Dist-County-Route: 05-SCR-01

Post Mile Limits: PM 8.1 – 10.7

Type of Work: Highway Widening

Project ID (EA): 05-2000-0083-0 (05-0C7340)

Program Identification: N/A

Phase: ☐ PID ☒ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): Central Coast, Region 3

Total DSA: 24.65 acres PCTA: 3.84 acres NIS: 3.84 acres

Alternative Compliance (acres) TBD in PS&E ATA 2 (50% Rule)? Yes ☐ No ☒

Estimated Const. Start Date: January 1, 2025 Estimated Const. Completion Date: December 31, 2028

Risk Level: RL 1 ☐ RL 2 ☐ RL 3 ☒ WPCP ☐ Other: ____

Is MWELO applicable? Yes ☒ No ☐

Does Project require a Rapid Stability Assessment? Yes ☐ No ☒

Is the Project within a TMDL/STGA area where Caltrans is a named stakeholder? Yes ☐ No ☒

TMDL Compliance Units (acres) 0 acres

Notification of ADL reuse (if yes, provide date): Yes ☐ Date: TBD in PS&E No ☐

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

Analette Ochoa 9/27/2022

Analette Ochoa, P.E. Registered Project Engineer — Date

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

Heidi Borders 09/30/22

Heidi Borders, *Project Manager* — *Date*

Enrique Castillo Ramirez 10/03/22

Enrique Castillo-Ramirez, *Designated Maintenance Representative* — *Date*

CJKilmer 10-03-22

Corby Kilmer, *Designated Landscape Architect Representative* — *Date*

(Stamp Required for PS&E only)

for

Karl Mikel 10/3/2022

Karl Mikel, *District SW Coordinator* — *Date*

STORM WATER DATA INFORMATION

1. Project Description

- The California Department of Transportation (Caltrans), in cooperation with the Santa Cruz County Regional Transportation Commission (SCCRTC) and Santa Cruz County, proposes to widen State Route (SR) 1 to include auxiliary lanes, accommodate bus-on-shoulder (BOS) operations between the Freedom Boulevard and State Park Drive interchanges, and construct Coastal Rail Trail Segment 12 (Project). The Coastal Rail Trail Segment 12 (Rail Trail) proposes to construct a paved bicycle and pedestrian shared used trail alongside the existing railroad track alignment, with an optional interim phase. The optional interim phase proposes that all or a portion of the trail would be constructed in approximately the same location of the existing railroad tracks by removal of the rails and ties from just south of Rio Del Mar Boulevard at the southern terminus with Sumner Avenue to the northern terminus at State Park Drive.
- One build alternative and the no-build alternative are proposed for further consideration. The Project is located in Santa Cruz County on SR 1 from post mile (PM) 8.1, south of Freedom Boulevard, to PM 10.7, north of State Park Drive, with 1.14 miles of trail along the SCCRTC-owned Santa Cruz Branch Rail Line (SCBRL) between State Park Drive and Rio Del Mar Boulevard. The total length of the Project on SR 1 is 2.6 miles, and on the SCBRL is 1.14 miles. Within the limits of the proposed Project, SR 1 is a controlled access freeway with two 12-foot lanes; shoulder width varies within Project limits. The average width of the inside shoulders is approximately 5 feet, and the average width of the outside shoulders is approximately 10 feet. Within the Project area, the existing railroad right-of-way is generally in the range of 40- to 55-feet-wide, with the existing railroad tracks generally in the center of the right-of-way. The existing railroad has at-grade crossings at State Park Drive, Aptos Creek Road, and Trout Gulch Road, with bridges over SR 1 at two locations, Soquel Drive, Aptos Creek and Valencia Creek, and crosses under Rio Del Mar Boulevard. The SCBRL is currently an active freight railroad. The Project vicinity and location are shown in the Required Attachments.
- <u>Purpose and Need</u>

  The purpose of the Project is to:
  - Reduce congestion along SR 1 through the Project limits.
  - Enhance bicycle and pedestrian connectivity along Rail Trail.
  - Promote the use of alternative transportation modes to increase transportation system capacity and reliability.
  - Provide Rail Trail access across SR 1 at the two railroad bridges.

  The Project is needed for the following reasons:
  - Several bottlenecks along SR 1 in the southbound and northbound directions cause congestion during peak hours, significantly delaying drivers.
  - Cut-through traffic, or traffic on local streets, is increasing because drivers are seeking to avoid congestion on SR 1.
  - There are limited opportunities for pedestrians and bicyclists to safely cross SR 1 and navigate the Project corridor, even though portions of the Project area are designated as regional bicycle routes.
  - There are insufficient incentives to increase transit service in the SR 1 corridor because congestion threatens reliability and cost-effective transit service delivery.

- The disturbed soil area (DSA), the existing impervious areas, added impervious areas, removed impervious areas, and replaced impervious areas (RIS) are listed in Table 1. These values were calculated based on the proposed geometry within Caltrans' and Santa Cruz County's right-of-way. The DSA includes the proposed impervious work, planned grading, and other unpaved areas that may be disturbed due to construction. The total New Impervious Surfaces (NIS) consists of areas of net new impervious area (NNI) and the RIS. The post-construction treatment area (PCTA) consists of the impervious area required to be treated by the Project.

Table 1. Summary of Project Areas, if Applicable

	Caltrans Right-of-Way (acres)	Santa Cruz County Right-of-Way (acres)			Total (acres)	
		County Road Work	Interim Trail Work	Ultimate Trail Work	Interim Project	Ultimate Project
Disturbed Soil Area (DSA)	17.06	0.47	7.12	7.12	24.65	24.65
Pre-project Impervious Area	32.47	0.08	2.00	2.31	34.55	34.86
Post-project Impervious Area	36.08	0.31	4.44	4.98	40.83	41.37
Net New Impervious Area (NNI)	3.61	0.23	2.44	2.67	6.28	6.51
Replaced Impervious Surface (RIS)	N/A	0	0	0	N/A	N/A
Total New Impervious Surface (NIS)	3.61	0.23	N/A	N/A	3.84	3.84
Post Construction Treated Area (PCTA)	3.61	0.23	0	0	3.84	3.84

Source: Mark Thomas, 2022

- The Project would include work within Caltrans and unincorporated Santa Cruz County's right-of-way.
- The portion of the Project along SR 1 is within Caltrans' right-of-way and is therefore, subject to the Caltrans Municipal Separate Storm Sewer System (MS4) permit. The Project's Project Initiation Documents (PID) phase was approved in 2002 and therefore, work done within Caltrans' right-of-way must comply with the 1999 Caltrans MS4 permit, National Pollutant Discharge Elimination System (NPDES) No. CAS000003, State Water Resources Control Board (SWRCB) Order No. 99-06-DWQ.
- The Project would also include Rail Trail and road realignment work within unincorporated Santa Cruz County. Santa Cruz County is a permittee under the statewide Phase II Small MS4 Permit (NPDES No. CAS000004, SWRCB Order No. 2013-0001-DWQ). The Project would be subject to Post-Construction Stormwater Requirements issued by the Central Coast RWQCB, which give additional project size-based requirements for site design, water quality treatment,

runoff retention, and peak management. Road realignment work within the Santa Cruz County's right-of-way would be subject to the requirements outlined in the Phase II MS4 Permit. Additionally, the Santa Cruz County has developed *Design Criteria Containing Standards for the Construction of Streets, Storm Drains, Sanitary Sewers, Water Systems, and Driveways within the Unincorporated Portion of Santa Cruz County* (2019).

- The Project would need to consider stormwater treatment and baseline hydromodification management within Santa Cruz County's right-of-way for the road realignment work within unincorporated Santa Cruz County.
- Per the Phase II MS4 permit, sidewalks, bicycle lanes, and trails constructed with permeable surfaces, or sidewalks, bicycle lanes, and impervious trails built to direct stormwater to adjacent vegetated areas, are excluded from the post-construction stormwater treatment control and hydromodification management requirements of this permit. Because all of the Project's Rail Trail improvements within unincorporated Santa Cruz County's right-of-way fit the criteria of exclusion described above, these improvements would be exempt from implementing stormwater treatment and baseline hydromodification management.
- The Project would result in NNI surface areas of 6.28 acres under the Interim Trail option and 6.51 acres under the Ultimate Trail option. Because the 1999 Caltrans MS4 permit does not require projects to treat the RIS within Caltrans' right-of-way, and the Phase II Small MS4 Permit does not require projects to treat bicycle or pedestrian facilities, the Project is required to only treat the PCTA of the NIS of 3.61 acres within Caltrans' right-of-way and the PCTA of added and replaced area of 0.23 acres within the Santa Cruz County's right-of-way under both the Interim and Ultimate Trail options. Areas within the Santa Cruz County's right-of-way that are part of the Interim or Ultimate Trail options are bicycle or pedestrian facilities; therefore, these areas would not require treatment. As a result, the Project is required to infiltrate, or treat with flow through treatment best management practices (TBMP), the stormwater runoff from 3.84 acres of impervious surfaces.

2. Site Data and Storm Water Quality Design Issues

- The Project's receiving waters are Aptos Creek and Valencia Creek, Valencia Lagoon, and the Pacific Ocean. The northern portion of the Rail Trail is in the Soquel Watershed and drains directly to the Pacific Ocean through a system of stormwater drains. Valencia Creek is a tributary to Aptos Creek, and Aptos Creek drains directly to the Pacific Ocean
- According to the Caltrans' Water Quality Planning Tool (2022), the Project area is located entirely within the Aptos-Soquel Hydrologic Sub-Area (#304.13) of the Santa Cruz Hydrologic Area and the Big Basin Hydrological Unit.
- The *2018 California Integrated Report (Clean Water Act Section 303(d) List/305[b] Report)* (2021) lists Aptos Creek, Valencia Creek, and the Pacific Ocean as having Total Maximum Daily Loads (TMDL), as shown in Table 2. Valencia Lagoon is not listed as having any TMDLs. Caltrans is not a stakeholder for any of the listed impairments.

Table 2. 303(d) Listed Pollutants

Water Body	Pollutant	Potential Source	TMDL Completion Date (Estimated)
Aptos Creek	Indicator Bacteria	Collection System Failure, Natural Sources, Urban Runoff/Storm Sewers, Other Urban Runoff	U.S. Environmental Protection Agency (EPA) Approval Date: January 20, 2011
	Sedimentation/ Siltation	Source Unknown	2027
Valencia Creek	Escherichia coli (E. coli)	Source Unknown	2027
	Fecal Coliform	Collection System Failure, Domestic Animals/Livestock, Natural Sources, Urban Runoff/Storm Sewers	U.S. EPA Approval Date: January 20, 2011
	Sedimentation/ Siltation	Source Unknown	2027
Pacific Ocean at Rio Del Mar (Santa Cruz County), Aptos Creek mouth	Total Coliform	Source Unknown	2027

Source: SWRCB, 2021

- The Central Coast RWQCB's *Water Quality Control Plan for the Central Coast Basin* (Basin Plan; 2019) lists beneficial uses for Aptos Creek, Valencia Lagoon, and Valencia Creek (see Table 3). Valencia Lagoon does not have any beneficial uses listed.
- The SWRCB's California Ocean Plan (2019) list beneficial uses for the Pacific Ocean, which are also included in Table 3.
- There are six designated Areas of Special Biological Significance within the Central Coast RWQCB's jurisdiction, none of which fall within the proposed Project limits.

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Table 3. Beneficial Uses

Water Body	Beneficial Uses																			
	MUN	AGR	IND	GWR	REC1	REC2	WILD	COLD	WARM	MIGR	SPWN	BIOL	EST	FRSH	NAV	COMM	AQUA	MAR	SHELL	RARE
Aptos Creek	E	E	E	E	E	E	E	E	-	E	E	E	E	E	-	E	-	-	-	-
Valencia Creek	E	-	-	-	E	E	E	E	-	E	-	E	E	-	-	E	-	-	-	-
Valencia Lagoon	-	-	-	-	E	E	E	-	E	E	-	E	-	E	-	E	-	-	-	E
Pacific Ocean	-	-	E	-	E	E	-	-	-	E	E	E	-	-	E	E	E	E	E	E

Source: Central Coast RWQCB, 2019; SWRCB, 2019

Notes:

- MUN – municipal and domestic supply
- AGR – agricultural supply
- IND – industrial process supply
- GWR – groundwater recharge
- REC1 – water contact recreation
- REC2 – non-water contact recreation
- WILD – wildlife habitat
- COLD – cold freshwater habitat
- WARM – warm freshwater habitat
- MIGR – fish migration
- SPWN – fish spawning
- BIOL – preservation of biological habitats of special significance
- EST – estuarine habitat
- FRSH – fresh water replenishment
- NAV - navigation
- COMM – commercial and sports fishing
- AQUA – mariculture
- MAR – marine habitat
- SHELL – shellfish harvesting
- E - existing

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- The Project is not within a moderate- or high-density Significant Trash Generation Area.
- Based on the *Caltrans District 5 Work Plan* (2021), there are no drinking water reservoirs or groundwater recharge facilities near the Project area. However, the Basin Plan (Central Valley RWQCB, 2019) does identify both Aptos Creek and Valencia Creek as having the beneficial use of municipal and domestic water supply.
- Santa Cruz County. Santa Cruz County is a permittee under the statewide Phase II Small MS4 Permit (NPDES No. CAS000004, SWRCB Order No. 2013-0001-DWQ). The Project would be subject to Post-Construction Stormwater Requirements issued by the Central Coast RWQCB, which give additional project size-based requirements for site design, water quality treatment, runoff retention, and peak management. Road realignment work within the County of Santa Cruz's right-of-way would be subject to the requirements outlined in the Phase II MS4 Permit.

  Additionally, the County of Santa Cruz has developed *Design Criteria Containing Standards for the Construction of Streets, Storm Drains, Sanitary Sewers, Water Systems, and Driveways within the Unincorporated Portion of Santa Cruz County* (Santa Cruz County Design Criteria) (2019). The Santa Cruz County Design Criteria summarizes the requirements of the Phase II Small MS4 Permit and the Central Coast RWQCB's *Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region* (RWQCB Post-Construction Stormwater Requirements) (2013). It also provides guidance for low-impact development design strategies and specific BMP selection criteria. The Santa Cruz County Design Criteria provides technical requirements for project designs throughout Santa Cruz County that include the implementation of permanent stormwater TBMPs. Placement of stormwater TBMPs within unincorporated Santa Cruz County's right-of-way would comply with the Santa Cruz County Design Criteria.
- The Project would result in temporary and/or permanent impacts to riparian, freshwater marsh, drainage ditches, and riverine habitats within the Project vicinity. These habitats may fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE), RWQCB, California Department of Fish and Wildlife, and the Coastal Zone/California Coastal Commission. Impacts to these habitats may consist of fill or dredging, and such activities could require permits or authorizations from the previously stated regulatory agencies. As described in the *Draft Natural Environment Study* (SWCA Environmental, 2022), the proposed Project would result in temporary impacts to non-wetland waters of the U.S.; therefore, the Project would be regulated by the USACE under Section 404 of the Clean Water Act (CWA). Coverage under Nationwide Permit 14, Linear Transportation Projects, is anticipated. Discharges into waters of the U.S. under Section 404 of the CWA would require a Water Quality Certification from the RWQCB, pursuant to Section 401 of the CWA. As described in the *Draft Natural Environment Study*, the proposed Project would result in permanent and temporary impacts in areas under the California Department of Fish and Wildlife's jurisdiction; therefore, a Streambed Alteration Agreement would be required. As described in the *Draft Natural Environment Study,* the proposed Project would result in permanent and temporary impacts in areas under the Coastal Zone/California Coastal Commission's jurisdiction. For areas of the proposed Project that occur within the Coastal Zone of California, implementation of the Project will likely require a Coastal Development Permit or Waiver to satisfy provisions of the California Coastal Act.
- According to the Köppen climate classification system, the Project area has a Mediterranean climate, characterized by mild, moist winters and hot, dry summers (George, 2020). The Project generally experiences precipitation between October and April. A climate summary for the nearest National Oceanic and Atmospheric Administration weather station with similar elevation and topography to the Project reported the precipitation and temperature

information for the Santa Cruz, California Station (047916). The average annual rainfall reported for the Santa Cruz, California Station is 29.33 inches. The maximum average temperature reported for the Project area is 76.1 °F in September and the minimum average temperature reported is 38.8 °F in January. The wettest month of the year is January with an average rainfall of 6.14 inches and the driest month is July with 0.06 inches (Western Regional Climate Center, 2016).

- Per the Project's *Draft Initial Site Assessment* (Draft ISA) (WRECO, 2022a), subsurface conditions encountered near the Project limit, consists of various types of sand, silty sand, clayey silt with sand, sandy gravel, and sandy clay, to approximately 30 feet below ground surface (bgs).

  Soils within the Project footprint fall under Hydrologic Soil Groups (HSG) A, C, and D, with the majority of the Project site under HSG C (NRCS, 2020). Soils classified as HSG A typically have low runoff potential, with high infiltration rates and are located near the Rail Trail and near Freedom Boulevard. Soils classified as HSG C typically have moderately high runoff potential, with low infiltration rates and are located throughout the majority of the Project site. Soils classified as HSG D typically have high runoff potential and very slow infiltration rates and are located near State Park Drive and Moosehead Drive.

  As mentioned in the Project's Draft ISA, Santa Cruz County encompasses diverse topography, geologic features, and soils, including coastal terraces and alluvial valleys, steep foothills and mountains, known and potential earthquake faults and seismic hazards, and a wide range of soil types with varying constraints (e.g., expansion, liquefaction) (WRECO, 2022a).

- Per the United States Geological Survey (USGS) 7.5-Minute Soquel Quadrangle map and the 7.5-Minute Watsonville West Quadrangle map, the Project area is sloped towards Aptos Creek. Aptos Creek is at an elevation of 25 feet, with the State Park Drive and Freedom Boulevard Interchanges at average elevations of 150 feet. The average elevation of the Project area is 120 feet above mean sea level. Regionally, the Project is located in a hilly area, sloping from east to southwest towards Soquel Cove (USGS, 2019).

- The Project area lies within the Central Coast Hydrologic Region, Soquel Valley Groundwater Basin (3-1), Santa Cruz Mid-County Subbasin (3-001) (Department of Water Resources, 2004). There are no groundwater recharge areas near the Project area (Santa Cruz Mid-County Groundwater Agency, 2014).

- The Basin Plan does not list beneficial uses for specific groundwater basins; however, it does state that "Groundwater throughout the Central Coastal Basin, except for that found in the Carrizo Plain groundwater basin, is suitable for agricultural water supply, municipal and domestic water supply, and industrial use" (Central Coast RWQCB, 2019).

- Based on the Project's *Preliminary Geotechnical Design Report*, groundwater levels are anticipated to vary with the passage of time due to seasonal groundwater fluctuation, and surface and subsurface flows into nearby water coarse, ground surface run-off, and other environmental factors that may not be present at the time of previous field explorations (Parikh, 2021).

  Information obtained from the California SWRCB's GeoTracker website, for sites within proximity to the Project limit, indicated depth to groundwater ranges from 16 to 26.5 feet bgs, and groundwater flow direction is to the south-southwest (SWRCB, 2021).

- The Caltrans *District 5 Work Plan* (2021) does not identify any slopes prone to erosion along SR 1 near or within the Project area.

- As determined from Santa Cruz County's GIS Web mapping application, the land use immediately surrounding the Project area is mostly residential, open space, and parks and recreation (Santa Cruz County, 2022).
- According to the Project's Draft ISA (WRECO, 2022a), the Project may contain the following contaminants: pesticides, herbicides, and metals, aerially-deposited lead, petroleum hydrocarbons, volatile organic compounds, semi-volatile organic compounds, polychlorinated biphenyls, arsenic, copper, chromium, creosote, pentachlorophenol, polynuclear aromatic hydrocarbons, lead-based paint, and asbestos containing materials. The types and amounts of contaminants within the Project area, as well the aerially deposited lead locations and reuse potential, will be determined during the Plans, Specs, and Estimates (PS&E) phase. Per Parikh's *Preliminary Geotechnical Design Report* (2021), the groundwater conditions at the Project site would be verified during the PS&E phase.
- Per the Project's *Flood Evaluation Report-Location Hydraulic Study*, the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) were referenced for the Project. The majority of the Project site is located within unshaded Zone X regions. An area within unshaded Zone X is considered to be outside of FEMA's Special Flood Hazard Areas (SFHA) and represent areas of minimal flood hazard. Aptos Creek is associated with a base floodplain. The Aptos Creek floodplain at SR 1 and the railroad bridge are within FEMA FIRM panel 06087C0357F. According to the FIRM, Aptos Creek is associated with a SFHA Zone AE within the Project limits. Zone AE represents areas within a base floodplain where base flood elevations are provided. A floodway has also been defined along this reach of Aptos Creek. There are areas of shaded Zone X regions adjacent to the Aptos Creek base floodplain in the vicinity of SR 1, including along Valencia Creek. Shaded Zone X regions represent areas subject to inundation by storm events between the base flood and the 500-year flood, and are considered to be outside of a SFHA (WRECO, 2022b).
- The Project has a high receiving water risk because Aptos Creek and its tributaries have an impairment for sediment and have the combined existing beneficial uses of cold freshwater habitat, fish spawning, and fish migration (Central Coast RWQCB, 2019).
- The Project sediment risk factor was determined from the product of rainfall erosivity factor (R), the soil erosion factor (K), and the length-slope factor (LS). Using the U.S. EPA's "Rainfall Erosivity Factor Calculator for Small Construction Sites" (2022), the calculated R factor for the Project site is 260.44. The Caltrans' Water Quality Planning Tool (2022) identified the K- and LS-factors within the Project area to be 0.24 and 3.03, respectively. The product of these values is 189.39 tons/acre (26.44 x 0.32 x 3.89); because this value is greater than 75, the Project has a high sediment risk.
- The high receiving water and high sediment risks result in the Project being classified as Risk Level 3.
- The Build Alternative would require full or partial acquisitions for the construction of the SR 1 and Rail Trail ultimate trail option improvements, as well as temporary easements for construction activities such as the construction of sound walls and retaining walls along SR 1 and the SCBRL.
- There are no known existing TBMPs within the Project limits; if any are present, they will be avoided during construction, if possible, and will be identified on the plans to be developed during the PS&E phase. This will be confirmed with the Stormwater Coordinator.

