

ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017
PROJECT BASELINE AGREEMENT

Grapevine Rehab (06-0W920)

Resolution SHOPP-P-2324-08B

(to 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) effective on June 27, 2024 (will be completed by CTC), is made by and between the California Transportation Commission (Commission), the California Department of Transportation (Caltrans), the Project Applicant, Caltrans, and the Implementing Agency, Caltrans, sometimes collectively referred to as the "Parties".

3. RECITAL

- 3.1 Whereas at its 3/22/2024 meeting the Commission approved the State Highway Operation and Protection Program and included in this program of projects the Grapevine Rehab (06-0W920), 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, the Project Report attached hereto as Exhibit B, the Performance Metrics Form, if applicable, attached hereto as Exhibit C, as the baseline for project monitoring by the Commission.
- 3.2 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 [redacted], "Adoption of Program of Projects for the Active Transportation Program", dated [redacted]
 - Resolution [redacted], "Adoption of Program of Projects for the Local Partnership Program", dated [redacted]
 - Resolution [redacted], "Adoption of Program of Projects for the Solutions for Congested Corridors Program", dated [redacted]
 - Resolution G-24-34, "Adoption of Program of Projects for the State Highway Operation and Protection Program", dated 3/22/2024
 - Resolution [redacted], "Adoption of Program of Projects for the Trade Corridor Enhancement Program", dated [redacted]

- 4.3 All signatories agree to adhere to the Commission's 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 Caltrans agrees to secure funds for any additional costs of the project.
- 4.6 Caltrans agrees to report to Caltrans on a quarterly basis; on the progress made toward the implementation of the project, including scope, cost, schedule, and anticipated benefits/performance metric outcomes.
- 4.7 Caltrans agrees to prepare program progress reports 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 Caltrans 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 Caltrans agrees to submit a timely Project Performance Analysis as specified in the Commission's SB 1 Accountability and Transparency Guidelines.
- 4.10 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 and performance metric outcomes during the course of the project, and retain those records for six years from the date of the final closeout of the project. Financial records will be maintained in accordance with Generally Accepted Accounting Principles.
- 4.11 The 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 six 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 Performance Metrics

See Performance Metrics Form, if applicable, attached as Exhibit C.

5.4 Additional Provisions and Conditions *(Please attach an additional page if additional space is needed.)*

Attachments:

Exhibit A: Project Programming Request Form

Exhibit B: Project Report

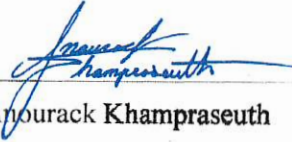
Exhibit C: Performance Metrics Form *(if applicable)*

SIGNATURE PAGE
TO
PROJECT BASELINE AGREEMENT

Project Name **Grapevine Rehab (06-0W920)**

Resolution

(to be completed by CTC)



4/24/2024

Anourack Khampraseuth

Date

Project Manager

Project Applicant



5/2/2024

Nabeelah Abi-Rached

Date

Single Focal Point

Implementing Agency



5/6/2024

Diana Gomez

Date

District Director

California Department of Transportation



06/06/2024

Tony Tavares

Date

Director

California Department of Transportation



07/02/2024

Tanisha Taylor

Date

Executive Director

California Transportation Commission

Memorandum

To: LYLE STOCKTON
SHOPP Office Chief
Division of Financial Programming

Date: May 13, 2024

File: 06-0W920 – 0618000063
KER – 005 – 4.4/10.2R

From: ANOURACK KHAMPRASEUTH
Project Manager
District 6

Subject: **BASELINE AGREEMENT CLARIFICATION MEMORANDUM**

This memorandum is written to accompany the SB-1 Baseline Agreement for this Grapevine Rehab project on Interstate 5 in Kern County. The purpose of this memorandum is to clarify PA&ED Milestone, Post-Mile Limits, Performance Measures, Capital Outlay Support (COS), Construction Capital (CON CAP), and Total Cost.

- The PA&ED milestone was achieved on 1/18/2024. PRSM has been updated to reflect this.
- SHOPP amendment 22H-016 updated the end construction post-mile limits from 10.2 to 10.2R. CTIPS is correct.
- The Project Report had the incorrect performance measure. CTIPS contains the correct performance which is 23.2 lane-miles.
- The COS budget increased from \$14,589K to \$14,746K, due to inflationary impacts to labor rates that were not anticipated at the time of programming for PS&E and R/W Support. Additionally, a \$10,000K increase was incorporated into the CON CAP, complemented by IIJA funding aimed at enhancing protection and climate resiliency measures. Consequently, these adjustments contribute to an overall increase in the Total Cost.

If you have any questions, please contact me at 559-353-0449.

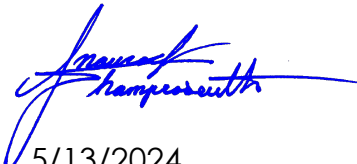

5/13/2024

EXHIBIT B - PROJECT REPORT

06 - Kern - 005 – 4.4/10.2
EA 06-0W9200 – Project ID 0618000063 - PPNO 6980, SHOPP ID Tool Number 19331
SHOPP Tool Activity Category - Pavement
January/2024

Project Report To Request For Project Approval

On Route 5 Northbound Only, Near Grapevine
Between Grapevine Creek Near Fort Tejon
And Grapevine Road Undercrossing

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:



MARIA TOLES
DISTRICT 06 DIVISION CHIEF, RIGHT OF WAY

APPROVAL RECOMMENDED:



MANUEL ORNELAS, PROJECT MANAGER

PROJECT APPROVED:

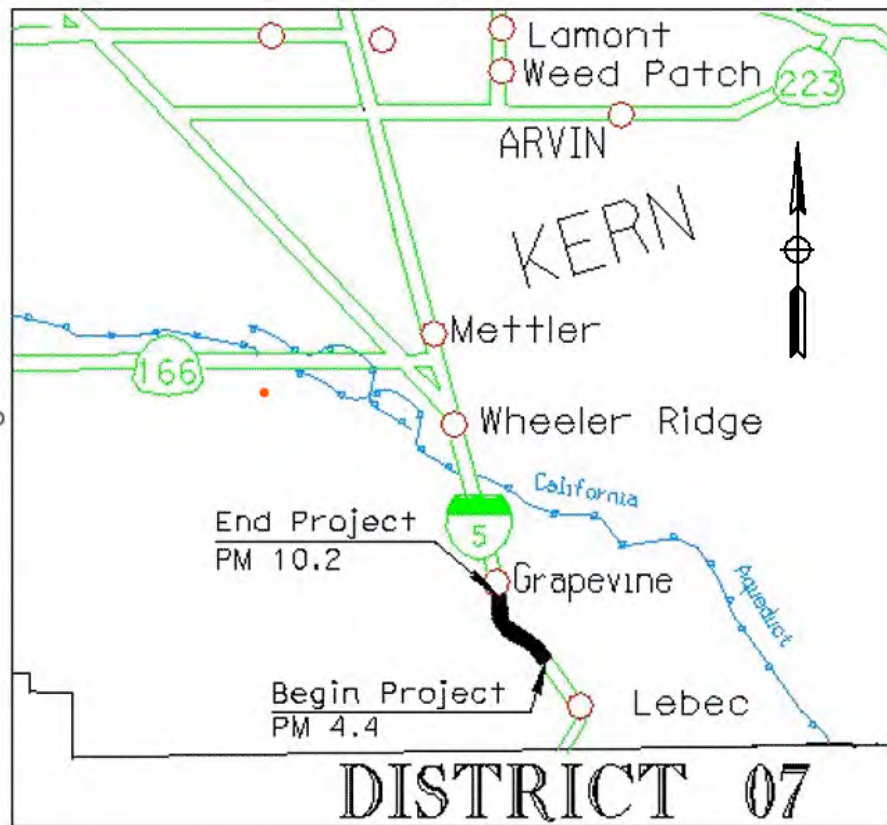


DIANA GOMEZ, DISTRICT 6 DIRECTOR

1/18/2024

DATE

Vicinity Map



NOT TO SCALE

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.

Ronnie Kier
RONNIE KIER
REGISTERED CIVIL ENGINEER

01/11/2024
DATE



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1. INTRODUCTION

Project Description

This Grapevine Rehabilitation Project on I-5 is a Roadway Rehabilitation (2R) located approximately 30 miles south of Bakersfield California in mountainous terrain on sustained grades. The proposed construction is to begin near Grapevine Creek Bridge (PM 4.4), extending north to Grapevine Road Undercrossing (PM 10.2). The reconstruction on this eight lane facility includes the removal and replacement of all Northbound (NB) lanes and shoulders and Southbound (SB) inside shoulder (for traffic handling), replacement of eighteen (18) drainage systems, addition of two (2) new drainage systems (one of which is a permanent drainage solution to an artesian spring in the roadway causing pavement distress at Tejon Road Overcrossing (PM 5.02)), add permanent erosion control, initiate a separate Alternative Compliance Project with the Water Board addressing the Water Quality Volume treatment shortfall, adjust all drainage inlets to finish grade, upgrade all guardrails to the Midwest Guardrail System (MGS), upgrade an existing Closed Circuit Television (CCTV), install a new CCTV station, remove and replace a weather station, upgrade six existing hose-count systems. The paved shoulder for the right-side truck escape ramp will be reconstructed. All work is within existing right of way. Per the Pavement Condition Report for an RTL year of 2024/2025 and for 23.2 Miles (mainline only).

The 23/24 Project Construction Cost for the build alternative is estimated at \$89,666,000 million without escalation and the 24/25 escalated construction capital cost is estimated at \$101,461,000.

Project Limits	06-Kern-5
	PM 4.4/10.2
Number of Alternatives	1 – Build & No Build
Programmable Project Alternative	1
Funding Source*	SHOPP - 201.122
Funding Year	2024/2025
Type of Facility	8-Lane Freeway
Number of Structures	3 (No work on Structures in this project)
SHOPP Project Output	23.2 Mainline - Lane Miles, 18 Drainage System Replacement 2 New Drainage Systems
Anticipated Environmental Determination or Document	CEQA Categorical Exemption / NEPA Categorical Exclusion
Legal Description	In Kern County near Grapevine from Grapevine Creek to Grapevine Undercrossing
Project Development Category	4B
SWDR Risk Level	2
PR Level	1

Capital Outlay Project Cost	Current Cost¹ Estimate including Risk:(\$1000)	Escalated Cost² Estimate:(\$1000)
Support		
PA&ED (Project Approval and Environmental Document)	\$2,730	\$2,908
PS&E (Plans Specifications and Estimate)	\$2,900	\$3,252
R/W (Right-of-Way)	\$90	\$101
CONS (Construction)	\$7,000	\$8,328
Capital		
R/W	\$174	\$191
CONS	\$89,666	\$101,461

2. RECOMMENDATION

It is being recommended that this Project Report (PR) be approved for the preferred alternative and that the project proceeds to the Plans Specifications and Estimate (PS&E) phase.

3. BACKGROUND

Project History

This portion of 8-lane divided freeway had a crack, seat, and Hot Mix Asphalt (HMA) overlay of 0.35' performed on the NB portion between 1992-1993, and several panel replacement / HMA overlay projects thereafter.

In 2018 a Project Initiation Report (PIR) programed work for the NB lanes and selected a pavement strategy which was to place new Portland Cement Concrete (PCC) on top of the existing PCC, raising the profile. Retaining walls with Concrete Barrier and the modification of two existing retaining walls were quantified for the pavement edges located in large fill areas due to the proposed raised profile.

In 2019, two Supplemental Project Initiation Report's (SPIR's) - Reduced Escalation, reduced the roadway construction, right of way and project capital outlay capital for the PIR build alternative. This reduced capital is what is still programmed today.

In May of 2021, a third SPIR removed retaining walls from the NB pavement edges assuming Type 60MC Concrete Barrier would be sufficient, reduced contingencies, added the PCC reconstruction of SB lanes #3 and #4 and shoulders, increased the number of repaired culverts to 77 and advanced the Ready to List (RTL) date by four months, placing it in the fourth quarter of the 2024/2025 fiscal year. This project's support costs shown in the third SPIR programable alternative has not been programed.

In 2022, began the preparation of the Draft Project Report (DPR). HQ Traffic Safety Devices Branch Chief, Mark Ballentine, stated that Traffic Safety Systems Guidance (TSSG) Section

4.5(1) is very explicit in stating standard plan detail A76A, Type 60MC Concrete Barrier must not be used as a retaining wall and is not to be constructed for this purpose. Raising the NB profile created similar constructability challenges for implementing standard plan detail P76, edge treatment for new construction and standard plan detail A77N3, MGS typical line post embedment. It was at this time Project Management was informed that adding the retaining walls back into the project with current roadway construction unit costs, significantly increased the required roadway construction capital, above what was programmed from the second SPIR. A Project Change Request (PCR) was to acquire additional funding for the added support, scope and updated roadway construction unit costs found in the third SPIR (including retaining walls).

Not all the 77 drainage systems identified in the drainage recommendation were captured in the survey package and some of the proposed drainage work was found to create concerns for the Tejon, California Native American Tribe. Design could not request additional surveys to capture information to design the drainage systems in PA&ED due to a lack of resources. Furthermore, Right of Way (ROW) requirements for the drainage systems not in the survey package could not be determined. Due to these challenges, the PDT reduced the drainage work down to replace 18 systems and add 2 new systems.

As the project developed, it was becoming unclear if a PCR would secure the total construction capital required. To strengthen stewardship and drive efficiency, the NB pavement strategy was revised to Alternative 2 of the third SPIR, which eliminates the need to reconstruct two existing NB retaining walls and the need for any additional retaining walls to either of the NB shoulders while bringing the project into alignment with the 2013 Transportation Concept Report plans of becoming a ten-lane freeway by 2035. Environmental anticipated fewer impacts with this revised NB pavement strategy and changed the required document from a California Environmental Quality Act (CEQA) - Initial Study with Proposed Negative Declaration (IS/ND) / National Environmental Policy Act (NEPA) - Categorical Exclusion (CE) to a CEQA – Categorical Exempt / NEPA - CE, eliminating the need for a Draft Environmental Document (DED) and Draft Project Report (DPR).

Community Interaction

The Tejon California Native American tribe was consulted. It had concerns regarding the replacement of drainage facilities in the vicinity. Due to right of way and funding constraints of the project, the drainage system was dropped.

Existing Facility

Within the project limits I-5 is in mountainous terrain with a speed limit of 65 mph. The project begins near Fort Tejon at an elevation of approximately 3,500 feet and ends near Grapevine at an elevation of approximately 1,500 feet. This location of I-5 is an eight-lane divided freeway, functionally classified as a principal arterial in Kern County that runs North and South with a high volume of commercial truck traffic. In locations, truck traffic takes one (1) lane as a designated truck lane in both the NB and SB directions. The median width varies from 70 to 600 feet with 8 to 10 feet shoulders. There are two (2) NB truck emergency escape ramps, one exiting to each side of the freeway. There is a concrete lined storm flow channel called Grapevine Creek in the divided median areas which is then piped under I-5 in undivided median areas. Grapevine

Creek carries storm flow of the entire canyon (including I-5 storm flow) thorough the project from beginning to end. Most of the project is in 100+ foot-high cut or fill slopes between 1.5:1 to 2:1.

4. PURPOSE AND NEED

Purpose:

The purpose of this project is to preserve and extend the life of the NB existing lanes of I-5 near Grapevine from Grapevine Creek near Fort Tejon PM 4.4 to Grapevine Undercrossing near Grapevine PM 10.2 so that the roadway will be in condition that requires minimal maintenance and improves ride quality.

Need:

The existing pavement has considerable distress and some panels have failed to the extent that pavement rehabilitation is needed. Repairs and replacements need to also be made for drainage and electrical facilities, in addition to replacing all railing with Midwest Guardrail System.

4A. Problem, Deficiencies, Justification

The existing pavement along I-5 within the project limits is in fair condition with considerable distress and continues to deteriorate. The existing truck escape ramp shoulder on the east side of the freeway has deteriorated from truck removal activities and needs rehabilitation. Continued pavement distress due to groundwater seepage at Tejon Road Overcrossing (PM 5.02) needs a permanent repair solution. Guardrail at some locations do not meet current MGS standards.

4B. Regional and System Planning

Identify Systems

Under the Federal-aid Surface Transportation Program, I-5 (PM 4.4/10.7) is part of the National Highway System (NHS) as a Strategic Highway Network, with a federal functional classification as a Principal Arterial and with Intermodal Corridor of Economic Significance (ICES).

State Planning

The 2013 TCR for Segment 2, between Fort Tejon OC and the Grapevine UC (PM 4.4 to PM 10.7) plans for this segment is to become a ten-lane divided freeway with locations of a lane being designated as an auxiliary truck lane in both the NB and SB directions, accommodating the Surface Transportation Assistance Act (STAA) design vehicle.

Regional Planning

This project will improve mobility for vehicles and bicyclists.

Local Planning

There is no fixed route operating on this segment of I-5.

Route Designations

I-5 is on the National Highway System, the STRAHNET system, and is categorized as a Lifeline for emergency response activities of the region. The Interregional Road System (IRRS) designates this segment of I-5 as High Emphasis, Focus, and Gateway. For the STAA designates this segment as part of the National Network and it is also an Intermodal Corridor of Economic Significance.

4C. Traffic

Traffic Volumes

Location (Both Directions)	2029 ADT	2049 ADT	2069 ADT	TI (20 Yrs.)	TI (40 Yrs.)
KER 5 (PM 4.4/10.2)	101,500	142,500	200,000	16.5	18.5

Traffic Collisions

The collision history for the study segment for the most recent three-year study period (between 08-01-2019 and 7-31-2022) are shown in number of collisions per million-vehicle-miles (MVM) in the following Table B. The data indicates that the Actual *Fatal + Injury* and *Total* collision rates are higher than the statewide averages for similar highways. However, the Actual *Fatal* collision rate is lower than the statewide average.

County-Route (Post mile range)	Actual Rate (Acc/Million Vehicles)			Average Rate (Acc/Million Vehicles)		
	F ¹	F+I ²	Total ³	F ¹	F+I ²	Total ³
KER 5 NB (PM 4.4/5.2)	0.000	0.22	0.89	0.006	0.21	0.65
KER 5 NB (PM 5.2/10.2)	0.013	0.22	0.78	0.005	0.18	0.56
KER 5 SB (PM 4.4/5.2)	0.000	0.18	0.70	0.006	0.21	0.65
KER 5 SB (PM 5.2/10.2)	0.004	0.13	0.64	0.005	0.18	0.56

NOTES:

The KER 5 NB (PM 4.4/5.2) collision history for the study period indicated a total of 32 collisions within project limits (0-Fatal, 8-Injury, 24-Property Damage Only).

The KER 5 NB (PM 5.2/10.2) collision history for the study period indicated a total of 182 collisions within project limits (3-Fatal, 49-Injury, 130-Property Damage Only).

The KER 5 SB (PM 4.4/5.2) collision history for the study period indicated a total of 50 collisions within project limits (0-Fatal, 13-Injury, 37-Property Damage Only).

The KER 5 SB (PM 5.2/10.2) collision history for the study period indicated a total of 149 collisions within project limits (1-Fatal, 29-Injury, 119-Property Damage Only)

5. ALTERNATIVES

5A. Viable Alternative

Alternative 1: Preferred Project Alternative – Pavement Reconstruction

The work proposed for the NB lanes is to replace the underlying Jointed Plain Concrete Pavement (JPCP) section for all lanes and shoulders with JPCP/HMA-A/AS above PM 5.0 and

CRCP/HMA-A/AS below PM 5.0 maintaining the existing profile and geometrics per 2R guidelines. The SB inside shoulder will be replaced to accommodate a cross median detour allowing reconstruction of 2 NB lanes and a shoulder concurrently while maintaining three open lanes of traffic for each direction. All guardrails will be upgraded to new MGS standards with new end treatments, drainage inlets will be adjusted to finish grade, eighteen drainage pipes will be replaced, and two new systems added. Existing CCTV will be upgraded, a new CCTV station added, existing Remote Pickup Unit (RPU) upgraded, several count stations with loop detectors installed, existing loop detectors replaced, and an existing Vehicle Detection System (VDS) replaced with new cabinet, controller, detector cards, modem, and antenna. The paved shoulder for the right-side truck escape ramp will be reconstructed. Feasible permanent erosion control has been added and a separate Alternative Compliance Project has been initiated with the Water Board to address the Water Quality Volume treatment shortfall. The NB ramps at Tejon Ranch will be closed temporarily during a cross median detour. All work is within existing right of way.

Design standards and deviations from design standards

Some California State Routes were constructed before implementation of the current design standards. Correcting all deviations to current standards is not cost effective. The following decision tree categorizes capital pavement improvements to the State Highway System. [Microsoft Word - Final Version of DIB 79-03r1 dated 1-29-08.doc \(ca.gov\)](#)

A 2R Certification effectively becomes an approved Design Standard Decision Document (DSDD) for all deviations without a cost-effective traffic operation strategy. Once a project has 2R Certification, deviations from design standards can be perpetuated, not made worse. 2R Certification has four Safety Screens.

Safety Screen 1.1 addresses the overall safety of the facility, analyzing the actual fatal plus injury accidents. 2R projects, must score below 0.35 accidents per million vehicle miles (acc/mvm). Safety Screens 1.2 and 2.0 are not applicable for freeways.

Safety Screen 3.0 addresses potential safety issues by performing a safety analysis to determine if there are other issues that indicate general geometric improvements are needed. These issues include high fatal rates, high collision rates and narrow shoulders in Freeway Groups not listed previously in the report.

Safety Screen 3.2 addresses spot locations, analyzing cost effective geometric improvements at spot locations that should be included in the project. The 2R Certification for this project can be found in Attachment L

In reviewing this PR's revised scope, the district 06 Traffic Liaison and the Design Coordinator requested a Design Standards Risk Assessment (DSRA) table to be added to this PR. The purpose for this DSRA is to farther evaluate in PS&E the cost effectiveness of providing ten feet shoulders for an estimated nine spot locations where MGS cannot be replaced "in kind" due to new MGS placement requirements. Adding additional MGS length is described as "added assets", not perpetuating an existing design deviation analyzed by the 2R Certification process and may necessitate additional documentation of additional nonstandard features. The total additional length of added assets currently proposed is estimated at 615 feet, requiring

approximately 3,912.5 feet of additional ten feet shoulder to make standard. If it is determined that a Design Standard Decision Document is necessary, it is desired early in the PS&E phase.

Design Standards Risk Assessment			
Alternative	Design Standard from Highway Design Manual Tables 82.1A & 82.1B	Probability of Nonstandard Design Feature Approval (None, Low, Medium, High)	Justification for Probability Rating
Alternative 1	Topic 309.1 Horizontal Clearances (3) Minimum Clearances (a) ETW to MGS is Ten Feet	Medium	TBD / Environmental Impacts / Terrain / 2R Safety Screen 3.2 Passed Showing No Cost-Effective Geometric Improvements were Indicated by Accident Analysis

Highway Planting

Existing landscaping will be maintained as much as possible. No irrigation is expected at this time.

Railroad Involvement

There are no railroad facilities tangent to or crossing this project.

Noise Barrier

There are no protected receptors within the limits of this project.

Erosion Control

Temporary and permanent erosion control will be included with this project to minimize erosion. Per the Evaluation Documentation Form (EDF), this project is required to consider the installation of permanent treatment BMPs. However, the mountainous terrain have made identifying areas conducive to biofiltration swales or strips challenging. Storm Water and Design have been looking into dressing up the existing water paths from the culvert exit to the concrete lined Grapevine Creek in numerous areas throughout the project. Biofiltration swale design will be done in the PS&E phase when additional survey information can be provided. The project does not propose to increase the total impervious area, volume, or velocity of the roadway stormwater runoff, but does propose to create approximately 54.6 acres of Replaced Impervious Surface (RIS) area with the replacement of the NB PCC.

Nonmotorized and Pedestrian Features

Are complete streets features included? Yes No

According to the Transportation Concept Report (TCR, February 2013): Bicycles are permitted on I-5 throughout District 6. Outside shoulders within the project limits allow bicycle use and drainage inlets will have bicycle approved grates. It would be difficult to maintain bicycle access during construction. Pedestrians are prohibited on I-5. According to Director's policy on

complete streets elements and Context Sensitive Solutions the project has been evaluated to provide safe mobility for all users including bicyclists, transit riders, and motorists appropriate to the function and context of the facility. The scope of the project will not include the potential of park and ride facilities.

Cost Estimates

This PR construction capital has a significant increase over the programmed amount from the second (SPIR) – Reduced Escalation of 2019. The bulk of the cost discrepancy between the 2018 PIR and PR can be found in comparing the unit costs of Section 2 of the Project Planning Cost Estimate (\$19,857,500 vs \$49,955,300). Under the direction of the Project Development Team (PDT), a Project Change Request (PCR) is anticipated to be approved at the January California Transportation Commission (CTC) meeting for an additional \$10 million in construction capital from The Infrastructure Investment and Jobs Act (IIJA) for a total of \$90,969,000.

The Project Planning Cost Estimate tabulating the roadway construction, right of way and project capital outlay estimates for the build alternative can be found in Attachment J.

Right of Way Data

The Right of Way Data Sheet and Mitigation and Compliance Cost Estimates (MCCE) can be found in Attachment I.

5B. Rejected Alternative

5B.1 No Build Alternative

The “No-Build” alternative was rejected because it does not meet the need and purpose.

5B.2 “White Top” Alternative

The “White Top” pavement strategy would raise the NB design profile 1.15 to 1.40 feet above the existing PCC and would replace all concrete barrier and existing retaining walls. It was determined that Type 60MC concrete barrier could not be used as a retaining wall to meet standard plan minimum requirements. Retaining walls or sliver fill would be needed to meet standard plan requirements. Both items are very expensive and would add an estimated cost of 20 million dollars to the project, assuming no utility relocation or environmental mitigation would be required.

6. CONSIDERATIONS REQUIRING DISCUSSION

6A. Hazardous Waste

A lead compliance plan (LCP) is required, including Standard Special Provision (SSP) 7-1.02K(6)(j)(iii) Earth Material Containing Lead.

Standard Specification Provision 14-11.12 Removal of Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue: Includes specifications for removing, handling, and disposing of yellow thermoplastic and yellow-painted traffic stripe and pavement marking. The residue from the removal of this material is a generated hazardous waste (lead chromate). Removal of existing yellow thermoplastic and yellow-painted traffic stripe and pavement marking exposes workers to health hazards that must be addressed in a lead compliance plan. The appropriate project SSPs and NSSPs will be edited for the project and provided during the Plans, Specifications and Estimates (PS&E) project phase.

6B. Value Analysis

The estimated project exceeds the Federal Highway Administration (FHWA) threshold and will need a Value Analysis Study to be eligible for Federal funding. A Value Analysis (VA) Study is scheduled early in, 2024.

6C. Resource Conservation

An evaluation of possible recycling of pavement and salvaging of materials will be performed during the design stage of the project.

6D. Right-of-Way Issues

Right of Way Impact

Within this project, the State right of way includes the median up to PM 9.0. From PM 9.0 to 10.0 I-5 is a divided freeway and the median is not state owned. The outer limit of State right of way has a range. Right of way can be adjacent to the shoulder or at the top or bottom of the adjacent cut/fill slopes.

No impacts to right of way are anticipated. Storm-water treatment needs, drainage pipes and new electrical items will be constructed within the existing right of way and easements as reasonable. There is no railroad involvement.

Right of Way Utility Impact

Based on the preliminary permit search information and field review observation, throughout the project are existing utility joint poles with overhead electric and communication lines as well as underground, oil, gas, and water lines with easements within State right of way. Utility relocation might be required in this project. A Conceptual Cost Estimate for Right of Way includes an estimate covering utility potholing costs. The Utility Engineering Workgroup will conduct utility verification during the PS&E phase.

