

**DEPARTMENT OF TRANSPORTATION**

DISTRICT 1, P. O. BOX 3700  
EUREKA, CA 95502-3700  
PHONE (707) 445-6440  
FAX (707) 441-5775  
TTY 711



*Making Conservation  
a California Way of Life.*

October 18, 2018

Larry Oetker, Executive Director  
Humboldt Bay Harbor, Recreation and Conservation District  
P.O. Box 1030  
Eureka, CA 95502

Dear Mr. Oetker,

Caltrans is submitting this permit application for work associated with the Eureka-Arcata Route 101 Corridor Improvement Project. The purpose of the project is to improve safety along the corridor by eliminating uncontrolled left turns, reduce delay at intersections, replace southbound Jacoby Creek bridge, increase the length of various acceleration and deceleration lanes, replace and upgrade guardrail and bridge rails, and replace nine tide gates on culverts. Currently the project is split into these five separate funding components:

- 01-0E000     Jacoby Creek bridge, bridge rails and guardrails near bridges
- 01-0C930     Replace tide gates and add rock weir in Gannon Slough
- 01-36600     Indianola Interchange and Airport Road signal, STIP funded portion
- 01-0C970     Upgrade guardrails, replace and add median barriers
- 01-0F220     Extend acceleration lanes, realign southbound lanes at California Redwood Company, reconstruct ramps at Route 255 interchange, upgrade lighting
- 01-36601     Humboldt Bay Area Mitigation (HBAM) at Lanphere: mitigation site for multiple projects

This permit application covers only 01-0E000 Jacoby Creek Bridge Replacement and 01-0C930 Tide Gates, as these are the only locations which require work below the Mean High High Water. The HBAM project is the anticipated mitigation site for impacts to waters and other resources of this and other projects (Arcata Bay Trail), and will require permitting by the Harbor District. A separate permit will be submitted when the design has been determined.

If you have any questions about these projects or application, please contact Jason Meyer, Associate Environmental Planner, at [jason.meyer@dot.ca.gov](mailto:jason.meyer@dot.ca.gov) or 441-5921.

Sincerely,

A handwritten signature in black ink, appearing to read "JP", written over a white background.

Jeffrey Pimentel  
Project Manager

- Enclosures:
1. Humboldt Harbor District Permit Application
  2. Attachment A: Additional Project Information
  3. Layouts/Plans
  4. CD with overall project information



# HUMBOLDT BAY HARBOR, RECREATION AND CONSERVATION DISTRICT



P.O. BOX 1030  
Eureka, California 95502  
phone (707) 443-0801  
fax (707) 443-0800

## PERMIT APPLICATION

Date Filed \_\_\_\_\_

General Information	For District Use						
<p>1.) Name, Address, phone # and email of Developer, Project Sponsor and Legal Owner</p> <p><b>Caltrans: Jeff Pimentel</b> 1656 Union Street Eureka, CA 95501 <a href="mailto:Jeffrey.pimentel@dot.ca.gov">Jeffrey.pimentel@dot.ca.gov</a> 707.445.6440</p>	<p>A. Application No. _____</p> <p>Application Type:</p> <table style="margin-left: 20px;"> <tr> <td>Franchise</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Permit</td> <td><input type="checkbox"/></td> </tr> <tr> <td>Lease</td> <td><input type="checkbox"/></td> </tr> </table>	Franchise	<input type="checkbox"/>	Permit	<input type="checkbox"/>	Lease	<input type="checkbox"/>
Franchise	<input type="checkbox"/>						
Permit	<input type="checkbox"/>						
Lease	<input type="checkbox"/>						
<p>2.) Address of Project and Assessor's block, lot and Parcel Number</p> <p><b>US Highway 101 at Jacoby Creek Bridge</b> Various Tide Gates on US Highway 101, Gannon Slough – No APNs for these State Properties</p>	<p>B. Date Received by Harbor District</p> <p>C. Date Accepted for filing by Commission</p> <p>D. Date of Public Notice</p>						
<p>3.) Contact person Name, Address, phone #</p> <p><b>Jason Meyer</b> 1656 Union Street Eureka, CA 95501 <a href="mailto:Jason.meyer@dot.ca.gov">Jason.meyer@dot.ca.gov</a> 707.441.5921</p>	<p>E. Date of Environmental Compliance</p> <p>F. Date of Public Notice</p> <p>G. Date of Public Hearings</p>						
<p>4.) Attach list of names and addresses of all adjoining property owners:</p> <p><b>See Attachment</b></p>	<p>H. Date of Commission Action</p> <p style="margin-left: 20px;">Approval: _____</p> <p style="margin-left: 20px;">Conditional _____</p> <p style="margin-left: 20px;">Disapproval _____</p>						
<p>5.) List and describe any other related Project Permits &amp; Other Public Approvals required, including those required by City, Regional, State &amp; Federal Agencies.</p> <p><b>See Attachment</b></p>	<p>I. Expiration Date</p>						
<p>6.) Existing City/County Zoning</p> <p><b>Highway: US 101 South</b></p>	<p>Comments</p>						
<p>7.) Proposed Site Use (Project Title)</p> <p><b>Eureka-Arcata Corridor Improvement Project (Jacoby Creek Bridge Replacement, Tide Gates)</b></p>							

**PRE-PROJECT EELGRASS CHECKLIST**

Please complete the Eelgrass Pre-project Checklist below. Note that the checklist questions relate to the Area of Potential Effect (APE) associated with your project, which incorporates a surrounding buffer inclusive of the limits of potential construction and/or maintenance-related activities that could affect eelgrass habitat. Provide a copy of the completed questionnaire along with your permit application and a map depicting the proposed project location, potential eelgrass depth range -10 to +4 feet, and benchmark eelgrass distribution in the vicinity of the proposed project. Maps should be of an appropriate scale to clearly depict the preliminary/proposed APE boundary in relation to both existing and potential eelgrass resources as provided in the Humboldt Bay Eelgrass Comprehensive Management Plan and associated webpage ([humboldt-bay.org/eelgrass-management-plan](http://humboldt-bay.org/eelgrass-management-plan)). Here you'll find information and links including [eelgrass information for permit applicants](#), [a baseline eelgrass distribution map](#), and the [Humboldt Bay Eelgrass Comprehensive Management Plan](#). Contact the Harbor District office with questions (443-0801).

***For New Projects:***

		YES	NO
a)	Is the project located within 100 feet of previously mapped (known) eelgrass habitat?	x	
b)	Will any construction or new operational traffic occur within the vicinity of existing eelgrass?	x	
c)	Is any portion of the project located in an area with depths ranging from -10 to +4 feet?	x	
d)	Does the project result in new cover, shading or other form of light reduction of open water areas ranging in depth from -10 to +4 feet?	x	
e)	Is the project anticipated to affect wind or tidal circulation patterns within the bay?		x
f)	Could the project affect ambient water temperature or clarity or result in new effluent (including stormwater) discharge point?		x
g)	Does the project result in any placement of fill, including shoreline armor?	x	
h)	Is the project anticipated to lead to an increase in boat traffic that could affect nearby eelgrass habitat through grounding, prop scarring, wake, or shading impacts?		x

***For Maintenance/Repair Projects and Construction Activities:***

		YES	NO
i)	Is project construction likely to increase turbidity? To what extent and for what duration?	x	
j)	Will construction require the use of a barge or other vessel that may temporarily impact the bay floor (e.g. spud poles, anchoring, prop scarring, etc.) within known eelgrass habitat or within depths ranging from -10 to +4 feet?		x
k)	Will construction require the use of turbidity curtains in proximity to eelgrass habitat?		x
l)	Will project construction result in temporary shading from moored/anchored working vessel(s)?		x

If you responded yes to any of the questions above, your project may have the potential to affect eelgrass habitat and you'll need to conduct a preliminary eelgrass survey. Please refer to the District's [Eelgrass Management Plan webpage](#) for further guidance and a list of local agency contacts should you have additional questions.

## **EELGRASS**

This project has the potential to effect eelgrass habitat, which was discussed in the 2016 Biological Assessment submitted to National Marine Fisheries Service and their Letter of Concurrence (provided on CD). There is eelgrass present within the 101 Slough near the Eureka Slough tide gate, where work will occur. This project may have construction impacts such as increased turbidity, but will not have long-term impacts such as increased shading or removal of habitat. The tide gates are being replaced with the intention of maintaining the current circulation patterns and potentially allowing more saltwater into the 101 Slough, which would be beneficial to eelgrass. The project includes some shoreline armoring at the Gannon Slough tide gate and weir area, but there is not eelgrass at this location.

The project has the potential to increase turbidity during construction, but this was determined to be discountable in the Biological Assessment and Letter of Concurrence:

*With implementation of measures that minimize turbidity, potential impacts to eelgrass from construction-related turbidity are discountable given they are extremely unlikely to occur, and would be insignificant if they were to occur because they would be short term (on the order of hours) and likely rinse clean off the leaves within a day or so whereby resulting in inconsequential disturbance to photosynthesis and plant growth. (Page 31, National Marine Fisheries Letter of Concurrence April 29, 2016)*

Please refer to the Biological Assessment and Letter of Concurrence for more details on potential impacts to eelgrass.

Answer all questions completely on a separate page. If the question does not apply to your project, so indicate by marking N.A. Contact Harbor District Office with questions.

## **PROJECT DESCRIPTION**

8. **Site Size:** Multiple Sites – see plans in attachments
9. **Square Footage:** Multiple Sites – see plans in attachments
10. **Number of floors of construction:** NA
11. **Amount of off-street parking provided:** NA
12. **Attach plans:** See attached
13. **Proposed scheduling:** Construction is planned for years 2019 through 2025
14. **Associated projects:**

Caltrans has multiple projects along the corridor associated with this work. The overall project is to address safety concerns with uncontrolled left turns along US Highway 101 between Eureka and Arcata. The overall project includes constructing a separated grade interchange at Indianola Cutoff, installing a signal at Airport Road, installing median barriers, installing guardrail, lengthening the acceleration and

deceleration lanes at various access points, and upgrading the lighting at various locations.

**15. Anticipated incremental development:**

This project is not anticipated to cause future private development along the highway. Caltrans does plan to continue to maintain this highway into the future, which will likely include future projects along the corridor.

**16. If residential, include the number of units, schedule of unit sizes, range of sale prices or rents, and type of household size expected: NA**

**17. If commercial, indicate the type, whether neighborhood, city or regionally oriented, square footage of sales area, and loading facilities: NA**

**18. If industrial, indicate type, estimated per shift employment & loading facilities: NA**

**19. If institutional, indicate the major function, estimated per shift employment, occupancy, loading facilities, and community benefits derived from the project: NA**

**20. If the project involves a variance, conditional use or recognizing application, state this and indicate clearly why the application is required: NA**

**Are the following items applicable to the project or its effects? Answer yes or no. Discuss all items answered yes.**

**21. Change in existing features of any bays, tidelands, beaches, lakes or hills, or substantial alteration of ground contours.**

The Tide Gates portion of this project is being designed to avoid any hydrological changes which would alter aquatic habitats. The Jacoby Creek Bridge is being designed to avoid long-term impacts to waterways.

**22. Change in scenic views or vistas from existing residential areas or public lands or roads.**

The Tide Gates portion of the project would have no impacts to views or vistas. Southbound Jacoby Creek Bridge will have standard highway bridge railings and deck and is not anticipated to have negative impacts on views.

**23. Change in pattern, scale or character of general area of project.**

The Tide Gates project will have no change in pattern, scale or character because these are existing tide gates and the project proposes to replace only the gates, not the structures or culverts.

The southbound Jacoby Creek Bridge replacement project would replace the existing 39-foot-wide bridge with a 43-foot-wide bridge to achieve full shoulder widths. This project would also replace the rails on the northbound Jacoby Creek Bridge and the northbound Gannon Slough bridge.

**24. Significant amounts of solid waste or litter.**

This project is not anticipated to add solid waste or litter to the surrounding environment. Construction of this project will incorporate standard specifications to ensure there is no waste or litter left around the construction site.

**25. Change in dust, ash, smoke, fumes or odors in vicinity.**

This project is not anticipated to cause substantial amounts of dust, ash, smoke, fumes or odor to the environment. Construction of this project will incorporate standard specifications for dust control.

**26. Change in ocean, bay, lake, stream or ground water quality or quantity, or alteration of existing drainage patterns.**

This project does not anticipate major changes in ground water quality or quantity. Storm water currently sheet flows off the roadway through mowed vegetation into roadside ditches and sloughs and this would not change.

**27. Substantial change in existing noise or vibration levels in the vicinity.**

- A. During Construction**
- B. During Project Utilization**

Changes in noise or vibration levels after this project is constructed are not anticipated. Traffic levels are expected to remain the same after the project is completed.

The construction process will include some noise and vibration due to heavy machinery and vibration piles. The southbound Jacoby Creek Bridge replacement project involves the installation of six or eight 36-inch diameter cast-in-place-steel shell (CISS) piles by oscillation, vibration or rotation approximately 15 to 20 feet from the wetted channel. Noise and vibration during construction will be temporary.

**28. Site on filled land or on slope of 10% or more.**

The area for this project is relatively flat.

**29. Use of disposal or potentially hazardous materials, such as toxic substances, flammable or explosives.**

Construct will involve standard construction methods, including spill kits and procedures for accidental spills of standard construction fluids (fuel and concrete). There may be Aerially Deposited Lead in some soils adjacent to the highway which will be handled according to our standard measures.

**30. Substantial change in municipal services demand (police, fire, water, sewage, etc.)**

There will be no change to municipal services demand.

**31. Substantially increase fossil fuel consumption (electricity, oil, natural gas, etc.).**

There will be no long term changes to fossil fuel consumption due to this project.

**32. Relationship to larger project or series of projects**

The two projects within this permit application are part of the larger Eureka-Arcata Route 101 Corridor Improvement Project. Information on the larger safety project can be found in the Final EIR/S on the supplied CD.

**ENVIRONMENTAL SETTING:**

**33. Describe the project site as it exists before the project including information on topography, soil stability, plants and animals, and any cultural, historical, or scenic aspects. Describe any existing structures on the site and the use of the structures. Attach photographs of the site. Photos will be accepted.**

The project site is described in the attached Final Environmental Impact Statement/Report.

**34. Describe the surrounding properties, including information on plants and animals and any cultural, historical, or scenic aspects. Indicate the type of land use (residential, commercial, etc.) intensity of land use (one-family, apartment houses, shops, department stores, etc.) and the scale of development (height, frontage, setback, rear yard, etc.) Attach photographs of the vicinity. Photos accepted.**

The project site and adjacent areas are described in the attached Final Environmental Impact Statement/Report.