- There are no known existing maintenance facilities within the Project limits; if any are present, they will be avoided during construction, if possible, and will be identified on the plans to be developed during the PS&E phase.

3. Temporary Construction Site BMPs to be used on Project

- This Project proposes to disturb 24.65 acres of soil. Therefore, this Project will require a Storm Water Pollution Prevention Plan (SWPPP) and coverage under the Construction General Permit (CGP). Because this Project disturbs less than 30 acres of soil, the Project is not subject to bioassessment monitoring.
- A preliminary risk level assessment has determined this Project to be Risk Level 3. See attached Risk Level Assessment for more information.
    - The R-factor is 260.44.
    - The K-factor is 0.24.
    - The LS-factor is 3.03.
    - The sediment risk is High (189.39 ton/acre).
- The Latitude/Longitude for the Project is 36.9753, -121.8932.
- The cost of construction site BMPs is estimated at 3% of the roadway item cost.
- 25 acres will be used in the calculation to determine CGP Notice of Intent (NOI)/Notice of Termination (NOT) fees.

    3 Number of FYs of construction schedule
    3 Additional years for vegetation period or other NOT requirements
    6 Total years
    $1,796 Storm Water Construction Annual Fees for 25 acres
    $5,388 Total NOI/NOT Stormwater CGP fees

- The SWPPP will outline effective combinations of temporary and permanent erosion and sediment controls will be used. Stormwater management for the site will be coordinated through the contractor with Caltrans construction personnel to effectively manage erosion from the DSAs by implementing a SWPPP. Because Aptos Creek has a TMDL for sediment, additional robust erosion and sediment controls will be implemented to ensure sediment does not enter waterways. Selected BMPs that will be included, but not limited, to the SWPPP for the Project are defined as follows:

Temporary Soil Stabilization

- Active DSAs and work within Aptos Creek will be minimized during the rainy season, utilizing scheduling techniques.
- Existing vegetation will be preserved to the maximum extent feasible with the use of temporary high-visibility fence.
- Temporary protective cover/erosion control will be implemented on all non-active DSAs and soil stockpiles.
- Erosive forces of stormwater runoff will be controlled with effective storm flow management such as temporary concentrated flow conveyance devices, earthen dikes, drainage swales,

lined ditches, outlet protection/velocity dissipation devices, and slope drains as determined feasible.

Temporary Sediment Controls

- Linear sediment controls such as fiber rolls, check dams, or gravel bag berms will be implemented on all active and non-active DSAs during the rainy season.
- To further help prevent sediment discharge, stabilized construction site entrances, temporary drainage inlet protection, and street sweeping and vacuuming will be utilized.
- Appropriate wind erosion controls will be implemented year-round.

Non-Stormwater Management

- Water conservation practices will be implemented on all construction sites and wherever water is used.
- The widening of the SR 1 bridge over Aptos Creek and Spreckels Drive would occur on the south side of SR 1 and require abutment walls along the existing embankments, along the south side of Aptos Creek, and the embankment on the north side of Spreckels Drive. Therefore, temporary clear water diversions, temporary dewatering of the work zone, and material and equipment use over water BMPs will be required during construction to protect water quality.
- Dewatering activities would comply with the Caltrans *Standard Plans and Standard Specifications* (2018), and applicable permits from the Central Coast RWQCB. If groundwater in the area is contaminated, the Project would comply with the NPDES General Permit for Discharges of Highly Treated Groundwater to Surface Waters (NPDES No. CAG993002, Order No. R3-2016-0035). If groundwater in the Project area is clean, the Project would comply with the NPDES General Permit for Discharges with Low Threat to Water Quality (NPDES No. CAG993001, Order No. R3-2017-0042).
- Paving and grinding procedures will be implemented throughout SR 1 and the Rail Trail, where paving, surfacing, resurfacing, grinding, or saw cutting may pollute stormwater runoff or discharge to the storm drain system or watercourses.
- Procedures and practices designed for construction contractors to recognize illicit connections or illegally dumped or discharged materials on a construction site, and report incidents to the Resident Engineer, will be implemented.
- The following activities would be performed at least 100 feet from concentrated flows of stormwater, drainage courses, and inlets if within the floodplain and at least 50 feet if outside of the floodplain: stockpiling materials, storing equipment and liquid waste containers, washing vehicles or equipment, and fueling and maintaining vehicles and equipment.
- Pile driving operations will be utilized for bridge piers, therefore pile driving BMPs will be implemented.
- Concrete curing will be used in the construction of multi-use paved path on the Rail Trail, the two railroad bridges over SR 1, the widening of the bridge over Aptos Creek and Spreckels Drive, and 9 retaining walls. Concrete curing includes the use of both chemical and water methods. Proper procedures will minimize pollution of runoff during concrete curing.

- The following construction site BMPs are anticipated to be bid items for this Project:
    - Job Site Management, including street sweeping
    - Prepare Stormwater Pollution Prevention Program
    - Rain Event Action Plan
    - Storm Water Sampling and Analysis Day
    - Stormwater Annual Report
    - Move In/Move Out (Temporary Erosion Control)
    - Temporary Hydraulic Mulch (Bonded Fiber Matrix)
    - Temporary Soil Binder
    - Temporary Check Dam
    - Temporary Drainage Inlet Protection
    - Temporary Fiber Roll
    - Temporary Gravel Bag Berm
    - Temporary Large Sediment Barrier
    - Temporary Construction Entrance
    - Temporary Concrete Washout
    - Temporary Fence (type ESA)
    - Drainage Inlet Marker
- Supplemental Items
    - Water Pollution Control Maintenance Sharing
    - Additional Water Pollution Control
    - Storm Water Sampling and Analysis
- State Furnished Items
    - Annual Construction General Permit Fee
- Concurrence from construction regarding the temporary Construction Site BMP implementation strategy and associated quantities will be provided during the PS&E phase.

4. Maintenance BMPs

- The Project would enhance multi-modal access throughout the Segment 12 of the Rail Trail. Therefore, drain inlet stenciling would be required. The stenciling would be designed in accordance with the Caltrans *Standard Specifications* (2018) and the Santa Cruz County Design Criteria (2019).
- Maintenance vehicle pullouts would be considered for each potential BMP to allow for ease of maintenance.

5. Regional Water Quality Control Board Agreements, PLACs, and Other Water Quality Requirements

- Currently, there are no key negotiated understandings or agreements with the Central Coast RWQCB and other permitting agencies pertaining to the Project. The required water quality permits, reviews, and approvals are listed in Section 3. The permit applications will be approved before advertising or prior to approval of the Final Environmental Document, as applicable.

6. Permanent BMPs

Rapid Stability Assessment

- The Project is grandfathered under the 1999 Caltrans MS4 permit; therefore, the Project is not required to implement hydromodification management measures within Caltrans' right-of-way.
- Per the Phase II MS4 permit, sidewalks, bicycle lanes, and trails constructed with permeable surfaces, or sidewalks, bicycle lanes, and impervious trails built to direct stormwater to adjacent vegetated areas are excluded from the hydromodification management requirements of this permit. Because all the Project's Rail Trail improvements within unincorporated Santa Cruz County's right-of-way fit the criteria of exclusion described above, these improvements would also be exempt from implementing stormwater treatment and baseline hydromodification management.
- For non-exempt portions of the Project within Santa Cruz County's right-of-way, the Project would have to comply with the hydromodification management requirements included under the Central Coast RWQCB Post-Construction Stormwater Requirements of the Phase II MS4 permit. The Project proposes to add or replace less than 15,000 square feet of non-exempt impervious areas within Santa Cruz County's right-of-way; therefore, the Project would not be subject to hydromodification requirements.

Design Pollution Prevention (DPP) BMP Strategy

Downstream Effects Related to Potentially Increased Flow

- The increase in impervious area from the widening of the SR 1 roadway, the replacement of the two SCBRL bridges over SR 1, and the widening of the SR 1 bridge over Aptos Creek and Speckles Drive has the potential to increase the velocity, volume, and potential sediment load of downstream flow.
- These increases will be minimized through the implementation of stormwater treatment BMPs to promote infiltration and dispersion of runoff.
- Downstream effects will be further minimized using permanent erosion control measures along slopes and disturbed soils to achieve permanent stabilization and vegetation establishment.

Slope/Surface Protection Systems

- The Project would be constructed to minimize erosion by disturbing slopes only when necessary, minimizing cut and fill areas to reduce slope lengths, providing cut and fill slopes flat enough to allow revegetation to limit erosion rates, and providing concentrated flow conveyance systems consisting of storm drains, ditches, and gutters.
- Permanent erosion control measures would be applied to all exposed areas once grading or soil disturbance work is completed as a permanent measure to achieve final slope stabilization. These measures may include hydraulically applying a combination of hydroseed with native seed mix, hydromulch, straw, tackifier, and compost to promote vegetation establishment as well as installing fiber rolls to prevent sheet flow from concentrating and causing gullies. For steeper slopes or areas that may be difficult for vegetation to establish, measures such as netting, blankets, or slope paving would be considered to provide stabilization.

- The source control measures for this Project would include drain inlet markers, protection of existing vegetation, and landscaping practices (Santa Cruz County, 2019). Locations and designs for source control measures would be determined during the PS&E phase.
- Mature existing landscape plantings will be removed as a result of the Build Alternative. Where proper setback requirements allow, plantings will be replaced as per Caltrans' policies, and include a permanent automated irrigation system and a three-year plant establishment period. The replacement planting effort will include vegetation impacted by the contractor's staging, storage, and construction activities.
- The Project will be required to comply with Model Water Efficient Landscape Ordinance (MWELO). The Maximum Applied Water Allowance (MAWA) and Estimated Total Water Use (ETWU) for this Project will be provided at the PS&E phase.

Concentrated Flow Conveyance Systems

- The Project would result in an increase of 6.28 acres of impervious area under the Interim Trail option or 6.51 acres of impervious area under the Ultimate Trail option. The principal features that would impact existing drainage facilities are the widening of the SR 1 roadway, the replacement of the two SCBRL bridges over SR 1, and the widening of the SR 1 bridge over Aptos Creek and Speckles Drive.
- The goal of the Project is to maintain the current drainage patterns. Drainage would be proposed for the overcrossing structure, and additional inlets and new drainage systems would be designed to meet the current drainage requirements and capture the increased flows. Potential drainage features for the Project include ditches, berms, dikes, swales, flared culvert and end sections, outlet protection/velocity dissipation devices, and overside drains. For detailed drainage information, refer to the Project's *Drainage Impact Study Report* (WRECO, 2022c). Drainage improvements would be determined during the PS&E phase.

Preservation of Existing Vegetation

- Existing mature vegetation and landscaping within the whole Project limits would be protected in place where possible.
- Areas of clearing and grubbing would be limited to those areas impacted by new construction. Environmentally sensitive areas (ESA) would be preserved during construction with the use of temporary high-visibility ESA fencing. ESA fencing locations would be identified during the PS&E phase.

Treatment BMP Strategy

- TBMPs are considered because the Project has more than 1 acre of NIS; therefore, the Project is required to treat the 3.84 acres of PCTA. Dry-weather flow and traction sand traps would not be considered for this Project within Caltrans' right-of-way since dry-weather flows are not anticipated and traction sand traps are not regularly applied to SR 1 within the Project area. Caltrans has an approved list of TBMPs that have been studied and verified to remove targeted design constituents and provide general pollutant removal. The TBMPs considered for this Project are discussed in the subsections below.
- The Project proposes to implement 11 BMPs with a total of 10.68 and 10.33 acres of treated impervious and pervious areas within Caltrans right-of-way , respectively, and 5.94 and 0.35 acres of treated impervious and pervious areas within the County right-of-way, respectively.

- Types and locations of the proposed treatment BMPs, as well as their treated impervious and/or pervious areas within both the Caltrans and County right-of-way have been listed in Table E-2 and in the Maps Showing BMP Deployment (see Treatment BMPs Checklist T-1, Part 1 and in the Maps Showing BMP Deployment under Supplemental Attachments).
- Treatment calculations, types, and final sizing and locations of BMPs will be determined during the PS&E phase.

Infiltration Devices

- Infiltration devices allows for the removal of pollutants from surface discharges by capturing water quality volume, or a portion thereof, and infiltrating it directly to the soil rather than discharging it to surface waters.
- Infiltration devices are considered for this Project because a portion of the Project footprint within the Santa Cruz County's right-of-way consists of soils classified under HSG A. These soils typically have low runoff potential with high infiltration rates, indicating sufficient soil permeability to implement infiltration devices.
- Any stabilized pervious areas within the Project limits that receives runoff from an impervious area and promotes infiltration of runoff may be considered for designation as a Design Pollution Prevention (DPP) Infiltration Area. DPP Infiltration Areas are vegetated and non-vegetated areas that would be designed and/or evaluated for infiltration capabilities.
- DPP Infiltration Areas would be placed in areas with sufficient elevation to allow gravity drainage of the device when needed for maintenance purposes.

Biofiltration Swales

- The use of biofiltration and bioretention type devices allows for pollutant removal or reduction while promoting the effort to mimic predevelopment hydrology by reducing flow rates and velocities.
- Biofiltration swales are proposed for this Project because site conditions allow for the establishment of vegetation, and it is expected that there are adequate areas within Caltrans' and Santa Cruz County's right-of-way to place biofiltration swales. Conceptional BMP locations within the whole Project limits are shown in the Supplemental Attachments. Detailed design calculations to size the biofiltration swales and determination of final locations will be completed during the PS&E phase.
- Biofiltration swale slopes would be a maximum of 4:1 (H:V).
- Biofiltration swale bottom widths would range between 2 and 10 feet.
- If water cannot be infiltrated completely, an underdrain would be installed for conveyance. Underdrains would be lined with an impermeable layer to prevent comingling of groundwater with runoff.
- The area is largely flat, and exposed soil would be hydroseeded.

Trash Capture Devices

- The use of trash capture devices allows for trash removal or reduction to remove pollutants from stormwater runoff.

- The Project is not within a moderate- or high-density Significant Trash Generation Area; therefore, the Project is not required to implement trash capture systems within Caltrans' right-of-way.

  As required by the Santa Cruz County Design Criteria (2019), the Project would implement full trash capture systems consistent with SWRCB Requirements within Santa Cruz County's right-of-way. The trash capture systems would be designed to treat all runoff from the Project site and from upstream watershed areas that drain to the Project site.

Table E-1. Overall Project Treatment and Credit Summary Table			
		Caltrans Right-of-Way	County Right-of-Way
	PCTA (ac)	A: 3.61	A: 0.23
Total Treated Area	Treated Impervious Area (ac)	B: 10.33	B: 0.35
	Treated Pervious Area (ac)	C: 5.94	C: 0.00
	PCTA Balance (ac)	D: +12.66	D: +0.12

Required Attachments

- Vicinity Map
- Location Map
- Risk Level Determination Documentation

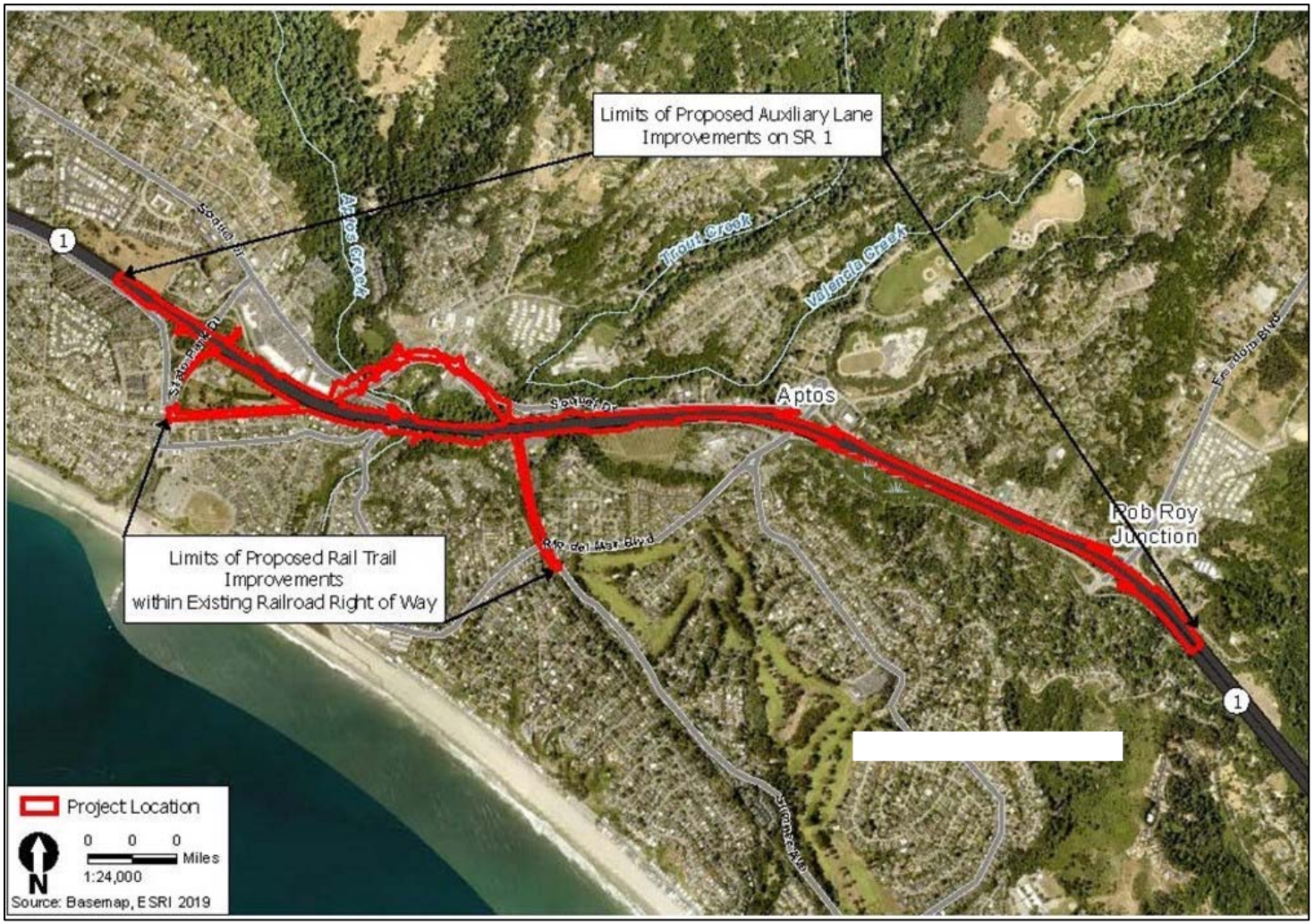
Supplemental Attachments

- Checklist SW-1, Site Data Sources
- Checklist T-1, Part 3 (Treatment BMPs)
- BMP cost information from: Project Planning Cost Estimate (PPCE) during PID and PA/ED project phases
- Checklist SW-2, Stormwater Quality Issues Summary
- Checklist SW-3, Measures for Avoiding or Reducing Potential Stormwater Impacts
- Checklist DPP-1, Parts 1–5 (Design Pollution Prevention BMPs)
- Checklist T-1, Part 2 (Treatment BMPs)
- Construction Site BMP Consideration Form
- Checklist CS-1, Parts 1–6 (Construction Site BMPs)
- Plans showing BMP deployment

PROJECT VICINITY MAP

Source: ICF, 2021

PROJECT LOCATION MAP



Source: ICF, 2021

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DATE: September 2022

Project ID / EA: 05-0C734

No.	Criteria	Yes ✓	No ✓	Supplemental Information for Evaluation
1.	Begin Project evaluation regarding requirement for implementation of Treatment BMPs	✓		See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMPs. Continue to 2.
2.	Is the scope of the Project to install Treatment BMPs (e.g., Alternative Compliance, TMDL, Trash Amendment Compliance)?	✓		If **Yes**, go to 8. If **No**, continue to 3.
3.	Is there a direct or indirect discharge to surface waters?	✓		If **Yes**, continue to 4. If **No**, go to 9.
4.	As defined in the WQAR, does the Project have: 1. Areas of Special Biological Significance (ASBS), 2. A TMDL area where Caltrans is named stakeholder, or 3. Other Pollution Control Requirements for surface waters within the project limits?		✓ ✓ ✓	If **Yes to any**, contact the District/Regional Stormwater Coordinator to discuss the Department's obligations, go to 8 or 5. _____*(Dist./Reg. SW Coordinator initials*) If **No**, continue to 5.
5.	Are any existing Treatment BMPs partially or completely removed? (ATA condition #1, See PPDG Section 4.4.1)		✓	If **Yes**, go to 8 **AND** continue to 6. If **No**, continue to 6.
6.	Is this a Routine Maintenance Project?		✓	If **Yes**, continue to 9. If **No**, go to 7.
7.	Does the project result in one acre or more of new impervious surface (NIS)? PSR	✓		If **Yes**, go to 8. *3.84 ac NIS (NIS=NNI+ RIS)* If **No**, continue to 9.
8.	Project is required to implement Treatment BMPs.	Complete Checklist T-1, Part 1.		
9.	Project is not required to implement Treatment BMPs. _____ *(Dist. /Reg. SW Coord. Initials)* _____*(Project Engineer Initials)* _____ *(Date)*	Document for Project Files by completing this form and attaching it to the SWDR.		

