

INFORMATION HANDOUT

For Contract No. 11-295204

At 11-SD-94-59.6/60.2

Identified by

Project ID 110000392

MATERIALS INFORMATION

[United States Fish and Wildlife Service Biological Opinion, January 23, 2015](#)

[Memorandum of Understanding Between California Department of Transportation District 11 and Campo Band of Missions Indians, September 10, 2015](#)

[Tribal Employment Rights Ordinance, May 31, 1994](#)

[Geotechnical Design Report, December 16, 2015](#)

[Water Source Letter, December 12, 2015](#)



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008



In Reply Refer To:
FWS-SDG-14B0124-15F0083

JAN 23 2015

Ms. Kim T. Smith, Chief
Environmental Stewardship and Ecological Studies
California Department of Transportation - District 11
4050 Taylor Street
San Diego, California 92110

Attention: Mr. Michael Galloway, Associate Environmental Planner

Subject: Formal Section 7 Consultation for the State Route 94 Curve Realignment Project, San Diego County, California

Dear Ms. Smith:

This document transmits our biological opinion based on our review of the State Route 94 (SR-94) Curve Realignment Project and its effects on the federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*; Quino), in accordance with section 7 of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*). The California Department of Transportation (Caltrans) has assumed the Federal Highway Administration's (FHWA) responsibilities under the Act for this consultation in accordance with Section 1313, Surface Transportation Project Delivery Program, of the Moving Ahead for Progress in the 21st Century Act (MAP-21) of 2012, as described in the National Environmental Policy Act (NEPA) assignment Memorandum of Understanding between FHWA and Caltrans (effective October 1, 2012) and codified in 23 U.S.C. 327. We initiated consultation on September 4, 2014, the day we received your request.

This biological opinion is based on: 1) information provided in your agency's September 4, 2014, letter requesting initiation of formal consultation on the proposed project; 2) the *State Route 94 Curve Realignment Biological Assessment* (Caltrans 2014, BA); and 3) other sources of information including survey reports and email correspondence. The complete project file addressing this consultation is maintained at the Carlsbad Fish and Wildlife Office (CFWO).

CONSULTATION HISTORY

February 20, 2014: The U.S Fish and Wildlife Service's (Service) Information, Planning, and Conservation System (IPaC) received a request for a list of federally threatened and endangered species expected to be present in or near the proposed action area, and a list was generated and sent to Caltrans.

- May 9, 2014: Representatives from Caltrans, the CFWO, and the Campo Kumeyaay Nation attended an onsite meeting to discuss the proposed project and its potential impacts to listed species and to conduct the final protocol survey for Quino.
- September 4, 2014: Caltrans provided a letter dated September 4, 2014, requesting initiation of formal consultation on the proposed action, together with the BA.
- October 2, 2014: The CFWO provided a letter acknowledging initiation of formal consultation on the project, including a list of information requested in the first 90 days of consultation.
- October 2, 2014: Caltrans provided the information requested in our initiation letter, including digital copies of the BA figures and project survey reports.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Using Federal funds provided through the FHWA, Caltrans proposes a safety project that will realign a curve to improve sight distance on SR-94 [post mile (PM) 59.8 to PM 60.3] between Church Road and Kumeyaay Road, near the unincorporated community of Manzanita, in San Diego County (Figures 1 and 2). The project involves construction of 12-foot wide lanes and 8-foot wide outside shoulders within the curve realignment area. The project also includes the acquisition of new right-of-way and the relocation of existing overhead utilities with the placement of new poles. Project construction is anticipated to begin in March of 2017, and the duration of construction is estimated at 18 months.

The project will result in 1.0 acre of permanent and 1.6 acres of temporary impacts to chaparral habitat, respectively, and 0.3 acre of temporary impact to disturbed meadows and fields. Patches of nectar plants suitable for Quino foraging and other habitat features favorable for Quino, including hilltops, ridgelines, rocky outcrops, and cryptogammic soil crusts, are present within the action area for the project (Caltrans 2014).

Conservation Measures

Caltrans has agreed to implement the following conservation measures as part of the proposed action to avoid, minimize, and offset impacts to Quino and other sensitive resources, such as wetlands, aquatic resources, wildlife, and rare plants:

1. Permanent impacts to 1.0 acre of onsite chaparral habitat suitable for Quino will be offset through the permanent conservation of 2.0 acres of southern mixed chaparral habitat at the Rancho San Diego Mitigation Bank.

2. All areas of temporary impact will be revegetated and restored with native species. These areas will be returned to original grade, as feasible. Duff and rare plants may be salvaged from the project impact footprint to the extent practicable to aid in revegetating temporary impact areas with native habitats. Prior to initiating project impacts, a restoration plan will be developed for the temporary impact areas. The plan will be submitted to the CFWO for review and approval. This plan will include a detailed description of restoration methods, slope stabilization, and erosion control; criteria for restoration to be considered successful; and monitoring protocol(s). Methods for avoiding impacts to Quino from restoration maintenance activities (e.g., weed removal) will be included in the restoration plan. Personnel conducting maintenance activities will be instructed to take care to avoid effects from trampling and herbicide drift to areas with Quino host and nectaring plants. Following the completion of construction activities within each area of impact, the restoration plan will be implemented for a minimum of 3 years, unless success criteria are met earlier and all artificial water has been off for at least 2 years. Temporary impact areas will be planted as soon as possible following re-grading after completion of construction to prevent encroachment by nonnative plants.
3. Because the project is expected to start in 2017, Caltrans will conduct surveys for Quino within 1 year prior to the commencement of vegetation clearing and construction activities to ensure that survey information remains up to date. Caltrans acknowledges that section 7 consultation will be reinitiated if survey results indicate that additional impacts to the species may occur beyond those addressed in this biological opinion.
4. A biologist (Project Biologist) approved by the CFWO will be on site during: a) initial clearing and grubbing; and b) weekly during project construction to ensure compliance with all conservation measures. The Project Biologist will be familiar with Quino and their habitat and will have experience monitoring this species. The contract of the biologist will allow direct communication with the CFWO at any time regarding the proposed project. Caltrans will submit the biologist's name, address, telephone number, and work schedule on the project to the CFWO at least 5 working days prior to initiating project impacts. The Project Biologist will be provided with a copy of this consultation.
5. Under the supervision of the Project Biologist, the limits of project impacts (including construction staging areas and access routes) will be clearly delineated with bright orange fencing, stakes, flags, or markers that will be installed in a manner that does not impact habitats to be avoided and such that they are clearly visible to personnel on foot and operating heavy equipment. If work occurs beyond the fenced or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of the CFWO. Temporary construction fencing and markers will be removed upon project completion.
6. The Project Biologist will submit a final report to the CFWO within 120 days of project completion including photographs of impact areas and adjacent habitat, documentation that authorized impacts were not exceeded, and documentation that general compliance with all conservation measures was achieved. The report will specify numbers and locations of Quino (if observed). Raw field notes should be available upon request by the CFWO.

7. An employee education program will be developed. Each employee (including temporary, contractors, and subcontractors) will receive a training/awareness program prior to working on the proposed project. They will be advised of the potential impact to the listed species and the potential penalties for taking such species. At a minimum, the program will include the following topics: occurrence of the listed and sensitive species in the area (including photographs); their general ecology; sensitivity of the species to human activities; legal protection afforded these species; penalties for non-compliance with Federal and State laws; reporting requirements; and project features designed to reduce the impacts to these species and promote continued successful occupation of the project area.
8. During project construction, all invasive species included on National Invasive Species Management Plan, the State of California Noxious Weed List, and the California Invasive Plant Council's (Cal-IPC) Invasive Plant Inventory list found growing within the project right-of-way will be removed. Weed removal will be conducted within the project right-of-way as needed during the construction and restoration period. Special care will be taken during transport, use, and disposal of soils containing invasive weed seeds, and all weedy vegetation removed during construction will be properly disposed of to prevent spread into areas outside of the construction area
9. Appropriate erosion and siltation controls will be installed prior to the onset of vegetation clearing and be maintained in good repair until the completion of project construction. Erosion and sediment control devices used for the proposed project, including fiber rolls and bonded fiber matrix, will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.
10. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated areas that are outside of habitat suitable for Quino and are a minimum of 100 feet from drainages and associated plant communities.
11. Impacts from fugitive dust will be avoided and minimized through watering and other appropriate best management practices (BMPs).
12. The project site will be kept as clear of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site. All spoils and material disposal will be disposed of properly.
13. If fill must be borrowed from or disposed of offsite, the construction contractor will identify any necessary borrow and disposal sites and provide this information to Caltrans for review. Caltrans will review borrow and disposal site information and submit the information to the CFWO. If borrow or disposal activities directly related to this project may affect a listed species or critical habitat, Caltrans will reinstate section 7 consultation.
14. If nighttime construction is necessary, all lighting used at night for project construction (e.g., staging areas, equipment storage sites, roadway) will be selectively placed and directed onto

the roadway or construction site and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats.

15. Project personnel will be prohibited from bringing domestic pets to construction sites to ensure that domestic pets do not disturb or depredate wildlife in adjacent habitats.

Action Area

According to 50 CFR § 402.02 pursuant to section 7 of the Act, the “action area” means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. For purposes of this consultation, we define the action area as the 0.5-mile project site, which includes the 1.0-acre permanent impact area and the 1.9-acre temporary impact area of sensitive native upland habitats. The action area also includes the surrounding habitat within about 500 feet, which may be exposed to project-related effects such as increased light and dust levels and human activity during project construction and operation of the facilities. In addition, the action area includes the Rancho San Diego Mitigation Bank which is located west of the project site in San Diego County, California (Figure 1). Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon the action area.

STATUS OF THE SPECIES

The Service listed the Quino as endangered on January 16, 1997 (62 FR 2313), published a revised final critical habitat rule on June 17, 2009 (67 FR 18356), and issued a recovery plan for the species on August 11, 2003 (Service 2003). The status of the Quino was described in detail in a 5-year review for this species on August 13, 2009 (Service 2009). Please refer to these documents for general information on the species description, life history requirements, threats, and conservation needs of the Quino. These documents can be found at <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=I00P>. The following is a summary of the Quino’s habitat affinities.

The primary larval food sources or host plants for the Quino are dot-seed plantain (*Plantago erecta*), woolly plantain (*Plantago patagonica*), thread-leaved bird’s beak (*Cordylanthus rigidus*), white snapdragon (*Antirrhinum coulterianum*), and Chinese houses (*Collinsia concolor*). Larval Quino may also use other species of plantain and annual owl’s-clover as primary or secondary host plants and are thought to diapause in or near the base of native shrubs (73 FR 3327). While the use patterns of primary and secondary larval host plants are not fully understood, evidence exists that both may be necessary for the survival of Quino larvae (Service 2003). Quino larvae, particularly in the early instars, have a very limited capacity for movement. Therefore, high local host plant density is necessary for high larval survival rates (Service 2003). As adults, Quino use a number of flowering plants as nectar sources (67 FR 18359, Mattoni et al. 1997).

Habitat patch suitability is determined primarily by larval host plant density, topographic diversity, nectar resource availability, and climatic conditions (Service 2003). Quino are generally found in open areas and ecotone situations within a variety of plant communities, including grasslands, chaparral, and coastal sage scrub. Open areas within a given vegetation community appear to be

critical landscape features for Quino populations. Optimal habitat appears to contain little or no invasive exotic vegetation and a well-developed cryptogamic crust.

Long-distance dispersal has been documented in the bay checkerspot butterfly up to a distance of 4 miles (Murphy and Ehrlich 1980), but dispersal studies in sum suggest that long distance movements by individual checkerspot butterflies are not common (Service 2003). Harrison (1989) found bay checkerspot butterfly habitat within 0.6 mile of a source subpopulation is 100 percent likely to be colonized by immigrants from the source subpopulation. Additionally, adult Quino are known to display hilltopping behavior, where male, and to a lesser extent female, butterflies are frequently observed on hilltops, ridgelines, and other prominent geographic features (Osborne 2001). Hilltopping behavior allows sparse populations of butterflies to congregate in order to locate mates.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR § 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area that have undergone section 7 consultation and the impacts of State and private actions which are contemporaneous with the consultation in progress.

The action area includes the proposed project site and the Rancho San Diego Mitigation Bank. The 2.9- acre project site is located on SR-94 [post mile (PM) 59.8 to PM 60.3] between Church Road and Kumeyaay Road, near the unincorporated community of Manzanita, in San Diego County (Figures 1 and 2). The project site includes patches of nectar plants suitable for Quino foraging and other habitat features favorable for Quino including hilltops, ridgelines, rocky outcrops, and cryptogammic soil crusts (Caltrans 2014). No designated Quino critical habitat occurs within the action area.

The action area is located on the western edge of the Southeast San Diego Recovery Unit for the Quino. This unit supports a single occurrence complex of Quino (the Jacumba Occurrence Complex), which is located in the center of the unit, approximately 8 miles east of the project site (Figure 3). Habitat in this unit has not been heavily invaded by nonnative plants, and the resident Quino populations may be the only ones that will not require extensive management to address nonnative plant invasion (Service 2003). This unit also provides for connectivity to Baja California, Mexico (Service 2003). The Jacumba Occurrence Complex was not classified as a core occurrence complex in the recovery plan (Service 2003) due to its relatively small geographic size and the small number of observed individuals at the time. However, more recent observations have characterized the Jacumba population as resilient, and the associated habitat-based population distribution was classified as a core occurrence complex in our 5-year review (Service 2009).

Protocol surveys for Quino were conducted within the biological study area (i.e., the project's permanent and temporary impact area plus a 300-foot buffer) for the project in 2014 with negative results; however, drought conditions may have affected Quino and host plant detectability in 2014. Numerous records exist for Quino in the vicinity of the project site, including 32 data records dating from 2005 to 2010 within approximately 2 to 3 miles encircling the project site (CFWO Geographic

Information Systems Analysis, December 5, 2014). The nearest Quino record is approximately 0.5 mile southeast of the project site (AECOM 2010). Based on a review of numerous publications on dispersal distance of checkerspot butterflies, our recovery plan for the Quino (Service 2003) estimates occupied areas to be habitat within 0.6 mile of recent butterfly occurrences.

Based on the above information and for the purposes of this consultation, we determined any part of the action area with appropriate habitat for Quino within 0.6 mile of a known Quino occurrence may be occupied. The project will permanently impact 1.0 acre and temporarily impact 1.6 acres of chaparral and temporarily impact 0.3 acre of disturbed meadows and fields. Within the area of overlap between the project impact area and the 0.6 mile dispersal distance of recent Quino occurrences (shown in Figure 4 as the 1 kilometer buffer), the project will permanently impact 0.5 acre and temporarily impact 0.6 acre of chaparral considered occupied by Quino (Caltrans 2014).

The Rancho San Diego Mitigation Bank is a 1,832-acre property located both north and south of SR-94 and west of SR-54 at Steele Canyon (Figure 5). The property is dominated by southern mixed chaparral and Diegan coastal sage scrub. Previous occurrences of Quino are documented within and adjacent to the Rancho San Diego Mitigation Bank (Caltrans 2014, Service 2003). The property is owned and managed by the Service as a unit of the National Wildlife Refuge System. The Rancho San Diego Mitigation Bank is located in the Southwest San Diego Recovery Unit and provides habitat for the Rancho San Diego Occurrence Complex of Quino, which is one of 15 occurrence complexes within this unit (Service 2003).

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species, together with the effects of other activities that are interrelated and interdependent with that action that would be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

Direct Effects

The proposed project will result in the permanent and temporary loss of 0.5 acre and 0.6 acre of occupied Quino habitat, respectively. Construction activities that could result in direct impacts include the removal or crushing of host plants if any are present in construction areas and the death of Quino larvae or eggs if they have colonized those plants. In addition, human foot traffic through host plants and/or nectar sources could crush or trample eggs, larvae, or adults. Adult Quino may be injured or killed by moving vehicles during construction.

Given the number of Quino observations nearby (i.e., only a single Quino observation within 0.6 mile of the site), it is likely that Quino abundance on the site is low. Thus, with the minimization and avoidance measures proposed, we anticipate the loss of only a few Quino individuals of various life stages within the relatively small 1.1 acre-impact area that includes Quino habitat. This small loss of Quino habitat and death or injury of a few Quino individuals is not anticipated to result in an

appreciable reduction in the numbers, reproduction, or distribution of the Quino populations within the Jacumba Occurrence Complex or rangewide.

Following project construction, all temporarily impacted habitats, including areas deemed occupied Quino habitat (0.6 acre), will be restored with native species. In total, 1.9 acres will be revegetated with native species. The temporary impacts of the project are not anticipated to substantially degrade the quality of habitat for Quino. The removal of native vegetation and soil disturbance may facilitate invasion by nonnative grasses and weeds; however, the site will be re-seeded with native species following project completion, and Quino nectaring plants are anticipated to be available within the restored temporary impact area in the spring following re-seeding, or the following spring, should adverse weather conditions negatively affect restoration efforts the first year.

Restoration activities within both occupied (0.6 acre) and adjacent suitable (1.3 acre) habitat areas are expected to result in an overall benefit to the Quino, but these activities could result in inadvertent impacts to Quino during restoration maintenance activities. However, the project includes avoidance measures to ensure that Quino are not significantly disrupted as a result of restoration activities. Specifically, personnel conducting maintenance activities (e.g., weeding) will take care to avoid effects from trampling and herbicide drift to areas with Quino host and nectaring plants. Therefore, effects to Quino associated with habitat restoration are anticipated to be insignificant.

Caltrans will offset the permanent loss of 0.5 acre of occupied Quino habitat through the preservation of a total of 2 acres of southern mixed chaparral at the Rancho San Diego Mitigation Bank, which is occupied by Quino. Although conservation of Quino habitat off the project site will not avoid or minimize impacts to the individual Quino impacted by the project or contribute to the long-term protection of Quino habitat within the Jacumba Occurrence Complex, the offsite conservation will permanently protect 2 acres of southern mixed chaparral habitat within the Rancho San Diego Occurrence Complex of Quino. This southern mixed chaparral is occupied by Quino and thus will contribute to the conservation and recovery of the species.

Indirect Effects

Indirect impacts to Quino could occur where the construction is directly adjacent to Quino habitat. Wind borne dust particles from construction traffic and blasting could affect Quino host and nectaring plants by covering them with a layer of dust. Dust on the plants could potentially inhibit their growth as well as decrease their palatability to Quino. Elevated dust levels may also affect the ability of Quino larvae and adults to respire normally. Insects are known to be adversely affected by being coated with oil films, emulsions, or dust particles that clog the respiratory openings (spiracles) on their bodies and can stop respiration (Storer *et al.* 1972). Implementation of dust reduction, as described in Conservation Measure 11¹ is anticipated to minimize effects associated with increased dust.

¹ Conservation Measures referred to hereafter are previously described in the *Project Description* of this biological opinion.

Lighting for night construction in areas where Quino occur could increase the number and type of Quino predators. Phototropism (moving toward light) in arthropods is common and if Quino are attracted to lights, they may be killed or harmed by the lights themselves, vehicular traffic, or predators. The presence of lights has the potential to increase the number of insectivorous bats foraging in the project area. An increase in predatory bats could decrease the number of adult Quino in the action area. The project does not propose any changes to operational lighting along SR-94. Temporary construction lighting used for the project will be lowest illumination necessary for safety and will be shielded and directed toward the facility and away from sensitive habitats. The use of night lighting that is of the lowest illumination necessary for human safety and is shielded and directed away from sensitive habitat, as proposed by Conservation Measure 14, is anticipated to minimize effects to Quino associated with lighting.

Construction activities that include clearing and grading of the existing native vegetation could also increase the cover and number of invasive nonnative plant species in habitats adjacent to the project area. Nonnative species are now recognized as a threat to biodiversity in native plant communities, second only to direct habitat loss and fragmentation (Pimm and Gilpin 1989, Scott and Wilcove 1998). Nonnative species often out-compete and exclude native species, potentially altering the structure of the vegetation, degrading or eliminating habitat used by the Quino, and providing food and cover for undesirable nonnative animals (Bossard et al. 2000). Non-native plants have been shown to displace Quino host plants, which appear to be poor competitors against non-native grasses (Service 2003). In addition to displacing larval host plants, nonnative annuals have been shown to replace nectar sources (Service 2003). Soil disturbance associated with the proposed action may facilitate nonnative weed species invasion of the project site and thus the surrounding habitat areas. The project has incorporated avoidance measures (Conservation Measure 8) to prevent the spread of nonnative species through the regular removal of invasive species within the project area and careful disposal of soils with weed seed and weedy vegetation. Implementation of these measures is anticipated to minimize the impact of invasive species introduction on Quino and its habitat resulting from project implementation to a level of insignificance.

Additional indirect effects include an increase in human encroachment from construction personnel. Measures have been incorporated, such as construction fencing, to avoid and minimize these impacts to Quino. SR-94 is an existing facility, so with the proposed conservation measures, any increase in habitat degradation associated with these factors is expected to be insignificant.

