

REPORT AND NOTIFICATION COVER SHEET
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**Project Name
(as found on
Certification):** Arroyo Grande Creek Channel Waterway Management
Program

Permittee: County of San Luis Obispo Flood Control and Water
Conservation District

Reg. Meas. ID: 382836

Place ID: 775765

Certification (WDID): 34012WQ01

Order Effective Date: April 26, 2019

Report Type Submitted
Part A – Project Reporting
☐ Sediment and Vegetation Management Work Plan
☒ Annual Report
Part B - Project Status Notifications
☐ Commencement of Construction
☐ Request for Renewal
☐ Request for Notice of Project Complete
Part C - Conditional Notifications and Reports
☐ Work Window Extension Request
☐ In-Water Work, Dewatering, or Diversion Plan
☐ Weekly In-Water Work, Dewatering, and/or Diversion Monitoring and Maintenance Report
☐ Accidental Discharge of Hazardous Material Report
☐ Violation of Compliance with Water Quality Standards Report
☐ Modifications to Project Report
☐ Transfer of Property Ownership Report
☐ Transfer of Long-Term BMP Maintenance Report

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Kate Shea
Print Name ¹

County of San Luis Obispo Division Manager
Affiliation and Job Title

Kate Shea
Signature

5/29/2026
Date

¹STATEMENT OF AUTHORIZATION (include if authorization has changed since application was submitted)

I hereby authorize _____ to act in my behalf as my representative in the submittal of this report, and to furnish upon request, supplemental information in support of this submittal.

Permittee's Signature

Date

***This Report and Notification Cover Sheet must be signed by the Permittee or a duly authorized representative and included with all written submittals.**



Arroyo Grande Creek Channel Waterway Management Program

Regional Water Quality Control Board,
Certification No. 34012WQ01 Annual Report

prepared for

County of San Luis Obispo

Flood Control and Water Conservation District

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May 2026

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1 Introduction

This Annual Status Report (report) has been prepared by Rincon Consultants, Inc. (Rincon) on behalf of the County of San Luis Obispo Flood Control and Water Conservation District (District) for the Arroyo Grande Creek Channel Waterway Management Program (WMP or Project).

The WMP provides for flood control and habitat improvement within the lower reaches of the Los Berros Creek Diversion Channel and Arroyo Grande Creek (Project reach or Project area).

Construction within the Project area began in 2019 and was completed in 2021, including construction of 22 sediment management zones (SMZ), levee modifications, creation of habitat improvement structures (42 log structures), and revegetation of the Project reach. See Appendix A, Project Figures (Project Overview).

This report serves as the annual report, as required by the Regional Water Quality Control Board (RWQCB) Certification WDID No. 34012WQ01 (WQ Certification) issued April 26, 2019, and amended on October 7, 2025.

The District submitted the *Arroyo Grande Creek Channel Waterway Management Program – 2025 Annual Vegetation Management and Sediment Removal Work Plan*, dated April 15, 2025 (2025 Work Plan). The 2025 Work Plan outlined proposed WMP activities planned for 2025. Further detail was provided in the *Arroyo Grande Creek Channel Waterway Management Program – Update to 2025 Vegetation Management and Sediment Removal Work Plan* (2025 Updated Work Plan) dated August 1, 2025.

Activities completed in 2025 were consistent with the work plans referenced above and were performed in accordance with conditions of the WQ Certification.

2 Protective Measures

All work completed in 2025 was performed in accordance with the WQ Certification, the 2025 Work Plan and 2025 Updated Work Plan. The following protective measures were implemented during all phases of construction, maintenance and mitigation activities.

2.1 Qualified Biologists

Compliance support activities, such as Worker Environmental Awareness Program (WEAP) training, pre-activity surveys, monitoring and handling of aquatic species, were completed by qualified biologists, approved by US Fish and Wildlife Service (USFWS). All biologists were familiar with the contents of the WQ Certification and were qualified to implement measures and conditions of the permit.

2.2 Pre-Construction Surveys and WEAP Training

SWCA Environmental Consultants (SWCA) and Rincon qualified biologists completed WEAP training prior to all routine maintenance and emergency work. A list of Best Management Practices and terms and conditions of the WQ Certification was provided to District employees, contractors, and other site personnel. Table 1 includes a summary of WEAP training completed in 2025. WEAP training documentation including training materials, and worker sign-in sheets can be provided upon request.

Table 1 Summary of 2025 WEAP Training

Date	Compliance Activity	Approved Biologist
4/16/2025	WEAP training KD Janni	SWCA ¹
6/26/2025	WEAP training California Men's Colony	Ryan Wardle
7/17/2025	WEAP training Ventura Brush Goats	Ryan Wardle
8/18/2025	WEAP training District crews, Ventura Brush Goats	Ryan Wardle
8/28/2025	WEAP training KD Janni	Adam Sachs
9/2/2025	WEAP training KD Janni	Ryan Wardle
9/4/2025	WEAP training KD Janni	Ryan Wardle
9/10/2025	WEAP training KD Janni	Ryan Wardle
9/16/2025	WEAP training KD Janni	Ryan Wardle
10/7/2025	WEAP training District crews, Papich Construction	Adam Sachs
10/13/2025	WEAP training District crews, Papich Construction	Frances McKechnie
10/16/2025	WEAP training Papich Construction	Frances McKechnie
10/19/2025	WEAP training County crews	Frances McKechnie
10/21/2025	WEAP training Papich Construction	Adam Sachs
10/27/2025	WEAP training Papich Construction	Adam Sachs
12/30/2025	WEAP training Bunyon Bros	Ryan Wardle

¹ WEAP training completed by USFWS approved SWCA biologists Sara Snyder, Katie Saenger, Galen Pelzmann and/or Kyle Suchy.

2.3 Diversion, Dewatering and Aquatic Species Relocation

The 2025 Updated Work Plan included construction drawings (including a dewatering exhibit), a *Diversion Dewatering Plan*, and *Fish Removal and Rescue Plan for Steelhead Trout and Tidewater Goby*. Isolation of the work area, capture, relocation and dewatering proceeded as described in the diversion and fish rescue plans. Diversion and dewatering activities at the Breach Site commenced on October 6 and were completed by October 27, 2025. Additional details on the work conducted at the Breach Site are provided in Section 3.2.

2.4 Herbicide Application Best Management Practices

All herbicide treatments within or adjacent to aquatic resources used appropriately labeled products for aquatic use. All herbicide applications were sprayed during appropriate weather conditions including avoiding applications during wind velocities exceeding 5 miles per hour or in foggy or rainy conditions when ground moisture is excessive. All non-target species were avoided to the extent feasible during spraying.

3 Construction and Maintenance Activities

The WMP provides for vegetation management, levee raise and repair activities, and sediment management in established SMZs. Initial construction activities, periodic sediment management, and revegetation activities prior to 2025 are detailed in past annual reports (SWCA 2025). Construction and maintenance activities completed in 2025 are provided below.

3.1 Vegetation Management

Table 2 provides a summary of routine vegetation maintenance work completed in 2025. Vegetation management included control of non-native species with handheld equipment, grazing animals and herbicide application. Routine vegetation management also included woody vegetation removal with equipment. Representative photos are provided in Appendix B (2025 Site Photographs).

Table 2 Summary of 2025 Annual Maintenance Activities and Monitoring Support

Dates	Activity
4/21/2025	Vegetation management: levee top mowing
4/22/2025	Vegetation management: levee top mowing
4/23/2025	Vegetation management: levee top mowing
5/8/2025	Non-native vegetation removal: weed whipping and hand tools
6/26/2025	Non-native vegetation management: weed whipping and hand tools
7/10/2025	Non-native vegetation management: weed whipping and hand tools
7/17/2025	Non-native vegetation management: weed whipping, hand tools, mower
8/18/2025	Vegetation management for goat grazing corral fence: weed whipping and hand tools
8/19/2025-8/27/2025	Vegetation management for goat grazing corral fence: weed whipping/ goat grazing
8/28/2025-8/29/2025	Vegetation management: levee mowing
9/2/2025-9/26/2025 ¹	Vegetation management: chainsaw and weed whipping
9/8/2025-9/15/2025	Vegetation management for goat grazing corral fence: weed whipping/ goat grazing
10/10/2025	Woody vegetation management: chainsaw
10/13/2025	Woody vegetation management: chainsaw
11/25/2025	Non-native vegetation removal: herbicide application
12/11/2025	Non-native vegetation removal: herbicide application
12/30/2025	Emergency Flood Control: downed tree and debris removal

¹Dates excluding weekends

Vegetation management completed in 2025 included control of non-native vegetation within SMZs and levee banks, mowing of levee roads, and woody vegetation removal within the active and secondary channels. In all cases, pre-activity clearance surveys preceded the work, and biological monitors were on site, as needed to monitor and provide guidance.

Control of non-native vegetation was primarily completed with hand tools and weed whips. Goat grazing was implemented along levee banks, which involved pre-activity clearance surveys for sensitive resources, setting up electric fencing, and allowing goats to browse existing vegetation.

Herbicide applications of *Roundup Custom Aquatic* targeted newly emergent non-native species along the inner levee slopes of SMZ 7, 8 and 10. Vegetation control activities focused on areas with high non-native plant cover.

Woody vegetation removal targeted trimming of riparian vegetation and removal of dead/downed material within the channel to maintain flood capacity and reduce the potential for debris jams during high flow events. Instream work was completed with a small crew using chainsaws and hand tools with larger equipment (i.e., chipper, crane) operated from the levee road. Woody vegetation removal followed WMP guidelines, including removal of fallen and dead trees, trimming of woody vegetation within the channel to maintain 6 feet of vertical clearance from the streambed, and removal of woody vegetation (live or dead) within 20 feet upstream and downstream of the existing bridges. Cut woody vegetation was removed from the channel manually and chipped or placed into a truck on the levee for offsite disposal. With the exception of emergency work on December 30 (downed tree and debris removal for flood control), all in-channel vegetation management activities were completed prior to October 15, 2025.

3.2 Construction and Sediment Management

Sediment management in 2025 occurred at SMZ 7 and the Union Pacific Railroad (UPRR) Bridge (directly adjacent to SMZ 7) during levee repairs completed on the south levee directly adjacent to the UPRR Bridge and SMZ 7 sediment management locations (2023 Breach Site Levee Repair Project). Work was completed from October 1 through October 31, 2025.

Workdays including pre-activity surveys, monitoring, aquatic species relocation, and general construction monitoring are summarized in Table 3. Water quality data collected during the construction period is provided in Section 4.1. Representative photos are provided in Appendix B (2025 Site Photographs). Additional details are provided in the following sections.

2023 Breach Site Levee Repair

The 2023 Breach Site Levee Repair Project (Breach Site) involved the permanent repair of the location of a 2023 levee breach. The levee damage and resulting breach were caused by severe flooding during a January 2023 atmospheric river precipitation event. An emergency repair of the breach site was completed in 2023, however, deficiencies in the 2023 emergency repair were noted, due to the work occurring during high flows, including the bank's inability to support riparian vegetation—an ecological function and a primary objective of the WMP.

The District submitted the 2025 Updated Work Plan on August 1, 2025, detailing the planned repair including stream diversion, addition of rock slope protection (RSP), and backfill with soil and riparian plantings. The 2025 Updated Work Plan included construction drawings, a *Diversion Dewatering Plan*, and *Fish Removal and Rescue Plan for Steelhead Trout and Tidewater Goby*.

Routine Sediment Management

Annual sediment management activities took place in late October, concurrent with the Breach Site repairs. Routine sediment management included sediment removal at SMZ 7 and sediment/vegetation removal 20 feet upstream and downstream of the UPRR Bridge. Sediment removal at SMZ 7 excavated approximately 300 cubic yards of sediment within approximately 190 linear feet of the secondary channel, contiguous with the UPRR Bridge.

Table 4 provides a summary of the 2025 sediment management activities. Table 4 will be maintained and appended in subsequent Annual Reports to document a cumulative record of sediment management activities for all activities for duration of the current 401 certification.

Per the WQ Certification, routine sediment removal during the maintenance period shall not exceed 2,740 feet in Arroyo Grande Creek and 640 feet in Los Berros Diversions Channel, and no individual sediment removal shall exceed 500 feet along the channel, and each sediment removal site must be separated by a minimum of 500 feet in the same year.

Table 3 Summary of 2025 Pre-Activity Surveys and Monitoring for Construction and Sediment Management Activities

Dates	Activity ¹
10/1/2025	Pre-activity survey
10/6/2025	Aquatic Species Relocation; construction monitoring (special status species, water quality)
10/7/2025	Construction monitoring (special status species, water quality)
10/8/2025	Construction monitoring (special status species, water quality)
10/13/2025	Construction monitoring (special status species, water quality)
10/15/2025	Aquatic Species Relocation; construction monitoring (special status species, water quality)
10/16/2025	Aquatic Species Relocation; construction monitoring (special status species, water quality)
10/17/2025	Aquatic Species Relocation; construction monitoring (special status species, water quality)
10/20/2025	Construction monitoring (special status species, water quality)
10/21/2025	Aquatic Species Relocation; construction monitoring (special status species, water quality)
10/22/2025	Aquatic Species Relocation; construction monitoring (special status species, water quality)
10/23/2025	Construction monitoring (special status species, water quality)
10/24/2025	Construction monitoring (special status species, water quality)
10/27/2025	Construction monitoring (special status species, water quality)
10/28/2025	Construction monitoring (special status species, water quality)
10/29/2025	Construction monitoring (special status species, water quality)
10/30/2025	Construction monitoring (special status species, water quality)
10/31/2025	Construction monitoring (special status species, water quality)

¹ USFWS approved biological monitors completed pre-activity clearance surveys and/or monitoring for all activities.

Table 4 Summary of Sediment Management Activities

Year	Volume of Sediment Removed	Channel Length	Location(s)
2025	300 CY	190 LF	SMZ 7

4 Mitigation Activities

4.1 Background

Following the completion of WMP construction activities in 2021, mitigation was completed in accordance with permit requirements and the Habitat Mitigation and Monitoring Plan (HMMP; SWCA 2019). Specific goals per the HMMP include:

- A continuous riparian corridor within the Arroyo Grande Creek and Los Berros Creek diversion channels;
- An increase in plant species diversity within portions of both channels by planting a diverse palette of tree species;
- The establishment of riparian and scrub vegetation in areas that are currently devoid of vegetation;
- A decrease in the overall percent cover of exotic invasive vegetation;
- Increased water quality with the removal of trash from riparian areas;
- A reduction in fine sediment erosion by vegetating buffer strips along the levee; and
- Enhanced in-stream habitat through the introduction of log structures and alcoves.

Mitigation for impacts to jurisdictional riparian and stream habitats within Arroyo Grande Creek and the Los Berros Creek diversion channel utilized multiple methods. Table 5 summarizes the acreage and linear feet of each mitigation method implemented following Project construction (SWCA 2025).

Table 5 Mitigation Implementation Summary

Mitigation Type	Mitigation Method (RWQCB Category)	Acres		Linear Feet	
		Actual	Target	Actual	Target
Transition Zone Hydroseeding	Rehabilitation	6.45 ¹	9.40	10,953	10,635
Riparian Scrub Hydroseeding	Enhancement	12.80 ²	6.28	11,300	11,357
Riparian Tree Planting	Enhancement	3.50	3.45	6,360	6,261
Invasive Species Removal	Enhancement	5.50 ³	3.70	9,660	5,517
Trash Removal	Rehabilitation	3.50 ⁴	2.00	5,000	3,267
In-stream Habitat Enhancement	Enhancement	1.50	1.22	—	—
Total		33.25	26.05	43,273	37,037

¹ The entire disturbance footprint of sediment management areas was seeded with the transition zone mix; however, total impacts were overestimated during permitting (i.e., 9.4 acres). The as-built disturbance area is less than what was anticipated (i.e., 6.45 acres) and therefore, the area available for seeding was less than anticipated.

² The riparian scrub enhancement seed mix was applied to all the bare soils outside the SMZs. The area seeded following construction was nearly double the anticipated area, which included all temporarily disturbed soils as well as adjacent areas along the inner levee slopes.

³ In 2020, 2.5 acres of invasive species removal occurred focusing on Phase I. In 2021, an additional 3.0 acres of invasive species were removed. Additional acreage of non-native and invasive species will be removed and continue to be managed in subsequent years.

⁴ Substantial quantities of trash, associated with more than 30 illegal homeless encampments, were removed over several years leading up to and during construction. Estimated trash removed totals 500 to 750 cubic yards over the entire three-mile project area within Arroyo Grande Creek which included an estimated 3.5-acre area. Additional trash removal is occurring annually.

4.2 Revegetation

Revegetation strategies include hydroseeding, live cuttings/container plantings with natives, and eradication of exotic species through hand-pulling, herbicide application, grazing, and weed whipping. Annual monitoring tracks revegetation success, and remedial revegetation efforts are implemented in areas where performance criteria are not being met.

Initial Revegetation (2019-2021)

Initial revegetation activities were implemented following the completion of construction in 2019 (Phase I), and in 2020--2021 (Phase II). Revegetation efforts focused on the rehabilitation of sediment management areas (transition zones), the establishment of riparian scrub within bare areas outside of SMZs, and with establishment of riparian trees within the buffer zone areas. Transition zones (secondary channel bottom) and riparian scrub zones (inner levee slope bordering each secondary channel) were revegetated using site-specific seed mixes. Riparian trees were established using container stock and cuttings. The following areas were revegetated:

- Transition Zone Hydroseeding: 26,102 square meters (6.44 acres)
- Riparian Scrub Hydroseeding: 51,800 square meters (12.8 acres)
- Riparian Tree Planting: 14,164 square meters (3.5 acres)

Hydroseeding

Hydroseeding with site specific seed mixes was implemented for transition zone and riparian scrub areas. Phase I hydroseeding occurred in October 2019 and Phase II hydroseeding occurred in different areas between October 2020 and February 2021. Following completion of Phase II construction, all of Phase II and portions of Phase I SMZs were hydroseeded within the riparian scrub zone. A modified Phase II hydroseed mix was developed with increased seeding rates in response to the limited success of the Phase I hydroseed mix.

Planting

Phase I mitigation plantings were installed at SMZ 1-11 in March 2020 and Phase II plantings were installed at SMZ 12-22 in February and March 2021. Phase I and Phase II plantings included 352 and 343 individual plantings, respectively, for a total of 695 plantings across the Project reach. Additional replacement plantings in 2020-2021 included 76 trees planted in SMZ 1-11 (February-March 2021) and 14 replacement trees planted in SMZ 17, 18, 20 and 21 (January 2022).

Plantings included riparian tree species as 1-gallon containers and cuttings. All cuttings were harvested from mature mule fat and willows located in Arroyo Grande Creek. Harvesting, temporary storage, and planting of cuttings followed standard practices, as described in the HMMP. At the conclusion of the initial revegetation effort, a total of 14,164 square meters (1.4 hectares, 3.5 acres) had been planted with riparian trees to create a continuous riparian buffer strip between the SMZ (secondary channel) and the low flow channel (main channel).

Remedial Revegetation

2022 Revegetation Activities

Agricultural operations adjacent to SMZs 17 and 19 resulted in herbicide overspray, and in January 2022 these areas were observed to be negatively affected, and devoid of vegetation. Remedial

actions included hand broadcast of a modified Upper Levee Slope Seed Mix—a seed mix composed of deep-rooted, self-sowing species, adapted to the drier conditions of the upper levee slope.

Remedial actions taken in 2022 (December) to increase native plant cover in areas not meeting performance standards included application of a modified Inner Levee Slope Seed Mix in SMZ 8, 10, 12/13, 14, 15, 17, 18, 20, and 21. This seed mix deviated from the original seed mixes identified in the HMMP with species selection aimed to incorporate more locally-occurring species better adapted to the drier levee slopes. A high flow event occurred immediately following the seeding effort, and most of the seed was believed to have been washed downstream. However, when the flows receded later in 2023, some seed mix germination was observed.

2023 Revegetation Activities

Following the emergency sediment removal work in 2023, all areas disturbed by Project work were hydroseeded using the site-specific seed mixes previously approved for use on the slopes and channel bottoms of the secondary channels.

No container plantings were completed in winter of 2022-2023 due to high water levels through March 2023. Additionally, emergency sediment removal work was completed in fall of 2023, so planting efforts were delayed until the following spring (2024).

2024 Revegetation Implementation

2024 remedial revegetation activities included installation of perennial herb and grass container stock in SMZ 9 and 11. A total of 373 plantings were installed in March 2024 and an additional 152 plants were installed in December 2024; a total of 525 plantings. Non-woody, perennial species were selected in order to maintain channel flood capacity, out-compete non-native annuals, and to provide a late summer-fall food source for overwintering monarch butterflies (*Danaus plexippus*).

2025 Revegetation Implementation

Following completion of the levee stabilization at the Breach Site and sediment removal at SMZ 7, all disturbed areas were hydroseeded for native species revegetation and erosion control. Disturbed areas within the secondary channel bottom were hydroseeded with the Transition Zone Seed Mix as specified in the HMMP, and disturbed areas within the inner levee slopes were hydroseeded with a modified Riparian Scrub Seed Mix. The Riparian Scrub Seed Mix was modified from the previous seed mix identified in the HMMP to incorporate locally occurring species and species that would be more successful on the drier upper levee slopes.

In late November, broadcast spraying was conducted at SMZ 7 and SMZ 8 (north slope inner levee), and in early December at SMZ 10. This treatment was completed to prepare the area for the planting of native vegetation. In early December 2025, approximately 800 container-grown perennial herb and grass species were planted on the inner slope of the north levee at SMZ 7 and 8. In mid-December 2025 approximately 550 container plants were installed at SMZ 10. Following herbicide application, and installation of container stock, the identified management areas were broadcast seeded with the Riparian Scrub Seed Mix.

During construction of the Breach Site, black cottonwood (*Populus trichocarpa* [= *P. balsamifera* ssp. *trichocarpa*]) stakes were embedded within the soil filled RSP voids as described in the 2025 Updated Work Plan. After completion of the repair, additional native tree species in the form of container stock were planted along the repaired slope to increase native species diversity. Species included California sycamore (*Platanus racemosa*; 3 individuals), white alder (*Alnus rhombifolia*; 1

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individual), black cottonwood (3 individuals), box elder (*Acer negundo*; 1) and one coast live oak (*Quercus agrifolia*).

Table 6 provides a tabulation of species and seeding rates (pounds per acre [lbs./acre]) for the Transition Zone and Riparian Scrub Seed Mixes. Table 7 includes a summary of species, container size and number of individual plants installed at SMZ 7, 8 and 10.