See Figure 4-1, Project Evaluation Process for Consideration of Permanent Treatment BMP

RISK LEVEL DOCUMENTATION

Receiving Water Risk Level

Aptos Creek, Valencia Creek and Trout Gulch have COLD, SPAWN, AND MIGR beneficial uses:

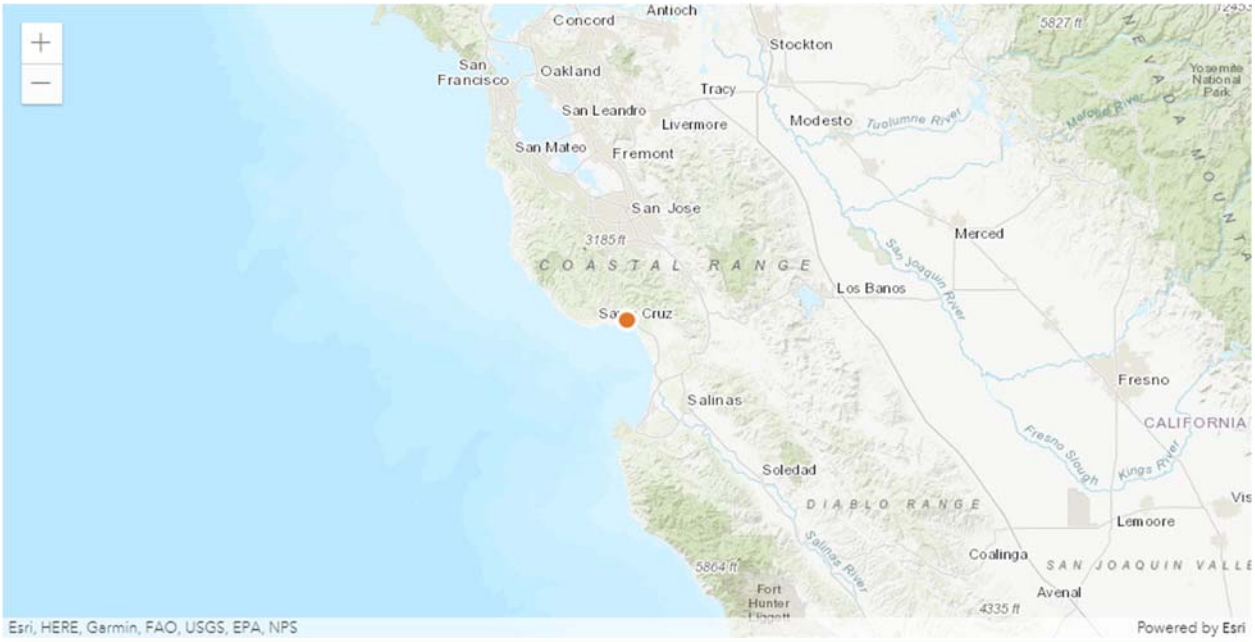
Table 2-1. Identified Uses of Inland Surface Waters (continued)

Waterbody Names	MUN	AGR	PROC	IND	GWR	REC1	REC2	WILD	COLD	WARM	MIGR	SPWN	BIOL	RARE	EST	FRSH	NAV	POW	COMM	AQUA	SAL	SHELL
Logan Creek	X				X	X	X	X	X		X	X							X			
Sleeper Gulch	X				X	X	X	X	X				X						X			
McDonald Gulch	X				X	X	X	X	X		X	X	X						X			
Spring Creek	X				X	X	X	X	X		X	X							X			
Boulder Creek	X	X			X	X	X	X	X		X	X							X			
Bracken Brae Creek	X				X	X	X	X	X					X					X			
Hare Creek	X				X	X	X	X	X		X	X		X					X			
Jamison Creek	X				X	X	X	X	X		X	X							X			
Peavine Creek	X				X	X	X	X	X		X	X							X			
Silver Creek	X				X	X	X	X	X		X	X							X			
Foreman Creek	X				X	X	X	X	X		X	X							X			
Malosky Creek	X				X	X	X	X	X		X	X							X			
Clear Creek	X				X	X	X	X	X		X	X							X			
Alba Creek	X				X	X	X	X	X		X	X							X			
Marshall Creek	X				X	X	X	X	X		X	X							X			
Manson Creek	X				X	X	X	X	X		X	X							X			
Fall Creek	X	X		X	X	X	X	X	X		X	X	X						X			
South Fall Creek	X	X			X	X	X	X	X		X	X	X						X			
Bennett Creek	X	X		X	X	X	X	X	X		X	X	X						X			
Bull Creek	X				X	X	X	X	X			X							X			
Shingle Mill Creek	X				X	X	X	X	X		X	X							X			
Gold Gulch Creek	X				X	X	X	X	X		X	X							X			
Woods Lagoon						X	X	X			X	X			X				X			X
Arana Gulch	X				X	X	X	X	X		X	X		X		X			X			
Schwan Lake						X	X	X		X		X	X	X					X			X
Corcoran Lagoon					X	X	X	X		X		X		X	X				X			X
Rodeo Creek Gulch (Doyle Gulch)	X	X		X	X	X	X	X	X			X				X			X			
Moran Lake					X	X	X	X		X		X							X			
Soquel Lagoon						X	X	X	X		X	X		X	X				X			
Soquel Creek	X	X		X	X	X	X	X	X		X	X	X			X			X			
Bates Creek	X					X	X	X	X		X	X	X						X			
Grover Gulch	X				X	X	X	X	X		X	X							X			
Soquel Creek, east branch	X			X	X	X	X	X	X		X	X							X			
Hinckley Creek	X	X		X	X	X	X	X	X		X	X	X						X			
Amaya Creek	X				X	X	X	X	X		X	X							X			
Soquel Creek, west branch	X				X	X	X	X	X		X	X							X			
Hester Creek	X				X	X	X	X	X		X	X							X			
Laural Creek	X				X	X	X	X	X		X	X							X			
Burns Creek	X				X	X	X	X	X		X	X							X			
Moores Gulch	X				X	X	X	X	X		X	X							X			
Miners Creek	X				X	X	X	X	X		X	X							X			
Aptos Creek	X	X		X	X	X	X	X	X		X	X	X		X	X			X			
Valencia Creek	X				X	X	X	X	X		X	X							X			
Trout Gulch	X				X	X	X	X	X										X			
Bridge Creek	X	X				X	X	X	X		X	X	X						X			
Valencia Lagoon						X	X	X		X		X		X					X			

Source: Central Coast RWQCB, 2019

Sediment Risk Level

R-Factor = 65.11 + 65.11 + 65.11 +65.11= 260.44



Facility Information

Start Date: 01/01/2025	**Latitude:** 36.9753
End Date: 12/31/2025	**Longitude:** -121.8932

Calculation Results

Rainfall erosivity factor (R Factor) = **65.11**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority, you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

Source: U.S. EPA, 2022

R-Factor (continued)

Facility Information

Start Date: 01/01/2026	**Latitude:** 36.9753
End Date: 12/31/2026	**Longitude:** -121.8932

Calculation Results

Rainfall erosivity factor (R Factor) = **65.11**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority, you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

Facility Information

Start Date: 01/01/2027	**Latitude:** 36.9753
End Date: 12/31/2027	**Longitude:** -121.8932

Calculation Results

Rainfall erosivity factor (R Factor) = **65.11**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority, you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

Facility Information

Start Date: 01/01/2028	**Latitude:** 36.9753
End Date: 12/31/2028	**Longitude:** -121.8932

Calculation Results

Rainfall erosivity factor (R Factor) = **65.11**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

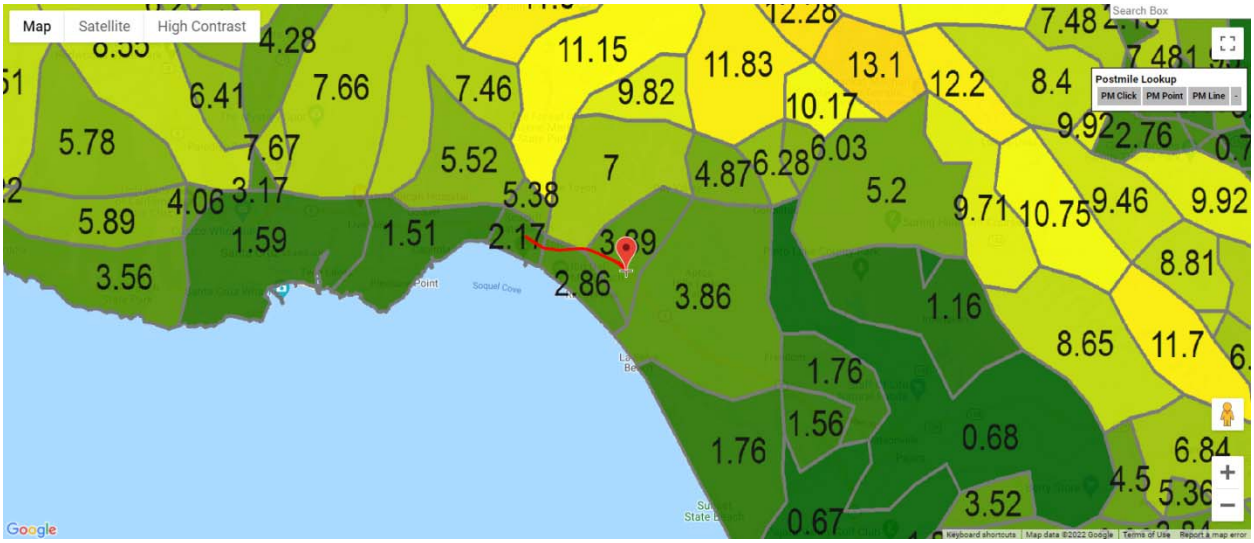
You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority, you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

Source: U.S. EPA, 2022

K-Factor = 0.32

Source: Caltrans, 2022

LS-Factor = 3.89



Source: Caltrans, 2022

	A	B	C
1	**Sediment Risk Factor Worksheet**		**Entry**
2	**A) R Factor**		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm		
5	**R Factor Value**		260.44
6	**B) K Factor (weighted average, by area, for all site soils)**		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	Site-specific K factor guidance		
9	**K Factor Value**		0.24
10	**C) LS Factor (weighted average, by area, for all slopes)**		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	LS Table		
13	**LS Factor Value**		3.03
14			
15	**Watershed Erosion Estimate (=RxKxLS) in tons/acre**		189.39
16	**Site Sediment Risk Factor**		**High**
17	Low Sediment Risk: < 15 tons/acre		
18	Medium Sediment Risk: >=15 and <75 tons/acre		
19	High Sediment Risk: >= 75 tons/acre		
20			

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment** (For help with impaired waterbodies please visit the link below) or has a **USEPA approved TMDL implementation plan for sediment**?: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml	**yes**	**High**
OR		
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan) http://www.waterboards.ca.gov/waterboards_map.shtml		

Combined Risk Level Matrix

Receiving Water Risk \ Sediment Risk	Low	Medium	High
Low	Level 1	Level 2	
High	Level 2		Level 3

Project Sediment Risk:	**High**
Project RW Risk:	**High**
Project Combined Risk:	**Level 3**

Checklist SW-1, Site Data Sources

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

Information for the following data categories should be obtained, reviewed and referenced as necessary throughout the project planning phase. Collect any available documents pertaining to the category and list them and reference your data source. For specific examples of documents within these categories, refer to Section 5.5 of this document. Example categories have been listed below; add additional categories, as needed. Summarize pertinent information in Section 2 of the SWDR.

DATA CATEGORY/SOURCES	Date
Water Quality	
• California Department of Transportation. *District 5 Work Plan for Fiscal Year 2022-2023*.	2021
• California Department of Transportation. *Project Planning and Design Guide*. CTSWRT-17-314.24.1.	2017 (Updated April 2019)
• California Department of Transportation. *Statewide Trash Implementation Plan*. CTSWRT-19-379.09.2.	2019
• California Department of Transportation. *Water Quality Planning Tool*. <http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx>	Last Accessed: Feb 1, 2022
• California Department of Water Resources. *Soquel Valley Groundwater Basin*. Bulletin 118. <https://water.ca.gov/LegacyFiles/pubs/groundwater/bulletin_118/basindescriptions/3-1.pdf >	2004
• Central Coast Regional Water Quality Control Board. *Central Coast Basin (Region 3) Water Quality Control Plan* (Basin Plan).	2019
• Central Coast Regional Water Quality Control Board. *Post-Construction Stormwater Management Requirements Development Projects in the Central Coast Region* (Post-Construction Stormwater Requirements).	2013
• Regional Water Quality Control Board. *Resolution No. R3-2013-0032 Approving Post-Construction Stormwater Management Requirements for Development Projects in the Central Coast Region.*	2013
• Santa Cruz County. *Design Criteria Containing Standards for the Construction of Streets, Storm Drains, Sanitary Sewers, Water Systems, and Driveways within the Unincorporated Portion of Santa Cruz County*.	2019
• Santa Cruz County. *General Plan*. <https://www.sccoplanning.com/PlanningHome/SustainabilityPlanning/GeneralPlan.aspx>	2020
• Santa Cruz County Department Environmental Health. *Santa Cruz County Watersheds.* <http://scceh.com/Home/Programs/WaterResources/WatershedandStreamHabitatProtection/SantaCruzCountyWatersheds.aspx>	Last Accessed: Feb 7, 2022

• Santa Cruz Mid-County Groundwater Agency. *Groundwater Sustainability Plan*. <http://www.midcountygroundwater.org/sustainability-plan>	2019
• State Water Resources Control Board. *California Ocean Plan* (Ocean Plan).	2019
• State Water Resources Control Board. 2018. *Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List /305(b) Report).* <https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml>	2021
• United States Environmental Protection Agency. *Rainfall Erosivity Factor Calculator for Small Construction Sites*. https://www.epa.gov/npdes/rainfall-erosivity-factor-calculatorsmall-construction-sites#getTool.	Last Accessed: April 7, 2022
Geotechnical	
• Natural Resource Conservation District (NRCS). *Custom Soil Resource Report for Santa Cruz County, California*. <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>	2020
• Parikh Consultants, Inc (Parikh). 2021. *Preliminary Geotechnical Design Report*	2021
• United States Department of Agriculture. *Part 630 Hydrology National Engineering Handbook.* "Hydrologic Soil Group." <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=22526.wba>	2009
• WRECO. *Draft Initial Site Assessment.*	2022a
Topographic	
• United States Geological Survey. *The National Map*. Available at: <https://viewer.nationalmap.gov/basic/?basemap=b1&category=histtopo,ustopo&title=Map%20View#productGroupSearch>	2019
Climatic	
• Western Regional Climate Center. *Period of Record Monthly Climate Summary for Santa Cruz, California (047916)*. <https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7916>	2016
Other Data Categories	
• Horizon Water and Environment. 2022. *Draft Natural Environment Study.*	2022
• ICF. *Project Area Map.*	2021
• ICF. *Project Location Map.*	2021
• ICF. 2021. Personal correspondence with Lindsey Christensen: *RE: Questions and RFI items, Hwy 1 State Park to Freedom Boulevard*	2022
• Santa Cruz County. GIS Web. <https://gis.santacruzcounty.us/gisweb/>	Last Accessed: Feb 8, 2022
• WRECO. *Draft Drainage Impact Study Report.*	2022c
• WRECO. *Draft Location Hydraulic Study.*	2022b

Treatment BMPs
Checklist T-1, Part 1

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

Consideration of Treatment BMPs

This checklist is used for projects that require the consideration of Approved Treatment BMPs, as determined from the process described in Section 4 (Project Treatment Consideration) and the Evaluation Documentation Form (EDF). This checklist will be used to determine which Treatment BMPs should be considered for each BMP contributing drainage area within the project. Supplemental data will be needed to verify siting and design applicability for final incorporation into a project.

Complete this checklist for each phase of the project. This will help to determine if any changes to the BMP strategy are necessary, based on site specific information gathered during later phases. Use the responses to the questions as the basis of developing the narrative in Section 6 of the Storm Water Data Report to document that Treatment BMPs have been appropriately considered and/or incorporated.

Before evaluating an area for treatment capabilities or to incorporate a Treatment BMP, calculate the numeric sizing requirement for each contributing drainage area (Water Quality Volume [WQV] from the 85th percentile 24 hour storm event or Water Quality Flow [WQF] rate). Soil and geometric information for the project area will be necessary to use this T-1 Checklist.

Identify the overall project Post Construction Treatment Area

Refer to Section 4.4 Treatment Areas for more information on these various surfaces.

Post Construction Treatment Area = NNI + RIS + ATA (1) + ATA (2)

NNI = Net New Impervious Area

RIS = Replaced Impervious Surface

ATA (1) = Additional Treatment Area required for existing Treatment BMPs that were removed as part of the project

ATA (2) = Additional Treatment Area required when NNI is 50 percent or greater than total project impervious

What is the Post Construction Treatment Area for the project? Interim: 3.84; Ultimate: 3.84 **Acres** (A in Table E-1)

This post construction treatment area is the impervious area required to be treated by the project. The PE is to incorporate BMPs until the summation of the treated impervious area of all the BMPs is equivalent to the post construction treatment area for the Project.

Once this area has been treated, the project is in compliance with the post construction treatment requirement.

Total Maximum Daily Load (TMDL) Retrofit Projects

If the project is installing Treatment BMPs to only address TMDL requirements, then there is no required post construction treatment area. The Treatment BMPs for a TMDL retrofit project should be designed to treat the impervious and pervious contributing drainage areas, as they are both eligible for Compliance Unit (CU) credits.

Overall Project Evaluation

Answer all questions, unless otherwise directed.

A. Overall Project Consideration

1. Is the project in a watershed with prescriptive Treatment BMP requirements in an adopted TMDL implementation plan or are there any other requirements for project area (i.e., District, Regional Board, Lawsuit, etc.)? ☐ Yes ☒ No

   If Yes, consult the District/Regional Storm Water Coordinator to determine if there are written agreements related to specific Treatment BMPs. In this case, determine if the rest of the T-1 Checklist needs to be followed to address other post construction requirements. If not, document BMP(s) in the Individual Treatment BMP Summary Table, provide information on the basis of the BMP requirement and any regulatory coordination in the SWDR narrative, and complete the SWDR Summary Spreadsheets. Otherwise, continue.

   If No, continue.

2. Does the receiving water have a TMDL for litter/trash, or is there a region specific requirement related to trash? ☒ Yes ☐ No
   COUNTY ONLY

   If Yes, first evaluate BMPs that can treat other pollutants and are considered to be full capture devices (GSRDs or other) for litter/trash. If other BMPs cannot be sited, consult with the District/Regional Storm Water Coordinator to determine if standalone full capture devices (GSRDs or other) are required to be incorporated. If standalone devices are required and no other Treatment BMPs are being considered, go to question 6 of "Individual BMP Evaluation".

   If No, continue.

3. Is the project located in an area that uses traction sand more than twice a year? ☐ Yes ☒ No

   If Yes, first consider BMPs that can treat other pollutants and can capture traction sand. If other BMPs cannot be sited, consult the District/Regional Storm Water Coordinator to determine if standalone traction sand trap devices should be incorporated.

   If standalone devices are required and no other Treatment BMPs are being considered, go to question 6 of "Individual BMP Evaluation". Otherwise, continue with this checklist to identify Treatment BMPs that provide traction sand and other pollutant removal, or to design Treatment BMPs in series.

   If No, continue.

