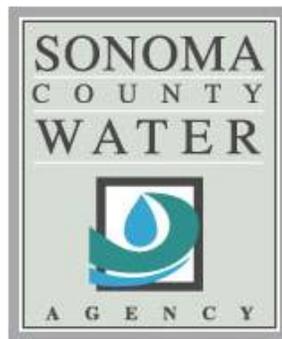


Sonoma County Water Agency
Stream Maintenance Program (SMP)
**Annual Notification for
2014 Maintenance Projects**

Prepared for:
The SMP Inter-Agency Working Group



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Sonoma County Water Agency Stream Maintenance Program 2014 Projects

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Section 1

Project List and Locations

1A. Sediment Removal and Bank Stabilization Project List and Type

The following sediment removal and bank stabilization projects are anticipated for the 2014 maintenance season:

Zone 1A

- **One Localized Sediment Removal Project at:**
 - Colgan Creek Reach 5C: Downstream from Hearn Avenue
- **Six Reach Scale Sediment Removal Projects at:**
 - Forestview Creek Reaches 2 and 3: Between Fulton Road and Guerneville Road
 - Hinebaugh Creek Reaches 3B, 4, 5A and 5C: Highway 101 to County Club Drive
 - South Fork Copeland Creek Reach 1: Southwest Blvd. to Coral Ct., along railroad tracks
 - Starr Creek Reach 2: Railroad tracks to Oak Park Street
 - Steele Creek Reach 1B: Between Marlow Road and Gamay Street
 - Steele Creek Reach 2: Between Marlow Road and Ridley Avenue
- **Six Sediment Basin/Instream Basin Clearings at:**
 - Cook Creek Reach 2: East of Petaluma Hill Road
 - Copeland Creek 2: East of Commerce Boulevard
 - Copeland Creek Reaches 3 and 4: Above and below Country Club Drive
 - Copeland Creek Reaches 4 and 5: Above and below Snyder Lane
 - Five Creek Reach 1: Downstream from Snyder Lane
 - Wilfred Creek Reach 1C: Downstream from Snyder Lane
- **Six Reservoir Inlet Clearings at:**
 - Brush Creek Reservoir

- Matanzas Creek Reservoir
- Piner Creek Reservoir
- Santa Rosa Creek Reservoir (Spring Lake)
- Santa Rosa Creek Diversion Structure: upstream of Santa Rosa Creek Reservoir
- Fish Ladder in Santa Rosa Diversion Structure: upstream of Santa Rosa Creek Reservoir

Zone 2A

■ Two Reach Scale Sediment Removal Projects at:

- McDowell Creek Reach 2B: Caulfield Lane to confluence with East Fork McDowell Creek
- Washington Creek Reach 2: Madison Street to Holly Lane

■ Three In-stream Basin Clearings at:

- Adobe Creek Reaches 1 and 2: above and below S. McDowell Boulevard
- Washington Creek Reach 1: Downstream of Holly Lane
- Washington Creek Reach 3: Upstream of Madison Street

■ One Bank Repair at the following location:

- East Washington Creek Reach 3: Downstream of Ely Boulevard between Stations 34+00 and 35+00

Zone 3A

■ One Reach Scale Sediment Removal Project at:

- Nathanson Creek Bypass Reach 1: Fine Avenue to Dewell Drive

1B. Sediment Removal and Bank Stabilization Project Site Locations and Other Geographic Information

The following table presents location and geographic information for each of the 2014 project sites.

Table 1-1: Location and Other Geographic Information for Project Sites

Project Site	Creek	Tributary To	SMP Reach	USGS Quad, Township, Range, Section	Latitude/ Longitude
ZONE 1A					
Localized Scale Sediment Removal Projects					
Colgan Creek Hearn Ave south to concrete banks	Colgan Creek	Laguna de Santa Rosa	Colgan 5C	Santa Rosa Quad, T7N, R8W, Section 35	38.413 N, -122.721 W
Reach Scale Sediment Removal Projects					
Forestview Creek from Fulton Rd to Guerneville Rd	Forestview Creek	Peterson Creek	Forestview 2 and 3	Sebastopol Quad, T7N, R8W, Section 17 and 18	38.454 N, -122.775 W
Hinebaugh Creek Hwy 101 to Country Club Dr	Hinebaugh Creek	Laguna de Santa Rosa	Hinebaugh 3B, 4, 5A and 5C	Cotati Quad, T6N, R8W, Section 23 and 24	38.351 N, -122.708 W
South Fork Copeland Creek Southwest Blvd to Coral Ct	South Fork Copeland Creek	Copeland Creek	South Fork Copeland 1	Cotati Quad, T6N, R8W, Section 25	38.337 N, -122.695 W
Starr Creek from railroad tracks to Oak Park St	Starr Creek	Windsor Creek	Starr 2	Healdsburg Quad, T8N, R9W, Section 11	38.55 N, -122.821 W
Steele Creek between Marlow Rd and Gamay St	Steele Creek	Piner Creek	Steele 1B	Santa Rosa Quad, T7N, R8W, Section 16	38.45 N, -122.456 W
Steele Creek between Marlow Rd and Ridley Ave	Steele Creek	Piner Creek	Steele 2	Santa Rosa Quad, T7N, R8W, Section 16	38.45 N, -122.749 W
In-stream Sediment Basin Removal Projects					
Cook Creek Basin east of Petaluma Hill Rd	Cook Creek	Coleman Creek	Cook 2	Cotati Quad, T6N, R7W, Section 18	38.364 N, -122.675 W
Copeland Creek at Commerce Boulevard	Copeland Creek	Laguna de Santa Rosa	Copeland 2	Cotati Quad, T6N, R8W, Section 26	38.343 N, -122.712
Copeland Creek at Country Club Drive	Copeland Creek	Laguna de Santa Rosa	Copeland 3 & 4	Cotati Quad, T6N, R8W, Section 25	38.343 N, -122.69 W
Copeland Creek at Snyder Ln	Copeland Creek	Laguna de Santa Rosa	Copeland 4 & 5	Cotati Quad, T6N, R8W, Section 25	38.343 N, -122.685 W

Project Site	Creek	Tributary To	SMP Reach	USGS Quad, Township, Range, Section	Latitude/ Longitude
Five Creek at Snyder Ln	Five Creek	Crane Creek	Five 1	Cotati Quad, T6N, R8W, Section 13	38.361 N, -122.685 W
Wilfred Creek at Snyder Ln	Wilfred Creek	Bellevue-Wilfred Creek	Wilfred 1C	Cotati Quad, T6N, R8W, Section 13	38.371 N, -122.686 W
Reservoir Inlet Clearing Projects					
Brush Creek Reservoir	Brush Creek	Santa Rosa Creek	N/A	Santa Rosa Quad, T7N, R7W, Section 6	38.487 N, -122.671 W
Matanzas Creek Reservoir	Matanzas Creek	Santa Rosa Creek	N/A	Santa Rosa Quad, T7N, R7W, Section 32	38.405 N, -122.652 W
Piner Creek Reservoir	Paulin Creek	Santa Rosa Creek	N/A	Santa Rosa Quad, T7N, R8W, Section 11	38.466 N, -122.706 W
Santa Rosa Creek Reservoir (Spring Lake)	Santa Rosa Creek	N/A	N/A	Santa Rosa Quad, T7N, R7W, Section 17	38.46 N, -122.654 W
Santa Rosa Creek Diversion	Santa Rosa Creek	Laguna de Santa Rosa	Santa Rosa Div. 1	Santa Rosa Quad T7N, R7W	38°27'25.86"N 122°38'23.36"W
Fish Ladder in Santa Rosa Creek Diversion Structure	Santa Rosa Creek	Spring Lake	Santa Rosa Div. 1	Santa Rosa Quad, T7N, R7W, Section 17	38.46 N, -122.654 W
ZONE 2A					
Reach Scale Sediment Removal Projects					
McDowell Creek Caulfield Ln to East Fork McDowell Creek	McDowell Creek	Petaluma River	McDowell 2B	Petaluma River Quad, T5N, R7W, Section 34	38.236 N, -122.619 W
Washington Creek Madison St to Holly Ln	Washington Creek	Petaluma River	Washington 2	Petaluma Quad, T5N, R7W, Section 28	38.246 N, -122.634 W
In-stream Sediment Basin Clearing Projects					
Adobe Creek above and below S. McDowell Blvd	Adobe Creek	Petaluma River	Adobe 1 and 2	Petaluma River Quad, T5N, R7W, Section 33	38.232 N, -122.599 W
Washington Creek downstream of Holly Ln	Washington Creek	Petaluma River	Washington 1	Petaluma Quad, T5N, R7W, Section 28	38.246 N, -122.635 W
Washington Creek upstream of Madison St	Washington Creek	Petaluma River	Washington 3	Petaluma Quad, T5N, R7W, Section 28	38.246 N, -122.633 W
Bank Repair Projects					
East Washington Creek between STA 34+00 - 35+00	East Washington Creek	Washington Creek	East Washington 3	Glen Ellen Quad, T5N, R7W, Section 26 and 27	38.253 N, -122.61 W

Project Site	Creek	Tributary To	SMP Reach	USGS Quad, Township, Range, Section	Latitude/ Longitude
ZONE 3A					
<i>Reach Scale Sediment Removal Projects</i>					
Nathanson Creek Bypass Fine Ave to Dewell Dr	Nathanson Creek	Schell Creek	Nathanson 1	Sonoma Quad, T5N, R5W, Section 18	38.278 N, -122.457 W

1C. Sediment Removal and Bank Repair Project Settings and Resources

Channel Characterization Sheets and Site Photos

Channel characterization sheets for the 2014 project sites were developed for, and included in, Chapter 4 of the Stream Maintenance Program (SMP) Manual. The channel characterization sheets contained within the Manual provide baseline information on the maintenance reach's setting, physical processes, geomorphic conditions, biologic conditions, and management considerations. The channel characterization sheets also include photographs depicting typical conditions of the reach. Program reviewers are directed to view the reach characterization sheets in the Manual (Chapter 4) to provide an overview of reach conditions.

Current photographs showing the specific location of maintenance activities for the 2014 project sites are provided in Appendix A.

Potential Habitat for Listed Species

Based on possible listed species occurrences, Table 1-2 below indicates which of the applicable species-specific Best Management Practices (BMPs) (identified in Table 7-1 of the SMP Manual) that will be applied when conducting maintenance activities. Specifically, the BMPs which will be applied according to maintenance activity type are listed in Table 1-2. This table is an excerpt of Table 7-2 from the SMP Manual. Maps displaying the project location relative to known biological resources (California Natural Diversity Database) (CNDDDB) are included in Appendix B.

Table 1-3 presents habitat potential for listed species by reach. As shown in Table 1-3, none of the project reaches are known to support or provide suitable habitat for California freshwater shrimp, Central California Coast Coho salmon, or California Coastal Chinook salmon. Thirteen project sites (Adobe 1 and 2, Copeland 2, 3, 4, and 5, Hinebaugh 3B, 4, 5A and 5C, Santa Rosa Creek Reservoir, Santa Rosa Creek Diversion/Fish Ladder, and Washington 1) provide potential habitat or there is a known occurrence, at or adjacent to the reach for Central California Coast Steelhead. Additionally, all of the project sites show potential habitat for the Western Pond Turtle, with the exception of Nathanson Bypass 1.

Several project reaches may provide potential upland aestivation habitat for California Tiger Salamander (CTS), specifically: Colgan 5C, Copeland 2, 3, 4, and 5, Hinebaugh 3B, 4, 5A and 5C,

South Fork Copeland 1, and Wilfred 1C. CTS BMPs BR-12, BR-13, and BR-14 will be implemented for vegetation management activities and ground disturbing projects in these areas. Additional information regarding potential effects on California tiger salamander, areas of disturbance and compensatory mitigation can be found in Section 3C of this notification.

Maintenance areas proposed for 2014 potentially supporting California red-legged frog include Adobe 1 and 2, Brush Creek Reservoir, Cook 2, East Washington 3, Matanzas Creek Reservoir, McDowell 2B, Nathanson Creek Bypass 1, Piner Creek Reservoir, Santa Rosa Creek Reservoir, Santa Rosa Creek Diversion/Fish Ladder, and Starr 2. Furthermore, Cook 2, Copeland 5 and the Santa Rosa Creek Diversion/Fish Ladder may include potential habitat for Foothill yellow-legged frog. Finally, none of the anticipated 2014 maintenance reaches have the potential to support special-status plant species.

Table 1-2: Best Management Practices by Activity

BMP	Name	Sediment Removal	Bank Stabilization	Vegetation Management							Other Activities	
				Willow Removal	Blackberry Removal	Cattail Removal	Tree Pruning and Exotics Removal	Tree Removal and Relocation	Mowing	Nursery Stock Tree Planting	Reservoir Debris Removal	Sediment Disposal
General Impact Avoidance and Minimization												
GEN-1	Work Window	X	X	X	X	X	X	X	X	X	X	X
GEN-2	Staging and Stockpiling of Materials	X	X	X	X	X	X	X	X	X	X	X
GEN-3	Channel Access	X	X	X	X	X	X	X	X	X	X	X
Air Quality Protection												
AQ-1	Dust Management	X	X	X	X	X	X	X	X	X	X	X
AQ-2	Enhanced Dust Management	X	X	X	X	X	X	X	X	X	X	X
Biological Resources Protection												
BR-1	Area of Disturbance	X	X	X	X	X	X	X	X	X	X	X
BR-2	Pre-maintenance Educational Training	X	X	X	X	X	X	X	X	X	X	X
BR-3	Biotechnical Bank Stabilization		X									
BR-4	Impact Avoidance and Minimization During Dewatering	X	X									
BR-5	Fish and Amphibian Species Relocation Plan	X	X									
BR-6	On-Call Wildlife Biologist	X	X	X	X	X	X	X	X	X	X	X
BR-7	Special Status Plants	X	X	X	X	X	X	X	X	X	X	X
BR-8	Nesting Migratory Bird and Raptor Pre-maintenance Surveys	X	X	X	X	X	X	X	X	X	X	X
BR-10	California Red-legged Frog Avoidance and Impact Minimization Measures for Ground-Disturbing Activities	X	X								X	X
BR-11	California Red-legged Frog Avoidance and Impact Minimization for Vegetation Management			X	X	X	X	X	X	X		
BR-12	California Tiger Salamander Avoidance and Impact Minimization Measures for Sediment and Debris Removal	X		X		X					X	X

BMP	Name	Sediment Removal	Bank Stabilization	Vegetation Management							Other Activities	
				Willow Removal	Blackberry Removal	Cattail Removal	Tree Pruning and Exotics Removal	Tree Removal and Relocation	Mowing	Nursery Stock Tree Planting	Reservoir Debris Removal	Sediment Disposal
BR-13	California Tiger Salamander Avoidance and Impact Minimization Measures for Bank Stabilization		X									
BR-14	California Tiger Salamander Avoidance and Impact Minimization Measures for Vegetation Management			X	X		X	X	X	X	X	
BR-15	Foothill Yellow-legged Frog Avoidance and Impact Minimization Measures for Ground-Disturbing Activities	X	X								X	X
BR-16	Foothill Yellow-legged Frog Avoidance and Impact Minimization Measures for Vegetation Management			X	X	X	X	X	X	X		
BR-17	Western Pond Turtle Pre-maintenance Surveys for Ground-Disturbing Activities	X	X	X	X	X	X	X	X	X	X	
BR-18	Zone 1A Salmonid Avoidance and Impact Minimization Measures	X	X	X		X				X		
Cultural Resources Protection												
CR-2	Cultural Resources Investigation		X									
CR-3	Previously Undiscovered Cultural Resources	X	X	X	X	X	X	X	X	X	X	X
CR-4	Previously Undiscovered Palentological Resources	X	X	X	X	X	X	X	X	X	X	X
CR-5	Staff Cultural Resources Training	X	X	X	X	X	X	X	X	X	X	X
CR-7	Ecosystem Restoration Program			X	X	X	X	X	X	X		
Hazardous Materials Safety												
HAZ-1	Spill Prevention and Response Plan	X	X	X	X	X	X	X	X	X	X	X
HAZ-2	Equipment and Vehicle Maintenance	X	X	X	X	X	X	X	X	X	X	X
HAZ-3	Equipment and Vehicle Cleaning	X	X	X	X	X	X	X	X	X	X	X
HAZ-4	Refueling	X	X	X	X	X	X	X	X	X	X	X
HAZ-5	On-Site Hazardous Materials Management	X	X	X	X	X	X	X	X	X	X	X
HAZ-6	Existing Hazardous Sites or Waste	X	X	X	X	X	X	X	X	X	X	X
HAZ-7	Fire Prevention	X	X	X	X	X	X	X	X	X	X	X

BMP	Name	Sediment Removal	Bank Stabilization	Vegetation Management							Other Activities		
				Willow Removal	Blackberry Removal	Cattail Removal	Tree Pruning and Exotics Removal	Tree Removal and Relocation	Mowing	Nursery Stock Tree Planting	Reservoir Debris Removal	Sediment Disposal	
HAZ-8	Testing and Disposal of Spoils	X	X									X	X
Vegetation Management													
VEG-1	Removal of Existing Vegetation	X	X	X			X	X		X			
VEG-2	Use of Herbicides			X	X	X	X	X					
VEG-3	Planting and Revegetation After Soil Disturbance	X	X				X	X		X			
Water Quality and Channel Protection													
WQ-1	Apply Erosion Control Fabric to or Hydroseeding of Exposed Soils	X	X	X	X	X	X	X				X	X
WQ-2	Prevent Scour Downstream of Sediment Removal	X											
WQ-3	In-Channel Grading	X	X										
Good Neighbor Policies													
GN-1	Work Site Housekeeping	X	X	X	X	X	X	X	X	X		X	X
GN-2	Public Outreach	X	X	X	X	X	X	X	X	X		X	X
GN-3	Noise Control	X	X	X	X	X	X	X	X	X		X	X
GN-4	Traffic Flow, Pedestrians, and Safety Measures	X	X	X	X	X	X	X	X	X		X	X
GN-5	Odors	X	X									X	X

Table 1-3: Habitat Potential for Listed Species by Reach

Reach	Listed Species								
	California Freshwater Shrimp	California Red-legged Frog	California Tiger Salamander*	Foothill Yellow-legged Frog	Western Pond Turtle	Central California Coast Steelhead	Central California Coast Coho	California Coastal Chinook	Plants
ZONE 1A									
<i>Localized Scale Sediment Removal Projects</i>									
Colgan 5C	U	U	1(2026.6); 2(5693.9)	U	P	U	U	U	U
<i>Reach Scale Sediment Removal Projects</i>									
Forestview 2	U	U	U	U	P	U	U	U	U
Forestview 3	U	U	U	U	P	U	U	U	U
Hinebaugh 3B	U	U	2(1450.1); 3(142.7)	U	P	P(M)	U	U	U
Hinebaugh 4	U	U	3	U	P	P(M)	U	U	U
Hinebaugh 5A	U	U	3	U	P	P(M)	U	U	U
Hinebaugh 5C	U	U	3	U	P	P(M)	U	U	U
South Fork Copeland 1	U	U	3	U	P	U	U	U	U
Starr 2	U	P	U	U	P	U	U	U	U
Steele 1B	U	U	U	U	P	U	U	U	U
Steele 2	U	U	U	U	P	U	U	U	U
<i>In-stream Sediment Basin Projects</i>									
Cook 2	U	P	U	P	P	U	U	U	U
Copeland 2	U	U	3	U	P	O(M)	U	U	U
Copeland 3	U	U	3	U	P	O(M/R)	U	U	U
Copeland 4	U	U	3	U	P	O(M)	U	U	U
Copeland 5	U	U	3	P	P	O(M/R)	U	U	U
Five 1	U	U	U	U	P	U	U	U	U
Wilfred 1C	U	U	3(6025.9)	U	P	U	U	U	U
<i>Reservoir Inlet Clearing Projects</i>									
Brush Creek Reservoir	U	P	U	U	P	U	U	U	U
Matanzas Creek Reservoir	U	P	U	U	P	U	U	U	U
Piner Creek Reservoir	U	P	U	U	P	U	U	U	U
Santa Rosa Creek Reservoir	U	P	U	U	P	P	U	U	U
Santa Rosa Div. 1	U	P	U	P	P	O*	U	U	U

Reach	Listed Species								
	California Freshwater Shrimp	California Red-legged Frog	California Tiger Salamander*	Foothill Yellow-legged Frog	Western Pond Turtle	Central California Coast Steelhead	Central California Coast Coho	California Coastal Chinook	Plants
ZONE 2A									
Reach Scale Sediment Removal Projects									
McDowell 2B	U	P	U	U	P	U	U	U	U
Washington 2	U	P	U	U	P	U	U	U	U
In-stream Sediment Basin Clearing Projects									
Adobe 1	U	P	U	U	P	O(M)	U	U	U
Adobe 2	U	P	U	U	P	O(M)	U	U	U
Washington 1	U	P	U	U	P	O*	U	U	U
Washington 3	U	P	U	U	P	U	U	U	U
Bank Repair Projects									
East Washington 3	U	P	U	U	P	U	U	U	U
ZONE 3A									
Reach Scale Sediment Removal Projects									
Nathanson 1	U	P	U	U	U	U	U	U	U

Source: SMP Manual Table 7-3 as updated by the BO processes and new data (March 2012)

Legend

- O Known occurrence in reach
- O* Presence documented within adjacent reach or tributary; not applicable for fish if known barrier or reach goes dry
- P Potential habitat (includes areas rated potential or marginal)
- M Migration corridor (fish only)
- S Known or potential spawning habitat (fish only)
- R Known or potential rearing habitat (fish only)
- U Unsuitable habitat, unlikely to occur and/or no known occurrence

CTS Habitat Rankings*

- 1 - Within 500 ft of a known occurrence
- 2 - Between 500ft-2200ft of a known occurrence
- 3 - Between 2200 ft and 1.3 mi of a known occurrence
- 4 - Greater than 1.3 mi, but within SRPCS range (no mitigation required)

*Parentheses following CTS habitat ranks notate distance (in feet) of each rank for reaches with more than one CTS ranking

1E. Vegetation Management Activities

During the 2014 maintenance season, vegetation maintenance will include tree and brush thinning, and removal of exotic species and other vegetation blockages to improve hydraulic capacity and retain or enhance appropriate habitat. Vegetation maintenance will be completed according to Appendix E of the SMP Manual (*Vegetation Management Plan*) as well as the associated terms and conditions of all programmatic permits and biological opinions.

For 2014, vegetation maintenance will be completed in the locations as shown below. Note that maintenance generally occurs in only a portion of the identified reach, not the entire reach length. An addendum will be sent out in August to supplement this list if any subsequent requests for vegetation management are made for areas not shown below. The submission and approval of such an addendum is specified in the CDFW Streambed Alteration Agreement (No. 1600-2009-0399-R3) for the SMP.

Table 1-4. 2014 Vegetation Management Activities

Reach	Vegetation Management Activity		
	<i>Blackberry Management (Mowing, Hand Removal, Herbicide Treatment)</i>	<i>Exotics Management (Hand Removal, Herbicide Treatment)</i>	<i>Willow Pruning</i>
Engineered Channels			
Zone 1A			
Abramson 1			X
Airport 1			X
Airport 2			X
Bellevue Wilfred 1	X		
Bellevue Wilfred 2	X		
Bellevue Wilfred 3	X		
Bellevue Wilfred 4	X		
Brush 1			X
Brush 2A			
Brush 2B			
Coleman 2			X
Colgan 1	X		X
Colgan 2	X		X
Colgan 3	X		
Colgan 4	X		
Colgan 5A	X		X
Colgan 6			X
Colgan 7			X
College 1	X	X	
College 2	X	X	
College 3	X	X	
Cook 1	X	X	X
Cook 2			X
Copeland 3			X
Copeland 4			X
Copeland 5			X
Crane 2			
Ducker 1	X	X	X
Ducker 2			
Five 1	X	X	
Forestview 1			
Forestview 2			
Forestview 3			
Hinebaugh 1			X

Reach	Vegetation Management Activity		
	<i>Blackberry Management (Mowing, Hand Removal, Herbicide Treatment)</i>	<i>Exotics Management (Hand Removal, Herbicide Treatment)</i>	<i>Willow Pruning</i>
Hinebaugh 2			X
Hunter 1			
Hunter 2			
Kawana 1B			
Laguna 2			X
Matanzas 1	X	X	X
Paulin 1			X
Paulin 2			X
Paulin 5	X	X	
Peterson 1			
Peterson 2			
Piner 2B			X
Piner 3A			X
Piner 4	X	X	
Piner 5	X	X	
Piner 6			X
Piner 7			X
Roseland 1			X
Roseland 1A			X
Roseland 2			X
Russell 1A			
Russell 1B			
Russell 2			X
Santa Rosa 1	X		X
Santa Rosa 2	X		X
Santa Rosa 3	X		X
Santa Rosa 4	X		X
S. Fork Copeland 1	X		X
S. Fork Copeland 2	X		X
Spring 3	X		X
Starr 1			
Starr 2			
Steele 2	X	X	X
Steele 5	X	X	X
Todd 1			
Todd 2			
Todd 5B			X
ZONE 2A			
Adobe 1	X		X
Capri 1			X
Capri 2			X
Capri 3			X
Capri 4			X
Corona 1	X		

Reach	Vegetation Management Activity		
	<i>Blackberry Management (Mowing, Hand Removal, Herbicide Treatment)</i>	<i>Exotics Management (Hand Removal, Herbicide Treatment)</i>	<i>Willow Pruning</i>
Corona 4			X
Corona 5			X
Corona 6			X
Corona 7			X
East Washington 4			X
East Washington 5			X
Lichau 1	X		X
Lichau 2	X		X
Lichau 3A	X		X
Lichau 3B	X		X
Lichau 3C	X		X
Lichau 3D	X		X
Washington 7			X
Zone 6A			
West Slough 1	X		X
Modified and Natural Channels			
Zone 1A			
Irwin 1	X		X
Irwin 2	X		X
Oakmont 1	X		X
Oakmont 2	X		X
Oakmont 3	X		X
Oakmont 4	X		X
Oakmont 5	X		X
San Antonio 0A	X		X
San Antonio 0B	X		X
San Antonio 1	X		X
San Antonio 2	X		X
San Antonio 3	X		X
Spring 1	X		X
Spring 2	X		X
Zone 2A			
Lichau 5	X		X
Lichau 6	X		X
Lichau 7	X		X
Lichau 8	X		X
Petaluma River 0A	X		X
Petaluma River 0B	X		X
Petaluma River 0C	X		X
Petaluma River 1	X		X
Petaluma River 2	X		X
Petaluma River 3	X		X
Petaluma River 4	X		X
Zone 3A			

Reach	Vegetation Management Activity		
	<i>Blackberry Management (Mowing, Hand Removal, Herbicide Treatment)</i>	<i>Exotics Management (Hand Removal, Herbicide Treatment)</i>	<i>Willow Pruning</i>
Lawndale 0	X		X
Lawndale 1	X		X
Lawndale 2	X		X
Nathanson 0	X		X
Nathanson 0A	X		X
Nathanson 2	X		X
Nathanson 3	X		X
Nathanson 4	X		X
Nathanson 5	X		X
Nathanson 6	X		X
Nathanson 7	X		X
Nathanson 8	X		X
Nathanson 9	X		X
Rodgers 0	X		X
Rodgers 0A	X		X
Rodgers 1	X		X
Rodgers 1A	X		X
Rodgers 1B	X		X
Rodgers 2	X		X
Zone 5A			
Fife 0	X		X
Fife 0A	X		X
Fife 0B	X		X
Fife 0C	X		X
Fife 0D	X		X
Fife 0E	X		X
Fife 1	X		X
Fife 2	X		X

Section 2

Site Specific Photographs/Project Designs

This section provides project designs and photographs which describe specific maintenance locations and site conditions. Appendix A illustrates pre-maintenance conditions for each proposed project location. Design drawings for each project are presented in Appendix C. These drawings display the following information for each 2014 project:

- Longitudinal profiles comparing the existing grade and the project design
- Plan views showing existing conditions, Ordinary High Water Mark (OHWM), and maintenance locations
- Channel cross-sections showing existing conditions and the project design

The project designs have been arranged in the following order:

- Colgan Creek 5C Localized
- Forestview Creek 2 and 3 Reach Scale
- Hinebaugh Creek 3B, 4, 5A and 5C Reach Scale
- South Fork Copeland 1 Reach Scale
- Starr Creek 2 Reach Scale
- Steele 1B Reach Scale
- Steele Creek 2 Reach Scale
- Five 1-Wilfred-Adobe-Copeland-Cook In-stream Sediment Basins
- Copeland 2 In-stream Sediment Basins
- Brush-Matanzas-Piner-Santa Rosa Reservoir/Santa Rosa Diversion Fish Ladder Inlet Clearing
- McDowell 2B Reach Scale
- Washington Creek 1, 2 and 3 (Sediment Basins and Reach Scale Projects)
- East Washington 3 Bank Repair
- Nathanson Creek Bypass 1 Reach Scale

Section 3

Summary of Maintenance Project Sizes, Extents, and Potential Effects

The following tables describe the areal and length extents of the 2014 maintenance projects and their potential effects to Waters of the State/U.S. and listed species.

3A. Sediment Removal Projects

Project Site	Length (linear feet)	Volume Removed (cu. yds.)	Acres Disturbed	
			Waters of the U.S. (below OHWM*)	Waters of the State (below TOB*)
ZONE 1A				
Localized Scale				
Colgan 5C	170	101	0.07	—
Reach Scale				
Forestview 2 and 3	3,243	901	0.93	—
Hinebaugh 3B, 4, 5A and 5C	4,260	2,303	1.93	—
South Fork Copeland 1	2,805	810	0.53	0.18
Starr 2	800	444	0.37	—
Steele 1B	800	767	0.14	0.20
Steele 2	1,542	171	0.91	—
In-stream Sediment Basin Clearing				
Cook 2	200	150	0.18	—
Copeland 2	150	333	0.09	0.02
Copeland 3 & 4	200	400	0.21	—
Copeland 4 & 5	205	750	0.21	—
Five 1	120	100	0.11	—
Wilfred 1C	200	100	0.05	—
Reservoir Inlet Clearing				
Brush Creek Reservoir	n/a	250	0.05	—
Matanzas Creek Reservoir	n/a	250	0.05	—
Piner Creek Reservoir	n/a	250	0.05	—
Santa Rosa Creek Reservoir	n/a	100	0.06	—
Santa Rosa Div. 1	180	350	0.25	—
Fish Ladder in Santa Rosa Div. 1	40	18	0.01	—
Zone 1A Project Totals	14,915	8,548	6.2	0.40

Project Site	Length (linear feet)	Volume Removed (cu. yds.)	Acres Disturbed	
			Waters of the U.S. (below OHWM*)	Waters of the State (below TOB*)
ZONE 2A/3A				
Reach Scale				
McDowell 2B	1,473	164	0.52	0.002
Nathanson 1	695	730	0.52	0.06
Washington 2	375	496	0.16	0.02
In-stream Sediment Basin				
Adobe 1 & 2	80	750	0.08	—
Washington 1	170	224	0.07	0.01
Washington 3	75	99	0.03	0.004
Zone 2A/3A Totals	2,868	2,463	1.38	0.096
Combined 2014 Project Totals	17,783	11,011	7.58	0.496

*OHWM is an abbreviation for Ordinary High Water Mark. TOB is an abbreviation for Top of Bank.

3B. Bank Repair Projects

Project Site	Length (linear feet)	Acres Disturbed		Volume of Fill (cu.yds, net)	Treatment Approach (SMP Manual Figures 5-5, 5-6, or 5-7)
		Waters of the U.S. (below OHWM)	Waters of the State (below Top of Bank)		
E. Washington 3 (Zone 2A)	53	0.0155	0.0052	67	5-6
Totals	53	0.0155	0.0052	67	

3C. Listed and Special-Status Species – Potential Area of Effect

California Tiger Salamander

As described above in Section 1C and Table 1-3, there are three species listed under the Federal Endangered Species Act that could be potentially impacted by the 2014 maintenance projects. One of these species, California tiger salamander (CTS), is also listed under the California Endangered Species Act. The SMP Manual and associated Biological Opinions (BOs) from the USFWS and National Marine Fisheries Service (NMFS) describe the necessary avoidance and minimization measures required for these species in support of the incidental take authorization. SMP managers and biologists reviewed the 2014 maintenance project locations and proposed activities for potential impacts to special-status species and their habitats. Based on this review the Water Agency concluded that impacts to CTS are the only potential impacts to listed species that require compensatory mitigation for the season.

Table 3-1 below identifies 2014 SMP maintenance reaches within 1.3 miles of known CTS occurrences. Maintenance project areas (above the ordinary high water mark – the zone potentially supporting rodent burrows and providing CTS upland habitat) are given for the project areas within the 1.3 mile buffer zone of known occurrences. Resource maps indicating the location of 2014 SMP projects in relation to CNDDDB data can be found in Appendix B, and maps used to calculate CTS distance rankings to determine this season’s mitigation needs can be found in Appendix D.

SMP channels do not provide suitable breeding habitat for California tiger salamanders but the upper banks of channels may provide upland aestivation habitat. Areas with an abundance of small mammal burrows will be flagged by a qualified biologist and avoided during project implementation.

Table 3-1. 2014 SMP Projects Requiring Compensatory Mitigation for CTS

Project Site	Rank/Area Disturbed Above OHWM (sq.ft.)	Compensatory Mitigation Required (as per USFWS BO)	
		Ratio	Total required (sq.ft.)
Localized Scale			
Colgan 5C	1/0	2:1	0
	2/0	1:1	0
Reach Scale			
Hinebaugh 3B	2/0	1:1	0
	3/0	0.2:1	
Hinebaugh 4	3/0	0.2:1	0
Hinebaugh 5A	3/0	0.2:1	0
Hinebaugh 5C	3/0	0.2:1	0
South Fork Copeland 1	3/7,842	0.2:1	1,568
In-stream Sediment Basin			
Copeland 2	3/750	0.2:1	150
Copeland 3	3/0	0.2:1	0
Copeland 4	3/0	0.2:1	0
Copeland 5	3/0	0.2:1	0
Wilfred 1C	3/0	0.2:1	0
Project Totals	8,592 sq. ft. (0.197 acres)		1,718 sq. ft. (0.039 acres)

Based on the guidance of the SMP’s Programmatic USFWS Biological Opinion and Consistency Determination from the CDFW, the Water Agency will compensate for potential impacts to CTS habitat through purchase of credits from a USFWS- and CDFW-approved conservation bank for the CTS. The Water Agency has purchased 0.28 acres of credit to date. This credit has been used to mitigate for impacts resulting from 2010, 2011, 2012 and 2013 projects. The CTS mitigation requirements for 2010, 2011, 2012 and 2013 were 0.034, 0.05, 0.049 and 0.237, respectively. The total combined CTS impact mitigation for the past four seasons is 0.37. As seen in Table 3-1, 0.039 acre is the foreseen CTS credit needed for the 2014 season. To provide coverage for the 2014 and 2015 field seasons, the Water Agency will pursue purchasing an additional 0.28 acres

of credit from USFWS- and CDFW-approved local mitigation banks. This mitigation for CTS habitat disturbance is provided in addition to already required SMP on-site and off-site mitigation activities which will be implemented in 2014 as well as associated BMPs described below (see Section 4 and Appendix E).

To address stream maintenance effects on CTS in locations where the species has the potential to occur (SMP Manual Table 7-3), the Water Agency will (according to BMPs BR-12, BR-14, and BR-14 California Tiger Salamander Avoidance and Impact Minimization Measures for Sediment and Debris Removal, Bank Stabilization, Vegetation Management, and the USFWS BO) undertake the following measures:

1. For sediment and debris removal maintenance activities occurring in areas where California tiger salamander (CTS) has been identified as potentially occurring (see SMP Manual Table 7-3), a qualified biologist will conduct pre-maintenance surveys of upland habitats and identify areas with small mammal burrows. Areas with an abundance of small mammal burrows will be flagged and avoided during project implementation.
2. Maintenance activities will be restricted to the streambed and avoid disturbance to adjacent upland habitat.
3. Sediment and debris removal activities shall minimize removal of upland vegetation and soil compaction.
4. If upland banks must be traversed by heavy equipment to access a streambed, the route will be located where no small mammal burrows are present and will be delineated by temporary fencing to minimize upland habitat disturbance.
5. If burrows or other suitable aestivation habitat are present where sediment or debris removal activities are proposed, a qualified biological monitor or a biologist with an Incidental Take Permit will be on call during project activity in proximity to upland CTS habitat. The biological monitor will have the authority to stop work if a CTS is encountered until such a time as the animal is moved to an area away from the project site.
6. Maintenance activities located in proximity to upland CTS habitat will be scheduled to avoid the CTS migration season (October 15 – June 30). If work must be completed during the migration season, barrier fencing will be installed to exclude CTS from maintenance areas.
7. In the event that a CTS is encountered within the maintenance area, a biologist with an Incidental Take Permit, or biologist approved by the USFWS, will move the salamander to a safe location with suitable underground refugia (e.g., open burrow of appropriate depth) outside of the maintenance area. Actions taken to move CTS will be consistent with applicable USFWS and CDFW regulations and permits.
8. The USFWS Sacramento Field Office will be contacted within 48 hours of any CTS observations.

In addition to the conservation measures articulated for ground-disturbing activities, the Water Agency will also implement the following measures to avoid potential impacts to CTS during vegetation maintenance activities occurring within potential habitat for the species:

1. For vegetation management activities occurring in areas where CTS has been identified as potentially occurring (see SMP Manual Table 7-3), a qualified biologist will conduct pre-maintenance surveys of upland habitats and identify areas with small mammal burrows. Areas with an abundance of small mammal burrows will be flagged and avoided during project implementation.
2. Based on surveys, if CTS is identified as potentially present, then access across upland channel banks and adjacent upland habitats will be by foot only. Vehicles will be restricted to existing access roads.
3. A qualified biological monitor, or biologist with an Incidental Take Permit, will be on call during project activity in proximity to upland CTS habitat. The biological monitor will have the authority to stop work if a CTS is encountered until such a time as the animal is moved to an area away from the project site.
4. In the event that a CTS is encountered within the maintenance area, a biologist with an Incidental Take Permit, or biologist approved by the USFWS, will move the salamander to a safe location with suitable underground refugia (e.g., open burrow of appropriate depth) outside of the fenced maintenance area. Actions taken to move CTS will be consistent with applicable USFWS and CDFW regulations and permits.
5. The USFWS Sacramento Field Office will be contacted within 48 hours of any CTS observations.

California Red-Legged Frog

To address stream maintenance effects on California red-legged frog in locations where the species has the potential to occur (see SMP Manual Table 7-3), the Water Agency will (according to BMPs BR-10 and BR-11 California Red-legged Frog Avoidance and Impact Minimization Measures for Ground-Disturbing and Vegetation Management Activities and the USFWS BO) undertake the following measures:

1. For ground-disturbing maintenance activities occurring in areas where California red-legged frog has been identified as potentially occurring (see SMP Manual Table 7-3), a qualified biologist will conduct USFWS-approved protocol level surveys to determine the potential presence of red-legged frogs. For ground-disturbing maintenance activities that are in areas where California red-legged frogs are identified as potentially occurring and no protocol level surveys are conducted, red-legged frogs will be presumed present.
2. If suitable breeding habitat is encountered, the USFWS will be contacted and any site-specific recommendations will be implemented.

3. If red-legged frogs are present or assumed present, a qualified biological monitor, or a biologist with an Incidental Take Permit pursuant to Section 10(A)(1)(b) for the Act, will inspect the area daily before the start of work and will be present during maintenance activities in sensitive habitats. If appropriate, Water Agency staff will install exclusionary fencing.
4. In the event that a red-legged frog is encountered within the maintenance area, the USFWS will be contacted within 48 hours of any red-legged frog observations, and a qualified biologist will move the frog to a safe location outside of the project area. Actions taken to move red-legged frog will be consistent with applicable Service and CDFW regulations and permits. The biological monitor will have the authority to stop work if a red-legged frog is encountered until such a time as the frog may be moved to an area outside of the project area fencing.
5. If dewatering of a creek is required, dipnet and seine surveys for red-legged frog tadpoles will be completed prior to initiation of dewatering. Captured tadpoles will be moved to a safe location elsewhere in the creek.

California red-legged frog protocol level surveys will be conducted for SMP ground-disturbing projects within areas considered potential habitat. Protocol level surveys require eight visits and two of these visits must occur after July 1. If significant resources are encountered during ongoing surveys, field results will be sent to the USFWS prior to commencing project activities. The results of site assessments and surveys are considered valid for two years by the USFWS. After two years, new surveys conducted under the most current USFWS Guidance may be required, if deemed necessary by the appropriate USFWS Office.

In March and April 2014, Water Agency biologists conducted reconnaissance-level site assessments of all the 2014 ground-disturbing project sites not surveyed within the last two years to evaluate whether potential frog habitat exists. The findings of these reconnaissance surveys were reviewed by the USFWS and it was determined that none of the project sites currently support California red-legged frog habitat. As such, no protocol-level surveys are required for this construction season. An accounting of surveys conducted on the 2014 ground-disturbing project sites is provided in Table 3-2 below.

Table 3-2. 2014 California red-legged frog survey summary

Location	Year and Survey Conducted
ZONE 1A	
Localized Scale Project	
Colgan 5C	Spring 2014 habitat assessment
Reach Scale Project	
Forestview 2 and 3	Spring 2014 habitat assessment
Hinebaugh 3B, 4, 5A and 5C	Spring 2014 habitat assessment
South Fork Copeland 1	Spring 2014 habitat assessment
Starr 2	2013 habitat assessment
Steele 1B	Spring 2014 habitat assessment
Steele 2	Spring 2014 habitat assessment

Location	Year and Survey Conducted
Sediment Basin Clearing	
Cook 2	2010 protocol level; Spring 2014 habitat assessment
Copeland 2, 3, 4 and 5	Spring 2014 habitat assessment
Five 1	Spring 2014 habitat assessment
Wilfred 1C	Spring 2014 habitat assessment
Reservoir Inlet Clearing	
Brush Creek Reservoir	2010 protocol level; 2013 habitat assessment
Matanzas Creek Reservoir	2010 protocol level; 2013 habitat assessment
Piner Creek Reservoir	2009 protocol level; 2013 habitat assessment
Santa Rosa Creek Reservoir (Spring Lake)	2010 protocol level; 2013 habitat assessment
Santa Rosa Diversion Structure	2010 and 2012 protocol level
ZONE 2A/3A	
Reach Scale Project	
McDowell 2B	Spring 2014 habitat assessment
Nathanson Creek Bypass 1	2013 habitat assessment
Washington 2	Spring 2014 habitat assessment
In-Stream Sediment Basin Clearing	
Adobe 1 and 2	2010 and 2013 protocol level
Washington 1 and 3	Spring 2014 habitat assessment
Bank Repair	
East Washington 3	2013 habitat assessment

In addition to the conservation measures articulated for ground-disturbing activities, the Water Agency will also implement the following measures to avoid potential impacts to CRLF during vegetation maintenance activities occurring within potential habitat for the species (2014 SMP vegetation maintenance project locations are listed in Table 1-4 of this Notification):

1. For vegetation maintenance activities occurring in areas where red-legged frog has been identified as potentially occurring (see SMP Manual Table 7-3), a qualified biologist will conduct pre-maintenance surveys of aquatic habitats and identify potential red-legged frog breeding and foraging areas. These areas will be flagged and avoided by maintenance crews.
2. In areas where red-legged frog could potentially occur, field crews conducting hand trimming of vegetation will access channel banks by foot only and will avoid entering open water. Vehicles will be restricted to existing access roads.
3. In work sites where potential red-legged frog breeding and foraging areas were identified during the pre-maintenance survey, a qualified biological monitor or a biologist with an Incidental Take Permit, pursuant to Section 10(a)(1)(b) of the Act will be on-site during project activity in sensitive habitats. The biological monitor will have the authority to stop work if a red-legged frog (or any of its life stages) is encountered until such a time as the frog may be moved to an area away from the project site.
4. The USFWS will be contacted within 48 hours of any red-legged frog observations.

Fisheries Resources and Salmonids

As described above in Section 1C and Table 1-3, Central California Coast Steelhead (CCC Steelhead) could potentially be affected by flood control maintenance activities. SMP managers and biologists reviewed the 2014 maintenance project locations and proposed activities. Based on this review the Water Agency concluded that project sites (Adobe 1 and 2, Copeland 2, 3, 4, and 5, Hinebaugh 3B, 4, 5A and 5C, Santa Rosa Creek Reservoir, Santa Rosa Creek Diversion/Fish Ladder, and Washington 1) provide potential habitat or there is a known occurrence, at or adjacent to the reach for CCC Steelhead.

Table 3-3. 2014 Projects Potentially Affecting Central California Coast Steelhead

Steelhead Use		
Project Site		Mitigation action
<i>Reach Scale</i>		
Hinebaugh 3B	Migration	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue • Retain sidebank trees • Implement erosion control BMPs • Implement Tier 1 Restoration
Hinebaugh 4	Migration	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue • Retain sidebank trees • Implement erosion control BMPs • Implement Tier 1 Restoration
Hinebaugh 5A	Migration	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue • Retain sidebank trees • Implement erosion control BMPs • Implement Tier 1 Restoration
Hinebaugh 5C	Migration	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue • Retain sidebank trees • Implement erosion control BMPs • Implement Tier 1 Restoration
Washington 1	Migration	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue; or conduct work after creek goes dry • Retain sidebank trees • Implement erosion control BMPs • Implement Tier 1 Restoration
<i>In-stream Sediment Basin</i>		
Adobe 1 and 2	Migration	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue; or conduct work after creek goes dry • Retain sidebank trees • Implement erosion control BMPs
Copeland 2 and 3	Migration	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue; or conduct work after creek goes dry • Retain sidebank trees • Implement erosion control BMPs
Copeland 4 and 5	Migration	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue; or conduct work after creek goes dry • Retain sidebank trees • Implement erosion control BMPs

Steelhead Use		
Project Site		Mitigation action
Santa Rosa Creek Diversion/Fish ladder	Migration/Rearing	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue; or conduct work after creek goes dry • Retain sidebank trees • Implement erosion control BMPs
Reservoir Inlets		
Santa Rosa Creek	Migration/Rearing	<ul style="list-style-type: none"> • Survey for presence • Isolate work area • Retain sidebank trees • Implement erosion control BMPs

CCC Steelhead pass through selected Water Agency flood control channels in the winter on their way to spawning areas higher up in the watershed. They also pass through these same channels during out-migration in the spring. The SMP Manual and associated Biological Opinions (BOs) from the National Marine Fisheries Service (NMFS) describe the necessary avoidance and minimization measures required for this species that supports the incidental take authorization. These measures are indicated in Table 1-2 and will be implemented prior to, during and following construction activity. Specifically, efforts are taken to avoid any work while the species are present, retain overhead canopy, and to retain or improve out-migration feeding opportunities. Additionally, where feasible, pools and connecting channels are constructed or retained to improve habitat complexity following sediment removals.

Site Surveys for Presence of Special-Status Plants

None of the anticipated 2014 project reaches provide potential habitat for special-status plant species, based on survey requirements established in Table 7-3 of the SMP Manual. General habitat and focused surveys for SMP plant species were conducted for stream reaches that are considered to have (based on best professional judgment of Water Agency botanists) some potential to support vernal pool species or are near known or historic populations. For the 2014 spring flowering season, surveys were included for reaches along Colgan Creek (reaches 3, 4, and 5), as well as along Lichau Creek Reach 1. Vernal pool species were observed in the early bud-break on April 3 and then in mid-bloom on April 16, 2014, on the Santa Rosa Plain. Sonoma sunshine (*Blennosperma bakeri*) was in mid-bloom (Photos 1 and 2 below) at the Alton Lane Preserve on April 16, 2014. A population of Burke's goldfields (*Lasthenia burkei*) surveyed that same day in the northeastern field at the Llano Road and Todd Road crossing was in early bloom (Photos 3 and 4 below). Sebastopol meadowfoam (*Limnathes vinulans*) was observed almost in full-bloom at the Water Agency's Todd Road Well site on April 16 (Photo 5 and 6 below). No special-status plant species were observed during focused surveys conducted along Colgan and Lichau project reaches during the blooming season in April 2014.



Photos 1 and 2. Sonoma Sunshine at Alton Preserve 4/16/14



Photos 3 and 4. Burke's goldfields at Llano and Todd, 4/16/14



Photos 5 and 6. Sebastopol meadowfoam at Todd Road Wells, 4/16/14

Foothill Yellow-legged Frog

Pre-construction surveys for foothill yellow-legged frog are required at Cook 2, Copeland 5, and the Santa Rosa Creek Diversion/Fish Ladder.

To address stream maintenance effects on foothill yellow-legged frog in locations where the species has the potential to occur (See SMP Manual Table 7-3), the Water Agency will (according to BMPs BR-15 and BR-16 Foothill Yellow-legged Frog Avoidance and Impact Minimization Measures for Ground-Disturbing and Vegetation Management Activities and the USFWS BO) undertake the following measures:

1. For ground-disturbing activities occurring in areas where foothill yellow-legged frog has been identified as potentially occurring (see SMP Manual Table 7-3), a qualified biologist will conduct pre-maintenance surveys to assess habitat within the proposed maintenance area.
2. A qualified biologist will inspect the maintenance area daily before the start of work. If appropriate, Water Agency staff will install exclusionary fencing. In the event that foothill yellow-legged frogs are encountered within the maintenance area, a qualified biologist will move the frog to a safe location outside of the maintenance area. Actions taken to move foothill yellow-legged frog will be consistent with applicable CDFW regulations and permits.
3. If dewatering a creek segment is required, a qualified biologist will conduct visual and dipnet surveys and move captured frogs and tadpoles to a safe location in the creek. Actions taken to move foothill yellow-legged frog will be consistent with applicable CDFW regulations and permits.
4. CDFW will be notified within 48 hours of any foothill yellow-legged frog observations.

In addition to the conservation measures articulated for ground-disturbing activities, the Water Agency will also implement the following measures to avoid potential impacts to frogs during vegetation maintenance activities occurring within potential habitat for the species:

1. For vegetation maintenance activities occurring in areas where foothill yellow-legged frog has been identified as potentially occurring (see SMP Manual Table 7-3), a qualified biologist will conduct pre-maintenance surveys of aquatic habitats and identify potential foothill yellow-legged frog breeding and foraging areas. These areas will be flagged and avoided by maintenance crews.
2. Based on surveys, if foothill yellow-legged frog is identified as potentially present, then field crews will access channel banks by foot only and will avoid entering open water. Vehicles will be restricted to existing access roads.

Western Pond Turtle

Western pond turtles potentially occur in all proposed 2014 SMP ground-disturbing project sites except Nathanson Bypass 1. However, this site will be checked for possible turtles prior to any construction.