Based on preliminary permit search information and field review information the approximate locations and types of utilities within the project limits are as follows:

PM	Type	Company
Various	Oil Line	Arco & Gas (aka Richfield Oil Co, Atlantic Richfield Company), CHEVRON, MOBIL, PLAINS, Pacific Pipeline System, Inc, General Petroleum Company, HPU & IDLE TORRENCE
Various	Water	Grapevine Water System, ARCO, CHEVRON, DWR, MOBIL, Tejon Industrial, Tejon Ranch
Various	Gas Line	Pacific Lighting Corporation, SCG, ARCO, Chevron, PG&E
4.67, 7.01	Transmission Line	SCG, Southern California Edison Company and Pacific Gas & Electric, PG&E
Various	Communications / Fiber	AT&T, CVIN, LUMEN, MCI, PLAINS, Tejon Ranch,
Various	Sewer	Tejon Ranch
Various	Irrigation	Tejon – Castaic Water District, Maricopa Water Storage District

6E. Environmental Compliance

A CEQA Categorical Exemption / NEPA Categorical Exclusion Determination Form has been provided and can be found in Attachment H.

Visual/Aesthetics

This project has no impact to scenic vista or scenic resources.

Paleontological Resources

If unanticipated fossil discovery occurs during construction, Specification 14-7.03 of the Caltrans 2022 Standard Specifications identifies the procedures required to protect the resource.

Biological Environment

Standard Specification Provision 14-6.03B (Bird Protection) will be required. If construction activities occur during the bird nesting season (February 1 to September 30), a qualified biologist should be notified 30 days prior to the start of construction to conduct a focused survey for active bird nests in the project vicinity.

Standard Specification Provision 14-1.02 Environmentally Sensitive Area: Pertains to environmentally sensitive areas marked on the ground. Do not enter an environmentally sensitive area unless authorized. If breached, notify the resident engineer.

1600 Streambed Alteration Agreement permit would be acquired before construction starts.

6F. Air Quality Conformity

A Dust Control Plan (DCP) is needed if at least 2,500 cubic yards of material are moved in a day for at least three days of the project, or 5 or more acres of land will be disturbed during construction.

Caltrans Standard Specifications, Section 14-9.02 “Air Pollution Control” and Section 10-5 “Dust Control,” require the contractor to comply with the air pollution control rules, ordinances, and regulations and statutes.

6G. Title VI Considerations

The considerations under the Title VI of the Civil Rights Act of 1964 and related statutes have been included in this project. Based on the population ethnic/racial distribution in the displacement area, the project would not cause disproportionately high and adverse effect on any minority or low-income populations.

6H. Noise Abatement Decision Report

Short term construction noise impacts will be addressed in accordance with Caltrans Standard Specification Provision 14-8 and Standard Specification Provision 14-8.02 will be needed if night work is anticipated.

6I. Life-Cycle Cost Analysis

In concurrence of the current Life Cycle Cost Analysis (LCCA) policy, a LCCA can be found in Attachment K.

6J. Reversible Lanes

This project does not qualify as a capacity increasing or a major street or highway realignment project and reversible lanes have been considered.

7. OTHER CONSIDERATIONS AS APPROPRIATE

Public Hearing Process

Early and continuing coordination with the public and public agencies is an essential part of the environmental process. It helps planners determine the necessary scope of environmental documentation and the level of analysis required, and to identify potential impacts and avoidance, minimization, and/or mitigation measures and related environmental requirements. Agency and tribal consultation for the project was accomplished through a variety of formal and informal methods, including interagency coordination meetings, written correspondent, and emails. There are no cultural resource concerns with the current project description from Tejon tribal representatives.

Permits

The following permits, licenses, agreements, and certifications are required before project construction:

Agency	Permit/Approval	Status
California Department of Fish and Wildlife	1600-Streambed Alteration Agreement	The 1600 permit would be obtained before construction starts.
Regional Water Quality Control Board	Waste Discharge Requirement (WDR)	The Waste Discharge fees would be obtained before construction starts.
Regional Water Quality Control Board	Alternative Compliance Project (APC)	Conceptual Approval of the APC is required before Ready To List (RTL).

Transportation Management Plan

Preliminary traffic impacts and mitigation for this project have been outlined in Transportation Management Plan (TMP) Data Sheet as Attachment G to minimize delay and maximize safety for the motorists during construction. Costs associated with the traffic impact mitigation measures listed in the TMP Data Sheet have been included in this document's estimate. Lane closure charts and detailed TMP will be provided during PS&E stage.

A TMP for this project is required and will be requested when the design is complete enough to determine specific traffic impact, and early enough to make design changes/additions required for traffic mitigation.

The preliminary mainline staging strategy for the pavement reconstruction work for this project is to have two lanes and the adjacent shoulder reconstructed together. This will reduce the time necessary for construction and will utilize a cross-median detour, reducing traffic to 3 lanes in each direction.

There will be intermittent ramp closures, no consecutive ramp closure will be allowed. The NB has two slip on/off ramps at Tejon Ranch. SB lanes are climbing a significant grade and reducing the number of lanes would have a much greater impact on the delay during high traffic periods.

Nighttime work is anticipated for this project.

A Communication Plan has been developed for this Grapevine Rehab project outlining the Public Information Office's strategy during construction. See attachment M.

Stage Construction

The final determination of the staging work will be done during the PS&E. The current lane replacement strategy for the NB of this 8-lane facility is to be conducted in 3 stages. Stage 1 will close SB lane 1 and replace the inside shoulder with PCC so that it can handle NB traffic for later stages. Stages 2 and 3 will reduce I-5 to 3 lanes in both directions by closing two adjacent lanes in the NB while utilizing a cross-median detour. Stage 2 will replace NB lanes 3, 4 and the outside shoulder. Stage 3 will replace NB 1, 2 and the inside shoulder. Preliminary locations for the cross-median detours will be located immediately before the southern project limit and immediately after the north project limit (PM 4.0 to 4.4 and PM 10.2 to 10.7). The locations for the cross-over detours were chosen due to the large median and grade separations throughout the project. Work is not expected outside the State right of way.

Accommodation of Oversize Loads

This project has no effect on the topic.

Graffiti Control

This project lies in a rural section and is not considered a graffiti-prone area.

Asset Management

This project proposes to reconstruct the NB roadbed, SB inside shoulder and is part of the SHOPP Ten Year Plan (TYP) (See Attachment - D).

This project is addressing 23.13 lane miles of which 23.0 miles are currently in pre-fair condition and 0.1 miles are in pre-poor condition.

Complete Streets

The California Department of Transportation (Caltrans) recognizes that walking, biking, transit, and passenger rail are integral to our vision of delivering a brighter future for all through a world-class transportation network. Additionally, Caltrans recognizes that streets are not only used for transportation but are also valuable community spaces.

The project is in a rural area, and there are no surrounding communities. In this area there is no pedestrian or transit infrastructure, and there are no designated bicycle lanes. The project Development team does not identify any needs for pedestrian or transit infrastructure facilities within the project limits. The Kern County Council of Governments Active Transportation Plan does not identify bicycle infrastructure needs in the area either. Bicyclist are allowed in the shoulders on I-5 throughout District 6. The NB outside shoulder drainage inlets will be replaced with bicycle proof grates.

Climate Change Considerations

Considering the information in the Climate Change and Greenhouse Gas Emission dated July 2022 and the Air Quality Memorandum dated February 2023, the significance determinations for this project were found to be less than significant impact for; generation of greenhouse gas emissions since the project is not capacity increasing and was found not to conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With the implementation of construction greenhouse gas reduction measures, the impacts would be less than significant.

Caltrans Standard Specifications Section 14-9.02 Air Pollution Control requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Measures that reduce construction vehicle emissions also help reduce greenhouse gas emissions.

Climate change contributes to an increase in wildfires in the vicinity of the project. The existing NB I-5 lanes are currently HMA which can melt due to the high temperatures created by wildfires. Also, HMA surfaces are generally darker than concrete surfaces, which means they absorb more visible light and convert it into heat energy. The IJA has provided increased federal funding for transportation system projects in California and some projects will get funding for providing “climate resilience”. PCC has a higher degree of fire resistance and absorbs less heat from sunlight when compared to HMA. This project will replace HMA with PCC. A PCR is anticipated to be approved at the December CTC meeting for an additional \$10 million in construction capital from the IJA.

Broadband and Advance Technologies

- A. Fueling opportunities for zero-emission vehicles is not applicable.
- B. Caltrans does not presently have a plan to add Vehicle to infrastructure (V2I) communications within these project limits. A revaluation will be concluded during the PA&ED phase to determine if requirements have changed.

California Highway Patrol (CHP) enforcement activities

350 working days have been estimated for the construction of this project. The Traffic Management Plan (TMP) estimates 3 officer shifts per day at a cost of \$1,378,000.

High-occupancy vehicle lanes

No high-occupancy vehicle lanes will be added to this segment of I-5 due to the large volume of traffic and its high percentage of trucks within restrictive mountainous terrain.

Interim features

No interim features are proposed with this project.

Operational improvement features

No operational improvements are included in this maintenance project.

Ramp metering

No ramp metering is proposed or warranted on the ramps within the project limits as the traffic volumes on the ramps are too low.

Roadside design and management

Both NB and the SB inside shoulders will be replaced on the Mainline, and truck escape ramps will be maintained and repaired as necessary. The right-side truck escape ramp will have the maintenance access shoulder reconstructed. Existing MBGR will be upgraded to standard MGS. Proposed lighting for the right-side truck escape ramp was removed due to culturally sensitive resources.

Traffic analysis

This project does not increase the capacity of the facility.

Material and/or disposal site

Grinding materials may be reused and a disposal site will be determined during PS&E phase.

Salvaging and recycling of hardware and other non-renewable resources

It is not anticipated to salvage and recycle hardware and other non-renewable resources.

Recycled materials

Rubberized Hot Mix Asphalt will not be utilized for overlaying the pavement within the project limits.

Stormwater

This project will require the preparation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will be developed by the contractor and submitted to the Caltrans resident engineer for review and acceptance prior to the start of construction. The SWPPP incorporates the applicable temporary construction site Best Management Practices (BMPs) for the project intended to reduce or eliminate pollutants in construction site storm water runoff.

This project does not increase impervious area or change flow. Grapevine Creek is in Johnson Canyon and is the only potential receiving water body within the project limits. When Grapevine Creek is in State ROW, it is either concrete lined or a piped system. Grapevine Creek exits State ROW into the divided median at postmile 9.0 and crosses I-5 NB in a box culvert at postmile 9.7 R. Grapevine Creek is not a 303(d) listed water body, it does not have an established Total Maximum Daily Load (TMDL) or effluent limit. No Drinking Water Reservoirs and/or Recharge Facilities have been identified within the project limits.

Regional Water Quality Control Board (Central Valley, Region 5) (RWQCB) regulations state that New Impervious Surface (NIS) area requires stormwater treatment when NIS exceeds 10,000 square feet. Reconstruction of the NB pavement qualifies as NIS requiring stormwater treatment. Given this project is in a canyon in mountainous terrain, only 5 BMP locations were found within the project limits to have stormwater treatment potential. These 5 BMPs are anticipated to treat less than 3% of the project runoff. The district asked The RWQCB for an exemption to this new regulation due to the terrain of the project and The RWQCB denied the district's request. The district is now preparing a feasibility analysis to present to the RWQCB for a separate Alternative Compliance Project (ACP). RWQCB's conceptual approval of an APC is required prior to RTL.

Earth Retaining Systems

There are at least two earth retaining systems within the project on both sides of the NB lanes. Following 2R criteria, all existing nonstandard geometric standards are being perpetuated and retaining systems will not be modified with this project. If HQ determines in PS&E that these retaining systems are not sufficient for the proposed work, new retaining walls will need to be installed and may delay the project schedule and will increase construction capital.

Hydraulic facilities

All drainage inlets will be adjusted to match, 18 drainage pipes will be replaced with new pipe culverts and 2 new drainage systems will be added. The current SHOPP Project Accomplishment Performance Measure Benefits shows 2958 feet of culverts to be replaced/installed.

Traffic management systems and signals

This project will replace an existing vehicle detection system, upgrade a closed-circuit television (CCTV) camera, install a CCTV camera system, remove, and replace a weather station, and upgrade six existing hose-count systems.

Preliminary Geotechnical Design Report (PGDR) for Grapevine Rehab

The purpose of this report is to assist planners and designers by providing preliminary geotechnical recommendations for the proposed Intelligent Transportation System (ITS) element of one Closed Caption Television (CCTV) at PM 4.5 and the groundwater seepage conditions at PM 5.0. The PGDR recommends foundation type for the CCTV Pole Type (Camera Pole 35) is the CIDH shown on the 2022 Standard Plan ES-16B. And to add a drainage system network of perforated metal or perforated PVC underdrains, longitudinally and traverse below the distressed pavement area and transport the water via solid wall pipe (s) in slurry backfilled trench to the nearest existing or new culvert.

8. FUNDING, PROGRAMMING AND ESTIMATE

Funding

The project is funded from the 2022 SHOPP 20.XX.201.122 Roadway Preservation Pavement 2R Program.

Federal-aid Funding:

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

Programming

The current project construction capital for the build alternative is estimated at \$89,666,000 and the escalated construction capital is estimated at \$101,461,000. A PCR is anticipated to be approved at the January CTC meeting for an additional \$10 million in Construction Capital from the IJA for a total of \$90,969,000. A PCR will be processed to capture an additional \$91,000 in R/W capital. The source of R/W funding is being investigated. The project development team will continue to look for opportunities to reduce the project cost to fall within the available programming. This may include reduction of scope or pavement rehabilitation strategy revisions. If the estimate cannot be contained, then the district may request the CTC to consider a construction allocation that is greater than 120% of the programmed amount.

The project is currently programmed in the SHOPP with funding shown below.

Fund Source	Fiscal Year Estimate for the Programmable Alternative					
	20/21	21/22	22/23	23/24	24/25	Total
20.10.201.122						
Component	In thousands of dollars (\$1,000)					
PA&ED Support	2,908					2,908
PS&E Support			3,252			3,252
Right-of-Way Support			101			101
Construction Support					8,328	8,328
Right-of-Way					100	100
Construction					80,969	80,969
Total	2,908		3,353		89,397	95,658

The support to capital cost ratio is 18.0%. An escalation rate is 3.2% for capital costs. An escalation rate of 3.2% in FY 19/20 through 21/22 and 2% each year afterwards for all support costs. Right of way capital is escalated at 5%.

9. DELIVERY SCHEDULE

Project Milestones	Milestone Date (Month/Day/Year)	Milestone Designation (Target/Actual)	
APPROVE PID	M010	02/22/2019	Actual
PROGRAM PROJECT	M015	07/01/2020	Actual
BEGIN ENVIRONMENTAL	M020	01/06/2021	Actual
PA & ED	M200	01/23/2024	Target
PS&E TO DOE	M377	10/06/2024	Target

RIGHT OF WAY CERTIFICATION	M410	03/06/2025	Target
READY TO LIST	M460	05/21/2025	Target
FUND ALLOCATION	M470	06/26/2025	Target
HEADQUARTERS ADVERTISE	M480	07/28/2025	Target
BIDS OPEN	M490	08/04/2025	Target
AWARD	M495	10/01/2025	Target
APPROVE CONSTRUCTION CONTRACT	M500	11/04/2025	Target
CONTRACT ACCEPTANCE	M600	08/07/2027	Target
END PROJECT	M800	08/07/2029	Target

10. RISKS

A Risk Register has been completed as part of this PR. This Risk Register is an assessment of potential risks and impacts to the overall project associated with scope, cost (construction and support) and schedule.

Some of the active high probability and/or high impact items identified are, RTL in the 24/25 fourth quarter and this project has not been identified as the parent project of a Stormwater Alternative Compliance project. Design and Stormwater continue to work toward obtaining written RWQCB compliance and post RTL details.

11. EXTERNAL AGENCY COORDINATION

Federal Highway Administration (FHWA)

This project is an Assigned Project in accordance with the current Stewardship and Oversight Agreement on Project Assumption and Program Oversight between FHWA, California Division and Caltrans.

12. PROJECT REVIEWS

Scoping team field review	PDT	Date	02/15/2018
Safety field review	2R Cert	Date	02/22/2018
District Asset Manager	Scott Harlan	Date	01/12/2024
HQ SHOPP Program Advisor	Amy Fong	Date	02/11/2019
District PID Program Manager	Robert Polyack	Date	10/17/2018
District Maintenance	Rene Sanchez	Date	12/04/2023
HQ Project Delivery Coordinator	Paul Gennaro	Date	12/04/2023
Project Manager	Manuel Ornelas	Date	01/12/2024
FHWA	N/A	Date	
District Safety Review	Koko Widyatmoko	Date	12/11/2018
Constructability Review	PDT	Date	12/04/2023
Other	PEER Review	Date	12/04/2023

13. PROJECT PERSONNEL

Name	Title	Phone Number
Manuel Ornelas	Project Manager	559-908-5492
Jun Xu	Design Manager	559-908-8994
Ronnie Kier	Project Engineer	559-840-6860
Amrit Brar	District Construction	559-332-0538
Ted Mooradian	Materials	559-488-4148
Rene Sanchez	Maintenance	559-906-0627
Curtis Abe	Surveys	559-383-5995
Sam Wong	Hydraulics	559-908-9693
Soe Nyein	Hydraulics	559-383-5835
Segaran Logeswaran	CT Geotechnical Design North	916-207-2064
Isidro Perez	Traffic Management	559-383-5246
Warren Lum	Traffic Operations	559-383-5616
Christopher Ogletree	Haz Waste Specialist	559-383-5547
Richard Derby	Environmental SWDR	559-383-5470
Phong Duong	Environmental	559-383-5589
Nick Dumas	Chief, Right of Way	559-243-3461
Scott Harlan	Chief, Asset Management	559-383-5241
Winter Yeung	District 6 Truck Access Manager	559-383-5041
Caleb Wu	Traffic Operations	559-383-5236

14. ATTACHMENTS (Number of Pages)

- A. Location Map (1)
- B. Typical X-Sections (2)
- C. Risk Summary (3)
- D. SHOPP Performance Measure Report (1)
- E. Stormwater Data Report (1)
- F. Preliminary Design Geotechnical Report (20)
- G. Transportation Management Plan Data Sheet (4)
- H. CEQA Exemption/ NEPA Categorical Exclusion Determination & Re-Validation Form (5)
- I. Right of Way Data Sheet, Cost Estimate and MCCE (7)
- J. Estimate (10)
- K. LCCA (4)
- L. 2R Certification (8)
- M. Communication Plan (4)

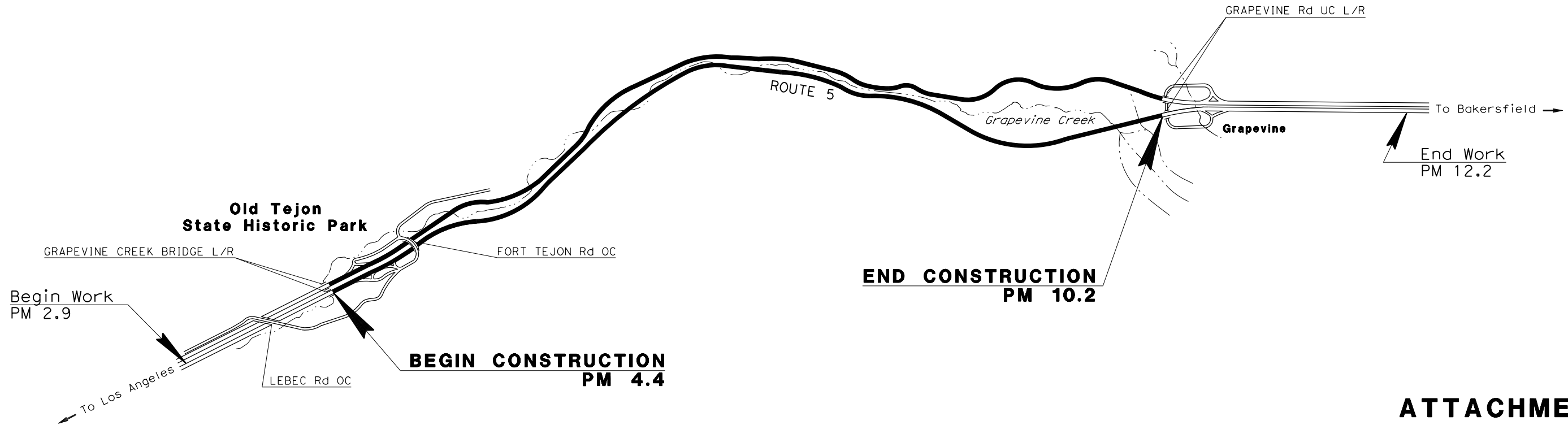
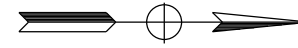
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

IN KERN COUNTY NEAR GRAPEVINE
FROM THE GRAPEVINE CREEK BRIDGE
TO THE GRAPEVINE ROAD UNDERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2022

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	5	4.4/10.2		

LOCATION MAP



NO SCALE

ATTACHMENT A

PROJECT ENGINEER _____ DATE _____
 REGISTERED CIVIL ENGINEER



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.

CONTRACT No.	06-0W920
PROJECT ID	0618000063

PROJECT MANAGER
ERNESTO GARCIA

DESIGN ENGINEER
JUN XU

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR: JUN XU
 CHECKED BY: []
 DESIGNED BY: []
 CALCULATED BY: []
 REVISIONS: []
 REVISOR: NATALYA CHEVY / HARITH KIRAN
 DATE: []
 REVISOR: RONNIE KIER
 DATE: []

NOTES:

- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- EXIST CRACK AND SEAT CONCRETE PAVEMENT: PM 4.49 - PM 8.89, PM 9.21 - PM 9.41 & PM 9.49 - PM 10.08
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- NORTHBOUND LOCATIONS: PM 4.40 - PM 5.43, PM 5.69 - PM 5.82, PM 6.43 - PM 6.71, PM 6.84 - PM 7.06, PM 7.08 - PM 8.28.
 SOUTHBOUND LOCATIONS: PM 4.49 - PM 4.67, PM 4.67 - PM 5.15, PM 5.89 - PM 6.22, PM 7.57 - PM 8.63.

ROUTE 5 DESIGN DESIGNATIONS

2029 ADT	101,500
2049 ADT	142,500
2069 ADT	200,000
D	51%
TI 20/40	16.5/18.5
V	70 MPH

PAVEMENT CLIMATE REGION

SOUTH MOUNTAIN

ABBREVIATIONS:

PBM PERVIOUS BASE MATERIAL

PROPOSED TYPICAL PAVEMENT STRUCTURAL SECTIONS

- 1. 1.00' CRCP *
- 0.25' HMA (TYPE A)
- 0.70' AS
- * 1.20' JPCP FROM PM 4.4 TO 5.0

EXISTING STRUCTURAL SECTIONS

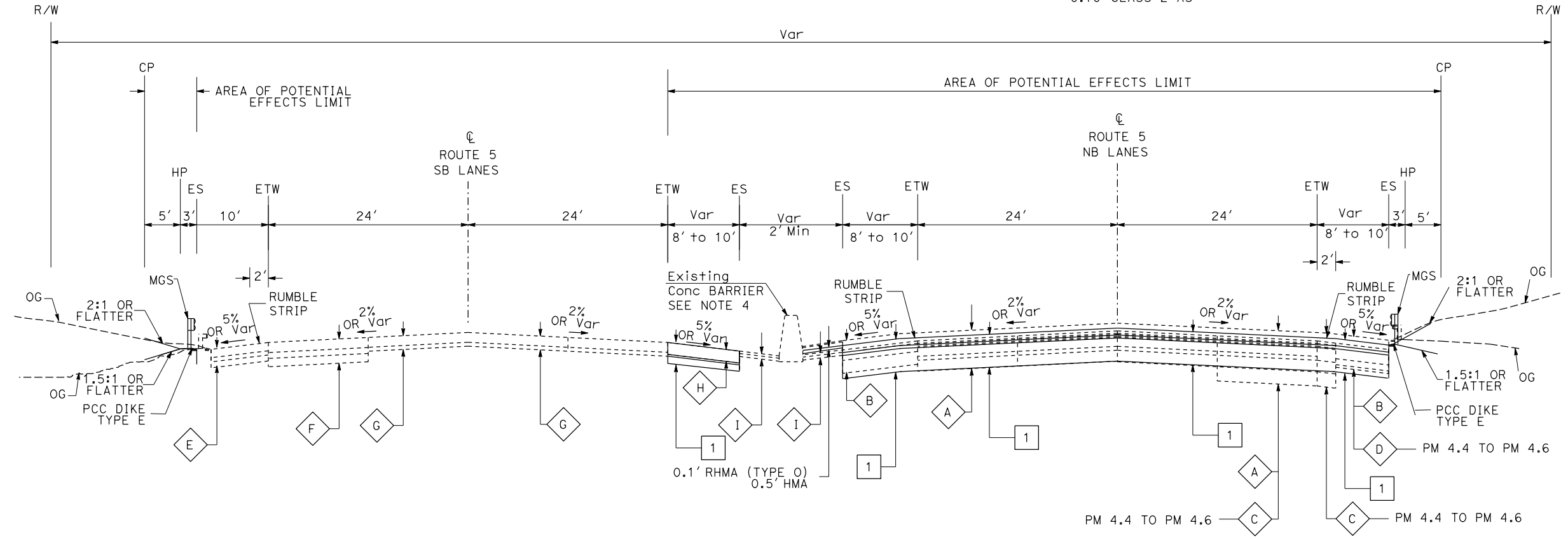
- A. 0.20' RHMA (GAP GRADED)
0.30' AC (TYPE B)
0.75' PCC (SEE NOTE 2)
0.30' CTB
0.50' AB (only lane 4)
- B. 0.20' RHMA
0.68' AC
1.08' PBM
- C. 0.20' RHMA (GAP GRADED)
0.0.25' AC (TYPE B)
PRF
0.10' AC (TYPE B)
1.30' JPCP
0.50' LCB
0.70' CLASS 2 AS
- D. 1.30' HMA (TYPE A)
0.50' CLASS 2 AB
0.22' PBM
- E. 0.70' PCC
0.35' LCB
0.50' AS
- F. 0.85' PCC
0.50' LCB
0.70' AS
- G. 0.83' PCC
0.33' CTB
- H. 1.00' AC
- I. 0.1' RHMA (TYPE O)
0.5' HMA

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	5	4.4/10.2	00	0000

REGISTERED CIVIL ENGINEER DATE []

PLANS APPROVAL DATE []

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**BUILD ALTERNATIVE
 ROUTE 5 (SB)
 PM 4.4 - 5.2
 PM 5.9 - 6.2**

**BUILD ALTERNATIVE
 ROUTE 5 (NB)
 PM 4.4 - 5.2
 PM 5.9 - 6.2**

TYPICAL CROSS SECTIONS

ATTACHMENT B

NO SCALE

X-1

DATE PLOTTED => 4-JAN-2024
 TIME PLOTTED => 13:08
 LAST REVISION 05-20-21

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	5	4.4/10.2	00	0000

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

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

- NOTES:**
- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
 - Exist CRACK AND SEAT CONCRETE PAVEMENT: PM 4.49 - PM 8.89, PM 9.21 - PM 9.41 & PM 9.49 - PM 10.08
 - FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

