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W11a

CDP 1-20-0422 (CALTRANS DR. FINE BRIDGE)

JANUARY 13, 2021

EXHIBITS

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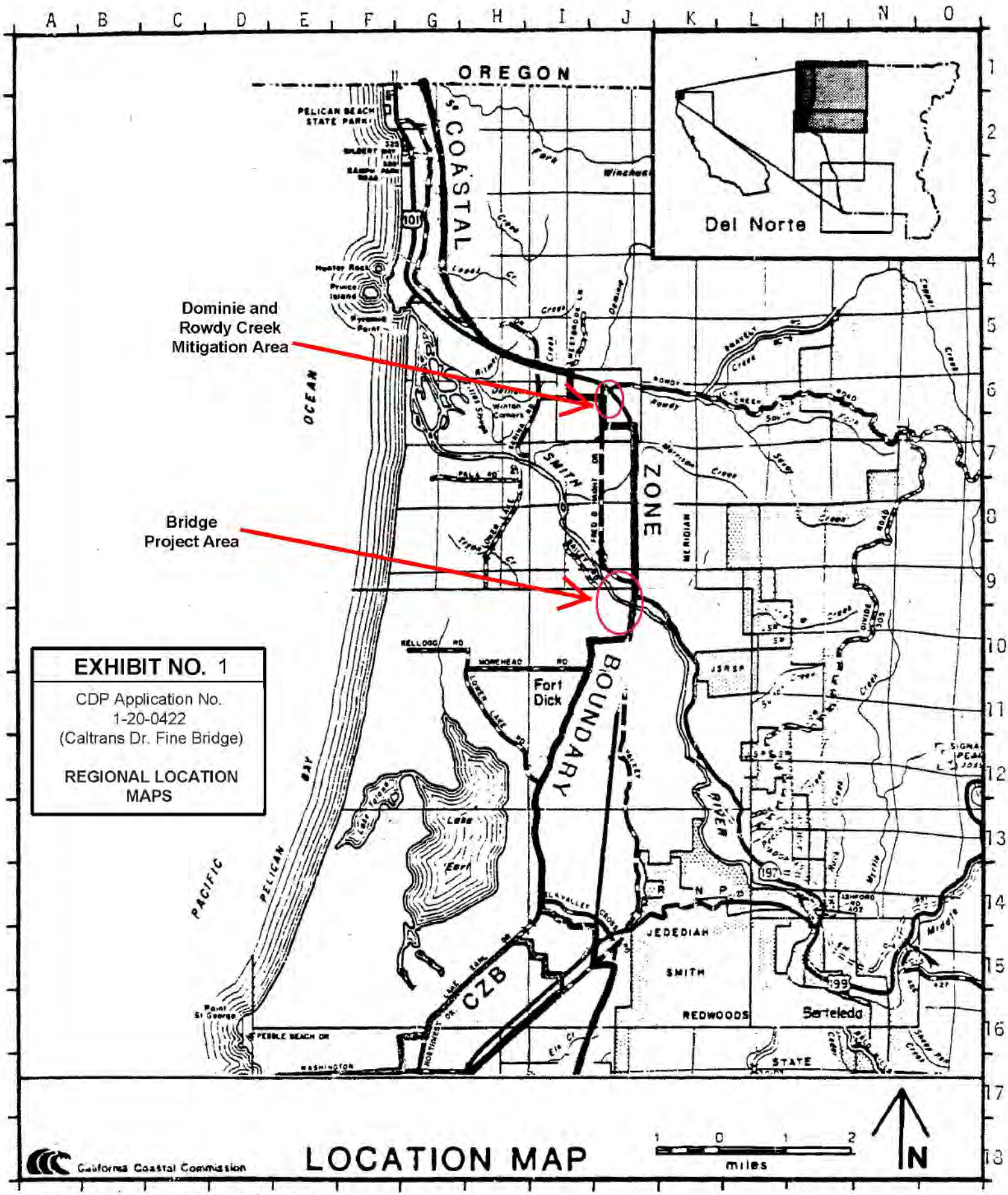
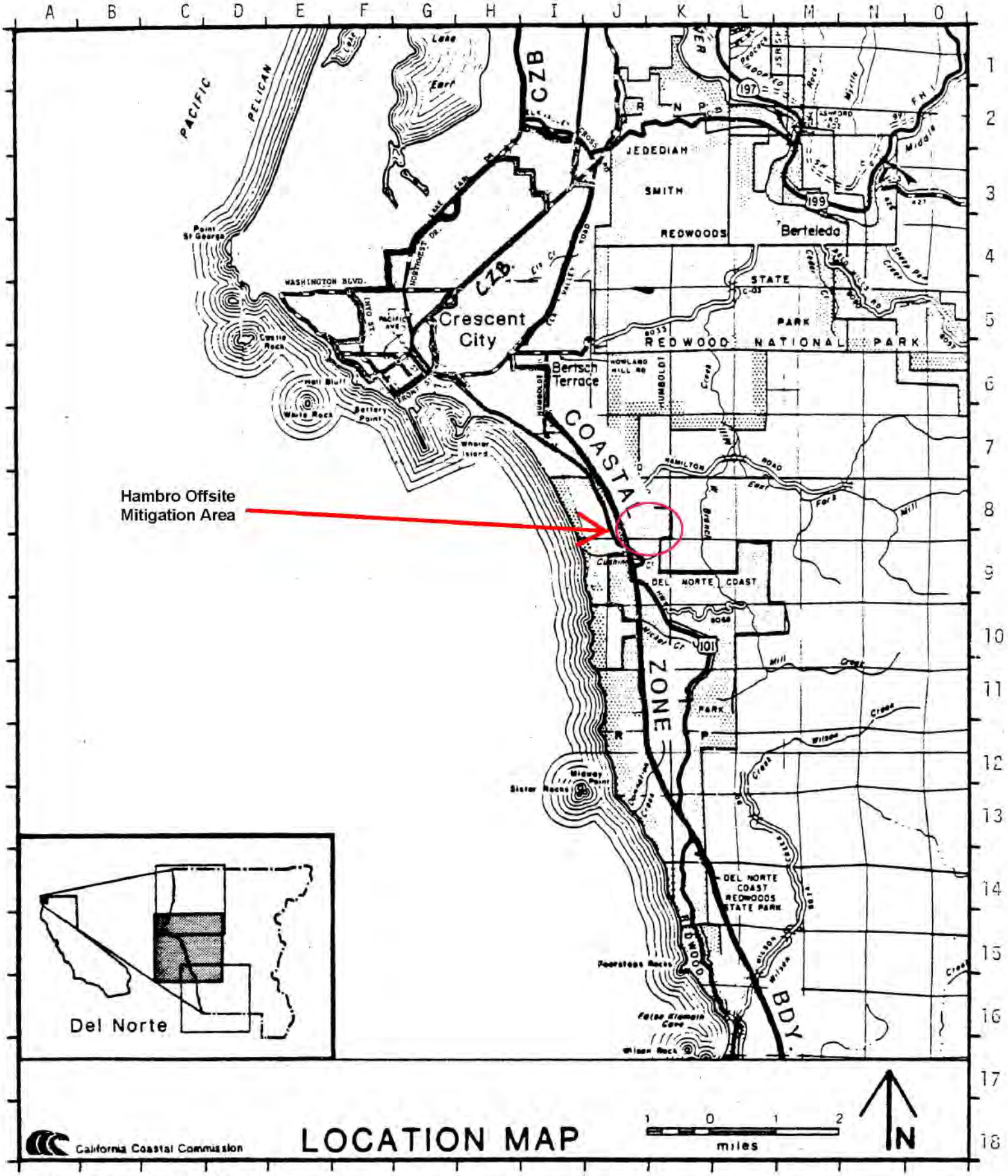


County of Del Norte



County of Del Norte

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0 0.23 0.45 0.9 mi

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EXHIBIT NO. 2

CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)

PROJECT AREA

EXHIBIT NO. 3

CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)

PROJECT OVERVIEW MAP

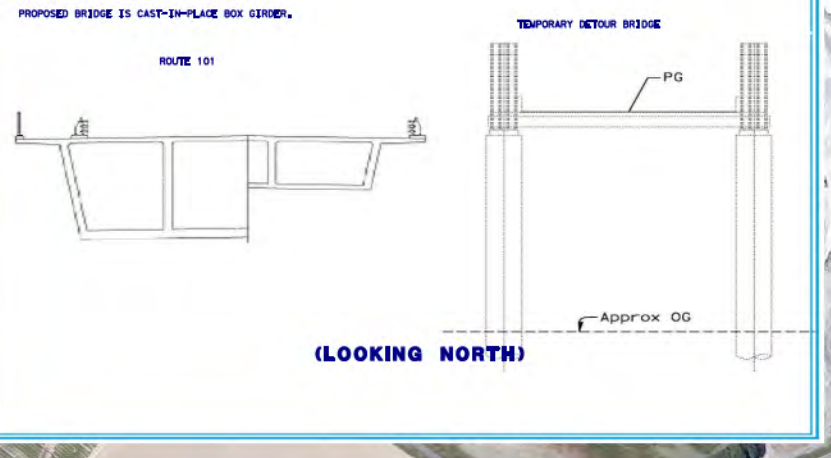
* AERIAL PHOTO - 7/15/2015
* DISPLAY CREATED ON 07/11/2017 BY D3 DESIGN, CALTRANS

SMITH RIVER BRIDGE REPLACEMENT

EAST TEMPORARY DETOUR BRIDGE

BEGIN PROJECT
ACCESS
PROPOSED STAGING AREA
BEGIN CONSTRUCTION
BEGIN PROJECT
ACCESS AREA
Lake Earl Drive
South Bank Road
BEGIN CONSTRUCTION
PERMANENT RETAINING WALL
PROPOSED STAGING AREA
SMITH RIVER BRIDGE REPLACEMENT
Smith River Overflow Bridge
PM 38.81
ABUTMENT 1
PIER 3
PIER 4
ABUTMENT 5
CHW = 22.5' (NAVD88)
CHW = 22.5' (NAVD88)
TEMPORARY CONSTRUCTION EASEMENT
PERMANENT RETAINING WALL
ACCESS
ACCESS
ACCESS
ACCESS
PROPOSED STAGING AREA
END PROJECT
Fred D. Haight Drive
PM 38.47
101
END CONSTRUCTION
TEMPORARY RETAINING WALL
PROPOSED STAGING AREA
ACCESS
END CONSTRUCTION
END PROJECT
SMITH RIVER
TEMPORARY RETAINING WALL
PM 38.91

NOTES:
PROPOSED BRIDGE IS CAST-IN-PLACE BOX GIRDER.



(LOOKING NORTH)

LEGEND

- RIGHT OF WAY (R/W)
- TEMPORARY CONSTRUCTION EASEMENT (TCE)
- PG - PROPOSED GRADE
- OG - ORIGINAL GROUND

0 100 200 300 400 500
SCALE

Photo 1. Looking east toward the Dr. Fine Bridge, which crosses north/south over the Smith River.

Photo 2. Looking north, non-standard concrete bridge rails, narrow shoulders (1-foot), and narrow elevated maintenance walkway (21-inches) are "functionally obsolete" elements.

Photo 3. Existing painted green steel girders and concrete piers spanning the Smith River; looking north from the southern river bank.

Photo 4. Looking west toward the bridge where South Bank Road traverses under the south end of the painted green steel girder section of the bridge.

Figure 1-2. Photos of Existing Bridge

EXHIBIT NO. 4

CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)

SITE PHOTOS
(Source: Caltrans FEIR)

Figure 2-5. Photo Facing Northbound at Dr. Fine Bridge

Figure 2-6. Photo Facing Southbound at Dr. Fine Bridge

Figure 2-7. View Facing West from the Bridge Deck

Figure 2-8. View Facing East from the Bridge Deck

Project Description for the Dr. Fine Bridge Replacement Project Caltrans District 1

Purpose and Need

The project is on U.S. 101 in Del Norte County from postmile (PM) 35.8 to 36.5, approximately 10 miles north of Crescent City. Within the limits of the project, U.S. 101 is a conventional two-lane, undivided highway. Presently, Dr. Fine Bridge has two 12-foot lanes, 1-foot non-standard shoulders, and a 21-inch elevated maintenance walkway. The new two-lane bridge would have two 12-foot lanes, 8-foot shoulders, and a 6-foot- wide separated pedestrian walkway. The purpose of the project is to improve the safety, connectivity, and reliability of the bridge for hikers, bikers, travelers, commuters, and freight carriers. The project is needed to address several critical issues associated with the safety and structural integrity of the existing bridge which was constructed in 1940.

Design Features

Bridge Type

The new bridge type would be a Cast-in-place (CIP) Box Girder on seismic isolation bearings with three piers (one below the OHWM of the Smith River, one partially below the OWHM, and one entirely above the OHWM). The bridge's soffit would be uniform between Abutment 1 and Pier 2 and parabolic between Pier 2 and Abutment 5. Parabolic soffits would allow for longer spans (up to 335-feet long for this bridge) while maximizing the clearance underneath. There would be triple friction pendulum-type seismic isolation bearings at all locations between the bridge superstructure (bridge deck and box girder) and the substructure (abutments and piers).

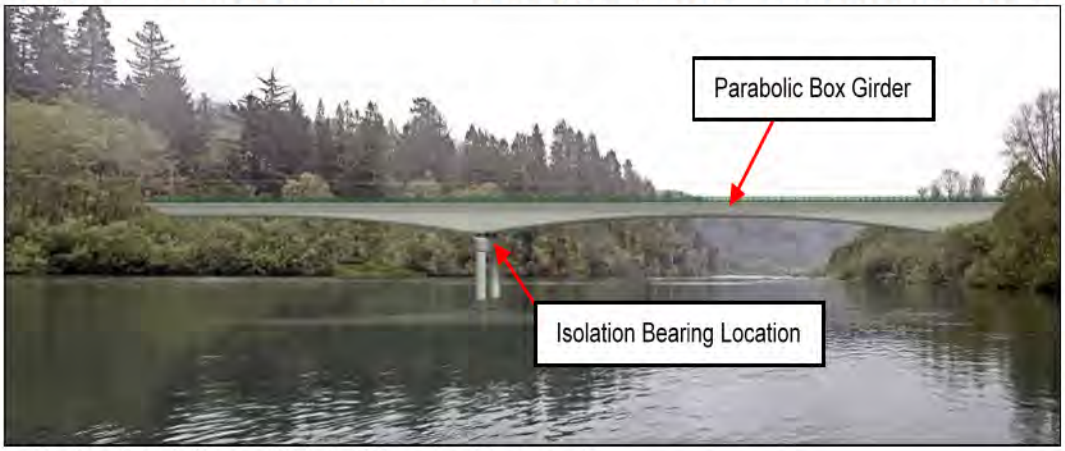


Photo-simulation of CIP Bridge, looking east.

Figure 1 Photosimulation of Bridge Looking east

EXHIBIT NO. 5

CDP Application No. 1-20-0422 (Caltrans Dr. Fine Bridge)

REVISED PROJECT DESCRIPTION

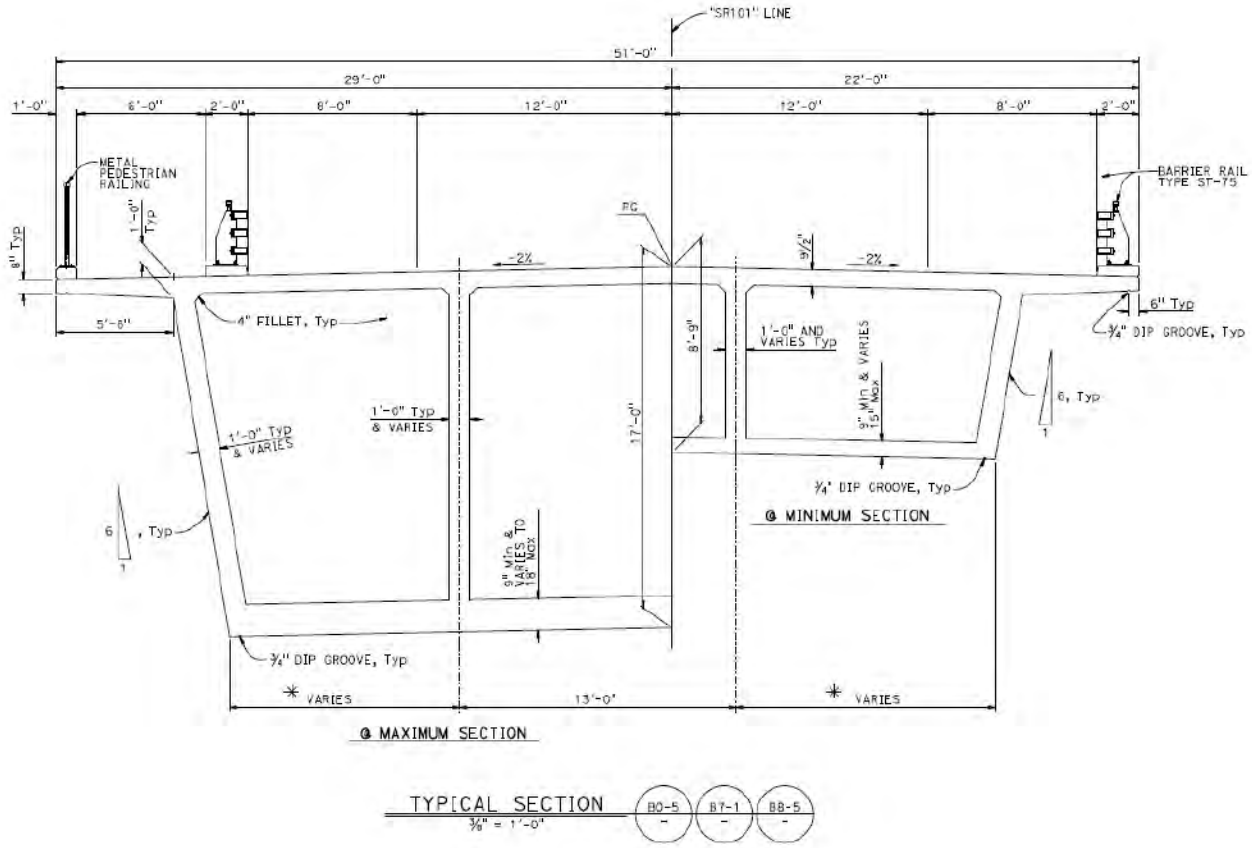


Figure 2 Typical Section of new bridge

Bridge Railing

The new bridge would have barrier railing (ST-75) that is "see through" and could be powder coated with various colors. An artistic rendering of the barrier railing on Figure 3 below illustrates a dark green color. The pedestrian bridge railing would have a design motif that reflects a tribal pattern in coordination with applicable Northwestern California tribes (Tolowa Dee-Ni' Nation and Elk Valley Rancheria). Refer to Figure 3 below for an example of bridge railing and tribal design motif.

Figure 3 Photo-simulations of the Proposed Pedestrian Bridge Railing and Design Motif Known as "Friendship Design Pattern"

Retaining Walls

Permanent retaining walls would have a visual aesthetic treatment, such as colored concrete or texture, so they would blend with the natural environment. Retaining walls minimize project footprint and reduce the amount of fill needed.

The retaining walls on the northeast and southeast corners of State Route 197 are no longer needed. Permanent Type 1 retaining walls are proposed on the northwest, and southwest sides of the new bridge. Temporary soldier pile retaining walls are proposed on the northeast and southeast sides of the existing bridge alignment to support the temporary detour bridge. The slopes on the northeast and southeast sides of the bridge associated with the temporary retaining walls will be re-contoured to the existing grade once the detour bridge is removed.

Table 1 Retaining Walls

Location	Type	Length	Height
Northwest of bridge (permanent)	Type 1	228 feet	6 feet
Northeast of bridge; West of detour bridge(temporary)	Soldier Pile	65 feet	15 feet
Northeast of bridge; East of detour bridge (temporary)	Soldier Pile	145 feet	24 feet
Southeast of bridge; West of detour bridge (temporary)	Soldier Pile	57 feet	16 feet
Southeast of bridge; East of detour bridge (temporary)	Soldier Pile	313 feet	24 feet
Southwest of bridge (permanent)	Type 1	277 feet	4-6 feet

Stormwater Treatment

The project would include the use of permanent stormwater treatment Best Management Practices (BMPs) due to increases in impervious roadway surface and associated 401 Certification Program of the North Coast Regional Water Quality Control Board (RWQCB). Design Pollution Prevention BMPs would be incorporated into the project where appropriate to

minimize impacts on water quality by preventing erosion and stabilizing disturbed soil areas. Treatment BMPs will provide water quality benefits including the settlement of soil particles, pollutant removal, and increase stormwater retention times to promote infiltration. In addition to the bioswales, the following pollution prevention measures would be included in the project:

- Slopes would be graded to 1.5:1 and vegetated to blend with the natural terrain and promote sheet flow and infiltration;
- Drainage ditches and channels would be vegetated where feasible; and,
- Re-vegetation would utilize seed mixture mulch and compost materials to promote growth and infiltration.

Runoff from impervious roadway surfaces along the roadway and bridge approaches would be discharged as sheet-flow to biofiltration swales. Biofiltration swales are vegetated channels, typically configured as trapezoidal or v-shaped channels that receive and convey stormwater flows from the roadway. Pollutants are removed by filtration through vegetation, sedimentation, adsorption to soil particles, and infiltration through soil.

Existing Drainage Work

The existing 18- to 24-inch diameter cross culverts on U.S. 101 at PM 36.29 and PM 36.31 would be replaced and rebuilt. These culverts are at the U.S. 101/SR 197 intersection and just north of the intersection. The drainage inlets at PM 36.29 and PM 36.31 would be modified to conform to the completed highway alignment and RSP will be added at the outlets.

Construction Equipment

Typical equipment used for construction and demolition includes pavers, cranes, hoe rams, pile drivers, vibratory hammers, excavators, backhoes, hauling and dumping trucks, compactors, portable generators, boom trucks, concrete trucks, saws, pumps, jackhammers, site trailers, storage boxes, and mobile filtration boxes.

Utility Relocations

As the project has moved further into the design phase, additional details of the utility relocations or configuration has been provided. All utility relocations are within the original studied project area limits.

Pacific Power has overhead 69kv Transmission and 12kv Distribution lines which cross the Smith River approximately 300' to the west of the existing bridge. On the south side, these lines conflict with access from the staging area to the bridge construction site. The lower 12kv lines will be placed underground by open trench method from the existing Transmission structure to a newly placed, tall pole just south of the access to the staging area. The Transmission lines will

remain overhead but will be raised by attaching to the new pole, which will create ample vertical clearance for equipment passing beneath.

On the north side of the river, Pacific Power's aerial 12kv line branches to the east with Charter Communication's fiber-optic line. These lines conflict with roadway construction where they cross 101. These lines will be placed underground via directional bore. The transmission 3-pole structure will be replaced in the same location with a 2-pole structure. A new pole will be placed on the east side of 101, which is where the lines will rise-up and continue aerially on their existing paths. A bore pit will be required near the Transmission structure, and near the new pole on the east side.

Frontier Communication and Charter Communication aerial facilities cross the Smith River adjacent to the Dr. Fine Bridge to the west. These lines and poles conflict with the construction of the bridge. The lines and poles will be removed, once the detour bridge is installed. The lines will be trenched underground along the east side of the highway (south to Lake Earl Drive, and north to Fred Haight Drive), and then will attach to the detour bridge. They will be transferred to the permanent structure once it is completed. The lines will be bored beneath the highway from the east side of 101 to the corner of Lake Earl Dr/101. Bore pits will be required at both ends. From there, approximately 400' of trenching will also be required heading west from 101/Lake Earl Dr, along the south shoulder of Lake Earl Dr to where they will rise up onto existing poles and tie into their existing facilities along South Bank Rd.

Charter Communication also has aerial facilities along Fred Haight Dr. There is a vertical clearance conflict at the access to the staging area south of Fred Height Dr. Charter will replace 3 poles with taller poles to provide the required height of their lines for equipment to pass beneath.

There is also an electrical service drop for the USGS Gage Station on the northeast side of the structure that would be removed during construction, then replaced after the project. The USGS Gage Station would be temporarily relocated to a suitable location, to be determined by USGS, and then remounted to the new bridge after completion.

Clearing and Grubbing

Vegetation that is cleared and grubbed may be collected and processed into duff by grinding or chipping. Duff may be stockpiled until placed on the planned revegetation areas. Additionally, all disturbed areas would receive appropriate erosion control measures which would be a combination of hydroseeding, straw, and fiber application. The contractor must clear and grub all areas where the highway, bridge, and road approaches are to be constructed. Access and staging areas would be cleared as necessary to move and store material and equipment around the project site.

Temporary Stream Crossing

For the drainage channel southwest of the bridge, a temporary channel crossing would be necessary for equipment access and temporary roadway realignment of South Bank Road. Sections of the channel both upstream and downstream from an existing 36-inch culvert under South Bank Road may need temporary culverts; these would be covered with clean, imported gravel and filter fabric. This would provide a passable surface for equipment and vehicles to cross. The filter fabric would prevent small gravel and sediment from entering the drainage channel. The temporary drainage channel crossing would be installed as permitted, when the drainage channel is dry, and would remain in place until construction work is complete.

Water from construction activities in the cofferdams could be transferred by pumps and a double-walled dewatering pipe to an infiltration basin proposed on the property approximately 450 feet downstream of the bridge, on the south side of the Smith River. The pipe would be placed along an access road, between the bridge and the infiltration basin and staging area.

Update: As the project has moved further into the final design of the project, two additional stream crossings would be required, and one stream diversion. Two crossings on the Northwest side would be required for access, and an additional crossing is being proposed to protect the stream during retaining wall installation. On the Northeast side, a temporary stream diversion is required for installation of the detour bridge. The drainage system on the southwest side will be temporarily shifted on the inlet side to accommodate construction activities. This culvert would be returned to pre-project configuration when construction is complete.

Construction Trestles and Temporary Gravel Berms

Temporary construction trestles would be built to span the western pearlshell mussel bed and thalweg (the deepest part of the channel) along the southern side of the river. One 40-foot-wide construction trestle will be needed for the construction of the new bridge and will be located downstream of the existing bridge. During demolition activities, a construction trestle also would be used upstream of the existing bridge. The piles for the construction trestles are typically 2-foot (24-inch) diameter steel shell piles, but may be up to 30-inch diameter, W-Section steel beams, or HP steel piles. Piles would be installed as deep as possible with a vibratory hammer; however, it is anticipated that the piles would also need to be driven to get them to the required final depth. For the construction trestle spanning the western pearlshell mussel bed, it is estimated that 18 piles (24-inch or 30-inch diameter steel pipe piles) would be required for the trestle, consisting of three supports of 6 piles each with one support on the river bank and the other two supports in the river (note: additional piles are needed for falsework and described in the next section). It is assumed the trestle piles would remain in the river year-round for the duration of the project. However, the deck and cross beams (i.e., stringers) would be removed prior to the winter season (i.e., by October 15 in each construction year) and reinstalled each subsequent year as needed.

The remainder of the Smith River would be accessed using temporary gravel berms. Temporary gravel berm configurations would change each year depending on in-water construction activities.

The edges of the gravel berm would be contained using k-rail, or another method proposed by the contractor. Additionally, there would be extensions of the gravel berm, approximately 30 feet wide and roughly perpendicular to the bridge, for access to pier locations. Access to the temporary gravel berm and trestle would likely be from a temporary access road on the northwestern side of the bridge.

Clean, washed, spawning sized gravel would be used to construct the bed of the gravel berm, with any further specifications to be determined by permitting requirements; such as gravel berm permeability (included in the Mussel Monitoring Plan). The temporary gravel berms would be removed each year prior to October 15 and reinstalled each subsequent year.

Table 2 Temporary Gravel Berm Footprint and Volume

Construction Season	Footprint and Volume
1	45,900 sq. ft; 1.1 acres; 9,856 CY
2	38,000 sq. ft.; 0.9 acre; 7,852 CY
3	14,400 sq. ft.; 0.3 acre; 2,844 CY
4	N/A
Total	98,300 sq. ft.; 2.3 acres; 20,552 CY

Bridge Demolition

The contractor would be required to prepare a Bridge Demolition Plan for review and approval by the Caltrans Resident Engineer, as is standard practice. The contractor would address any nesting birds before demolition could commence. This could include conducting regular surveys for nesting birds on the bridge (and subsequent removal of nesting materials before nests are established) and/or bird exclusion.

A temporary containment system would be constructed to prevent debris material from falling into the Smith River. The containment system may include steel or timber posts and girders, timber decking, and heavy tarps.

The temporary gravel berm and construction trestle would be used to support the temporary containment system. Another option would be to use a suspended deck system, such as Safespan.

Equipment used to install the temporary containment system and trestle would likely include a crane and hydraulic hammer.

Portions of the existing reinforced concrete bridge may be permitted to drop to the ground (i.e., on the temporary gravel berms outside the wetted channel), but the contractor would be required to prevent material from entering the Smith River. Traffic control would be implemented on South Bank Road during bridge demolition as needed. Because the existing steel diagonal bracing and girders have been painted with lead-based paint, the contractor would be required to submit a Lead Compliance Plan for handling, removing, and disposing residue containing lead from paint.

The existing steel bracing would be cut and removed in sections. The steel girders would be cut and removed in portions with a crane positioned on the temporary gravel berm or leveled ground surface. A containment system will be used to prevent cuttings from entering the river.

There is a total of 19 piers/bents supporting the existing bridge: 14 concrete bents and 5 piers, 3 of which are below the Smith River Ordinary High-Water-Mark (OHWM). There are also 2 abutments and seismic retrofit piles on land to be partially removed. The concrete columns and foundations of the 14 bents that are outside the river channel would be partially removed. Excavations for the bents would be backfilled with native material and graded to finish grade. The 5 piers would be removed by removing the pile caps and cutting off the existing piers below channel bottom at a depth of 4.5 feet for piers 11,12,13,14 and 15; this depth for cutting off the piers avoids exposure due to expected scour depths. Routine Bridge inspections would check for any scour or exposure as needed. Cofferdams would be required for dewatering pier removal areas.

Materials generated from the bridge removal would become the property of the contractor and recycled per Caltrans' standard provisions. All material would be disposed at an appropriately permitted facility.

Grading and Fill

Grading and fill activities are proposed to tie in the proposed roadway with the existing U.S. 101 roadway geometry. Roadway improvements at the north and south ends of the proposed bridge are also proposed and includes widening the shoulders and constructing pedestrian rails. Temporary fill is proposed for gravel berm installation, and the abutments for the temporary detour bridge. Permanent fill is associated with new structures including retaining walls, new bridge piers as well as on-site wetland creation, RSP for drainage outlets, erosion control and bioswales. Imported materials would be used for all fill areas. Exported materials or borrow would be taken to an approved site or landfill that meets CCC requirements.

Table 3 Grading and Fill Quantities for Entire Project

Cut (cubic yards)[1]	Fill (cubic yards) [2]	Import (cubic yards)	Export (cubic yards)
868 (roadway)	1,312 (roadway) 20,552 (gravel berm) 10,120 (Detour) 131 (RSP) 159 (wetland creation)	11,432	868

Public Access

There is currently informal public access under the existing bridge on the southern bank. Current informal access is both vehicular, including boat launching, and pedestrian. During construction, access would be prohibited. Post construction, vehicle access is proposed to be prohibited by installation of boulders along South Bank Road. Pedestrian access would still be available.

Prohibiting vehicle access would be beneficial to the western pearlshell mussel bed that is located under the existing bridge along the southern side of the river. The mussel bed extends both upstream and downstream of the existing bridge. Benefits of prohibiting access include reducing direct disturbance to the edge of the channel and substrate near the mussel bed and increased riparian vegetation and reduced erosion due to vegetation regrowth in the area that is currently denuded due to use of the informal dirt road for vehicle access. Prohibiting access may also limit the amount of garbage and refuse that is currently being left on the bank below OHWM. New signage would be installed directing users to vehicular access points nearby and Caltrans will be involved in improvements of the Fred Haight Boat Launch downstream (see mitigation projects section).

Temporary Bridge Detour

A temporary detour structure would be constructed approximately 48 feet to the east side of the existing structure. Construction of the detour bridge would begin on land during the first winter season and would include construction of the north and south approaches, piers above the Ordinary High-Water Mark (OHWM), and temporary retaining walls that support the 3-foot increase in roadway grade. The main spans of the steel panel bridge would be constructed and launched from the south approach over the river to the north approach during the summer season.

[1] Max height of slope= 0 ft. All CY estimates are preliminary until final design.
[2] Max height of slope=25 ft. All CY estimates are preliminary until final design.

Traffic would be switched to the detour bridge once it is completed. Only minimal delays are expected and the need to reroute traffic to SR 197 and U.S. 199 is eliminated. Next, the main spans of the existing bridge will be removed from the channel and the two shafts at the new Pier 4 support location in the Smith River would be constructed. The detour alignment would be utilized while the new bridge on the existing alignment is constructed.

During the in-channel work seasons, the portion of the new CIP bridge within the wetted channel will be constructed using falsework erected on the temporary gravel berm and on piles spanning the mussel bed to allow construction of the bridge's superstructure. Once construction of the new bridge and other components (grading, fill, and retaining walls) are completed and traffic is moved over, the steel panel detour bridge will be disassembled and transported away, and the north and south approaches would be removed.

Falsework Pile Installation

Falsework would be in place until the bridge is cured, anticipated to come out before the winter season. Falsework piles would be installed in river on existing alignment. Piles may be a combination of H-Piles and steel shell piles. Temporary piles would be used for falsework to temporarily support the superstructure. The falsework foundation would likely be put on spread footings on top of the gravel berms.

Other Roadway Improvements

Roadway improvements on US 101 will span from just South of Lake Earl Drive to just south of Fred Haight Drive. There will also be roadway improvements on Route 197, extending east from the Route-101/197 intersection. Roadway improvements along Route 101 include a new structural section with widened shoulders, adding a pedestrian path on the west side with a custom pedestrian rail, bridge rail on both sides of the roadway. The west side pedestrian path will extend on both ends of the bridge behind the barrier several hundred feet, to the north and the south off the structure. Many bioswales are anticipated within the project limits– some South of the bridge, and a few North of the bridge. See project plans for further details.

Right-of-Way

No permanent right of way is required for the project. Temporary construction easements would be required for material and equipment staging, access roads, bridge and roadway work, and to conform the project to adjacent parcels. The contractor would acquire Del Norte County encroachment permits.

Table 4 Use of Properties not owned in fee title

APN	Owner	Project Activities
105-020-14	Palmer Westbrook, Inc.	Equipment and materials staging, construction of dewatering and infiltration basin
105-020-20	Palmer Westbrook, Inc.	Construction of temporary detour bridge, revegetation
105-700-01	Steinruck	Access road, construction of retaining wall, revegetation
105-020-36	Holt	Potential equipment and materials staging
105-020-87	Calvary Chapel of the Redwoods	Access road, revegetation
105-070-04	Quick	Access to construct temporary detour bridge, construction of temporary retaining wall associated with detour, revegetation

Traffic Control

Stage 1

The Temporary Detour Bridge piles will be placed until the detour is ready for live traffic. Construction Zone Enhanced Enforcement Program (COZEEP) Officers will assist when the traffic is transferred on to the temporary span. Traffic speed will be reduced from the original miles per hour down to the required speed limit guiding commuters with signs, temporary reflective traffic stripes, safety equipment such as water filled barrels, k-rail and flashing lights.

Stage 2

Two-way traffic will be moved onto the detour bridge once the original bridge is closed. Speed will be reduced to an appropriated safe speeding (around 25 mph) because of the two reversing curves required for the detour alignment. Warning systems and signage will be used to alert motorist of the special conditions of the construction detour. Temporary railing (type K) will be installed off the viaducts and bridge deck four corners to funnel traffic and shield construction area that is just west of the detour.

Stage 3

Two-way traffic will be moved onto the new structure. The detour bridge and foundations will be demolished and removed as described above. A new temporary pavement used during the construction period will be grinded and removed to the original condition, thus reducing an extra impervious surface.

Stage 4

Restore plants, grass and bushes back to original condition. Install Permanent Best Management Practices and remove any temporary construction bmp like silt fences and silt resistance-fabric in the drainage inlets.

Proposed Public Outreach to Boating Community

Construction of Project is anticipated to begin in the Fall of 2021, with in-channel work beginning the Summer of 2022. Prior to, and for the life of the project, an extensive Public Outreach Plan will be implemented to ensure recreationalists, including boaters, kayakers and the general public, are aware of the access restrictions during and post-construction. The project is anticipated to be completed at the end of 2025.

The existing informal public access under the bridge at South Bank Road will be closed all year during construction. Post-construction, vehicular access will no longer be available at this location. Signs will be placed on South Bank Road, Fred Haight Drive and northbound and southbound US Highway 101 directing folks to the Del Norte County boat launch one mile downstream and Ruby van Deventer County Park two miles upstream.

From approximately June 15 to October 15 during construction, boaters and kayakers will not be able to pass under the bridge in the Smith River. Public information will be disseminated on the Caltrans website, social media posts, press releases and radio announcements and would include access restrictions, construction notifications and/or any anticipated traffic delays. Signs will be placed at upstream ramps and access points to indicate Ruby van Deventer County Park will be the final takeout point during the work window. In addition, Caltrans will perform outreach to numerous recreation companies, sporting goods and outdoor stores to target the boating and recreation community via flyers. The list of businesses Caltrans would target concerning recreational restrictions include Mike Coopman's Guide Service, Smith River Kayaks, Crescent City Fishing Charters, James Keeling Fishing Guide Service, Sportsman's Warehouse, Englund Marine, and Hastings Sporting Goods.

As part of the outreach plan, Caltrans will contact the Nor-Cal Guides & Sportsmen's Association, Fishing the North Coast with Kenny Priest, and California Sportsman Radio Show for announcements on air to reach a wider audience. Furthermore, Caltrans will contact the Del Norte County Sheriff's Department since they have authority over river patrols and could assist in ensuring no kayakers or boaters are at risk of getting close to construction zones.

Notifications to local businesses would occur four weeks prior to construction and additional flyers and signs would be posted prior to peak fishing and tourist seasons each subsequent year as needed. Media announcements would occur for the life of the project.

Mitigation Projects Associated with the Dr. Fine Replacement

Mussel Monitoring:

The Mussel -Monitoring Plan would begin during the summer of 2021 and will include population sampling of the mussel bed within the project area and a chosen reference population site upstream. The site will be chosen in coordination with CDFW and the on-call contractor (likely Xerces Society). This will provide baseline data for monitoring during construction. During construction, monitoring of reference sites and mussel bed in project area will occur for the life of the project and assessments on the need for relocations will be ongoing. In addition, monitoring flow during gravel berm installation to ensure mussels do not get dislodged will be implemented. See Mussel Monitoring Plan for more details.

Hambro Enhancements

The purpose of the Hambro off-site mitigation is to provide additional compensatory mitigation to meet the 4:1 ratio for wetlands to offset wetland impacts from the construction of the Dr. Fine Bridge Replacement Project. The 45-acre Hambro Parcel (APN 115-020-18) parcel is adjacent to the existing Crescent City Marsh Wildlife Area (CCMWA) managed by CDFW (CDFW 2003) and adjacent to US 101, just south of Crescent City. Mitigation actions include wetland enhancement and restoration for both federal and coastal wetlands by the removal invasive plant species.

Mitigation implementation activities will be carried out through a contractor with work overseen and quality control managed by Caltrans Landscape Architects, Caltrans Mitigation Specialists and Caltrans project Biologists. Long-term endowments for the mitigation projects would be included as part of the long-term management plan to protect mitigation sites in perpetuity.

On-site wetland creation

Create conditions that will support a 3-parameter, native dominated, woody riparian wetland by designing and constructing a grading plan that will allow development of hydric soil and wetland hydrology and by installing native, woody, wetland-rated riparian plants. Wetland creation area would occur south of South Bank Road on the east side, under and slightly to the west of the bridge to connect it to the existing drainage.

Revegetation

After all construction materials are removed, the site would be restored to a natural setting by grading, placing erosion control, and replanting with native vegetation. Replanting would be

subject to a plant establishment period as defined by permits, which would require Caltrans to monitor successful revegetation of disturbed areas.

Dominie Creek

Caltrans proposes to implement the Dominie Creek Fish Passage Improvement Project as mitigation for both fish passage and Other Waters mitigation impacts associated with the Dr. Fine Bridge Replacement Project. The Dominie Creek Project is a fish passage improvement within the Caltrans right-of-way on the United States Highway 101 (US 101) at Post Mile 39.78. The Dominie Creek project proposes to remove the existing box culvert and install an 80-foot span bridge to provide a stream width of 30 feet. This includes a re-profile of the stream bottom to minimize head-cutting and provide an unobstructed stream which would allow fish access to approximately 8,400 feet of upstream habitat.

This fish passage mitigation project is expected to improve access of adult and juvenile salmonids to spawning and rearing habitat in Dominie Creek above US 101. The project will also contribute to high-priority fish passage improvement and conservation efforts to restore access of adult and juvenile coho to spawning and non-natal rearing habitat in tributaries and sloughs of the lower Smith River estuary. Due to the exposed rebar and a damaged weir at the outlet apron, fish passage is obstructed in Dominie Creek, blocking an estimated 8,400 feet of upstream habitat. Low water depths, high velocities, and a 2-foot-high perched outlet at the weir limit fish passage above this crossing.

In addition to fish passage mitigation, the Dominie Creek project will provide over 0.03 acres of Other Waters mitigation values by the removal of the 10-foot wide and 80-foot long concrete box culvert.

Rowdy Creek

In addition to funding and implementing the Dominie Fish Passage Project for fish passage mitigation, Caltrans intends to partially fund the Rowdy Creek Fish Passage Project to achieve full mitigation under CESA. The Tolowa Dee-ni' Nation is planning to implement the Rowdy Creek Fish Passage Improvement project to provide fish passage at the Dominie and Rowdy Creek confluence for all age classes of salmonids while allowing the Rowdy Creek Hatchery to continue to operate.

On January 6, 2015 the Smith River Rancheria and the Rowdy Creek Hatchery heard the views of the Stakeholders which selected Alternative D as the Preferred Alternative from the 2105 feasibility study. Alternative D will provide unimpeded passage for all life stages of salmonids, achieving the project primary goal, in addition to providing continued operational opportunities

that could contribute to advancing the science of watershed and fisheries management practices into the future.

The objectives of the Rowdy Creek Fish Passage Project include:

i) Restore fish passage on Rowdy Creek when the Hatchery is not collecting fish and flow is sufficient.
ii) Restore fish passage on Dominie Creek at the Rowdy Creek confluence when flow is sufficient.
iii) Restore volitional fish passage on Dominie Creek at the Dominie Creek Diversion structure when flow is sufficient, limit the handling of fish not to be captured for Hatchery broodstock, and meet NMFS diversion screen guidelines for protection of fish.
iv) Establish methods for hatchery to generate the water needed for operation

Fred Haight Boat Launch Project

Funds are needed to design, permit, and develop the construction bid package for essential improvements to the Saxton boat ramp (Fred Haight Boat Launch) and fishing facility located downstream of the Dr. Fine Bridge. CDFW, as the landowner, will submit the application for a grant and will maintain the facility. Caltrans proposes to match funds (approximately $90,000) to ensure the completion of the project. Caltrans' contribution to this project would provide compensatory mitigation for the loss of the informal access point at south bank road under Dr. Fine Bridge as a result of the bridge replacement.

Improvements to the site during construction include, but is not limited to, modernizing and extending boat ramp, rehabilitate/redesign parking lot, add new striping, ADA parking, replacing location signs, rehabilitating restrooms, add refuse/recycling bins, add interpretative panels with biological and cultural information, adding a DIDSON/sonar fish counting station, picnic tables/benches, covered kiosk, kayak put-in element, construct a bird observation shelter, and lighting and fencing.

INDEX OF PLANS

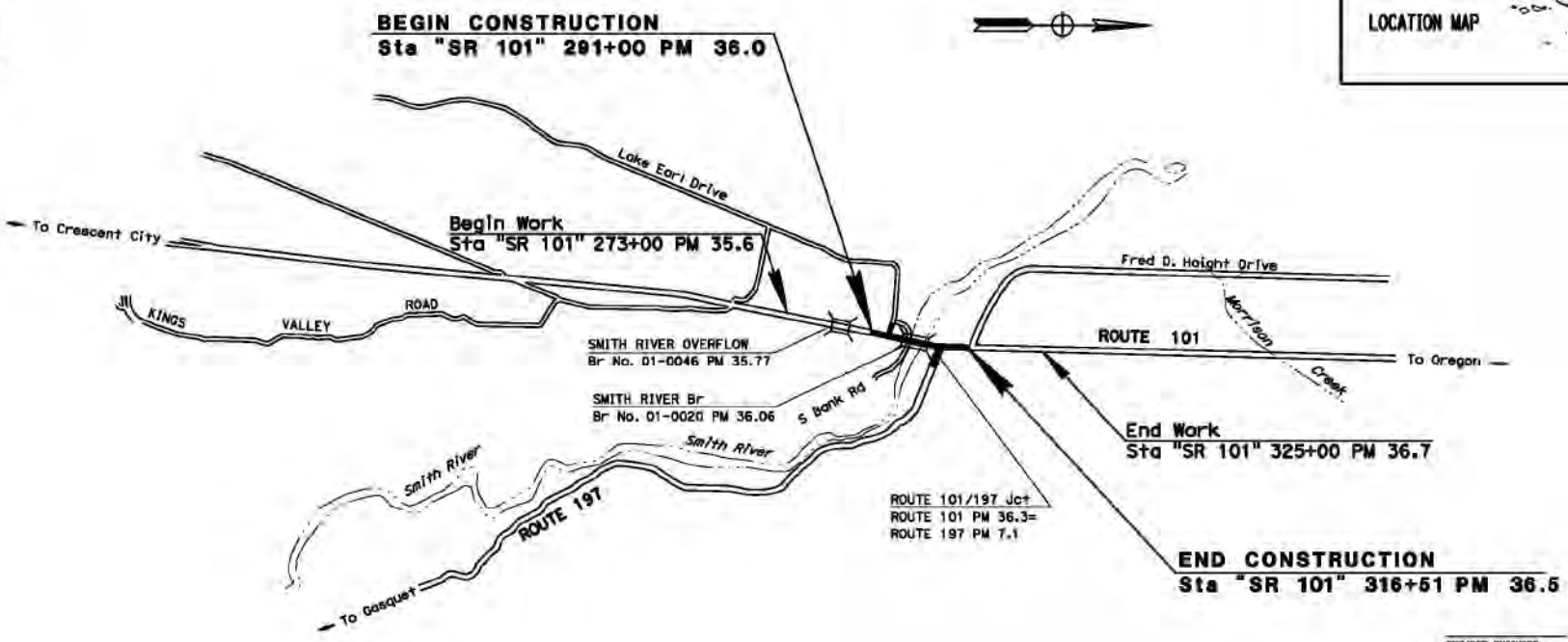
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN DEL NORTE COUNTY
NEAR JUNCTION 197
AT SMITH RIVER BRIDGE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Dn	101	35.8/36.5		

EXHIBIT NO. 6
CDP Application No. 1-20-0422 (Caltrans Dr. Fine Bridge)
PROJECT LAYOUTS AND PLANS



NO SCALE

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.

