MEMORANDUM OF AGREEMENT
BETWEEN
THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE CITY CREEK BRIDGE AND EASK FORK CITY CREEK BRIDGE
RAIL REPLACEMNT PROJECT, SAN BERNARDINO COUNTY, CALIFORNIA

WHEREAS, the Federal Highway Administration (FHWA) has assigned and the California Department of Transportation (Caltrans) has assumed FHWA responsibility for environmental review, consultation, and coordination pursuant to 23 USC 327, which became effective on October 1, 2012 and applies to this undertaking; and

WHEREAS, Caltrans is deemed to be a federal agency for all federal-aid- highway projects and, in that capacity Caltrans is assigned the role of "agency official." To provide for effective compliance, day-to-day responsibilities and coordination of the Section 106 process are further delegated to the Division of Environmental Analysis (DEA) Cultural Studies Office (CSO) Chief, the appropriate Caltrans District (District) and Caltrans Professionally Qualified Staff (PQS); and

WHEREAS, Caltrans has consulted with the State Historic Preservation Officer (SHPO) pursuant to the January 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act as it Pertains to the Administration of the Federal-Aid Highway Program in California* (Federal-Aid Highway PA), and, where the Federal-Aid Highway PA so directs, in accordance with 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. 4700, as amended (NHPA), regarding the Undertaking's effect on historic properties. Caltrans shall file a copy of this MOA with the Advisory Council on Historic Preservation (ACHP) pursuant to Stipulation X.C.4 of the Federal-Aid Highway PA; and

WHEREAS, Caltrans is proposing an Undertaking to replace the current baluster railing on City Creek Bridge (Bridge 54-0365) and East Fork City Creek Bridge (Bridge 54-0345), located on State Route 330 (SR-330) in San Bernardino County, California, with modern concrete barrier railing in order to comply with current design and safety requirements. The Undertaking will also require removal of the existing concrete curb under the existing bridge railing and strengthening of the outer edge and overhang of the bridge deck in order to support the new bridge rails; and

WHEREAS, Caltrans has determined that the City Creek Bridge and East Fork City Creek Bridge Rail Replacement Project, which is described in **Attachment A** to this Memorandum of Agreement (MOA), will have an adverse effect on City Creek Bridge (Bridge 54-0365) and East Fork City Creek Bridge (Bridge 54-0345), properties determined to be eligible for inclusion in the National Register of Historic Places (National Register) under Criterion C and therefore historic properties as defined at 36 CFR §800.16(I)(1); and

WHEREAS, the Area of Potential Effects (APE) for the Undertaking has been established as the City Creek Bridge (Bridge 54-0365) and East Fork City Creek Bridge (Bridge 54-0345) bridge decks as well as the SR-330 roadway on either side of the bridges to accommodate project signage, staging and traffic control. The APE is located wholly within the Caltrans right of way. All proposed work will be confined to the two bridge structures and there will be no ground disturbing activities; and

WHEREAS, Caltrans, in consultation with the SHPO, has determined that the Undertaking's adverse effects cannot be avoided, and that implementation of the treatments set forth in **Stipulation II** of this MOA will satisfactorily take into account the Undertaking's adverse effects on historic properties; and

WHEREAS, Caltrans District 8 has participated in the consultation and has been invited to participate in this MOA as an invited signatory; and;

WHEREAS, Caltrans has consulted with the Highland Area Historical Society (HAHS) regarding the Undertaking and its effect on historic properties and has invited them to participate in the MOA as a concurring party; and

WHEREAS, Caltrans has initiated consultation with Morongo Band of Mission Indians, San Manuel Band of Mission Indians, Serrano Band of Indians, Chemehuevi Reservation, Fort Mojave Indian Tribe, Gabrieleni/Tongva San Gabriel Band, Gabrieleno Band of Mission Indians, Gabrieleno/Tongva Nation, and Soboba Band of Luiseno Indians, regarding the Undertaking and its possible effects on historic properties in March 2007 and July 2015. No responses indicating concern for cultural resources or interest in participating in the Section 106 process were received from any of these tribes/groups; and

NOW, THEREFORE, Caltrans and the SHPO agree that, upon Caltrans' decision to proceed with the Undertaking, Caltrans shall ensure that the Undertaking is implemented in accordance with the following stipulations in order to take into account the effects of the Undertaking on historic properties, and further agree that these stipulations shall govern the Undertaking and all of its parts until this MOA expires or is terminated.

Caltrans shall ensure that the following measures are implemented:

STIPULATIONS

I. AREA OF POTENTIAL EFFECTS

A. The Area of Potential Effects (APE) for the Undertaking is depicted in **Attachment B** (Project Maps) to this MOA. The Undertaking is restricted to the decks of City Creek Bridge (Bridge 54-0365) and East Fork City Creek Bridge (Bridge 54-0345). Thus the APE was established as the bridge decks themselves, as well as the SR-330 roadway on either side of the bridges to accommodate project signage, staging and traffic control. The APE is wholly within the Caltrans right of way.

B. If modifications to the Undertaking subsequent to the execution of this MOA necessitate the revision of the APE, District 8 will consult with Caltrans and the SHPO to facilitate mutual

agreement on the subject revisions. If Caltrans, District 8, and the SHPO cannot reach such agreement, then the parties to this MOA shall resolve the dispute in accordance with **Stipulation IV.B** below. If Caltrans, District 8, and the SHPO reach mutual agreement on the proposed revisions, then District 8 will submit a final map of the revisions, consistent with the requirements of Stipulation VIII.A and Attachment 3 of the Federal-Aid Highway PA no later than 30 days following such agreement. Any additional required identification and evaluation efforts necessitated due to changes to the APE will be undertaken consistent with the requirements of Stipulation VIII.B and VIII.C of the Federal-Aid Highway PA

II. TREATMENT OF HISTORIC PROPERTIES

A. Caltrans District 8 PQS shall work with Caltrans District 8 Project Management and Caltrans District 8 Public Affairs to develop historical content on SR-330, the City Creek Bridge and East Fork City Creek Bridge to be placed on the Caltrans District 8 public website. The content will include historical narrative information, as well as historical photographs and plans, if available, and/or other project-related historic preservation information. The information will be maintained on the Caltrans District 8 website at a minimum for the life of the project, and will be archived for future access on a Caltrans hosted website TBD prior to termination of this MOA. The information link will also be made available to the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento for inclusion on its website.

B. Caltrans District 8, taking into account input from the HAHS, shall develop a historical content of SR-330, the City Creek Bridge and East Fork City Creek Bridge to be placed on the HAHS website for a length of time to be determined by the HAHS. The content will include historical narrative information, as well as historical photographs and plans, and other documentation as determined through consultation between the HAHS and Caltrans. The information developed for the HAHS website may be identical to the content developed for the Caltrans District 8 website described in Subsection A of this section.

C. Caltrans District 8 PQS shall develop a presentation on the historical information on SR-330, the City Creek Bridge and East Fork City Creek Bridge to be presented to the HAHS at one of the HAHS's upcoming monthly meetings. The information presented at the meeting may be identical to the content developed for the HAHS website described in Subsection A or B of this section.

D. Caltrans shall direct the contractor to apply treatments for historical design considerations as depicted in Attachment C and D to the replaced baluster rails on both City Creek Bridge and East Fork City Creek Bridge. Consistency of treatments with this measure, and any future revisions to the treatments, will be determined through review of project plans pursuant to Subsection E of this section.

E. Caltrans Design shall submit the design plans and specifications for the Undertaking to District 8 Cultural Studies and request review by a Caltrans Professionally Qualified Staff Principal Architectural Historian for conformance with Stipulation II.D. The SHPO shall be afforded the opportunity to review the design plans and specifications. Failure of the

SHPO to respond within thirty (30) calendar days after receipt of the plans shall not preclude Caltrans from implementing the plans. Should the SHPO object within thirty (30) calendar days to any plans and specifications submitted for review, then Caltrans PQS shall consult with the SHPO to resolve the objection. If the objection cannot be resolved within this time period, the parties to this MOA shall resolve the dispute in accordance with **Stipulation IV.B** below.

F. Caltrans shall prepare a construction monitoring plan and conduct periodic monitoring of construction activities to ensure the project is conducted in a manner that meets the stipulations outlined in this MOA. The monitoring plan and its ongoing status will be included in the annual reports submitted pursuant to Stipulation F. Caltrans shall ensure that the construction monitoring plan is implemented. A monitoring report shall be prepared and submitted to SHPO to document project completion and compliance with the treatment of Historic Properties outlined in this section. The monitor shall meet the professional appropriate Federal qualifications standards in accordance with Stipulation IV.A.3 of this MOA. Caltrans will not authorize the execution of any Undertaking activity that may affect historic properties in the Undertaking's APE until the requirements set forth in **Stipulation II.A – II.F** of this stipulation have been met.

