ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017
PROJECT BASELINE AGREEMENT
Soscol Junction Project

Resolution SCCP-P-2021-05B
(will be completed by CTC)

1. FUNDING PROGRAM

- ☐ Active Transportation Program
- ☐ Local Partnership Program (Competitive)
- ☒ Solutions for Congested Corridors Program
- ☐ State Highway Operation and Protection Program
- ☐ Trade Corridor Enhancement Program

2. PARTIES AND DATE

2.1 This Project Baseline Agreement (Agreement) for the *Soscol Junction Project*, effective on, June 23, 2021 (will be completed by CTC), is made by and between the California Transportation Commission (Commission), the California Department of Transportation (Caltrans), the Project Applicant, *Napa Valley Transportation Authority*, and the Implementing Agency, *Caltrans*, sometimes collectively referred to as the "Parties".

3. RECITAL

3.2 Whereas at its December 2, 2020 meeting the Commission approved the Solutions for Congested Corridors Program, and included in this program of projects the *Soscol Junction Project*, the parties are entering into this Project Baseline Agreement to document the project cost, schedule, scope and benefits, as detailed on the Project Programming Request Form attached hereto as Exhibit A and the Project Report attached hereto as Exhibit B, as the baseline for project monitoring by the Commission.

3.3 The undersigned Project Applicant certifies that the funding sources cited are committed and expected to be available; the estimated costs represent full project funding; and the scope and description of benefits is the best estimate possible.

4. GENERAL PROVISIONS

The Project Applicant, Implementing Agency, and Caltrans agree to abide by the following provisions:

4.1 To meet the requirements of the Road Repair and Accountability Act of 2017 (Senate Bill [SB] 1, Chapter 5, Statutes of 2017) which provides the first significant, stable, and on-going increase in state transportation funding in more than two decades.

4.2 To adhere, as applicable, to the provisions of the Commission:

- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Active Transportation Program", dated
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Local Partnership Program", dated
- ☒ Resolution G-20-80, "Adoption of Program of Projects for the Solutions for Congested Corridors Program", dated December 2, 2020
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the State Highway Operation and Protection Program", dated
- ☐ Resolution *Insert Number* , "Adoption of Program of Projects for the Trade Corridor Enhancement Program", dated

4.3 All signatories agree to adhere to the Commission's Solutions for Congested Corridors Program, Guidelines. Any conflict between the programs will be resolved at the discretion of the Commission.

4.4 All signatories agree to adhere to the Commission's SB 1 Accountability and Transparency Guidelines and policies, and program and project amendment processes.

4.5 The Napa Valley Transportation Authority agrees to secure funds for any additional costs of the project.

4.6 The Napa Valley Transportation Authority agrees to report to Caltrans on a quarterly basis; after July 2019, reports will be on a semi-annual basis on the progress made toward the implementation of the project, including scope, cost, schedule, outcomes, and anticipated benefits.

4.7 Caltrans agrees to prepare program progress reports on a quarterly basis; after July 2019, reports will be on a semi-annual basis and include information appropriate to assess the current state of the overall program and the current status of each project identified in the program report.

4.8 The Napa Valley Transportation Authority agrees to submit a timely Completion Report and Final Delivery Report as specified in the Commission's SB 1 Accountability and Transparency Guidelines.

4.9 All signatories agree to maintain and make available to the Commission and/or its designated representative, all work related documents, including without limitation engineering, financial and other data, and methodologies and assumptions used in the determination of project benefits during the course of the project, and retain those records for four years from the date of the final closeout of the project. Financial records will be maintained in accordance with Generally Accepted Accounting Principles.

4.10 The Transportation Inspector General of the Independent Office of Audits and Investigations has the right to audit the project records, including technical and financial data, of the Department of Transportation, the Project Applicant, the Implementing Agency, and any consultant or sub-consultants at any time during the course of the project and for four years from the date of the final closeout of the project, therefore all project records shall be maintained and made available at the time of request. Audits will be conducted in accordance with Generally Accepted Government Auditing Standards.

5. SPECIFIC PROVISIONS AND CONDITIONS

5.1 Project Schedule and Cost
See Project Programming Request Form, attached as Exhibit A.

5.2 Project Scope
See Project Report or equivalent, attached as Exhibit B. At a minimum, the attachment shall include the cover page, evidence of approval, executive summary, and a link to or electronic copy of the full document.

5.3 Other Project Specific Provisions and Conditions
https://www.nvta.ca.gov/sites/default/files/Environmental%20Study_0.pdf
https://www.nvta.ca.gov/sites/default/files/Soscol%20Junction%20Fact%20Sheet.pdf

Attachments:

Exhibit A: Project Programming Request Form
Exhibit B: Project Report

SIGNATURE PAGE
TO
PROJECT BASELINE AGREEMENT

Soscol Junction Project

Resolution SCCP-P-2021-05B

Digitally signed by Kate Miller
Date: 2021.03.18 13:14:22 -07'00'

3/18/2021

Kate Miller — Date

Executive Director

Project Applicant

4/1/2021

Dina El-Tawansy — Date

District Director

Implementing Agency

4/1/2021

Dina El-Tawansy — Date

District Director

California Department of Transportation

5.4.21

Toks Omishakin — Date

Director

California Department of Transportation

08/17/21

Mitchell Weiss — Date

Executive Director

California Transportation Commission

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6510-2020-0007 v0

Amendment (Existing Project) ☐ YES ☒ NO				Date	07/08/2021 14:51:56
Programs ☐ LPP-C ☒ LPP-F ☒ SCCP ☐ TCEP ☒ STIP ☒ Other					
District	EA	Project ID	PPNO	Nominating Agency	
04	28120	0400000769	0376	Napa Valley Transportation Authority	
County	Route	PM Back	PM Ahead	Co-Nominating Agency	
Napa	221	0.000	0.700		
Napa	29	5.000	6.700	MPO	Element
				MTC	Capital Outlay
Project Manager/Contact			Phone	Email Address	
Sanjay Mishra			707-259-5951	smishra@nvta.ca.gov	

Project Title

Soscol Junction (SR 29/221/Soscol Ferry Road)

Location (Project Limits), Description (Scope of Work)

In Napa County. The project is an operational improvement located at the intersection of SR 29/SR 221/Soscol Ferry Road. The project will reconfigure the existing signalized intersection and build a new roundabout interchange with an elevated structure on SR 29 and roundabouts below grade, one north of SR 29, and one south of SR 29. The project will also construct a class I multiuse path on the north side of the intersection allowing bicycles and pedestrians to navigate the intersection.

Component	Implementing Agency
PA&ED	Caltrans District 4
PS&E	Napa Valley Transportation Authority
Right of Way	Caltrans District 4
Construction	Caltrans District 4

Legislative Districts

Assembly:	4	Senate:	3	Congressional:	5

Project Milestone		Existing	Proposed
Project Study Report Approved			
Begin Environmental (PA&ED) Phase		12/01/2000	12/01/2000
Circulate Draft Environmental Document	Document Type (ND/MND)/FONSI	09/20/2019	09/20/2019
Draft Project Report		09/20/2019	09/20/2019
End Environmental Phase (PA&ED Milestone)		02/13/2020	02/13/2020
Begin Design (PS&E) Phase		04/15/2020	04/15/2020
End Design Phase (Ready to List for Advertisement Milestone)		06/30/2021	07/30/2021
Begin Right of Way Phase		06/08/2020	06/08/2020
End Right of Way Phase (Right of Way Certification Milestone)		05/01/2021	05/01/2021
Begin Construction Phase (Contract Award Milestone)		11/15/2021	11/15/2021
End Construction Phase (Construction Contract Acceptance Milestone)		11/15/2023	11/15/2023
Begin Closeout Phase		11/15/2023	11/15/2023
End Closeout Phase (Closeout Report)		11/15/2024	11/15/2024

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6510-2020-0007 v0

Date 07/08/2021 14:51:56

Purpose and Need

Purpose: To alleviate congestion and improve operation by constructing an interchange separation at SR 221 and SR 29.
Need: The signalized intersection of SR 221 and SR 29 is currently experiencing traffic congestion during AM and PM peak periods and is operating at or near capacity. The traffic projections indicate that the peak hour traffic volume would increase by about 50% by 2039.

Project Benefits:
State Route (SR) 29 and SR 221 meet at Soscol Ferry Road Junction and serve motorists traveling between Napa Valley and Fairfield/Vallejo Area. SR 221 and SR 29 serve as interregional, recreational, commercial, agricultural, and commuter routes. The project will remove the traffic signal and construct an interchange separation and roundabouts which will alleviate congestion, improve traffic operations, and enhance safety.

NHS Improvements ☒ YES ☐ NO	Roadway Class NA	Reversible Lane Analysis ☐ YES ☒ NO

Inc. Sustainable Communities Strategy Goals ☒ YES ☐ NO Reduce Greenhouse Gas Emissions ☒ YES ☐ NO

Project Outputs

Category	Outputs	Unit	Total
Operational Improvement	Interchange modifications	EA	1

Date 07/08/2021 14:51:56

Additional Information

*Congestion Reduction : Regional per capita VMT map by MTC-2017 and BAAQMD VMT 2005.
Relevant job multiplier for industry per Economic Policy Institute U.S. empl .
Soscal Junction TOAR. No BUILD avg delay is 320.5 seconds. BUILD avg delay = 10.2 seconds. ADT assumed 72500.
Current Annual Ttl person delay 221seconds. No BUILD average delay 320.5seconds and BUILD average delay will be 10.2seconds.
Data: AADT details form Caltrans. for D 4, Route -029, County Napa, Postmile 6.196, Location JCT. RTE. 221 North.
- See Cal B/C Corridor analysis tool for total Person hours tavel time saved & Soscol Junction TOAR.
-MTC VMT maps (2017) https://mtc.maps.arcgis.com/home/webmap/viewer.html?webmap=2bddae2c822146a7a8e98892a6d4ee2f
-VMT data (2005) by BAAQMD for Climate Action Plan. http://capvmt.us-west-2.elasticbeanstalk.com/data
Assmptns:
-Per capita VMT data of Transportation Analysis Zones (TAZ) were assumed to be 1291 and 1292.
-Ref. MTC's VMT projections prepared in 2017- Per Capita VMT for 2040 is projectcted for TAZ 1291 is 16.2 and TAZ 1292 is 15.9, avg ~16.
- Different development assumptions & thus it is not possible to compare the BUILD and No BUILD per capita VMT.
-Avg vehicle occupancy assumed to be 1.4 persons/veh. Refer 2014 Napa County Travel Behaviour Study."
*Throughput (Bicyclist/Pedestrian Screen Line Counts)
Method: Induced Demand calc based of # of housing units w/in 4 mi of bicycle impvmnt - 0.2 trips per 100 dwelling units in low residential areas
Data: Census tract housing units w/in 4 mi is ~6,758 housing units - census tracts 2003.2, 2003.1, 2002,02, 2002.01, 2009, & half of 2008.02); 6,758/100 units = 67.58 units (.0.2) = 13.5 or 13 bicycles per day; Used calc from AICP Simple Techniques for Forecasting Bicycle & Pedestrian Demand.
*System Reliability (Peak Per Travel Time Reliability Index)
Method: BTI < 0.25- Reliable; 0.25 - <0.5- Moderately Reliable; >= 0.5 - Unreliabl
Data: SR 29 Comprehensive Multimodal Corridor Plan was completed by NVTA w/ Travel Time Reliability Analysis. Buffer Time Index (BTI) Thresholds are projected.
Assmptns: The Buffer time index- addt'l time a driver will allocate to pass through Soscol Junction. Project is expected to reduce the pass through time by 50% as compared to a No Build condition.
*Safety
Method: SWITRS (injuries), Cal B/C Corridor Analysis costs savings (accident cost savings)
Data: Collision data for the SR 29/ SR 221 I SWITRS & Transportation Injury Mapping System (TIMS) for a 5yr per btwn 1/1/13 and 12/13/17. Collison Projection Analysis for Soscol Junction by GHD Inc. Cal B/C Corridor Analysis v7.2 used for accident cost savings. SJ TOAR. https://www.driverknowledge.com/car-accident-statistics/; https://www.epi.org/publication/updated-employment-multipliers-for-the-u-s-economy/
Assmptns: Per the Collision projection analysis, project to reduce vehicle collision by 66%.
*Econ Dev :Method:Use of relevant job multiplier for industry - Economic Policy Institute U.S. empl multiplier report.
Data: Jan 2019 Updated Employment Multipliers for U.S. Economy, by Economic Policy Institute.
Assmptns: Construction yields 5.5 direct jobs &10.9 indirect jobs per $1M. $64M proj = ~1050 jobs.
*Air Quality & GHG:Method: See Cal B/C Corridor Analysis tool v7.2 for Soscol Project.
Data: final env docu, Cal B/C v 7.2 : Assmptns: Not a new or expanded hwy project that would have a significant # of diesel veh; unlikely to affect intersections; roundabouts are considered to red CO2 emissns by 66%.
*Cost Effectiveness
Method: Cost Benefit Ratio= $463.2M/47.5M
Data: SJ ennv doc, SJ TOAR, Cal B/C v 7.2
*Accessblty
2017 Socio Economic Profile study; Key destinations Id'd in Napa Travel Behavior Study, key destinations w/in 45 min, peak hr
---
RTL date is updated to 7/30 and $739k added to CON Support due to fish passage design and alternative design.

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6510-2020-0007 v0

Performance Indicators and Measures						
Measure	**Required For**	**Indicator/Measure**	**Unit**	**Build**	**Future No Build**	**Change**
Congestion Reduction	LPPF, LPPC, SCCP	Project Area, Corridor, County, or Regionwide VMT per Capita and Total VMT	Total Miles	0	0	0
			VMT per Capita	16	16	0
	LPPF, LPPC, SCCP	Person Hours of Travel Time Saved	Person Hours	46,911,860	0	46,911,860
			Hours per Capita	0	0	0
	LPPF, LPPC, SCCP	Daily Vehicle Hours of Delay	Hours	203	6,453	-6,250
	Optional	Per Capita and Total Person Hours of Delay per Year	Person Hours	73,306	2,345,778	-2,272,472
			Hours per Capita	0	0	0
Throughput	Optional	Bicyclist/ Pedestrian Screen Line Counts	# of Bikes	13	0	13
			# of Pedestrians	0	0	0
System Reliability	LPPF, LPPC, SCCP	Peak Period Travel Time Reliability Index	Index	0.25	0.5	-0.25
	LPPF, LPPC, SCCP	Transit Service On-Time Performance	% "On-time"	0	0	0
Air Quality & GHG	LPPF, LPPC, SCCP, TCEP	Particulate Matter	PM 2.5 Tons	2	0	2
			PM 10 Tons	0	0	0
	LPPF, LPPC, SCCP, TCEP	Carbon Dioxide (CO2)	Tons	94,157	0	94,157
	LPPF, LPPC, SCCP, TCEP	Volatile Organic Compounds (VOC)	Tons	30	0	30
	LPPF, LPPC, SCCP, TCEP	Sulphur Dioxides (SOx)	Tons	1	0	1
	LPPF, LPPC, SCCP, TCEP	Carbon Monoxide (CO)	Tons	238	0	238
	LPPF, LPPC, SCCP, TCEP	Nitrogen Oxides (NOx)	Tons	96	0	96
Safety	LPPF, LPPC, SCCP, TCEP	Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries	Number	0	0	0
	LPPF, LPPC, SCCP, TCEP	Number of Fatalities	Number	0	0	0
	LPPF, LPPC, SCCP, TCEP	Fatalities per 100 Million VMT	Number	0	0	0
	LPPF, LPPC, SCCP, TCEP	Number of Serious Injuries	Number	4	12	-8
	LPPF, LPPC, SCCP, TCEP	Number of Serious Injuries per 100 Million VMT	Number	3.1	9.1	-6
	Optional	Number of Property Damage Only and Non-Serious Injury Collisions	Number	30	88	-58
	Optional	Accident Cost Savings	Dollars	23,808,244	0	23,808,244
Accessibility	LPPF, LPPC, SCCP	Number of Jobs Accessible by Mode	Number	94,900	79,800	15,100
	LPPF, LPPC, SCCP	Number of Destinations Accessible by Mode	Number	40	28	12
	LPPF, LPPC, SCCP	Percent of Population Defined as Low Income or Disadvantaged Within 1/2 Mile of Rail Station, Ferry Terminal, or High-Frequency Bus Stop	%	0	0	0

PPR ID
ePPR-6510-2020-0007 v0

Performance Indicators and Measures						
Measure	**Required For**	**Indicator/Measure**	**Unit**	**Build**	**Future No Build**	**Change**
Economic Development	LPPF, LPPC, SCCP, TCEP	Jobs Created (Direct and Indirect)	Number	1,050	0	1,050
Cost Effectiveness	LPPF, LPPC, SCCP, TCEP	Cost Benefit Ratio	Ratio	9.76	0	9.76
System Preservation Pavement	LPPC, LPPF	Pavement Condition Index	Index	0	0	0
			Rating	NA	NA	
System Preservation Bridges	LPPF, LPPC	Bridge Deck Rating	Rating	NA	NA	
	LPPF, LPPC	Bridge Superstructure Rating	Rating	NA	NA	
	LPPF, LPPC	Bridge Substructure Rating	Rating	NA	NA	
Noise Level (Soundwalls Only)	LPPC, LPPF	Number of Receptors	Number	0	0	0
	LPPC, LPPF	Properties Directly Benefited	Number	0	0	0
	LPPC, LPPF	Number of Decibels	Number	0	0	0

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6510-2020-0007 v0

District	County	Route	EA	Project ID	PPNO
04	Napa, Napa	221, 29	28120	0400000769	0376

Project Title

Soscol Junction (SR 29/221/Soscol Ferry Road)

Existing Total Project Cost ($1,000s)									
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Implementing Agency
E&P (PA&ED)									Caltrans District 4
PS&E									Napa Valley Transportation Authority
R/W SUP (CT)									Caltrans District 4
CON SUP (CT)									Caltrans District 4
R/W									Caltrans District 4
CON									Caltrans District 4
TOTAL									
Proposed Total Project Cost ($1,000s)									Notes
E&P (PA&ED)	6,100							6,100	
PS&E	5,045							5,045	
R/W SUP (CT)	200							200	
CON SUP (CT)			4,875					4,875	
R/W	100							100	
CON			48,419					48,419	
TOTAL	11,445		53,294					64,739	

Fund #1:	RIP - State Cash (Committed)								Program Code
Existing Funding ($1,000s)									20.XX.075.600
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									Metropolitan Transportation Commiss
PS&E									Program Code: STIP.
R/W SUP (CT)									Pending STIP amendment to move
CON SUP (CT)									$864k from CON to CON-Sup
R/W									$5045 PSE voted 03/25/20
CON									
TOTAL									
Proposed Funding ($1,000s)									Notes
E&P (PA&ED)	6,100							6,100	
PS&E	5,045							5,045	
R/W SUP (CT)	200							200	
CON SUP (CT)									
R/W	100							100	
CON			23,419					23,419	
TOTAL	11,445		23,419					34,864	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6510-2020-0007 v0

Fund #2:	Future Need - Future Funds (Uncommitted)								Program Code
	Existing Funding ($1,000s)								FUTURE
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									Program Code: SB 1 - LPP Formula For Soscal Junction
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									LPP-F added for construction support.
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fund #3:	Local Funds - Developer Fees (Committed)								Program Code
	Existing Funding ($1,000s)								20.10.400.100
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									Program Code: Local
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)			3,714					3,714	
R/W									
CON									
TOTAL			3,714					3,714	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6510-2020-0007 v0

Fund #4:	State SB1 SCCP - State Highway Account (Committed)								Program Code
	Existing Funding ($1,000s)								20.XX.705.100
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									Program Code: SB1 - SCCP
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			25,000					25,000	
TOTAL			25,000					25,000	

Fund #5:	State SB1 LPP - Local Partnership Program - Formula distribution (Committed)								Program Code
	Existing Funding ($1,000s)								
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									$422k programmed during June 21 CTC meeting.
PS&E									
R/W SUP (CT)									
CON SUP (CT)			422					422	
R/W									
CON									
TOTAL			422					422	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

PROJECT PROGRAMMING REQUEST (PPR)

PRG-0010 (REV 08/2020)

PPR ID
ePPR-6510-2020-0007 v0

Fund #6:	RIP - COVID Relief Funds - STIP (Committed)								Program Code
	Existing Funding ($1,000s)								
Component	Prior	20-21	21-22	22-23	23-24	24-25	25-26+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
	Proposed Funding ($1,000s)								Notes
E&P (PA&ED)									Increase the construction support, programmed at June 21 CTC meeting.
PS&E									
R/W SUP (CT)									
CON SUP (CT)			739					739	
R/W									
CON									
TOTAL			739					739	

Project Report

For Project Approval

In Napa County on Route 29

From 0.3 Mile South of North Kelly Road to Napa Corporate Way Undercrossing

And On Route 221 From Intersection of Route 29 to Napa Valley Corporate Way/Anderson Road

I have reviewed the right-of-way information contained in this report and the right-of-way data sheet attached hereto, and find the data to be complete, current and accurate:

Mark L. Weaver, Deputy District Director,
Right of Way and Land Surveys

APPROVAL RECOMMENDED:

Kelly Hirschberg
Project Manager

Halim Mathkour, District Office Chief,
Office of Design North Counties

APPROVED:

Helena (Lenka) Culik-Caro,
Deputy District Director Design

February 13, 2020
Date

Vicinity Map

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

REGISTERED CIVIL ENGINEER

1/16/2020
DATE

Table of Contents

1. INTRODUCTION

Project Description

The SR 29, SR 221 and Soscol Ferry Road Intersection Project is located in Napa County at the intersection of SR 29, SR 221 and Soscol Ferry Road on PM R5.45/R6.7 at SR 29 and PM 0.0/0.6 at SR 221.
The scope and emphasis of the Project is to improve traffic operations; reduce congestion, vehicle queues, and conflicts; improve local and regional bicycle connections and pedestrian facilities; and improve safety at the SR 29, SR 221 and Soscol Ferry Road Intersection.
The build alternative would construct a tight diamond interchange with two, four-legged, multi-lane roundabouts, one on either side of the SR 29 expressway. In this alternative, SR 29 would be re- built as an overcrossing just north of the existing intersection with SR 221, providing separation between the adjacent high-speed SR 29 to SR 221 northbound ramp and the adjacent roundabout entry. The overcrossing would ensure that no eastbound and westbound through traffic on SR 29 would be required to traverse the roundabout. The roundabouts would provide access to the following: North Roundabout - SR 221/SR 29 NB Ramps and South Roundabout - SR 221/SR 29 Ramps & Soscol Ferry Road.

See Attachment B for typical cross sections and Attachment C for preliminary layout sheets.
The project is funded by Regional Improvement Program (program code 20.XX.075.600).
The following table lists key project features:

Project Limits	04 Napa 29 PM 5.45/6.7 04 Napa 221 PM 0.0/0.6	
Number of Alternatives	Two (one Build Alternative and the No-Build Alternative)	
	Current Cost Estimate:	**Escalated Cost Estimate:**
Capital Outlay Support	$14,200,000	$14,200,000
Capital Outlay Construction	$39,744,400	$43,683,260
Capital Outlay Right of Way*	$300,000	$300,000
Funding Source	Roadway Improvement Program	
Funding Year	2021/2022	
Type of Facility	Roundabouts and two Bridges	
Number of Structures	Two	
Environmental Determination or Document	Initial Study with mitigated negative Declaration/ Environmental Assessment with Finding of No Significant Impact	
Legal Description	In Napa County on Route 29 from 0.3 Mile south of North Kelly Road to Napa Corporate Way Undercrossing and on Route 221 from Intersection of Route 29 to Napa Valley Corporate Way/Anderson Road.	
Project Development Category	Category 4B	

* R/W Data sheet is $18,000

2. RECOMMENDATION

It is recommended that this project be approved using the "Build" Alternative and that the project proceed to the next phase. The affected local agencies and local public have been consulted with respect to the project scope, and they are in general accord with the project.

3. BACKGROUND

Project History

A Project Study Report /Project Development Support (PSR/PDS) of EA 28120K was approved on September 29, 2000. The document provided four alternatives of a 2-lane connector that will provide continuous traffic flow from SB 221 to SB 29 to over-pass/flyover the signalized at-grade SR29/221 Intersection. Project cost estimates ranged from $18.8 million to $26.5 million. All of the four alternatives were found to be not feasible due to potential environmental impact and non-standard freeway entrance and exit designs.

In January 2002, a new alternative (Alternative 5) was developed to bring the design to standard while minimizing the environmental impacts. The scope of the project remains the same which is constructing a 2-lane connector from SB 221 to SB 29 while maintaining the signal at the existing intersection. In January 2004, a Value Analysis (VA) study was conducted between Caltrans and the Napa County Transportation and Planning Agency (NCTPA). As result of this study, a new alternative (Alternative 6) was proposed and to be further studied. The alternative closed the Soscol Ferry Road, eliminated the left-turn on SB 29 to northbound (NB) 221 and removed the NB 221 lane and signals at the existing intersection, shortened the flyover structure and included a diamond interchange at the undercrossing of Napa Valley Corporate Drive/Vista Point Drive. Further design study showed that the total estimated cost of Alternative 6 at $65 million and the proposed interchange at the Napa Valley Corporate Drive/Vista Point Drive did not meet the interchange spacing standard of 2-miles. Alternative 6 was found to be not feasible.

In January 2008, Caltrans presented to the NCTPA Technical Advisory Committee Alternative 5, with two variations (Option 2 and Option 3). Alternative 5 was re-named Alternative 5, Option 1.

In June 2008, NCTPA expressed concerns of the high cost for Alternative 6 and re-visited Alternative 5 (Option 1, Option 2 and Option 3).

Alternative 5 Option 1	Alternative 5 Option 2	Alternative 5 Option 3
Option 1 is the original alternative that proposes to build a flyover, re-align a portion of SB 221 to SR 29 connection, and keep the existing signals at the intersection.	Options 2 includes a shorter flyover structure, right-turn lane connector from SB 221 to NB 29, closure of SR 29 median, and removal of NB 221 leg and the existing signals at the intersection.	Option 3 proposes a similar flyover structure, right-turn lane connector, and signals elimination as Option 2, but with complete removal of Soscol Ferry Road and SR 221 at the intersection.

In 2009, Caltrans, NCTPA, City of Napa, and County of Napa held workshop meetings and evaluated Alternative 5 options and the potential traffic demand of the Napa Pipe Project. They concluded that Alternative 5, Option 1 is a viable alternative for the project.

In 2018, Caltrans, NVTA and City of Napa proposed a new alternative consisting of two roundabouts that integrated complete streets elements into the design. The DED was released after the Draft Project report was signed on 9/20/2019.

Community Interaction

On August 16, 2018, Caltrans held a public outreach meeting with NVTA to present and solicit public input on these two roundabout alternatives at the NVTA boardroom in Napa County. Most of the comments received were in support of the roundabout designs; The single roundabout design option was eliminated because construction staging could not be accommodated for the overcrossing.