B. Dual Purpose Facilities

Does the project have (or propose to include) any dual purpose facilities that could meet treatment requirements (e.g., Dry Weather Flow Diversion, flood control basins, etc.)? ☐ Yes ☒ No

If Yes and 100 percent of the post construction treatment area will be treated by the dual purpose facility, go to question 6 of "Individual BMP Evaluation". Document the basis of treatment in the SWDR narrative and complete the SWDR Summary Spreadsheets.

If Yes, but 100 percent of the post construction treatment area has not been addressed, continue.

If No, continue.

C. Evaluate overall project area for infiltration opportunities using existing and proposed roadside surfaces (DPP Infiltration Areas). Assure the DPP Infiltration Area is stabilized to handle Highway drainage design flows, for both sheet and concentrated flows (See HDM section 800).

Document DPP Infiltration Areas on the "Individual Treatment BMP Summary Table" located at the end of this checklist.

1. Based on site conditions, do the DPP Infiltration Areas infiltrate 100 percent of the WQV generated by the post construction treatment area for the project? ☒ Yes ☐ No

   Yes, go to question 6 of "Individual BMP Evaluation".

   If No, account for area infiltrated and continue.

2. Can infiltration for these areas be increased by using soil amendments or other means? ☒ Yes ☐ No

   If Yes, and 100 percent of the WQV generated by the post construction treatment area is infiltrated, go to question 6 of "Individual BMP Evaluation".

   If Yes, but 100 percent of the WQV generated by the post construction treatment area is not infiltrated, continue with checklist to identify Treatment BMPs that will treat the remaining required treatment area.

   If No, continue.

Individual BMP Evaluation

Answer the following questions for each Treatment BMP location being considered. The following process must be followed until the post construction treatment area or desired treatment credit (alternative compliance or TMDL compliance unit) has been achieved; for TMDL compliance units, consider both impervious and pervious contributing drainage areas. Use the Individual Treatment BMP Summary Table at the end of the checklist to summarize the selected BMP(s) based on the findings of the following questions for each BMP contributing drainage area.

1. Infiltration Devices (Infiltration Basin, Trench, or other device)

   a. Can 100 percent of the BMP contributing drainage area WQV (or remaining WQV, if in series with a DPP infiltration area or other BMP) be infiltrated? ☒ Yes ☐ No

      If Yes, go to question 6.

      If No, continue.

2. Biofiltration Devices (Biofiltration Strips and Swales)

   a. Is this a TMDL retrofit project or is the project within a TMDL or 303(d) impaired receiving water body area? ☒ Yes ☐ No

      If Yes, when designing the biofiltration device, determine the percent WQV infiltrated from both the impervious and pervious BMP contributing drainage areas. Consider using existing or amended soils:

      i. If infiltration is >50 percent, continue to b.

      ii. If infiltration is ≤50 percent, go to question 3.

      If No, continue to b. ☒ Yes ☐ No

   b. Can biofiltration devices be designed to:

      i. Treat 100 percent of the WQF/WQV (or remainder, if in series with a DPP infiltration area or other BMP) from the BMP contributing drainage area, and

      ii. Meet the siting and design criteria of the Caltrans biofiltration device design guidance.

      If Yes, continue to c.

      If No, go to question 3.

   c. Biofiltration devices are considered to be an effective method of treatment, go to question 6.

3. Earthen type BMPs (Detention Devices, Media Filters, or other devices)

   a. Is this a TMDL retrofit project or is the project within a TMDL or 303(d) impaired receiving water body area? ☐ Yes ☐ No

   If Yes, when designing the earthen type BMP, determine the percent WQV infiltrated from both the impervious and pervious BMP contributing drainage area. Consider using existing or amended soils:

   i. If infiltration is >50 percent, continue to b.

   ii. If infiltration is ≤50 percent, go to question 4.

   If No, continue to b.

   b. Can earthen type BMPs (standalone or in series with other approved Treatment BMPs) be designed to: ☐ Yes ☐ No

   iii. Treat 100 percent of the WQV (or remainder, if in series with a DPP infiltration area or other BMP) from the BMP contributing drainage area, and

   iv. Meet the criteria of the Caltrans design guidance for the treatment device being considered.

   If Yes, continue to c.

   If No, go to question 4.

   c. Earthen type BMPs are considered to be an effective method of treatment, go to question 6.

4. Targeted Design Constituent (TDC)

   This approach will compare the effectiveness of individual BMPs and allow the project engineer to use judgment when evaluating BMP feasibility (site constraints, safety, maintenance requirements, life-cycle costs, etc.).

   a. Does the project discharge to a 303(d) impaired receiving water or a receiving water in a TMDL area where Caltrans is a named stakeholder? ☐ Yes ☐ No

   If Yes, is the identified pollutant(s) considered to be a TDC (check all that apply below)? Continue to b. ☐ Yes ☐ No

   ☐ sediments
   ☐ phosphorus
   ☐ nitrogen
   ☐ copper (dissolved or total)
   ☐ lead (dissolved or total)
   ☐ zinc (dissolved or total)
   ☐ general metals (dissolved or total)[1]

   If No or if no TDC is identified, use Matrix A to select BMPs and go to question 5.

[1] General metals is a designation used by Regional Water Boards when specific metals have not yet been identified as causing the impairment.

b. Treating Only Sediment. Is sediment a TDC? ☐ Yes ☐ No

If Yes, use Matrix A to select BMPs and go to question 5.

If No, continue to c.

c. Treating Only Metals. Are copper, lead, zinc, or general metals listed TDCs? ☐ Yes No

If Yes, use Matrix B to select BMPs, and go to question 5.

If No, continue to d.

d. Treating Only Nutrients. Are nitrogen and/or phosphorus listed TDCs? ☐ Yes No

If Yes, use Matrix C to select BMPs, and go to question 5.

If No, continue e.

e. Treating both Metals and Nutrients. Is copper, lead, zinc, or general metals AND nitrogen or phosphorous a TDC? ☐ Yes No

If yes, use Matrix D to select BMPs, and go to question 5.

If No, continue.

BMP Selection Matrix A: General Purpose Pollutant Removal			
Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Strip: HRT > 5 Austin filter (concrete) Austin filter (earthen) Delaware filter	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Strip: HRT < 5 Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Swale	Austin filter (concrete) Delaware filter
HRT = hydraulic residence time (min) All BMPs shown are considered to be effective, but some more than others. The project engineer should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.			

BMP Selection Matrix B: Any metal is the TDC, but not nitrogen or phosphorous			
Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Austin filter (earthen) Austin filter (concrete) Delaware filter	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Strip: HRT > 5 Strip: HRT < 5 Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale	Austin filter (concrete) Delaware filter
HRT = hydraulic residence time (min)			

All BMPs shown are considered to be effective, but some more than others. The project engineer should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.

BMP Selection Matrix C: Phosphorous and / or nitrogen is the TDC, but no metals are the TDC			
Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Austin filter (earthen) Austin filter (concrete) Delaware filter*	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Biofiltration Strip Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale	Austin filter (concrete) Delaware filter
All BMPs shown are considered to be effective, but some more than others. The project engineer should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.			
*Delaware filters would be ranked in Tier 2 if the TDC is nitrogen only, as opposed to phosphorous only or both nitrogen and phosphorous.			

BMP Selection Matrix D: Any metal, plus phosphorous and / or nitrogen are the TDCs			
Consider BMPs (or combinations of) to treat the contributing drainage area WQV with BMPs listed in this table. First evaluate Tier 1 BMPs, followed by Tier 2 BMPs when Tier 1 BMPs are not feasible. Within each Tier, BMP selection will be determined by the site-specific determination of feasibility. BMPs are chosen based on the infiltration category determined for BMP contributing drainage area. BMPs in other infiltration categories should be ignored.			
	BMP ranking for infiltration category:		
	Infiltration < 20%	Infiltration 20% - 50%	Infiltration > 50%
Tier 1	Austin filter (earthen) Austin filter (concrete) Delaware filter*	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches	Austin filter (earthen) Detention (unlined) Infiltration basins Infiltration trenches Biofiltration Strip Biofiltration Swale
Tier 2	Biofiltration Strip Biofiltration Swale Detention (unlined)	Austin filter (concrete) Delaware filter Biofiltration Strip Biofiltration Swale	Austin filter (concrete) Delaware filter

All BMPs shown are considered to be effective, but some more than others. The project engineer should use professional judgment when selecting BMPs based on overall feasibility. All BMPs are shown to demonstrate equivalent effectiveness.
*In cases where earthen BMPs also infiltrate, Delaware filters are ranked in Tier 2 if the TDC is nitrogen only, but they are Tier 1 for phosphorous only or both nitrogen and phosphorous.

5. Does the project discharge to a 303(d) receiving water that is listed for mercury or low dissolved oxygen? ☐ Yes ☒ No

   If Yes, contact the District/Regional Storm Water Coordinator to determine if standing water in a Delaware Media Filter or Wet Basin would be a risk to downstream water quality. Continue to question 6.

   If No, continue to question 6.

6. Identify the Treatment BMPs being considered and complete the Individual Treatment BMP Summary Table and Overall Project Treatment Summary Table on the following pages. Refer to Appendix B of the PPDG and review the checklists identified below for every Treatment BMP under consideration. ☒ Complete

   Document the basis of design in the SWDR narrative and complete the SWDR Summary Spreadsheets.

   __X__ DPP Infiltration Areas: Checklist T-1, Part 11

   ____ Infiltration Devices: Checklist T-1, Part 2

   __X_ Biofiltration Strips and Biofiltration Swales: Checklist T-1, Part 3

   ___ Detention Devices: Checklist T-1, Part 4

   ____ Traction Sand Traps: Checklist T-1, Part 5

   ____ Dry Weather Diversion: Checklist T-1, Part 6

   ____ GSRDs: Checklist T-1, Part 7 (Only for County Right-of-Way)

   ____ Media Filter [Austin Sand Filter and Delaware Filter]: Checklist T-1, Part 8

   Note:

   Multi-Chamber Treatment Train (MCTT) is not listed here because Caltrans has found that other approved BMPs are equally effective and more sustainable due to lower life cycle costs.

   Wet Basins are not listed here due to feasibility issues due to site feasibility and issues with long term operation and maintenance.

   MCTT and Wet Basins may be considered or implemented upon the recommendation of the District/Regional Storm Water Coordinator.

7. Prepare cost estimate, including right-of-way, and identify any pertinent site specific determination of feasibility for selected Treatment BMPs and include in the SWDR for approval. TO BE UPDATED IN PS&E ☒ Complete

Individual Treatment BMP Summary Table

☒ Complete

List the selected BMPs based on the findings of this checklist and the treated areas associated with each BMP. For projects with multiple BMPs, add rows, or attach a separate sheet displaying the following information.

Each BMP must be tracked in the SWDR Summary Spreadsheet, including additional information related to each BMP.

Table E-2: Individual Treatment BMP Summary Table								
BMP Identifier Number	BMP Type	Offset, Stationing Start	Offset, Stationing End	BMP Area (ac)	Treated Impervious Area (CT R/W) (ac)	Treated Pervious Area (CT R/W) (ac)	Treated Impervious Area (County R/W) (ac)	Treated Pervious Area (County R/W) (ac)
1	Biofiltration Swale	52.22' Lt "SR1" 210+14	52.73' Lt "SR1" 219+65	0.33	1.89	0	-	-
2	Biofiltration Swale	43.95' Rt "SR1" 228+12	43.25' Lt "SR1" 232+32	0.17	1.47	0.90	-	-
3	Biofiltration Swale	44.07' Rt "SR1" 233+98	43.25' Rt "SR1" 234+96	0.03	0.25	0.38	-	-
4	Biofiltration Swale	44.68' Lt "SR1" 242+88	43.03' Lt "SR1" 245+72	0.10	2.14	1.62	-	-
5	Biofiltration Swale	47.65' Lt "SR1" 246+71	43.43' Lt "SR1" 247+64	0.05	0.24	0.16	-	-
6	Biofiltration Swale	48.16' Lt "SR1" 270+91	29.23' Lt "SR1" 273+68	0.04	1.84	0.62	-	-
7	Biofiltration Swale	20.53’ Lt “RT-U”1013+37	26.11’ Lt “RT-U”1014+72	0.05	-	-	0.15	0
8	Biofiltration Swale/DPP Infiltration Area	22.40 Lt “RT-U”1023+90	17.40 Lt “RT-U”1026+58	0.10	-	-	0.15	0
9	Biofiltration Swale	18.17 Lt “RT-U”1047+79	17.07 Lt “RT-U”1048+69	0.03	-	-	0.05	0

BMP Identifier Number	BMP Type	Offset, Stationing Start	Offset, Stationing End	BMP Area (ac)	Treated Impervious Area (CT R/W) (ac)	Treated Pervious Area (CT R/W) (ac)	Treated Impervious Area (County R/W) (ac)	Treated Pervious Area (County R/W) (ac)
10	Biofiltration Swale	57.64' Rt "SR1" 300+07	54.50' Rt "SR1" 303+33	0.17	1.36	1.23	-	-
11	Biofiltration Swale	63.41' Lt "SR1" 303+86	27.93' Lt "SR1" 304+74	0.03	1.14	1.03	-	-
Total Treated Area (acre):					10.68	10.33	5.94	0.35

TO BE UPDATED IN PS&E

Checklist SW-2, Stormwater Quality Issues Summary

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

The following questions provide a guide to collecting critical information relevant to project stormwater quality issues. Consult other Caltrans functional units (Environmental, Landscape Architecture, Maintenance, etc.) and the District/Regional Design Stormwater Coordinator as necessary. Summarize pertinent responses in Section 2 of the SWDR; do not discuss items identified as not applicable.

1.	Determine the receiving waters for the project	☒Complete	☐NA
2.	For the project limits, list the 303(d) impaired receiving water bodies and their constituents of concern.	☒Complete	☐NA
3.	Determine if there are any municipal or domestic water supply reservoirs or groundwater percolation facilities within the project limits, as shown by DWP.	☒Complete	☐NA
4.	Determine the RWQCB special requirements, including TMDLs, effluent limits, etc.	☒Complete	☐NA
5.	Determine regulatory agencies seasonal construction and construction exclusion dates or restrictions required by federal, state, or local agencies.	☒Complete	☐NA
6.	Determine if a 401 certification will be required.	☒Complete	☐NA
7.	Identify rainy season.	☒Complete	☐NA
8.	If applicable, determine the general climate of the project area. Identify annual rainfall and rainfall intensity curves.	☒Complete	☐NA
9.	If considering Treatment BMPs, determine the soil classification, permeability, erodibility and depth to groundwater.	☒Complete	☐NA
10.	Determine contaminated soils within the project area.	☒Complete	☐NA
11.	Determine the total disturbed soil area of the project.	☒Complete	☐NA
12.	Describe the topography of the project site.	☒Complete	☐NA
13.	List any areas outside of the Caltrans right-of-way that will be included in the project (e.g., contractor's staging yard, work from barges, easements for staging).	☒Complete	☐NA
14.	Determine if additional right-of-way acquisition or easements and right-of-entry will be required for design, construction and maintenance of BMPs. If so, how much?	☒Complete	☐NA
15.	Determine the estimated unit costs for right-of-way should it be needed for Treatment BMPs, stabilized conveyance systems, lay-back slopes, or interception ditches.	☐Complete	☒NA
16.	Determine if project area has any slope stabilization concerns.	☒Complete	☐NA
17.	Describe the local land use within the project area and adjacent areas.	☒Complete	☐NA
18.	Evaluate the presence of dry weather flow.	☐Complete	☒NA

Checklist SW-3, Measures for Avoiding or Reducing Potential Stormwater Impacts

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

The PE should confer with other functional units, such as Landscape Architecture, Hydraulics, Environmental, Materials, Construction and Maintenance, as needed to assess these issues. Summarize pertinent responses in Section 2 of the SWDR; do not discuss items identified as not applicable.

Options for avoiding or reducing potential impacts during project planning include the following:

1.	Can the project be relocated or realigned to avoid/reduce impacts to receiving waters or to increase the preservation of critical (or problematic) areas such as floodplains, steep slopes, wetlands, and areas with erosive or unstable soil conditions?	☐Yes	☒No	☐NA
2.	Can structures and bridges be designed or located to reduce work in live streams and minimize construction impacts?	☒Yes	☐No	☐NA
3.	Can any of the following methods be utilized to minimize erosion from slopes:			
	a. Disturbing existing slopes only when necessary?	☒Yes	☐No	☐NA
	b. Minimizing cut and fill areas to reduce slope lengths?	☒Yes	☐No	☐NA
	c. Incorporating retaining walls to reduce steepness of slopes or to shorten slopes?	☒Yes	☐No	☐NA
	d. Acquiring right-of-way easements (such as grading easements) to reduce steepness of slopes?	☒Yes	☐No	☐NA
	e. Avoiding soils or formations that will be particularly difficult to re-stabilize?	☒Yes	☐No	☐NA
	f. Providing cut and fill slopes flat enough to allow re-vegetation and limit erosion to pre-construction rates?	☒Yes	☐No	☐NA
	g. Providing benches or terraces on high cut and fill slopes to reduce concentration of flows?	☐Yes	☐No	☒NA
	h. Rounding and shaping slopes to reduce concentrated flow?	☒Yes	☐No	☐NA
	i. Collecting concentrated flows in stabilized drains and channels?	☒Yes	☐No	☐NA
4.	Does the project design allow for the ease of maintaining all BMPs?	☒Yes	☐No	
5.	Can the project be scheduled or phased to minimize soil-disturbing work during the rainy season?	☒Yes	☐No	
6.	Can permanent stormwater pollution controls such as paved slopes, vegetated slopes, basins, and conveyance systems be installed early in the construction process to provide additional protection and to possibly utilize them in addressing construction stormwater impacts?	☒Yes	☐No	☐NA

Design Pollution Prevention BMPs

Checklist DPP-1, Part 1

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

Consideration of Design Pollution Prevention BMPs

Consideration of Downstream Effects Related to Potentially Increased Flow [to streams or channels]

Will the project increase velocity or volume of downstream flow?	☒Yes	☐No	☐NA
Will the project discharge to unlined channels?	☒Yes	☐No	☐NA
Will the project encroach, cross, realign, or cause other hydraulic changes to a stream that may affect downstream channel stability?	☒Yes	☐No	☐NA

If Yes was answered to any of the above questions, consider ***Downstream Effects Related to Potentially Increased Flow***, complete the Checklist DPP-1, Part 2.

Slope/Surface Protection Systems

Will the project create new slopes or modify existing slopes?	☒Yes	☐No	☐NA

If Yes was answered to the above question, consider ***Slope/Surface Protection Systems***, complete the Checklist DPP-1, Part 3.

Concentrated Flow Conveyance Systems

Will the project create or modify ditches, dikes, berms, or swales?	☒Yes	☐No	☐NA
Will project create new slopes or modify existing slopes?	☒Yes	☐No	☐NA
Will it be necessary to direct or intercept surface runoff?	☒Yes	☐No	☐NA
Will cross drains be modified?	☒Yes	☐No	☐NA

If Yes was answered to any of the above questions, consider ***Concentrated Flow Conveyance Systems***; complete the Checklist DPP-1, Part 4.

Preservation of Existing Vegetation, Soils, and Stream Buffer Areas

It is the goal of the Stormwater Program to maximize the protection of desirable existing vegetation, soils, and stream buffer areas to provide erosion and sediment control benefits on all projects. ☒Complete

Consider ***Preservation of Existing Vegetation, soils, and stream buffer areas***, complete the Checklist DPP-1, Part 5.

Design Pollution Prevention BMPs

Checklist DPP-1, Part 2

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

TO BE COMPLETED IN PS&E

Downstream Effects Related to Potentially Increased Flow

1.	Review total paved area and reduce to the maximum extent practicable.	☒ Complete
2.	Review channel lining materials and design for stream bank erosion control.	☐ Complete
	(a) See Chapters 860 and 870 of the HDM.	☐ Complete
	(b) Consider channel erosion control measures within the construction limits as well as downstream. Consider scour velocity. If erosion control measures are required downstream of construction limits obtain the appropriate permits and right of way documents to include work within the construction limits.	☐ Complete
3.	Include, where appropriate, energy dissipation devices at culvert outlets.	☐ Complete
4.	Ensure all transitions between culvert outlets/headwalls/wingwalls and channels are smooth to reduce turbulence and scour.	☐ Complete
5.	Include, if appropriate, peak flow attenuation basins or devices to reduce peak discharges.	☐ Complete
6.	Calculate the water quality volume infiltrated within the project limits. These calculations will be used in the Checklist T-1, Part 1.	☐ Complete

Design Pollution Prevention BMPs

Checklist DPP-1, Part 3

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

TO BE COMPLETED IN PS&E

Slope / Surface Protection Systems

1. What are the proposed areas of cut and fill? (attach plan or map) ☐Complete
2. Were benches or terraces provided on high cut and fill slopes to shorten slope length? ☐Yes ☐No
3. Were concentrated flows collected in stabilized drains or channels? ☐Yes ☐No
4. Are new or disturbed slopes > 4:1 horizontal:vertical (h:v)? ☐Yes ☐No

   If Yes, District Landscape Architect is responsible for an erosion control strategy and may prepare an erosion control plan.
5. Are new or disturbed slopes > 2:1 (h:v)? ☐Yes ☐No

   If Yes, DES Geotechnical Design unit must prepare a Geotechnical Design Report, and the District Landscape Architect should prepare or approve an erosion control plan. Concurrence must be obtained from the District Maintenance Stormwater Coordinator for slopes steeper than 2:1 (h:v).