III. TREATMENT OF HUMAN REMAINS AND UNANTICIPATED EFFECTS

A. As legally mandated, human remains and related items discovered during the implementation of the terms of this Agreement and the Undertaking will be treated in accordance with the requirements of Health and Safety Code Section 7050.5(b). If pursuant to of Health and Safety Code Section 7050.5(c) the coroner determines that the human remains are or may be those of a Native American, then the discovery shall be treated in accordance with the provisions of Public Resources Code Sections 5097.98 (a)(d). Caltrans, as the landowner, shall ensure, to the extent possible, that the views of the Most Likely Descendent(s), as determined by the California Native American Heritage Commission, is taken into consideration when decisions are made about the disposition of Native American human remains and associated objects.

B. If Caltrans determines after construction of the Undertaking has commenced, that either the Undertaking will affect a previously unidentified property that may be eligible for the National Register, or affect a known historic property in an unanticipated manner, Caltrans will address the discovery or unanticipated effect in accordance with Stipulation XV.B of the Federal-Aid Highway PA and 36 CFR §800.13(b)(3). Caltrans at its discretion may hereunder and pursuant to 36 CFR §800.13(c) assume any discovered property to be eligible for inclusion in the National Register.

IV. ADMINISTRATIVE PROVISION

A. STANDARDS

1. **Definitions**. The definitions provided at 36 CFR Part 800.16 are applicable throughout this MOA.

2. Parties to this agreement are defined as follows:

    a. **Signatory parties** have the sole authority to execute, amend, or terminate the MOA.

    b. **Invited signatories** have the authority to amend or terminate the MOA.

    c. **Concurring parties** signing the MOA do so to acknowledge their agreement or concurrence with the MOA, but have no legal authority under the MOA to terminate or amend the MOA. Concurring with the terms of the MOA does not constitute their agreement with the Undertaking.

3. **Professional Qualifications.** Caltrans will ensure that only individuals meeting the *Secretary of the Interior's Professionally Qualified Standards for Archaeology and Historic Preservation* (48 Federal Register [FR] 44738-39) in the relevant field of study carry out or review appropriateness and quality of the actions and products required by Stipulation II in this MOA.

4. **Documentation Standards.** Written documentation of activities prescribed by **Stipulations I, II,** and **III** of this MOA shall conform to *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-44740) as well as to applicable standards and guidelines established by the SHPO.

B. RESOLVING OBJECTIONS

1. Should any party to this MOA object at any time in writing to the manner in which the terms of this MOA are implemented, to any action carried out or proposed with respect to implementation of the MOA (other than the Undertaking itself), or to any documentation prepared in accordance with and subject to the terms of this MOA, Caltrans shall immediately notify the other MOA parties of the objection, request their comments on the objection within 15 days following receipt of Caltrans' notification, and proceed to consult with the objecting party for no more than 30 days to resolve the objection. Caltrans will honor the request of the other parties to participate in the consultation and will take any comments provided by those parties into account.
2. If the objection is resolved during the 30-day consultation period, Caltrans may proceed with the disputed action in accordance with the terms of such resolution.
3. If at the end of the 30-day consultation period, Caltrans determines that the objection cannot be resolved through such consultation, then Caltrans shall forward all documentation relevant to the objection to the ACHP, including Caltrans' proposed response to the objection. The ACHP shall provide Caltrans with its advice on the resolution of the objection within 30 days of receiving adequate documentation. Prior to reaching a final decision on the dispute, Caltrans shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories, and concurring parties, and provide them with a copy of this written response. Caltrans will then proceed according to its final decision.
    a.
4. If the ACHP does not provide its advice regarding the dispute within the 30 day time period, Caltrans may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, Caltrans shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them to the ACHP with a copy of such written response.

5. Caltrans responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.
6. Caltrans may authorize any action subject to objection under this stipulation to proceed after the objection has been resolved in accordance with the terms of this stipulation.

C. AMENDMENTS

1. Any signatory party to this MOA may propose that the MOA be amended, whereupon all signatory parties shall consult for no more than 30 days to consider such amendment. The amendment will be effective on the date a copy signed by all of the original signatories is filed with the ACHP. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with **Stipulation IV.D**, below.
2. Attachments to this MOA may be amended through consultation as prescribed in the **Stipulation I,** and **II.E** as appropriate, without amending the MOA proper.

D. TERMINATION

1. If this MOA is not amended as provided for in **Section IV.C.**, or if either signatory proposes termination of this MOA for other reasons, the signatory party proposing termination shall, in writing, notify the other MOA parties, explain the reasons for proposing termination, and consult with the other parties for at least 30 days to seek alternatives to termination. Such consultation shall not be required if Caltrans proposes termination because the Undertaking no longer meets the definition set forth in 36 CFR §800.16(y).
2. Should such consultation result in an agreement on an alternative to termination, the signatory parties shall proceed in accordance with the terms of that agreement.
3. Should such consultation fail, the signatory party proposing termination may terminate this MOA by promptly notifying the other MOA parties in writing. Termination hereunder shall render this MOA without further force or effect.
4. If this MOA is terminated hereunder, and if Caltrans determines that the Undertaking will nonetheless proceed, then Caltrans shall comply with the requirements of 36 CFR 800.3-800.6, or request the comments of the ACHP, pursuant to 36 CFR Part 800.

E. DURATION OF THE MOA

The duration of this PA shall be five (5) years following the date of execution by the SHPO and Caltrans, or upon completion of the Undertaking (whichever comes first). If the terms are not satisfactorily fulfilled at that time, The District, in coordination with CSO, shall consult with the signatories and concurring parties to extend it or reconsider its terms. Reconsideration may include continuation of the PA as originally executed, amendment of the PA, or termination. In the event of termination, Caltrans will comply with 36 CFR Part 800 if it determines that the Undertaking will proceed notwithstanding termination of this PA.

F. REPORTING REQUIREMENTS

Caltrans shall provide the signatory and concurring parties to this agreement annual updates as to the progress of the completion of the stipulations described above by December 31st of each year, beginning December 31, 2017. Such reports shall include description of the progress of the Undertaking, review of monitoring schedule, activities, and effectiveness, discussion of any problems encountered, and discussion of issues with implementing the proposed mitigation measures, and discussion of any disputes and objections received as part of Caltrans efforts to carry out the terms of this MOA.

G. EFFECTIVE DATE

This MOA will take effect on the date that it has been executed by the signatory parties.

EXECUTION of this MOA by Caltrans and the SHPO, its filing with the ACHP in accordance with 36 CFR §800.6(b)(1)(iv), and subsequent implementation of its terms, shall evidence, pursuant to 36 CFR §800.6(c), that this MOA is an agreement with the ACHP for purposes of Section 110(1) of the NHPA, and shall further evidence that Caltrans has afforded the ACHP an opportunity to comment on the Undertaking and its effects on historic properties, and that Caltrans has taken into account the effects of the Undertaking on historic properties.

MEMORANDUM OF AGREEMENT
BETWEEN
THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE CITY CREEK BRIDGE AND EASK FORK CITY CREEK BRIDGE
RAIL REPLACEMNT PROJECT, SAN BERNARDINO COUNTY, CALIFORNIA

SIGNATORY PARTIES:

California Department of Transportation

By _____ Date _____
Katrina Pierce, Chief
Division of Environmental Analysis

California State Historic Preservation Officer

By _____ Date _____
Julianne Polanco, State Historic Preservation Officer

MEMORANDUM OF AGREEMENT
BETWEEN
THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE CITY CREEK BRIDGE AND EASK FORK CITY CREEK BRIDGE
RAIL REPLACEMNT PROJECT, SAN BERNARDINO COUNTY, CALIFORNIA

INVITED SIGNATORY:

California Department of Transportation, District 8

By _____ Date _____
John Bulinski
Title: District Director

MEMORANDUM OF AGREEMENT
BETWEEN
THE CALIFORNIA DEPARTMENT OF TRANSPORTATION
AND THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE CITY CREEK BRIDGE AND EASK FORK CITY CREEK BRIDGE
RAIL REPLACEMNT PROJECT, SAN BERNARDINO COUNTY, CALIFORNIA

Concurring Party:

Highland Area Historical Society

By _____ Date _____
TBD
Title: TBD

MOA

Attachment A

Project Description

Both the City Creek Bridge (Bridge 54 0365) and East Fork City Creek Bridge (Bridge 54 0345) are located on State Route 330 (SR-330) between the City of Highland and the Community of Running Springs, San Bernardino County. The bridges are located at PM 23.5 and 33.68, respectively. The project location is shown in **Figures 1-2** located in Attachment A. The APE for this undertaking, depicted in **Figure 3**, consists of the bridge structures themselves as well as the SR-330 roadway on either side to accommodate staging, traffic handling, and construction area signs. The City Creek Bridge (Bridge 54 0365) and East Fork City Creek Bridge (Bridge 54 0345) are the only Historic Properties within the APE.

The project consists of replacing the current baluster widow railing on both bridges with modern concrete barrier railing because the current railing on both bridges does not meet Caltrans and FHWA requirements for crash test sufficiency and safety. FHWA and Caltrans require bridge rails on highways where the speed is over 45 miles per hour to meet Test Level 4 (TL-4) equivalency. The current railing on both bridges is rated at test level two (TL-2), which is sufficient for speeds up to 45 miles per hour. The design speed and road conditions on SR-330 at the location of the City Creek and East Fork City Creek bridges requires a railing rated at TL-4.

