Appendix B

0C550 Navarro Ridge Safety Project

Environmentally Sensitive Habitat Area (ESHA) Analysis

Caltrans, 2019

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ESHA Assessment

for the Navarro Ridge Safety Project

Albion 7.5-minute USGS Quadrangle

State Route 1 Mendocino County PM 41.80 to 42.30

EA 01-0C550; EFIS 0112000300

June 2019

Caltrans

CALIFORNIA DEPARTMENT OF TRANSPORTATION

ESHA Assessment
for the Navarro Ridge Safety Project

Mendocino County, State Route 1, Post Miles 41.80-42.30
EA: 01-0C550
EFIS: 0112000300
STATE OF CALIFORNIA
Department of Transportation

June 2019

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Chapter 1. Introduction

This Environmentally Sensitive Habitat Area (ESHA) analysis was conducted as a condition of the California Coastal Act and Mendocino County Coastal Zoning code for the Navarro Ridge Safety Project. The purpose of the analysis was to describe the existing vegetation communities, survey for special-status plant species and wetlands, and recommend appropriate avoidance and minimization measures to reduce impacts to sensitive species and sensitive habitats within buffers, which are considered ESHAs under the Mendocino County General Plan, Coastal Element (Mendocino County 1991).

This report summarizes information gathered from previously conducted surveys for the Project conducted solely for the purposes of this ESHA assessment and includes a review of special-status natural communities and species, wetlands and other sensitive resources that meets the definition of ESHA as defined by the Mendocino County Local Coastal Program (LCP).

1.1 Purpose and Need

The proposed project would make safety improvements and perform drainage rehabilitation on State Route 1 (SR 1) between post miles (PM) 41.8 and 42.3 in Mendocino County. The project is being proposed to reduce the number and severity of collisions by improving roadway geometry, increasing shoulder widths to current standards, and installing rumble strips and a Midwest Guardrail System (MGS). A ten-year review of this road segment shows 20 collisions, 10 of which were "run off the road" accidents resulting in one fatality. 13 of these accidents occurred in the 5-year period from 7/1/2010 to 6/8/2015. Shoulder widening and edgeline rumble strips are needed to provide a recovery area for errant vehicles and reduce the frequency of these types of accidents. The existing shoulders are 0 feet in width. Work would include widening both lanes to 12 feet, widening both road shoulders to 4 feet, and improving the super elevation of the road surface to current standards. The construction of the new shoulders would require excavation of material from the east side of the road and placement of a new structural section. The project is needed to increase driver safety from run-off-road collisions and to improve storm water management.

1.2 Project Description

Caltrans proposes to make safety improvements and perform rehabilitation in Mendocino County on SR 1 from post mile (PM) 41.8 to PM 42.3. The project proposes to widen the existing lane to 12 feet, widen the existing shoulders in both directions to 4 feet, install edge

line and centerline rumble strips, install a Midwest Guardrail System (MGS), improve the superelevation, and remove trees. Work would also involve installing four new culverts, replacing three existing culverts, installing nine new drainage inlets (DIs), removing nine DIs, and extending five culverts. Rock slope protection (RSP) would be placed at the outlets of all culverts, specific measurements of RSP are provided in Section 3.1.

At PM 41.79, the existing 6 foot box culvert would remain at the same location. At PM 41.83, the existing 18 inch culvert would be abandoned, the existing slot drain and DIs would be removed, four new DIs, three new 24 inch culverts and 18 inch culverts would be installed. At PM 41.95, the existing 18 inch culvert would be extended, the existing DI would be removed, and a new DI would be installed. At PM 41.98, the existing 18 inch culvert would be extended, the existing DI would be removed, and a new DI would be installed. At PM 42.02, the existing 24 inch culvert would be replaced and extended, the existing DI would be removed, and a new DI would be installed. At PM 42.11, the existing 18 inch culvert would be replaced and extended, the existing DI would be removed, and a new DI would be installed. At PM 42.26, the existing 18 inch culvert would be replaced and extended, the existing DI would be removed, and a new DI would be installed.

The construction of the new shoulders would involve the excavation of existing material and the placement of a new structural section. The structural section would consist of 1.30 feet of class 2 aggregate base, 0.40 foot of hot mix asphalt (type A), and 0.08 foot of bonded wearing course (BWC-G). This structural section would help seal longitudinal pavement joints and provide a good surface for receiving new striping. A layer of geosynthetic pavement interlayer (GPI) would be used at the pavement joint where the new section meets the existing material.

The new MGS installed from PM 42.11 to PM 42.30 would include both standard sections and 7 foot post segments in narrow roadway locations. Also, a new Omit One Post (MGS) would be installed from PM 41.78 to PM 41.80 to span the inlet and outlet of the 6 foot box culvert on both sides of State Route (SR) 1. The MGS to be installed within the project limit would be treated with a light-brown stain to reduce glare and to blend the MGS into the visual character of the natural landscape.

Erosion has been occurring below the culvert outlet at PM 42.11. To prevent further erosion at this location, which could compromise the highway, the existing downdrain, which is failing, would be removed and replaced with a rock-lined ditch and ¼ ton of rock slope protection (RSP). The existing culvert at this location, which is also failing, would be replaced.

Below many of the existing cutslopes, an inboard ditch carries storm water between culvert inlets. An additional 2 feet of widening beyond the shoulder is included to provide space for this water.

Sixty two (62) trees are to be removed on State Right Of Way and thirteen (13) trees are to be removed within a Temporary Construction Easement (TCE) respectively.

The anticipated traffic control measures are reversing traffic control, moving lane closure, and shoulder closure. One-lane closure is permitted within the project limits. A minimum of 12 feet of paved roadway must be open for use by public traffic. Bicyclists would be accommodated through the work zone. Signage would be used to alert vehicle operators to the possible presence of bicyclists. The estimated maximum delay during one-way reversing traffic control would be 10 minutes. Access to side roads and residences would be maintained at all times.

Construction Equipment

Equipment needed to perform the work includes support vehicles, dump trucks, pickup trucks, hauling trucks, backhoe, trencher, pile driver, drilling rigs/augers, paver, rollers, concrete saw, jackhammer, generators, grinders, compressors, concrete saws, other handheld power tools, and drums to store debris from surface preparation work.

Construction Schedule

It is anticipated that construction would be completed within one year but could be longer depending on the contractor and seasonal work window restrictions defined in permit requirements.

Areas for Contractor Use (Staging Areas)

Areas for Contractor Use have been identified on the north end of the project in existing pullouts on the west and east side of SR 1. Maps showing these areas are shown in Figure 7 of Appendix A.

Clearing and Grubbing

The contractor would remove all vegetation and debris within the right of way (ROW) and within temporary construction easements as specified, except for environmentally sensitive habitat areas (ESHAs) that require preservation. ESHAs would be protected with the use of high visability fencing (HVF). Sixty two (62) trees are to be removed on State right of way

and thirteen (13) trees removed on the Temporary Construction Easement (TCE). Of the 75 trees in total, 45 of the trees are alive (12 Bishop pines, 32 Monterey Pines and 1 Douglas-fir), 15 are dead standing trees (most likely Monterey pines), and 15 are stumps. These trees may be removed for construction access and widening activities. While the Bishop Pine Forest is considered a vulnerable community (G3/S3), the small number of Bishop pines that are mixed in with Monterey pines are likely planted by land owners for privacy and are likely invading disturbed coastal prairie habitat. Therefore, closed-cone pine-cypress plant community is not considered an ESHA for this project.

In compliance with the Migratory Bird Treaty Act, vegetation clearing would be limited to September 1st to February 28th or if vegetation removal is required during the breeding season, a nesting bird survey would be conducted by a qualified biologist within one week of removal. 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. Alternately, Type D Erosion Control may be used which would be a combination of hydroseeding, straw, and fiber application. Access and staging areas would be cleared as necessary to move and store material and equipment around the project site. Equipment used to clear and grub vegetation would likely include backhoes, chain saws, mowers, chippers, and hand tools.

Grading and Fill

Lanes would be widened to 12 feet, and shoulders would be widened to 4 feet. The construction of the new shoulders would require excavation of material from the east side of the road and placement of a new structural section. The catch slope would most likely be 2:1. Total amount of anticipated cut material is 6766 cubic yards, at a maximum height of 30 feet. Total amount of anticipated fill material is 3462 cubic yards, at a maximum height of 20 feet.

Construction of new shoulders would include excavating existing material and placing a new shoulder structural section that would consist of 0.65 feet of Class 2 Subbase, 0.75 feet of Class 2 Subbase, and 0.45 feet of hot asphalt mix (Type A). Additional items include restriping, installation of edge line and centerline rumble strip, and dike replacement.

Revegetation and Plant Establishment

After all construction materials are removed, the site would be restored to a natural setting by grading, placing erosion control, and replanting. Replanting would be subject to a plant establishment period as defined by permits, which would require Caltrans to adequately water plants, replace unsuitable plants, weed, and control pests.

Right of Way

A temporary construction easement would be required for the proposed build alternative from private landowners for the culvert outlet work. It is anticipated no other temporary or permanent right of way would be required. Right of way fencing that has been undermined within the area of erosion would be reconstructed after construction is complete.

1.3 Project Features, Standard Measures, and Best Management Practices

The following section provides a list of project features, standard practices, and best management practices (BMPs) that are included as part of the project description. These avoidance and minimization measures are prescriptive and sufficiently standardized to be generally applicable, and do not require special tailoring to a project situation. These are generally measures that result from laws, permits, guidelines, and resource management plans that are relevant to the project. They contain refinements in planning policies and implementing actions. These practices predate the project's proposal and apply to all similar projects. For this reason, these measures and practices do not qualify as project mitigation, and the effects of the project are analyzed with these measures in place. Any project-specific measures that would be applied to reduce the effects of project impacts are listed in relevant sections of Chapter 3.

Standard measures relevant to the protection of natural resources deemed applicable to the proposed project include the following:

Water Quality and Storm Water Runoff

WQ-1: Construction site BMPs would follow the latest edition of the Construction Site Best Management Practices Manual (Caltrans 2017b) to control and minimize the impacts of construction-related activities, materials and pollutants on the watershed.

WQ-2: The project would comply with Caltrans Standard Specifications for Water Pollution Control and Job Site Management (Caltrans 2018). Caltrans' Standard Specifications require the contractor to submit a Water Pollution Control Plan for projects with a disturbed soil area (DSA) of less than one acre for review and approval by the resident engineer. The Water Pollution Control Plan would implement storm water and water pollution control training, routine BMP inspections, spill prevention and control, materials and waste management and non-storm water management.

Wetlands and Other Waters

WW-1: The contractor would be required to place high visibility fencing (HVF) along the boundaries of all riparian, wetland or other environmentally sensitive areas adjacent to the project footprint.

WW-2: Revegetation would take place on-site after construction to address permanent and temporary impacts to other waters of the U.S. and associated riparian areas resulting from the proposed project. All disturbed soil areas would be planted with regionally appropriate native plants. Caltrans would remove non-native and invasive plants within disturbed soil areas as needed during the plant establishment period. Planting ratios would be determined following updated guidance from USACE, NCRWQCB, and County of Mendocino Department of Planning and Building (MDP&BS). A Revegetation Plan would be submitted during the permitting phase of the project to address all project requirements.

WW-3: The construction footprint would be reduced to the maximum extent feasible.

Natural Communities

NC-1: After construction materials are removed, the project area would be revegetated. Replanting would be subject to a plant establishment period as defined by project permits, which would require Caltrans to adequately water plants, replace unsuitable plants, and control pests. Caltrans would implement a program of invasive weed control in all areas of soil disturbance caused by construction to improve habitat for native species in and adjacent to disturbed soil areas within the project limits.

NC-2: The contractor would be required to place temporary HVF along the boundaries of environmentally sensitive areas to avoid impacts to sensitive habitats that occur adjacent to the project footprint.

Animal Species

AS-1: To protect migratory and nongame birds, their occupied nests and eggs, nesting prevention measures would be implemented. Vegetation removal would be restricted to the period outside the bird breeding season (September 1 through February 28), or if vegetation removal is required during the breeding season, a nesting bird survey would be conducted by a qualified biologist within one week of removal. If an active nest were located, the biologist would coordinate with the California Department of Fish and Wildlife (CDFW) to establish appropriate species-specific buffer(s) and any monitoring requirements. The buffer(s) would

be delineated around each active nest, and construction activities would be excluded from these areas until birds have fledged, or the nest is determined to be unoccupied.