Given the increasing level of congestion at the intersection, there is consensus for the project. A Draft Environmental Document was released for public circulation from September to October 2019, with the public meeting on October 8, 2019. Section 7 goes into more detail about the comments received during that meeting. The Caltrans Pedestrian Advisory Committee (PAC) and Napa Bicycle and Pedestrian Advisory Committee have been invited to participate in project meetings. This project has the support of the Metropolitan Transportation Commission (MTC) and Napa Valley Transportation Authority (NVTA, formerly NCTPA). Local agencies, community groups, local businesses, and residences have also expressed strong support for the project

Existing Facility

Route 29 -PM R6.04 – R 6.48

Existing Facility:	*Signal Controlled Intersection*	**Design Speed:**	65 mph
Truck Route Network:	Terminal Access Route	**Climate Region:**	Low Mountain
Number of Lanes:	4	**Posted Speed:**	60 mph
Lane Width:	12'	**Sidewalk Width:**	N/A
Shoulder Width:	4' inside, 8' outside	**Median Width:**	24' Min

Nap / 221/ PM 0.00 – 0.12

Existing Facility:	*Signal Controlled Intersection*	**Design Speed:**	65 mph
Truck Route Network:	Terminal Access Route	**Climate Region:**	Low Mountain
Number of Lanes:	4	**Posted Speed:**	55 mph
Lane Width:	12'	**Sidewalk Width:**	N/A
Shoulder Width:	5' inside, 7' outside	**Median Width:**	27'

SR 29, SR 221, and Soscol Ferry Road Intersection

The existing SR 29, SR 221 and Soscol Ferry Road intersect at-grade and it is a signalized intersection. The existing intersection of SR 29 with SR 221/Soscol Ferry Road consists of two through lanes in the northbound direction, together with a left-turn lane to Soscol Ferry Road and a two-lane right-turn connector to Route 221 northbound. In the southbound direction, SR 29 consists of two through lanes, one left turning lane to northbound SR 221 and one right turning lane to Soscol Ferry Road. SR 221 in the southbound direction consists of one through lane to the Soscol Ferry Road, two exclusive left-turn lanes to southbound 29 and one exclusive right-turn lane to northbound 29. The Soscol Ferry Road in the northbound direction consists of one through lane to northbound SR 221, one left-turn lane to northbound SR 29 and one right-turn lane to southbound SR 29.

4. PURPOSE AND NEED

Motorists traveling on Route 29 and Route 221 have been experiencing congestion and delays as commercial and residential developments are clustered along the highways in the southern part of the County while wineries and tourism industries are expanding rapidly in the northern part of the County.

Purpose

The purpose of this project is to:

- Alleviate congestion and improve traffic flow at SR 29, SR 221 and Soscol Ferry Road intersection
- Improve local and regional bicycle and pedestrian facilities through the SR 29, SR 221 and Soscol Ferry Road intersection

Need

The SR29, SR221 and Soscol Ferry Road intersection has become increasingly congested due to high peak hour delays as a result of high traffic volumes and turning movements. Peak hour traffic volumes are expected to significantly increase by 50 percent by the year 2045 which will contribute to higher delays and increased congestion for traveling motorists compared to existing levels.

In addition, other needs related to improve bicycle and pedestrian connectivity have been identified, including completing a link in the local (SR 29, SR221)

4A. Problem, Deficiencies, Justification

Problem and Deficiencies

Napa County attracts more than 5 million visitors a year-1.7 million of whom stay overnight. Especially on weekends, during the summer, and during the crush-the harvest in September and October-tourists cause severe congestion along SR 29 and the Silverado Trail. Silverado

Trail connects the SR 221 in the north. MTC also noted in the *North Bay Corridor Study*, dated March 1998, that "population and job growth are expected to continue to intensify along Route 29, Route 101, and Interstate 80. Travel demand is diverse and includes not only weekday commuting, but weekend tourism, truck traffic from agricultural operations, and traffic generated by major events."

According to MTC' *Bay Area Plan 2040* and *Regional Transportation Plan 2035*: By 2040 the San Francisco Bay Area is projected to add 2.1 million people, increasing total regional population from 7.2 million to 9.3 million, an increase of 30 percent or roughly 1 percent per year; daily auto trips in Bay Area Counties from Year 2006 to Year 2035 will experience a 32% increase. The existing intersection currently is experiencing traffic congestion and is operating at a Level of Service (LOS) D and F during AM and PM peak periods respectively. As indicated in the August 2013 Operational Analysis report for SR 29/221/Soscol Ferry Road intersection, traffic impacts with the "no build" alternative with the Napa Pipe Project, traffic delay time for year 2039 would be 7 hours and 7.3 hours at the intersection during the A.M. and P.M. peak hours, respectively. Traffic projections for the left turn movements for southbound Route 221 to southbound Route 29 indicate that P.M. peak hour traffic volumes will increase by 88% by year 2039. Route 29 through movements in both directions is also high.

4B. Regional and System Planning

Corridor Overview

State Route (SR) 29 in District 4 is a mix of conventional, freeway, and expressway that travels north from Interstate 80 (I-80) at the north end of the Carquinez Bridge in Vallejo (Solano County) to the Napa-Lake County border north of Calistoga. SR 29 is the primary north/south route through Downtown Vallejo and Napa County, connecting with I-80 and State Routes 37, 221, 12, 121, and 128.

The majority of SR 29 is designated as a conventional highway. It becomes an expressway at Devlin Road north of American Canyon up to North Kelly Road before SR 29/221 (Soscol Junction). After the interchange, it continues as an expressway for two and a half miles north, becomes a freeway until Washington Street just north of Yountville. It once again becomes a conventional highway to the Napa-Lake County border. It serves as the main street in St. Helena and Calistoga and provides access, along with the Silverado Trail, to the region's four-hundred-plus vineyards and wineries. North of Calistoga, SR 29 climbs Mount Saint Helena to the border of Lake County.

Bicycle and pedestrian accessbility is provided via the surrounding arterial network. Bicycle accessibility is provided on the Silverado Trail parallel to SR 29 and the west portion of SR 128 from Napa to Calistoga.

Federal and State Planning

Most of the route is State Scenic Highway eligible, but does not currently have Scenic Highway designation. In the California Road System (CRS) Functional Classification, SR 29

is designated as Other Principal Arterial from Vallejo to Soscol Junction, Other Freeways and Expressways from Soscol Junction to Oak Knoll Ave, reverts to Other Principal Arterial from Oak Knoll Ave to Madison Street, and becomes a Minor Arterial onwards up to Lake County.

In the National Highway System (NHS), SR 29 is identified as MAP 21 Principal Arterial from Vallejo to SR 37, as Other NHS from SR 37 junction to SR 12 junction, and back as a MAP 21 Principal Arterial from SR 12 Junction to Madison Street in Yountville. It is not part of the National Highway Freight Network under the Fixing America's Surface Transportation Act. SR 29 is mainly a Surface Transportation Assistance Act (STAA) Terminal Access Route and becomes a 65' California Legal King-Pin Rear Axle (KPRA) Advisory route as Lincoln Ave in Calistoga up to Lake County.

SR 29 is a part of the California Interregional Road System (IRRS). The IRRS is defined as a series of interregional State highway routes that provide access to and links between the State's economic centers, major recreation areas, and urban and rural regions. SR 29 is not part of the 11 Strategic Interregional Corridors identified in the 2015 Interregional Transportation Strategic Plan.

Regional Planning

The Metropolitan Transportation Commission (MTC) functions as both the State-designated Regional Transportation Planning Agency (RTPA) and federally-designated Metropolitan Planning Organization (MPO). As such, it is responsible for the update of the Regional Transportation Plan (RTP), a financially-constrained long-range programming report for the region. Under Senate Bill (SB) 375, along with an updated RTP, each region in California must develop a Sustainable Communities Strategy (SCS) that promotes walk and bike-friendly mixed-use commercial and residential development that is found close to mass transit, jobs, schools, shopping, parks, recreation, and other amenities.

MTC's Plan Bay Area (PBA) 2040, adopted in July 2017, serves as the San Francisco Bay Area's RTP and SCS. PBA 2040 is the strategic update to PBA 2013, and it builds on earlier work to develop an efficient transportation network, provide more housing choices and grow in a financially and environmentally responsible way. PBA 2040 is a roadmap to help Bay Area cities and counties preserve the character of our diverse communities while adapting to the challenges of future population growth. This project is referenced as RTP ID 17-04-0009 in PBA 2040. The Project is covered for $61M.

The Soscol Junction Project is also included in the MTC financially constrained *2013 Transportation Improvement Program* (TIP) [under TIP ID NAP090003, for $6.3M (total support funding)]. The project was amended into the 2013 TIP as project ID NAP090003 in TIP Revision 2013-14. The project is included in the 2040 Plan Bay Area as Project #94073.

A new initiative called Horizon developed by MTC and ABAG tackles challenging questions on driverless vehicles, sea level rise, earthquakes, economic and political volatility that may alter the future by the Year 2050 outside of the traditional regional planning process through June 2019. The specific strategies and investments that perform best in multiple scenarios

based on the Horizon process which are resilient to uncertainties will be recommended for inclusion in the Preferred Scenario for Plan Bay Area 2050 currently underway.

Local Planning

The Napa Valley Transportation Authority (NVTA) is a Congestion Management Agency formed in 1998 as a joint effort by the cities of American Canyon, Calistoga, Napa, St. Helena, the town of Yountville and the County of Napa. NVTA serves as the countywide transportation planning agency and oversees local transit and multi-modal projects. The agency's goals, duties and composition make it easier for local governments to tackle the increasingly complex problem of traffic congestion. NVTA implements projects and programs approved by the voters through policy, planning and funding decisions made in public meetings.

NVTA is currently developing a Comprehensive Multimodal Corridor Plan for SR 29 to be completed by the end of 2019, supporting this project.

Future Projects

The State Highway Operation and Protection Program (SHOPP) is the State's "fix-it-first" program that funds the repair and preservation of the State Highway System (SHS), safety improvements, and some highway operational improvements. There are currently three SHOPP projects listed in the table below that are within this project vicinity.

The California State Transportation Improvement Program (STIP) is the biennial five-year plan adopted by the California Transportation Commission for future allocations of certain State transportation funds for state highway improvements, intercity rail, and regional highway and transit improvements. There are currently no STIP projects within the vicinity of the project.

The District System Management Plan (DSMP) Project List, updated every odd year, is a list of multi-modal State Highway System (SHS) projects, which are not fully programmed and are of high priority to receive funding. The latest 2017 DSMP identifies projects derived from TCRs, CCPs, RTPs, the Interregional Transportation Strategic Plan (ITSP), and General Plans. These projects are also found in the overall Multimodal Operations, Non-SHOPP, Transportation Equity Report (MONSTER) list which builds on the DSMP and CFMP project lists to provide a comprehensive list of non-SHOPP needs in the District. This project was identified on the MONSTER List. The following table lists the planned State Highway Operation and Protection Program (SHOPP) projects in the vicinity of the Project.

Source: PRSM report 8/9/19

PROJ. ID	EA	County Route	Post Mile	Funding Source/ Program Year	Legal Description	Work Description	Current Phase
415000343	4J410	NAP 29	1.7 / 5.1	SHOPP 2022	Sheehy Creek Culvert Rehabilitation	In Napa County on Route 29 at various locations. Storm permanent rehabilitate culverts.	0 PAED
0416000040	0K000	NAP 29	0 / 14.6	SHOPP 2022	SR 29 ADA compliance	In Napa County along SR 29 at PM 0.23/14.6 from Kimberly Drive to Salvador Ave. Upgrade 27 curb ramps with 12 pedestrian push buttons and a new 100-feet long sidewalk with ADA standards.	1 PSE
0419000570	3Q760	NAP 29	0 / 0	SHOPP (PID K Phase)	Install rumble strips	In Napa County on Route 29, 121, and 128 at various locations. Install centerline rumble strips (CLRS), shoulder rumble strips (SRS), and edgeline rumble strips (ELRS)	K Phase

4C. Traffic

Year	2-Way ADT	TI* Mainline	TI Shoulder	2_Way DHV	Truck %	K-Value
NAP 221 PM 0/0.6						
2018 (Present Year)	36,600	NA	NA	NA	6.04	NA
2042 (20 Years)	56,500	12.0	7.5	4,600	6.04	8.22
2062 (40-Years)	81,000	13.0	8.0	6,660	6.04	8.22
NAP-29 PM 5.0/6.7						
2018 (Present Year)	50,600	NA	NA	NA	7.49	NA
2042 (20 Years)	69,900	12.0	7.3	6,770	7.49	9.68
2062 (40 Years)	91,600	13.5	8.5	8,870	7.49	9.68

*TI: Traffic Index

Current and Forecast Traffic Analysis

Average daily traffic (ADT) counts on SR 221 east of SR 29 were received from Caltrans. The 24-hour daily counts were collected on an hourly basis for a week from Tuesday, May 3 to Monday, May 8, 2016. The weekday average ADT (Monday through Friday) of 32,149 vehicles per day (VPD) exceeds both the weekend and seven (7) day weekly averages. The highest daily count was on Thursday, and the average weekend daily traffic is approximately 5,300 VPD lower than the average weekday traffic. This appears to be due to SR 221 serving weekday commuter traffic. SR 221 also has a consistent daily directionality with more vehicles traveling southbound, which could imply that the northbound delays at the intersection result in re-direction of traffic to alternative routes.

Traffic forecasts were based on applications of the MTC Travel Demand Forecasting Model and validated within the project study area. The MTC Model is a regional travel demand model that covers the entire Bay Area. To ensure a high level of confidence in the forecasting process, the MTC Model was first refined and validated within the project study area.

Per input received from the Project Development Team, the Design Year for intersection improvements was determined to be Year 2045. As the MTC Model currently does not provide projections beyond the Model Horizon Year 2040, a growth rate obtained from the linear extrapolation between Year 2018 data and previously developed Year 2040 traffic volumes was applied to Year 2040 intersection volumes to obtain Year 2045 intersection turning movement volumes.

Nap / 29, 221 / PM 6.04,0.00 – 6.48, 0.12

The following table presents current and projected daily volumes for SR 29, SR 221 and Soscol Ferry Rd. ADTs were estimated by using intersection traffic counts and scaling using the PM peak and SR 221 as a baseline.

Route	Existing (2018)	2025		2045	
		No Build	Build	No Build	Build
SR 29	65,000	77,886	84,064	83,017	89,152
SR 221	32,149	35,331	40,491	36,808	41,925
Soscol Ferry Rd	15,700	17,558	20,927	19,192	22,503

2016 Truck Traffic Data

Route	ADT	Truck %	2-axle	3-axle	4-axle	5-axle
SR 29	51,000	6.28%	1,907	545	91	1,665
SR 221	32,000	6.04%	833	317	121	752
Soscol Ferry Rd	15,700	1.7%	N/A	N/A	N/A	N/A

Peak Hour Traffic Data

The following table shows the existing and forecasted traffic volumes and Level of Service (LOS) during the AM/[PM] peak hour for the No Build and Build Alternative.

Segment	Existing Year		Year 2025			Year 2045		
	Mixed Flow (vph)	LOS	Mixed Flow (vph)	No Build LOS	Build LOS	Mixed Flow (vph)	No Build LOS	Build LOS
Northbound SR 29	1766 [1705]	F [F]	1925 [1740]	F [F]	N/A	2120 [1800]	F [F]	N/A
To Soscol Ferry Rd	15 [9]	D [D]	55 [60]	D [D]	N/A	55 [65]	D [D]	N/A
Southbound SR 29	1524 [1176]	F [F]	1615 [1575]	F [F]	N/A	1800 [1790]	F [F]	N/A
To SR 221	52 [19]	D [D]	65 [40]	D [D]	B [B]	70 [45]	D [D]	B [B]
To Soscol Ferry Rd	461 [329]	D [C]	505 [465]	F [F]	A [A]	560 [525]	F [F]	A [A]
SR 221	106 [80]	C [C]	125 [95]	C [C]	A [B]	135 [95]	C [C]	A [C]
To Northbound SR 29	33 [120]	C [C]	100 [180]	C [C]	A [B]	100 [185]	C [D]	A [C]
To Southbound SR 29	814 [983]	F [F]	990 [1215]	F [F]	A [B]	1035 [1260]	F [F]	A [C]
Soscol Ferry Rd	64 [100]	E [A]	70 [110]	E [F]	A [C]	75 [120]	D [F]	A [C]
To Northbound SR 29	203 [465]	D [F]	205 [470]	E [F]	A [C]	225 [505]	D [F]	A [B]
To SR 29 South	19 [191]	D [F]	190 [290]	F [F]	A [B]	195 [300]	E [F]	A [C]

Existing Traffic Operations

The existing SR 29/SR 221/Soscol Ferry Road intersection is a signal-controlled intersection with a free flow dual right lane from SR 29 to northbound SR 221. The intersection experiences average delays of more than three minutes which corresponds to LOS F during the peak commute periods. Field observations shows excessive queuing that limits the use of the thru-right lane downstream for the free flow dual right turn lanes to be fully utilized.

Collision Analysis

Accident rates for the SR 29 and SR 221 corridors were obtained from Traffic Accident Surveillance and Analysis (TASAS) for the three-year period between January 1, 2016 through December 31, 2018. The following tables summarize the collision data for this three-year period.

TASAS Collision Data Summary (January 1, 2016 through December 31, 2018)

Co-Rte-PM	Number of Accidents				Actual Accident Rates (Acc/MVM)			Statewide Average Accident Rate (Acc/MVM)		
	I	F	F+I	Total	Fatal	F+I	Total	Fatal	F+I	Total
Nap-29-PM 5/R6.7	105	1	106	281	0.009	0.94	2.48	0.015	0.32	0.89
Nap-221-PM 0/0.6	18	1	19	52	0.044	0.83	2.27	0.010	0.54	1.22

Notes:

1. Accident Rates are measured in accidents per million vehicles (Acc/MVM)
2. Nap – Napa County
3. **Bold** numbers denote higher rates than statewide average

As shown in the above table, there were 281 collisions (1-Fatal, 105-Injury, 175-PDO (Property Damage Only) that occurred on the State Route 29 within the project limits. The types of accidents were:

Type of Collision	Number	Percentage
Head On	0	0
Sideswipe	39	13.9
Rear End	205	73
Broadside	5	1.8
Hit Object	22	7.8
Overturn	6	2.1
Auto-Pedestrian	1	0.4
Other	3	1.1
Not Stated	0	0

These accidents were largely caused by the following factors:

Primary Collision Factor	Number	Percentage
Influence of Alcohol	7	2.5
Following Too Close	12	4.3
Failure to Yield	6	2.1
Improper Turn	27	9,6
Speeding	187	9.6
Other Violation	37	13.2
Improper Driving	0	0
Other Than Driver	3	1.1
Unknown	2	0.7
Fell Sleep	0	0
Not Stated	0	0
Invalid Codes	0	0

Rear-end collisions, sideswipes, and hit objects (typically collisions with other vehicles), which generally are due to driver inattention, unsafe speeds, and lane changing, accounted for the majority of accidents. The primary collision factors were speeding other violations, and improper turns. Elevating State Route 29 above State Route 221 and improving the existing signal intersection to a full roundabout interchange would greatly reduce all rear-end and improper turn related collisions. All broadside collisions would also effectively be eliminated with the introduction of roundabout intersections as the geometric features do not allow for those type of collisions.

As shown in the above table, there were 52 collisions (1-Fatal, 18-Injury, 33-PDO (Property Damage Only) that occurred on State Route 221 within the project limits. The types of accidents were:

Type of Collision	Number	Percentage
Head On	0	0
Sideswipe	5	9.6
Rear End	39	75
Broadside	1	1.9
Hit Object	7	13.5
Overturn	0	0
Auto-Pedestrian	0	0
Other	0	0
Not Stated	0	0

These accidents were largely caused by the following factors:

Primary Collision Factor	Number	Percentage
Influence of Alcohol	4	7.7
Following Too Close	1	1.9
Failure to Yield	0	0
Improper Turn	6	11.5
Speeding	31	59.6
Other Violation	9	17.3
Improper Driving	0	0
Other Than Driver	1	1.9
Unknown	0	0
Fell Sleep	0	0
Not Stated	0	0
Invalid Codes	0	0

Rear-end collisions and hit objects (typically collisions with other vehicles), which generally are due to driver inattention, unsafe speeds, and lane changing, accounted for the majority of accidents. The primary collision factors were speeding and other violations. Improving the existing signal intersection to a full roundabout interchange would greatly reduce all rear-end and speeding related collisions. All broadside collisions would also effectively be eliminated with the introduction of roundabout intersections as the geometric features do not allow for those type of collisions.

Most accidents happened during daytime and were typically due to congestion.

Future Traffic Operations

The two proposed roundabouts at the intersections of SR 29 NB Ramps/SR 221 and SR 29 SB Ramps/Soscol Ferry Road are projected to operate at LOS C or better through Year 2045 conditions. Furthermore, the projected queues are projected to not exceed available storage or effect downstream intersections through Year 2045 conditions.

5. ALTERNATIVES

5A. Viable Alternatives

In recent years, commercial and residential developments have clustered along the highways in the southern part of Napa County, and the winery and tourism industries have expanded rapidly in the northern part of the county. Congestion and delays on SR-29 and SR-221 have increased due to the ongoing regional growth and development.

There is only one alternative proposed for the project, the Build Alternative:

To reduce congestion, the build alternative will construct a tight diamond interchange with one, four-legged, multi-lane roundabout on the south side of the SR 29 freeway and one,

three-legged, multi-lane roundabout, on the north side of the SR 29 freeway, see Figure 2. In this alternative, SR 29 will be re-built as an overcrossing just north of the existing intersection with SR 221, minimizing right of way impacts and providing separation between the adjacent high-speed SR 29 to SR 221 northbound ramp and the adjacent roundabout entry. The overcrossing ensures that no eastbound and westbound thru traffic on SR 29 is required to traverse the roundabout. The roundabouts will provide access to the following:

- North Roundabout - SR 221/SR 29 NB Entrance Ramp
- South Roundabout - SR 221/SR 29 Ramps & Soscol Ferry Road

Typically, the roundabout geometric design requires the driver to reduce the speed in the intersection to 15-25 MPH. Conversely, drivers can travel through a signalized intersection at speeds higher than posted speed limits due to lack of geometric constraints. Due to reduced travel speeds through the intersection and expected reduction in crashes, the roundabout alternative is likely to eliminate most severe crash types over that of the No Build.

Nonstandard Boldface and Underlined Design Features

For the Build Alternative, several design features will require design standard decision documentation. Table 5-1 lists the boldface and underlined nonstandard design features within the project limits. The following table also identifies where the Highway Design Manual addresses these design standards.

To aid pedestrian and bicycle circulation in the vicinity of the roundabouts, a 10-footwide minimum Class I shared use path would be provided along the northern side of SR 221/Soscol Ferry Road. The shared use path would be separated from vehicular traffic by placing a minimum 5-foot-wide non-traversable buffer (either planted or inert/rocks).

Design Exception Details

Alternative	Design Standard from Highway Design Manual Tables 82.1A & 82.1B	Justification
Build	Index 201.1- Stopping Sign Distance Standards	Constrained by existing Suscol Creek Bridge.
Build	Index 202.2- Standards for Superelevation	Constrained by existing structures on north and south of the project limits.
Build	Index 203.2- Standards for Curvature- Lateral Clearance	Minimize potential for unsafe maneuvers by overly widening shoulders.
Build	Index 502.2- Isolated Off-Ramps and Partial Interchanges	Constraints and traffic needs agreed upon by the PDT.
Build	Index 504.3- Distance Between Ramp Intersection and Local Road Intersection	Roundabout improves safety concern with distance between intersections
Build	Index 202.5 Superelevation Transition	Constrained location where 6%/100 feet is still met.
Build	Index 204.4- Vertical Curves- 2 Percent and Greater	Constrained by existing structures on north and south of the project limits.
Build	Index 301.1 Side Slope 4:1 or Flatter (advisory)	Avoids additional staging and permanent impacts.
Build	Index 305.1- Median Width Freeways and Expressways- Urban	Conforms to existing substandard condition.

The Design Standard decision document for the nonstandard boldface and underlines features was approved on 1/31/2020.

Ramp Metering

There is no proposed Ramp Metering in the project vicinity in the 2103 Ramp Metering Development Plan.

5B. Rejected Alternatives

PSR-PDS Alternatives

1. Two-lane flyover connector from SB 221 to SB 29 crossing SR 29 and Soscol Ferry Road on west of at-grade SR 29/ 221/Soscol Ferry Road intersection.

2. Two-lane flyover connector from SB 221 to SB 29 crossing SR 221 and SR 29 on east of at-grade SR 29/ 221/Soscol Ferry Road intersection.

Alternatives 1 and 2 proposed to build a two-lane flyover connector from SB 221 to SB 29. The flyover structure passes through locations where it is identified as biological, historical, and pre-historical resources. The alternatives require constructing a lengthy structure (1060

feet long) for passing over either Route 29 and Soscol Ferry Road or Route 221 and Route 29 and constructing a structure over the Suscol Creek. Both alternatives propose a SB left exit connection to the Soscol Ferry Road. They are not conformed to Caltrans basic design policy for freeway entrances and exits (Section 504.2, Highway Design Manual), which states, "All freeway entrances and exits, except for direct connections with median high occupancy vehicles lanes, shall connect to the right of through traffic." These alternatives were rejected due to mandatory highway design policy requirement, significant environmental and cultural resources impact and high construction cost due to excessive long structure.

3. Two-lane flyover connector from SB 221 to SB 29 merging from left on Route 29 and crossing SR 221 and NB 29 on east of at-grade SR 29/ 221/Soscol Ferry Road intersection. Shift SB Route 29 to southwest.

4. Two-lane flyover connector from SB 221 to SB 29 merging from left on Route 29 and crossing SR 221 and NB 29 on east of at-grade SR29/221/Soscol Ferry Road intersection. Shift southbound Route 29 to northeast.

Alternatives 3 and 4 are similar. Both alternatives propose to build a two-lane flyover connector from SB 221 to SB 29 merging from left on Route 29. The alternatives require constructing a lengthy structure (1060 feet) for passing over both SR 221 and NB 29 and constructing a structure over the Suscol Creek. These alternatives propose Route 221 exit and Route 29 entrance on left of through traffic. They were rejected due mandatory freeway design policy requirement, high construction cost of excessive long structure and construction cost for shifting alignment of the SB 29 to southwest or northeast with the associated new right of way requirement.

Original Draft Project Report Alternatives

Alternative 5, Option 1: Construct a 2-lane flyover from SB 221 to SB 29 and re-align SB 221 connection to SR 29 at the existing SR 29/221/Soscol Ferry Road intersection. Re-stripe the leg of the SB 221 at the intersection from 4 lanes to 2 lanes. Leave the existing signal at SR 29/SR 221/Soscol Ferry Road intersection in place. The dual left-turn traffic at the intersection would be re-routed onto the flyover. This alternative was rejected by the public due to visual impacts and insufficient bicycle/pedestrian accessibility.

