

INFORMATION HANDOUT

For Contract No. 11-2T2504

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Project ID 1112000216

PERMITS

U.S. Fish and Wildlife Service Biological Opinion

MATERIALS INFORMATION

Geotechnical Design Report for the Investigation of Soil Conditions Beneath the Outside Shoulders of Interstate 805 Between Grove Street and Plaza Boulevard, dated December 12, 2013

Structural Section Recommendations, Dated April 3, 2013



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road, Suite 101
Carlsbad, California 92011



In Reply Refer To:
FWS-SDG-10B0002-11F0293

APR 19 2011

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

Attention: Susan Scatolini, Associate Environmental Planner

Subject: Formal Section 7 Consultation for the Interstate 805 South Managed Lanes Project,
San Diego County, California

Dear Ms. Smith:

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion based on our review of the Interstate 805 (I-805) South Managed Lanes Project and its effects on the federally threatened coastal California gnatcatcher (*Polioptila californica californica*, "gnatcatcher"), 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 Sections 6004 and 6005 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) 2005, as described in the National Environmental Policy Act Delegation Pilot Program Memorandum of Understanding between FHWA and Caltrans (effective July 1, 2007) and codified in Renewed 23 U.S.C. 326 and 23 U.S.C. 327.

Based on conservation measures committed to by Caltrans, we concur with your determination that the proposed project is not likely to adversely affect the federally endangered least Bell's vireo (*Vireo bellii pusillus*, "vireo") and light-footed clapper rail (*Rallus longirostris levipes* "rail") (Enclosure). The project will affect habitat types that are used by the vireo and rail, but project activities are not scheduled to commence on the phase of the project adjacent to vireo and rail occupied habitat within the Sweetwater River until approximately 2015-2018. Due to the expected delay between consultation with our agency and initiation of project impacts, Caltrans has agreed to conduct protocol surveys for the vireo and rail within 1 year prior to the commencement of vegetation clearing and construction activities for the project in suitable habitat for these species and to reinitiate consultation if either of the two species are observed within the project impact area.

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This biological opinion is based on information provided in: 1) *Biological Assessment, I-805 South Managed Lanes, Cities of San Diego, Chula Vista, National City CA* (Caltrans 2010 "BA"); 2) *Interstate 805 Managed Lanes South Project Draft Environmental Impact Report/ Environmental Assessment*; 3) a field meeting on March 3, 2011; and 4) other sources of information including survey reports and email correspondence. A complete project file of this consultation is maintained at the Carlsbad Fish and Wildlife Office (CFWO).

CONSULTATION HISTORY

On November 30, 2010, we received a letter from Caltrans requesting initiation of formal consultation on the proposed action, together with the BA. On March 3, 2011, representatives from Caltrans and the CFWO attended an onsite meeting to discuss the proposed project. On March 8, 2011, representatives from Caltrans and the CFWO met to discuss avoidance and minimization measures. Between March 14, 2011, and April 6, 2011, we received information we had requested regarding the management of the Sage Hills and Mendocino preserves.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

Using Federal funds provided through the FHWA, Caltrans proposes to widen the existing I-805 freeway between East Palomar Street and Landis Street in the cities of San Diego, Chula Vista, and National City and portions of unincorporated San Diego County (Figure 1). The project will result in the construction of four buffer-separated managed lanes (two lanes in each direction) and two high occupancy vehicle (HOV) lanes (one in each direction) in the freeway median. The managed lanes will be separated from the general purpose freeway lanes by a 1.2-meter-wide (4-foot-wide) painted buffer. The project also includes the construction of a HOV/transit direct connector ramp to State Route 15 (SR-15). Additional project features include construction of in-line transit stations at the East H Street overcrossing and at the East Plaza Boulevard undercrossing and a transit station on East Palomar Street with park and ride lots and a north-facing direct access ramp (DAR) at the East Palomar Street overcrossing. The project will also modify or replace some existing overcrossing and undercrossing structures and will construct noise and retaining walls at various locations. The project crosses the Sweetwater River and Chollas Creek. The total project length is approximately 18.3 kilometers (km) [11.4 miles (mi)]. Construction is proposed to begin in 2012 and be completed by 2020.

The project will permanently impact several scrub communities occupied by gnatcatchers, including 0.84 hectares (ha) [2.08 acres (ac)] of coastal sage scrub¹ (CSS), 1.24 ha (3.08 ac) of disturbed CSS, 0.02 ha (0.05 ac) of maritime succulent scrub², and 0.004 ha (0.01 ac) of

¹ Coastal sage scrub consists of several vegetation alliances and related associations, which includes the *Artemisia californica*, *Artemisia californica-Eriogonum fasciculatum*, and *Encelia californica* Alliances (Sproul et al 2011).

² Maritime succulent scrub, called the *Artemisia californica-Eriogonum fasciculatum-Opuntia littoralis/Dudleya (edulis)* Association, is part of the *Artemisia californica-Eriogonum fasciculatum* Alliance (Sproul et al 2011).

CSS/chaparral³. The project will temporarily impact other scrub communities occupied by gnatcatchers, including 0.05 ha (0.12 ac) of CSS, 1.23 ha (3.05 ac) of disturbed CSS, 0.004 ha (0.01 ac) of maritime succulent scrub, and 0.01 ha (0.02 ac) of CSS/chaparral. In addition, permanent impacts will occur to 0.32 ha (0.78 ac) of southern mixed chaparral⁴ and 1.31 ha (3.25 ac) disturbed southern mixed chaparral, and temporary impacts will occur to 0.59 ha (1.46 ac) of southern mixed chaparral and 0.89 ha (2.21 ac) of disturbed southern mixed chaparral. The project will result in the permanent loss of portions of three gnatcatcher territories (Caltrans 2010).

Conservation Measures

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

1. Permanent impacts to 2.11 ha (5.22 ac) and temporary impacts to 1.29 ha (3.2 ac) of gnatcatcher habitat and impacts to other native upland habitats on the site will be offset through the permanent conservation of 7.14 ha (17.65 ac) of CSS and MSS, including 2.05 ha (5.07 ac) at the Sage Hill Preserve and 5.09 ha (12.58 ac) at the Mendocino Preserve.
2. Both the Sage Hill and Mendocino preserves are owned and managed by the County of San Diego and have conservation easements in place in favor of the San Diego Association of Governments (SANDAG). These preserve lands were purchased with funding from the SANDAG's TransNet Environmental Mitigation Program (EMP), with approval from the CFWO, for use, in part, to offset the impacts of transportation infrastructure improvement projects funded by the TransNet Extension Ordinance, including the I-805 South Managed Lanes Project. An approved Memorandum of Agreement (MOA) among the SANDAG, Caltrans, CFWO, and California Department of Fish and Game outlines the roles and commitments of the organizations with regard to implementation of the EMP. Caltrans, under the EMP MOA, will ensure that perpetual management, maintenance, and monitoring plans are prepared and implemented for the Sage Hill and Mendocino preserves. Caltrans, under the EMP MOA, will ensure that non-wasting endowments for amounts approved by the CFWO based on Property Analysis Records (PAR) (Center for Natural Lands Management ©1998) or similar cost estimation methods are established to secure the ongoing funding for the perpetual management, maintenance and monitoring of the Sage Hill and Mendocino preserves. Caltrans, under the EMP MOA, will ensure that draft management plans including: 1) a description of perpetual management, maintenance, and monitoring actions and the PAR or other cost estimation results for the non-wasting endowment; 2) proposed land manager's name, qualifications, business

³ CSS/chaparral likely refers to the *Adenostoma fasciculatum*-(*Eriogonum fasciculatum*, *Artemisia californica*, *Salvia mellifera*) Association (Sproul et al 2011).

⁴ While southern maritime chaparral consists of several vegetation alliances, the *Adenostoma fasciculatum*-*Xylococcus bicolor* Alliance dominates this scrub community (Sproul et al 2011).

address, and contact information are submitted to the CFWO for review and approval. Caltrans will ensure that the final management plans are submitted to the CFWO and will coordinate with the CFWO to determine a mutually satisfactory solution for the establishment of endowments for perpetual management. Caltrans anticipates that the management plans will not be prepared prior to initiating project impacts; however, annual reports will be provided on their status until the final management plans have been provided and the endowments have been established, which will occur no later than December 1, 2014.

3. The clearing and grubbing of native upland habitats will occur from September 1 to February 14 to avoid the gnatcatcher breeding season [or sooner than September 1 if a biologist⁵ approved by the CFWO (“Project Biologist”) demonstrates to the satisfaction of the CFWO that all nesting is complete]. 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.
4. The Project Biologist will be on site during: a) initial clearing and grubbing; and b) weekly during project construction within 152.4 meters (m) [500 feet (ft)] of offsite gnatcatcher and wetland habitat to ensure compliance with all conservation measures. The Project Biologist will be familiar with the habitats, plants, and wildlife in the project area to ensure that issues relating to biological resources are appropriately and lawfully managed⁶. The Project Biologist will perform the following duties:
 - a. Perform a minimum of three focused surveys, on separate days, to determine the presence of gnatcatchers in the project impact footprint. Surveys will begin a maximum of 30 days prior to performing vegetation clearing/grubbing and one survey will be conducted the day immediately prior to the initiation of remaining work. If any gnatcatchers are found within the project impact footprint, the Project Biologist will direct construction personnel to begin vegetation clearing/grubbing in an area away from the gnatcatchers. In addition, the Project Biologist will walk ahead of clearing/grubbing equipment to flush birds towards areas of coastal sage scrub to be avoided. It will be the responsibility of the Project Biologist to ensure that gnatcatchers will not be injured or killed by vegetation clearing/grubbing. The Project Biologist will also record the number and location of gnatcatchers disturbed by vegetation clearing/grubbing. Caltrans will notify the CFWO at least 7 days prior to vegetation clearing/grubbing to allow the CFWO to coordinate with the Project Biologist on bird flushing activities;
 - b. Oversee installation of and inspect the construction fencing and erosion control measures within or up-slope of adjacent native habitat areas a minimum of once per week to ensure that any breaks in the fence or erosion control measures are repaired immediately;

⁵ The designated project biologist for this measure should be experienced in gnatcatcher biology and ecology.

⁶ The designated project biologist for this measure should be experienced in gnatcatcher biology and ecology.

- c. Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust;
 - d. Train all contractors and construction personnel on the biological resources associated with the projects and ensure that training is implemented by construction personnel. At a minimum, training will include: 1) the purpose for resource protection; 2) a description of the sensitive resources and their habitats; 3) the conservation measures that should be implemented during project construction to conserve the sensitive resources, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); 4) environmentally responsible construction practices; 5) the protocol to resolve conflicts that may arise at any time during the construction process; and 6) the general provisions of the Act, the need to adhere to the provisions of the Act, and the penalties associated with violating the Act;
 - e. Halt work, if necessary, and confer with the CFWO to ensure the proper implementation of species and habitat protection measures. The Project Biologist will report any non-compliance issue to the CFWO within 24 hours of its occurrence;
 - f. Submit monthly email reports (including photographs of impact areas) to Caltrans and the CFWO during clearing of gnatcatcher habitat and project construction. The monthly reports will document that authorized impacts were not exceeded and general compliance with all conditions. The reports will also outline the location of construction activities; the type of construction that occurred, and equipment used. These reports will specify numbers, locations, and sex of gnatcatchers (if observed), observed gnatcatcher behavior (especially in relation to construction activities), and remedial measures employed to avoid and minimize impacts to gnatcatchers. Raw field notes should be available upon request by the CFWO; and
 - g. Submit a final report to the CFWO within 120 days of project completion that includes: photographs of habitat areas that were to be avoided and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conservation measures was achieved. As-built construction drawings with an overlay of habitat that was impacted and avoided will be provided as well once they have been completed.
5. All native or sensitive habitats outside and adjacent to the permanent and temporary construction limits will be designated as Environmentally Sensitive Areas (ESAs) on project maps. ESAs will be temporarily fenced during construction with orange plastic snow fence, or in areas of permanent flowing water, with stakes and flagging. No personnel, equipment or debris will be allowed within the ESAs. Fencing and flagging will be installed in a manner that does not impact habitats to be avoided and such that it is

clearly visible to personnel on foot and operating heavy equipment. Caltrans will submit to the CFWO for approval, at least 5 days prior to initiating project impacts (except for impacts resulting from clearing to install temporary fencing), the final plans for initial clearing and grubbing of habitat and project construction. These final plans will include photographs that show the fenced and flagged limits of impact and all areas to be impacted or avoided. 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 will be removed upon project completion.

