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Chick here to go to original staff report

Th22c

Prepared November 10, 2014 for November 13, 2014 Hearing

To: Commissioners and Interested Persons

From: Susan Craig, District Manager
Ryan Moroney, Coastal Planner

Subject: STAFF REPORT ADDENDUM for Th22c
Application Number 3-14-1526 (Cow Cliffs Viaduct)

The purpose of this addendum is to modify the staff recommendation for the above-referenced item.

In the time since the staff report was distributed, staff has received new information from the Applicant necessitating a minor change to the staff recommendation with respect to **Special Condition 1(e)**, which requires undergrounding of the telephone line located in the project vicinity and removal of two telephone poles. On November 6, 2014, Caltrans staff met with AT&T staff at the project site to discuss the feasibility of the requirements of this condition. AT&T staff indicated that undergrounding the phone line from Pole 1 to Pole 2 and removal of Pole 2 can easily be done. (See page 4 of Exhibit 3 in the Staff Report). However, in order to remove Pole 1, the aerial line that goes down into the creek bed would also have to be moved. Thus, the line would either have to be placed underground by trenching through the southern bank of Big Creek, or a conduit would have to be attached to the historical Big Creek Bridge. Both of these options have potential significant impacts, either to sensitive riparian resources due to construction activities taking place in the creek, or to historical resources due to placement of a new conduit on the historic bridge. Neither of these options is viable given the constraints of this Project, including the fact that the environmental document did not consider potential impacts and mitigations for either of these alternatives, and it is not clear that such a project would be the environmentally superior project. Planning and designing an approved solution, if one could be found, would also push Caltrans well past the construction window for this season. Accordingly, the most viable option at this point would be to underground the phone line from Pole 1 to Pole 2, and remove Pole 2 but leave Pole 1 in place. AT&T did indicate that the height of Pole 1 could be reduced, but did not provide an exact number of feet of height reduction.

Given this information, staff concurs that Special Condition 1(e) should be amended to allow Pole 1 to remain in place and to require that this pole's height be reduced to the maximum extent feasible. This change does not modify the basic staff recommendation, which is still approval with conditions. Thus, the staff report is modified as shown below (where applicable, text in

underline format indicates text to be added, and text in ~~strikethrough~~ format indicates text to be deleted):

a. Modify text on staff report at page 2 as follows:

Staff concurs with Caltrans that a viaduct and rockfall netting are necessary to protect Highway 1 from failure and to ensure traveler safety, and that these are the most appropriate interim solutions for this location at the current time. Ultimately, Caltrans will need to pursue a longer term solution for this section of the highway system, which is continually subject to wave attack, shoreline erosion and landslide. In the meantime, the proposed viaduct and rockfall netting will help to maintain slope stability and protect this important transportation, public safety, and recreational access corridor. The project will, however, result in impacts to public recreational access (including the loss of one pullout), public views and sand supply loss to the littoral system. To a certain degree, adverse impacts of the project are mitigated by the project design itself, because it is designed to ensure continued public recreational access along Highway 1. In order to fully mitigate the project's public access and visual impacts, however, the project is conditioned to require undergrounding of a telephone line and removal of ~~two~~ one telephone poles~~~~ and a reduction in the height of a second telephone pole to the maximum extent feasible, access improvements to the Big Creek Bridge Scenic Overlook area, including a public bench, and recreational improvements to another pullout area downcoast from the Project location. Staff has collaborated extensively with Caltrans on these mitigation measures and the resulting agreement is memorialized and reinforced by Special Condition 1. The project is additionally conditioned to require: submittal of as-built plans and a Water Pollution Control Plan (WPCP); incorporation of appropriate avoidance and minimization measures to protect sensitive habitat; the use of appropriate construction best management practices to protect water quality, and future maintenance parameters.*

b. Modify Special Condition 1(e) on staff report pages 5 as follows:

e. Undergrounding of Utilities. *The phone line identified in the project plans (Utility Plan, U-1 Exhibit 1) shall be relocated underground at or near the current location of telephone pole 1 (identified on page 4 of Exhibit 3), ~~and the two existing telephone poles~~ telephone pole 2 (also identified on page 4 of Exhibit 3) shall be removed and telephone pole 1 shall be reduced in height to the maximum extent feasible.*

c. Add text on staff report page 25 as follows:

It should also be noted that the Big Sur Multi-Agency Advisory Council, in conjunction with the office of Congressman Sam Farr, has recently been looking into the issue of undergrounding of utilities along this important public view corridor and identified as an important goal "incorporating undergrounding into transportation projects," as was done for the Rocky Creek Viaduct.

Caltrans staff met with AT&T staff at the project site to discuss the feasibility of undergrounding the phone line at this location and removing both telephone poles. AT&T staff indicated that undergrounding the phone line from Pole 1 to Pole 2 and removal of Pole 2 can easily be done. However, in order to remove Pole 1, the aerial line that goes down into the creek bed would also have to be moved. Thus, the line would either have to be placed

underground by trenching through the southern bank of Big Creek, or a conduit would have to be attached to the historical Big Creek Bridge. Both of these options have potential significant impacts, either to sensitive riparian resources due to construction activities taking place in the creek, or to historical resources due to placement of a new conduit on the historic bridge. Neither of these options is viable given the constraints of this Project, including the fact that the environmental document did not consider potential impacts and mitigations for either of these alternatives, and it is not clear that such a project would be the environmentally superior project. Planning and designing an approved solution, if one could be found, would also push Caltrans well past the construction window for this season. Accordingly, the most viable option at this point would be to underground the phone line from Pole 1 to Pole 2, and remove Pole 2 but leave Pole 1 in place. AT&T did indicate that the height of Pole 1 could be reduced, but did not provide an exact number of feet of height reduction.

Given all the above, the Commission identifies the removal of ~~these poles~~ telephone pole 2 and a reduction in height of telephone pole 1 to the maximum extent feasible, and the undergrounding of this portion of the telephone line (beginning at or near the current location of telephone pole 1 as identified on page 4 of Exhibit 3) as an appropriate mitigation for visual impacts of the project as this will improve the overall public viewshed and visual character of the area. Condition No. 1(e) requires this measure to be implemented.

In addition, Caltrans has requested a few minor changes to clarify Special Conditions 1 and 2, and correct information contained in the staff report findings. The following two changes are incorporated into Special Conditions 1 and 2 to provide for greater flexibility in dealing with potential unforeseen circumstances regarding implementation of the mitigation plan and construction plan:

d. Add text to Special Condition 1 on staff report page 5 as follows:

***1. Public Access/ Visual/Sand Supply Mitigation**. PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Applicant shall submit two copies of a mitigation plan for Executive Director review and approval identifying the measures to be taken to implement the below mitigation requirements. Minor adjustments to these requirements may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources: …*

e. Add text to Special Condition 2 on staff report page 6 as follows:

***2. Construction Plan.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit two copies of a Construction Plan to the Executive Director for review and approval. Minor adjustments to these requirements may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources. The Construction Plan shall, at a minimum, include the following: …*

The following change adds the permit number of the referenced Alder Creek Highway 1 Project

to the staff report to specify which project the staff report is referring to.

f. Add text at page 17 of staff report as follows:

The Commission finds that in-kind recreational mitigation measures are feasible, and can be used as mitigation for the public access recreational resource impacts of the proposed project. This approach is consistent with the Commission's action in the Alder Creek Highway 1 repair project (CDP 3-10-34).

The following modifications are necessary because the impervious surface information provided by the Applicant was incorrect and staff has subsequently been provided with the correct figures.

g. Modify text at page 26 of staff report as follows:

Caltrans has estimated that construction of the project will take roughly one year. The viaduct and roadway will be built one lane at a time starting with the southbound lane. Once the southbound lane is completed, reversing one-way traffic will be shifted over to the southbound lane and construction will begin on the northbound side of the viaduct and the lane leading up to it. The project's existing impervious surface is 17,~~0~~900 sq. ft. The proposed final impervious surface will be ~~40,500~~ 22,600 sq. ft. Therefore, the amount of new impervious surface will be ~~23,500~~ 4,700 sq. ft.

Finally, the following typographical error was identified which requires correction.

h. Correct typographical error at page 27 of the staff report:

In addition to the sensitive marine habitats identified above, an environmentally sensitive habitat area (ESHA) is located on the slopes in the immediate vicinity of the project. For such areas, Coastal Act policy 30240 provides:

Section 302~~0~~40: (a) Environmentally sensitive habitat areas…

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Filed:	10/22/2014
Action Deadline:	4/20/2015
Staff:	R. Moroney - SC
Staff Report:	10/23/2014
Hearing Date:	11/13/2014

STAFF REPORT: CDP HEARING

Application Number:	3-14-1526
Applicant:	Caltrans
Project Location:	Big Sur, North of Big Creek Bridge at site of existing bluff failure (post miles 28.0 to 28.6 in Monterey County).
Project Description:	Construct 175-foot-long viaduct with 12-foot-wide lanes and 4-foot-wide shoulders and related improvements, including permanent rockfall netting on the inland side of the road, to stabilize Highway 1 at this location.
Staff Recommendation:	Approval with Conditions.

SUMMARY OF STAFF RECOMMENDATION

Caltrans proposes to construct a viaduct along a portion of Highway 1 in Big Sur near Big Creek to stabilize the roadway, restore full use of the highway, and preserve highway utility and access. The project would consist of a 175-foot-long viaduct and retaining wall to permanently stabilize a portion of the embankment under Highway 1 that has been subject to extreme landsliding at this location. An approximately 46.5-inch high see-through railing (Type ST-70, as used for the Rocky Creek Viaduct) is proposed on the ocean side of the viaduct for vehicle safety, and an approximately 208 foot extension to existing rockfall netting on the inland side of the project, previously authorized under an emergency CDP, would remain as a permanent fixture to provide for added protection to the traveling public.

The project site is located on a narrow stretch of Highway 1 just north of the Big Creek Bridge in Big Sur, between post miles 28.0 and 28.6. Wave action beneath the highway has substantially eroded the toe of the bluff and over-steepened the slope causing the southbound shoulder of the roadway to collapse. The slope at the edge of the shoulder is vertical and averages 45 degrees over an approximately 160-foot slope distance. Distress cracks have been identified in the pavement indicating movement beneath the roadway, and Caltrans is concerned that the highway could fail catastrophically. The project was initiated in December 2013 to address these conditions. Pursuant to an emergency coastal permit, Caltrans closed the southbound lane and moved all traffic to the northbound land via continuous reversing one-way traffic control until the roadway can be repaired. Under a separate emergency coastal permit, Caltrans also installed an approximately 208-foot-long extension of rockfall netting on the inland side of the road at the project location which expanded upon the approximately 623-foot-long rockfall net that was installed at the site in 2002 to address continual rockfall occurrences at this location. The proposed viaduct will stabilize the roadway and restore full use of the highway at this location, and the rockfall netting extension will protect the highway and travelers on it.

Staff concurs with Caltrans that a viaduct and rockfall netting are necessary to protect Highway 1 from failure and to ensure traveler safety, and that these are the most appropriate interim solutions for this location at the current time. Ultimately, Caltrans will need to pursue a longer term solution for this section of the highway system, which is continually subject to wave attack, shoreline erosion and landslide. In the meantime, the proposed viaduct and rockfall netting will help to maintain slope stability and protect this important transportation, public safety, and recreational access corridor. The project will, however, result in impacts to public recreational access (including the loss of one pullout), public views and sand supply loss to the littoral system. To a certain degree, adverse impacts of the project are mitigated by the project design itself, because it is designed to ensure continued public recreational access along Highway 1. In order to fully mitigate the project's public access and visual impacts, however, the project is conditioned to require undergrounding of a telephone line and removal of two telephone poles, access improvements to the Big Creek Bridge Scenic Overlook area, including a public bench, and recreational improvements to another pullout area downcoast from the Project location. Staff has collaborated extensively with Caltrans on these mitigation measures and the resulting agreement is memorialized and reinforced by Special Condition 1. The project is additionally conditioned to require: submittal of as-built plans and a Water Pollution Control Plan (WPCP); incorporation of appropriate avoidance and minimization measures to protect sensitive habitat; the use of appropriate construction best management practices to protect water quality, and future maintenance parameters.

Accordingly, staff recommends that the Commission approve a conditioned CDP for the project. The motion to act on this recommendation is found on page 4 below.

TABLE OF CONTENTS

APPENDICES

EXHIBITS

I. MOTION AND RESOLUTION

Staff recommends that the Commission, after public hearing, **approve** a coastal development permit for the proposed development. To implement this recommendation, staff recommends a **YES** vote on the following motion. Passage of this motion will result in approval of the CDP as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Motion: *I move that the Commission approve Coastal Development Permit Number 3-14-1526 pursuant to the staff recommendation, and I recommend a yes vote.*

Resolution to Approve CDP: *The Commission hereby approves Coastal Development Permit Number 3-14-1526 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.*

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation.** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

1. Public Access/ Visual/Sand Supply Mitigation. PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Applicant shall submit two copies of a mitigation plan for Executive Director review and approval identifying the measures to be taken to implement the below mitigation requirements:

a. Big Creek Bridge Scenic Overlook Area and Pullout Access. Publicly available vehicle parking areas on the seaward side of Highway 1 at the Big Creek Bridge Scenic Overlook pullout area (Pullout Area 2) shall be maintained for such use, and general public pedestrian access shall be provided and allowed at both the upcoast and downcoast ends of the Big Creek Bridge Scenic Overlook pullout area (as shown in Exhibit 3). One bench shall be installed at the downcoast end of the Big Creek Bridge Scenic Overlook area. The bench shall be rustic, and constructed of wood or rock masonry, and match the rugged character of the Big Sur area, and shall be installed in such a way as to limit visual impacts as seen from Highway 1 and maximizes coastal and bridge views from the bench. Caltrans shall maintain the bench in a manner designed to facilitate public use of the bench, including replacing the bench if it becomes damaged or destroyed by natural or man-made causes. In addition, three to four large, flat-topped boulders appropriate for seating shall be installed along the outer perimeter of the upcoast portion of the Big Creek Bridge Scenic pullout area. Development that interferes with or hinders general public use of the Big Creek Bridge Scenic Overlook area and pullout shall be prohibited.

b. Guardrail Minimization at Big Creek Bridge Scenic Overlook Area Pullout. The project shall incorporate use of the "TAU II" crash cushion attenuator at the Big Creek Bridge Scenic Overlook pullout (Pullout Area 2 shown in Exhibit 3) in order to maximize public access and otherwise ensure continued vehicle and pedestrian access to this location. The design shall incorporate visual minimization features for the crash cushion attenuator consistent with the scenic pullout area, including appropriate treatment to darken and dull the finish of the device, and blend it with the surrounding environs to the maximum extent feasible.

c. Recreational Improvements to Alternate Pullout Area (Pullout 3) Downcoast from Big Creek Bridge. Three to four large, flat-topped boulders appropriate for seating shall be installed along the outer perimeter of the first ocean-side pullout area (Pullout Area 3 as shown in Exhibit 3) immediately downcoast of the Big Creek Bridge.

d. ST-70 Railing. All visual impact minimization measures identified in the project's Mitigated Negative Declaration (dated May 2014) and Scenic Resource Evaluation and Visual Analysis (dated April 3, 2014), including the use of ST-70 railing on the viaduct, shall be incorporated into the Project design.

e. Undergrounding of Utilities. The phone line identified in the project plans (Utility Plan, U-1 Exhibit 1) shall be relocated entirely underground at or near the current location of telephone pole 1 (identified on page 4 of Exhibit 3), and the two existing telephone poles (also identified on page 4 of Exhibit 3) shall be removed.

2. Construction Plan. PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Permittee shall submit two copies of a Construction Plan to the Executive Director for review and approval. The Construction Plan shall, at a minimum, include the following:

a. Construction Areas. The Construction Plan shall identify the specific location of all construction areas, all staging areas, and all construction access corridors in site plan view. All such areas within which construction activities and/or staging are to take place shall be minimized to the maximum extent feasible in order to have the least impact on public access and shoreline resources, including by using alternative areas for staging and storing construction equipment and materials as feasible.

b. Construction Methods. The Construction Plan shall specify the construction methods to be used, including all methods to be used to keep the construction areas separated from public (including bike and pedestrian) access through the construction area and public recreational use areas (including existing turnouts).

c. Construction BMPs. The Construction Plan shall specifically identify the type and location of all erosion control/water quality best management practices that will be implemented during construction to protect coastal water quality, including the following: (a) silt fences, straw wattles, or equivalent apparatus, shall be installed at the perimeter of the construction site to prevent construction-related runoff and/or sediment from discharging to the ocean; (b) equipment washing, refueling, and/or servicing shall take place at least 50 feet from the bluff edge. All construction equipment shall be inspected and maintained at an off-site location to prevent leaks and spills of hazardous materials at the project site; (c) the construction site shall maintain good construction housekeeping controls and procedures (e.g., clean up all leaks, drips, and other spills immediately; keep materials covered and out of the rain (including covering exposed piles of soil and wastes); dispose of all wastes properly, place trash receptacles on site for that purpose, and cover open trash receptacles during wet weather; remove all construction debris from the site); and (d) all erosion and sediment controls shall be in place prior to the commencement of construction as well as at the end of each work day.

d. Construction Site Documents. The Construction Plan shall provide that copies of the signed coastal development permit and the approved Construction Plan be maintained in a conspicuous location at the construction job site at all times, and that such copies are available for public review on request. All persons involved with the construction shall be briefed on the content and meaning of the coastal development permit and the approved Construction Plan, and the public review requirements applicable to them, prior to commencement of construction.

e. Construction Coordinator. The Construction Plan shall provide that a construction coordinator be designated to be contacted during construction should questions arise regarding the construction (in case of both regular inquiries and emergencies), and that their contact information (i.e., address, phone numbers, etc.) including, at a minimum, a telephone number that will be made available 24 hours a day for the duration of construction, is conspicuously posted at the job site where such contact information is readily visible from public viewing areas, along with indication that the construction

coordinator should be contacted in the case of questions regarding the construction (in case of both regular inquiries and emergencies). The construction coordinator shall record the name, phone number, and nature of all complaints received regarding the construction, and shall investigate complaints and take remedial action, if necessary, within 24 hours of receipt of the complaint or inquiry.

f. Notification. The Permittee shall notify planning staff of the Coastal Commission's Central Coast District Office at least three working days in advance of commencement of construction, and immediately upon completion of construction.

3. Final Water Pollution Control Plan. PRIOR TO COMMENCEMENT OF CONSTRUCTION, the Applicant shall submit two sets of a final Water Pollution Control Plan (WPCP) to the Executive Director for review and approval. Minor adjustments to the following requirements may be allowed by the Executive Director if such adjustments: (1) are deemed reasonable and necessary; and (2) do not adversely impact coastal resources. The final WPCP shall include provisions for all of the following:

a. Sedimentation Controlled. Runoff from the project site shall not increase sedimentation in coastal waters post-construction. During construction, runoff from the project site shall not increase sedimentation in coastal waters beyond what is allowable under the final Water Quality Certification approved for the project by the Regional Water Quality Control Board.

b. Pollutants Controlled. Runoff from the project site shall not result in other pollutants entering coastal waters or wetlands during construction or post-construction.

c. BMPs. Best Management Practices (BMPs) shall be used to prevent the entry of polluted stormwater runoff into coastal waters and Big Creek during construction and post construction, including use of relevant BMPs as detailed in the current California Storm Water Quality Best Management Handbooks (http://www.cabmphandbooks.com).

d. Spill Measures. An on-site spill prevention and control response program, consisting of BMPs for the storage of clean-up materials, training, designation of responsible individuals, and reporting protocols to the appropriate public and emergency service agencies in the event of a spill, shall be implemented at the project to capture and cleanup any accidental or other releases of oil, grease, fuels, lubricants, or other hazardous materials, including to avoid them entering coastal waters or wetlands.

e. BMP Schedule. A schedule for installation and maintenance of appropriate construction source-control BMPs to prevent entry of stormwater runoff into the construction site and to prevent excavated materials from entering runoff leaving the construction site.

All requirements above and all requirements of the approved WPCP shall be enforceable components of this CDP. The Permittee shall undertake development in accordance with this condition and the approved WPCP.

4. Future Monitoring and Maintenance. This coastal development permit requires ongoing monitoring of the overall permitted viaduct structure and related improvements at this location

(i.e., viaduct, railings, rockfall netting, soldier pile wall, drainage, and associated development), and authorizes future maintenance as described in this special condition. The Permittee acknowledges and agrees on behalf of Caltrans and all successors and assigns that: (a) it is Caltrans' responsibility to maintain the permitted viaduct structure and related improvements in a structurally sound manner and in its approved state; (b) it is Caltrans' responsibility to retrieve any failing portion of the permitted structure or related improvements that might otherwise substantially impair the aesthetic qualities of the beach; and (c) it is Caltrans' responsibility to annually or more often inspect the overall permitted viaduct structure and related improvements for signs of failure and/or displaced structural components. Any such maintenance-oriented development associated with the overall permitted viaduct structure and improvements shall be subject to the following:

a. Maintenance. "Maintenance," as it is understood in this condition, means development that would otherwise require a coastal development permit whose purpose is to repair and/or maintain the overall permitted viaduct structure and rockfall netting and make improvements to their approved configuration, including retrieval of any project components that may be displaced from the approved design. Any proposed modifications to the approved as-built plans or required construction BMPs associated with any maintenance event shall be reported to planning staff of the Coastal Commission's Central Coast District Office with the maintenance notification (described below), and such changes shall require a coastal development permit amendment unless the Executive Director determined that an amendment is not legally required.

b. Other Agency Approvals. The Permittee acknowledges that these maintenance stipulations do not obviate the need to obtain permits from other agencies for any future maintenance and/or repair episodes.

c. Maintenance Notification. Prior to commencing any maintenance event, the Permittee shall notify planning staff of the Coastal Commission's Central Coast District Office, in writing, regarding the proposed maintenance. Except for necessary emergency interventions, such notice shall be given by first-class mail at least two weeks in advance of commencement of work. The notification shall include a detailed description of the maintenance event proposed, and shall include any plans, engineering and/or geology reports, proposed changes to the maintenance parameters, other agency authorizations, and other supporting documentation describing the maintenance event. The maintenance event shall not commence until the Permittee has been informed by planning staff of the Coastal Commission's Central Coast District Office that the maintenance event complies with this coastal development permit. If the Permittee has not received a response within 30 days of receipt of the notification by the Coastal Commission's Central Coast District Office, the maintenance event shall be authorized as if planning staff affirmatively indicated that the event complies with this coastal development permit. The notification shall clearly indicate that the maintenance event is proposed pursuant to this coastal development permit, and that the lack of a response to the notification within 30 days of its receipt constitutes approval of it as specified in the permit.

d. Non-compliance Proviso. If the Permittee is not in compliance with the conditions of this permit at the time that a maintenance event is proposed, then the maintenance event that might otherwise be allowed by the terms of this future maintenance condition may not be allowed by this condition, subject to determination by the Executive Director.

e. Emergency. Nothing in this condition shall serve to waive any Permittee rights that may exist in cases of emergency pursuant to Coastal Act Section 30611, Coastal Act Section 30624, and Subchapter 4 of Chapter 5 of Title 14, Division 5.5, of the California Code of Regulations (Permits for Approval of Emergency Work).

f. Duration of Covered Maintenance. Future maintenance under this coastal development permit is allowed subject to the above terms for TEN YEARS FROM THE DATE OF PERMIT ISSUANCE. Maintenance can be carried out beyond the ten-year period if the Executive Director extends the maintenance term in writing. The intent of this permit is to regularly allow for ten-year extensions of the maintenance term unless there are changed circumstances that may affect the consistency of this maintenance authorization with the policies of Chapter 3 of the Coastal Act and thus warrant a re-review of this permit.

5. As-Built Plans. WITHIN THREE MONTHS OF COMPLETION OF CONSTRUCTION, the Permittee shall submit two copies of As-Built Plans for Executive Director review and approval showing all development authorized by this coastal development permit; all property lines; and all highway elements. The As-Built Plans shall be substantially consistent with the submitted project plans (dated received in the Coastal Commission's Central Coast District Office on August 18, 2014). The As-Built Plans shall include color photographs (in hard copy and jpg format) that clearly show the as-built project, and that are accompanied by a site plan that notes the location of each photographic viewpoint and the date and time of each photograph. At a minimum, the photographs shall be from upcoast, seaward, and downcoast viewpoints, seen from the edge of the highway and from a sufficient number of viewpoints as to provide complete photographic coverage of the permitted viaduct and related structures at this location (i.e., viaduct, railings, rockfall netting, soldier pile wall, drainage, and associated development). Such photographs shall be at a scale that allows comparisons to be made with the naked eye between photographs taken in different years and from the same vantage points; recordation of GPS coordinates would be desirable for this purpose. The As-Built Plans shall be submitted with certification by a licensed civil engineer with experience in coastal structures and processes, acceptable to the Executive Director, verifying that the armoring has been constructed in conformance with the submitted project plans.

6. Environmentally Sensitive Habitat Area. The project shall incorporate and comply with all avoidance and minimization measures for biological impacts identified in the "Programmatic Biological Opinion for Highway 1 Management Activities that Affect Smith's Blue Butterfly (1-8-07-F-68)," the "Natural Environmental Study" (dated April 2014) and the MND.