Alternative 5, Option 2: Construct a 2-lane left-turn flyover from SB 221 to SB 29 and a single-lane right-turn connector from SB 221 to NB 29. SR 29 median would be closed. The leg of SR 221 and the existing signal at the SR 29/221/Soscol Ferry Road intersection would be removed. All left-turns and through movements of the Soscol Ferry Road at the intersection would be eliminated to enhance operation of SR 29. The existing dual left-turn traffic from SB 221 to SB 29 at the intersection would be re-routed onto the flyover and right-turn traffic from SB 221 to NB 29 will be directed to the single-lane connector. This alternative was rejected by the public due to visual impacts and insufficient bicycle/pedestrian accessibility.

Alternative 5, Option 3: The option is similar to Alterative 5, Option 2. A shorter structure from SB 221 to SB 29 and a connector from SB 221 to NB 29 are proposed. In addition to median closure on SR 29 and removal of the signals, complete removal of the leg of Soscol Ferry Road and SR 221 at the intersection is proposed. The traffic movements will be as follows: left turns, right turns and through movements on Soscol Ferry Road and SR 221 at the intersection will be all eliminated to facilitate the traffic throughput on SR 29. The option was rejected because access to nearby businesses and residences is substantially reduced.

Alternative 6: The alternative proposes to build two-lane flyover from SB 221 that over crosses SR 29 and merges to SB 29 and a connector from SB 221 to NB 29 with closure of legs of SR 221 and Soscol Ferry Road and removal of existing signals at the existing SR 29 intersection. At Napa Corporate Way/Soscol Ferry Road Undercrossing, the project proposes to build four ramps to tie the local road to SR 29 to form a diamond interchange. The alternative was developed during the Value Analysis study performed in January and February of 2004 (value analysis alternative 2.1). After further studies, the cost estimate for this alternative increased to $65 M and the proposed interchange at Napa Corporate Way / Soscol Ferry Road did not meet the interchange spacing requirement of 1 mile. This alternative was rejected due to the high construction cost and interchange spacing requirements.

Single Roundabout

A public outreach meeting was held on August 16, 2018 where two roundabout interchange alternatives were presented – a single roundabout and a double roundabout. There was no real preference by the public for either alternative, however, over 85% of people were in favor of roundabouts in general. The single roundabout alternative requires all six legs of the interchange (both sets of on/off-ramps from SR 29, SR 221, and Soscol Ferry Road) enter a single intersection. In order to provide adequate spacing for each of these legs, a significant sized diameter of 280 feet is required. As the average larger roundabout diameter is typically somewhere around 150 feet, this is almost double the size the public is more familiar. In addition, due to the size and location, the structure would need to be significantly longer to span the intersection, it would be difficult to stage the project without some sort of long-term lane closure and would be difficult to maintain/modify the intersection in the future due to the close proximity of the on/off ramps to the SR 29 overcrossing. Based on these limitations, this design option was officially withdrawn by the PDT in November 2018.

6. CONSIDERATIONS REQUIRING DISCUSSION

6A. Hazardous Waste

The project will involve roadway widening, which will require the excavation of roadside soil that likely contains surface-deposited contaminants, such as aerially deposited lead (ADL) and petroleum hydrocarbons. Therefore, a site investigation that examines soil contamination levels will be necessary. Depending on the design details of the retaining walls, groundwater sampling might become an element of the site investigation. The investigation will determine what regulatory requirements, if any, will be applied to the excavated soil if it is to be reused as fill material within the project limits or disposed of at a landfill. The site investigation will be conducted during the Plans, Specifications, and Estimate (PS&E) phase.

6B. Value Analysis

The National Highway Systems Act and the Safe Accountable Flexible Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) require projects whose total cost exceeds $25 million to have a Value Analysis (VA) Study prepared. The estimated cost of the project exceeds the $25 million threshold. Therefore, a VA Study for the project was completed in January 2020. According to the study results, five out of seven recommendations were considered in the final VA Study. They are as follows:

1. Eliminate approximately 50% of the trees from the project in order to reduce highway planting and irrigation costs associated with these elements. Visual commitments may be fulfilled with this proposed reduction.

2. Construct a single span box girder bridge in two stages in lieu if precast girder bridge

3. Reduce the vertical clearance under the bridge from 17 feet to 16 feet 6 inches

4. In the roundabout lanes, eliminate RHMA (Rubberized Hot mix Asphalt) from the project and use HMA (Hot Mix Asphalt)

5. Reduce the settlement period of 60 days to 15 days

Implementing these VA recommendations will improve performance over the baseline concept by 6%, reducing construction costs by approximately $1.6 million and reducing construction time by 3.5 months. Overall, when cost, time, and performance are factored together, the net impact in value to the project is a 13% improvement. However, the implementations of these recommendations are likely to take place during the design phase of the project.

6C. Resource Conservation

The proposed project will attempt to rehabilitate existing pavement as much as possible, thereby reducing the need for new construction materials for structural sections. Rubberized Hot Mix Asphalt (RHMA) and Hot Mix Asphalt (HMA) will be utilized on new pavement. The fill section will reuse excavated materials from the project, if possible.

Also, the proposed project will improve traffic operations and facilitate traffic movements through the project area. The lessening of congestion and related traffic delays will result in faster average travel speeds, thus allowing more energy efficient vehicle operation.

This project will attempt to salvage as much existing material (such as sign panels, metal beam guard railing, etc.) as possible. Determination of what items to salvage and the respective quantity of salvaged material will be made during the design phase of the project.

6D. Right of Way

The project is anticipated to be located within the existing Caltrans Right of Way (ROW) and would not result in any property acquisition or the displacement of residents or businesses. Construction activity is anticipated to occur within the ROW and no temporary construction easements would be required. Estimated cost information is contained in the Right of Way Data Sheet in Attachment E of this report.

Railroad

The project is not anticipated to require railroad involvement.

Utilities

Plans for verification of and potholing for the existing utilities will be developed and refined during the PS&E phase.

6E. Environmental Compliance

The Initial Study with Mitigated Negative Declaration/ Environmental Assessment with Finding of No Significant Impact (IS MND/EA FONSI) for the project was approved on February 13, 2020, in accordance with its own environmental procedures and State and federal environmental regulations (attachment K). The MND FONSI is the appropriate final environmental document for the project. Biological Opinion was approved on January 23, 2020. Memorandum of Agreement (MOA) was received on February 13, 2020.

Biology

Caltrans prepared a Natural Environment Study (NES) to provide technical information to determine the extent to which the Soscol Junction Improvement Project will affect plants, wildlife, and natural communities occurring in the BSA, including special-status species, jurisdictional wetlands and waters, and protected natural plant communities. These biological resources are further detailed in the IS MND/EA FONSI. A Biological Assessment (BA) was

Frog. Caltrans received a Biological Opinion (BO) from United States Fish and Wildlife Service (USFWS) which outlines the effects to listed species and critical habitats with in the project footprint. Additionally, the BO outlines the conditions and mitigation which Caltrans must adhere to. Caltrans received the signed BO from the USFWS on January 23, 2020.

Hydrology, Floodplain and Fish Passage

The bridge crossing at Suscol Creek was constructed in 1915 and extended in 1944 with the southbound direction constructed in the early 1980s, this bridge does not appear to have any structural deficiencies. Caltrans has determined the remaining life span of this structure is 50 years, so bridge replacement is not required. The Build Alternative would require the widening of the bridge crossing at Suscol Creek along SR 29 by approximately 15 feet; this crossing would involve a box girder. The bridge would include two cast-in-steel shell columns, approximately 30 to 40 feet deep, and 4 abutments.

The SR 29 crossing at Suscol Creek is an arch culvert, extended with a box culvert and further extended with a long trapezoidal concrete channel and concrete apron on the downstream end. It varies in shape and slope along its length. Suscol Creek originates at the Napa/Solano County border and drains a portion of the hills southeast of the City of Napa and is a tributary to the Napa River. At SR 29, Suscol Creek conveys runoff from a watershed of approximately 2.8 square miles; the waterway is known to be a steelhead stream. Napa County Resource Conservation District (NRCD) has identified several fish passage barriers along the length of Suscol Creek, including the crossing at SR 29.

Based on conservative swimming capabilities and minimum depth requirements from California Department of Fish and Wildlife (CDFW) guidelines, the crossing at Suscol Creek does not meet current fish passage requirements and is not passable by steelhead at any life stage under any flow conditions. The main obstacles for fish passage are lack of water depth in the culvert and high velocities at high flows. The existing culvert at Suscol Creek is flat-bottomed and relatively wide, which promotes shallow, fast-moving water during most low to moderate flows. Based on Napa County Resource Conservation District's (NCRCD) "Highway 29 Culvert at Suscol Creek Fish Passage Assessment," dated June 2011 (NCRCD, 2011) study recommends the following actions to improve passage conditions for upstream migration of steelhead:

1. Install concrete baffles on the existing apron to increase water depth and reduce velocities.

2. Install a series of rock weirs in the downstream channel to decrease velocities and increase depths, as well as reduce a possible jump barrier.

Given the nature of the complexity of fish movement at the Suscol Creek area, Caltrans is studying the feasibility of the fish passage solution and will formulate strategies at the plan, specifications, and estimates phase (PS&E) of the project.

6F. Cultural Resources

The study area was examined for cultural resources and a series of reports conforming to Caltrans standards were prepared addressing archaeological and architectural resources. The studies identified two historic properties eligible for listing or listed in the National Register of Historic Places. The *State Historic Preservation Office* (SHPO) concurred on a finding of Adverse Effect to the one of the historic properties. A Memorandum of Agreement (MOA) was developed to address the treatment and data recovery plan within the impacted portions of the property.

6G. Visual Impact Assessment

A Visual Impact Assessment report has been prepared to evaluate visual impacts of the project. The process used to identify impacts generally follows the guidelines outlined in the publication "Visual Impact Assessment for Highway Projects," Federal Highway Administration (FHWA), March 1981.

The existing views at the project site location are of moderate quality. They consist of existing views of traffic, utilities, and man-made elements. Overall, the proposed project will not substantially degrade the existing visual character of the project vicinity.

The following measures to avoid or minimize visual impacts would be incorporated into the project:

1. Aesthetic treatment of the overcrossing structure will use context-sensitive texture and/or color to minimize the change to visual character.

2. Retaining walls, slope paving, and roundabouts will incorporate aesthetic treatments that use context-sensitive textures and/or colors to help minimize the impacts to visual character and support visual unity at the project site.

3. Metal Beam Guardrail will be used in place of concrete barrier to the greatest extent feasible to minimize visual intrusion into the scenic corridor. Where concrete barriers are required, context sensitive barrier texture and color will be used to reduce contrast and enhance compatibility with the visual character and unity of the setting.

4. Trees and vegetation outside of clearing and grubbing limits will be protected from the contractor's operations, equipment, and materials storage.

5. Construction activities will limit all construction lighting to within the area of work and avoid light trespass through directional lighting, shielding, and other measures as needed.

6. Slopes will be graded to mimic the surrounding gently rolling topography to reduce the appearance of manufactured slopes.

7. Revegetation of disturbed areas and manufactured slopes will include pasture grasses and forbs similar to the surrounding pasturelands to reduce the appearance of manufactured slopes.

8. Native or climatically appropriate scattered vegetation will be placed to reduce the appearance of manufactured slopes and the new overcrossing.

The recommended minimization measures would help to reduce the overall impact to the site and to the scenic corridor by integrating the project into the landscape. However, some unfavorable visual impacts would remain because of the loss of openness and reduction in views of hillsides, vegetation, and mountains at some location.

6H. Air Quality Conformity

The project is included in the Metropolitan Transportation Commission's (MTC) current Regional Transportation Plan (RTP), Plan Bay Area 2040 (ABAG and MTC 2017, RTP ID # 17-04-0009). The project is included in MTC's financially constrained 2019 Transportation Improvement Program (TIP), (MTC 2019, Project TIP ID# NAP090003).

The project is not exempt from the requirement to determine air quality conformity, under the CAA conformity rule per 40 CFR 93. The interagency consultation with the Air Quality Task Force determined on July 1, 2019 that the project does not fit the definition of air quality concern per 40 CFR 93.123(b)(i) or 40 CFR 93.128 and therefore is not subject to PM2.5 project level conformity requirement.

6I. Title VI Considerations

The purpose of the project is to improve the navigation, mobility, and traffic operations at the Intersection, which will reduce congestion, vehicle queues, and conflicts. Local and regional bicycle connections and pedestrian facilities throughout the interchange will be improved, which will make the interchange more accessible to users. Safety for all modes of transportation will be improved because of the changes.

Additionally, public transportation routes will continue to serve local transit stops, some existing pedestrian and bicycle facilities could be disrupted by construction equipment and vehicles. Access to recreation areas, shopping, and other community facilities will not be disrupted.

The proposed project has no potential to cause disproportionately high and adverse effects on any minority or low-income populations. Transportation benefits of the proposed project would accrue to all area residents. Since the interchange does not currently have sufficient pedestrian and bicycle facilities to accommodate users, the proposed project would also provide a benefit for these users as well.

6J. Noise Abatement Decision Report (NADR)

No significant changes in noise levels are expected within the proposed project area and therefore, there is no noise abatement required. Construction noise is unavoidable and could adversely affect some nearby members of the public during daytime hours. However, the impact will be temporary and limited to the time of the construction in any one location. Construction activities for the proposed project could result in noise levels greater than the existing noise levels. Since construction activities will move around the respective project areas as construction proceeds, it is unlikely that any one location will experience high noise levels continuously for extended periods of time.

Caltrans Standard Specifications for construction contracts include the following noise abatement measures to minimize construction noise impacts: All construction equipment shall be required to conform to the provisions in Section 14-8.02 of the latest edition of Standard Specifications to minimize noise from construction activities, such as maintaining equipment mufflers in proper operating order. The contractor shall comply with any local noise ordinances.

6K. Greenhouse Gas Emissions Report

Construction-generated GHG includes emissions resulting from material processing by onsite construction equipment, workers commuting to and from the project site, and traffic delays due to construction. The emissions will be produced at different rates throughout the project depending on the activities involved at various phases of construction. The analysis was focused on vehicle-emitted GHG and carbon dioxide (CO2) is the single most important GHG pollutant due to its abundance when compared with other vehicle-emitted GHG, including methane (CH4), nitrous oxide (N20), hydrofluorocarbon (HFCs) and black carbon (BC).

Based on project information available for environmental studies, the construction-related GHG emissions were calculated using the Road Construction Emissions Model (RCEM), version 8.1.0, provided by the Sacramento Metropolitan Air Quality Management District. It was estimated that for construction duration of 12 months the total amount of CO2 produced due to construction would be 1447.45 tons. The following table summarizes the construction related emissions, including the total CO2e emission.

Summary of Construction-related GHG Emissions

	PARAMETERS			PROJECT TOTAL
	CO2 (tons)	**CH4 (tons)**	**N2O (tons)**	**CO2e[1] (metric tons)**
TOTAL	1,447.45	0.37	0.01	1,325.45

Because construction activities are short-term, the GHG emissions resulting from construction activities would not result in long-term adverse effects. Implementation of Caltrans Standard Specifications, such as complying with air-pollution-control rules,

regulations, ordinances, and statutes that apply to work performed under the Contract and the use of construction best management practices, would result in reducing GHG emissions from construction activities, e.g. (1) Regular vehicle and equipment maintenance, (2) Limiting idling of vehicles and equipment onsite.

Even though the construction activities resulting from the aforementioned innovations have a temporary impact to the environment, in the long term, surrounding areas will receive the benefits of these innovations because air pollution are reduced compared to the existing road conditions by the following:

1. Innovations such as longer pavement lives, improvement in traffic management and changes in materials, construction-related GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

2. Roundabouts generate substantially less air pollution from vehicles. It has been found that emissions of HC, CO, NOx and carbon dioxide (CO2) are reduced by 75, 86, 79, and 69% respectively compared to stop-controlled intersection. Another showed that replacing a signalized intersection with a roundabout decreased CO emission for vehicles by 29%, NOx emissions by 21%, and fuel consumption by 28%. The differences in study methodologies likely contribute to the large variation in results. Other studies show that there are no emission reductions for every situation, such as when intersections of major high-speed roadways with low volume minor roads are compared to other forms of intersection control.

3. Constructing sidewalks and bike lanes will promote reduction of vehicle traffic.

Construction-related Vibration Analysis

Structural damage is not expected but vibration may be perceived by residents at structures located less than 200 feet from the highway. However, some individuals may be annoyed at barely perceptible levels of vibration depending on the activities in which they are participating. The following control measures are recommended during construction:

- The residence at 1020 Soscol Ferry Road will be nearest to the construction of the Soscol Ferry Road leg and South roundabout, therefore construction vibration levels will either be distinctly or strongly perceptible. It is recommended that these phases of work be during the day, if feasible.

- Locate staging and storage areas away from sensitive receptors (residences)

- Prevent idling of other equipment within 100 feet of structures.

6L. Life-Cycle Cost Analysis

A Life-Cycle Cost Analysis (LCCA) pavement strategy was prepared on February 13, 2019, to compare the cost of a rigid overlay strategy, which has a 40-year service life, with the cost of a flexible overlay strategy, which also has a 40-year service life. The analysis showed the rigid overlay strategy has the lower life-cycle cost, the LCCA recommends the Jointed Plain Concrete Pavement (JPCP) alternative instead of the Hot Mix Asphalt (HMA) to match 40-year new construction strategy. The pavement checklist has also been prepared (see Attachment I).

7. OTHER CONSIDERATIONS AS APPROPRIATE

Public Hearing Process

The Draft Environmental Document was circulated to the public for review and comment on September 20th, 2019 until October 20th, 2019. On October 08, 2019, a public meeting was held at the NVTA office in Napa. During the open forum hearing attendees were invited to view informational exhibits, including maps of the project footprint, anticipated right of way impacts, cost and schedule overview and environmental topics evaluated in the Draft Environmental document.

Seven individual comments were submitted during the 30-day public comment circulation period, which discussed a wide array of topics. Public comment concerns include: safety during construction, road safety, insufficient lane width for trucks, privacy concerns, air quality and inadequate drainage damaging nearby private property.

Cooperative Agreements

A Cooperative agreement is needed between State and NVTA for Design, R/W, and Construction phases of the project to outline roles and responsibilities of each agencies. This project report will be an authorizing document to proceed with a cooperative agreement for the PS&E and Right of Way. (See attachment J)

Other Agreements

Maintenance agreements do not exist between the State and the City or County of Napa covering the project vicinity. The proposed project will not initiate any new maintenance agreements. All proposed project features will be maintained by the State.

Transportation Management Plan

The Transportation Management Plan (TMP) for the project will be developed and refined during the PS&E phase. Various TMP elements, such as press releases to notify and inform motorists, community groups, local entities, elected officials, and emergency services providers, may be used. The project may also implement a Construction Zone Enhanced Enforcement Program (COZEEP) to alleviate and minimize delay to the traveling public. Preliminary TMP elements and costs, including the traffic maintenance strategy, are

indicated on the Transportation Management Plan Data Sheet, which is provided as Attachment G.

Stage Construction

It is anticipated that the alternative will be built in seven stages, however this could change depending on the construction method chosen by the contractor and could take approximately two years. Generally, during all stages of construction, the existing number of lanes on SR 29 and SR 221 will be maintained.

Stage 1 will construct temporary pavements necessary for shifting SR 29 and SR 221 traffic in later stages and will begin construction of the SB 29 off-ramp.

Stage 2 will begin with a temporary signal and will shift the existing SR 29/SR 221 intersection slightly to the southwest in order to construct the easterly portion of the new SR 29 alignment and a large portion of the new roundabout intersections.

From Stage 2 thru to Stage 5, the left turn movement from northbound SR 29 will be closed. A detour will be provided within existing pavements that will add approximately 2 to 2.5 minutes of travel time, see Detour 1.

Stages 3 and 4 will complete construction of the easterly portion of SR 29 as well as the remaining SR 221 grade change but will require the closure of SR 221 to SB SR 29. These stages will be scheduled during off-peak season and durations will be limited to 10-15 days to try and limit traffic impacts as much as possible. A detour will be provided within existing pavements that will add approximately 1.5 to 2 minutes of travel time, see Detour 2.

From Stage 3 to Stage 5, access from Soscol Ferry Road to NB SR 29 will be closed. A detour will be provided within existing pavements that will add approximately 1.5 to 2 minutes of travel time, see Detour 3.

Stage 5 will shift SR 29 traffic to the newly constructed easterly portion in order to complete the westerly construction. The roundabout intersections will be open and SR 221 traffic could access SB SR 29.

In addition, the construction near Suscol Creek to widen the existing SR 29 overcrossing would be limited to the dry season of June 15 to October 15, in or near aquatic habitat when drainages and wetlands would be either dry or at their lowest water level, to minimize impacts to biological resources or soil hydrology.

Accommodation of Oversize Loads

The temporary reduction of travel lane width and any other construction staging constraints will need to be considered when planning to move oversize loads through the highway segment undergoing the work proposed in this project.

Construction Site BMPs Used in Project

The project will include four different types of Best Management Practices, Construction Site BMPs, Design Pollution Prevention BMPs, Permanent Treatment BMPs and Maintenance BMPs. A Storm Water Data Report is prepared to summarize all the proposed measures for the project. The approved signature sheet is attached.

The project seems to have a disturbed soil area (DSA) of more than 15 acres. To comply with the conditions of the Construction General Permit (NPDES No. CAS000002) and Caltrans NPDES Permit (NPDES No. CAS000003), and to address the temporary water quality impacts resulting from the construction activities in this project, compliance with Storm Water Pollution Prevention Plan Standard specifications is required. This Standard Specification will address the preparation of Storm Water Pollution Prevention Plan (SWPPP) document and the implementation of SWPPP during construction. A risk level determination for construction activities will be performed and depending to construction period and location, the project will be designated as risk level 1, 2 or 3. Risk level 3 would be the highest Water Quality risk.

Best Management Practices (BMPs) need to be implemented to address the temporary water quality impacts resulting from the construction activities in the project. BMPs will include the measures of soil stabilization, sediment control, wind erosion control, tracking control, and pollution control. Creek Diversion is anticipated due to high probability of in-water work. If in-water work is required, water quality monitoring and reporting, in addition to stormwater monitoring and rain event action plans will be required. Dewatering is also anticipated. Appropriate BMPs and their quantities need to be developed during the PS&E phase. Since this project requires a 401 certification, local treatment BMP design guidance in the BASMAA Post Construction Manual for Phase II Municipalities applies. Per the manual bioretention swales are the preferred treatment BMP. Trash capture devices are anticipated, and their actual types and locations will be determined during the PS&E phase.

If significant amount of groundwater will be encountered in the deep excavations, dewatering may be required. Early discussion shall be initiated with the Water Pollution Control Branch. As part of the Hazardous Waste Site Investigation, ground water testing may be required to determine if it is contaminated to develop contract provisions for its handling and disposal during construction.

Context Sensitive Solutions and Complete Streets

The Director Policy 22, "Context Sensitive Solutions", effective 11/29/2001 and Deputy Directive 64-R2, "Complete Streets" were evaluated as a part of the project. This project has taken Complete Streets into consideration. Caltrans is working with local partners and stakeholders to identify and implement Complete Streets elements in this project.

Context Sensitive Solutions utilized include context sensitive features for the overcrossing structure, aesthetic treatments for structures, slope paving and roundabouts, guardrail design, vegetation control and protection, construction lighting, slope design enhancement, drainage,

drainage design, color treatment for drainage, upland rural revegetation, creek and riparian revegetation, tree pruning, and fish passage design.

Complete Streets Elements

To aid pedestrian and bicycle circulation in the vicinity of the roundabouts, a 10-footwide minimum, Class I, shared use path would be provided along the northern side of SR 221/Soscol Ferry Road. The shared use path would be separated from vehicular traffic by placing a minimum 5-foot-wide non-traversable buffer (either planted or inert/rocks) and would be constructed to conform to a future shared use path constructed by the City of Napa with connection to Napa Valley Corporate Way along the western side of SR 221. The Soscol Junction path also would provide a future connection to the planned Napa Valley Vine Trail near Soscol Ferry Road and Devlin Road to the south. Bicyclists travelling north from SR 29 to SR 221 would continue to access the shoulder along the existing northbound slip lane.

Pedestrian crossings would be located a minimum of one car length from the circulatory roadway. The pedestrian refuges at the splitter islands would be at least 6 feet wide, which is consistent with National Cooperative Highway Research Program Report 672, entitled Roundabouts: An Information Guide, 2nd Edition. The shared use path would convey both pedestrian and bicycle traffic through the intersection.

The path would provide the opportunity for bicyclists to exit the bicycle lane or shoulder via a bicycle ramp and navigate the intersection on the shared-use path and through the crosswalks. As an alternative to taking the shared-use path, bicyclists also would be able to exit the bicycle lane or shoulder and enter the roadway to ride with vehicle traffic through the roundabout.

At two-lane approaches, crosswalks would be split into two separate crossings through pedestrian refuges at the splitter islands. These two-stage crossings would reduce the amount of sustained time a pedestrian is in potential conflict with motorized vehicles by limiting the length of each crossing and limiting each crossing to one direction of vehicle travel at a time. All pedestrian accommodations would meet applicable standards and requirements under the Americans Disability Act.

Storm-Water Compliance

The project will comply with the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) permit and the Construction General Permit. The preparation of a Storm Water Pollution Prevention Plan (SWPPP) document will be required because the disturbed soil area (DSA) is estimated to be over 15 acres.

Construction Site BMPs to be implemented to address the temporary water quality impacts include measures for soil stabilization, sediment control, wind erosion control, and tracking pollution control. Creek diversion is anticipated due to the high probability of in-water work. If in-water work is required water quality monitoring and reporting, in addition to stormwater monitoring and rain event action plans will be required. Dewatering is also anticipated.

Since a 401 certification is anticipated for the project compliance to the local's requirements regarding Post Construction Treatment BMPs and hydromodification will be required to address 100% of the impervious area within the project limits. Trash capture devices are also anticipated.

The Storm Water Data Report (SWDR) for the project was prepared and approved on May 7th, 2019 (see Attachment F for the signature sheet). The SWDR summarizes the actions proposed in compliance with the permit.

Airport

This project is within four -miles radius of the Napa County Airport. Two FAA permits are required: Notices of Proposed Construction and Alteration. The State will procure the permits.

8. FUNDING, PROGRAMMING AND ESTIMATE

Funding

The total Estimated Construction Cost for the project including right of way capital is $43.9 million. See Attachment D for the Project Report Cost Estimate. The project is proposed to be funded under the Regional Improvement Program (program code 20.XX.075.600). Under 2040 Plan Bay Area, this project is covered for $61M. The sources of funding for this project will be the potential future funding SB1 congested Corridor program, RM3 and Developers.

A Project Programing Request (PPR) is currently being developed to address the differences between the current and programmed costs.

Programming

The following table lists the programming for the project. The support cost ratio is 65.1%.