Table 6 2025 Revegetation Seed Mixes

Scientific Name	Common Name	Seeding Location/Seeding Rate	
		Transition Zone (lbs./acre)	Riparian Scrub (lbs./acre)
<i>Achillea millefolium</i>	Yarrow	–	2
<i>Acmispon americanus</i> (= <i>Lotus purshianus</i>)	Spanish lotus	–	2
<i>Acmispon glaber</i> (= <i>Lotus scoparius</i>)	Deerweed	–	2
<i>Ambrosia psilostachya</i>	Western ragweed	–	1
<i>Artemisia douglasiana</i>	Mugwort	1	2
<i>Bromus carinatus</i>	California brome	–	6
<i>Camissoniopsis cheiranthifolia</i>	Beach evening primrose	–	0.5
<i>Diplacus aurantiacus</i> (= <i>Mimulus aurantiacus</i>)	Bush monkeyflower	–	1.5
<i>Distichlis spicata</i>	Salt grass	2	–
<i>Elymus glaucus</i>	Bule wildrye	–	2
<i>Elymus triticoides</i>	Creeping rye	–	2
<i>Epilobium ciliatum</i>	Willow herb	0.5	–
<i>Erythranthe guttata</i> (= <i>Mimulus guttatus</i>)	Seep monkeyflower	0.5	–
<i>Eschscholzia californica</i>	California poppy	–	3
<i>Festuca microstachys</i>	Small fescue	6	4
<i>Hordeum brachyantherum</i>	Meadow barley	3	3
<i>Hordeum depressum</i>	Alkali barley	2	–
<i>Juncus mexicanus</i>	Mexican rush	0.5	–
<i>Lupinus nanus</i>	Sky lupine	2	–
<i>Lupinus succulentus</i>	Arroyo lupine	–	1
<i>Melica californica</i>	California melic	–	3
<i>Muhlenbergia rigens</i>	Deer grass	1	0.5
<i>Oenothera elata</i>	Evening primrose	–	0.5
<i>Stipa pulchra</i>	Purple needlegrass	–	2
<i>Trifolium willdenovii</i>	Tomcat clover	2	–
<i>Verbena lasiostachys</i>	Western vervain	–	0.5
Total lbs./acre		20.5	38.5

Table 7 2025 Revegetation Container Plant List

Scientific Name	Common Name	Container Size	Quantity		
			SMZ 7	SMZ 8	SMZ 10
<i>Acmispon glaber</i> (=Lotus scoparius)	Deerweed	1-gallon	40	–	–
<i>Artemisia douglasiana</i>	Mugwort	1-gallon	47	78	120
<i>Baccharis glutinosa</i>	Marsh baccharis	1-gallon	54	71	64
<i>Diplacus aurantiacus</i> (=Mimulus aurantiacus)	Bush monkeyflower	1-gallon	28	40	17
<i>Euthamia occidentalis</i>	Western goldenrod	1-gallon	–	–	59
<i>Muhlenbergia rigens</i>	Deer grass	1-gallon	58	48	36
<i>Oenothera elata</i>	Evening primrose	1-gallon	43	123	142
<i>Symphyotrichum chilense</i>	Pacific aster	1-gallon	75	93	109
<i>Verbena lasiostachys</i>	Western vervain	1-gallon	8	–	–
Total Container Plants			353	453	547

4.3 Restoration Maintenance

Maintenance activities to ensure the success of the restoration are ongoing. In 2025, these efforts consisted of invasive species removal within mitigation areas and planting container stock at SMZ 9 and 11. These efforts are described in more detail in Section 2.1 (Vegetation Management) and 3.3 (Remedial Revegetation). Additional maintenance efforts are described below.

Vegetation Management

As discussed above in Section 3.1, vegetation management completed in 2025 included control of non-native and woody vegetation within SMZs and levee banks, mowing of levee roads, and woody vegetation removal within the active and secondary channels. Maintenance of restoration plantings located at SMZ 7, 8, 10 and the Breach Site location also included hand weeding and/or application of herbicide. In all cases, pre-activity clearance surveys preceded the work, and biological monitors were on site, as needed to monitor and provide guidance.

Maintenance and Watering of Plantings

Container plantings were installed in December 2025 at SMZ 7, 8, and 10 and at the Breach Site. The installed plants have received supplemental water following initial installation as needed during periods of dry weather to aid in establishment. A temporary irrigation system was set up at the Breach Site plantings with supplemental watering planned for approximately once every three weeks during dry periods. The installed container stock will continue to receive supplemental water until they are determined to be self-sufficient.

Trash Removal

In 2025 trash removal was completed at several locations within the Project reach. On February 11, 2025, clean up occurred at two locations 1) upstream of 22nd Street Bridge and 2) near Guiton Crossing. Approximately 4,400 pounds of trash was removed on this date. A second trash removal effort targeting the same two locations was completed on April 9, 2025; approximately 2,100 pounds of trash was removed.

General Site Maintenance and Vandalism

District staff completed routine site inspections throughout the year. No vandalism of mitigation planting areas was documented in 2025.

4.4 Log Structures and Alcoves

A total of 42 log structures and 10 alcoves were installed within the Project reach. The total mitigation area provided by each log structure was estimated at 1,500 square feet (SF), for the net benefit of 63,000 SF (1.5 acres) of enhanced in-stream habitat. Log structures add areas of complex instream cover for south-central California coast steelhead (steelhead; *Oncorhynchus mykiss*) and California red-legged frog (*Rana draytonii*). No specific acreage of habitat enhancement was calculated for alcoves.

The number of log structures and alcoves installed differs slightly from what was anticipated due to a change in channel conditions from the time the initial plans were developed in 2006 to the start of construction in 2019. A full summary of these modifications was presented in the 2024 Annual Report (SWCA 2025).

Monitoring results for log structures and alcoves is summarized in Section 5.3. No maintenance or modification of any instream structures was completed in 2025.

5 Technical Surveys and Monitoring

Comprehensive technical surveys and monitoring, as required by Project permits and approvals, were completed throughout 2025. Additional technical surveys and monitoring summarized in this section include 1) water quality sampling at three bridge locations, 2) California Rapid Assessment Monitoring (CRAM), and 3) log structure and alcove monitoring.

5.1 Water Quality Sampling

Water Quality within the Project Reach

Water quality sampling was completed twice per season (winter, spring, fall), for a total of six sampling events in 2025. Water quality sampling was completed by SWCA for the first two winter sampling events. Samples were taken at each of the three bridge crossings within the Project area: Highway 1, 22nd Street, and UPRR Bridges. Water temperature and turbidity were recorded using a hand-held meter (HACH® 2100Q Portable Turbidimeter).

Table 8 provides a summary of temperature (degrees Fahrenheit [°F]) and turbidity (nephelometric turbidity units [NTU]) recorded across the four seasons in 2025. Spring and fall sampling events were completed by Rincon. Summer sampling events were not completed. Sampling locations were established approximately 30 feet upstream of each of the three bridge structures within the WMP Project reach, including Highway 1, 22nd Street, and UPRR Bridges. Water temperature (degrees Celsius) and turbidity (NTU) were recorded in-situ using a YSI Multiparameter Sonde in June and November. December data was collected with a handheld glass thermometer and Hanna portable turbidimeter.

Table 8 2025 Water Quality Sampling Results

Date	Union Pacific Railroad Bridge		22 nd Street		Highway 1	
	Temperature (°F)	Turbidity (NTU)	Temperature (°F)	Turbidity (NTU)	Temperature (°F)	Turbidity (NTU)
Winter						
1/29/2025 ¹	53	1.05	53	0.92	53	2.36
2/21/2025 ¹	60	2.39	60	2.53	58	3.42
Spring						
4/28/2025 ¹	57	3.91	57	5.43	56	7.1
6/11/2025	61	11.33	61	11.40	61	16.5
Summer						
No survey	–	–	–	–	–	–
No survey	–	–	–	–	–	–
Fall						
11/21/2025	57	24.75	57	24.40	57	22.50
12/22/2025	57	11.0	56	13.0	57	65.0
Average	58	9	57	10	57	19

¹ Water quality sampling events conducted by SWCA

Water Quality Monitoring During Construction

The WQ Certification specifies visually monitoring of turbidity levels downstream of the work area boundaries during instream construction and maintenance activities. Background turbidity levels were determined to be approximately 13 NTU based on the average turbidity reading recorded at the three bridge locations during seasonal monitoring (Table 8). Table 9 provides the water quality monitoring data for the duration of instream work at the Breach Site, including date, sample period, sample time, visual observations, turbidity (NTU) and notes recorded during instream work at the Breach Site.

No visual observations of oil, grease or any other deleterious substances were recorded. Increases in turbidity above background levels were recorded periodically throughout instream work. During these periods, Project biologists and District staff would work with the contractor to evaluate and adjust erosion and sediment control mechanisms, as needed.

Table 9 Water Quality Monitoring Results during Breach Site Construction

Date	Sample Period	Sample Time (24-hour)	Visual Observations	Turbidity (NTU)	Notes
10/6/2025	AM	1059	No grease or oil observed	31.75	Work area established and instream vegetation removed; aquatic species capture/relocation
	Midday	—	No grease or oil observed	—	
	End of day	1433	No grease or oil observed	73.75	
10/15/2025	AM	0745	No grease or oil observed	47.85	Block nets installed, aquatic species capture/relocation using seines and dip nets; contractor begins constructing cofferdam
	Midday	—	No grease or oil observed	—	
	End of day	1425	No grease or oil observed	47.17	
10/16/2025	AM	—	No grease or oil observed	14.48	Aquatic species capture/relocation; contractor continues construction of cofferdams and begins installation of diversion pipe
	Midday	—	No grease or oil observed	—	
	End of day	1530	No grease or oil observed	8.21	
10/17/2025	AM	0742	No grease or oil observed	16.93	Aquatic species capture/relocation; contractor continues construction of cofferdams and installation of diversion pipe; block nets removed
	Midday	NS	No grease or oil observed	--	
	End of day	1723	No grease or oil observed	21.9	
10/20/2025	AM	0752	No grease or oil observed	21.2	Aquatic species capture/relocation; dewatering initiated; cofferdams fortified
	Midday	1250	No grease or oil observed	11.05	
	End of day	1518	No grease or oil observed	8.56	
10/21/2025	AM	0747	No grease or oil observed	12.07	Aquatic species capture/relocation; dewatering initiated; cofferdams fortified
	Midday	1107	No grease or oil observed	9.85	
	End of day	1655	No grease or oil observed	17.53	
10/22/2025	AM	0728	No grease or oil observed	8.28	Aquatic species capture/relocation; dewatering continued; keyway excavated and RSP placement initiated
	Midday	1158	No grease or oil observed	10.88	
	End of day	1502	No grease or oil observed	5.1	

Date	Sample Period	Sample Time (24-hour)	Visual Observations	Turbidity (NTU)	Notes
10/23/2025	AM	0749	No grease or oil observed	15.86	Monitoring for aquatic species; placement of RSP and soil backfill
	Midday	1148	No grease or oil observed	7.14	
	End of day	1428	No grease or oil observed	6.31	
10/24/2025	AM	0736	No grease or oil observed	21.2	Monitoring for aquatic species; removal of dewatering equipment; fortify cofferdams
	Midday	1121	No grease or oil observed	8.75	
	End of day	1521	No grease or oil observed	6.13	
10/27/2025	AM	0759	No grease or oil observed	21.66	Monitoring for aquatic species; re-install block nets; deconstruction of cofferdams and diversion pipe; block nets removed
	Midday	1207	No grease or oil observed	12.89	
	End of day	1537	No grease or oil observed	15.1	
10/28/2025	AM	n/a	n/a	n/a	Monitoring for aquatic species; instream work completed
	Midday	n/a	n/a	n/a	
	End of day	n/a	n/a	n/a	

5.2 California Rapid Assessment Method

Two Assessment Areas (AAs) were established by the District for CRAM monitoring within the project reach; pre-construction baseline assessments were conducted in 2016. One AA is in Arroyo Grande Creek, just upstream of 22nd Street (Phase 1), and the second is in the Los Berros Creek diversion channel (Phase 2). Post-construction CRAM assessments began in April 2020 in the Phase 1 portion of the Project reach. Since April 2021, CRAM assessments have included both AAs. The April 2021 assessment shifted the location of the Los Berros AA so that it was located within the Phase 2 Project area. Monitoring results from the period 2016-2024 were collected by SWCA (2024). Rincon began conducting the annual CRAM assessments in June 2025. The overall AA score from the pre-construction baseline assessment, as well as the scores for each of the four CRAM attributes – including Buffer and Landscape Context, Hydrology, Physical Structure, and Biotic Structure – are used as the primary metrics to compare the results of each annual CRAM assessment.

The overall AA score within Arroyo Grande Creek increased from 65 to 69 between 2016 and 2025, reflecting an increase in the Physical Structure metric as a result of Project implementation. The score decreased from 70 to 69 between 2024 and 2025, reflecting decreases in the Physical Structure and Biotic Structure metrics. The Physical Structure score decreased from 75 to 62.5 between 2024 and 2025 as a result of the decrease in the Structural Patch Richness submetric score from B (9) to C (6). This decrease is due to changes in structural patch types between 2024 and 2025 potentially caused by high flows during the 2024 rainy season. Additionally, the Biotic Structure score decreased from 61.11 to 58.33 between 2024 and 2025 as a result of decreases in the Percent Invasion, Plant Community Score, and Vertical Biotic Structure submetrics. The Hydrologic Connectivity submetric score also increased from B (9) to A (12) between 2024 and 2025; this increase is likely due to changes in bank full indicators between 2024 and 2025 that led to a higher average entrenchment ratio.

The 2016 and 2025 AA for the Los Berros Creek diversion channel are not comparable since they occurred in different locations. However, the overall AA score within Los Berros Creek increased from 50 to 56 between 2022 and 2025, reflecting an increase in the Buffer and Landscape Context, Biotic Structure, and Hydrology metrics between the three years. The Hydrology metric increased

from 50 to 75 between 2024 and 2025 as a result of the increase in the Hydrologic Connectivity submetric score from D (3) to A (12) between 2024 and 2025. This increase is likely due to discrepancies in bank full measurements between 2024 and 2025 that led to a higher average entrenchment ratio. Additionally, the Biotic Structure score decreased from 47.22 to 38.89 between 2024 and 2025 as a result of a decrease in the Vertical Biotic Structure submetric. Results of the CRAM monitoring from 2025 are included in Appendix C.

5.3 Log Structure and Alcove Monitoring

2025 monitoring was conducted by Waterways Consulting, Inc. (Waterways), SWCA, Wallace Group and Rincon. Monitoring results are summarized in the *Log Structure and Alcove Monitoring Report* (Wallace Group 2026). A brief description of the methods and results are provided below; the full report is included in Appendix D.

Background

The WMP included construction, maintenance and monitoring of 42 instream woody structures (two per SMZ) during the initial construction of the Project in 2019 and 2020. The goal of the log structures was to reinforce the Arroyo Grande Creek main channel as the primary flow path while adding habitat complexity and grade control within the constructed secondary channels (Waterways 2024).

“Type A” structures were constructed at the upstream end of each secondary channel. Their primary purpose is to protect the head of the bar between the main and secondary channels, downstream of the secondary channel inlets. These structures also enhance habitat complexity and provide cover for steelhead and California red-legged frog. “Type B” structures were installed near the downstream end of the secondary channels. These structures function as grade control features and habitat elements, encouraging scour and pool formation while helping to prevent head cutting into the secondary channels (Wallace Group 2026).

The following monitoring framework was developed involving periodic inspections to verify that the structures were functioning as intended. The monitoring program contained the following elements:

- **Photo Documentation:** Taking photos of each log structure and associated pool and alcove features from established photo points.
- **Visual Assessment:** Evaluating the stability and condition of each log structure, associated pool or alcove, and adjacent channel.
- **Habitat Data Collection:** Recording habitat data focused on flow velocity (when flow is present), pool development, and shelter rating at the log structures.

Monitoring Methods

Qualitative monitoring events were completed by SWCA on January 29 and April 15-16, and by Rincon and Wallace Group on August 25 and November 21, 2025. Qualitative surveys included walking the entire Project reach and observing habitat conditions at each structure.

Quantitative monitoring of the forty-two log structures was conducted on February 28, June 25, and December 11, 2025. The February 28, 2025, monitoring was conducted by Waterways, with the remaining visits completed by Wallace Group. During each visit, field representatives walked the Project reach and collected photos, notes, and field measurements as applicable.

The following information was recorded during each quantitative monitoring visit:

- **Structure and Alcove Condition.** Including a visual evaluation of each log structure and alcove to document site specific conditions and identify any need for adaptive management or maintenance.
- **Habitat Data.** All field measurements were taken and recorded on monitoring forms including pool dimensions; flow velocity; shelter rating.
- **Photo Logs**

Monitoring Results

Overall, conditions remained relatively unchanged since the fall 2024 surveys. Log structures have remained intact following numerous high flow events, including two above average water years in 2023 and 2024. Table 10 summarizes which secondary channels were activated within the Project area since 2019-2020.

Table 10 Secondary Channels Activated by Flood Flows

Water Year	Secondary Channel Activated
2019-2020*	3, 9, 10
2020-2021	1, 3, 9, 10, 11, 12/13, 14, 15, 16, 17, 19
2021-2022	1, 3, 5, 6, 9, 10, 11, 12/13, 14, 15, 16, 17, 19
2022-2023	All Activated
2023-2024	All Activated
2024-2025	14, 15, 16, 17, 18, 19

* Only Phase I log structures had been completed: 1 – 11

Source: Wallace Group 2026

5.4 Revegetation Monitoring

Performance and Success Criteria

The success of revegetation efforts is tracked by annual monitoring of and comparison with established performance standards. Table 11 summarizes the original performance standards outlined in the HMMP.

Table 11 2019 HMMP Performance Standards

Performance Standards ¹	Year 1	Year 2	Year 3	Year 4	Year 5
Total Percent of Native Cover for Understory	30%	40%	50%	60%	70%
Total Percent of Native Cover for Overstory	50%	60%	70%	80%	90%
Percent of Non-Native Cover for Understory ²	<60%	<60%	<45%	<35%	<35%
Percent of Non-Native Cover for Overstory	20%	15%	10%	5%	0%
Plant Survival for Understory	90%	85%	80%	80%	80%
Plant Survival for Overstory	90%	85%	80%	80%	90%

¹ The mitigation site must be self-sustaining (i.e., no maintenance or artificial irrigation) for a minimum of two years to be considered successful. Plant survivorship may include original plantings, remedial plantings, or volunteers. Remedial plantings will be monitored until District environmental staff determines that they are self-sustaining.

² Percent non-native cover calculations exclude non-native annual grasses; however, includes non-native perennial grasses. The final goal for percent non-native cover is less than 35% (excluding annual grasses).

Modified Performance Standards

Following monitoring efforts in 2020 and 2021 it was determined that tracking individual plant survival was not feasible, and modified performance standards were developed to better address the goals of the HMMP. The following modified performance standards were adopted (SWCA 2025):

- Mitigation plantings will still be established and maintained to meet the goals of the HMMP (i.e., plantings will be established in areas that currently have little or no cover).
- Survival/mortality of individual plantings will not be tracked, but plantings will be monitored collectively for maintenance needs and assessed for successful establishment with an emphasis on filling in gaps in the riparian tree canopy.
- Native species diversity will be tracked by completing an inventory of dominant, co-dominant, and prominent understory as well as overstory species in each SMZ.
- Percent cover of native and non-native overstory and understory vegetation will still be documented using the established quadrat sampling method, along with the new diversity metrics.

Minimum diversity thresholds (performance standards) were recommended, and the following diversity standards were adopted (Table 12).

Table 12 Modified Performance Standards

Performance Standards ¹	Year 1	Year 2	Year 3	Year 4	Year 5
Number of Overstory Species in Buffer Zones adjacent to each SMZ ² (Downstream of 22 nd St)	1	2	2	2	2
Number of Overstory Species Present in Buffer Zones adjacent to each SMZ (Upstream of 22 nd St)	2	3	3	3	4
Number of Overstory Species Present in the Project Area	3	4	4	5	5
Minimum Number of Native Overstory Species Co-Dominant in the Project Area	2	3	3	4	4

¹ Overstory vegetation is parsed between areas upstream and downstream of 22nd Street due to restrictions on the tree species that can be established downstream. Understory species will include perennial herbs, vines, and shrubs. Any notable population of native annual species will be documented as part of the qualitative assessment of overall mitigation success and health/diversity of the habitat but not included in species diversity counts.

² Trees established in the buffer zone adjacent to each SMZ are tracked in association with that SMZ, but woody vegetation is not being established directly within SMZs (secondary channel) in order to maintain flood capacity.

Survey Methodology

Quantitative monitoring surveys of the Project reach were completed by Rincon on June 11, 12, 13, and 16 of 2025. Survey methodology followed descriptions in previous annual reports (SWCA 2025). One square meter quadrats were used to collect quantitative data across three micro-habitats:

1. the riparian buffer strip on either side of the main (active) channel (Buffer Strip [BS])
2. the riparian scrub zone associated with the active SMZ (Riparian Scrub [RS])
3. transitional zone between the two (Transition Zone [TZ])

Quadrats were established along one, two or three transects, spaced at roughly even intervals along each SMZ, with the number of transects varying according to SMZ length. A single transect was established in SMZs less than 500-feet in length, two transects were established in SMZs 500 to 1,000 feet, and three transects in SMZs over 1,000 feet long. Quadrats were established in pairs,

and placed on either side of the transect, with the exception of the Buffer Strip which straddled the active channel. Quadrats were placed in representative areas along each transect within each microhabitat. Six quadrats were established along each transect, two in each microhabitat (BS, TZ and RS). The following data was collected at each quadrat location.

- Overstory native and non-native (absolute percent cover)
- Understory native and non-native (absolute percent cover)
- Number of native overstory species
- Number of dominant and co-dominant native understory species

The California Native Plant Society percent cover diagrams were utilized to calibrate percent cover estimates and maintain consistent results (CNPS 2025). In order to collect percent cover of overstory vegetation, a phone camera in self-portrait mode was aimed towards the sky in the center of each quadrat. Dominant and co-dominant understory native species were tallied within each quadrat. Dominant species composed at least 20 percent cover, while co-dominant species occupied up to 10 percent cover.

Photo sampling points were also re-established at each SMZ. Previously established photo point monitoring locations established within the SMZs were found to be inaccessible or less informative due to dense vegetation growth, so new photo point monitoring locations were established along the levee structure to generate an informative overview of all the vegetation present within the SMZ. Two photo points were taken at each SMZ, one on each end of the zone, looking inwards. An additional two photo points were taken in the center of SMZ 13, facing outwards, due to the SMZs large size.

The number of native overstory species within each SMZ as evaluated on November 21, 2025 (see Table 12, Modified Performance Standards). Overstory species observed within the buffer strip of each SMZ was recorded during a qualitative survey of the entire Project reach.

Monitoring Results

Monitoring data collected for all 22 SMZs in 2025 are summarized in Table 13. Criteria that met Year-5 performance criteria are highlighted grey. Overstory and understory exotic cover met the 5-year performance criteria at most SMZs. Understory native plant cover improved significantly since 2024, however, Year-5 (70 percent cover) target was not achieved at any SMZ. Overstory native cover achieved the Year-5 goal (90 percent cover) at a third of the SMZs, with the remaining SMZs showing well above 70 percent for Arroyo Grande Creek and 61-88 percent at Los Berros Creek. Note that this metric excludes the RS zones, which are managed without overstory species. Modified performance criteria was established for the number of native overstory species in buffer strips (BS), and 2025 observations indicate a good diversity of native tree species. Year-5 criteria was achieved at most SMZs, especially in the downstream portion of the Project.