KIDIANGA TSHILUNDA
No. C 67572
Exp. 6-30-21
CIVIL
STATE OF CALIFORNIA

DESIGN ENGINEER: LEONARDO MORALES
PROJECT MANAGER: DAVID T. MELENDREZ

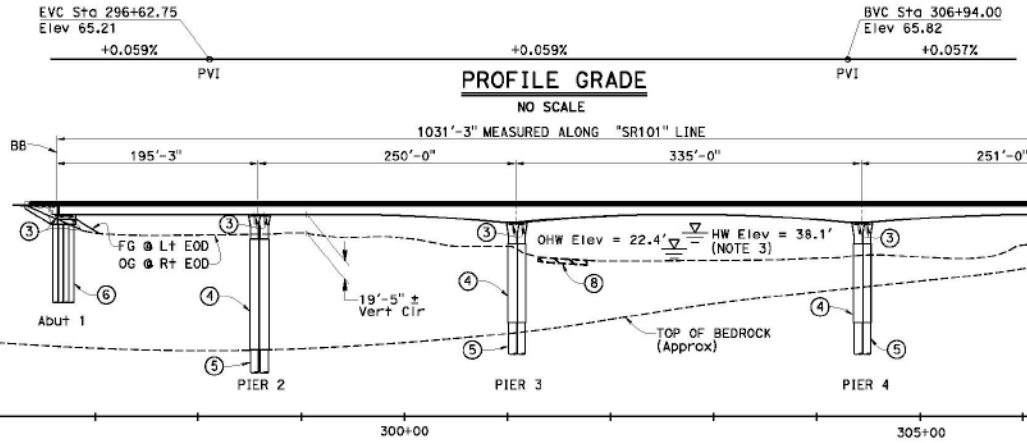
THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

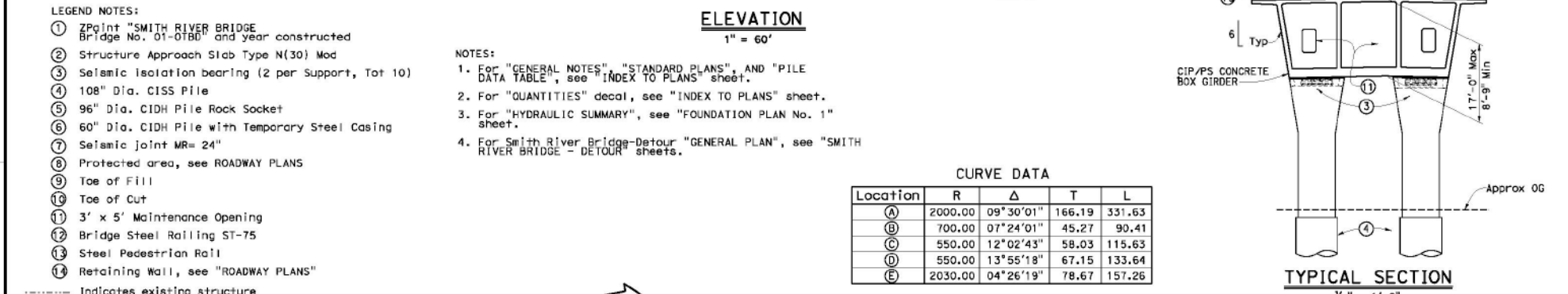
CONTRACT No.	01-436400
PROJECT ID	0100000193

USERNAME => s108712
DGN FILE => 0100000193ab.dgn

DATE PLOTTED => 07-DEC-2020
TIME PLOTTED => 13:28

BORDER LAST REVISED 9/30/2012 | CALTRANS WEB SITE IS: HTTP://WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0325 | PROJECT NUMBER & PHASE 01000001930





LEGEND NOTES:

1. ZPoint "SMITH RIVER BRIDGE Bridge No. 01-0TBD" and year constructed
2. Structure Approach Slab Type N(30) Mod
3. Seismic isolation bearing (2 per Support, Tot 10)
4. 108" Dia. CISS Pile
5. 96" Dia. CIDH Pile Rock Socket
6. 60" Dia. CIDH Pile with Temporary Steel Casing
7. Seismic joint MR= 24"
8. Protected area, see ROADWAY PLANS
9. Toe of Fill
10. Toe of Cut
11. 3' x 5' Maintenance Opening
12. Bridge Steel Railing ST-75
13. Steel Pedestrian Rail
14. Retaining Wall, see "ROADWAY PLANS"

Indicates existing structure

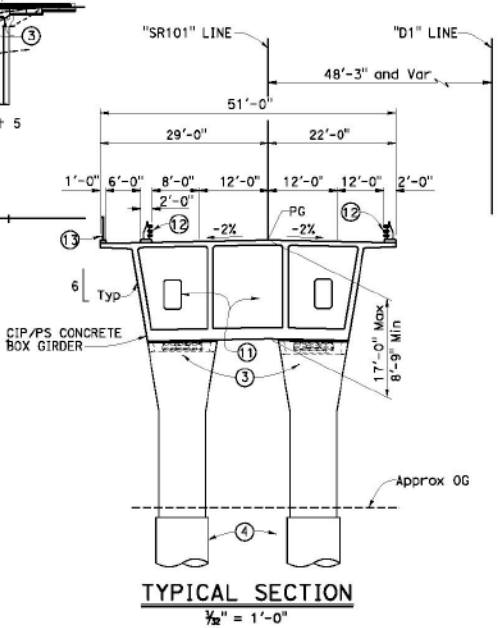
Denotes point of minimum vertical clearance

NOTES:

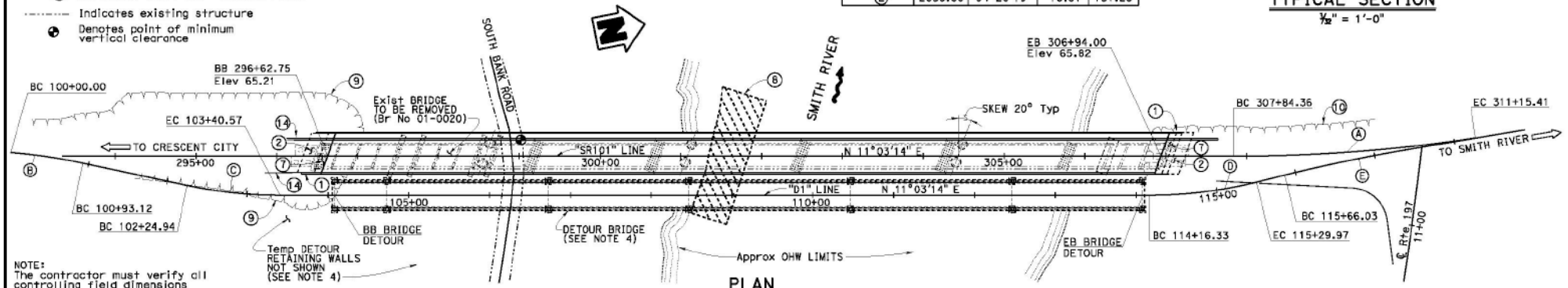
1. For "GENERAL NOTES", "STANDARD PLANS", AND "PILE DATA TABLE", see "INDEX TO PLANS" sheet.
2. For "QUANTITIES" decal, see "INDEX TO PLANS" sheet.
3. For "HYDRAULIC SUMMARY", see "FOUNDATION PLAN No. 1" sheet.
4. For Smith River Bridge-Detour "GENERAL PLAN", see "SMITH RIVER BRIDGE - DETOUR" sheets.

CURVE DATA

Location	R	Δ	T	L
Ⓐ	2000.00	09°30'01"	166.19	331.63
Ⓑ	700.00	07°24'01"	45.27	90.41
Ⓒ	550.00	12°02'43"	58.03	115.63
Ⓓ	550.00	13°55'18"	67.15	133.64
Ⓔ	2030.00	04°26'19"	78.67	157.26



TYPICAL SECTION
½" = 1'-0"



PLAN
1" = 60'

NOTE:
The contractor must verify all controlling field dimensions before ordering or fabricating any material.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	DN	101			

REGISTERED CIVIL ENGINEER DATE

MM/DD/YYYY
PLANS APPROVAL DATE

PETE MORBOE No. C57519 Exp. 12-31-2021 CIVIL STATE OF CALIFORNIA REGISTERED PROFESSIONAL ENGINEER

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

DESIGN	BY P. Norboe/A. Shamsabadi/ S. Heath	CHECKED K. Lee/A. Ibrahim/ A. Gilani	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	
DETAILS	BY C. Figueroa/E. Montevirgen	CHECKED K. Lee/A. Ibrahim	LAYOUT BY G. Schuster	CHECKED P. Norboe	
QUANTITIES	BY P. Norboe	CHECKED K. Lee/A. Ibrahim	SPECIFICATIONS BY	PLANS AND SPECS COMPARED	

Krishnakant Andurlekar
BRANCH CHIEF

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
COMPLEX DESIGN BRANCH

BRIDGE No. 01-0041
POST MILE 36.06

SMITH RIVER BRIDGE - REPLACE
GENERAL PLAN

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REVISION 5/8/2018)

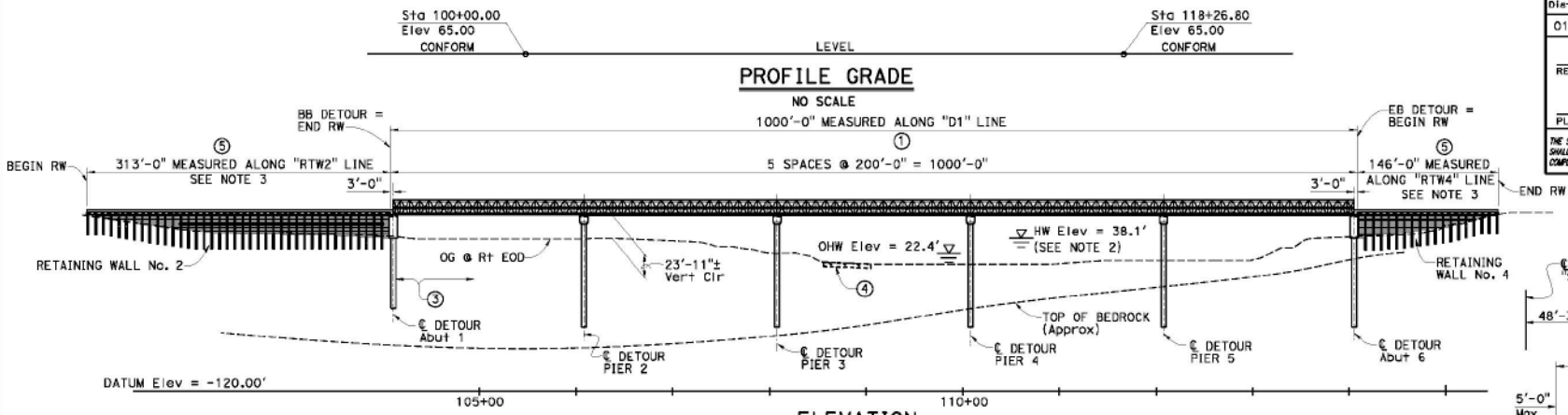
DATE PLOTTED => 03-DEC-2020 TIME PLOTTED => 14:58
FILE => 01-436404_c_gp01.dgn USERNAME => e128480

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3575
PROJECT NUMBER & PHASE: 01000001930
CONTRACT No.: 01-436404

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
11-9-20				1	88



LEGEND NOTES:

1. Temporary Truss Panel bridge supplied by contractor
2. Truss panel erection and launch platform designed by contractor
3. 60" Dia. CIDH Pile (2 Per support Tot 12) with Temporary Steel Casing
4. Protected area, see ROADWAY PLANS
5. Temporary Soldier pile wall with deadmen shown. Alternative contractor designed wall may be substituted with approval of the Engineer
6. Temporary Railing (Type K)
7. TL-4 Guardrail, supplied by contractor
8. Panel Truss Bearing, supplied by contractor
9. 2" AC Overlay

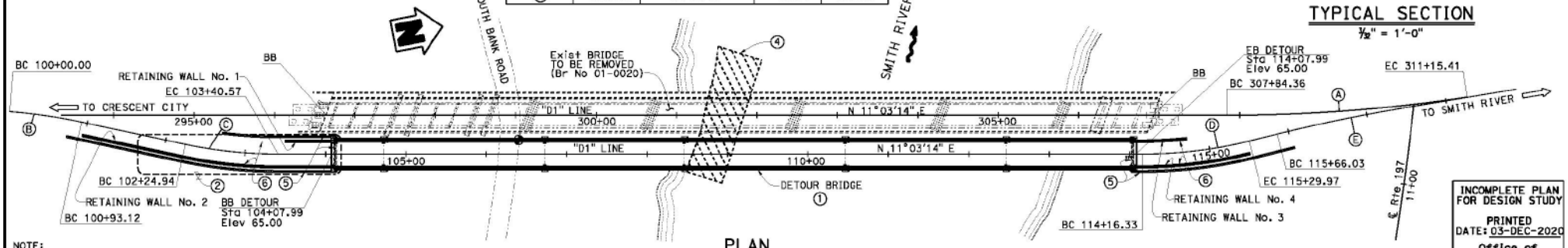
◉ Denotes temporary point of minimum vertical clearance

NOTES:

1. For "GENERAL NOTES" and "PILE DATA TABLE", see "INDEX TO PLANS" sheet.
2. For "HYDRAULIC SUMMARY", see "FOUNDATION PLAN No. 1" sheet.
3. For RETAINING WALL, see "RETAINING WALL No. 1 and RETAINING WALL No. 2" sheet.

CURVE DATA

Location	R	Δ	T	L
Ⓐ	2000.13	09°29'00"	165.90	331.05
Ⓑ	1400.00	03°48'40"	46.58	93.12
Ⓒ	1100.00	06°01'22"	57.87	115.63
Ⓓ	1100.00	06°57'39"	66.90	133.64
Ⓔ	4060.00	02°13'09"	78.64	157.25



PLAN
1" = 60'

NOTE:
The contractor must verify all controlling field dimensions before ordering or fabricating any material.

INCOMPLETE PLAN FOR DESIGN STUDY
PRINTED DATE: 03-DEC-2020
Office of Structure Design
STATE OF CALIFORNIA

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	DN	101			

REGISTERED CIVIL ENGINEER DATE
PETE NORBOE No. C57519 Exp. 12-31-2021 CIVIL
MM/DD/YYYY
PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

		BY	CHECKED
DESIGN		P. Norboe	A. Ibrahim
DETAILS		C. Figueras	A. Ibrahim
QUANTITIES		P. Norboe	A. Ibrahim

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

	BY	CHECKED
LAYOUT	P. Norboe	A. Ibrahim
SPECIFICATIONS	BY	PLANS AND SPECS COMPARED

Krishnakant Anduriekar
BRANCH CHIEF

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
COMPLEX DESIGN BRANCH

BRIDGE No. 01-0041
POST MILE 36.06

SMITH RIVER BRIDGE - DETOUR
GENERAL PLAN

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REVISION 5/8/2018)

DATE PLOTTED => 03-DEC-2020 TIME PLOTTED => 15:06
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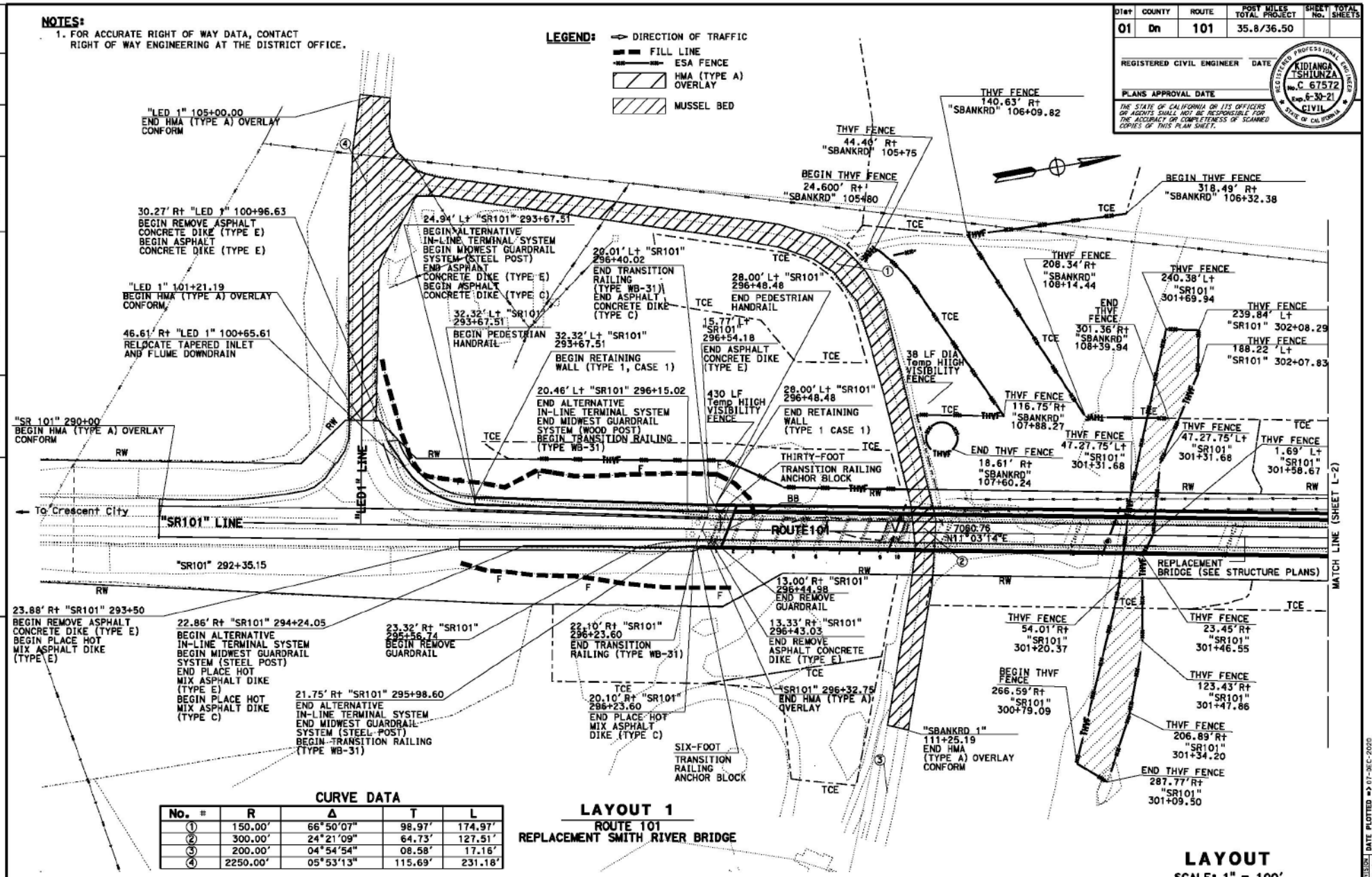
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3575
PROJECT NUMBER & PHASE: 010000001930
CONTRACT No.: 01-436404

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
				55	88



CURVE DATA

No. #	R	Δ	T	L
①	150.00'	66°50'07"	98.97'	174.97'
②	300.00'	24°21'09"	64.73'	127.51'
③	200.00'	04°54'54"	08.58'	17.16'
④	2250.00'	05°53'13"	115.69'	231.18'

LAYOUT 1
ROUTE 101
REPLACEMENT SMITH RIVER BRIDGE

LAYOUT
SCALE: 1" = 100'

L-1

DIst	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	Del	101	35.8/36.50		

REGISTERED CIVIL ENGINEER DATE
KIDIANGA TSHIUNZA No. C 67572 Exp. 6-30-21 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.

REVISED BY | DATE REVISED
SAMSON B. TOE | KIDIANGA TSHIUNZA
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: LEOBARDO MORALES
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

BORDER LAST REVISED 7/2/2010
USERNAME => s106712
DGN FILE => 0100000193e0001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0325
PROJECT NUMBER & PHASE 03140000241
07-29-19 DATE PLOTTED => 07-DEC-2020
TIME PLOTTED => 13:20

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	Dn	101	35.8/36.50		

REGISTERED CIVIL ENGINEER — DATE

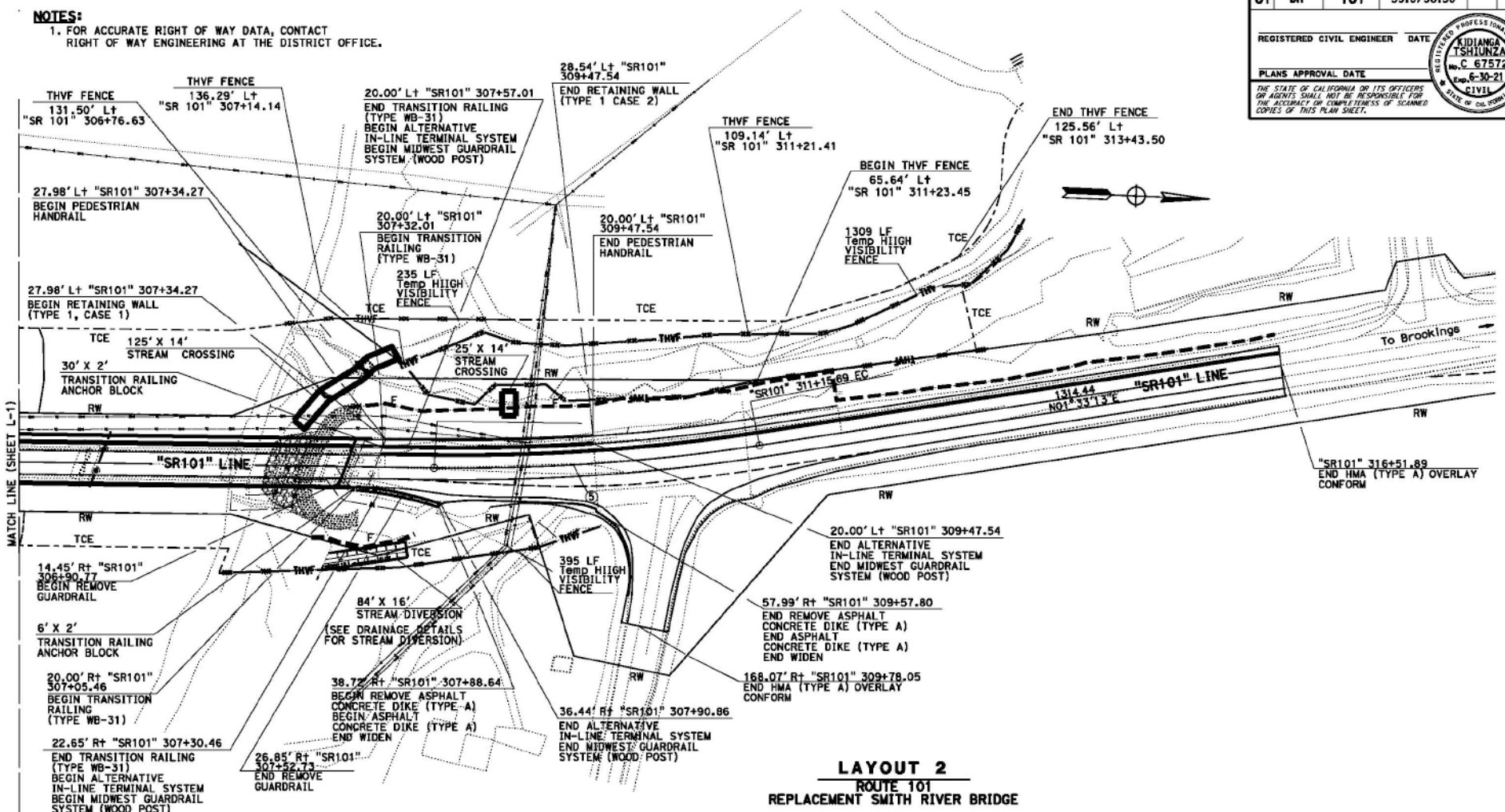
KIDIANGA TSHIUNZA No. C 67572 Exp. 6-30-21 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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.

NOTES:

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



LAYOUT 2
ROUTE 101
REPLACEMENT SMITH RIVER BRIDGE

CURVE DATA

No. #	R	Δ	T	L
⑤	200.00'	09°30'01"	166.19'	331.63'

LAYOUT
SCALE: 1" = 100'

L-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN

FUNCTIONAL SUPERVISOR: LEOBARDO MORALES

CALCULATED-DESIGNED BY: SAMSON B. TOE

CHECKED BY: KIDIANGA TSHIUNZA

REVISED BY | DATE REVISED

LAST REVISION — DATE PLOTTED => 07-DEC-2020 (07-29-19) | TIME PLOTTED => 13:20

BORDER LAST REVISED 7/2/2010 | USERNAME => s108712 | DGN FILE => 0100000193ed002.dgn | RELATIVE BORDER SCALE IS IN INCHES (0 1 2 3) | UNIT 0325 | PROJECT NUMBER & PHASE 03140000241

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	Del	101	35.8/36.50		

REGISTERED CIVIL ENGINEER — DATE

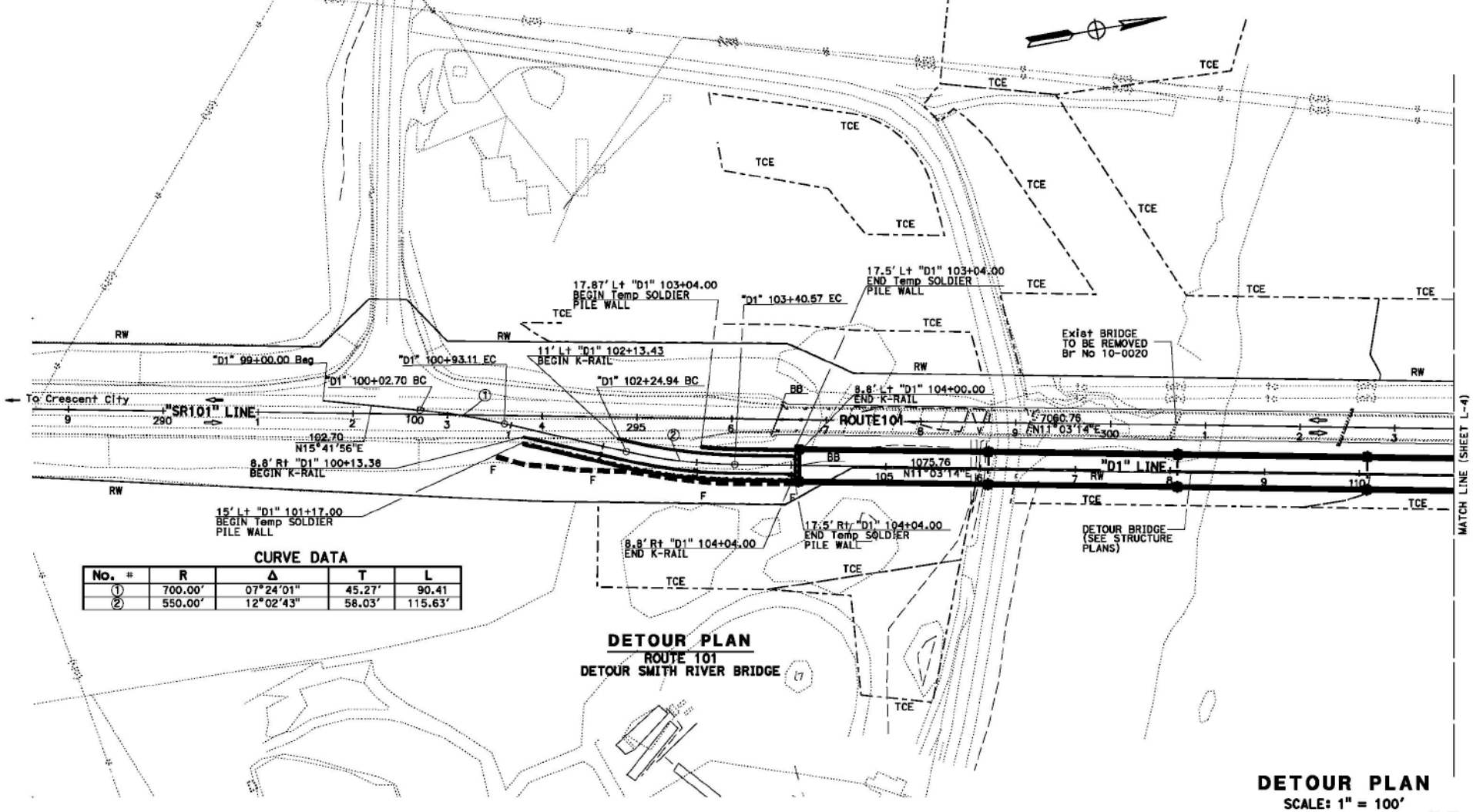
KIDIANGA TSHIUNZA No. C 67572 Exp. 6-30-21 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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.

NOTES:

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



CURVE DATA

No. #	R	Δ	T	L
①	700.00'	07°24'01"	45.27'	90.41
②	550.00'	12°02'43"	58.03'	115.63'

DETOUR PLAN
ROUTE 101
DETOUR SMITH RIVER BRIDGE

DETOUR PLAN
SCALE: 1" = 100'

DE-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY		REVISED BY	DATE REVISED
DESIGN	LEOBARDO MORALES	SAMSON B. TOE	KIDIANGA TSHIUNZA			

LAST REVISION — DATE PLOTTED => 07-DEC-2020 — TIME PLOTTED => 13:21

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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	Dn	101	35.8/36.50		

REGISTERED CIVIL ENGINEER DATE

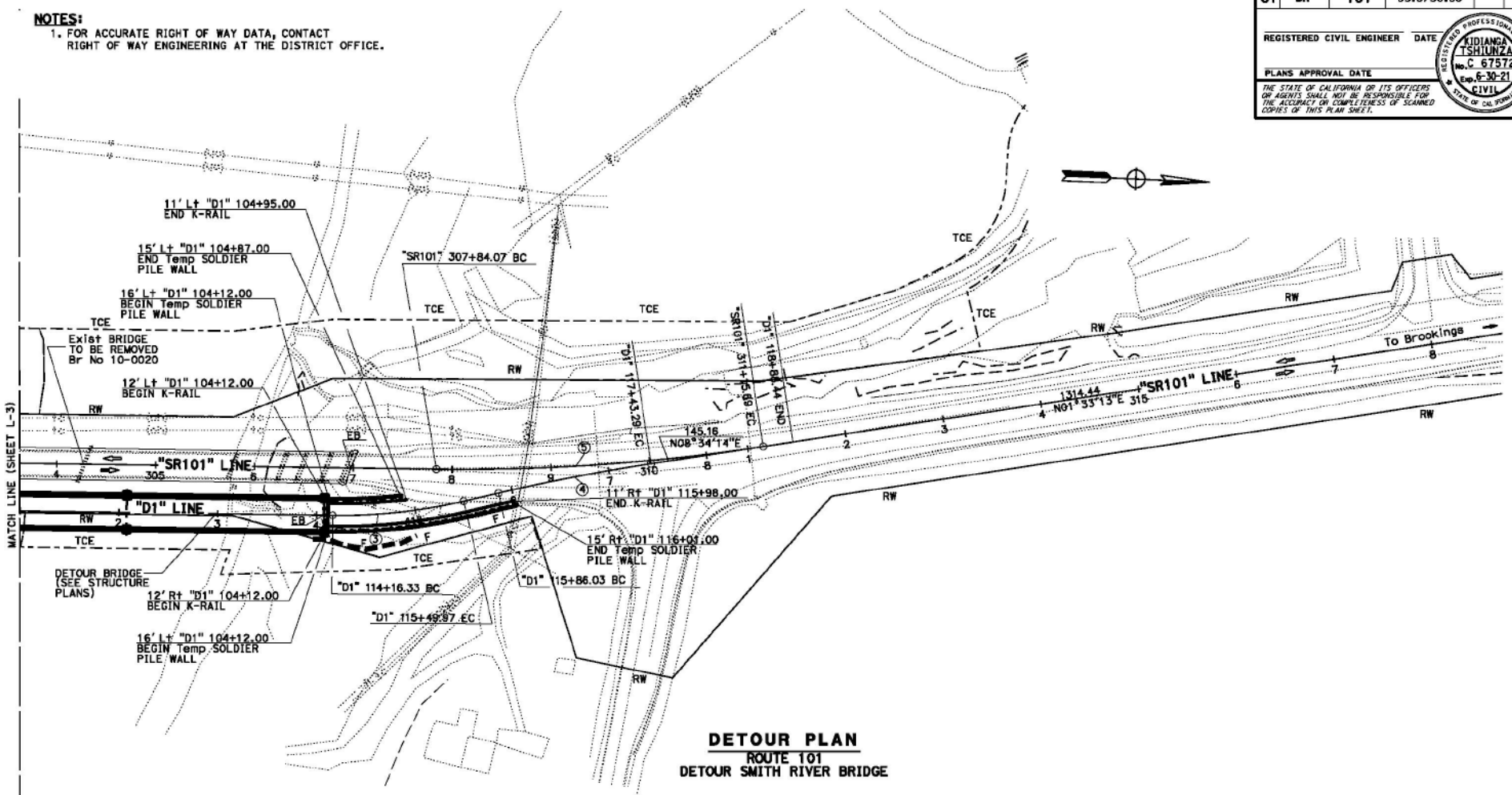
KIDIANGA TSHIUNZA No. C 67572 Exp. 6-30-21 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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.

NOTES:

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



DETOUR PLAN
ROUTE 101
DETOUR SMITH RIVER BRIDGE

CURVE DATA

No. #	R	Δ	T	L
③	550.00'	13°55'18"	67.15'	133.64'
④	2030.00'	04°26'19"	78.67'	157.26'
⑤	200.00'	09°30'01"	166.19'	331.63'

DETOUR PLAN
SCALE: 1" = 100'

DE-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
DESIGN	LEOBARDO MORALES	SAMSON B. TOE	KIDIANGA TSHIUNZA		

LAST REVISION DATE PLOTTED => 07-DEC-2020
07-29-19 TIME PLOTTED => 13:21

BORDER LAST REVISED 7/2/2010 | USERNAME => s108712 DGN FILE => 0100000193mg002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0325 | PROJECT NUMBER & PHASE 03140000241

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	DN	101			

REGISTERED CIVIL ENGINEER X DATE

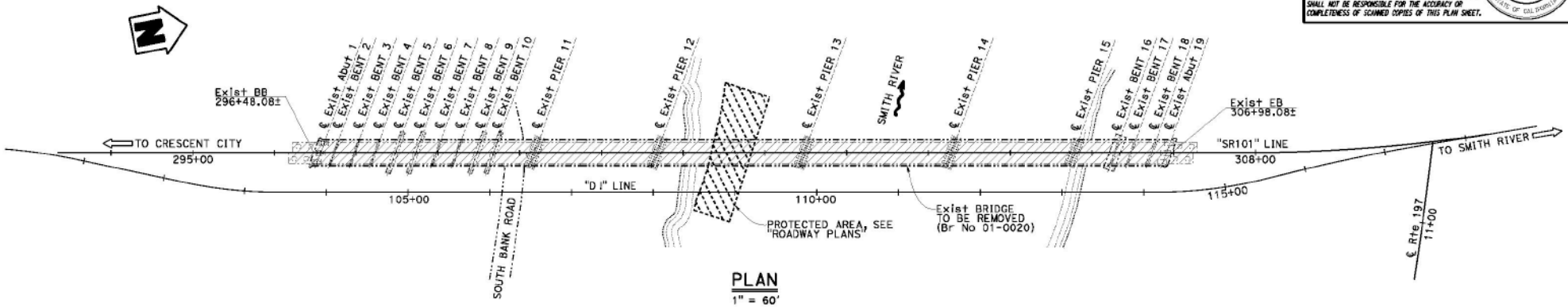
PETE NORBOE No. C57519 Exp.12-31-2021 CIVIL

MM/DD/YYYY
PLANS APPROVAL DATE

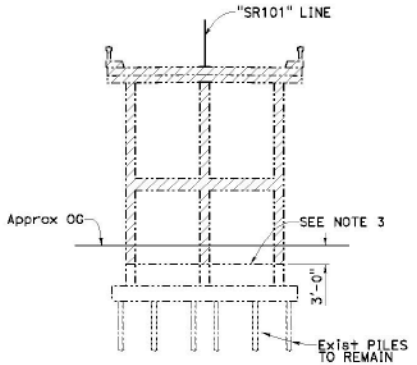
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LEGEND:
- Existing structure
- Limits of bridge removal
- Environmentally sensitive area

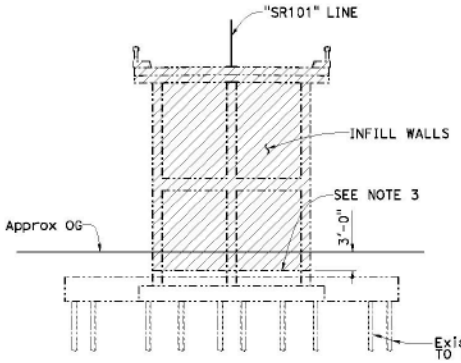
NOTES:
1. For additional removal details for existing abutments, see "BRIDGE REMOVAL DETAILS NO. 2" sheet.
2. For additional removal details for existing BENT 16, see "BRIDGE REMOVAL DETAILS NO. 3" sheet.
3. For limits of bridge removal elevations, see "BRIDGE REMOVAL DETAILS No. 3" sheet.



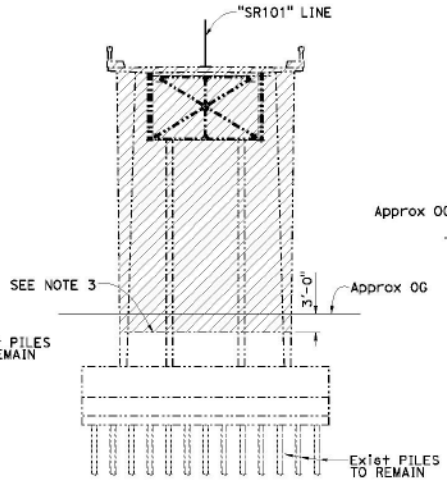
PLAN
1" = 60'



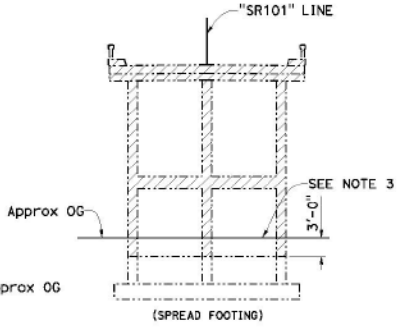
Exist BENTS 2, 3, 4, 7, & 8



Exist BENTS 5, 6, 9, & 10



Exist PIERS 11, 12, 13, 14, & 15



Exist BENT 17 & 18

NOTE:
The contractor must verify all controlling field dimensions before ordering or fabricating any material.

EXISTING TYPICAL SECTIONS
1" = 10'-0"

DESIGN	BY P. Norboe	CHECKED A. Ibrahim	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN COMPLEX DESIGN BRANCH	BRIDGE No. 01-0041
DETAILS	BY C. Figueres	CHECKED A. Ibrahim			POST MILE 36.06
QUANTITIES	BY P. Norboe	CHECKED A. Ibrahim			

SMITH RIVER BRIDGE - REPLACE
BRIDGE REMOVAL DETAILS No. 1

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISED 5/8/2018)

DATE PLOTTED => 03-DEC-2020 TIME PLOTTED => 14:59
FILE => 01-436404_c_d-bremov01.dgn USERNAME => e128480
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3575
PROJECT NUMBER & PHASE: 01000001930
CONTRACT No.: 01-436404

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
11-9-20				5	88

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	DN	101			

REGISTERED CIVIL ENGINEER — X — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

PETE MORBOE No. C57519 Exp. 12-31-2021 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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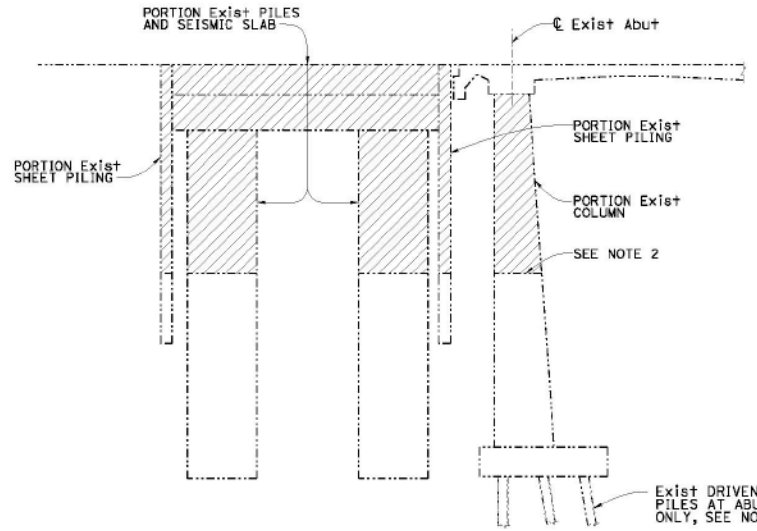
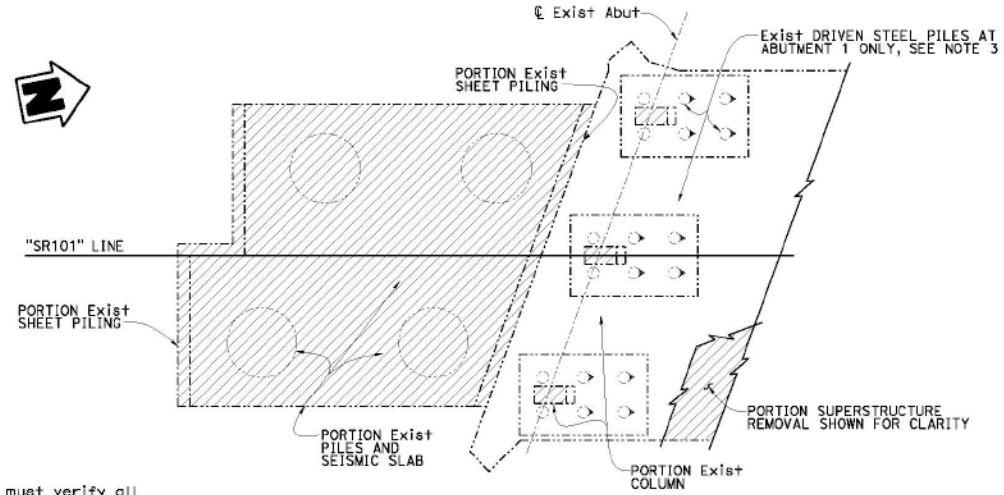
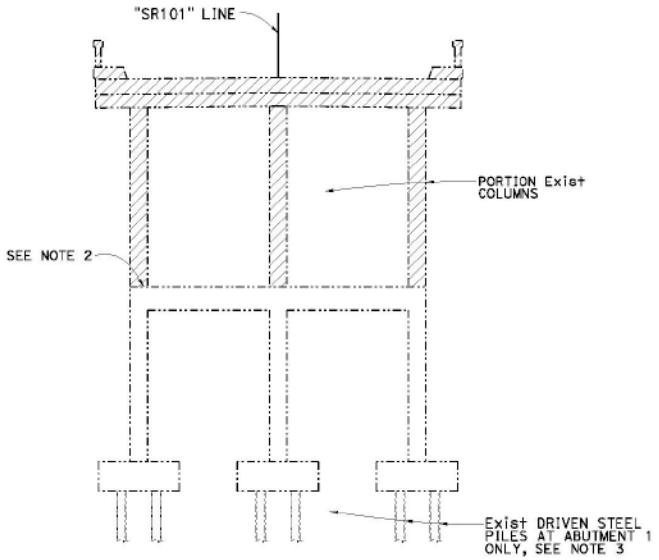


ELEVATION
3/16" = 1'-0"



PLAN
3/16" = 1'-0"

NOTE:
The contractor must verify all controlling field dimensions before ordering or fabricating any material.



TYPICAL SECTION
3/16" = 1'-0"

NOTES:

1. Exist Abutment 1 shown, Exist Abutment 19 similar.
2. For limits of bridge removal elevations, see "BRIDGE REMOVAL DETAILS No. 3" sheet.
3. Exist driven battered steel piles may be in path of new CIDH piles. A means and method shall be provided to either remove the portion of the existing pile upon encounter or removal before installation of new pile, upon approval of the engineer.