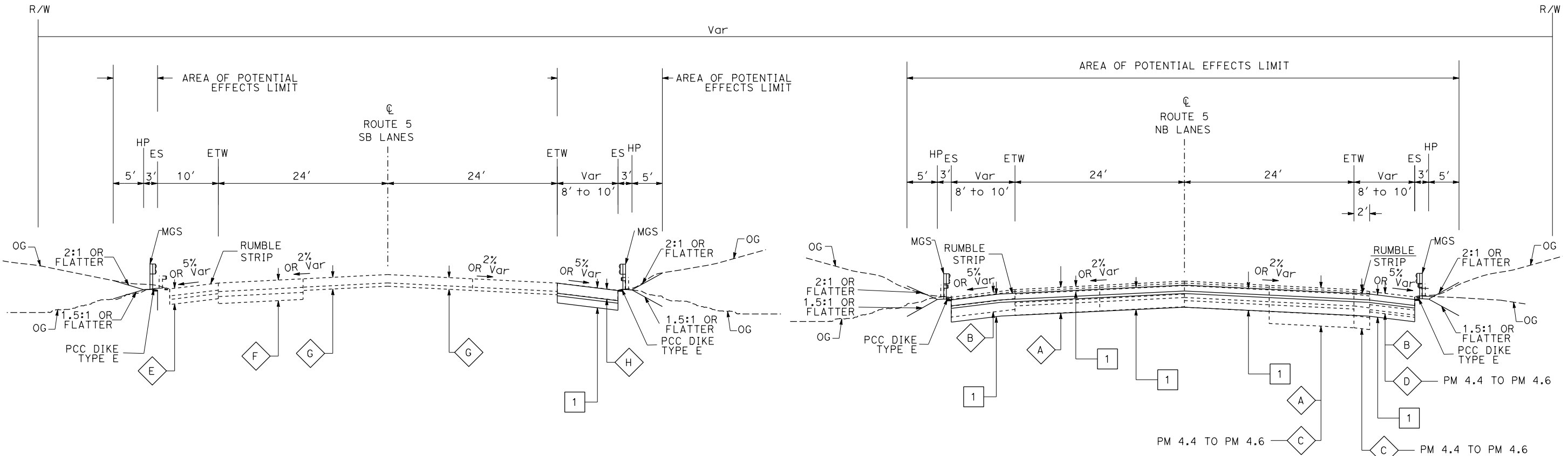
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 JUN XU

CHECKED BY
 RONNIE KIER

DESIGNED BY
 NATALYA CHEVY / HARITH KIRAN

REVISOR BY
 DATE



**BUILD ALTERNATIVE
 ROUTE 5 (SB)
 PM 5.2 - 5.9
 PM 6.2 - 10.2**

**BUILD ALTERNATIVE
 ROUTE 5 (NB)
 PM 5.2 - 5.9
 PM 6.2 - 10.2**

TYPICAL CROSS SECTIONS

ATTACHMENT B

NO SCALE **X-2**

DATE PLOTTED => 11-DEC-2023
 TIME PLOTTED => 11:22

Risk Register / Risk Management Plan for 06-0W920, Grapevine Rehab

v3.0 last modified 03/1/2018 CB

Risk Checkpoint: PID Date: 1/10/2024
Project Nickname: Grapevine Rehab EA: 06-0W920 Co-Rt, Post Miles: Ker - 5 - 4.4/10.2 Project Manager: Manuel Ornelas
FY & Program (SHOPP or STIP): 2018 (SHOPP) Total Costs (Capital & Support): \$96,000k RTL Target: 5/21/2025

Phase	Cost Contingency Range \$k			Schedule Contingency Range (Wkg Days)		
	Optimistic	PERT	Pessimistic	Optimistic	PERT	Pessimistic
0-PA&ED	\$0	\$0	\$0	0	0	0
1-PS&E	\$0	\$0	\$0	0	0	0
2-RW Sup	\$0	\$0	\$0	0	0	0
3-Con Sup	\$0	\$0	\$0	0	0	0
Support Contingency	\$0	\$0	\$0	0	0	0
4-Con Cap	\$0	\$1,984	\$8,500	0	0	0
9-RW Cap	\$0	\$0	\$0	0	0	0
Capital Contingency	\$0	\$1,984	\$8,500	0	0	0
Total Contingency	\$0	\$1,984	\$8,500	0	0	0

Risk Identification						Risk Assessment				Risk Response				Quantifying "Red" (High P & I) Level Risks				
Status	ID #	Type	Category	Title	Risk Statement	Current status / assumptions	Risk Trigger	Probability (P)	Cost Impact Schedule Impact (I)	Cost Score Schedule Score (Pxi)	Strategy	Response Actions	Risk Owner	Updated	Impacted Phase	Calculated Contingency	Support (hours) Capital Cost \$k	Schedule (Days)
Retired	1	Threat	Design	Sight Distance	Sight distance may not meet standards at several of the existing curves	2R Standards allow for the continuation of this deficiency	Geometric review denying continuation of existing sight distance	3-Moderate (31-50%)	4 - Moderate (\$3723.5k - \$7439.553k)	12	Mitigate	Adjust alignment of roadway to provide adequate sight distance	Design	5/3/2021	0-PA&ED Sup		O ML P	O ML P
								40%	2 - Low (<1 month)	6					1-PS&E Sup		O ML P	O ML P
Retired	2	Threat	Geotechnical	Slope Widening	Widening the median shoulder to standard will involve some earthwork on existing fill slopes and original ground slopes	Widening expected to work within normal widening practices	Unacceptable quality of fill	2-Low (11-30%)	4 - Moderate (\$3723.5k - \$7439.553k)	8	Mitigate	Incorporate slope stabilization techniques ranging from soil stabilization to retaining walls	Design	5/3/2021	0-PA&ED Sup		O ML P	O ML P
								20%	2 - Low (<1 month)	4					1-PS&E Sup		O ML P	O ML P
Active	3	Threat	Design	Traffic Handling	Maintaining 3 lanes of traffic while reconstructing the middle lanes may cause significant reduction in production rates during construction and add to cost of project	Work will be done on 1 lane and shoulder for lanes 1 a& 4, and just 1 lane at a time for lanes 2 & 3	Denial of traffic handling plans during planning	2-Low (11-30%)	4 - Moderate (\$3723.5k - \$7439.553k)	8	Mitigate	Accept necessary changes to traffic handling to get project approved and pay for extra stages of construction	Design	5/3/2021	0-PA&ED Sup		O ML P	O ML P
								20%	8 - High (3-6 months)	16					1-PS&E Sup		O ML P	O ML P
Retired	4	Threat	Design	Drainage	Replacing existing culverts will require connecting to the aging box culvert buried in the median of SR 5, work on the box culvert could compromise the integrity of the box and require significant increase in scope during construction. This cost could drain contingency money and delay the project completion.	Alternative routing of the stormwater is being investigated. If alternative routing is not possible the risk will need to be accepted by construction	Attempts to work on buried culvert during construction	4-High (51-70%)	4 - Moderate (\$3723.5k - \$7439.553k)	16	Mitigate	Pay increased construction costs of stabilizing existing box culvert	Design	5/3/2021	0-PA&ED Sup		O ML P	O ML P
								20%	8 - High (3-6 months)	32					1-PS&E Sup		O ML P	O ML P
Retired	5	Threat	Design	Drainage	Avoiding connection to existing box culvert with new drainage lines may require extensive trunk line lengths along the shoulders of the freeway.	A viable trunk line alternative can be developed that will not require excessive cost	During design of the drainage system the cost and scope will be evaluated	2-Low (11-30%)	2 - Low (<\$3723.5k)	4	Mitigate	Design drainage with the most appropriate and serviceable option	Design	5/3/2021	0-PA&ED Sup		O ML P	O ML P
								20%	2 - Low (<1 month)	4					1-PS&E Sup		O ML P	O ML P
Retired	6	Threat	Design	Stormwater Treatment	New regulations may require that all existing roadway runoff be treated before leaving the state right of way.	An existing basin located adjacent to the freeway near the Grapevine Interchange is being investigated to use for treatment of runoff.	If an agreement with Tejon Ranch cannot be made to treat the water then another location will have to be secured for a treatment basin	3-Moderate (31-50%)	2 - Low (<\$3723.5k)	6	Mitigate	Acquire alternative location for drainage basin	Design	5/3/2021	0-PA&ED Sup		O ML P	O ML P
								20%	4 - Moderate (1-3 months)	12					1-PS&E Sup		O ML P	O ML P
Active	7	Threat	Right of Way	Parcels	As a result of any scope changes, RW acquisition may be needed for the project which may impact the schedule and cost.	No R/W acquisition is necessary.	R/W acquisition is required for the project.	2-Low (11-30%)	2 - Low (<\$4800k)	4	Accept	During PA&ED, the design team should identify if any parcels are needed for the project. If risk materializes, the PM will seek additional funds or additional time for the schedule as allowed by the CTC rules or PDT will look into changing rehab strategy and/or reducing scope.	R/W, PM	5/11/2021	2-RW Sup		O ML P	O ML P
								40%	4 - Moderate (1-3 months)	8					9-RW Cap		O ML P	O ML P
Active	8	Threat	Utilities	Utilities	As a result of possible utilities in the project area, steps will need to be taken to protect and or avoid these facilities. This could impact schedule.	Utilities will need to be identified and potholed as early in the Design process as possible.	Once verification mapping is received Design will need to determine which facilities maybe impacted.	3-Moderate (31-50%)	4 - Moderate (\$3723.5k - \$7439.553k)	12	Mitigate	Once Utilities have been identified then potholing will need to take place to determine if there is a utility conflict.	RW	4/12/2018	2-RW Sup		O ML P	O ML P
								40%										

ATTACHMENT C

Risk Identification								Risk Assessment			Risk Response				Quantifying "Red" (High P & I) Level Risks			
Status	ID #	Type	Category	Title	Risk Statement	Current status / assumptions	Risk Trigger	Probability (P)	Cost Impact Schedule Impact (I)	Cost Score Schedule Score (Pxt)	Strategy	Response Actions	Risk Owner	Updated	Impacted Phase	Calculated Contingency	Support (hours) Capital Cost \$k	Schedule (Days)
Active	9	Threat	Right of Way	Schedule/RW Needs	Since schedule assumes the critical path is Design, any temporary construction easement requirements or unforeseen utility relocations may cause schedule delays.	No TCE are required	TCE are required	2-Low (11-30%)	2 - Low (<\$4800k)	4	Accept	Once additional TCE's are identified, the PM will seek additional funds or additional time for the schedule as allowed by the CTC rules or PDT will look into changing rehab strategy and/or reducing scope	R/W, PM	5/3/2021	2-RW Sup	O ML P	O ML P	O ML P
								20%	2 - Low (<1 month)	4					9-RW Cap	O ML P	O ML P	O ML P
Retired	10	Threat	Design	Elevated Median Grade	Due to the median being higher than the roadway in certain areas, retaining walls may be needed resulting in increased project cost	The median is not higher than the roadway	Median is higher than the roadway in certain areas	3-Moderate (31-50%)	2 - Low (<\$4800k)	6	Accept	During PS&E if design determines a retaining wall is necessary, PM will seek additional funding as allowed by CTC rules or PDT will look into changing rehab strategy and/or reducing scope	Design, PM	5/3/2021	4-Con Cap	O ML P	O ML P	O ML P
								40%	2 - Low (<1 month)	6					1-PS&E Sup	O ML P	O ML P	O ML P
Retired	11	Threat	Design	Engineer Estimate Contingency Reduction	The project may need additional construction funds at RTL due to unforeseen additional costs.	Project costs at RTL due not exceed the 15% contingencies used in the engineer's estimate and/or lowest bidder is below engineer's estimate at bid opening	Project costs at RTL exceed the 15% contingencies used in engineer's estimate and/or the lowest bidder is higher than engineer's estimate at bid opening which will require supplemental funds	2-Low (11-30%)	4 - Moderate (\$5100k - \$10189.8k)	8	Accept	If project capital cost estimates are higher than budgeted amount, PM will seek additional funding as allowed by CTC rules or PDT will look into changing rehab strategy and/or reducing scope	Design, PM	3/30/2021	3-Con Sup	O ML P	O ML P	O ML P
								20%	2 - Low (<1 month)	4					4-Con Cap	O ML P	O ML P	O ML P
Active	12	Threat	Design	Multiple Alternatives	Because the project assumes there is only two alternatives (Build and No-Build), any additional alternatives added by PDT or Value Analysis will impact the project cost and/or schedule	Project finished PAED with only two alternatives (Build and No-Build)	PDT or Value Analysis adds additional alternatives	2-Low (11-30%)	4 - Moderate (\$4800k - \$9590.4k)	8	Accept	If project capital cost estimates are higher than budgeted amount, PM will seek additional funding as allowed by CTC rules or PDT will look into changing rehab strategy and/or reducing scope	Design, PM	5/3/2021	0-PA&ED Sup	O ML P	O ML P	O ML P
								20%	4 - Moderate (1-3 months)	8					4-Con Cap	O ML P	O ML P	O ML P
Retired	13	Opportunity	Project Management	Scope Changes	Due to scope changes, additional funds are required in support and/or capital	Original scope of the project was to rehab one direction of highway. Additional funds will be required for PAED and PSE because project is now rehabbing both directions of highway. A supplemental PIR is in the works.	Scope has changed to rehab both directions of highway	4-High (51-70%)	8 - High (\$9500k - \$19200k)	32	Exploit	PM will request additional supplemental funds if PIR with revised scope is approved. This is an opportunity to save cost by combining both NB and SB lanes into a single project which will yield savings in support (for both PAED and PSE) and construction capital (escalation)	PM	5/3/2021	1-PS&E Sup	O ML P	O ML P	O ML P
								60%	8 - High (3-6 months)	32					0-PA&ED Sup	O ML P	O ML P	O ML P
Retired	14	Threat	Environmental	Additional Environmental Clearance due to scope increase may require a higher level document than a CE/CE	Scope of work changes will cause permanent impacts to environmental sensitive resources.	Scope of work will not change.	Impacts to potential biological habitat or archeological resources.	2-Low (11-30%)	8 - High (\$9500k - \$19200k)	16	Avoid	Additional time, resource and environmental studies-consultation is required. Design changes could become necessary.	Environmental, Design, ROW, PM	5/27/2023	1-PS&E Sup	O ML P	O ML P	O ML P
								20%	16 - Very High (>6 months)	32					4-Con Cap	O ML P	O ML P	O ML P
Retired	15	Threat	Environmental	PTE	Late identification of TCE's will lead to a delay in clearing the areas for environmental and potentially additional permits/cost. There is a risk that PTE may not be obtained in a timely fashion, which will delay cultural/biology survey and may impact the project schedule.	Obtain PTE in an adequate timeframe to not cause delay.	PTE not obtained in a timely fashion	2-Low (11-30%)	4 - Moderate (\$4800k - \$9590.4k)	8	Avoid	Send request for PTE early to right-of-way.	Biology/Cultural	7/27/2022	0-PA&ED Sup	O ML P	O ML P	O ML P
								20%	4 - Moderate (1-3 months)	8								
Retired	16	Threat	Environmental	Archeological Resource	There is a risk that a currently unidentified archeological site may be encountered during PAED or identified during survey and the site would be eligible for NRHP.	We assume no archeological materials or resources will be PAED and no further investigation needed. Work with Design to refine APE.	Late archeological resources discovered.	2-Low (11-30%)	4 - Moderate (\$4800k - \$9590.4k)	8	Mitigate	Additional consultation and mitigation would be needed. Inform project PDT. Additional cost and longer schedule would be required.	Cultural	7/27/2022	0-PA&ED Sup	O ML P	O ML P	O ML P
								20%	8 - High (3-6 months)	16								
Retired	17	Threat	Environmental	Listed Species	Biology listed species will be impacted by the project.	Sensitive species will be present in project area.	Listed species are discovered in project area.	4-High (51-70%)	16 - Very High (>\$19200k)	64	Avoid	Consultation would be required and possibly very high compensatory mitigation. Work with project sponsor, design, hydraulic and PM to revise scope of work or remove culvert locations to avoid the listed species habitat.	Biology	7/27/2022	0-PA&ED Sup	O ML P	O ML P	O ML P
								60%	4 - Moderate (1-3 months)	16								
Retired	18	Threat	Environmental	CDFW review	California Department of Fish and Wildlife review/consultation of the biology proposed mitigation measures and technical document could delay the environmental document. Scope	Work with Design to refine the APE	Acquisition of additional right of way for an onsite mitigation would trigger more	2-Low (11-30%)	4 - Moderate (\$4800k - \$9590.4k)	8	Mitigate	Coordinate closely with biology, design and ROW if there is possibility acquisition of additional ROW.	Biology/Environmental	7/27/2022	0-PA&ED Sup	O ML P	O ML P	

Risk Identification							Risk Assessment			Risk Response				Quantifying "Red" (High P & I) Level Risks				
Status	ID #	Type	Category	Title	Risk Statement	Current status / assumptions	Risk Trigger	Probability (P)	Cost Impact Schedule Impact (I)	Cost Score Schedule Score (Pxt)	Strategy	Response Actions	Risk Owner	Updated	Impacted Phase	Calculated Contingency	Support (hours) Capital Cost \$k	Schedule (Days)
					change, such as acquiring additional right of way for mitigation, would delay the review time of our Biological Assessment.		Impacts	20%	4 - Moderate (1-3 months)	8								
Active	19	Threat	Environmental	Alt Compliance Project Funding	If State Water board conceptual approval requires secured funding, funding source would need to be identified early in PS&E to avoid delivery schedule delay and or the project scope would have to be reduced.	Assumption is that conceptual approval will not require secured funding.	Conceptual approval denied because no funding source identified.	3-Moderate (31-50%) 40%	4 - Moderate (\$4800k - \$9500.4k) 16 - Very High (>6 months)	12 48	Accept	Coordinate with Sponsor to identify funding source.	Storm Water	12/20/2023	1-PS&E Sup 1-PS&E Sup		O ML P O ML P	O ML P O ML P
Active	20	Threat	Environmental	Stormwater Treatment	As a result of the State Water Board denial of proposed Alt Compliance project location, a new Alt Compliance project location would need to be identified. This could delay the RTL target date.	Assumption is State Water Board will provide conceptual approval of submitted Alt Compliance Project.	Denial from State Water Board.	3-Moderate (31-50%) 40%	2 - Low (<\$4800k) 16 - Very High (>6 months)	6 48	Accept	Work with State Water Board to identify acceptable Alt Compliance Project location.	Storm Water	12/20/2023	1-PS&E Sup 1-PS&E Sup		O ML P O ML P	O ML P O ML P
Active	21	Threat	Design	Design	Bids are greater than 120% of programmed construction capital, then a Supplemental Funds request would be required.	Assumption is bids will be within 120% programmed budget.	Bid opening	5-Very High (>70%) 85%	16 - Very High (>\$19200k) 16 - Very High (>6 months)	80 80	Accept	PDT would revise project scope or find additional funding.	Project Sponsor	12/8/2023	4-Con Cap 4-Con Cap	\$1,984k	O \$0k ML \$1,000k P \$10,000k PERT \$2,334k O ML P	O 0 ML 0 P 0 O ML P
Active	22	Threat	Design	Design	As a result of working days being greater than estimated the support cost budget need could increase.	Assumption is multiple crews will remove PCC	CPM determines WD greater than 350	1-Very Low (1-10%) 5%	1 - Very Low (Insignificant) 4 - Moderate (1-3 months)	1 4	Accept	Work with PDT to develop a CPM that captures work that can be done concurrently.	Design	12/18/2023	3-Con Sup 3-Con Sup		O ML P O ML P	O ML P O ML P

SHOPP Project- Accomplishment- Performance Measures- Benefits																	
District	OG	ToolID	ProjectID	EA	Co-Rte-PM	View/Print/PIR (Per formance)											
Multi-Objective Worksheet	Bridge	Pavement	Drainage	Facilities	Signs and Lighting	Mobility	Roadside	Bicycle and Pedestrian Infrastructure	Sustainability /Climate Change	Advance Mitigation/ Mitigation	Major Damage & Betterments	Green-house Gases					
Performance & Accomplishments (PR)																	
ActID	Activity Detail			Performance Objective	Unit of Measurement	Quantity	Pre-Good	Pre-Fair	Pre-Poor	New	Post-Good	Post-Fair	Post-Poor	HQ Program Review & Green with District	HQ Comment	Review Date	Performance Change Date After Review
1 B21	Concrete Pavement Curb Rehabilitation			Pavement Class I	Lane Miles	23.32	0	9	22	94	0	9	23.32				
2 C1	Replace/Install Culverts (2.1151)			Number of Objectives in the SHS	Each	18	1	5	12	0	18	0	0				
3 C2	Replace/Install Culverts (2 d t51)			Drainage Restoration	Linear Feet	2325	1	447	29	594	92	1282	0				
4 C13	New Culvert			Number of Objectives in the SHS	Each	2				2							
5 C14	New Culvert			Drainage Restoration	Linear Feet	1				1							
7	Guard Rail (2 d t1 c d5)			Number of Objectives in the SHS	Linear Feet	5			5		5						
7 E23	Collisions Reduced (2 d t15)			Collision Severity Reduction	Fatal/Serious Injury Collisions	1	7				1	7					
8 E24	Lighting - Rehabilitation (2 d t7 t)			Lighting Rehabilitation	Each	9			9		9						
9 E25	Overhead Sign Structures Rehabilitation (2 d t7 t)			Overhead Sign Structures Rehabilitation	Each	1			1		1						
11	Sign Panel Replacement			Sign Panel Replacement	Each	14			14		14						
11 E55	Proactive Safety Vehicles			Proactive Safety - Annual Fatal & Serious Injury Collisions	Annual Fatal & Serious Injury Collisions	1			1		1			Yes 0		8/17/23	
12 E5	Proactive Safety Pedestrians			Proactive Safety - Annual Fatal & Serious Injury Collisions	Annual Fatal & Serious Injury Collisions	0			7		7			Yes 0		8/17/23	
13 F6	Census Station (2 d t15)			Number of Objectives in the SHS	Each	1				1							
14 F3	Roadside Weather Information Station (2 d t15)			Number of Objectives in the SHS	Each	4		1		2		1					
15 F4	Roadside Weather Information Station (2 d t15)			Number of Objectives in the SHS	Each	1				1							
16 45	Transportation Management System Structures			Transportation Management System Structures	Each	2				2							
17 F4	Transportation Technology Systems			Transportation Management Systems	Each	6		1		3		2					
18 G7	Worker Safety - Safe			Roadside Safety Improvements	Locations	9			9		9						
19 G1	Worker Safety - Vegetation Control			Roadside Safety Improvements	Locations	2			2		2						
2	Does any Location Within the Project Limits Ped/Bike accessible?			Number of Objectives in the SHS	Yes/No	Yes											
21 H37	Bicycle-Tolerable Drainage Grates			Number of Objectives in the SHS	Each	2			2		2						
22 I11	Use of Recycled/Retained Materials			Number of Objectives in the SHS	Linear Miles	58			58		58						
28 O112	Use of Locally Available Building Materials			Number of Objectives in the SHS	Linear Miles	5			5		5						
24 N2	Quantitative - Proposed			Number of Objectives in the SHS	TCO2e	1489											
25 N8	Quantitative - Unmitigated			Number of Objectives in the SHS	TCO2e	2781											

Programming Performance Summary (All Locations)

Program Code	Activity Category	Asset Class	Asset	Performance Value	Performance Measure	Unit	Pre-Good	Pre-Fair	Pre-Poor	Pre-Total	Post-Good	New	Post-Good+New	Post-Fair	Post-Poor	Post-Total
2 d t22	Pavement - Pavement Rehabilitation 2R	Primary	Pavement	23.32	Lane mile(s)	Lane mile(s)	1		23	1	23		23			23

- Notes:**
- The spreadsheet for reporting performance in the "Programming Performance Summary" was developed to assist the districts on performance reporting requirements for CIP and PIR. For discrepancies or errors, please notify CIP Tool admins via e-mail at CIPTool@dot.a.gov
 - The data summarized in the table represents the performance reported or to be reported in CIP.
 - Programming only requires the breakdown of Good, Fair and Poor for Primary and Supplementary Asset Classes.
 - Reporting of bridge pre and post conditions may contain errors if the project RTIs before 2/24/25.
 - Reporting drainage pre-total and post good may differ whenever projects contain abandoned/removed culverts as the culvert no longer exists at post construction, is deleted from the pre-total value for posting of the post good value, and gets deleted from the statewide CIP inventory database.
 - Proactive Safety projects will temporarily use the same performance outputs of Safety Improvement projects. When the reporting requirements for CIP changes, the logic in the CIP Tool will change.
 - During the transition to the new Proactive Safety objective, the performance output for projects with a primary activity category of Proactive Safety (under program codes 15, 112, or 235) will continue to be presented here in the units of measure corresponding to the activities historically reported to date. Change in units to "Annual Fatal and Serious Injury Collisions" for future programming requests is being planned.



Dist-County-Route: 06-KER-5
Post Mile Limits: 4.4/10.2
Type of Work: Pavement Rehabilitation (2R)
Project ID (EA): 0618000063 (06-0W920)
Program Identification: 201.122
Phase: PID PA/ED PS&E

Regional Water Quality Control Board(s): Central Valley, Region 5

Total Disturbed Soil Area: 55.1 acres PCTA: 54.6 acres

Alternative Compliance (acres): 51.5 acres ATA 2 (50% Rule)? Yes No

Estimated Const. Start Date: 11/04/2025 Estimated Const. Completion Date: 08/07/2027

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): N/A

Notification of ADL reuse (if yes, provide date): Yes Date: TBD No

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E only.

Ronnie Kier 10/13/2023
Ronnie Kier, Registered Project Engineer Date

I concur with the Construction water pollution control strategy and selected temporary BMPs in this report:

Jamal Algutami FOR 10/23/2023
Sarbjit Deol, District Construction SW Coordinator Date

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

Manuel Ornelas 10/31/2023
Manuel Ornelas, Project Manager Date

Rene Sanchez 11/8/23
Rene Sanchez, Designated Maintenance Representative Date

Brad Cole 11/13/23
Brad Cole, Designated Landscape Architect Representative Date

[Stamp Required at PS&E only]

Mazin Al Ali 12/11/2023
Mazin Al Ali, Regional SW Coordinator Date

Memorandum

To: JUN XU
Central Region Project Development
District 6 Design
Branch A

Date: May 18, 2023

File: 06-KER-5-4.4/10.2
EA: 06-0W920
EFIS: 0618000063
Grapevine Rehab

Attn: Ronnie Kier
Project Engineer

From: GEOTECHNICAL SERVICES
Office of Geotechnical Design North
Branch B

Subject: **PRELIMINARY GEOTECHNICAL DESIGN REPORT FOR GRAPEVINE REHAB**

INTRODUCTION

Per your request, dated March 21, 2023, the Office of Geotechnical Design North (OGDN) Branch B is providing this Preliminary Geotechnical Design Report (PGDR) for the proposed geotechnical work related to the Grapevine Rehab Project located on Interstate 5 (I-5) from PM 4.4 to PM 10.2 in Kern County (see Figure 1). The purpose of this report is to assist planners and designers by providing preliminary geotechnical recommendations for the proposed Intelligent Transportation System (ITS) element of one Closed Caption Television (CCTV) at PM 4.50 and the groundwater seepage conditions at PM 5.02.

Project Description

The Grapevine Rehab Project is located approximately 30 miles south of Bakersfield California on I-5. Per the Index to Plans sheet, the construction is proposed to begin near Grapevine Creek Bridge (PM 4.4), extending north to Grapevine Road Undercrossing (PM 10.2). The project includes removal and replacement of the roadway underlying Jointed Plain Concrete Pavement (JPCP) section and base for all lanes and shoulders, replacement of twenty (20) drainage systems and drainage inlets adjusted, upgrade of all guardrails to the Midwest Guardrail System, upgrade of an existing CCTV, installation of a new CCTV station, and a permanent repair solution to pavement distress due to groundwater seepage at Fort Tejon Road Overcrossing (PM 5.02). Per the request package, summaries of proposed project elements that require geotechnical recommendations are presented in Tables 1 and 2.