Year-5 performance criteria for the number of native dominant and co-dominant native understory species was only achieved at one location (SMZ 12/13). These results are also most likely biased toward under reporting native plant cover, due to the very limited sample size provided by quadrat sampling. In the future, it is recommended that an SMZ-wide assessment of dominant/sub-dominant/prominent native plant cover be used to evaluate native plant performance.

Number of overstory species reported from quadrat surveys by micro habitat resulted in a poor sample of the total overstory diversity across the Project reach. Quadrat data generally captured one or two overstory species, when in fact, the average number of overstory species present in each

SMZ ranged from three to six species, with the exception of Los Berros Creek (SMZ 20-22) which lacks overstory species diversity. A total of eight overstory species were observed in the Project area including:

- Boxelder (*Acer negundo*; ACNE)
- Northern California black walnut (*Juglans californica* var. *hindsii*; JUCA)
- Black cottonwood (*Populus trichocarpa*; POBA)
- Fremont cottonwood (*P. fremontii*; POFR)
- California sycamore (*Platanus racemosa*; PLRA)
- Red willow (*Salix laevigata*; SALLAE)
- Arroyo willow (*S. lasiolepis*; SALLAS)
- Pacific willow (*S. lucida* ssp. *lasiandra*; SALUL)

Of these eight species, arroyo willow is by far the most dominant, with black cottonwood and red willow as common co-dominants. California sycamore was less frequently observed but well documented as a co-dominant in the Project reach. Boxelder and pacific willow were relatively infrequent. Fremont cottonwood and Northern California black walnut were only observed one and two times, respectively.

Photographs recorded during monitoring are provided in Appendix E.

Breach Site Monitoring Results

The mitigation and monitoring strategy for the Breach Site was proposed by District staff (Sal Zargoza, Public Works Environmental Specialist II) via email correspondence with RWQCB (Allie Mortensen, RWQCB Environmental Scientist) in December 2025 and January 2026. Native riparian tree saplings 2-4 years of age were planted to compensate for the temporal loss of riparian cover during emergency repairs in 2023. These plantings will be maintained and monitored in accordance with the approved WMP HMMP (see Table 10, above) and photo points will be established to visually track vegetation growth at the Breach Site.

Native plantings at the Breach Site were monitored by District staff in 2025. Seven of the eight planted riparian trees survived, with one California sycamore tree lost due to high river flow. The seven surviving trees represent an 87 percent survival rate and is on target with the Year 1 (90 percent) survival rate for overstory trees.

Black cottonwood stakes embedded within the soil filled RSP voids in fall of 2025 did not survive. Photos of the Breach Site plantings are provided in Appendix E (Mitigation Monitoring Photographs; Photos 45-48).

Table 13 2025 Quantitative and Visual Observation Data

SMZ/ Year 5 Performance Criteria					Number of Native Overstory Species ¹		Number of Dominant/ Co-dominant Native Understory Species ^{4,3}	Number of Native Overstory Species in Buffer Zones ^{2, 4}		Number of Native Overstory Species in Project Area ²	
	Understory Native % Cover ¹	Understory Exotic % Cover ¹	Overstory Native % Cover ¹	Overstory Exotic % Cover ¹	Downstream of 22 nd Street	Upstream of 22 nd Street		Downstream of 22 nd Street	Upstream of 22 nd Street	Total Number of Species	Minimum Number of Co-Dominant Species
	70	<35	90	0	2	4		2	4	5	4
SMZ 1	5.8	61.7	100	0	1	–	1	6 (ACNE, POBA, POFR, PLRA, SALLAE, SALLAS, SALUL)	–	8 Overstory Species Total Dominant Overstory Species SALLAS - Arroyo willow (<i>Salix lasiolepis</i>) SALLAE - Red willow (<i>S. laevigata</i>) POBA - black cottonwood (<i>Populus trichocarpa</i>) PLRA - CA sycamore (<i>Platanus racemosa</i>) Co-Dominant Overstory Species ACNE - boxelder (<i>Acer negundo</i>) SALUL - Pacific willow (<i>S. lucida</i> ssp. <i>lasiandra</i>) Other Species Observed JUCA - CA black walnut (<i>Juglans californica</i> var. <i>hindsii</i>) POFR - Fremont cottonwood (<i>P. fremontii</i>)	
SMZ 2	28.0	34.2	88.8	0.8	1	–	1	3 (SASLAE, SALLAS, PLRA)	–		
SMZ 3 ⁵	–	–		–	–	–	–	5 (ACNE, POBA, PLRA, SALLAE, SALLAS)	–		
SMZ 4	41.7	31.2	76.7	0	1	–	3	4 (POBA, PLRA, SALLAE, SALLAS)	–		
SMZ 5	21.0	17.5	97.5	0	2	–	2	3 (PLRA, SALLAE, SALLAS)	–		
SMZ 6	33.3	19.2	87.5	0	1	–	2	4 (SALLAE, SALLAS, SALUL, PLRA)	–		
SMZ 7	39.2	31.7	80.0	0	1	–	2	4 (POBA, PLRA, SALLAE, SALLAS)	–		
SMZ 8	12.8	74.2	97.5	13.3	–	2	2	–	4 (SALLAE, SALLAS, POBA, PLRA)		
SMZ 9	42.5	17.5	93.8	0	–	1	2	–	3 (POBA, SASLAE, SALLAS)		
SMZ 10	49.1	17.2	75.8	0	–	2	3	–	4 (POBA, PLRA, SALLAE, SALLAS)		
SMZ 11	67.5	24.2	45.0	0	–	1	2	–	3 (POBA, SALLAE, SALLAS)		
SMZ 12/13	65.0	20.9	90.6	0	–	1	4	–	5 (ACNE, JUCA, POBA, PLRA, SALLAE, SALLAS)		
SMZ 14	15.6	57.8	77.5	0	–	2	2	–	5 (ACNE, POBA, PLRA, SALLAE, SALLAS)		
SMZ 15	17.5	35.0	95.0	0	–	1	2	–	4 (ACNE, JUCA, SALLAE, SALLAS)		
SMZ 16	24.2	70.0	71.3	0	–	1	1	–	3 (POBA, PLRA, SALLAS)		
SMZ 17	28.8	19.7	90.0	0	–	1	2	–	3 (PLRA, SALLAE, SALLAS)		
SMZ 18	20.5	28.3	77.5	0	–	1	2	–	3 (PLRA, SALLAE, SALLAS)		
SMZ 19	13.3	26.2	87.5	0	–	2	3	–	4 (POBA, SALLAE, SALLAS, SALUL)		
SMZ 20	42.5	70.8	88.8	0	–	1	3	–	1 (SALAS)		
SMZ 21	19.2	75.0	71.3	0.8	–	1	2	–	2 (SALAS, ACNE)		
SMZ 22	1.7	78.3	61.3	0	–	1	1	–	1 (SALAS)		

¹ Original performance criteria: data collected using the documented quadrat method. Quadrat averages exclude overstory cover recorded in Riparian Scrub zones which are managed for low-growing perennial natives excluding overstory cover.

² Modified performance criteria (new diversity metric): data collected using visual assessment of specified sampling unit

³ Year 4 performance criteria for number of dominant/co-dominant native understory species taken from 2024 Annual Report; Year 1, 2, 3 and 5 performance criteria developed in 2025 based on industry standards and trends provided in other criteria

⁴ Modified performance criteria (new diversity metric): number of overstory species in Buffer Strip adjacent to each SMZ; species are listed alphabetically

⁵ Quadrat sampling data was not collected at SMZ 3 due to limited access and safety issues; tall and dense hoary nettle (*Urtica dioica*), California blackberry (*Rubus ursinus*) and poison oak (*Toxicodendron diversilobum*) within the SMZ made for conditions in which data collection was not feasible

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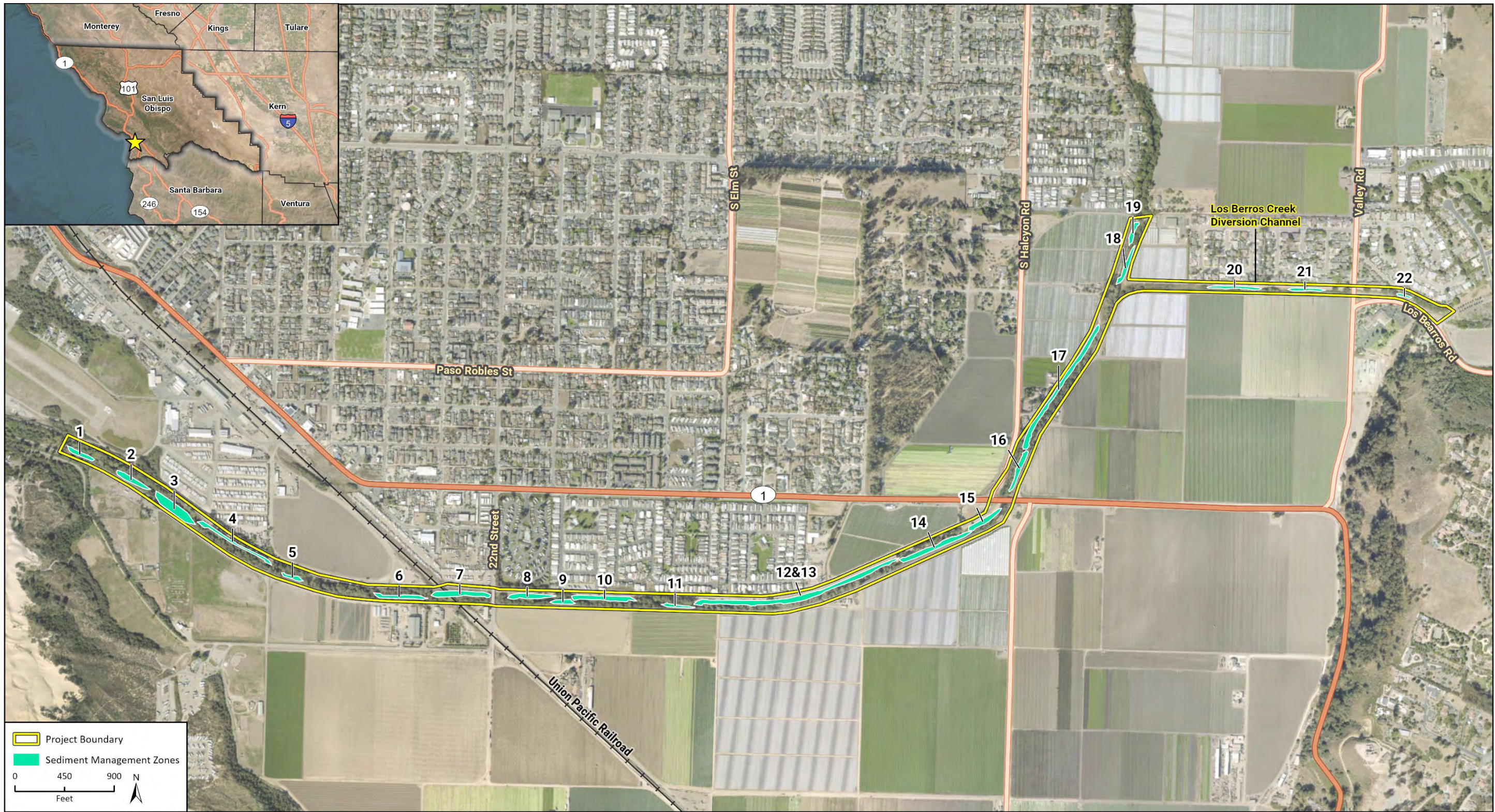
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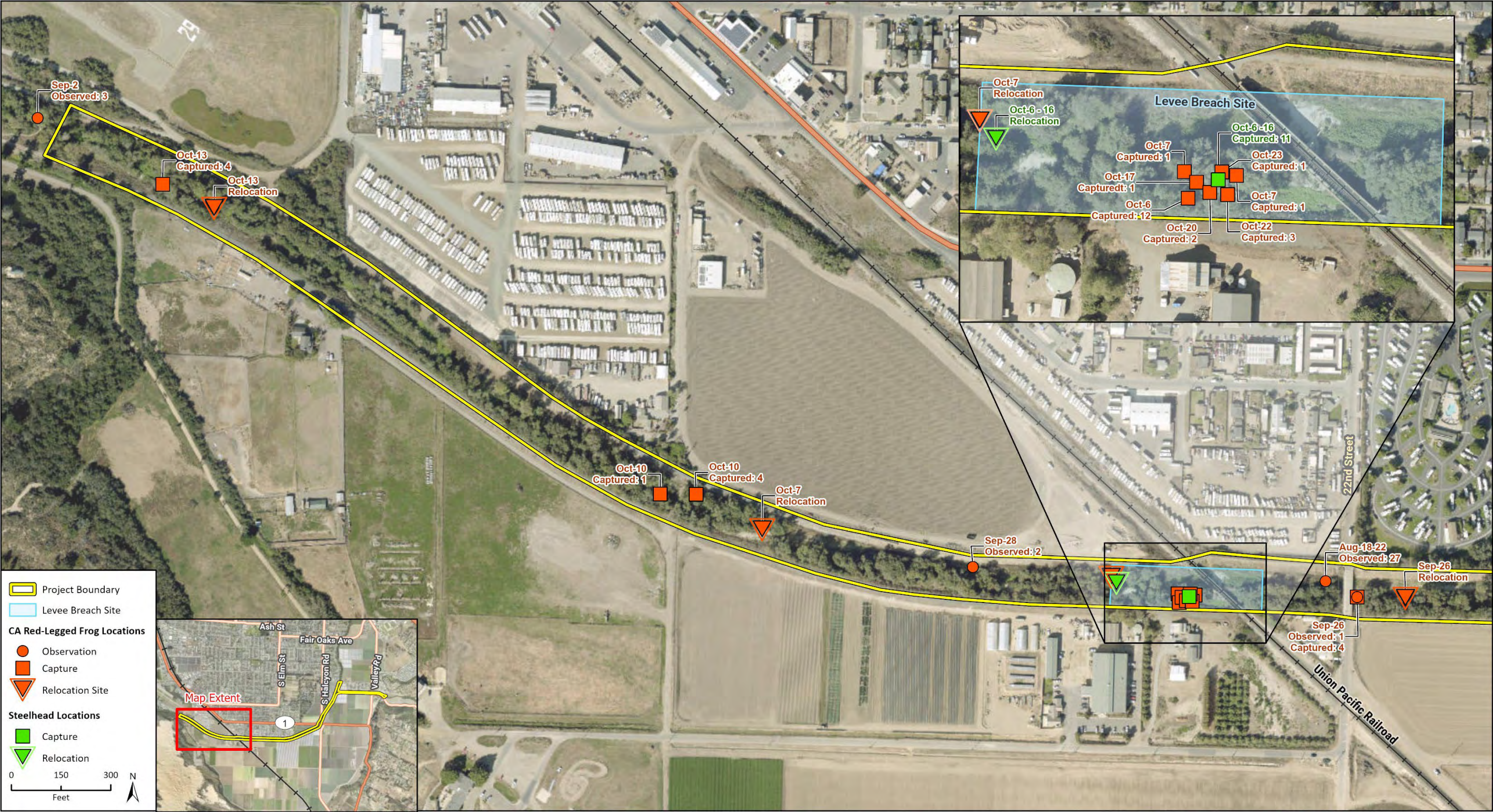
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Appendix A

Project Figures





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24-17044 B1Q
Fig A-2 Special Status Species Observation and Relocation Map

Appendix B

2025 Site Photographs (Vegetation Maintenance, Sediment Management and Revegetation Activities)



Photograph 1. Vegetation removal at SMZ 12/13, facing east. July 10, 2025.



Photograph 2. Goats utilized for vegetation removal downstream on 22nd Street bridge, facing north. August 20, 2025.



Photograph 3. Goats utilized for vegetation removal downstream on 22nd Street bridge, facing east. August 20, 2025.



Photograph 4. Vegetation management crew trimming woody vegetation within the secondary channel north of Arroyo Grande Creek, facing south. September 16, 2025.



Photograph 5. Crew trimming woody vegetation along levee road south of Los Berros Creek, facing east. September 19, 2025.



Photograph 6. Levee road north of Arroyo Grande Creek following woody vegetation trimming, facing east. September 16, 2025.



Photograph 7. Looking east at the upstream block at the Breach Site. October 16, 2025.



Photograph 8. Fish recovery and relocation during diversion of Arroyo Grande Creek at the Breach Site. October 16, 2025.



Photograph 9. SCCC steelhead recovered and relocated from the Breach Site. October 15, 2025.



Photograph 10. Sediment removal at SMZ 7. October 16, 2025.



Photograph 11. Looking east at the upstream diversion dam and diversion pipe running under the UPRR Bridge. October 21, 2025.



Photograph 12. Looking downstream (southwest) at the Breach Site with diversion pipe and dewatering wells in the foreground. October 21, 2025.



Photograph 13. Adult CRLF captured and relocated. October 22, 2025.



Photograph 14. Looking upstream (east) within the secondary channel sediment removal area of SMZ 7. October 23, 2025.



Photograph 15. Looking downstream (southwest) at the UPRR Bridge crossing the SMZ 7 secondary channel; Breach Site work area in background, photo left. October 27, 2025.



Photograph 16. Looking downstream (west) of Breach Site; levee bank has been stabilized, diversion removed, and streamflow returned to the primary channel. October 28, 2025.



Photograph 17. Planting container plants at SMZ 7. December 2, 2025.



Photograph 18. Planting container plants at SMZ 8. December 8, 2025.



Photograph 19. Newly planted native perennials with mulch topdressing; SMZ 8. December 8, 2025.



Photograph 20. Site preparation for new container plantings at SMZ 10. December 8, 2025.

Appendix C

CRAM Monitoring Results



Basic Information

eCRAM ID	10326
Assessment Area Name	Arroyo Grande Creek at 22nd Street
Project Name	
Assessment Area ID	Arroyo Grande Creek
Project ID	9157
Wetland Type	riverine non-confined
CRAM Version	6.1
Visit Date	2025-06-13T00:00:00.000Z
AA Category	mitigation
Practitioners	Travis Belt (lead practitioner)
Other Practitioners	Frances McKechnie
County	San Luis Obispo
Ecoregion	Central Coast
AA Centroid Latitude	35.0955
AA Centroid Longitude	-120.6063
AA Size (Hectares)	0.60
Approximate Length of AA	135
Average Channel Width	
Average AA Width	45
Average Bankful Width	11.64
Flowing water at time of assessment?	true
What is the channel form of the reach you are assessing?	Straight
Apparent Hydrologic Flow Regime	intermittent
Tidal Stage	not recorded
Is this a public record?	false
AA Comment	Restoration area within Arroyo Grande Creek in the City of Oceano and unincorporated SLO County, CA. Year 6 of ongoing restoration monitoring.

Metric Scores

Attribute	Attribute Score	Metric	Metric Score
buffer and landscape context	78.50	stream corridor continuity	A (12)
buffer and landscape context	78.50	percent of AA with buffer	B (9)
buffer and landscape context	78.50	average buffer width	D (3)
buffer and landscape context	78.50	buffer condition	B (9)
hydrology	75.00	water source	C (6)
hydrology	75.00	channel stability	B (9)
hydrology	75.00	hydrologic connectivity	A (12)
physical structure	62.50	structural patch richness	C (6)
physical structure	62.50	topographic complexity	B (9)
biotic structure	58.33	number of plant layers present	A (12)
biotic structure	58.33	number of co-dominant species	B (9)
biotic structure	58.33	percent invasion	C (6)
biotic structure	58.33	plant community score	9
biotic structure	58.33	horizontal interspersion and zonation	C (6)
biotic structure	58.33	vertical biotic structure	C (6)

Stressors

Metric	Stressor	Has a significant negative effect?
biotic structure	Mowing, grazing, excessive herbivory (within AA)	false
biotic structure	Pesticide application or vector control	false
biotic structure	Removal of woody debris	false
biotic structure	Treatment of non-native and nuisance plant species	false
buffer and landscape context	Dams (or other major flow regulation or disruption)	false
buffer and landscape context	Industrial/commercial	false
buffer and landscape context	Intensive row-crop agriculture	false
buffer and landscape context	Passive recreation (bird-watching, hiking, etc.)	false
buffer and landscape context	Rangeland (livestock rangeland also managed for native vegetation)	false
buffer and landscape context	Sports fields and urban parklands (golf courses, soccer fields, etc.)	false
buffer and landscape context	Transportation corridor	false
buffer and landscape context	Urban residential	false
hydrology	Actively managed hydrology	false
hydrology	Dike/levees	false
hydrology	Engineered channel (riprap, armored channel bank, bed)	false
hydrology	Flow diversions or unnatural inflows	false
hydrology	Groundwater extraction	false
hydrology	Non-point Source (Non-PS) discharges (urban runoff, farm drainage)	false
hydrology	Point Source (PS) discharges (POTW, other non-stormwater discharge)	false
physical structure	Bacteria and pathogens impaired (PS or Non-PS pollution)	false
physical structure	Pesticides or trace organics impaired (PS or Non-PS pollution)	false
physical structure	Vegetation management	false

Index Score: 69

This report was created on 10-28-2025 using the SFEI eCRAM Mapper at www.cramwetlands.org. The data provided in this report is for informational purposes only and may not be sufficient for the purposes of fulfilling the requirements of a regulatory permit. Please see "Using CRAM (California Rapid Assessment Method) To Assess Wetland Projects As an Element of Regulatory and Management Programs" CWMW, Oct. 13, 2009.



Basic Information

eCRAM ID	10327
Assessment Area Name	Los Berros Creek Diversion near Valley Road Bridge
Project Name	
Assessment Area ID	Los Berros Creek
Project ID	
Wetland Type	riverine non-confined
CRAM Version	6.1
Visit Date	2025-06-13T00:00:00.000Z
AA Category	mitigation
Practitioners	Travis Belt (lead practitioner)
Other Practitioners	Frances McKechnie
County	San Luis Obispo
Ecoregion	Central Coast
AA Centroid Latitude	35.1036
AA Centroid Longitude	-120.5842
AA Size (Hectares)	0.161
Approximate Length of AA	77.7
Average Channel Width	
Average AA Width	21
Average Bankful Width	5.2
Flowing water at time of assessment?	false
What is the channel form of the reach you are assessing?	Straight
Apparent Hydrologic Flow Regime	intermittent
Tidal Stage	not recorded
Is this a public record?	false
AA Comment	Restoration area within Los Berros Creek in unincorporated San Luis Obispo County, CA. Year 5 of ongoing restoration monitoring.