LEGEND:
- Existing structure
- Limits of bridge removal

DESIGN	BY P. Norboe	CHECKED A. Ibrahim	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN COMPLEX DESIGN BRANCH	BRIDGE No. 01-0041
DETAILS	BY C. Figueroa	CHECKED A. Ibrahim			POST MILE 36.06
QUANTITIES	BY P. Norboe	CHECKED A. Ibrahim			

SMITH RIVER BRIDGE - REPLACE
BRIDGE REMOVAL No. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 5/8/2018)

DATE PLOTTED => 03-DEC-2020 TIME PLOTTED => 14:59
FILE => 01-436404_c_d-bremov02.dgn USERNAME => e128480

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3575
PROJECT NUMBER & PHASE: 01000001930
CONTRACT No.: 01-436404

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
				6	88

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	DN	101			

REGISTERED CIVIL ENGINEER — X DATE

MM/DD/YYYY
PLANS APPROVAL DATE

PETE MORBOE
No. C57519
Exp. 12-31-2021
CIVIL
STATE OF CALIFORNIA

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REMOVAL ELEVATION TABLE	
Location	Elevation (ft)
Abut 1	46.0
Pier 2	46.0
Pier 3	34.0
Pier 4	33.0
Pier 5	32.0
Pier 6	32.0
Pier 7	32.0
Pier 8	32.0
Pier 9	32.0
Pier 10	32.0
Pier 11	31.0
Pier 12	21.0
Pier 13	15.0
Pier 14	12.0
Pier 15	13.0
Pier 16	27.0
Pier 17	33.0
Pier 18	45.0
Abut 19	47.0

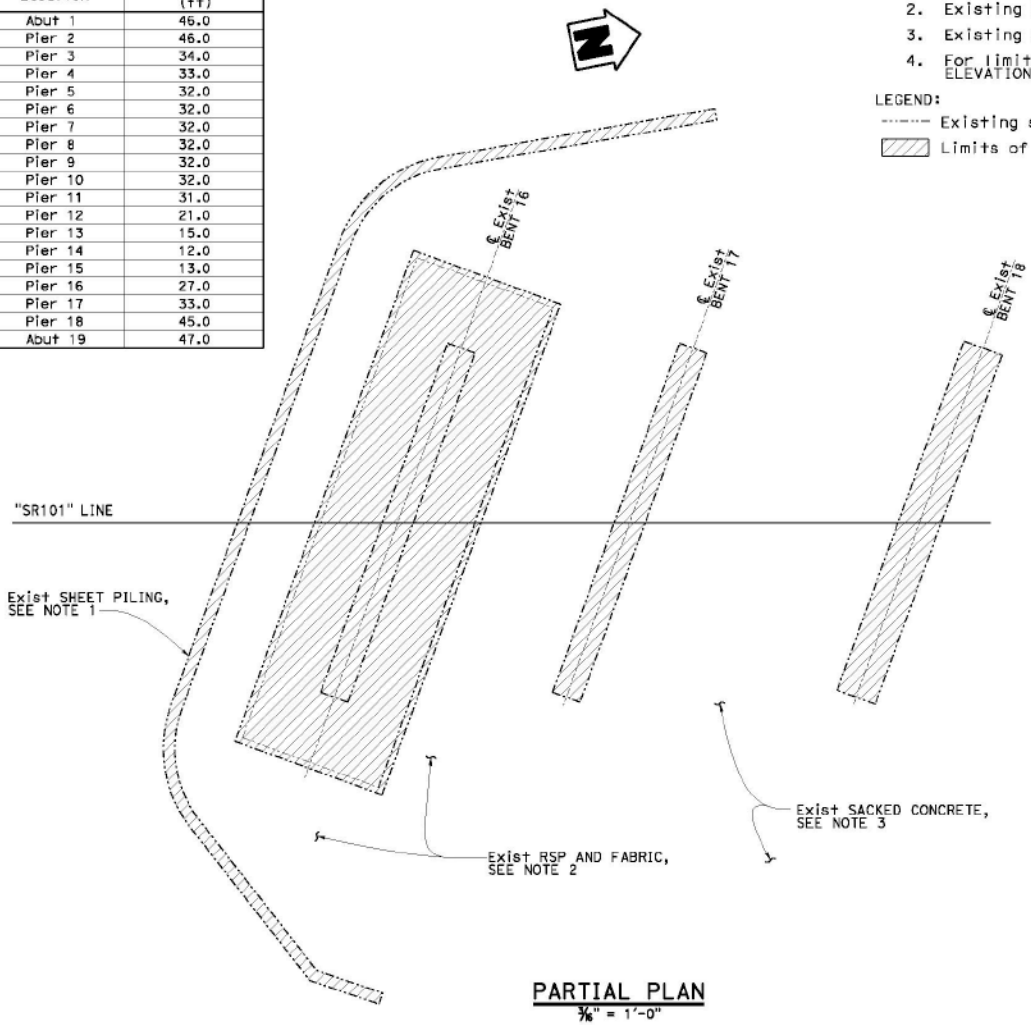
NOTES:

1. Remove existing sheet piling to a minimum of 3' below FG.
2. Existing RSP and fabric to remain, not shown.
3. Existing sacked concrete to remain, not shown.
4. For limits of bridge removal, see "REMOVAL ELEVATION TABLE".

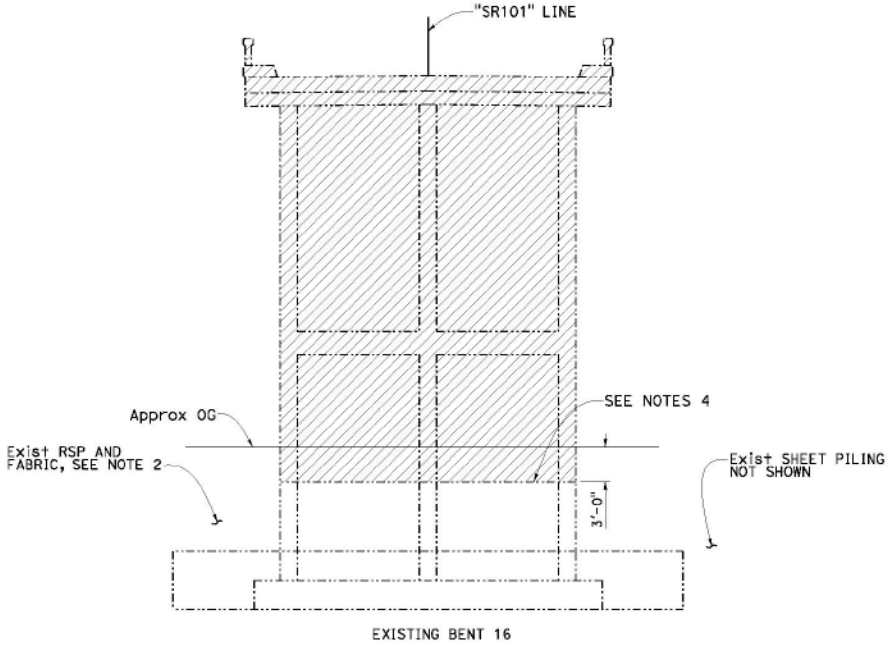
LEGEND:

Existing structure

Limits of bridge removal



PARTIAL PLAN
3/16" = 1'-0"



EXISTING BENT 16

TYPICAL SECTION
3/16" = 1'-0"

NOTE:
The contractor must verify all controlling field dimensions before ordering or fabricating any material.

DESIGN	BY P. Norboe	CHECKED A. Ibrahim	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN COMPLEX DESIGN BRANCH	BRIDGE No. 01-0041
DETAILS	BY C. Figueroa	CHECKED A. Ibrahim			POST MILE 36.06
QUANTITIES	BY P. Norboe	CHECKED A. Ibrahim			

SMITH RIVER BRIDGE - REPLACE

BRIDGE REMOVAL No. 3

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 5/8/2018)

DATE PLOTTED => 03-DEC-2020 TIME PLOTTED => 14:59
FILE => 01-436404_c_d-bremov03.dgn USERNAME => e128480

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3575
PROJECT NUMBER & PHASE: 01000001930
CONTRACT No.: 01-436404

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
11-9-20				7	88

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	DN	101			

REGISTERED CIVIL ENGINEER — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

PETE NORBOE No. C57519 Exp. 12-31-2021 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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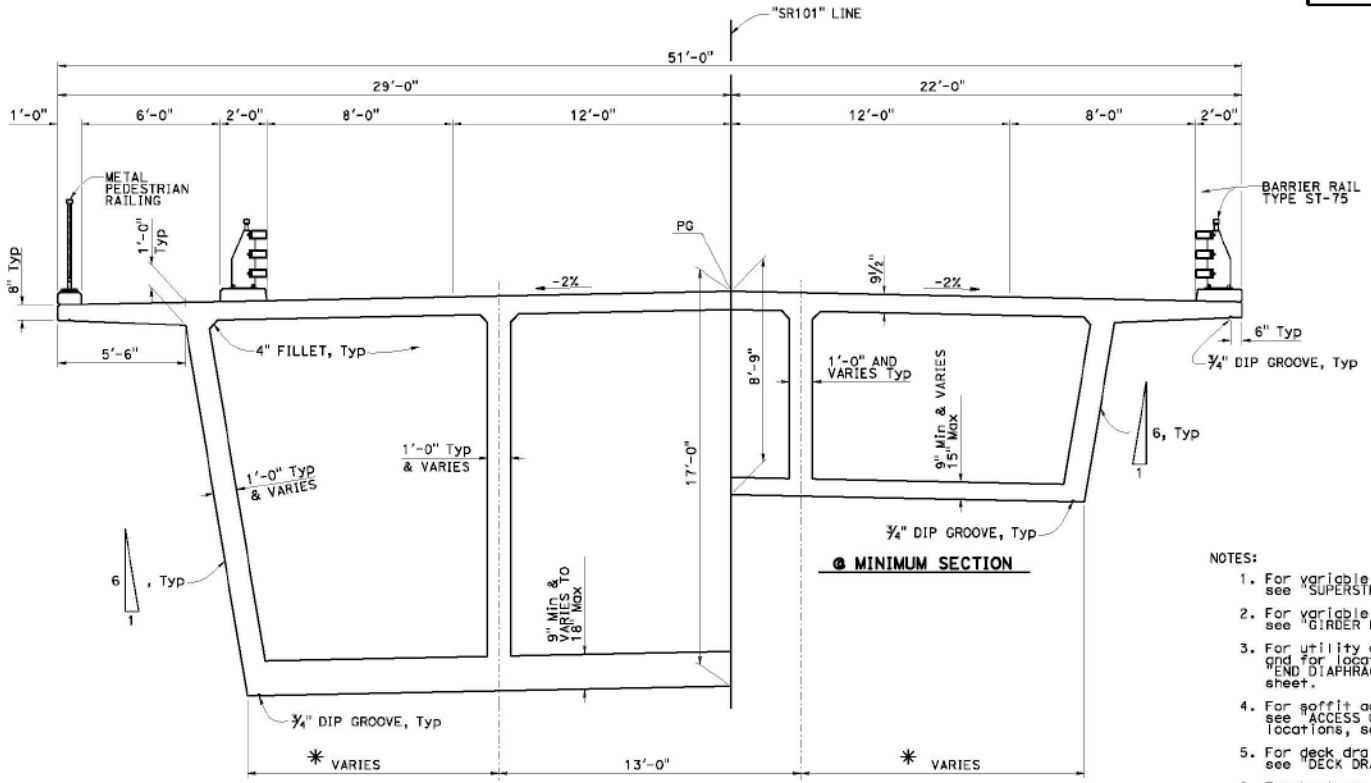

@ MAXIMUM SECTION

@ MINIMUM SECTION

TYPICAL SECTION
⅛" = 1'-0"

B0-5 | B7-1 | B8-5

NOTES:

1. For variable bottom soffit thickness, see "SUPERSTRUCTURE GEOMETRICS" sheet.
2. For variable girder thickness, see "GIRDER LAYOUT" sheet.
3. For utility opening size, and for location, see "END DIAPHRAGM DETAILS" sheet. (B7-10)
4. For soffit access opening size and details, see "ACCESS OPENING DETAILS" sheet and for locations, see "GIRDER LAYOUT" sheets.
5. For deck drain type location, see "DECK DRAIN LOCATION" sheet.
6. For bent cap maintenance access opening size, location, and details, see "PIER CAP DETAILS" sheets.

* Dimensions varies with structure depth. for structure depth variations, see "SUPERSTRUCTURE GEOMETRICS" sheet.

DESIGN	BY P. Norboe	CHECKED K. Lee	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN COMPLEX DESIGN BRANCH	BRIDGE No. 01-0041
DETAILS	BY C. Figueroa	CHECKED K. Lee			POST MILE 36.06
QUANTITIES	BY P. Norboe	CHECKED K. Lee			

SMITH RIVER BRIDGE - REPLACE

TYPICAL SECTION No. 1

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 5/8/2018)

DATE PLOTTED => 03-DEC-2020 TIME PLOTTED => 15:01
FILE => 01-436404_tx01.dgn USERNAME => e199880

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3575
PROJECT NUMBER & PHASE: 01000001930
CONTRACT No.: 01-436404

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
11-4-20				20	88

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
01	DN	101			

REGISTERED CIVIL ENGINEER — X — DATE

MM/DD/YYYY
PLANS APPROVAL DATE

PETE NORBOE
No. C57519
Exp. 12-31-2021
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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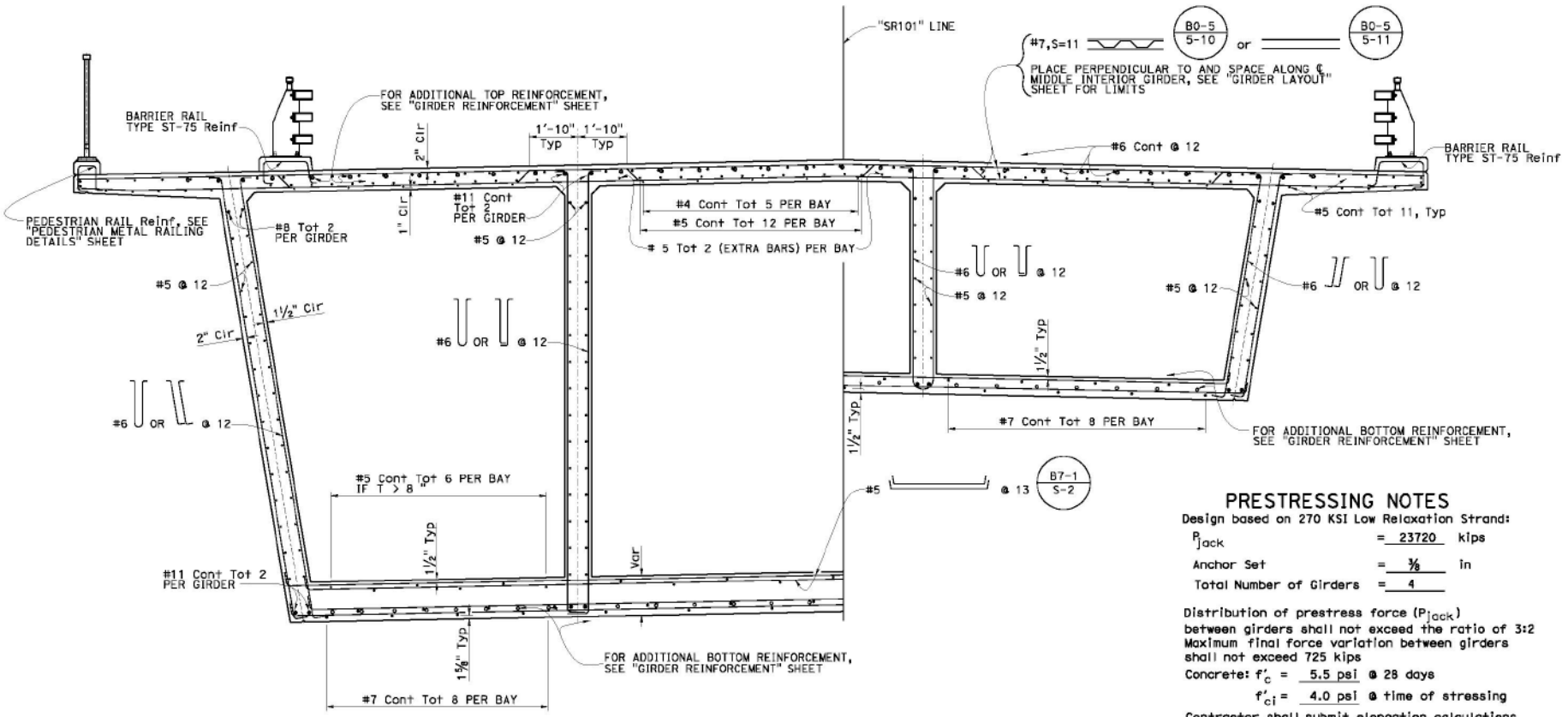


PART TYPICAL SECTION

½" = 1'-0"

PRESTRESSING NOTES

Design based on 270 KSI Low Relaxation Strand:

P_{Jack} = 23720 kips

Anchor Set = ⅜ in

Total Number of Girders = 4

Distribution of prestress force (P_{Jack}) between girders shall not exceed the ratio of 3:2
Maximum final force variation between girders shall not exceed 725 kips

Concrete: f'_c = 5.5 psi @ 28 days

f'_{ci} = 4.0 psi @ time of stressing

Contractor shall submit elongation calculations based on initial stress at point of no movement

⊠ = 0.8404 times jacking stress.

Two ends stressing shall be performed from Abut 1 and Abut 5.

	BY	CHECKED
DESIGN	P. Norboe	K. Lee
DETAILS	C. Figueroa	K. Lee
QUANTITIES	P. Norboe	K. Lee

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
COMPLEX DESIGN BRANCH

BRIDGE No. 01-0041
POST MILE 36.06

SMITH RIVER BRIDGE - REPLACE

TYPICAL SECTION No. 2

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REVISION 5/8/2018)

DATE PLOTTED => 03-DEC-2020 TIME PLOTTED => 15:01
FILE => 01-436404_tc02.dgn USERNAME => e129480

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 3575
PROJECT NUMBER & PHASE: 01000001930
CONTRACT No.: 01-436404

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES				SHEET	OF
11-4-20				21	88

View looking northwest from the northeast side of the bridge

(Utility Line Removal)

EXHIBIT NO. 7

CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)

VISUAL SIMULATIONS
(Source: Caltrans)

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

View looking north and below the bridge from the southwest side of the bridge

(Utility Line Removal)

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

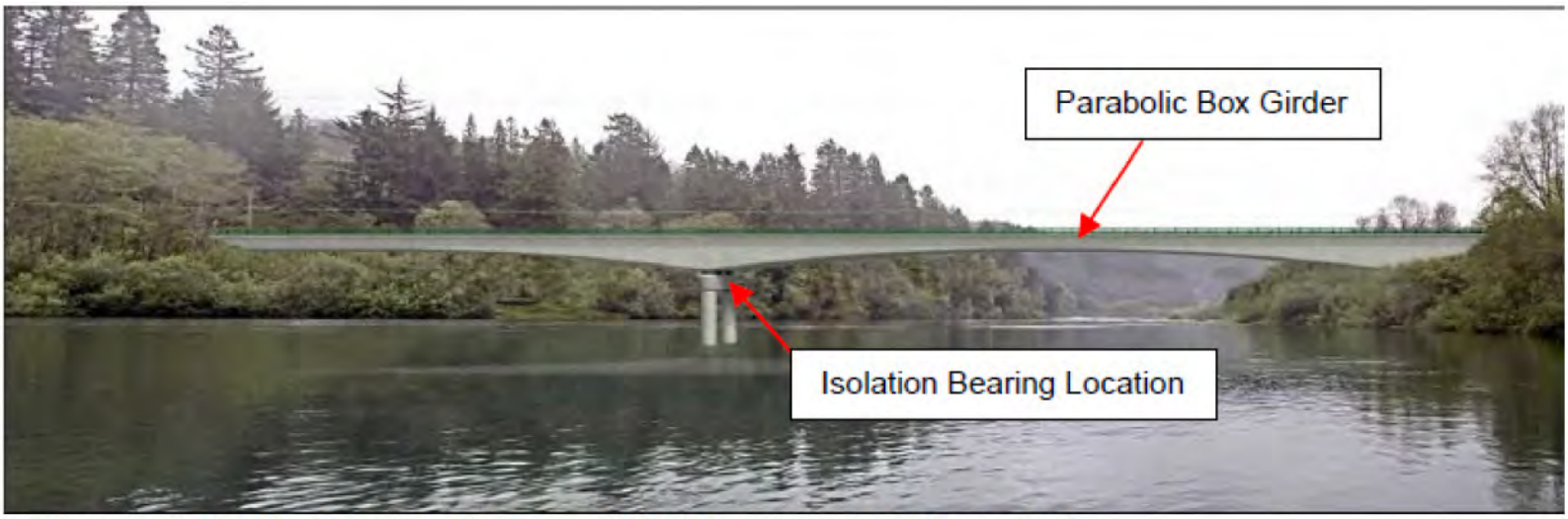


Figure 1-6. Photo-simulation of CIP Bridge, looking east.

Figure 2-11. Existing View and anticipated tree/vegetation removal areas for Alternatives 3 at Key View 2- Traveling northbound looking east just north of the bridge

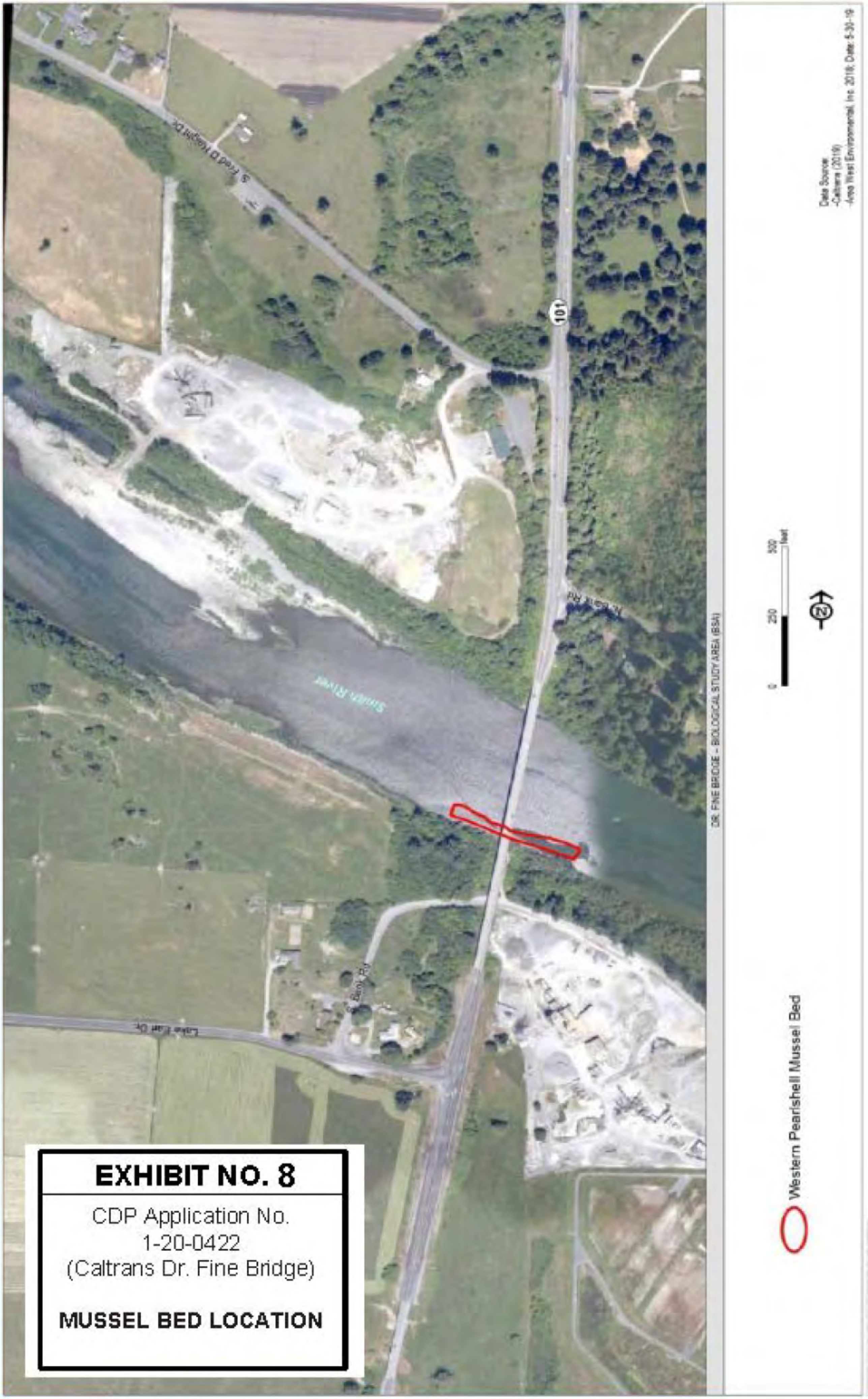


EXHIBIT NO. 8

CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)

MUSSEL BED LOCATION

E

COASTAL VEGETATION COMMUNITY PROJECT IMPACTS

DR. FINE (SMITH RIVER) BRIDGE PROJECT
DN-101-PM 35.8/36.5
EA: 01-43840
EFIS: 0100000193

ABBREHVIATIONS:

TEMP: TEMPORARY IMPACT | PERM: PERMANENT IMPACT
C-PERM: CONSTRUCTION PERMANENT IMPACT | AC: ACRES

LEGEND:

- PERMANANT IMPACT AREA
- STATE RIGHT-OF-WAY
- TEMP CONSTRUCTION EASEMENTS
- PROJECT IMPACT LIMITS
- OTHER WATERS
- SMITH RIVER
- PALUSTRINE FORESTED BROADLEAF DECIDUOUS WETLAND
- RED ALDER RIPARIAN FOREST WETLAND
- SITKA WILLOW WETLAND THICKETS
- COASTAL WETLAND 2
- COASTAL WETLAND 1 (CW1) IMPACT AREA
- OTHER WATERS (OW) IMPACT AREA
- SMITH RIVER IMPACT AREA
- PALUSTRINE FORESTED BROADLEAF DECIDUOUS WETLAND (PFBDW), IMPACT AREA
- RED ALDER RIPARIAN FOREST WETLAND (RARF) IMPACT AREA
- SITKA WILLOW WETLAND THICKETS (SWT) IMPACT AREA
- COASTAL WETLAND 2 (CW2) IMPACT AREA
- ARROYO WILLOW WETLAND THICKETS (AWT) IMPACT AREA

TOTAL IMPACTS:

SMITH RIVER (PERM): 0.006 AC	OW (C-PERM): 0.083 AC
SMITH RIVER (TEMP): 1.130 AC	SWT (C-PERM): 0.265 AC
RARF (C-PERM): 2.440 AC	SWT (PERM): 0.005 AC
PFBDW (C-PERM): 0.057 AC	CW1 (C-PERM): 0.207 AC
AWT (C-PERM): 0.311 AC	CW2 (C-PERM): 0.297 AC
RARF (PERM): 0.001 AC	

EXHIBIT NO. 9
CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)
Wetland and Natural Communities Map

- SATELLITE IMAGERY - 04/2018
- DELINEATION DATA COLLECTED 05/19/2015 BY D1 ENVIRONMENTAL, CALTRANS.
- DISPLAY CREATED ON 11/20/2020 BY D1 LANDSCAPE ARCHITECTURE, CALTRANS

EXHIBIT NO. 10

CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)

OFFSITE MITIGATION LOCATIONS

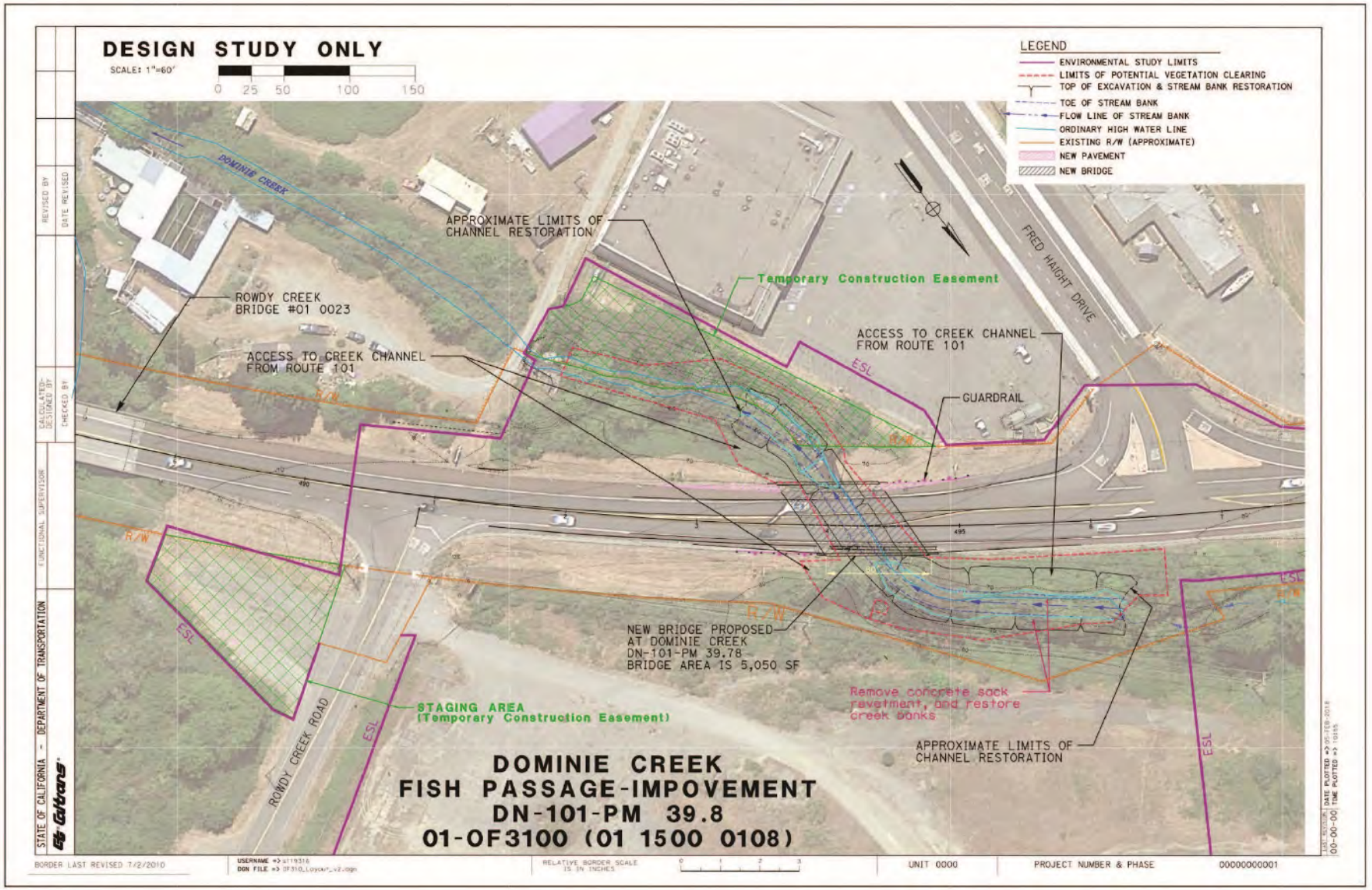
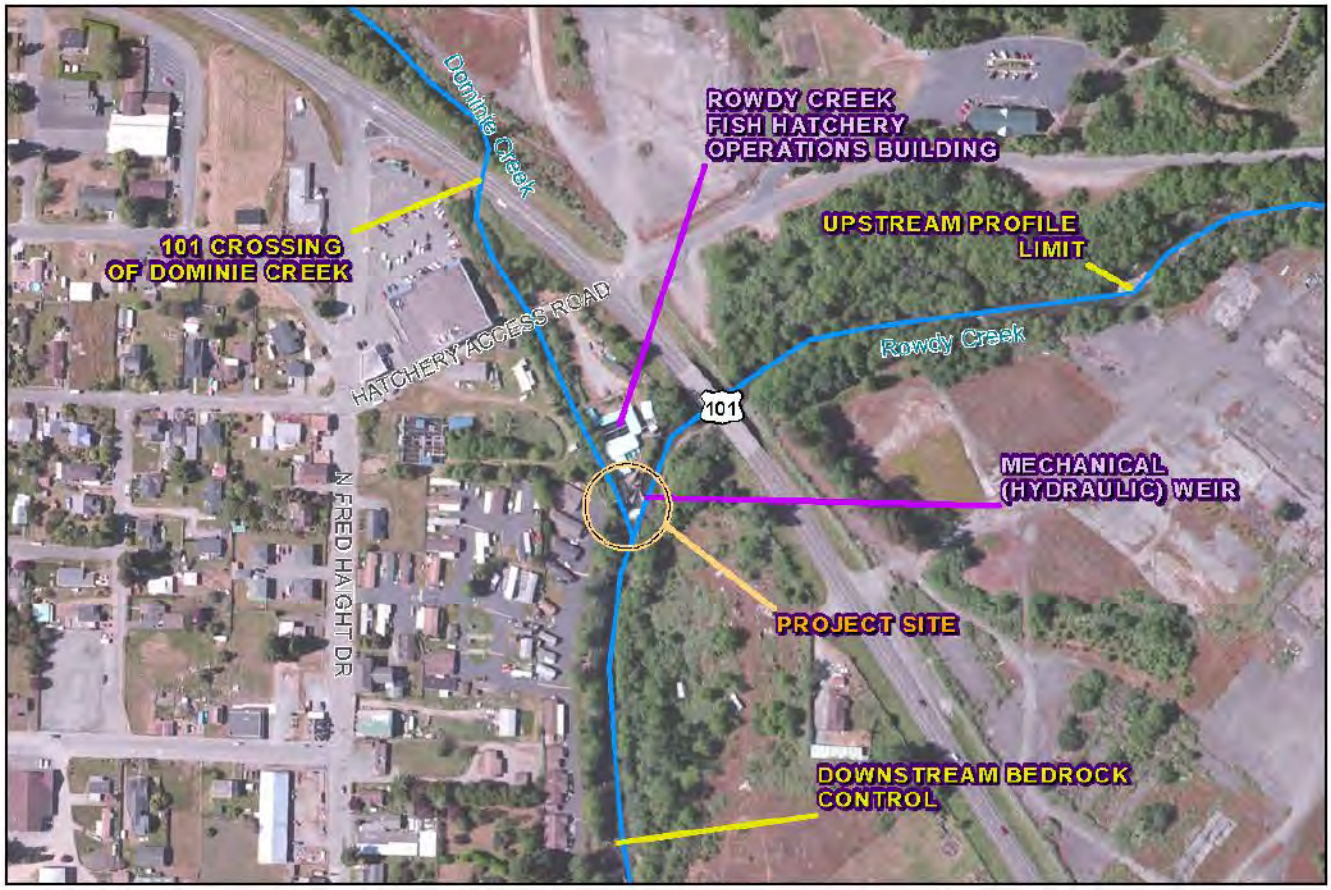


Figure 1-2. Project Overview

Figure 1-2. Project Overview



Interstate Highway
Limited Access
Highway

Paper Size ANSI A

0 125 250 500 Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

N

Smith River Rancheria
Rowdy Creek Fish Passage Improvement Project

Job Number 8411195
Revision A
Date 21 Nov 2014

Project Vicinity and Location Map

Figure 1

718 Third Street Eureka, CA 95501 T 707 443 8326 F 707 444 8330 E eureka@ghd.com W www.ghd.com

N:\US\Eureka\Projects\Legacy\Projects\01714 Smith River Rancheria\8411195 SRR-RowdyCrkFishPassage\08-GIS\Maps\Figures\F1_Vicinity_RowdyCreekHatchery.mxd

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Figure 2. Location of the 45-acre Environmental Study Limit (ESL, white outline at treeline), within the 159-acre Hambro Parcel (blue outline), an area contributing to the 335-acre Crescent City Marsh Wildlife Area (yellow outline). Access to the site is from Elk Valley Road, Crescent City.

COASTAL ONSITE REVEGETATION AREAS

DR. FINE (SMITH RIVER) BRIDGE PROJECT
DN-101-PM 35.8/36.5

EA: 01-43640
EFIS: 0100000193

LEGEND:

- OTHER WATERS (OW)
- PALUSTRINE FORESTED BROADLEAF DECIDUOUS WETLAND (PFBDW)
- RED ALDER RIPARIAN FOREST WETLAND (RARF)
- SITKA WILLOW WETLAND THICKETS (SWT)
- PALUSTRINE SCRUB-SHRUB WETLAND CREATION (PSSWC)
- RARF RE-ESTABLISHMENT (RRE)
- ONSITE REVEGETATION OUTSIDE OF R/W (OR)
- COASTAL WETLAND 2
- WETLAND CREATION FOR COASTAL COMMISSION (WCCC)
- STATE RIGHT-OF-WAY
- TEMP CONSTRUCTION EASEMENTS

0 100 200 300 400 500
FEET
SCALE

- SATELLITE IMAGERY – 04/2018
- DELINEATION DATA COLLECTED 05/19/2015 BY D1 ENVIRONMENTAL, CALTRANS.
- DISPLAY CREATED ON 11/20/2020 BY D1 LANDSCAPE ARCHITECTURE, CALTRANS

EXHIBIT NO. 11
CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)
ONSITE MITIGATION AND REVEGETATION AREAS

COASTAL IMPACTS AND REVEGETATION AREAS

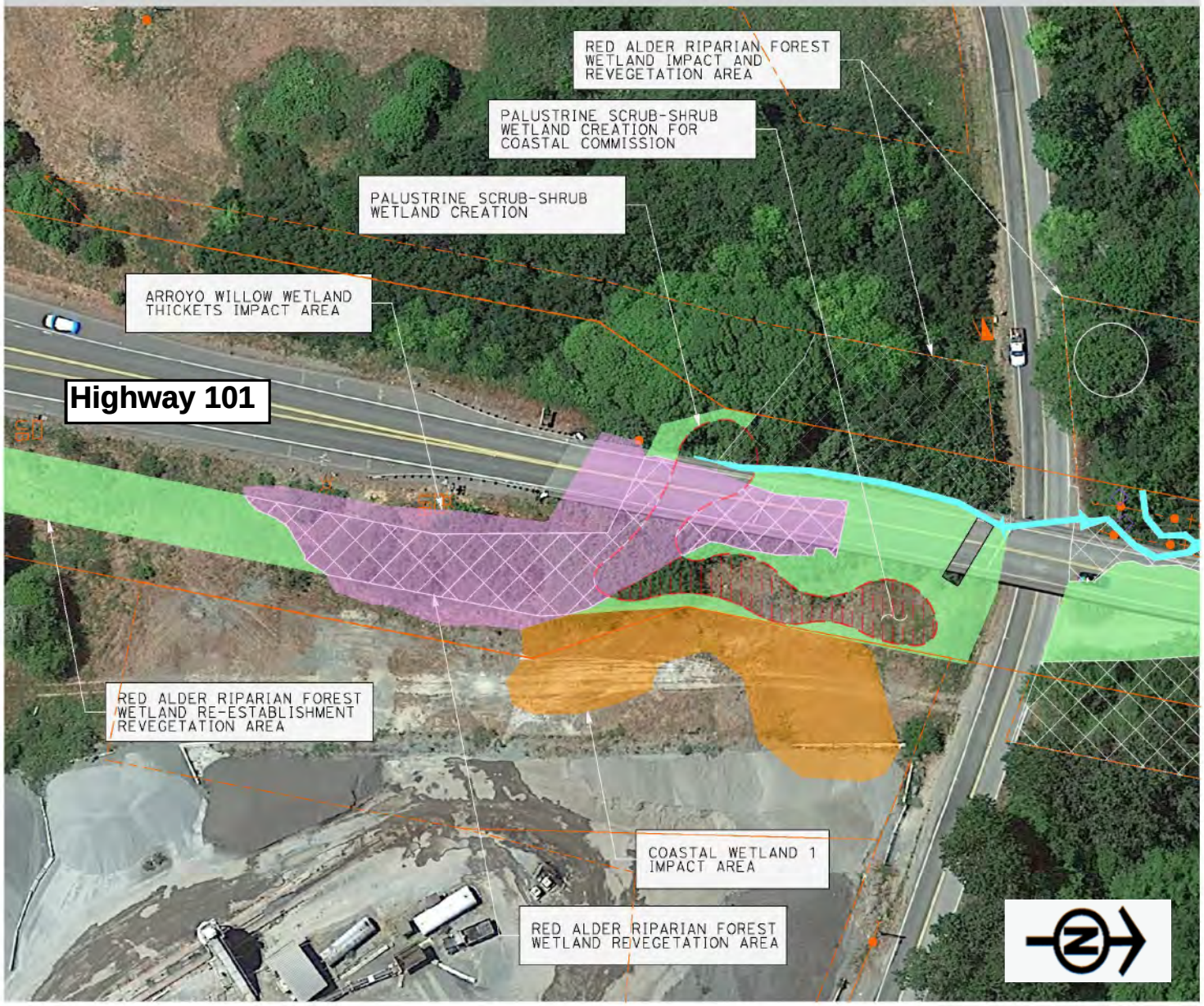


EXHIBIT NO. 12

CDP Application No. 1-20-0422 (Caltrans Dr. Fine Bridge) **EXCERPT OF COOPERATIVE AGREEMENT FOR USE OF HAMBRO PARCEL**

01-DNO-2.2, 8.2/8.7, 12.0/15.5, 35.8/36.5
EA No. 01-0E710, 01-0F280, 01-0B090, 01-43640
EFIS No. 0115000002, 0100020444, 0115000099, 0100000193
Cooperative Agreement No. 01-0391

COOPERATIVE AGREEMENT

This AGREEMENT, ENTERED INTO EFFECTIVE on 8/16, 2018, is between the STATE OF CALIFORNIA, acting by and through its Department of Transportation, referred to herein as "CALTRANS," and the CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, referred to herein as "CDFW." CALTRANS and CDFW are each a PARTY or collectively the PARTIES.

RECITALS

1. Streets and Highways Code sections 114 and 130 authorize CALTRANS to enter into this Agreement with a public agency such as CDFW.

2. The following CALTRANS projects require action by CALTRANS to address natural resources impacts:
   a. Waukell Creek Emergency Project: Emergency culvert work at Waukell Creek in Del Norte County (where Waukell Creek crosses under US Route 101 at Post Mile 2.22), was conducted within the creek channel. Compensation is in relation to this work and satisfies a stipulated judgment.
   b. Hunter and Panther Creek Bridges Seismic Restoration Project: The project proposes to replace the Hunter Creek and Panther Creek Bridges located on US Route 101 in Del Norte County between Post Miles 8.2/8.7. The project would temporarily and permanently affect wetlands.
   c. Dr. Fine Bridge Replacement Project: The project proposes to replace the Dr. Fine Bridge located on US Route 101 in Del Norte County between Post Miles 35.8/36.5. The project would temporarily and permanently affect wetlands.
   d. Last Chance Grade (LCG) Project: The project proposes to resolve highway deficiencies located on US 101 in Del Norte County at Post Miles 12.0/15.5. The project has the potential to temporarily and permanently affect wetlands.

3. CALTRANS desires to enter into this Agreement with CDFW to provide compensation to offset the impacts of the projects listed above in Article 2 a. To this purpose, CALTRANS will acquire in CDFW's name an estimated 132.8 acres of the 159 acre "Hambro" parcel (APN 115-020-18), herein the 132.8 acre portion will be referred to as "PARCEL," and provide an endowment of $297,148 to CDFW for the perpetual stewardship of the PARCEL, herein referred to as "ENDOWMENT." The 159 acre Hambro parcel is owned by Hambro Forest Products, and encompasses wetland, riparian, and Sitka spruce habitat, and developed business and beach area. The acquisition will not include the business and beach area. PARCEL is located adjacent to US Route 101, just south of Crescent City, in Del Norte County. A map of PARCEL location is provided in Exhibit A, attached hereto and made part of this Agreement.

4. CDFW issued CALTRANS two memorandums, dated October 16, 2017 and January 24, 2018, providing provisional concurrence that the purchase of PARCEL and the endowment would also fully meet the wetland mitigation requirements, as determined by CDFW, of the Hunter and Panther Creek Bridges Seismic Restoration Project and the temporary three-parameter wetland impacts of the Dr. Fine Bridge Replacement Project (projects listed above in Article 2 b and c). CALTRANS will coordinate its restoration/enhancement activities related to the Dr. Fine Bridge Replacement Project with CDFW at a future date. The memorandums are attached hereto as Exhibit B.

   CDFW also issued an email, dated May 31, 2018, confirming that to the greatest extent feasible the Parcel could be utilized as wetland mitigation for the LCG Project. The email is attached hereto as Exhibit C.

5. Fee title to the PARCEL will be purchased in CDFW's name.

6. A hazardous waste study (known as an Initial Site Assessment) was prepared February, 2018 and indicated the 132.8-acre portion of PARCEL to be acquired contains no hazardous materials.

7. The terms of this Agreement shall supersede any prior agreement relating to purchase of PARCEL and the ENDOWMENT except for the stipulated judgement related to the Waukell Creek Emergency Project.

8. PARTIES now define herein below the terms and conditions under which this Agreement will be implemented.

SECTION I

CDFW AGREES:

1. Purchase of PARCEL plus ENDOWMENT would satisfy all compensation requirements for the Waukell Creek Emergency Project, and the wetland compensation requirements for the Hunter and Panther Creek Bridges Seismic Restoration Project.

   For the Dr. Fine Bridge Replacement Project, CALTRANS would be allowed to use up to 9 acres of PARCEL for wetland enhancement/restoration. This effort would be conducted under a future Cooperative Agreement between CDFW and Caltrans.

   Although early in the planning process, with mitigation needs still to be determined, for the LCG Project, Caltrans would be allowed to use the Parcel to the greatest extent feasible for wetland enhancement/restoration. This effort would be conducted under a future Cooperative Agreement between CDFW and Caltrans.

2. To enter into a separate agreement, under terms and conditions agreed to by the Parties, that permits CALTRANS personnel access to, and over the PARCEL for evaluating

wetland enhancement needs, enhancement plan preparation, implementation of enhancement plan, and for short and long-term monitoring efforts.

3. To accept the PARCEL in its current environmental condition and setting, including, but not limited to, the information provided in the Phase 1 Environmental Site Assessment, dated February 2018. CDFW has received and reviewed a copy of the above-referenced document. CALTRANS will not be responsible for any present or future remediation of said hazardous materials.

SECTION II

CALTRANS AGREES:

1. Contingent on Parcel owner willingness to sell, to purchase PARCEL in CDFW's name and provide an ENDOWMENT in the amount of $297,148.

2. To deposit with National Fish and Wildlife Foundation (NFWF) within ninety (90) calendar days of property PARCEL acquisition an ENDOWMENT amount of $297,148, which represents CALTRANS' total financial obligation pursuant to this Agreement.

SECTION III

IT IS MUTUALLY AGREED:

1. All obligations of CALTRANS created pursuant to the terms of this Agreement are subject to the appropriation of resources by the Legislature, State Budget Act authority and the allocation of funds by the California Transportation Commission (CTC).