Effect on Recovery

The proposed project is consistent with the recovery objectives identified in the recovery plan for the Quino (Service 2003). The project will result in permanent and temporary losses of a small amount of occupied Quino habitat within the Southeast San Diego Recovery Unit for the Quino, but these impacts have been minimized. To offset this loss, the project will conserve 2 acres of southern mixed chaparral at the Rancho San Diego Mitigation Bank, an area with previous known occurrences of Quino within the Southwest San Diego Recovery Unit.

The proposed conservation of habitat at the Rancho San Diego Mitigation Bank will help accomplish the primary goal of the Quino recovery plan, which is to protect and manage habitat supporting

known current population distributions (occurrence complexes) and landscape connectivity between them. Specifically, the proposed habitat conservation will help accomplish recovery action 1.5., Southwest San Diego Recovery Unit: protect and manage as much as possible of the remaining undeveloped suitable and restorable habitat patches and dispersal areas within and between the occurrence complexes.

The project will not substantially fragment existing populations within recovery units or interfere with dispersal between populations, and Quino are expected to move into the restored temporary impact area from adjacent occupied habitat. Thus, over the long-term, the project is expected to contribute to the conservation and recovery of the species by conserving Quino habitat in southwest San Diego County.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. We are unaware of any future non-Federal actions that are reasonably certain to occur within the action area and may affect Quino.

CONCLUSION

After reviewing the current status of the Quino, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the Quino. We reached this conclusion by considering the following:

- Adverse effects to the Quino will be reduced by implementation of the avoidance and minimization measures identified in the “Project Description” of this biological opinion;
- The project will permanently impact only 0.5 acre of occupied Quino habitat out of many thousands of remaining acres of quino habitat rangewide;
- The project will temporarily impact only 0.6 acre of occupied Quino habitat, this habitat will be restored, and within 1 to 2 years post-project we anticipate this habitat will again be suitable for Quino foraging.
- Impacts to the Quino will be offset by conserving 2 acres of chaparral habitat occupied by Quino at the Rancho San Diego Mitigation Bank;
- With implementation of the conservation measures, the proposed action is not anticipated to result in an appreciable reduction in the numbers, reproduction, or distribution of Quino in the action area or range-wide.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by Caltrans for the exemption in section 7(o)(2) to apply. Caltrans has the continuing duty to regulate the activity that is covered by this incidental take statement. If Caltrans fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

To monitor the impact of the incidental take, Caltrans must report the progress of the action and its impact on the species to the CFWO as specified in the incidental take statement [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

Quantifying the precise number of individual Quino that may be incidentally taken is not possible because the butterfly's small body size and diapause life stage make the observation or detection of mortality highly unlikely. Because we cannot provide the precise number of individual Quino that are likely to be taken with implementation of the proposed action, take exemptions are provided as follows:

- Harm, death, or injury of Quino eggs, larvae, pupae or adults within a total of 1.1 acres (0.5 acre permanent and 0.6 acre temporary impacts) of occupied Quino habitat in the action area. The amount or extent of incidental take will be exceeded if project-related impacts, including vegetation clearing, occur in occupied Quino habitat outside of this 1.1-acre area.

We note that the project proposes an additional 0.5 acre of permanent and 1.3 acres of temporary impacts to habitat that is suitable for Quino but is not considered to be occupied because it is farther than 0.6 mile away from a recent Quino record. Should repeat surveys conducted within 1 year prior to vegetation clearing for the project find this habitat to be occupied by Quino, section 7 consultation will be reinitiated to address unanticipated impacts to the species (per Conservation Measure 3).

EFFECT OF TAKE

In the accompanying biological opinion, we determined that this level of anticipated take is not likely to jeopardize the continued existence of the Quino.

REASONABLE AND PRUDENT MEASURES

Caltrans will implement conservation measures as part of the proposed action to minimize the incidental take of Quino. In addition to these conservation measures, the following reasonable and prudent measure is necessary to monitor and report the effects of the incidental take on Quino:

Caltrans will monitor and report on compliance with the established take exemptions for Quino associated with the proposed action.

TERMS AND CONDITIONS

To be exempt from the prohibitions of section 9 of the Act Caltrans must comply with the following term and condition which implement the reasonable and prudent measure described above.

Within 1 year prior to project initiation, Caltrans will conduct updated surveys for Quino to verify that occupied Quino habitat (i.e., suitable habitat in the project impact area located within 0.6 mile from a recent Quino record) does not exceed 1.1 acre. Within 30 calendar days of the completion of project activities within Quino habitat, Caltrans will provide the CFWO with a report documenting the area of occupied Quino habitat impacted. In addition, though it is unlikely that Quino will be observed dead or injured as a result of project clearing activities, the report should document the number of any dead or injured Quino observed in the action area. The report will include an assessment of how or why Quino may have been injured or killed. Caltrans will report incidences of take (observed death or injury of Quino) to the CFWO within 3 days. All field notes and other documentation generated by the biological monitor shall be made available to the CFWO upon request. The purpose of this notification is to ensure that impacts to Quino occupied habitat from the proposed project do not exceed the take thresholds.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans or to develop information. We have not identified any additional conservation recommendations that will further benefit the Quino within the action area.

REINITIATION NOTICE

This concludes formal consultation on the SR-94 Curve Realignment Project. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency

involvement or control over the action has been retained (or is authorized by law) and if 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or, 4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological opinion, please contact Sally Brown of this office at 760- 431-9440, extension 278.

Sincerely,



G. Mendel Stewart
Field Supervisor

LITERATURE CITED

- AECOM. 2010. 45-day Summary Report of Focused Surveys for the Quino Checkerspot Butterfly for the Campo Wind Energy Project. 15+pp.
- Bossard, C., J. Randall, and M. Hoshovsky (eds). 2000. Invasive plants of California's wildlands. University of California Press. Berkeley, California. 360 pp.
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- [Service] U.S. Fish and Wildlife Service. 2009. Quino Checkerspot Butterfly (*Euphydryas editha quino*) 5-Year Review, Region 8. Sacramento, California. 54 pp.