6. All pile driving for the project that will occur near habitats that support gnatcatchers will be conducted between September 1 and February 14 (or sooner than September 1 if the Project Biologist demonstrates to the satisfaction of the CFWO that all nesting is complete) to avoid the gnatcatcher breeding season and to minimize construction noise impacts to nesting gnatcatchers.
7. 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.
8. Appropriate best management practices (BMPs) will be used to control erosion and sedimentation. No sediment or debris will be allowed to enter creeks, rivers, or other drainages. All debris from the expansion of bridges will be contained so that it does not fall into rivers and creeks.
9. The project will construct detention basins in some of the loop ramps, and bioswales will be placed on many of the slopes to treat runoff from the freeway.
10. Caltrans will ensure that project landscaping does not include alien plant species listed on the California Invasive Plant Council's (Cal-IPC) "Invasive Plant Inventory" list. A copy of the complete list can be obtained from Cal-IPC's web site at <http://www.cal-ipc.org>.
11. Several invasive weed species currently grow within the right-of-way along I-805. Special care will be taken during transport, use, and disposal of soils containing invasive weed seeds. All heavy equipment will be washed and cleaned of debris prior to entering a new area to minimize the spread of invasive weeds.
12. Cut slopes adjacent to native habitats will be revegetated with native upland habitats with similar composition to those within the project study area. Fill slopes and areas adjacent to wetlands and drainages will be revegetated with appropriate native upland and wetland species. The revegetated areas will have temporary irrigation and will be planted with native container plants and seeds selected by the Project Biologist. At least 3 years of plant establishment/maintenance on these slopes is needed to control invasive weeds. Bioswales

will be planted with appropriate species as determined by the Project Biologist and storm water pollution prevention professional.

13. Duff from areas with coastal sage scrub and chaparral will be saved to aid in revegetating slopes with native species.
14. Rare plants will be salvaged where practicable for use in revegetation efforts.
15. All temporary impact areas will be revegetated and restored to pre-existing conditions. 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). Following the completion of construction activities, the restoration plan will be implemented for a minimum of 5 years, unless success criteria are met earlier and all artificial water has been off for at least 2 years.
16. Landscaping will not use plants that require intensive irrigation, fertilizers, or pesticides adjacent to preserve areas, and water runoff from landscaped areas will be directed away from adjacent native habitats and contained and/or treated within the development footprint.
17. Caltrans will submit a draft list of species to be included in the landscaping to the CFWO for approval. Caltrans will submit to the CFWO the final list of species to be included in the landscaping within 30 days of receiving approval of the draft list of species.
18. Contractors and construction personnel will strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint.
19. The project site will be kept as clean of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site.
20. Pets of project personnel will not be allowed on the project site.
21. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will occur within the fenced project impacts limits.
22. Impacts from fugitive dust will be avoided and minimized through watering and other appropriate measures.
23. If night work is necessary, night lighting will be of the lowest illumination necessary for human safety, selectively placed, shielded and directed away from natural habitats.

24. Cut and fill will be balanced within the project or the construction contractor will identify the source or disposal location. All spoils and material disposal will be disposed of properly.

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. Subsequent analyses of the environmental baseline, effects of the action, and levels of incidental take are based upon the action area. For this project, we have defined the action area to be the 18.3-km (11.4-mi) project site, which includes 3.74 ha (9.25 ac) of permanent and 2.78 ha (6.87 ac) of temporary impacts to sensitive native upland habitats and 0.43 ha (1.06 ac) of permanent and 1.07 ha (2.64 ac) of temporary impacts to wetland habitats. The action area also includes the surrounding habitat within about 150 m (500 ft), which may be exposed to project-related effects such as increased noise, light, and dust levels and human activity during project construction and operation of the facilities. In addition, the action area includes the Sage Hill and Mendocino preserves (Figure 2), which are located in the Elfin Forest Community in unincorporated San Diego County, California, approximately 48 km (30 mi) north of the project site.

STATUS OF THE SPECIES

The status of the gnatcatcher was described in detail in a biological opinion for the Caltrans-sponsored State Route 76 Melrose Drive to South Mission Highway Improvement Project, San Diego County, California (FWS-SDG-08B0136-08F0900, dated October 1, 2008); new information since that time is provided in the 5-year review for gnatcatcher (Service 2010). Please refer to these documents for detailed information on the life history requirements of the species, threats to the species, and conservation needs of the species.

Summary of Species' Distribution and Numbers Rangelwide

The gnatcatcher occurs in CSS and associated habitats from southern Ventura County to Baja California, Mexico. In 1993, the Service estimated that about 2,562 gnatcatcher pairs remained in the United States, with the highest densities occurring in Orange and San Diego counties (Service 1993). In a recent study using more rigorous sampling techniques, Winchell and Doherty (2008) estimated there were 1,324 (95 percent confidence interval: 976–1,673) gnatcatcher pairs over a 44,923-ha (111,006-ac) area on public and quasi-public lands in Orange and San Diego counties. Their sampling frame covered only a portion of the U.S. range, focusing on the coast, and was limited to 1 year. Although it is not valid to extrapolate beyond the sampling frame, especially in light of known differences in population densities across the range of the gnatcatcher (Atwood 1992), it is likely there are more gnatcatchers in the U.S. portion of the range than was suggested by earlier estimates; Winchell and Doherty (2008) estimated nearly as many gnatcatchers in the portion of the U.S. range sampled in their study as

was originally estimated for the entire U.S. range. We are not aware of any recent estimates of gnatcatcher populations in Baja California.

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 that are contemporaneous with the consultation in progress. The proposed project area contains areas of native upland habitat, including habitats that are suitable for the gnatcatcher. Fifteen gnatcatcher territories were documented within the Biological Study Area for the project during various biological surveys for the project (Caltrans 2010). Protocol surveys were conducted by John Konecny and Jim Rocks in 2006 (Caltrans 2010), and URS in 2007 (URS 2007). Portions of three gnatcatcher territories are located within the permanent impact area of the proposed project.

The Sage Hill Preserve consists of 10 parcels totaling 95 ha (234 ac). The preserve is located within the Pre-approved Mitigation Area of the proposed North County Multiple Species Conservation Program (MSCP) and is also identified by the adjacent northwestern San Diego County Multiple Habitat Conservation Program (MHCP) as a Core Gnatcatcher Conservation area. A 2001 Biological Technical Report for the Quail Ridge project, which was proposed for this site before it was acquired for conservation, documented the following plant communities: approximately 65 ha (160 ac) of CSS supporting between 7 and 11 pairs of gnatcatchers, coast live oak riparian forest, freshwater marsh, southern willow scrub, native grassland, and southern mixed chaparral, along with creek and riparian habitats (Helix Environmental Planning, Inc. 2001).

The Mendocino Preserve is a single parcel of 15.96 ha (39.44 ac) and is located within unincorporated San Diego County. The County of San Diego contributed half of the funding for the acquisition of the Mendocino Preserve; thus, half of the conservation acreage is reserved for the County. On the 7.98 ha (19.72 ac) of the Mendocino Preserve that is allocated to SANDAG, part of which will be conserved to offset the impacts of the I-805 South Managed Lanes Project, 7.47 ha (18.47 ac) of CSS are occupied by gnatcatchers (SANDAG 2010). The site also includes native and nonnative grassland, southern willow scrub, and mulefat scrub.

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, which will 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, are later in time, and still reasonably certain to occur.

Habitat Loss

Construction activities are not anticipated to result in the death or injury of any gnatcatchers or nests. A Project Biologist will be present to ensure that gnatcatchers are not directly killed or injured during vegetation removal and other construction activities. The clearing and grubbing of native habitats will be conducted outside of the breeding season (February 15 to August 31).

The project will result in a total of 2.12 ha (5.22 ac) of permanent impacts and 1.29 ha (3.2 ac) of temporary impacts to gnatcatcher habitat throughout the 18.3 km- (11.4 mi-) long project area. Permanent impacts consist of 0.84 ha (2.08 ac) of CSS, 1.24 ha (3.08 ac) of disturbed CSS, 0.02 ha (0.05 ac) of maritime succulent scrub, and 0.004 ha (0.01 ac) of CSS/chaparral. Temporary impacts consist of 0.05 ha (0.12 ac) of CSS, 1.23 ha (3.05 ac) of disturbed CSS, 0.004 ha (0.01 ac) of maritime succulent scrub, and 0.01 ha (0.02 ac) of CSS/chaparral.

Portions of three gnatcatcher territories are located within the permanent and temporary impact areas of the proposed project (Caltrans 2010). The project will result in the permanent loss of part of a gnatcatcher territory in Rice Canyon south of H Street and east of I-805, and part of a gnatcatcher territory located north of H Street and east of I-805 (Figure 3a). A small portion of a third gnatcatcher territory located east of I-805 and west of the Sweetwater River will also be permanently impacted (Figure 3b). Temporary impacts will also occur to small portions of these gnatcatcher territories.

At Rice Canyon, Caltrans estimates that permanent impacts will occur to approximately 5 percent, and temporary impacts will occur to approximately 10 percent of the pair's use area. North of H Street and east of I-805, Caltrans estimates that approximately 40 percent of the pair's use area will be permanently impacted, and 40 percent will be temporarily impacted. East of I-805 and west of the Sweetwater River, the pair's use area is farther from the project impact area, and Caltrans estimates that approximately 2 percent of the use area will be permanently impacted and 5 percent will be temporarily impacted.

Although habitat removal will be conducted outside the gnatcatcher nesting season, gnatcatchers are non-migratory territorial birds, and removal of a substantial portion of a gnatcatcher pair's breeding territory will force the pair to expand their existing territory or establish a new territory, particularly during the breeding season, when territorial boundaries are better defined (Preston et al. 1998). Because gnatcatchers are distributed throughout much of the suitable habitat in the project area (Caltrans 2010), it is likely that the gnatcatchers affected by habitat loss within their primary use areas will be forced to compete with resident gnatcatchers when attempting to expand an existing territory or establish a new territory.

The pair at Rice Canyon and the pair east of I-805 and west of the Sweetwater River will each experience the loss of only 15 and 7 percent of their use areas, respectively, over the short term, and these pairs may be able to survive project construction impacts within the remaining and/or adjacent habitat. However, even if these birds survive and successfully establish territories, they are expected to experience reduced productivity (e.g., delayed initiation or prevention of nest building, fewer nesting attempts per season, overall reduction in reproductive output) due to the overall reduced availability of foraging and breeding habitat and increased territorial interactions in the project area.

The pair located North of H Street and east of the I-805 will lose approximately 80 percent of its use area over the short term. Because these displaced birds likely will be less able to find suitable habitat to forage and shelter in, we anticipate they will be more vulnerable to predation and otherwise may die or be injured.