7. Assumption of Risk, Waiver of Liability and Indemnity. By acceptance of this permit, the Permittee acknowledges and agrees, on behalf of itself and all successors and assigns: (i) that the site is subject to hazards from episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunami, tidal scour, coastal flooding, and the interaction of same; (ii) to assume the risks to the Permittee and the property that is the subject of this permit of injury

and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims due to such hazards), expenses, and amounts paid in settlement arising from any injury or damage.

IV. FINDINGS AND DECLARATIONS

A. PROJECT LOCATION, DESCRIPTION AND BACKGROUND

The project site is located on Highway 1 approximately 50 miles south of Monterey, and 40 miles north of Cambria, along the Big Sur coastline between post miles 28.0 and 28.6. It sits just north of the Big Creek and the Big Creek Bridge within the Landels-Hill Big Creek Reserve.[1] The surrounding terrain is mountainous, and highway side slopes are steep. At this location, Highway 1 has essentially been notched into the side of the Santa Lucia Mountains, which drop vertically into the Pacific Ocean. This stretch of coastline, like much of the Big Sur coast, finds Highway 1 extending along an extreme coastal landform creating the unique scenic drive that characterizes the touring experience along much of this area, but also leading to the types of issues associated with maintaining its precarious perch. Within the project limits, the current roadway varies in width between 22 and 24 feet, with 11-foot-wide lanes and zero to two-foot-wide shoulders.

The project proposes to construct a full-width sidehill viaduct in order to address narrowing of the southbound travel lane and a dip in the profile grade due to loss of highway embankment along the westerly side of the roadway in order to restore full access to the highway, and preserve utility and highway access to the Big Sur area. A sidehill viaduct is like a bridge in that it is supported by concrete columns, but unlike a bridge, the inland side of the roadway sits on grade. The project includes the following features:

- The viaduct structure will have 12-foot-wide lanes and 4-foot-wide shoulders.
- The viaduct will consist of three spans of pre-cast/pre-stressed "I" girder using two 2-column bents. Each column is made of steel-cased, cast-in-drilled-hole concrete. (See Exhibit 1 and Table 1 below.)
- Each abutment will have seven 24-inch cast-in-drilled-hole concrete piles. (See Abutment 1 and Abutment 4 Layouts in Exhibit 1.)

[1] The Landels-Hill Big Creek Reserve consists of approximately 3,848 acres land located in the Santa Lucia Mountain Range in Big Sur. It is operated by the University of California at Santa Cruz as a scientific research preserve "through which nature can be investigated, observed and monitored, but not fundamentally altered," and is not open to the general public.

- A 46.5-inch-high metal railing (Type ST-70) on the west side of the viaduct will protect vehicles and bicycles from leaving the new structure.
- A short soldier-pile retaining wall will be constructed on the inland side, under the viaduct, where it will not be visible to the public. The retaining wall will be constructed of concrete-encased steel I-beams spaced by treated timber lagging. (See Soldier Pile Wall Details No. 1 and 2 in Exhibit 1.)
- The viaduct will receive concrete end treatments with a date stamp, transitioning into guardrail.
- The north end of the viaduct will be preceded by about 200 feet of steel guardrail with steel posts; the south end will be preceded by about 60 feet of guardrail with steel posts. Guardrails and posts will be treated with a brown Natina coloring to reduce glare.
- An existing phone line buried in the side of the inland cliff will be relocated underground.

See Table 1 below for full structure detail.

Table 1 – Structure Detail for Cow Cliffs Viaduct	
Structure Type	Pre-cast/pre-stressed "I" girder with cast-in-place concrete deck
Viaduct Length	175 ft
Viaduct Width	34 ft (2-ft barrier + 4-ft shoulder + 12-ft lane + 12-ft lane + 4-ft shoulder
Abutments	Seat-type abutments[2]
Bent/Column	Two 2-column bents (4-ft diameter columns with permanent casing)
Foundation Type	Abutments: 24" CIDH; Bents: 3-ft diameter CIDH
No. of spans	Three spans: 75-ft middle span and two 50-ft end spans

In addition to the project components described above, the project also proposes to authorize work recently performed at this location under two emergency permits; ECDP G-3-13-0227 (Big Creek Traffic Signalization; Issue Date: December 19, 2013) and ECDP G-3-14-0011 (Cow Cliffs rockfall net; Issue date: April 1, 2014.) These emergency permits were granted as a result of substantial erosion at the toe of the bluff, which caused the southbound shoulder of the roadway to collapse and resulted in distress cracks in the pavement of the highway. The traffic signalization project established the current temporary traffic signal and concrete "K" railing that closed off the southbound lane, and will be removed with construction of the permanent repair. The rockfall net project consisted of eight 26-foot-long by 11-foot-tall panels anchored into the ground in a shallow foundation and tethered to the hillside by a cable. Caltrans intends to retain this netting as a permanent fixture (and extension to the previously approved 623 linear feet of rockfall netting installed in 2002) to provide added protection to the traveling public. Thus, a portion of this CDP application represents the required follow-up regular CDP application to recognize the rockfall netting installed under emergency CDP G-3-14-0011 as permanent. Although this development exists, and relevant existing information on it is brought to bear, it

[2] Seat-type supports are normally used at bridge ends to accommodate thermal expansion and eliminate the high stresses that would otherwise be present in the superstructure when the ends are rigidly held.

has not previously been authorized by a formal CDP process. Thus, for Coastal Act analytical purposes, the rockfall net extension will be evaluated as if it were not yet in place.

See **Exhibit 1** for project plans; **Exhibit 2** for project location; **Exhibit 3** for photographs of the project site; **Exhibit 4** for photographs of the traffic signal; **Exhibit 5** for photographs of the rockfall netting; and **Exhibit 6** for Final Roadway Aerial.

B. STANDARD OF REVIEW

The site is within the Landels-Hill Big Creek Reserve, which is owned by the University of California. Coastal Act Section 30519(b) provides that the Commission review development proposals for any state university or college located in the coastal zone. Therefore the standard of review for this project is the Chapter 3 policies of the Coastal Act.

C. GEOLOGICAL CONDITIONS AND HAZARDS

Coastal Act Section 30235 addresses the use of shoreline protective devices:

> ***30235.*** *Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.*

Coastal Act Section 30253 addresses the need to ensure long-term structural integrity, minimize future risk, and to avoid landform altering protective measures in the future. Section 30253 provides, in part:

> ***Section 30253.*** *New development shall do all of the following:*
>
> *(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
>
> *(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*

Analysis

Coastal Act Section 30235 acknowledges that seawalls, revetments, cliff retaining walls, groins and other such structural or "hard" methods designed to forestall erosion also alter natural landforms and natural shoreline processes. Accordingly, with the exception of coastal-dependent uses, Section 30235 limits the construction of shoreline protective works to those required to protect existing structures or public beaches in danger from erosion. The Coastal Act provides these limitations because shoreline structures can have a variety of negative impacts on coastal resources, including adverse effects on sand supply, public access, coastal views, natural

landforms, and overall shoreline beach dynamics on and off site, ultimately resulting in the loss of beaches.

Under Coastal Act Section 30235, a shoreline structure may be approved if: (1) there is an existing structure; (2) the existing structure is in danger from erosion; (3) shoreline-altering construction is required to protect the existing endangered structure; and (4) the required protection is designed to eliminate or mitigate its adverse impacts on shoreline sand supply. The first three questions relate to whether the proposed armoring is necessary, while the fourth question applies to mitigating some of the impacts from it.

Existing Structure to be Protected

The existing State Highway at this location was originally constructed in the 1930's, and therefore predates the coastal permitting requirements of both 1972's Proposition 20 (the Coastal Initiative) and the 1976 Coastal Act. As noted, Highway 1 provides a very important transportation, commerce, and public safety link to communities within Big Sur and along the Big Sur coast. It is also an extremely valuable and popular public access and recreation amenity. Accordingly, the highway and its related elements (e.g., drainage, etc.) at this location qualify as existing structures for purposes of Coastal Act Section 30235.

Danger from Erosion

The Coastal Act allows cliff retaining walls when required to protect existing structures in danger from erosion, but it does not define the term "in danger." There is a history of extreme, continuous erosion taking place on the hillside below the highway at this location, which has resulted in severe erosion of the embankment that supports the highway and undercutting of the highway's roadbed. As noted above, the Commission previously issued ECDP G-3-13-0227 (Big Creek Traffic Signalization) on December 19, 2013, to authorize the southbound lane closure in order to address this issue (see Exhibit 4). Therefore, the erosion danger at the site is well documented. Additionally, Caltrans submitted a "Foundation Report for Cow Cliffs Viaduct" prepared by Caltrans' Division of Engineering Services, Geotechnical Services. The report contains a characterization of subsurface geotechnical conditions, an analysis of potential site conditions as they pertain to the project, and a recommended design and construction criteria for the proposed structure's foundation. The report also documents the project need and purpose, and the immediacy of the threat:

> *The loss of embankment appears to be the result of a combination of ocean wave action washing away the toe of the slope, and percolating rain water piping soil from beneath the roadway and eroding the slope. Due to concerns that the south bound lane could be lost to a catastrophic failure of the highway embankment, the lane has been closed to traffic, and will remain so until the viaduct is constructed.*
> *…*
>
> *The loss of highway embankment along this stretch of roadway appears to be episodic rather than continuous. Erosion rates have been based on reviews of rainfall records and inspection of recent and historical photographs of the site. The roadway cross section in the project area initially included a continuous dirt shoulder, approximately 20 feet wide, along approximately 300 feet of its westerly side, beginning about 200 feet northwest of the Big Creek Bridge. The highway embankment appears to have been relatively stable up to 1982. Then, during the*

> *1982/1983 "El Niño" storms approximately 6 feet of embankment was lost along the middle third of its length. From 1983 to 1997 embankment loss was minimal. Again, during the 1997/1998 "El Niño" storms, another approximately 6 feet of embankment was lost. By then, the hinge point of the embankment slope was 8 feet away from the edge of the traveled way. Embankment loss was minimal from 1998 to 2005, but between 2005 and 2011, three episodes of high rainfall resulted in the loss of 5 additional feet of embankment. The highway embankment is presently in an over steepened condition, and arcuate cracks have developed in the roadway pavement. The apex of the erosion scarp is now approximately 2.5 feet from the edge of the traveled way.*

In addition, the "Landslides in Highway 1 Corridor" (November 2001, pp. 28-29) prepared in conjunction with the Coast Highway Management Plan (CHMP) describes this section of the highway as follows:

> *The Lopez Point-Gamboa Point area shows great variation in the types of rocks and types of landslides. Bounding the area are two large blocks of greenstone within the Franciscan Complex. Both the southern block, known as Rain Rocks, and the northern one, known as Cow Cliffs, originally formed very steep sea cliffs that rose hundreds of feet above sea level. Construction of the highway across these cliffs resulted in hundreds of feet of very steep slopes above the highway. At Rain Rocks these slopes are nearly vertical and composed of hard rocks that are prone to rockfalls. At Cow Cliffs the rocks are more fractured and the slopes somewhat less steep, but rock falls and debris slides have been common. Between these two blocks of very resistant rock, the Franciscan melange contains the greatest density of landslides on the Big Sur Coast. This segment definitely has the highest level of landslide activity in the highway corridor. The landslides are mainly very large and relatively slow-moving but with significant potential for debris slides and rock falls.*

Finally, photographic evidence of the site clearly demonstrates the erosion danger. (See **Exhibit 3**.)

Accordingly, Highway 1 and its related elements are existing structures that are in danger from erosion and thus qualify for shoreline protection consideration under the second Section 30235 test.

Feasible Protection Alternatives to a Shoreline Structure

The third Section 30235 test that must be met is that the proposed armoring must be "required" to protect the existing threatened structure. In other words, shoreline armoring can be permitted if it is the only feasible alternative capable of protecting the structure. When read in tandem with other applicable Coastal Act policies cited in these findings, this Coastal Act 30235 evaluation is often conceptualized as a search for the least environmentally damaging feasible alternative that can serve to protect existing endangered structures.

Other alternatives typically considered include: the "no project" alternative; abandonment of threatened structures; relocation of the threatened structures; sand replenishment programs; drainage and vegetation measures applied to the bluff and on the blufftop itself; and

combinations of each.[3] In the present case, the first two alternatives were not pursued because they would result in the closure of Highway 1, which is an unsatisfactory outcome for necessary transportation links, commerce, and public access and recreation along the Big Sur Coast. The no-project alternative would mean that storm wave erosion would threaten the slope that supports the westerly edge of Highway 1. Left alone and unarmored, roadway collapse would shortly follow and scenic Highway 1 would have to be closed. Thus, the no-project and abandonment alternatives are rejected because they would not accomplish the prime project purpose of protecting the existing highway. Similarly, given that there is only a small, narrow rocky beach located at the base of the bluff along the project site, sand replenishment and above-beach stabilization measures would also not effectively address the primary threat of direct wave attack to the toe of the supporting and weakly consolidated slope, and are likewise insufficient responses here.

Thus, the proposed project was selected by Caltrans as the least environmentally damaging feasible alternative. In this case, an essential State Highway structure is already vulnerable to ocean wave attack. For the time being, there are no available, feasible alternatives that will have less impact on the environment or avoid some form of cliff armoring. The Commission concurs that the proposed alternatives, i.e. the proposed viaduct and rockfall netting, are both feasible and appropriate, and that they form the basis for the most Coastal Act-consistent approach for addressing the identified erosion risk on an interim basis at this location and at the current time. Again, future planning is required to better address Highway 1 stability more comprehensively and proactively (as opposed to a project by project response basis), but such efforts will take significant time and resources, and aren't appropriately a part of the current project.

In summary, Highway 1 is in danger from erosion, shoreline armoring is required, and Caltrans' preferred solutions are the most appropriate in this case. Accordingly, the proposed project meets the first three elements of Section 30235.

Sand Supply Impacts

The fourth test of Section 30235 that must be met in order to allow Commission approval is that shoreline structures must be designed to eliminate or mitigate adverse impacts to local shoreline sand supply.

Beach sand material comes to the shoreline from inland areas, carried by rivers and streams; from offshore deposits, carried by waves; and from coastal dunes and bluffs, and, as relevant here when the bluffs lose material due to wave attack, landslides, surface erosion, gullying, and other processes. Within the project area, the shoreline is made up of medium-sized cobble and boulders which appear to be comprised of harder rock. Before highway construction, erosion of the scree slope at the base of the mountains was a likely contributor to beach rock and possibly to sand supply. Loose debris shed by the steep rocky hillside freely accumulated on the slope leading down to the beach. This slope represents the natural angle of repose for unconsolidated

[3] Caltrans prepared a structure-type alternatives analysis which identified the proposed structure type as the preferred alternative. With regard to the rockfall netting, Caltrans indicated that each rock slide/fall system is designed specifically for each location, based on the unique circumstances of that location. Cow Cliffs experiences large boulders that could potentially crush a vehicle or block the road; therefore the rock net at Cow Cliffs was designed to handle the size and velocity of the rocks that could put the public and highway at risk.

rocky debris sliding down from the mountain's densely compressed siltstones and mudstones. At the toe of the debris slope, wave attack would excavate loose material and thereby add to the offshore sand budget. Continued wave attack across the beach area would steepen the toe of the debris slope, inducing more material to slide down towards the sea until a new, temporary equilibrium was reached.

The soldier pile cliff retaining wall and rock fall netting would be expected to alter these natural processes, particularly with respect to the amount of material that would have been supplied to the beach if the bluff were to erode naturally. Moreover, if natural erosion were allowed to continue at the project site, some amount of additional beach material would be added to the larger littoral cell sand supply system fronting the bluffs.

It has proven difficult over the years for the Commission to identify appropriate mitigation for such impacts. That difficulty is heightened by the particular facts of this case, including: 1) the cliff retaining wall is being constructed primarily to allow for construction of the viaduct as opposed to armoring any shoreline, and will be completely or partially buried once construction is completed; 2) the entire cliff around the project area is actively eroding; 3) much of the slide material consists of medium and large rocks, rather than sand; and 4) the beach below is generally lacking in sand and consists primarily of rock and boulders.

In this case, Commission staff discussed with Caltrans the possibility of side-casting the landslide debris captured in the rockfall netting as a means of mitigating impacts to sand supply. Numerous problems were identified with this option, including the fact that the intertidal area below is designated as critical habitat for the Black Abalone (*Haliotis cracherodii*) and the offshore area is part of the California Coastal National Monument and is also part of the Monterey Bay National Marine Sanctuary (and side-casting could harm these resources). In light of these issues and that disposal of landslide debris may affect a number of different stakeholder groups (such as the Commission, Caltrans, the National Sanctuary, National Marine Fisheries Service, California Fish and Wildlife etc.), Caltrans has agreed to take the lead on convening a future stakeholders group. This group will consider updating the Coast Highway Management Plan to analyze the issue of side-casting, landslide debris management and sand supply budget in hopes of identifying appropriate areas along the coast to allow for disposal of material that would otherwise have found its way into the offshore sand supply system.[4]

Where minimization of impacts is not possible or sufficient to offset impacts, mitigation typically required by the Commission for such sand supply impacts have been in-lieu fees and/or beach nourishment, and in some cases compensatory beach access improvements. With regards to beach nourishment, a formal sand replenishment strategy can introduce an equivalent amount of sandy material back into the system over time to mitigate the loss of sand that would be caused by a protective device over its lifetime. Obviously, given the right circumstances such an introduction of sand, if properly planned, could feed into the Big Sur coast sand system to mitigate the impact of the project. However, offshore bathymetry, shoreline orientation, and

[4] Caltrans' commitment is subject to the Commission and National Marine Sanctuary providing respective agency staffing to accommodate this effort. The Sanctuary has already undergone a substantial effort to understanding the sensitivity of shoreline habitats to existing disposal practices and effectively minimizing the negative effects of landslide material deposition or redistribution on or near the shoreline. http://montereybay.noaa.gov/resourcepro/resmanissues/landslide.html

other factors and conditions would appear to inhibit beach sand accretion at the beach below Cow Cliffs, significantly reducing the likelihood that a beach nourishment program could succeed. As an alternative mitigation mechanism, the Commission oftentimes uses a mitigation payment when in-kind mitigation of impacts is not available. In situations where ongoing sand replenishment or other appropriate mitigation programs are not yet in place, the mitigation payment is deposited into an account until such time as an appropriate program is developed, and the funds can then be used to offset the designated impacts. When mitigation funds are pooled in this way for multiple projects in a certain area, the cumulative impacts can also be better addressed inasmuch as the pooled resources can sometimes provide for a greater mitigation impact than a series of smaller mitigations based on individual impacts and fees. Another alternative mitigation also often applied by the Commission is using public recreational access improvements to offset impacts from encroachment, passive erosion and loss of bluff materials. Such mitigation is typically applied by the Commission to public agencies that manage public access when they have applied for armoring projects.

Caltrans has stressed that armoring of the shoreline as proposed preserves the integrity of the Highway 1 right-of-way and the physical transportation facility, which it points out can, in and of itself, be considered mitigation for the impacts caused by the shoreline protective devices. As discussed elsewhere, State Highway Route 1 (i.e., the Big Sur Coast Highway) is a designated National Scenic Byway. The iconic landscape is world renowned. The dramatic confluence of the mountains and the sea has drawn visitors to Big Sur for decades. Highway 1 is also an important transportation and commerce corridor, linking the small rural Big Sur communities with larger urban areas north and south. Big Sur and the smaller towns are dependent on the delivery of goods and services trucked-in via Highway 1, as well as the patrons who frequent local businesses. The highway further provides an essential public service link including for fire protection and response, emergency services, and law enforcement. The Big Sur Coast Highway is also a very popular recreational asset and significant public access route. In the vicinity of Big Creek, Highway 1 provides one of the closest and best views of the Pacific Ocean along its entire 110-mile stretch. Public access opportunities are otherwise uncommon in southern Big Sur, especially within the Landels-Hill Reserve, which is generally closed to public access. Highway 1 also provides the only north-south public access link between Carmel and Cayucos in the coastal zone. The next available through road is 40 miles inland. Thus, it is appropriate in this case to recognize that the project ensures that the public recreational and other attributes of Highway 1 will remain available for public use and to factor that into the development of an overall mitigation package here.

In this case, Caltrans' primary mission is to protect Highway 1, including ensuring the highway's continued and significant public recreational access utility. Thus, there are opportunities for appropriate mitigation in situ; both in terms of project design as well as potential enhanced public recreational access features along this stretch of the highway. Toward this end, Commission staff has coordinated with Caltrans staff on potential improvements to the Big Creek Bridge overlook area and incorporated these improvements into **Special Condition 1**.

The Commission finds that in-kind recreational mitigation measures are feasible, and can be used as mitigation for the public access recreational resource impacts of the proposed project. This approach is consistent with the Commission's action in the Alder Creek Highway 1 repair project CDP. Therefore, this permit is conditioned for in-kind recreational offsets (e.g., public access

improvements to several pullout areas) as the most appropriate and reasonable mitigation method, given the above-described factors. Staff has collaborated with Caltrans to identify appropriate in-kind recreational resource mitigation measures. These measures are described in greater detail in the section on public access and recreation, below. The resulting agreement is memorialized and is reinforced by Special Condition 1.

Accordingly, as conditioned, the proposed project offsets impacts on sand supply through in-kind recreational resource benefits. Therefore, the project satisfies the Coastal Act Section 30235 requirements regarding mitigation for sand supply impacts.

This permit is further conditioned to satisfy the follow-up requirements from emergency coastal development permit G-3-13-0227 (Big Creek Traffic Signalization), as a result of a previous cliff failure at the subject location. Given the geological instability of the landform at this location, there is a possibility that the viaduct structure and related improvements may fail in the future as well. Failure might include displacement of the structure, or portions thereof, which may result in structural components falling to the rocky beach located below the project site. Accordingly, this approval is also conditioned to require monitoring of the new structure to ensure that it remains stable, and also requires that if any or all of the portions of the structure fail and are displaced to the beach below, that such structural components be retrieved from the beach in a timely manner (**Special Condition 4**). Such future monitoring and maintenance activities must be understood in relation to clear as-built plans. Therefore, **Special Condition 5** of this approval requires the submittal of as-built plans to define the footprint and profile of the permitted development.

In terms of recognizing and assuming the hazard risks for shoreline development, the Commission's experience in evaluating proposed developments in areas subject to hazards has been that development has continued to occur despite periodic episodes of heavy storm damage and other such occurrences. Development in such dynamic environments is susceptible to damage due to such long-term and episodic processes. Past occurrences statewide have resulted in public costs (through low interest loans, grants, subsidies, direct assistance, etc.) in the millions of dollars. In this instance, the State of California through its agency Caltrans assumes the economic burdens of the preventative revetment work and any necessary mitigation requirements, as well as the responsibility for seeking a long-term solution. Further, the potentially impacted properties—the Caltrans right of way, the beach and tidal waters under State Lands Commission jurisdiction—are all in public ownership. Nonetheless, given the uncertainties and risks involved, unforeseen costs and impacts may arise as a consequence of project approval. As a means of allowing continued development in areas subject to these hazards, applicants are regularly required to acknowledge site hazards and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed. There are inherent risks associated with development on and around eroding slopes in a dynamic coastal bluff environment; this applies to the project proposed as well as for the highway development in this area in general. The approved project is likely to be affected by bluff and shoreline erosion in the future. Although the Commission has sought to minimize the risks associated with the development proposed in this application (and in past actions with other development at this location), the risks cannot be eliminated entirely. Accordingly, this approval is conditioned for the Applicant to assume all risks for developing at this location (**see Special Condition 7)**.

D. PUBLIC ACCESS AND RECREATION

Coastal Act Section 30604(c) requires that every coastal development permit issued for any development between the nearest public road and the sea "shall include a specific finding that the development is in conformity with the public access and public recreation policies of [Coastal Act] Chapter 3." Coastal Act Sections 30210 through 30213, 30221 and 30223 specifically protect public access and recreation. In particular:

> ***30210.*** *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*
>
> ***30211.*** *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*
>
> ***30213.*** *Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred. …*
>
> ***30221.*** *Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.*
>
> ***30223.*** *Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.*

These overlapping policies clearly protect public access and recreation opportunities for the public, particularly free and low cost access. They also protect Highway 1 for its public recreational attributes.