Fund Source	Fiscal Year Estimate								
201.110	Prior	18/19	19/20	20/21	21/22	23/24	23/24	Future	Total
Component	In thousands of dollars ($1,000)								
PA&ED support	6,100	—	—	—	—	—	—	—	6,100
PS&E support	—	—	3,000	—	—		—	—	3,000
Right-of-way support	—	—	300	—	—	—	—	—	300
Construction support	—	—	—	—	4,800	—	—	—	4,800
Right-of-way	—	—	—	—	300	—	—	—	300
Construction	—	—	—	—	21,500	—		—	21,500
Total	6,100	—	3,300	—	26,600	—	—	—	36,000

Notes:
PA&ED = Project Approval and Environmental Document
PS&E = Plans, Specifications, and Estimate
— = not applicable

Estimate

The total project costs in 2019 dollars for the Build Alternative are estimated as follows. A preliminary project cost estimate is provided in Attachment D, with an escalation rate of 3.2% per year to the Ready to List date is $43.68 million.

Build Alternative	
Roadway Items	$30,040,847
Structures Items	$13,612,413
Total Project Construction Costs	**$43,683,260**

The reasons for cost increase are additional earthwork due to changes in design alternative (two roundabouts), complex stage constructions, and new fish passage requirement.

9. DELIVERY SCHEDULE

Project Milestones		Milestone Date	Milestone Designation
PROGRAM PROJECT	M015	12/1/00	Actual
BEGIN ENVIRONMENTAL	M020	7/1/01	Actual
CIRCULATE DPR & DED EXTERNALLY	M120	09/20/19	Actual
PA&ED	M200	01/31/20	Target
PS&E TO DOE	M377	01/29/21	Target
DRAFT STRUCTURES PS&E	M378	01/15/21	Target
PROJECT PS&E	M380	03/15/21	Target
RIGHT OF WAY CERTIFICATION	M410	05/03/21	Target
READY TO LIST	M460	06/30/21	Target
HEADQUARTERS ADVERTISE	M480	09/27/21	Target
AWARD	M495	11/15/21	Target
APPROVE CONTRACT	M500	12/20/21	Target
CONTRACT ACCEPTANCE	M600	12/16/24	Target

Notes:
DED = Draft Environmental Document
DOE = District Office Engineer
DPR = Draft Project Report
PA&ED = Project Approval and Environmental Document
PS&E = Plans, Specifications, and Estimate

10. RISKS

As part of the Risk Management Plan, a Risk Register has been prepared for the project to assist the project team in identifying, analyzing, and managing negative impacts on the project schedule, cost, scope, and quality. Several risks which may cause schedule delay and/or cost escalation have been identified, such as: biological opinion from regulatory agencies, Utility conflict during excavation, foundation type/size change due to different soil conditions. The RMP will be continually updated in the PS&E phase and throughout construction.

The Risk Register will continue to be updated through the Design phase to track and mitigate risks. See Attachment H for the Risk Register.

11. EXTERNAL AGENCY COORDINATION

The project is a Delegated Project in accordance with the current Stewardship and Oversight Agreement signed between the Federal Highway Administration (FHWA) and Caltrans on May 28, 2015.

Table 11-1: Permits, Licenses, Agreements, and Certifications Required for Project Construction

Permit or Approval Document	Approving Agency
1600 – Lake and Streambed Alteration Agreement	California Department of Fish and Wildlife
2081 – Incidental Take Permit	California Department of Fish and Wildlife
Section 404 Nationwide Permit	U.S. Army Corps of Engineers
Section 401 Water Quality Certification	Regional Water Quality Control Board

12. PROJECT REVIEWS

District Maintenance Stan Ng Date: 09/04/2019
Landscape Office Susan Lindsay Date: 09/04/2019
Project Manager Kelly Hirschberg Date: 01/15/2020
District Safety Review Bahman Zarechian Date: 09/04/2019
Constructability Review Ali Ahmadzadeh Date: 09/04/2019
Consultant Review Heather Anderson Date: 09/03/2019
NVTA Review Rebecca Schenck Date: 09/05/2019

13. PROJECT PERSONNEL

Table 13-1: Names, Titles, and Telephone Contact Information for Project Personnel

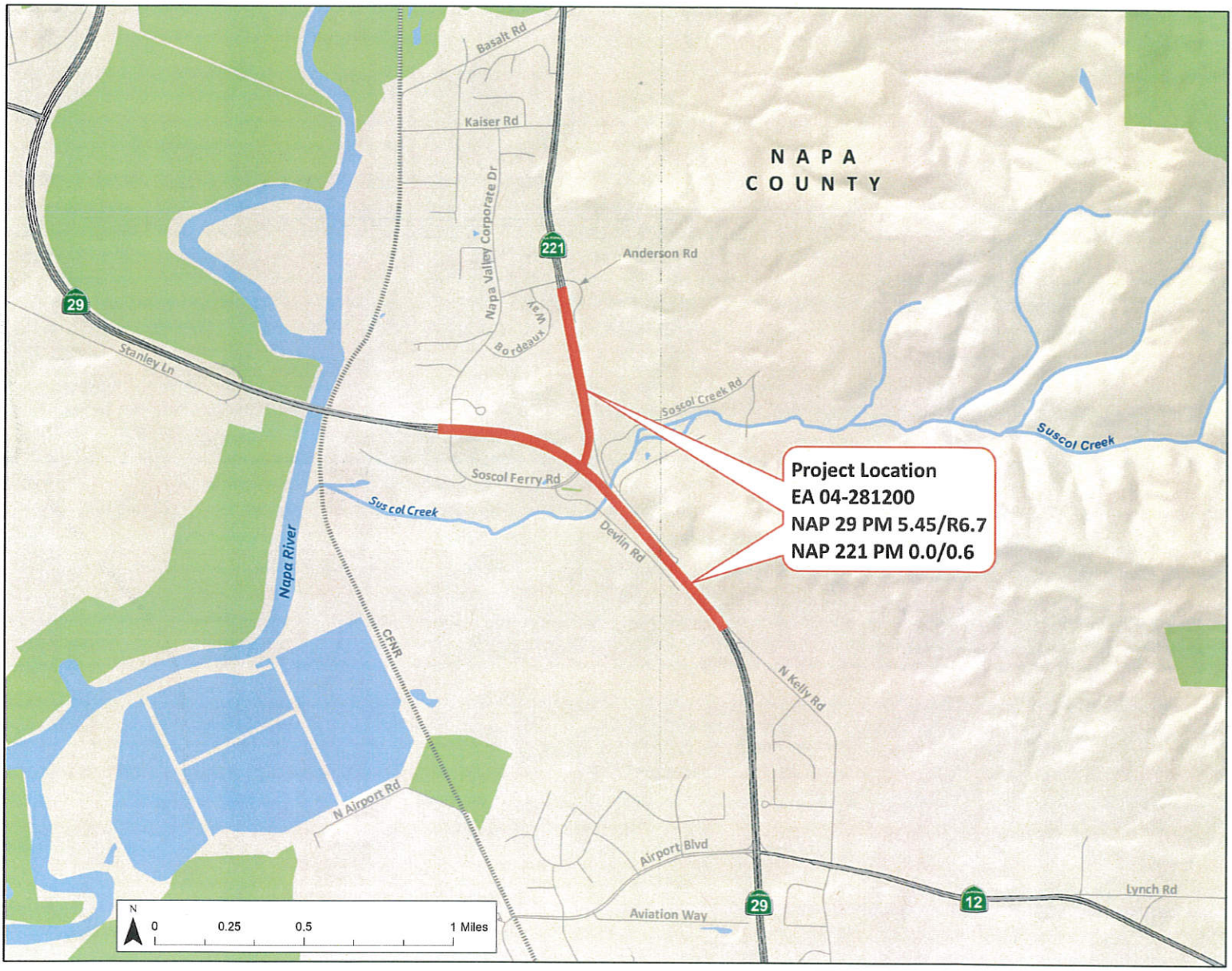
Name	Title	Phone Number
Kelly Hirschberg	Regional Project Manager	(510) 286-4925
Halim Mathkour	Chief, Office of Design North	(510) 286-6011
Hillal Hamdan	Senior Design North	(510) 286-4818
Chris Okpalaugo	Project Engineer, Design North	(510) 286-5224
Youssef Y. Karam	Design North Counties	(510) 286-4675
Wahida Rashid	Senior Environmental Planner	(510) 622-8706
Trang Hoang	Storm Water Coordinator	(510) 286-5650
Luis Tacuri	District Materials Engineer	(510) 622-1755
Bahman Zacherian	District Traffic Safety Senior	(510) 286-4578
Katheleen reilly	Branch Chief, Office of Hydraulics	(510) 286-4860

14. ATTACHMENTS

A. Project Location Map
B. Cross Section(s)
C. Preliminary Layout Sheets
D. Project Report Cost Estimate
E. Right of Way Data Sheet
F. Storm Water Data Report
G. Transportation Management Plan Data Sheet
H. Risk Register
I. Pavement Checklist
J. Draft Cooperative Agreement
K. Initial MND/EA FONSI

ATTACHMENT A

Project Location Map


NAPA
COUNTY
Basalt Rd
Kaiser Rd
Napa Valley Corporate Dr
221
Anderson Rd
29
Stanley Ln
Soscol Creek Rd
Suscol Creek
Soscol Ferry Rd
Suscol Creek
Devlin Rd
Napa River
CR&R
N Kelly Rd
N Airport Rd
Airport Blvd
Aviation Way
29
12
Lynch Rd
Project Location
EA 04-281200
NAP 29 PM 5.45/R6.7
NAP 221 PM 0.0/0.6
N
0
0.25
0.5
1 Miles

ATTACHMENT B

Cross Section(s)

NOTES:

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATIONS ARE SHOWN ON THE SUERELEVATION DIAGRAMS.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Nap	29/221	0.00/0.12, R6.04/R6.48		—

PRELIMINARY - NOT FOR CONSTRUCTION

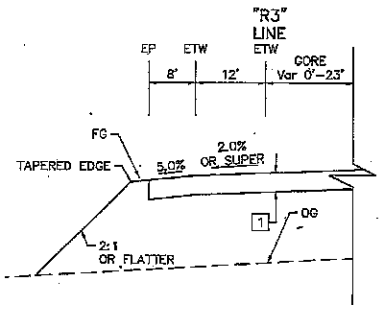
REGISTERED PROFESSIONAL ENGINEER — No. — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

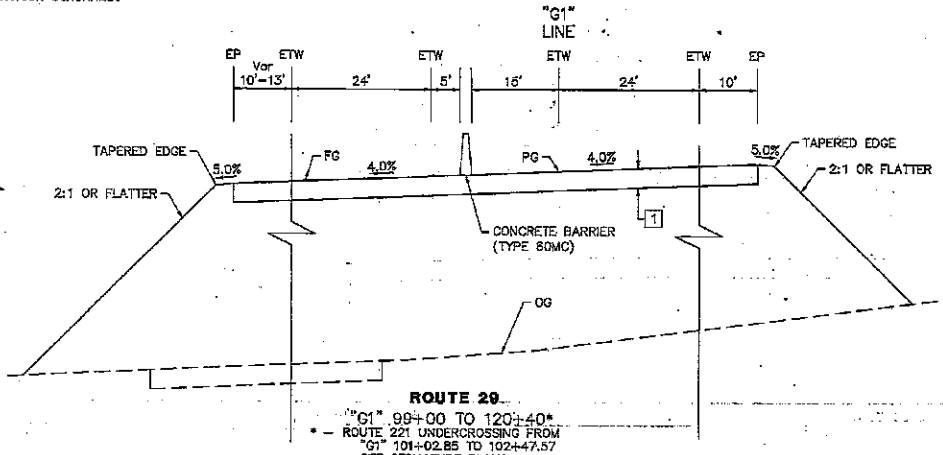
THE STATE OF CALIFORNIA, OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

GHD Inc.
943 RESERVE DRIVE #100
ROSEVILLE, CA 95678

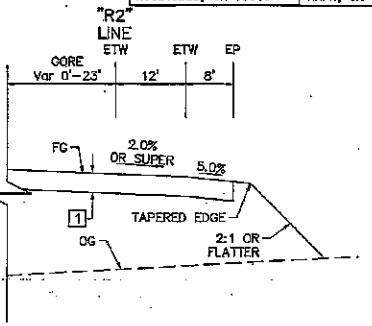
NVTA
625 BURNELL STREET
NAPA, CA 94559



SB EXIT RAMP
"G1" 117+50 TO 120+40



ROUTE 29
"G1" 99+00 TO 120+40*
* – ROUTE 221 UNDERCROSSING FROM "G1" 101+02.85 TO 102+47.57 SEE STRUCTURE PLANS



NB ENTRANCE RAMP
"G1" 109+80 TO 115+20

TYPICAL PAVEMENT STRUCTURE SECTIONS:

1
0.10' RHMA-OPEN GRADED (OPEN GRADED FRICTION COURSE)
0.20' RHMA (GAP GRADED)
1.15' HMA (TYPE A)
GPI (PAVING GRID)
0.25' HMA (TYPE A)
0.50' CLASS 2 AB

2
0.30' TEXTURED HMA
1.15' HMA (TYPE A)
GPI (PAVING GRID)
0.25' HMA (TYPE A)
0.50' CLASS 2 AB

3
0.10' RHMA-OPEN GRADED (OPEN GRADED FRICTION COURSE)
0.20' RHMA (GAP GRADED)
1.15' HMA (TYPE A)
GPI (PAVING GRID)
0.25' HMA (TYPE A)
0.50' CLASS 2 AB
1.00' ASPHALT TREATED PERMEABLE BASE

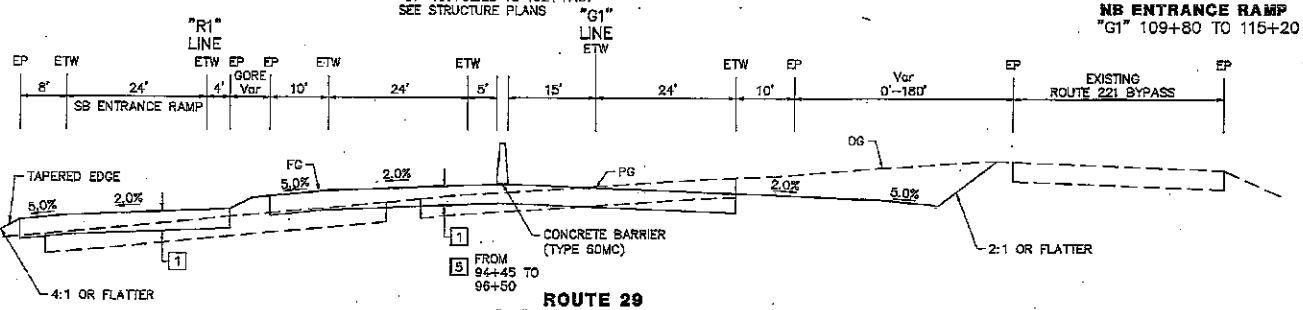
4
0.20' COLD PLANE AC PAVEMENT
0.20' HMA (TYPE A)

5
0.20' COLD PLANE AC PAVEMENT
Var HMA (TYPE A)

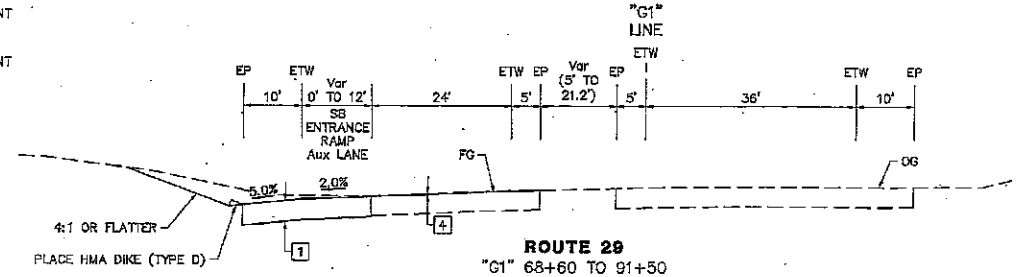
8
SHARED USE PATH
0.33' MINOR CONCRETE (SW)
0.50' CLASS 2 AB

◇1
xx' AC
xx' AB

* NOTE: CALTRANS TO PROVIDE EXISTING SECTIONS



ROUTE 29
"G1" 91+50 TO 99+00



ROUTE 29
"G1" 68+60 TO 91+50

LEGEND:

LS	LANDSCAPED AREA
SUP	SHARED USE PATH
GPI	GEOSYNTHETIC PAVEMENT INTERLAYER

TYPICAL CROSS SECTIONS

NO SCALE

X-1

MCP	6-28-19		
BDH	1-14-19		
REVISED BY	DATE REVISED		
TRENTON HOFFMAN	HEATHER ANDERSON		
CALCULATED-DESIGNED BY	CHECKED BY		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION CONSULTANT FUNCTIONAL SUPERVISOR: RONALD G. BOYLE

Caltrans

UNIT REVISION 00-00-00 | DATE PLOTTED => ROUTE | TIME PLOTTED => &TIME

BORDER LAST REVISED 7/2/2010 | USERNAME => &USER -DGN FILE =>I:\G\PRJ\2123\2123X001.DWG | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE xxxxxxxxxxx

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Nap	29/221	0.00/0.12, R6.04/R6.48		--

PRELIMINARY, NOT FOR CONSTRUCTION

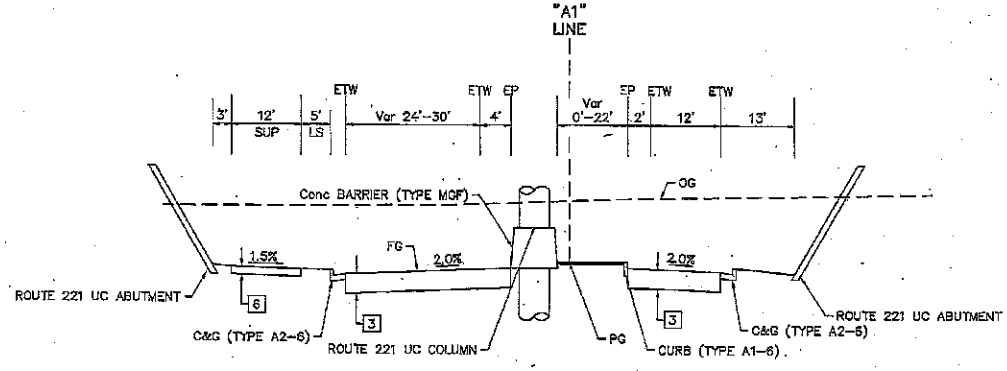
REGISTERED PROFESSIONAL ENGINEER — DATE — No. — Exp. — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

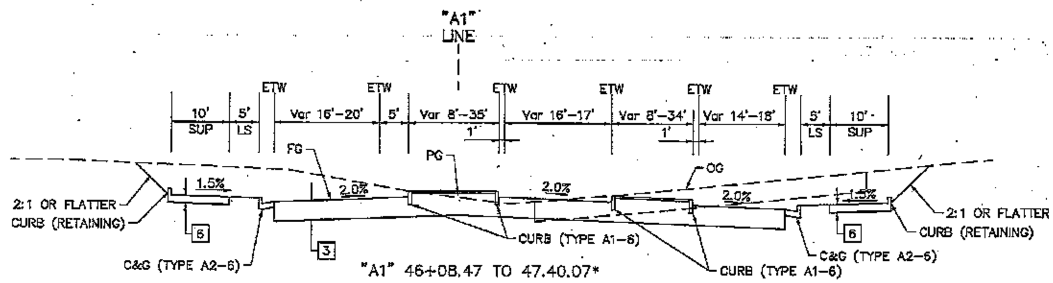
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

GHD Inc.
943 RESERVE DRIVE #100
ROSEVILLE, CA 95678

NVTA
625 BURNELL STREET
NAPA, CA 94559

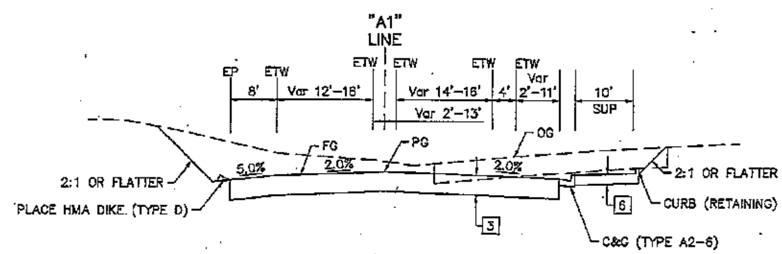


"A1" 49+04.96 TO 51+16.98



"A1" 46+08.47 TO 47.40.07*

* – WEST ROUNDABOUT FROM 47+40.07 TO 49+04.96



ROUTE 221
"A1" 44+38.21 TO 46+08.47

FOR NOTES AND LEGEND, SEE SHEET X-1.

TYPICAL CROSS SECTIONS
NO SCALE

X-2

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION | Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	TRENTON HOFFMAN	REVISED BY	TGH	MCP
RONALD G. BOYLE	CHECKED BY	HEATHER ANDERSON	DATE REVISED	1-14-19	6-28-19

LAST REVISION 00-00-00 | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME

BORDER LAST REVISED 7/2/2010 | USERNAME => $USER | DGN FILE =>K:\PRJ\2123\2123X001.DWG | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE | XXXXXXXXXXX

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Nap	29/221	0.00/0.12, R6.04/R6.48		--

PRELIMINARY - NOT FOR CONSTRUCTION

DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

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

GHD Inc.
943 RESERVE DRIVE #100
ROSEVILLE, CA 95678

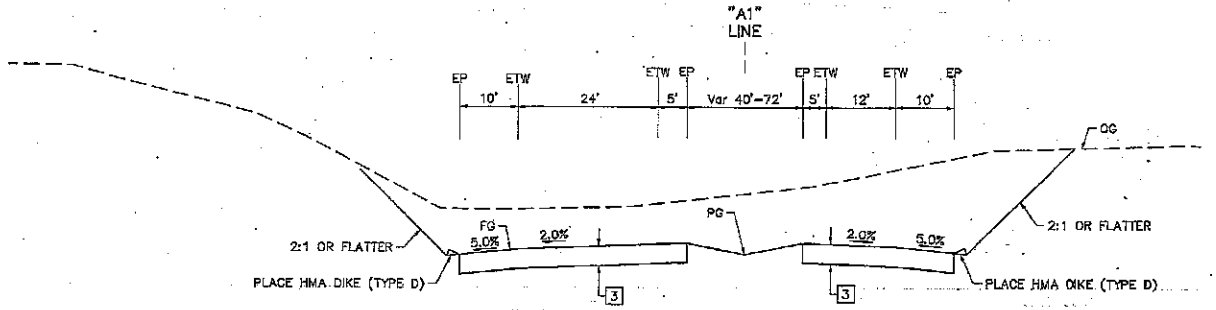
NVTA
625 BURNELL STREET
NAPA, CA 94559

REVISED BY	DATE REVISED
TGH	1-14-19
MCP	6-28-19

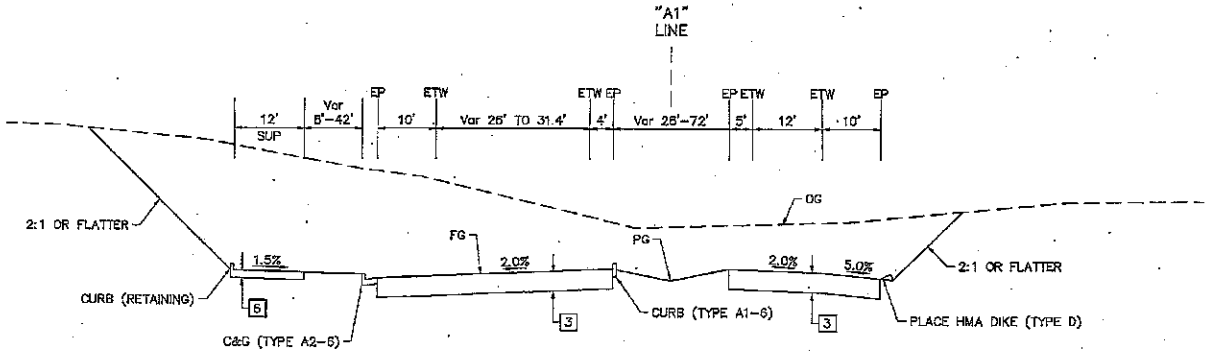
CALCULATED/DESIGNED BY: TRENTON HOFFMAN
CHECKED BY: HEATHER ANDERSON

CONSULTANT FUNCTIONAL SUPERVISOR: RONALD G. BOYLE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION



"A1" 54+07.54 TO 60+05.00



ROUTE 221

"A1" 52+66.73 TO 54+07.54*

* - EAST ROUNDABOUT
FROM 51+16.98 TO 52+66.73

FOR NOTES AND LEGEND, SEE SHEET X-1.

TYPICAL CROSS SECTIONS

NO SCALE

X-3

LAST REVISION: DATE PLOTTED => 00-00-00 TIME PLOTTED => 0:TIME

BORDER LAST REVISED 7/2/2010 | USERNAME => USER DGN FILE => H:\PRJ\212.3\212.3X001.DWG | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE XXXXXXXXXX

ATTACHMENT C

Preliminary Layout Sheets

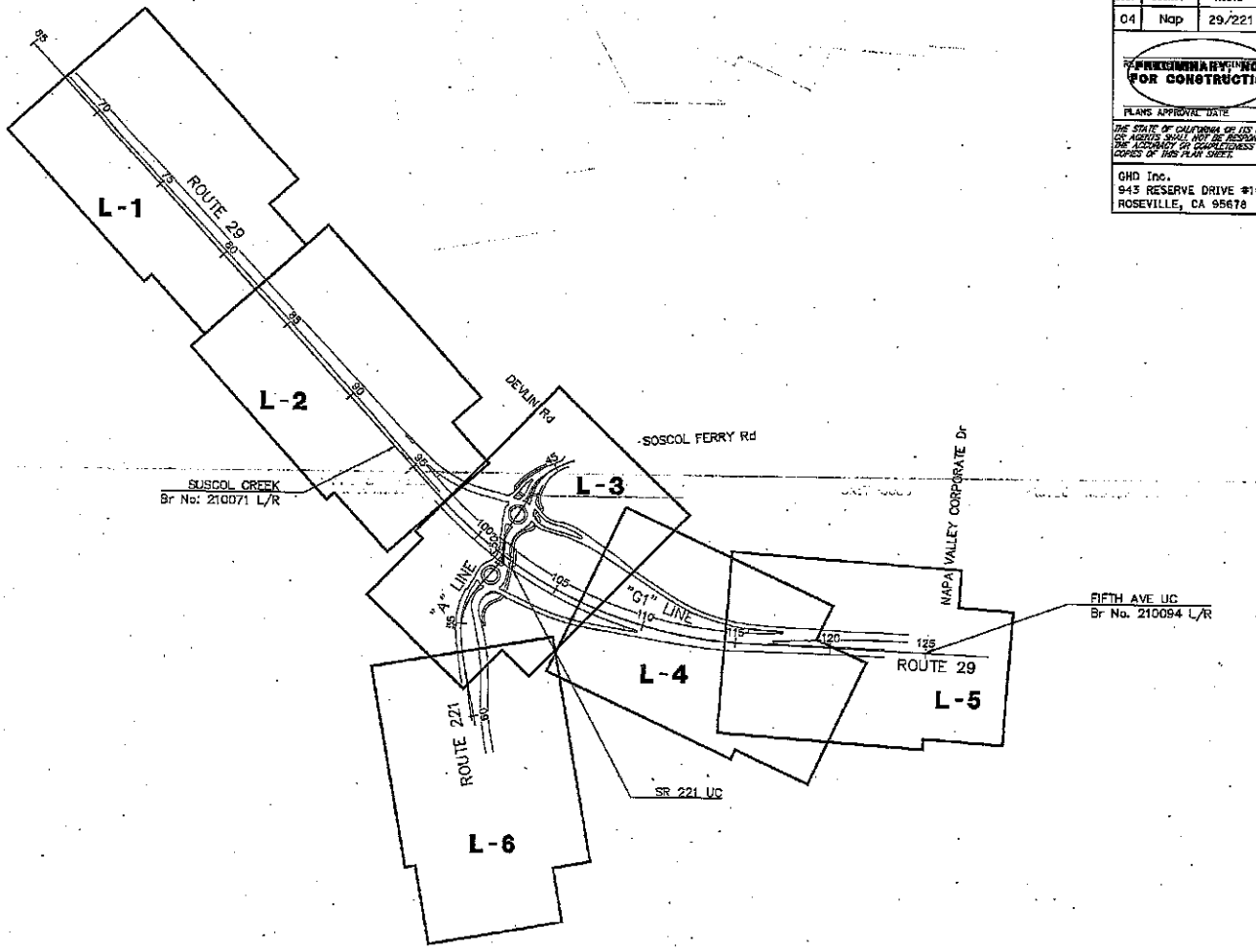
Build Alternative

SR 29/SR 221 JUNCTION INTERCHANGE

Napa, California

GHD
943 Reserve Drive, Suite 100
Roseville, CA 95678 USA
T 1 916 782 8688 W www.ghd.com
GHD Inc.

