7 - VEN - 101 - 4.1/30.9
07-29830K - 0713000249 - 4625
December 2013

# Project Study Report-Project Development Support (PSR-PDS)

# To

# Request Programming for Capital Support (Project Approval and Environmental Document Phase) in the 2014 STIP

On Route US-101

Between Near S. Moorpark Road (PM 4.1)

And Near State Route 33 (PM 30.9)

APPROVAL RECOMMENDED:

Peter De Haan, *PROGRAMMING DIRECTOR,*
*Ventura County Transportation Commission, Accepts Risks Identified in this PSR-PDS and Attached Risk Register*

APPROVAL RECOMMENDED:

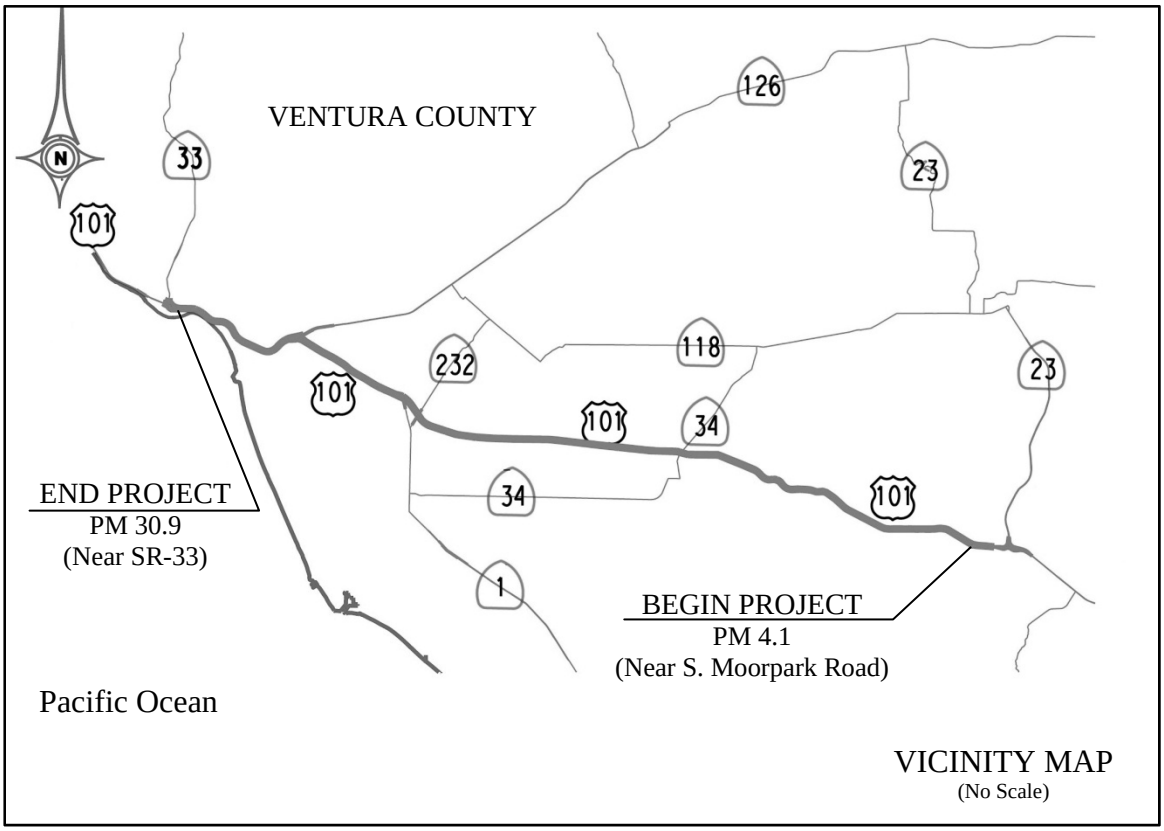
Ravi Ghate, *CALTRANS PROJECT MANAGER*

APPROVED:

for Carrie Bowen, *ACTING DISTRICT DIRECTOR*

12/23/13
*DATE*

# Vicinity Map




On Route 101

Between Near S. Moorpark Road (PM 4.1)

And Near State Route 33 (PM 30.9)

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

Duyen Luu 12/6/13

*REGISTERED CIVIL ENGINEER* *DATE*

# Table of Contents

## 1. INTRODUCTION

The Ventura County Transportation Commission (VCTC), project sponsor, through its Comprehensive Transportation Plan (CTP) has identified US-101 as a priority within their region. As such, this project proposes to accommodate future traffic demands on this route by constructing High Occupancy Vehicle (HOV) lanes as discussed in Section 7 of this report.

The table below highlights some of the projects features:

| | |
|---|---|
| **Project Limits** | *7 - VEN - 101 - 4.1/30.9* |
| **Number of Alternatives** | *4* |
| **Current Capital Outlay Support Estimate for PA&ED** | *$14 million* |
| **Current Capital Outlay Construction Cost Range** | *$575- $2,000 million* |
| **Current Capital Outlay Right-of-Way Cost Range** | *$15 - >$100 million* |
| **Funding Source** | *TBD by VCTC* |
| **Type of Facility** | *4-6 lane Freeway* |
| **Number of Structures** | *18 – 39 (depending on the Alternative)* |
| **Anticipated Environmental Determination or Document** | • *Initial Study with proposed Mitigated Negative Declaration (CEQA)*<br>• *Routine Environmental Assessment with proposed Finding of No Significant Impact (NEPA)* |
| **Project Development Category** | *Category 4* |

VCTC will seek State Transportation Improvement Program (STIP) funding for the PA & ED phase. Funding sources for the anticipated capital costs have yet to be identified, but given the magnitude of this project, it is likely that funding would be comprised of a mixture of sources.

The remaining capital outlay support, right-of-way, and construction components of the project are preliminary estimates and are not suitable for programming purposes. Either a project report or a supplemental project initiation document following the format of a PSR will serve as the programming document for the remaining components of the project. A project report will serve as approval of the "selected" alternative.

## 2. BACKGROUND

US-101 is a major interregional route connecting San Francisco and Los Angeles. In fact, it is the major coastal north-south route that connects the northern, central and southern areas of the State. Regionally, US-101 connects Ventura County's

communities and the neighboring counties, and is a part of local mobility and economic well being.

From SR-23 (PM 3.11) to Chestnut Street OH on-ramp (PM 30.10), US-101 chiefly consists of three 12-foot wide mixed flow lanes (MFLs) in each direction and at spot locations there are 12-foot wide auxiliary lanes; the outside and inside shoulders widths vary from 0 to 10 feet. Between SR-126 (PM 26.39) and SR-33 (PM 30.91), US-101 consists of two 12-foot wide MFLs in each direction.

VCTC requested Caltrans to prepare this PSR-PDS; the corresponding cooperative agreement was executed in March 2013 (Agreement # 07-4976). VCTC was specific in the Alternatives they wanted studied, as they are seeking to address future traffic demands within their region.

## 3. PURPOSE AND NEED

**Purpose:**
By implementing HOV lanes, this project proposes to reduce congestion, improve traffic operations, and accommodate future traffic volumes in this area.

**Need:**
Due to the projected population growth for Ventura County, currently estimated at ± 1% annually, it is anticipated that the forecasted traffic demands will adversely impact the level of service (LOS) along US-101.

## 4. TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT (TEPA)

The Office of Traffic Engineering North prepared a TEPA (Attachment B) and the findings with respect to the peak hour LOS are summarized below:

| Current (2012) | Alternative 1 (2035) | Alternative 2 (2035) | Alternative 3 (2035) | Alternative 4 (2035) |
|---|---|---|---|---|
| F0-F4 | F4 or worse | E-F1 | D-E | C-D |

The current (2012) and projected (2035) average annual daily traffic (AADT) is estimated at 140,000 and 173,000 vehicles respectively.

The assessment indicates that “although auxiliary lanes are not to be considered as capacity lanes, they improve the operational capacity of the mainline through improved weaving, merging and storage for the off-ramps, thus eliminating bottlenecks and eventually elevating the LOS.” In fact, if auxiliary lanes were implemented as a standalone alternative, the anticipated 2035 LOS would be E-F0.

The TEPA also indicates that detailed studies would be required in the future to fully assess the benefits of implementing auxiliary lanes independently or in conjunction with Alternatives 3 or even 4, as described in Section 7.

## 5. DEFICIENCIES

The data shown in the tables below illustrate current traffic volumes as well as accident information:

2012 Traffic Volumes on
California State Highway System

| Post Mile | Location Description | Back Peak Hour | Back Peak Month | Back AADT | Ahead Peak Hour | Ahead Peak AADT | Ahead AADT |
|---|---|---|---|---|---|---|---|
| 4.06 | Moorpark Rd | 13,600 | 180,000 | 175,000 | 13,600 | 178,000 | 173,000 |
| 7.89 | Wendy Dr | 10,800 | 144,000 | 139,000 | 9,900 | 134,000 | 126,000 |
| 13.85 | Junction SR-34 | 10,100 | 137,000 | 130,000 | 10,700 | 145,000 | 139,000 |
| 19.17 | Almond Dr | 10,400 | 142,000 | 135,000 | 10,000 | 136,000 | 130,000 |
| 22.01 | Junction SR-232 | 10,300 | 138,000 | 132,000 | 9,800 | 128,000 | 121,000 |
| R24.65 | Victoria Ave | 10,100 | 132,000 | 124,000 | 9,500 | 126,000 | 116,000 |
| 26.39 | Junction SR-126 | 7,200 | 93,000 | 87,000 | 9,800 | 125,000 | 117,000 |
| 28.45 | Seaward Ave | 9,800 | 125,000 | 117,000 | 9,900 | 123,000 | 115,000 |
| 30.91 | Junction SR-33 | 8,500 | 100,000 | 93,000 | 5,800 | 78,000 | 70,000 |

2011 Annual Average Daily Truck Traffic on
California State Highway System[1]

| Post Mile | Leg | Location Description | Vehicle AADT Total | Truck % of total vehicles | Truck AADT Total |
|---|---|---|---|---|---|
| 3.11 | B | Junction SR-23 | 185,000 | 3.69 | 6,827 |
| 3.11 | A | Junction SR-23 | 175,000 | 3.51 | 6,143 |
| 7.89 | O | Wendy Dr | 124,000 | 4.88 | 6,051 |
| 12.30 | O | Pleasant Valley Rd | 125,000 | 4.88 | 6,100 |
| 13.85 | B | Junction SR-34 | 127,000 | 4.88 | 6,198 |
| 13.85 | A | Junction SR-34 | 135,000 | 4.93 | 6,656 |
| 22.01 | O | Junction SR-232 | 130,000 | 4.68 | 6,084 |
| 22.73 | O | Junction SR-1 | 141,000 | 3.91 | 5,513 |
| R24.65 | O | Victoria Ave | 116,000 | 4.26 | 4,942 |

[1] A leg is given for each count location and is denoted by an A, B or O. For traffic volumes purposes, a highway intersection or interchange has two legs. According to ascending post miles (route direction) and a post mile reference at the center of the intersection or interchange, B = back leg, A = ahead leg, and O = traffic volume is equal for the back and ahead legs.

| Post Mile | Leg | Location Description | Vehicle AADT Total | Truck % of total vehicles | Truck AADT Total |
|---|---|---|---|---|---|
| 26.39 | B | Junction SR-126 | 86,000 | 5.45 | 4,687 |
| 26.39 | A | Junction SR-126 | 116,000 | 5.53 | 6,415 |
| 30.91 | B | Junction SR-33 | 92,000 | 6.38 | 5,870 |
| 30.91 | A | Junction SR-33 | 68,000 | 7.84 | 5,331 |

Given that US-101 within the project limits consists of mainly three MFLs per direction, then an analysis of the above suggests that the LOS during peak hours varies from F (vehicle operating speed < 29 MPH) to C (vehicle operating speed > 54 MPH). These values would be worse in the segments where there are only two MFLs per direction.

If this project is implemented, it is anticipated that congestion would be reduced and the overall mobility of this corridor would be improved.

The accident rates for US-101 within the project limits for the three-year period from July 1, 2008 to June 30, 2011 are generally lower than the statewide averages for similar facilities as shown in the table below:

| Direction | Accident Rates Per Million Vehicle Miles (ACCS/MVM) | | | | | |
|---|---|---|---|---|---|---|
| | Actual Rates | | | Average Rates | | |
| | Fatal | Fatal + Injury | Total | Fatal | Fatal + Injury | Total |
| Northbound | 0.004 | 0.20 | 0.69 | 0.004 | 0.28 | 0.88 |
| Southbound | 0.003 | 0.19 | 0.64 | 0.004 | 0.28 | 0.88 |

The types of collisions and primary collision factors are summarized below:

| Type and Number of Collisions | | Percent (%) | Primary Collision Factors (Other Associated Factors) |
|---|---|---|---|
| Rear End | 1,338 | 52 | speeding and following too close |
| Hit Object | 676 | 26 | improper turn |
| Sideswipe | 405 | 16 | other violation |
| Others | 145 | 6 | unknown |
| Total | 2,564 | 100 | |

During the aforementioned three-year period, there were a total of 2,564 accidents; ± 50% of which can be considered to be “congestion” related accidents. Thus, if the proposed improvements are implemented, then the overall safety within US-101 should also improve as congestion related accidents would be expected to decrease.

## 6. CORRIDOR AND SYSTEM COORDINATION

- District System Management Plan (DSMP)

  The District System Management Plan (DSMP) is a vital part of the System Planning process. As a long-range (20-25 year) planning document, it describes how the transportation system will be managed, maintained and developed. The DSMP for District 7 is currently being developed.

- The Transportation Concept Reports (TCR)

  The July 2013 approved TCR takes into account all planned and programmed projects found in the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

  The TCR has the following recommendations for Segments 11 to 15 which correspond to this project's limits.

| Segment # and Limits | | Existing Lanes in Each Direction | Directional Split | 2035 Baseline RTP (Both Directions) | | Total # of Lanes[2] Required to Attain: | |
|---|---|---|---|---|---|---|---|
| | | | | | | LOS "D" | LOS "F" |
| 11 | SR-23N to SR-34 | 3 | 55.9 % SB PM Peak | 6 MFL | | 8 | 7 |
| | | | | LOS | F | | |
| 12 | SR-34 to SR-232 | 3 | 52.9 % NB PM Peak | 6 MFL | | 7 | 6 |
| | | | | LOS | E | | |
| 13 | SR-232 to SR-1 | 3 | 52.2 % NB PM Peak | 8 MFL | | 9 | 9 |
| | | | | LOS | C | | |
| 14 | SR-1 to SR-126 | 3 | 50.4 % SB PM Peak | 6 MFL | | 7 | 6 |
| | | | | LOS | E | | |
| 15 | SR-126 to SR-33 | 3 | 51.6 % SB PM Peak | 6 MFL | | 6 | 6 |
| | | | | LOS | C | | |

  Based on this information, additional capacity would still be required in order to attain a LOS of D; if implemented, this project should improve the LOS.

- Corridor System Management Plan (CSMP)

  The current (2010) CSMP for US-101 represents a thorough analysis of the

[2] The "odd" figures shown suggest there are auxiliary lanes in both directions; these lanes are assumed to have ½ the capacity of standard MFLs.

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system performance and management options that can improve the current and future performance of the corridor and includes the portion of US-101 that begins at the Rice Avenue interchange in Ventura County to Winchester Canyon Drive in Santa Barbara County.

The following is an excerpt from the CSMP:

*The main locations of congestion in Ventura County will be in the southern half of the corridor in the cities of Ventura and Oxnard. Traffic analysis has identified these bottlenecks as:*

- *The lane drop at the SR-126 interchange for southbound traffic will emerge as a significant problem for the corridor in the future.*

- *Bottlenecks at Victoria Avenue and Vineyard Avenue for southbound traffic will continue in the future. This congestion will be lessened because the bottleneck at SR-126 will reduce the flow of traffic to the south.*

- *For northbound traffic, the main problems will be at Rice Avenue and Johnson Drive at the south end of the corridor. The future congestion at these bottlenecks will restrict the amount of traffic that can get through, which will lessen congestion in the rest of the corridor in Ventura County.*

If implemented, this project would help alleviate congestion at these locations. Auxiliary lanes could also improve the congestion, but as stated in Section 4, further studies are needed to assess the benefits of auxiliary lanes.

- Regional Transportation Plan (RTP)

  The 2012 RTP for US-101 recommends the addition of a MFL at various locations in each direction from the Los Angeles/Ventura County Line to Moorpark Road.

- Bicycle and Pedestrian Master Plans

  The facilities that are modified or proposed in this project should be designed so as to take into account local and regional bicycle and pedestrian needs.

- Complete Streets

  The Complete Streets Act of 2008 requires cities and counties to incorporate the concept of Complete Streets in their General Plan updates to ensure that transportation plans meet the needs of all users of our roadway system. The facilities that are modified or proposed in this project should be designed so as to comply with this requirement.

The following projects on US-101 are in the vicinity of this project:

| Project ID | Post Mile | Project Scope | Caltrans Milestones | | | |
|---|---|---|---|---|---|---|
| | | | PA & ED M200 | RTL M460 | Contract Acceptance M600 | End Project M800 |
| 0700000021 | 22.0/ R24.0 | Widen Roadway and Bridges | 06/2001 | 12/2001 | 10/2007 | 07/2018 |
| 0700000395 | 22.0/ R23.7 | Planting and Irrigation | 06/2001 | 03/2007 | 04/2012 | 01/2014 |
| 0700020160 | 00.0/ 12.6 | Replace PCC Slabs Cold Plane AC | 09/2005 | 07/2010 | 06/2012 | 01/2015 |
| 0700020104 | 12.6/ R37.0 | Place Hot Mix Asphalt | 08/2007 | 07/2010 | 05/2013 | 01/2015 |
| 0712000100 | 14.0/ 21.0 | Trash TMDL BMPs | 04/2009 | 12/2014 | 10/2016 | 10/2017 |
| 0700000542 | 9.1 | Upgrade Weigh Station | 02/2009 | 05/2012 | 10/2013 | 12/2014 |
| 0712000117 | 5.2 | Modify Traffic Signal | 10/2012 | 09/2013 | 07/2014 | 08/2015 |
| 0700000395 | 22.0/ R23.7 | Planting and Irrigation | 06/2001 | 03/2007 | 04/2012 | 01/2014 |
| 0700020160 | 00.0/ 12.6 | Replace PCC Slabs Cold Plane AC | 09/2005 | 07/2010 | 06/2012 | 01/2015 |

## 7. ALTERNATIVES

Four alternatives were analyzed in this PSR-PDS, and are discussed below. The design speed considered for these alternatives is 65 MPH. Any of the three buildable alternatives should satisfy the need and purpose for this project. Operational issues that were identified in the 2010 CSMP like weaving, high volume/diverging, lanes drops issues that are within the project limits would need to be studied in greater detail in the future and are considered to be beyond the scope for this document.

As the project progresses through the project development cycle, the alternatives should continue to be updated, so as to comply with current High-Occupancy Vehicle Guidelines.

Although a “Fact Sheet Exceptions to Mandatory Design Standards” is not needed for this project at this phase, the proposed nonstandard features for this project were discussed with the Headquarters Design Coordinator; each build alternative discussed below includes a Design Standards Risk Assessment.

The cross sections and capital cost estimates for each of the following build alternatives are found in Attachments C and D respectively.

**Alternative 1: No-build**

There are no costs associated with this Alternative, as it leaves the existing conditions as-is. This alternative does not satisfy the need and purpose for this project and there would still be a future need to address the forecasted traffic volumes within this corridor.

**Alternative 2: Adds a nonstandard width HOV lane (see limits below) in each direction**

This alternative would use the existing median area to accommodate a new HOV lane in each direction. In order to minimize widening and right-of-way acquisition, the existing standard lane and shoulder widths would have to be nonstandard at various locations.

This alternative proposes the following cross sections:

| **PM 4.1 to PM 14.8** | **PM 14.8 to PM 30.9** |
|---|---|
| 1’ wide left shoulders | 1’ min. wide left shoulders |
| 11’ wide HOV lanes | 12’ wide HOV lanes |
| 1’ wide buffer between HOV and MFLs | 1’ wide buffer between HOV and MFLs |
| 11’ wide #1 and #2 lanes | 12’ wide #1 and #2 lanes |
| 12’ wide #3 lanes | 12’ wide #3 lanes |
| 9’-10’ wide right shoulders | 9’-10’ wide right shoulders |

So as to comply with the design speed, at several horizontal curve locations, the roadway will be widened as shown in the cross sections to improve the stopping sight distance in the vicinity of the HOV lane closest to the median/left shoulder (see Attachment C). Right-of-way acquisition will be required for this purpose.

As shown in the cross sections, the roadway will be widened at some locations by four feet in each direction (adjacent to the right shoulder) to accommodate standard width lanes and shoulders. It is expected that this widening will occur within State right-of-way.

This Alternative proposes to modify the on-ramps as needed to include a HOV lane and ramp meters; the proposed improvements should result in ramps that have standard width lanes and shoulders as well as standard acceleration lane lengths. The off-ramps will also be modified as needed, so as to provide standard lane widths and shoulders and deceleration lengths.

This alternative would require 17 structures to be widened and one structure will need to be replaced.

**Design Standards Risk Assessment for Alternative 2**

| # | Proposed or Existing Feature | Design Standard from Highway Design Manual Tables 82.1A & 82.1B | Probability of Design Exception Approval (None, Low, Medium, High,) | Justification for Probability Rating |
|---|---|---|---|---|
| 1 | Existing | Index 204.3<br>Standard for Grade | Medium to High | See Attachment E |
| 2 | Proposed | Index 301.1<br>Lane Width | Low | |
| 3 | Proposed | Index 302.1<br>Shoulder Width | Median: Low<br>Outside: Low | |
| 4 | Proposed | Index 305.1<br>Median Width | Low | |
| 5 | Existing | Index 309.2<br>Vertical Clearances | Low to Medium | |
| 6 | Existing | Index 501.3<br>Interchange Spacing | Medium | |

The estimated right-of-way cost is $15 million.

The capital construction cost range for this alternative is $575 - $690 million.

**Alternative 3: Adds a standard width HOV lane in each direction**

Although similar to Alternative 2, this alternative will require significant widening and right-of-way acquisition in order to provide a standard with HOV lane.

This alternative proposes the following cross sections:

| PM 4.1 to PM 30.9 |
|---|
| 10’ min. wide left shoulders |
| 12’ wide HOV lanes |
| 4’ wide buffer between HOV and MFLs |
| 12’ wide MFLs |
| 10’ wide right shoulder |

This alternative would require 23 structures to be widened and 14 structures to be replaced.

**Design Standards Risk Assessment for Alternative 3**

| # | Proposed or Existing Feature | Design Standard from Highway Design Manual Tables 82.1A & 82.1B | Probability of Design Exception Approval (None, Low, Medium, High,) | Justification for Probability Rating |
|---|---|---|---|---|
| 1 | Existing | Index 204.3<br>Standard for Grade | Medium to High | See Attachment E |
| 2 | Existing | Index 309.2<br>Vertical Clearances | Low to Medium | |
| 3 | Existing | Index 501.3<br>Interchange Spacing | Medium | |

The estimated right-of-way cost is estimated to be greater than $100 million.

The capital constriction cost rage for this alternative is $1,375 - $1,650 million.

**Alternative 4: Adds two standard width HOV lanes in each direction**

This is identical to Alternative 3, except that it provides a second standard width HOV lane in each direction.

This alternative proposes the following cross sections:

| PM 4.1 to PM 30.9 |
|---|
| 10’ min. wide left shoulders |
| 12’ wide HOV lanes (2 lanes per direction) |
| 4’ wide buffer between HOV and MFLs |
| 12’ wide MFLs |
| 10’ wide right shoulder |

This alternative would require 23 structures to be widened and 16 structures to be replaced.

**Design Standards Risk Assessment for Alternative 4**

| # | Proposed or Existing Feature | Design Standard from Highway Design Manual Tables 82.1A & 82.1B | Probability of Design Exception Approval (None, Low, Medium, High,) | Justification for Probability Rating |
|---|---|---|---|---|
| 1 | Existing | Index 204.3<br>Standard for Grade | Medium to High | See Attachment E |
| 2 | Existing | Index 309.2<br>Vertical Clearances | Low to Medium | |
| 3 | Existing | Index 501.3<br>Interchange Spacing | Medium | |

This alternative requires the most right-of-way of the three build alternatives and the cost is estimated to be greater than $100 million.

The capital constriction cost rage for this alternative is $1,630 - $2,000 million.

**Other alternatives studied:**

Since VCTC has expressed interest and plans to pursue a separate study to assess the feasibility of converting the proposed HOV lanes into High Occupancy Toll (HOT) lanes, a cursory analysis was conducted as it relates to the proposed alternatives and it was found that it would cost approximately $60 - $70 million (in 2013) to convert the HOV lanes proposed in Alternative 4 into HOT lanes sometime in the future.

As suggested in the TEPA, operational benefits could be achieved by implementing auxiliary lanes, however detailed traffic studies would be required in subsequent project development phases to truly assess what is needed. Nonetheless, the capital cost to implement auxiliary lanes as needed within this corridor is estimated at $120-$130 million (in 2013).

Should the need arise and pending funding constraints, the implementation of auxiliary lanes could be considered as a standalone alternative or could be implemented in conjunction with either Alternatives 3 or 4 for this project. Although a standalone auxiliary lane alternative was not evaluated as part of the scope for this PSR-PDS, as determined by VCTC, it was considered in the TEPA.

## 8. RIGHT-OF-WAY

A Conceptual Cost Estimate – Right-of-Way Component was prepared (Attachment F), other right-of-way items are summarized below:

**Utilities:**

This project will have utility related impacts, the full extent of which should be identified during the next phase. Nonetheless, the conceptual cost estimate includes utility costs.

**Railroad:**

Bridge No. 52-0237 L/R (West Ventura OH), which is used by Amtrak (Pacific Surfliner), poses a significant risk to this project near the downtown Ventura area. The feasibility to relocate/reconstruct this structure in order to accommodate any of the Alternatives discussed in Section 7 is not fully known. Depending on the cost, the Alternatives may need to be modified in this area to fit within the existing physical constraints. Further studies are needed during the next phase to determine what is feasible.

## 9. STAKEHOLDER INVOLVEMENT

This PSR-PDS was developed at the request of VCTC which consists of a variety of stakeholders.

Some of the efforts to involve VCTC included the presentation of preliminary findings of this document to the VCTC Board and to a VCTC Technical Advisory Committee in October 2013.

VCTC staff was also given the opportunity to review this document which was prepared in consultation with VCTC and Caltrans staff to ensure that this document meets the needs of the project sponsor.

In subsequent project development phases, other stakeholders will include:

- California Coastal Commission
- California Department of Fish and Wildlife
- California Regional Water Quality Control Board
- Railroad related entities
- U.S. Dept of Fish and Wildlife
- U.S. Army Corps of Engineers
- VCTC, Ventura County and the cities along US-101 impacted by this project

## 10. ENVIRONMENTAL DETERMINATION/DOCUMENT

The October 2013 Preliminary Environmental Analysis Report (PEAR) concludes that this project is expected to be classified as follows (Attachment G):

- California Environmental Quality Act (CEQA):

  Initial Study with proposed Mitigated Negative Declaration (ND)

- National Environmental Policy Act (NEPA):

  Routine Environmental Assessment with proposed Finding of No Significant Impact

## 11. FUNDING

It has been determined that this project is eligible for federal-aid funding.

**Capital Outlay Project Estimate (in $ millions)**

| Alternative | Range of Estimate | | STIP Funds | | Other Funds | |
|---|---|---|---|---|---|---|
| | Construction | Right-of-Way | Construction | Right-of-Way | Construction | Right-of-Way |
| 1 | 0 | 0 | | | | |
| 2 | 575-690 | 15 | | | | |
| 3 | 1,375-1,650 | >100 | | | | |
| 4 | 1,630-2,000 | >100 | | | | |

TBD

The level of detail available to develop these capital outlay project estimates is only accurate to within the above ranges and is useful for long-range planning purposes only. The capital outlay project estimates should not be used to program or commit State-programmed capital outlay funds.

**Capital Outlay Support Estimate**

Capital outlay support estimate for programming PA & ED in the 2014 STIP for this project: $14 million.

## 12. SCHEDULE

| Project Milestones | | Scheduled Delivery Date (Month/Year) |
|---|---|---|
| Program Project | M015 | Spring 2014 |
| Begin Environmental | M020 | July 2017 |
| Circulate DPR & DED Externally | M120 | December 2019 |
| PA & ED | M200 | June 2020 |

The anticipated funding fiscal year for construction is 2023/24. Also see Attachment H (Project Schedule).

## 13. RISKS

Pursuant to District Directive 35 (DD-35), risk management activities were conducted; the resulting risk register is found in Attachment I.

## 14. FHWA COORDINATION

This project is considered to be a High Profile Project (HPP) in accordance with the current Federal Highway Administration (FHWA) and Department of Transportation (Caltrans) Joint Stewardship and Oversight Agreement.

A determination if the project will be considered HPP will be made during the PA & ED phase. If the project meets federal criteria, then a Project Management Plan and a Finance Plan will be required.