To address stream maintenance effects on Western Pond Turtle in locations where the species has the potential to occur (See SMP Manual Table 7-3), the Water Agency will (according to BMPs BR-17 Western Pond Turtle Pre-maintenance Surveys for Ground-Disturbing Activities and the USFWS BO) undertake the following measures:

1. For projects located in areas where western pond turtle has been identified as potentially occurring (see SMP Manual Table 7-3), a qualified biologist will conduct pre-maintenance surveys to assess habitat within the proposed maintenance area. The timing of surveys will be coordinated with the Maintenance Coordinator and be completed immediately prior to construction.
2. If suitable instream habitat for the western pond turtle is present in the maintenance area, a qualified biologist will inspect the maintenance area daily before the start of work. In the event that a western pond turtle is encountered before or during the maintenance activity, a qualified biologist will move the turtle to a safe location outside of the work area. Actions taken to move western pond turtle will be consistent with applicable CDFW regulations and permits.
3. If dewatering of a creek segment is required, a qualified biologist will be present and will move turtles – if found – to a safe location in the creek. Actions taken to move western pond turtle will be consistent with applicable CDFW regulations and permits.
4. CDFW will be notified within 48 hours of any western pond turtle observations.

3D. Cultural Resources Protection

The 2014 East Washington 3 bank repair project would involve excavation into native soils. As identified in the SMP Manual, and more specifically in the BMPs for Cultural Resources (SMP Table 7-1), a cultural resources investigation is required prior to performing any such activity. As specified in the Cultural Resources BMPs, this investigation must include background research and Native American consultation, a pedestrian survey, documentation, and application of management requirements (as required). The Cultural Resources Constraints Report prepared for the SMP was consulted to fulfill the requirements regarding background research and Native American consultation. In addition, SCWA has conducted a pedestrian survey for one bank stabilization site on April 10, 2012. These investigations concluded that there are no known cultural resources within the area of potential effect (APE) of the project sites. However, prior to the commencement of ground-disturbing activities, all Water Agency personnel will be briefed on the importance of protecting cultural resources (BMP CR-5: *Staff Cultural Resources Training Program*), and if buried resources are accidentally discovered during ground-disturbing activities, appropriate measures will be implemented. These measures (BMPs CR-3: *Previously Undiscovered Cultural Resources* and CR-4: *Previously Undiscovered Paleontological Resources*) are described in detail in Chapter 7 of the SMP Manual.

Section 4

Annual Mitigation Plan

This section describes the mitigation activities proposed for the 2014 maintenance projects. Sections 4A and 4B describe on-site and off-site mitigation activities, respectively. Table 4-6 summarizes maintenance project funding for the off-site Watershed Partnerships Program (WPP).

Table 4-5 provides summary statistics for areas impacted and mitigated for the 2014 maintenance season. Detailed project descriptions for each WPP project utilized for the 2014 field season are included in Appendix G.

4A. On-Site Mitigation Activities (Tier 1)

On-site impact mitigation will be implemented at the specific project reach where the maintenance work was conducted. SMP Chapter 8 provides details on how on-site mitigation is evaluated and designed to address impacts in the immediate maintenance project area, considering restoration and enhancement opportunities in the reach. On-site mitigation activities will restore or improve habitat that is affected by the sediment removal or bank stabilization activities within the general reach footprint in which the disturbance has occurred. On-site restoration typically restores and enhances a larger area than is impacted by maintenance activities. However, for simplicity in accounting, the on-site mitigation is calculated as a 1:1 ratio (acres disturbed to acres restored). As described in Chapter 8 of the SMP Manual, Tier 1 on-site mitigation activities include a robust planting program to develop a fuller riparian corridor and the removal of exotic and invasive species to enhance instream habitat and remove migration barriers.

More detailed descriptions of Tier 1 mitigation is provided in the Annual Summary Report (provided by January 31st) following completion of the restoration planting. In general mitigation aims to add to existing vegetation and replace habitat that was disturbed during sediment removal or bank repairs. Furthermore, mitigation treatments are designed and managed to shepherd the riparian zone through a successional process that incorporates transitioning the vegetation from an early seral state to a climax canopy. The seral to climax shift primarily involves going from higher to lower density of trees as each matures. Specific treatments are selected to restore the type of habitat lost and enhance the existing vegetation. In other words, if a given reach currently supports an extensive riparian corridor, restoration efforts focus on creating complexity in canopy layers (adding native shrub, herbaceous perennial and grass understory) along with re-establishing instream graminoids (aquatic sedges, rushes and grasses). If a given reach has few trees or shrubs, then restoration focuses on establishing riparian habitat following the conceptual planting design (Figure 8-3 in the SMP Manual). Commonly, projects follow the conceptual planting designs, however, larger channels such as

the lower Laguna de Santa Rosa and Santa Rosa Creek provide additional areas that can accommodate additional “planting lines” (areas where woody plants can be allowed in the stream cross section with a minimal loss to capacity). The preliminary planting approach for each project and type is identified in the table below (additional opportunities are indicated where feasible):

Table 4-1: Tier 1 Mitigation Summary

MAINTENANCE PROJECT	RESTORATION ACTIVITY
ZONE 1A	
<i>Localized Scale Sediment Removal</i>	
Colgan 5C	Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes Establishing native upland grasses and herbaceous perennials on upper and side banks
<i>Reach Scale Sediment Removal</i>	
Forestview 2 and 3	Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes Establishing native upland trees, grasses and herbaceous perennials on upper and side banks
Hinebaugh 3B, 4, 5A and 5C	Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes Establishing native upland trees, grasses and herbaceous perennials on upper and side banks
South Fork Copeland 1	Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes Establishing native upland grasses and herbaceous perennials on upper and side banks
Starr 2	Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes Establishing native upland grasses and herbaceous perennials on upper and side banks
Steele 1B	Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes Establishing native upland trees, grasses and herbaceous perennials on upper and side banks
Steele 2	Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes Establishing native upland trees, grasses and herbaceous perennials on upper and side banks
<i>In-stream Sediment Basin Clearing</i>	
Cook 2	Erosion control BMPs
Copeland 2	Tier 3
Copeland 3 & 4	Erosion control BMPs
Copeland 4 & 5	Erosion control BMPs
Five 1	Erosion control BMPs
Wilfred 1C	Erosion control BMPs
<i>Reservoir Inlet Clearing</i>	

MAINTENANCE PROJECT	RESTORATION ACTIVITY
Brush Creek Reservoir	Erosion control BMPs
Matanzas Creek Reservoir	Erosion control BMPs
Piner Creek Reservoir	Erosion control BMPs
Santa Rosa Creek Reservoir	Erosion control BMPs
Santa Rosa Div. 1	Erosion control BMPs
Fish Ladder in Santa Rosa Div. 1	Erosion control BMPs
ZONE 2A	
<i>Reach Scale Sediment Removal</i>	
McDowell 2	Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes Establishing native upland trees, grasses and herbaceous perennials on upper and side banks
Washington 2	Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes Establishing native upland trees, grasses and herbaceous perennials on upper and side banks
<i>In-stream Sediment Basin Clearing</i>	
Adobe 1 & 2	Erosion control BMPs
Washington 1	Tier 3
Washington 3	Tier 3
<i>Bank Repair</i>	
East Washington 3	Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes Establishing native upland trees, grasses and herbaceous perennials on upper and side banks
ZONE 3A	
<i>Reach Scale Sediment Removal</i>	
Nathanson Creek Bypass 1	Establishing native riparian herbaceous perennials and instream graminoids on both toes Establishing native upland grasses and herbaceous perennials on upper and side banks

*None- sediment basin impacts are initially attributed to Tier 3 mitigation. Future projects in same area are not subject to additional mitigation

For the 2014 maintenance year, projects at sites previously established as in-stream sediment basin clearing areas (which also includes reservoir inlets, concrete-lined channels and fish ladders) or that are intended to serve as sediment basin clearing areas in the future include the following (note that the date of establishment is included after the reach designation in parenthesis):

ZONE 1A REACHES

- Cook 2 (2008)
- Copeland 2 (2014)
- Copeland 3 and 4 (2008)
- Copeland 4 and 5 (2008)

- Five 1 (2010)
- Wilfred 1C (2009)
- Brush Creek Reservoir inlet (2011)
- Matanzas Creek Reservoir Inlet (2011)
- Piner Creek Reservoir Inlet (2011)
- Santa Rosa Creek Reservoir (2011)
- Santa Rosa Diversion 1 (2010)
- Fish ladder in Santa Rosa Diversion 1 (2012)

ZONE 2A/3A REACHES

- Adobe 1 and 2 (2009)
- Washington 1 (2014)
- Washington 3 (2014)

4B. Off-Site Mitigation Activities (Tiers 2 and 3)

As described in the SMP Manual, off-site mitigation is provided to address the temporal gap between when on-site impacts occur and when on-site mitigation is provided. Tier 2 mitigation provides in-kind mitigation at neighboring SMP reaches that afford an opportunity for mitigation. Tier 3 mitigation projects provide restorative and mitigating watershed solutions that address SMP impacts at an off-site location. Tier 3 mitigation is implemented through a 10% matching contribution of SMP maintenance costs for sediment removal and bank repairs. SMP off-site watershed mitigation is led and funded by the Water Agency through a Watershed Partnerships Program (WPP) grant program to distribute funding to partnering agencies. These projects are implemented collaboratively with local non-profit agencies and Resource Conservation Districts (RCDs)

WPP partners are required to meet SMP permit requirements during development and implementation of their projects. Taken together with Tier 1 onsite mitigation these projects address the impacts of 2014 maintenance activities by conducting in-kind riparian and stream restoration in geographic proximity to this year's SMP activities. The success criteria and commitments described in Chapter 8 of the SMP Manual regarding implementation of off-site restoration projects apply to all of the 2014 WPP projects. These criteria and commitments include describing planting success rates (75%), a 5-yr monitoring period with annual reporting, and a description of what happens in the event of unsuccessful projects.

Construction costs and the quantity of WPP projects needed each year to meet the temporal need vary. On average the Water Agency's 10% matching contributions provide between \$50,000 and \$120,000 to the WPP project fund. Generally, while this funding is adequate to meet the minimum need of 10% of the area affected for each given year, specific partners propose projects of a larger scale than the mitigation needed. For this reason the Water Agency has contributed between \$200,000 and \$250,000 to the WPP each year since 2008. This approach has provided for watershed restoration to be accomplished in advance of the impacts associated with stream maintenance, and has provided vitally needed support for local restoration nonprofits. Additionally, this approach has vastly increased program flexibility and

has provided a way to bank temporal mitigation in advance of the actual work. The banked mitigation accounts can then be assigned as needed to appropriate impacts dependant on regulatory approval.

For 2014, three projects are being brought forward as Tier 3 Mitigation, two of which are in Zone 1A: (1) The Center for Environmental Stewardship 2014 Pool Creek Habitat Enhancement Project and (2) the Point Blue Conservation Science 2014 STRAW Washoe Creek Restoration Project at Stony Point Quarry. The third Tier 3 project is the 2014 STRAW Corona Creek Restoration Project at Poppy Hill Farm Project in Zone 2A. The projects will be focused on riparian restoration and enhancement and sediment reduction. Precise details of the proposed Tier 3 WPP project will be forwarded to the Inter-Agency Workgroup for approvals as the scope and agreement is developed. Copies of the 2014 WPP project proposals are provided in Appendix G of this Notification. 2014 WPP project locations in Zone 1A and Zone 2A/3A are designated in Figures 4-1a and 4-1b, respectively, below. Cost and area accounting for 2014 WPP proposed projects is indicated in Tables 4-2 through 4-5.

Table 4-2: List of 2014 Tier 3 (Off-Site) Restoration Projects

Project Name	Project Size	Project Cost	Year To Be Completed	Project Purpose
ZONE 1A				
Center for Environmental Stewardship: 2014 Pool Creek Habitat Enhancement Project	1.25 acres	\$48,500	2020	Invasive plant removal and installation of native vegetation to improve habitat quality, and installation wildlife friendly livestock exclusion fence
Point Blue Conservation Science: STRAW Washoe Creek Restoration Project at Stony Point Quarry	0.48 acres	\$49,797	2020	Invasive plant removal and installation of native vegetation to improve habitat quality and reduce sediment inputs to Laguna de Santa Rosa
ZONE 2A				
Point Blue Conservation Science: STRAW Corona Creek Restoration Project at Poppy Hill Farm	0.81 acres	\$40,262	2020	Invasive plant removal and installation of native vegetation to improve habitat quality and reduce sediment inputs
Totals	2.54 acres	\$138,559		

Figure 4-1a: General location map for the 2014 Tier 3 (Off-Site) mitigation projects in Zone 1A

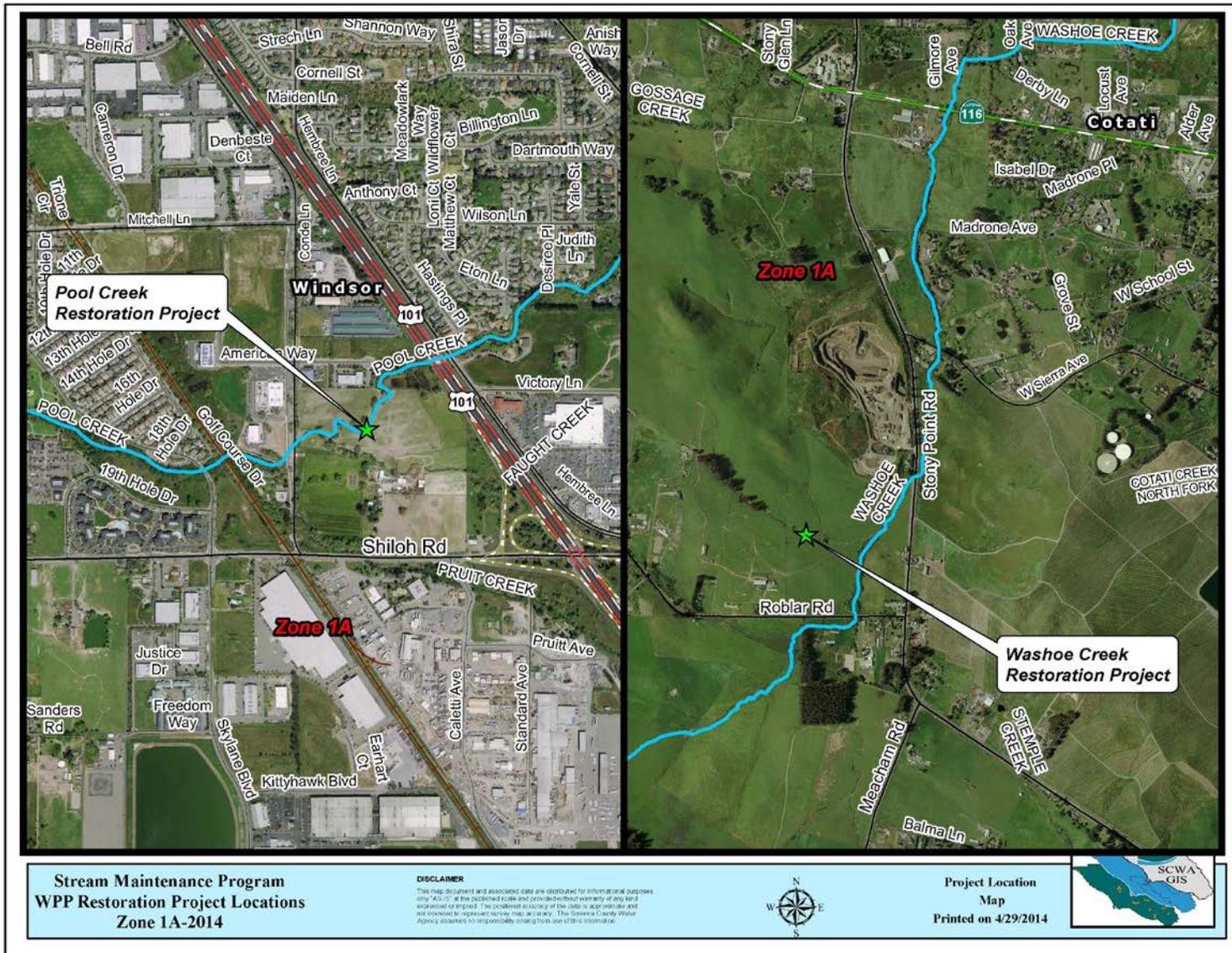


Figure 4-1b. General location map for the 2014 Tier 3 (Off-site) mitigation projects in Zone 2A

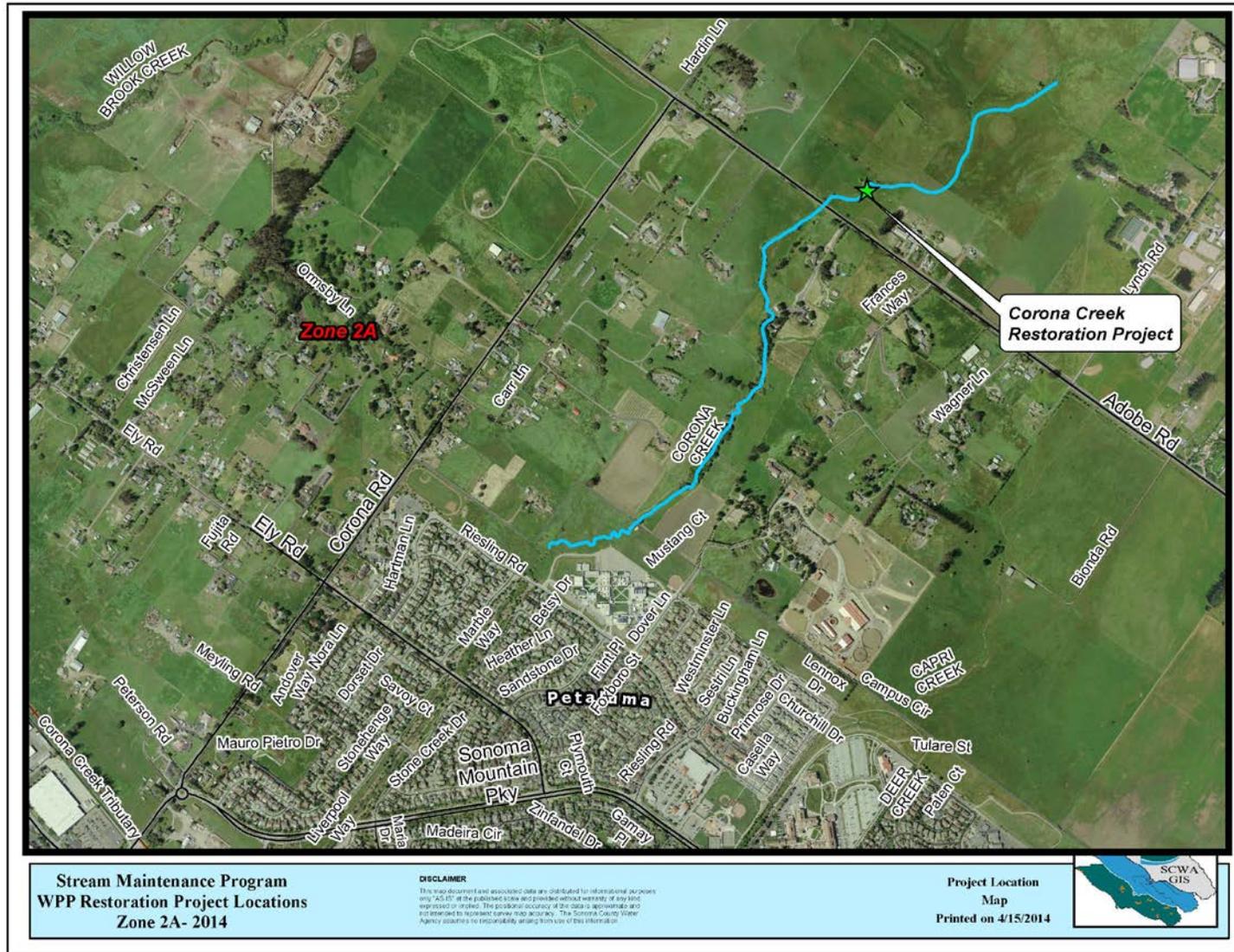


Table 4-3. Summary of 2014 Maintenance Costs and Off-Site Mitigation Contributions

Project Reach	Maintenance Cost	Off-Site Mitigation Contribution
ZONE 1A		
Colgan 5C – Localized Scale	\$18,119	\$1,812
Forestview 2 and 3 - Reach Scale	\$90,485	\$9,049
Hinebaugh 3B, 4, 5A and 5C - Reach Scale	\$204,120	\$20,412
South Fork Copeland 1 – Reach Scale	\$53,714	\$5,371
Starr 2 - Reach Scale	\$28,410	\$2,841
Steele 1B – Reach Scale	\$55,700	\$5,570
Steele 2 – Reach Scale	\$27,577	\$2,758
Cook 2 – In-stream Sediment Basin	\$8,031	\$803
Copeland 2 – In-stream Sediment Basin	\$39,677	\$3,968
Copeland 3 & 4 – In-stream Sediment Basin	\$17,829	\$1,783
Copeland 4 & 5 – In-stream Sediment Basin	\$40,510	\$4,051
Five 1 – In-stream Sediment Basin	\$5,401	\$540
Wilfred 1 – In-stream Sediment Basin	\$5,401	\$540
Brush Creek Reservoir - Inlet Clearing	\$4,801	\$480
Matanzas Creek Reservoir - Inlet Clearing	\$12,003	\$1,200
Piner Creek Reservoir - Inlet Clearing	\$4,801	\$480
Santa Rosa Creek Reservoir - Inlet Clearing	\$5,982	\$598
Santa Rosa Diversion Structure – Inlet Clearing	\$12,200	\$1,220
Fish Ladder in Santa Rosa Div. 1 – Inlet Clearing	\$1,077	\$108
ZONE 1A TOTALS	\$635,838	\$63,584
ZONES 2A/3A		
McDowell 2B - Reach Scale	\$25,301	\$2,530
Nathanson Bypass 1 - Reach Scale	\$35,885	\$3,589
Washington 2 – Reach Scale	\$27,893	\$2,789
Adobe 1 & 2 – In-stream Sediment Basin	\$40,510	\$4,051
Washington 1 – In-stream Sediment Basin	\$17,972	\$1,797
Washington 3 – In-stream Sediment Basin	\$9,691	\$970
East Washington 3 – Bank Repair	\$22,826	\$2,283
ZONES 2A/3A TOTALS	\$180,078	\$18,009
Combined 2014 Projects Totals	\$815,916	\$81,593

Table 4-4. 2014 Proposed Off-Site Mitigation Project Costs

2014 WPP Off-Site Mitigation Projects	Cost
ZONE 1A	
Center for Environmental Stewardship: Pool Creek Habitat Enhancement Project	\$48,500
Point Blue Conservation Science: STRAW: Washoe Creek Restoration Project at Stony Point Quarry	\$49,797
WPP Zone 1A total	\$98,297
Off Site Mitigation Funding provided by SCWA in 2014	\$98,297
2014 Off Site Mitigation Funding Requirement	\$63,584
Carry-over Mitigation Projects from 2014	\$34,713
ZONE 2A	
Point Blue Conservation Science: STRAW: Corona Creek Restoration Project at Poppy Hill Farm	\$40,262
WPP Zone 2A total	\$40,262
Off Site Mitigation Funding provided by SCWA in 2014	\$40,262
2014 Off Site Mitigation Funding Requirement	\$18,009
Carry-over Mitigation Projects from 2014	\$22,253
Previously Funded and Banked Off-Site Credits (all Zones)	
Carry-over Mitigation Projects from 2014	\$56,966
Carry-over Mitigation Projects from 2011-2013	\$122,554
Total Funded Mitigation Credit Available to Apply to Subsequent Seasons	\$179,520

Table 4-4 balances the needed mitigation requirement for 2014 by utilizing funded mitigation credit accumulated since 2008.

Table 4-5. 2014 Accounting of Impacts and Mitigation

Project by Type	Impact (acres)	Mitigation (acres)	Ratio of Mitigation to Impact
ZONE 1A			
On-Site Mitigation			
<i>Localized Sediment Removal</i>			
Colgan Creek 5C	0.07	0.07	1:1
<i>Reach-Scale Sediment Removal</i>			
Forestview Creek 2 and 3	0.93	0.93	1:1
Hinebaugh Creek 3B, 4, 5A and 5C	1.93	1.93	1:1
South Fork Copeland Creek 1	0.71	0.71	1:1
Starr Creek 2	0.37	0.37	1:1
Steele Creek 1B	0.34	0.34	1:1
Steele Creek 2	0.91	0.91	1:1
<i>Sediment Basin/Instream Basin Clearing</i>			
Cook Creek 2 (basin) at Petaluma Hill Blvd	n/a	n/a	Sed-Basin, 2008*
Copeland 2 East of Commerce Blvd	0.11	0.11	1:1
Copeland Creek 3 /4 at Country Club Dr	n/a	n/a	Sed-Basin, 2008
Copeland Creek 4/5 at Snyder Ln	n/a	n/a	Sed-Basin, 2008
Five Creek 1 at Snyder Ln	n/a	n/a	Sed-Basin, 2010
Wilfred Creek 1 downstream from Snyder Ln	n/a	n/a	Sed-Basin, 2010

Reservoir Inlet Clearing			
Brush Creek Reservoir	n/a	n/a	Sed-Basin, 2011
Matanzas Creek Reservoir	n/a	n/a	Sed-Basin, 2011
Piner Creek Reservoir	n/a	n/a	Sed-Basin, 2011
Santa Rosa Creek (Spring Lake) Reservoir	n/a	n/a	Sed-Basin, 2011
Santa Rosa Div. 1 fish ladder	n/a	n/a	Sed-Basin, 2012
Zone 1A On-Site Mitigation Totals	5.37	5.37	
Off-Site Mitigation			
Center for Environmental Stewardship: 2014 Pool Creek Habitat Enhancement Project		1.25	
Point Blue Conservation Science: STRAW: Washoe Creek Restoration Project at Stony Point Quarry		0.48	
Zone 1A Off-Site Mitigation Total		1.73	

ZONES 2A/3A

On-Site Mitigation			
Reach-Scale Sediment Removal			
McDowell 2B	0.52	0.52	1:1
Nathanson Creek Bypass 1	0.58	0.58	1:1
Washington Creek 2	0.18	0.18	1:1
Sediment Basin/Instream Basin Clearing			
Adobe Creek 1/2 at S. McDowell Blvd	n/a	n/a	Sed-Basin, 2008
Washington 1 downstream of Holly Ln	0.08	0.08	1:1
Washington 3 upstream of Madison St	0.03	0.03	1:1
Bank Repair			
East Washington 3 between STA 34+00 -35+00	0.02	0.02	1:1
Zones 2A/3A On-Site Mitigation Totals	1.41	1.41	
Off-Site Mitigation			
Point Blue Conservation Science: STRAW: Corona Creek Restoration Project at Poppy Hill Farm		0.81	
Zones 2A/3A Off-Site Mitigation Total		0.81	

2014 Impact to Mitigation Accounting	Impact (acres)	Mitigated (acres)	Replacement Ratio
ZONE 1A			
Total Tier 1 Impact	5.37	5.37	1:1
Additional Required Temporal Mitigation (10% of 5.37 acres)		0.537	1:0.10
Total Required Mitigation Area for 2014 (Tier 1 Impacts +10% for Temporal Impacts) (5.37+ 0.537 acres)		5.91	1:1.1
2014 Tier 2 and 3 Contribution Total (Temporal Mitigation)		1.73	
2014 Tier 3 Requirement		0.537	
2014 Temporal Mitigation Less the Required 10% Area (1.73- 0.537 acres)		1.19	
2014 Tier 2 and 3 Mitigation Area Carryover		1.19	

(1.73-0.537 acres)			
2008-2013 Tier 2 and 3 Mitigation Area Carryover		21.70	
Current Combined Tier 2 and Tier 3 Mitigation Carryover (1.19+21.70 acres)		22.89	
ZONE 2A/3A			
Total Tier 1 Impact	1.41	1.41	1:1
Additional Required Temporal Mitigation (10% of 1.41 acres)		0.141	1:0.10
Total Required Mitigation Area for 2014 (Tier 1 Impacts +10% for Temporal Impacts) (1.41+ 0.141 acres)		1.55	1:1.1
2014 Tier 2 and 3 Contribution Total (Temporal Mitigation)		0.81	
2014 Tier 2 and Tier 3 Requirement		0.141	
2014 Temporal Mitigation Less the Required 10% Area (0.81- 0.141 acre)		0.67	
2014 Tier 2 and 3 Mitigation Area Carryover (0.81-0.141 acre)		0.67	
2008-2013 Tier 2 and 3 Mitigation Area Carryover		0.68	
Current Combined Tier 2 and Tier 3 Mitigation Carryover (0.67+0.68 acre)		1.35	

* Sed-Basins are instream focused sediment collection areas. Utilizing these areas frequently significantly reduces sediment loads downstream. The SMP treats reservoir inlets, concrete-lined channels, and fish ladders as instream focused sediment removal areas. The SMP assumes that initial impacts for re-establishing design grade for instream sediment basins will be mitigated through Tier 3 projects. For follow-up (often annual) sediment removal, mitigation will not be required as these areas will be disturbed regularly and permanent plant establishment would be impossible. Dates indicate the year of establishment as a sediment basin and subsequent completion of a one-time Tier 3 mitigation.

Section 5

Annual Sediment Disposal Plan

The 2014 annual sediment testing and disposal plan was developed in collaboration with the North Coast and San Francisco Regional Water Quality Control Boards (Regional Boards). The sediment testing requirements for the Stream Maintenance Program are defined in the Regional Board’s Monitoring and Reporting Program (MRP) issued for the joint Order for 401 Certification and Waste Discharge Requirements (Order No. R1-2009-0049). At the request of the Water Agency and through discussions with the Regional Boards, the testing requirements were refined in May of last year (2013) to better target pollutant sources.

This section provides an overview of the refined sediment testing plan and the proposed disposal sites for the 2014 maintenance projects. At this time (April 25, 2014), sediment test results are pending and will be provided to regulatory agencies, once lab results are received, anticipated in late-May.

5A. Sediment Sampling and Testing

2014 Approach and Methods

For the 2014 season, sediment sampling and testing will be conducted according to the requirements of the MRP and as detailed in the amended Sediment Sampling and Analysis Guidelines (provided in Appendix F of this Notification). Project reaches, estimated quantities of sediment to be removed and the number of samples to be collected for Zone 1A and Zones 2A/3A are shown in Tables 5-1 and 5-2, respectively, below. Comments to explain the sampling proposal are also provided.

[j1]

Table 5-1: Proposed Sediment Sampling Plan for 2014 in Zone 1A

Maintenance Reach Number and Maintenance Scale* (linear feet; see SMP Manual for reach locations)	Estimated Amount of Sediment to be Removed (cubic yards)	Number and Group of Analytes to be Tested (full suite or subset)	Comments
Reach Scale			
Steele Creek 1B (800 lf)	767	1 – full suite	One sample to be collected where bulk of sediment is to be removed; a composite of 2 cores: Samples taken at Sta 611+52 Sta 614+43.
South Fork Copeland 1 (2,805 lf)	810	1 -full suite	Samples to be collected where bulk of sediment is to be removed; composite of 2 cores:

			Sta 14+40 Sta 35+60 Residential area to the east. Railroad tracks to the west.
Sediment Basin/Instream Basin Clearing			
Copeland Creek 2 (100 lf)	333	1 -full suite	1 sample to be collected where bulk of sediment is to be removed; a composite of 2 cores: Sta 2+11 Sta 2+54
Cook Creek Sediment Basin	No sampling for 5 years		Annual site. Sampled in 2011
Copeland 3/4 at County Club	No sampling for 5 years		Annual site. Sampled in 2011
Copeland 4/5 at Snyder Lane	No sampling for 5 years		Annual site. Sampled in 2011
Five 1 at Snyder Lane	No sampling for 5 years		Annual site. Sampled in 2010
Wilfred 1 at Snyder Lane	No sampling for 5 years		Annual site. Sampled in 2009

* The complete list of 2014 maintenance activities in Zone 1A includes projects approved in 2013 but were not conducted. Only new sites proposed for maintenance in 2014 will be tested. Sites that were sampled and approved in 2013 include Colgan 5C (localized scale), Forestview 2 and 3 (reach scale), Hinebaugh 3B, 4, 5A, and 5C (reach scale), Starr 2 (reach scaled) and Steele 2 (reach scale).

Table 5-2: Sediment Sampling Plan for 2014 in Zones 2A and 3A

Maintenance Reach and Type* (linear feet; see SMP Manual for reach locations)	Estimated Amount of Sediment to be Removed (cubic yards)	Number of Samples	Sampling Location and Comments
Reach Scale			
Washington 1/2 (310 lf)	410	1	Composite of: - 11+66 - 12+58
Washington 2/3 (310 lf)	410	1	Composite of: - 15+12 - 16+09 Washington 3 sampled in 2011. Elevated levels of metals were detected. However, concentrations were well below the California residential soil limits and not considered harmful to human health from incidental exposure to soil.
McDowell 2 (1,473 lf)	164	1	Composite of : - 27+19 - 29+01 - 41+73

*The complete list of 2014 maintenance activities in Zones 2A and 3A includes projects approved in 2013 but were not conducted. Only new sites proposed for maintenance in 2014 will be tested. Sites that were sampled and approved in 2013 include Nathanson Bypass 1 (reach scale).

5B. Sediment Disposal and Reuse

To support the 2014 maintenance activities, the Water Agency has identified the following sites to potentially receive sediment excavated from the stream channels: Grab N’ Grow Soil Products, Wheeler Zamaroni, Grossi Site, Sonoma County Central Landfill in Petaluma, SCWA Pond #5 at the Mirabel Facility, and at various dairies in the Stony Point Road vicinity. These are the same sites used for the 2011, 2012, and 2013 maintenance seasons, with all sediment

disposal occurring in the Zone 1A Santa Rosa area, under the authority of the North Coast RWQCB. Each of these sites are upland and would not directly discharge water or sediment to surface waterbodies. Figure 5-1 (below) shows the general location of these disposal sites

Use of these sites is approved by the regulatory agencies prior to the onset of maintenance. Site approval is based on the sediment test results which will be reviewed in May/June 2014. The following provides a brief description of the above listed sediment disposal and reuse sites:

- **Grab N' Grow**

Grab N' Grow Products processes and sells soil products for farmers, gardeners, and landscapers. The company is located at 2759 Llano Road in Santa Rosa. The facility recycles over 80,000 cubic yards of organic materials including green waste (tree trimmings and landscaping waste) and agricultural waste each year. Grab N' Grow produces soil mixes, compost, and groundcover materials.

This facility has the potential capacity to receive the entirety of the sediment removed as part of 2014 maintenance activities. Grab N' Grow is primarily interested in material that can be used to augment other materials for use as fill. The Water Agency and Grab N' Grow have a written agreement for soil disposal.

- **Wheeler Zamaroni**

Wheeler Zamaroni is a local company that sells landscape and building materials, and custom fabricated stone. The company operates at a 30-acre facility located at 3500 Petaluma Hill Road in south Santa Rosa. The Water Agency has established an agreement with this company for soil disposal.

No SMP sediments would be resold as soil products, such as for gardening or soil amendments, due to the potential for redistribution of anthropogenic bioaccumulative materials present in the stream sediments. Wheeler Zamaroni is primarily interested in material that they can sort into sand and gravels for reuse.

- **Grossi Site**

Mr. Ed Grossi's property is located at 6652 Petaluma Hill Road in Rohnert Park. On this property, Mr. Grossi operates a landscaping nursery and grows feed grains for dairy cattle. He also maintains an open area to process soil material for potting and resale. Mr. Grossi has an existing agreement with the Water Agency to accept sediment from stream channels in the SMP area. As approved in past maintenance seasons, the Grossi property has received and reused sediment from stream maintenance activities for the past two years. The memorandum of agreement between Mr. Grossi and the Water Agency for soil disposal does not expire until 2023.

This site has the potential capacity to receive the entirety of sediment excavated from the 2014 maintenance sites. Sediment excavated from the Rohnert Park and Cotati areas would be taken to Grossi's property to reduce transportation costs. SMP sediment would not be used for agricultural purposes, such as growing feed grasses or reuse as potting soils. The sediment will be reused as fill material only.

- **Sonoma County Central Landfill, Petaluma**

Soil that is not suitable for reuse at the sites listed above based on testing results will be taken

to the Sonoma County Central Landfill in Petaluma for use as cover material. The soil must conform to the County's testing and material quality requirements. Review and approval from the Regional Board will be requested if this option will be pursued for sediment disposal.

- **SCWA Pond #5 Mirabel Facility**

The Water Agency is in the process of filling pond #5 at the Mirabel water collector facility located at 10290 Westside Road in Forestville, CA. Sediment disposed at this site will not be used for agricultural purposes, it will strictly be used as backfill material to restore finished grade to pond #5.

- **Dairy Bedding**

The Water Agency has received inquiries from several local dairies in the Stony Point Rd vicinity about the use of SMP sediment for use as bedding material. Any agreement with local dairies would require that material be placed in preapproved locations upon evaluation by Water Agency staff and could not be used as fill in wetlands or sensitive areas. The Water Agency obtained approval for this type of sediment reuse from North Coast RWQCB staff in 2011.

Appendix A

Site Specific Photos

2014 Maintenance Activities: Site Specific Photographs

Zone 1A Localized Scale Sediment Removal

Colgan 5C. Looking downstream from northern-most end of access road. Zone 1A. Photo taken April 2, 2014.



Zone 1A Reach Scale Sediment Removal

Forestview 2. Looking upstream from the Forestview Drive bridgehead. Zone 1A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Forestview 3. Looking downstream from Fulton Road bridgehead. Zone 1A. Photo taken April 2, 2014.



Hinebaugh 3B. Looking downstream from Commerce Blvd Bridgehead. Zone 1A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Hinebaugh 4. Looking downstream from State Farm Bridgehead. Zone 1A. Photo taken April 2, 2014.



Hinebaugh 5A. Looking downstream from railroad track. Zone 1A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Hinebaugh 5B. Downstream from Country Club bridgehead. Zone 1A. Photo taken April 2, 2014.



South Fork Copeland 1. Looking upstream from south end of reach. Zone 1A. Photo taken April 16, 2014.



2014 Maintenance Activities: Site Specific Photographs

Starr 2. Looking downstream from north end of reach (Adjacent to culvert) Zone 1A. Photo taken April 2, 2014.



Steele 1B. Looking downstream from Marlow Road. Zone 1A. Photo taken April 16, 2014.



2014 Maintenance Activities: Site Specific Photographs

Steele 2. Looking Downstream from access road turnaround. Zone 1A. Photo taken April 2, 2014.



Zone 1A Sediment Basin/ Instream Basin Clearing

Cook creek Sediment basin. Zone 1A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Copeland 2 Sediment basin. Looking upstream from Commerce. Zone 1A. Photo taken April 2, 2014.



Copeland 3 Sediment basin. Looking downstream from Country Club. Zone 1A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Copeland 4 sediment basin. Looking upstream from Country Club. Zone 1A. Photo taken April 2, 2014.



Copeland 4 Sediment basin. Looking downstream from Snyder. Zone 1A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Copeland 5 Sediment Basin. Looking upstream from Snyder. Zone 1A. Photo taken April 2, 2014.



Five 1 Sediment basin. Looking downstream from Snyder. Zone 1A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Wilfred 1 Sediment basin. Zone 1A. Photo taken April 2, 2014.



Zone1A Reservoir Inlet Clearings

Brush Creek Reservoir. Zone 1A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Matanzas Creek Reservoir inlet. Zone 1A. Photo taken April 2, 2014.



Piner Reservoir. Zone 1A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Santa Rosa Diversion. Looking downstream. Zone 1A. Photo taken April 2, 2014.



Santa Rosa Diversion. Looking Upstream. Zone 1A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Santa Rosa Reservoir. Zone 1A. Photo taken April 2, 2014.



Santa Rosa Fish Ladder. Zone 1A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Zone 2A Reach Scale Sediment Removal

McDowell 2B. Looking downstream from the north end of reach. Zone 2A. Photo taken April 2, 2014.



Washington 2. Looking upstream from Holly Ln. Zone 2A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Washington 2. Looking downstream from Madison St. Zone 2A. Photo taken April 2, 2014.



Zone 2A In-stream Basin Clearings

Adobe 1 Sediment Basin. Looking upstream from concret barrier. Zone 2A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Adobe 2 Sediment Basin. Looking upstream from South McDowell Blvd. Zone 2A. Photo taken April 2, 2014.



Washington 1 Sediment Basin. Looking downstream from Holly Ln. Zone 2A. Photo taken April 2, 2014.



2014 Maintenance Activities: Site Specific Photographs

Washington 3 Sediment Basin. Looking upstream from Madison. Zone 2A. Photo taken April 2, 2014.



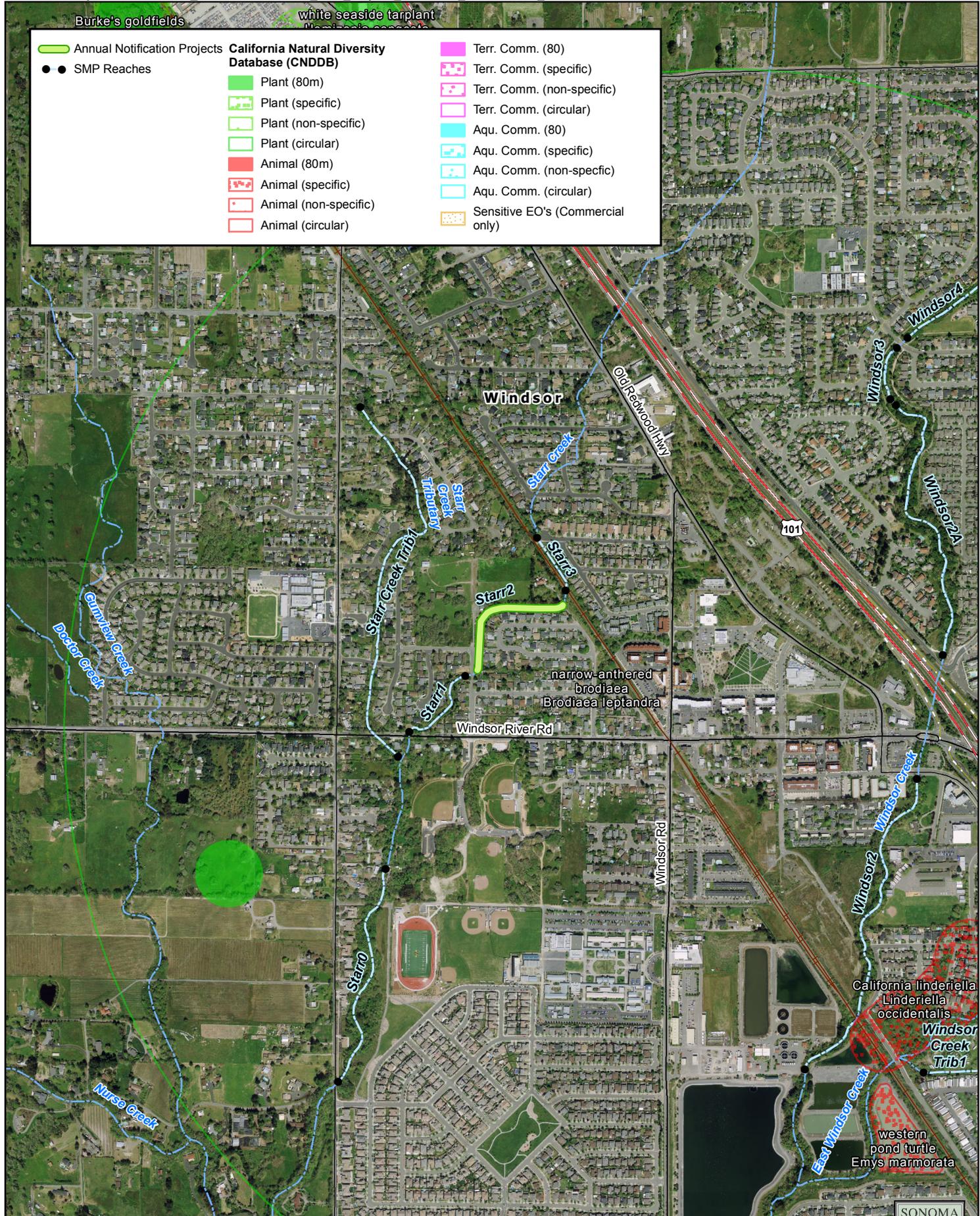
Zone 3A Reach Scale Sediment Removal

Nathanson Bypass 1. Looking downstream from walking bridge. Zone 3A. Photo taken April 2, 2014.