AS-2: Pre-construction surveys for active raptor nests would be conducted by a qualified biologist within 15 days prior to the initiation of construction activities. Areas to be surveyed would be limited to those areas subject to increased disturbance because of construction activities (i.e., areas where existing traffic or human activity is greater than or equal to construction-related disturbance need not be surveyed). If any active raptor nests were identified, appropriate conservation measures (as determined by a qualified biologist) would be implemented. These measures may include, but are not limited to, establishing a construction-free buffer zone around the active nest site, biological monitoring of the active nest site, and delaying construction activities near the active nest site until the young have fledged.

- Raptor surveys would be primarily focused on the cliffs below the culvert at PM 42.11, which is the area within the project vicinity that is the most conducive to raptor nesting.

Invasive Species

IS-1: To prevent the spread of invasive plant species in disturbed soil after construction, all disturbed areas would be seeded with native herbaceous species and weed-free mulch would be applied.

IS-2: Construction equipment would be inspected and cleaned to remove invasive species and/or pathogens before being brought to the project site and prior to removal from the project area.

Chapter 2. Study Methods

2.1 Previous Studies

Biological studies for the Project have been completed and are presented in a Natural Environment Study (NES) dated September 25, 2017 (Caltrans, 2018) and an Addendum to the NES dated January 3, 2019. The NES and its Addendum include information on the following:

1) Habitat types present
2) Potential jurisdictional wetlands
3) Special status species present
4) Inventory and establishment of baseline conditions of biological resources, and
5) Identification of potential issues for the study

Field reviews conducted for the project have been utilized for the purposes of determining ESHA. The ESHA study area (Biological Study Area or BSA) includes all sites extending 100-feet around the project footprint. Table 1 below includes information on field visits that occurred in 2017 and 2018.

Table 1. Personnel and survey dates for the biological resources/ESHA evaluation.

Task	2017-2018 Survey Dates	Personnel
Aquatic Resource Delineations	May 30-June 1, July 6-7, July 17	Mindy Trask, Caltrans Biologist; Lori Price, Caltrans Biologist; Alexandra Laughtin, Caltrans Biologist
Jurisdictional delineations and meeting with resource agencies	November 16	Desiree Davenport, Caltrans Biologist; Janelle Leeson (USACE); Brandon Stevens (NCRWQCB); JoAnn Loehr (CDFW)
Rare plant surveys	April 17-29, May 30-June 1, July 17-19	Mindy Trask, Caltrans Biologist; Maureen Doyle, Caltrans Biologist; Grant Thornton, Caltrans Biologist; Lori Price, Caltrans Biologist; Alexandra Laughtin, Caltrans Biologist

Task	2017-2018 Survey Dates	Personnel
Butterfly habitat assessment	April 17-29, May 2	Mindy Trask, Caltrans Biologist; Maureen Doyle, Caltrans Biologist; Grant Thornton, Caltrans Biologist; Lori Price, Caltrans Biologist
Butterfly surveys	Several field visits between June and September	Dr. Richard Arnold and Robert Jenson from ICF, entomologists and California butterfly experts approved by USFWS
Tree counts and site visit	August 22, 2018	Desiree Davenport, Caltrans Biologist; Dawn Graydon, Caltrans Biologist
General site visit	June 13, 2019	Reed Crane, Caltrans biologist.

2.2 Environmentally Sensitive Habitat Areas

Studies were conducted within the project area and within a 100-feet buffer around the project's environmental study limit (ESL) to satisfy the conditions of the Coastal Element of the Mendocino County General Plan. Four areas were identified that meet the definition of "Environmentally Sensitive Habitat Areas" (ESHA).

The California Coastal Act provides a definition of "environmentally sensitive habitat area" as:

"Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. There are three important elements to the definition of Environmentally Sensitive Habitat Area (ESHA) under the California Coastal Act. First, a geographic area can be designated ESHA either because of the presence of individual species of plants or animals or because of the presence of a particular habitat. Second, in order for an area to be designated as ESHA, the species or habitat must be either rare or it must be especially valuable. Finally, the area must be easily disturbed or degraded by human activities (Dixon 2003)."

Vegetation community types within the study area are typical of the North Coast subregion of Northern California. Vegetation communities are described using the alliance and association system as outlined in "A Manual of California Vegetation" by Sawyer, Keeler-Wolf, and Evens.

Chapter 3. Results: Biological Resources, Discussion of Impacts

Chapter 20.496 of the Mendocino County LCP includes policies that apply to ESHAs. Buffer areas are described and defined in Section 20.496.020 as:

"An area that shall be established adjacent to all ESHAs. The purpose of a buffer area shall be to provide for a sufficient area to protect the ESHA from significant degradation resulting from future developments. The width of the buffer area shall be a minimum of 100-feet, unless an applicant can demonstrate, after consultation and agreement with the California Department of Fish and Wildlife (if applicable), and County Planning Staff, that 100-feet is not necessary to protect the resources of that particular habitat area and the adjacent upland transitional habitat function of the buffer from possible significant disruption caused by the proposed development. The buffer area shall be measured from the outside edge of the ESHAs and shall not be less than 50-feet in width."

This section describes a variety of standards for determining the allowable width of the buffer area, including standards for development permitted within the buffer area. Mendocino County Code Section 20.496.025(7) further specifies development that is allowed in wetlands, including incidental public service purposes.

According to the Mendocino County LCP Chapter 20.496, highway activities can be allowed within ESHA buffers when avoidance is not feasible.

3.1 ESHAs

Impacts to ESHAs that occur within the 100-foot buffer are defined and summarized in Table 2 below and described further in the paragraphs below Table 2. A site-specific summary of each ESHA can be found in Table 3. For sites where unavoidable impacts to ESHA are anticipated, incorporation of avoidance or minimization efforts to reduce project impacts are included in the project description in Sections 1.3 and 3.2 of this report.

Table 2. Estimated Impacts by Resource Type

Feature Type	Impact			
	Permanent: Length	Permanent: Acres	Temporary: Length	Temporary: Acres
Drainage Ditches	0	0	1524	0.034

Ephemeral Streams	249	0.011	28	0.014
Coastal Wetlands	0	0	0	0
3-Parameter Wetlands	0	0	110	0.0097
Total	249 Linear Feet (LF)	.011 acres	1662 LF	0.0577 acres

Wetlands

USACE Wetlands and Waters of U.S. and State—areas that are inundated or saturated with surface or groundwater at a frequency and duration sufficient to support, and typically do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are considered jurisdictional under the CWA if they exhibit three parameters characteristic of these features (predominance of hydrophytic vegetation, hydric soils, and wetland hydrology) and have a significant nexus to a Traditional Navigable Water (TNW).

Coastal Wetlands—areas that have at least one of the three parameters characteristic of wetlands (predominance of hydrophytic vegetation, hydric soils and wetland hydrology).

Below is a discussion of the wetland ESHAs that were found, documented, and analyzed in the BSA. Several of the ESHAs described below including W-1, OW-1, and OW-2, are not nearby construction activities. They are included in this analysis due to their proximity to the staging area. These ESHAs will not be affected by this project but may be affected by a neighboring project (01-0E940 Navarro Drainage). Potential impacts as a result of 01-0E940 are analyzed in the ESHA Analysis associated with that project. This ESHA Analysis is limited to analysis of potential impacts resulting from project activities described in the Project Description above. Refer to figures 1-5 in Appendix A for maps of the discussed ESHAs.

CW-1 is a 0.05-acre coastal wetland that has at least wetland vegetation. A complete delineation of this wetland was not completed, since it is outside of the project footprints. OW-4 probably drains this wetland.

> **Buffer:** It is anticipated that construction activities would occur approximately 60-70 feet downslope from this wetland. A 100-foot buffer is not feasible at this location.
> **Potential Impacts:** No impact to this ESHA is expected. No work is proposed that would directly impact the ESHA. ESHA is upslope from proposed construction activities, thus construction related runoff would not impact the EHSA.

CW-2 is a 0.003-acre coastal wetland that has at least wetland vegetation. *Scirpus microcarpus* and *Hypochaeris radicata* are the dominant species in this wetland. OW-7 probably drains this wetland.

Buffer: It is anticipated that construction activities would occur approximately 100 feet downslope from this wetland.
Potential Impacts: No impact to this ESHA is expected. No work is proposed that would directly impact the ESHA. ESHA is upslope from proposed construction activities, thus construction related runoff would not impact the EHSA.

W-1 is a 0.03-acre pocket wetland that has all three wetland parameters. This plant community is dominated by small-fruited bulrush (*Scirpus microcarpus*) with co-dominant species such as Pacific water parsley (*Oenanthe sarmentosa*), giant horsetail (*Equisetum telmateia*), common velvet grass (*Holcus lanatus*) and sedge (*Carex* spp.).

Buffer: This ESHA is approximately 20-feet to 50-feet off of the roadway between the staging area and the construction area. A 100-foot buffer is not feasible at this location.
Potential Impacts: No impact to this ESHA is expected. Analysis of this ESHA is included due to its proximity to the staging area. No work is proposed that would directly or indirectly impact this ESHA.

W-2 is a 0.317-acre 3-parameter wetland that is dominated by *Holcus lanatus* and *Equisetum telmateia.*

Buffer: It is anticipated that construction activities would occur approximately 30 feet upslope from this wetland.
Potential Impacts: No impact to this ESHA is expected with implementation of avoidance measures as described in Section 1.3 of this report. These measures include placement of high visibility fencing (HVF) by the contractor along the boundaries of ESHAs adjacent to the project footprint.

W-3 is a 0.008-acre wetland ditch that is dominated by *Isotepis cernua.* The existence of this wetland ditch is due to the drainage patterns of the roadway and the private road to the east.

Buffer: A buffer is not feasible at this location.
Potential Impacts: Removal and replacement may be necessary. Wetland soil would be removed and set aside until it could be replaced, as described in Caltrans Standard Special Provision (SSP) 19-2.03D(2). Thus, the impacts to the wetland ditch are

expected to be temporary. Temporary impacts of 0.0017 acres would be associated with removal and replacement of drainage ditch.

W-4 is a 0.002-acre wetland ditch southeast of the staging area. It is dominated by *Diplacus aurantiacus* and *Cyperus eragrostis*. The existence of this wetland ditch is due to the drainage patterns of the roadway and the private road to the east.

Buffer: A buffer is not feasible at this location.
Potential Impacts: Removal and replacement may be necessary. Wetland soil would be removed and set aside until it could be replaced, as described in Caltrans Standard Special Provision (SSP) 19-2.03D(2). Thus, the impacts to the wetland ditch are expected to be temporary. Temporary impacts of 0.008 acres would be associated with removal and replacement of drainage ditch.

Other Waters

All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide (known as traditional navigable waters).

- All interstate waters including interstate wetlands.
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    - Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    - From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    - Which are used or could be used for industrial purpose by industries in interstate commerce.
- All impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries of waters.
- The territorial seas.

Below is a discussion of the other waters ESHAs that were found, documented, and analyzed within the BSA.

D-1, D-2, and D-2 are roadside ditches that convey stormwater and, possibly, water from upslope and from underground seeps. These three ditches run along the eastern side of the highway and are approximately 1 foot in width. **D-1** is the northernmost ditch and runs for approximately 167 feet. **D-2** is in the middle of **D-1** and **D-3** and runs for approximately 728 feet. **D-3** is the southernmost ditch and runs for approximately 629 feet.

Buffer: A buffer is not feasible at this location.
Potential Impacts: Removal and replacement would be necessary. Soil from the ditches would be removed and set aside until it could be replaced, as described in Caltrans Standard Special Provision (SSP) 19-2.03D(2), in the newly established drainage ditch. Thus, impacts to these ditches would be temporary in nature. Temporary impacts of 0.035 acres would be associated with removal and replacement of the drainage ditch.

D-4 is a drainage ditch that is in between the roadway and the Navarro Point Preserve parking lot towards the southern end of the project area.

Buffer: It is anticipated that construction activities would occur between approximately 30-feet and 80-feet upslope from this ditch. A 100-foot buffer is not feasible at this location.
Potential Impacts: No impact to this ESHA is expected.

OW-1 is a small drainage that drains from the wetland south into Navarro Drainage at the inlet of the culvert. It is approximately 54-feet long by 2-feet wide, making the area about 0.004 acre or 174 square feet.

Buffer: This ESHA is approximately 20-feet to 50-feet off of the roadway between the staging area and the construction area. A 100-foot buffer is not feasible at this location.
Potential Impacts: No impacts to this ESHA are expected. Analysis of this ESHA is included due to its proximity to the staging area. No work is proposed that would directly or indirectly impact this ESHA.