----- **Questions 35 and 36 MUST BE ANSWERED!** -----

**35. How will the proposed use or activity promote the public health, safety, comfort, and convenience?**

The purpose of this project is to improve safety along U.S. Highway 101 between Eureka and Arcata. The overall project achieves this goal by limiting uncontrolled left turns, improving median barriers and guardrails, extending acceleration and deceleration lanes, improving lighting, and replacing a bridge.

**36. How is the requested grant, permit, franchise, lease, right, or privilege required by the public convenience and necessity?**

The purpose of this project is to improve safety along U.S. Highway 101 between Eureka and Arcata. The overall project achieves this goal by limiting uncontrolled left turns, improving median barriers and guardrails, extending acceleration and deceleration lanes, improving lighting, and replacing a bridge.

-----  
**37. Financial statement:**

**A. Estimated project cost.**

Approximately \$8.7 million (for the Jacoby Creek Bridge Replacement and Tide Gates portions of the overall project).

**B. How will the project be financed?**

State Highway Operations Protection Program (SHOPP).

**38. Describe fully directions necessary to arrive at project site.**

The project is located at various points along US Highway 101 between Eureka and Arcata. (See attached project description.)

**39. The Applicant agrees, as a condition of the permit being issued, to indemnify and hold harmless the Humboldt Bay, Harbor Recreation and Conservation District from any and all claims, demands, or liabilities for attorneys' fees obtained from or against demands for attorney's fees, costs of suit, and costs of administrative records made against District by any and all third parties as a result of third party environmental actions against District arising out of the subject matter of this application and permit, including, but not limited to, attorney's fees, costs of suit, and costs of administrative records obtained by or awarded to third parties pursuant to the California Code of Civil Procedure Section 1021.5 or any other applicable local, state, or federal laws, whether such attorneys' fees, costs of suit, and costs of administrative records are direct or indirect, or incurred in the compromise, attempted compromise, trial, appeal, or arbitration of claims for attorneys' fees and costs of administrative records in connection with the subject matter of this application and permit.**

**NOTE**

The District hereby advises the Applicant that, under California Public Resources Code (PRC) Section 21089, the District when a lead agency under the California Environmental Quality Act (CEQA) of 1970, as amended, pertaining to an Environmental Impact Report (EIR) or a Negative Declaration (MND/ND) may charge and collect from the Applicant a reasonable fee in order to recover the estimated costs incurred by the District in preparing an EIR or MND/ND for the project and the procedures necessary for PRC compliance on the Applicants project.

In the event your project contains an analysis of issues pertaining to CEQA, for which District staff is not competent to independently review, or District requires the same in preparation of an EIR or MND/ND for the project, the District may retain a reviewing consultant to evaluate the content of the Administrative-Draft EIR and Final EIR or MND/ND with respect to these issues. The cost of such reviewing consultant services shall be borne by the Applicant.

CERTIFICATION: I hereby certify that the statements furnished above and in the attached exhibits present the information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. And I agree to indemnify the District as described in part 39 of this application.

Dated: 10/18/18

  
For \_\_\_\_\_

## **Humboldt Bay Harbor, Recreation and Conservation District Additional Project Information**

### **Project Description**

#### Replacement of The Southbound Jacoby Creek Bridge

The existing southbound (SB) Jacoby Creek Bridge on U.S. Highway 101 (US 101) at post mile (PM) 84.6 was originally constructed in 1920 for a two lane conventional highway. The original bridge was approximately 73 feet long and consisted of reinforced concrete beams resting on four reinforced concrete bents. The bridge was widened by approximately 16 feet in 1956 when the two lane highway was converted for use as the southbound (SB) lanes of a divided highway. Due to age and deterioration, and the need for more frequent and costly maintenance, this bridge needs to be replaced.

The new bridge will be approximately 73 feet long and 43 feet wide (6 feet wider than the current bridge). The additional width is to allow for standard shoulder widths and bridge rails. The new bridge will be two lanes wide and single span with no piers in the channel, unlike the current bridge which is a three-span structure with two rows of piles within the channel. The new bridge will be constructed at a deck elevation approximately two feet higher than the existing bridge elevation to account for anticipated sea-level rise and to keep the new bottom of soffit above existing soffit elevations. The new bridge will have approximately 300 square feet more surface area and will shade an additional 300 square feet area of Jacoby Creek.

Elements of construction of the detour bridge and demolition of the SB Jacoby Creek Bridge are described in further detail below.

#### ***Construction of the Detour Bridge***

The replacement southbound Jacoby Creek bridge will be constructed adjacent to the existing bridge within the median. A temporary detour of the southbound lanes will be constructed within the median and will utilize the new bridge on the detoured alignment. The temporary realignment onto the new bridge allows the demolition of the existing SB Jacoby Creek Bridge. After the old bridge is removed

---

and the new bridge abutments installed, the detour bridge will then be moved to the new bridge location by using a jack-and-slide method.

Construction of the detour will involve the removal of approximately 0.05 acre of riparian vegetation within the highway median, including four large, non-native Monterey pine (*Pinus radiata*) trees (diameter at breast height [dbh] 30-61 inches). The detour bridge approaches will require approximately two years of temporary paving in approximately 0.4 acre of wetland. Although the approaches will be restored once construction is complete, the 0.4-acre impact to wetland will be considered a permanent impact due to the extended duration of up to two years of loss of wetland function.

In the median on both sides of Jacoby Creek, two areas (each about 50 feet long, 8 feet wide, and 4 feet deep) will be excavated east of the existing bridge for the temporary detour bridge abutments. All excavated material will be contained to prevent sediments from entering waterways, or the excavated material will be placed directly into dump trucks and carried to an approved disposal site. These excavations will be above the ordinary high water mark (OHWM), avoiding the water of the active, wetted Jacoby Creek channel and associated emergent vegetation; however, water is expected to enter the excavated areas, therefore dewatering or seepage prevention will be required.

Within the excavated areas on either side of the channel, six or eight 36-inch diameter cast-in-place-steel shell (CISS) piles will be installed by oscillation, vibration or rotation approximately 15 to 20 feet from the wetted channel. Pile installation for the detour bridge is expected to take approximately six hours per day over the course of a week. The piles will be set approximately 100 feet deep. All pile placing equipment will be staged outside the banks of Jacoby Creek. Soil will be removed from inside the upper section of the CISS piles and filled with reinforced concrete. After the piles are installed, abutment footings will be constructed on the piles. A temporary concrete washout facility will be placed on-site for concrete clean up. Construction of the abutments is expected to take approximately one to two months to complete during the summer of the first year of construction.

The detour bridge will be pre-cast box sections transported to the site and lowered into place by a crane. The sections will be bolted together then capped/bonded with a concrete deck surface. Bridge rails will then be installed. Temporary fill will be placed for the detour bridge approaches and paved, then SB traffic will be diverted to the new bridge.

---

## ***Demolition of the Existing Jacoby Creek Bridge***

Once the detour is operational, the old bridge will be demolished. The contractor will be required to submit a demolition plan, to be approved by the Caltrans Resident Engineer, which will describe methods and measures taken to restrict or minimize construction debris from entering the creek channel prior to demolition. The California Coastal Commission (CCC), California Department of Fish and Wildlife (CDFW), and North Coast Regional Water Quality Control Board (NCRWQB) will also have an opportunity to review the demolition plan.

Prior to demolition, a debris containment system will be installed per the approved demolition plan. Temporary containment could be mounted to either the existing bridge support piles or placed on the banks of the creek outside the wetted channel to allow for removal of the bridge rails, concrete deck, and beams while minimizing the possibility of debris entering the creek channel.

Once the containment system is in place, the bridge rails will be removed with a small hoe-ram, jackhammers and/or concrete saws. Using a crane or excavator, the deck and beams will likely be taken out in pieces from above. The pile caps supporting the existing bridge deck will then be removed, similar to the deck removal. Debris will be removed from the debris containment system as demolition work proceeds. All concrete debris will be moved outside the project limits to be recycled or disposed at an approved disposal site.

Twelve of the existing bridge piers (a row of six piers on either side of the channel) are situated above the water line on the bank of Jacoby Creek and their removal will not impact the creek channel. These piers will be cut off at an elevation sufficiently low enough to accommodate the new bridge's foundation, which will be approximately four feet below the existing roadway elevation. The twelve remaining piers are in the water even at low tide and their removal will require in-stream work. To ensure all minimization and avoidance measures are implemented, a biological monitor will be present during all in-stream activities associated with removal of the existing SB Jacoby Creek Bridge and piers.

The twelve piers within the channel will be removed above the water line of the creek during low tide to avoid the need for excavation or isolation casing and to minimize turbidity. This will likely be accomplished by tightly wrapping containment material (high density polyethylene [HDPE] sheets to control dust and debris from entering the creek) to the piers below the water line, then using a concrete saw or pneumatic/hydraulic hammer to cut the piers above the water line. The cut piers will be tethered to an excavator or crane operating from outside the channel, then removed and placed outside

---

the channel. Pier removal will take approximately two weeks to complete. After demolition and removal of all structural elements of the bridge, the debris containment system will be removed.

### ***Construction of New Bridge Abutments and Final Bridge Alignment***

In the excavated areas of the old abutments, new abutments will be extended to the west along both banks of Jacoby Creek. Six to eight CISS piles will be installed on the banks about 15 to 20 feet from the wetted channel for the abutments of the new bridge. The piles will be driven to specified depths, to less than 100 feet deep, using a vibratory or oscillating pile driver. Water is expected to enter the excavated areas, therefore dewatering or seepage prevention will be required. Reinforcing and concrete will be placed within the steel shell. The abutments and pile caps will be formed, reinforcing placed, and concrete poured. A temporary concrete washout facility will be placed on-site for concrete clean up, and all pile driving equipment will be staged outside the banks of Jacoby Creek.

The SB roadway will be closed for one night. Using the jack-and-slide method, the detour bridge deck will be moved approximately 44 feet west to the original alignment with the highway. The bridge will be paved and striped, and traffic will be re-routed.

Once the new bridge is operational, the remaining asphalt surface of the detour bridge will be removed and recycled or properly disposed of outside the project limits. The fill placed for the detour will be removed and contoured to the pre-construction slopes within the median. The finished surface will be seeded with a California native seed mix and non-persistent cereal grain for erosion control. Once the area is stabilized, silt fences or other temporary Best Management Practice (BMP) systems utilized to prevent construction debris or sediment from entering Jacoby Creek will be removed.

The abutments of the detour bridge will remain in place, to be utilized for traffic staging for future replacement of the NB bridge when it reaches the end of its useful life. The abutments will be covered with topsoil and planted until such time when they will be used again.

### **Bridge Rail Upgrades at Jacoby Creek and Gannon Slough**

The existing northbound (NB) Jacoby Creek and NB Gannon Slough bridges were originally constructed in 1955 and are approximately 74.5 feet long and 76.5 feet long, respectively, and 39 feet wide. The bridges consist of reinforced concrete slabs resting on reinforced concrete pile caps on concrete piles. There are four bents in total for the NB Jacoby Creek Bridge and five for the NB Gannon Slough Bridge.

The new bridge rails will be cantilevered from the existing bridges, requiring no piers within the watercourses. A containment system will be placed along the edges of the bridges to keep foreign materials from entering the watercourses during construction. Construction of the bridge rails will be performed from the roadway; however, workers may need to walk on the bed, bank or channel of the watercourses to install and remove the debris containment system.

Both bridges will be widened by approximately 24 inches (12 inches on each side of the bridges) to accommodate the new bridge rails; however, the lane widths of 11 feet and 12 feet, the right shoulder (10 feet), and the left shoulder (4 feet) will match the existing widths. Steel tubular railing will meet standard height requirements for bicycle and pedestrian use. The wider bridge configurations will shade approximately an additional 75 square feet of Gannon Slough and an additional 100 square feet of Jacoby Creek.

## Tide Gate Replacement

Eight tide gates at five different locations within the environmental study limit (ESL) will be replaced (Table 1). The tide gates within the ESL were installed in 1954, are aging and in poor condition, and require emergency repair at an increasing rate. Included are the dual tide gates off Airport Road where the 101 Slough outlets at Eureka Slough behind the Farm Store on Jacobs Avenue; the tide gate south of Mid-City Motor World that connects to a roadside ditch at California Redwood Company; a tide gate at Brainard Slough north of Bracut; a tide gate at Old Jacoby Creek; and a triple tide gate at Gannon Slough, north of the NB Gannon Slough Bridge.

**Table 1. Tide Gate Replacements**

No.	Location	Fish Species	Existing Gate(s)	Replacement Gate(s)
1	Highway 101 Slough	Tidewater goby & salmonids	2 - 60" square	1- standard or tideflex 1- fish-friendly design
2	California Redwood Company ditch	No fish present	1 - 48" x 36" rectangular	1- standard or tideflex
3	Brainard Slough	Tidewater goby & salmonids	1 - 24" round	1- fish-friendly design
4	Old Jacoby Creek	Possibly tidewater goby	1 - 60" square	1- fish-friendly design
5	Gannon Slough	Tidewater goby & salmonids	3 - 60" x 72" rectangular	1- fish-friendly design 2- standard or tideflex

Currently, all the tide gates are the standard top-hinged flap gate design, either round or rectangular. At the locations where federally-listed fish such as salmonids and tidewater goby may be present, a fish-friendly design will be installed to facilitate fish passage. The Old Jacoby Creek, 101, Brainard, and Gannon Sloughs are locations where both gobies and salmonids may be present and will receive a fish-friendly tide gate. If there are fish present at a location with more than one tide gate, only one

---

fish-friendly gate will be installed. Once installed, the fish-friendly tide gates will be adjusted to maintain existing muted tidal flow conditions to perpetuate current habitat conditions present inland of the tide gates, such as minimum and maximum water level, salinity, and water level fluctuations.

There are a number of tide gate configurations available to provide fish passage. These include self-regulating or buoyant gate; a permanent, adjustable guillotine gate that creates a continual passage; a Muted Tide Regulator Gate; and Mitigator Fish Passage Gate. The final tide gate design selection will be determined with technical assistance requested from the National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Wildlife (CDFW).

Operation of the tide gates, and subsequent habitat enhancement, will likely be linked to further restoration activities unrelated to the action. The Federal Highway Administration (FHWA) and Caltrans will work with regulatory agencies and adjacent landowners to ensure the development and implementation of adaptive management strategies for operation of the newly installed fish-friendly tide gates to balance the habitat and fish passage needs of listed salmonids and tidewater goby with suitable land uses.