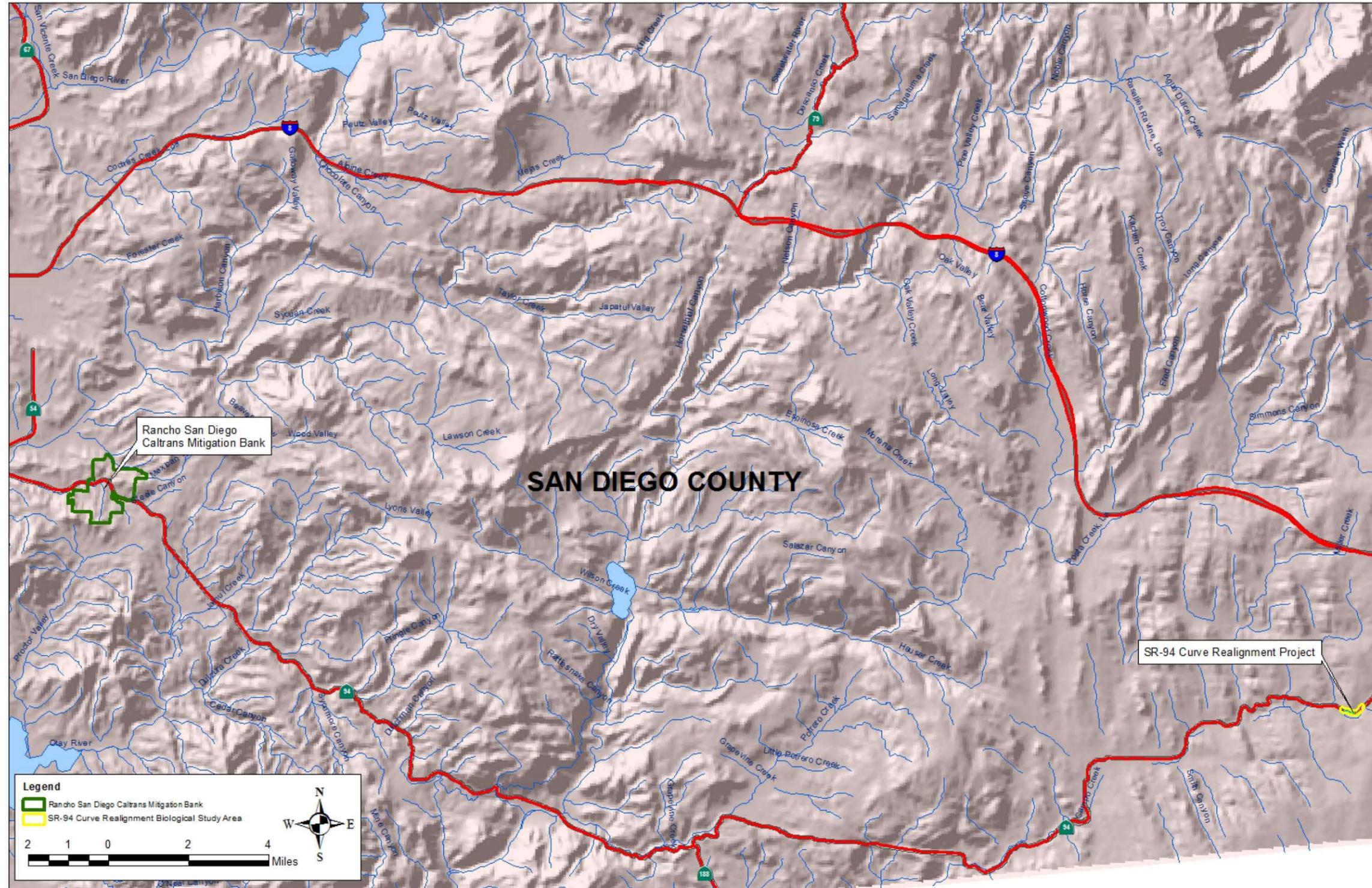


Figure 1 – Location Map

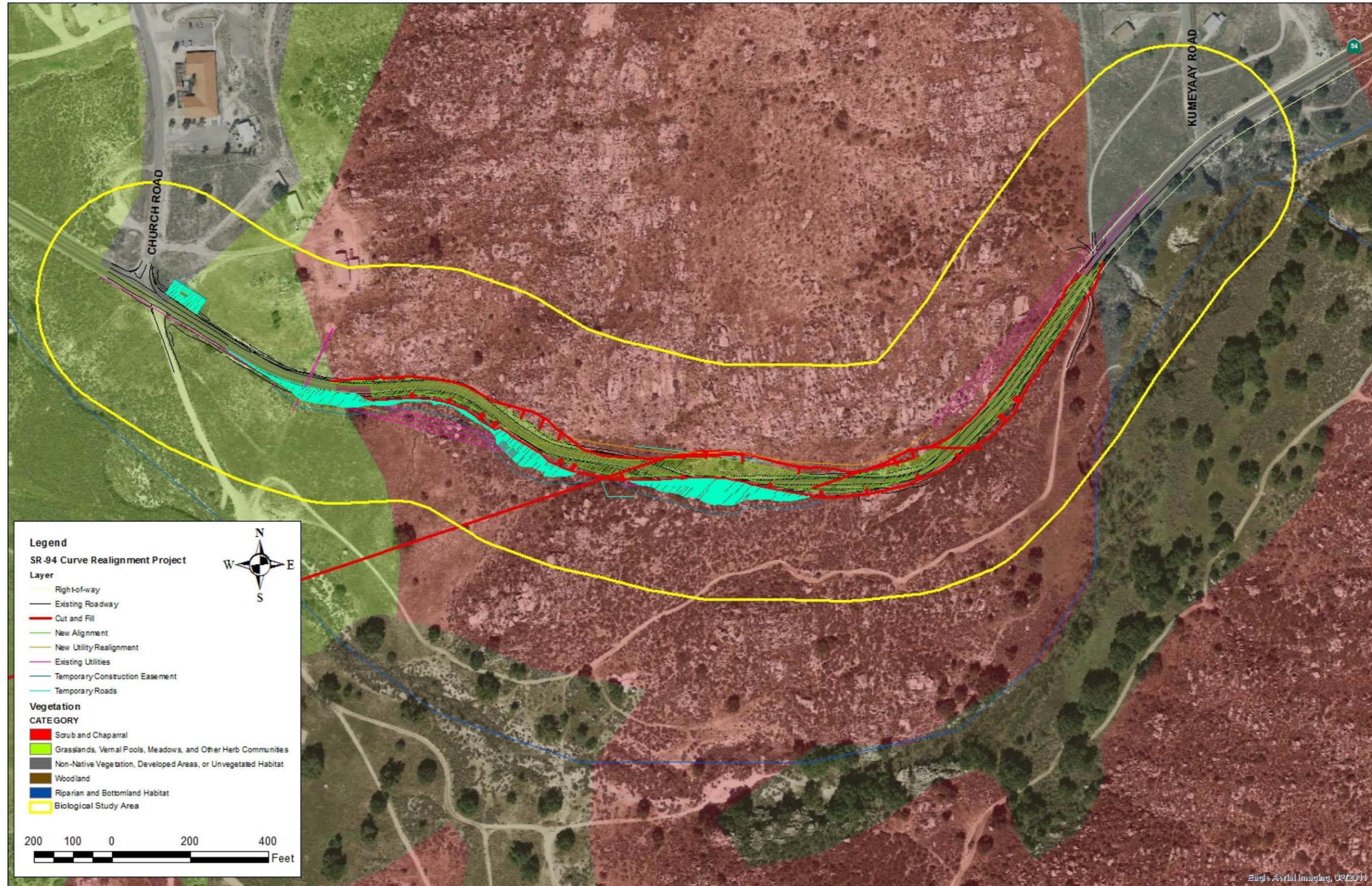


Figure 2 – Location Detail

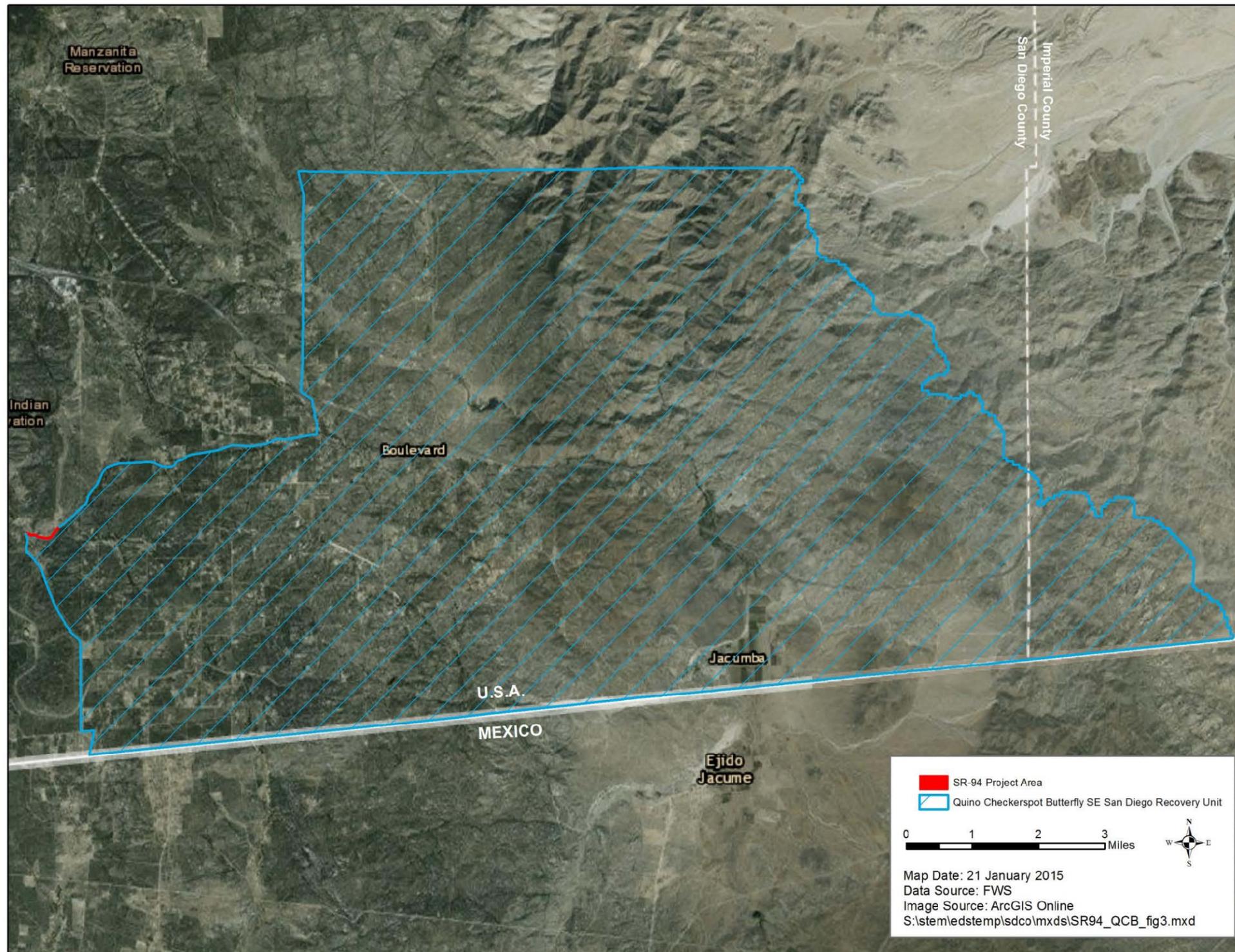


Figure 3 – QCB Recovery Area

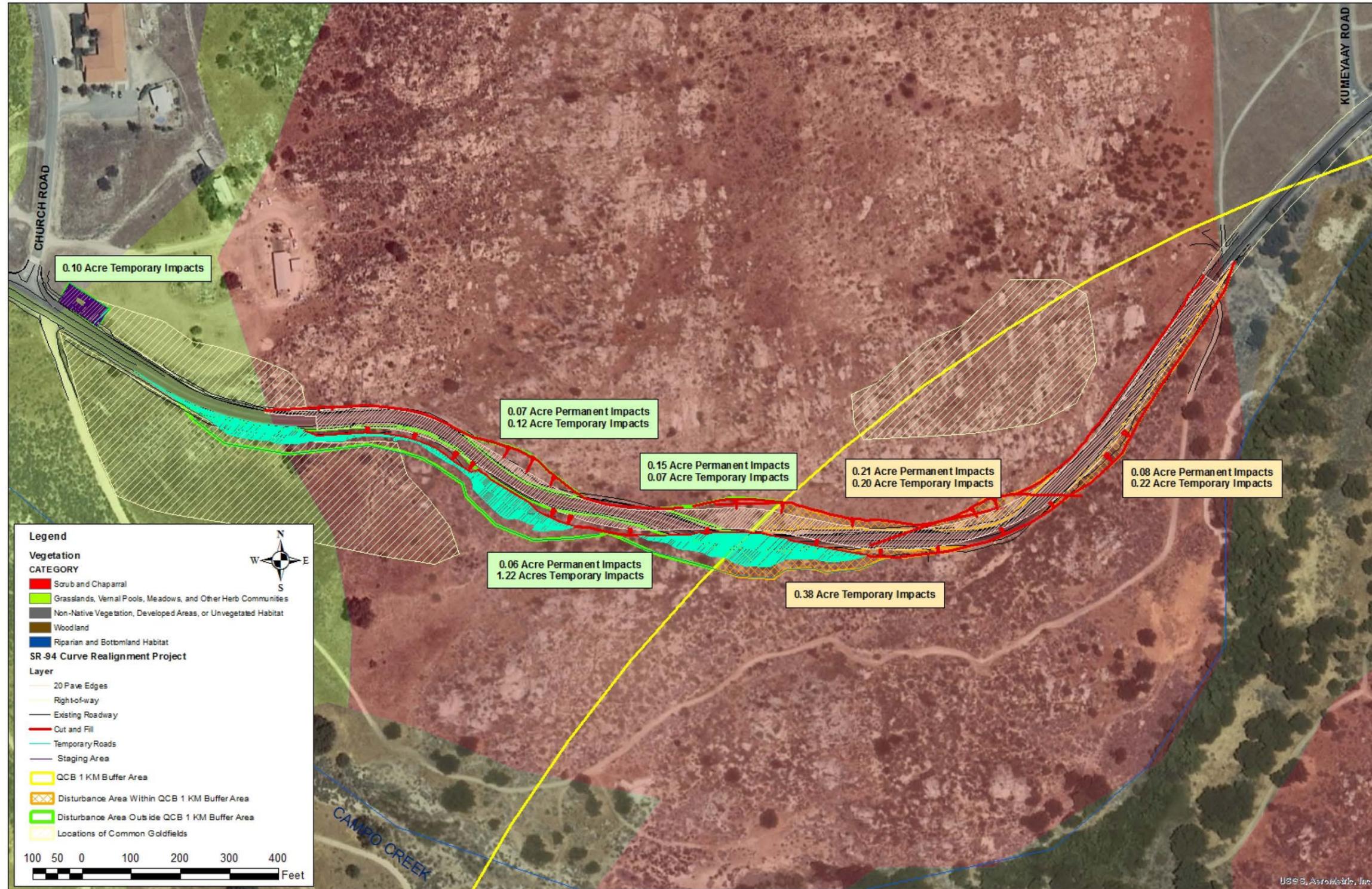


Figure 4 – QCB Habitat

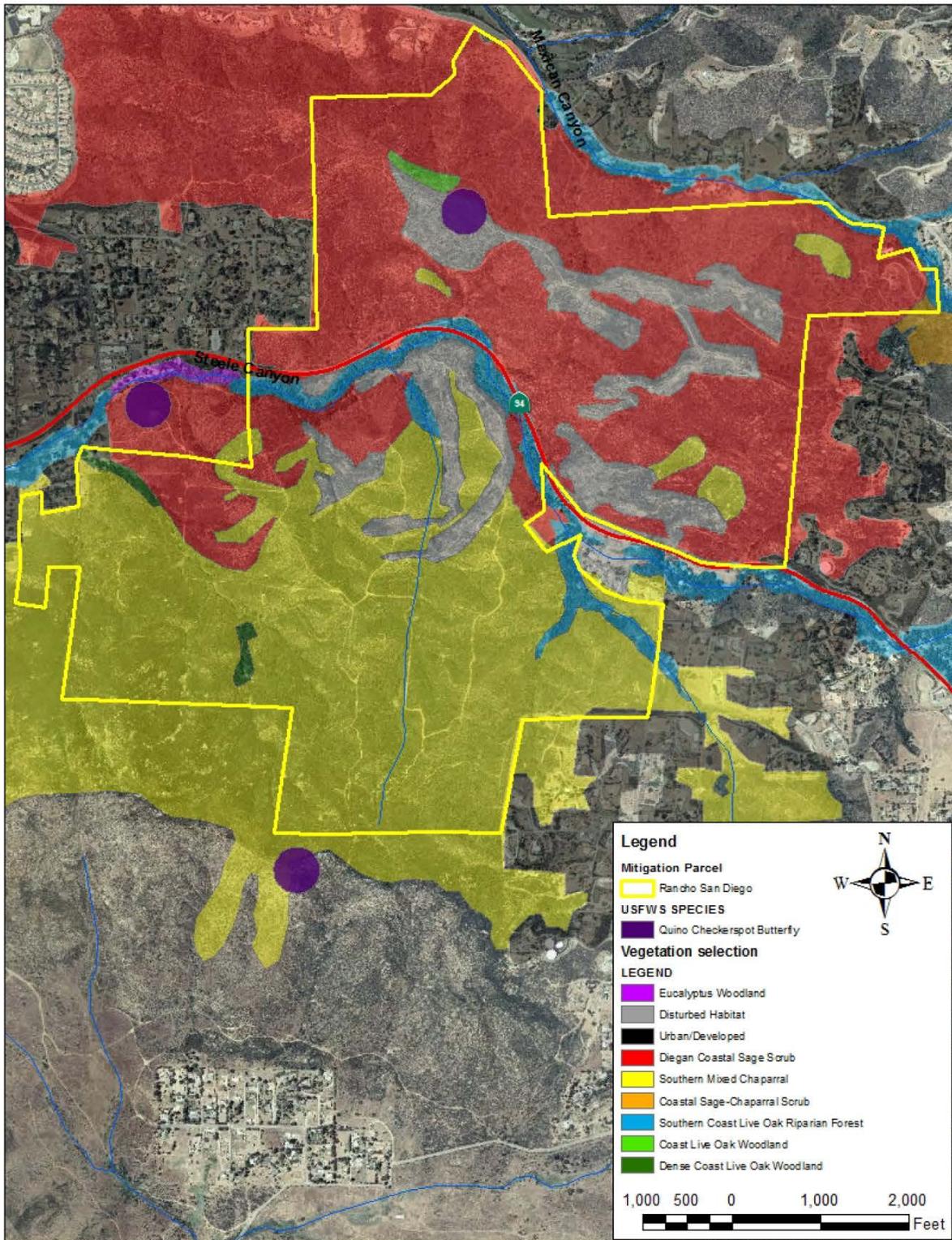


Figure 5 – Rancho San Diego

MEMORANDUM OF UNDERSTANDING
Between
CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 11
and
CAMPO BAND OF MISSIONS INDIANS

1. PURPOSE AND RECITALS

The California Department of Transportation (Caltrans) desires to implement Tribal Employment Rights Ordinances on transportation projects and work cooperatively with federally recognized California Native American Tribes (Tribal Governments) to increase Native American employment opportunities. Caltrans pays Tribal Employment Rights Ordinance (TERO) fees for the portions of the projects on tribal lands. Caltrans honors tribal ordinances pursuant to the law and follows TERO provisions on Hiring Preferences for Contracted State Highway Work conducted on tribal lands or on any State highway included in a TERO tribe's Indian Reservation Road (IRR) inventory when a portion of the project is on tribal lands in accordance with state law. To this end, on December 15, 2010, Caltrans adopted Deputy Directive DD-74-R2 in accordance with 23 USC § 140(d) and California Attorney General Opinion No. 07-304.

Pursuant to Deputy Directive DD-74-R2, Caltrans District 11 and the Campo Band of Mission Indians (Tribe) are engaging in this Memorandum of Understanding (TERO MOU) to facilitate the application of the Tribe's TERO for Caltrans projects on Tribal Land and to delineate the roles and responsibilities of the Tribe and Caltrans in this process.

This TERO MOU covers all applicable projects that are located on Tribal Land as denoted in the Scope of Memorandum (Appendix A). A Project Fact Sheet with project specific information will be developed for each individual project (Appendix B).

This TERO MOU represents the present intention of the parties, but it is not intended to be used as a sole basis for authorizing funding and it is not a legally binding contract between the parties unless a TERO fee is paid by Caltrans to the Tribe.

Caltrans and the Tribe

2. MEETINGS

Caltrans

- (A) The District Director, with appropriate Caltrans staff, including the District Native American Liaison (DNAL), will seek to hold at least two meetings a year with Tribes in the District to discuss upcoming projects and priorities, including those with TERO requirements. All tribes, including the Campo Band of Mission Indians, will be invited to participate and Caltrans may discuss information on employment opportunities, eligibility requirements for Native American-owned

firms to become Disadvantaged Business Enterprises, and other information important to working in conjunction with the Tribe's TERO.

- (B) The Residential Engineer (RE), DNAL, and/or other appropriate Caltrans staff will invite the Tribe's TERO Officer to project pre-construction meetings in order to give the tribe and the contractor an opportunity to coordinate and discuss communication protocols, work schedules, safety meetings, and the TERO Highway Construction Permit (THCP). Five days notice will be given to the Tribe prior to the meeting.

Tribe

- (C) The TERO Officer and/or other officials the Tribe deems appropriate will attend project preconstruction meetings to receive project information, schedules and coordinate with the contractor. Discussions may include communication protocols, work schedules, safety meetings, and the THCP. If the TERO Officer is unable to attend the preconstruction meetings, the Officer will designate an alternate to attend or arrange another meeting.
- (D) If the TERO Officer and/or other officials cannot attend meetings described in (A) above, they will make arrangements with the DNAL or other appropriate Caltrans staff to obtain the information imparted at the meetings.

3. INFORMATION SHARING BETWEEN CALTRANS AND TRIBE

Caltrans

- (A) The DNAL will be the first point of contact for information regarding Caltrans TERO policies and procedures within the District unless the Tribe is otherwise notified by the District.
- (B) The DNAL will maintain a list of Tribes with TEROs in the District and include Campo Band of Mission Indians on it. Location information with postmiles for Tribal Land on which State Highway is located will be included and provided to the District Director and other Caltrans staff as appropriate. This information will be included in the Scope of Memorandum (Appendix A).
- (C) The DNAL will work with the Tribe to obtain copies of the Tribe's TERO, IRR inventory list, THCP, and other documents and/or information necessary for implementing projects with TERO requirements.
- (D) The DNAL will be included in Project Development Team (PDT) meetings for projects with TERO requirements.

Tribe

- (E) The TERO Officer or other tribal members (as deemed appropriate by the TERO Officer or other designee) will ensure the DNAL has a copy of the Tribe's TERO; information on Tribal Lands and boundaries, including relevant portions of the Tribe's IRR inventory list; and other documents and/or information necessary for implementing projects with TERO requirements. If any of this information

changes after this MOU is executed, the Tribe will notify Caltrans so that the MOU can be updated.

- (F) The TERO Officer or other tribal members (as deemed appropriate by the TERO Officer or other designee) will contact the RE prior to visiting construction sites.

4. TRIBAL HIGHWAY CONSTRUCTION PERMIT (THCP)

Caltrans

- (A) Caltrans will include Special Provisions in the Scope of Memorandum in this MOU (Appendix A, Attachment A) directing contractors to:
 - a. Submit a THCP to the Tribe within 5 days of contract approval and submit a copy to the Caltrans Residential Engineer (RE) at the same time.
 - b. Submit a signed THCP to the RE within 10 days after receipt from the Tribe.
 - c. Not begin work until the RE receives a signed THCP from contractor.
- (B) A THCP will be attached to the Scope of Memorandum in this MOU (Attachment B) and included in a Supplemental Information Handout accompanying the special provisions for projects with TERO requirements.

Tribe

- (C) The Tribe will maintain a database of personnel trained to industry standards appropriate for each labor category and refer a list of qualified personnel to contractors and subcontractors after receiving a THCP Labor Force Projection Form/Application.
- (D) The Tribe will return a completed THCP to the contractor within 30 days of receiving a THCP Labor Force Project Form/Application.
- (E) The Tribe will notify the RE if it suspends a THCP.

5. TERO FEE

Caltrans will pay a TERO fee of 5% on the total bid amount for portions of projects on Tribal Lands. If a TERO Fee is paid, this MOU shall become a binding agreement and the covenants whereby the parties will seek to perform certain actions or may elect to perform certain actions shall become binding obligations of the respective parties, and the parties agree to perform such actions.

If a TERO fee is paid:

Caltrans

- (A) The RE, DNAL, or other appropriate Caltrans staff will notify the TERO Officer when a contract with TERO requirements is approved.

- (B) Upon receipt of a signed THCP, the RE will provide all documentation necessary so that the Tribe can properly invoice Caltrans for the amount of a contract subject to the TERO Fee.
- (C) Caltrans will send payment to the Tribe within 45 days upon receipt of the invoice by the RE, pursuant to the Prompt Payment Act (Government Code 927, et seq.).
- (D) The RE will forward the TERO invoice to Caltrans Accounting within 7 days of receiving a TERO invoice in accordance with established Construction payment procedures.

Tribe

- (E) The Tribe will properly invoice Caltrans for the TERO fee within 15 days after the RE provides documentation of the amount of the contract subject to the fee.
- (F) The invoice will be given to a project's RE.
- (G) The Tribe will use the fee to support the Tribe's economic development and employment programs, as described in the Tribe's TERO.

6. TERO INFORMATION IN CONTRACT AND BID DOCUMENTS

- (A) Caltrans will inform prospective bidders of projects with TERO requirements by including a Special Notice in construction contracts.
- (B) Caltrans will notify the contractor of a minimum 55-day delayed start to allow for processing of the THCP as indicated in provision 4.
- (C) Caltrans will direct the contractor to the TERO Requirements Information Handout under Supplemental Project Information. The following will be included in the Information Handout:
 - a. This MOU
 - b. Appropriate TERO provisions pertaining to the Contracted State Highway Work done within that TERO tribe's jurisdiction, included in the MOU.
 - c. Scope of Memorandum (MOU Appendix A) with
 - Project-Specific TERO Special Provisions (Appendix A, Attachment A)
 - THCP with Labor Force Project Form/Application or equivalent (Appendix A, Attachment B)
 - d. Project Fact Sheet (MOU Appendix B)

7. HIRING PROCESS

Caltrans

- (A) To the extent permitted by Federal and State law, contractors will be directed to follow hiring preference provisions of Tribal Law as defined by the Tribe's TERO, in regard to Hiring Preferences when undertaking Contracted State Highway Work on Tribal Lands.

- (B) To the extent that the terms of this MOU are applicable, the DNAL will work with the Tribe in order to incorporate the Tribe's TERO (as set forth in this MOU) within Contracted State Highway Work.

TRIBE

- (C) The Tribe will work with the Caltrans in order to incorporate the applicable provisions of the Tribe's TERO (as set forth in this MOU) within Contracted State Highway Work, including the provisions set forth above.

8. DEFINITIONS

Caltrans and the Tribe

- (A) The following definitions, taken from or adapted in accordance with DD-74-R2, are incorporated herein:
- a. Contracted State Highway Work means non-emergency Caltrans projects, construction and contracted maintenance, conducted on tribal lands or on any State highway included in the Tribe's IRR inventory when a portion of the project is on its tribal lands.
 - b. Federally Recognized Tribe – A tribal government and members of any tribe, band, pueblo, nation or other organized group that is acknowledged by the Federal Government to constitute a tribe with a government-to-government relationship with the U.S. and eligible for programs, services, and other relationships established by the U.S. for Indians because of their status as Indians (U.S. Department of Transportation Order DOT 5301.1 dated November 16, 1999), or community including any Alaska Native village or region pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.).
 - c. Hiring Preference – Congress has expressly authorized states to implement Indian hiring preferences for highway work conducted on tribal lands. Implementation of Indian hiring preferences is in recognition of, and with reference to, Congress' fiduciary responsibility to advance tribal economic development and self sufficiency. Hiring preferences are predicated upon membership in a Federally Recognized Tribe, so the term "federally recognized Indian" is a political classification for the purposes of this Memorandum. TERO Hiring Preferences are only available to enrolled members of Federally Recognized Tribes, and the Department cannot favor one tribe over another in implementing a Hiring Preference. Qualified job applicants will be provided to Caltrans contractors by the Tribe's designated TERO representative.
 - d. Indian Reservation Road (IRR) – A public road that is located within or provides access to an Indian reservation, Indian trust land, or restricted Indian land (23 U.S.C. §101(a)(12)). These roads are important to the

overall public transportation needs to the reservation, and are recommended to the Bureau of Indian Affairs (BIA) for inclusion in the IRR inventory by the Tribe. Approval for inclusion of these routes must be given by BIA. Revised route sheets and updated documents are submitted to the Federal Lands Highway Program Administrator so the IRR inventory can be updated.

- e. Tribal Employment Rights Ordinance (TERO) – A legislative act adopted by the governing body of a Federally Recognized Tribe.
- f. Tribal Lands – Lands within a reservation, lands held in trust by BIA, or lands otherwise under the direct ownership of the Tribe. Most tribal lands are in trust status and within a reservation.

9. DURATION AND AMENDMENTS

Caltrans and the Tribe

- (A) This MOU may only be amended by a written agreement between the parties, and it may be terminated by either party upon at least thirty (30) days prior written notice to the other party. In the event of termination, unless otherwise mutually agreed by the parties, the provisions of this MOU will remain in force with respect to contracts for Contracted State Highway Work that were executed before the MOU was terminated.
- (B) No waiver of any term, covenant or condition of this MOU shall be effective unless the waiver is made in writing and executed by all the parties. No failure to enforce a term, covenant or condition of this MOU shall be deemed to be a waiver of the term, covenant or condition. No waiver of any term, covenant or condition shall imply or constitute a waiver of any other term, covenant or condition. Unless otherwise stated in the waiver, no waiver of a provision of this MOU shall constitute a continuing waiver.

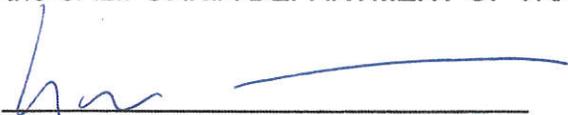
The parties hereto have agreed to the provisions cited in this document and have further approved this MOU for signature by their duly authorized representatives.

For Campo Band of Mission Indians

By: 
RALPH GOFF, Chairman

Date: 9-12-14

For the CALIFORNIA DEPARTMENT OF TRANSPORTATION

By: 
LAURIE BERMAN District Director, District 11

Date: 9-19-14

**AMENDMENT ONE
TO THE
MEMORANDUM OF UNDERSTANDING
BETWEEN
CALIFORNIA DEPARTMENT OF TRANSPORTATION DISTRICT 11
AND
CAMPO BAND OF MISSION INDIANS**

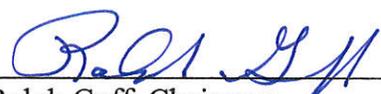
The Memorandum of Understanding (TERO MOU) between California Department of Transportation District 11 (Caltrans) and Campo Band of Mission Indians (Tribe), as executed on September 19, 2014, is hereby amended as follows:

The third paragraph of Item 1, **PURPOSE AND RECITALS**, is amended to read:

This TERO MOU covers all applicable projects Tribal Land. For each applicable new project, Caltrans and the Tribe will update the four Appendix items with project-specific information: the Scope of Memorandum (Appendix A), Special Provisions (Appendix A, Attachment A), THCP Application (Appendix A, Attachment B), and a Project Fact Sheet (Appendix B). These Appendix items will be developed for each project without need for further amendment to this TERO MOU.

The parties hereto have agreed to and have further approved this Amendment One to the TERO MOU for signature by their duly authorized representatives as set forth below.

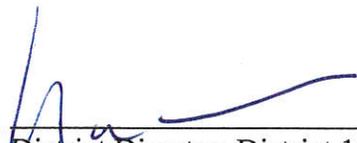
For the Tribe:



Ralph Goff, Chairman

Date: 9-10-15

For Caltrans:



District Director, District 11

Date: 8-27-2015

Appendix A

Scope of Memorandum

Caltrans and Campo Tribe MOU executed on September 19, 2014 and Amendment One September 10, 2015.

Scope of Memorandum

Projects within the following areas have TERO requirements that must be followed pursuant to the provisions in the MOU signed by the Campo Tribe Caltrans on September 19, 2014 and Amendment One signed on September 10, 2015:

| Contract No. Project ID | Project County- Route-Postmile | Work Description | Campo Tribal Lands | Campo IRR Inventory |
|----------------------------|-----------------------------------|------------------------|-----------------------|------------------------|
| 11-295204 1100000392 | SD- 94 59.6/60.2 | Highway Realignment | Reservation | 38.97-65.38 |

APPENDIX A, ATTACHMENT A

Project-Specific Special Provisions For Campo Tribe TERO MOU

SPECIAL NOTICE:

- This project includes Tribal Employment Rights Ordinance (TERO) requirements. See section 5-1.20G and 8-1.04C for TERO submittal requirements.

SSP 2-1.06B SUPPLEMENTAL PROJECT INFORMATION

The Department makes the following supplemental project information available:

Supplemental Project Information

| Means | Description |
|--|---|
| Included in <i>Information Handout</i> | Campo Band of Mission Indians TERO Memorandum of Understanding (MOU) with TERO Highway Construction Permit (THCP) Application |

INFORMATION HANDOUT:

Campo Tribe TERO Requirements Information Handout contains:

1. Signed MOU between the Campo Band of Mission Indians Tribe and the Department.
2. Attachment A project-specific TERO special provisions.
3. Attachment B TERO Highway Construction Permit Application (THCP).

SSP 5-1.20G Tribal Employment Rights Ordinance Requirements:

Complete the Campo Band of mission Indians TERO Highway Construction Permit (THCP) Application included in the *Information Handout*. Within 5 days after Contract approval, submit the completed application to the Tribe and a copy of the submitted application to the Engineer.

Submit the executed THCP to the Engineer within 10 days after you receive it from the Tribe.

SSP 8-1.04C:

Use a minimum 45-day delayed start after contract approval.

Do not start job site activities until the Department authorizes or accepts your submittal for:

Executed Campo band of Mission Indians TERO Highway Construction Permit (THCP)

Do not start other job site activities until all the submittals from the above list are authorized or accepted and the following information is received by the Engineer:

Copy of the Campo Band of Mission Indians TERO Highway Construction Permit (THCP) Application submitted to the Tribe.



Campo Band of Mission Indians
Tribal Highway Construction Permit
36190 Church Road, Suite 1
Campo, CA 91906

Name of Project: SR-94 Highway Realignment Project (1100000392)
Caltrans Project Expenditure Authorization (EA) Number: 11-295204

The Campo Band of Mission Indians, issues this permit in accordance with its Tribal Employment Rights Ordinance, enacted by the federally recognized governing body of the tribe, the Campo Tribal Council. This permit sets forth the terms and conditions under which a Contractor [and Subcontractors] are authorized to conduct work on California Department of Transportation (Caltrans) projects that occur on Tribal Land.