VEGETATED SURFACES

1. Identify existing vegetation. ☒Complete
2. Evaluate site to determine soil types, appropriate vegetation and planting strategies. ☐Complete
3. How long will it take for permanent vegetation to establish? ☐Complete
4. Plan transition BMPs from construction to permanent establishment. ☐Complete
5. Have vegetated areas and supporting permanent irrigation systems been designed to comply with the Model Water Efficient Landscape Ordinance (MWELO)? ☐Yes ☐No
6. Minimize overland and concentrated flow depths and velocities. ☐Complete

HARD SURFACES

1. Are hard surfaces minimized? ☒Yes ☐No

   Review appropriate SSPs for Vegetated Surface and Hard Surface Protection Systems. ☐Complete

Design Pollution Prevention BMPs
Checklist DPP-1, Part 4

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

TO BE COMPLETED IN PS&E

Concentrated Flow Conveyance Systems

Ditches, Berms, Dikes and Swales

1. Consider Ditches, Berms, Dikes, and Swales as per Topics 813, 834.3, 835, and Chapter 860 of the HDM. ☒Complete
2. Review existing and proposed conditions to remove any dike not required for slope stability, erosion control, and water conveyance. ☐Complete
3. Evaluate risks due to erosion, overtopping, flow backups or washout. ☐Complete
4. Consider outlet protection where localized scour is anticipated. ☒Complete
5. Examine the site for run-on from off-site sources. ☐Complete
6. Consider permissible shear and velocity when selecting lining material (See Table 865.2 in the HDM). ☐Complete

Overside Drains

1. Consider downdrains, as per Index 834.4 of the HDM. ☐Complete
2. Consider paved spillways for side slopes flatter than 4:1 h:v. ☐Complete

Flared Culvert End Sections

1. Consider flared end sections on culvert inlets and outlets as per Chapter 827 of the HDM. ☒Complete

Outlet Protection/Velocity Dissipation Devices

1. Consider outlet protection/velocity dissipation devices at outlets, including cross drains, as per Chapters 827 and 870 of the HDM. ☒Complete

Review appropriate SSPs for Concentrated Flow Conveyance Systems. ☐Complete

Design Pollution Prevention BMPs

Checklist DPP-1, Part 5

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

TO BE COMPLETED IN PS&E

Preservation of Existing Vegetation, Soils, and Stream Buffer Areas

1.	Review Preservation of Property, (Clearing and Grubbing) to reduce clearing and grubbing and maximize preservation of existing vegetation, soils, and stream buffer areas.	☒Complete
2.	Has all vegetation, soils, and stream buffer areas to be retained been coordinated with Environmental, and identified and defined in the contract plans?	☐Yes ☐No
3.	Have steps been taken to minimize disturbed areas, such as locating temporary roadways to avoid stands of trees and shrubs and to follow existing contours to reduce cutting and filling?	☐Complete
4.	Have impacts to preserved vegetation, soils, and stream buffer areas been considered while work is occurring in disturbed areas?	☐Yes ☐No
5.	Are all areas to be preserved delineated on the plans?	☐Yes ☐No

Treatment BMPs
Checklist T-1, Part 3

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

Biofiltration Swales / Biofiltration Strips

Feasibility

1. Do the climate and site conditions allow vegetation to be established? ☒Yes ☐No
   If "No", evaluate other BMPs.
2. Can biofiltration swale be designed with a slope between 0.25 and 6 percent (with 1 to 2 percent preferred)? ☒Yes ☐No
   If "No", Biofiltration Swales are not feasible.
3. Can biofiltration strips be designed with a maximum slope of 2H:1V (with 4H:1V or flatter preferred)? ☒Yes ☐No
   If "No", Biofiltration Strips are not feasible.
4. Are Biofiltration device(s) proposed at sites where known contaminated soils exist? ☐Yes ☒No
   If "Yes", consult with District/Regional NPDES Coordinator about how to proceed.
5. Does adequate area exist within the RW to place Biofiltration device(s)? ☒Yes ☐No
   If "Yes", continue to Design Elements section. If "No", continue to Question 6.
6. If adequate area does not exist within RW, can suitable, additional RW be acquired to site Biofiltration devices and how much RW would be needed to treat WQF? ☐Yes ☐No
   _____ acres
   If "Yes", continue to Design Elements section. If "No", continue to Question 7.
7. If adequate area cannot be obtained, document in Section 6 of the SWDR that the inability to obtain adequate area prevents the incorporation of these Treatment BMPs into the project. ☐Complete

Design Elements

TO BE COMPLETED IN PS&E

* **Required** Design Element – A "Yes" response to these questions is required to further the consideration of this BMP into the project design. Document a "No" response in Section 6 of the SWDR to describe why this Treatment BMP cannot be included into the project design.

** **Recommended** Design Element – A "Yes" response is preferred for these questions, but not required for incorporation into a project design.

1.	Has the District Landscape Architect provided vegetation mixes appropriate for climate and location? *	☒Yes	☐No
2.	Can the biofiltration swale be designed as a conveyance system under any expected flows > the WQF event, as per HDM Chapter 800? * (e.g., freeboard, minimum slope)	☒Yes	☐No
3.	Can the biofiltration swale be designed as a water quality treatment device under the WQF while meeting the required HRT, depth, and velocity criteria? (Reference Appendix B, Section B.4.3)*	☒Yes	☐No
4.	Is the maximum length of a biofiltration strip ≤ 100 ft? Strips > 100 ft. may still be considered as long as potential erosion issues have been addressed. **	☒Yes	☐No
5.	Has the minimum width (perpendicular to flow) of the invert of the biofiltration swale received the concurrence of District Maintenance? *	☐Yes	☐No
6.	Can biofiltration swales be located in natural or low cut sections to reduce maintenance problems caused by animals burrowing through the berm of the swale? *	☒Yes	☐No
7.	Has the infiltration rate of the bio-filtration device been calculated and maximized through amendments where appropriate?**	☐Yes	☐No
8.	Have Biofiltration Systems been considered for locations upstream of other Treatment BMPs, as part of a treatment train or pretreatment? ** If "Yes", document the amount of runoff treated (WQV/WQF).	☒Yes	☐No
9.	Has the lining material been selected based on the permissible shear and velocity (refer to HDM Chapter 860 and Table 865.2)?*	☐Yes	☐No

Construction Site BMPs
Checklist CS-1, Part 1

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

TO BE COMPLETED DURING PS&E

Temporary Soil Stabilization

General Parameters

1. How many rainy seasons are anticipated between begin and end of construction? 3

2. What is the total disturbed soil area for the project? (ac) 24.65

3. Consult your District/Regional Design Stormwater Coordinator for the minimum required combination of temporary soil stabilization and temporary sediment controls and barriers for area, slope inclinations, rainy and non-rainy season, and active and non-active disturbed soil areas. ☐Complete

Scheduling

4. Does the project have a duration of more than one rainy season and have disturbed soil area in excess of 25 acres? ☐Yes ☒No

   (a) Include multiple mobilizations (Move-in/Move-out) as a separate contract bid line item to implement permanent erosion control or revegetation work on slopes that are substantially complete. (Estimate at least 6 mobilizations for each additional rainy season. Designated Construction Representative may suggest an alternate number of mobilizations.) ☐Complete

   (b) Edit specifications for permanent erosion control or revegetation work to be implemented on slopes that are substantially complete. ☐Complete

   (c) Edit permanent erosion control or revegetation specifications to require seeding and planting work to be performed when optimal. ☐Complete

Preservation of Existing Vegetation

5. Do Environmentally Sensitive Areas (ESAs) exist within or adjacent to the construction limits? (Verify the completion of DPP-1, Part 5) ☒Yes ☐No

   (a) Verify the protection of ESAs through delineation on all project plans. ☐Complete

(b) Protect from clearing and grubbing and other construction disturbance by enclosing the ESA perimeter with high visibility plastic fence or other BMP. ☐Complete

6. Are there areas of existing vegetation (mature trees, native vegetation, landscape planting, etc.) that need not be disturbed by project construction? Will areas designated for proposed or existing Treatment BMPs need protection (infiltration characteristics, vegetative cover, etc.)? (Coordinate with District Environmental and Construction to determine limits of work necessary to preserve existing vegetation to the maximum extent practicable.) ☒Yes ☐No

(a) Designate as outside of limits of work (or designate as ESAs) and show on all project plans. ☐Complete

(b) Protect with high visibility plastic fence or other BMP. ☐Complete

7. If yes for 5, 6, or both, then designate ESA fencing as a separate contract bid line item, *if not already incorporated as part of design pollution prevention work (See DPP-1, Part 5).* ☐Complete

Slope Protection

8. Provide a temporary soil stabilization BMP(s) appropriate for the DSA, slope steepness, slope length, and soil erodibility. (Consult with District Landscape Architect.)

(a) Select Hydraulic Mulch, Hydroseeding, Soil Binders, Straw Mulch, Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets, Wood Mulching, other BMPs or a combination to cover the DSA throughout the project's rainy season. ☒Complete

(b) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) ☐Complete

(c) Designate as a separate contract bid line item. ☐Complete

Slope Interrupter Devices

9. For projects with temporary erosion control requirements, provide slope interrupter devices for all slopes with slope lengths equal to or greater than of 20 ft in length, in accordance with CGP requirements.

(a) Select Fiber Rolls or other BMPs to protect slopes throughout the project's rainy season. ☒Complete

(b) For slope inclination of 4:1 (h:v) and flatter, Fiber Rolls or other BMPs shall be placed along the contour and spaced 20 ft on center. ☒Complete

(c) For slope inclination between 4:1 (h:v) and 2:1 (h:v), Fiber Rolls or other BMPs shall be placed along the contour and spaced 15 ft on center. ☒Complete

(d) For slope inclination of 2:1 (h:v) and greater, Fiber Rolls or other BMPs shall be placed along the contour and spaced 10 ft on center. ☒Complete

(e) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest alternate increase.) ☐Complete

(f) Designate as a separate contract bid line item. ☐Complete

Channelized Flow

10. Identify locations within the project site where concentrated flow from stormwater runoff can erode areas of soil disturbance. Identify locations of concentrated flow that enters the site from outside of the RW (off-site run-on). ☒Complete

(a) Utilize Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets, Earth Dikes/Swales, Ditches, Outlet Protection/Velocity Dissipation, Slope Drains, Check Dams, or other BMPs to convey concentrated flows in a non-erosive manner. ☒Complete

(b) Designate as a separate contract bid line item, as appropriate. ☐Complete

Construction Site BMPs
Checklist CS-1, Part 2

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

TO BE COMPLETED DURING PS&E

Sediment Control

Perimeter Controls - Run-off Control

1. Is there a potential for sediment laden sheet and concentrated flows to discharge offsite from runoff cleared and grubbed areas, below cut slopes, embankment slopes, etc.? ☒Yes ☐No

   (a) Select linear sediment barrier such as Silt Fence, Fiber Rolls, Gravel Bag Berm, Sand Bag Barrier, Straw Bale Barrier, or a combination to protect wetlands, water courses, roads (paved and unpaved), construction activities, and adjacent properties. (Coordinate with District Construction for selection and preference of linear sediment barrier BMPs.) ☒Complete

   (b) Increase the quantities by 25 percent for each additional rainy season. (Designated Construction Representative may suggest an alternate increase.) ☐Complete

   (c) Designate as a separate contract bid line item. ☐Complete

Perimeter Controls - Run-on Control

2. Do locations exist where sheet flow upslope of the project site and where concentrated flow upstream of the project site may contact DSA and construction activities? ☒Yes ☐No

   (a) Utilize linear sediment barriers such as Earth Dike/Drainage Swales and Lined Ditches, Fiber Rolls, Gravel Bag Berm, Sand Bag Barrier, Straw Bale Barrier, or other BMPs to convey flows through and/or around the project site. (Coordinate with District Construction for selection and preference of perimeter control BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item, as appropriate. ☐Complete

Storm Drain Inlets

3. Do existing or proposed drainage inlets exist within the construction limits? ☒Yes ☐No

   (a) Select Drainage Inlet Protection to protect municipal storm drain systems or receiving waters wetlands at each drainage inlet. (Coordinate with District Construction for selection and preference of inlet protection BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item. ☐Complete

4. Can existing or proposed drainage inlets utilize an excavated sediment trap as described in Drainage Inlet Protection - Type 2? ☐Yes ☐No

   (a) Include with other types of Drainage Inlet Protection. ☐Complete

Sediment/Desilting Basin

5. Does the project lie within a Rainfall Area where the required combination of temporary soil stabilization and sediment control BMPs includes desilting basins? ☐Yes ☒No

   (a) Consider feasibility for desilting basin allowing for available right-of-way within the construction limits, topography, soil type, disturbed soil area within the watershed, and climate conditions. Document if the inclusion of sediment/desilting basins is infeasible. ☐Complete

   (b) If feasible, design desilting basin(s) per the guidance in the *CASQA Construction BMP Guidance Handbook* to maximize capture of sediment-laden runoff. ☐Complete

   (c) Designate as a separate contract bid item ☐Complete

6. Is ATS to be used for controlling sediment? ☐Yes ☒No

   (a) If yes, then will desilting basin or other means of natural storage be used? ☐Yes ☐No

   (b) If no, then plan for storage tanks sufficient to hold treatment volume. ☐Complete

7. Will the project benefit from the early implementation of proposed permanent Treatment BMPs? (Coordinate with District Construction.) ☐Yes ☐No

   (a) Edit specifications for permanent Treatment BMP work to be implemented in a manner that will allow its use as a Construction Site BMP. ☐Complete

Sediment Trap

8. Can sediment traps be located to collect channelized runoff from disturbed soil areas prior to discharge? ☐Yes ☒No

   (a) Design sediment traps in accordance with the *CASQA Construction BMP Guidance Handbook*. ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs
Checklist CS-1, Part 3

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

TO BE COMPLETED DURING PS&E

Tracking Controls

Stabilized Construction Entrance/Exit

1. Are there points of entrance and exit from the project site to paved roads where mud and dirt could be transported offsite by construction equipment? (Coordinate with District Construction for selection and preference of tracking control BMPs.) ☒Yes ☐No

   (a) Identify and designate these entrance/exit points as stabilized construction entrances. ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Tire/Wheel Wash

2. Are site conditions anticipated that would require additional or modified tracking controls such as entrance/outlet tire wash? (Coordinate with District Construction.) ☒Yes ☐No

   (a) Designate as a separate contract bid line item. ☐Complete

Stabilized Construction Roadway

3. Are temporary access roads necessary to access remote construction activity locations or to transport materials and equipment? (In addition to controlling dust and sediment tracking, access roads limit impact to sensitive areas by limiting ingress, and provide enhanced bearing capacity.) (Coordinate with District Construction.) ☐Yes ☒No

   (a) Designate these temporary access roads as stabilized construction roadways. ☐Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Street Sweeping and Vacuuming

1. Is there a potential for tracked sediment or construction related residues to be transported offsite and deposited on public or private roads? (Coordinate with District Construction for preference of including street sweeping and vacuuming with tracking control BMPs.) ☒Yes ☐No

   (a) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs
Checklist CS-1, Part 4

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

TO BE COMPLETED DURING PS&E

Wind Erosion Controls

Wind Erosion Control

1. Is the project located in an area where standard dust control practices in accordance with *Standard Specifications*, Section 14-903: Dust Control, are anticipated to be inadequate during construction to prevent the transport of dust offsite by wind? *(Note: Dust control by water truck application is paid for through the various items of work. Dust palliative, if it is included, is paid for as a separate item.)* ☒Yes ☐No

   (a) Select Hydraulic Mulch, Hydroseeding, Soil Binders, Geotextiles, Mats, Plastic Covers, and Erosion Control Blankets, Wood Mulching or a combination to cover the DSA subject to wind erosion year-round, especially when significant wind and dry conditions are anticipated during project construction. (Coordinate with District Construction for selection and preference of wind erosion control BMPs.) ☒Complete

   (b) Designate as a separate contract bid line item. ☐Complete

Construction Site BMPs
Checklist CS-1, Part 5

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

TO BE COMPLETED DURING PS&E

Non-Stormwater Management

Temporary Stream Crossing & Clear Water Diversion

1. Will construction activities occur within a water body or watercourse such as a lake, wetland, or stream? (Coordinate with District Construction for selection and preference for stream crossing and clear water diversion BMPs.) ☒Yes ☐No

   (a) Select from types offered in Temporary Stream Crossing to provide access through watercourses consistent with permits and agreements.[1] ☐Complete

   (b) Select from types offered in Clear Water Diversion to divert watercourse consistent with permits and agreements.[1] ☐Complete

   (c) Designate as a separate contract bid line item(s). ☐Complete

Other Non-Stormwater Management BMPs

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? ☒Yes ☐No

   (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as Water Conservation Practices, Dewatering Operations, Paving and Grinding Operations, Potable Water/Irrigation, Vehicle and Equipment Cleaning, Vehicle and Equipment Fueling, Vehicle and Equipment Maintenance, Pile Driving Operations, Concrete Curing, Material and Equipment Use Over Water, Concrete Finishing, and Structure Demolition/Removal Over or Adjacent to Water.[1] ☒Complete

   (b) Verify that costs for non-stormwater management BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction. ☐Complete

[1] *Coordinate with District Environmental for consistency with US Army Corps of Engineers 404 and 401 permits and Dept. of Fish and Game 1601 Streambed alteration Agreements.*

Construction Site BMPs
Checklist CS-1, Part 6

Prepared by: WRECO Date: September 2022 District-Co-Route: 05-SCR-01

PM: 8.1/10.7 Project ID (or EA): 05-0C7340 RWQCB: Central Coast

TO BE COMPLETED DURING PS&E

Waste Management & Materials Pollution Control

Concrete Waste Management

1. Does the project include concrete placement or mortar mixing? ☒Yes ☐No

   (a) Select from types offered in Concrete Waste Management to provide concrete washout facilities. In addition, consider portable concrete washouts and vendor supplied concrete waste management services. (Coordinate with District Construction for selection and preference of waste management and materials pollution control BMPs.) ☐Complete

   (b) Designate as a separate contract bid line item if the quantity of concrete waste and washout are anticipated to exceed 5.2 yd^3 or if requested by Construction. ☐Complete

Other Waste Management and Materials Pollution Controls

2. Are construction activities anticipated that will generate wastes or residues with the potential to discharge pollutants? ☒Yes ☐No

   (a) Identify potential pollutants associated with the anticipated construction activity and select the corresponding BMP such as Material Delivery and Storage, Material Use, Spill Prevention and Control, Solid Waste Management, Hazardous Waste Management, Contaminated Soil Management, Sanitary/Septic Waste Management, and Liquid Waste Management ☒Complete

   (b) Verify that costs for waste management and materials pollution control BMPs are identified in the contract documents. Designate BMP as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction. ☐Complete