The California Redwood Company ditch has no upstream fish habitat, so this replacement gate will not have a fish-friendly design. These tide gates will be replaced with a flexible rubber tide gate. The opening of this style of tide gate is a vertical slot in a single molded piece of rubber that is mounted at the outlet of the culvert. The vertical opening is flexible and the default position is closed. When the hydraulic head differential changes, the slot opens and water flows downstream. The hydraulic head differential needed to open this type of gate is quite small, so the water flows out slowly. This design is low maintenance and debris will not prevent the gate from closing. The flexible nature of the opening allows it to close over debris and form a seal.

All replacement gates will make use of existing headwall structures and will be installed at the same level as the existing gates. Tide gate work will generally consist of removing the existing tide gates and likely re-drilling and installing new stainless steel anchors epoxied into existing concrete. Minor structural modifications to the headwalls, including concrete placement, may be needed to mount the new gates. The U.S. 101 Slough location is proposed to have a new maintenance access manway installed concurrent with the tide gate installation. The new tide gates will generally be placed by cranes then bolted into place. The existing access road at Airport Avenue will be utilized for the placement of the tide gates at the U.S. 101 Slough. Existing vegetation and shrubs will be mowed prior to the migratory bird nesting period. The remaining locations will utilize the existing shoulder on U.S. 101. Some vegetation removal may be needed to establish access to each site.

---

Tide gate replacement will coincide with low flow and low tide periods during the summer and/or winter months to minimize turbidity, exposure to fish (Caltrans NMFS 2016 BA, Appendix VII), and to ease construction. Even at low tide or within the dry season there may be a small amount of run-off flow, and one or two workers may have to enter the channel to position and install the new gate, potentially resulting in minor turbidity. If water is present in the channel during tide gate replacement, temporary exclusion devices will be placed in the channel to keep water out of the construction zone. The exclusion devices are anticipated to be in place no longer than 8 hours.

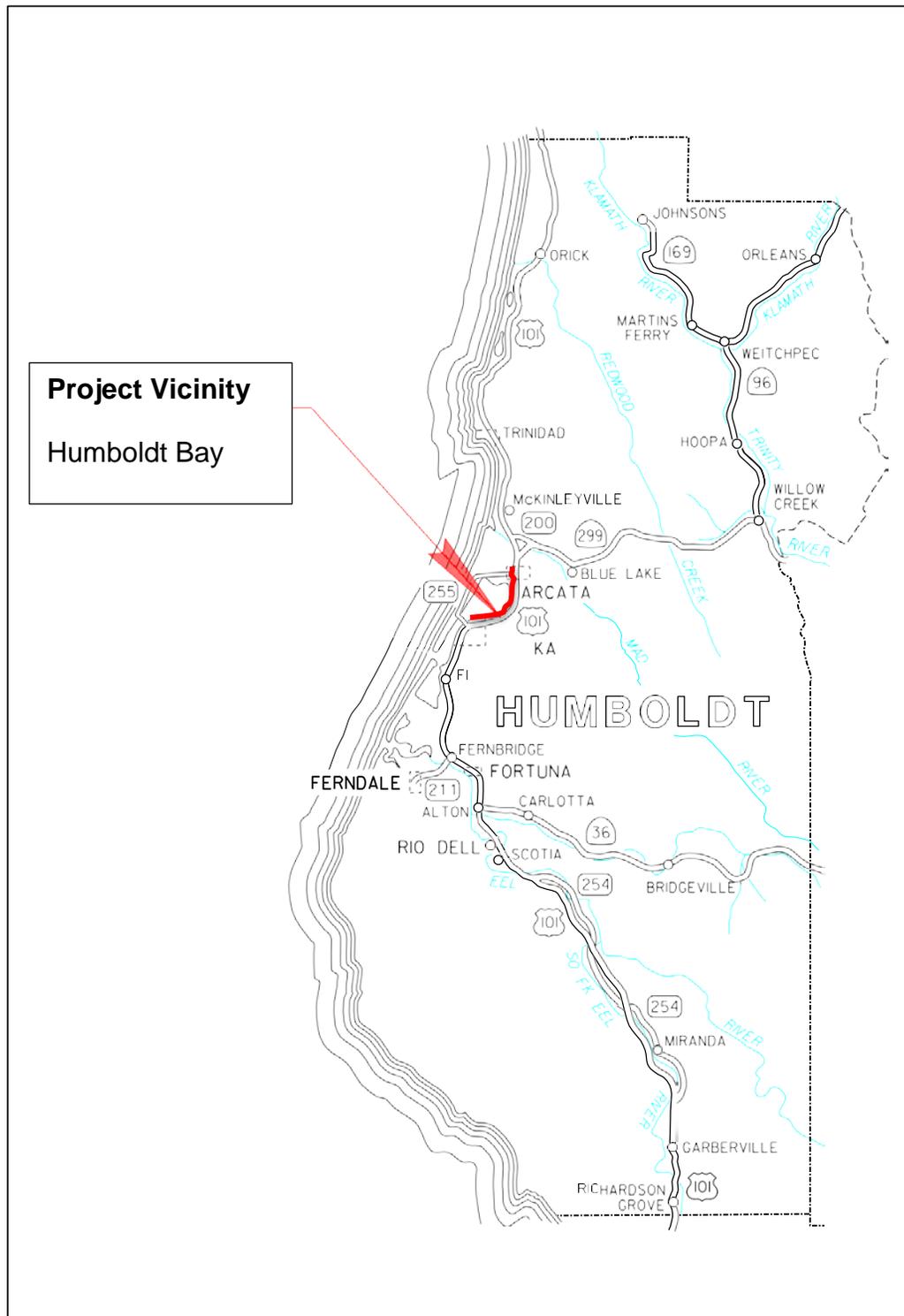
### Rock Weir Construction at Gannon Slough

Caltrans proposes to construct a rock weir in the channel of Gannon Slough downstream of the tide gates to form a backwater for the tide gate and to facilitate passage success for all salmonid life stages by providing a staging area for adults migrating upstream during the spawning season. Approximately 200 cubic yards of rock will be installed to provide backwater at the outlet of the triple tide gates (Caltrans 2016 Biological Assessment (BA), diagram in Appendix IV). The weir will be sealed with gravel and fines, creating areas where water can pool below the tide gates during ebb tide. The rock will cover an area 40 feet by 20 feet by about 3 feet deep, and extend up the side banks to prevent scouring from the outpour of the tide gates. To minimize turbidity and exposure to fish, placement of the rock will coincide with low flow and low tide periods during the summer or winter months (Caltrans 2016 BA, Appendix VII). Construction of the weir will likely be completed during low tide events. When the tide re-floods the area, some minor turbidity could be generated.

*See CD/ NMFS for Caltrans NMFS 2016 BA and referenced Appendices*

*For detailed location maps, see CD/Layouts and Plans 0E000 & 0C930*

Figure 1. General Project Location



## Project Impacts

Details of the impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat are shown in Table 2.

**Table 2. Dredge and Fill Information for SB Jacoby Creek Bridge and Tide Gate Replacement**

Project	Post Mile (PM) Area	Drainage Work Type	Type of Water Body	Fill and/or Dredge Volume (Cubic yards) and Type	Fill and/or Dredge Excavation Surface area (Square Feet or Acre)	Fill and/or Dredge Linear Feet	Type of Impact (Permanent/Temporary)
PM 79.9-84.9 0C930 Tide Gate Replacement Project	Gannon Slough	¼ ton rock for fish weir in Gannon Slough (fish mitigation)	Slough	280 CY of ¼ ton rock	0.018 acre (800 SF)	80 linear ft	Permanent
01-0E000 Southbound (SB) Jacoby Creek Bridge & Northbound (NB) Rail Replacement Project	PM 79.80/84.7	Bridge Replacement-earthen fill for temporary bridge	Perennial stream	1,550 CY of earthen fill for temporary bridge (1 Year) / 200 CY for new bridge	0.38 acre (16,552.8 SF)	100 linear ft.	Permanent (over 1 year of impact)
01-0E000 Southbound (SB) Jacoby Creek Bridge & Northbound (NB) Rail Replacement Project	PM 79.80/84.7	Bridge Replacement-work area	Perennial stream		0.42 acre (18,295.3 SF)		Temporary

### Vegetation Type

To construct the NB Jacoby Creek Bridge detour, four large (non-native) Monterey pine trees will require removal. Given the riparian position of these trees, this area will be replanted with native, ecologically appropriate small tree and shrub species that meet safety and riparian tree requirements once construction is complete.

### Tree Species

**Table 3. Trees and Shrubs to be removed within the U.S. 101 Corridor**

Post Mile	Species	DBH (inches)
84.5	Monterey pine	36
84.5	Monterey pine	61
84.5	Monterey pine	56
84.5	Monterey pine	30

### Special status animal or plant species or habitats

The proposed project may affect, and is likely to adversely affect, the federally threatened tidewater goby (*Eucyclogobius newberryi*) and designated tidewater goby critical habitat. Potential effects on the species, and avoidance and minimization measures, are covered by the formal consultation issued by USFWS November 2010 (USFWS: 81331-2010\_F-0053).

### See CD/USFWS BO/E\_A Corridor

The proposed project may affect, but is not likely to adversely affect, the federally threatened Southern Oregon/Northern California Coast (SONCC) evolutionarily significant unit (ESU) of coho salmon (*Oncorhynchus kisutch*), California Coastal (CC) Chinook salmon ESU (*O. tshawytscha*), Northern California (NC) Distinct Population Segment (DPS) steelhead (*O. mykiss*), and Southern DPS of the North American green sturgeon (*Acipenser medirostris*), or their individual designated critical habitat. Essential Fish Habitat (EFH) for Pacific coast salmon, Pacific groundfish, and coastal pelagic species also occurs in the project area and could be affected by the project. Potential effects to the species, critical habitat and EFH, and avoidance and minimization measures are covered by the formal consultation issued by NMFS on April 29, 2016.

### See CD/NMFS 20150429\_final LOC\_Eureka\_Arcata\_Corridor.pdf

---

Although the project area is within the range of the federally and state threatened northern spotted owl (*Strix occidentalis caurina*); the federally threatened and state endangered marbled murrelet (*Brachyramphus marmoratus*); the state endangered bald eagle (*Haliaeetus leucocephalus*); and state fully protected peregrine falcon (*Falco peregrinus*), there is no suitable nesting habitat for these birds within 0.25 mile of the project location and these species would not be affected by the project. The state fully protected California brown pelican (*Pelecanus occidentalis californicus*), which could potentially roost in or fly over the project area, is not likely to be adversely affected by this work.

A number of special status rare plants have been found in or near the project area. One federally listed plant—western lily (*Lilium occidentale*)—has historically been found within 0.25 mile, but not within the project area. Based upon record search data, and the limited functions and values of the habitat due to regular disturbance from roadway maintenance, no additional state or federally listed plant species are expected to occur. Replacement of the SB bridge at Jacoby Creek will have minor temporary and permanent impacts to Lyngbye's sedge (*Carex lyngbyei*)—a special status plant with a California Rare Plant Rank of 2B.2<sup>1</sup>.

## Measures to Protect Fish, Wildlife and Plant Resources

### *Best Management Practices (BMPs)*

The contractor will be required to develop and implement site-specific Best Management Practices (BMPs) and a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will identify appropriate and relevant BMPs that must be implemented to protect water quality throughout the life of the project.

Caltrans proposes to apply all applicable BMPs presented in Table C-1 of the Stormwater Project Planning and Design Guide (PPDG). Table C-1 is a matrix of the Construction Site BMPs that have been approved for use during construction. Detailed descriptions and guidance regarding implementation of these BMPs may be found in the 2003 CSBMP. Caltrans will implement the short-term construction site BMPs and long-term design treatment BMPs, as follows:

---

<sup>1</sup> California Rare Plant Rank 2B.2: Moderately threatened in California, but more common elsewhere.

### ***Short-Term Construction Site BMPs***

- SS-1 Scheduling
- SS-2 Preservation of Existing Vegetation
- SS-3 Hydraulic Mulch
- SS-5 Soil Binders
- SS-6 Straw Mulch
- SS-7 Geotextiles, Plastic Covers, Erosion Control Blankets/Mats
- SS-8 Wood Mulch
- SS-9 Earth Dikes/Drainage Swales & Lined Ditches
- SS-10 Outlet Protection/Velocity Dissipation Devices
- SS-11 Slope Drains
- SS-12 Streambank Stabilization
- SC-1 Silt Fence
- SC-2 Sediment/Desilting Basin
- SC-3 Sediment
- SC-4 Check Dam
- SC-5 Fiber Rolls
- SC-6 Gravel Bag Berm
- SC-7 Street Sweeping and Vacuuming
- SC-8 Sandbag Barrier
- SC-9 Straw Bale Barrier
- SC-10 Storm Drain Inlet Protection
- WE-1 Wind Erosion Control
- NS-1 Water Conservation Practices
- NS-2 (called NS-4 in PPDG and CSBMPM) Temporary Stream Crossing
- NS-3 Paving and Grinding Operations
- NS-11 Pile Driving Operations
- NS-12 Concrete Curing
- NS-13 Material and Equipment Use Over Water
- NS-14 Concrete Finishing
- NS-15 Structure Demolition/Removal Over or Adjacent to Water
- NS-6 Illicit Connection/Illegal Discharge Detection and Reporting
- NS-8 Vehicle and Equipment Cleaning
- NS-9 Vehicle and Equipment Fueling
- NS-10 Vehicle and Equipment Maintenance
- WM-1 Material Delivery and Storage
- WM-2 Material Usage
- WM-3 Stockpile Management
- WM-4 Spill Prevention and Control
- WM-5 Soil Waste Management
- WM-6 Hazardous Waste Management
- WM-8 Concrete Waste Management
- WM-9 Sanitary/Septic Waste Management
- WM-10 Liquid Waste Management
- TC-1 Stabilized Construction Entrance/Exit

---

### ***Long-Term Design and Permanent Treatment BMPs***

- Cut and fill slopes will receive a hydroseed application formulated by a licensed Landscape Architect to provide final stabilization.
- Use of asphalt dikes and overside drains will be kept to a minimum to maintain stormwater sheet flow drainage patterns.
- Drainage conveyance systems will be designed with consideration of downstream effects.
- Use of a retaining wall structure to minimize impacts to adjacent wetlands and existing drainage patterns.
- Sheet flow stormwater runoff drainage patterns over vegetated fill slopes and swales will be maximized for biofiltration treatment.