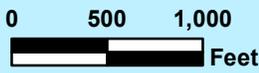
Appendix B

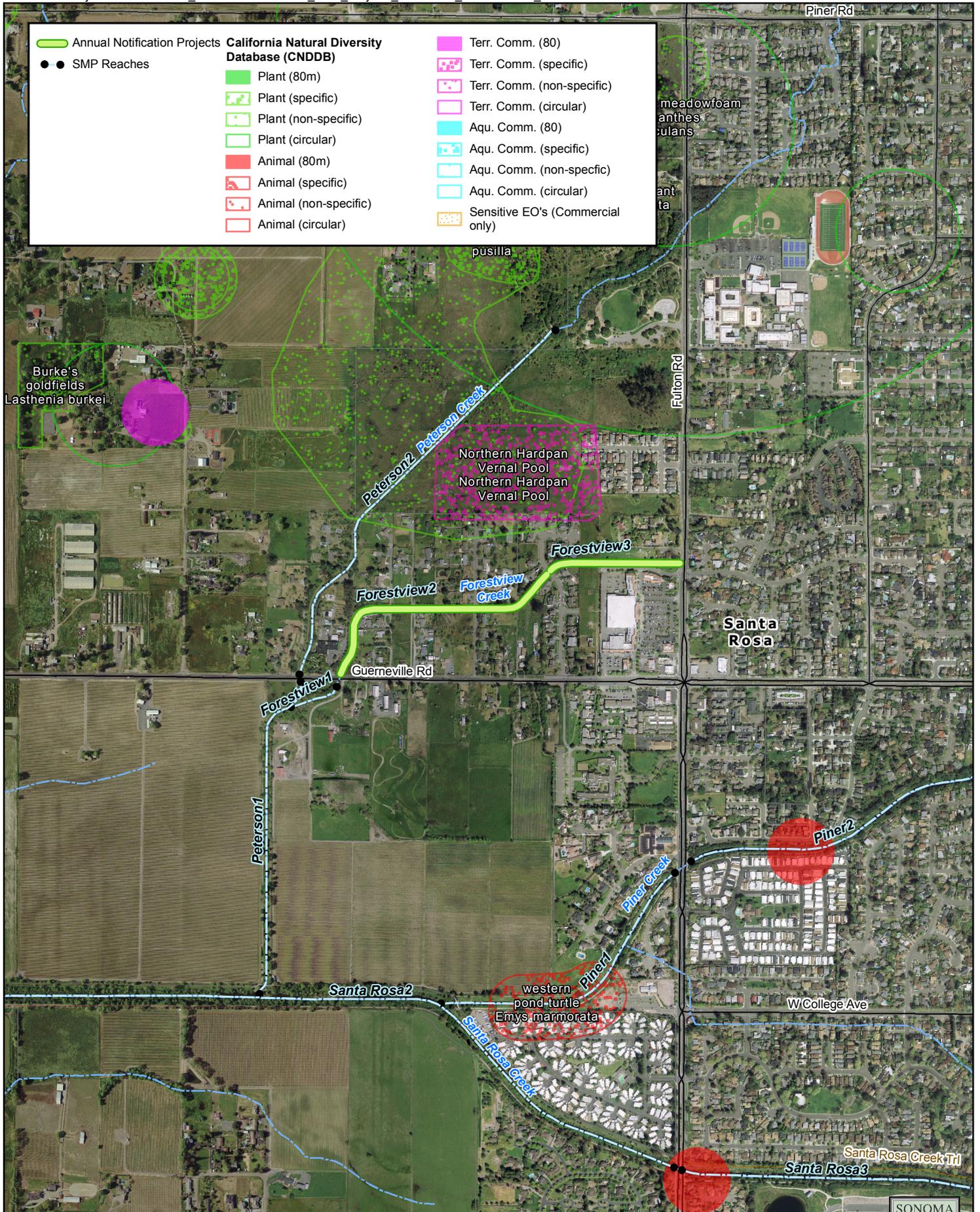
Project Maps with CNDDDB Overlay



2014 Stream Maintenance Program Projects Windsor A

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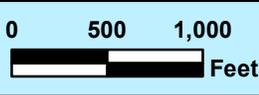


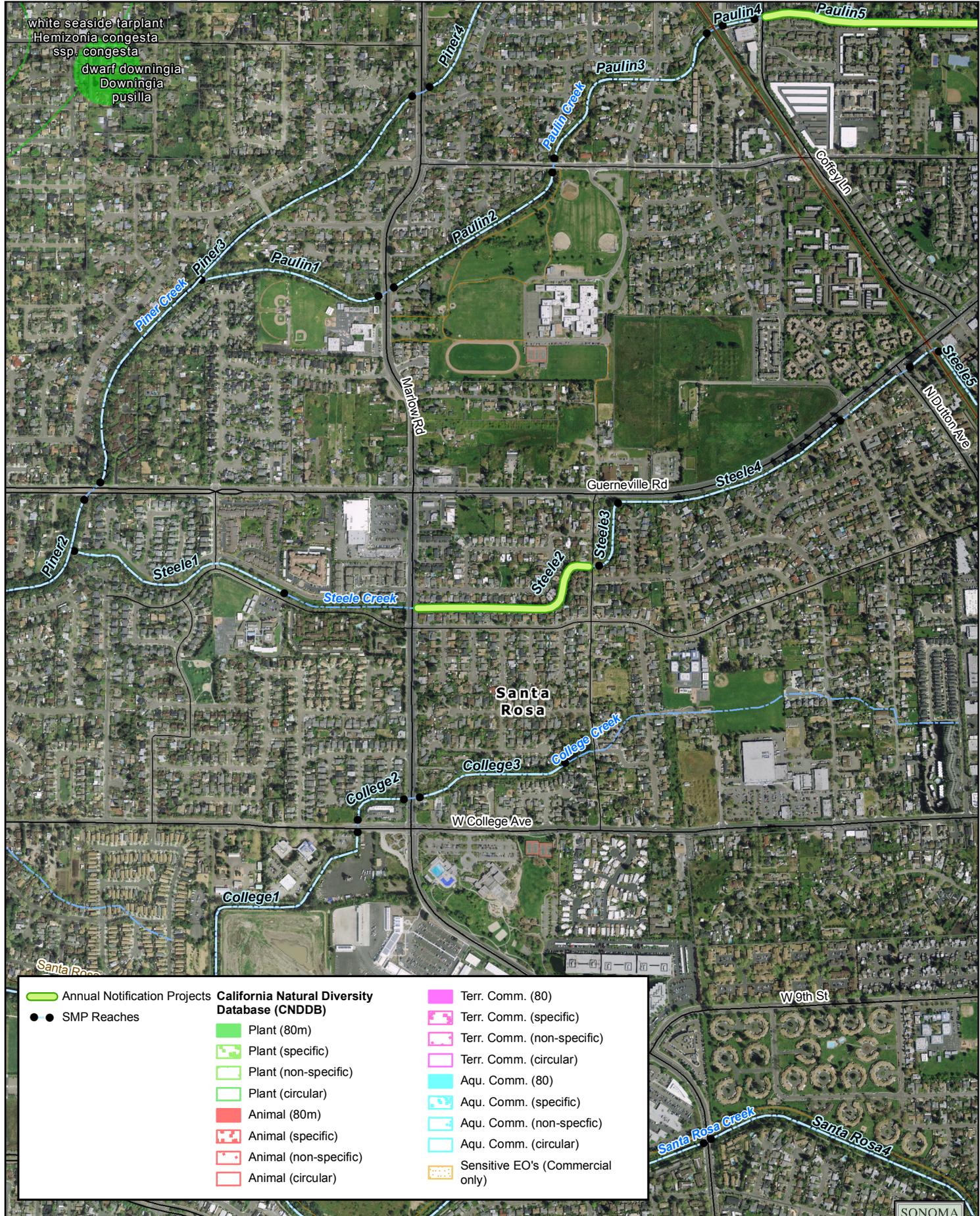


Annual Notification Projects	California Natural Diversity Database (CNDDDB)	Terr. Comm. (80)
SMP Reaches	Plant (80m)	Terr. Comm. (specific)
	Plant (specific)	Terr. Comm. (non-specific)
	Plant (non-specific)	Terr. Comm. (circular)
	Plant (circular)	Aqu. Comm. (80)
	Animal (80m)	Aqu. Comm. (specific)
	Animal (specific)	Aqu. Comm. (non-specific)
	Animal (non-specific)	Aqu. Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)

2014 Stream Maintenance Program Projects
Santa Rosa A

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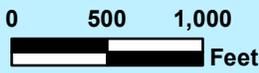


white seaside tarplant
Hemizonia congesta
 ssp. *congesta*
 dwarf downingia
Downingia
pusilla

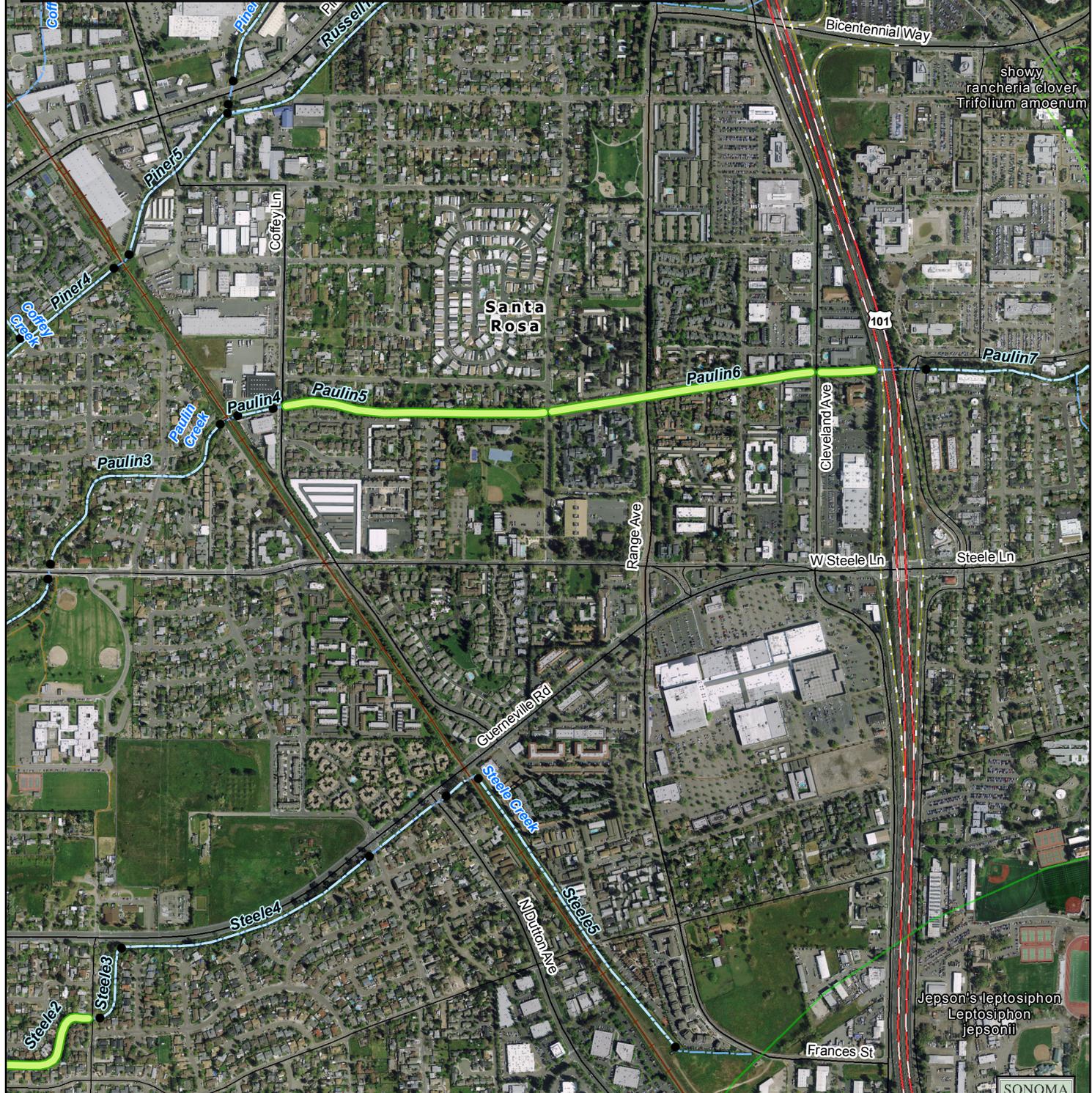
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2014 Stream Maintenance Program Projects
 Santa Rosa B

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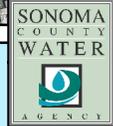


 Annual Notification Projects	California Natural Diversity Database (CNDDDB)	 Terr. Comm. (80)
 SMP Reaches		 Terr. Comm. (specific)
 Plant (80m)		 Terr. Comm. (non-specific)
 Plant (specific)		 Terr. Comm. (circular)
 Plant (non-specific)		 Aqu. Comm. (80)
 Plant (circular)		 Aqu. Comm. (specific)
 Animal (80m)		 Aqu. Comm. (non-specific)
 Animal (specific)		 Aqu. Comm. (circular)
 Animal (non-specific)		 Sensitive EO's (Commercial only)
 Animal (circular)		



2014 Stream Maintenance Program Projects
Santa Rosa C

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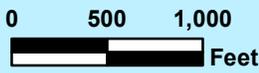




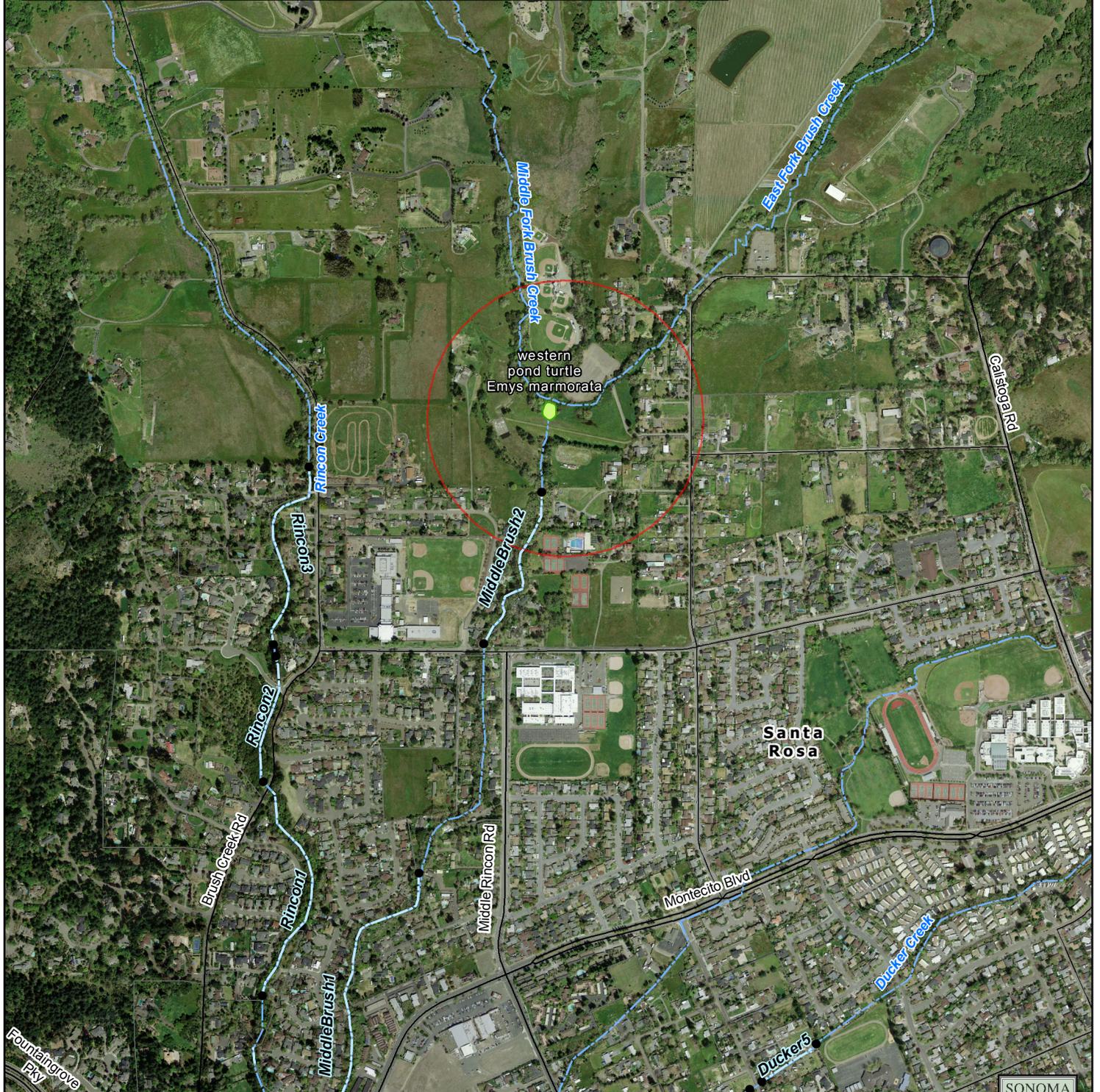
Annual Notification Projects	California Natural Diversity Database (CNDDDB)	Terr. Comm. (80)
SMP Reaches	Plant (80m)	Terr. Comm. (specific)
	Plant (specific)	Terr. Comm. (non-specific)
	Plant (non-specific)	Terr. Comm. (circular)
	Plant (circular)	Aqu. Comm. (80)
	Animal (80m)	Aqu. Comm. (specific)
	Animal (specific)	Aqu. Comm. (non-specific)
	Animal (non-specific)	Aqu. Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)

2014 Stream Maintenance Program Projects
Santa Rosa D

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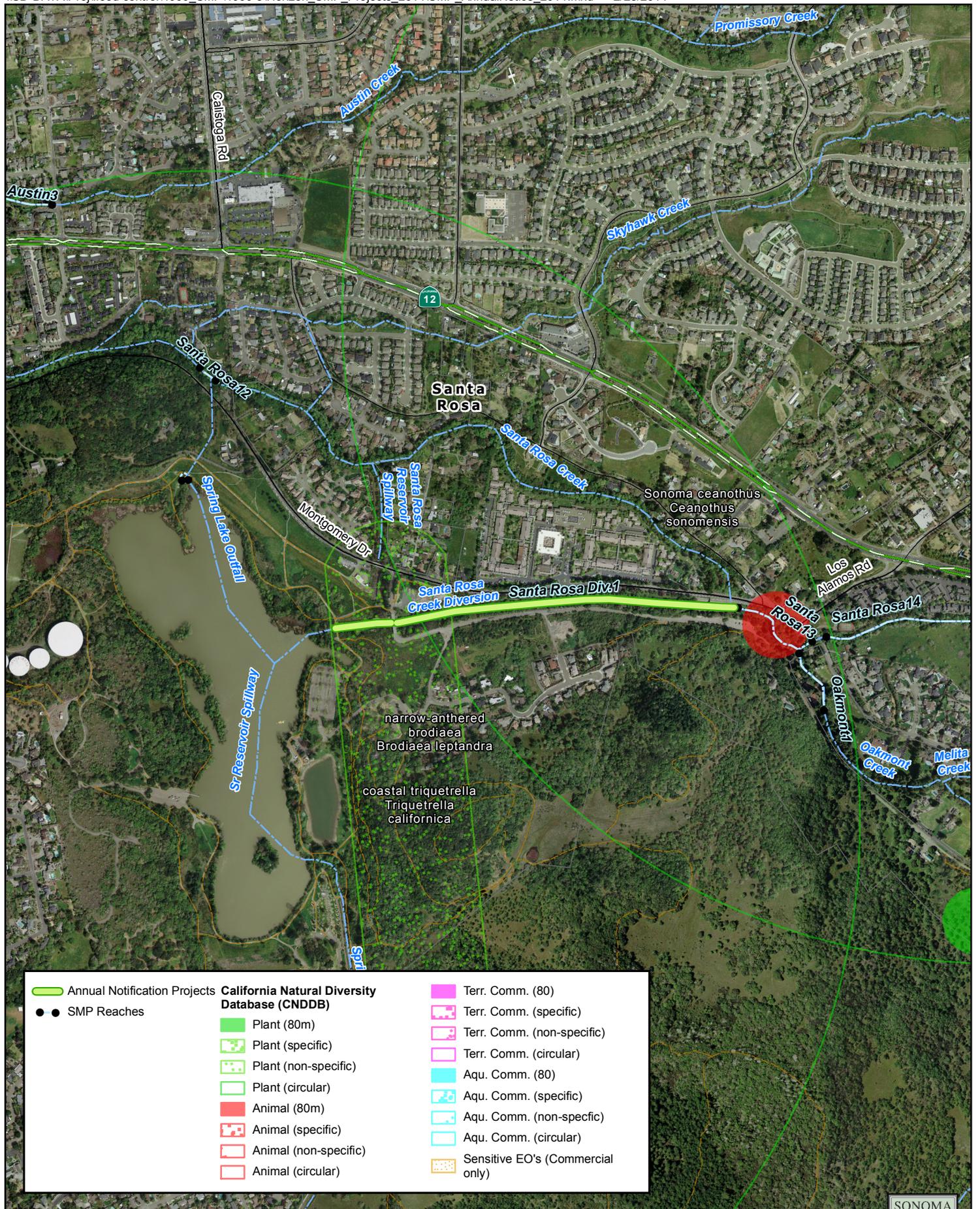
 Annual Notification Projects	California Natural Diversity Database (CNDDDB)	 Terr. Comm. (80)
 SMP Reaches	 Plant (80m)	 Terr. Comm. (specific)
	 Plant (specific)	 Terr. Comm. (non-specific)
	 Plant (non-specific)	 Terr. Comm. (circular)
	 Plant (circular)	 Aqu. Comm. (80)
	 Animal (80m)	 Aqu. Comm. (specific)
	 Animal (specific)	 Aqu. Comm. (non-specific)
	 Animal (non-specific)	 Aqu. Comm. (circular)
	 Animal (circular)	 Sensitive EO's (Commercial only)



2014 Stream Maintenance Program Projects Santa Rosa E

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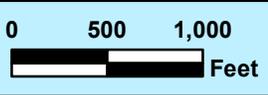


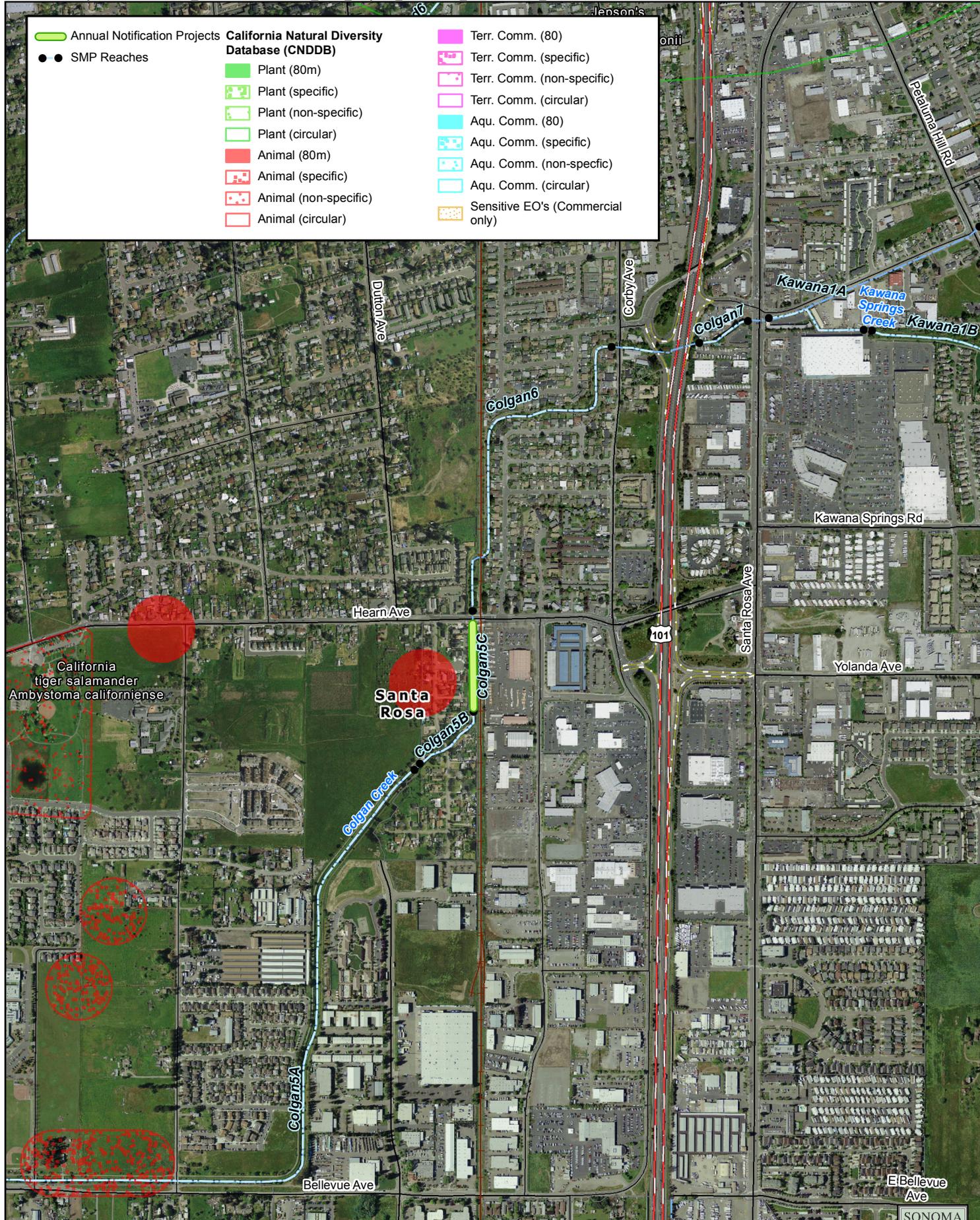


Annual Notification Projects	California Natural Diversity Database (CNDDB)	Terr. Comm. (80)
SMP Reaches	Plant (80m)	Terr. Comm. (specific)
	Plant (specific)	Terr. Comm. (non-specific)
	Plant (non-specific)	Terr. Comm. (circular)
	Plant (circular)	Aqu. Comm. (80)
	Animal (80m)	Aqu. Comm. (specific)
	Animal (specific)	Aqu. Comm. (non-specific)
	Animal (non-specific)	Aqu. Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)

2014 Stream Maintenance Program Projects
Santa Rosa F

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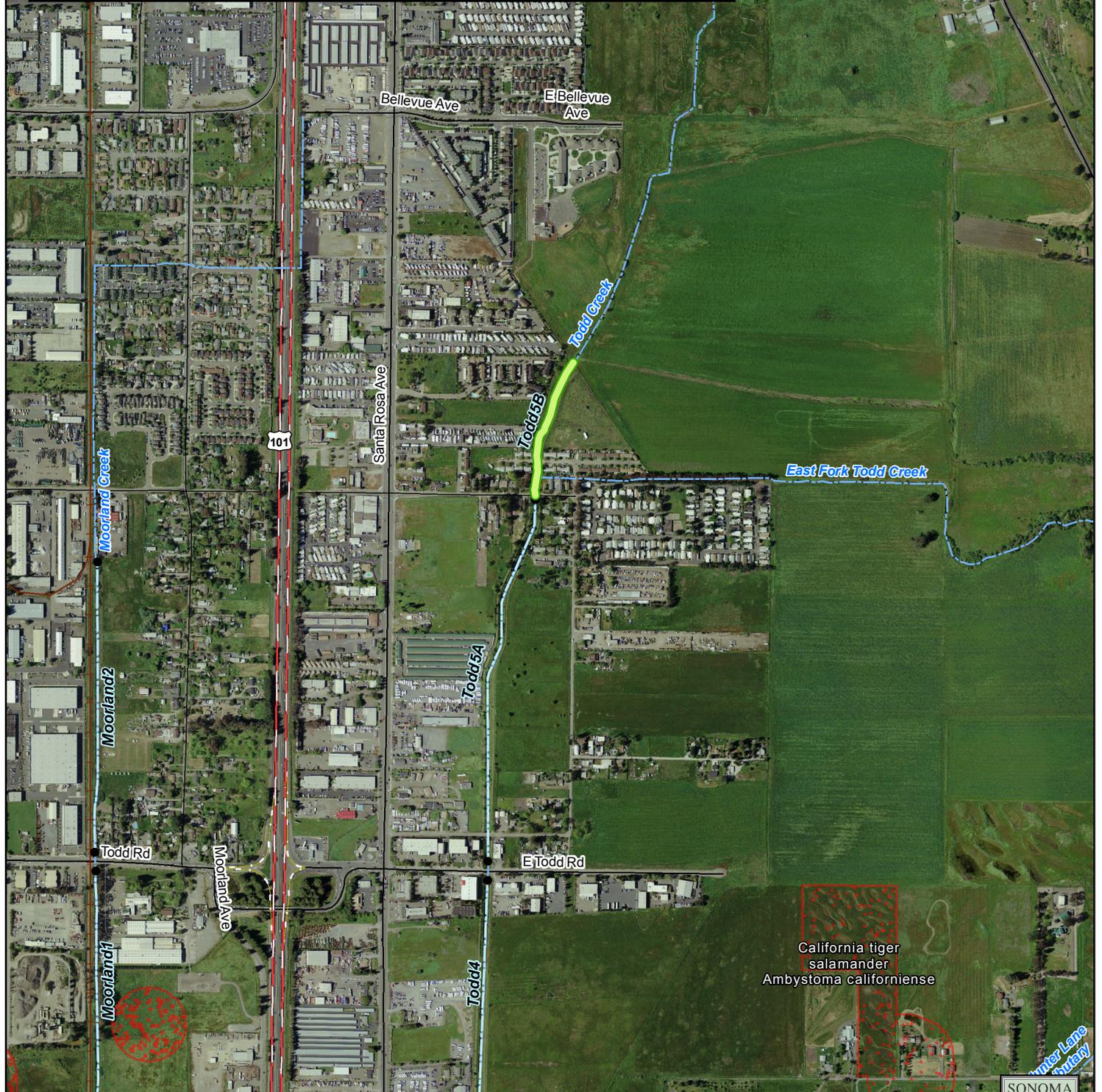


**2014 Stream Maintenance
Program Projects
Santa Rosa G**

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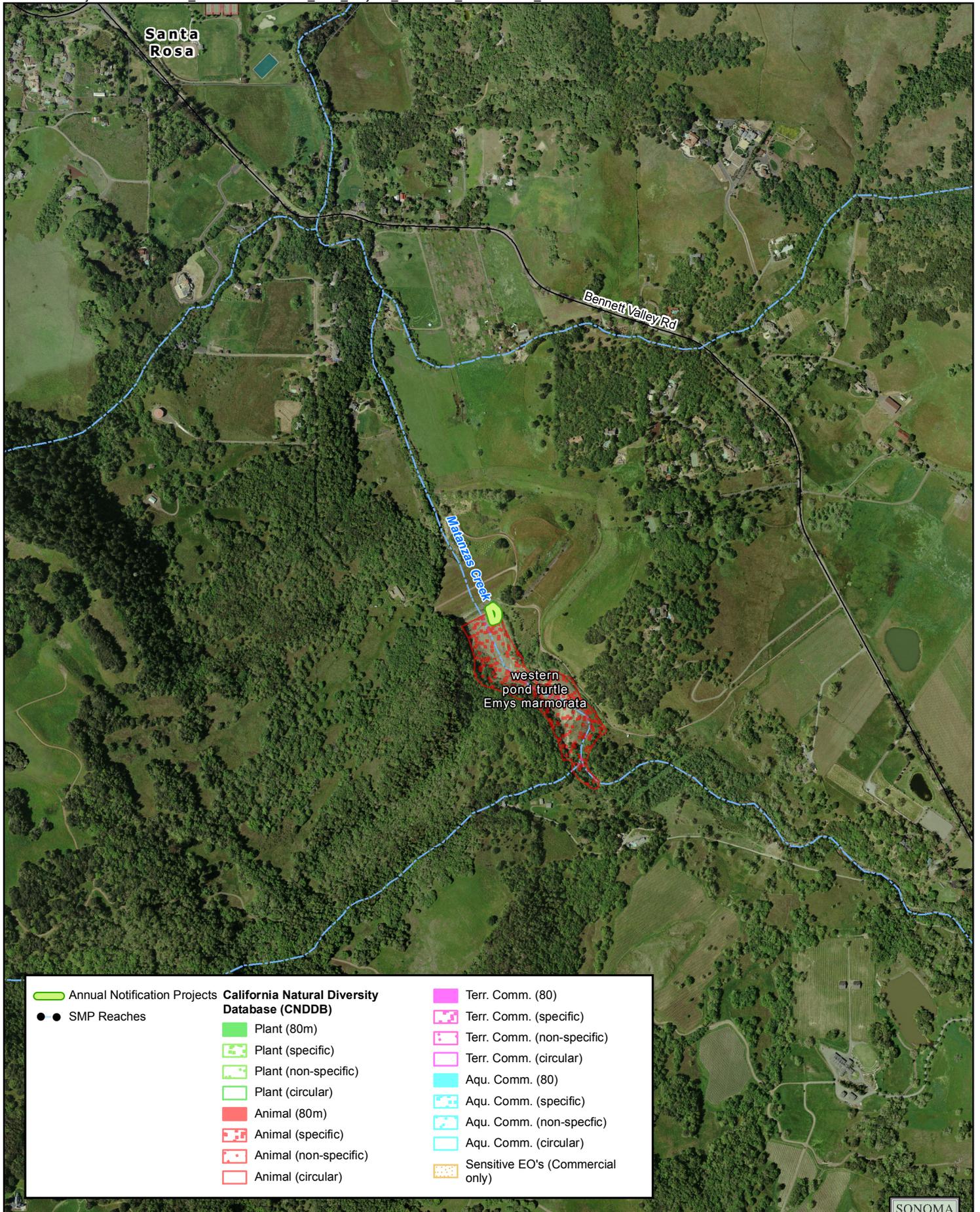
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	SMP Reaches			Terr. Comm. (specific)
				Terr. Comm. (non-specific)
				Terr. Comm. (circular)
				Aqu. Comm. (80)
				Aqu. Comm. (specific)
				Aqu. Comm. (non-specific)
				Aqu. Comm. (circular)
				Sensitive EO's (Commercial only)



2014 Stream Maintenance Program Projects
Santa Rosa H

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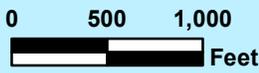




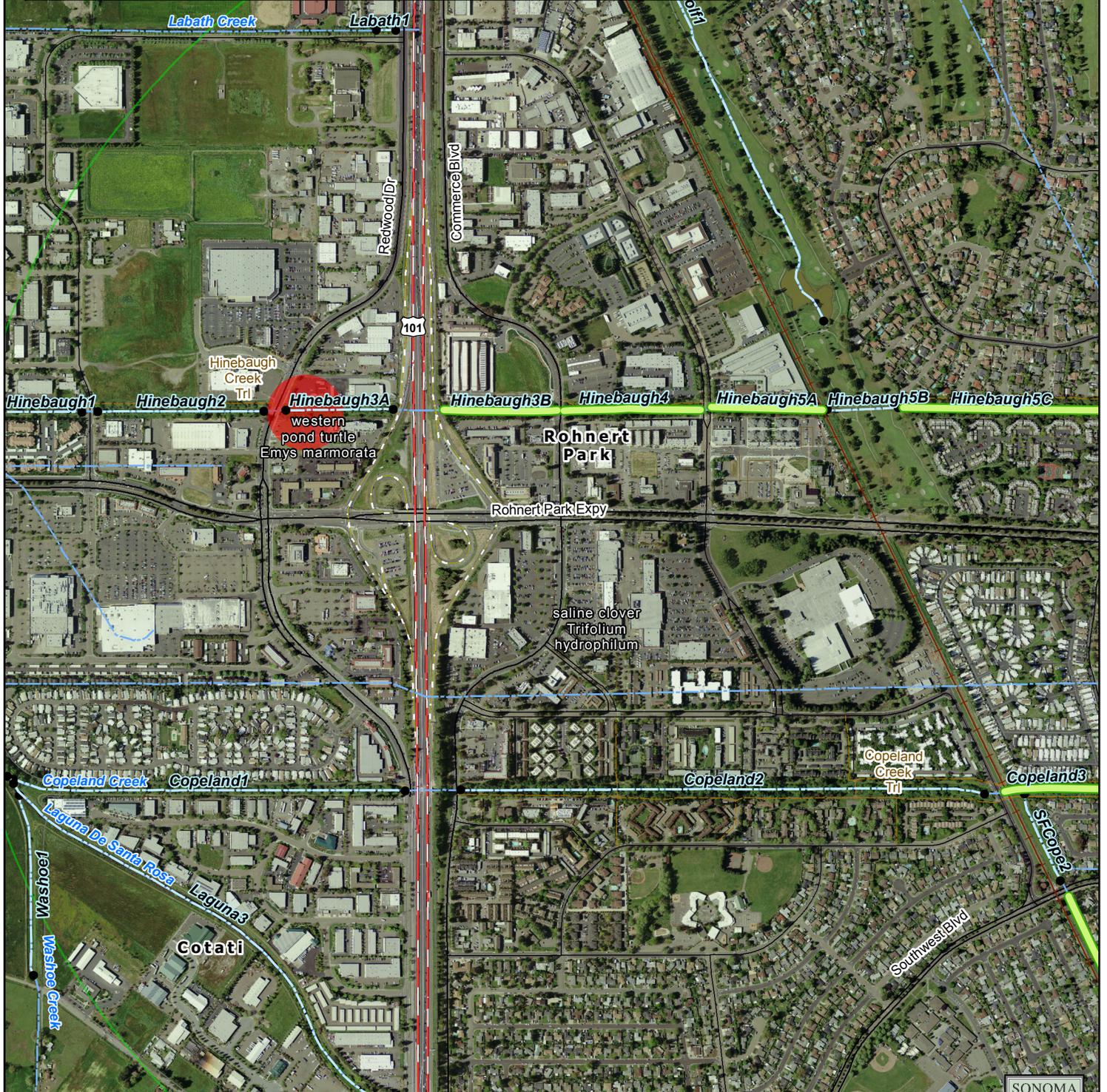
Annual Notification Projects	California Natural Diversity Database (CNDDDB)	Terr. Comm. (80)
SMP Reaches	Plant (80m)	Terr. Comm. (specific)
	Plant (specific)	Terr. Comm. (non-specific)
	Plant (non-specific)	Terr. Comm. (circular)
	Plant (circular)	Aqu. Comm. (80)
	Animal (80m)	Aqu. Comm. (specific)
	Animal (specific)	Aqu. Comm. (non-specific)
	Animal (non-specific)	Aqu. Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)

2014 Stream Maintenance Program Projects
Santa Rosa I

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Annual Notification Projects	California Natural Diversity Database (CNDDDB)	Terr. Comm. (80)
SMP Reaches	Plant (80m)	Terr. Comm. (specific)
	Plant (specific)	Terr. Comm. (non-specific)
	Plant (non-specific)	Terr. Comm. (circular)
	Plant (circular)	Aqu. Comm. (80)
	Animal (80m)	Aqu. Comm. (specific)
	Animal (specific)	Aqu. Comm. (non-specific)
	Animal (non-specific)	Aqu. Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)



2014 Stream Maintenance Program Projects
Rohnert Park A

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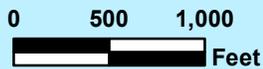




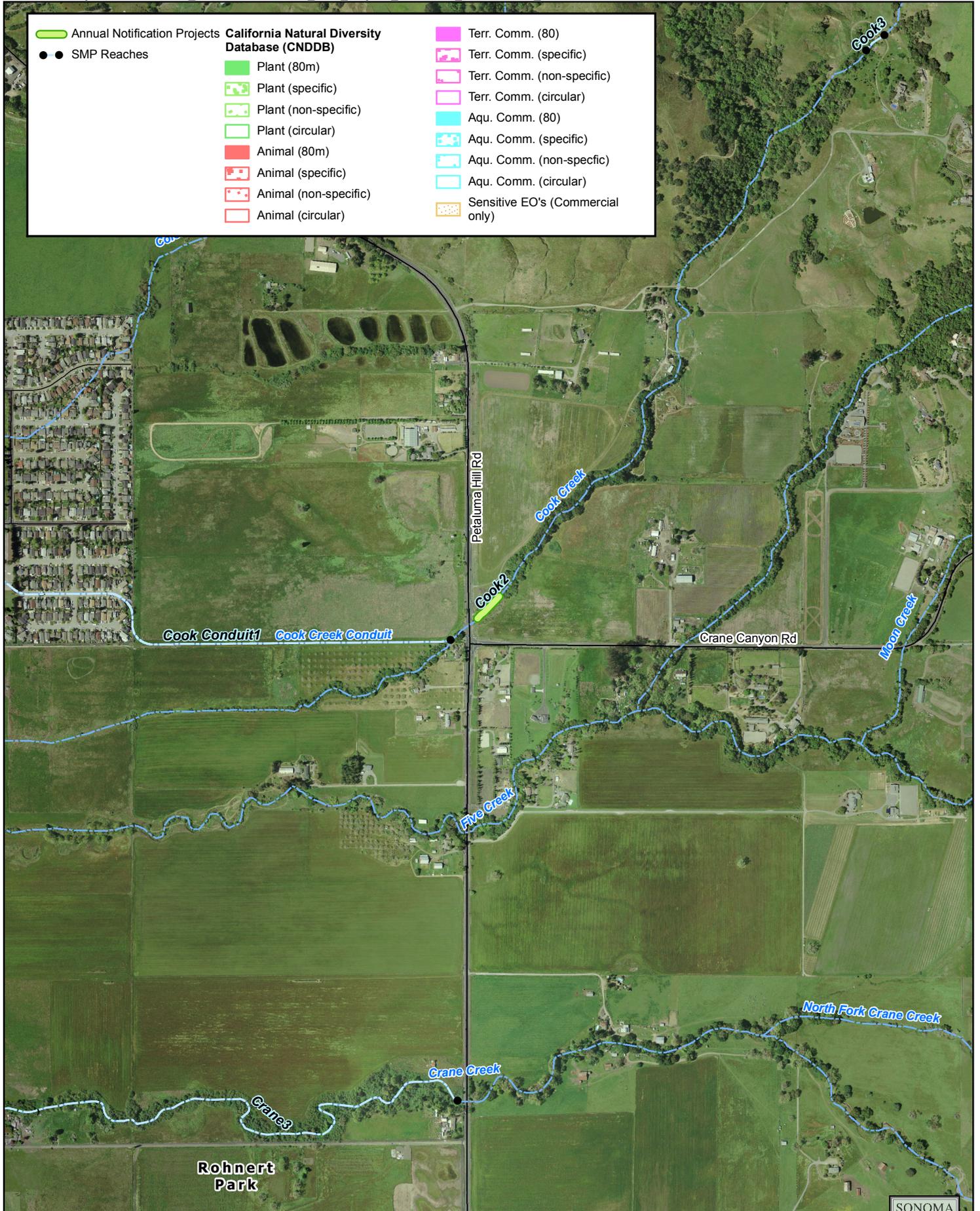
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SMP Reaches	Plant (80m)	Terr. Comm. (specific)
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	Plant (non-specific)	Terr. Comm. (circular)
	Plant (circular)	Aqu. Comm. (80)
	Animal (80m)	Aqu. Comm. (specific)
	Animal (specific)	Aqu. Comm. (non-specific)
	Animal (non-specific)	Aqu. Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)

2014 Stream Maintenance Program Projects
Rohnert Park B

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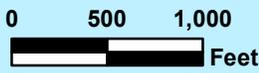


 Annual Notification Projects	California Natural Diversity Database (CNDDB)	 Terr. Comm. (80)
 SMP Reaches	 Plant (80m)	 Terr. Comm. (specific)
	 Plant (specific)	 Terr. Comm. (non-specific)
	 Plant (non-specific)	 Terr. Comm. (circular)
	 Plant (circular)	 Aqu. Comm. (80)
	 Animal (80m)	 Aqu. Comm. (specific)
	 Animal (specific)	 Aqu. Comm. (non-specific)
	 Animal (non-specific)	 Aqu. Comm. (circular)
	 Animal (circular)	 Sensitive EO's (Commercial only)



2014 Stream Maintenance Program Projects Rohnert Park C

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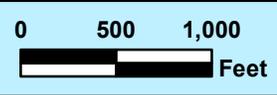


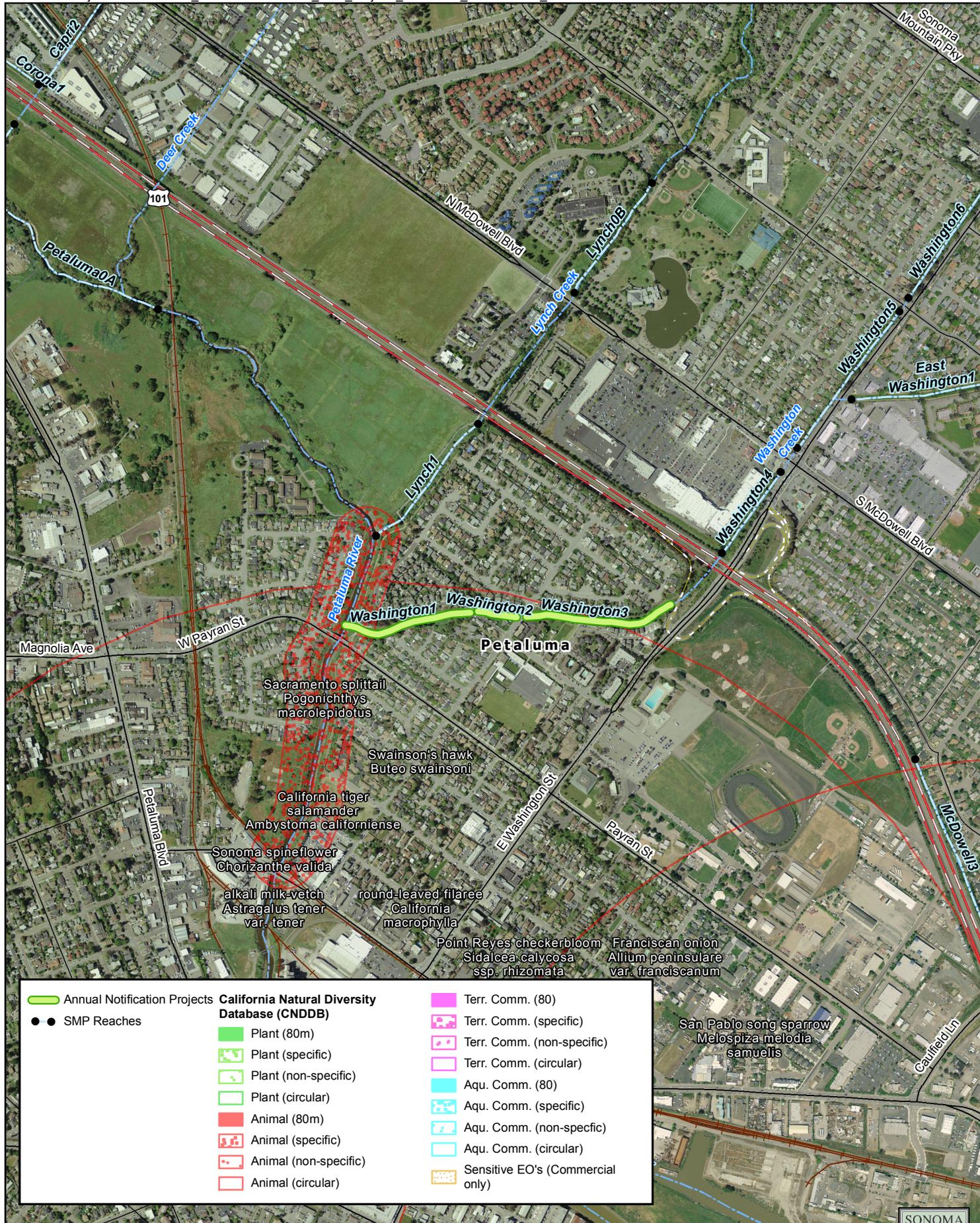


Annual Notification Projects	California Natural Diversity Database (CNDDB)	Terr. Comm. (80)
SMP Reaches	Plant (80m)	Terr. Comm. (specific)
	Plant (specific)	Terr. Comm. (non-specific)
	Plant (non-specific)	Terr. Comm. (circular)
	Plant (circular)	Aqu. Comm. (80)
	Animal (80m)	Aqu. Comm. (specific)
	Animal (specific)	Aqu. Comm. (non-specific)
	Animal (non-specific)	Aqu. Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)

2014 Stream Maintenance Program Projects
Cotati A

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Annual Notification Projects	California Natural Diversity Database (CNDDB)	Terr. Comm. (80)
SMP Reaches	Plant (80m)	Terr. Comm. (specific)
	Plant (specific)	Terr. Comm. (non-specific)
	Plant (non-specific)	Terr. Comm. (circular)
	Plant (circular)	Aqu. Comm. (80)
	Animal (80m)	Aqu. Comm. (specific)
	Animal (specific)	Aqu. Comm. (non-specific)
	Animal (non-specific)	Aqu. Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)

Sacramento splittail
Pogonichthys macrolepidotus

Swainson's hawk
Buteo swainsoni

California tiger salamander
Ambystoma californiense

Sonoma spineflower
Chorizanthe valida

alkali milk-vetch
Astragalus tener var. *tener*

round-leaved filaree
California macrophylla

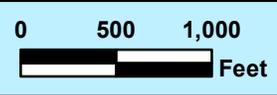
Point Reyes checkerbloom
Sidalcea calycosa ssp. *rhizomata*

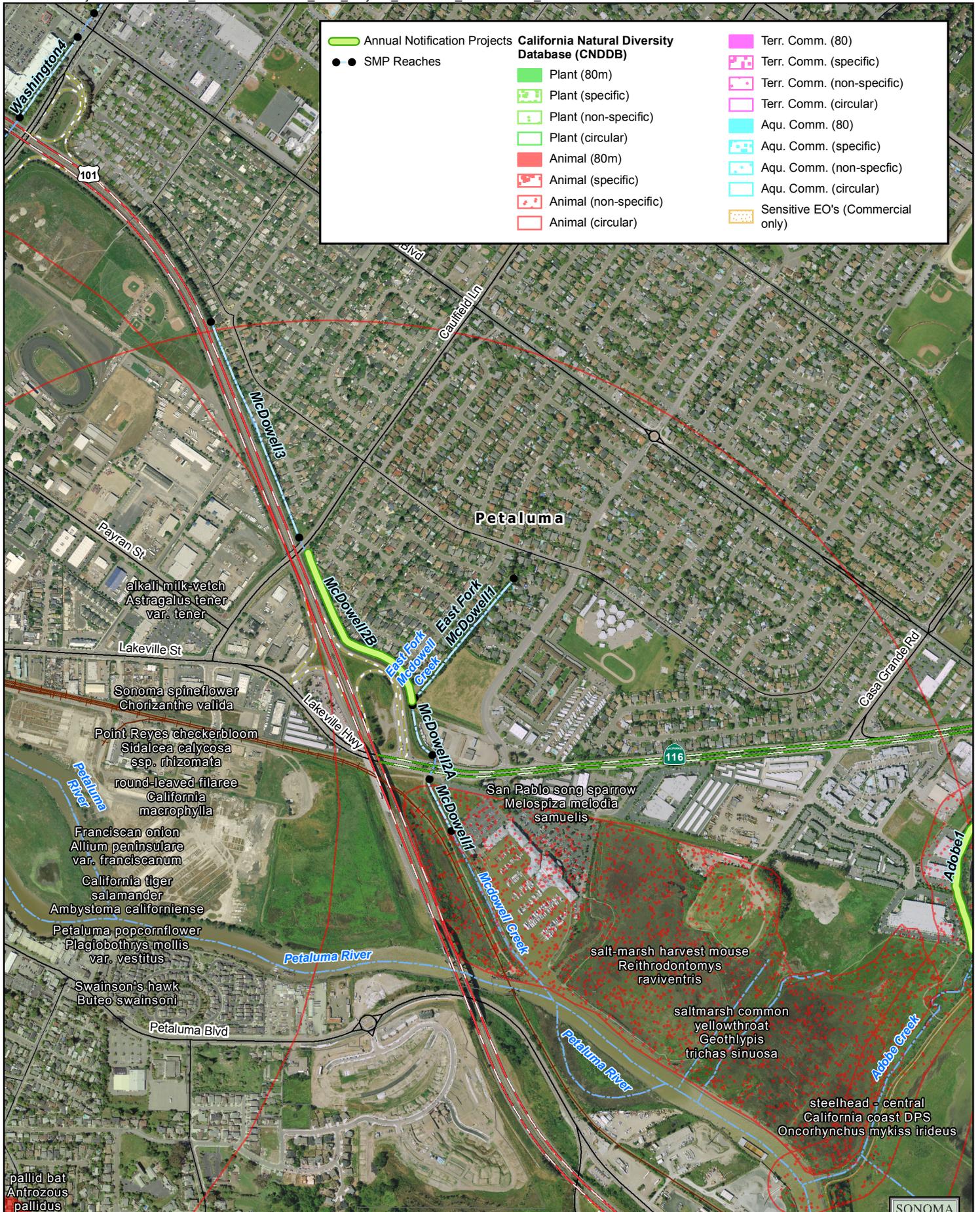
Franciscan onion
Allium peninsulare var. *franciscanum*

San Pablo song sparrow
Melospiza melodia samuelis

2014 Stream Maintenance Program Projects
Petaluma A

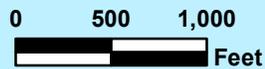
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2014 Stream Maintenance Program Projects
Petaluma B

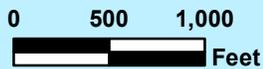
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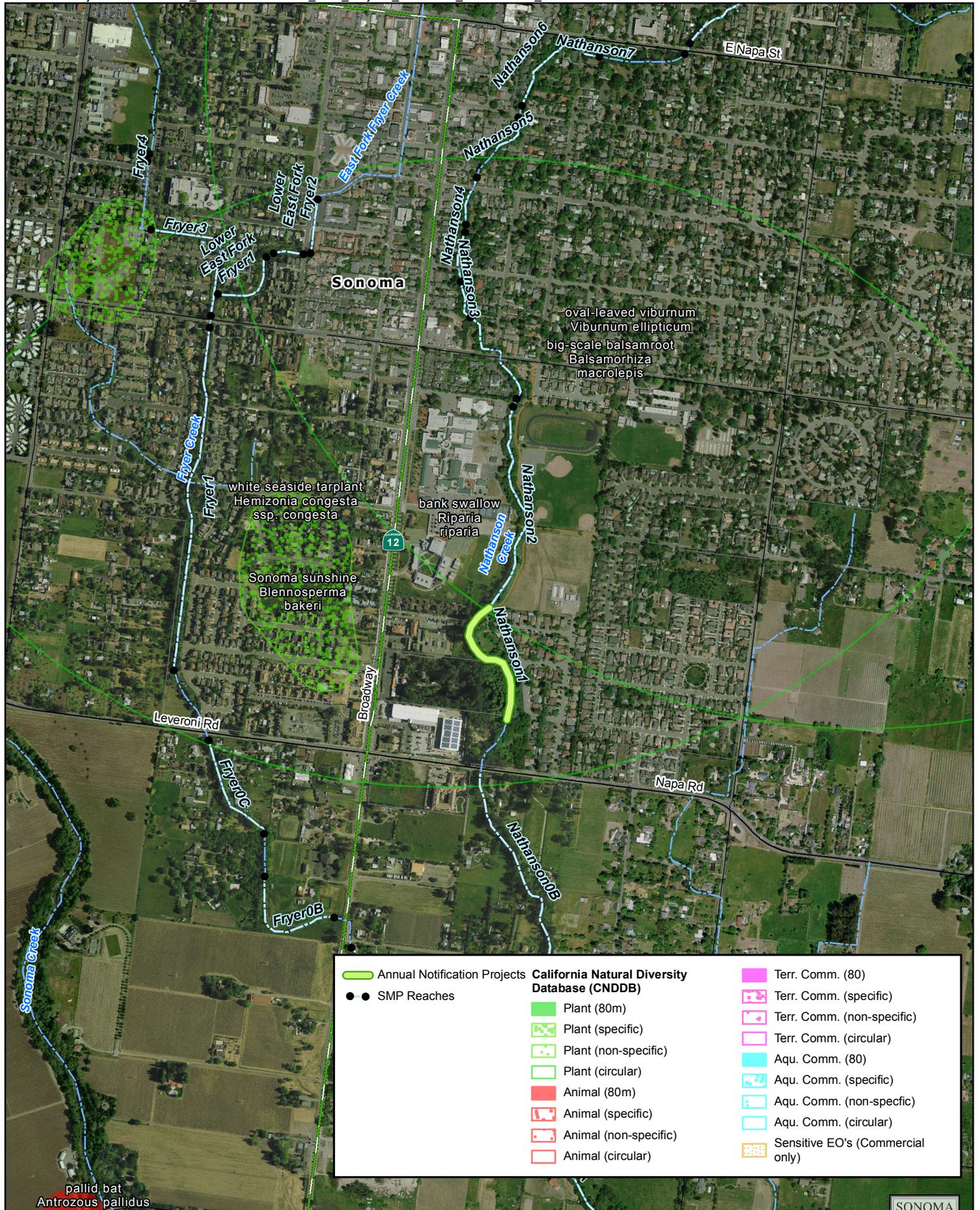




