

FOR CONTRACT NO.: **04-283814**

INFORMATION HANDOUT

MATERIALS INFORMATION

DRAFT CONCEPTUAL STORMWATER POLLUTION PREVENTION PLAN

TREE SURVEY

04-Son-116-67.3/71.9

ADDED PER ADDENDUM NO. 1 DATED OCTOBER 21, 2009

DRAFT CONCEPTUAL

STORMWATER POLLUTION PREVENTION PLAN

for

STAGE GULCH ROAD CONSTRUCTION

04-283814

Prepared for:

CALIFORNIA DEPARTMENT OF TRANSPORTATION
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Submitted by:

To be determined

Project Site Address

For construction on State Highway 116 in Sonoma County About 9 km East
of Petaluma From Adobe Road to 0.2 km West of Arnold Drive

Contractor's Water Pollution Control Manager

To be determined

Contractor's Designated Water Pollution Control Inspector (if different from WPCM)

To be determined

SWPPP Prepared by:

To be determined

SWPPP Preparation Date

September 30, 2009

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SWPPP Attachments

Attachment A.....Vicinity Map and Site Map
Attachment B..... Water Pollution Control Drawings
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Attachment D..... Computation Sheet for Determining Runoff Coefficients
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Attachment I..... Trained Contractor Personnel Log
Attachment J..... Subcontractor Notification Letter and Log
Attachment K.....Notice of Discharge
Attachment L.....(Intentionally Left Blank)
Attachment M..... Annual Certification of Compliance Form
Attachment N..... Other Plans/Permits/Agreements
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Attachment P.....Notice of Completion of Construction (NCC) / Notice of Termination (NOT)
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Attachment R..... Sampling Activity Log and Chain-of-Custody Forms
Attachment S..... Pollutant Testing Guidance Table
Attachment T..... Sampling Data Reporting Form
Attachment U..... Discharge Reporting Log

Section 100

SWPPP Certifications and Approval

100.1 Initial SWPPP Certification

Project Name: **STAGE GULCH ROAD CONSTRUCTION**

Caltrans Contract Number: **04-283814**

"I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Contractor's Signature

Date

Contractor's Name and Title

Contractor's Telephone Number

100.2 SWPPP Approval

Is a Local Agency / Private Entity administering the project?

Yes No

The Caltrans Resident Engineer is the authorized representative of the Department for approving, signing, and certifying the SWPPP in conformance with Section H, Provision 8.b; and Section M, Provision 10 of the Caltrans Permit (CAS000003, Order No. 99-06-DWQ). The SWPPP was prepared by the Contractor and submitted for review and approval to the Resident Engineer, pursuant to the Special Provisions, the SWPPP/WPCP Preparation Manual, and the Standard Specifications Section 7-1.01G – Water Pollution. The Contractor is responsible and liable at all times for compliance with applicable requirements for which compliance is ultimately determined by the Regional Water Quality Control Board (RWQCB), the State Water Resources Control Board (SWRCB), and/or the U.S. Environmental Protection Agency (EPA).

For Caltrans Use Only
**Resident Engineer's Approval and
Caltrans Certification of the
Stormwater Pollution Prevention Plan**

Project Name: **STAGE GULCH ROAD CONSTRUCTION**

Caltrans Contract Number: **04-283814**

"I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Resident Engineer's Signature

Date

Resident Engineer's Name

Resident Engineer's Telephone Number

The Resident Engineer is the authorized representative of the Local Agency / Private Entity for approving, signing, and certifying the SWPPP in conformance with Section H, Provision 8.b; and Section M, Provision 10 of the Caltrans Permit (CAS000003, Order No. 99-06-DWQ). The SWPPP was prepared by the Contractor and submitted for review and approval to the Local Agency Resident Engineer and Caltrans Oversight Engineer, pursuant to the Special Provisions, the SWPPP/WPCP Preparation Manual, and the Standard Specifications Section 7-1.01G – Water Pollution. The

Contractor is responsible and liable at all times for compliance with applicable requirements for which compliance is ultimately determined by the Regional Water Quality Control Board (RWQCB), the State Water Resources Control Board (SWRCB), and/or the U.S. Environmental Protection Agency (EPA).

For Local Agency / Private Entity Use Only
**Resident Engineer's Approval and
Local Agency Certification of the
Stormwater Pollution Prevention Plan**

Project Name: **STAGE GULCH ROAD CONSTRUCTION**

Caltrans Contract Number: **04-283814**
Local Agency / Private
Entity Name

"I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Resident Engineer's Signature

Date

Resident Engineer's Name

Resident Engineer's Telephone
Number

The Caltrans Oversight Engineer is the authorized representative of the Department for approving, signing, and certifying the SWPPP in conformance with Section H, Provision 8.b; and Section M, Provision 10 of the Caltrans Permit (CAS000003, Order No. 99-06-DWQ). The SWPPP was prepared by the Contractor and submitted for review and approval to the Local Agency Resident Engineer and Caltrans Oversight Engineer, pursuant to the Special Provisions, the SWPPP/WPCP Preparation Manual, and the Standard Specifications Section 7-1.01G – Water Pollution. The Contractor is responsible and liable at all times for compliance with applicable requirements for which compliance is ultimately determined by the Regional Water Quality Control Board (RWQCB), the State Water Resources Control Board (SWRCB), and/or the U.S. Environmental Protection Agency (EPA).

For Caltrans Use Only
Oversight Engineer's Approval and
Caltrans Certification of the
Stormwater Pollution Prevention Plan

"I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Oversight Engineer's Signature

Date

Oversight Engineer's Name

Oversight Engineer's Telephone
Number

100.3 Annual Compliance Certification

By June 15 of each year, the contractor shall submit an Annual Certification of Compliance to the Resident Engineer (and Oversight Engineer if applicable) stating compliance with the terms and conditions of the Permits and the SWPPP. The Annual Certification of Compliance Form and Resident Engineer Approval Form are included in Attachment M.

Section 200 SWPPP Amendments

200.1 SWPPP Amendment Certification and Approval

This SWPPP shall be amended:

- Whenever there is a change in construction or operations which may affect the discharge of pollutants to surface waters, groundwater(s), or a municipal separate storm sewer system (MS4); or
- If any condition of the Permits is violated or the general objective of reducing or eliminating pollutants in stormwater discharges has not been achieved. If the RWQCB determines that a Permit violation has occurred, the SWPPP shall be amended and implemented within 14 calendar days after notification by the RWQCB;
- Annually, prior to the defined rainy season, when required by the project's Special Provisions; and
- When deemed necessary by the Resident Engineer.

The following items shall be included in each amendment:

- Who requested the amendment;
- The location of proposed change;
- The reason for change;
- The original BMP proposed, if any; and
- The new BMP proposed.

The amendments for this SWPPP, along with the Contractor's Certification and the Resident Engineer's Approval, can be found in Attachment C. Amendments are listed in the Amendment Log in Section 200.2 and a copy is also included in Attachment C.

Section 300

Introduction and Project Description

300.1 Introduction and Project Description

This is a safety improvement project consisting of shoulder widening of the two-lane Route 116 to a standard 2.4-meter width from Adobe Road KP 67.2 (PM 41.7) to Arnold Drive KP 71.8 (PM 44.6) in Sonoma County. In the process all non-standard horizontal curves will be realigned and flattened to a minimum of 260 m in radius to provide sufficient sight distance at a speed of 80kph (50 mph). The existing roadway near the County Dump Road will be realigned to avoid the environmentally sensitive area surrounding Champlin Creek. The realignment of the roadway along this section will also include a left turn pocket to service traffic in and out of County Dump Road. The vertical curve will also be corrected at this location. Box culverts, which allow water to flow beneath SR 116, will be replaced with natural bottom culverts in order to improve flow of the creek and reduce erosion around entrance and exit points of the culverts that have caused the minimal shoulder and portions of the road to crumble. Note that this is a CSWPPP, which is valid for 60 days or until the Contractor's SWPPP is approved.

The project's total disturbed soil area is approximately 5.47 hectares. This covers the additional impervious area of 2.4 hectares from shoulder widening/realignment, 0.115 hectares in reworked pavement. The remaining 2.955 hectares are disturbed, unpaved areas.

There are no existing structures within the project area and no new structures are proposed. The project limits is outside of Sonoma County's urban MS4s but due to changes in line/grade and hydraulic capacity, and soil disturbance above 1.2 hectares, treatment of roadway run-off is required to mitigate stormwater impact in the surrounding environment.

300.2 Unique Site Features

Stage Gulch Road is situated within the jurisdiction of the San Francisco Bay RWQCB (Region 2). The existing roadway near the County Dump Road is near an the environmentally sensitive area surrounding Champlin Creek. Champlin Creek is an intermittent creek that flows alongside the section of SR 116 included in the project area. Champlin Creek is presumed to be a relatively permanent tributary to a navigable water and, as such, would be considered a potential Water of the U.S., subject to regulation by the USACE under Section 404 of the Clean Water Act. The proposed project area also intersects eight unnamed intermittent tributaries to Champlin Creek. The channel widths of these tributaries range from 2 to 3 feet wide and are typically composed of natural cobble. At the time of the April 2007 surveys, these channels were either dry or had slow flows with some deeper (6-inch) pools of standing water. Scour pools and eroded banks were common. Some of these tributaries were vegetated with upland grassland vegetation. All nine of these features are considered to be both Waters of the State and potential Waters of the U.S. To minimize the need to

acquire additional state right-of-way, soil-nailed retaining walls with heights up to 8 meters will be installed in five sections where the slope is steep and the road elevation is cut below existing terrain.

The existing creeks within the project area cross under the road several times. The surrounding areas, mostly agricultural land with a few residential structures, eventually drain into these creeks. The general land use is for agricultural purposes.

The existing drainage consists of storm water sheet flowing from the highway and into the ditches at the toe of embankments. The ditches then flow into creeks along the highway project. The project proposes concrete barriers and retaining walls, which have inlets that collect storm water flow that have concentrated along the concrete barriers or retaining walls. The inlets then drain to the ditches and/or creeks. The project also proposes biofiltration strips and biofiltration swales, which will treat storm water flows from the highway prior to draining to the creeks.

The major creek along the project is Champlin Creek and the other creeks are unnamed tributaries. Adjacent to the eastern project site is the confluence of Rodgers Creek and Champlin Creek. Rodgers Creek is tributary to Fowler Creek. Champlin Creek, Rodgers Creek, and Fowler Creek are not listed on the 303(d).

The project site is mapped in andelistic and basaltic lava flows of the Sonoma Volcanics. Quaternary deposits are restricted to alluvium along the creek bed and in the flat eastern end of the project site. Soils in the project area fall within Hydrologic Groups C and D. Group C soils have slow infiltration rates, slow transmission, and high runoff potential. Group D soils have a very slow infiltration rates, very slow water transmission, and very high runoff potential. Samples include clay soils with clay pan or clay layer at or near the surface, and shallow soils that overlie nearly impervious surfaces. Permeability ranges from 0.06 up to 0.63 inches per hour.

The proposed project will require the replacement and extension of 19 culverts to accommodate the highway improvements. All new culverts will be upgraded to enhance fish passage, dispersal behavior of aquatic species, and hydraulic efficiency. Along the new alignment near Sonoma County Transfer Station Road, natural-bottom culverts will be installed to improve hydraulic flow, reduce erosion, improve dispersal of aquatic species, and enhance fish passage. If work is conducted where there is perennial water flow through the culverts, the water will be diverted through the project area during the construction period to prevent impeding the creek flow. Caltrans will use cofferdams designed to dewater the creek through the construction area. Once construction is complete, Caltrans will remove all project-induced material, restore the pre-construction creek flow, and return stream contours to their original conditions.

According to the Storm Water Data Report, the groundwater at the project site is approximately 17 ft (5.2 m) below existing ground.

300.3 Construction Site Estimates

The following are estimates of the construction site:

Construction site area	39.5 (16.0 hectares)	acres
Percentage impervious area before construction	26	%
Runoff coefficient before construction ^{(1), (3)}	0.51	
Percentage impervious area after construction	43	%
Runoff coefficient after construction ^{(1), (3)}	0.61	
Anticipated stormwater flow onto the construction site ^{(2), (3)}	see attachment E	cfs

⁽¹⁾ Calculations are shown in Attachment D.

⁽²⁾ Calculations are shown in Attachment E.

⁽³⁾ Reference any Hydrology and Hydraulic reports available for the project in Attachment D and E and also add the reference list in Section 400.

300.4 Project Schedule/Water Pollution Control Schedule

A hard copy of the Water Pollution Control Schedule is attached in this section. The Construction schedule, included as part of this Conceptual SWPPP, considers the amount and duration of soil exposed to erosion by wind, rainfall and vehicle tracking, and attempts to minimize disturbed soil areas during each rainy season. The Contractor will be prepared with sufficient quantities of temporary water pollution control practices, year-round, to deploy soil stabilization and sediment control practices, in response to seasonal and unseasonal rainfall.

- Install ESA fencing 01/04/2010
- Install Construction Site Entrance 01/06/2010
- Install Drainage Inlet Protection 01/08/2010
- Install Sediment Control BMP's 01/12/2010
- Site Preparation: Clearing / tree removal 01/14/2010
- Install Soil Stabilization Control BMP's 02/15/2010

300.5 Contact Information/List of Responsible Parties

The Water Pollution Control Manager (WPCM) assigned to this project is:

To be determined

To be determined

The WPCM shall have primary responsibility and significant authority for the implementation, maintenance, inspection and amendments to the approved SWPPP. The WPCM will be available at all times throughout duration of the project. Duties of the Contractor's WPCM include but are not limited to:

Ensuring full compliance with the SWPPP and the Permit;

Implementing all elements of the SWPPP, including but not limited to:

- Implementing prompt and effective erosion and sediment control measures; and
- Implementing all non-stormwater management, and materials and waste management activities such as: monitoring discharges (dewatering, diversion devices); general site clean-up; vehicle and equipment cleaning, fueling and maintenance; spill control; ensuring that no materials other than stormwater are discharged in quantities, which will have an adverse effect on receiving waters or storm drain systems, etc.;

Conducting pre-storm inspections;

Conducting post-storm inspections;

Conducting storm event inspections;

Conducting routine inspections as specified in the Special Provisions or described in the SWPPP;

Preparing annual compliance certification;

Ensuring elimination of all unauthorized discharges;

Mobilizing crews in order to make immediate repairs to the control measures (the Contractor's WPCM shall be assigned authority by the Contractor to mobilize crews);

Coordinating with the Resident Engineer to assure all of the necessary corrections/repairs are made immediately, and that the project complies with the SWPPP, the Permit and approved plans at all times; and

Submitting Notices of Discharge and reports of Illicit Connections or Illegal Discharges.

To Be Determined

Section 400

References, Other Plans, Permits, and Agreements

The following documents are made a part of this SWPPP by reference:

- Standard Plans and Specifications, dated May 2006.
- Contract Plans and specifications No. 04-283814, dated September 8 2009, prepared by CALTRANS.
- SWRCB Order No. 99-06-DWQ, NPDES No. CAS000003 (“Permit”), National Pollutant Discharge Elimination System (NPDES) Permit, Statewide Storm Water Permit and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (Caltrans), July 1999.
- Modification of SWRCB Order 99-08-DWQ, NPDES General Permit No. CAS000002 (“General Permit”), WDRs for Discharges of Storm Water Runoff Associated with Construction Activity to include Small Construction Activity (One to Five Acres).
- SWRCB Resolution No. 2001-046, “Modification of Water Quality Order 99-08-DWQ State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General *Permit For Storm Water Discharges Associated With Construction Activity (CGP)*” to amend the monitoring provisions of the General Permit for sampling and analysis requirements.
- SWRCB Order No. 99-08-DWQ, NPDES General Permit No. CAS000002 (“General Permit”), WDRs for Discharges of Storm Water Runoff Associated with Construction Activity, August 1999.
- Caltrans Statewide Storm Water Management Plan (SWMP), dated 2003.
- Caltrans SWPPP/WPCP Preparation Manual, dated March 2007.
- Caltrans "Construction Site Storm Water Quality Sampling Guidance Manual"
- Caltrans "Water Quality Data-Reporting Protocols" Water Quality Control Plan for the San Francisco Bay Basin
- Storm Water Data Report (EA 283801; Son-116), dated October 2006.
- State Route 116 "Stage Gulch" Curve Correction and Realignment Project, Section 401 Clean Water Act, Water Quality Certification Application Package, dated September 2008.

Attachment N includes copies of the Caltrans Statewide Permit, the Construction General Permit, and other local, state, and federal plans and permits. Following is a list of the other local, state, and federal plans and permits included in Attachment N:

- Water Quality Certification for the State Route 116 Stage Gulch Road Curve Correction and Realignment Project, Sonoma County, dated May 2009.

TO BE DETERMINED

Section 500

Body of SWPPP

500.1 Objectives

This SWPPP has six main objectives:

- Identify all pollutant sources, including sources of sediment that may affect the quality of stormwater discharges associated with construction activity (stormwater discharges) from the construction site;
- Identify non-stormwater discharges;
- Identify, construct, implement in accordance with a time schedule, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction;
- Develop a maintenance schedule for BMPs installed during construction designed to reduce or eliminate pollutants after construction is completed (post-construction BMPs);
- Identify a sampling and analysis strategy and sampling schedule for discharges from construction activity which discharge directly into water bodies listed on Attachment 3 of the Construction General Permit (Clean Water Act Section 303(d) [303(d)] Water Bodies listed for Sedimentation); and
- For all construction activity, identify a sampling and analysis strategy and sampling schedule for discharges that have been discovered through visual monitoring to be potentially contaminated by pollutants not visually detectable in the runoff.

This SWPPP conforms with the required elements of the Permit and with the required elements of the Construction General Permit issued by the State of California, State Water Resources Control Board (SWRCB). This SWPPP will be modified and amended to reflect any amendments to the Permits, or any changes in construction or operations that may affect the discharge of pollutants from the construction site to surface waters, groundwaters, or the municipal separate storm sewer system (MS4). The SWPPP will also be amended if it is in violation of any condition of the Permit or has not achieved the general objective of reducing pollutants in stormwater discharges. The SWPPP shall be readily available onsite for the duration of the project.

500.2 Vicinity Map

The construction project vicinity map showing the project location, surface water boundaries, geographic features, construction site perimeter, staging areas, storage yards, and general topography, is located in Attachment A. The project's Title Sheet provides more detail regarding the project location and is also included in Attachment A.

500.3 Pollutant Sources and BMP Identification

500.3.1 Inventory of Materials and Activities that May Pollute Stormwater

The following is a list of construction materials that will be used and activities that will be performed that will have the potential to contribute pollutants, other than sediment, to stormwater runoff (control practices for each activity are identified in the WPCDs provided in Attachment B and/or in Sections 500.3.4 through 500.3.8.2):

- Vehicle fluids, including oil, grease, petroleum, and coolant;
- Asphaltic emulsions associated with asphalt-concrete paving operations;
- Cement materials associated with PCC paving operations, drainage structures, median barriers, and bridge construction;
- Base and subbase material;
- Joint and curing compounds;
- Concrete curing compounds (e.g. methacrylate and epoxy resin products);
- Metals and plated rails;
- Paints;
- Solvents, thinners, acids;
- Mortar Mix;
- Raw landscaping materials and wastes (topsoil, plant materials, herbicides, fertilizers, pesticides, mulch);
- BMP materials (sandbags, liquid copolymer);
- Treated lumber (materials and wastes);
- PCC rubble;
- Masonry block rubble; and
- General litter

Potential non-stormwater and waste management related discharges are described in Sections 500.3.8.1 and 500.3.8.2, respectively.

The following is a list of construction activities that have the potential to contribute sediment to stormwater discharges include: (control practices for each activity are identified in the WPCDs provided in Attachment B and/or in Sections 500.3.4 through 500.3.7):

- Clearing and grubbing operations;
- Grading operations;
- Soil import operations;
- Storm drain and structure excavation operations;
- Paving;
- Landscaping operations

Sections 500.3.4 to 500.3.8.2 lists all Best Management Practices (BMPs) that are contract requirements, including details used for this project. Implementation and location of BMPs, including details, are shown on the WPCDs in Attachment B. Narrative descriptions of BMPs to be used during the project are listed by category in each of the following SWPPP sections.

500.3.2 Existing (Pre-Construction) Control Measures

The following are existing (pre-construction) control measures encountered within the project site:

- Slopes within the construction site are protected with native vegetation.
- There are vegetated ditches within the construction site..

500.3.3 Nature of Fill Material and Existing Data Describing the Soil

Existing site features that, as a result of past usage, may contribute pollutants to stormwater (e.g., toxic materials that are known to have been treated, stored, disposed, spilled, or leaked onto the construction site) include:

- Past subsurface investigation for aerially deposited lead (ADL) nearby Route 116 found low levels of ADL that require no special disposal. Should some of the excavated material be found contaminated with aerially deposited lead, petroleum and byproducts from vehicles using existing roadway or pesticides that require special handling and restrictions, drilling and subsurface exploration will include off-site disposal of waste.

500.3.4 Soil Stabilization (Erosion Control)

Soil stabilization, also referred to as erosion control, consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Soil stabilization BMPs protect the soil surface by covering and/or binding soil particles. This project will incorporate minimum temporary soil stabilization requirements, temporary soil stabilization measures required by the contract documents, and other measures selected by the contractor. The steps outlined in the instructions for this section for identifying soil stabilization BMPs to be included in the SWPPP have been followed. The applicable Contract Special Provisions, Contract Plans, Standard Plans, and Standard Specifications are provided or listed in Attachment B.

- 1) Preserve existing vegetation where required and when feasible.
- 2) Apply temporary soil stabilization (erosion control) to remaining active and non-active areas as required by the Contract Specifications and Special Provisions and the SWPPP/WPCP Preparation Manual, Tables 1-3 and 1-4, and Appendix D. Reapply as necessary to maintain effectiveness.
- 3) Implement temporary soil stabilization measures at regular intervals throughout the defined rainy season to achieve and maintain the contract's disturbed soil area requirements. When the Contract Special Provisions require it, temporary soil stabilization will be implemented 20 days prior to the defined rainy season.
- 4) In accordance with Table 1-3 of the SWPPP/WPCP Preparation Manual, stabilize non-active areas within 14 days of cessation of construction activities, or one day prior to all predicted rain events, whichever comes first.
- 5) Control erosion in concentrated flow paths by applying erosion control blankets, check dams, erosion control seeding, and lining swales as required in the Special Provisions and/or as shown on plans.
- 6) Apply seed to areas deemed substantially complete by the Resident Engineer during the defined rainy season.
- 7) At completion of construction, apply permanent erosion control to all remaining disturbed soil areas as required in the Special Provisions and/or as shown on plans.

Sufficient soil stabilization materials will be maintained onsite to allow implementation in conformance with Caltrans requirements and described in this SWPPP. This includes implementation requirements for active and non-active areas that require deployment before the onset of rain.

The following soil stabilization BMP implementation table indicates the BMPs that shall be implemented to control erosion on the construction site. Locations and details of temporary soil

stabilization BMPs are shown on the WPCDs in Attachment B. The following list of BMPs and narrative explain how the selected BMPs will be incorporated into the project.

TEMPORARY SOIL STABILIZATION BMPs						
CONSTRUCTION BMP ID NO ⁽¹⁾	BMP NAME	MINIMUM REQUIRE- MENT ⁽³⁾	CONTRACT BID ITEM	BMP USED		IF NOT USED, STATE REASON
				YES	NO	
SS-1	Scheduling	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
SS-2	Preservation of Property/ Preservation of Existing Vegetation	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
SS-3	Temporary Hydraulic Mulch (Bonded Fiber Matrix)	✓ ⁽²⁾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Temporary Hydraulic Mulch (Polymer Stabilized Fiber Matrix)	✓ ⁽²⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Bonded Fiber Matrix used
SS-4	Temporary Erosion Control (With Temporary Seeding)	✓ ⁽²⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Use SS-3
SS-5	Temporary Soil Stabilizer	✓ ⁽²⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Use SS-3
SS-6	Temporary Erosion Control (Straw Mulch with Stabilizing Emulsion)	✓ ⁽²⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Use SS-3
SS-7	Temporary Erosion Control Blanket (On Slope)	✓ ⁽²⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Use Temporary Cover
	Temporary Erosion Control Blanket (In swale or ditch)		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Use Temporary Cover
SS-7	Temporary Cover (Plastic Covers)	✓ ⁽²⁾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
SS-8	Temporary Mulch (Wood)		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Use SS-3
SS-9	Earth Dikes / Drainage Swales & Lined Swales		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
SS-10	Outlet Protection / Velocity Dissipation Devices		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
SS-11	Slope Drains		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

TO BE DETERMINED

TEMPORARY SOIL STABILIZATION BMPs						
SS-12	Streambank Stabilization		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ALTERNATIVE SOIL STABILIZATION BMPs USED⁽⁴⁾ <input type="checkbox"/> Yes <input type="checkbox"/> No					IF USED, STATE REASON	
CONSTRUCTION BMP ID NO ⁽¹⁾	BMP NAME					
SS-2	Temporary Fence (Type ESA)					To preserve existing vegetation and natural resources through out the project site
Notes: ⁽¹⁾ The BMP designations (SS-1, SC-3, etc.) are solely for maintaining continuity with existing Caltrans documents and are not provided to imply that the Construction Site BMP Reference Manual is a required contract document. ⁽²⁾ The Contractor shall ensure implementation of one of the two measures listed or a combination thereof to achieve and maintain the contract's rainy and non-rainy season requirements. ⁽³⁾ Not all minimum requirements may be applicable to every project. Applicability to a specific project shall be determined by the Contractor and approved by the Resident Engineer. ⁽⁴⁾ Use of alternative BMPs will require written approval by the Resident Engineer.						

The Contractor shall monitor the National Weather Service weather forecast on a daily basis throughout duration of the contract. The Contractor may use an alternative weather forecasting service, if approved by the Resident Engineer. Active areas where soil disturbance has occurred, and will continue to occur, during the ensuing 21 days shall be protected using appropriate water pollution control practices within 15 days, or before predicted precipitation, whichever occurs first.

Temporary soil stabilization and sediment control practices will be implemented during the rainy season between October 15 and April 15. The Contractor shall implement soil stabilization and sediment control practices a minimum of 10 days before the start of the rainy season using Temporary Hydraulic Mulch, Temporary Silt Fences, and Temporary Drainage Inlet Protection. The Contractor shall maintain soil stabilization and sediment control materials on site to protect disturbed soil areas.

SCHEDULING:

The construction schedule included in this Conceptual SWPPP considers the amount and duration of soil exposed to erosion by wind, rainfall and vehicle tracking, and minimizes disturbed soil areas during any rainy season. The Contractor will be prepared with sufficient quantities of temporary water pollution control practices, year-round, to deploy soil stabilization and sediment control practices, in response to seasonal and unseasonal rainfall.

PRESERVATION OF EXISTING VEGETATION:

Temporary Fence Type ESA (TFESA) will be installed prior to clearing and grubbing or soil disturbing activities, in order to preserve existing vegetation throughout the project site. TFESA locations have been delineated after consideration of impacts from grade changes to existing vegetation and root zone.

TEMPORARY HYDRAULIC MULCH:

Temporary Hydraulic Mulch (Bonded Fiber Matrix - BFM) will be applied to active and non-active disturbed soil areas that require temporary protection until permanent vegetation is established, or areas that must be redistributed following an extended period of inactivity. Prior to application, embankments and fill areas will be roughened by rolling with a crimping- or punching-type roller or by track-walking. BFM requires 12 to 24 hours to dry to become effective. Re-application may be necessary to achieve water quality objectives.

TEMPORARY COVER:

Temporary Cover will be used on active disturbed soil areas that are particularly difficult to stabilize, especially stockpiles of soil. Stockpiles shall be located out of floodplains during rainy season, and at least 50 feet (15.2 m) from concentrated flows of stormwater, drainage courses, or inlets, unless written approval is obtained from the Resident Engineer. The Contractor may discontinue addition or removal of material for up to 21 days, and a stockpile will still be considered active. The Contractor shall protect active stockpiles with plastic or geotextile cover, soil stabilization measures, or with linear sediment barrier when precipitation is predicted. Active stockpiles of cold mix asphalt concrete shall be placed on an impervious surface and covered with plastic when precipitation is predicted.

The Contractor shall protect inactive soil stockpiles with a plastic or geotextile cover, or with soil stabilization measures at all times during the rainy season. A linear sediment barrier around the perimeter of the stockpile shall also be used. During the non-rainy season soil stockpiles shall be covered and protected with a linear sediment barrier when precipitation is predicted. The Contractor shall control wind erosion during dry weather as provided in Section 10, "Dust Control," of the Standard Specifications.

Stockpiles of material containing aurally deposited lead will not be placed where affected by surface run-on or run-off. Stockpiles shall be covered with plastic sheeting 1/2 inch minimum thickness or one foot of nonhazardous material, and linear sediment barrier (temporary gravel bag berm). Stockpiles shall not be placed in environmentally sensitive areas. Stockpiled material shall not enter storm drains, inlets, or waters of the State

Stockpiles of portland cement concrete rubble, asphalt concrete (AC), hot mix asphalt (HMA), AC and HMA rubble, aggregate base, or aggregate subbase shall be covered with plastic or geotextile, or

protected with a linear sediment barrier at all times during the rainy season, and also when precipitation is predicted during the non-rainy season.

Stockpiles of cold mix asphalt concrete shall be placed on, and covered with, impermeable material at all times during the rainy season, and when precipitation is predicted during the non-rainy season.

Stockpiles of pressure treated wood shall be covered with impermeable material and placed on pallets at all times during the rainy season, and when precipitation is predicted during the non-rainy season.

The Contractor shall repair or replace linear sediment barriers and covers as needed, or as directed by the Engineer, to keep them functioning properly. Sediment shall be removed when it accumulates to 1/3 of the linear sediment barrier height.

500.3.5 Sediment Control

Sediment controls are structural measures that are intended to complement and enhance the selected soil stabilization (erosion control) measures and reduce sediment discharges from construction areas. Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water. This project will incorporate minimum temporary sediment control requirements, temporary sediment control measures required by the contract documents, and other measures selected by the contractor. The steps outlined in the instructions for this section for identifying sediment control BMPs to be included in the SWPPP have been followed. The applicable Contract Special Provisions, Contract Plans, Standard Plans, and Standard Specifications are provided or listed in Attachment B.

Sediment control BMPs will be installed at all appropriate locations along the site perimeter and at all operational internal inlets to the storm drain system at all times during the rainy season. During the non-rainy season, adequate sediment control materials will be available to control sediment discharges at the downgrade perimeter and operational inlets in the event of a predicted storm.

Temporary sediment control materials, equivalent to 10% of the installed quantities on the site during the rainy and non-rainy seasons will be maintained onsite throughout the duration of the project for implementation in event of predicted rain, rapid response to failures or emergencies, in conformance with other Caltrans requirements, and as described in the SWPPP. This includes implementation requirements for active areas and non-active areas before the onset of rain.

Prior to the opening of a new DSA in the rainy season, additional temporary sediment control materials necessary to protect this DSA will be stored onsite.

The following sediment control BMP implementation table indicates the BMPs that shall be implemented to control sediment on the construction site. Implementation and locations of temporary sediment control BMPs are shown on the WPCDs in Attachment B and described in this section. The BMP working details can also be found in Attachment B of this SWPPP. The following list of BMPs and narrative explain how the selected BMPs will be incorporated into the project.

TEMPORARY SEDIMENT CONTROL BMPs						
CONSTRUCTION BMP ID NO ⁽¹⁾	BMP NAME	MINIMUM REQUIRE- MENT ⁽³⁾	CONTRACT BID ITEM	BMP USED		IF NOT USED, STATE REASON
				YES	NO	
SC-1	Temporary Silt Fence	✓ ⁽²⁾	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
SC-2	Temporary Sediment Basin		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not applicable
SC-4	Temporary Check Dam		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
SC-5	Temporary Fiber Rolls	✓ ⁽²⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Use SC-1
SC-6	Temporary Gravel Bag Berm		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
SC-7	Street Sweeping	✓	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
SC-8	Temporary Sandbags		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
SC-9	Temporary Straw Bale Barrier		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Use SC-1
SC-10	Temporary Drain Inlet Protection	✓	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ALTERNATIVE SEDIMENT CONTROL BMPs USED⁽⁴⁾ <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						IF USED, STATE REASON

Notes:
⁽¹⁾ The BMP designations (SS-1, SC-3, etc.) are solely for maintaining continuity with existing Caltrans documents and are not provided to imply that the Construction Site BMP Reference Manual is a required contract document.
⁽²⁾ The Contractor shall ensure implementation of one of the two measures listed or a combination thereof to achieve and maintain the contract's rainy and non-rainy season requirements.
⁽³⁾ Not all minimum requirements may be applicable to every project. Applicability to a specific project shall be determined by the Contractor and approved by the Resident Engineer.
⁽⁴⁾ Use of alternative BMPs will require written approval by the Resident Engineer.

TEMPORARY CHECK DAMS:

Temporary Check Dams will be used in natural and man-made channels or drainage ditches to reduce scour and channel erosion, by reducing flow velocity and allowing sediment to settle.

TEMPRARY GRAVEL BAG BERM:

Temporary Gravel Bag Berms will be installed to form a barrier across a slope to intercept runoff, reduce flow velocity, spread flow, and provide some sediment removal. They will be also used as a barrier for stockpiles of soil or any other construction stockpile material.

STREET SWEEPING:

Street Sweeping will be done by using a mechanical sweeper followed by a vacuum-assisted sweeper, or vacuum-assisted dry (waterless) sweeper or regenerative-air sweeper. Street sweeping will occur at the job site entrance and exit locations during: clearing and grubbing activities; earthwork activities; trenching activities; roadway structural section activities; when vehicles are entering and leaving the job site; after soil disturbing activities; after observing off-site tracking of material.

TEMPORARY DRAINAGE INLET PROTECTION:

Temporary Drainage Inlet Protection will be used at all locations shown on CWPCDs.

500.3.6 Tracking Control

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The following tracking control BMP implementation table indicates the BMPs that shall be implemented to reduce sediment tracking from the construction site onto private or public roads. The steps outlined in the instructions for this section for identifying tracking control BMPs to be included in the SWPPP have been followed. The applicable Contract Special Provisions, Contract Plans, Standard Plans, and Standard Specifications are provided or listed in Attachment B. Implementation and locations of sediment tracking BMPs are shown on the WPCDs in Attachment B and described in this section. The BMP working details can also be found in Attachment B of this SWPPP. The following list of BMPs and narrative explain how the selected BMPs will be incorporated into the project.

TEMPORARY WIND EROSION CONTROL BMPs						
CONSTRUCTION BMP ID NO ⁽¹⁾	BMP NAME	MINIMUM REQUIRE- MENT ⁽²⁾	CONTRACT BID ITEM	BMP USED		IF NOT USED, STATE REASON
				YES	NO	
WE-1	Wind Erosion Control	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Temporary Soil Stabilization BMPs and Temporary sediment Control BMPs will be deployed, which will provide wind erosion control benefits
TC-1	Temporary Construction Entrance		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
TC-2	Stabilized Construction Roadway		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	R/W and ESA constraints
----	All Soil Stabilization Measures included in Section 500.3.4		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ALTERNATIVE WIND EROSION CONTROL BMPs USED⁽³⁾						IF USED, STATE REASON
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
Notes: ⁽¹⁾ The BMP designations (SS-1, SC-3, etc.) are solely for maintaining continuity with existing Caltrans documents and are not provided to imply that the Construction Site BMP Reference Manual is a required contract document. ⁽²⁾ Not all minimum requirements may be applicable to every project. Applicability to a specific project shall be determined by the Contractor and approved by the Resident Engineer. ⁽³⁾ Use of alternative BMPs will require written approval by the Resident Engineer.						

500.3.7 Wind Erosion Control

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The steps outlined in the instructions for this section for identifying wind erosion control BMPs to be included in the SWPPP have been followed. The applicable Contract Special Provisions, Contract Plans, Standard Plans, and Standard Specifications are provided or listed in Attachment B. Locations and details of wind erosion control BMPs are shown on the WPCDs in Attachment B (as applicable). The following list of BMPs and narrative explain how the selected BMPs shall be incorporated into the project.

TEMPORARY WIND EROSION CONTROL BMPs						
CONSTRUCTION BMP ID NO ⁽¹⁾	BMP NAME	MINIMUM REQUIREMENT ⁽²⁾	CONTRACT BID ITEM	BMP USED		IF NOT USED, STATE REASON
				YES	NO	
WE-1	Wind Erosion Control	✓	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Temporary Soil Stabilization BMPs and Temporary sediment Control BMPs will be deployed, which will provide wind erosion control benefits
TC-1	Temporary Construction Entrance		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
TC-2	Stabilized Construction Roadway		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	R/W and ESA constraints
----	All Soil Stabilization Measures included in Section 500.3.4		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
ALTERNATIVE WIND EROSION CONTROL BMPs USED⁽³⁾						IF USED, STATE REASON
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
<p>Notes:</p> <p>⁽¹⁾ The BMP designations (SS-1, SC-3, etc.) are solely for maintaining continuity with existing Caltrans documents and are not provided to imply that the Construction Site BMP Reference Manual is a required contract document.</p> <p>⁽²⁾ Not all minimum requirements may be applicable to every project. Applicability to a specific project shall be determined by the Contractor and approved by the Resident Engineer.</p> <p>⁽³⁾ Use of alternative BMPs will require written approval by the Resident Engineer.</p>						

500.3.8 Construction Site Management

Construction site management shall consist of controlling potential sources of water pollution before they come in contact with storm water systems or watercourses. The Contractor shall control material pollution and manage waste and non-storm water existing at the construction site by implementing effective handling, storage, use, and disposal practices.

500.3.8.1 Non-Stormwater Management Pollution Control

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An inventory of potential non-stormwater discharges is provided in this section. The following BMP consideration checklist indicates the BMPs that have been selected to control non-stormwater pollution on the construction site. The steps outlined in the instructions for this section for identifying non-stormwater pollution control BMPs to be included in the SWPPP have been followed. The applicable Contract Special Provisions, Contract Plans, Standard Plans, and Standard Specifications are provided or listed in Attachment B. Locations and details of applicable non-stormwater control BMPs are shown on the WPCDs in Attachment B.

Non-stormwater discharges into storm drainage systems or waterways, which are not authorized under the Caltrans Permit or authorized under a separate NPDES permit shall be prohibited.

CONSTRUCTION SITE MANAGEMENT						
NON-STORMWATER MANAGEMENT POLLUTION CONTROL BMPs						
CONSTRUCTION BMP ID NO ⁽¹⁾	BMP NAME	MINIMUM REQUIRE- MENT ⁽²⁾	CONTRACT BID ITEM	BMP USED		IF NOT USED, STATE REASON
				YES	NO	
NS-1	Water Control and Conservation		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NS-2	Dewatering ⁽³⁾		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NS-3	Paving, Sealing, Sawcutting, and Grinding Operations		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NS-4	Temp Stream Crossing ⁽³⁾		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NS-5	Clear Water Diversion ⁽³⁾		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NS-6	Illegal Connection and Illegal Discharge Detection Reporting	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NS-7	Potable Water / Irrigation		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
NS-8	Vehicle and Equipment Cleaning	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NS-9	Vehicle and Equipment Fueling	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NS-10	Vehicle and Equipment Maintenance	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NS-11	Pile Driving Operations		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	There is no pile driving in this project.
NS-12	Concrete Curing		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NS-13	Material and Equipment Used Over Water		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
NS-14	Concrete Finishing		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

NS-15	Structure Demolition / Removal Over or Adjacent to Water		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ALTERNATIVE NON-STORMWATER CONTROL BMPs USED⁽⁴⁾						IF USED, STATE REASON
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
CONSTRUCTION BMP ID NO⁽¹⁾	BMP NAME					
NS-2	Temporary Creek Diversion Systems					There are six locations where the creek crosses. At these locations, an RCB is extended or the existing culvert is removed and and replaced with a new culvert.
Notes: ⁽¹⁾ The BMP designations (SS-1, SC-3, etc.) are solely for maintaining continuity with existing Caltrans documents and are not provided to imply that the Construction Site BMP Reference Manual is a required contract document. ⁽²⁾ Not all minimum requirements may be applicable to every project. Applicability to a specific project shall be determined by the Contractor and approved by the Resident Engineer. ⁽³⁾ The BMPs listed above are incidental and do not include operations included as separate line items in the contract. ⁽⁴⁾ Use of alternative BMPs will require written approval by the Resident Engineer.						