Terms and Conditions:

- 1. Contractor/Employer:** Within 5 days of contract approval, Contractor will file a Labor Force Projection Form (attached) with the Tribe's TERO Officer. Contractor will describe the types of work to be performed and skills needed to undertake such work. [Work to be performed by subcontractors will be included on [a/the] Labor Force Projection Form.]
- 2. Core Crew:** Contractor [and Subcontractors] will identify key employees, generally supervisory in nature that have worked continuously for many seasons and are not recently hired for this specific project on the Labor Force Project form.
- 3. Indian Preference:** If available, qualified Indians must be hired in preference to non-Indians. Employer shall neither recruit nor hire any non-Indians for any covered position until the tribal TERO Officer has provided notice that no qualified Indians are available to fill such covered position. The TERO Officer maintains an Indian Skills-Bank to assist Employers to meet the Indian preference requirements of the Tribal Employment Rights Ordinance. Covered positions are defined in the Ordinance. Each waiver issued is only for that particular position/task and the employee cannot be transferred to another position once that job is done.
- 4. Labor Force Changes and Curtailment:** Contractor will inform the TERO Officer of any potential changes to a project that could impact the labor force while construction is ongoing. Potential changes could be the result of additional work being needed to complete a project, among other things. Where a reduction in force is necessary, excepting Core Crew members, Indians hired pursuant to Indian preference will have the priority in retention.
- 5. Compliance Inspections:** The TERO Officer or other designated staff will make periodic visits to project sites to ensure employment and safety rules are adhered to. [The

Officer will contact the Contractor and RE prior to site visits.] To facilitate the inspections, the Contractor will share work schedules, contact information, and information on safety or other meetings with the TERO Officer at the preconstruction meeting or other venues as arranged.

6. **[Maintaining Employment Records:** Contractors will maintain accurate employment records on all employees and all applicants for employment; regardless of length and category or employment, hired, fired, or laid-off. The files shall reflect: name, address and employment category for which applicant performed or applied to perform. If applicant was contacted but not hired, hired and fired, all data should reflect action taken by that firm. Such informational records shall be made available to the TERO Officer, upon reasonable notice.]
7. **Assistance:** If a Contractor deems that an Indian employee's performance is such that he or she is jeopardizing and endangering job loss, suspension, or termination, the Contractor may contact the TERO Officer to provide assistance toward resolving of that issue.
8. **[Tribal Holidays and Ceremonial Customs:** It is further understood that the Contractor recognizes operations are taking place within a unique cultural setting. To the extent possible the Contractor, in consultation with the TERO Officer, should consider Tribal Holidays and ceremonial customs and accommodate Indian employees requesting certain leave of absences for religious purposes.]
9. **Duration and Scope of Permit:** This permit will terminate upon project completion but may be revoked by the TERO Officer in the case that the aforementioned conditions are not met.

Dominique Connolly
TERO Officer, Campo Tribe

Date

Contractor

Date



Labor Force Projection Form

This form must be completed and filed with the Campo TERO Officer. Attach additional sheets if necessary.

Contractor/Subcontractor Name: _____
Mailing Address: _____
City, State, and Zip Code: _____
Phone Number _____
Cell # _____
Contact: _____
Contracting With: Caltrans
Expenditure Authorization (EA): 11-295204

Briefly describe the project and basic tasks and types of work to be performed:

Please list types of skills and categories which will be required towards performing said contract:

| | |
|-----|-----|
| 1. | 2. |
| 3. | 4. |
| 5. | 6. |
| 7. | 8. |
| 9. | 10. |
| 11. | 12. |
| 13. | 14. |
| 15. | 16. |
| 17. | 18. |
| 19. | 20. |
| 21. | 22. |
| 23. | 24. |
| 25. | 26. |

Indian Preference shall be accorded at every Tier Level. Please list the names and positions of your Core Crew (Core Crew members are typically supervisory and members you depend on every day). All other persons needed on this job will go through the TERO Skills Bank.

Please use as many sheets as necessary for explaining your on-site employment related projection.

| NAME | JOB TITLE |
|------|-----------|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |
| 7. | |
| 8. | |
| 9. | |
| 10. | |
| 11. | |
| 12. | |
| 13. | |
| 14. | |
| 15. | |
| 16. | |

Contractor

Date

Dominique Connolly
TERO Officer, Campo Tribe

Date

Appendix B
Project Fact Sheet

Caltrans and (Tribe) MOU executed on September 19, 2014 and Amendment One September 10, 2015.

Project Fact Sheet

The following State highway construction project(s) have TERO requirements that must be followed pursuant to the Stipulations in the MOU signed by the Campo Band of Missions Indians Tribe and Caltrans on September 19, 2014 and Amendment One September 10, 2015:

| Project EA and Project ID No. | County-Route-Postmile(s) of project | Project Description | Bridge Number [if bridge work included] | IRR Inventory Postmiles for IHP | TERO fee Postmiles |
|-------------------------------|-------------------------------------|------------------------|---|---------------------------------|--------------------|
| 11-295204 1100000392 | SD-94 59.6/60.2 | Highway Realignment | N/A | SD-94 38.97/65.4 | SD-94 59.6/60.2 |

Contacts:

Caltrans:

Phone Numbers:

| | |
|----------------------------------|----------------|
| District Director: Laurie Berman | (619) 688-6668 |
| DNAL: Jesus "Chi" Vargas | (619) 688-6807 |
| Project Manager: Jose Robles | (619) 688-0268 |
| RE : | |
| Const. Inspector : | |

Tribal Contacts:

Phone Numbers:

| | |
|---|-------------------------|
| TERO Officer/Director: Dominique Connolly | (619) 478-9046 Ext. 226 |
| Tribal Administrator: | |
| | |
| | |

Tribal Employment Rights Ordinance

Caltrans contract 11-295204

Project ID 1100000392

Realignment Project

SD-94-59.6/60.2

TERO PROVISIONS – Pertaining to Contracted State Highway Work

Listed below is the Campo TERO Ordinance that pertains to State Highway Work.

**Campo Band of Mission Indians
Tribal Employment Right Ordinance
Approved: May 31, 1994**

SUBJECT: Establishment of the Campo Tribal Employment Rights Office (TERO) and adoption of standards and procedural guidelines for application of the Campo and Indian Preference in Employment.

Tribal Employment Rights Ordinance

Caltrans contract 11-295204

Project ID 1100000392

Realignment Project

SD-94-59.6/60.2

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Tribal Employment Rights Ordinance

Caltrans contract 11-295204

Project ID 1100000392

Realignment Project

SD-94-59.6/60.2

SECTION 1.0 GENERAL PROVISIONS

1.1 Name and Purpose. This ordinance shall be known as the “Campo Band of Mission Indians Tribal Employment Rights Ordinance.” The purpose of this ordinance is to assist in and require the fair employment of Indians on the Campo Indians Reservation and to prevent discrimination against Indians in the employment practices of Reservation Employers.

1.2 Definitions. The following terms shall have the following meaning in this ordinance.

- 1.2.1 “Band” means the Campo Band of Mission Indians, a federally recognized Indian tribal government.
- 1.2.2 “Board” or “Board of Directors” means the Board of the Muht-Hei, Inc.
- 1.2.3 “Chairman” means the Chairman of the Band.
- 1.2.4 “Director” means the Director of the Tribal Employment Rights Program created this Ordinance.
- 1.2.5 “EEOC” means the United States Equal Employment Opportunity Commission.
- 1.2.6 “Employers” means any person located or engaged in work on the Reservation and employing one or more persons. The term “Employer” excludes federal, state or county government agencies, but includes contractors and subcontractors so such agencies.
- 1.2.7 “Engaged in Work on the Reservation” means an Employer or any of his or her employees spends a majority of his or her time performing work within the exterior boundaries of the Reservation on a continuing basis during any portion of a business enterprise, specific project, contract, or subcontract.
- 1.2.8 “General Council” means the General Council of the Band.
- 1.2.9 “Indian” means any person recognized as an Indian by the United States pursuant to its trust responsibility to American Indians.
- 1.2.10 “Joint Venture” means an association of two or more persons to carry out a single or limited number of business enterprises for profit, for which purpose they combine their property, money, effects, skills, and knowledge.

Tribal Employment Rights Ordinance

Caltrans contract 11-295204

Project ID 1100000392

Realignment Project

SD-94-59.6/60.2

- 1.2.11 “Located on the Reservation” means an Employer maintains a temporary or permanent office or facility within the exterior boundaries of the Reservation during any specific project, contract, or subcontract.
- 1.2.12 “Muht-Hei, Inc.” means the corporation chartered and wholly owned by the Campo Band that is responsible for implementation of this ordinance.
- 1.2.13 “OFCCP” means the Office of Federal Contract Compliance Programs of the United States.
- 1.2.15 “Ordinance” means this Tribal Employment Rights Ordinance.
- 1.2.16 “Person” means an individual, trust, firm, association, partnership, political subdivision, government agency, municipality, industry, public or private corporation, or any other entity whatsoever.
- 1.2.17 “Reservation” means the Campo Indian Reservation.

SECTION 2.0 ESTABLISHMENT AND ADMINISTRATION OF TRIBAL EMPLOYMENT RIGHTS PROGRAM

2.1 Establishment. There is hereby established the Campo Band Tribal Employment Rights Program.

2.2 Administration. The Board of Directors of Muht-Hei, Inc. shall administer the Tribal Employment Rights Program.

2.3 Authority. In carrying out this ordinance, the Board shall have the power:

- 2.2.1 To hire and fire employees of the Tribal Employment Rights Program. Including a Director, and to pay them salaries from funds of the Tribal Employment Rights Program. Pursuant to a salary schedule established by the Board of Directors.
- 2.2.2 To establish rules and regulations implementing the Tribal Employment Rights Program.
- 2.2.3 To expend funds appropriated by the General Council for the Tribal Employment Rights Program.

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- 2.2.4 To obtain funding from federal, state, or other sources to carry out the Tribal Employment Right Program.
- 2.2.5 To establish numerical hiring goals and timetables specifying the minimum number of Indians an Employer must hire by craft or skill level.
- 2.2.6 To establish and administer a tribal hall and require Employers to use it.
- 2.2.7 To prohibit Employers from using job qualifications criteria or personnel requirements that may bar Indians from employment unless such criteria or requirements are required by business necessity. The Board of Directors may adopt EEOC guidelines as its regulations and may adopt additional requirements to eliminate employment barriers unique to Indians and the Reservation.
- 2.2.8 To establish counseling programs to help Indians obtain and retain employment.
- 2.2.9 To hold hearing and to subpoena witnesses and documents in accordance with the Ordinance.
- 2.2.10 To require Employers to submit reports and take all actions deemed necessary by the Board of Directors for fair and vigorous implementation of this Ordinance.
- 2.2.11 To enter into cooperative agreements with federal employment rights agencies such as EEOC and OFCCP to eliminate employment discrimination against Indians both on and off the Reservation.
- 2.2.12 To take such other actions as are necessary and proper to achieve the purposes and objectives of the Tribal Employment Rights Program.

2.4 Director; Appointment; Term; Vacancy. The Board of Directors of Muht-Hei, Inc. shall appoint a Director of the Tribal Employment Rights Program. The Director shall serve at the pleasure of the Board. The Board of Directors may establish a salary for and pay the Director for his or her services.

2.5 Duties of the Director. The Director of the Tribal Employment Rights Program shall have the Authority to expend funds of the Program and obtain funds from federal, state or other sources to carry out the purposes of the Program, subject to the approval of the Board

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of Directors. The Director shall have the Authority to develop rules, regulation, and guidelines to implement the Ordinance, subject to the approval of the Board of Directors, to subpoena witnesses and documents, to investigate complaints; to file complaints, to require Employers, contractors, subcontractors, and unions to submit such reports as the Director deems necessary or convenient to ensure compliance with this Ordinance; to issue compliance orders; to recommend to the Board of Directors the imposition of orders and penalties against non-complying Employers; and to take such actions as are necessary and proper for the fair and vigorous implementation of this Ordinance.

SECTION 3.0 TRIBAL EMPLOYMENT RIGHTS PROGRAM

3.1 Coverage. All employers are required to give preference to Indians in hiring, promotion, training, contracting, and subcontracting, and must comply with this ordinance and the rules, regulations and orders of the Director and the Board.

3.2 Contracts and Subcontracts. The Indian preference requirements contained in this Ordinance shall apply to and be enforceable against all contractors and subcontractors of Employers

3.3 Minimum Numerical Goals and Timetables for Indian employment. The Board of Directors may establish the minimum number of Indians each Employer must employ on his or her work force during any year that the Employer is located or engaged in work on the Reservation. Numerical goals may be set for each skill, or job classification used by the Employer and shall include but not be limited to administrative, supervisory, and professional, categories. For both new and existing Employers, the Board of Directors shall review the goals at least annually and revised them as necessary to reflect changes in the number of Indians available or changes in Employers hiring plans. Each Employer shall submit a monthly report to the Director on a form provided by the Director, indicating the number of Indians in his or her work force, all persons hired or fired during the month, the job positions involved, and any other information required by the Director.

3.5 Job Qualifications and Personnel Requirements. Employers are prohibited from using job qualifications criteria or personnel requirements that bar Indians from employment, unless such criteria or requirements are required by business necessity.

3.6 Tribal Hiring Hall. The director shall establish and administer a tribal hiring hall to assist the Board of Directors and Employers in placing Indians in job positions. An employer may recruit and hire workers from whatever sources are available to him or her and by whatever process the Employer chooses, as long as the Employer complies with this Ordinance and Indian job preference regulations and agreements pertaining to the employer's business.

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3.7 Counseling and Support Programs. The Board of Directors will establish counseling and other support programs to help Indians obtain and retain employment. Every Employer shall be required to cooperate with the director regarding such counseling and support programs.

3.9 Promotions. Every Employer shall give Indian preference in all promotion opportunities and shall encourage Indians to seek such opportunities.

SECTION 4.0 HEARINGS, PENALTIES APPEALS

4.1 Individual Complaints. Any person that believes that any employer, a contractor or subcontractor of an Employer has failed to comply with this ordinance, any rules or regulations promulgated hereunder, or any orders of the Director or the Board, may file a complaint with the Director. The Director will notify such party of the alleged violations, investigate the complaint, and attempt to achieve an informal settlement of the matter. If an informal settlement cannot be achieved, such complaining person or the Director may request a hearing before the Board of Directors on the matter.

4.2 Complaint Procedure for the Director of the Tribal Employment Rights Program. If the Director has cause to believe that an Employer, contractor, subcontractor, or union has failed to comply with this ordinance, any rules or regulations promulgated hereunder, or any orders of the Director or the Board, he or she may issue a complaint. The Director shall notify such party and the Board of Directors of the alleged violations and attempt to achieve an informal settlement of the matter. If an informal settlement cannot be achieved, such complaining person or the Director may request a hearing before the Board of Directors on the matter.

4.3 Notice. If a hearing is requested by the Director, an individual, an Employer, or a union pursuant to this Section, a written notice, of hearing shall be given to all concerned parties stating the nature of the issue to be heard at the hearing. The notice shall advise such parties of their right to be at the hearing, to present testimony of witnesses and other evidence, and to be represented by counsel at their own expense.

4.4 Hearing Procedures. Hearings before the Board of Directors shall be governed by the following rules or procedure:

- 4.4.1 All parties may present witnesses and other evidence and may be represented by counsel at their own expense.
- 4.4.2 The Board of Directors may have the advice and assistance of counsel at the hearing.
- 4.4.3 The president or Vice-President of the Board of Directors shall preside, and

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the Board of Directors shall proceed to ascertain the facts in a reasonable and orderly fashion.

- 4.4.4 The hearing may be adjourned, postponed, or continued at the discretion of the Board of Directors.
- 4.4.5 At the end of the hearing, the Board of Directors may take immediate action or take the matter under advisement.
- 4.4.6 The Board of Directors shall notify in writing all parties within thirty (30) days after the bearing of the decision in the matter, and such decision shall be final and not subject to appeal.

4.5 Retaliation. If any Employer, contractor or, subcontractor fires, lays off, or penalizes in any manner, any employee, contractor, sub-contractor, or union for using the complaint procedure or exercising any other right provided herein, the offending Employer, contractor, or sub-contractor shall be subject to the penalties provided in this Ordinance.

4.6 Civil Orders and Penalties for violation. Any Employer, contractor, or sub-contractor that violates this Ordinance, the rules or regulations promulgate hereunder, or any orders of the Director or the Board shall by subject to penalties for such violations, including but not limited to orders:

- 4.6.1 Requiring the payment of back pay and damages to compensate any injured party.
- 4.6.2 Summarily removing employees hired in violation of this Ordinance, the rules or regulating promulgated hereunder, or orders of the Director of the Board.
- 4.6.3 Imposing monetary civil penalties in amounts reasonably related to the harm caused by the violation.
- 4.6.4 Requiring employment, promotion, and/or training of Indians injured by the violation.
- 4.6.5 Requiring changes in procedures and policies necessary to eliminate the violations and/or prevent future violations.
- 4.6.6 Making any other provision deemed by the Board of Directors necessary to prevent, alleviate, eliminate, or compensate for any violation.

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SECTION 5.0 MISCELLANEOUS PROVISIONS

5.1 Publication of Ordinance. The Board of Directors shall notify all Employers located or engaged in work on the Reservation, or known to be planning to locate or engage in work on the Reservation, of this Ordinance and their obligations to comply. The Board shall take all reasonable measures to ensure that all bid announcements issued by any tribal, federal, state, or other private or public entity contain a statement that the successful bidder will be obligated to comply with this Ordinance, all rules or regulations promulgated hereunder, and orders of the Director and The Board. All tribal agencies responsible for issuing business permits for Reservation activities or otherwise engaged in activities involving contact with prospective Employers on the Reservation shall be responsible for advising such prospective Employers of their obligations under this Ordinance, the rules or regulations promulgated hereunder, and orders of the Director and Board.

5.2 Compliance Plan. As of the effective date of this Ordinance, no new Employer may commence work on the Reservation until it has consulted with the Board of Directors on and developed a plan for meeting its obligations under this Ordinance.

5.3 Reporting and on-site inspection. Employers shall submit reports and other information requested by the Director. The Director shall have the right to make on-site inspections during regular working hours in order to monitor any Employer's compliance with this Ordinance, the rules or regulations promulgated hereunder, and orders of the Director or the Board. The Director shall have the right to speak to workers and conduct investigations on job sites with prior notice to the Resident Engineer of the project.

5.4 Severability. If any provision of this Ordinance or its application to any person or circumstances is held invalid, the remainder of the Ordinance or the application of the provision to other persons or circumstances is not affected.

5.4 Rules and Regulations. The Board of Directors shall adopt such rules, regulations, policies, and guidelines as it deems necessary to implement this Ordinance.

10.6 Tribal employment Rights Program Funds. All funds appropriated to the Tribal Employment Rights Program or received from any federal, state, or local agency to carry out this Ordinance shall be under the management control of the Board of Directors, but shall be Tribal funds subject to the final control of and disposition by the General Council.

5.7 Effective Date. This Ordinance shall be effective from the date of its approval by the General Council.



GEOTECHNICAL DESIGN REPORT

**REALIGNMENT OF STATE ROUTE 94 FROM CHURCH ROAD TO KUMIYAA
ROAD**

11-SD-94-PM 59.6 / 60.2

**EA: 11-295204
EFIS: 1100000392**

December 16, 2015

Prepared By:

**OFFICE OF GEOTECHNICAL DESIGN-SOUTH BRANCH B
7177 OPPORTUNITY ROAD
SAN DIEGO, CA 92111**

Memorandum

*Serious drought
Help save water!*

To: Mr. Jose Robles
Project Engineer
District 11
Traffic Project Development

Date: December 16, 2015

File: 11-SD-94-59.6/60.2

EA: 11-295204

EFIS: 11000000392

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Geotechnical Services
Office of Geotechnical Design – South, Branch B

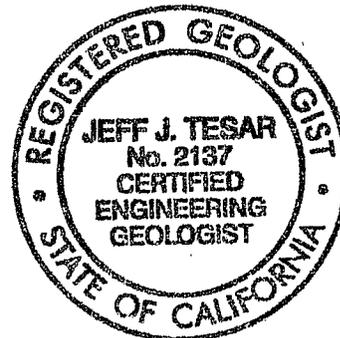
Subject: Geotechnical Design Report for the Realignment of State Route 94 from Church Road to Kumiyaay Road.

Pursuant to your request, the Office of Geotechnical Design-South, Branch B (OGDS) has prepared this Geotechnical Design Report for the proposed realignment of SR-94 from Church Road to Kumiyaay Road. This report presents the geotechnical conditions as evaluated from field data, research of archives, and engineering analysis. The report provides recommendations for project design and construction.

OGDS staff will be available for further assistance. Should you have any questions or comments regarding this report, please contact Jeff Tesar at (858) 467-2716.



Jeff Tesar, C.E.G.
Engineering Geologist
Office of Geotechnical Design – South, Branch B



JT

CARBON COPY (cc) LIST

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District 11 Project Manager
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Office Chief, OGDS
Acting Branch Chief, OGDS Branch-B

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- APPENDIX A Project Blasting Specifications
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1.0 INTRODUCTION

This report has been prepared by the Office of Geotechnical Design – South Branch B (OGDS) to address the geotechnical considerations for the proposed realignment of a tight radius 250 feet curve on SR-94 from Church Rd to Kumiyaay Rd, hereafter referred to as the project. To improve traffic safety along this interval of highway, cuts to the existing cut slopes and construction of fill embankments are proposed. A project location layout is presented in Figure 1.

The geotechnical investigation for the project included: site reconnaissance, research of archived resources, field geologic mapping, and data analysis. The Caltrans Engineering Geologist performed this investigation.