Figure 1: Project Vicinity Map

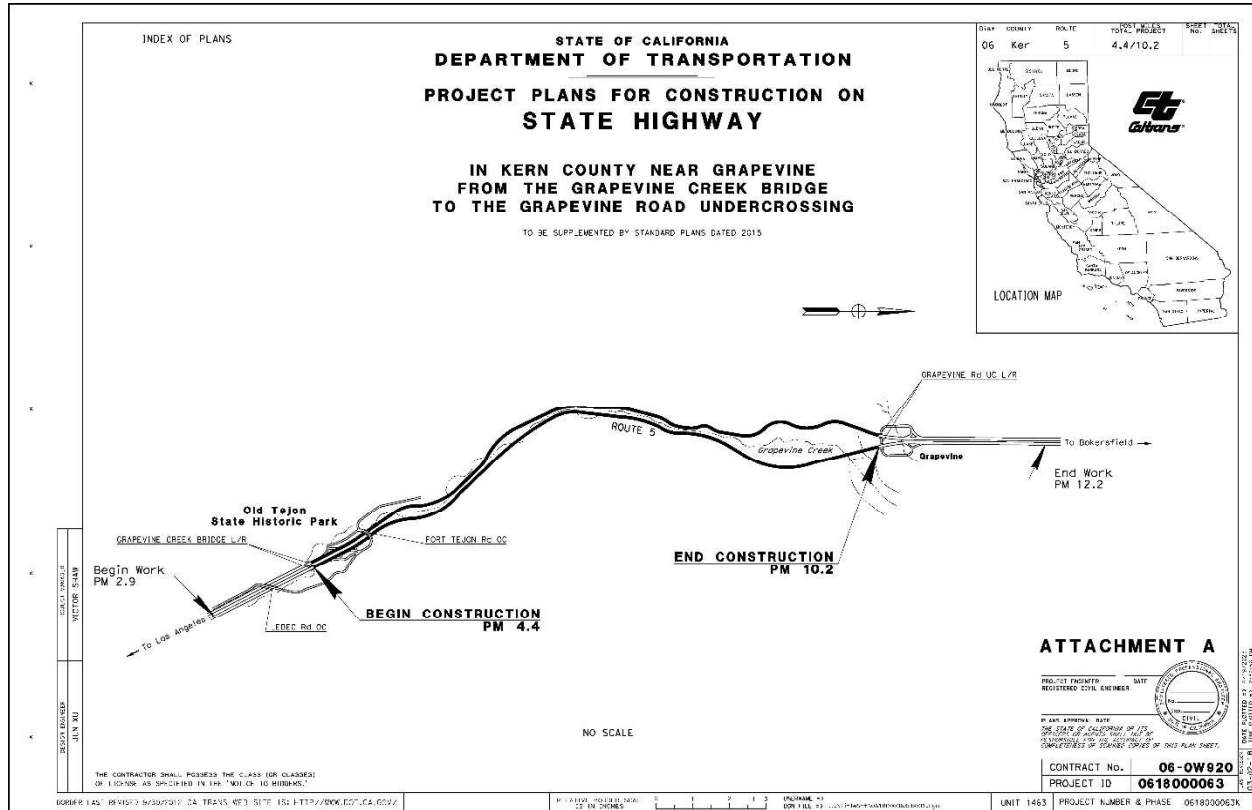


Table 1: Summary of ITS Element

Description of Proposed Work	Post Mile (PM)	Pole Type	Height "h" (ft.)	Location Description
New CCTV	4.50	Camera Pole 35	35	Right shoulder of southbound I-5, behind guardrail, on the north side of Grapevine Creek Br. (50-0128)

Note: See 2022 Standard Plan ES-16B Electrical Systems (Camera Pole 25' to 45')

Table 2: Groundwater Seepage and Pavement Distress

Description of Proposed Work	Post Mile ⁽¹⁾ (PM)	Approximate area of Seepage (sq ft.) ⁽²⁾	Location Description ⁽²⁾
Drainage Rehab	5.02	6,400	Northbound (NB) No. 3 lane, No. 4 lane, and right shoulder

Notes: (1) PM of Tejon Road OC. (2) 160 ft by 40 ft. area per *Maintenance Support Memo I-5 Postmile 5.04 Groundwater Seepage Repair*

All elevations contained herein, are based on the National Geodetic Vertical Datum of 1929 (NGVD 29), unless otherwise noted. The elevation adjustment from NGVD 29 to the North American Vertical Datum of 1988 (NAVD 88) elevations, in accordance with the National Oceanic and Atmospheric Administration - National Geodetic Survey - Coordinate Conversion and Transformation (NCAT) tool with Vertcon v3.0, requires adding approximately +2.8 ft. to the NGVD 29 elevation.

GEOTECHNICAL INVESTIGATION

Pertinent Reports and Investigations

The following publications and information were predominantly utilized to assist in the assessment of the site conditions within the project limits. No subsurface investigation or site reconnaissance was performed as part of this report.

- *Preliminary Geologic Map of the Grapevine 7.5' quadrangle, Kern County, California* (CA Department of Conservation, 2014)
- *Preliminary Geologic Map of the Frazier Mountain 7.5' quadrangle, Kern, Los Angeles, and Ventura counties, California* (CA Department of Conservation, 2016)
- *Maintenance Support Memo I-5 Postmile 5.04 Groundwater Seepage Repair*
- Various geotechnical documents on GeoDOG
- LOTBs for Tejon Road Overcrossing (Br. No. 50-0193) and Lebec Road Overcrossing (Br. No. 50-0271)
- Bridge Inspection Records Information System (BIRIS)
- CA Department of Water Resources - Water Data Library
<https://wdl.water.ca.gov/waterdatalibrary>
- Cardno, *Annual 2017 Groundwater Monitoring and Status Report, Closure Summary Report, M-1 Pipeline Corridor Tejon Ranch Property, Lebec CA, and Work Plan for Well Destruction*, 2018, State Water Resources Control Board-GeoTracker, www.waterboards.ca.gov
- As-built roadway plans in Caltrans Document Retrieval System (DRS) (Contract No's 58-6VC14, 58-6VC43, 06-86VC1, 58-46VC4)

GEOTECHNICAL CONDITIONS

Geology

The Preliminary Geologic Map of the Grapevine 7.5' quadrangle, and the Preliminary Geologic Map of the Frazier Mountain 7.5' quadrangle, indicate the geology within the project limits generally consists of three categorized geologic assemblages. The geologic group of units/materials consist of surficial materials (artificial fill, alluvial sediment, and Holocene to Late Pleistocene landslides), Tertiary sedimentary and volcanic units (sandstone, conglomerate, dacite tuff and tuff breccia), and intrusive and high-grade metamorphic rocks that are Mesozoic and/or older of the Tehachapi-San Emigdio Complex (tonalite, quartz diorite, gneiss, and migmatite). Table 3 presents the approximate postmile ranges of the generalized geologic units/materials within the project limits.

Table 3: Generalized Geologic Units

Approximate Postmile Range ⁽¹⁾		Geologic Units	Notes ⁽²⁾
Begin (NB/SB)	End (NB/SB)		
4.40	8.48R NB 8.47L SB	Intrusive and high-grade metamorphic rocks of the Tehachapi-San Emgdio Complex	Underlying fill and alluvium, and exposed in road cuts. Northern boundary defined by the Grapevine Thrust Fault at ~PM 8.48L/R
8.48R	9.3R NB 9.67L SB	Tertiary sedimentary and volcanic units	Underlying fill and alluvium, and exposed in road cuts. Northern boundary generally defined by the Pleito Thrust Fault at ~PM 9.7L/9.6R
7.25R NB	8.05R NB	Holocene Landslide	Active landslide. See horizontal drain project EA: 06-380100 and repair project for landslide EA: 06-371800
8.80R	8.93R	Holocene Landslide	Landslide complex
9.17R	9.20R	Holocene Landslide	Landslide complex
9.3R NB 9.67L SB	10.2 NB,SB	Alluvial fan and wash deposits	Underlying fill

(1) CT Postmile Services. (2) Due to scope of report, not all records are included in summary notes.

For greater detail of the geologic units and formations within the project limits refer to the portions of the Preliminary Geologic Map of the Grapevine 7.5' quadrangle and the Frazier Mountain 7.5' quadrangle provided in Attachment 1.

Geologic hazards within the project limits are landslides, debris and mud flows emanating from tributary drainages, and rockfall from existing cut and native slopes above. Table 4 presents the approximate postmile ranges of the geologic hazards within the project limits.

Table 4: Geologic Hazards

Approximate Postmile Range ⁽¹⁾		Geologic Hazards	Notes ⁽²⁾
Begin (NB/SB)	End (NB/SB)		
7.25R NB	8.05R NB	Holocene landslide	Active landslide. See horizontal drain project EA: 06-380100 and repair project for landslide EA: 06-371800
7.89R NB	8.05R NB	Rockfall	Existing rockfall attenuators
8.13L SB	8.46L SB	Rockfall	Emanates from cut slope. See Maintenance Support Memo for Rockfall on I-5 (EA: 07-93032)
7.91L SB	7.99L SB	Rockfall	Emanates from cut and native slopes
8.10L SB	7.24L SB	Mud and debris flow	Numerous drainages

(1) CT Postmile Services. (2) Due to scope of report, not all records are included in summary notes.

Surface Conditions

The project limits are in a region with semi mountainous terrain with elevations within the project limits range from approximately 3,230 ft. near the south end of the project

down to approximately 1,500 ft. at the north end of the project. Existing roadway within the project limits is an 8-lane divided highway consisting of 12 ft. lanes with 10 ft. shoulders and aligned generally in a north-south direction. The roadway within the project limits is constructed within cut and fill sections. Per the as-built Typical Cross-Sections sheets (Contract No. 58-6VC14), cut slope ratios vary from 6:1 (H:V) to 1:1 maximum, with native slopes above typically having slopes ratios of 1:1 (H:V) or flatter. Fill slopes ratios vary from 6:1 (H:V) to 1.5:1 maximum. Surface water predominantly drains off the highway into ditches, side drains, and cross culverts that trend towards the Grapevine Creek which flows northwestwardly mainly between NB and SB I-5.

PM 4.50 (CCTV)

The topography at the proposed CCTV location is flat. Based on the project DTM/Topo survey (TSB0750: 1" iron pipe w/ a red CT plug set behind guardrail) the ground surface elevation is about 3,206 ft. (NAVD 88). Approximately 35 ft. south of the proposed CCTV location is Grapevine Creek channel and the Grapevine Creek Bridge (50-0128), respectively. Grapevine Creek Bridge consists of a Reinforced Concrete Double Barrel 8 ft. x 8 ft. x 34 ft. long box culvert. Based on the as-built structure dimensions the channel depth is approximately 8 ft. lower than the ground surface of the proposed CCTV location. Surface water at the CCTV location drains towards Grapevine Creek. No issues regarding the performance of the existing fill such as erosion and instabilities were identified. No scour issues were identified at the downstream side of Grapevine Creek Bridge in the latest Bridge Inspection Report (dated May 20, 2021) in BIRIS.

PM 5.02 (Pavement Distress)

The topography at the site is generally flat. Based on the as-built Plan and Profile (Contract No. 58-6VC14, sheet 9 of 156), in the vicinity of the pavement distress, the ground surface elevation is approximately 3,126 ft., and the profile grade 35 ft. right of "B" line (centerline of I-5) near as-built Station 268 is -5.65%, looking up-station. Grapevine Creek is located about 300 ft. southwest of the site. As described within the *CT Maintenance Support Memo I-5 Postmile 5.04 Groundwater Seepage Repair*, the site is in a cut/fill transition. Adjacent to the NB I-5 right edge of pavement exists a v-ditch that flows northwesterly. The v-ditch flows into an approximate 65 ft. long, 24 inch diameter Corrugated Metal Pipe (CMP) culvert, under the driveway entrance to the CT Sand Barn (located about 45 ft. east of the NB I-5 edge of travelway and 100 ft. north of abutment 5 of Fort Tejon OC). Vegetation covers the v-ditch and water pools at the inlet of the CMP. According to the Caltrans Culvert Inspection Program, this CMP is in poor condition.

Based on Google Earth surface elevations and site photo 3 provided within the *CT Maintenance Support Memo I-5 Postmile 5.04 Groundwater Seepage Repair*, the surface water of NB I-5 does not drain into the adjacent v-ditch but rather pools between the right edge of travelway and edge of pavement and flows northwesterly. As described on the date of the inspection (June 29, 2022), the water seepage area is approximately 160 ft. in length by about 40 ft. in width, covering the NB I-5 lanes 3, 4, and right shoulder. The pavement distresses (cracks and potholes) were observed in

NB I-5 lanes 3, 4, and the right paved shoulder. No water seepage or ponding was visible in the SB lanes.

Subsurface Conditions

PM 4.50 (CCTV)

The subsurface conditions are described in the Foundation Investigations memo (GeoDOG, dated November 5, 1998) for Grapevine Creek Bridge (Widen) (Br. No. 50-0128) as “soft to slightly compact sandy silt, and compact fine sand”. The foundation investigation consisted of collecting soil samples with a hand auger to a depth of 10 ft. The location of the hand auger boring nor the top of boring elevation is defined in the Foundation Investigations memo. As-built LOTBs do not exist in BIRIS, and boring records were not discovered during the literature review in GeoDOG. Furthermore, lab data does not exist at the Translab Geotechnical Laboratory for the Grapevine Creek Bridge (Widen) project. Fill materials are assumed to be locally derived from nearby structure and roadway slope cut locations and are anticipated to consist of non-cohesive soil. The proposed CCTV is located at the boundary of alluvial sediment of Grapevine Creek, overlying Digier Canyon Quartz Diorite Orthogneiss which is exposed in the roadway cut of SB I-5 at PM 4.45. Based on the as-built Plan and Profile (Contract No. 58-6VC43, sheets 54 and 55 of 110), up to approximately 5 ft. of fill may exist at the proposed CCTV location. Bedrock is not anticipated to exist within the depth of the CCTV Cast-in-Drilled-Hole (CIDH) foundation.

PM 5.02 (Pavement Distress)

A review of the as-built LOTBs (B-3, B-8, B-9) for Fort Tejon Road OC and CPT-10 (Earthquake Retrofit Project, EA: 06-376201) indicate the soils below the original ground surface (approximate elevation range 3,122 ft. to 3,110 ft.) at the pavement distress site consist of very soft and very loose organic sandy clayey silt, soft organic sandy silty clay, and slightly compact to compact interbedded silty sand and clayey silt. Based on the General Plan for Tejon Road OC and elevation profiles within as-built roadway plans, the site is also underlain by fill of varying thicknesses.

Buried perforated metal pipe underdrains and several non-functioning CMP culverts exist below NB I-5 as shown on the 1930's and 1950's As-built Roadway Plans (1950's Contract No. 58-6VC14, Drainage Details sheet 45 of 156, and 1930's Contract No. 06-86VC1, 58-46VC4, sheet 15 of 25). It is our Offices understanding from our recent meeting on April 18, 2023 that pipelines may exist below the centerline of I-5, and requires confirmation from utility owner.

Groundwater

The groundwater conditions within the project limits were evaluated using available subsurface records for Fort Tejon Road OC, *Maintenance Support Memo I-5 PM 5.04 Groundwater Seepage Repair*, evidence of groundwater springs using aerial photography interpretation and as-built roadway plans, and State Water Resources Control Board's Site Cleanup Program documents on GeoTracker.

PM 4.50 (CCTV)

No groundwater data for this location was discovered during the literature research. The as-built LOTBs for Lebec Road OC, located approximately 2,400 ft. south of this location at PM 4.05, indicate no groundwater was encountered during the subsurface investigation. The lowest explored elevation at Lebec Road OC was about 3,212 ft., approximate depth of 35 ft. No channel elevations or bottom of existing footing elevations are provided in as-built plans for Grapevine Creek Bridge (Widen) (Br. No. 50-0128) or as-built roadway plans (Contract No. 58-6VC43). For design purposes and until site specific survey data is obtained, the groundwater is assumed to be at the bottom of Grapevine Creek channel located at approximately depth of 8 ft. (Elev. 3,198 ft., NAVD 88).

PM 5.02 (Pavement Distress)

Groundwater conditions consist of two main water bearing zones beneath the site. The upper groundwater bearing zone is unconfined. The lower groundwater bearing zone is confined between about 35 ft. to 39 ft. below NB I-5, between approximate elevations 3,084 ft. and 3,088 ft. Artesian conditions exist within the lower groundwater bearing zone; per the as-built LOTBs for Fort Tejon Road OC, "artesian flow was encountered in all holes".

The groundwater flow gradient is to the northwest (Cardno, 2018), see Groundwater Elevation Map attached. Pertinent site groundwater data from Caltrans and Consultant work within and adjacent to State Right of Way is presented in Table 5. The data is provided to assist District Hydraulics in designing the drainage facilities.

Cumulative groundwater measurement data between 1990 and 2017 can be found in the *Annual 2017 Groundwater Monitoring and Status Report, Closure Summary Report, M-1 Pipeline Corridor Tejon Ranch Property, Lebec CA* (Cardno, GeoTracker).

Groundwater amounts and levels can be expected to fluctuate in response to annual precipitation, seasons, duration and intensity of storm events, climate change, and human use.

Table 5: Measured Groundwater Table

Location (Boring No.)	PM	Ground Surface Elevation (ft)	Groundwater Table Or Piezometric Elevation		Date Measured	Notes
			Depth (ft)	Elevation (ft)		
Fort Tejon OC (B-1)	5.02	3,117.7	33.5	3,084.2	3/4/57	GW depth and elevation is of the lower confined aquifer. A total of 9 borings were drilled in March of 1957. Ground Surface Elev. as shown on as-built LOTBs.
Fort Tejon OC (B-3)		3,127.9	40	3,087.9	3/6/57	
Fort Tejon OC (CPT-10)	5.03	3,122.5	2.0	3,120.5	3/31/95	Per the CPT Sounding Report on GeoDOG, CPT was located 51 ft. Lt. of "FR1" Line, STA 267+72. Earthquake Retrofit Project (EA: 06-376201).
Tejon Ranch (MW-1A)	4.88	3,169.7	6.8	3,162.9	6/24/98	Vertical datum is unknown. The highest measured GW elevation is presented, beginning from down-station of distressed area at the former California Highway Patrol substation to the area around the CT Sand Barn. MW-5 was a 30.5 ft. deep artesian well. See Attachment 2 Groundwater Elevation Map.
Tejon Ranch (MW-21)	4.89	3,167.4	6.1	3,161.3	6/24/98	
Tejon Ranch (MW-5)	4.92	3,156.5	0.0	3,156.5	1/25/17	
Tejon Ranch (MW-3)	4.94	3,152.5	4.2	3,148.3	3/2/05	
Tejon Ranch (MW-4)	4.96	3,146.6	4.4	3,142.2	6/24/98	
CT Sand Barn (MW-20)	5.03	3,125.8	0.7	3,125.1	1/20/15	
CT Sand Barn (MW-14)	5.07	3,119.8	6.7	3,113.1	3/5/03	
CT Sand Barn (MW-24)	5.09	3,114.7	10.4	3,104.3	3/5/14	

Seismic Hazards

Site Seismic Parameters

The average shear wave velocities (V_{s30}) for the upper 100 ft. of alluvium at the CCTV location (PM 4.50) is estimated to be about 837 ft/sec (265 m/s). The V_{s30} was calculated using soil types and corrected ($N_{1(60)}$) SPT blow counts shown on as-built LOTBs (B-3) for Lebec Road Overcrossing (Br. No. 50-0271).

Ground Motion Parameters

The Design Response Spectrum, as defined in the Attachment B of the Caltrans Seismic Design Criteria was estimated using the Caltrans ARS Online (v.3.0.2) web tool. The Design Response Spectrum is the probabilistic response spectrum (return period = 975 years) developed based on the 2014 United States Geological Survey (USGS) National Seismic Hazard Map. The estimated design ground motion parameters are provided in the following Table 6.

Table 6: Recommended Ground Motion Parameters for Geotechnical Design

Project Component (PM)	Site Parameters			Design Ground Motion Parameters (Return Period = 975 years)		
	Location		Shear-Wave Velocity V_{s30} , (m/sec)	Horizontal Peak Ground Acceleration (HPGA) ⁽¹⁾ (g)	Mean Earthquake ⁽¹⁾ M, Moment Magnitude	Mean Site to Fault Source Distance ⁽¹⁾ R, (km)
	Latitude, Degrees	Longitude, Degrees				
CCTV (4.50)	34.871111	-118.888678	265	0.74	7.63	7.2

(1) Based on Caltrans web tool ARS Online (Version 3.0.2)

Fault Rupture

Surface rupture hazard potential within the project limits was evaluated by reviewing the following maps and associated hyperlinks:

- Quaternary Fault and Fold Database of the United States (USGS)
- Fault Activity Map of California, California Geological Survey (CGS)
- CGS Information Warehouse: Regulatory Maps

The Alquist-Priolo Earthquake Fault Zone for the Pleito fault zone (Eastern section) intercepts State Right of Way adjacent to SB I-5 approximately between PM 9.55L and PM 9.82L, and NB I-5 approximately between PM 9.55R and PM 9.78R. The Special Studies Zones, Grapevine Quadrangle, Revised Official Map (CGS, 1985) is provided in Attachment 3. The *Fault Evaluation Report FER-150 Wheeler Ridge and Pleito Fault Systems, Southwest Kern County*; Fault Map figure 2A (CGS, 1984) shows the fault mapped within State Right of Way by others. A summary of the Eastern Pleito Fault section, based on the USGS Quaternary Fault and Fold Database synopsis as reported by compiler William A. Bryant (CGS) is provided in Table 7. The synopsis reports that one and possibly two events have occurred between 500 AD and 1600 AD. Based on the limited scope of this memo a Surface Fault Rupture Displacement Hazard Analysis (SFRDHA) was not performed.

Table 7: Fault Rupture Summary of the Eastern Pleito Fault Section

Fault Name	Fault ID (CGS/USGS)	Fault Type	Fault Section Length (km)	Average Strike	Dip and Dip Direction	Magnitude (Mw)	Slip Rate (mm/yr.)	Recurrence Interval (yr.)	Average Slip per Event (m)
Pleito (Eastern Section)	309 / 76b	Thrust	16	N69°W	20°S	7.5	Between 1.0 and 5.0	500-600	0.77

Note: Magnitude value from USGS and Southern California Earthquake Data Center reporting for Kern County Earthquake of 1952, epi-centered 3.7 miles WNW of Grapevine, CA

Liquefaction

Based on review of earth materials described in existing reports and nearby LOTBs for Lebec Rd OC (Br. No. 50-0271), the absence of submerged layers of loose sands, the potential for liquefaction of the materials supporting the proposed CCTV pole is considered negligible.

GEOTECHNICAL DESIGN EVALUATION

CCTV (PM 4.50)

The CCTV Pole Type (Camera Pole 35) as shown on 2022 Standard Plan Sheet ES-16b is proposed to be constructed at PM 4.50 adjacent to a water course in what is understood to be a Caltrans fill embankment overlying alluvial sediment. Assuming the embankment was constructed using typical Caltrans construction methods, the compacted embankment material can be estimated to have soil properties including a unit weight of 120 pound per cubic foot (pcf) and an internal angle of friction (phi angle) of 30 degrees. The *User Guide to Standard Plans Section ES – Electrical Systems-Poles, Posts, and Standards* states the CCTV CIDH foundation design uses soil parameters of 120 pcf and a phi angle of 30.

A lateral analysis was performed using software Ensoft Lpile utilizing soil parameters of 105 pcf and phi angle of 30, the unfactored base plate reactions and the allowable deflections as shown in Table 8, for the 2.5 ft. diameter x 8 ft. deep CIDH provided by the Professional Engineer of Standard Plan Sheet ES-16b and ES-7N. Results of the analysis revealed that the CIDH pile head deflection is less than 0.5 inch. Therefore, the CIDH foundation shown on Standard Plan Sheet ES-16b and ES-7N is applicable and a special design foundation should not be required.

Table 8: CCTV Base Plate Loading and Reaction Data

Allowable Stress Level	Maximum Allowable Deflection
Moment – 220,000 lb-in	0.5 in lateral
Shear – 820 lb	0.003 radians rotation
Axial – 1,000 lb	

Drainage System (PM 5.02)

Photos of ponding water and reports indicate the existing drainage systems are inadequate to dewater the project site. Parts of the existing drainage systems appear to have exceeded its original design life and conducive to transport the shallow groundwater. Aerial photos of the seepage area, and the cumulative groundwater measurement data in the *Annual 2017 Groundwater Monitoring and Status Report, Closure Summary Report, M-1 Pipeline Corridor Tejon Ranch Property, Lebec CA* (Cardno) suggests the groundwater elevations are subject to both seasonal and climatic changes.

RECOMMENDATIONS

CCTV (PM 4.5)

The recommended foundation type for the CCTV Pole Type (Camera Pole 35) is the CIDH shown on the 2022 Standard Plan ES-16B.

Drainage System (PM 5.02)

Install a network of perforated metal or perforated PVC underdrains, longitudinally and transverse below the distressed pavement area and transport the water via solid wall pipe(s) in slurry backfilled trench to the nearest existing or new culvert.