This work includes controlling potential sources of pollution before they come in contact with stormwater systems or watercourses. Material pollution and waste and non-stormwater management will be achieved by implementing effective handling, storage, use, and disposal practices.

The Contractor's employees and subcontractors will be trained in these subjects:

1. Material pollution prevention and control
2. Waste management
3. Non-stormwater management
4. Identifying and handling hazardous substances
5. Potential dangers to humans and the environment from spills and leaks or exposure to toxic or hazardous substances

Training will take place before starting work on this job. New employees will receive the complete training before starting work on this job. Weekly meetings will be conducted to discuss and reinforce spill prevention and control; material delivery, storage, use, and disposal; waste management; and non-stormwater management procedures.

WATER CONTROL AND CONSERVATION

Water used for work activities will be managed to prevent erosion or discharge of pollutants into storm drain systems or watercourses. Approval will be obtained before washing anything on the job site with water that could discharge into a storm drain system or watercourse. Discharges will be reported immediately.

If water is used at the job site, conservation practices will be implemented. Water source to broken lines, sprinklers, or valves will be shut off, and breaks will be repaired within 24 hours. If possible, reuse water from waterline flushing for landscape irrigation. Paved areas will be swept and vacuumed and water will not be used.

ILLEGAL CONNECTION AND DISCHARGE DETECTION AND REPORTING

The job site and the site perimeter will be inspected before starting work for evidence of illegal connections, discharges, or dumping. After starting work, the job site and perimeter will be inspected on a daily schedule. When illegal connections, discharges, or dumping are discovered, the Engineer will be notified immediately. No further action will be taken unless ordered by the Engineer. Unlabeled or unidentifiable material will be assumed hazardous.

VEHICLE AND EQUIPMENT CLEANING

Vehicle and equipment cleaning or washing at the job site will be limited, except that which is necessary to control vehicle tracking or hazardous waste. The Engineer will be notified before cleaning vehicles and equipment at the job site with soap, solvents, or steam. All wash water will be contained and recycled, or disposed of, under "Liquid Waste" or "Hazardous Waste" of the Special Provisions, whichever is applicable. Diesel will not be used to clean vehicles or equipment, and the use of solvents will be minimized.

Vehicle and equipment washing will occur in a structure equipped with disposal facilities. If using a structure is not possible, vehicles and equipment must be cleaned or washed at an outside area:

1. Paved with AC, HMA, or portland cement concrete
2. Surrounded by a containment berm
3. Equipped with a sump to collect and dispose of wash water
4. If within the floodplain, located at least 100 feet (30.5 m) from concentrated flows of stormwater, drainage courses, watercourses, or storm drain inlets unless approved
5. If outside the floodplain, located at least 50 feet (15.2 m) from concentrated flows of stormwater, drainage courses, watercourses, or storm drain inlets unless approved

When washing vehicles or equipment with water, water use will be minimized. Hoses will be equipped with a positive shut-off valve.

Liquid from wash racks will be discharged to a recycle, or other approved, system. Liquids and sediment will be removed as necessary. The WPCM will inspect vehicle and equipment cleaning facilities daily, when vehicle and equipment cleaning occurs daily, and weekly when vehicle and equipment cleaning does not occur daily.

VEHICLE AND EQUIPMENT FUELING AND MAINTENANCE

When practicable, maintenance on vehicles and equipment will be performed off-site. If fueling or maintenance must be done on-site, areas will be designated, which will be on level ground and

protected from stormwater run-on. If within the floodplain, these areas will be located at least 100 feet from concentrated flows of stormwater, drainage courses, watercourses, or storm drain inlets, or if outside the floodplain, these areas will be located at least 50 feet (15.2 m) from concentrated flows of stormwater, drainage courses, watercourses, or storm drain inlets.

Containment berms or dikes will be used around the fueling and maintenance area. Adequate quantities of absorbent spill cleanup material and spill kits will be kept in the fueling and maintenance area and on fueling trucks. After use, spill clean-up material and kits will be disposed of immediately. Drip pans or absorbent pads will be used during fueling or maintenance. Fueling or maintenance activities will not be left unattended. Fueling nozzles will be equipped with an automatic shut-off control.

The WPCM will inspect vehicle and equipment maintenance and fueling areas daily, when vehicle and equipment maintenance and fueling occurs daily, and weekly when vehicle and equipment maintenance and fueling does not occur daily.

The WPCM will inspect vehicles and equipment at the job site for leaks and spills on a daily schedule. Operators will inspect vehicles and equipment each day of use. If leaks cannot be repaired immediately, the vehicle or equipment must be removed from the job site.

MATERIAL AND EQUIPMENT USED OVER WATER:

Drip pans and absorbent pads will be placed under vehicles or equipment used over water. An adequate supply of spill clean-up material will be kept with the vehicle or equipment. If the vehicle or equipment will be idle for more than one hour, drip pans or plastic sheeting will be placed under vehicles or equipment over water. Comply with all permits. As stated in the Special Provisions, "If the Contractor identifies discharges into surface waters or drainage systems causing or potentially causing pollution, or if the project receives a written notice or order from a regulatory agency, the Contractor shall immediately inform the Engineer. The Contractor shall submit a written report to the Engineer within 7 days of the discharge, notice or order. The report shall include the following information:

- A. The date, time, location, and nature of the operation, type of discharge and quantity, and the cause of the notice or order.
- B. The water pollution control practices used before the discharge, or before receiving the notice or order.
- C. The date of placement and type of additional or altered water pollution control practices placed after the discharge, or after receiving the notice or order.
- D. A maintenance schedule for affected water pollution control practices.

STRUCTURE REMOVAL OVER OR ADJACENT TO WATER:

Demolished material will not be allowed to enter stormwater systems or watercourses. Approved covers and platforms will be used to collect debris. Debris catching devices will be emptied daily

and shall be handled as under "Waste Management" of the Special Provisions. The WPCM will inspect, daily, demolition sites within 50 feet (15.2 m) of stormwater systems or watercourses.

PAVING, SEALING, SAWCUTTING AND GRINDING ACTIVITIES:

The following materials will be prevented from entering storm drain systems or water courses:

1. Cementitious material
2. Asphaltic material
3. Aggregate or screenings
4. Grinding or sawcutting residue
5. Pavement debris
6. Shoulder backing
7. Methacrylate

Drainage inlets will be covered and linear sediment barriers will be implemented, to protect downhill watercourses until paving, sealing, sawcutting, or grinding activities are complete and excess material has been removed. During the rainy season, or when precipitation is predicted, paving, sawcutting, and grinding will be limited to places where run-off can be captured.

A vacuum will be used to remove slurry from sawcutting activities immediately after slurry is produced. Slurry will not be allowed to run onto lanes open to public traffic or off the pavement. Residue from portland cement concrete grinding activities will be collected with a vacuum attachment on the grinding machine. Residue will not be left on pavement or allowed to flow across pavement.

THERMOPLASTIC STRIPING AND PAVEMENT MARKERS:

Thermoplastic striping and preheating equipment shut-off valves will be inspected to ensure proper functioning at all times. Preheating, transferring, or loading thermoplastic will not occur within 50 feet (15.2 m) of drainage inlets or watercourses. Preheating container will not be filled above a level that is 6 inches (150 mm) below the top. Truck beds will be cleaned daily of scraps or melted thermoplastic.

Unloading, transferring, or loading bituminous material for pavement markers will not be done within 50 feet (15.2 m) of drainage inlets or watercourses. Pressure from melting tanks will be released before removing the lid to fill or service. Melting tanks will not be filled above a level that is 6 inches (150 mm) below the top. Bituminous material shall be collected from the roadway after marker removal.

CONCRETE CURING:

Chemical curing compound will not be oversprayed. Drift will be minimized by spraying as close to the concrete as possible. Drainage inlets will be protected and drainage inlets will be covered before

applying curing compound. Minimize the use and discharge of water by using wet blankets or similar methods to maintain moisture while curing concrete.

CONCRETE FINISHING:

Water and solid waste from high-pressure water blasting will be collected and disposed of properly. Drainage inlets within 50 feet (15.2 m) will be covered before sandblasting. Drift of dust and blast material will be minimized by keeping the nozzle close to the surface of the concrete. Blast residue may contain hazardous material.

Containment structures for concrete finishing activities will be inspected for damage before each day of use and before predicted precipitation. Liquid and solid waste from the containment structure will be removed after each work shift.

DEWATERING AND NON-STORM WATER DISCHARGE CONTROL:

Groundwater and accumulated precipitation dewatered from excavations will be collected, conveyed, treated, and disposed to a storm drain system upon obtaining coverage under Order No. R2-2006-0075 adopted by the San Francisco Bay RWQCB.

500.3.8.2 Waste Management Pollution Control

An inventory of construction activities, materials, and waste is provided in Section 500.3.1. The following BMP consideration checklist indicates the BMPs that have been selected to control construction site wastes and materials. The steps outlined in the instructions for this section for identifying waste management and materials pollution control BMPs to be included in the SWPPP have been followed. The applicable Contract Special Provisions, Contract Plans, Standard Plans, and Standard Specifications are provided or listed in Attachment B. Locations and details of applicable materials handling and waste management BMPs are shown on the WPCDs in Attachment B. In the narrative description, a list of waste disposal facilities and the type of waste to be disposed at each facility is also provided. The following list of BMPs and narrative explain how the selected BMPs will be incorporated into the project.

CONSTRUCTION SITE MANAGEMENT						
WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs						
CONSTRUCTION BMP ID NO ⁽¹⁾	BMP NAME	MINIMUM REQUIRE- MENT ⁽²⁾	CONTRACT BID ITEM	BMP USED		IF NOT USED, STATE REASON
				YES	NO	
WM-1	Material Delivery and Storage	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
WM-2	Material Use	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
WM-3	Stockpile Management	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
WM-4	Spill Prevention and Control	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
WM-5	Solid Waste Management	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
WM-6	Hazardous Waste Management ⁽³⁾		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
WM-7	Contaminated Soil Management ⁽³⁾		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
WM-8	Concrete Waste Management		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	Temporary Concrete Washout Facility		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	WM-8 Temporary Concrete Washout (Portable) is used.
	Temporary Concrete Washout (Portable)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
WM-9	Sanitary/Septic Waste Management	✓	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
WM-10	Liquid Waste Management		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
ALTERNATIVE WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs USED ⁽⁴⁾ <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						IF USED, STATE REASON
WM-8	Temporary Concrete Washout Facility (Portable)					
Notes: ⁽¹⁾ The BMP designations (SS-1, SC-3, etc.) are solely for maintaining continuity with existing Caltrans documents and are not provided to imply that the Construction Site BMP Reference Manual is a required contract document. ⁽²⁾ Not all minimum requirements may be applicable to every project. Applicability to a specific project shall be verified by the Contractor or determined by Caltrans. ⁽³⁾ The BMPs listed above are incidental and do not include operations included as separate line items in the contract. ⁽⁴⁾ Use of alternative BMPs will require written approval by the Resident Engineer.						

TO BE DETERMINED

MATERIAL MANAGEMENT:

Material will be delivered, used, and stored for this job in a way that minimizes or eliminates discharge of material into the air, storm drain systems, or watercourses. Employees trained in emergency spill clean-up procedures will be present during unloading of hazardous materials or chemicals. Chemical storage areas such as concrete curing compound will be stored in secondary containment system for refueling system, a cover system with side protection will be included to prevent rain water from coming in contact with the refueling system. The contractor must contact the local Certified Unified Program Agency (CUPA) to comply with their requirements, such as the preparation of a hazardous materials management plan.

STOCKPILE MANAGEMENT:

Following practices described in this section for managing stockpiles will be implemented during the rainy season and during the non-rainy season when the National Weather Service predicts precipitation with a probability of at least 30 percent.

Stockpile management procedures will be used to reduce or eliminate potential air and water pollution from stockpiled material including soil, paving material, or pressure treated wood.

Stockpiles located within the floodplain, at least 100 feet (30.5 m) from concentrated flows of stormwater, drainage courses, or inlets, unless approved. If located outside the floodplain, at least 50 feet (15.2 m) from concentrated flows of stormwater, drainage courses, or inlets.

Active and inactive soil stockpiles will be covered with soil stabilization measures, plastic sheeting, or geosynthetic fabric and surrounded with a linear sediment barrier. Portland cement concrete rubble, AC, HMA, AC and HMA rubble, aggregate base or aggregate sub-base stockpiles will be covered with plastic sheeting, or geosynthetic fabric and surrounded with a linear sediment barrier.

Pressure treated wood stockpiles will be placed on pallets, covered with impermeable material.

Cold mix asphalt concrete stockpiles will be placed on impervious surface, covered with impermeable material and protected from run-on and run-off.

If material is added or removed for up to 21 days, the stockpile will be considered still active during that period.

Linear sediment barriers and covers will be maintained as needed to keep them functioning properly. If sediment accumulates to 1/3 of the linear sediment barrier height, sediment will be removed.

SPILL PREVENTION AND CONTROL:

Implement spill and leak prevention procedures for chemicals and hazardous substances stored on the job site. As soon as it is safe, contain and clean-up spills of petroleum products, sanitary and septic waste substances listed under CFR Title 40, Parts 110, 117, and 302.

SOLID WASTE MANAGEMENT:

Trash and debris will be removed from the job site at least once a week. If practicable, nonhazardous job site waste and excess material will be recycled. If recycling is not practicable, disposal will comply with Section 7-1.13, "Disposal of Material Outside the Highway Right of Way."

Sufficient number of closed-lid dumpsters with adequate volume to contain the solid waste generated by work activities will be furnished. When refuse reaches the fill line, dumpsters will be emptied. Dumpsters will be watertight. Dumpsters will not be washed at the job site. Additional containers and more frequent pick-ups will be necessary during the demolition phase of construction.

HAZARDOUS WASTE MANAGEMENT:

Hazardous waste management practices will be used for the following:

1. Petroleum products
2. Asphalt products
3. Concrete curing compound
4. Pesticides
5. Acids
6. Paints
7. Stains
8. Solvents
9. Wood preservatives
10. Roofing tar
11. Road flares
12. Lime
13. Glues and adhesives
14. Materials classified as hazardous by California Code of Regulations, Title 22, Division 4.5; or listed in CFR Title 40, Parts 110, 117, 261, or 302

Containers with adequate storage volume at convenient locations for hazardous waste collection will be furnished. Hazardous wastes will not be mixed and will not be allowed to accumulate on the ground. Store containers of dry waste that are not watertight on pallets. Store hazardous waste away from storm drains, watercourses, moving vehicles, and equipment.

Cleaning water-based or oil-based paint from brushes or equipment within a contained area will be done in a manner that does not contaminate soil, watercourses, or storm drain systems. Paints, thinners, solvents, residues, and sludges that cannot be recycled or reused will be handled and disposed of as hazardous waste. Dry latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths will be disposed of as solid waste.

Within 90 days of being generated, hazardous waste must be disposed. A licensed hazardous waste transporter will be used to take hazardous waste to a Class I Disposal Site. A copy of uniform hazardous waste manifest forms will be submitted within 24 hours of transporting hazardous waste.

The WPCM will perform daily inspection of storage areas for hazardous materials and wastes, hazardous waste disposal and transporting activities and hazardous material delivery and storage activities.

CONTAMINATED SOIL MANAGEMENT:

Past subsurface investigation for aerially deposited lead (ADL) nearby Route 116 found low levels of ADL that require no special consideration. Should some of the excavated material be found contaminated with aerially deposited lead or pesticides that require special handling and restrictions, drilling and subsurface exploration will include off-site disposal of waste.

TEMPORARY CONCRETE WASHOUT BIN:

Temporary Concrete Washout Bin will be used for collection and disposal of: washout from concrete delivery trucks; slurries containing portland cement concrete or hot mix asphalt from sawcutting, coring, grinding, grooving, and hydro-concrete demolition; concrete waste from mortar mixing stations.

CONCRETE WASTE:

Practices to prevent the discharge of portland cement concrete, AC, or HMA waste into storm drain systems or watercourses will be implemented. Portland cement concrete, AC, or HMA will be collected and disposed at waste locations where:

1. Concrete material, including grout, is used
2. Concrete dust and debris result from demolition
3. Sawcutting, coring, grinding, grooving, or hydro-concrete demolition of portland cement concrete, AC, or HMA creates a residue or slurry
4. Concrete truck or other concrete-coated equipment is cleaned at the job site

Sandblast debris/residue generated from grinding, grooving or demolition activities will be contained, in order to prevent the waste from being blown into adjacent system or water bodies.

SANITARY AND SEPTIC WASTE MANAGEMENT:

The WPCM will inspect, at least weekly, sanitary or septic waste storage and monitor disposal procedures. Sanitary facilities that discharge to the sanitary sewer system will be properly connected and free from leaks. Sanitary facilities will be placed at least 50 feet (15.2 m) away from storm drains, watercourse, and flow lines. Written approval/permits from local health agency, city, county, and sewer district will be obtained before discharging from a sanitary or septic system directly into a sanitary sewer system, and submit a copy to the Resident Engineer. Local health agency provisions

will be complied with while using an on-site disposal system. Temporary sanitary facilities will be serviced on a weekly basis and documented.

LIQUID WASTE MANAGEMENT:

Practices to prevent job site liquid waste from entering storm drain systems or watercourses will be used. Liquid wastes expected on the job site include the following:

1. Drilling slurries or fluids
2. Grease-free or oil-free wastewater or rinse water
3. Dredgings, including liquid waste from drainage system cleaning
4. Liquid waste running off a surface including wash or rinse water
5. Other non-storm water liquids not covered by separate permits

Liquid waste will be held in structurally sound, leak-proof containers such as:

1. Roll-off bins
2. Portable tanks

Liquid waste containers will be of sufficient quantity and volume to prevent overflow, spills and leaks.

Containers will be stored at least 50 feet (15.2 m) from moving vehicles and equipment, if within the floodplain, at least 100 feet (30.5 m) from concentrated flows of stormwater, drainage courses, watercourses, or storm drain inlets. If outside the floodplain, they will be stored at least 50 feet (15.2 m) from concentrated flows of stormwater, drainage courses, watercourses, or storm drain inlets unless approved

Remove and dispose of deposited solids from sediment traps under "Solid Waste," unless the Engineer authorizes another method.

Liquid waste may require testing to determine hazardous material content before disposal. Drilling fluids and residue will be disposed outside of the right-of-way.

500.4 Water Pollution Control Drawings (WPCDs)

The Water Pollution Control Drawings can be found in Attachment B of the SWPPP.

500.5 Construction BMP Maintenance, Inspection and Repair

Inspections shall be conducted by the Contractor's WPCM or other 24-hour trained staff at the following minimum frequencies:

- Prior to a forecast storm;
- After a rain event that causes runoff from the construction site;
- At 24-hour intervals during extended rain events;
- Daily inspections within the Lake Tahoe Hydrologic Unit;
- Weekly during the rainy season;
- Every 2 weeks during the non-rainy season; and
- At any other time(s) or intervals of time specified in the project Special Provisions.

Completed inspection checklists shall be submitted to the Resident Engineer within 24 hours of inspection. Copies of the completed checklists will be kept with the SWPPP. A tracking or follow-up procedure shall follow any inspection that identifies deficiencies in BMPs. A program for Maintenance, Inspection and Repair of BMPs shall be provided in Attachment G of this SWPPP.

500.6 Post-Construction Stormwater Management

500.6.1 Post-Construction Control Practices

The following are the post-construction BMPs that are to be used at this construction site after all construction is complete:

- Erosion Control (Type D)
- Erosion Control (Netting)
- Fiber Rolls
- Erosion Control (Compost Blanket)
- Check Dams

500.6.2 Operation/Maintenance after Project Completion

The post-construction BMPs that are described above will be funded and maintained as follows:

Short Term Funding: Caltrans District 4 Maintenance

Long Term Funding: Caltrans District 4 Maintenance

The responsible party for the long-term maintenance of post-construction BMPs is Caltrans District 4 Maintenance.

In the long-term, there is a need for revegetation with native grasses and forbes on disturbed soil areas. Biofiltration Swales and Biofiltration strips will also need revegetation.

500.7 Training

Section 300.5 shows the name of the contractor's WPCM. This person has received the following training:

- To be listed by the Contractor

The training log showing formal and informal training of various personnel is shown in Attachment I. A copy of all training certificate(s) (e.g., Caltrans 24 Hour Training Class and Construction General Permit Training) for the WPCM and the SWPPP Preparer are included in Attachment I. Training records shall be updated, documented and reported in the SWPPP quarterly. Documentation of new training shall be submitted to the Resident Engineer within 24-hours of training.

CONTRACTOR TO INSERT HERE ANY ADDITIONAL TEXT REGARDING TRAINING OF PERSONNEL.

This SWPPP was prepared by CONTRACTOR TO INSERT COMPANY, NAME AND PROFESSIONAL REGISTRATION OR OTHER QUALIFICATIONS (INCLUDING INFORMATION REGARDING OTHER TRAINING COURSES, SUCH AS CALTRANS SWPPP PREPARATION TRAINING) OF PERSON THAT PREPARED THE SWPPP.

500.8 List of Subcontractors

All contractors and subcontractors shall be notified of the requirement for stormwater management measures during the project. A list of contractors shall be maintained and included in the SWPPP. If subcontractors change during the project, the list shall be updated accordingly. The completed subcontractor notification letter and log is included in the SWPPP as Attachment J.

Section 600

Monitoring Program and Reports

600.1 Site Inspections

Site inspections shall be conducted by the Contractor's WPCM or other Caltrans approved 24-hour trained staff at the following minimum frequencies:

- Prior to a forecast storm;
- After a rain event that causes runoff from the construction site;
- At 24-hour intervals during extended rain events;
- Daily inspections within the Lake Tahoe Hydrologic Unit;
- Weekly during the rainy season;
- Every 2 weeks during the non-rainy season; and
- At any other time(s) or intervals of time specified in the Contract Special Provisions.

The results of all inspections and assessments shall be documented, a copy shall be provided to the Resident Engineer within 24 hours of the inspection, and copies of the completed inspection checklists shall be maintained with the SWPPP. Site inspections conducted for monitoring purposes shall be performed using the inspection checklist shown in Attachment H.

The name(s) and contact number(s) of the assigned inspection personnel are listed below and their training qualifications are provided in Attachment I:

Assigned inspector: NAME OF INSPECTOR
Alternate inspector: NAME OF INSPECTOR

Contact phone: TELEPHONE NUMBER
Contact phone: TELEPHONE NUMBER

600.2 Discharge Reporting

If a discharge occurs or if the project receives a written notice or order from any regulatory agency, the contractor will immediately notify the Resident Engineer, and will file a written report to the Resident Engineer within 7 days (3 days for Districts 7 and 11) of the discharge event, notice, or order. Corrective measures will be implemented immediately following the discharge, notice or order. All discharges will be documented on a Discharge Reporting Log.

Discharges requiring reporting include:

- Stormwater from a DSA discharged to a waterway without treatment by an effective combination of temporary erosion and sediment control BMPs;
- Non-stormwater, except conditionally exempted discharges, discharged to a waterway or a storm drain system, without treatment by an approved control measure (BMP);

- Stormwater discharged to a waterway or a storm drain system where the control measures (BMPs) have been overwhelmed or not properly maintained or installed;
- Discharge of hazardous substances above the reportable quantities in 40 CFR 110.3, 117.3 or 302.4;
- Stormwater runoff containing hazardous substances from spills discharged to a waterway or storm drain system;
- Where water quality sample results from a CWA Section 303(d) stream listed for sediment, siltation or turbidity indicate elevated levels of sediment or turbidity in downstream samples;
- Where water quality sample results indicate elevated levels of non-visible pollutants;
- Discharges that may endanger health or the environment; and
- Other discharge reporting as directed by the Resident Engineer.

The report to the Resident Engineer will contain the following items:

- The date, time, location, nature of operation, and type of unauthorized discharge, including the cause or nature of the notice or order;
- The control measures (BMPs) deployed before the discharge event, or prior to receiving notice or order;
- The date of deployment and type of control measures (BMPs) deployed after the discharge event, or after receiving the notice or order, including additional measures installed or planned to reduce or prevent re-occurrence; and
- An implementation and maintenance schedule for any affected BMPs.

600.3 Record Keeping and Reports

Records shall be retained for a minimum of three years for the following items:

- Site inspections;
- Compliance certifications;
- Discharge reports;
- Approved SWPPP document and amendments;
- Sampling and analysis results; and
- Copies of all applicable permits.

600.4 Sampling and Analysis Plan for Sediment

Does this project have the potential to discharge directly to a water body listed as impaired due to Sedimentation/Siltation and/or Turbidity pursuant to Clean Water Act, Section 303(d)?

Yes No

Does this project have the potential to discharge collected stormwater by dewatering?

Yes No

This project does not have the potential to discharge directly to a water body listed as impaired due to Sedimentation/Siltation and/or Turbidity pursuant to Clean Water Act, Section 303(d).

This project does have the potential to discharge collected stormwater by dewatering.

600.4.1 Scope of Monitoring Activities

This SAP has been prepared pursuant to the requirements of Resolution 2001-046 and the applicable sections of the *Caltrans Construction Site Storm Water Quality Guidance Manual, December 2003*. The SAP describes the sampling and analysis strategy and schedule for monitoring increases in the [specify impairment: Sedimentation/Siltation and/or Turbidity] levels caused by storm water discharges from the project site.

Does the project receive run-on with the potential to combine with stormwater that discharges directly to the 303(d) listed water body?

Yes No

The project does not receive run-on with the potential to combine with stormwater that discharges directly to the 303(d) listed water body.

This project discharges accumulated stormwater into Champlin Creek and other unnamed tributaries. This SAP has been prepared pursuant to the requirements of the *Caltrans Construction Site Storm Water Quality Sampling Guidance Manual, December 2003*. The SAP describes the sampling and analysis strategy and schedule for monitoring turbidity in the water body and stormwater discharges from the project site.

The project will discharge to Champlin Creek and other unnamed tributaries at the following location(s), as shown on the WPCDs in Attachment B:

- Station 22+50 CWPCD-6
- Station 28+60 CWPCD-7

- Station 36+00 CWPCD-10
- Station 41+10 CWPCD-11
- Station 46+60 CWPCD-13
- Station 53+60 CWPCD-15

600.4.2 Monitoring Strategy

Sampling Schedule

Upstream, downstream, discharge, and run-on samples, if applicable, shall be collected for Suspended Sediment Concentration (SSC), Settleable Solids (SS), Total Suspended Solids (TSS), Turbidity, pH, and Non-Visible Pollutants during the first two hours of discharge from rain events that result in a direct discharge from the project site to Champlin Creek and unnamed tributaries. Samples shall be collected during daylight hours (sunrise to sunset) and shall be collected regardless of the time of the year, status of the construction site, or day of the week.

All storm events that occur during daylight hours will be sampled up to a maximum of four rain events within a 30-day period. In conformance with the U.S. Environmental Protection Agency definition, a minimum of 72 hours of dry weather will be used to distinguish between separate rain events.

Sampling Locations

Sampling locations are based on proximity to identified discharge or run-on location(s), accessibility for sampling, personnel safety, and other factors in accordance with the applicable requirements in the Caltrans *Construction Site Storm Water Quality Sampling Guidance Manual*. Sampling locations are shown on the WPCDs and include:

- A sample location (designated number C1 and C2) is upstream of all direct discharge from the construction site for the collection of a control sample to be analyzed for the prevailing condition of the receiving water without any influence from the construction site. The control sample will be used to determine the background levels of Suspended Sediment Concentration (SSC), Settleable Solids (SS), Total Suspended Solids (TSS), Turbidity, pH, and Non-Visible Pollutants in the 303(d) listed water body upstream of the project, if any.
 - Sample location number C1 and C2 is located 30+00 Rt and 41+00 Lt.
- A sample location (designated number S8) is immediately downstream from the last point of direct discharge from the construction site for the collection of a sample to be analyzed for potential increases in Suspended Sediment Concentration (SSC), Settleable Solids (SS), Total

Suspended Solids (TSS), Turbidity, pH, and Non-Visible Pollutants in the 303(d) listed water body caused by storm water discharges from the project, if any.

- o Sample location number S8 is located 53+65 Lt.

Upstream, downstream, and discharge samples shall be collected for turbidity during the discharge from the project site to the unnamed tributaries and Champlin Creek. Samples shall be collected at the commencement of dewatering and routinely during the dewatering activity.

600.4.3 Monitoring Preparation

Samples will be collected by (check one or more):

- Contractor Personnel Yes No
- Commercial Laboratory Yes No
- Environmental Consultant Yes No

Samples from the project site shall be collected by contractor sampling personnel:

- Name/Telephone Number: Name Phone Number
- Name/Telephone Number: Name Phone Number
- Alternate(s)/Telephone Number: Name Phone Number
- Alternate(s)/Telephone Number: Name Phone Number

Prior to the rainy season, all sampling personnel and alternates shall review Section 600 through 600.5.10 of this SWPPP. Qualifications of designated contractor personnel describing environmental sampling training and experience are provided in Attachment I.

An adequate stock of supplies and equipment for monitoring Suspended Sediment Concentration (SSC), Settleable Solids (SS), Total Suspended Solids (TSS), Turbidity, pH, and Non-Visible Pollutants shall be available on the project site or provided by [specify laboratory] prior to a sampling event. Monitoring supplies and equipment shall be stored in a cool-temperature environment that will not come into contact with rain or direct sunlight. Sampling personnel shall be available to collect samples in accordance with the sampling schedule.

Supplies maintained at the project site shall include, but will be not limited to, nitrile or latex gloves, sample collection equipment, coolers, appropriate number, type, and volume of sample bottles, identification labels, re-sealable storage bags, paper towels, personal rain gear, ice, Sampling Activity Log forms, and Chain-of-Custody (COC) forms.

The contractor shall obtain and maintain the field testing instruments, as identified in Section 600.4.5, for analyzing samples in the field by contractor sampling personnel. Safety practices for sample collection will be in accordance with the [enter title and publication date of contractor health and safety plan for the project].

Samples on the project site will be collected by the following [specify laboratory or environmental consultant]:

Company Name:

Address:

Telephone Number:

Point of Contact:

Qualifications of designated sampling personnel describing environmental sampling training and experience are provided in Attachment I.

The WPCM will contact [specify name of laboratory or environmental consultant] 24 hours prior to a predicted rain event to ensure that adequate sample collection personnel, supplies and field test equipment for monitoring [specify impairment: Sedimentation/Siltation and/or Turbidity] are available and will be mobilized to collect samples on the project site in accordance with the sampling schedule.

[Specify name of laboratory or environmental consultant] will obtain and maintain the field-testing instruments, as identified in Section 600.4.5, for analyzing samples in the field by their sampling personnel.

600.4.4 Sample Collection and Handling

Sample Collection Procedures

Grab samples shall be collected and preserved in accordance with the methods identified in Table 600-1, "Sample Collection, Preservation and Analysis for Monitoring Sedimentation/Siltation and/or Turbidity", provided in Section 600.4.5. Only personnel trained in proper water quality sampling shall collect samples. Include training qualifications in Attachment I.

Upstream samples shall be collected to represent the condition of the water body upgradient of the construction site. Downstream samples shall be collected to represent the water body mixed with direct flow from the construction site. Samples shall not be collected directly from ponded, sluggish, or stagnant water.

Upstream and downstream samples shall be collected using one of the following methods:

- Placing a sample bottle directly into the stream flow in or near the main current upstream of sampling personnel, and allowing the sample bottle to fill completely;

OR,

- Placing a decontaminated or 'sterile' bailer or other 'sterile' collection device in or near the main current to collect the sample, and then transferring the collected water to appropriate sample bottles, allowing the sample bottles to fill completely.

Run-on samples, if applicable, shall be collected to identify potential sedimentation/siltation and/or turbidity that originates off the project site and contributes to direct discharges from the construction site to the 303(d) listed water body. Run-on samples shall be collected downgradient and within close proximity of the point of run-on to the project by pooling or ponding water and allowing the ponded water to spill over into sample bottles directly in the stream of water.

Samples from dewatering discharge, if applicable, shall be collected to identify potential turbidity. Samples shall also be collected upstream and downstream of the discharge in the receiving water body.

To maintain sample integrity and prevent cross-contamination, sampling collection personnel shall:

- Wear a clean pair of nitrile gloves prior to the collection and handling of each sample at each location.
- Not contaminate the inside of the sample bottle by not allowing it to come into contact with any material other than the water sample.
- Discard sample bottles or sample lids that have been dropped onto the ground prior to sample collection.
- Not leave the cooler lid open for an extended period of time once samples are placed inside.
- Not touch the exposed end of a sampling tube, if applicable.
- Avoid allowing rainwater to drip from rain gear or other surfaces into sample bottles.
- Not eat, smoke, or drink during sample collection.
- Not sneeze or cough in the direction of an open sample bottle.
- Minimize the exposure of the samples to direct sunlight, as sunlight may cause biochemical transformation of the sample to take place.
- Decontaminate sampling equipment prior to sample collection using a TSP-soapy water wash, distilled water rinse, and final rinse with distilled water.
- Dispose of decontamination water/soaps appropriately (i.e., do not discharge to the storm drain system or receiving water).

All or some of samples will be analyzed by (select one or both):

Laboratory Yes No

Contractor (Field Measurement) Yes No

Sample Handling Procedures

REQUIRED TEXT only If laboratory will analyze ALL or SOME OF THE samples:

Immediately following collection, sample bottles for laboratory analytical testing will be capped, labeled, documented on a COC form provided by the analytical laboratory, sealed in a resealable plastic storage bag, placed in an ice-chilled cooler, at ± 4 degrees Celsius as practicable, and delivered within 24 hours to the following California state-certified laboratory:

Laboratory Name:

Address:

Telephone Number:

Point of Contact:

Sample Documentation Procedures

All original data documented on sample bottle identification labels, COC forms, Sampling Activity Logs, and Inspection Checklists shall be recorded using waterproof ink. These shall be considered accountable documents. If an error is made on an accountable document, the individual shall make corrections by lining through the error and entering the correct information. The erroneous information shall not be obliterated. All corrections shall be initialed and dated. Copies of the COC forms and Sampling Activity Log are provided in Attachment R.

Sampling and field analysis activities shall be documented using the following:

- Sample Bottle Identification Labels: Sampling personnel shall attach an identification label to each sample bottle. At a minimum, the following information shall be recorded on the label, as appropriate:
 - Project name
 - Project number
 - Unique sample identification code as shown below:

SSSSYYMMDDHHmmTT

Where:

SSSSS = sampling point number (e.g., CCUP1, CCDN2)
YY = last two digits of the year (e.g., 06)
MM = month (01-12)
DD = day (01-31)
HH = hour sample collected (00-23)
mm = minute sample collected (00-59)
TT = Type or QA/QC Identifier (if applicable)
G = grab
FS = field duplicate

For example, the sample number for a grab sample collected at Station CCUP1 collected at 4:15PM on December 8, 2006 would be:

CCUP10612081615G

- Collection date/time
- Analysis constituent
- Initials of person who collected the sample
- **Sampling Activity Logs:** A log of sampling events will identify:
 - Sampling date
 - Separate times for sample collection of upstream, downstream, run-on, dewatering, and QA/QC samples recorded to the nearest minute
 - Unique sample identification number and location
 - Analysis constituent
 - Names of sampling personnel
 - Weather conditions (including precipitation amount)
 - Field analysis results
 - Other pertinent data
- **Chain-of-Custody (COC) forms:** All samples to be analyzed by a laboratory shall be accompanied by a COC form provided by the laboratory. Only the sample collectors shall sign the COC form over to the lab. COC procedures shall be strictly adhered to for Quality Assurance and Quality Control (QA/QC) purposes.
- **Stormwater Quality Construction Inspection Checklists:** When applicable, the contractor's stormwater inspector shall document on the checklist that samples for sedimentation/siltation and/or turbidity were taken during a rain event.

600.4.5 Sample Analysis

Samples shall be analyzed for the constituents indicated in Table 600-1, “Sample Collection, Preservation and Analysis for Monitoring Sedimentation/Siltation and/or Turbidity.”

TABLE 600-1
Sample Collection, Preservation and Analysis for Monitoring Sedimentation/Siltation and/or Turbidity

Constituent ⁽¹⁾	Analytical Method	Test to be Used?		Sample Preservation	Minimum Sample Volume ⁽²⁾	Sample Bottle	Maximum Holding Time	Reporting Limit
		YES	NO					
(a) Suspended Sediment Concentration (SSC)	ASTM D3977-97	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Store at 4° C (39.2° F)	200 mL	Contact Laboratory	7 days	Contact Laboratory
(b) Settleable Solids (SS)	EPA 160.5 Std Method 2540(f)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Store at 4° C (39.2° F)	1 L	Polypropylene	48 hours	0.1 mL/L/hr
(c) Total Suspended Solids (TSS)	EPA 160.2 Std Method 2540(d)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Store at 4° C (39.2° F)	100 mL	Polypropylene	7 days	1 mg/L
(d) Turbidity	EPA 180.1 Std Method 2130(b)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Store at 4° C (39.2° F)	100 mL	Polypropylene or Glass	48 hours	1 NTU

Notes: ⁽¹⁾ Samples shall be analyzed by using methods (b) and (c), or only method (a)

- ASTM – American Society for Testing and Materials
- °C – Degrees Celsius
- °F – Degrees Fahrenheit
- EPA – U.S. Environmental Protection Agency
- L – Liter
- mL/L/hr – Milliliters per liter per hour

- mg/L – Milligrams per liter
- mL – Milliliters
- NTU – Nephelometric Turbidity Unit
- Std Method – Per the *Standard Methods for the Examination of Water and Wastewater*, 20th Edition, American Water Works Association

⁽²⁾ Minimum sample volume recommended. Specific volume requirements will vary by laboratory; check with laboratory when setting up bottle orders.

Will samples be analyzed in the field?:

Yes No

600.4.6 Quality Assurance/Quality Control

For an initial verification of laboratory or field analysis, duplicate samples shall be collected at a rate of 10 percent or 1 duplicate per sampling event. The duplicate sample shall be collected, handled, and analyzed using the same protocols as primary samples, and shall be collected where contaminants are likely, and not on the upstream sample. A duplicate sample shall be collected immediately after the primary sample has been collected. Duplicate samples shall not influence any evaluations or conclusions; however, they shall be used as a check on laboratory quality assurance.

600.4.7 Data Management and Reporting

A copy of all water quality analytical results and QA/QC data shall be submitted to the Resident Engineer within 5 days of sampling (for field analyses) and within 30 days of sampling (for laboratory analyses). Electronic results shall be submitted on diskette in Microsoft Excel (.xls) format, and shall include, at a minimum, the following information from the lab: Sample ID Number, Contract Number, Constituent, Reported Value, Laboratory Name, Method Reference, Method Number, Method Detection Limit, and Reported Detection Limit. Attachment T contains the Sampling Data Reporting Form, which must accompany the submittal of sampling data.

Laboratory reports and COCs shall be reviewed for consistency between laboratory methods, sample identifications, dates, and times for both primary samples and QA/QC samples. All data, including COC forms, Sampling Activity Logs, and Sampling Data Reporting Forms shall be kept with the SWPPP document. Electronic results shall be emailed to [Name] of [Company] at [email address] after final sample results are received after each sampling event. Electronic copies shall be forwarded by email to [Resident Engineer Name] at [email address] for inclusion into a statewide database.

600.4.8 Data Evaluation

An evaluation of the water quality sample analytical results, including figures with sample locations, shall be submitted to the Resident Engineer with the water quality analytical results and the QA/QC data for every event that samples are collected. Should the downstream sample concentrations exceed the upstream sample concentrations or dewatering discharge concentrations exceed applicable water quality standards, then the WPCM or other personnel shall evaluate the BMPs, site conditions, surrounding influences (including run-on sample analysis), and other site factors to determine the probable cause for the increase.

As determined by the data and project evaluation, appropriate BMPs shall be repaired or modified to mitigate increases in sediment and/or turbidity concentrations in the water body. Any revisions to the BMPs shall be recorded as an amendment to the SWPPP.

600.4.9 Change of Conditions

Whenever SWPPP monitoring, pursuant to Section B of the General Permit, indicates a change in site conditions that might affect the appropriateness of sampling locations, testing protocols shall be revised accordingly. All such revisions will be recorded as amendments to the SWPPP.

600.5 Sampling and Analysis Plan for Non-Visible Pollutants

This Sampling and Analysis Plan (SAP) for Non-Visible Pollutants describes the sampling and analysis strategy and schedule for monitoring non-visible pollutants in stormwater discharges from the project site and offsite activities directly related to the project in accordance with the requirements of Section B of the General Permit, and applicable requirements of the Caltrans *Construction Site Storm Water Quality Sampling Guidance Manual*, December 2003.