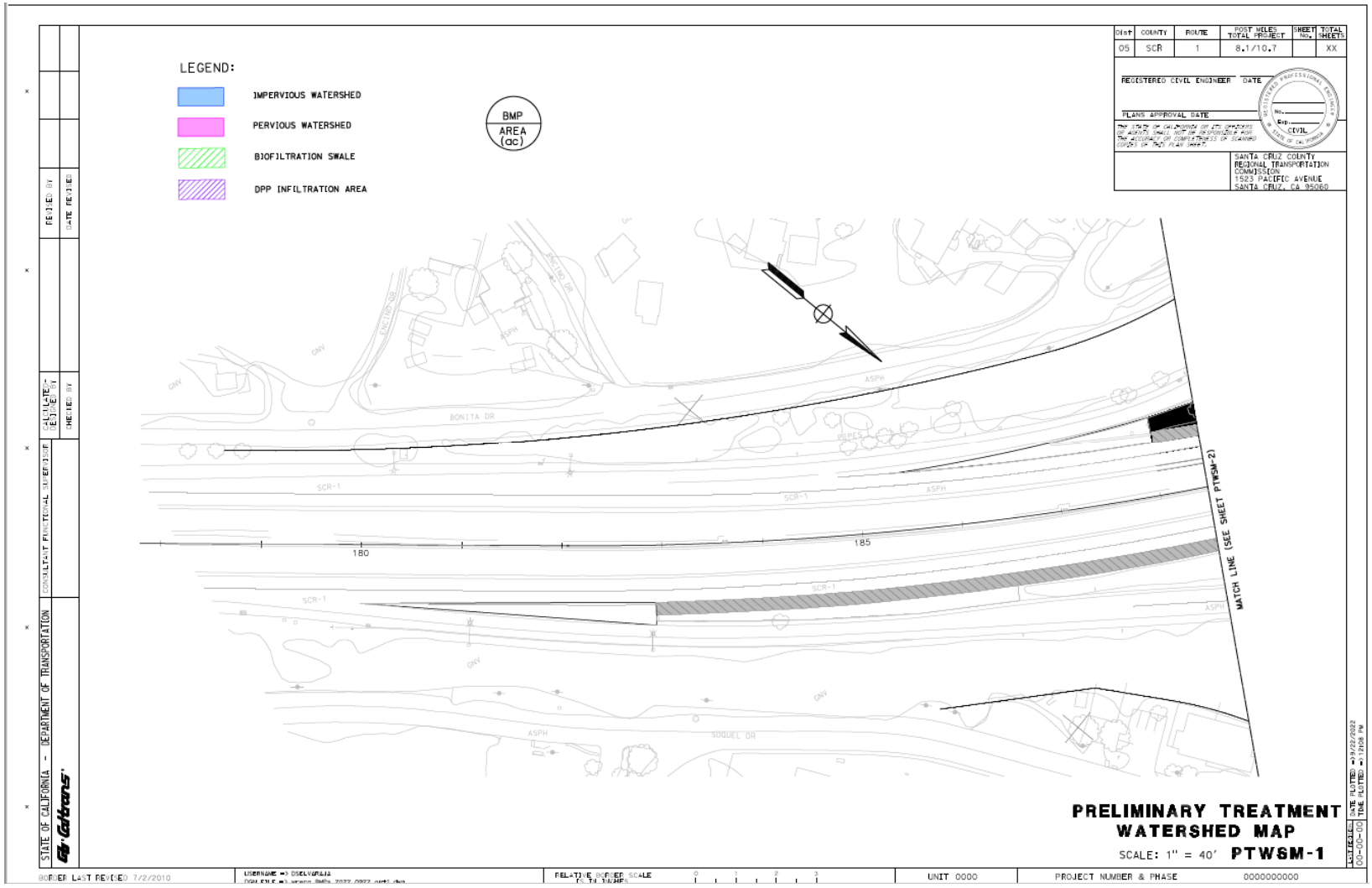
Temporary Stockpiles (Soil, Materials, and Wastes)

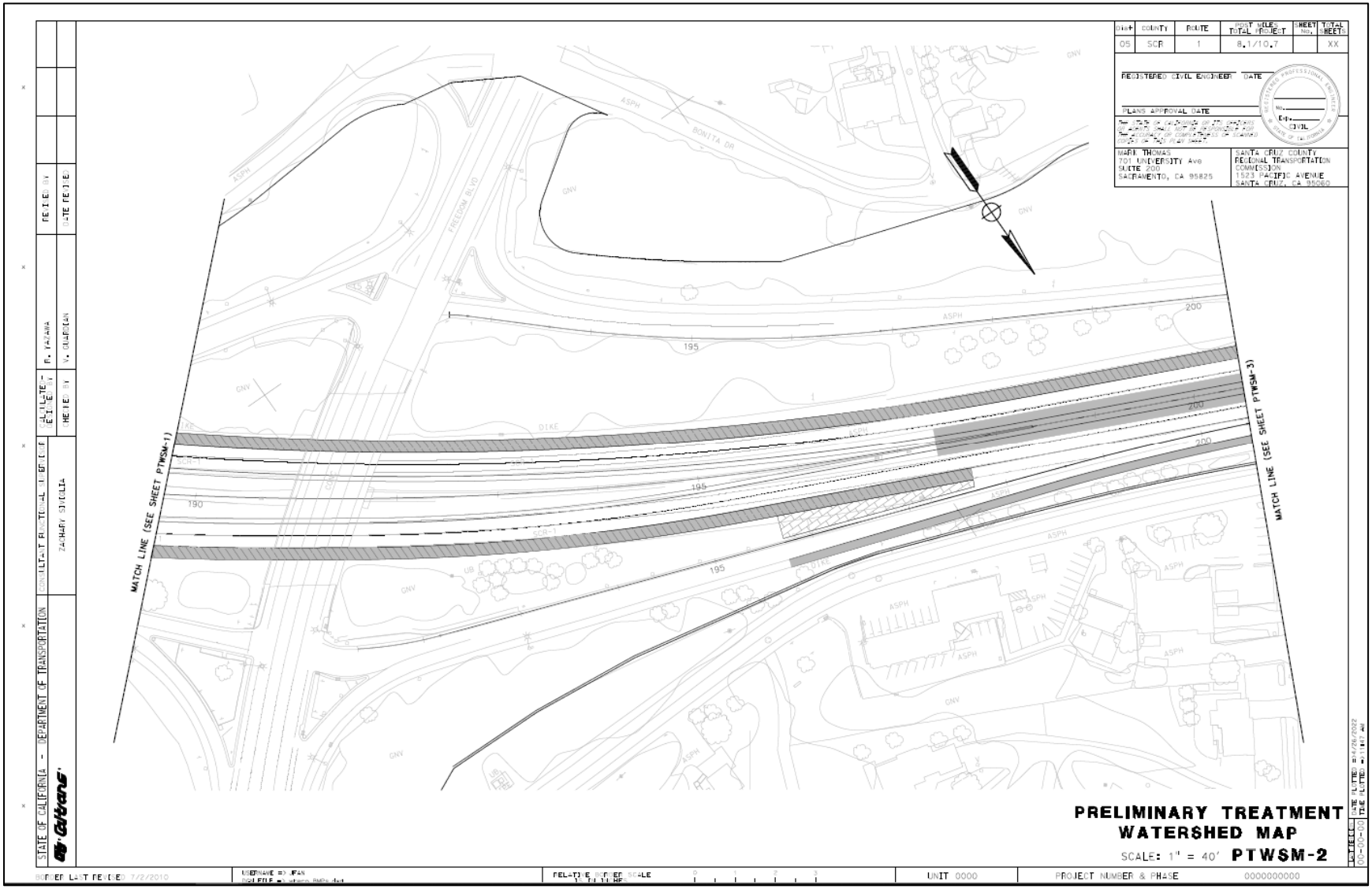
3. Are stockpiles of soil, etc. anticipated during construction? ☒Yes ☐No

(a) Verify that costs for stockpile management and associated sediment control and temporary soil stabilization BMPs for temporary stockpiles are identified in the contract documents. Designate as a separate contract bid line item if the requirements in Job Site Management *Standard Specifications* Section 13 are anticipated to be inadequate or if requested by Construction.