Following construction, all temporarily impacted habitats, including CSS, will be restored and are expected to be re-occupied by gnatcatchers. Since restored CSS usually takes a minimum of 4 to 5 years of growth before it is suitable for occupation by gnatcatchers (O'Connell and Erickson 1998, Miner et al. 1998), a temporal loss of CSS available to gnatcatchers will occur in the project area. This temporal loss likely will reduce the number and reproductive fitness of gnatcatchers in the project area. However, because large numbers of gnatcatcher pairs will be breeding in the intact habitat adjacent to the impact area, we do not anticipate that the temporary impacts will increase the risk of gnatcatcher extirpation in the area, and we expect that the temporarily impacted habitat will be re-occupied as soon as it is mature enough to support gnatcatcher breeding.

Overall, the loss of habitat for three gnatcatcher pairs over the short-term, and the permanent loss of habitat for one of these pairs will reduce the number of gnatcatchers that can be supported in the general project area. Impacts to three gnatcatcher pairs represent less than 1 percent of the rangewide estimate of gnatcatcher pairs, and gnatcatchers will continue to occupy the general project area; thus, the project is not expected to result in an appreciable reduction in the numbers, reproduction, or distribution of the species rangewide.

Caltrans will offset the permanent loss of gnatcatcher habitat [2.12 ha (5.22 ac)], and impacts to other native habitats on the site, through the preservation of 7.13 ha (17.65 ac) of gnatcatcher occupied CSS and maritime succulent scrub at the Sage Hill and Mendocino preserves.

Although conservation of gnatcatcher and upland habitat off the project site will not avoid or minimize impacts to the individual gnatcatchers impacted by the project, the offsite conservation will permanently protect a total of 7.13 ha (17.65 ac) of CSS and maritime succulent scrub and contribute to the conservation and recovery of the species.

Indirect Effects

Indirect effects include lighting associated with the project that will impact the adjacent gnatcatcher habitat. Light that alters natural light patterns in ecosystems can lead to increased predation, disorientation, and disruption of inter-specific interactions (Longcore and Rich 2004). If night work is necessary, night lighting will be of the lowest illumination necessary for human safety, selectively placed, shielded and directed away from natural habitats. This will minimize the impact of lighting on gnatcatcher behavior in adjacent habitat to the point where such effects are insignificant.

Noise and vibrations associated with the use of heavy equipment during construction and operations of the proposed facilities have the potential to disrupt gnatcatcher behaviors in adjacent habitat by masking intraspecific communication and startling birds (e.g., see Dooling and Popper 2007 for a discussion of observed effects of highway noise on birds). However, gnatcatchers that occupy habitats adjacent to the existing I-805 freeway are subjected to existing noise and vibration and continue to occupy the habitat. Ambient noise measurements taken along the project area range from 54 dB(A) L_{eq} to 80 dB(A) L_{eq} with the majority of measurements in the 60 dB(A) L_{eq} to 70 dB(A) L_{eq} range. Once construction is complete, project operations are anticipated to result in a minimal increase in existing noise levels of 1 dB(A) or less. Pile driving for the project that will occur near habitats that support gnatcatchers will be conducted outside of the gnatcatcher breeding season to minimize construction noise impacts to nesting gnatcatchers.

Additional indirect effects include an increase of erosion and sedimentation, introduction of invasive species, wildfire, and human encroachment. I-805 is an existing facility, so with the proposed conservation measures, any increase in habitat degradation associated with these factors is likely to be insignificant.

Effect on Recovery

The project is not anticipated to impede recovery of the gnatcatcher. As described above, the project will result in impacts to gnatcatchers and their habitats. However, the impacts are small relative to the amount of habitat and gnatcatcher territories rangewide (roughly 2,562 pairs). Furthermore, because substantial areas of occupied habitat will remain adjacent to the impact areas, and habitat restoration will be initiated immediately following construction, little risk exists that the project will extirpate any gnatcatcher populations in the project area. Permanent impacts to gnatcatchers and their habitat will be offset through the conservation of a total of 7.13 ha (17.65 ac) of CSS and maritime succulent scrub that will support the recovery of the species.

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 gnatcatchers.

CONCLUSION

After reviewing the current status of the gnatcatcher, the environmental baseline for the action area, 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 gnatcatcher. We reached this conclusion by considering the following:

- Adverse effects to the gnatcatcher will be avoided and minimized by implementation of the conservation measures identified in the "Project Description" of this biological opinion.
- The project will permanently impact only 2.12 ha (5.22 ac) of CSS and maritime succulent scrub out of many thousands of hectares (acres) of gnatcatcher habitat rangewide.
- The project will result in the temporary impact to only 1.29 ha (3.2 ac) of coastal sage scrub, but this scrub community will be restored, and within 4 to 5 years will again be suitable for habitat for gnatcatcher breeding and foraging.
- Permanent and temporary project-related habitat loss will impact up to three gnatcatcher pairs, which represents less than 1 percent of the roughly 2,562 pairs rangewide.
- Impacts to occupied gnatcatcher habitat will be offset by conserving 7.13 ha (17.65 ac) of occupied CSS and maritime succulent scrub at the Sage Hill and Mendocino preserves.
- With the proposed conservation measures, the project is not expected to have a long-term effect on the gnatcatcher or its habitat in the project area or rangewide and is not anticipated to impede recovery of the species.

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 or collect, or attempt to engage in any such conduct. Harm is further defined 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 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) of the Act, taking that is incidental to and not intended as part of the proposed 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. If Caltrans fails to implement the 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

The take threshold for gnatcatchers is based on the number of gnatcatcher pairs and the amount of occupied habitat impacted. If the take threshold is exceeded, it will trigger reinitiation of consultation. Take of gnatcatcher is authorized as follows:

- Take in the form of harm of up to 3 gnatcatcher pairs is authorized due to the permanent removal of 2.12 ha (5.22 ac) of CSS and maritime succulent scrub and the temporary removal of 1.29 ha (3.2 ac) of CSS and maritime succulent scrub. The take threshold will be met if more than the specified amount of habitat or more than three gnatcatcher territories are impacted.

EFFECT OF TAKE

In the accompanying biological opinion, we determined that this level of anticipated take is not likely to result in jeopardy to the gnatcatcher.

REASONABLE AND PRUDENT MEASURES

Caltrans will implement conservation measures as part of the proposed action to minimize the incidental take of gnatcatchers. 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 gnatcatchers:

1. Caltrans will monitor and report on compliance with established take thresholds for gnatcatchers 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 terms and conditions which implement the reasonable and prudent measures described above.

- 1.1 Prior to initiating the proposed project, the Project Biologist will conduct a single-pass survey of the project site to verify that no more than three gnatcatcher territories (total) will be substantially impacted by the project. Three preconstruction surveys will be conducted within all suitable gnatcatcher habitat within the footprint for the project, within 30 days prior to initiation of vegetation removal activities. Prior to initiating the project, Caltrans will provide to the CFWO a map showing the distribution of gnatcatchers relative to the project footprint, an estimate of the number of gnatcatcher territories that will be impacted by the project, and the cumulative total of gnatcatcher territories impacted by the project, or confirm in writing that maps, distribution information, and the number of territories that will be impacted by the project as shown in the BA remain correct.
- 1.2 Caltrans will notify the CFWO within 30 days of completing removal of gnatcatcher occupied habitat. The purpose of this notification is to ensure that impacts to gnatcatcher-occupied habitat from the proposed project do not exceed the take thresholds.

DISPOSITION OF SICK, INJURED, OR DEAD SPECIMENS

Upon locating dead, injured, or sick individuals of threatened or endangered species, initial notification must be made to our Division of Law Enforcement in either San Diego, California, at (619) 557-5063 or in Torrance, California, at (310) 328-6307 within 3 working days. Notification should also be sent by telephone and writing to this office in Carlsbad, California, at 6010 Hidden Valley Road, Suite 101, Carlsbad, California 92011, (760) 431-9440. Written notification must be made within 5 calendar days and include the collection date and time, the location of the animal, and any other pertinent information. Care must be taken in handling sick or injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. The remains of intact specimens shall be placed with educational or research institutions holding the appropriate State and Federal permits. Remains shall be placed with the San Diego Natural History Museum, San Diego. Arrangements regarding proper disposition of potential museum specimens shall be made with the institution by the authorized biologist prior to implementation of the action.

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 conservation recommendations that would provide further benefit to the gnatcatcher in the action area of the project.

REINITIATION NOTICE

This concludes formal consultation regarding the I-805 South Managed Lanes Project as outlined in materials submitted to us. 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; and (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,

A handwritten signature in black ink, appearing to read "Jim A. Bartel". The signature is fluid and cursive, with the first name being the most prominent.

Jim A. Bartel
Field Supervisor

Enclosure

LITERATURE CITED

- Atwood, J. L. 1992. A maximum estimate of the California gnatcatcher's population size in the United States. *Western Birds* 23:1-9.
- Caltrans. 2010a. Biological assessment, I-805 South Managed Lanes, cities of San Diego, Chula Vista, National City, CA. 30+pp.
- Caltrans. 2010b. Interstate 805 Managed Lanes South project draft environmental impact report/ environmental assessment.
- Dooling, R. J. and A. N. Popper. 2007. The effects of highway noise on birds. Prepared by Environmental BioAcoustics LLC for the California Department of Transportation, Sacramento, California. 74 pp.
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- Longcore, T. and C. Rich. 2004. Ecological light pollution. *Front Ecological Environment* 2(4):191-198.
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- O'Connell, M. and R. Erickson. 1998. An example of the California gnatcatcher nesting in restored coastal sage scrub. *Western Birds* 29:434-438.
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- San Diego Association of Governments (SANDAG). 2010. Request for Letter of Concurrence and Commitment on Zamudio, Mendocino, and Pardee Carmel Valley TransNet Mitigation Sites. 3+pp.
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- URS. 2007. 45-day report for California gnatcatcher surveys along I-805 at Sweetwater River and Otay River San Diego County, California. 7 pp.
- U.S. Fish and Wildlife Service (Service). 1993. Endangered and threatened wildlife and plants; Determination of threatened status for the coastal California gnatcatcher; Final Rule. *Federal Register* 58:16742-16757.

U.S. Fish and Wildlife Service (Service). 2010. Coastal California gnatcatcher (*Polioptila californica californica*) 5-year review: Summary and evaluation. Prepared by the Carlsbad Fish and Wildlife Office, Carlsbad, California. 51 pp.

Winchell, C. S. and P. F. Doherty. 2008. Using California gnatcatcher to test underlying models of habitat conservation plans. *Journal of Wildlife Management* 72:1322–1327.

ENCLOSURE

The following information supports the U.S. Fish and Wildlife Service's (Service) concurrence with Caltrans' "not likely to adversely affect" determination for the federally endangered least Bell's vireo (*Vireo bellii pusillus*, "vireo") and light-footed clapper rail (*Rallus longirostris levipes* "rail") in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), for the I-805 South Managed Lanes Project, San Diego County, California.

One vagrant male vireo was observed in 2006 east of I-805 and west of Plaza Bonita Road (URS 2006). A second singing male was observed in 2010 west of I-805 approximately 457+ meters (m) [1500+ feet (ft)] from the I-805 Sweetwater Bridges on three occasions (Caltrans 2010) (Figure 3b). The closest suitable habitat for vireo is approximately 73 m (240 ft) from the project impact area (Caltrans 2010). Although no breeding vireo have been observed close to the project impact area in several years, there is potential for project construction to affect vireo in the adjacent habitat (i.e., effects associated with noise, light, and contaminant run-off). However, Caltrans will implement measures (below) to avoid and minimize such impacts to an insignificant level.