Analysis

As previously discussed, the project is located just north of Big Creek in the U.C. Landels-Hill Big Creek Reserve. Public access facilities are limited in this area and in southern Big Sur more generally, as a result of the dramatic landform. Highway 1 is the primary public access facility at this location, and offers dramatic views of the mountains and ocean, and the interface between the two. The "Corridor Intrinsic Qualities Inventory: Recreational Qualities" prepared in conjunction with the CHMP eloquently captures this point:

> *The intrinsic recreational qualities along the Coast Highway are the result of the dramatic scenic landscape and inherent isolation of the Big Sur area. Recreation opportunities are defined by the elements of this spectacular setting: precipitous mountains rising straight from the sea, an often-inaccessible rocky shoreline, limited beach access, cold and dangerous surf, and challenging topography. For the majority of the Big Sur Coast, the roadway is the only continuously accessible route or feature. Supporting the vision to provide a continuous trail system along*

> *the coast, sections of the California Coastal Trail (CCT) are already in place along Highway 1. However, the trail presently contains numerous gaps along the Big Sur Coast, where the highway shoulder serves as the only means to span these gaps.* (pg. 3-1)

With respect to this particular segment of the Highway, the "Recreational Qualities Inventory" provides the following detail:

> *The Big Creek Coast is divided into private land in the southern section and a publicly owned, but restricted access ecological reserve in the north. The coastline in this area is rugged and inaccessible. Active recreation is limited, though touring vistas and nature study opportunities are plentiful. Lopez Point, Gamboa Point,* ***and the spectacular concrete arch Big Creek Bridge are the key sightseeing features****. The interim CCT continues to follow the Coast Ridge trail alignment, while the shoreline alternative follows the highway shoulder, from the Kirk Creek area to the Ventana Inn. [emphasis added]*
>
> ***
>
> *The northern half of the segment encompasses Big Creek Reserve, a unit of the University of California Natural Reserve System. Entry is by special permit, University Extension class enrollment, or Esalen seminar only. The plant life in this reserve epitomizes the exceptional diversity of vegetation in the Big Sur region. In a survey of only 4,000 acres in this reserve, 344 species of plants were found, representing 42 percent of all California plant families. An established trail system within the reserve leads to Devil's Canyon, Big Creek footbridge, Whale Hill and the ponderosa pine-covered ridge above Vicente Creek. There is no general public access to the beach at the mouth of Big Creek.* (pg. 3-11)

Thus, at this location, pullouts along the shoulder of Highway 1 provide one of the only opportunities for passive viewing of the unique features present at this location, namely Big Creek the historic Big Creek Bridge (and related rock masonry parapet wall), as well as offshore features including sea stacks, kelp beds, and the marine inhabitants. Moreover, such pullouts represent the most appropriate form of access in such cliff-bound environments. With respect to such pullouts, the CHMP specifically denotes their high value, both individually and cumulatively, and mandates that they be retained to the "maximum extent practicable":

> ***Pullouts are widely valued in this corridor as they allow for impromptu stopping in quiet areas that are small, less populated and unencumbered, in contrast to what might be expected at designated vista points. The essence of the many small pullouts is the opportunity for self-guided and more personal discovery of the coast and might be considered lower impact relative to vista points.*** *Pullouts have generally developed simply as travel-worn areas where a view was evident from the road, and where no sign has ever been needed to draw the traveler to stop. A preference for the informal over the formal is a strongly held value in the corridor and elevates the importance of these roadside features.*

> ***1. With respect to the value and opportunities provided by these less formal areas, retain and maintain existing pullouts to the maximum extent practicable.*** *[Emphasis added]*
>
> *2. Any changes or modifications to existing pullouts should be driven by safety or operational needs; options for permanence (e.g., designating vista points) should be evaluated. Modifications to existing pullouts or establishment of any new pullouts must consider the compatibility with adjacent land uses and intensity of existing use. (pp. 22-23)*

In this case, there are two existing pullouts (see Exhibit 3) at each end of the proposed viaduct structure that currently provide the public with the opportunity to pull off the highway and soak in spectacular views of this rugged coastline. For ease of reference, the upcoast pullout is referred to as Pullout 1 and the downcoast pullout is referred to as Pullout 2. The project as originally proposed would entirely close off public vehicle access to Pullout 1 and substantially impede access to Pullout 2 in order to accommodate for the standard guard railing on the north and southbound approaches to the viaduct.

With regard to Pullout 1, staff concurs with Caltrans staff that maintaining public vehicle access to this location does not appear feasible given the project design. Specifically, even if the guardrailing was shortened to allow vehicular access to this turnout, a vehicle could enter, but could not turn around in order to drive outback onto Highway 1. As Caltrans explained, it would not be appropriate to create a situation that requires a vehicle to back out onto the highway with limited sight distance in order to exit the pullout 1, and the Commission agrees with this assessment and that there are no alternatives that would meet safety requirements while still allowing access to Pullout 1.

However, with regard to Pullout 2, as discussed above, this pullout provides an entirely unique opportunity for viewing the historic Big Creek Bridge. With respect to the Bridge itself, the CHMP "Historic Qualities Inventory" provides:

> *One of the most important public sector resources is the Highway 1 corridor itself, which has been listed in the National Register as a "linear historic district." In addition to its many remarkable engineering features such as masonry railings, drinking fountains, and great highway bridges such as those at Bixby Creek and Wildcat Creek, the highway is also notable for its historic contribution to the region. Following its completion in 1937, it forever changed the character of Big Sur from an isolated frontier to a popular and easily accessible tourist destination.* (pg. 1-4)

Likewise, the "Cultural Resources Inventory" states:

> *The bridges are best understood as a group, however, unified by a common roadway, a common setting, and a single design principle. These are the Big Sur Arches, which together comprise one of the most beautiful public works projects in the United States. They are perhaps the finest products of the Bridge Department of the California Division of Highways, which, in the opinion of bridge historian/engineer David Billington, was responsible for "the best series of arch bridges in the United States."* (pp. 27-28)

Moreover, the downcoast portion of Pullout 2 is bounded by a historically significant rock

masonry parapet wall feature that was constructed at the time of bridge construction and provides a prime example of rock masonry from the time. (See, Exhibit 3). As discussed above, this particular pullout and viewpoint provide unique views to Big Creek and the Big Creek Bridge and also provide an up-close experience of the historic rock masonry parapet wall as well as a unique view of the southern coastline and offshore features. (See, Exhibit 3). Additionally, the upcoast portion of Pullout 2 provides unique views to the ocean, the dramatic upcoast cliff features, as well as offshore features, such as kelp beds and a visually significant seamount. Thus, the loss of public access to Pullout 2, which provides important recreational, cultural, historical and visual features, cannot be found consistent with the Coastal Act.

Commission staff has therefore collaborated with Caltrans staff on a feasible alternative to ensure that public access is maintained at this important public access location. Specifically, **Special Condition 1** requires the use of a "TAU II" crash cushion attenuator instead of the proposed 60 feet of transitional and standard guardrailing that would otherwise impede access to Pullout 2. While somewhat bulky, this device is only 25 feet long and would ensure that public access to this important recreational resource is maintained. (See Exhibit 7).

In the larger context, the project will protect the Highway, which is essential to maintaining the continuity of the primary public access corridor along the Big Sur Coast. Thus, preserving the integrity of the Highway itself provides some mitigation for the proposed project's public access impacts. However, further mitigation measures to reduce the project's public recreational impacts, i.e. closure of one of the existing pullouts and the project's sand supply impacts discussed above, are feasible.

One type of mitigation would be improvements to the California Coastal Trail (CCT) in this area. In general, the Commission advocates for a barrier protected pedestrian walkway if there is no feasible off-highway alignment for the CCT. In this case, no such walkway is incorporated into the design. Moreover, while widening the shoulders to four feet will improve pedestrian safety at the project site, there does not appear to be adequate room on the proposed viaduct for a separate bike/pedestrian walkway. The old pre-highway coastal trail still exists upslope from the Highway as it crosses the privately owned Circle M Ranch and the U.C. Landels-Hill Reserve. Portions of this trail have been widened to accommodate high clearance vehicles, and other segments have been realigned and are in regular use today by the Circle M Ranch employees and U.C. staff. However, as discussed elsewhere in this report public access to the Reserve is severely limited.[5] Rehabilitation of existing trail segments on University of California lands, upslope from the project, would represent the optimal way to align the CCT and meet Coastal Act public access needs for lateral access and mitigate for the loss of Pullout 1. However, this would require future discussions with U.C. (rather than Caltrans) to address its issues of appropriate use of the Natural Reserve land.[6]

Accordingly, the most immediately obvious feasible candidate to mitigate the project's public

[5] Currently, public access in the Landels-Hill Reserve is generally limited to elementary school groups by permission only, post-doctoral and other research with on-site experiments, and U.C. field classes (e.g. photography). General public access is allowed one day per year during U.C.'s annual "open house" event.

[6] U.C. has previously identified parking, recreational over-use, trespass off trails, integrity of ongoing research projects, and sanitation as issues of concern regarding opening up the Reserve to general public access.

access and recreational resource impacts would be to maintain and enhance the down coast Big Creek Bridge Overlook Area (Pullout 2) and to better accommodate public access to this unique viewpoint. This approval is therefore subject to conditions that provide for public access maintenance and improvements to Pullout 2. Specifically, **Special Condition 1** requires maintenance and enhancement of public access opportunities to this unique and historically significant feature of the Big Sur coast (e.g. through the use of a crash cushion to minimize guard railing, installation of a public bench and flat-topped boulders that can be sat on. **Special Condition 1** also calls for modest recreational access improvements to the next pullout downcoast (Pullout 3) from the Big Creek Bridge as part of the overall mitigation package, and these access improvements will serve to mitigate for the loss of the upcoast pullout (see Exhibit 3).

In sum, the project as conditioned will protect the continuity of public access on the Big Sur Coast Highway; and, through substantive public access improvements at the Big Creek Bridge Scenic overlook area (Pullout 2) and the alternate downcoast pullout area (Pullout 3), offset the project's public recreational access impacts, i.e. sand supply loss and the loss of Pullout 1). Therefore, as conditioned, the project can be found consistent with the Coastal Act public access and recreation policies cited above.

E. VISUAL RESOURCES

Coastal Act Section 30251 states:

> ***Section 30251.*** *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.*

The Big Sur Coast represents one of the State's most acclaimed scenic resources. Highway 1 in Monterey County along the Big Sur Coast is a designated State Scenic Highway, the first California highway to be so distinguished. In 1996, it became one of the nation's first "All American Roads," the highest designation offered by the Federal Highway Administration under the National Scenic Byways Program. The Big Sur Coast Highway provides the means by which millions of visitors per year enjoy this great scenic attraction. Thus, the project area is a highly scenic area within the meaning of Coastal Act Section 30251.

Analysis

The project is an emergency safety improvement that, as proposed, will restore the damaged portion of roadway. The proposed viaduct (see Exhibit 1) will include a 46.5-inch-high metal railing on the west side intended to prevent vehicles and bicycles from leaving the new structure. The railing proposed for this project is Type ST-70, which was chosen for its high safety rating and relative visual transparency, and which has been approved by the Commission for previous

projects in the Bug Sur vicinity. Additionally, the north end of the viaduct will be preceded by about 200 feet of steel guardrail with steel posts; the south end will receive about 60 feet of steel guardrail with steel posts. The guardrails and posts will be treated with a brown Natina coloring to reduce glare.

Widening the highway for the length of the viaduct is not expected to have a large effect on the scale or character of Highway 1. The most visible element of the project will be the tubular steel railing because the viaduct itself will not be readily visible from a motorist's perspective but instead will appear similar to the roadway but for the substantial railing element. Moreover, the viaduct will not be visible from upcoast or downcoast Highway 1 locations because distant views to the project site from along Highway 1 are generally blocked by intervening topography. The proposed rockfall net project consists of eight 26-foot-long by 11-foot-tall panels anchored into the ground in a shallow foundation and tethered to the hillside by a cable (see Exhibit 3 for a photo of the netting). This netting was installed under emergency CDP G-3-14-0011 as an extension to the approximately 623 linear feet of rockfall netting installed at the Cow Cliffs site in 2002. Caltrans intends to retain this existing netting as a permanent fixture to provide added protection to the traveling public.

Caltrans prepared a Scenic Resources Evaluation and Visual Analysis for the project that identifies expected visual impacts and visual impact minimization measures, including treatment of the bridge railing and galvanized steel safety devices with a permanent stain to replace the silver finish with a rusty brown color. The Commission has approved this type of railing in this area, and the brown color will blend with adjacent bluffs. Nevertheless, the overall bulk of the viaduct structure, including the increased lane and shoulder widths, the addition of a substantial amount of new guardrailing, and the rockfall net extension will generally impact the public viewshed and alter the natural landform at this site, and result in visual impacts that must be mitigated. **Special** C**ondition No. 1(d)** will ensure that the measures contained in the Scenic Resources Evaluation and Visual Analysis are implemented.

Additionally, as discussed in the project description, the project proposes to relocate and underground an existing phone line that is currently buried along the northbound shoulder. This line, however, then goes above ground and connects to two weathered telephone poles at the downcoast portion of the project location, just upcoast from the Big Creek Bridge. (See page 4 of Exhibit 3.) The Applicant's project description does not include the undergrounding of the phone line at this location or removal of these two telephone poles.

The CHMP, Caltrans guidance documents, and Public Utilities Commission regulations all strongly favor, if not require, the undergrounding of utilities:

> **Overhead Utility Lines**
> *Overhead utilities are a prominent feature along certain sections of the Highway 1 corridor. Although undergrounding of overhead utilities is a general recommendation of these guidelines, it is recognized that some features have cultural value associations and may be considered to contribute to the overall historic, rural character of the corridor. The guidelines are focused on specific locations where traditional utility features may be considered acceptable but are*

> *recognized to have adverse visual impacts. (Figure 12 in Section 3.3 illustrates an example of such utilities along the Garrapata Coast).*
>
> *For designated scenic highways, the State's Public Utilities Commission requires that new utilities be installed underground.* ***Similarly, any project proposed that involves utility relocation also requires undergrounding.*** *(CHMP, Guidelines for Corridor Aesthetics, p. 49; emphasis added).*

Caltrans Scenic Highway Guidelines provides similar guidance (at p. 11; emphasis added):

> ***Undergrounding of Utility Lines. Section 320 of the California Public Utilities Code requires the undergrounding of all new or relocated electric and communication distribution facilities within 1,000 feet of any highway designated an official scenic highway and visible from that highway where feasible.*** *Appendix A provides the full text of Section 320. Copies of the Public Utilities Commission's Order and Court Decisions Relating to Section 320 are available from the Caltrans District Scenic Highway Coordinator, and provide more detail on utility undergrounding. The California Public Utilities Commission makes final determinations regarding exceptions to undergrounding utilities.*

It should also be noted that the Big Sur Multi-Agency Advisory Council, in conjunction with the office of Congressman Sam Farr, has recently been looking into the issue of undergrounding of utilities along this important public view corridor and identified as an important goal "incorporating undergrounding into transportation projects," as was done for the Rocky Creek Viaduct.[7]

Given all the above, the Commission identifies the removal of these poles and the undergrounding of this portion of the telephone line (beginning at or near the current location of telephone pole 1 as identified on page 4 of Exhibit 3) as an appropriate mitigation for visual impacts of the project as this will improve the overall public viewshed and visual character of the area. **Condition No. 1(e)** requires this measure to be implemented. [8]

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[7] See, http://www.co.monterey.ca.us/planning/cca/BSMAAC/BSMAAC%20AGENDAS%20&%20MINUTES%202013/BSMAAC_MINUTES_110113.pdf

[8] Another potential opportunity for visual improvements to the area is modification to an existing Highway 1 drainpipe. This drainpipe is visible from the roadway and adjacent pullout areas in the upcoast portion of the project area (see Page 5 of Exhibit 3). This drainpipe, which extends out from the slope and discharges directly onto the bluff, detracts from the overall visual experience of the otherwise unaltered bluff. Commission staff identified camouflaging of this pipe as a possible mitigation measure to address the project's overall impact to visual resources (e.g., reducing the length of the pipe so that it is more flush with the bluff face). However, Caltrans staff was adamant that any alteration (short of a 50 to 100 foot extension to the base of the bluff) would result in erosion impacts that could impact the stability of the highway. Thus, the Commission finds that the incremental visual improvement of cutting the pipe flush with the bluff is not worth the potential risk to the highway. However, it should be noted that Caltrans staff also brought the pipe feature to the attention of the culvert database manager, who indicated that it will be reviewed and addressed as necessary in the future.

The above measures will help to minimize and mitigate the visual impacts of the proposed development. Therefore, as conditioned, the project can be found consistent with Section 30251 of the Coastal Act.

F. MARINE RESOURCES/WATER QUALITY

The Coastal Act protects the marine resources and habitat offshore of this site. Coastal Act Sections 30230 and 30231 provide:

> ***Section 30230.*** *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*
>
> ***Section 30231.*** *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Analysis

The offshore waters and intertidal zone downslope from the proposed project site are within the Monterey Bay National Marine Sanctuary (MBNMS) and the State Sea Otter Refuge. These reserves protect a variety of marine habitat features, including the rocky intertidal zone, offshore kelp forests, marine mammal haul-outs and seabird nesting and foraging areas, all of which are represented at Cow Cliffs.

Caltrans has estimated that construction of the project will take roughly one year. The viaduct and roadway will be built one lane at a time starting with the southbound lane. Once the southbound lane is completed, reversing one-way traffic will be shifted over to the southbound lane and construction will begin on the northbound side of the viaduct and the lane leading up to it. The project's existing impervious surface is 17,000 sq. ft. The proposed final impervious surface will be 40,500 sq. ft. Therefore, the amount of new impervious surface will be 23,500 sq. ft.

Caltrans prepared a Water Quality Assessment, which stated that a Water Pollution Control Plan or Storm Water Pollution Prevention Plan will be prepared by the design engineer for the project. Caltrans submitted a Storm Water Data Report, and the project plans include a general drainage plan. The Storm Water Data Report identifies construction site best management practices

(BMP's) that may be included in the Water Pollution Control Plan. **Special Condition 3** requires this Plan to be submitted to the Executive Director for review and approval prior to issuance of the permit. **Special Condition 2** requires that the Construction Plan include construction methods typically required by the Commission to protect water quality and marine resources during construction of cliff retaining walls, including maintaining good construction site housekeeping controls and procedures, the use of appropriate erosion and sediment controls, a prohibition on equipment washing, refueling, or servicing on the beach, etc. To further protect marine resources and offshore habitat, **Special Condition 2** also requires construction documents to be kept at the site for inspection, and also requires a construction coordinator to be available to respond to any inquiries that arise during construction. Thus, as conditioned, the project is consistent with Coastal Act Sections 30230 and 30231 regarding protection of marine resources and offshore habitats.

G. ENVIRONMENTALLY SENSITIVE HABITAT

In addition to the sensitive marine habitats identified above, an environmentally sensitive habitat area (ESHA) is located on the slopes in the immediate vicinity of the project. For such areas, Coastal Act policy 30240 provides:

> ***Section 302040:*** *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.* ***(b)*** *Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

Analysis

Caltrans biologists completed a Natural Environment Study (NES) for the project in April 2014. The studies conducted for the project included general biological field surveys and botanical surveys for sensitive plants. The NES identifies regional plant and animal species of concern within the footprint of the project and in close proximity to the project, including seacliff buckwheat, a host plant for the Smith's blue butterfly, American Peregrine falcon and California Condor. The NES' executive summary ultimately found as follows:

> *There is potential for the project to affect seacliff buckwheat (Eriogonum parvifolium), which is a host plant for the federally endangered Smith's blue butterfly. Smith's blue butterfly are known to occur approximately 300 feet south of the project's biological study area. With confirmation of the species so close to the project area in combination with the presence of seacliff buckwheat, the effects determination is that the proposed project may affect and is likely to adversely affect Smith's blue butterfly. Federal Endangered Species Act (FESA) Section 7 Consultation will be required and consultation will be completed through the requirements set forth in the 2008 Programmatic Biological Opinion for Smith's blue butterfly will be implemented.*
>
> *The proposed project would temporarily impact 0.225 acres of coastal scrub habitat and 0.131 acres of ruderal habitat. The proposed project would permanently impact 0.026 acres of scrub habitat, and 0.050 acres of ruderal*

> *habitat. The proposed project would impact approximately six seacliff buckwheat plants.*

Due to the presence of the protected Smith's blue butterfly in the project vicinity as well as the presence of seacliff buckwheat. Pursuant to Coastal Act Section 30240, only resource-dependent uses are allowed in ESHA. The proposed highway is not a resource-dependent use and therefore cannot be allowed in ESHA consistent with this provision of the Coastal Act. However, as described in Section H of this report, the proposed project may be approved under the conflict resolution provision of the Coastal Act, despite this inconsistency.

Nonetheless, the remaining requirements of Section 30240 must be adhered to; namely, ESHA shall not be significantly disrupted or degraded. Caltrans is proposing several measures to avoid and minimize impacts to sensitive resources. Specifically, in order to minimize these impacts, the NES requires the implementation of 19 "Avoidance and Minimization Measures," including four general avoidance and minimization measures, 12 avoidance and minimization measures for Smith's blue butterfly (as provided by the "Programmatic Biological Opinion for Highway 1 Maintenance Activities that Affect the Smith's Blue Butterfly)," one avoidance and minimization measure for nesting birds, and two avoidance and minimization measures for California condors. **Special Condition 6** ensures that these avoidance and minimization measures will be implemented as part of the Project.

In conclusion, the proposed project includes impacts to ESHA. Although these impacts are proposed to be avoided and minimized in many significant ways, the project is fundamentally inconsistent with Coastal Act policies that only allow resource-dependent uses in ESHA. However, as described in Section H of this report, the project can be approved under the conflict resolution provisions of the Coastal Act.

H. CONFLICT RESOLUTION

> ***Section 30007.5:*** *Legislative findings and declarations; resolution of policy conflicts. The Legislature further finds and recognizes that conflicts may occur between one or more policies of the division. The Legislature therefore declares that in carrying out the provisions of this division such conflicts be resolved in a manner which on balance is the most protective of significant coastal resources. In this context, the Legislature declares that broader policies which, for example, serve to concentrate development in close proximity to urban and employment centers may be more protective, overall, than specific wildlife habitat and other similar resource policies.*
>
> ***Section 30200(b)***: Where the commission or any local government in implementing the provisions of this division identifies a conflict between the policies of this chapter, Section 30007.5 shall be utilized to resolve the conflict and the resolution of such conflicts shall be supported by appropriate findings setting forth the basis for the resolution of identified policy conflicts.

As noted previously in this report, the proposed project is inconsistent with Section 30240 (ESHA). However, as explained below, denying or modifying the proposed project to eliminate

these inconsistencies would lead to nonconformity with other Coastal Act policies, namely Sections 30210, 30220 and Section 30251, related to visual resources. In such a situation, when a proposed project is inconsistent with a Chapter 3 policy and denial or modification of the project would be inconsistent with another policy, Section 30007.5 of the Coastal Act provides for resolution of such a policy conflict in a manner that is most protective of coastal resources.

Analysis
Resolving conflicts through application of Section 30007.5 involves the following seven steps:

1) The project, as proposed, is inconsistent with at least one Chapter 3 policy;
2) The project, if denied or modified to eliminate the inconsistency, would affect coastal resources in a manner inconsistent with at least one other Chapter 3 policy that affirmatively requires protection or enhancement of those resources;
3) The project, if approved, would be fully consistent with the policy that affirmatively mandates resource protection or enhancement;
4) The project, if approved, would result in tangible resource enhancement over existing conditions;
5) The benefits of the project are not independently required by some other body of law;
6) The benefits of the project must result from the main purpose of the project, rather than from an ancillary component appended to the project to "create a conflict"; and,
7) There are no feasible alternatives that would achieve the objectives of the project without violating any Chapter 3 policies.

The proposed development meets all of the above criteria for applying conflict resolution, as follows:

Step 1
First, for the Commission to apply Section 30007.5, a proposed project must be inconsistent with an applicable Chapter 3 policy. Here, approval of the proposed development would be inconsistent with Section 30240 because the proposed development will be located in ESHA yet the highway is not a resource-dependent use.

Step 2
Second, the project, if denied or modified to eliminate the inconsistency, would affect coastal resources in a manner inconsistent with at least one other Chapter 3 policy that affirmatively requires protection or enhancement of those resources. A true conflict between Chapter 3 policies results from a proposed project which is inconsistent with one or more policies, and for which denial or modification of the project would be inconsistent with at least one other Chapter 3 policy. Further, the policy inconsistency that would be caused by denial or modification of a project must be with a policy that affirmatively mandates protection or enhancement of certain coastal resources. Without the proposed viaduct, the southbound lane of Highway 1 would remain closed, and closure of the entire highway at this location due to landslides and coastal erosion would be inevitable in the future because of the highly erosive nature of the bluffs on the seaward side of the existing highway. This would be inconsistent with Section 30210 which affirmatively requires the Commission to provide maximum public access. In most cases, denying a proposed project will not cause adverse effects on coastal resources for which the

Coastal Act mandates protection or enhancement, but will simply maintain the status quo. However, where denial of a project would result in significant impacts to public access and recreation and approval is inconsistent with another policy, a conflict between or among two or more Coastal Act policies is presented.

Step 3
The project, if approved, would be fully consistent with the policy that affirmatively mandates resource protection or enhancement. For denial of a project to be inconsistent with a Chapter 3 policy, the proposed project would have to protect or enhance the resource values for which the applicable Coastal Act policy includes an affirmative mandate. That is, if denial of a project would conflict with an affirmatively mandated Coastal Act policy, approval of the project would have to conform to that policy. If the Commission were to interpret this conflict resolution provision otherwise, then any proposal, no matter how inconsistent with Chapter 3 that offered a slight incremental improvement over existing conditions could result in a conflict that would allow the use of Section 30007.5. The Commission concludes that the conflict resolution provisions were not intended to apply to such minor incremental improvements. In this case, the project provides safe and long-term public access to the coast along this highly scenic portion of Highway 1, and, as conditioned to ensure maximization of public access, the project is fully consistent with the Coastal Act public access and recreation policies.