Metric Scores

Attribute	Attribute Score	Metric	Metric Score
buffer and landscape context	73.25	stream corridor continuity	A (12)
buffer and landscape context	73.25	percent of AA with buffer	B (9)
buffer and landscape context	73.25	average buffer width	D (3)
buffer and landscape context	73.25	buffer condition	C (6)
hydrology	75.00	water source	C (6)
hydrology	75.00	channel stability	B (9)
hydrology	75.00	hydrologic connectivity	A (12)
physical structure	37.50	structural patch richness	D (3)
physical structure	37.50	topographic complexity	C (6)
biotic structure	38.89	number of plant layers present	A (12)
biotic structure	38.89	number of co-dominant species	B (9)
biotic structure	38.89	percent invasion	D (3)
biotic structure	38.89	plant community score	8
biotic structure	38.89	horizontal interspersion and zonation	D (3)
biotic structure	38.89	vertical biotic structure	D (3)

Stressors

Metric	Stressor	Has a significant negative effect?
biotic structure	Mowing, grazing, excessive herbivory (within AA)	false
biotic structure	Treatment of non-native and nuisance plant species	false
buffer and landscape context	Dams (or other major flow regulation or disruption)	false
buffer and landscape context	Industrial/commercial	false
buffer and landscape context	Intensive row-crop agriculture	false
buffer and landscape context	Rangeland (livestock rangeland also managed for native vegetation)	false
buffer and landscape context	Sports fields and urban parklands (golf courses, soccer fields, etc.)	false
buffer and landscape context	Transportation corridor	false
buffer and landscape context	Urban residential	false
hydrology	Actively managed hydrology	false
hydrology	Dike/levees	false
hydrology	Flow diversions or unnatural inflows	false
hydrology	Groundwater extraction	false
hydrology	Non-point Source (Non-PS) discharges (urban runoff, farm drainage)	false
hydrology	Point Source (PS) discharges (POTW, other non-stormwater discharge)	false
physical structure	Bacteria and pathogens impaired (PS or Non-PS pollution)	false
physical structure	Pesticides or trace organics impaired (PS or Non-PS pollution)	false
physical structure	Vegetation management	false

Index Score: 56

This report was created on 10-28-2025 using the SFEI eCRAM Mapper at www.cramwetlands.org. The data provided in this report is for informational purposes only and may not be sufficient for the purposes of fulfilling the requirements of a regulatory permit. Please see "Using CRAM (California Rapid Assessment Method) To Assess Wetland Projects As an Element of Regulatory and Management Programs" CWMW, Oct. 13, 2009.

Appendix D

Wallace Group Log Structure and Alcove Monitoring Report

ARROYO GRANDE CREEK
WATERWAY MANAGEMENT PROGRAM
Annual Log Structure and Alcove Monitoring
For
County of San Luis Obispo

JANUARY 2026

Prepared by:



WALLACE GROUP

Wallace Group
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805 544-4011
Job Number: 0019-0118

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PURPOSE

The purpose of this report is to document and summarize the quantitative log structure and alcove monitoring conducted in 2025 as part of the Arroyo Grande Creek Waterway Management Program. This annual monitoring effort documents how these structures meet their objectives of maintaining flood conveyance capacity within the leveed channel and enhancing aquatic and riparian habitat for sensitive species. This report provides data to guide adaptive management strategies, prioritize maintenance needs, and inform future sediment and vegetation management actions by assessing structural integrity, hydraulic function, and habitat conditions.

Qualitative monitoring is documented in the NMFS Annual Status Report prepared by Rincon Consultants.

Recommendations resulting from this monitoring are included in the Annual Work Plan and/or the Secondary Sediment Management Plan.

INTRODUCTION

This report summarizes the monitoring of log structures installed along approximately 15,000 linear feet of Arroyo Grande and Los Berros Creeks in San Luis Obispo County, California. The monitoring is part of the Arroyo Grande Creek Waterway Management Program Project (Project), which aims to increase flood capacity within the project reach while enhancing water quality and providing habitat for sensitive species, including salmonids, in the leveed channel. To maintain the improved flood capacity, sediment and vegetation within the reach are managed as needed. The Phase 1 Design Drawings (August 13, 2019) and the Phase 2 Design Drawings (March 6, 2020) prepared by Cannon (Drawings) provide further details regarding the Project designs and can be provided upon request.

Construction of the Project was completed in two phases. In 2019, the first phase included installation of twenty-two (22) log structures and construction of eleven (11) secondary channels. The second phase, completed in 2020, added twenty (20) log structures and ten (10) secondary channels. Each secondary channel, located within a leveed portion of Arroyo Grande Creek (Figure 1), contains two log structures and corresponds to a designated Sediment Management Zone (SMZ). This report provides an assessment of all forty-two (42) log structures installed during both phases.

LOG STRUCTURE AND ALCOVE MONITORING

Log Structure Overview and Design Intent

Log structures were incorporated into the Project to reinforce the primary flow path of the Arroyo Grande Creek main channel while adding habitat complexity and grade control within the constructed secondary channels. Two types of structures were installed.

“Type A” structures were constructed at the upstream end of each secondary channel. Their primary purpose is to protect the head of the bar between the main and secondary channels, downstream of the secondary channel inlets. These structures also enhance habitat complexity and provide cover for steelhead and California red-legged frog. During high-flow events, Type A structures are intended to create turbulence that forms and maintains pools. Additionally, they introduce roughness, promoting variability in flow conditions and channel substrate.

“Type B” structures were installed near the downstream end of the secondary channels. These structures function as grade control features and habitat elements, encouraging scour and pool formation while preventing headcutting into the secondary channels. Depending on their position relative to the main channel, Type B structures can create backwater alcoves and mimic undercut banks, offering refuge for migrating steelhead during high flows. Alcoves also provide habitat for red-legged frogs when flow velocities are low and when areas remain moist or ponded as flows recede and secondary channels dry.

Monitoring Program

Specific monitoring procedures for the log structures were not included in the project permits. Therefore, a monitoring program was developed to inspect the log structures, verify that they are functioning as intended, and implement adaptive management measures if needed. The monitoring program includes the following elements:

- Photo Documentation: Taking photos of each log structure and associated pool and alcove features from established photo points.
- Visual Assessment: Evaluating the stability and condition of each log structure, associated pool or alcove, and adjacent channel.
- Habitat Data Collection: Recording habitat data focused on flow velocity (when flow is present), pool development, and shelter rating at the log structures.

Monitoring Methods

Quantitative monitoring of the forty-two log structures was conducted on February 28, June 25, and December 11, 2025. During each visit, Wallace Group representatives walked the project reach and collected photos, notes, and field measurements as applicable. The February 28, 2025 monitoring was conducted by Waterways Consulting. Photos were taken to document the condition of each structure and surrounding area. Type A structures were photographed generally looking downstream, while Type B structures were photographed generally looking upstream. An exhibit of the log structures, secondary channels, and general photo point locations is included in Appendix A. Representative photos of the log structures are included in Appendix B.

Field measurements and observations were recorded on monitoring forms. Where water was present in pools adjacent to log structures, pool dimensions were measured; where water was absent, dimensions were estimated where visible scour had occurred. Velocity was measured using the orange peel method when surface flow was present. This method involves placing an orange peel in the water and timing its travel over a defined distance using a stopwatch. Velocity is calculated by dividing the distance traveled by the recorded time, yielding feet per second.

A shelter rating was also determined for each log structure using the method outlined in the California Salmonid Stream Habitat Restoration Manual, Part III: Habitat Inventory Methods (CDFW 2004), included as Appendix C. Shelter ratings were assigned assuming the presence of flow and appropriate depths to provide steelhead habitat, even if a structure was dry at the time of monitoring. Additional observations included visual estimates of pool cover percentage, notes on log structure and adjacent channel condition, and identification of recommended adaptive management or maintenance needs.

Monitoring Results

Conditions remained relatively unchanged since the fall 2024 inspection, which followed sediment and debris removal activities completed throughout most of the project reach. Refer to the 2024 report for locations where maintenance occurred. Storm flows during 2025 were similar to those in 2024, if not lower. The creek did not experience any high-flow events exceeding full storm flow stage at the 22nd Street Bridge gage (County of San Luis Obispo Public Works Department, 2025). Figure 1 includes a graph showing flow stage at 22nd Street Bridge during 2025.



Figure 1. 22nd Street Bridge Gage Stage Data 2025

Few secondary channels appeared to have been activated during 2025, and of those activated, all but Secondary Channel 15 have swapped from their primary channels to the secondary permanently. Table 1 summarizes the secondary channels activated during each winter since monitoring began in Water Year 2020.

Table 1. Secondary Channels Activated by Flood Flows

Water Year	Secondary Channel /Sediment and Vegetation Management Site # Activated
2019-2020	3, 9, 10
2020-2021	1, 3, 9, 10, 11, 12/13, 14, 15, 16, 17, 19
2021-2022	1, 3, 5, 6, 9, 10, 11, 12/13, 14, 15, 16, 17, 19
2022-2023	All Secondary Channels
2023-2024	All Secondary Channels
2024-2025	14, 15, 16, 17, 18, 19

The log structures have remained intact after experiencing high flows during several events since project construction. Some areas of scour have persisted around certain structures, while other locations have undergone cycles of scour and deposition.

For some Type A structures, scouring adjacent to the secondary channel inlet has exposed the log spanning the inlet. In some cases, this has resulted in flow impingement along the levee or bank toe because the log is sloped away from the main channel.

For Type B structures, some footer logs have been undermined but continue to force flow over the top of the logs during medium to high flows. These scour areas provide cover and habitat complexity when inundated and are not considered problematic unless they lead to headcut formation extending upstream or erosion along the levee or bank toe.

Monitoring forms with field notes are provided in Appendix D, organized by inspection date. Table 2 summarizes log structure and secondary channel conditions to help prioritize future maintenance activities. A detailed description of each log structure—including water presence, pool formation, and shelter rating—is included on the monitoring forms. Representative photos of each log structure are included in Appendix B. Comprehensive digital photos from each inspection can be provided upon request.

Table 2 summarizes the log structure and habitat conditions to help prioritize future maintenance activities. A more detailed description of each log structure, including information related to the presence of water and pool formation at each structure, and the shelter rating are included on the monitoring forms. Recommendations based on the 2025 monitoring events can be found in the 2025 Secondary Sediment Management Plan.

Table 2. Log Structure Condition and Habitat Rating Table

Site #	Log Structure Condition	Alcove/Pool Condition	Notes
1A	OK	None	Structure is perched on riparian buffer. Heavy sediment build up within log structure.
1B	Good	Poor	Log structure holding grade near outlet of secondary channel.
2A	Good	None	1 to 2 ft of deposition at inlet to the secondary channel.
2B	Good	Poor	Sediment covers top of footer log on upstream side, and a small pool downstream.
3A	Good	Good	Heavy vegetation in and around structure. Significant debris racking.
3B	Poor	OK	Continuous groundwater on both sides of footer log. Log structure undercut and significant scour on upstream side. River left root wad near to fully exposed, river right footer log is buried.
4A	Good	OK	Heavy vegetation in and around structure and only a small pool.
4B	OK	Poor	Root wad logs are perched above the channel. Footer log is buried.
5A	Good	Good	Sediment in the secondary channel. Heavy debris racking on top of structure.
5B	OK	Poor	River right root wad is perched on riparian buffer. Minimal to no vegetative cover.
6A	Good	Good	Appears stable and performing as intended.
6B	Good	OK	Root wad on river right is perched on riparian buffer. Footer log is buried. Sediment deposition in secondary channel downstream from the structure.
7A	OK	Good	Pool is perched above main flow channel, approx. 3 to 4 feet. Debris racking between structure and main channel.
7B	Good	OK	Footer log exposed on downstream side, small pool on river right.
8A	OK	Good	Heavy sediment build up, dense vegetation.
8B	Good	OK	Rootwad on river right and footer log completely covered. Narrow channel on upstream side of footer log on river left.
9A	Good	Good	Significant debris racking, dense vegetation.
9B	OK	Poor	Footer log on river right is fully undermined. Higher flows conveyed over the logs. Sediment deposition downstream of structure, before main channel.
10A	Good	Good	Significant debris racking. There was a beaver dam in the area that is now gone after the November storms.
10B	OK	Poor	Fully filled in with sediment. Minor depression near rootwad on river left. Root wad on river right buried.
11A	Good	Poor	Sediment build up under structure. Minor flow path under structure. Standing water in secondary channel.
11B	OK	OK	River left root wad fully exposed, river right root wad fully buried.

Site #	Log Structure Condition	Alcove/Pool Condition	Notes
12/13A	OK	Good	Structure is perched approx. 3 feet above the main channel. Small scour pool immediately underneath the structure.
12/13B	Good	Good	Log structure operates optimally. Root wads exposed on both sides, shallow pool immediately downstream from structure.
14A	Good	None	Flow in secondary channel only. Unlikely that primary flow will shift back to main channel, bend in thalweg pointing away from log structure.
14B	Poor	OK	Footer logs completely submerged. Root wad logs are both exposed on the side/top, with root wad fully exposed.
15A	OK	Good	Significant bank cutting over river right log (approx. 8ft).
15B	OK	Good	Footer logs were fully submerged in June from apparent backwater. Root wad on river right is exposed. River left root wad log is partially buried. Erosion cut on river right adjacent to root wad, approx. 5 to 6 feet deep.
16A	Poor	Good	Structure is perched above the primary channel. Vertical erosion cut into the secondary channel bank at river left, approx. 6-foot overhanging wall. Flow in both channels.
16B	Poor	Good	Trash present, flow solely in secondary channel, completely undercut. Root wads and footer logs are fully exposed.
17A	OK	Good	Sediment deposition underneath is limiting factor for pool. The structure is perched above the channels on the riparian buffer.
17B	OK	None	Completely submerged, flowing in both primary and secondary channels.
18A	OK	None	Significant sediment, log structure well outside main channel.
18B	OK	Poor	Trash present, debris present. Footer logs are completely undercut. Root wad logs are fully exposed.
19A	Good	OK	Structure impacted by buildup of sediment to within the top of the interior logs. Structure is perched above the channels on the riparian buffer. Some debris racking.
19B	Poor	Poor	All flow in secondary channel creating increased potential for impacting fish passage. Footer log is completely undercut and no longer holding grade. River left root wad log is fully buried.
20A	Good	OK	The log structure is perched above the channel and is only inundated during high flow.
20B	Good	None	The log structure is perched above the channel and is only inundated during high flow. River left root wad log perched, river right root wad wholly buried.
21A	Good	OK	The log structure is perched above the channel and is only inundated during high flow. Scour under structure and pool sloped towards main channel.
21B	Good	None	The log structure is perched above the channel and is only inundated during high flow. Structure 80% buried.
22A	Good	Good	The log structure is perched above the channel and is only inundated during high flow.
22B	Good	None	The log structure is perched above the channel and is only inundated during high flow. River right root wad exposed, all else buried.

REFERENCES

California Department of Fish and Wildlife. July 2010. California Salmonid Stream Habitat Restoration Manual, Part III Habitat Inventory Methods.

Cannon. August 2019. Construction Drawings. Arroyo Grande Creek Waterway Management Program, Phase 1 Project 2019.

Cannon. March 2020. Construction Drawings. Arroyo Grande Creek Waterway Management Program, Phase II Project 2020.

County of San Luis Obispo Flood Control and Water Conservation District. August 2025. AGCWMP 2025 Secondary Sediment Management Plan.

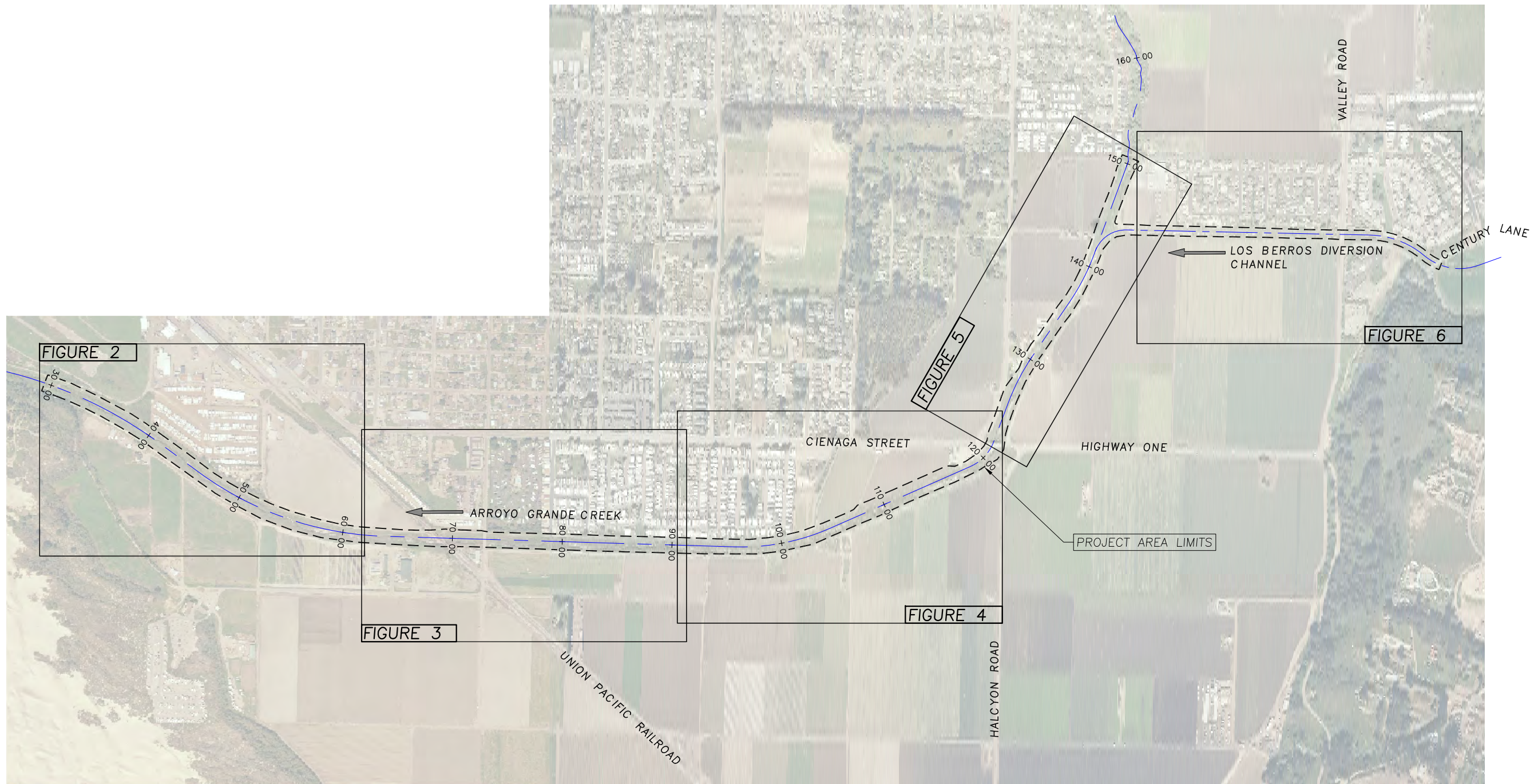
County of San Luis Obispo Public Works Department. “22nd Street Bridge (734)” SLO County Water Resources Dashboard,
https://wr.slocountywater.org/sensor/?site_id=9&site=9422c185-4650-4a19-9748-fd6042161110&device_id=1&device=d31896e3-200a-45f8-a7f0-624d09a7eee0.
Accessed December 12, 2025.

SWCA Environmental Consultants. 2019. Arroyo Grande Creek Channel Waterway Management Program, Habitat Mitigation and Monitoring Plan.

Waterways Consulting Inc. October 2010. Arroyo Grande Creek Channel Waterway Management Program – Final Report.

APPENDIX A

Log Structures, Secondary Channels, and General Photo Point Locations



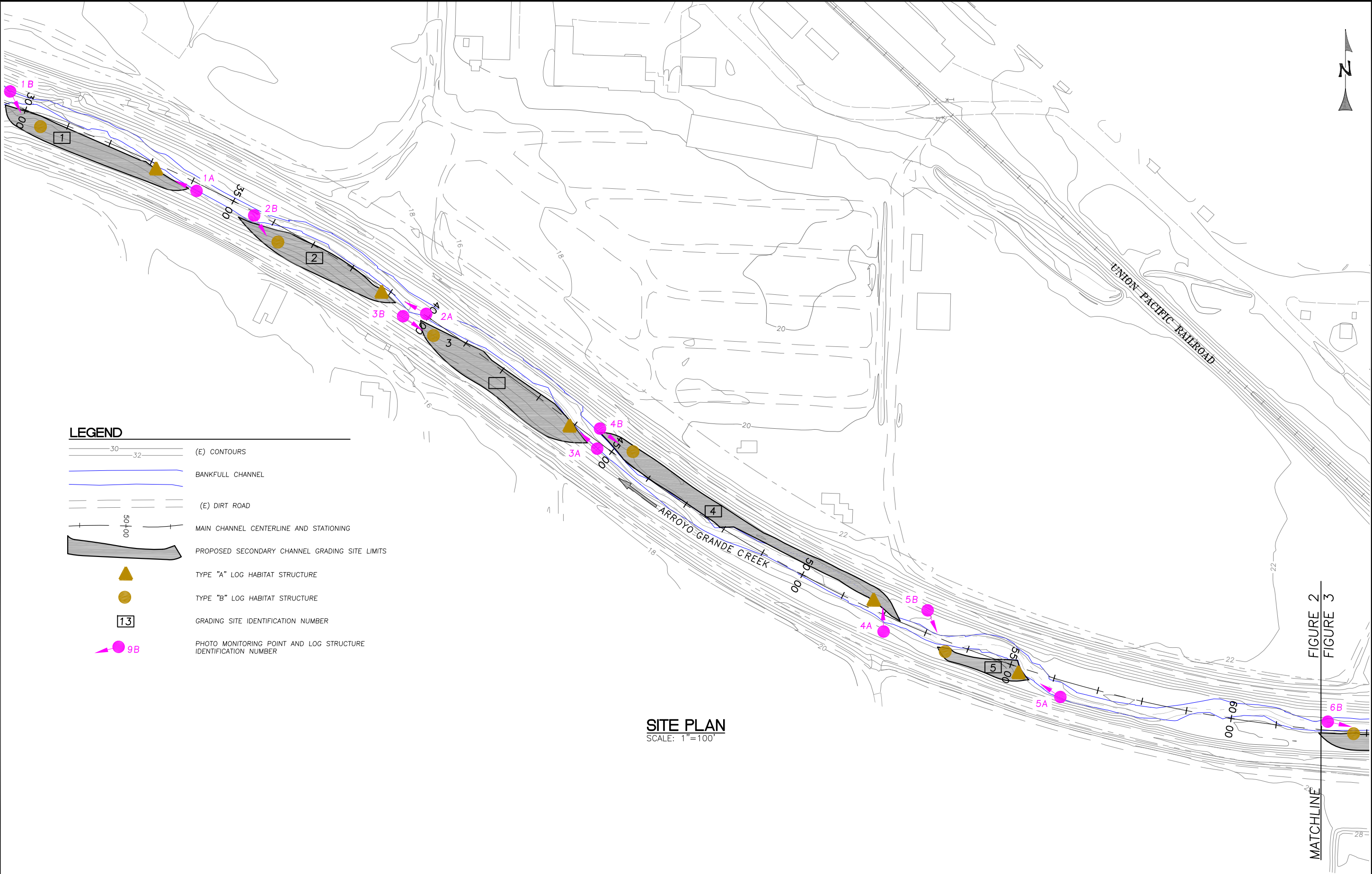
PROJECT AREA OVERVIEW
SCALE: 1"=500'