REFERENCES

California Department of Conservation, EQ Zapp: California Earthquake Hazard Zone Application, <<https://www.conservation.ca.gov/cgs/geohazards/eq-zapp>>

California Department of Conservation, *Preliminary Geologic Map of the Grapevine 7.5' quadrangle, Kern County, California, 2014*

California Department of Conservation, *Preliminary Geologic Map of the Frazier Mountain 7.5' quadrangle, Kern, Los Angeles, and Ventura counties, California, 2016*

California Department of Conservation, CGS Information Warehouse: Regulatory Maps, *Fault Evaluation Report FER-150 Wheeler Ridge and Pleito Fault Systems, Southwest Kern County, 1984*, <<https://maps.conservation.ca.gov/cgs>>

California Department of Conservation, CGS Information Warehouse: Regulatory Maps, *Special Studies Zones, Grapevine Quadrangle, Revised Official Map, 1985*, <<https://maps.conservation.ca.gov/cgs>>

California Department of Conservation, Fault Activity Map of California, <<https://maps.conservation.ca.gov/cgs/fam>>

California Department of Transportation, Document Retrieval System <https://drs.dot.ca.gov/FalconWebV3/caltrans_WebSuiteV3.aspx>

California Department of Transportation, GeoDOG-Digital Archive of Geotechnical Data, <<https://geodog.dot.ca.gov>>

California Department of Transportation, ARS Online (v3.0.2), <<https://arsonline.dot.ca.gov>>

California Department of Transportation, Seismic Design Criteria, 2019, Version 2.0, Appendix B, <<https://dot.ca.gov/programs/engineering-services/manuals/seismic-design-criteria>>

California Department of Transportation, Bridge Inspection Records Information System (BIRIS), <<https://smi.onramp.dot.ca.gov>>

Cardno, *Annual 2017 Groundwater Monitoring and Status Report, Closure Summary Report, M-1 Pipeline Corridor Tejon Ranch Property, Lebec CA, and Work Plan for Well Destruction*, 2018, State Water Resources Control Board, <<https://geotracker.waterboards.ca.gov>>

United States Geological Survey, U.S. Quaternary Fault and Fold Database, <<https://www.usgs.gov/programs/earthquake-hazards/faults>>

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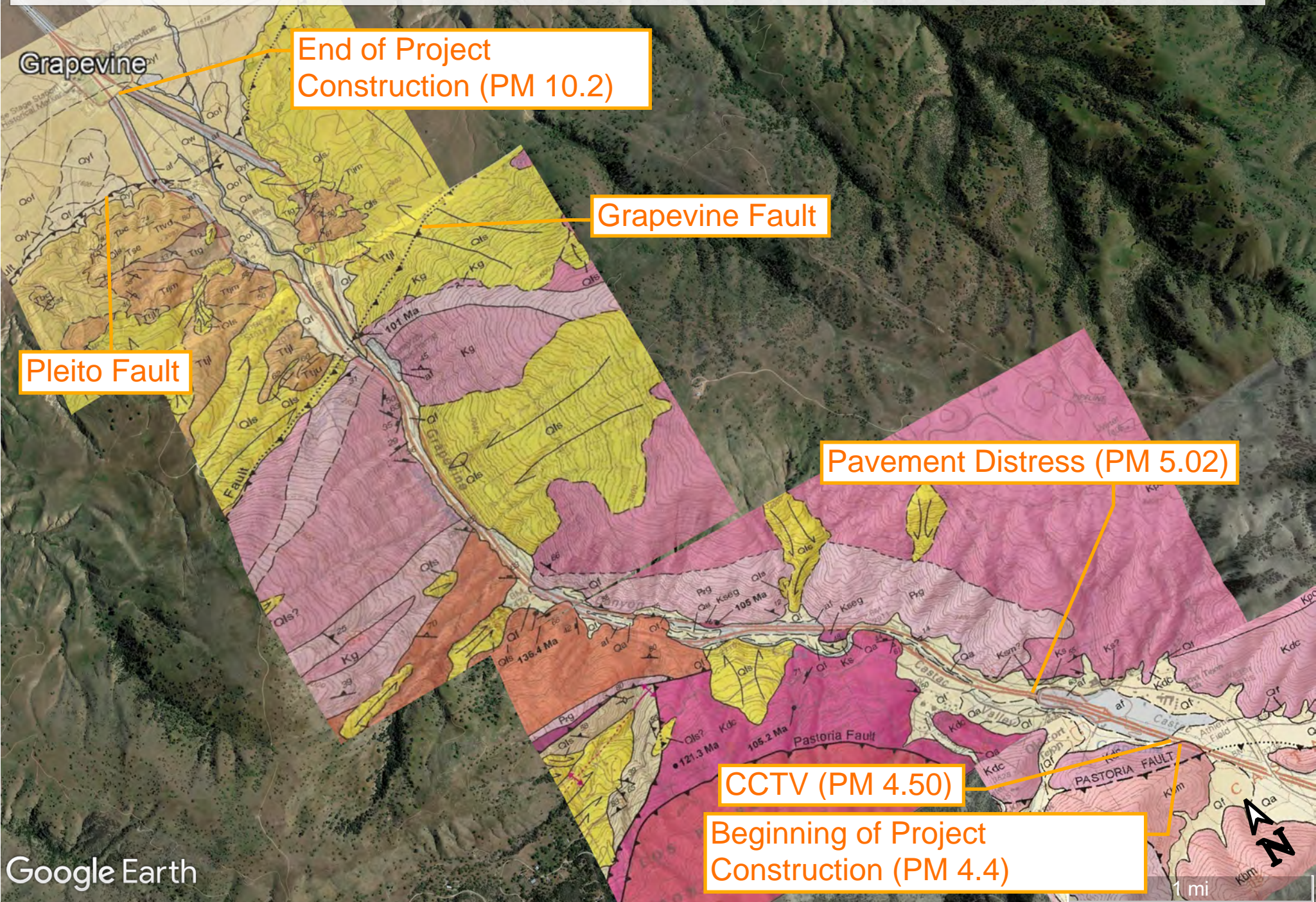
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Attachments

1. Geologic Map and Key
2. Groundwater Elevation Map
3. Special Studies Zones, Grapevine Quadrangle, Revised Official Map

Attachment 1: Geologic Map

Portions of the Preliminary Geologic Map of the Grapevine 7.5' quadrangle, and the Preliminary Geologic Map of the Frazier Mountain 7.5' quadrangle



Google Earth

Attachment 1 (continued): Geologic Map Key

Source: Preliminary Geologic Map of the Grapevine 7.5' quadrangle

DESCRIPTION OF MAP UNITS

SURFICIAL UNITS

af	Artificial fill and disturbed areas (historic, Holocene) – Consists of man-made deposits of earth-fill soils derived from local sources. Mapped specifically along the California Aqueduct structure, debris catchment basins, and includes fill soils along freeway/road alignments.
Qw	Wash deposits (late Holocene) – Unconsolidated sand and gravel deposited in recently active stream channels. Deposits are generally derived from local bedrock, or reworked from other local Quaternary sources. Subject to localized reworking and new sediment deposition during storm events.
Qf	Modern alluvial fan deposits (late Holocene) – Unconsolidated to weakly consolidated, poorly sorted, gravel, sand, and silt deposits forming active, essentially undissected, alluvial fans. Includes small to large cones at the mouths of stream canyons and broad aprons of coarse debris adjacent to mountain fronts. Gravel clasts are typically unweathered with little to no oxidation. Unit includes local mudflow deposits consisting of massive sandy silty cobble to boulder gravel. (Units Q6 through Q8 of Hall, 1984).
Qa	Modern alluvium (Holocene) – Unconsolidated to weakly consolidated, mostly undissected, fluvial gravel, sand and silt. Loose, yellowish-gray sand, silt, and pebble to cobble gravel. Consists predominately of moderately sorted coarse-grained to very coarse-grained arkosic sand.
Qpa	Ponded alluvium (Holocene) – Unconsolidated to weakly consolidated sand, silt, and clay deposits in closed depressions.
Qya	Younger alluvial deposits (middle Holocene to Late Pleistocene) – Unconsolidated thin- to thick-bedded gravel. Deposited in point bar and overbank settings associated with active stream channels.
Qls	Landslide deposits (Holocene to Late Pleistocene) – Unconsolidated to moderately well-consolidated jumbled rock debris consisting of surficial failures resulting from soil and rock creep, debris flows, and large-scale rotational rock slides. Recognizable by topographic expression or chaotic internal structure.
Qyl	Younger alluvial fan deposits (middle Holocene to Late Pleistocene) – Unconsolidated to weakly consolidated, pale brown to dark yellowish brown, silty and coarse to very coarse arkosic sand with pebbles and cobbles, moderately to well-stratified. Gravels are typically clast-supported, oxidized, and primarily from granitic sources, with many sub-rounded friable mafic schist clasts. Silt layers exposed in vertical stream bank cuts show weak prismatic structure. Unit is exposed as slightly dissected, elevated broad alluvial fans and canyon fill along the northern flank of the San Emigdio Mountains. Along the Piute Fault these deposits are slightly deformed and partially dissected (Units Q4 and Q5 of Hall, 1984).
Qof	Older fan deposits (Late to Middle Pleistocene) – Slightly to moderately consolidated, poorly sorted, silty pebbly sand to coarse gravel and boulder fan deposit. Unit is poorly to moderately stratified with a moderately developed Bt horizon up to 0.5m thick (Unit Q3 of Hall, 1984).
Qvof	Very old fan deposits (Early Pleistocene) – Moderately to well-consolidated, poorly sorted, coarse gravel and boulder fan deposit, highly elevated and dissected.

Attachment 1 (continued): Geologic Map Key

TERTIARY SEDIMENTARY AND VOLCANIC UNITS

QTl

Tulare Formation (Pleistocene to Late Pliocene) – Loosely consolidated light gray boulder conglomerate, conglomeratic sandstone, sandstone, and claystone, non-marine. Conglomerate clasts composed of siliceous (Monterey) shale, sandstone, and basement rocks in gray sandy to clayey matrix, clasts are angular to subangular.

Tmg

Monterey Formation (Middle to Early Miocene)

Gould shale member – White to grayish brown siliceous and semi-siliceous biogenic shale and porcelanite, marine, thin bedded, platy to fissile, abundant soft-sediment deformational folding, weathers cream to buff, includes thin dolomite layers. Abundant foraminifera indicating Late Saussean to Relizian age (Dibblee, 1973a; Nilseri et al., 1973)

Tmc

Clay shale member – Gray clay shale and siltstone, marine, bedded.

Tbc

Bena Conglomerate (Middle to Early Miocene) – Gray to brown sandy polymictic cobble conglomerate with minor sandstone interbeds, non-marine, massive to crudely bedded, clast-supported, composed of poorly sorted cobbles with some boulders in a weakly consolidated arkosic sand matrix. Interfingers to the west with the Monterey Formation. Deposited with angular unconformity on the Tecuya Formation east of Tecuya Canyon.

Tt

Tembler Formation (Early Miocene)

Siltstone member – Pale yellow, light gray, light brown siltstone and fine-grained sandstone, marine, massive to locally bedded.

Tts

Sandstone member – Gray, light yellow, and yellowish brown fine- to coarse-grained and conglomeratic sandstone, marine, micaceous, locally silty, bedded locally contains brown spherical boulder-sized concretions.

Tto

Tecuya Formation (Early Miocene to late Oligocene)

Sandstone and conglomerate member (Early Miocene) – Pale yellow, light yellowish brown, and gray medium- to coarse-grained and conglomeratic sandstone and sandy pebble to cobble conglomerate, nonmarine, massive to thick-bedded, cemented. Conglomeratic sandstones and conglomerates contain distinctive black subrounded to rounded fine-grained mafic clasts. Local basal boulder conglomerate, clasts up to 3 meters in diameter. Overall, this unit is lithologically similar to the granitic conglomerate member (map symbol: Ttg) but with a higher proportion of sandstone to conglomerate.

Ttu

Airfall tuff (Early Miocene?) – Hornblende-rich airfall tuff, well-indurated. Unit only occurs on ridge line between Colorful and Tecuya Canyons, near the Grapevine Thrust Fault, where it appears to be in contact with both Jurassic gabbro (map symbol: Jg) and the lower members of the Tejon Formation (map symbols: Ttju and Ttjl). The nature of these contacts is not readily observable in the field and therefore, the unit is tentatively included with the other volcanic units in the map area, following Chapman (2012).

Ttb

Basalt flows (Early Miocene) – Black to dark reddish brown aphanitic and locally scoriaceous basalt with basalt breccias/conglomerate, subaerial, local silica-filled amygdules. Outcrops locally exhibit sub-parallel sheet jointing. Interfingers to the west with the sandstone member of the Temblor Formation (map symbol: Tts). In thin section the basalt exhibits pliotaxitic to trachytic texture (Cole and DeCelles, 1991). Breccia and conglomerate facies are poorly-sorted, inversely-graded, matrix-supported, and contain angular to subrounded boulder-sized clasts of thinly bedded aphanitic basalt. K/Ar date of 24.6 ± 2.9 Ma (Turner, 1970).

Ttd

Dacite tuff and tuff breccia (Early Miocene) – Light gray thin to medium-bedded tuff and gray, pink, and red dacitic tuff breccias, subaerial. Lower portion is 4 to 12 meters of thin-bedded tuff containing fragments of zoned and twinned plagioclase, quartz, biotite, hornblende, porphyritic dacite, and pumice in a vitric groundmass (Cole and DeCelles, 1991). Tuff facies also contains very thin pumice-rich beds. Upper part of unit consists of poorly-sorted, matrix-supported dacite tuff breccia, 1 to 15 meters thick, massive with local inverse grading, porphyritic dacite boulders (up to 4 meters in diameter) are common, locally welded with flattened and deformed pumice fragments. Basal contact is conformable with nonmarine conglomerate member (Ttg). K/Ar dates range from 21.5 ± 0.6 to 21.9 ± 1.7 Ma (Turner, 1970).

Ttg

Granitic conglomerate member (Early Miocene to late Oligocene) – Interbedded red, green, gray, and brown mudstone, siltstone, sandstone, and pebble to boulder conglomerate, nonmarine, occasional channel scour and fill structures. Conglomerate is primarily composed of granitic and metamorphic clasts, including metavolcanic and quartzite clasts, in a coarse sandy matrix. Occasional interbeds of fossiliferous marine siltstone. Mammalian fossils recovered between Tecuya Creek and Salt Creek are assigned to the early part of the Arikarean Land Mammal Age (Tedford, 1961).

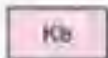
Ttgb

Granitic breccia member (late Oligocene) – Greenish gray boulder cobble conglomerate with minor very coarse-grained to pebbly sandstone, nonmarine. Only found along western edge of map area, discontinuous.

Attachment 1 (continued): Geologic Map Key

INTRUSIVE AND METAMORPHIC ROCKS – MESOZOIC AND/OR OLDER

Pastoria Upper Plate



Kb

Lebec Granodiorite (Late Cretaceous) – Light gray medium- to coarse-grained biotite granodiorite, locally potassium feldspar porphyritic, some secondary chlorite and muscovite. Well-dated mean U/Pb zircon ages range from 88 to 92 Ma (Chapman, 2012).



Kbc

Granite of Brush Mountain (Early Cretaceous) – Light colored coarse-grained granite, highly altered, lineating banding common, forms yellow to orange craggy exposures. Occurs as the uppermost plate of the Pastoria fault system forming extremely altered kippers. U/Pb zircon age of 104.7 ± 0.9 Ma (Chapman, 2012).



Kc

Marble (Mesozoic to Paleozoic?) – White to gray medium grained mylonitic to cataclastic marble.

Tehachapi-San Emigdio Complex (TSE)



Kg

Garnet-Biotite Tonalite of Grapevine (Late Cretaceous) – Light-colored fine- to medium-grained, garnet biotite tonalite, foliated. Garnets range from 3 to 5 mm in diameter. Intrudes Grapevine Canyon paragneiss (Pzg). Correlative to the "garnet tonalite" of the Intrusive suite of Bear Valley in the Tehachapi Mountains and southern Sierra Nevada to the northeast (Saleeby et al., 2007). In thin section, samples have abundant plagioclase, biotite, hornblende, and disseminated small garnets. U/Pb zircon age of 101 ± 1 Ma (Saleeby et al., 2007).



Kqd

San Emigdio Quartz Diorite Orthogneiss (Early Cretaceous) – Dark colored, medium-grained, hornblende quartz diorite orthogneiss, foliated, locally contains coarse red almandine-rich garnet porphyroblasts up to 3 cm. Unit is located structurally above the Rand Fault and exhibits a strongly attenuated structural fabric characterized by anastomosing ductile to brittle shear zones. Correlative with the "hornblende gabbroids" of the Bear Valley intrusive suite of Saleeby et al. (2007) in the Tehachapi Mountains and southern Sierra Nevada to the northeast. In thin section, samples show biotite-rich shear bands and quartz grains with undulatory extinction. U/Pb zircon age of 105.8 ± 0.6 Ma (Chapman, 2012).



Kqc

Quartzofeldspathic Gneiss of Pastoria Creek (Early Cretaceous) – Heterogeneous mixture of tonalite, mafic rock, and granodiorite, moderately to strongly layered. Part of the "gneiss complex of the Tehachapi Mountains" described by Saleeby et al. (2007) with a U/Pb zircon age of 112 ± 2 Ma.



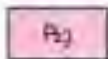
Kqg

Digger Canyon Quartz Diorite Orthogneiss (Early Cretaceous) – Brownish green to black medium-grained hornblende quartz diorite to gabbro orthogneiss, weakly to moderately developed foliation. Similar to Kseg but garnet porphyroblasts are rare. Western continuation of the White Oak diorite gneiss, which is a tectonic mixture of amphibolite to locally greenschist (retrograde) facies dioritic, gabbroic, and mylonitic gneisses representing the lower portion of the "gneiss complex of the Tehachapi Range" described by Saleeby et al. (2007). In thin section, samples have abundant hornblende, subhedral zircons, and weakly-developed polycrystalline quartz ribbons. U/Pb zircon ages range from 105.2 ± 4.2 to 121.3 ± 1.4 Ma (Chapman, 2012).



Kgt

San Emigdio Tonalite (Early Cretaceous) – Light colored garnet biotite tonalite and hornblende, massive to moderately foliated, composed predominantly of plagioclase, quartz, biotite, and reddish pink garnet. Metamorphosed to upper amphibolite facies. In thin section, samples show euhedral epidote phenocrysts embayed in biotite. U/Pb zircon age of 136 ± 2 Ma (Chapman, 2012).



Pzj

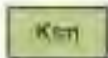
Grapevine Canyon Paragneiss and Grapevine Peak migmatite (Mesozoic to Paleozoic?) – Light to dark brown metasediment and metapelite, strongly foliated and isoclinally folded, variably migmatized. Occurs as pendants within TSE simplex. Contains mainly plagioclase, quartz, potassium feldspar, biotite, red garnet, and graphite, with large (1-3 cm) tabular muscovite pseudomorphs after kyanite (Pickett and Saleeby, 1993). Correlative with the "migmatitic paragneiss" at the structural base of the "gneiss complex of the Tehachapi Mountains" (Saleeby et al., 2007).

San Emigdio Schist



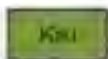
K

Metasandstone (Late Cretaceous) – Light blue to dark gray coarse-grained metapsammite, quartzite, and quartzofeldspathic schist, massive to weakly foliated, highly sheared. Metasandstone member characterized by the peak mineral paragenesis of garnet + plagioclase + biotite + quartz ± muscovite ± kyanite (Chapman, 2012). Garnets typically occur as idiomorphic grains ranging from 1 to 5 mm. Grades from upper amphibolite to epidote-amphibolite facies. Occasional deformed quartzofeldspathic veins are visible in outcrops. The San Emigdio Schist represents forearc-trench sediments deposited between 98 and 102 Ma, subducted to a depth of 30 to 35 km, and exhumed to upper crustal levels between 89 and 93 Ma (Grove et al., 2003; Jacobson et al., 2011; Chapman et al., 2013). In thin section, metasandstone samples have elongate quartz grains with undulatory extinction and subhedral garnet porphyroblasts with blebby quartz inclusions. Primary micas show uniform orientation.



Km

Metabasalt (Late Cretaceous) – Dark brown to greenish black metabasalt, commonly block and white polka-dotted to striped texture, commonly biminerally with amphibole and plagioclase. Plagioclase porphyroblast composition typically ranges from An17 to An35 (Chapman, 2012). Diopsidic and augitic clinopyroxenes occur proximal to the Rand Fault. Appears as small, irregular bodies within map unit Ks.



Km

Ultramafic (Late Cretaceous) – Light to dark green talc and actinolite schist bodies, massive, waxy, associated with map unit Km.

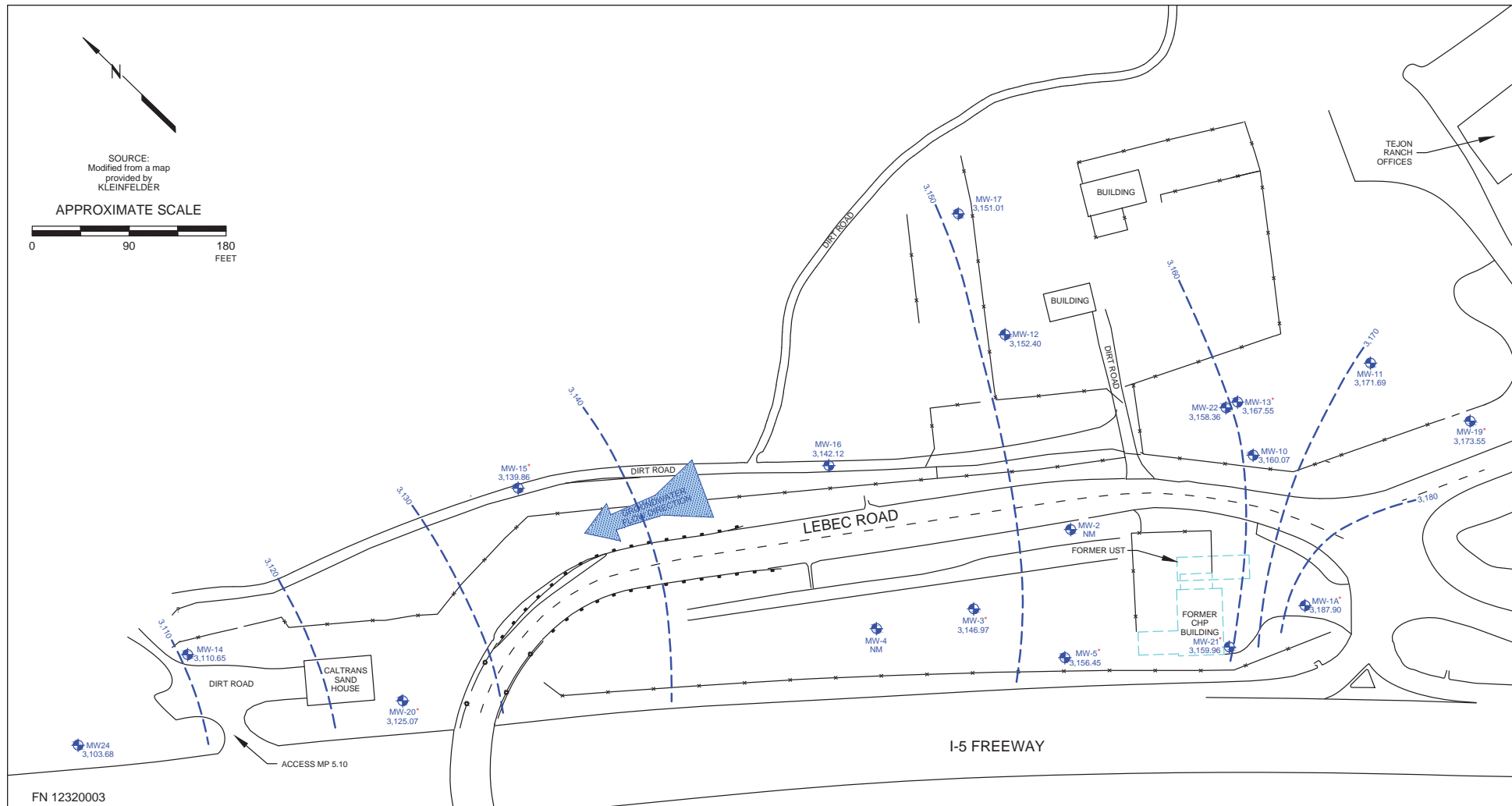
Western San Emigdio Mafic Complex (WSEMC)



G

Gabbro (Jurassic) – Light purple to green fine- to medium-grained gabbro, olivine gabbro, and hornblende gabbro, massive to strongly foliated. Locally pervasive alteration of pyroxene to amphibole (Chapman, 2012).

Attachment 2: Groundwater Elevation Map



FN 12320003



GROUNDWATER ELEVATION MAP 01/25/17

LEBEC PIPELINE CORRIDOR
Tejon Ranch Property
Lebec, California

EXPLANATION

- MW24 Groundwater monitoring well
- Line of equal groundwater elevation
- Well screen submerged
- Groundwater elevation in feet relative to mean sea level
- Barbed wire fence
- NM Not measured

PROJECT NO.

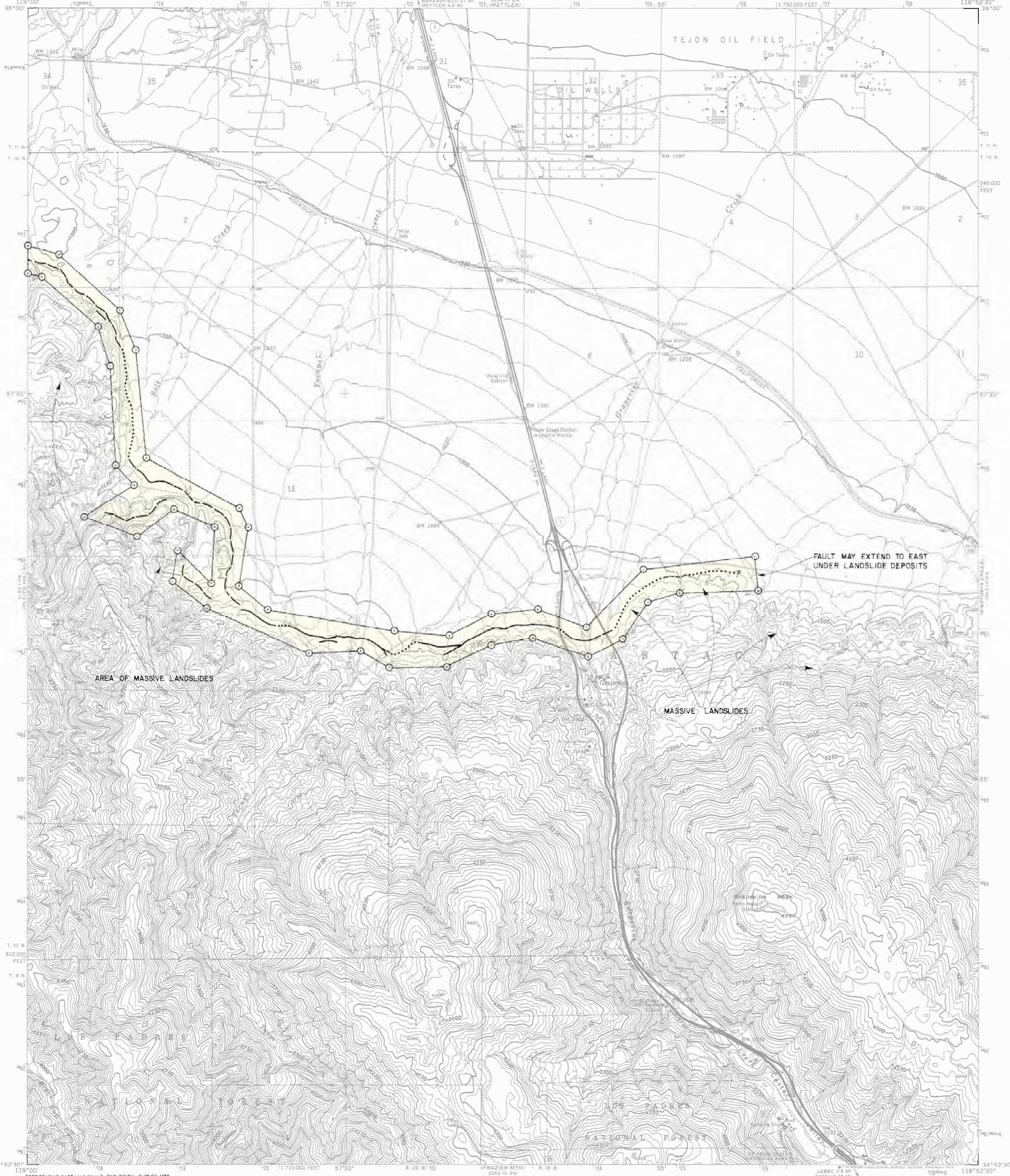
1232

PLATE

3

DATE: 07/14/17

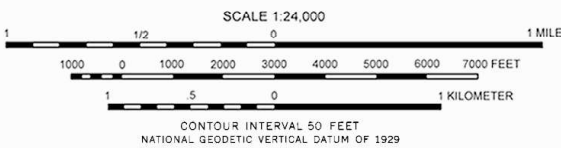
Attachment 3: Special Studies Zones,
Grapevine Quadrangle,
Revised Official Map



AREA OF MASSIVE LANDSLIDES

MASSIVE LANDSLIDES

FAULT MAY EXTEND TO EAST UNDER LANDSLIDE DEPOSITS



MAP EXPLANATION

Potentially Active Faults

1906 C
 Faults considered to have been active during Holocene time and to have a relatively high potential for surface rupture: solid line where accurately located, long dash where approximately located, short dash where inferred, dotted where concealed; query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by creep or possible creep.

Special Studies Zone Boundaries

○—○ These are delineated as straight-line segments that connect encircled turning points so as to define special studies zone segments.
 —○ Seaward projection of zone boundary.