Step 4
The project, if approved, would result in tangible resource enhancement over existing conditions. This is the case here for several reasons. First, as discussed above, the project will protect Highway 1, which is essential to maintaining the continuity of the primary public access corridor along the Big Sur Coast. In addition, as proposed, the viaduct will provide wider shoulders thus improving access and safety to non-motorized traffic. Moreover, as conditioned, the project will result in significant public access and viewshed improvements.

Step 5
The benefits of the project are not independently required by some other body of law. The benefits that would cause denial of the project to be inconsistent with a Chapter 3 policy cannot be those that a project proponent is already being required to provide pursuant to another agency's directive under another body of law. In other words, if the benefits would be provided regardless of the Commission's action on the proposed project, the project proponent cannot seek approval of an otherwise unapprovable project on the basis that the project would produce those benefits – that is, the project proponent does not get credit for resource enhancements that it is already being compelled to provide. For this project, while Caltrans has an obligation to keep the highway open and provide safe access, it cannot repair this section of highway to provide access without a CDP from the Commission. The benefits of the project are therefore not independently required by some other body of law.

Step 6
The benefits of the project must result from the main purpose of the project, rather than from an ancillary component appended to the project to "create a conflict." A project's benefits to coastal resources must be integral to the project purpose. If a project is inconsistent with a Chapter 3 policy, and the main elements of the project do not result in the cessation of ongoing degradation

of a resource the Commission is charged with enhancing, the project proponent cannot "create a conflict" by adding to the project an independent component to remedy the resource degradation. The benefits of a project must be inherent in the purpose of the project. If this provision were otherwise, project proponents could regularly "create conflicts" and then request that the Commission use Section 30007.5 to approve otherwise unapprovable projects. The conflict resolution provisions of the Coastal Act could not have been intended to foster such an artificial and easily manipulated process, and were not designed to barter amenities in exchange for project approval. In this case the benefits of the project result from its primary purpose – a repaired highway that will remain open and available for public access, and conditioned to benefit public access and visual resources.

Step 7

There are no feasible alternatives that would achieve the objectives of the project without violating any Chapter 3 policies. The ideal solution in this case would most likely be to reconstruct Big Creek Bridge, slightly inland from the existing alignment, and to continue northward with a very long rockshed across the face of the Cow Cliffs landslide. Such a bridge would allow room for bicycle-safe shoulders and a barrier-protected pedestrian access. The existing, graceful arch aesthetics could be incorporated into the new bridge, but the existing baluster railing would regrettably have to be replaced with a safer design. The rockshed component would reflect the strategy used at Rain Rocks, nearby. However, such a solution would be very costly and would present the same conflicts with section 30240 and likely impact even more ESHA than the proposed project. Thus, even if this alternative project were feasible, it would be inconsistent with the same Chapter 3 policy that the proposed project violates. Thus, there are no feasible alternatives that would achieve the objectives of the project without violating any Chapter 3 policies.

Based on the above, the Commission finds that the proposed project presents a conflict between Section 30240 on the one hand, and Sections 30210, (30253(1)), 30220, 30240(b), 30253, and 30251, and that this conflict must be resolved through application of Section 30007.5.

Conflict Resolution

With the conflict among several Coastal Act policies established, the Commission must resolve the conflict in a manner which on balance is the most protective of significant coastal resources. In reaching this decision, the Commission evaluates the project's tangible, necessary resource enhancements over the current state and whether they are consistent with resource enhancements mandated in the Coastal Act. In the end, the Commission must determine whether its decision to either deny or approve a project is the decision that is most protective of significant coastal resources.

In this case, the most threatened coastal resource in the project area is public access. The approved project is more protective of coastal resources than denial would be because it allows for continued motor vehicle and bicycle access along and to the coast. ESHA is also an important resource that will be impacted by the proposed project in a manner not consistent with Section 30240. In resolving the identified Coastal Act conflicts, the Commission finds that the impacts on coastal resources from not constructing the project will be more significant than the project's ESHA impacts if these impacts are minimized and mitigated as proposed and conditioned.

Therefore, the Commission finds that approving the project, as conditioned, is, on balance, most protective of coastal resources.

I. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Section 13096 of the California Code of Regulations requires that a specific finding be made in conjunction with coastal development permit applications showing the application to be consistent with any applicable requirements of CEQA. Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect that the activity may have on the environment.

Caltrans, acting as the CEQA lead agency, adopted a Negative Declaration for the proposed project on May 23, 2014. The Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. The preceding coastal development permit findings discuss the relevant coastal resource issues with the proposal, and the permit conditions identify appropriate modifications to avoid and/or lessen any potential for adverse impacts to said resources. All public comments received to date have been addressed in the findings above, which are incorporated herein in their entirety by reference.

As such, there are no additional feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse environmental effects which approval of the proposed project, as conditioned, would have on the environment within the meaning of CEQA. Thus, if so conditioned, the proposed project will not result in any significant environmental effects for which feasible mitigation measures have not been employed consistent with CEQA Section 21080.5(d)(2)(A)

APPENDIX A – SUBSTANTIVE FILE DOCUMENTS

1. Revised Project Description for Permitting Purposes
2. September 24, 2014 Storm Water Data Report
3. August 11, 2014 Foundation Report for Cow Cliffs Viaduct
4. August 11, 2014 Paleontology Report
5. May 2014 Initial Study with Negative Declaration
6. April 30, 2014 Natural Environmental Study
7. April 3, 2014 Scenic Resources Evaluation and Visual Analysis
8. February 4, 2014 Water Quality Assessment
9. January 31, 2014 Initial Site Assessment (hazardous waste)
10. CDP Application Materials
11. ECDP G-14-13-0227 (Traffic Signalization)
12. ECDP G-3-14-0011 (Rockfall Net Extension)
13. Coast Highway Management Plan Corridor Management Plan (March 2004)
14. Coast Highway Management Plan, Corridor Aesthetics Guidelines (March 2004)
15. Coast Highway Management Plan, Storm Damage Response and Management (July 2003)
16. Coast Highway Management Plan, Vegetation Management (March 2004)
17. Cultural Resources Inventory of Coast Highway 1 (June 2001)

18. Corridor Intrinsic Qualities Inventory: Historic Qualities (November 2001)
19. Corridor Intrinsic Qualities Inventory: Recreational Qualities (November 2001)
20. Corridor Intrinsic Qualities Inventory: Natural Qualities (December 2001)
21. Estimated Sediment Yield from Coastal Landslides and Active Slope Distribution along the Big Sur Coast (May 2003)
22. Landslides in the Highway 1 Corridor: Geology and Slope Stability along the Big Sur Coast (November 2001)
23. Cow Cliffs Viaduct Permanent Restoration Initial Study with Negative Declaration (May 2014)

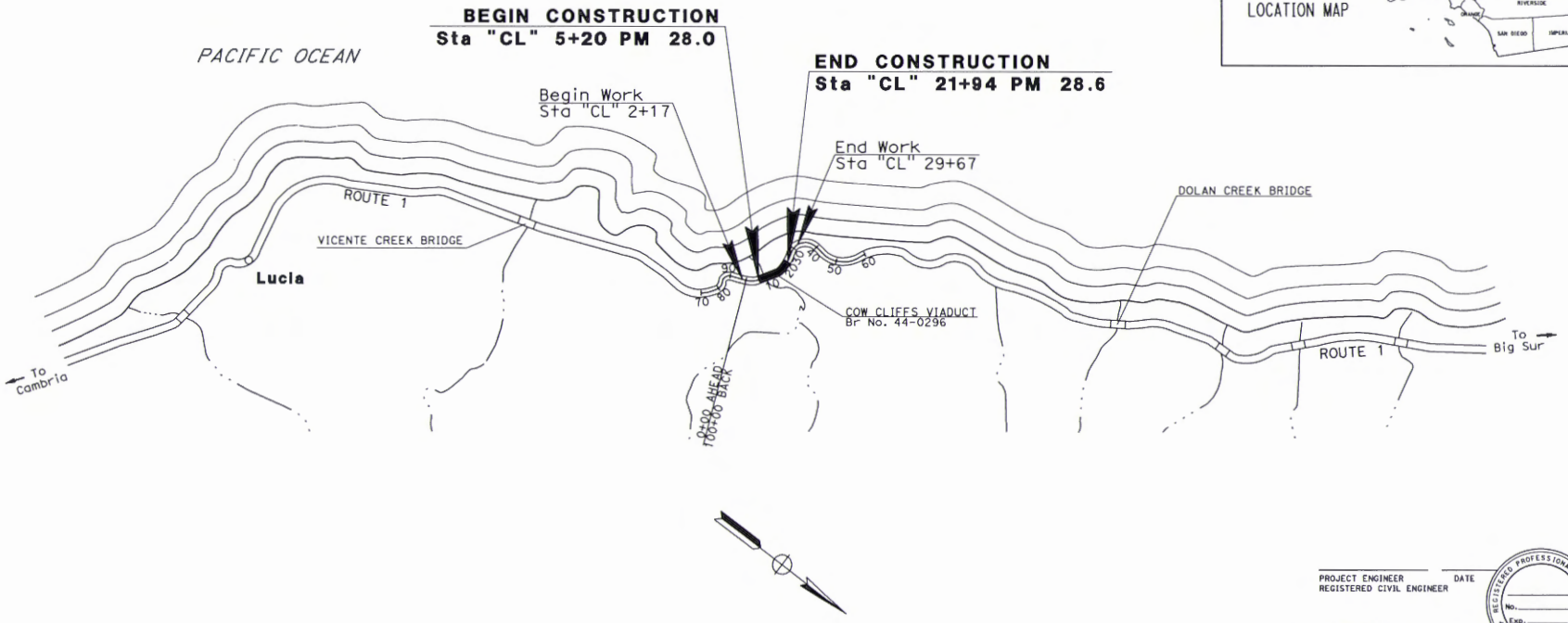
INDEX OF PLANS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN MONTEREY COUNTY
NEAR LUCIA
FROM 0.1 MILE SOUTH OF BIG CREEK BRIDGE
TO 2.6 MILES SOUTH OF DOLAN CREEK BRIDGE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6		



NO SCALE

DESIGN ENGINEER	STEVE WYATT
PROJECT MANAGER	KEN DOSTALEK

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

PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

CONTRACT No.	05-1F8904
PROJECT ID	0514000072

LAST REVISION 06-24-14 | DATE PLOTTED => 14-AUG-2014 | TIME PLOTTED => 0725

BORDER LAST REVISED 9/30/2012 | CALTRANS WEB SITE IS: HTTP//WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => s132183 | DGN FILE => 0514000072ab001.dgn | UNIT 1450 | PROJECT NUMBER & PHASE 05140000721

Exhibit 1
3-12-1526
1 of 21

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

NOTES:

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATIONS ARE SHOWN ON THE SUPERELEVATION DIAGRAM
3. SEE LAYOUT AND SUMMARY OF QUANTITIES SHEET FOR EXACT LOCATIONS OF HMA DIKE AND GUARDRAIL

DESIGN DESIGNATION

AADT	(2014)	2,397	D	59.2%
AADT	(2034)	3,368	T	0.6%
DHV	(2014)	417	V	45 MPH
DHV	(2034)	588	TI_{20}	6

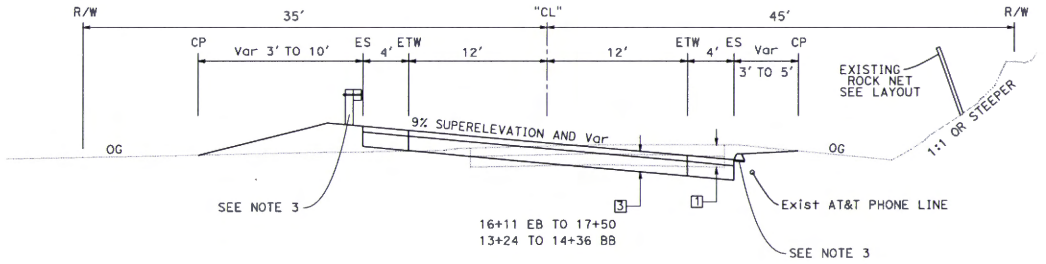
PAVEMENT CLIMATE REGION

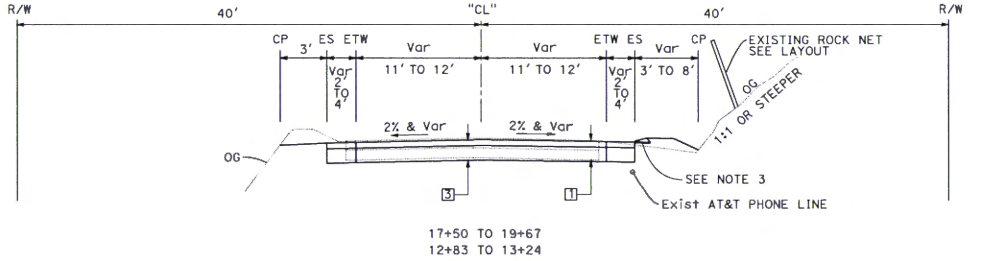
CENTRAL COAST

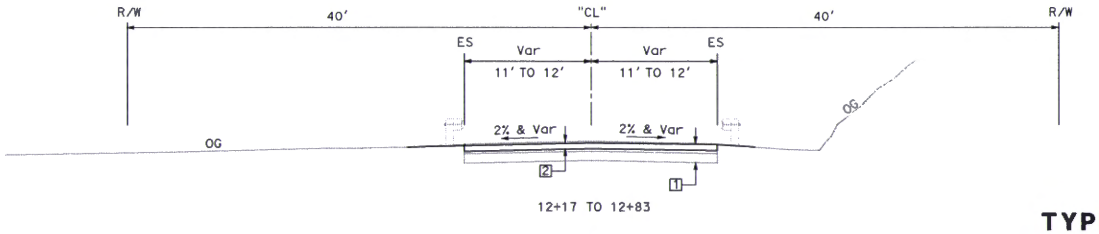
EXISTING
[1] 0.6' AC
0.5' CL2 AB

[2] COLD PLANE AC PAVEMENT (Max 0.65')
0.4' HMA (TYPE A)

[3] 0.40' HMA (TYPE A)
1.00' CL 2 AB







ROUTE 1

NO SCALE

TYPICAL CROSS SECTIONS

X-1

LAST REVISION 06-24-14
DATE PLOTTED => 14-AUG-2014
TIME PLOTTED => 07:25

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: STEVE WYATT
CALCULATED-DESIGNED BY: JOE ERWIN
CHECKED BY
REVISED BY
DATE REVISED

BORDER LAST REVISED 7/2/2010 | USERNAME => s132183 DGN FILE => 0514000072ca001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1450 | PROJECT NUMBER & PHASE 05140000721

Exhibit 1
3-12-1526
2 of 21

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6		

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.

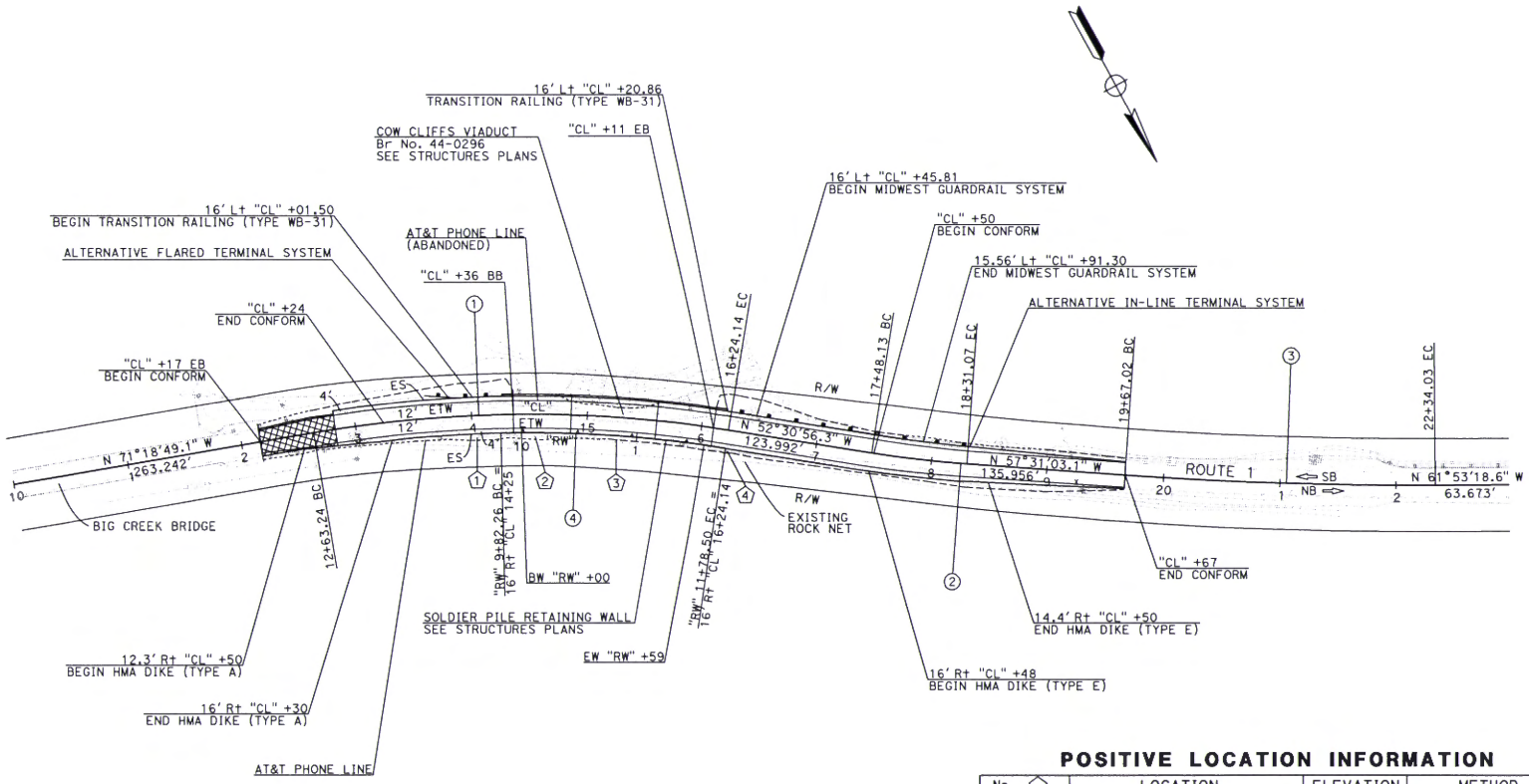
REGISTERED PROFESSIONAL ENGINEER — No. — EXP. — CIVIL — STATE OF CALIFORNIA

NOTES:

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

LEGEND

COLD PLANE AC PAVEMENT



CURVE DATA

No.	R	Δ	T	L
1	1100'	18°47'53"	182.08'	360.90'
2	950'	05°00'07"	41.49'	82.93'
3	3500'	04°22'16"	133.57'	267.01'
4	1084'	10°22'21"	98.39'	196.24'

POSITIVE LOCATION INFORMATION

No.	LOCATION	ELEVATION	METHOD
1	18.8' Rt "CL" 14+04.1	120.04	POTHOLING
2	19.1' Rt "CL" 14+54.9	120.78	POTHOLING
3	19.2' Rt "CL" 15+26.7	123.36	POTHOLING
4	17.9' Rt "CL" 16+26.4	124.76	POTHOLING

SCALE: 1"=50'

LAYOUT
L-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: STEVE WYATT
CALCULATED-DESIGNED BY: JOE ERWIN
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION: DATE PLOTTED => 14-AUG-2014
06-24-14 TIME PLOTTED => 07:25

BORDER LAST REVISED 7/2/2010 | USERNAME => s132183 DGN FILE => 0514000072ea001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1450 | PROJECT NUMBER & PHASE 05140000721

Exhibit 1
3-12-1526
3 of 21

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6		

REGISTERED CIVIL ENGINEER DATE

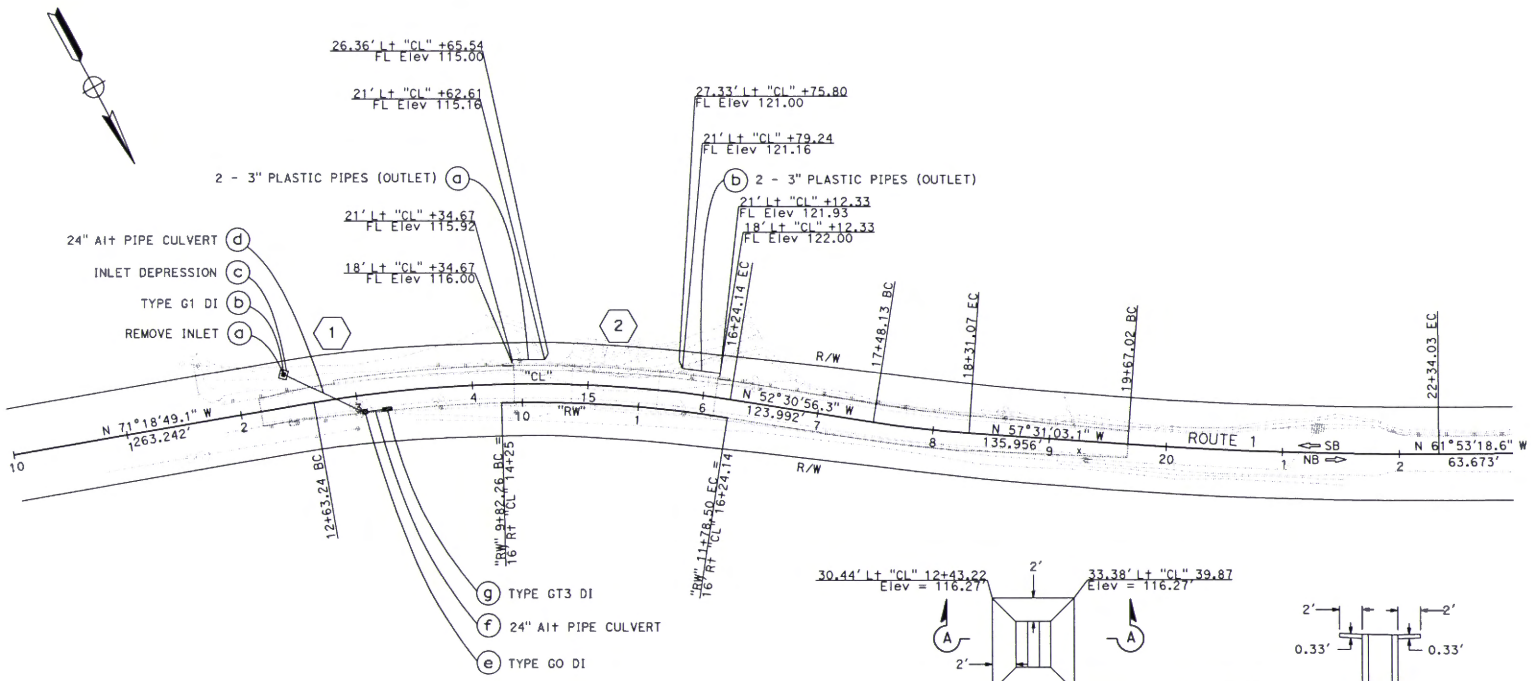
PLANS APPROVAL DATE

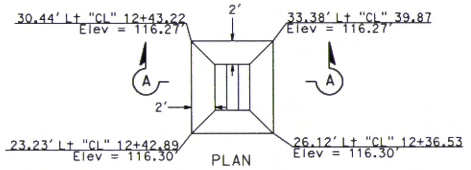
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

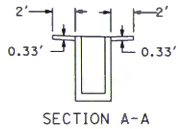
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

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







INLET DEPRESSION 1 c
NO SCALE

CONCRETE APRON DETAIL

APPROVED FOR DRAINAGE WORK ONLY

DRAINAGE PLAN

SCALE: 1"=50'

D-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: STEVE WYATT
CALCULATED-DESIGNED BY: JOE ERWIN
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION 06-24-14 | DATE PLOTTED => 14-AUG-2014 | TIME PLOTTED => 07:25

BORDER LAST REVISED 7/2/2010 | USERNAME => s132183 | DGN FILE => 05140000721a001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1450 | PROJECT NUMBER & PHASE 05140000721

NOTES:

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

POSITIVE LOCATION INFORMATION

No. ⬠	LOCATION	ELEVATION	METHOD
1	18.8' Rt "CL" 14+04.1	120.04	POTHOLING
2	19.1' Rt "CL" 14+54.9	120.78	POTHOLING
3	19.2' Rt "CL" 15+26.7	123.36	POTHOLING
4	17.9' Rt "CL" 16+26.4	124.76	POTHOLING

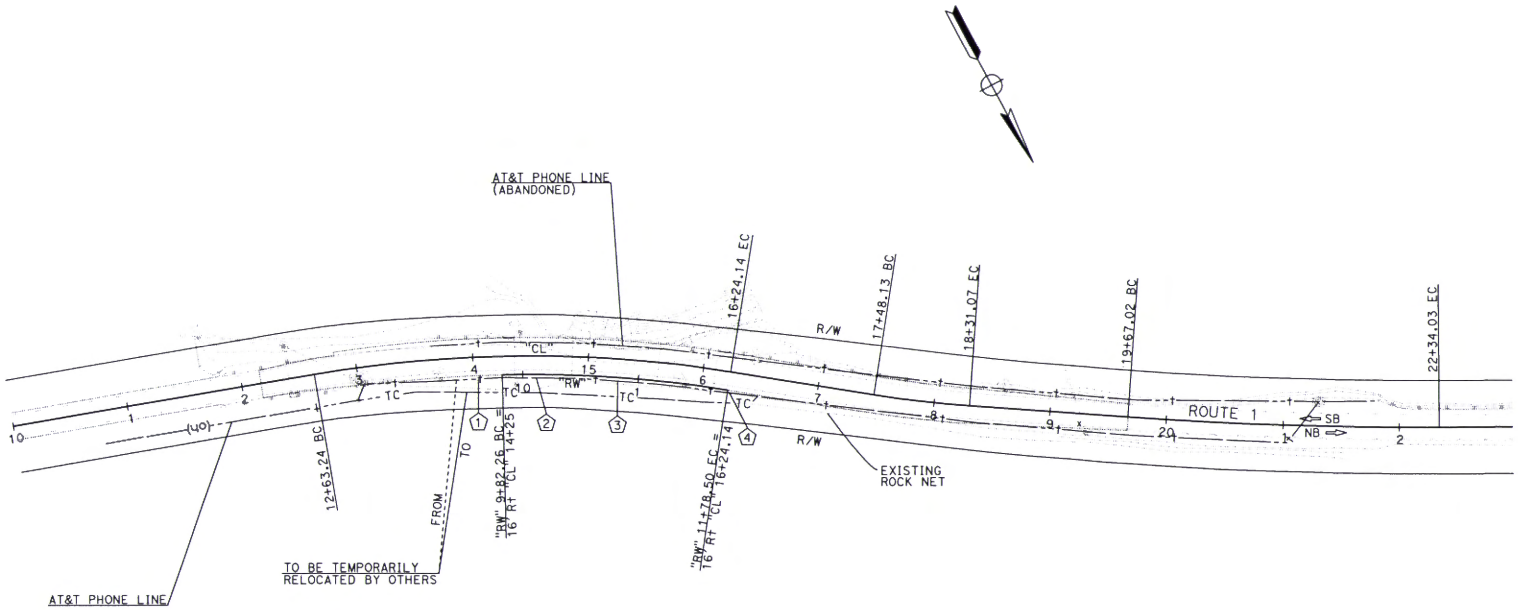
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

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



APPROVED FOR UTILITY WORK ONLY

SCALE: 1"=50'

UTILITY PLAN

U-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISED BY	LAST REVISION 06-24-14
Caltrans DESIGN	STEVE WYATT	JOE ERWIN CHECKED BY	DATE REVISED	DATE PLOTTED => 14-AUG-2014 TIME PLOTTED => 07:25

BORDER LAST REVISED 7/2/2010	USERNAME => s132183 DGN FILE => 0514000072ka001.dgn	RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3	UNIT 1450	PROJECT NUMBER & PHASE 05140000721

Exhibit 1
3-12-1526
5 of 21

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6		

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.