### ***Temporary Construction Site BMPs***

- Scheduling: construction activities involving soil disturbance adjacent to wetlands and Other Waters will take place during dry weather conditions, generally between June 1 and October 15, to minimize sediment discharges to receiving waters. Furthermore, the SWPPP prepared by the contractor prior to construction will include a scheduling BMP that specifies: 1) the project schedule will sequence construction activities with the installation of both soil stabilization and sediment control measures; 2) BMPs will be deployed in a sequence to follow the progress of grading and construction; 3) the construction schedule will be arranged so that grading and construction will occur during the dry summer months; and 4) proper scheduling will be done to avoid grading, landscaping application, pavement striping, concrete work, and asphalt paving from occurring immediately prior to forecast rain events.
- Preparation of a Rain Event Action Plans 48-hours prior to any forecasted precipitation to ensure adequate stabilization of equipment, materials, and soils will be completed prior to rain.
- Any debris and sediment will be contained within the work site or diverted into a sedimentation basin before being returned to any receiving waters. Excess material excavated from the work site will be disposed off-site at an approved disposal site away from any stream course.
- Soil stabilization measures (mulching, straw wattles) will be implemented during and after construction to reduce sediment discharge from areas of disturbed soil. After construction, areas of bare soil will be seeded or planted with a non-persistent cereal grain and California native seed mix. Straw will be certified weed-free. These measures will provide for immediate soil stabilization and subsequent vegetative cover (i.e., next growing season) until natural processes resume.

- When construction is complete, watercourse banks will be returned to natural contours.
- Silt fences, straw bales, or fiber rolls will be placed to control sediment discharge; minimal sediment will be released into receiving waters. Certified weed-free mulch, silt fences, straw bales, or fiber rolls will be applied to exposed soil areas for over-wintering protection from erosion.
- Measures will be taken to prevent construction equipment discharges from contaminating soil or waters in the construction site. Construction site entrances/exits will be stabilized and street sweeping performed to prevent tracking of sediment.
- Perimeter control for the temporary stockpiling of materials, soil, and debris that may contain potential contaminants (e.g., concrete debris, treated timbers). Excavated spoils will be controlled to prevent sedimentation to the stream.
- Use of geo-synthetic fabric (e.g., plastic, filter fabric) barriers to prevent the discharge of pollutants (e.g., sediment, oil and grease, etc.) when equipment is working adjacent to or over waterways.
- A temporary concrete washout facility will be placed on-site for concrete clean up. No concrete washings or water from concrete will be allowed to flow into waterways. No concrete will be poured within the waterways. Water that has come into contact with setting concrete will be pumped into a tank and disposed at an approved disposal site.
- To control fugitive dust during construction, loose debris will be cleaned up using a vacuum truck (as opposed to a kick broom machine). Also, pavement will be removed by cold planing, using a machine that deposits grindings directly into a truck. The cutting teeth of the grinder are lubricated with water, which is enough to minimize dust production, but not enough to create runoff.
- Preparation and implementation of a sampling and analysis plan for discharges during construction.
- For work at Jacoby Creek, instead of conventional hydraulic fluids, biodegradable vegetable or approved synthetic oil will be used for operating the vibratory hammer needed to install the bridge piles. Confirmation and approval from NMFS will be required before synthetic oil selection and use.

### *General Avoidance and Minimization Measures*

General avoidance and minimization measures will be implemented as part of construction activities to minimize and avoid impacts to sensitive as well as common biological resources. General avoidance and minimization measures are described below.

- *Worker Education* – A worker education program will be developed and implemented for all construction personnel. Training will be provided at the start of work and within five days of any new worker arrival. The program will consist of a briefing on environmental issues relative to the proposed project. Training will be conducted by a qualified biologist.
- *Erosion Control* – Erosion control and slope stabilization Best Management Practices (BMP)'s will be implemented. These practices may include installing temporary high visibility fencing (THV fencing), silt fencing, straw wattles, fiber rolls, hay bales, and other protective measures to avoid impacts to non-targeted areas. Temporary erosion control measures will be implemented at all disturbed areas. Permanent erosion control measures will be implemented upon completion of construction. Use of wildlife-friendly BMPs will be utilized.
- *Environmentally Sensitive Area Designation* – Caltrans will establish and indicate environmentally sensitive areas (ESAs) on project plans and specifications to avoid potential construction impacts to sensitive biological resources (such as rare plant populations) located within and adjacent to the construction corridor. Temporary exclusionary fencing will be placed around populations of special status plant species prohibiting construction activities in those areas.
- *Biological Monitoring* – Caltrans will have a qualified biologist present as needed to monitor construction activities in sensitive biological resource areas to ensure adherence to permit conditions and avoidance and minimization requirements.
- *Trash storage and disposal* – Trash will be stored in predator-proof containers and transported off-site at the end of each work day.
- *Restoration/revegetation* – An on-site mitigation and revegetation plan will be developed and submitted with permit applications. All disturbed areas will be revegetated with native, non-invasive species or non-persistent hybrids that will serve to stabilize site conditions. Monitoring and maintenance of native plant reestablishment and non-native colonization will be implemented.

### *Environmentally Sensitive Areas*

Environmentally sensitive areas (ESAs) will be identified on project plans and specifications and THV fencing will be installed in appropriate locations to avoid and minimize impacts to wetlands, natural communities of special concern, and trees in areas immediately adjacent to construction zones, and no work or equipment storage will be allowed within the ESAs. A Caltrans biologist will work with the survey crew and the Resident Engineer to help delineate work zones to avoid and minimize wetland impacts and tree and other vegetation removal. Additional avoidance and minimization measure will include:

- Soil stabilization and sediment control (e.g., silt fences, fiber rolls, straw bale, temporary sedimentation barriers, hydraulic mulching, hydroseeding, and straw mulch).
- Non-stormwater management (e.g., water conservation practices, clear water diversion, concrete curing, and concrete finishing).
- Waste management and materials pollution control (material delivery and storage, material use, stockpile management, spill prevention and control, solid waste management, hazardous waste management, concrete waste management, and liquid waste management).
- Specific construction site BMPs to address potential discharges of water with a high pH from contact with wet concrete will be specified by the Project Engineer, with concurrence by the Construction Stormwater Coordinator for inclusion in the contract.
- The disturbed areas within the environmental study limit will be restored and revegetated to preconstruction conditions, using regionally-appropriate California native seed mix and seedlings of plant species found on the site, under the guidance of a Revegetation Specialist and Landscape Architect.

### *Equipment Storage Areas*

- Primary staging areas will be on US 101 shoulders with possible additional staging areas on nearby private property. No staging areas will occur within environmentally sensitive areas.
- Any vehicles stored within 150 feet of the OHWL of drainage facilities, watercourses, sloughs, or Humboldt Bay will have spill prevention measures in place for refueling. This includes placement of an absorbent boom around the fuel port (on machine being fueled), as well as a thick absorbent mat that is rolled out on the ground under the equipment to catch a larger spill. When fueling vehicles and other equipment, there will be a person at both the fuel nozzle and the truck valve so that emergency shut-off could be made if there was a nozzle or hose failure.
- Proper and timely maintenance of vehicles and equipment used during construction to reduce the potential for mechanical breakdowns leading to a spill of materials.

- 
- All equipment remaining on the job site will have secondary containment placed beneath the drip zone when left overnight. Leaks will be immediately controlled with absorbent mats and repaired before equipment operates again. Clean-up of petrochemical drips will occur as soon as observed. All equipment will be monitored by the contractor daily for chemical leakage. To offer protection from storm events, Caltrans will require monitoring for storm events and the movement of equipment accordingly.
  - For all night road work and paving operations that require the use of artificial light, light shields will be used to direct lighting toward the roadway and away from adjacent water bodies to avoid impacting the aquatic environment.

### *Conservation of Riparian Habitat*

- The width of the construction disturbance zone within riparian areas will be minimized through careful pre-construction planning.
- Exclusionary fencing will be installed along the boundaries of all riparian areas and other environmentally sensitive areas (i.e., wetlands) to avoid impacts to these habitats outside the project footprint.
- Riparian vegetation removal (e.g., tree trimming) will be restricted to the minimum needed for construction access.
- Once the bridge detour is removed, the median at Jacoby Creek will be replanted with native trees and shrubs and seeded with native herbaceous vegetation that are aptly suited to the project region.

### *Bridge Work*

- To avoid barotrauma to fish, no piles will be installed in the active, wetted channel for the new SB Jacoby Creek Bridge. Piles will be vibrated, oscillated, or rotated into place on the bank 15 to 20 feet from the wetted channel. Impact driving will not be used.
- Piers from the old SB Jacoby Creek Bridge will be cut above the low tide water level to avoid impacts to fish and fish habitat. The bridge piers will be removed without excavation or the use of isolation casing to minimize turbidity in the creek.
- To avoid and minimize impacts to the watercourses, all bridge debris will be contained. The demolition debris containment system may be mounted on the existing bridge piers and/or placed on the stream banks outside the wetted channel. Containment will minimize the potential for bridge demolition debris to enter the watercourse.

- No construction equipment will work within the active, wetted creek channel; however, workers will need to walk within the stream to install, maintain, and remove the debris containment system. The contractor will be required to submit a Demolition Plan to the Resident Engineer for approval. The Demolition Plan will describe measures taken to restrict or minimize construction debris from entering the creek channel and to avoid or minimize the amount and extent of workers walking in the stream channel. The Demolition Plan will prohibit the use of any structure placed within the wetted channel of Jacoby Creek and require demolition activities coincide with low flow periods to minimize watercourse impacts.
- The contractor will be required to place temporary barrier fencing, or a similar form of visual barrier, along the entire length of the north and south banks of Jacoby Creek (within the vicinity of the SB and NB Jacoby Creek bridges) to minimize visual disturbance to fish and to prevent workers from crossing the creek during routine movements within the BSA. In addition, the contractor will build or install a temporary footbridge that workers may use to cross the creek without walking in the wetted channel. Both ends of the footbridge will be placed outside the wetted channel.
- Excavations for the temporary detour bridge abutments will be below the mean high tide line; cofferdams will be installed to exclude water in the Jacoby Creek channel.
- To ensure adherence to all permit conditions and all minimization and avoidance measures are implemented, a biological monitor will be present during all in-stream activities associated with removal of the old SB Jacoby Creek Bridge and piers. The biological monitor will also ensure the temporary footbridge and the visual barrier have been properly installed and maintained.

### *Fish*

- In-stream work within a bed, bank, or channel of a watercourse will be restricted to the period between July 1st and October 15th.
- Construction activities restricted to this period include all tide gate replacements, rock weir construction at Gannon Slough, pile installation on the banks of Jacoby Creek for the new bridge and detour bridge, and activities associated with workers potentially walking in Jacoby Creek to install/maintain the debris containment structure and remove the old bridge piers.

- Any work performed within a wetted channel that involves placement of rock or workers walking within the channel (i.e., construction of rock weir at Gannon Slough, possible tide gate replacement, and construction/maintenance of containment systems for bridge demolition and bridge pier removal) will coincide with low flow and low tide events (outside of significant precipitation events and between the latter two hours of outgoing tides and beginning two hours of incoming tides).
- Limit in-stream work to low flow and low tide periods to minimize potential turbidity associated with workers walking in the channel or rock placement, and minimize exposure and avoid injury to fish that might otherwise be present when water levels are higher.

### *Tide Gate Installation and Monitoring*

- Tide gates will be installed during low tide (i.e., when old tide gates are out of the water) to minimize sediment release into waterways and to avoid fish that may occur at the tide gate sites when water is present.
- If water is present in the channel during tide gate replacement, temporary exclusion devices will be placed in the channel to keep water out of the construction zone. The exclusion devices would be in place no longer than 8 hours.
- Pre-project hydrologic conditions will be assessed upstream of the existing tide gates by a qualified consultant (approved by the USFWS and NMFS) prior to construction to document baseline conditions.
- The qualified consultant will make the preliminary settings to the adjustable fish-friendly tide gates. Since the gates are being replaced because they no longer close effectively, the new adjustable gates will be opened enough to mimic the current hydrology. Once the tide gates are installed, upstream water conditions will be monitored daily and the adjustable gate will be opened or closed slightly until average weekly post-construction conditions are within 95 percent of preconstruction conditions.
- Monitoring and adjustment will continue for two years following tide gate installation by a qualified consultant. There will be no monitoring of water conditions at new tide gates that are not adjustable (i.e., tide gates at Jacobs Avenue and California Redwood Company ditches).

### *Migratory Birds and Bats*

The following avoidance and minimization measures will reduce the potential effects on migratory birds and bats:

- Install exclusion devices on the bridges before February 15 or conduct nest removal every 2-3 days during the nesting season (February 15 through September 1) to deter nesting migratory birds and roosting bats.
  - Netting material will not be used as an exclusion device.
  - If the nest removal strategy is implemented, a qualified biologist will survey the bridge before nest removal to ensure the nest is not occupied.
- Vegetation will be removed outside the bird breeding season (September 2 through February 14). If vegetation has not been cleared outside the breeding season (if cleared between February 15 and September 1), the following guidelines will be observed:
  - No earlier than two weeks prior to construction, a qualified biologist will conduct migratory bird surveys to identify nesting birds within a 300-foot buffer of the project construction area. If active bird nests are found during pre-construction surveys:
    - A qualified biologist will coordinate with CDFW to establish the appropriate buffer for specific species.
    - A buffer will be delineated around each active nest, and construction activities within the buffer area will not occur.
    - A qualified biologist will monitor the active nest for disturbance during construction and nesting chronology. All disturbed areas will be revegetated and restored to pre-construction conditions. Replanting will occur with native plant material indigenous to the area.

### *Special-Status Plants*

Avoidance and minimization measures for special status plant species will include:

- Placement of ½ to 2-inches thick metal/wood/rubber sheets over the top of the Lyngbye's sedge stands where equipment access is required to prevent the equipment tracks/wheels from rutting and compressing the soil and uprooting or destroying the sedges.
- Install THV fencing so that equipment does not leave protective mats.
- Install THV fencing on the banks of Gannon Slough to protect the occurrences of Humboldt Bay owl's-clover, western sand-spurrey, and seacoast angelica.

---

Before construction, the Resident Engineer will work with the Project Biologist and Contract Biologist to locate placement of protective pads and THV fencing.

### *Invasive Plants*

- All equipment used for off-road construction activities will be weed-free prior to entering the project.
- Any seed mixes or other vegetative material used for revegetation of disturbed sites will consist of non-persistent cereal grain, California native seed mix, or locally adapted native plant materials to the extent practicable.
- Any equipment (including boots/waders) and construction equipment shall be properly disinfected or cleaned according to guidance provided by the State of California Aquatic Invasive Species Management Plan (CDFW Revised 2016 protocol) prior to in-water work to prevent the spread of aquatic invasive species.
- Excess excavated soil and plant materials will be disposed at an upland location where it cannot be washed into any watercourse. The disposal will comply with all county and local regulations.
- Caltrans will not allow disposal of soil and plant materials from any areas that support invasive species to areas that support stands dominated by native vegetation.
- Plant species used for erosion control will consist of native, non-invasive species or non-persistent hybrids that will prevent invasive species from colonizing.
- The Project Revegetation Plan will address and implement an invasive weed plan which will target identified invasive species on the California Department of Food and Agriculture or the Cal-IPC lists.