600.5.1 Scope of Monitoring Activities

The following construction materials, wastes or activities, as identified in Section 500.3.1, are potential sources of non-visible pollutants to stormwater discharges from the project. Storage, use, and operational locations are shown on the WPCDs in Attachment B.

- Vehicle fluids, including oil, grease, petroleum, and coolant;
- Asphaltic emulsions associated with asphalt-concrete paving operations;
- Cement materials associated with PCC paving operations, drainage structures, median barriers, and bridge construction;
- Base and subbase material;
- Joint and curing compounds;
- Concrete curing compounds (e.g. methacrylate and epoxy resin products);
- Metals and plated rails;
- Paints;
- Solvents, thinners, acids;
- Mortar Mix;
- Raw landscaping materials and wastes (topsoil, plant materials, herbicides, fertilizers, pesticides, mulch);
- BMP materials (sandbags, liquid copolymer);
- Treated lumber (materials and wastes);

- PCC rubble;
- Masonry block rubble; and
- General litter
-

The following existing site features, as identified in Section 500.3.3, are potential sources of non-visible pollutants to stormwater discharges from the project. Locations of existing site features contaminated with non-visible pollutants are shown on the WPCDs in Attachment B.

- Existing Pavement
- As stated in Section 500.3.3, “Past subsurface investigation for aerially deposited lead (ADL) nearby Route 116 found low levels of ADL that require no special disposal.”

The following soil amendments have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil and will be used on the project site. Locations of soil amendment application are shown on the WPCDs in Attachment B.

- None

The project has the potential to receive stormwater run-on with the potential to contribute non-visible pollutants to stormwater discharges from the project. Locations of such run-on to the Caltrans right-of-way are shown on the WPCDs in Attachment B.

- Adjacent roadways
- Adjacent driveways,
- Upstream creeks and tributaries

Sampling for non-visible pollutants will be conducted when (1) a breach, leakage, malfunction, or spill is observed; and (2) the leak or spill has not been cleaned up prior to the rain event; and (3) there is the potential for discharge of non-visible pollutants to surface waters or drainage system.

600.5.2 Monitoring Strategy

Sampling Schedule

Samples for the applicable non-visible pollutant(s) and a sufficiently large uncontaminated background sample shall be collected during the first two hours of discharge from rain events that result in a sufficient discharge for sample collection. Samples shall be collected during daylight hours (sunrise to sunset) and shall be collected regardless of the time of year, status of the construction site, or day of the week.

In conformance with the U.S. Environmental Protection Agency definition, a minimum of 72 hours of dry weather will be used to distinguish between separate rain events.

Collection of discharge samples for non-visible pollutant monitoring will be triggered when any of the following conditions are observed during the required inspections conducted before or during rain events:

- Materials or wastes containing potential non-visible pollutants are not stored under watertight conditions. Watertight conditions are defined as (1) storage in a watertight container, (2) storage under a watertight roof or within a building, or (3) protected by temporary cover and containment that prevents stormwater contact and runoff from the storage area.
- Materials or wastes containing potential non-visible pollutants are stored under watertight conditions, but (1) a breach, malfunction, leakage, or spill is observed, (2) the leak or spill is not cleaned up prior to the rain event, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.
- An operational activity, including but not limited to those in Section 600.5.1, with the potential to contribute non-visible pollutants (1) was occurring during or within 24 hours prior to the rain event, (2) applicable BMPs were observed to be breached, malfunctioning, or improperly implemented, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.
- Soil amendments that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil have been applied, and there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.
- Stormwater runoff from an area contaminated by historical usage of the site has been observed to combine with stormwater runoff from the site, and there is the potential for discharge of non-visible pollutants to surface waters or a storm sewer system.

Sampling Locations

Sampling locations are based on proximity to planned non-visible pollutant storage, occurrence or use; accessibility for sampling, personnel safety; and other factors in accordance with the applicable requirements in the Caltrans *Construction Site Storm Water Quality Sampling Guidance Manual*, December 2003. Planned sampling locations are shown on the WPCDs and include the following:

- Eight sampling location(s) on the project site and the contractor's yard have been identified for the collection of samples or runoff from planned material and waste storage areas and from areas where that non-visible pollutant producing operations are planned.
- Sample location number(s) S1, S2, S3, S4, S5, S6, S7, S8 is located 22+50 Rt, 25+55 Rt, 28+70 Lt, 32+40 Lt, 36+10 Rt, 41+15 Rt, 46+65 Rt, and 53+65 Lt, respectively.

- Three sampling locations have been identified for the collection of samples of runoff that drain areas where soil amendments that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil will be applied.
- Sample location number(s) S6, S7, and S8 is located 41+15 Rt, 46+65 Rt, and 53+65 Lt, respectively.
- No sampling locations have been identified for the collection of samples of runoff that drain areas contaminated by historical usage of the site.
- Two sampling locations have been identified for the collection of samples of run-on to the Caltrans right-of-way with the potential to combine with discharges being sampled for non-visible pollutants. These samples are intended to identify sources of potential non-visible pollutants that originate off the project site.
- Sample location number(s) C1 and C2 is located 30+00 Rt and 41+00 Lt.
- Two sampling location(s) has been identified for the collection of an uncontaminated sample of runoff as a background sample for comparison with the samples being analyzed for non-visible pollutants. This location(s) was selected such that the sample will not have come in contact with (1) operational or storage areas associated with the materials, wastes, and activities identified in Section 500.3.1; (2) potential non-visible pollutants due to historical use of the site as identified in Section 500.3.3; (3) areas in which soil amendments that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil have been applied; or (4) disturbed soils areas.
- Sample location number(s) C1 and C2 is located 30+00 Rt and 41+00 Lt.

If an operational activity or stormwater inspection conducted 24 hours prior to or during a rain event identifies the presence of a material storage, waste storage, or operations area with spills or the potential for the discharge of non-visible pollutants to surface waters or a storm sewer system that was an unplanned location and has not been identified on the WPCDs, sampling locations will be selected using the same rationale as that used to identify planned locations.

600.5.3 Monitoring Preparation

Samples will be collected by:

- | | | |
|------------|---|--|
| Contractor | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Consultant | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Laboratory | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

Samples on the project site will be collected by the following contractor sampling personnel:

Name/Telephone Number:

Name/Telephone Number:

Alternate(s)/Telephone Number:

Alternate(s)/Telephone Number:

Prior to the rainy season, all sampling personnel and alternates will review Section 600 through 600.5.10 of this SWPPP. Qualifications of designated contractor personnel describing environmental sampling training and experience are provided in Attachment I.

An adequate stock of monitoring supplies and equipment for monitoring non-visible pollutants will be available on the project site prior to a sampling event. Monitoring supplies and equipment will be stored in a cool temperature environment that will not come into contact with rain or direct sunlight. Sampling personnel will be available to collect samples in accordance with the sampling schedule. Supplies maintained at the project site will include, but are not limited to, surgical gloves, sample collection equipment, coolers, appropriate number and volume of sample bottles, identification labels, re-sealable storage bags, paper towels, personal rain gear, ice, Sampling Activity Log forms, and COC forms.

The contractor will obtain and maintain the field testing instruments, as identified in Section 600.5.6, for analyzing samples in the field by contractor sampling personnel.

Safety practices for sample collection will be in accordance with the [ENTER TITLE AND PUBLICATION DATE OF CONTRACTOR'S HEALTH AND SAFETY PLAN FOR THE PROJECT OR PROVIDE SPECIFIC REQUIREMENTS HEREIN].

Samples on the project site will be collected by the following [specify laboratory or environmental consultant]:

Company Name:

Address:

Telephone Number:

Point of Contact:

Qualifications of designated sampling personnel describing environmental sampling training and experience are provided in Attachment I.

WPCM will contact [specify name of laboratory or environmental consultant] 24 hours prior to a predicted rain event and if one of the triggering conditions is identified during an inspection before, during, or after a storm event to ensure that adequate sample collection personnel, supplies and field test equipment for monitoring non-visible pollutants are available and will be mobilized to collect samples on the project site in accordance with the sampling schedule.

[Specify name of laboratory or environmental consultant] will obtain and maintain the field testing instruments, as identified in Section 600.5.6, for analyzing samples in the field by their sampling personnel.

600.5.4 Analytical Constituents

Identification of Non-Visible Pollutants

The following table lists the specific sources and types of potential non-visible pollutants on the project site and the applicable water quality indicator constituent(s) for that pollutant.

**Table 600-3
Potential Non-Visible Pollutants and Water Quality Indicator Constituents**

Pollutant Source	Pollutant	Water Quality Indicator Constituent
Cleaning Products	Acids, Bleaches, Detergents, TSP, Solvents,	pH, Residual Chlorine, Phosphate, VOC, SVOC
Portland Cement Concrete & Masonry Products	Masonry Products, Sealant, Fly Ash, Municipal Solid Waste, Curing Compounds	pH, Alkalinity, Methyl Methacrylate, Metals, VOC, SVOC
Landscaping and Other Products	Fertilizers, Inorganic and Organic, Herbicides, Top Soil	TDS, Aluminum, Sulfate, Nitrate, Phosphate, pH, Organic Nitrogen and COD
Painting Products	Paint, Paint Strippers, Sealants, Solvents, Thinners, etc.	VOC, SVOC, COD
Contaminated Soil	Aerially Deposited Lead, Petroleum, etc.	Lead, Contaminant specific
Adhesives	Adhesives	COD, Phenols, SVOC
Dust Palliative Products	Salts	Chloride, TDS, Cations (Sodium, Magnesium, Calcium)
Vehicle	Antifreeze, Batteries, Fuels, Lubricants	Lead, pH, Sulfuric Acid
Soil Amendment/Stabilization Products	Polymer/Copolymer	Organic Nitrogen, BOD, COD, DOC, Nitrate, Sulfate, Nickel
Treated Wood Products	ACZA, CCA, ACA Copper Naphthenate, Creosote	Arsenic, Total Chromium, Copper and Zinc

600.5.5 Sample Collection and Handling

Sample Collection Procedures

Samples of discharge shall be collected at the designated sampling locations shown on the WPCDs for observed breaches, malfunctions, leakages, spills, operational areas, soil amendment application areas, and historical site usage areas that triggered the sampling event.

Grab samples shall be collected and preserved in accordance with the methods identified in Table 600-3, "Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants" table provided in Section 600.5.6. Only personnel trained in proper water quality sampling shall collect samples.

Samples shall be collected by placing a separate laboratory-provided sample container directly into a stream of water downgradient and within close proximity to the potential non-visible pollutant discharge location. This separate laboratory-provided sample container shall be used to collect water, which shall be transferred to sample bottles for laboratory analysis. The upgradient and uncontaminated background samples shall be collected first prior to collecting the downgradient to minimize cross-contamination. The sampling personnel shall collect the water upgradient of where they are standing. Once the separate laboratory-provided sample container is filled, the water sample shall be poured directly into sample bottles provided by the laboratory for the analyte(s) being monitored.

To maintain sample integrity and prevent cross-contamination, sampling collection personnel shall:

- Wear a clean pair of surgical gloves prior to the collection and handling of each sample at each location;
- Not contaminate the inside of the sample bottle by not allowing it to come into contact with any material other than the water sample;
- Discard sample bottles or sample lids that have been dropped onto the ground prior to sample collection;
- Not leave the cooler lid open for an extended period of time once samples are placed inside;
- Not sample near a running vehicle where exhaust fumes may impact the sample;
- Not touch the exposed end of a sampling tube, if applicable;
- Avoid allowing rainwater to drip from rain gear or other surfaces into sample bottles;
- Not eat, smoke, or drink during sample collection;
- Not sneeze or cough in the direction of an open sample bottle;

- Minimize the exposure of the samples to direct sunlight, as sunlight may cause biochemical transformation of the sample to take place;
- Decontaminate sampling equipment prior to sample collection using a TSP-soapy water wash, distilled water rinse, and final rinse with distilled water; and
- Dispose of decontamination water/soaps appropriately (i.e., not discharge to the storm drain system or receiving water).

Sample Handling Procedures

All or some of samples will be analyzed by (select one or both):

Laboratory	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Contractor (Field Measurement)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Immediately following collection, sample bottles for laboratory analytical testing shall be capped, labeled, documented on a COC form provided by the analytical laboratory, sealed in a re-sealable storage bag, placed in an ice-chilled cooler, at ± 4 degrees Celsius as practicable, and delivered within 24 hours to the following California Environmental Laboratory Accreditation Program (ELAP) – certified laboratory:

Laboratory Name:

Address:

Telephone Number:

Point of Contact:

Sample Documentation Procedures

All original data documented on sample bottle identification labels, COC forms, Sampling Activity Logs, and Inspection Checklists shall be recorded using waterproof ink. These shall be considered accountable documents. If an error is made on an accountable document, the individual shall make corrections by lining through the error and entering the correct information. The erroneous information shall not be obliterated. All corrections shall be initialed and dated. Copies of the COC form and Sampling Activity Log are provided in Attachment R.

Duplicate samples shall be identified consistent with the numbering system for other samples to prevent the laboratory from identifying duplicate samples. Duplicate samples shall be identified in the Sampling Activity Logs.

Sampling and field analysis activities shall be documented using the following:

- **Sample Bottle Identification Labels:** Sampling personnel shall attach an identification label to each sample bottle. At a minimum, the following information shall be recorded on the label, as appropriate:

- Project name
- Project number
- Unique sample identification code as shown below:

SSSSSYMMDDHHmmTT

Where:

SSSSS = sampling point number (e.g., CCUP1, CCDN2)
YY = last two digits of the year (e.g. 06)
MM = month (01-12)
DD = day (01-31)
HH = hour sample collected (00-23)
mm = minute sample collected (00-59)
TT = Type or QA/QC Identifier (if applicable)
G = grab
FS = field duplicate

For example, the sample number for a grab sample collected at Station CCUP1 collected at 4:15PM on December 8, 2006 would be:

CCUP10612081615G

- Collection date/time (No time applied to QA/QC samples)
 - Analysis constituent
 - Initials of person who collected the sample
-
- **Sampling Activity Logs:** A log of sampling events shall identify:
 - Sampling date;
 - Separate times for collected samples and QA/QC samples recorded to the nearest minute;
 - Unique sample identification number and location;
 - Analysis constituent;
 - Names of sampling personnel;
 - Weather conditions (including precipitation amount);
 - Field analysis results; and
 - Other pertinent data.

- COC Forms: All samples to be analyzed by a laboratory will be accompanied by a COC form provided by the laboratory. Only the sample collectors will sign the COC form over to the lab. COC procedures will be strictly adhered to for QA/QC purposes.
- Stormwater Quality Construction Inspection Checklists: When applicable, the contractor's Stormwater inspector will document on the checklist that samples for non-visible pollutants were taken during a rain event.

600.5.6 Sample Analysis

Samples shall be analyzed for the applicable constituents using the analytical methods identified in Table 600-4, "Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants" table in this section.

Will samples be analyzed in the field?:

Yes No

600.5.7 Quality Assurance/Quality Control

For an initial verification of laboratory or field analysis, duplicate samples shall be collected at a rate of 10 percent or 1 duplicate per sampling event. The duplicate sample shall be collected, handled, and analyzed using the same protocols as primary samples. A duplicate sample shall be collected at each location immediately after the primary sample has been collected. Duplicates shall be collected where contamination is likely, not on the background sample. Duplicate samples shall not influence any evaluations or conclusions; however, they shall be used as a check on laboratory quality assurance.

600.5.8 Data Management and Reporting

A copy of all water quality analytical results and QA/QC data shall be submitted to the Resident Engineer within 5 days of sampling (for field analyses) and within 30 days (for laboratory analyses). All submitted information shall include a signed copy of the sampling data reporting certification form. Electronic results shall be submitted on diskette in Microsoft Excel (.xls) format, and shall include, at a minimum, the following information from the lab: Sample ID Number, Contract Number, Constituent, Reported Value, Lab Name, Method Reference, Method Number, Method Detection Limit, and Reported Detection Limit. Attachment T contains the Sampling Data Reporting Form, which must accompany the submittal of sampling data.

Lab reports and COCs shall be reviewed for consistency between lab methods, sample identifications, dates, and times for both primary samples and QA/QC samples. All data, including COC forms, Sampling Activity Logs, and Sampling Data Reporting Forms shall be kept with the SWPPP document. Electronic results shall be emailed to [NAME] of [COMPANY] at [email address] after final sample results are received after each sampling event. Electronic copies shall be forwarded by email to [Resident Engineer Name] at [email address] for inclusion into a statewide database.

600.5.9 Data Evaluation

An evaluation of the water quality sample analytical results, including figures with sample locations, shall be submitted to the Resident Engineer with the water quality analytical results and the QA/QC data. Should the runoff/downgradient sample show an increased level of the tested analyte relative to the background sample, the BMPs, site conditions, and surrounding influences shall be assessed to determine the probable cause for the increase.

As determined by the site and data evaluation, appropriate BMPs shall be repaired or modified to mitigate discharges of non-visual pollutant concentrations. Any revisions to the BMPs shall be recorded as an amendment to the SWPPP.

600.5.10 Change of Conditions

Whenever SWPPP monitoring, pursuant to Section B of the General Permit, indicates a change in site conditions that might affect the appropriateness of sampling locations or introduce additional non-visible pollutants of concern, testing protocols shall be revised accordingly. All such revisions shall be recorded as amendments to the SWPPP.

DIST	COUNTY	ROUTE	MILEAGE FROM PROJECT TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SON	116	67.3/71.9	1	337



STATE OF CALIFORNIA ACHSSTP-P116(042)E
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN SONOMA COUNTY
ABOUT 9 KM EAST OF PETALUMA
FROM ADOBE ROAD
TO 0.2 KM WEST OF ARNOLD DRIVE

INDEX OF SHEETS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-12	TYPICAL CROSS SECTIONS
13-27	LAYOUTS
28-42	PROFILES AND SUPERELEVATION DIAGRAMS
43-52	CONSTRUCTION DETAILS
53-57	TEMPORARY WATER POLLUTION CONTROL PLANS, DETAILS AND QUANTITIES
58-77	EROSION CONTROL PLANS, DETAILS AND QUANTITIES; DRAINAGE PLANS, PROFILES, DETAILS AND QUANTITIES; EDGE DRAINS (SANITARY SEMER PLANS, PROFILES, DETAILS AND QUANTITIES)
78-138	UTILITY PLANS, DETAILS AND QUANTITIES
139-148	CONSTRUCTION AREA SIGNS, DETAILS AND QUANTITIES
149-163	STAGE CONSTRUCTION PLANS, DETAILS AND QUANTITIES
164-165	PAVEMENT DELINEATION PLANS, DETAILS AND QUANTITIES
217-234	SIGN PLANS, DETAILS AND QUANTITIES
235-254	SUMMARY OF QUANTITIES
255-257	RETAINING WALL No. 4, 5, 6 AND 7 PLANS, TYPICAL DETAILS, QUANTITIES AND LOG OF TEST BORING SHEETS
258-271	ELECTRICAL PLANS
272-278	REVISED STANDARD PLANS
279-302	STRUCTURE PLANS
303-312	RETAINING WALL No. 1 (BR No. 20E0018)
313-322	RETAINING WALL No. 2 (BR No. 20E0019)
323-337	RETAINING WALL No. 3 (BR No. 20E0020)

TO BE SUPPLEMENTED BY STANDARD PLANS DATED JULY 2004

BEGIN CONSTRUCTION
Sta A 9+70 KP 67.3 PM 41.8

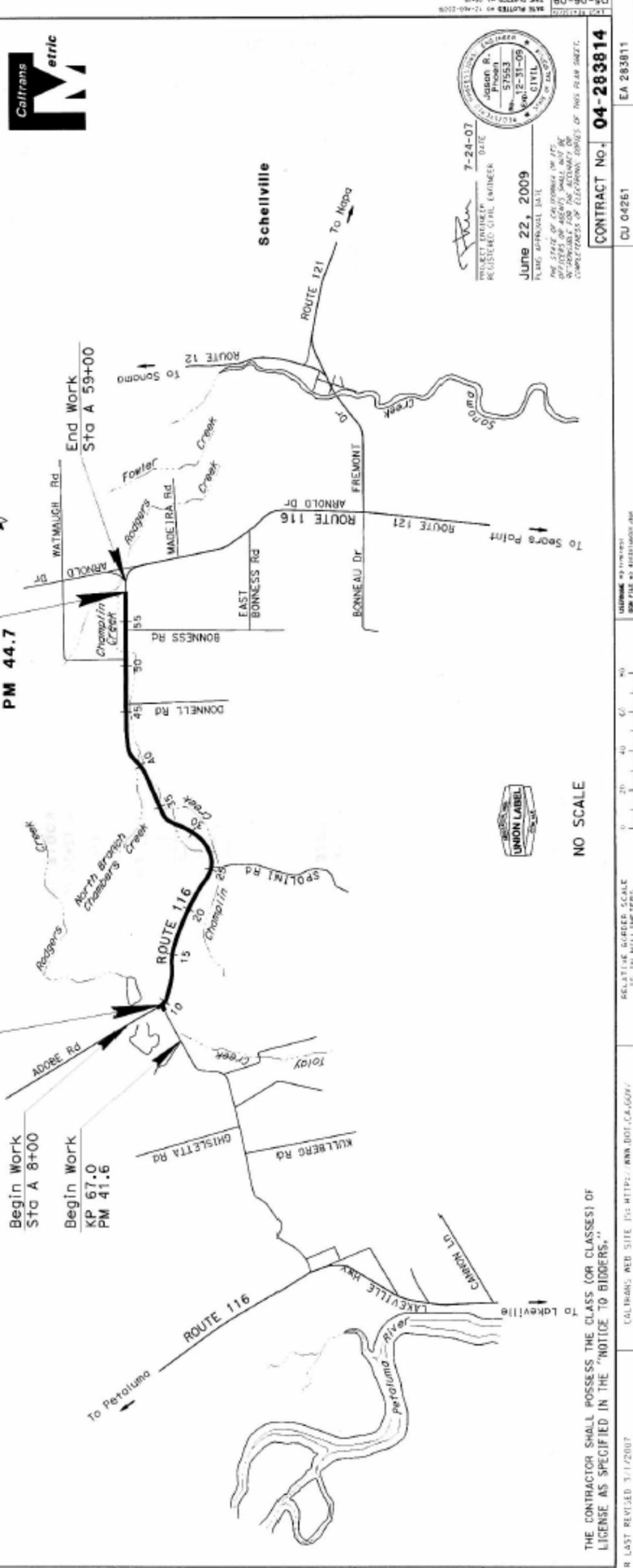
END CONSTRUCTION
Sta A 58+30 KP 71.9 PM 44.7

Begin Work Sta A 8+00

Begin Work KP 67.0 PM 41.6

End Work Sta A 59+00

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



7-24-07
 PROJECT ENGINEER
 REGISTERED CIVIL ENGINEER
 License No. 57553
 Date 12-31-05
 CIVIL

June 22, 2009
 PLAN APPROVAL DATE

THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
 CONTRACT NO. 04-283814

CONTRACT NO. 04-283814
 DU 04261
 EA 283811

NO SCALE

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

FORMER LAST REVISED 3/1/2007 | CALTRANS WEB SITE IS: [HTTP://WWW.DOT.CA.GOV/](http://www.dot.ca.gov/) | RELATIVE GRADE SCALE 1" = 10' HILLSHADES | 0 20 40 60 80 | UTM GRID COORDINATES FROM FILE NO. 402313000.DWG

Attachment B

Water Pollution Control Drawings

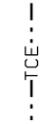
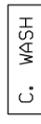
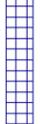
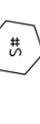
CONCEPTUAL WATER POLLUTION CONTROL DRAWINGS (CWPCDs)

FOR CONSTRUCTION ON STATE HIGHWAY IN THE COUNTY OF SONOMA ON ROUTE 116 FROM KP 67.3 TO 71.9 FROM ADOBE ROAD TO 0.2 KM WEST OF ARNOLD DRIVE

GENERAL WATER POLLUTION CONTROL NOTES

- CWPCDs depict construction activities and best management practices (BMPs) by each stage that are expected to occur in the rainy season(s) for the duration of the Contract.
- The Conceptual Water Pollution Control Drawings (CWPCDs) are intended to provide additional direction and convey specific BMP expectations to the contractor. The (CWPCDs) are prepared assuming standard construction practices and may not reflect the contractor's actual methods of construction, access requirements or project phasing.
- The Conceptual Storm Water Pollution Prevention Plan (CSWPPP) will be adhered to for all construction activities planned for the first 60 days after contract approval, or until the Contractor's SWPPP is approved by the Engineer.
- The CSWPPP will be used as a guide and reference tool to develop and submit the contract SWPPP that includes all elements of the CSWPPP and any additional elements required to complete the SWPPP in conformance with the Special Provisions, the Permits, any other local requirements. The Contractor's SWPPP shall supersede the Conceptual SWPPP upon Engineer's approval.
- Field conditions may necessitate modifications to the CWPCDs in the contract SWPPP prepared by the Contractor.
- Disturbed Soil Areas (DSA) are limited to 2 hectares during the rainy season from October 15 to April 15.
- The Contractor will use all temporary water pollution control practices included in the Contract to develop and submit the Contract SWPPP.
- The Contractor will use best management practices (BMPs) described under in special provisions section "Construction Site Management" to control potential sources of water pollution before they come in contact with storm water systems or watercourses. Control material pollution and manage waste and non-storm water at the job site by implementing effective handling, storage, use, and disposal practices.
- The Contractor will include the following contract items of work for permanent water pollution control as shown on the Erosion Control Plans: Move-In/Move-Out (Erosion Control); Erosion Control (Type D); Compost, Incorporate; Erosion Control (Netting); Fiber Rolls; Erosion Control (Compost Blanket). Permanent water pollution control measures shall be applied to non-active DSAs deemed complete. These permanent water pollution control practices may be constructed and utilized during the construction period. The Contractor shall maintain and protect the permanent water pollution control practices throughout the duration of the project and shall restore these controls to the lines, grades and condition shown on the plans prior to acceptance of the contract.
- Construction Site Management BMPs will be implemented year-round to control mobile operations common to this contract, which may include Asphalt recycling, concrete mixing, crushing and storage of materials.
- The Contractor shall monitor the National Weather Service weather forecast on a daily basis during the contract. The Contractor may use an alternative weather forecasting service if approved by the Engineer. Active DSAs where soil disturbance has occurred and will continue to occur during the ensuing 21 days shall be protected using appropriate water pollution control practices within 15 days, or before predicted precipitation, whichever occurs first.
- Temporary soil stabilization and sediment control practices will be implemented during the rainy season between October 15 and April 15. The Contractor shall implement soil stabilization and sediment control practices a minimum of 6 days before the start of the rainy season using Temporary Hydraulic Mulch, Temporary Silt Fences, Temporary Gravel Bag Berms and Temporary Drainage Inlet Protection. The Contractor shall maintain soil stabilization and sediment control materials on site to protect disturbed soil areas.
- Contractor shall determine the staging areas best suited for their construction equipment and materials, and is responsible for implementing the standard BMP practices to the satisfaction of the SFBROWCB. Contractor shall revise the SWPPP to reflect any changes or amendments to the plan and report, and must submit the report to the SFBROWCB for their approval. Any additional changes to the original plans will require revision to the SWPPP and resubmitted to obtain another approval.

LEGEND:

-  CONCENTRATED SURFACE FLOW
-  TEMPORARY CREEK DIVERSION SYSTEM
-  PIPE/UNDERGROUND FLOW DIRECTION
-  RUN-ON FLOW DIRECTION
-  RUN-ON LOCATION
-  TEMPORARY CHECK DAM
-  TEMPORARY CONSTRUCTION EASEMENT (TCE)
-  TEMPORARY CONSTRUCTION ENTRANCE
-  TEMPORARY CONCRETE WASHOUT BIN
-  TEMPORARY DRAINAGE INLET PROTECTION
-  PERMANENT DRAINAGE EASEMENT
-  TEMPORARY SILT FENCE
-  TEMPORARY COVER
-  ENVIRONMENTALLY SENSITIVE AREA (ESA)
-  TEMPORARY FENCE (TYPE ESA)
-  SAMPLING LOCATION
-  CONTROL POINT

STORM WATER POLLUTION CONTROL CONSTRUCTION NOTES:

- Construction schedule included in the Conceptual SWPPP considers the amount and duration of soil exposed to erosion by wind, rainfall and vehicle tracking and minimizes DSA during any rainy season. Contractor will be prepared with sufficient quantities of temporary water pollution control practices year-round to deploy soil stabilization and sediment control practices in response to seasonal and unseasonal rainfall.
- Temporary Fence (Type ESA) will be installed prior to clearing and grubbing or soil disturbing activities in order to preserve existing vegetation throughout the project site. Temporary Fence (Type ESA) locations have been delineated after consideration of impacts from grade changes to existing vegetation and the root zone.
- Temporary Hydraulic Mulch (Bonded Fiber Matrix) will be applied to active and non-active DSAs that require temporary protection until permanent vegetation is established. Disturbed areas must be reappplied following an extended period of inactivity. Prior to application, embankments and fill areas will be roughened by rolling with a crimping or punching type roller or by track walking. Hydraulic Mulch will require 24 hours to dry to become effective.
- Temporary Cover will be used on active DSAs when areas are particularly difficult to stabilize, especially stockpiles of soil, cold mix asphalt concrete, portland cement concrete (PCC) rubble, asphalt concrete, hot mix asphalt (HMA), AC, HMA rubble, aggregate base or subbase shall be placed on an impervious surface and covered with a plastic or geotextile cover, or with soil stabilization measures at all times during the rainy season. During the non-rainy season all soil stockpiles shall be covered and protected with a linear sediment barrier when precipitation is predicted.
- Temporary Silt Fence will be installed and maintained at locations shown on the plans to allow sediment to settle and from runoff before it leaves the site.
- Temporary Check Dams will be used in natural and man-made channels or drainage ditches to reduce scour and channel erosion by reducing flow velocity and allowing sediment to settle.
- Temporary Gravel Bag Berms will be installed to form a barrier across a slope to intercept runoff, reduce its flow velocity, release runoff as sheet flow and provide some sediment removal.
- Street Sweeping will be done by using a Mechanical sweeper followed by a vacuum-assisted sweeper, or Vacuum-assisted dry (waterless) sweeper or Regenerative-air sweeper. Street sweeping will occur at the job site entrance and exit locations during clearing and grubbing activities; earthwork activities; trenching activities; roadway structural section activities; when vehicles are entering and leaving the job site; after soil disturbing activities; after observing offsite tracking of material.
- Temporary Drainage Inlet Protection will be used at all locations shown on CWPCDs.
- Temporary Construction Entrances will be used at points of entrance and exit to reduce tracking of mud and dirt onto public roads by construction vehicles.
- Construction Site Management will be implemented year-round control material pollution and manage waste and non-storm water existing at the construction site by implementing effective handling, storage, use, and disposal practices.
- Temporary Concrete Washout Bin will be used for collection and disposal of: Washout from concrete delivery trucks; Slurries containing portland cement concrete or hot mix asphalt from sawcutting, coring, grinding, grooving, and hydro-concrete demolition; Concrete waste from mortar mixing stations.
- A Sampling and Analysis to monitor the effectiveness of the water pollution control practices have been determined. This project has the potential to discharge non-visible pollutants in storm water from the construction site. Non-visible pollutant sampling locations, (downstream from each non-visible pollutant source) and background/uncontaminated control sample points (water quality level check before entering construction area) are shown on these CWPCD plans.
- For the first order of work (to be completed within the first 60 days), staging of the temporary Erosion Control measures are as follows (the order of implementing the water pollution control practices may vary due to circumstances or changes in the construction sequence activities):
 - Temporary Fence (Type ESA)
 - Temporary Construction Entrance
 - Temporary Drainage Inlet Protection
 - Temporary Sediment Control BMPs
 - Temporary Soil Stabilization BMPs

x

x

x

x

x

PROJECT MANAGER
SENIOR LANDSCAPE ARCHITECT

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		SENIOR LANDSCAPE ARCHITECT	
OFFICE OF WATER QUALITY		DESIGNED BY	CHECKED BY
		REVISD BY	DATE REVISED
		01/07	01/07

BORDER LAST REVISED 3/1/2007

FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

Dis+ COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04 Son	116	67.3/71.9		



LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE

SIGNATURE

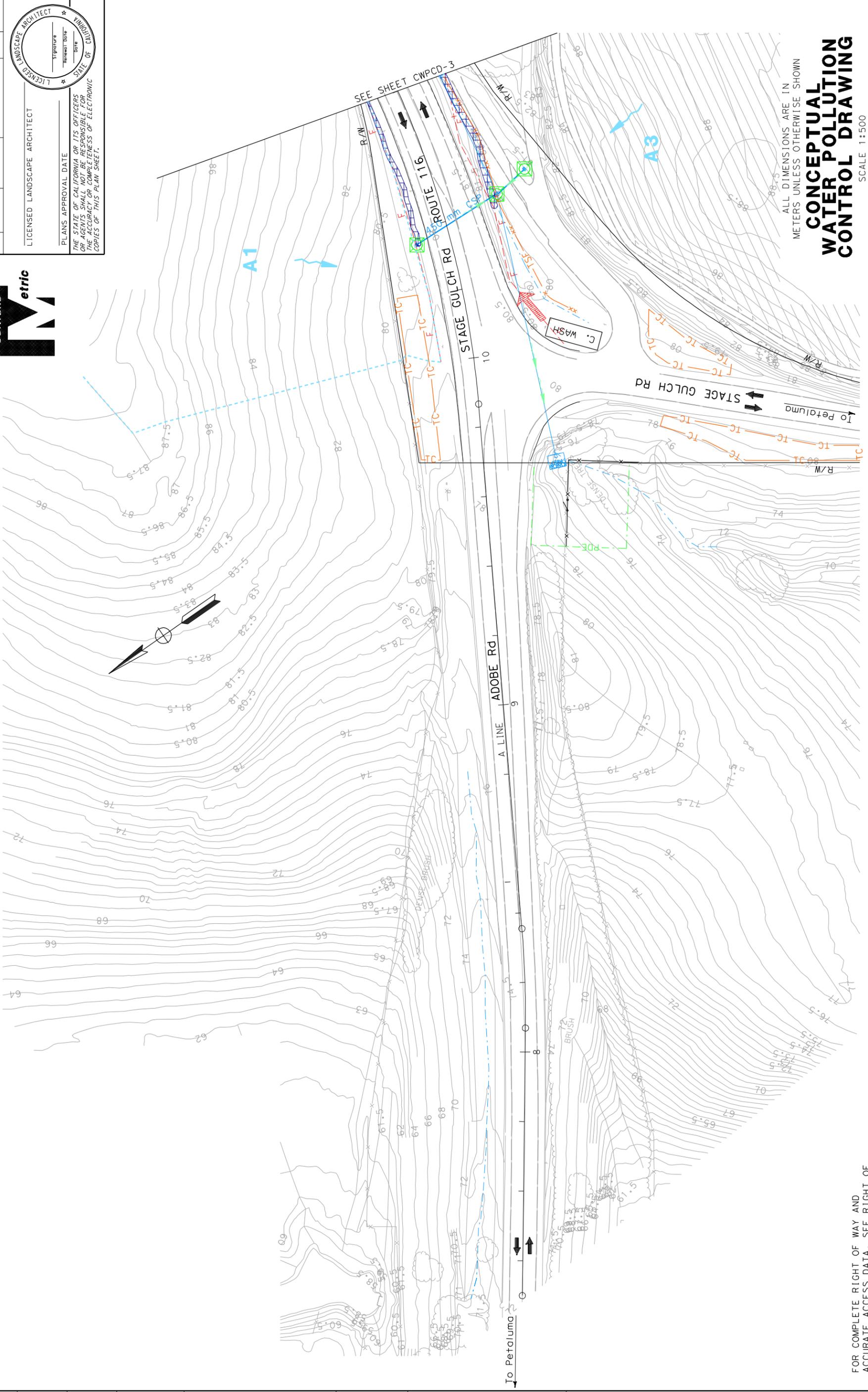
REVISION DATE

DATE

STATE OF CALIFORNIA

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CONCEPTUAL WATER POLLUTION CONTROL DRAWING

SCALE 1:500

CWPCD-2

LAST REVISION: 06-25-08
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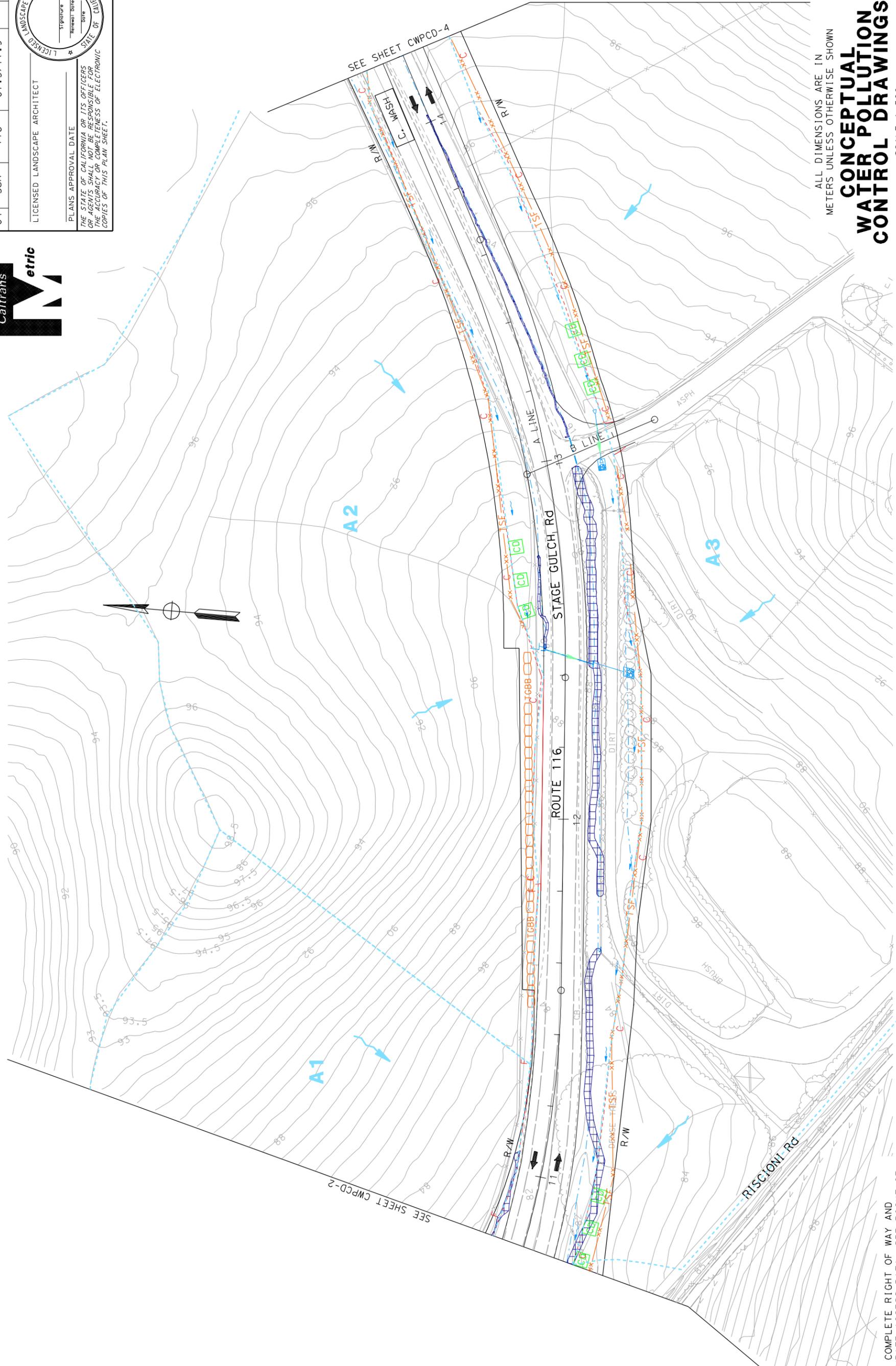
CU 04343

EA 283811

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		SENIOR LANDSCAPE ARCHITECT	
OFFICE OF WATER QUALITY		DESIGNED BY	
		CHECKED BY	
REVISOR	DATE	REVISION	DESCRIPTION
01/07	01/07		

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CU 04343

EA 283811



Dis+ COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No. TOTAL SHEETS
04 Son	116	67.3/71.9	

