SEG (Class B1)		--
Total		2.59

*Combine RHMA-G and HMA to provide required HMA GE.

RHMA-G/HMA/LCB/AS

Design Life = 20 years

TI = 10.0

Design subgrade R-value = 20 (with SEG)

(a) Determine required total gravel equivalent (GE):

$$\begin{aligned}GE_{Total} &= 0.0032 \times TI \times (100 - R_{Subgrade}) \\ &= 0.0032 \times 10 \times (100 - 20) \\ &= 2.56 \text{ foot}\end{aligned}$$

(b) Determine the GE for the combined RHMA-G, HMA, and LCB (materials not subject to California R-value tests); R-value for Class 4 AS is 50:

$$\begin{aligned}GE_{RHMA-G+HMA+LCB} &= 0.0032 \times 10 \times (100 - 50) \\ &= 1.6 \text{ foot}\end{aligned}$$

(c) Determine the GE of RHMA-G and HMA by multiplying the combined GE from (b) by 0.40 and adding the safety factor.

$$\begin{aligned}GE_{RHMA-G+HMA} &= GE_{RHMA-G+HMA+LCB} \times 0.4 + 0.2 \\ &= 0.84 \text{ foot}\end{aligned}$$

(d) Determine actual thickness of RHMA-G and HMA from Table 633.1 of the HDM. The closest GE corresponds to a RHMA-G + HMA thickness of 0.5 foot (GE = 0.9 foot).

(e) Determine the GE of the LCB layer:

$$\begin{aligned}GE_{LCB} &= GE_{RHMA-G+HMA+LCB} + SafetyFactor - GE_{RHMA-G+HMA} \\ &= 1.6 + 0.2 - 0.9 \\ &= 0.9 \text{ foot}\end{aligned}$$

(f) The closet GE is 0.95 which corresponds to a LCB layer thickness of 0.5 foot.

(g) Determine GE of the AS layer:

$$\begin{aligned}GE_{AS} &= 2.56 - 0.9 - 0.95 \\ &= 0.71 \text{ foot} \Rightarrow 0.75 \text{ foot}\end{aligned}$$

(h) The pavement structural layer thicknesses are as follows:

Layer	Thickness (feet)	Gravel Equivalent
RHMA-G*	0.15	0.90
HMA	0.35	
LCB	0.50	0.95
Class 4 AS	0.75	0.75
SEG (Class B1)		--
Total		2.60

* Combine RHMA-G and HMA to provide required HMA GE.

OGFC/RHMA-G/HMA/AB

Design Life = 40 years

TI = 11.0

Design subgrade R-value = 20 (with SEG)

Based on HDM, Topic 633.1(3), the following enhancements should be incorporated into flexible pavement alternatives:

- Use the procedures for full depth hot mix asphalt to determine the minimum thickness for flexible pavement.
- Place a minimum 0.5 foot of aggregate base underneath the flexible pavement.
- Use a non-structural wearing course above the surface layer.
- Use rubberized hot mix asphalt for the top of the surface layer.

(a) Determine required total gravel equivalent (GE):

$$\begin{aligned}
 GE_{Total} &= 0.0032 \times TI \times (100 - R_{Subgrade}) \\
 &= 0.0032 \times 11.0 \times (100 - 20) \\
 &= 2.82 \text{ feet}
 \end{aligned}$$

(b) Determine the GE of RHMA-G and HMA by adding the safety factor of 0.1.

$$\begin{aligned}
 GE_{RHMA-G+HMA} &= 2.82 + 0.1 \\
 &= 2.92 \text{ feet}
 \end{aligned}$$

(d) Determine actual thickness of RHMA-G and HMA from Table 633.1 of the HDM.

The closest GE corresponds to a RHMA-G + HMA thickness of 1.30 foot (GE = 2.99 feet).

(e) Add 0.5 foot of Class 3 AB (ignore GE)

(h) The pavement structural layer thicknesses are as follows:

Layer	Thickness (feet)	Gravel Equivalent
OGFC	0.10	--
RHMA-G*	0.15	2.99
HMA	1.15	
Class 2 AB	0.50	Ignored
SEG (Class B1)		--
Total		2.99

PAVEMENT STRATEGY CHECKLIST

Date: 8/29/13

Project description and project elements:

SR 85 Express Lanes Project

The California Department of Transportation (Department), in cooperation with the Santa Clara Valley Transportation Authority (VTA), proposes to convert the existing High-Occupancy Vehicle (HOV) lanes on State Route (SR) 85 to express lanes. The express lanes would allow HOVs to continue to use the lanes without cost and eligible single-occupant vehicles to pay a toll. The express lanes would be implemented on northbound and southbound SR 85 from United States Highway 101 (US 101) in southern San Jose to US 101 in Mountain View in Santa Clara County. The project would include the continuation of the express lanes for 3.3 miles on US 101 in southern San Jose. Express lane advance notification signage would also be added in a 4.1-mile segment of US 101 in Mountain View, for a total project length of 33.7 miles. The project does not require any right-of-way acquisition.

SR 85 is a 24.1-mile long freeway that connects Mountain View to southern San Jose. SR 85 passes through Cupertino, Saratoga, Campbell, Los Gatos, Sunnyvale, Los Altos, Mountain View, and San Jose. SR 85 also intersects with SR 237, Interstate 280 (I-280), SR 17, and SR 87. Trucks over 9,000 pounds are prohibited on SR 85 between US 101 and I-280, except for maintenance and emergency vehicles, buses, and recreational vehicles. SR 85 typically has three lanes in each direction: two mixed-flow lanes and one HOV lane.

In the section between SR 87 and I-280, where the median width is approximately 46 feet, pavement widening would be conducted in the median to accommodate the second express lane. The median would be paved, and the existing three-beam barrier would be replaced with a Type 60 concrete barrier. In the areas where the median width is less than 46 feet, widening would occur in the available median width.

An auxiliary lane would be added to a 1.1-mile segment of northbound SR 85 between the existing South De Anza Boulevard on-ramp and Stevens Creek Road off-ramp. The purpose of the auxiliary lane is to maintain peak-period traffic flow where the two express lanes become a single express lane south of the SR 85/I-280 interchange. The existing pavement would be widened by up to 14 feet to the outside (northeast). To accommodate the auxiliary lane, the existing embankments at the abutments of the South Stelling Road and McClellan Road overcrossings adjacent to northbound SR 85 would be replaced with retaining walls.

Conversion of the HOV lanes into single express lanes on SR 85 between US 101 in southern San Jose and SR 87 and between I-280 and US 101 in Mountain View would include restriping and installation of overhead signs and tolling devices in the median. The single express lane would continue in both directions of US 101 in southern San Jose and would include the installation of overhead signs in the median.

EA: 04-4A7900

Project Manager: Fariba Zoury, Caltrans

Co/Rte: SCI/85, SBt/101

Office: Santa Clara County

Project Engineer: Caroline Pineda

Program: HB5 Major Program

Design Senior: Hassan Nikzad

PM Limits: 0.0/R24.1, 23.1/28.6, 47.9/52.0

Materials Engineer (8th floor) : _____ Signature _____

This project is at the following phase (please check one):

PID (PSSR, etc.) PR PS&E OTHER

Describe existing structural section (e.g., shoulder, traveled way). Show limits if different sections are within the project:

See Draft Project Report Appendix K – Life Cycle Cost Analysis (Appendix C. LCCA Assumption Memo)

What pavement types/structural sections does Materials propose for each segment (shoulders and traveled way)?