## 15. PROJECT REVIEWS

***Caltrans:***

| | | | |
|---|---|---|---|
| Field Review | | Date | *4/30/13* |
| District Maintenance | *Paul Crispi* | Date | *11/26/13* |
| District Traffic Safety Engineer | *Kirk Patel* | Date | *11/26/13* |
| Headquarters Design Coordinator | *Karl Dreher* | Date | *11/26/13* |
| Project Manager | *Ravi Ghate* | Date | *11/26/13* |
| FHWA | *Josue M. Yambo* | Date | *11/26/13* |
| District Quality Review | | Date | *11/26/13* |

***VCTC:***

| | | | |
|---|---|---|---|
| Programming Director | *Peter De Haan* | Date | *11/26/13* |

## 16. PROJECT PERSONNEL

***Caltrans:***

| | |
|---|---|
| Elaheh Yadegar<br>Chief, Office of Project and Special Studies (OPSS) | (213) 897-9635 |
| Rafael Molina<br>Senior Transportation Engineer (STE), OPSS | (213) 897-7945 |
| Duyen Luu<br>Project Engineer, OPSS | (213) 897-0092 |
| Ravi Ghate<br>Project Manager | (213) 897-5593 |
| Kirk Patel<br>STE, Office of Traffic Engineering - North | (213) 897-1825 |
| Karl Dreher<br>Project Development Coordinator | (916) 653-4937 |
| Tami Podesta<br>Senior Environmental Planner -<br>Office of Environmental Planning | (213) 897-0309 |

## 17. ATTACHMENTS

A. Vicinity and Location Map
B. Traffic Engineering Performance Assessment Report (TEPA)
C. Cross Sections
D. Capital Outlay Project Estimates
E. Design Standards Risk Assessment
F. Conceptual Cost Estimate – Right-of-Way Component
G. Preliminary Environmental Analysis Report (PEAR)
H. Project Schedule
I. Risk Register
J. Advance Planning Study (APS)
K. List of Impacted Structures
L. PSR-PDS Scoping Checklist
M. Storm Water Data Report (Cover Page)

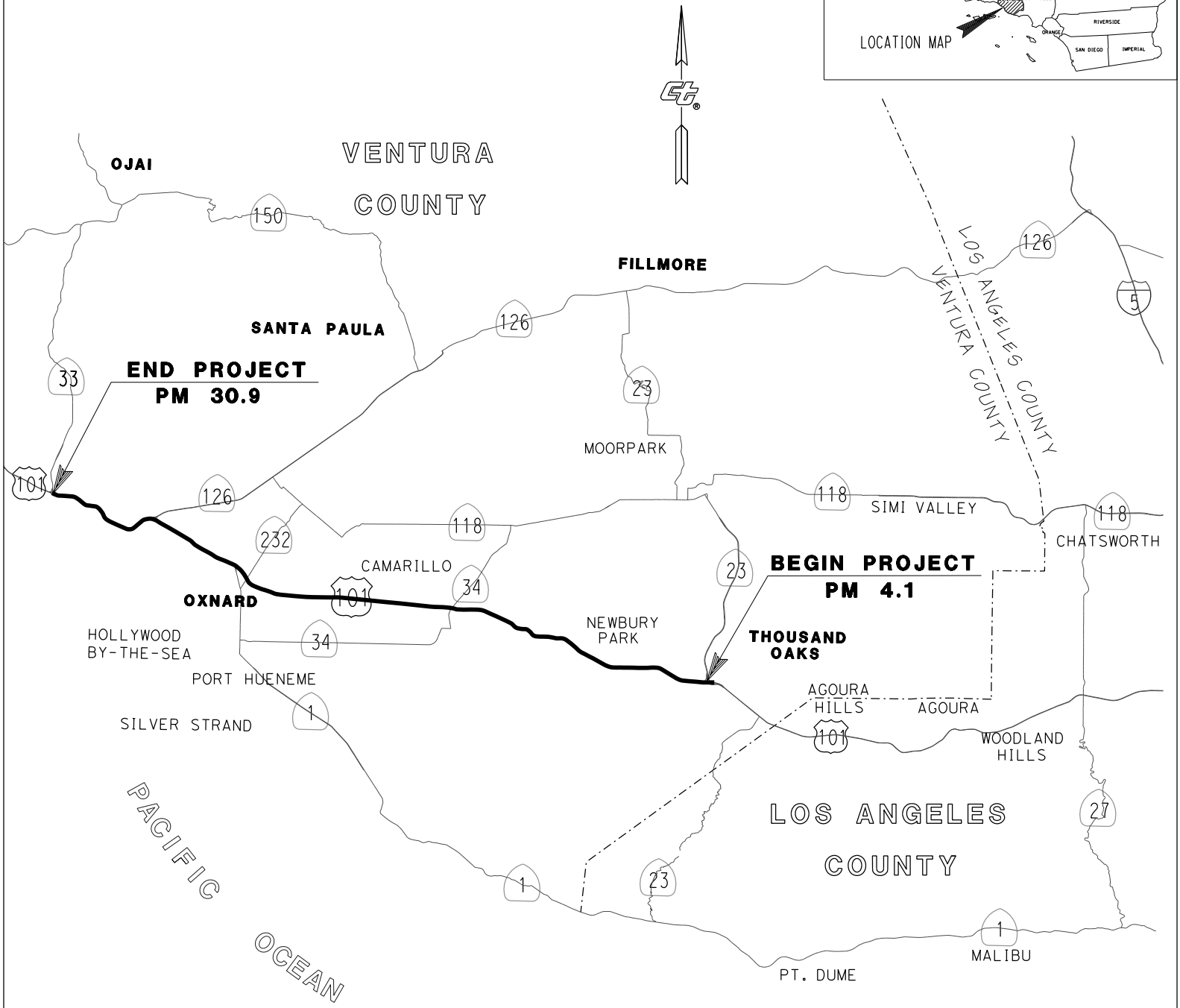
# Vicinity and Location Map

**ATTACHMENT – A**

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 07 | VEN | 101 | 4.1/ 30.9 | 1 | |

# VICINITY MAP

**0713000249 (EA-29830K)**


# ATTACHMENT A

**(NO SCALE)**

# Traffic Engineering Performance Assessment Report (TEPA)

**ATTACHMENT – B**

Caltrans
Traffic Engineering

07-VEN-101- PM (4.1-30.9)

December 11, 2013

PRELIMINARY

# TRAFFIC ENGINEERING PERFORMANCE ASSESSMENT REPORT

## NORTHBOUND AND SOUTHBOUND ROUTE 101 HOV LANES AND AUXILIARY LANES

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12/11/2013
DATE

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12/12/13
DATE

# I. INTRODUCTION

This preliminary Traffic Engineering Performance Assessment Report aims at examining the operational conditions and needs for improvement on northbound and southbound Route 101 in Ventura County between Post Miles 4.1 to 30.9 that starts around Moorpark Road till around Route 33 interchange through the localities of Thousand Oaks, Camarillo, Oxnard, and Ventura.

Route 101 within this segment consists mainly of 6-8 MFL (Mixed Flow Lanes) in both directions with no HOV or auxiliary lanes.

Deterioration in the LOS (level of Service) on the mainline NB and SB Route 101 and local arterials within the limits of Ventura County has been closely examined and studied over the years.

Congestion was noticed on the mainline in both directions during peak periods in various locations, this congestion was mainly attributed to traffic demand exceeding the available mainline capacity in addition to weaving and merging issues in the vicinity of interchanges and wherever the mainline drops lanes and changes in configuration.

The congestion on freeway interchanges and local arterials is attributed, among other factors, to inefficient discharge of traffic from the local streets to the mainline NB and SB 101 and vice versa.

# II. BACKGROUND

Route 101 is part of the National Highway System (NHS) and serves as an Interstate/Interregional/Intraregional and commute travel highway.

In the limits of this project Route 101 traverses in northwest-southeast direction.

The need for new strategies for operational improvements came from the fact that congestion on our network has grown by about 45% since 1990 and is continuing to grow at a much faster rate than adding new lanes or even new freeways can cope up with.

Based on extensive studies performed by Caltrans for this route and every other route in the area, two common factors contributed significantly to the critical congestion and delay onto the freeway system.

The primary factor was the ever-increasing traffic demand that exceeds the system capacity, and the second would be the unfavorable weaving and merging movements attempted by motorists for different purposes, this maneuvering along mainline lanes creates bottlenecks, elevates accident rate, compromises safety, and deteriorates the LOS.

The primary objective of this report is to eliminate the LOS F (stop and go traffic), improve safety, ensure trip reliability, and to provide motorists with accurate real time information on freeway conditions.

# III. NEED AND PURPOSE

## A. Methodology

Published AADT values were first analyzed and compared against other sources and projects and then were utilized throughout this Report according to the following protocol:

1. The AADT numbers which I utilized throughout this Operational Analysis Report were based upon the "Worst Case Scenario".
2. This Scenario requires analyzing the AADT figures over a period of 10+ years and then using the worst case (the highest figures) resulting from the following cases:
    a) The most recent AADT with the annual ambient growth rate from that year to the current and to the design year (2035).
    b) An older AADT with the annual ambient growth rate factored in from that year onto the current and onto the design year (2035).
    c) Factors that reduce the AADT temporarily are not being considered in the AADT analysis.
    d) In the absence of verified operational improvement(s), the decrease in AADT from one year to the following one in a manner contradicting the forecasted annual increase per the SCAG model would not be considered.
3. Therefore, for these segments of Route 101, the older AADT figures with the annual ambient growth rates factored in proved to be the most critical, and hence were utilized in this report.

## B. Existing Configuration

1. Northbound and Southbound Route 101 freeway within the study area mainly consist of 3-4 MFL in each direction with no HOV and no auxiliary lanes.
2. During peak periods and due to the reduction in cross-section on NB Route 101 north of Route 23 Interchange, and due to the lack of auxiliary lanes, the mainline experiences considerable travel delay rates.
3. Similarly, the southbound Route 101 experiences the same levels of delay during peak periods due to change in configuration in addition to the lack of sufficient mainline capacity and the absence of auxiliary lanes.
4. Consequently, improving the LOS of this Route would require elimination of the bottlenecks formed by the reductions in mainline cross-section and adding capacity through added lanes in addition to implementing better operational techniques through managed lanes like HOV and HOT lanes and mitigating unfavorable weaving and merging through the addition of auxiliary lanes and eliminating backups onto the mainline through improving the storage capacity of the off-ramps.
5. Due to the critical location of this segment of Route 101 and the importance of providing acceptable freeway operation for commuters, improvements for this segment of Route 101 will reduce congestion and contribute to substantial savings in travel time delays for both freeway and local traffic.

## C. Existing Traffic Conditions

a. Mainline 101 within the limits of the study area has a 2009-2012 average AADT of 140,000 vehicles and a 5 % of truck traffic.
b. Considering an annual ambient growth rate of 1.05%, the projected 2035 AADT for this segment of Route 101 would be approximately 173,000 vehicles.
c. The mainline Route 101 within the study limits consists of 6-8 MFL and no HOV lanes for both directions.
d. With an average cross-section of 7 MFL and a peak hourly volume of about 10~15% of the AADT, therefore, the mainline Route 101 would have a peak hourly

volume of about 2500~3700 vphpl (vehicles per hour per lane) by 2035 corresponding to a LOS F4 and worse.

e. The Traffic Accident Surveillance and Analysis System (TASAS) report for this segment of Route 101 was not obtained.

## D. Deficiency and Justification

1) Reductions in the mainline cross-section in both directions due to lane drops at various locations create congestion and backups onto the mainline resulting in bottlenecks which deteriorate the LOS of the mainline by increasing density, decreasing speeds, and creating an unsafe environment for the motorists that would include an increase in the accident rate, and decrease the ability to deal with incidents in a timely manner.
2) Constant increase in traffic demand due to ambient growth and multiple developments along this segment of Route 101 and that is not met by an equivalent increase in capacity magnifies the weaving and merging deficiencies leading to more bottlenecks and further deterioration of the operational and safety levels of service for the mainline in both directions.
3) The absence of auxiliary lanes between successive on and off-ramps, in addition to the lack of sufficient storage capacity of off-ramps magnify the adverse impact of weaving and merging on the LOS of the mainline in addition to the bottlenecks formed by the backed up traffic from the off-ramps onto the mainline which deteriorates the LOS even further.
4) The current AADT averaged over a 4-year period from 2009-2012 is about 140,000 vehicles.
5) With an average cross-section of 7 lanes and a peak hourly demand of 10%-15% of the AADT, therefore, the current peak hourly demand would be about 2000-3000 vphpl.
6) This current demand would render the mainline Route 101 during peak periods to be operating at a LOS of F0-F4.
7) With the existing configuration, the forecasted 2035 traffic peak hourly demand would reach about 2500-3700 vphpl (vehicle per hour per lane).
8) This anticipated demand exceeds by far the capacity of the mainline Route 101 within the study area, and if left unmitigated the LOS would drop to below F4 and delays in travel time would increase significantly.
9) Caltrans right of way within the study area was not investigated nor included as part of this report.

# IV. ALTERNATIVES

The following alternatives are being considered:

### A. Alternative "A"- No Build (Null)

This alternative proposes the 'Do Nothing' option.

This alternative does not address the existing or the future forecasted operational and safety deficiencies to neither the mainline nor the local intersections on Route 101 within the study limits.

## B. Alternative "B"- Add a Non-standard width HOV lane in each direction

a. This alternative proposes to construct an all-new non-standard width HOV lane in each direction within the project limits.
b. This Alternative is expected, in addition to increasing the mainline capacity in both directions, to further improve the LOS through promoting ride-share and hence decreasing the demand.
c. The implementation of this Alternative would also be expected to improve the operational capacity of the mainline interchanges for both directions of Route 101 due to elimination of bottlenecks and backups onto the mainline, hence improving the overall operational and safety levels of service for both State and local facilities.
d. In addition, this Alternative is expected to improve the mainline LOS even further by improving the merging and weaving impacts due to a better mainline configuration and elimination of backups and bottlenecks.
e. This proposal might call for a new right of way acquisition pending a ROW review and verification.

## C. Alternative "C" – Add a Standard width HOV lane in each direction

a. This alternative proposes to construct an all-new standard width HOV lane in each direction within the project limits.
b. A standard 12' wide lane normally has about 15% more capacity than a non-standard width lane.
c. Similar to Alternative "B", this Alternative is expected, in addition to increasing the mainline capacity in both directions, to further improve the LOS through promoting ride-share and hence decreasing the demand.
d. Also, the implementation of this Alternative would also be expected to improve the operational capacity of the mainline interchanges for both directions of Route 101 due to elimination of bottlenecks and backups onto the mainline, hence improving the overall operational and safety levels of service for both State and local facilities.
e. In addition, and similar to Alternative "B", this Alternative is expected to improve the mainline LOS even further by improving the merging and weaving impacts due to a better mainline configuration and elimination of backups and bottlenecks.
f. This proposal might call for a new right of way acquisition pending a ROW review and verification.

## D. Alternative "D" – Add two Standard width HOV lanes in each direction

a. This alternative proposes to add two-12ft. HOV lanes in each direction of Route 101 within the study area.
b. This Alternative will enhance the capacity of the mainline even further and would mitigate the increased demand to a better level.
c. The extensive widening of the mainline Route 101 in both directions that would be needed to implement this Alternative would require the relocation and reconfiguration of several interchanges within the project limits to accommodate such widening.
d. This Alternative would also require the relocation and reconstruction of several structural elements more than the previous alternatives due to the extensive widening of the mainline.

e. This Alternative would also call for the acquisition of more ROW that would be needed pending further investigation. A thorough ROW study would be needed.
f. A thorough investigation of geometrics and design elements would be needed to investigate the viability and validity of this alternative.
g. A comprehensive cost-benefit analysis would also be needed for this alternative.

**E. Alternative "E" – Construct missing Auxiliary Lanes and modify on and off ramps**

This alternative proposes to add and modify the following auxiliary lanes and ramps within the study area:

1. Construct a northbound auxiliary lane from Pleasant Valley Rd. to Flynn Rd.
2. Construct a northbound auxiliary lane from Lewis Rd. (Rte 34) to Carmen Dr.
3. Construct a northbound auxiliary lane from Carmen Dr. to Las Posas Rd.
4. Construct a northbound auxiliary lane from Las Posas Rd. to Springville Rd.
5. Construct a northbound auxiliary lane from Springville Rd. to Central Ave.
6. Construct a northbound auxiliary lane from Central Ave. to Del Norte Blvd.
7. Construct a northbound auxiliary lane from Rice Ave. to Rose Ave.
8. Construct a northbound auxiliary lane from SB Rose Ave. to Vineyard Ave. (Rte 232).
9. Construct a northbound auxiliary lane from Johnson Dr. to Victoria Ave.
10. Construct a northbound auxiliary lane from Victoria Ave. to Telephone Rd.
11. Construct a northbound auxiliary lane from WB 126/NB 101 to Seaward Ave.
12. Construct a northbound auxiliary lane from Seaward Ave. to Vista Del Mar and extend it to California St.
13. Construct a southbound auxiliary lane from Chestnut St. to Seaward Ave.
14. Construct a southbound auxiliary lane from Seaward Ave. to EB 126 connector then extend it to Telephone Rd.
15. Construct a southbound auxiliary lane from Telephone Rd. to Victoria Ave.
16. Construct a southbound auxiliary lane from Victoria Ave. to Wagon Wheel Rd.
17. Construct a southbound auxiliary lane from Vineyard Ave. (Rte 232) to Rose Ave.
18. Construct a southbound auxiliary lane from Del Norte Blvd. to Central Ave.
19. Construct a southbound auxiliary lane from Central Ave. to Springville Dr.
20. Construct a southbound auxiliary lane from Springville Dr. to Las Posas Rd.
21. Construct a southbound auxiliary lane from Las Posas Rd. to Carmen Dr.
22. Construct a southbound auxiliary lane from Carmen Dr. to Lewis Rd.
23. Construct a southbound auxiliary lane from Dawson Rd. to Pleasant Valley/Santa Rosa Rd.
24. Widen the entrance of the northbound Carmen Dr. off-ramp to be a two-lane branching out to three instead of the current one-lane entrance branching out to three.
25. Widen the entrance of the northbound Las Posas Rd. off-ramp to be a two-lane entrance branching out to three instead of the current one-lane entrance branching out to two lanes.

26. Widen Flynn Rd., Carmen Rd., Las Posas Rd., and Lewis Rd. to increase the storage capacity of proposed metered on-ramps.
27. Install ramp-metering hardware on all on-ramps per Caltrans Ramp Metering Design Manual.
28. Lengthen and widen merge areas on Flynn Rd., Lewis Rd., Carmen Rd, and Los Posas Rd. on-ramps.
29. Optimize the signal timing schedules for all signals at off-ramps' termini to allow for an optimum discharge of traffic off the mainline and onto the local arterials taking into consideration the optimization of ICU to achieve maximum benefits.

# V. MANDATORY/ADVISORY DESIGN EXCEPTIONS

The implementation of either of the Alternatives "B, C or D", as outlined above, might require mandatory and advisory design exceptions. Further studies will be needed to determine their scope.

# VI. TRAFFIC MANAGEMENT PLAN (TMP)

Widening of mainline, constructing the proposed auxiliary lanes and adding the proposed HOV facilities and consequently reconfiguring the interchanges in addition to the existing structures that would be impacted by such widening would require short and long-term closures of segments of the mainline and ramps. A comprehensive TMP would be required. Existing traffic lanes are expected to be reduced during construction for short and long-term closures. A comprehensive Transportation Management Plan would be necessary for this project.

# VII. CONCLUSION

1. Due to the critical location of this segment of NB and SB Route 101 in Ventura County and the importance of providing acceptable operational and safety levels for commuters, improvements to this Route will enhance the existing operational and safety levels of service for the mainline freeway, its interchanges and local intersections..
2. With the current average AADT between 2009 and 2012 of 140,000 vehicles as shown above, and with a peak hourly volume estimated at 10%-15% of the AADT, therefore the current peak hourly demand would be approximately 14,000-21,000 vehicles with a corresponding peak lane hourly demand of 2000-3000 vphpl.
3. This current demand of 2000-3000 vphpl would correspond to a LOS F0-F4 during peak periods for both directions of Route 101 within the limits of the study area. Hence, the addition of HOV facilities would add a much needed capacity to the existing and will improve this segment of Route 101 to meet the demand more efficiently in addition to promoting ride share concepts which would improve the operational and safety levels even further.
4. Although auxiliary lanes are not to be considered as capacity lanes, they improve the operational capacity of the mainline through improved weaving, merging and storage for the off-ramps, thus eliminating bottlenecks and eventually elevating the LOS.

5. In addition to the anticipated improvements to the freeway system, the proposed mitigation is expected to significantly enhance the operational capacity of the local arterials within the vicinity of the project.
6. The implementation of either Alternative "B" or "C" by adding one-HOV lane in each direction, and taking into consideration that the maximum capacity of an HOV lane to operate at a satisfactory level of service would be 70% of a regular MFL, therefore, the addition of the two HOV lanes would be equivalent to the addition of 1.4 MFL.
7. In addition to the added capacity, the reduction in demand due to ride-share could be estimated at 10%-20%.
8. Consequently, the new mainline configuration would be the equivalent of 8.4 lanes, and with a 2035 forecasted AADT of 173,000 vehicles, and based on the aforementioned factors, and for Alternative "B", the mainline would be expected to flow at a peak hourly rate of about 1900-2300 vphpl equivalent to a 2035 LOS E-F1.
9. Similarly the implementation of Alternative "C" and with the 15% more capacity handling for a standard width lane versus non-standard as explained above, and with the equivalent configuration of 8.4 lanes, the 2035 forecasted LOS would be D-E.
10. The implementation of Alternative "D" as mentioned above will render the final freeway mainline cross-section to be equivalent to 9.8 MFL.
11. The associated peak hourly demand rate for such a configuration would be expected at 1500-1800 vphpl equivalent to a 2035 forecasted LOS C-D.
12. In addition to the construction of the proposed HOV lanes, adding the proposed auxiliary lanes at the aforementioned 23 locations in both directions of Route 101 with a total length of approximately 16 miles and with the associated modifications that would be needed for the ramps will further improve both the operational and safety levels of service for both the mainline and the local arterials significantly.
13. The construction of these auxiliary lanes and modifying the ramps as was mentioned in Alternative "E" enhance the operational and safety capacity of the mainline Route 101 by eliminating weaving, merging, and bottlenecks caused by backups from the off-ramps as was previously explained.
14. Combining Alternative "E" with either of the other build alternatives "B", "C" or "D" will render these Alternatives to function more efficiently by increasing their ability for reducing congestion, travel delay, and consequently elevating the LOS of the mainline and the neighboring local arterials within the vicinity of the project.
15. A proper evaluation of the impact of the proposed auxiliary lanes and ramps' modification on reducing the weaving, merging, and bottlenecks on the mainline would require an exhaustive weaving/merging analysis for the mainline Route 101 in both directions within the study area in addition to a detailed queuing analysis utilizing the HCM 85$^{th}$ Percentile methodology for the ramps under investigation.
16. This kind of detailed analysis is beyond the scope of this Preliminary Assessment but could be performed at a later stage if the need arises.
17. For the purpose of this Preliminary Assessment, and based on the author's of this document own experience and knowledge of Route 101, similarities from other projects are going to be drawn, interpolated and proportioned to suit the criteria of the project on hand.

18. Consequently, and by combining the improvement elements contained in Alternative "E" with those of Alternative "B", the 2035 anticipated peak LOS would be at D/E.
19. Similarly, the implementation of both alternatives "C" and "E" together will render the mainline Route 101 to operate at a forecasted 2035 LOS of C/D during peak periods.
20. Also, and based upon the same level of analysis, combining alternatives "D" and "E" together with all their elements being constructed, the forecasted 2035 LOS would be at B/C during peak periods.
21. Alternatively, the implementation of alternative "E" alone without any of the proposed HOV lanes is expected to render the mainline Route 101 within the project limits to operate at a LOS E/F0 during peak periods.

## VIII. RECOMMENDATION

1. Based on the foregoing discussion, and notwithstanding the impacts to the freeway interchanges or the would-be needed ROW the Office of Traffic Engineering would recommend the implementation of the combined alternatives "D" and "E" as it represents the maximum addition to the mainline capacity and mitigation for operational and/or safety deficiencies for both the mainline Route 101 and the local arterials within the vicinity of the project.
2. A thorough investigation would be needed to examine the validity of this alternative in terms of cost, constructability and ROW.
3. If the cost and/or ROW acquisition would prove to be prohibitive, then the Office of Traffic Engineering would recommend the implementation of the combined alternatives "C" and "E" pending the same verification.
4. Finally, if both of the above alternatives would prove to be not-cost effective, then the implementation of the combined alternatives "B" and "E" would be required to provide an acceptable level of mitigation for the problems on hand as discussed above.
5. In conclusion, and to enhance, improve, and mitigate the existing and the forecasted future deficiencies in the operational capacity and safety levels on northbound and southbound Route 101 within the limits of the study area, and to be able to achieve the range of operational and safety sought-after benefits for this area, and as was amply shown above, the Office of Traffic Engineering recommends the prioritization of the Alternatives in the following order:

    a. Alternatives "D" and "E" combined.
    b. Alternatives "C" and "E" combined.
    c. Alternatives "B" and "E" combined.
    d. Alternative "D" by itself.
    e. Alternative "C" by itself.
    f. Alternative "B" by itself.
    g. Alternative "E" by itself.

The re-synchronization of the freeway/local system and the construction of the project discussed in this report will significantly improve both local and freeway traffic as it will elevate the operational and safety capacity of the freeway and local arterials within the study area and beyond.

**This Project is therefore recommended for approval and funding in order to achieve the required benefits.**

## IX. DISTRICT CONTACTS

The following individuals should be contacted for information pertaining to this "Operational Analysis and Assessment Report":

| Name | Organization/Branch | Phone |
|---|---|---|
| Ashraf W. Hanna | Lead Project Engineer, Office of Traffic Engineering-North | (213) 897-7916 |
| Kirk Patel | Senior Transportation Engineer, Office of Traffic Engineering-North | (213) 897-1825 |
| Marco Ruano | Chief, Office of Traffic Engineering-North | (213) 897-9863 |

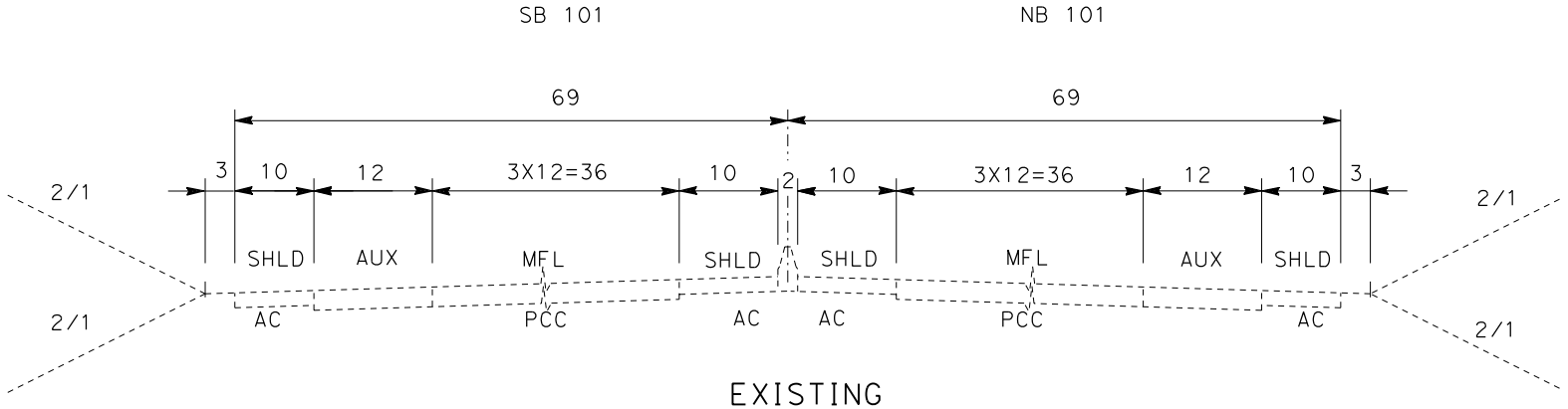
# Cross Sections

**ATTACHMENT – C**

# CROSS SECTIONS

From PM 4.10 To PM 9.01

(No Scale)

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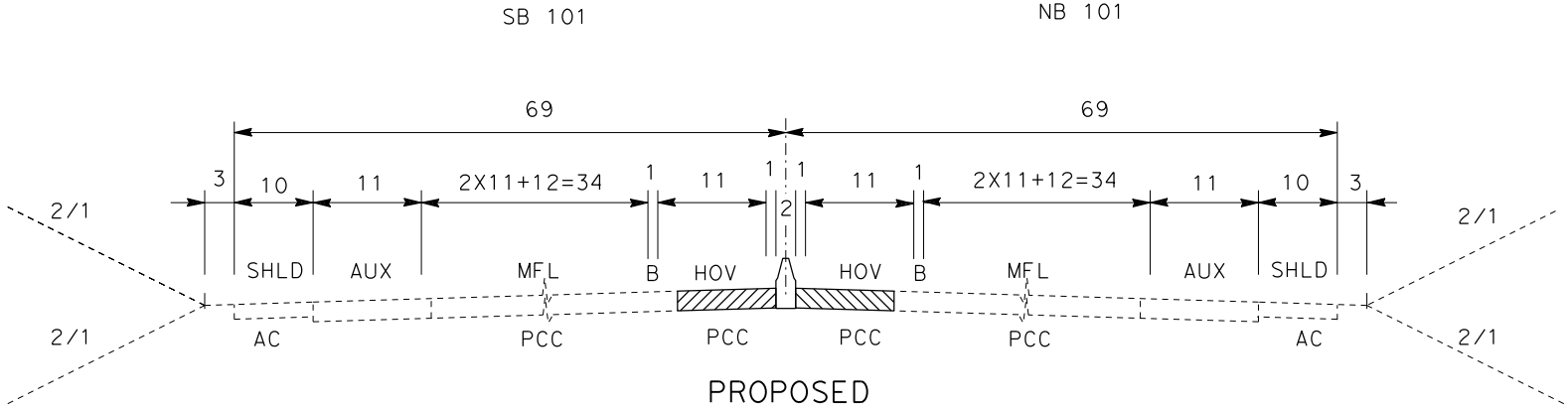



PROPOSED

NON-STANDARD WIDTH HOV LANES
( Freeway Tangent Section )

LEGEND:

AUX: AUXILIARY LANE
MFL: MIXED FLOW LANE
B : BUFFER

Note: 1) All dimesions are in Feet.