**2014 Stream Maintenance
Program Projects
Petaluma C**

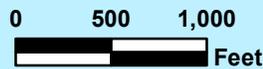
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2014 Stream Maintenance Program Projects
Sonoma A

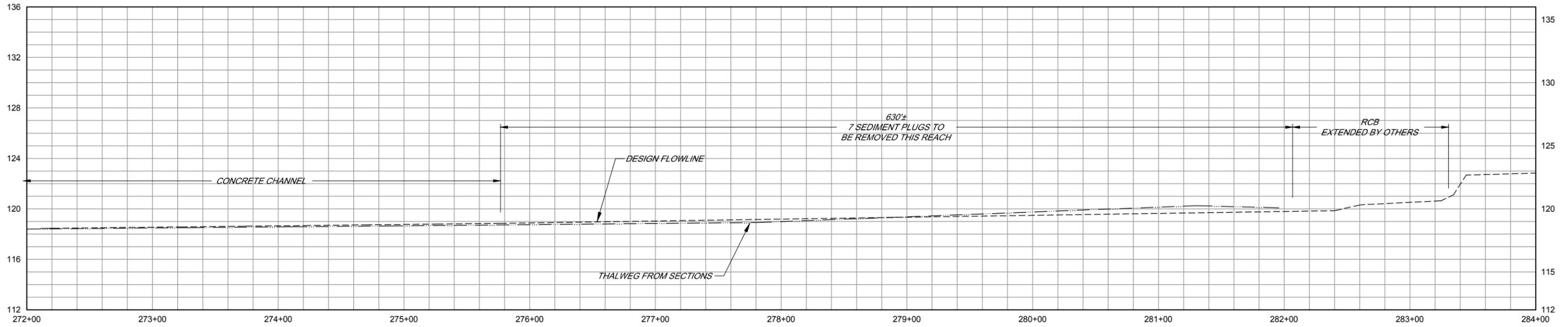
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Appendix C

Project Designs

- Colgan Creek 5C Localized
- Forestview Creek 2 and 3 Reach Scale
- Hinebaugh Creek 3B, 4, 5A and 5C Reach Scale
- South Fork Copeland 1 Reach Scale
- Starr Creek 2 Reach Scale
- Steele 1B Reach Scale
- Steele Creek 2 Reach Scale
- Five 1-Wilfred-Adobe-Copeland-Cook In-stream Sediment Basins
- Copeland 2 In-stream Sediment Basins
- Brush-Matanzas-Piner-Santa Rosa Reservoir/Santa Rosa Diversion Fish Ladder Inlet Clearing
- McDowell 2B Reach Scale
- Washington Creek 1, 2 and 3 (Sediment Basins and Reach Scale Projects)
- East Washington 3 Bank Repair
- Nathanson Creek Bypass 1 Reach Scale



PROFILE
 SCALE HORIZ 1" = 40'
 VERT 1" = 4'



PLAN
 SCALE 1" = 40'

\\SD-DATA\Pro\Flood control\zone 1a Colgan Creek\SMP_5\2014_ColganCrk_Civil

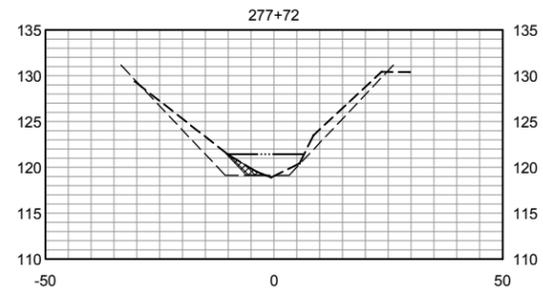
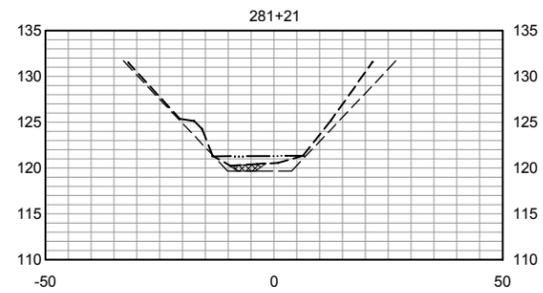
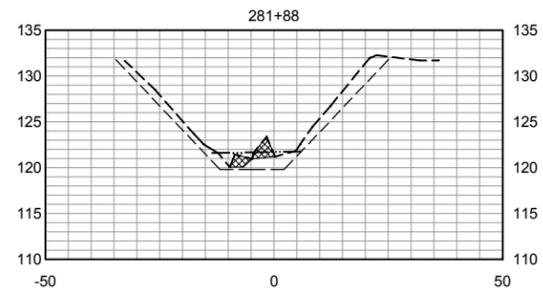
BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

				SCALE: AS SHOWN DATE: 22 NOV 2013 DRAWN: SMP REVIEWED:		SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A COLGAN SMP REACH 5C (2014) PLAN & PROFILE STA 272+00 TO STA 283+00	
				FILE NAME: 2014_ColganCrk_Civil.dwg CONTRACT NUMBER:		DRAWING NUMBER: C-1 SHEET 2 OF 3	
NO.	DATE	REVISION	BY				

\\SD-DATA\Pro\Flood control\zone 1a\Colgan Creek\2014_CDLGAN-SMP_5\2014_ColganCrk_Civil

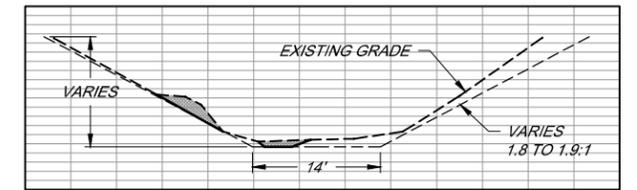


BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

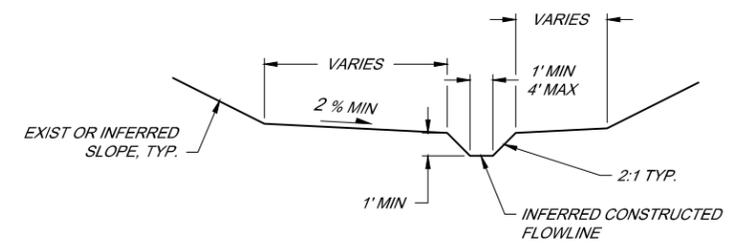


SECTIONS SMP-5C

SCALE HORIZ 1" = 20'
VERT 1" = 10'



TYPICAL SECTION UPSTREAM STA 275+78 TO HERN AVENUE
NOT TO SCALE



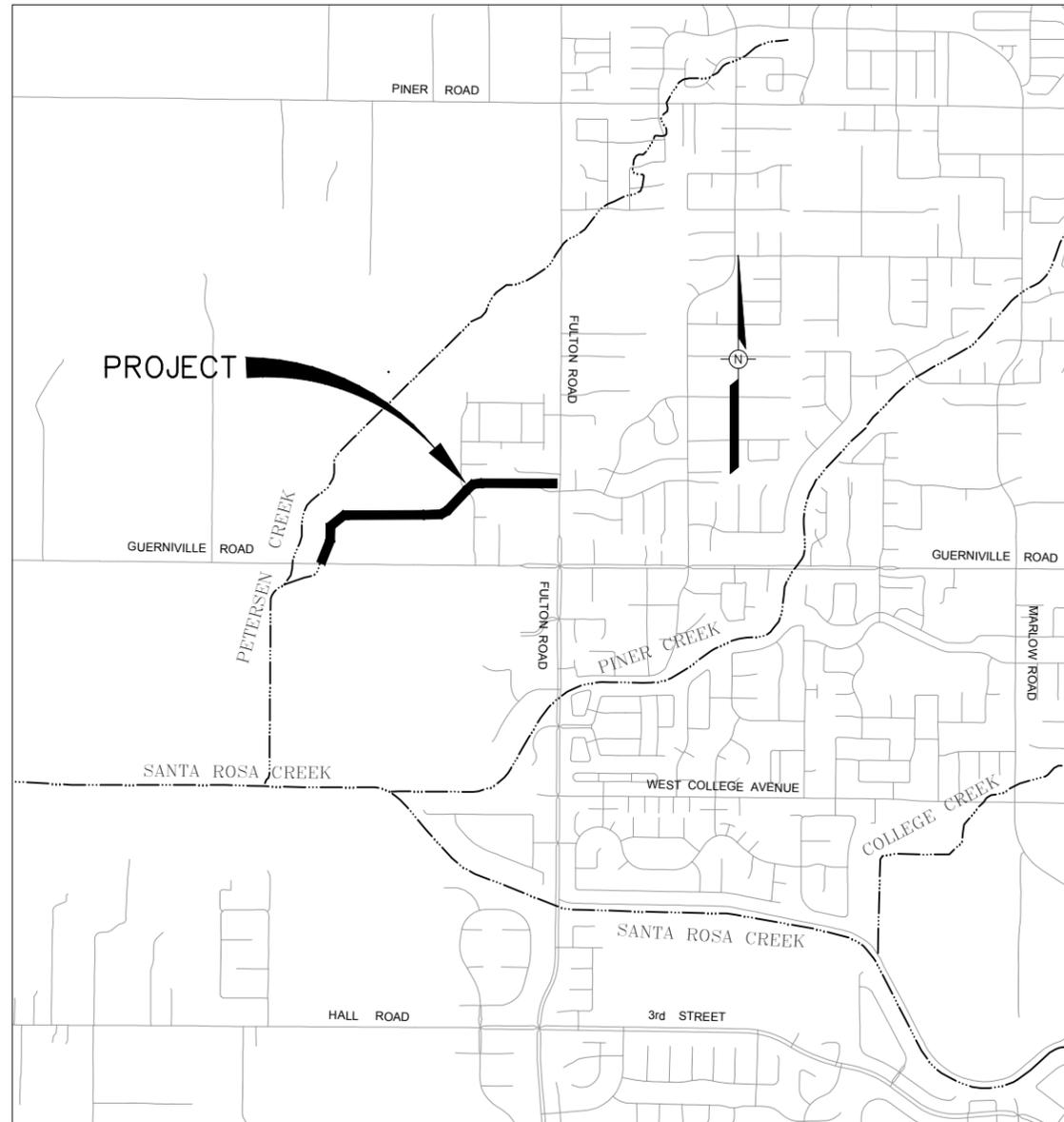
SEDIMENT REMOVAL LOW FLOW CHANNEL SECTION
NOT TO SCALE

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY
 SCALE: AS SHOWN DATE: 22 NOV 2013
 DRAWN: SMP
 REVIEWED:

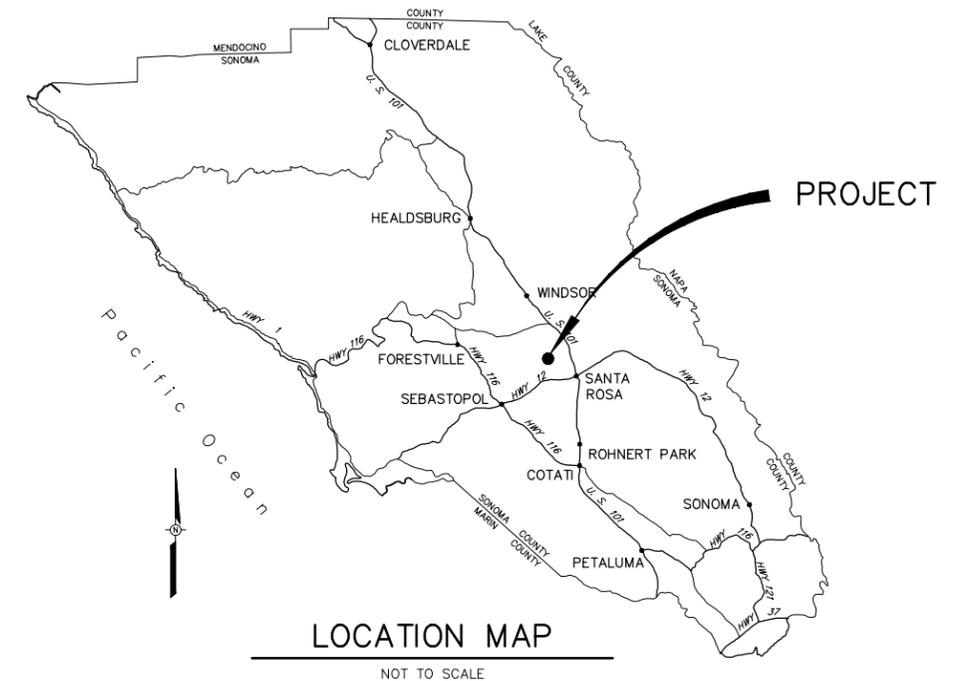
SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
COLGAN SMP REACH 5C (2014)
SECTIONS
 FILE NAME: 2014_ColganCrk_Civil.dwg DRAWING NUMBER: C-2 SHEET 3 OF 3
 CONTRACT NUMBER:

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A FORESTVIEW CREEK - REACH 2 AND 3 REACH SCALE SEDIMENT REMOVAL



VICINITY MAP

NOT TO SCALE



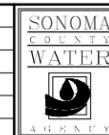
LOCATION MAP

NOT TO SCALE

FORESTVIEW CREEK SMP REACH 2 AND 3						
WORK TO BE DONE WITHIN CHANNEL						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING FROM SERVICE ROAD OR IN THE DEWATERED CHANNEL.	STATION 518+00 TO STATION 550+43	3,243	12.5	BELOW OHW 42,465	0.6	BELOW OHW 901

INDEX TO DRAWINGS		
SHEET NUMBER	DRAWING NUMBER	TITLE
1	G-1	INDEX TO DRAWINGS, LOCATION & VICINITY MAPS AND TABLE
2	C-1	PLAN & PRIORFILE STA 518+00 TO STA 528+00
3	C-2	PLAN & PRIORFILE STA 528+00 TO STA 540+00
4	C-3	PLAN & PRIORFILE STA 540+00 TO STA 550+50
5	C-4	SECTIONS

NO.	DATE	REVISION	BY								

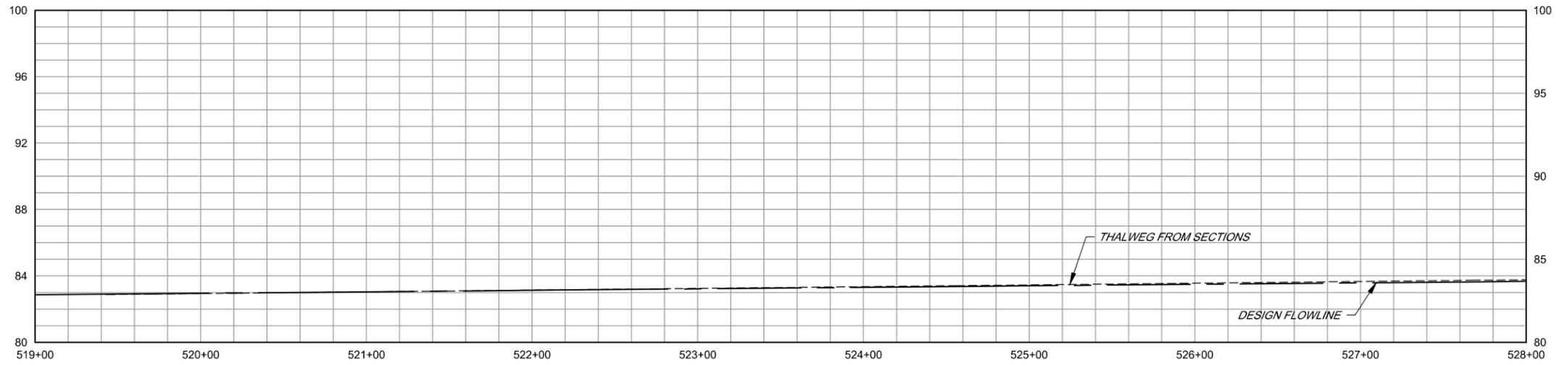


SCALE: AS SHOWN	DATE: 11/22/2013
DRAWN: SMP	
REVIEWED:	

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A FORESTVIEW CREEK - REACH 2 AND 3 - INDEX TO DRAWINGS, LOCATION & VICINITY MAPS AND TABLE		
FILE NAME: 2013_Forestview-G.dwg	DRAWING NUMBER: G-1	SHEET 1 OF 5

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH, ADJUST SCALE ACCORDINGLY

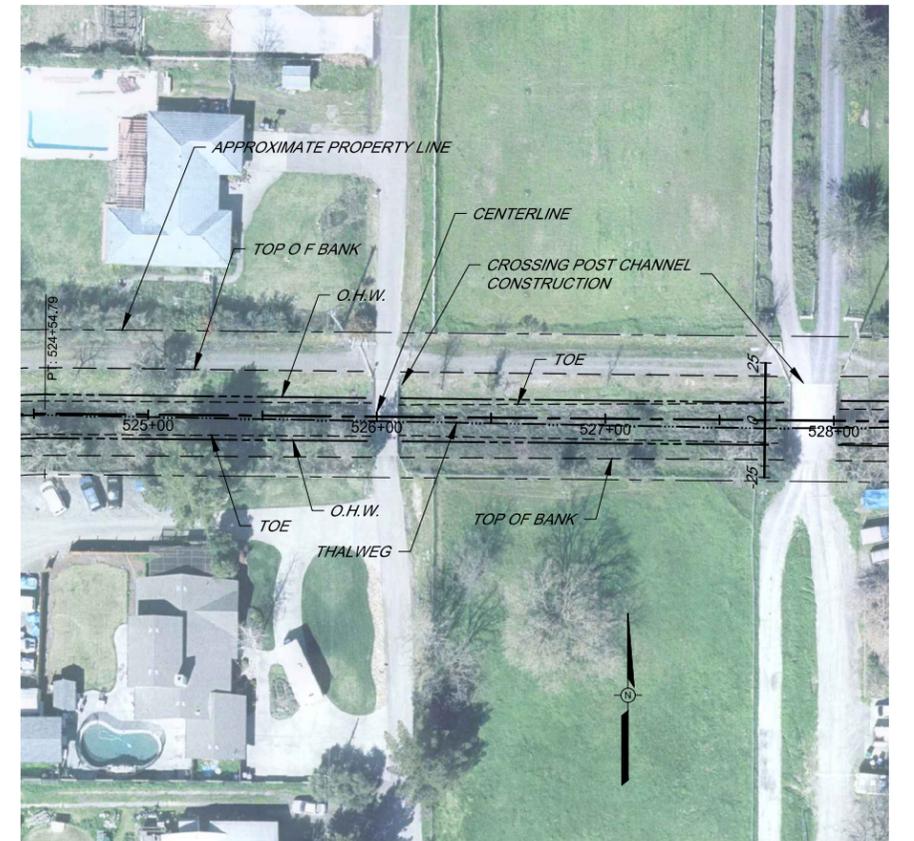
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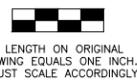
PROFILE
 SCALE HORIZ 1" = 40'
 VERT 1" = 4'



PLAN
 SCALE 1" = 40'

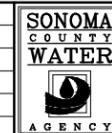


PLAN
 SCALE 1" = 40'



BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

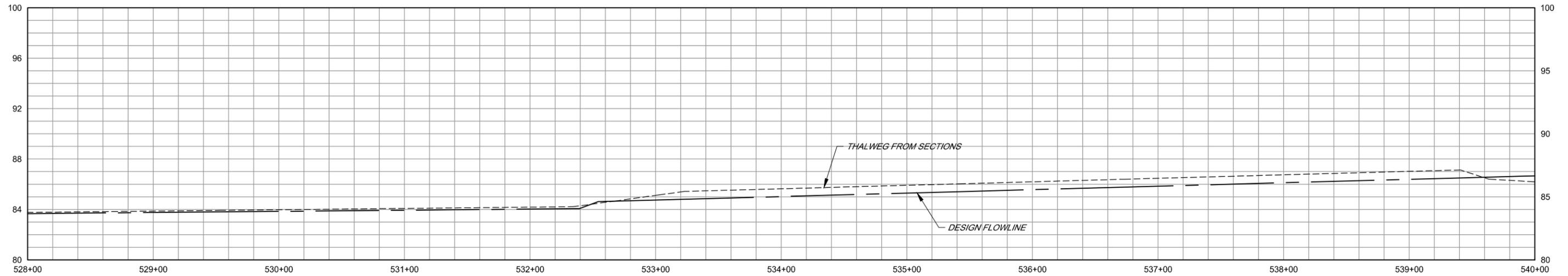
NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 11/22/2013
DRAWN: ---	
REVIEWED: ---	

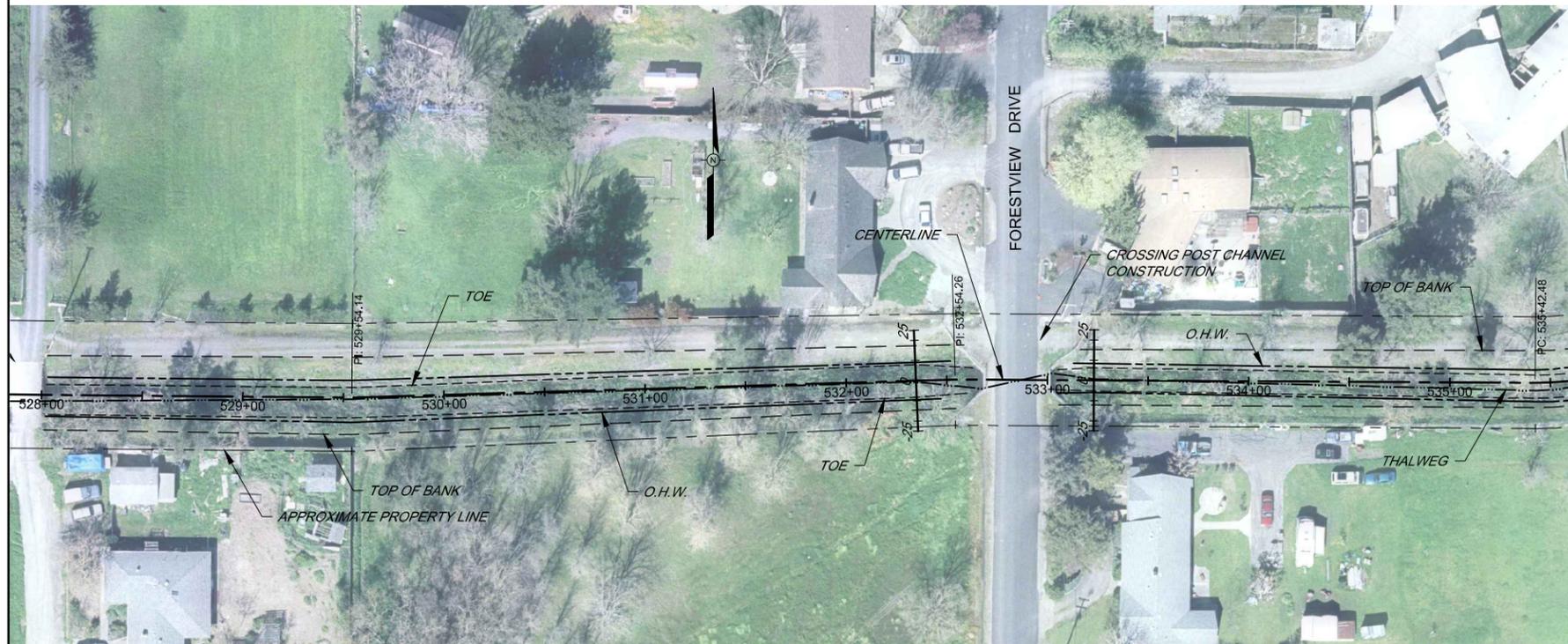
PLAN & PROFILE STA 518+00 TO STA 528+00

FILE NAME: 2013_Forestview-C	DRAWING NUMBER: C-1	SHEET 2 OF ##
CONTRACT NUMBER:		



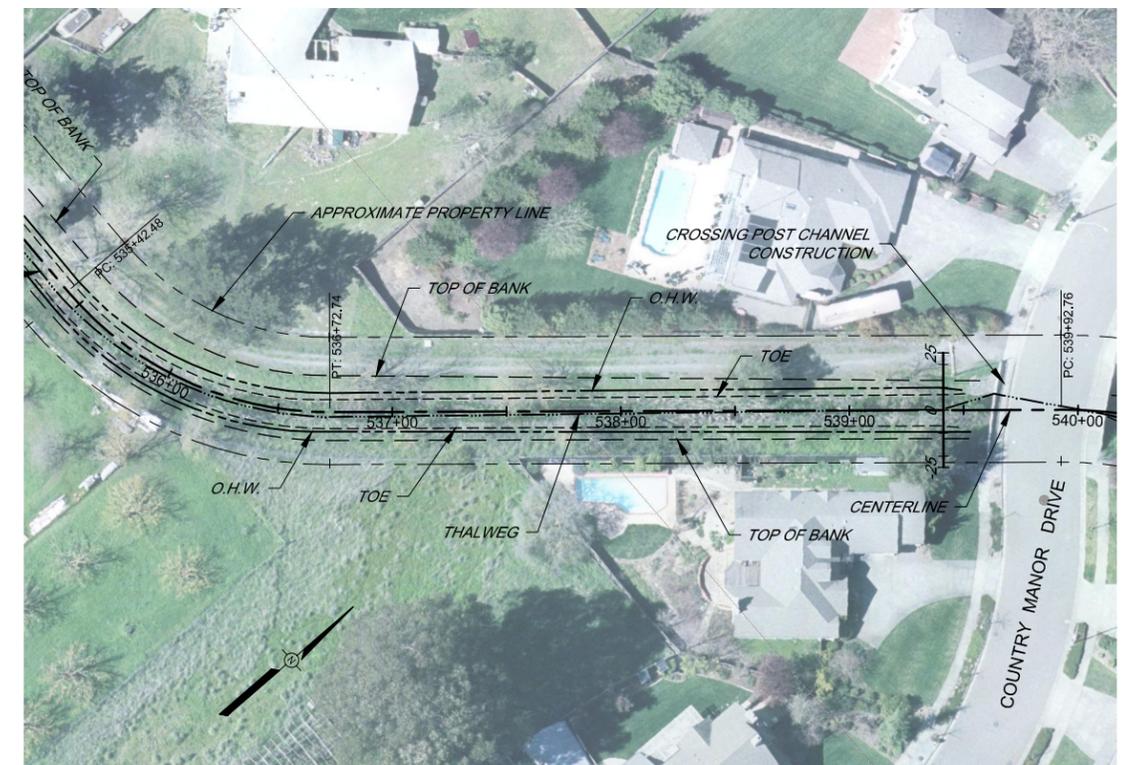
PROFILE

SCALE HORIZ 1" = 40'
VERT 1" = 4'



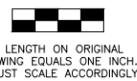
PLAN

SCALE 1" = 40'



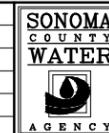
PLAN

SCALE 1" = 40'



BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

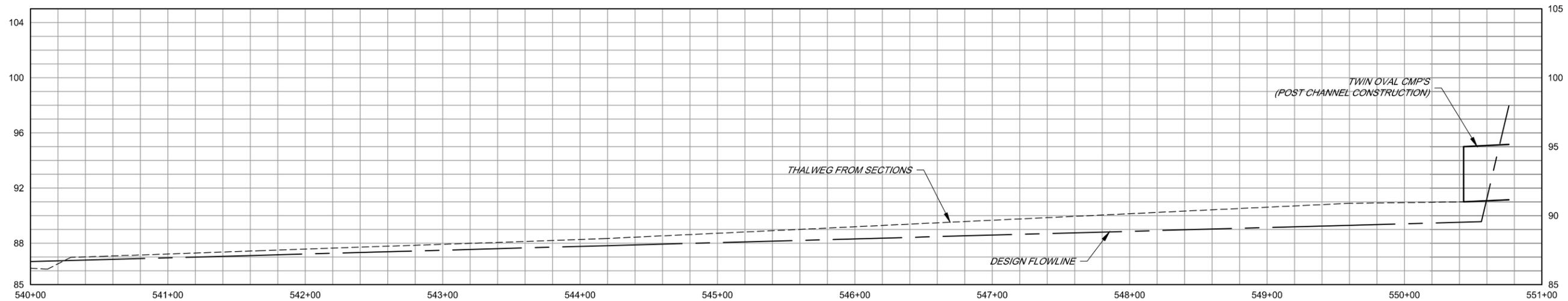


SCALE: AS SHOWN	DATE: 11/22/2013
DRAWN: ---	
REVIEWED: ---	

PLAN & PRIOFILE STA 528+00 TO STA 540+00

FILE NAME: 2013_Forestview-C	DRAWING NUMBER: C-2	SHEET 3 OF ##
CONTRACT NUMBER:		

I:\sdata\proj\ford\controlzone\1a\Forestview_C\112013\Forestview



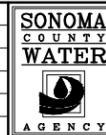
PROFILE
 SCALE HORIZ 1" = 40'
 VERT 1" = 4'



PLAN
 SCALE 1" = 40'

BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

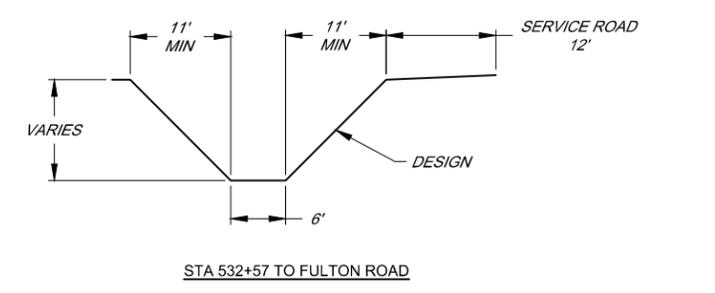
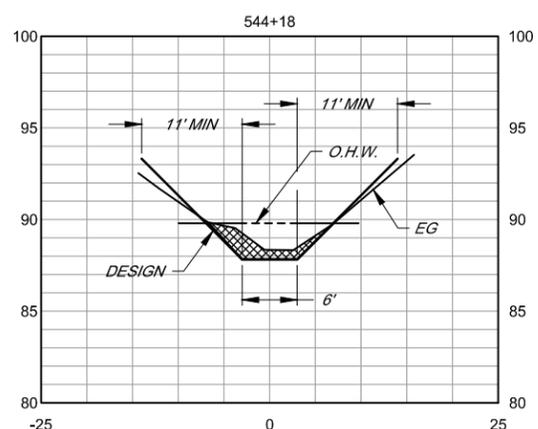
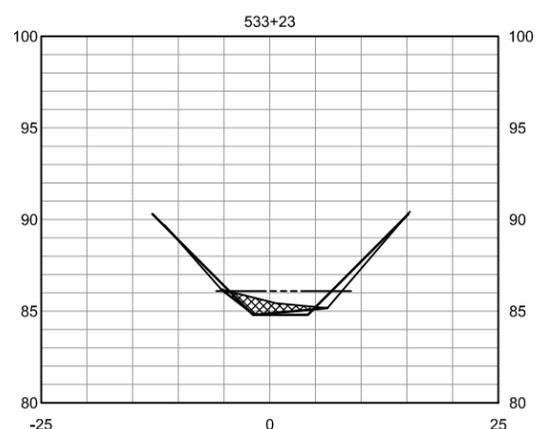
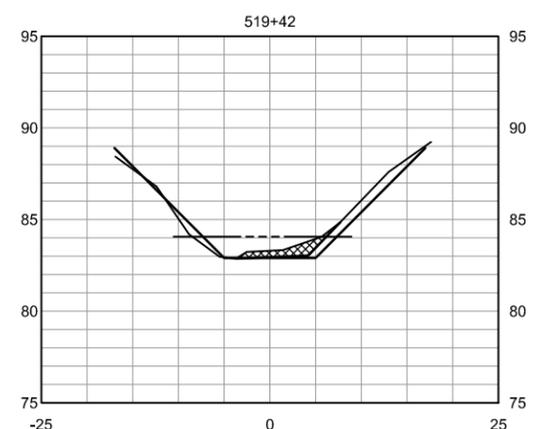
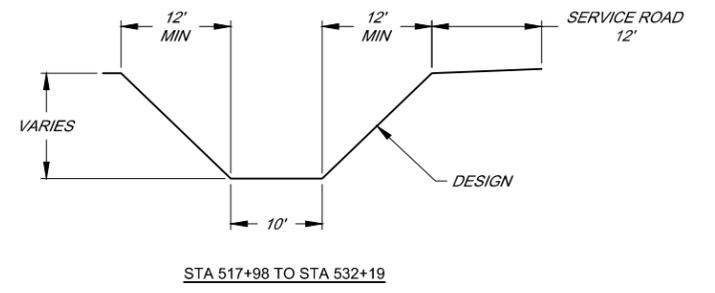
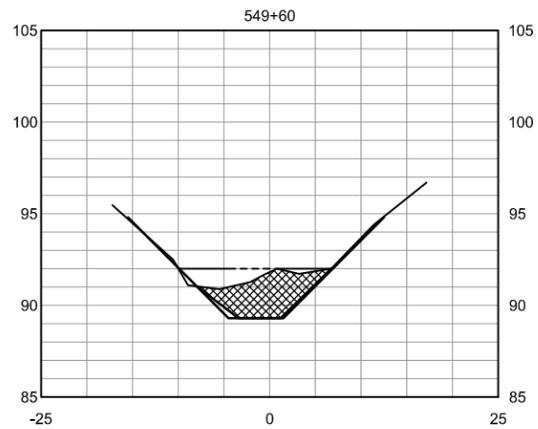
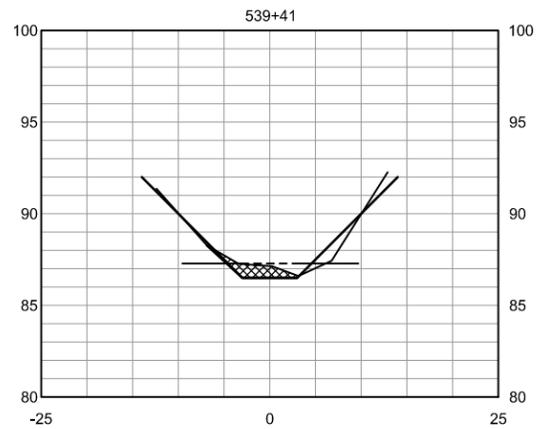
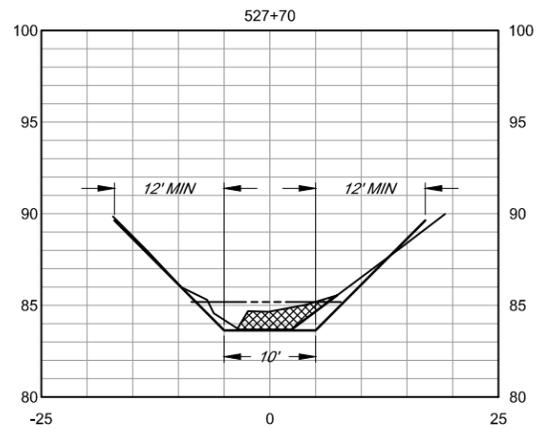
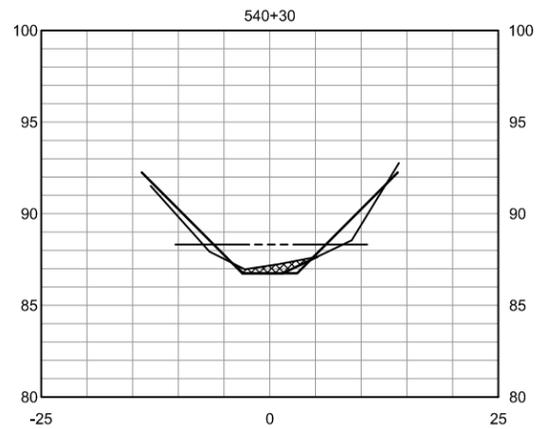
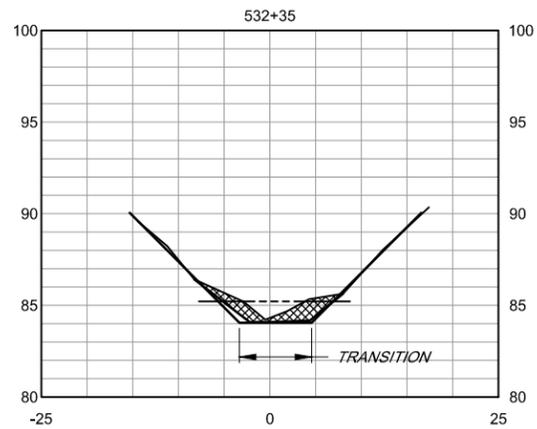
NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 11/22/2013
DRAWN: ---	
REVIEWED: ---	

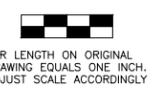
SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
 FORESTVIEW CREEK - REACH 2 AND 3
 PLAN & PROFILE STA 540+00 TO STA 550+50

FILE NAME: 2013_Forestview-C	DRAWING NUMBER: C-3	SHEET 4 OF 5
CONTRACT NUMBER:		



TYPICAL SECTIONS
N.T.S.

SECTIONS
SCALE HORIZ 1" = 10'
VERT 1" = 5'

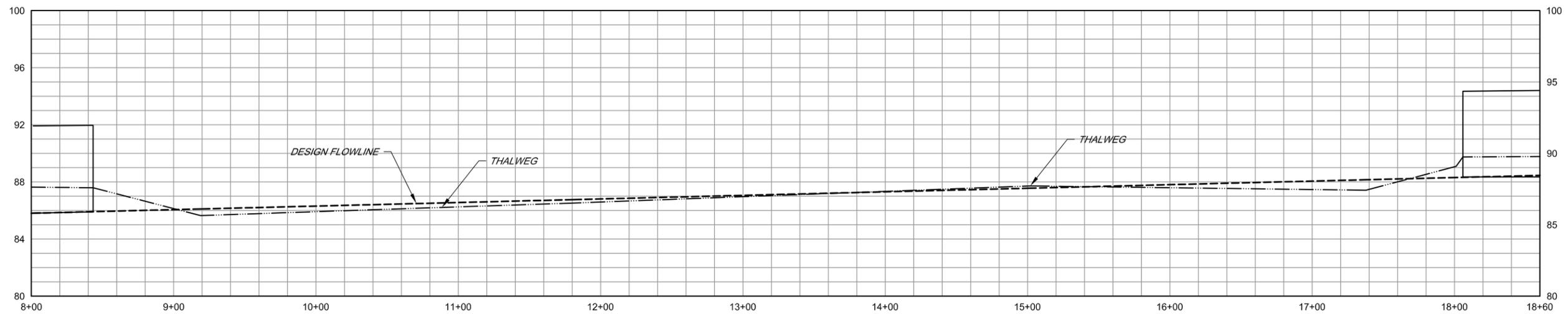


NO.	DATE	REVISION	BY	AGENCY

SCALE: AS SHOWN	DATE: 11/22/2013
DRAWN: ---	
REVIEWED: ---	

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A		
FORESTVIEW CREEK - REACH 2 AND 3 SECTIONS		
FILE NAME: 2013_Forestview-C	DRAWING NUMBER: C-4	SHEET 5 OF 5
CONTRACT NUMBER:		

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PROFILE
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 VERT 1" = 4'



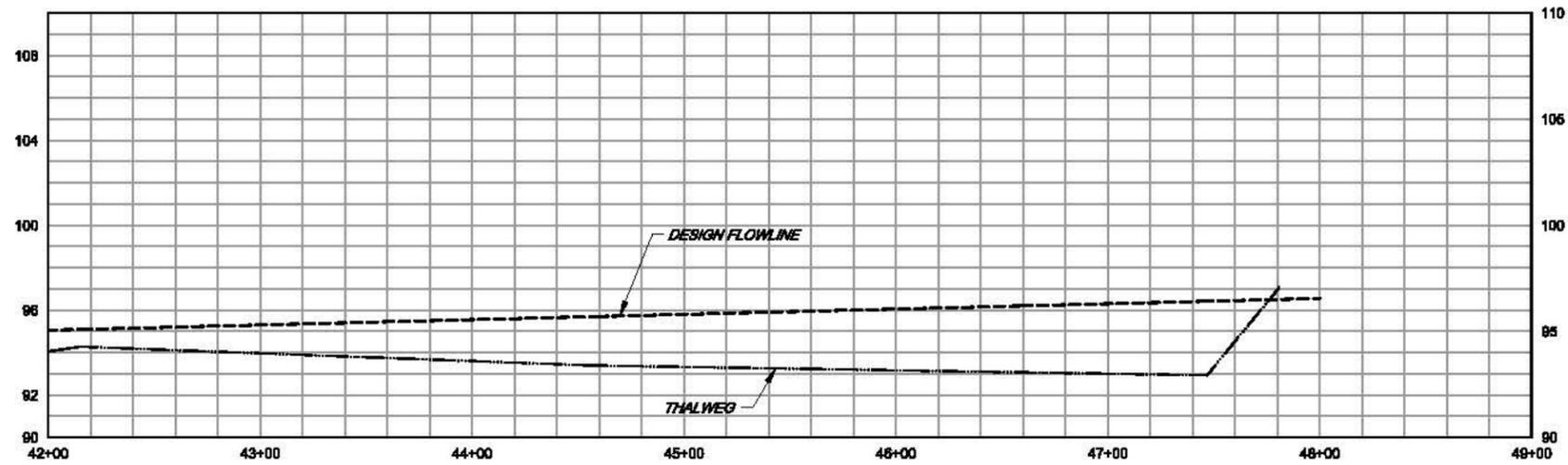
PLAN
 SCALE 1" = 40'

BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

SCALE: AS SHOWN	DATE: 11/22/2013
DRAWN: ADF	
REVIEWED:	

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A HINEBAUGH SMP REACH 3B, 4, 5A, AND 5C (2014) PLAN & PROFILE STA 8+40 TO STA 18+60		
FILE NAME: 2014_Hinebaugh-CIVIL	DRAWING NUMBER: C-2	SHEET 3 OF 8
CONTRACT NUMBER:		



PROFILE
 SCALE HORIZ 1" = 40'
 VERT 1" = 4'



PLAN
 SCALE 1" = 40'

BAR LENGTH IN ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER

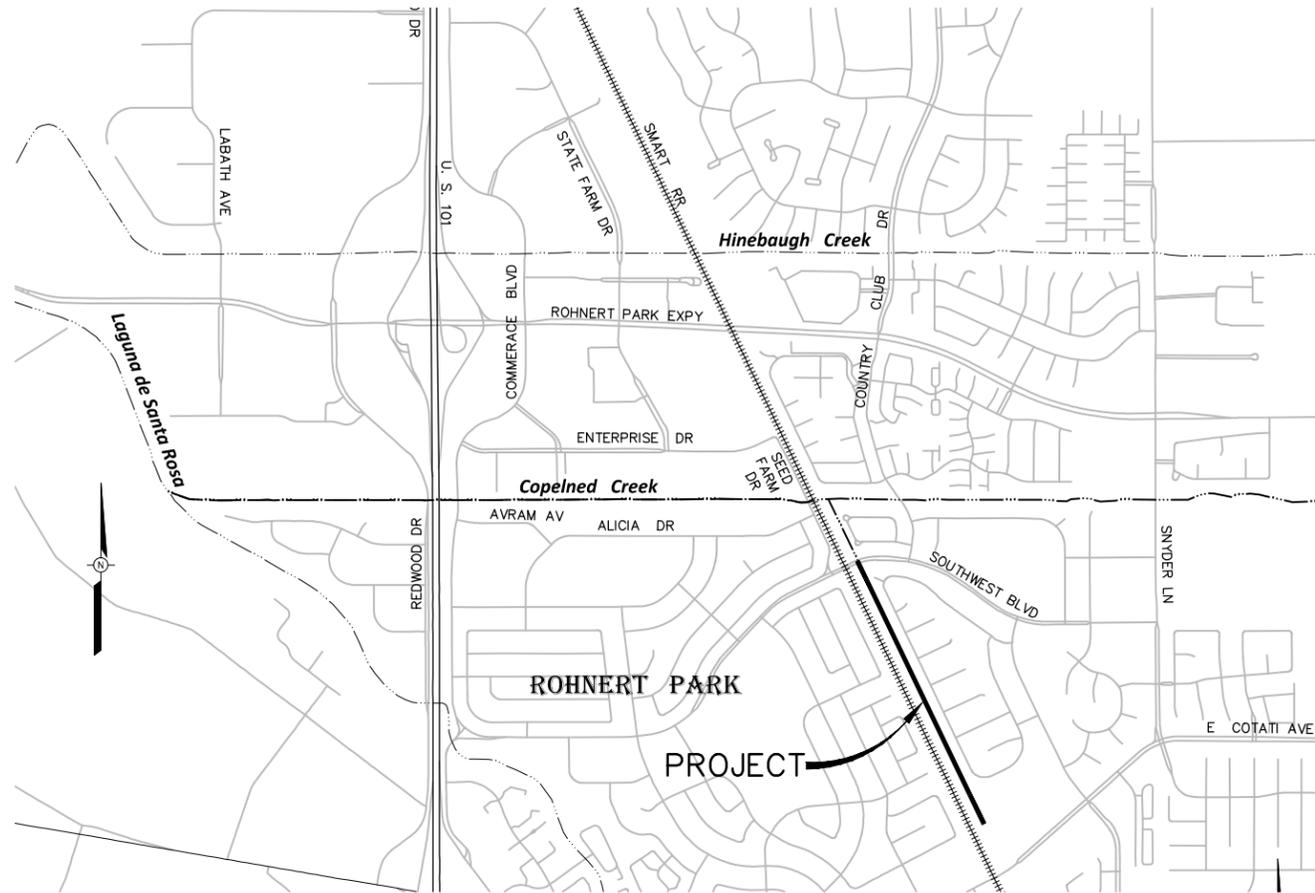
SCALE: AS SHOWN DATE: 11/22/2013
 DRAWN BY: ADF
 REVIEWED BY: _____

**SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
 HINEBAUGH SMP REACH 3B, 4, 5A, AND 5C (2014)
 PLAN & PROFILE STA 42+00 TO STA 49+00**

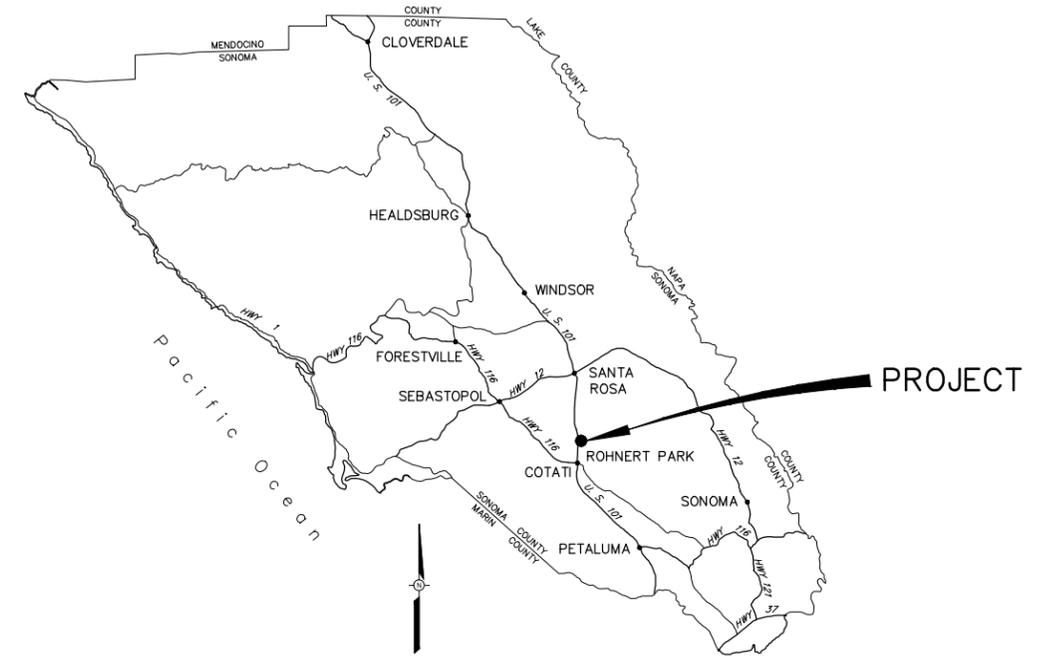
FILE NAME: 2014_Hinebaugh-CIVIL CONTRACT NUMBER: _____
 DRAWING NUMBER: C-5 SHEET 6 OF 8

2014/11/22/2013 11:22 AM Hinebaugh-CIVIL 6 OF 8

SOUTH FORK COPELAND CREEK SMP REACH 1 (2014) SEDIMENT REMOVAL



VICINITY MAP
SCALE 1" = 1000'

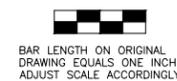


LOCATION MAP
SCALE N.T.S.