November, 2018 2123EX012.dwg



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Nap	29/221	0.00/0.12, R6.04/R6.48		--

PRELIMINARY; NOT FOR CONSTRUCTION

DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

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

GHD Inc. 943 RESERVE DRIVE #100 ROSEVILLE, CA 95678	NVTA 625 BURNELL STREET NAPA, CA 94559

KEY MAP AND LINE INDEX

NO SCALE

K-1

	REVISED BY	DATE REVISED
MCP	1041	1-14-19
6-26-19		

TREANTON HOFFMAN
HEATHER ANDERSON

CALCULATED-DESIGNED BY
CHECKED BY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
CONSULTANT FUNCTIONAL SUPERVISOR
RONALD G. BOYLE

BORDER LAST REVISED 7/2/2010

USERNAME => #USER
DGN FILE =>K:\PRJ\2123\2123L001.DWG

RELATIVE BORDER SCALE IS IN INCHES

0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE xxxxxxxxxxx

LAST REVISION 00-00-00
DATE PLOTTED => #DATE
TIME PLOTTED => #TIME

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

LEGEND:
TRUCK APRON OR BLISTER (TEXTURED HMA)
ENVIRONMENTAL STUDY LIMITS

NAPA COUNTY

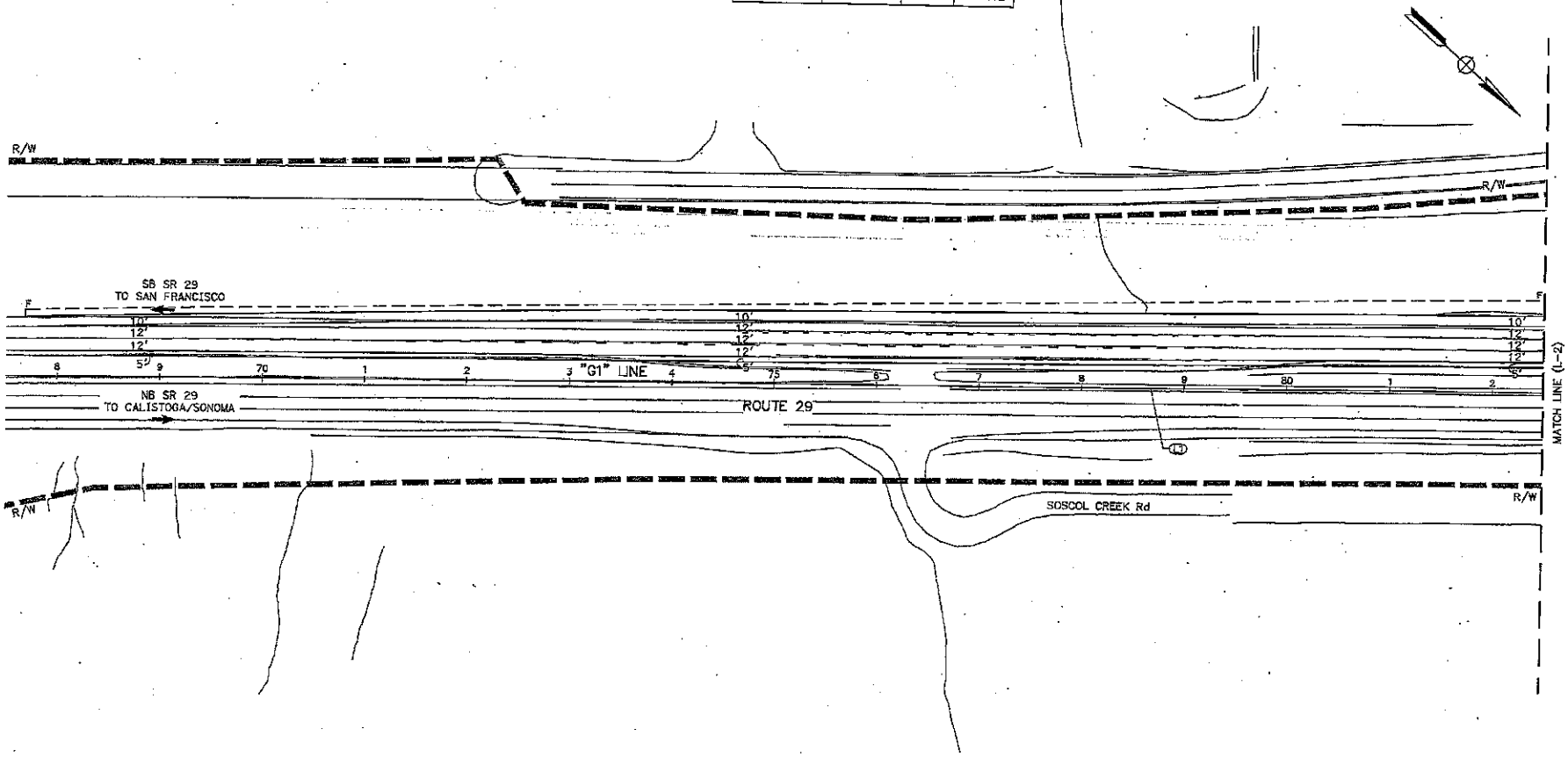
ALIGNMENT DATA "G1" LINE				
NO.	R	Δ	T	L
L1	–	N42°18'29"W	–	2735.82'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Nap	29/221	0.00/0.12, R6.04/R6.48		

RE PRELIMINARY - NOT FOR CONSTRUCTION
DATE
PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.
REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

GHD Inc.
943 RESERVE DRIVE #100
ROSEVILLE, CA 95678

NVTA
625 BURNELL STREET
NAPA, CA 94559

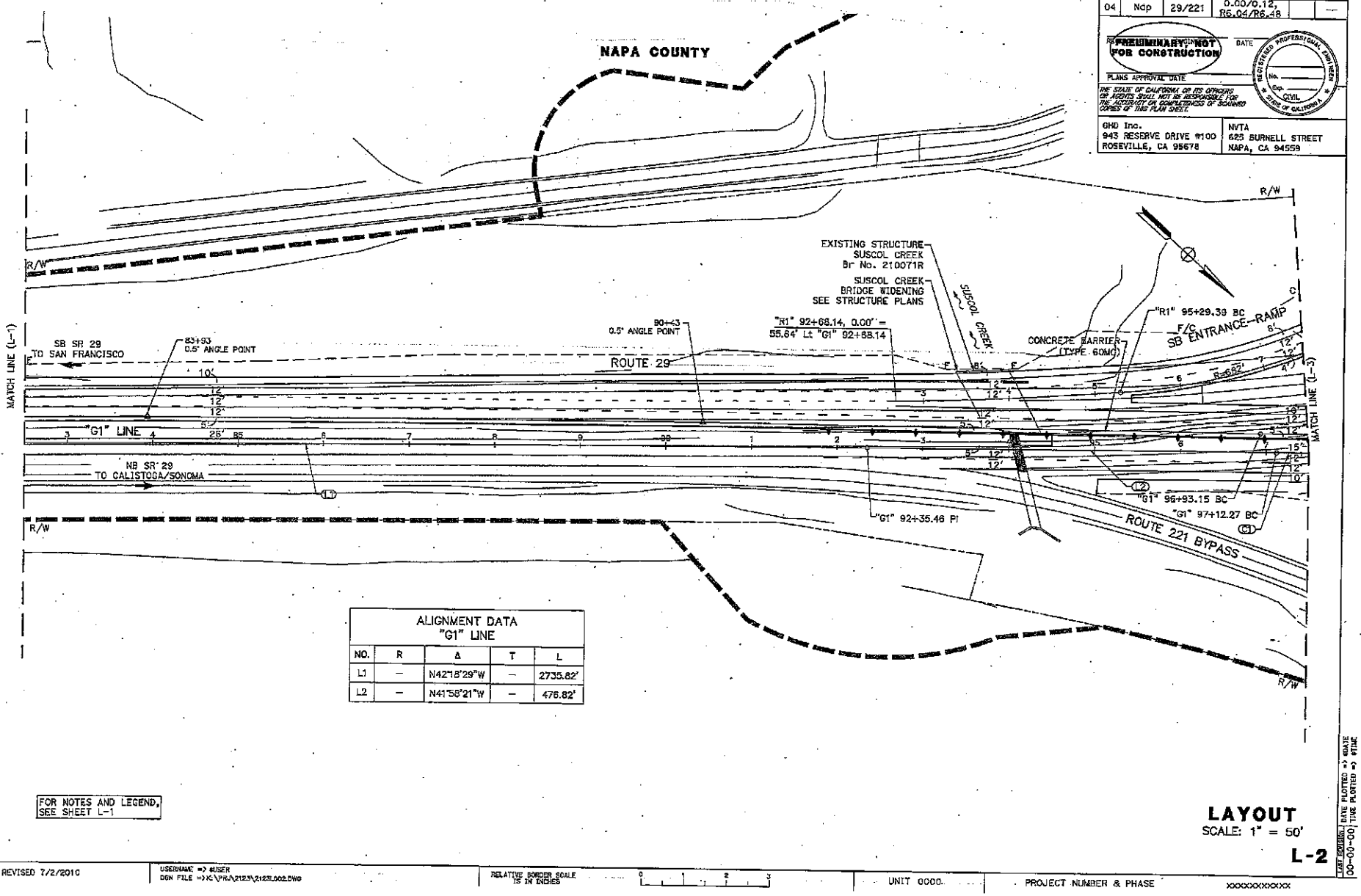


LAYOUT
SCALE: 1" = 50'

L-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
Caltrans	RONALD G. BOYLE	TRENTON HOFFMAN	HEATHER ANDERSON	MCP	6-28-19

BORDER LAST REVISED 7/2/2010 | USERNAME => #USER | DGN FILE => IC:\PROJ\2123\2123L002.DWG | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0000 | PROJECT NUMBER & PHASE xxxxxxxxxx | LAST REVISED DATE PLOTTED => 00-00-00 TIME PLOTTED => 0TIME



ALIGNMENT DATA "G1" LINE				
NO.	R	Δ	T	L
L1	–	N42°18'29"W	–	2735.82'
L2	–	N41°58'21"W	–	476.82'

FOR NOTES AND LEGEND, SEE SHEET L-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Nap	29/221	0.00/0.12, R6.04/R6.48		–

PRELIMINARY; NOT FOR CONSTRUCTION

DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — CIVIL — STATE OF CALIFORNIA

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

GHD Inc.
943 RESERVE DRIVE #100
ROSEVILLE, CA 95678

NVTA
625 BURNELL STREET
NAPA, CA 94559

REVISED BY	DATE REVISED
MCP	6-28-19

TRENTON HOFFMAN
HEATHER ANDERSON

CALCULATED-DESIGNED BY
CHECKED BY

RONALD G. BOYLE

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

Caltrans

LAYOUT

SCALE: 1" = 50'

L-2

BORDER LAST REVISED 7/2/2010

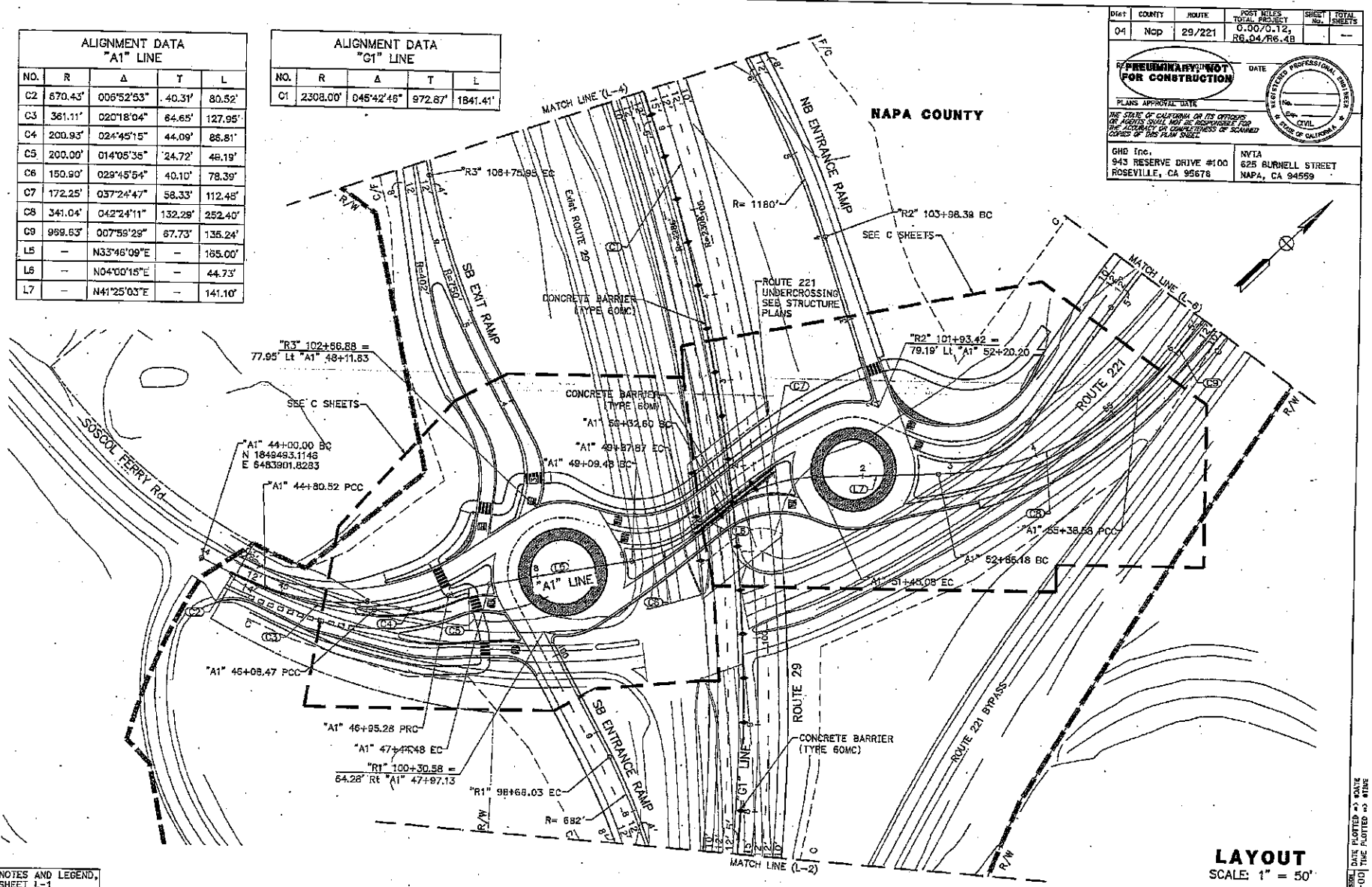
USERNAME => %USER
DGN FILE => K:\PRJ\2123\2123L002.DWG

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE XXXXXXXXXX

LAST REVISION 00-00-00 DATE PLOTTED => %DATE TIME PLOTTED => %TIME



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Nap	29/221	0.00/0.12, R6.04/R6.48		

NO.	REVISED BY	DATE REVISED
	MCP	8-28-19

CALCULATED-DESIGNED BY	CHECKED BY
TRENTON HOFFMAN	HEATHER ANDERSON

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | CONSULTANT FUNCTIONAL SUPERVISOR: RONALD G. BOYLE

FOR NOTES AND LEGEND, SEE SHEET L-1

BORDER LAST REVISED 7/2/2010

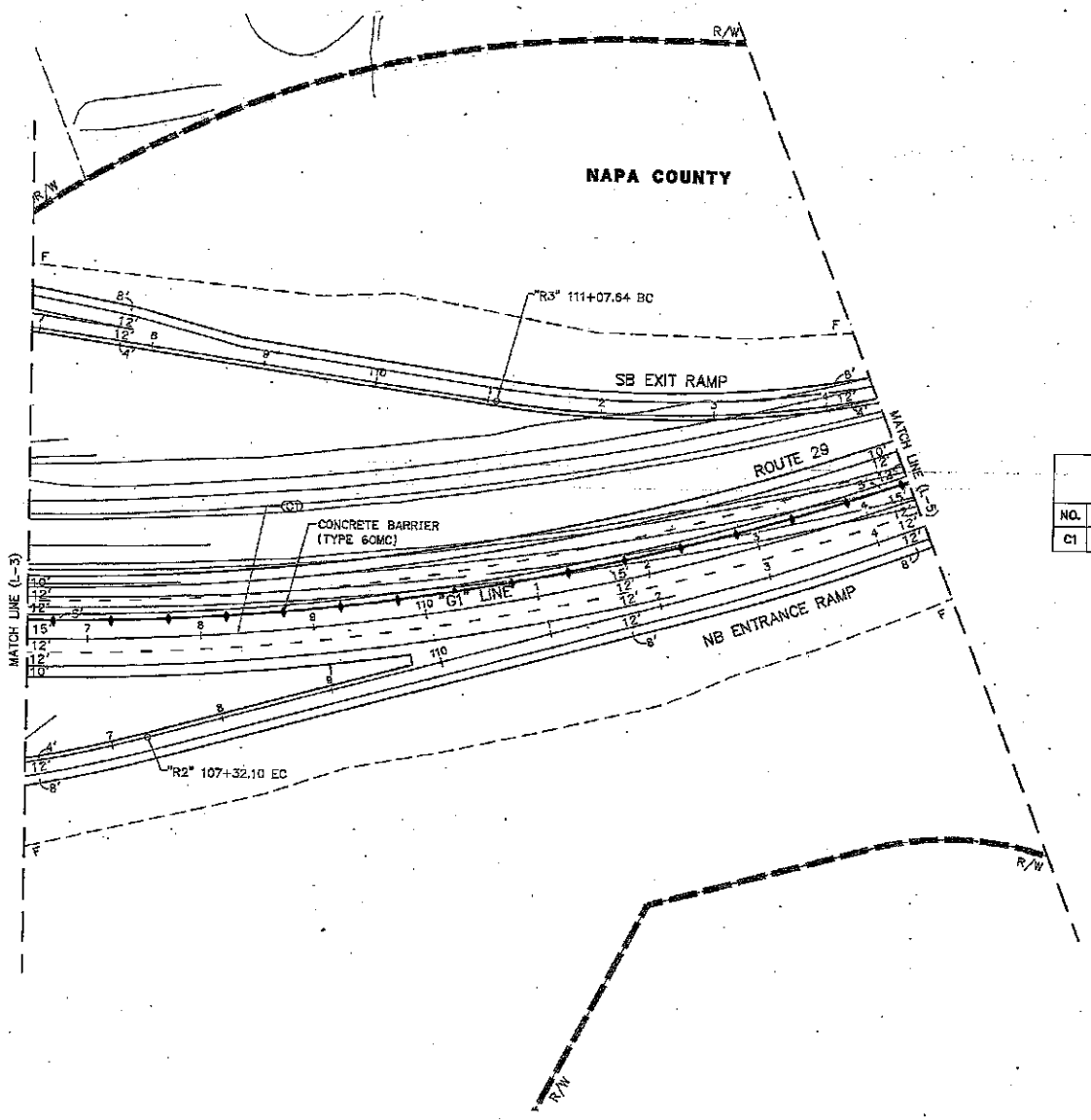
USERNAME => &USER
&GN FILE =>K:\PRJ\2123\2123L002.DWG

RELATIVE BORDER SCALE IS IN INCHES

UNIT 0000

PROJECT NUMBER & PHASE xxxxxxxxxx

LAST REVISION DATE PLOTTED => &DATE
TIME PLOTTED => &TIME



ALIGNMENT DATA "G1" LINE				
NO.	R	Δ	T	L
C1	2308.00'	045°42'46"	972.87'	1841.41'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Nap	29/221	0.00/0.12, R6.04/R6.48		

PRELIMINARY - NOT FOR CONSTRUCTION

DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

GHD Inc.
943 RESERVE DRIVE #100
ROSEVILLE, CA 95678

NVTA
625 BURNELL STREET
NAPA, CA 94559

STATE OF CALIFORNIA — DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
Caltrans	RONALD G. BOYLE	TRENTON HOFFMAN	HEATHER ANDERSON	MCP	6-28-19

FOR NOTES AND LEGEND, SEE SHEET L-1

LAYOUT

SCALE: 1" = 50'

L-4

BORDER LAST REVISED 7/2/2010

USERNAME => \$USER
DGN FILE => K:\PRJ\2123\2123L002.DWG

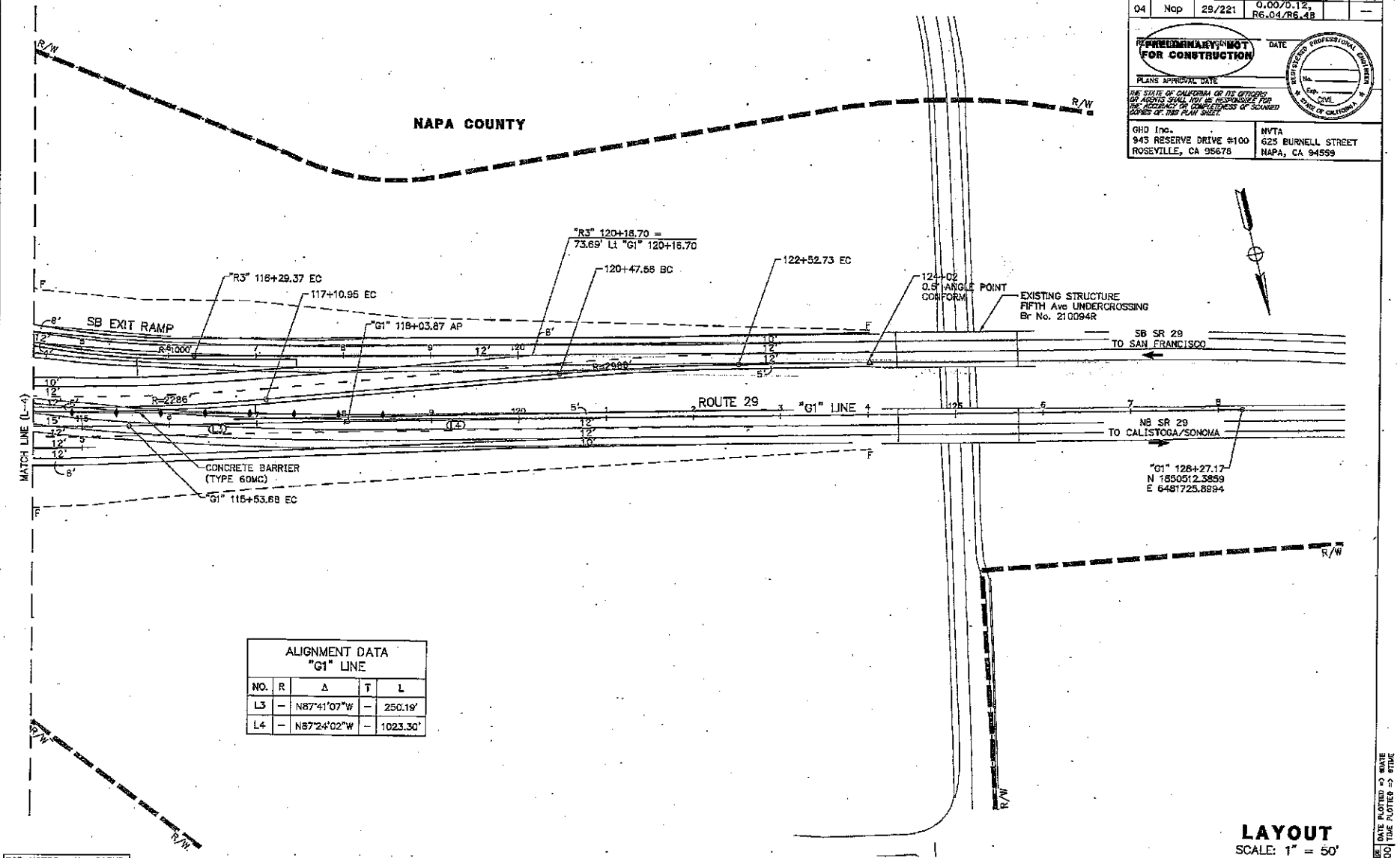
RELATIVE BORDER SCALE IS IN INCHES

0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE xxxxxxxxxx

DATE PLOTTED => \$DATE
TIME PLOTTED => \$TIME



ALIGNMENT DATA "G1" LINE				
NO.	R	Δ	T	L
L3	–	N87°41'07"W	–	250.19'
L4	–	N87°24'02"W	–	1023.30'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Nap	29/221	0.00/0.12, R6.04/R6.48		—

PRELIMINARY - NOT FOR CONSTRUCTION

DATE

PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA

GHD Inc. 943 RESERVE DRIVE #100 ROSEVILLE, CA 95678	NVTA 625 BURNELL STREET NAPA, CA 94559

FOR NOTES AND LEGEND, SEE SHEET L-1

LAYOUT
SCALE: 1" = 50'

L-5

REVISED BY	DATE REVISED
MCP	5-20-19
TRENTON HOFFMAN	HEATHER ANDERSON
CALCULATED-DESIGNED BY	CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR	
RONALD G. BOYLE	