OW-2 is the main drainage called "Navarro Drainage" and approximately 642 linear feet occurs within the 100-ft BSA. It is about 3 feet wide for a total of 0.044 acres of other waters in the BSA. This drainage has a deeply incised channel and vegetation was observed growing in the existing RSP that was placed on the outlet side of the culvert during the 1998 storm damage construction work.

Buffer: This ESHA is adjacent to, and runs beneath the roadway between the staging area and the construction area. A 100-foot buffer is not feasible at this location.
Potential Impacts: No impacts to this ESHA are expected. Analysis of this ESHA is included due to its proximity to the staging area. No work is proposed that would directly or indirectly impact this ESHA.

OW-3 is small drainage that occurs along the east side of a large gravel pullout on the northeast side of the BSA. This area is proposed as an area for contractor use. This drainage totals about 200 feet long by 2 feet wide making it about 0.009 acre of area.

Buffer: This ESHA is adjacent to a potential staging area. A buffer is not feasible at this location.
Potential Impacts: No impact to this ESHA is expected with implementation of avoidance measures as described in Section 1.3 of this report. These measures include placement high visibility fencing (HVF) by the contractor along the boundaries of ESHAs adjacent to the project footprint and areas for contractor use.

OW-4 is a watercourse associated with the culvert at PM 42.26. The width of the vegetated watercourse is approximately 1 foot. It appears this watercourse facilitates the drainage of CW-1.

Buffer: A buffer is not feasible at this location.
Potential Impacts: The 18-inch culvert would be replaced and extended 13-feet to accommodate lane and shoulder widening. Widening would occur approximately 6.5-feet to the east and 6.5 feet to the west. A 11-foot by 4.5-foot RSP energy dissipator would be installed below the culvert outlet. Permanent impacts of approximately 0.001 acres would be associated with the culvert extension and RSP placement. Temporary impacts of 0.002 acres would be associated with construction activities at the inlet.

OW-5 is a watercourse associated with the culvert at PM 42.11. The culvert conveys roadway stormwater runoff and possibly upslope runoff as well. No upslope channels or seeps are evident. On the downslope side, there is a substantial erosional gully present. The erosional channel is approximately 20-feet wide by 50-feet long.

Buffer: A buffer is not feasible at this location.
Potential Impacts: The 34-foot 18-inch culvert and 33-foot 18-inch downdrain would be replaced with a single 65-foot 24-inch culvert. The new culvert outlet would be shifted approximately 8 feet to the east, and the inlet would be shifted

approximately 5 feet to the east. The existing drainage inlet and headwall would be removed and a new drainage inlet would be installed. The erosional gully would be filled with quarter-ton RSP to a depth of approximately 5.6-feet. Permanent impacts of 0.017 acres would be associated with RSP placement to address the erosional channel. Temporary impacts of 0.002 acres would be associated with construction activities at the inlet.

OW-6 is a watercourse associated with the culvert at PM 42.02. The culvert conveys roadway stormwater runoff and possibly runoff and/or belowground water originating upslope as well. No upslope or downslope channels or seeps associated with this feature are evident within the 100-foot buffer.

Buffer: A buffer is not feasible at this location.
Potential Impacts: The existing 32-foot 24-inch culvert would be removed and replaced with a 41-foot 24-inch culvert. The new inlet would be approximately 7 feet to the east of the existing inlet and the existing outlet would be approximately 2 feet to the west of the existing outlet. The drainage inlet would be removed and replaced. A 14-foot by 6-foot RSP energy dissipator would be installed beneath the outlet. Permanent impacts of approximately 0.002 acres would be associated with the culvert extension and RSP placement. Temporary impacts of 0.002 acres would be associated with construction activities at the inlet.

OW-7 is a watercourse associated with the culvert at PM 41.98. The culvert conveys roadway stormwater runoff and possibly runoff and/or belowground water originating upslope as well. It may drain CW-2, discussed above. No downslope channels or seeps associated with this feature are evident within the 100-foot buffer.

Buffer: A buffer is not feasible at this location.
Potential Impacts: The existing 37.5-foot 18-inch culvert would be extended at the inlet and the outlet. The outlet would be extended 5.4-feet with a concrete culvert and concrete collar. The inlet would be extended 9.6-feet with a concrete culvert and concrete collar. The drainage inlet would be removed and replaced. An 11-foot by 4.5-foot RSP energy dissipator would be installed beneath the new outlet. Permanent impacts of approximately 0.0017 acres would be associated with the culvert extension and RSP placement. Temporary impacts of 0.002 acres would be associated with construction activities at the inlet.

OW-8 is a watercourse associated with the culvert at PM 41.95. The culvert conveys roadway stormwater runoff and possibly runoff and/or belowground water originating

upslope as well. No upslope or downslope channels or seeps associated with this feature are evident within the 100-foot buffer.

Buffer: A buffer is not feasible at this location.
Potential Impacts: The existing 37.5-foot 18-inch culvert would be extended at the inlet and the outlet. The outlet would be extended 5.1-feet with a concrete culvert and concrete collar. The inlet would be extended 6.6-feet with a concrete culvert and concrete collar. The drainage inlet would be removed and replaced. An 11-foot by 4.5-foot RSP energy dissipator would be installed beneath the new outlet. Permanent impacts of approximately 0.0015 acres would be associated with the culvert extension and RSP placement. Temporary impacts of 0.002 acres would be associated with construction activities at the inlet.

OW-9 is a watercourse associated with the drainage facilities on the adjacent private driveway to the east. These culverts convey both roadway stormwater and runoff originating upslope in the private driveway and the hillside. Water in this watercourse eventually flows through the box culvert at PM 41.79.

Buffer: A buffer is not feasible at this location.
Potential Impacts: The existing drainage inlets would be replaced and a 5-foot by 3-foot RSP energy dissipator would be installed at the outlet of the existing culvert. Permanent impacts of approximately 0.0003 acres would be associated with the RSP placement. Temporary impacts of 0.002 acres would be associated with construction activities at the inlet and outlet.

OW-10 is a watercourse that is associated with the culverts at 41.83 and 41.84. These culverts convey both roadway stormwater and runoff originating upslope in the private driveway and the hillside.

Buffer: A buffer is not feasible at this location.
Potential Impacts: The existing slotted drains and culvert would be removed. They would be replaced by a new 2-culvert system. Two new drainage inlets would be required. A 14.41-foot by 6-foot RSP energy dissipator would be installed beneath the outlet. Permanent impacts of 0.002 acres would be associated with RSP placement and changes in culvert configuration. Temporary impacts of 0.0002 acres would be associated with construction activities at the inlet.

Table 3. ESHA Summary

ESHA	ESHA Description	Permanent Impact Description	Approximate Temporary Impact Size*	Narrative
CW-1	Coastal wetland	0	0	No impacts anticipated.
CW-2	Coastal wetland	0	0	No impacts anticipated.
W-1	3 Parameter wetland	0	0	No impacts anticipated
W-2	3 Parameter wetland	0	40 LF 0.0017	Temporary displacement possible with cut limits.
W-3	3 Parameter wetland ditch	0	70 LF 0.008 acres	Temporary displacement possible with cut limits.
W-4	3 Parameter wetland ditch	0	0	No impacts anticipated.
D-1	Roadway drainage ditch	0	167 LF / 0.003 acres	Temporary displacement associated with shoulder widening.
D-2	Roadway drainage ditch	0	728 LF / 0.017 acres	Temporary displacement associated with shoulder widening.
D-3	Roadway drainage ditch	0	629 LF / 0.014 acres	Temporary displacement associated with shoulder widening.
D-4	Parking lot drainage ditch	0	0	No impacts anticipated.
OW-1	Ephemeral drainage	0	0	No impacts anticipated.
OW-2	Perennial drainage	0	0	No impacts anticipated.
OW-3	Ephemeral drainage	0	0	No impacts anticipated.
OW-4	Ephemeral drainage	13' culvert extension 0.001 acres RSP	4 LF 0.002 acres	Replace and extend culvert. Place RSP at outlet. Temporary impacts are a result of construction activities at the inlet.

ESHA	ESHA Description	Permanent Impact Description	Approximate Temporary Impact Size*	Narrative
OW-5	Ephemeral drainage	8' culvert extension 0.017 acres RSP	4 LF 0.002 acres	Replace and extend culvert. Fill erosional feature at outlet with RSP. Temporary impacts are a result of construction activities at the inlet.
OW-6	Ephemeral drainage	9' culvert extension 0.002 acres RSP	4 LF 0.002 acres	Replace and extend culvert. Place RSP at outlet. Temporary impacts are a result of construction activities at the inlet.
OW-7	Ephemeral drainage	15' culvert extension 0.001 acres RSP	4 LF 0.002 acres	Culvert extension and RSP placement at outlet. Temporary impacts are a result of construction activities at the inlet.
OW-8	Ephemeral drainage	12' culvert extension 0.001 acres RSP	4 LF 0.002 acres	Culvert extension and RSP placement at outlet. Temporary impacts are a result of construction activities at the inlet.
OW-9	Ephemeral drainage	0.0003 acres RSP	4 LF 0.002 acres	Placement of RSP at outlet. Temporary impacts are a result of construction activities at the inlet.
OW-10	Ephemeral drainage	0.002 acres RSP	4 LF 0.002 acres	Placement of RSP at outlet. Temporary impacts are a result of construction activities at the inlet.
Total		57 LF 0.0243 acres	1662 LF 0.0577 acres	

*Temporary impacts are a result of construction activities.

3.2 Avoidance and Minimization Efforts

Measures as described in Section 1.3 *Project Features, Standard Measures, and Best Management Practices* of this report, would be implemented to avoid and minimize impacts to regulated wetlands and other waters in the BSA. In addition, Caltrans would ensure that applicable BMPs are used to stabilize all bare soil areas over both the short term and long term and to minimize adverse effects to water quality, aquatic habitat, and aquatic species. BMPs include treatment controls, soil stabilization practices, and weather-appropriate scheduling. HVF would be used to limit ground disturbance to sensitive areas within the project footprint, and debris containment plans would be implemented to ensure construction debris does not enter adjacent waters. Any debris and sediment would be contained within the project site and disposed off-site. Restoration of the historic channel is written into the project purpose and need.

Soils from the ephemeral drainages and roadside ditches with wetland characteristics that would be impacted by the proposed road widening would be stored and stockpiled as described in Standard Special Provision (SSP) 19-2.03D(2). This measure helps to preserve the seed stock and species diversity of the original sites and will improve the post construction habitat at the improved culvert inlets and roadside ditches.

Revegetation would take place on-site after construction to address temporary impacts to other waters of the U.S. and associated riparian areas resulting from the proposed project. All disturbed soil areas would be planted with regionally appropriate native plants. Caltrans would remove non-native and invasive plants within disturbed soil areas as needed during the plant establishment period. Planting ratios would be determined following updated guidance from USACE, NCRWQCB, and MDP&BS. A Revegetation Plan would be submitted to address all requirements for the project.

Chapter 4. Reduced Buffer Analysis

The following information is a reduced buffer analysis as required by and outlined in Section 20.496.020 of the Mendocino County Coastal Zoning Code.

(A) Buffer Areas. Sizable buffers are not possible for the ESHAs at this project. High visibility fencing (HVF) would be used, where appropriate, to exclude the ESHAs and thus avoid direct impacts from construction activities. To the extent possible, buffers between the ESHAs and construction activities would be maximized. Avoidance and minimization measures would be coordinated with CDFW as necessary to ensure protection of the ESHAs.

(1) Width. Some ESHAs would be directly impacted by construction. Impacts are expected to be temporary and permanent in nature. Impacts would be avoided through the use of HVF and other avoidance and minimization measures described in Sections 1.3 and 3.2.

(a) Biological Significance of Adjacent Lands. The project area has a low biological value since the waters associated with the impact area do not support salmonids or other sensitive species. The Mendocino Land Trust is adjacent to the project area, and protected plants, animals and their habitats exist in the Land Trust area. Minimization measures have been developed to maintain the habitat functions of the surrounding lands.

(b) Sensitivity of Species to Disturbance. Because the project does not have habitat that supports sensitive species, these species would not be disturbed by the proposed development. The continued use of the project area by common species is expected to continue after the project is completed and all minimization measures have been implemented.

(c) Susceptibility of Parcel to Erosion. Potential for erosion would be minimized by implementing BMPs to control sediment and erosion in accordance with the current Caltrans Construction BMP Manual. A Water Pollution Control Plan would be prepared for the project and/or appropriate BMPs would be employed to protect water quality. Overall, the improvement of the drainage features addressed in the project is expected to reduce the potential for excessive erosion in area.

(d) Use of Natural Topographic Features to Locate Development. Coastal bluffs are not located within the BSA. Work would take place within the drainage areas as well as within existing developed areas. Avoidance and minimization measures would be utilized to protect ESHAs.