Pavement widening at the locations of existing rigid pavement:

Design Factors are TI = 11.0, R-value = 20, Table 623.1E (Type II, Central Coast Climate Region, without lateral support)

Section Component	Thickness
	(feet)
JPCP	0.80
HMA-A	0.25
Class 4 AS	0.60
SEG (Class B1)	--

Pavement widening at the locations of existing flexible pavement:

Design Factors are TI = 10.0, R-value = 20, GE (required) = 2.56

Section Component	Thickness	Gravel Equivalent
	(feet)	(feet)
RHMA-G	0.15	0.90
HMA	0.35	
Class 3 AB	0.85	0.94
Class 4 AS	0.75	0.75
SEG (Class B1)		--
Total		2.59

Pavement is involved in:

Entire project OR Part of the project

Assumptions (Is future widening in Regional Transportation Plan? Yes or no?): Yes

Please provide information for all of the following items that apply to this project.

	Yes	No	Question
1.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Are you implementing an innovative strategy (e.g., cold foam Hot-Mix Asphalt (HMA)), pre-cast concrete pavement, continuously reinforced pavement, etc)?</p> <p>If so, which are you implementing and why? If not, why not?</p> <p>Standard application of structural pavement has been proposed.</p>
2.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Has Rapid Rehab strategy been considered (e.g., weekend closures and lane replacements)?</p> <p>Explain: Weekend closure and nighttime work will be required for this project. Rapid rehab strategies will be considered and details will be developed during the design phase.</p>
3.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Are you using Rubberized Hot-Mix Asphalt (RHMA) in this project?</p> <p>If not, justify:</p> <p>Yes, rubberized hot mix asphalt (RHMA-G) is being used.</p>
4.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Was Life Cycle Analysis performed?</p> <p>Yes. See Draft Project Report Appendix K – Life Cycle Cost Analysis.</p>
5.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Does existing pavement have a settlement problem?</p> <p>Explain: No indication of settlement problem exists in the corridor.</p>
6.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>a) Is this project (or part of project) maintaining the grade profile?</p> <p>Yes, grade profile will be maintained.</p> <p>b) If not, explain how the profile change affects the pavement strategy choice (cut v. fill):</p>
7.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Will there be a new barrier?</p> <p>A concrete barrier Type 60GE will be provided at the locations where the overhead signs are proposed. In the SR 85 section between SR 87 and I-280, the existing thrie-beam barrier will be replaced with a concrete barrier Type 60.</p>

	Yes	No	Question
8.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Is the proposed structural section on cut or fill or both? Provide limits of both, if applicable.</p> <p>1. Generally, the project will pave the existing v-shaped median between SR 87 (PM 6.5) and I-280 (PM 17.3). Therefore, this pavement will be placed on fill.</p> <p>The new auxiliary lane pavement between De Anza on-ramp (PM 16.2) to Sevens Creek off-ramp (PM 17.8) will be constructed on a combination of cut and fill.</p>
9.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Are highly expansive basement soils present?</p> <p>No, design R-value is 20.</p>
10.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Are as-builts (including structural section information regarding edge drains, under drains, lime treatment, permeable blanket, etc.) available?</p> <p><input type="checkbox"/> <input type="checkbox"/></p> <p>If no, did you check map files and online?</p> <p>If yes, existing structural section was based on (check one): <input checked="" type="checkbox"/> as-built <input type="checkbox"/> actual boring</p>
11.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Do the project limits have problems with groundwater (e.g., high water table, flow requirements, etc.)? If yes, explain:</p> <p>At the north end of the project, between approximately El Camino Real and Oregon Expressway, layers of soft to stiff silty clay were encountered from ground surface to depths in the order of 20 to 30 feet below ground surface. Groundwater was measured in this area at depths ranging from about 3 to 28 feet. In consideration of these soft to stiff clays, a foundation for overhead signs will be required in this area, consisting of either driven piles or drilled piers.</p>
12.	<input type="checkbox"/>	<input type="checkbox"/>	<p>Has the availability of pavement materials (i.e., long haul distances from plants) been considered?</p> <p>To be determined during the design phase.</p> <p>If yes, how does material availability affect pavement type selection?</p>
13.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Will the existing pavement be rehabilitated?</p> <p>No pavement rehabilitation anticipated.</p> <p><input type="checkbox"/> <input type="checkbox"/></p> <p>What are the age and condition of the existing adjacent lanes?</p> <p>To be determined during the design phase once pavement deflection studies are complete.</p>

	Yes No	Question																																
14.	<input checked="" type="checkbox"/> <input type="checkbox"/>	<p>What is the type of pavement/structural section (corridor pavement type/structural section continuity) on upstream/downstream roadway? Explain if several:</p> <p>Southbound Lanes at South Conform (at SR 87):</p> <table border="1"> <thead> <tr> <th>Feet</th> <th>Item</th> </tr> </thead> <tbody> <tr> <td>0.75</td> <td>PCC</td> </tr> <tr> <td>0.25</td> <td>ATPB</td> </tr> <tr> <td>0.80</td> <td>CI 4 AB</td> </tr> </tbody> </table> <p>Northbound Lanes at South conform (at SR 87):</p> <table border="1"> <thead> <tr> <th>Feet</th> <th>Item</th> </tr> </thead> <tbody> <tr> <td>0.75</td> <td>PCC</td> </tr> <tr> <td>0.25</td> <td>ATPB</td> </tr> <tr> <td>0.80</td> <td>CI 4 AB</td> </tr> </tbody> </table> <p>Southbound Lanes at North Conform (at I-280):</p> <table border="1"> <thead> <tr> <th>Feet</th> <th>Item</th> </tr> </thead> <tbody> <tr> <td>0.70</td> <td>PCC</td> </tr> <tr> <td>0.45</td> <td>RMCTB</td> </tr> <tr> <td>0.50</td> <td>CI 4 AS</td> </tr> </tbody> </table> <p>Northbound Lanes at South conform (at SR 87):</p> <table border="1"> <thead> <tr> <th>Feet</th> <th>Item</th> </tr> </thead> <tbody> <tr> <td>0.70</td> <td>PCC</td> </tr> <tr> <td>0.45</td> <td>RMCTB</td> </tr> <tr> <td>0.50</td> <td>CI 4 AS</td> </tr> </tbody> </table>	Feet	Item	0.75	PCC	0.25	ATPB	0.80	CI 4 AB	Feet	Item	0.75	PCC	0.25	ATPB	0.80	CI 4 AB	Feet	Item	0.70	PCC	0.45	RMCTB	0.50	CI 4 AS	Feet	Item	0.70	PCC	0.45	RMCTB	0.50	CI 4 AS
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15.	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<p>Is TMP data (lane closure charts) available and was it considered? Yes. See Draft Project Report Appendix G – TMP Data Sheet.</p> <p>Will there be nighttime paving? If so, provide lane closure hours: Closure hours to be determined during the design phase.</p>																																
16.	<input type="checkbox"/> <input checked="" type="checkbox"/>	<p>Was field Maintenance input considered? Field Maintenance input to be evaluated during the design phase.</p>																																
17.	<input checked="" type="checkbox"/> <input type="checkbox"/>	<p>Were climate conditions (extreme temperature, rainfall, etc.) considered? Yes, the climate in this area is characterized by moderate climatic conditions. This consists of mild winters, mild summers, small daily and seasonal temperature ranges and high relative humidity. Average monthly precipitation varies from less than 0.1 inch to 3 inches in the months of July and January, respectively.</p> <p>If so, which ones do you anticipate affecting the pavement job? Temperatures in the winter season will restrict the contractor's ability to place AC product especially in the night hours.</p>																																