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

PAVEMENT STRUCTURE

LOCATION	HMA (TYPE A)	CLASS 2 AGGREGATE BASE (CY)	(N) EMBANKMENT	ROADWAY EXCAVATION	COLD PLANE AC PAVEMENT	TACK COAT
	TON	CY	CY	CY	SQYD	TON
Sta 12+17 TO 12+83	49		3		187	0.1
Sta 12+83 TO 14+36	142	181	63	328		0.1
Sta 14+36 TO 16+11			29	19		
Sta 16+11 TO 19+67	307	392	198	254		0.3
FROM SCQ-1	31	32	6	41		
HMA DIKE	5					
TOTAL	534	605	299	642	187	0.5

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

MIDWEST GUARDRAIL AND END TREATMENTS

LOCATION				TRANSITION RAILING (TYPE WB-31)	MIDWEST GUARDRAIL SYSTEM	AIt FLARED TERMINAL SYSTEM	AIt IN-LINE TERMINAL SYSTEM
SHEET	STATION	Lt	Rt	EA	LF	EA	EA
L-1	14+01.50	X		1		1	
L-1	16+20.86	X		1			
L-1	16+45.81 TO 17+91.30	X			146		1
TOTAL				2	146	1	1

TEMPORARY WATER POLLUTION CONTROL

LOCATION	TEMPORARY CONSTRUCTION ENTRANCE TYPE 2	TEMPORARY DRAINAGE INLET PROTECTION	TEMPORARY CHECK DAM	TEMPORARY FIBER ROLL TYPE 2	TEMPORARY GRAVEL BAG BERM	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)
	EA	EA	LF	LF	LF	SQYD
Sta 12+17 TO 19+67	1		300	1500	500	200
Sta 12+41, Lt		1				
Sta 12+41, Rt		1				
Sta 13+05		1				
Sta 13+25		1				
Sta 19+30		1				
TOTAL	1	5	300	1500	500	200

PAVEMENT DELINEATION

SHEET	LOCATION	DIRECTION	DETAIL NUMBER	4" THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) WHITE	4" THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) YELLOW	PAVEMENT MARKER (RETROREFLECTIVE) TYPE D	OBJECT MARKER TYPE L-1 OM2-2V	GUARD RAILING DELINEATOR	DELINEATOR (CLASS 1) FLEXIBLE POST
				LF		EA	EA	EA	EA
PD-1	5+20 TO 21+94		22		1674	144			
PD-1	12+17 TO 19+67, Lt		27B	752					
PD-1	12+17 TO 20+00, Rt		27B	785					
PD-1	13+50, Lt	FSBT							1
PD-1	16+50 TO 17+50, Lt	FSBT						2	
PD-1	12+50, Rt	FNBT					1		
PD-1	12+59, Lt	FSBT					1		
PD-1	17+48, Rt	FNBT					1		
PD-1	18+42, Lt	FSBT					1		
SUBTOTAL				1537	1674	144	4	2	1
SUBTOTAL FROM SHEET SCQ-1							6		23
TOTAL				3207		144	10	2	24

PLACE HMA DIKE

LOCATION				TYPE A	TYPE E	HMA (TYPE A)
SHEET	STATION	Lt	Rt	LF	LF	TON
L-1	12+50 TO 13+30		X	80		2
L-1	17+48 TO 18+50		X		102	3
TOTAL				75	102	5*

* QUANTITY INCLUDED IN PAVEMENT STRUCTURE QUANTITIES SUMMARY

SUMMARY OF QUANTITIES

NO SCALE

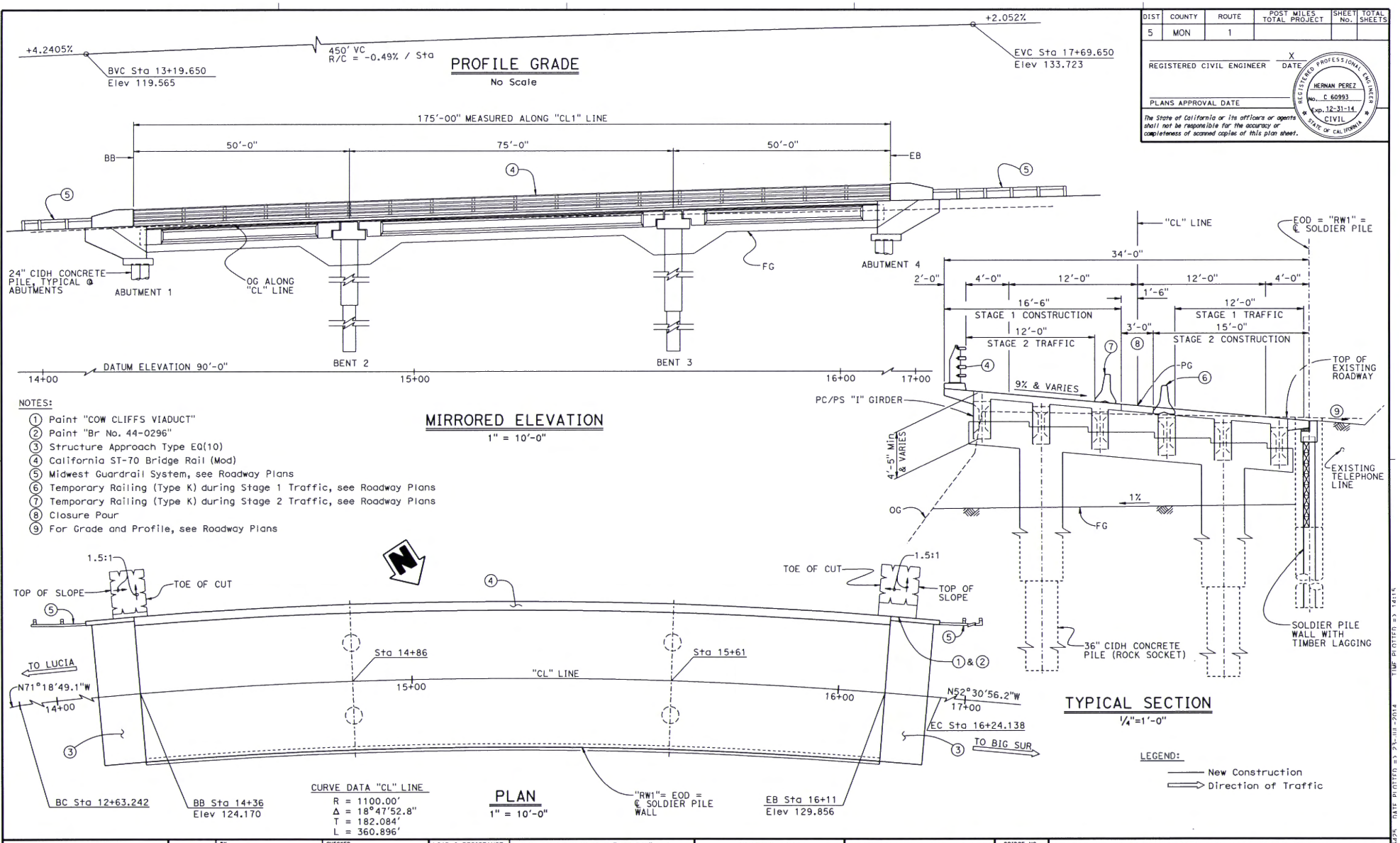
Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN
FUNCTIONAL SUPERVISOR: STEVE WYATT
CALCULATED-DESIGNED BY: JOE ERWIN
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 14-AUG-2014
06-24-14 TIME PLOTTED => 07:26

BORDER LAST REVISED 7/2/2010 | USERNAME => s132183 DGN FILE => 0514000072pa001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1450 | PROJECT NUMBER & PHASE 05140000721

Exhibit 1
3-12-1526
6 of 21



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
5	MON	1			

REGISTERED CIVIL ENGINEER — DATE

REGISTERED PROFESSIONAL ENGINEER — HERNAN PEREZ — No. C 60993 — Exp. 12-31-14 — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

	BY	CHECKED
DESIGN	H. PEREZ	M. CULLEN
DETAILS	K. CHONKRIA	H. PEREZ
QUANTITIES	X	X

LOAD & RESISTANCE FACTOR DESIGN — LIVE LOADING: HL93 W/LOW-BOY and PERMIT DESIGN VEHICLE

LAYOUT: K. CHONKRIA — CHECKED: H. PEREZ

SPECIFICATIONS: X — PLANS AND SPECS COMPARED: X

X
DESIGN ENGINEER

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 6

BRIDGE NO. 44-0296
POST MILE 28.28

COW CLIFFS VIADUCT
GENERAL PLAN

UNIT: 3591
PROJECT NUMBER & PHASE: 0514000072-K
CONTRACT NO.: 05-1F8904

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 5-9-14 | 5-9-14 | 7-24-14 | 7-22-14

SHEET 1 OF X

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)

FILE => 44-0296-a-gp01-alt1.dgn

TIME PLOTTED => 14:15

DATE PLOTTED => 31-JUL-2014

Exhibit 1
3-12-1526
7 of 21

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1			

REGISTERED CIVIL ENGINEER — DATE X

PLANS APPROVAL DATE

HERNAN PEREZ, No. C 60993, Exp. 12-31-14, CIVIL, REGISTERED PROFESSIONAL ENGINEER, STATE OF CALIFORNIA

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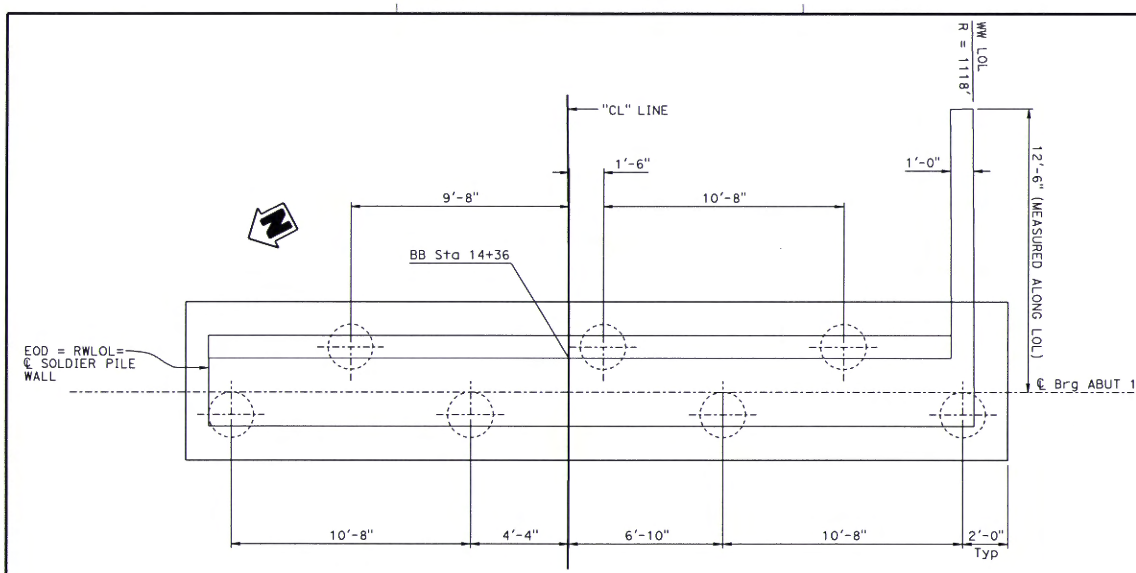
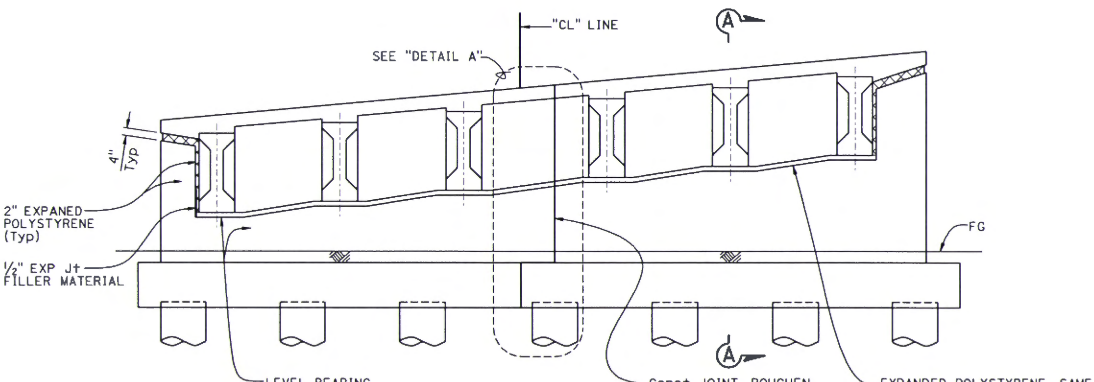
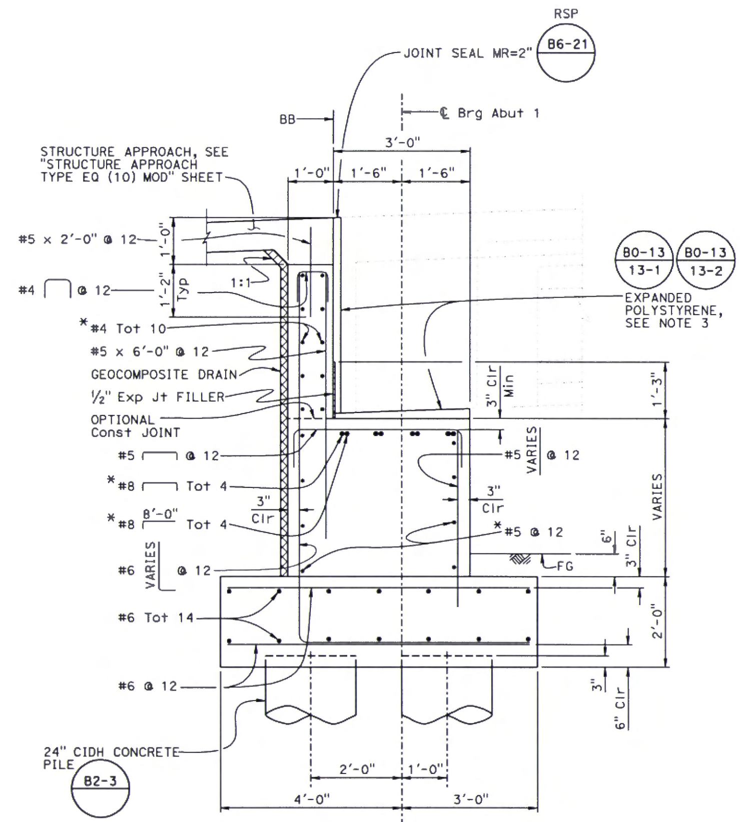


PLAN
3/8" = 1'-0"



ELEVATION
3/8" = 1'-0"



SECTION A-A
3/4" = 1'-0"

* Place Parallel to top of deck

DESIGN	BY H. PEREZ	CHECKED X
DETAILS	BY K. CHONKRIA	CHECKED X
QUANTITIES	BY X	CHECKED X

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 6

BRIDGE NO. 44-0296
POST MILE 28.28

COW CLIFFS VIADUCT
ABUTMENT 1 LAYOUT

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3591
PROJECT NUMBER & PHASE: 0514000072 & 1 CONTRACT NO.: 05-1F8904

DISREGARD PRINTS BEARING EARLIER REVISION DATES — 6-20-14

REVISION DATES

SHEET X OF X

FILE => 44-0296-f-a01_lo1.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1			

REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

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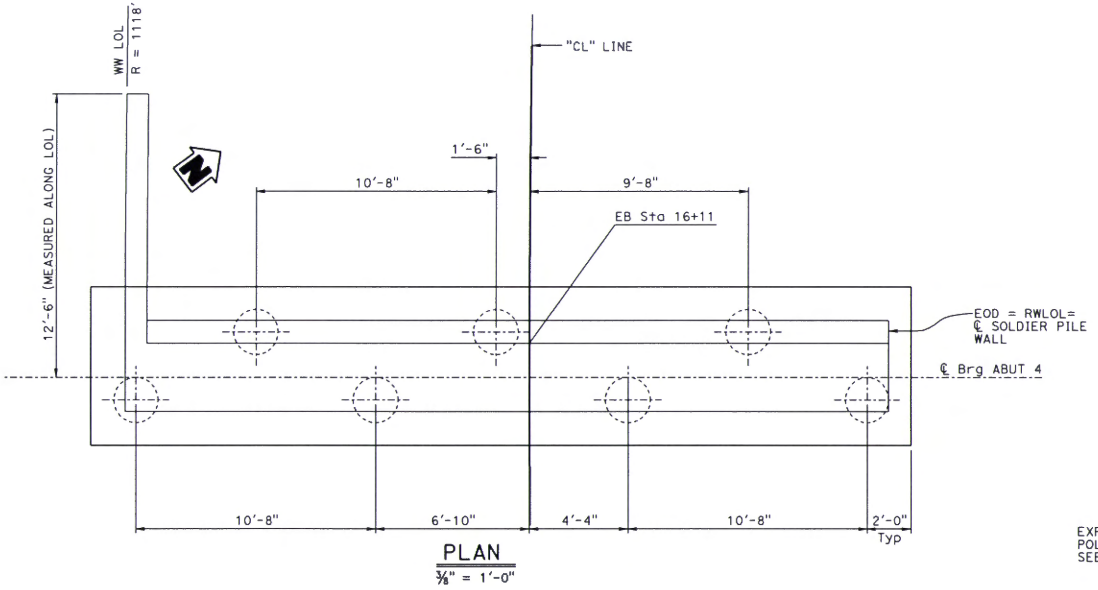
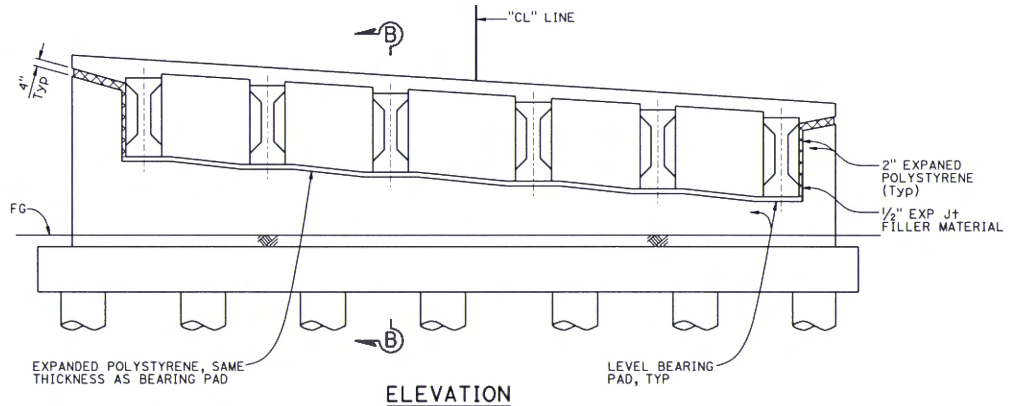
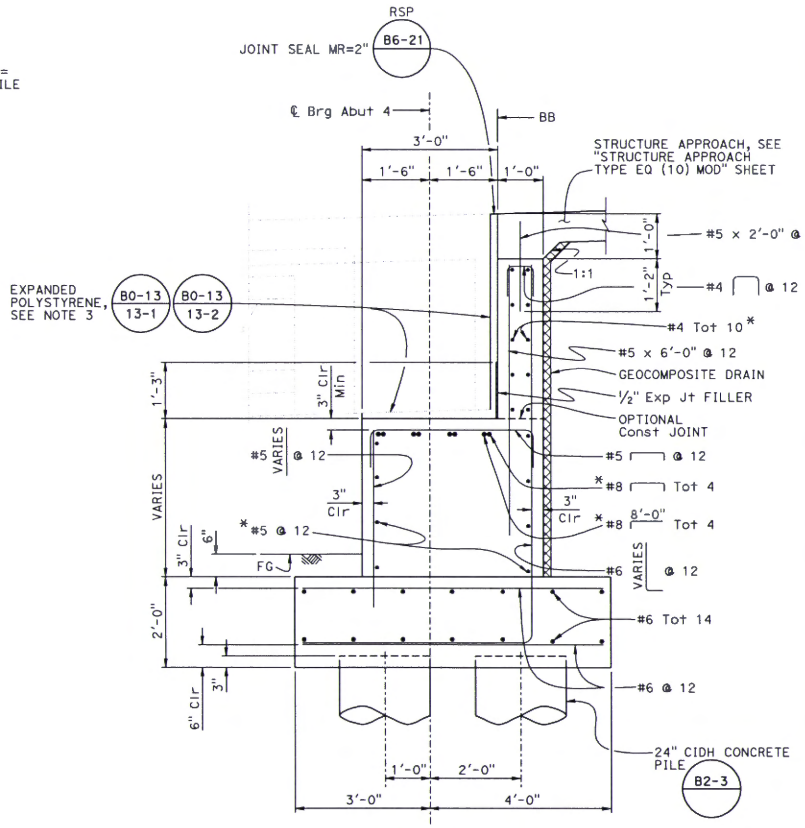
REGISTERED PROFESSIONAL ENGINEER — HERNAN PEREZ — No. C 60993 — Exp. 12-31-14 — CIVIL — STATE OF CALIFORNIA



PLAN
3/8" = 1'-0"



ELEVATION
3/8" = 1'-0"



SECTION B-B
3/4" = 1'-0"

* Place Parallel to top of deck

DESIGN	BY H. PEREZ	CHECKED X	
DETAILS	BY K. CHONKRIA	CHECKED X	
QUANTITIES	BY X	CHECKED X	

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 6

BRIDGE NO. 44-0296
POST MILE 28.28

COW CLIFFS VIADUCT
ABUTMENT 4 LAYOUT

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3591
PROJECT NUMBER & PHASE: 0514000072 & 1 CONTRACT NO.: 05-1F8904

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES			SHEET	OF
9-26-14			X	X

FILE => 44-0296-f-a02_lo2.dgn

Exhibit 1
3-12-1526
9 of 21

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1			

REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

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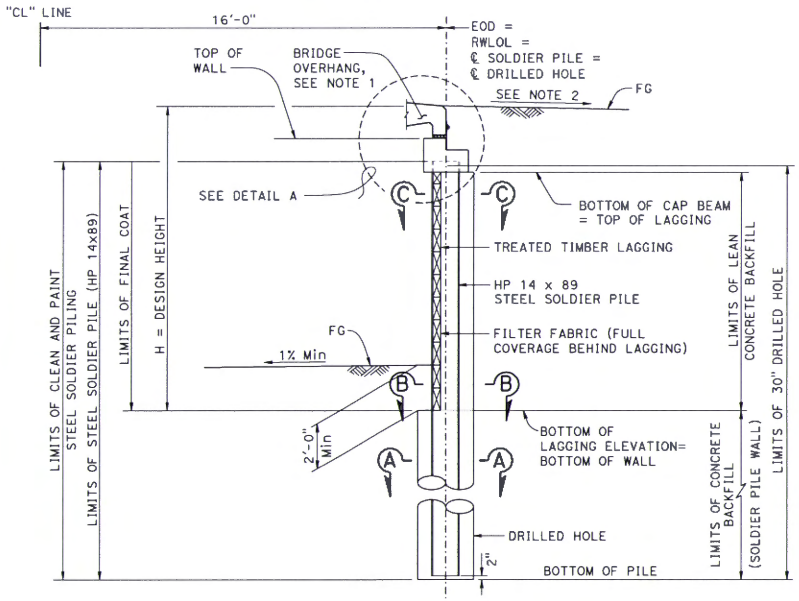
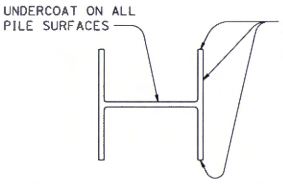
REGISTERED PROFESSIONAL ENGINEER — HERNAN PEREZ — No. C 60993 — Exp. 12-31-14 — CIVIL — STATE OF CALIFORNIA



TYPICAL SECTION
⅜" = 1'-0"

NOTES:

1. For clarity, Cow Cliffs Viaduct not shown.
2. For grade and profile, see roadway plans.
3. Clear cover shall be 2" unless otherwise noted.