(e) Use of Existing Cultural Features to Locate Buffer Zones. Previously disturbed shoulders and roadway would be used for staging to minimize impacts to ESHAs.

(f) Lot Configuration and Location of Existing Development. The project is located in and adjacent to the existing roadway.

(g) Type and Scale of Development Proposed. The proposed project would include temporary and permanent impacts. The project is located in and adjacent to the existing roadway. Measures have been proposed to protect ESHAs during construction.

(2) Configuration. The buffer area is not applicable due to the close vicinity of the ESHA to the construction area.

(3) Land Division. No new subdivision or boundary line adjustments are proposed in conjunction with this development.

(4) Permitted Development.

(a) The proposed developments would not significantly impact the functional capacity of the habitat area or the habitat areas ability to be self-sustaining and maintain species diversity. The project would result in an overall improvement of drainage features.

(b) Work would only be conducted at or adjacent to the existing developed roadway. No other sites would be feasible or less environmentally damaging. Structures within the buffer and within ESHAs include the existing roadway, its drainage features, and the proposed improvements described above. Equipment necessary to complete the work would remain outside of ESHA areas to the extent possible.

(c) Proposed work within the ESHA buffers would not have a significant impact on the adjacent habitat areas. The work proposed would maintain and improve existing drainage patterns.

(d) The project would be compatible with the continuance of such habitat areas by maintaining their functional capacity and their ability to be self-sustaining and to maintain natural species diversity.

(e) The project proposes to widen the shoulders and improve the drainage facilities on SR 1, which is necessary to enhance safe driving conditions through this stretch of roadway. No other feasible locations are available. Revegetation would take place on-site after construction to address temporary impacts to other waters of the U.S. and associated with the proposed project. All disturbed soil areas would be planted with regionally appropriate native plants.

(f) The proposed development would result in less than 1 acre of new impervious surface area. The project would incorporate all standard BMPs and minimize the removal of vegetation. The proposed development would not cause an increase in artificial light, nutrient runoff, or air pollution. There would be minimal human intrusion in wetlands for this project. Some human intrusion is required within adjacent waters. Once construction is completed, human intrusion would decrease to minimal surveys during the monitoring period, and then be reduced to the normal level of human intrusion associated with the project area.

(g) No significant removal of riparian vegetation would take place as part of this project. Revegetation would take place on-site after construction to address temporary impacts to other waters of the U.S. resulting from the proposed project. All disturbed soil areas would be planted with regionally appropriate native plants.

(h) All proposed drainage features were designed to withstand peak surface water flows from a one hundred (100) year flood without significant impediment.

(i) There would be no interference with the hydrologic processes or biological diversity on site upon completion of the proposed construction. Existing drainage patterns would be maintained and improved. All disturbed areas would be revegetated appropriately.

(j) The proposed project would improve on the existing drainage patterns within the project area. Capacity for groundwater and overland flow would be increased as a result of this project.

(k) The proposed project would not cause significant adverse permanent impacts to any ESHA or ESHA buffer; however, temporary and permanent impacts to waters would occur. A Revegetation Plan may be required to address permanent and temporary impacts to waters. Revegetation would take place on-site after construction has been completed.

Chapter 5. References

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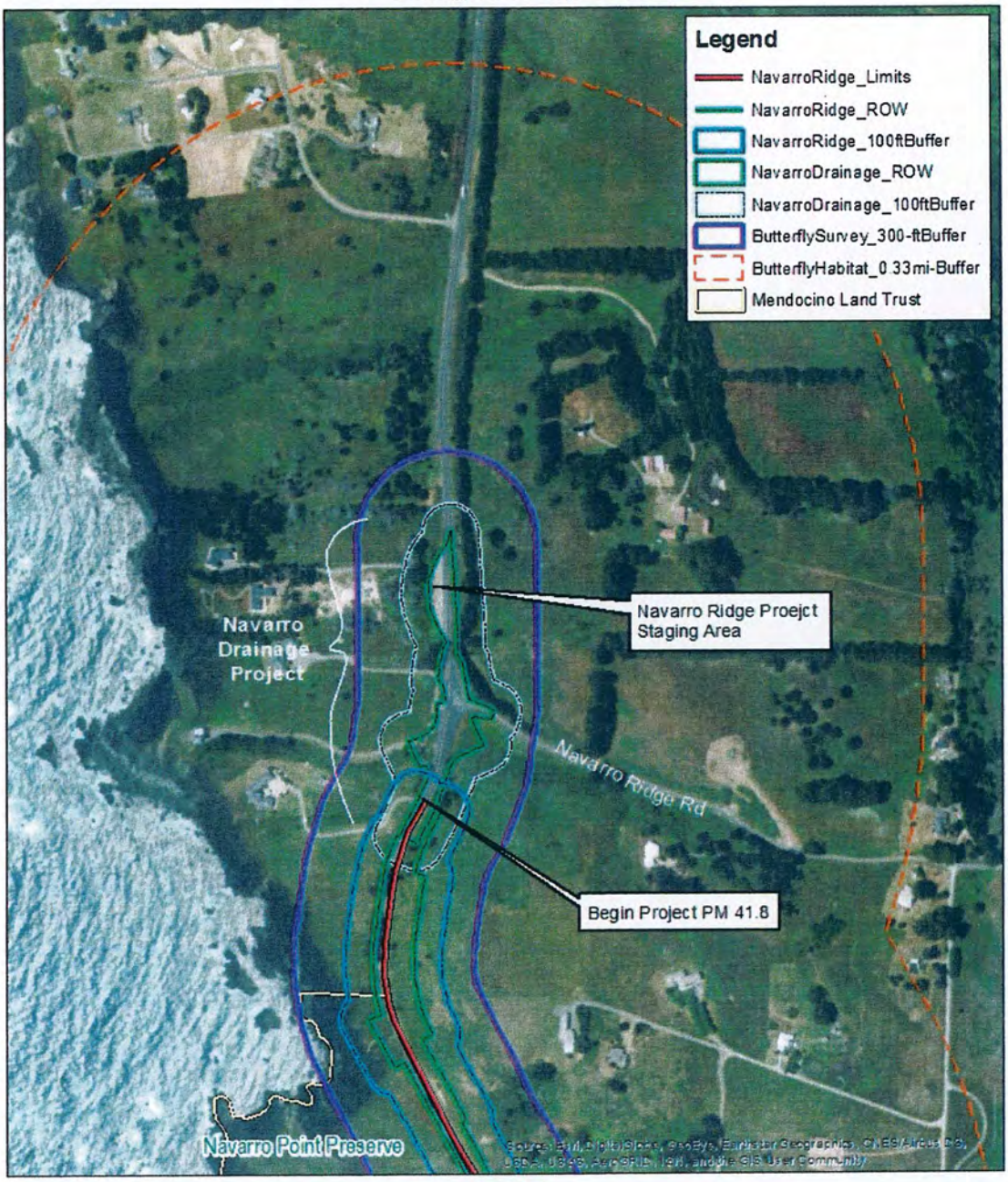
Mendocino County. Revised, 1991. Mendocino County General Plan. Coastal Commission Certified 1985. Mendocino County Planning and Building Services, Ukiah, CA.

Sawyer, J. O, T. K. Wolf and J. M. Evens. 2009. A Manual of California Vegetation (2nd ed). California Native Plant Society, Sacramento, CA.

Appendix A Figures

Biological Study Areas



MEN-1 PM 41.8-42.3
Navarro Ridge Safety Project

Figure 1. Project Location Map (North)

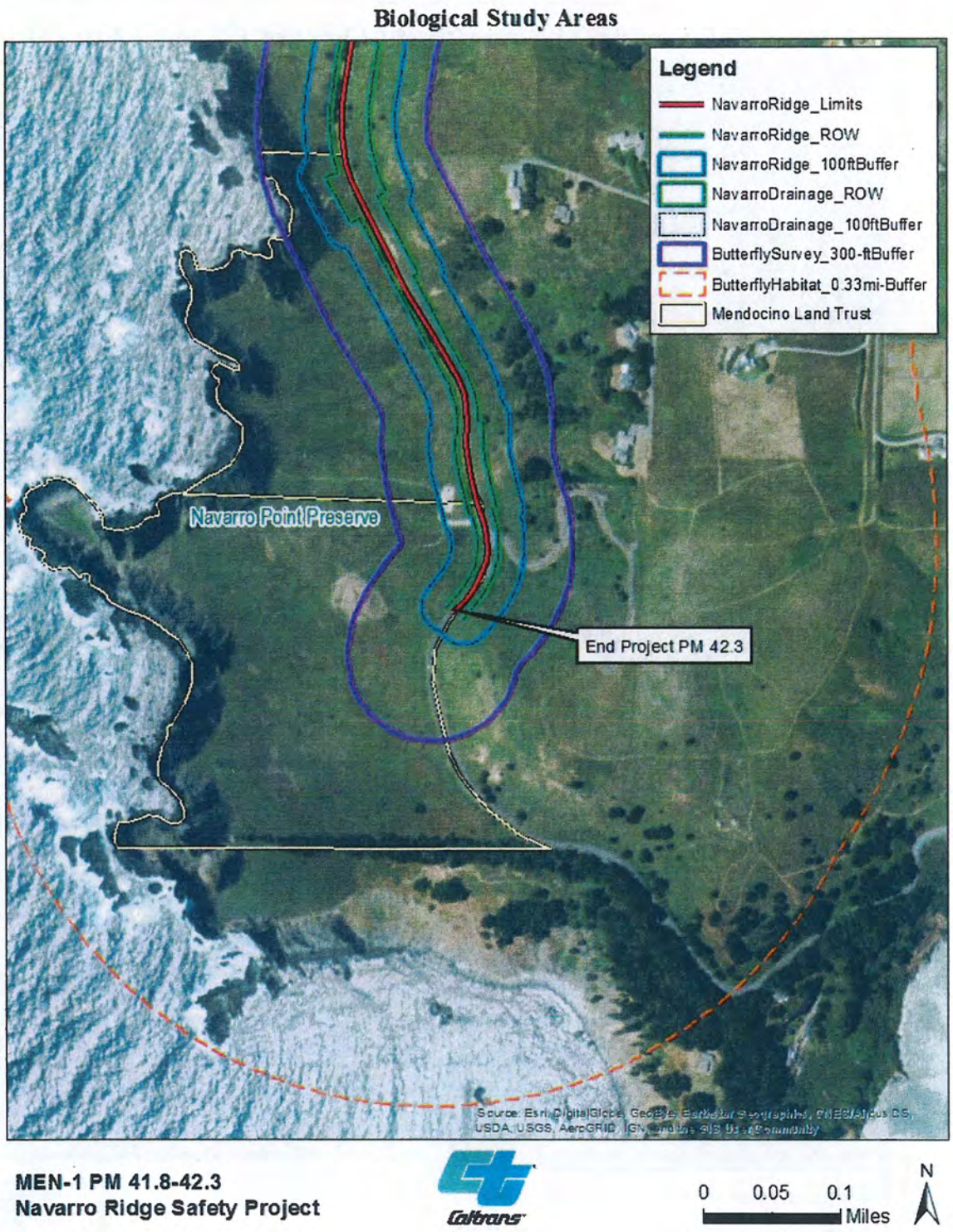


Figure 2. Project Location Map (South)