2. All applicable laws, rules and policies relating to the use of federal or state funds shall apply notwithstanding other provisions of this Agreement.

3. Neither CDFW nor any officer or employee thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by CALTRANS and/or its agents under or in connection with any work, authority, or jurisdiction conferred upon CALTRANS under this agreement. It is understood and agreed that CALTRANS, to the extent permitted by law, will defend, indemnify, and save harmless CDFW and all of its officers and employees from all claims, suits, or actions of every name, kind, and description brought forth under, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by CALTRANS and/or its agents under this agreement.

4. Neither CALTRANS nor any officer or employee thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by CDFW, its contractors, sub-contractors, and/or its agents under or in connection with any

work, authority, or jurisdiction conferred upon CDFW under this agreement. It is understood and agreed that CDFW, to the extent permitted by law will defend, indemnify, and save harmless CALTRANS and all of its officers and employees from all claims, suits, or actions of every name, kind, and description brought forth under, but not limited to, tortious, contractual, inverse condemnation, or other theories or assertions of liability occurring by reason of anything done or omitted to be done by CDFW, its contractors, sub-contractors, and/or its agents under this agreement.

5. In the event of any breach of this Agreement by either party, the other party may enforce this Agreement by any means available at law or in equity. In the event of litigation, mediation or arbitration to resolve any breach of, or dispute related to this Agreement, each party agrees to pay for their own attorneys' cost and expenses, without regard to who prevails.

6. A failure by either party to enforce any provision of this Agreement shall not be construed as a continuing waiver, or as a waiver of the right to compel enforcement of that provision.

7. This Agreement may be executed in several counterparts and all counterparts so executed shall constitute one agreement that shall be binding on all of the parties, notwithstanding that all of the parties are not a signatory to the original or the same counterpart. If any provision of this Agreement is held invalid, the other provisions shall not be affected thereby.

8. No alteration or variation of the terms of this Agreement shall be valid unless made by a formal amendment executed by the parties hereto and no oral understanding or agreement not incorporated herein shall be binding on any of the parties hereto.

9. Nothing within the provisions of this Agreement is intended to create duties or obligations to or rights in third parties not party to this Agreement or to affect the legal liability of either party to the Agreement by imposing any standard of care different from the standard of care imposed by law.

10. This Agreement shall terminate upon CDFWs written acceptance that CALTRANS has completed all agreed upon enhancement efforts of wetlands on PARCEL; however all indemnification, document retention, audit, claims, environmental, legal challenge, hazardous material, operation, maintenance, and ownership articles will remain in effect until terminated or modified in writing by mutual agreement.

PARTIES are empowered to enter into this AGREEMENT and have delegated to the undersigned the authority to execute this Agreement on behalf of the respective agencies and covenants to have followed all the necessary legal requirements to validly execute this Agreement.

STATE OF CALIFORNIA
Department of Transportation

By: _____
District Director
for MATT BRADY

STATE OF CALIFORNIA
Department of Fish and Wildlife

By: _____
Neil Manji, CDFW Regional Manager

Approved as to form and procedure:

_____
Attorney
Department of Transportation

Certified as to budgeting of funds:

_____
District Budget Manager

Certified as to financial terms and policies:

_____
Accounting Administrator

State of California
DEPARTMENT OF TRANSPORTATION

Memorandum

To: Rachelle Estrada
Associate Environmental Planner
North Region Environmental

Date: October 28, 2020

File: Dr. Fine Bridge Replacement Project
DN-101-35.8/36.5
01-43640/0100000193

From: Susan Leroy
Associate Environmental Planner (Natural Sciences)
North Region Environmental

SUBJECT: UPDATE ON TAKE DUE TO 2014 HYDROACOUSTIC THRESHOLDS

Per the California Coastal Commissions request, Caltrans hydroacoustic engineer provided a second hydroacoustic assessment based on 2014 guidelines. The 2014 recommended thresholds are less restrictive than the criteria established in 2008. The National Marine Fisheries Service (NMFS) used the isopleth (area of injury) calculated based on the 2008 criteria. The isopleth was used to determine numbers of fish injured for the take permit.

The isopleth in the original assessment (2008 criteria) calculated the isopleth for injury at 245 meters. The most conservative isopleth for injury using the 2014 guidance is 21 meters. Abundance and distribution of fish were based on seven years of snorkel surveys between 2012 and 2018. The California Department of Fish and Wildlife (CDFW) estimated the mean number of coho that would reside in each habitat unit surveyed.

The estimate of take due to barotrauma unjury in the NMFS Biological Opinion was estimated as 108 young of the year (YOY) coho and 11 coho smolts. YOY coho are not expected to migrate during the work season (unlike smolts). Therefore NMFS assumes that all YOY coho in that radius would be lethally taken during the first day of in-water falsework pile driving. The contractor may begin pile driving as early as June 15 and most coho smolts would have migrated through the area, but some individuals may be exposed to barotrauma if they hold in the pile driving area, and a new group of smolts may be present each day of pile driving. NMFS and CDFW estimate that the week of June 15 there would be approximately 20 smolts passing the bridge site during the pile driving, and no more than 20% of the smolts would stop within the action area. They estimated that two smolts would be killed on each of the four days on in-water pile driving, and one smolt to be killed each of the three on-land pile driving days (11 total). (NMFS No: WCRO-2020-00584).

Because the isopleth is reduced from 245 meters to 21 meters and NMFS estimated 108 YOY and 11 smolts would be taken, the ratio equivalent would be 9 YOY coho "taken". Assuming the smolt count would be the same as the NMFS estimate (because they will be migrating through), 9 coho YOY and 11 smolts would be lethally taken due to barotrauma injury during pile driving activities according to the 2014 guidelines.

From: Estrada, Rachelle@DOT
To: Gedik, Tamara@Coastal
Subject: RE: Dr. Fine Bridge: Hydroacoustic Impacts Analysis
Date: Thursday, November 12, 2020 1:30:34 PM

Good afternoon,

The extra 21 days would push us out of our June 15- October 15 in-channel work window. The sequence of work is very constrained, and delaying construction by this many days would result in an additional summer (in-channel) season, resulting in more impacts to fish. The salmonid lifecycle is three years, and pushing construction to an additional year may affect one cohort in two different years (per NMFS).

For the trestle, the table shows that there will be 12 piles driven in water. There would be 6 piles/day driven. It follows that the 2014 guidelines would be exceeded for two days. (For the on land piles, they can drive 6 in a day without potential exceedance, and only 6 are proposed on land, thus the analysis shows no exceedance for trestle piles on land).

For the falsework, the number of pile strikes is more than double than for the trestle. The table shows that the SEL levels would accumulate more for each pile, and would be exceeded for on land piles as well as in water piles. For in water piles, they could not drive 6 piles without exceeding the SEL thresholds, and propose to drive 12 piles total (6/day), hence the two days exceedance for in water piles. Similarly, for the 12 piles on land (6/day) Caltrans would potentially be exceeding the 2014 guidelines.

Let me know if this makes sense of if further explanation is needed.

Thanks,

Rachelle Estrada
Associate Environmental Planner (Coordinator)
North Region Environmental, E-2
Caltrans, District 1
Cell: 707-601-8469

From: Gedik, Tamara@Coastal <Tamara.Gedik@coastal.ca.gov>
Sent: Tuesday, November 10, 2020 2:02 PM
To: Estrada, Rachelle@DOT <Rachelle.Estrada@dot.ca.gov>
Subject: Re: Dr. Fine Bridge: Hydroacoustic Impacts Analysis and BMP narrative

Hi Rachelle,

Thanks again to you, Ryan and Susan for the information below. I've passed this info along to our ecologist and I would appreciate your responses to these follow-up questions:

- The chart indicates that it would require 21 extra days of pile driving to stay under the 203 dB threshold at 10 m. A brief explanation of why that is infeasible to do in the first season is what we're looking for - not just a statement that it's not feasible. What are the scheduling implications of the extra 21 days? We need to be able to explain this in our staff report and to the Commission.
- Also, to help with how we explain this to the Commission, could you please clarify what is meant by "exceedance" here:
  "For the **trestle**-18 total piles; 12 in water and 6 on land= exceedance two days for in water trestle piles*.
  For the **falsework** piles- up to 24 piles; 12 in water and 12 on land= exceedence two days for the on-land** and two days for the in water piles***."

  I believe Caltrans is referring to "the amount of time the 2014 thresholds would be exceeded during each land driven and water driven pile." But, I can't correlate it to the figures in the table though so any additional explanation you can offer would be appreciated.

Thanks as always,

~Tamara L. Gedik
Coastal Program Analyst
California Coastal Commission
1385 8th Street, Suite 130, Arcata, CA 95521
Phone: (707) 826-8950
Fax: (707) 826-8960
Tamara.Gedik@coastal.ca.gov

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From: Estrada, Rachelle@DOT <Rachelle.Estrada@dot.ca.gov>
Sent: Thursday, November 5, 2020 10:04 AM
To: Gedik, Tamara@Coastal <Tamara.Gedik@coastal.ca.gov>
Subject: RE: Dr. Fine Bridge: Hydroacoustic Impacts Analysis and BMP narrative

Pile Location	Pile Type	Hammer Type	Estimated Single Strike SEL (dB)	Estimated Total Number of Piles	Engineers Estimated Strikes per Pile	Engineers Estimated Strikes per Day	Number of Pile Strikes before Exceeding 203 dB Cumulative SEL	Number of Piles per Day before Exceeding 203 dB Cumulative SEL	Number of Pile Driving Days with No Acoustic Restrictions	Number of Pile Driving Days if Daily Cumulative SEL is Restricted to 203 dB at 10 meters
In Water	24-inch Trestle	Impact	173	12	500	3,000	1,000	2	2	6
On Land		Impact	168	6	500	3,000	3,160	6	1	1

In Water	24-inch Falsework	Impact	173	12	1,250	7,500	1,000	<1	2	15
On Land		Impact	168	12	1,250	7,500	3,160	2	2	6

From: Gedik, Tamara@Coastal <Tamara.Gedik@coastal.ca.gov>
Sent: Wednesday, November 04, 2020 1:43 PM
To: Estrada, Rachelle@DOT <Rachelle.Estrada@dot.ca.gov>
Subject: Re: Dr. Fine Bridge: Hydroacoustic Impacts Analysis and BMP narrative

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Rachelle,

Thanks for all your efforts and Ryan and Susan's efforts, too. The table below is helpful, but it looks like it summarizes the number of days that would be required and we're especially interested in seeing the calculated number of piles per day. I think if a column was added to the table below showing the *number of piles* *per day* that could be driven on land vs. in water using the 10m threshold, that would be exactly the information we are asking for.

Thank you!

~Tamara L. Gedik
Coastal Program Analyst
California Coastal Commission
1385 8th Street, Suite 130, Arcata, CA 95521
Phone: (707) 826-8950
Fax: (707) 826-8960
Tamara.Gedik@coastal.ca.gov

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From: Estrada, Rachelle@DOT <Rachelle.Estrada@dot.ca.gov>
Sent: Wednesday, November 4, 2020 12:57 PM
To: Gedik, Tamara@Coastal <Tamara.Gedik@coastal.ca.gov>
Subject: Re: Dr. Fine Bridge: Hydroacoustic Impacts Analysis and BMP narrative

Hi Tamara,

It is to Ryan's understanding that you are asking how much longer the pile driving would take if we are required to keep the cumulative SEL below 203 dB at 10 meters thus perhaps increasing the number of season's? … The table below includes the information I think you're asking for, if not could you provide extra clarification?

Both the estimated number of piles strikes and the number of strikes before exceeding the 203 dB guideline are based on our best guess. Per our construction staff, these estimates should not be used to establish limits on daily pile strikes, compliance with noise thresholds should always be determined by field measurements during construction. Delays in constructing the trestle and falsework could affect other construction operations and overall project schedule, potentially pushing into another in-channel season.

Pile Location	Pile Type	Hammer Type	Estimated Single Strike SEL (dB)	Estimated Total Number of Piles	Engineers Estimated Strikes per Pile	Engineers Estimated Strikes per Day	Number of Pile Strikes before Exceeding 203 dB Cumulative SEL	Number of Pile Driving Days with No Acoustic Restrictions	Number of Pile Driving Days if Daily Cumulative SEL is Restricted to 203 dB at 10 meters
In Water	24-inch Trestle	Impact	173	12	500	3,000	1,000	2	6
On Land		Impact	168	6	500	3,000	3,160	1	1
In Water	24-inch Falsework	Impact	173	12	1,250	7,500	1,000	2	15
On Land		Impact	168	12	1,250	7,500	3,160	2	5

Susan and Ryan would be happy to chat if this doesn't quite answer the question. Just so we make sure we provide exactly what you need

Thanks,

Rachelle Estrada
Associate Environmental Planner (Coordinator)
North Region Environmental, E-2
Caltrans, District 1
Cell: 707-601-8469

From: Gedik, Tamara@Coastal <Tamara.Gedik@coastal.ca.gov>
Sent: Tuesday, November 03, 2020 11:57 AM
To: Estrada, Rachelle@DOT <Rachelle.Estrada@dot.ca.gov>
Subject: Re: Dr. Fine Bridge: Hydroacoustic Impacts Analysis and BMP narrative

EXTERNAL EMAIL. Links/attachments may not be safe.

Thanks Rachelle-

I believe he was more interested in the direct calculation using the 10m threshold, whereas it appears the info below identifies the amount of exceedance that would result from the project. Maybe I'm wrong but that's my sense in a quick glance.

Are you able to obtain the direct calculations so we can use that for our analysis?

Thanks again,

~Tamara L. Gedik
Coastal Program Analyst
California Coastal Commission
1385 8th Street, Suite 130, Arcata, CA 95521
Phone: (707) 826-8950
Fax: (707) 826-8960
Tamara.Gedik@coastal.ca.gov

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From: Estrada, Rachelle@DOT <Rachelle.Estrada@dot.ca.gov>
Sent: Tuesday, November 3, 2020 11:51 AM
To: Gedik, Tamara@Coastal <Tamara.Gedik@coastal.ca.gov>
Subject: RE: Dr. Fine Bridge: Hydroacoustic Impacts Analysis and BMP narrative

Hi Tamara,

In response to the question(s):

We need to do all the pile driving in one season in order to get the bridge constructed; it is not feasible to install the piles in two seasons because we need the trestles and falsework in order to construct the bridge. Furthermore, Caltrans agreed with NMFS that the falsework and trestle piles would be installed during the same period in order to limit exposure to salmon to one season. If the pile driving were to span two seasons, we would be exposing more cohorts and individuals to pile driving noise.

Then maybe the question becomes: What is the amount of time the 2014 thresholds would be exceeded during each land driven and water driven piles?
The peak sound pressure levels for piles installed on land are expected to remain below the 2014 peak sound pressure level guideline.
From Ryan's assessment:

- The distance to the 203 dB SEL for **on land trestle piles** is 10 meters, thus on-land pile impacts would be minimal and because the isopleth ends at 10 meters.
- The distance to the 203 dB SEL threshold for **in water trestle piles** is 21 meters, thus an *area of a concentric circle 11 meters outside the 10 meter isopleth would result in injury to fish.
- The distance to the 203 dB SEL for **on land falsework** piles is 18 meters, thus an **area of a concentric circle 8 meters outside the 10 meter isopleth would result in injury to fish.
- The distance to 203 dB SEL for **in water falsework piles** is 38 meters, thus ***area of a concentric circle 28 meters outside the 10 meter isopleth would result in injury to fish.

They would drive 6 piles/day.
For the **trestle**-18 total piles; 12 in water and 6 on land= exceedance two days for in water trestle piles*.
For the **falsework** piles- up to 24 piles; 12 in water and 12 on land= exceedence two days for the on-land** and two days for the in water piles***.

I hope this answers her outstanding questions. I also have attached the BMP narrative for your review.

Thanks and have a great day,

Rachelle Estrada
Associate Environmental Planner (Coordinator)
North Region Environmental, E-2
Caltrans, District 1
Cell: 707-601-8469

From: Gedik, Tamara@Coastal <Tamara.Gedik@coastal.ca.gov>
Sent: Monday, November 02, 2020 6:57 AM
To: Estrada, Rachelle@DOT <Rachelle.Estrada@dot.ca.gov>
Subject: RE: Dr. Fine Bridge: Hydroacoustic Impacts Analysis

EXTERNAL EMAIL. Links/attachments may not be safe.

Thanks for the productive call on Thursday, and thank you for providing the hydroacoustic analysis using the 2014 guidelines- that's very helpful, and what we were looking for. I do have a follow-up question/request from our ecologist: could Ryan or Susan calculate the time that would be required to drive these piles without exceeding the 2014 thresholds at 10 m (which is the standard)? This calculation would tell us if the latter is feasible or would result in more seasons of impact. It might make sense to distinguish between land trestle piles and in-water piles, but I'll look forward to Ryan and Susan's analysis on that.

And I have another, unrelated question: is there a reference number specific to the federal environmental documents? I see the CEQA clearinghouse number is 2010102037, and I'm looking for the related NEPA #. The only other reference numbers I see on the EIR/EIS are 01-43640 / 0100000193 which I believe are Caltrans' internal numbers. If you could provide me the corresponding NEPA reference number, I'd

appreciate it.

Thanks again!
-Tamara

From: Estrada, Rachelle@DOT <Rachelle.Estrada@dot.ca.gov>
Sent: Thursday, October 29, 2020 5:21 PM
To: Gedik, Tamara@Coastal <Tamara.Gedik@coastal.ca.gov>
Subject: Dr. Fine Bridge: Hydroacoustic Impacts Analysis

Hi Tamara,

Attached is the "Take" revision memo and hydroacoustic analysis based on the 2014 guidelines. If your staff has any questions I am sure we can set up a meeting with Ryan and Susan.. Great chatting with you this AM and I will keep the things flowing in.

Thanks,

Rachelle Estrada
Associate Environmental Planner (Coordinator)
North Region Environmental, E-2
Caltrans, District 1
Cell: 707-601-8469

Supplemental Hydroacoustic Analysis for the California Coastal Commission
Dr. Fine Bridge Replacement Project, Caltrans District 1
Prepared by Ryan Pommerenck, Caltrans Environmental Engineering
October 22, 2020

The California Coastal Commission has requested hydroacoustic consultation for the Smith River/Hwy 101 bridge replacement project, based on the 2014 Popper et. al research recommendations. The 2014 guidelines are currently the best available science and were conducted after the 2008 Interim threshold agreement. Table 1 below represents research impacts related to pile driving injuries that lead to mortality, injuries that researchers' term "recoverable", as well as harm and harassment in the form of a Temporary Threshold Shift (TTS).

In relation to state and federal Endangered Species Acts (ESA), recoverable injury is not consistent or in compliance with the Federal Endangered Species Act (FESA) definition, or the California Endangered Species Act (CESA) definitions of take;

- FESA take; "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species", and
- CESA take; "to hunt, pursue, catch, capture, kill, or attempt to hunt, pursue, catch, or kill."

Therefore, to align the 2014 recommendations, the best available science and research, with the intent of CESA and FESA, it is recommended that injuries termed as "recoverable" are appropriately considered take. This application of the thresholds is both conservative of species impacts, per the best available science, and is also aligned with state and federal laws and regulations which protect threatened and endangered species.

The recommended thresholds are therefore;

- 203 dB SELcum, or
- >207 dB Peak

Table 1. 2014 Pile Driving Criteria and Guidelines

Type of Fish	Mortality and potential mortal injury	Impairment			Behavior
		Recoverable injury	TTS	Masking	
Fish: no swim bladder (particle motion detection)	>219 dB SEL_{cum} or >213 dB peak	>216 dB SEL_{cum} or >213 dB peak	>>186 dB SEL_{cum}	(N) Moderate (I) Low (F) Low	(N) High (I) Moderate (F) Low
Fish: swim bladder is not involved in hearing (particle motion detection)	210 dB SEL_{cum} or >207 dB peak	203 dB SEL_{cum} or >207 dB peak	>186 dB SEL_{cum}	(N) Moderate (I) Low (F) Low	(N) High (I) Moderate (F) Low
Fish: swim bladder involved in hearing (primarily pressure detection)	207 dB SEL_{cum} or >207 dB peak	203 dB SEL_{cum} or >207 dB peak	186 dB SEL_{cum}	(N) High (I) High (F) Moderate	(N) High (I) High (F) Moderate
Eggs and larvae	>210 dB SEL_{cum} or >207 dB peak	(N) Moderate (I) Low (F) Low	(N)Moderate (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) Moderate (I) Low (F) Low

Potential Underwater Noise Levels from Construction

Underwater noise levels from trestle and falsework piles installed in the water have the potential to exceed the 2014 peak sound pressure level and cumulative SEL guidelines for fish.

Small diameter temporary piles installed on land or in shallow water typically do not create peak sound pressure levels high enough to cause injury to fish. The peak sound pressure levels for piles installed on land are expected to remain below the 2014 peak sound pressure level guideline. A small impact area is expected for piles installed on land due to exceeding the 2014 cumulative SEL guideline.

Trestle Piles

Table 2 shows the estimated impact zones for 24-inch trestle piles.

The estimated distance to the 2014 peak guideline for impact pile driving is 12 meters from the pile. The estimated distance to the 2014 cumulative SEL guideline for impact pile driving is 21 meters from the pile.

The estimated distance to the 2014 peak guideline for impact pile driving on land is less than 10 meters from the pile. The estimated distance to the 2014 cumulative SEL guideline for impact pile driving on land is 10 meters from the pile.

Table 2. Estimated Distance to 2014 Guidelines for Impact Pile Diving 24-inch Temporary Trestle Piles

Location	Pile Type	Number of Piles per Day	Estimated Number of Blows per Day	Distance to 203 dB Cumulative SEL Guideline (m)	Distance to 150 dB RMS Criteria (m)	Distance to 207 dB Peak Guideline (m)
In Water	24-inch Pipe	6	3,000	21	[1]	12
On Land	24-inch Pipe	6	3,000	10	[1]	<10

[1]*Maximum distance is limited to 750 meters downstream and 650 meters upstream due to curves in river*

Falsework Piles

Table 3 shows the estimated impact zones for 24-inch falsework piles.

The estimated distance to the 2014 peak guideline for impact pile driving is 12 meters from the pile. The estimated distance to the 2014 cumulative SEL guideline for impact pile driving is 38 meters from the pile.

The estimated distance to the 2014 peak guideline for impact pile driving on land is less than 10 meters from the pile. The estimated distance to the 2014 cumulative SEL guideline for impact pile driving on land is 18 meters from the pile.

Table 3. Estimated Distance to 2014 Guidelines for Impact Pile Diving 24-inch Temporary Falsework Piles

Location	Pile Type	Number of Piles per Day	Estimated Number of Blows per Day	Distance to 203 dB Cumulative SEL Guideline (m)	Distance to 150 dB RMS Criteria (m)	Distance to 207 dB Peak Guideline (m)
In Water	24-inch Pipe	6	7,500	38	[1]	12
On Land	24-inch Pipe	6	7,500	18	[1]	<10

[1]*Maximum distance is limited to 750 meters downstream and 650 meters upstream due to curves in river*

Attachment 1: Reference Data and Impact Zones for Fish

Pile Location	Pile Type	Hammer Type	Piles Per Day	Estimated Strikes per Day	Data Source	Reference Distance for Source Data (m)[1]	Source Data at Reference Distance (dB)			Cumulative SEL at Reference Distance (dB)	Transmission Loss Coefficient	Distance to 2014 Guidelines (m)		Behavioral RMS Threshold
							Peak	RMS	SEL			Peak	Cumulative SEL	
												207 dB	203 dB SEL	150 dB
In Water	24-inch Trestle	Impact	6	3,000	Caltrans 2015 Table I.2-3B 24" Steel Shell Pile Northern Rail Extension	10	208	183	173	208	15	12	21	[1]
On Land		Impact	6	3,000	Caltrans 2015 Table I.3-8 20" Steel Pipe Pile Stockton WWTP Pipeline	10	198	182	168	203	15	<10	10	[1]
In Water	24-inch Falsework	Impact	6	7,500	Caltrans 2015 Table I.2-3B 24" Steel Shell Pile Northern Rail Extension	10	208	183	173	212	15	12	38	[1]
On Land		Impact	6	7,500	Caltrans 2015 Table I.3-8 20" Steel Pipe Pile Stockton WWTP Pipeline	10	198	182	168	207	15	<10	18	[1]

[1]The reference distance is the distance between the reference pile and the monitoring location.

CALIFORNIA COASTAL COMMISSION
NORTH COAST DISTRICT OFFICE
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ARCATA, CA 95521
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MEMORADUM

EXHIBIT NO. 14

CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)
HYDROACOUSTIC ANALYSIS FROM STAFF ECOLOGIST

FROM: John D. Dixon, Ph.D., Ecologist

TO: Tamara Gedik, Coastal Program Analyst

SUBJECT: Dr. Fine Bridge Construction – Hydroacoustic Impacts

DATE: December 3, 2020

Documents reviewed:

Beuhler, D., R. Oestman, J. Reyff, K. Pommerenck, and B. Mitchell. 2015. Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish. A technical report dated November 2015 prepared by ICF International and Illingworth and Rodkin, Inc. for Caltrans. 532 pages.

Caltrans. March 2020. Biological Assessment for the Dr. Fine Bridge Replacement Project.

Estrada, R. (Caltrans). November 5, 2020. Email to T. Gedik (CCC) regarding "Dr. Fine Bridge: Hydroacoustic Impacts Analysis and BMP narrative," transmitting technical information from Ryan Pommerenck and Susan Leroy.

Estrada, R. (Caltrans). November 12, 2020. Email to T. Gedik (CCC) regarding "Dr. Fine Bridge: Hydroacoustic Impacts Analysis," transmitting technical information from Ryan Pommerenck and Susan Leroy.

Garwood, J. (CDFW). No date (1st created 2012). Aquatic species inventory of the mainstem Smith River at the Highway 101 Dr Fine Bridge, Del Norte County, CA.

Oestman, R. and C.J. Earle. 2012. Effects of Pile-Driving Noise on *Oncorhynchus mykiss* (Steelhead Trout). Pages 263-265 in A.N. Popper and A. Hawkins (eds.). 2012. The Effects of Noise on Aquatic Life. Advances in Experimental Medicine and Biology 730, Springer.

Pommerenck, R. (Caltrans). October 22, 2020. Supplemental hydroacoustic analysis for the California Coastal Commission, Dr. Fine Bridge Replacement Project.

Popper, A.N., A.D. Hawkins, and M.B. Halvorsen. 2019. Anthropogenic Sound and Fishes. A technical report dated February 2019 prepared by ICF for the Washington State Department of Transportation. 155 pages.

Van Atta, A. (NMFS). March 19, 2020. Biological Opinion for the Doctor Fine Bridge Replacement Project.

In 2004, Caltrans coordinated with the Federal Highway Administration and the Departments of Transportation in Oregon and Washington to establish a Fisheries Hydroacoustic Working Group that included representatives from NOAA Fisheries, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and the U.S. Army Corps of Engineers. Its function was to improve and coordinate information on fishery impacts due to underwater sound from pile driving. The Working Group was supported by a panel of experts in hydroacoustics and fish biology. In 2008, the members of the Working Group signed the "Agreement in Principal for Interim Criteria for Injury to Fish from Pile Driving Activities." The Interim criteria for injury to fish

are a Peak Sound Pressure Level of 206 dB re 1 µPa or a Cumulative Sound Exposure Level of 187 dB re 1 µPa for fish 2 grams and larger and a Cumulative Sound Exposure Level of 183 dB re 1 µPa for fish less than 2 grams. The peak SPL is seldom reached, so pile driving is generally constrained by the cumulative SEL. The Commission has required that the dual criteria be applied to most pile driving projects within the Coastal Zone.

The 2008 Interim criteria were based on a literature review through 2005, much of which was "gray literature" that had not been subject to peer review and that suffered from poor experimental design. The technical experts involved were aware that there was not strong evidence for the standards that were proposed, but were confident that they were conservative in the direction of protecting sensitive species. In 2009, NOAA Fisheries convened a panel of fifteen international experts to review the evidence for the impacts of anthropogenic underwater sound on fish. This group was later supported by a variety of organizations and agencies, including the National Science Foundation and the Office of Naval Research, to review the literature through 2013 and to develop a new set of guidelines for the effects of activities such as pile driving on fishes and turtles. The guidelines were published in 2014[1]. The lead author, Dr. Art Popper, was also one of the principal scientists upon whose work the 2008 Interim Agreement was based. Recently, Dr. Popper and two other authors of the 2014 Guidelines extended the literature review through mid-2018 and presented their scientific assessment in a technical report commissioned by the Washington Department of Transportation (Popper, et al. 2019). They summarized the pertinent scientific literature and recommended that the peer-reviewed 2014 Guidelines be adopted because they reflect the best available science. The more recent studies indicate that injury to fish with a swim bladder occurs when the peak SPL is greater than 207 dB or the cumulative SEL is greater than 203 dB[2]. Fish without a swim bladder are thought to suffer injury when the peak SPL is greater than 213 dB or the cumulative SEL is greater than 216 dB.

For their hydroacoustic analyses for the construction of the Dr. Fine bridge, Caltrans (2020) and the National Marine Fisheries Service (NMFS) (Van Atta 2020) relied on the 2008 guidelines. In order to avoid the most critical periods for salmonids, pile driving will only take place between June 15 and October 15 when only larger (> 2 g) individuals are expected to be present. Therefore, the analysis of biological impacts was based on a cumulative SEL threshold of 187 dB. Apparently for construction efficiency, Caltrans proposes to drive six piles per day for a total of seven days. In their biological opinion, NMFS calculated that the cumulative SEL threshold would be exceeded in a radius of up to 158 m (520 ft) and all young-of-year coho residing in the area would be killed on the first day of pile driving with no additional deaths in the following days. Smolts[3] are expected to be moving downstream and past the bridge site with a small number stopping and holding during the day. The estimated number of fish that could be exposed to lethal sound was based on the results of seven years of snorkel surveys between 2012 and 2018. Based on the expected number of individuals in various areas that will be exposed to lethal levels of underwater noise, NMFS predicts that pile driving will result in the death of up to 108 young-of-year and 11 smolt coho salmon.

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[1] Popper, A.N. et al. 2014. Sound Exposure Guidelines for Fishes and Sea Turtles: A Technical Report prepared by ANSI-Accredited Standards Committee S3/SC1. New York: Springer, and Acoustic Society of America Press.

[2] That the 2008 Interim Criteria are excessively conservative is also suggested by the results of a caged fish study that found no injuries to juvenile steelhead resulting from pile driving during the construction of the Mad River Bridges that subjected fish to a cumulative SEL of 194 dB (Oestman & Earle, 2012).

[3] The life stage of salmon when they first enter the ocean from their natal stream (generally from about March to July). Downstream migration takes place at night.

At the request of Commission staff, Caltrans produced a supplemental hydroacoustic analysis (Pommerenck 2020). Assuming six piles per day are driven, the distance over which the 203 dB cumulative SEL would be exceeded varies between 10 m (33 ft) and 38 m (125 ft), resulting in the death of about 26[4] resident young-of-year and no more than 11[5] smolt coho that are moving through the area. Commission staff then requested that Caltrans consider the consequences of not exceeding the 203 cumulative SEL threshold at 10 m (the standard distance at which sound is monitored), thereby avoiding most "Take." Staying within the threshold would add 21 days of pile driving for a total of 28 days (Estrada November 5, 2020). With 28 days of pile driving being required, the work could not be accomplished in one season because the sequence of work is very constrained (Estrada November 12, 2020). Pile driving in two seasons would delay the bridge construction and could potentially have a greater impact on coho and other fish species[6] that are present. The latter seems somewhat counter intuitive because staying below the established hydroacoustic threshold is intended to prevent death or injury to fish. Despite the nominal standard of no impact, all fish within the 10-m radius of each piling would be killed when the noise threshold was approached during each of two years. Caltrans and the resource agencies believe that minimizing the construction period and the number of seasons of possible coho loss is more conservative than minimizing the area of impact but having impacts during two seasons[7].

I recommend that the Commission accept the recommendation that pile driving be confined to a single season. I further recommend that during pile driving, Caltrans monitor underwater noise levels 38 m from the pile being driven, which is the maximum distance at which the 203 dB cumulative SEL threshold is exceeded and the onset of physical injury occurs (Pommerenck 2020). If the 203 dB cumulative SEL threshold is reached, pile driving should cease for at least 12 hours.

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[4] The estimated "Take" was based on the assumption that the "Take" is proportional to the area impacted. NMFS (Van Atta 2020) estimated that the maximum area within which the 187 dB cumulative SEL threshold would be exceeded is within a 158-m radius from the pile driving and that 108 YOY coho would be killed. Assuming take is proportional to impact area and assuming a maximum impact radius of 38 m for the 203 dB threshold, 26 YOY would be killed.

[5] The Biological Opinion (Van Atta 2020) likens smolt out-migration to a conveyor belt that operates during the night and stops during the day. Any smolts holding during the day within the area exposed to lethal underwater sound would be killed. Considering the varying distances of injurious cumulative SEL exposure (≥187 dB) for trestle and falsework piles on land (56m and 69m) and in water (113m and 158m), NMFS expects two smolts to be killed on each of the four days of in-water pile driving, and one smolt to be killed on each of the three on-land pile driving days. With a cumulative SEL injury threshold of 203 dB, the maximum distance for injurious sound exposure is 38 m. Given the much smaller area of risk, the number of smolts killed will probably be considerably fewer than 11, but can't be estimated with the information provided.

[6] The coho salmon (*Oncorhynchus kisutch*) has been the primary focus of the resource agencies because the southern Oregon and northern California coastal populations (SONCC Evolutionary Significant Unit) are designated "threatened" under the Endangered Species Act. However, many other species are also at risk, including chinook salmon (Threatened in other ESUs), cutthroat trout, other unidentified salmonids, and the Klamath smallscale sucker that were observed within the impact area during snorkel surveys in 2011 and 2012 (Garwood nd).

[7] If the changes in construction scheduling resulted in an additional year of construction, it would also put the endangered pearlshell mussel bed on the south side of the river at additional risk of sedimentation and dislodgement.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404-4731

March 19, 2020 **Refer to NMFS No:** WCRO-2020-00584

EXHIBIT NO. 15
CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)
EXCERPTS OF NMFS BIOLOGICAL OPINION

Dana York
Branch Chief, Environmental Services E2
California Department of Transportation
1656 Union Street
Eureka, California 95501

Re: Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Doctor Fine Bridge Replacement Project

Dear Mr. York:

Thank you for your letter of March 17, 2020, requesting initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for the Doctor Fine Bridge Replacement Project. This consultation was conducted in accordance with the 2019 revised regulations that implement section 7 of the ESA (50 CFR 402, 84 FR 45016).

Thank you, also, for your request for consultation pursuant to the essential fish habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA)(16 U.S.C. 1855(b)) for this action.

The enclosed biological opinion is based on our review of the California Department of Transportation's[1] (Caltrans) proposed project and describes NMFS' analysis of potential effects on threatened Southern Oregon and Northern California (SONCC) coho salmon (*Oncorhynchus kisutch*). In the enclosed biological opinion, NMFS concludes the project is not likely to jeopardize the continued existence of SONCC coho salmon; nor is it likely to adversely modify critical habitat. However, NMFS anticipates that take of SONCC coho will occur. An incidental take statement which applies to this project with non-discretionary terms and conditions is included with the enclosed biological opinion.

NMFS has reviewed the proposed project for potential effects on EFH and determined that the proposed project would adversely affect EFH for Pacific Coast Salmon, which are managed

[1] Pursuant to 23 USC 327, and through a series of Memorandum of Understandings beginning June 7, 2007, the Federal Highway Administration (FHWA) assigned and Caltrans assumed responsibility for compliance with Section 7 of the federal Endangered Species Act (ESA) and the Magnuson-Stevens Fishery Conservation and Management Act (MSA) for federally-funded transportation projects in California. Therefore, Caltrans is considered the federal action agency for consultations with NMFS for federally funded projects involving FHWA. Caltrans proposes to administer federal funds for the implementation of the proposed action and is, therefore, considered the federal action agency for this consultation.

under the Pacific Coast Salmon Fishery Management Plan. Therefore, we have included the results of that review in Section 3 of this document, and provided an EFH conservation recommendation.

Additionally, NMFS reviewed Caltrans' analyses of potential impacts to Southern Distinct Population Segment (DPS) of eulachon (*Thaleichthys pacificus*), Southern DPS of North American green sturgeon (*Acipenser medirostris*), and the Southern Resident DPS killer whale (*Orcinus orca*). We concur with Caltrans' conclusion that the proposed action is not likely to adversely affect these species.

Please contact Mike Kelly, Northern California Office, Arcata, at (707) 825-1622 or via email at Mike.Kelly@noaa.gov if you have any questions concerning this section 7 consultation, or if you require additional information.

Sincerely,

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

Enclosure

cc: Copy to ARN File #151422WCR2020AR00061

Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response

Doctor Fine Bridge Replacement Project,
Del Norte County, California

NMFS Consultation Number: WCRO-2020-00584
Action Agency: California Department of Transportation

Table 1. Affected Species and NMFS' Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species?	Is Action Likely To Jeopardize the Species?	Is Action Likely to Adversely Affect Critical Habitat?	Is Action Likely To Destroy or Adversely Modify Critical Habitat?
Southern Oregon/North California Coast (SONCC) coho salmon (*Oncorhynchus kisutch*)	Threatened	Yes	No	Yes	No
Southern DPS of Eulachon (*Thaleichthys pacificus*)	Threatened	No	No	N/A	N/A
Southern DPS of North American Green Sturgeon (*Acipenser medirostris*)	Threatened	No	No	N/A	N/A
Southern Resident DPS Killer Whale (*Orcinus orca*)	Endangered	No	No	N/A	N/A

Table 2. Essential Fish Habitat and NMFS' Determinations:

Fishery Management Plan That Identifies EFH in the Project Area	Does Action Have an Adverse Effect on EFH?	Are EFH Conservation Recommendations Provided?
Pacific Coast Salmon	Yes	Yes

Consultation Conducted By: National Marine Fisheries Service, West Coast Region

Issued By:

Alecia Van Atta
Assistant Regional Administrator
California Coastal Office

Date: March 19, 2020

Table of Contents

1. INTRODUCTION

This Introduction section provides information relevant to the other sections of this document and is incorporated by reference into Sections 2 and 3 below.

1.1 Background

NOAA's National Marine Fisheries Service (NMFS) prepared the biological opinion (opinion) and incidental take statement (ITS) portions of this document in accordance with section 7(b) of the Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq.), and implementing regulations at 50 CFR 402, as amended.

We also completed an essential fish habitat (EFH) consultation on the proposed action, in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.) and implementing regulations at 50 CFR 600.

We completed pre-dissemination review of this document using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (DQA) (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The document will be available within two weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. A complete record of this consultation is on file at NMFS Northern California Office in Arcata, California.

1.2 Consultation History

NMFS provided pre-consultation technical assistance to the California Department of Transportation (Caltrans) on the Doctor Fine Bridge Replacement Project (project or proposed action) as needed beginning in March 2009, which included participating in site visits, meetings, and reviewing/commenting on draft Biological Assessments (BA).

During development of the BA, NMFS met multiple times with Caltrans and the California Department of Fish and Wildlife (CDFW) to discuss information needs, conservation measures, and fish presence in the action area. During this period, Caltrans made several changes to the proposed action which included measures related to both constructability and minimization of impacts to sensitive species and habitats. These modifications included changes to the numbers and types of piles, changes to the alignment of the new bridge, and refinement of river diversion methods.

Caltrans provided an initial hydroacoustic assessment in June 2017 (Caltrans 2017a) for various pile driving scenarios, and they provided updated analyses in March 2019 (Caltrans 2019). As additional changes were made to pile driving scenarios, NMFS and Caltrans made additional analyses to fine tune the previous assessments, and Caltrans included the final assessments in their BA (Caltrans 2020).

NMFS had a key meeting with CDFW on February 20, 2020 to discuss CDFW's data and opinions about the expected numbers and locations of juvenile coho salmon in the action area.

CDFW summarize the data in an email conversation between March 10 and 11, 2020 (Garwood 2020).

On March 17, 2020, Caltrans submitted the final BA and requested initiation of formal consultation. NMFS reviewed the request and determined that the information was sufficient to initiate formal consultation for SONCC coho salmon and their designated critical habitat, Southern DPS of North American green sturgeon, Southern DPS of eulachon, Southern Resident DPS killer whales, as well as MSA EFH consultation. NMFS notified Caltrans that consultation was initiated on March 17, 2020.

1.3 Proposed Federal Action

"Action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies (50 CFR 402.02). Federal action means any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken by a Federal Agency (50 CFR 600.910).

Caltrans proposes to replace the U.S. Highway 101 (US 101) Doctor Ernest Fine Bridge (Dr. Fine Bridge) over the Smith River in Del Norte County, California. The bridge would be built on the existing alignment, which will require that a temporary detour bridge be constructed on the immediate downstream side of the existing bridge. Once the detour bridge is complete and traffic is diverted onto it, Caltrans and its contractor will demolish the old bridge. Caltrans expects the proposed action to be completed in four work seasons, which includes three seasons with work in water, beginning in in 2022.

All construction work below the ordinary high water mark (OHWM), including fish removal and installation of in-river work pads, would be restricted to June 15 through October 15. A qualified biologist will monitor all in-stream construction activities, including dewatering activities, bridge demolition, and pile driving, to ensure adherence to all environmental permit conditions and avoidance and minimization measures. Caltrans will also conduct hydroacoustic monitoring during all impact pile driving and concussive demolition work to ensure that predicted sound intensity and attenuation distances are not exceeded.

SONCC coho salmon are also listed as threatened under the California Endangered Species Act (CESA). California Fish and Game Code Section 2081 (b) (2) requires that action agencies fully mitigate for take of CESA listed species. Mitigation under CESA for the likely mortality of sub-yearling juvenile coho salmon, as a result of implementing the Dr. Fine Bridge Project, is expected. Prior to any activities that could incidentally take SONCC coho salmon, Caltrans will submit documentation to show that sufficient funds have been allocated, acceptable to and approved by CDFW, in the Expenditure Authorizations for the proposed action and Dr. Fine Bridge Project to ensure implementation of all measures to minimize and fully mitigate the incidental take of state listed species resulting from construction of the proposed action and Dr. Fine Bridge Project. This documentation (i.e., written document provided by Caltrans), would identify specific minimization and mitigation components including compliance and effectiveness monitoring that are in accordance Fish and Game Code Section 2081 (b)(4) and Section 2081 (b)(2) to fully mitigate for take and the costs associated with Project components. Therefore, CDFW may issue a 2080.1 consistency determination.

Mitigation for incidental take of coho salmon under CESA will be addressed by a fish passage project at the U.S. 101 crossing on Dominie Creek, a tributary to Rowdy Creek on the lower Smith River. Dominie Creek is identified as a high priority fish passage barrier in the SONCC Coho Salmon Recovery Plan (NMFS 2014). NMFS completed consultation for the Dominie Creek mitigation project in October 2018. (CDFW has indicated that they may require additional mitigation depending on their as-yet undetermined estimate of the level of take as defined under CESA. Caltrans acknowledges that additional section 7 consultation may be required if additional mitigation may affect listed species or their critical habitats.)

The proposed action is described in detail in Caltrans' BA (Caltrans 2020). Project elements that may affect salmonids or critical habitat, and accompanying measures to minimize impacts, are summarized below, while the remaining project description is incorporated by reference to Caltrans' BA.

1.3.1 Construction Staging and Access

Two proposed equipment staging areas will be located outside of the riparian corridor above OHWM. One staging area will be in an agricultural field southwest of the bridge, and the second will be in a graded area of a gravel plant on the southeast side of the bridge. An infiltration basin, which would be necessary for various dewatering activities, will also be located in the southwest staging area. Temporary roads on both sides of the river will allow access for vehicles and equipment to the riverbed, a construction trestle, and work pads (referred to as "berms" in Caltrans' BA). Access roads will be decommissioned and winterized after October 15 in each year. Access to the river will require work in the water as described below.

Clearing of vegetation to construct the staging areas, access roads, and drainage crossings would result in 3.32 acres (including approximately 200 linear feet of riverbank) of temporary loss of riparian vegetation. Additionally, 0.08 acre of riparian vegetation will be permanently removed within the footprints of the new bridge piers, approaches, viaducts, and retaining walls. Caltrans proposes to avoid or minimize impacts to riparian habitat by placing temporary fencing along the boundaries of all riparian areas that are not proposed to be removed.

Within the access area, there are three riparian trees that Caltrans considers to be mature (greater than 36-inch diameter). Of those, only one red alder is likely to be removed. The following species of trees in the study area are between 12 and 36 inches in diameter and will be removed: cascara, English holly, tanoak, Douglas-fir, red willow, arroyo willow, Pacific willow, Sitka willow, western hemlock, and big-leaf maple. However, Caltrans does not know the exact number of these smaller trees.

Caltrans and their contractor(s) (referred to as Caltrans below) will install a temporary construction trestle and gravel work pads in the Smith River to access construction and demolition activity locations. The main working surface of the pads will be approximately 40 feet wide and will include extensions of approximately 30 feet wide for access to the pier demolition and new pier construction locations. Access to the temporary gravel work pads and trestle would likely be from a temporary access road on the northwestern side of the bridge. The gravel work pads will be installed and removed in each of the three in-water construction

when some juveniles in the action area will likely be harmed or killed as a result of this proposed project. Therefore, NMFS does not expect any appreciable effects on VSP parameters, and, thus, the proposed action is not expected to reduce the survival and recovery of the SONCC coho salmon ESU, and the project is unlikely to appreciably diminish the value of designated critical habitat for the conservation of the species.

2.7.3 Summary of Effects to Critical Habitat

NMFS has determined that the effects to critical habitat from the proposed action are limited to short-term effects on the riverbed substrate where work pads occur, minor turbidity events, and short-term and miniscule permanent effects of riparian vegetation loss. While the new bridge will have one pier in the water, the project will remove four piers of the old bridge below OHWM. Therefore, some beneficial effects to critical habitat may occur due to the reduced number of bridge piers below the OHWM, which would help restore more natural fluvial processes and increase space for habitat. The results of our analysis indicate that negative effects on critical habitat would be temporary or negligible. Therefore, changes to critical habitat due to the project are unlikely to appreciably reduce the likelihood of survival and recovery of SONCC coho salmon.