LIMITS OF CLEAN AND PAINT STEEL SOLDIER PILING
1½" = 1'-0"

SOLDIER PILE WALL GENERAL NOTES

DESIGN: AASHTO LRFD Bridge Design Specifications, 6th Edition with California Amendments, dated January 20104

LIVE LOAD: 240 psf equivalent to 2 feet soil weight

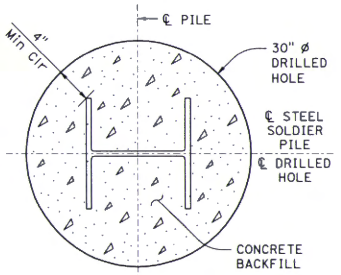
SOIL PARAMETERS: (For determination of Design Lateral Earth Pressures)
Backfill soil weight = 135 lb/ft³
Friction Angle = 34°
Active Pressure coefficent, Ka = 0.28
Slope Angle = 0°

STEEL SOLDIER PILE: ASTM A572 Grade 50 Mini

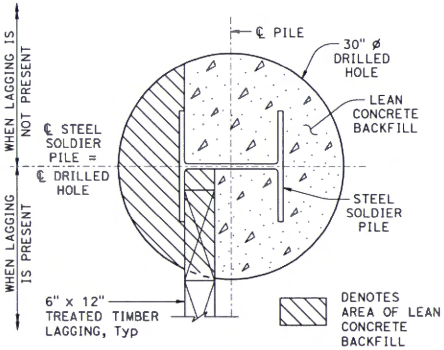
REINFORCED CONCRETE CAP BEAM: f'c = 4.0 ksi
fy = 60 ksi

STRUCTURAL TIMBER: Treated Douglas Fir, Grade No. 1 or better
Timber to be full sawn

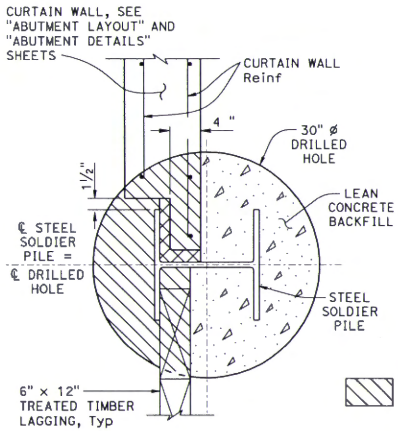
STAINLESS STEEL: ASTM F593, F594, and A240



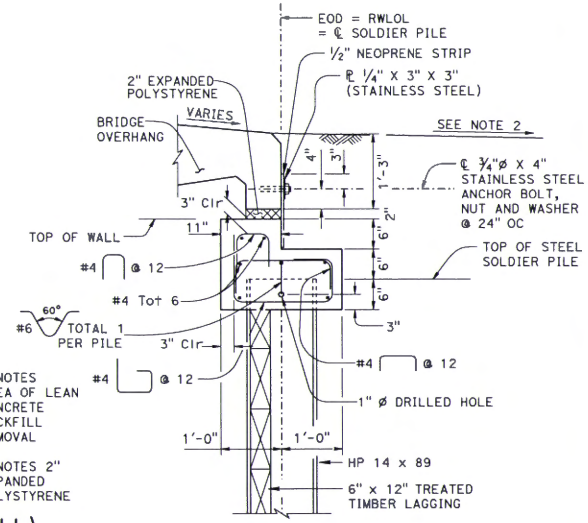
SECTION A-A
1½" = 1'-0"



SECTION B-B
1½" = 1'-0"



SECTION C-C (AT BEGIN OR END OF WALL)
1½" = 1'-0"



DETAIL A
1" = 1'-0"

DESIGN	BY H. PEREZ	CHECKED X	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 6	BRIDGE NO. 44-0296
DETAILS	BY K. CHONKRIA	CHECKED X			POST MILE 28.28
QUANTITIES	BY X	CHECKED X			

COW CLIFFS VIADUCT
SOLDIER PILE WALL DETAILS No. 1

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3591
PROJECT NUMBER & PHASE: 0514000072 & 1
CONTRACT NO.: 05-1F8904

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
5-12-14	6-23-14			X	X

FILE => 44-0296-g-rwd01.dgn

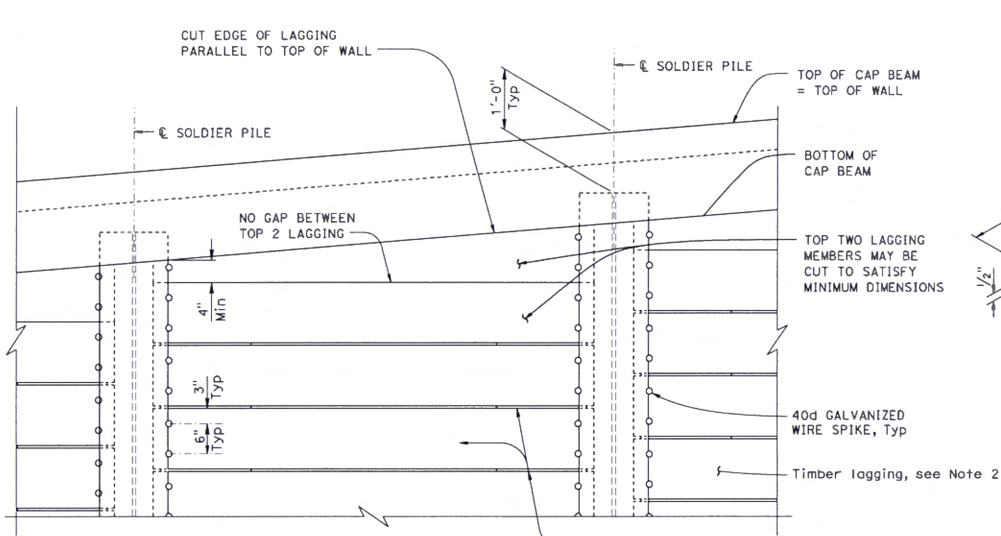
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1			

REGISTERED CIVIL ENGINEER X DATE

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

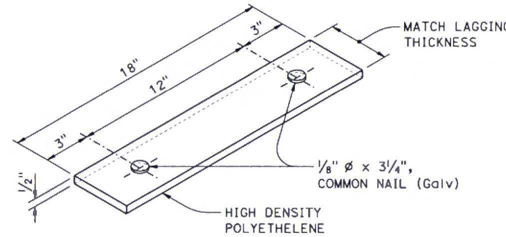
REGISTERED PROFESSIONAL ENGINEER HERNAN PEREZ No. C 60993 Exp. 12-31-14 CIVIL STATE OF CALIFORNIA



PART ELEVATION

LAGGING DETAILS

1" = 1'-0"

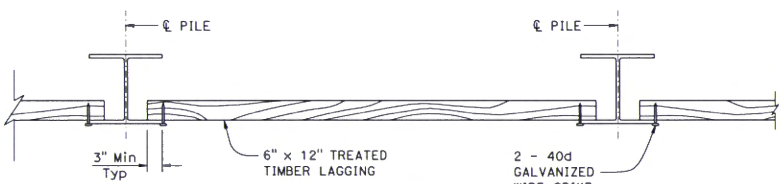


SHIM DETAIL

3" = 1'-0"

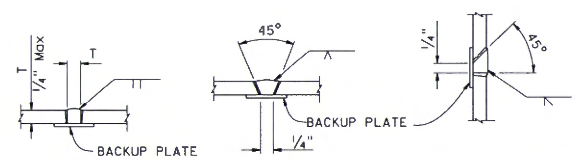
NOTES:

1. No clipping of timber lagging corners allowed.
2. Place lagging members level.
3. Spikes shall not be bent.



PART PLAN

1" = 1'-0"



PILE WELDING DETAIL-BUTT JOINTS

NO SCALE

NOTES:

1. Single vee-groove and square groove permitted for all positions
2. Single bevel-groove permitted for horizonal joints only

DESIGN	BY H. PEREZ	CHECKED X	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 6	BRIDGE NO. 44-0296
DETAILS	BY K. CHONKRIA	CHECKED X			POST MILE 28.28
QUANTITIES	BY X	CHECKED X			

COW CLIFFS VIADUCT

SOLDIER PILE WALL DETAILS No. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3591
PROJECT NUMBER & PHASE: 0514000072 & 1 CONTRACT NO.: 05-1F8904

DISREGARD PRINTS BEARING EARLIER REVISION DATES 6-12-14

REVISION DATES | SHEET X | OF X

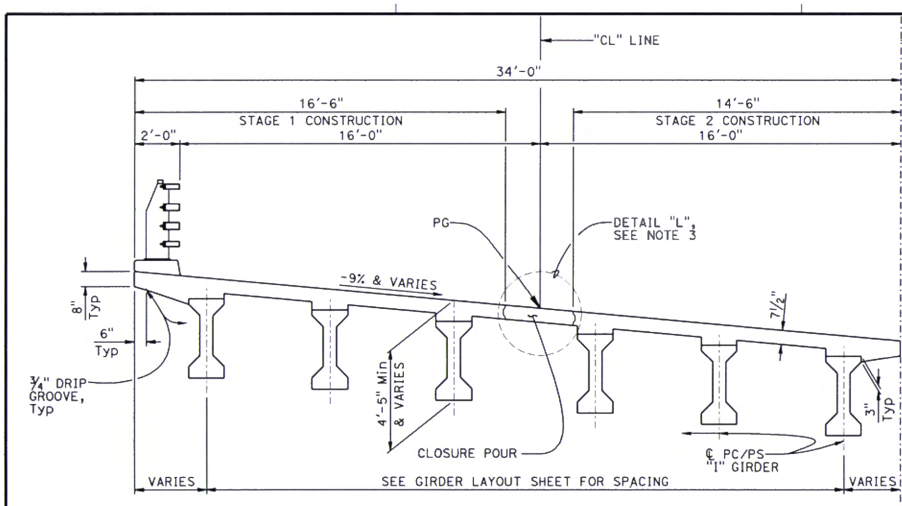
FILE => 44-0296-a-rwdt02.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
5	MON	1			

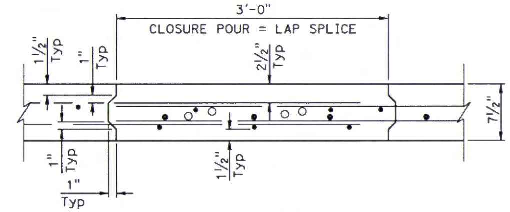
REGISTERED CIVIL ENGINEER X DATE

PLANS APPROVAL DATE

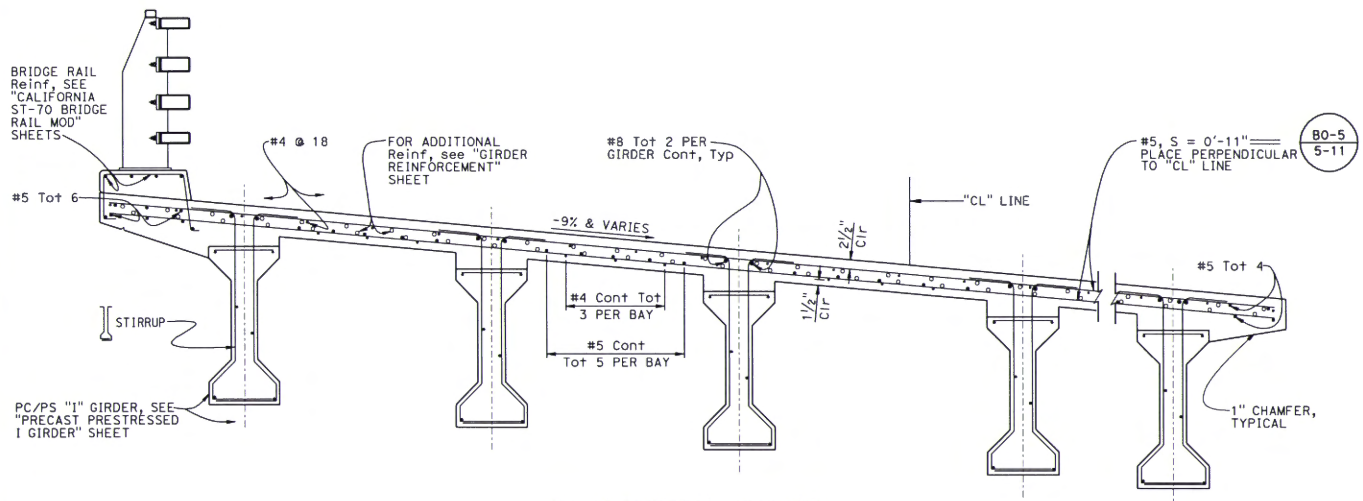
REGISTERED PROFESSIONAL ENGINEER HERNAN PEREZ No. C 60993 Exp. 12-31-14 CIVIL STATE OF CALIFORNIA



TYPICAL SECTION
⅜" = 1'-0"



DETAIL "L"
1½" = 1'-0"



PART TYPICAL SECTION
¾" = 1'-0"

NOTES:

1. Intermediate and end diaphragms must be placed at least five days before the deck pour.
2. Closure pour concrete (including the intermediate diaphragm in the vicinity of the closure pour) must not be placed until 15 days after adjacent deck pours are completed.
3. For Girder spacing and Closure pour location, see "GIRDER LAYOUT" sheet.
4. Soldier Pile Wall not shown. For wall details see "SOLDIER PILE WALL LAYOUT" sheet.
5. All deck reinforcement, including intermediate, bent and end diaphragms reinforcement shall be Epoxy Coated.

	BY	CHECKED
DESIGN	H. PEREZ	M. CULLEN
DETAILS	K. CHONKRIA	H. PEREZ
QUANTITIES	X	X

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
DESIGN BRANCH 6

BRIDGE NO. 44-0296
POST MILE 28.28

COW CLIFFS VIADUCT
TYPICAL SECTION

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3591
PROJECT NUMBER & PHASE: 0514000072-K CONTRACT NO.: 05-1F8904

DISREGARD PRINTS BEARING EARLIER REVISION DATES — REVISION DATES 3-3-14 7-22-14 SHEET X OF X

FILE => 44-0296-k-ts01.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	X	X	X

REGISTERED CIVIL ENGINEER — DATE X

PLANS APPROVAL DATE

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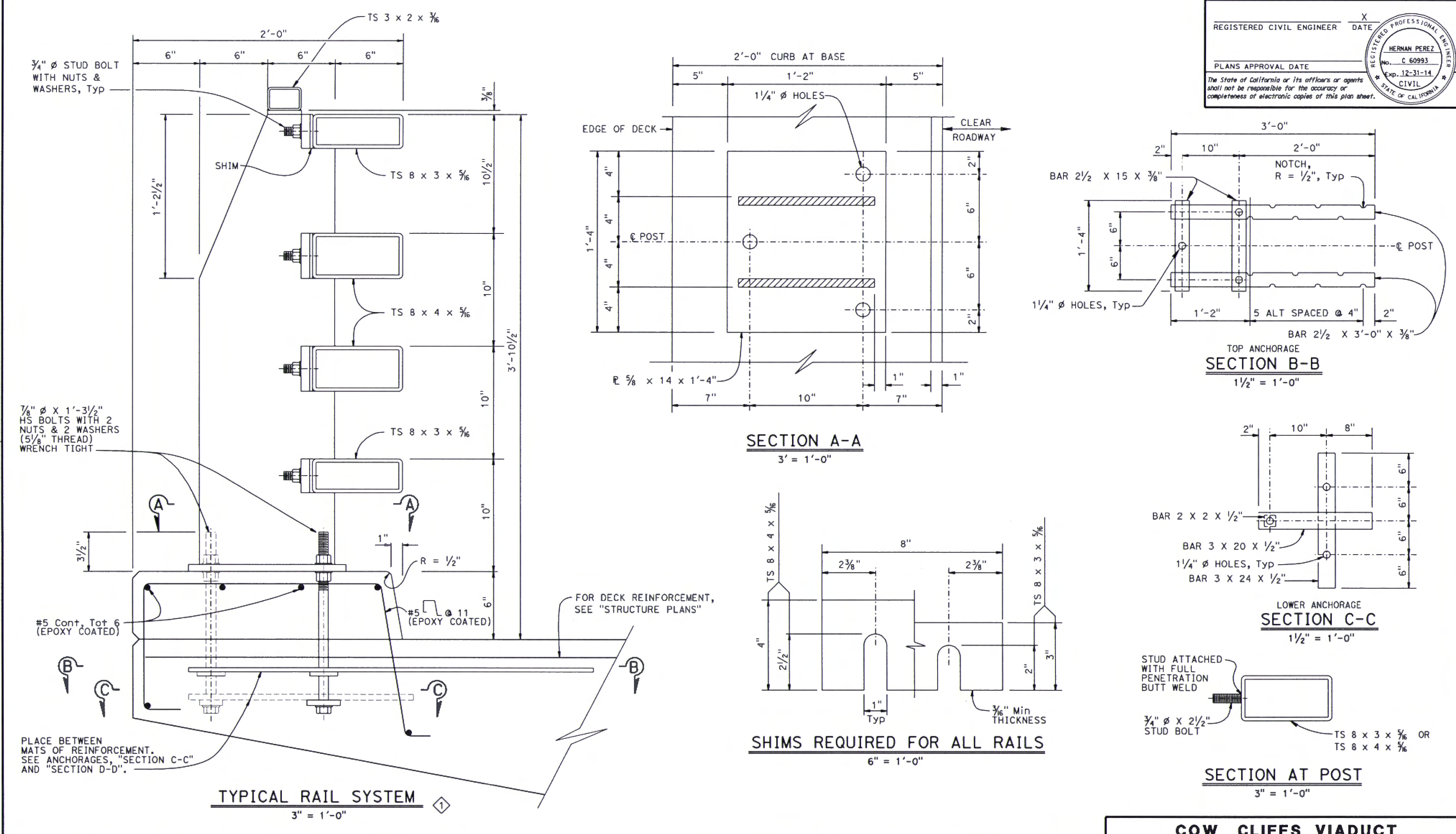
REGISTERED PROFESSIONAL ENGINEER — HERNAN PEREZ — No. C 60993 — Exp. 12-31-14 — CIVIL — STATE OF CALIFORNIA



STANDARD DRAWING	◇1 Revised Detail	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. 44-0296 POST MILE 28.28	COW CLIFFS VIADUCT CALIFORNIA ST-70 BRIDGE RAIL (MOD) DETAILS NO. 1
FILE NO. xs18-130-1 APPROVAL DATE July 2011					

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3591
PROJECT NUMBER & PHASE: 0514000072 & 1 CONTRACT NO.: 05-1F8904

DISREGARD PRINTS BEARING EARLIER REVISION DATES — REVISION DATES 5-23-14 6-3-14 — SHEET X OF X

FILE => 44-0296-w-csdt-01.dgn

USERNAME => s115425 DATE PLOTTED => 23-JUN-2014 TIME PLOTTED => 14:16

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	X	X	X

REGISTERED CIVIL ENGINEER — X DATE

PLANS APPROVAL DATE

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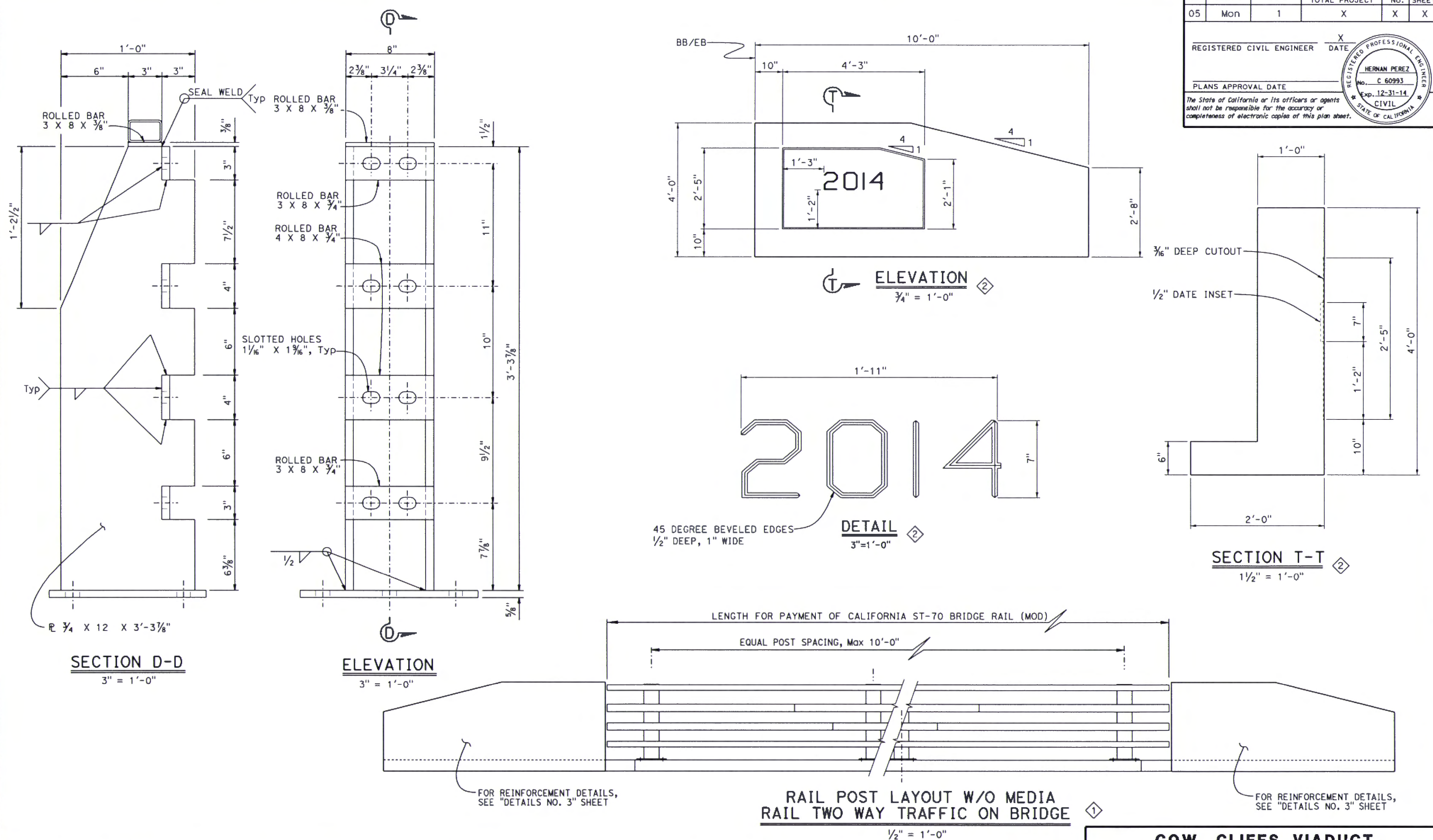
REGISTERED PROFESSIONAL ENGINEER — HERNAN PEREZ — No. C 60993 — Exp. 12-31-14 — CIVIL — STATE OF CALIFORNIA



RAIL POST LAYOUT W/O MEDIA RAIL TWO WAY TRAFFIC ON BRIDGE ①

1/2" = 1'-0"

COW CLIFFS VIADUCT

CALIFORNIA ST-70 BRIDGE RAIL (MOD)

DETAILS NO. 2

STANDARD DRAWING — FILE NO. xs16-130-2 — APPROVAL DATE July 2011

① Revised Detail

② Added Detail

STATE OF CALIFORNIA — DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 44-0296 — POST MILE 28.28

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

UNIT: 3591

PROJECT NUMBER & PHASE: 0514000072 & 1 CONTRACT NO.: 05-1F8904

FILE => 44-0296-w-csdt-02.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES