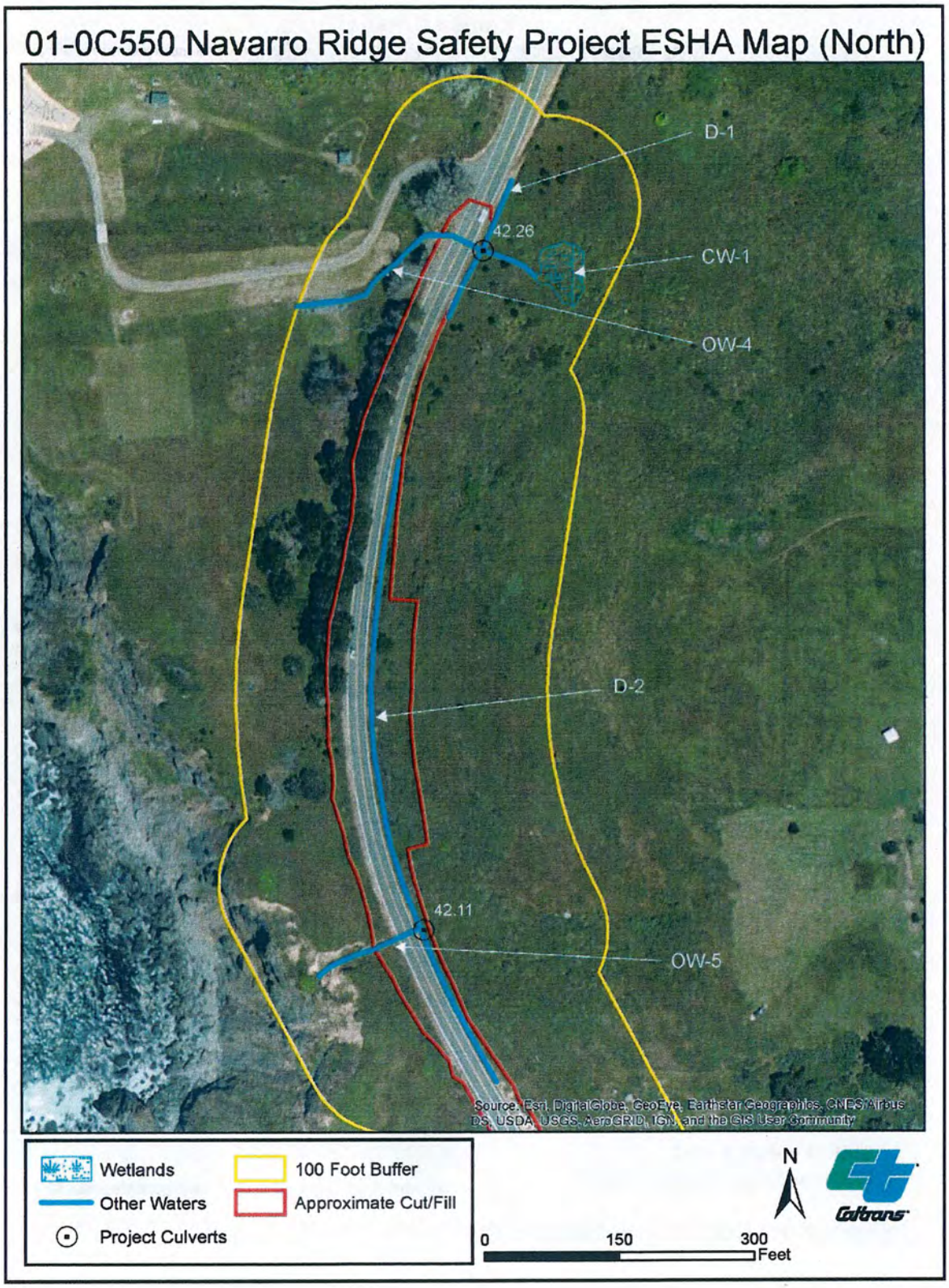


Figure 3. ESHA Map (Northern Extent)

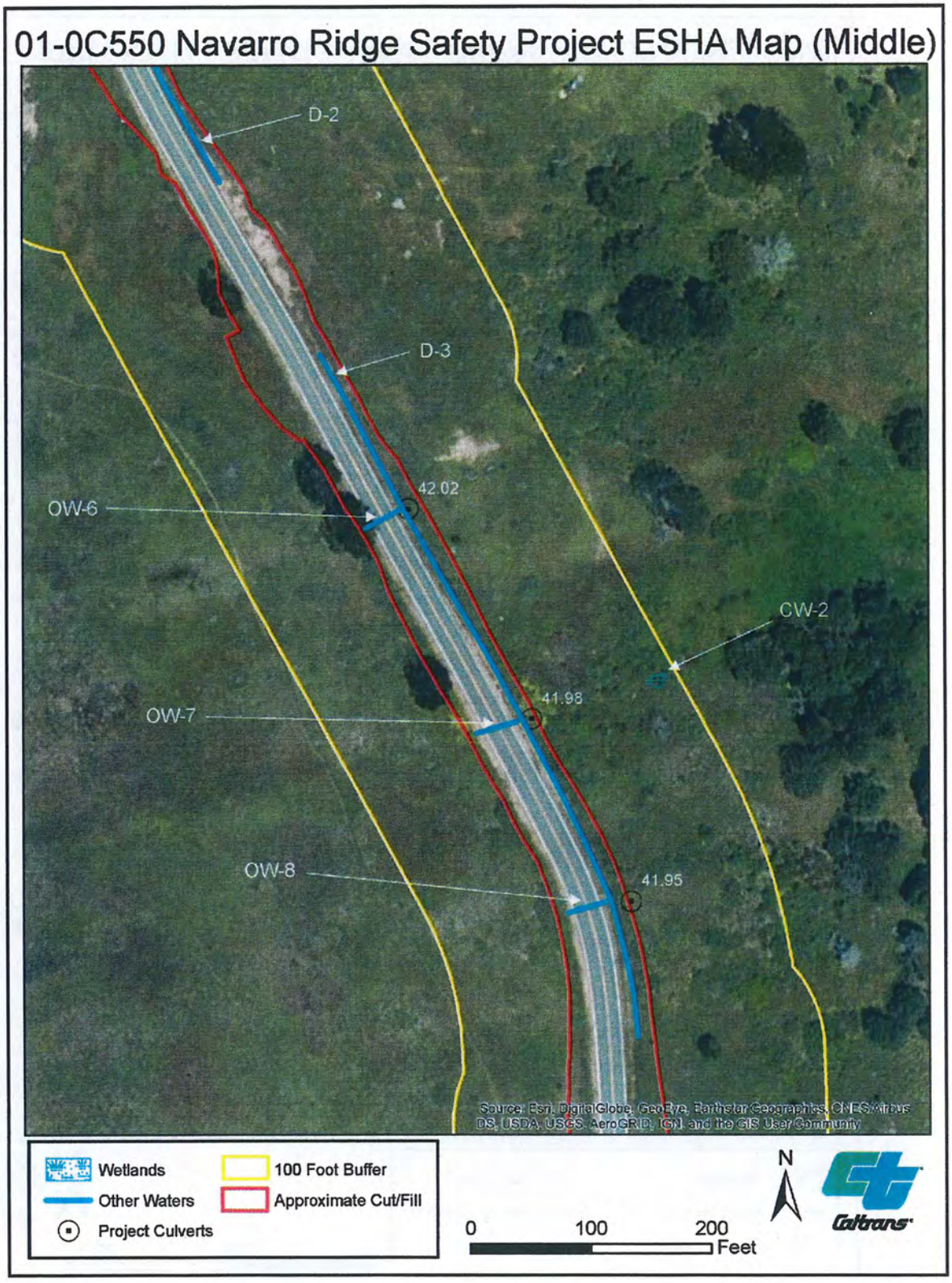


Figure 4. ESHA Map (Middle Extent)

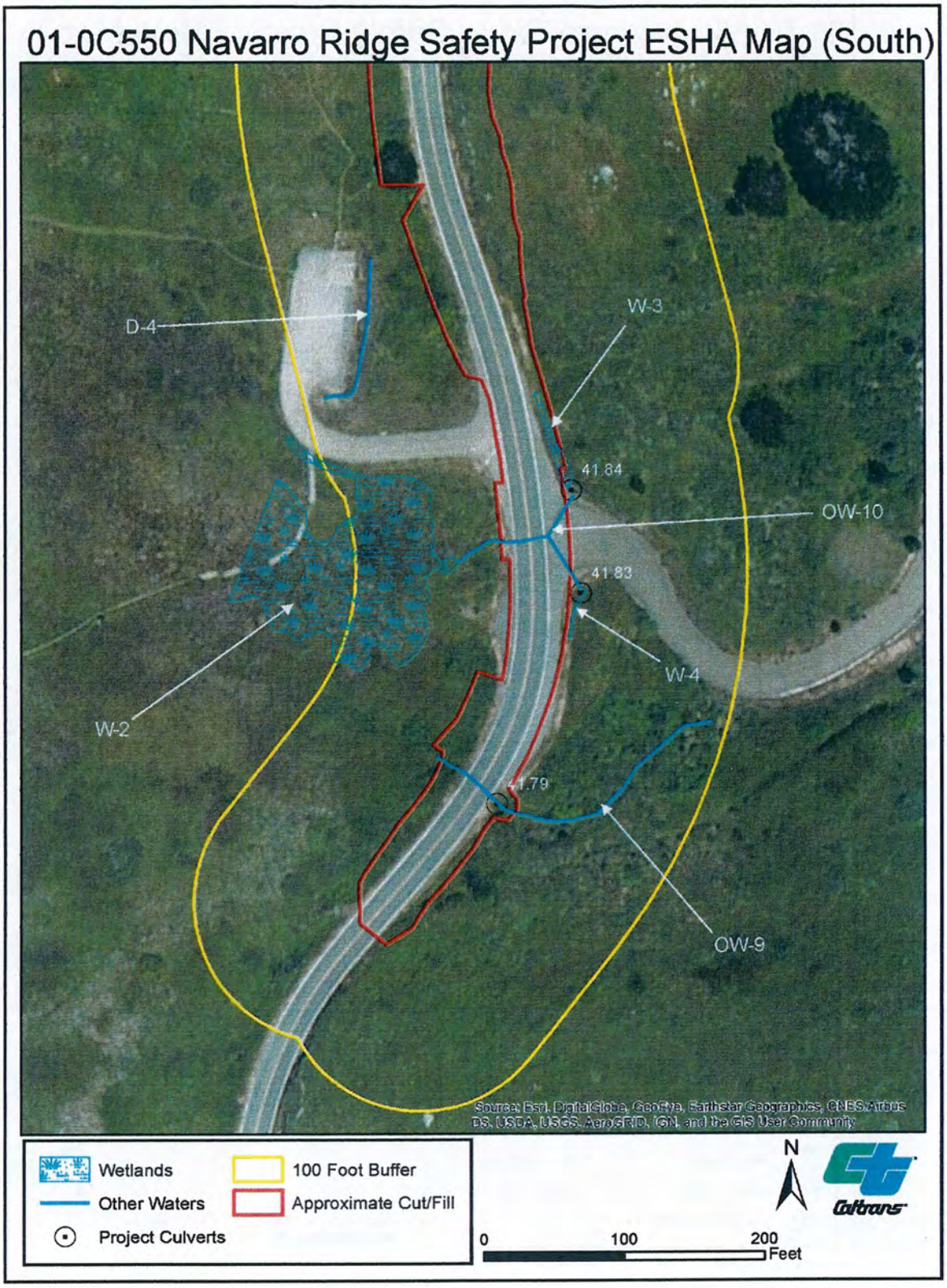


Figure 5. ESHA Map (Southern Extent)

01-0C550 ESHA Map (Staging Area)

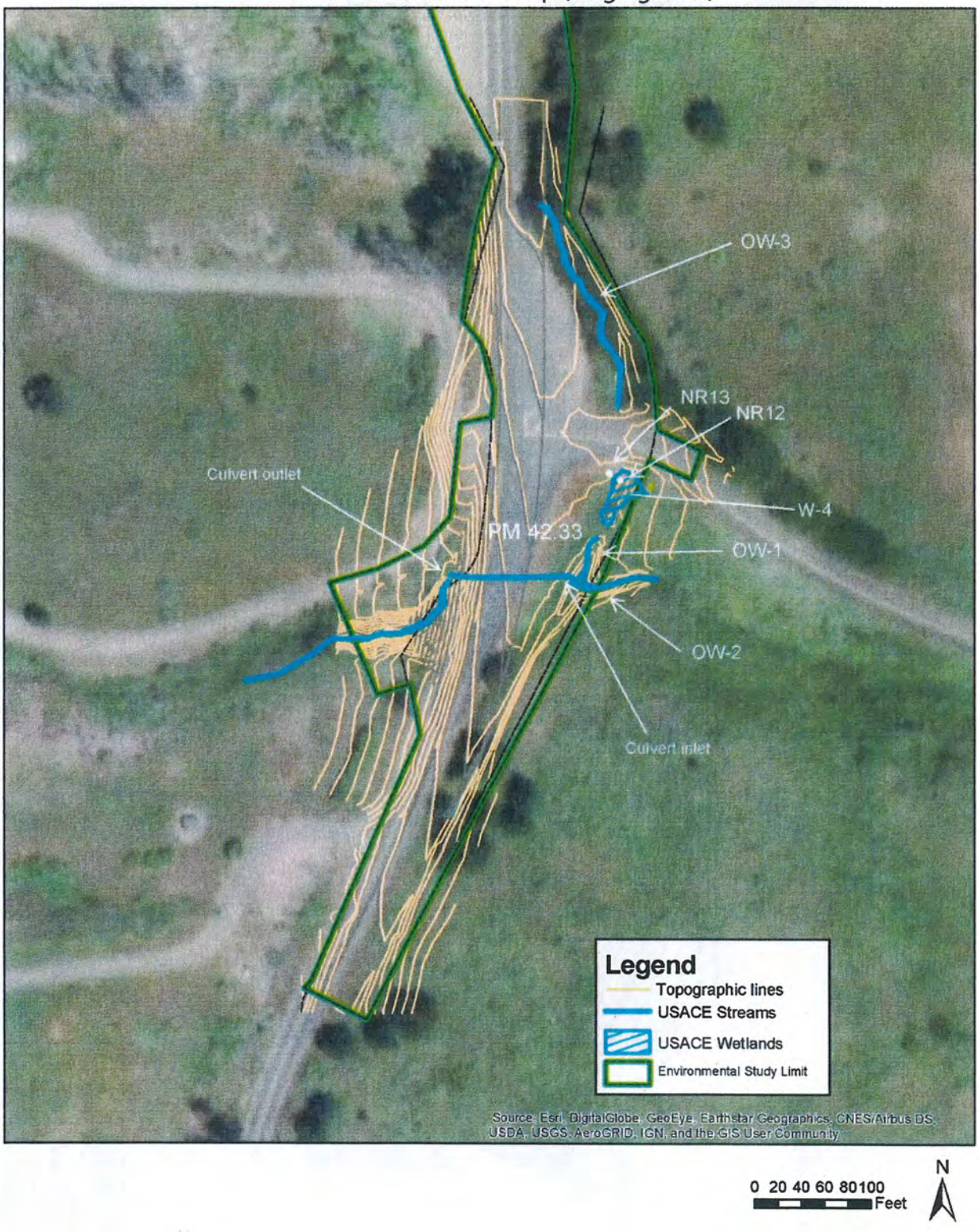


Figure 6. ESHA Map (Staging Area)