### *On-Site Mitigation and Revegetation Plan*

The draft On-Site Mitigation and Monitoring Plan (On-Site MMP) is still in the editing phase and can be submitted the upon request.

### *Off-Site Mitigation Plan*

Caltrans proposes to utilize permittee-responsible mitigation strategy at an off-site location(s) in the north Humboldt Bay area to mitigate for permanent and temporal loss of wetlands from the proposed action. The current mitigation proposal involves establishing mitigation credits on the Lanphere parcel. The Lanphere parcel is diked former tidelands that are currently in agricultural use. The Lanphere parcel (project site—located approximately 3.5 miles northwest of the city of Arcata) was purchased by Caltrans for the purpose of constructing compensatory wetland mitigation for offsetting impacts to jurisdictional wetlands associated with the Eureka-Arcata Route 101 Corridor Improvement Project. The proposed mitigation project would convert existing upland and seasonal freshwater wetland habitat on the Lanphere parcel to tidal and subtidal habitat, while creating, restoring, and enhancing freshwater and forested wetlands.

Caltrans is currently working with a consultant to refine the design and create a mitigation and monitoring plan (MMP). Agency coordination and consultations are ongoing. The Draft MMP is proposed for Agency review and submittal November 2018. Caltrans is currently investigating other parcels to meet the State of California “No Net Loss” policy.

## **Related Permits and Approvals**

<b>Permit</b>	<b>Applied</b>	<b>Issued</b>
Section 404 CWA Individual Permit	8/15/2018	Pending
Section 401 Water Quality Certification	8/15/2018	Pending
USFWS Biological Opinion/Incidental Take	4/2010	11/22/2010
NMFS Biological Opinion/Incidental Take	2/2016	4/29/2016
Coastal Consistency Certification	2/8/2013	11/14/2013
Coastal Development Permit	9/2018	Pending
Section 106 Compliance	9/2018	Pending

## Adjacent Parcels

APN	Property Owner Name	Property Address	Mailing Address
014-151-090	Carl Johnson	3956 Jacobs Ave. Eureka, CA 95501	3956 Jacobs Ave. Eureka, CA 95501
017-102-011	County Of Humboldt		
017-102-100	Harvey M Harper Company	4800 N Highway 101, Eureka, CA 95503	4800 N Highway 101 Eureka, CA 95503
501-091-020	Ronald Rodoni / Ronan Oday		1860 Ronald Ave. Fortuna, CA 95540
501-091-140	Marjorie Brundy / The 2004 Marjorie A Brundy Trust		3329 Halfway Ave., McKinleyville, CA 95519
501-061-010	City of Arcata		736 F St. Arcata, CA 95521
501-042-050	City of Arcata		736 F St. Arcata, CA 95521
501-043-090	United States of America		
501-043-110	United States of America		
017-081-010	California Redwood Company	5151 US Highway 101, Eureka, CA 95501	1301 5th Ave., Suite 2700 Seattle, WA 98101
405-061-060	City of Eureka		
017-102-030	United States of America		
501-091-060	Northwestern Pacific Railroad Co.		
501-241-270	Northwestern Pacific Railroad Co.		
017-102-006	State of California		
017-102-012	Harvey M Harper Company		4800 N Highway 101 Eureka, CA 95503

---

## Overall Project as described in Environmental Impact Report/Statement

The selected build alternative, Modified Alternative 3A, consists of five Projects and one Mitigation Project. Modified Alternative 3A Projects consist of the following elements:

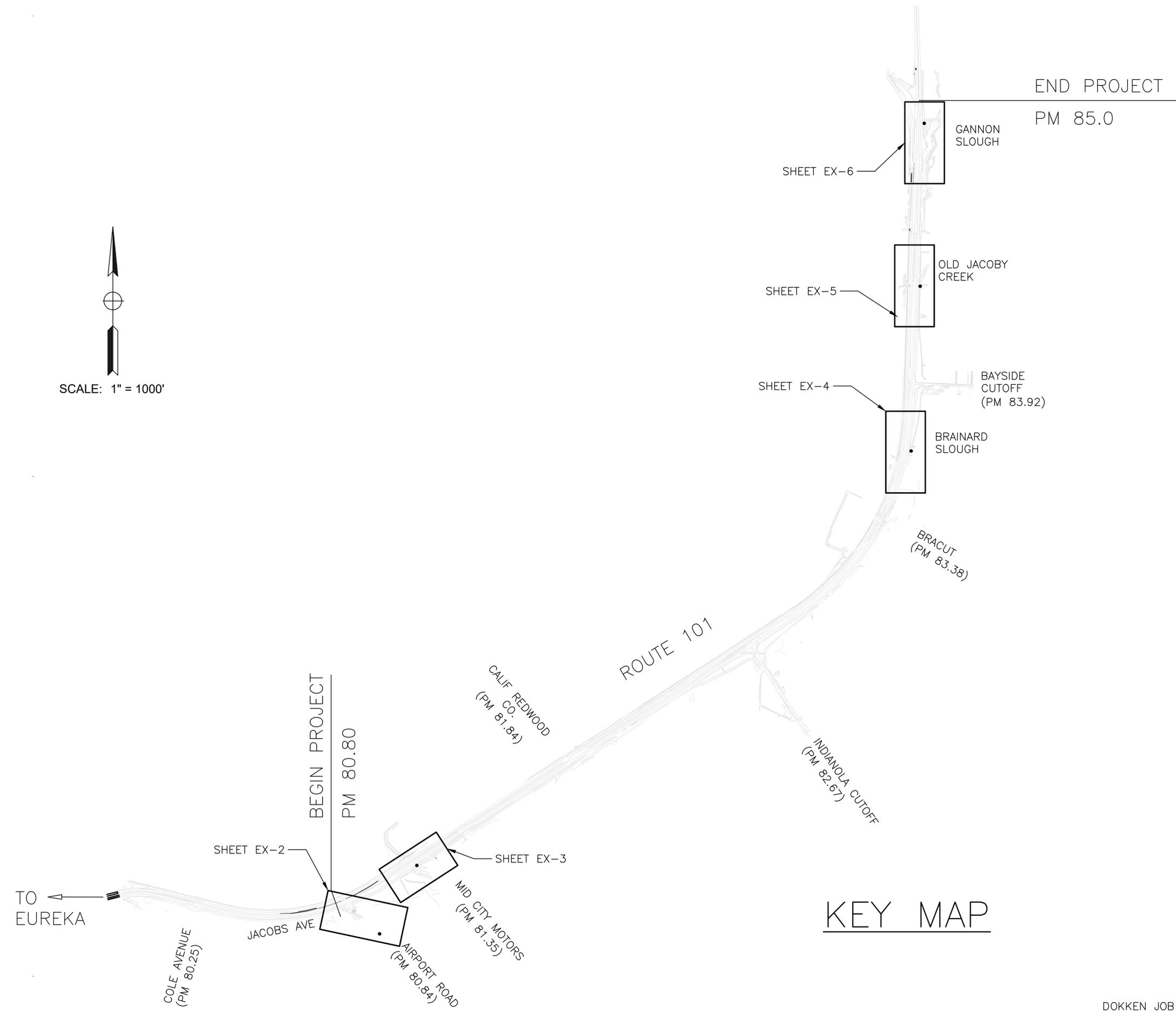
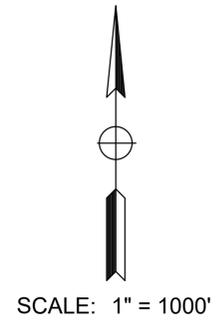
- Replace bridge rails on the NB Jacoby Creek and Gannon Slough bridges
- Replacement of the SB Jacoby Creek Bridge
  - Includes construction of a detour bridge
  - Demolition of existing Jacoby Creek Bridge
  - Construction of new bridge abutments
- Extension and spot widening to extend the deceleration lane at Cole Avenue, and extend deceleration and acceleration lanes at Mid-City Motor World, California Redwood Company, Bracut Industrial Park, Resale Lumber/ Bracut Maintenance Yard, and Bayside Cutoff
- Replacement of eight tide gates within the project limits, four with a fish-friendly design
- Construction of rock weir in Gannon Slough at the outlet of the new tide gates
- Replace electrical lines for replaced/relocated highway lighting
- Addition or replacement of roadway lighting
- Vegetation removal to establish a Clear Recovery Zone
- Removal of Safety Corridor signage
- Shoulder and curb replacement at the US 101/Route 255 Interchange
- Installation of Guardrail and Cable Rail Safety Barrier
- Paving of new roadway
- Construct a grade separation at the intersection of US 101 and Indianola Cutoff with steeper fill slopes and narrower median to minimize wetland impacts
- Construct half signal on NB US 101 at Airport Road
- Close all current median crossings except at Airport Road
- Additional NB lane from Airport Road to Mid-City Motor World
- Road realignment and drainage modifications at Jacobs Avenue/Airport Road Intersection

**Enclosures:**

**CD for Agencies with Additional Permit Application Materials**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	CALCULATED, DESIGNED BY	REVISOR	DATE
<b>Caltrans</b>		CHECKED BY	BY	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	HUM	101	80.8/85.0	1	6
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE			No. _____		
			Exp. _____		
<small>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.</small>					
DOKKEN ENGINEERING 110 BLUE RAVINE RD. SUITE 200 FOLSOM, CA 95630					



KEY MAP

EX-1

<b>ROUTE 101 TIDE GATE REPLACEMENT</b>	
EA 0C930	PM 80.8-85.0
CU 00000	EA 0C930





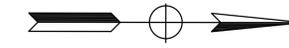


**LEGEND:**

- CALTRANS RIGHT-OF-WAY
- PROPOSED CONSTRUCTION LIMITS

**NOTE:**

1. CONTRACTOR TO SET UP TRAFFIC CONTROL FOR SHOULDER AND POSSIBLE LANE CLOSURE DURING CONSTRUCTION



SCALE: 1"=50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	HUM	101	80.8/85.0	5	6

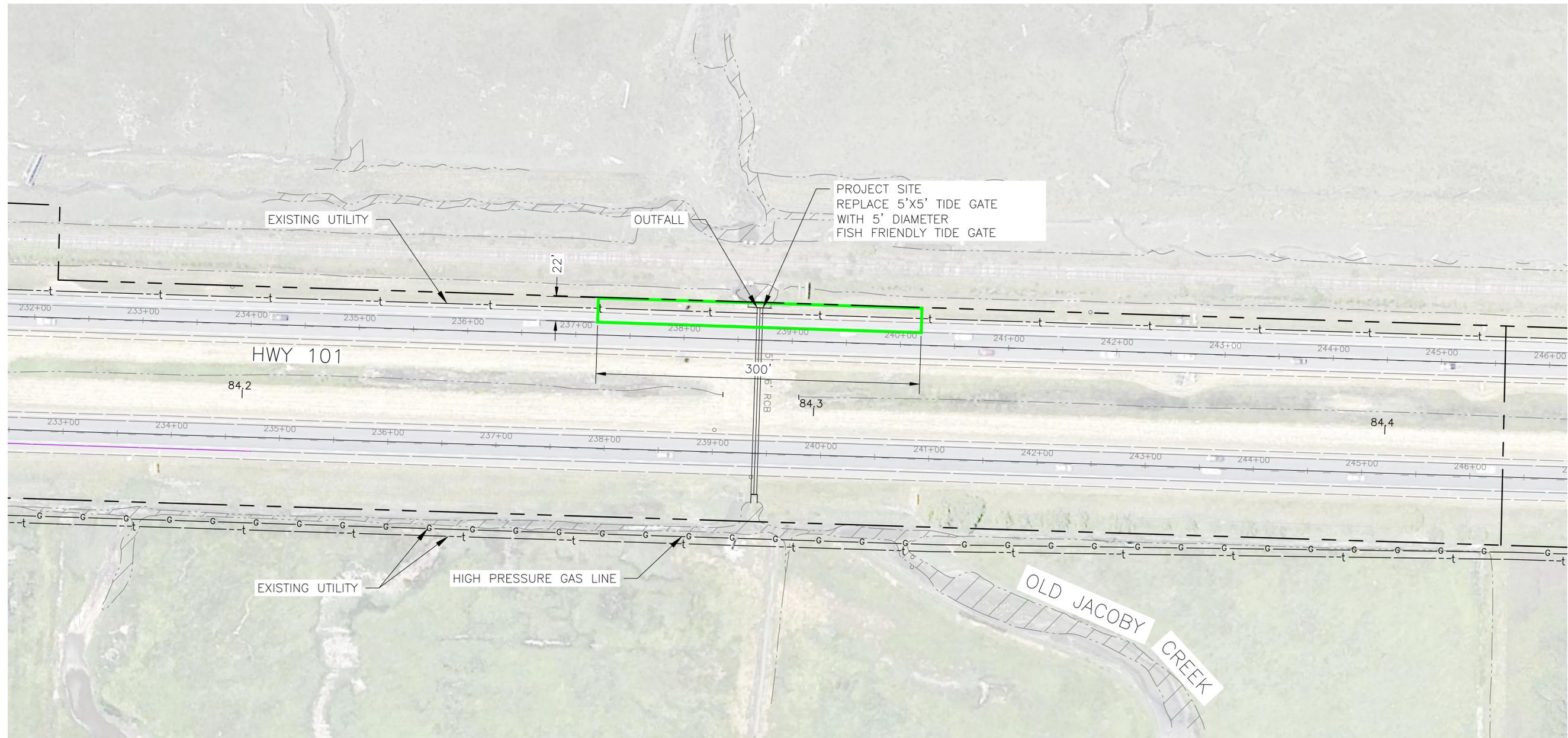
  

REGISTERED CIVIL ENGINEER	DATE
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER  
No. \_\_\_\_\_  
Exp. \_\_\_\_\_  
CIVIL  
STATE OF CALIFORNIA