	Yes	No	Question
18.			Which stage construction requirements (matching adjacent sections, temporary paving, etc.) were considered? Proposed pavement will match adjacent sections.
19.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Is this a large-scale project? Explain all quantity take-off: See Draft Project Report Appendix G – Project Cost Estimate for quantity take-off.
20.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is there Open-Graded Hot-Mix Asphalt (OGHMA) on the existing pavement? No existing OGHMA within the project limit.
21.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Was environmental impact considered? Yes, an IS-EA has been prepared.
22.			What is the proposed pavement design life? 20 years.
23.			What is the final lane line configuration? The project would convert the existing single HOV lanes into an Express Lane facility that would have one lane between U.S. 101 in southern San Jose and SR 87, two lanes between SR 87 and I-280, and one lane between I-280 and U.S. 101 in Mountain View. SR 85 typically has two mixed-flow lanes.
24.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Are there vertical clearance issues? If yes, explain: Existing vertical clearances have been checked with ground survey and as-builts throughout the project limits, and all of the existing structures meet these minimum clearances, with the exception of the Dana Street OC and the Middlefield Road OC where the existing and proposed vertical clearance does not meet the minimum vertical clearance requirement. In these segments, trucks are restricted to the rightmost general purpose lane where the project is not proposing any changes to the existing geometry. Trucks are not allowed in the HOV lane under the current conditions, and will not be allowed in the express lane under the future build scenario on SR 85 south of I-280.
25.			What is the traffic index? Pavement widening at the locations of existing rigid pavement: Design Factors are TI = 11.0 Pavement widening at the locations of existing flexible pavement: Design Factors are TI = 10.0
26.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Are there existing retrofit edge drains? No existing retrofit edge drain.
27.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Will shoulders be used as detours? The shoulders will not be used as detours.

	Yes	No	Question
28.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Is there settlement at bridge approaches? Liquefaction can result in loss of foundation support and settlement of overlying structures. High to very high liquefaction susceptibility has been mapped along short reaches of the alignment within younger fluvial deposits where larger drainages cross at Saratoga Creek.</p> <p>Are bridge approach slabs being replaced? Does such replacement include shoulders? Bridge approach slab type N and R are being placed. Shoulders are included.</p>
29.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>Is there a minimum standard (2% or 1.5%) cross-slope? If not standard, provide date of design exception approval: _____ 1.5% CROSS SLOPE</p> <p>The widened pavement will have cross slope of 2%.</p>
30.			<p>Provide the pavement condition report. Pavement condition report to be prepared during the design phase.</p>
31	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>Other factors? Explain:</p>

December 2013

04-SCI-85, PM 0.0/R24.1
04-SCI-101, PM 23.1/28.6
04-SCI-101, PM 47.9/52.0
EA 04-4A7900
RU: 04-235
Program ID: N/A

Attachment L
Cooperative Agreement

COOPERATIVE AGREEMENT

This agreement, effective on November 9, 2009, is between the State of California, acting through its Department of Transportation, referred to as CALTRANS, and:

Santa Clara Valley Transportation Authority, a political subdivision of the State of California, referred to as VTA.

RECITALS

1. CALTRANS and VTA, collectively referred to as PARTNERS, are authorized to enter into a cooperative agreement for improvements within the SHS right of way per Streets and Highways Code sections 114 and/or 130.
2. WORK completed under this agreement contributes toward the conversion of existing High Occupancy Vehicle (HOV) lanes from SR 85 post miles 0 to 24, northern segment of US 101 from post miles 47.9 to 52.0 and southern segment of US 101 from post miles 25.3 to 28.6 into Express Lanes, formerly known as High Occupancy Toll Lanes, by introducing a striped buffer, restricting access to the lane to specific locations, and charging single occupant vehicles a toll to use the lane, hereinafter referred to as PROJECT.
3. PARTNERS will cooperate to perform the PA&ED, Design and Right of Way phases for PROJECT.
4. There are no prior PROJECT-related cooperative agreements.
5. No PROJECT deliverables have been completed prior to this agreement.
6. The estimated date for COMPLETION OF WORK is July 31, 2014.
7. PARTNERS now define in this agreement the terms and conditions under which they will accomplish WORK.

DEFINITIONS

CALTRANS STANDARDS – CALTRANS policies and procedures, including, but not limited to, the guidance provided in the *Guide to Capital Project Delivery Workplan Standards* (previously known as WBS Guide) available at <http://www.dot.ca.gov/hq/projmgmt/guidance.htm>.

CEQA – The California Environmental Quality Act (California Public Resources Code, sections 21000 et seq.) that requires State and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those significant impacts, if feasible.

COMPLETION OF WORK – All PARTNERS have met all scope, cost, and schedule commitments included in this agreement and have signed a COOPERATIVE AGREEMENT CLOSURE STATEMENT.

COOPERATIVE AGREEMENT CLOSURE STATEMENT – A document signed by PARTNERS that verifies the completion of all scope, cost, and schedule commitments included in this agreement.

FHWA – Federal Highway Administration.

FHWA STANDARDS – FHWA regulations, policies and procedures, including, but not limited to, the guidance provided at <http://www.fhwa.dot.gov/programs.html>.

FUNDING PARTNER – A PARTNER who commits a defined dollar amount to WORK.

FUNDING SUMMARY - The table in which PARTNERS designate funding sources, types of funds, and the project components in which the funds are to be spent. Funds listed on the FUNDING SUMMARY are “not-to-exceed” amounts for each FUNDING PARTNER.

HM-1 – Hazardous material (including, but not limited to, hazardous waste) that may require removal and disposal pursuant to federal or state law whether it is disturbed by PROJECT or not.

HM-2 – Hazardous material (including, but not limited to, hazardous waste) that may require removal and disposal pursuant to federal or state law only if disturbed by PROJECT.

HM MANAGEMENT ACTIVITIES – Management activities related to either HM-1 or HM-2 including, without limitation, any necessary manifest requirements and disposal facility designations.

IMPLEMENTING AGENCY – The PARTNER responsible for managing the scope, cost, and schedule of a project component to ensure the completion of that component.

IQA – Independent Quality Assurance – Ensuring that IMPLEMENTING AGENCY’S quality assurance activities result in WORK being developed in accordance with the applicable standards and within an established Quality Management Plan. IQA does not include any work necessary to actually develop or deliver WORK or any validation by verifying or rechecking work performed by another partner.

NEPA – The National Environmental Policy Act of 1969 that establishes a national policy for the environment and a process to disclose the adverse impacts of projects with a federal nexus.

PA&ED (Project Approval and Environmental Document) – The project component that includes the activities required to deliver the project approval and environmental documentation for PROJECT.

PARTNERS – The term that collectively references all of the signatory agencies to this agreement. This term only describes the relationship between these agencies to work together to achieve a mutually beneficial goal. It is not used in the traditional legal sense in which one partner’s individual actions legally bind the other partners.

PROJECT MANAGEMENT PLAN – A group of documents used to guide a project’s execution and control throughout the project’s lifecycle.

PS&E (Plans, Specifications, and Estimate) – The project component that includes the activities required to deliver the plans, specifications, and estimate for PROJECT.

R/W (Right of Way) – The project component that includes the activities required to deliver the right of way for PROJECT.

SAFETEA-LU – The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, signed into federal law on August 10, 2005.

SCOPE SUMMARY – The table in which PARTNERS designate their commitment to specific scope activities within each project component as outlined by the *Guide to Capital Project Delivery Workplan Standards* (previously known as WBS Guide) available at <http://www.dot.ca.gov/hq/projmgmt/guidance.htm>.

SHS – State Highway System.

SPONSOR(S) – The PARTNER that accepts the obligation to secure financial resources to fully fund WORK. This includes any additional funds beyond those committed in this agreement necessary to complete the full scope of WORK defined in this agreement or settle claims.

WORK – All scope and cost commitments included in this agreement.