**STATE OF CALIFORNIA
 SPECIAL STUDIES ZONES**
 Delineated in compliance with
 Chapter 7.5, Division 2 of the California Public Resources Code
 (Alquist-Priolo Special Studies Zones Act)

**GRAPEVINE QUADRANGLE
 REVISED OFFICIAL MAP**
 Effective: January 1, 1985

James F. Davis State Geologist

REFERENCES USED TO COMPILE FAULT DATA

- Grapevine Quadrangle
- Dibblee, T.W., Jr., 1973, Geologic map of the Grapevine quadrangle, California: U.S. Geological Survey Open File Map, 1 sheet.
- Hall, N.T., 1984, Resource interval and late Quaternary history of the eastern Pleistocene fault, northern Transverse Ranges, California: U.S. Geological Survey Final Technical Report (Contract No. 14-08-0001 9144), 2 volumes, 89 p., 16 pls.
- Hall, N.T., Colton, W.R., and May, E.A., 1981, Resource intervals on the Pleistocene fault, Transverse Ranges, California, in Charney, R.B., Rodriguez, T.K., and Seiders, W.K. (Compilers), Summaries of technical reports, volume 12, prepared by participants in National Earthquake Hazards Reduction Program: U.S. Geological Survey Open-File Report 81-833, p. 129-132.
- Smith, T.C., 1984, Wheeler Ridge and Pinto fault systems, southwestern Kern County: California Division of Mines and Geology Fault Evaluation Report FER-150 (unpublished).
- For additional information on faults in this map area, the rationale used for zoning, and additional references consulted, refer to unpublished Fault Evaluation Reports on file at the DMG office in Pleasant Hill.

IMPORTANT - PLEASE NOTE

- 1) This map may not show all faults that have the potential for surface fault rupture, either within the special studies zones or outside their boundaries.
- 2) Faults shown are the basis for establishing the boundaries of the special studies zones. The identification and location of these faults are based on the best available data. However, the quality of data used is varied. Traces have been drawn as accurately as possible at this map scale.
- 3) Fault information on this map is not sufficient to serve as a substitute for the geologic site investigations (special studies) required under Chapter 7.5 of Division 2 of the California Public Resources Code.



TRANSPORTATION MANAGEMENT PLAN DATA SHEET

**Division of Maintenance and Operations
Work Zone Operations Branch
District 6**



**06-KER-5 PM 4.40/10.20
Grapevine Rehabilitation – Northbound only
PROJECT/EA NO: 0618000063/06-0W920
October 20, 2023**

Prepared For: Jun Xu
Design Senior
Office of District 6 Design, Branch A
Attn: Ronnie Kier

Prepared By: Paul Yamashita

Concurred By:

Dan Massa

Dan Massa, District Traffic Manager
District 6 – Work Zone Operations

This updated Transportation Management Plan (TMP) data sheet is prepared in response to a request from Office of District 6 Design, Branch A dated October 16, 2023.

Per Deputy Directive 60-R2, TMPs must be carefully developed and implemented for all planned work activities on the State Highway System (SHS) to maintain safety and minimize disruption to the traveling public. The TMP Data Sheet identifies the proposed TMP strategies and costs that may be included.

The following items shall be included in the project initiation document (PID) and/or Project Report (PR):

- 1) The TMP Data Sheet shall be attached.
- 2) Any costs associated with the traffic impact mitigation measures listed in the TMP Data Sheet shall be included.
- 3) The following statements shall be included:

“Preliminary traffic impacts and mitigation for this project have been outlined in the attached Transportation Management Plan Data Sheet (TMP Data Sheet). Costs associated with the traffic impact mitigation measures listed in the TMP Data Sheet have been included in this document’s estimate.”

“A TMP for this project is required and should be requested when the design is complete enough to determine specific traffic impacts, but yet early enough to make design changes/additions required for traffic mitigation.”

“Lane requirement charts and detailed TMP will be provided during PS&E stage.”

“Lane closures are not allowed when the traffic volume is beyond the capacity of the remaining lanes. Nighttime work outside peak hours is anticipated for this project.”

If you have any questions, please feel free to contact Dan Massa at 559-260-3526 or Paul Yamashita at 559-383-5180.

Attachments:

- TMP Data Sheet

DISTRICT 6 - TRANSPORTATION MANAGEMENT PLAN DATA SHEET (TMP Elements and Costs)

County	Route	PM	Project Number	EA Number
KER	5	4.40/10.20	618000063	0W920

Project Name: Grapevine Rehabilitation

Project Limit: From 0.1 mile south of Grapevine Creek to Grapevine Undercrossing (Br 50-194)

Project Description: Northbound Pavement Rehabilitation - 2R project

A) The project includes the following facility closures:

- | | |
|---|---|
| <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Highway or Freeway Lanes <input checked="" type="checkbox"/> Highway or Freeway Shoulders <input type="checkbox"/> Freeway Connectors <input type="checkbox"/> Full/Complete Freeway/Highway Closure | <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Freeway Off-ramps <input checked="" type="checkbox"/> Freeway On-ramps <input type="checkbox"/> Local Streets |
|---|---|

B) Are there any construction strategies that can restore existing number of lanes?

- Yes No
- Temporary Roadway Widening Structure Involvement
 - Lane Restriping (Temporary narrow lane widths)
 - Roadway Realignment (Detour around work area)
 - Median and/or Right Shoulder Utilization
 - Use of HOV lane as Temporary Mixed Flow Lane
 - Staging Alternatives (Explain Below)

C) Calculated Delay

- | | | |
|----|---|---------------------|
| 1. | Estimated Maximum Individual delay | _____ N/A minutes |
| 2. | Existing or Acceptable Individual Vehicle Delay | _____ N/A minutes |
| 3. | Estimated Individual Vehicle Delay Requiring Mitigation | _____ N/A minutes |
| 4. | Estimate Delay Cost (Most Applicable) | |
| | Extended Weekend Closure | |
| | Weekly (7 days) | |
| 5. | Estimated Duration of Project Related Delays | _____ 443 # of Days |
| 6. | Cost of Construction Related delays | |

TMP Estimates based on X-Number of Working Days requiring Lane/Shoulder/Ramp/Freeway/Highway Closures: _____ 443 Working Days

Total Working Days to Construct the Project: _____ 443 Working Days

Concurrent work during "remove PCC" reduced WD's to 350

Ronnie Kier

DISTRICT 6 - TRANSPORTATION MANAGEMENT PLAN DATA SHEET (TMP Elements and Costs)

D) Preliminary TMP Elements and Costs

1. Public Information (ITEM#066063)		Cost	4. Construction Strategies		Cost
<input checked="" type="checkbox"/>	Press Release/Media Alerts	\$45,000	<input type="checkbox"/>	One-Way Reversing Operation	
<input checked="" type="checkbox"/>	Brochures and Mailers	\$5,000	<input checked="" type="checkbox"/>	Two-way Traffic on One Side	\$0
<input type="checkbox"/>	Advertisements		<input type="checkbox"/>	Reversible Lanes	
<input type="checkbox"/>	Public Information Center		<input checked="" type="checkbox"/>	Ramp/Connector Closure	\$0
<input type="checkbox"/>	Telephone Hotline		<input checked="" type="checkbox"/>	Night Work	\$0
<input type="checkbox"/>	Project Website		<input type="checkbox"/>	Extended Weekend Work	
<input checked="" type="checkbox"/>	Lane Closure System	\$0	<input type="checkbox"/>	Ped/Bicycle Access Improvements	
<input type="checkbox"/>	Public Meetings/Hearings		<input type="checkbox"/>	Maintain Business Access	
<input checked="" type="checkbox"/>	Freight Travel Information	\$0	<input type="checkbox"/>	C + T Bidding	
2. Motorist Information		Cost	<input type="checkbox"/>	Innovative Construction Techniques	
<input checked="" type="checkbox"/>	Traffic Radio Announcements	\$0	<input checked="" type="checkbox"/>	Coordination w/ Adj. Construction Site	\$0
<input type="checkbox"/>	Highway Advisory Radio (HAR)		<input checked="" type="checkbox"/>	Speed Limit Reduction	\$0
<input checked="" type="checkbox"/>	Portable CMS (ITEM #128652)	\$157,000	<input type="checkbox"/>	Traffic Screens	
<input type="checkbox"/>	Temporary Motorist Information Signs		5. Demand Management		Cost
<input type="checkbox"/>	Dynamic Speed Message Signs		<input type="checkbox"/>	Telecommuting	
<input checked="" type="checkbox"/>	Traveler Information (QuickMap, CHIN)	\$0	<input type="checkbox"/>	Truck/Heavy Vehicle Restrictions	
3. Incident Management		Cost	<input type="checkbox"/>	Variable Work Hours	
<input checked="" type="checkbox"/>	Transportation Management Center	\$0	<input type="checkbox"/>	Temporary Ramp Metering	
<input type="checkbox"/>	Fixed Changeable Message Signs (CMS)		<input type="checkbox"/>	Transit Incentives	
<input type="checkbox"/>	Traffic Management Team (TMT)		<input type="checkbox"/>	Shuttle Services	
<input type="checkbox"/>	Intelligent Transportation Systems (ITS)		<input type="checkbox"/>	Ridesharing/Carpooling Incentive	
<input type="checkbox"/>	Surveillance Equipment		<input type="checkbox"/>	Park & Ride Promotion	
<input type="checkbox"/>	Helicopter for Aerial Surveillance		6. Alternate Routes (or Detours)		Cost
<input type="checkbox"/>	Construction Tow Service		<input type="checkbox"/>	Off-site Detours/Use of Alt. Routes	
<input checked="" type="checkbox"/>	COZEEP (ITEM #066062)	\$1,152,000	<input type="checkbox"/>	Signal Timing/Coord. Improvements	
4. Construction Strategies		Cost	<input type="checkbox"/>	Temporary Traffic Signals	
<input checked="" type="checkbox"/>	Lane Requirement Charts	\$0	<input type="checkbox"/>	Street/Intersection Improvements	
<input checked="" type="checkbox"/>	Construction Staging	\$0	<input type="checkbox"/>	Turn Restrictions	
<input checked="" type="checkbox"/>	Traffic Handling Plans	\$0	<input type="checkbox"/>	Parking Restrictions	
<input type="checkbox"/>	Full Facility Closures		7. Other Considerations		Cost
<input checked="" type="checkbox"/>	Lane Modifications	\$0	<input type="checkbox"/>	Application of New Technologies	
<input type="checkbox"/>	Local Road Closures		<input type="checkbox"/>	Other	

PROJECT NOTES:

TOTAL ESTIMATED COST OF TMP: \$1,359,000

- Current dollar values used. Inflation was not factored into the estimate. Paul adjustment to TMPDS for 350 WD - PIO \$35, Brochures \$4, PCMS \$125, COZEEP \$910 = \$1,074
- There are no noise restrictions / moratoriums for night work.
- Traffic Control/Maintain Traffic costs was not provided. Please consult with the OE or construction office for this estimate.
- Portable CMS specified for this project by this estimate is designed for congestion relief as outlined by DD-60.
Portable CMS required for other purposes should be included under other specifications.
- COZEEP specified for this project by this estimate is designated for congestion relief as outlined by DD-60.
COZEEP required for other purposes should be included under other specifications.
- The TMP is a living document that is subject to change if material changes take place in the final version of the project phase or if changes are required during construction to respond to excessive levels of congestion.
- This revised TMP Data Sheet supersedes the previous TMP Data Sheet dated 3/9/23.

*The estimated cost will depend on the Design Engineer's and Office of Traffic Design's Estimate.



**CEQA EXEMPTION / NEPA CATEGORICAL EXCLUSION
DETERMINATION FORM (rev. 06/2022)**

Project Information

Project Name (if applicable): Interstate 5 Grapevine Pavement Rehabilitation

DIST-CO-RTE: 06-Ker-5

PM/PM: 4.0/10.7

EA: 06-0W920

Federal-Aid Project Number: 0618000063

Project Description

The California Department of Transportation proposes to resurface the existing pavement and repair damaged culverts on northbound and southbound roadways on Interstate 5 from Grapevine Creek Bridge near Fort Tejon to the Grapevine Road Undercrossing in Kern County. All construction activities will be within the State right-of-way. No additional right-of-way is required.

Caltrans CEQA Determination (Check one)

- Not Applicable** – Caltrans is not the CEQA Lead Agency
- Not Applicable** – Caltrans has prepared an IS or EIR under CEQA

Based on an examination of this proposal and supporting information, the project is:

- Exempt by Statute.** (PRC 21080[b]; 14 CCR 15260 et seq.)
- Categorically Exempt. Class 1.** (PRC 21084; 14 CCR 15300 et seq.)
 - No exceptions apply that would bar the use of a categorical exemption (PRC 21084 and 14 CCR 15300.2). See the [SER Chapter 34](#) for exceptions.
- Covered by the Common Sense Exemption.** This project does not fall within an exempt class, but it can be seen with certainty that there is no possibility that the activity may have a significant effect on the environment (14 CCR 15061[b][3].)

Senior Environmental Planner or Environmental Branch Chief

Trais Norris III	<i>J William "Trais" Norris, AIA</i>	5/24/2023
Print Name	Signature	Date

Project Manager

Ernesto Garcia	<i>Ernesto Garcia P.</i>	5/24/23
Print Name	Signature	Date



CEQA EXEMPTION / NEPA CATEGORICAL EXCLUSION DETERMINATION FORM

Caltrans NEPA Determination (Check one)

Not Applicable

Caltrans has determined that this project has no significant impacts on the environment as defined by NEPA, and that there are no unusual circumstances as described in 23 CFR 771.117(b). See [SER Chapter 30](#) for unusual circumstances. As such, the project is categorically excluded from the requirements to prepare an EA or EIS under NEPA and is included under the following:

23 USC 326: Caltrans has been assigned, and hereby certifies that it has carried out the responsibility to make this determination pursuant to 23 USC 326 and the Memorandum of Understanding dated April 18, 2022, executed between FHWA and Caltrans. Caltrans has determined that the project is a Categorical Exclusion under:

23 CFR 771.117(c): activity (26)

23 CFR 771.117(d): activity (d)()

Activity Enter activity number listed in Appendix A of the MOU between FHWA and Caltrans

23 USC 327: Based on an examination of this proposal and supporting information, Caltrans has determined that the project is a Categorical Exclusion under 23 USC 327. 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 May 27, 2022, and executed by FHWA and Caltrans.

Senior Environmental Planner or Environmental Branch Chief

Trais Norris III

J William "Trais" Norris, III

5/24/2023

Print Name

Signature

Date

Project Manager/ DLA Engineer

Ernesto Garcia

Ernesto Garcia P.

05/24/23

Print Name

Signature

Date

Date of Categorical Exclusion Checklist completion (if applicable): 5/25/23

Date of Environmental Commitment Record or equivalent: 5/22/23

Briefly list environmental commitments on continuation sheet if needed (i.e., not necessary if included on an attached ECR). Reference additional information, as appropriate (e.g., additional studies and design conditions).



CEQA EXEMPTION / NEPA CATEGORICAL EXCLUSION DETERMINATION FORM

Continuation sheet:

Hazardous Waste Special Provision

- A lead compliance plan (LCP) is required. The estimated cost to include the LCP is \$3,000.
- Standard Special Provision (SSP) 7-1.02K(6)(j)(iii) Earth Material Containing Lead.
- Standard Specification Provision 14-11.12 Removal of Yellow Traffic Stripe and Pavement Marking with Hazardous Waste Residue: Includes specifications for removing, handling, and disposing of yellow thermoplastic and yellow-painted traffic stripe and pavement marking. The residue from the removal of this material is a generated hazardous waste (lead chromate). Removal of existing yellow thermoplastic and yellow-painted traffic stripe and pavement marking exposes workers to health hazards that must be addressed in a lead compliance plan.

Water Quality

- If the project disturbs less than one acre of soil, a Water Pollution Control Plan (WPCP) is required to be prepared by the contractor following the Caltrans 2018 Standard Specification Provision 13-1 – Water Pollution.

Noise

- Short term construction noise impacts need to be addressed in accordance with Caltrans Standard Specification Provision 14-8 and if night work is anticipated; then design needs to fill out form Standard Specification Provision 14-8.02

Air

- A Dust Control Plan (DCP) is needed if at least 2,500 cubic yards of material are moved in a day for at least three days of the project, or 5 or more acres of land will be disturbed during construction.
- Caltrans Standard Specifications, Section 14-9.02 "Air Pollution Control" and Section 10-5 "Dust Control," require the contractor to comply with the air pollution control rules, ordinances, and regulations and statutes.

Paleontology

- If unanticipated fossil discovery occurs during construction, Specification 14-7.03 of the Caltrans 2018 Standard Specifications identifies the procedures required to protect the resource.

Biology

- Standard Specification Provision 14-6.03B (Bird Protection) will be required.
- If construction activities occur during the bird nesting season (February 1 to September 30), a qualified biologist should be notified 30 days prior to the start of construction in order to conduct a focused survey for active bird nests in the project vicinity.
- Standard Specification Provision 14-1.02 Environmentally Sensitive Area: Pertains to environmentally sensitive areas marked on the ground. Do not enter an environmentally sensitive area unless authorized. If breached, notify the resident engineer.
- 1600 Streambed Alteration Agreement and Section 401/404 Clean Water Act permits would be acquired before construction starts.

NEPA/CEQA RE-VALIDATION FORM



DIST./CO./RTE.	06/KER/5
P/M/P/M	4.0/10.7
E.A. or Fed-Aid Project No.	06-0W920
Other Project No. (specify)	
PROJECT TITLE	Interstate 5 Grapevine Pavement Rehab
ENVIRONMENTAL APPROVAL TYPE	Categorical Exemption
DATE APPROVED	5/24/2023
REASON FOR CONSULTATION (23 CFR 771.129)	<i>Check reason for consultation:</i> <input type="checkbox"/> Project proceeding to next major federal approval <input checked="" type="checkbox"/> Change in scope, setting, effects, mitigation measures, requirements <input type="checkbox"/> 3-year timeline (EIS only) <input type="checkbox"/> N/A (Re-Validation for CEQA only)
DESCRIPTION OF CHANGED CONDITIONS	<i>The changed conditions or new information on page 2.</i>

NEPA CONCLUSION - VALIDITY

Based on an examination of the changed conditions and supporting information: [Check ONE of the three statements below, regarding the validity of the original document/determination (23 CFR 771.129). If document is no longer valid, indicate whether additional public review is warranted and whether the type of environmental document will be elevated.]

- The original environmental document or CE remains valid. No further documentation will be prepared.
- The original environmental document or CE is in need of updating; further documentation has been prepared and is included on the continuation sheet(s) or is attached. With this additional documentation, the original ED or CE remains valid.
 Additional public review is warranted (23 CFR 771.111(h)(3)) Yes No
- The original document or CE is no longer valid.
 Additional public review is warranted (23 CFR 771.111(h)(3)) Yes No
 Supplemental environmental document is needed. Yes No
 New environmental document is needed. Yes No (If "Yes," specify type: _____)

CONCURRENCE WITH NEPA CONCLUSION

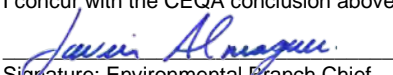

I concur with the NEPA conclusion above.
 12/14/23  12/14/2023
 Signature: Environmental Branch Chief Date Signature: Project Manager/DLAE Date

CEQA CONCLUSION: (Only mandated for projects on the State Highway System.)

Based on an examination of the changed conditions and supporting information, the following conclusion has been reached regarding appropriate CEQA documentation: (Check ONE of the five statements below, indicating whether any additional documentation will be prepared, and if so, what kind. If additional documentation is prepared, attach a copy of this signed form and any continuation sheets.)

- Original document remains valid. No further documentation is necessary.
- Only minor technical changes or additions to the previous document are necessary. An addendum has been or will be prepared and is included on the continuation sheets or will be attached. It need not be circulated for public review. (CEQA Guidelines, §15164)
- Changes are substantial, but only minor additions or changes are necessary to make the previous document adequate. A supplemental environmental document will be prepared, and it will be circulated for public review. (CEQA Guidelines, §15163)
- Changes are substantial, and major revisions to the current document are necessary. A Subsequent environmental document will be prepared, and it will be circulated for public review. (CEQA Guidelines, §15162) (Specify type of subsequent document, e.g., Subsequent FEIR)
- The CE is no longer valid. New CE is needed. Yes No

CONCURRENCE WITH CEQA CONCLUSION

I concur with the CEQA conclusion above.
 12/14/23  12/14/2023
 Signature: Environmental Branch Chief Date Signature: Project Manager/DLAE Date

NEPA/CEQA RE-VALIDATION FORM

CONTINUATION SHEET(S)

Address only changes or new information since approval of the original document and only those areas that are applicable. Use the list below as section headings as they apply to the project change(s). Use as much or as little space as needed to adequately address the project change(s) and the associated impacts, minimization, avoidance and/or mitigation measures, if any.

Changes in project design, e.g., scope change; a new alternative; change in project alignment

Project work proposed has been revised since the previous Environmental Document completed on 5/2/42023:

The work proposed for the NB lanes is to replace the underlying Jointed Plain Concrete Pavement (JPCP) section for all lanes and shoulders with JPCP/HMA-A/AS above PM 5.0 and CRCP/HMA-A/AS below PM 5.0 maintaining the existing profile and geometrics per 2R guidelines. The SB inside shoulder will be replaced to accommodate a cross median detour allowing reconstruction of 2 NB lanes and a shoulder concurrently while maintaining three open lanes of traffic for each direction. All guardrails will be upgraded to new MGS standards with new end treatments, drainage inlets will be adjusted to finish grade, eighteen drainage pipes will be replaced, and two new systems added. Existing CCTV will be upgraded, a new CCTV station added, existing Remote Pickup Unit (RPU) upgraded, several count stations with loop detectors installed, existing loop detectors replaced, and an existing Vehicle Detection System (VDS) replaced with new cabinet, controller, detector cards, modem, and antenna. The paved shoulder for the right-side truck escape ramp will be reconstructed. Feasible permanent erosion control has been added and a separate Alternative Compliance Project has been initiated with the Water Board to address the Water Quality Volume treatment shortfall. The NB ramps at Tejon Ranch will be closed temporarily during a cross median detour. All work is within existing right of way. Project construction is anticipated to span 443 working days. All environmental technical are still valid and permits are no longer needed.

Changes in environmental setting, e.g., new development affecting traffic or air quality;

No impact.

Changes in environmental circumstances, e.g., a new law or regulation; change in the status of a listed species.

No change in status of listed species or avoidance mitigation measures

Changes to environmental impacts of the project, e.g., a new type of impact, or a change in the magnitude of an existing impact.

No new impacts.

Changes to avoidance, minimization, and/or mitigation measures since the environmental document was approved.

No change.

Changes to environmental commitments since the environmental document was approved, e.g., the addition of new conditions in permits or approvals. When this applies, append a revised Environmental Commitments Record (ECR) as one of the Continuation Sheets.

No change.

Memorandum**To:** Manuel Ornelas**Date:** 12/4/2023**File:** CD 06 EA 0W9200 **Alt** Alt1-Rev1**Attn:** Ronnie Kier**Co** KER **RTE** 5

Jun Xu

DESCRIPTION:**Pavement Rehabilitation (2R)*****UPDATE for MCCE only****From:** Department of Transportation
Division of Right of Way Central Region**Subject: RIGHT OF WAY DATA SHEET**

We have completed an estimate of the right of way costs for the above-referenced project based on the Right of Way Data Sheet Request Form dated 5/8/2023

The following assumptions and limiting conditions were identified:**Parcels**

The Data Sheet request indicates that all work on this project will occur within the State's right of way, with no additional right of way needed for this project. Data Sheet updated for MCCE only (12/4/23)

Utility

Project engineer stated that minor utility involvement is anticipated, and will require 150 positive locations and no utility relocation is anticipated. It is assumed that this means all utility facilities above ground and underground in the project area will be worked around. Any adjustment of facilities constitutes involvement and the full R/W utility process and timeline would be necessary before the project could be certified.

Right of Way Lead Time will require a minimum of 6 months after we receive Certified Appraisal Maps and Utility Conflict Plans, obtained necessary environmental clearance and applicable freeway agreements have been approved.

Recommended for approval by:

Sara Blum

SARA BLUM
Senior Right of Way Agent
(559) 383-5194

Page 1 of 4

General Description of R/W and Excess Lands Required (zoning, use, major improvements, critical or sensitive parcels, etc.):

The Data Sheet request indicates that all work on this project will occur within the State's right of way, with no additional right of way needed.

General Description of Utility Involvement:

This is a pavement rehabilitation project in Kern County on Interstate 5 from Grapevine Creek near Fort Tejon, PM 4.4, to the Grapevine Road Undercrossing near PM 10.2. The Project Initiation Report (PIR) and Supplemental PIR were signed on February 22, 2019, and June 5, 2019, respectively. Please note that the project has been expanded to include construction on the southbound lanes within the same project limits, PM 4.4/10.2. The current work proposed to be completed in January of 2029 for the northbound (NB) is to remove the underlying Jointed Plain Concrete Pavement (JPCP) section and base for all lanes and shoulders.

General Description of Railroad Involvement:

No railroad facilities will be affected.

Right Of Way Cost Estimate	Current Year 2023	Contingency Rate 25%	Escalation Rate 5%	Escalated Year 2025
Acquisition:	\$0	25%	5%	\$0
Mitigation:	\$79,410	25%	5%	\$87,550
State Share of Utilities:	\$93,750	25%	5%	\$103,359
Expert Witness:	\$0	25%	5%	\$0
Relocation Assistance:	\$0	25%	5%	\$0
Demolition and Clearance:	\$0	25%	5%	\$0
Title and Escrow:	\$0	25%	5%	\$0
Ad Signs:	\$0	25%	5%	\$0
Total Current Value:	\$173,160			\$190,909

If RW Cost Est fields are blank, Costs = \$0

NOTE: above estimate includes railroad engineering in the amount of: \$0.00

Estimated Construction Contract Work (CCW): 0 R/W LEAD TIME/Mo. 6

Estimated Pothole Date: 8/1/2023

Cost Break Down		Parcel Data	
Pot Hole	75,000	# of Parcel Type X:	0
# Pot Holes	150	# of Parcel Type A: less than \$10,000 non-complex	0
Mitigation		# of Parcel Type B: more than \$10,000 non-complex	0
Land		# of Parcel Type C: complex, special valuation	0
Bank		# of Parcel Type D: most complex/time consuming	0
Permit Fees	63,528	Totals:	0
Parcel Area			# of Duals Needed:
Total R/W Required:	0		
Total Excess Area:	0		Totals: 0

of Excess Parcels:

Misc R/W Work

# of RAP Displacements:	0
# of Clearance/Demos:	0
# of Const Permits:	0
# of Condemnations:	0

RR Involvement

Railroad Facilities or Right of Way Affected?	No
Const/Maint Agreement:	No
Service Contract Count:	0
Right of Entry:	No
Clauses:	No
Estimated Lead-time:	No

Utilities

<u>14</u> Companies to be potholed
<u>14</u> Companies for Verification
<u>0</u> Companies for Utility Relocations
JUA/CCUAs are not needed

Is there a significant effect on assessed valuation:

Were any previously unidentified sites with hazardous waste or material found:

Are RAP displacements required:

of single family: # of muliti-family: # of business/nonprofit: # of farms:

Sufficient replacement housing will be available without last resort housing:

Are material borrow or disposal sites required:

Are there potential relinquishments or abandonments:

Are there any existing or potential airspace sites:

Are environmental mitigation parcels required:

Data for evaluation provided by:

Estimator:	Sandra Sifuentes	12/4/2023
Railroad Liaison Agent:	Sandra Sifuentes	5/22/2023
Utility Relocation Coordinator:	Heather Franklin	5/23/2023

I have personally reviewed this Right of Way Sheet and all supporting information. I find this Data Sheet complete and current, subject to the limiting conditions set forth.