2.8 Conclusion

After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of SONCC coho salmon or destroy or adversely modify its designated critical habitat.

2.9 Incidental Take Statement

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "Incidental take" is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

2.9.1 Amount or Extent of Take

In the biological opinion, NMFS determined that incidental take is reasonably certain to occur as follows:

- Take of young-of-year SONCC coho salmon in the form of capture is expected during fish relocation from work pad areas and cofferdams. Up to five juvenile coho are expected to be captured and relocated during each year of the project due to both

cofferdam and work pad construction (30 fish total over three years). Because mortality resulting from relocation activities, including netting and electrofishing, is estimated to be about three percent; up to one coho mortality is expected over the three years. Please refer to sections 2.9.3 and 2.9.4 below for monitoring and reporting requirements.

- Take of young-of-year SONCC coho salmon is expected to occur due to exposure to injurious levels of sound energy during demolition activity in year one of the project. Up to 54 young-of-year coho are expected to be lethally taken due to pile driving sound exposure. (We do not expect take of coho smolts at the time of demolition activity.)
- Take of young-of-year and smolt life stages of SONCC coho salmon is expected to occur due to exposure to injurious levels of sound energy during impact pile driving in year two of the project. Up to 108 young-of-year coho, and 11 smolts, are expected to be lethally taken due to pile driving sound exposure.

Caltrans proposes to snorkel the identified habitat units in the action area to ensure that numbers of coho present does not exceed estimates, and they will report the results to NMFS before pile driving or demolition occurs. If more coho salmon than predicted are present and cannot be relocated, or relocation efforts would be expected to take more than the anticipated amount, reinitiation of the consultation may be necessary.

Additionally, Caltrans proposes to monitor sound levels during pile driving and demolition activities to ensure that attenuation distances are not exceeded. Caltrans will report any exceedances to NMFS immediately. If attenuation distances are exceeded, reinitiation of consultation may be necessary. In this case, sound pressure levels are a surrogate for the predicted extent of take because we cannot count fish injured by sound from pile driving as we cannot necessarily see them. Established protocols for hydroacoustic impacts (Caltrans 2015) clearly define the pressure levels over which injury is expected to occur, and provide guidance for determining distances of injurious sound levels. In the above Biological Opinion, we have estimated the expected number of individual SONCC coho salmon that may be exposed within these hydroacoustic impact distances; therefore, for the purposes of monitoring take, the measured distances are an appropriate surrogate for take.

2.9.2 Effect of the Take

In the biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

2.9.3 Reasonable and Prudent Measures

"Reasonable and prudent measures" are nondiscretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02). NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize take of SONCC coho salmon:

1. Undertake measures to ensure that injury and mortality of threatened coho salmon during fish relocation activities are low.
2. Ensure construction methods, minimization measures, and monitoring are properly implemented during construction. This includes preparing and providing NMFS with plans describing how impacts of the incidental take on coho salmon in the action area

would be monitored and documented.

3. Prepare and submit a post-construction report regarding the effects of fish relocation and construction activities.

2.9.4 Terms and Conditions

The terms and conditions described below are non-discretionary, and Caltrans must comply with them in order to implement the RPMs (50 CFR 402.14). Caltrans has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. The following terms and conditions implement reasonable and prudent measure 1:
    a. Caltrans or their contractor shall submit to NMFS a Construction Site Dewatering Plan and an Aquatic Species Relocation Plan for review a minimum of 30 days prior to implementing the plans.
    b. Qualified biologists with expertise in the areas of anadromous salmonid biology shall conduct fish relocation activities associated with construction. Caltrans will ensure that all biologists working on the project are qualified to conduct fish relocation in a manner which minimizes all potential risks to salmonids.

       Caltrans or their contractor performing fish relocation shall first use a seine to herd fish out of the work site, if practicable, before using electrofishing techniques. Herding fish out of the work site with a seine prior to electrofishing will reduce the number of fish exposed to electrofishing activities and reduce the number of fish captured and subject to risks of mortality. Herding or hazing fish by using an electrofisher shall not be attempted.
    c. Salmonids shall be handled with extreme care and kept in water to the maximum extent possible during rescue activities. All captured fish must be kept in cool, shaded, and aerated water protected from excessive noise, jostling, or overcrowding or potential predators any time they are not in the stream, and fish will not be removed from this water except when released. Captured salmonids will be relocated as soon as possible to an instream location in which suitable habitat conditions are present to allow for adequate survival for transported fish and fish already present. Fish will be distributed between multiple locations if biologists judge that overcrowding may occur in a single location.
    d. If any salmonids are found dead or injured, the project biologist will contact NMFS biologist Mike Kelly by phone immediately at (707) 825-1622. The purpose of the contact is to review the activities resulting in the take and to determine if additional protective measures are required. All salmonid mortalities will be retained, placed in an appropriately-sized sealable plastic bag, labeled with the date and location, fork length, and be frozen as soon as possible. Frozen samples will be retained by the biologist until specific instructions are provided by NMFS. The biologist may not transfer biological samples to anyone other than the NMFS Northern California Office in Arcata, California without obtaining

prior written approval from the South Coast Branch Chief. Any such transfer will be subject to such conditions as NMFS deems appropriate.

2. The following terms and conditions implement reasonable and prudent measure 2:

    a. Caltrans shall allow any NMFS employee(s) or any other person(s) designated by NMFS, to accompany field personnel to visit the project site during activities described in this opinion.

    b. Caltrans shall contact NMFS within 24 hours of meeting or exceeding take of listed species prior to project completion. Notify Mike Kelly by phone at 707-825-1622. This contact acts to review the activities resulting in take and to determine if additional protective measures are required.

    c. Caltrans shall develop and submit to NMFS for review a hydroacoustic monitoring plan that includes underwater sound measurements at sites that are determined appropriate to ensure cSEL thresholds are not exceeded. The plan shall be submitted to NMFS for review a minimum of 30 days prior to implementing the plan.

    d. Caltrans shall make available to NMFS data from the hydroacoustic monitoring on a real-time basis (i.e., daily monitoring data should be accessible to NMFS upon request).

3. The following term and condition implements reasonable and prudent measure 3:

    a. Caltrans shall provide a written report to NMFS by January 15 of the year following construction of the project. The report shall be sent to NMFS via email to Mike.Kelly@noaa.gov or via mail to Mike Kelly at 1655 Heindon Road, Arcata, CA 95521. The reports shall contain, at a minimum, the following information:

        i. **Construction related activities** -- The report will include the dates construction began and was completed; a discussion of any unanticipated effects or unanticipated levels of effects on salmonids, a description of any and all measures taken to minimize those unanticipated effects and a statement as to whether or not the unanticipated effects had any effect on ESA-listed fish; the number of salmonids (by ESU and DPS) killed or injured during Project construction; and photographs taken before, during, and after the activity from photo reference points.

        ii. **Fish Relocation –** The report will include a description of the location from which fish were removed and the release site including photographs; the date and time of the relocation effort; a description of the equipment and methods used to collect, hold, and transport salmonids; the number of fish relocated by species; the number of fish injured or killed by species and a brief narrative of the circumstances surrounding salmonid injuries or mortalities; and a description of any problems which may have arisen during the relocation activities and a statement as to whether or not the activities had any unforeseen effects.

2.10 Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

1. NMFS recommends that Caltrans consider implementing a statistically valid estimate of pre- and post-pile driving occupancy of discrete coho salmon rearing habitat units in the action area identified by CDFW (Garwood 2020). Such a study could help determine whether pile driving in similar shallow alluvial locations is indeed creating lethal take of wild juvenile salmonids. Fish relocation and exclusion based solely on the expectation of lethal take due to barotrauma carries its own risks to juvenile salmonids; therefore, better understanding hydroacoustic impacts could reduce unnecessary take due to relocation and exclusion.

2.11 Reinitiation of Consultation

This concludes formal consultation for the Doctor Fine Bridge Replacement Project.

As 50 CFR 402.16 states, reinitiation of consultation is required and shall be requested by the Federal agency or by the Service 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 taking specified in the ITS is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action.

2.12 "Not Likely to Adversely Affect"' Determinations

NMFS concurs with Caltrans' conclusion that the proposed action is not likely to adversely affect Southern DPS green sturgeon or Southern DPS eulachon individuals due to their extremely unlikely, and therefore discountable, occurrence in the action area during in-water project activities. Southern DPS eulachon complete their freshwater life history during winter and early spring when project activities will not impact them. Southern DPS green sturgeon have not been documented in the action area, and they hold in deep pools, which do not occur in the action area; therefore, they are not likely to be exposed to project impacts. Critical habitat is not designated for these two ESA-listed species in the action area.

NMFS concurs with Caltrans' conclusion that the proposed action is not likely to adversely affect Southern Resident DPS killer whales because it will not result in reductions in availability of their prey. Caltrans calculated the numbers of juvenile Chinook salmon that could be lost due to the project in each of the two years where mortalities are expected. NMFS' standard for adverse effects to Southern Residents is a loss of 100 adult equivalents (NMFS 2013). Caltrans predicts that of 44 adults will be lost due to impacts in the first year, and 59 would be lost due to impacts in the second year. Therefore, the proposed action would not adversely affect Southern

Residents. Critical habitat for Southern Residents does not occur within the Doctor Fine Bridge project's action area.

3. MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT RESPONSE

Section 305(b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. The MSA (section 3) defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects on EFH may result from actions occurring within EFH or outside of it and may include site-specific or EFH-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH.

This analysis is based, in part, on the EFH assessment provided by Caltrans and descriptions of EFH for Pacific Coast salmon (PFMC 2014) contained in the fishery management plan developed by the PFMC and approved by the Secretary of Commerce.

3.1 Essential Fish Habitat Affected by the Project

Essential Fish Habitat is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802[10]). "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.10). The term "adverse effect" means any impacts which reduce the quality and/or quantity of EFH. Adverse effects may include direct or indirect physical, chemical, or biological alterations of the waters or substrates and loss of, or injury to, benthic organisms, prey species, and their habitats, and other ecosystem components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from actions occurring within EFH or outside of it and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.910). The EFH consultation mandate applies to all species managed under a Fishery Management Plan (FMP) that may be present in the action area.

The Pacific Coast Salmon FMP addresses EFH that will be adversely affected by the Project. Furthermore, the project is located in a Habitat Area of Particular Concern (HAPC) for coho and Chinook salmon under the Pacific Coast Salmon FMP. HAPC are described in the regulations as subsets of EFH that are identified based on one or more of the following considerations: the importance of the ecological function provided by the habitat; the extent to which the habitat is

sensitive to human-induced environmental degradation; whether, and to what extent, development activities are, or will be stressing the habitat type; and the rarity of the habitat type (50 CFR 600.815(a)(8)). Designated HAPC are not afforded any additional regulatory protection under MSA; however, federal projects with potential adverse impacts to HAPC are more carefully scrutinized during the consultation process. The HAPC developed for complex channel and floodplain habitat may be adversely affected by the emergency action.

3.2 Adverse Effects on Essential Fish Habitat

The adverse effects to EFH are same as adverse effects to critical habitat described under section 2.5.5 of the ESA section 7 consultation on the proposed action.

Potential adverse effects to Pacific Coast Salmon EFH include:

1. Temporary loss of food resources due to covering the riverbed with gravel work pads and cofferdams during three years of construction.
2. Short-term turbidity pulses during in-water construction, and possible sediment entrainment from disturbed ground during the first rains.
3. Temporary and permanent loss of riparian vegetation.
4. Noise disturbance during impact pile driving and demolition activities.

3.3 Essential Fish Habitat Conservation Recommendations

NMFS provides the following EFH conservation recommendation:

1. NMFS recommends that Caltrans consider implementing a statistically valid estimate of pre- and post-pile driving occupancy of discrete coho salmon rearing habitat units in the action area identified by CDFW (Garwood 2020). Such a study could help determine whether pile driving in similar shallow alluvial locations is indeed creating lethal take of wild juvenile salmonids. Fish relocation and exclusion based solely on the expectation of lethal take due to barotrauma carries its own risks to juvenile salmonids; therefore, better understanding hydroacoustic impacts could reduce unnecessary take due to relocation and exclusion.

This recommendation does not impact physical habitat related to this project; therefore, it is not possible to calculate how much habitat would be improved. However, results of the study could improve decision making regarding effects of pile driving on the surrounding habitat during future pile driving projects.

3.4 Supplemental Consultation

Caltrans must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that effects the basis for NMFS' EFH Conservation Recommendations (50 CFR600.920(1)).

3.5 Supplemental Consultation

Caltrans must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that effects the basis for NMFS' EFH Conservation Recommendations (50 CFR600.920(1)).

4. DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

The Data Quality Act (DQA) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the opinion addresses these DQA components, documents compliance with the DQA, and certifies that this opinion has undergone pre-dissemination review.

4.1 Utility

Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users. The intended user of this opinion is Caltrans. Other interested users could include CDFW, other resource agencies, citizens of the affected areas, and others interested in the conservation of the affected species and habitat. Individual copies of this opinion were provided to Caltrans. The format and naming adheres to conventional standards for style.

4.2 Integrity

This consultation was completed on a computer system managed by NMFS in accordance with relevant information technology security policies and standards set out in Appendix III, 'Security of Automated Information Resources,' Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

4.3 Objectivity

Information Product Category: Natural Resource Plan

Standards: This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NMFS ESA Consultation Handbook, ESA regulations, 50 CFR 402.01 et seq., and the MSA implementing regulations regarding EFH, 50 CFR 600.

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the References section. The analyses in this opinion and EFH consultation contain more background on information sources and quality.

Referencing: All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

Review Process: This consultation was drafted by NMFS staff with training in ESA and MSA implementation, and reviewed in accordance with West Coast Region ESA quality control and assurance processes.

EXHIBIT NO. 16

CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)

CDFW MEMOS RE FISHERIES MITIGATION

From: Olson, Jennifer@Wildlife
To: Davenport, Desiree@DOT; York, Dana A@DOT
Cc: Walker-Brown, Denise@DOT
Subject: RE: draft email to Caltrans
Date: Tuesday, October 27, 2020 3:29:59 PM

EXTERNAL EMAIL. Links/attachments may not be safe.

Hi Desiree and all,

It sounded like there was still some discussion as to whether Caltrans wanted to pursue a CD or an ITP so let me know if that has been settled yet. I will reach our to our headquarters folks and ask about financial assurances overall. If we want to schedule a time to discuss on the phone or webex/teams, let me know, I'm pretty open tomorrow and Thursday but then I am out of the office until Wednesday 11/4.
Also, I just realized I forgot to change the subject of this email from "draft email to Caltrans" -- I had sent to Curt and Gordon for concurrence so that's why it says draft. Very sorry if that confused anyone/whoops! I could re-send if it's helpful for forwarding.

Best,
Jen

From: Davenport, Desiree@DOT <Desiree.Davenport@dot.ca.gov>
Sent: Tuesday, October 27, 2020 3:09 PM
To: Olson, Jennifer@Wildlife <Jennifer.Olson@wildlife.ca.gov>; York, Dana A@DOT <dana.york@dot.ca.gov>
Cc: Walker-Brown, Denise@DOT <denise.walker-brown@dot.ca.gov>
Subject: RE: draft email to Caltrans

Warning: This email originated from outside of CDFW and should be treated with extra caution.

Thanks Jen,

I'll let Dana chime in if he wants but I think this should work for us. I also believe that I'll be working on the ITP and mitigation moving forward. What do you need as part of the ITP to get that going? We will need to work with the Tribe to get the funding to them, likely through a cooperative agreement. What assurances do you need to move forward?

Thanks again,

Desiree Davenport
Biologist
Caltrans North Region Environmental
707-672-9006 cell (currently teleworking)

From: Olson, Jennifer@Wildlife <Jennifer.Olson@wildlife.ca.gov>
Sent: Tuesday, October 27, 2020 2:54 PM
To: York, Dana A@DOT <dana.york@dot.ca.gov>
Cc: Davenport, Desiree@DOT <Desiree.Davenport@dot.ca.gov>
Subject: FW: draft email to Caltrans

Hi Dana, below is our analysis of mitigation value of the Rowdy Creek fish passage project. Let me know what else you need, and let me know if you or Desiree are the best contact moving forward -- Curt Babcock and Brandon indicated I should send this to you. Thanks! See below:

According to the 2019 NMFS Biological Opinion, the lethal take estimate for juvenile Coho Salmon due to Dr. Fine bridge replacement is 174. The current mitigation proposed is to replace the box culvert at U.S. Highway 101 over Dominie Creek, projected to result in an estimated 40 juvenile Coho Salmon (23% of mitigation needs). Additional mitigation has been proposed in the form of funding fish passage elements of Rowdy Creek Hatchery Project sufficient to create an additional 134 juvenile Coho Salmon. Caltrans requested CDFW assistance in determining how much of the project to fund to fulfill the additional mitigation needs. CDFW determined the following:

Expected Coho Salmon Mitigation Benefit Analysis
Assumptions:

1. At least one additional Coho Salmon redd is needed to generate 134 additional juvenile Coho Salmon.
2. Based on the most recent available survey year (2018-19), estimated Coho Salmon redd densities in the Smith River are at 3 redds/km based on survey data in Mill Creek, Smith River basin.
3. Instantaneous adult Coho Salmon stray rate from the existing Smith River population (colonization post weir removal) into Rowdy Creek is 5%.

We used the most recent number of estimated Coho Salmon redds in Mill Creek from 2018-19 winter. The population has been declining over the duration of this study so it is prudent to use the most recent estimate of 103 redds across 33.5 km (3 Coho redds/ km) as a reasonable donor population density to expect during the early onset of a restored Rowdy Creek. Given a population-level stray rate of approximately 5%, we can expect approximately 5 new Coho Salmon redds in Rowdy Creek directly after weir removal. Given just one of the five new redds would fulfill the remaining mitigation needs, Caltrans could fund 1/5 (20%) of the fish passage project costs to achieve the full mitigation required pursuant to CESA.

Let me know if you have any questions or would like to discuss further.
Best,
Jen

Jennifer Olson
Senior Environmental Scientist

State of California
Department of Fish and Wildlife

Memorandum

Date: September 30, 2020

To: Brandon Larsen
North Region Environmental–District 1 Office Chief
California Department of Transportation
brandon.larsen@dot.ca.gov

From: Curt Babcock
Northern Region, Habitat Conservation Program Manager
California Department of Fish and Wildlife

DocuSigned by:
Curt Babcock
974D273FEE784E2...

Subject: Mitigation for Dr. Fine Bridge Replacement Project

On July 21, 2020, Caltrans requested additional information from the California Department of Fish and Wildlife (Department) about mitigation requirements for take of State Threatened Oregon/Northern California Coast Evolutionarily Significant Unit Coho Salmon (SONCC Coho Salmon, *Oncorhynchus kisutch*) associated with the Dr. Fine Bridge Replacement Project. The California Endangered Species Act (CESA) requires any take (defined in Fish and Game Code section 86 as "hunt, pursue, catch, capture, or kill", or attempt to do so) that occurs incidental to an otherwise lawful activity be minimized and fully mitigated.

The Department would like to reiterate our general support for the Dominie Creek Fish Passage Project because of its benefit to SONCC Coho Salmon, as well as many other anadromous species including Southern Oregon/Northern California Coastal Chinook Salmon (*Oncorhynchus tshawytscha*) (State Species of Special Concern (SSC)), Coast Cutthroat Trout (*Oncorhynchus clarkii clarkii*) (SSC), and Pacific Lamprey (*Entosphenus tridentatus*) (SSC). As Department staff have expressed to Caltrans over the past four years, the Department supports the Dominie Creek Fish Passage Project as a component of the full mitigation needs for take of SONCC Coho Salmon that will result from the Dr. Fine Bridge Replacement Project. When Caltrans staff originally approached Department staff to seek concurrence for use of the Dominie Creek Project as mitigation for the Dr. Fine Project (in May 2016), the extent of projected take of SONCC Coho Salmon was unknown. In 2020, a take estimate for the Dr. Fine Project was produced, and that estimate appears to exceed the mitigation value that would result from the Dominie Creek Project for SONCC Coho Salmon. Therefore, Department fisheries and permitting staff have offered suggestions for additional feasible mitigation that could be added to help the Dr. Fine Project meet the full mitigation requirements of CESA.

This memo serves to provide information that Caltrans requested in its' July 21, 2020 memo. In that memo, Caltrans asked:

> *"How did CDFW calculate the mitigation credit for Dominie Creek? What variables and factors were taken into consideration?"*

To estimate the mitigation value that would result from the Dominie Creek Project, Department staff used survey data collected between 2012 and 2019. During this period, Dominie Creek was surveyed for juvenile SONCC Coho Salmon in 5 of 8 survey years (2012, 2014, 2016, 2017, 2018). These surveys detected 16 juvenile SONCC Coho Salmon in Dominie Creek in only one year (2018). Dominie Creek was also surveyed for adult SONCC Coho Salmon by conducting spawner surveys in one winter (2011-12) based on randomized sampling. This survey component was implemented in the Smith River watershed for five seasons (2011-12 to 2015-16). No adult SONCC Coho Salmon were observed in Dominie Creek during the winter of 2011-12 despite counting 129 redds, 278 live fish observations, and 88 carcasses across seven surveys (Garwood and Larson 2014).

The reach-level SONCC juvenile Coho Salmon detection rate approaches 95%. The 2018 survey detected 16 juvenile SONCC Coho Salmon spread across 5 pools. Given that surveys covered half the sample units (5 pools), it was assumed that 32 SONCC Coho Salmon could be counted across 10 pools. To account for individual pool detection, we divided 32 by 0.8 (the standard SONCC Coho Salmon detection rate for snorkel surveys in low densities) which resulted in an estimated 40 juveniles for the reach in 2018. The Department used these numbers, from the only year with any detections of juvenile SONCC Coho Salmon, to assign a mitigation credit that assumes the maximum number of SONCC Coho Salmon observed onsite, corrected for detection probability, that would be produced as a result of the Dominie Creek Project. Given the scarcity of SONCC Coho Salmon in Dominie Creek, and across the greater Rowdy Creek Basin (see emphasis below), the Department assumes that in a best-case scenario, the Dominie Creek Project would result in 1 additional pair of spawning SONCC Coho Salmon that would produce a similar number of juveniles to those observed in 2018. This would replace 40 (or slightly less than 25%) of the 174 juvenile SONCC Coho Salmon estimated to be lethally taken by the Dr. Fine bridge replacement project.

Caltrans also requested reference to code or regulation that required immediate benefit for inclusion in CESA full mitigation. Our previous memo did not state the benefits must be immediate, and there is no code or regulation addressing the value of mitigation based on the timeframe of implementation. However, a review of past Incidental Take Permits shows that mitigation value has been generally reduced based on the extent of delayed implementation. Though the Rowdy Creek Fish Hatchery barriers are funded for design plans to address the barriers, there is no guarantee of implementation or funding to complete a project, or when this may occur if funded. The effect of Rowdy

Creek Hatchery barrier on SONCC Coho Salmon use of Dominie Creek was not specifically included in the numerical calculation above, but is rather an additional consideration when comparing other mitigation options.

Caltrans also asked:

> *"Were the benefits of restoration to channel function and water quality improvements to downstream spawning and rearing habitats considered in the analysis?"*

The short channel below US Highway 101 to the mouth of Dominie Creek is highly altered and is poor fish habitat. It contains riprap and a water intake pool with flashboards for the Rowdy Creek Hatchery. Pools are shallow, very little spawning gravel exists, and the channel is scoured to bedrock in many places. It is surrounded by legacy infrastructure including an adjacent grocery market building and encroaching parking lot, in addition to a fish hatchery that spans both sides of the stream to the mouth. The riparian zone, channel slope, and channel hydraulics have all been permanently altered by these facilities. Replacing the box culvert with a bridge and removing concrete sacks from the channel will bring back some streambed habitats that could be used for spawning, but the area is small relative to the currently available one kilometer of habitat above the highway crossing. Given the ephemeral nature of this population, despite good spawning habitat already available and accessible above the box culvert, it is unlikely that this small improvement in spawning potential will add another spawning pair of SONCC Coho Salmon to Dominie Creek unless the greater Rowdy Creek watershed improves with the removal of the substantial hatchery weir barrier.

Additionally, Caltrans' July 21, 2020 memo stated:

> *"Caltrans is unaware of literature (please provide if available) supporting the premise that cold water streams render them poor juvenile rearing habitat."*

The Department stated that the habitat present in Dominie Creek is generally good for spawning but is limited for rearing juveniles due to very low water temperatures. Coldwater habitats provide essential refugia in temperature impaired systems. However, exceptionally cold-water habitats, such as the habitat provided by Dominie Creek (the 5th coldest stream out of 92 points sampled throughout the Smith River Basin), also suppress growth of juvenile salmonids. This does not mean that they are poor habitats, only that they are far less productive for juveniles than warmer waters within the optimal range of SONCC Coho Salmon thermal tolerance. Given this, juvenile salmonids are less likely to move into very cold habitats unless nearby temperatures become stressful, which is highly unlikely in systems like the Smith River Watershed which are not temperature impaired. The relationship of warmer, more productive waters with increased salmonid growth rates within, and even extending above, their range of

thermal tolerance is described in recent work such as Lusardi et al. (2020). Dominie Creek is also a spawning tributary for Chinook salmon, steelhead, and coastal cutthroat trout. Based on spawner survey observations from one winter (2011-12), Dominie Creek had a substantial run of spawning Chinook salmon and steelhead (*see* tables 3 and 6 *in* Garwood and Larson 2014) and a large fraction of these fish were of hatchery origin. Densities are likely artificially increased in Dominie Creek annually due to the Rowdy Creek weir barrier blocking upstream migrations just above the mouth of Dominie Creek. Many fish were observed spawning in very poor locations (J. Garwood, personal observation) indicating the fish densities exceeded spawning habitat availability. These artificial densities can further suppress subsequent juvenile life stages of all salmonids, including wild SONCC Coho Salmon as they compete for limited space and food.

The July 21, 2020 memo also asks,

> *"…why is restoration within much smaller tributaries that provide only velocity refuge, such as Stotenburg Creek, considered more productive and of higher value (i.e. 75% of Dr. Fine Bridge mitigation value) for recovery efforts than creating access to spawning habitat?"*

To clarify, it is not the Department's opinion that coastal plain habitats such as Stotenburg Creek, "provide only velocity refuge." Department research has found these coastal plain off-channel and emergent freshwater habitats to be extremely productive for juvenile fishes (Parish and Garwood 2015, Parish and Garwood 2016, Wallace et al. 2015), and these habitats produce larger smolts, which increases survival. Dominie Creek already allows access to adult SONCC Coho Salmon, thus, it is uncertain whether the Dominie Creek Project will produce any additional spawning pairs. In contrast, expansion of limited but very productive coastal plain habitat will provide immediate benefit for juveniles that already disperse from spawning reaches above Dr. Fine to the estuary. Juvenile Smith River SONCC Coho Salmon preferentially use these habitats and grow larger than fish in colder, less productive habitats. This is well documented in Department research, and the importance of productive coastal off-channel stream and estuary habitats are well described in the Smith River coastal plain (Parish and Garwood 2015, Parish and Garwood 2016) and in the general literature throughout the Pacific Northwest (Wallace et al. 2015, Miller and Sadro 2003, Koski 2009). It is the Department's opinion, based on the best available science, that adding overwinter habitat in the coastal plain of the Smith River is among the most critical elements improving productivity and recovery of the SONCC Coho Salmon population as a whole.

The July 21, 2020 memo also posed some general questions about the 2017 report *2011-2016 Salmonid Redd Abundance and Juvenile Distribution and Spatial Structure in the Smith River Basin* (Walkley and Garwood 2017) and about juvenile coho use of Rowdy Creek upstream of the Rowdy Creek Hatchery weir. Department fisheries staff, co-author of the 2017 report, Justin Garwood, provided the following information:

Walkley and Garwood (2017) did not suggest that Dominie Creek was limiting production in the system. Juvenile SONCC Coho Salmon were only documented in Rowdy Creek above the weir barrier in 3 out of 8 years, indicating the adult population above the weir is ephemeral at best (Table 1). Furthermore, in 5 years of spawner surveys, only 1 to 6 adult SONCC Coho Salmon were observed in 4 of the 5 years in Rowdy Creek above the weir (Table 1). Both adult and juvenile SONCC Coho Salmon counts indicate an extremely small population in Rowdy Creek despite over 20 km of high-quality habitat occurring above the Rowdy Creek weir. The annual Rowdy Creek Hatchery weir fish counts and annual juvenile SONCC Coho Salmon population estimates, conducted in Rowdy Creek by Green Diamond resource company, correlate with our adult and juvenile observation trends producing at best single-digit counts of fish annually, or sometimes none at all. In contrast, we count hundreds of adults and thousands of juveniles on our surveys annually in the similar sized Mill Creek subbasin, with similar habitat and no weir barrier. We conclude the weir is the major limiting factor in suppressing SONCC Coho Salmon recovery in the greater Rowdy Creek area across 20 km of habitat. Repairing all the barriers on Dominie Creek (1 km of habitat) will have little effect on recovering the Rowdy Creek Basin population unless the greater watershed issues are addressed. Because Dominie Creek is a tributary, it will benefit after the greater issues in the basin are resolved, because salmonid populations do not recover on a creek-by-creek basis. Rather, they operate at a larger scale, with individual creeks supporting the population across the 20 km of habitat. In some years individual creeks are used, and in some they are not. Fish spawn where they find mates and when populations are low, they concentrate their spawning in a limited area. As the greater population size increases, the more widespread the spawning populations become. Tributaries like Dominie Creek will benefit down the line if the Rowdy Creek population increases, although it has been suppressed for decades.

In response to the questions,

> *"What were the winter stream flow conditions the year these fish were observed? If evidence of adult spawning in Dominie Creek was missed during the preceding winter, would it not be possible that the juvenile fish identified were pushed in during a high water event from Rowdy Creek or perhaps mis-identified?"*

The Department provides the following: fish are not "mis-identified" by observers. The most critical assumption in our monitoring programs and modeling approach is that all fish are identified correctly to species; surveys would be useless if this were a systemic issue. A small fraction of fish (<1%) are not identified when fish flush too fast, but these are put in an unidentified category. We have extensive training, shadowing, and tests before anyone is elevated to a surveyor. We retain long-term experts on our crews, who are among the best trained and most experienced field biologists in counting salmonids. We also implement double-blind surveys in every 4th unit for estimating detection. We

have found over the years that haphazard mis-identifications of SONCC Coho Salmon are frequently made by observers who are unprepared and operate on little training, but this is not the case with our rigorously trained and tested observers.

We found 16 juveniles in Dominie Creek during the summer of 2018 and expanded this to 40 based on detection and sampling rate. We did not conduct spawner surveys the prior winter because that survey program was discontinued in 2016, so we cannot speculate that we "missed" the adults. Regardless, it does not matter if adults were seen the prior winter or not because the juveniles prove they indeed spawned in Dominie Creek in 1 year out of the 5 years it was surveyed. Our juvenile survey is extremely effective at detecting SONCC Coho Salmon, and we are confident they were only present in 1 out of the 5 years. Given the impassible juvenile barriers in Dominie Creek at the mouth and Highway 101, and high water velocities in Dominie's confined lower channel during floods, it is nearly impossible that nonnatal juveniles moved into Dominie Creek, especially where they were observed above Highway 101.

To respond to Caltrans' request:

> *"…to further understand juvenile utilization of coho salmon in Rowdy Creek upstream of the weir for comparison. Please provide juvenile survey data, including the pre and post implementation monitoring conducted by FRGP for the restoration projects in Rowdy Creek to date."*

The Department provides the following: See Table 1. Juvenile SONCC Coho Salmon were only encountered in Rowdy Creek above the weir in 4 out of 8 years, with annual counts ranging from 1 to 62 fish. These counts are extremely low and indicate the Rowdy Creek population is suppressed to its nadir. FRGP has funded a few restoration projects (e.g. wood loading) in Rowdy Creek, but given the SONCC Coho Salmon population is so suppressed, no available data could validate or invalidate a recovery response to any improvement project up to this point.

In the July 21 memo Caltrans also states:

> *"the Dominie Creek barrier has been a top priority for addressing passage for salmon and steelhead according to the North Coast Fish Passage Advisory Committee (FishPAC), the Humboldt State University Study (Lang 2005), and multiple state and federal agencies."*

Previous rankings referenced above have been generally more qualitative assessments based on multi-species benefits, or they were referencing the Rowdy Creek Fish Hatchery barrier on Dominie Creek, which is downstream of the Dominie Creek Fish Passage Project. CDFW's Region 1 fish passage priority list does not include the Domnie Creek Fish Passage Project on Highway 101, but does have the downstream Rowdy Creek Hatchery barrier as a high priority, and a footnote that fixing the upstream

Dominie Creek Fish Passage Project at Highway 101 would need to happen. The 2018 FishPAC list did not include the Dominie Creek Fish Passage Project. These rankings, though important for highlighting potential projects to seek solutions, are not directly applicable to the SONCC Coho Salmon-specific full mitigation requirement in CESA. In analyzing the benefits of the proposed Dominie Creek project, the Department has a large amount of survey data (referenced above) that allows a quantitative analysis specific to SONCC Coho Salmon and this project. Therefore, our basis and conclusion for the full mitigation assessment specific to SONCC Coho Salmon and the Dominie Fish Passage Project is more appropriate than use of these past multi-species assessments.

We anticipate that this memo will clarify the process by which the Department determined the contribution that the Dominie Creek Fish Passage Project would make to the mitigation needs for the Dr. Fine Bridge Replacement Project, the value of additional mitigation in coastal plain habitats, and provides information on the SONCC Coho Salmon population in the Dominie Creek and Rowdy Creek areas. The Department looks forward to continuing to work with Caltrans on this Project and are available to discuss options for moving forward with CESA permitting.

ec: Gordon Leppig, Jennifer Olson, Michael van Hattem, Justin Garwood
California Department of Fish and Wildlife
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Caltrans
Dana York, Stephanie Fredrickson
dana.york@dot.ca.gov, Stephanie.Frederickson@dot.ca.gov

Table 1. Total number of SONCC Coho Salmon observed annually in Rowdy Creek Basin by survey type and year. Survey effort was based on an annual basin-wide sample draw for each survey type.

Year	Adult Counts (spawner)[A]	Juvenile Snorkel Counts (summer)
2012	**1** (53 surveys over 7 reaches)	**39** (4 reaches, 183 pools surveyed)[B]
2013	**1** (16 surveys over 2 reaches)	**62** (5 reaches, 141 pools surveyed)
2014	**4** (33 surveys over 4 reaches)	**1** (6 reaches, 80 pools surveyed)
2015	**6** (48 surveys over 5 reaches)	**0** (7 reaches, 121 pools surveyed)
2016	**0** (42 surveys over 6 reaches)	**12** (6 reaches, 120 pools sampled)[B]
2017	No surveys-change in focus	**16** (8 reaches, 128 pools sampled)[B]
2018	No surveys-change in focus	**33** (3 reaches, 84 pools sampled)
2019	No Surveys-change in focus	**0** (4 reaches, 82 pools sampled)

[A] Maximum number of individuals seen. Due to multiple surveys each winter, live individuals could be seen more than once.
[B] All fish observed in the reach that extends below Rowdy Creek weir (also below Dominie Creek) to the mouth of Rowdy Creek indicating they likely migrated to lower Rowdy Creek from other subbasins in the Smith River in these years as no individuals were found above the weir or in Dominie Creek.

References:

Garwood, J. and M. Larson. 2014. Reconnaissance of salmonid redd abundance and juvenile spatial structure in the Smith River with emphasis on coho salmon. Final report to the California Department of Fish and Wildlife, Fisheries Restoration Grants Program, Contract: P1010504. Smith River Alliance, Crescent City, CA. 63p.

Koski, K. V. 2009. The fate of coho salmon nomads: the story of an estuarine-rearing strategy promoting resilience. Ecology and Society 14(1):4.

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State of California
Department of Fish and Wildlife

M e m o r a n d u m

Date: June 29, 2020

To: Brandon Larsen
North Region Environmental–District 1 Office Chief
California Department of Transportation
brandon.larsen@dot.ca.gov

From: Curt Babcock, Habitat Conservation Program Manager
Northern Region

DocuSigned by:
Curt Babcock
974D273FEE784E2...

Subject: Mitigation for Dr. Fine Bridge Replacement Project

Dear Mr. Larsen:

On May 19, 2020, the California Department of Fish and Wildlife (Department) received a request from Caltrans for a Consistency Determination (CD) pursuant to Fish and Game Code (FGC) Section 2080.1. On June 9, 2020, you requested information from the Department about mitigation requirements related to this CD for take of State Threatened Oregon/Northern California Coast Evolutionarily Significant Unit Coho Salmon (SONCC Coho Salmon, *Oncorhynchus kisutch*) associated with the Dr. Fine Bridge Replacement Project (Project). The California Endangered Species Act (CESA) requires any take (defined in FGC Section 86 as "hunt, pursue, catch, capture, or kill", or attempt to do so) that occurs incidental to an otherwise lawful activity be minimized and fully mitigated.

In the March 19, 2020 Biological Opinion/Incidental Take Statement (BO/ITS) for the Project, the National Marine Fisheries Service estimated that the Project would result in lethal take of 174 juvenile SONCC Coho Salmon, and the non-lethal take (capture) of 29 juvenile SONCC Coho Salmon, over three years. CalTrans proposed to mitigate for this take by implementing the Dominie Creek Fish Passage Project and programmed its replacement in 2015; and in 2016 the Department agreed to it as partial mitigation for the Project. The purpose of the Dominie Creek Project is to remove an existing partial fish passage barrier by constructing a new bridge and roughened stream channel to provide full passage for anadromous fish of all life stages.

The current crossing of Dominie Creek at U.S. Highway 101 is a partial barrier to adult SONCC Coho Salmon and a full barrier to juvenile SONCC Coho Salmon. There is another barrier downstream of Highway 101 at the Rowdy Creek Fish Hatchery, that is likely a partial barrier to adult salmon and total barrier to juveniles which limits the immediate benefits of the Dominie Project. Habitat present in Dominie Creek is generally good for spawning, but limited for rearing juveniles due to very low water

temperatures. In recent surveys of Dominie Creek by the Department, no adult SONCC Coho Salmon have been detected during two years of spawning surveys, and juveniles were detected during only one out of five years of juvenile surveys, indicating that at least one pair of adults spawned during the preceding winter. Fifteen juveniles were detected during that year. Surveys were conducted in half of pool habitats present.

Given that adult passage is already present, but will be enhanced to allow passage under all flow conditions, and the stream's limited use by SONCC Coho Salmon for spawning, there will be limited additional value for production of SONCC Coho Salmon. Therefore, the Department has determined that the proposed Dominie Creek Fish Passage Project would provide mitigation for 25% of the SONCC Coho Salmon take from the Dr. Fine Bridge project. Although Dominie Creek does provide habitat for and is used by other salmonid species, that benefit cannot be considered as part of full mitigation for SONCC Coho Salmon pursuant to CESA.

Department research shows that SONCC Coho Salmon consistently use the increasingly rare, yet productive habitats found in coastal plain tributaries, such as Stotenburg, Morrison, and Tryon Creeks (Parish and Garwood 2015 and 2016). Using minnow trapping data from nearby Stotenburg Creek and other similar coastal plain tributaries, Department staff found densities of approximately 0.62 SONCC Coho Salmon per square meter. The Department's recommendation to include mitigation for the Project at a proximal site to the Dr. Fine Bridge, in a coastal plain tributary such as Stotenburg Creek, ensures increased productivity of SONCC Coho Salmon will be immediate. Thus, if Caltrans is considering restoration in Stotenburg Creek to complete full mitigation requirement, it would require restoration of approximately 215 square meters or 60 linear meters of stream in Stotenburg Creek or similar productive Coho habitats.

The Department has provided these analyses at the request of Caltrans to help identify viable options to fully mitigate for take of SONCC Coho Salmon associated with the Dr. Fine Bridge Replacement Project. Additionally, to issue a CD, the Department must determine that the BO/ITS is consistent with CESA. Because of CESA's requirement to minimize and fully mitigate take of listed species, Caltrans must ensure that any additional mitigation to complete the full mitigation requirement is included in the BO/ITS for the Dr. Fine Project when making a request for a CD. Additionally, because CESA requires that adequate funding be provided to implement the required mitigation, the BO/ITS must include language that specifies how funding will be assured, unless the mitigation is completed prior to the Dr. Fine Project. Typically, this requires a means by which the Department can unilaterally draw upon funds in the case that mitigation is not completed. This is generally achieved by providing a letter of credit, escrow account, or other similar financial instrument approved by the Department's Office of General Counsel. These details must be included in the BO/ITS for it to be consistent with CESA.

If Caltrans cannot provide a BO/ITS that is consistent with CESA, an alternative would be to apply for an Incidental Take Permit. This would allow more time and flexibility to determine mitigation options and a method of financial assurance acceptable to the Department.

The Department looks forward to continuing to work with Caltrans on this Project and are available to discuss options for moving forward with CESA permitting.

ec: Gordon Leppig, Jennifer Olson, Michael van Hattem, Justin Garwood
California Department of Fish and Wildlife
gordon.leppig@wildlife.ca.gov, jennifer.olson@wildlife.ca.gov,
michael.vanhattem@wildlife.ca.gov, justin.garwood@wildlife.ca.gov

Caltrans
Dana York, Stephanie Fredrickson
Stephanie.Frederickson@dot.ca.gov, dana.york@dot.ca.gov

References:

Parish, M. and J. Garwood. 2015. Distribution of Juvenile Salmonids and Seasonal Aquatic Habitats within the Lower Smith River Basin and Estuary, Del Norte County, California. Final report to the California Department of Fish and Wildlife, Fisheries Restoration Grants Program: P1310518, Arcata, CA.

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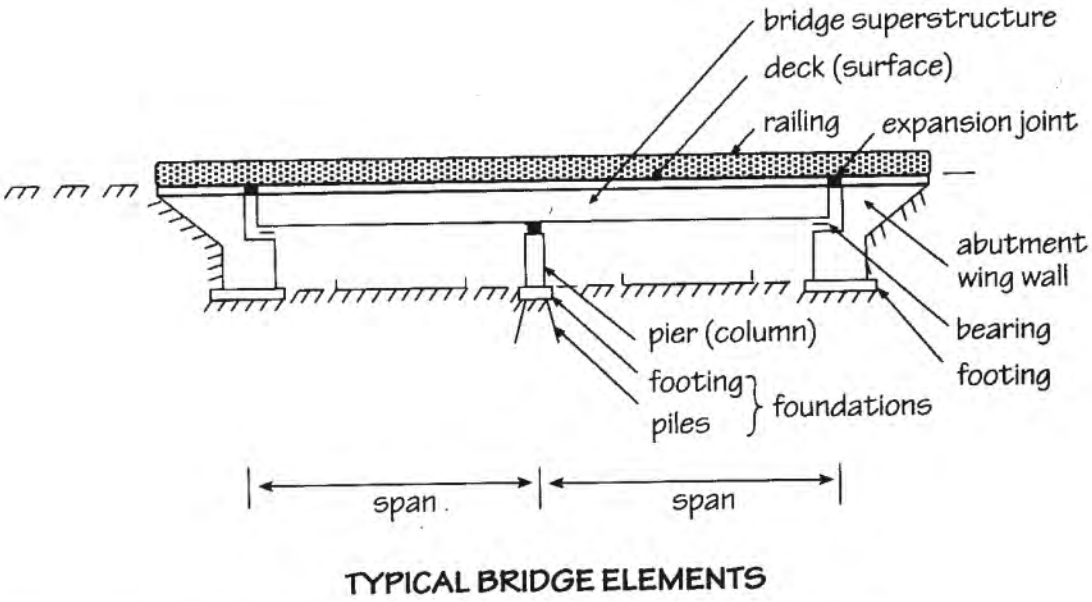
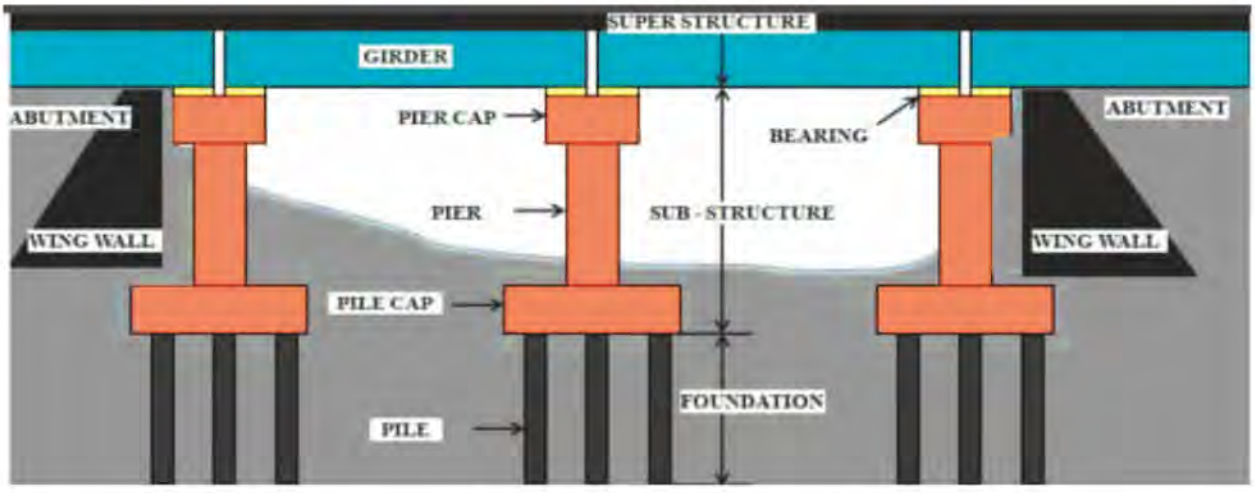
Illustration of Bridge Terminology Common to Dr. Fine Bridge Project.