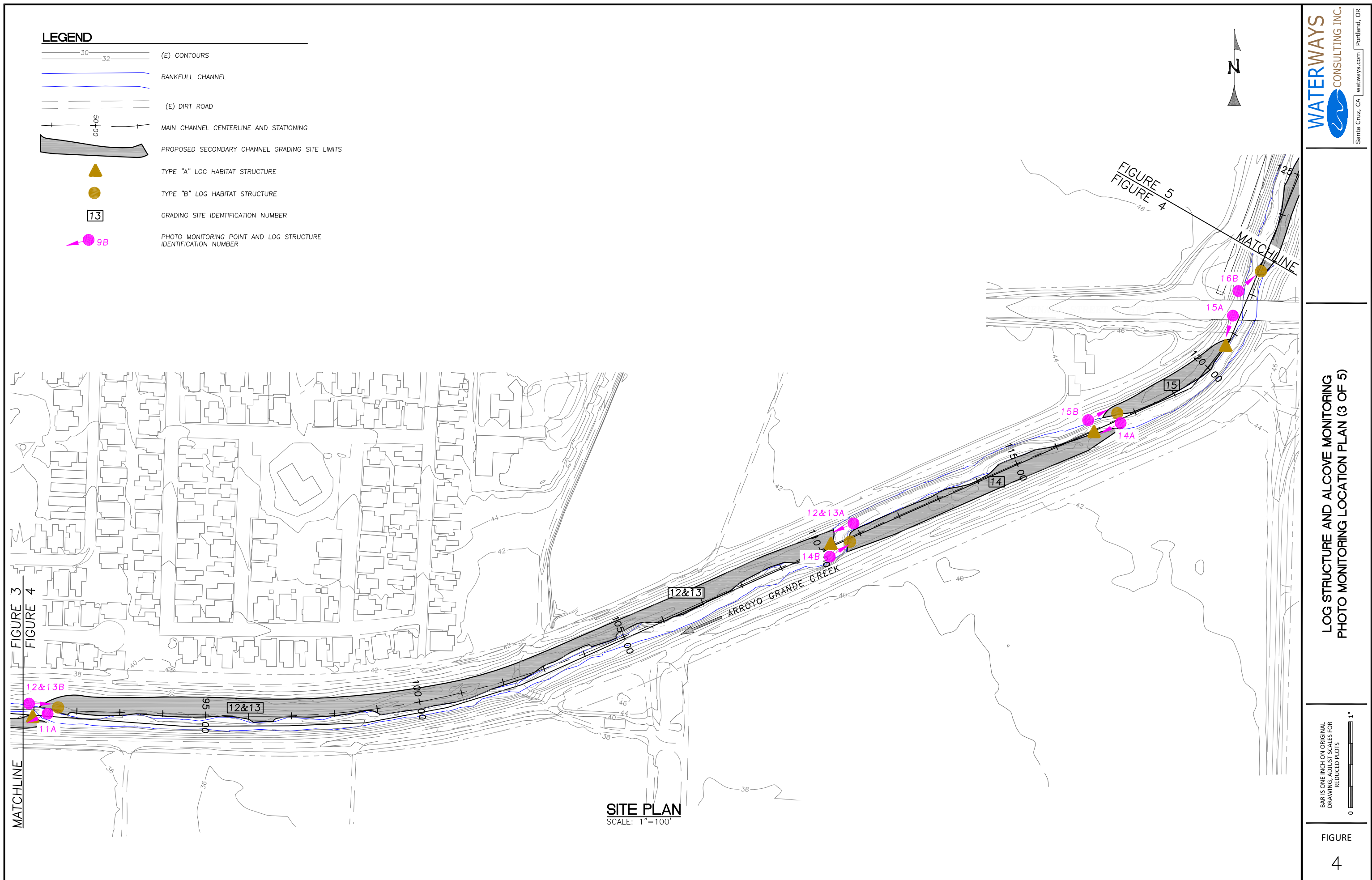
LEGEND

— ARROYO GRANDE CREEK

BAR IS ONE INCH ON ORIGINAL
DRAWING. ADJUST SCALES FOR
REDUCED PLOTS

0 1"





LEGEND

30

32

50

00

(E) CONTOURS

BANKFULL CHANNEL

(E) DIRT ROAD

MAIN CHANNEL CENTERLINE AND STATIONING

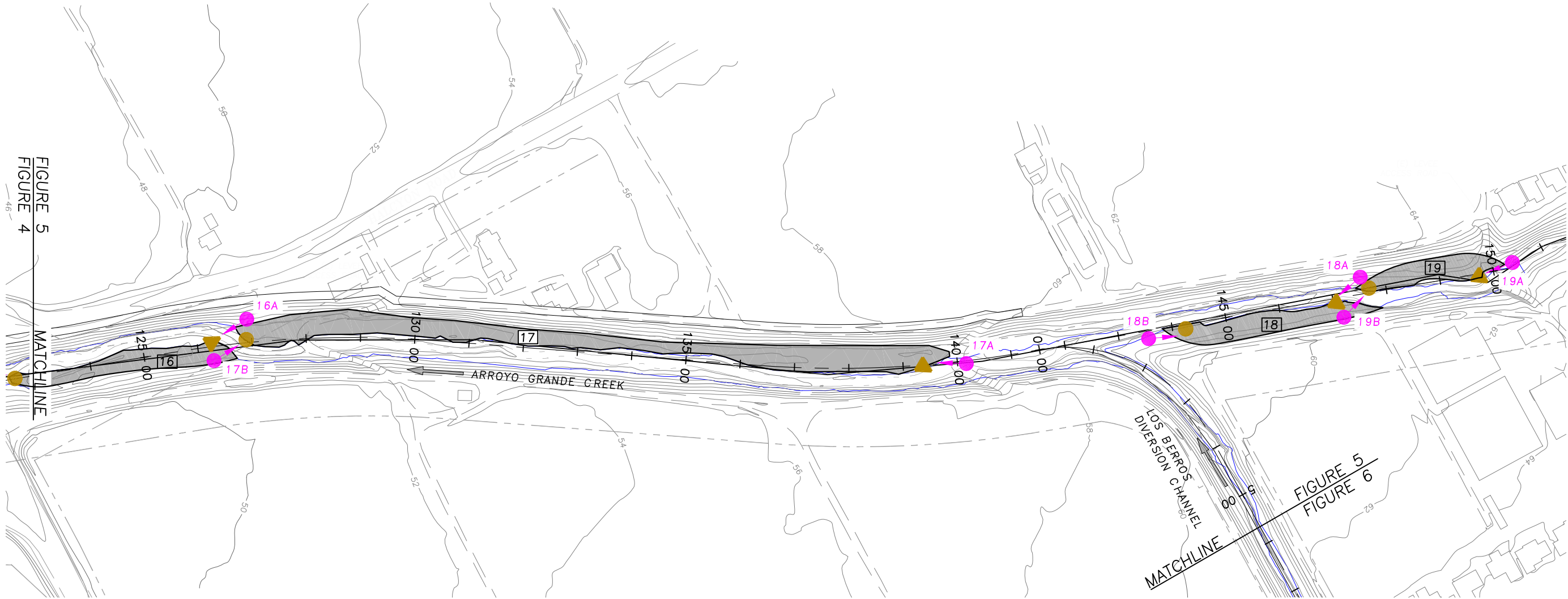
PROPOSED SECONDARY CHANNEL GRADING SITE LIMITS

TYPE "A" LOG HABITAT STRUCTURE

TYPE "B" LOG HABITAT STRUCTURE

GRADING SITE IDENTIFICATION NUMBER

PHOTO MONITORING POINT AND LOG STRUCTURE IDENTIFICATION NUMBER

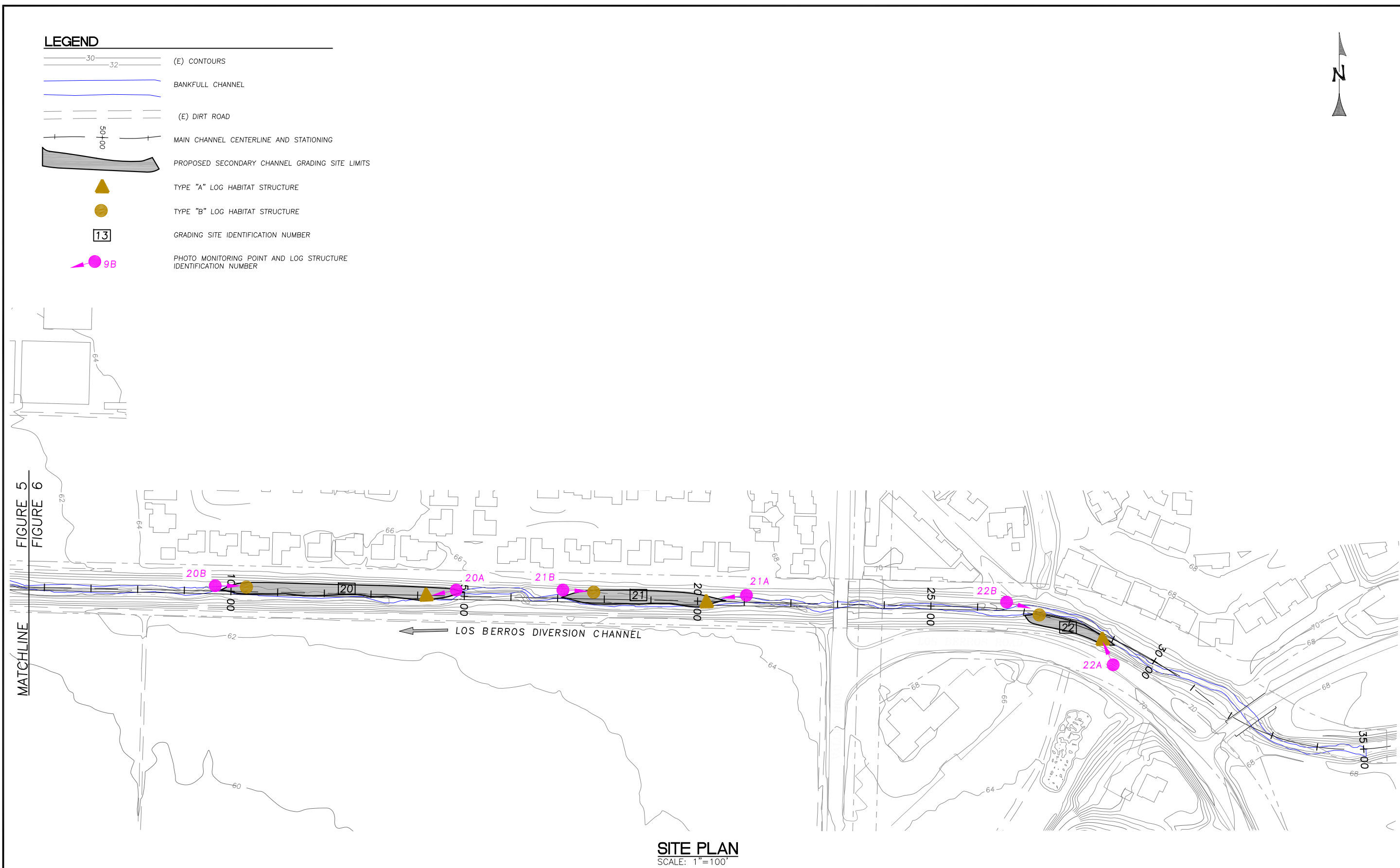


SITE PLAN
SCALE: 1"=100'



LOG STRUCTURE AND ALCOVE MONITORING
PHOTO MONITORING PLAN (4 OF 5)

BAR IS ONE INCH ON ORIGINAL
DRAWING. ADJUST SCALES FOR
REDUCED PLOTS



APPENDIX B

Representative Log Structure Monitoring Photos

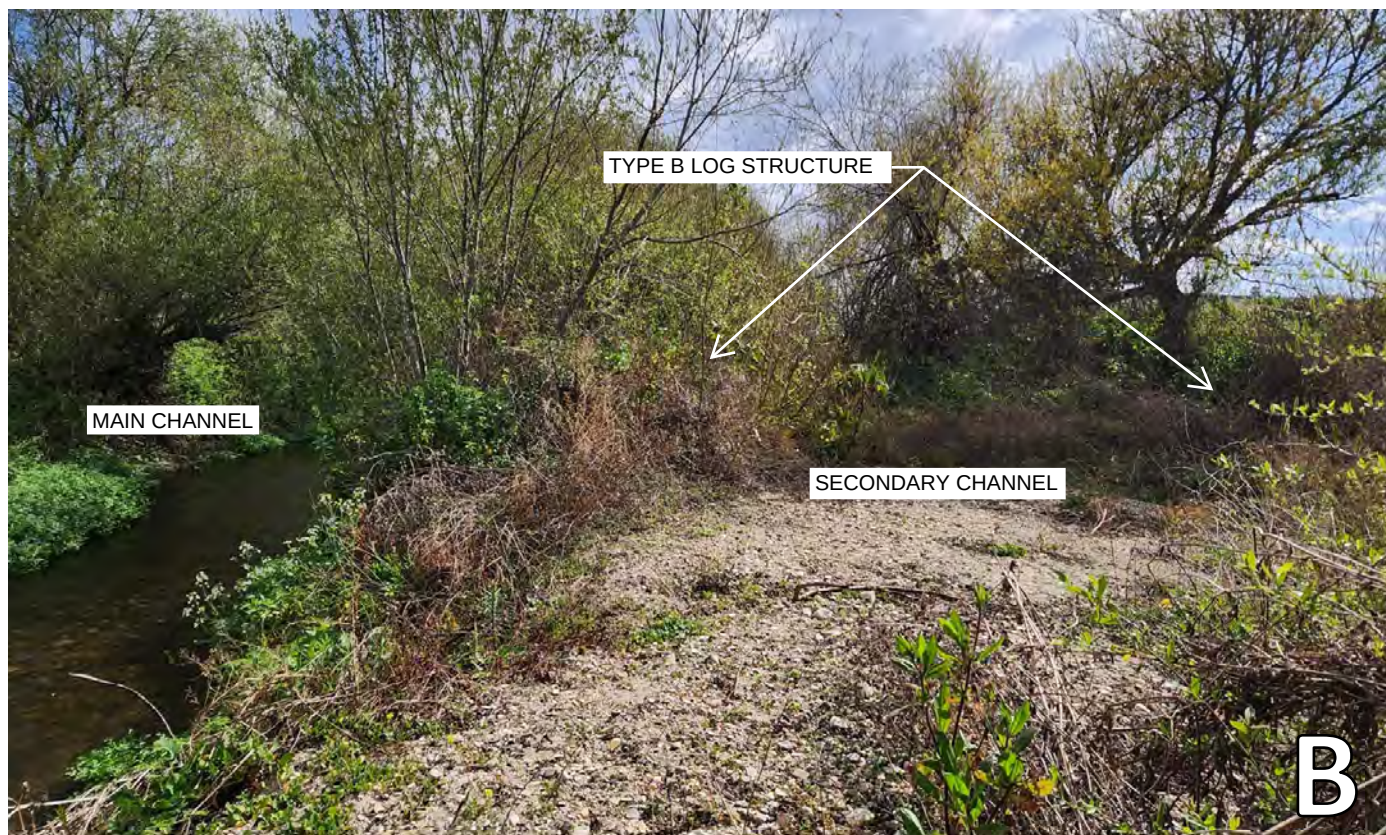
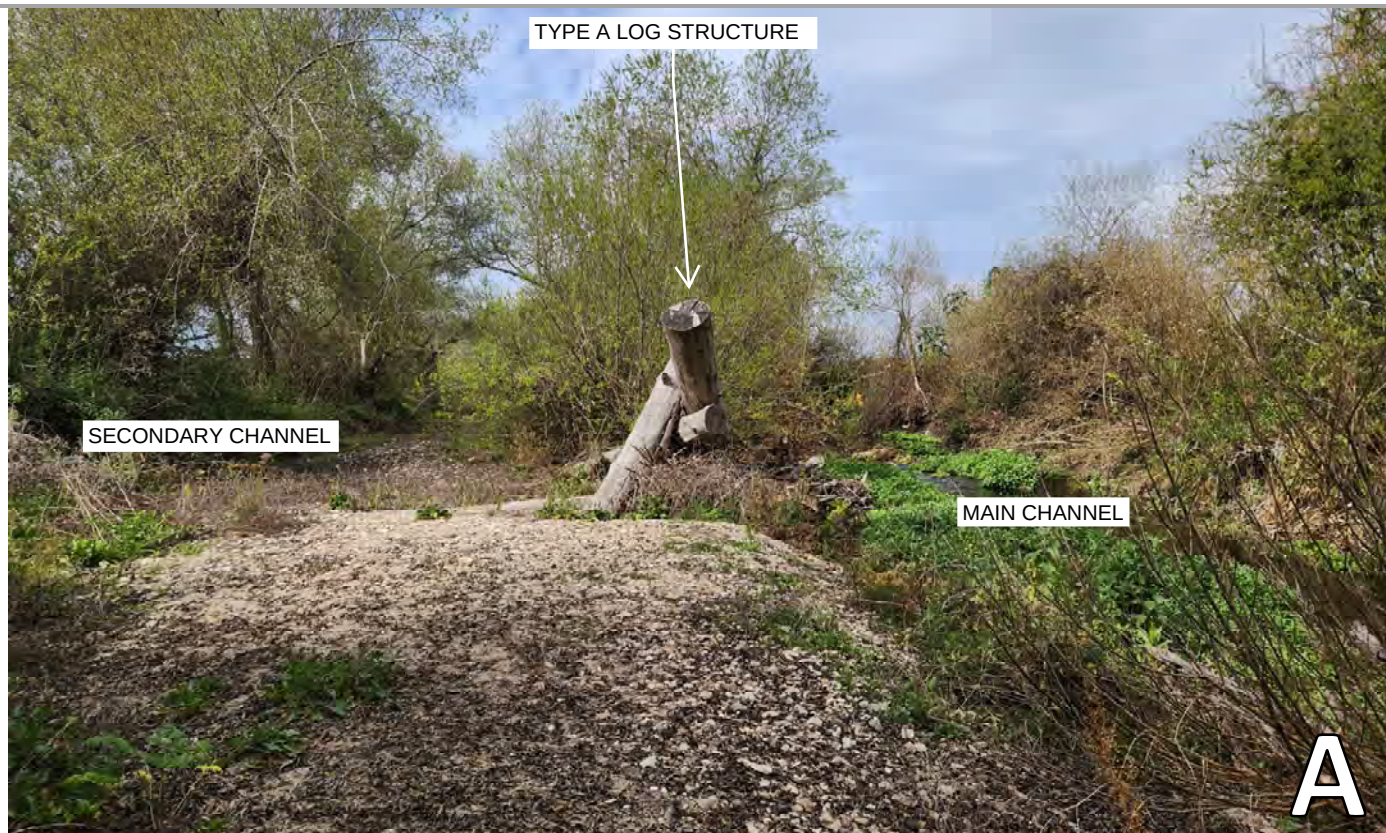