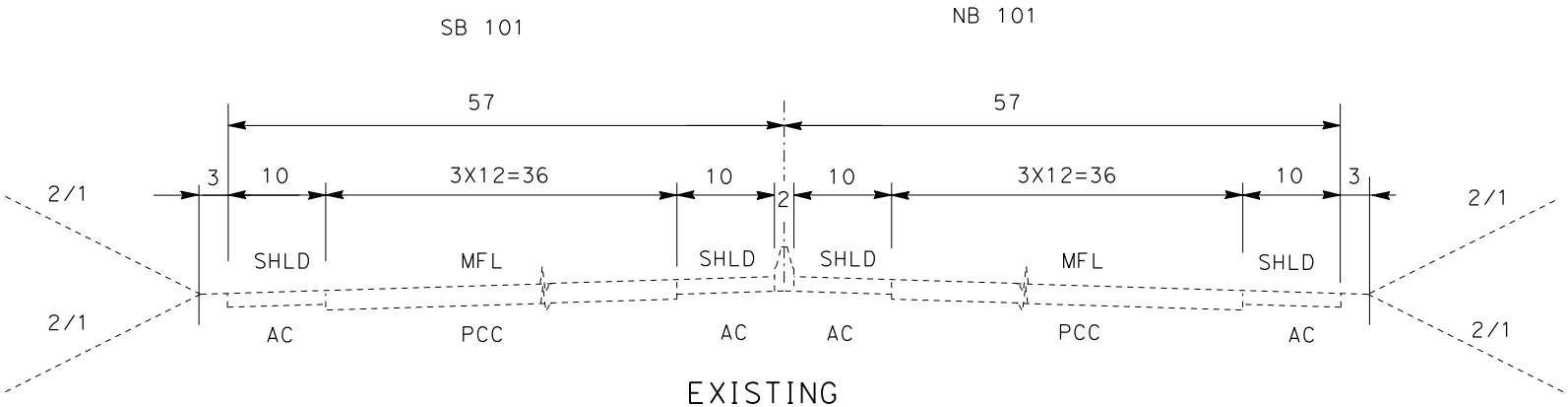
2) Shoulders become 9 feet when freeway goes though OC bridge

ATTACHMENT C
ALTERNATIVE 2
SHEET 1 OF 27

# CROSS SECTIONS

From PM 9.01 To PM 14.80

(No Scale)

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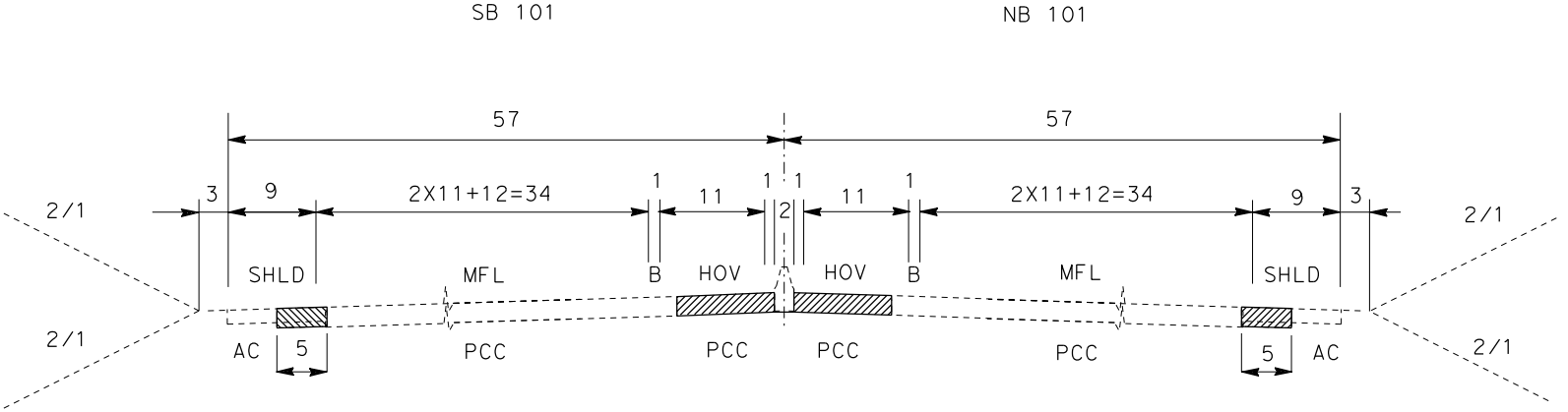


PROPOSED

NON-STANDARD WIDTH HOV LANES
( Freeway Tangent Section )

ATTACHMENT C
ALTERNATIVE 2
SHEET 2 OF 27

# CROSS SECTIONS

From PM 14.80 To PM 17.04, From PM 18.01 To PM 18.97, From PM 21.69 To PM 22.00

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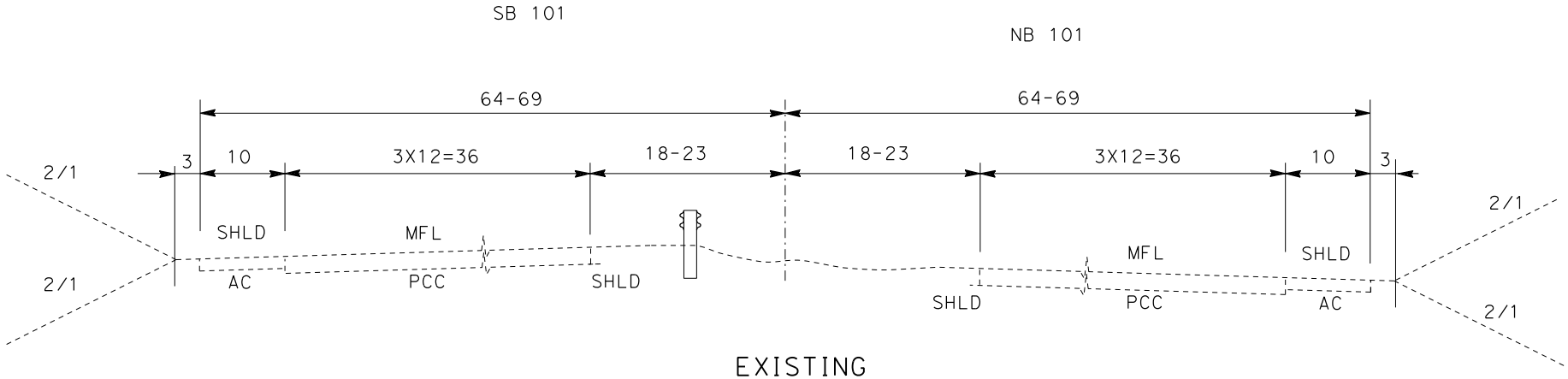


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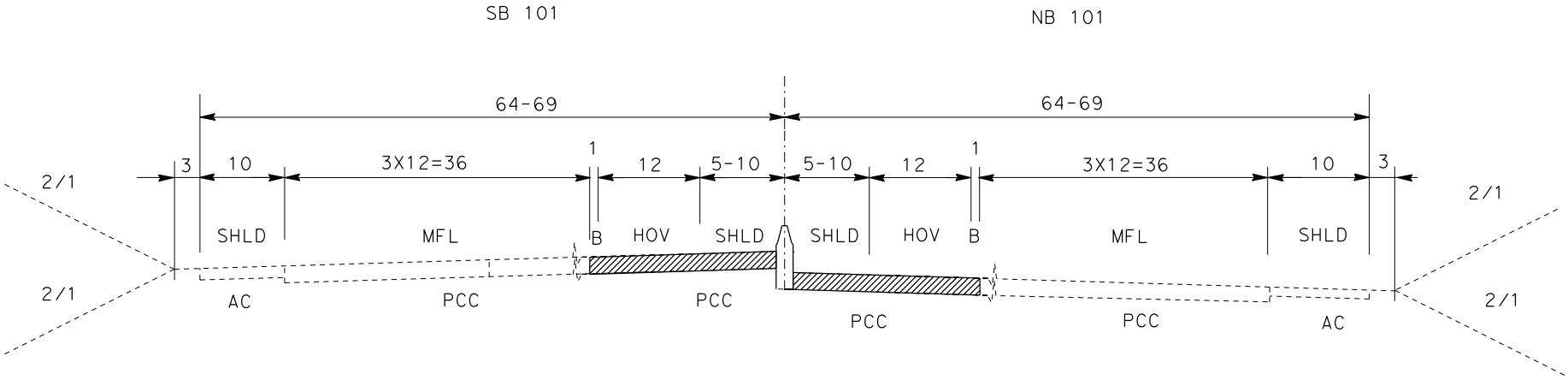


PROPOSED

STANDARD WIDTH HOV LANES
( Freeway Tangent Section )

ATTACHMENT C

ALTERNATIVE 2

# CROSS SECTIONS

From PM 17.04 To PM 18.01  From PM 18.97 To PM 21.69

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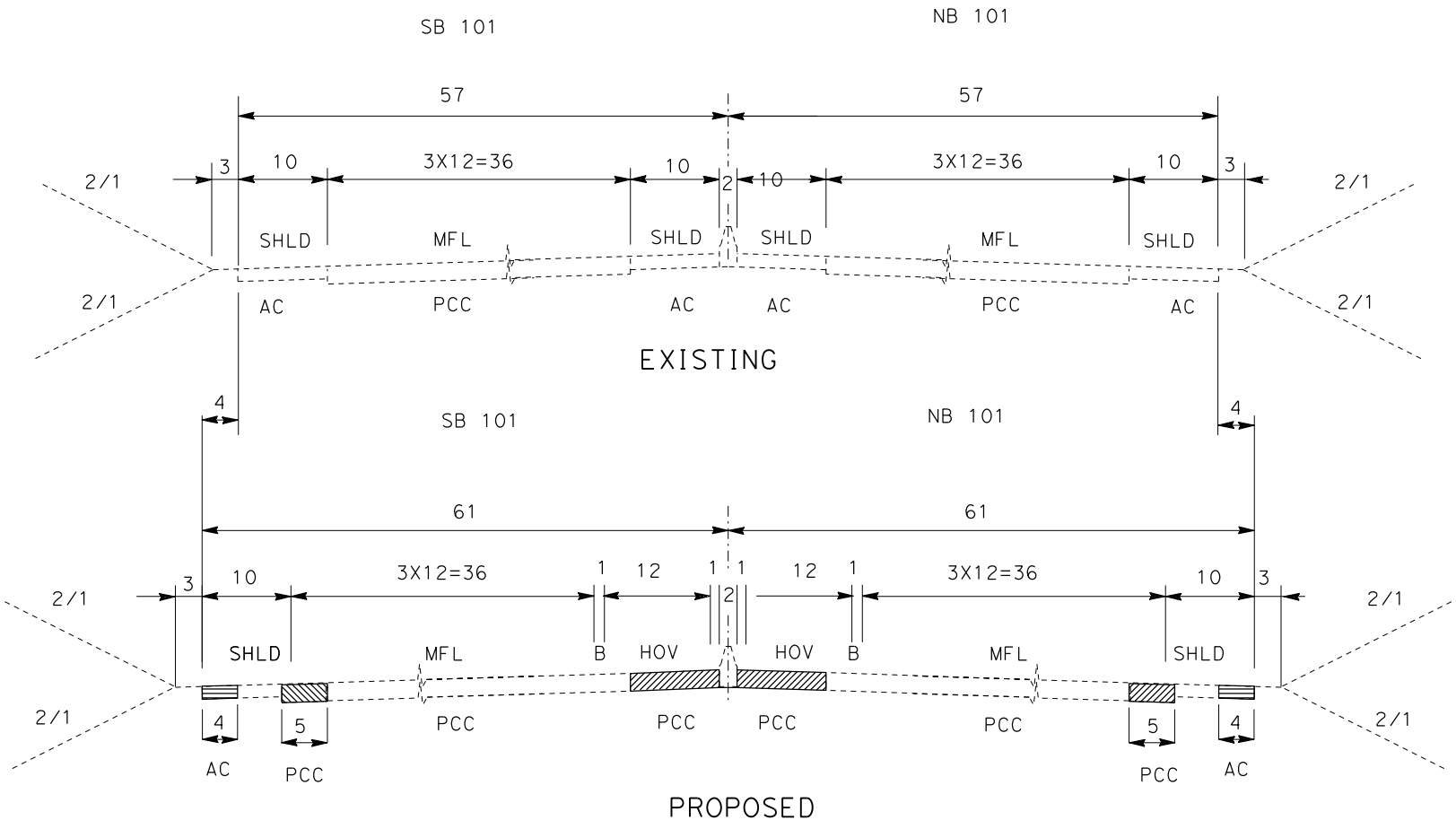


STANDARD WIDTH HOV LANES
( Freeway Tangent Section )

ATTACHMENT C
ALTERNATIVE 2
SHEET 4 OF 27

# CROSS SECTIONS

From PM 22.00 To PM R23.98

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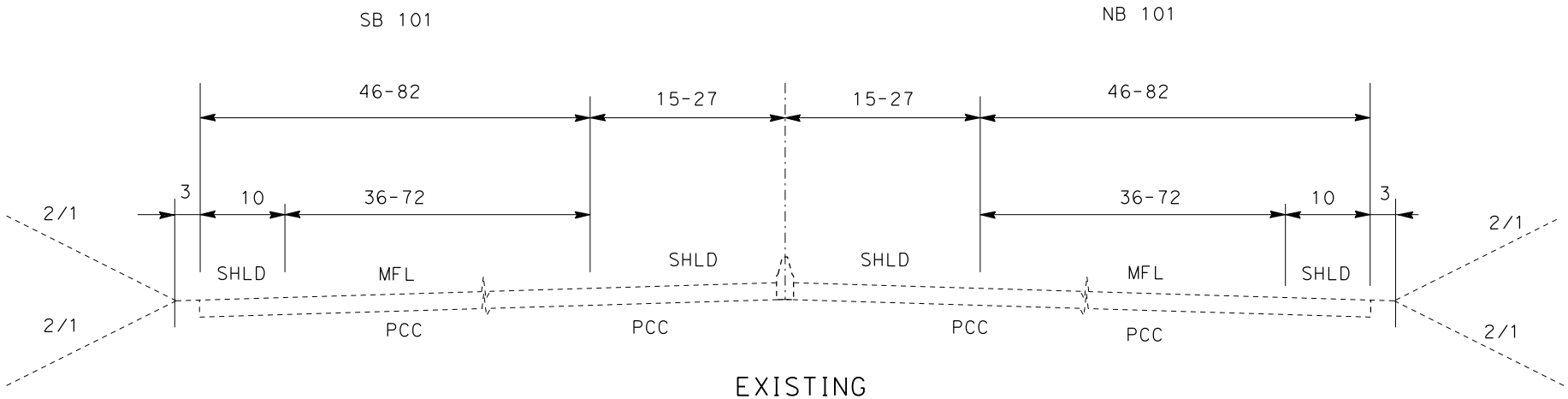


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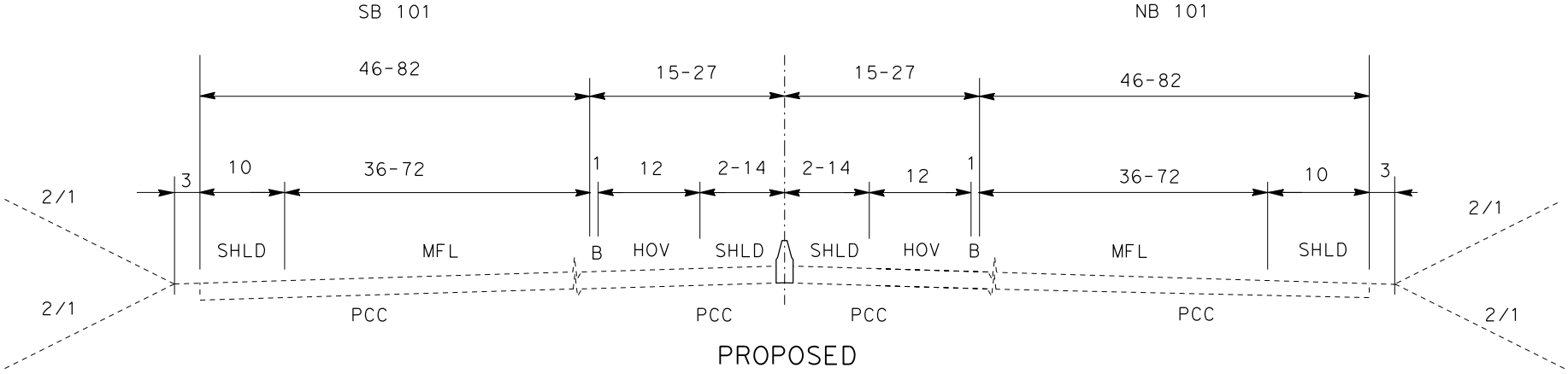



PROPOSED

STANDARD WIDTH HOV LANES
( Freeway Tangent Section )

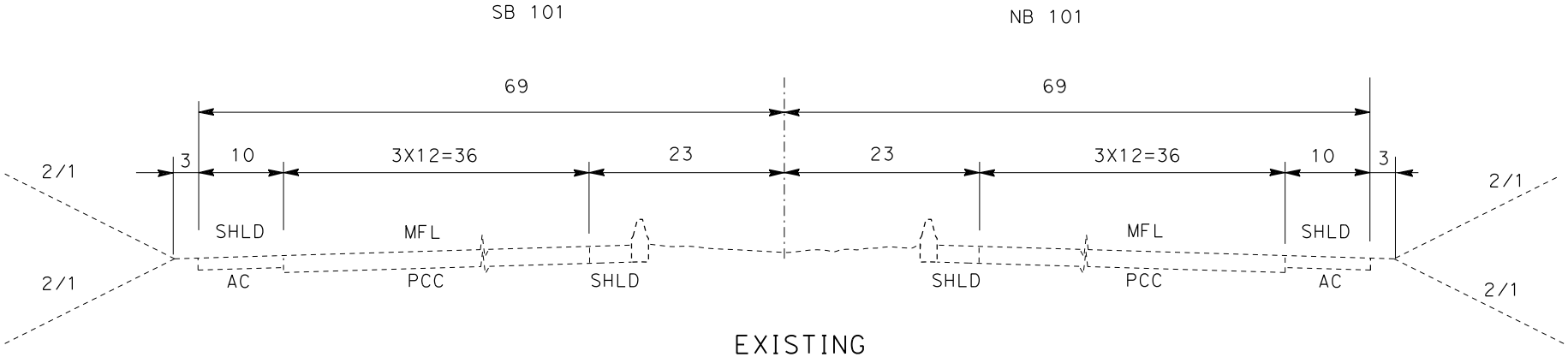
ATTACHMENT C

ALTERNATIVE 2

# CROSS SECTIONS

From PM R23.98 To PM 30.90

(No Scale)

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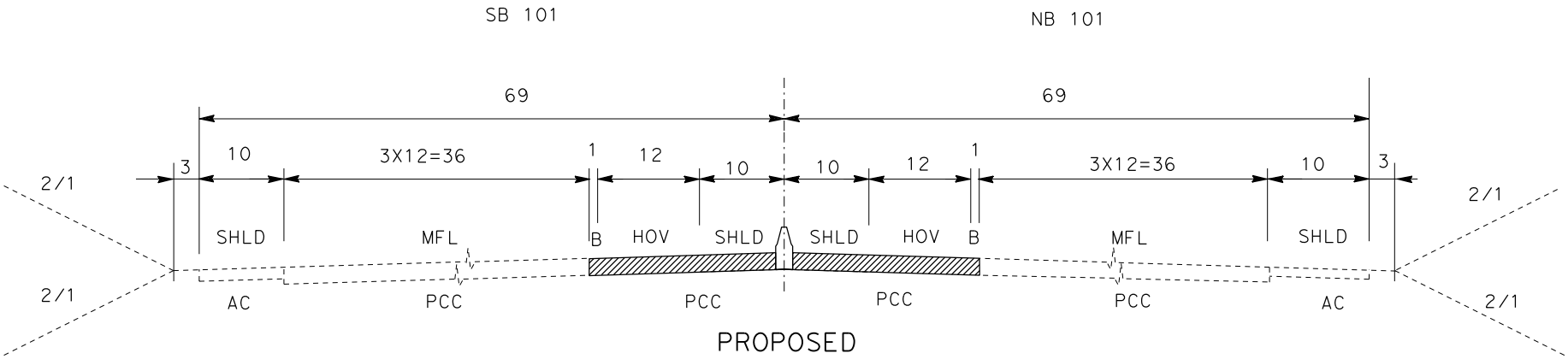


PROPOSED

STANDARD WIDTH HOV LANES
( Freeway Tangent Section )

ATTACHMENT C

ALTERNATIVE 2

# CROSS SECTIONS

From PM 4.10 To PM 23.98

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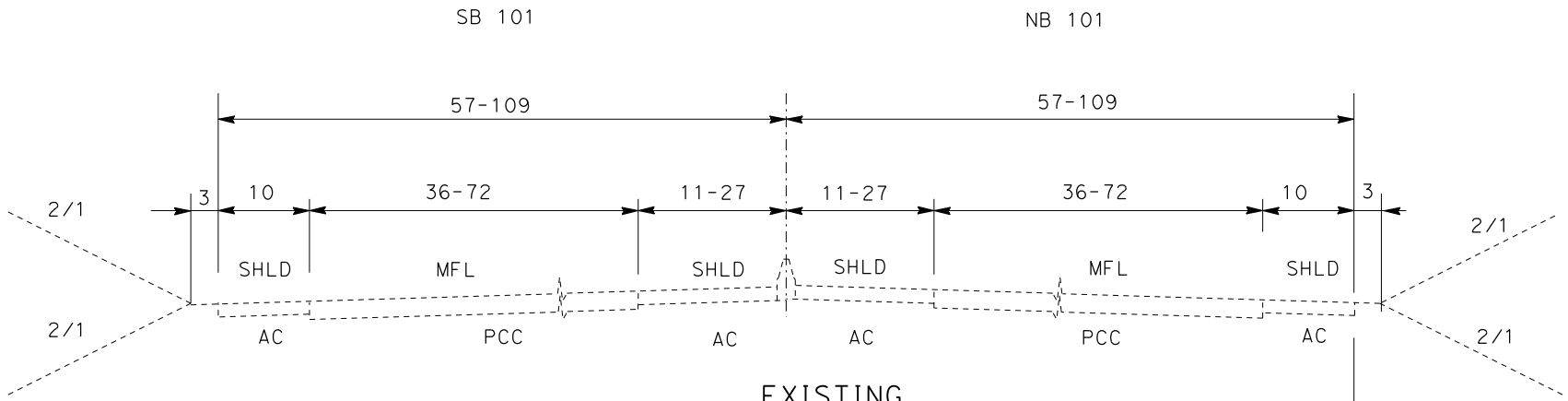


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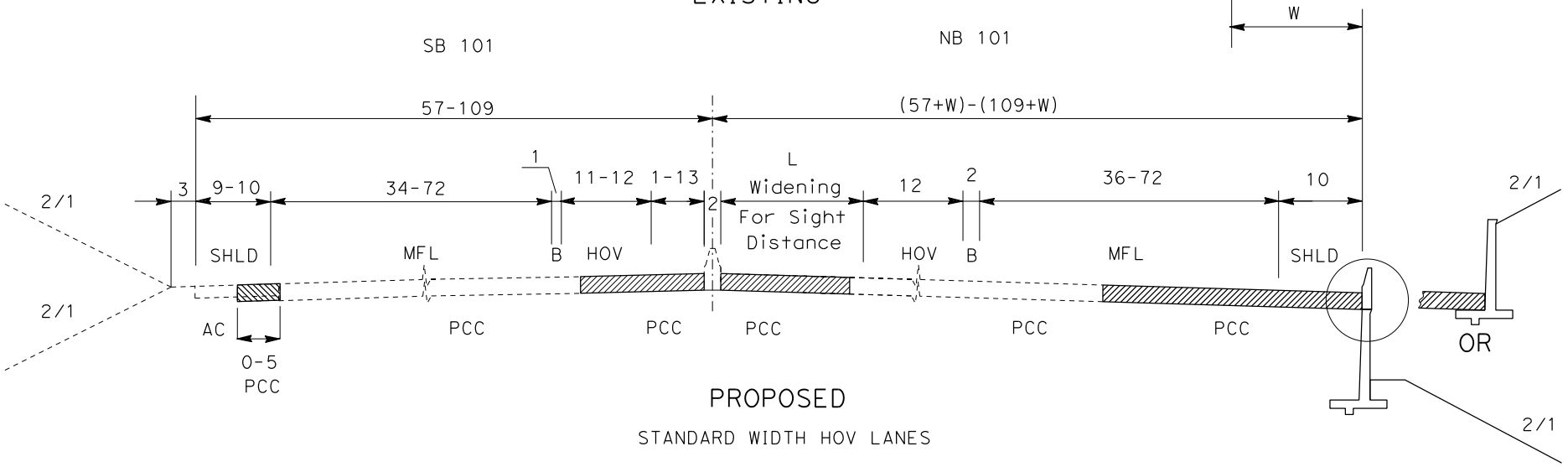



PROPOSED

STANDARD WIDTH HOV LANES

| Northbound at Horizontal Curve Locations | |
|---|---|
| R=3,500′, L=10′, W=14′ | R=3,000′, L=12′, W=16′ |
| R=2,000′, L=21′, W=25′ | R=1,500′, L=30′, W=34′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

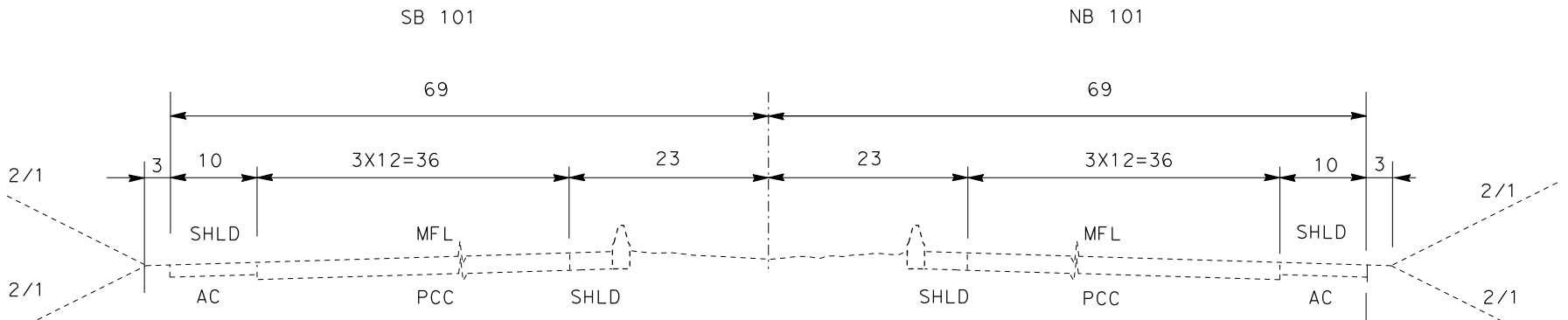
ATTACHMENT C

ALTERNATIVE 2

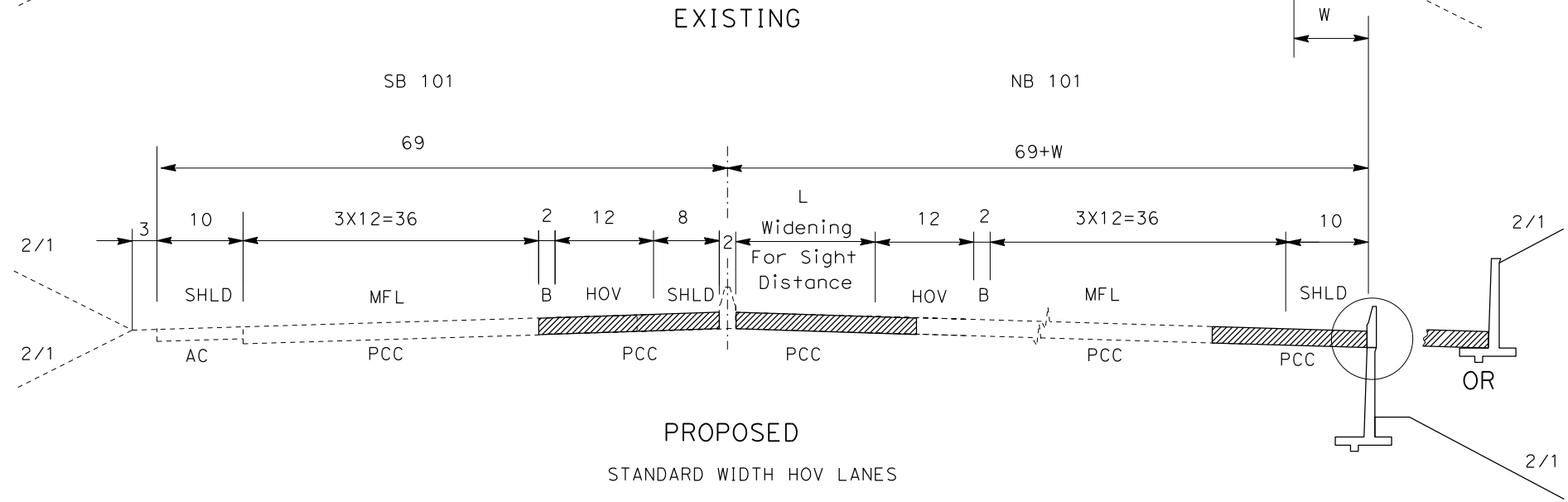
# CROSS SECTIONS

From PM R23.98 To PM 30.90

(No Scale)




EXISTING




PROPOSED

STANDARD WIDTH HOV LANES

| Northbound at Horizontal Curve Locations | |
|---|---|
| R=3,000′, L=12′, W= 4′ | R=2,500′, L=16′, W= 8′ |
| R=2,000′, L=21′, W= 13′ | R=1,500′, L=30′, W= 22′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