Rail pairs have consistently been found approximately 122 m (400 ft) to the east and between 30.5 m (100 ft) and 213 m (700 ft) west of the project's Sweetwater Bridge temporary impact area, within patches of freshwater marsh habitat that are outside of the project impact area (Konecny 2006, Caltrans 2010) (Figure 3b). The project will temporarily remove 0.18 hectare (ha) [0.45 acres (ac)] of freshwater marsh habitat; however, this impact will occur within a very small habitat fragment that is not occupied by rails and is far-removed from the occupied Sweetwater River habitat. While the project will not result in the removal of any rail habitat, there is potential for construction to affect rails in the adjacent habitat (i.e., effects from noise, light, contaminant run-off, and loss of connectivity). However, Caltrans will implement the conservation measures identified below to avoid and minimize such impacts to an insignificant level.

Caltrans has agreed to remove native wetland vegetation during the non-breeding season to ensure that no potential exists for the project to affect vireo and rail breeding. Since project activities are not scheduled to commence on the phase of the project adjacent to vireo and rail occupied habitat within the Sweetwater River until approximately 2015-2018, Caltrans has agreed to conduct protocol surveys for the vireo and rail within 1 year prior to the commencement of vegetation clearing and construction activities for the project in suitable habitat for these species and to reinitiate consultation should they be observed within the project impact area.

The conservation measures identified below have been incorporated into the project to minimize the effects of the project on vireos and rails in the adjacent habitat. In addition, measures in the biological opinion to minimize impacts to the federally threatened coastal California gnatcatcher

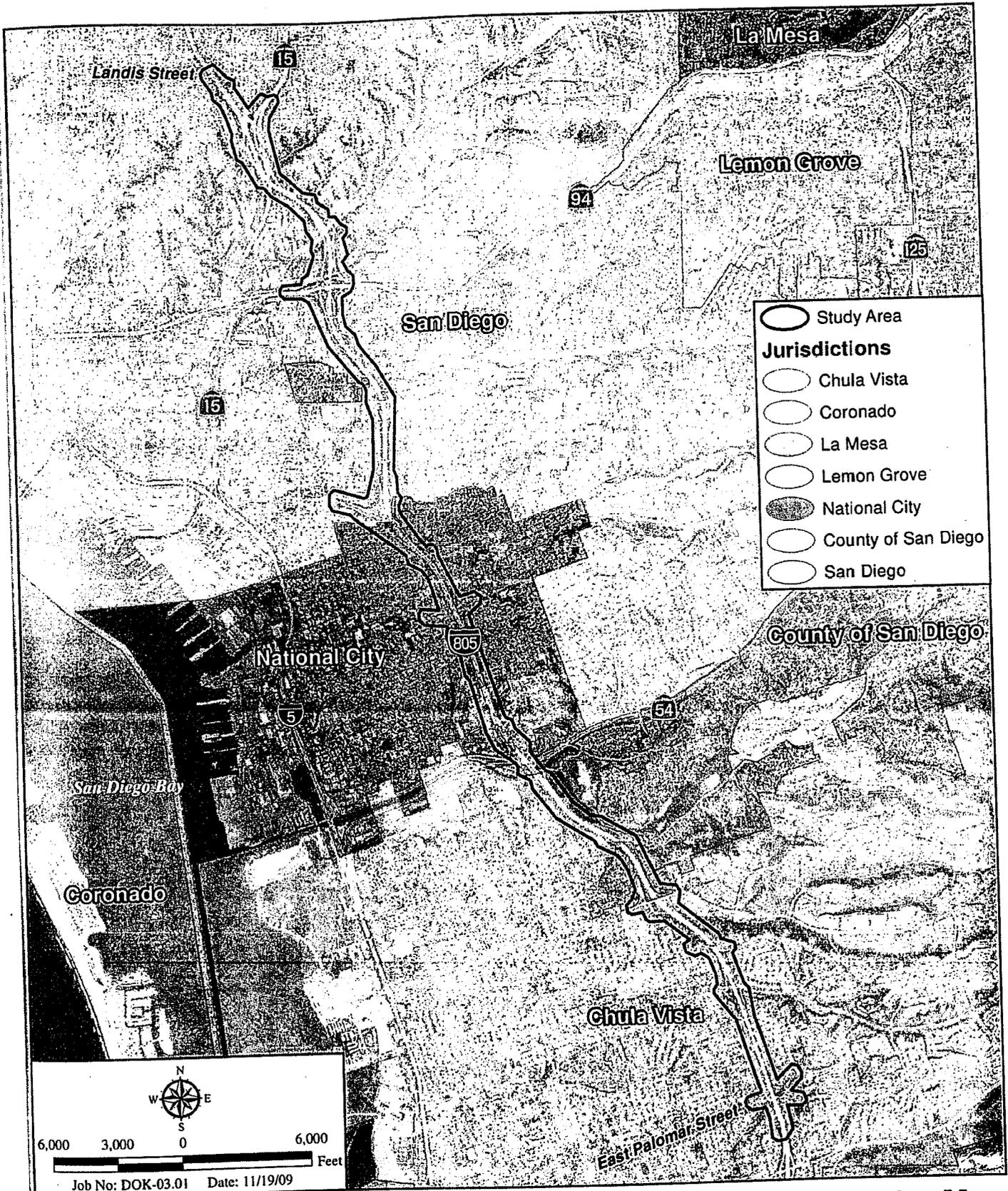
(*Polioptila californica californica*) (i.e., fencing and flagging, biological monitoring, restoration of temporary impact areas) will also minimize project impacts on vireos and rails in the adjacent habitat. The numbering below is a continuation of the numbering of the conservation measures in the associated biological opinion for ease of reference by Caltrans.

25. Permanent impacts to 0.43 ha (1.06 ac) and temporary impacts to 1.07 ha (2.64 ac) of wetland communities (southern willow scrub, freshwater marsh, disturbed wetland, unvegetated channel) will be offset through the purchase of a total of 1.42 ha (3.52 ac) of wetland credits at the Rancho Jamul Mitigation Bank.
26. The clearing and grubbing of native wetland habitats will occur from September 16 to March 14 to avoid impacts to nesting birds.
27. Fueling of construction equipment will only occur at a designated area at a distance of greater than 30 m (100 ft) from drainages and associated plant communities to preclude adverse water quality impacts.
28. To minimize noise impacts to vireo and rail breeding during construction, all pile driving at the Sweetwater River will be completed between September 16 and March 14. In addition, should construction occur within or adjacent to the Sweetwater River riparian corridor during the March 15 to September 15 nesting season, all construction equipment, fixed or mobile, will be equipped with properly operating and maintained mufflers.
29. No night work will occur at the Sweetwater River during the March 15 to September 15 nesting season. If night work is necessary at the Sweetwater River outside of the nesting season, night lighting will be of the lowest illumination necessary for human safety, selectively placed, shielded and directed away from natural habitats;
30. At the Sweetwater River, tall equipment that is not in active use will be stored under the bridge or will be fitted with bird control spikes to ensure that raptors will not be able to use it as a perch to prey on listed bird species.
31. Caltrans will coordinate with the Service's Carlsbad Fish and Wildlife Office regarding the design of the Sweetwater River bridge supports to ensure that the undercrossing maintains the maximum feasible amount of light and openness (e.g., openings in bridge bents) for rail movement between occupied habitat east and west of the bridge.

With incorporation of these proposed conservation measures, potential impacts to vireo and rail will be minimized to the point where such effects are insignificant. Based on the current survey information and the conservation measures proposed by Caltrans, the Service concurs with Caltrans' determination that the project, as proposed, is not likely to adversely affect vireo and rail.

LITERATURE CITED (ENCLOSURE)

- Caltrans. 2010. Biological Assessment, I-805 South Managed Lanes, Cities of San Diego, Chula Vista, National City, California. 30+pp.
- Konecny Biological Services. 2006. Results of focused surveys for the light-footed clapper rail and California black rail for the SANDAG Interstate-805 project, San Diego County, California. 9 pp.
- URS. 2006. 45-day report for southwestern willow flycatcher surveys along I-805 at Los Penasquitos, Sweetwater River, and Otay River, San Diego County, California. 11+ pp.