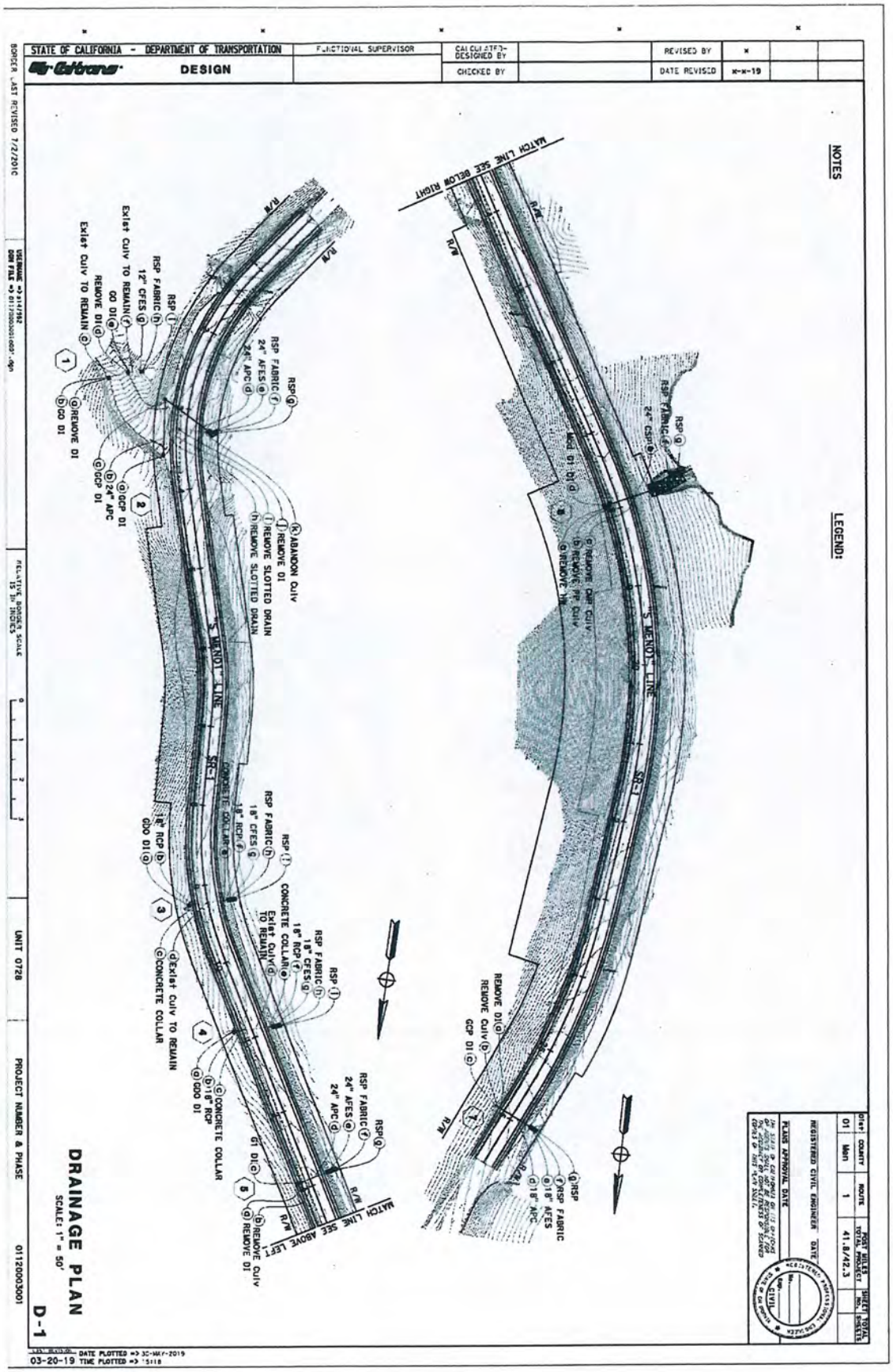


Figure 7. Draft Layout for Navarro Ridge Safety Project as of 5/30/2019

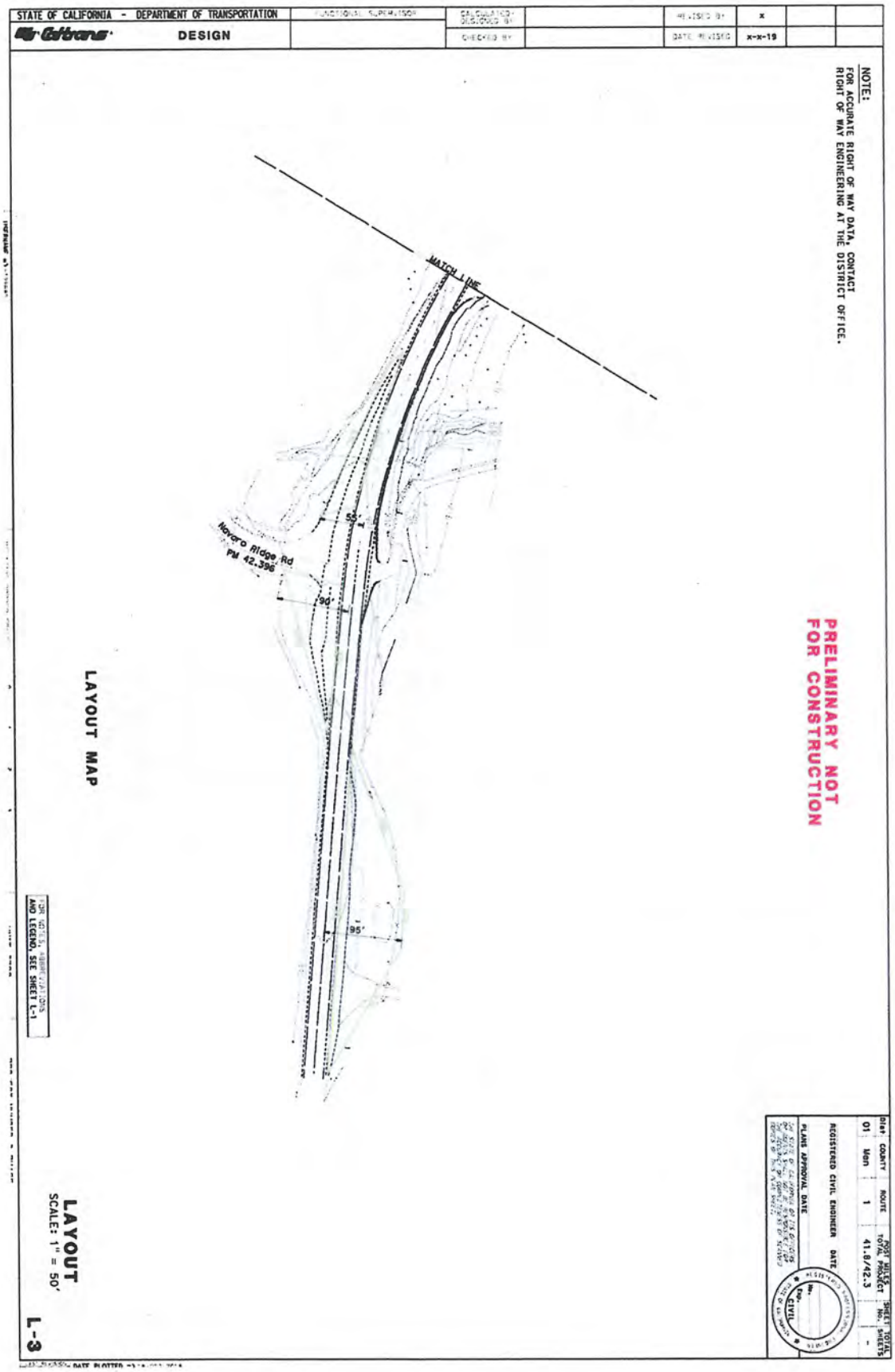


Figure 8. Map of Proposed Staging Area

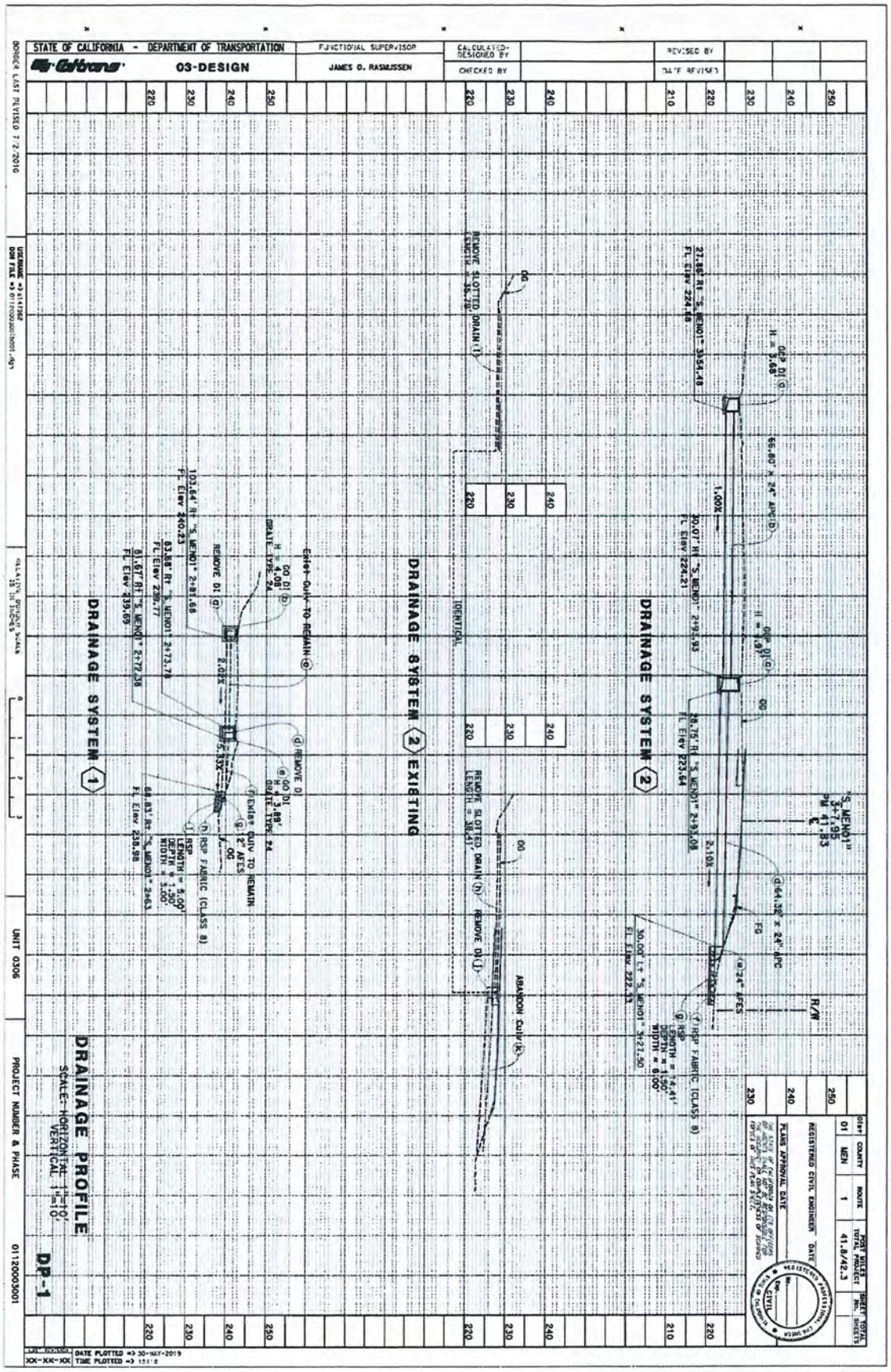


Figure 9. Draft Drainage Profile PM 41.83

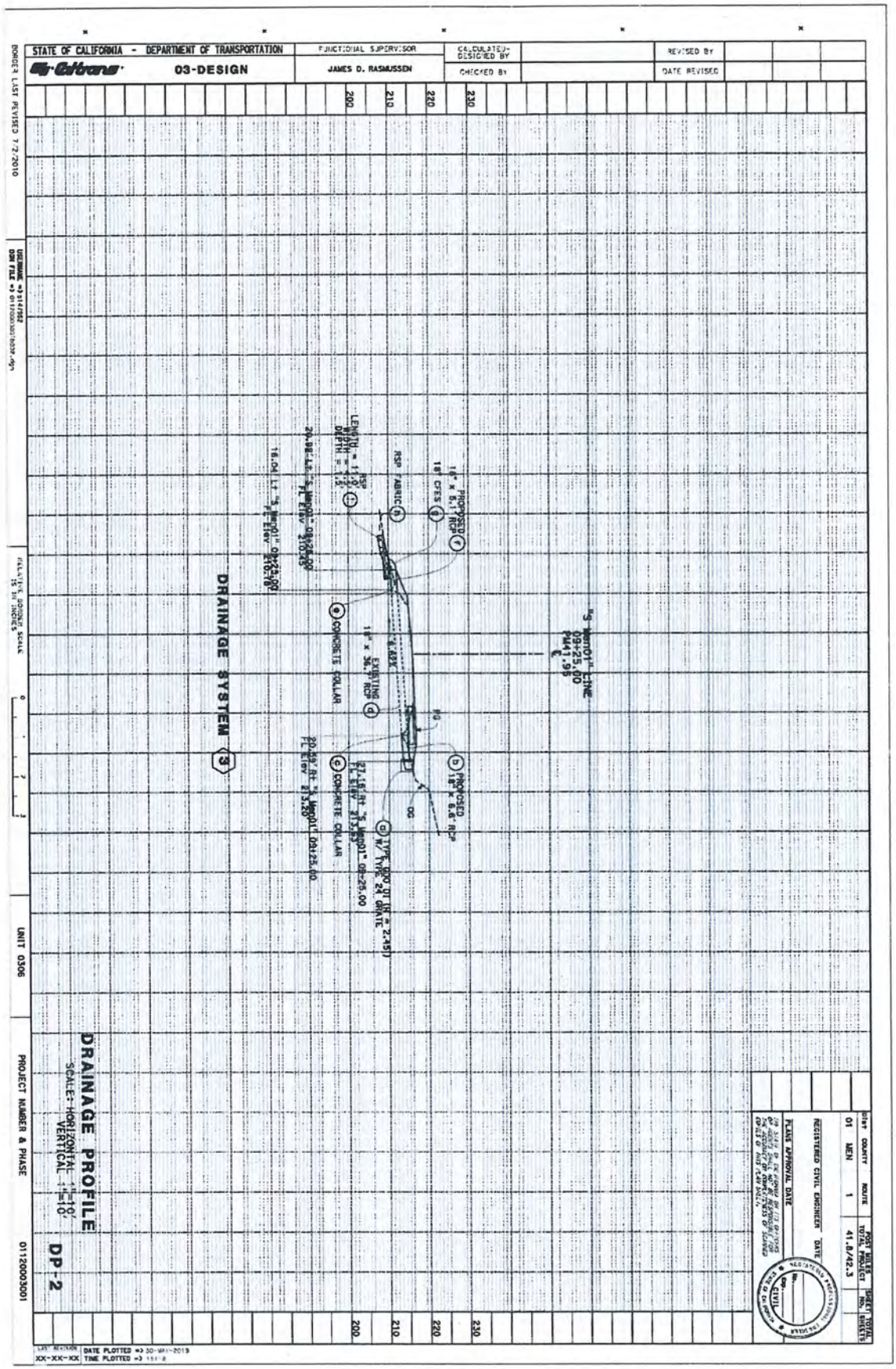


Figure 10. Draft Drainage Profile PM 41.95

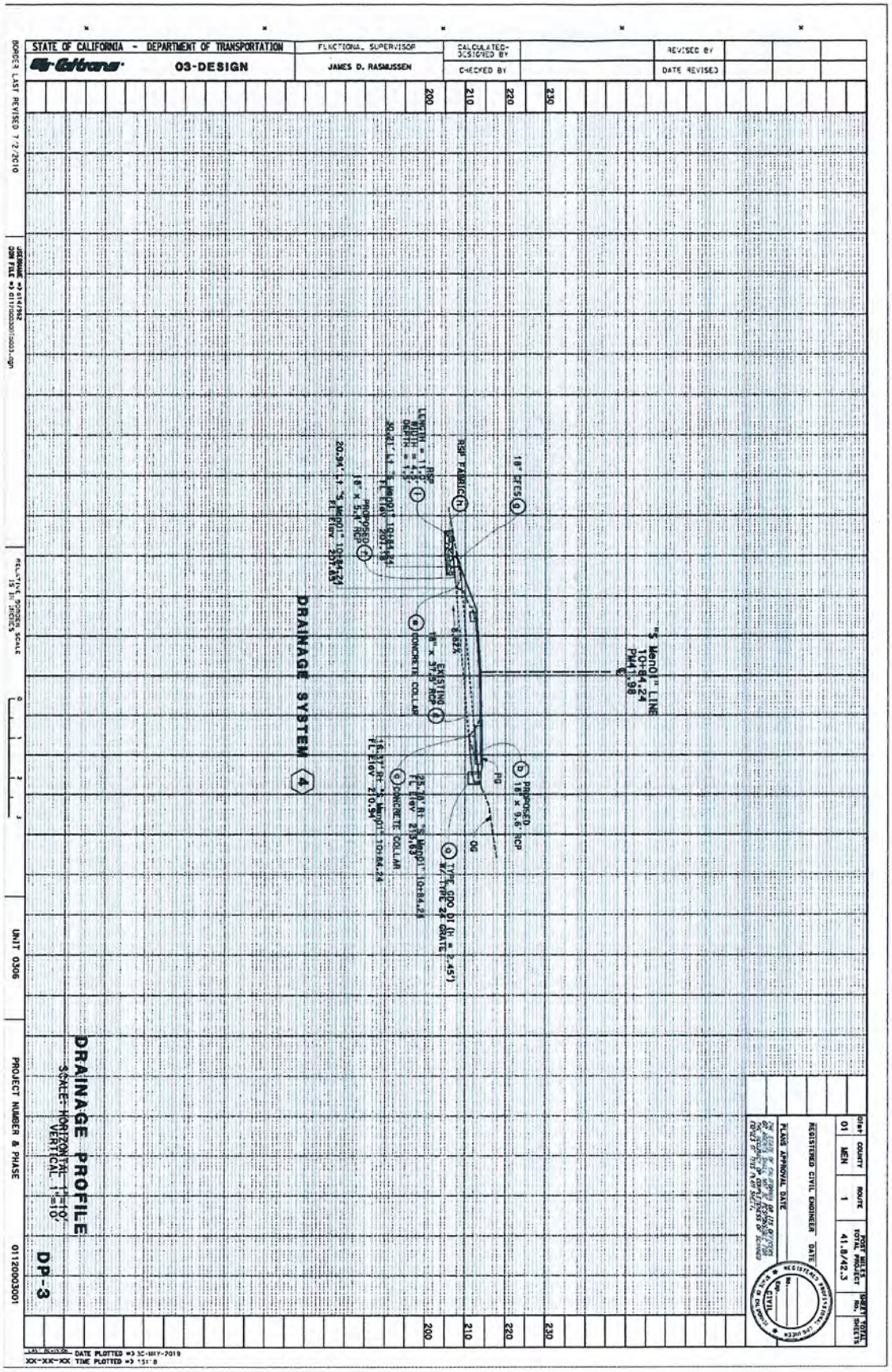


Figure 11. Draft Drainage Profile PM 41.98

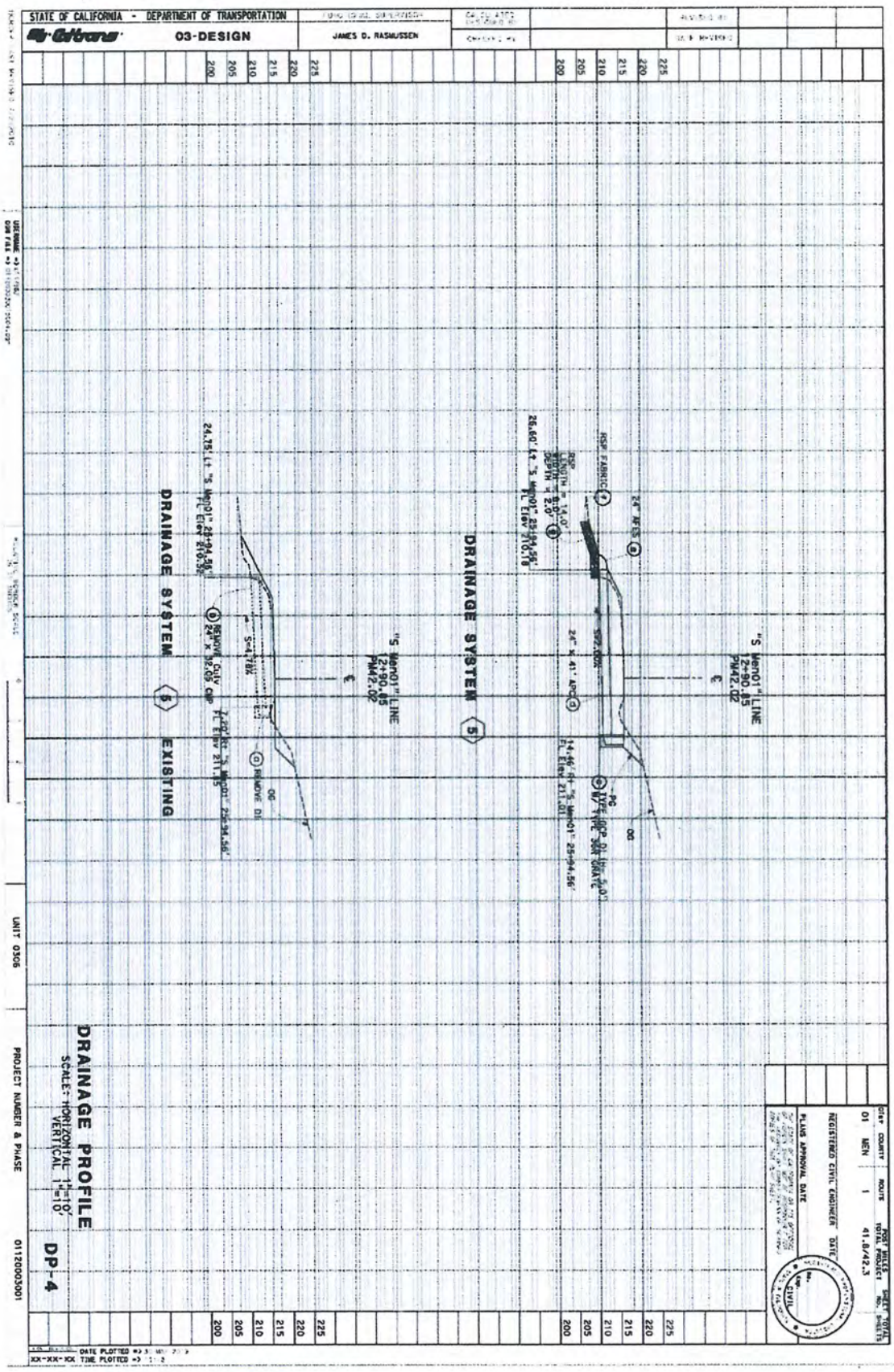