NICHOLAS G. DUMAS
Office Chief, District 6 Right of Way

Date
ENTERED PRSM 11/7/2023
BY: N Beebe Pence



Mitigation and Compliance Cost Estimate (MCCE)

PART 1 - PROJECT INFORMATION

DIST-CO-RTE: 06 - KER - 005 **PM/PM:** 4.400/10.200

EA/Project Number: 06-0W920_ / 0618000063

Project Name: Grapevine Rehab

Form Completed by: Phong Duong

Project Manager: ORNELAS, MANUEL **Phone:** (559) 243-3441

Date: 12/1/2023

MCCE Phase prepared for: FED

PART 2 - ENVIRONMENTAL COMMITMENTS FOR PERMANENT IMPACTS

Environmental Commitments for Alternative: Build

Commitment	Design \$	FY	Ac/Crd	ROW \$ Planned	FY	ROW \$ Actual	Pd	Construction \$	FY
Archaeological									
	\$0						<input type="checkbox"/>		

Biological

Annual WDR Fee				\$2,509	25/26		<input type="checkbox"/>		
Annual WDR Fee				\$2,509	26/27		<input type="checkbox"/>		
Tree ESA Fence							<input type="checkbox"/>	\$5,000	25/26
Wetland Delineation PAED	\$18,268.19	20/21					<input checked="" type="checkbox"/>		
Bio Monitoring	\$150,000	25/26					<input type="checkbox"/>		

Hazardous Waste

Lead Compliance Plan							<input type="checkbox"/>	\$2,500	24/25
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PART 3 - PERMITS AND AGREEMENTS

Permit/Agreement	ROW \$ Planned	FY	ROW \$ Actual	Pd	Construction \$	FY
CEQA Review	\$0	23/24		<input type="checkbox"/>		
1600	\$55,510	23/24		<input type="checkbox"/>		
NOI/NOT (Stormwater)				<input type="checkbox"/>	\$12,346	26/27
Water Discharge Requirement (WDR)	\$3,000	23/24		<input type="checkbox"/>		
TOTAL	\$168,268.19		\$63,528		\$19,846	

Approved by:

Javier Almaguer

12/4/23

Environmental Branch Chief (Print Name) Signature

Date

If Right of Way Capital is needed:

Sara Blum

Sara Blum

12/4/23

Right-of-Way Office Chief (Print Name)

Signature

Date

If cultural and biology mitigation totals more than \$500,000:

Environmental Office Chief (Print Name)

Signature

Date

Submitted to PM on: _____ Initial _____

Comments (explanation and risk management plan attached)

11/17/23- Not including any riparian mitigation 5 year planting project in this programming at this time.
7/21/2023 - In-lieu fee was removed (\$228,375 for FY24/25) since no permanent impacts are anticipated. FY 21/22 \$144,000 for monitoring was removed - not sure what this was for. Monitoring item for #348k in FY 24/25 was reduced to \$150k for 1600 required monitoring. This was based on rough estimates from past projects and scoping for this project. PW

Removed mitigation \$2, 054, 442.00 for TSS as habitat for this species will be avoided DG 1/23/2023

6-15-2022

Revised Biological mitigation for impacts to the Tehachapi slender salamander due to box culvert work between PM 5.8/5.9. Estimated less than 1 acre of impacts, however no banks are available for this species so will need to complete RFP for mitigation at an off site location.

Potential impacts to WOUS estimated at .5 acres \$228,375

Added 2081 for TSS cost to the permits tab at the 2022 application cost.

6/22/23- ADL study needed for excess soil due to BMP grading/construction (only minor modifications to box culverts). 7/10/23- Removed \$30K for ADL PSI- no longer anticipating excess soil.

TSS Mitigation removed due to avoidance of impacts by scope changes. 5/15/2023.

Removed CEQA Review fee because project is now CEQA CE.

10/30/23 Project was down scoped to a screening memo and all areas of issues were removed, no Cultural monitoring is needed. PD/CG

10/30/23 Removed Paleo monitoring \$35k under Constructions \$ per PD/Richard S.

11/15/2023 Estimated 1600 fee on 20 culverts with a cost of less than \$100,000. Updated WDR Annual fees and In Lieu fee cost for .05 acres of perm impacts to waters of the state DG

Bio Swales on the east side of the project will no longer be included due to the potential cost of the replanting and Confirmed with Design that no culvert extensions will occur and so the in Lieu Fee for

.05 acres at \$44, 000.00 will not be required

PROJECT
0W920 PR Estimate - NB Reconstruction 120523.xlsx
EA: 06-0W9200 PR 618000063

I. ROADWAY ITEMS SUMMARY

	Section	Cost
1	Earthwork	\$ 150,000
2	Pavement Structural Section	\$ 49,955,300
3	Drainage	\$ 1,303,100
4	Specialty Items	\$ 2,664,500
5	Environmental	\$ 423,700
6	Traffic Items	\$ 6,998,600
7	Detours	\$ 740,100
8	Minor Items	\$ 2,913,400
9	Roadway Mobilization	\$ 3,059,100
10	Supplemental Work	\$ 3,372,600
11	State Furnished	\$ 3,847,900
12	Time-Related Overhead	\$ 3,059,100
13	Roadway Contingency	\$ 11,178,000
TOTAL ROADWAY ITEMS		\$ 89,665,400

Estimate Prepared By : Ronnie Kier 12/14/2023
Name and Title Date Phone

Estimate Reviewed By : Harith Kiran 12/14/2023
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.

PROJECT
0W920 PR Estimate - NB Reconstruction 120523.xlsx

EA: 06-0W9200 PR 618000063

SECTION 1: EARTHWORK

Item code	Unit	Quantity	Unit Price (\$)	Cost
190101 Roadway Excavation	CY	x	= \$	-
19010X Roadway Excavation (Type X) ADL	CY	x	= \$	-
194001 Ditch Excavation	CY	x	= \$	-
19801X Imported Borrow	CY/TON	x	= \$	-
192037 Structure Excavation (Retaining Wall)	CY	x	= \$	-
193013 Structure Backfill (Retaining Wall)	CY	x	= \$	-
193031 Pervious Backfill Material (Retaining Wall)	CY	x	= \$	-
170103 Clearing & Grubbing	LS/ACRE	1 x	50,000.00 = \$	50,000
100100 Develop Water Supply	LS	1 x	100,000.00 = \$	100,000
198007 Imported Material (Shoulder Backing)	TON	x	= \$	-
210130 Duff	ACRE	x	= \$	-
XXXXXX Some Item	Unit			

TOTAL EARTHWORK SECTION ITEMS	\$ 150,000
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SECTION 2: PAVEMENT STRUCTURAL SECTION

Item code	Unit	Quantity	Unit Price (\$)	Cost
400050 Continuously Reinforced Concrete Pavement	CY	79,317 x	350.00 = \$	27,760,950
401050 Jointed Plain Concrete Pavement	CY	10,982 x	350.00 = \$	3,843,700
404092 Seal Pavement Joint	LF	x	= \$	-
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	3,267 x	50.00 = \$	163,350
390132 Hot Mix Asphalt (Type A)	TON	44,788 x	110.00 = \$	4,926,680
390137 Rubberized Hot Mix Asphalt (Gap Graded)	TON	x	= \$	-
39300X Geosynthetic Pavement Interlayer (Type X)	SQYD	x	= \$	-
26020X Class 2 Aggregate Base	CY	61,929 x	50.00 = \$	3,096,450
290201 Asphalt Treated Permeable Base	CY	x	= \$	-
280015 Lean Concrete Base	CY	x	= \$	-
250401 Class 4 Aggregate Subbase	CY	x	50.00 = \$	-
374002 Asphaltic Emulsion (Fog Seal Coat)	TON	x	= \$	-
397005 Tack Coat	TON	48 x	800.00 = \$	38,400
377501 Slurry Seal	TON	x	= \$	-
3750XX Screenings (Type XX)	TON	x	= \$	-
374492 Asphaltic Emulsion (Polymer Modified)	TON	x	= \$	-
370001 Sand Cover (Seal)	TON	x	= \$	-
731530 Minor Concrete (Textured Paving)	CY	x	= \$	-
731502 Minor Concrete (Miscellaneous Construction)	CY	x	= \$	-
39407X Place Hot Mix Asphalt Dike (Type X)	LF	x	= \$	-
150771 Remove Asphalt Concrete Dike	LF	x	= \$	-
420201 Grind Existing Concrete Pavement	SQYD	x	= \$	-
150860 Remove Base and Surfacing	CY	x	= \$	-
390095 Replace Asphalt Concrete Surfacing	CY	x	= \$	-
15312X REMOVE CONCRETE PAVEMENT AND BASE	LF/CY/LS	x	= \$	-
394090 Place Hot Mix Asphalt (Miscellaneous Area)	SQYD	x	= \$	-
398200 Cold Plane Asphalt Concrete Pavement	SQYD	x	= \$	-
846052 12" RUMBLE STRIP (CONCRETE PAVEMENT)	STA	3,675 x	105.00 = \$	385,875
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	= \$	-
411105 SB INDIVIDUAL SLAB REPLACEMENT (RSC)	LS	1 x	= \$	-
418002 REMOVE CONCRETE PAVEMENT AND BASE	CY	176,939	48.00 = \$	8,493,072
780210A SURVEY MONUMENT	EACH	10	5,000.00 = \$	50,000
730012A MINOR CONCRETE (PCC DIKE)	CY	2992	400.00 = \$	1,196,800

TOTAL PAVEMENT STRUCTURAL SECTION ITEMS	\$ 49,955,300
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PROJECT
OW920 PR Estimate - NB Reconstruction 120523.xlsx

EA: 06-OW9200 PR 618000063

SECTION 3: DRAINAGE

Item code	Unit	Quantity	Unit Price (\$)	Cost
710132 REMOVE CULVERT (LF)	EA/LF	1,759	x 50.00	= \$ 87,950
150668 Remove Flared End Section	EA		x	= \$ -
710150 REMOVE INLET	EA	40	x 1,000.00	= \$ 40,000
150826 Remove Manhole	EA		x	= \$ -
150820 Modify Inlet	EA		x	= \$ -
155232 Sand Backfill	CY	0	x 150.00	= \$ -
150203 Abandon Culvert	EA	0	x 27.00	= \$ -
152430 Adjust Inlet	EA	90	x 2,000.00	= \$ 180,000
155003 Cap Inlet	EA		x	= \$ -
510501 Minor Concrete	CY		x	= \$ -
510502 Minor Concrete (Minor Structure)	CY		x	= \$ -
5105XX Minor Concrete (Type XX)	CY		x	= \$ -
510094 Structural Concrete, Drainage Inlet	CY	188	x 2,500.00	= \$ 470,000
620XXX XX" Alternative Pipe Culvert (Type X)	LF		x	= \$ -
6411XX XX" Plastic Pipe	LF		x	= \$ -
650050 72" Reinforced Concrete Pipe (Type X)	LF		x 425.00	= \$ -
650030 42" Reinforced Concrete Pipe (Type X)	LF	229.63	x 275.00	= \$ 63,250
650026 36" Reinforced Concrete Pipe (Type X)	LF	160.41	x 265.00	= \$ 42,400
650022 30" Reinforced Concrete Pipe (Type X)	LF		x 270.00	= \$ -
650018 24" Reinforced Concrete Pipe (Type X)	LF	1268.82	x 140.00	= \$ 177,660
710380 18" Cured-In-Place Pipeliner	LF		x 180.00	= \$ -
710384 24" Cured-In-Place Pipeliner	LF		x 125.00	= \$ -
710388 30" Cured-In-Place Pipeliner	LF		x 270.00	= \$ -
710390 36" Cured-In-Place Pipeliner	LF		x 260.00	= \$ -
710394 48" Cured-In-Place Pipeliner	LF		x 440.00	= \$ -
72" Cured-In-Place Pipeliner	LF		x 440.00	= \$ -
665024 24" Corrugated Steel Pipe (0.109" Thick)	LF		x 150.00	= \$ -
665030 30" Corrugated Steel Pipe (0.064" Thick)	LF		x	= \$ -
665036 36" Corrugated Steel Pipe (0.064" Thick)	LF		x	= \$ -
68XXXX 18" perforated Steel Pipe Underdrain (Edge Drain)	LF	1,200	x 150.00	= \$ 180,000
69011X XX" Corrugated Steel Pipe Downdrain (0.XXX" Thick)	LF		x	= \$ -
70321X XX" Corrugated Steel Pipe Inlet (0.XXX" Thick)	LF		x	= \$ -
70XXXX 18" Corrugated Steel Pipe (0.XXX" Thick)	LF	100	x 150.00	= \$ 15,000
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	11,950	x 2.50	= \$ 29,875
XXXXXX Bicycle safe grate	LS	6,750	x 2.50	= \$ 16,875
TOTAL DRAINAGE ITEMS				\$ 1,303,100

SECTION 4: SPECIALTY ITEMS

Item code	Unit	Quantity	Unit Price (\$)	Cost
080050 Progress Schedule (Critical Path Method)	LS	1	x 10,000.00	= \$ 10,000
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	1	x 5,000.00	= \$ 5,000
141120 Treated Wood Waste	LB	443,140	x 0.50	= \$ 221,570
839774 Remove Concrete Barrier	LF	2,000	x 30.00	= \$ 60,000
839752 REMOVE GUARDRAIL	LF	32,000	x 5.00	= \$ 160,000
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	= \$ -
832006 MIDWEST GUARDRAIL SYSTEM (STEEL POST)	LF	30,839	x 36.00	= \$ 1,110,204
839301 Single Thrie Beam Barrier	LF		x	= \$ -
839310 Double Thrie Beam Barrier	LF		x	= \$ -
839521 Cable Railing	LF		x	= \$ -
8395XX Terminal System (Type CAT)	EA		x	= \$ -
839585 Alternative Flared Terminal System	EA	42	x 3,000.00	= \$ 126,000
839584 Alternative In-line Terminal System	EA		x	= \$ -
4906XX CIDH Concrete Piling (Insert Diameter)	LF		x	= \$ -
839XXX Crash Cushion (Insert Type)	EA		x	= \$ -
839642 CONCRETE BARRIER (TYPE 60MC)	LF		x 110.00	= \$ -
839640 CONCRETE BARRIER (TYPE 60M)	LF	2,000	x 82.00	= \$ 164,000
520103 Bar Reinforced Steel (Retaining Wall)	LB		x	= \$ -
510060 Structural Concrete, barrier footing 10" x 3.5'	CY		x 500.00	= \$ -
513553 Retaining Wall (Masonry Wall)	SQFT		x	= \$ -
511035 Architectural Treatment	SQFT		x	= \$ -
598001 Anti-Graffiti Coating	SQFT		x	= \$ -
203070 Rock Stain	SQFT		x	= \$ -
5136XX Reinforced Concrete Crib Wall (Type X)	SQFT		x	= \$ -
839543 TRANSITION RAILING (TYPE WB-31)	EA	11	x 4,000.00	= \$ 44,000
597601 Prepare and Stain Concrete	SQFT		x	= \$ -
839561 Rail Tensioning Assembly	EA		x	= \$ -
839581 End Anchor Assembly (Type SFT)	EA	4	x 1,200.00	= \$ 4,800
390011 PREPAVING INERTIAL PROFILER	LS	1	x 5,000.00	= \$ 5,000
832070A ASPHALT COMPOSITE VEGETATION CONTROL	SQYD	13,706	x 55.00	= \$ 753,830
TOTAL SPECIALTY ITEMS				\$ 2,664,500

SECTION 5: ENVIRONMENTAL

5A - ENVIRONMENTAL MITIGATION

Item code	Unit	Quantity		Unit Price (\$)	=	Cost
	LS	1	x	0.00	= \$	-
130670	Temporary Reinforced Silt Fence				= \$	-
141000	Temporary Fence (Type ESA)	1	x	5,000.00	= \$	5,000
<i>Subtotal Environmental Mitigation</i>						\$ 5,000

5B - LANDSCAPE AND IRRIGATION

Item code	Unit	Quantity		Unit Price (\$)	=	Cost
20XXXX	Highway Planting		x		= \$	-
20XXXX	Irrigation System		x		= \$	-
204099	Plant Establishment Work		x		= \$	-
204101	Extend Plant Establishment Work		x		= \$	-
20XXXX	Follow-up Landscape Project		x		= \$	-
150685	Remove Irrigation Facility		x		= \$	-
20XXXX	Maintain Existing (Irrigation or Planted Areas)		x		= \$	-
206400	Check and Test Existing Irrigation Facilities		x		= \$	-
21011X	Imported Topsoil (X)		x		= \$	-
20XXXX	Rock Blanket, Rock Mulch, DG, Gravel Mulch		x		= \$	-
200122	Weed Germination		x		= \$	-
208304	Water Meter		x		= \$	-
2087XX	XX" Conduit (Use for Irrigation x-overs)		x		= \$	-
20890X	XX" Conduit (Use for Extension of Irrigation x-overs)		x		= \$	-
<i>Subtotal Landscape and Irrigation</i>						\$ -

5C - EROSION CONTROL

Item code	Unit	Quantity		Unit Price (\$)	=	Cost
210010	Move In/Move Out (Erosion Control)		x		= \$	-
210350	Fiber Rolls		x		= \$	-
	Hydroseeding Erosion Control	1	x	69903	= \$	69,903
2102XX	Rolled Erosion Control Product (X)		x		= \$	-
21025X	Bonded Fiber Matrix		x		= \$	-
210300	Hydromulch		x		= \$	-
210420	Straw		x		= \$	-
210430	Hydroseed		x		= \$	-
210600	Compost		x		= \$	-
210630	Incorporate Materials		x		= \$	-
<i>Subtotal Erosion Control</i>						\$ 69,903

5D - NPDES

Item code	Unit	Quantity		Unit Price (\$)	=	Cost
130300	Prepare SWPPP	1	x	23,500.00	= \$	23,500
130200	Prepare WPCP	500	x	1.00	= \$	500
130100	Job Site Management	1	x	50,000.00	= \$	50,000
130330	Storm Water Annual Report	4	x	2,000.00	= \$	8,000
130310	Rain Event Action Plan (REAP)		x		= \$	-
130320	Storm Water Sampling and Analysis Day	6	x	12,000.00	= \$	72,000
130520	Temporary Hydraulic Mulch		x		= \$	-
130550	Temporary Hydroseed		x		= \$	-
130505	Move-In/Move-Out (Temporary Erosion Control)	3	x	5,000.00	= \$	15,000
130640	Temporary Fiber Roll		x		= \$	-
130900	Temporary Concrete Washout	1	x	40,000.00	= \$	40,000
130710	Temporary Construction Entrance	4	x	2,500.00	= \$	10,000
160110	Temporary Silt Fence (ESA)	6,300	x	3.50	= \$	22,050
130620	Temporary Drainage Inlet Protection	51	x	150.00	= \$	7,650
130730	Street Sweeping	1	x	100,000.00	= \$	100,000
XXXXX	Storm Water Lump Sum	1	x		= \$	-
<i>Subtotal NPDES</i>						\$ 348,700

TOTAL ENVIRONMENTAL	\$	423,700
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Supplemental Work for NPDES

066595	Water Pollution Control Maintenance Sharing*	1	x	23,500.00	= \$	23,500
066596	Additional Water Pollution Control**	1	x	23,500.00	= \$	23,500
066597	Storm Water Sampling and Analysis***	1	x	5,000.00	= \$	5,000
066916	Annual Con General Permit Fees	1	x	24,570.00	= \$	24,570
	Water Board Non Compliance Fee			2,388,672.00	= \$	-

<i>Subtotal Supplemental Work for NDPS</i>	\$	76,570
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*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	x	= \$ -
860201	Signal and Lighting	LS	x	= \$ -
860990	Closed Circuit Television System	LS	x	= \$ -
86110X	Ramp Metering System (Location X)	LS	x	= \$ -
86070X	Interconnection Conduit and Cable	LF/LS	x	= \$ -
5602XX	Furnish Sign Structure (Type X)	LB	x	= \$ -
5602XX	Install Sign Structure (Type X)	LB	x	= \$ -
498040	XX" CIDHC Pile (Sign Foundation)	LF	x	= \$ -
86080X	Inductive Loop Detectors	EA/LS	x	= \$ -
8609XX	Traffic Monitoring Station (Type X)	LS	x	= \$ -
15075X	Remove Sign Structure	EA/LS	x	= \$ -
151581	Reconstruct Sign Structure	EA	x	= \$ -
152641	Modify Sign Structure	EA	x	= \$ -
860090	Replace loop detectors and piezo sensors	LS	1 x	37,000.00 = \$ 37,000
86XXXX	IJA Broadband	LS	0 x	240,000.00 = \$ -
860926A	Remove and Replace VDS	LS	1 x	78,000.00 = \$ 78,000
860927A	Upgrade Exist Lighting	LS	1 x	433,000.00 = \$ 433,000
860928A	Upgrade Exist CCTV	LS	3 x	13,000.00 = \$ 39,000
860929A	Install a CCTV Camera System with new electric S	LS	1 x	78,000.00 = \$ 78,000
860930A	Update existin RPU	LS	1 x	85,000.00 = \$ 85,000
860931A	Install Count Station TDC	LS	6 x	23,000.00 = \$ 138,000
<i>Subtotal Traffic Electrical</i>				\$ 888,000

6B - Traffic Signing and Striping

Item code	Unit	Quantity	Unit Price (\$)	Cost
566011	Roadside Sign - One Post	EA	1 x	111,635.00 = \$ 111,635
566012	Roadside Sign - Two Post	EA	x	= \$ -
5602XX	Furnish Sign	SQFT	x	= \$ -
568016	Install Sign Panel on Existing Frame	SQFT	x	= \$ -
150711	Remove Painted Traffic Stripe	LF	x	= \$ -
141101	Remove Yellow Painted Traffic Stripe (Hazardous Waste)	LF	x	= \$ -
150712	Remove Painted Pavement Marking	SQFT	x	= \$ -
150742	Remove Roadside Sign	EA	x	= \$ -
152320	Reset Roadside Sign	EA	x	= \$ -
152390	Relocate Roadside Sign	EA	x	= \$ -
82010X	Delineator (Class X)	EA	x	= \$ -
846007	6" Thermoplastic Traffic Stripe (Enhanced Wet Night)	LF	x	= \$ -
846012	Thermoplastic Crosswalk and Pavement Marking (SQFT	x	= \$ -
120090	Construction Area Signs	LS	1 x	62,500.00 = \$ 62,500
84XXXX	Permanent Pavement Delineation	LS	x	= \$ -
84XXXX	Traffic Handling Items Including Detour	LS	1 x	2,601,541.00 = \$ 2,601,541
84XXXX	Roadside Sign	LS	1 x	= \$ -
84XXXX	Pavement Delineation Items	LS	1 x	423,257.00 = \$ 423,257
<i>Subtotal Traffic Signing and Striping</i>				\$ 3,198,933

6C - Traffic Management Plan

Item code	Unit	Quantity	Unit Price (\$)	Cost
66063	Public Information	1	\$ 39,000	\$ 39,000 <i>supplemental</i>
128650	Portable Changeable Message Signs	LS	1 x	\$ 125,000 = \$ 125,000
<i>Subtotal Traffic Management Plan</i>				\$ 125,000

6C - Stage Construction and Traffic Handling

Item code	Unit	Quantity	Unit Price (\$)	Cost
120199	Traffic Plastic Drum	EA	x	= \$ -
12016X	Channelizer (Type X)	EA	x	= \$ -
120120	Type III Barricade	EA	x	= \$ -
129100	Temporary Crash Cushion Module	EA	98 x	200.00 = \$ 19,600
120100	Traffic Control System	LS	1 x	700,000 = \$ 700,000
129110	Temporary Crash Cushion	EA	x	= \$ -
129000	Temporary Railing (Type K)	LF	194,304 x	10.00 = \$ 1,943,040
120149	Temporary Pavement Marking (Paint)	SQFT	x	= \$ -
82010X	Delineator (Class X)	EA	x	= \$ -
XXXXXX	Temporary Radar Speed Feedback Sign S	Unit	1 x	124,000.00 = \$ 124,000
<i>Subtotal Stage Construction and Traffic Handling</i>				\$ 2,786,640

TOTAL TRAFFIC ITEMS	\$ 6,998,600
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SECTION 7: DETOURS

Includes constructing, maintaining, and removal

Item code	Unit	Quantity	Unit Price (\$)	Cost
190101 Roadway Excavation	CY	2,444	x 16.00 = \$	39,104
19801X Imported Borrow	CY/TON		x = \$	-
390132 Hot Mix Asphalt (Type A)	TON	4,889	x 82.00 = \$	400,898
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 = \$	-
839774 Remove Concrete Barrier	LF	2,000	x 25.00 = \$	50,000
839640 Concrete Barrier (Type 60M)	LF	2,000	x 125.00 = \$	250,000

TOTAL DETOURS	\$ 740,100
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SUBTOTAL SECTIONS 1 through 7	\$ 58,267,700
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SECTION 8: MINOR ITEMS

8A - Americans with Disabilities Act Items

ADA Items	0.0%	\$	-
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8B - Bike Path Items

Bike Path Items	0.1%	\$	58,268
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8C - Other Minor Items

Other Minor Items	4.9%	\$	2,855,117
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Total of Section 1-7	\$ 58,267,700	x 5.0%	= \$ 2,913,385
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TOTAL MINOR ITEMS	\$ 2,913,400
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SECTIONS 9: MOBILIZATION

Item code	Unit	Quantity	Unit Price (\$)	Cost
999990				
Total Section 1-8		\$ 61,181,100	x 5%	= \$ 3,059,055

TOTAL MOBILIZATION	\$ 3,059,100
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SECTION 10: SUPPLEMENTAL WORK

Item code	Unit	Quantity	Unit Price (\$)	Cost
066670 Payment Adjustments For Price Index Fluctuations	LS	1	x 407,000 = \$	407,000
066094 Value Analysis	LS	1	x 10,000 = \$	10,000
066070 Maintain Traffic	LS	1	x 319,200 = \$	319,200
066919 Dispute Resolution Board	LS	1	x 22,500 = \$	22,500
066921 Dispute Resolution Advisor	LS		x = \$	-
066015 Federal Trainee Program	LS	1	x 20,000 = \$	20,000
066610 Partnering	LS	1	x 70,000 = \$	70,000
066204 Remove Rock and Debris	LS		x = \$	-
066222 Locate Existing Crossover	LS		x = \$	-
066016 JUST-IN-TIME TRAINING	LS	1	x = \$	-
<i>Cost of NPDES Supplemental Work specified in Section 5D</i>				<u>\$ 76,570</u>

Total Section 1-8	\$ 61,181,100	4%	= \$ 2,447,244
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TOTAL SUPPLEMENTAL WORK	\$ 3,372,600
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Note: For Project less than 50 Working Days Mobilization is not required as a separate contract item, however contract item prices should take into consideration mobilization as part of the price. If the building portion of the project is greater than 50% of the total project cost, then mobilization is not included.

SECTION 11: STATE FURNISHED MATERIALS AND EXPENSES

Item code		Unit	Quantity		Unit Price (\$)	=	Cost
066105	Resident Engineers Office	LS	36	x	12,600.00	=	\$447,300
066063	Traffic Management Plan - Public Information	LS	1	x	39,000.00	=	\$39,000
066901	Water Expenses	LS		x		=	\$0
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	910,000.00	=	\$910,000
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	FEE	LS	1	x	4,339.00	=	\$4,339
Total Section 1-8			\$ 61,181,100		4%	=	\$ 2,447,244

TOTAL STATE FURNISHED	\$3,847,900
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SECTION 12: TIME-RELATED OVERHEAD

Total of Roadway and Structures Contract Items excluding Mobilization \$61,181,100 (used to calculate TRO)
 Total Construction Cost (excluding TRO and Contingency) \$71,460,700 (used to check if project is greater than \$5 million excluding contingency)

Estimated Time-Related Overhead (TRO) Percentage (0% to 10%) = **5%**

Item code		Unit	Quantity		Unit Price (\$)	=	Cost
070018	Time-Related Overhead	WD	350	X	\$8,740	=	\$3,059,100

TOTAL TIME-RELATED OVERHEAD	\$3,059,100
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Note: If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.