Project Vicinity Map

I-805 MANAGED LANES SOUTH PROJECT

Figure 1

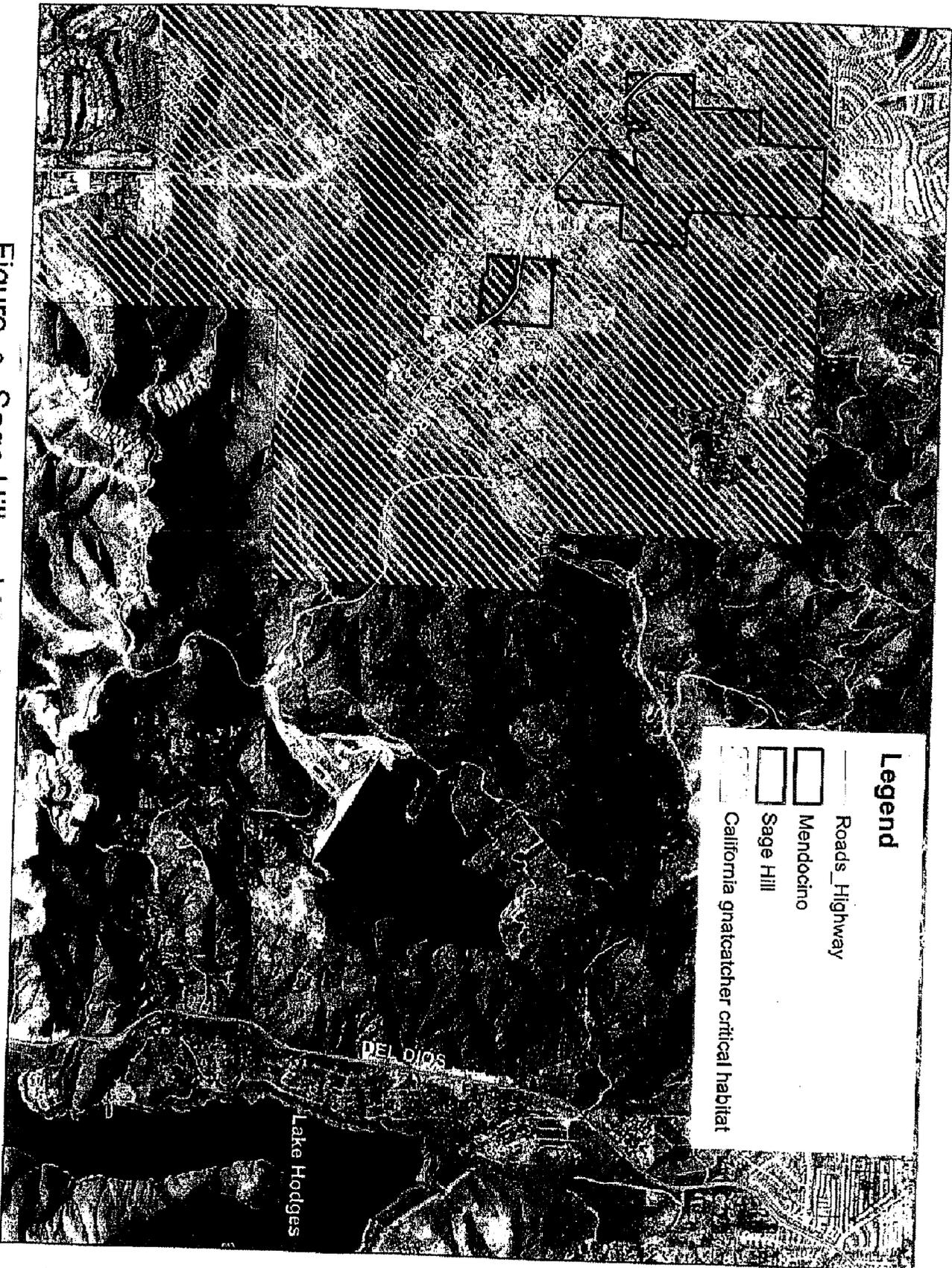


Figure 2 Sage Hill and Mendocino Preserves





Figure 3a Threatened and Endangered Species and Impact Areas



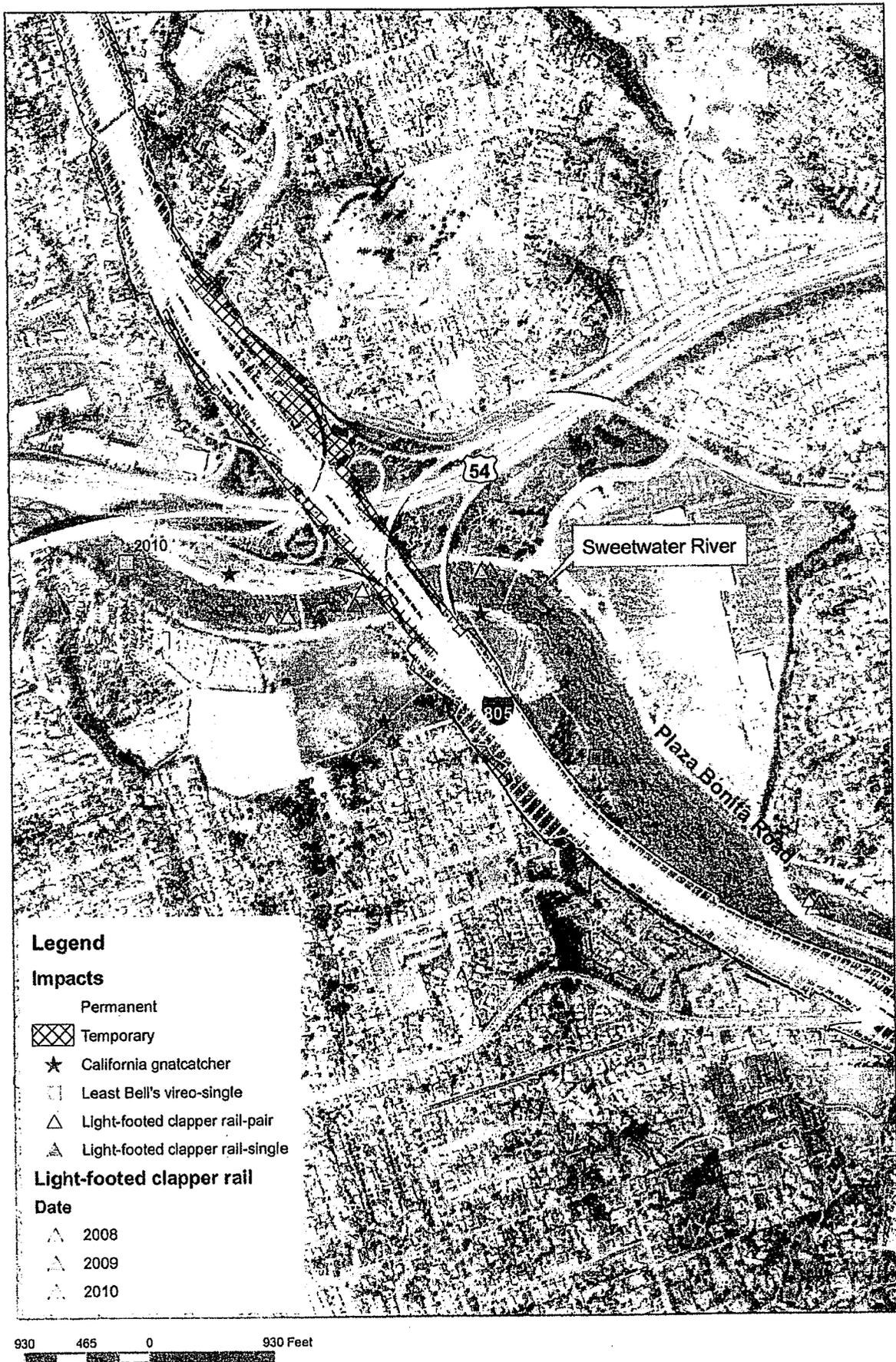


Figure 3b Threatened and Endangered Species and Impact Areas

Memorandum

*Flex Your Power!
Be energy efficient!*

To: Hanh-Dung Khuu
Project Engineer
I-805/SR-52 Corridor,
District 11

Date: December 12, 2013
File: 11-SD-805-9.5/10/3
11-2T250
1112000216

From: **DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Geotechnical Services
Office of Geotechnical Design – South 2, Branch D

Subject: Geotechnical Design Report for the Investigation of Soil Conditions Beneath the Outside Shoulders of Interstate 805 between Grove Street and Plaza Boulevard.

General

Pursuant to your request, a geotechnical subsurface investigation has been conducted for the section of the Interstate 805 (I-805) from Station 533+00 to 575+12 as shown on the attached typical Project Location Plan. It is our understanding that along this section the freeway is planned to be widened. The subsurface soil investigation was requested to evaluate near surface soil conditions and provide recommendations to mitigate any adverse conditions that may exist. This investigation included a review of the project related literature and archived reports, site reconnaissance, subsurface investigation, and the preparation of this memorandum. Photos depicting the project site are provided in Attachment 4.

Subsurface Investigation

The subsurface investigation that was conducted in November 2013, consisted of drilling 34 hand augers to depths ranging from 2.5 to 9.0 feet below the ground surface. Soils encountered during drilling were logged and field index tested. No groundwater was encountered in any of the borings. Table 1 provides boring data and description of the subsurface soil conditions per Caltrans Soil and Rock Logging, Classification, and Presentation Manual of 2010. Boring locations are provided on Boring Location Plans and are attached.

Site Geology

The project alignment is underlain by the Quaternary age Bay Point Formation (Qbp) and unnamed, near shore marine sandstone (Qn) (Kennedy and Tan, 1977). The Bay Point Formation is composed of marine, lagoonal, and nonmarine, poorly consolidated, fine and medium-grained, pale brown sandstone. The unnamed, near shore marine sandstone is composed of light brown, fine-grained, well and poorly sorted sandstone. This geologic unit is similar in composition and appearance to the Bay Point Formation.

The northern section of the project alignment is underlined by fill materials associated with the construction of the Paradise Creek culvert and the construction of the Plaza Boulevard Undercrossing.

Subsurface Soil Conditions

Some sections of the freeway are underlain by clays, silts, and clayey sands. These soils are currently wet and exhibit plastic soil properties or become plastic when hydrated and disturbed.

North bound I-805 segment

From about Station 538+50 to 545+50, the eastern shoulder of the traveled way is underlain by about 1.0 to 1.5 feet thick layer of fill materials that in turn is underlain by native soils. Fill materials consist of sands and gravels with trace of cobbles. Native soils consist of lean clays, clayey sands, and elastic silts that became plastic when hydrated and disturbed.

From approximately Station 556+40 to 557+00, the eastern shoulder of the traveled way is paved with a 0.3 foot thick layer of the Asphalt Concrete pavement. This pavement is underlain by a layer of highly plastic lean clay. At the depth of 1.0 foot this clay layer is underlain by sands with gravels. Within this interval, the existing pavement is heavily broken and several potholes were observed on its surface. Excess moisture was observed on the surface of the shoulder. Water appears to be seeping into the subgrade possibly from the nearby irrigation system.

From about Station 561+50 to 563+05, the eastern shoulder of the traveled way is underlain by about a 1.0 foot thick layer of sand fill material that in turn is underlain by native soils. The native soils consist of silts and silty sands that become plastic when hydrated and disturbed.

The remaining section of the eastern shoulder is underlain by native soils consisting of sands, gravels, and locally cobbles.

South bound I-805 segment

From about Station 553+50 to 559+00, the western shoulder of the traveled way is underlain by native soils consisting of sands and gravels.

From about Station 559+00 to 570+00, the western shoulder of the traveled way, including the onramp from Plaza Blvd to SB I-805, is generally underlain by clays, silts and clayey sands. In several borings these clayey soils were found to be moist or wet and plastic. In other borings these soils were found to be dry. When moisture was introduced to the dry soils during field index testing they become plastic, often highly plastic.

From about Station 570+00 to 574+50, the western shoulder of the traveled way is underlain by fill materials consisting of sands and gravels.

Conclusions

During the construction of I-805, along the southern section of the project interval, a relatively deep through-cut was excavated in the native formational soils. As a result, this section of the freeway is generally underlain by good quality native soils. However, certain areas are underlain by clayey soils. These clayey soils are competent when dry but become plastic and incompetent when wet and disturbed. These weak plastic soils are not suitable to receive a pavement structural section.

Recommendations

It is our understanding that for this project structural section recommendations were provided by Mr. Dave Evans, a District Pavement Engineer in his memorandum of April 3, 2013. Therefore, it is recommended that before the placement of new pavement structural section the existing unsuitable soils be removed and replaced with granular materials. These soils should be removed to a depth of 1.0 foot below the bottom of the recommended pavement structural section. A standard geosynthetic material (Biaxial Geogrid, conforming to Standard Specifications 88-1.02 P with an LTDS of 900 lb/ft) should be placed at the bottom of the excavation, and the excavation should be backfilled with the granular materials compacted to 90 % of relative compaction. In lieu of granular materials, Class IV materials can be utilized. Approximate longitudinal extent of areas where unsuitable soils should be removed and presented in Table 2.

During the construction phase of this project OGD2 representative can assist the Resident Engineer in determining the exact limits of removal and replacement of unsuitable soils.

References

State of California Standard Specifications 2010.

Kenedy and Tan, "Southern San Diego Metropolitan Area, California" California Division of Mines and Geology, 1997.

David Evans, CT Memorandum "Structural Section Recommendations," April 3, 2013.

Attachments

Project Location

Table 1: Subsurface Soils Description

Table 2: Extent of Unsuitable Soils to be Removed and Replaced

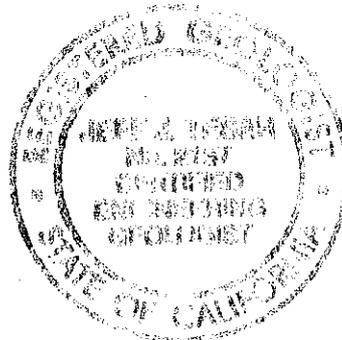
Boring Locations

Photos

If you have additional questions or require clarification please contact Jeff Tesar at 760 929-3236



Jeff Tesar, C.E.G.
Engineering Geologist
Office of Geotechnical Design-South 2



cc:

Ramon Martinez
Art Padilla
Abbas Abghari
Shawn Wei
Geotechnical Archive



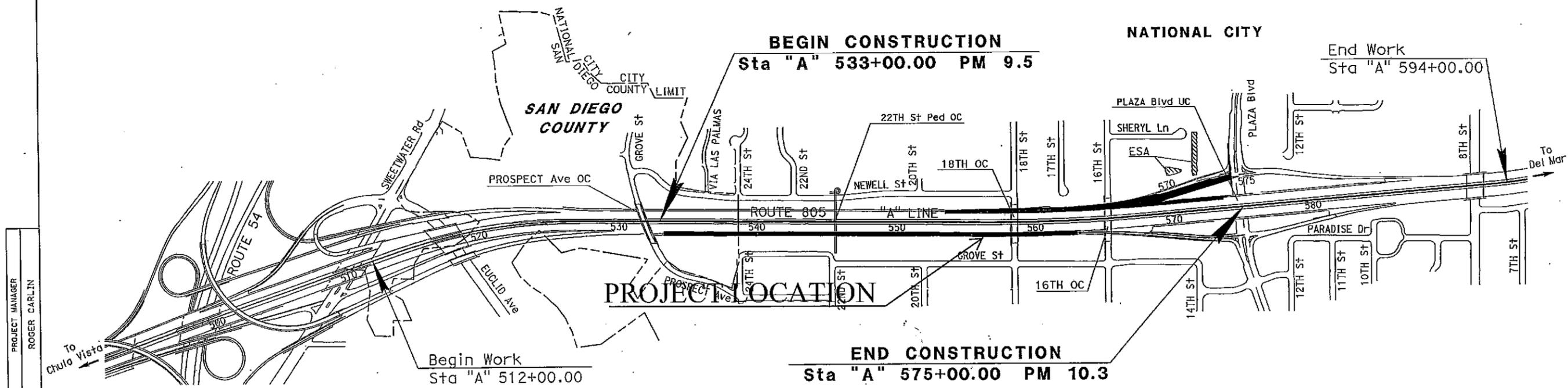
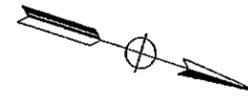
District Project Manager
District Materials Engineer
Office Chief, OGDS
Senior Supervisor, OGDS2, Branch-D
<http://svgegeodog.dot.ca.gov/>