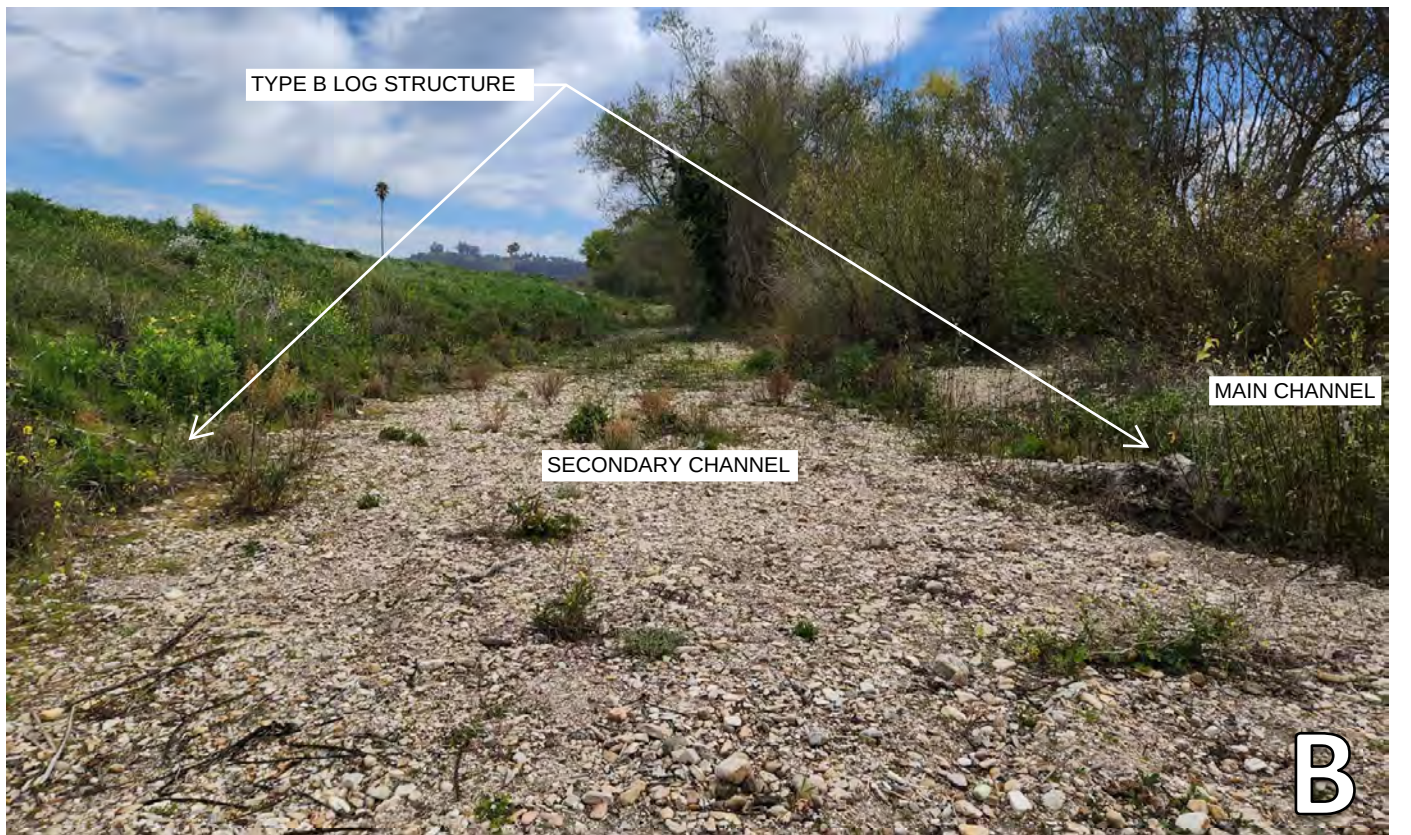








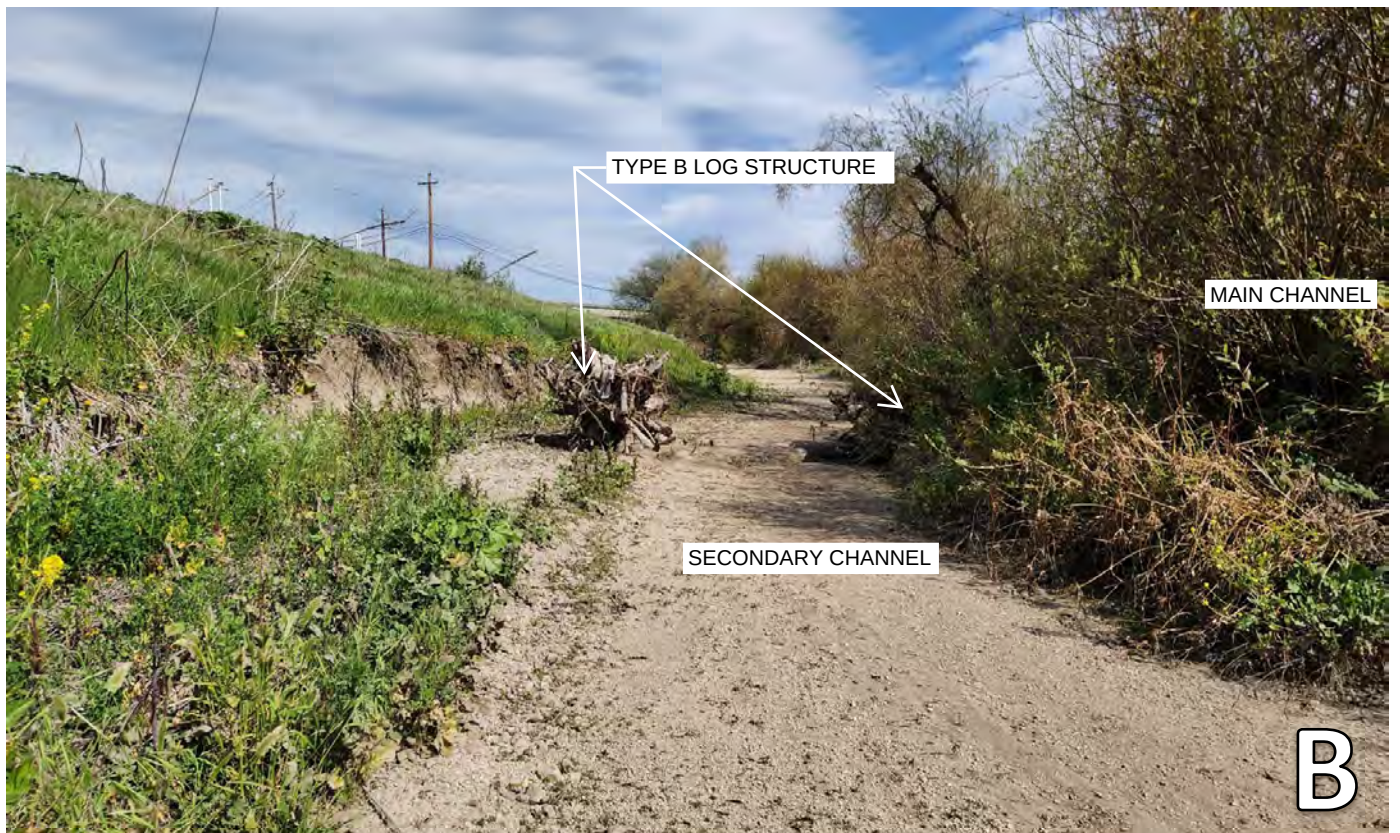












NOTE: PHOTO IS TAKEN FACING UPSTREAM















APPENDIX C

California Department of Fish and Wildlife – Shelter Rating

(California Salmonid Stream Habitat Restoration Manual, Fourth Edition)

CALIFORNIA SALMONID STREAM HABITAT RESTORATION MANUAL

Instream Shelter

Instream shelter within each habitat unit can be rated according to a standard system. This rating system is a field procedure for habitat inventories which utilizes objective field measurements. It is intended to rate, for each habitat unit, complexity of shelter that serves as instream habitat or that creates areas of diverse velocities which are focal points for salmonids. In this rating system, instream shelter is composed of those elements within a stream channel that provide protection from predation for salmonids, areas of reduced water velocities in which fish can rest and conserve energy, and separation between territorial units to reduce density related competition. This rating does not consider factors related to changes in discharge, such as water depth.

Instream Shelter Complexity. A value rating can be assigned to instream shelter complexity. This rating is a relative measure of the quantity and composition of the instream shelter.

Value	Instream Shelter Complexity Value Examples:
0	• No shelter.
1	• One to five boulders. • Bare undercut bank or bedrock ledge. • Single piece of large wood (>12" diameter and 6' long) defined as large woody debris (LWD).
2	• One or two pieces of LWD associated with any amount of small wood (<12" diameter) defined as small woody debris (SWD). • Six or more boulders per 50 feet. • Stable undercut bank with root mass, and less than 12" undercut. • A single root wad lacking complexity. • Branches in or near the water. • Limited submersed vegetative fish cover. • Bubble curtain.
3	Combinations of (must have at least two cover types): • LWD/boulders/root wads. • Three or more pieces of LWD combined with SWD. • Three or more boulders combined with LWD/SWD. • Bubble curtain combined with LWD or boulders. • Stable undercut bank with greater than 12" undercut, associated with root mass or LWD. • Extensive submersed vegetative fish cover.

Instream Shelter Percent Covered. Instream shelter percent covered is a measure of the area of a habitat unit occupied by instream shelter. The area is estimated from an overhead view.

APPENDIX D

Monitoring Forms

February 28, 2025

Site # 1	Site # 1
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth: N/A	Alcove Depth: 0.5 ft
Pool Width: N/A	Alcove Width: 20 ft
Pool Length: N/A	Alcove Length: 30 ft
Pool Area: N/A	Alcove Area: 600 sq. ft.
Flow Velocity: N/A	Flow Velocity: N/A
Velocity Differential Present: N/A	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes. Grasses and forbs. Young willows.	Is cover Present at Alcove? Yes – Boulder and rootwad. Grasses and forbs. Young willows.
Percent of Pool area w/ cover: N/A	Percent of Alcove area w/ cover: 90%
Shelter Rating: 3	Shelter Rating: 2
Notes: Sandy deposition occurred just upstream of log structure. The secondary channel inlet is perched 2 ft. above the main channel. Herbaceous vegetation has established throughout the secondary channel.	Notes: The log structure is holding grade. There is an approximately 1.5 ft. drop across the footer logs to the channel downstream.

Site # 2	Site # 2
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth: 1.5 ft	Alcove Depth: 0.5 ft.
Pool Width: 6 ft	Alcove Width: 20 ft.
Pool Length: 6 ft	Alcove Length: 80 ft.
Pool Area: 36 sq. ft.	Alcove Area: 1,600 sq. ft.
Flow Velocity: N/A	Flow Velocity: N/A
Velocity Differential Present: N/A	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes. Logs, vines, grasses and forbs.	Is cover Present at Alcove? Yes. Grasses and forbs, overhanging willow, rootwads
Percent of Pool area w/ cover: 30%	Percent of Alcove area w/ cover: 75%
Shelter Rating: 3	Shelter Rating: 2
Notes: There is a scour hole just upstream of the log structure and sandy deposition at the inlet to the secondary channel. The secondary channel is perched 2 ft. above the main channel. Herbaceous vegetation has established throughout the secondary channel.	Notes: The footer logs are 60% exposed with a 10 in. deep scour hole at the center of channel downstream of the footer logs. Areas of piping visible below footer logs.

Note: Pool and alcove dimensions have been estimated where water is not present.

Site # 3	Site # 3
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: Yes
Scour Depth: 1.5 ft.	Alcove Depth: 1 ft.
Pool Width: 15	Alcove Width: 20 ft.
Pool Length: 12	Alcove Length: 30 ft.
Pool Area: 180 sq. ft.	Alcove Area: 600 sq. ft.
Flow Velocity: 0 ft/sec	Flow Velocity: 0 ft/sec
Velocity Differential Present: 1.5 ft/sec	Velocity Differential Present: 1.5 ft/sec
Is cover Present at Pool area? Yes. Logs, woody debris, willow	Is cover Present at Alcove? Yes. Logs, overhanging willows, grasses and forbs.
Percent of Pool area w/ cover: 100%	% of Pool area w/ cover: 20%
Shelter Rating: 3	Shelter Rating: 3
Notes: Gravel deposition occurred upstream, adjacent to, and downstream of the log structure. Scour beneath the log structure has exposed ballast boulders and 90% of the log with rootwad extending across the secondary channel. A backwatered pool is present beneath the log structure. All flow is in the main channel. Large woody debris are racked on the log structure. Herbaceous vegetation has established in the majority of the secondary channel bed area.	Notes: There is a pool under and around the log structure fed by a subsurface connection to the main channel. The footer logs are undermined and no longer holding grade. The river left log is fully exposed. A 2-3 ft. tall vertical bank cut formed at river left by the rootwad.

Site # 4	Site # 4
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth: 1 ft.	Alcove Depth: 0.5 ft.
Pool Width: 12 ft.	Alcove Width: 30 ft.
Pool Length: 8 ft.	Alcove Length: 70 ft.
Pool Area: 96 sq. ft.	Alcove Area: 2,100 sq. ft.
Flow Velocity: N/A	Flow Velocity: 0 ft/sec
Velocity Differential Present: N/A	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes –overhanging willows, logs, grasses and forbs	Is cover Present at Alcove? Yes – rootwads, grasses and forbs, overhead willows and cottonwood trees
Percent of Pool area w/ cover: 100%	Percent of Alcove area w/ cover: 75%
Shelter Rating: 3	Shelter Rating: 2
Notes: The inlet to the secondary channel is perched 3-5 ft above the main channel invert. A willow growing along main channel is resting on the structure. Sandy deposition is visible at the inlet to the secondary channel, and in the first 40 ft. of the secondary channel downstream of the log structure. Herbaceous vegetation has established throughout the secondary channel.	Notes: Large alcove area downstream of logs when flow is present, separated from main channel by a low berm. The footer logs are completely buried, the rootwad logs are 60% exposed. A 8 in. deep x 4 ft. x 3 ft. scour hole has developed by the river left rootwad.

Note: Pool and alcove dimensions have been estimated where water is not present.

Site # 5	Site # 5
Log Structure type: A	Log Structure type: B
Water Present: Yes, stagnant	Water Present: No
Pool Depth: 2 ft.	Alcove Depth: 0.5 ft.
Pool Width: 25 ft.	Alcove Width: 10 ft.
Pool Length: 15 ft.	Alcove Length: 20 ft.
Pool Area: 375 sq. ft.	Alcove Area: 200 sq. ft.
Flow Velocity: 0 ft/sec	Flow Velocity: 0 ft/sec
Velocity Differential Present: 0.5 ft/sec	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – Rootwads, logs, debris, willows.	Is cover Present at Alcove? Yes – weeds, overhanging willows, rootwads.
Percent of Pool area w/ cover: 100%	Percent of Alcove area w/ cover: 80%
Shelter Rating: 3	Shelter Rating: 2
Notes: Debris racking on the log structure. Deposition of gravel downstream of the log structure. Nice pool has developed under the log structure exposing more of the logs and a ballast boulder. Inlet to the secondary channel is perched 3+ ft. above the main channel invert.	Notes: Top half of the footer logs are visible. There is an approximately 3 ft. drop to the main channel invert from the log structure. Deposition of gravel is visible in portions of the alcove. Herbaceous vegetation has established throughout the alcove.

Site # 6	Site # 6
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: No
Pool Depth: 2 ft.	Alcove Depth: 0.5 ft.
Pool Width: 15 ft.	Alcove Width: 20 ft.
Pool Length: 10 ft.	Alcove Length: 30 ft.
Pool Area: 150 sq. ft.	Alcove Area: 600 sq.ft.
Flow Velocity: 0 ft/sec	Flow Velocity: 0 ft/sec
Velocity Differential Present: 1.0 ft/sec	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – rootwad and logs.	Is cover Present at Alcove? Yes – overhanging and young willows.
Percent of Pool area w/ cover: 80%	Percent of Alcove area w/ cover: 10%
Shelter Rating: 3	Shelter Rating: 2
Notes: There is a backwater pool located below the log structure. Woody debris is racked on the log structure. Sand and gravel deposition is visible upstream of the log structure.	Notes: The rootwad logs are 50% exposed. The top of the footer logs are barely exposed. Deposition at downstream end of alcove near the confluence with the main channel.

Note: Pool and alcove dimensions have been estimated where water is not present.

Site # 7	Site # 7
Log Structure type: A	Log Structure type: B
Water Present: No.	Water Present: No.
Pool Depth: 2 ft.	Alcove Depth: 0.25 ft.
Pool Width: 15 ft.	Alcove Width: 15 ft.
Pool Length: 6 ft.	Alcove Length: 25 ft.
Pool Area: 90 sq.ft.	Alcove Area: 375 sq. ft.
Flow Velocity: 0 ft/sec	Flow Velocity: 0 ft/sec
Velocity Differential Present: N/A	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – Logs. Overhead trees, grasses, and forbs,	Is cover Present at Alcove? Yes – rootwads, grasses and forbs, overhanging willows.
Percent of Pool area w/ cover: 50%	Percent of Alcove area w/ cover: 100%
Shelter Rating: 3	Shelter Rating: 2
Notes: Debris racking on and adjacent to log structure. The secondary channel invert is perched approximately 3 ft. above the main channel invert.	Notes: There is a 4 ft x 15 ft x 1 ft deep scour hole by the rootwad of the river right log.

Site # 8	Site # 8
Log Structure type: A	Log Structure type: B
Water Present: Yes, stagnant	Water Present: No
Pool Depth: 3 ft	Alcove Depth: 0.5 ft.
Pool Width: 15 ft	Alcove Width: 30 ft.
Pool Length: 12 ft	Alcove Length: 100 ft.
Pool Area: 180 sq. ft.	Alcove Area: 3000 sq. ft.
Flow Velocity: 0 ft/sec	Flow Velocity: 0 ft/sec
Velocity Differential Present: N/A	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes. Logs, young willow, woody debris.	Is cover Present at Alcove? Yes – overhanging willows, rootwads, grasses and forbs
Percent of Pool area w/ cover: 30%	Percent of Alcove area w/ cover: 30%
Shelter Rating: 3	Shelter Rating: 2
Notes: Subsurface flow from main channel is inundating the pool located directly upstream and below the log structure. Willows continue to become established downstream of log structure. Deposition in secondary channel downstream of the log structure.	Notes: A large alcove extends downstream of the log structure. The footer logs are buried. The river left log and rootwad is 75% exposed. Herbaceous vegetation has established throughout the secondary channel.

Note: Pool and alcove dimensions have been estimated where water is not present.

Site # 9	Site # 9
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: No
Pool Depth: 2 ft.	Alcove Depth: 1 ft.
Pool Width: 15 ft.	Alcove Width: 15 ft.
Pool Length: 20 ft.	Alcove Length: 20 ft.
Pool Area: 300 sq. ft.	Alcove Area: 240 sq. ft.
Flow Velocity: 0 ft/sec	Flow Velocity: 0 ft/sec
Velocity Differential Present: 1 ft/sec	Velocity Differential Present: No.
Is cover Present at Pool area? Yes – Racked debris, overhanging willows, logs	Is cover Present at Alcove? Overhanging willows, rootwads, forbs
Percent of Pool area w/ cover: 100%	Percent of Alcove area w/ cover: 90%
Shelter Rating: 3	Shelter Rating: 3
Notes: There is a backwater pool located below the log structure. Mature willows adjacent to the log structure are helping to reinforce the bar between the channels. Young willows are establishing beside logs. Scour along levee/bank toe downstream of structure. Mature vegetation on levee/bank helping to reinforce slope at area of scour.	Notes: The footer logs and river right log are undermined. Large logs racked on the river left log with rootwad are providing cover and habitat complexity when flow is present in the secondary channel.

Site # 10	Site # 10
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: No
Pool Depth: 1.5 ft.	Alcove Depth: 0.5 ft.
Pool Width: 20 ft.	Alcove Width: 30 ft.
Pool Length: 10 ft.	Alcove Length: 40 ft.
Pool Area: 20 sq. ft.	Alcove Area: 1200 sq. ft.
Flow Velocity: 0 ft/sec	Flow Velocity: 0 ft/sec
Velocity Differential Present: 1.0 ft/sec	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – logs, debris, grasses and forbs, overhanging willows	Is cover Present at Alcove? Yes – rootwads, young willows
Percent of Pool area w/ cover: 80%	Percent of Alcove area w/ cover: 5%
Shelter Rating: 3	Shelter Rating: 2
Notes: There is a backwater pool located below the log structure. Deposition is visible at the secondary channel inlet. Mature trees downstream of the log structure are reinforcing the bar between channels. Large woody debris is racked on structure. Areas of scour along levee/bank toe has resulted in an approx. 1 ft. tall vertical bank.	Notes: Footer logs are buried and logs with rootwads are 90% buried. 1-2 ft. depth of gravel deposition is visible in the alcove and around the log structure. The alcove is perched approximately 1.5 ft. above the main channel invert.

Note: Pool and alcove dimensions have been estimated where water is not present.

Site # 11	Site # 11
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: No
Pool Depth: 1.5 ft.	Alcove Depth: 1.0 ft
Pool Width: 8 ft.	Alcove Width: 6 ft
Pool Length: 20 ft.	Alcove Length: 40 ft
Pool Area: 160 sq.ft.	Alcove Area: 240 sq. ft.
Flow Velocity: 0 ft/sec	Flow Velocity: 0 ft/sec
Velocity Differential Present: 1 ft/sec	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – young willows, logs, woody debris, grasses, and forbs	Is cover Present at Alcove? N/A
Percent of Pool area w/ cover: 5%	Percent of Alcove area w/ cover: 5%
Shelter Rating: 3	Shelter Rating: 2
Notes: There is a backwater pool located below the log structure. Deposition of gravel upstream of the log structure. Willows are establishing upstream of the log structure at the inlet to the secondary channel.	Notes: Log structure is at the confluence with the main channel. Logs are buried except for the river left log. Sandy deposition is visible over the logs. Herbaceous vegetation has established throughout the secondary channel.

Site # 12 & 13	Site # 12 & 13
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth: 1.5 ft.	Alcove Depth: 0.5 ft.
Pool Width: 6 ft.	Alcove Width: 35 ft.
Pool Length: 8 ft.	Alcove Length: 65 ft.
Pool Area: 48 sq. ft.	Alcove Area: 2,275 sq. ft.
Flow Velocity: 0 ft/sec	Flow Velocity: 0 ft/sec
Velocity Differential Present: N/A	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – logs, debris racking, young willows.	Is cover Present at Alcove? Yes – overhanging willows and logs.
Percent of Pool area w/ cover: 100%	Percent of Alcove area w/ cover: 5%
Shelter Rating: 3	Shelter Rating: 3
Notes: Significant debris are racked on the log structure. Gravel deposited is visible upstream of the structure. There is an area of localized erosion where there is a 3 ft. vertical bank for 5 linear feet along levee toe directly adjacent to the log structure.	Notes: The footer log is holding grade. Scour is visible on the downstream side of the footer logs. Deposition approx. 1 ft. deep is visible in the alcove area.

Note: Pool and alcove dimensions have been estimated where water is not present.

Site # 14	Site # 14
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: Yes
Pool Depth: N/A	Alcove Depth: N/A
Pool Width: N/A	Alcove Width: N/A
Pool Length: N/A	Alcove Length: N/A
Pool Area: N/A	Alcove Area: N/A
Flow Velocity: 2 ft/sec	Flow Velocity: 2 ft/sec
Velocity Differential Present: N/A	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – logs, young willow	Is cover Present at Alcove? Yes – logs
Percent of Pool area w/ cover: N/A	Percent of Alcove area w/ cover: 90%
Shelter Rating: 3	Shelter Rating: 3
Notes: Log structure is approximately 30 ft. upstream of the vegetated bar. Deposition at the structure has resulted in the structure being elevated above adjacent flow with no scour pool at structure. All flow is entirely in the secondary channel entering both upstream and downstream of the structure. Rock slope protection along levee toe continues to protect this area.	Notes: No alcove is present due to 100% of the flow being conveyed within the secondary channel. The footer logs are undermined and there is a 2 ft. deep scour pool below the logs.

Site # 15	Site # 15
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: No
Pool Depth: 3.5 ft.	Alcove Depth: 1 ft.
Pool Width: 8 ft.	Alcove Width: 20 ft.
Pool Length: 15 ft.	Alcove Length: 70 ft.
Pool Area: 120 sq. ft.	Alcove Area: 1400 sq. ft.
Flow Velocity: 1 ft/sec	Flow Velocity: 0 ft/sec
Velocity Differential Present: 1 ft/sec	Velocity Differential Present: 0.5 ft/sec
Is cover Present at Pool area? Yes – logs, debris	Is cover Present at Alcove? Yes – overhanging willows, rootwads, grasses and forbs
Percent of Pool area w/ cover: 80%	Percent of Alcove area w/ cover: 15%
Shelter Rating: 3	Shelter Rating: 3
Notes: There is a backwater pool located below the log structure. Scour at the log structure has exposed the ballast boulders and the log with rootwad extending across the secondary channel. The log is sloped away from the main channel and is directing flow into the levee/bank toe which has resulted in a 5 ft. vertical bank for approximately 50 feet. Significant debris is racked on the log structure.	Notes: No surface flow is present in the secondary channel. There is scour adjacent to the river right log, leaving a 4-5 ft. tall vertical bank for 30 ft. The footer logs are 80% buried. The rootwad logs are 100% exposed.

Note: Pool and alcove dimensions have been estimated where water is not present.

Site # 16	Site # 16
Log Structure type: A	Log Structure type: B
Water Present: Yes.	Water Present: Yes
Pool Depth: 0.5 ft.	Alcove Depth: 3.5 ft.
Pool Width: 20 ft.	Alcove Width: 20 ft.
Pool Length: 12 ft.	Alcove Length: 25 ft.
Pool Area: 240 sq. ft.	Alcove Area: 500 sq. ft.
Flow Velocity: 0 ft/sec	Flow Velocity: 1.0 ft/sec
Velocity Differential Present: N/A	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – logs, overhead willow	Is cover Present at Alcove? Yes – logs, woody debris
Percent of Pool area w/ cover: 100%	Percent of Alcove area w/ cover: 25%
Shelter Rating: 3	Shelter Rating: 3
Notes: 95% of the flow is in the main channel. 5% of flow is in the secondary channel. The pile logs have rotated downstream but are still connected to each other. Erosion along the levee toe has resulted in an approx. 5-foot-tall vertical bank for approx. 20 linear feet. Erosion along the toe is being exacerbated by the log extending across the secondary channel that has become exposed. Scour at the log structure has exposed a ballast boulder. Flow enters the secondary channel approximately 30 feet upstream of the Type B structure.	Notes: All flow is in the secondary channel. All flow is conveyed below the footer logs. Rock and concrete rubble exposed between the logs with rootwads is helping to hold grade upstream preventing further incision. There is a 3.5 ft. deep pool downstream of the log structure.