The purpose of this report is to document surface and subsurface geologic conditions and provide project recommendations. This report also establishes a geologic baseline to be used in assessing the existence and scope of changed site conditions.

This report is intended for the use by the project design engineer, construction personnel, bidders, and contractors.

2.0 EXISTING FACILITIES AND PROPOSED IMPROVEMENT

SR-94 is a major west-east route connecting Interstate 805 (I-805) in the City of San Diego with Interstate 8 (I-8), in a town of Manzanita, 65 miles to the east. SR-94 provides west-east movement of traffic through the southern section of the San Diego County urbanized and rural areas. At the project location, near the town of Manzanita, this route consists of a two lane asphalt paved highway with about two feet wide shoulders. There are no commercial or residential developments along the project alignment. Existing facilities in the project area include overhead utilities, traffic sign structures, and drainage features. The project alignment and surrounding area are depicted in the Aerial View that is presented in Figure 2.

Generally, the realignment of SR-94 will involve cutting into the existing cut slopes of the ridges located immediately to the north from the travelled way, and it will involve the construction of road embankments built of fill materials immediately to the south from the travelled way.

Proposed improvements are described in a greater detail in following subsections.

Ridge 1: Station 23+15 to 25+25

Westbound SR-94

Along this section of the project alignment, to the north from the edge of the highway, an existing cut into the south facing ascending slope of the relatively minor ridge section exists. This cut slope is inclined at 1:1 or flatter. For this northern section of the project alignment the

planned realignment will involve cutting into this existing cut slope at an inclination of 1:1 or flatter. The maximum height of the new cut slope will be about six feet from the toe to its crest. The maximum lateral encroachment into the existing slope will be 14 feet (Station 24+25).

Eastbound SR-94

Along this section of the project alignment, to the south from the edge of the highway, the existing ground surface is almost level or it slopes at a very low inclination to the south. For this southern section of the project alignment the planned realignment will involve the construction of the relatively thin road embankment built of fill materials and inclined at 2:1 or flatter.

Valley: Station 25+25 to 26+75

Westbound SR-94

Along this segment of the project alignment, SR-94 runs through the edge of the relatively shallow valley separating two ridges. A small arroyo is located at the bottom of this valley (Station 25+65). For this northern section of the project alignment the planned realignment will involve minor grading operations consisting of cuts and placements of fill materials.

Eastbound SR-94

Along this section of the project alignment, to the south from the edge of the highway, the existing ground surface is almost level or it slopes at a very low inclination to the south. For this southern section of the project alignment the planned realignment will involve the construction of the relatively thin road embankment built of fill materials and inclined at 2:1 or flatter

Ridge 2: Station 26+75 to 30+00

Westbound SR-94

Along this section of the project alignment, to the north from the edge of the highway, an existing cut into the south facing ascending slope of the relatively minor ridge exists. This cut slope is inclined at 1:1 or flatter. For this northern section of the project alignment the planned realignment will involve cutting into this existing cut slope at an inclination of 1:1 or flatter. The maximum height of the new cut slope will be about 45 feet from the toe to its crest. The maximum lateral encroachment into the existing slope will be 70 feet (Station 28+25).

Eastbound SR-94

Along this section of the project alignment, to the south from the edge of the highway, the existing ground surface slopes to the south at an inclination ranging from 1.7:1 to 2:1. A small arroyo is located at about Station 29+75. For this southern section of the project alignment the

planned realignment will involve the construction of the relatively thin road embankment built of fill materials and inclined at 2:1 or flatter.

Valley: Station 30+00 to 31+80

Westbound SR-94

Along this segment of the project alignment, SR-94 runs through the edge of the relatively shallow valley separating two ridges. This valley ascends to the north at an inclination of 3:1 or flatter. A small arroyo is located at the western edge of this valley (Station 30+00). For this northern section of the project alignment the planned realignment will involve a placement of a relatively thin layer of fill materials on the existing soils.

Eastbound SR-94

Along this section of the project alignment, from about Station 30+50 to 32+00, to the south from the edge of the highway, the existing ground surface ascends to the south at an inclination of 4:1 or flatter. For this southern section of the project alignment the planned realignment will involve cutting into the existing gently sloping terrain, including a removal of approximately 14 foot high and 20 foot long erosion resistant (crystalline) rock mass located at Station 31+00. The proposed cut will be maximum 7 feet high (except for the rock mass) and the maximum lateral encroachment into the existing gently sloping terrain will be 24 feet (Station 31+00).

Ridge 3: Station 31+80 to 35+50

Westbound SR-94

Along this section of the project alignment, to the north from the edge of the highway, an existing cut into the south facing ascending slope of the relatively minor ridge exists. This cut slope is inclined at 1:1 or flatter. For this northern section of the project alignment, the planned realignment will involve cutting into this existing cut slope at an inclination of 1:1 or flatter. The maximum height of the new cut slope will be about 22 feet from the toe to its crest. The maximum lateral encroachment into the existing slope will be 115 feet (Station 33+25).

Eastbound SR-94

Along this section of the project alignment, to the south from the edge of the highway, the existing ground surface is almost level or it slopes at a very low inclination to the south. For this southern section of the project alignment the planned realignment will involve the construction of the relatively thin road embankment built of fill materials with the south facing slope inclined at 2:1 or flatter.

Valley: Station 35+50 to 37+10

Westbound SR-94

Along this segment of the project alignment, SR-94 runs through the edge of the relatively shallow valley separating two ridges. This valley ascends to the north at a low inclination. For this northern section of the project alignment the planned realignment will involve minor grading operations consisting of cuts and a placement of relatively thin layer of fill materials on the existing soils.

Eastbound SR-94

Along this section of the project alignment, to the south from the edge of the highway, the existing ground surface descends to the south at an inclination of 2:1 or flatter. A small arroyo is located at the western edge of this segment (Station 35+65). For this southern section of the project alignment the planned realignment will involve construction of road embankment built of fill materials with the south facing slope inclined at 2:1 or flatter. However, from about Station 36+80 to 37+40 a large, about 14 foot tall erosion resistant (crystalline) rock mass crops out at the southern edge of the highway. The planned realignment will involve a removal of this rock mass.

Ridge 4: Station 37+10 to 44+30

Westbound SR-94

Along this section of the project alignment, to the north and northwest from the edge of the highway, an existing cut into the south and southeast facing ascending slope of the relatively minor ridge exists. This cut slope is inclined at 1:1 or flatter. For this section of the project alignment the planned realignment will involve cutting into this existing cut slope at an inclination of 1:1 or flatter. The maximum height of the new cut slope will be about 18 feet from the toe to its crest. The maximum lateral encroachment into the existing slope will be 50 feet (Station 38+25).

Eastbound SR-94

Along this section of the project alignment, to the south and southeast from the edge of the highway, the existing ground surface is almost level or it slopes at a very low inclination to the south and southeast. For this section of the project alignment the planned realignment will involve the construction of the relatively thin road embankment built of fill materials and inclined at 2:1 or flatter.

Valley: Station 44+30 to 44+96

Westbound SR-94

Along this segment of the project alignment, SR-94 runs through the edge of the relatively shallow valley separating two ridges. This valley ascends to the northwest at a very low inclination. For this section of the project alignment the planned realignment will involve minor grading operations consisting of cuts and placements of fill materials.

Eastbound SR-94

Along this section of the project alignment, the existing ground surface is almost level or it slopes at a very low inclination to the southeast. No grading operations are planned for this section of the project alignment.

3.0 PERTINENT REPORTS AND INVESTIGATIONS

Pertinent reports and investigations utilized in the preparation of this GDR include:

“Embankment Slope Erosion Control in Interstate 8, Sites 1 and 2, KP R98.8/R107.8” by Jeff Tesar, 1999.

“I-8, Rippability Estimates”, by Jeff Kermode and Joe Egan, 1998.

“Slope Erosion – Bridge Abutments (Sweetwater No. 57-0688, Pine Valley No. 57-0692, La Posta No. 57-0756.), by Mike Fordham, 2003.

Caltrans *“District Preliminary Geotechnical Report for the Realignment of a Section of the State Route 94,”* by Jeff Tesar, 2012.

4.0 PHYSICAL SETTING

The following section describes the physical setting of the project including: the climate; topography and drainage; man-made and natural features of engineering and construction significance; regional geology and seismicity.

4.1 Climate

The climate in this area is considered semi-arid. Precipitation data presented in the County of San Diego Average Annual Precipitation Map indicate that at the project location the average rainfall is about 15 inches per year. Nearly 90% of the annual precipitation occurs between the months of November and April. The Average Annual Precipitation Map is presented in Figure 3.

4.2 Topography and Drainage

The project is located within Peninsular Ranges Geomorphic Province of California. Within the project limits and vicinity SR-94 runs through mountainous topography. The highway traverses the mountains in a west-east direction and ascends the mountains from west to east, toward the Tecate Divide. The highway crosses numerous valleys, small and large canyons, and it meanders around granitic hills, ridges, and peaks. At the project location, the current roadway grade is approximately 3,400 feet above the mean sea elevation (MSE.) The mountain peak to the north of the project location reaches an elevation of 3,785 feet above MSE. A Topographic Map of the project area is presented in Figure 4.

This project alignment stretches along SR-94 from the west to the east, following the hilly topography. It meanders around four relatively small ridges that are separated by relatively shallow valleys. Arroyos (water courses) flowing to the south are located at the bottoms of some valleys. These topographic features of the project site can be discerned in Figure 3, Aerial View, and they are presented in a greater detail in Figures 5 and 5a, Project Site Topography.

Onsite rainfall and runoff water is collected by the system of existing drainage facilities including culverts, drainage ditches, and collection basins. Water collected by these drainage features flows through natural water courses to the southwest towards the Pacific Ocean.

4.3 Man-made and Natural Features of Engineering and Construction Significance

No man-made or natural features that present an unusual geotechnical engineering or construction challenge were identified during the course of this study.

4.4 Regional Geology and Seismicity

The project area lies within the Peninsular Ranges Geomorphic Province of California. These mountains belong to the Southern California Batholith Geologic Formation. The formations were formed by the magmatic intrusion in the Mesozoic Era, in the mid Cretaceous Period (Jennings, 1977.) At the project location igneous granitic rocks (bedrock) belonging to the Southern California Batholith Formation comprise granite, adamellite, granodiorite, tonalite, and diorite. These granitic rocks are strongly weathered often with spheroidal boulders as a result of weathering (Jenkins, 1962.) A geologic map of the project area is presented in Figure 5.

San Diego County sits upon the eastern margin of the Pacific Tectonic Plate. The region is seismically active as a result of relative movement between the Pacific and North American Plates. Relative to the North American Plate the Pacific Plate moves northwestward at an annual rate of about one inch per year. Tectonic stresses and strains associated with this plate movement have created a complex system of active, northwest trending faults typical to the region.

Major fault systems occurring near the project include the Whittier-Elsinore, Newport-Inglewood–Rose Canyon W, and a La Nacion Faults. All of these faults, as well as faults more distant from

the project, are potential seismic sources that could cause minimal to moderate shaking at the project site

5.0 EXPLORATION

To determine subsurface soil conditions, a geologic mapping along with field reconnaissances were conducted.

5.1 Drilling, Sounding, and Sampling

For this project drilling, sampling and laboratory testing were not performed.

5.2 Geologic Mapping

All proposed cuts will be constructed into the existing cut slopes that were constructed during the construction of the highway. For this project, since geology is well exposed on the faces of the existing cut slopes, the exploration consisted of field reconnaissances and geologic mapping of the outcrops (cuts) exposed along the project.

5.3 Geophysical Studies

No geophysical studies were conducted for the preparation of this report.

6.0 GEOTECHNICAL TESTING

No geotechnical testing were performed for the preparation of this report.

7.0 GEOTECHNICAL CONDITIONS

The following subsections describe the geotechnical conditions at the project site.

7.1 Site Geology

In general, ridges located on the project site are built of granitic bedrock consisting of weathered granite matrix, locally with spherical and angular granitic boulders/rocks within it. Weathered granite matrix consists of residual soil of the granitic origin often with the preserved remnant texture of the parent rock and/or intensely weathered igneous rock, granite (Caltrans Logging Manual, 2010). Granitic boulders/rocks represent so called crystalline rocks that have increased content of the erosion-resistant minerals, mostly quartz.

7.1.1 Lithology

The granitic bedrock comprise three lithologic units that are described below:

Unit 1

Unit 1 consist of igneous rock, coarse grained granite that is light gray, intensely weathered, moderately soft, and unfractured to very slightly fractured.

Unit 2

Unit 2 consists of igneous rock, medium grained granite that is light gray, moderately weathered, moderately hard, and slightly to moderately fractured, with fractures being randomly oriented.

Unit 3

Unit 3 consists of igneous rock, coarse to medium grained crystalline granite that is light gray, slightly weathered, hard, and unfractured.

Valleys are underlain by decomposed granite soils derived from the slopes of the ridges (colluvium) or/and decomposed granite soils transported and deposited by the water, thus alluvial soils. These decomposed granitic soils are typically coarse and medium grained sands. These soils are underlain by granitic bedrock.

Locally, minor sections of the project area are underlain by artificial fill consisting of compacted earth materials derived from local sources, predominately decomposed granite soils.

7.1.2 Stability of Existing Slopes

The current SR-94 roadway alignment was achieved by cut and fill grading. The slopes are located on the northern side of the freeway. They are cut slopes inclined at 1:1. All slopes at the project location generally appear to be in good condition and are performing well. In addition, several oversized rock masses are located at about the crest of these cut slopes. However, during the site investigation for this report they were found to be stable.

7.2 Subsurface Conditions

The following sections describe the geotechnically relevant conditions that impact project design and construction grading operations.

7.2.1 Soils

Ridge 1: Station 23+15 to 25+25

Westbound SR-94

Along this northern section of the project alignment, the southern edge of Ridge 1 is built of granitic bedrock that is overlain by relatively shallow layer of colluvial and residual soils of the granitic origin. These soils consist of coarse and medium grained sands. Granitic bedrock

comprises Unit 2. Locally, angular rocks are embedded within this weathered granite matrix. These rocks due to their mineral content are erosion resistant thus they are less weathered. By volume, about 20 % of rocks exposed on the existing cut comprise these rocks.

Eastbound SR-94

This southern section of the project alignment is underlain by decomposed granite soils consisting of coarse and medium grained sands. These soils are underlain by granitic bedrock. About three foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density. In addition, numerous animal burrows were observed to the south of that segment of the highway.

Valley: Station 25+25 to 26+75

Westbound SR-94

This northern section of the project alignment is underlain by decomposed granite soils consisting of coarse and medium grained sands. These soils are underlain by granitic bedrock. About three foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density. In addition, numerous animal burrows were observed to the north of that segment of the highway.

Eastbound SR-94

This southern section of the project alignment is underlain by decomposed granite soils consisting of coarse and medium grained sands. These soils are underlain by granitic bedrock. About three foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density. In addition, numerous animal burrows were observed to the south of that segment of the highway.

Ridge 2: Station 26+75 to 30+00

Westbound SR-94

From about Station 26+75 to 28+45, the southern edge of Ridge 2 is built of granitic bedrock that is overlain by relatively shallow layer of colluvial and residuals soil of the granitic origin. These soils consist of coarse and medium grained sands. Granitic bedrock consists of three lithological units. By volume, approximately 40 % this bedrock consists of Unit 1, about 30% consists of Unit 2, and about 30% consists of Unit 3. In addition, crystalline granite rocks and rock masses (Unit 3) were observed above the crest of the existing cut slope either laying on the ground surface or protruding from it.

From about Station 28+75 to 30+00, the southern edge of Ridge 2 is built of granitic bedrock that is overlain by relatively shallow layer of colluvial and residual soils of the granitic origin. These soils consist of coarse and medium grained sands. Granitic bedrock consists of Unit 1. No erosion resistant crystalline rocks were observed on the face of the existing cut slope. However, crystalline rocks and rock masses were observed laying on the ground surface above the crest of this cut slope, suggesting that they most likely gravitationally moved to their current positions.

Eastbound SR-94

This southern section of the project alignment was constructed as a road embankment and it is underlain by fill materials consisting of decomposed granite coarse and medium grained sands. At the face of this embankment slope about three foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density. This was most evident at the location of the arroyo which banks and bottom are underlain by alluvial soils of the granitic origin. In addition, numerous animal burrows were observed to the south of that segment of the highway.

Valley: Station 30+00 to 31+80

Westbound SR-94

This northern section of the project alignment is underlain by decomposed granite soils consisting of coarse and medium grained sands. These soils are underlain by granitic bedrock. About three foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density. In addition, numerous animal burrows were observed to the north of that segment of the highway.

Eastbound SR-94

This southern section of the project alignment is underlain by relatively shallow layer of decomposed granite soils consisting of coarse and medium grained sands. These soils are underlain by granitic bedrock. About two foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density. The rock mass located at Station 31+00 consist of Unit 3.

Ridge 3: Station 31+80 to 35+50

Westbound SR-94

From about Station 31+75 to 31+90, the southern edge of Ridge 3 is built of granitic bedrock that is overlain by relatively shallow layer of colluvial and residuals soil of the granitic origin. These soils consist of coarse and medium grained sands. Granitic bedrock consists of Unit 1.

From about Station 31+90 to 32+20, the southern edge of Ridge 3 is built of granitic bedrock that is overlain by relatively shallow layer of colluvial and residuals soil of the granitic origin. These soils consist of coarse and medium grained sands. Granitic bedrock comprises Unit 2.

From about Station 32+00 to 35+50, the southern edge of Ridge 3 is built of granitic bedrock that is overlain by relatively shallow layer of colluvial and residuals soil of the granitic origin. These soils consist of coarse and medium grained sands. Granitic bedrock comprises Unit 1.

Eastbound SR-94

This southern section of the project alignment is underlain by decomposed granite soils consisting of coarse and medium grained sands. These soils are underlain by granitic bedrock. About three foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density. In addition, numerous animal burrows were observed to the south of that segment of the highway.

Valley: Station 35+50 to 37+10

Westbound SR-94

This northern section of the project alignment is underlain by decomposed granite soils consisting of coarse and medium grained sands. These soils are underlain by granitic bedrock. About three foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density. In addition, numerous animal burrows are located to the north of that segment of the highway.

Eastbound SR-94

This southern section of the project alignment is underlain by relatively shallow layer of decomposed granite soils consisting of coarse and medium grained sands. These soils are underlain by granitic bedrock. About two foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density. The rock mass located at Station 36+80 to 37+40, consists of Unit 3 that is slightly and randomly fractured.

Ridge 4: Station 37+10 to 44+30

Westbound SR-94

From about Station 37+10 to 38+80, the south to southeastern edge of Ridge 4 is built of granitic bedrock that is overlain by relatively shallow layer of colluvial and residuals soil of the granitic origin. These soils consist of coarse and medium grained sands. By volume, approximately 70 % of the granitic bedrock consists of Unit 1, 20 % consists of Unit 2, and 10% consists of Unit 3.

In addition large crystalline granite rocks and rock masses are located at the top of this section of Ridge 4.

From about Station 38+80 to 40+40, the southern edge of Ridge 4 is built of granitic bedrock that is overlain by relatively shallow layer of colluvial and residuals soil of the granitic origin. These soils consist of coarse and medium grained sands. Granitic bedrock comprises Unit 1.

From about Station 40+40 to 41+60, the southern edge of Ridge 4 is built of granitic bedrock that is overlain by relatively shallow layer of colluvial and residuals soil of the granitic origin. These soils consist of coarse and medium grained sands. Granitic bedrock comprises Unit 2.

From about Station 41+60 to 44+20, the southern edge of Ridge 4 is built of granitic bedrock that is overlain by relatively shallow layer of colluvial and residuals soil of the granitic origin. These soils consist of coarse and medium grained sands. Granitic bedrock comprises Unit 1.

Eastbound SR-94

This south to southeastern section of the project alignment is underlain by relatively shallow layer of decomposed granite soils consisting of coarse and medium grained sands. These soils are underlain by granitic bedrock. About two foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density. Also several animal burrows are located along that section.

Valley: Station 44+30 to 44+96

Westbound SR-94

This northwestern section of the project alignment is underlain by decomposed granite soils consisting of coarse and medium grained sands. These soils are underlain by granitic bedrock. About two foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density. In addition, numerous animal burrows are located to the northwest from that segment of the highway.

Eastbound SR-94

This southeastern section of the project alignment is underlain by relatively shallow layer of decomposed granite soils consisting of coarse and medium grained sands. These soils are underlain by granitic bedrock. About two foot thick top layer of these soils was relatively easily penetrated by the engineering probe suggesting their low density.

7.2.2 Groundwater

No ground or spring water was observed during the geologic mapping. Under this project alignment the groundwater table is expected to exist deep enough not to impact the construction

phase of this project. However, perched water, water that is trapped on the granitic impermeable bedrock, could potentially be encountered at isolated locations, especially during the rainy season. In general, the occurrence of perched water is not likely to have a significant impact on the construction activities for this project.

7.3 Surface Water

Permanent surface water bodies do not exist at the location of this project.