SECTION 13: ROADWAY CONTINGENCY

Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Total Section 1-12 \$ 74,519,800 x **15%** = \$11,177,970

TOTAL CONTINGENCY	\$11,178,000
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Note: TRO is a contract item if total project cost is (non-escalated) over \$5 million AND 100 or more working days.
 If the building portion of the project is greater than 50% of the total project cost, then TRO is not included.
 TRO calculated for you as percentage of the sum of all contract items only;
 excluding mobilization, supplemental work, state furnished materials and expenses, and contingency.

II. STRUCTURE ITEMS

DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Name	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total 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)	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Cost Per Square Foot	\$0		\$0		\$0
COST OF EACH	\$0		\$0		\$0

DATE OF ESTIMATE	00/00/00		00/00/00		00/00/00
Name	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Bridge Number	57-XXX		57-XXX		57-XXX
Structure Type	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Width (Feet) [out to out]	0 LF		0 LF		0 LF
Total 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)	XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX		XXXXXXXXXXXXXXXXXXXX
Cost Per Square Foot	\$100		\$0		\$0
COST OF EACH	\$0		\$0		\$0

TOTAL COST OF BRIDGES	\$0
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TOTAL COST OF BUILDINGS	\$0
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Structures Mobilization Percentage	10%	\$0
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Recommended Contingency: (Pre-PSR 30%-50%, PSR 25%, Draft PR 20%, PR 15%, after PR approval 10%, Final PS&E 5%)

Structures Contingency Percentage	10%	\$0
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TOTAL COST OF STRUCTURES	\$0
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Estimate Prepared By: _____
 XXXXXXXXXXXXXXXXXXXX ----- Division of Structures

_____ Date

Note: Structure's Estimate may include Contingency, Overhead and Mobilization.
 Separate out the Contingency and Mobilization from DES Structure's per SQFT estimate.
 Add more sheets if needed. Call them 9a, 9b, 9c, ..., etc

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	\$	79,410
C)	C1)	Utility Relocation (State Share)	\$	93,750
	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 <u>0%</u>	\$	0
J)		Design Appreciation Factor <u>0%</u>	\$	0
K)		Utility Relocation (Construction Cost)	\$	0

L)

TOTAL RIGHT OF WAY ESTIMATE	\$173,160
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M)

TOTAL R/W ESTIMATE: Escalated	\$190,909
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N)

RIGHT OF WAY SUPPORT

Support Cost Estimate
Prepared By _____ Project Coordinator¹ _____ Phone _____

Utility Estimate Prepared
By _____ Utility Coordinator² _____ Phone _____

R/W Acquisition Estimate
Prepared By _____ Right of Way Estimator³ _____ 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

Memorandum

To: JUN XU
Senior Transportation Engineer
Central Region Project Development
Design I, Branch Q

Date: July 14, 2023

File: 06-KER-5
PM 4.4 – PM 10.2
EA 06-0W920
ID 0618000063

Tanzila Alam for Rebecca Franco-Muñoz

From: REBECCA FRANCO-MUÑOZ
Senior Transportation Engineer
Design Technical Services Branch Chief
Department of Transportation – District 06

Subject: LIFE-CYCLE COST ANALYSIS (UPDATED)

An updated Life Cycle Cost Analysis has been completed for the proposed pavement rehabilitation project on Interstate 5 in Kern County for PM 4.4 – PM 10.2. The structural section alternatives were obtained from the PA&ED Supplemental Preliminary Pavement Structural Section Recommendations memorandums dated April 26, 2023, and February 7, 2023, both of which were provided by the Materials Engineering Branch in Fresno (see attachments).

Although this project is classified as a Resurfacing and Restoration (2R) project, it was analyzed as a Reconstruction project for the purposes of conducting an LCCA given that it requires an entire structural section replacement of the existing pavement structure, as per guidance from Topic 603 of the Highway Design Manual. Therefore, Figure 2-1 (New Construction and Reconstruction Pavement Alternatives Selection Flowchart) of the August 2013 Life Cycle Cost Analysis Procedures Manual was used to conduct this LCCA.

Selection of Pavement Alternatives

Based on the nature of the travel way (mainline), the 40-year traffic index ($TI_{40} > 11.5$), and the climate region (South Mountain), the LCCA Manual flowchart renders the following two pavement alternatives appropriate for comparison:

Alternative 1: 40-year rigid Continuously Reinforced Concrete Pavement (CRCP) over Hot Mix Asphalt (HMA-A) over Class 2 Aggregate Subbase (AS).

Alternative 2: 40-year flexible Rubberized Hot Mix Asphalt (RHMA-G) over Hot Mix Asphalt (HMA-A) over Class 2 Aggregate Base (AB).

The laterally supported CRCP was chosen for consideration as the 40-year rigid pavement alternative over the laterally unsupported CRCP. Rigid pavements lacking lateral support are noncompetitive in this LCCA. This is because laterally supported pavement has better long-term performance, a lower maintenance cost, and a lower initial construction cost compared to a laterally unsupported alternative. These criteria are discussed in Topic 626.2 Shoulder of the Highway Design Manual.

Results

The results of the LCCA determined that Alternative 1, a 40-year 1.00 ft CRCP over 0.25 ft HMA-A over 0.70 ft AS, had the lowest Life-Cycle Cost out of the two proposed alternatives. The Life Cycle Costs are the sum of the Present Value Agency Cost and Present Value User Cost for each respective alternative. The Deterministic Results of the LCCA are tabulated below.

Deterministic Results (KER-5 PM 4.4/10.2, NB and SB Mainline and Shoulders)

Total Cost	Alternative 1: 40-YR RIGID CRCP (1.00') / HMA (0.25') / AS (0.70')		Alternative 2: 40-YR FLEXIBLE RHMA (0.20') / HMA (1.45') / AB(0.50')	
	Agency Cost (\$1000)	User Cost (\$1000)	Agency Cost (\$1000)	User Cost (\$1000)
Undiscounted Sum	\$64,116	\$2,782	\$101,783	\$12,661
Present Value	\$63,819	\$2,782	\$79,215	\$3,601
Life-Cycle Costs	\$66,601		\$80,899	
EUAC	\$2,887	\$126	\$3,583	\$163

Glossary

Undiscounted Sum is the cost as if all costs were to occur today.

Present Value is the value of all the future expenditures over the analysis period converted to present value dollars.

EUAC is the equivalent uniform annual cost. EUAC is the yearly cost of an alternative as if they occurred uniformly throughout the analysis period.

Agency Cost includes initial construction, maintenance, rehabilitation (including CAPM), support and remaining service life value (credit) costs. For initial

construction agency cost, items common between the different alternatives are not included.

User Cost is the additional travel time and related vehicle operating costs incurred by the traveling public due to potential congestion associated with planned construction throughout the analysis period.

Documenting Life-Cycle Cost Analysis Results

It should be noted that per the Department's Life-Cycle Cost Analysis Procedures Manual Section 4.6, there is latitude in using engineering judgment when selecting the preferred alternative(s) to be incorporated into the proposed project design.

4.6 Document the Preferred Pavement Alternative

"Other than the mandatory design standards detailed in Topic 612, "Pavement Design Life," of the HDM, there is no absolute requirement to choose the pavement alternative with the lowest total life-cycle cost, although it is strongly encouraged. **If the lowest total life-cycle cost is not selected, reason must be documented.** Some possible reasons that another alternative other than the one with the lowest life-cycle cost might be chosen include safety, scope, schedule, constructability, environmental, accommodation of future growth or capacity improvements, or political reasons. LCCA project decisions should be documented in the PID, PR, or other appropriate project document (see PDPM Appendix O-O)."

For LCCA documentation and submittal of LCCA results, refer to the instructions at the department's [LCCA Website](#). If you have any questions, please contact Tanzila Alam (at tanzila.alam@dot.ca.gov by email or at 559-383-5251 by phone) or me (at rebecca.franco-munoz@dot.ca.gov by email or 559-470-8280 by phone). Thank you.

Attachments

1. 06-0W920 RealCost Final Report 07.14.23.pdf
2. 06-0W920 Pavement Type Selection Flowchart.pdf
3. 06-0W920 Quantity, WDs, and Initial Cost Calculations.pdf
4. Structural Section Recommendations 04.26.23.pdf
5. Structural Section Recommendations 02.07.23.pdf

2R PROJECT CERTIFICATION ^{1, 2}

A Safety Screening, as required by Design Information Bulletin Number 79-03, was conducted for the segment of highway identified above in the project description.



Date: FEB 22, 2018

Albert Lee, District 6 Traffic Operations Office Chief

This project will be scoped and designed as a 2R Project per the guidance in Design Information Bulletin Number 79-03. The Safety Screening that was performed will be an integral part of the development of this project.

H. BINNING

Brian Everson, Central Region Project Development Division Chief

Date: 02/28/18

I concur with the 2R Purpose and Need of this project.

Paul Gennaro, Central Region Design Coordinator

Date: 03/13/2018

I concur that this project should be scoped and designed as a 2R Project per the guidance in Design Information Bulletin Number 79-03 and that the Safety Screening associated with this project will be an integral part of the development of this project. Therefore, since the appropriate Purpose and Need for this project is pavement resurfacing and restoration (2R), I have determined that this project is to be delivered as a 2R Project.

Samer Shaath, Acting District 6 Deputy Director for Maintenance and Operations ³

Date: 3-15-18

Notes:

1. This certification document shall be filed in the district project history files.
2. A copy of this Certification shall be sent to Headquarters Division of Design, attention Design Report Routing.
3. District organizations with separate Deputies for Maintenance and Operations need the signatures of both individuals

Memorandum


*Flex your power!
Be energy efficient!*

To: JUN XU
Office of Design I, Branch Q
Project Development

Date: February 22, 2018

Attn: Michael Foster

File: 06-Ker-5
PM 4.4/10.2 N
EA 0W920
Project 0618000063

From: ALBERT LEE, Chief 
District 6 - Office of Traffic Operations

Subject: Safety Screening for 2R Project

This is in response to your request for a safety screening for the proposed 2R project on Route 5 in Kern County. The project proposes to rehabilitate pavement on Ker 5 from Grapevine Creek Bridge (PM 4.4) to Grapevine UC (PM 10.2) in the northbound direction.

Existing Conditions:

This segment of Interstate 5 is a rural eight-lane divided freeway in mountainous terrain. The roadway consists of 12-foot lanes, 8-foot inside shoulders, and outside shoulders varying from 8 to 10 feet. The current (2016) ADT on Route 5 within the project limits is 80,000 with 24% trucks.

The accident history for the project segments for the most recent three-year study period (between 01-01-2013 and 12-31-2015) are shown in number of accidents per million-vehicle-miles (MVM) in the Table B below:

Ker 5	Actual (MVM)			Statewide Average (MVM)		
	Fatal	F+I	Total	Fatal	F+I	Total
Northbound (PM 4.4/5.152)	0.000	0.13	0.69	0.004	0.11	0.32
Northbound (PM 5.152 R/10.2 R)	0.000	0.21	0.77	0.002	0.07	0.19

Safety Screen 1.0: Fatal plus Injury (F + I) Accident Rate:

This Safety screen addresses the overall safety of the facility within the project limits. It must be passed to be eligible as a 2R project.

1.1. Is the actual F+I accident rate below either the statewide average or 0.35 accidents per million-vehicle-mile (acc/mvm)?

The F+I accident rates of 0.13 for the first segment and 0.21 for the second segment are above the statewide averages of 0.11 and 0.07 respectively for similar types of facility. However, they are both below the 2R threshold of 0.35 acc/mvm, therefore, it passes Safety Screen 1.1.

1.2. For projects on other highway types, are the actual F+I accident rates below both statewide average and 1.0 (acc/mvm)?

Section 2.1 is not applicable for freeways.

>>>>> Safety Screen 1.0 passed.

Safety Screen 2.0: Highway Width F + I screen:

This screen addresses collisions related to roadway widths on 2 and 3 lane conventional highways where shoulder widths are less than standard per DIB 79. This screen applies only to roadways where shoulders do not meet current RRR standards as discussed in DIB 79. It must be passed to be eligible as a 2R project. The safety screen compares average and actual F+I collision rates related to highway width (HW). HW collisions are defined as head-ons and side-wipes, plus collisions with primary locations of beyond right shoulder. It is recognized that other collision types may also be related to the highway width, but for this screen, only these parameters are to be used. If the actual rate (Calculated HW F+I rate) is equal to or below the statewide average (calculated HW F+I rate) the project passes this screen. If it does not then the project must be processed as a RRR project. See Safety Screening Procedures for 2R Projects dated November 28, 2007 for HW F+I rate calculations.

>>>>> Safety Screen 2.0 is not applicable for freeways.

Safety Screen 3.0: Safety Analysis

This safety screen addresses other potential safety issues that are not addresses by safety screen 1.0 and 2.0. Section 3.1 of this safety screen must be passed to be eligible as a 2R project. Improvements based on the analysis from Section 3.2 should be incorporated into the 2R project as discussed below.

3.1. The district Traffic Safety unit will perform a safety analysis to determine if there are other issues that would indicate general geometric improvements are needed. These issues can include items such as high fatal rates, and high collisions rate related to narrow shoulders in Highway Groups not listed above. Projects failing to pass this threshold should be discussed with the Traffic Liaison and the Design Coordinator.

Safety Analysis

Northbound (PM 4.4/5.152)

Table B for the three-year study period (between 01-01-2013 and 12-31-2015) indicates that the Actual *Fatal + Injury* and *Total* collision rates are higher than the statewide averages for similar routes. However, the Actual *Fatal* collision rate is lower than the statewide average. The types of collisions and their primary collision factor are listed in the following table:

Primary Collision Factor	Type of Collision		
	SIDE SWIPE	REAR END	HIT OBJECT
IMPROPER TURN	1	1	4
SPEEDING	1	7	4
OTHER VIOLATION	3		
Total	5	8	8

The collision history for the study period indicated a total of 21 collisions within project limits (0-Fatal, 4-Injury, 17-Property Damage Only). The objects struck from the 8 hit object collisions are listed as follows:

OBJECT STRUCK	HIT OBJECT
Barrier	3
Dike or curb	2
Over embankment	1
Fence	1
Other object on the road	1
TOTAL	8

No areas of accident concentration were identified.

Northbound (PM 5.152 R/10.2 R)

Table B for the three-year study period (between 01-01-2013 and 12-31-2015) indicates that the Actual *Fatal + Injury* and *Total* collision rates are higher than the statewide averages for similar routes. However, the Actual *Fatal* collision rate is lower than the statewide average. The types of collisions and their primary collision factor are listed in the following table:

Primary Collision Factor	Type of Collision							
	HEAD ON	SIDE SWIPE	REAR END	BROAD-SIDE	HIT OBJECT	OVER-TURN	OTHER	NOT STATED
INFLUENCE OF ALCOHOL		1	2		2			
FOLLOWING TOO CLOSE			3					
IMPROPER TURN	1	8	5	5	19	4		
SPEEDING		2	46	1	11	2		
OTHER VIOLATION		21	4	2	3		0	
OTHER THAN DRIVER					11		3	
UNKNOWN		2						1
Total	1	34	60	8	46	6	3	1

The collision history for the study period indicated a total of 159 collisions within project limits (0-Fatal, 43-Injury, 116-Property Damage Only). The objects struck from the 46 hit object collisions are listed as follows:

OBJECT STRUCK	HIT OBJECT
Traffic sign/sign post	1
Guardrail	2
Barrier	10
Wall (Exc. soundwalls)	2
Dike or curb	9
Cut slope or embankment	4
Over embankment	2
Other object on the road	10
Overtuned	1
Vehicle	4
Does Not Apply	1
TOTAL	46

No areas of accident concentration were identified.

3.2 *The safety analysis should also determine if there are cost effective geometric improvements at spot locations that should be included in the project.*

No geometric improvements were indicated by the accident analysis

>>>>> *Safety Screen 3.0 passed.*

Safety Screen 4.0: Pedestrian and Bicycle Needs in or near Communities

>>>>> Safety Screen 4.0 is not applicable for freeways.

In summary, this project passes the safety screens in accordance with procedures developed in the updated DIB 79-03. If you have any questions, please call Warren Lum at 444-2563.

CONCEPTUAL REPORT

It is proposed to preserve and resurface the existing four NB lanes of State Route 5 in Kern County, near Bakersfield from end of Grapevine Creek Bridge to Grapevine UC Bridge.

The project cost is estimated at \$ 66,905,000. Furthermore, the project is to be funded from the 2020 SHOPP in the 2020/2021 Fiscal Year.

BACKGROUND AND DEFICIENCY

State Route 5 is functionally classified as a principal arterial in the State of California, it runs in the north and south direction with a high percentage of truck traffic. The existing pavement within the NB project limits had a crack seat overlay of 0.35' between 1992 -1993, and several panel replacement projects thereafter.

PROPOSAL

This conceptual report recommends that State Route 5 within the NB project limit is to be preserved as follow:

Alternative 1

Existing pavement within this limits should be rehabilitated in accordance with recommendations of the Central Region Materials Engineer, reconstruction with CRCP for all lanes should be considered.

Alternative 2

Lanes 1&2 and inside shoulder, remove existing AC pavement 0.35', rebuild outside shoulder with AC, replace failed slabs with PCC and grind PCC pavement.

Lanes 3&4 and outside shoulder, complete removal and replace with CRCP. (Construct Lane #4 with 14' and stripe at 12').

Existing truck escape off ramps should match new road profile.

Include all applicable standards as required. Replace 81 culverts within this limits, and other TMS items as listed in the attached notes and comments from the pre-scoping meeting.

Other alternatives that have been considered and not accepted were:

Do nothing. Do nothing will allow deterioration to continue which will result in a more costly and severe alternatives in the future. Do nothing is also not in harmony with Caltrans maintenance policies maintaining a road system that is safe and serviceable.

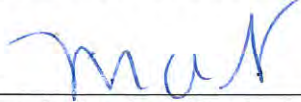
ENVIRONMENTAL AND RIGHT-OF-WAY CONCERNS

No significant impacts are known at this time.

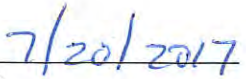
PROJECT PERSONNEL

See attached list of attendees at the pre-scoping meeting

APPROVAL RECOMMENDED BY



Marco A. Sanchez, District 6 SHOPP Manager



Date



Introduction and Background

The purpose of the Project Communication Plan (PCP) is to provide consistent and timely information to all project stakeholders. This plan will assist the project team in building an effective communication strategy to enhance communication throughout project delivery.

This project is located on Interstate Route 5, in Kern County near Grapevine Creek (PM 4.4) extending north to Grapevine Road Undercrossing (PM 10.2). This project proposes to remove and replace the northbound lane and shoulders and the southbound inside shoulder.

Project Team Representatives

The project development team (PDT) is comprised of the following representatives:

Name	Title	Division/Office	Phone Number
Manuel Ornelas	Project Manager	Project Management	559-779-6618
Irene Lee	Design Manager/PE	Design	559-383-5220
Thien Truong	Design Engineer	Design	559-515-1834
Javier Almaguer	Environmental Manager	Environmental	559-287-9320
Phong Duong	Generalist	Environmental	559-383-5589
James Burford	Construction Manager	Construction	559-977-4455
Nick Dumas	Right of Way Office Chief	Right of Way	559-243-3461
Sara Blum	Right of Way Manager	Right of Way	559-383-5194
Tom Overstreet	Surveys Manager	Surveys	559-903-4937
Scott Harlan	Branch Chief	Asset Management	559-383-5241
Alicia Rodriguez	Office Chief	Asset/Program Management	559-908-5484
Amy Fong	Program Advisor	Headquarters SHOPP	916-995-5536
Isidro Perez	Branch Chief	Traffic Management	559-383-5246
Sam Wong	Branch Chief	Hydraulics	559-243-3507
Caleb Wu	Branch Chief	Traffic Operations	559-383-5202
Mazin Al Ali	Branch Chief	Storm Water	559-908-6061
Rene Sanchez	Branch Chief	Maintenance Eng.	559-488-4225
Ali Bakdoud	Branch Chief	Electrical Design	559-899-9615
Johnson Vang	Utility Engineer	Utility Engineering Workgroup	559- 981-9203
Mohammed Qatami	Branch Chief	Traffic Design	559-974-3692
Paul Gennaro	Project Delivery Coordinator	Headquarters Project Delivery Coordinator	559-260-2386
Isidro Perez	Acting District Traffic Safety Engineer	Traffic Investigations	559-383-5246



Alec Kimmel	Senior Transportation Planner	Transportation Planning	559-696-5698
Emad Abi-Rached	Branch Chief	Technical Planning	559-385-9601

Community Involvement

This project is located on Interstate Route 5, in Kern County near Grapevine Creek (PM 4.4) extending north to Grapevine Road Undercrossing (PM 10.2).

The environmental document for this project is a CE, therefore we will not include public and stakeholder engagement.

A NOE (Notice of Exemption) will be submitted to the State Clearinghouse to post on their website. Project comments will be directed to the Senior listed in the NOE.

Communication Methods

➤ Internal Communication

- In-person meetings
- E-mail
- WebEx
- Microsoft Teams
- Phone calls

The Caltrans Project Manager will keep a detailed summary of the project status report, based on input from team members. This status is updated continuously. Components of the project status report may include meeting minutes and action item list. The action item list contains urgent and/or important issues and is discussed at team meetings. The project status is the responsibility of the Caltrans Project Manager to maintain and circulate before each meeting. Each team member and agency are ultimately responsible of tracking and being accountable for his/her action items from the meetings.

The Caltrans Project Manager, or the team member responsible for calling a meeting, shall either record or assign someone to record meeting minutes. The record shall include the date, time, subject matter, attendees and the issues and outcomes discussed. A copy of these minutes shall be emailed to all participants with the notation that they will become part of the official record if no objection to the content is made within 30 calendar days or sooner. Responses requesting changes to the minutes shall be filed with the final record.

Project Development Team (PDT) meetings are scheduled by the Project Manager and are held as needed. A listing of PDT members and contact information is provided in the section Project Team Representatives. Notices/invitations indicating date, time and location are sent out electronically through email by the Caltrans Project Manager or their appointee. Each agency is responsible for reviewing the agenda and previous meeting minutes/action items to determine the proper attendees for each meeting. Telephone connection to a PDT meeting can be arranged on an individual request basis. All PDT members will electronically receive PDT meeting minutes/action



items, so they are able to stay up to date on the project whether they attend the meeting. These meetings will constitute the primary means of communicating information to the project team and keeping the project team current with project status. All relevant project status information should be conveyed.

The Caltrans Project Manager will meet with the Caltrans Functional Units informally as needed to discuss/resolve issues.

➤ External Communication

- Phone
- Email
- Mail (Postal Service)
- Social Media
- News Media

Information will be provided upon request and may be shared periodically through the Public Information Office during major construction events.

Project Information Reporting

District 6 Project Management utilizes an online Project Reporting System. This web application is managed by the Central Region with the assistance of local IT and our Statewide partners. The intent is to provide timely, accurate and relevant project-related information to those involved in Statewide Project Delivery from multiple data sources, including QMRS, PRSM, AMS, CTIPS, GIS and more.

Project Information Reporting

All parties agree to work cooperatively to avoid and resolve conflicts at the lowest level possible. If disagreements emerge which cannot be resolved, the following procedure will be followed:

1. All parties involved must agree that an impasse exists
2. All parties involved must be able to respond in the affirmative to the following statements:
 - The position taken is legal and ethical
 - The position taken is good for our customers
 - The position taken makes efficient use of resources
 - Each party accepts full responsibility for the position he/she is taking
 - The position taken works towards meeting project delivery goals

When the parties at the lowest level are unable to come to a solution, the problem must be escalated to the next working level.

Identified Stakeholders

The Public Information Office (PIO) identified the following entities as stakeholders:

Stakeholder	Contact Name	Contact Info	Phone Number/email
El Tejon Unified School District	TBD	4337 Lebec Rd, Lebec, CA 93243	661-248-6247



Tejon Ranch Wildlife Management Office	TBD	4424 Lebec Rd, Lebec, CA 93243	661-248-3000
Tejon Ranch	TBD	4436 Lebec Rd, Lebec, CA 93243	661-248-3000
Tejon Agricultural Corporation	TBD	4436 Lebec Rd, Lebec, CA 93243	661-327-8481
Fort Tejon State Historic Park	TBD	4201 Fort Tejon Rd, Lebec, CA 93243	661-248-6692
Jack in the Box	TBD	8968 Grapevine Rd E, Lebec, CA 93243	661-248-6807
Valero	TBD	9012 Grapevine Rd E, Lebec, CA 93243	210-345-2000
Grapevine Food Market	TBD	9012 Grapevine Rd E, Lebec, CA 93243	661-248-6887
Vacant Building	TBD	9046 Grapevine Rd E, Lebec, CA 93243	661-327-2263
Days Inn by Wyndham Lebec	TBD	9000 Countryside Ct, Lebec, CA 93243	661-248-1530
Vacant Building	TBD	9021 Rose Station Rd, Lebec, CA 93243	
Shell	TBD	9069 Grapevine Rd, Lebec, CA 93243	661-248-6591
Senator	Laphonza Butler	Dirksen Senate Office Bldg., Room G-12, Washington, DC 20510	202-224-3841
Senator	Alex Padilla	112 Hart Senate Office Bldg. Washington DC 20510	202-224-3553
Chief of Staff (Alex Padilla)	David Montes	LA Office	David Montes@padilla.senate.gov
Legislative Director	Joshua Esquivel		Joshua Esquivel@padilla.senate.gov
Senior Field	Margaret Arechiga		margaret_arechiga@padilla.senate.gov
Representative	Kevin McCarthy	2468 Rayburn House Office Bldg. Washington, DC 20515	202-225-2915
District Director	Robin Lake-Foster		Robin.lake-foster@mail.house.gov
Field Representative	Perry Finzel		Perry.finzel@mail.house.gov
Field Representative	Jake Lopez		Jake.lopez@mail.house.gov
State Senator (District 12)	Shannon Grove	1021 O Street, Room 7150 Sacramento, CA 95814	916-651-4012



District Director (District 12)	Vivian Cao		Vivian.cao@sen.ca.gov
Director of Constituent Services (District 12)	Tracey Richardson		Tracy.richardson@sen.ca.gov
Assembly Member (District 32)	Vince Fong	4550 California Avenue Suite 740 Bakersfield, CA 93309	661-395-2995
District Director (District 32)	Jessica Janssen		Jessica.janssen@asm.ca.gov
Field Representative (District 32)	Marisol Goni		Marisol.goni@asm.ca.gov
Kern County Supervisor (District 2)	Zack Scrivner		District2@kerncounty.com
County Clerk	Aimee Espinoza		ctyclerk@kerncounty.com
Kern County Sheriff	Donny Youngblood		sheriff@kernsheriff.org
Kern County Public Works			661-862-5100
Kern County Fire	Cary Wright		cwright@kerncountyfire.com
Kern County Fire Chief	Aaron Duncan		aduncan@kerncountyfire.com
Kern County Fire	Silvia Coronado		scoroonado@kerncountyfire.com
Kern County Fire ECC			Ecc_user@kerncountyfire.com
Kaweah Health	Kevin Morrison		kmorrison@kareahhealth.org
CHP Bakersfield PIO	Tomas Martinez		Tomas.martinez@chp.ca.gov
Caltrans D7 PIO	Michael Comeaux		Michael.comeaux@dot.ca.gov