LICENSED LANDSCAPE ARCHITECT

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STATE OF CALIFORNIA

REGISTERED PROFESSIONAL

DATE

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CONCEPTUAL WATER POLLUTION CONTROL DRAWINGS

SCALE 1:500

CWPCD-3

LAST REVISION 04-18-08
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OFFICE OF WATER QUALITY		DESIGNED BY	CHECKED BY
		REVISD BY	DATE REVISED
		01/07	01/07

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CU 04343

EA 283811

Dis+ COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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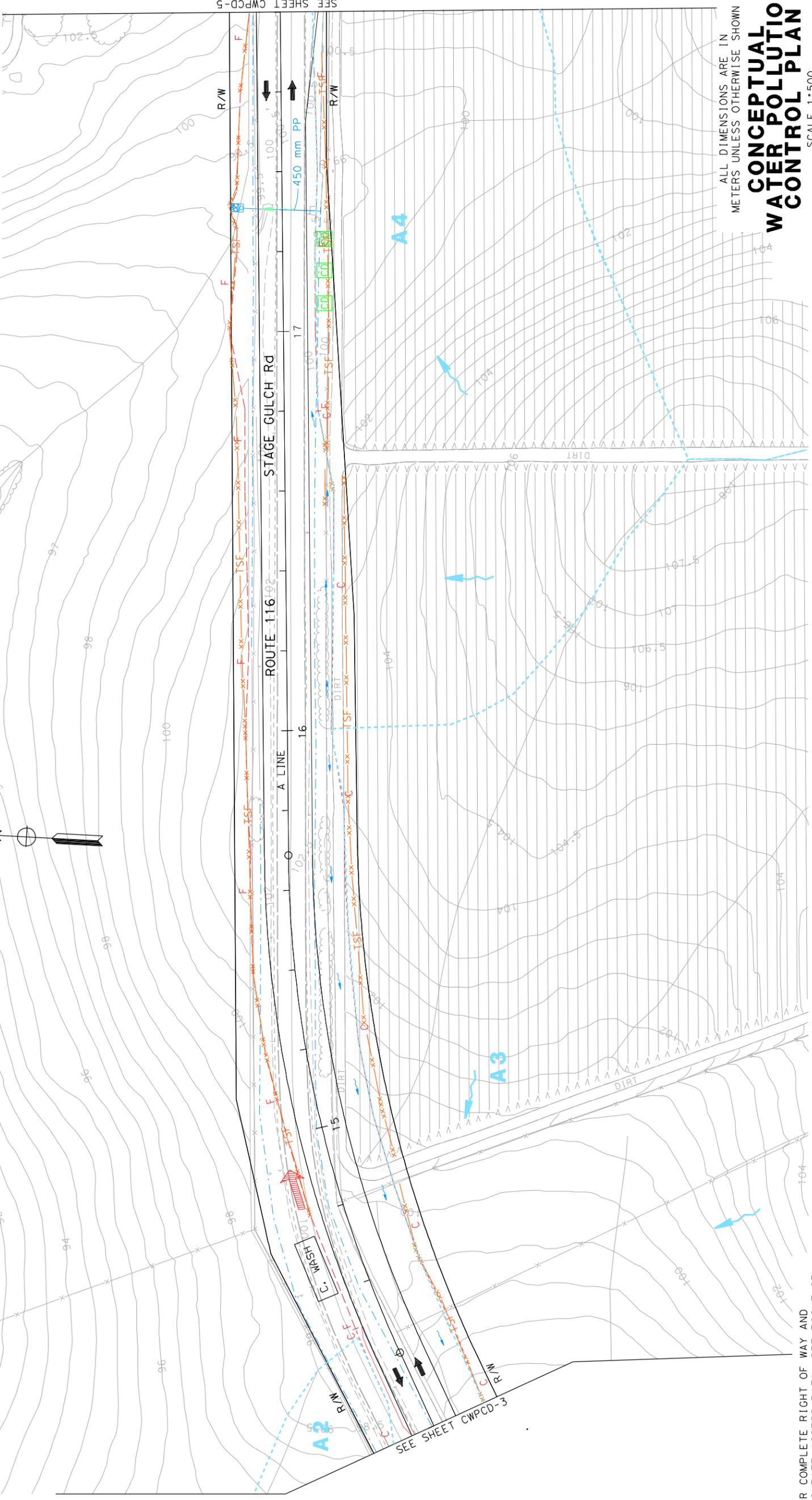
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CONCEPTUAL WATER POLLUTION CONTROL PLAN

SCALE 1:500

CWPCD-4

SEE SHEET CWPCD-5

SEE SHEET CWPCD-3

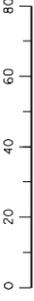
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DESIGNED BY	REVISOR	DATE REVISION	REVISION
01/07		01/07	

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CU 04343

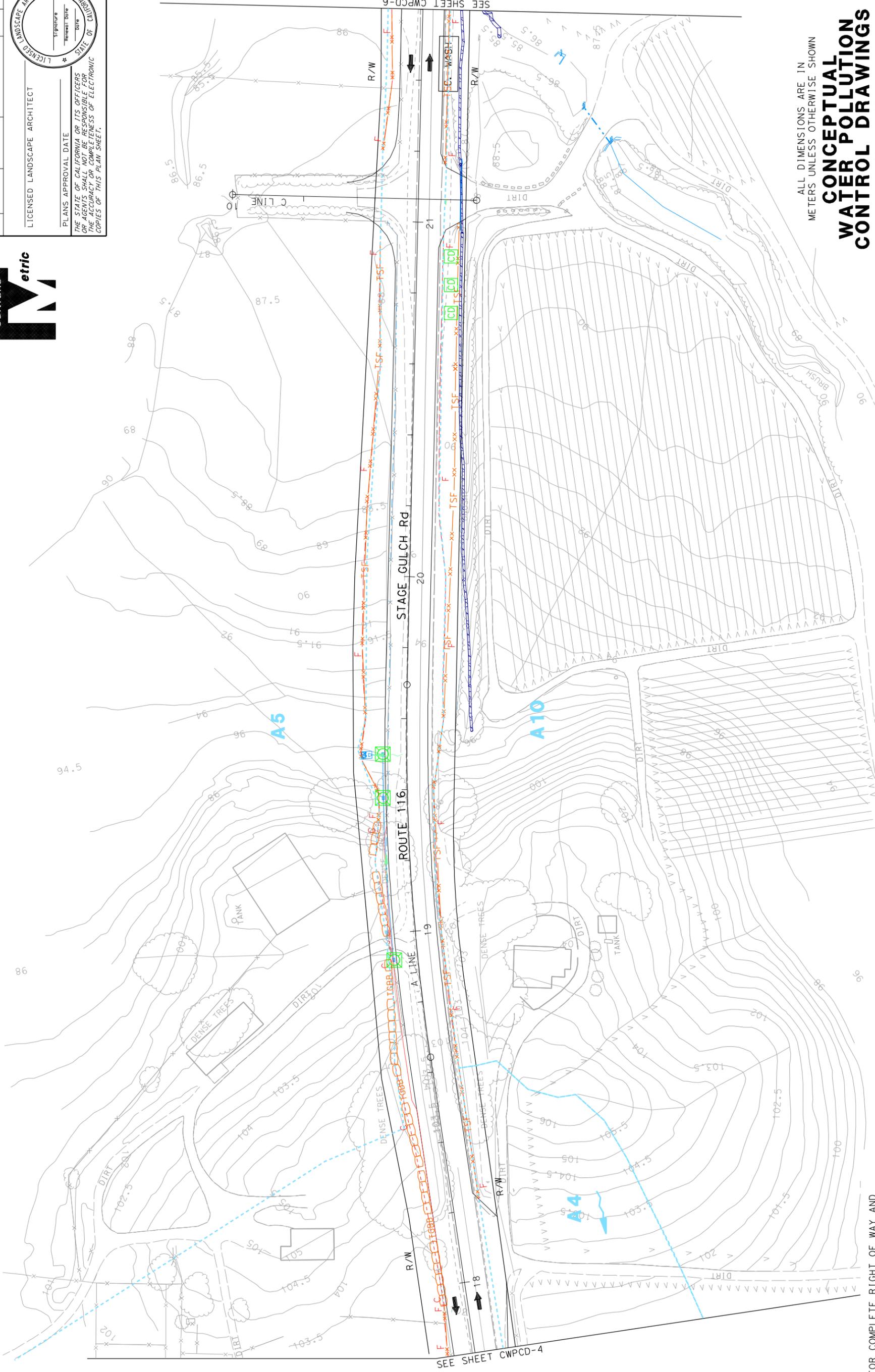
EA 283811

WATER POLLUTION CONTROL DRAWINGS

SCALE 1:500

CWPCD-5

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Dis+ COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04 Son	116	67.3/71.9		

LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE

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STATE OF CALIFORNIA

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CONCEPTUAL WATER POLLUTION CONTROL DRAWINGS

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CWPCD-7

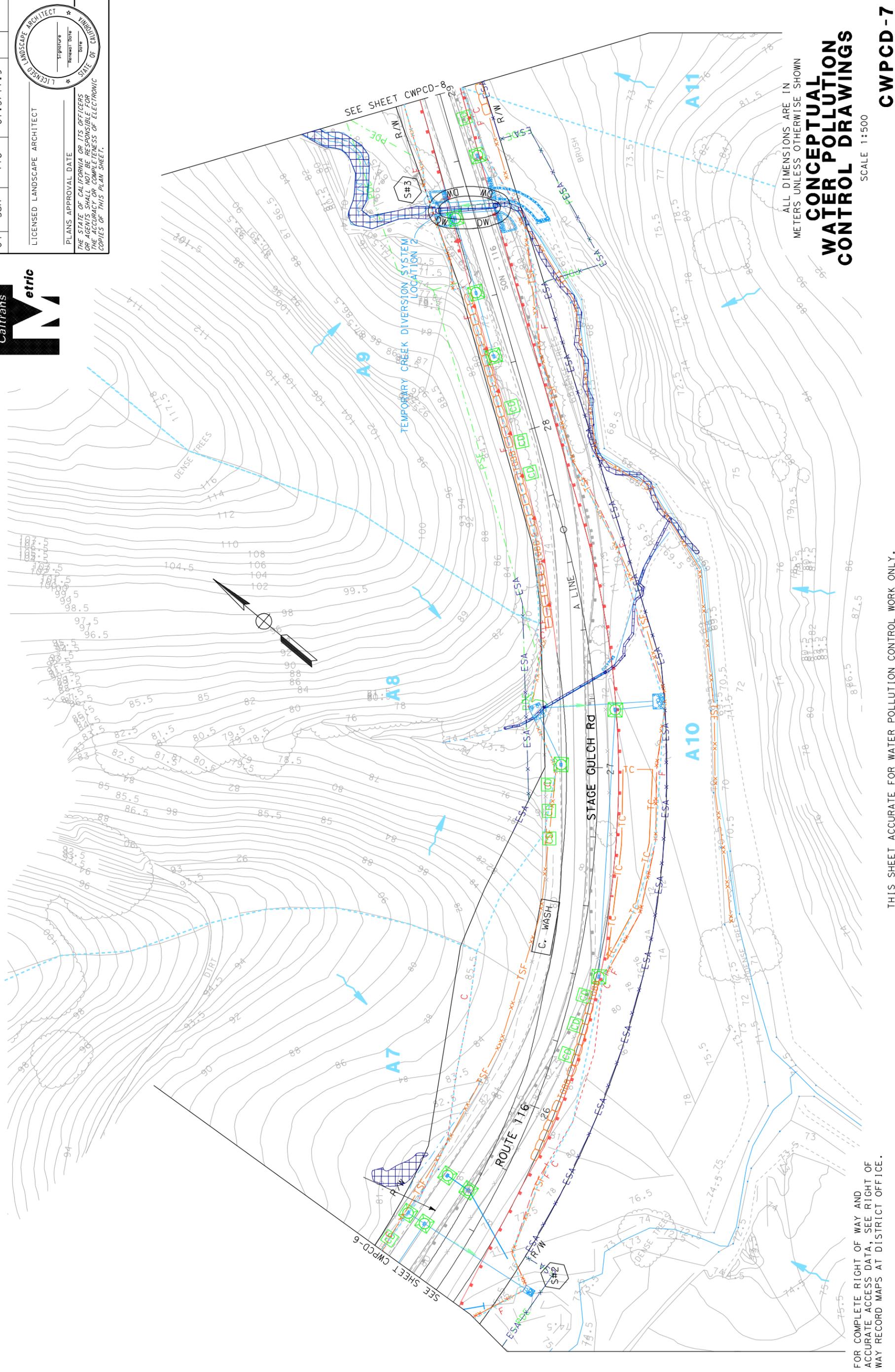
Dis+ COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No. TOTAL SHEETS
04 Son	116	67.3/71.9	

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01/07	DATE REVISED



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		REVISD BY	DATE REVISED
		01/07	01/07

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CU 04343

EA 283811

Dis+	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	116	67.3/71.9		



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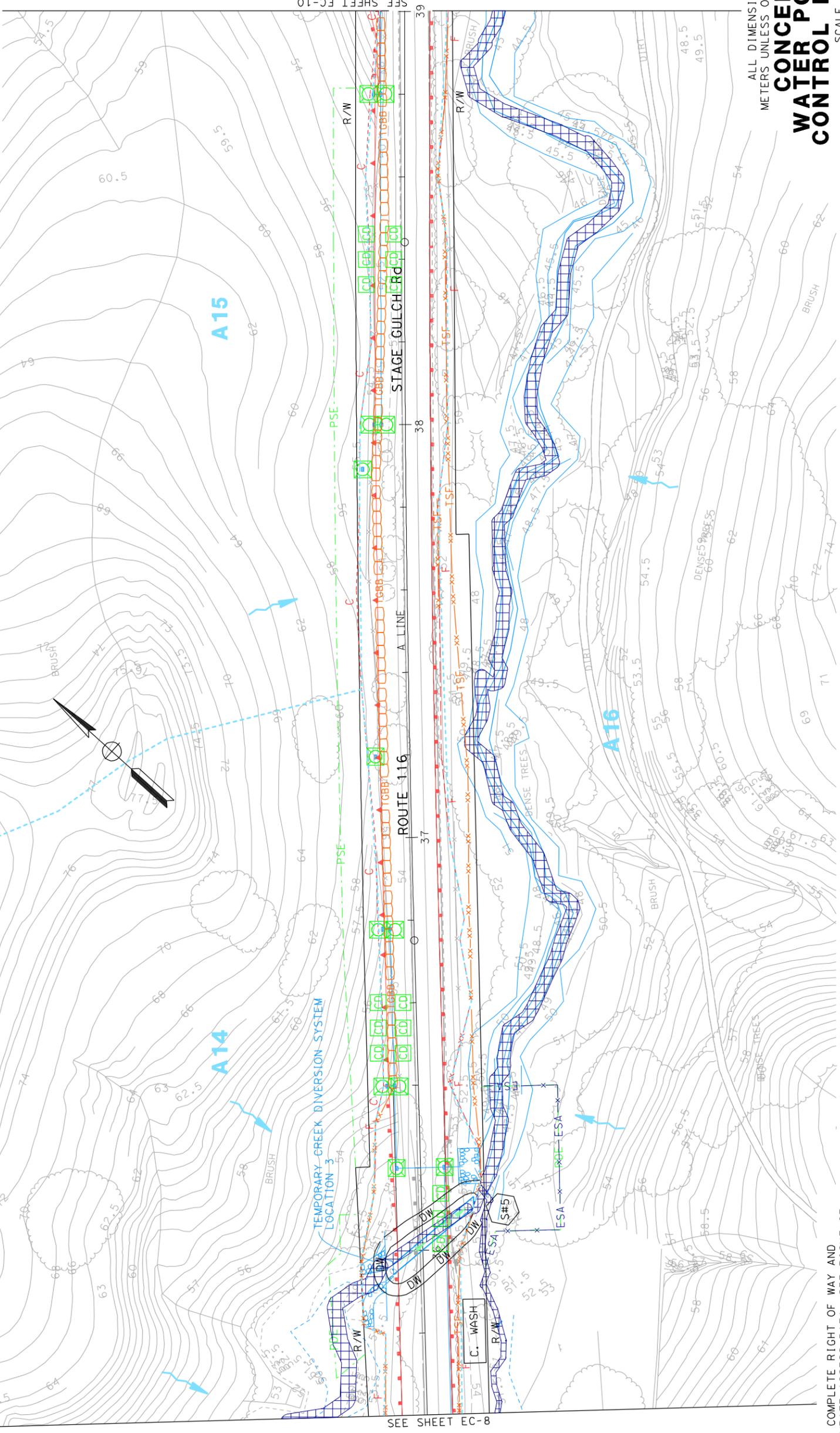
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REVISION: _____

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CONCEPTUAL WATER POLLUTION CONTROL DRAWINGS

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CWPCD -10

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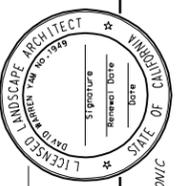
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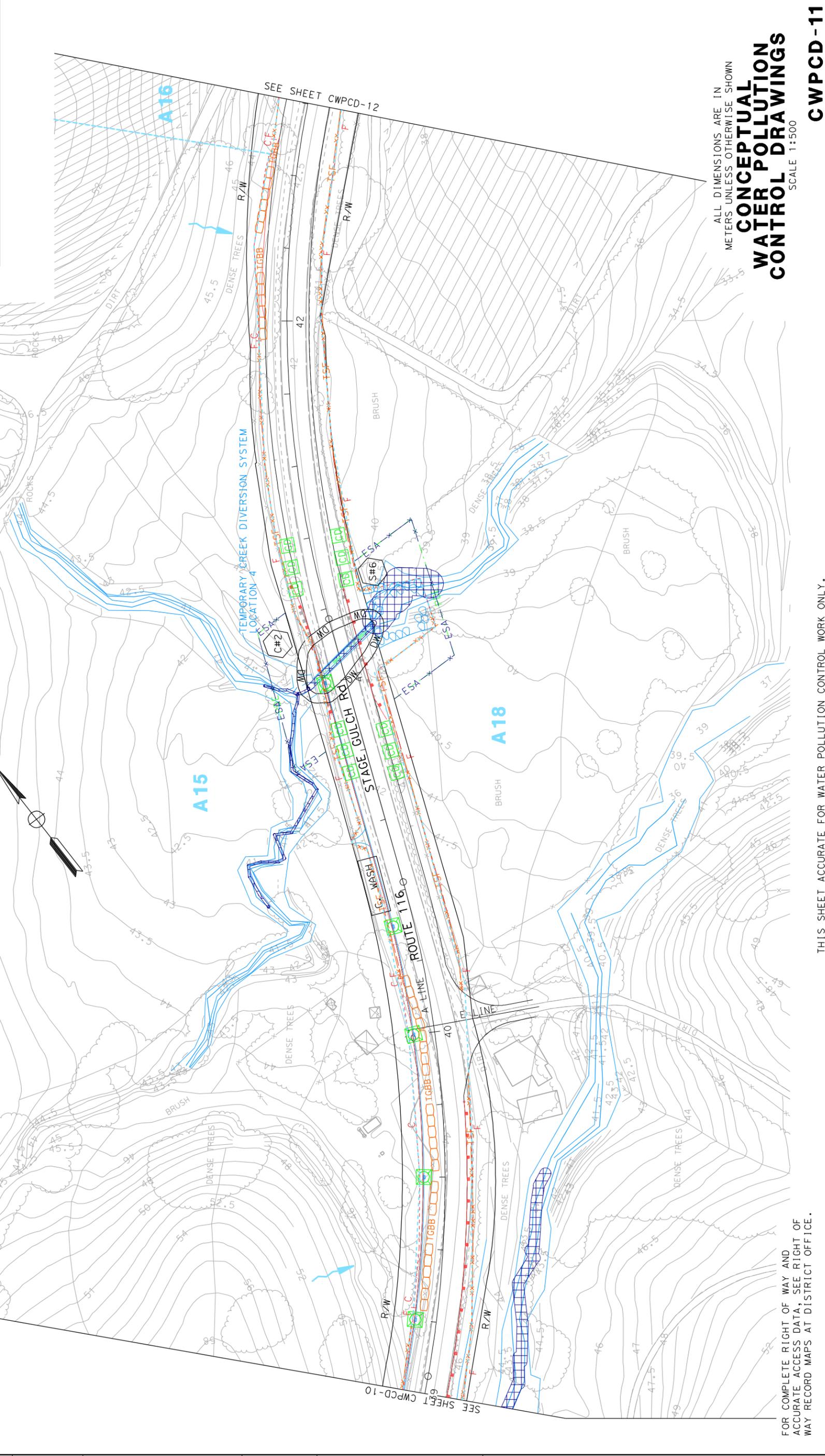
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	CHECKED BY
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	01/07

Dis+ COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No. TOTAL SHEETS
04 Son	116	67.3/71.9	



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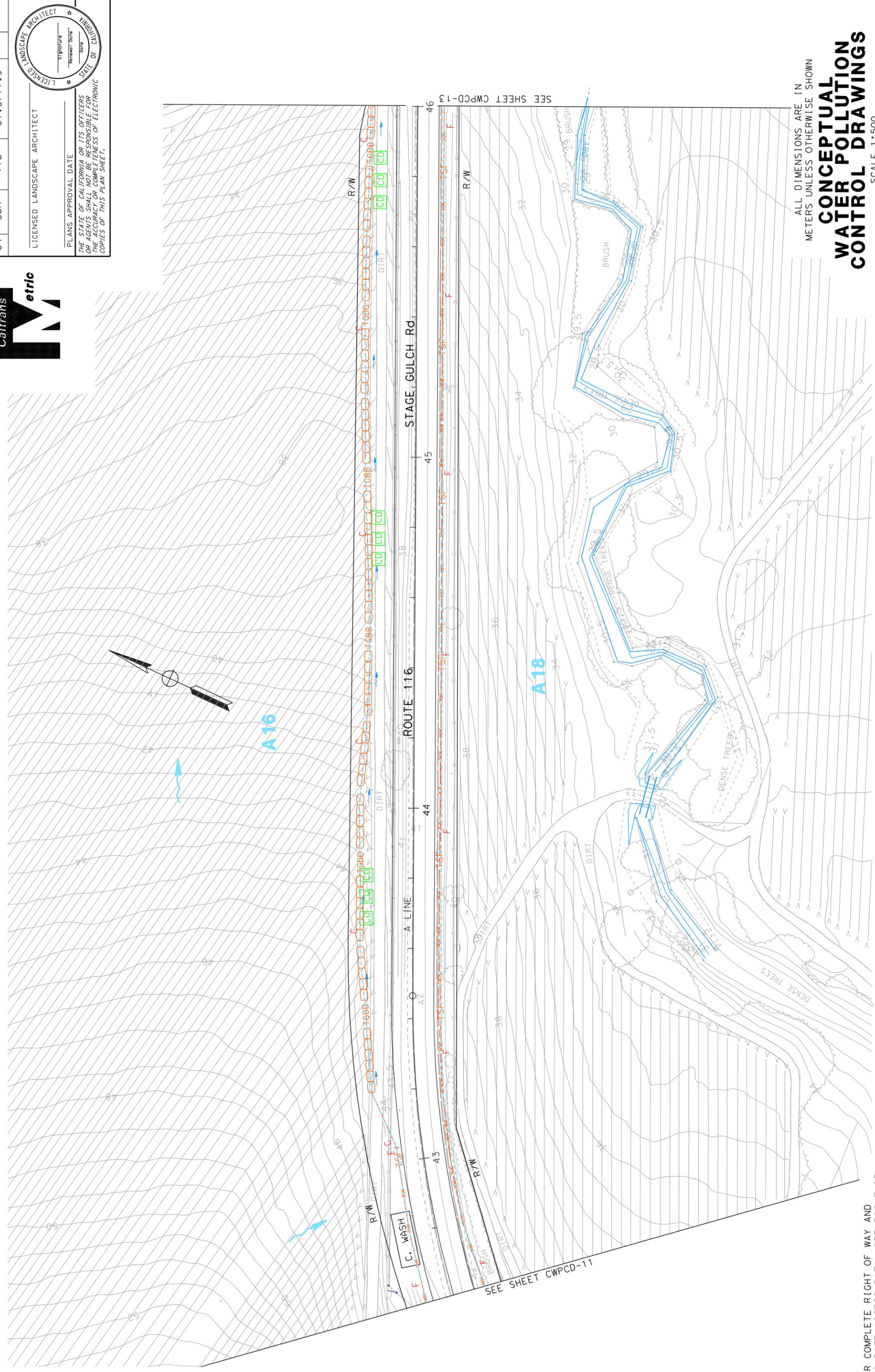
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LAST REVISION 04-18-08
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CU 04343

EA 283811



Dis+ COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04 Son	116	67.3/71.9		

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DATE REVISED	01/07	DATE REVISED	01/07
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EA 283811

Dis+	County	Route	Kilometer Post Total Project	Sheet No.	Total Sheets
04	Son	116	67.3/71.9		



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STATE OF CALIFORNIA

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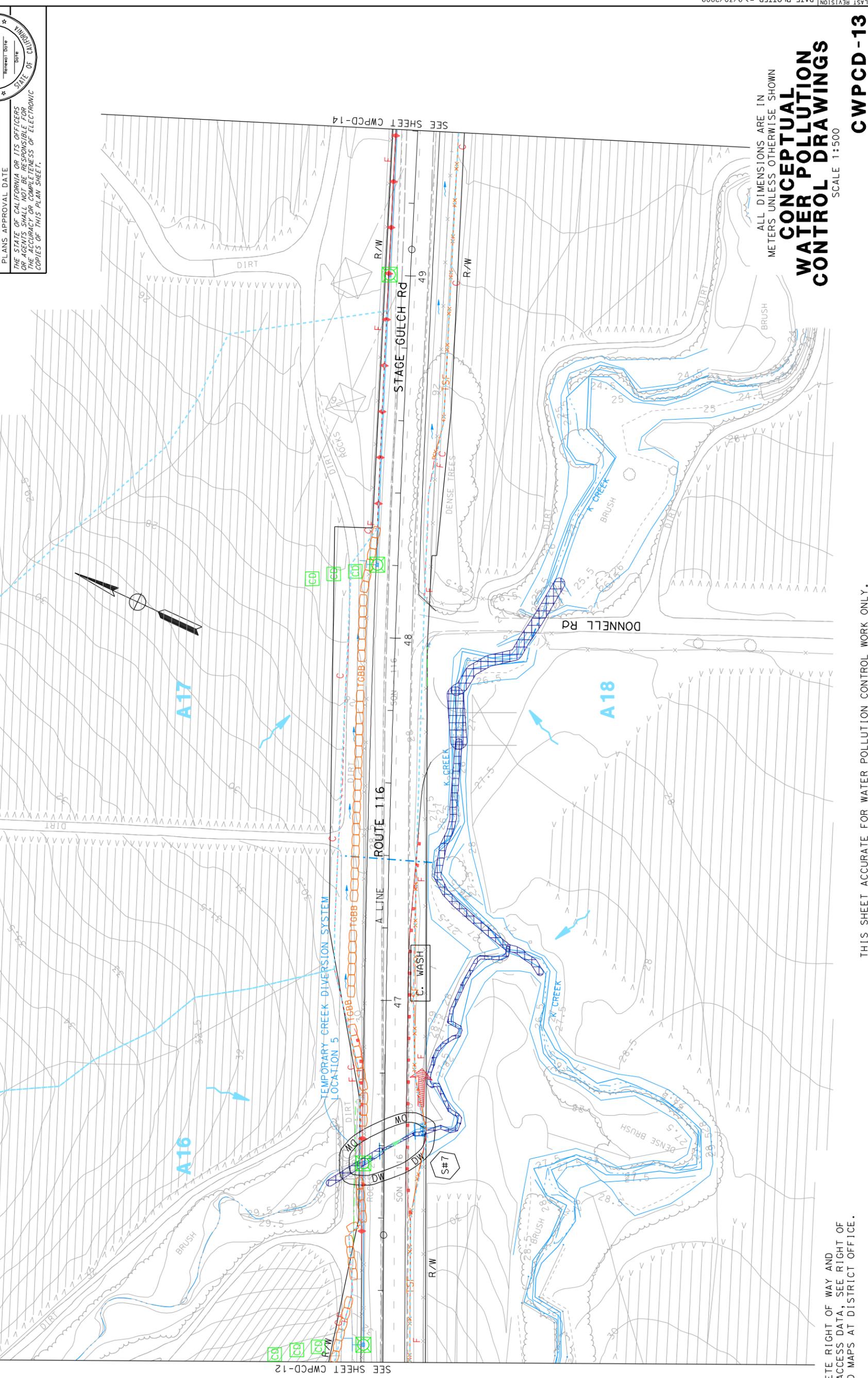
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TOTAL SHEETS: _____

Dis+	County	Route	Kilometer Post Total Project	Sheet No.	Total Sheets
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CONCEPTUAL WATER POLLUTION CONTROL DRAWINGS

SCALE 1:500

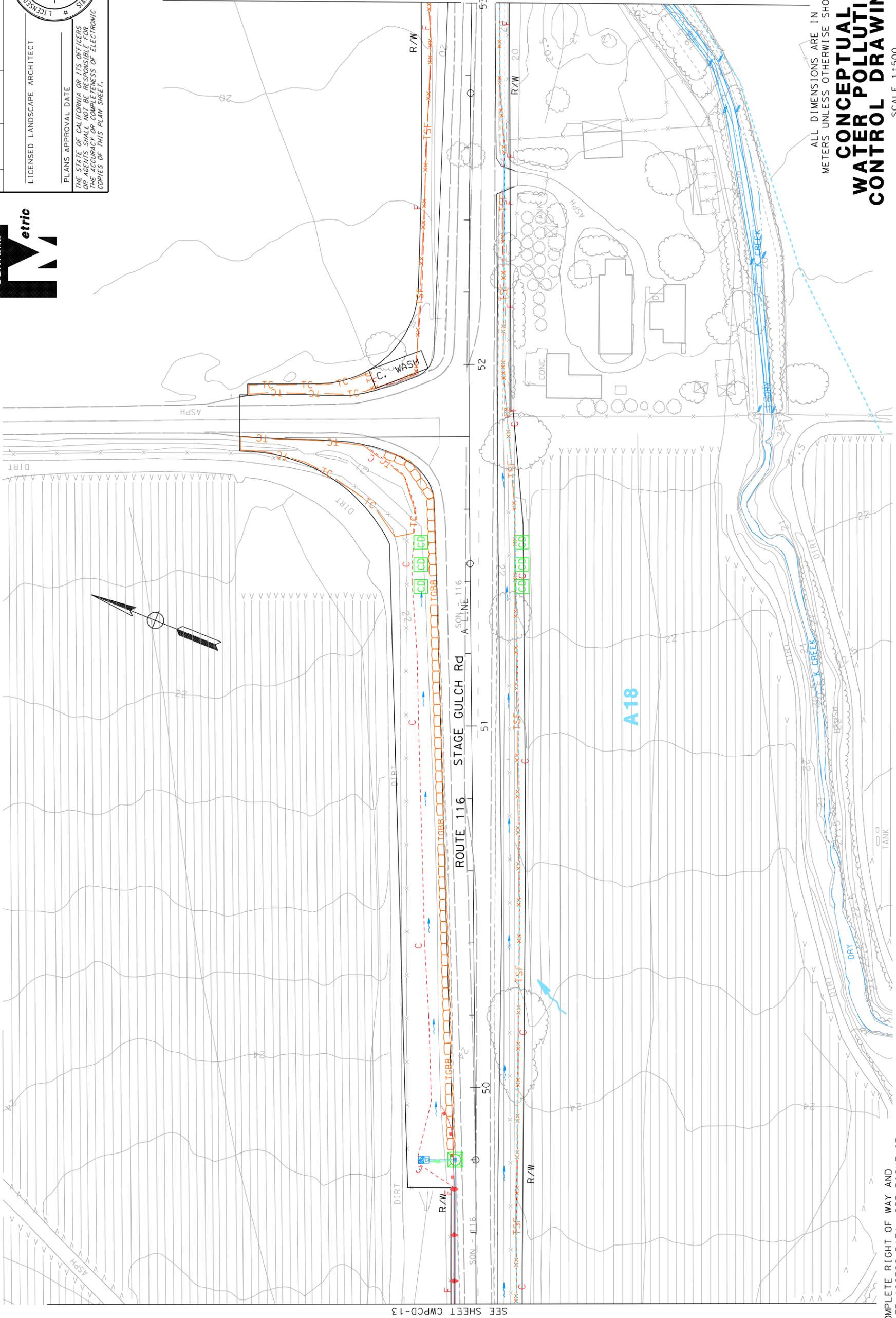
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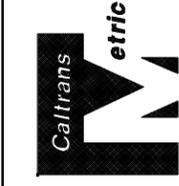
CONCEPTUAL WATER POLLUTION CONTROL DRAWINGS

SCALE 1:500

CWPCD-14

SEE SHEET CWPCD-13

SEE SHEET CWPCD-15



Dis+ COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04 Son	116	67.3/71.9		
LICENSED LANDSCAPE ARCHITECT				
PLANS APPROVAL DATE				
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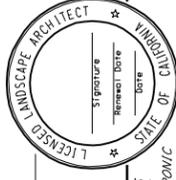
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CU 04343

EA 283811

DATE REVISION	01/07
REVISOR	01/07

Dis#	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	116	67.3/71.9		



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PLANS APPROVAL DATE

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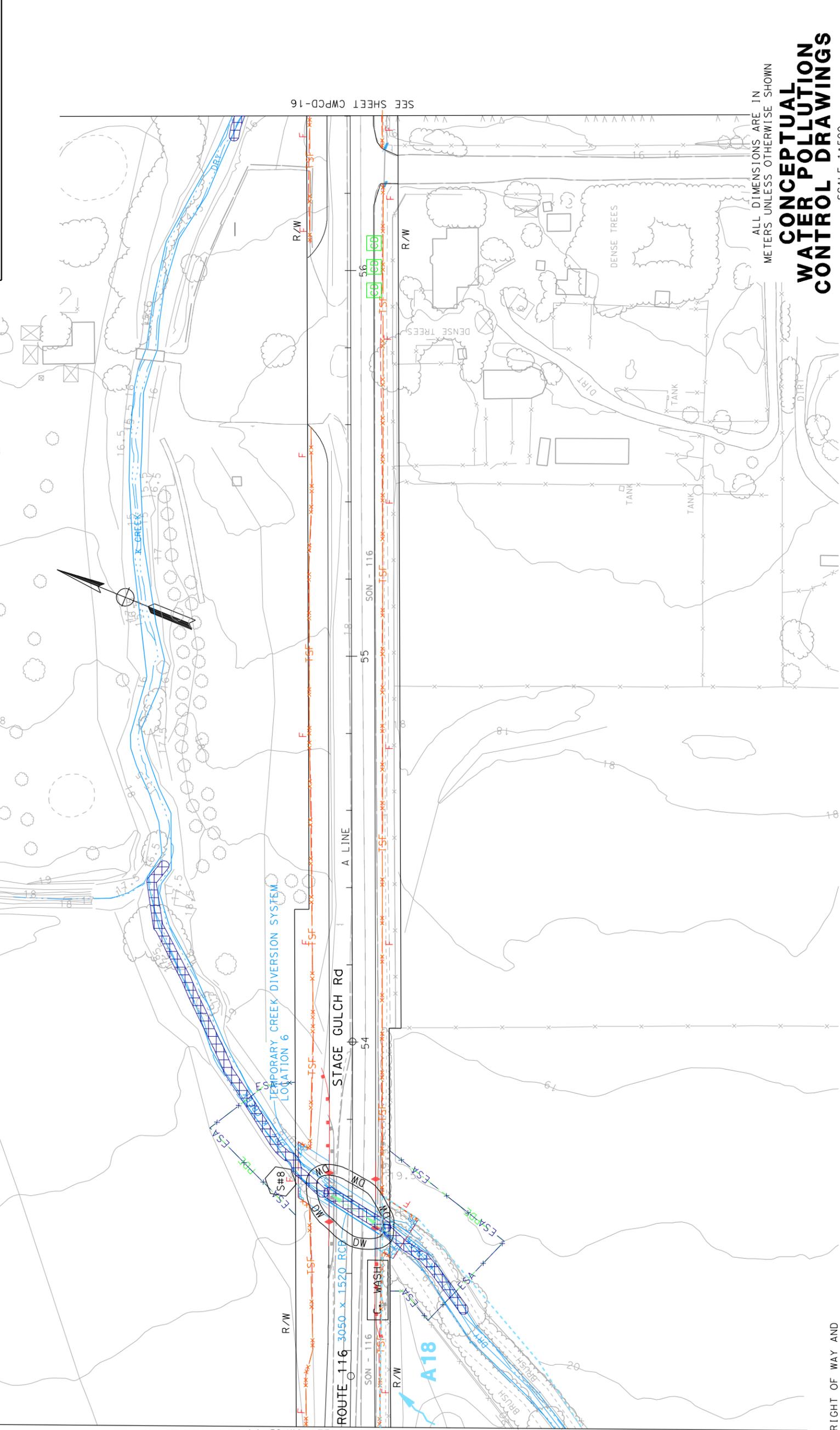
DATE

SIGNATURE

REVISION

DATE

STATE OF CALIFORNIA



SEE SHEET CWPCD-14

SEE SHEET CWPCD-16

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CONCEPTUAL WATER POLLUTION CONTROL DRAWINGS

SCALE 1:500

CWPCD-15

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		SENIOR LANDSCAPE ARCHITECT	
OFFICE OF WATER QUALITY		DESIGNED BY	CHECKED BY
01/07	REVISOR	01/07	DATE REVISED

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CU 04343

EA 283811

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CONCEPTUAL WATER POLLUTION CONTROL DRAWINGS

SCALE 1:500

CWPCD-16

LAST REVISION 04-18-08
DATE PLOTTED => 9/30/2009
TIME PLOTTED => 4:21:53 PM

Dis+ COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04 Son	116	67.3/71.9		

LICENSED LANDSCAPE ARCHITECT

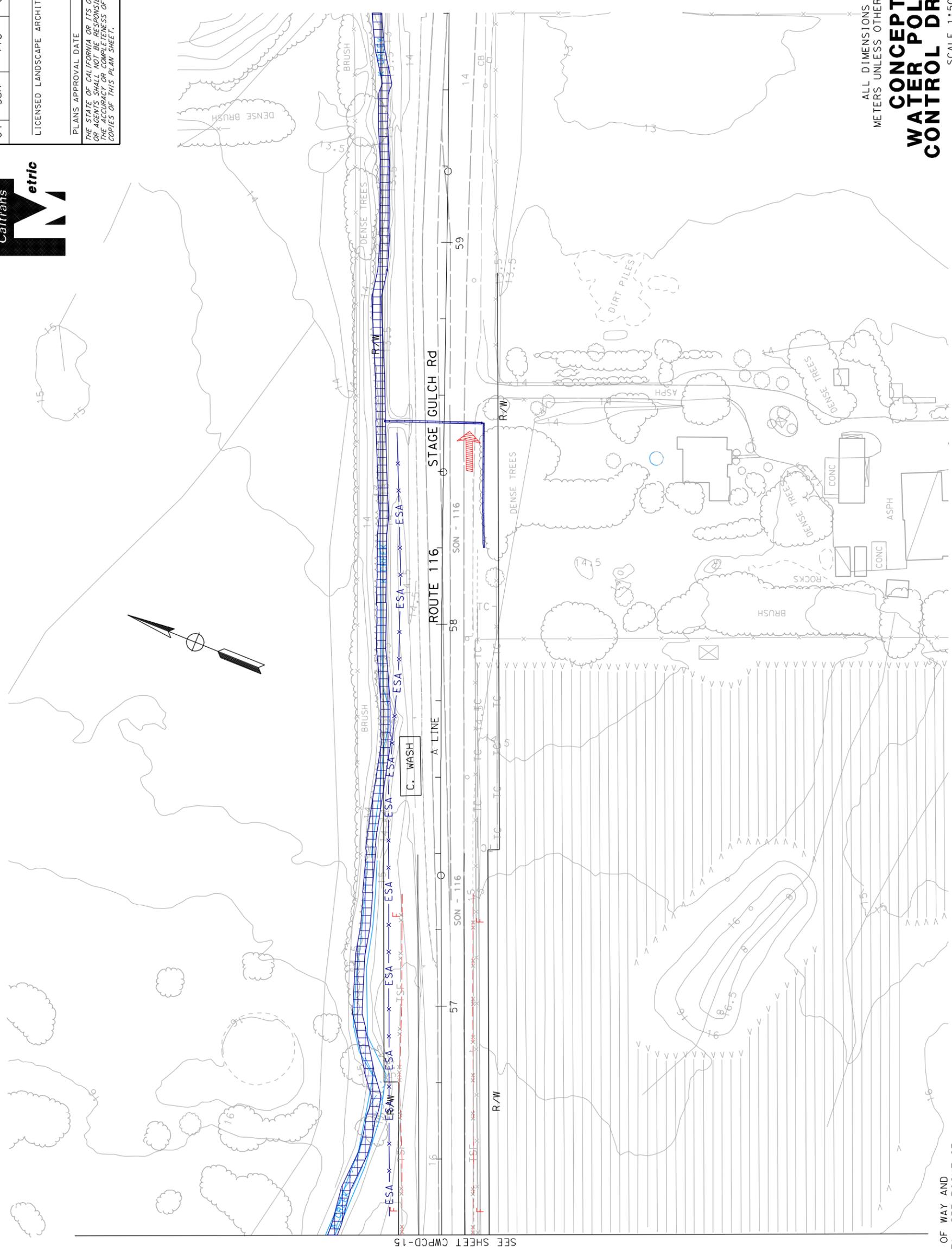
PLANS APPROVAL DATE

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LICENSED LANDSCAPE ARCHITECT

STATE OF CALIFORNIA

Signature: _____
REVISION DATE: _____
DATE: _____



SEE SHEET CWPCD-15

Attachment C

Amendments

SWPPP Amendment No. _____

Project Name: STAGE GULCH ROAD CONSTRUCTION

Caltrans Contract Number: 04-283814

To Be Completed by Contractor

"I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Contractor's Signature

Date

Contractor's Name and Title

Contractor's Telephone Number



For Use When Caltrans is Administering Project

For Caltrans Use Only
**Resident Engineer's Approval and
Caltrans Certification of the
Stormwater Pollution Prevention Plan
or Water Pollution Control Plan
Amendment**

"I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Resident Engineer's Signature

Date

Resident Engineer's Name

Resident Engineer's Telephone
Number

For Use When Local Agency / Private Entity is Administering Project

For Local Agency / Private Entity Use Only **Resident Engineer's Approval and Local Agency / Private Entity Certification of the Stormwater Pollution Prevention Plan or Water Pollution Control Plan Amendment**

"I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Resident Engineer's Signature

Date

Resident Engineer's Name

Resident Engineer's Telephone
Number

For Caltrans Use Only **Caltrans Oversight Engineer's Approval and Caltrans Certification of the Stormwater Pollution Prevention Plan Amendment**

"I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Oversight Engineer's Signature

Date

Oversight Engineer's Name

Oversight Engineer's Telephone
Number

Attachment D

Computation Sheet for Determining Runoff Coefficients

$$\text{Total Site Area} = \frac{39.5 \text{ ac}}{(16.0 \text{ ha})} \quad (\text{A})$$

Existing Site Conditions

$$\text{Impervious Site Area}^1 = \frac{10.4 \text{ ac}}{(4.2 \text{ ha})} \quad (\text{B})$$

$$\text{Impervious Site Area Runoff Coefficient}^{2,4} = \frac{0.95}{1} \quad (\text{C})$$

$$\text{Pervious Site Area}^3 = \frac{29.2 \text{ ac}}{(11.8 \text{ ha})} \quad (\text{D})$$

$$\text{Pervious Site Area Runoff Coefficient}^4 = \frac{0.36}{1} \quad (\text{E})$$

$$\text{Existing Site Area Runoff Coefficient} = \frac{(\text{B} \times \text{C}) + (\text{D} \times \text{E})}{(\text{A})} = \frac{0.51}{1} \quad (\text{F})$$

Proposed Site Conditions (after construction)

$$\text{Impervious Site Area}^1 = \frac{16.8 \text{ ac}}{(6.8 \text{ ha})} \quad (\text{G})$$

$$\text{Impervious Site Area Runoff Coefficient}^{2,4} = \frac{0.95}{1} \quad (\text{H})$$

$$\text{Pervious Site Area}^3 = \frac{22.7 \text{ ac}}{(9.2 \text{ ha})} \quad (\text{I})$$

$$\text{Pervious Site Area Runoff Coefficient}^4 = \frac{0.36}{1} \quad (\text{J})$$

$$\text{Proposed Site Area Runoff Coefficient} = \frac{(\text{G} \times \text{H}) + (\text{I} \times \text{J})}{(\text{A})} = \frac{0.61}{1} \quad (\text{K})$$

1. Includes paved areas, areas covered by buildings, and other impervious surfaces.
2. Use 0.95 unless lower or higher runoff coefficient can be verified.