☐Complete

Maps Showing BMP Deployment

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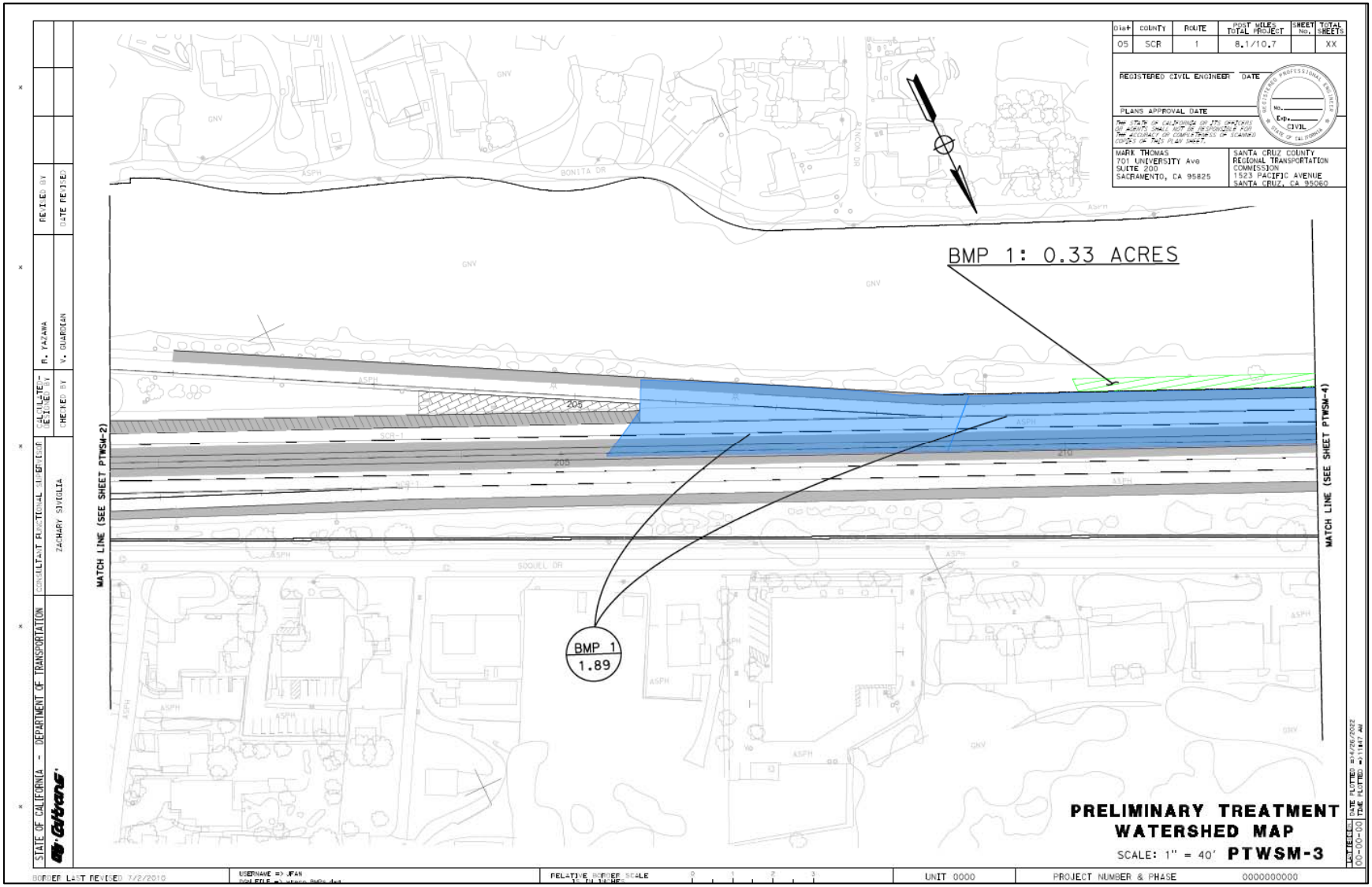
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
REGISTERED CIVIL ENGINEER
PLANS APPROVAL DATE
MARK THOMAS
701 UNIVERSITY Ave
SUITE 200
SACRAMENTO, CA 95825
SANTA CRUZ COUNTY
REGIONAL TRANSPORTATION
COMMISSION
1523 PACIFIC AVENUE
SANTA CRUZ, CA 95060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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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SANTA CRUZ, CA 95060
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PLANS APPROVAL DATE
CIVIL
R. YAZAWA
V. GUARDIAN
ZACHARY SIVOLIA
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UNIT 0000
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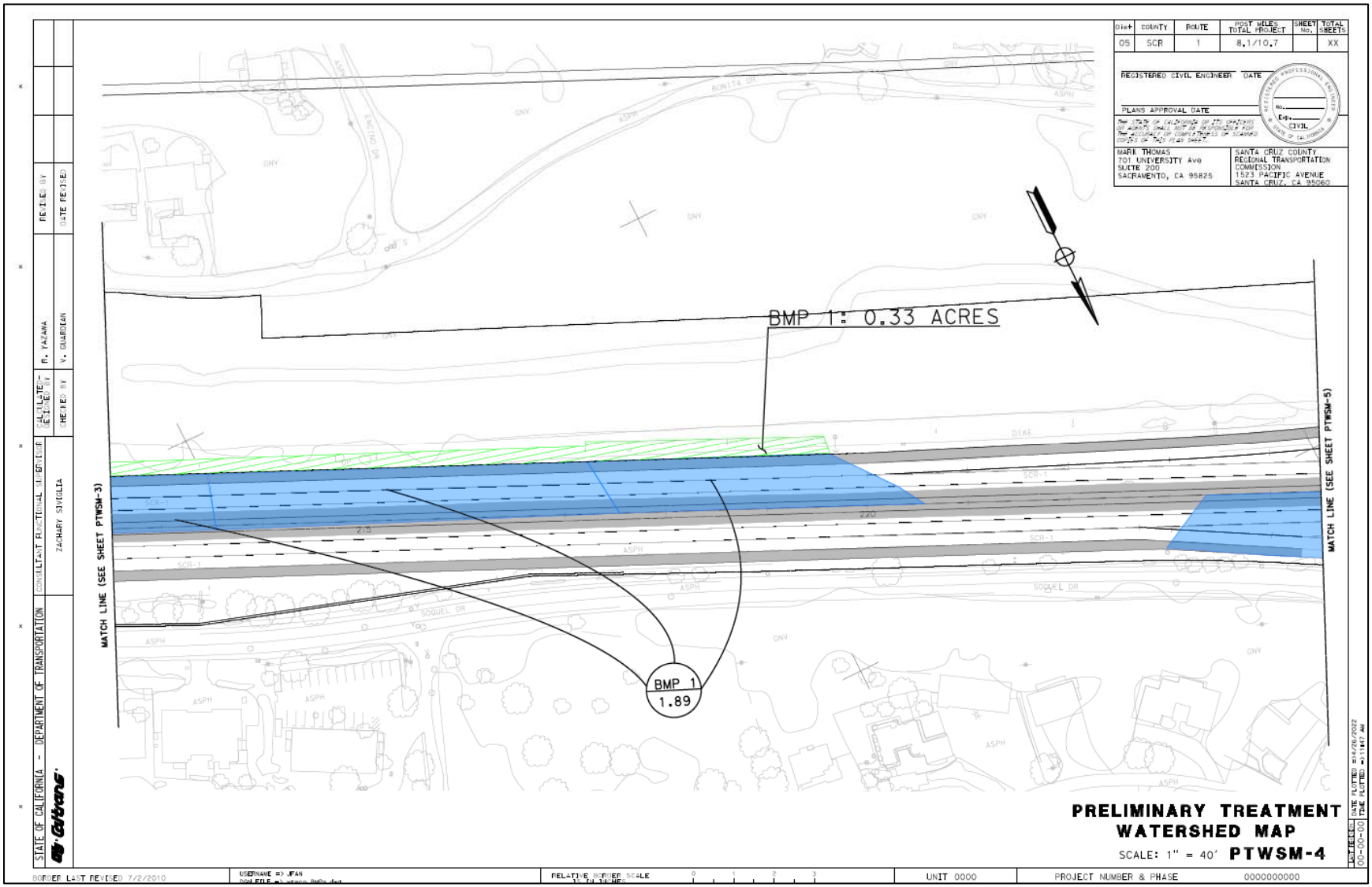
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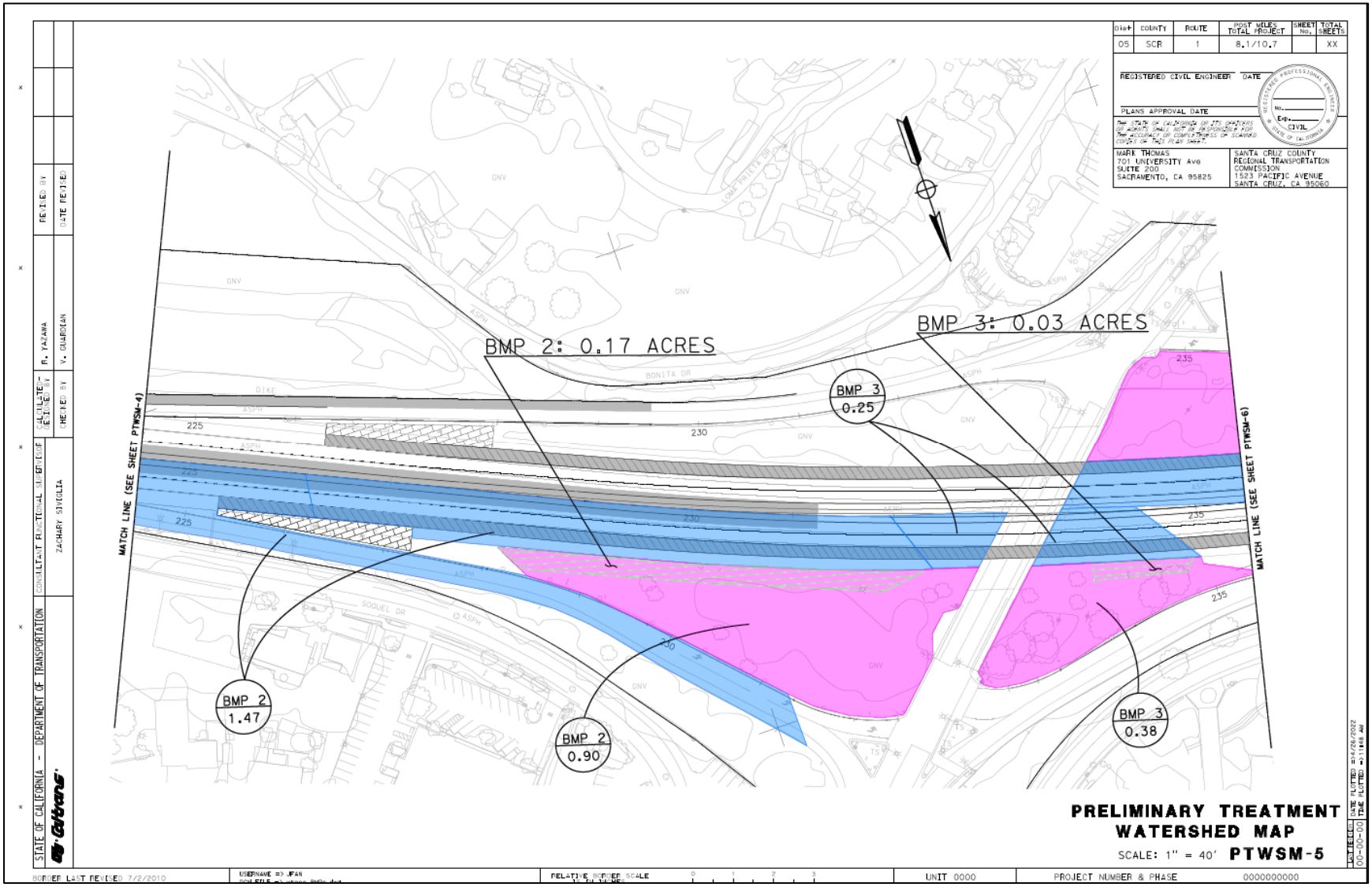
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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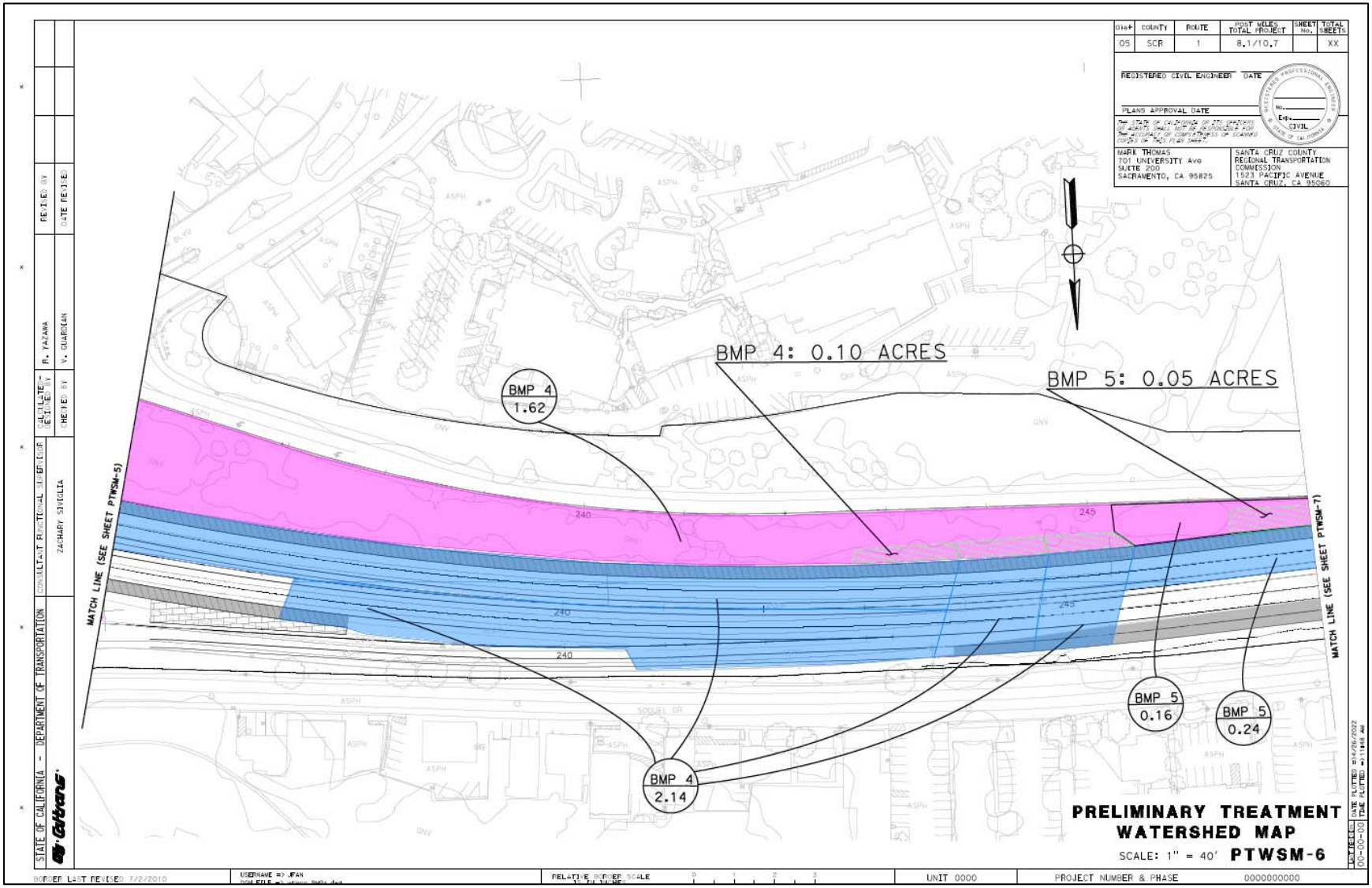
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SANTA CRUZ, CA 95060
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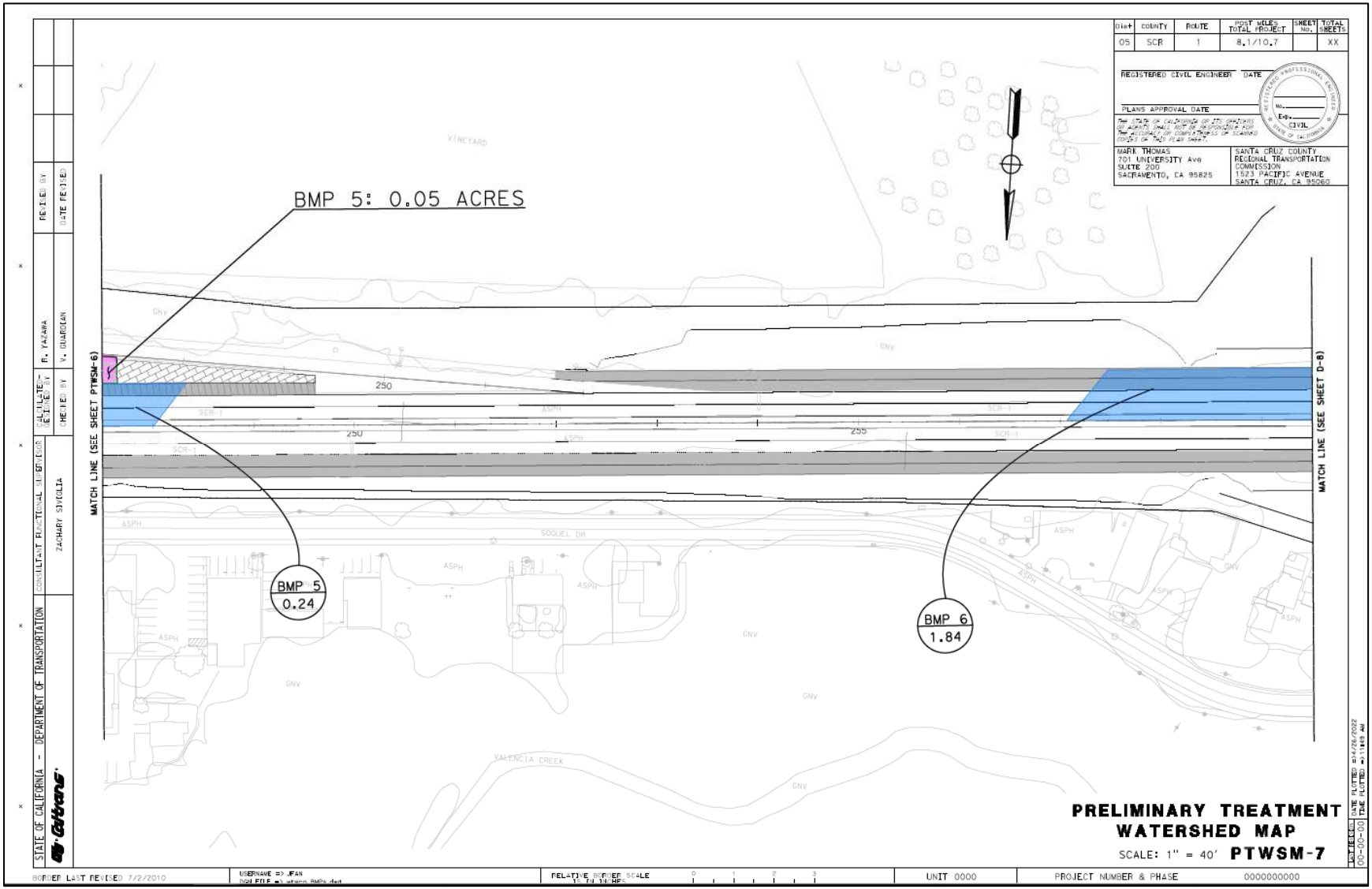
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VALENCIA CREEK
PRELIMINARY TREATMENT
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SCALE: 1" = 40'
PTWSM-7
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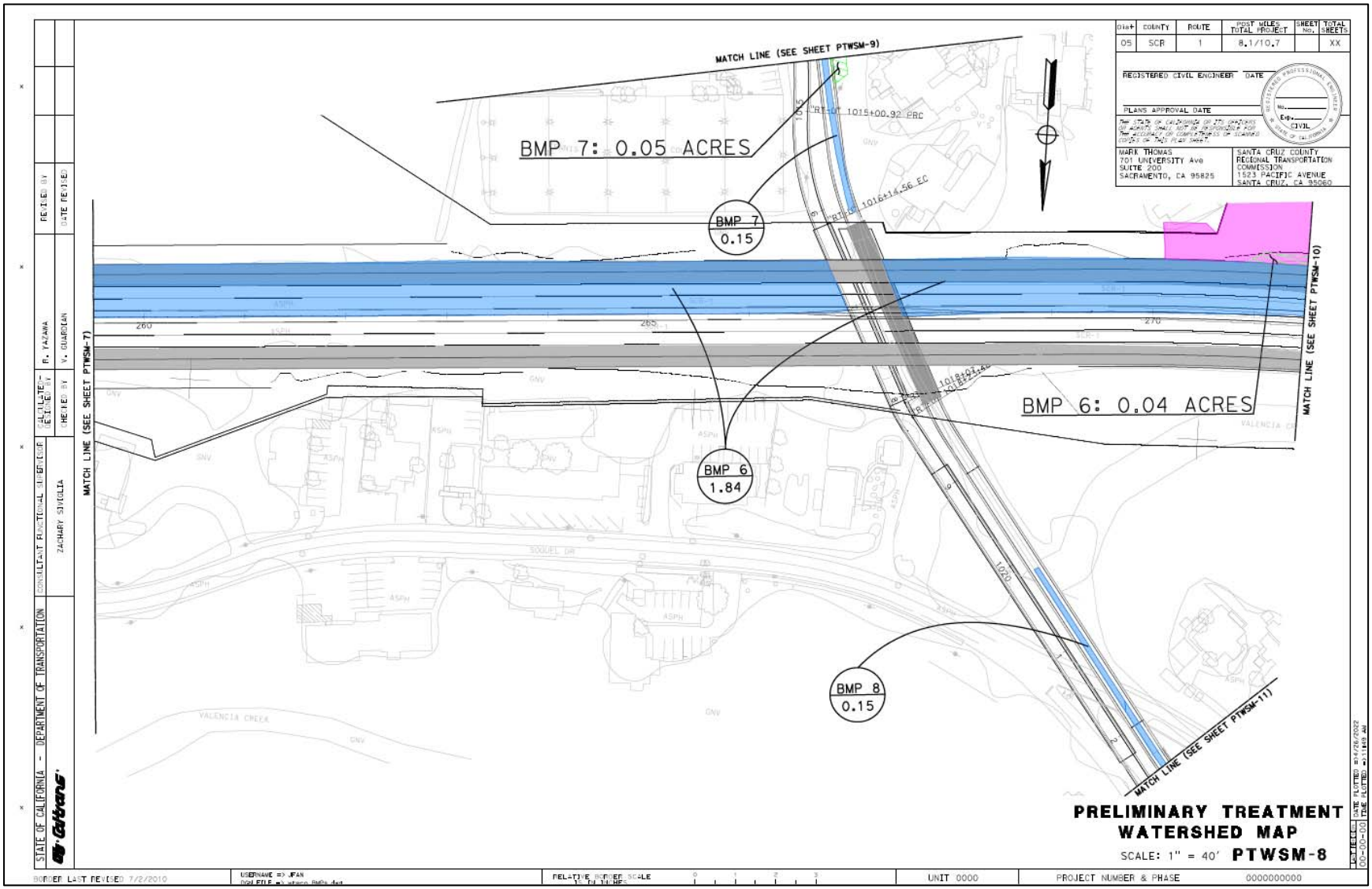
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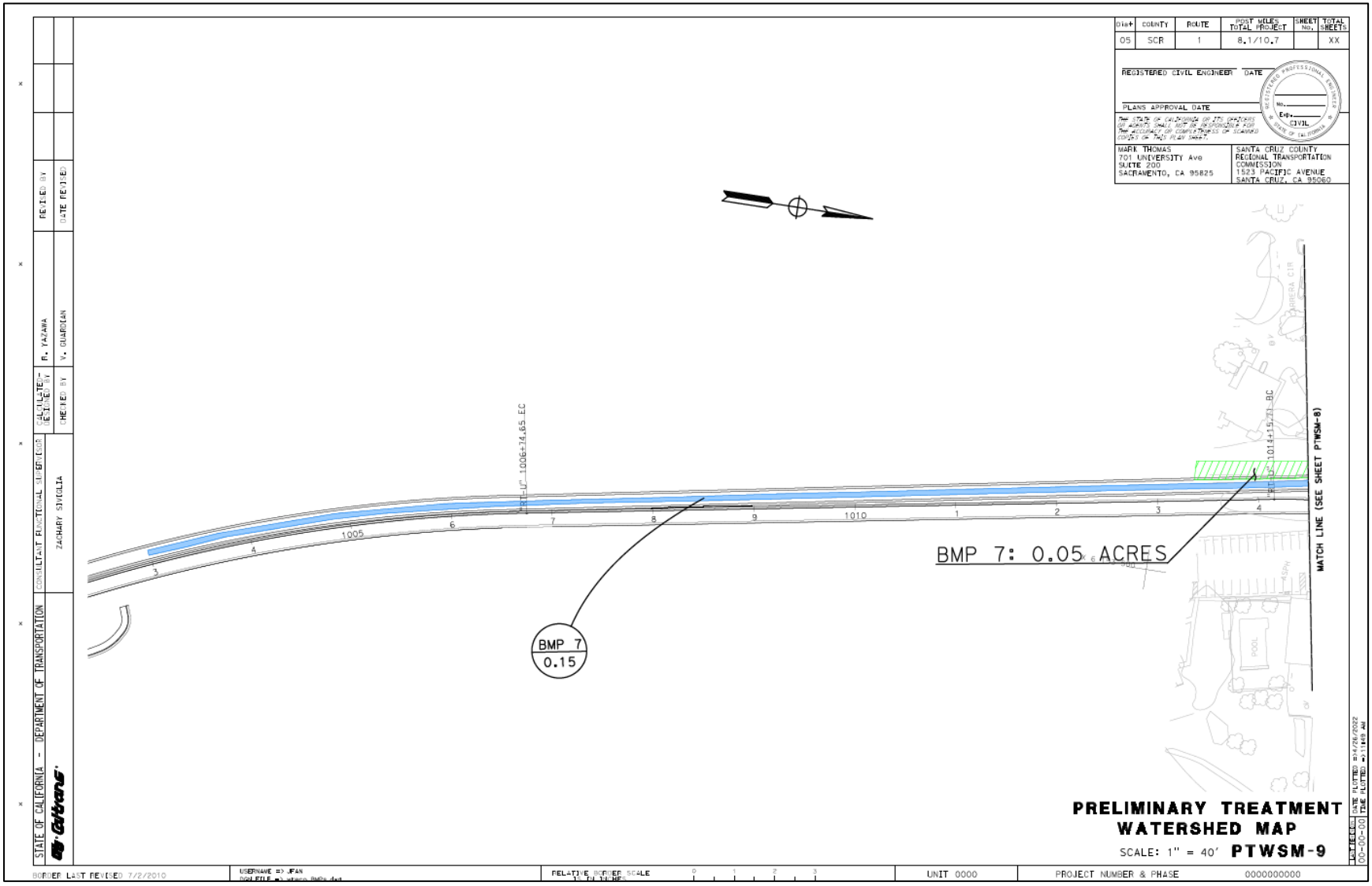
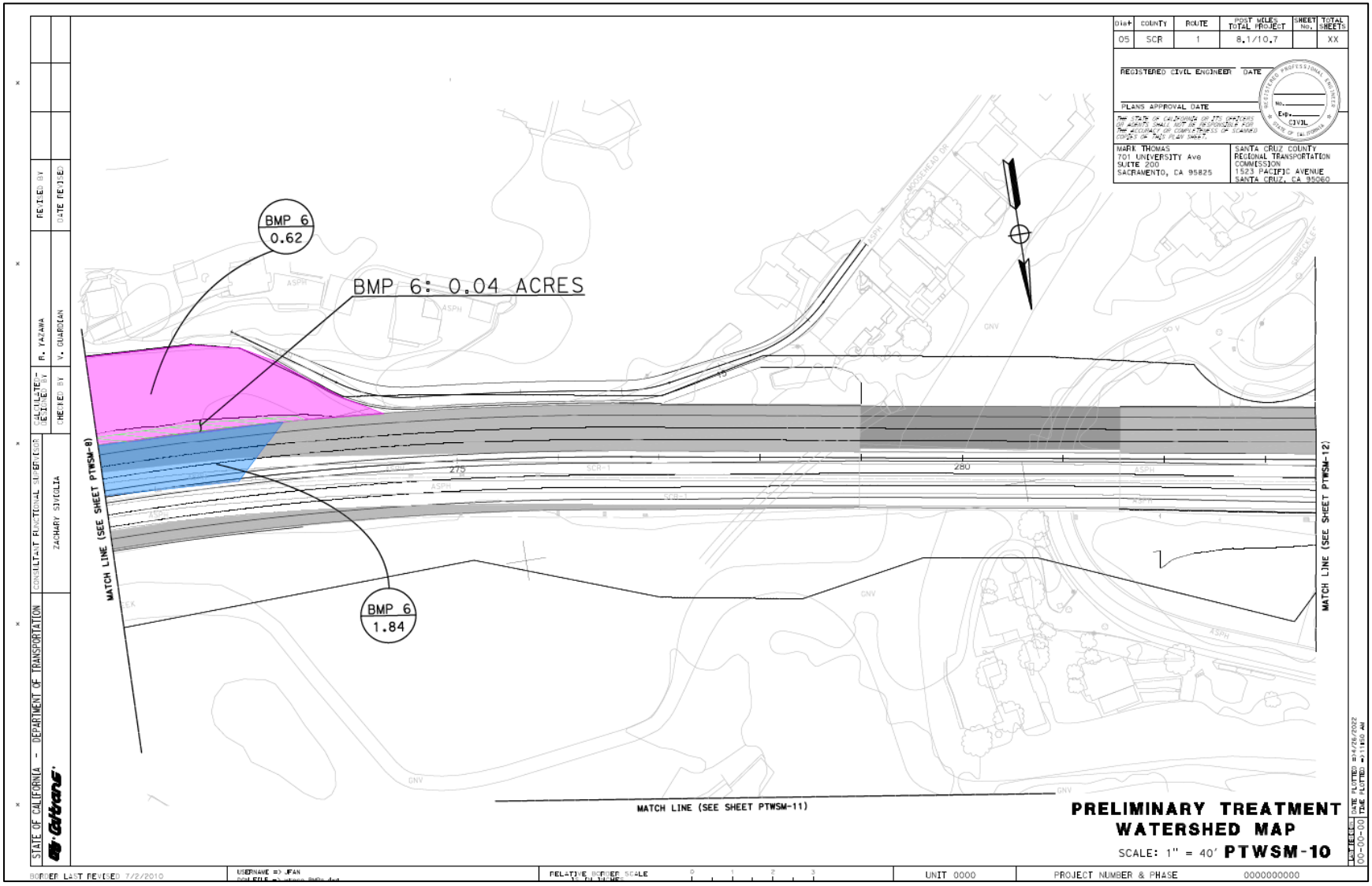
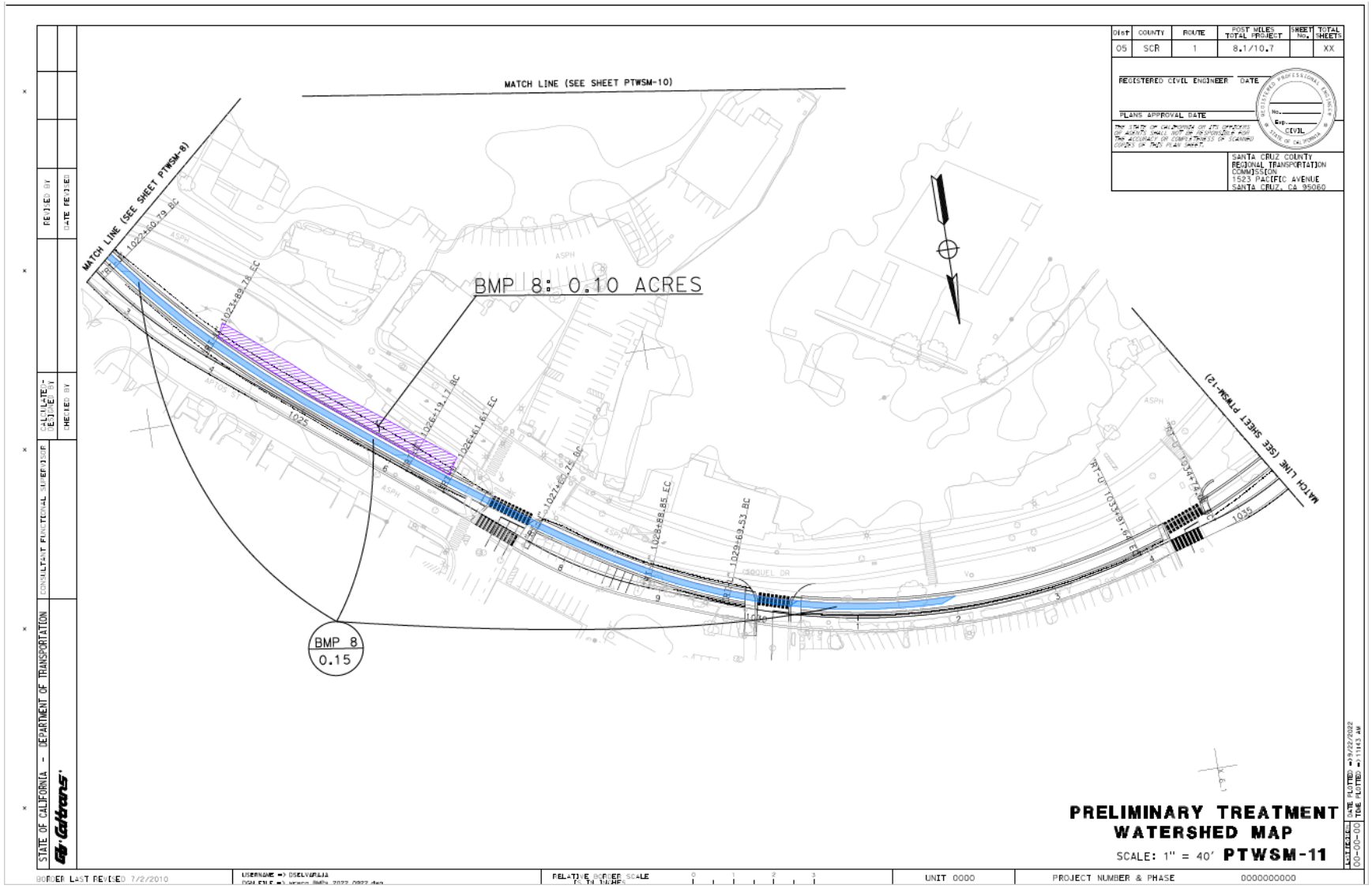
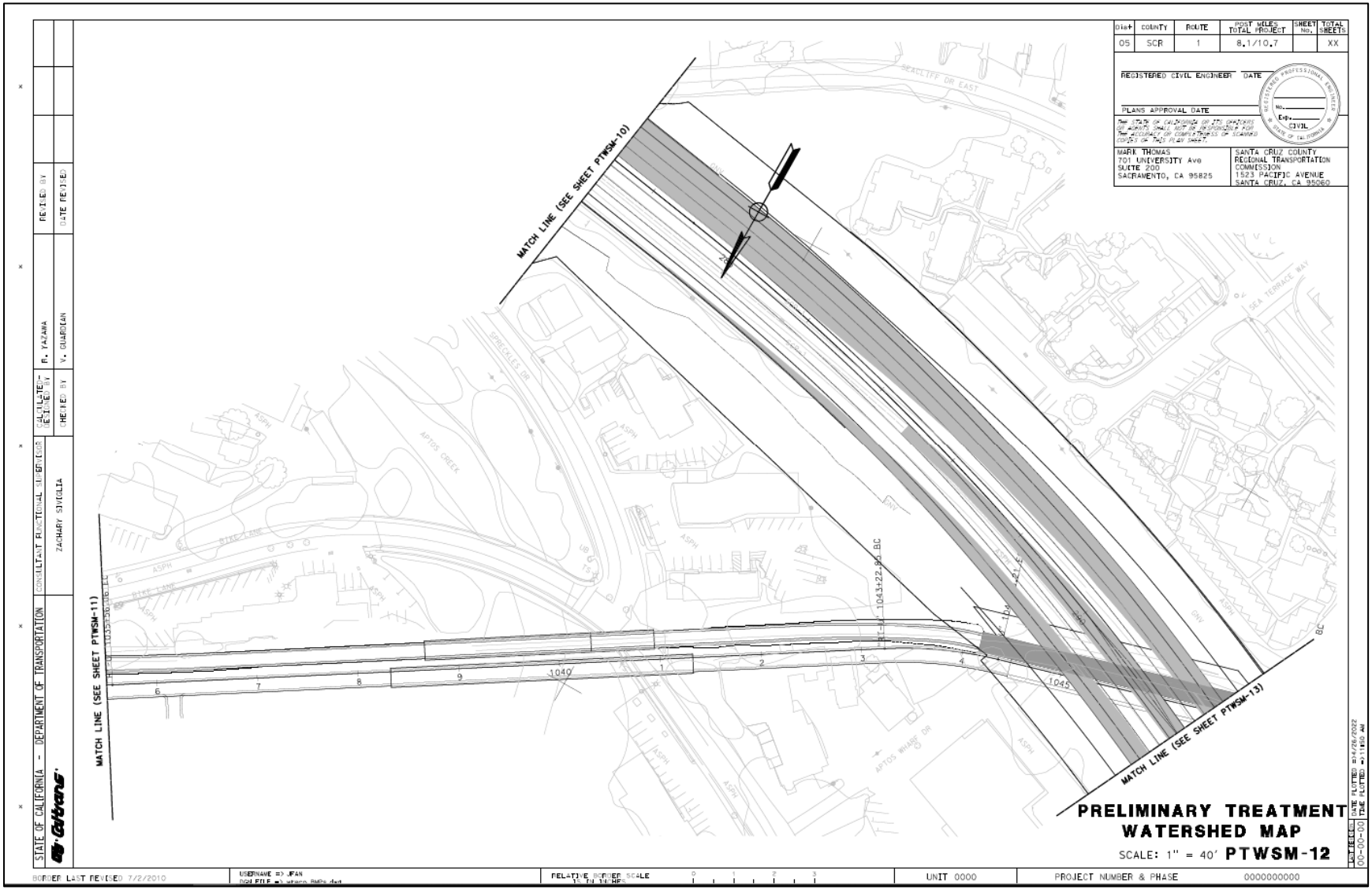
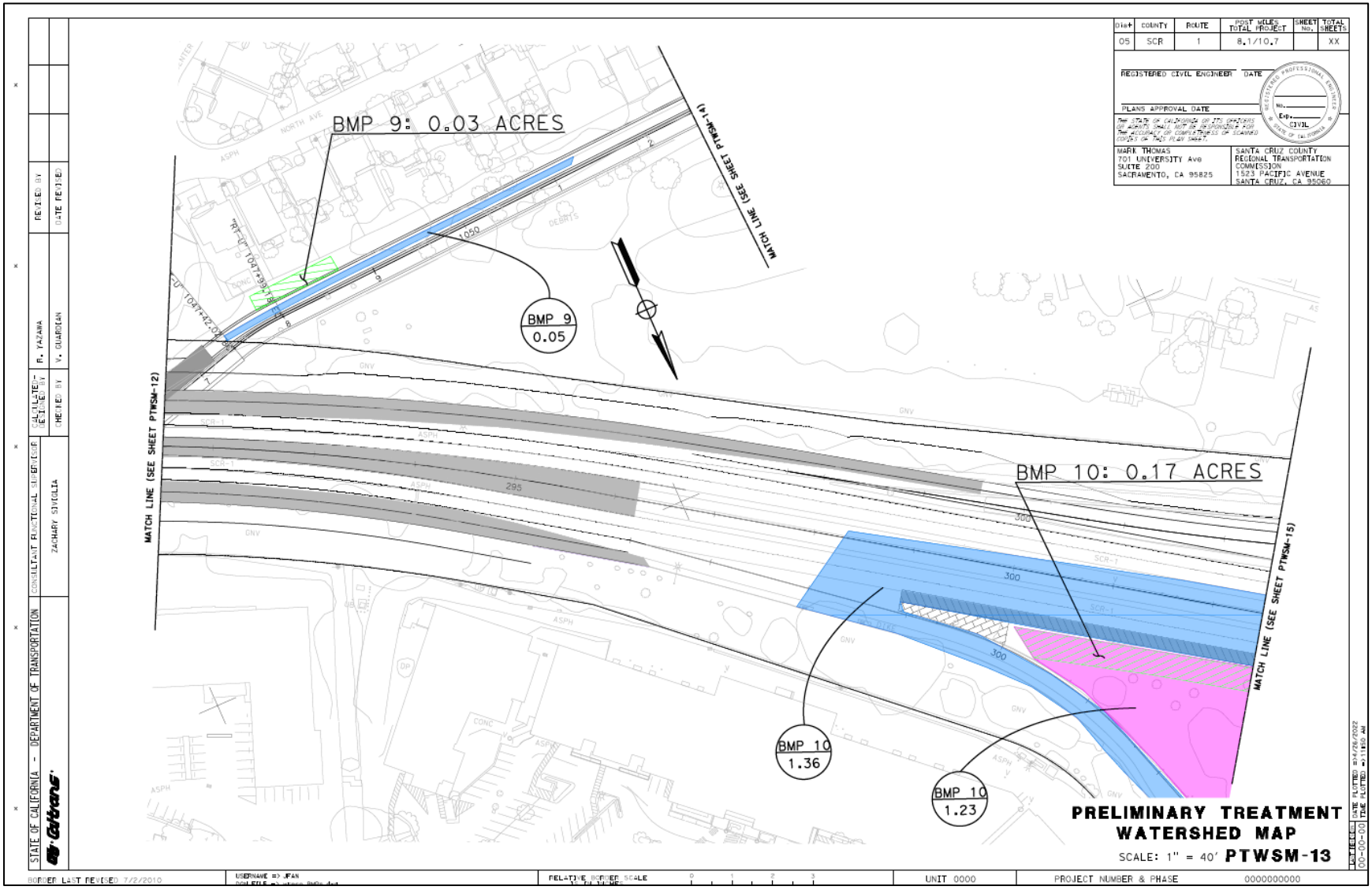
VALENCIA CREEK
PRELIMINARY TREATMENT
WATERSHED MAP
SCALE: 1" = 40'
PTWSM-8
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ZACHARY SIVOLIA
R. YAZAWA
V. GUARDIAN
MARK THOMAS
701 UNIVERSITY Ave
SUITE 200
SACRAMENTO, CA 95825
SANTA CRUZ COUNTY
REGIONAL TRANSPORTATION
COMMISSION
1523 PACIFIC AVENUE
SANTA CRUZ, CA 95060
REGISTERED CIVIL ENGINEER
PLANS APPROVAL DATE
UNIT 0000
PROJECT NUMBER & PHASE
0000000000