TYPICAL BRIDGE ELEMENTS

(Source: https://erkrishneelram.wordpress.com/2015/03/08/basic-bridge-terms/)



(Source: https://civiconcepts.com/2019/10/bridge-components-and-their-function/)

EXHIBIT NO. 17

CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)

ILLUSTRATIONS OF BRIDGE COMPONENTS

Memorandum

Making Conservation a California Way of Life

To: ***Rachelle Estrada***
Associate Environmental Planner (Coordinator)
North Region Environmental, E-2
Caltrans, District 1

Date: November 30, 2020

File: 01-DN-101-PM 35.8 – 36.5
Smith River (Dr. Fine Memorial) Bridge Replacement
EA: 01-436400
EFIS: 01-0000-0193

From: **RONALD McGAUGH**
Structures Hydraulic Engineer
Structures Hydraulics and Hydrology Branch
Office of Design and Technical Services
Division of Engineering Services

Subject: **COASTAL COMMISSION REPLIES/INQUIRIES AT THE DR FINE MEMORIAL BRIDGE PIER CUTOFF CONSIDERATIONS**

Coastal Commission inquiries are in quotation marks and indicated in Green

Several solutions were mentioned, one of which included removing the piles, footings, and h-piles (essentially the entire structure) for the in-channel piers. Can CalTrans staff please clarify their proposal- i.e. are you proposing to remove the entire structures for all of the in-channel piers or just pier #14?

Long-term degradation/aggradation: Staff noted that it is CalTran's general policy to cut bridge piers 3ft below the "existing grade". Staff is concerned that 3ft might not be a conservative enough estimate given the proclivity of channels to change over time. As requested during the call, staff are looking forward to receiving site plans of the existing piers that depict the short and long-term scour depths noted in the previous hydraulic study in addition to the cutoff depths as currently proposed.

Provide scour elevations so the footings are not exposed. Provide an explanation on what the long and short term scour potential is around the removed piers, and what is the depth of removal needed. Explain how that effect from the localized scour around the new piles would or could be compounded by storm events and other changing riverine processes, and how that would impact potential future exposure.

EXHIBIT NO. 18
CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)

MEMO FROM CALTRANS RE: PIER CUT-OFFS

At our project location smith river is a well Entrenched riverine system that is just coming out of the Six Rivers National Forest into the Kings Valley. The meander of the river will not change as it is coming out of the peaks of the foothills on a well established path. This is not a braided stream. The depth of the channel that this river has carved is over 30 feet deep at our project location. The meander of the stream has a slight east to west curvature (downstream to upstream) the floodplain of the channel at our project location is approximately 4700 ft wide. It is not anticipated that the meander, sinuosity, or stream alignment will significantly change. The following data is slightly different from the FHR of 2016.

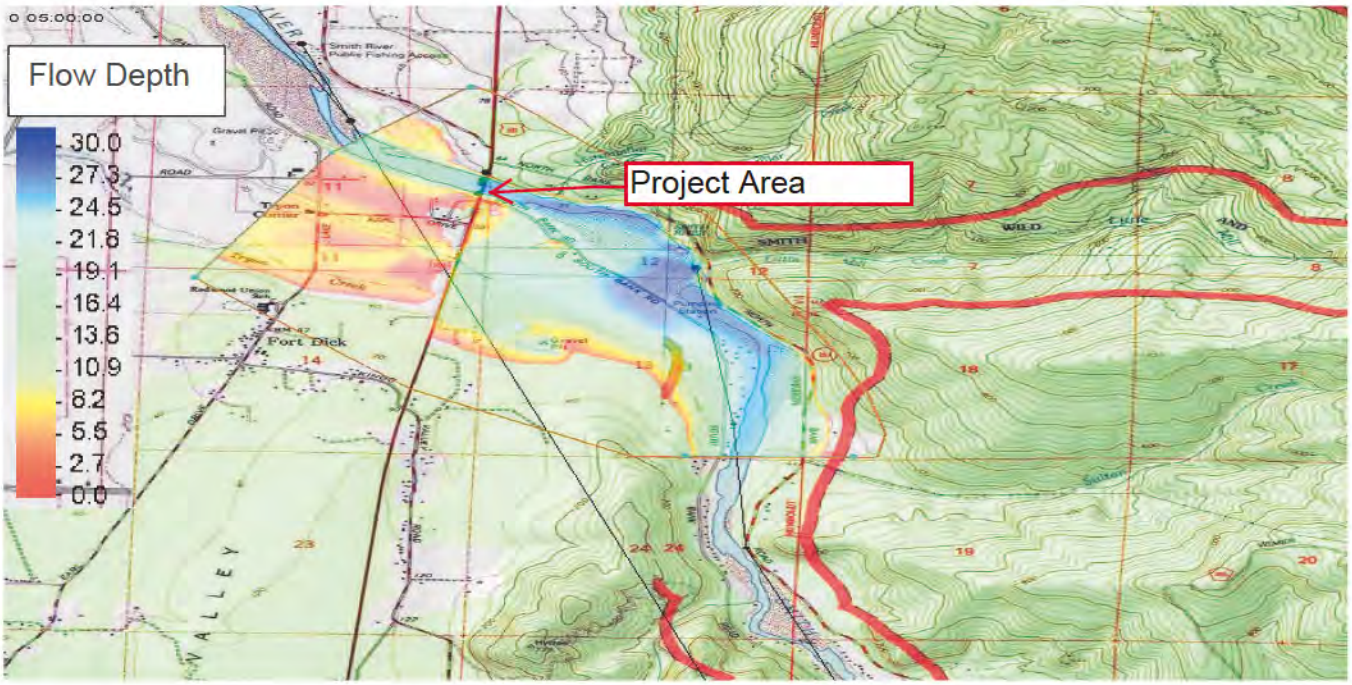


Figure 1

The critical piers for this existing structure are 12 thru 15. These are the piers that labeled the entire structure as “Scour Critical” and are illustrated in Section 4 of the 2016 Final Hydraulic Report.

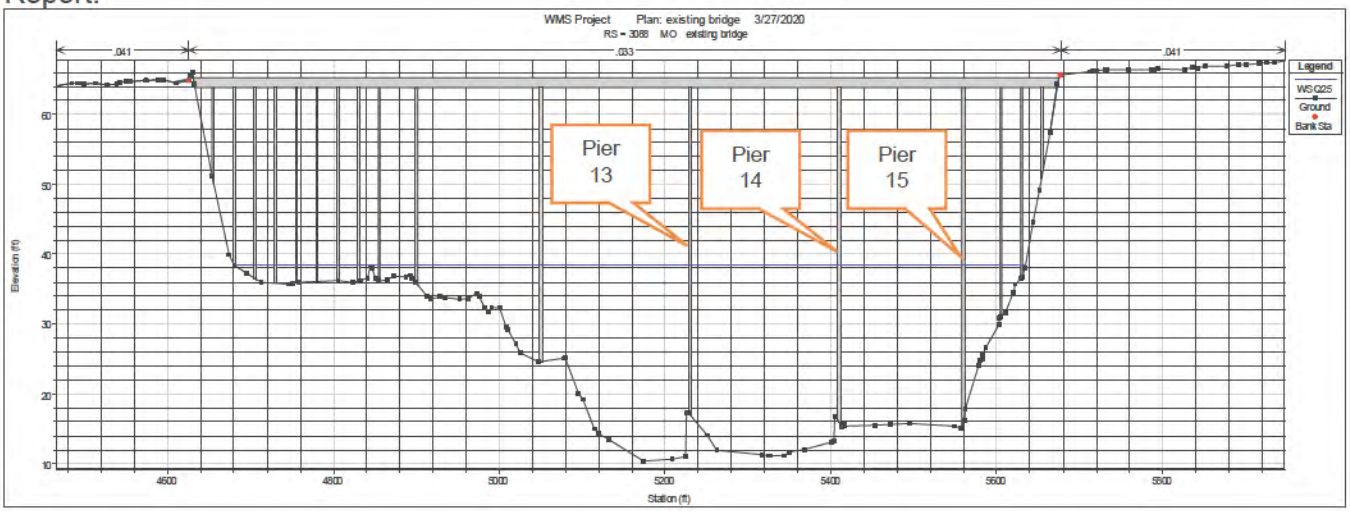


Figure 2: Idealized Hecras Cross section showing piers and water surface elevation for Q100 flow

The following data for each pier show present and future information for each pier that is affected by the flow for the Q100 discharge using anticipated water surface elevations.

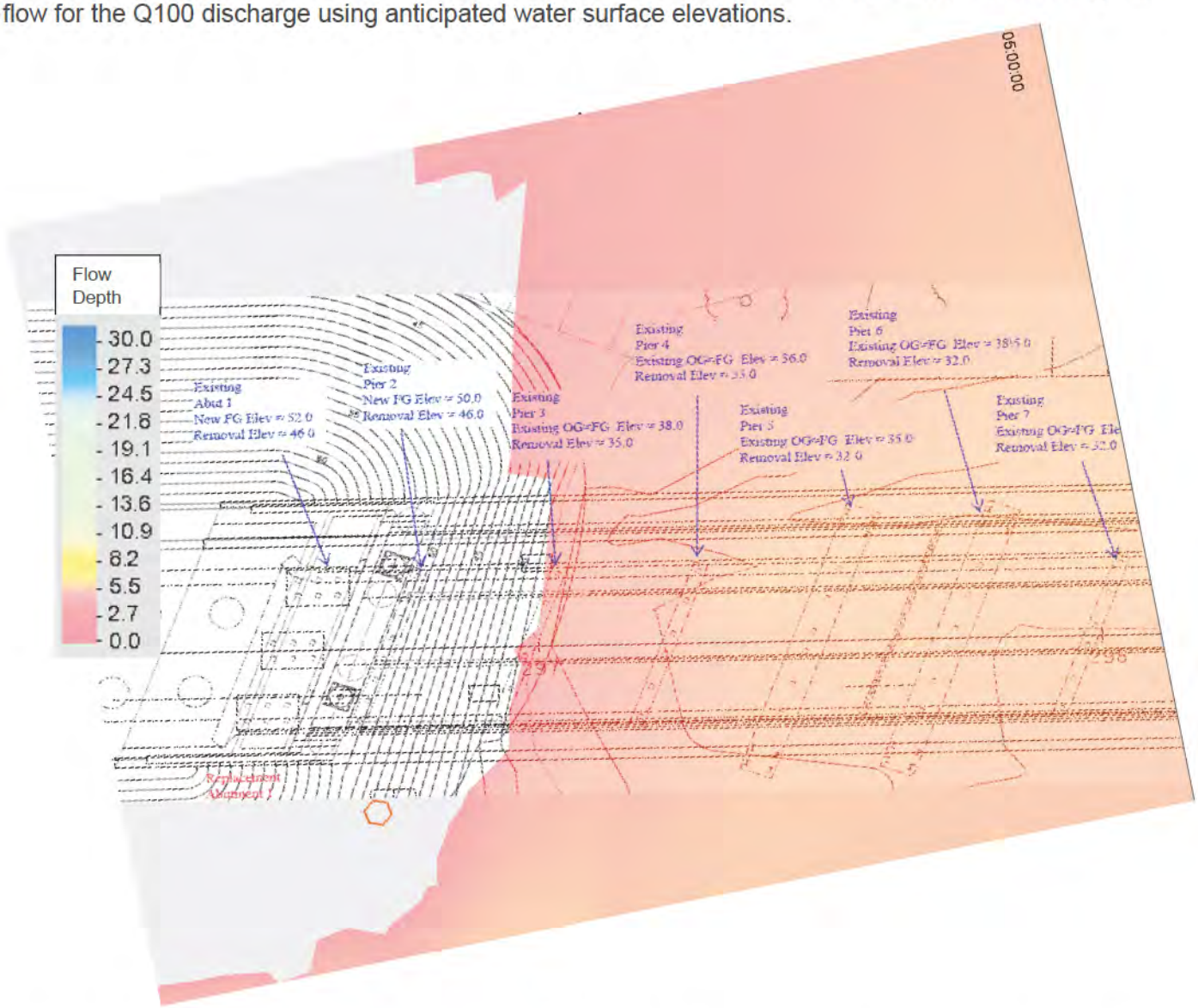


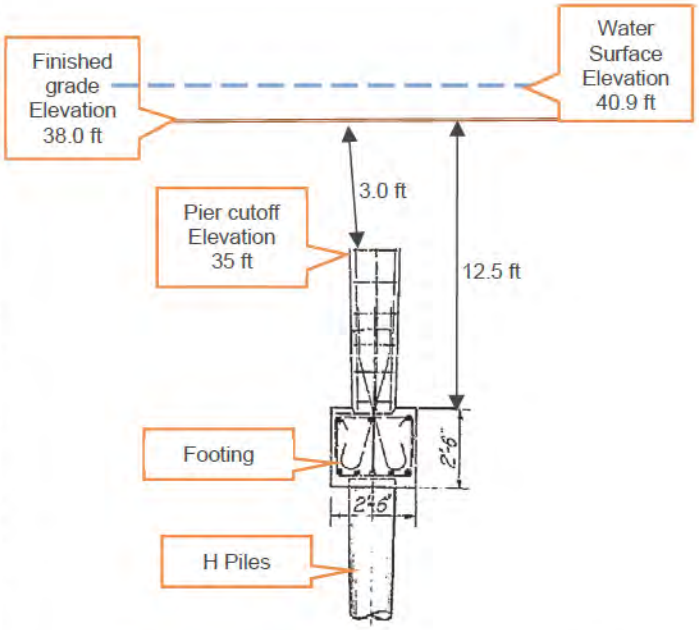
Figure 3: Abutment 1 – Pier 7 2d Overlay flow depths in relation to existing piers for cutoff considerations

Abutment 1 and pier 2 are out of the flow and incur issues relating to the removal of piers for scour consideration.

Piers 2- thru 10 show no degradation and slight aggregation from the original cross section of 1939. There is a trend of aggradation. Mining is an issue that represents unknown conditions and may change the anticipated results of these riverine studies.

Pier 3 location shown in Figure 3

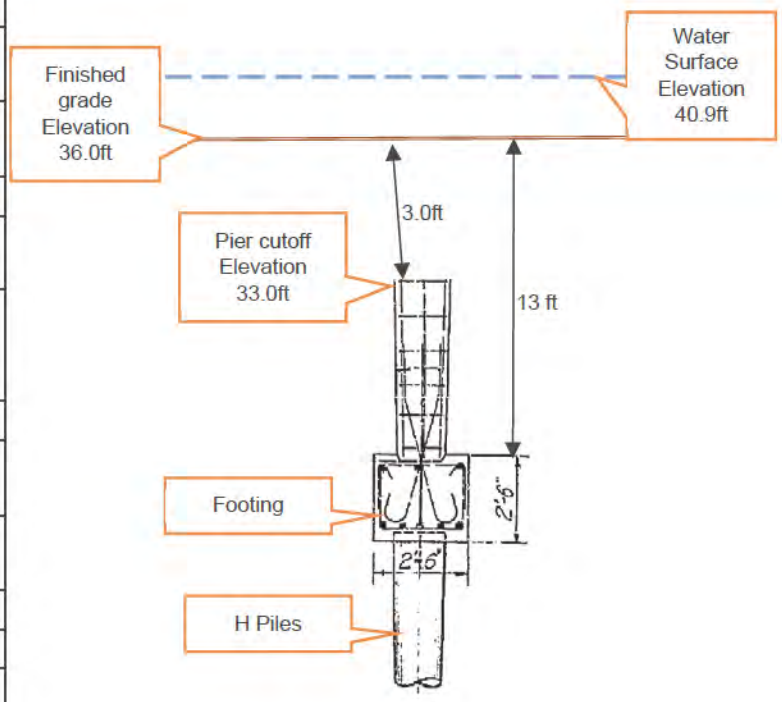
EXISTING CONDITIONS		
Pier number	3	
Approximate Finished ground elevation	38	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	2.9	feet/sec
Maximum Water depth based on Q100 flow	2.9	Feet
Scour depth based on Q100 storm	3.0	Feet
Bottom of Existing scour	35.0	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 0.5 ft of flow at 2.9 ft/sec is no scour potential	no scour potential	
Short term scour effects	none- no pier	
Recommended depth of removal 3.0 ft	3	Feet
Will the channel move at this pier location- not likely	Not likely	
	12.5	
After pier removal		
Approximate Finished ground elevation	38	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	35	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	2.9	Feet
Maximum Water depth based on Q100 flow	2.9	Feet
Future considerations	Slow moving ponded water will not cause any scour or degradation issues	



Future view after pier removal

Pier 4 location shown in Figure 3

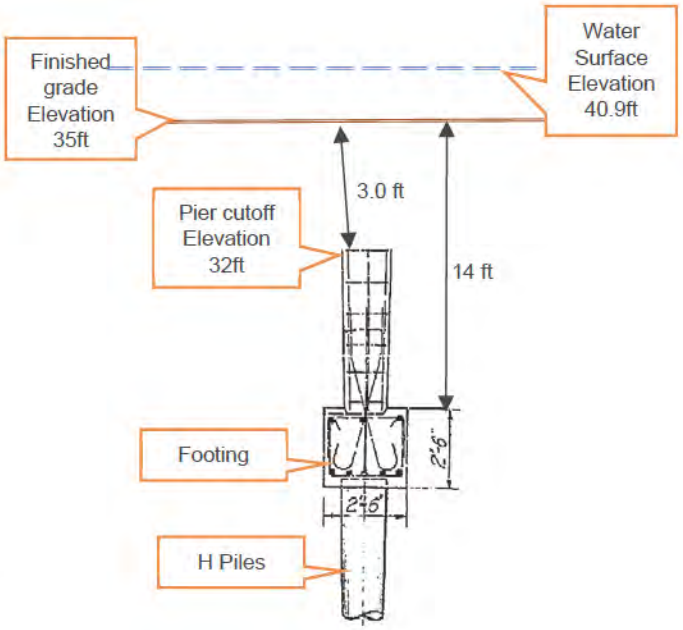
EXISTING CONDITIONS		
Pier number	4	
Approximate Finished ground elevation	36	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	12.3	feet/sec
Maximum Water depth based on Q100 flow	4.9	Feet
Scour depth based on Q100 storm	6.0	Feet
Bottom of Existing scour	30.0	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 0.5 ft of flow at 2.9 ft/sec is no scour potential	no scour potential	
Short term scour effects	none- no pier	
Recommended depth of removal 3.0 ft	3	Feet
Will the channel move at this pier location- not likely	Not likely	
	13	
After pier removal		
Approximate Finished ground elevation	36	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	33	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	12.3	Feet
Maximum Water depth based on Q100 flow	4.9	Feet
Future considerations	Moderately slow moving ponded water will not cause any scour or degradation issues	



Future view after pier removal

Pier 5 location shown in Figure 3

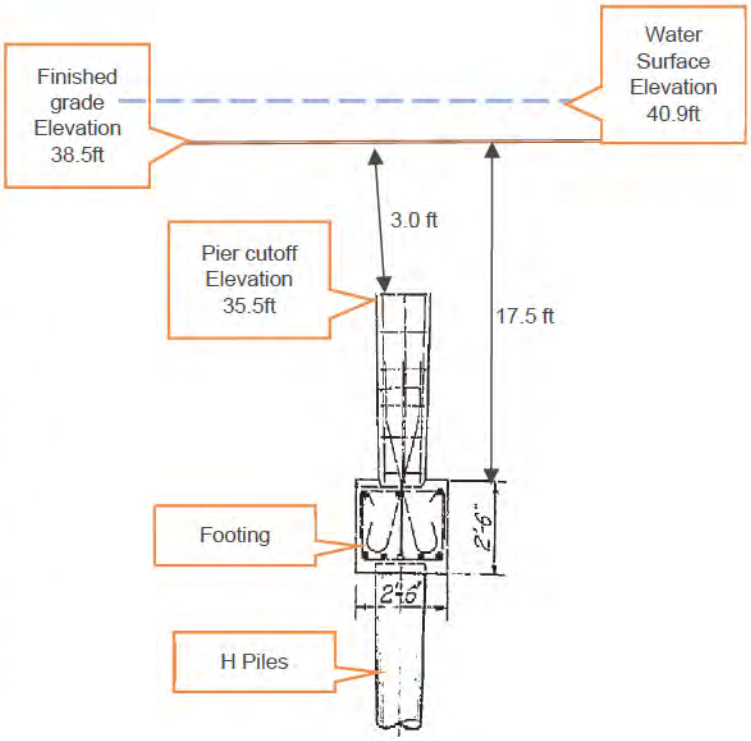
EXISTING CONDITIONS		
Pier number	5	
Approximate Finished ground elevation	35	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	12.7	feet/sec
Maximum Water depth based on Q100 flow	5.9	Feet
Scour depth based on Q100 storm	6.2	Feet
Bottom of Existing scour	28.8	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 5.9 ft of flow at 12.7 ft/sec is no scour potential	no scour potential for fast enough to move material along the bed	
Short term scour effects	none- no pier	
Recommended depth of removal t	3	Feet
Will the channel move at this pier location-	Not likely	
	14	
After pier removal		
Approximate Finished ground elevation	35	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	32	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	12.7	Feet
Maximum Water depth based on Q100 flow	5.9	Feet
Future considerations	faster moving water due to small hills in floodplain and the concentration of flow moving towards the bridge. Will not cause any scour or degradation issues	



Future view after pier removal

Pier 6 location shown in Figure 3

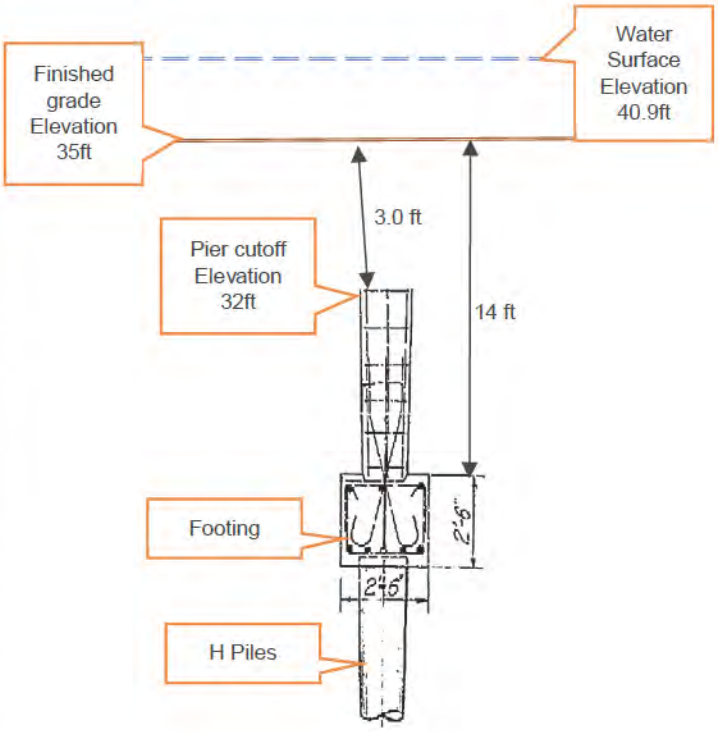
EXISTING CONDITIONS		
Pier number	6	
Approximate Finished ground elevation	38.5	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	10.3	feet/sec
Maximum Water depth based on Q100 flow	2.4	Feet
Scour depth based on Q100 storm	5.0	Feet
Bottom of Existing scour	33.5	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 10.3 ft of flow at 2.4 ft/sec	low scour potential	
Short term scour effects	none- no pier	
Recommended depth of removal 3.0 ft	3	Feet
Will the channel move at this pier location- not likely	Not likely	
	17.5	
After pier removal		
Approximate Finished ground elevation	38.5	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	35.5	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	10.3	Feet
Maximum Water depth based on Q100 flow	2.4	Feet
Future considerations	faster moving water due to small hills in floodplain and the concentration of flow moving towards the main channel. Will not cause any scour or degradation issues after pier removal	



Future view after pier removal

Pier 7 location shown in Figure 3

EXISTING CONDITIONS		
Pier number	7	
Approximate Finished ground elevation	35	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	6.8	feet/sec
Maximum Water depth based on Q100 flow	5.9	Feet
Scour depth based on Q100 storm	4.7	Feet
Bottom of Existing scour	30.3	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 5.9 ft of flow at 6.8 ft/sec is no scour potential	no scour potential	
Short term scour effects	none- no pier	
Recommended depth of removal 3.0 ft	3	Feet
Will the channel move at this pier location- not likely	Not likely	
After pier removal		
Approximate Finished ground elevation	35	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	32	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	6.8	Feet
Maximum Water depth based on Q100 flow	5.9	Feet
Future considerations	Slow moving semi-ponded water will not cause any scour or degradation issues	



Future view after pier removal

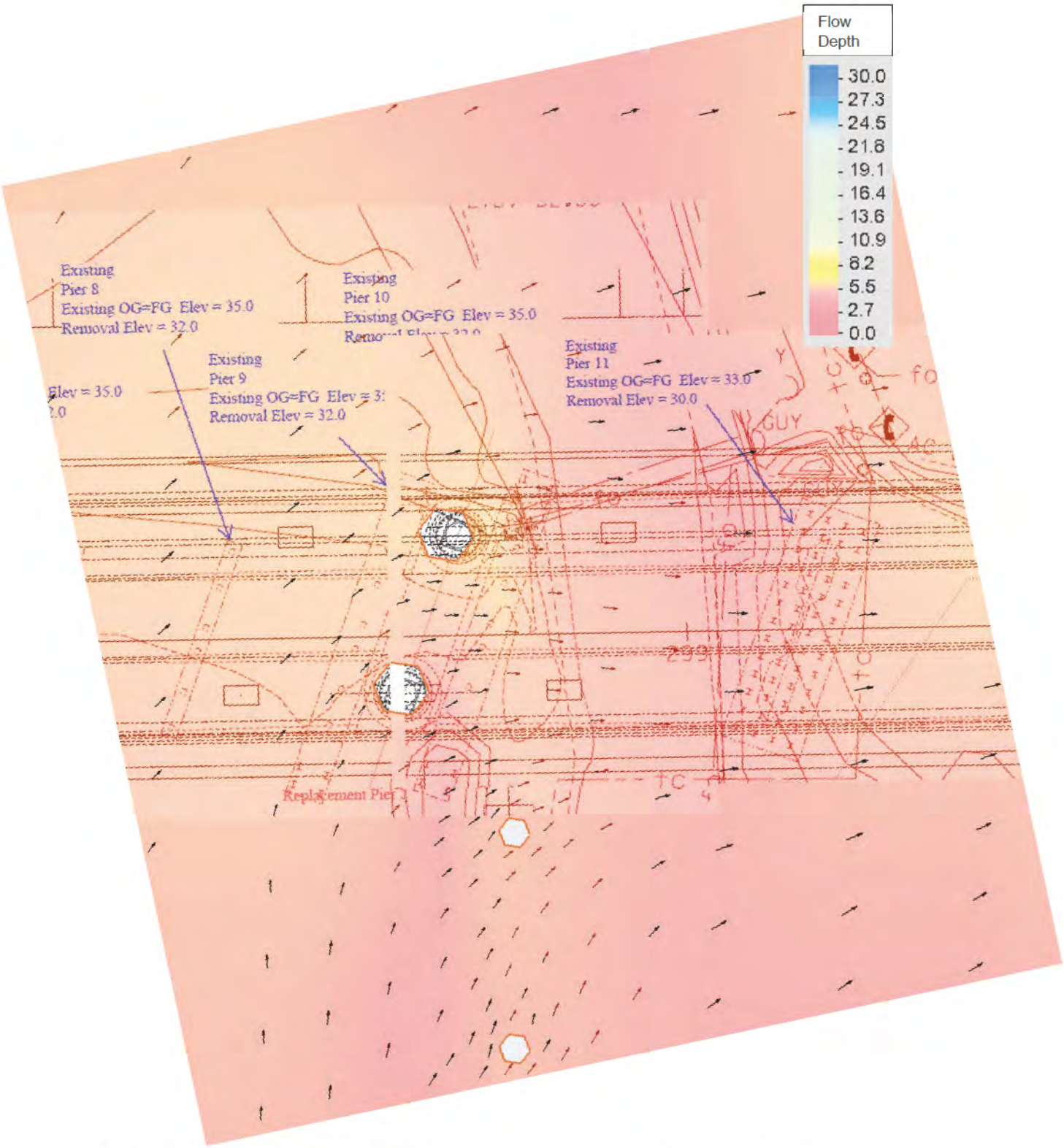
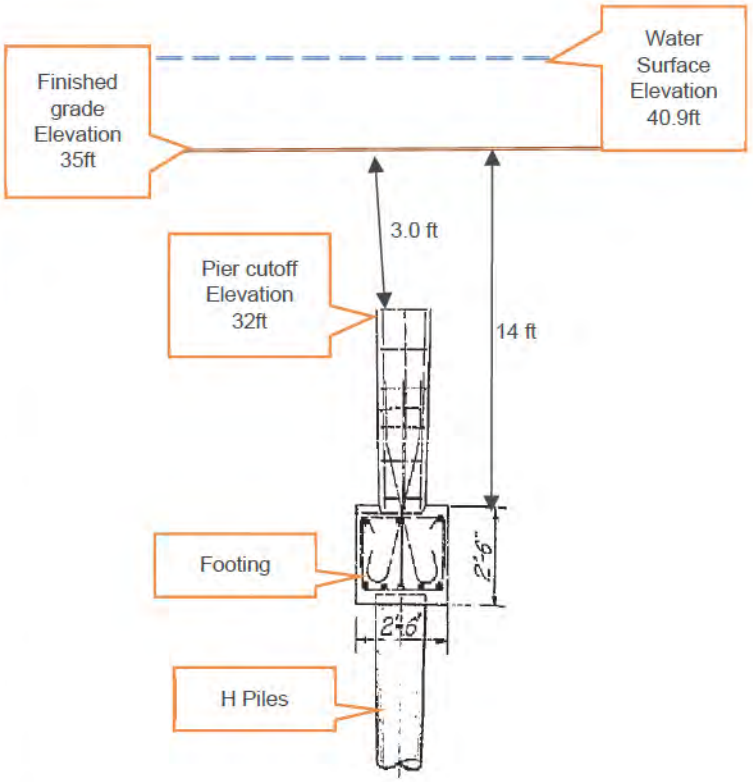


Figure 4: Pier 9- Pier 11 2d Overlay flow depths in relation to existing piers for cutoff considerations

Pier 8 location shown in Figure 4

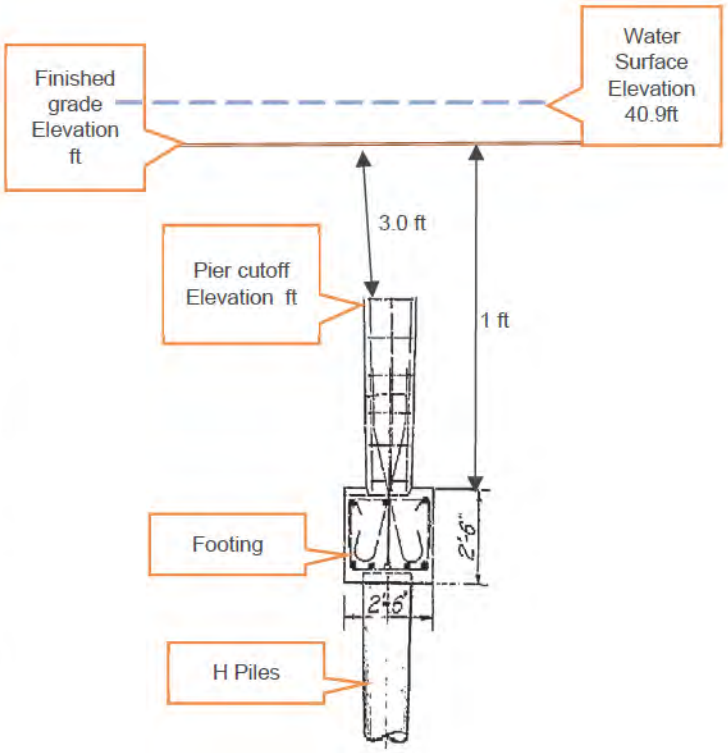
EXISTING CONDITIONS		
Pier number	8	
Approximate Finished ground elevation	35	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	3.7	feet/sec
Maximum Water depth based on Q100 flow	5.9	Feet
Scour depth based on Q100 storm	3.7	Feet
Bottom of Existing scour	31.3	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 5.9ft of flow at 3.7 ft/sec	no scour potential	
Short term scour effects	none- no pier	
Recommended depth of removal 3.0 ft	3	Feet
Will the channel move at this pier location-	Not likely	
After pier removal		
Approximate Finished ground elevation	35	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	32	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	3.7	Feet
Maximum Water depth based on Q100 flow	5.9	Feet
Future considerations	Slow moving semi-ponded water will not cause any scour or degradation issues	



Future view after pier removal

Pier 9 location shown in Figure 4

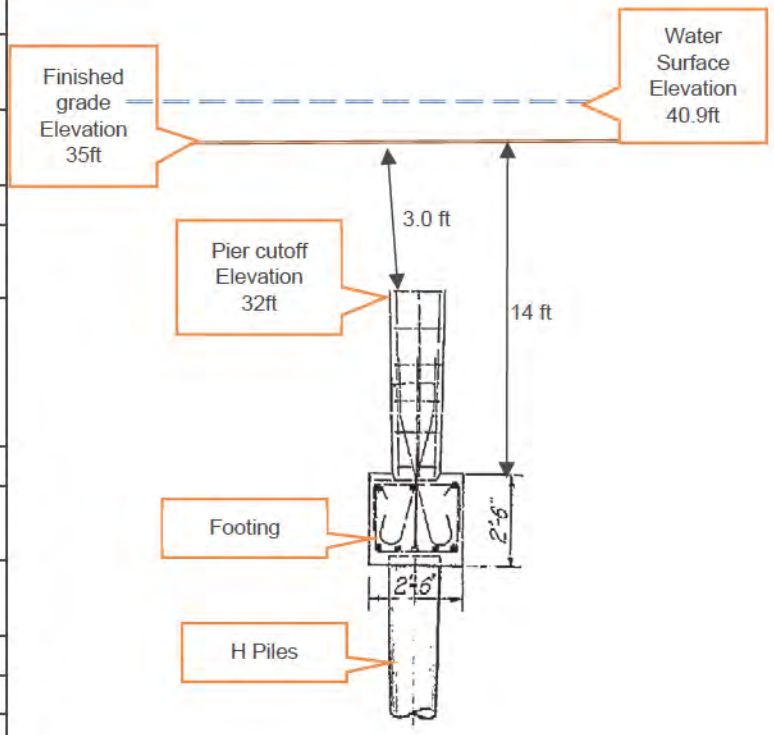
EXISTING CONDITIONS		
Pier number	9	
Approximate Finished ground elevation	35	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	2	feet/sec
Maximum Water depth based on Q100 flow	5.9	Feet
Scour depth based on Q100 storm	2.8	Feet
Bottom of Existing scour	32.2	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 5.9 ft of flow at 2.8 ft/sec is no scour potential	no scour potential	
Short term scour effects	none- no pier	
Recommended depth of removal 3.0 ft	3	Feet
Will the channel move at this pier location- not likely	Not likely	
After pier removal		
Approximate Finished ground elevation	35	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	32	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	2	Feet
Maximum Water depth based on Q100 flow	5.9	Feet
Future considerations	Slow moving ponded water washing over a small mound in the floodplain-no scour or degradation issues	



Future view after pier removal

Pier 10 location shown in Figure 4

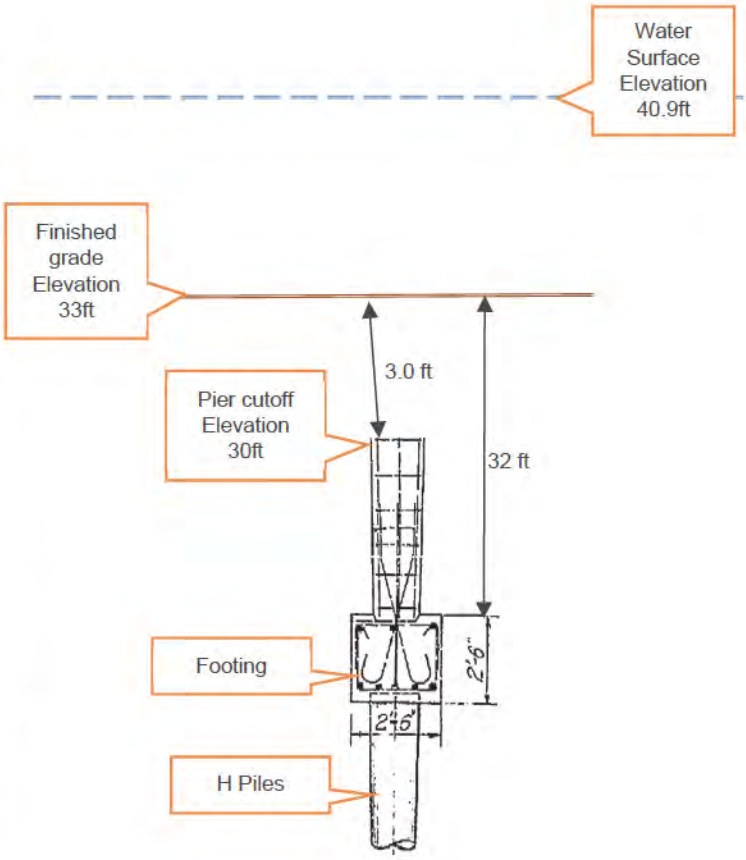
EXISTING CONDITIONS		
Pier number	10	
Approximate Finished ground elevation	35	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	2.7	feet/sec
Maximum Water depth based on Q100 flow	5.9	Feet
Scour depth based on Q100 storm	3.2	Feet
Bottom of Existing scour	31.8	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 5.9 ft of flow at 2.7 ft/sec is no scour potential	no scour potential	
Short term scour effects	none- no pier	
Recommended depth of removal 3.0 ft	3	Feet
Will the channel move at this pier location- not likely	Not likely	
	14	
After pier removal		
Approximate Finished ground elevation	35	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	32	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	2.7	Feet
Maximum Water depth based on Q100 flow	5.9	Feet
Future considerations	Slow moving ponded water washing over a small mound in the floodplain-no scour or degradation issues	



Future view after pier removal

Pier 11 location shown in Figure 4

EXISTING CONDITIONS		
Pier number	11	
Approximate Finished ground elevation	33	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	7.8	feet/sec
Maximum Water depth based on Q100 flow	7.9	Feet
Scour depth based on Q100 storm	6.8	Feet
Bottom of Existing scour	26.2	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 7.9 ft of flow at 2.9 ft/sec is no scour potential	no scour potential	
Short term scour effects	none- no pier	
Recommended depth of removal 3.0 ft	3	Feet
Will the channel move at this pier location- not likely	Since none of the flow sees the pier- no scour- channel would ave to degrade 3 ft- not likely	
	32	
After pier removal		
Approximate Finished ground elevation	33	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	30	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	7.8	Feet
Maximum Water depth based on Q100 flow	7.9	Feet
Future considerations	Moderately faster flow closer to the main channel- no scour issues	



Future view after pier removal

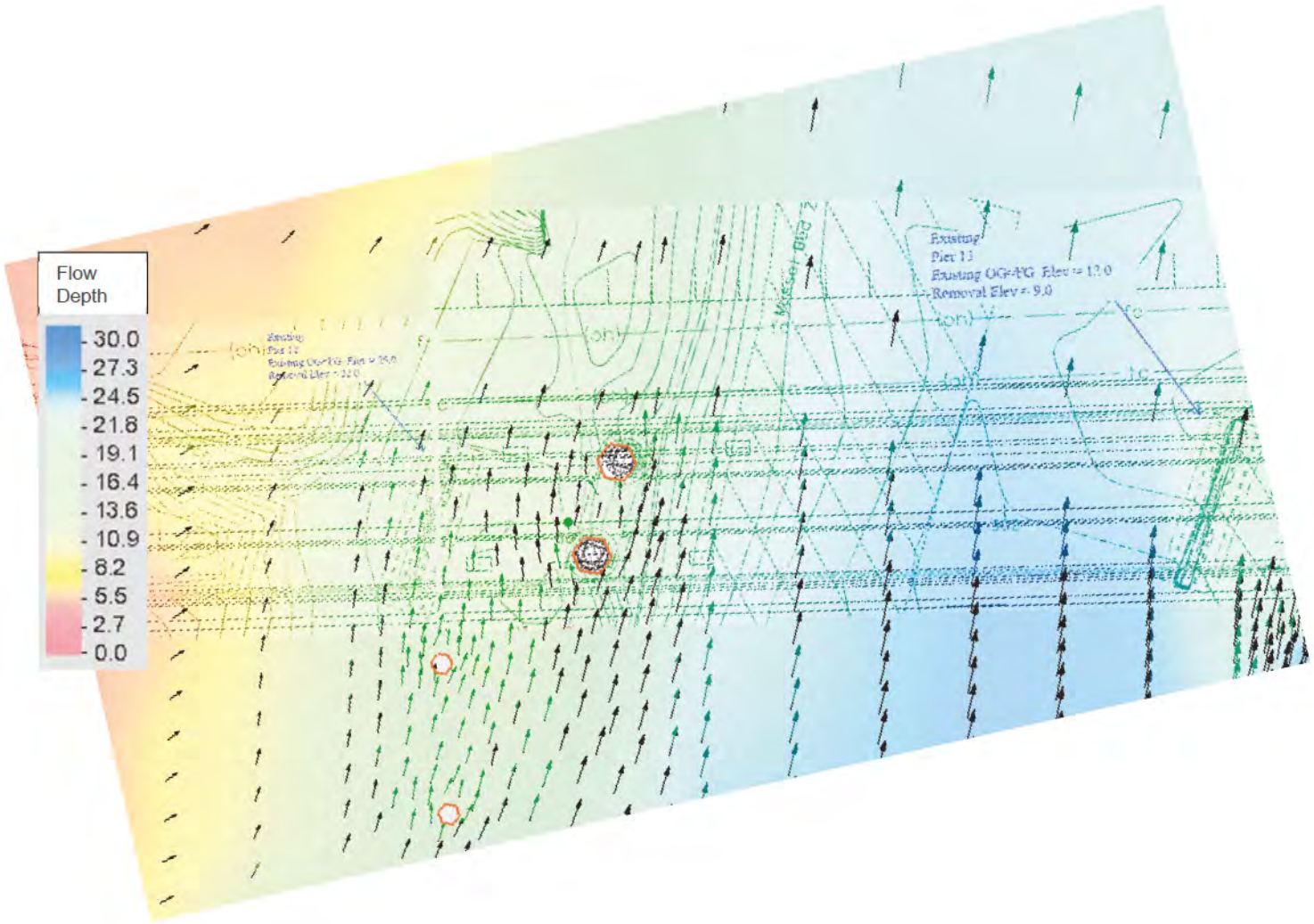
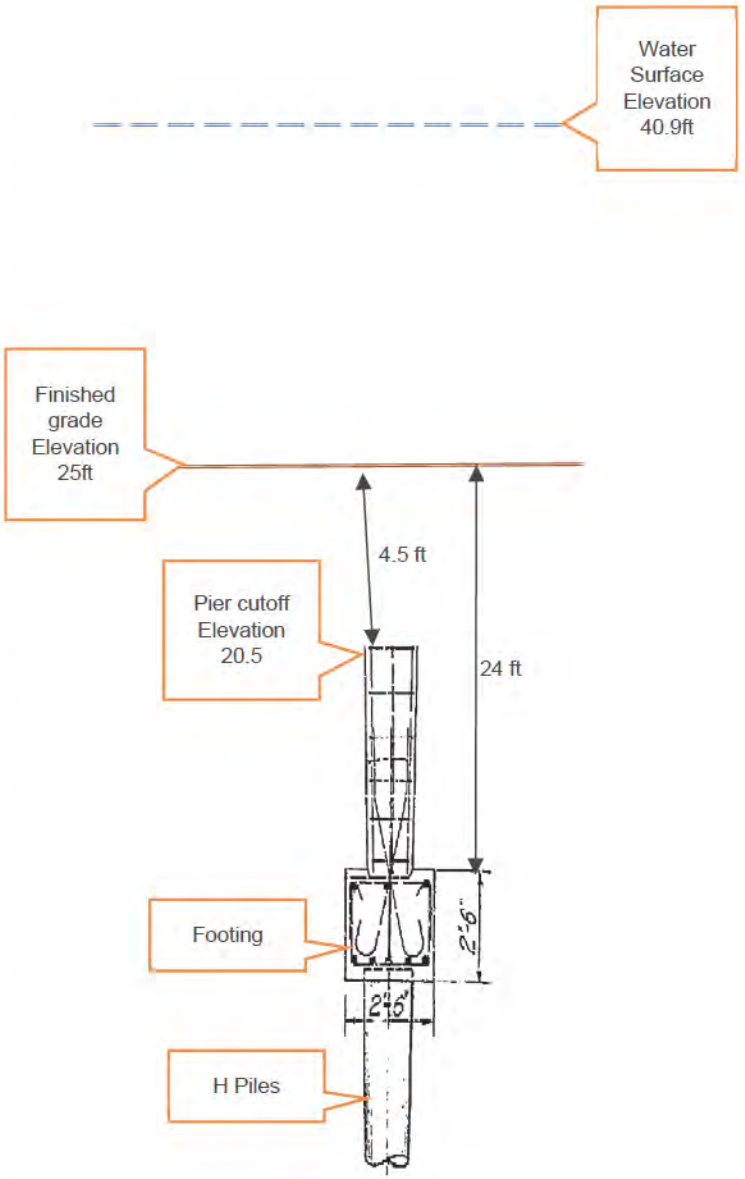


Figure 5: Pier 12- Pier 13 2d Overlay flow depths in relation to existing piers for cutoff considerations