Attachment D

Computation Sheet for Determining Runoff Coefficients

3. Includes areas of vegetation, most unpaved or uncovered soil surfaces, and other pervious areas.
4. See the table on the following page for typical C values.

Table 819.2B
Runoff Coefficients for
Developed Areas

Type of Drainage Area	Runoff Coefficient
Business:	
Downtown areas	0.70 - 0.95
Neighborhood areas	0.50 - 0.70
Residential:	
Single-family areas	0.30 - 0.50
Multi-units, detached	0.40 - 0.60
Multi-units, attached	0.60 - 0.75
Suburban	0.25 - 0.40
Apartment dwelling areas	0.50 - 0.70
Industrial:	
Light areas	0.50 - 0.80
Heavy areas	0.60 - 0.90
Parks, cemeteries:	0.10 - 0.25
Playgrounds:	0.20 - 0.40
Railroad yard areas:	0.20 - 0.40
Unimproved areas:	0.10 - 0.30
Lawns:	
Sandy soil, flat, 2%	0.05 - 0.10
Sandy soil, average, 2-7%	0.10 - 0.15
Sandy soil, steep, 7%	0.15 - 0.20
Heavy soil, flat, 2%	0.13 - 0.17
Heavy soil, average, 2-7%	0.18 - 0.25
Heavy soil, steep, 7%	0.25 - 0.35
Streets:	
Asphaltic	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Drives and walks	0.75 - 0.85
Roofs:	0.75 - 0.95

Stage Gulch / Highway 116

Attachment E: Run-on Discharges

Computation Sheet for Determining Run-on Discharges

Existing Site Conditions

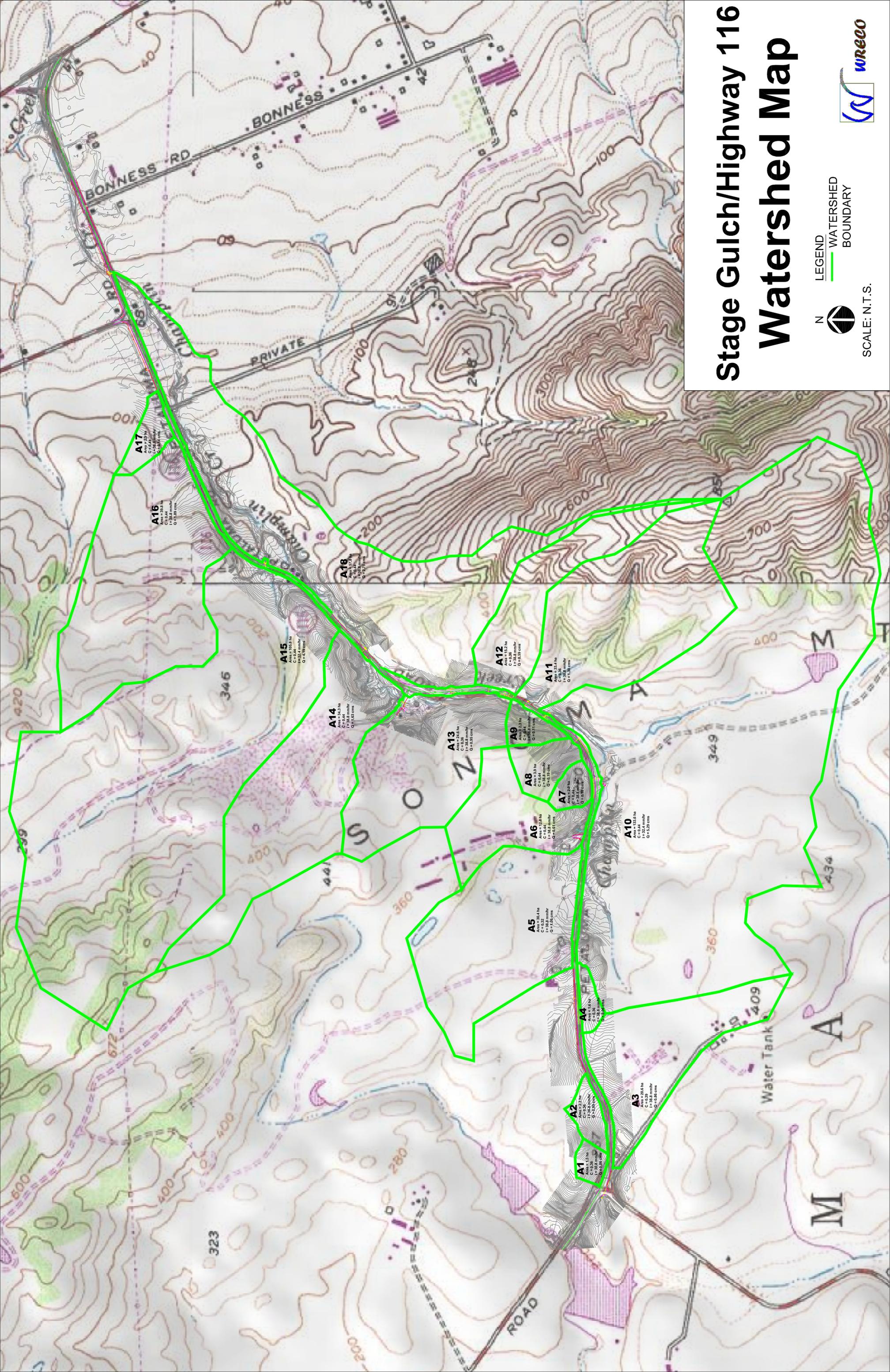
$$Q = CiA \quad \text{English units}$$

$$Q = \frac{CiA}{K} \quad \text{metric units}$$

- C = Area Runoff Coefficient
- i = Area Rainfall Intensity (in/hr, mm/hr)
- A = Drainage Area (ac, ha)
- Q = Site Area Run-on Discharge (ft³/s, m³/s)
- K = 360

- i = 1.53 in/hr (5-yr 10-min) = 38.8 mm/hr (5-yr 10-min)
- i = 1.28 in/hr (5-yr 15-min) = 32.4 mm/hr (5-yr 15-min)

Area ID	Station (m)	Side	C	i (mm/hr)	i (in/hr)	Area (ha)	Area (ac)	Q (m ³ /s)	Q (ft ³ /s)
A1	10+00	Lt	0.36	38.8	1.53	1.5	3.6	0.06	2.0
A2	12+45	Lt	0.36	38.8	1.53	2.3	5.7	0.09	3.1
A3	12+45	Rt	0.39	38.8	1.53	20.6	50.9	0.86	30.3
A4	17+30	Rt	0.36	38.8	1.53	1.6	3.9	0.06	2.1
A5	22+52	Lt	0.32	38.8	1.53	30.4	75.2	1.05	37.1
A6	24+80	Lt	0.44	38.8	1.53	12.8	31.7	0.61	21.5
A7	25+54	Lt	0.44	38.8	1.53	2.0	5.0	0.10	3.4
A8	27+18	Lt	0.44	38.8	1.53	3.9	9.8	0.19	6.6
A9	28+00	Lt	0.44	38.8	1.53	2.3	5.8	0.11	3.9
A10	28+66	Rt	0.44	32.4	1.28	133.6	330.2	5.29	186.8
A11	29+50	Rt	0.36	38.8	1.53	33.4	82.7	1.30	45.9
A12	31+01	Rt	0.36	38.8	1.53	15.2	37.5	0.59	20.8
A13	32+40	Lt	0.36	38.8	1.53	24.6	60.7	0.95	33.7
A14	36+02	Lt	0.44	38.8	1.53	34.3	84.8	1.63	57.5
A15	41+06	Lt	0.44	32.4	1.28	105.8	261.4	4.19	147.9
A16	46+59	Lt	0.44	38.8	1.53	39.8	98.4	1.89	66.7
A17	48+00	Lt	0.44	38.8	1.53	2.9	7.2	0.14	4.9
A18	53+60	Rt	0.44	38.8	1.53	57.8	142.9	2.75	97.0

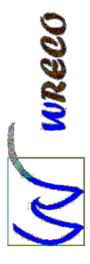


Stage Gulch/Highway 116 Watershed Map

N

 LEGEND
 WATERSHED BOUNDARY

SCALE: N.T.S.



Attachment F

Notice of Construction (NOC) / Notice of Intent (NOI)

Attachment G

Maintenance, Inspection, and Repair of Construction Site BMPs

<i>SWPPP Inspection, Maintenance and Repair Program</i>			
BEST MANAGEMENT PRACTICES (BMPs)	INSPECTION FREQUENCY		MAINTENANCE/REPAIR PROGRAM
	Rainy	Non-Rainy	
TEMPORARY SOIL STABILIZATION BMPs			
			<ul style="list-style-type: none"> ■ ■
			<ul style="list-style-type: none"> ■ ■
TEMPORARY SEDIMENT CONTROL BMPs			
			<ul style="list-style-type: none"> ■ ■ ■ ■ ■
			<ul style="list-style-type: none"> ■ ■ ■ ■ ■
WIND EROSION CONTROL BMPs			
TRACKING CONTROL BMPs			
			<ul style="list-style-type: none"> ■ ■
NON-STORM WATER MANAGEMENT BMPs			
			<ul style="list-style-type: none"> ■ ■ ■ ■ ■

<i>SWPPP Inspection, Maintenance and Repair Program</i>			
BEST MANAGEMENT PRACTICES (BMPs)	INSPECTION FREQUENCY		MAINTENANCE/REPAIR PROGRAM
	Rainy	Non-Rainy	
WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs			
			<ul style="list-style-type: none"> ■ ■ ■ ■ ■ ■
			<ul style="list-style-type: none"> ■ ■ ■ ■ ■ ■

Site inspections shall be conducted by the Contractor’s WPCM or other Caltrans approved 24-hour trained staff at the following minimum frequencies:

- Prior to a forecast storm;
- After a rain event that causes runoff from the construction site;
- At 24-hour intervals during extended rain events;
- Daily inspections within the Lake Tahoe Hydrologic Unit;
- Weekly during the rainy season;
- Every 2 weeks during the non-rainy season; and
- At any other time(s) or intervals of time specified in the Contract Special Provisions.

Completed inspection checklists shall be submitted to the Resident Engineer within 24 hours of inspection. Copies of the completed checklists will be kept with the SWPPP. A tracking or follow-up procedure shall follow any inspection that identifies deficiencies in BMPs.

Attachment H

Stormwater Quality Construction Site Inspection Checklist

GENERAL INFORMATION				
Project Name	STAGE GULCH ROAD CONSTRUCTION			
Caltrans Contract No.	04-283814			
Contractor				
Inspector's Name				
Inspector's Title				
Signature				
Date of Inspection				
Inspection Type (Check Applicable)	<input type="checkbox"/> Prior to forecast rain		<input type="checkbox"/> After a rain event	
	<input type="checkbox"/> 24-hr intervals during extended rain		<input type="checkbox"/> Other _____	
Season (Check Applicable)	<input type="checkbox"/> Rainy		<input type="checkbox"/> Non-Rainy	
Storm Data	Storm Start Date & Time:		Storm Duration (hrs):	
	Time elapsed since last storm (Circle Applicable Units)	Min. Hr. Days	Approximate Rainfall Amount (mm)	

PROJECT AREA SUMMARY AND DISTURBED SOIL AREA (DSA) SIZE LIMITS FROM SPECIAL PROVISIONS			
Total Project Area	_____ Hectares	_____ Acres	
Rainy Season DSA Limit	_____ Hectares	_____ Acres	
Field Estimate of Non-Active DSAs	_____ Hectares	_____ Acres	
Field Estimate of Active DSAs	_____ Hectares	_____ Acres	

OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Preservation of Existing Vegetation				
Is temporary fencing provided to preserve vegetation in areas where no construction activity is planned?				
Location:				
Temporary Soil Stabilization				
Does the applied temporary soil stabilization provide 100% coverage for the required areas?				
Are any non-vegetated areas that may require temporary soil stabilization?				
Is the area where temporary soil stabilization required free from visible erosion?				
Location:				
Temporary Linear Sediment Barriers				
Are temporary linear sediment barriers properly installed in accordance with the details, functional and maintained?				
Are temporary linear sediment barriers free of accumulated litter?				
Is the built-up sediment less than 1/3 the height of the barrier?				
Are cross barriers installed where necessary and properly spaced?				
Are fiber rolls installed and maintained on required slopes in accordance with the details, functional and maintained?				
Location:				
Storm Drain Inlet Protection				
Are storm drain inlets internal to the project properly protected with either Type 1, 2 or 3 inlet protection?				
Are storm drain inlet protection devices in working order and being properly maintained?				
Location:				



OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Location:				
Desilting Basins				
Are basins maintained to provide the required retention/detention?				
Are basin controls (inlets, outlets, diversions, weirs, spillways, and racks) in working order?				
Location:				
Stockpiles				
Are all locations of temporary stockpiles, including soil, hazardous waste, and construction materials in approved areas?				
Are stockpiles protected from run-on, run-off from adjacent areas and from winds?				
Are stockpiles located at least 50 ft from concentrated flows, downstream drainage courses and storm drain inlets?				
Are required covers and/or perimeter controls in place?				
Location:				
Concentrated Flows				
Are concentrated flow paths free of visible erosion?				
Location:				
Tracking Control				
Are points of ingress/egress to public/private roads inspected, swept, and vacuumed daily?				
Are all paved areas free of visible sediment tracking or other particulate matter?				
Is rock at Temporary Construction Entrance(s) 12-inches or more in thickness?				
Does sediment need to be removed from the rock, or does the rock need to be replaced?				
For Type 2 Construction Entrance, does sediment need to be removed from ribbed plates?				
Location:				
Location:				
Location:				

OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Location:				
Wind Erosion Control				
Is dust control implemented in conformance with Section 10 of the Standard Specifications?				
Location:				
Dewatering Operations				
Is dewatering handled in conformance with the dewatering permit issued by the RWQCB?				
Is required treatment provided for dewatering effluent?				
Location:				
Vehicle & Equipment Fueling, Cleaning, and Maintenance				
Are vehicle and equipment fueling, cleaning and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious material?				
Are vehicle and equipment fueling, cleaning and maintenance activities performed on an impermeable surface in dedicated areas?				
If no, are drip pans used?				
Are dedicated fueling, cleaning, and maintenance areas located at least 15 m away from downstream drainage facilities and watercourses, and protected from run-on and runoff?				
Is wash water contained for infiltration/ evaporation and disposed of outside the highway right of way?				
Is on-site cleaning limited to washing with water (no soap, soaps substitutes, solvents, or steam)?				
On each day of use, are vehicles and equipment inspected for leaks and if necessary, repaired?				
Location:				
Waste Management & Materials Pollution Control				
Are material storage areas and washout areas protected from run-on and runoff, and located at least 50 ft from concentrated flows and downstream drainage facilities?				



OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Are all material handling and storage areas clean; organized; free of spills, leaks, or any other deleterious material; and stocked with appropriate clean-up supplies?				
Are liquid materials, hazardous materials, and hazardous wastes stored in temporary containment facilities?				
Are bagged and boxed materials stored on pallets?				
Are hazardous materials and wastes stored in appropriate, labeled containers?				
Are proper storage, clean-up, and spill-reporting procedures for hazardous materials and wastes posted in open, conspicuous and accessible locations adjacent to storage areas?				
Are temporary containment facilities free of spills and rainwater?				
Are temporary containment facilities and bagged/boxed materials covered?				
Are temporary concrete washout facilities designated and being used?				
Are temporary concrete washout facilities functional for receiving and containing concrete waste and are concrete residues prevented from entering the drainage system?				
Do temporary concrete washout facilities provide sufficient volume and freeboard for planned concrete operations?				
Are the temporary concrete washout facilities' PVC liners free from punctures and holes?				
Are concrete wastes, including residues from cutting and grinding, contained and disposed of off-site or in concrete washout facilities?				
Are spills from mobile equipment fueling and maintenance properly contained and cleaned up?				
Is the site free of litter?				
Are trash receptacles provided in the Contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods?				
Is litter from work areas within the construction limits of the project site collected and placed in watertight dumpsters?				
Are waste management receptacles free of leaks?				
Are the contents of waste management receptacles properly protected from contact with storm water or from being dislodged by winds?				
Are waste management receptacles filled at or beyond capacity?				
Location:				
Temporary Water Body Crossing or Encroachment				
Are temporary water body crossings and encroachments constructed as shown on the plans or as approved by the engineer?				
Does the project conform to the requirements of the 404 permit and/or 1601 agreement?				

OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Location:				
Illicit Connection/Illegal Discharge Detection and Reporting				
Is there any evidence of illicit discharges or illegal dumping on the project site?				
If yes, has the Engineer been notified?				
Location:				
Discharge Points				
Are discharge points and discharge flows free from noticeable pollutants?				
Are discharge points free of any significant erosion or sediment transport?				
Location:				
WPCP/SWPPP Update				
Do the WPCP/SWPPP, Project Schedule/Water Pollution Control Schedule and WPCDs adequately reflect the current site conditions and contractor operations?				
Are all BMPs shown on the WPCDs installed in the proper location(s) and according to the details for the plan?				
Location:				
General				
Are there any other potential water pollution control concerns at the site?				
Location:				
Storm Water Monitoring				



OTHER REQUIREMENTS				
Requirement	Yes	No	N/A	Corrective Action
Does storm water discharge directly to an water body listed as impaired for sediment/sedimentation or turbidity in the General Construction Activity Permit?				
If yes, were samples for sediment/sedimentation or turbidity collected pursuant to the sampling and analysis plan, if required, during rain events?				
Were there any BMPs not properly implemented, or breaches, malfunctions, leakages or spills observed, which could result in the discharge of pollutants to surface waters that would not be visually detectable in storm water?				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan during rain events?				
Were soil amendments (e.g., gypsum) used on the project?				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan during rain events?				
Did storm water contact stored materials or waste and resulted in a discharge from the construction site? (Materials not in watertight containers, etc.)				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan during rain events?				

Attachment I

Trained Contractor Personnel Log

Stormwater Management Training Log

Project Name: STAGE GULCH ROAD CONSTRUCTION

Caltrans Contract Number: 04-283814

Storm Water Management Topic: (check as appropriate)

- Temporary Soil Stabilization
- Temporary Sediment Control
- Wind Erosion Control
- Tracking Control
- Non-storm water management
- Waste Management and Materials Pollution Control
- Storm Water Sampling

Specific Training Objective: _____

Location: _____

Date: _____

Instructor: _____

Telephone: _____

Course Length (hours): _____

Attendee Roster (attach additional forms if necessary)

Name	Company	Phone

Attachment I
Trained Contractor Personnel Log Sheet

Name	Company	Phone

COMMENTS:



Attachment J

Subcontractor Notification Letter (Sample) and Notification Log

SWPPP Notification

ABC Construction Inc,
123 Sunset Blvd., Suite 456
Hollywood, CA 90000

Dear Sir/Madam,

Please be advised that the California State Water Resources Control Board has adopted the NPDES Statewide Storm Water Permit (Permit) to the State of California, Department of Transportation (Caltrans) in 1999 (CAS000003, Order No. 99-06-DWQ); and the General Permit (General Permit) for Storm Water Discharges Associated with Construction Activity (CAS000002, Order No. 99-08-DWQ), and modifications thereto. The goal of these permits is prevent the discharge of pollutants associated with construction activity from entering the storm drain system, ground and surface waters.

[Contractor] has developed a Storm Water Pollution Prevention Plan (SWPPP) in order to implement the requirements of the Permits.

As a subcontractor, you are required to comply with the SWPPP and the Permits for any work that you perform on site. Any person or group who violates any condition of the Permits may be subject to substantial penalties in accordance with state and federal law. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP and the Permits. A copy of the Permits and the SWPPP are available for your review at the construction office. Please contact me if you have further questions.

Sincerely,

John Doe
Project Superintendent

Attachment K

Notice of Discharge

To: Name of Caltrans Resident Engineer

Date: Insert Date

Subject: Notice of Discharge

Project Name: STAGE GULCH ROAD CONSTRUCTION

Caltrans Contract Number: 04-283814

In accordance with the Caltrans NPDES Statewide Permit for Storm Water Discharges Associated with Construction Activity, the following instance of discharge is noted:

Date, time, and location of discharge

Insert description and date of event

Nature of the operation that caused the discharge

Insert description of operation

Initial assessment of any impact caused by the discharge

Insert assessment

Existing BMP(s) in place prior to discharge event

List BMPs in place

Date of deployment and type of BMPs deployed after the discharge.

BMPs deployed after the discharge (with dates)

Steps taken or planned to reduce, eliminate and/or prevent recurrence of the discharge

Insert steps taken to prevent recurrence

Implementation and maintenance schedule for any affected BMPs

Insert implementation and maintenance schedule

If further information or a modification to the above schedule is required, notify the contact person below.

Attachment K
Notice of Discharge

Name of Contact Person

Title

Company

Telephone Number

Signature

Date



Attachment M

Annual Certification of Compliance Form

Annual Certification of Compliance for the Construction Contractor

Project Name: STAGE GULCH ROAD CONSTRUCTION

Caltrans Contract Number: 04-283814

Contractor Company Name: _____

Contractor Address: _____

Annual Certification Inspection Date: _____

Description of Work:

description of work

Work Now in Progress:

work in progress

Work Planned for Next 12 Months:

work planned

Water Pollution Control Manager Findings

I, and/or personnel acting under my direction and supervision, have inspected the project site and the work described above and certify:

1. YES NO Stormwater pollution control measures are being implemented in accordance with the SWPPP approved for the project.
2. YES NO The project site and activities thereon are in compliance with the Caltrans Statewide NPDES Permit No. CAS000003, the NPDES General Permit No. CAS000002, or local NPDES permits, which ever is applicable.

Attachment M
Annual Certification of Compliance

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations

Contractor Signature: _____

Date: _____



Approval by the Resident Engineer for the Annual Certification of Compliance

Resident Engineer's Findings

I, and/or personnel acting under my direction and supervision, have inspected the project site and the work described above and find as follows:

1. YES NO Stormwater pollution control measures are being implemented in accordance with the SWPPP approved for the project.

2. YES NO The project site and activities thereon are in compliance with the Caltrans Statewide NPDES Permit No. CAS000003, the NPDES General Permit No. CAS000002, or local NPDES permits, which ever is applicable.

When both 1 and 2 above are checked "yes", the resident engineer must complete the annual certification below.

If either 1 or 2 above are checked "no", the resident engineer must:

- File a notice of non-compliance within 30 days of identification of the noncompliance;
- Document follow up actions below;
- Notify the contractor; and
- Initiate corrective actions in accordance with the contract.

Is a Local Agency administering the project?

Yes No

Resident Engineer's Follow up Actions:

Attachment N

Other Plans/Permits/Agreements



California Regional Water Quality Control Board

San Francisco Bay Region



Linda S. Adams
Agency Secretary

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
<http://www.waterboards.ca.gov/sanfranciscobay>

Arnold Schwarzenegger
Governor

May 28, 2009
Site No.: 02-49-C0198 (BT)
CIWQS Place No.: 725448

Sent via electronic mail: No hard copy to follow

California Department of Transportation
Attn: Mr. Jason Mac
Jason_Mac@dot.ca.gov
111 Grand Ave.
Oakland, CA 94623

Subject: Water Quality Certification for the State Route 116 Stage Gulch Road Curve Correction and Realignment Project, Sonoma County

Caltrans Project No.: EA 04-283801

Dear Mr. Mac:

We have reviewed and hereby issue water quality certification to the California Department of Transportation (Department) for the project referenced above (hereinafter Project). The Department has applied to the U.S. Army Corps of Engineers (Corps) for Nationwide Permit Nos. 13, *Bank Stabilization*, 14, *Linear Transportation Projects*, 27, *Wetland and Riparian Restoration and Creation Activities*, and, 33, *Temporary Construction, Access and Dewatering*, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). As such, the Department has applied to the Water Board for a Clean Water Act Section 401 water quality certification that the Project will not violate State water quality standards.

Project: The Department proposes to realign and widen State Route 116 (SR 116) between Old Adobe Road and Arnold Drive in unincorporated Sonoma County to reduce the frequency of traffic accidents. Also, the intersection of SR 116 and County Dump Road will be reconfigured to improve the ingress and egress. The Project is proposed to begin construction in January 2010 and last approximately 36 months.

The Project area is characterized by grazing and vineyard land uses, and hilly topography with upland oak and high-quality oak-bay riparian woodlands. SR 116 and intermittent Champlin Creek are adjacent each other throughout the approximately 3-mile Project length, and cross each other at several locations.

Preserving, enhancing, and restoring the San Francisco Bay Area's waters for over 50 years



SR 116 will be widened, reworked, and realigned. An approximately 1,275 linear foot segment of SR 116 west of the Sonoma County Transfer Station Road will be completely removed from the riparian corridor and relocated east to the adjacent upland area. The Department will abandon and remove this portion of SR 116 and restore the riparian corridor.

Impacts: The proposed project will result in permanent fill to approximately 1,436 linear feet (0.16 acres) of jurisdictional waters, 0.11 acres of jurisdictional wetlands, and, 165 linear feet (0.012) acres of state jurisdictional roadside ditches as a result of culvert extensions and roadway widening and realignment. The Project will also result in temporary impacts to approximately 1,065 linear feet (0.17 acres) of jurisdictional waters, 0.089 acres of jurisdictional wetlands, and 475 linear feet (0.022 acres) of state jurisdictional roadside ditches.

Project implementation would result in approximately 8.14 acres of added impervious area. Stormwater runoff from impervious areas may contain hydrocarbons, metals, volatile organic compounds, trash, and sediment at levels that may significantly impact jurisdictional waters if left untreated.

Mitigation: To compensate for permanent impacts to approximately 1,436 linear feet (0.16 acres of jurisdictional waters), the Department shall remove 1,274 linear feet of the existing SR 116 from the riparian zone of Champlin Creek and restore the area to riparian habitat. Two culverts shall be removed at the upper and lower limits of the restoration area. Also, two creek meanders may be altered to better-suit the site conditions. Restoration activities (i.e., removal of roadway and construction of riparian bench, meander re-build) through the Champlin Creek corridor shall total approximately 1.2 acres.

The Department shall mitigate for permanent impacts to jurisdictional wetlands by the purchase of 0.2 acres of seasonal freshwater wetland mitigation credits at the Burdell Ranch Wetland Mitigation Bank.

Because the Department shall be constructing approximately 5,200 linear feet of new roadside drainage ditches on-site that shall be vegetated using native grass mix, additional mitigation is not required for permanent impacts to state jurisdictional roadside drainage ditches. The approximately 5,200 linear feet of ditches shall be placed in areas where ditches do not currently exist.

To mitigate for temporary impacts to jurisdictional wetlands, waters, and state jurisdictional drainage ditches, all areas disturbed during construction shall be stabilized and revegetated using any combination of native grasses, shrubs, and legumes.

As mitigation for increased pollutant loads associated with impervious areas, the Department shall provide treatment of stormwater runoff from an area equivalent to the added and reworked impervious areas (8.75 acres). The Department shall install three biofiltration swales and 14 biofiltration strips at the following locations:

- **Biofiltration swale 1** shall be located adjacent westbound SR 116 between post miles 41.98 and 42.01. The swale will treat approximately 0.53 acres of impervious area;
- **Biofiltration swale 2** shall be located adjacent westbound SR 116 stations 44.02 and 44.05. The swale will treat approximately 0.48 acres of impervious area;
- **Biofiltration swale 3** shall be located adjacent westbound SR 116 stations 44.17 and 44.19. The swale will treat approximately 0.32 acres of impervious area;
- **Biofiltration strip 1** shall be located adjacent westbound SR 116 between post miles 41.81 and 41.87. The strip will treat approximately 0.40 acres of impervious area;
- **Biofiltration strip 2** shall be located adjacent eastbound SR 116 between post miles 42.08 and 42.18. The strip will treat approximately 0.48 acres of impervious area;
- **Biofiltration Strip 3** shall be located adjacent westbound SR 116 between post miles 42.22 and 42.30. The strip will treat approximately 0.21 acres of impervious area;
- **Biofiltration Strip 4** shall be located adjacent eastbound SR 116 between post miles 42.42 and 42.50. The strip will treat approximately 0.27 acres of impervious area;
- **Biofiltration Strip 5** shall be located adjacent westbound SR 116 between post miles 42.48 and 42.54. The strip will treat approximately 0.16 acres of impervious area;
- **Biofiltration Strip 6** shall be located adjacent westbound SR 116 between post miles 42.74 and 42.87. The strip will treat approximately 0.66 acres of impervious area;
- **Biofiltration Strip 7** shall be located adjacent westbound SR 116 between post miles 43.04 and 43.09. The strip will treat approximately 0.28 acres of impervious area;
- **Biofiltration Strip 8** shall be located adjacent eastbound SR 116 between post miles 43.25 and 43.38. The strip will treat approximately 1.38 acres of impervious area;
- **Biofiltration Strip 9** shall be located adjacent eastbound SR 116 between post miles 43.73 and 44.09. The strip will treat approximately 1.35 acres of impervious area;
- **Biofiltration Strip 10** shall be located adjacent eastbound SR 116 between post miles 44.19 and 44.43. The strip will treat approximately 0.67 acres of impervious area;

- **Biofiltration Strip 11** shall be located adjacent westbound SR 116 between post miles 44.29 and 44.42. The strip will treat approximately 0.48 acres of impervious area;
- **Biofiltration Strip 12** shall be located adjacent westbound SR 116 between post miles 44.42 and 44.52. The strip will treat approximately 0.35 acres of impervious area;
- **Biofiltration Strip 13** shall be located adjacent westbound SR 116 between post miles 44.54 and 44.78. The strip will treat approximately 0.57 acres of impervious area; and,
- **Biofiltration Strip 14** shall be located adjacent eastbound SR 116 between post miles 44.76 and 44.82. The strip will treat approximately 0.14 acres of impervious area.

CEQA Compliance: A Mitigated Negative Declaration for the Project was filed by the California Department of Transportation on July 28, 2005.

Wetland Tracker System: It has been determined through regional, state, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the State's No Net Loss Policy for wetlands, the state needs to closely track both wetland losses and mitigation/restoration project success. Therefore, we require that the Authority use a standard form to provide Project information related to impacts and mitigation/restoration measures. An electronic copy of the form and instructions can be downloaded at: <http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml>. Project information concerning impacts and mitigation/restoration will be made available at the web link: <http://www.wetlandtracker.org>.

Certification: I hereby issue an order certifying that any discharge from the referenced project will comply with the applicable provisions of sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003 - 0017 – DWQ, “General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received State Water Quality Certification” which requires compliance with all conditions of this Water Quality Certification. The following conditions are associated with this certification:

1. The Agency shall adhere to the Standard and Regional conditions imposed by Nationwide Permit Nos. 13, 24, 27, and 33, issued to the Department by the Corps and to the conditions

of the California Department of Fish and Game (CDFG) Final Streambed Alteration Agreement (Agreement);

2. The Department shall submit a Final Mitigation and Monitoring Plan (Plan) no later than September 1, 2009. The Plan shall include, at a minimum, all of the following:

Riparian Restoration

- a. A riparian restoration plan that includes:
 - i. Restoration and enhancement of an approximately 2.9 acre riparian area;
 - ii. Complete removal of asphalt concrete from 1,274 linear feet of the existing SR 116 and subsequent revegetation in and adjacent this area;
 - iii. A survey supported proposal to sub-excavate areas of roadway removal for purposes of restoring riparian habitat;
 - iv. A detailed riparian planting plan based upon baseline conditions documented from thriving riparian areas within or nearby the Project area.
 - v. Use of biostabilization or biotechnical bank stabilization where bank stabilization is proposed;
 - vi. Removal of the two Champlin Creek culverts from the abandoned section of SR 116 and restoration of the creek channel at these locations;
 - vii. Realignment of Champlin Creek meanders where justified by survey data.
- b. A maintenance and monitoring plan for riparian restoration activities. The maintenance and monitoring plan shall include success criteria and require that:
 - i. Any individual planting not be considered successfully established if two or fewer growing seasons have passed from the time of planting and/or the termination of supplemental irrigation;
 - ii. Photographic monitoring points be used during the monitoring period, with color photos included in every monitoring report; and,
 - iii. Final success criteria shall not be considered achieved on any element of the riparian restoration plan until ten years have passed from the time of mitigation construction.

Annual Monitoring Reports

- c. A time schedule for submittal of annual monitoring reports to the Water Board;

Temporary Impacts

- d. A planting and mitigation plan for onsite restoration of temporary impacts. The planting plan shall include a diversity of native oak species. The planting plan shall also include maple, buckeye, laurel, willow, snowberry, California blackberry, coffee berry, sticky monkeyflower, mugwort, and dogbane. The Department shall also include a plan to ensure that temporarily impacted areas revegetate successfully;

Supporting Surveys

- e. Survey data, including longitudinal profiles, to support proposed work in Champlin Creek that may significantly change the existing creek grade, direction,

dimensions, or resilience to down-cutting (i.e., installation of impermeable creek bed liner¹); and,

Planted Rock-Slope Protection

- f. A plan to install appropriate woody riparian vegetation within all areas where rock slope protection is being proposed at culvert outfalls; in these areas where vegetation is not being proposed, the Department shall explain why inclusion of vegetation is not feasible. The Plan shall also include a maintenance and monitoring plan that ensures successful establishment of rock slope protection-planted vegetation. Individual plantings may not be considered successfully established until two growing seasons have passed from their initial planting, and, individual RSP-planted areas may not be considered successful any sooner than five years from the initial planting episode.
3. The Final Mitigation and Monitoring Plan shall be found acceptable to the Water Board Executive Officer before any Project-related construction may commence;
4. On-site riparian restoration mitigation shall not be considered complete until the Final Mitigation Report is found acceptable to the Executive Officer, in writing;
5. Certification is conditioned upon submission to the Water Board a receipt for purchase of 0.2 acres of seasonal freshwater wetland mitigation credits at Burdell Ranch Wetland Mitigation Bank;
6. The Department shall commence onsite riparian restoration construction activities no later than June 15, 2011. Failure to meet this deadline shall result in an enforcement action by the Water Board;
7. Project construction within waters of the state shall be restricted to the dry season, specifically, April 15 to October 15, or the end of any extension granted by CDFG;
8. All temporarily disturbed areas shall be revegetated with a combination of grass, shrub, and legume species native to the project area, and, restored to improved or pre-construction conditions;
9. During clearing and grubbing activities in areas of temporary impact, which are not within the limits of excavation or embankment construction, the Department shall trim vegetatively-propagating tree species, such as willows, above ground, without damaging their root structures. Where this is not feasible, and the tree is removed or otherwise

¹ The Department has proposed an in-stream California red-legged frog “stilling basin” with an impermeable bed liner as mitigation for potential impacts to the frog. At the time of certification issuance, the Department has not provided evidence that the proposed stilling basin will not be deleterious to the long-term stability of Champlin Creek. As such, installation of the stilling basin is not accepted under this certification.