Dist
COUNTY
ROUTE
POST MILES TOTAL PROJECT
SHEET No.
TOTAL SHEETS
05
SCR
1
8.1/10.7
XX
REGISTERED CIVIL ENGINEER
DATE
PLANS APPROVAL DATE
MARK THOMAS
701 UNIVERSITY Ave
SUITE 200
SACRAMENTO, CA 95825
SANTA CRUZ COUNTY
REGIONAL TRANSPORTATION
COMMISSION
1523 PACIFIC AVENUE
SANTA CRUZ, CA 95060
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR
ZACHARY SIVIGLIA
CALCULATED/DESIGNED BY
R. YAZAMA
CHECKED BY
V. GUARDIAN
REVISED BY
DATE REVISED
BMP 7
0.15
BMP 7: 0.05 ACRES
MATCH LINE (SEE SHEET PTWSM-8)
PRELIMINARY TREATMENT
WATERSHED MAP
SCALE: 1" = 40'
PTWSM-9
BORDER LAST REVISED 7/2/2010
UNIT 0000
PROJECT NUMBER & PHASE
0000000000


BMP 6
0.62
BMP 6: 0.04 ACRES
BMP 6
1.84
MATCH LINE (SEE SHEET PTWSM-8)
MATCH LINE (SEE SHEET PTWSM-12)
MATCH LINE (SEE SHEET PTWSM-11)
PRELIMINARY TREATMENT
WATERSHED MAP
SCALE: 1" = 40'
PTWSM-10
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ZACHARY SAVIGLIA
R. YAZAWA
V. OLABUENA
REVISED BY
DATE REVISED
CALCULATED/DESIGNED BY
CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR
Dist
COUNTY
ROUTE
POST MILES TOTAL PROJECT
SHEET No.
TOTAL SHEETS
05
SCR
1
8.1/10.7
XX
REGISTERED CIVIL ENGINEER
DATE
PLANS APPROVAL DATE
MARK THOMAS
701 UNIVERSITY Ave
SUITE 200
SACRAMENTO, CA 95825
SANTA CRUZ COUNTY
REGIONAL TRANSPORTATION
COMMISSION
1523 PACIFIC AVENUE
SANTA CRUZ, CA 95060
BORDER LAST REVISED 7/2/2010
PROJECT NUMBER & PHASE
0000000000
UNIT 0000


MATCH LINE (SEE SHEET PTWSM-10)
MATCH LINE (SEE SHEET PTWSM-8)
BMP 8: 0.10 ACRES
MATCH LINE (SEE SHEET PTWSM-12)
BMP 8
0.15
DIST 05
COUNTY SCR
ROUTE 1
POST MILES TOTAL PROJECT 8.1/10.7
SHEET NO.
TOTAL SHEETS XX
REGISTERED CIVIL ENGINEER DATE
PLANS APPROVAL DATE
SANTA CRUZ COUNTY REGIONAL TRANSPORTATION COMMISSION
1523 PACIFIC AVENUE
SANTA CRUZ, CA 95060
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
CONSULTANT FUNCTIONAL SUPERVISOR
PLOTTED BY
CHECKED BY
DATE REVISED
BORDER LAST REVISED 7/2/2010
UNIT 0000
PROJECT NUMBER & PHASE 0000000000
PRELIMINARY TREATMENT
WATERSHED MAP
SCALE: 1" = 40'
PTWSM-11


MATCH LINE (SEE SHEET PTWSM-10)
MATCH LINE (SEE SHEET PTWSM-11)
MATCH LINE (SEE SHEET PTWSM-13)
PRELIMINARY TREATMENT
WATERSHED MAP
SCALE: 1" = 40'
PTWSM-12
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
REGISTERED CIVIL ENGINEER
DATE
PLANS APPROVAL DATE
MARK THOMAS
701 UNIVERSITY Ave
SUITE 200
SACRAMENTO, CA 95825
SANTA CRUZ COUNTY
REGIONAL TRANSPORTATION
COMMISSION
1523 PACIFIC AVENUE
SANTA CRUZ, CA 95060
UNIT 0000
PROJECT NUMBER & PHASE
0000000000


BMP 9: 0.03 ACRES
BMP 9
0.05
BMP 10: 0.17 ACRES
BMP 10
1.36
BMP 10
1.23
MATCH LINE (SEE SHEET PTWSM-14)
MATCH LINE (SEE SHEET PTWSM-12)
MATCH LINE (SEE SHEET PTWSM-15)
PRELIMINARY TREATMENT WATERSHED MAP
SCALE: 1" = 40' PTWSM-13
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
MARK THOMAS
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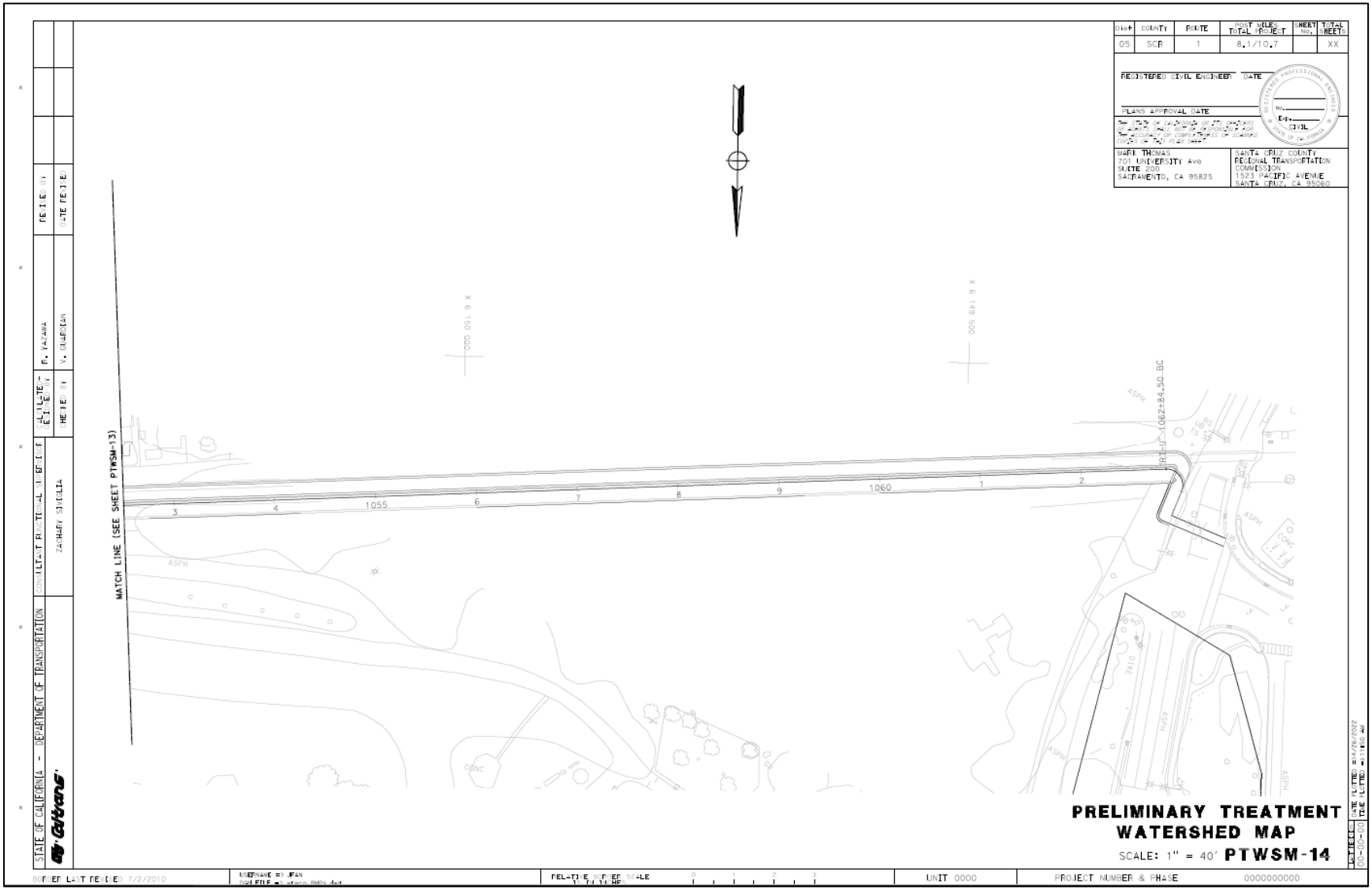
SACRAMENTO, CA 95825
SANTA CRUZ COUNTY
REGIONAL TRANSPORTATION
COMMISSION
1523 PACIFIC AVENUE
SANTA CRUZ, CA 95060


MATCH LINE (SEE SHEET PTWSM-13)
PRELIMINARY TREATMENT
WATERSHED MAP
SCALE: 1" = 40'
PTWSM-14
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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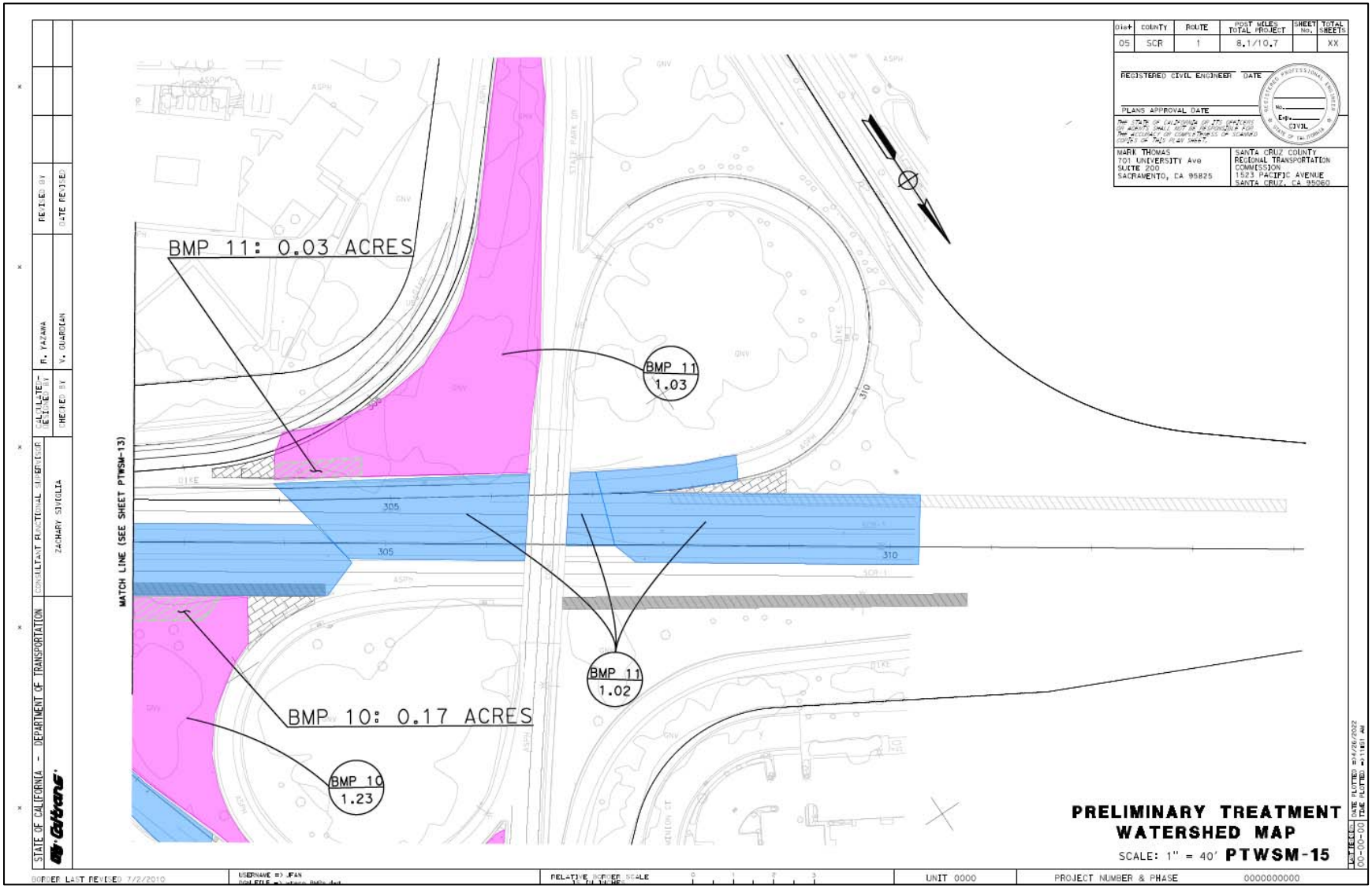
SANTA CRUZ, CA 95060
REGISTERED CIVIL ENGINEER
DATE
PLANS APPROVAL DATE
UNIT 0000
PROJECT NUMBER & PHASE 0000000000


BMP 11: 0.03 ACRES
BMP 11
1.03
BMP 11
1.02
BMP 10: 0.17 ACRES
BMP 10
1.23
MATCH LINE (SEE SHEET PTWSM-13)
PRELIMINARY TREATMENT
WATERSHED MAP
SCALE: 1" = 40'
PTWSM-15
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ZACHARY SIVOLIA
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SANTA CRUZ COUNTY
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SANTA CRUZ, CA 95060
REGISTERED CIVIL ENGINEER
DATE
PLANS APPROVAL DATE

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