INDEX OF PLANS

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 PROJECT PLANS FOR CONSTRUCTION ON
 STATE HIGHWAY
 IN SAN DIEGO COUNTY
 IN AND NEAR NATIONAL CITY FROM
 GROVE STREET OVERCROSSING TO
 PLAZA BOULEVARD UNDERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	805	9.5/10.3	1	



PROJECT MANAGER
 ROGER CARLIN
 DESIGN ENGINEER
 HANH KHUU

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.	11-2T2504
PROJECT ID	1112000216

NO SCALE

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

LAST REVISION 12-17-12 DATE PLOTTED => 13-SEP-2013 TIME PLOTTED => 09:48

Table 1: Subsurface Soil Description

BORING NO.	LOCATION OFFSET, STATION & REFERENCE LINE	SUBSURFACE SOIL DESCRIPTION
HA-13-001	R 88; 533+95; I- 805 "A" Line	0.0-3.0': Poorly-graded SAND with GRAVEL (SP); brown; moist; coarse SAND; coarse and fine GRAVEL.
HA-13-002	R 90; 535+95; I- 805 "A" Line	0.0-4.0': Poorly-graded SAND with GRAVEL(SP); brown; dry to moist; coarse SAND; coarse and fine GRAVEL; trace COBBLES.
HA-13-003	R 90; 535+99; I- 805 "A" Line	0.0-4.0': Poorly-graded SAND with GRAVEL (SP); brown; dry to moist; coarse SAND and fine GRAVEL; slightly CLAYEY.
HA-13-004	R 89; 540+20; I- 805 "A" Line	0.0-1.5': Poorly-graded GRAVEL with SAND (GP); brown; dry to moist; coarse GRAVEL; coarse SAND; trace COBBLES; (FILL). 1.5-2.5': Lean CLAY(CL); brown; dry to moist; high plasticity when moist/wet. 2.5-3.5': CLAYEY SAND (SC); brown; moist; coarse SAND; medium plasticity 3.5-5.0': Poorly-graded SAND (SP); brown; moist; coarse SAND; locally slightly CLAYEY.
HA-13-005	R 88; 543+09; I- 805 "A" Line	0.0-1.0': Poorly-graded SAND (SP); brown; moist; medium grained. 1.0-3.5': Poorly-graded SAND (SP); brown; moist; coarse to medium; trace fine GRAVEL; locally CLAYEY; low plasticity when moist/wet. 3.5-5.0': Elastic SILT with SAND; brown; moist; fine SAND; elastic when moist/wet.
HA-13-006	R 88; 546+22; I- 805 "A" Line	0.0-5.0': Poorly-graded SAND (SP); brown; dry; coarse to medium; trace fine GRAVEL.
HA-13-007	R 82; 549+40; I- 805 "A" Line	0.0-1.0': Poorly-graded SAND (SP); brown; dry; medium to fine. 1.0-5.0': SILTY SAND (ML); brown; dry; fine.
HA-13-008	R 82; 552+54; I- 805 "A" Line	0.0-3.0': Poorly-graded SAND with GRAVEL (SP); brown; dry; coarse to medium SAND; fine GRAVEL.
HA-13-009	L 80; 553+80; I- 805 "A" Line	0.0-4.0': Poorly-graded SAND (SP); brown; dry; medium; trace of coarse GRAVEL.
HA-13-010	L 80; 555+33; I- 805 "A" Line	0.0-6.0': Poorly-graded SAND (SP); brown; dry to moist; coarse to medium; trace of fine GRAVEL.

HA-13-011	R 85; 555+36; I- 805 "A" Line	0.0-1.0': Poorly-graded SAND (SP); brown; moist; coarse. 1.0-2.5': Poorly-graded SAND (SP); brown; moist; coarse; slightly SILTY. 2.5-3.0': SILTY SAND (SM); brown; moist; fine. 3.0-5.0': Poorly-graded SAND (SP); brown; moist; coarse.
HA-13-012	R 83; 556+70; I- 805 "A" Line	0.0-0.3': ASPHALT CONCRETE (4") 0.4-1.0': Lean CLAY (CL); brown; moist to wet; high plasticity. 1.0-1.5': Poorly-graded SAND with GRAVEL (SP); brown; moist; coarse to medium; fine GRAVEL.
HA-13-013	L 80; 556+92; I- 805 "A" Line	0.0-2.5': Poorly-graded SAND (SP); brown; moist; coarse to medium; trace fine GRAVEL; locally slightly CLAYEY. 2.5-5.5': Poorly-graded SAND (SP); brown; moist; coarse to medium.
HA-13-014	L 90; 558+48; I- 805 "A" Line	0.0-5.0': Poorly-graded SAND with GRAVEL (SP); brown; dry to moist; medium SAND; fine GRAVEL.
HA-13-015	R 86; 558+59; I- 805 "A" Line	0.0-3.0': Poorly-graded SAND (SP); brown; moist; coarse.
HA-13-016	L 97; 560+20; I- 805 "A" Line	0.0-2.0': SILTY SAND (SM); brown; dry; fine. 2.0-3.8': CLAYEY SAND (SC); brown; dry to moist; fine; medium plasticity when moist/wet.
HA-13-017	L 93; 561+81; I- 805 "A" Line	0.0-2.0': SILTY SAND (SM); brown; dry; fine. 2.0-2.3': CLAYEY SAND (SC); brown; dry; fine; plastic when moist/wet. 2.3-3.5': Poorly-graded SAND (SP); brown; dry to moist; fine; some GRAVEL.
HA-13-018	R 84; 562+70; I- 805 "A" Line	0.0-1.0': Poorly-graded SAND (SP); brown; moist; coarse. 1.0-3.0': SILT (ML); brown; moist; elastic when wet. 3.0-5.0': SILTY SAND (SM); brown; moist; fine SAND; low plasticity when moist/wet.
HA-13-019	L 92; 563+45; I- 805 "A" Line	0.0-2.5': Poorly-graded SAND (SP); brown; dry; medium to fine. 2.5-2.8': CLAYEY SAND (SC); brown; dry to moist; fine; medium plasticity when moist/wet. 2.8-5.0': Poorly-graded SAND (SP); brown; dry to moist; fine.
HA-13-020	L 100; 565+00; I- 805 "A" Line	0.0-4.5': CLAYEY SAND (SC); brown; dry to moist; fine; medium plasticity when moist/wet.

HA-13-021	L 104; 566+50; I- 805 "A" Line	0.0-1.5': SILTY SAND (SM); brown; dry; elastic when moist/wet. 1.5-4.5': Lean CLAY(CL); brown; dry to moist; high plasticity when moist/wet.
HA-13-022	L 94; 567+83; I- 805 "A" Line	0.0-3.5': SANDY lean CLAY (CL); brown; moist; plastic. 3.5-4.5': Poorly-graded SAND (SP); brown; moist; medium to fine; (utility backfill?).
HA-13-023	L 130; 567+92; I- 805 "A" Line	0.0-2.0': CLAYEY SAND (SC); brown; moist; medium. 2.0-5.0': SANDY lean CLAY (CL); brown; dry; high plasticity when moist/wet.
HA-13-024	L 76; 568+23; I- 805 "A" Line	0.0-1.5': Poorly-graded SAND (SP); brown; moist; medium to fine GRAVEL; (FILL). 1.5-8.5': Lean CLAY with SAND (CL); brown; moist to wet; high plasticity. 8.5-9.0': CLAYEY SAND (SC); brown; moist; medium plasticity.
HA-13-025	L 140; 568+78; I- 805 "A" Line	0.0-5.0': Lean CLAY (CL); light brown; dry; high plasticity when moist/wet.
HA-13-026	L 80; 569+08; I- 805 "A" Line	0.0-5.0': Lean CLAY (CL); brown; moist; plastic. 5.0-6.0': CLAYEY SAND (SC); brown; dry to moist; fine. 6.0-7.0': Poorly-graded SAND (SP); brown; dry; fine.
HA-13-027	L 80; 569+52; I- 805 "A" Line	0.0-3.0': SANDY lean CLAY (CL); brown; moist; plastic. 3.0-5.0': SANDY lean CLAY (CL); brown; dry; high plasticity when moist/wet.
HA-13-028	L 130; 569+83; I- 805 "A" Line	0.0-2.0': Poorly-graded SAND (SP); brown; moist; fine. 2.0-5.0': CLAYEY SAND (SC); brown; dry ; fine; medium plasticity when moist/wet.
HA-13-029	L 81; 569+75; I- 805 "A" Line	0.0-4.0': SANDY lean CLAY (CL); brown; moist; high plasticity .
HA-13-030	L 83; 569+88; I- 805 "A" Line	0.0-1.0': CLAYEY SAND (SC); brown; moist; fine. 1.0-5.0': Poorly-graded SAND (SP); brown; moist; fine.
HA-13-031	L 176; 570+65; I- 805 "A" Line	0.0-2.5': Poorly-graded SAND with GRAVEL (SP); brown; dry; medium SAND; coarse GRAVEL.
HA-13-032	L 80; 571+70; I- 805 "A" Line	0.0-5.0': Poorly-graded SAND (SP); brown; moist; fine; few coarse SAND; trace fine GRAVEL; (FILL).

HA-13-033	L 80; 572+41; I- 805 "A" Line	0.0-3.0': SILTY SAND (SM); brown; moist; fine; locally CLAYEY; trace fine GRAVEL; (FILL). 3.0-5.0': Poorly-graded SAND (SP); brown; moist; fine.
HA-13-034	L 217; 573+20; I- 805 "A" Line	0.0-2.5': Poorly-graded SAND with GRAVEL (SP); brown; dry; medium SAND; coarse GRAVEL; (FILL).

Table 2. Extent of Unsuitable Soils to be Removed and Replaced.