Pier 12 location shown in Figure 5

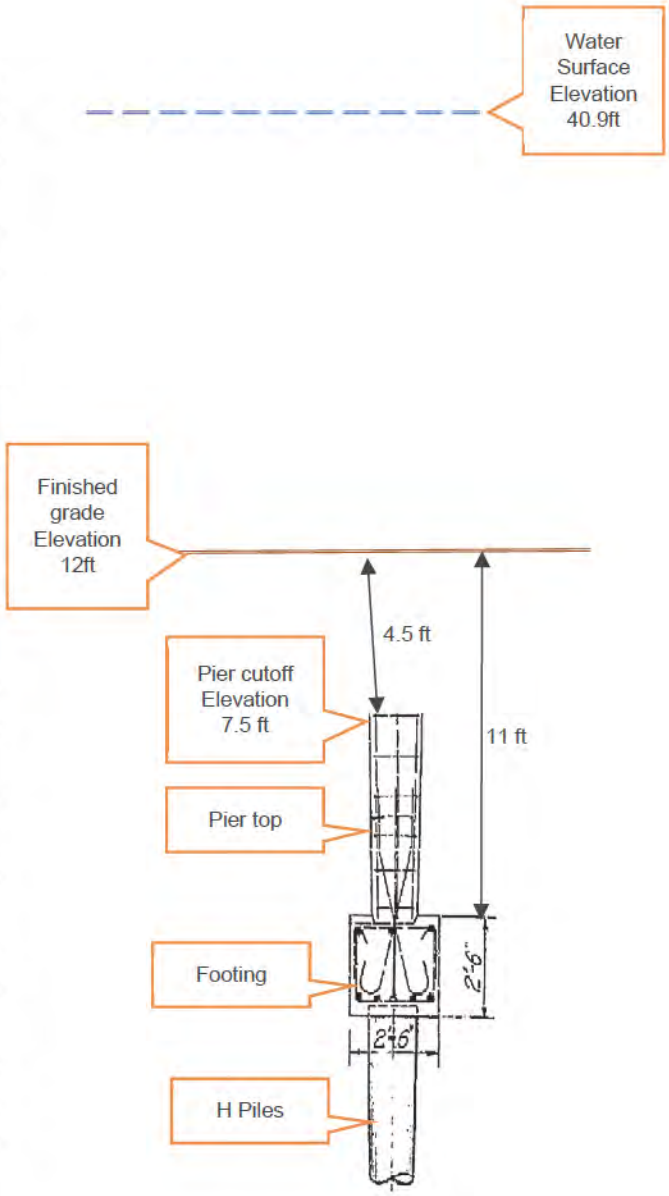
EXISTING CONDITIONS		
Pier number	12	
Approximate Finished ground elevation	25	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	7.7	feet/sec
Maximum Water depth based on Q100 flow	15.9	Feet
Scour depth based on Q100 storm	7.5	Feet
Bottom of Existing scour	17.5	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 15.9 ft of flow at 7.7 ft/sec is	low scour potential-due to aggradation and degradation	
Short term scour effects	none- no pier	
Recommended depth of removal	4.5	Feet
Will the channel move at this pier location- not likely	Not likely has not moved since 1939	
	24	
After pier removal		
Approximate Finished ground elevation	25	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	20	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	7.7	Feet
Maximum Water depth based on Q100 flow	15.9	Feet
Future considerations	Flow in the main channel, both degradation, and aggradation issues-once pier is removed scour will disappear	



Future view after pier removal

Pier 13 location shown in Figure 5
"Scour Critical Pier"

EXISTING CONDITIONS		
Pier number	13	
Approximate Finished ground elevation	12	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	20.6	feet/sec
Maximum Water depth based on Q100 flow	28.9	Feet
Scour depth based on Q100 storm	12.3	Feet
Bottom of Existing scour	-0.3	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 28.9 ft of flow at 20.6 ft/sec is no scour potential	no scour potential	
Short term scour effects	none- no pier	
Recommended depth of removal 3.0 ft	4.5	Feet
Will the channel move at this pier location- not likely	Not likely near thalweg	
*** **Unknown Variations due to mining**		
After pier removal		
Approximate Finished ground elevation	12	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	4.5	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	20.6	Feet
Maximum Water depth based on Q100 flow	28.9	Feet
Future considerations	Flow in the main channel, both degradation and aggradation issues-once pier top is removed scour will disappear	



Future view after pier removal

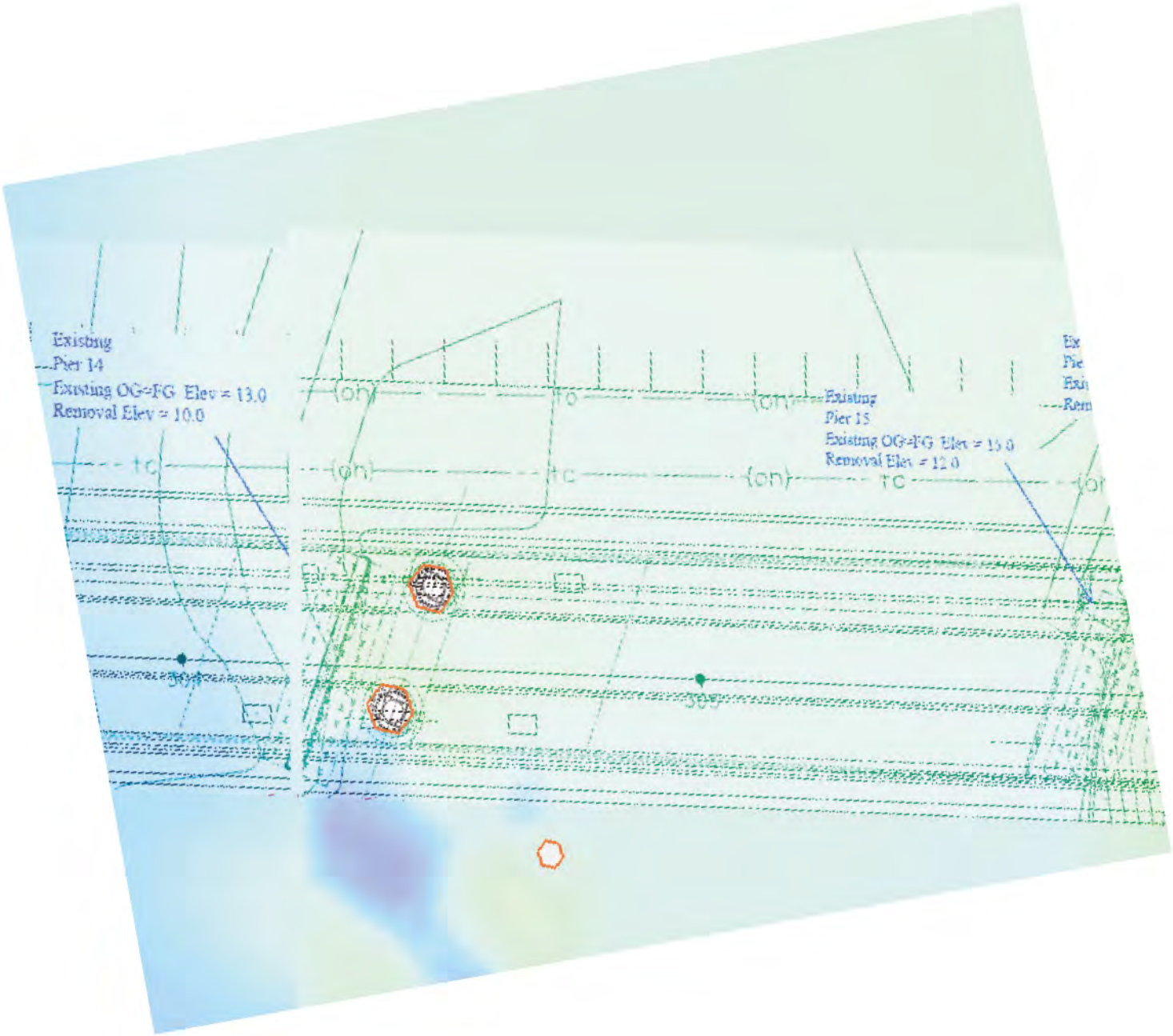
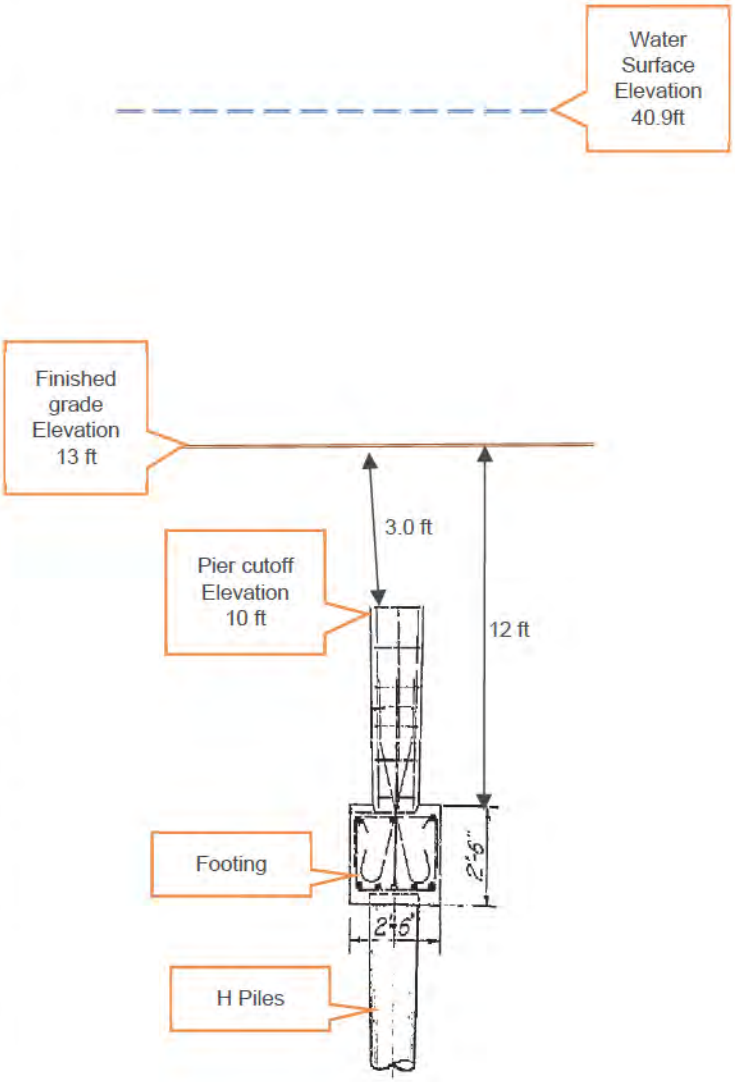


Figure 6: Pier 14- Pier 15 2d Overlay flow depths in relation to existing piers for cutoff considerations

Pier 14 location shown in Figure 6

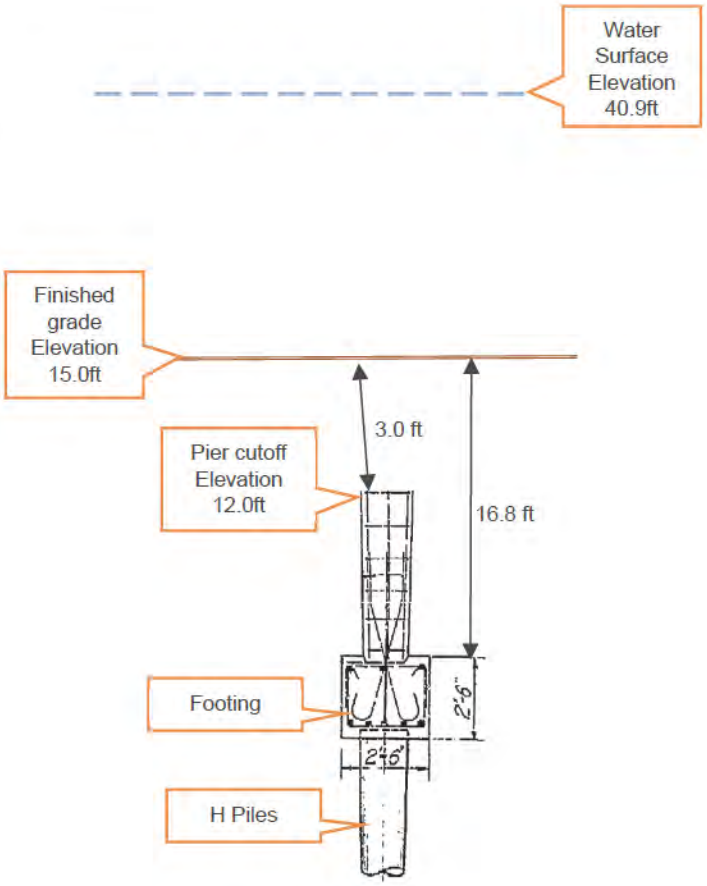
EXISTING CONDITIONS		
Pier number	14	
Approximate Finished ground elevation	13	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	20.6	feet/sec
Maximum Water depth based on Q100 flow	27.9	Feet
Scour depth based on Q100 storm	12.3	Feet
Bottom of Existing scour	0.7	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 27.9 ft of flow at 20.6 ft/sec is no scour potential	low scour potential- no change since 1939 cross section	
Short term scour effects	none- no pier	
Recommended depth of removal 3.0 ft	3	Feet
Will the channel move at this pier location- not likely	no change since 1939 cross section	
After pier removal		
Approximate Finished ground elevation	13	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	10	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	20.6	Feet
Maximum Water depth based on Q100 flow	27.9	Feet
Future considerations	Flow in the main channel, both degradation, and aggradation issues-once pier is removed scour will disappear	



Future view after pier removal

Pier 15 location shown in Figure 6

EXISTING CONDITIONS		
Pier number	15	
Approximate Finished ground elevation	15	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	17	feet/sec
Maximum Water depth based on Q100 flow	25.9	Feet
Scour depth based on Q100 storm	11.2	Feet
Bottom of Existing scour	3.8	Feet
SCOUR POTENTIAL AFTER REMOVAL		
Long term scour potential- at 25.9 ft of flow at 17.0 ft/sec is no scour potential	no scour potential	
Short term scour effects	none- no pier	
Recommended depth of removal 3.0 ft	3	Feet
Will the channel move at this pier location- not likely	Not likely	
After pier removal		
Approximate Finished ground elevation	15	Feet
Water surface elevation	40.9	Feet
Pier cutoff elevation	12	Feet
Local Velocity around removed Pier - the pier is gone no local scour at this location	17	Feet
Maximum Water depth based on Q100 flow	25.9	Feet
Future considerations	Slow-moving ponded water will not cause any scour or degradation issues	



Future view after pier removal

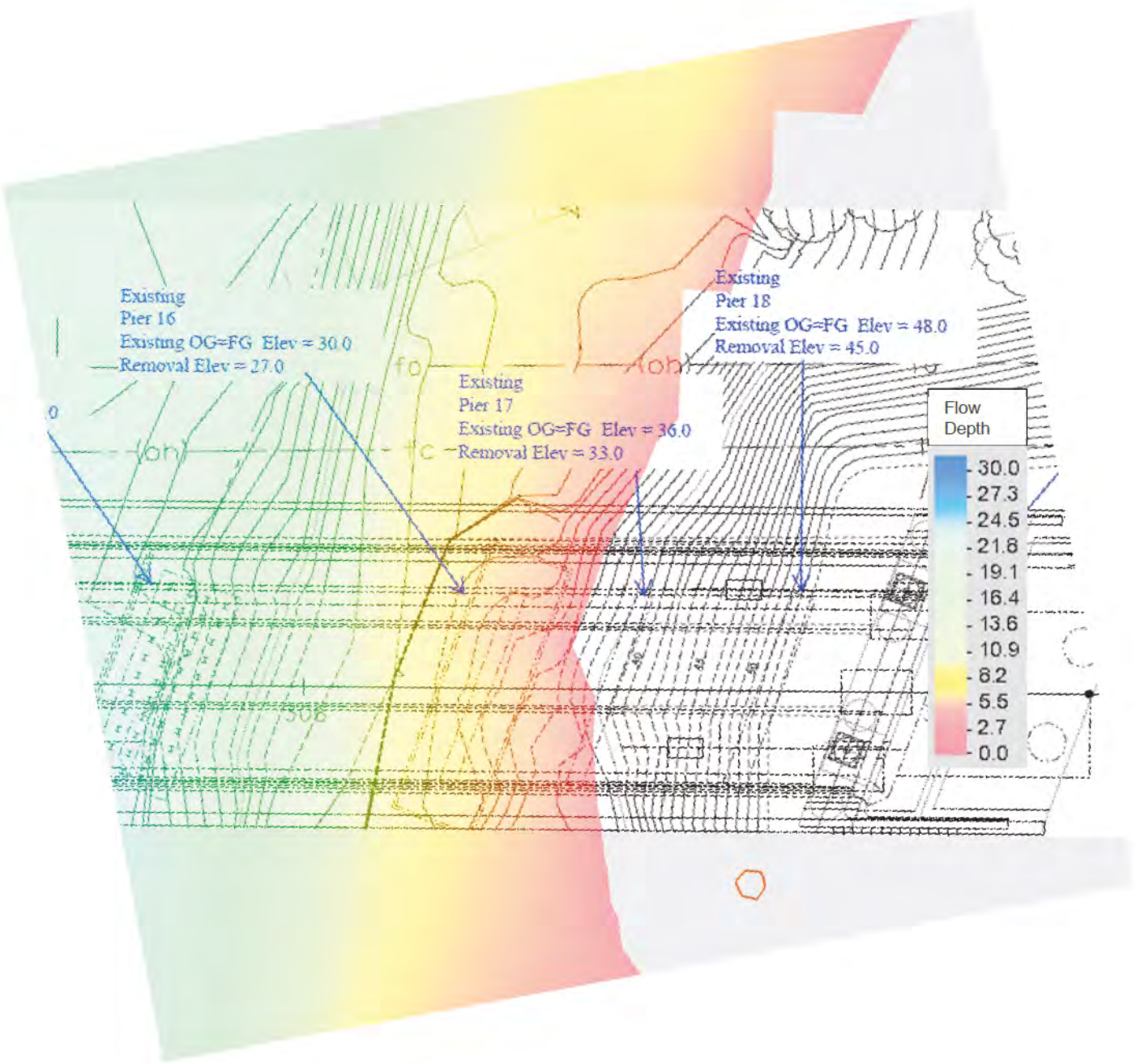
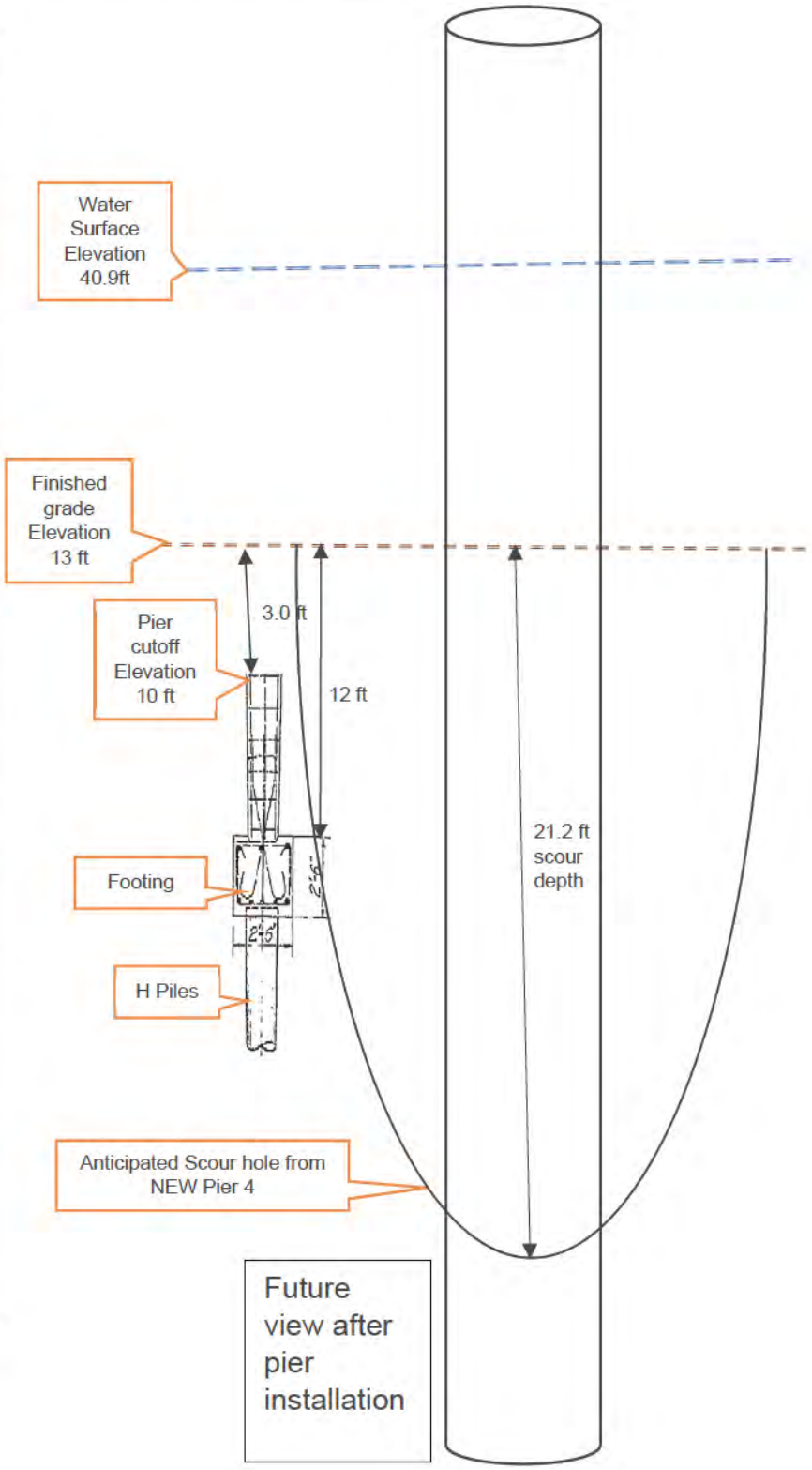


Figure 7: Pier 16- Pier 18 2d Overlay flow depths in relation to existing piers for cutoff considerations

The rest of the piers in this project will be similar to the ones shown in the previous illustrations.

For the new pier closest to the location of the existing piers see illustration for NEW pier 4 which is a round 96 inch(8 foot) column, which is 12 feet from the edge of existing pier 14.

FUTURE CONDITIONS		
Future Pier number	4	
Approximate Finished ground elevation	14	Feet
Water surface elevation	40.9	Feet
Local Velocity around Pier	21	feet/sec
Maximum Water depth based on Q100 flow	26.9	Feet
Scour depth based on Q100 storm	21.2	Feet
Bottom of Future scour	-7.2	Feet
SCOUR POTENTIAL		
Long term scour potential- at 26.9 ft of flow at 21ft/sec	Possible thalweg migration	
Short term scour effects	scour hole that will be cyclic- hole forms at beginning of storm- hole fills as storm recedes	
This pier is 11 ft away from the old pier 14		
There is a possibility scour may reach old pier 14 at fringes of scour hole during the peak of the storm, but will be covered up once peak starts to recede- very low "extra" scour potential due to scour hole. To be conservative entire pier can be removed leaving only the footing.		
Will the channel move at this pier location-	Not likely	
Future considerations	Slow-moving ponded water will not cause any scour or degradation issues	



Hydraulically for scouring the new pier is located " behind" the Existing pier 14 and the scour hole will develop right around the new pier. There is a possibility that the fringes of the new scour hole may intersect the sides of the existing pier, but since the flow is not hitting the pier head on scour effects will be greatly minimized, and should not cause the old existing pier to become exposed.

Generally, once the pier is removed and cut to approximately 3 foot below the planned finished grade the scour problem that the square pier built in the late 1930s will be removed and the areas of the stream where those old existing piers were located will revert to a " regular" stream channel lining- like the rest of the channel that has no manmade appurtenances to obstruct the flow.

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SITE SPECIFIC SEISMIC HAZARD ANALYSIS REPORT SMITH RIVER (DR. FINE) BRIDGE DEL NORTE COUNTY, CALIFORNIA KLEINFELDER PROJECT # 20143390.004A

NOVEMBER 3, 2017

EXHIBIT NO. 19
CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)

SEISMIC HAZARDS ANALYSIS EXCERPTS

A Report Prepared For:

Mr. Xing Zheng
California Department of Transportation

SITE SPECIFIC SEISMIC HAZARD ANALYSIS REPORT
SMITH RIVER (DR. FINE) BRIDGE
DEL NORTE COUNTY, CALIFORNIA

Kleinfelder Project Number 20143390.004A

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November 3, 2017

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SITE-SPECIFIC SEISMIC HAZARD EVALUATION
SMITH RIVER (DR. FINE) BRIDGE
DEL NORTE COUNTY, CALIFORNIA

1 INTRODUCTION

This report presents the results of our site-specific seismic hazard and site response analyses for the Smith River (Dr. Fine) Bridge replacement project in Del Norte County, California. The Smith River (Dr. Fine) Bridge replacement project involves construction of a new 1,000-foot long, four-span box girder bridge with a continuous deck isolated by triple frictional pendulum (TFP) bearings. The bridge will replace an existing bridge supported by two abutments and 17 piers. The bridge is located on Highway 101 in northwest California near Crescent City in an active seismic region. This report reflects current knowledge regarding seismic hazard around the project area. The subsurface soil conditions used in this study were obtained from previous and current geotechnical investigations performed by Caltrans at the project site. A draft version of this report was provided on June 15, 2017. Review comments by Caltrans were provided to us on September 25, 2017 and were resolved on October 19, 2017. Documentation of the review comments and their resolution is provided in Appendix C.

The purpose of this seismic hazard analysis is to develop site-specific ground motion criteria in terms of peak ground accelerations and response spectral accelerations for the subject site by using a seismic source model (proximity to active faults, major historical earthquakes, and regional seismicity) and subsurface soil conditions at the site. The response spectrum is a graphical representation relating the maximum response of a single degree of freedom, elastic damped oscillator with different fundamental periods to dynamic loads. Site-specific spectrum for any given return period represents uniform-risk earthquake ground motions consistent with the seismic source model and the local site response. In addition to free-field spectrum, a kinematic spectrum is also developed. The final ground surface spectrum is developed using the results of site response and kinematic analyses. Since the site is underlain by sloping bedrock with depths to bedrock change significantly across the bridge, a two-dimensional (2D) site response analysis is needed along the longitudinal direction of the bridge. One-dimensional site response analysis in the transverse direction is appropriate for this project. Specifically, our scope of services includes the following:

- Literature review of available geologic and seismic setting of the area and developing a site-specific seismic source model.

- Estimating the shear wave velocity profile for the subsurface using information from soil borings and suspension logging performed by Caltrans.

- Estimating the average shear wave velocity an Elevation of -120 feet, which is the bottom of the site response model.

- Performing site-specific probabilistic seismic hazard analyses (PSHA) to develop Uniform Hazard Spectrum (UHS) at the bottom of the site response model for ground motions having 5% probability of exceedance in 50 years (return period of about 975 years). This is the target "outcrop" spectrum for spectral matching of time histories.

- Selecting seven sets of time histories based on the site conditions, controlling fault magnitude, distance, and mechanism.

- Spectrally matching seed time histories with the target "outcrop" UHS for site response analyses using computer programs DEEPSOIL and QUAD4M.

- Developing an idealized soil profile and associated soil parameters based on the results of field investigations for DEEPSOIL and QUAD4M analyses.

- Perform equivalent linear 1D site response analyses using computer program DEEPSOIL in the transverse direction.

- Perform equivalent-linear 2D site response analyses using computer program QUAD4M in the longitudinal direction.

- Perform kinematic analysis to develop kinematic response spectra at abutments and bents.

- Obtain results from 1D and 2D site response analyses in terms of longitudinal, transverse, and vertical time histories for acceleration, velocity and displacement and their response spectra at 10-foot vertical intervals along the pile/shaft length at each abutment and bent.

- Development of site-specific, uniform-hazard horizontal response spectra at ground surface for the design earthquake for 5 percent damping using the results 1D, 2D and kinematic response.
- Report preparation of the results of the site-specific seismic hazard analyses.

1.1 PROJECT LOCATION

The project site is located in Del Norte County, California. The approximate bridge coordinates used for the seismic hazard analysis are:

Latitude: 40.79336° N
Longitude: 124.18021° W

Figure 1 shows bridge location and location of borings.

Petersen et al. (2008) developed new multisegment ruptures for several California Type-B faults, and implemented four new recurrence models for southern California Type-A faults. In addition Petersen et al. (2008) reduced earthquakes M>=6.5 in smoothed gridded seismicity to 1/3 of the rate to account for earthquakes already modeled on faults, implemented a branch of G-R model with b=0, which is consistent with modeling of several of the large multisegment ruptures on the San Andreas system, and revised slip rates for sections of the San Andreas fault, San Jacinto fault, and nine Type-B faults, and finally revised geometry of faults in northern California.

We have used the Peterson et al. (2008) approach in our analyses which includes both Characteristic and G-R models. A b-value of 0.8 is used for all the faults in California. The most likely a-values were estimated for each seismic source based on the recurrence rates of earthquakes and events per year associated with that seismic source as reported by Petersen et al. (2008) and Cao et al. (2003).

3.5 SEISMIC HAZARD ANALYSIS

Results of shear wave velocity (V_S) measurements and assumed shear wave velocity profile is presented in Figure 5. Purpose of our seismic hazard analysis is to establish target rock spectrum at the bedrock level. Based on the results presented in Figure 5, V_S values are in excess of 8,000 feet/sec (2,500 m/s) at an elevation of -120 feet which corresponds to the bedrock level for our model. However, as can be seen from Figure 5, that there is a lot of scatter in the Vs data and as such using 2,500 m/s in our ground motion hazard analysis may not represent the realistic scenario. In addition, many of the NGA Ground Motion Prediction Equations (GMPE) are limited to maximum V_{S30} values from 1,200 to 1,500 m/s. Based on the uncertainty in the V_S value at the bedrock level, we have used a V_{S30} value of 1,000 m/s to estimate spectral accelerations at the bedrock level.

Probabilistic seismic hazard analyses were used to estimate the peak and spectral ground accelerations for the rock outcrop for ground motions having 5% probability of exceedance in 50 years (return period of about 975 years) as discussed above. This analysis involves the selection of an appropriate predictive relationship to estimate the ground motion parameters, and, through probabilistic methods, determination of peak and spectral accelerations.

6 CONCLUSIONS AND RECOMMENDATIONS

The site is underlain by a matrix of soils, gravel, cobbles, and boulders overlying bedrock. Depth to bedrock at the site varies from more than 150 feet at the south end to tens of feet at the north end. Shear wave velocity (VS) measurement at the site involved suspension logging which resulted in VS measurements with high uncertainty. Because of this uncertainty, we pegged the rock VS to 1,000 m/s. However, a sensitivity analyses of bedrock properties show some increase in rock motion for different VS values. The ground motion was developed for a return period of about 1,000 years as required by Caltrans. However, for some critical bridges in the state, Caltrans has used return period of 1,000 to 2,000 years. In addition, building codes use a return period of about 2,500 years for building designs. For a return period of 2,500 years, the spectrum is about two times the 1,000-year spectrum.

Recent studies by Stewart (2016) have also shown that site response procedures do not capture site amplification beyond the site period and typically result in unconservative values. We estimate that site period for this site is around 0.6-0.7 second. Therefore, our 1-D and 2-D results, in the period range greater than 0.6-0.7 second, are unconservative.

6.1 TIME HISTORIES

Since the site is located in a subduction zone environment which is not well understood in terms of ground motions and due to the greater uncertainty about the shear wave velocity of the subsurface materials, and due to the limitation of site response procedures in amplifying ground motions at longer periods, we believe that a higher return period is more appropriate for the design of the base isolation devices for the new bridge.

Therefore, it has been suggested and we concur that the design of the base isolation devices be adopted with a displacement demand 2 to 3 times greater than the current ground motion criteria for the following reasons:

1. The pendulum bearing should have a sufficient displacement capacity to prevent hitting the bearing edge. This impact loading is highly desirable in the event that the ground motion happens to be much larger.

2. Once the strategy of pendulum bearings is adopted, it would be wise to install a larger diameter than needed such that the design can accommodate the 2,500-year or higher ground motions.

3. It is just an incremental cost to go with larger diameter pendulum bearings but the design is much more robust.

We recommend that for the design of pendulum bearing, time histories may be increased by up to 3 times due to the reasons mentioned above.

6.2 SITE-WIDE DESIGN ARS

At the request of Caltrans, we developed horizontal ground surface response spectra considering the range of results for the various seed time histories and support locations. The purpose of developing such spectra is to facilitate simplified analyses (such as frequency domain response spectrum-type analyses) which require a single response spectrum, and so that a representative response spectrum can be shown on the project plans to concisely portray the design ground motions.

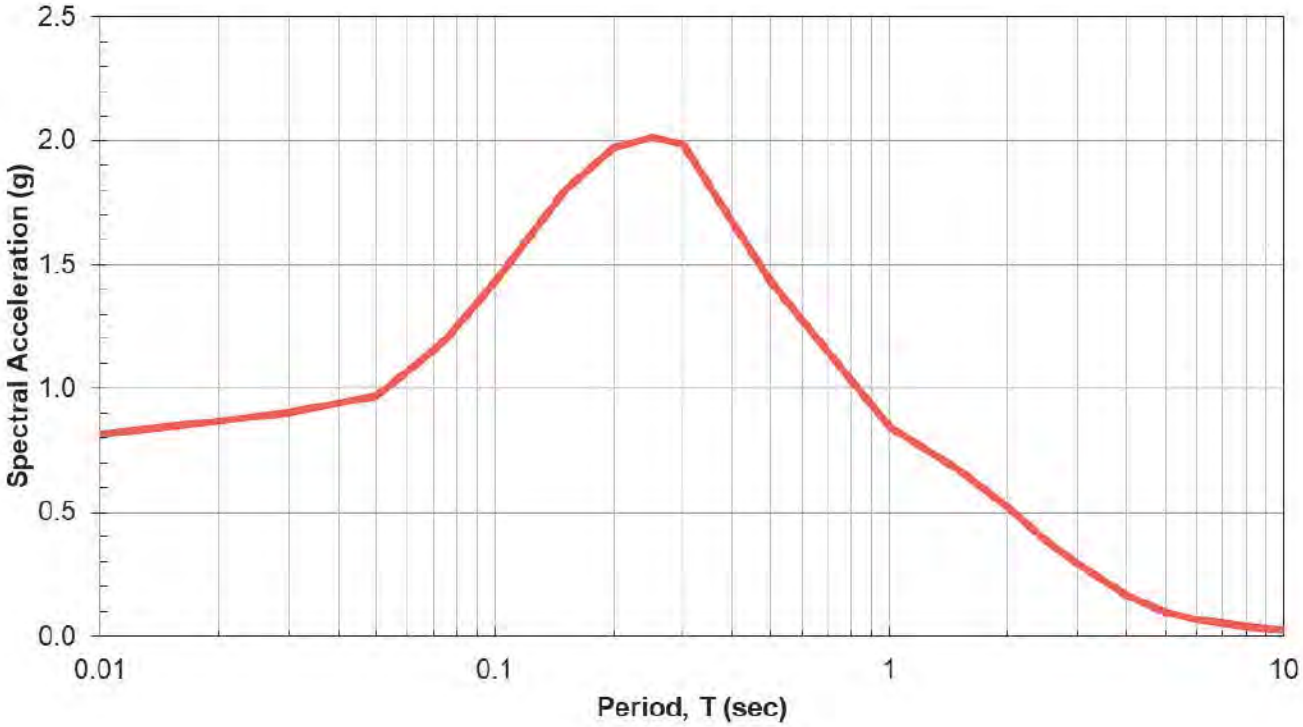
In Figure 28 the gray lines represent the horizontal free field surface spectra calculated for seed time histories and support locations. The colored lines show mean values calculated for each support location. The thick black line is an envelope of the free field mean values, and is considered a conservative representation of the mean free response spectra at the site. A site-wide kinematic spectrum developed by EMI is also presented for reference.

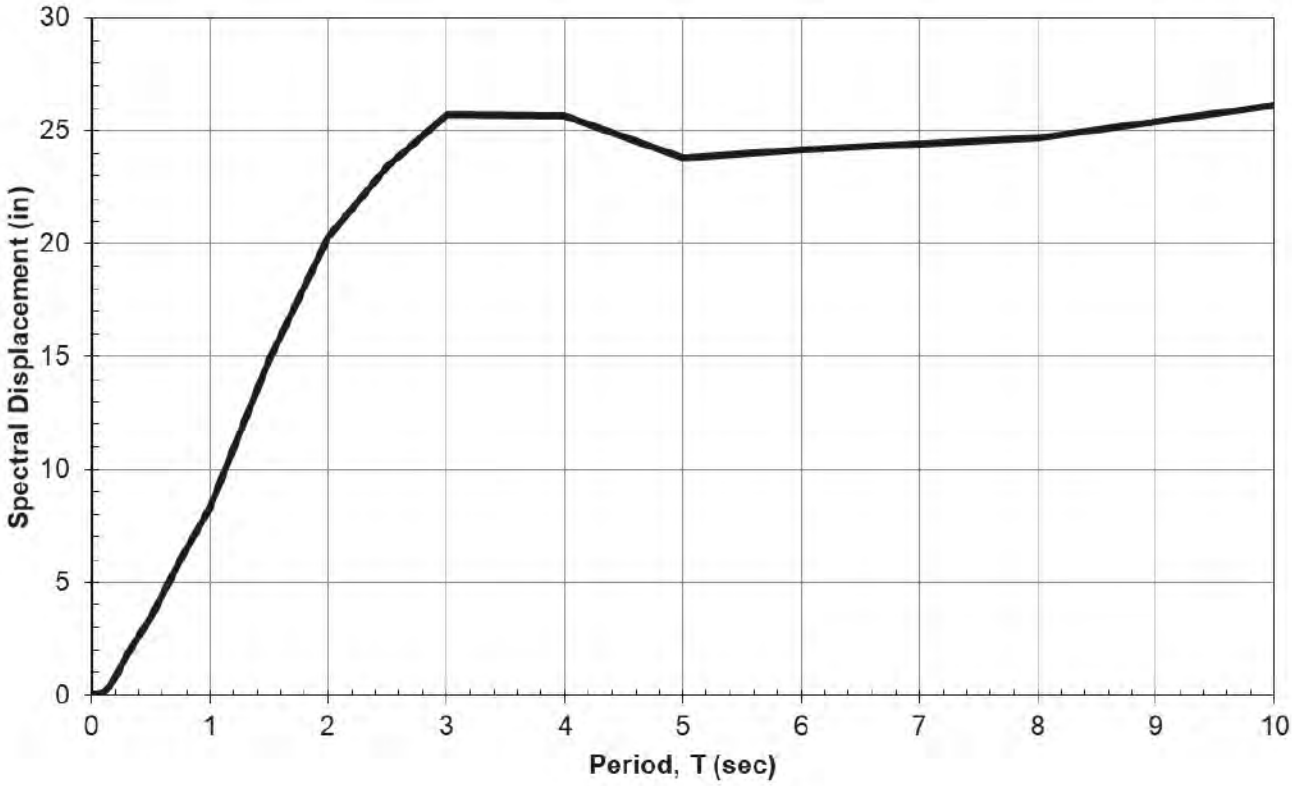
Figure 29 presents all the horizontal free field surface spectra and the thick black dashed line envelopes all of the individual spectra with the exception of a few outlying peaks. The 84th percentile (mean plus 1 standard deviation assuming lognormal distribution) spectra for each support location and a site-wide kinematic spectrum developed by EMI are also shown for reference.

Figure 30 compares the free field mean envelope (FF Mean), the envelope of all the results (FF Envelope) and the EMI kinematic spectra. In addition, surface spectra for 1,000-year and 2,500-year return periods for subsurface conditions around south abutment are also plotted. It

can be seen for our periods of interest, response spectrum for 2,500-year return period is the most conservative.

Based on the above discussions in terms of uncertainties with ground motions and shear wave velocity and due to unconservative results of site response studies at long periods, we believe that the 2,500-years response spectrum should be used as the design ARS for this site. Figure 31 presents our recommended design ARS for this site.





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CHECKED BY	JRG
FILE NAME	i

RECOMMENDED DESIGN ARS CURVES

SMITH RIVER (DR. FINE) BRIDGE
DEL NORTE COUNTY
CALIFORNIA

FIGURE
31

Draft Narrative 4.14.20

Del Norte County Public Access Improvements
Draft Description of Saxton Boat Ramp Improvement Project

Summary
Funds are needed to design, permit, and develop construction bid package for essential improvements to the Saxton boat ramp and fishing facility located on the beautiful Lower Smith River in Del Norte County. The CDFW, as the landowner, will submit the application and will maintain the facility.

Background
The wild and majestic Smith River is located in Northern California. The Smith was named for the explorer Jedediah Smith and its free flowing, emerald-green waters begin in the High Siskiyou Mountains and flows to meet the ocean less than three miles from the Oregon border. The Smith is a wild and scenic river along most of its course and no gas-powered crafts are allowed on this river. The Smith River is the largest river system in California that flows freely along its entire course.

Fishing, boating, and swimming all require good public access. There are a significant number of great access points for swimming, but there are fewer options which include boat ramps, essential is you are putting a drift boat in the water – a popular boat choice for salmon fishermen.

The Lower Smith River is a Class I to Class II rated stream from where the South Fork of the Smith joins the Main stem. This means that the entire stretch can be navigated by drift boats with little difficulty. The entire reach flows through the redwood forest making it a unique, world class experience.

Public access on the main stem of the Smith includes: The Forks River Access and Boat ramp, owned and operated by the USDA Forest Service as part of the Smith National Recreation Area; Jed Smith State Park, owned and operate by California State Parks includes both a Day Use Area and a small boat ramp which provides watercraft access; Ruby Van Deventer County Park includes both a campground and boat access; and the Saxton Boat ramp (more). Many trips originate at the Forks and Ruby Van Deventer boat ramps and most of these trips use the Saxton boat ramp as a take-out point.

- The Forks facility has a boat ramp, vault toilets and parking spaces for 8 single vehicles, 12 vehicles with boat trailers, and two handicap vehicles with boat trailers. It is a popular drift boat and kayak inflatable put in location. Summer the facility is used as parking for swimming at nearby river beaches; the rainy season it is used for fishing and boat launching.

- Ruby van Deventer County Park has watercraft access and a small campground sandwiched into a thin strip of second-growth redwoods between busy Highway 197 and the Smith River, five miles north of Jedediah Smith Redwoods. River access is via a road leads down to the gravel riverbank, and during the day, most visitors come to fish in the river. Ruby is both a popular take-out and put-in for this section of the Smith River

- The Saxton facility is located on the lower portion of the Smith River, just downstream of the Dr. Fine Bridge and is owned by the State of California and managed by CDFW. Del Norte County maintained the site until 2010, when the MOU between the County and the State lapsed. This river access point has parking and a restroom that operates some of the year.

Fishing on the Smith River
The Smith River supports four species of anadromous fish: fall-run chinook salmon, coho salmon, winter-run steelhead trout and coastal cutthroat trout. Smaller number of spring-run chinook and summer-run steelhead are also in the system. Historically, salmon were very abundant in the rivers and streams of the Pacific Northwest and the Smith River was no exception. From 1890 to 1930 a cannery operated at the mouth of the Smith until in-river commercial fishing was closed. During its heyday cannery records documented the processing of 50 tons of salmon per year.

The Smith Steelhead are among the largest in the state and the river holds the record at 27 plus pounds. The best time to fish for Steelhead at the Smith is during the Winter season from December to April. Steelhead begin to enter the system behind the November/December Fall run of Salmon. The Smith is also home to cutthroat trout.

The Smith River as possessing the only healthy winter steelhead population in California. 2015 Smith River sonar counts estimate the number of migrating adult Chinook Salmon to vary per season between 15,000 and 25,000 and Steelhead Trout to be between 10,000 and 15,000.

Boat ramp use is estimated to be between 800 to 1,000 boats or trips per year, which can be broken down between seasons of intense use and lighter use.

The Need for the Project
The site needs modernization, refurbishment, and additional visitor improvements to increase public access, safety, and comfort. The grant guidelines for public access funding suggest that additional visitor facilities are encouraged and include kayak put-in elements, interpretive panels and bird watching shelters. In lieu of bird watching facilities, we might consider adding a large kiosk element (covered area for picnics) to extend seasonal use.

Proposed site improvements are described below:

I. SAXTON FISHING ACCESS AND BOAT RAMP - CDFW

Overview
The launch area is located on the main stem of the Smith River downstream of Highway 101. (insert coordinates or physical address.)

Describe importance to tourism and fishing industry here. (more here)

Snapshot of Proposed Improvements:
- Modernize and extend boat ramp
- Rehabilitate/redesign parking lot, new striping
- ADA parking
- Replace location signs
- Rehabilitate Restrooms
- Refuse/recycling bins
- Add interpretative panels, may include a map of river and estuary, info on fisheries and wildlife to be seen, cultural
- Incorporate DIDSON/sonar fish counting station into site.
- Add picnic tables/benches, covered kiosk

Kayak put-in element
Covered kiosk
Trail
Bird observation shelter
Lighting
Fencing

Resolve issue with well & enclaved parcel with residence

Current Conditions and User Statistics
The facility has parking that can accommodate a significant number of boats and trailers. (how many) The parking area surface is asphalt and in poor condition. There is a restroom that is open on an intermittent basis.

Parking Lot: The current parking lot is approximately .75 acres and has 28 drive-through spaces.

The facility is commonly used as a take-out for boats that enter the river at the Forest Service Forks boat ramp. A second popular river entry spot is the Ruby Van Deventer County Park, which has 40 parking spots and additional parking on the gravel bar.

Ramp: (include more detailed description of ramp width and indicate if major engineering changes are needed.) Describe how it operates in low, medium, and high flows. Make case for the extension of boat ramp.

Visitor amenities: There are old picnic tables (and what else). It would be desirable to install a functioning restroom, covered kiosk, small craft access and what else?

Visitation Statistics
High season is and users are ___~4,000_____. Low season is and users are _____~1,600_____

Site History
Originally was owned by Saxton, Schindler and Ulrich and was acquired by the State of California in 1963 for the purpose of providing boat access to the main stem Smith for drift boat fishermen. (Describe historical use)

Next Steps
Prepare questions for WCB Project Manager
- How important is the description of user days?
- What is best strategy for budgeting a planning grant
- May we see an example of a successful application?
- How do we estimate engineering planning?
- Are their "boat ramp planning" firms?
- How do we estimate the cost of securing permits?
- What mapping needs are there?
- Secure letters of support?

Secure photos.