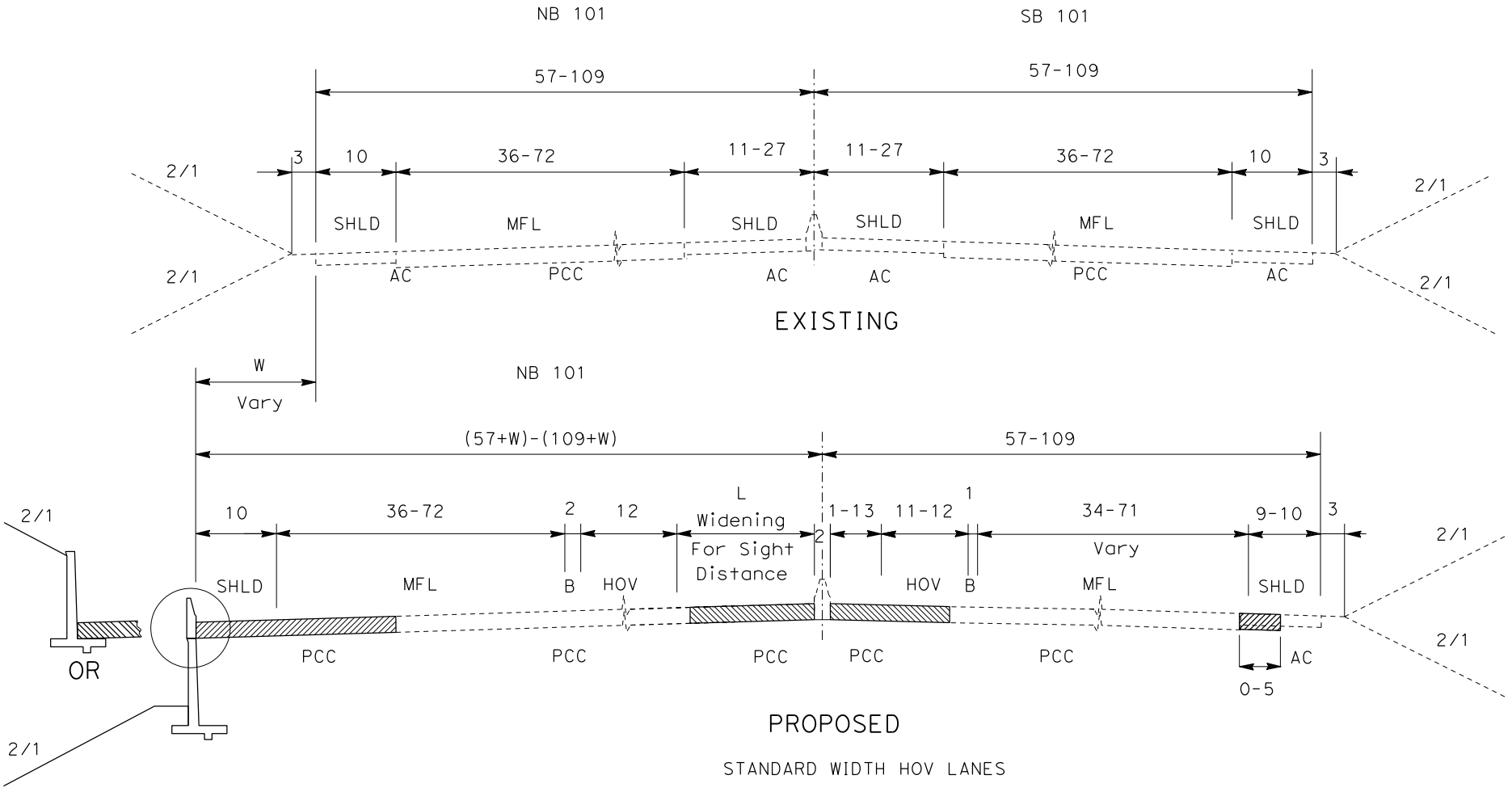
ATTACHMENT C

ALTERNATIVE 2

# CROSS SECTIONS

From PM 4.10 To PM R23.98

(No Scale)




| Southbound at Horizontal Curve Locations | |
|---|---|
| R=3,500′, L=10′, W=14′ | R=3,000′, L=12′, W=16′ |
| R=2,000′, L=21′, W=25′ | R=1,500′, L=30′, W=34′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

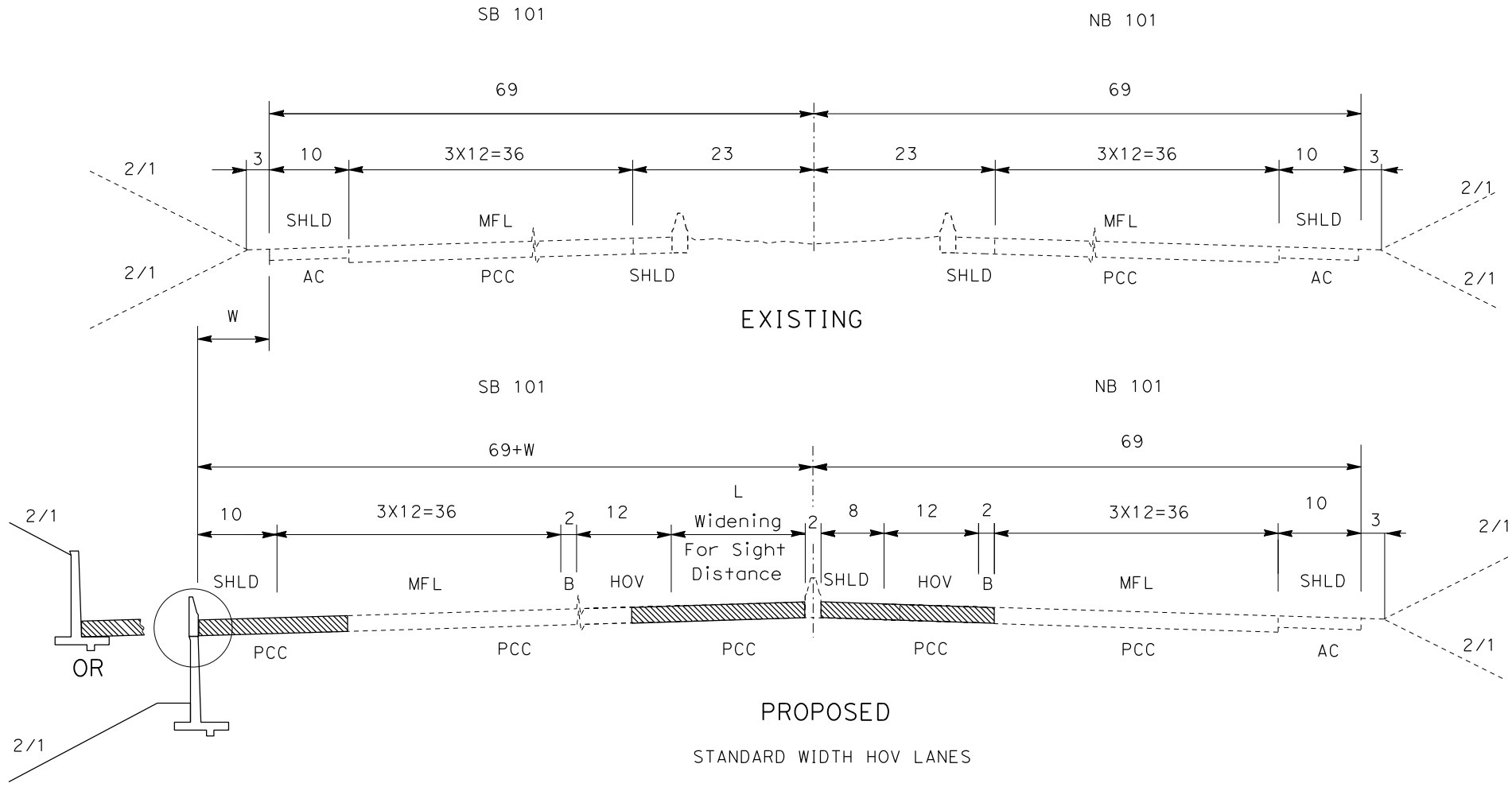
ATTACHMENT C

ALTERNATIVE 2

# CROSS SECTIONS

From PM R23.98 To PM 30.90

(No Scale)




| Southbound at Horizontal Curve Locations | |
|---|---|
| R=3,000′, L=12′, W= 4′ | R=2,500′, L=16′, W= 8′ |
| R=2,000′, L=21′, W= 13′ | R=1,500′, L=30′, W= 22′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

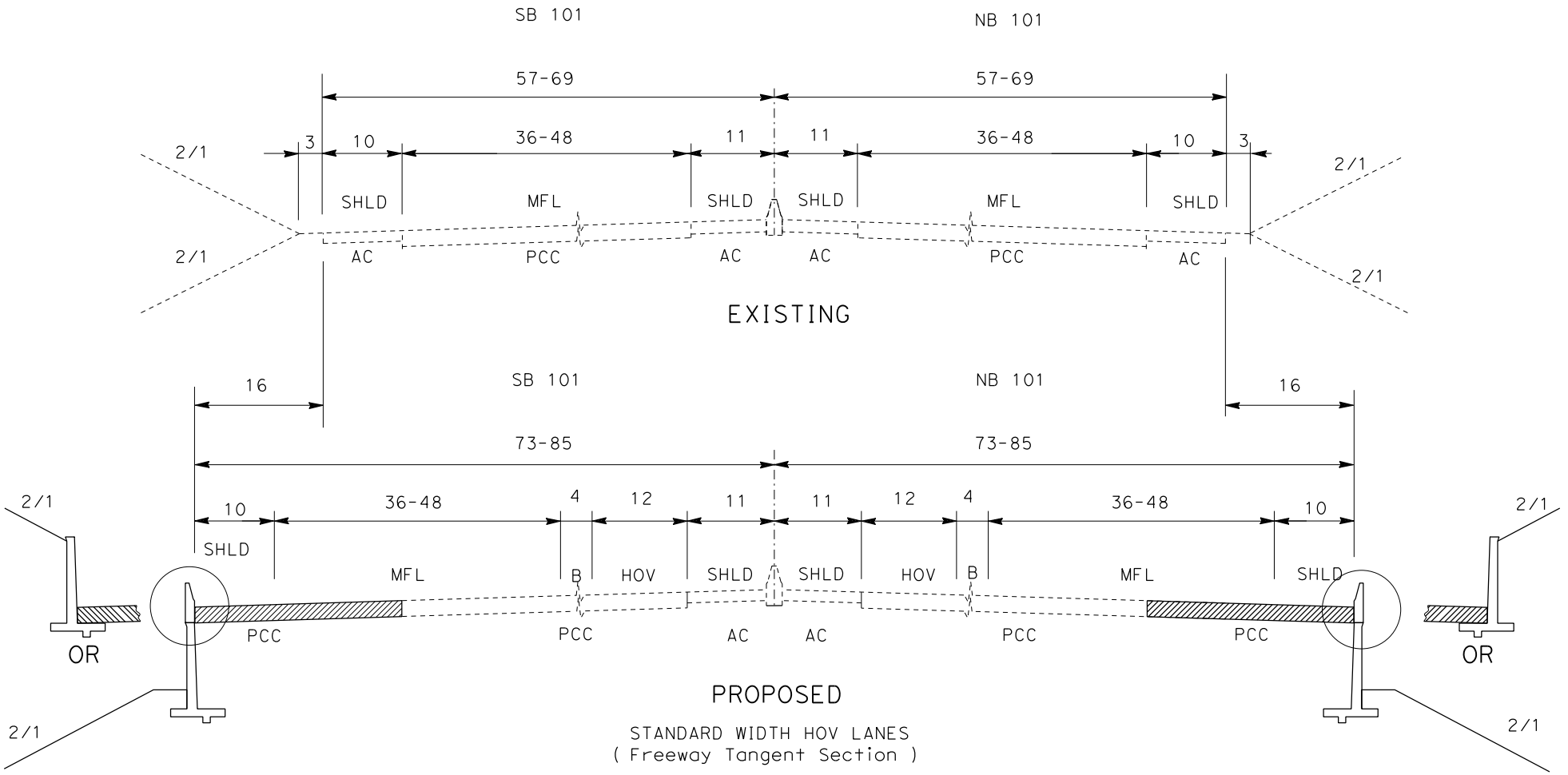
ATTACHMENT C

ALTERNATIVE 2

# CROSS SECTIONS

From PM 4.10 To PM 14.80, From PM 17.04 To PM 18.01, From PM 18.97 To PM 21.69

(No Scale)




ATTACHMENT C

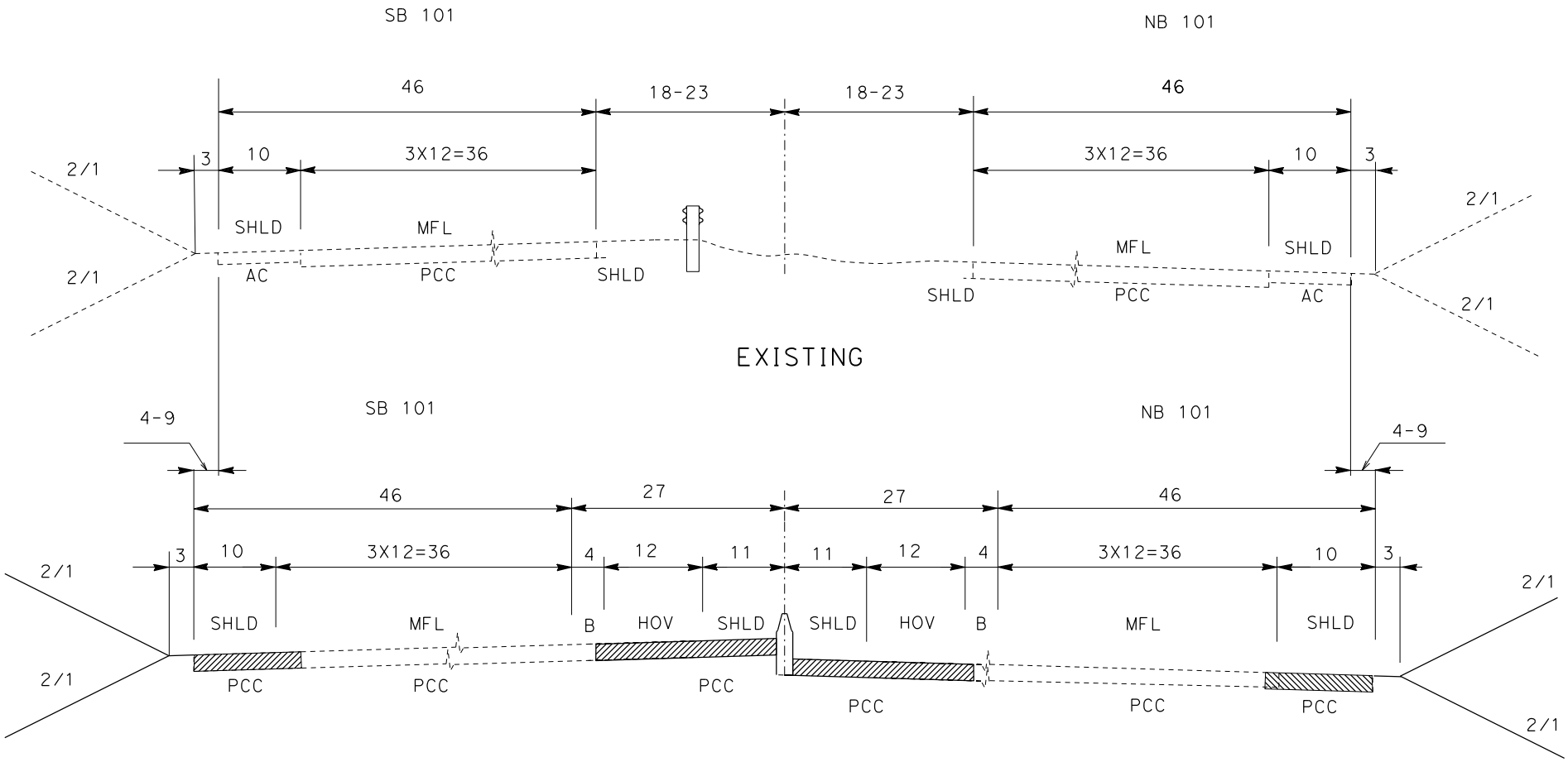
ALTERNATIVE 3

SHEET 11 OF 27

# CROSS SECTIONS

From PM 14.80 To PM 17.04, From PM 18.01 To PM 18.97, From PM 21.69 To PM 22.00

(No Scale)




PROPOSED

STANDARD WIDTH HOV LANES
( Freeway Tangent Section )

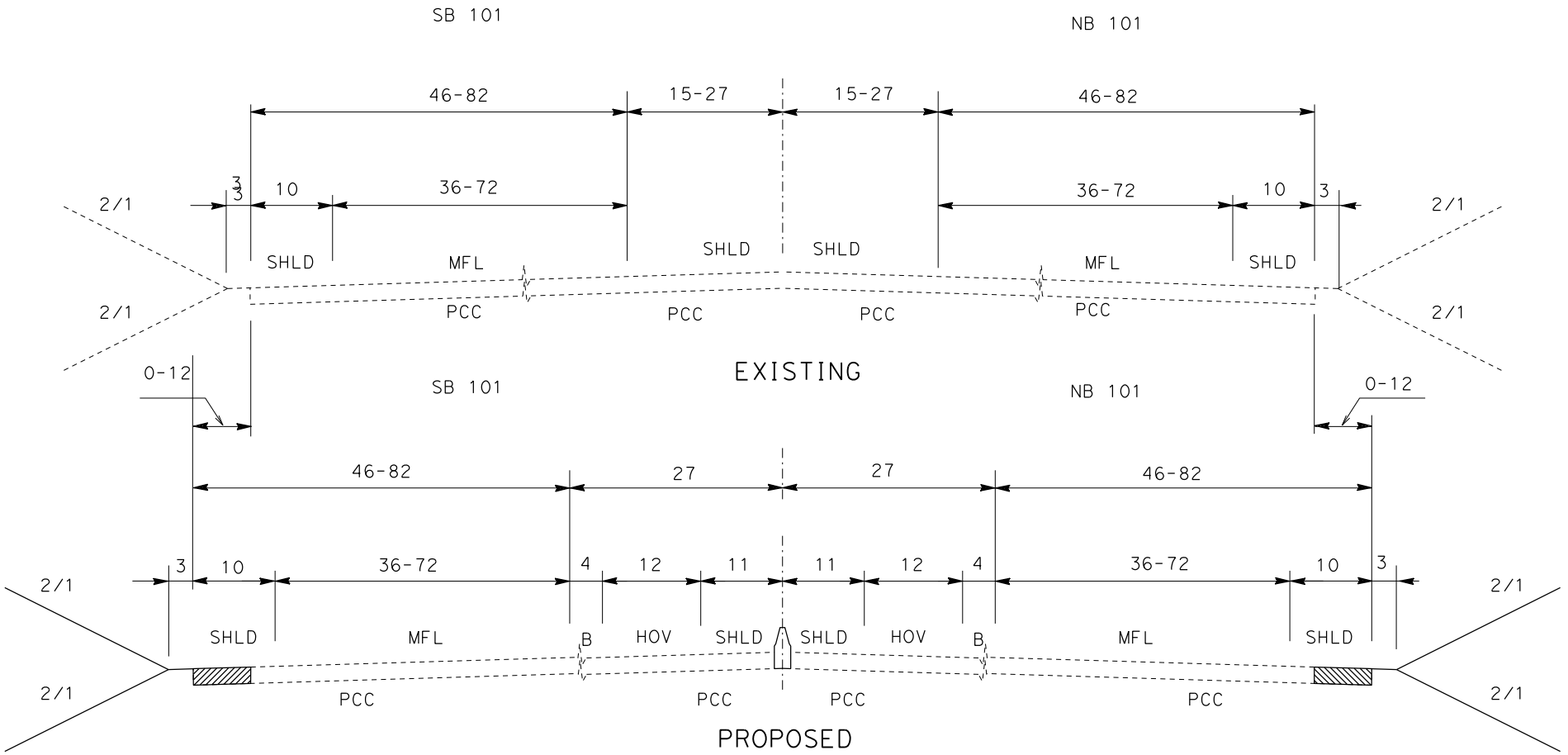
ATTACHMENT C

ALTERNATIVE 3

# CROSS SECTIONS

From PM 22.00 To PM R23.98

(No Scale)




STANDARD WIDTH HOV LANES
( Freeway Tangent Section )

ATTACHMENT C

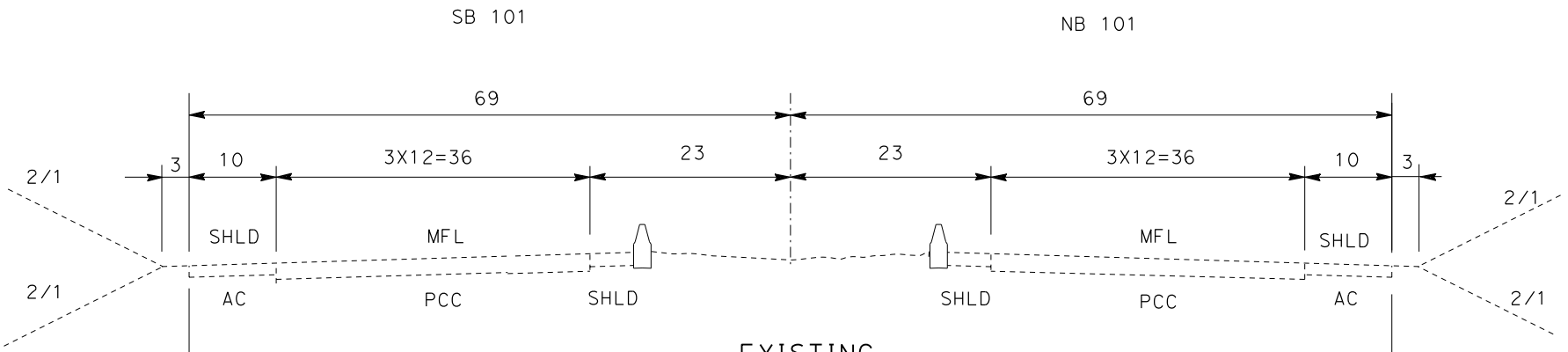
ALTERNATIVE 3

SHEET 13 OF 27

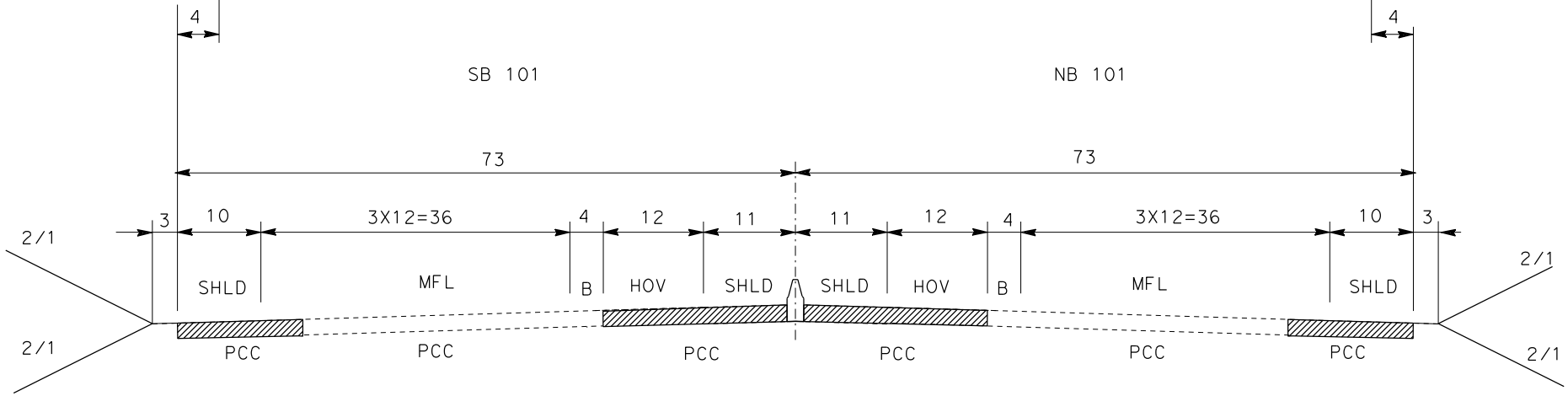
# CROSS SECTIONS

PM R23.98 To PM 30.90

(No Scale)




EXISTING




PROPOSED

STANDARD WIDTH HOV LANES
( Freeway Tangent Section )

ATTACHMENT C

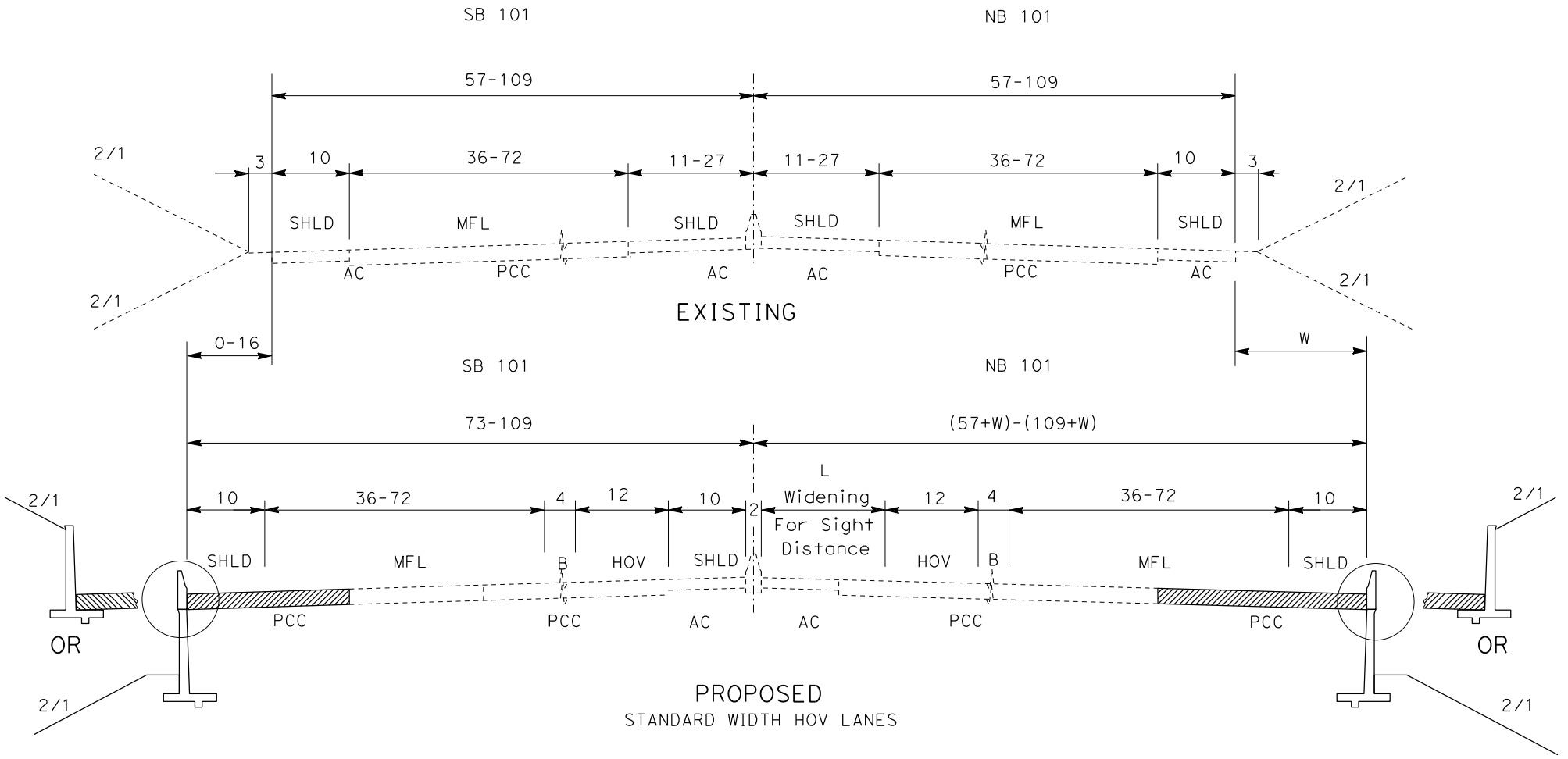
ALTERNATIVE 3

SHEET 14 OF 27

# CROSS SECTIONS

From PM 4.10 To PM R23.98

(No Scale)




| Northbound at Horizontal Curve Locations | |
|---|---|
| R=3,500′, L=10′, W=16′ | R=3,000′, L=12′, W=18′ |
| R=2,000′, L=21′, W=27′ | R=1,500′, L=30′, W=36′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

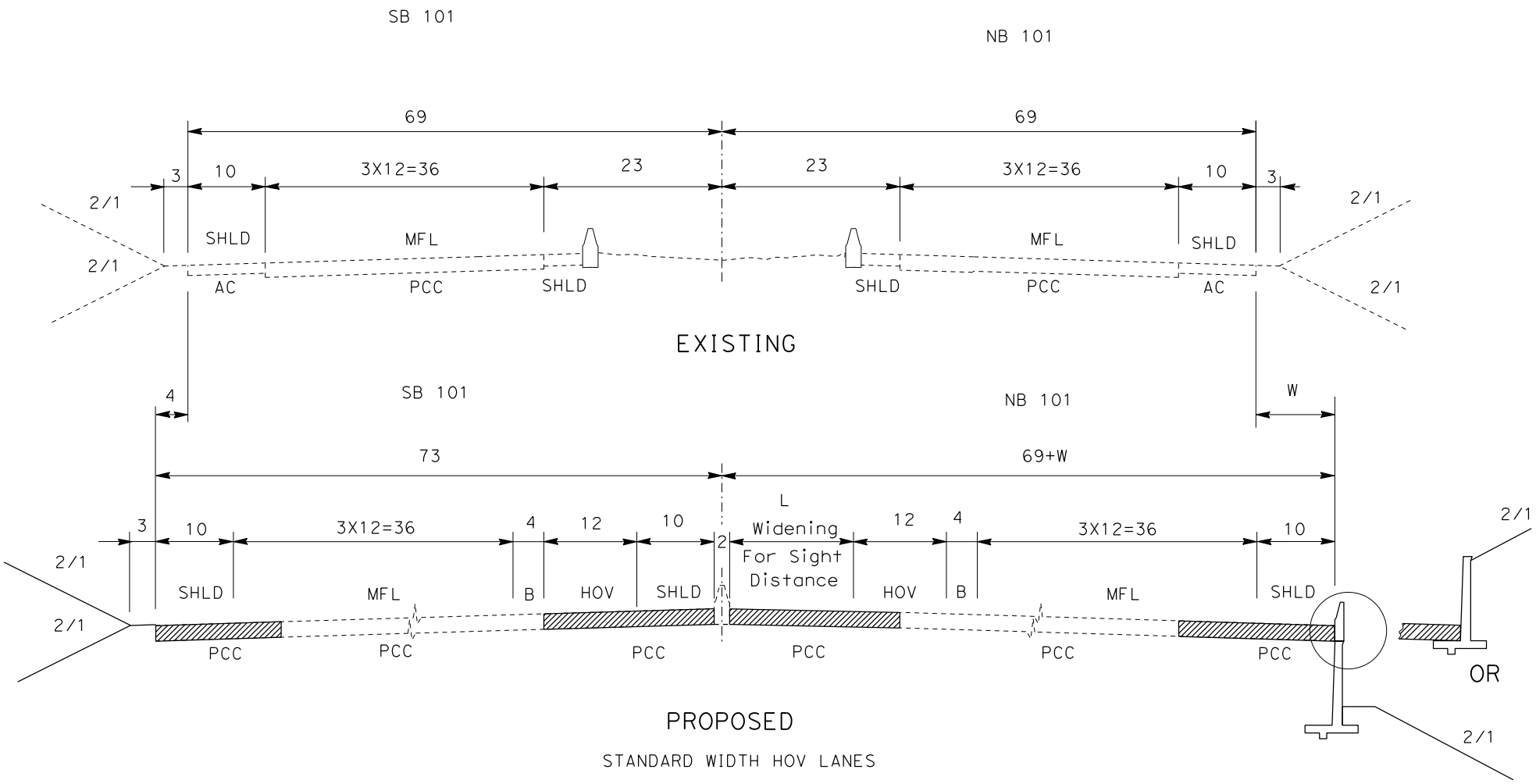
ATTACHMENT C

ALTERNATIVE 3

# CROSS SECTIONS

From PM R23.98 To PM 30.90

(No Scale)




| Northbound at Horizontal Curve Locations | |
|---|---|
| R=3,000′, L=12′, W= 6′ | R=2,500′, L=16′, W= 10′ |
| R=2,000′, L=21′, W= 15′ | R=1,500′, L=30′, W= 24′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