RESPONSIBILITIES

8. VTA is SPONSOR for all WORK.
9. VTA is the only FUNDING PARTNER for this agreement. VTA’s funding commitment is defined in the FUNDING SUMMARY.
10. CALTRANS is the CEQA lead agency for PROJECT.
11. CALTRANS is the NEPA lead agency for PROJECT.
12. VTA is IMPLEMENTING AGENCY for PA&ED, PS&E and R/W.

SCOPE

Scope: General

13. All WORK will be performed in accordance with federal and California laws, regulations, and standards.

All WORK will be performed in accordance with FHWA STANDARDS and CALTRANS STANDARDS.

14. IMPLEMENTING AGENCY for a project component will provide a Quality Management Plan for that component as part of the PROJECT MANAGEMENT PLAN.
15. CALTRANS will provide IQA for the portions of WORK within existing and proposed SHS right of way. CALTRANS retains the right to reject noncompliant WORK, protect public safety, preserve property rights, and ensure that all WORK is in the best interest of the SHS.
16. VTA may provide IQA for the portions of WORK outside existing and proposed SHS right of way.
17. PARTNERS may, at their own expense, have a representative observe any scope, cost, or schedule commitments performed by another PARTNER. Observation does not constitute authority over those commitments.
18. Each PARTNER will ensure that all of their personnel participating in WORK are appropriately qualified to perform the tasks assigned to them.
19. PARTNERS will invite each other to participate in the selection and retention of any consultants who participate in WORK.
20. PARTNERS will conform to sections 1720 – 1815 of the California Labor Code and all applicable regulations and coverage determinations issued by the Director of Industrial Relations if PROJECT work is done under contract (not completed by PARTNER’S own employees) and is governed by the Labor Code’s definition of a “public work” (section 1720(a)(1)).
- PARTNERS will include wage requirements in all contracts for “public work” and will require their contractors and consultants to include prevailing wage requirements in all agreement-funded subcontracts for “public work”.
21. IMPLEMENTING AGENCY for each project component included in this agreement will be available to help resolve WORK-related problems generated by that component for the entire duration of PROJECT.
22. CALTRANS will issue, upon proper application, at no cost, the encroachment permits required for WORK within SHS right of way.

Contractors and/or agents, and utility owners will not perform activities within SHS right of way without an encroachment permit issued in their name.

23. If unanticipated cultural, archaeological, paleontological, or other protected resources are discovered during WORK, all work in that area will stop until a qualified professional can evaluate the nature and significance of the discovery and a plan is approved for its removal or protection. VTA will notify CALTRANS within twenty-four (24) hours of any said discovery.
24. All administrative draft and administrative final reports, studies, materials, and documentation relied upon, produced, created, or utilized for PROJECT will be held in confidence and where applicable, Government Code section 6254.5(e) shall protect the confidentiality of such documents in the event said documents are shared between the PARTNERS.

PARTNERS will not distribute, release, or share said documents with anyone other than employees, agents, and consultants who require access to complete WORK without the written consent of the PARTNER authorized to release them, unless required or authorized to do so by law.

25. If any PARTNER receives a public records request, pertaining to WORK under this agreement, that PARTNER will notify PARTNERS within five (5) working days of receipt and make PARTNERS aware of any disclosed public documents.
26. If HM-1 or HM-2 is found during WORK, IMPLEMENTING AGENCY for the project component during which it is found will immediately notify PARTNERS.
27. CALTRANS, independent of PROJECT, is responsible for any HM-1 found within existing SHS right of way. CALTRANS will undertake HM-1 MANAGEMENT ACTIVITIES with minimum impact to PROJECT schedule.
28. If HM-1 is found outside existing SHS right of way, responsibility for such HM-1 rests with the owner(s) of the parcel(s) on which the HM-1 is found. VTA, in concert with the local agency having land use jurisdiction over the parcel(s), will ensure that HM-1 MANAGEMENT ACTIVITIES are undertaken with minimum impact to PROJECT schedule.
29. If HM-2 is found within PROJECT limits, the public agency responsible for the advertisement, award, and administration (AAA) of the PROJECT construction contract will be responsible for HM-2 MANAGEMENT ACTIVITIES.
30. CALTRANS' acquisition or acceptance of title to any property on which any HM-1 or HM-2 is found will proceed in accordance with CALTRANS' policy on such acquisition.
31. PARTNERS will comply with all of the commitments and conditions set forth in the environmental documentation, environmental permits, approvals, and applicable agreements as those commitments and conditions apply to each PARTNER'S responsibilities in this agreement.
32. IMPLEMENTING AGENCY for each project component will furnish PARTNERS with regular status reports during the implementation of WORK in that component.

33. Upon COMPLETION OF WORK, ownership and title to all materials and equipment constructed or installed as part of WORK within SHS right of way become the property of CALTRANS, except Express Lanes Electronic Toll System, Express Lanes overhead sign structures and Express Lanes freeway lighting, which will become the property of VTA.
34. IMPLEMENTING AGENCY for a project component will accept, reject, compromise, settle, or litigate claims of any non-agreement parties hired to do WORK in that component.
35. PARTNERS will confer on any claim that may affect WORK or PARTNERS' liability or responsibility under this agreement in order to retain resolution possibilities for potential future claims. No PARTNER shall prejudice the rights of another PARTNER until after PARTNERS confer on claim.
36. PARTNERS will maintain and make available to each other all WORK-related documents, including financial data, during the term of this agreement and retain those records for four (4) years from the date of termination or COMPLETION OF WORK, or three (3) years from the date of final federal voucher, whichever is later.
37. PARTNERS have the right to audit each other in accordance with generally accepted governmental audit standards.

CALTRANS, the State auditor, FHWA, and VTA will have access to all WORK-related records of each PARTNER for audit, examination, excerpt, or transaction.

The examination of any records will take place in the offices and locations where said records are generated and/or stored and will be accomplished during reasonable hours of operation.

The audited PARTNER will review the preliminary audit, findings, and recommendations, and provide written comments within 60 calendar days of receipt.

Any audit dispute not resolved by PARTNERS is subject to dispute resolution. Any costs arising out of the dispute resolution process will be paid within 30 calendar days of the final audit or dispute resolution findings.

38. PARTNERS consent to service of process as permitted by law.
39. PARTNERS will not incur costs beyond the funding commitments in this agreement. If IMPLEMENTING AGENCY anticipates that funding for WORK will be insufficient to complete WORK, SPONSOR(S) will seek out additional funds and PARTNERS will amend this agreement.
40. If WORK stops for any reason, IMPLEMENTING AGENCY will place PROJECT right of way in a safe and operable condition acceptable to CALTRANS.
41. If WORK stops for any reason, PARTNERS are still obligated to implement all applicable commitments and conditions included in the PROJECT environmental documentation, permits, agreements, or approvals that are in effect at the time that WORK stops, as they apply to each PARTNER's

responsibilities in this agreement, in order to keep PROJECT in environmental compliance until WORK resumes.

42. Each PARTNER accepts responsibility to complete the activities identified on the SCOPE SUMMARY. Activities marked with "N/A" on the SCOPE SUMMARY are not included in the scope of this agreement.
43. VTA will coordinate the following resource agency permits, agreements, and/or approvals: U.S. Army Corps of Engineers Permit (404), U.S. Forest Service Permit(s), U.S. Coast Guard Permit, Department of Fish and Game 1600 Agreement(s), Coastal Zone Development Permit, Waste Discharge (NPDES) Permit, U.S. Fish and Wildlife Service Approval and the Regional Water Quality Control Board 401 Permit.
44. VTA will obtain the following resource agency permits, agreements, and/or approvals: U.S. Army Corps of Engineers Permit (404), U.S. Forest Service Permit(s), U.S. Coast Guard Permit, Department of Fish and Game 1600 Agreement(s), Coastal Zone Development Permit, Waste Discharge (NPDES) Permit and the Regional Water Quality Control Board 401 Permit.
45. VTA will implement the following resource agency permits, agreements, and/or approvals: U.S. Army Corps of Engineers Permit (404), U.S. Forest Service Permit(s), U.S. Coast Guard Permit, Department of Fish and Game 1600 Agreement(s), Coastal Zone Development Permit, Waste Discharge (NPDES) Permit, U.S. Fish and Wildlife Service Approval and the Regional Water Quality Control Board 401 Permit.