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

DOKKEN ENGINEERING  
110 BLUE RAVINE RD.  
SUITE 200  
FOLSOM, CA 95630



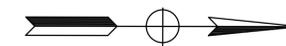
EX-5



ROUTE 101 TIDE GATE REPLACEMENT	
EA 0C930	PM 80.8-85.0
CU 00000	EA 0C930

**LEGEND:**

- CALTRANS RIGHT-OF-WAY
- PROPOSED CONSTRUCTION LIMITS



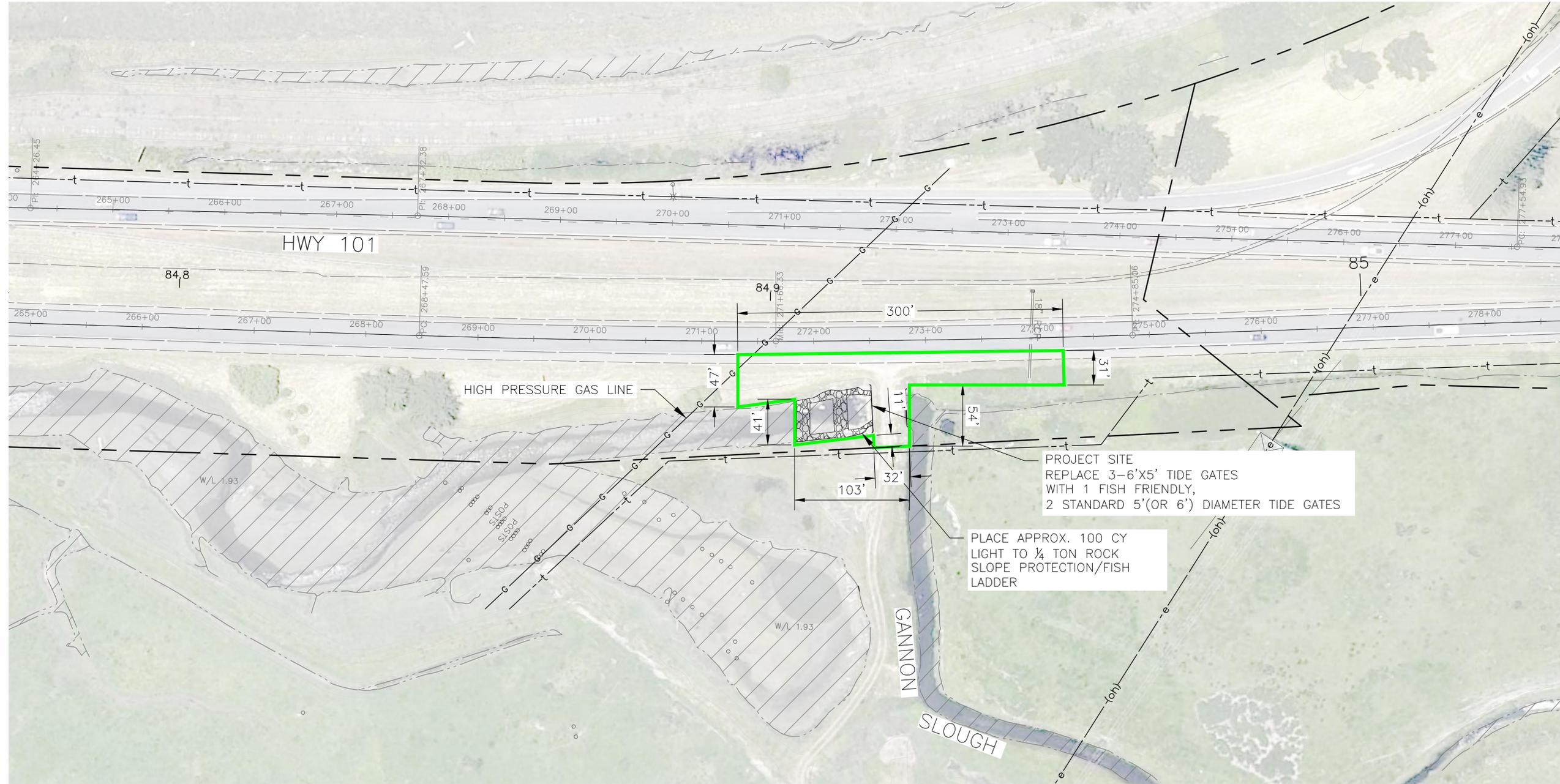
SCALE: 1"=50'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	HUM	101	80.8/85.0	6	6

REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
 PLANS APPROVAL DATE \_\_\_\_\_  
 No. \_\_\_\_\_  
 Exp. \_\_\_\_\_  
 CIVIL  
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.  
 DOKKEN ENGINEERING  
 110 BLUE RAVINE RD.  
 SUITE 200  
 FOLSOM, CA 95630

STATE OF CALIFORNIA — DEPARTMENT OF TRANSPORTATION  
 CONSULTANT FUNCTIONAL SUPERVISOR  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 REVISED BY  
 DATE REVISED



EX-6

<b>ROUTE 101 TIDE GATE REPLACEMENT</b>	
EA 0C930	PM 80.8-85.0
CU 00000	EA 0C930

INDEX OF PLANS	
SHEET No	DESCRIPTION
1	TITLE AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3-5	LAYOUTS
X	CONSTRUCTION DETAILS
X	CONSTRUCTION AREA SIGNS
6-8	TRAFFIC HANDLING PLANS, DETAILS AND QUANTITIES
X	SUMMARY OF QUANTITIES

STRUCTURE PLANS	
XX-XX	JACOBY CREEK BRIDGE 04 0023L (REPLACE)
XX-XX	JACOBY CREEK BRIDGE 04 0023R BRIDGE RAILS
XX-XX	GANNON SLOUGH BRIDGE 04 0024R BRIDGE RAILS

THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

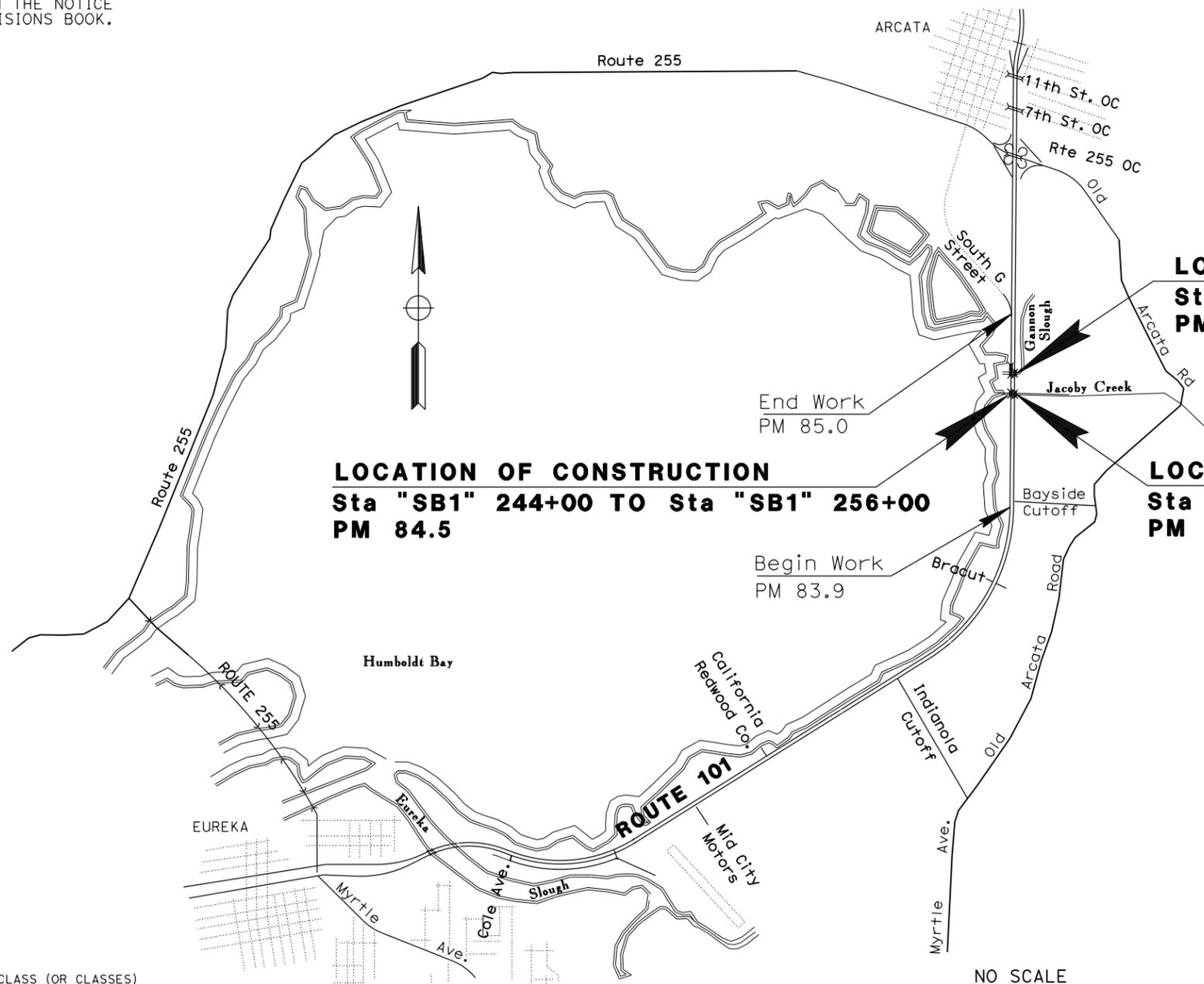
**STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION**

**PROJECT PLANS FOR CONSTRUCTION ON  
STATE HIGHWAY  
IN HUMBOLDT COUNTY  
NEAR ARCATA  
FROM 0.10 MI SOUTH OF JACOBY CREEK BRIDGE 04-0023L & R  
TO 0.10 MI NORTH OF GANNON SLOUGH BRIDGE 04-0024R**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	HUM	101	84.4/84.8	1	X

**Caltrans**



**LOCATION OF CONSTRUCTION**  
Sta "SB1" 244+00 TO Sta "SB1" 256+00  
PM 84.5

End Work  
PM 85.0

Begin Work  
PM 83.9

**LOCATION OF CONSTRUCTION**  
Sta "NB1" 260+90 TO Sta "NB1" 261+66.5  
PM 84.7

**LOCATION OF CONSTRUCTION**  
Sta "NB1" 249+60 TO Sta "NB1" 250+52  
PM 84.5

NO SCALE

PROJECT MANAGER  
TROY ARSENEAU

DESIGN ENGINEER  
L. R. ASHLEY

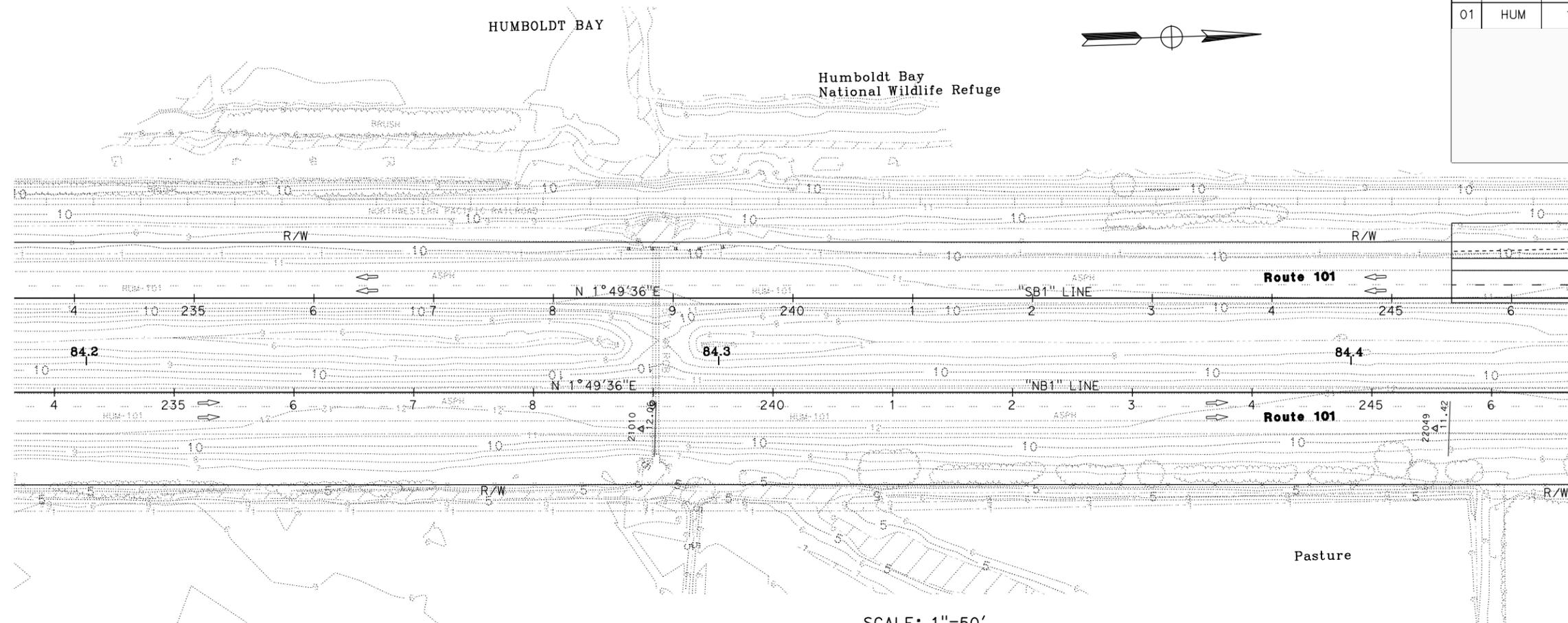
THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

CONTRACT No.	<b>01-0E0004</b>
PROJECT ID	<b>0113000091</b>

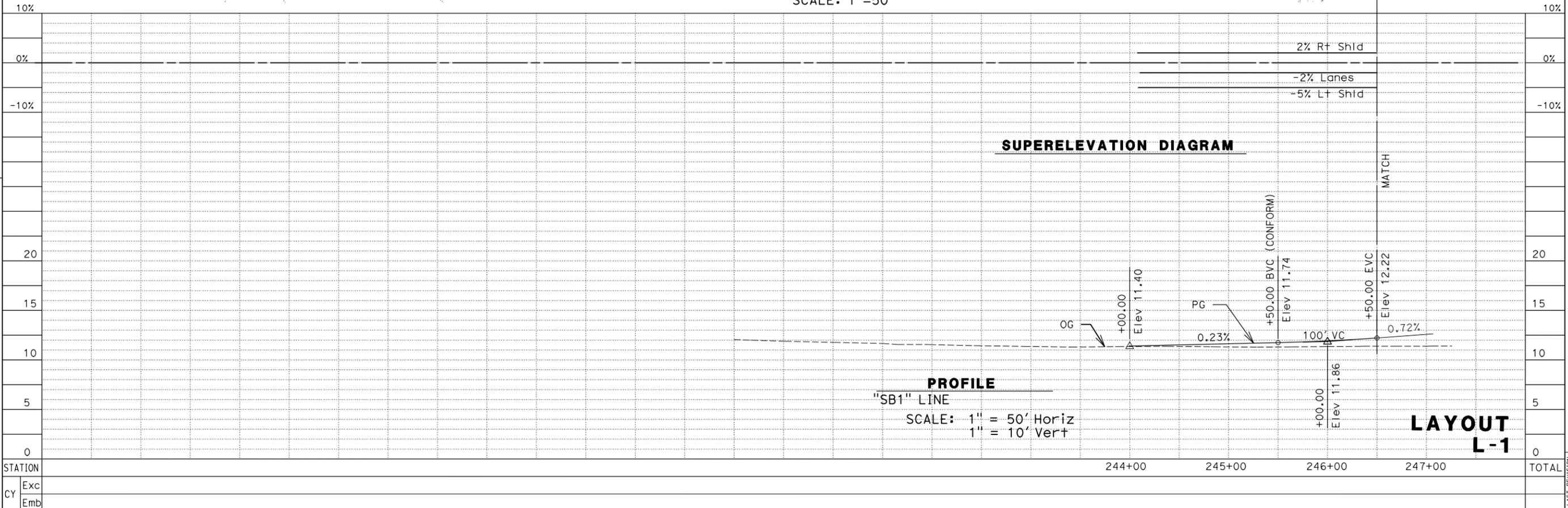
DATE PLOTTED => 30-MAY-2018  
TIME PLOTTED => 16:05  
LAST REVISION 02-29-16