While the current railing on the City Creek Bridge (Bridge 54 0365) was replaced in-kind as part of the 1995 seismic retrofit project and is in good condition, the railing on the East Fork City Creek Bridge (Bridge 54 0345) is original and severely deteriorated. During construction, temporary "Type K" railing will be placed in front of the bridge rail on one side of the bridge, the current rail and concrete curb will be removed, and the new Concrete Barrier Type 736 railing will be installed on City Creek Bridge and Concrete Barrier Type 742 will be installed on the East Fork City Creek Bridge. Concrete Barrier Type 736 and 742 are identical solid concrete barriers, but differ slightly in height, 36 inches and 42 inches, respectively. However, prior to construction if coring results reveal that the AC pavement is more than 4" in depth, Type 736 will change to Type 742 for both bridges.

The project will be constructed in stages with an estimated total number of working days of 140. One lane on each bridge will be closed, temporary "Type K" railing will be set up, and construction will be completed during Stage 1, and then the process will be repeated on the opposite side for Stage 2. Construction on the City Creek Bridge will take approximately 40 working days per stage and construction on the East Fork City Creek Bridge will take approximately 30 days per stage. It will be at the Contractor's discretion as to whether construction on both bridges will occur simultaneously, thus shortening the construction window.

In order to accommodate the new railing, the bridge deck overhang will be strengthened. One of the methods being considered to strengthen the overhang is CFRP (Carbon Fiber Reinforced Polymer) process. The CFRP method involves removing the existing 4" of AC concrete on the outer 7 feet (max) of the bridge, cutting grooves in the outer six feet of concrete, installing the CFRP (epoxy or fiber bars) into the grooves, then covering the deck with AC concrete. The replacement bridge rail would then be placed over the AC and CFRP. After the CFRP is installed and AC re-applied, the deck will look the same as it currently does.

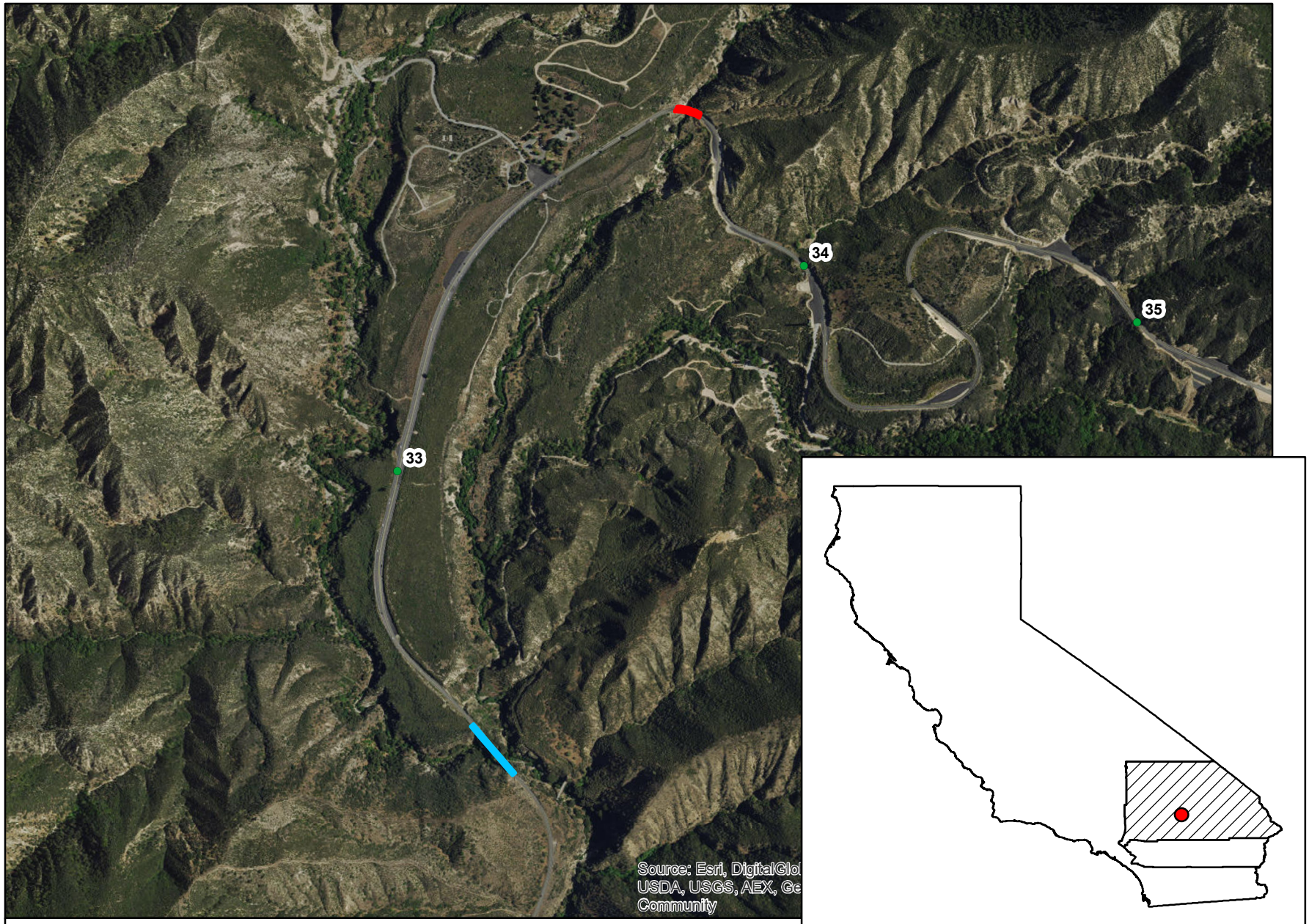
There is only one build alternative proposed for this undertaking. See Section 6 of the FOE (April 2016) for a discussion of the decision making process for alternative selection for this project.

MOA

Attachment B

Maps

EA 38852 Replace Bridge and Approach Rail
Project Location and Vicinity Map



N

0 0.1 0.2 0.3 0.4 Miles

0 150 300 450 600 Meters

08-SBd-330 PM 32.5/33.71
Township 01N, Range 03W, Sections: 10 and 15 SBBM
Harrison Mountain USGS 7.5' Quadrangle

East Fork Creek Bridge

City Creek Bridge

Caltrans

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	32.51,33.68		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
DUNG HUY PHAN
No. 73061
Exp 12/31/16
CIVIL
STATE OF CALIFORNIA

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

LEGEND

AREA OF POTENTIAL EFFECT (APE)

CURVE DATA

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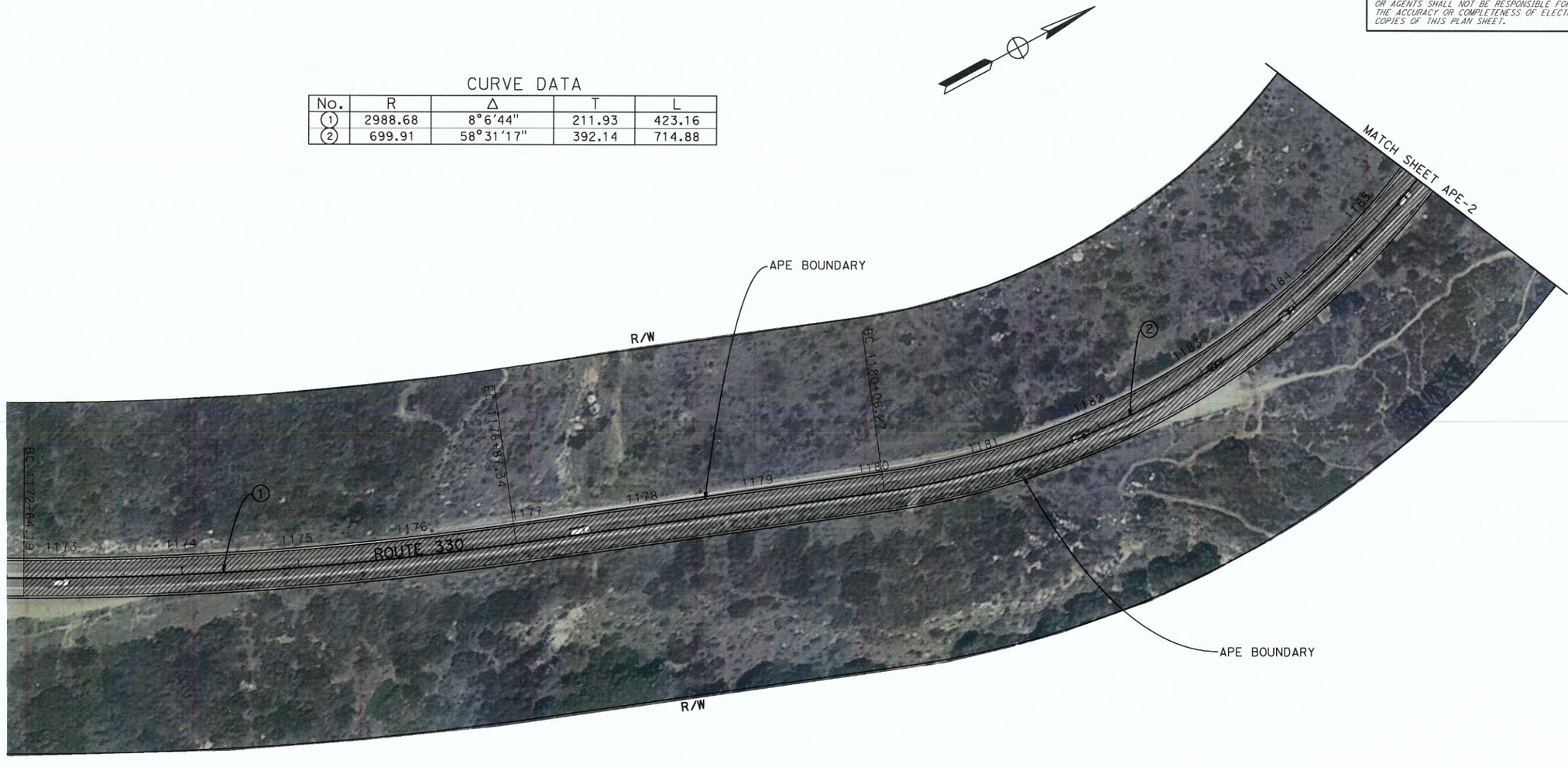