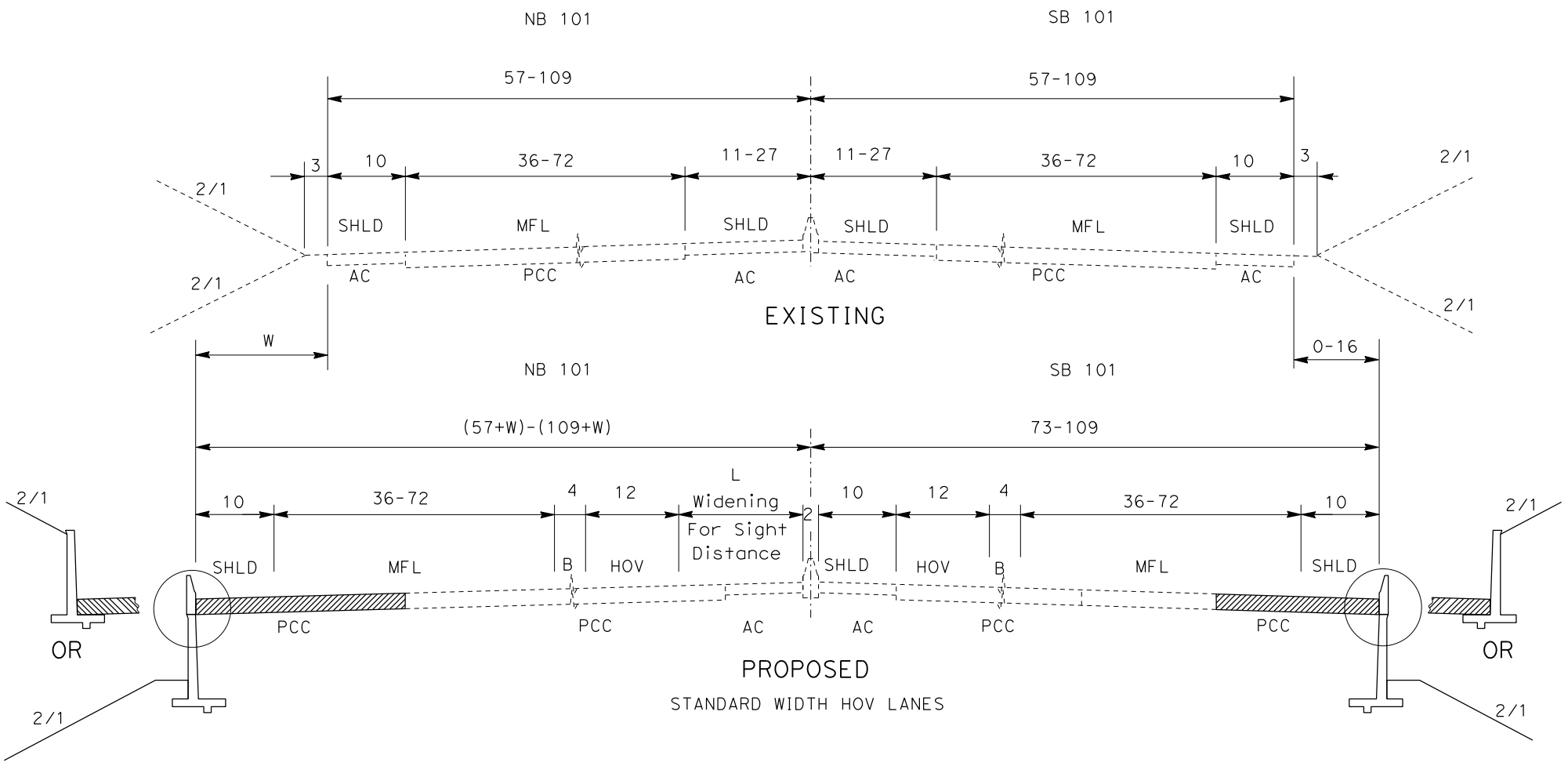
ATTACHMENT C

ALTERNATIVE 3

# CROSS SECTIONS

From PM 4.10 To PM R23.98

(No Scale)




| Southbound at Horizontal Curve Locations | |
|---|---|
| R=3,500′, L=10′, W=16′ | R=3,000′, L=12′, W=18′ |
| R=2,000′, L=21′, W=27′ | R=1,500′, L=30′, W=36′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

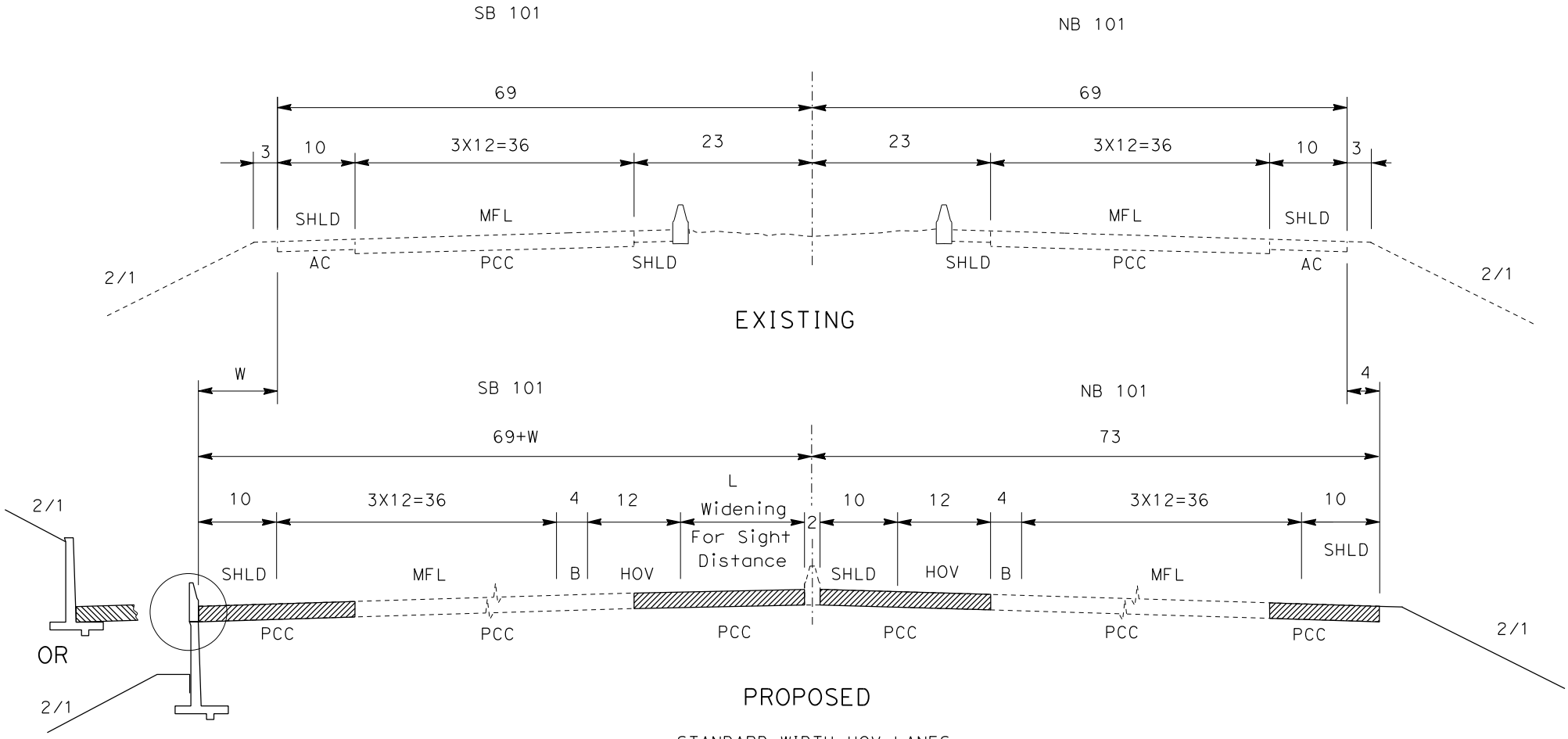
ATTACHMENT C

ALTERNATIVE 3

# CROSS SECTIONS

From PM R23.98 To PM 30.90

(No Scale)




STANDARD WIDTH HOV LANES

| Southbound at Horizontal Curve Locations | |
|---|---|
| R=3,000′, L=12′, W= 6′ | R=2,500′, L=16′, W= 10′ |
| R=2,000′, L=21′, W= 15′ | R=1,500′, L=30′, W= 24′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

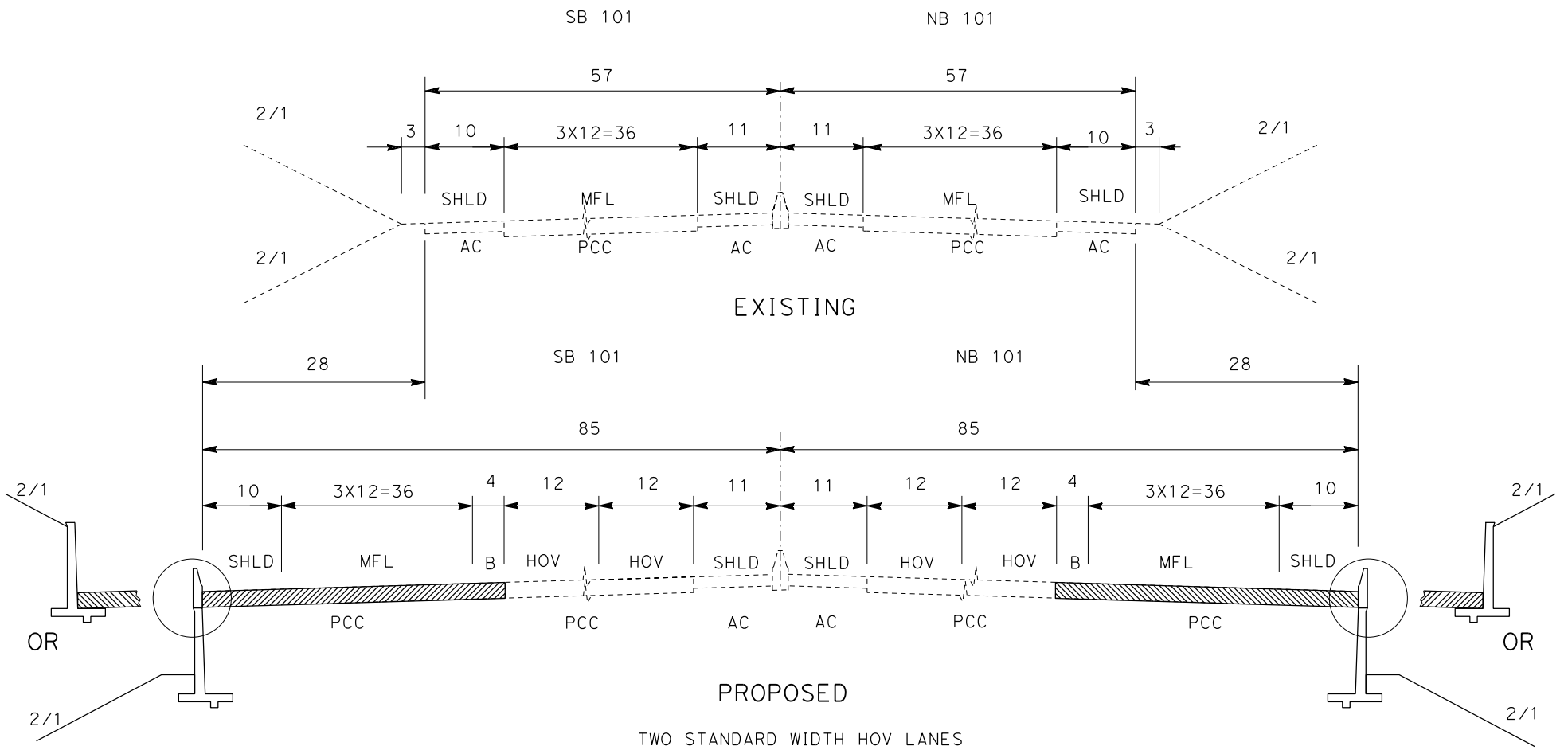
ATTACHMENT C

ALTERNATIVE 3

# CROSS SECTIONS

From PM 4.10 To PM 14.80, From PM 17.04 To PM 18.01, From PM 18.97 To PM 21.69

(No Scale)




ATTACHMENT C

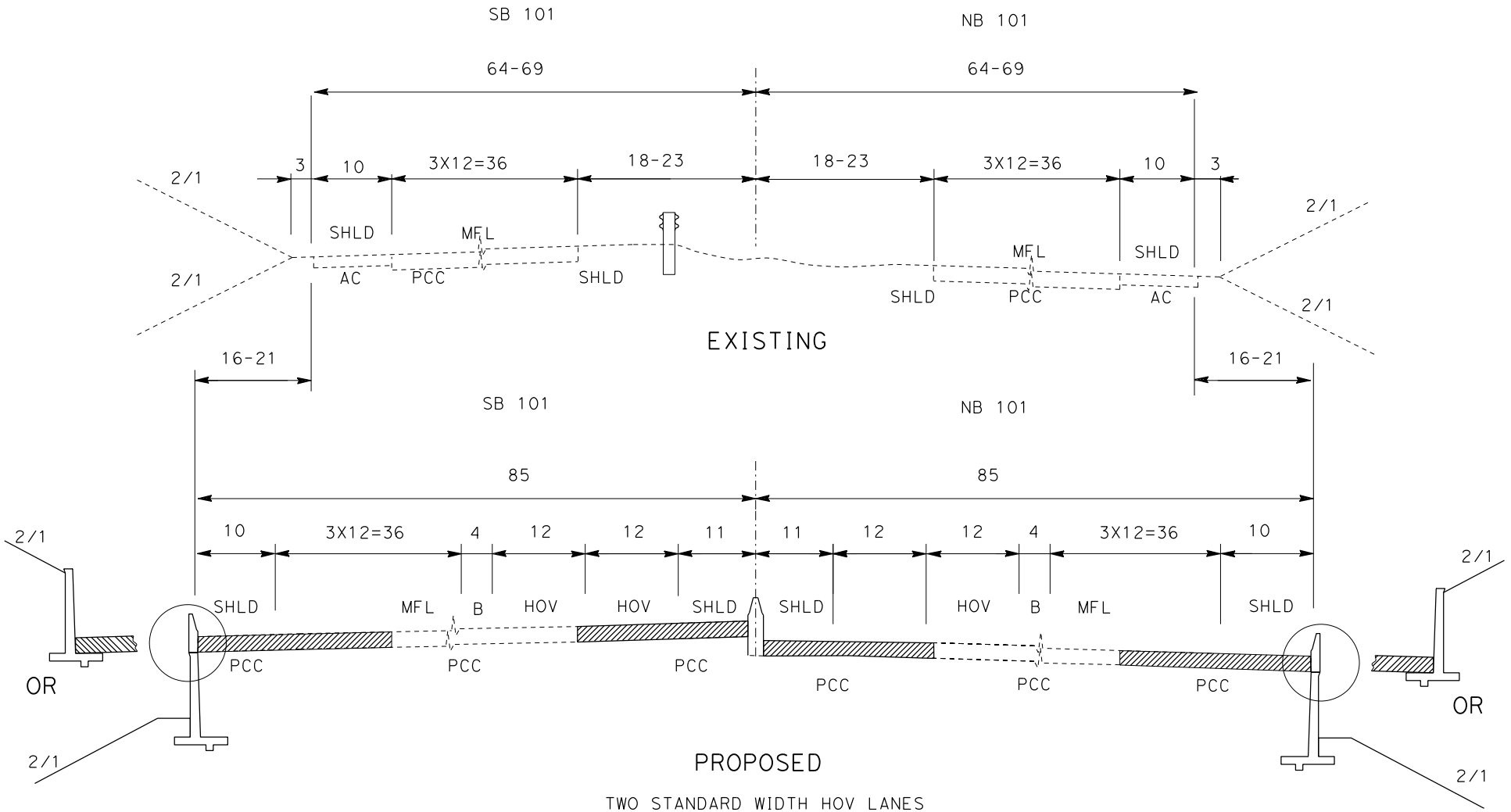
ALTERNATIVE 4

SHEET 19 OF 27

# CROSS SECTIONS

From PM 14.80 To PM 17.04, From PM 18.01 To PM 18.97, From PM 21.69 To PM 22.00

(No Scale)




TWO STANDARD WIDTH HOV LANES
( Freeway Tangent Section )

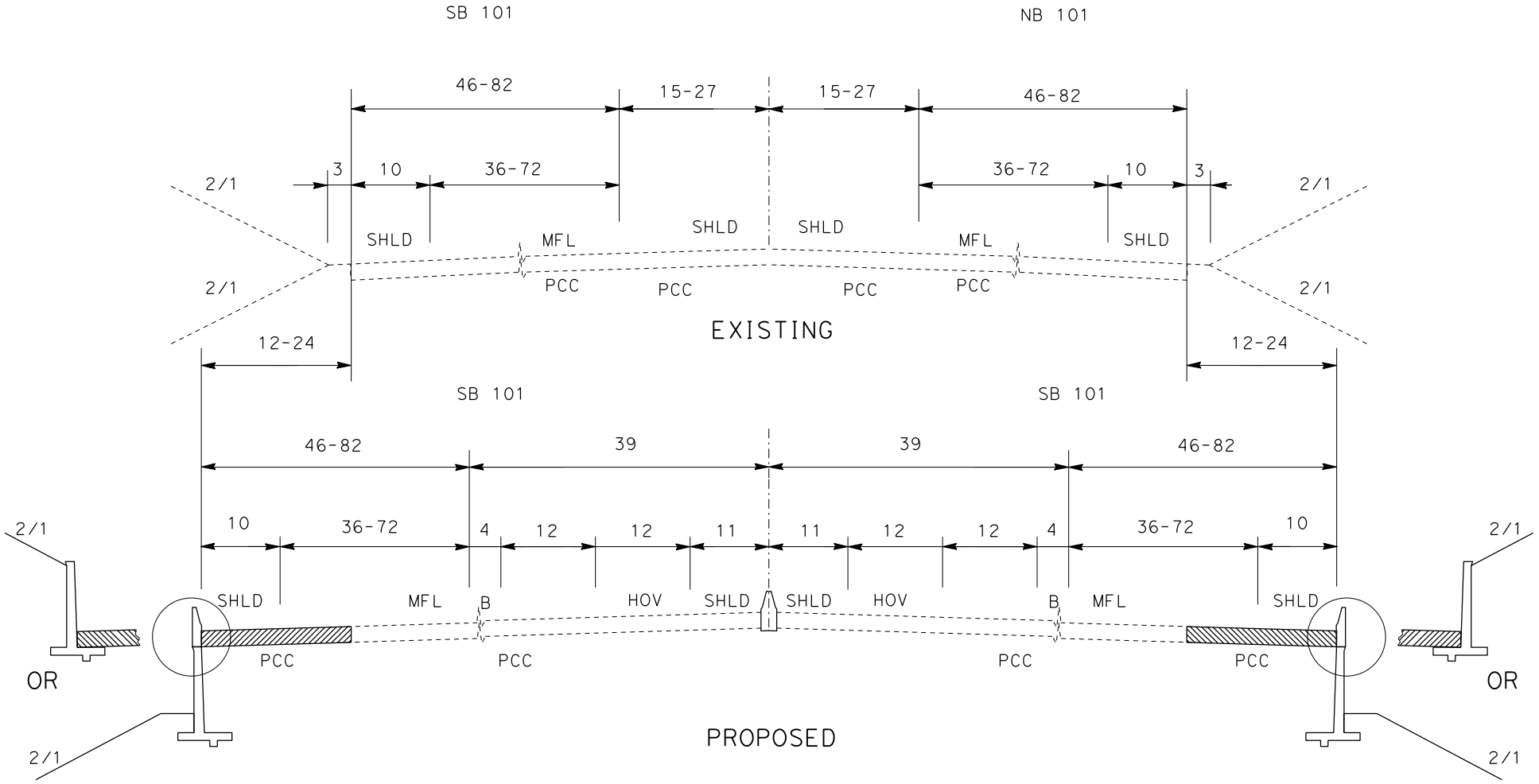
ATTACHMENT C

ALTERNATIVE 4

# CROSS SECTIONS

From PM 22.00 To PM R23.98

(No Scale)




TWO STANDARD WIDTH HOV LANES
( Freeway Tangent Section )

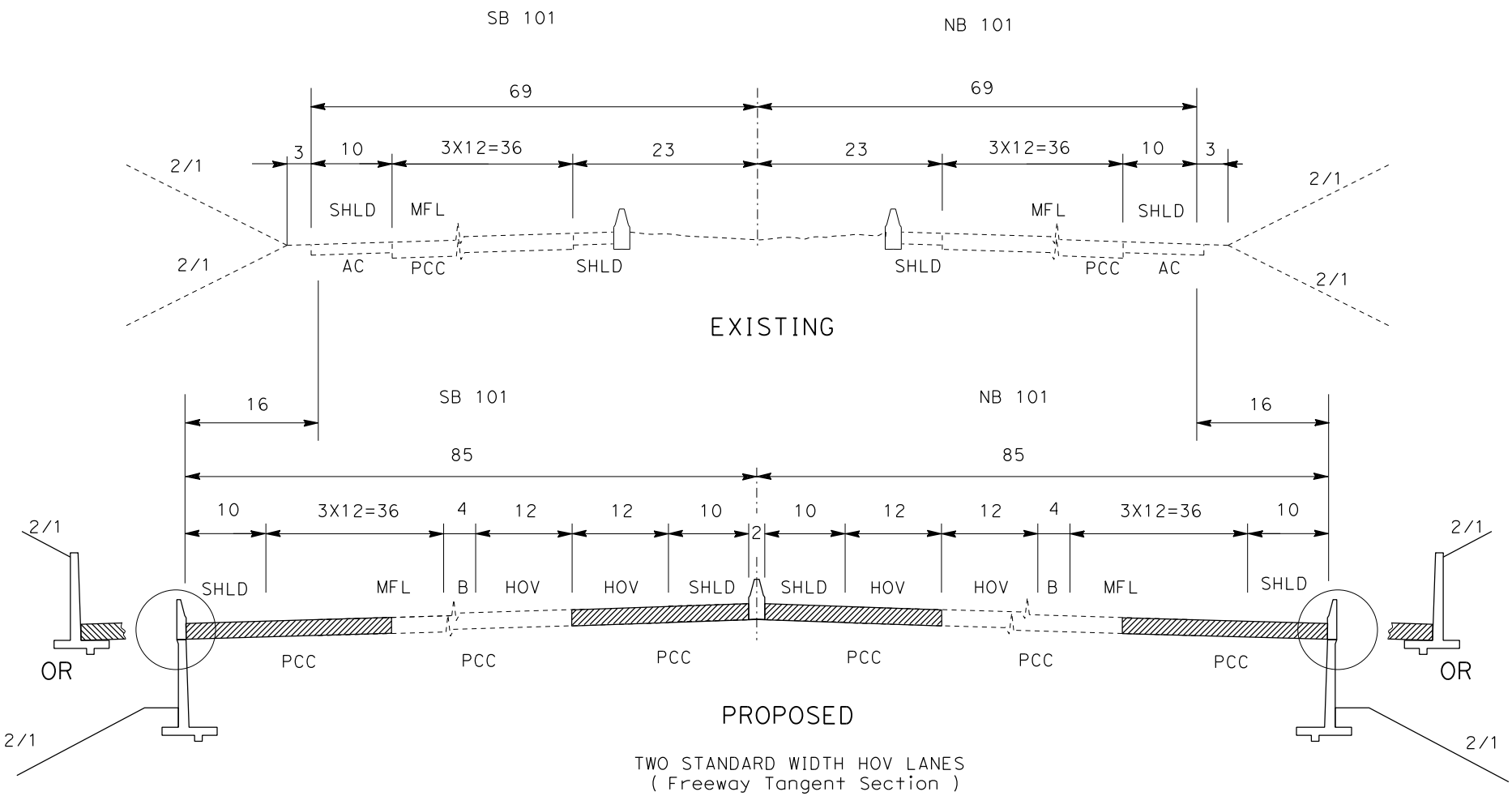
ATTACHMENT C

ALTERNATIVE 4

# CROSS SECTIONS

PM R23.98 To PM 30.90

(No Scale)




ATTACHMENT C

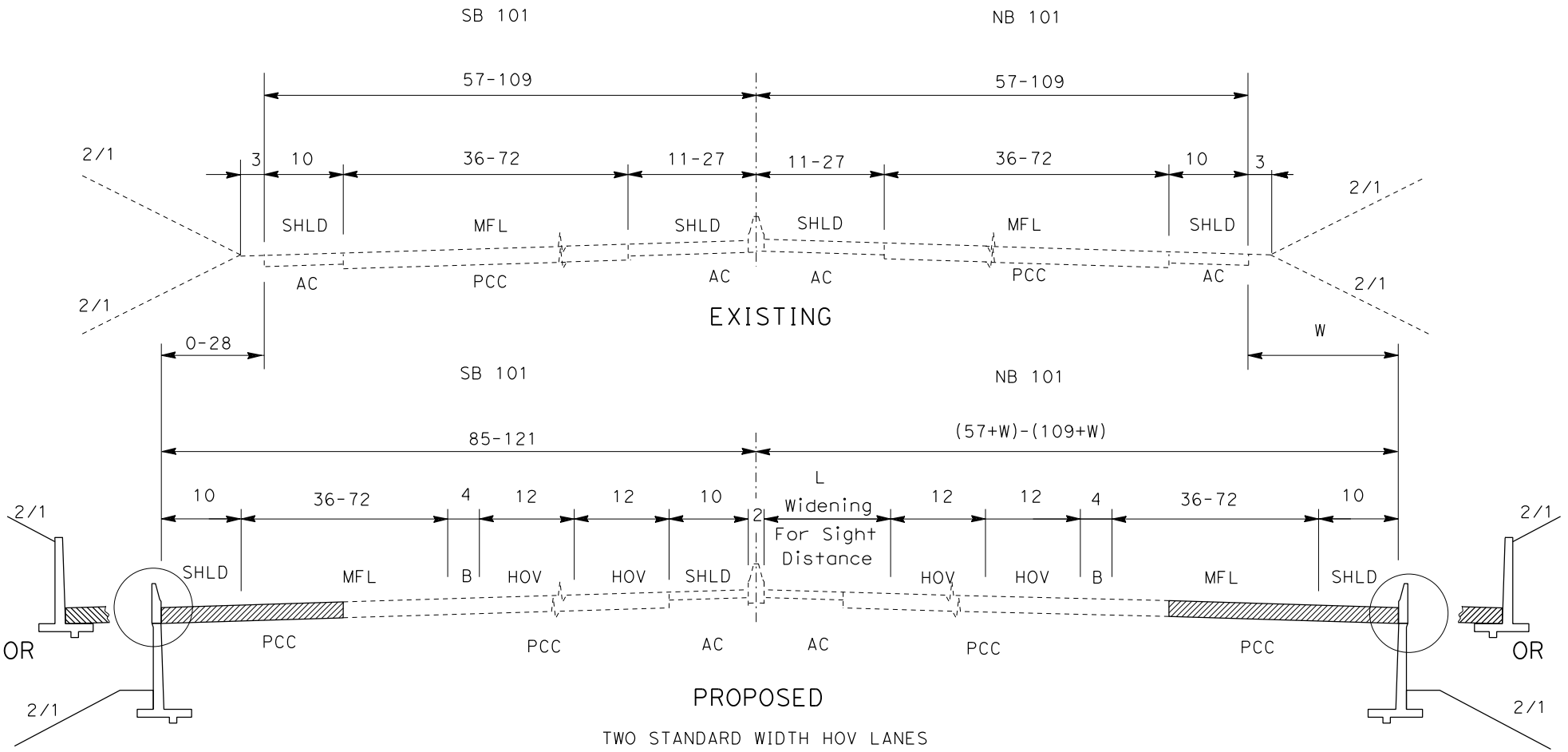
ALTERNATIVE 4

SHEET 22 OF 27

# CROSS SECTIONS

From PM 4.10 To PM R23.98

(No Scale)




| Northbound at Horizontal Curve Locations | |
|---|---|
| R=3,500′, L=10′, W=28′ | R=3,000′, L=12′, W=30′ |
| R=2,000′, L=21′, W=39′ | R=1,500′, L=30′, W=48′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