SOUTH FORK COPELAND CREEK SMP REACH 1 (2014)						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	AVERAGE DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAR OR FRONT END LOADER OPERATING IN CHANNEL	STA 8+00 TO STA 36+05	2,805	6	ABOVE O.H.W. 7,842 BELOW O.H.W 28,050. TOTAL =35,892	1.3	ABOVE O.H.W 347 BELOW O.H.W. 463 TOTAL = 810

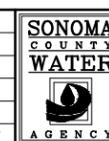
INDEX TO DRAWINGS		
SHEET NUMBER	DRAWING NUMBER	TITLE
1	G-1	INDEX TO DRAWINGS, TABLE, VICINITY AND LOCATION MAPS
2	C-1	PLAN AND PROFILE STA 8+00 TO 20+00
3	C-2	PLAN AND PROFILE STA 20+00 TO STA 32+00
4	C-3	PLAN AND PROFILE STA 32+00 TO STA 36+05
5	C-4	SECTIONS

**PRELIMINARY
90% SUBMITTAL**
FOR REVIEW PURPOSES ONLY
11 MAR 2014



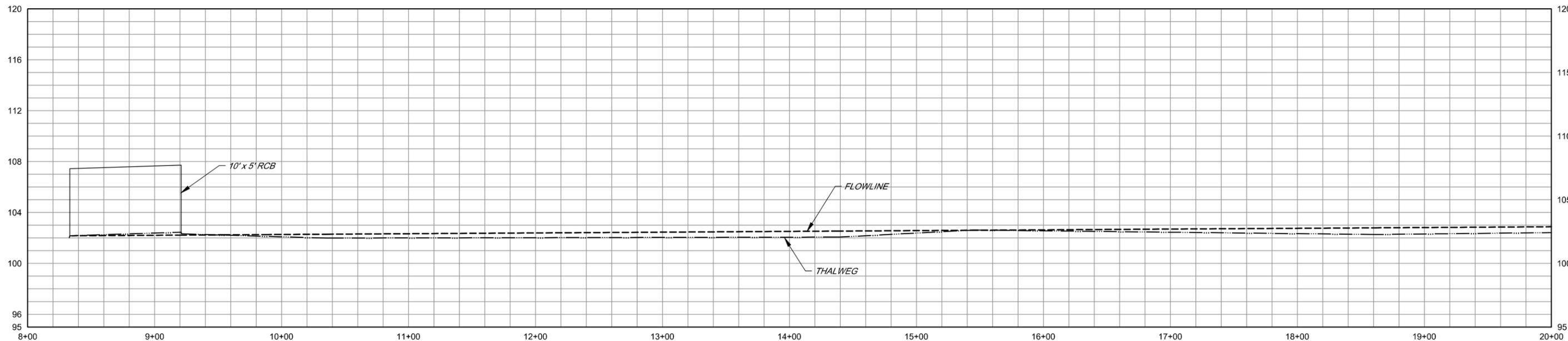
BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY



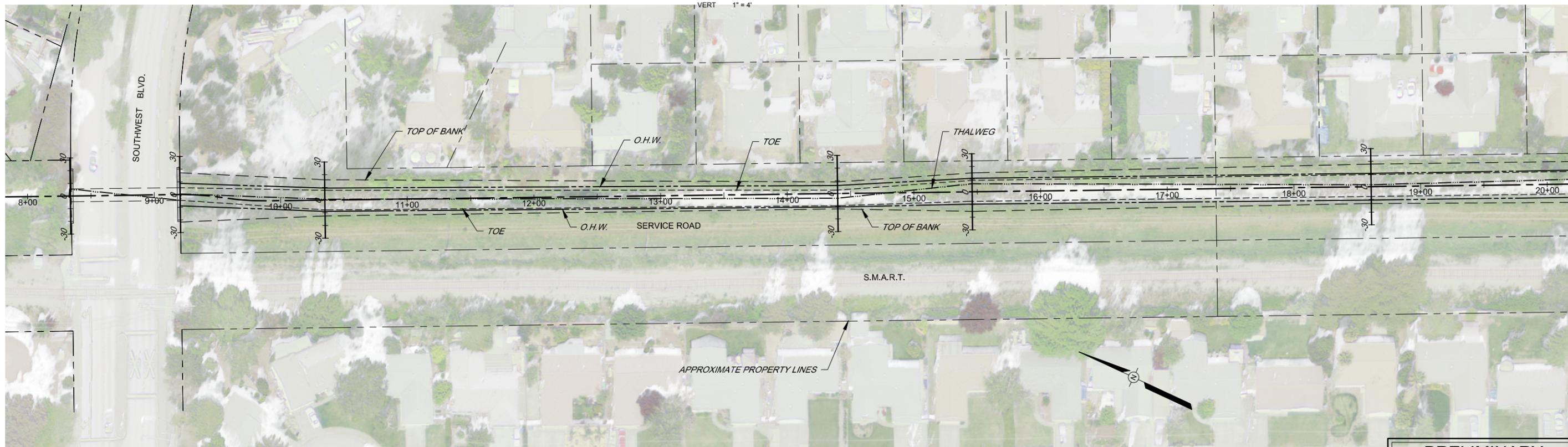
SCALE: AS SHOWN	DATE: 3/18/2014
DRAWN: ----	REVIEWED: ----

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A		
SOUTH FORK COPELAND CREEK SMP REACH 1 (2014). INDEX TO DRAWINGS, TABLE, VICINITY AND LOCATION MAPS		
FILE NAME: S_F_COPELAND-2014_GENERAL	DRAWING NUMBER: G-1	SHEET 1 OF 5
CONTRACT NUMBER:		



PROFILE

SCALE HORIZ 1" = 40'
VERT 1" = 4'



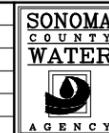
PLAN

SCALE 1" = 40'

**PRELIMINARY
90% SUBMITTAL**
FOR REVIEW PURPOSES ONLY
####

BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: #####
DRAWN: ---	
REVIEWED: ---	

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A

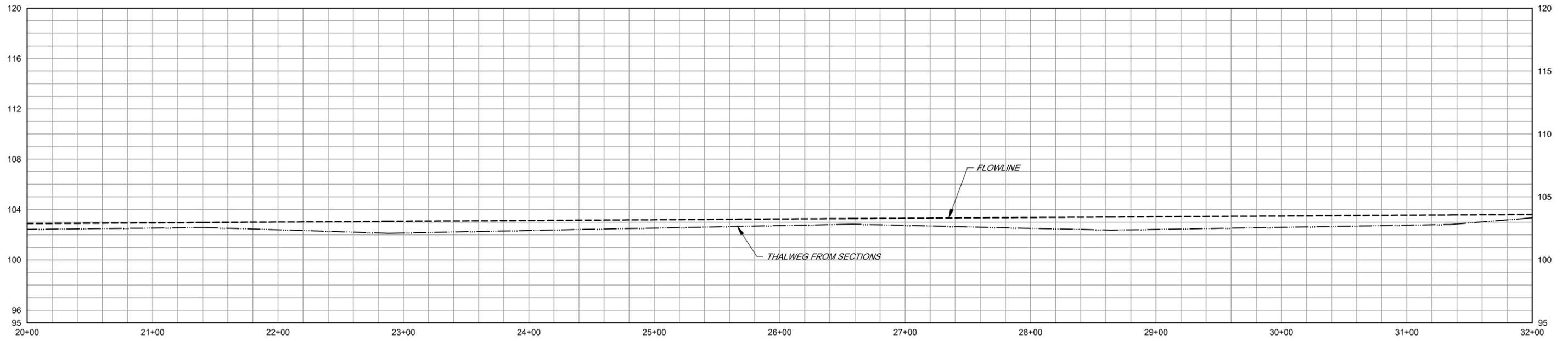
PLAN AND PROFILE STA 8+00 TO 20+00

FILE NAME: S_F_COPELAND-2014_CIVIL
CONTRACT NUMBER: _____

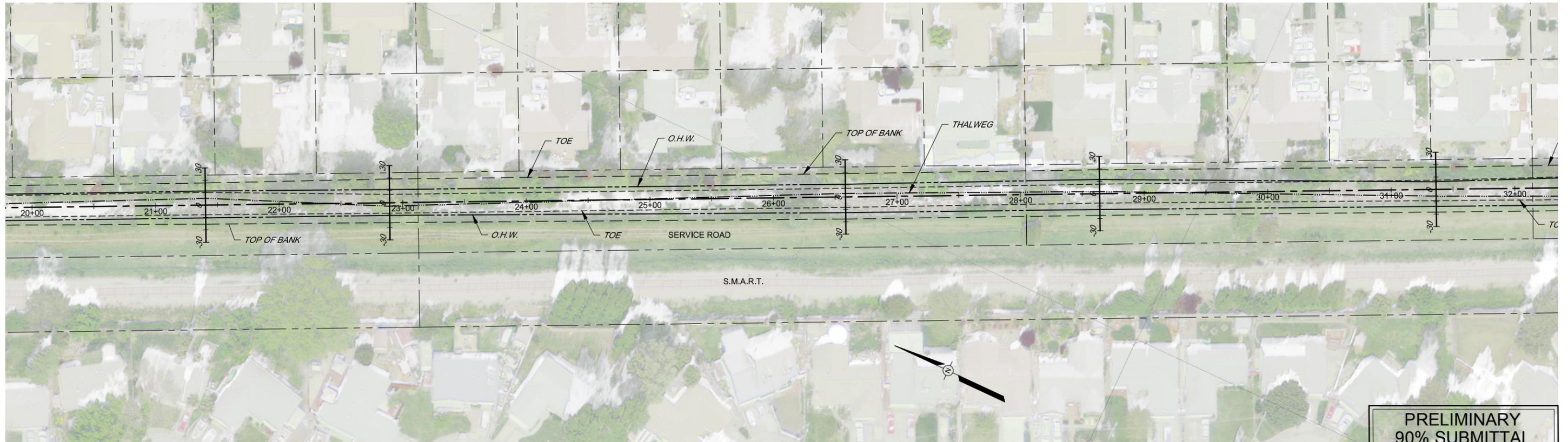
DRAWING NUMBER: C-1

SHEET 2 OF ##

I:\sdata\proj\flow_control\zone 1a\copeland\SouthFwk_Copeland



PROFILE
 SCALE HORIZ 1" = 40'
 VERT 1" = 4'

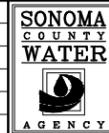


PLAN
 SCALE 1" = 40'

**PRELIMINARY
 90% SUBMITTAL**
 FOR REVIEW PURPOSES ONLY
 ####

BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

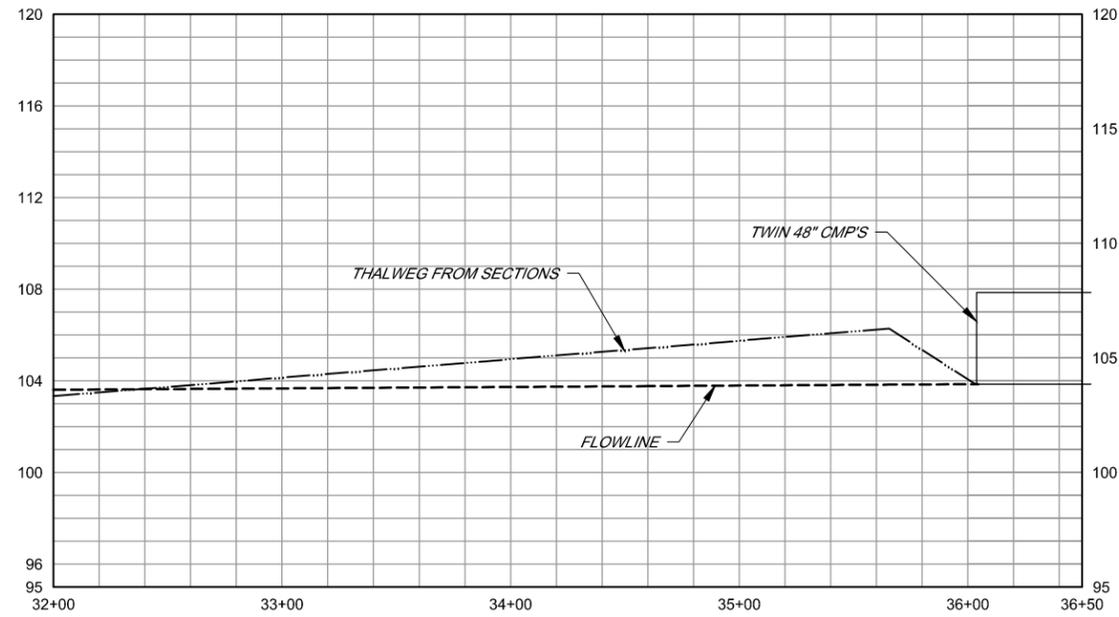
NO.	DATE	REVISION	BY



SCALE: AS SHOWN
 DATE: #####
 DRAWN: ---
 REVIEWED: ---

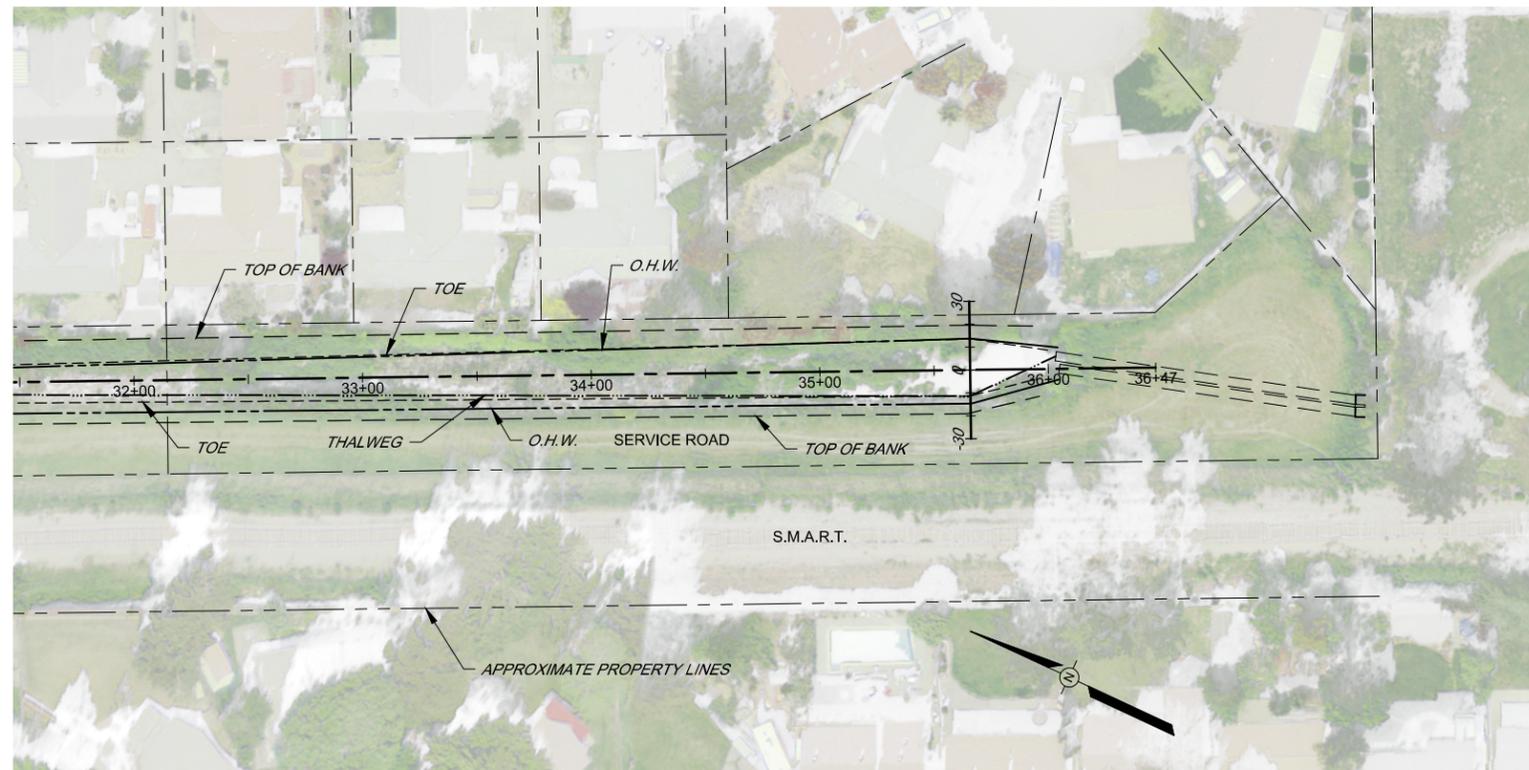
SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
PLAN AND PROFILE STA 20+00 TO STA 32+00
 FILE NAME: S_F_COPELAND-2014_CIVIL
 CONTRACT NUMBER: _____
 DRAWING NUMBER: C-2
 SHEET 3 OF ##

I:\sdata\proj\filed_control\zone 1a\copeland\SouthFork_Copeland



PROFILE

SCALE HORIZ 1" = 40'
 VERT 1" = 4'



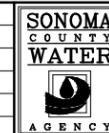
PLAN

SCALE 1" = 40'

PRELIMINARY
90% SUBMITTAL
 FOR REVIEW PURPOSES ONLY
 ###

BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

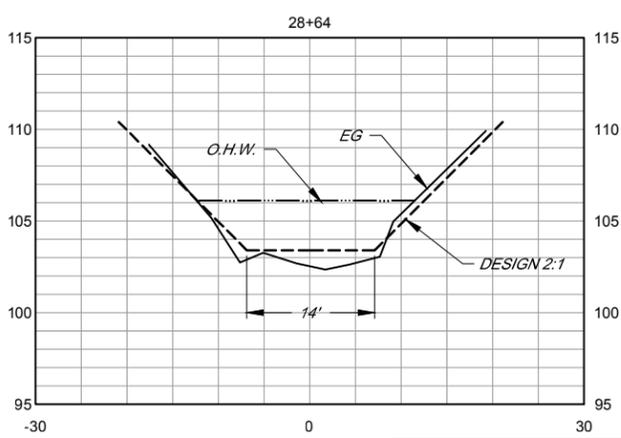
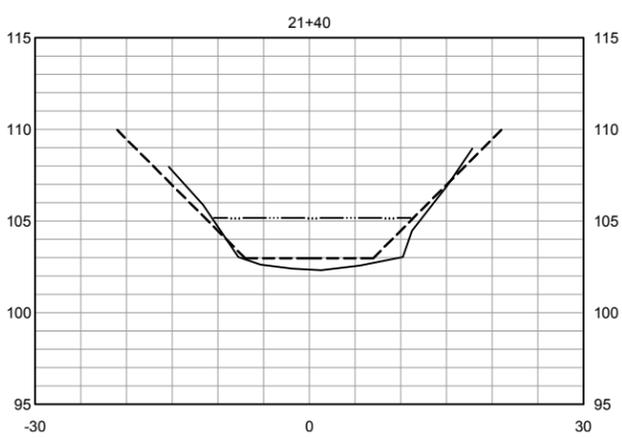
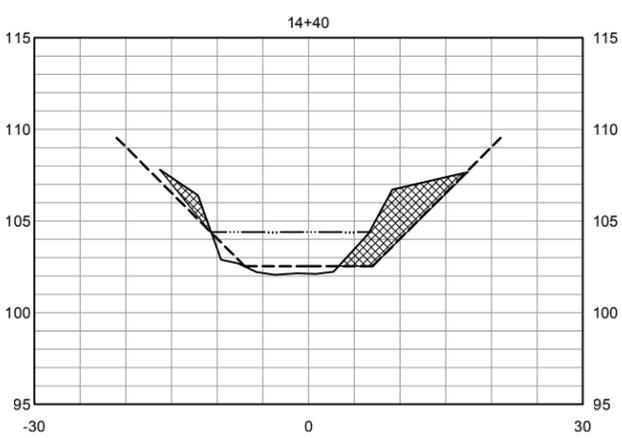
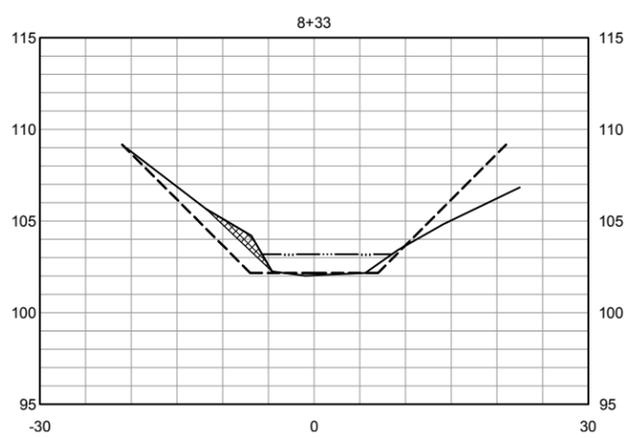
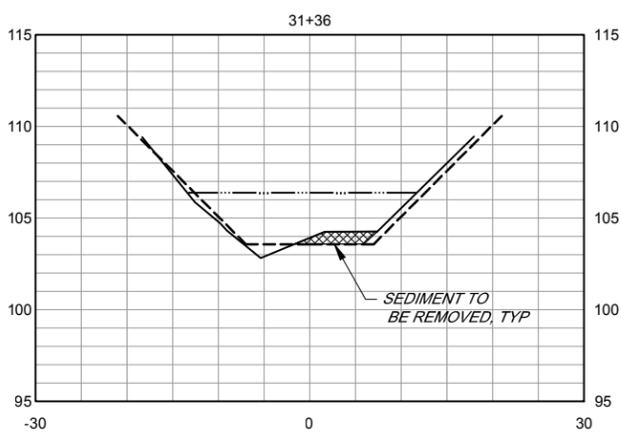
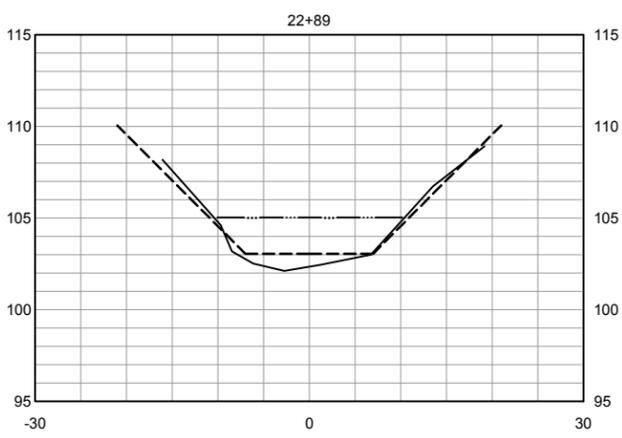
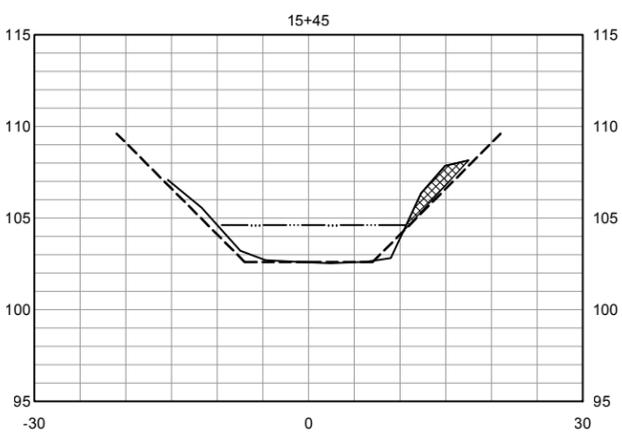
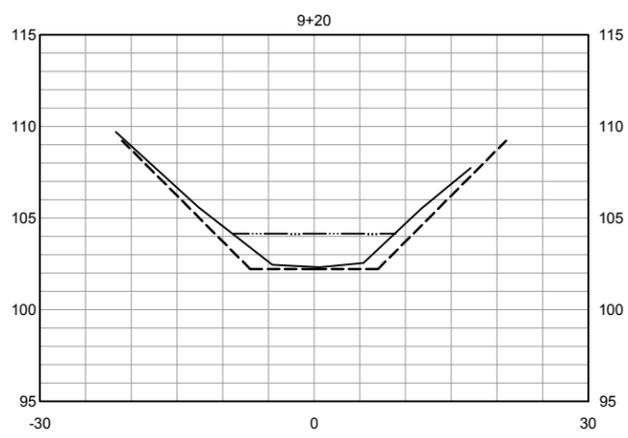
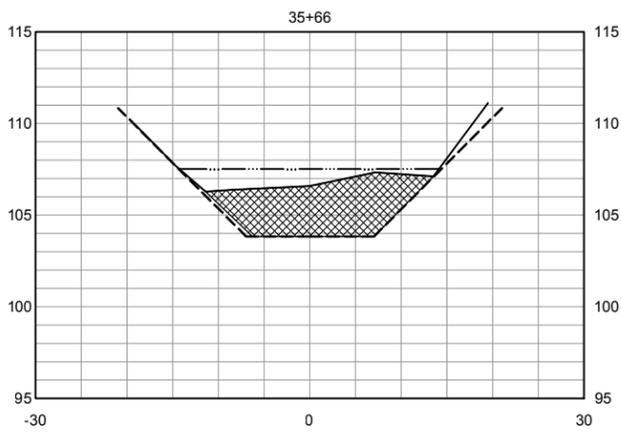
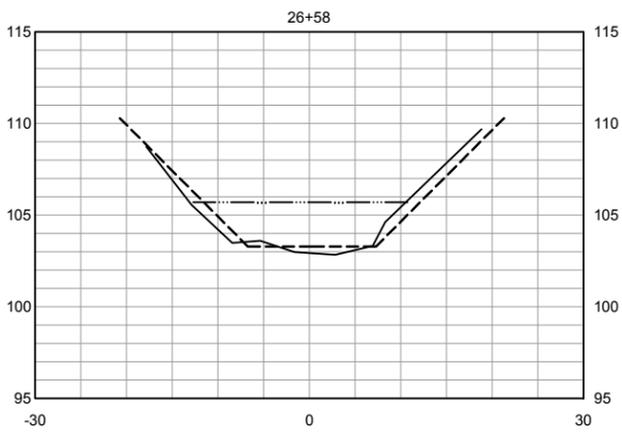
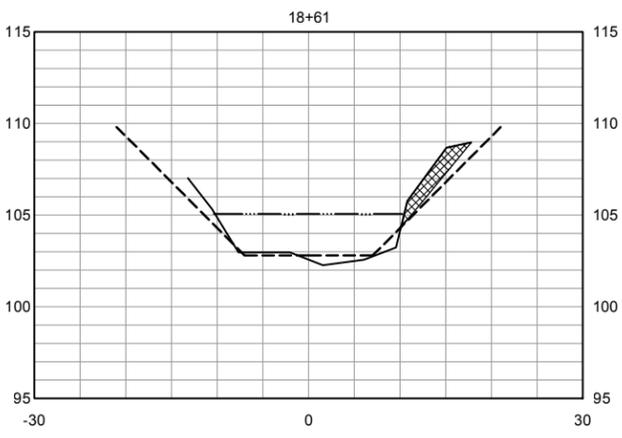
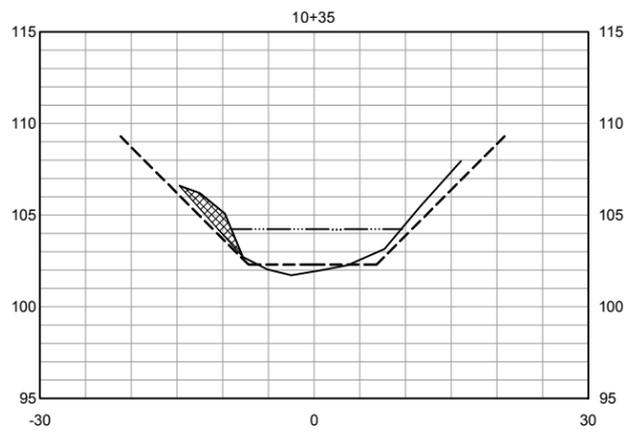
NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: #####
DRAWN: ---	
REVIEWED: ---	

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A		
PLAN AND PROFILE STA 32+00 TO STA 36+05		
FILE NAME: S_F_COPELAND-2014_CIVIL	DRAWING NUMBER: C-3	SHEET 4 OF ##

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PRELIMINARY
90% SUBMITTAL
 FOR REVIEW PURPOSES ONLY
 ####

SECTIONS
 SCALE HORIZ 1" = 10'
 VERT 1" = 5'

BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
 DATE: #####
 DRAWN: ---
 REVIEWED: ---

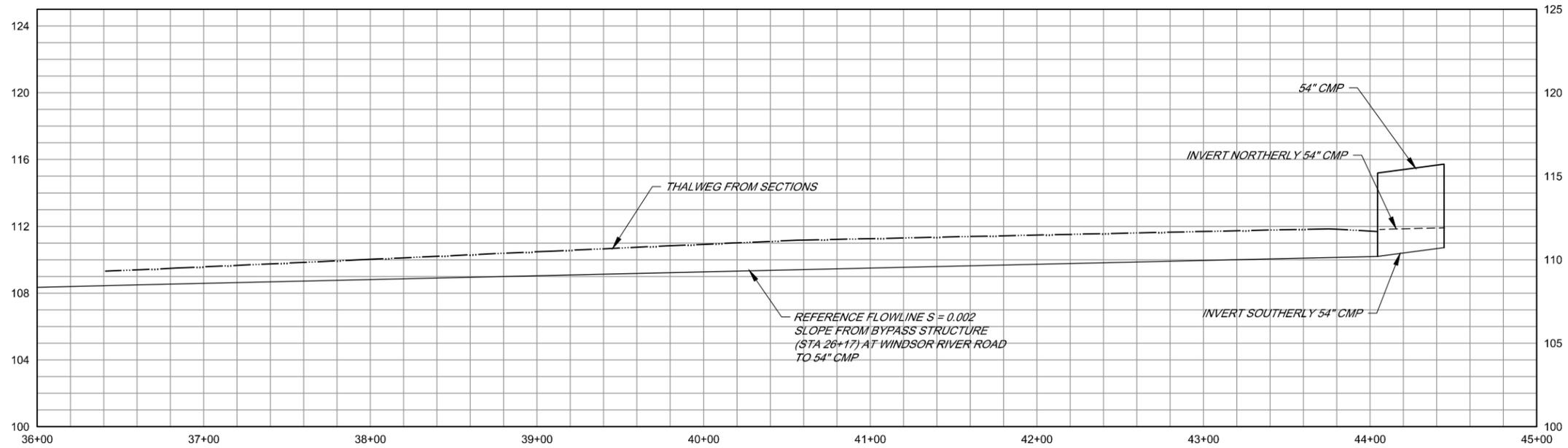
SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A

SECTIONS

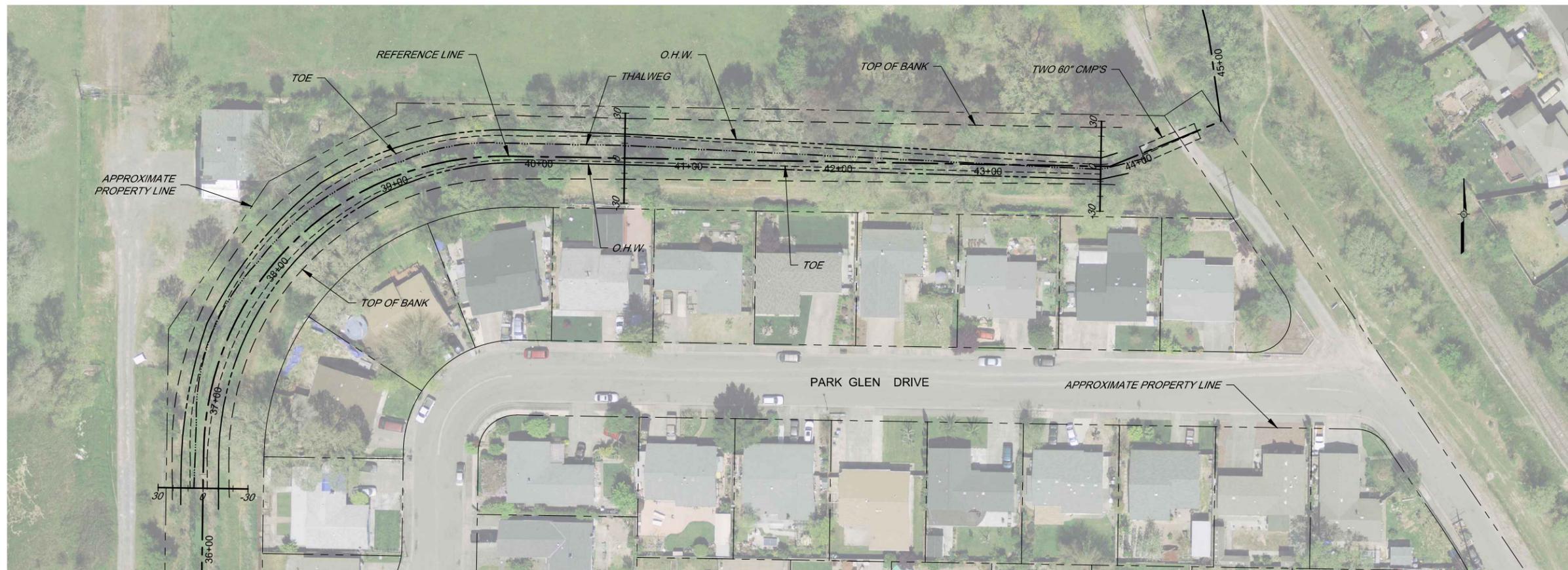
FILE NAME: S_F_COPELAND-2014_CIVIL
 CONTRACT NUMBER: _____

DRAWING NUMBER: C-4
 SHEET 5 OF ##

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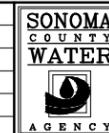
PROFILE
SCALE HORIZ 1" = 40'
VERT 1" = 4'



PLAN
SCALE 1" = 40'

BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

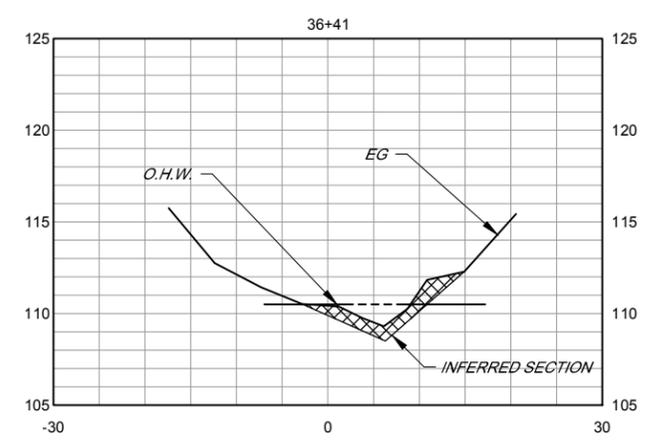
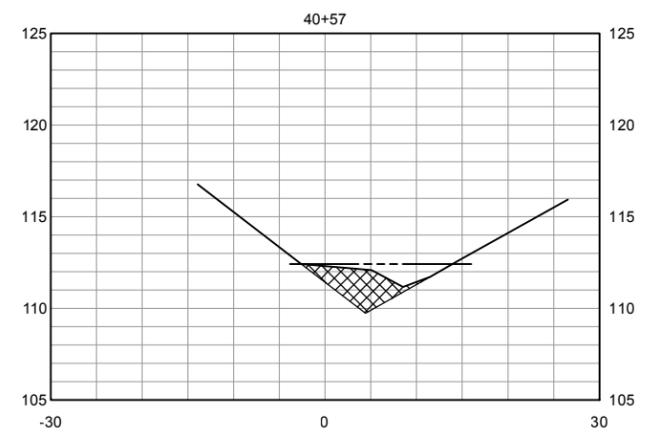
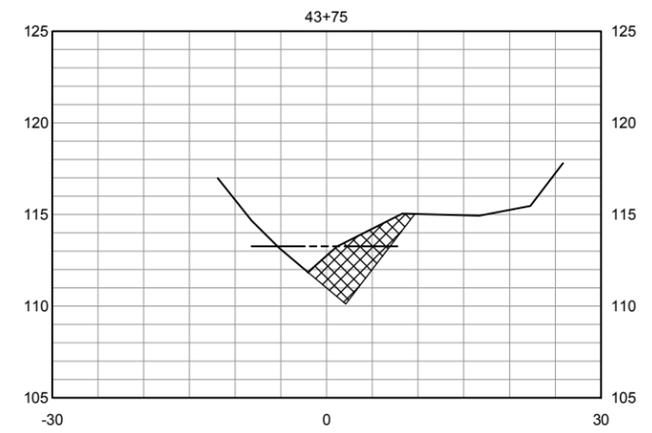


SCALE: AS SHOWN	DATE: 11/22/2013
DRAWN: ADF	
REVIEWED:	

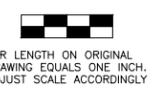
SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A	
STARR CREEK - REACH 2	
PLAN AND PROFILE STA 36+00 TO STA 45+00	
FILE NAME: 2013_Starr-Crk_civil	DRAWING NUMBER: C-1
CONTRACT NUMBER:	SHEET 2 OF 3

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\\sdata\proj\ford\controlzone\1a\Starr_Creek\2013_Starr_Crk



SECTIONS
 SCALE HORIZ 1" = 10'
 VERT 1" = 5'



BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

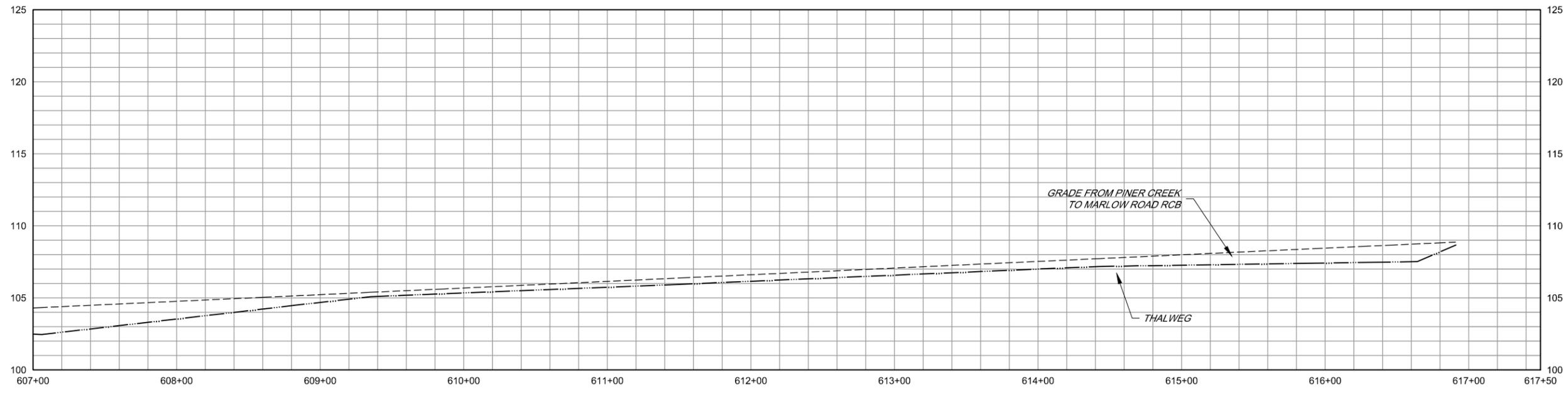
NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: 11/22/2013
 DRAWN: ADF
 REVIEWED:

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
STARR CREEK - REACH 2
SECTIONS

FILE NAME: 2013_Starr-Crk_civil CONTRACT NUMBER:
 DRAWING NUMBER: C-2 SHEET 3 OF 3



PROFILE

SCALE HORIZ 1" = 40'
VERT 1" = 4'



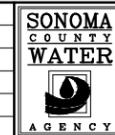
PLAN

SCALE 1" = 40'



BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

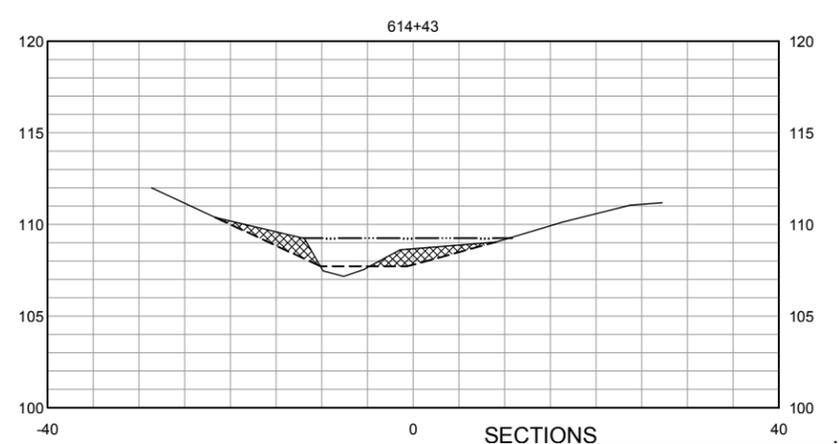
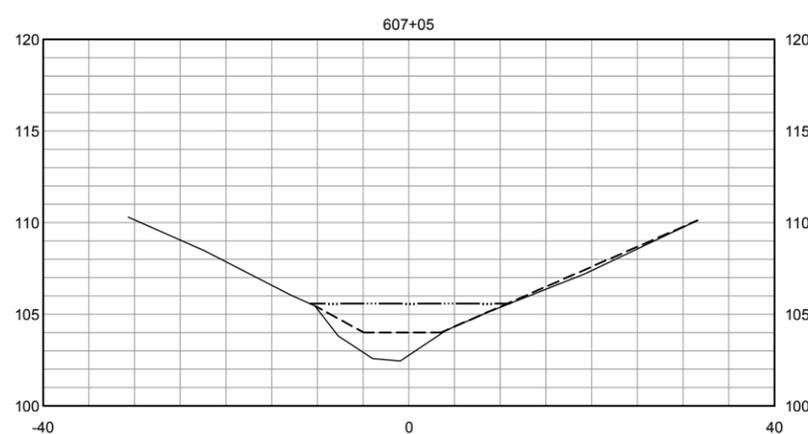
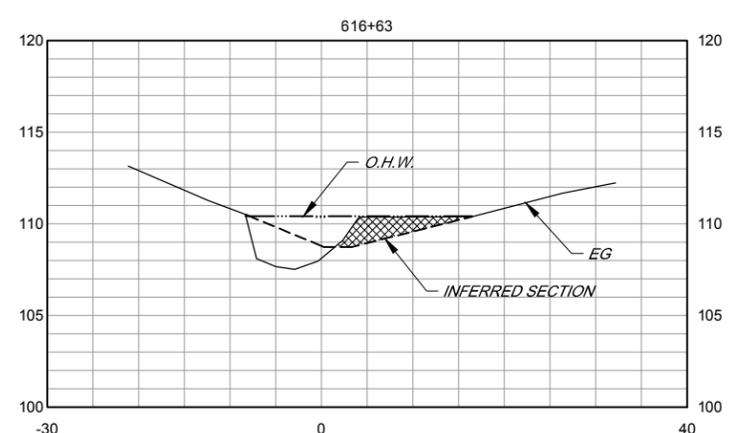
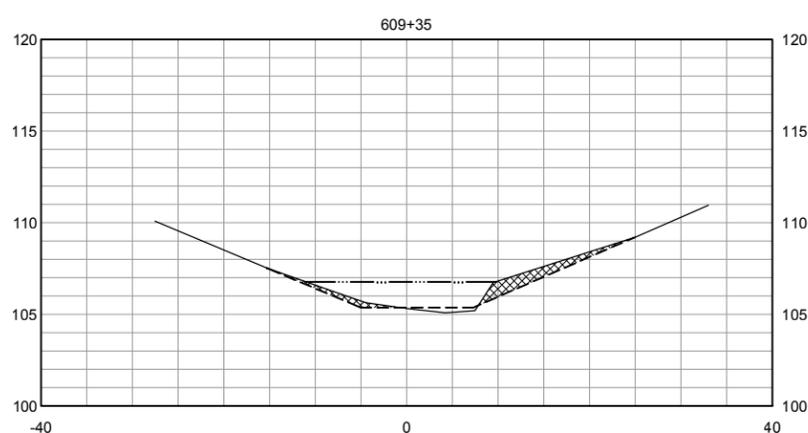
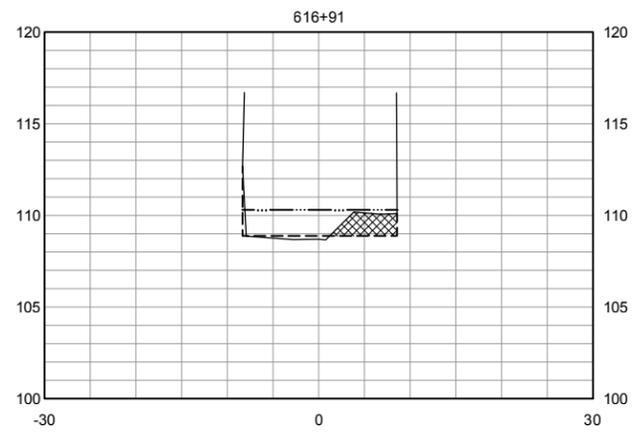
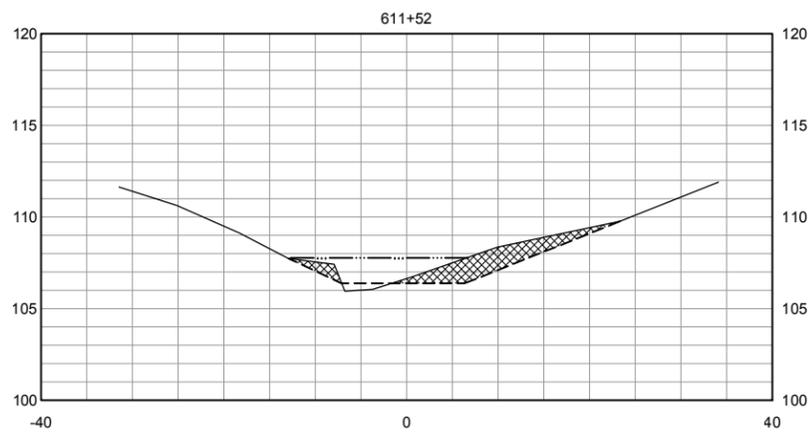


SCALE: AS SHOWN	DATE: March 18, 2014
DRAWN: ---	
REVIEWED: ---	

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A		
STEELE CREEK SMP REACH 1 (2014)		
PLAN AND PROFILE STA 607+00 TO STA 617+00		
FILE NAME: 2014-STEELE_CRK-CIVIL	DRAWING NUMBER: C-1	SHEET 2 OF 3
CONTRACT NUMBER:		

I:\sdata\poflood\controlzone 1a\Steele_Creek\2014\Steele_Crk

\\sdata\proj\ford\controlzone\1a\Steele_Creek\2014\Steele_Crk



SECTIONS
SCALE HORIZ 1" = 10'
VERT 1" = 5'

BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: March 18, 2014

DRAWN: ---

REVIEWED: ---

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A

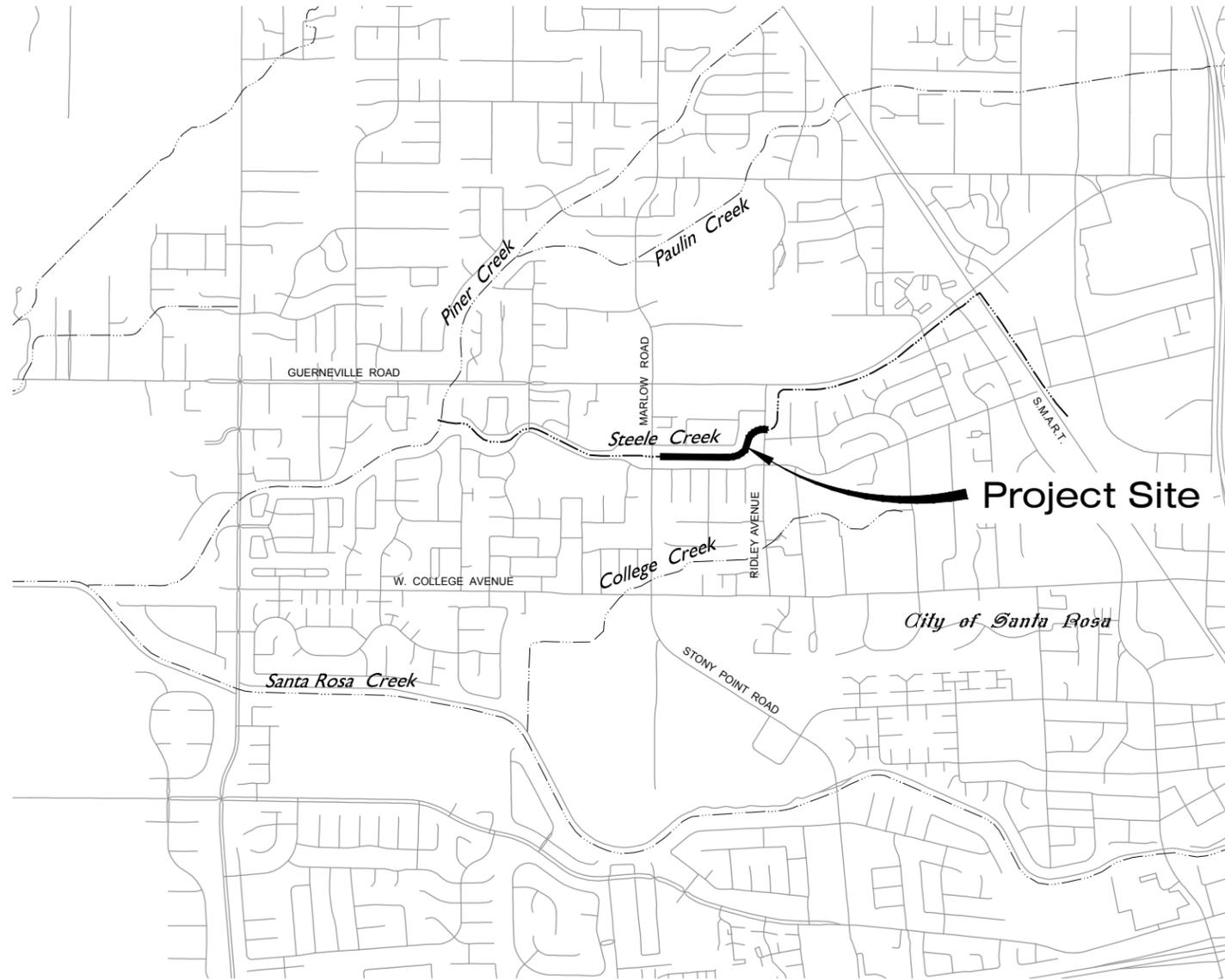
STEELE CREEK SMP REACH 1 (2014)

SECTIONS

FILE NAME: 2014-STEELE_CRK-CIVIL DRAWING NUMBER: C-2 SHEET 3 OF 3

CONTRACT NUMBER:

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A STEELE CREEK - REACH 2 REACH SCALE SEDIMENT REMOVAL



VICINITY MAP

NOT TO SCALE



LOCATION MAP

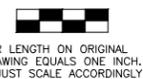
NOT TO SCALE

STEELE CREEK

EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAR OR FRONT END LOADER OPERATING IN CHANNEL	STA 619+02 TO STA 634+44	1,542	6	39,525	.5	171

INDEX TO DRAWINGS

SHEET No	SHEET TITLE	SHEET DESCRIPTION
1	G-1	INDEX TO DRAWINGS, LOCATION AND VICINITY MAPS
2	C-1	SEDIMENT REMOVAL PLAN AND PROFILE STA 617+00 TO STA 628+00
3	C-2	SEDIMENT REMOVAL PLAN AND PROFILE STA 628+00 TO STA 635+00
4	C-3	SEDIMENT REMOVAL TYPICAL SECTIONS



BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH, ADJUST SCALE ACCORDINGLY

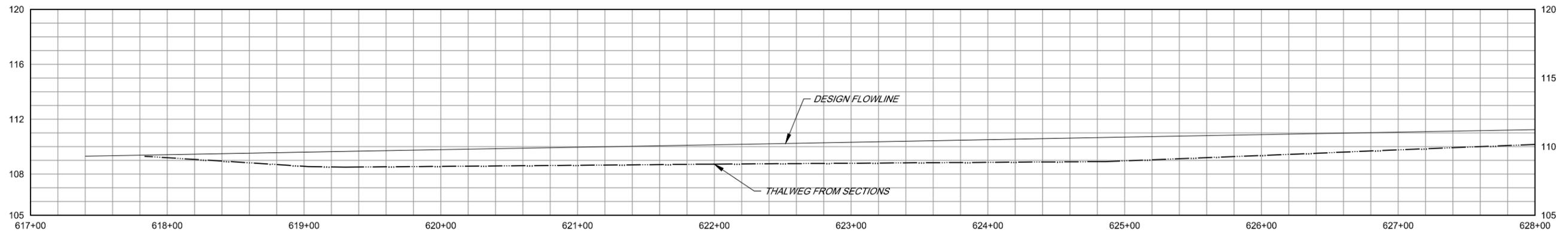
NO.	DATE	REVISION	BY



SCALE:	AS SHOWN	DATE:	3/13/2013
DRAWN:	SMP		
REVIEWED:			