Caltrans Project Manager — Date: 04/19/2016

Caltrans District 8 Professionally Qualified Staff (PQS) — Date: 4/19/16

MAP 3: AREA OF POTENTIAL EFFECT
08-SBd-330 PM 32.51,33.68
EA 388520

APE MAP
SCALE: 1" = 50'

APE-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans PROJECT DEVELOPMENT
SUPERVISING ENGINEER
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
LAST REVISION | DATE PLOTTED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	32.51,33.68		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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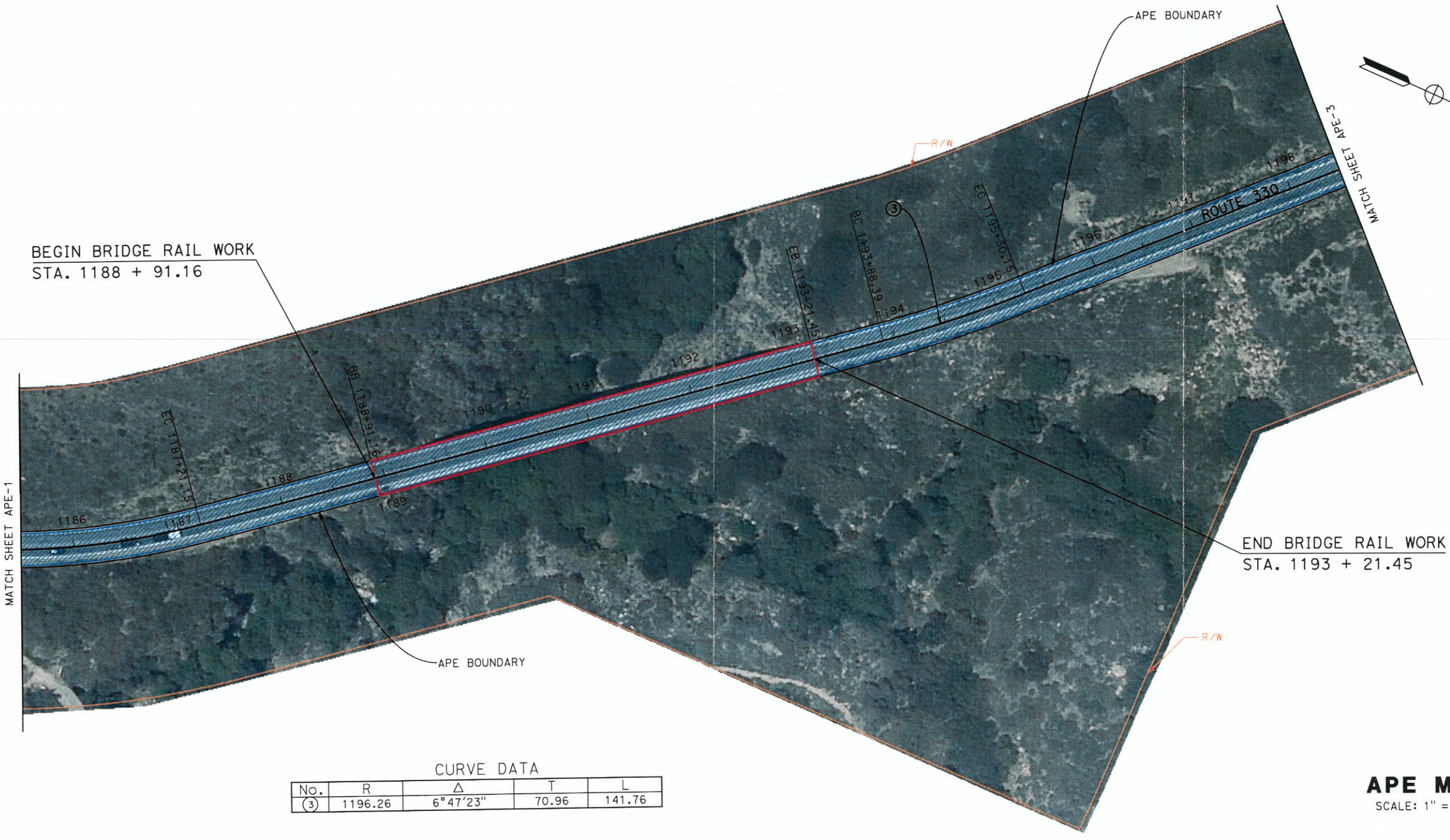
LEGEND

BRIDGE RAIL WORK

AREA OF POTENTIAL EFFECT (APE)

CITY CREEK BRIDGE
BR NO 54-0365
ON ROUTE 330 AT 32.51



CURVE DATA

No.	R	Δ	T	L
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APE MAP

SCALE: 1" = 50'

APE-2

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY

CHECKED BY

SUPERVISING ENGINEER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans PROJECT DEVELOPMENT

LAST REVISION 04-19-07

DATE PLOTTED => 05-JUN-2007
TIME PLOTTED => 08:34

BORDER LAST REVISED 11/1/2006

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 8388520envape002.dgn

CU 08220

EA 388520

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	32.51,33.68		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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

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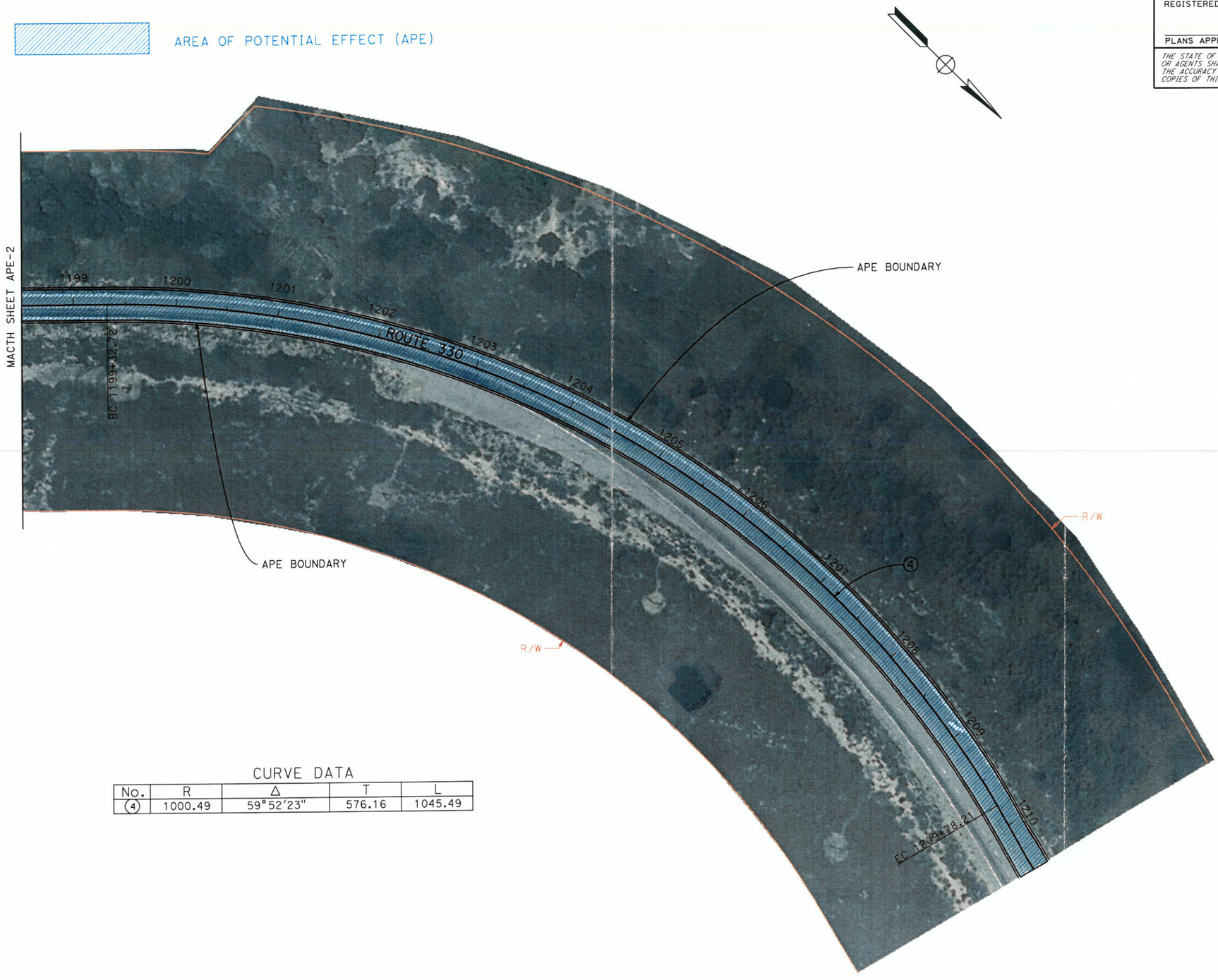
LEGEND