Scope: Project Approval and Environmental Document (PA&ED)

46. CALTRANS is the CEQA lead agency. CALTRANS will determine the type of environmental documentation required and will cause that documentation to be prepared.
47. All PARTNERS involved in the preparation of CEQA environmental documentation will follow the CALTRANS STANDARDS that apply to the CEQA process including, but not limited to, the guidance provided in the Standard Environmental Reference available at www.dot.ca.gov/ser.
48. Pursuant to SAFETEA-LU Section 6004 and/or 6005, CALTRANS is the NEPA lead agency for PROJECT and will assume responsibility for NEPA compliance and will prepare any needed NEPA environmental documentation or will cause that documentation to be prepared.
49. All PARTNERS involved in the preparation of NEPA environmental documentation will follow FHWA STANDARDS that apply to the NEPA process including, but not limited to, the guidance provided in the FHWA Environmental Guidebook available at www.fhwa.dot.gov/hep/index.htm.
50. VTA will prepare the appropriate CEQA environmental documentation to meet CEQA requirements.
51. VTA will prepare the appropriate NEPA environmental documentation to meet NEPA requirements.

52. Any PARTNER preparing any portion of the CEQA environmental documentation, including any studies and reports, will submit that portion of the documentation to the CEQA lead agency for review, comment, and approval at appropriate stages of development prior to public availability.
53. Any PARTNER preparing any portion of the NEPA environmental documentation (including, but not limited to, studies, reports, public notices, and public meeting materials, determinations, administrative drafts, and final environmental documents) will submit that portion of the documentation to CALTRANS for CALTRANS' review, comment, and approval prior to public availability.
54. VTA will prepare, publicize and circulate all CEQA-related public notices and will submit said notices to the CEQA lead agency for review, comment, and approval prior to publication and circulation.
55. VTA will prepare, publicize, and circulate all NEPA-related public notices, except Federal Register notices. VTA will submit all notices to CALTRANS for CALTRANS' review, comment, and approval prior to publication and circulation.

CALTRANS will work with the appropriate federal agency to publish notices in the Federal Register.
56. The CEQA lead agency will attend all CEQA-related public meetings.
57. VTA will plan, schedule, prepare materials for, and host all CEQA-related public meetings and will submit all materials to the CEQA lead agency for review, comment, and approval at least 10 working days prior to the public meeting date.
58. The NEPA lead agency will attend all NEPA-related public meetings.
59. VTA will plan, schedule, prepare materials for, and host all NEPA-related public meetings. VTA will submit all materials to CALTRANS for CALTRANS' review, comment, and approval at least 10 working days prior to the public meeting date.
60. If a PARTNER who is not the CEQA or NEPA lead agency holds a public meeting about PROJECT, that PARTNER must clearly state their role in PROJECT and the identity of the CEQA and NEPA lead agencies on all meeting publications. All meeting publications must also inform the attendees that public comments collected at the meetings are not part of the CEQA or NEPA public review process.

That PARTNER will submit all meeting advertisements, agendas, exhibits, handouts, and materials to the appropriate lead agency for review, comment, and approval at least 10 working days prior to publication or use. If that PARTNER makes any changes to the materials, that PARTNER will allow the appropriate lead agency to review, comment on, and approve those changes three (3) working days prior to the public meeting date.

The CEQA lead agency maintains final editorial control with respect to text or graphics that could lead to public confusion over CEQA-related roles and responsibilities. The NEPA lead agency has final approval authority with respect to text or graphics that could lead to public confusion over NEPA-related roles and responsibilities.

61. The PARTNER preparing the environmental documentation, including the studies and reports, will ensure that qualified personnel remain available to help resolve environmental issues and perform any necessary work to ensure that PROJECT remains in environmental compliance.

Scope: Plans, Specifications, and Estimate (PS&E)

62. VTA will ensure that the engineering firm preparing the plans, specifications, and estimate will not be employed by or under contract to the PROJECT construction contractor.

VTA will not employ the engineering firm preparing the plans, specifications, and estimate for construction management of PROJECT.

However, VTA may retain the engineering firm during CONSTRUCTION to check shop drawings, do soil foundation tests, test construction materials, and perform construction surveys.

63. VTA will identify and locate all utility facilities within PROJECT area as part of PS&E responsibilities. All utility facilities not relocated or removed in advance of construction will be identified on the plans, specifications, and estimate for PROJECT.
64. VTA will make all necessary arrangements with utility owners for the timely accommodation, protection, relocation, or removal of any existing utility facilities that conflict with construction of PROJECT or that violate CALTRANS' encroachment policy.

Scope: Right of Way (R/W)

65. VTA will provide a land surveyor licensed in the State of California to be responsible for surveying and right of way engineering. All survey and right of way engineering documents shall bear the professional seal, certificate number, registration classification, expiration date of certificate, and signature of the responsible surveyor.
66. VTA will provide CALTRANS-approved verification of its arrangements for the protection, relocation, or removal of all conflicting facilities and that such work will be completed prior to construction contract award or as otherwise stated in the PROJECT plans, specifications, and estimate. This verification must include references to all required SHS encroachment permits.
67. VTA will utilize a qualified CALTRANS-approved public agency or consultant in all right of way activities. Right of way consultant contracts will be administered by a qualified right of way person.
68. VTA will provide a Right of Way Certification to CALTRANS prior to PROJECT advertisement.
69. All right of way conveyances must be completed prior to COMPLETION OF WORK. CALTRANS' acceptance of right of way title is subject to review of an Updated Preliminary Title Report provided by

VTA verifying that the title is free of all encumbrances and liens. Upon acceptance, VTA will provide CALTRANS with a Policy of Title Insurance in CALTRANS' name.

70. VTA shall comply with Streets and Highways Code section 760 and shall obtain written approval from CALTRANS Division of Right of Way to adopt Resolutions of Necessity at the local level in accordance with the CALTRANS Right of Way Manual, Section 17.04.09.01

Cost: General

71. SPONSOR(S) will secure funds for all WORK including any additional funds beyond the FUNDING PARTNERS' existing commitments in this agreement. Any change to the funding commitments outlined in this agreement requires an amendment to this agreement.
72. The cost of any awards, judgments, or settlements generated by WORK is a WORK cost.
73. CALTRANS, independent of PROJECT, will pay all costs for HM MANAGEMENT ACTIVITIES related to HM-1 found within existing SHS right of way.
74. Independent of PROJECT, all costs for MANAGEMENT ACTIVITIES related to HM-1 found outside the existing SHS right of way will be the responsibility of the owner(s) of the parcel(s) where the HM-1 is located.
75. HM MANAGEMENT ACTIVITIES costs related to HM-2 are a PROJECT CONSTRUCTION cost.
76. The cost of coordinating, obtaining, complying with, implementing, and if necessary renewing and amending resource agency permits, agreements, and/or approvals is a WORK cost.
77. The cost to comply with and implement the commitments set forth in the environmental documentation is a WORK cost.
78. The cost to prepare the environmental documentation, including investigative studies and technical environmental reports, and ensure that PROJECT remains in environmental compliance is a WORK cost.
79. The cost of any legal challenges to the CEQA or NEPA environmental process or documentation is a WORK cost.
80. Independent of WORK costs, CALTRANS will fund the cost of its own IQA for WORK done within existing or proposed future SHS right of way.
81. VTA will fund the cost of its own IQA for WORK done outside existing or proposed future SHS right of way.