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A STEELE CREEK - REACH 2 INDEX TO DRAWINGS, LOCATION AND VICINITY MAPS			
FILE NAME:	2013_SteeleCk_General.dwg	DRAWING NUMBER:	G-1
CONTRACT NUMBER:			SHEET 1 OF 4

I:\sdata\proj\100\control\zone 1a\Steele_Creek\2013\Steele_Ck



PROFILE

SCALE HORIZ 1" = 40'
VERT 1" = 4'



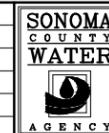
PLAN

SCALE 1" = 40'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
22 NOV 2013

BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

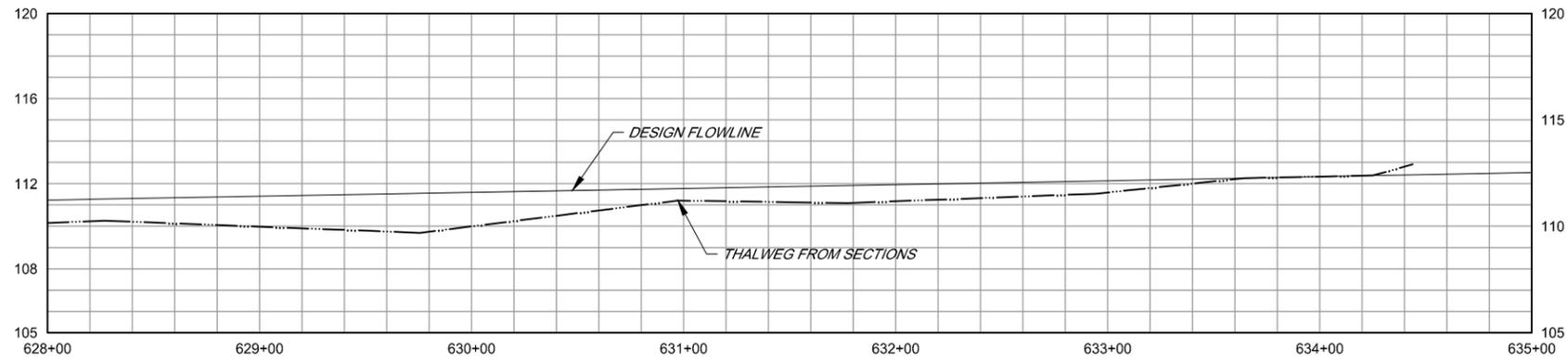
NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 11/22/2013
DRAWN: ADF	
REVIEWED:	

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A		
STEELE CREEK - REACH 2		
SEDIMENT REMOVAL PLAN AND PROFILE STA 617+00 TO STA 628+00		
FILE NAME: 2013_Steele-Crk_CIVIL	DRAWING NUMBER: C-1	SHEET 2 OF 4
CONTRACT NUMBER:		

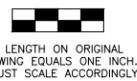
I:\sdata\proj\flow_control\zone 1a\Steele_Creek\2013\Steele_Crk



PROFILE
 SCALE HORIZ 1" = 40'
 VERT 1" = 4'

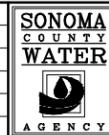


PLAN
 SCALE 1" = 40'



BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

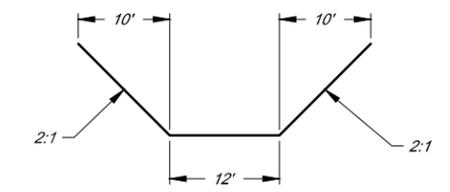
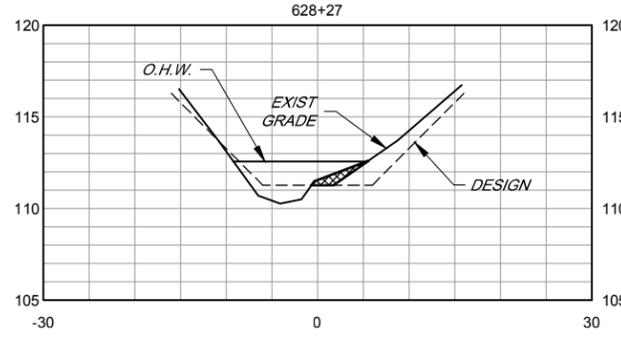
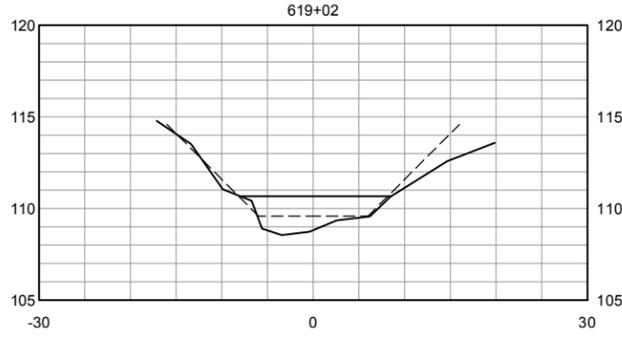
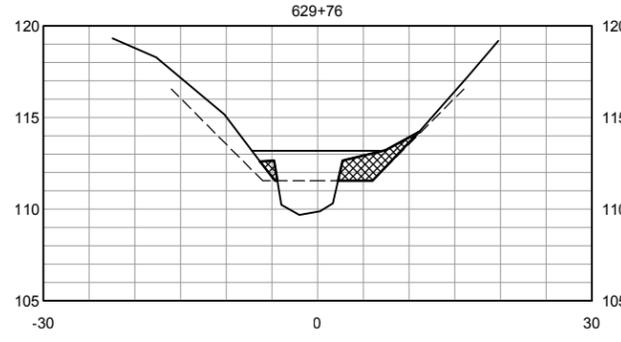
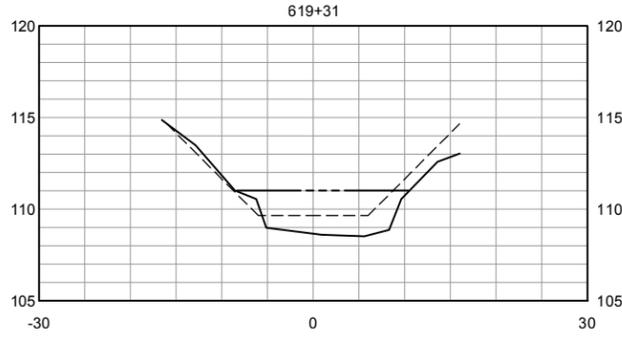
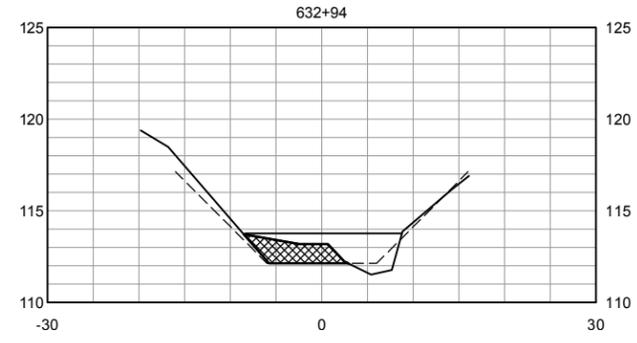
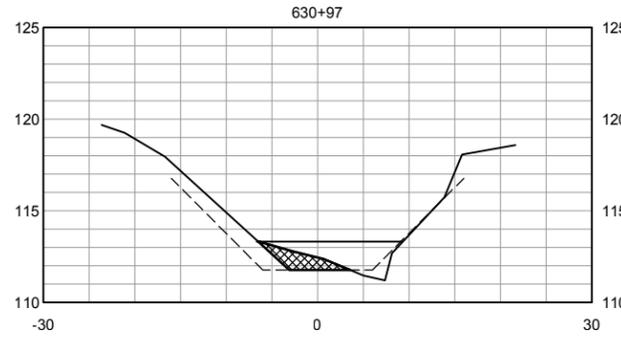
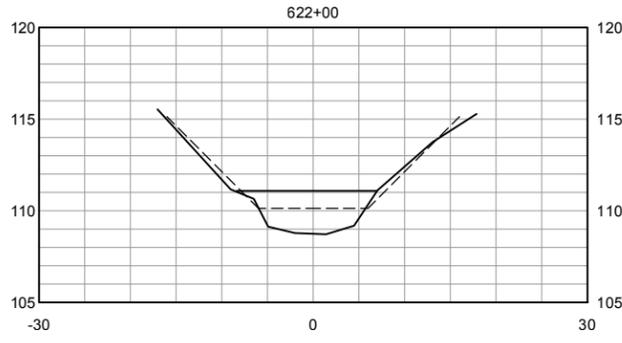
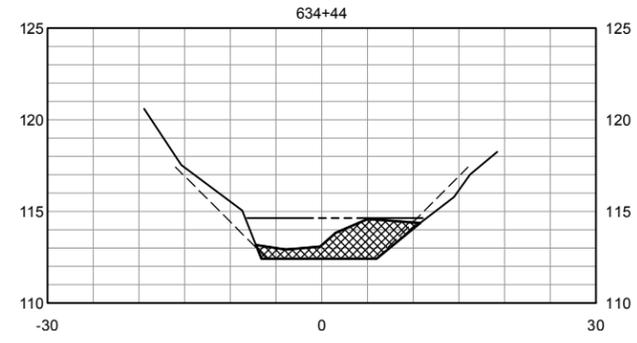
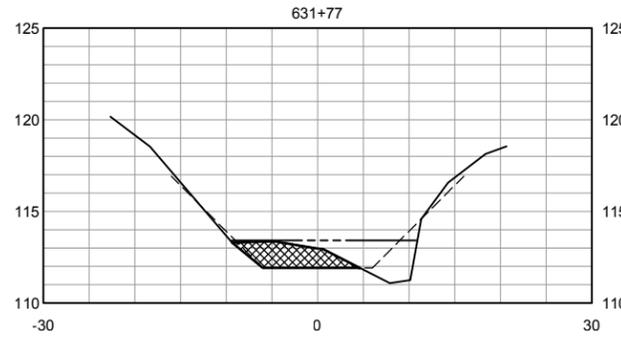
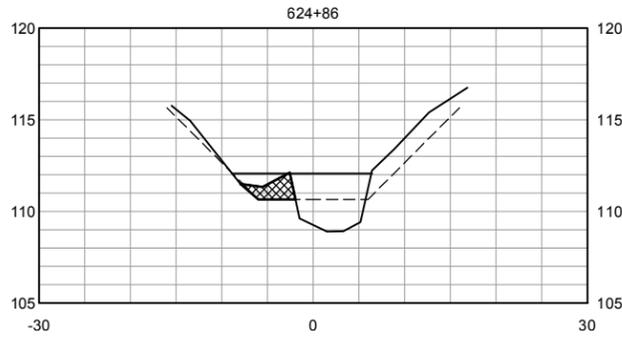
NO.	DATE	REVISION	BY



SCALE: AS SHOWN
 DATE: 11/22/2013
 DRAWN: ADF
 REVIEWED:

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
 STEELE CREEK - REACH 2
 SEDIMENT REMOVAL PLAN AND PROFILE STA 628+00 TO STA 635+00
 FILE NAME: 2013_Steele-Crk_CIVIL
 CONTRACT NUMBER:
 DRAWING NUMBER: C-2
 SHEET 3 OF 4

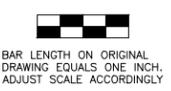
I:\sdata\proj\100\controlzone 1a\Steele_Creek\2013\Steele_Crk



TYPICAL SECTION
not to scale

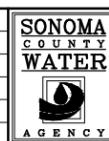
SECTIONS

SCALE HORIZ 1" = 10'
VERT 1" = 5'



BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

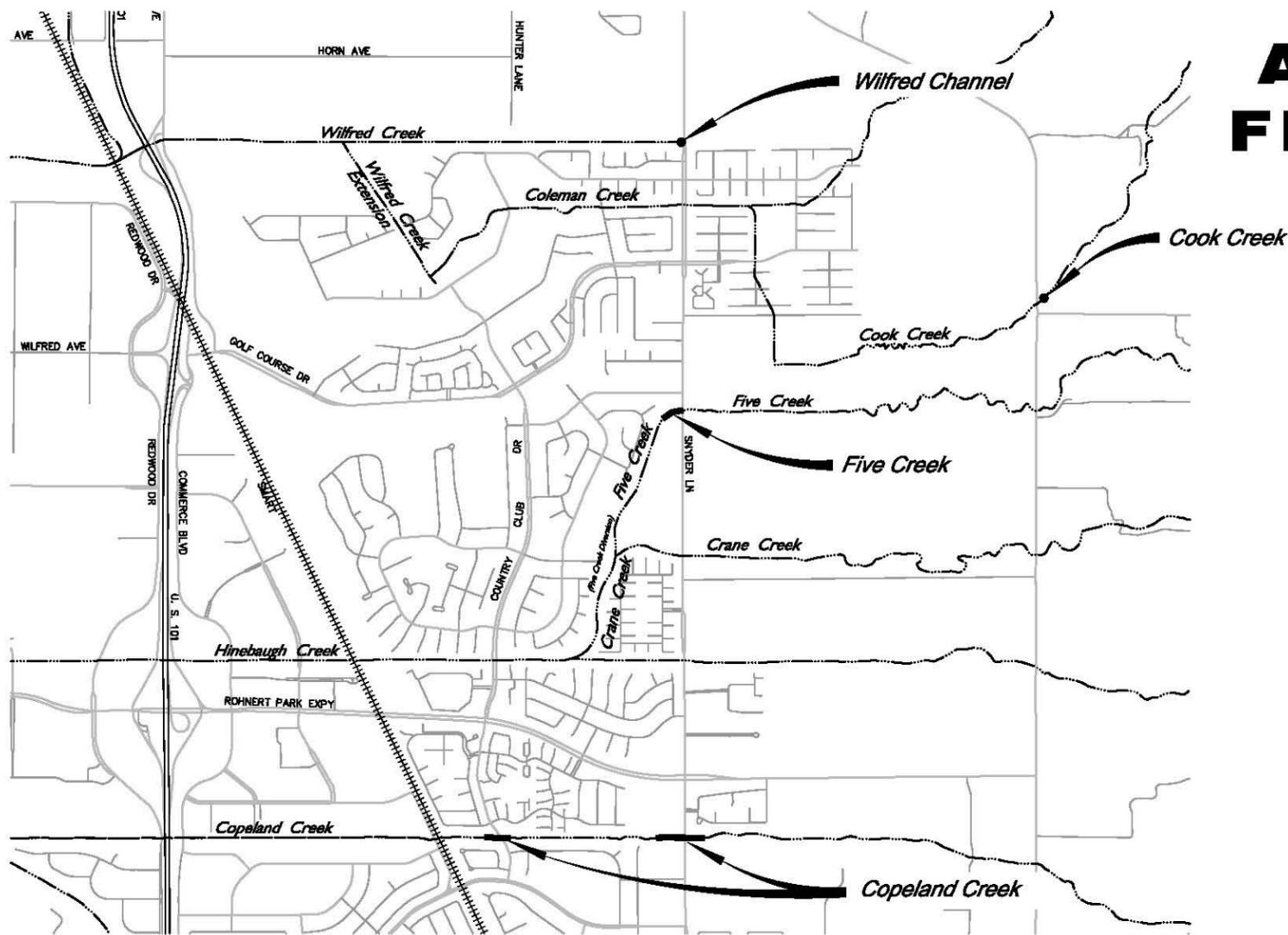


SCALE: AS SHOWN DATE: 11/22/2013
DRAWN: ADF
REVIEWED:

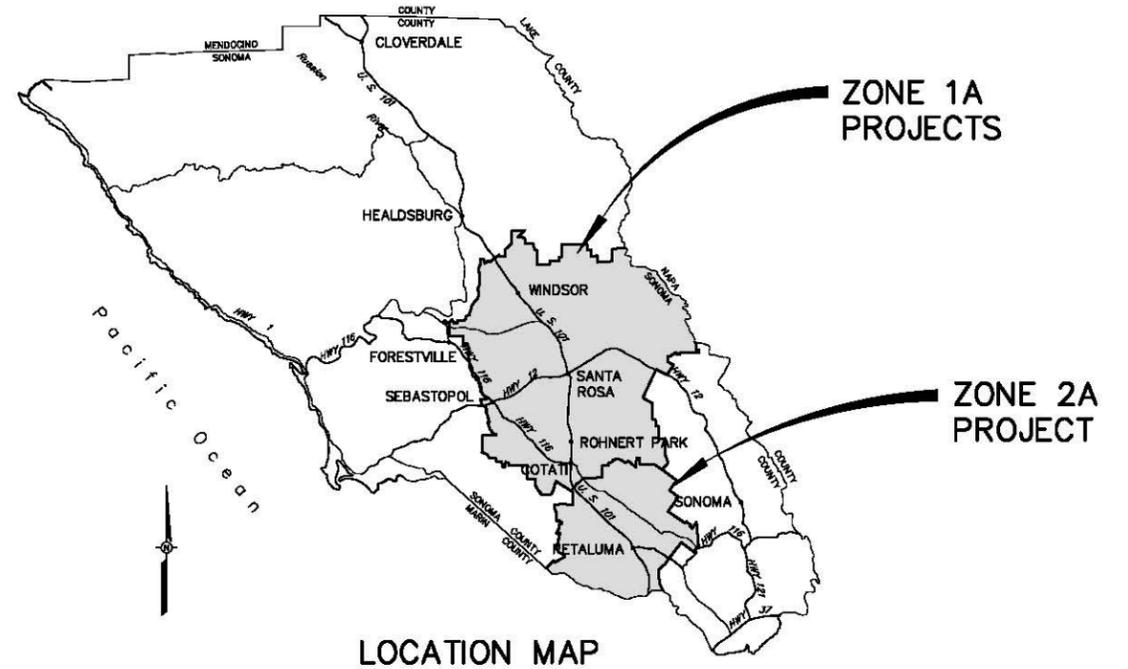
SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
STEELE CREEK - REACH 2
SEDIMENT REMOVAL TYPICAL SECTIONS
FILE NAME: 2013_Steele-Crk_CIVIL DRAWING NUMBER: C-3 SHEET 4 OF 4
CONTRACT NUMBER:

I:\sdata\proj\flow_control\zone 1a\Steele_Creek\2013_Sheets_Crk

ADOBE, COOK, COPELAND, FIVE, AND WILFRED CREEKS LOCALIZED SEDIMENT REMOVAL



ZONE 1A

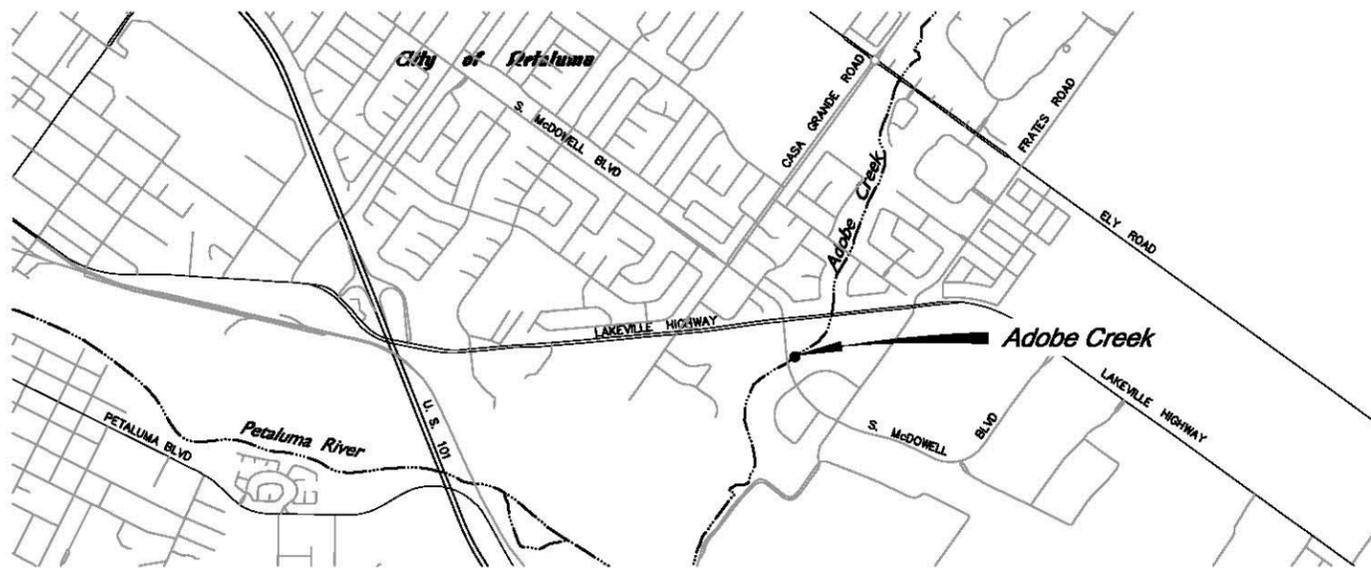


LOCATION MAP

NOT TO SCALE

DRAWING INDEX

SHEET No.	SHEET TITLE	TITLE
1	G-1	LOCATION AND VICINITY MAPS
2	C-5	FIVE CREEK SEDIMENT REMOVAL PLAN, PROFILE, AND CROSS SECTIONS
3	C-3	WILFRED CREEK SEDIMENT REMOVAL
4	C-1	ADOBE CREEK SEDIMENT REMOVAL PLAN
5	C-2	ADOBE CREEK SEDIMENT REMOVAL CROSS SECTIONS
6	C-1	COPELAND CREEK AT COUNTRY CLUB DRIVE SEDIMENT REMOVAL PLAN AND CROSS SECTIONS
7	C-2	COPELAND CREEK AT SNYDER LANE SEDIMENT REMOVAL PLAN AND CROSS SECTIONS
8	C-1	COOK CREEK SEDIMENT REMOVAL



ZONE 2A
VICINITY MAP

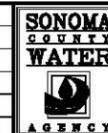
NOT TO SCALE

**PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY**
29 MAR 2012

NOTE:
ALL EXCAVATION IS BELOW OHW

BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

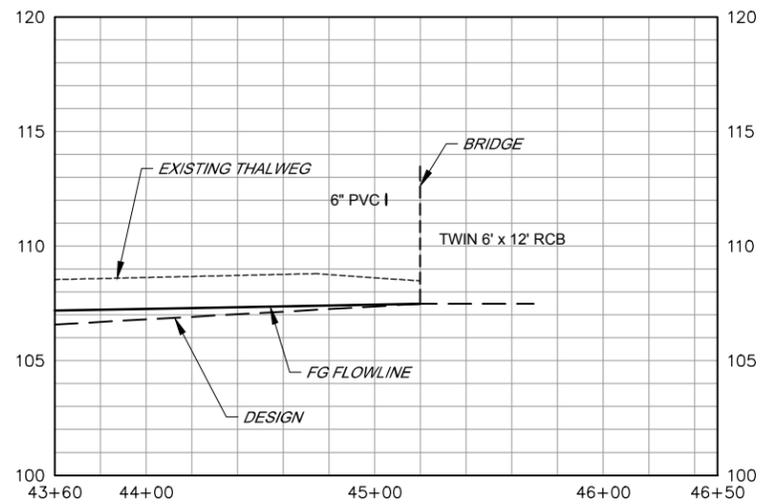
NO.	DATE	REVISION	BY



SCALE :	AS SHOWN	DATE :	03/29/12
DRAWN :	SMP	REVIEWED :	

SEDIMENT REMOVAL – ZONE 1A AND ZONE 2A
LOCATION AND VICINITY MAPS

\\sfd-ads\pro\p\loc control\zone 1\FIVE_CRK-deversion\2011\2011SedRemov_BasinAndInstream_Index



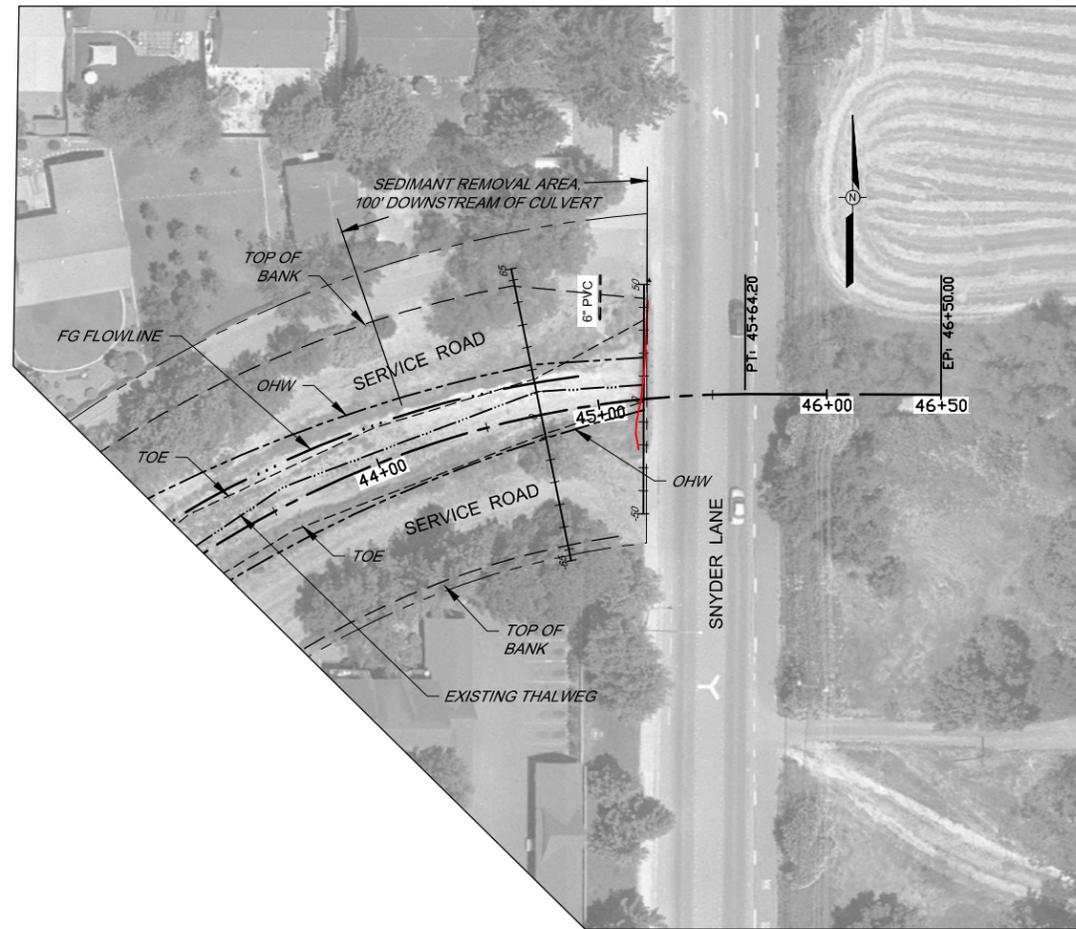
PROFILE

SCALE: HORIZ 1" = 40'
VERT 1" = 4'

FIVE CREEK

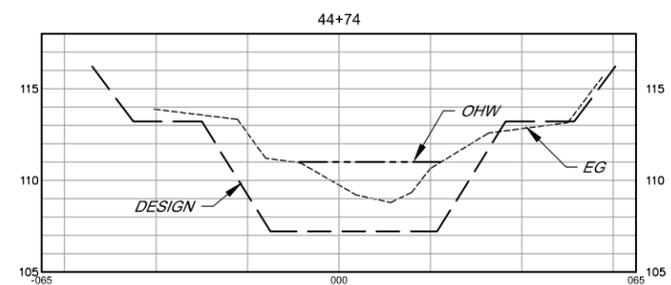
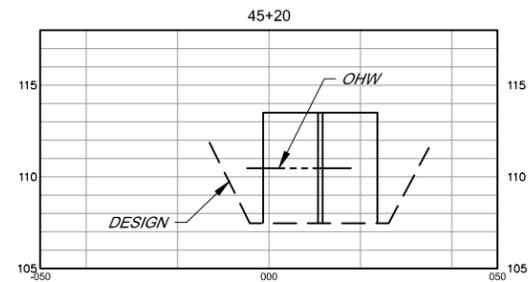
EXCAVATION

PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAD AND DOZER IN CHANNEL	STA 44+00 TO STA 45+20	120	40	4,800	.6	100
TOTAL =		120	TOTAL =	4,800	TOTAL =	100



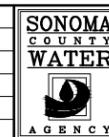
PLAN

SCALE: 1" = 40'



**PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY**
 29 MAR 2012

NO.	DATE	REVISION	BY



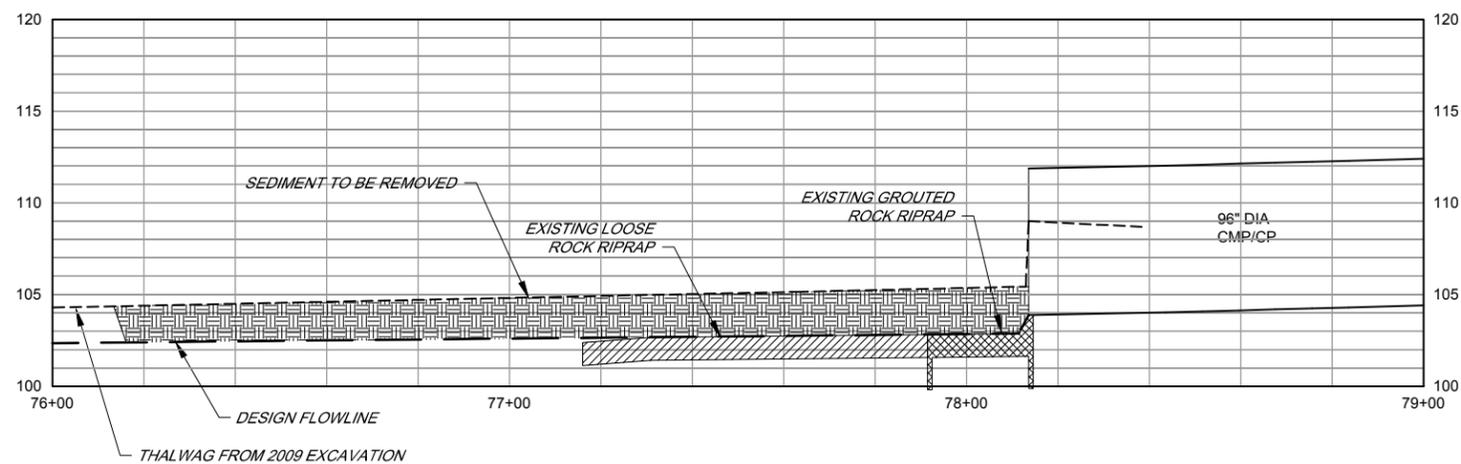
SCALE:	AS SHOWN	DATE:	03/29/12
DRAWN:	SMP	REVIEWED:	

**SEDIMENT REMOVAL – ZONE 1A AND ZONE 2A
FIVE CREEK SEDIMENT REMOVAL PLAN, PROFILE,
AND CROSS SECTIONS**

FILE NAME: FIVE_02-17-11_P&P.dwg	DRAWING NUMBER: C-5	SHEET 2 OF 8
----------------------------------	---------------------	--------------

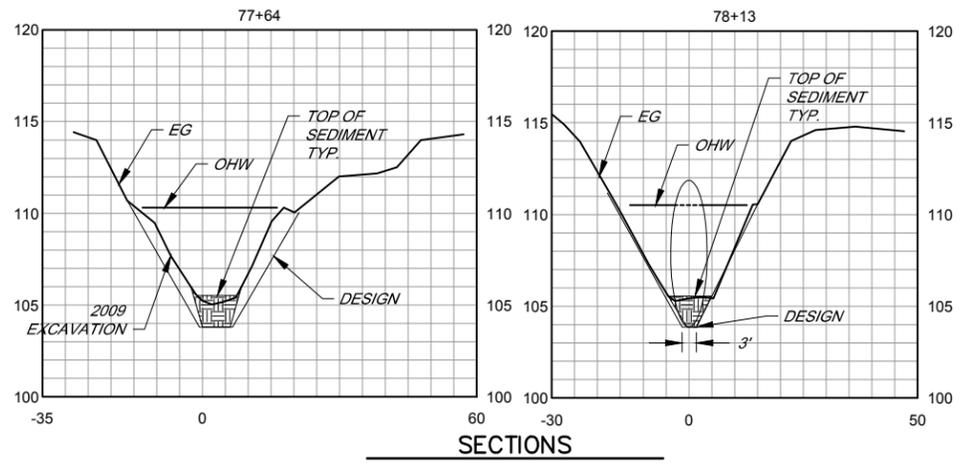
BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

\\srd-08a-proj3\Flood_control\zone 1a\FIVE_Crk-deverston\2011\FIVE_02-17-11_P&P



PROFILE

SCALE: HORIZ 1" = 20'
VERT 1" = 5'



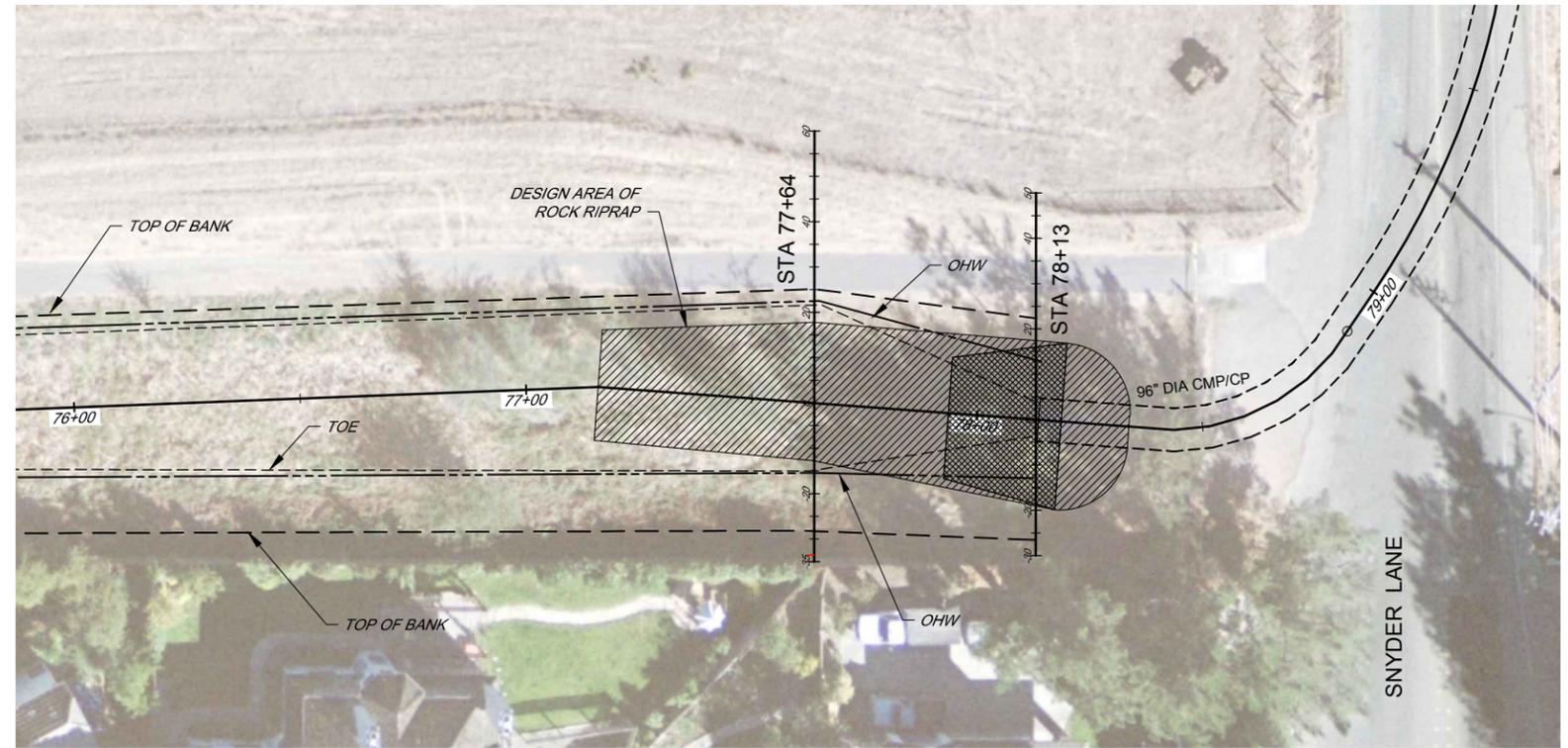
SECTIONS

SCALE: HORIZ 1" = 20'
VERT 1" = 5'

WILFRED CREEK

EXCAVATION

PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OPERATING FROM SERVICE ROAD	STA 76+14± TO STA 78+14	200	10	2000	1.35	100

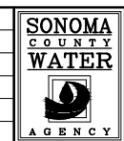


PLAN

SCALE: 1" = 20'

**PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY**
29 MAR 2012

NO.	DATE	REVISION	BY



SCALE: AS SHOWN
DATE: 03/29/12
DRAWN: SMP
REVIEWED:

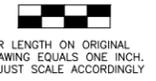
**SEDIMENT REMOVAL – ZONE 1A AND ZONE 2A
WILFRED CREEK SEDIMENT REMOVAL**

FILE NAME: C-3.dwg
CONTRACT NUMBER: --

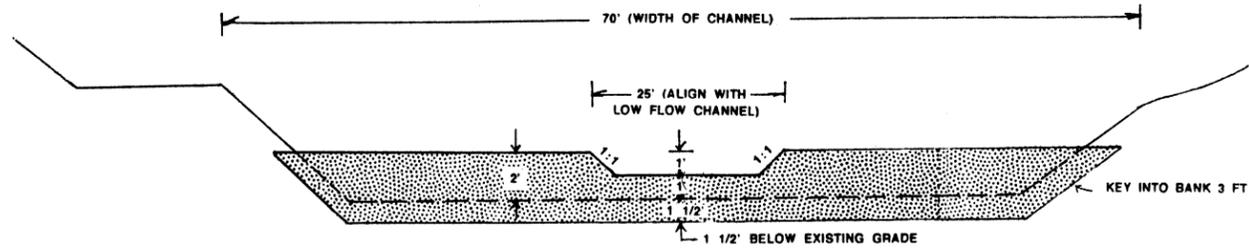
DRAWING NUMBER: C-3

SHEET 3 OF 8

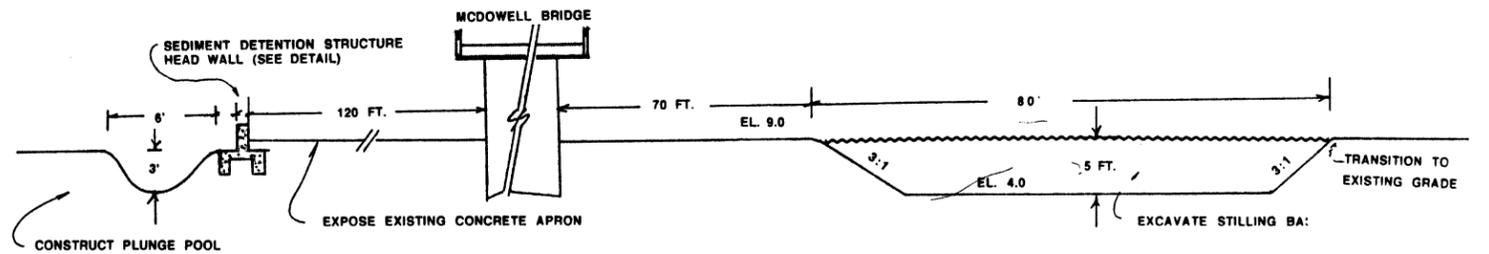
\\sdr-06.ta.proj\Flood_control\zone 1a\WILFRED\2011\C-3



BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY



SEDIMENT DETENTION STRUCTURE--FRONT VIEW
N.T.S.
(DESIGN)



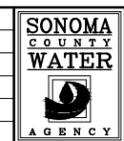
SEDIMENT DETENTION STRUCTURE--PROFILE
N.T.S.
(DESIGN)



**PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY**
29 MAR 2012

PLAN
SCALE: 1" = 20'

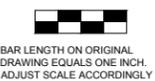
NO.	DATE	REVISION	BY



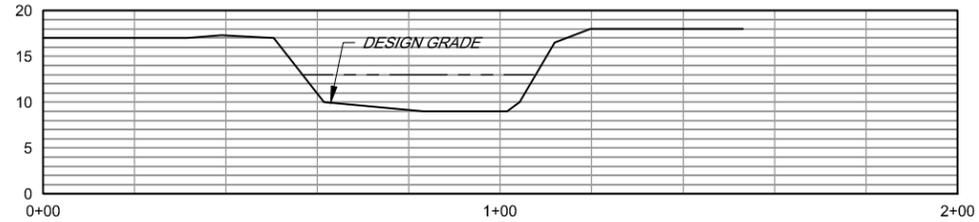
SCALE: AS SHOWN	DATE: 03/29/12
DRAWN: SMP	
REVIEWED:	

SEDIMENT REMOVAL – ZONE 1A AND ZONE 2A ADOBE CREEK SEDIMENT REMOVAL PLAN	
FILE NAME: C-Adobe_2011.dwg	DRAWING NUMBER: C-1
CONTRACT NUMBER: ##	SHEET 4 OF 8

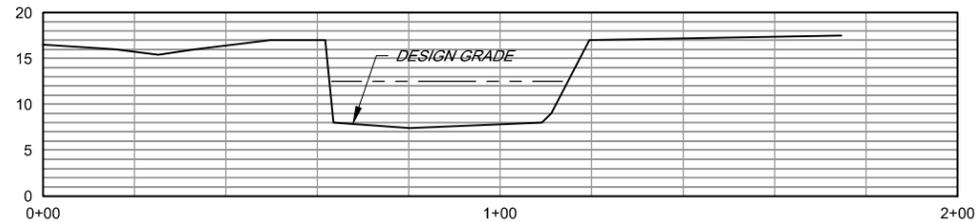
\\sdata\proj\ford\controlzone 2\Adobe Creek\SED-BASIN Adobe2011\C-Adobe_2011



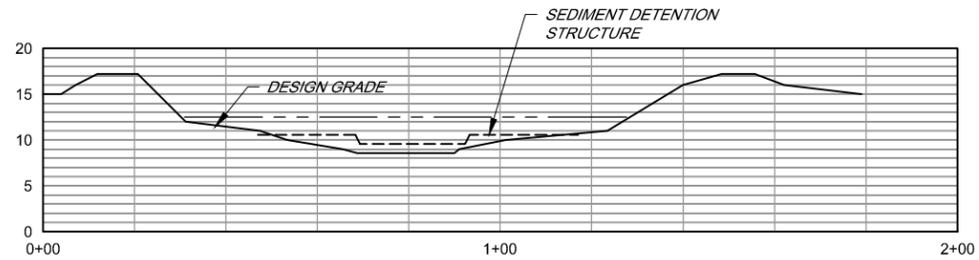
BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY



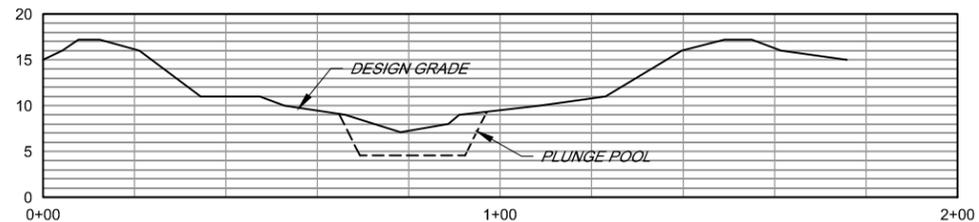
SECTION 4



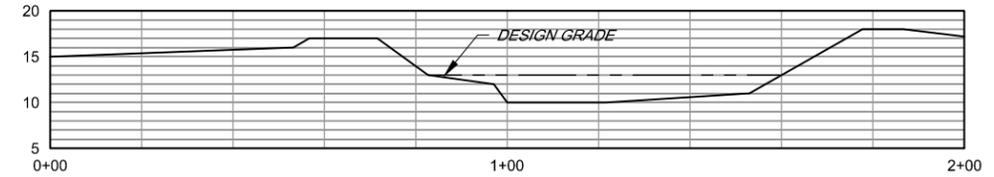
SECTION 3



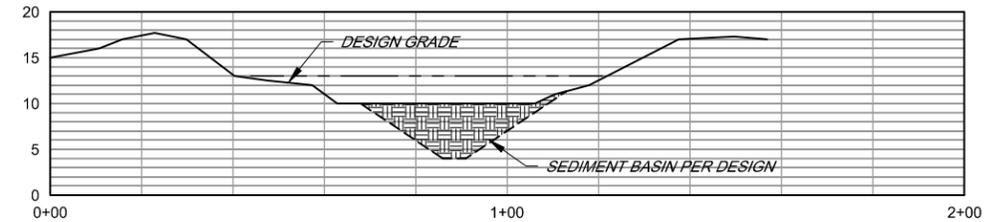
SECTION 2



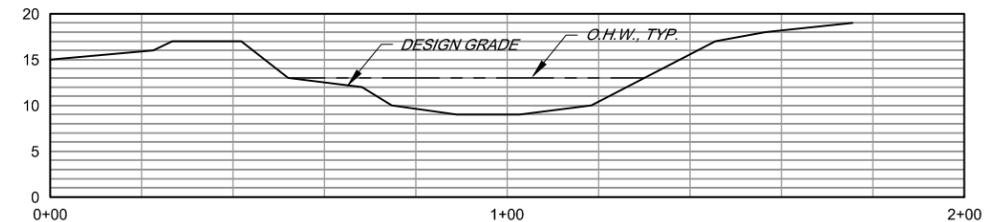
SECTION 1



SECTION 7



SECTION 6



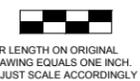
SECTION 5

ADOBE CREEK						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OPERATING FROM SERVICE ROAD	N/A	80	45	3600	5.6	750

PRELIMINARY
90% SUBMITTAL
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 29 MAR 2012

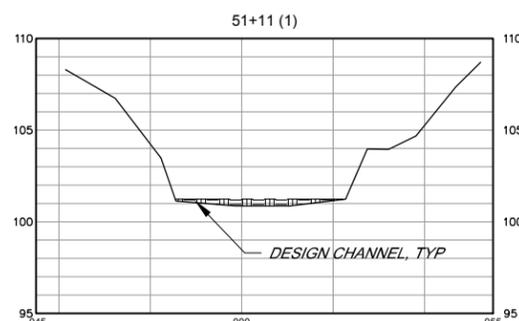
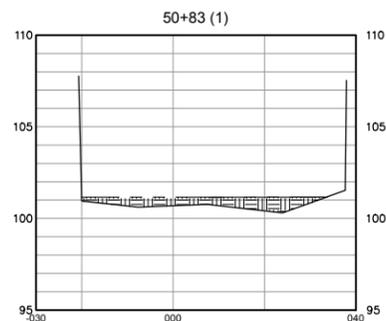
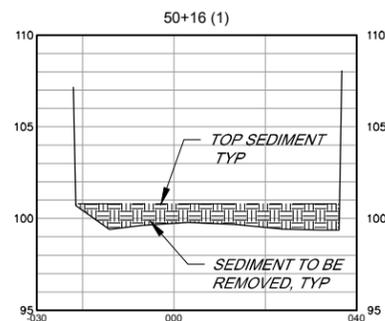
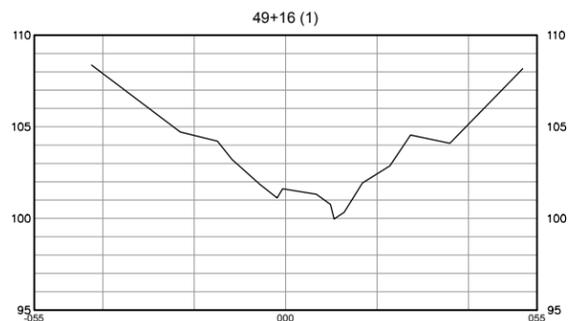
NOTE:
 SECTIONS DRAWN FROM DESIGN CONTOURS SHOWN ON THE
 DESIGN PLAN PRIOR TO CONSTRUCTION OF SEDIMENT DETENTION
 BASIN AND SEDIMENT DETENTION STRUCTURE

\\sdata\proj\ford\controlzone\2\adobe_creek\SED-BASIN_adobe2011\C-adobe_2011



BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY			SEDIMENT REMOVAL – ZONE 1A AND ZONE 2A ADOBE CREEK SEDIMENT REMOVAL CROSS SECTIONS	
				SCALE: AS SHOWN	DATE: 03/29/12	FILE NAME: C-adobe_2011.dwg	
				DRAWN: SMP	REVIEWED:	DRAWING NUMBER: C-2	SHEET 5 OF 8
				CONTRACT NUMBER: --			



SECTIONS

SCALE: HORIZ 1" = 20'
VERT 1" = 4'



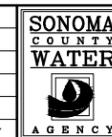
PLAN

SCALE: 1" = 20'

COPELAND CREEK						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING IN THE DEWATERED CHANNEL.	STA 49+60 TO STA 51+60	200	45	9000	1.2	400

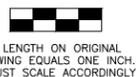
**PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY**
29 MAR 2012

NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 03/29/12
DRAWN: SMP	
REVIEWED:	

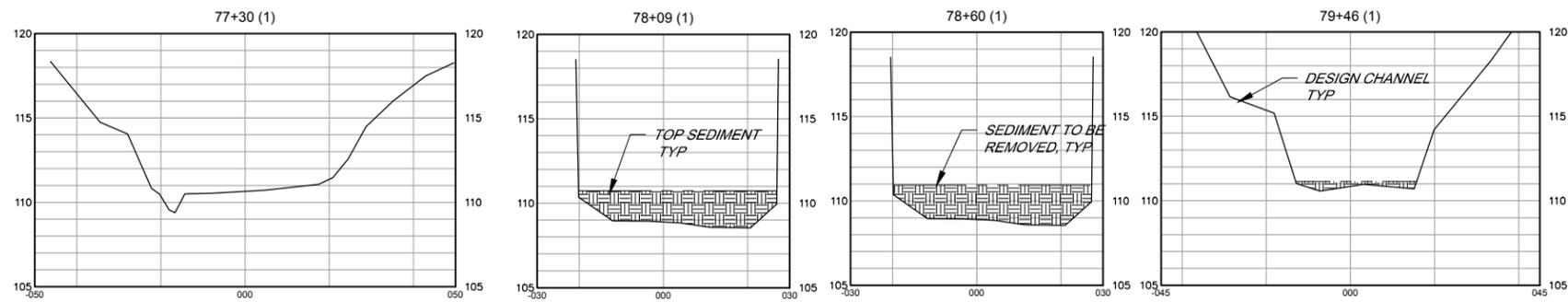
SEDIMENT REMOVAL - ZONE 1A AND ZONE 2A COPELAND CREEK AT COUNTRY CLUB DRIVE SEDIMENT REMOVAL PLAN AND CROSS SECTIONS		
FILE NAME: C1-2_COPELAND.dwg	DRAWING NUMBER: C-1	SHEET 6 OF 8
CONTRACT NUMBER: --		



BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY.