7.3.1 Scour

A scour evaluation is not applicable to this project.

7.3.2 Erosion

Since the fill slopes at this project will be constructed utilizing decomposed granitic materials (sands), slope faces are expected to be susceptible to fluvial and wind erosion. Therefore, the District 11 Office of Landscape Architect should be consulted regarding appropriate erosion control measures for this project.

7.4 Project Site Seismicity

Due to the proximity of active fault zones, the project site will experience seismic shaking. This section provides a seismic evaluation of the project site.

7.4.1 Ground Motions

A project area Seismic Hazard Map is presented in Figure 7. No known Holocene fault exists within the project area. The nearest known active fault is the Whittier-Elsinore Fault. The fault lies about 20 miles northeast from the project limits, and it is capable of producing an earthquake with a Maximum Credible Magnitude of 7.5 on the Richter scale. The Newport-Inglewood-Rose Canyon W Fault Zone believed to be capable of producing an earthquake with a Maximum Credible Magnitude of 7.0 on the Richter scale is located about 40 miles west from the project site. The La Nacion Fault is located about 36 miles west from the project limits, and it is capable of producing an earthquake with a Maximum Credible Magnitude of 6.75 on the Richter scale. All three faults are believed to be capable of generating a Peak Ground Acceleration of about 0.24 g at the project site (Mulchin, 1996.)

7.4.2 Ground Rupture

The project is located outside of any State of California Alquist Priolo Special Study Zone. No known active fault trace crosses the project alignment. Ground surface rupture caused by active faulting is considered unlikely.

8.0 GEOTECHNICAL ANALYSIS AND DESIGN

The following section describes the geotechnical analyses, parameters, and design criteria that should be utilized by project designers in the continued development of proposed project features.

8.1 Dynamic Analysis

This section describes the seismic parameters selected and dynamic analysis developed for the project.

8.1.1 Parameter Selection

The proximity of the project area to the Newport-Inglewood-Rose Canyon and Whittier-Elsinore Faults establishes the potential for the area to be impacted by a significant seismic event. The Maximum Credible Earthquake on these faults has been estimated to be of magnitude 7.0 and 7.5 respectively. The Peak Bedrock Acceleration at the project site could range up to 0.24g and have duration of 15 to 20 seconds (from the California Seismic Hazard Map 1996, by Lillian Mualchin and DMG OFR92-1).

The effective seismic horizontal coefficient, k_h , used in pseudo-static slope stability analysis is specified in Caltrans Guidelines for Foundation Investigation and Reports (Version 1.2) as 1/3 of the peak ground acceleration. Therefore, $k_h = 0.08$ should be used for the pseudo-static slope stability analyses.

8.2 Cuts and Excavations

This section presents the analyses used to determine the stability, rippability, and grading factors of materials encountered in proposed foundation excavations.

8.2.1 Stability

It is anticipated that the excavations for the proposed roadway realignment will be stable during construction, provided that the excavations are left open for a limited duration and not exposed to excessive saturation or concentrated storm runoff.

8.2.2 Rippability

Decomposed granite soils of colluvial and alluvial origin, along with the residual granitic soils that underlay the project alignment may be excavated utilizing standard earth-moving equipment.

For the areas that are underlain by igneous rocks comprising lithologic Units 1 and 2, using heavy duty earth moving equipment along with strong effort and frequent watering of rocks to be ripped may be implemented to excavate/rip these weathered rocks.

Utilizing heavy duty earth moving equipment may be implemented to excavate/rip the igneous rocks comprising Unit 3, including the removal of large rock masses built of crystalline granite

and located on both sides of the highway. However, locally, the low potential exist that their removal could require blasting. Based on geologic mapping, along the project alignment, including its both northern and southern sections, approximately a total of about 210 foot long section consisting of several short sections scattered along the project alignment could potentially require localized blasting. However, again, this blasting potential is low, and it is expected to be relatively small-scaled.

Blasting specifications for use on this project are attached to this report. However, for this project production blasting should not be allowed, for it will potentially negatively impact the final grades of the roadway and the inclination and limits of the proposed cut slopes. Only controlled blasting as presplitting and/or hydraulic splitting should be allowed for this project.

Rocks comprising granitic bedrock were classified by mapping the outcropping cuts along the project alignment and the surface mapping of the ridges. Since the lateral encroachment into these outcropping cuts is planned to be relatively minor; this exploration method should be sufficiently accurate to assess rock rippability. However, the probability of the occurrence of the crystalline rock, such as tonalite that has not been exposed on the face of the cut do exist. Nonetheless, this probability is very low and it is most likely limited to the western limits of Ridges 2 and 4.

8.2.3 Grading Factors

Based on our local experience, generally, the grading factor for the decomposed granite bedrock or/and decomposed granite soils should be about 0.9. However, existing surficial granular decomposed granite soils were found to be of low density. In addition, some oversized rocks ripped from the bedrock may not be suitable for the placement in the planned relatively shallow road embankments. Unless, they are crushed to the sizes that would allow them to be utilized in the construction of the fill embankments as per Caltrans Standard Specifications. These factors may diminish the value of the grading factor of the surficial and subsurface soils at the project location.

8.3 Embankments

No significant embankments will be constructed as part of this project.

8.4 Sound Walls

No sound walls are proposed as part of this project

8.5 Earth Retaining Systems

No earth retaining structures are proposed as part of this project.

8.6 Culvert Foundations

No culvert foundations are proposed as part of this project.

8.7 Minor Structure Foundations

No minor structure foundations are proposed as part of this project.

9.0 MATERIAL SOURCES

If fill materials need to be imported for this project, then, the decomposed granite soils would be the most suitable type. These materials should be available in the relative vicinity of the project location. In addition, materials imported for this project should conform to the Caltrans Standard Specifications 2010.

10.0 MATERIAL DISPOSAL

Material generated during construction should be placed in suitable locations as engineered fill within the projects limits or properly disposed off site. Material disposal should follow Standard Specifications 2010. No locations that would be adversely impacted by the placement of excess material were identified.

11.0 CONSTRUCTION CONSIDERATIONS AND ADVISORIES

This section describes the construction considerations including: advisories; considerations that influence design and/or specifications; and monitoring and instrumentation.

- Project cut slopes may be inclined 1:1 or flatter.
- Fill slopes will be most likely constructed with the utilization of locally available residual decomposed granite materials (sands). Therefore, proposed 2:1 (H:V) inclined fill slopes will be stable if constructed according to the Caltrans Standard Specifications.
- Appropriate erosion control measures should be implemented to protect the newly graded embankment slope faces.
- Surface water should be contained by appropriate drainage improvements. These improvements should contain surface water and/or direct it away from the highway infrastructure and faces of the graded slopes.
- The contractor should anticipate difficult excavation conditions as described in section 8.2.2.
- The cutting into the existing cut slope should be accomplished by the use of heavy duty earth moving equipment combined with strong effort.

- Oversized rock masses including two located on the southern side of the project alignment could be pulverized by breakers mounted on large excavators. The resulting fragmented rocks could be crushed, or they could be moved outside of traveled way and incorporated into the landscape.
- Locally, the occurrence of fresh, hard bedrock could create a potential for implementation of blasting operations into this project. However, this potential is relatively low, and it would be of a small scale. Locally, if all ripping efforts fail, this blasting could be implemented to shatter or dislodge crystalline granite rock masses from the weathered granitic matrix.

12.0 ACTUAL VS. REPORTED SITE CONDITIONS

The characterization of geotechnical conditions along the project alignment and presented in this report are based on the review of the design information provided, conceptual project features, as-built plans, geologic maps, geologic literature, archival reports, field reconnaissance, and geologic mapping. The evaluations and recommendations contained in this report are based on the information discovered.

12.0 REFERENCES

1. Geologic Map of California, by Charles Jennings California Geologic Map Series, Map no. 2, 1977..
2. Geologic Map of California, San Diego-El Centro Sheet, by Olaf Jenkins, 1992
3. County of San Diego Average Annual Precipitation, by the Department of Public Works, San Diego, 1984.
4. California Seismic Hazard Map, by L. Mualchin, 1996.
5. Live Oak Springs Quadrangle, California – San Diego Co. , 7.5 Minute Series Topographic Map, by the USGS, 1959.
6. Caltrans Soil and Rock Logging, Classification, and Presentation Manual, 2010 Edition.
7. Caltrans District Preliminary Geotechnical Report for the Realignment of a Section of the State Route 94, by Jeff Tesar, 20012.

APPENDICES

PROJECT BLASTING SPECIFICATIONS

19-4 ROCK EXCAVATION (CONTROLLED BLASTING)

19-4.01 GENERAL

19-4.01A Summary

Section 19-4 includes specifications for performing rock excavation with controlled blasting and presplitting rock to form rock excavation slopes.

You may use hydraulic splitters, pneumatic hammers, controlled blasting, or other roadway excavation techniques authorized to fracture rock and construct stable final rock cut faces.

Comply with section 12.

Comply with federal, state, and local blasting regulations. Regulations containing specific Cal-OSHA requirements for blasting activities include 8 CA Code of Regs, Ch 4, Subchapter 7, Group 18, "Explosive Materials." Regulations for explosives containing percholate materials include 22 CA Code of Regs, Division 4.5, Ch 33, "Best Management Practices for Percholate Materials."

You are liable for damages resulting from blasting activities.

19-4.01B Definitions

controlled blasting: Use of explosives and blasting accessories in predetermined spaced and aligned drill holes to limit blast vibrations, noise from airblast overpressure, and flyrock.

flyrock: Rock that becomes airborne due to blasting.

near field blasting: Blasting within 30 feet of a critical structure.

presplitting: Establishment of a free surface or shear plane in rock along the specified excavation slope by the controlled use of explosives and blasting accessories in appropriately aligned and spaced drill holes.

19-4.01C Submittals

19-4.01C(1) General

Submit 3 copies of the blasting safety plan and each controlled blasting plan. After each plan is authorized, submit 3 additional copies of each authorized plan.

19-4.01C(2) Blasting Safety Plan

Submit a blasting safety plan. The plan must include:

1. References to applicable federal, state, and local codes and regulations
2. Copies of permits required for blasting activities
3. Business name, contractor license number, address, and telephone number of the blasting subcontractor
4. Proof of current liability insurance and bonding
5. Name, address, telephone number, copies of applicable licenses, and resume of:
 - 5.1. Blaster-in-charge
 - 5.2. Personnel responsible for controlled blast design, loading, and conducting the blasting operation
 - 5.3. Safety officer for blasting subcontractor
 - 5.4. Blast monitoring consultant
 - 5.5. Blasting consultant
6. Name, address, and telephone number of the local fire station and law enforcement agencies
7. Detailed description of:
 - 7.1. Location where explosives will be stored
 - 7.2. Security measures to protect and limit access to the explosives
 - 7.3. Transportation means for explosives
 - 7.4. List of personnel permitted to handle the explosives
8. Exclusion zone and limited-entry zone for nonblast related operations and personnel surrounding loading and blasting operations

9. Details of warning signals used to alert employees on the job site of an impending blast and to indicate the blast is completed and the area is safe to enter
10. How blasting operations will be conducted
11. Measures to protect blasting operations and personnel from lightning
12. Emergency evacuation procedures for areas where explosives may be present
13. How misfires will be recognized, handled, and resolved including:
 - 13.1. Who will be notified
 - 13.2. How blast zone will be secured until misfire is resolved
 - 13.3. Identification of equipment that may be needed to resolve misfires
14. Details of signs to be used around blasting zones including:
 - 14.1. Timing of when signs will be posted relative to a specific blast
 - 14.2. Name and telephone number of person responsible for placing signs
 - 14.3. Roadway signs for compliance with Chapter 6, Typical Application 2, of the California MUTCD.
15. Traffic control details for:
 - 15.1. Loading and blasting operations
 - 15.2. Misfire event or other blast related phenomenon that causes a transportation corridor to remain closed to the public
16. Description of possible noxious gas generation and details of safeguards to be used to protect employees, work zones adjacent to the shot, private property, and the public
17. Procedure to report and resolve complaints for blast related accidents
18. Copies of each MSDS and manufacturer data sheets of explosives, caps, primers, initiators, and other compounds

19-4.01C(3) Controlled Blasting Plan

Submit a controlled blasting plan for each blast. The plan must include details on how each blast will be controlled and the following:

1. Blast identification by numerical and chronological sequence
2. Location, referenced to stationing, offset distance, date, and time of blast
3. Drawings showing drill hole pattern, spacing, burden, and initiation sequence
4. Typical cross-sections through zone to be blasted
5. Groundwater level, if present, within the prism to be blasted
6. Initiation-sequence diagram showing the actual firing time of each delay
7. Type of material to be blasted
8. Number of drill holes
9. Diameter, depth, and spacing of holes
10. Height or length of stemming
11. Types and characteristics of explosives used, including explosive's density, relative strength, and date of manufacture
12. Type of caps and delay periods used and their date of manufacture
13. Total amount of explosives used
14. Total amount of explosives detonating within any 8 millisecond period
15. Powder factor (pounds of explosive per cubic yard of material blasted)
16. Method of firing
17. Direction and distance to nearest building or structure
18. Type and method of instrumentation
19. Location and placement of instruments
20. Measures to limit air noise and flyrock
21. Measures to limit overbreak
22. Name of blasting subcontractor
23. Name and signature of blaster-in-charge
24. Drawings showing spacing and proximity of shot guards to blast location

Changes to the controlled blasting plan made to adjust for site conditions must be submitted for review before implementing.

19-4.01D Quality Control and Assurance

19-4.01D(1) General

Not Used

19-4.01D(2) Blaster-In-Charge

Assign a blaster-in-charge responsible for supervising all blasting activities. The blaster-in-charge must have 10 years of experience in performing or supervising similar blasting activities and must be a licensed blaster.

19-4.01D(3) Blast Monitoring Consultant

Assign a blast monitoring consultant to monitor blasting generated vibrations and noise near buildings and structures that may be subject to damage. The monitoring consultant must be responsible for collecting and interpreting vibration and noise data. The blast monitoring consultant must:

1. Not be employed by the blasting contractor or other subcontractor on the project
2. Have a minimum of a 2-year Associate's Degree in science or engineering
3. Have at least 5 years of documented experience in collecting and interpreting ground vibrations and noise data

19-4.01D(4) Blasting Consultant

Assign a blasting consultant to oversee near field blasting activities. The blasting consultant must:

1. Be an engineer or geologist who is licensed in the State
2. Have 10 years of experience providing specialized blasting services in near field blasting
3. Not be employed by the blasting contractor, explosive manufacturer, or explosive distributor
4. Submit a resume of credentials and a list of projects worked on

19-4.01D(5) Preblast Surveys

At least 15 days before starting blasting activities, prepare a preblast survey of all buildings and structures within 330 feet of blasting activities and submit it with the controlled blasting plan. The preblast survey must include a written report, sketches, and photos or a videotape with date and time displayed on the image. The preblast survey must include:

1. Name of the person making the inspection
2. Name of property owner and occupants
3. Property address
4. Date and time of the inspection
5. Description of the structure or other improvement including culverts and bridges
6. Detailed description of existing condition of walls, ceiling, and floor of each interior room including attic and basement
7. Detailed description of existing condition of foundations, exterior walls, roofs, doors, windows, and porches
8. Detailed description of existing condition of garages, outbuildings, sidewalks, driveways, and swimming pools
9. Detailed listing of highway sign posts, light fixtures, and overhead power lines
10. Survey of wells or other private water supplies including total depth and existing water surface levels
11. Identification of sites conducting procedures, processes, or operations that may be sensitive to blasting activities
12. Scaled map or aerial photo showing the location of structures and properties surveyed and location of all proposed blasting sites

If blasting activities are suspended for a period of 45 days or more, perform another preblast survey and submit it at least 15 days before resuming blasting activities.

After blasting activities are completed, prepare and submit a postblast survey of the same buildings and structures as in the preblast survey. The postblast survey must include all items included in the preblast survey.

19-4.01D(6) Vibration and Noise Monitoring

Vibration levels must be kept below peak particle velocity of 2 inches per second at the nearest building or structure.

Noise from airblast overpressure levels must be kept below 128 dB (C-network or Linear network) at the nearest building

Ground vibrations and noise created from blasting must be controlled by using properly designed delay sequencing and charge weights for shots.

Provide 3 seismographs to be available for deployment that are appropriate for controlled blasting activities and capable of:

1. Recording particle velocities for 3 mutually perpendicular components of vibration and instantaneous resultant peak vector sum in the range generally found with controlled blasting.
2. Continuously measuring, recording, and reporting vibrations along 3 primary axes.
3. Measuring and recording vibration frequencies ranging from 2 to 300 Hz.
4. Providing a printed record of each event showing a plot of peak particle velocity versus vibration frequencies.
5. Measuring and recording airblast noise levels. The noise transducer must be detachable from the main unit to allow placing at elevations with a clear line of sight between transducer and blast.

Record each blast shot using approved seismographs and prepare a vibration and noise monitoring report. The report must include:

1. Identification of instruments used
2. Name of blast monitoring consultant
3. Distance and direction of recording stations from blast area
4. Type of ground at recording station and material on which instrument sits
5. Maximum particle velocity in each component and resultant peak particle velocity of each shot
6. Copy of seismograph readings with date and signature of blast monitoring consultant
7. Noise levels recorded in dB (C-network or Linear network) units

19-4.01D(7) Video Recording of Blasts

Video-record each blast. The video-recording must be taken from a safe location with a clear view of the blast area, activities, and progression. Identify each video or section of video with an index to identify each blast. Submit a copy of each video in DVD-Video format.

19-4.01D(8) Blasting Complaints

Accurately document each complaint. Notify the Engineer immediately of a complaint received or at the start of the next day's work shift. Complaint documentation must include:

1. Name and address of complainant
2. Date, time, and nature of complaint
3. Dated photo or videotape of physical damage
4. Name of person receiving complaint
5. Record of complaint investigation conducted
6. Resolution of complaint

19-4.01D(9) Postblast Reports

Document each shot in a postblast report. The postblast report must include all data required in the controlled blasting plan for that shot and the following:

1. Description of site conditions, loading, and time of blast
2. Description of weather conditions at time of blast including wind direction and cloud cover
3. Drillers boring record
4. Copy of vibration and noise monitoring report
5. Copy of documented complaints arising from the blast

Submit the postblast report within 48 hours of the blast.

19-4.02 MATERIALS

The maximum diameter of explosives used in presplit holes must not be greater than 50 percent of the diameter of the presplit hole.

Only standard cartridge explosives prepared and packaged by explosive manufacturing firms must be used in the presplit holes. These must consist of one of the following:

1. Fractional portions of standard cartridges to be affixed to the detonating cord in the field
2. Solid column explosives joined and affixed to the detonating cord in the field

Stemming materials must be dry, free-running material meeting the grading requirements in the following table when tested under California Test 202:

| Sieve sizes | Percentage passing |
|-------------|--------------------|
| 3/8" | 100 |
| No. 8 | 90 |

19-4.03 CONSTRUCTION

At least 7 days before starting or resuming blasting activities, notify occupants of the local buildings within 330 feet of the blasting area in writing. Verbally notify occupants of pending blasting activities on the day of blasting.

Do not perform blasts within 1,200 feet of concrete placed within 72 hours.

Before firing any blast, confirm that groundwater conditions are consistent with shot design and explosive type to be used.

Before firing any blast in areas where flyrock may result in personal injury or damage to property or the work, cover the rock to be blasted with blasting mats, soil, or other equally serviceable material to prevent flyrock.

If blasting causes flyrock, suspend blasting activities. The blasting consultant must review the site to determine the cause of the flyrock problem and provide an amendment to the controlled blasting plan that prevents flyrock.

Do not use drill cuttings as stemming in controlled blasting operations.

Before drilling the presplitting holes, remove overburden soil and weathered rock along the top of the excavation for a distance of at least 50 feet beyond the drilling limits or to the end of the excavation. Ensure removal of overburden soil and weathered rock and expose fresh rock to an elevation equal to the bottom of the adjacent lift of the presplitting holes being drilled.

Drill slope holes for presplitting along the line of the planned slope within the tolerances specified. The drill holes must be at least 2-1/2 inches, but not more than 3 inches in diameter. Control the drilling operations by using proper equipment and techniques. Ensure no hole deviates from the plane of the planned slope by more than 12 inches or from parallel to an adjacent hole by more than 67 percent of the planned horizontal spacing between holes.

The length of presplit holes for an individual lift must not exceed 30 feet, unless you can demonstrate to the Engineer that you can stay within the above tolerances and produce a uniform slope. The length of holes may then be increased to a maximum of 60 feet if authorized.

The spacing of presplit holes must not exceed 3 feet on centers and must be adjusted to produce a uniform shear face between holes.

The Engineer may order you to drill auxiliary holes along the presplit line. These holes must not be loaded or stemmed. Except for spacing, auxiliary drill holes must comply with the specifications for presplit holes. Drilling auxiliary drill holes along the presplit line is change order work.

Place the adjacent line of production holes inside the presplit lines in such a manner that avoids damage to the presplit face.