SHEET X OF X

Exhibit 1
3-12-1526
14 of 21

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	X	X	X

REGISTERED CIVIL ENGINEER — DATE X

PLANS APPROVAL DATE

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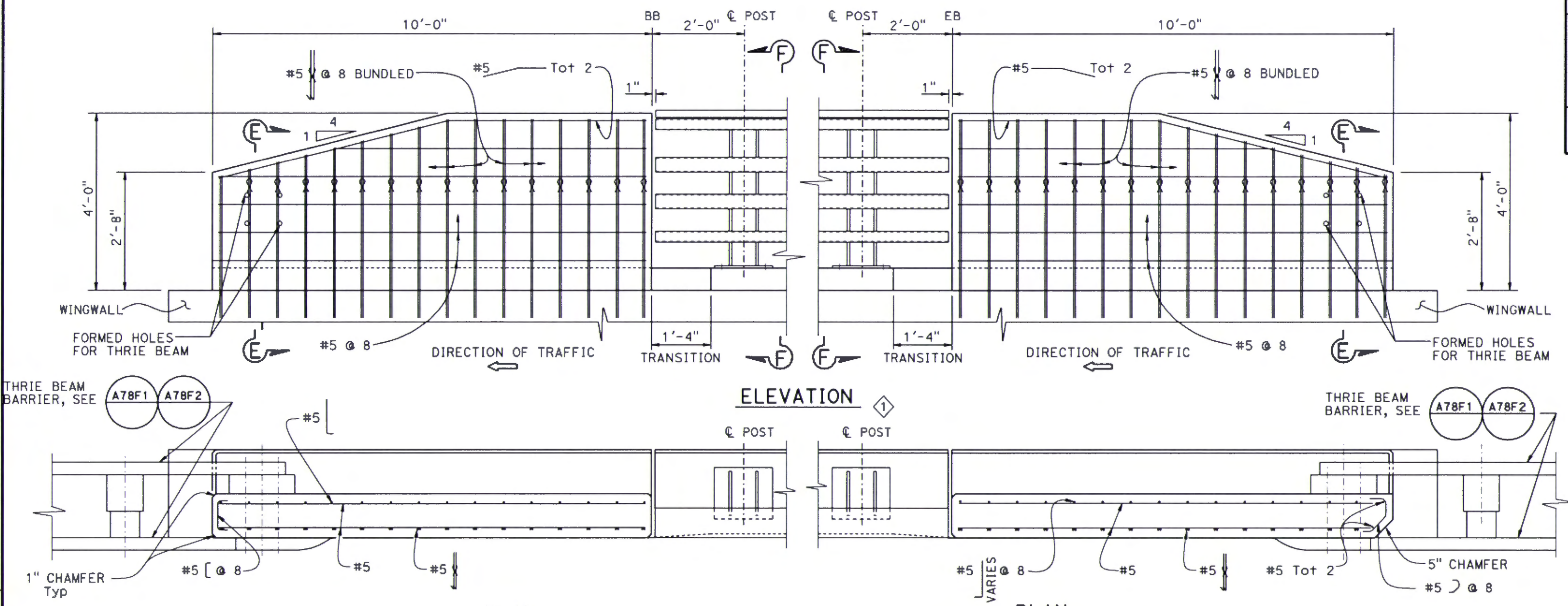

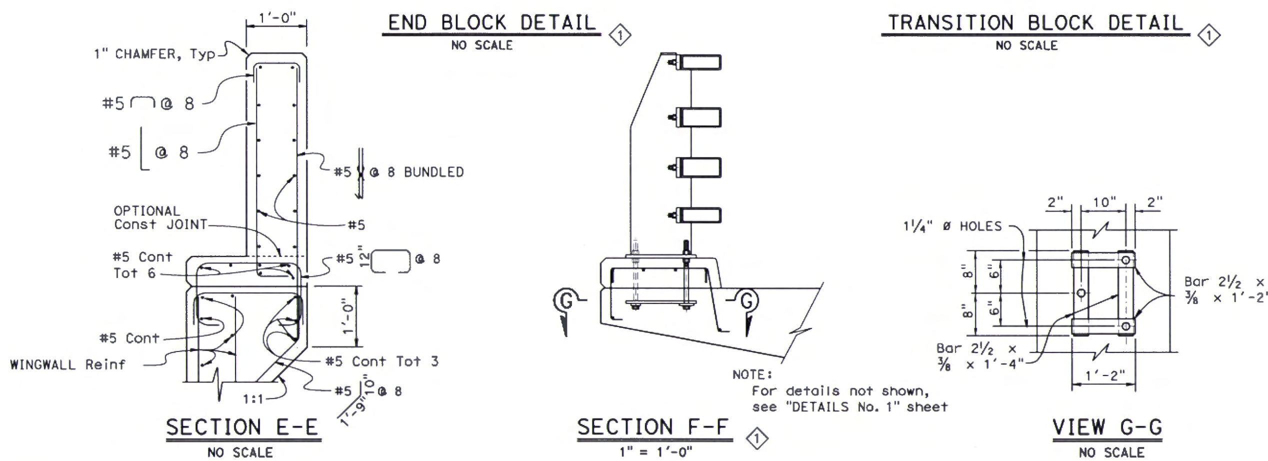

NOTES: ⟨2⟩

1. Proposed railing layout shown is approximate. Final layout shall be reviewed by Engineer before fabrication
2. Venting and pick-up holes in rails and sleeves shall be shown on fabricator's shop plans
3. Anchor bolts may be tack welded (shop or field) to anchorage
4. Tubing shall be bent or fabricated to fit horizontal curve
5. Each rail length shall be continuous over a minimum of two posts
6. The fabricator shall check that the tubular sleeves splices conform to the dimensions indicated to assure proper clearance
7. Except for expansion splices, not more than one splice shall be permitted per same side of post

STANDARD DRAWING

FILE NO. xs16-130-3 — APPROVAL DATE September 2013

⟨1⟩ Revised Detail

⟨2⟩ Revised Note 4

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 44-0296 — POST MILE 28.28

COW CLIFFS VIADUCT
CALIFORNIA ST-70 BRIDGE RAIL (MOD)
DETAILS NO. 3

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3591
PROJECT NUMBER & PHASE: 0514000072 & 1 CONTRACT NO.: 05-1F8904

FILE => 44-0296-w-csdt-03.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES

SHEET X OF X

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1			

REGISTERED CIVIL ENGINEER — X — DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
HERNAN PEREZ
No. C 60993
Exp. 12-31-14
CIVIL
STATE OF CALIFORNIA

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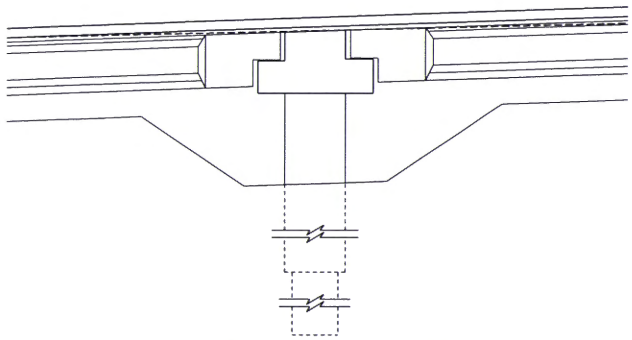
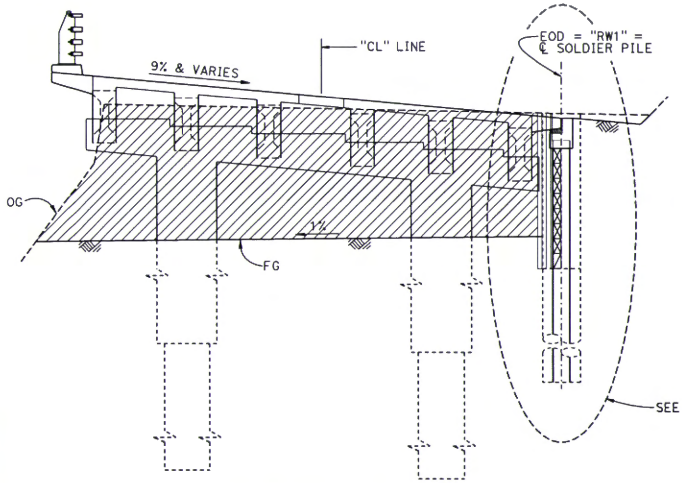
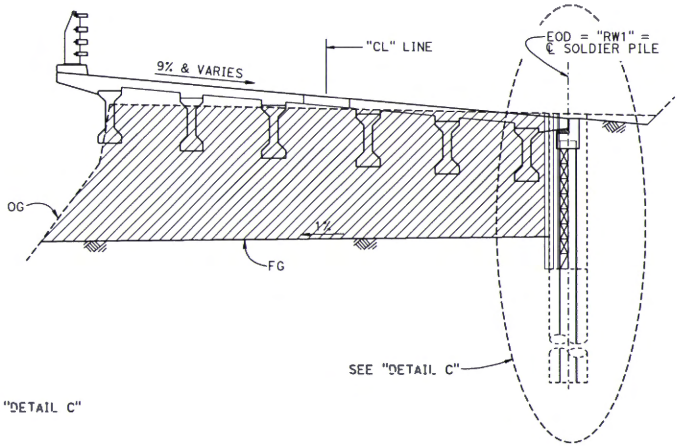


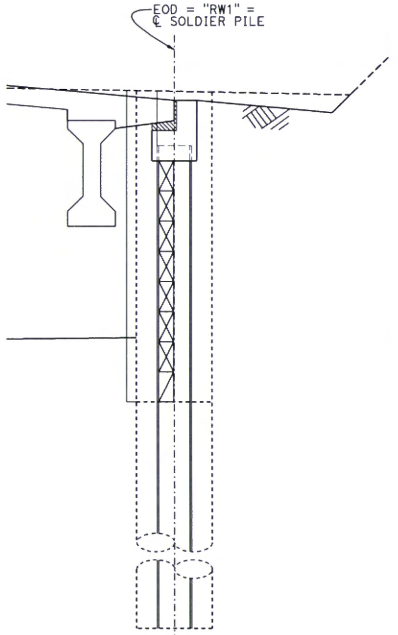
MIRRORED ELEVATION
1/4"=1'-0"



AT BENTS 2 & 3
1/4"=1'-0"



AT SPANS 1, 2 & 3
1/4"=1'-0"



DETAIL C
½"=1'-0"

LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL

DESIGN	BY H. PEREZ	CHECKED X	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 6	BRIDGE NO. 44-0296
DETAILS	BY D. PATO	CHECKED X			POST MILE 28.28
QUANTITIES	BY X	CHECKED X			

COW CLIFFS VIADUCT
STRUCTURE EXCAVATION AND BACKFILL

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3591
PROJECT NUMBER & PHASE: 0514000072-1
CONTRACT NO.: 05-1F8904

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
1-23-14				X	X

FILE => 44-0296-y-strexc-backfill-01.dgn

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	MON	1	28.0/28.6	2	8

AS BUILT

CONTRACT No. 05A1688
C.C.A. DATE XX/XX/XXXX
R.E. NAME C. E. Hench

REGISTERED CIVIL ENGINEER — DATE

August 7, 2014
PLANS APPROVAL DATE

B.C.LEU No. 52498 Exp. 12-31-14 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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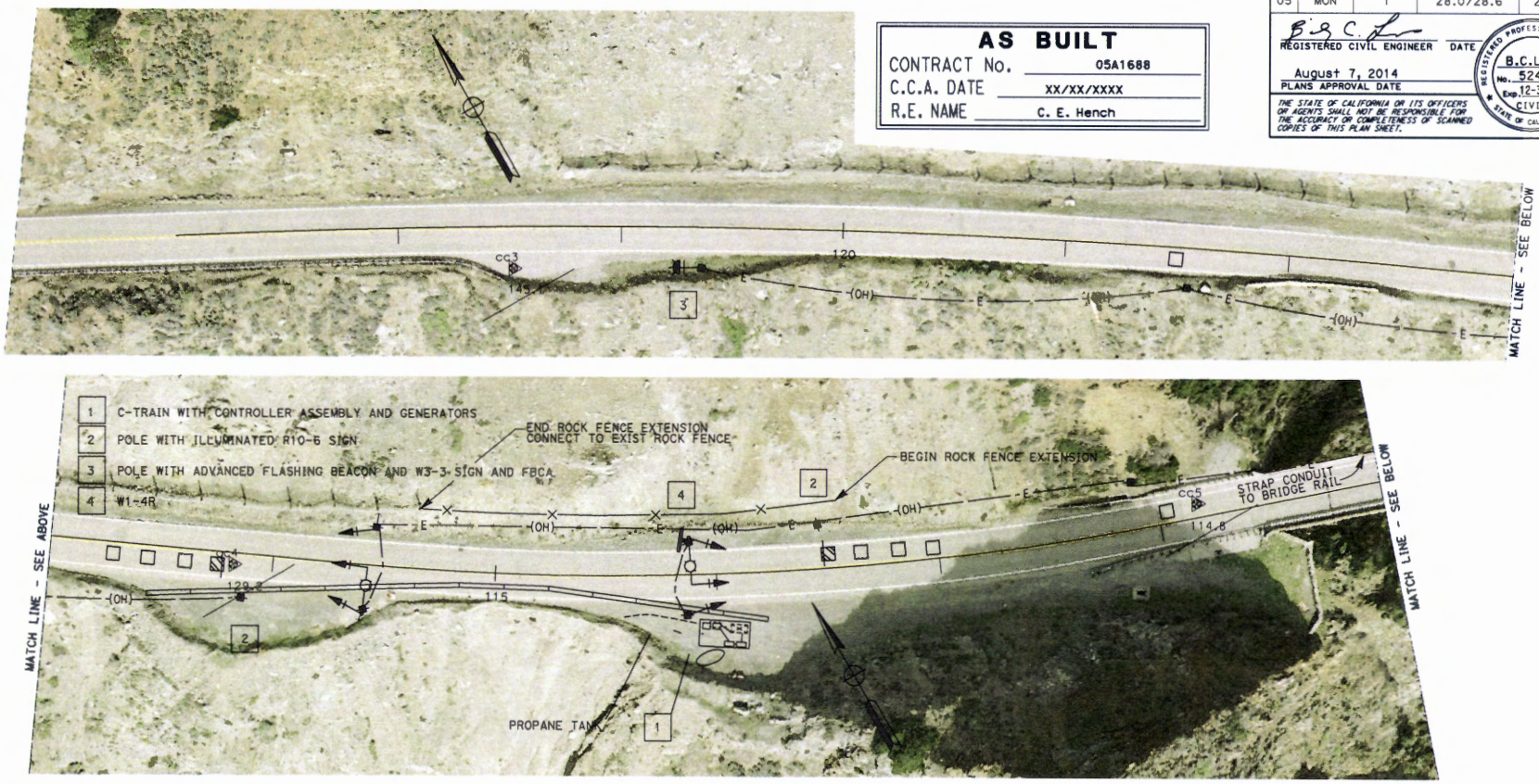

LAYOUT
L-1

SCALE 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
FUNCTIONAL SUPERVISOR
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED

Exhibit 1
3-12-1526
17 of 21

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6	3	8

AS BUILT
CONTRACT No. 0S1688
C.C.A. DATE XX/XX/XXXX
R.E. NAME C.E. Hench

REGISTERED CIVIL ENGINEER DATE

August 7, 2014
PLANS APPROVAL DATE

S.A.Balaban No. 53069 Exp.6-30-15 CIVIL

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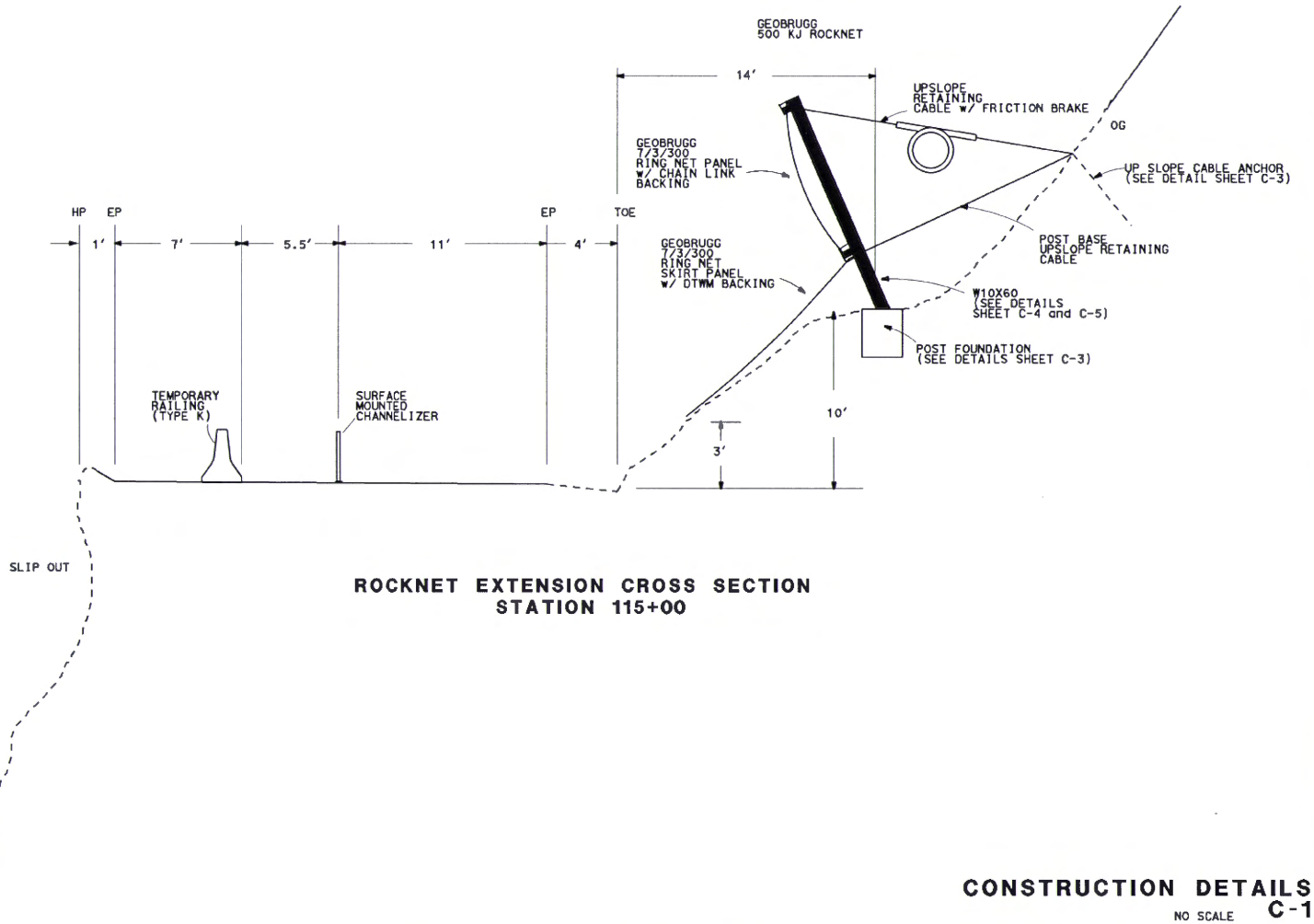

ROCKNET EXTENSION CROSS SECTION
STATION 115+00

CONSTRUCTION DETAILS
NO SCALE **C-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
MAINTENANCE DESIGN
FUNCTIONAL SUPERVISOR: LANCE GORMAN
CALCULATED-DESIGNED BY: STEVE BALABAN
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 08-AUG-2014
TIME PLOTTED => 11:05
00-00-00

BORDER LAST REVISED 7/2/2010
USERNAME => s109181
DGN FILE => 0512000047go001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1251
PROJECT NUMBER & PHASE 0512000047 1

Exhibit 1
3-12-1526
18 of 21

NOTES:

1. SEE SHEET C-3 FOR GROUND ANCHOR AND FOUNDATION DETAILS
2. SEE SHEETS C-4 AND C-5 FOR POST DETAILS
3. SEE SHEET C-6 FOR PANEL CONNECTION DETAILS

AS BUILT
CONTRACT No. 05A1688
C.C.A. DATE XX/XX/XXXX
R.E. NAME C.E. Hench

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6	4	8

REGISTERED CIVIL ENGINEER DATE

August 7, 2014
PLANS APPROVAL DATE

S.A.Balaban No. 53069 Exp. 6-30-15 CIVIL

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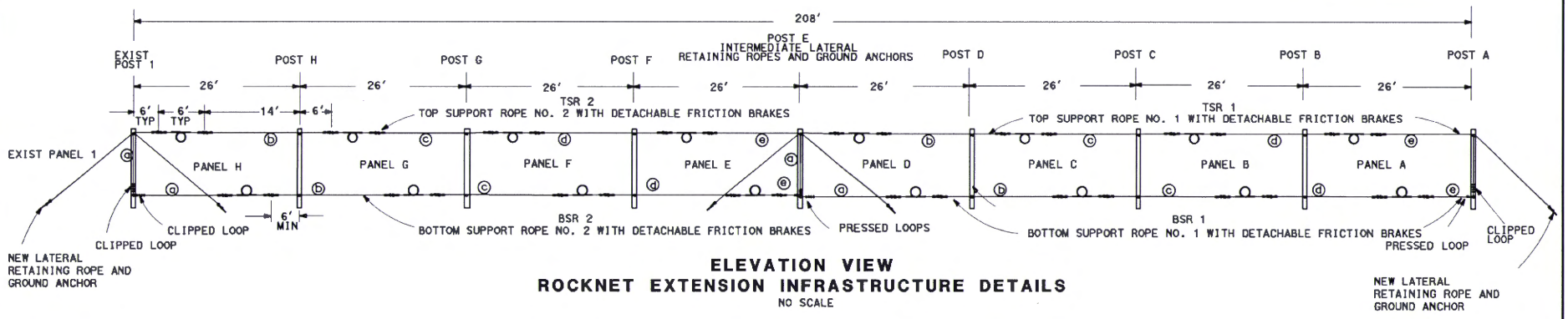


ELEVATION VIEW
ROCKNET EXTENSION INFRASTRUCTURE DETAILS
NO SCALE

INFRATRUCTURE MATERIALS LIST

PANELS E THRU H

TOP SUPPORT ROPE NO. 2

SEGMENT	LENGTH (FT)	CLIPPED LOOP	8" PRESSED LOOP	THIMBLED PRESSED LOOP	WILD END
ⓐ	21'	1		1	1
ⓑ	20'			2	
ⓒ	20'			2	
ⓓ	20'			2	
ⓔ	25'		1	1	

BOTTOM SUPPORT ROPE NO. 2

SEGMENT	LENGTH (FT)	CLIPPED LOOP	8" PRESSED LOOP	THIMBLED PRESSED LOOP	WILD END
ⓐ	18'	1		1	1
ⓑ	20'			2	
ⓒ	20'			2	
ⓓ	20'			2	
ⓔ	6'		1	1	

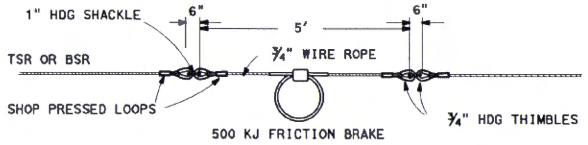
PANELS A THRU D

TOP SUPPORT ROPE NO. 1

SEGMENT	LENGTH (FT)	CLIPPED LOOP	12" PRESSED LOOP	THIMBLED PRESSED LOOP	WILD END
ⓐ	17'		1	1	
ⓑ	20'			2	
ⓒ	20'			2	
ⓓ	20'			2	
ⓔ	30'	1		1	1

BOTTOM SUPPORT ROPE NO. 1

SEGMENT	LENGTH (FT)	CLIPPED LOOP	12" PRESSED LOOP	THIMBLED PRESSED LOOP	WILD END
ⓐ	18'	1			1
ⓑ	20'			2	
ⓒ	20'			2	
ⓓ	20'			2	
ⓔ	6'		1	1	



DETACHABLE FRICTION BRAKE DETAIL
NO SCALE

CONSTRUCTION DETAILS
NO SCALE C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
MAINTENANCE DESIGN
FUNCTIONAL SUPERVISOR: LANCE DORMAN
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY: STEVE BALABAN
DATE REVISED

LAST REVISION: DATE PLOTTED => 08-AUG-2014 TIME PLOTTED => 11:15
00-00-00

BORDER LAST REVISED 7/2/2010
USERNAME => s109181
DGN FILE => 0512000047gd002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 1251
PROJECT NUMBER & PHASE 0512000047 1