Site # 17	Site # 17
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: Yes
Pool Depth: 1 ft.	Alcove Depth: N/A
Pool Width: 8 ft.	Alcove Width: N/A
Pool Length: 8 ft.	Alcove Length: N/A
Pool Area: 64 sq. ft.	Alcove Area: N/A
Flow Velocity: 0 ft/sec	Flow Velocity: 1.5 ft/sec
Velocity Differential Present: No	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – logs, debris, vegetation, overhung willows	Is cover Present at Alcove? Yes. Logs, grasses and forbs, young willows
Percent of Pool area w/ cover: 40%	Percent of Alcove area w/ cover: 10%
Shelter Rating: 3	Shelter Rating: 2
Notes: All the flow is in the main channel, but is then directed into the secondary channel approximately halfway between the 17A and 17B log structures. Willows downstream of the log structure are helping to maintain the bar between channels. Significant debris is racked on the log structure.	Notes: 2/3 of the total flow is in the secondary channel and is being conveyed over the log structure. The footer logs are not exposed. The river right log with rootwad is 60% exposed. The river left log is buried.

Note: Pool and alcove dimensions have been estimated where water is not present.

Site # 18	Site # 18
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: Yes
Pool Depth: N/A	Alcove Depth: 1.5 ft.
Pool Width: N/A	Alcove Width: 12 ft.
Pool Length: N/A	Alcove Length: 30 ft.
Pool Area: N/A	Alcove Area: 360 sq. ft.
Flow Velocity: 0 ft/sec	Flow Velocity: 1 ft/sec
Velocity Differential Present: N/A	Velocity Differential Present: Yes – 1.5-2 ft/sec
Is cover Present at Pool area? Yes – willows, logs, grasses, and forbs	Is cover Present at Alcove? Yes – logs, root wads, bank cuts, overhung willows
Percent of Pool area w/ cover: N/A	Percent of Alcove area w/ cover: 20%
Shelter Rating: 3	Shelter Rating: 3
Notes: The log structure is located close to the river left bank and only gets inundated during high flows. Debris and sediment in the main channel are directing flow into the secondary channel 30 ft. downstream of the type A structure. Flow also enters the secondary channel directly downstream of the log structure. The secondary channel is incised downstream of where flow enters.	Notes: All flow is in secondary channel and being conveyed under the log structure. All logs are fully exposed. Incision has resulted in a 4-5 ft. vertical bank cut along the levee/bank toe. A 3 ft. deep pool has formed under the footer logs.

Site # 19	Site # 19
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: Yes
Pool Depth: 1 ft.	Alcove Depth: N/A
Pool Width: 15 ft.	Alcove Width: N/A
Pool Length: 15 ft.	Alcove Length: N/A
Pool Area: 225 sq. ft.	Alcove Area: N/A
Flow Velocity: 0.5 ft/sec	Flow Velocity: 1.5 ft/sec
Velocity Differential Present: 1.5 ft/sec	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – logs, young willows, woody debris.	Is cover Present at Alcove? Yes – logs, debris, overhanging willow, vertical banks
Percent of Pool area w/ cover: 5%	Percent of Alcove area w/ cover: 10%
Shelter Rating: 3	Shelter Rating: 3
Notes: Debris jam in the main channel directs 100% of the flow into the secondary channel upstream of the log structure. The secondary channel has incised approx. 2-3 ft.	Notes: All flow is within the secondary channel. Flow is passing below the footer logs and log with rootwad on river right.

Note: Pool and alcove dimensions have been estimated where water is not present.

Site # 20	Site # 20
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth: 0.5 ft.	Alcove Depth: N/A
Pool Width: 3 ft.	Alcove Width: N/A
Pool Length: 3 ft.	Alcove Length: N/A
Pool Area: 9 sq.ft.	Alcove Area: N/A
Flow Velocity: N/A	Flow Velocity: N/A
Velocity Differential Present: N/A	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – logs, grasses, and forbs	Is cover Present at Alcove? Yes – root wad, grasses, and forbs.
Percent of Pool area w/ cover: 100%	Percent of Alcove area w/ cover: 5%
Shelter Rating: 3	Shelter Rating: 2
Notes: During high flow conditions, flow reenters the main channel from the secondary channel approximately 40 ft. downstream of the log structure at the concrete drop structure where the bar between channels was eroded. Scour along the bank has left the rootwad overhanging the main channel. Deposition is visible in the secondary channel for 50 ft. downstream of the log structure.	Notes: The log structure and secondary channel are perched 2+ ft. above the main channel. Minor scour is visible below the rootwad adjacent to main channel.

Site # 21	Site # 21
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth: 0.5 ft.	Alcove Depth: N/A
Pool Width: 3 ft.	Alcove Width: N/A
Pool Length: 6 ft.	Alcove Length: N/A
Pool Area: 18 sq.ft.	Alcove Area: N/A
Flow Velocity: N/A	Flow Velocity: N/A
Velocity Differential Present: N/A	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – logs, debris, grasses and forbs	Is cover Present at Alcove? N/A
Percent of Pool area w/ cover: 90%	Percent of Alcove area w/ cover: N/A
Shelter Rating: 3	Shelter Rating: 2
Notes: Dense grasses and forbs are established throughout the secondary channel. Debris is racked on the log structure. Scour/bank erosion below the log structure exposed the top of the anchor boulder, leaving logs overhanging main channel 3 ft. Logs structure is stable.	Notes: Dense grasses and forbs are established throughout the secondary channel. The secondary channel invert is perched approx. 1 ft. above the main channel.

Note: Pool and alcove dimensions have been estimated where water is not present.

Site # 22	Site # 22
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth: 0.5 ft.	Alcove Depth: 0.5 ft
Pool Width: 2 ft.	Alcove Width: 10 ft
Pool Length: 3 ft.	Alcove Length: 6 ft
Pool Area: 6 sq. ft.	Alcove Area: 60 sq. ft.
Flow Velocity: N/A	Flow Velocity: N/A
Velocity Differential Present: N/A	Velocity Differential Present: N/A
Is cover Present at Pool area? Yes – logs, grasses and forbs	Is cover Present at Alcove? Yes – logs, grasses and forbs
Percent of Pool area w/ cover: 100%	Percent of Alcove area w/ cover: 90%
Shelter Rating: 3	Shelter Rating: 2
Notes: Dense grasses and forbs are established throughout the secondary channel. Scour under structure has exposed the ballast boulder and logs. Log structure is stable. The entrance to the secondary channel is perched 2+ ft. above the main channel.	Notes: Dense grasses and forbs are established throughout the secondary channel. Erosion along the main channel bank has exposed the end of the footer log.

Note: Pool and alcove dimensions have been estimated where water is not present.

June 25, 2025

Site # 1	
Log Structure type: A	Log Structure type: B
Water Present: No, No pool	Water Present: No
Pool Depth (ft): N/A	Alcove Depth (ft): 0.5
Pool Width (ft): N/A	Alcove Width (ft): 2
Pool Length (ft): N/A	Alcove Length (ft): 6
Pool Area (ft²): N/A	Alcove Area (ft²): 12
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: N/A	Is Cover Present at Alcove: Minimal, log and rock
Pool area w/ cover (%): N/A	Alcove area w/ cove (%): 25
Shelter Rating: N/A	Shelter Rating: 1
Notes: Structure is overgrown with willows and brambles. Structure is perched on riparian buffer. Heavy sediment build up within 1ft of log joining. Similar to 2A.	Notes: Dense vegetation. Minor pool on river left at end of root wad. Shallow pool on river right at end of root wad. Sediment over top of footer log with minor drop on downstream side.

Site # 2	
Log Structure type: A	Log Structure type: B
Water Present: No pool	Water Present: No
Pool Depth (ft): N/A	Alcove Depth (ft): 1.5
Pool Width (ft): N/A	Alcove Width (ft): 6
Pool Length (ft): N/A	Alcove Length (ft): 3
Pool Area (ft²): N/A	Alcove Area (ft²): 18
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps):
Is Cover Present at Pool area: N/A	Is Cover Present at Alcove: Minimal, large woody debris (lwd), and brush
Pool area w/ cover (%): N/A	Alcove area w/ cove (%): 25
Shelter Rating: NA	Shelter Rating: 1
Notes: No pool, Log structure perched on riparian buffer. Heavy growth of brambles covering entire structure. Sediment deposition upstream of structure at entrance to secondary channel.	Notes: Sediment covers top of footer log on upstream side, small pool downstream.

Site # 3	
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: Yes
Pool Depth (ft):	Alcove Depth (ft): 1
Pool Width (ft):	Alcove Width (ft): 20
Pool Length (ft):	Alcove Length (ft): 18
Pool Area (ft²):	Alcove Area (ft²): 360
Flow Velocity (fps):	Flow Velocity (fps): 0
Velocity Differential Present (fps):	Velocity Differential Present (fps): 0
Is Cover Present at Pool area:	Is Cover Present at Alcove: Minimal, lwd
Pool area w/ cover (%):	Alcove area w/ cove (%): 0
Shelter Rating:	Shelter Rating: 1
Notes: Could not access, overgrown from both sides of channel. Photo taken from secondary channel.	Notes: Standing water on both sides of footer log. Small flow path through secondary channel. Significant scour on upstream side. River left root wad fully exposed. Footer log near to fully exposed at river left, right right footer log is buried. Photo taken looking downstream.

Site # 4	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): 2	Alcove Depth (ft): 0.5
Pool Width (ft): 10	Alcove Width (ft): 10
Pool Length (ft): 7	Alcove Length (ft): 15
Pool Area (ft²): 70	Alcove Area (ft²): 150
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): 0	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, lwd, woody tree cover	Is Cover Present at Alcove: Minimal to none
Pool area w/ cover (%): 75	Alcove area w/ cove (%): 0
Shelter Rating: 2	Shelter Rating: 1 (potential 0)
Notes: Heavy vegetation (willows and brambles) in and around the structure. Small pool immediately under the structure.	Notes: Heavy growth of herbaceous vegetation, no woody cover. Minimal pool. Root wad logs are perched above the channel, footer log is buried.

Site # 5	
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: No
Pool Depth (ft): 2	Alcove Depth (ft): 0.5
Pool Width (ft): 10	Alcove Width (ft): 4
Pool Length (ft): 16	Alcove Length (ft): 15
Pool Area (ft²): 160	Alcove Area (ft²): 60
Flow Velocity (fps): 0	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, lwd, woody tree cover	Is Cover Present at Alcove: Minimal, lwd
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 0
Shelter Rating: 3	Shelter Rating: 1
Notes: Lots of sediment in the secondary channel. Heavy debris racking on top of structure. Edge of pool abuts the main channel at river right.	Notes: River right root wad is perched on riparian buffer. Riparian buffer is densely overgrown.

Site # 6	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): 3	Alcove Depth (ft): 1
Pool Width (ft): 17	Alcove Width (ft): 3
Pool Length (ft): 4	Alcove Length (ft): 12
Pool Area (ft²): 68	Alcove Area (ft²): N/A
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, logs, lwd, woody tree cover	Is Cover Present at Alcove: Yes, woody tree, lwd
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 50
Shelter Rating: 3	Shelter Rating: 2
Notes: Debris around the base of the structure. Good cover for pool. Appears stable and performing as intended.	Notes: Minimal pool at river left. Root wad on river right is perched on riparian buffer. Footer log is buried. Sediment deposition in secondary channel downstream from the structure.

Site # 7	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): 1.5	Alcove Depth (ft): 1.5
Pool Width (ft): 18	Alcove Width (ft): 4
Pool Length (ft): 6	Alcove Length (ft): 6
Pool Area (ft²): 108	Alcove Area (ft²): 24
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, overhead trees and logs	Is Cover Present at Alcove: Yes, brush and log roots
Pool area w/ cover (%): 50	Alcove area w/ cove (%): 25
Shelter Rating: 3	Shelter Rating: 2
Notes: Pool is perched above main flow channel, approx 3 to 4 feet. Debris racking between structure and main channel.	Notes: Footer log exposed on downstream side, small pool on river right. Some cover is herbaceous vegetation, cover will likely decrease after veg management. Photo taken looking downstream.

Site # 8	
Log Structure type: A	Log Structure type: B
Water Present: Yes, stagnant pool	Water Present: No
Pool Depth (ft): 3	Alcove Depth (ft): 0.75
Pool Width (ft): 12	Alcove Width (ft): 4
Pool Length (ft): 8	Alcove Length (ft): 8
Pool Area (ft²): 96	Alcove Area (ft²): 32
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, lwd, woody tree cover	Is Cover Present at Alcove: Yes, small woody debris (swd), woody tree cover
Pool area w/ cover (%): 75	Alcove area w/ cove (%): 50
Shelter Rating: 3	Shelter Rating: 2
Notes: (2:34pm) Heavy sediment buildup. Dense willows established over structure.	Notes: (2:39pm) Rootwad on river right and footer log completely covered. Small alcove near rootwad on river left. Narrow channel on upstream side of footer log on river left.

Site # 9	
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: Yes, standing water
Pool Depth (ft): 1.5	Alcove Depth (ft): 1
Pool Width (ft): 30	Alcove Width (ft): 24
Pool Length (ft): 10	Alcove Length (ft): 4
Pool Area (ft²): 300	Alcove Area (ft²): 96
Flow Velocity (fps): 0	Flow Velocity (fps): N/A
Velocity Differential Present (fps): 2	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, lwd, swd, woody tree cover	Is Cover Present at Alcove: Minimal lwd
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 25
Shelter Rating: 3	Shelter Rating: 1
Notes: (2:21pm) Debris racking, heavy willow growth.	Notes: (2:27pm) Footer log on river right is fully undermined. Sediment deposition downstream of structure, before main channel.

Site # 10	
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: No
Pool Depth (ft): 24	Alcove Depth (ft): 0.25
Pool Width (ft): 18	Alcove Width (ft): 4
Pool Length (ft): 8	Alcove Length (ft): 2
Pool Area (ft²): 144	Alcove Area (ft²): 8
Flow Velocity (fps): 0	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Lwd, swd, woody tree cover	Is Cover Present at Alcove: N/A
Pool area w/ cover (%): 75	Alcove area w/ cove (%): 25
Shelter Rating: 3	Shelter Rating: 1
Notes: (2:04pm) Significant debris racking. Note that beaver dam is present just upstream from structure, fully across main channel.	Notes: (2:14pm) No alcove, fully filled in with sediment. Minor depression near rootwad on river left. Root wad on river right buried.

Site # 11	
Log Structure type: A	Log Structure type: B
Water Present: Yes, stagnant or groundwater	Water Present: Yes, backwater
Pool Depth (ft): 0.75	Alcove Depth (ft): 1
Pool Width (ft): 8	Alcove Width (ft): 30
Pool Length (ft): 25	Alcove Length (ft): 4
Pool Area (ft²): 200	Alcove Area (ft²): 120
Flow Velocity (fps): 0	Flow Velocity (fps): 0
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: No	Is Cover Present at Alcove: No
Pool area w/ cover (%): 0	Alcove area w/ cove (%): 0
Shelter Rating: 0	Shelter Rating: 0
Notes: (1:47pm) Sediment buildup under structure. Minor flow path under structure. Standing water in secondary channel.	Notes: (1:55pm) Standing water upstream and downstream of structure, likely backwater. River left root wad fully exposed, river right root wad fully buried.

Site # 12 & 13	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: Yes, shallow stagnant pool
Pool Depth (ft): 2	Alcove Depth (ft): 2
Pool Width (ft): 8	Alcove Width (ft): 30
Pool Length (ft): 4	Alcove Length (ft): 8
Pool Area (ft²): 32	Alcove Area (ft²): 240
Flow Velocity (fps): N/A	Flow Velocity (fps): 0
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, lwd, swd, woody tree cover	Is Cover Present at Alcove: Yes, lwd
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 25
Shelter Rating: 3	Shelter Rating: 2
Notes: (12:27pm) Structure is perched approx. 3-feet above the main channel. Small scour pool immediately underneath the structure. Overgrown riparian area	Notes: (1:39pm) Log structure operating optimally. Root wads exposed on both sides, shallow pool immediately downstream from structure. The riparian area is very dense with vegetation.

Site # 14	
Log Structure type: A	Log Structure type: B
Water Present: Yes, submerged	Water Present: Yes, submerged
Pool Depth (ft): 0.5	Alcove Depth (ft): 2.5
Pool Width (ft): 4	Alcove Width (ft): 25
Pool Length (ft): 5	Alcove Length (ft): 5
Pool Area (ft²): 20	Alcove Area (ft²): 125
Flow Velocity (fps): 0	Flow Velocity (fps): 0.5
Velocity Differential Present (fps): 2	Velocity Differential Present (fps): 2
Is Cover Present at Pool area: Yes, lwd, woody tree cover	Is Cover Present at Alcove: Yes, lwd, woody tree cover
Pool area w/ cover (%): 75	Alcove area w/ cove (%): 50
Shelter Rating: 3	Shelter Rating: 3
Notes: (12:07pm) Willows established over the structure. Minor sediment buildup. Monitor sediment for next year.	Notes: Footer logs completely submerged. Root wad logs are both exposed on the side/top, with root wad fully exposed. Pools are deeper immediately under the root wads.

Site # 15	
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: Yes, fully submerged From backwater
Pool Depth (ft): 0.5	Alcove Depth (ft): 0.5
Pool Width (ft): 10	Alcove Width (ft): 12
Pool Length (ft): 4	Alcove Length (ft): 4
Pool Area (ft²): 40	Alcove Area (ft²): 48
Flow Velocity (fps): 2.5	Flow Velocity (fps): 0
Velocity Differential Present (fps): 2	Velocity Differential Present (fps): 0
Is Cover Present at Pool area: Yes, lwd, some swd	Is Cover Present at Alcove: Yes over river left, lwd woody tree cover
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 25
Shelter Rating: 3	Shelter Rating: 3
Notes: (11:28am) Significant debris racking, significant bank cutting over river right log (approx 8ft).	Notes: (12:00pm) Footer logs are fully submerged. Root wad on river right is exposed. River left root wad log is partially buried. All water appears to be backwater. Erosion cut on river right adjacent to root wad, approx 5 to 6 feet deep.

Site # 16	
Log Structure type: A	Log Structure type: B
Water Present: No, water flowing around but not under	Water Present: Yes
Pool Depth (ft): 0.5	Alcove Depth (ft): 1
Pool Width (ft): 8	Alcove Width (ft): 14
Pool Length (ft): 6	Alcove Length (ft): 10
Pool Area (ft²): 48	Alcove Area (ft²): 140
Flow Velocity (fps): 0.5	Flow Velocity (fps): 0
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): 3
Is Cover Present at Pool area: Lwd, swd, woody tree cover	Is Cover Present at Alcove: Yes, lwd, woody tree cover
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 75
Shelter Rating: 3	Shelter Rating: 3
Notes: (11:00am) Both secondary and primary channels flowing. Structure is perched above the primary channel. Vertical erosion cut into the secondary channel bank at river left, approx 4-foot overhanging wall. Good cover underneath the lower logs.	Notes: (11:14am) Flowing in secondary channel, completely undercut. Root wads and footer logs are fully exposed.

Site # 17	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: Yes, Completely submerged and flowing
Pool Depth (ft): 0.5	Alcove Depth (ft): N/A
Pool Width (ft): 6	Alcove Width (ft): N/A
Pool Length (ft): 8	Alcove Length (ft): N/A
Pool Area (ft²): 48	Alcove Area (ft²): N/A
Flow Velocity (fps): N/A	Flow Velocity (fps): 2
Velocity Differential Present (fps):	Velocity Differential Present (fps): 0
Is Cover Present at Pool area: Yes, lwd, swd, woody tree cover	Is Cover Present at Alcove: Minimal from woody tree cover
Pool area w/ cover (%): 100	Alcove area w/ cove (%): N/A
Shelter Rating: 3	Shelter Rating: 1
Notes: (10:32am) Sediment deposition underneath is limiting factor for pool. The structure is perched above the channels on the riparian buffer. Monitor sediment for next year.	Notes: (10:56am) Completely submerged, flowing in both primary and secondary channels.

Site # 18	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: Yes
Pool Depth (ft): N/A	Alcove Depth (ft): N/A
Pool Width (ft): N/A	Alcove Width (ft): N/A
Pool Length (ft): N/A	Alcove Length (ft): N/A
Pool Area (ft²): N/A	Alcove Area (ft²): N/A
Flow Velocity (fps): N/A	Flow Velocity (fps): 2.5
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): 0
Is Cover Present at Pool area: N/A	Is Cover Present at Alcove: River right under log Lwd and woody veg
Pool area w/ cover (%): N/A	Alcove area w/ cove (%): N/A
Shelter Rating: N/A	Shelter Rating: N/A
Notes: Significant sediment, log structure well outside main channel.	Notes: (10:24am) No alcove, all flowing water. Footer logs are completely undercut. Root wad logs are fully exposed.

Site # 19	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: Yes
Pool Depth (ft): N/A	Alcove Depth (ft): 1
Pool Width (ft): N/A	Alcove Width (ft): 8
Pool Length (ft): N/A	Alcove Length (ft): 12
Pool Area (ft²): N/A	Alcove Area (ft²): 96
Flow Velocity (fps): N/A	Flow Velocity (fps): 0.5
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): 2.0
Is Cover Present at Pool area: Yes, lwd, woody tree cover	Is Cover Present at Alcove: Yes, swd, woody tree cover
Pool area w/ cover (%): Minimal	Alcove area w/ cove (%): 50
Shelter Rating: 1	Shelter Rating: 2
Notes: No pool, structure impacted by build up of sediment to within the top of the interior logs. Structure is perched above the channels on the riparian buffer. Some debris racking. Willows established over the structure.	Notes: All flow is in secondary channel. Footer log is completely undercut and no longer holding grade. River left root wad log is fully buried.

Site # 20	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): N/A	Alcove Depth (ft): N/A
Pool Width (ft): N/A	Alcove Width (ft): N/A
Pool Length (ft): N/A	Alcove Length (ft): N/A
Pool Area (ft²): N/A	Alcove Area (ft²): N/A
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Lwd	Is Cover Present at Alcove: N/A
Pool area w/ cover (%): 75	Alcove area w/ cove (%): N/A
Shelter Rating: 2	Shelter Rating: N/A
Notes: (3:53pm) Sediment buildup under structure. Good shelter, no pool.	Notes: No pool, no shelter, river left root wad log perched, river right root wad wholly buried. No photo, structure not visible through vegetation.