82. Fines, interest, or penalties levied against any PARTNER will be paid, independent of WORK costs, by the PARTNER whose actions or lack of action caused the levy. That PARTNER will indemnify and defend all other PARTNERS.
83. CALTRANS will administer all federal subvention funds identified on the FUNDING SUMMARY.
84. The cost to place PROJECT right of way in a safe and operable condition and meet all environmental commitments is a WORK cost.
85. Because IMPLEMENTING AGENCY is responsible for managing the scope, cost, and schedule of a project component, if there are insufficient funds available in this agreement to place the PROJECT right of way in a safe and operable condition, the appropriate IMPLEMENTING AGENCY accepts responsibility to fund these activities until such time as PARTNERS amend this agreement.

That IMPLEMENTING AGENCY may request reimbursement for these costs during the amendment process.
86. If there are insufficient funds in this agreement to implement applicable commitments and conditions included in the PROJECT environmental documentation, permits, agreements, and/or approvals that are in effect at a time that WORK stops, the PARTNER implementing the commitments or conditions accepts responsibility to fund these activities until such time as PARTNERS amend this agreement.

That PARTNER may request reimbursement for these costs during the amendment process.
87. PARTNERS will pay invoices within 45 calendar days of receipt of invoice.
88. FUNDING PARTNERS accept responsibility to provide the funds identified on the FUNDING SUMMARY.
89. SPONSOR(S) accepts responsibility to ensure full funding for the identified scope of work.

Cost: Project Approval and Environmental Document (PA&ED)

90. The cost to prepare, publicize, and circulate all CEQA and NEPA-related public notices is a WORK cost.
91. The cost to plan, schedule, prepare, materials for, and host all CEQA and NEPA-related public meetings is a WORK cost.

Cost: Plans, Specifications, and Estimate (PS&E)

92. The cost to positively identify and locate, protect, relocate, or remove any utility facilities whether inside or outside SHS right of way will be determined in accordance with federal and California laws and

regulations, and CALTRANS' policies, procedures, standards, practices, and applicable agreements including, but not limited to, Freeway Master Contracts.

SCHEDULE

93. PARTNERS will manage the schedule for WORK through the work plan included in the PROJECT MANAGEMENT PLAN.

GENERAL CONDITIONS

94. This agreement will be understood in accordance with and governed by the Constitution and laws of the State of California. This agreement will be enforceable in the State of California. Any legal action arising from this agreement will be filed and maintained in the Superior Court of the county in which the CALTRANS district office signatory to this agreement resides, or in the Superior Court of the County in which WORK is being performed.
95. All obligations of CALTRANS under the terms of this agreement are subject to the appropriation of resources by the Legislature, the State Budget Act authority, and the allocation of funds by the California Transportation Commission.
96. PROJECT is subject to the intent, terms, conditions, requirements, and constraints of the American Recovery and Reinvestment Act of 2009 (ARRA) and as directed by CALTRANS.
97. Any funding received and used by Local Partner that is determined by subsequent state or federal audit to be unallowable under state or federal law, regulations or administrative procedures, are subject to repayment by Local Partner within ninety (90) days of demand or within such other period as agreed to by PARTNERS. Local Partner agrees that CALTRANS is hereby authorized to intercept and withhold any future payments due Local Partner from CALTRANS or any third party source, including but not limited to the State Treasurer, the State Controller or the California Transportation Commission.
98. Any PARTNER who performs IQA does so for its own benefit, further, that PARTNER cannot be assigned liability due to its IQA activities.
99. Neither VTA nor any officer or employee thereof is responsible for any injury, damage or liability occurring by reason of anything done or omitted to be done by CALTRANS under or in connection with any work, authority, or jurisdiction conferred upon CALTRANS under this agreement.

It is understood and agreed that CALTRANS will fully defend, indemnify, and save harmless VTA and all of its officers and employees from all claims, suits, or actions of every name, kind, and description brought forth under, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by CALTRANS under this agreement.

100. Neither CALTRANS nor any officer or employee thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by VTA under or in connection with any work, authority, or jurisdiction conferred upon VTA under this agreement.

It is understood and agreed that VTA will fully defend, indemnify, and save harmless CALTRANS and all of its officers and employees from all claims, suits, or actions of every name, kind, and description brought forth under, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by VTA under this agreement.

101. This agreement is not intended to create a third party beneficiary or define duties, obligations, or rights in parties not signatory to this agreement. This agreement is not intended to affect the legal liability of PARTNERS by imposing any standard of care for completing WORK different from the standards imposed by law.
102. PARTNERS will not assign or attempt to assign agreement obligations to parties not signatory to this agreement.
103. Any ambiguity contained in this agreement will not be interpreted against PARTNERS. PARTNERS waive the provisions of California Civil Code section 1654.
104. A waiver of a PARTNER'S performance under this agreement will not constitute a continuous waiver of any other provision. An amendment made to any article or section of this agreement does not constitute an amendment to or negate all other articles or sections of this agreement.
105. A delay or omission to exercise a right or power due to a default does not negate the use of that right or power in the future when deemed necessary.
106. If any PARTNER defaults in their agreement obligations, the non-defaulting PARTNER(S) will request in writing that the default be remedied within 30 calendar days. If the defaulting PARTNER fails to do so, the non-defaulting PARTNER(S) may initiate dispute resolution.
107. If a question arises regarding interpretation of the Agreement or its performance, or the alleged failure of a PARTNER to perform, the PARTNER raising the question or making the allegation shall give written notice thereof to the other PARTNER. The PARTNERS shall promptly meet in an effort to resolve the issues raised. If the PARTNERS fail to resolve the issues raised, alternative forms of dispute resolution, including mediation or binding arbitration, may be pursued by mutual agreement. It is the intent of the PARTNERS to the extent possible that litigation be avoided as a method of dispute resolution.
108. PARTNERS maintain the ability to pursue alternative or additional dispute remedies if a previously selected remedy does not achieve resolution.

109. If any provisions in this agreement are deemed by a court of competent jurisdiction to be, or are in fact, illegal, inoperative, or unenforceable, those provisions do not render any or all other agreement provisions invalid, inoperative, or unenforceable, and those provisions will be automatically severed from this agreement.
110. This agreement is intended to be PARTNERS' final expression and supersedes all prior oral understanding or writings pertaining to WORK.
111. If during performance of WORK additional activities or environmental documentation is necessary to keep PROJECT in environmental compliance, PARTNERS will amend this agreement to include completion of those additional tasks.
112. PARTNERS will execute a formal written amendment if there are any changes to the commitments made in this agreement.
113. This agreement will terminate upon COMPLETION OF WORK or upon 30 calendar days' written notification to terminate and acceptance between PARTNERS, whichever occurs first.

However, all indemnification, document retention, audit, claims, environmental commitment, legal challenge, and ownership articles will remain in effect until terminated or modified in writing by mutual agreement.

114. The following documents are attached to, and made an express part of this agreement: SCOPE SUMMARY, FUNDING SUMMARY.
115. Signatories may execute this agreement through individual signature pages provided that each signature is an original. This agreement is not fully executed until all original signatures are attached.

CONTACT INFORMATION

Below is the contact information for each PARTNER to this agreement. PARTNERS will notify each other in writing of any personnel or location changes. These changes do not require an amendment to this agreement.