POSSIBLE BUDGET ELEMENTS

Park Planner 25K
Mapping 8K
Engineering 40K?
Permitting 15K
Construction bid package 5K?
What is missing

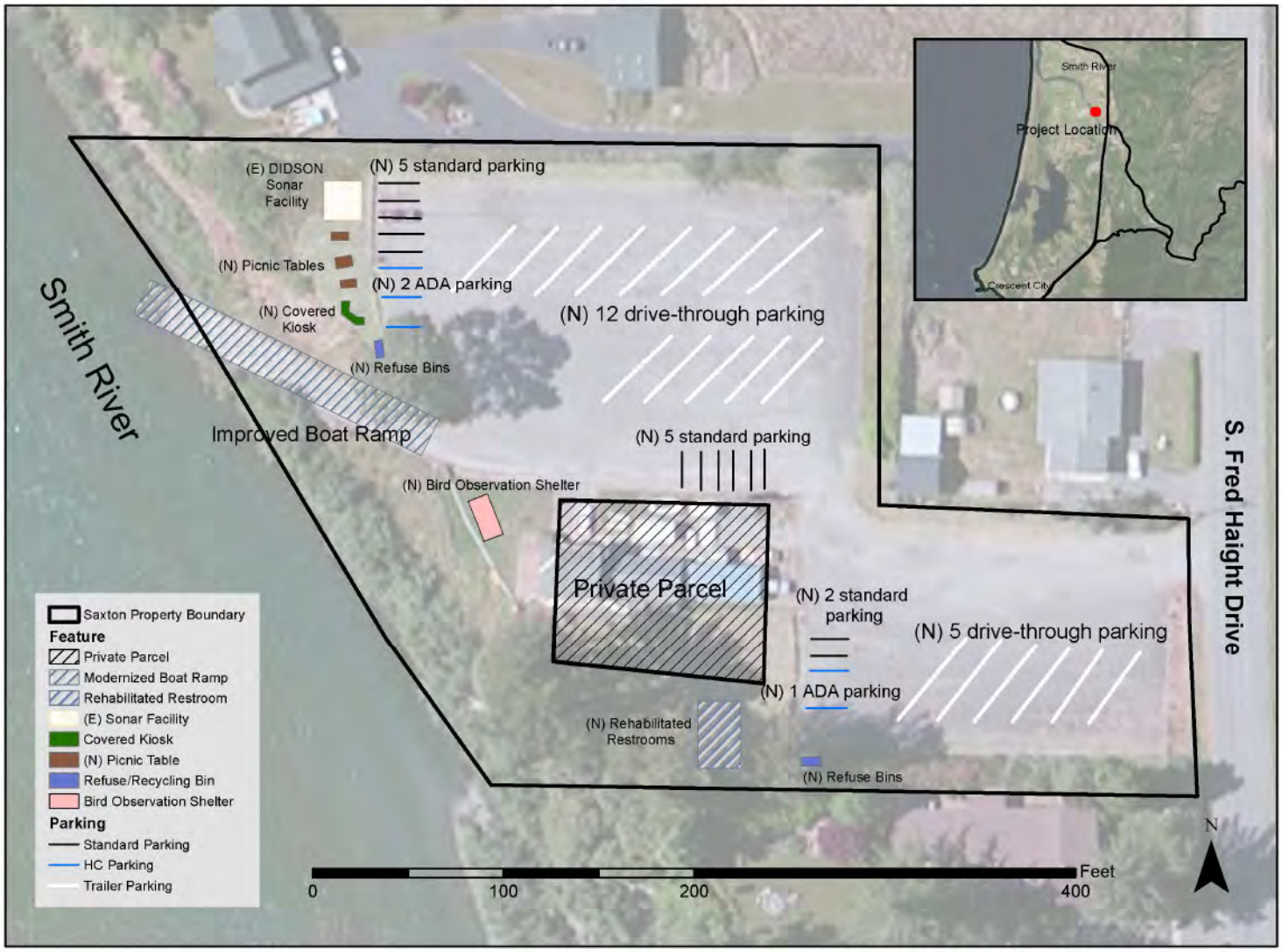
The grant application should include money to cover permitting needs

An engineering firm would be needed to prepare conceptual and eventual final engineered plans needed to construct the improvements. Depending on the qualifications of the firm, some elements may need to be subcontracted as a boat ramp design would require specialized experience. The project site is located partially within the County's retained permitting authority under the certified Local Coastal Program and partially retained jurisdiction by the Coastal Commission. In most cases, we tend to support the idea of a consolidated permit, like what is planned for the Dr. Fine Bridge replacement, whereby only **one** permit is issued to save time. In this case, the County would support deferring permit authority to the Commission. The project is subject to CEQA and I believe the Department would be the lead agency. The environmental review would obviously need to be completed prior to submitting the Coastal Development Permit application to the Commission. Key components of the environmental review would include a wetland delineation, biological assessment, cultural and tribal cultural resource study, possible traffic impact analysis (SB 743 compliance), and hydrology study (floodplain impacts etc.). I am sure that an Environmental Scientist in CDFW's Habitat Conservation Program would be able to pin everything needed down. Other permits likely needed if the boat ramp is a component of the project include: CDFW 1600 Permit - Lake and Streambed Alteration Agreement, US ACE Department of Army Permit (Section 404 Compliance), and North Coast Regional Water Quality Control Board - Water Quality Certification (Section 401 Compliance).

---

https://www.statesmanjournal.com/story/travel/outdoors/2019/05/01/experience-beauty-redwood-national-park-smith-river/3619430002/

Saxton Boat Ramp - Smith River



State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

TRANSPORTATION MANAGEMENT PLAN UPDATE #2

To: KIDIANGA TAHIUNZA
Project Engineer
North Region Design M15

Date: September 18, 2020
File: DN-101 PM 35.8/36.5
EA: 01-436401
EFIS: 01 0000 0193
Dr. Fine Bridge Replacement

From: SMR
SHERI RODRIGUEZ, Chief
District 1 Office of Traffic Operations

Project Information

Location:	In Del Norte County near Crescent City, from 0.2 miles north to 0.9 miles north of the Smith River Overflow Bridge.	
Type of Work:	Bridge replacement	
Anticipated Traffic Control:	Reversing traffic control w/ flagging Temporary 2-lane detour bridge Shoulder closure	
Estimated Maximum Delay:	15 minutes during reversing traffic control Minimal during detour and shoulder closures	
Peak Hour Traffic Volumes:	900 vph	
Work Zone Speed Reduction:	Assume required; complete form CEM-1301	
Closure During Night Hours:	Possible	
Number of Working Days:	783 days per Project Report	
Target PS&E Date:	November 3, 2020	
Target RTL Date:	April 19, 2021	
District Traffic Mgr/ TMP Mgr:	Sheri Rodriguez	(707) 498-5252
TMP Contact:	Paul Hailey	(707) 496-1562

Anticipated Traffic Impacts

Significant traffic impacts are not anticipated provided the following recommendations and requirements are incorporated into the project. In conformance with Deputy Directive-60, District Lane Closure Review Committee approval is not required for projects with anticipated traffic delay less than 30 min.

EXHIBIT NO. 21
CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)

TRANSPORTATION MANAGEMENT PLAN

Lane Requirements

- See Chart no. 1 "Conventional Highway Lane Requirements" for lane closure hour restrictions.

- The full width of the traveled way must be open for use by public traffic for the following Special Days:

Event	Event Date	Special Days
Del Norte County Fair	First Weekend in August	Thursday through Sunday
Sea Cruise	First Weekend in October	Friday through Sunday

The contractor must verify the actual dates for these Special Events. See Chart no. 2 "Lane Closure Restrictions for Designated Holidays and Special Days" for lane closure day restrictions.

Public Notice

- At least 15 days before implementing proposed changes in vertical clearances, horizontal clearances (including shoulders) or both, notify the Transportation Permits Branch so annual permit holders can be notified of restrictions.

- The District Public Information Office, (707) 445-6444, must be contacted two weeks in advance of the start of construction.

- Each closure must be entered in the Lane Closure System (LCS; https://lcs-new2.dot.ca.gov).

  - To access the LCS you will need an account. Contact Jeannette Candalot at (707) 445-7807 to obtain an account.

  - Every Monday by noon, submit a schedule of planned closures for the next week period.

  - Closures must be statused daily. Status closures before the first advance warning sign is placed (1097) and after the last advance warning sign is picked up (1098) or if cancelled (1022). Statusing can be accomplished through:

Status With	Day	Time	URL/Contact Number
LCS Web Page	Any	Any	https://lcs-new2.dot.ca.gov
LCS Mobile Web Page	Any	Any	https://lcsmobile.dot.ca.gov
District 1 Dispatch	Monday-Friday	6:30am-6:30pm	(707) 441-5747

District 3 Dispatch	Monday-Friday	6:30pm-6:30am	(916) 859-7900
District 3 Dispatch	Saturday and Sunday	Any	(916) 859-7900

- The Resident Engineer must provide information to residents and businesses before and during project work that may represent a negative impact on commerce and travel surrounding the zone of construction.

Bicyclist Accommodation

- This section of Route 101 is part of the Pacific Coast Bike Route. Bicyclists must be accommodated through the work zone.
  - Bicycle regulatory or warning signs must be used to alert road users of potential motorist/bicyclist conflicts.
  - During reversing traffic control using flaggers, bicyclists must be instructed to join the vehicle queue.
  - During reversing traffic control using a temporary signal system:
    a) The R4-11 sign (BICYCLES MAY USE FULL LANE) must be placed prior to the temporary signal system zone.
    b) All-red timing must be adjusted to facilitate bicyclists through the lane closure or
    c) Install a push button that adjusts all-red timing to facilitate bicyclists through the lane closure

Traffic Control

- One reversing traffic control lane closure is allowed within the project limits.
- Reversing traffic control must be in conformance with the Caltrans Revised Standard Plan RSP T13 "TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS".
  - A minimum of 12 ft of paved roadway must be open for use by public traffic.
  - The maximum length of a reversing traffic control lane closure is 2,000 ft.
  - Do not place portable transverse rumble strip arrays or C45(CA) signs for one-way-reversing traffic control. Use advance warning sign distance "C" between signs W20-1 and W20-4.

- Work that occurs outside of a traffic lane but within 6 ft of the edge of traveled way on a 2-lane facility must require a shoulder closure. Close the shoulder area with cones or portable delineators. Place the cones or delineators on a taper in advance of work, parked vehicles or equipment and along the edge of the traveled way at 25 ft intervals to a point not less than 25 ft past the last vehicle or piece of equipment. Use at least 9 cones or delineators for the taper. Use a W20-1, "Road Work Ahead," W21-5b, "Right/Left Shoulder Closed Ahead," or C24(CA), "Shoulder Work Ahead," sign mounted on a crashworthy, portable sign support with flags. The sign must be at least 48 by 48 inches in size.

- Keep the full width of the traveled way open to traffic when no active construction activities are occurring in the traveled way or within 6 ft of the traveled way.

- Portable Changeable Message Signs (PCMSs) are required to notify the public of closures related to this project.

  - Place PCMSs at the locations shown and in advance of the 1st warning sign for each:

    a) Stationary lane closure

    b) Shoulder closure

    c) Speed reduction zone

  - Start displaying the message on the PCMS 15 minutes before closing the lane.

  - The minimum height of the PCMS must be 7 ft.

- Access to businesses, side roads and residences must be maintained at all times. When work or traffic queues extend through an intersection, additional traffic control will be required at the intersection.

- The Project Engineer (PE) should assess the need for COZEEP. The PE should consult with the Area Construction Engineer (ACE) or Resident Engineer (RE) to determine which specific construction operations should use COZEEP and use that as the basis for funding. (CA DOT Construction Manual Section 2-215C).

Project Coordination

The following table lists projects that are anticipated having closures within this project's work limits and must be added to section 5-1.20A of the 2018 Standard Specifications:

Contract No.	Co-Rte-PM	Location	Type of Work	Est. Delay
01-0J1804	DN-101-36.06	Smith River Overflow Bridge	Deck/Joint Seal Repair	10 minutes
01-488024	DN-199-1.1/2.6	Near Crescent City	Culvert Rehab (w/ potential detour to US 101)	10 minutes

TMP Elements Needed for Cost Estimate

Item Code	Item	Unit	Minimum Unit Price
066062	COZEEP Contract	LS	$140/officer-hr[1]
066063	Traffic Management Plan – Public Information	LS	$2,000
066070	Maintain Traffic	LS	0.75% of Traffic Items[2]
120100	Traffic Control System	LS	$1,000/working day
120100	Traffic Control System-Flagging Component	LS	$3,800/shift[3]
120100	Traffic Control System-Additional Flagger Component[4]	LS	$100/flagger-hr
128652	Portable Changeable Message Sign	LS	$20,000
128601	Temporary Signal System[5]	LS	$150,000

[1]Consult Construction for number of hours
[2]Traffic Items include 12XXXX items; round unit price to the nearest thousand.
[3]Shift assumes 4 total flaggers at 10 hrs/da. This amount should be included in the Traffic Control System item.
[4]Additional flaggers may be needed at side roads/driveways. This amount should be included in the Traffic Control System item.
[5]Consult Traffic Electrical for further details

Contingency Plan

The contractor must prepare a contingency plan for reopening closures to public traffic. The Contractor must submit the contingency plan for a given operation to the Engineer within one working day of the Engineer's request. Contingencies for unanticipated delays, emergencies, etc. must be coordinated between the RE and the Contractor.

SMR/pwh

CC: LMorales
DMelendrez
JMcGee
Traffic Safety
PIO

Chart no. 1
Conventional Highway Lane Requirements

County: Del Norte	Route/Direction: 101 NB/SB	PM: 35.8/36.5

Closure limits:

From hour to hour	24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Mondays through Thursdays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
Fridays	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R										
Saturdays																									
Sundays																					R	R	R	R	R

Legend:

R	Provide at least one 12 ft through traffic lane for use by both directions of travel (Reversing Control). The maximum closure length is 2,000 ft.
	No lane and/or shoulder closures allowed.

REMARKS:

Chart no. 2
Lane Closure Restrictions for Designated Holidays and Special Days

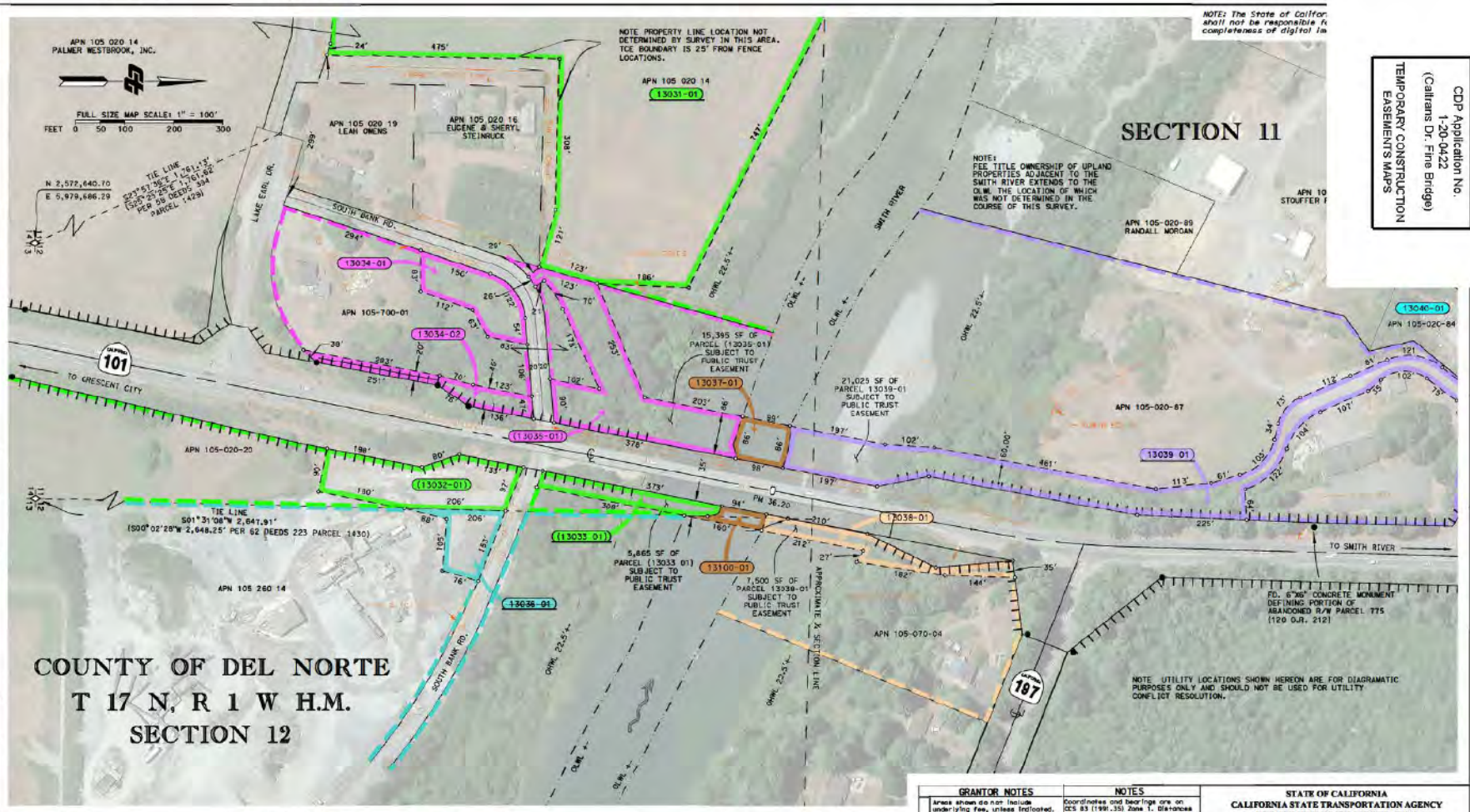
Thu	Fri	Sat	Sun	Mon	Tues	Wed	Thu	Fri	Sat	Sun
xx	**H** xx	xx	xx							
	SD xx									
	xx	**H** xx	xx							
		SD xx								
	xx	xx	**H** xx	xx						
			SD xx							
	xx	xx	xx	**H** xx						
				xx	**H** xx					
					xx	**H** xx				
						xx	**H** xx	xx	xx	xx
							SD xx			

Legend:

	Refer to lane requirement charts
xx	Except during the use of a temp. signal system, the full width of the traveled way must be open for use by traffic.
H	Designated Holiday
SD	Special Day

FOR STATE HIGHWAY MAPBOOK

EXHIBIT NO. 22
CDP Application No. 1-20-0422 (Caltrans Dr. Fine Bridge)
TEMPORARY CONSTRUCTION EASEMENTS MAPS



PARCEL#	TITLE CODE ①	GRANTOR	AREAS (square feet or as noted) TOTAL	REQUIRED	[UF] EXCESS	[UF] REMAINDER	REMARKS	RECORDATION TYPE ②	DATE	DOC.# ③
13034-01	TCE	JAYTUK D. STEINRUCK	221,760	21,080						
13034-02	TCE			13,470						
(13035-01)	TCE			55,940						
13031-01	TCE	PALMER WESTBROOK, INC.	LARGE	835,375						
(13032-01)	TCE	PALMER WESTBROOK, INC.	LARGE	37,845						
(13033-01)	TCE		LARGE	19,845			DOES NOT INCLUDE AREAS SUBJECT TO PUBLIC TRUST EASEMENT			
13036-01	TCE	EAGLE SKY RENTALS	LARGE	14,115			PARCEL RE-CERTIFIED			
13037-01	TCE	STATE LANDS COMMISSION	LARGE	9,235			DOES NOT INCLUDE AREAS SUBJECT TO PUBLIC TRUST EASEMENT			
13038-01	TCE	TONY & ERIKA QUICK	104,200	18,975						
13039-01	TCE	CALMERY CHAPEL OF THE REDWOODS	397,280	87,890			PARCEL LINES ADJUSTED 5/5/2020			
13100-01	TCE	STATE LANDS COMMISSION	LARGE	3,745			AREAS SUBJECT TO PUBLIC TRUST EASEMENT			

GRANTOR NOTES
Areas shown do not include underlying fee, unless indicated.
Ac acres
Indicates Underlying Fee (UF) Area
Indicates Indeterminate UF
TITLE CODES:
A Access Rights Only
F Fee
E Easement (Ease)
TCE Temp Construction Ease
T=Other Temp Ease (see Remarks)
O=Other (see Remarks)
TYPE:
GD=Grant deed
ED=Easement Deed
QC Quitclaim
OD Director's deed
DE Director's easement deed
DA Director's quitclaim deed
FOC Final Order of Condemnation
HE Highway easement deed
REL Relinquishment
VAC Vacation
JUA Joint use agreement
CCUA=Consent to common use agreement
Document or Instrument number

NOTES
Coordinates and bearings are on CCS 83 (1991.35) Zone 1. Distances and scattering are grid distances. Divide by 1.0000628 to obtain ground distances.
All distances are in feet unless otherwise noted.

LEGEND
Access Prohibited
Access Superseded
Existing R/W Superseded
OH Overhead Utility Lines
OHWL Ordinary High Water Line
OLWL Ordinary Low Water Line
Indicates Found Monument as noted
Indicates calculated point. (Does not imply monument set)
Title to State
Required for Others

STATE OF CALIFORNIA
CALIFORNIA STATE TRANSPORTATION AGENCY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY APPRAISAL MAP

DN 101 PM 35.7 - 36.5

FOR PREVIOUS R/W INFORMATION SEE MAP(S)0710 & 0711

TO DESIGN: EA(s)1A3640 FA#:
DRAFTED BY:JNC CHECKED BY:CRJ

DISTRICT	COUNTY	ROUTE	SHEET PM	SHEET NO.	TOTAL SHEETS
01	DN	101	36.2	2	3

PROJECT ID:0100000193

CDP Application No. 1-20-0422 (Caltrans Dr. Fine Bridge)

TRANSPORTATION MANAGEMENT PLAN

R/W PROJECT SURVEYOR: J. CONDON PLS 7335			
REVISIONS	DATE	BY	
AMEND TIES UPSTREAM	1/26/2020	J. CONDON PLS 7335	
OFFSET 13031-01 FROM FENCE	2/11/2020	J. CONDON PLS 7335	
AMEND TIES	4/15/2020	J. CONDON PLS 7335	
AMEND PARCEL 13034-02	8/11/2020	J. CONDON PLS 7335	

43640 APPR MAP 20200811 RE 13034-02.dwg
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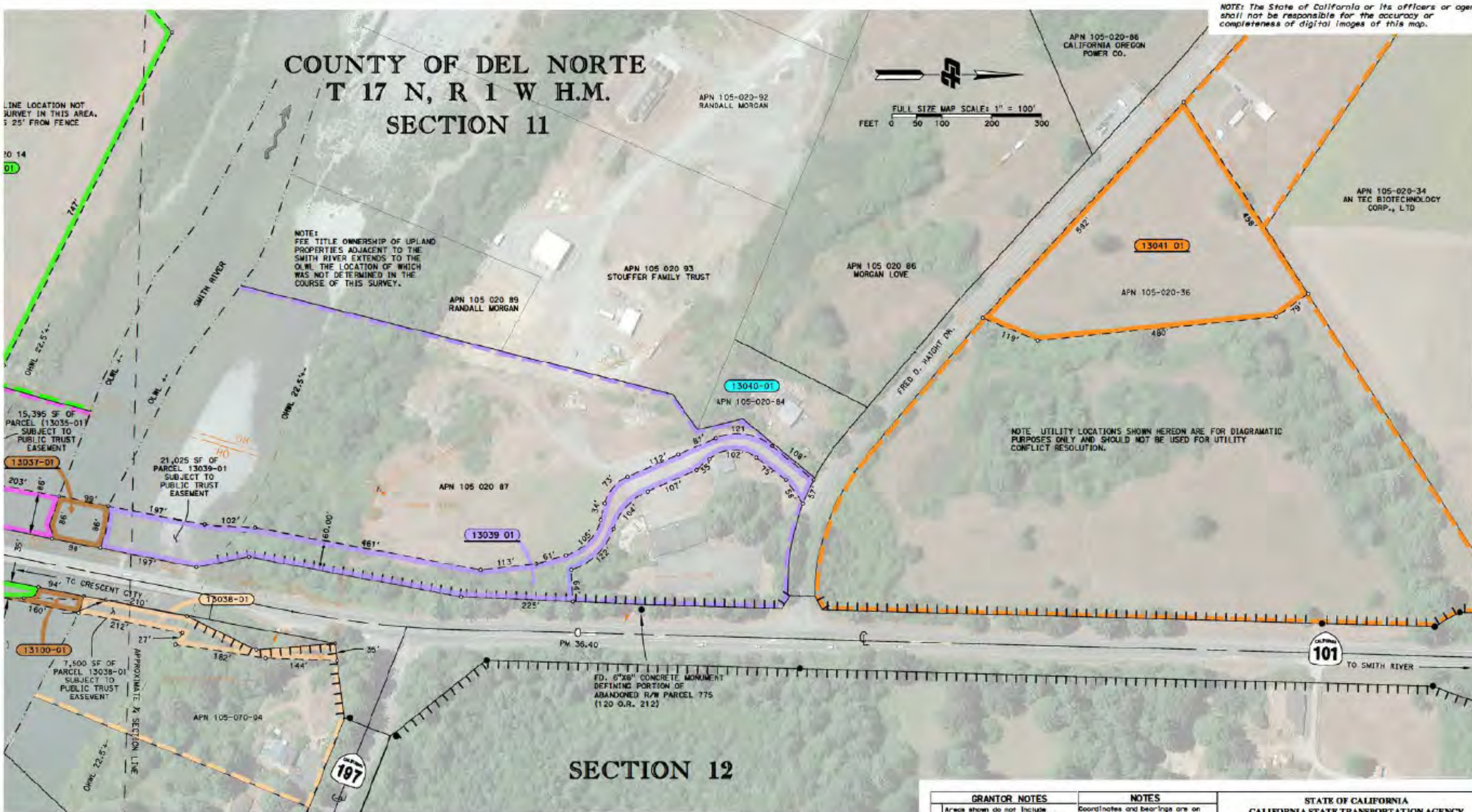
FOR STATE HIGHWAY MAPBOOK



PARCEL#	TITLE CODE ①	GRANTOR	AREAS (square feet or as noted) TOTAL	REQUIRED [UF]	EXCESS [UF]	REMAINDER	REMARKS	RECORDATION TYPE ②	DATE	DOC.# ③
13037-01	TCE	STATE LANDS COMMISSION	LARGE	5,205			DOES NOT INCLUDE AREAS SUBJECT TO PUBLIC TRUST EASEMENT			
13038-01	TCE	TONY & ERIKA QUICK	104,200	16,975						
13039-01	TCE	CALVERY CHAPEL OF THE REDWOODS	397,280	87,890			PROPERTY LINES ADJUSTED 5/5/2020			
13040-01	TCE	ERIC & KIMBERLY LOVE	76,580	0			PROPERTY LINES ADJUSTED 5/5/2020 - NO TCE NEEDED			
13041-01	TCE	DENNIS JAMES HOLT	818,270	158,540						
13100-01	TCE	STATE LANDS COMMISSION	LARGE	3,745			DOES NOT INCLUDE AREAS SUBJECT TO PUBLIC TRUST EASEMENT			

GRANTOR NOTES

Areas shown do not include underlying fee, unless indicated.
Ac acres
[ ] Indicates Underlying Fee (UF) Area
[[ ]] Indicates Indeterminate UF
① TITLE CODES:
A Access Rights Only
F Fee
E Easement (Ease)
TCE=Temp Construction Ease
T=Other Temp Ease (see Remarks)
O=Other (see Remarks)
② TYPE:
GD Grant deed
ED=Easement deed
QC=Quitclaim
DD Director's deed
DE Director's easement deed
DK Director's quitclaim deed
FOC=Final Order of Condemnation
HE=Highway easement deed
REL Relinquishment
VAC Vacation
JUA Joint use agreement
CCUA=Consent to common use agreement
③ Document or Instrument number

NOTES

Coordinates and bearings are on CCS 83 (1991.35) Zone 1. Distances and stationing are grid distances. Divide by 1.0000628 to obtain ground distances.
All distances are in feet unless otherwise noted.

LEGEND

Access Prohibited
Access Superseded
Existing R/W Superseded
OH Overhead Utility Lines
OHWL Ordinary High Water Line
OLWL Ordinary Low Water Line
● Indicates Found Monument as noted
○ Indicates calculated point. (Does not imply monument set)
Title to State
Required for Others

STATE OF CALIFORNIA
CALIFORNIA STATE TRANSPORTATION AGENCY
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY APPRAISAL MAP

DN 101 PM 35.7 - 36.5

FOR PREVIOUS R/W INFORMATION SEE MAP(S)0710 & 0711

TO DESIGN: EA(s)#43640 FA#:
DRAFTED BY:JWC CHECKED BY:CRJ

DISTRICT	COUNTY	ROUTE	SHEET PM	SHEET NO.	TOTAL SHEETS
01	DN	101	36.4	3	3

PROJECT ID: 0100000193

R/W PROJECT SURVEYOR: J. COHOON PLS 7335

DATE	REVISIONS	BY
1/28/2020	AMEND TCE'S UPSTREAM	J. COHOON PLS 7335
2/11/2020	OFFSET 13031-01 FROM FENCES	J. COHOON PLS 7335
5/6/2020	AMEND LINEWORK PCL 13039	J. COHOON PLS 7335
6/11/2020	AMEND PARCEL 13034-02	J. COHOON PLS 7335

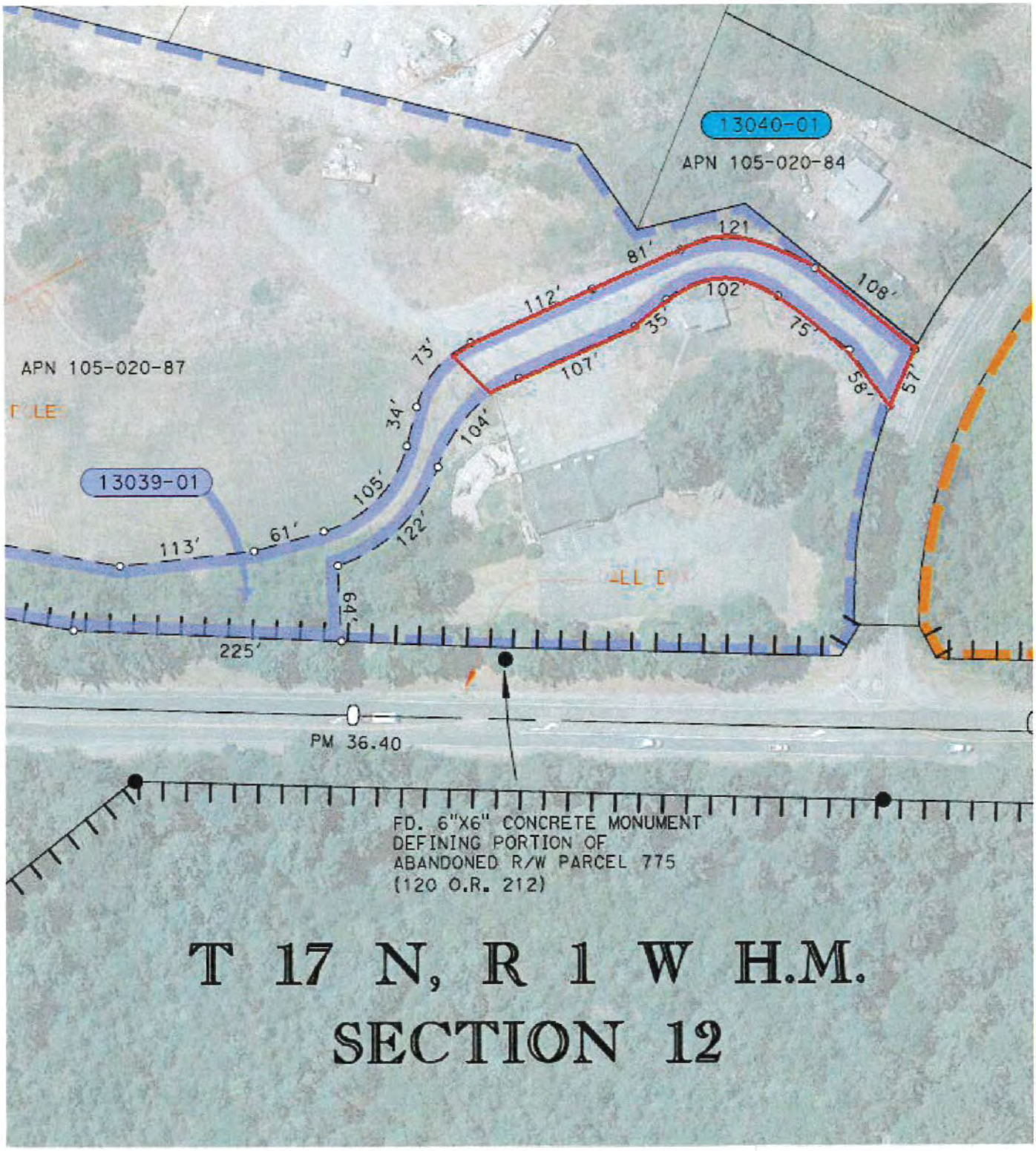

13040-01
APN 105-020-84
APN 105-020-87
13039-01
121
81'
112'
102'
108'
73'
35'
75'
107'
58'
57'
34'
104'
105'
61'
113'
122'
64'
225'
PM 36.40
FD. 6"X6" CONCRETE MONUMENT
DEFINING PORTION OF
ABANDONED R/W PARCEL 775
(120 O.R. 212)
T 17 N, R 1 W H.M.
SECTION 12

Exhibit B

DEPARTMENT OF TRANSPORTATION

NORTH REGION ENVIRONMENTAL
P.O. BOX 3700
EUREKA, CA 95502-3700
707) 445-6417
www.dot.ca.gov
TTY 711

Making Conservation a California Way of Life.

EXHIBIT NO. 23
CDP Application No. 1-20-0422 (Caltrans Dr. Fine Bridge)
PERMIT CONSOLIDATION CORRESPONDENCE

July 21, 2020

Tamara Gedik
Coastal Program Analyst
California Coastal Commission
1385 Eighth Street, Suite 130
Arcata, CA 95521

Re: Authorization to process a consolidated Coastal Development Permit for the Dr. Fine Bridge Replacement, Del Norte County

Dear Tamara Gedik:

This letter serves as a formal request by the California Department of Transportation (Caltrans) to the California Coastal Commission (CCC) to process a consolidated Coastal Development Permit (CDP) for the Smith River Bridge Replacement (Caltrans Bridge #01-0020), known as the Dr. Ernest Fine Memorial Bridge (referred to as the Dr. Fine Bridge hereinafter .

The project is on U.S. Highway 101 U.S. 101) immediately north of the community of Fort Dick and approximately 10 miles north of Crescent City in Del Norte County, California. The total length of the proposed project is 0.7 mile, from the Smith River Overflow Bridge (Caltrans Bridge #01-0046) at Post Mile (PM) 35.8 to Fred D. Haight Drive at PM 36.5. The purpose of the proposed project is to replace the existing Dr. Fine Bridge which would improve safety, connectivity, and reliability of the bridge for hikers, bikers, travelers, commuters, and freight carriers. The project is needed to address several critical issues associated with the existing bridge, originally constructed in 1940, including steel degradation, scour, not seismically up to standard, and functionally obsolete. The bridge would be replaced with a structure that meets current material, geometric, scour, and seismic design standards.

Caltrans authorizes a "consolidated permit review" and Del Norte County has requested a consolidated CDP to streamline the permitting process by allowing all components of the Bridge Replacement to be reviewed and approved within one CDP. If you have further questions or need additional information, please contact me at rachelle.estrada@dot.ca.gov or at (707) 445-6417.

Sincerely,

Rachelle Estrada

Rachelle Estrada
Associate Environmental Planner
North Region Environmental, Caltrans District 1

Attachment: 1. Del Norte County consolidation letter to Caltrans

COUNTY OF DEL NORTE

COMMUNITY DEVELOPMENT DEPARTMENT
981 H STREET, SUITE 110
CRESCENT CITY, CA 95531
FAX – (707) 465-0340

Planning	Engineering &Surveying	Roads	Building Inspection	Environmental Health	Code Enforcement
(707) 464-7254	(707) 464-7229	(707) 464-7238	(707) 464-7253	(707) 465-0426	(707) 464-7254

July 13, 2020

Rachelle Estrada, Associate Environmental Planner
California Department of Transportation, District 1
PO Box 3700
Eureka, CA 95502-3700

Re: Coastal Development Permit Consolidation – Dr. Fine Memorial Bridge Replacement

Dear Ms. Estrada,

Thank you for your request for a consolidated permit review for this project. Under Section 21.50.040 of the Del Norte County Coastal Zoning Code, the California Coastal Commission retains coastal permit jurisdiction for projects undertaken on any tidelands, submerged lands, or on public trust lands lying within the Coastal Zone. Based on mapping included in your July 8, 2020 letter, the proposed project is located within the County's permit jurisdiction for Coastal Development Permits as well as the permitting jurisdiction of the California Coastal Commission. Previous coastal permits have been consolidated for Phase 2A and 2B of the geotechnical investigations at the Dr. Fine Bridge in 2014 and for the latest geotechnical drilling in 2019.

In accordance with Board of Supervisors Resolution No. 2008-072, I am requesting from the Coastal Commission a consolidated Coastal Development Permit process, assigning for the Dr. Fine Memorial Bridge Replacement, the limited jurisdiction of the County of Del Norte, to the California Coastal Commission in order to assist the California Department of Transportation by reducing the duplicative permitting process that would otherwise be required to receive a Coastal Development Permit from both the County and the State. Should you have any questions, or if the project area changes appreciatively to include additional areas under County jurisdiction, please contact me.

Sincerely,

Heidi Kunstal

Heidi Kunstal
Director

cc: Board of Supervisors, Del Norte County
Jay Sarina, County Administrative Officer
Bob Merrill, North Coast District Manager, California Coastal Commission

CALIFORNIA COASTAL COMMISSION
NORTH COAST DISTRICT OFFICE
1385 EIGHTH STREET, SUITE 130
ARCATA, CA 95521
VOICE (707) 826-8950
FAX (707) 826-8960

December 15, 2020

County of Del Norte
Attn: Heidi Kunstal, Community Development Director
981 H Street, Suite 110
Crescent City, CA 95531

RE: Consolidated Permitting for the Caltrans Dr. Fine Bridge Replacement Project, Bridge # 01-0020 on U.S. Highway 101 from post mile (PM) 35.8 to Fred D. Haight Drive at PM 36.5, Del Norte County (Commission Coastal Development Permit Application File No. 1-20-0422)

Dear Ms. Kunstal:

Coastal Commission staff has received your July 13, 2020 request for a consolidated coastal development permit (CDP) process, pursuant to Coastal Act Section 30601.3, for the above-referenced proposed development. As noted in your letter, portions of the proposed project would occur in both the LCP jurisdiction of Del Norte County and in Coastal Commission's retained jurisdiction. In response to your request, and pursuant to Coastal Act Section 30601.3, the executive director agrees to process and act upon a consolidated CDP application for this project.

If you have any questions, please contact me at (707) 826-8950 or Tamara.Gedik@coastal.ca.gov.

Sincerely,
DocuSigned by:
7C47047109B34D9...
Tamara Gedik
Coastal Program Analyst

Cc: Rachelle Estrada, Coordinator, Caltrans District 1

State of California
Department of Fish and Wildlife

EXHIBIT NO. 24
CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)
CDFW LETTER AUTHORIZING USE OF HAMBRO PARCEL

M e m o r a n d u m

Date: December 14, 2020

To: **Matt Brady**, District 1 Director
CalTrans
Matthew.Brady@dot.ca.gov

From: **Tina Bartlett**, Regional Manager
Northern Region

DocuSigned by:
Tina Bartlett
1D82ADE7303A474...

Subject: **Use of Hambro Parcel (Crescent City Marsh Wildlife Area) as Offsite Mitigation for Impacts Associated with Dr. Fine Bridge Replacement**

The California Department of Fish and Wildlife (Department) and Caltrans are signatory to Cooperative Agreement No. 01-0391 that outlined future mitigation options that could occur at the Department's Hambro Parcel, located within the Crescent City Marsh Wildlife Area. Pursuant to this Cooperative Agreement, I am writing to document our support for this mitigation project and allow Caltrans and their contractors and/or consultants access to the Hambro Parcel (APN: 115-020-18) to implement offsite mitigation for temporal impacts associated with the Dr. Fine Bridge Replacement Project.

Caltrans proposes to remove invasive non-native plants within the approximately 49-acre late seral Sitka spruce (*Picea sitchensis*) stand and freshwater wetland mosaic. The restoration work will target English ivy (*Helix hedera*) which is estimated to be in about 35% of the trees and covering about 15% of the ground within the stand. Other non-native plants such as English holly (*Ilex aquifolium*), Jubata grass (*Cortaderia jubata*) and French broom (*Genista monspessulana*) will also be removed as part of the restoration work. All target species are listed in the California Invasive Plant Council's Invasive Plant Inventory. If left unabated, English ivy could compromise Sitka spruce tree health and further spread within the grove from vertical growth and associated seed production.

Mitigation proposed by Caltrans on Department Lands is consistent with Department Bulletin Number 2012-02 and the Department fully supports this mitigation project. Once the work schedule is known, please contact Senior Environmental Scientist Michael van Hattem at Michael.vanHattem@wildlife.ca.gov in our Eureka Field Office to complete a Department Access Agreement for the restoration work.

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Ec:

California Coastal Commission
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Tolowa Dee-ni' Nation

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EXHIBIT NO. 25

CDP Application No.
1-20-0422
(Caltrans Dr. Fine Bridge)
CORRESPONDENCE FROM TRIBAL REPRESENTATIVES THROUGH 12/19/20

November 12, 2020

California Coastal Commission
Tamara L. Gedik
Coastal Program Analyst
13858th Street, Suite 130
Arcata, CA 95521

Dv-laa-ha~ Ms. Gedik,

The Tolowa Dee-ni' Nation ("Nation"), a federally recognized Indian Tribe, has received a notification from you regarding a coastal development permit ("CDP") application which was submitted to the California Coastal Commission ("Commission") by California Department of Transportation ("Caltrans") for the proposed Dr. Fine Bridge Replacement Project. The Nation understands you have sent this notification in accordance with the California Coastal Act and Tribal Consultation Policy. The project Area of Potential Effect ("APE") is within the aboriginal territory of the Nation which encompasses the lands and watersheds of Wilson Creek to the south, the Sixes River to the north, east to the Applegate watershed in the Coastal Range, and west to the Pacific Coast horizon.

The Nation has been consulting with Caltrans on this project for many years, beginning in approximately 2012/2013. The Nation does have concerns about potential impacts to cultural resources. According to traditional oral history and ethnographic documentation there are cultural sites located on the north and south side of the Smith River in the area of Dr. Fine Bridge. Although no cultural resources were identified during the cultural resources surveys conducted by Caltrans Archaeologists, the Nation maintains the belief that cultural resources are located in the project area. As such, the Tribal Council has formally requested that tribal cultural monitors be onsite during all ground disturbing activities throughout the duration of the project. If any inadvertent discoveries are identified during project activities, work is to immediately stop in the area until a qualified archaeologist and the Tribal Historic Preservation Officer of the Nation can assess the discovery and determine how to proceed.

In addition to the concerns about cultural resources as they are defined by the California Environmental Quality Act ("CEQA"), the Nation also considers many natural resources as cultural resources. The project area encompasses the site of a historical Tolowa Village- T'uu-yaa~-sdvm-dvn. Currently the land is still inhabited by Tolowa citizens whom live off this specific land, including but not limited to: agriculture (gardens-food and medicinal/trees-food and utilitarian), sustenance harvesting of resources on the property (myrtle nuts and salmonids), agriculture water supply and domestic water supply. We would like it to be

recognized that this is still an inhabited village of Tolowa Dee-ni' people whom will be impacted by this project.

Lastly the Nation has the following environmental concerns which we would like documented with the Commission, as the permitting agency:

- The Nation would like to bring attention to the current storm water run-off on the South West corner of the project. During any rain event (large or small) there is a substantial quantity of water that runs off the bridge and highway down Lake Earl Dr. and collects on property APN 105-700-01. The EIR is unclear if this storm water runoff situation is being specifically addressed and what mitigation measures apply to this specific area.
- Temporary gravel berms are predicted to be left in the river until October 15th, this overlaps with the movement of spawning fish up the river as noted by local fisheries biologists, having an impact on recreational and sustenance fishing, negatively effecting local economy. The Nation support build alternatives that result in less in-water barriers for recreational and wildlife passage, as well as reduced noise. Elk regularly swim and navigate this section of the river. Deer tend to go over the highway vs. under the bridge (potentially due to loud noise from traffic on bridge) resulting in high amounts of roadkill and potential traffic safety.
- The Nation emphasizes the importance of water quality as it applies to the waters of the Smith River, domestic water supplies and storm water runoff. It is critical that all assurances and quality control measure are strictly adhered to and enforced throughout the duration and post implementation of the project. The dewatering process seems ambiguous, again the Nation emphasize that any water discharged back on to the site or in to the Smith River undergo strict water quality assurances.
- The Nation has grave concern of the potential to reuse lead contaminated soil in the project area no matter the level of content. It should be noted that there are three young tribal children that reside immediately adjacent and within the proposed project area. The Nation request quality assurance and control measures are taken to ensure that no soil containing lead is redistributed in the project area. In addition, the Nation emphasizes the importance of preventing hazardous waste contamination and that all assurances and quality control measures are taken to strictly monitor and enforce the potential of hazardous waste contamination and the appropriate disposal of such contaminants, with consideration given to the potential health impacts to the residents of the project area.
- The Nation requests that air quality impacts be reassessed from a cumulative perspective. The air quality of the project area is already significantly impacted from the gravel mining operation located on APN 105-260-14. The potential for naturally occurring asbestos to be disturbed during construction activities is high, this in addition to the operation of the gravel mining has potential to cumulatively impact air quality. The Nation asks that this be assessed and that appropriate measures be taken to mitigate the impact.

The Nation is grateful for the opportunity to submit our comments and concerns to be considered in regard to the coastal permit for this project. For any questions or continued communications regarding our comments please contact Amanda O'Connell, Tribal Historic Preservation Officer, by phone (707 954-5271 or by email at amanda.oconnell@tolowa.com.

Shu' shaa nin-la,

Leann McCallum
Chairperson, On Behalf of Tribal Council