North Bound I-805 Segment	South Bound I-805 Segment
From Station 538+50 to 545+50	From Station 559+00 to 570+00*
From Station 556+40 to 557+00	
From Station 561+50 to 563+05	

*-- Including the Onramp from Plaza Blvd to I-805

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	805	9.5/10.3		

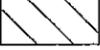
REGISTERED CIVIL ENGINEER	DATE
STEVEN TRAN	
No. 74494	
Exp. 12-31-13	
CIVIL	

PLANS APPROVAL DATE

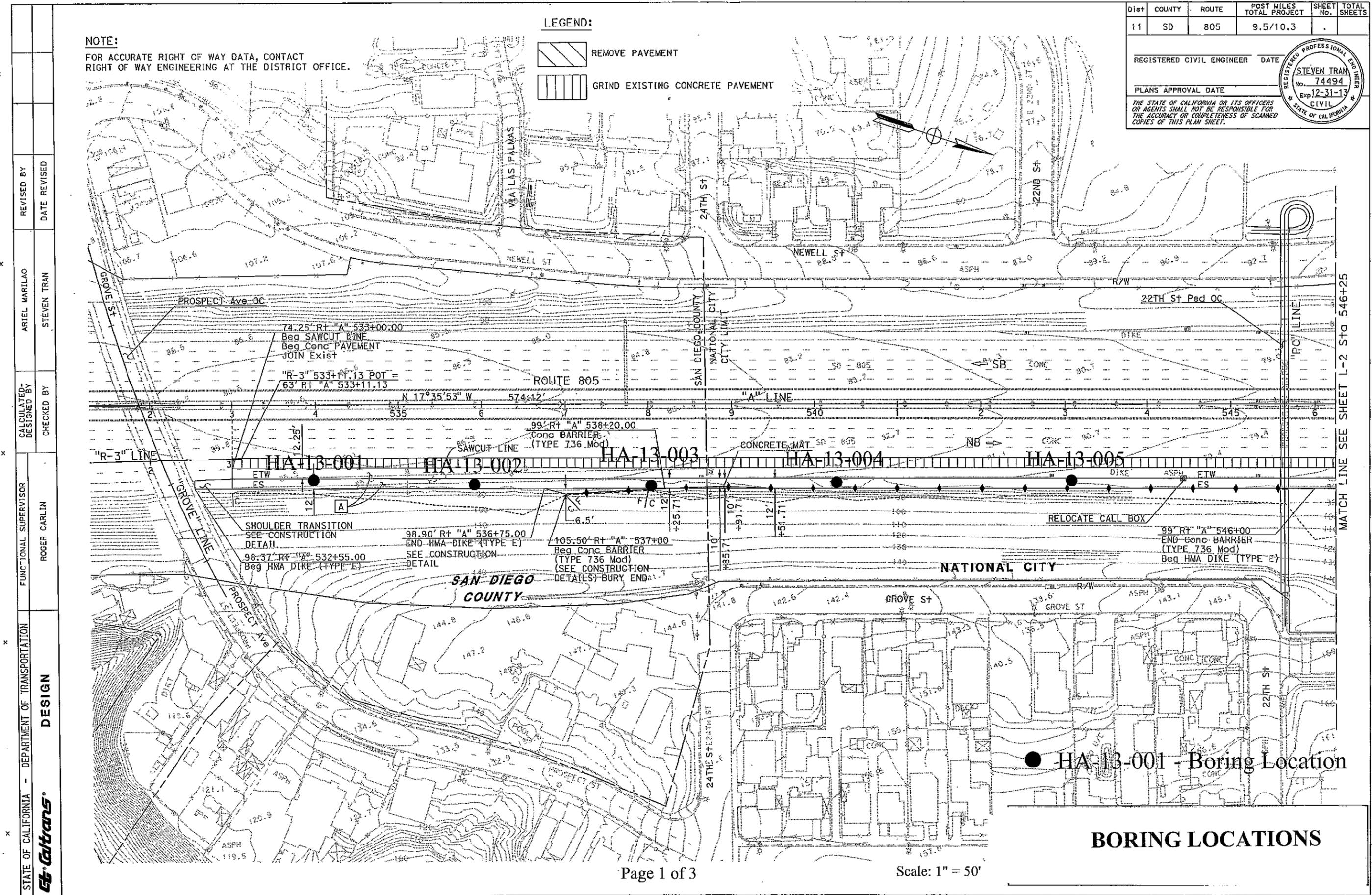
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

LEGEND:

 REMOVE PAVEMENT

 GRIND EXISTING CONCRETE PAVEMENT



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: ROGER CARLIN

CHECKED BY: STEVEN TRAN

DESIGNED BY: ARIEL MARILAO

REVISOR: STEVEN TRAN

DATE REVISOR: DATE REVISOR

MATCH LINE SEE SHEET L-2 Sta 546+25

● HA-13-001 - Boring Location

BORING LOCATIONS

LAST REVISION DATE PLOTTED => 13-SEP-2013 TIME PLOTTED => 09:48

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	805	9.5/10.3	.	.

REGISTERED CIVIL ENGINEER	DATE
STEVEN TRAN	
No. 74494	
Exp 12-31-13	
CIVIL	
STATE OF CALIFORNIA	

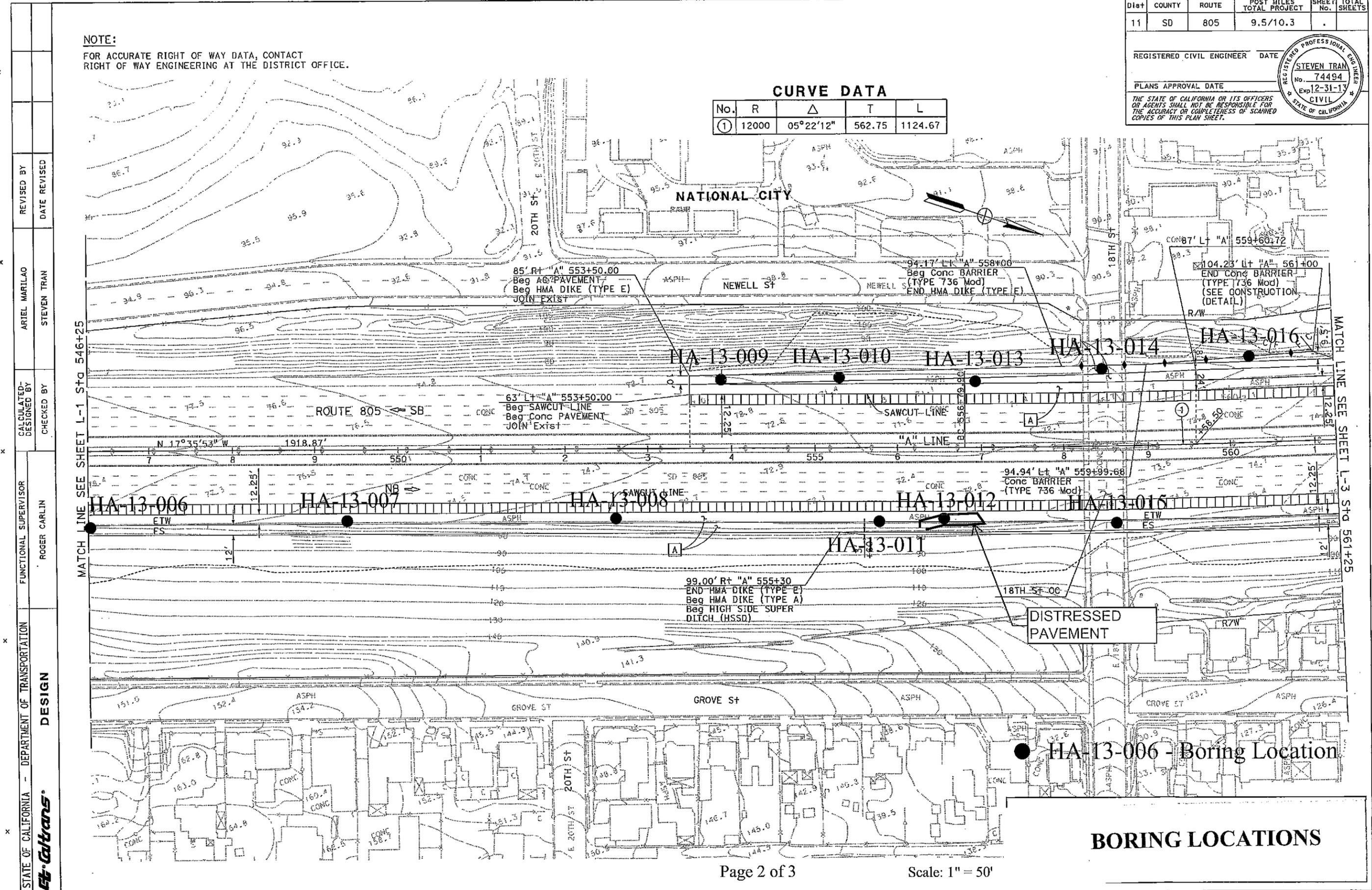
PLANS APPROVAL DATE

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.

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

CURVE DATA

No.	R	Δ	T	L
①	12000	05°22'12"	562.75	1124.67



DISTRESSED PAVEMENT

● HA-13-006 - Boring Location

BORING LOCATIONS

LAST REVISION: DATE PLOTTED => 13-SEP-2013
00-00-00 TIME PLOTTED => 09:48

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	805	9.5/10.3	.	