Figure 12. Draft Drainage Profile PM 42.02

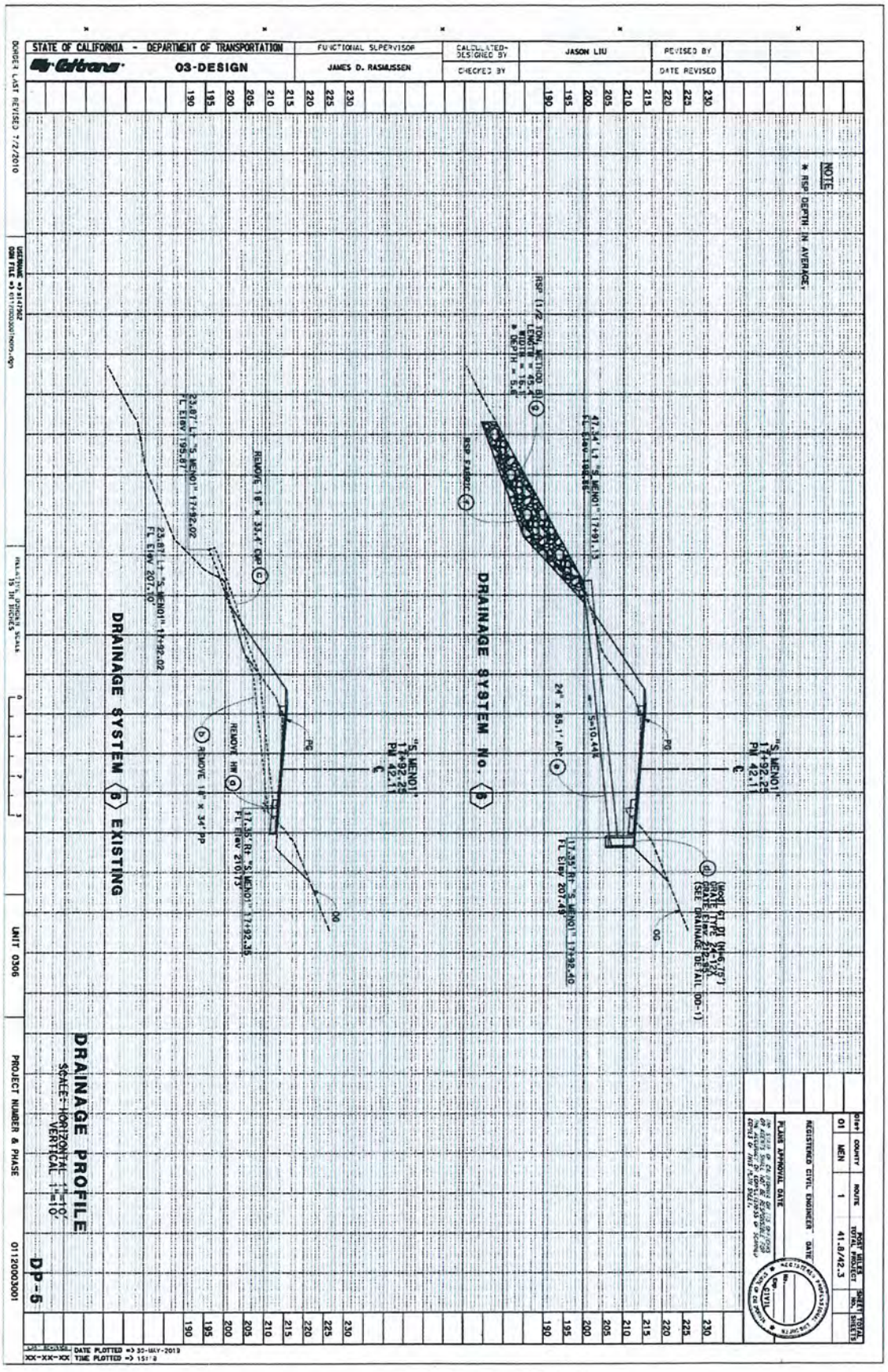


Figure 13. Draft Drainage Profile PM 42.11

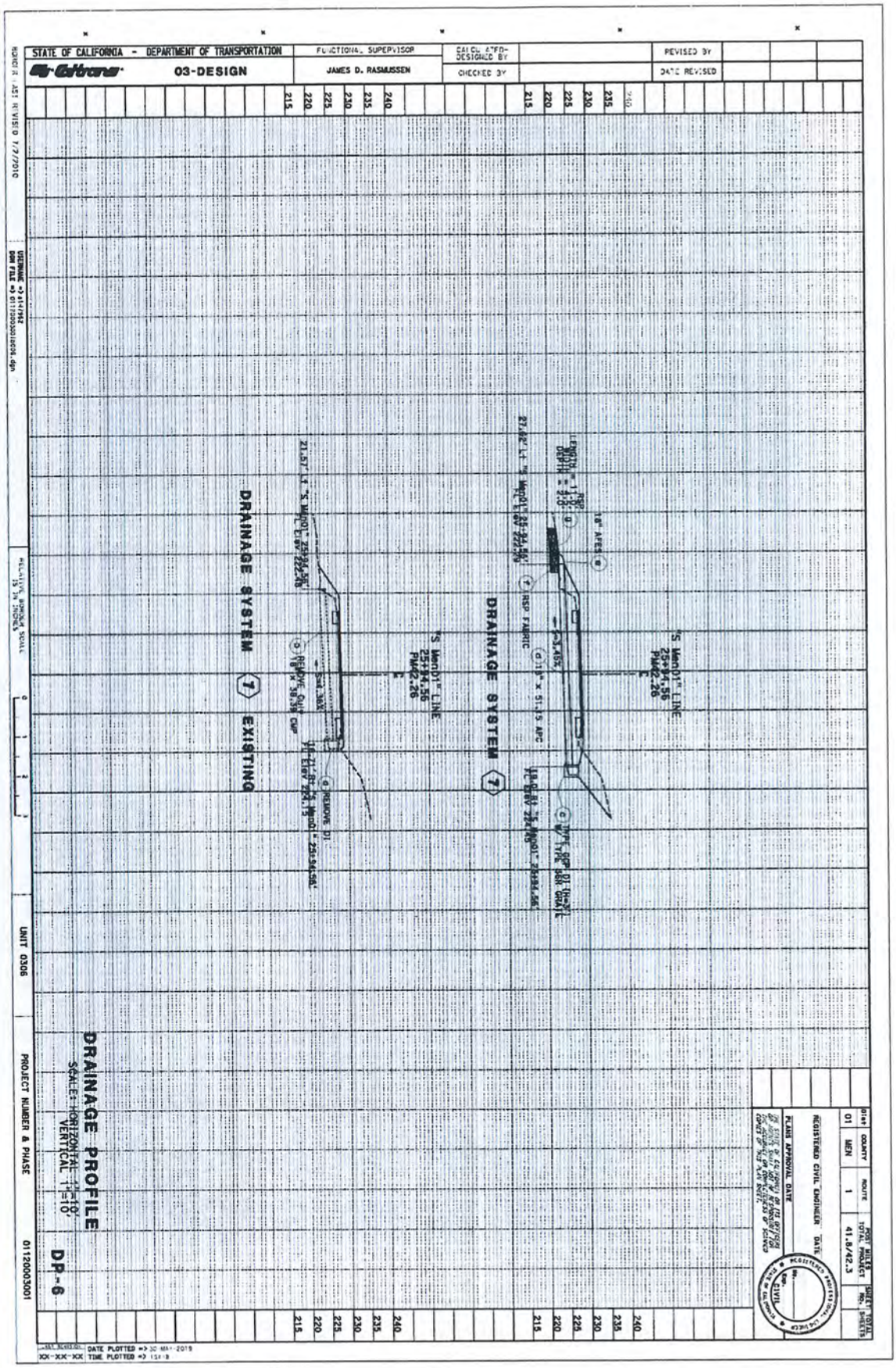


Figure 14. Draft Drainage Profile PM 42.26

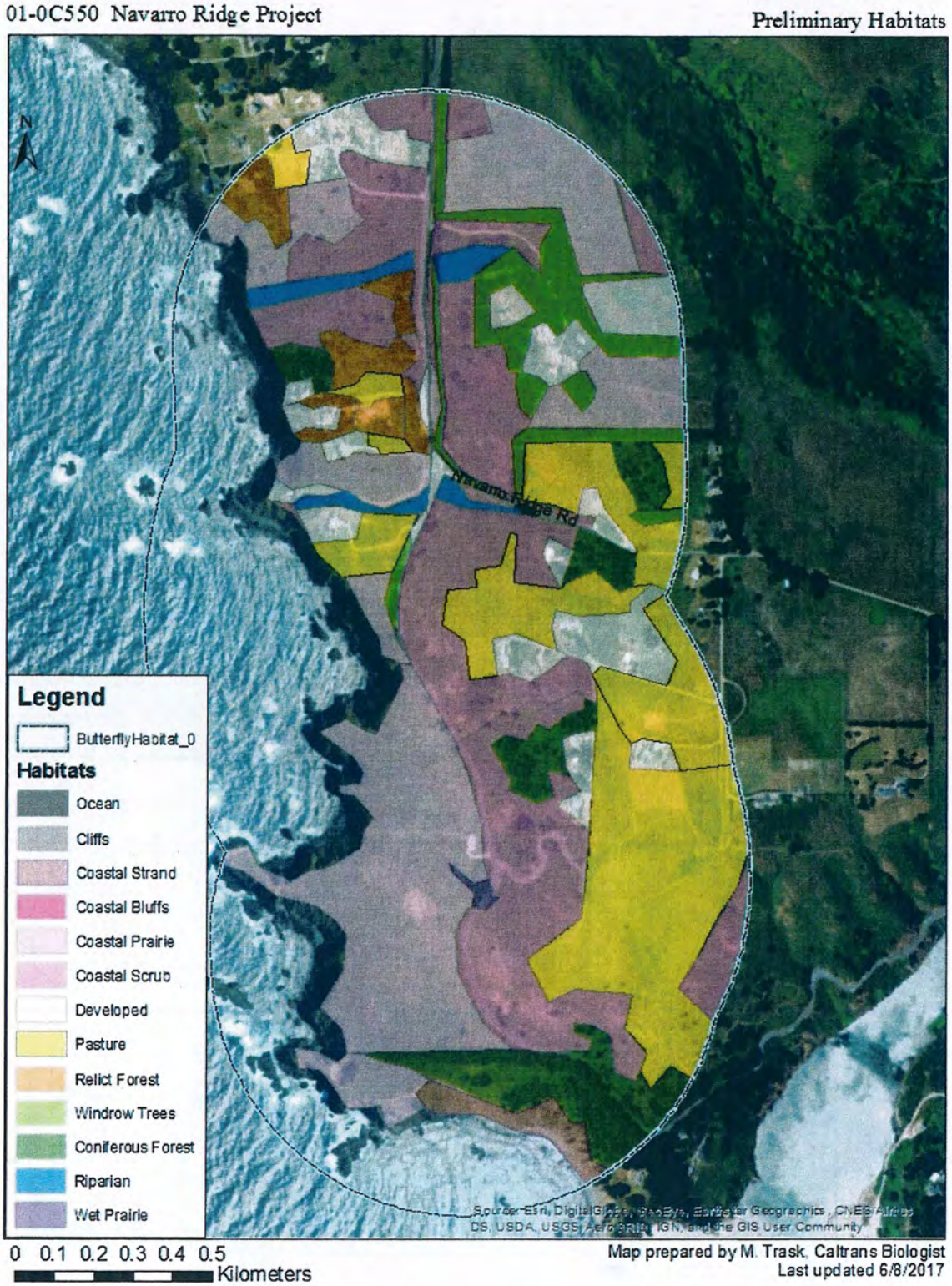


Figure 15. Habitat Communities in the 300-ft Biological Study Area

Appendix B Photos

Photo 1. Culvert outlet at PM 42.26 shows OW-4. Photo taken June 13, 2019.

Photo 2. Roadside ditch, D-2, between PM 42.11 and PM 42.26. Photo taken June 13, 2019.

Photo 4. Culvert at PM 42.11 leading to erosional gully. Photo taken on June 13, 2019.

Photo 5. Wetland ditch near PM 41.84 (W-3). Photo taken on June 1, 2017.

Photo 6. Photo taken from Navarro Ridge Road looking north at OW-3 in the pullout on the northeast side of the project area. Photo taken 5/30/17.

Photo 7. Photo of the wetland and small-fruited bulrush alliance looking northeast from SR 1 just north of the inlet of Navarro Drainage. Photo taken 5/30/18.