If necessary to reduce shatter and overbreak of the presplit surface, the 1st line of production holes must be drilled parallel to the slope line at the top of the cut and at each bench level thereafter.

Blasting techniques that result in damage to the presplit surface must be discontinued immediately.

No portion of the production holes must be drilled within 8 feet of a presplit plane unless authorized. The bottom of the production holes must not be lower than the bottom of the presplit holes.

A maximum offset of 24 inches will be permitted for a construction working bench at the bottom of each lift for use in drilling the next lower presplitting pattern.

Adjust the drilling operations to compensate for drift of previous levels and for the offset at the start of new levels to maintain the specified slope plane.

If the methods of drilling and blasting do not produce the desired result of a uniform slope and shear face without overbreak and within the tolerances specified, drill, blast, and excavate in short sections, up to 100 feet, until a technique produces desired results.

If a fractional portion of a standard explosive cartridge is used, the cartridge must be firmly affixed to a length of detonating cord equal to the depth of the drill hole so that the cartridge does not slip down the detonating cord nor cock across the hole and bridge the flow of stemming material. Spacing of cartridges along the length of the detonating cord must not exceed 30 inches center to center and must be adjusted to give the desired results.

If a solid column type explosive is used, the column must be assembled and affixed to the detonating cord to comply with the explosive manufacturer's instructions. Submit as an informational submittal a copy of the explosive manufacturer's instruction before using the column type explosive.

The bottom charge of a presplit hole may be larger than the line charges but must not cause overbreak. The top charge of the presplitting hole must be placed far enough below the collar to avoid overbreaking the surface.

Before placing the charge, the hole must be free of obstructions for the hole's entire depth. Ensure placing of the charge does not cause caving of material from the walls of the holes.

The Engineer may order the use of stemming materials as necessary to achieve a satisfactory presplit face. Stemmed presplit holes must be completely filled to the collar.

Detonate charges in each presplitting pattern simultaneously.

The tolerances in section 19-2.03G do not apply to presplit surfaces of excavation slopes where presplitting is required. The presplit face must not deviate more than 1 foot from the plane passing through adjacent drill holes, except where the character of the rock is such that irregularities are unavoidable. The average plane of the completed slopes must not deviate more than 1 foot from the plan slopes. These tolerances are measured perpendicular to the plane of the slope. No portion of the slope may encroach on the roadbed.

If equally satisfactory presplit slopes are obtained, you may either presplit the slope face before drilling for production blasting or presplit the slope face and production blast at the same time, provided that the presplitting drill holes are fired with zero delay. The production holes must be delayed by at least 50 milliseconds starting at the row of holes farthest from the slope and progressing in steps to the row of holes nearest the presplit line. The presplitting holes must extend either to the end of the excavation or for a distance of not less than 50 feet beyond the limits of the production holes to be detonated.

19-4.04 PAYMENT

Rock excavation is measured as specified for roadway excavation in section 19-2.04.

The Department does not pay for holes that:

1. Fail to meet the alignment specified controls
2. Are drilled where the finish slope does not meet the slope tolerances specified

The Department pays only for holes that qualify as to alignment and slope finish and show a hole trace for approximately 50 percent of the drilled length.

The Engineer determines which presplit holes qualify for payment after excavation but before slope trimming or cleanup work.

Drill hole (presplitting) is measured by the theoretical slope length computed from elevations taken before detonating each lift and a plane 3 feet below finished grade. The Department does not pay for drilling more than 3 feet below finished grade unless additional drilling is ordered. For holes that produce an acceptable slope and comply with the tolerances, except alignment within the plane of the slope, the length paid for is 75 percent of the theoretical slope length.

December 16, 2015

Geotechnical Design Report for the Realignment of the Section
of State Route 94 from Church Road to Kumiyaay Road
EA 11-295204
ID 1100000392



December 16, 2015

Geotechnical Design Report for the Realignment of the Section
of State Route 94 from Church Road to Kumiyaay Road
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of State Route 94 from Church Road to Kumiyaay Road
EA 11-295204
ID 1100000392



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**PROJECT PLANS FOR CONSTRUCTION ON
 STATE HIGHWAY**
**IN SAN DIEGO COUNTY NEAR MANZANITA
 FROM CHURCH ROAD TO 0.1 MILE WEST OF
 KUMEYAAY ROAD**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

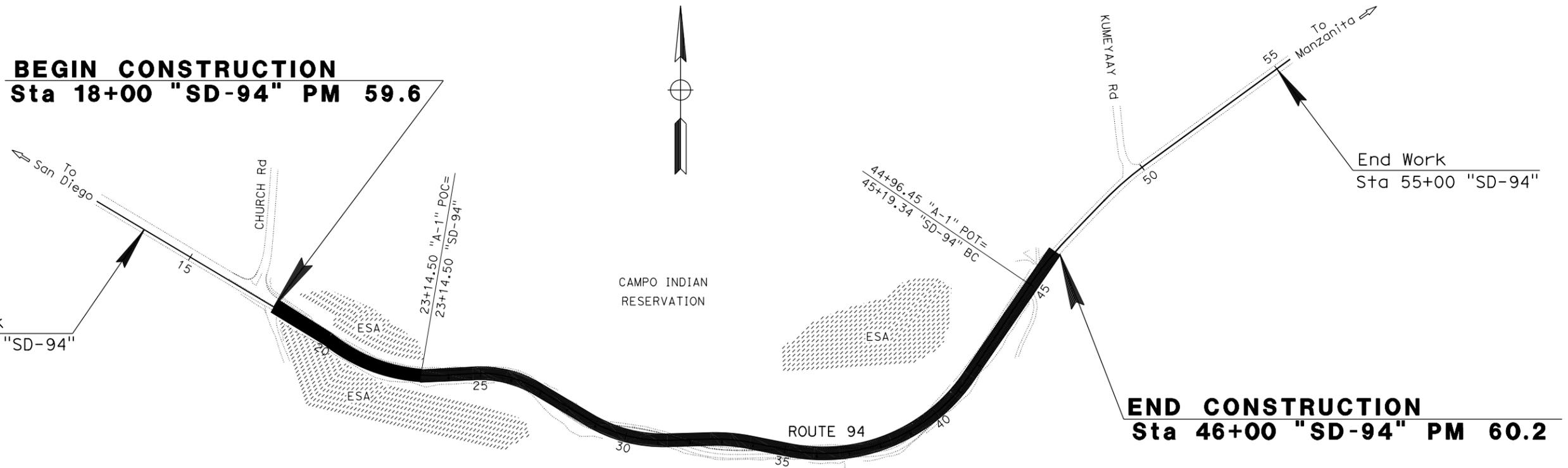
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|-----------------------------|--------------|-----------------|
| 11 | SD | 94 | 59.6/60.2 | | |

BEGIN CONSTRUCTION
 Sta 18+00 "SD-94" PM 59.6

Begin Work
 Sta 12+00 "SD-94"

End Work
 Sta 55+00 "SD-94"

END CONSTRUCTION
 Sta 46+00 "SD-94" PM 60.2



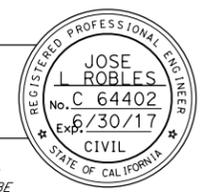
PROJECT MANAGER
 CHARLES GRAY

DESIGN MANAGER
 JOSE LUIS ROBLES

FIGURE 1
PROJECT LOCATION

ID: 1100000392 J TESAR 2015

PROJECT ENGINEER _____ DATE _____
 REGISTERED CIVIL ENGINEER



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

| | |
|--------------|-------------------|
| CONTRACT No. | 11-295204 |
| PROJECT ID | 1100000392 |

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

NO SCALE



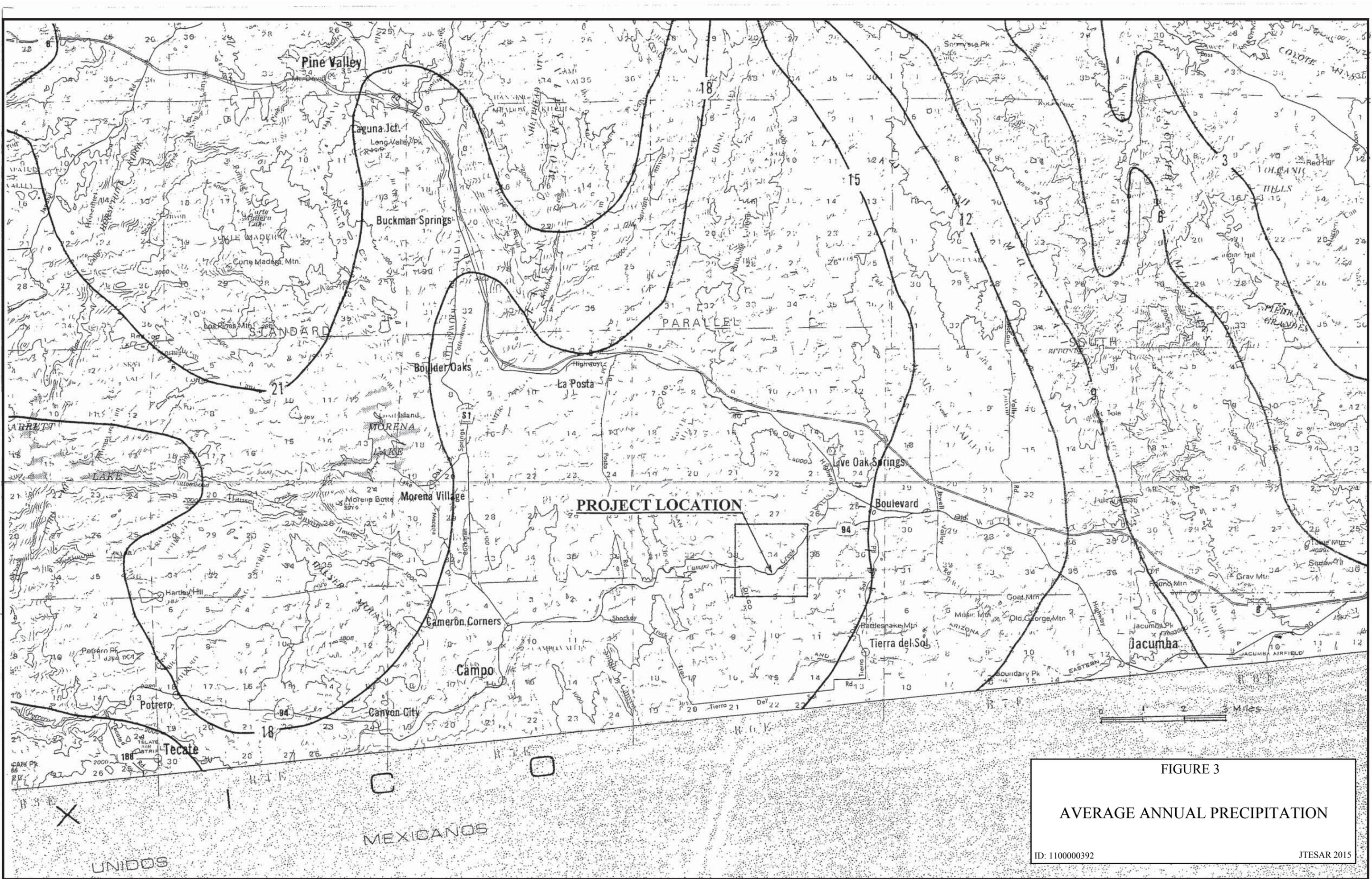
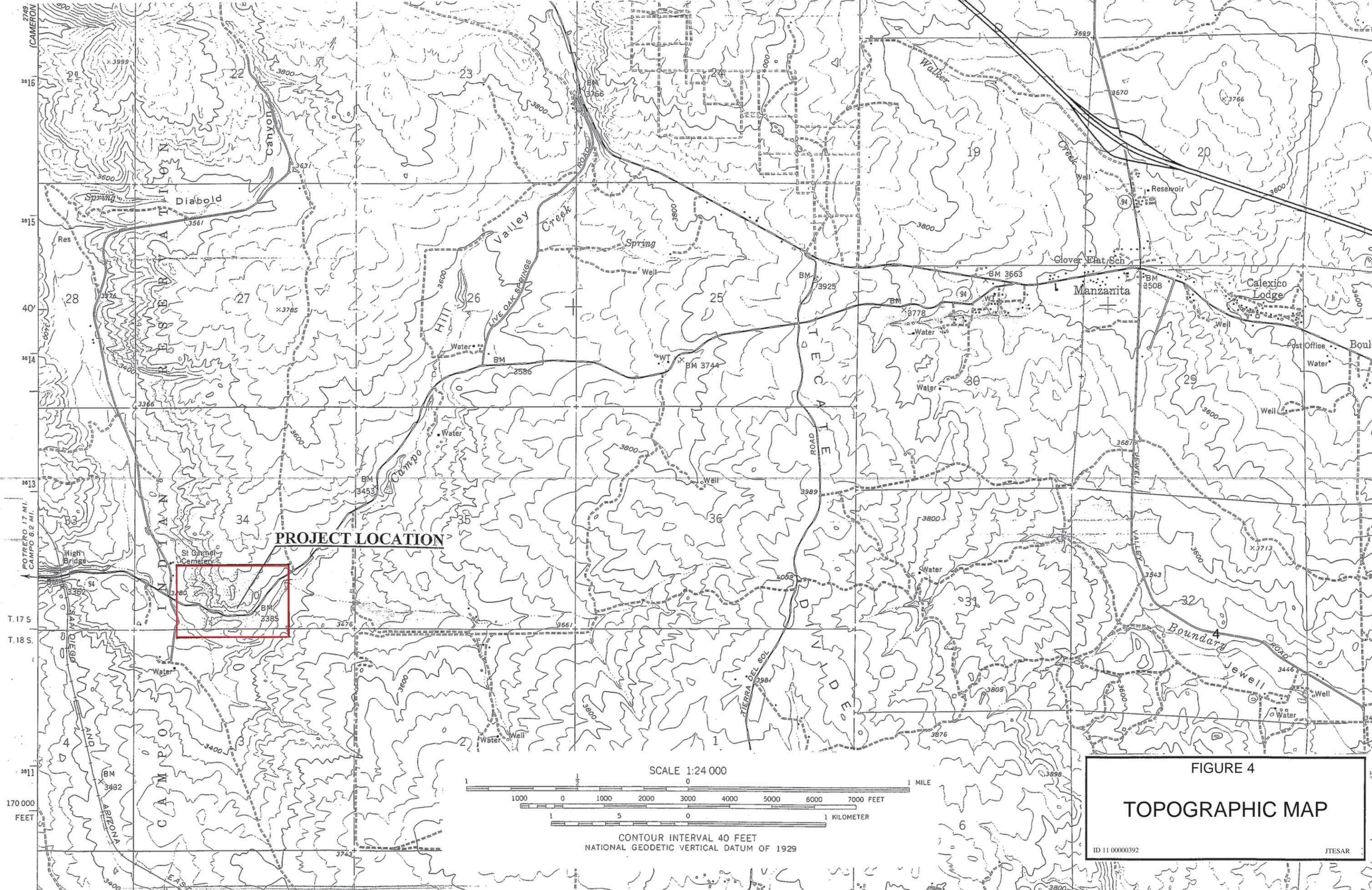
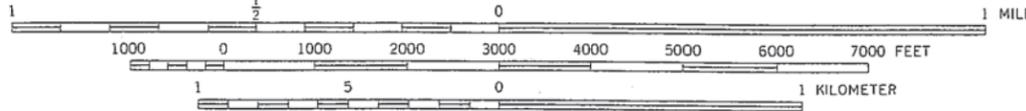


FIGURE 3
 AVERAGE ANNUAL PRECIPITATION
 ID: 1100000392 JTESAR 2015



PROJECT LOCATION

SCALE 1:24 000



CONTOUR INTERVAL 40 FEET
 NATIONAL GEODETIC VERTICAL DATUM OF 1929

FIGURE 4

TOPOGRAPHIC MAP

ID 11 00000392

JTESAR

| | | | | | |
|------|--------|-------|--------------------------|-----------|--------------|
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
| 11 | SD | 94 | 59.6/60.2 | | |

| | |
|---------------------------|------|
| REGISTERED CIVIL ENGINEER | DATE |
| JOSE L. ROBLES | |
| No. C 64402 | |
| Exp. 06-30-17 | |
| CIVIL | |

PLANS APPROVAL DATE

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

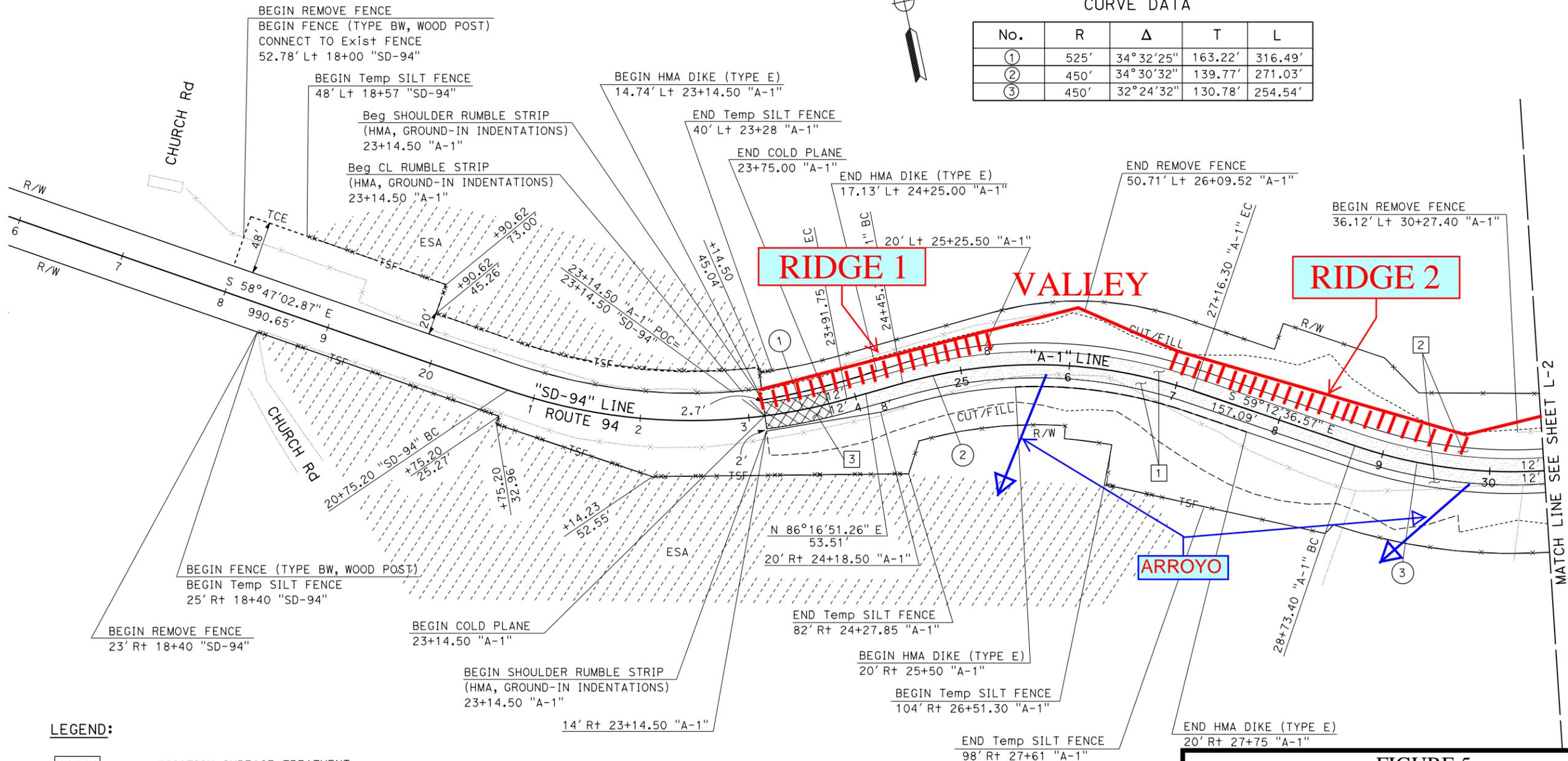
NOTES:

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- FOR EROSION CONTROL LEGEND, SEQUENCE/APPLICATION INFORMATION, AND QUANTITIES, SEE THE PLANT LIST SHEET.

CAMPO INDIAN RESERVATION

CURVE DATA

| No. | R | Δ | T | L |
|-----|------|-------------|---------|---------|
| ① | 525' | 34° 32' 25" | 163.22' | 316.49' |
| ② | 450' | 34° 30' 32" | 139.77' | 271.03' |
| ③ | 450' | 32° 24' 32" | 130.78' | 254.54' |



LEGEND:

- HIGH FRICTION SURFACE TREATMENT
- COLD PLANE AC PAVEMENT

FIGURE 5

PROJECT SITE TOPOGRAPHY

ID: 1100000392

J TESAR 2015

SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
 KENNY T. NGUYEN
 JOSE LUIS ROBLES
 CHARLES GRAY
 REVISIONS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

DATE PLOTTED => 07-MAR-2016
 TIME PLOTTED => 09:57
 LAST REVISION => 02-24-16

NOTES:

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

| | | | | | |
|------|--------|-------|--------------------------|-----------|--------------|
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
| 11 | SD | 94 | 59.6/60.2 | | |

REGISTERED CIVIL ENGINEER DATE _____
 JOSE L. ROBLES
 No. C 64402
 Exp. 06-30-17
 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.