AREA OF POTENTIAL EFFECT (APE)



CURVE DATA

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APE MAP

SCALE: 1" = 50'

APE-3

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

SUPERVISING ENGINEER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans **PROJECT DEVELOPMENT**

LAST REVISION 04-19-07 | DATE PLOTTED => 05-JUN-2007 | TIME PLOTTED => 08:35

BORDER LAST REVISED 11/1/2006

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 8388520envape003.dgn

CU 08220

EA 388520

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	32.51,33.68		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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

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LEGEND

AREA OF POTENTIAL EFFECT (APE)

CURVE DATA

No.	R	Δ	T	L
(5)	1999.71	44°37'1"	820.49	1557.20

APE MAP
SCALE: 1" = 50'

APE-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans **PROJECT DEVELOPMENT**
SUPERVISING ENGINEER
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION 04-19-07
DATE PLOTTED => 05-JUN-2007
TIME PLOTTED => 08:36

BORDER LAST REVISED 11/1/2006

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

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DGN FILE => 8388520envape004.dgn

CU 08220

EA 388520

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	32.51,33.68		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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

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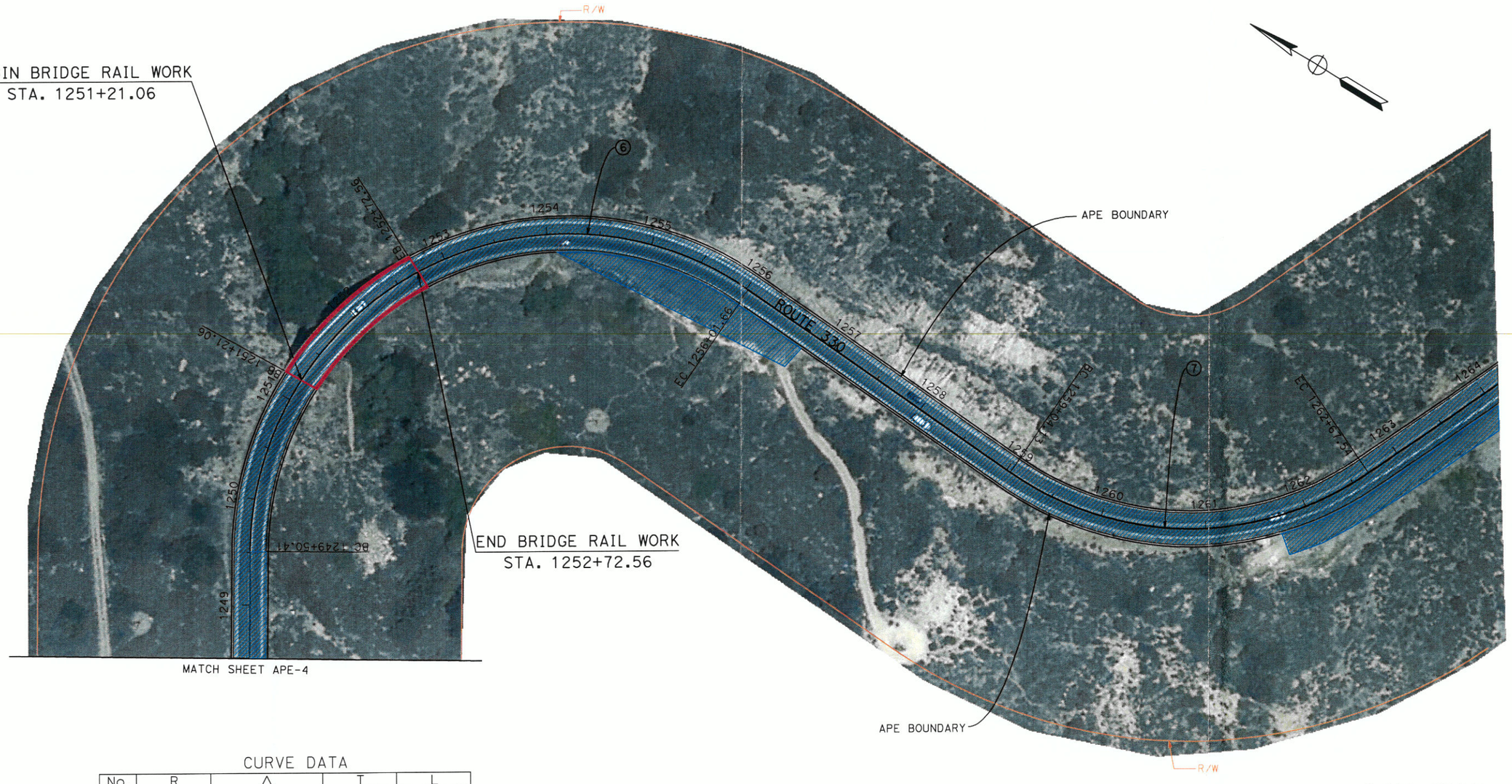
EAST FORK CITY CREEK BRIDGE
BR NO. 54-0345
ON ROUTE 330 AT 33.68

LEGEND

BRIDGE RAIL WORK

AREA OF POTENTIAL EFFECT (APE)



CURVE DATA

No.	R	Δ	T	L
⑥	299.95	124°24'0"	568.91	651.26
⑦	299.95	69°25'0"	207.76	363.41

APE MAP
SCALE: 1" = 50'

APE-5

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY

CHECKED BY

SUPERVISING ENGINEER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans PROJECT DEVELOPMENT

LAST REVISION 04-19-07
DATE PLOTTED => 05-JUN-2007
TIME PLOTTED => 08:38

BORDER LAST REVISED 11/1/2006

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ttran
DGN FILE => 8388520envape005.dgn

CU 08220

EA 388520

MOA

Attachment C

Proposed Treatment for Historical Design Consideration

Simulation 1A: City Creek Bridge with existing window railing, roadway view

Simulation 1B: City Creek Bridge with proposed Type 736/742 Railing with aesthetic “window” treatment.

Simulation 2A: City Creek Bridge with existing window railing, side view

Simulation 2B: City Creek Bridge with proposed Type 736 Railing with aesthetic “window” treatment, side view

Simulation 3A: East Fork City Creek Bridge with existing window railing, roadway view

Simulation 3B: East Fork City Creek Bridge with proposed Type 742 Railing with aesthetic “window” treatment.