- irreparably damaged, the Department shall replace the damaged tree no later than fourteen days from the time of impact and report this activity in the annual report;
10. Biofiltration swales shall be equipped with underdrains to ensure vertical infiltration of stormwater. In locations where biofiltration strips and swales are proposed in Type C and D soils, the strips and/or swales shall be compost-amended to enhance infiltration;
 11. Not later than 30 days prior to the beginning of construction of any Project component, the Department shall submit, acceptable to the Executive Officer, a final SWPPP to address the Project's expected construction stage impacts, prepared pursuant to the State Water Resources Control Board Water Quality Order No. 99-06-DWQ, the NPDES Statewide Permit for Storm Water Discharges From the State of California City of Transportation Properties, Facilities, and Activities. If the Department is proposing rainy season construction activities, the Department shall provide a detailed schedule of activities and the associated pollution prevention measures that shall be in place to protect Champlin Creek;
 12. The Department shall maintain a copy of this Water Quality Certification at the Project site so as to be available at all times to site operating personnel. It is the responsibility of the Department to assure that all personnel (employees, contractors, and subcontractors) are adequately informed and trained regarding the conditions of this certification;
 13. This certification does not allow for the take, or incidental take, of any special status species. The Department shall use the appropriate protocols, as approved by the California Department of Fish and Game and the U.S. Fish and Wildlife Service, to ensure that Project activities do not impact the Beneficial Use of the Preservation of Rare and Endangered Species;
 14. No fueling, cleaning, or maintenance of vehicles or equipment shall take place within any areas where an accidental discharge to Champlin Creek may occur. Construction materials and heavy equipment must be stored outside the active flow of Champlin Creek;
 15. The Department is required to use the standard Wetland Tracker form to provide Project information describing impacts and mitigation/restoration measures not later than September 15, 2009, to the Executive Officer. The completed Wetland Tracker form shall be submitted electronically to wetlandtracker@waterboards.ca.gov, or, shall be submitted as a hard copy to both: 1) San Francisco Bay Regional Water Quality Control Board (see letterhead for address), to the attention of Wetland Tracker, and, 2) San Francisco Estuary Institute, 7770 Pardee Lane, Oakland, CA 94621-1424, to the attention of Mike May;
 16. Except as expressly allowed in this Certification, the discharge, or creation of the potential for discharge, of debris, rubbish, or any soil materials including fresh concrete, cement, silts, clay, sand and other organic materials to Champlin Creek is prohibited. Any of these materials placed within or where they may enter Champlin Creek by the Department or any party working under contract, or with the permission of the Department, shall be removed

immediately. When construction is completed, any excess material shall be removed from the work area and any areas adjacent to the work area where such material may be washed into Champlin Creek. During construction, the Department and the contractor shall not dump any litter or construction debris within the riparian/stream zone. All such debris and waste shall be picked up daily and properly disposed of at an appropriate site;

17. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the California Water Code (CWC) and Section 3867 of Title 23 of the California Code of Regulations (23 CCR);
18. This certification action does not apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license, unless the pertinent certification application was filed pursuant to California Code of Regulations (CCR) Title 23, Subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought; and,
19. Certification is conditioned upon total payment of the full fee required in State regulations (23 CCR Section 3833). Water Board staff received full payment of \$27,615.60 on November 20, 2008.

We anticipate your cooperation in implementing these conditions. However, please be advised that any violation of water quality certification conditions is a violation of State law and subject to administrative civil liability pursuant to California Water Code (CWC) section 13350. Failure to respond, inadequate response, late response, or failure to meet any condition of this certification may subject you to civil liability imposed by the Water Board to a maximum of \$5,000 per day per violation or \$10 for each gallon of waste discharged in violation of this certification.

Condition Nos. 2, 5, 11 and 15 are requirements for submittal of information or reports.

Any requirement for a report made as a condition to this action is a formal requirement pursuant to CWC section 13267, and failure or refusal to provide, or falsification of such required report is subject to civil liability as described in CWC section 13268.

Should new information come to our attention that indicates a water quality problem with this project, the Water Board may issue Waste Discharge Requirements pursuant to 23 CCR Section 3857.

If you have any question, please contact Brendan Thompson of my staff at (510) 622-2506, or via e-mail to BThompson@waterboards.ca.gov.

Sincerely,

Bruce H. Wolfe
Executive Officer

cc (via e-mail): Mr. Bill Orme SWRCB-DWQ
Mr. Hal Durio, Regulatory Branch, USACE
Ms. Jane Hicks, Regulatory Branch, USACE
Ms. Holly Costa, Regulatory Branch, USACE
Mr. Cameron Johnson, Regulatory Branch, USACE
Mr. Dale Bowyer, Water Board
Ms. Melissa Escaron, CDFG
Mr. Hardeep Takhar, Caltrans
Mr. David Smith, USEPA

Attachment P

Notice of Completion of Construction / Notice of Termination

Attachment R

Sampling Activity Log and Chain-of-Custody Forms

RAIN EVENT GENERAL INFORMATION				
Project Name	STAGE GULCH ROAD CONSTRUCTION			
Caltrans Contract N ^o	04-283814			
Contractor				
Sampler's Name				
Signature				
Date of Sampling				
Season (Check Applicable)	<input type="checkbox"/> Rainy		<input type="checkbox"/> Non-Rainy	
Storm Data	Storm Start Date & Time:		Storm Duration (hrs):	
	Time elapsed since last storm (Circle Applicable Units)	Min. Hr. Days	Approximate Rainfall Amount (mm)	

For rainfall information: <http://cdec.water.ca.gov/weather.html> or <http://www.wrh.noaa.gov/wrhq/nwspage.html>

SAMPLE LOG		
Sample Identification	Sample Location	Sample Collection Date and Time

Specific sample locations descriptions may include: 30m upstream from discharge at eastern boundary, runoff from northern waste storage area, downgradient of inlet 57 at kilometer post 36, etc.

FIELD ANALYSIS		
	Yes	No
Sample Identification	Test	Result

Attachment S

Pollutant Testing Guidance Table

Attachment S Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Asphalt Products (Sections 37, 39, 92, 93, 94, and Special Provisions)	Hot Asphalt	Yes - Rainbow Surface or Brown Suspension	Visually Observable - No Testing Required	Visually Observable - No Testing Required	
	Asphalt Emulsion				
	Liquid Asphalt (tack coat)				
	Cold Mix				
	Crumb Rubber	Yes - Black, solid material	Visually Observable - No Testing Required		
Asphalt Concrete (Any Type)	Yes - Rainbow Surface or Brown Suspension	Visually Observable - No Testing Required			
Cleaning Products	Acids	No	pH Acidity Anions (acetic acid, phosphoric acid, sulfuric acid, nitric acid, hydrogen chloride)	pH Meter Acidity Test Kit	EPA 150.1 (pH) SM 2310B (Acidity)
	Bleaches	No	Residual Chlorine	Chlorine	EPA 300.0 (Anion) SM 4500-CL G (Res. Chlorine)
	Detergents	Yes - Foam	Visually Observable - No Testing Required	Visually Observable - No Testing Required	
	TSP	No	Phosphate	Phosphate	EPA 365.3 (Phosphate)
	Solvents	No	VOC	None	EPA 601/602 or EPA 624 (VOC)
			SVOC	None	EPA 625 (SVOC)

Attachment S Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory	
Portland Concrete Cement & Masonry Products (Section 27, 28, 29, 40, 41, 42, 49, 50, 51, 53, 63, 65, 72, 73, 80, 81, 83, 90, and Special Provisions)	Portland Cement (PCC)	Yes - Milky Liquid	Visually Observable - No Testing Required			
	Masonry products	No	pH Alkalinity	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH) SM 2320 (Alkalinity)	
	Sealant (Methyl Methacrylate - MMA)	No	Methyl Methacrylate Cobalt Zinc	None	EPA 625 (SVOC) EPA 200.8 (Metal)	
	Incinerator Bottom Ash Bottom Ash Steel Slag Foundry Sand Fly Ash Municipal Solid Waste	No	Aluminum Calcium Vanadium Zinc	Calcium Test	EPA 200.8 (Metal) EPA 200.7 (Calcium)	
	Mortar	Yes - Milky Liquid	Visually Observable - No Testing Required			
	Concrete Rinse Water	Yes - Milky Liquid	Visually Observable - No Testing Required			
	Non-Pigmented Curing Compounds		No	Acidity	pH Meter Alkalinity or Acidity Test Kit	SM 2310B (Acidity)
				Alkalinity		SM 2320 (Alkalinity)
				pH		EPA 150.1 (pH)
				VOC		EPA 601/602 or EPA 624 (VOC)
				SVOC		EPA 625 (SVOC)

Attachment S Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory	
Landscaping and Other Products (Section 20, 24, and Special Provisions)	Aluminum Sulfate	No	Aluminum TDS Sulfate	TDS Meter Sulfate	EPA 200.8 (Metal)	
					EPA 160.1 (TDS)	
					EPA 300.0 (Sulfate)	
	Sulfur-Elemental	No	Sulfate	Sulfate	EPA 300.0 (Sulfate)	
	Fertilizers-Inorganic ⁴		No	Nitrate	Nitrate	EPA 300.0 (Nitrate)
				Phosphate	Phosphate	EPA 365.3 (Phosphate)
				Organic Nitrogen	None	EPA 351.3 (TKN)
				Potassium	None	EPA 200.8 (Metal)
	Fertilizers-Organic		No	TOC	Nitrate	EPA 415.1 (TOC)
				Nitrate		EPA 300.0 (Nitrate)
				Organic Nitrogen		EPA 351.3 (TKN)
				COD		EPA 410.4 (COD)
	Natural Earth (Sand, Gravel, and Topsoil)	Yes - Cloudiness and turbidity	Visually Observable - No Testing Required			
	Herbicide	No	Herbicide	None	Check lab for specific herbicide or pesticide	
Pesticide	Pesticide					
Lime	Alkalinity		pH Meter Alkalinity or Acidity Test Kit			
			pH		EPA 150.1 (pH)	

Attachment S Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Painting Products (Section 12-3.08, 20-2.32, 50-1.05, 59, 91, and Special Provisions)	Paint	Yes	Visually Observable - No Testing Required		
	Paint Strippers	No	VOC	None	EPA 601/602 or EPA 624 (VOC)
			SVOC	None	EPA 625 (SVOC)
	Resins	No	COD	None	EPA 410.4 (COD)
			SVOC		EPA 625 (SVOC)
	Sealants	No	COD	None	EPA 410.4 (COD)
			COD		
	Solvents	No	COD	None	EPA 410.4 (COD)
			VOC		EPA 601/602 or EPA 624 (VOC)
			SVOC		EPA 625 (SVOC)
	Lacquers, Varnish, Enamels, and Turpentine	No	COD	None	EPA 410.4 (COD)
			VOC		EPA 601/602 or EPA 624 (VOC)
SVOC			EPA 625 (SVOC)		
Thinners	No	VOC	None	EPA 601/602 or EPA 624 (VOC)	
		COD		EPA 410.4 (COD)	
Portable Toilet Waste Products	Portable Toilet Waste	Yes	Visually Observable - No Testing Required		

Attachment S Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Contaminated Soil ⁵	Aerially Deposited Lead ³	No	Lead	None	EPA 200.8 (Metal)
	Petroleum	Yes – Rainbow Surface Sheen and Odor		Visually Observable - No Testing Required	
	Mining or Industrial Waste, etc.	No	Contaminant Specific	Contaminant Specific – Check with laboratory	Contaminant Specific – Check with laboratory
Line Flushing Products	Chlorinated Water	No	Total chlorine	Chlorine	SM 4500-CL G (Res. Chlorine)
Adhesives	Adhesives	No	COD	None	EPA 410.4 (COD)
			Phenols	Phenol	EPA 420.1 (Phenol)
			SVOC	None	EPA 625 (SVOC)
Dust Palliative Products (Section 18)	Salts (Magnesium Chloride, Calcium Chloride, and Natural Brines)	No	Chloride	Chloride	EPA 300.0 (Chloride)
			TDS	TDS Meter	EPA 160.1 (TDS)
			Cations (Sodium, Magnesium, Calcium)	None	EPA 200.7 (Cations)
Vehicle	Antifreeze and Other Vehicle Fluids	Yes - Colored Liquid	Visually Observable - No Testing Required		
			Sulfuric Acid	None	EPA 300.0 (Sulfate)
	Batteries	No	Lead	None	EPA 200.8 (Metal)
			pH	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH)
Fuels, Oils, Lubricants	Yes - Rainbow Surface Sheen and Odor	Visually Observable - No Testing Required			

Attachment S
Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Soil Amendment/Stabilization Products	Polymer/Copolymer ^{6,7}	No	Organic Nitrogen	None	EPA 351.3 (TKN)
			BOD	None	EPA 405.1 (BOD)
			COD	None	EPA 410.4 (COD)
			DOC	None	EPA 415.1 (DOC)
			Nitrate	Nitrate	EPA 300.0 (Nitrate)
			Sulfate	Sulfate	EPA 300.0 (Sulfate)
			Nickel	None	EPA 200.8 (Metal)
	Straw/Mulch	Yes - Solids	Visually Observable - No Testing Required		
	Lignin Sulfonate	No	Alkalinity	Alkalinity	SM 2320 (Alkalinity)
			TDS	TDS Meter	EPA 160.1 (TDS)
	Psyllium	No	COD	None	EPA 410.4 (COD)
			TOC	None	EPA 415.1 (TOC)
	Guar/Plant Gums	No	COD	None	EPA 410.4 (COD)
			TOC		EPA 415.1 (TOC)
			Nickel		EPA 200.8 (Metal)
Gypsum	No	pH	pH Meter Alkalinity or Acidity Test Kit	EPA 150.1 (pH)	
		Calcium	Calcium	EPA 200.7 (Calcium)	
		Sulfate	Sulfate	EPA 300.0 (Sulfate)	
		Aluminum			
		Barium			
		Manganese	None	EPA 200.8 (Metal)	
Vanadium					

Attachment S Pollutant Testing Guidance Table ¹

Category	Construction Site Material	Visually Observable?	Pollutant Indicators ²	Suggested Analyses Field ³	Laboratory
Treated Wood Products (Section 58, 80-3.01B(2), and Special Provisions)	Ammoniacal-Copper-Zinc-Arsenate (ACZA)	No	Arsenic	Total Chromium	EPA 200.8 (Metal)
	Copper-Chromium-Arsenic (CCA)		Copper		
	Ammoniacal-Copper-Arsenate (ACA)		Zinc		
	Copper Naphthenate				
	Creosote	Yes - Rainbow Surface or Brown Suspension		Visually Observable - No Testing Required	

Notes:

1. 1 If specific pollutant is known, analyze only for that specific pollutant. See MSDS to verify.
2. For each construction material, test for one of the pollutant indicators. Bolded pollutant indicates lowest analysis cost or best indicator. However, the composition of the specific construction material, if known, is the first criterion for selecting which analysis to use.
3. See www.hach.com, www.lamotte.com, www.ysi.com and www.chemetrics.com for some of the test kits
4. If the type of inorganic fertilizer is unknown, analyze for all pollutant indicators listed.
5. Only if special handling requirements are required in the Standard Special Provisions for aerially deposited lead (ADL)
6. If used with a dye or fiber matrix, it is considered visually observable and no testing is required.
7. Based upon research conducted by Caltrans, the following copolymers/polymers do not discharge pollutants and water quality sampling and analysis is **not** required: Super Tak™, M-Binder™, Fish Stik™, Pro40dc™, Fisch-Bond™, Soil Master WR™, and EarthGuard™.

Acronyms:

BOD – Biochemical Oxygen Demand
COD – Chemical Oxygen Demand
DOC – Dissolved Organic Carbon
EPA – Environmental Protection Agency
HACH – Worldwide company that provides advanced analytical systems and technical support for water quality testing.
SM – Standard Method
SVOC – Semi-Volatile Organic Compounds
TDS – Total Dissolved Solids
TKN – Total Kjeldahl Nitrogen
TOC – Total Organic Carbon
TSP – Tri-Sodium Phosphate
VOC - Volatile Organic Compounds

References:

Construction Storm Water Sampling and Analysis Guidance Document, California Stormwater Quality Task Force, October 2001.
Environmental Impact of Construction and Repair Materials on Surface and Ground Waters, Report 448, National Cooperative Highway Research Program, 2001
Soil Stabilization for Temporary Slopes, Environmental Programs, California Department of Transportation, October 1, 1999.
Statewide Storm Water Management Plan, Division of Environmental Analysis, California Department of Transportation, April 2002.
Statewide Storm Water Quality Practice Guidelines, Environmental Program, California Department of Transportation, August 2000.
Soil Stabilization for Temporary Slopes and District 7 Erosion Control Pilot Study, June 2000.
Stormwater Monitoring Protocols, Guidance Manual, California Department of Transportation, May 2000.

Attachment T

Sampling Data Reporting Form

RAIN EVENT GENERAL INFORMATION				
Project Name	STAGE GULCH ROAD CONSTRUCTION			
Caltrans Contract N°	04-283814			
Contractor				
Sampler's Name				
Signature				
Date of Sampling				
Season (Check Applicable)	<input type="checkbox"/> Rainy		<input type="checkbox"/> Non-Rainy	
Storm Data	Storm Start Date & Time:		Storm Duration (hrs):	
	Time elapsed since last storm (Circle Applicable Units)	Min. Hr. Days	Approximate Rainfall Amount (mm)	

SAMPLE LOG		
Sample Identification	Sample Location	Sample Collection Date and Time

Specific sample locations descriptions may include: 30m upstream from discharge at eastern boundary, runoff from northern waste storage area, downgradient of inlet 57 at kilometer post 36, etc.

FIELD ANALYSIS		
	Yes	No
Sample Identification	Test	Result

"I certify under a penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is true, accurate, and complete. I

am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Contractor's Signature

Date

Contractor's Name and Title

Contractor's Telephone Number

Stage Gulch Road Curve Correction and Realignment Project Tree Survey
Sonoma, CA

Tree Number	Common Name	Botanical name	Diameter at 4.5 ft (in)	Habitat	Comments	UTM NAD83 Zone 10	
						X	Y
1	California bay	<i>Umbellularia californica</i>	8.1, 8.4, 9.7, 2.3, 9.8, 9.5, 15.3, 12.7, 6.9	Upland		543161	4232313
2	California bay	<i>Umbellularia californica</i>	6.8, 5.6, 9.5, 5.2, 5, 9.7, 3.2, 4	Upland		543169	4232321
3	Coast live oak	<i>Quercus agrifolia</i>	4.5	Upland		543174	4232330
4	California buckeye	<i>Aesculus californica</i>	3.8, 4.3, 2.5, 4.5, 2.9, 1.9, 2.6, 3.3	Upland		543179	4232336
5	California bay	<i>Umbellularia californica</i>	6.9, 6.4, 7	Upland		543178	4232339
6	Coast live oak	<i>Quercus agrifolia</i>	6.8, 9.8, 8	Upland		543184	4232346
7	Coast live oak	<i>Quercus agrifolia</i>	4.0	Upland		543192	4232361
8	Coast live oak	<i>Quercus agrifolia</i>	1.3, 4.3, 4.7, 1.8, 3.2	Upland		543198	4232371
9	Coast live oak	<i>Quercus agrifolia</i>	6.1	Upland		543199	4232375
10	Coast live oak	<i>Quercus agrifolia</i>	5.7, 3.1, 1.4	Upland		543200	4232375
11	White willow	<i>Salix alba</i>	39.9	Riparian Corridor		541375	4232117
12	Coast live oak	<i>Quercus agrifolia</i>	4.1, 1.4, 7.4	Upland		543204	4232381
13	California bay	<i>Umbellularia californica</i>	55.3, 7.1, 1.2, 4.5, 6, 5.6, 7.4	Riparian Corridor		543234	4232415
14	Black oak	<i>Quercus kelloggii</i>	40.0	Riparian Corridor		543233	4232422
15	Coast live oak	<i>Quercus agrifolia</i>	27.3	Upland		543242	4232447
16	Coast live oak	<i>Quercus agrifolia</i>	7.8	Upland		543243	4232445
17	California buckeye	<i>Aesculus californica</i>	6.3, 3.3, 7.8, 7, 7.4, 4.3	Upland		543244	4232450
18	Coast live oak	<i>Quercus agrifolia</i>	51.3	Riparian Corridor		543271	4232459
19	Coast live oak	<i>Quercus agrifolia</i>	13.8	Riparian Corridor		543270	4232460
20	Coast live oak	<i>Quercus agrifolia</i>	21.8	Riparian Corridor		543274	4232459
21	Coast live oak	<i>Quercus agrifolia</i>	41.8	Riparian Corridor		543273	4232457
22	Coast live oak	<i>Quercus agrifolia</i>	26.0	Riparian Corridor		543277	4232458
23	Coast live oak	<i>Quercus agrifolia</i>	26.0	Riparian Corridor		543275	4232465
24	White willow	<i>Salix alba</i>	52.0	Riparian Corridor		541386	4232122
25	Apple	<i>Malus sp.</i>	3, 4, 5	Upland		541383	4232114
25A	Plum	<i>Prunus sp.</i>	5.0	Upland	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage	541398	4232122

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						X	Y
25B	Plum	<i>Prunus</i> sp.	5.0	Upland	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage	541398	4232117
25C	Plum	<i>Prunus</i> sp.	5.0	Upland	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage	541390	4232115
25D	Plum	<i>Prunus</i> sp.	5.0	Upland	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage	541396	4232113
26	Valley oak	<i>Quercus lobata</i>	13.8	Upland		543251	4232470
27	Coast live oak	<i>Quercus agrifolia</i>	12, 12.3	Riparian Corridor		543253	4232475
28	Coast live oak	<i>Quercus agrifolia</i>	4.1	Riparian Corridor		543257	4232486
29	Coast live oak	<i>Quercus agrifolia</i>	6.8	Riparian Corridor		543255	4232489
30	Coast live oak	<i>Quercus agrifolia</i>	15.4, 13.2, 12.7, 14.3	Riparian Corridor		543255	4232494
31	White willow	<i>Salix alba</i>	32.0	Riparian Corridor		541395	4232126
32	Valley oak	<i>Quercus lobata</i>	27.3	Riparian Corridor		543257	4232507
33	Eucalyptus	<i>Eucalyptus</i> sp.	11.9, 60.8, 18.3	Upland		541501	4232078
34	Valley oak	<i>Quercus lobata</i>	21.7	Riparian Corridor		543262	4232510
35	Valley oak	<i>Quercus lobata</i>	40.4	Upland		543270	4232517
36	Valley oak	<i>Quercus lobata</i>	23.1	Riparian Corridor		543263	4232528
37	Valley oak	<i>Quercus lobata</i>	16.6	Riparian Corridor		543267	4232531
38	California buckeye	<i>Aesculus californica</i>	5.7, 1.9, 1.4	Riparian Corridor		543265	4232539
39	Black oak	<i>Quercus kelloggii</i>	19.5, 20, 14.6	Riparian Corridor		543265	4232535
40	Black oak	<i>Quercus kelloggii</i>	17.8	Riparian Corridor		543259	4232538
41	California buckeye	<i>Aesculus californica</i>	10.2, 3.3, 4.2, 10.9, 8.3, 9.4	Riparian Corridor		543261	4232537
42	Coast live oak	<i>Quercus agrifolia</i>	4.2, 4.1	Riparian Corridor		543265	4232544
43	Valley oak	<i>Quercus lobata</i>	11.7	Riparian Corridor		543263	4232543
44	California bay	<i>Umbellularia californica</i>	5.5	Riparian Corridor		543263	4232543

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						X	Y
45	Valley oak	<i>Quercus lobata</i>	16.5	Riparian Corridor		543264	4232544
46	Valley oak	<i>Quercus lobata</i>	8.2	Riparian Corridor		543265	4232548
47	Valley oak	<i>Quercus lobata</i>	8.5	Riparian Corridor		543264	4232550
48	Coast live oak	<i>Quercus agrifolia</i>	18, 17	Riparian Corridor		543263	4232551
49	California bay	<i>Umbellularia californica</i>	4, 3.6, 2, 1.7, 2.3	Riparian Corridor		543262	4232552
50	Black oak	<i>Quercus kelloggii</i>	10.8	Riparian Corridor		543263	4232554
51	California bay	<i>Umbellularia californica</i>	4, 2.5	Riparian Corridor		543262	4232555
52	California buckeye	<i>Aesculus californica</i>	8.8, 4.8, 8.6	Riparian Corridor		543262	4232555
53	Valley oak	<i>Quercus lobata</i>	18.7	Riparian Corridor		543263	4232558
54	Valley oak	<i>Quercus lobata</i>	10.2	Riparian Corridor		543263	4232557
55	Black oak	<i>Quercus kelloggii</i>	13.1	Riparian Corridor		543262	4232557
56	California bay	<i>Umbellularia californica</i>	5.7	Riparian Corridor		543259	4232560
57	California bay	<i>Umbellularia californica</i>	4.3	Riparian Corridor		543261	4232561
58	Coast live oak	<i>Quercus agrifolia</i>	7.7	Riparian Corridor		543262	4232563
59	Black oak	<i>Quercus kelloggii</i>	10.8	Riparian Corridor		543267	4232563
60	Red willow	<i>Salix laevigata</i>	6.9	Riparian Corridor		543269	4232567
61	Red willow	<i>Salix laevigata</i>	13, 11.6	Riparian Corridor		543262	4232568
62	Valley oak	<i>Quercus lobata</i>	12.0	Riparian Corridor		543260	4232563
63	Coast live oak	<i>Quercus agrifolia</i>	15.6, 9.2, 5.5	Riparian Corridor		543259	4232563
64	California bay	<i>Umbellularia californica</i>	3.4, 4	Riparian Corridor		543259	4232546
65	California buckeye	<i>Aesculus californica</i>	7.6, 6.3, 2.9, 1.7	Riparian Corridor		543259	4232546
66	Valley oak	<i>Quercus lobata</i>	10.9	Riparian Corridor		543266	4232569
67	Valley oak	<i>Quercus lobata</i>	10.5	Riparian Corridor		543268	4232571
68	Valley oak	<i>Quercus lobata</i>	9.1	Riparian Corridor		543268	4232573
69	Black oak	<i>Quercus kelloggii</i>	13.5	Riparian Corridor		543269	4232575
70	Coast live oak	<i>Quercus agrifolia</i>	20.3	Riparian Corridor		543261	4232581
71	Valley oak	<i>Quercus lobata</i>	8.5	Riparian Corridor		543266	4232586
72	Valley oak	<i>Quercus lobata</i>	12.3	Riparian Corridor		543268	4232589
73	Coast live oak	<i>Quercus agrifolia</i>	19.5, 3.3, 9.1	Riparian Corridor		543271	4232588
74	Coast live oak	<i>Quercus agrifolia</i>	13.4	Riparian Corridor		543265	4232591
75	Coast live oak	<i>Quercus agrifolia</i>	7.1, 11.1, 12.1, 12, 10.9	Riparian Corridor		543261	4232597
76	Coast live oak	<i>Quercus agrifolia</i>	32.2	Riparian Corridor		543260	4232583
77	Valley oak	<i>Quercus lobata</i>	23.0	Riparian Corridor		543261	4232576
78	Coast live oak	<i>Quercus agrifolia</i>	14.0	Riparian Corridor		543262	4232574

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						X	Y
79	Eucalyptus	<i>Eucalyptus</i> sp.	39.7	Upland		541501	4232074
80	Eucalyptus	<i>Eucalyptus</i> sp.	76.6	Upland		541504	4232076
81	Eucalyptus	<i>Eucalyptus</i> sp.	64.6	Upland		541511	4232075
82	Eucalyptus	<i>Eucalyptus</i> sp.	61.4	Upland		541519	4232079
83	Eucalyptus	<i>Eucalyptus</i> sp.	49.3	Upland		541524	4232079
84	Eucalyptus	<i>Eucalyptus</i> sp.	78.0	Upland		541527	4232093
85	Eucalyptus	<i>Eucalyptus</i> sp.	37.6	Upland		541533	4232083
86	Eucalyptus	<i>Eucalyptus</i> sp.	80.0	Upland		541535	4232088
87	Eucalyptus	<i>Eucalyptus</i> sp.	83.0	Upland		541544	4232088
88	Coast live oak	<i>Quercus agrifolia</i>	12.8	Upland		542244	4232226
89	Coast live oak	<i>Quercus agrifolia</i>	7.1, 6.6, 9.7	Upland		542248	4232226
90	Coast live oak	<i>Quercus agrifolia</i>	9, 4.7	Upland		542249	4232225
91	Coast live oak	<i>Quercus agrifolia</i>	14, 4	Upland		542254	4232224
92	Coast live oak	<i>Quercus agrifolia</i>	13, 13.3	Upland		542253	4232224
93	Coast live oak	<i>Quercus agrifolia</i>	19.7, 5	Upland		542254	4232225
94	Coast live oak	<i>Quercus agrifolia</i>	14.0	Upland		542255	4232225
95	Coast live oak	<i>Quercus agrifolia</i>	15.9, 11.6, 9.4, 6	Upland		542259	4232225
96	Coast live oak	<i>Quercus agrifolia</i>	7.6, 29.4	Upland		542263	4232222
97	Coast live oak	<i>Quercus agrifolia</i>	7.8, 15.4	Upland		542266	4232226
98	Coast live oak	<i>Quercus agrifolia</i>	20.5	Upland		542268	4232226
99	Coast live oak	<i>Quercus agrifolia</i>	15.4	Upland		542274	4232227
100	California bay	<i>Umbellularia californica</i>	12, 11.7, 11.2, 12.7	Upland		542281	4232226
101	California bay	<i>Umbellularia californica</i>	17.8, 17, 9, 5.4, 4.8, 20.5	Upland		542282	4232221
102	Coast live oak	<i>Quercus agrifolia</i>	4.3, 6.3	Upland		542286	4232222
103	California bay	<i>Umbellularia californica</i>	18, 18, 10.1, 12.7, 11.7, 18.3, 4.7, 9.7, 14.5, 15.6, 13.5, 23.5, 23.8, 22.3	Upland		542302	4232224
104	California bay	<i>Umbellularia californica</i>	8, 7.6	Upland		542318	4232228
105	California bay	<i>Umbellularia californica</i>	5.6, 4.2, 10.5	Upland		542325	4232230
106	California bay	<i>Umbellularia californica</i>	19, 14, 18	Upland		542324	4232229
107	Coast live oak	<i>Quercus agrifolia</i>	37.3	Upland		542337	4232234
108	Pear	<i>Pyrus</i> sp.	18.0	Upland		542357	4232225
109	California bay	<i>Umbellularia californica</i>	8.0	Upland		542358	4232226

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						X	Y
110	Coast live oak	<i>Quercus agrifolia</i>	21.5	Upland		542348	4232237
111	Coast live oak	<i>Quercus agrifolia</i>	14.5, 7.8, 22.3, 28	Upland		542329	4232242
112	Coast live oak	<i>Quercus agrifolia</i>	12.2, 9	Upland		542320	4232240
113	Coast live oak	<i>Quercus agrifolia</i>	9.3, 7, 5	Upland		542319	4232244
114	Coast live oak	<i>Quercus agrifolia</i>	16.4, 10.3	Upland		542306	4232244
115	Coast live oak	<i>Quercus agrifolia</i>	16.0	Upland		542270	4232241
116	Coast live oak	<i>Quercus agrifolia</i>	28.5	Upland		542267	4232244
117	California bay	<i>Umbellularia californica</i>	14.9	Upland		542266	4232240
118	Coast live oak	<i>Quercus agrifolia</i>	14.0	Upland		542262	4232242
119	Coast live oak	<i>Quercus agrifolia</i>	13, 14.7	Upland		542262	4232241
120	Coast live oak	<i>Quercus agrifolia</i>	9.0	Upland		542258	4232241
121	Coast live oak	<i>Quercus agrifolia</i>	45.8	Upland		542257	4232250
122	California bay	<i>Umbellularia californica</i>	4, 6, 5, 29, 10, 10, 4, 38.5	Upland		542243	4232252
123	Eucalyptus	<i>Eucalyptus sp.</i>	17.5, 20.5	Upland		542238	4232248
124	Eucalyptus	<i>Eucalyptus sp.</i>	7, 4	Upland		542234	4232247
125	Eucalyptus	<i>Eucalyptus sp.</i>	12.7, 8.3, 70, 32, 6, 8, 8, 10.5, 32	Upland		542229	4232246
126	Coast live oak	<i>Quercus agrifolia</i>	14.1, 7.9, 10	Upland		542214	4232240
127	Pear	<i>Pyrus sp.</i>	5.6, 7.5	Upland		542141	4232239
128	Coast live oak	<i>Quercus agrifolia</i>	11.4, 13	Upland		542257	4232241
129	Coast live oak	<i>Quercus agrifolia</i>	20.0	Upland		542255	4232239
130	Coast live oak	<i>Quercus agrifolia</i>	15.4	Upland		542243	4232235
131	Coast live oak	<i>Quercus agrifolia</i>	11.2	Riparian Corridor		542648	4232200
132	Coast live oak	<i>Quercus agrifolia</i>	8.2	Upland		542784	4232178
133	Coast live oak	<i>Quercus agrifolia</i>	7.3, 5.1, 6.1, 6	Upland		542786	4232179
134	Valley oak	<i>Quercus lobata</i>	9.9	Upland		542787	4232177
135	California bay	<i>Umbellularia californica</i>	8, 8.1	Upland		542789	4232176
136	Coast live oak	<i>Quercus agrifolia</i>	5.5, 5.5, 6	Upland		542794	4232176
137	Coast live oak	<i>Quercus agrifolia</i>	4, 7.4	Upland		542797	4232175
138	Valley oak	<i>Quercus lobata</i>	19.6	Upland		542798	4232173
139	Coast live oak	<i>Quercus agrifolia</i>	6.4, 5, 5.8	Upland		542805	4232171
140	Coast live oak	<i>Quercus agrifolia</i>	6.9, 4.9	Upland		542817	4232168
141	Coast live oak	<i>Quercus agrifolia</i>	8.7	Upland		542819	4232167
142	Coast live oak	<i>Quercus agrifolia</i>	15.6, 16.1	Upland		542817	4232168

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						X	Y
143	Coast live oak	<i>Quercus agrifolia</i>	28.0	Upland		542826	4232165
144	Coast live oak	<i>Quercus agrifolia</i>	8.5	Upland		542833	4232165
145	Coast live oak	<i>Quercus agrifolia</i>	23, 16.9	Upland		542858	4232163
146	Coast live oak	<i>Quercus agrifolia</i>	14, 4	Upland		543068	4232211
147	Coast live oak	<i>Quercus agrifolia</i>	5.0	Upland		543089	4232232
148	Coast live oak	<i>Quercus agrifolia</i>	15.5	Upland		543104	4232241
149	Coast live oak	<i>Quercus agrifolia</i>	5, 6.3	Upland		543144	4232282
150	Coast live oak	<i>Quercus agrifolia</i>	19.2	Upland	diameter measured at 12" above grade (trunk splits and flairs into two large horizontal stems)	543146	4232291
151	California buckeye	<i>Aesculus californica</i>	3.8, 4, 5.7, 5, 4.3, 4.6	Riparian Corridor		543150	4232295
152	California buckeye	<i>Aesculus californica</i>	9.7, 6, 6.4, 5, 5.5, 5, 5, 4, 4	Riparian Corridor		543154	4232297
153	California buckeye	<i>Aesculus californica</i>	7.9, 5.7, 7, 17.7, 5.5, 9.7, 8.4, 7.8	Riparian Corridor		543161	4232306
154	Coast live oak	<i>Quercus agrifolia</i>	7, 7.8, 5.5	Riparian Corridor		542652	4232212
155	Coast live oak	<i>Quercus agrifolia</i>	12.1, 16, 12.2, 10.7, 9.2	Upland		542676	4232208
156	Black walnut	<i>Juglans hindsii</i>	18.2	Upland		542732	4232211
157	Coast live oak	<i>Quercus agrifolia</i>	46.8	Upland		542690	4232223
158	Coast live oak	<i>Quercus agrifolia</i>	28.4	Upland		542703	4232222
159	Black walnut	<i>Juglans hindsii</i>	19.1	Upland	measured at 12"	542733	4232218
160	Monterey pine	<i>Pinus radiata</i>	55.8	Upland		542735	4232233
161	Black walnut	<i>Juglans hindsii</i>	14.6	Upland		542734	4232242
162	Black walnut	<i>Juglans hindsii</i>	13.5	Upland		542728	4232250
163	Coast live oak	<i>Quercus agrifolia</i>	8.9	Upland		542744	4232241
164	Coast live oak	<i>Quercus agrifolia</i>	4.3	Upland		542745	4232238
165	Coast live oak	<i>Quercus agrifolia</i>	18.6	Upland		542747	4232239
166	Coast live oak	<i>Quercus agrifolia</i>	14, 7.2	Upland		542748	4232237
167	Coast live oak	<i>Quercus agrifolia</i>	37.0	Upland		542750	4232210
168	Coast live oak	<i>Quercus agrifolia</i>	23.6, 9	Upland		542756	4232221
169	Coast live oak	<i>Quercus agrifolia</i>	33.7	Upland		542764	4232198
170	Coast live oak	<i>Quercus agrifolia</i>	18.3	Upland		542774	4232200
171	California bay	<i>Umbellularia californica</i>	12.9, 9.3	Upland		542784	4232203

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						X	Y
172	California bay	<i>Umbellularia californica</i>	9.7, 12.8, 10.8, 15.6, 4, 14.8, 8.8, 7.4, 11.4	Upland		542782	4232198
173	Coast live oak	<i>Quercus agrifolia</i>	14.0	Upland		542792	4232194
174	Coast live oak	<i>Quercus agrifolia</i>	9.9, 9.7	Upland		542793	4232197
175	Coast live oak	<i>Quercus agrifolia</i>	18.5, 11.6	Upland		542797	4232199
176	Coast live oak	<i>Quercus agrifolia</i>	16.5, 14.1	Upland		542797	4232199
176A	Coast live oak	<i>Quercus agrifolia</i>	8.0	Upland	tree not tagged due to location; dbh estimated	542799	4232193
177	Coast live oak	<i>Quercus agrifolia</i>	22, 22	Upland	hanging over vertical bank; estimated one stem diameter due to location	542805	4232191
178	Coast live oak	<i>Quercus agrifolia</i>	20, 11.6, 12, 12	Upland	estimated 12" dia stems due to location	542805	4232192
179	Coast live oak	<i>Quercus agrifolia</i>	15.9, 21.4, 22	Upland	estimated 22" stem due to location on vertical bank	542811	4232191
179A	Coast live oak	<i>Quercus agrifolia</i>	4.0	Upland	tree not tagged due to location; dbh estimated	542811	4232189
179B	Coast live oak	<i>Quercus agrifolia</i>	10.0	Upland	tree not tagged due to location; dbh estimated	542817	4232189
179C	Coast live oak	<i>Quercus agrifolia</i>	20.0	Upland	tree not tagged due to location; dbh estimated	542817	4232189
180	Coast live oak	<i>Quercus agrifolia</i>	34.0	Upland	estimated dbh due to location	542815	4232191
181	Coast live oak	<i>Quercus agrifolia</i>	7.5, 26.7	Upland		542825	4232189
182	Coast live oak	<i>Quercus agrifolia</i>	17.0	Upland		542829	4232192
183	Coast live oak	<i>Quercus agrifolia</i>	14, 31	Upland		542830	4232191
184	Coast live oak	<i>Quercus agrifolia</i>	11.0	Upland		542822	4232184
185	Coast live oak	<i>Quercus agrifolia</i>	17.0	Upland		542828	4232183
186	Coast live oak	<i>Quercus agrifolia</i>	31.0	Upland		542830	4232183
186A	Coast live oak	<i>Quercus agrifolia</i>	16.0	Upland	tree not tagged due to location; dbh estimated	542838	4232179
187	Valley oak	<i>Quercus lobata</i>	12.0	Upland		542844	4232180
188	Valley oak	<i>Quercus lobata</i>	16.0	Upland		542847	4232178
189	Coast live oak	<i>Quercus agrifolia</i>	22.5	Upland		542849	4232182
190	Coast live oak	<i>Quercus agrifolia</i>	8.2, 14	Upland		543057	4232224

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Tree Number	Common Name	Botanical name	Diameter at 4.5 ft (in)	Habitat	Comments	UTM NAD83 Zone 10	
						X	Y
191	Coast live oak	<i>Quercus agrifolia</i>	16.2	Upland		543083	4232262
192	Coast live oak	<i>Quercus agrifolia</i>	9.8, 16.5	Upland		543088	4232263
193	California bay	<i>Umbellularia californica</i>	8.8, 7.2	Upland		543110	4232276
194	Coast live oak	<i>Quercus agrifolia</i>	14.0	Upland		543107	4232278
195	Madrone	<i>Arbutus menziesii</i>	6.8	Upland		543109	4232280
196	Coast live oak	<i>Quercus agrifolia</i>	7.8	Upland		543108	4232282
197	California buckeye	<i>Aesculus californica</i>	4.9, 7.1, 3.5	Upland		543111	4232283
198	California bay	<i>Umbellularia californica</i>	6.9, 6.2, 5, 5, 5, 5, 5, 5, 5, 5, 5, 4, 4, 6, 6, 3, 3, 3	Upland		543118	4232284
199	California bay	<i>Umbellularia californica</i>	6.2, 3, 3, 4, 4, 5, 5, 5, 5	Upland		543118	4232285
200	Coast live oak	<i>Quercus agrifolia</i>	9.9	Upland		543117	4232287
201	Coast live oak	<i>Quercus agrifolia</i>	10.4	Upland		543115	4232290
202	California buckeye	<i>Aesculus californica</i>	5.8, 3, 5.7, 5, 3, 4	Upland		543124	4232292
203	California buckeye	<i>Aesculus californica</i>	5, 5, 5, 4, 4, 4, 3, 3, 6	Upland		543130	4232296
203A	California bay	<i>Umbellularia californica</i>	7, 6, 4, 5, 6	Upland	tree not tagged due to location; dbh estimated	543131	4232293
204	California bay	<i>Umbellularia californica</i>	8.5, 5, 5, 5, 4, 4, 4, 3, 3, 6	Upland		543133	4232298
205	California buckeye	<i>Aesculus californica</i>	5, 5, 5, 5, 5, 4, 3	Upland		543130	4232299
206	California buckeye	<i>Aesculus californica</i>	3, 3, 3, 3, 5	Upland		543136	4232303
207	California buckeye	<i>Aesculus californica</i>	6.7, 6, 7, 5.2, 4	Upland		543136	4232309
208	California buckeye	<i>Aesculus californica</i>	9.4, 11.3, 5.4, 5, 4	Upland		543137	4232310
209	Coast live oak	<i>Quercus agrifolia</i>	20, 8	Upland	estimated dbh due to location	543139	4232315
210	California buckeye	<i>Aesculus californica</i>	7.6, 6, 6, 5, 5, 3, 3	Upland	estimated dbh due to location	543138	4232313
211	California buckeye	<i>Aesculus californica</i>	5, 5, 4	Upland		543136	4232316
211A	Coast live oak	<i>Quercus agrifolia</i>	10, 12	Upland	tree not tagged due to location; dbh estimated	543136	4232329
211B	Coast live oak	<i>Quercus agrifolia</i>	5.0	Upland	tree not tagged due to location; dbh estimated	543137	4232329
212	California bay	<i>Umbellularia californica</i>	14.7	Upland		543141	4232337
213	Coast live oak	<i>Quercus agrifolia</i>	12.7	Upland		543142	4232337