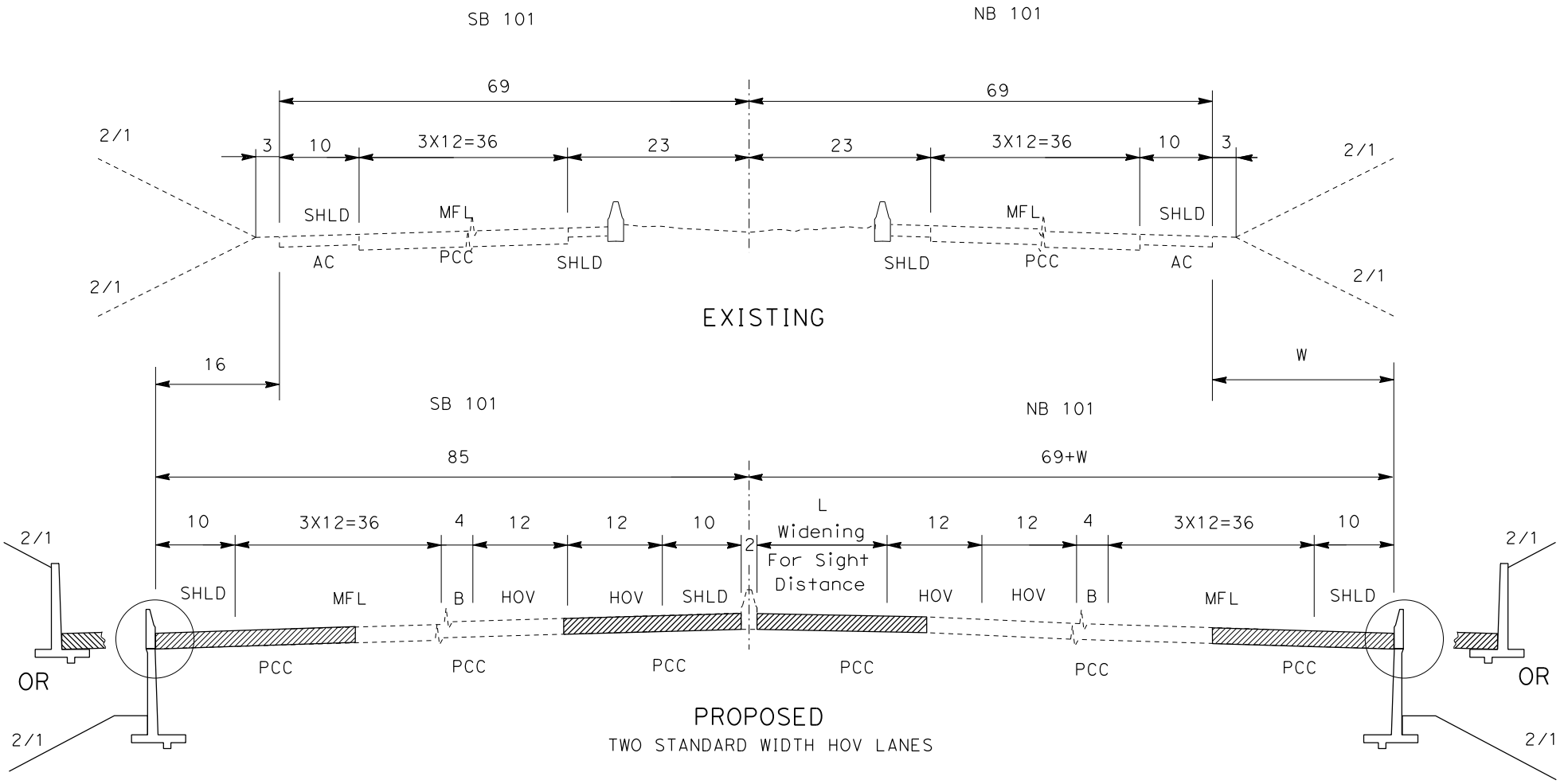
ATTACHMENT C

ALTERNATIVE 4

# CROSS SECTIONS

From PM R23.98 To PM 30.90

(No Scale)




| Northbound at Horizontal Curve Locations | |
|---|---|
| R=3,000′, L=12′, W=18′ | R=2,500′, L=16′, W=22′ |
| R=2,000′, L=21′, W=27′ | R=1,500′, L=30′, W=36′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

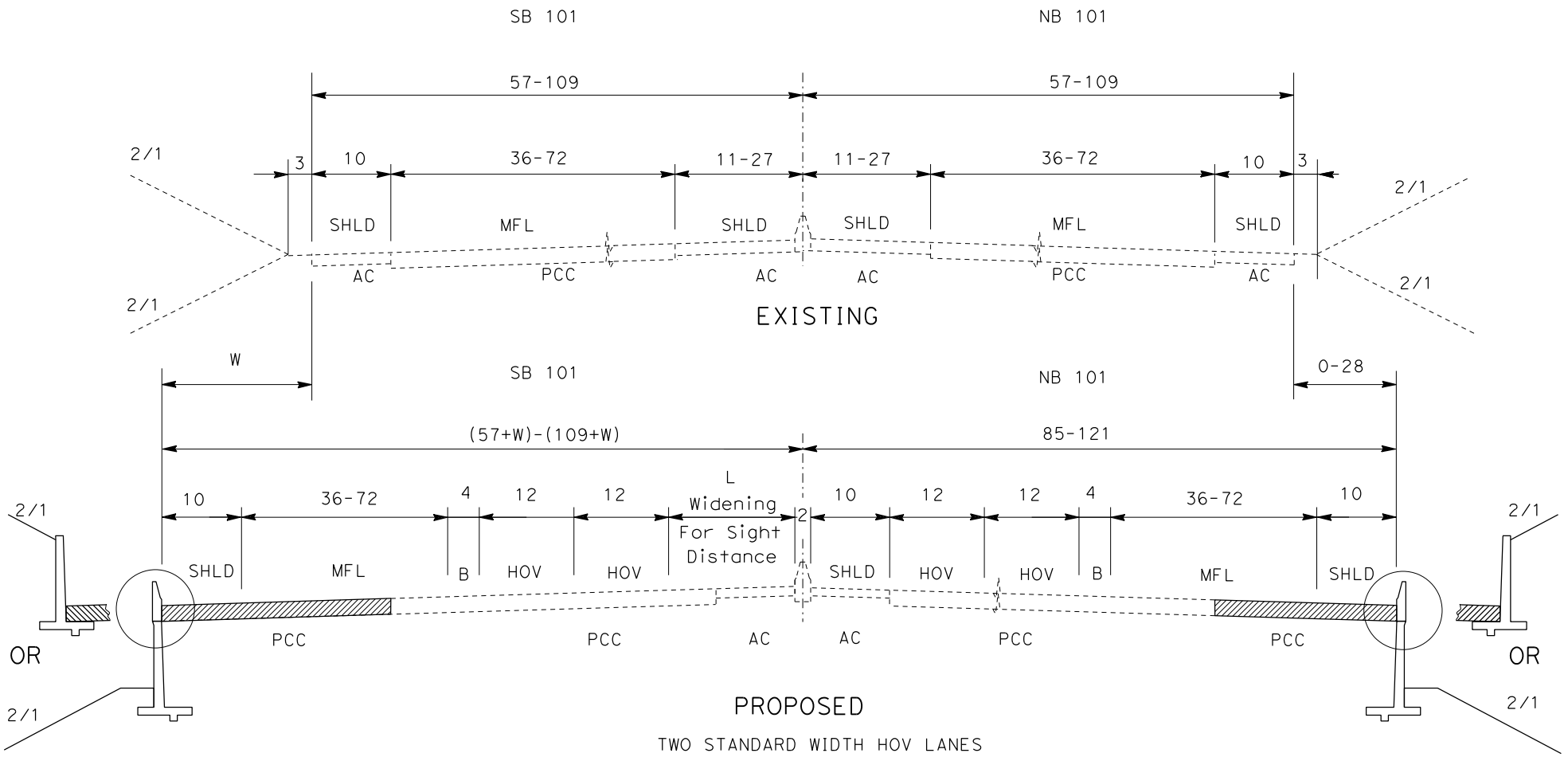
ATTACHMENT C

ALTERNATIVE 4

# CROSS SECTIONS

From PM 4.10 To PM R23.98

(No Scale)




| Southbound at Horizontal Curve Locations | |
|---|---|
| R=3,500′, L=10′, W=28′ | R=3,000′, L=12′, W=30′ |
| R=2,000′, L=21′, W=39′ | R=1,500′, L=30′, W=48′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

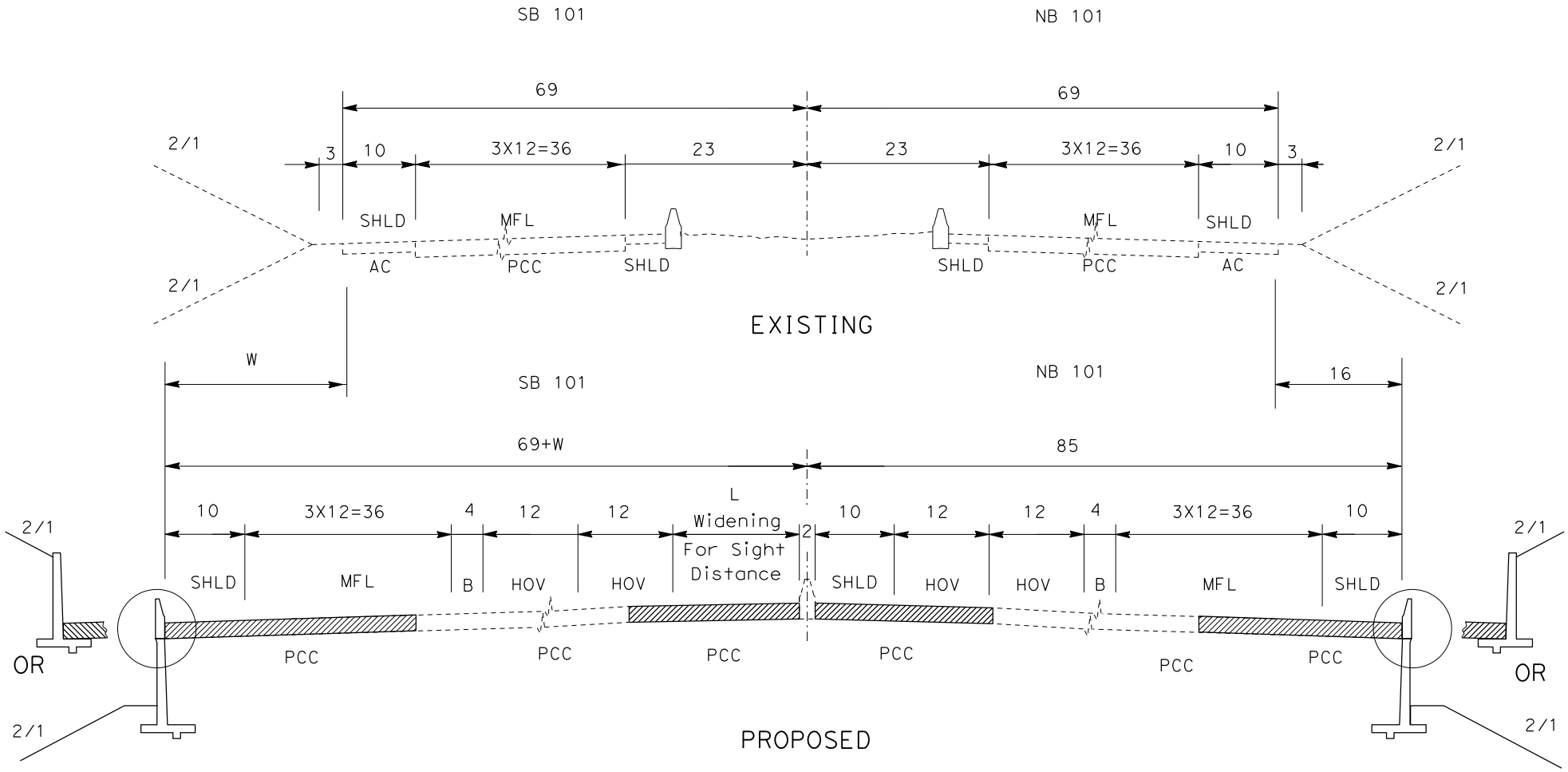
ATTACHMENT C

ALTERNATIVE 4

# CROSS SECTIONS

From PM R23.98 To PM 30.90

(No Scale)




| Southbound at Horizontal Curve Locations | |
|---|---|
| R=3,000′, L=12′, W=18′ | R=2,500′, L=16′, W=22′ |
| R=2,000′, L=21′, W=27′ | R=1,500′, L=30′, W=36′ |

(The List of the Horizontal Curves are on Sheet 27)

W: Outside Widening Width

L: Widening Width for Sight Distance

ATTACHMENT C

ALTERNATIVE 4

# LOCATION OF HORIZONTAL CURVES ON US-101

| | | From PM | To PM | Radius | Curve Length |
|---|---|---|---|---|---|
| 1 | SB | 4.11 | 4.36 | 3,000 | 1,300 |
| 2 | NB | 5.06 | 5.41 | 3,000 | 1,800 |
| 3 | SB | 6.93 | 7.16 | 3,000 | 1,200 |
| 4 | SB | 8.38 | 8.49 | 2,900 | 590 |
| 5 | NB | 9.11 | 9.28 | 1,500 | 1,000 |
| 6 | SB | 9.38 | 9.48 | 1,500 | 500 |
| 7 | NB | 9.57 | 9.66 | 2,000 | 500 |
| 8 | SB | 10.12 | 10.49 | 2,000 | 2,000 |
| 9 | NB | 10.55 | 10.84 | 1,500 | 1,400 |
| 10 | SB | 11.07 | 11.2 | 1,500 | 1,400 |
| 11 | NB | 11.28 | 11.55 | 3,000 | 1,400 |
| 12 | NB | 12.58 | 12.77 | 3,000 | 1,100 |
| 13 | SB | 13.51 | 13.66 | 3,000 | 800 |
| 14 | NB | 13.88 | 14.05 | 3,000 | 800 |
| 15 | SB | 21.49 | 21.89 | 3,500 | 2,200 |
| 16 | NB | 22.37 | 22.73 | 3,500 | 1,900 |
| 17 | NB | 26.19 | 26.94 | 3,000 | 3,958 |
| 18 | SB | 27.1 | 27.56 | 2,000 | 2,352 |
| 19 | SB | 28.23 | 28.61 | 3,000 | 2,030 |
| 20 | NB | 28.74 | 29.23 | 2,500 | 2,600 |
| 21 | SB | 29.31 | 29.56 | 2,000 | 1,334 |
| 22 | NB | 29.82 | 30.17 | 3,000 | 1,900 |
| 23 | SB | 30.52 | 30.65 | 2,000 | 650 |

# Capital Outlay Project Estimates

**ATTACHMENT – D**

# Project Study Report – Project Development Support
# Capital Outlay Project Estimate

| | |
|---|---|
| Dist - Co - Rte | 7 - VEN - 101 |
| PM | 4.1/30.9 |
| Program Code | 40.50.075.651 |
| Project Number | 0713000249 |
| Month/Year | December 2013 |

PROJECT DESCRIPTION

Limits: From ± S. Moorpark Road (PM 4.1) to ± State Route 33 (PM 30.9)

Proposed Improvement (Scope): Adds a nonstandard width HOV lane in each direction.[1]

Alternative: 2

**SUMMARY OF PROJECT COST ESTIMATE**

| | | |
|---|---|---|
| Total Roadway Items | $ | 472,000,000 |
| Total Structure Items | $ | 71,488,000 |
| Total Environmental Mitigation Items | $ | 15,000,000 |
| Subtotal Construction Costs | $ | 558,488,000 |
| Total Right-of-Way Items | $ | 15,000,000 |
| Total Project Capital Outlay Costs | $ | 573,488,000 |
| Use | $ | 575,000,000 |

Cost Range $575,000,000 - $690,000,000

Note:

***The capital outlay project estimates provided are not for programming purposes. The breadth of range is based on available information and reasonable assumptions.***

[1] This alternative proposes nonstandard width HOV lanes from PM 4.1 to PM 14.8 and standard width lanes from PM 14.8 to PM 30.9.

## I. ROADWAY ITEMS

| | Average Cost per Lane Mile | | Number of Lane Miles | | Total Cost |
|---|---|---|---|---|---|
| Total Cost | $ 8,805,970 | x | 53.6 | = | $ 472,000,000 |

Explanation:

The Average cost per lane mile (above) includes, and may not limited to the following items:

1. Earthwork
2. Pavement Structural Section(s)
3. Drainage
4. Specialty Items
5. Traffic Items
6. Minor Items
7. Mobilization

## II. STRUCTURE ITEMS

| | | |
|---|---|---|
| Retaining Walls | $ | 15,800,000 |
| Structure Replacement/Widening | $ | 55,688,000 |
| Total Structure Items | $ | 71,488,000 |

Explanation:

The above figures were provided by the Division of Engineering Services and include the following:

1. widen under-crossings
2. new retaining walls
3. replace over-crossings

These figures include mobilization and contingencies.

## III. ENVIRONMENTAL MITIGATION

| | | |
|---|---|---|
| Environmental Mitigation & Compliance | $ | 15,000,000 |

## IV. RIGHT OF WAY ITEMS

| | | |
|---|---|---|
| Acquisition, Including Excess Lands, Damage to Remainders and Goodwill | $ | *TBD* |
| Utility Relocation (State Share) | $ | *TBD* |
| Total Right of Way Items | $ | 15,000,000 |

| | |
|---|---|
| Anticipated Date of Right-of-Way Certification (Date to which values are escalated) | Dec. 2022/Jan. 2023 |

# Project Study Report – Project Development Support
# Capital Outlay Project Estimate

| | |
|---|---|
| Dist - Co - Rte | 7 - VEN - 101 |
| PM | 4.1/30.9 |
| Program Code | 40.50.075.651 |
| Project Number | 0713000249 |
| Month/Year | December 2013 |

PROJECT DESCRIPTION

Limits: From ± S. Moorpark Road (PM 4.1) to ± State Route 33 (PM 30.9)

Proposed Improvement (Scope): Adds a standard width HOV lane in each direction.

Alternative: 3

**SUMMARY OF PROJECT COST ESTIMATE**

| | | |
|---|---|---|
| Total Roadway Items | $ | 1,031,000,000 |
| Total Structure Items | $ | 204,800,000 |
| Total Environmental Mitigation Items | $ | 39,000,000 |
| Subtotal Construction Costs | $ | 1,274,800,000 |
| Total Right-of-Way Items | $ | 100,000,000 |
| Total Project Capital Outlay Costs | $ | 1,374,800,000 |
| Use | $ | 1,375,000,000 |

Cost Range $1,375,000,000 - $1,650,000,000

Note:

***The capital outlay project estimates provided are not for programming purposes. The breadth of range is based on available information and reasonable assumptions.***

## I. ROADWAY ITEMS

| | Average Cost per Lane Mile | | Number of Lane Miles | | Total Cost |
|---|---|---|---|---|---|
| Total Cost | $ 19,235,075 | x | 53.6 | = | $ 1,031,000,000 |

Explanation:

The Average cost per lane mile (above) includes, and may not limited to the following items:

1. Earthwork
2. Pavement Structural Section(s)
3. Drainage
4. Specialty Items
5. Traffic Items
6. Minor Items
7. Mobilization

## II. STRUCTURE ITEMS

| | | |
|---|---|---|
| Retaining Walls | $ | 66,040,000 |
| Structure Replacement/Widening | $ | 138,760,000 |
| Total Structure Items | $ | 204,800,000 |

Explanation:

The above figures were provided by the Division of Engineering Services and include the following:

1. widen under-crossings
2. new retaining walls
3. replace over-crossings

These figures include mobilization and contingencies.

## III. ENVIRONMENTAL MITIGATION

| | | |
|---|---|---|
| Environmental Mitigation & Compliance | $ | 39,000,000 |

## IV. RIGHT OF WAY ITEMS

| | | |
|---|---|---|
| Acquisition, Including Excess Lands, Damage to Remainders and Goodwill | $ | *TBD* |
| Utility Relocation (State Share) | $ | *TBD* |
| Total Right of Way Items | $ | >100,000,000 |

| | |
|---|---|
| Anticipated Date of Right-of-Way Certification (Date to which values are escalated) | Dec. 2022/Jan. 2023 |

Explanation:

The above figures were provided by the Right of Way Appraisals, and Planning & Management.

# Project Study Report – Project Development Support
# Capital Outlay Project Estimate

| | |
|---|---|
| Dist - Co - Rte | 7 - VEN - 101 |
| PM | 4.1/30.9 |
| Program Code | 40.50.075.651 |
| Project Number | 0713000249 |
| Month/Year | December 2013 |

PROJECT DESCRIPTION

Limits: From ± S. Moorpark Road (PM 4.1) to ± State Route 33 (PM 30.9)

Proposed Improvement (Scope): Adds two standard width HOV lanes in each direction.

Alternative: 4

**SUMMARY OF PROJECT COST ESTIMATE**

| | | |
|---|---|---|
| Total Roadway Items | $ | 1,122,000,000 |
| Total Structure Items | $ | 313,588,000 |
| Total Environmental Mitigation Items | $ | 90,000,000 |
| Subtotal Construction Costs | $ | 1,525,588,000 |
| Total Right-of-Way Items | $ | 100,000,000 |
| Total Project Capital Outlay Costs | $ | 1,625,588,000 |
| Use | $ | 1,630,000,000 |

Cost Range $1,630,000,000 - $2,000,000,000

Note:

***The capital outlay project estimates provided are not for programming purposes. The breadth of range is based on available information and reasonable assumptions.***

## I. ROADWAY ITEMS

| | Average Cost per Lane Mile | | Number of Lane Miles | | Total Cost |
|---|---|---|---|---|---|
| Total Cost | $ 20,932,836 | x | 53.6 | = | $ 1,122,000,000 |

Explanation:

The Average cost per lane mile (above) includes, and may not limited to the following items:

1. Earthwork
2. Pavement Structural Section(s)
3. Drainage
4. Specialty Items
5. Traffic Items
6. Minor Items
7. Mobilization
8. Stormwater Data Report Items (i.e. Design Pollution Prevention, Treatment, and Construction Site BMPs)

## II. STRUCTURE ITEMS

| | | |
|---|---|---|
| Retaining Walls | $ | 108,710,000 |
| Structure Replacement/Widening | $ | 204,878,000 |
| Total Structure Items | $ | 313,588,000 |

Explanation:

The above figures were provided by the Division of Engineering Services and include the following:

1. widen under-crossings
2. new retaining walls
3. replace over-crossings

These figures include mobilization and contingencies.

## III. ENVIRONMENTAL MITIGATION

| | | |
|---|---|---|
| Environmental Mitigation & Compliance | $ | 90,000,000 |

## IV. RIGHT OF WAY ITEMS

| | | |
|---|---|---|
| Acquisition, Including Excess Lands, Damage to Remainders and Goodwill | $ | *TBD* |
| Utility Relocation (State Share) | $ | *TBD* |
| Total Right of Way Items | $ | >100,000,000 |

| | |
|---|---|
| Anticipated Date of Right-of-Way Certification (Date to which values are escalated) | Dec. 2022/Jan. 2023 |

Explanation:

The above figures were provided by the Right of Way Appraisals, and Planning & Management.

# Design Standards Risk Assessment

**ATTACHMENT – E**

# Design Standards Risk Assessment

Alternative 2

| # | Proposed or Existing Feature | Design Standard from Highway Design Manual Tables 82.1A & 82.1B | Probability of Design Exception Approval (None, Low, Medium, High,) | Justification for Probability Rating |
|---|---|---|---|---|
| 1 | Existing | Index 204.3<br>Standard for Grade | Medium to High | |
| 2 | Proposed | Index 301.1<br>Lane Width | Low<br>(location specific) | There are many different proposed cross sections and site conditions within the project that need independent evaluation. R/W is available in many locations. The need for widening for bridges, shoulders & lanes are tied together. There will need to be compelling reasons for not widening to standards give the expected life of this project and the high volumes of traffic. A more detailed accident and operational analysis, and restrictive conditions would be needed to be compelling. (see comments below re: safety) |
| 3 | Proposed | Index 302.1<br>Shoulder Width | Median: Low<br>Outside: Low | Median shoulder: same comment as above. Reduces shoulders will impact safety and operations. A detailed accident analysis will be needed to justify exceptions at each exception location. CHP enforcement will need additional widening. Proposed less than standard outside shoulders need a compelling justification. |
| 4 | Proposed | Index 305.1<br>Median Width | Low | This exception is dependent on 301.1 & 302.1 |
| 5 | Existing | Index 309.2<br>Vertical Clearances | Low-Medium | Not enough information to evaluate. Bridges that are modified, have bridge hits, or are structurally deficient need to be considered for full standard retrofit or replacement. Other options many be available to increase vertical clearance. |
| 6 | Existing | Index 501.3<br>Interchange Spacing | Medium | Not enough information provided to evaluate. Non standard IC spacing will need to be justified and corrected if there is significant degradation to the mainline. Operation improvements may be needed at accident locations and operational constraint points (weaving, merging, etc.). |

## Design Standards Risk Assessment

Alternative 3

| # | Proposed or Existing Feature | Design Standard from Highway Design Manual Tables 82.1A & 82.1B | Probability of Design Exception Approval (None, Low, Medium, High,) | Justification for Probability Rating |
|---|---|---|---|---|
| 1 | Existing | Index 204.3<br>Standard for Grade | Medium to High | |
| 2 | Existing | Index 309.2<br>Vertical Clearances | Low-Medium | Not enough information provided to evaluate. Bridges that are modified, have bridge hits, or are structurally deficient need to be considered for full standard retrofit or replacement. Other options many be available to increase vertical clearance. |
| 3 | Existing | Index 501.3<br>Interchange Spacing | Medium | Not enough information provided to evaluate. Non standard IC spacing will need to be justified and corrected if there is significant degradation to the mainline. Operation improvements may be needed at accident locations and operational constraint points (weaving, merging, etc.). |

Alternative 4

| # | Proposed or Existing Feature | Design Standard from Highway Design Manual Tables 82.1A & 82.1B | Probability of Design Exception Approval (None, Low, Medium, High,) | Justification for Probability Rating |
|---|---|---|---|---|
| 1 | Existing | Index 204.3<br>Standard for Grade | Medium to High | |
| 2 | Existing | Index 309.2<br>Vertical Clearances | Low-Medium | Not enough information provided to evaluate. Bridges that are modified, have bridge hits, or are structurally deficient need to be considered for full standard retrofit or replacement. Other options many be available to increase vertical clearance. |
| 3 | Existing | Index 501.3<br>Interchange Spacing | Medium | Not enough information provided to evaluate. Non standard IC spacing will need to be justified and corrected if there is significant degradation to the mainline. Operation improvements may be needed at accident locations and operational constraint points (weaving, merging, etc.). |

# Conceptual Cost Estimate – Right-of-Way Component

**ATTACHMENT – F**

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

# M e m o r a n d u m

To: Rafael Molina , Design Manager
Program and Project Management
District 7, Los Angeles Office

**Date: 10/23/13**

From: Dan Murdoch, Office Chief
Right of Way Appraisals, and Planning & Management
District 7, Los Angeles Office

07-VEN-101-PM4.1/30.9
Project ID # 0713000249
EA: 29830K
Data Sheet ID NO: ds587

A Field Review was conducted 8/16/20

**Scope of the Right of Way**

| | | |
|---|---|---|
| Right of Way Required | Yes | |
| Number of Parcels | >100 | |
| Type of Parcels | Suburban | |
| Land Area: | Fee: | Easement: |
| Displaced Persons/Businesses | | |
| Demolition/Clearance | | |
| Railroad Involvement | Yes | |
| Utility Involvement | Yes | |

**Cost Estimates**

| | |
|---|---|
| Support Costs | >$10,000,000 |
| Capital Costs | >$100,000,000 |

**Schedule**

Right of Way will require 24 months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of 12/1/22.

**Areas of Concern**

Planning was unable to define the project requirements or needs, which resulted in a lack of data to determine what the Right of Way impacts will be.

Planning was unable to define the project requirements or needs, which resulted in a lack of data to determine what the Utility impacts will be.

No Capital Costs were provided to the estimator at this time for Utilities, therefore these costs were not included in this Conceptual Cost Estimate - Right of Way Component.

No Capital Costs were provided to the estimator at this time for Railroads, therefore these costs were not included in this Conceptual Cost Estimate - Right of Way Component.

# Preliminary Environmental Analysis Report (PEAR)

**ATTACHMENT – G**

# PRELIMINARY ENVIRONMENTAL ANALYSIS REPORT

## 1. Project Information

| District | County | Route | PM | EA |
|---|---|---|---|---|
| 07 | VEN | 101 | 4.1/30.9 | 29830K |
| **Project Title:** Ventura County U.S. 101 HOV Widening Project | | | | |
| **Project Manager**<br>Ravi Ghate | | | **Phone #**<br>213-897-5593 | |
| **Project Engineer**<br>Duyen Luu | | | **Phone #**<br>213-897-7945 | |
| **Environmental Office Chief/Manager**<br>Garrett Damrath | | | **Phone #**<br>213-897-9016 | |
| **PEAR Preparer**<br>Natalie Hill | | | **Phone #**<br>213-897-0841 | |

## 2. Project Description

**Purpose and Need**
Caltrans proposes to maintain or improve traffic operations and mobility on the U.S. 101 freeway mainline in Ventura County from post mile 4.1 to 30.9. There is a need to reduce the existing and forecasted peak hour traffic volumes that place strain on the current system. The U.S. 101 experiences congestion and delays within these limits, and the proposed project would work to alleviate these future delays.

**Description of work**
The proposed project would widen U.S. 101 from PM 4.1 to 30.9. Bridge widening and/or overcrossing replacement would be necessary for Alternatives 2, 3, and 4. Temporary staging areas would be required throughout the project limits.

**Alternatives**
There are three Build Alternatives and one No-Build Alternative currently proposed.
Alternative 1: No Build Alternative
Alternative 2: Addition of a non-standard HOV lane in each direction
Alternative 3: Addition of a standard HOV lane in each direction
Alternative 4: Addition of two full standard HOV lanes in each direction

The proposed project extends approximately 26 miles along the U.S 101 freeway in Ventura County.

- Alternative 1 is the No-Build Alternative and the existing roadway conditions would remain.