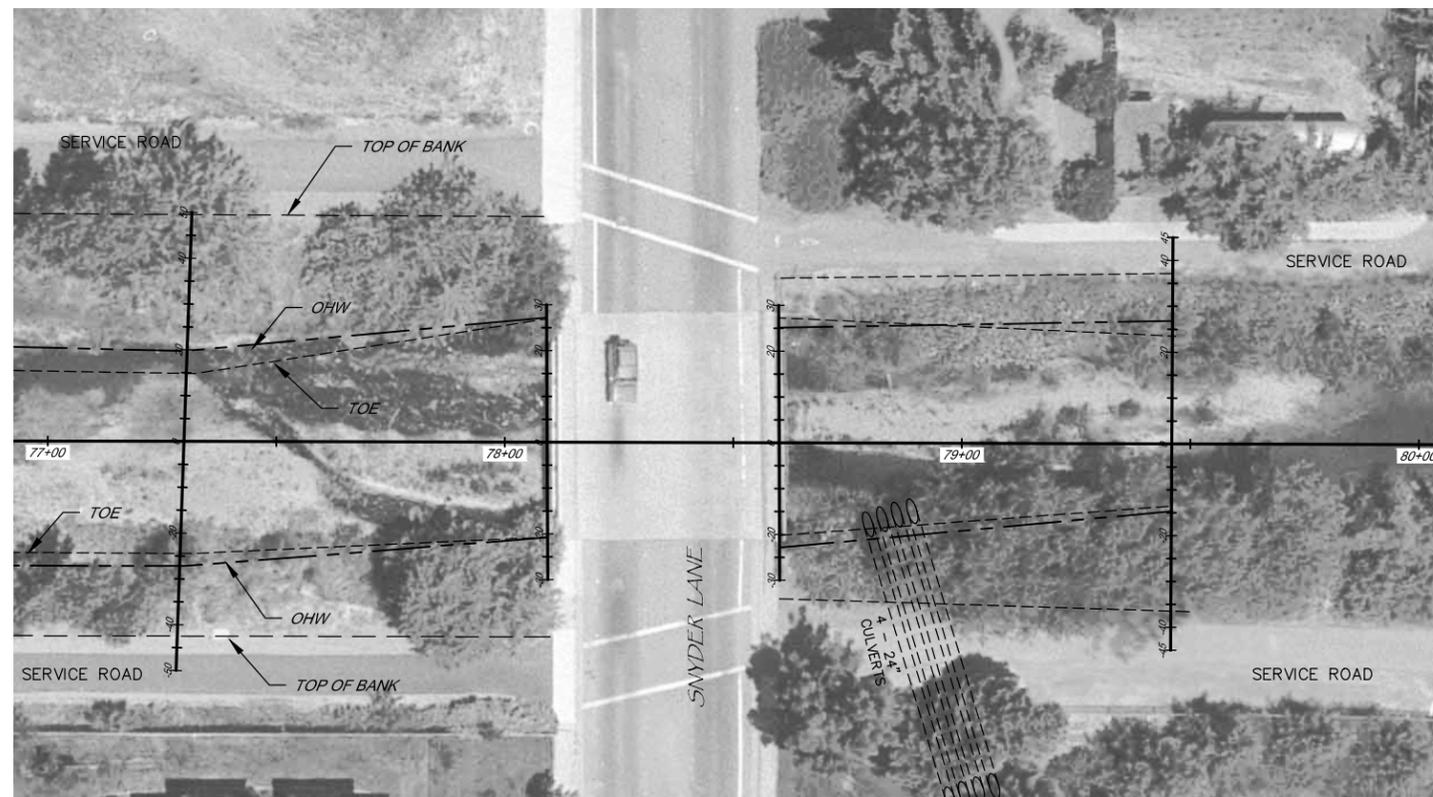
NOTE: AERIAL PHOTOGRAPHY FLOWN IN 2000

\\sdr-data-proj\flow_control\zone 1a\copeland\sediment_removal\2011\C1-2_COPELAND



SECTIONS

SCALE: HORIZ 1" = 20'
VERT 1" = 4'



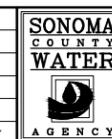
PLAN

SCALE: 1" = 20'

COPELAND CREEK						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING IN THE DEWATERED CHANNEL.	STA 77+50 TO STA 79+55	205	45	9,225	2.2	750

**PRELIMINARY
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29 MAR 2012

NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 03/29/12
DRAWN: SMP	
REVIEWED:	

SEDIMENT REMOVAL - ZONE 1A AND ZONE 2A		
COPELAND CREEK AT SNYDER LANE SEDIMENT REMOVAL PLAN AND CROSS SECTIONS		
FILE NAME: C1-2_COPELAND.dwg	DRAWING NUMBER: C-2	SHEET 7 OF 8
CONTRACT NUMBER: --		

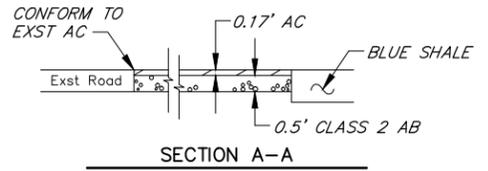
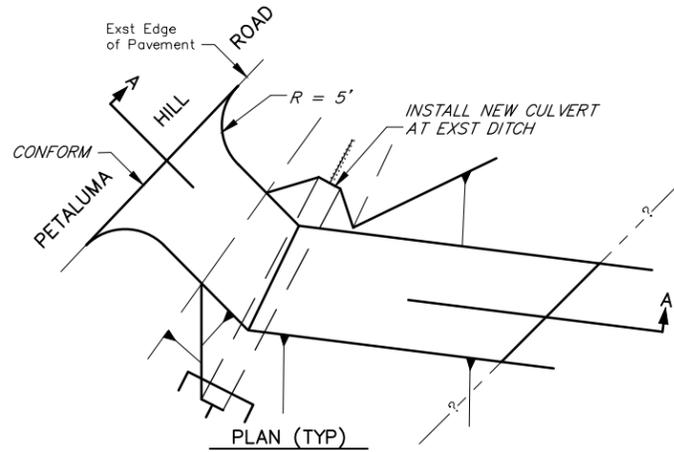
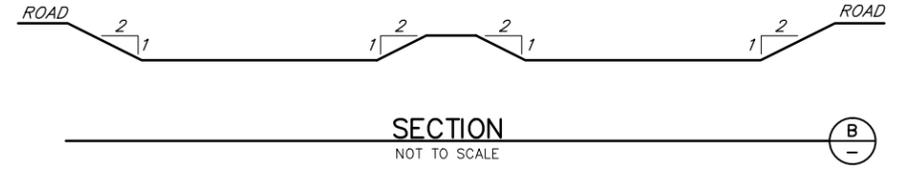


BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

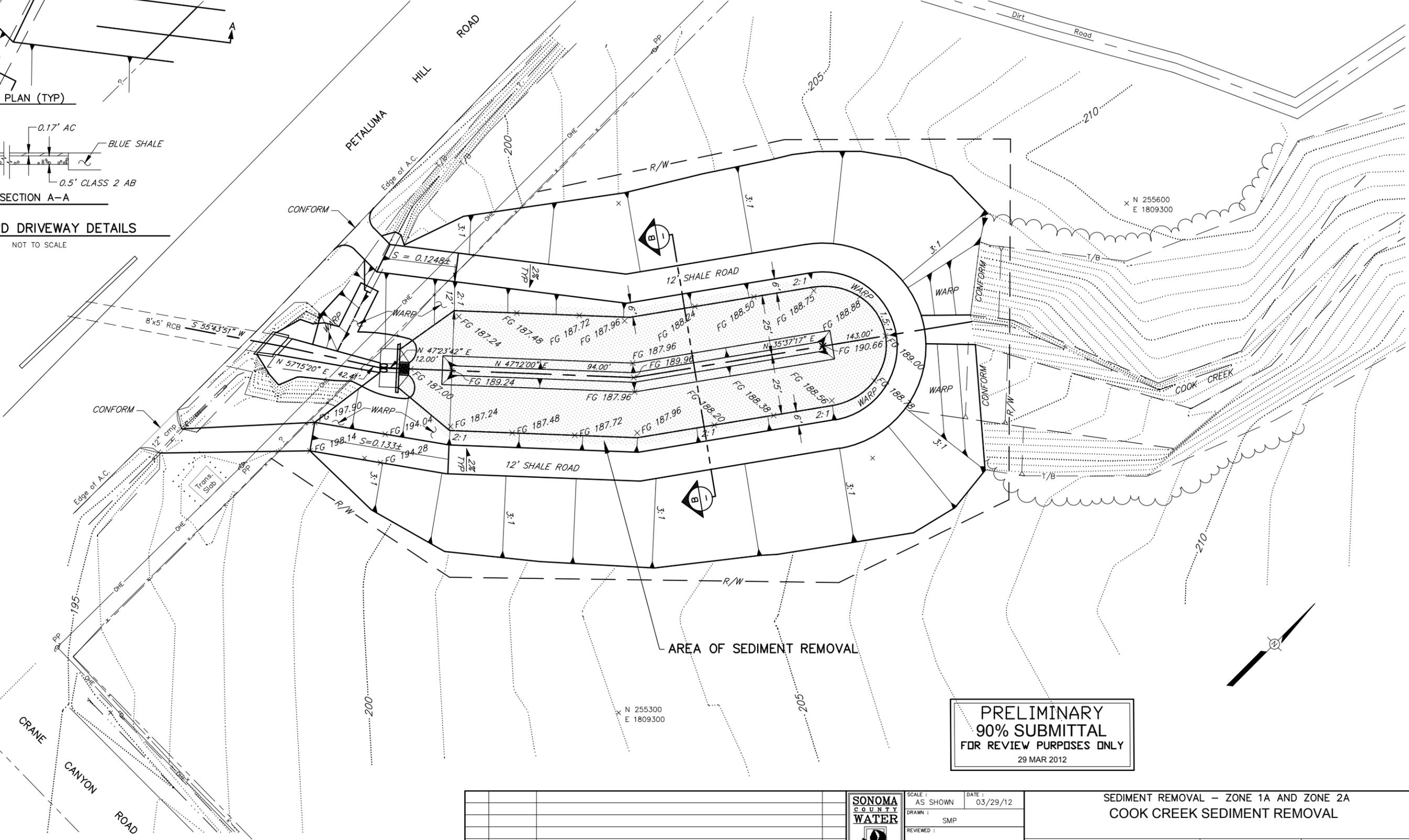
NOTE:
AERIAL PHOTOGRAPHY FLOWN IN 2000

\\sdr-data-proj\proj\control\zone 1a\copeland\sediment_removal\2011\C1-2_COPELAND

COOK CREEK EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y.(TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAD AND DOZER IN CHANNEL	NA	200	40	8,000	0.5	150
TOTAL = 200		TOTAL = 8,000		TOTAL = 150		



STANDARD DRIVEWAY DETAILS
NOT TO SCALE



PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 MAR 2012

NO.	DATE	REVISION	BY

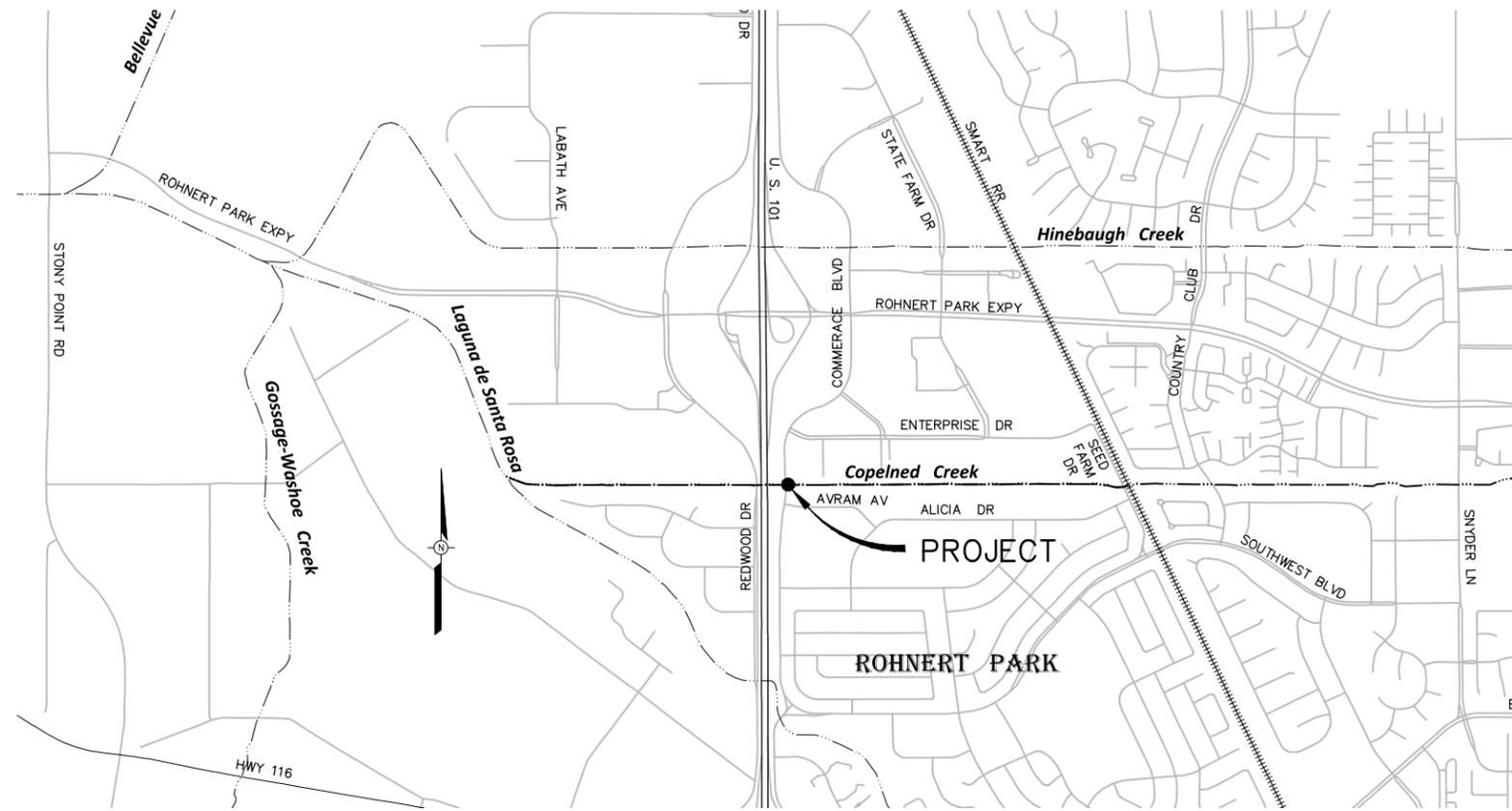
SCALE: AS SHOWN
DATE: 03/29/12
DRAWN: SMP
REVIEWED:

SONOMA COUNTY WATER AGENCY
SEDIMENT REMOVAL - ZONE 1A AND ZONE 2A
COOK CREEK SEDIMENT REMOVAL
FILE NAME: grading-plan.dwg
DRAWING NUMBER: C-1
SHEET 8 OF 8

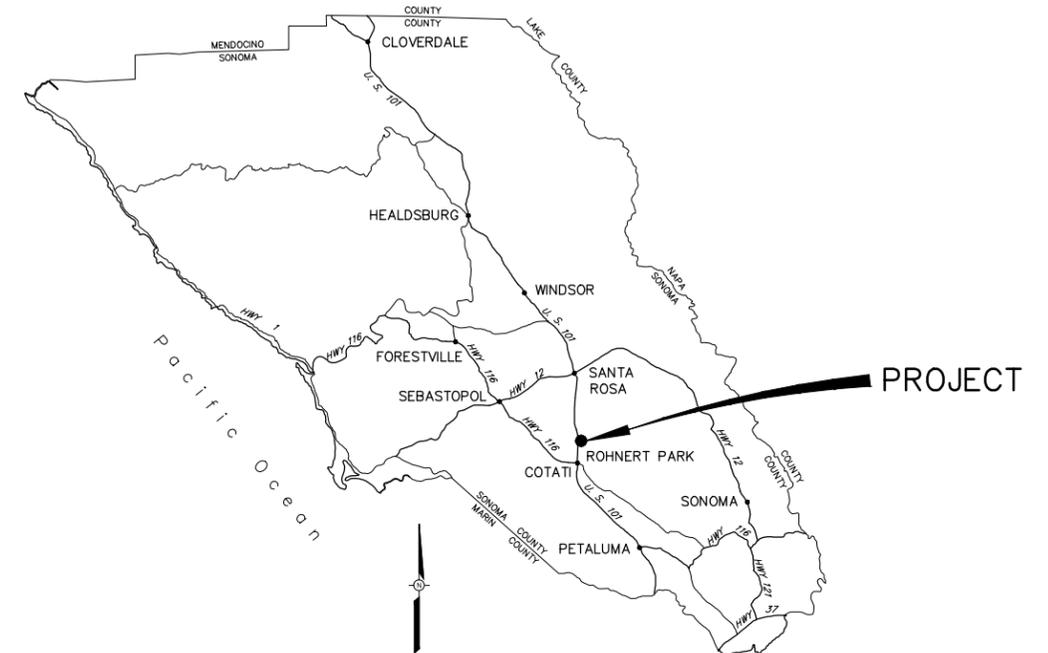
\\sdr-data-proj\flow_control\zone 1a\cook_creek_basin\sediment-removal\2011\grading-plan

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

COPELAND CREEK - SMP REACH 2 (2014) SEDIMENT REMOVAL



VICINITY MAP
SCALE 1" = 1000'



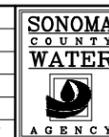
COPELAND CREEK - SMP REACH 2 (2014)						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	AVERAGE DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAR OR FRONT END LOADER OPERATING IN CHANNEL	STA 2+00 TO STA 3+50	150	30	ABOVE O.H.W. 750 BELOW O.H.W. 3750 TOTAL = 4500	2	ABOVE O.H.W. 2 BELOW O.H.W. 331 TOTAL = 333

INDEX TO DRAWINGS		
SHEET NUMBER	DRAWING NUMBER	TITLE
1	G-1	INDEX TO DRAWINGS, TABLE, VICINITY AND LOCATION MAPS
2	C-1	PLAN, PROFILE AND SECTIONS

**PRELIMINARY
90% SUBMITTAL**
FOR REVIEW PURPOSES ONLY
11 MAR 2014

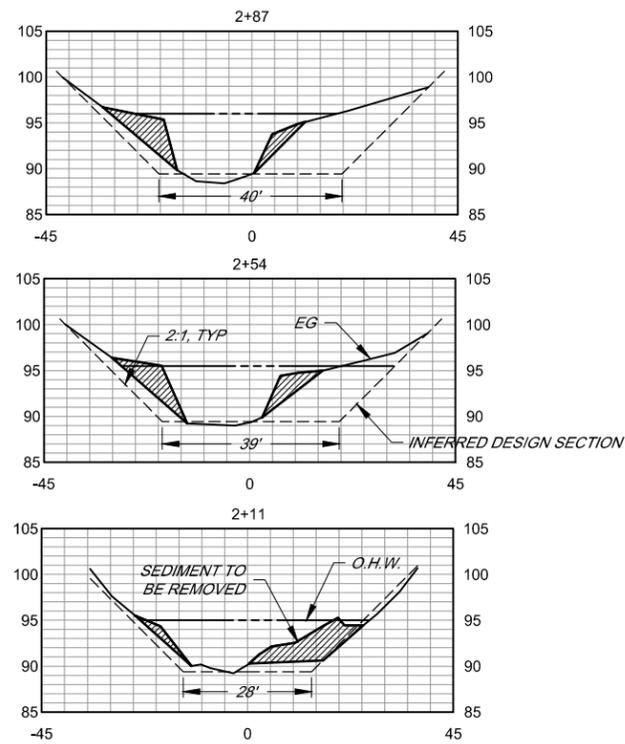
BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

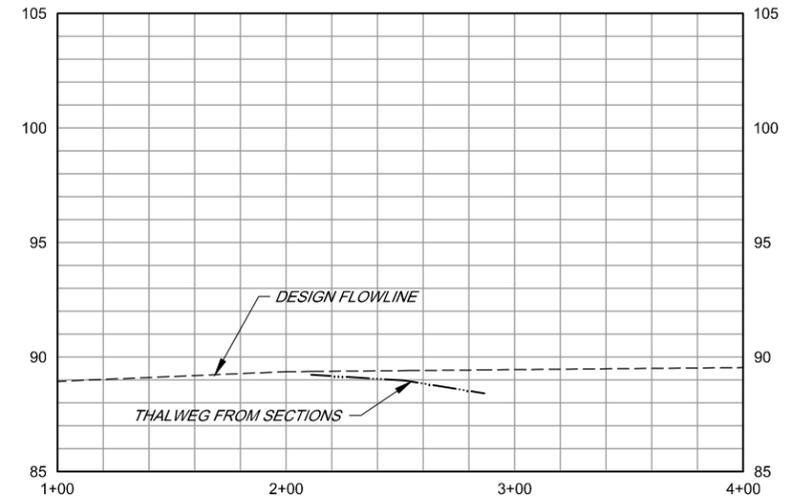


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DRAWN: ADF
REVIEWED:

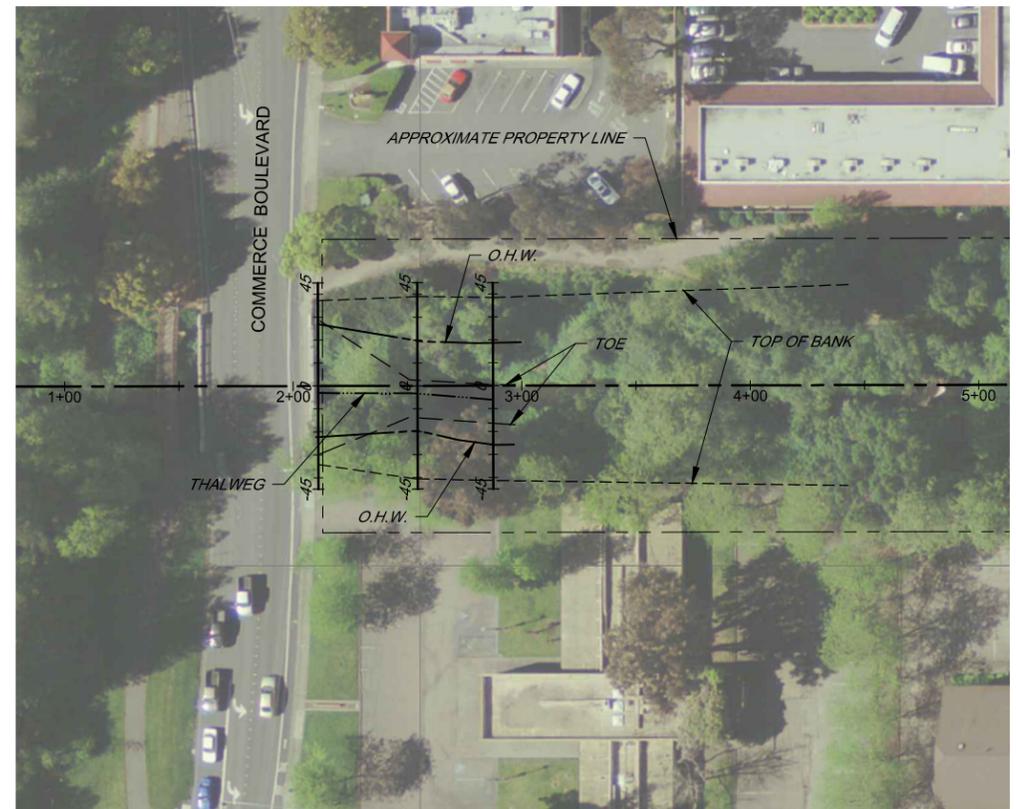
SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
COPELAND CREEK - SMP REACH 2 (2014).
INDEX TO DRAWINGS, TABLE, VICINITY AND LOCATION MAPS
FILE NAME: 2014-copeland_G
CONTRACT NUMBER:
DRAWING NUMBER: G-1
SHEET 1 OF 2



SECTIONS
 SCALE HORIZ 1" = 20'
 VERT 1" = 10'

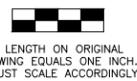


PROFILE
 SCALE HORIZ 1" = 40'
 VERT 1" = 4'



PLAN
 SCALE 1" = 40'

**PRELIMINARY
 90% SUBMITTAL**
 FOR REVIEW PURPOSES ONLY
 11 MAR 2014



BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

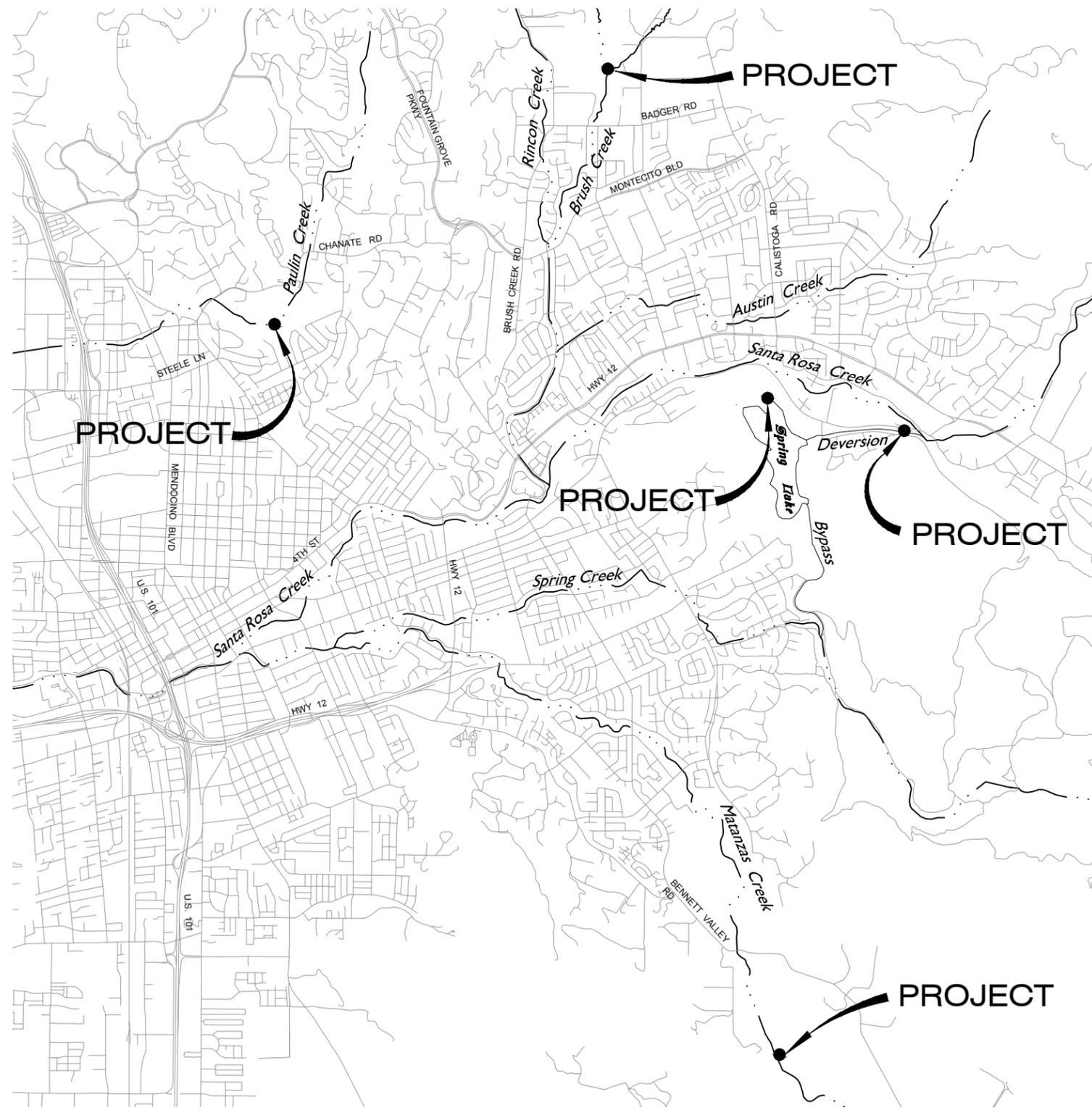
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 DRAWN: ADF
 REVIEWED:

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 COPELAND CREEK - SMP REACH 2 (2014).
 PLAN, PROFILE AND SECTIONS

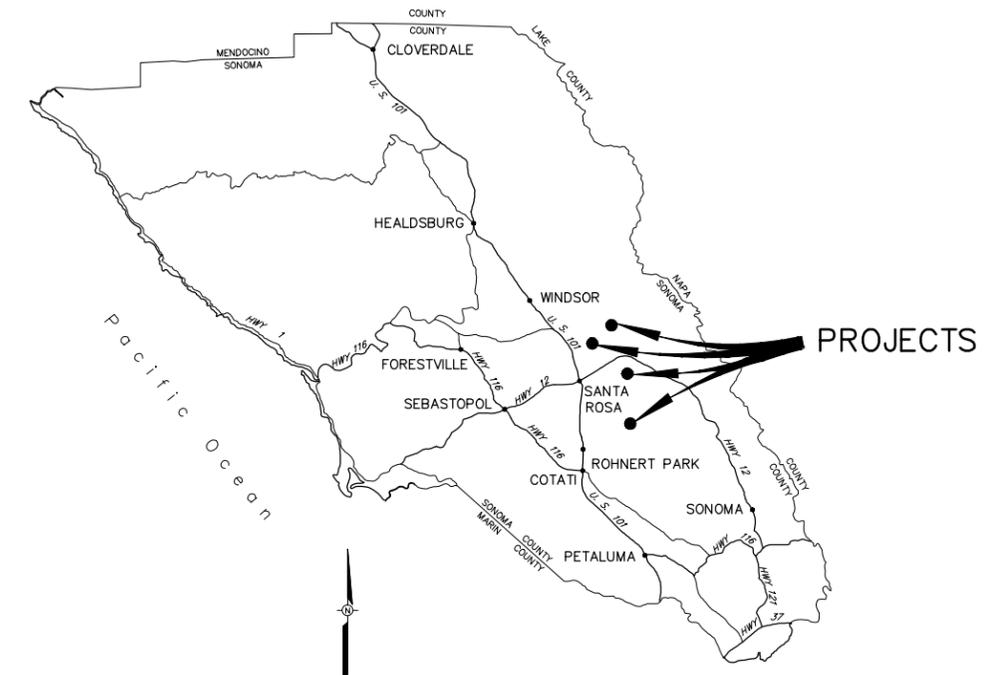
FILE NAME: 2014-COPELAND-CIVIL DRAWING NUMBER: C-1 SHEET 2 OF 2
 CONTRACT NUMBER:

I:\SD\DATA\Project\control\zone 1a\copeland\sediment_remove\2014-COPELAND

**BRUSH CREEK RESERVOIR
 PINER CREEK RESERVOIR (Paulin Creek)
 MATANZAS CREEK RESERVOIR
 SANTA ROSA CREEK RESERVOIR
 (Spring Lake)
 OUTLET STRUCTURE SEDIMENT REMOVAL
 and
 SANTA ROSA CREEK DIVERSION
 FISH LADDER**

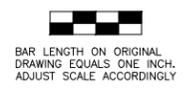


VICINITY MAP
 NOT TO SCALE



LOCATION MAP
 NOT TO SCALE

INDEX TO DRAWINGS:		
SHEET NUMBER	DRAWING NUMBER	TITLE
1	G-1	
PINER CREEK RESERVOIR		
4	C-2	PINER CREEK RESERVOIR - OUTLET PLAN
5	1-0545-102.17	SEWER ENCASEMENT AND PRINCIPAL SPILLWAY PROFILES
MATANZAS CREEK RESERVOIR		
6	C-3	MATANZAS CREEK RESERVOIR PLAN - OUTLET
7	D57-4	PRICIPAL SPILLWAY GENERAL PLAN
SANTA ROSA CREEK RESERVOIR (SPRING LAKE)		
8	C-4	SANTA ROSA CREEK RESERVOIR (SPRING LAKE) - OUTLET
9	1-9130-102.13	PRINCIPAL SPILLWAY DETAILS STA 0+00 TO 3+00
SANTA ROSA CREEK DIVERSION FISH LADDER		
10	C-5	SANTA ROSA CREEK FISH LADDER - PLAN
11	1-9140-102.9A	SANTA ROSA CREEK RESERVOIR FISH LADDER DETAILS



**PRELIMINARY
 90% SUBMITTAL
 FOR REVIEW PURPOSES ONLY**
 07 MAR 2012

PRELIMINARY SUBJECT TO REVISION			
NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: NONE DATE: 3/7/2012
 DRAWN: SMP
 REVIEWED:

\\SD-DATA\Pro\lood control\zone 1a\Brush_Crk-reservoir\G-1_RESERVOIRS_2012



AREA OF WORK

PLAN

1"=40'

**PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY**
07 MAR 2012

BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

EXCAVATION				
PROJECT ACTIVITY DESCRIPTION	LOCATION	AREA (SQUARE FT.)	AVERAGE DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING IN THE DEWATERED AREA IN RESERVOIR	AROUND OUTLET STRUCTURE	2,250	3	250

NO.	DATE	REVISION	BY

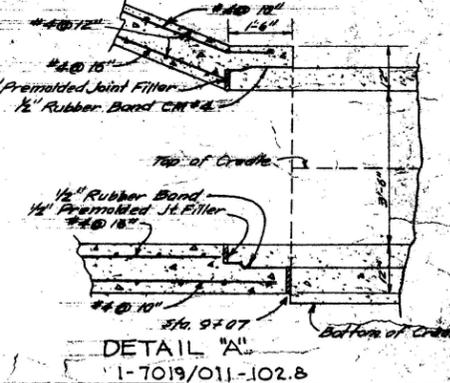
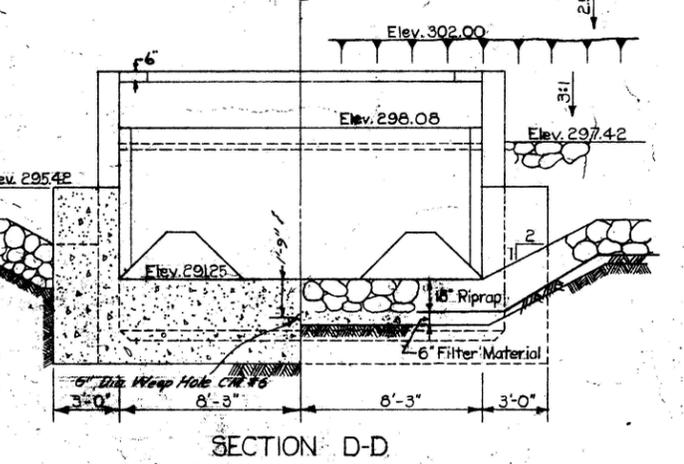
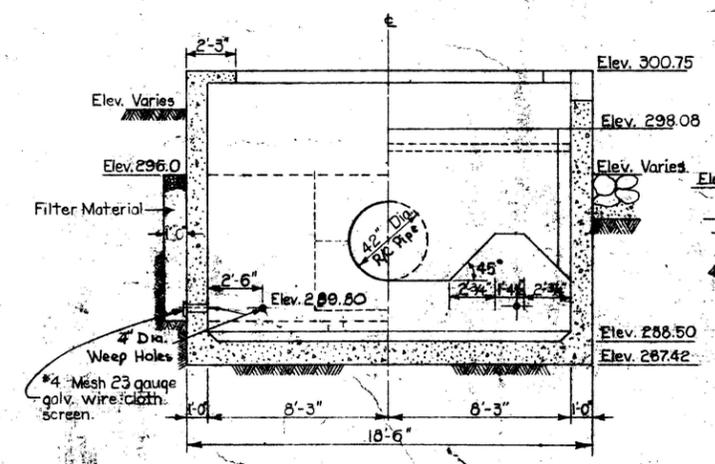
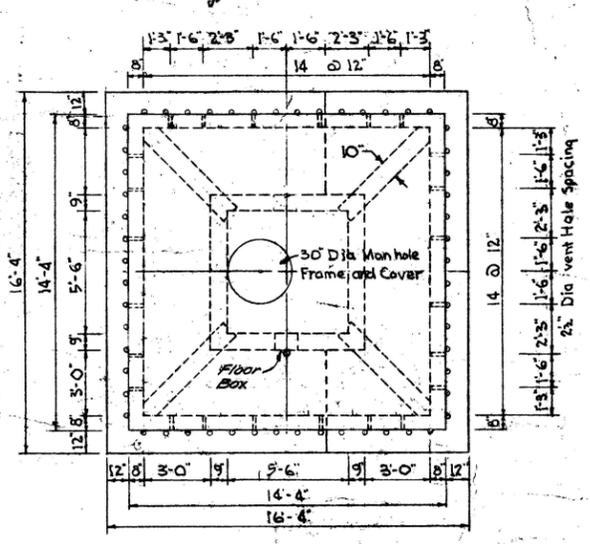
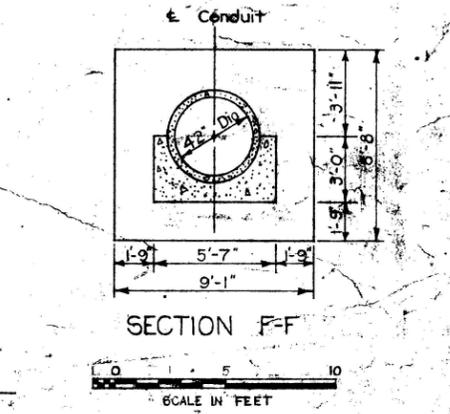
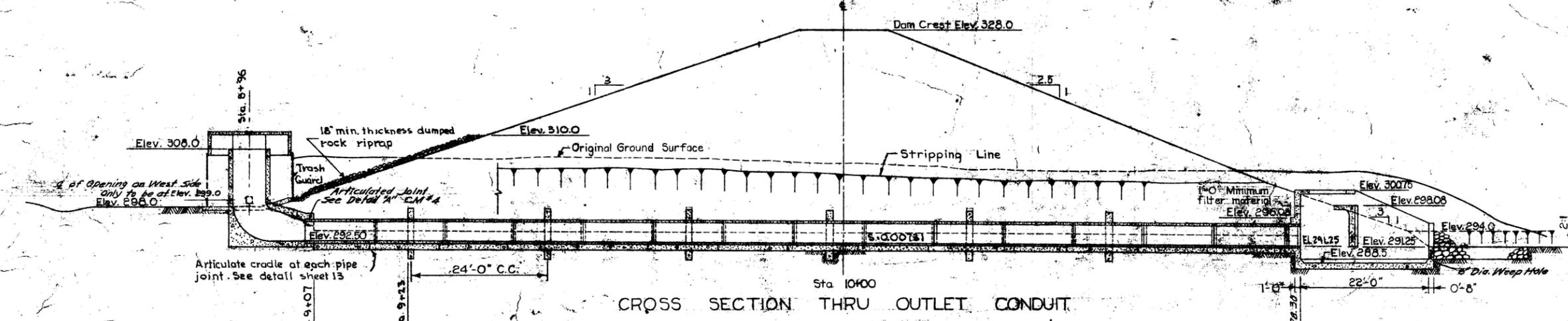
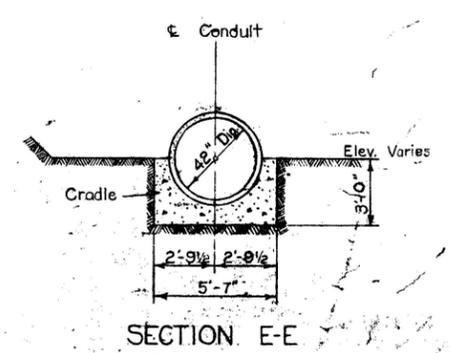
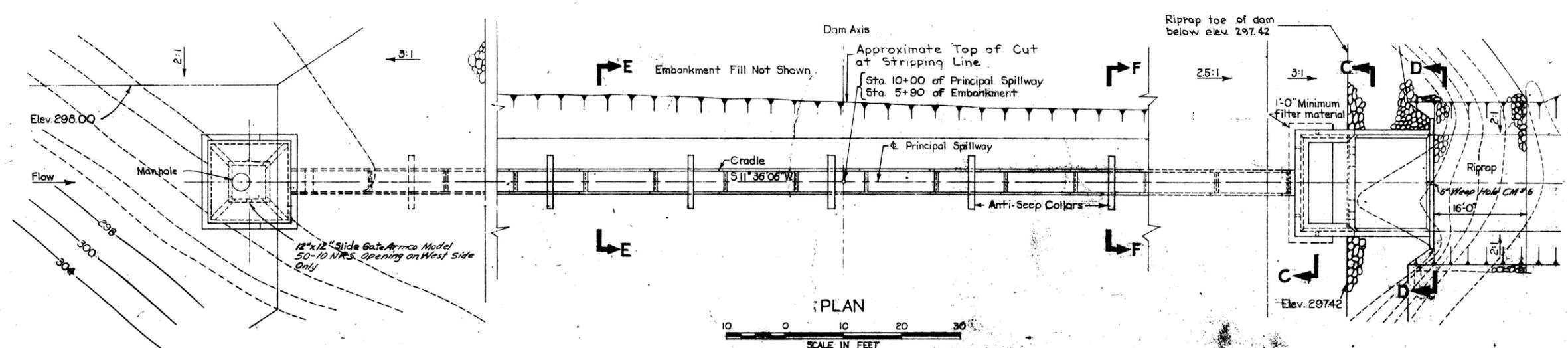
SONOMA COUNTY WATER AGENCY

SCALE: NONE DATE: 3/7/2012
 DRAWN: SMP
 REVIEWED:

**LAGUNA - MARK WEST ZONE 1A
BRUSH CREEK RESERVOIR OUTLET PLAN - OUTLET**

FILE NAME: Brush-Crk_Res_C-1_2012.dwg CONTRACT NUMBER: DRAWING NUMBER: C-1 SHEET 2 OF 11

I:\SD-DATA\Project\food control\zone 1a\Brush_Crk_Res_C-1_2012



NO.	DATE	REVISION	BY
1	12-50-60	Through Brush Bar Sub Gate Control	R.B.O.

SONOMA COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

APPROVED

DATE: 5/1/61

STATE OF CALIFORNIA
 Department of Water Resources
 FOR THE CHIEF ENGINEER

APPLICATION No. 1002-3
 APPROVED AS TO SAFETY: *W. A. Brown*
 DATE: Jan. 29, 1963 Supervisor, Safety of Dams

PRINCIPAL SPILLWAY PLAN AND SECTIONS
 BRUSH CREEK - MIDDLE FORK
 CENTRAL SONOMA WATERSHED PROJECT
 SONOMA COUNTY, CALIF.

U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE

Designed R.L.H. Date 7-60
 Title Head. E. & W.P. Unit
 Drawn R.W.M. Date 7-60
 Title State Conservation Engineer
 Traced _____
 Checked H.L.C., E.B.M. Date 3-61 No. 7 of 18 Drawing No. D56-7

AS BUILT



PLAN

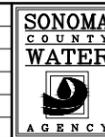
SCALE: 1" = 20'

**PRELIMINARY
90% SUBMITTAL**
FOR REVIEW PURPOSES ONLY
07 MAR 2012

BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

EXCAVATION				
PROJECT ACTIVITY DESCRIPTION	LOCATION	AREA (SQUARE FT.)	AVERAGE DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING IN THE DEWATERED AREA IN RESERVOIR	AROUND OUTLET STRUCTURE	2,250	3	250

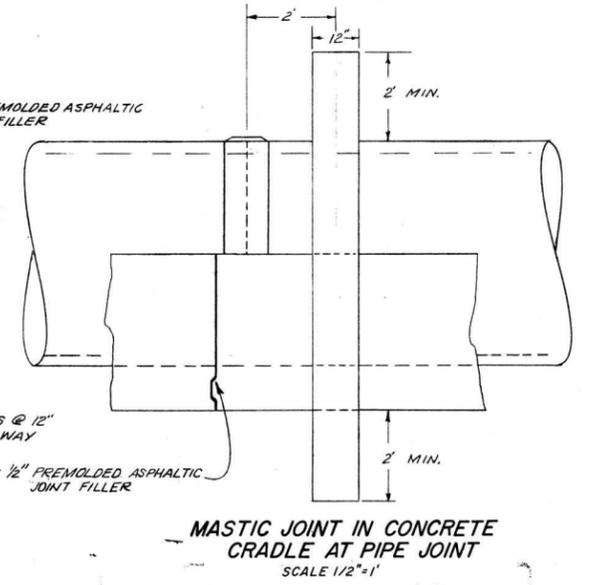
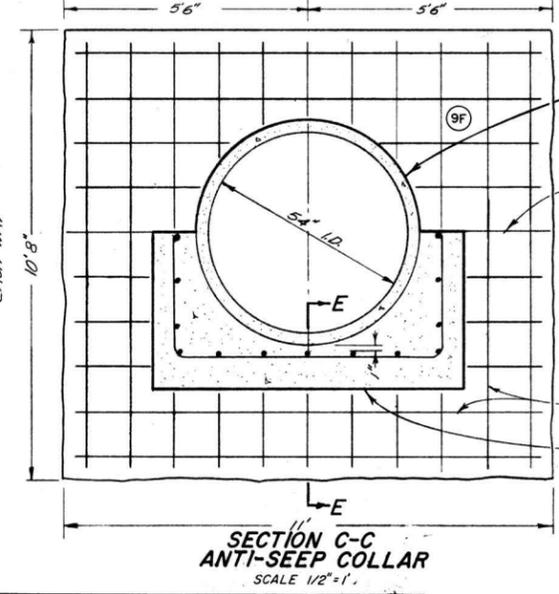
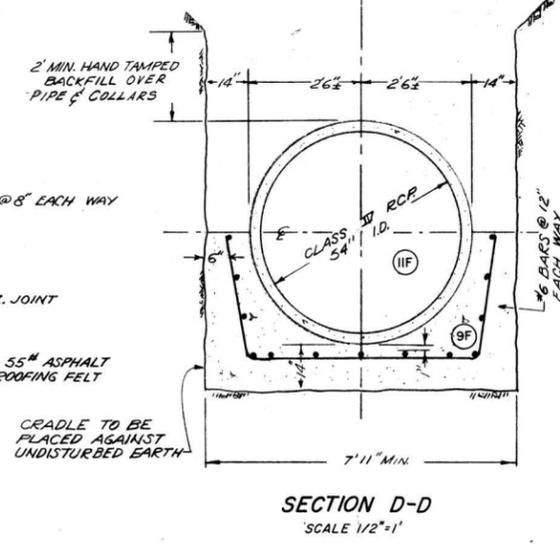
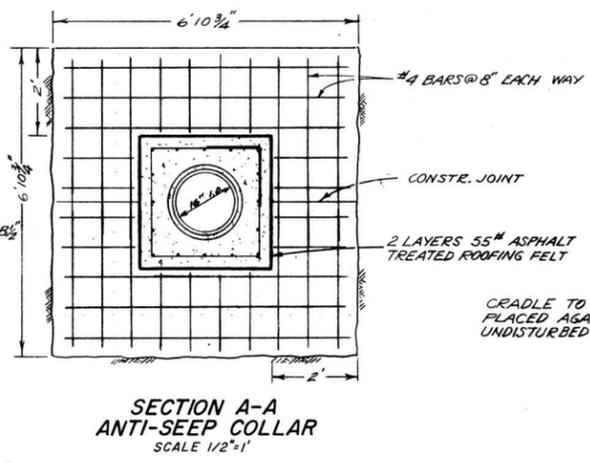
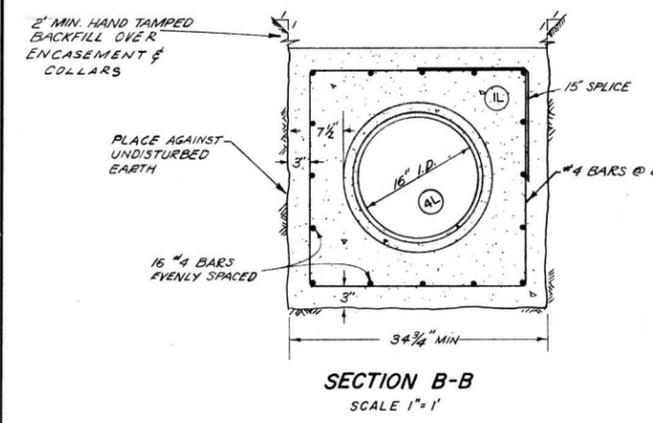
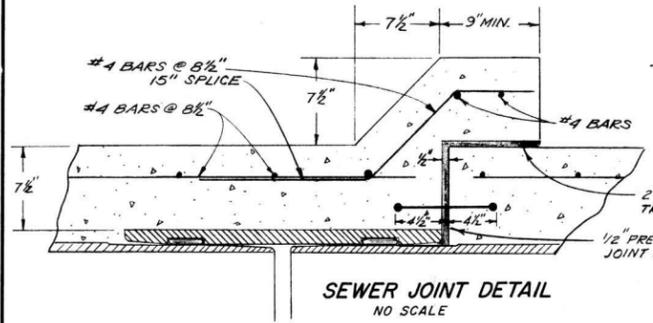
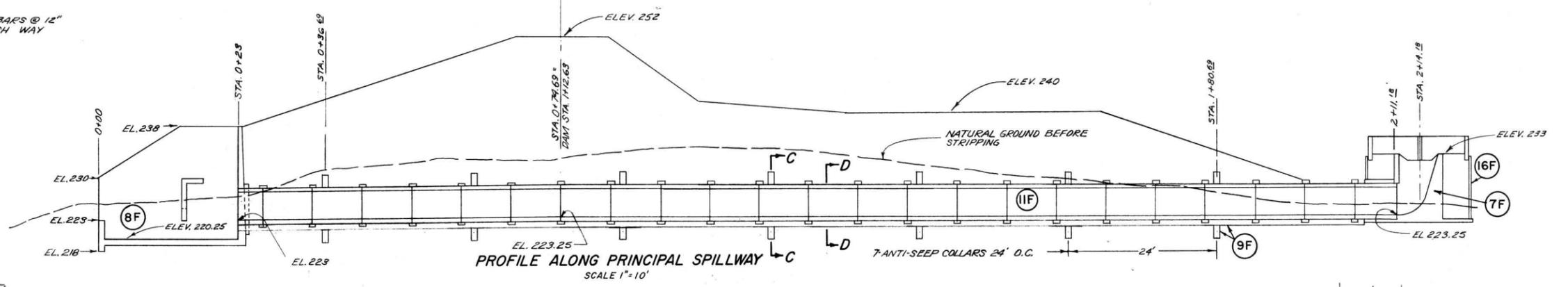
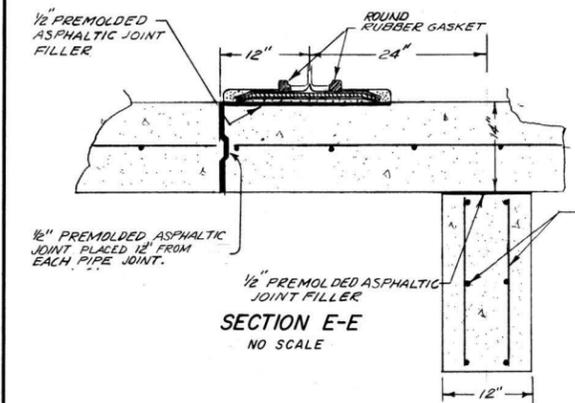
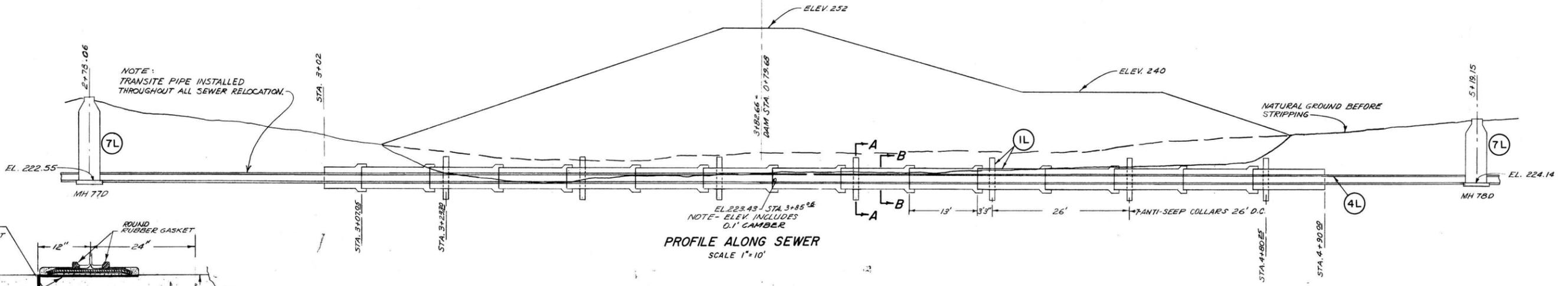
NO.	DATE	REVISION	BY



SCALE :	NONE	DATE :	3/7/2012
DRAWN :	SMP	REVIEWED :	

LAGUNA – MARK WEST ZONE 1A
PINER CREEK RESERVOIR - OUTLET PLAN

FILE NAME: Piner-Crk_Res_C-2_2011.dwg	DRAWING NUMBER: C-2	SHEET 4 OF 11
---------------------------------------	---------------------	---------------



NOTE:
FOR FIBER GLASS COUPLING BAND ALTERNATE,
CRADLE & PIPE SHALL BE SEPARATED
WITH ASPHALTIC PAINT BETWEEN THE
PIPE JOINT & CRADLE JOINT.