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						X	Y
214	California buckeye	<i>Aesculus californica</i>	6, 6, 5, 5, 3, 3	Upland		543149	4232338
215	Coast live oak	<i>Quercus agrifolia</i>	8.2	Upland		543152	4232344
216	Coast live oak	<i>Quercus agrifolia</i>	8.7	Upland		543152	4232336
217	Coast live oak	<i>Quercus agrifolia</i>	14.0	Upland		543159	4232336
218	California bay	<i>Umbellularia californica</i>	10.8	Upland		543156	4232338
219	Coast live oak	<i>Quercus agrifolia</i>	16.7	Upland		543154	4232339
220	Coast live oak	<i>Quercus agrifolia</i>	14.4, 13.1	Upland		543147	4232340
221	California bay	<i>Umbellularia californica</i>	7.5	Upland		543154	4232339
222	California bay	<i>Umbellularia californica</i>	7.3	Upland		543154	4232344
223	Coast live oak	<i>Quercus agrifolia</i>	9.9	Upland		543159	4232345
224	California buckeye	<i>Aesculus californica</i>	6.1	Upland		543158	4232349
225	California bay	<i>Umbellularia californica</i>	4.5	Upland		543158	4232349
226	Coast live oak	<i>Quercus agrifolia</i>	10.3	Upland		543154	4232348
227	California bay	<i>Umbellularia californica</i>	12.5, 12.3	Upland		543158	4232351
228	Coast live oak	<i>Quercus agrifolia</i>	9.1	Upland		543157	4232355
229	California bay	<i>Umbellularia californica</i>	6.2	Upland		543156	4232355
230	Coast live oak	<i>Quercus agrifolia</i>	9.7	Upland		543158	4232354
231	Coast live oak	<i>Quercus agrifolia</i>	9.5	Upland		543162	4232347
232	California buckeye	<i>Aesculus californica</i>	7.4, 5.4, 11	Upland		543170	4232355
233	Coast live oak	<i>Quercus agrifolia</i>	12, 9	Upland		543152	4232333
234	Coast live oak	<i>Quercus agrifolia</i>	6.1, 6.2	Upland		543150	4232329
234	Coast live oak	<i>Quercus agrifolia</i>	6.8	Upland		543151	4232327
236	Coast live oak	<i>Quercus agrifolia</i>	14.3, 17.3	Upland		543151	4232327
236A	Coast live oak	<i>Quercus agrifolia</i>	10.0	Upland	tree not tagged due to location; dbh estimated	543149	4232334
236B	Coast live oak	<i>Quercus agrifolia</i>	5, 6	Upland	tree not tagged due to location; dbh estimated	543151	4232330
237	Coast live oak	<i>Quercus agrifolia</i>	10.0	Upland		543144	4232319
238	Coast live oak	<i>Quercus agrifolia</i>	6, 6	Upland		543145	4232319
239	Coast live oak	<i>Quercus agrifolia</i>	6.3	Upland		543146	4232319
240	California bay	<i>Umbellularia californica</i>	24.4	Riparian Corridor		543159	4232361
241	California bay	<i>Umbellularia californica</i>	8.9, 6.8	Upland		543159	4232361
242	California bay	<i>Umbellularia californica</i>	4.2, 11.8, 14.5, 5.7	Upland		543154	4232362
243	California buckeye	<i>Aesculus californica</i>	5.4, 7.3, 6	Riparian Corridor		543161	4232369
244	California bay	<i>Umbellularia californica</i>	9.5, 6.9	Riparian Corridor		543166	4232377

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						X	Y
245	Oregon ash	<i>Fraxinus latifolia</i>	13.1, 16.7	Riparian Corridor		543163	4232381
246	California bay	<i>Umbellularia californica</i>	15.3, 12, 11.8, 10.5, 12.6, 19.1	Riparian Corridor		543170	4232382
247	Coast live oak	<i>Quercus agrifolia</i>	27.2, 15.8	Upland		543176	4232381
248	California bay	<i>Umbellularia californica</i>	15.8, 12.7, 13.7, 14.8, 8.7, 6.8, 8.4, 15.7, 8.8, 8.1	Riparian Corridor		543173	4232390
249	California bay	<i>Umbellularia californica</i>	13.8	Riparian Corridor		543173	4232403
250	Coast live oak	<i>Quercus agrifolia</i>	8.4, 4	Riparian Corridor		543179	4232404
251	Coast live oak	<i>Quercus agrifolia</i>	7, 7, 8	Riparian Corridor		543183	4232401
252	Coast live oak	<i>Quercus agrifolia</i>	17.2	Riparian Corridor		543201	4232400
253	California bay	<i>Umbellularia californica</i>	11, 8, 15.1, 4.5, 10.7, 9, 9, 9, 8.4, 7.2, 10.3, 8.5, 9.2, 8.4, 7.1, 8, 9.4	Riparian Corridor		543203	4232406
254	California bay	<i>Umbellularia californica</i>	11.2, 4.6, 12.9	Riparian Corridor		543209	4232414
255	California bay	<i>Umbellularia californica</i>	10.1	Riparian Corridor		543209	4232415
256	California bay	<i>Umbellularia californica</i>	22.8, 14.7	Riparian Corridor		543210	4232415
257	California bay	<i>Umbellularia californica</i>	14.3	Riparian Corridor		543212	4232418
258	California bay	<i>Umbellularia californica</i>	21.2	Riparian Corridor		543213	4232421
259	California bay	<i>Umbellularia californica</i>	22.8, 14.7	Riparian Corridor		543214	4232420
260	California buckeye	<i>Aesculus californica</i>	6.1	Riparian Corridor		543202	4232423
261	Valley oak	<i>Quercus lobata</i>	17.6	Riparian Corridor		543218	4232432
262	Coast live oak	<i>Quercus agrifolia</i>	16.9, 15.5	Riparian Corridor		543213	4232437
263	California buckeye	<i>Aesculus californica</i>	9.1, 13.9	Riparian Corridor		543216	4232436
264	Valley oak	<i>Quercus lobata</i>	21.9	Riparian Corridor		543225	4232438
265	California buckeye	<i>Aesculus californica</i>	10.1, 4.4, 10.5, 4.5, 4, 4, 4, 4, 4, 5.7, 5.5	Riparian Corridor		543218	4232447
266	California bay	<i>Umbellularia californica</i>	16.5, 9, 9, 9.5	Riparian Corridor		543219	4232452
267	California bay	<i>Umbellularia californica</i>	26, 9.6	Riparian Corridor		543222	4232451
268	California buckeye	<i>Aesculus californica</i>	7.3	Riparian Corridor		543229	4232459
269	California buckeye	<i>Aesculus californica</i>	8.7, 7.8, 7.5	Riparian Corridor		543232	4232467
270	Coast live oak	<i>Quercus agrifolia</i>	13.2, 6	Riparian Corridor		543236	4232476
271	California bay	<i>Umbellularia californica</i>	4.7, 8.5, 7.5	Riparian Corridor		543239	4232487
272	California buckeye	<i>Aesculus californica</i>	7.6	Riparian Corridor		543242	4232497

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						X	Y
273	California bay	<i>Umbellularia californica</i>	9.3, 8.7	Riparian Corridor		543243	4232509
274	California bay	<i>Umbellularia californica</i>	19.9, 18.4, 18, 18	Riparian Corridor		543237	4232509
275	Valley oak	<i>Quercus lobata</i>	27.5	Riparian Corridor		543242	4232516
276	Coast live oak	<i>Quercus agrifolia</i>	26.5, 29.6	Upland		543234	4232598
277	Coast live oak	<i>Quercus agrifolia</i>	26.0	Upland		543228	4232630
278	Coast live oak	<i>Quercus agrifolia</i>	57.0	Upland		543225	4232668
279	Valley oak	<i>Quercus lobata</i>	31.9	Upland		543224	4232673
280	Coast live oak	<i>Quercus agrifolia</i>	31.6	Upland		543223	4232704
281	Coast live oak	<i>Quercus agrifolia</i>	9.4, 11, 4	Riparian Corridor		543224	4232742
281A	Coast live oak	<i>Quercus agrifolia</i>	6.0	Riparian Corridor	tree not tagged due to location; dbh estimated	543221	4232742
282	Coast live oak	<i>Quercus agrifolia</i>	5.8	Riparian Corridor		543224	4232744
283	Coast live oak	<i>Quercus agrifolia</i>	6.1, 4	Riparian Corridor		543225	4232746
284	Coast live oak	<i>Quercus agrifolia</i>	4.7	Riparian Corridor		543225	4232748
285	Coast live oak	<i>Quercus agrifolia</i>	6, 7, 5	Riparian Corridor		543225	4232751
286	Coast live oak	<i>Quercus agrifolia</i>	23.0	Upland	estimated dbh	543239	4232806
287	Coast live oak	<i>Quercus agrifolia</i>	10.0	Upland	estimated dbh	543246	4232827
288	Arroyo willow	<i>Salix lasiolepis</i>	6.5, 7.4, 4.3, 4.8	Riparian Corridor		543217	4232872
289	Arroyo willow	<i>Salix lasiolepis</i>	7.1	Riparian Corridor		543219	4232874
290	Arroyo willow	<i>Salix lasiolepis</i>	8.8	Riparian Corridor		543219	4232872
291	Arroyo willow	<i>Salix lasiolepis</i>	8.6, 7.2	Riparian Corridor		543219	4232871
292	Arroyo willow	<i>Salix lasiolepis</i>	5.7, 6.5, 6, 6, 5, 6	Riparian Corridor		543224	4232873
293	Arroyo willow	<i>Salix lasiolepis</i>	4.9, 3	Riparian Corridor		543222	4232868
294	Arroyo willow	<i>Salix lasiolepis</i>	5.8, 5	Riparian Corridor		543221	4232867
295	Valley oak	<i>Quercus lobata</i>	36.0	Riparian Corridor		543240	4232825
296	Valley oak	<i>Quercus lobata</i>	26.0	Riparian Corridor	estimated dbh	543236	4232817
297	Coast live oak	<i>Quercus agrifolia</i>	24.0	Riparian Corridor	estimated dbh	543236	4232812
298	Valley oak	<i>Quercus lobata</i>	13.7	Upland		543236	4232807
299	Valley oak	<i>Quercus lobata</i>	24.0	Upland	estimated dbh	543235	4232803
300	Coast live oak	<i>Quercus agrifolia</i>	23.8	Upland		543226	4232770
301	Valley oak	<i>Quercus lobata</i>	25.9	Upland		543226	4232764
302	Valley oak	<i>Quercus lobata</i>	5.9	Upland		543183	4232895
303	Red willow	<i>Salix laevigata</i>	7.8, 11, 8	Riparian Corridor		543197	4232899
304	Red willow	<i>Salix laevigata</i>	11.6	Riparian Corridor		543198	4232900
305	Red willow	<i>Salix laevigata</i>	8.7, 7.5	Riparian Corridor		543194	4232903

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						X	Y
306	Red willow	<i>Salix laevigata</i>	12.6	Riparian Corridor		543186	4232907
307	Valley oak	<i>Quercus lobata</i>	13.2	Riparian Corridor		543176	4232908
308	Red willow	<i>Salix laevigata</i>	10.4	Riparian Corridor		543172	4232912
309	Coast live oak	<i>Quercus agrifolia</i>	11.0	Upland		543206	4232915
310	Valley oak	<i>Quercus lobata</i>	14.5	Upland		543212	4232913
311	Red willow	<i>Salix laevigata</i>	11.0	Riparian Corridor		543172	4232914
312	Valley oak	<i>Quercus lobata</i>	13.7, 17, 5	Upland		543213	4232913
313	Coast live oak	<i>Quercus agrifolia</i>	13.5	Riparian Corridor		543225	4232900
314	Valley oak	<i>Quercus lobata</i>	7.0	Riparian Corridor		543226	4232896
315	Valley oak	<i>Quercus lobata</i>	19.0	Riparian Corridor		543226	4232896
316	Valley oak	<i>Quercus lobata</i>	15.0	Riparian Corridor		543229	4232894
317	Arroyo willow	<i>Salix lasiolepis</i>	10.0	Riparian Corridor	in willow thicket- hundreds of small diameter stems	543235	4232901
318	Valley oak	<i>Quercus lobata</i>	65.0	Riparian Corridor		543231	4232916
319	Plum	<i>Prunus sp.</i>	8.3, 4.5, 9	Riparian Corridor		543236	4232915
320	Red willow	<i>Salix laevigata</i>	8.4, 10	Riparian Corridor		543245	4232921
321	Coast live oak	<i>Quercus agrifolia</i>	9.0	Riparian Corridor		543234	4232891
322	Coast live oak	<i>Quercus agrifolia</i>	9.7	Riparian Corridor		543237	4232890
323	Valley oak	<i>Quercus lobata</i>	5.2	Riparian Corridor		543238	4232889
324	Valley oak	<i>Quercus lobata</i>	12.0	Riparian Corridor		543239	4232888
325	Valley oak	<i>Quercus lobata</i>	6.0	Riparian Corridor		543239	4232888
326	Valley oak	<i>Quercus lobata</i>	8.0	Riparian Corridor		543244	4232889
327	Valley oak	<i>Quercus lobata</i>	18.0	Upland		543244	4232882
328	Valley oak	<i>Quercus lobata</i>	10.1	Upland		543254	4232898
329	Valley oak	<i>Quercus lobata</i>	7.9	Upland		543260	4232901
330	Coast live oak	<i>Quercus agrifolia</i>	16.0	Upland	estimated dbh	543259	4232882
331	Valley oak	<i>Quercus lobata</i>	17.8	Upland		543277	4232897
332	Valley oak	<i>Quercus lobata</i>	18.0	Upland		543271	4232897
333	Valley oak	<i>Quercus lobata</i>	19.0	Upland		543272	4232900
334	Valley oak	<i>Quercus lobata</i>	7.0	Upland		543274	4232900
335	Valley oak	<i>Quercus lobata</i>	11.7	Upland		543277	4232899
336	Valley oak	<i>Quercus lobata</i>	7, 7.2	Upland		543278	4232906
337	Valley oak	<i>Quercus lobata</i>	15.4	Upland		543277	4232907
338	Valley oak	<i>Quercus lobata</i>	6.5	Upland		543278	4232907

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						X	Y
339	Coast live oak	<i>Quercus agrifolia</i>	13.7, 8, 12.2, 13, 11, 8	Upland		543282	4232909
340	Coast live oak	<i>Quercus agrifolia</i>	8.8, 7.2	Upland		543283	4232908
341	Valley oak	<i>Quercus lobata</i>	10.4	Upland		543286	4232909
342	California bay	<i>Umbellularia californica</i>	6.7, 9.5	Upland		543286	4232912
343	Valley oak	<i>Quercus lobata</i>	16.0	Upland		543290	4232909
344	Coast live oak	<i>Quercus agrifolia</i>	15.8, 12, 11.5, 12, 13	Upland		543291	4232918
345	Coast live oak	<i>Quercus agrifolia</i>	17.2, 12.8	Upland		543292	4232918
346	Coast live oak	<i>Quercus agrifolia</i>	6.6	Upland		543296	4232919
347	Coast live oak	<i>Quercus agrifolia</i>	9.2	Upland		543295	4232919
348	Eucalyptus	<i>Eucalyptus sp.</i>	10.8, 14.8	Upland		543301	4232929
349	Coast live oak	<i>Quercus agrifolia</i>	9.2, 10.1, 9.8	Upland		543349	4232979
350	Coast live oak	<i>Quercus agrifolia</i>	8.3	Upland		543346	4232984
351	Coast live oak	<i>Quercus agrifolia</i>	15.2, 16.5	Upland		543347	4232986
352	Coast live oak	<i>Quercus agrifolia</i>	11.5, 11.4, 23.3	Upland		543348	4232988
353	Coast live oak	<i>Quercus agrifolia</i>	11.5, 11.4, 23.3	Upland		543358	4232991
354	Valley oak	<i>Quercus lobata</i>	20.0	Upland		543356	4232993
355	California bay	<i>Umbellularia californica</i>	8.5, 4.7	Upland		543359	4232989
356	Coast live oak	<i>Quercus agrifolia</i>	18.2	Upland		543361	4232992
357	Valley oak	<i>Quercus lobata</i>	13, 9.4	Upland		543361	4232993
358	California buckeye	<i>Aesculus californica</i>	5.2, 4.4, 3.9, 5.6	Upland		543363	4232993
359	Coast live oak	<i>Quercus agrifolia</i>	24.6	Upland		543361	4233001
360	Coast live oak	<i>Quercus agrifolia</i>	18.0	Upland		543364	4232999
361	Coast live oak	<i>Quercus agrifolia</i>	17.0	Riparian Corridor		543369	4233004
362	Coast live oak	<i>Quercus agrifolia</i>	12.5	Riparian Corridor		543370	4233005
363	Coast live oak	<i>Quercus agrifolia</i>	17.1	Riparian Corridor		543372	4233007
364	Coast live oak	<i>Quercus agrifolia</i>	15.0	Riparian Corridor		543375	4233010
365	California buckeye	<i>Aesculus californica</i>	7.4, 5.5, 4.7, 4, 4	Riparian Corridor		543373	4233010
366	California buckeye	<i>Aesculus californica</i>	13, 4	Riparian Corridor		543372	4233010
367	California buckeye	<i>Aesculus californica</i>	7.7	Riparian Corridor		543379	4233014
368	California buckeye	<i>Aesculus californica</i>	6.5, 4.6, 4, 9.8, 5, 8	Riparian Corridor		543380	4233013
369	California buckeye	<i>Aesculus californica</i>	5.4, 6, 6.8, 7.8, 5, 10.8, 5, 8, 5, 5.5, 5.5, 14.3	Riparian Corridor		543385	4233022
370	Coast live oak	<i>Quercus agrifolia</i>	14, 14	Riparian Corridor		543386	4233024

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Tree Number	Common Name	Botanical name	Diameter at 4.5 ft (in)	Habitat	Comments	UTM NAD83 Zone 10	
						X	Y
371	California buckeye	<i>Aesculus californica</i>	9.5, 9.5	Riparian Corridor		543381	4233023
372	Coast live oak	<i>Quercus agrifolia</i>	13.0	Riparian Corridor	growing horizontally into project right of way	543380	4233031
373	California bay	<i>Umbellularia californica</i>	14.0	Riparian Corridor		543387	4233028
374	California bay	<i>Umbellularia californica</i>	6, 6.5, 10.3	Riparian Corridor		543391	4233028
375	California buckeye	<i>Aesculus californica</i>	12.9, 39.5	Riparian Corridor		543402	4233035
376	California buckeye	<i>Aesculus californica</i>	14, 14.2, 11.5	Riparian Corridor		543409	4233035
377	Coast live oak	<i>Quercus agrifolia</i>	4.5	Riparian Corridor		543407	4233028
378	Coast live oak	<i>Quercus agrifolia</i>	5.4	Riparian Corridor		543405	4233029
378A	Coast live oak	<i>Quercus agrifolia</i>	8, 8	Riparian Corridor	tree not tagged due to location; dbh estimated	543400	4233022
379	Coast live oak	<i>Quercus agrifolia</i>	4.5	Riparian Corridor		543399	4233020
380	Coast live oak	<i>Quercus agrifolia</i>	8, 8	Riparian Corridor	estimated dbh	543394	4233016
381	Valley oak	<i>Quercus lobata</i>	19.6	Riparian Corridor		543418	4233041
382	Valley oak	<i>Quercus lobata</i>	23.8	Riparian Corridor		543421	4233047
383	Valley oak	<i>Quercus lobata</i>	18.4	Riparian Corridor		543423	4233048
384	Valley oak	<i>Quercus lobata</i>	6.8, 14.3	Upland		543488	4233107
385	Valley oak	<i>Quercus lobata</i>	15.0	Upland		543497	4233118
386	Coast live oak	<i>Quercus agrifolia</i>	4, 5	Upland		543498	4233120
387	Coast live oak	<i>Quercus agrifolia</i>	6, 6	Upland		543515	4233134
388	Coast live oak	<i>Quercus agrifolia</i>	7, 6	Upland		543519	4233137
389	Valley oak	<i>Quercus lobata</i>	5, 9.1	Upland		543522	4233140
390	Coast live oak	<i>Quercus agrifolia</i>	4, 7.3	Upland		543531	4233151
391	Valley oak	<i>Quercus lobata</i>	5.0	Upland		543535	4233150
392	Coast live oak	<i>Quercus agrifolia</i>	5, 3, 5, 5, 6	Upland		543535	4233151
393	Coast live oak	<i>Quercus agrifolia</i>	6, 6	Upland		543537	4233154
394	Coast live oak	<i>Quercus agrifolia</i>	6.7	Upland		543538	4233156
395	Coast live oak	<i>Quercus agrifolia</i>	6.8, 6	Upland		543541	4233158
396	California buckeye	<i>Aesculus californica</i>	11.7, 11.3	Upland		543629	4233251
397	Coast live oak	<i>Quercus agrifolia</i>	10.0	Upland		543635	4233257
398	Valley oak	<i>Quercus lobata</i>	22.5	Upland		543677	4233308
399	Coast live oak	<i>Quercus agrifolia</i>	12.5, 14.2	Upland		543679	4233312
400	Valley oak	<i>Quercus lobata</i>	4.7	Upland		543685	4233321
401	Coast live oak	<i>Quercus agrifolia</i>	5.8, 18.0	Riparian Corridor		543248	4232597
402	Coast live oak	<i>Quercus agrifolia</i>	6.7	Riparian Corridor		543253	4232599

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Tree Number	Common Name	Botanical name	Diameter at 4.5 ft (in)	Habitat	Comments	UTM NAD83 Zone 10	
						X	Y
403	Valley oak	<i>Quercus lobata</i>	7.3	Riparian Corridor		543248	4232605
404	Coast live oak	<i>Quercus agrifolia</i>	25.4, 10.1	Riparian Corridor		543248	4232613
405	California bay	<i>Umbellularia californica</i>	5.0	Riparian Corridor		543248	4232613
406	Coast live oak	<i>Quercus agrifolia</i>	5.6	Riparian Corridor		543238	4232704
407	California bay	<i>Umbellularia californica</i>	7.6, 9.0	Riparian Corridor		543237	4232710
408	California buckeye	<i>Aesculus californica</i>	6.0, 5.1, 3.2, 3.7, 4.4	Riparian Corridor		543237	4232709
409	Valley oak	<i>Quercus lobata</i>	6.8, 5.5, 2.8	Riparian Corridor		543239	4232713
410	Valley oak	<i>Quercus lobata</i>	7.2	Riparian Corridor		543239	4232713
411	Valley oak	<i>Quercus lobata</i>	6.4, 7.3	Riparian Corridor		543237	4232714
412	Valley oak	<i>Quercus lobata</i>	6.6, 3.2	Riparian Corridor		543239	4232714
413	Valley oak	<i>Quercus lobata</i>	6.4	Riparian Corridor		543238	4232715
414	Valley oak	<i>Quercus lobata</i>	4.2	Riparian Corridor		543237	4232719
415	Coast live oak	<i>Quercus agrifolia</i>	8.3, 3.5, 2.8, 1.6, 1.8, 1.2	Riparian Corridor		543240	4232721
416	Valley oak	<i>Quercus lobata</i>	4.0	Riparian Corridor		543238	4232718
417	Coast live oak	<i>Quercus agrifolia</i>	9.2, 6.7	Riparian Corridor		543237	4232721
418	California bay	<i>Umbellularia californica</i>	5.2, 2.4, 1.0, 1.4	Riparian Corridor		543240	4232723
419	Coast live oak	<i>Quercus agrifolia</i>	6.6, 2.8, 1.4	Riparian Corridor		543239	4232722
420	Coast live oak	<i>Quercus agrifolia</i>	6.0, 1.7, 5.3, 1.4, 1.3, 2.1, 1.9, 2.6	Riparian Corridor		543238	4232724
421	California bay	<i>Umbellularia californica</i>	5.3, 6.6	Riparian Corridor		543237	4232727
422	Valley oak	<i>Quercus lobata</i>	30.3	Riparian Corridor		543235	4232729
423	California buckeye	<i>Aesculus californica</i>	9.5, 5.5, 6.9	Riparian Corridor		543243	4232704
424	California buckeye	<i>Aesculus californica</i>	6.0, 2.4, 5.6, 1.4	Riparian Corridor		543237	4232687
425	Coast live oak	<i>Quercus agrifolia</i>	28.0	Riparian Corridor		543238	4232679
426	Valley oak	<i>Quercus lobata</i>	19.0	Riparian Corridor		543236	4232676
427	California bay	<i>Umbellularia californica</i>	24.3, 1.5, 1.9, 7.6	Riparian Corridor		543238	4232676
428	California bay	<i>Umbellularia californica</i>	7.0, 5.0	Riparian Corridor		543239	4232677
429	Coast live oak	<i>Quercus agrifolia</i>	17.9	Riparian Corridor		543238	4232662
430	Valley oak	<i>Quercus lobata</i>	24.3	Riparian Corridor		543238	4232660
431	Red willow	<i>Salix laevigata</i>	16.9	Riparian Corridor		543243	4232635
432	California bay	<i>Umbellularia californica</i>	4.1	Riparian Corridor		543244	4232628
433	Coast live oak	<i>Quercus agrifolia</i>	23.1, 11.8	Riparian Corridor		543251	4232623
434	California bay	<i>Umbellularia californica</i>	5.5	Riparian Corridor		543259	4232600
435	Coast live oak	<i>Quercus agrifolia</i>	19.4	Riparian Corridor		543261	4232600

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						X	Y
436	Valley oak	<i>Quercus lobata</i>	15.6	Riparian Corridor		543261	4232603
437	Coast live oak	<i>Quercus agrifolia</i>	14.1	Riparian Corridor		543261	4232608
438	Valley oak	<i>Quercus lobata</i>	13.2	Riparian Corridor		543259	4232605
439	California bay	<i>Umbellularia californica</i>	6.0	Riparian Corridor		543260	4232609
440	California bay	<i>Umbellularia californica</i>	10.0	Riparian Corridor		543259	4232609
441	Coast live oak	<i>Quercus agrifolia</i>	8.0	Riparian Corridor		543261	4232607
442	Coast live oak	<i>Quercus agrifolia</i>	8.4	Riparian Corridor		543260	4232607
443	Coast live oak	<i>Quercus agrifolia</i>	14.6	Riparian Corridor		543259	4232610
444	Coast live oak	<i>Quercus agrifolia</i>	12.0	Riparian Corridor		543258	4232614
445	Valley oak	<i>Quercus lobata</i>	18.2	Riparian Corridor	measured at 3 ft	543254	4232620
446	Coast live oak	<i>Quercus agrifolia</i>	21.8, 10.9, 5.6	Riparian Corridor		543255	4232624
447	Coast live oak	<i>Quercus agrifolia</i>	10.9	Riparian Corridor		543253	4232626
448	Coast live oak	<i>Quercus agrifolia</i>	24.2, 13.9, 19.8, 18.6	Riparian Corridor		543245	4232640
449	Coast live oak	<i>Quercus agrifolia</i>	16.2, 5.1, 2.4	Riparian Corridor		543243	4232660
450	Coast live oak	<i>Quercus agrifolia</i>	11.8	Riparian Corridor		543244	4232660
451	Coast live oak	<i>Quercus agrifolia</i>	12.2	Riparian Corridor		543243	4232667
452	Coast live oak	<i>Quercus agrifolia</i>	37.6	Riparian Corridor		543246	4232694
453	California bay	<i>Umbellularia californica</i>	38.5	Riparian Corridor		543247	4232696
454	Valley oak	<i>Quercus lobata</i>	9.9	Riparian Corridor		543241	4232744
455	Valley oak	<i>Quercus lobata</i>	28.0	Riparian Corridor		543238	4232747
456	Valley oak	<i>Quercus lobata</i>	17.8	Riparian Corridor		543237	4232742
457	Coast live oak	<i>Quercus agrifolia</i>	7.2, 5.2, 6.5	Riparian Corridor		545583	4234220
458	Coast live oak	<i>Quercus agrifolia</i>	9.8, 4.0, 3.9, 9.8	Upland		545581	4234213
459	Coast live oak	<i>Quercus agrifolia</i>	7.4, 8.4, 9.6, 4.6	Upland		545584	4234208
460	Coast live oak	<i>Quercus agrifolia</i>	11.3, 6.2, 3.3	Riparian Corridor		545582	4234227
461	Arroyo willow	<i>Salix lasiolepis</i>	2.1, 8.2, 6.7, 6.8, 6.7, 8.2, 16.0	Riparian Corridor		545570	4234225
462	Arroyo willow	<i>Salix lasiolepis</i>	6.4, 3.9, 1.8, 1.2, 1.4	Riparian Corridor		545564	4234223
463	Arroyo willow	<i>Salix lasiolepis</i>	7.4, 3.8, 7.2	Riparian Corridor		545564	4234230
464	Eucalyptus	<i>Eucalyptus</i> sp.	6.4, 16.0, 15.1, 3.1, 13.0, 8.0, 10.0	Riparian Corridor		545560	4234222
465	Red willow	<i>Salix laevigata</i>	9.3	Riparian Corridor		545562	4234230
466	Red willow	<i>Salix laevigata</i>	8.2, 10.5	Riparian Corridor		545558	4234230
467	Arroyo willow	<i>Salix lasiolepis</i>	6.4, 5.1, 7.2	Riparian Corridor		545558	4234229
468	Eucalyptus	<i>Eucalyptus</i> sp.	7.8, 8.2, 7.9, 1.8, 16.1	Riparian Corridor		545551	4234223

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Tree Number	Common Name	Botanical name	Diameter at 4.5 ft (in)	Habitat	Comments	UTM NAD83 Zone 10	
						X	Y
469	Red willow	<i>Salix laevigata</i>	7.2	Riparian Corridor		545554	4234231
470	Arroyo willow	<i>Salix lasiolepis</i>	9.4, 3.1	Riparian Corridor		545552	4234230
471	Red willow	<i>Salix laevigata</i>	10.9, 15.9	Riparian Corridor		545548	4234235
472	Arroyo willow	<i>Salix lasiolepis</i>	7.1	Riparian Corridor		545546	4234234
473	Red willow	<i>Salix laevigata</i>	9.4, 5.9, 8.5, 4.3	Riparian Corridor		545544	4234235
474	Red willow	<i>Salix laevigata</i>	10.5, 11.9	Riparian Corridor		545545	4234233
475	Red willow	<i>Salix laevigata</i>	4.9	Riparian Corridor		545541	4234236
476	Red willow	<i>Salix laevigata</i>	8.9	Riparian Corridor		545543	4234237
477	Red willow	<i>Salix laevigata</i>	11.4	Riparian Corridor		545543	4234238
478	Red willow	<i>Salix laevigata</i>	9.1, 8.0, 9.7, 6.8	Riparian Corridor		545541	4234239
479	Red willow	<i>Salix laevigata</i>	9.2	Riparian Corridor		545540	4234235
480	Red willow	<i>Salix laevigata</i>	5.5	Riparian Corridor		545540	4234237
481	Red willow	<i>Salix laevigata</i>	13.6	Riparian Corridor		545544	4234240
482	Red willow	<i>Salix laevigata</i>	5.4	Riparian Corridor		545541	4234241
483	Plum	<i>Prunus sp.</i>	6.0, 4.5, 1.3, 1.4	Riparian Corridor		545536	4234243
			9.9, 11.1, 11.5, 13.9, 13.3, 11.1, 11.3, 12.2, 12.3, 11.9, 11.4				
484	Red willow	<i>Salix laevigata</i>		Riparian Corridor		545532	4234244
485	Black walnut	<i>Juglans hindsii</i>	4.3	Riparian Corridor		545530	4234244
486	Red willow	<i>Salix laevigata</i>	5.2	Riparian Corridor		545526	4234243
487	Red willow	<i>Salix laevigata</i>	9.6	Riparian Corridor		545524	4234245
488	Red willow	<i>Salix laevigata</i>	11.2, 5.8, 5.8, 6.0	Riparian Corridor		545525	4234245
489	Red willow	<i>Salix laevigata</i>	11.4, 9.6	Riparian Corridor		545522	4234246
490	Red willow	<i>Salix laevigata</i>	10.7	Riparian Corridor		545523	4234244
491	Red willow	<i>Salix laevigata</i>	10.8	Riparian Corridor		545520	4234245
492	Red willow	<i>Salix laevigata</i>	9.4	Riparian Corridor		545524	4234236
493	Red willow	<i>Salix laevigata</i>	7.8	Riparian Corridor		545525	4234237
494	Coast live oak	<i>Quercus agrifolia</i>	4.3, 6.0	Riparian Corridor		545496	4234250
495	Red willow	<i>Salix laevigata</i>	6.0	Riparian Corridor		545499	4234248
496	Red willow	<i>Salix laevigata</i>	9.0	Riparian Corridor		545500	4234249
497	Red willow	<i>Salix laevigata</i>	8.8, 11.0, 9.2	Riparian Corridor		545500	4234248
498	Red willow	<i>Salix laevigata</i>	11.8, 10.2, 10.9	Riparian Corridor		545498	4234249
499	Red willow	<i>Salix laevigata</i>	11.2, 11.6, 4.0	Riparian Corridor		545497	4234253
500	Red willow	<i>Salix laevigata</i>	5.1	Riparian Corridor		545499	4234256
502	Red willow	<i>Salix laevigata</i>	11.1	Riparian Corridor		545501	4234254

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						X	Y
503	Red willow	<i>Salix laevigata</i>	13.0	Riparian Corridor		545503	4234252
504	Red willow	<i>Salix laevigata</i>	7.2	Riparian Corridor		545502	4234253
505	Red willow	<i>Salix laevigata</i>	12.7	Riparian Corridor		545506	4234251
506	Red willow	<i>Salix laevigata</i>	8.0	Riparian Corridor		545504	4234251
507	Red willow	<i>Salix laevigata</i>	9.2	Riparian Corridor		545505	4234251
508	Red willow	<i>Salix laevigata</i>	9.0, 6.1	Riparian Corridor		545518	4234250
509	Red willow	<i>Salix laevigata</i>	9.0	Riparian Corridor		545516	4234248
510	Red willow	<i>Salix laevigata</i>	3.0, 10.6, 9.5	Riparian Corridor		545514	4234249
511	Red willow	<i>Salix laevigata</i>	10.8, 7.6	Riparian Corridor		545518	4234248
512	Red willow	<i>Salix laevigata</i>	6.0	Riparian Corridor		545519	4234248
513	Red willow	<i>Salix laevigata</i>	4.2	Riparian Corridor		545514	4234256
514	Red willow	<i>Salix laevigata</i>	10.2, 4.8	Riparian Corridor		545518	4234255
515	Red willow	<i>Salix laevigata</i>	10.1, 12.8, 11.2, 4.0	Riparian Corridor		545522	4234255
516	Red willow	<i>Salix laevigata</i>	12.3	Riparian Corridor		545522	4234258
517	Arroyo willow	<i>Salix lasiolepis</i>	5.6	Riparian Corridor		545522	4234256
518	Red willow	<i>Salix laevigata</i>	10.0, 9.0, 10.8, 8.4	Riparian Corridor		545524	4234257
519	Red willow	<i>Salix laevigata</i>	7.4, 7.2	Riparian Corridor		545525	4234253
520	Red willow	<i>Salix laevigata</i>	5.6	Riparian Corridor		545528	4234251
521	Red willow	<i>Salix laevigata</i>	15.8	Riparian Corridor		545536	4234247
522	Arroyo willow	<i>Salix lasiolepis</i>	4.3	Riparian Corridor		545532	4234249
523	Arroyo willow	<i>Salix lasiolepis</i>	6.5	Riparian Corridor		545542	4234245
524	Valley oak	<i>Quercus lobata</i>	24.2	Upland		543299	4232585
525	Valley oak	<i>Quercus lobata</i>	13.0	Upland		543300	4232587
526	Coast live oak	<i>Quercus agrifolia</i>	4.5	Upland		543297	4232587
527	Coast live oak	<i>Quercus agrifolia</i>	29.6	Upland		543294	4232603
528	Valley oak	<i>Quercus lobata</i>	22.3	Upland		543300	4232605
529	Coast live oak	<i>Quercus agrifolia</i>	31.8	Upland		543302	4232608
530	Valley oak	<i>Quercus lobata</i>	22.2	Upland		543295	4232665
531	Valley oak	<i>Quercus lobata</i>	21.5	Upland		543297	4232667
532	Coast live oak	<i>Quercus agrifolia</i>	21.2	Upland		543297	4232674
533	Coast live oak	<i>Quercus agrifolia</i>	7.8, 13.9, 12.2, 11.9	Upland		543296	4232680
534	Coast live oak	<i>Quercus agrifolia</i>	17.7, 8.7	Upland		543299	4232682
535	Madrone	<i>Arbutus menziesii</i>	28.9	Upland		543298	4232689
536	Coast live oak	<i>Quercus agrifolia</i>	4.2, 5.7, 3.3	Upland		543292	4232686
537	Coast live oak	<i>Quercus agrifolia</i>	5.7, 5.4	Upland		543288	4232684

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						X	Y
538	Coast live oak	<i>Quercus agrifolia</i>	12.3	Upland		543293	4232687
539	Coast live oak	<i>Quercus agrifolia</i>	11.5	Upland		543293	4232690
540	Coast live oak	<i>Quercus agrifolia</i>	10.3	Upland		543290	4232692
541	Black oak	<i>Quercus kelloggii</i>	17.0	Upland		543288	4232697
542	Black oak	<i>Quercus kelloggii</i>	7.0	Upland		543289	4232698
543	Coast live oak	<i>Quercus agrifolia</i>	15.5	Upland		543292	4232699
544	Coast live oak	<i>Quercus agrifolia</i>	15.9, 16.6	Upland		543294	4232703
545	Coast live oak	<i>Quercus agrifolia</i>	15.0	Upland		543296	4232709
546	Coast live oak	<i>Quercus agrifolia</i>	12.9, 11.9	Upland		543296	4232712
547	Valley oak	<i>Quercus lobata</i>	7.6	Upland		543295	4232719
548	Coast live oak	<i>Quercus agrifolia</i>	11.7, 7.6	Upland		543294	4232717
549	Coast live oak	<i>Quercus agrifolia</i>	8.2, 8.0, 8.0	Upland		543291	4232723
550	Coast live oak	<i>Quercus agrifolia</i>	10.5, 2.2, 2.4, 5.1, 3.1, 7.5, 8.6	Upland		543286	4232722
551	Coast live oak	<i>Quercus agrifolia</i>	17.3, 18.4, 15.4	Upland		543293	4232730
552	Coast live oak	<i>Quercus agrifolia</i>	18.3, 8.8, 8.9	Upland		543290	4232734
553	Valley oak	<i>Quercus lobata</i>	16.0	Upland		543298	4232897
554	Coast live oak	<i>Quercus agrifolia</i>	29.0	Upland		543322	4232889
555	Valley oak	<i>Quercus lobata</i>	23.7	Upland		543322	4232889
556	Coast live oak	<i>Quercus agrifolia</i>	18.7	Upland		543317	4232895
557	Coast live oak	<i>Quercus agrifolia</i>	24.2	Upland		543321	4232894
558	Coast live oak	<i>Quercus agrifolia</i>	31.2	Upland		543323	4232901
559	Coast live oak	<i>Quercus agrifolia</i>	35.9	Upland		543317	4232904
560	Coast live oak	<i>Quercus agrifolia</i>	29.7	Upland		543318	4232909
561	Coast live oak	<i>Quercus agrifolia</i>	23.3	Upland		543325	4232908
562	Coast live oak	<i>Quercus agrifolia</i>	24.3	Upland		543332	4232921
563	Valley oak	<i>Quercus lobata</i>	18.0	Upland		543332	4232922
564	Valley oak	<i>Quercus lobata</i>	17.8	Riparian Corridor		543360	4232951
565	Valley oak	<i>Quercus lobata</i>	9.3	Riparian Corridor		543360	4232951
566	Valley oak	<i>Quercus lobata</i>	10.0	Riparian Corridor		543366	4232959
567	Valley oak	<i>Quercus lobata</i>	22.0	Riparian Corridor	estimated dbh	543365	4232959
568	Valley oak	<i>Quercus lobata</i>	24.0	Riparian Corridor		543359	4232967
569	Coast live oak	<i>Quercus agrifolia</i>	6.5	Riparian Corridor		543359	4232965
570	California bay	<i>Umbellularia californica</i>	4.7	Riparian Corridor		543358	4232964
571	Coast live oak	<i>Quercus agrifolia</i>	6.7	Riparian Corridor		543356	4232962