The primary agreement contact person for CALTRANS is:

Nick Saleh, Project Manager
111 Grand Avenue
Oakland, California 94612
Office Phone: (510) 286-6355
Email: nick_saleh@dot.ca.gov

The primary agreement contact person for VTA is:

Murali Ramanujam, Project Manager
3331 N. First Street, Bldg. B-2
San Jose, California 95134
Office Phone: (408) 952-8905
Fax Number: (408) 955-9765
Email: murali.ramanujam@vta.org

SIGNATURES

PARTNERS declare that:

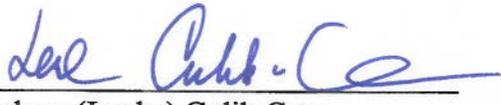
1. Each PARTNER is an authorized legal entity under California state law.
2. Each PARTNER has the authority to enter into this agreement.
3. The people signing this agreement have the authority to do so on behalf of their public agencies.

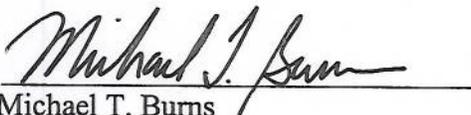
STATE OF CALIFORNIA

SANTA CLARA VALLEY

DEPARTMENT OF TRANSPORTATION

TRANSPORTATION AUTHORITY

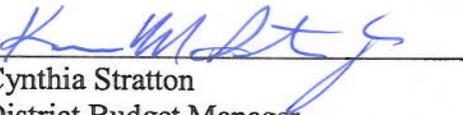
By: 
 Helena (Lenka) Culik-Caro
 Deputy District Director

By: 
 Michael T. Burns
 General Manager

Date: 10/22/09

CERTIFIED AS TO FUNDS:

APPROVED AS TO FORM

By: 
 Cynthia Stratton
 District Budget Manager

By: 
 VTA Counsel

Date: 10/21/09

SCOPE SUMMARY

4	5	6	7	8	Description	CALTRANS	VTA	N/A
2					Project Approval and Environmental Document (PA&ED) - 160, 165, 175, 180, 205	X	X	
	160				Perform Preliminary Engineering Studies and Draft Project Report	X	X	
		05			Updated Project information		X	
		10			Engineering Studies		X	
		15			Draft Project Report		X	
		20			Engineering and Land Net Surveys		X	
		30			Environmental Study Request (ESR)		X	
		40			NEPA Delegation	X		
		45			Base Maps and Plan Sheets for Project Report and Environmental Studies		X	
	165				Perform Environmental Studies and Prepare Draft Environmental Document	X	X	
		05			Environmental Scoping of Alternatives Identified for Studies in Project Initiation Document		X	
		10			General Environmental Studies		X	
		15			Biological Studies		X	
		20			Cultural Resource Studies		X	
			05		Archaeological Survey		X	
				05	Area of Potential Effects/Study Area Maps		X	
				10	Native American Consultation		X	
				15	Records and Literature Search		X	
				20	Field Survey		X	
				25	Archaeological Survey Report		X	
				99	Other Archaeological Survey Products		X	
			10		Extended Phase I Archaeological Studies		X	
				05	Native American Consultation		X	
				10	Extended Phase I Proposal		X	
				15	Extended Phase I Field Investigation		X	
				20	Extended Phase I Materials Analysis		X	
				25	Extended Phase I Report		X	
				99	Other Phase I Archaeological Study Products		X	
			15		Phase II Archaeological Studies		X	
				05	Native American Consultation		X	
				10	Phase II Proposal		X	

		15	Phase II Field Investigation		X	
		20	Phase II Materials Analysis		X	
		25	Phase II Report		X	
		99	Other Phase II Archaeological Study Products		X	
		20	Historical and Architectural Resource Studies		X	
		05	Preliminary Area of Potential Effects/Study Area Maps for Architecture		X	
		10	Historic Resources Evaluation Report - Archaeology		X	
		15	Historic Resource Evaluation Report - Architecture (HRER)		X	
		20	Bridge Evaluation		X	
		99	Other Historical and Architectural Resource Study Products		X	
		25	Cultural Resource Compliance Consultation Documents		X	
		05	Final Area of Potential Effects/Study Area Maps		X	
		10	PRC 5024.5 Consultation		X	
		15	Historic Property Survey Report/Historic Resources Compliance Report		X	
		20	Finding of Effect		X	
		25	Archaeological Data Recovery Plan/Treatment Plan		X	
		30	Memorandum of Agreement		X	
		99	Other Cultural Resources Compliance Consultation Products		X	
	25		Draft Environmental Document or Categorical Exemption/Exclusion	X	X	
		10	Section 4(F) Evaluation		X	
		20	Environmental Quality Control and Other Reviews	X		
		25	Approval to Circulate Resolution	X		
		30	Environmental Coordination		X	
		99	Other Draft Environmental Document Products		X	
		30	NEPA Delegation	X		
		45	Required Permits During PA&ED Development		X	
		50	Permits During PA&ED Development		X	
	175		Circulate Draft Environmental Document and Select Preferred Project Alternative Identification		X	
	180		Prepare and Approve Project Report and Final Environmental Document	X	X	
		05	Final Project Report		X	
		10	Final Environmental Document	X	X	
		05	Approved Final Environmental Document	X		
		25	Statement of Overriding Considerations	X		
		30	CEQA Certification	X		
		40	Section 106 Consultation and MOA	X		
		45	Section 7 Consultation	X		
		50	Final Section 4(F) Statement	X		
		55	Floodplain Only Practicable Alternative Finding	X		
		60	Wetlands Only Practicable Alternative Finding	X		
		65	Section 404 Compliance	X		
		70	Mitigation Measures	X		
		10	Public Distribution of Final Environmental Document and		X	

			Respond To Comments			
		15	Final Right of Way Relocation Impact Document		X	
		99	Other Final Environmental Document Products		X	
		15	Completed Environmental Document	X	X	
		05	Record of Decision (NEPA)	X		
		10	Notice of Determination (CEQA)	X		
		20	Environmental Commitments Record		X	
		99	Other Completed Environmental Document Products		X	
		20	NEPA Delegation	X		
	205		Obtain Permits, Agreements, and Route Adoptions		X	
3			Plans, Specifications, and Estimates (PS&E) - 185, 230, 235, 240, 250, 255, 260, 265	X	X	
	185		Prepare Base Maps and Plan Sheets for PS&E Development		X	
	230		Prepare Draft Plans, Specifications, and Estimates		X	
	235		Mitigate Environmental Impacts and Clean Up Hazardous Waste		X	
	240		Draft Structures Plans, Specifications, and Estimates		X	
	250		Final Structures Plans, Specifications, and Estimates Package		X	
	255		Circulate, Review, and Prepare Final District Plans, Specifications, and Estimates Package		X	
	260		Contract Bid Documents Ready to List		X	
	265		Awarded and Approved Construction Contract		X	
		50	Contract Ready for Advertising		X	
		55	Advertised Contract		X	
		60	Bids Opened		X	
		65	Contract Award		X	
		70	Executed and Approved Contract		X	
		75	Independent Assurance		X	
4			Right of Way (R/W) - 195, 200, 220, 225, 245, 300		X	
	195		Right of Way Property Management and Excess Land		X	
	200		Utility Relocation		X	
	220		Right of Way Engineering		X	
	225		Obtain Right of Way Interests for Project Right of Way Certification		X	
		50	Parcel and Project Documentation		X	
		55	Right of Way Interests		X	
		05	Right of Way Appraisals		X	
		10	Right of Way Acquisition		X	
		15	Right of Way Relocation Assistance		X	
		20	Right of Way Clearance		X	
		25	Right of Way Condemnation			
	245		Post Right of Way Certification Work		X	
	300		Final Right of Way Engineering		X	