- Alternative 2 would add a non-standard HOV lane in each direction by utilizing the existing shoulders and median and re-striping. The right-of-way acquisition would be minimal and work outside of the existing U.S.101 footprint would also be minimal for this alternative. However, 17 bridges would need to be widened for Alternative 2.
- Alternative 3 would add a standard HOV lane in each direction and would require approximately 16' of additional right-of-way in each direction. 23 bridges would require widening and 14 overcrossings would require reconstruction or replacement.
- Alternative 4 would include two standard HOV lanes in each direction and would require the most right-of-way. The overcrossing and bridge replacement/ reconstruction would be the same as Alternative 3 but the right-of-way would be approximately 28' in each direction. Retaining walls would also be built to accommodate the widening.

**Figure 2-1**: Project Study Area

### 3. *Anticipated Environmental Approval*

| CEQA | | NEPA | |
|---|---|---|---|
| **Environmental Determination** | | | |
| Statutory Exemption | ☐ | | |
| Categorical Exemption | ☐ | Categorical Exclusion | ☐ |
| **Environmental Document** | | | |
| Initial Study or Focused Initial Study with proposed Negative Declaration (ND) or Mitigated ND | ☒ | Routine Environmental Assessment with proposed Finding of No Significant Impact<br><br>Complex Environmental Assessment with proposed Finding of No Significant Impact | ☒<br><br>☐ |
| Environmental Impact Report | ☐ | Environmental Impact Statement | ☐ |
| CEQA Lead Agency (if determined): | | Caltrans | |
| Estimated length of time (months) to obtain environmental approval: | | 24 Months from date that Division of Environmental Planning receives formal request for environmental document (w/complete set of engineering drawings) from Division of Design | |
| Estimated person hours to complete identified tasks: | | 16,925 | |

The following technical studies will be required with the proposed Initial Study/Environmental Assessment (IS/EA), Mitigated Negative Declaration (MND) and Finding of No Significant Impact (FONSI):

- Air Quality Review Report
- Bioacoustic Study Report (Noise)
- Community Impact Assessment Report
- Finding of Effect – Section 106 (Cultural Resources)
- Foundation Report (Geotechnical Engineering)
- Geotechnical Design Report
- Hazardous Waste Assessment
- Historic Properties Survey Report
- Location Hydraulic Study
- Natural Environmental Study Report (Biology)
- Storm Water Data Report
- Traffic and Safety Analysis
- Visual Impact Assessment Report
- Wildlife Corridor Study

### 4. Special Environmental Considerations (Preliminary)

Section 404 of the Federal Clean Water Act, Section 7 of the Federal Endangered Species Act (FESA), Department of Fish and Game 1600 and 1602 permits, and Section 4(f) of the Department of Transportation Act (49 U.S.C. 303) coordination and permits would be required, as well as any associated off-site biological mitigation. It should be noted that the permit process takes six to twelve (6-12 months). Biological monitoring is also anticipated during construction.

In addition, a Farmland Impact Assessment may be required if any farmland would be included in the right-of-way acquisition. Noise measurements would be completed at receptors along the project limits, and noise barriers would be required if noise levels are found to exceed the Noise Abatement Criteria.

### 5. Anticipated Environmental Commitments

The anticipated environmental commitments would come from permits, resource agency requirements, and soundwall barriers as well as any other mitigation measures or specifications to be included in the PS&E package.

### 6. Permits and Approvals

RWQCB 401 permit process: $16,000
California Department of Fish and Wildlife: $4,500

SHPO coordination and associated Cultural Resource documents: 12 months
Department of Fish and Game 1600 and 1602 permit coordination: 6-12 months
Section 7 consultation: 6-12 months
Section 4(f) process: Concurrence and coordination from property owners if use is *de minimus*
California Coastal Commission
Public Utilities Commission
Union Pacific Railroad

### 7. Level of Effort: Risks and Assumptions

A Coastal Development Permit would be required for the northernmost 3.3 miles of the project limits that are within the coastal zone. This should be coordinated early to avoid affecting the schedule of the proposed project.

Section 4(f) of the Department of Transportation Act (49 U.S.C. 303) may be required for the area north of Santa Rosa Road/U.S. 101. There are baseball fields and recreation facilities directly adjacent to the freeway and depending on the proximity of construction activities, a Section 4(f) may be considered.

Farmland Impacts- There may be potential farmland impacts under Alternatives 3 and 4. Williamson Act requirements would be considered if there were any impacts to farmland.

The U.S. 101 north of Route 34 transects areas with housing on either side. This should be taken into consideration that due to the close proximity of the housing in this location, additional noise barriers may be needed and should be included in the project budget.

Revised April 2011

The project must be included in the Regional Transportation Improvement Plan (RTIP), which is initiated by District Air Quality Branch.

The extensive limits of the proposed project along U.S. 101 will require coordination and scoping with numerous communities and regional agencies. In addition, the cities of Camarillo, Oxnard, and Ventura will be involved in the planning process. This would factor into the Community Impacts section of the environmental analysis.

8. **PEAR Technical Summaries**

HUMAN ENVIRONMENT/ COMMUNITY IMPACTS

8.1 **Land Use:** The land use is comprised mainly of Transportation use, as the limits follow the existing U.S. 101 freeway in Ventura County. The right-of-way acquisition would be a mix of industrial, farmland, and local business/ residential. More information would be obtained during the PA/ED phase with input from Surveys and Right-of-Way.

Future land use changes within the project area are regulated in part by the Save Open Space and Agricultural Resources (SOAR) initiative, which prevents changes in specified land use categories of the General Plan unless the land use change is approved by a (simple) majority of voters. The SOAR measure is a General Plan amendment and has been passed in all major cities within Ventura County. Therefore, significant impacts to land use as a result of the project are minimized under this measure.

*Alternative 2:* Direct impacts to existing land use are not likely, however, indirect impacts to existing land use may occur as a result of improved travel times, access, and mobility, in which existing land uses adjacent to interchanges may potentially be shifted towards commercial and/or industrial use subject to growth pressures. However, land use changes are subject to change under the discretion of the local jurisdiction in which the project is located.

*Alternative 3:* Alternative 3 would require widening to accommodate the standard HOV lane in each direction. Direct impacts may occur as a result, in which the acquisition of additional land outside of Caltrans right-of-way will be converted towards transportation related use in order to accommodate for the additional HOV lanes. Indirect impacts will be similar to those discussed under Alternative 2.

*Alternative 4:* Under Alternative 4, two standard HOV lanes will be constructed in each direction. As a result, a greater amount of right-of-way will be required in comparison to Alternative 3. As a result, direct land use impacts may occur if additional right-of-way is required beyond Caltrans right-of-way. If required, such land uses will be converted towards transportation related use in order to accommodate for the additional HOV lanes. Indirect impacts will be similar to those discussed under Alternative 2.

8.2 **Growth:** Based on the First-Cut Screening approach it was determined that there is a potential for project related growth due to the project type, location, and growth pressures. As a result, further analysis will be needed in order to assess indirect growth impacts on resources of concern

within the project area. Further analysis through a stand-alone Growth Analysis Report may be adequate.

*Alternative 2:* Restriping and minimal widening of the existing highway will allow for a Non-Standard HOV lane in each direction. With the inclusion of an HOV lane, may result in a reduction in travel times, increased accessibility, and mobility within the area, which may result in potential induced growth within the area.

*Alternative 3:* This alternative will involve all of the same growth impacts under Alternative 2, however additional widening will be required. Although additional right-of-way will be required, the same number of HOV lanes (one in each direction) will remain the same.

*Alternative 4:* Under this alternative, two standard HOV lanes will be constructed in each direction. With the inclusion of two HOV lanes, further reductions in travel times may occur, as well as increased accessibility and mobility within the area. Therefore, induced growth upon resources of concern under this alternative may be greater in comparison to the other build alternatives.

8.2 **Farmlands/Timberlands:** There may be some farmland impacts with the right-of-way acquisition required for the build alternatives. Most of the farmland exists in the City of Oxnard and would require the submission of a Farmland Conversion Impact Rating form (AD- 1006) for compliance with the Farmland Protection Policy Act. Several agricultural sites are located along U.S. 101 near Del Norte Boulevard and Rice Avenue in Oxnard and in Camarillo along U.S. 101 near Daily Drive, Santa Rosa Road, Springville Drive, and Central Avenue. In San Buenaventura, the agricultural areas are adjacent to U.S. 101 and Channel Drive, Harbor Boulevard, and Arundell Barranca.

8.3 **Community Impacts**: The proposed project would extend through the cities of Calabasas, Agoura Hills, Thousand Oaks, Newbury Park, Camarillo, Oxnard and Ventura. All of the above cities, as well as Ventura County and local planning agencies and resource agencies would be involved in the planning phase of the proposed project.

The proposed project is located within Ventura County, in which the project limits begin at Moorpark Road and traverse along US-101 and terminates at the US-101/SR-33 interchange. The proposed project passes through the following communities: Thousand Oaks, Camarillo, Oxnard, and San Buenaventura.

Since the project proposes to widen an existing highway facility impacts towards community cohesion should be minimal. However, Caltrans shall work with the public and local agencies in order to design the project in a manner that is consistent with the existing community character for the various jurisdictions in which the project is situated.

- **Relocations and Real Property Acquisition.** The plans for the proposed project are preliminary, and the amount of right-of-way (ROW) to be acquired is dependent on the alternative selected. Although large areas of the project area have median area that could be used for the inclusion of the HOV lane(s), it will require design and surveys to more closely

identify these areas. Full or partial ROW acquisition may be required from parcels including, but not limited to, farmland, businesses, and industrial property. Preliminary estimates of ROW are as follows:

*Alternative 2:* Minor widening on both sides of the existing U.S. 101 mainline (in US acres)

- Approximately 40.45 acres

*Alternative 3:* 16 foot widening on both sides of existing mainline roadway (in US Acres)

- Approximately 158.63 acres, majority urban

*Alternative 4:* 28 foot widening on both sides of existing mainline roadway (in US Acres)

- Approximately 282.10 acres, majority urban

8.4 **Traffic Impacts:** A comprehensive traffic analysis report will be required that carefully studies the effects of the proposed project on the freeway mainline, appurtenant ramps, and the affected city/surface streets within the project study area. This data is instrumental in supporting the purpose and need of the proposed project, and the undertaking of the proposed project as a whole. This report shall provide data that accurately depicts existing conditions, the effects of the no-build alternative, and modeling that was performed to provide data for opening year and the horizon year (2040). The following datasets are required for disclosure in the draft and final environmental document:

a. **Travel time comparison (existing and modeled).** Usually expressed as time saved by comparing vehicle miles traveled (VMT) and vehicle hours traveled (VHT), shown as total time saved per annum. Compare all build alternatives to the existing and the future no-build or no project-alternative.
b. **Peak period performance.** Show modeled top speeds during the period(s) of highest demand, to include all peak periods, including mid-day, if appropriate. Again, compare all build alternatives to both existing conditions and the future no-build alternative.
c. **Corridor travel time.** Comparisons between origin and destination (O/D) pairs are helpful.
d. **Volume/capacity (v/c) ration and level of service.** Density of traffic on the freeway or roadway.
e. **Measures to lessen traffic/circulation impacts.** If these are proposed, provide a table showing the improved v/c ratios, modeled for the future year, including a comparison of all build alternatives to the no-build alternatives.
f. **Freeway connector volumes.** Compare all build alternatives to the existing and future no-build or no-project alternative as the project includes connector improvements.
g. **Arterial impacts and intersection impacts (existing and modeled).** Impacts to local streets and intersections shall be fully disclosed.

In addition to the aforementioned traffic datasets, additional specialized traffic data will be required to perform the necessary analyses in terms of noise and air quality, and any impacts the

proposed project may have in the project study area, and its contributions to the regional environment as a whole. The necessary data are detailed as follows:

a. Vehicle Miles Traveled (VMT) for a 24-hour period, broken-down further into different periods of the day, as well as truck percentages and speeds associated with each of the periods. All data should reflect build and no-build in each of the analysis years.
b. Total ADT and truck ADT in existing, opening, and horizon (2040) years, along this segment of U.S. 101 with AND without the project.
c. Truck ADT in opening and horizon years.
d. Peak-hour truck volume in opening and horizon years.
e. Average speed for trucks through project study area in opening and horizon years.
f. Delays and LOS experienced by trucks in opening and horizon years.

8.5 **Visual/Aesthetics:** A Visual Impact Assessment (VIA), and possibly a more comprehensive Scenic Resource Evaluation would be required, particularly because of the length of the project and because the project includes several retaining walls in both northbound and southbound directions of U.S.101. The U.S.101 through this area of Ventura County includes natural landforms visible from the roadway when travelling in either direction. The Santa Susana Mountains are visible in the distance when looking north, and the Santa Monica Mountains are visible to the south. Land uses along the project limits vary from commercial, farming, and residential. The height of the walls and the wall treatments would require further analysis and evaluation. Approximately two (2) months would be required to deliver the VIA and 7 months would be required to prepare the PS&E highway planting plans.

This segment of U.S. 101 is not listed as a scenic highway and neither the county nor cities along the route have submitted documentation to date to request scenic highway designation.

8.6 **Cultural Resources**: The proposed project involves widening of more than one-half-lane in multiple locations and therefore is not eligible for a screening memo and higher documentation would be required. For Alternative 1 (No-Build) the roadway conditions would remain the same. Alternative 2 would require widening 17 bridges and reconstruction/replacement of one bridge. Alternative 3 would require widening of 23 bridges with 14 overcrossings reconstructed or replaced. Alternative 4 would require 23 bridges to be widened and 14 reconstructed or replaced. Based on preliminary review, no known cultural resources have been identified within the project area. However, as a result of the scope of work for this project, a Historic Property Survey Report (HPSR), Historic Resources Evaluation Report (HRER), and Archeological Survey Report (ASR) must be completed. The above-mentioned documents would be reviewed and concurred with by the State historic Preservation Officer (SHPO). It is estimated that it will take 12 months to complete the necessary studies.

PHYSICAL ENVIRONMENT

8.7 **Hydrology and Floodplain**: Local, state and federal water resources and floodplain management agencies must be consulted if a proposed action encroaches on a 100-year base

floodplain. Coordination also may occur in order to obtain current information on development and proposed actions in the affected watersheds. Caltrans is responsible for initiating early coordination meetings to discuss potential floodplain encroachments. If there are potential impacts to endangered species or wetlands, and/or if a 404 permit is required, the federal and state agencies with jurisdiction and permitting authority should be identified early in the environmental process. Caltrans and local agencies are responsible for early and on-going coordination with the U.S. Wildlife Service regarding technical information and standards for mitigation (as necessary) and with the U.S. Army Corps of Engineers regarding permit requirements.

There are 11 locations within the project area where the Base Flood of 100-year Storm affects the existing freeway. Additional investigation will be done at the PA/ED phase.

8.8 **Water Quality and Storm Water Runoff**: Identification of potential storm water quality requirements and pollutants of concern for specific water bodies must be considered during development of the Project Study Report-Project Development Support (PSR-PDS), Project Report (PR), Project Scope Summary Report (PSSR) and other scoping documents. The project engineer must ensure that the programmed project includes sufficient right-of-way and budget for storm water controls and provide a cost estimate for construction site BMPs, design pollution prevention BMPs and Treatment BMPs where applicable. Identification of project specific, permanent and temporary BMPs must be identified to mitigate any impacts. Be advised that permanent BMPs are to be implemented at the project site to the maximum extent practicable, while being consistent with existing Caltrans policies.

Recommendations from treatment BMPs from the Corridor Stormwater Management Study must be followed. Additionally, concurrence must be obtained from Aythem Al-Saleh, District 7 Construction Storm Water Coordinator (see section 6 of the Storm Water Data Report). For Total Maximum Daily Loads (TMDL), the project engineer should contact Robert Wu, TMDL Coordinator, for the latest TMDL developments and requirements in the project area.

Preparation of a Storm Water Data Report (SWDR) for PID, PA/ED and PS&E phases will be required. The project must comply with NPDES Construction General Permit No. CAS00002 and NPDES Caltrans Statewide Permit No. CAS000003. Additionally, the project must also be in compliance with District 7 Directives DD-31, DD-81, DD-32, DD-91 and DD-92.

8.9 **Geology, Soils, Seismic and Topography**: A Geologic Hazard Report will be required to analyze geologic, soil and seismic conditions in the vicinity of the project study area, as well as an analysis of the potential environmental impacts for the project alternatives on these conditions and the potential impacts of geotechnical conditions on the transportation facility. Four (4) months (minimum lead time required for OGDS-1 to complete and deliver the requested information) will be required to complete the aforementioned.

Once the District selects an alternative and the Project Initiation Document (PID) is approved, an additional request should be made to the OGDS-1 chief for a final resource

allocation and time schedule estimate for delivering a final Geotechnical Design Report (GDR) and/or Foundation Report (FR) for the proposed project.

8.10 **Paleontology**: The cultural resource evaluations would include this in the analysis.

8.11 **Hazardous Waste/Materials**: A complete project screening, (including scheduling of subsequent studies) will be required to compile more accurate information regarding hazardous materials, hazardous wastes, and contamination for the proposed project. A full Initial Site Assessment (ISA) is necessary to screen the project area, and specific alternatives as defined, for possible contamination.

Based on existing Aerially Deposited Lead (ADL) investigation reports, the exposed soil that will be removed is likely lead impacted. This is due to the use of lead based gasoline that was used before the 1980's. Due to high traffic volumes on U.S. 101, the lead concentration on the top 2 feet of exposed soil will likely exceed CCR Title 22 threshold and require disposal to a Class I waste facility. Alternatives 3 and 4 would require the most additional right-of-way outside of the existing paved shoulder, and would therefore have the greatest amount of Aerially Deposited Lead (ADL) issues. If the removed soil meets Caltrans' DTSC Lead Variance (June 30, 2009), it can be reused in the project area, otherwise it will require disposal at a Class I facility.

Hazardous waste issues vary with each alternative because of the number of bridges that need widened and the number of overcrossings that would be reconstructed or replaced. Dewatered groundwater and soil generated from the Cast-In-Drilled-Hole (CIDH) construction are likely to be classified as contaminated, requiring disposal at a Class II or Class III waste facility.

Right-of-way acquisition is likely required for Alternatives 2, 3, and 4. All of the property acquisitions for the selected alternative should be studied in the ISA and if required, and the Site Investigation level during the PS&E phase. Other related hazardous waste issued to be aware of include: Removal of Metal Beam Guard Rails (MBGRs), treated wood waste, Asbestos Containing Materials and lead-based paint in bridge structures, removal of yellow stripe and pavement markings.

The Hazardous Waste issues will vary greatly depending on the alternative that is selected. ADL is likely present in the exposed shoulder or median if it is converted to a travel lane. All of the alternative will require an ISA study of the construction activities, and where bridges, overcrossings, and retaining walls will be built, altered, or replaced.

8.12 **Air Quality**:
The potential impacts that may adversely affect project development are two-fold: regional and project level. Projects that anticipate federal funding, but are not included in the regional emissions analysis of the most recent Regional Transportation Plan (RTP)/ Federal Transportation Improvement Program (FTIP) are not eligible to receive such funds unless they are exempt pursuant to 40 CFR 93.126 or 40 CFR 93.126-128. Therefore this project would require inclusion in the RTP/FTIP.

The proposed is located in the South Central Coast Air Basin (SCCAB) which is in attainment of federal and state standards for Sulfer Dioxide, Carbon Monoxide, Nitrogen Dioxide, fine particulate matter, and Lead standards. It is in serious nonattainment of federal and state standards for ozone. The SCCAB is in attainment of the federal standard for $PM_{10}$ but is nonattainment of the state standard for $PM_{10}$.

8.13 **Noise and Vibration**: The project has been determined to be a Type I project as defined by the Caltrans Traffic Noise Analysis Protocol (May 2011) and requires a detailed noise study during the Project Approval/ Environmental Document (PA/ED) phase. Approximately 3,000 hours and 8-9 months are needed to complete the Noise Study. Design and Construction would require approximately 320 hours combined.

8.14 **Energy and Climate Change**: Because the proposed project is a congestion relief project and/or capacity increasing project, a quantitative $CO_2$ analysis would be required. The project would also require inclusion in a current conforming RTIP or RTP.

8.15 **Biological Environment**: Preparation of a Natural Environment Study (NES) would be required in consideration of the scope of work for this project. This study would encompass research and survey data concerning natural communities, any bodies of water and associated habitat, and plant and animal species that may be affected by the proposed project.

The Conejo Grade and Santa Clara River crossing are the two most biologically sensitive locations within the proposed project limits. The proposed project requires work within the following drainages: Arroyo Conejo, Arroyo Conejo Creek, Calleguas Creek, and the Santa Clara River. As a result of the drainages listed, this project has the potential to impact water quality and fish populations. Due to the scope of the project as well as construction related noise and vibration, there will be the potential to impact nesting birds and fish species within the drainages listed above.

A Wildlife Corridor Study would also be required to assess present and future functionality of potential wildlife linkages throughout the U.S. 101 corridor. The viability and enhancement of these linkages would be studied in the assessment.

It is recommended that vegetation removal or construction activities involving high levels of noise to be scheduled outside the time frame of February 15th through September 1st in order to minimize impacts to nesting birds. A water diversion for this project will be necessary, and any work within perennial drainages should be conducted outside the winter rain season which is November 1st to April 1st. It is anticipated that a qualified biologist will be necessary onsite to monitor any construction related activities, due to the sensitive nature of the species residing within the proposed project area. Approximately (12) months and 2,200 hours will be required to complete/deliver the NES which does not take into account mitigation monitoring.

8.16 **Cumulative Impacts**: A Cumulative Impact analysis will be required at the PA/ED stage of the project. Due to the project scope, a cumulative impact analysis will be included in the Draft and Final Environmental documents.

8.17 **Context Sensitive Solutions**: The northernmost 3.3 miles of the project limits are within the coastal zone, and context sensitive solutions such as inclusion of coastal access and specific coastal approved visual barriers may be required. This would be determined through coordination with the California Coastal Commission (CCC) and the Ventura County Local Coastal Program. In addition, noise barriers may be required at some locations of the project and may require context sensitive designed.

## *9. Summary Statement for PSR or PSR-PDS*

**Alternative 1: No Build**

- This alternative would require the least permits and studies, as no construction would occur. The existing built condition would remain as-is.

**Alternative 2: Non-Standard HOV widening**

- This alternative would require all technical studies and permits. Although there would be the least amount of widening outside of the existing U.S. 101 footprint with this alternative, 17 bridges would be widened and one (1) would need to be replaced. It would require coordination with U.S Army Corps of Engineers, U.S. Fish and Wildlife Service, CA Department of Fish and Wildlife, CA Coastal Commission, as well as four cities and local agencies.

**Alternative 3: One standard HOV lane in each direction**

- This alternative would require the same permits and coordination as Alternative 2 and in addition, would necessitate additional coordination with local property owners for the additional right-of-way acquisition. There would be 23 bridges that would have to be widened and 14 overcrossings that would need to be reconstructed or replaced. Farmland acquisition would most likely be required, therefore initiating the farmland conversion impact rating (form AD 1006) be completed to determine quality and type of farmland being impacted.

**Alternative 4: Two standard HOV lanes added in each direction**

- This alternative would include both of the elements of Alternatives 2 and 3 and would require the most right-of-way with the addition of two standard HOV lanes in each direction. (Approximately 28 feet of widening on the northbound and 28 feet of widening on the southbound sides.) 23 bridges would have to be widened and 14 overcrossings would need to be reconstructed or replaced (same as Alternative 3).

## *10. Disclaimer*

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

### 11. List of Preparers

| | |
|---|---|
| Cultural Resources specialist:<br>Noah Allison | Date: 08/01/13 |
| Biologist:<br>Paul Caron/ Eric Hanson | Date: 09/03/13 |
| Community Impacts specialist:<br>Dan Tran and Pauline Le | Date: 09/12/13 |
| Noise and Vibration specialist<br>Jin S. Lee/ Arnold Parmar | Date: 08/08/13 |
| Air Quality specialist<br>Andrew Yoon | Date: 08/07/13 |
| Paleontology specialist/liaison | Date: |
| Water Quality specialist<br>N/A | Date: N/A |
| Hydrology and Floodplain specialist<br>Dave Bhalla/ Sa Thai | Date: 08/07/13 |
| Hazardous Waste/Materials specialist<br>Ayubur Rahman/ Upa Patel | Date: 08/19/13 |
| Visual/Aesthetics specialist<br>George Olguin | Date: 08/02/13 |
| Energy and Climate Change specialist<br>N/A | Date: N/A |
| Other:<br>Billy Ho, Mapping | Date: 09/13/13 |
| PEAR Preparer (Name and Title)<br>Natalie Hill, Associate Environmental Planner | Date: 09/10/13 |

### 12. Review and Approval

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

Jam Poder
Environmental Branch Chief

Date: 11/25/13

Rani Ghate
Project Manager

Date: 11/25/13

# Project Schedule

**ATTACHMENT – H**

| Project Milestones | | Scheduled Delivery Date (Month/Year) |
|---|---|---|
| Program Project | M015 | Spring 2014 |
| Begin Environmental | M020 | July 2017 |
| Circulate DPR & DED Externally | M120 | December 2019 |
| PA & ED | M200 | June 2020 |
| Right of Way Certification | M410 | December 2022 |
| Ready to List | M460 | January 2023 |
| Project Advertise | M480 | April 2023 |
| Award | M495 | September 2023 |
| Approve Contract | M500 | October 2023 |
| Construction Begin | - | November 2023 |
| Contract Acceptance | M600 | March 2028 |

# Risk Register

**ATTACHMENT – I**

**District 7 Risk Management Identification and Management System (RIMS) v2.0 |**

Ravi Ghate (Role-PM), you are logged in. Today is November 26, 2013

- Choose Category/Function

## Step 1b - RIMS Relevant Risk Input Form

**Project:** 07-29830

Risk Not on list? Click to Add New Risk Description.

Add Risks

**Environmental Risks**

| Relevant? | Risk Description | Sample ID No. |
|---|---|---|
| | Environmental analysis incomplete | 37 |
| | Availability of project data and mapping at the beginning of the environmental study is insufficient | 38 |
| | New information after Environmental Document is completed may require re-evaluation or a new document (i.e. utility relocation beyond document coverage) | 39 |
| | New alternatives required to avoid, mitigate or minimize impact | 40 |
| | Acquisition, creation or restoration of on or off-site mitigation | 41 |
| | Environmental clearance for staging or borrow sites required | 42 |
| | Historic site, endangered species, riparian areas, wetlands and/or public park present | 43 |
| | Design changes require additional Environmental analysis | 44 |
| | Unforeseen formal NEPA/404 consultation is required | 45 |
| | Unforeseen formal Section 7 consultation is required | 46 |
| | Unexpected Section 106 issues expected | 47 |
| | Unexpected Native American concerns | 48 |
| | Unforeseen Section 4(f) resources affected | 49 |
| | Project may encroach into the Coastal Zone | 50 |
| | Project may encroach onto a Scenic Highway | 51 |
| | Project may encroach to a Wild and Scenic River | 52 |
| | Unanticipated noise impacts | 53 |
| | Project causes an unanticipated barrier to wildlife | 54 |
| | Project may encroach into a floodplain or a regulatory floodway | 55 |
| | Project does not conform to the state implementation plan for air quality at the program and plan level | 56 |
| | Unanticipated cumulative impact issues | 57 |
| | Asbestos Pipes | 147 |
| | Growth Inducement Sprawl Issues | 148 |
| | Uninticipated Hazardous Waste Materials or contaminated soils | 149 |
| | Water Quality Issues | 150 |

Add Risks

Risk Not on list? Click to Add New Risk Description.

**District 7 Risk Management Identification and Management System (RIMS) v2.0 |**

Ravi Ghate (Role-PM), you are logged in. Today is November 26, 2013

- Choose Category/Function

## Step 1b - RIMS Relevant Risk Input Form

**Project:** 07-29830

Risk Not on list? Click to Add New Risk Description.

Add Risks

**External Risks**

| Relevant? | Risk Description | Sample ID No. |
|---|---|---|
| | Landowners unwilling to sell | 18 |
| | Local communities pose objections | 19 |
| | Unreasonably high expectations from stakeholders | 20 |
| | Political factors or support for project changes | 21 |
| | Stakeholders request late changes | 22 |
| | New stakeholders emerge and request changes | 23 |
| | Threat of lawsuits | 24 |
| | Increase in material cost due to market forces | 25 |
| | Water quality regulations change | 26 |
| | New permits or additional information required | 27 |
| | Reviewing agency requires longer than expected review time | 28 |
| | Changes to storm-water requirements | 29 |
| | Permits or agency actions delayed or take longer than expected | 30 |
| | New information required for permits | 31 |
| | Environmental regulations change | 32 |
| | Controversy on environmental grounds expected | 33 |
| | Pressure to deliver project on an accelerated schedule | 34 |
| | Labor shortage or strike | 35 |
| | Construction or pile driving noise and vibration impacting adjacent businesses or residents | 36 |
| | Force Majeure | 151 |
| | Prorities change on existing program | 152 |
| | Weather related Interruptions to Const | 153 |

Add Risks

Risk Not on list? Click to Add New Risk Description.

**District 7 Risk Management Identification and Management System (RIMS) v2.0 |**

Ravi Ghate (Role-PM), you are logged in. Today is November 26, 2013

- Choose Category/Function

## Step 1b - RIMS Relevant Risk Input Form

**Project:** 07-29830

Risk Not on list? Click to Add New Risk Description.

Add Risks

**Design Risks**

| Relevant? | Risk Description | Sample ID No. |
|---|---|---|
| | Design Incomplete | 1 |
| | Unexpected geotechnical or groundwater issues | 2 |
| | Inaccurate assumptions on technical issues in planning stage | 3 |
| | Surveys incomplete | 4 |
| | Changes to materials/geotechnical/foundation | 5 |
| | Bridge site data incomplete to DES | 6 |
| | Hazardous waste site analysis incomplete | 7 |
| | Unforeseen design exceptions required | 8 |
| | Consultant design not up to Department standards | 9 |
| | Unresolved constructability items | 10 |
| | Complex hydraulic features | 11 |
| | Unable to meet Americans with Disabilities Act requirements | 12 |
| | Project in a critical water shortage area and a water source agreement required | 13 |
| | Incomplete quantity estimates | 14 |
| | Unforeseen construction window and/or rainy season requirements | 15 |
| | New or revised design standard | 16 |
| | Construction staging more complex than anticipated | 17 |
| | Changes in final alignment geometry | 144 |
| | Design Changes impact Const cost and schedule | 145 |
| | Design Review delays project schedule | 146 |

Add Risks

Risk Not on list? Click to Add New Risk Description.