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						X	Y
572	Coast live oak	<i>Quercus agrifolia</i>	5.5	Riparian Corridor		543356	4232963
573	Valley oak	<i>Quercus lobata</i>	6.5	Riparian Corridor		543353	4232959
574	Coast live oak	<i>Quercus agrifolia</i>	9.6	Riparian Corridor		543355	4232958
575	Coast live oak	<i>Quercus agrifolia</i>	12.7	Riparian Corridor		543355	4232958
576	Coast live oak	<i>Quercus agrifolia</i>	4.7	Riparian Corridor		543356	4232959
577	Coast live oak	<i>Quercus agrifolia</i>	8.0	Riparian Corridor		543357	4232958
578	Coast live oak	<i>Quercus agrifolia</i>	6.8	Riparian Corridor		543354	4232961
579	Coast live oak	<i>Quercus agrifolia</i>	6.0	Riparian Corridor		543359	4232957
580	Coast live oak	<i>Quercus agrifolia</i>	4.5	Riparian Corridor		543354	4232957
581	Coast live oak	<i>Quercus agrifolia</i>	14.3, 5	Riparian Corridor		543355	4232955
582	Valley oak	<i>Quercus lobata</i>	7.3	Riparian Corridor		543350	4232956
583	Valley oak	<i>Quercus lobata</i>	4.5	Riparian Corridor		543346	4232953
584	Coast live oak	<i>Quercus agrifolia</i>	5.0	Riparian Corridor		543346	4232952
585	Coast live oak	<i>Quercus agrifolia</i>	6.0	Riparian Corridor		543344	4232949
586	Valley oak	<i>Quercus lobata</i>	6.3	Riparian Corridor		543346	4232947
587	Valley oak	<i>Quercus lobata</i>	5.7, 4	Riparian Corridor		543344	4232950
588	Valley oak	<i>Quercus lobata</i>	14.4	Upland		543340	4232946
589	Coast live oak	<i>Quercus agrifolia</i>	4.5	Upland		543340	4232946
590	Valley oak	<i>Quercus lobata</i>	13.2	Upland		543337	4232942
591	Coast live oak	<i>Quercus agrifolia</i>	5.2	Upland		543339	4232940
592	Valley oak	<i>Quercus lobata</i>	13.8	Upland		543305	4232908
593	Coast live oak	<i>Quercus agrifolia</i>	22.0	Upland		543306	4232910
594	California bay	<i>Umbellularia californica</i>	7, 7	Upland		543314	4232915
595	California bay	<i>Umbellularia californica</i>	4.5, 5, 6	Upland		543314	4232916
596	California bay	<i>Umbellularia californica</i>	7.5, 7	Upland		543317	4232918
597	Coast live oak	<i>Quercus agrifolia</i>	16.0	Upland		543319	4232921
598	Valley oak	<i>Quercus lobata</i>	25.8	Riparian Corridor		543411	4233017
599	Coast live oak	<i>Quercus agrifolia</i>	9.2	Riparian Corridor		543411	4233016
600	Coast live oak	<i>Quercus agrifolia</i>	9.0	Riparian Corridor		543402	4232998
601	Coast live oak	<i>Quercus agrifolia</i>	25.5	Upland		543686	4233329
602	Coast live oak	<i>Quercus agrifolia</i>	10, 12, 7.5	Riparian Corridor		543715	4233397
603	Red willow	<i>Salix laevigata</i>	9.0	Riparian Corridor		543713	4233400
604	California bay	<i>Umbellularia californica</i>	15.5, 13.5	Riparian Corridor		543710	4233401
605	Coast live oak	<i>Quercus agrifolia</i>	8.2	Riparian Corridor		543714	4233403
606	Coast live oak	<i>Quercus agrifolia</i>	7.8	Riparian Corridor		543717	4233401

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						X	Y
607	Coast live oak	<i>Quercus agrifolia</i>	5.2, 6.8, 7.5	Riparian Corridor		543717	4233407
608	Coast live oak	<i>Quercus agrifolia</i>	11.5, 5.4	Riparian Corridor		543719	4233407
609	Coast live oak	<i>Quercus agrifolia</i>	10, 6, 10	Upland		543730	4233425
610	Coast live oak	<i>Quercus agrifolia</i>	11.7, 6.4	Upland		543752	4233469
611	Coast live oak	<i>Quercus agrifolia</i>	5.9, 6.8	Upland		543752	4233473
612	Coast live oak	<i>Quercus agrifolia</i>	9.8, 15.2	Upland		543751	4233475
613	Coast live oak	<i>Quercus agrifolia</i>	10.9, 6.8	Upland		543760	4233484
614	Coast live oak	<i>Quercus agrifolia</i>	5.3	Upland		543759	4233486
615	Coast live oak	<i>Quercus agrifolia</i>	30.2	Upland		543762	4233485
616	Coast live oak	<i>Quercus agrifolia</i>	8.5	Upland		543765	4233491
616	Coast live oak	<i>Quercus agrifolia</i>	4.5	Upland		543766	4233491
618	Coast live oak	<i>Quercus agrifolia</i>	6.5	Upland		543765	4233490
619	Coast live oak	<i>Quercus agrifolia</i>	7.4, 8	Upland		543766	4233491
620	Coast live oak	<i>Quercus agrifolia</i>	17.0	Upland		543766	4233489
621	Coast live oak	<i>Quercus agrifolia</i>	8.3	Upland		543767	4233485
622	Coast live oak	<i>Quercus agrifolia</i>	11.8	Upland		543771	4233493
623	Coast live oak	<i>Quercus agrifolia</i>	7.3, 10	Upland		543773	4233497
624	Coast live oak	<i>Quercus agrifolia</i>	8.1	Upland		543772	4233496
625	Coast live oak	<i>Quercus agrifolia</i>	10.3, 5.3	Upland		543783	4233506
626	Coast live oak	<i>Quercus agrifolia</i>	11.8	Upland		543784	4233508
627	Coast live oak	<i>Quercus agrifolia</i>	13.7	Upland		543788	4233513
627A	Coast live oak	<i>Quercus agrifolia</i>	20.0	Upland	tree not tagged due to location; dbh estimated	543784	4233514
627B	Coast live oak	<i>Quercus agrifolia</i>	20.0	Upland	tree not tagged due to location; dbh estimated	543785	4233513
627C	Coast live oak	<i>Quercus agrifolia</i>	10.0	Upland	tree not tagged due to location; dbh estimated	543789	4233519
628	Coast live oak	<i>Quercus agrifolia</i>	16.7	Upland		543799	4233525
628A	Coast live oak	<i>Quercus agrifolia</i>	14.0	Upland	tree not tagged due to location; dbh estimated	543796	4233525
629	Coast live oak	<i>Quercus agrifolia</i>	15.4, 17.5	Upland		543937	4233606
630	Valley oak	<i>Quercus lobata</i>	7.5, 7.5, 6	Upland		543781	4233484
631	Coast live oak	<i>Quercus agrifolia</i>	4.7	Upland		543787	4233489
632	California buckeye	<i>Aesculus californica</i>	8.6, 7.5	Upland		543788	4233490
633	Coast live oak	<i>Quercus agrifolia</i>	25.5	Upland		543793	4233492

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						X	Y
634	Coast live oak	<i>Quercus agrifolia</i>	46.0	Upland	measured at 20"	543797	4233499
635	Coast live oak	<i>Quercus agrifolia</i>	7.6, 6.4, 4, 4	Upland		543870	4233558
636	Valley oak	<i>Quercus lobata</i>	13.3	Upland		543891	4233567
637	Valley oak	<i>Quercus lobata</i>	12.1	Upland		543912	4233578
638	Valley oak	<i>Quercus lobata</i>	11, 6	Upland		543983	4233611
639	Wattle	<i>Acacia sp</i>	4.1, 4, 3	Upland		544012	4233626
640	Eucalyptus	<i>Eucalyptus sp.</i>	70, 45	Upland	estimated dbh	544315	4233765
641	Eucalyptus	<i>Eucalyptus sp.</i>	41.0	Upland		544325	4233770
642	Eucalyptus	<i>Eucalyptus sp.</i>	77.0	Upland		544334	4233772
643	Eucalyptus	<i>Eucalyptus sp.</i>	80.0	Upland	estimated dbh	544341	4233777
644	Eucalyptus	<i>Eucalyptus sp.</i>	90.0	Upland	estimated dbh	544357	4233777
645	Eucalyptus	<i>Eucalyptus sp.</i>	80.0	Upland	estimated dbh	544356	4233779
646	Eucalyptus	<i>Eucalyptus sp.</i>	40.0	Upland	estimated dbh	544485	4233834
647	Eucalyptus	<i>Eucalyptus sp.</i>	100.0	Upland	estimated dbh	544495	4233840
648	Eucalyptus	<i>Eucalyptus sp.</i>	50.0	Upland	estimated dbh	544600	4233884
649	Eucalyptus	<i>Eucalyptus sp.</i>	55.0	Upland	estimated dbh	544646	4233904
650	Eucalyptus	<i>Eucalyptus sp.</i>	24.0	Upland	estimated dbh	544688	4233923
651	Eucalyptus	<i>Eucalyptus sp.</i>	20.0	Upland	estimated dbh	544695	4233925
652	Honeylocust	<i>Gleditsia triacanthos</i>	26.7	Upland		545012	4234056
653	Coast live oak	<i>Quercus agrifolia</i>	25.7	Riparian Corridor		545101	4234127
654	Eucalyptus	<i>Eucalyptus sp.</i>	60.0	Upland		545247	4234151
655	Wattle	<i>Acacia sp.</i>	5, 6	Upland		545253	4234153
656	Elm	<i>Ulmus sp.</i>	11.8	Upland		545260	4234159
657	Elm	<i>Ulmus sp.</i>	9.9	Upland		545261	4234158
658	Elm	<i>Ulmus sp.</i>	12.0	Upland		545263	4234160
659	Elm	<i>Ulmus sp.</i>	7.6, 6.5	Upland		545369	4234203
660	Eucalyptus	<i>Eucalyptus sp.</i>	50, 14	Upland		545660	4234101
661	Coast live oak	<i>Quercus agrifolia</i>	13.5, 9	Upland		545627	4234179
662	Coast live oak	<i>Quercus agrifolia</i>	8.5, 7, 10, 5, 10, 9	Upland		545627	4234190
663	Arroyo willow	<i>Salix lasiolepis</i>	5, 8, 6, 4	Riparian Corridor		545622	4234192
664	Sandbar willow	<i>Salix exigua</i>	5, 5, 5, 4, 4	Riparian Corridor		545609	4234210
665	Coast live oak	<i>Quercus agrifolia</i>	13.2	Riparian Corridor		545611	4234203
666	Coast live oak	<i>Quercus agrifolia</i>	13.3, 10.5, 13, 16, 26	Riparian Corridor		545606	4234208
667	Coast live oak	<i>Quercus agrifolia</i>	7, 5, 8	Riparian Corridor		545587	4234235
668	Coast live oak	<i>Quercus agrifolia</i>	9.2, 9.9	Riparian Corridor		543421	4233021

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						X	Y
669	California buckeye	<i>Aesculus californica</i>	4, 4, 4, 3, 3	Riparian Corridor		543421	4233024
670	Coast live oak	<i>Quercus agrifolia</i>	49.3	Riparian Corridor		543433	4233004
671	Coast live oak	<i>Quercus agrifolia</i>	24.0	Riparian Corridor	estimated dbh due to location under large fallen oak	543430	4233016
672	California bay	<i>Umbellularia californica</i>	14, 8.5	Riparian Corridor		543437	4233020
673	Coast live oak	<i>Quercus agrifolia</i>	6.0	Riparian Corridor		543436	4233023
673A	Coast live oak	<i>Quercus agrifolia</i>	7.0	Riparian Corridor	tree not tagged due to location; dbh estimated	543443	4233025
674	California buckeye	<i>Aesculus californica</i>	20.0	Riparian Corridor		543443	4233029
675	Coast live oak	<i>Quercus agrifolia</i>	19.8, 18.5	Riparian Corridor		543442	4233037
676	Coast live oak	<i>Quercus agrifolia</i>	6, 4, 6, 4.7, 5.2	Riparian Corridor		543441	4233043
677	Coast live oak	<i>Quercus agrifolia</i>	20.9	Upland		543459	4233061
678	Coast live oak	<i>Quercus agrifolia</i>	10.3	Upland		543462	4233065
679	Valley oak	<i>Quercus lobata</i>	8.0	Upland		543463	4233065
680	Valley oak	<i>Quercus lobata</i>	21.5	Riparian Corridor		543491	4233085
681	Valley oak	<i>Quercus lobata</i>	10.0	Riparian Corridor		543491	4233087
682	Valley oak	<i>Quercus lobata</i>	16.0	Riparian Corridor		543495	4233092
683	Valley oak	<i>Quercus lobata</i>	10.9	Upland		543494	4233095
684	Coast live oak	<i>Quercus agrifolia</i>	10.0	Riparian Corridor		543505	4233101
685	Valley oak	<i>Quercus lobata</i>	14.8	Riparian Corridor		543502	4233101
686	Valley oak	<i>Quercus lobata</i>	12.0	Riparian Corridor		543502	4233102
687	Coast live oak	<i>Quercus agrifolia</i>	17.8	Riparian Corridor		543505	4233105
688	Valley oak	<i>Quercus lobata</i>	19.0	Riparian Corridor		543505	4233106
689	Valley oak	<i>Quercus lobata</i>	18.0	Riparian Corridor		543508	4233107
690	Valley oak	<i>Quercus lobata</i>	14.0	Riparian Corridor		543509	4233106
691	Valley oak	<i>Quercus lobata</i>	22.0	Riparian Corridor		543513	4233109
692	California buckeye	<i>Aesculus californica</i>	7.5	Riparian Corridor		543520	4233114
693	Coast live oak	<i>Quercus agrifolia</i>	4.2	Riparian Corridor		543509	4233110
694	Coast live oak	<i>Quercus agrifolia</i>	14.1	Riparian Corridor		543517	4233116
695	Valley oak	<i>Quercus lobata</i>	25.2	Riparian Corridor		543517	4233117
696	California bay	<i>Umbellularia californica</i>	4.0	Riparian Corridor		543520	4233118
697	California bay	<i>Umbellularia californica</i>	10.7	Riparian Corridor		543524	4233123
698	Coast live oak	<i>Quercus agrifolia</i>	7.0	Riparian Corridor		543529	4233126
699	Coast live oak	<i>Quercus agrifolia</i>	19.5	Riparian Corridor		543531	4233129

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						X	Y
700	Coast live oak	<i>Quercus agrifolia</i>	4.9, 9	Riparian Corridor		543537	4233134
701	Coast live oak	<i>Quercus agrifolia</i>	11.6, 11, 17.2	Riparian Corridor		543540	4233136
702	Coast live oak	<i>Quercus agrifolia</i>	15, 7.3	Riparian Corridor		543551	4233145
703	Coast live oak	<i>Quercus agrifolia</i>	5.2	Upland		543553	4233148
704	Coast live oak	<i>Quercus agrifolia</i>	6.2, 8, 6.8	Upland		543557	4233153
705	Coast live oak	<i>Quercus agrifolia</i>	17.2	Upland		543573	4233168
706	Coast live oak	<i>Quercus agrifolia</i>	4.8	Upland		543574	4233165
707	Valley oak	<i>Quercus lobata</i>	12.2, 20	Upland		543574	4233169
709	Valley oak	<i>Quercus lobata</i>	21.3	Upland		543575	4233170
710	Coast live oak	<i>Quercus agrifolia</i>	13.8	Upland		543606	4233198
711	Coast live oak	<i>Quercus agrifolia</i>	17.7	Upland		543614	4233208
712	Coast live oak	<i>Quercus agrifolia</i>	11.0	Upland		543627	4233218
713	Elm	<i>Ulmus sp.</i>	5.3	Upland		543629	4233221
714	Coast live oak	<i>Quercus agrifolia</i>	13.0	Upland		543632	4233225
715	California buckeye	<i>Aesculus californica</i>	11.0	Upland		543633	4233224
716	Coast live oak	<i>Quercus agrifolia</i>	16.5	Upland		543635	4233227
717	Coast live oak	<i>Quercus agrifolia</i>	15.4	Upland		543639	4233229
718	California buckeye	<i>Aesculus californica</i>	32.0	Upland		543678	4233264
719	Coast live oak	<i>Quercus agrifolia</i>	28, 25.5	Riparian Corridor		543738	4233401
720	Coast live oak	<i>Quercus agrifolia</i>	6.5	Riparian Corridor		543739	4233398
721	Coast live oak	<i>Quercus agrifolia</i>	20, 22.5	Riparian Corridor		543752	4233396
722	California buckeye	<i>Aesculus californica</i>	6.3, 9.3	Riparian Corridor		543757	4233398
723	California buckeye	<i>Aesculus californica</i>	9.9, 10	Riparian Corridor		543756	4233403
724	Coast live oak	<i>Quercus agrifolia</i>	20.4, 21.5	Riparian Corridor		543757	4233406
725	Plum	<i>Prunus sp.</i>	8.2	Upland		543758	4233407
726	Coast live oak	<i>Quercus agrifolia</i>	24.7	Riparian Corridor		543754	4233406
727	Black walnut	<i>Juglans hindsii</i>	13.7	Riparian Corridor		543746	4233413
728	Valley oak	<i>Quercus lobata</i>	27.7	Riparian Corridor		543735	4233411
729	Coast live oak	<i>Quercus agrifolia</i>	23.0	Riparian Corridor		543735	4233406
730	California buckeye	<i>Aesculus californica</i>	6.4, 4, 4, 3, 3, 3	Riparian Corridor		545294	4234206
731	Black walnut	<i>Juglans hindsii</i>	5.2, 4, 4	Riparian Corridor		545306	4234211
732	California buckeye	<i>Aesculus californica</i>	16.6	Riparian Corridor		545312	4234214
733	California buckeye	<i>Aesculus californica</i>	5, 5, 4, 4, 4, 4, 4, 4, 4, 3, 3, 3, 3, 3	Riparian Corridor		545313	4234214
734	California buckeye	<i>Aesculus californica</i>	4.4, 3, 3, 3, 2, 2	Riparian Corridor		545314	4234218

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Tree Number	Common Name	Botanical name	Diameter at 4.5 ft (in)	Habitat	Comments	UTM NAD83 Zone 10	
						X	Y
735	California buckeye	<i>Aesculus californica</i>	5.2, 4, 4, 4, 3	Riparian Corridor		545316	4234216
736	California buckeye	<i>Aesculus californica</i>	4.5, 3, 3	Riparian Corridor		545316	4234217
737	California buckeye	<i>Aesculus californica</i>	4.5	Riparian Corridor		545317	4234219
738	California buckeye	<i>Aesculus californica</i>	4, 4, 4, 4, 3, 3, 3	Riparian Corridor		545318	4234218
739	Coast live oak	<i>Quercus agrifolia</i>	22.8	Riparian Corridor		545330	4234222
740	California buckeye	<i>Aesculus californica</i>	4.0	Riparian Corridor		545332	4234221
741	California buckeye	<i>Aesculus californica</i>	5.4, 5.8, 4	Riparian Corridor		545333	4234222
742	California buckeye	<i>Aesculus californica</i>	6.1, 3	Riparian Corridor		545335	4234226
743	California buckeye	<i>Aesculus californica</i>	6.2	Riparian Corridor		545334	4234223
744	California buckeye	<i>Aesculus californica</i>	7.5, 5	Riparian Corridor		545333	4234223
745	California buckeye	<i>Aesculus californica</i>	5, 4, 4, 4, 7.5, 9.5, 8, 3	Riparian Corridor		545352	4234232
746	Eucalyptus	<i>Eucalyptus</i> sp.	11.0	Riparian Corridor		545355	4234230
747	Arroyo willow	<i>Salix lasiolepis</i>	5, 3, 2, 2	Riparian Corridor		545361	4234232
748	Black walnut	<i>Juglans hindsii</i>	11.0	Riparian Corridor		545364	4234238
749	Black walnut	<i>Juglans hindsii</i>	7.0	Riparian Corridor		545364	4234238
750	Plum	<i>Prunus</i> sp.	22.2	Riparian Corridor	measured at 20"	545369	4234233
751	Black walnut	<i>Juglans hindsii</i>	11, 10.3, 11	Riparian Corridor		545370	4234233
752	Red willow	<i>Salix laevigata</i>	14.8	Riparian Corridor		545384	4234233
753	Red willow	<i>Salix laevigata</i>	4, 4, 3	Riparian Corridor		545399	4234243
754	California bay	<i>Umbellularia californica</i>	9.6, 8, 8, 11.5	Riparian Corridor		545413	4234252
755	California bay	<i>Umbellularia californica</i>	6.8, 6.5	Riparian Corridor		545408	4234253
756	California bay	<i>Umbellularia californica</i>	7, 4, 13, 12	Riparian Corridor		545413	4234253
757	California bay	<i>Umbellularia californica</i>	8.5	Riparian Corridor		545413	4234256
758	California bay	<i>Umbellularia californica</i>	5.8	Riparian Corridor		545414	4234256
759	California bay	<i>Umbellularia californica</i>	7.0	Riparian Corridor		545414	4234257
760	California bay	<i>Umbellularia californica</i>	4.5, 7.5, 7	Riparian Corridor		545416	4234255
761	California buckeye	<i>Aesculus californica</i>	6.3, 3	Riparian Corridor		545420	4234254
762	California buckeye	<i>Aesculus californica</i>	4.0	Riparian Corridor		545419	4234252
763	California buckeye	<i>Aesculus californica</i>	7.2, 6.8, 5	Riparian Corridor		545420	4234252
763A	Red willow	<i>Salix laevigata</i>	20.0	Riparian Corridor	tree not tagged due to location; dbh estimated	545393	4234241
764	California buckeye	<i>Aesculus californica</i>	6.8, 4, 3	Riparian Corridor		545420	4234251
765	Red willow	<i>Salix laevigata</i>	16, 16	Riparian Corridor		545423	4234247
766	Oregon ash	<i>Fraxinus latifolia</i>	7.0	Riparian Corridor		545424	4234247

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Tree Number	Common Name	Botanical name	Diameter at 4.5 ft (in)	Habitat	Comments	UTM NAD83 Zone 10	
						X	Y
766A	Sandbar willow	<i>Salix exigua</i>	8, 8, 6	Riparian Corridor	tree not tagged due to location; dbh estimated	545427	4234251
767	Red willow	<i>Salix laevigata</i>	12.0	Riparian Corridor		545430	4234243
768	Red willow	<i>Salix laevigata</i>	10.7	Riparian Corridor		545436	4234255
769	Red willow	<i>Salix laevigata</i>	14.5, 13, 11	Riparian Corridor		545438	4234256
770	Red willow	<i>Salix laevigata</i>	13.0	Riparian Corridor		545439	4234257
771	Black walnut	<i>Juglans hindsii</i>	8.0	Riparian Corridor		545437	4234257
772	Red willow	<i>Salix laevigata</i>	11.5	Riparian Corridor		545440	4234257
773	Red willow	<i>Salix laevigata</i>	12.0	Riparian Corridor		545443	4234259
774	Black walnut	<i>Juglans hindsii</i>	20.5	Riparian Corridor		545447	4234260
775	California bay	<i>Umbellularia californica</i>	7.5	Riparian Corridor		545449	4234258
776	California bay	<i>Umbellularia californica</i>	6.2, 6, 5, 4	Riparian Corridor		545450	4234256
777	California bay	<i>Umbellularia californica</i>	6, 5, 4.5	Riparian Corridor		545453	4234259
778	Black walnut	<i>Juglans hindsii</i>	8, 7, 7	Riparian Corridor		545444	4234249
779	Oregon ash	<i>Fraxinus latifolia</i>	6.5	Riparian Corridor		545447	4234250
780	Plum	<i>Prunus sp.</i>	7, 5	Riparian Corridor		545449	4234249
781	Coast live oak	<i>Quercus agrifolia</i>	10, 5.8	Riparian Corridor		545452	4234244
782	Oregon ash	<i>Fraxinus latifolia</i>	6.5	Riparian Corridor		545461	4234257
783	Red willow	<i>Salix laevigata</i>	18, 16	Riparian Corridor		545464	4234257
784	Red willow	<i>Salix laevigata</i>	14.5	Riparian Corridor	field gps coordinates could not be obtained due to limited satellite coverage	545464	4234255
785	Red willow	<i>Salix laevigata</i>	11.0	Riparian Corridor	field gps coordinates could not be obtained due to limited satellite coverage	545465	4234260
786	Red willow	<i>Salix laevigata</i>	7.5	Riparian Corridor	field gps coordinates could not be obtained due to limited satellite coverage	545467	4234260
787	Red willow	<i>Salix laevigata</i>	13.2, 8, 6	Riparian Corridor	field gps coordinates could not be obtained due to limited satellite coverage	545468	4234256

Stage Gulch Road Curve Correction and Realignment Project Tree Survey
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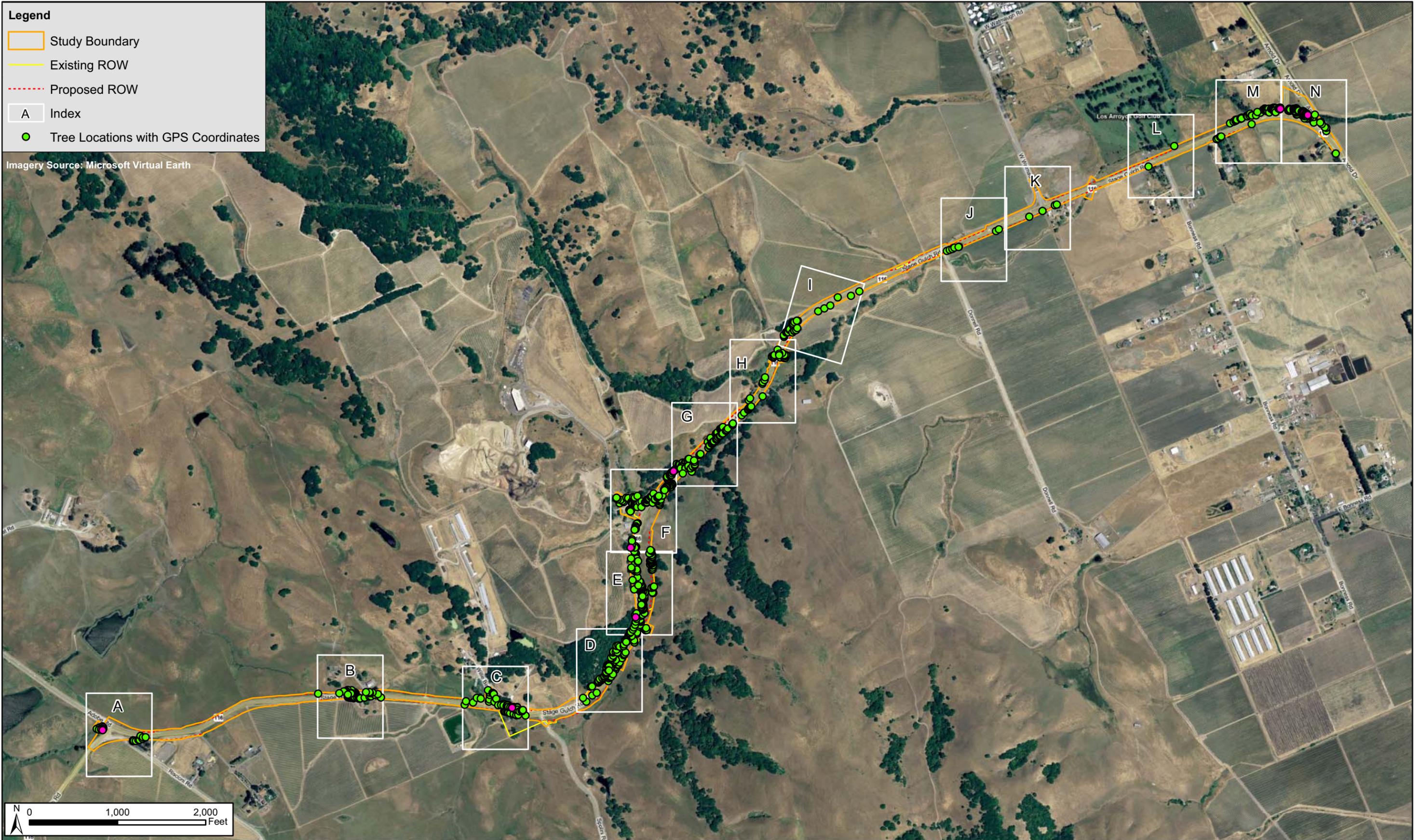
Tree Number	Common Name	Botanical name	Diameter at 4.5 ft (in)	Habitat	Comments	UTM NAD83 Zone 10	
						X	Y
788	Red willow	<i>Salix laevigata</i>	14.5, 11	Riparian Corridor		545466	4234254
788A	Willow	<i>Salix sp.</i>	9.0	Riparian Corridor	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage; tree not tagged in field	545544	4234247
788B	Willow	<i>Salix sp.</i>	10.0	Riparian Corridor	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage; tree not tagged in field	545547	4234248
788C	Willow	<i>Salix sp.</i>	6.0	Riparian Corridor	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage; tree not tagged in field	545548	4234245
788D	Willow	<i>Salix sp.</i>	15.0	Riparian Corridor	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage; tree not tagged in field	545551	4234245
788E	Willow	<i>Salix sp.</i>	6.0	Riparian Corridor	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage; tree not tagged in field	545550	4234243

Stage Gulch Road Curve Correction and Realignment Project Tree Survey
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Tree Number	Common Name	Botanical name	Diameter at 4.5 ft (in)	Habitat	Comments	UTM NAD83 Zone 10	
						X	Y
788F	Willow	<i>Salix</i> sp.	20.0	Riparian Corridor	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage; tree not tagged in field	545555	4234240
788G	Willow	<i>Salix</i> sp.	14.0	Riparian Corridor	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage; tree not tagged in field	545556	4234240
788H	Willow	<i>Salix</i> sp.	16.0	Riparian Corridor	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage; tree not tagged in field	545555	4234239
788I	Willow	<i>Salix</i> sp.	10.0	Riparian Corridor	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage; tree not tagged in field	545560	4234238
788J	Willow	<i>Salix</i> sp.	12.0	Riparian Corridor	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage; tree not tagged in field	545561	4234236

Stage Gulch Road Curve Correction and Realignment Project Tree Survey
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Tree Number	Common Name	Botanical name	Diameter at 4.5 ft (in)	Habitat	Comments	UTM NAD83 Zone 10	
						X	Y
788K	Willow	<i>Salix</i> sp.	6.0	Riparian Corridor	estimated dbh due to location; field gps coordinates could not be obtained due to limited satellite coverage; tree not tagged in field	545563	4234234



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Legend

- Tree Locations with GPS Coordinates
- Tree Locations with Estimated Coordinates
- ▭ Study Boundary
- Existing ROW
- - - Proposed ROW



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Legend

- Tree Locations with GPS Coordinates
- ▭ Study Boundary
- Existing ROW
- - - Proposed ROW



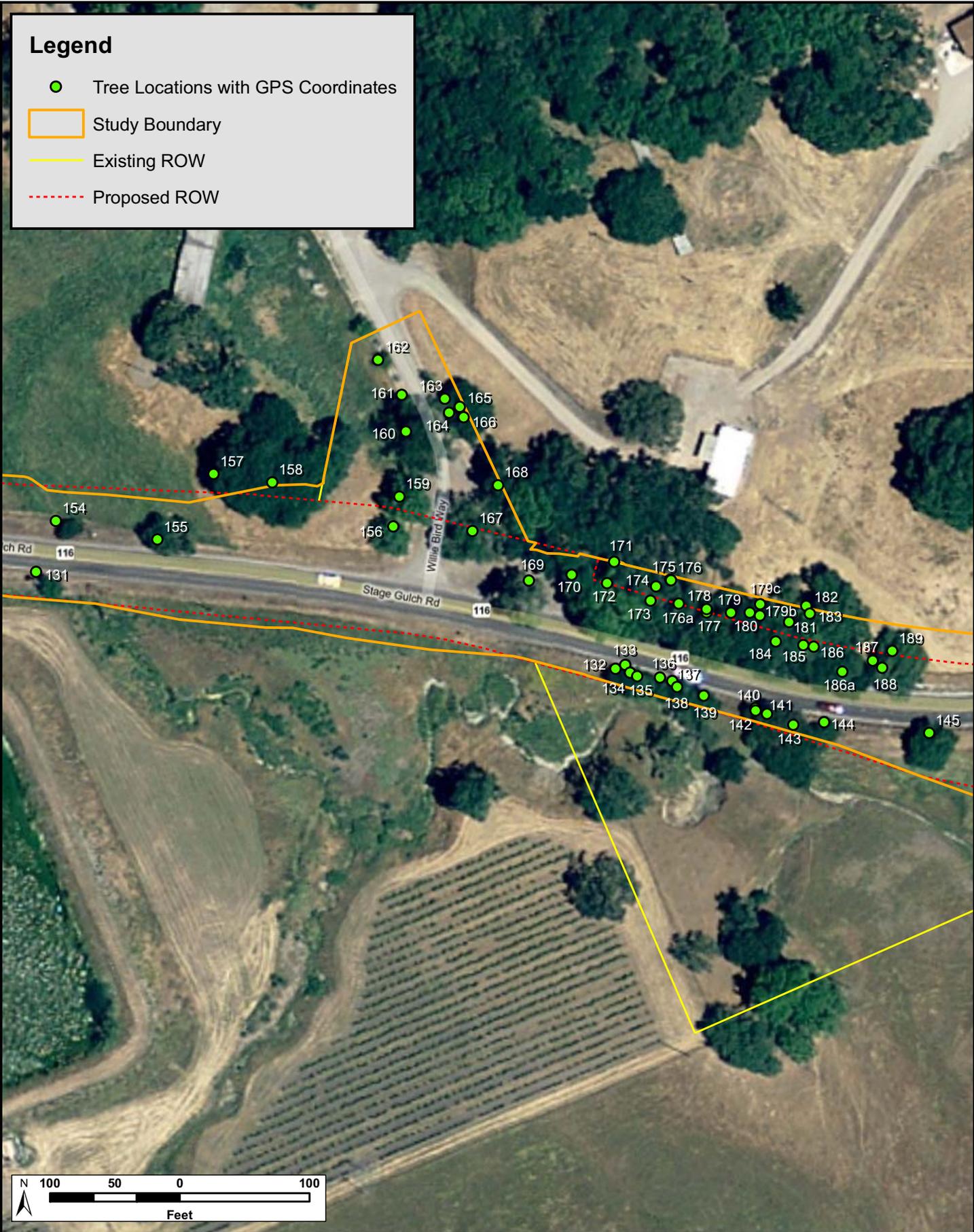
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Figure 2B: Tree Location Map

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Figure 2E: Tree Location Map

Stage Gulch Road Curve Correction and Realignment Project (2855-01)
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Figure 2F: Tree Location Map
 Stage Gulch Road Curve Correction and Realignment Project (2855-01)
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Legend

- Tree Locations with GPS Coordinates
- Tree Locations with Estimated Coordinates
- ▭ Study Boundary
- Existing ROW
- - - Proposed ROW



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Figure 2H: Tree Location Map
 Stage Gulch Road Curve Correction and Realignment Project (2855-01)
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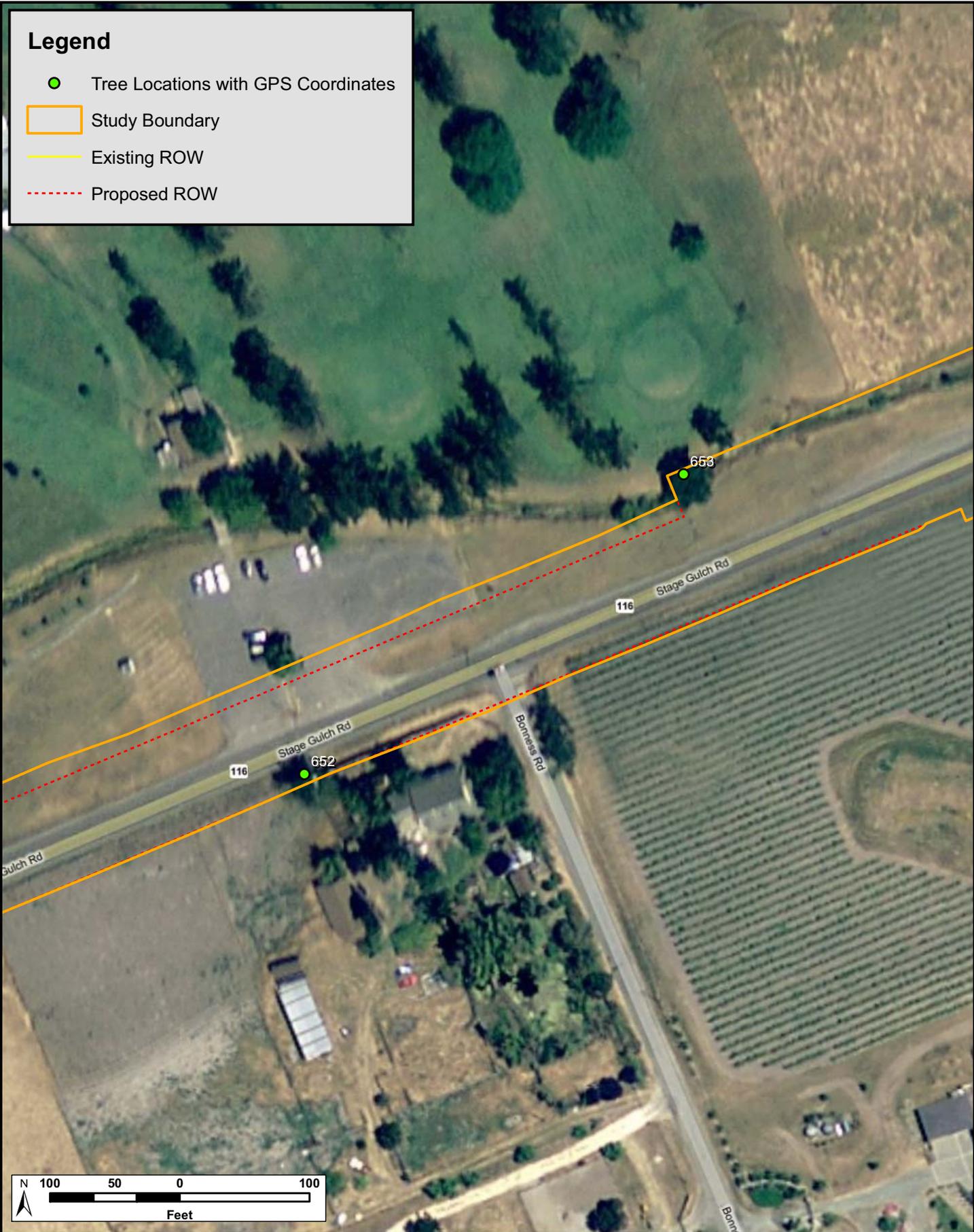
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Figure 2L: Tree Location Map
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Figure 2M: Tree Location Map
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