STATE OF CALIFORNIA ~ DEPARTMENT OF TRANSPORTATION

Caltrans

BORDER LAST REVISED 7/2/2010

USERNAME => <USER
DGN FILE => K:\PRA\2123\212SL002.DWG

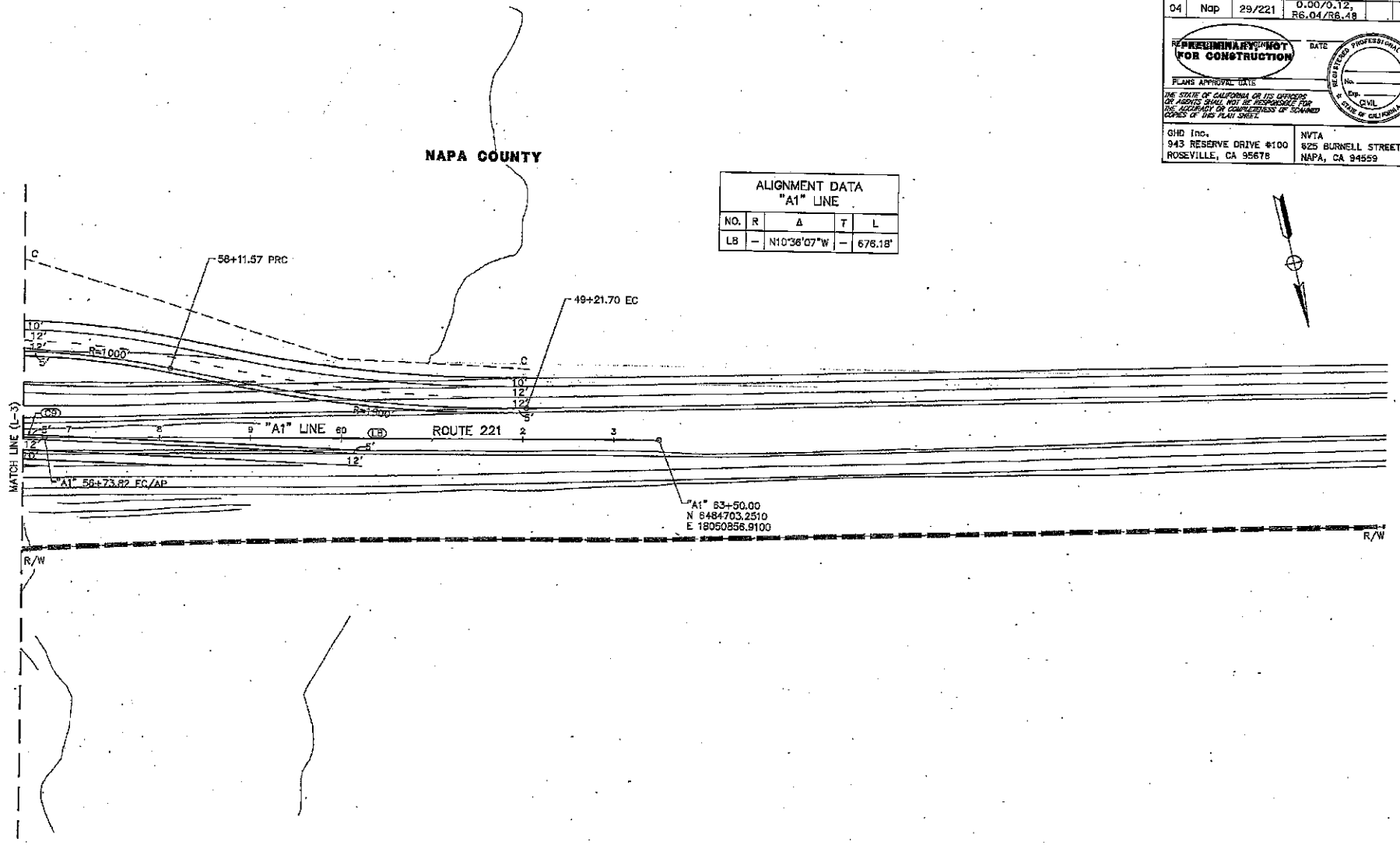
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT .0000

PROJECT NUMBER & PHASE xxxxxxxxxxx

LAST REVISION 00-00-00

DATE PLOTTED => <DATE
TIME PLOTTED => <TIME



ALIGNMENT DATA "A1" LINE				
NO.	R	Δ	T	L
L8	–	N10°36'07"W	–	676.18'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Nap	29/221	0.00/0.12, R6.04/R6.48		

PRELIMINARY - NOT FOR CONSTRUCTION

DATE

PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — EXP. — CIVIL

GHD Inc.
943 RESERVE DRIVE #100
ROSEVILLE, CA 95678

NVTA
625 BURNELL STREET
NAPA, CA 94559

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: RONALD G. BOYLE

CALCULATED-DESIGNED BY: TRENTON HOFFMAN

CHECKED BY: HEATHER ANDERSON

REVISED BY: MEP

DATE REVISED: 6-28-19

FOR NOTES AND LEGEND, SEE SHEET L-1

LAYOUT

SCALE: 1" = 50'

L-6

BORDER LAST REVISED 7/2/2010

USERNAME => euser
DGN FILE => K:\PRJ\2123\2123L002.DWG

RELATIVE BORDER SCALE IS IN INCHES

0 1 2 3

UNIT 0000

PROJECT NUMBER & PHASE xxxxxxxxxx

LAST REVISION (00-00-00) DATE PLOTTED => 00/ATE TIME PLOTTED => 0TIME

ATTACHMENT D

Project Report Cost Estimate

PROJECT

PRELIMINARY COST ESTIMATE

EA: 04-28120

EA: 04-28120 PID: 40000769

PID: 40000769

District-County-Route: 04-NAP-29

PM: R6.04 - R6.48

Type of Estimate : Project Report

Program Code : TBD

Project Limits : SR 29 and SR 221/Soscol Ferry Road Intersection

Project Description: Intersection Reconfiguration

Scope : Construct Diamond Interchange Including Roundabout On/Off-Ramp Intersections

Alternative : Build Alternative

SUMMARY OF PROJECT COST ESTIMATE

	Current Year Cost	Escalated Cost
TOTAL ROADWAY COST	$ 27,359,400	$ 30,070,847
TOTAL STRUCTURES COST	$ 12,385,000	$ 13,612,413
SUBTOTAL CONSTRUCTION COST	$ 39,744,400	$ 43,683,260
TOTAL RIGHT OF WAY COST	$ 250,000	$ 300,000
TOTAL CAPITAL OUTLAY COSTS	**$ 39,995,000**	**$ 43,984,000**
PA/ED SUPPORT	$ 6,100,000	$ 6,100,000
PS&E SUPPORT	$ 4,000,000	$ 4,000,000
RIGHT OF WAY SUPPORT	$ 300,000	$ 300,000
CONSTRUCTION SUPPORT	$ 4,800,000	$ 4,800,000
TOTAL SUPPORT COST	**$ 15,200,000**	**$ 15,200,000**
TOTAL PROJECT COST	**$ 55,200,000**	**$ 59,200,000**
FUTURE PROJECT COST	**$ 49,100,000**	**$ 53,100,000**

Note: cost shown in red has already been programmed and extended

Programmed Amount

	Month	Year
Date of Estimate (Month/Year)	7	19
Estimated Construction Start (Month/Year)	4	22
Number of Working Days =	340	
Estimated Mid-Point of Construction (Month/Year)	6	23
Estimated Construction End (Month/Year)	7	24
Number of Plant Establishment Days	440	

Estimated Project Schedule

PID Approval	
PA/ED Approval	1/31/2020
PS&E	3/1/2021
RTL	10/1/2021
Begin Construction	4/1/2022

Reviewed by District O.E. or Cost Estimate Certifier

Hillel Hamburger — 1/16/2020 — 510-286-4818

Office Engineer / Cost Estimate Certifier — Date — Phone

Approved by Project Manager

Holly Livingston — 1/16/2020 — (510) 286-4425

Project Manager — Date — Phone

I. ROADWAY ITEMS SUMMARY

	Section		Cost
1	Earthwork	$	2,825,000
2	Pavement Structural Section	$	7,938,400
3	Drainage	$	500,000
4	Specialty Items	$	894,700
5	Environmental	$	2,862,800
6	Traffic Items	$	2,672,600
7	Detours	$	645,900
8	Minor Items	$	733,600
9	Roadway Mobilization	$	1,907,300
10	Supplemental Work	$	542,900
11	State Furnished	$	380,000
12	Time-Related Overhead	$	1,887,500
13	Roadway Contingency	$	3,568,700
	TOTAL ROADWAY ITEMS	**$**	**27,359,400**

Estimate Prepared By :	Michael Pitcock	12/23/2019	916-782-8688
	Name and Title	Date	Phone
Estimate Reviewed By :	Heather Anderson, PE	12/23/2019	916-782-8688
	Name and Title	Date	Phone

By signing this estimate you are attesting that you have discussed your project with all functional units and have incorporated all their comments or have discussed with them why they will not be incorporated.

SECTION 1: EARTHWORK

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	95,000	x	27.00	=	$	2,565,000
152320	Lead Compliance Plan	LS	1	x	5,000.00	=	$	5,000
194001	Ditch Excavation	CY		x		=	$	-
198010	Imported Borrow	CY	45,000	x	5.00	=	$	225,000
192037	Structure Excavation (Retaining Wall)	CY		x		=	$	-
193013	Structure Backfill (Retaining Wall)	CY		x		=	$	-
193031	Pervious Backfill Material (Retaining Wall)	CY		x		=	$	-
16010X	Clearing & Grubbing	LS	1	x	20,000.00	=	$	20,000
170101	Develop Water Supply	LS	1	x	10,000.00	=	$	10,000

TOTAL EARTHWORK SECTION ITEMS	$	2,825,000

SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code		Unit	Quantity		Unit Price ($)			Cost
401050	Jointed Plain Concrete Pavement	CY	11,700	x	230.00	=	$	2,691,000
400050	Continuously Reinforced Concrete Pavement	CY		x		=	$	-
280000	Lean Concrete Base	CY	4,300	x	170.00	=	$	731,000
404093	Seal Isolation Joint	LF		x		=	$	-
413117	Seal Concrete Pavement Joint (Silicone)	LF		x		=	$	-
413118	Seal Pavement Joint (Asphalt Rubber)	LF		x		=	$	-
280010	Rapid Strength Concrete Base	CY		x		=	$	-
410095	Dowel Bar (Drill and Bond)	EA		x		=	$	-
390132	Hot Mix Asphalt (Type A)	TON	17,300	x	110.00	=	$	1,903,000
390137	Rubberized Hot Mix Asphalt (Gap Graded)	TON	2,000	x	140.00	=	$	280,000
390402	RHMA-(Open Graded Friction Course)	TON	1,000	x	125.00	=	$	125,000
393006	Geosynthetic Pavement Interlayer (Paving Grid)	SQYD	15,700	x	10.00	=	$	157,000
260203	Class 2 Aggregate Base	CY	2,900	x	120.00	=	$	348,000
290201	Asphalt Treated Permeable Base	CY	3,800	x	130.00	=	$	494,000
250201	Class 2 Aggregate Subbase	CY	8,600	x	40.00	=	$	344,000
374002	Asphaltic Emulsion (Fog Seal Coat)	TON		x		=	$	-
397005	Tack Coat	TON	35	x	500.00	=	$	17,500
390100	Prime Coat	TON	40	x	800.00	=	$	32,000
377501	Slurry Seal	TON		x		=	$	-
3750XX	Screenings (Type XX)	TON		x		=	$	-
374492	Asphaltic Emulsion (Polymer Modified)	TON		x		=	$	-
370001	Sand Cover (Seal)	TON		x		=	$	-
731530A	Hot Mix Asphalt (Textured Paving)	TON	175	x	175.00	=	$	30,625
730020	Minor Concrete (Curb A1-6)	CY	61	x	650.00	=	$	39,650
730020	Minor Concrete (Curb D4MOD)	CY	24	x	750.00	=	$	18,000
730020	Minor Concrete (Curb Central Island)	CY	18	x	750.00	=	$	13,500
731504	Minor Concrete (Curb and Gutter)	CY	130	x	800.00	=	$	104,000
39407X	Place Hot Mix Asphalt Dike (Type E)	LF	2,490	x	13.00	=	$	32,370
150771	Remove Asphalt Concrete Dike	LF		x		=	$	-
420201	Grind Existing Concrete Pavement	SQYD		x		=	$	-
150860	Remove Base and Surfacing	CY	12,600	x	15.00	=	$	189,000
390095	Replace Asphalt Concrete Surfacing	CY		x		=	$	-
15312X	Remove Concrete	LF/CY/LS		x		=	$	-
394090	Place Hot Mix Asphalt (Miscellaneous Area)	SQYD	175	x	50.00	=	$	8,750
153103	Cold Plane Asphalt Concrete Pavement	SQYD	19,000	x	20.00	=	$	380,000
39405X	Shoulder Rumble Strip (HMA, X-In Indentations)	STA		x		=	$	-
413113	Repair Spalled Joints, Polyester Grout	SQYD		x		=	$	-
420102	Groove Existing Concrete Pavement	SQYD		x		=	$	-
390136	Minor Hot Mix Asphalt	TON		x		=	$	-
394095	Roadside Paving (Miscellaneous Areas)	SQYD		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS	$	7,938,400

SECTION 3: DRAINAGE

Item code		Unit	Quantity		Unit Price ($)			Cost
15080X	Remove Culvert	EA/LF		x		=	$	-
150820	Modify Inlet	EA		x		=	$	-
155232	Sand Backfill	CY		x		=	$	-
15020X	Abandon Culvert	EA/LF		x		=	$	-
152430	Adjust Inlet	LF		x		=	$	-
155003	Cap Inlet	EA		x		=	$	-
510501	Minor Concrete	CY		x		=	$	-
510502	Minor Concrete (Minor Structure)	CY		x		=	$	-
5105XX	Minor Concrete (Type XX)	CY		x		=	$	-
620XXX	XX" Alternative Pipe Culvert (Type X)	LF		x		=	$	-
6411XX	XX" Plastic Pipe	LF		x		=	$	-
65XXXX	XX" Reinforced Concrete Pipe (Type X)	LF		x		=	$	-
6650XX	XX" Corrugated Steel Pipe (0.XXX" Thick)	LF		x		=	$	-
68XXXX	XX" Plastic Pipe (Edge Drain)	LF		x		=	$	-
69011X	XX" Corrugated Steel Pipe Downdrain (0.XXX" Thic	LF		x		=	$	-
70321X	XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF		x		=	$	-
70XXXX	XX" Corrugated Steel Pipe Riser (0.XXX" Thick)	LF		x		=	$	-
7050XX	XX" Steel Flared End Section	EA		x		=	$	-
703233	Grated Line Drain	LF		x		=	$	-
72XXXX	Rock Slope Protection (Type and Method)	CY/TON		x		=	$	-
72901X	Rock Slope Protection Fabric (Class X)	SQYD		x		=	$	-
721420	Concrete (Ditch Lining)	CY		x		=	$	-
721430	Concrete (Channel Lining)	CY		x		=	$	-
750001	Miscellaneous Iron and Steel	LB		x		=	$	-
XXXXXX	Additional Drainage	LS	1	x	500,000.00	=	$	500,000

TOTAL DRAINAGE ITEMS	$	500,000

SECTION 4: SPECIALTY ITEMS

Item code		Unit	Quantity		Unit Price ($)			Cost
080050	Progress Schedule (Critical Path Method)	LS		x		=	$	-
582001	Sound Wall (Masonry Block)	SQFT		x		=	$	-
510530	Minor Concrete (Wall)	CY		x		=	$	-
15325X	Remove Sound Wall	LF/LS		x		=	$	-
070030	Lead Compliance Plan	LS		x		=	$	-
141120	Treated Wood Waste	LB		x		=	$	-
153221	Remove Concrete Barrier	LF		x		=	$	-
150662	Remove Metal Beam Guard Railing	LF	2,750	x	15.00	=	$	41,250
150668	Remove Flared End Section	EA		x		=	$	-
8000XX	Chain Link Fence (Type XX)	LF		x		=	$	-
80XXXX	XX" Chain Link Gate (Type CL-6)	EA		x		=	$	-
832005	Midwest Guardrail System	LF	100	x	60.00	=	$	6,000
839301	Single Thrie Beam Barrier	LF		x		=	$	-
839310	Double Thrie Beam Barrier	LF		x		=	$	-
839521	Cable Railing	LF		x		=	$	-
8395XX	Terminal System (Type WB-31)	EA		x		=	$	-
839585	Alternative Flared Terminal System	EA		x		=	$	-
839584	Alternative In-line Terminal System	EA	2	x	3,500.00	=	$	7,000
498052	60" CIDH Concrete Pile (Sign Foundation)	LF	25	x	1,250.00	=	$	31,250
129110A	Alternative Crash Cushion	EA	2	x	4,000.00	=	$	8,000
839640	Concrete Barrier (Type 60M)	LF	210	x	180.00	=	$	37,800
839642	Concrete Barrier (Type 60MC)	LF	2,700	x	120.00	=	$	324,000
839714	Concrete Barrier (Type 80)	LF	320	x	420.00	=	$	134,400
520103	Bar Reinforced Steel (Retaining Wall)	LB		x		=	$	-
510060	Structural Concrete, Retaining Wall	CY		x		=	$	-
513553	Retaining Wall (Masonry Wall)	SQFT		x		=	$	-
511035	Architectural Treatment	SQFT	7,900	x	20.00	=	$	158,000
598001	Anti-Graffiti Coating	SQFT		x		=	$	-
511036	Architectural Surface (Barrier)	SQFT	24,225	x	3.00	=	$	72,675
5136XX	Reinforced Concrete Crib Wall (Type X)	SQFT		x		=	$	-
839543	Transition Railing (Type WB-31)	EA	2	x	5,000.00	=	$	10,000
597601	Prepare and Stain Concrete	SQFT	32,125	x	2.00	=	$	64,250
839561	Rail Tensioning Assembly	EA		x		=	$	-
83958X	End Anchor Assembly (Type X)	EA		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

TOTAL SPECIALTY ITEMS	$	894,700

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
	Biological Mitigation	LS	1	x	1,000,000.00	=	$	1,000,000
130670	Temporary Reinforced Silt Fence	LF		x		=	$	-
141000	Temporary Fence (Type ESA)	LF	800	x	5.00	=	$	4,000
						Subtotal Environmental Mitigation	$	*1,004,000*

5B - LANDSCAPE AND IRRIGATION

Item code		Unit	Quantity		Unit Price ($)			Cost
20XXXX	Highway Planting	LS	1	x	300,000.00	=	$	300,000
20XXXX	Irrigation System	LS	1	x	200,000.00	=	$	200,000
204099	Plant Establishment Work	LS	1	x	75,000.00	=	$	75,000
204101	Extend Plant Establishment Work	LS		x		=	$	-
20XXXX	Follow-up Landscape Project	LS		x		=	$	-
150685	Remove Irrigation Facility	LS		x		=	$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)	LS		x		=	$	-
206400	Check and Test Existing Irrigation Facilities	LS		x		=	$	-
21011X	Imported Topsoil (X)	CY/TON		x		=	$	-
200114	Rock Blanket, Rock Mulch, DG, Gravel Mulch	SQFT	20,200	x	25.00	=	$	505,000
200122	Weed Germination	SQYD		x		=	$	-
208304	Water Meter	EA	2	x	50,000.00	=	$	100,000
2087XX	XX" Conduit (Use for Irrigation x-overs)	LF		x		=	$	-
20890X	Extend X" Conduit (Use for Extension of Irrigation x-overs)	LF		x		=	$	-
						Subtotal Landscape and Irrigation	$	*1,180,000*

5C - EROSION CONTROL

Item code		Unit	Quantity		Unit Price ($)			Cost
210010	Move In/Move Out (Erosion Control)	EA	4	x	3,000.00	=	$	12,000
210350	Fiber Rolls	LF	18,876	x	2.50	=	$	47,190
210360	Compost Sock	LF		x		=	$	-
2102XX	Rolled Erosion Control Product (X)	SQFT		x		=	$	-
21025X	Bonded Fiber Matrix	QFT/ACRE		x		=	$	-
210300	Hydromulch	SQFT	330,000	x	0.03	=	$	9,900
210420	Straw	SQFT		x		=	$	-
210430	Hydroseed	SQFT	330,000	x	0.08	=	$	26,400
210600	Compost	SQFT	330,000	x	0.50	=	$	165,000
210630	Incorporate Materials	SQFT	330,000	x	0.04	=	$	13,200
						Subtotal Erosion Control	$	*273,690*

5D - NPDES

Item code		Unit	Quantity		Unit Price ($)			Cost
130300	Prepare SWPPP	LS	1	x	5,000.00	=	$	5,000
130200	Prepare WPCP	LS		x		=	$	-
130100	Job Site Management	LS	1	x	20,000.00	=	$	20,000
130330	Storm Water Annual Report	EA	40	x	1,000.00	=	$	40,000
130310	Rain Event Action Plan (REAP)	EA	40	x	100.00	=	$	4,000
130320	Storm Water Sampling and Analysis Day	EA	40	x	400.00	=	$	16,000
130520	Temporary Hydraulic Mulch	SQYD		x		=	$	-
130550	Temporary Hydroseed	SQYD	37,000	x	3.00	=	$	111,000
130505	Move-In/Move-Out (Temporary Erosion Control)	EA	4	x	3,000.00	=	$	12,000
130640	Temporary Fiber Roll	LF	19,000	x	5.00	=	$	95,000
130900	Temporary Concrete Washout	LS	1	x	10,000.00	=	$	10,000
130710	Temporary Construction Entrance	EA	2	x	5,000.00	=	$	10,000
130610	Temporary Check Dam	LF	60	x	15.00	=	$	900
130620	Temporary Drainage Inlet Protection	EA	8	x	150.00	=	$	1,200
130730	Street Sweeping	LS	1	x	80,000.00	=	$	80,000
						Subtotal NPDES	$	*405,100*
						TOTAL ENVIRONMENTAL	$	**2,862,800**

Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	LS	1	x	10,000.00	=	$	10,000
066596	Additional Water Pollution Control**	LS	1	x	10,000.00	=	$	10,000
066597	Storm Water Sampling and Analysis***	LS	1	x	20,400.00	=	$	20,400
XXXXXX	Some Item	LS		x		=	$	-
						Subtotal Supplemental Work for NDPS	$	*40,400*

*Applies to all SWPPPs and those WPCPs with sediment control or soil stabilization BMPs.

**Applies to both SWPPPs and WPCP projects.

*** Applies only to project with SWPPPs.

SECTION 6: TRAFFIC ITEMS

6A - Traffic Electrical

Item code		Unit	Quantity		Unit Price ($)			Cost
860460	Lighting and Sign Illumination	LS	1	x	750,000.00	=	$	750,000
128605	Temporary Signal and Lighting	LS	1	x	150,000.00	=	$	150,000
860990	Closed Circuit Television System	LS		x		=	$	-
86110X	Ramp Metering System (Location X)	LS		x		=	$	-
86070X	Interconnection Conduit and Cable	LF/LS		x		=	$	-
560218	Furnish Sign Structure (Truss)	LB	17,500	x	4.35	=	$	76,125
560219	Install Sign Structure (Truss)	LB	17,500	x	0.35	=	$	6,125
498040	60" CIDHC Pile (Sign Foundation)	LF	25	x	1,000.00	=	$	25,000
86080X	Inductive Loop Detectors	EA/LS		x		=	$	-
8609XX	Traffic Operations System	LS	1	x	800,000.00	=	$	800,000
15075X	Remove Sign Structure	EA/LS		x		=	$	-
151581	Reconstruct Sign Structure	EA		x		=	$	-
152641	Modify Sign Structure	EA		x		=	$	-
860090	Maintain Existing Traffic Management System Elei	LS		x		=	$	-
86XXXX	Fiber Optic Conduit System	LS		x		=	$	-
XXXXX	Some Item	Unit		x		=	$	-

Subtotal Traffic Electrical $ *1,807,250*

6B - Traffic Signing and Striping

Item code		Unit	Quantity		Unit Price ($)			Cost
566011	Roadside Sign - One Post	EA	70	x	350.00	=	$	24,500
566012	Roadside Sign - Two Post	EA	8	x	500.00	=	$	4,000
5602XX	Furnish Sign	SQFT	780	x	15.00	=	$	11,700
568016	Install Sign Panel on Existing Frame	SQFT		x		=	$	-
150711	Remove Painted Traffic Stripe	LF	36,000	x	1.00	=	$	36,000
141101	Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF	12,000	x	1.00	=	$	12,000
150712	Remove Painted Pavement Marking	SQFT	150	x	5.00	=	$	750
150742	Remove Roadside Sign	EA	40	x	100.00	=	$	4,000
152320	Reset Roadside Sign	EA		x		=	$	-
152390	Relocate Roadside Sign	EA		x		=	$	-
82010X	Delineator (Class X)	EA		x		=	$	-
840502	Thermoplastic Traffic Stripe (Enhanced Wet Night	LF		x		=	$	-
846012	Thermoplastic Crosswalk and Pavement Marking (	SQFT		x		=	$	-
120090	Construction Area Signs	LS	1	x	75,000.00	=	$	75,000
84XXXX	Permanent Pavement Delineation	LS	1	x	80,000	=	$	80,000

Subtotal Traffic Signing and Striping $ *247,950*

6C - Traffic Management Plan

Item code		Unit	Quantity		Unit Price ($)			Cost
12865X	Portable Changeable Message Signs	EA	10	x	$ 10,000	=	$	100,000

Subtotal Traffic Management Plan $ *100,000*

6C - Stage Construction and Traffic Handling

Item code		Unit	Quantity		Unit Price ($)			Cost
120199	Traffic Plastic Drum	EA	70	x	100.00	=	$	7,000
120165	Channelizer (Surface Mounted)	EA	375	x	35.00	=	$	13,125
120120	Type III Barricade	EA		x		=	$	-
129100	Temporary Crash Cushion Module	EA	220	x	5.00	=	$	1,100
120100	Traffic Control System	LS	1	x	240,000.00	=	$	240,000
129110	Temporary Crash Cushion	EA	2	x	2,500.00	=	$	5,000
129000	Temporary Railing (Type K)	LF	12,500	x	20.00	=	$	250,000
120149	Temporary Pavement Marking (Paint)	SQFT	110	x	10.00	=	$	1,100
82010X	Delineator (Class X)	EA		x		=	$	-

Subtotal Stage Construction and Traffic Handling $ *517,325*

TOTAL TRAFFIC ITEMS $ **2,672,600**

SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code		Unit	Quantity		Unit Price ($)			Cost
190101	Roadway Excavation	CY	2,520	x	35.00	=	$	88,200
19801X	Imported Borrow	CY/TON	540	x	5.00	=	$	2,700
390132	Hot Mix Asphalt (Type A)	TON	5,550	x	100.00	=	$	555,000
26020X	Class 2 Aggregate Base	TON/CY		x		=	$	-
250401	Class 4 Aggregate Subbase	CY		x		=	$	-
130620	Temporary Drainage Inlet Protection	EA		x		=	$	-
129000	Temporary Railing (Type K)	LF		x		=	$	-
128601	Temporary Signal System	LS		x		=	$	-
120149	Temporary Pavement Marking (Paint)	SQFT		x		=	$	-
80010X	Temporary Fence (Type X)	LF		x		=	$	-
XXXXXX	Some Item	LS		x		=	$	-