**District 7 Risk Management Identification and Management System (RIMS) v2.0 |**

Ravi Ghate (Role-PM), you are logged in. Today is November 26, 2013

- Choose Category/Function

## Step 1b - RIMS Relevant Risk Input Form

**Project:** 07-29830

Risk Not on list? Click to Add New Risk Description.

Add Risks

**Right of Way Risks**

| Relevant? | Risk Description | Sample ID No. |
|---|---|---|
| | Utility relocation requires more time than planned | 90 |
| | Unforeseen railroad involvement | 91 |
| | Resolving objections to Right of Way appraisal takes more time and/or money | 92 |
| | Right of Way datasheet incomplete or underestimated | 93 |
| | Need for "Permits to Enter" not considered in project schedule development | 94 |
| | Condemnation process takes longer than anticipated | 95 |
| | Acquisition of parcels controlled by a State or Federal Agency may take longer than anticipated | 96 |
| | Discovery of hazardous waste in the right of way phase | 97 |
| | Seasonal requirements during utility relocation | 98 |
| | Utility company workload, financial condition or timeline | 99 |
| | Expired temporary construction easements | 100 |
| | Inadequate pool of expert witnesses or qualified appraisers | 101 |
| | Additional ROW may need to be acquired | 158 |
| | Design changes result in additional utility relocations | 159 |
| | Failure to obtain necessary utility agreements or acquisitions on time | 160 |
| | Less ROW than anticipated | 161 |
| | ROW unable to certify project before Advertising | 162 |

Add Risks

Risk Not on list? Click to Add New Risk Description.

**District 7 Risk Management Identification and Management System (RIMS) v2.0 |**

Ravi Ghate (Role-PM), you are logged in. Today is November 26, 2013

- Choose Category/Function

## Step 1b - RIMS Relevant Risk Input Form

**Project:** 07-29830

Risk Not on list? Click to Add New Risk Description.

Add Risks

**Engineering Services Risks**

| Relevant? | Risk Description | Sample ID No. |
|---|---|---|
| | Foundations utilizing Cast-In-Drilled-Hole or Cast-In-Steel-Shell pile 30" in diameter or greater may require tunneling and mining provisions within the contract documents and early notification of Cal-OSHA | 120 |
| | Bridges constructed at grade and then excavated underneath may require tunneling and mining provisions within the contract documents and early notification of Cal-OSHA | 121 |
| | Hazardous materials in existing structure or surrounding soil; lead paint, contaminated soil, asbestos pipe, asbestos bearings and shims | 122 |
| | Piles driven into fish habitat may require special noise attenuation to protect marine species | 123 |
| | Special railroad requirements are necessary including an extensive geotechnical report for temporary shoring system adjacent to tracks | 124 |
| | Access to adjacent properties is necessary to resolve constructability requirements | 125 |
| | Existing structures planned for modification not evaluated for seismic retrofit, scour potential and structural capacity | 126 |
| | Foundation and geotechnical tasks (foundation drilling and material testing) not identified and included in project workplan | 127 |
| | Bridge is a habitat to bats or other species requiring mitigation or seasonal construction | 128 |
| | Condition of the bridge deck unknown | 129 |
| | For projects involving bridge removal, bridge carries traffic during staging | 130 |
| | Verify that all seasonal constraints and permitting requirements are identified and incorporated in the project schedule | 131 |
| | Complex structures hydraulic design requiring investigation and planning | 132 |
| | Assumptions upon which the Advance Planning Study is based on are realistic and verification of these assumptions prior to completion of the Project Report | 133 |
| | Design changes to alignment, profile, typical cross section, stage construction between Advance Planning Study and the Bridge Site Submittal | 134 |
| | Unexpected environmental constraints that impact bridge construction | 135 |
| | Unforeseen aesthetic requirements | 136 |
| | Delay due to permits or agreements, from Federal, State, or local agencies for geotechnical subsurface exploration | 137 |
| | Delay due to Right-of-Entry agreements for geotechnical subsurface exploration | 138 |
| | Delay due to traffic management and lane closure for geotechnical subsurface exploration | 139 |

Add Risks

Risk Not on list? Click to Add New Risk Description.

# Advance Planning Study (APS)

**ATTACHMENT – J**

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

# Memorandum

**To:** **Rafael Molina**
Senior Transportation Engineer
Office of Project and Special Studies
District 7

**Date:** September 6, 2013

**File:** 07-101-VEN
PM 4.1/30.9
EFIS- 0713000249

**From:** Matt Holm
Bridge Design Branch 12
Office of Bridge Design South 1
Structure Design
Division Of Engineering Services

JW for MH

**Subject:** PSR/PDS Study

In reference to your memo dated July 8, 2013 regarding preparing a PSR/PDS study for the subject project, we have studied Alternative 2, Alternative 3 and Alternative 4 of the following four alternatives:

(1) Alternative 1: No build.
(2) Alternative 2: Add nonstandard width High Occupancy Vehicle (HOV) lane in each direction.
(3) Alternative 3: Add one standard width High Occupancy Vehicle (HOV) lane in each direction.
(4) Alternative 4: Add two standard width High Occupancy Vehicle (HOV) lanes in each direction.

The study includes widening under crossing bridges, building new retaining walls and replacing over crossing bridges as needed.

The estimated construction cost, including 10% mobilization and 30-35% contingencies, as follow:

| Alternative | Construction Cost ($1000) |
|---|---|
| 2 | 55,688 |
| 3 | 138,760 |
| 4 | 204,878 |

If you have any questions or if you need additional information regarding this memo, please contact Matt Holm at (916) 227-8832.

# List of Impacted Structures

**ATTACHMENT – K**

## List of Impacted Structures for Alternatives 2

| No. | Post Mile | Structures to be Widened | Railroad Involvement | Over Water | City |
|---|---|---|---|---|---|
| 1 | 10.21 | Conejo Grade Sidehill No. 1: 52-0413 | | | Camarillo |
| 2 | 10.56 | Conejo Grade Sidehill No. 2: 52-0414 | | | |
| 3 | 10.74 | Camarillo Springs Rd UC 52-0203 | | | |
| 4 | 11.44 | Arroyo Conejo Creek 52-0008 | | YES | |
| 5 | 12.76 | Arroyo Calleguas Creek 52-0009 | | YES | |
| 6 | 13.75 | Camarillo OH & Sep 52-0016 | YES | | |
| 7 | 18.78 | Beardsley Wash 52-0164 | | YES | Oxnard |
| 8 | R24.34 | Montalvo OH 52-0017 L/R | YES | YES | Ventura |
| 9 | R24.66 | Victoria Ave UC 52-0439 L/R | | | |
| 10 | 25.97 | Telephone Rd UC 52-0214 L/R | | | |
| 11 | 26.72 | Main St UC 52-0168 L/R | | | |
| 12 | 27.25 | Lemon OH 52-0020 L/R | YES | | |
| 13 | 29.45 | Vista Del Mar Dr. UC 52-0152 L/R | | | |
| 14 | 29.54 | San Jon Creek 52-0163 L/R | | | |
| 15 | 30.40 | Figueroa St. UC 52-0231 L/R | | | |
| 16 | 30.59 | Ventura Ave. Off-Ramp UC 52-0232 L/R | | | |
| 17 | 30.71 | West Ventura Overhead 52-0235 L/R | | | |

| No. | Post Mile | Structures to be Replaced | Railroad Involvement | Over Water | City |
|---|---|---|---|---|---|
| 1 | 7.02 | Borchard Rd OC 52-0247 | | YES | Thousand Oaks |

## List of Impacted Structures for Alternatives 3

| No. | Post Mile | Structures to be Widened | Railroad Involvement | Over Water | City |
|---|---|---|---|---|---|
| 1 | 4.53 | Arroyo Sidehill. Viaduct 52-0411 L | | | Thousand Oaks |
| 2 | 4.58 | Arroyo Sidehill. Viaduct 52-0411 R | | | |
| 3 | 4.71 | N Arroyo Conejo Sidehill Viaduct 52-0412 R | | | |
| 4 | 6.92 | S Branch Arroyo Conejo 52-0286S | | YES | |
| 5 | 10.21 | Conejo Grade Sidehill Viaduct 1; 52-0413 | | | Camarillo |
| 6 | 10.56 | Conejo Grade Sidehill Viaduct 2; 52-0414 | | | |
| 7 | 10.74 | Camarillo Springs Rd UC 52-0203 | | | |
| 8 | 11.44 | Arroyo Conejo Creek 52-0008 | | YES | |
| 9 | 12.76 | Arroyo Calleguas Creek 52-0009 | | YES | |
| 10 | 13.75 | Camarillo OH & Sep 52-0016 | YES | | |
| 11 | 18.78 | Beardsley Wash 52-0164 | | YES | Oxnard |
| 12 | R23.07 | Santa Clara River Bridge 52-0049 | | YES | Ventura |
| 13 | R23.98 | Montalvo Spur OH 52-0021 L/R | YES | | |
| 14 | R24.34 | Montalvo OH 52-0017 L/R | | YES | |
| 15 | R24.66 | Victoria Ave UC 52 0439 L/R | | | |
| 16 | 25.97 | Telephone Rd UC 52-0214 L/R | | | |
| 17 | 26.72 | Main St UC 52-0168 L/R | | | |
| 18 | 27.25 | Lemon OH 52-0020 L/R | YES | | |
| 19 | 29.45 | Vista Del Mar UC 52-0152 L/R | | | |
| 20 | 29.55 | San Jon Creek 52-0163 L/R | | YES | |
| 21 | 30.40 | Figueroa St. UC 52-00231 L/R | | | |
| 22 | 30.59 | Ventura Ave. Off-Ramp UC 52-0232 L/R | | | |
| 23 | 30.71 | West Ventura Overhead 52-0235 L/R | | | |

## List of Impacted Structures for Alternatives 3

| No. | Post Mile | Structures to be Replaced | Railroad Involvement | Over Water | City |
|---|---|---|---|---|---|
| 1 | 5.05 | Lynn Rd OC Bridge No 52-0325 | | | Thousand Oaks |
| 2 | 6.19 | Ventu Park OC 52-0280 L/R | | | |
| 3 | 7.02 | Borchard Rd OC 52-0247 | | YES | |
| 4 | 7.80 | Wendy Drive OC 52-0266 | | | |
| 5 | 12.30 | Santa Rosa Rd OC 52-0204 (Pleasant Valley Rd) | | | Camarillo |
| 6 | 14.13 | Arneill Rd OC 52-0447 | | | |
| 7 | 17.75 | Central Ave OC 52-0270 | | | |
| 8 | 19.17 | Del Norte Blvd OC 52-0271 (Almond Dr OC) | | | Oxnard |
| 9 | 20.08 | Santa Clara Ave OC 52-0197 | | | |
| 10 | 26.39 | Jct 126 / 101 Sep 52-0224 F (S1011-E126 Connector OC) | | | Ventura |
| 11 | 29.89 | Ash St POC 52-0218 | | | |
| 12 | 30.01 | Ventura UP 52-0178 | YES | | |
| 13 | 30.10 | Chestnut St. OH On-Ramp 52-00217K | YES | | |
| 14 | 30.15 | California St OC 52-0219 | | | |

## List of Impacted Structures for Alternatives 4

| No. | Post Mile | Structures to be Widened | Railroad Involvement | Over Water | City |
|---|---|---|---|---|---|
| 1 | 4.53 | Arroyo Sidehill. Viaduct 52-0411 L | | | Thousand Oaks |
| 2 | 4.58 | Arroyo Sidehill. Viaduct 52-0411 R | | | |
| 3 | 4.71 | N Arroyo Conejo Sidehill Viaduct 52-0412 R | | | |
| 4 | 6.92 | S Branch Arroyo Conejo 52-0286S | | YES | |
| 5 | 10.21 | Conejo Grade Sidehill Viaduct 1; 52-0413 | | | Camarillo |
| 6 | 10.56 | Conejo Grade Sidehill Viaduct 2; 52-0414 | | | |
| 7 | 10.74 | Camarillo Springs Rd UC 52-0203 | | | |
| 8 | 11.44 | Arroyo Conejo Creek 52-0008 | | YES | |
| 9 | 12.76 | Arroyo Calleguas Creek 52-0009 | | YES | |
| 10 | 13.75 | Camarillo OH & Sep 52-0016 | YES | | |
| 11 | 18.78 | Beardsley Wash 52-0164 | | YES | Oxnard |
| 12 | R23.07 | Santa Clara River Bridge 52-0049 | | YES | Ventura |
| 13 | R23.98 | Montalvo Spur OH 52-0021 L/R | YES | | |
| 14 | R24.34 | Montalvo OH 52-0017 L/R | | YES | |
| 15 | R24.66 | Victoria Ave UC 52 0439 L/R | | | |
| 16 | 25.97 | Telephone Rd UC 52-0214 L/R | | | |
| 17 | 26.72 | Main St UC 52-0168 L/R | | | |
| 18 | 27.25 | Lemon OH 52-0020 L/R | YES | | |
| 19 | 29.45 | Vista Del Mar UC 52-0152 L/R | | | |
| 20 | 29.55 | San Jon Creek 52-0163 L/R | | | |
| 21 | 30.4 | Figueroa St. UC 52-00231 L/R | | | |
| 22 | 30.59 | Ventura Ave. Off-Ramp UC 52-0232 L/R | | | |
| 23 | 30.71 | West Ventura Overhead 52-0235 L/R | | | |

## List of Impacted Structures for Alternatives 4

| No. | Post Mile | Structures to be Replaced | Railroad Involvement | Over Water | City |
|---|---|---|---|---|---|
| 1 | 5.05 | Lynn Rd OC Bridge No 52-0325 | | | Thousand Oaks |
| 2 | 6.19 | Ventu Park OC 52-0280 L/R | | | |
| 3 | 7.02 | Borchard Rd OC 52-0247 | | YES | |
| 4 | 7.89 | Wendy Drive OC 52-0266 | | | |
| 5 | 12.3 | Santa Rosa Rd OC 52-0204 (Pleasant Valley Rd) | | | Camarillo |
| 6 | 14.13 | Arneill Rd OC 52-0447 | | | |
| 7 | 17.75 | Central Ave OC 52-0270 | | | |
| 8 | 19.17 | Del Norte Bl OC 52-0271 (Almond Dr OC) | | | Oxnard |
| 9 | 20.08 | Santa Clara Ave OC 52-0197 | | | |
| 10 | 21 | Oxnard Bl (Route 1) 52-0454 | | | |
| 11 | 26.39 | Jct 126 / 101 Sep 52-0224F (S101-E126 Connector OC) | | | Ventura |
| 12 | 28.45 | Seaward Ave 52-0434 | | | |
| 13 | 29.89 | Ash St POC 52-0218 | | | |
| 14 | 30.01 | Ventura UP 52-0178 | YES | | |
| 15 | 30.1 | Chestnut St On-Ramp OH 52-00217K | YES | | |
| 16 | 30.15 | California St OC 52-0219 | | | |

# PSR-PDS Scoping Checklist

**ATTACHMENT – L**

# ARTICLE 11

# Division of Engineering Services PSR-PDS Scoping Checklist

## Project Information

District 07 County VEN Route US 101 (Post Mile) 4.1/R30.9, EA 29830K Project ID # 0713000249

Project Description: The Ventura County Transportation Commission (VCTC), project sponsor, through its Comprehensive Transportation Plan (CTP) has identified US-101 as a priority within their region. As such, this project proposes to accommodate future traffic demands on this route by constructing High Occupancy Vehicle (HOV) lanes as discussed below:

Alternative 1: No-build
Alternative 2: Adds a nonstandard width HOV lane in each direction
Alternative 3: Adds a standard width HOV lane in each direction
Alternative 4: Adds two standard width HOV lanes in each direction

**The PSR-PDS Scoping Checklist would be for Alternatives 2 to 4.**

Project Manager Ravi Ghate Phone # (213) 897- 5593

DES Project Liaison Engineer (PLE): Jan Rutenbergs Phone # 916-227-7335

DES Special Funded Projects Liaison Engineer: Masoud Esnaashari Phone # 916- 227-8341

DES Consultant Management Engineer: Phone #

*The Project Liaison Engineer will provide assistance with the completion of this form.

## Project Scope

DES acknowledges that scope is in development at this time. The Project Liaison Engineer is available to assist the District in determining the involvement of DES functional units. The intent of the checklist is to gather as much information as possible on the alternatives to accurately identify the involvement of DES.

Describe and identify in the following sections a general description of improvements anticipated as part of the project scope that will require DES functional unit involvement.

**Check applicable boxes describing proposed scope of project.**

☐ New Expressway/Freeway ☐ Other Roadway Realignment ☒ Widen Highway

| | | |
|---|---|---|
| on new alignment | ☐ Emergency/Storm Damage | ☐ Rockfall Project |
| ☐ Construct Interchange | ☒ Bridge Widening | ☐ Left-turn Pocket |
| ☐ Modify Interchange | ☐ Curve Correction | ☐ Modify Slope |
| ☒ Bridge Replacement | ☐ Building Project | ☐ Stabilize Subgrade |
| (New alignment? ☐ Yes ☒ No) | ☐ Median Barrier Retrofit | ☐ Stabilize Roadway |
| ☐ Bridge Rehabilitation | ☐ Construct Passing Lane | ☐ Landslide/Slip-out |
| ☐ New Bridge | ☒ Soundwall/Retaining Wall | ☐ Bridge Deck Rehab. |
| ☐ Bridge Seismic Retrofit | ☐ Roadway Rehabilitation | ☐ Bridge Joint Seals |
| ☐ Other Design: Explain: | | |

Briefly describe proposed scope of DES involvement for all alternatives.

**Alternative 1**: No-build

This alternative would maintain the existing freeway facility and therefore would not improve traffic congestion in this area.

**Alternative 2**:

- Add one HOV with Non-standard lanes from Begin to End project in each direction.
- Construct retaining walls and relocate soundwalls at the shoulder's edge where needed.
- Construct Concrete Barrier and shoulder in the median as follows:
  - From Carmen Dr OC PM 14.801 to PM 17.064
  - From PM 18.018 to PM 19.19
  - From PM 21.673 to PM 22.01
  - From PM 23.98 to PM 30.748

- <u>The following UC structures to be widened:</u>

  Conejo Grade Sidehill Viaduct No.1 (52-413)
  Conejo Grade Sidehill Viaduct No.2 (52-414)
  Camarillo Spring Rd UC (52-203)
  Arroyo Conejo (52-08)
  Arroyo Calleguas Creek (52-09)
  Camarillo OH, (52-16)
  Beardsley Wash (52-164)
  Montalvo Spur OH (52-21 L & R)
  Montalvo Spur OH # 52-17 L & R
  Victoria Ave. (52-439)
  Telephone Rd. ( 52-214)
  Main St. (52-168)
  Channel Dr & Lemon OH (52-20)
  Vista Del Mar Dr (52-152)
  Sanjon Creek (52-163)
  Figueroa St. UC (52-231)
  Ventura Ave. Off Ramp UC (52-232)
  West Ventura OH (52-235)

- The following OC structures to be reconstructed
  Borchard Rd OC (52-247)

**Alternative 3**:

- Add one HOV with Standard lanes from Begin to End project in each direction.
- Construct retaining walls and relocate soundwalls at the shoulder's edge where needed.
- Reconstruct AC Shoulder with PCC in the median.
- Widen Road way
- Modify Ramps
- Relocate Signs and Lights
- Construct Concrete Barrier and shoulder in the median as follows:
  - From Carmen Dr OC PM 14.801 to PM 17.064
  - From PM 18.018 to PM 19.19
  - From PM 21.673 to PM 22.01
  - From PM 23.98 to PM 30.748

- The following UC structures to be widened:
  SB Arroyo Conejo Sidehill Viaduct #52-411L
  NB Arroyo Conejo Sidehill Viaduct #52-411R
  NB Arroyo Conejo Sidehill Viaduct (Norht) #52-412R
  South Branch Arroyo Conejo (Off Ramp) #52-286
  Conejo Grade Sidehill Viaduct No.1 (52-413)
  Conejo Grade Sidehill Viaduct No.2 (52-414)
  Camarillo Spring Rd UC (52-203)
  Arroyo Conejo (52-08)
  Arroyo Calleguas Creek (52-09)
  Camarillo OH, (52-16)
  Beardsley Wash (52-164)
  Santa Clara River # 52-449
  Montalvo Spur OH (52-21 L&R)
  Montalvo Spur OH # 52-17 L & R,
  Victoria Ave. (52-255 L & R)
  Telephone Rd. ( 52-214 L&R )
  Main St. (52-168 L&R)
  Channel Dr & Lemon OH (52-20 L&R)
  Vista Del Mar Dr (52-152 L&R)
  Sanjon Creek (52-163 L&R)
  Figueroa St. UC (52-231 L&R)
  Ventura Ave. Off Ramp UC (52-232 L&R )
  West Ventura OH (52-235 L&R)

- The following OC structures to be reconstructed
  Lynn Rd # 52-325

Ventu Park Rd # 52-280 L/R
Borchard Rd OC (52-247)
Santa Rosa Rd # 52-0204
Arneill Rd # 52-0447
Springville Dr #
Central Ave. # 52-270
Del Norte Blvd. # 52-271
Rice Ave # 52-197
Route 126 OC # 52-224F,
SH ST. POC # 52-218
UP Rail Road # 51-178
Chestnut St. # 52-217K
California St. #52-219

**Alternative 4**:

Alternative 4 is similar to Alternative 3, except that the mainline roadway is widened 12 feet more, and two additional structures - Oxnard Blvd OC 52-0454 and Seaward Ave. OC 52-0434 will be reconstructed, to accommodate the additional HOV lane in each direction.

## Project Schedule

| | |
|---|---|
| PA/ED Date | |

## Project Cost

**For PSR (PDS)** projects, the following section is to be used for EACH alternative, provided that the scope is significantly different.

**Alternative #** 2

| | **Project Cost Range ($ 1000's)** | **Cost of Largest Structure ($ 1000's)** |
|---|---|---|
| Roadway | $483,000 – 560,000 | N/A |
| Structure** | $ 71,500 – 100,000 | $ |
| Total | $554,500 – 660,000 | |

**Structure Cost Range to be provided by (check one)

☐ Consultant ☒ Structure Design Technical Liaison.

**Alternative #** 3

| | **Project Cost Range ($ 1000's)** | **Cost of Largest Structure ($ 1000's)** |
|---|---|---|

| | | |
|---|---|---|
| Roadway | $ 1,947,000 - 1,220,000 | N/A |
| Structure** | $ 204,000 – 250,000 | $ |
| Total | $1,137,000 – 1,470,000 | |

**Structure Cost Range to be provided by (check one)

☐ Consultant ☒ Structure Design Technical Liaison.

**Alternative #4**

| Project Cost Range ($ 1000's) | | Cost of Largest Structure ($ 1000's) |
|---|---|---|
| Roadway | $1,230,800 – 1,341,000 | N/A |
| Structure** | $ 313,558 – 380,000 | $ |
| Total | $1,551,388 – 1,721,000 | |

**Structure Cost Range to be provided by (check one)

☐ Consultant ☒ Structure Design Technical Liaison.

## Project Scope Breakdown by DES Function

### Photogrammetry

**Note:** A **Photogrammetry Service Request**-PSR (PDS) must be completed and submitted to DES Photogrammetry by the District Photogrammetry Coordinator.

### Bridge Design Services (check applicable boxes)

**Design by:**

- ☒ Office of Structure Design
- ☐ Structure Maintenance Design
- ☐ Office of Structure Contract Management (Consultant Design Oversight)
- ☐ Office of Special Funded Projects (Consultant Design Oversight)

**Bridge Information:**

| | | |
|---|---|---|
| ☐ New Bridge(s) | Number | Br. Name(s) & No(s). |
| ☒ Bridge Replacement(s) | Number | Br. Name(s) & No(s). |
| ☒ Bridge Widening(s) | Number | Br. Name(s) & No(s). |
| ☐ New Bridge over water | Number | Br. Name(s) & No(s). |
| ☐Bridge Replacement over water | Number | Br. Name(s) & No(s). |
| ☒Bridge Widening over water | Number | Br. Name(s) & No(s). |
| ☒ Bridge Rail Replacement(s) | Number | Br. Name(s) & No(s). |
| ☐Approach Slab | Number | Br. Name(s) & No(s). |
| ☒Bridge with Railroad Involved | Number | Br. Name(s) & No(s). |
| ☐Bridge w/ Scour Analysis | Number | Br. Name(s) & No(s). |
| ☐Bridge w/ Special Design or Retrofit | Number | Br. Name(s) & No(s). |

### Other DES functional units required for Structure Work

☐ Structure Hydraulics (include if bridge is over or adjacent to water)
☒ Preliminary Investigations (Structure Foundation Plan)
☒ Geotechnical Services (Structure Foundations)

## Wall Design Data for Structure Design & Geotechnical Services

| | | | |
|---|---|---|---|
| ☐ Soundwall(s) Number | Est. Max. Ht Est. Length | ☐ Standard Design | ☐ Special Design |
| ☒ Ret. walls(s) Number | Est. Max. Ht Est. Length | ☐ Standard Design | ☐ Special Design |
| ☐ MSE Wall(s) Number | Est. Max. Ht Est. Length | ☐ Standard Design | ☐ Special Design |

## Geotechnical Services

**Is Oversight for consultant prepared geotechnical reports required?**

☐ Yes ☒ No

**Has the Geotechnical Design Liaison or other geotechnical person been contacted?**

☐ Yes ☒ No If yes, who?

| | | | | |
|---|---|---|---|---|
| **Terrain** | ☒ Flat | ☒ Rolling | ☒ Mountainous | |
| **Cuts:** | Est. Max Height (ft) 40 | Est. Volume(CY): | ☐ New | ☐ Widen |
| **Fills:** | Est. Max Height (ft) 30 | Est. Volume CY): | ☐ New | ☐ Widen |

**Sign Structures**

| | |
|---|---|
| ☐ Overhead Sign Foundations | Number |
| ☐ Changeable Message Sign Foundations | Number |

**Other:**

☒ Special Studies (slope stability, rockfall, erosion, seepage, ground water, settlement, liquefaction, slipout repair, rock slope, etc.) Explain: TIEBACK
☐ Existing Maintenance Problems: Explain:

## Technical Specialist Design

**Anticipated insertable plan sheet(s) check below:**

| | |
|---|---|
| ☐ Culvert(s) | Number |
| ☐ Barrier(s) | Number |
| ☐ Signs and Overhead Structures | Number |
| ☐ Other Design: | Explain: |

## Transportation Architecture Design

| | |
|---|---|
| ☐ Design New Building(s) | Explain: |
| ☐ Remodel Existing Buildings(s) | Explain: |
| ☐ Bridge Aesthetics Evaluation | Explain: |
| ☐ Build scale model | Explain: |
| ☐ Other Aesthetics work | Explain: |

## Electrical, Mechanical, Water & Wastewater Design

| | |
|---|---|
| ☐ Pumping Plants | Explain: |
| ☐ Movable bridge, drawbridge | Explain: |

| | |
|---|---|
| ☐ Lighting control system for facilities | Explain: |
| ☐ Sanitary Systems | Explain: |

### Materials Engineering & Testing Services

**Pavement**

| | | |
|---|---|---|
| ☒ Rigid ☒ Flexible | Average Grade | Average Superelevation |
| ☐ Deflection Study Required | No. of Locations | Lane/miles to be tested |

**Consultation and Inspection**

| | | |
|---|---|---|
| ☐ Loop detectors | ☐ Signal & Lighting Products | ☐ Changeable Message Signs, Closed Circuit TV |
| ☐ Concrete Bridge | ☐ Steel Bridge | |

### Materials Engineering & Testing Services (Continued)

**Corrosion Tests**

| | | |
|---|---|---|
| ☐ Soil | ☐ Concrete | ☐ Cathodic Protection System |

**Other**

| | |
|---|---|
| ☐ Special Products: | Explain |

| Division of Engineering Services Workload Estimate for PA/ED | | | | |
|---|---|---|---|---|
| **WBS** | **Alternative Number** | | | |
| | **1** | **2** | **3** | **4** |
| **100.10** | **0** | **0.42** | **0.51** | **0.65** |
| **160.10** | **0** | **2.64** | **5.77** | **7.67** |
| **175** | **0** | **0** | **0** | **0** |
| | | | | |
| **Total PY's per Alternative** | **0** | **3.06** | **6.28** | **8.32** |

**Prepared By: Jan Rutenbergs, PLE** _____ **Date: November 22, 2013**

## Additional Studies, Investigations or Research from DES

Identify additional studies or investigations that may be required from DES Functional Units.

**Project Manager:** _____ **Date:** _____

Please submit this form to DES, to the attention of the Project Liaison Engineer, Office of Project Delivery, in the subdivision of Program/Project & Resource Management.

DES will provide a Structure Cost Estimate Range, for each alternative and a resource summary estimate to be included in the project workplan.

# Storm Water Data Report (Cover Page)

**ATTACHMENT – M**

Dist-County-Route: 07-VEN-101
Post Mile Limits: PM 4.1/PM 30.9
Project Type: Capacity Improvement Project
Project ID (or EA): 0713000249 (29830K)
Program Identification: 40.50.075.651
Phase: ☒ PID ☐ PA/ED ☐ PS&E

**Regional Water Quality Control Board(s):** Los Angeles – Region 4

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: 402.4 acres Risk Level: 3
Estimated: Construction Start Date: March 1, 2024 Construction Completion Date: September 1, 2034
Notice of Intent (NOI) Date to be submitted: January 30, 2024

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 # _____ 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.*

Duyen Luu — 12/6/13
Duyen Luu, Registered Project Engineer — Date

*I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:*

Ravi Ghate — 12/18/13
*Ravi Ghate, Project Manager* — Date

12-18-13
*Roger Castillo, Designated Maintenance Representative* — Date

for Jai Paul Grewal — 12/18/13
*Ron Russak, Designated Landscape Architect Representative* — Date

*[Stamp Required for PS&E only]* — 12/18/2013
*Shirley Rak, District/Regional Design SW Coordinator or Designee* — Date