REGISTERED CIVIL ENGINEER	DATE
STEVEN TRAN	
No. 74494	
Exp. 12-31-13	
CIVIL	
STATE OF CALIFORNIA	

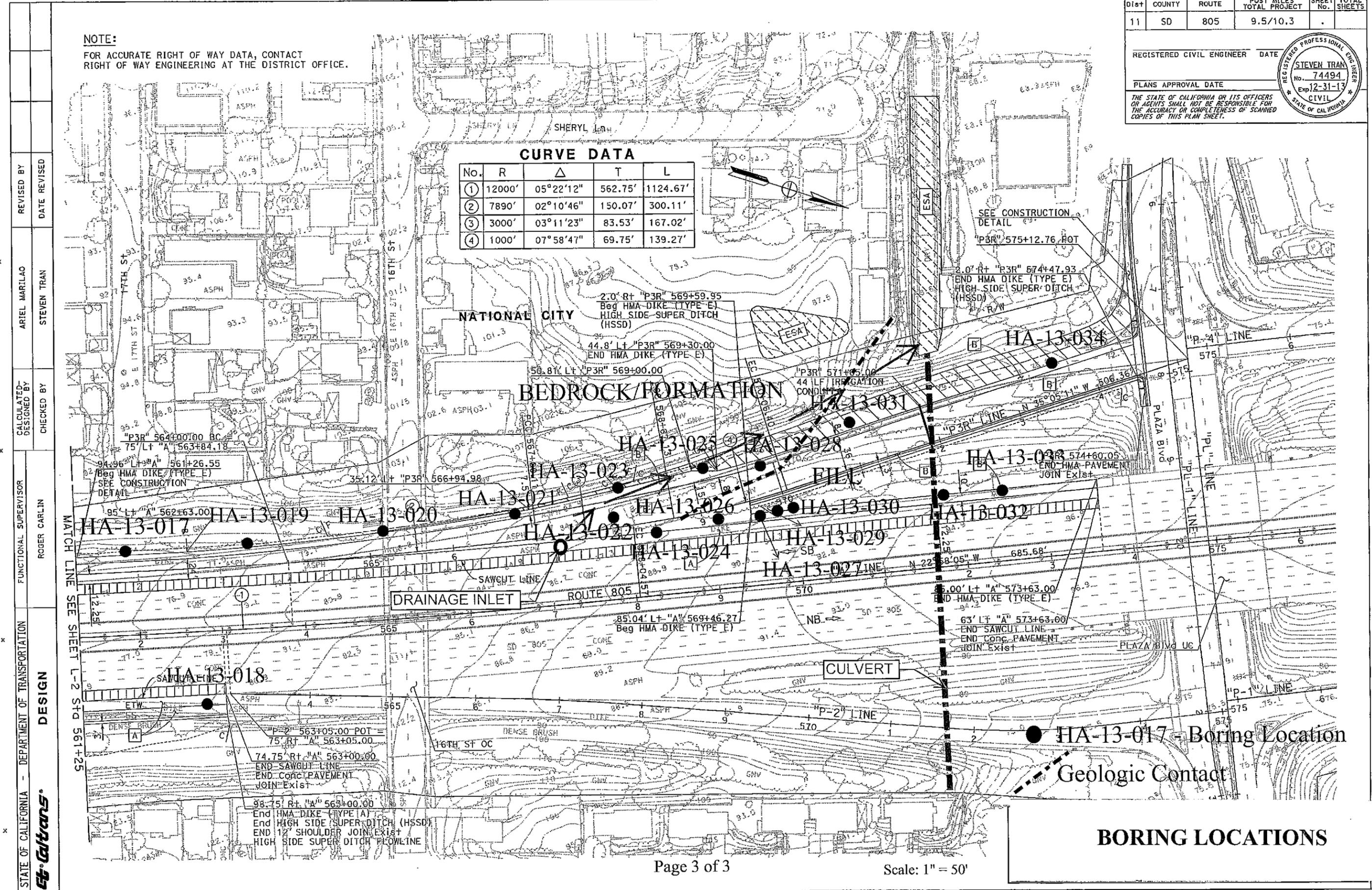
PLANS APPROVAL DATE

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

CURVE DATA

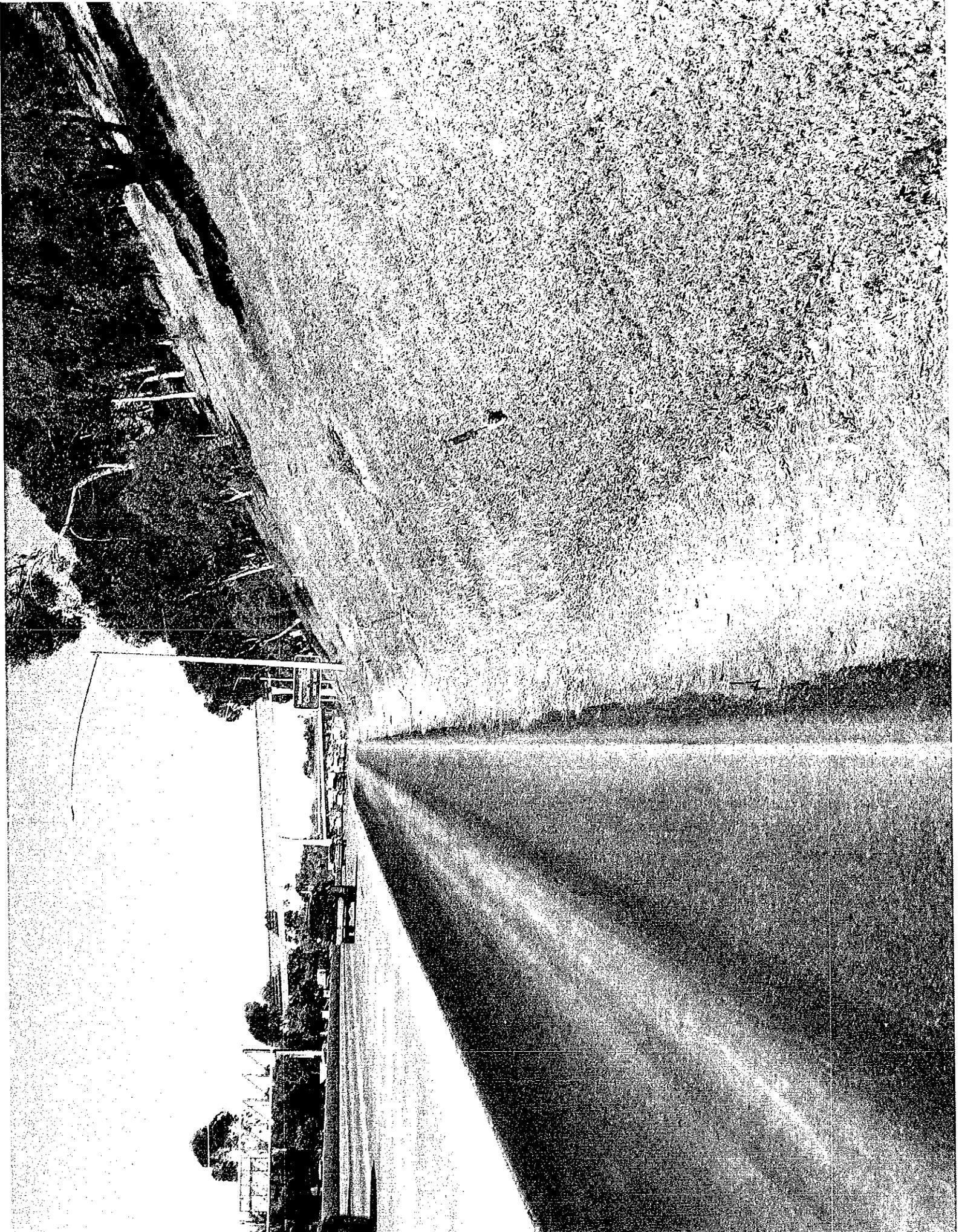
No.	R	Δ	T	L
①	12000'	05°22'12"	562.75'	1124.67'
②	7890'	02°10'46"	150.07'	300.11'
③	3000'	03°11'23"	83.53'	167.02'
④	1000'	07°58'47"	69.75'	139.27'

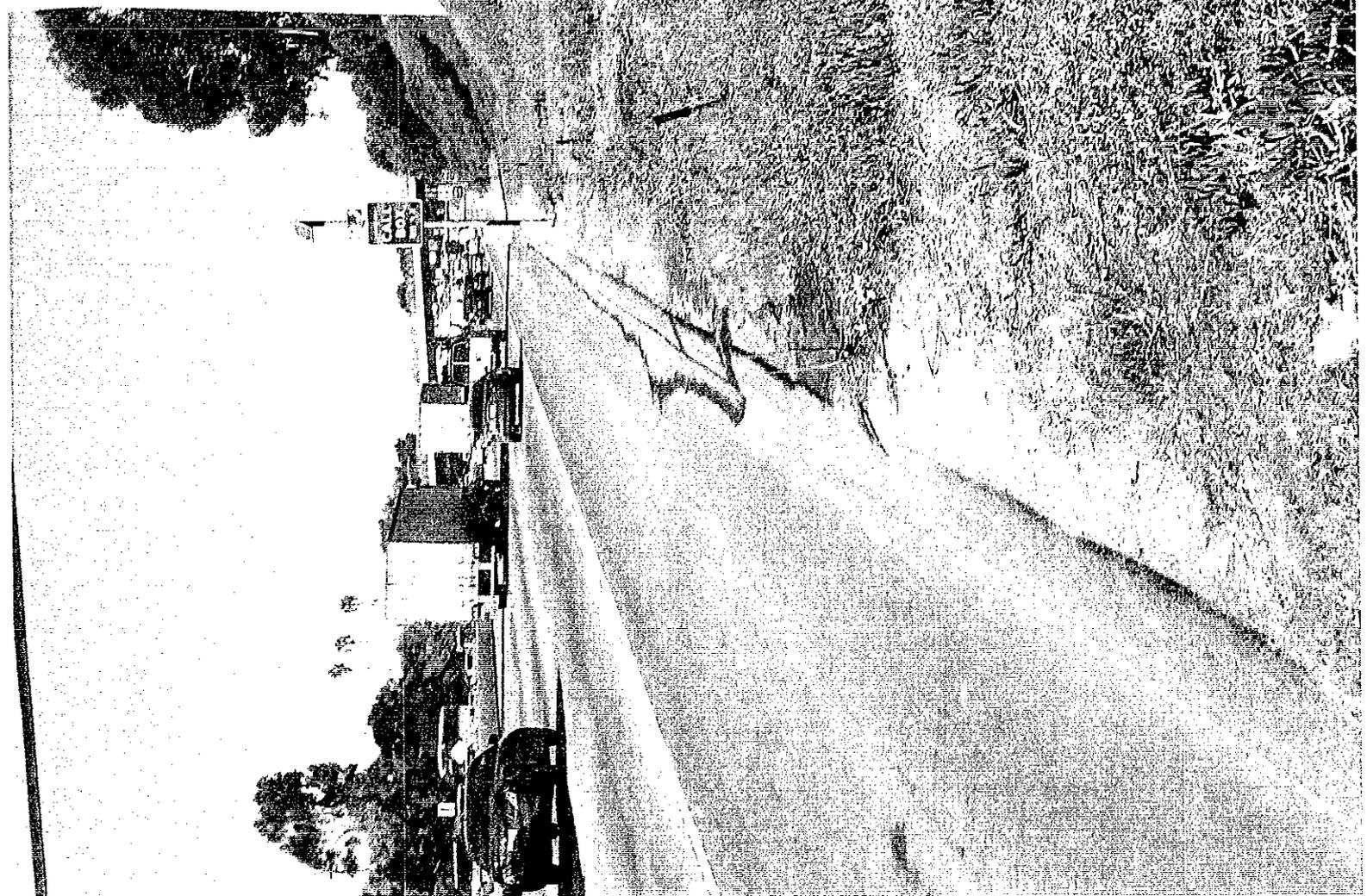


REVISOR: ARIEL MARILAO, STEVEN TRAN
 CHECKED BY: ROGER CARLIN
 FUNCTIONAL SUPERVISOR: ROGER CARLIN
 CALCULATED/DESIGNED BY: [Blank]
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 Et-Trans

LAST REVISION: DATE PLOTTED => 13-SEP-2013
 00-00-00 TIME PLOTTED => 09:48







Memorandum

To : BINH TRAN/ STEVE TRAN/ HANH-DUNG KHUU (MS 340)
Project Engineers
Design MS-340

Date: April 3, 2013

File: 11-SD-805
PM 9.5/10.3
EA 2T2501
EFIS 1112000216

From : DEPARTMENT OF TRANSPORTATION - DISTRICT 11
PAVEMENT ENGINEERING AND PLANT SERVICES

Subject: **STRUCTURAL SECTION RECOMMENDATIONS**

In accordance with your request dated January 28, 2013 we have provided structural section recommendations for the proposed auxiliary lanes and outside shoulder of Rte. 805 and traveled way and shoulder of the southbound on-ramp from Plaza Blvd. The design is based on an R-Value of <10 from previous materials report and the Traffic Indices (TI) provided by the Traffic Forecasting Branch. Foundation recommendation for temporary retaining wall is not addressed within this memo.

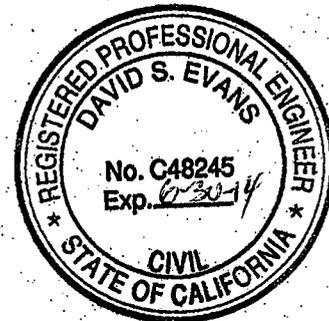
If you have questions or comments about this subject, please telephone R. Avila at 858-467-4069 or FAX at 858-467-4063.



Ruben Avila
Transportation Engineer, CT/Civil



David Evans
District Pavement Engineer



1 attachment
P File

11-SD-805
 PM 9.5/10.3
 EA 11-2T2501
 April 2013
 sheet 1 of 1

STRUCTURAL SECTION DESIGN - ft

LOCATION OR LINE	R-VALUE DESIGN	TRAF. INDEX	JPCP (ft)	HMA-A (ft)	AB CL 2 (ft)	AS CL 4 ¹ (ft)
INSIDE AUXILIARY LANE OF RTE. 805*	5	11.0	0.75	0.25	0.55	0.75
OUTSIDE AUXILIARY LANE OF RTE. 805*	5	14.5	0.90	0.25	0.65	0.75
OUTSIDE SHOULDER OF RTE 805*	5	14.5	0.90	0.25	0.65	0.75
TRAVELED WAY OF SB ON-RAMP FROM PLAZA BLVD.	5	11.0		0.55	2.15	0.75
SHOULDER OF SB ON-RAMP FROM PLAZA BLVD.	5	11.0		0.55	2.15	0.75

*These designs are based on laterally supported JPCP. For details, see Table 623.1E of HDM dated 5/7/2012

¹The aggregate subbase is mitigation for the possibility of unsuitable material (if any)

JPCP = Jointed Plain Concrete Pavement
 HMA-A = Hot Mix Asphalt (Type A)
 AB CL 2 = Aggregate Base Class 2
 AS CL 4 = Aggregate Subbase Class 4