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	HUM	101	84.4/84.8		



SCALE: 1"=50'



**SUPERELEVATION DIAGRAM**

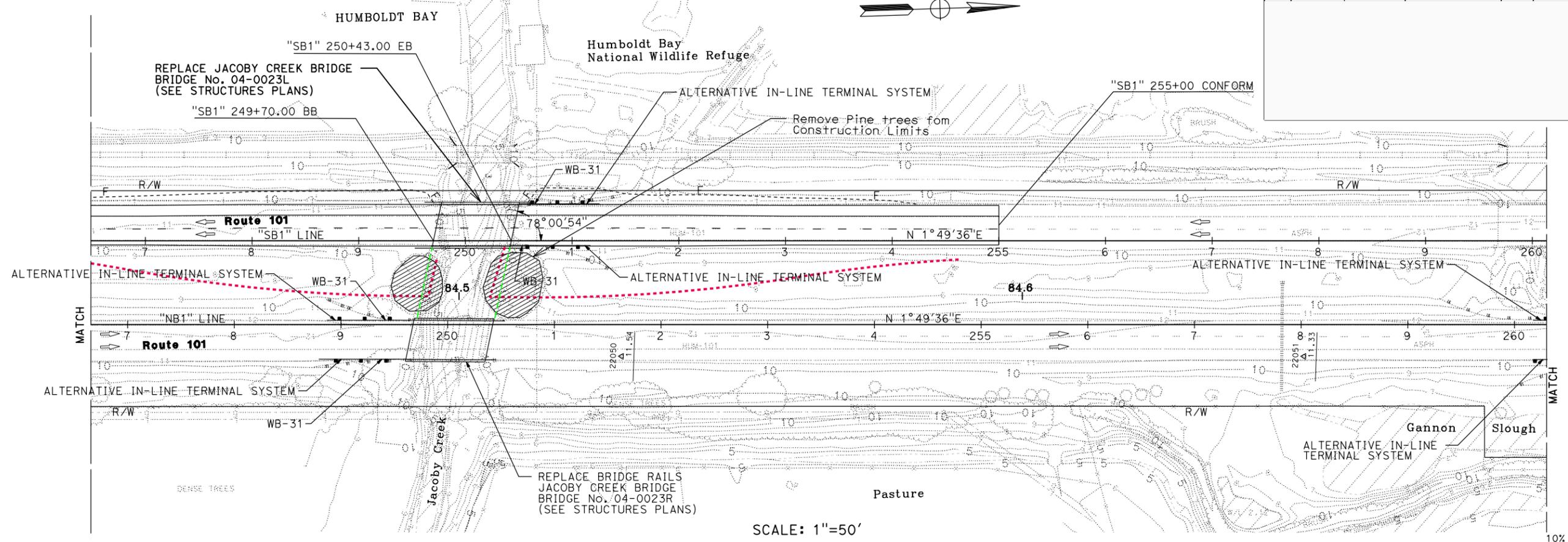
**PROFILE**  
 "SB1" LINE  
 SCALE: 1" = 50' Horiz  
 1" = 10' Vert

**LAYOUT L-1**

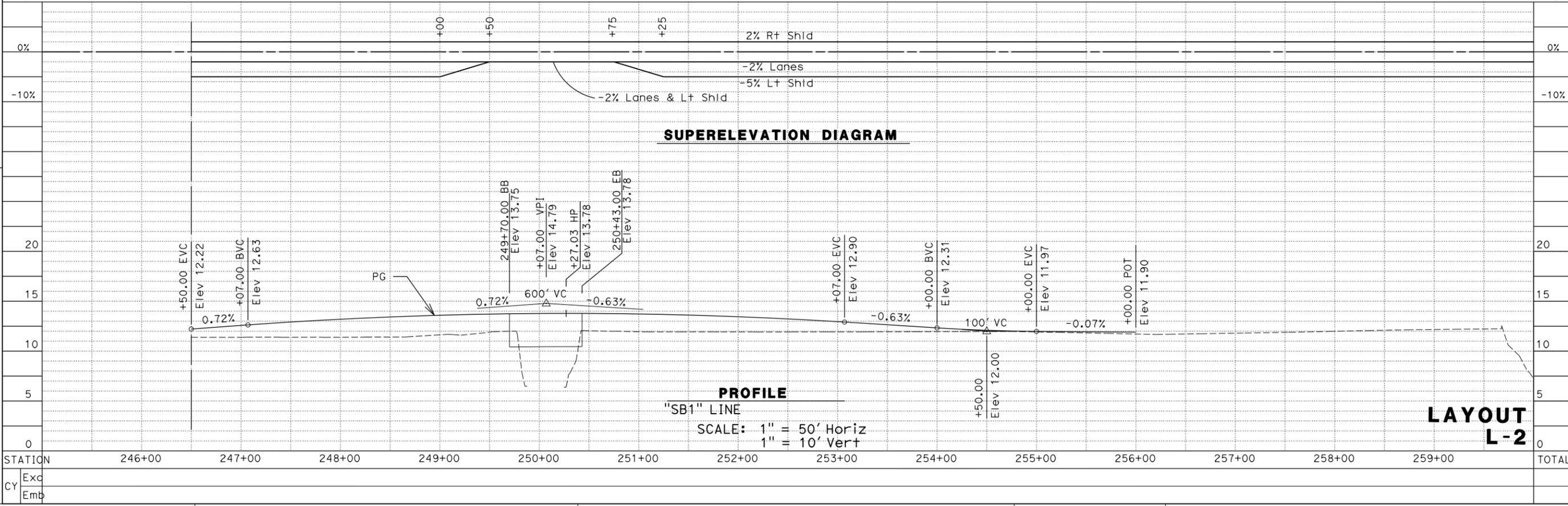
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Galtrans®  
 FUNCTIONAL SUPERVISOR  
 T LARK  
 REVISIONS: 00-00-00  
 DATE PLOTTED => 02-AUG-2018  
 TIME PLOTTED => 16:05

STATION	Exc	Emb	TOTAL
244+00			
245+00			
246+00			
247+00			
TOTAL			

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	HUM	101	84.4/84.8		



SCALE: 1"=50'



**SUPERELEVATION DIAGRAM**

**PROFILE**

"SB1" LINE  
SCALE: 1" = 50' Horiz  
1" = 10' Vert

**LAYOUT L-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	T LARK	REVISOR	DATE REVISOR
Exc	Emb	CALCULATED-DISIGNED BY	CHECKED BY	

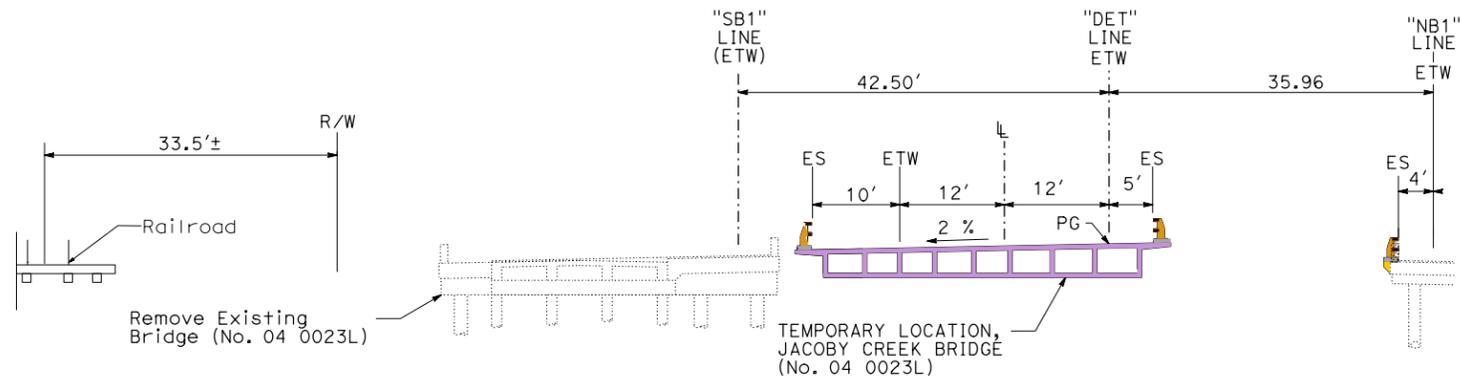
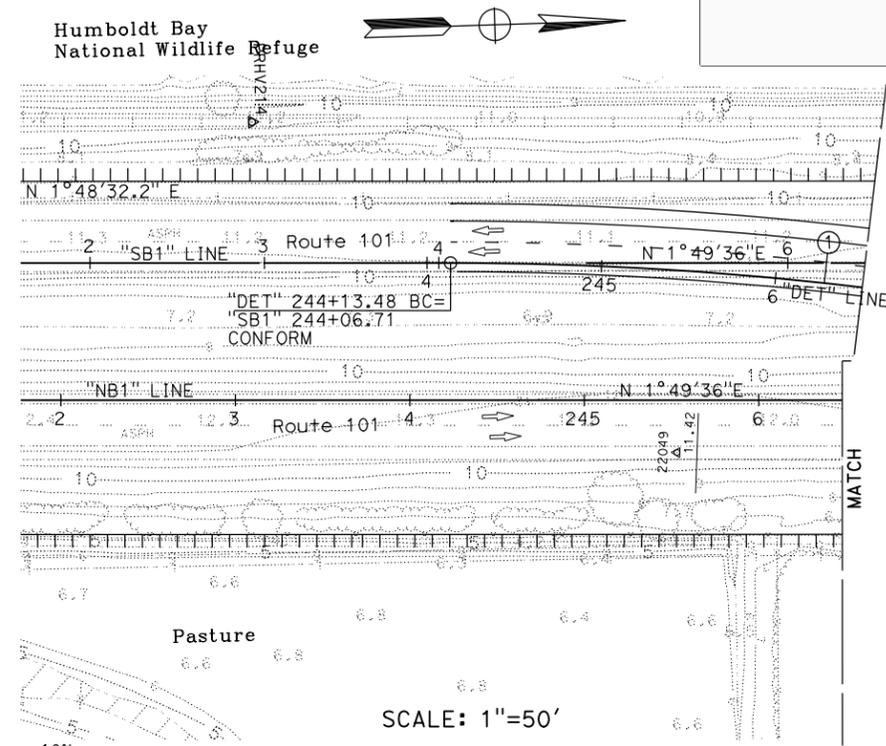
LAST REVISION: 00-00-00      DATE PLOTTED => 02-AUG-2018      TIME PLOTTED => 16:05



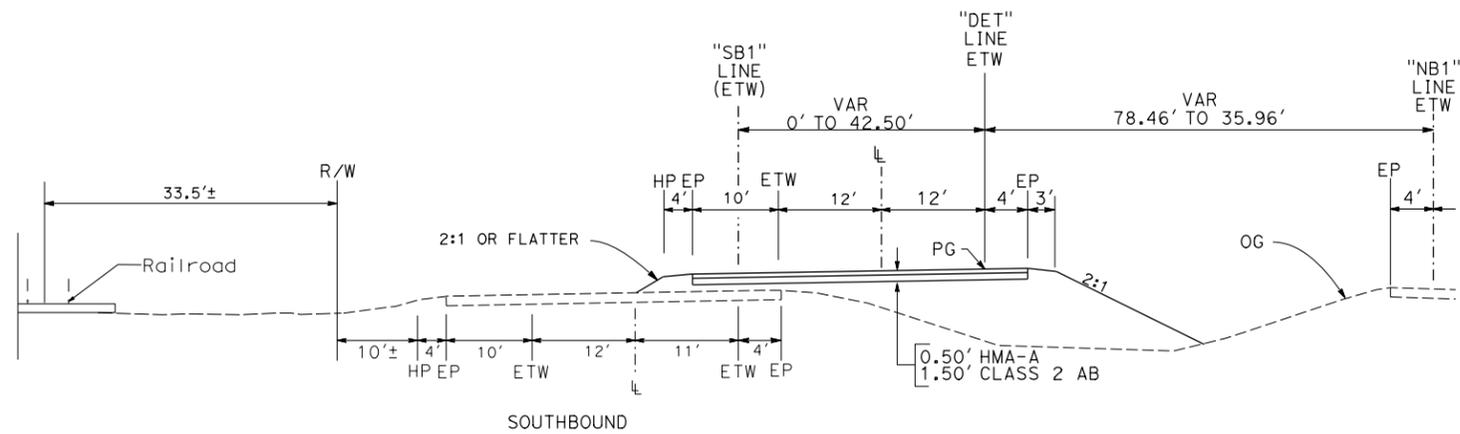
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR  
 T LARK  
 REVISIONS:  
 REVISION NO. | DATE | BY | DESCRIPTION  
 1 | 7/2/2010 | T LARK |