* Includes constructing, maintaining, and removal

TOTAL DETOURS	$	645,900

SUBTOTAL SECTIONS 1 through 7	$	18,339,400

SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items						
ADA Items			1.0%	$	183,394	
8B - Bike Path Items						
Bike Path Items			1.0%	$	183,394	
8C - Other Minor Items						
Other Minor Items			2.0%	$	366,788	
Total of Section 1-7	$	18,339,400	x 4.0%	= $	733,576	

TOTAL MINOR ITEMS	$	733,600

SECTIONS 9: ROADWAY MOBILIZATION

Item code							
999990	Total Section 1-8	$	19,073,000	x 10%	= $	1,907,300	

TOTAL ROADWAY MOBILIZATION	$	1,907,300

SECTION 10: SUPPLEMENTAL WORK

Item code		Unit	Quantity		Unit Price ($)			Cost
066094	Value Analysis	LS	1	x	10,000.00	=	$	10,000
066070	Maintain Traffic	LS	1	x	350,000.00	=	$	350,000
066919	Dispute Resolution Board	LS	1	x	22,500.00	=	$	22,500
066921	Dispute Resolution Advisor	LS		x		=	$	-
066015	Federal Trainee Program	LS	1	x	50,000.00	=	$	50,000
066610	Partnering	LS	1	x	70,000.00	=	$	70,000
066204	Remove Rock and Debris	LS		x		=	$	-
066222	Locate Existing Crossover	LS		x		=	$	-
XXXXXX	Some Item	Unit		x		=	$	-

Cost of NPDES Supplemental Work specified in Section 5D	=	$	40,400

Total Section 1-8	$	19,073,000	0.0%	= $	-

TOTAL SUPPLEMENTAL WORK	$	542,900

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price ($)		Cost
066105	Resident Engineers Office	LS	1	x	210,000.00	=	$210,000
066063	Traffic Management Plan - Public Information	LS	1	x	60,000.00	=	$60,000
066901	Water Expenses	LS	1	x	10,000.00	=	$10,000
8609XX	Traffic Monitoring Station (X)	LS		x		=	$0
066841	Traffic Controller Assembly	LS		x		=	$0
066840	Traffic Signal Controller Assembly	LS		x		=	$0
066062	COZEEP Contract	LS	1	x	100,000.00	=	$100,000
066838	Reflective Numbers and Edge Sealer	LS		x		=	$0
066065	Tow Truck Service Patrol	LS		x		=	$0
066916	Annual Construction General Permit Fee	LS		x		=	$0
XXXXXX	Some Item	Unit		x		=	$0
	Total Section 1-8	$	19,073,000		0%	= $	-

TOTAL STATE FURNISHED	$380,000

SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract items excluding Mobilization $31,468,000 (used to calculate TRO)

Total Construction Cost (excluding TRO and Contingency) $34,288,200 (used to check if project is greater than $5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **6%**

Item code		Unit	Quantity		Unit Price ($)		Cost
090100	Time-Related Overhead	WD	340	X	5551.470588	=	$1,887,500

TOTAL TIME-RELATED OVERHEAD	$1,887,500

SECTION 13: ROADWAY CONTINGENCY

Total Section 1-12	$	23,790,700	x	15%	=	$3,568,605

TOTAL CONTINGENCY	$3,568,700

II. STRUCTURE ITEMS

	Bridge 1	Bridge 2	
DATE OF ESTIMATE	07/29/19	07/29/19	00/00/00
Bridge Name	Soscol Interchange	Suscol Creek Bridge	xxxxxxxxxxxxxxxxxx
Bridge Number	TBD	21-0071L	57-XXX
Structure Type	Precast Prestressed	Bridge Widening	xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	100 LF	15 LF	0 LF
Total Bridge Length (Feet)	160 LF	62 LF	0 LF
Total Area (Square Feet)	15920 SQFT	930 SQFT	0 SQFT
Structure Depth (Feet)	4 LF	4 LF	0 LF
Footing Type (pile or spread)	Pile	N/A	xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$672	$1,809	$0
COST OF EACH	**$10,702,000**	**$1,683,000**	**$0**

	Building 1		
DATE OF ESTIMATE	00/00/00	00/00/00	00/00/00
Building Name	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Bridge Number	57-XXX	57-XXX	57-XXX
Structure Type	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Width (Feet) [out to out]	0 LF	0 LF	0 LF
Total Building Length (Feet)	0 LF	0 LF	0 LF
Total Area (Square Feet)	0 SQFT	0 SQFT	0 SQFT
Structure Depth (Feet)	0 LF	0 LF	0 LF
Footing Type (pile or spread)	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxx
Cost Per Square Foot	$0	$0	$0
COST OF EACH	**$0**	**$0**	**$0**

TOTAL COST OF BRIDGES		**$12,385,000**
TOTAL COST OF BUILDINGS		**$0**
STRUCTURES MOBILIZATION	0%	**$0**

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)
Total recommended percentages reduces any quantified risk based contingency from the risk register

STRUCTURES CONTINGENCY	0%	**$0**
TOTAL COST OF STRUCTURES		**$12,385,000**

Note: Mobilization and Contingency included in above unit costs.

Estimate Prepared By: _____ _____

XXXXXXXXXXXXXXXX ----- Division of Structures — Date

EA: 04-28120 PID: 40000769

III. RIGHT OF WAY

Fill in all of the available information from the Right of Way Data Sheet.

A)	A1)	Acquisition, including Excess Land Purchases, Damages & Goodwill, Fees	$	0
	A2)	SB-1210	$	0
B)		Acquisition of Offsite Mitigation	$	0
C)	C1)	Utility Relocation (State Share)	$	250,000
	C2)	Potholing (Design Phase)	$	0
D)		Railroad Acquisition	$	0
E)		Clearance / Demolition	$	0
F)		Relocation Assistance (RAP and/or Last Resort Housing Costs)	$	0
G)		Title and Escrow	$	0
H)		Environmental Review	$	0
I)		Condemnation Settlements 0%	$	0
J)		Design Appreciation Factor 0%	$	0
K)		Utility Relocation (Construction Cost)	$	0

L)	TOTAL RIGHT OF WAY ESTIMATE	$250,000
M)	TOTAL R/W ESTIMATE: Escalated	$300,000
N)	RIGHT OF WAY SUPPORT	$300,000

Support Cost Estimate Prepared By _____ Project Coordinator[1] _____ Phone

Utility Estimate Prepared By _____ Utility Coordinator[2] _____ Phone

R/W Acquisition Estimate Prepared By _____ Right of Way Estimator[3] _____ Phone

Note: Items G & H applied to items A + B

[1] When estimate has Support Costs only [2] When estimate has Utility Relocation [3] When R/W Acquisition is required

ATTACHMENT E

Right of Way Data Sheet

TO: Office of Design North Counties

Date 5/29/19
Dist 4 Co Nap Rte 29 PM 5.0/6.7
Co Nap Rte 221 PM 0.0/0.6

Attention: HILLAL HAMDAN
Senior Transportation Engineer

EA 28120 (04-0000-0769)

From: MONA POON
Right of Way Resource Manager

Soscol Junction Congestion Relief
D.S. # 7122

Subject: Current Estimated Right of Way Costs

We have completed an estimate of the right of way costs for the above referenced project based on maps we received on April 19, 2019 and the following assumptions and limiting conditions.

[ ] 1. The mapping did not provide sufficient detail to determine the limits of the right of way required.

[ ] 2. The transportation facilities have not been sufficiently designed so our estimator could determine the damages to any of the remainder parcels affected by the project.

[ ] 3. Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.

[ ] 4. This estimate does not include $_____ right of way costs previously incurred on the project, which may affect the total project right of way costs for programming purposes.

[ ] 5. We have determined there are no right of way functional involvements in the proposed project at this time, as designed.

Right of Way Lead Time will require a minimum of 6 months after we begin receiving final right of way requirements (PYPSCAN node No. 224), necessary environmental clearance has been obtained, and freeway agreements have been approved. From the date of receipt of final right of way requirements (PYPSCAN node No. 265), we will require a minimum of 4 months prior to the date of certification of the project. Shorter lead times will require either more right of way resources or an increased number of condemnation suits to be filed. Either of these actions may reflect adversely on the District's other programs or our public image generally.

Right of Way Resource Manager

Attachments:

[✓] Right of Way Data Sheet – Page One (always required)
[✓] Right of Way Data Sheet – All Pages (required when interest in real property is being acquired)
[✓] Utility Information Sheet
[ ] Railroad Information Sheet

RIGHT OF WAY DATA SHEET

TO: Design North Counties

Date 5/15/2019 D.S. # 7122
Dist. 04 Co. Nap Rte 29 PM 0.0/0.6
EA 281200(0400000769)

ATTN: Hillal Hamdan

Project Description: Alleviate Congestion

SUBJECT: Right of Way Data - Alternate No.

1. Right of Way Cost Estimate:

		Current Value (Future Use)	Escalation Rate	Escalated Value
A.	Acquisition, Including Excess Lands, Damages, and Goodwill	$0.00	%	$0.00
	Environmental Mitigation			$0.00
	Grantor's Appraisal Cost			$0.00
B.	Utility Relocation (State Share)	$15,000.00	%	$15,000.00
C.	Railroad (from page 6)			$0.00
D.	Relocation Assistance	$0.00	%	$0.00
E.	Clearance Demolition	$0.00	%	$0.00
F.	Title and Escrow Fees	$3,000.00	%	$3,000.00
G.	TOTAL ESCALATED VALUE			$18,000.00
H.	Construction Contract Work	$0.00		
I.	Railroad Phase 4 Costs	$0.00		

2. Anticipated Date of Right of Way Certification

3. Parcel Data:

	Type	Dual/Appr
X		
A		
B		
C		
D		
E	XXXX	
F	XXXX	

Total 0

Utilities	
U4-1	
-2	
-3	
-4	
U5-7	2
-8	
-9	

RR Involvements	
None	X
C&M Agrmt	
R/W Agrmt	
Design	
Const.	
Lic/RE/Clauses	

Misc R/W Work	
RAP Displ	0
Clear Demo	0
Const. Permits	0
Condemnation	0

Areas: Right of Way ____ No. Excess Parcels ____ Excess ____

Enter PMCS Screens ____ By ____

4. Are there any major items of construction contract work?
Yes ☐ No ☑ (If yes, explain)

5. Provide a general description of the right of way and excess lands required(zoning, use, major improvements critical or sensitive parcels, etc.).
No right of way required. ☑

6. Is there an effect on assessed valuation? (If yes explain)
Yes ☐ Not Significant ☐ No ☑

7. Are utility facilities or rights of way affected? Yes ☑ No ☐
If yes, attach Utility Information Sheet Exhibit 01-01-05)

8. Are railroad facilities or rights of way affected? Yes ☐ No ☑
If yes, attach Railroad Information Sheet Exhibit 01-01-06)

9. Were any previously unidentified sites with hazardous waste and/or material found?
Yes ☐ None evident ☑
(If yes, attach memorandum per Procedural Handbook Volume 1, Section 101.011)

10. Are RAP displacements required? Yes ☐ No ☑
(If yes, provide the following information)

No. of personal property relocations _____

No. of single family _____ No. of business/non profit _____

No. of multi-family _____ No. of farms _____

Based on Draft / Final Relocation Impact Statement / Study dated _____, it is anticipated that sufficient replacement housing will / will not be available without Last Resort Housing.

11. Are material borrow and / or disposal sites required? Yes ☐ No ☑
(If yes, expalin)

12. Are there potential relinquishments / abandonments? Yes ☐ No ☑
(If yes, expalin)

13. Are there any existing and/or potential Airspace sites? Yes ☐ No ☑
(If yes, expalin)

14. Are there Environmental Mitigation costs? Yes ☐ No ☑
(If yes, explain)

15. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if District proposes less that PMCS lead time and / or if significant pressures for project advancement are anticipated.)

PYPSCAN lead time (from Regular R/W to project certification) 6 months.

16. Is it anticipated that all Right of Way work be performed by CALTRANS staff?
Yes ☑ No ☐ (If no, discuss)

Assumptions and Limiting Conditions

- This data sheet was completed without a hazardous waste/materials report.
- Information on this data sheet was based on maps provided by Hillal Hamdan on 4/19/2019

Evaluation Prepared By: Lynn White

Right of Way: Name [signature] Date 5-15-19

Railroad: Name [signature] Date 5-16-19

Utilities: Name [signature] Date 5-15-19

Recommended for Approval:

[signature]
Right of Way Capital Cost Coordinator

I have personally reviewed this Right of Way Data Sheet and all supporting information. It is my opinion that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the limiting conditions set fourth, and find this Data Sheet complete and current.

[signature]
Chief, R/W Appraisal Services

5-17-19
Date

cc: Program Manager
Project Manger

UTILITY INFORMATION SHEET

1. Utility owners located within project limits:
PG&E, AT&T

2. Facilities potentially impacted by project (if known, include Owners(s) & facility type(s)):

3. Anticipated Workload:

X	Utility Verification required
X	Positive Identification
	Utility Relocation
	Other (Specify)

4. Additional information concerning anticipated utility involvements (include limiting conditions and a narative addressing likelihood that conflicts will occur);

_____ Involves possible relocation of electric transmission facilities
(If X'd, Data sheet should be forwarded to environmental)

5. PMCS input information

U4-1		Owner Expense Involvements
U4-2		State Expense Involvements *(Conventional, No Fed Aid)*
U4-3		State Expense Involvements *(Freeway, No Fed Aid)*
U4-4		State Expense Involvements *(Conventional or Freeway, Fed Aid)*
U5-7	2	Verifications - without involvements
U5-8		Verifications - 50% involvements
U5-9		Verifications resulting in involvements

NOTE: The sum of U-4's must equal the sum of ½ of the U5-8's and all of the U5-9's.

ESTIMATED STATE SHARE OF COSTS $ 15,000.00

Prepared by: Dan Asprogerakas

D A

Right of Way Utility Coordinator

5-15-19

Date

Right of Way Workplan

Date: 5/22/19

Please note that this estimate only contains the hours needed by RW Agents. You must also obtain an estimate from RW Engineering for a complete support cost total for the Office of Right of Way.

Project ID No: 0400000769
Project Manager:
Programmed RW Support: $0
PA&ED Date or Transmittal: 1/31/20
RWC Date: 12/15/21
Prepared by: P. Tsai
28120

100.05	Start Date:
Phase K	End Date:

(Data Sheet & PID)		Hours Needed
0850	Acq/P&M O.C.	
0856	Proj. Coord.	

150	Start Date:
Phase K	End Date:

(Data Sheet & PID)		Hours Needed
0850	Acq/P&M O.C.	
0851	Appraisals O.C.	
0856	Proj. Coord.	
0859	Capital Mgmt.	
0860	Appraisals	
0867	Railroad	
0869	Utilities	

160	Start Date:	4/2/2019
Phase 0	End Date:	1/31/2020

(Util. Verifications, RR study, PR, &/or Updated Datasheet)		Hours Needed
0850	Acq./P&M O.C.	2
0856	Proj. Coord.	24
0859	Capital Mgmt.	12
0860	Appraisals	12
0865	Acquisitions	2
0867	Railroad	1
0869	Utilities	70
0876	Rap	
0882	Clerical	16

165	Start Date:
Phase 0	End Date:

(Permits)		Hours Needed
0850	Acq./P&M O.C.	0
0856	Proj. Coord.	0
0865	Acquisitions	0
0882	Clerical	0

185	Start Date:	1/31/2020
Phase 1	End Date:	12/15/2021

(Updated datasheet, if needed)		Hours Needed
0850	Acq/P&M O.C.	8
0851	Appraisals O.C.	1
0856	Proj. Coord.	50
0859	Capital Mgmt.	50
0860	Appraisals	8
0867	Railroad	1
0869	Utilities/0882 Clerical	75
0852	Utilites O.C.	2

255	Start Date:
Phase 1	End Date:

(Certification - PSE)		Hours Needed
0856	Proj. Coord.	10
0860	Appraisals	1
0865	Acquisitions	1
0867	Railroad	
0869	Utilities	2
0876	RAP	

100.25	Start Date:
Phase 2	End Date:

(Project Mgmt)		Hours Needed
0850	Acq/P&M O.C.	
0856	Proj. Coord.	
0859	Capital Mgmt	

195	Start Date:
Phase 2	End Date:

(Prop Mgmt & Excess Land)		Hours Needed
0851	Appraisals O.C.	
0856	Proj. Coord.	
0860	Appraisals	
0872	Prop Mgmt	
0875	Excess Lands	
0874	Airspace	
0882	Clerical	

200	Start Date:
Phase 2	End Date:

(Utilities)		Hours Needed
0852	Utilites O.C.	
0856	Proj. Coord.	
0859	Capital Mgmt	
0869	Utilities	
0882	Clerical	

225	Start Date:
Phase 2	End Date:

(Pre-Cert Work)		Hours Needed
0850	Acq /P&M O.C.	
0851	Appraisals O.C.	
0856	Proj. Coord.	
0859	Capital Mgmt	
0860	Appraisals	
0865	Acquisitions	
0867	Railroad	
0868	Acq. Spec. (R.A.)	
0873	Demolition	
0876	RAP	
0882	Clerical	

245	Start Date:
Phase 2	End Date:

(Post-Cert Work)		Hours Needed
0850	Acq /P&M O.C.	
0851	Appraisals O.C.	
0859	Capital Mgmt	
0860	Appraisals	
0865	Acquisitions	
0867	Railroad	
0868	Acq. Spec. (R.A.)	
0873	Demolition	
0876	RAP	
0882	Clerical	

Total hours required (RW Agents Only): 348

Total RW COS (RW Agents Only): $46,980

Phase 2 only COS (RW Agents Only): $0

Approved By:

Sunnie Stanton
District Branch Chief
RW Project Coordination

ATTACHMENT F

Storm Water Data Report

Dist-County-Route: 04- NAP- 29/221
Post Mile Limits: 5.6/6.7 & 0/0.4
Type of Work: Soscol Junction Improvement
Project ID (EA): 04 0000769 (04-28120)
Program Identification:
Phase: ☐ PID ☒ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): San Francisco Bay (Region 2)
Total Disturbed Soil Area: 15+ acres PCTA: 15 acres
Alternative Compliance (acres): TBD ATA 2 (50% Rule)? Yes ☐ TBD ☒
Estimated Const. Start Date: 04/15/2022 Estimated Const. Completion Date: 04/15/2023
Risk Level: RL 1 ☐ RL 2 ☒ RL 3 ☐ WPCP ☐ Other:
Is MWELO applicable? Yes ☐ No ☒
Is the Project within a TMDL watershed? Yes ☒ No ☐
TMDL Compliance Units (acres): TBD
Notification of ADL reuse (if yes, provide date): Yes ☐ Date: TBD ☒

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 only.

Hillal Hamdan, Registered Project Engineer — 4-26-19 Date

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

Kelly Hirshberg, Project Manager — 5/7/2019 *Date*

Jhajj, Amrinder, Designated Maintenance Representative — for — 05-07-2019 *Date*

Alex McDonald, Designated Landscape Architect Rep. — 4-26-2019 *Date*

[Stamp Required at PS&E only] *Trang Hoang, District/Regional Design SW Coordinator or Designee* — 4-26-19 *Date*

ATTACHMENT G

Transportation Management Plan Data Sheet

TRANSPORTATION MANAGEMENT PLAN DATA SHEET

For Consultant TMP Projects

PROJECT MANAGER: Kelly Hirschberg	Phone #: (510) 286-4925
PROJECT ENGINEER (Consultant): Heather Anderson	Phone #: (916) 782-8688
PROJECT ENGINEER (CALTRANS): Hillal Hamdan	Phone #: (510) 286-4818
DIST-EA/PROJ ID: 04-28120/ 40000769 PROGRAM (HB1, HE11, etc.): TBD	
CO-RTE-PM (KP): NAP-29-R6.04-R6.48	
LEGAL DESCRIPTION: In Napa County on SR 29 from PM R6.04 to PM R6.48 and the junction of SR 29/SR 221	
DETAILED WORK DESCRIPTION: Construct undercrossing with Dual Roundabout Diamond Interchange at SR 29 and SR 221 Intersection (Soscol Junction)	
CONSTRUCTION COST ESTIMATE: $42,000,000	
PROJECT PHASE: PSR ☐ PR ☒ PS&E ☐	_____ %

Traffic Impact Descriptions

A) Does the proposed project includes long term closures (> 24 hours) Yes ☒ No ☐
[If "No", Continue to Item D (Preliminary TMP Elements and Costs.). If "Yes", Check Applicable Facilities.]

- ☐ Freeway Lanes
- ☒ Freeway Shoulder
- ☐ Freeway Connectors
- ☐ Freeway Off-ramps
- ☐ Freeway On-ramps
- ☒ Local Streets
- ☒ Full Freeway Closures

B) Are there any construction strategies that can restore existing number of lanes? (Check Applicable Strategies)

- ☐ Temporary Roadway Widening Structure Involvement? (If yes, notify Project Manager) Yes ☐ No ☒
- ☒ Lane Restriping (Temporary Narrow Lane Widths) Yes ☒ No ☐
- ☒ Roadway Realignment (Detour Around Work Area)
- ☒ Median and/or Right Shoulder Utilization
- ☐ Use of an HOV lane as a Temporary Mixed Flow Lane
- ☐ Staging Alternatives (Explain Below)

Notes: Extended closure of SR 221 during construction of the structure, along with the construction of SR 221, itself.

C) Calculated Delays (To be performed if construction strategies in Item B do not mitigate congestion resulting from Item A)

1. Estimated Maximum Individual Vehicle Delay _____ Minutes
2. Existing or Acceptable Individual Vehicle Delay _____ Minutes
3. Estimated Individual Vehicle Delay Requiring Mitigation [(l) - (2)] _____ Minutes
4. Estimated Delay Cost (Most Applicable)
   - ☐ Extended Weekend Closure $_____
   - ☐ Weekly (7 days) $_____
5. Estimated Duration of Project Related Delays _____
6. Cost of Construction Related Delays [(4 x 5)] $_____

D) Preliminary TMP Elements and Cost

1. Public Information
   - ☒ a. Brochures and Mailers $ 20,000
   - ☒ b. Press Release $ 20,000
   - ☐ c. Paid Advertising $
   - ☐ d. Public Information Center/Kiosk $
   - ☒ e. Public Meeting/Speakers Bureau $ 5,000
   - ☐ f. Telephone Hotline $
   - ☒ g. Internet $ 10,000
   - ☒ h. Notification to impacted groups (Bicycle users, Pedestrians with disability, others.) $ 5,000
   - ☐ i. Others _____ $

   SUB TOTAL $ 60,000

2. Motorists Information strategies
   - ☐ a Changeable Message Signs (Fixed) $
   - ☒ b. Changeable Message Signs (Portable) $ 100,000
   - ☒ c. Ground Mounted Signs $ 75,000
   - ☐ d. Highway Advisory Radio $
   - ☐ e. Caltrans Highway Information Network (CHIN) $
   - ☐ f. Revised Transit Schedules/Maps $
   - ☐ g. Others _____ $

   SUB TOTAL $ 175,000

3. Incident Management
   - ☒ a. Construction or Maintenance Zone Enhanced Enforcement Program (COZEEP or MAZEEP) $ 100,000
   - ☐ b. Freeway Service Patrol $
   - ☐ c. Traffic Management Team $
   - ☐ d. New CCTVs and Detectors $
   - ☐ e. Others _____ $

   SUB TOTAL $ 100,000

4. Construction Strategies (In Addition to Elements Identified on Item B)

☒	a.. Off Peak/Night/Weekend Work (Lane Closure Charts)	$ 120,000
☐	b. Reversible Lanes	$
☒	c. Total Facility Closure	$ 30,000
☒	d. Extended Weekend Closure	$ 160,000
☒	e. Truck Traffic Restrictions	$ 20,000
☒	f. Reduced Speed Zone	$ 20,000
☐	g. Connector and Ramp Closures	$
☐	h. Incentive and Disincentive	$
☐	i. Moveable Barrier	$
☐	j. Others _____	$
	SUB TOTAL	$ 350,000

5. Demand Management

☐	a. HOV Lanes/Ramps (New or Convert)	$
☐	b. Park and Ride Lots	$
☐	c. Rideshare Incentives	$
☐	d. Variable Work Hours	$
☐	e. Telecommute	$
☐	f. Ramp Metering (New Installation)	$
☐	g. Ramp Metering (Maintain Existing)	$
☐	h. Others _____	$
	SUB TOTAL	$ 0

6. Alternate Route Strategies

☐	a. Add Capacity to Freeway Connector	$
☒	b. Street Improvement (widening, traffic signal, etc)	$ 645,900
☐	c. Traffic Control Officers	$
☐	d. Parking Restrictions	$
☐	e. Others _____	$
	SUB TOTAL	$ 645,900

7. Other Strategies

☐	a. Application of New Technology	$
☐	b. Others _____	$
	SUB TOTAL	$ 0

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 1,330,900

8. The Project includes the following: (Check applicable type of facility closures)
   - [x] a. Highway or Freeway Lanes
   - [x] b. Highway or Freeway Shoulders
   - [ ] c. Full Freeway Closure
   - [ ] d. Freeway On/Off-Ramps
   - [ ] e. Freeway Connectors
   - [x] f. Local Streets
   - [ ] g. Prolonged Ramp Closures

9. Major operations requiring traffic control and working days for each

Operation	# of Working Days	# of Traffic Control Days
[x] a. Clearing and Grubbing	10	10
[x] b. Existing Feature Removal	5	5
[x] c. Excavation of Embankments Construction	94	94
[x] d. Structural Section Construction	29	29
[x] e. Drainage Feature Construction	50	50
[x] f. Structures Construction	240	240
[x] g. MBGR/Barrier Construction	30	30
[x] h. Striping	25	25
[x] i. Electrical Component Construction	5	5
[x] j. Others Landscaping and other Misc. Items	100	100
Total days	588	588

Notes : Extensive TMP may be required for the significant impacts.
Total # of Working Days shown here does not represent Contract WD as some activities overlap.
Estimated need of TMP elements and costs in this form reflect higher estimated values of both Alts (Build Alt 1 for Build Alt 2)

PREPARED BY (Consultant): Heather Anderson DATE: 8/20/2019

APPROVAL RECOMMENDED BY
(Caltrans Oversight Engineer): _____ DATE: _____

APPROVED BY (TMP Office): _____ DATE: _____

ATTACHMENT H

Risk Register

RISK REGISTER	3	PROJECT NAME	SR 12/29/221 Intersection Improvements	DIST-EA	04-281200 (0400000769)	Project Manager	Kelly Hirschberg	RISK MANAGER	Patrick Treacy / Gurmukh Thiara / Pradeep Narra / Austin Bossetti / Daniel Y. Chang	TOTAL COST (Capital +Support)	$62,619,000.00
PROJECT PHASE	PA&ED	PDT MEMBERS		RISK ASSESSMENT INFORMATION						TOTAL DAYS (Construction + Initial review (30 days)+ Closeout (60 days))	500