Site # 21	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): N/A	Alcove Depth (ft): N/A
Pool Width (ft): N/A	Alcove Width (ft): N/A
Pool Length (ft): N/A	Alcove Length (ft): N/A
Pool Area (ft²): N/A	Alcove Area (ft²): N/A
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, lwd woody tree cover	Is Cover Present at Alcove: No
Pool area w/ cover (%): 75	Alcove area w/ cove (%): N/A
Shelter Rating: 2	Shelter Rating: N/A
Notes: (4:03pm), Photo taken looking downstream, significant sediment build up. Scour under structure and pool sloped towards main channel.	Notes: (3:59pm) Photo taken looking upstream, no pool, structure 80% buried.

Site # 22	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): N/A	Alcove Depth (ft): 0.25
Pool Width (ft): N/A	Alcove Width (ft): 10
Pool Length (ft): N/A	Alcove Length (ft): 4
Pool Area (ft²): N/A	Alcove Area (ft²): 40
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, lwd	Is Cover Present at Alcove: No
Pool area w/ cover (%): 75	Alcove area w/ cove (%): 0
Shelter Rating: 3	Shelter Rating: 0
Notes: (4:24pm) Good shelter, no pool. Rocks exposed. Alcove drains to main channel. No sediment. Photo looking upstream.	Notes: (4:20pm) River right root wad exposed. All else buried. Photo taken looking downstream.

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Site # 1	
Log Structure type: A	Log Structure type: B
Water Present: No, No pool	Water Present: No
Pool Depth (ft): N/A	Alcove Depth (ft): 0.5
Pool Width (ft): N/A	Alcove Width (ft): 2
Pool Length (ft): N/A	Alcove Length (ft): 6
Pool Area (ft²): N/A	Alcove Area (ft²): 12
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps):	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: N/A	Is Cover Present at Alcove: Minimal, log and rock
Pool area w/ cover (%): N/A	Alcove area w/ cove (%): 25
Shelter Rating: N/A	Shelter Rating: 1
Notes: 2:03pm, Structure is overgrown with willows and brambles. Structure is perched on riparian buffer. Heavy sediment build up within 1ft of log joining. Similar to 2A.	Notes: 2:09pm, Significant and dense overgrowth. Minor pool on river left at end of root wad. Shallow pool on river right at end of root wad. Sediment over top of footer log with minor drop on downstream side.

Site # 2	
Log Structure type: A	Log Structure type: B
Water Present: No, No Pool	Water Present: No
Pool Depth (ft): N/A	Alcove Depth (ft): 1.5
Pool Width (ft): N/A	Alcove Width (ft): 6
Pool Length (ft): N/A	Alcove Length (ft): 3
Pool Area (ft²): N/A	Alcove Area (ft²): 18
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps):
Is Cover Present at Pool area: N/A	Is Cover Present at Alcove: Minimal, large woody debris (lwd), and brush
Pool area w/ cover (%): N/A	Alcove area w/ cove (%): 25
Shelter Rating: N/A	Shelter Rating: 1
Notes: 1:52pm, No pool, Log structure perched on riparian buffer. Heavy growth of brambles covering entire structure. Sediment deposition upstream of structure at entrance to secondary channel. No photo due to heavy vegetation.	Notes: 1:59pm, Significant overgrowth. Sediment covers top of footer log on upstream side, small pool downstream.

Site # 3	
Log Structure type: A	Log Structure type: B
Water Present: Yes, Groundwater	Water Present: Yes
Pool Depth (ft): 0.5	Alcove Depth (ft): 1
Pool Width (ft): 14	Alcove Width (ft): 20
Pool Length (ft): 4	Alcove Length (ft): 18
Pool Area (ft²): 15	Alcove Area (ft²): 360
Flow Velocity (fps): 0	Flow Velocity (fps): 0
Velocity Differential Present (fps): 2	Velocity Differential Present (fps): 2
Is Cover Present at Pool area: Yes, small woody debris (swd) and lwd	Is Cover Present at Alcove: Minimal, lwd
Pool area w/ cover (%): 75	Alcove area w/ cove (%): 0
Shelter Rating: 3	Shelter Rating: 1
Notes: 1:42pm, some debris racking	Notes: 1:49pm, Stagnant water on both sides of footer log. Small flow path through secondary channel. Log structure undercut. Significant scour on upstream side. River left root wad fully exposed. Footer log near to fully exposed at river left, right right footer log is buried.

Site # 4	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): 2	Alcove Depth (ft): 0.5
Pool Width (ft): 10	Alcove Width (ft): 10
Pool Length (ft): 7	Alcove Length (ft): 15
Pool Area (ft²): 70	Alcove Area (ft²): 150
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): 0	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, lwd, woody tree cover	Is Cover Present at Alcove: Minimal to none
Pool area w/ cover (%): 75	Alcove area w/ cove (%): 0
Shelter Rating: 2	Shelter Rating: 1 (potential 0)
Notes: 1:30pm, Heavy vegetation (willows and brambles) in and around the structure. Small pool immediately under the structure.	Notes: 1:38pm, Heavy growth of herbaceous vegetation, no woody cover. Minimal pool. Root wad logs are perched above the channel, footer log is buried.

Site # 5	
Log Structure type: A	Log Structure type: B
Water Present: Yes, backwater	Water Present: No
Pool Depth (ft): 2	Alcove Depth (ft): 0.5
Pool Width (ft): 10	Alcove Width (ft): 4
Pool Length (ft): 16	Alcove Length (ft): 15
Pool Area (ft²): 160	Alcove Area (ft²): 60
Flow Velocity (fps): 0	Flow Velocity (fps): N/A
Velocity Differential Present (fps): 2.5	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, lwd, wood tree cover	Is Cover Present at Alcove: Minimal, lwd
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 0
Shelter Rating: 3	Shelter Rating: 1
Notes: 1:23pm, Lots of sediment in the secondary channel. Heavy debris racking on top of structure. Edge of pool abuts the main channel at river right.	Notes: 1:25pm, River right root wad is perched on riparian buffer. Riparian buffer is densely overgrown.

Site # 6	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): 3	Alcove Depth (ft): 1
Pool Width (ft): 17	Alcove Width (ft): 3
Pool Length (ft): 4	Alcove Length (ft): 12
Pool Area (ft²): 68	Alcove Area (ft²): N/A
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, logs, lwd, woody tree cover	Is Cover Present at Alcove: Yes, woody tree, lwd
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 50
Shelter Rating: 3	Shelter Rating: 2
Notes: 1:08pm, Debris around the base of the structure. Good cover for pool. Appears stable and performing as intended.	Notes: 1:14pm, Minimal pool at river left. Root wad on river right is perched on riparian buffer. Footer log is buried. Sediment deposition in secondary channel downstream from the structure.

Site # 7	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): 1.5	Alcove Depth (ft): 1.5
Pool Width (ft): 18	Alcove Width (ft): 4
Pool Length (ft): 6	Alcove Length (ft): 6
Pool Area (ft²): 108	Alcove Area (ft²): 24
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/a
Is Cover Present at Pool area: Yes, overhead trees and logs	Is Cover Present at Alcove: Yes, brush and log roots
Pool area w/ cover (%): 75	Alcove area w/ cove (%): 25
Shelter Rating: 3	Shelter Rating: 2
Notes: 12:55pm, Pool is perched above main flow channel, approx 3 to 4 feet. Debris racking between structure and main channel.	Notes: 1:05pm, Footer log exposed on downstream side, small pool on river right. Veg cleared from breach site repair. Secondary channel is open under bridge.

Site # 8	
Log Structure type: A	Log Structure type: B
Water Present: Yes, stagnant (groundwater?)	Water Present: No
Pool Depth (ft): 3	Alcove Depth (ft): 0.75
Pool Width (ft): 12	Alcove Width (ft): 4
Pool Length (ft): 8	Alcove Length (ft): 8
Pool Area (ft²): 96	Alcove Area (ft²): 32
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): 2	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, lwd, woody tree cover	Is Cover Present at Alcove: Yes, swd, woody tree cover
Pool area w/ cover (%): 75	Alcove area w/ cove (%): 50
Shelter Rating: 3	Shelter Rating: 2
Notes: Heavy sediment buildup. Dense willows established over structure. No photo.	Notes: 10:35am, Rootwad on river right and footer log completely covered. Small alcove near rootwad on river left. Narrow channel on upstream side of footer log on river left.

Site # 9	
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: Yes, groundwater
Pool Depth (ft): 1.5	Alcove Depth (ft): 1
Pool Width (ft): 30	Alcove Width (ft): 24
Pool Length (ft): 10	Alcove Length (ft): 4
Pool Area (ft²): 300	Alcove Area (ft²): 96
Flow Velocity (fps): 0	Flow Velocity (fps): N/A
Velocity Differential Present (fps): 2	Velocity Differential Present (fps): 2
Is Cover Present at Pool area: Yes, lwd, swd, woody tree cover	Is Cover Present at Alcove: Minimal lwd
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 25
Shelter Rating: 3	Shelter Rating: 1
Notes: 10:25am, Debris racking, heavy willow growth.	Notes: 10:27am, Footer log on river right is fully undermined. Sediment deposition downstream of structure, before main channel.

Site # 10	
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: No
Pool Depth (ft): 2	Alcove Depth (ft): 0.25
Pool Width (ft): 18	Alcove Width (ft): 4
Pool Length (ft): 8	Alcove Length (ft): 2
Pool Area (ft²): 144	Alcove Area (ft²): 8
Flow Velocity (fps): 0	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Lwd, swd, woody tree cover	Is Cover Present at Alcove: N/A
Pool area w/ cover (%): 75	Alcove area w/ cove (%): 25
Shelter Rating: 3	Shelter Rating: 1
Notes: 10:16am, Significant debris racking. Note that beaver dam upstream of 10A is gone.	Notes: 10:22am, No alcove, fully filled in with sediment. Minor depression near rootwad on river left. Root wad on river right buried. Veg clearing in secondary channel.

Site # 11	
Log Structure type: A	Log Structure type: B
Water Present: Yes, stagnant or groundwater	Water Present: No
Pool Depth (ft): 0.75	Alcove Depth (ft): 1
Pool Width (ft): 3	Alcove Width (ft): 4
Pool Length (ft): 25	Alcove Length (ft): 30
Pool Area (ft²): 200	Alcove Area (ft²): 120
Flow Velocity (fps): 0	Flow Velocity (fps): 0
Velocity Differential Present (fps): 1.5	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Minimal	Is Cover Present at Alcove: Yes, woody veg
Pool area w/ cover (%):	Alcove area w/ cove (%): 15
Shelter Rating: ¹	Shelter Rating: ¹
Notes: 10:03am, Sediment buildup under structure. Minor flow path under structure. Standing water in secondary channel.	Notes: 10:08am, River left root wad fully exposed, river right root wad fully buried, channel not activated.

Site # 12 & 13	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: Yes, shallow stagnant pool (groundwater?)
Pool Depth (ft): 2	Alcove Depth (ft): 2
Pool Width (ft): 8	Alcove Width (ft): 30
Pool Length (ft): 4	Alcove Length (ft): 8
Pool Area (ft²): 32	Alcove Area (ft²): 240
Flow Velocity (fps): N/A	Flow Velocity (fps): 0
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Yes, lwd, swd, woody tree cover	Is Cover Present at Alcove: Yes, woody veg, swd
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 25
Shelter Rating: ³	Shelter Rating: ²
Notes: 9:43am, Structure is perched approx. 3-feet above the main channel. Small scour pool immediately underneath the structure. Overgrown riparian area.	Notes: 9:59am, Log structure operating optimally. Root wads exposed on both sides, shallow pool immediately downstream from structure. The riparian area is very dense with vegetation, veg clearing in secondary channel.

Site # 14	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: Yes, submerged
Pool Depth (ft): N/A	Alcove Depth (ft): 2.5
Pool Width (ft): N/A	Alcove Width (ft): 25
Pool Length (ft): N/A	Alcove Length (ft): 5
Pool Area (ft²): N/A	Alcove Area (ft²): 125
Flow Velocity (fps): N/A	Flow Velocity (fps): 0.5
Velocity Differential Present (fps): 2.5	Velocity Differential Present (fps): 2
Is Cover Present at Pool area: N/A	Is Cover Present at Alcove: Yes, lwd, woody tree cover
Pool area w/ cover (%): N/A	Alcove area w/ cove (%): 25
Shelter Rating: N/A	Shelter Rating: 1
Notes: 9:30am, no pool, unlikely primary flow will ever be in main channel without modifications, bend in thalweg is pointing away from log structure. This is a potential area to swap secondary to primary channel with new plantings. Cottonwood stakes in rock to river left.	Notes: 9:40am, Footer logs completely submerged. Root wad logs are both exposed on the side/top, with root wad fully exposed. Pools are deeper immediately under the root wads. Veg cover has died back.

Site # 15	
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: No
Pool Depth (ft): 0.5	Alcove Depth (ft): 0.5
Pool Width (ft): 10	Alcove Width (ft): 4
Pool Length (ft): 4	Alcove Length (ft): 6
Pool Area (ft²): 40	Alcove Area (ft²): 24
Flow Velocity (fps): 2.5	Flow Velocity (fps): 0
Velocity Differential Present (fps): 2	Velocity Differential Present (fps): 0
Is Cover Present at Pool area: Yes, lwd, some swd	Is Cover Present at Alcove: Yes, woody veg, swd
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 50
Shelter Rating: 3	Shelter Rating: 2
Notes: 9:20am, Significant debris racking, significant bank cutting over river right log (approx 8ft). Secondary channel appears to have engaged in previous storm.	Notes: 9:25am, SMZ appears to have activated and recent sediment plume, now completely dry.

Site # 16	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: Yes
Pool Depth (ft): 0.5	Alcove Depth (ft): 1
Pool Width (ft): 8	Alcove Width (ft): 20
Pool Length (ft): 6	Alcove Length (ft): 6
Pool Area (ft²): 48	Alcove Area (ft²): 120
Flow Velocity (fps): 0.5	Flow Velocity (fps): 1
Velocity Differential Present (fps): 2.5	Velocity Differential Present (fps): 2
Is Cover Present at Pool area: Yes, swd, lwd, woody veg	Is Cover Present at Alcove: Yes, swd
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 25
Shelter Rating: 3	Shelter Rating: 1
Notes: 9:07am, significant bank scour to river left 6ft, flow in both channels. No change to alcove structure.	Notes: 9:16am, trash present, flowing in secondary channel, completely undercut. Root wads and footer logs are fully exposed.

Site # 17	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: Yes, no alcove
Pool Depth (ft): 0.5	Alcove Depth (ft): N/A
Pool Width (ft): 6	Alcove Width (ft): N/A
Pool Length (ft): 8	Alcove Length (ft): N/A
Pool Area (ft²): 48	Alcove Area (ft²): N/A
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): 1.5
Is Cover Present at Pool area: Yes, lwd, swd, woody tree cover	Is Cover Present at Alcove: N/A
Pool area w/ cover (%): 100	Alcove area w/ cove (%): N/A
Shelter Rating: 3	Shelter Rating: 0
Notes: 8:53am, Sediment deposition underneath is limiting factor for pool. The structure is perched above the channels on the riparian buffer. Monitor sediment for next year, channel appears to have engaged with minimal flow but now dry.	Notes: 9:02am, Completely submerged, no alcove, flowing in both primary and secondary channels.

Site # 18	
Log Structure type: A	Log Structure type: B
Water Present: No, no pool	Water Present: Yes
Pool Depth (ft): N/A	Alcove Depth (ft): 4
Pool Width (ft): N/A	Alcove Width (ft): 25
Pool Length (ft): N/A	Alcove Length (ft): 4
Pool Area (ft²): N/A	Alcove Area (ft²): 100
Flow Velocity (fps): N/A	Flow Velocity (fps): 2
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): 1.5
Is Cover Present at Pool area: N/A	Is Cover Present at Alcove: Yes, swd, lwd
Pool area w/ cover (%): N/A	Alcove area w/ cove (%): 25
Shelter Rating: N/A	Shelter Rating: 1
Notes: 8:40am, Significant sediment, log structure well outside main channel.	Notes: 8:45am, trash present, debris present. Footer logs are completely undercut. Root wad logs are fully exposed.

Site # 19	
Log Structure type: A	Log Structure type: B
Water Present: Yes	Water Present: Yes
Pool Depth (ft): 0.25	Alcove Depth (ft): 2.5
Pool Width (ft): 2	Alcove Width (ft): 10
Pool Length (ft): 4	Alcove Length (ft): 4
Pool Area (ft²): 8	Alcove Area (ft²): 40
Flow Velocity (fps): 0	Flow Velocity (fps): 2
Velocity Differential Present (fps): 1	Velocity Differential Present (fps): 0
Is Cover Present at Pool area: Yes, woody veg	Is Cover Present at Alcove: Yes, woody veg, swd
Pool area w/ cover (%): 100	Alcove area w/ cove (%): 25
Shelter Rating: 2	Shelter Rating: 1
Notes: 8:25am, structure impacted by build up of sediment to within the top of the interior logs. Structure is perched above the channels on the riparian buffer. Some debris racking. Willows established over the structure.	Notes: 8:35am, All flow is in secondary channel. Potential for fish passage blockage. Footer log is completely undercut and no longer holding grade. River left root wad log is fully buried.

Site # 20	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): N/A	Alcove Depth (ft): N/A
Pool Width (ft): N/A	Alcove Width (ft): N/A
Pool Length (ft): N/A	Alcove Length (ft): N/A
Pool Area (ft²): N/A	Alcove Area (ft²): N/A
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps): N/A
Is Cover Present at Pool area: Lwd	Is Cover Present at Alcove: N/A
Pool area w/ cover (%): 75	Alcove area w/ cove (%): N/A
Shelter Rating: 2	Shelter Rating: N/A
Notes: 11:09am, Sediment buildup under structure. Good shelter, no pool.	Notes: 11:12am, No pool, no shelter, river left root wad log perched, river right root wad wholly buried. Structure not visible through vegetation.

Site # 21	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): N/A	Alcove Depth (ft): N/A
Pool Width (ft): N/A	Alcove Width (ft): N/A
Pool Length (ft): N/A	Alcove Length (ft): N/A
Pool Area (ft²): N/A	Alcove Area (ft²): N/A
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): N/A	Velocity Differential Present (fps):
Is Cover Present at Pool area: Yes, lwd woody tree cover	Is Cover Present at Alcove: No
Pool area w/ cover (%): 75	Alcove area w/ cove (%): N/A
Shelter Rating: 2	Shelter Rating: N/A
Notes: 11:02am, significant sediment build up. Scour under structure and pool sloped towards main channel.	Notes: 11:04am, no pool, structure 80% buried.

Site # 22	
Log Structure type: A	Log Structure type: B
Water Present: No	Water Present: No
Pool Depth (ft): N/A	Alcove Depth (ft): 0.25
Pool Width (ft): N/A	Alcove Width (ft): 10
Pool Length (ft): N/A	Alcove Length (ft): 4
Pool Area (ft²): N/A	Alcove Area (ft²): 40
Flow Velocity (fps): N/A	Flow Velocity (fps): N/A
Velocity Differential Present (fps): ¹	Velocity Differential Present (fps): ¹
Is Cover Present at Pool area: Yes, lwd	Is Cover Present at Alcove: No
Pool area w/ cover (%): ⁷⁵	Alcove area w/ cove (%): ⁰
Shelter Rating: ³	Shelter Rating: ⁰
Notes: 11:28am, Good shelter. Rocks exposed. Alcove drains to main channel. No sediment. Water in main channel	Notes: 11:30am, River right root wad exposed. All else buried. Water in main channel

Appendix E

2025 Mitigation Monitoring Photographs



Photograph 1. View of SMZ 1, facing east. June 11, 2025.



Photograph 2. View of SMZ 1, facing northwest. June 11, 2025.



Photograph 3. View of SMZ 2, facing east. June 11, 2025.



Photograph 4. View of SMZ 2, facing northwest. June 11, 2025.



Photograph 5. View of SMZ 3, facing east. June 11, 2025.



Photograph 6. View of SMZ 3, facing north. June 11, 2025.



Photograph 7. View of SMZ 4, facing south. June 12, 2025.



Photograph 8. View of SMZ 4, facing west. June 12, 2025.



Photograph 9. View of SMZ 5, facing east. June 12, 2025.



Photograph 10. View of SMZ 5, facing northwest. June 12, 2025.



Photograph 11. View of SMZ 6, facing northeast. June 12, 2025.



Photograph 12. View of SMZ 6, facing northwest. June 12, 2025.



Photograph 13. View of SMZ 7, facing southeast. June 12, 2025.



Photograph 14. View of SMZ 7, facing southwest. June 12, 2025.



Photograph 15. View of SMZ 8, facing southeast. June 13, 2025.



Photograph 16. View of SMZ 8, facing southwest. June 13, 2025.



Photograph 17. View of SMZ 9, facing northeast. June 12, 2025.



Photograph 18. View of SMZ 9, facing northwest. June 12, 2025.



Photograph 19. View of SMZ 10, facing southeast. June 13, 2025.



Photograph 20. View of SMZ 10, facing southwest. June 13, 2025.



Photograph 21. View of SMZ 11, facing northeast. June 12, 2025.



Photograph 22. View of SMZ 11, facing northwest. June 12, 2025.



Photograph 23. View from edge of SMZ 13, facing southeast. June 13, 2025.



Photograph 24. View from the middle of SMZ 13, facing southwest. June 13, 2025.



Photograph 25. View from the middle of SMZ 13, facing southeast. June 13, 2025.



Photograph 26. View from edge of SMZ 13, facing south. June 13, 2025.



Photograph 27. View of SMZ 14, facing north. June 12, 2025.



Photograph 28. View of SMZ 14, facing northwest. June 12, 2025.



Photograph 29. View of SMZ 15, facing east. June 12, 2025.



Photograph 30. View of SMZ 15, facing south. June 12, 2025.



Photograph 31. View of SMZ 16, facing north. June 16, 2025.



Photograph 32. View of SMZ 16, facing southwest. June 16, 2025.



Photograph 33. View of SMZ 17, facing east. June 13, 2025.



Photograph 34. View of SMZ 17, facing south. June 13, 2025.



Photograph 35. View of SMZ 18, facing north. June 16, 2025.



Photograph 36. View of SMZ 18, facing southwest. June 16, 2025.



Photograph 37. View of SMZ 19, facing northeast. June 16, 2025.



Photograph 38. View of SMZ 19, facing south. June 16, 2025.



Photograph 39. View of SMZ 20, facing northeast. June 16, 2025.



Photograph 40. View of SMZ 20, facing northwest. June 16, 2025.



Photograph 41. View of SMZ 21, facing northeast. June 16, 2025.



Photograph 42. View of SMZ 21, facing southwest. June 16, 2025.



Photograph 43. View of SMZ 22, facing east. June 16, 2025.



Photograph 44. View of SMZ 22, facing northwest. June 16, 2025.



Photograph 45. California sycamore at the Breach Site planting area, facing east. April 14, 2026.



Photograph 46. White alder at the Breach Site planting area, facing west. April 14, 2026.



Photograph 47. Black cottonwood at the Breach Site planting area, facing east. April 14, 2026.



Photograph 48. Black cottonwood, box elder and California poppy at the Breach Site planting area, facing west. April 14, 2026.