FUNDING SUMMARY

Funding Source	Funding Partner	Fund Type	PA&ED	PS&E	R/W Capital	R/W Support	Subtotal Support	Subtotal Capital	Subtotal Funds Type
FEDERAL	VTA	ARRA	\$2,000,000.00	\$1,300,000.00	\$0.00	\$0.00	\$3,300,000.00	\$0.00	\$3,300,000.00
FEDERAL	VTA	Demonstration Project Earmark	\$500,000.00	\$0.00	\$0.00	\$0.00	\$500,000.00	\$0.00	\$500,000.00
LOCAL	VTA	Local	\$0.00	\$1,000,000.00	\$1,500,000.00	\$500,000.00	\$1,500,000.00	\$1,500,000.00	\$3,000,000.00
		Subtotals by Component	\$2,500,000.00	\$2,300,000.00	\$1,500,000.00	\$500,000.00	\$5,300,000.00	\$1,500,000.00	\$6,800,000.00



Date: August 21, 2009
 Current Meeting: September 3, 2009
 Board Meeting: September 3, 2009

BOARD MEMORANDUM

TO: Santa Clara Valley Transportation Authority
 Board of Directors

THROUGH: General Manager, Michael T. Burns

FROM: Chief CMA Officer, Ristow, Chief Engineering & Construction Officer,
 Robinson

SUBJECT: General Manager Authority to Execute Caltrans Cooperative Agreements
 (Silicon Valley Express Lanes Program)

APPROVED ACCEPTED ADOPTED AMENDED DEFERRED DENIED
 Santa Clara Valley Transportation Authority
 Board of Directors
 Deborah A. Harrington, Board Secretary
 BY Memorandum
 DATE 09/03/09
 Copy to: Tom Smith, John Ristow
 08.04.09 jfg

Policy-Related Action: No

Government Code Section 84308 Applies: No

ACTION ITEM

RECOMMENDATION:

Authorize the General Manager to execute Cooperative Agreements with the California Department of Transportation (Caltrans), covering environmental, design, right of way, construction, landscaping, project close-out phases of Silicon Valley Express Lanes Program projects.

BACKGROUND:

The Silicon Valley Express Lanes Program (formerly referred to as the High Occupancy Toll Lanes Program) has been under development since 2003 when the Santa Clara Valley Transportation Authority (VTA) Board of Directors' Ad Hoc Financial Stability Committee requested a presentation from staff on High Occupancy Toll (HOT) Lanes and their potential benefits and opportunities in Santa Clara County.

At its December 2008 meeting, the VTA Board of Directors approved the Silicon Valley Express Lanes Program for the implementation of toll operations within the High Occupancy Vehicle (HOV) Lanes on Route 85, US 101 and 237/880 Interchange Direct Connector ramps.

Caltrans requires that sponsors of highway improvements enter into cooperative agreements with the State of California in order to establish roles and responsibilities and set parameters for fund reimbursement, if applicable. Separate agreements are typically executed to cover the project development, design and construction phases of projects.

VTA has executed many cooperative agreements with Caltrans over the past 12 years including

funding arrangements with MTC on the Express Lanes projects.

The Committee unanimously recommended that the Board approve this item.

Prepared by: Murali Ramanujam, Shanthi Ganji
Memo No. 2073

I certify that the foregoing instrument
is a true and exact copy of the original
on file in the Secretary of the Board of
Director's office

Jaqueline F. Colby
Date 9-4-09

AMENDMENT NO. 1 TO COOPERATIVE AGREEMENT

This Amendment No. 1 to Agreement (AMENDMENT), entered into, and effective on, May 10 2013, is between the State of California, acting through its Department of Transportation, referred to as CALTRANS, and

Santa Clara Valley Transportation Authority, a political subdivision of the State of California, referred to as VTA.

RECITALS

1. CALTRANS and VTA, collectively referred to as PARTNERS, entered into Agreement No. 04-2205 (AGREEMENT) on November 9, 2009, defining the terms and conditions for cooperating on the PA&ED, Design and Right of Way phases of a highway improvement project (PROJECT) in Santa Clara County. PROJECT consists of conversion of HOV lanes into Express Lanes (formerly, High Occupancy Toll Lanes) at the following locations: (a) on SR 85 from post miles 0.0 to 24.1, (b) on southern segment of US 101 from post miles 25.3 to 28.6, and (c) on northern segment of US 101 from post miles 47.9 to 52.0.
2. Under AGREEMENT, VTA is the SPONSOR, the IMPLEMENTING AGENCY and the sole FUNDING PARTNER, and CALTRANS is the CEQA and NEPA lead agency for PROJECT. The estimated date for COMPLETION OF WORK is July 31, 2014.
3. PARTNERS now wish to enter into AMENDMENT to increase the federal Demonstration Project Earmark funds for the PA&ED phase of PROJECT by \$990,000.

IT IS THEREFORE MUTUALLY AGREED:

4. The attached FUNDING SUMMARY A1 will replace the FUNDING SUMMARY in AGREEMENT in its entirety, and any reference to FUNDING SUMMARY in AGREEMENT will now be deemed a reference to FUNDING SUMMARY A1.
5. All other terms and conditions of AGREEMENT shall remain in full force and effect.
6. AMENDMENT is hereby deemed to be included in, and made a part of, AGREEMENT.

CONTACT INFORMATION

Below is the primary contact data for each PARTNER to the AGREEMENT. PARTNERS will notify each other in writing of any personnel or location changes. These changes do not require a revision to AGREEMENT.

The primary agreement contact person for CALTRANS is:
Fariba Zohoury, Project Manager
111 Grand Avenue
Oakland, California 94612
Office Phone: (510) 286-6355
Email: fariba_zohoury@dot.ca.gov

The primary agreement contact person for VTA is:
Darrell Vice, Project Manager
3331 N. First Street, Bldg. B-2
San Jose, California 95134
Office Phone: 408.952.4214
Email: darrell.vice@vta.org

SIGNATURES

PARTNERS declare that:

1. Each PARTNER is an authorized legal entity under California state law.
2. Each PARTNER has the authority to enter into AMENDMENT.
3. The people signing AMENDMENT have the authority to do so on behalf of their public agencies.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

By: 
Helena (Lenka) Culik-Caro
Deputy District Director-Design

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY

By:  5/2/13
Michael T. Burns
General Manager

CERTIFIED AS TO FUNDS:

By: 
Kevin M. Strough
District Budget Manager

APPROVED AS TO FORM:

By:  5/1/13
VTA Counsel

04-SCL-85 PM 0.0/R24.1
 04-SCL-101-PM 23.1/28.6
 04-SCL-101-PM 47.9/52.0
 EA: 4A790
 Federal Funds
 District Agreement 04-2205-A1

FUNDING SUMMARY A1

Funding Source	Funding Partner	Fund Type	PA&ED	PS&E	R/W Capital	R/W Support	Subtotal Support	Subtotal Capital	Subtotal Funds Type
FEDERAL	VTA	ARRA	\$2,000,000.00	\$1,300,000.00	\$0.00	\$0.00	\$3,300,000.00	\$0.00	\$3,300,000.00
FEDERAL	VTA	Demonstration Project Earmark	\$1,490,000.00	\$0.00	\$0.00	\$0.00	\$1,490,000.00	\$0.00	\$1,490,000.00
LOCAL	VTA	Local	\$1,000,000.00	\$0.00	\$1,500,000.00	\$500,000.00	\$1,500,000.00	\$1,500,000.00	\$3,000,000.00
		Subtotals by Component	\$4,490,000.00	\$1,300,000.00	\$1,500,000.00	\$500,000.00	\$6,290,000.00	\$1,500,000.00	\$7,790,000.00