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	HUM	101	84.4/84.8		

CURVE DATA							
No.	⊕	R	Δ	T	L	N	E
1		2000'	09°04'07"	158.61'	316.56'	2196748.53	5987689.10

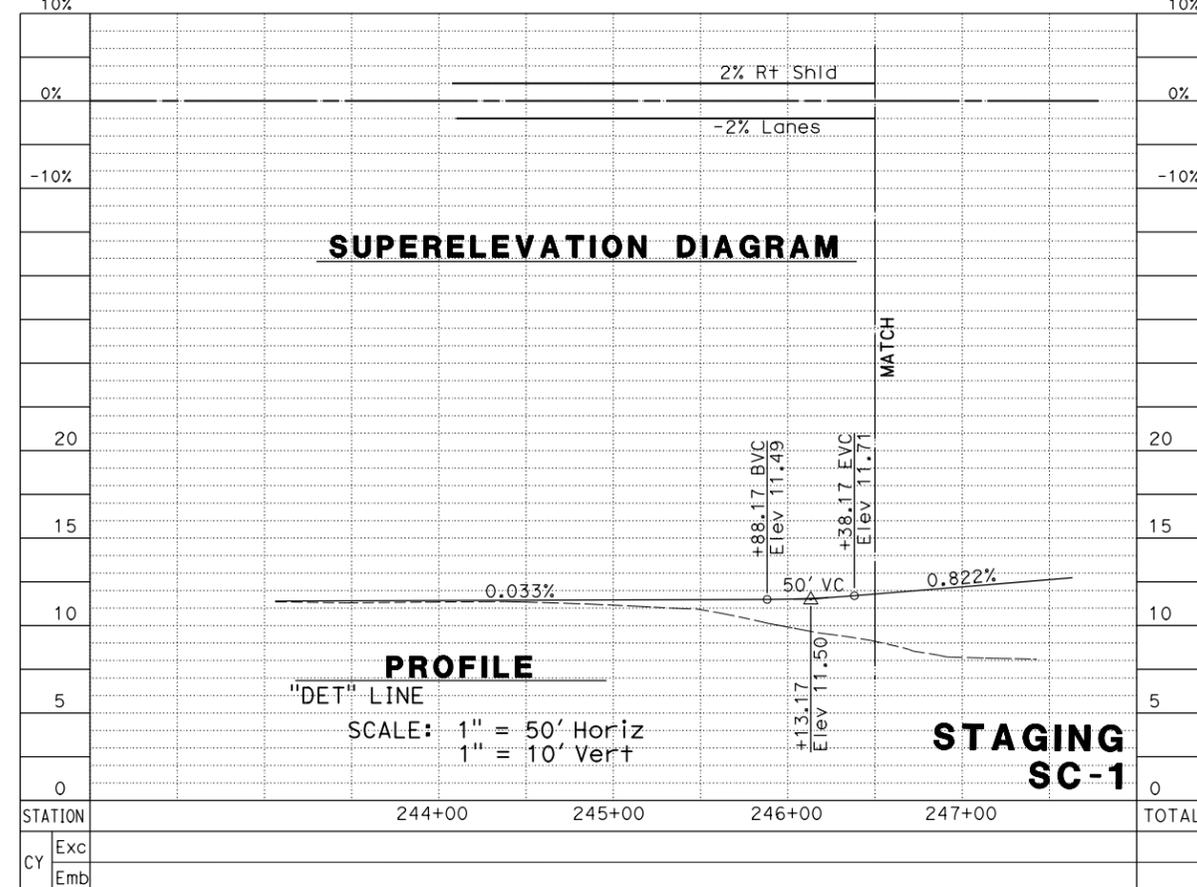


Sta "DET" 249+70.00 TO Sta "DET" 251+43.00



Sta "DET" 244+13.48 TO Sta "DET" 249+70  
 Sta "DET" 251+43 TO Sta "DET" 255+97.33

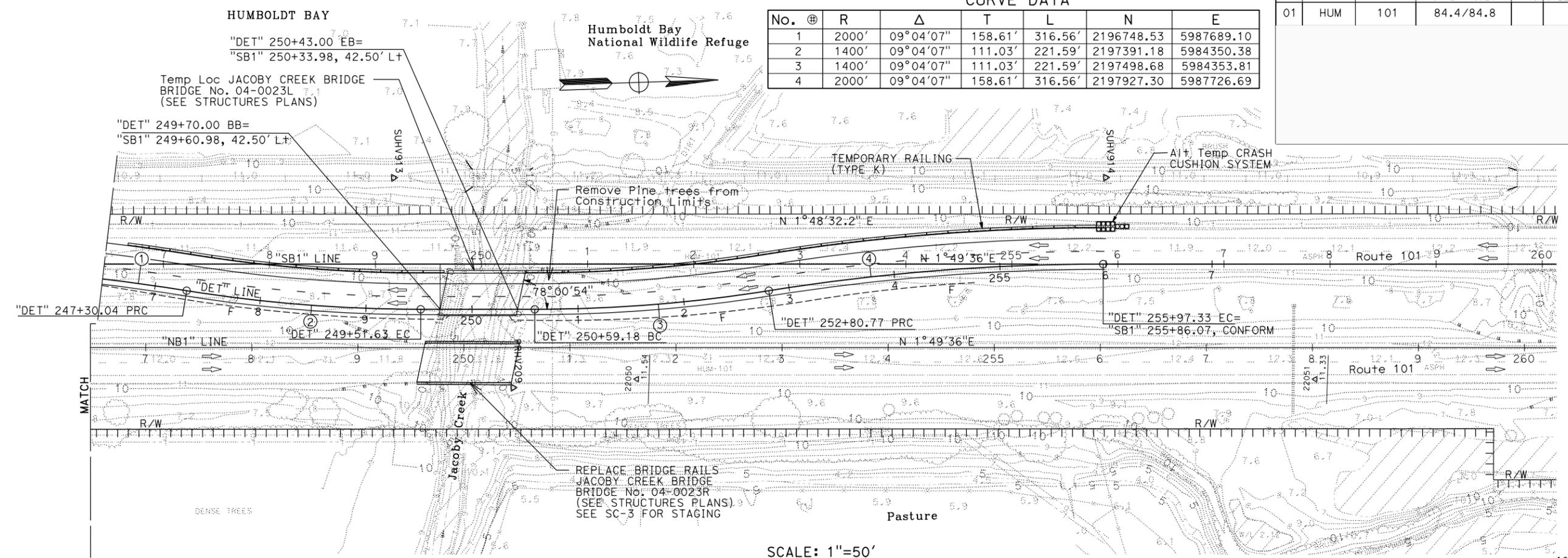
**TYPICAL SECTIONS**  
 "DET" LINE  
 NO SCALE



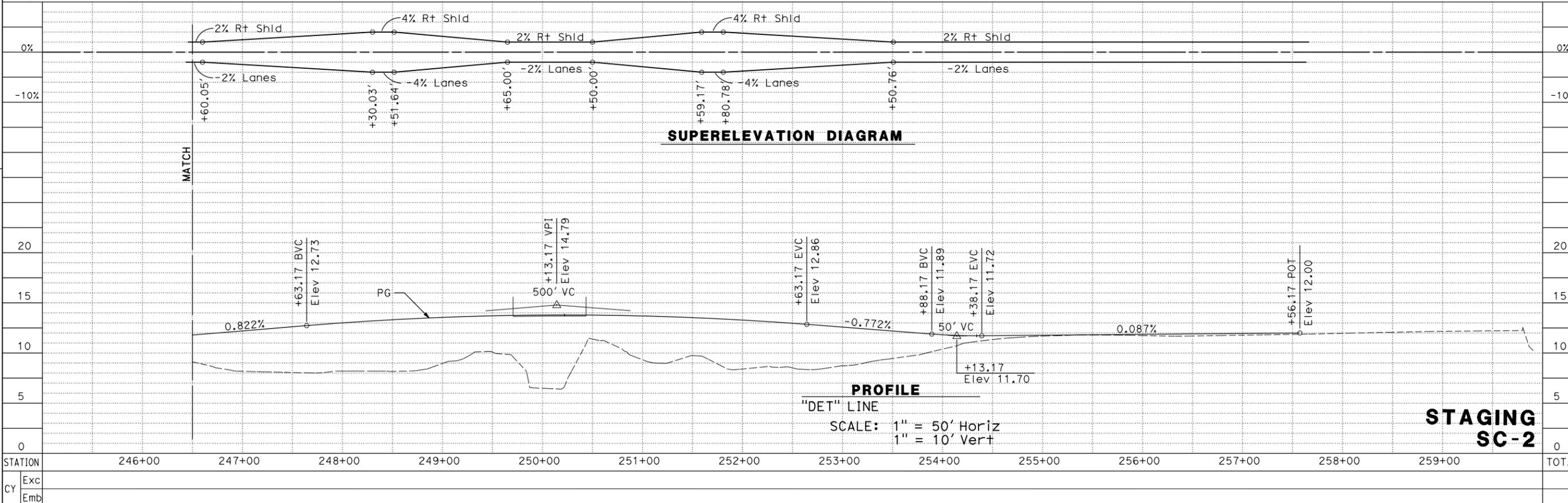
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR  
 T LARK  
 CALCULATED-D  
 DESIGNED BY  
 CHECKED BY  
 REVISIONS  
 REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	HUM	101	84.4/84.8		

No.	⊕	R	Δ	T	L	N	E
1		2000'	09°04'07"	158.61'	316.56'	2196748.53	5987689.10
2		1400'	09°04'07"	111.03'	221.59'	2197391.18	5984350.38
3		1400'	09°04'07"	111.03'	221.59'	2197498.68	5984353.81
4		2000'	09°04'07"	158.61'	316.56'	2197927.30	5987726.69



SCALE: 1"=50'



PROFILE  
 "DET" LINE  
 SCALE: 1" = 50' Horiz  
 1" = 10' Vert

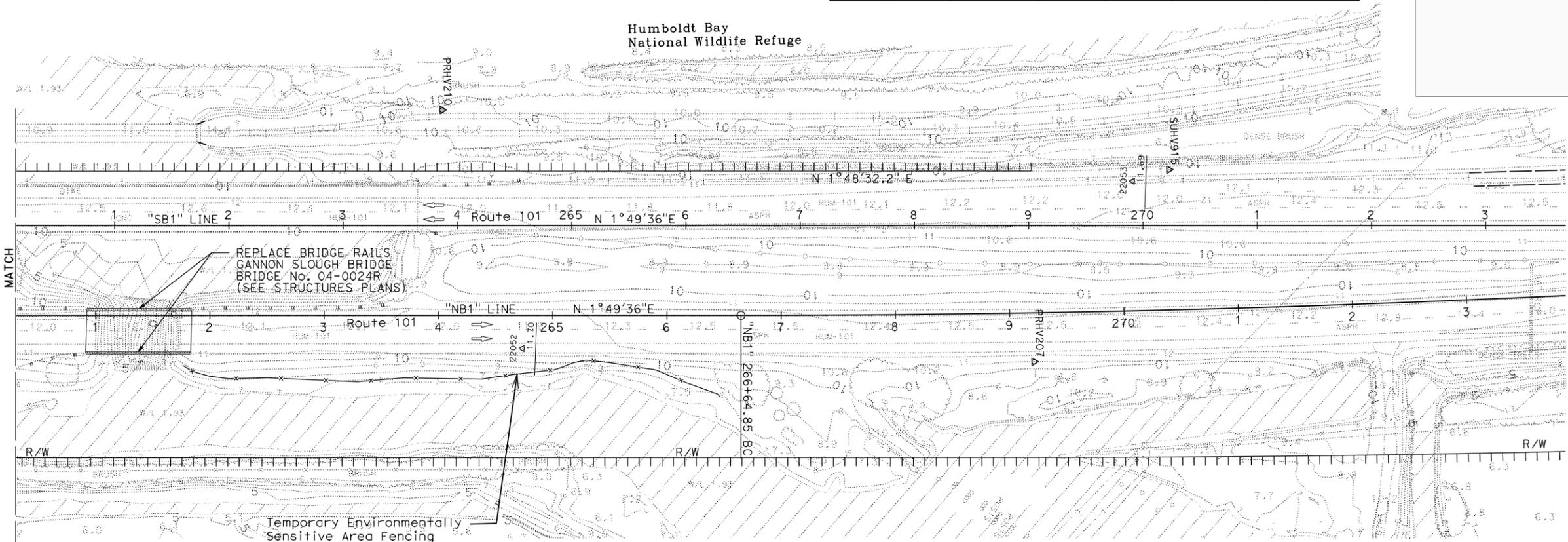
**STAGING  
 SC-2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	HUM	101	84.4/84.8		

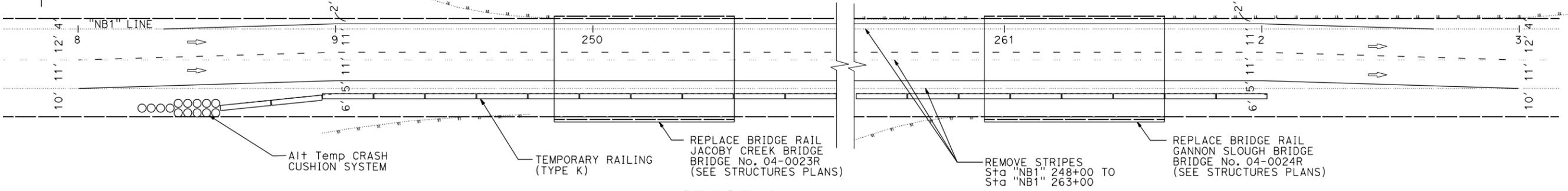
CURVE DATA						
No. @	R	Δ	T	L	N	E
5	15000'	02°45'27"	361.04'	721.94'	2199528.24	5970847.60



Humboldt Bay National Wildlife Refuge

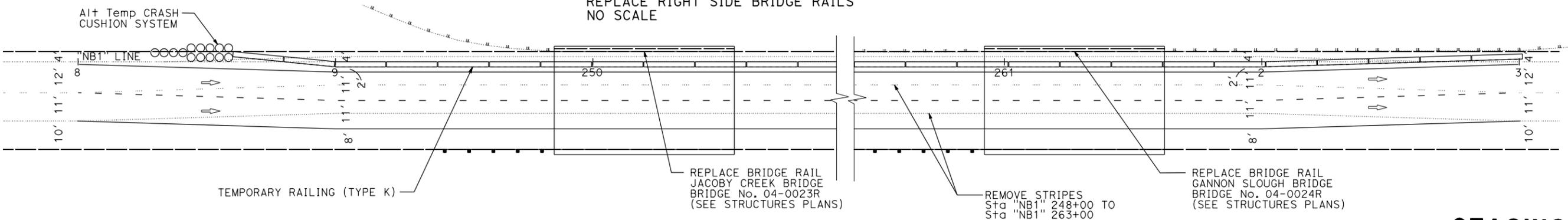


SCALE: 1"=50'



**STAGE 1**

REPLACE RIGHT SIDE BRIDGE RAILS  
NO SCALE



**STAGE 2**

REPLACE LEFT SIDE BRIDGE RAILS  
NO SCALE

**STAGING  
SC-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
Caltrans

FUNCTIONAL SUPERVISOR  
T LARK  
CALCULATED-DESIGNED BY  
CHECKED BY  
REVISED BY  
DATE REVISED