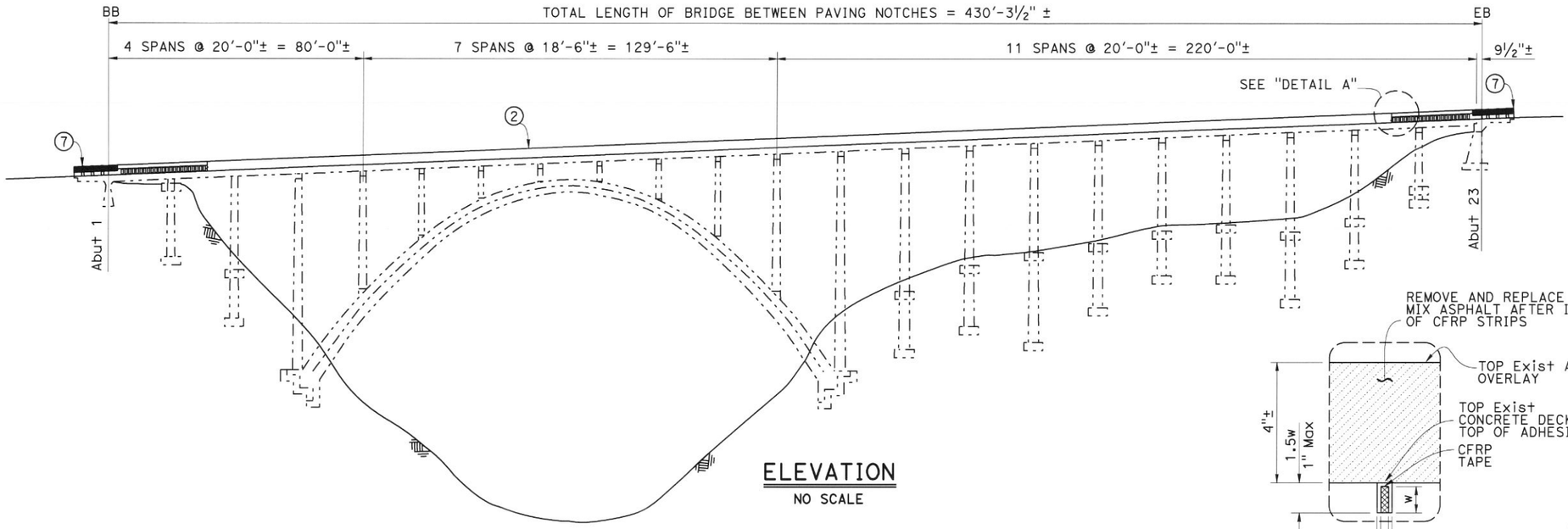
MOA

Attachment D

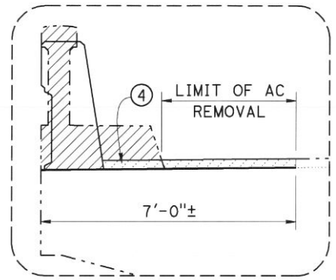
Project Plans

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF STRUCTURES

DIST	COUNTY	ROUTE	POST MILE
08	SBd	330	



ELEVATION
NO SCALE



DETAIL E
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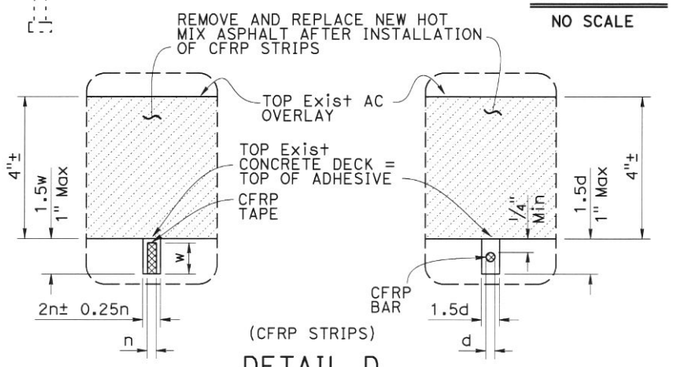
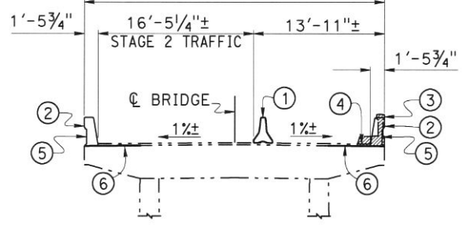
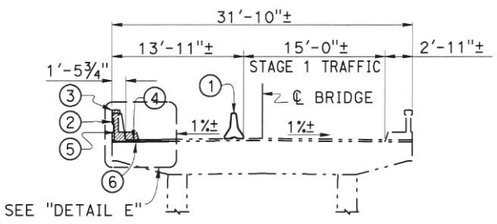


DETAIL D
NO SCALE

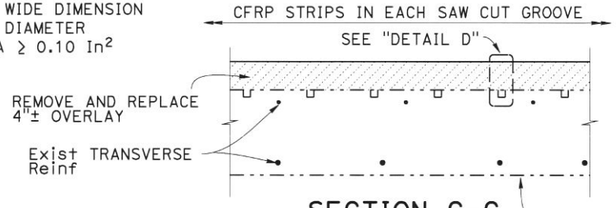
NOTES:
n = NARROW DIMENSION
w = WIDE DIMENSION
d = DIAMETER
AREA ≥ 0.10 In²



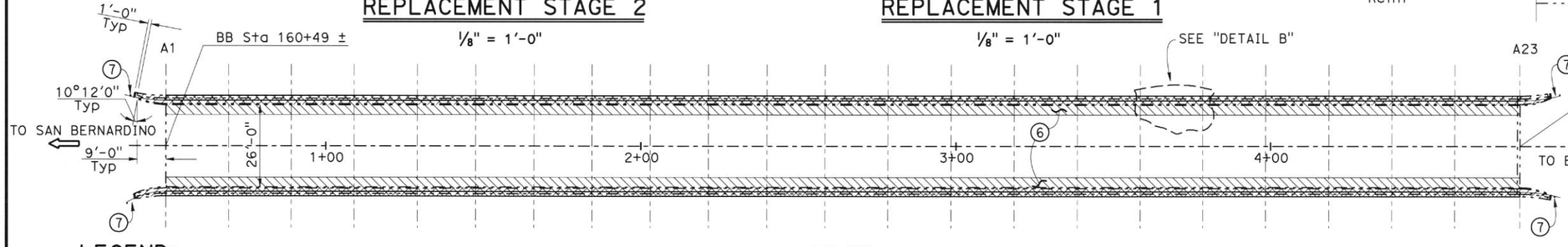
TYPICAL BARRIER REPLACEMENT STAGE 2
⅛" = 1'-0"



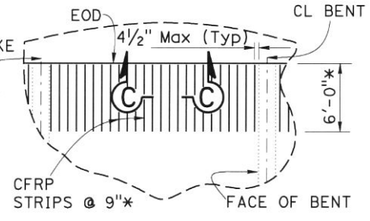
TYPICAL BARRIER REPLACEMENT STAGE 1
⅛" = 1'-0"



SECTION C-C
NO SCALE



PLAN
1" = 20'



DETAIL B
NO SCALE

LEGEND:
- Remove Exist Concrete Barrier
- Exist Construction
- New Construction
- OR (6) CFRP Strengthening
- Remove and Replace AC

ASSUMPTIONS:
1. Only one lane open during construction

NOTES:
(1) Temporary Railing, Type K
(2) New Concrete Barrier Type 736 (Mod)
(3) Remove Existing Concrete Barrier
(4) 4"± HMA Overlay
(5) Aesthetic treatment
(6) Indicates limits of:
- Remove existing 4"± AC overlay
- Remove unsound concrete and repair deck
- Sawcut grooves in existing concrete deck
- Fill with epoxy
- Place new carbon fiber reinforced polymer (CFRP)
- Place new 4"± HMA (Type B)overlay to match existing

(7) MWGS, see "ROADWAY PLANS"
(8) Barrier Reinforcement not shown

NOTE:
* LENGTH AND SPACING OF CFRP STRIPS TO BE DETERMINED DURING DESIGN STAGE

DESIGNED BY	MOHAMMAD MUQTADIR	DATE 06/08/16
DRAWN BY	ANTONETTE L. ONG	DATE 06/08/16
CHECKED BY	KYOUNG-HYEOG LEE	DATE 06/08/16
APPROVED	HOWARD NG	DATE 06/08/16

STRUCTURE DESIGN BRANCH 20

PLANNING STUDY

CITY CREEK BRIDGE (REPLACE BARRIER RAIL)