CURVE DATA

| No. | R | Δ | T | L |
|-----|--------|-----------|---------|---------|
| ③ | 450' | 32°24'32" | 130.78' | 254.54' |
| ④ | 450' | 12°47'37" | 50.45' | 100.48' |
| ⑤ | 550' | 56°23'47" | 294.89' | 541.37' |
| ⑥ | 800' | 10°58'48" | 76.89' | 153.31' |
| ⑦ | 1,000' | 10°16'22" | 89.89' | 179.30' |

CAMPO INDIAN RESERVATION

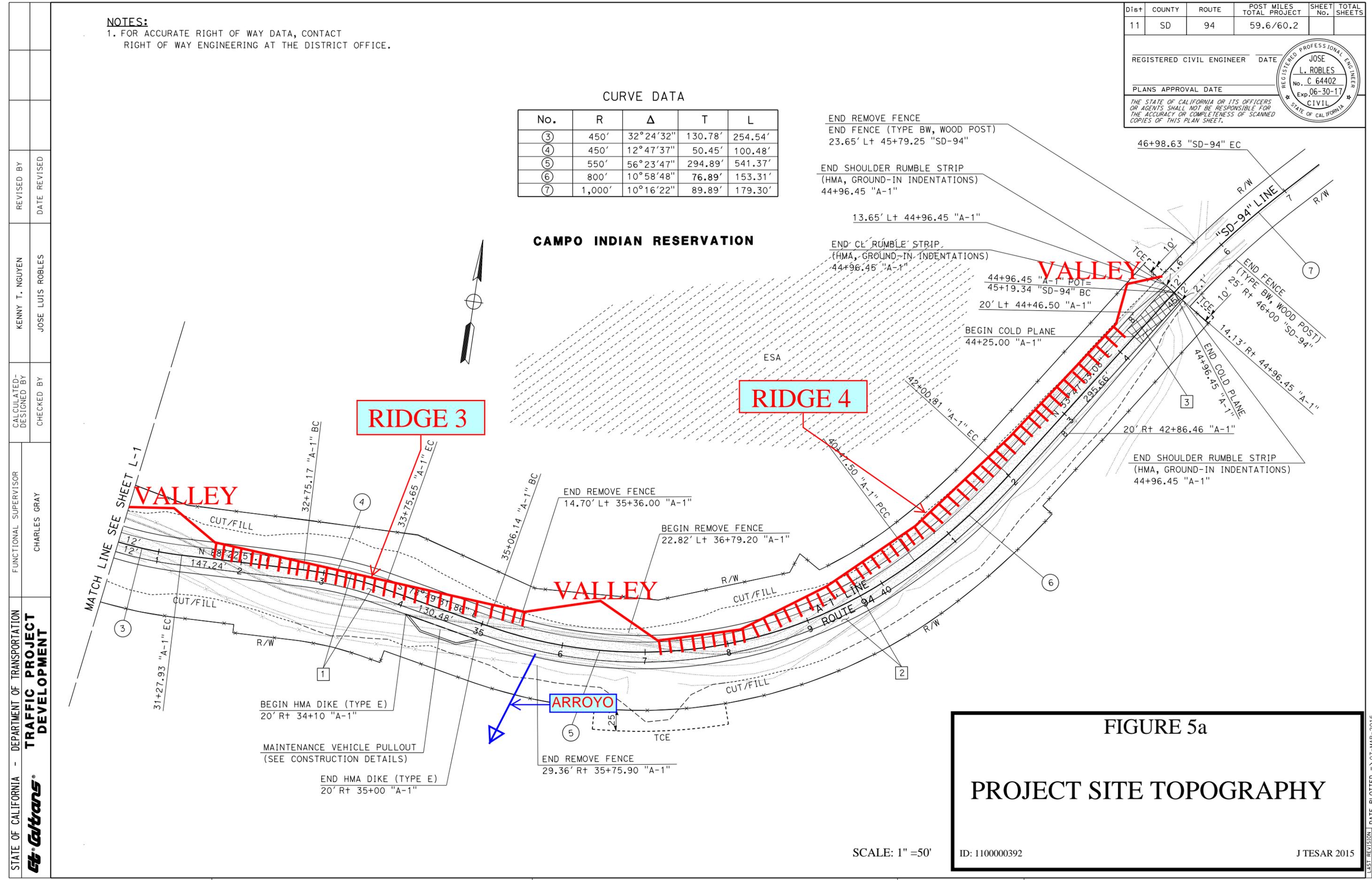
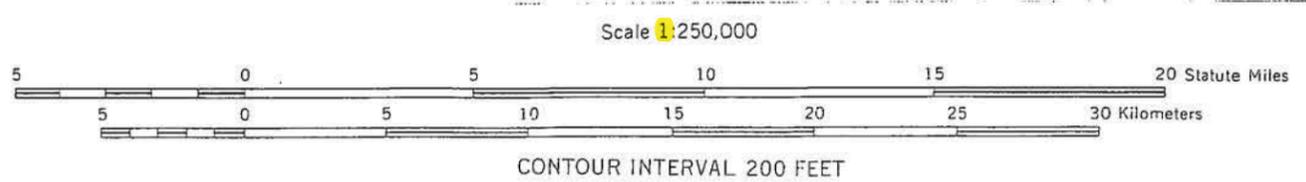
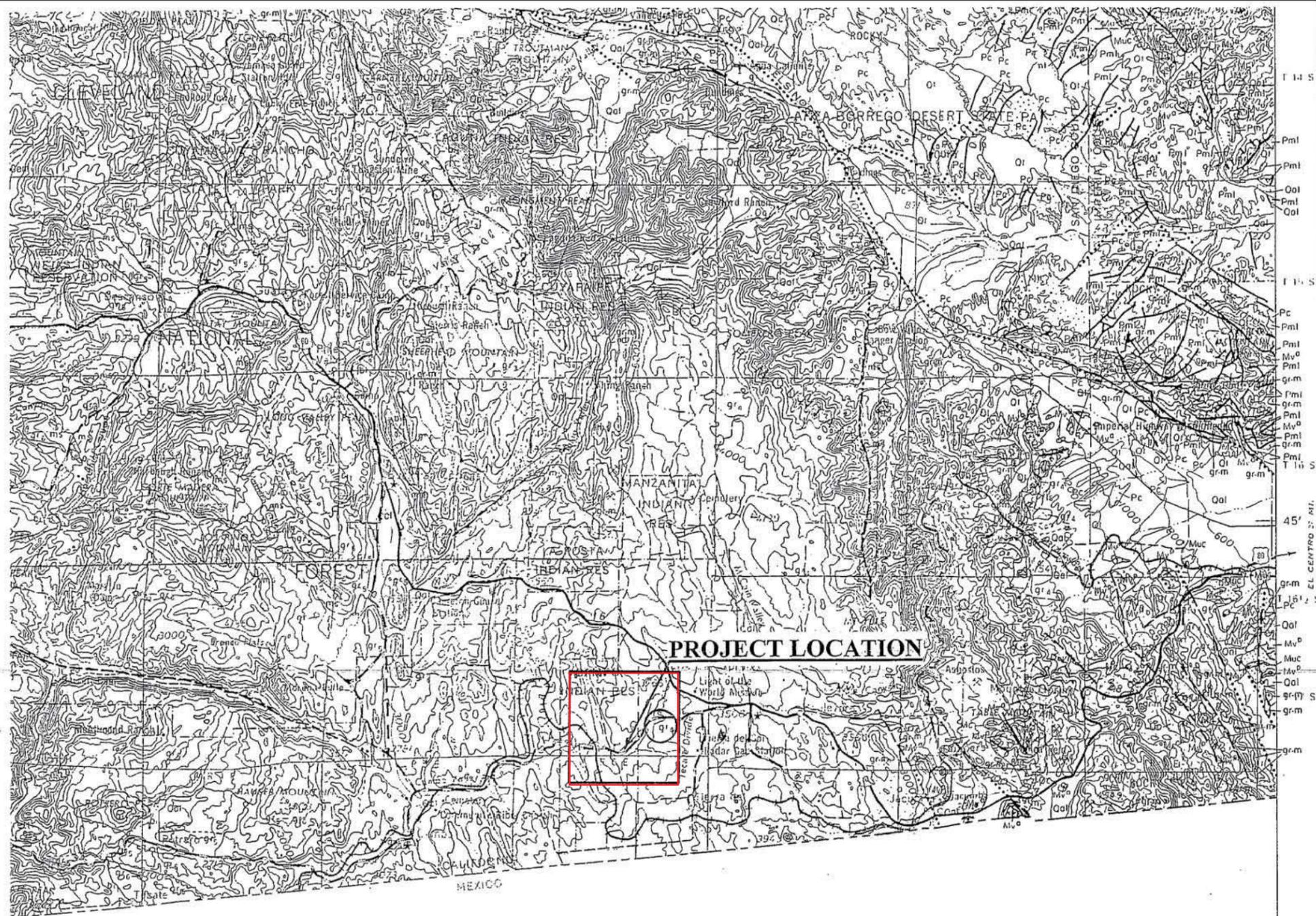


FIGURE 5a
PROJECT SITE TOPOGRAPHY
 ID: 1100000392
 J TESAR 2015



GEOLOGIC MAP OF CALIFORNIA
 OLAF P. JENKINS EDITION
SAN DIEGO-EL CENTRO SHEET
 COMPILATION BY RUDOLPH G. STRAND, 1962
 FOURTH PRINTING 1993

| | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|------------|------------|-------------------------------------|------------|-------------------------------------|---|---|--------------------------------|----------------------------------|--------------------------------|---|---------------------------------|----------|----------------------|----------------------|-----------|---------|---|----------|--|----------|------------|-----|-------------------------|
| MESOZOIC | CRETACEOUS | K | Undivided Cretaceous marine | PALEOZOIC | UNDIVIDED | Pre-Cretaceous metamorphic rocks (ls = limestone or dolomite) | Pre-Cretaceous metavolcanic rocks | | | | | | | | | | | | | | | | | |
| | | Ku | Upper Cretaceous marine | | | Pre-Cretaceous metasedimentary rocks | Pre-Cenozoic granitic and metamorphic rocks | | | | | | | | | | | | | | | | | |
| | | Jk | Lower Cretaceous marine | | | Paleozoic marine (ls = limestone or dolomite) | Paleozoic metavolcanic rocks | | | | | | | | | | | | | | | | | |
| | JURASSIC | Ju | Upper Jurassic marine | | | PERMIAN | Pm | Permian marine | Permian metavolcanic rocks | | | | | | | | | | | | | | | |
| | | Jm | Middle and/or Lower Jurassic marine | | | | C | Undivided Carboniferous marine | Carboniferous metavolcanic rocks | | | | | | | | | | | | | | | |
| | | Jt | Triassic marine | | | | Ps | Pennsylvanian marine | | | | | | | | | | | | | | | | |
| | PALEOZOIC | TRASSIC | FRANCISCAN FORMATION | | | F | FRANCISCAN FORMATION | DEVONIAN | Dm | Devonian marine | Devonian metavolcanic rocks | | | | | | | | | | | | | |
| | | | | | | | | | CARBONIFEROUS | Ms | Mississippian marine | | | | | | | | | | | | | |
| | | | | | | | | | | Dv | Devonian and pre-Devonian? metavolcanic rocks | | | | | | | | | | | | | |
| | | | | | | | | | | Ss | Silurian marine | | | | | | | | | | | | | |
| SILURIAN | | | | Ps | Pre-Silurian meta-sedimentary rocks | | | | Ps | Pre-Silurian metamorphic rocks | Ps | Pre-Silurian metavolcanic rocks | | | | | | | | | | | | |
| | | | | Or | Ordovician marine | | | | | | | | | | | | | | | | | | | |
| | | | | Cm | Cambrian marine | | | | | | | | | | | | | | | | | | | |
| CAMBRIAN | | | | ORDOVICIAN | SILURIAN | | | | DEVONIAN | PERMIAN | UNDIVIDED | CRETACEOUS | JURASSIC | TRASSIC | FRANCISCAN FORMATION | MESOZOIC | | | | | | | | |
| | | | | | | | | | | | | | | | | | Cm | Cambrian - Precambrian marine | pCg | Precambrian igneous and metamorphic rock complex | | | | |
| | | | | | | | | | | | | | | | | | Up | Undivided Precambrian metamorphic rocks pGg = gneiss, pCs = schist | Up | Undivided Precambrian granitic rocks | | | | |
| RECAMBRIAN | CAMBRIAN | ORDOVICIAN | SILURIAN | DEVONIAN | PERMIAN | UNDIVIDED | CRETACEOUS | JURASSIC | TRASSIC | FRANCISCAN FORMATION | MESOZOIC | JURASSIC | TRASSIC | FRANCISCAN FORMATION | MESOZOIC | UNDIVIDED | PERMIAN | CARBONIFEROUS | DEVONIAN | SILURIAN | CAMBRIAN | RECAMBRIAN | pCa | Precambrian anorthosite |
| | | | | | | | | | | | | | | | | | | | | | | | | Lp |

FIGURE 6
PROJECT GEOLOGY MAP
 ID: 110000392 JTESAR

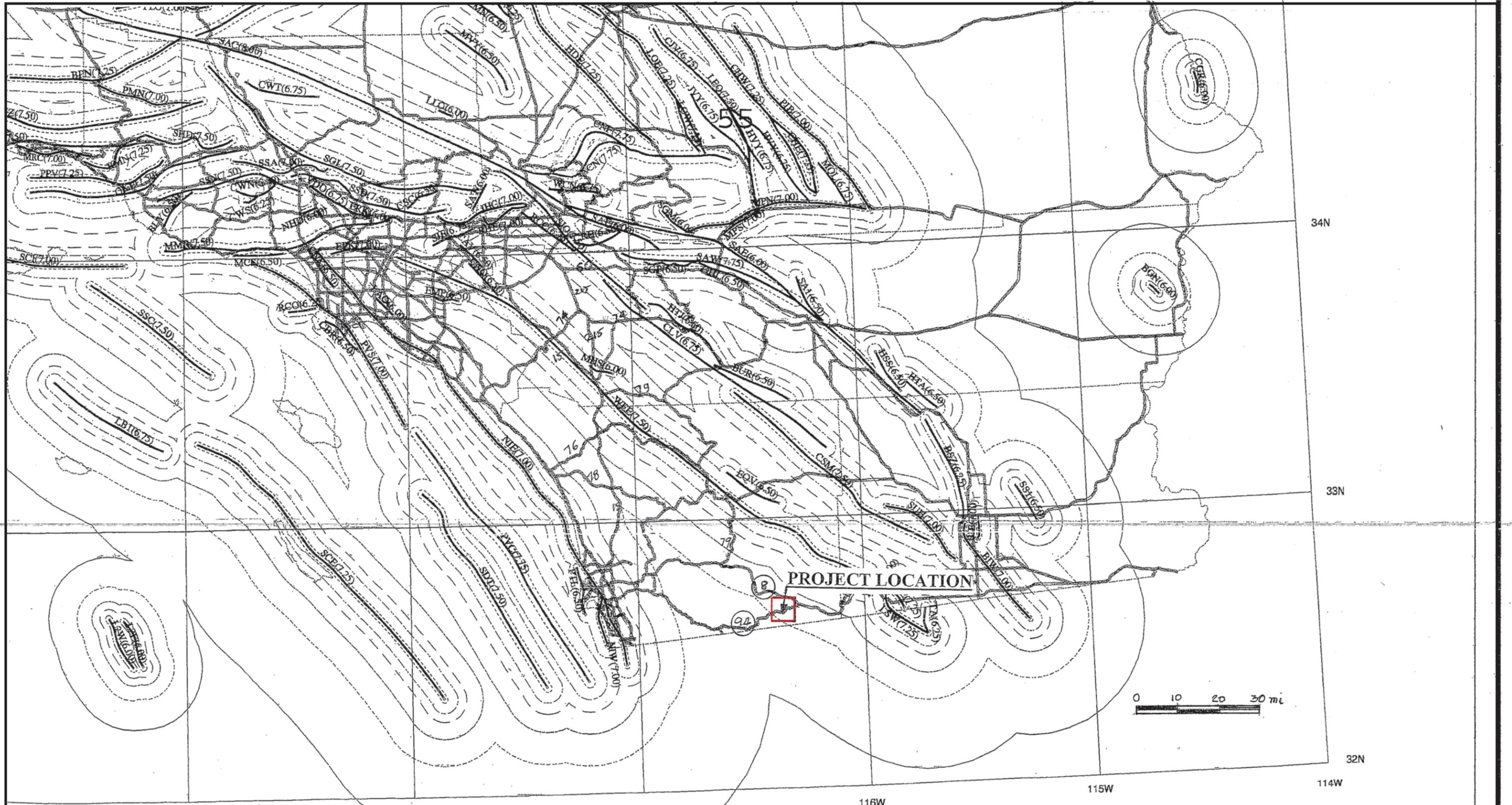


FIGURE 7
SEISMIC HAZARD DETAIL MAP

EA-11233-29520K

11-295201: WATER SOURCE LETTER

Decastro, Doni@DOT

From: Nunez, Cristina P@DOT
Sent: Monday, December 14, 2015 2:17 PM
To: Decastro, Doni@DOT
Subject: FW: Please confirm water is non-potable

From: Barbara Jacobs [mailto:dbwaterinc@cox.net]
Sent: Saturday, December 12, 2015 12:14 PM
To: Nunez, Cristina P@DOT
Subject: Re: Please confirm water is non-potable

Cristina,

The water located at 1108 West Imperial Hwy. Ocotillo Ca. is sold in bulk of construction purposes.
The water is not sold as potable water.

Sincerely,

Barbara Jacobs
D.B. Water inc.
858-342-0746

On Dec 10, 2015, at 3:59 PM, "Nunez, Cristina P@DOT" <cristina.nunez@dot.ca.gov> wrote:

Hi Barbara,

Please confirm that the water is non-potable.

Thank you,

Cristina Nunez
Traffic Operations
619-688-2583

From: Nunez, Cristina P@DOT
Sent: Wednesday, December 02, 2015 11:26 AM
To: 'Barbara Jacobs'
Subject: RE: Water Letter from Caltrans

Hi Barbara,

Please confirm that the water is non-potable.

Thank you,

Cristina Nunez
Traffic Operations
619-688-2583

From: Barbara Jacobs [<mailto:dbwaterinc@cox.net>]
Sent: Wednesday, December 02, 2015 9:44 AM
To: Nunez, Cristina P@DOT
Subject: Re: Water Letter from Caltrans

Dear,Cristina Nunez

Per you request , this letter is the confirmation of water availability for Caltrans project on SR-94 PM 59.7/60.2.

Your project is approved to receive up to 40,000 gallons of water per day (Excluding Sundays)

Water location;
1108 West Imperial Hwy
Ocotillo Ca. 92259

Truck parking is available per your request for your convenience.

Sincerely,
Barbara, Jacobs

DB Water Inc.
13318 Ann-O-Reno Ln.
Poway, Ca. 92064
858-342-0746

On Dec 1, 2015, at 5:29 PM, "Nunez, Cristina P@DOT" <cristina.nunez@dot.ca.gov> wrote:

Hi Barbara,

Per our conversation, please find attached water letter and plans I sent you on November 17, 2015.

Please confirm (in writing) the availability of the water that Caltrans is requesting for this project on SR-94 PM 59.7/60.2.

Thank you,

Cristina Nunez
Traffic Operations
619-688-2583

<295201_WaterSourceLetter.pdf>

Decastro, Doni@DOT

From: Nunez, Cristina P@DOT
Sent: Wednesday, December 02, 2015 10:08 AM
To: Decastro, Doni@DOT
Subject: FW: Water Letter from Caltrans

From: Barbara Jacobs [mailto:dbwaterinc@cox.net]
Sent: Wednesday, December 02, 2015 9:44 AM
To: Nunez, Cristina P@DOT
Subject: Re: Water Letter from Caltrans

Dear,Cristina Nunez

Per you request , this letter is the confirmation of water availability for Caltrans project on SR-94 PM 59.7/60.2.

Your project is approved to receive up to 40,000 gallons of water per day (Excluding Sundays)

Water location;
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Ocotilo Ca. 92259

Truck parking is avaiable per your request for your convienance.

Sincerely,
Barbara, Jacobs

DB Water Inc.
13318 Ann-O-Reno Ln.
Poway, Ca. 92064
858-342-0746

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Per our conversation, please find attached water letter and plans I sent you on November 17, 2015. Please confirm (in writing) the availability of the water that Caltrans is requesting for this project on SR-94 PM 59.7/60.2.

Thank you,

Cristina Nunez
Traffic Operations
619-688-2583

<295201_WaterSourceLetter.pdf>