Risk Identification						Probability		Cost Impact ($)				Time Impact (days)				Phase	Capital / Support	Individual Risk	Risk Response			
Status	ID #	Category	Title	Risk Statement	Current Status/ Assumptions	Prob Low	Prob High	Cost Low	Cost Most likely	Cost High	Cost Probable	Low	Most likely	High	Time Probable	ENG / CON	C/S	Rationale	Strategy	Response Actions	Risk Owner	Updated
Active	1	Environmental	Improvements to Fish passage	As a result of having steelhead presence in the Suscol Creek, BOs from USFWS and NMFS will be needed which may impact completing Env. Document.	Project team has evaluated preliminary fish passage assessment completed by Napa RCD. Agencies are asking the department to improve the fish passage way.	40	60	$500,000	$1,000,000	$1,500,000	$500,000	60	80	180	53	ENG	S	Based on PDTs input	Accept	PM and PE in coordination with Env. to look into the extent of work and estimate costs. PM to also talk to agencies for any alternative measures.	Wahida Rashid	09/05/19
Active	2	Construction	Buried Objects	Unanticipated buried objects encountered during construction may require mitigation, removal and disposal resulting in additional costs to the project.	The project may encounter difficulties when drilling holes to plant trees. Existing tree trunks and roots may become issue if hidden from field investigation. Other object may be found in conflict including subsurface rock. Trees planted will be 10 inch deep	20	40	$100,000	$150,000	$200,000	$45,000	0	10	20	3	CON	C	Based on past CT projects and PDT's input	Accept	Foundation work may encounter buried objects. If BMMO are encountered RE to tap into Contingency to resolve any issues.	Chri Moulton	09/05/19
Active	3	Environmental	Bird Nesting Season	Nesting birds, protected from harassment under the MBTA (Migratory Bird Treaty Act) and CFGC (California Fish and Game Code), may require additional construction activity work around during the bird nesting season resulting to additional project cost and schedule delays.	The location may have existing nearby vegetation with active nested birds during construction. Depending on the species, active nested birds will need to be protected with a buffer ranging from 100 ft. up to 300 ft. minimum or more. Also, birds may also nest in newly planted trees or on the ground. Nest bird season is from February 1 to September 30 within on construction season.	20	40	$100,000	$150,000	$200,000	$45,000	0	20	40	6	CON	C	Based on past CT projects and PDT's input	Avoid	1) If possible, remove the nesting habitat before nesting season. 2) An onsite CT biologist will perform preconstruction and on-site monitoring for bird nesting behavior/activities.3) Bird nesting is addressed in Special Provision 14-6.02 Species Protection.	Wahida Rashid	09/05/19
Active	4	Construction	Hazardous Materials	Unanticipated hazardous materials encountered during construction may require mitigation, removal and disposal resulting in additional costs to the project.	Hazardous materials may require onsite storage areas to dispose of which can be costly. The project consist of minimal trenching and frilling for holes. Hazardous material not dispose of my need to be stored on site. The 2017 fires may also contribute to the additional hazardous materials. Also, on Route 128 west of Capell Creek Bridge contains NOA (Naturally Occurring Asbestos) with serpentine soil. There is a low probability of ADL. Hazardous material request will be submitted during PS&E to verify possible hazardous materials within the project footprint.	0	20	$50,000	$75,000	$100,000	$7,500	0	5	10	1	CON	C	Based on past CT projects and PDT's input	Avoid	PDT team will further investigate during PS&E for soil sampling and Hazardous Material testing and list it as part of quantities.	Chris Wilson (Hazardous Materials)	09/05/19
Active	5	Organization	Coordination With Environmental Agency	Environmental agencies may require enhancements or apply constraints on the project resulting in additional costs and schedule delays.	PDT coordinating with env. Agencies	0	20	$250,000	$400,000	$500,000	$39,167	0	20	40	2	ENG	S	Based on PDT's input	Avoid	PM to coordinate with all necessary agencies to avoid delays.	Organization	09/05/19
Active	6	Design	Scope Increase or Scope Creep	The local agency (City, County and outside agency) or local Resident may request work leading to reengineering or additional work beyond the original scope of the project resulting in additional cost and time.	PDT to coordinate proactively with all local partners and try to minimize any scope creep.There is a discrepancy in actual scope of drainage work between City and Department.	0	20	$1,000,000	$1,250,000	$1,500,000	$125,000	0	20	40	2	ENG	S	Based on PDT's input and past CT projects.	Avoid	PM & PE to coordinate with county to hash out the driange scope discrepancy ASAP.	Hillal Hamdan	09/05/19
Active	7	Construction	Unidentified Utility & Facilities Conflicts	Utilities & Facilities conflict during excavation	PDT to do all Utility and facilities verification during PA&ED. PDT talked about high pressure waterline and gas line crossing the freeway.	0	20	$175,000	$250,000	$325,000	$25,000	0	20	40	2	CON	C	Based on past CT projects and PDT's input	Accept	Further utility verification will be completed in the PS&E phase. Design will also investigate existing CT facilities including TOS/RM and power in the PS&E phase. Construction will need to perform CT Facilities verification prior to the start of construction activities and will perform potholing for known utilities.This risk is to cover for any unanticipated encountering of utilities or facilities.	Chri Moulton	09/05/19
Active	8	Construction	Asphalt Price Index fluctuations	An increase in cost of oil based products may lead to cost over runs above the amount originally estimated in the BFES.	PE to look into the Asphalt quantities during the PS&E.	0	20	$50,000	$75,000	$100,000	$7,500	0	0	0	0	CON	C	Based on past CT projects and PDT's input	Accept	This risk is to cover for any cost overages above and beyond allocated as part of Supplemental work.	Chri Moulton	09/05/19
Active	9	Construction	Drainage Modifications	Design assumptions are based on existing as built data, which may not reflect actual field conditions leading to field modifications resulting in additional costs and time.	PDT to have a field visit and also request for survey data during PA&ED	0	20	$50,000	$75,000	$100,000	$7,500	0	10	20	1	CON	C	Based on Past CT projects and PDT's input	Accept	Any unanticipated field modificatoions will be addressed as a change order. Project contingency to cover for that.	Chri Moulton	09/05/19
Active	10	Construction	Differening Site Condition	Project scope includes extensive excavation and Foundation work. Any differing site conditions will result in additional costs and time.	PDT to request for all necessary soil testing and boring during PA&ED.	0	20	$100,000	$150,000	$20,000	$12,000	0	20	40	2	CON	C	Based on past CT projects and PDT's input	Avoid	Project to look into as builts and include bore logs for all foundation work.	Chri Moulton	09/05/19
Active	11	ROW	Ground Disturbance	Any ground disturbance for more than a year is considered as permament disturbance and will need mitigation (Based on PDT 3:1 acres of mitigation) resulting in additional costs.	PDT currently assumes all disturbance will be limited to less than a year and no additional land acquisition needed. If we end up needing additional land then its going to cost us $130k/ acre (Approx 30 acres)	0	20	$2,000,000	$3,000,000	$4,000,000	$300,000	0	0	0	0	ENG	C	Based on PDT's input	Avoid	PM & PE to look for ways to minimize ground disturnace due to staging to less than a year. PM to coordinate with necessary agencies to explore alternatives.	Ping Tsai	09/06/19
Active	12	Construction	Allocation for unidentified risks	Contingency needs to be allocated (based on industry practice) for issues that are missed when identifying uncertain events.	Industry accepted practical recommendations for including "unknown unknowns" into probabilistic cost and schedule risk models are used.	80	100	$249,000	$498,000	$996,000	$485,550	0	0	0	0	CON	C	Size of "unknown " allowances is dependent on the novelty of the project, stage of development of the project and type of industry. This risk account for all unidentified risks that the PDT didn't anticipate.	Accept	The projects Contingency funds includes 1% for all "Unknown Unknowns". RE to tap into contingency in case of need. This project has requested for 5% in Contingency.	Chri Moulton	09/05/19
Active	13	Construction	Support Costs Due to weather days	When contractor is allocated a weather day. COS costs will be incurred to the department. This risk is to cover all COS incurred to the Department. There are no delay costs.	No weather days were anticipated by the design team.	80	100	$0	$155,950	$311,900	$140,355	0	0	0	0	CON	S	Based on CT historical data. Projects with similar working days have an average of 0% - 10% of weather days allocated.	Accept	In case of need, RE and PM to tap into G-12 support funds.	Chri Moulton	09/05/19
Active	14	Design	COS costs due to delay	Additional support costs will be needed if the project is delayed during design phase. Cumulative costs of all Design risks.	These are Unanticipated COS costs expended by the design team due to changes and delays to the project.	100	100	$42,743	$88,636	$134,530	$88,636	0	0	0	0	ENG	S	This is cumulative of all the active risks with "P1" of Phase column.	Accept	See individual responses if there were any to the various risks identified in phase 1 (Design) that have schedule impacts. In case of any support costs overruns PM to request for G-12 support funds.	Hillal Hamdan	09/05/19
Active	15	Design	Indirect costs of Project Design/RTL Delay: (Mostly Escalation Costs)	If the project gets delayed in Design phase, RTL will be delayed resulting in Escalation of project costs. This is cumulative of all costs due to delay of RTL	Escalation costs of 5%/year is assumed for projects that got delayed in design phase.	100	100	$188,443	$390,780	$390,780	$357,057	0	0	0	0	ENG	C	This is cumulative of all the active risks with "P1" of Phase column.	Accept	See individual risk responses if there were any to the various risks identified in Phase 1 (Design).	Hillal Hamdan	09/05/19
Active	16	Construction	COS costs due to delay	Cumulative costs of additional Construction COS needed due to delays in construction phase.	These are Unanticipated COS costs expended by the Construction team due to changes and delays to the project.	100	100	$28,318	$62,380	$96,442	$62,380	0	0	0	0	CON	S	This is cumulative of all the active risks with "P4" of Phase column.	Accept	See individual responses if there were any to the various risks identified in Phase 4 (Construction) that have schedule impacts. In case of any support costs overruns PM to request for G-12 support funds.	Chri Moulton	09/05/19

Printed Date: 01/10/20

RISK REGISTER	3	PROJECT NAME	SR 12/29/221 Intersection Improvements	DIST-EA	04-281200 (0400000789)	Project Manager	Kelly Hirschberg	RISK MANAGER	Patrick Treacy / Gurmukh Thiara / Pradeep Narra / Austin Bossetti / Daniel Y. Chang	TOTAL COST (Capital +Support)	$62,619,000.00
PROJECT PHASE	PA&ED	PDT MEMBERS		RISK ASSESSMENT INFORMATION						TOTAL DAYS (Construction + Initial review (30 days)+ Closeout (60 days))	590

Risk Identification						Probability		Cost Impact ($)				Time Impact (days)				Phase	Capital / Support	Individual Risk	Risk Response				
Status	ID #	Category	Title	Risk Statement	Current Status/ Assumptions	Prob Low	Prob High	Cost Low	Cost Most likely	Cost High	Cost Probable	Low	Most likely	High	Time Probable	ENG / CON	C/S	Rationale	Strategy	Response Actions	Risk Owner	Updated
Active	17	Construction	Indirect costs of Project Construction: (TRO & TRO+ & Escalation)	Cumulative costs of delays due to any of the other risk items occurring in construction phase. these are the indirect costs associated with occurrence of any of identified risks causing a construction delay.	Has CO delay costs (TRO, TRO+ and Escalation Costs) Escalation = 5%/Year, TRO=10% of Capital Costs/Year TRO+ = 5% of Capital Costs/year	100	100	$113,308	$249,600	$385,892	$249,600	0	0	0	0	CON	C	This is cumulative of all the active risks with "P4" of Phase column.	Accept	See individual responses to the various risks identified in Construction.	Chri Moulton	09/05/19

Printed Date: 01/10/20

ATTACHMENT I

Pavement Checklist

(Rev. 3/04/10)

PAVEMENT STRATEGY CHECKLIST

Date: August 2, 2019

Project description and project elements:

Construct a tight diamond interchange with two, four-legged, multi-lane roundabouts, one on either side of the SR 29 freeway

EA: 04-281200 Project Manager: Kelly Hirschberg

Co/Rte: NAP 29/221 Office: Design-North

Project Engineer: Chris Okpaulago Program: STIP HE-11

Design Senior: Hillal Hamdan Initial HH PM Limits: SR29: 5.6/6.7, SR221: 0/0.4

Materials Engineer (8th floor): For Luis Tacuri Signature

This project is at the following phase (please check one):

☐ PID (PSSR, etc.) ☒ PR ☐ PS&E ☐ OTHER (PSR-PR)

Describe existing structural section (e.g., shoulder, traveled way). Show limits if different sections are within the project:

As-Built Information:

	EA (Filename)	PMs	Year Completed	Pavement Type of Project
Route 221	04-1E9904	0.0/2.7	12/22/2010	0.10' RHMA-G overlay
	04-OC4604	0.0/4.3	10/15/2001	AC Surfacing: Place 0.15' RAC-G over existing
	04-121554	0.0/2.7	8/18/1986	Replace Fog Seal Coat
Route 29	04-105924	3.9/5.5	1/4/1985	Reconstruct Roadway Project: Place 0.25' AC(A) over Reinforcing Fabric over 0.10' AC (A)
	04-273854	6.1/10.6	2/6/1981	Grade and Pave Project: 0.40' AC(A) over 0.80' CTB (A) over 0.50' AS (4)
	04-417904	0.9/8.9	9/6/1974	AC Surfacing : 0.08' OGAC over 0.20'AC (B)
	04-10ATCC2	6.0/10.2	8/7/1943	Remove and Replace with: 0.21'AC (B) over 0.50' PCC Base

Route 29:

According to the As-Built plan from contract #04-273854 dated 02/06/81, the existing structural section consists of 0.40AC(A)/0.80'CTB(A)/0.50'AS(4).

Route 221:

According to the As-Built plan from contract # 04-1E9904 dated 12/22/2010, the existing structural section consists of 0.1'-0.25' RHMA -G/0.2-0.3' AC/PCC /Base materials.

What pavement types/structural sections does Materials propose for each segment (shoulders and traveled way)?

Table below was provided by the Office of Materials in their *Preliminary Recommendations for Project Report Preparation only* Memo (dated 4/17/2014). Per Life-Cycle Cost Analysis, the preferred alternative is 40-year Rigid .

For the roadway portion Pavement-Traveled way and Shoulders:

40-year FLEXIBLE[1],[2] TI_{40} = 13.5	**40-year CRCP[1],[2] TI_{40} = 13.5, Low Mountain**	**40-year JPCP[1],[2] TI_{40} = 13.5, Low Mountain**
CUT or FILL Rvalue = 20.0	CUT or FILL Assumed Subgrade Soil Type II	CUT or FILL Assumed Subgrade Soil Type II
0.10' RHMA-O 0.20' RHMA-G 1.15' HMA-A GPI (Paving Grid) 0.25' HMA-A 0.50' Class 2 AB 1.00' PM w/UD* SEG *PM and UD to be placed on cuts only	0.85' CRCP 0.25' HMA-A 0.70' Class 2 AS 1.00' PM w/UD* SEG *PM and UD to be placed on cuts only	0.95' JPCP Bond Breaker 0.35' LCB 0.70' Cass 2 AS 1.00' PM w/UD* SEG *PM and UD to be placed on cuts only

For the existing SR 29 & 221:

Within the limits of the proposed work along Routes 29 and 221: Cold plane the existing mainline flexible pavement (traveled way and shoulders) and overlay it with:

0.10' OGFC (for the flexible alternatives only)
0.20' RHMA-SP-G (for the flexible alternatives) or 0.20' HMA-SP-A (for the rigid alternative)
GPI (Paving Mat) (for both flexible and rigid alternatives)
0.10' HMA-SP-A (for both flexible and rigid alternatives)

Pavement is involved in:

☐ Entire project OR ☒ Part of the project

Assumptions (Is future widening in Regional Transportation Plan? Yes): Please provide information for all of the following items that apply to this project.

	Yes	No	Question
1.	☐	☒	Are you implementing an innovative strategy (e.g., cold foam Hot-Mix Asphalt (HMA)), pre-cast concrete pavement, continuously reinforced pavement, etc)? If so, which are you implementing and why? If not, why not? For the roadway portion, continuously Jointed Plain Concrete Pavement (JPCP) is one of the alternatives recommended by Material office and also the preferred one per the results of Life-cycle Cost Analysis for its low initial construction cost, low maintenance cost, and low road user cost.
2.	☐	☒	Has Rapid Rehab strategy been considered (e.g., weekend closures and lane replacements)? Explain: Not known at this time if needed.
3.	☒	☐	Are you using Rubberized Hot-Mix Asphalt (RHMA) in this project? If not, justify: RHMA is proposed in the Flexible alternatives.
4.	☒	☐	Was Life Cycle Analysis performed? Yes. Based on its results, the 40-year Jointed Plain Concrete Pavement (JPCP) alternative is the one with lowest life cycle cost for the roadway portion;
5.	☐	☒	Does existing pavement have a settlement problem? Explain:

	Yes	No	Question
6.	☐	☒	a) Is this project (or part of project) maintaining the grade profile? A bridge is proposed in this project. The overpass on route 29 is new construction and has new profile. The remaining of the project maintains the grade profile. b) If not, explain how the profile change affects the pavement strategy choice (cut v. fill): See typical x-sections.
7.	☒	☐	Will there be a new barrier? On the bridge.
8.	☒	☐	Is the proposed structural section on cut or fill or both? Provide limits of both, if applicable. On both. See typical x-sections.
9.	☐	☒	Are highly expansive basement soils present? Not known at this time.
10.	☒ ☒	☐ ☐	Are as-builts (including structural section information regarding edge drains, under drains, lime treatment, permeable blanket, etc.) available? If no, did you check map files and online? If yes, existing structural section was based on (check one): ☒ as-built ☐ actual boring
11.	☒	☐	Do the project limits have problems with groundwater (e.g., high water table, flow requirements, etc.)? If yes, explain: The Suscol Creek Bridge is within the project limits.
12.	☐	☒	Has the availability of pavement materials (i.e., long haul distances from plants) been considered? If yes, how does material availability affect pavement type selection? The Syar plant is located a couple of miles away from the project location on SR 221.

	Yes	No	Question
13.	☒	☐	Will the existing pavement be rehabilitated? Rehab of the existing pavement is part of project scope.
	☒	☐	What are the age and condition of the existing adjacent lanes? Explain: According to the as-builts, for Route 29, the most recent pavement project was constructed in 1981(contract # 04-273854). From the 2011 Pavement Condition Survey, the section of SR 29 within the project limit is in fair to good condition. There does exist some mild cracking. On SR 221, a recent overlay project (contract # 04-1E9904) was carried out in 2010. The pavement is in good condition.
14.	☒	☐	What is the type of pavement/structural section (corridor pavement type/structural section continuity) on upstream/downstream roadway? Explain if several: According to the as-builts, on SR 29, the pavement of the upstream/downstream roadway is AC over CTB or PCC; on SR 221, the pavement is RAC over AC over PCC.
15.	☒	☐	Is TMP data (lane closure charts) available and was it considered? TMP Datasheet is available; Lane Closure Charts will be provided during PS&E by Traffic office.
	☒	☐	Will there be nighttime paving? If so, provide lane closure hours: Hours to be determined during PS&E.
16.	☒	☐	Was field Maintenance input considered? No major input.
17.	☒	☐	Were climate conditions (extreme temperature, rainfall, etc.) considered? If so, which ones do you anticipate affecting the pavement job? Cold temperatures may limit when HMA can be placed; Heavy rainfall may delay the concrete construction.
18.			Which stage construction requirements (matching adjacent sections, temporary paving, etc.) were considered? Temporary road; Soil consolidation at the bridge approaches;
19.	☒	☐	Is this a large-scale project? Explain all quantity take-off: 14725 cubic-yard of JPCP, and 50,300 tons of HMA
20.	☒	☐	Is there Open-Graded Hot-Mix Asphalt (OGHMA) on the existing pavement? Open-Graded AC shown on as-builts.

	Yes	No	Question
21	☒	☐	Was environmental impact considered? Explain: New alignments are close to existing roads to minimize the impact;
22			What is the proposed pavement design life? 40-year per LCCA.
23			What is the final lane line configuration? Two lanes on each direction on SR 29/221. See layouts.
24	☒	☐	Are there vertical clearance issues? If yes, explain: Proposed overpass is over-crossing SR 29 and/or SR 221. Vertical clearance has to be met during construction and post-construction and allow for future pavement overlays.
25			What is the traffic index? Information below was provided by either the office of Traffic Forecasting or assumed form the current HDM : • **Mainline 20-year TI** = 12.5 (provided by Traffic Forecasting Office) • **Mainline 40-year TI** = 13.5 (provided by Traffic Forecasting Office) • **Ramp 20-year TI** = 10 (assumed from Table 613.5A for the HDM) • **Ramp 40-year TI** = 11 (assumed from Table 613.5A for the HDM)
26	☐	☒	Are there existing retrofit edge drains?
27	☒	☐	Will shoulders be used as detours? Shoulder use as partial travel way is anticipated during overlay of the existing pavement.
28	☒ ☒	☐ ☐	Is there settlement at bridge approaches? A bridge is proposed in this project. There is high embankment at the abutments of the bridge. Settlement is anticipated during construction. Are bridge approach slabs being replaced? Does such replacement include shoulders? Approach slabs are part of the new bridge. Approach slabs cover shoulder and traveled way. Consulted with structures maintenance representative on N/A.
29	☒	☐	Is there a minimum standard (2% or 1.5%) cross-slope? If not standard, provide date of design exception approval: _____
30			Provide the pavement condition report. See attached.
31	☐	☒	Other factors? Explain:

ATTACHMENT J

Draft Cooperative Agreement

COOPERATIVE AGREEMENT

This AGREEMENT, effective on _____, is between the State of California, acting through its Department of Transportation, referred to as CALTRANS, and:

Napa Valley Transportation Authority, a public corporation/entity, referred to hereinafter as NVTA.

An individual signatory agency in this AGREEMENT is referred to as a PARTY. Collectively, the signatory agencies in this AGREEMENT are referred to as PARTIES.

RECITALS

1. PARTIES are authorized to enter into a cooperative agreement for improvements to the State Highway System per the California Streets and Highways Code, Sections 114 and 130.

2. For the purpose of this AGREEMENT, *the reconfiguration of the existing intersection of SR29 and SR221/Soscol Ferry Road in Napa County to a diamond interchange, with two roundabouts one on either side of SR29,* will be referred to hereinafter as PROJECT. The PROJECT scope of work is defined in the project initiation and approval documents (e.g. Project Study Report, Permit Engineering Evaluation Report, or Project Report).

3. All obligations and responsibilities assigned in this AGREEMENT to complete the following PROJECT COMPONENTS will be referred to hereinafter as WORK:

   - PLANS, SPECIFICATIONS, AND ESTIMATE (PS&E)
   - RIGHT-OF-WAY

   Each PROJECT COMPONENT is defined in the CALTRANS Workplan Standards Guide as a distinct group of activities/products in the project planning and development process.

ATTACHMENT K

Initial MND/EA FONSI

SCH# 2009072094
04-NAPA-29- PM R5.6/R6.7; 221-PM 0.0/0.4
EA: 28120/Project ID: 0400000769

Improve traffic operation and alleviate congestion, and enhancing bicycle and pedestrian connectivity at State Route 29/State Route 221/Soscol Ferry Road in Napa County

INITIAL STUDY WITH MITIGATED NEGATIVE DECLARATION/ENVIRONMENTAL ASSESSMENT WITH FINDING OF NO SIGNIFICANT IMPACT

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C), 49 U.S. Code 303, and/or 23 U.S. Code 138

THE STATE OF CALIFORNIA
Department of Transportation

RESPONSIBLE AGENCIES:
Federal Highway Administration
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service
California Department of Fish and Wildlife
California Transportation Commission
Regional Water Quality Control Board

2/13/2020
Date

For Tony Tavares
District Director
California Department of Transportation
CEQA/NEPA Lead Agency

The following individual may be contacted for more information about this document:

California Department of Transportation
Attn: Nathan Roberts, Associate Environmental Planner
P.O. Box 23660, MS 8B
Oakland, CA 94623
(510) 286-5935

CALIFORNIA DEPARTMENT OF TRANSPORTAITON
FINDING OF NO SIGNIFICANT IMPACT

State Route 29/221 Soscol Junction Improvement Project

FOR

The California Department of Transportation (Caltrans) has determined that the Preferred Alternative will have no significant impact on the human environment. This FONSI is based on the attached Environmental Assessment (EA) which has been independently evaluated by Caltrans and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. It provides sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. Caltrans takes full responsibility for the accuracy, scope, and content of the attached EA and appended reports.

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 USC 327 and the Memorandum of Understanding dated December 23, 2016 and executed by FHWA and Caltrans.

Tony Tavares
District Director
District 4
California Department of Transportation

2/13/2020
Date

SCH: 2009072094

Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

Caltrans, in partnership with the Napa Valley Transportation Authority (NVTA), proposes to reconfigure the existing intersection (Soscol Junction) of State Route (SR) 29 and SR 221/Soscol Ferry Road in Napa County from a signalized intersection to a full-diamond interchange, with two roundabout intersections on either side of SR 29. This proposed project is to improve traffic operations to alleviate congestion between Napa Valley and towards Interstate I-80 and SR 37. Bicycle, and pedestrian access is proposed to improve connectivity between existing bicycle and pedestrian access on SR 29 and SR 221.

Determination

Caltrans has prepared an Initial Study for this project and following public review, has determined from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no impact on agriculture and forest resources, hazards and hazardous materials, land use and planning, mineral resources, population and housing, public services, recreation, utilities and service systems, noise and wildfire. In addition, the project would have less than significant impacts to aesthetics, air quality, greenhouse gas emissions, hydrology and water quality, and transportation/traffic.

With the following mitigation measures incorporated, the proposed project would have less than significant effects to biological resources, cultural resources, geology and soils, and tribal cultural resources.

- To mitigate the removal of riparian trees Caltrans will plant trees offsite as compensatory mitigation for tree impacts. Additionally, impacts to California Red Legged Frog (CRLF) habitat would be at an approved mitigation bank.
- To address potential impacts to fossiliferous Pleistocene Sonoma Volcanics, a paleontological mitigation plan will be developed based on project design and construction methods.
- ESA fencing will be established as well as an Archaeological Monitoring Area Plan, and a Phase III Data Recovery Plan will be implemented to protect archaeological resources from construction activities. Additionally, Caltrans consulted with the State Historic Preservation Officer (SHPO) along with interested Native American groups and developed a Memorandum of Agreement.

for

Tony Tavares
District Director
District 4
California Department of Transportation

2/13/2020
Date