BRIDGE NO. 54-0365	UNIT: 3622
SCALE: AS SHOWN	PROJECT NO. & PHASE: 0812000124-K

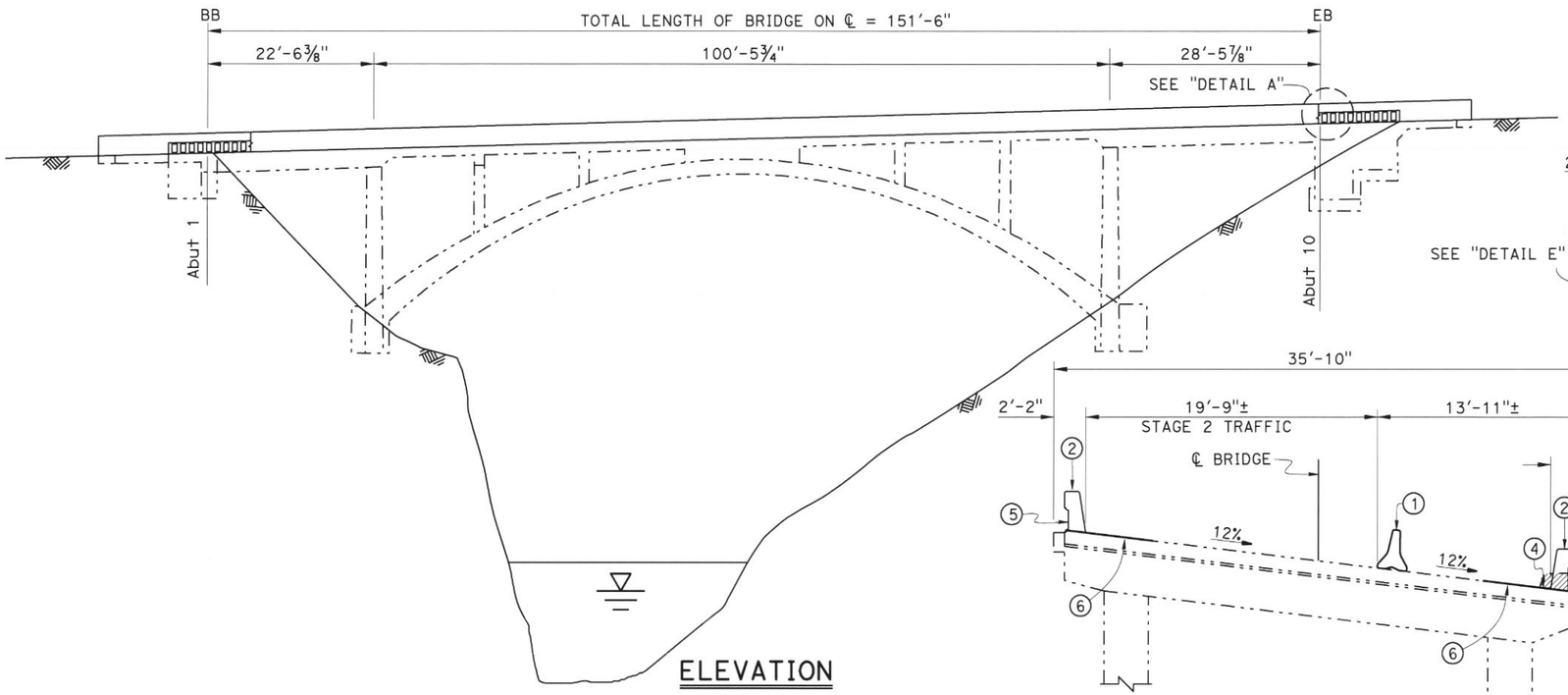
CONTRACT NO.: 38852K

FILE => 54-0365_APS_A1T3_06-01-16_MM.dgn

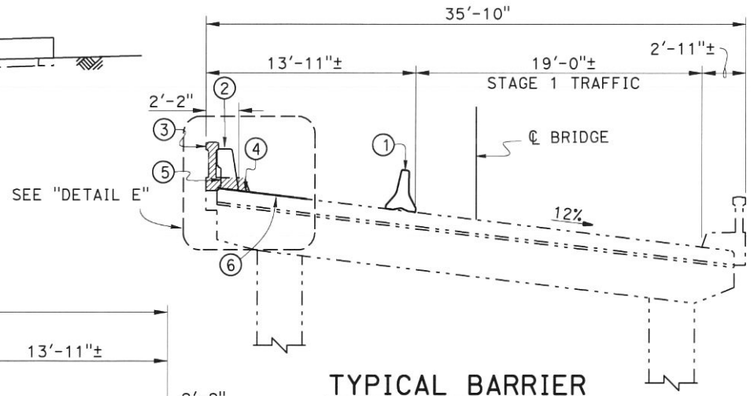
USERNAME => s129448 DATE PLOTTED => 15-JUN-2016 TIME PLOTTED => 13:37

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF STRUCTURES

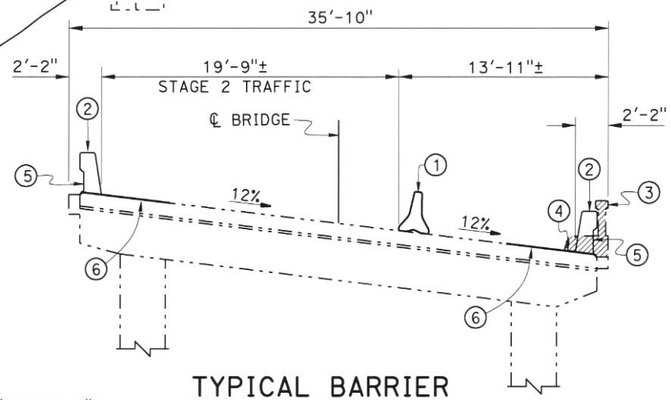
DIST	COUNTY	ROUTE	POST MILE
08	SBd	330	



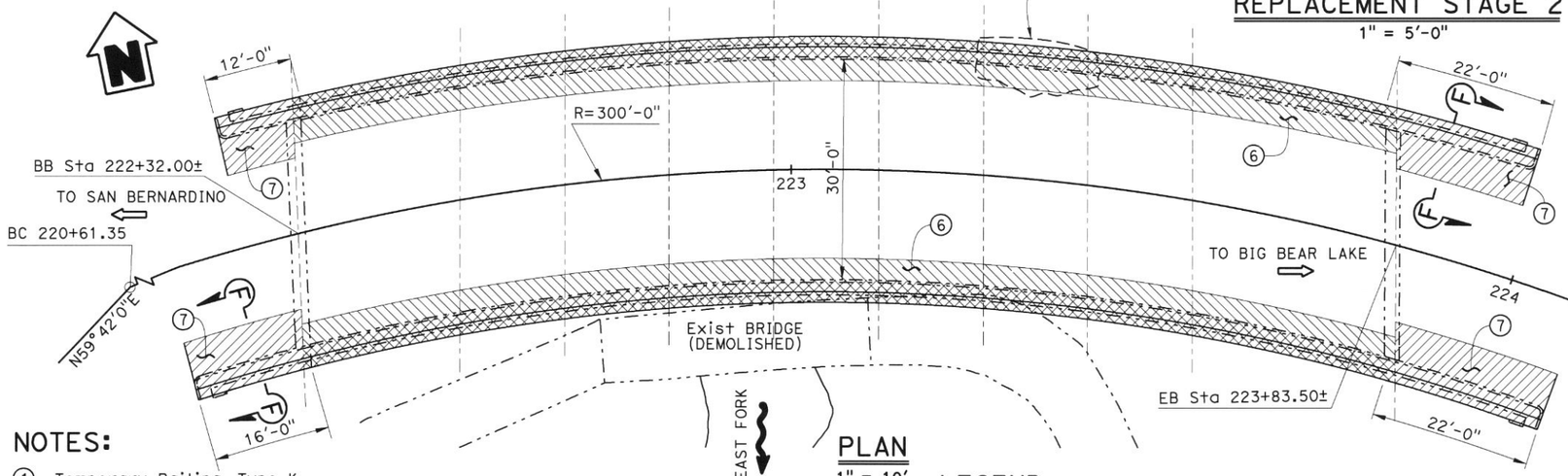
ELEVATION
NO SCALE



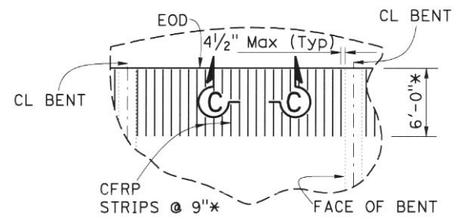
TYPICAL BARRIER
REPLACEMENT STAGE 1



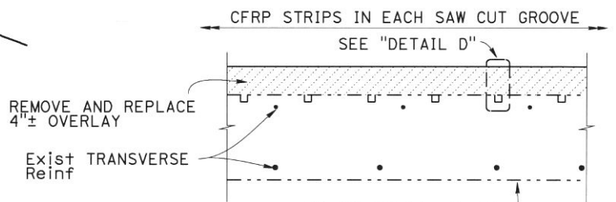
TYPICAL BARRIER
REPLACEMENT STAGE 2
1" = 5'-0"



PLAN
1" = 10'



DETAIL B
NO SCALE



SECTION C-C
NO SCALE

NOTES:

1. Temporary Railing, Type K
2. New Concrete Barrier Type 742 (Mod)
3. Remove Existing Concrete Barrier
4. 4"± HMA Overlay
5. Aesthetic treatment
6. Indicates limits of:
   - Remove existing 4"± AC overlay
   - Remove unsound concrete and repair deck
   - Sawcut grooves in existing concrete deck
   - Fill with epoxy
   - Place new carbon fiber reinforced polymer (CFRP)
   - Place new 4"± HMA (Type B)overlay to match existing
7. Barrier Slab
8. Barrier Reinforcement not shown

LEGEND:

- Remove Exist Concrete
- Exist Construction
- New Construction
- OR (6) CFRP Strengthening
- Remove and Replace AC

ASSUMPTIONS:

1. Only one lane open during construction

DESIGNED BY	MOHAMMAD MUQTADIR	DATE 06/08/16
DRAWN BY	ANTONETTE L. ONG	DATE 06/08/16
CHECKED BY	KYOUNG-HYEOG LEE	DATE 06/08/16
APPROVED	HOWARD NG	DATE 06/08/16

STRUCTURE DESIGN BRANCH 20

SHEET 1 OF 2

PLANNING STUDY

EAST FORK CITY CREEK BRIDGE (REPLACE BARRIER RAIL)