Exhibit 1
3-12-1526
19 of 21

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6	5	8

AS BUILT
CONTRACT No. 05A1688
C.C.A. DATE XX/XX/XXXX
R.E. NAME C.E. Hench

REGISTERED CIVIL ENGINEER DATE

August 7, 2014
PLANS APPROVAL DATE

S.A.Balaban No. 53069 Exp. 6-30-15 CIVIL

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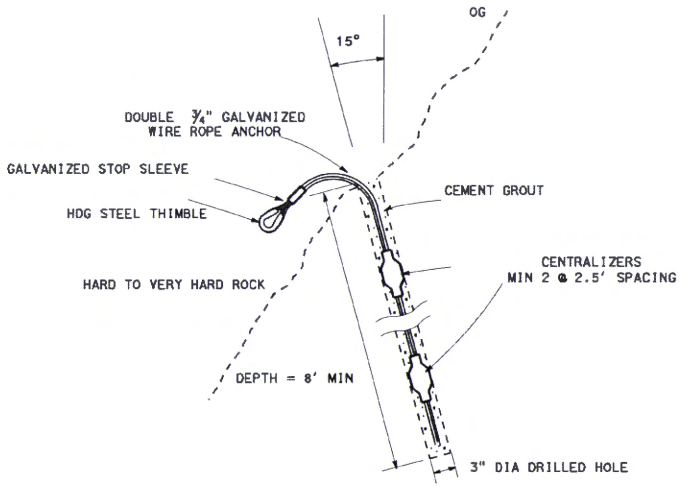
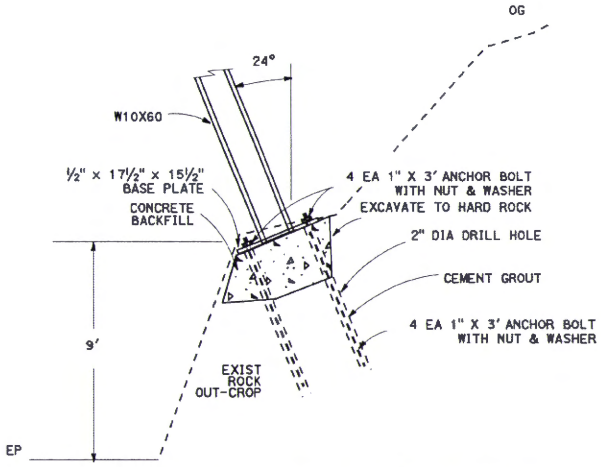
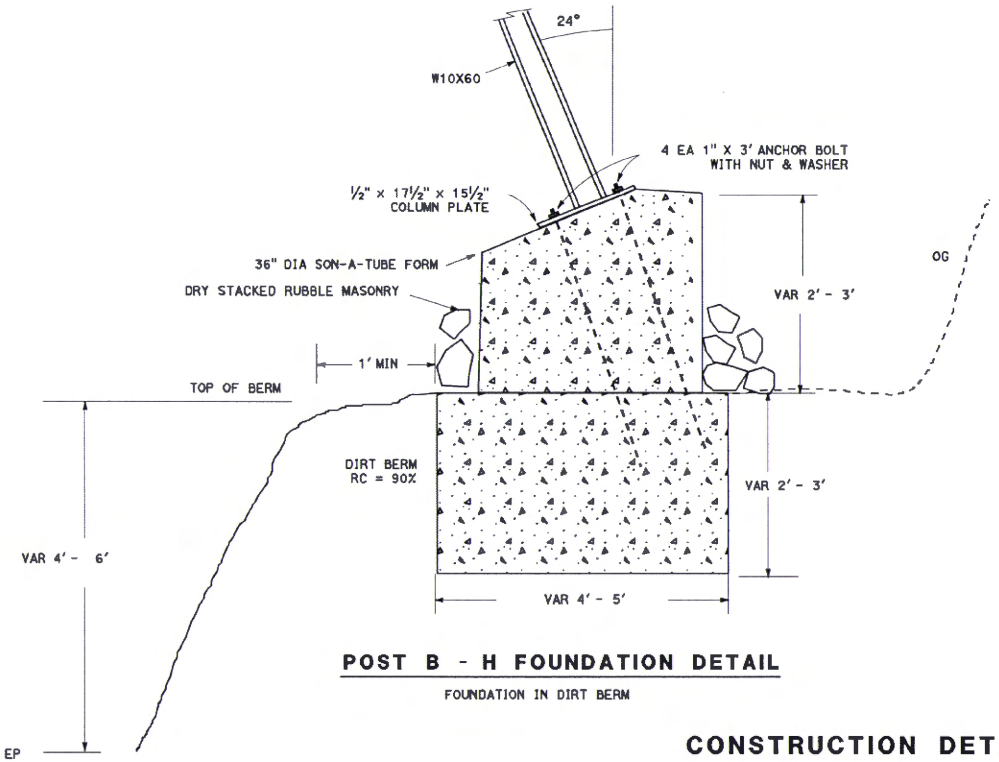


CABLE ANCHOR DETAIL



POST A FOUNDATION DETAIL

FOUNDATION IN HARD ROCK



POST B - H FOUNDATION DETAIL

FOUNDATION IN DIRT BERM

CONSTRUCTION DETAILS

NO SCALE

C-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
MAINTENANCE DESIGN
FUNCTIONAL SUPERVISOR: LANCE GORMAN
CALCULATED-DESIGNED BY: STEVE BALABAN
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 08-AUG-2014
TIME PLOTTED => 11:09
00-00-00

BORDER LAST REVISED 7/2/2010
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DGN FILE => 0512000047ga003.dgn
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UNIT 1251
PROJECT NUMBER & PHASE 0512000047 1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6	8	8

AS BUILT
CONTRACT No. 05A1688
C.C.A. DATE XX/XX/XXXX
R.E. NAME C.E. Hench

REGISTERED CIVIL ENGINEER DATE

May 2, 2014
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
S.A.Balaban
No. 53069
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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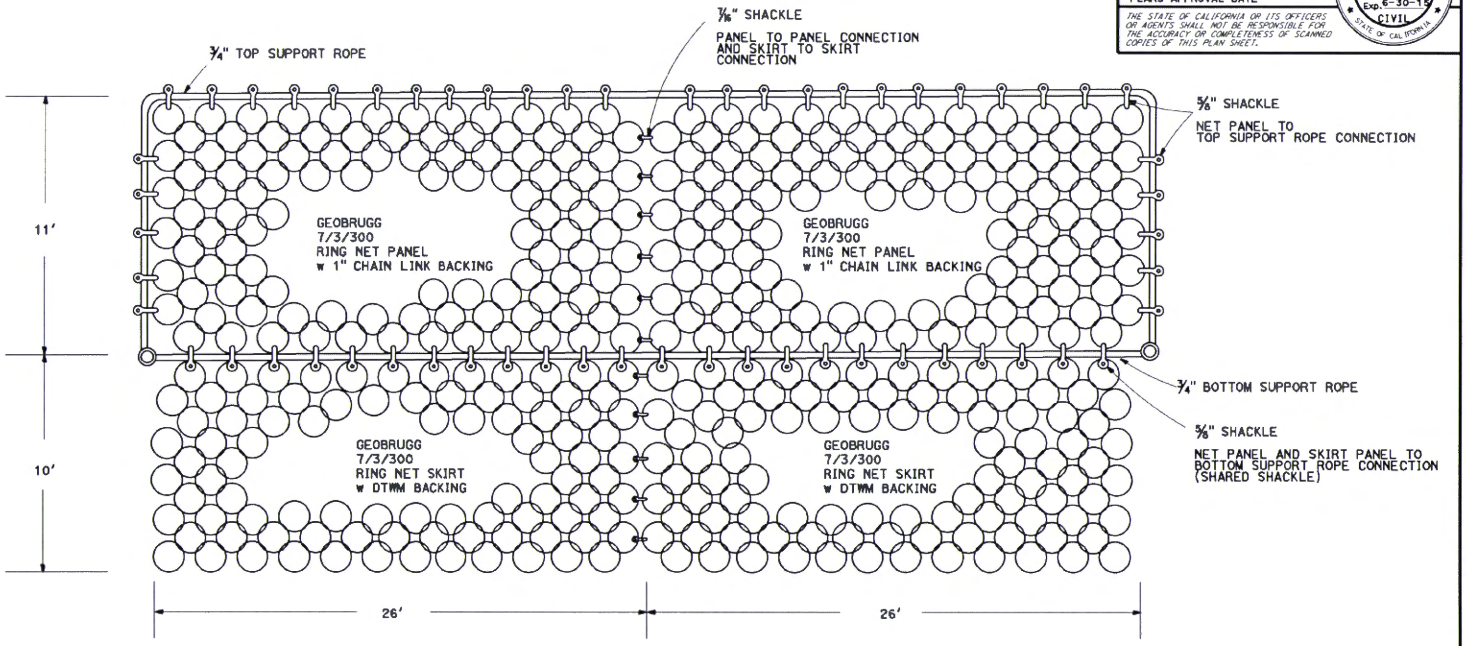
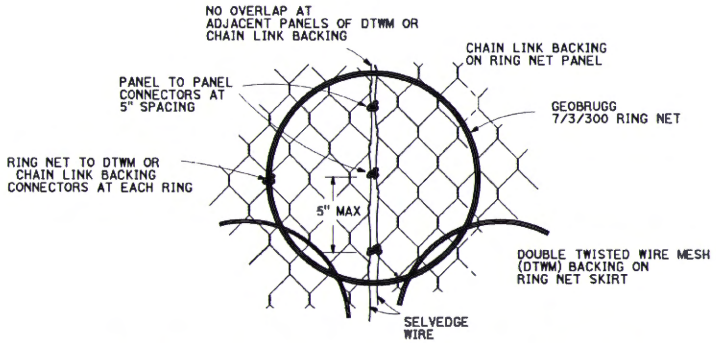


TYPICAL RING NET CONNECTION DETAIL



RING NET AND BACKING CONNECTION DETAIL

CONSTRUCTION DETAILS
NO SCALE **C-6**

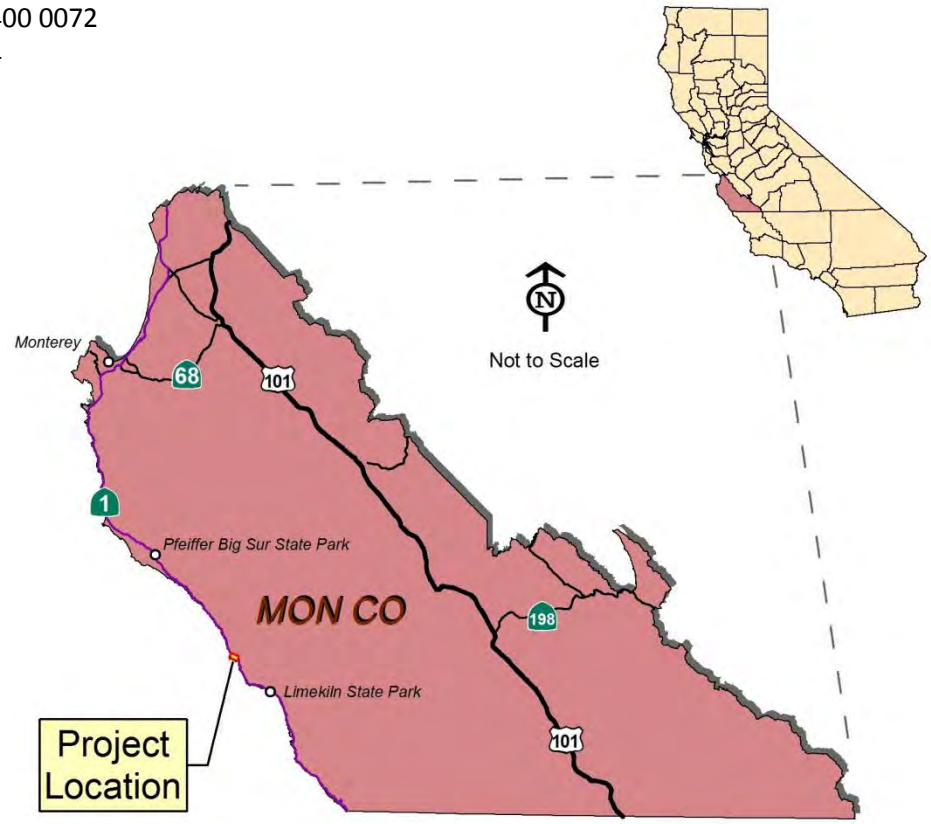
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
MAINTENANCE DESIGN
FUNCTIONAL SUPERVISOR: LANCE GORMAN
CALCULATED-DESIGNED BY: STEVE BALABAN
CHECKED BY
REVISED BY | DATE REVISED

LAST REVISION DATE PLOTTED => 08-AUG-2014
TIME PLOTTED => 11:46

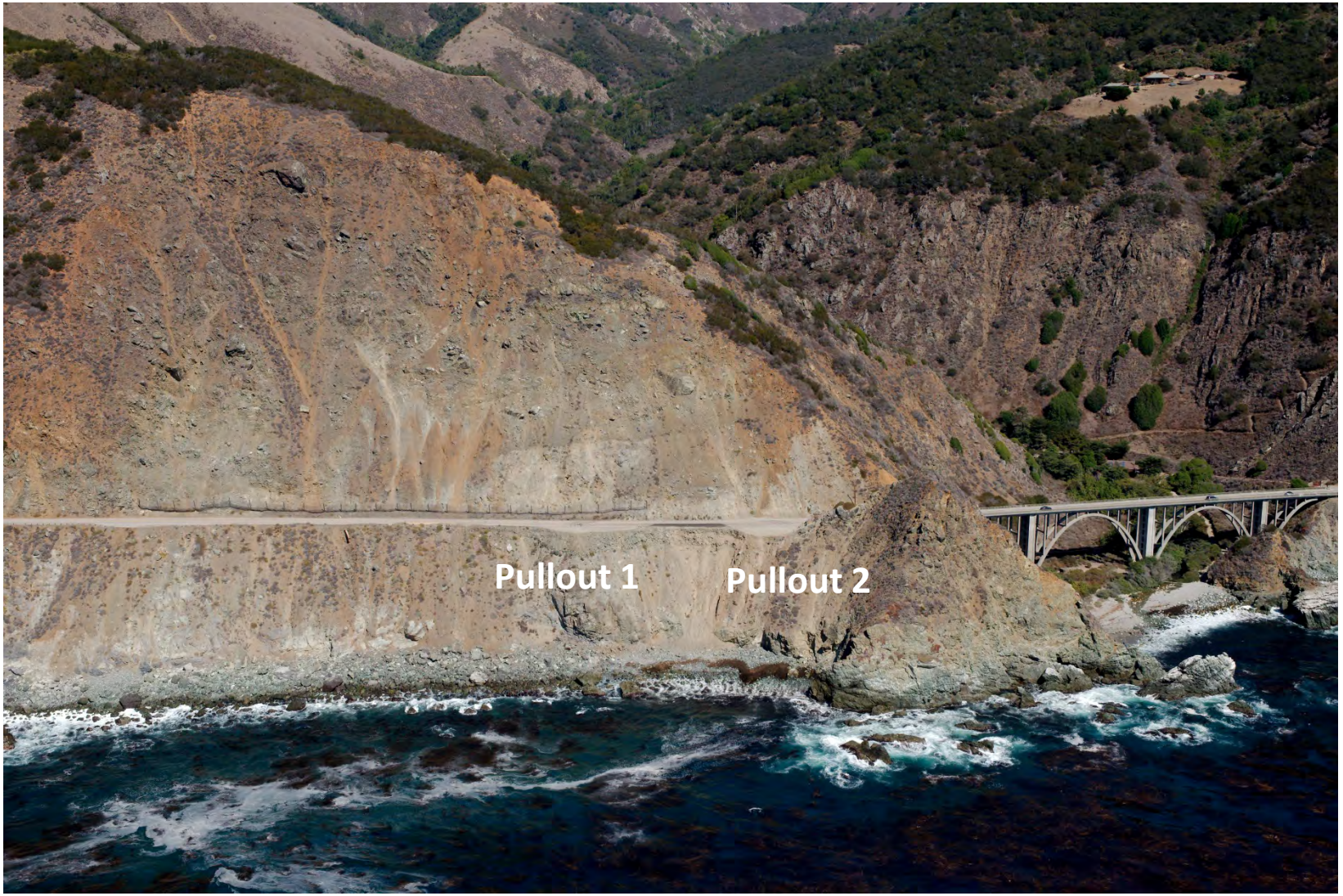
BORDER LAST REVISED 7/2/2010 | USERNAME => s109181 | DGN FILE => 0512000047gc006.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 1251 | PROJECT NUMBER & PHASE 0512000047 1

Exhibit 1
3-12-1526
21 of 21

Cow Cliffs Viaduct Permanent Restoration
05-MON-1-28.0/28.6
05-1F8900 / 05 1400 0072
SCH: 2014051004



Cow Cliffs - (Aerial View)



Downcoast from Bridge (Aerial View)

Project Location – Southbound Approach

Image Adapted from April 3, 2014 Scenic Resources Evaluation and Visual Analysis

Project Location – Northbound Approach

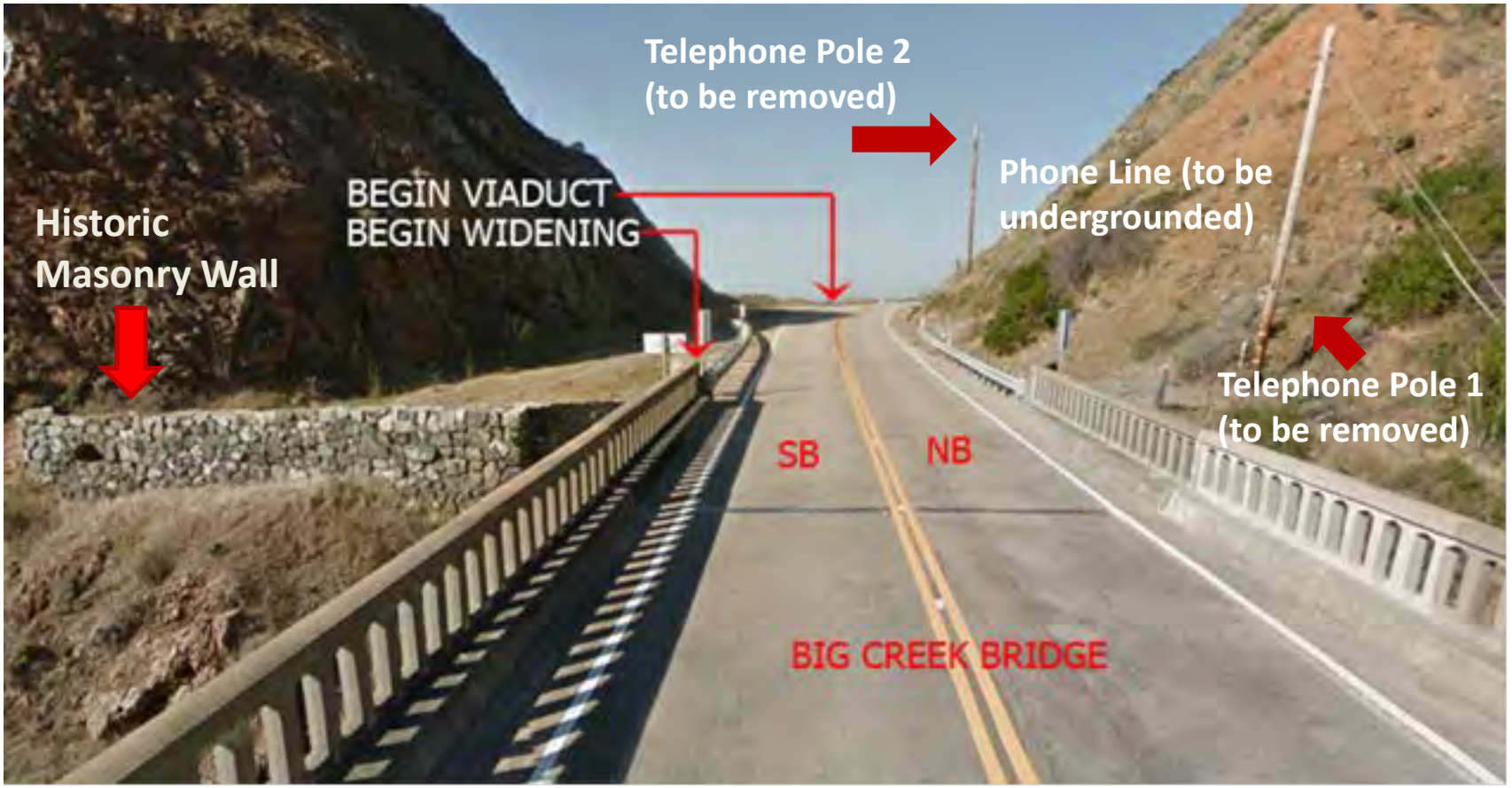


Image Adapted from April 3, 2014 Scenic Resources Evaluation and Visual Analysis

Southbound Approach

Rockfall Net & Cliff Face

Pullout 1 – Will Lose Public Vehicle Access (behind guard railing)

Pullout 2 – Upcoast Portion

Pullout 2 – Upcoast Portion
View looking upcoast

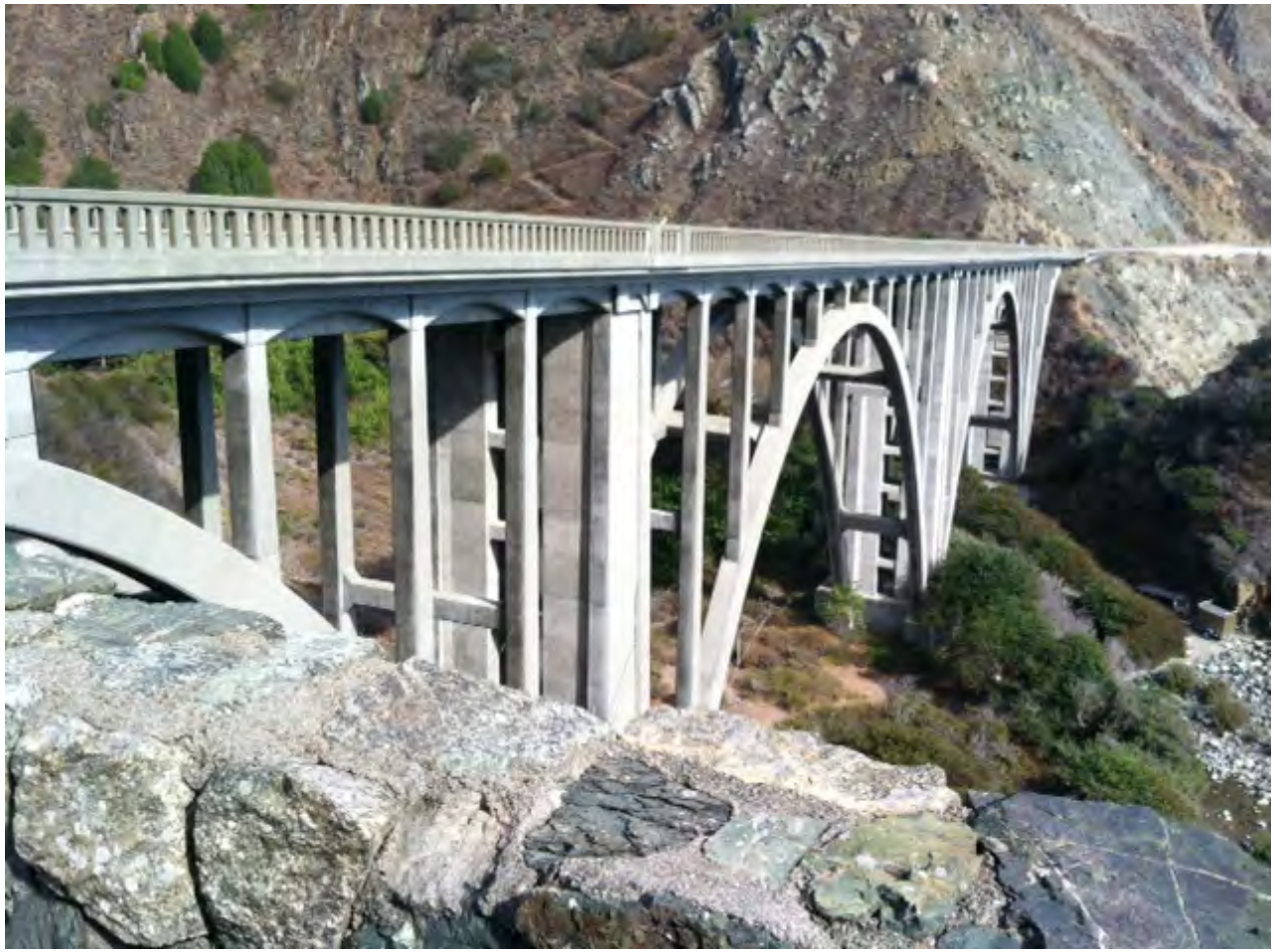
Pullout 2 – Upcoast Portion
View looking downcoast

Pullout 2 – Downcoast Approach

Pullout 2 - Downcoast Portion
"Big Creek Bridge Scenic Overlook Area"

Pullout 2 – Downcoast Portion
View Offshore

Pullout 2 – Downcoast Portion
View of Bridge



Completed road closure. January 2014

CDP application for Cow Cliffs viaduct
Caltrans

Project location during construction of rockfall fencing.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	Mon	1	28.0/28.6		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOSEPH J ERWIN
No. 74015
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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existing culvert to remain

reconstructed inlet

new culvert

existing culvert to remain

COW CLIFFS VIADUCT

BIG CREEK BRIDGE

ROUTE 1

new drainage inlets (2)

rockfall netting

SCALE: 1"=100'

FINAL ROADWAY AERIAL

Exhibit 6
3-14-1526
1 of 1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

FUNCTIONAL SUPERVISOR: STEVE WYATT

CALCULATED-DESIGNED BY: JOE ERWIN
CHECKED BY: BRIAN FULLER

REVISED BY | DATE REVISED

LAST REVISION | DATE PLOTTED =>19-SEP-2014

USERNAME =>a132103

“TAU II”
Crash Cushion

Exhibit 7
3-14-1526
1 of 1