BRIDGE NO. 54-0345	UNIT: 3622
SCALE: AS SHOWN	PROJECT NO. & PHASE: 0812000124-K

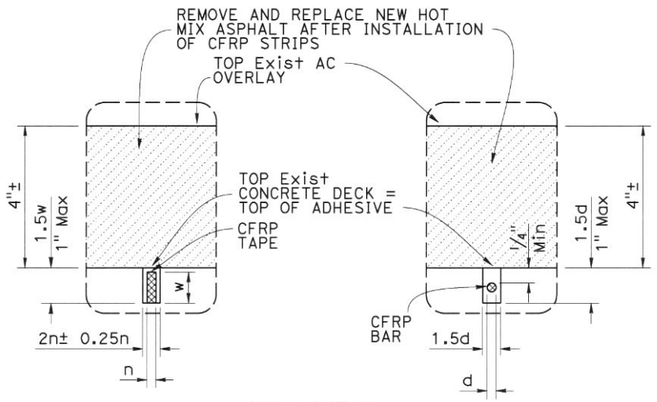
CONTRACT NO.: X

STRUCTURES DESIGN ADVANCE PLANNING STUDY SHEET (ENGLISH) (REV. 08-09-10)

FILE => 54-0345_APS01_Alt2_06-01-16_MM.dgn

USERNAME => s129448 DATE PLOTTED => 15-JUN-2016 TIME PLOTTED => 13:43

DIST	COUNTY	ROUTE	POST MILE
08	SBd	330	



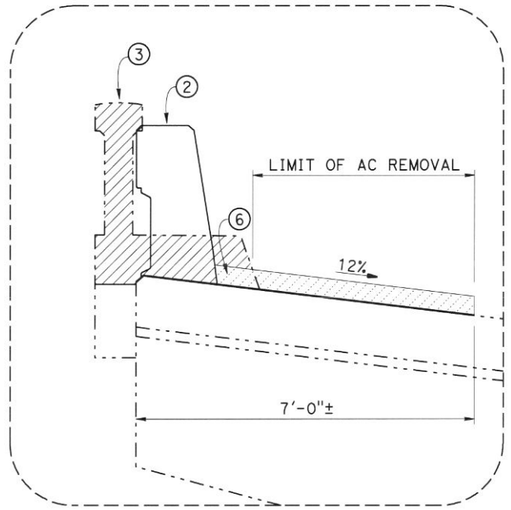
(CFRP STRIPS)

DETAIL D

NO SCALE

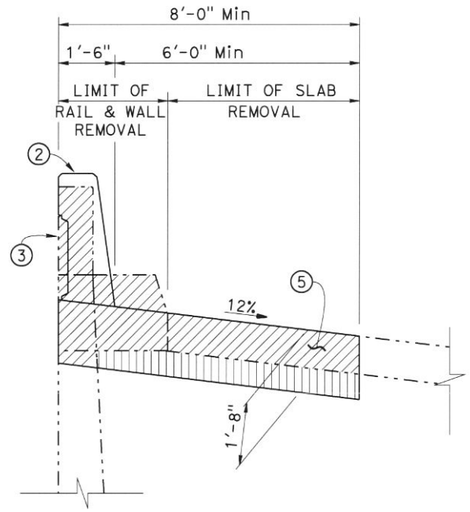
NOTES:

n = NARROW DIMENSION
w = WIDE DIMENSION
d = DIAMETER
AREA ≥ 0.10 In^2



DETAIL E

NO SCALE



SECTION F-F

NO SCALE

NOTES:

② New Concrete Barrier Type 742 (Mod)
③ Remove Existing Concrete Barrier
④ Barrier Reinforcement not shown
⑤ Barrier Slab
⑥ 4"± HMA Overlay

LEGEND:

Remove Exist Concrete
Exist Construction
New Construction
Structure Excavation
Remove and Replace AC

DESIGNED BY	MOHAMMAD MUQTADIR	DATE 06/08/16
DRAWN BY	ANTONETTE L. ONG	DATE 06/08/16
CHECKED BY	KYOUNG-HYEOG LEE	DATE 06/08/16
APPROVED	HOWARD NG	DATE 06/08/16

STRUCTURE DESIGN BRANCH 20

SHEET 2 OF 2

PLANNING STUDY

EAST FORK CITY CREEK BRIDGE (REPLACE BARRIER RAIL)

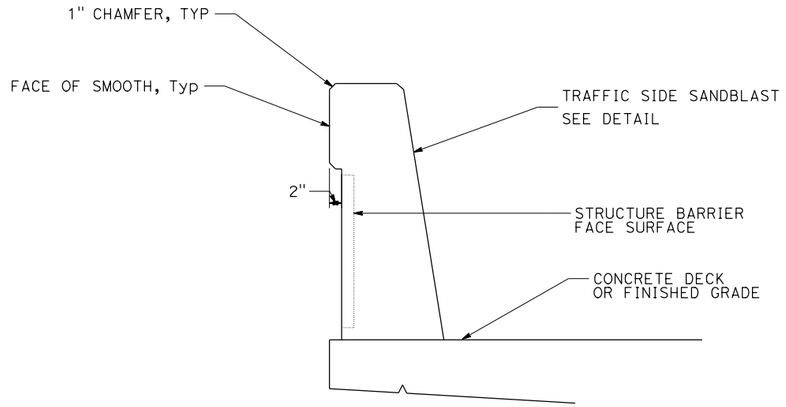
BRIDGE NO. 54-0345	UNIT: 3622
SCALE: AS SHOWN	PROJECT NO. & PHASE: 0812000124-K

FILE => 54-0345_APS02_AI+2_06-01-16_MM.dgn

CONTRACT NO.: X

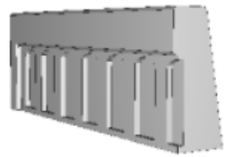
USERNAME => s129448 DATE PLOTTED => 15-JUN-2016 TIME PLOTTED => 13:41

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



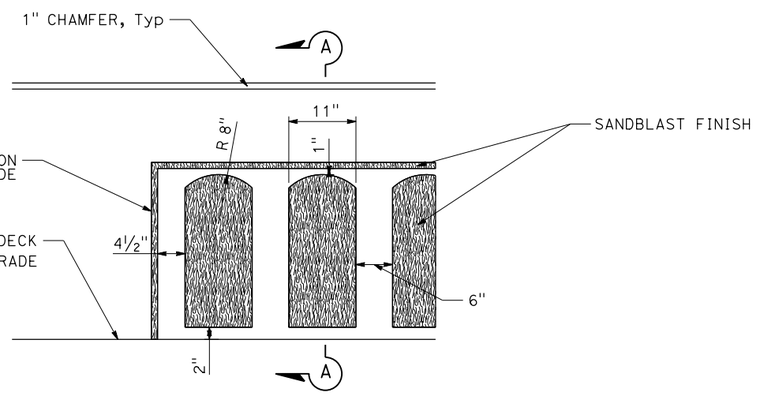
SECTION A-A DETAIL
CONCRETE BARRIER
TYPE 742

1" = 1'-0"



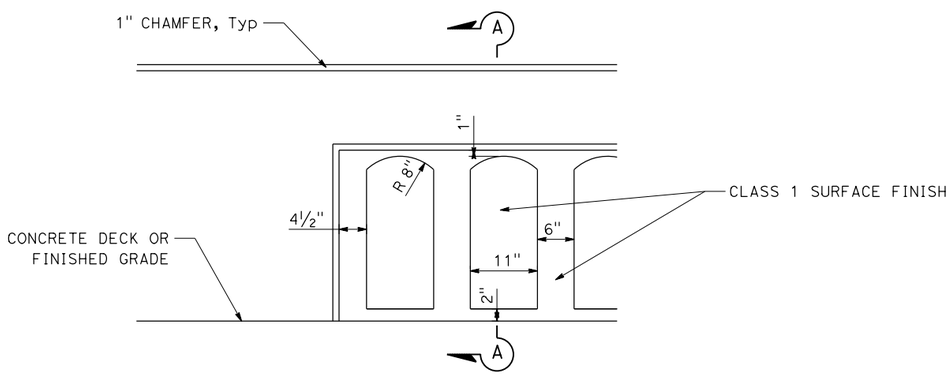
ISOMETRIC

NO SCALE



TYPICAL ELEVATION DETAIL
CONCRETE BARRIER TYPE 742
FACING TRAFFIC

1" = 1'-0"



TYPICAL ELEVATION DETAIL
CONCRETE BARRIER TYPE 742
FACING AWAY FROM TRAFFIC

1" = 1'-0"

ARCHITECTURAL TREATMENT
DETAILS

SCALE: 1" = 1'-0"

AT-01

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd	330	32.48/33.73		

LICENSED LANDSCAPE ARCHITECT

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.

LICENSED LANDSCAPE ARCHITECT
Matthew Perry Hall No. 2272
Signature
10/31/2017
Renewal Date
Date
STATE OF CALIFORNIA

REVISED BY	DATE REVISED
LORENA SALVADOR	MIKE BABICH

CALCULATED-DESIGNED BY	CHECKED BY

SENIOR LANDSCAPE ARCHITECT
MATTHEW P. HALL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

LAST REVISION 00-00-00
DATE PLOTTED => 28-DEC-2016
TIME PLOTTED => 08:07

BORDER LAST REVISED 7/2/2010 | USERNAME => s130436 | DGN FILE => rspb11-57.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2272 | PROJECT NUMBER & PHASE 0812000124 (EA 38852)