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
APPLICATION NO. 1002-2
APPROVED AS TO SAFETY

AS BUILT

PINER CREEK RESERVOIR SEWER ENCASEMENT & PRINCIPAL SPILLWAY PROFILES			
SCALE: AS SHOWN	APPROVED: <i>John W. White</i> CHIEF ENGINEER	DRAWN: SKMc	CHECKED: <i>Wol</i>
DATE: 1/23/1961	SONOMA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
DESIGNED: <i>M. J. Studis</i>	SUBMITTED: <i>Ron</i>	DRAWING NUMBER: 1-5045-102.17	



AREA OF WORK

PLAN

SCALE: 1" = 20'

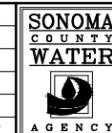
**PRELIMINARY
90% SUBMITTAL**
FOR REVIEW PURPOSES ONLY
07 MAR 2012

BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

EXCAVATION

PROJECT ACTIVITY DESCRIPTION	LOCATION	AREA (SQUARE FT.)	AVERAGE DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING IN THE DEWATERED AREA IN RESERVOIR	AROUND OUTLET STRUCTURE	2,250	3	250

NO.	DATE	REVISION	BY



SCALE : NONE DATE : 3/7/2012
DRAWN : SMP
REVIEWED :

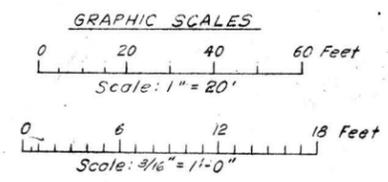
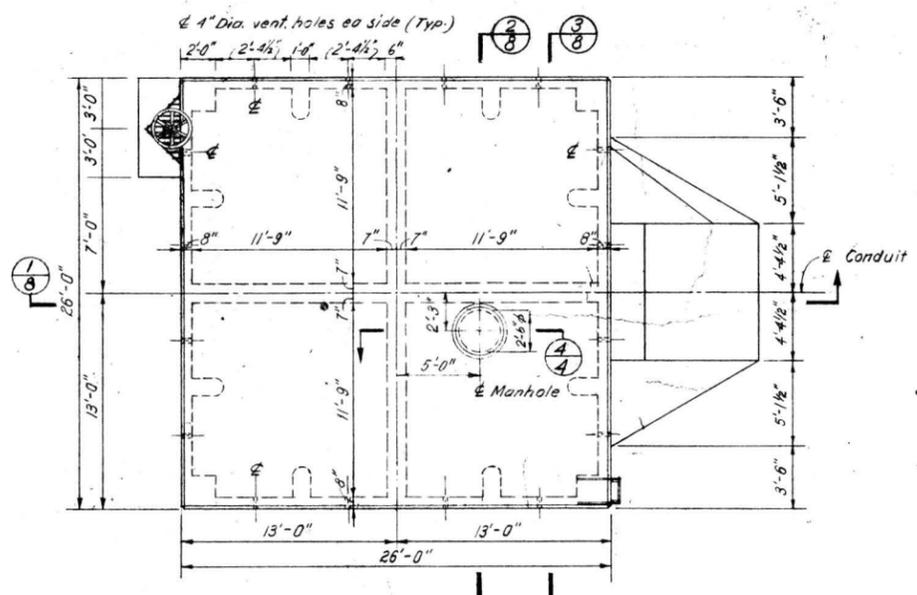
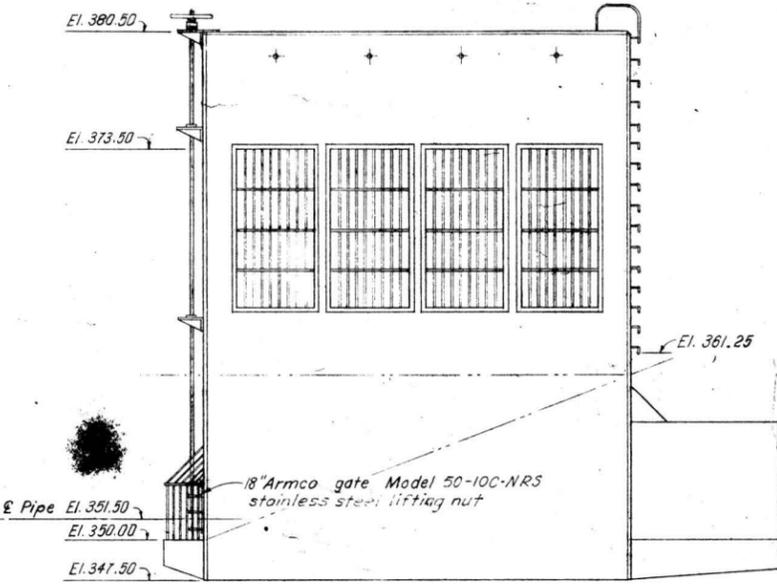
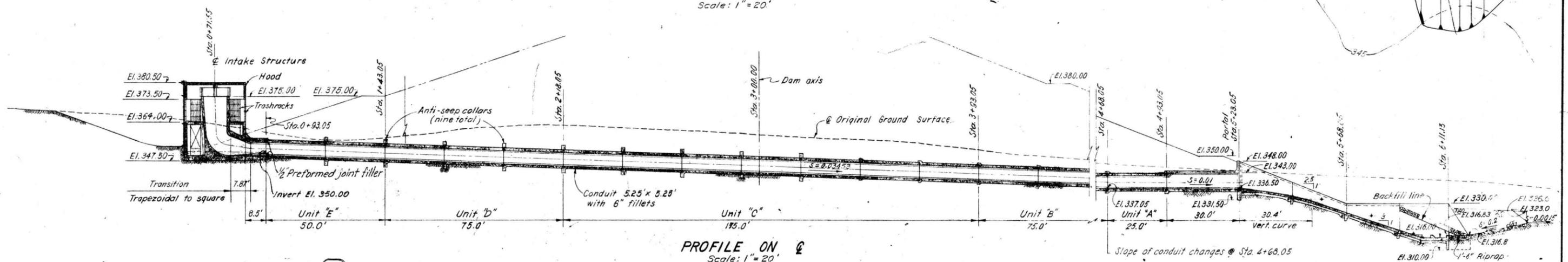
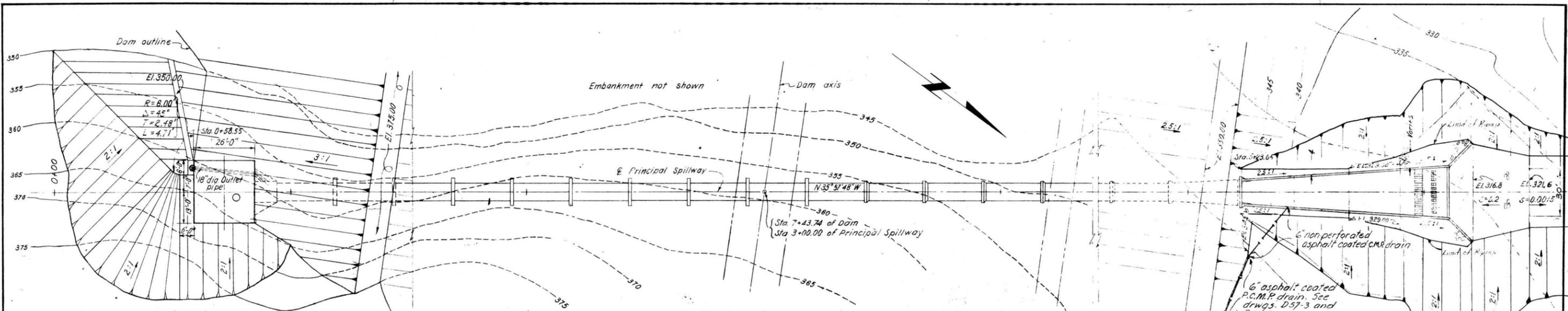
LAGUNA -- MARK WEST ZONE 1A
MATANZAS CREEK RESERVOIR PLAN - OUTLET

FILE NAME: Matanzas-Crk_Res_C-3_2012.dwg
CONTRACT NUMBER:

DRAWING NUMBER: C-3

SHEET 6 OF 11

\\SD-DATA\Profile\controllzone 1\matanzas_crk_reservoir\outlet\2012_SED\REMOVAL\Matanzas-Crk_Res_C-3_2012



- NOTES:**
1. For Intake Structure Details see Dwg. D57-5 and D57-6.
 2. For Conduit Details see Dwg. D57-6.
 3. For Outlet Chute and Stilling Basin Details see Dwg. D57-7.
 4. For Dam Embankment Details see Dwg. D57-3.



AS BUILT 1-6054-102.12AB

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
DIVISION OF SAFETY OF DAMS

APPLICATION No. 1002-4
APPROVED AS TO SAFETY

FOR THE CHIEF ENGINEER
Robert E. Hansen
DIVISION ENGINEER, REG. C.E. N° 8218

AUG 5 1966

WOODWARD, CLYDE, SHERARD & ASSOCIATES
CONSULTING CIVIL ENGINEERS - OAKLAND, CALIF.

DESIGNED: V.L.T.
CHECKED: V.S.D.
DRAWN: G.B.I.

APPROVED BY: *Stanley F. Clemons*
STATE ENGINEER

SONOMA COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
CENTRAL SONOMA WATERSHED PROTECTION PROJECT

MATANZAS CREEK
PRINCIPAL SPILLWAY
GENERAL PLAN

APPROVED - SOIL CONSERVATION SERVICE
APPROVED - SONOMA COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
STATE ENGINEER
CHIEF ENGINEER

DATE: MARCH 1962
SCALE: AS NOTED
DRWG. NO.: D57-4
SHEET OF



Spring Lake

AREA OF WORK

MONTGOMERY DRIVE

PLAN

SCALE: 1" = 40'

**PRELIMINARY
90% SUBMITTAL**
FOR REVIEW PURPOSES ONLY
07 MAR 2012

EXCAVATION

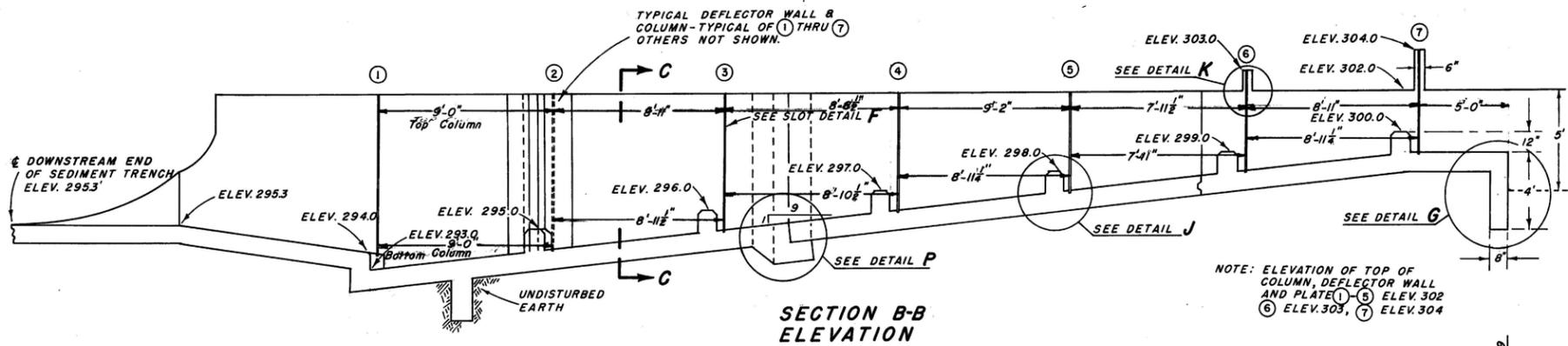
PROJECT ACTIVITY DESCRIPTION	LOCATION	AREA (SQUARE FT.)	AVERAGE DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING IN THE DEWATERED AREA IN RESERVOIR	AROUND OUTLET STRUCTURE	2,700	1	100

BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

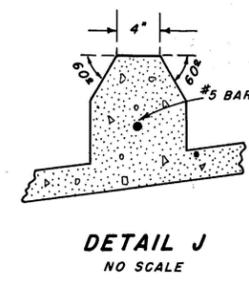
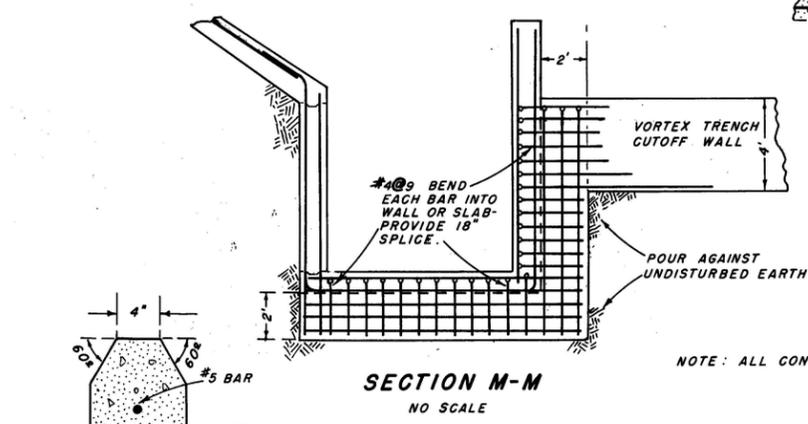
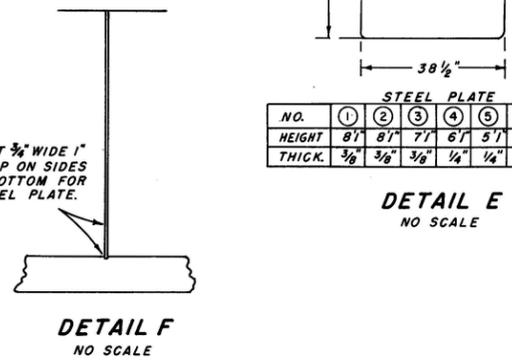
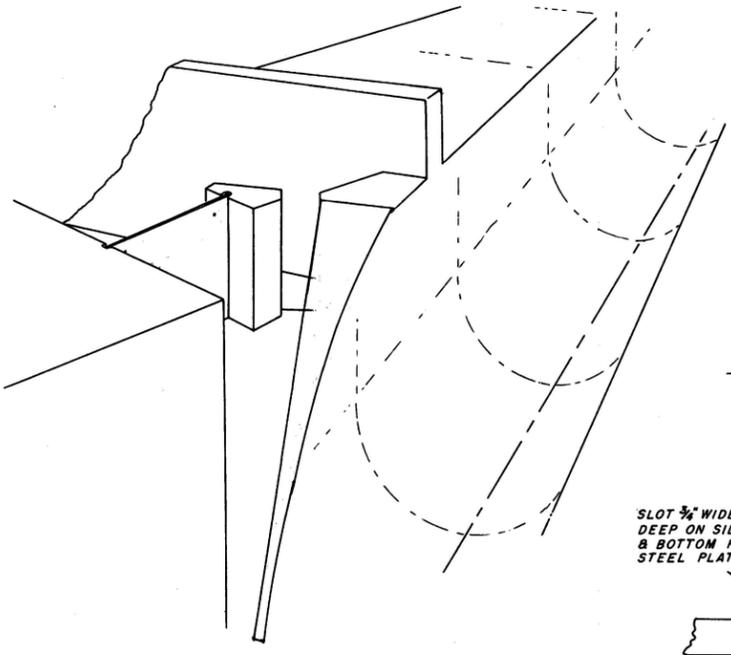
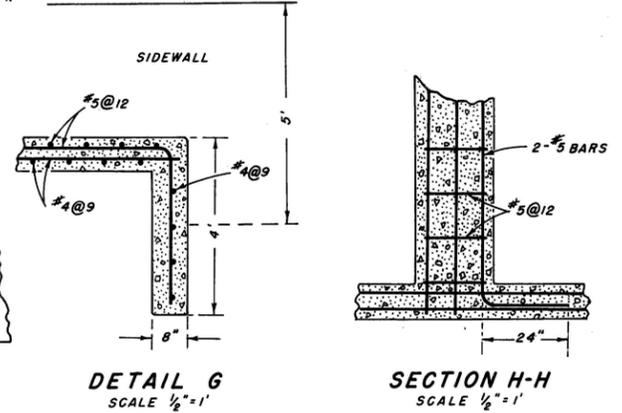
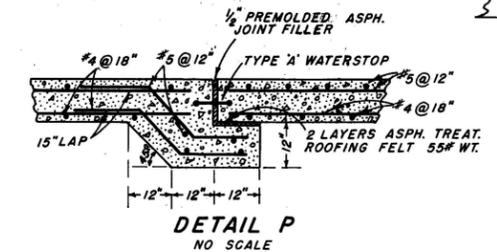
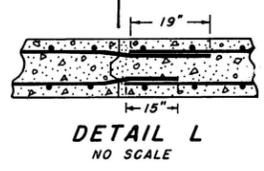
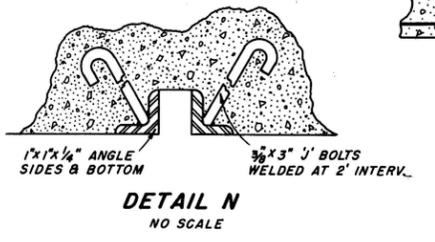
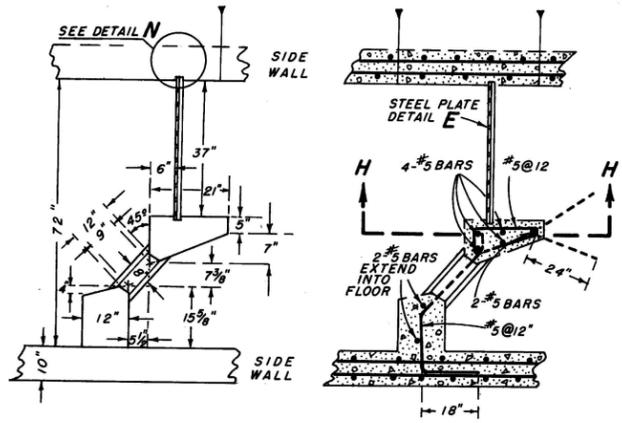
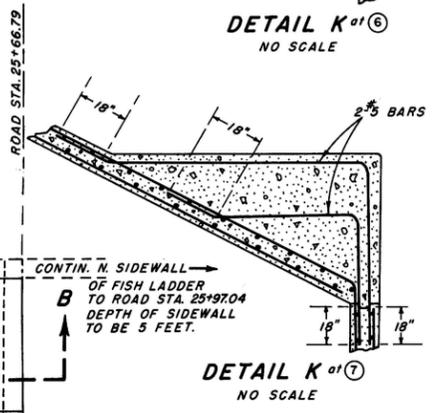
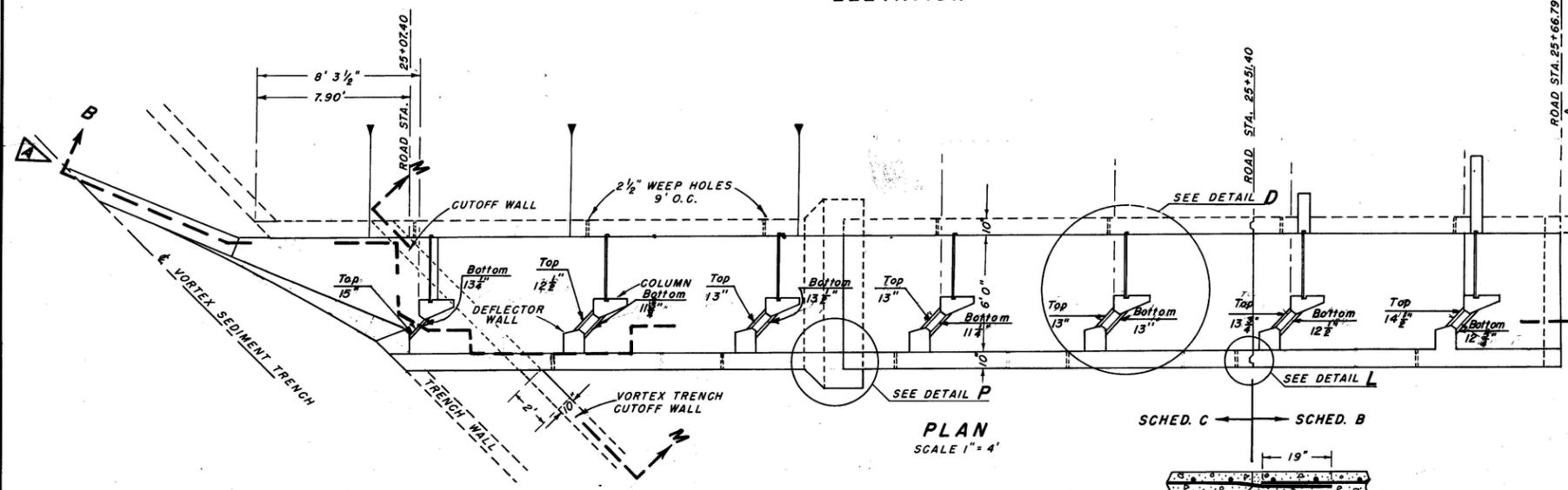
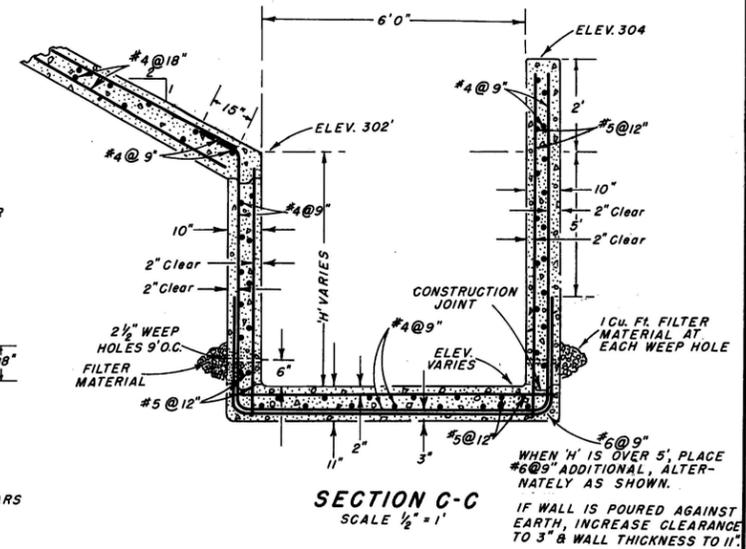
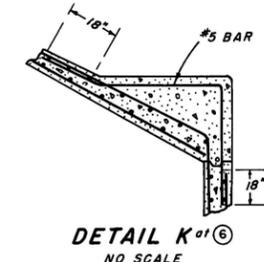
NO.	DATE	REVISION	BY


 SCALE: NONE DATE: 3/7/2012
 DRAWN: SMP
 REVIEWED:

LAGUNA - MARK WEST ZONE 1A
**SANTA ROSA CREEK RESERVOIR (SPRING LAKE)
 - OUTLET**
 FILE NAME: SpringLake_Out_C-4_2012.dwg DRAWING NUMBER: C-4 SHEET 8 OF 11
 CONTRACT NUMBER:



NOTE: ELEVATION OF TOP OF COLUMN, DEFLECTOR WALL AND PLATE ① ELEV. 302 ② ELEV. 303, ⑦ ELEV. 304



AS BUILT SCHEDULE C

SANTA ROSA CREEK RESERVOIR FISH LADDER DETAILS

SCALE: AS SHOWN APPROVED: [Signature] CHIEF ENGINEER DRAWN: J.R. DATE: JULY 28, 1962 CHECKED: [Signature]

SONOMA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED: P. FULLER SUBMITTED: [Signature] DRAWING NUMBER: I-9140-102.9 A



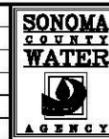
PLAN
SCALE 1" = 20'

EXCAVATION					
PROJECT ACTIVITY DESCRIPTION	LOCATION	LENGTH (LINEAL FT.)	AREA (SQUARE FT.)	AVERAGE DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OPERATING FROM TOP OF BANK OR IN THE DEWATERED AREA IN CHANNEL	FISH LADDER AT SANTA ROSA CREEK DIVERSION	40	240	2	18
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OPERATING FROM TOP OF BANK OR IN THE DEWATERED AREA IN CHANNEL	DIVERSION STRUCTURE ADJACENT TO FISH LADDER	180	10,800	1	350

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2012

NO.	DATE	REVISION	BY

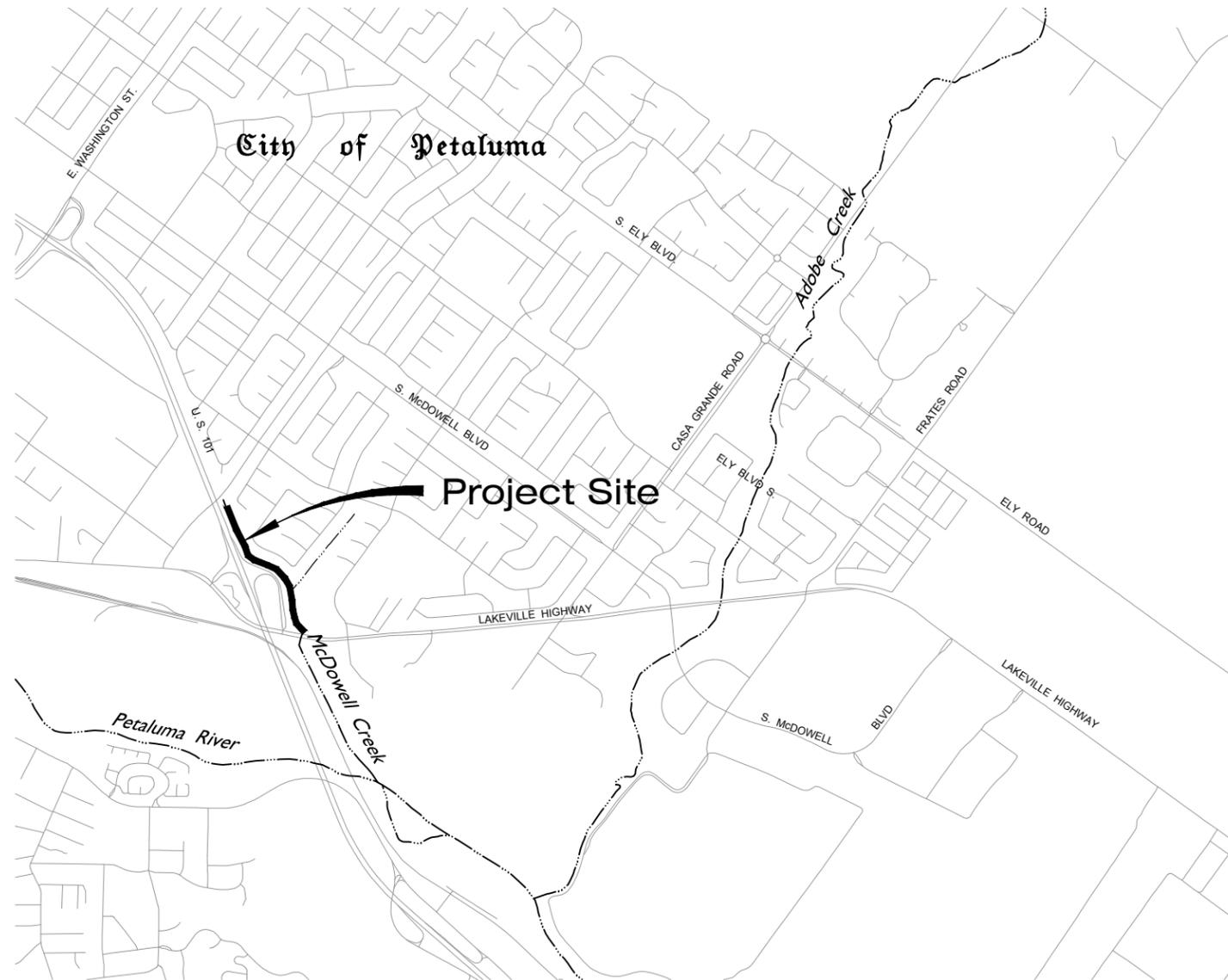


SCALE: AS SHOWN DATE: 3/7/2012
DRAWN: ADF
REVIEWED:

LAGUNA - MARK WEST ZONE 1A
SANTA ROSA CREEK FISH LADDER - PLAN
FILE NAME: 2012_FISH-LADDER_C-5
CONTRACT NUMBER: DRAWING NUMBER: C-5 SHEET 10 OF 11

\\SD\DATA\Projects\food_control\basins\10\SantaRosa\FishLadder_Chan_Sediment_Removal\2012_FISH-LADDER

McDOWELL CREEK - SMP REACH 2 (2014) SEDIMENT REMOVAL



VICINITY MAP

NOT TO SCALE

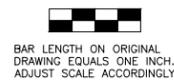


LOCATION MAP

NOT TO SCALE

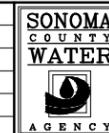
McDOWELL CREEK - SMP REACH 2 (2014)						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	AVERAGE DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAR OR FRONT END LOADER OPERATING IN CHANNEL	STA 27+00 TO STA 41+73	1,473	5	ABOVE O.H.W. 60 BELOW O.H.W. 23,055 TOTAL = 23,115	0.6	ABOVE O.H.W 2 BELOW O.H.W.162 TOTAL = 164

INDEX TO DRAWINGS		
SHEET NUMBER	DRAWING NUMBER	TITLE
1	G-1	INDEX TO DRAWINGS, TABLE, VICINITY AND LOCATION MAPS
2	C-1	PLAN AND PROFILE STA 26+00 TO STA 33+00
3	C-2	PLAN AND PROFILE STA 33+00 TO STA 42+00
4	C-3	SECTIONS



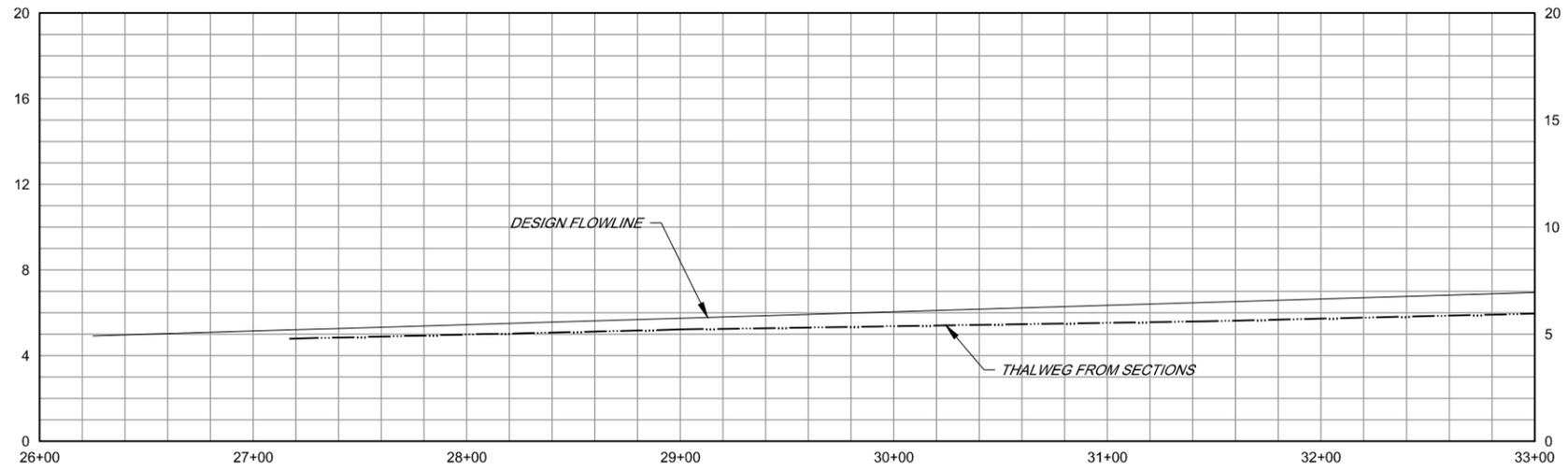
BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

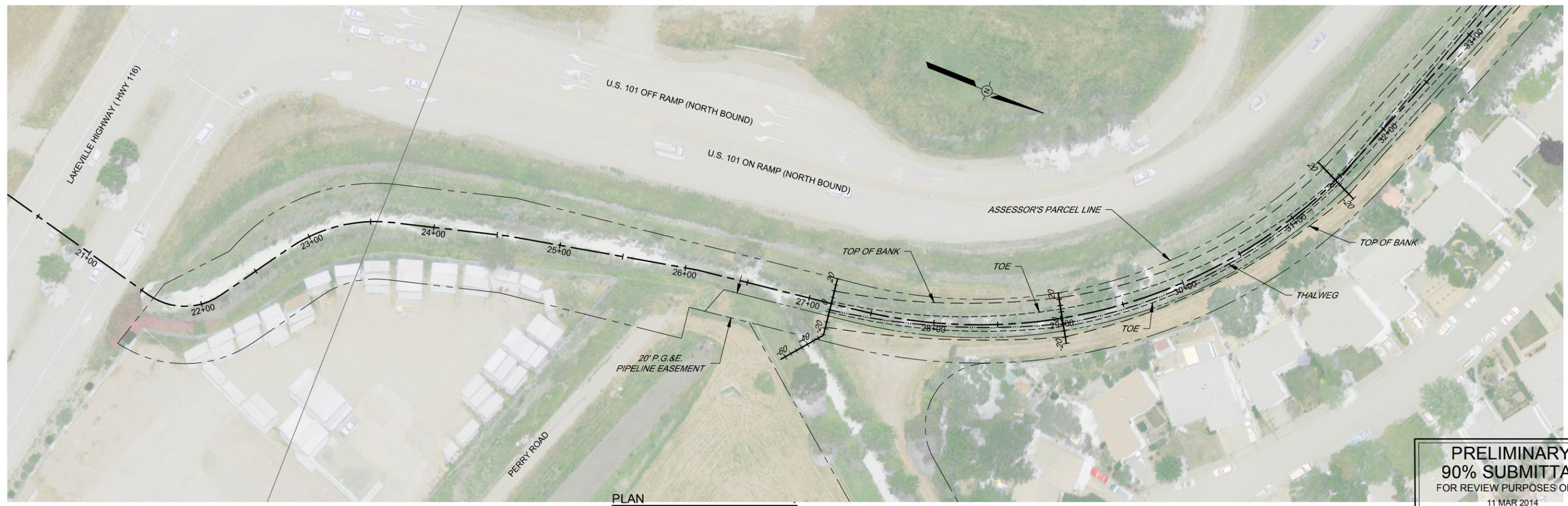


SCALE: AS SHOWN	DATE: 10/23/2013
DRAWN: ---	
REVIEWED: ---	

MCDOWELL CREEK - SMP REACH 2 (2014)		
McDOWELL CREEK - SMP REACH 2 (2014)		
INDEX TO DRAWINGS, TABLE, VICINITY AND LOCATION MAPS		
FILE NAME: 2014_GENERAL_McDowell	DRAWING NUMBER: G-1	SHEET 1 OF 4

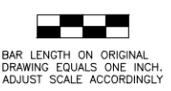


PROFILE
 SCALE HORIZ 1" = 40'
 VERT 1" = 4'



PLAN
 SCALE 1" = 40'

**PRELIMINARY
 90% SUBMITTAL**
 FOR REVIEW PURPOSES ONLY
 11 MAR 2014



BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

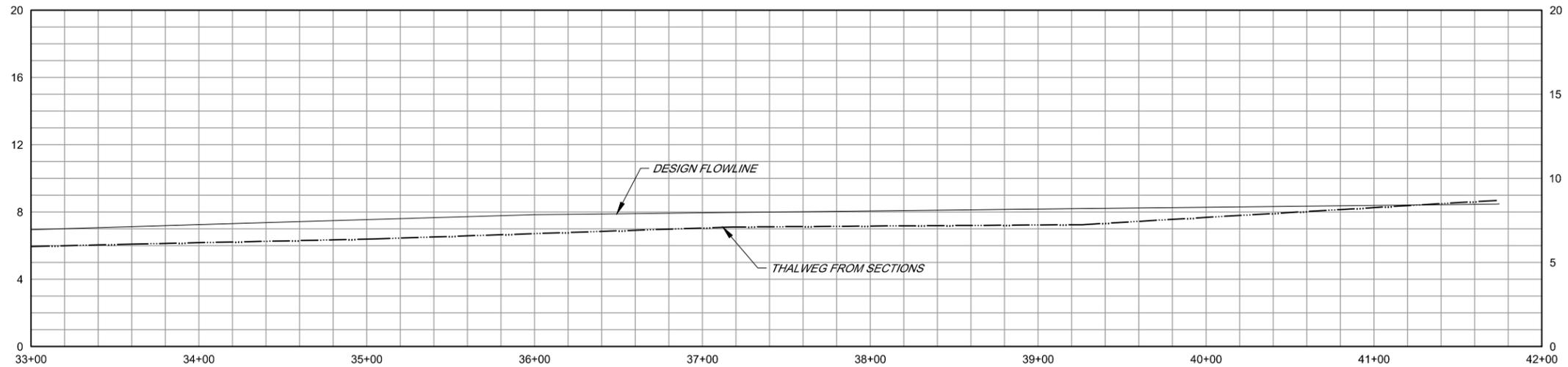
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: 9/10/2013
 DRAWN: ADF
 REVIEWED:

MCDOWELL CREEK - SMP REACH 2 (2014)
PLAN AND PROFILE STA 26+00 TO STA 33+00

FILE NAME: 2014_CIVIL_McDowell CONTRACT NUMBER: DRAWING NUMBER: C-1 SHEET 2 OF 4

USF-data\proj\ford_controls\zone 2a\McDowell\2014



PROFILE
 SCALE HORIZ 1" = 40'
 VERT 1" = 4'



PLAN
 SCALE 1" = 40'

PRELIMINARY
90% SUBMITTAL
 FOR REVIEW PURPOSES ONLY
 11 MAR 2014

BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

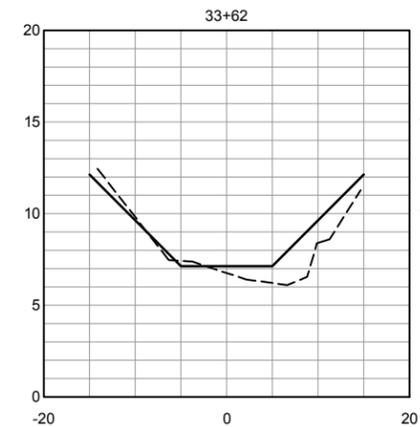
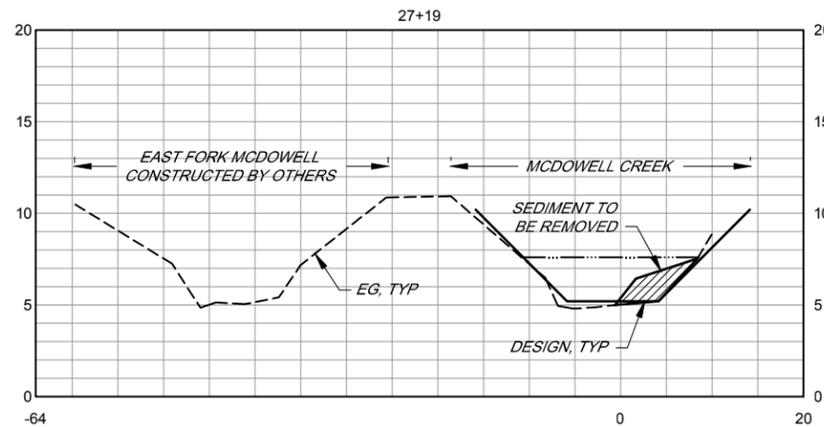
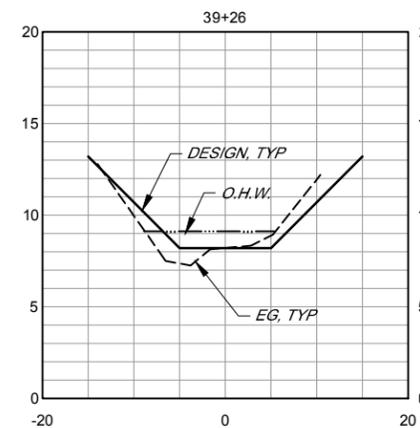
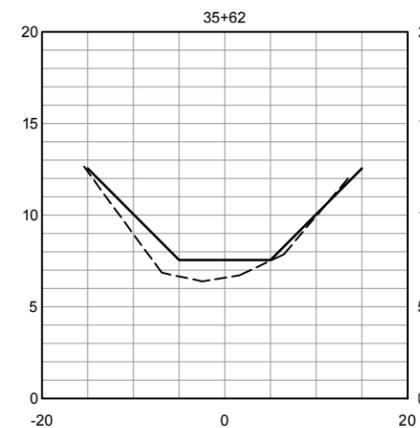
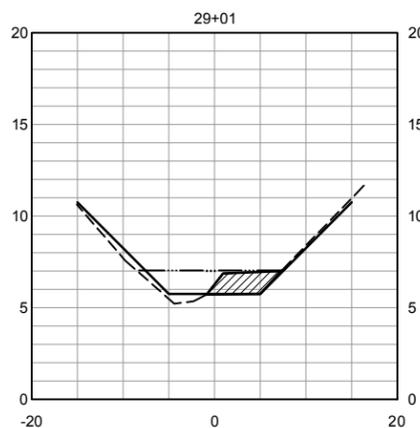
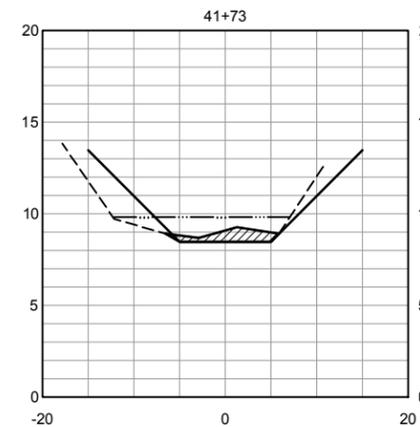
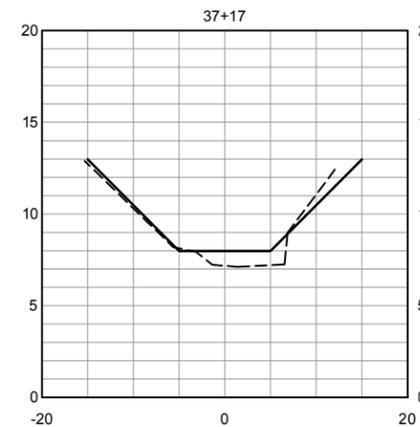
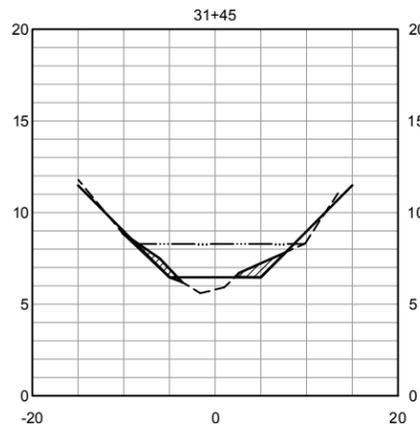
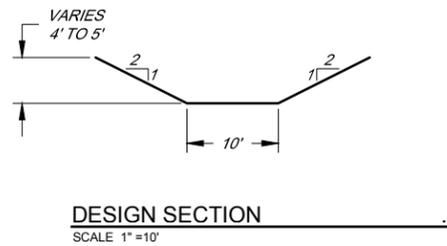
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: 9/10/2013
 DRAWN: ADF
 REVIEWED:

MCDOWELL CREEK - SMP REACH 2 (2014)
PLAN AND PROFILE STA 33+00 TO STA 42+00

FILE NAME: 2014_CIVIL_McDowell CONTRACT NUMBER:
 DRAWING NUMBER: C-2 SHEET 4 OF 4

USF:\data\profile\control\zone 2a\McDowell\2014



SECTIONS
SCALE HORIZ 1" = 10'
VERT 1" = 5'

\\sfr-datab\proj\ford_controls\zone 2a\McDowell\2014



BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

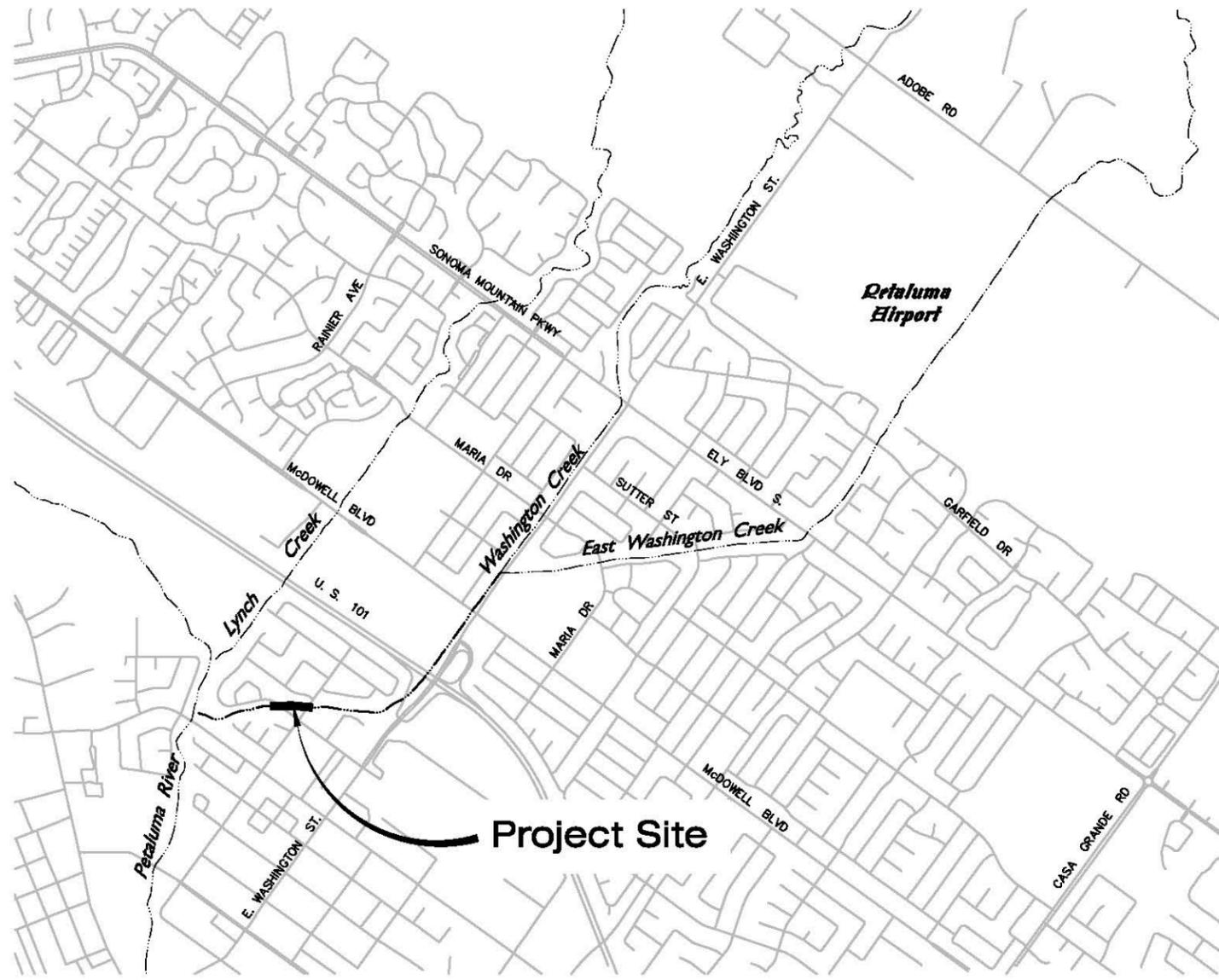
SCALE: AS SHOWN DATE: 9/10/2013
DRAWN: ADF
REVIEWED:

MCDOWELL CREEK - SMP REACH 2 (2014)

SECTIONS

FILE NAME: 2014_CIVIL_McDowell CONTRACT NUMBER:
DRAWING NUMBER: C-3 SHEET 3 OF 4

SMP PETALUMA BASIN WATERSHED ZONE 2A WASHINGTON CREEK SMP REACH 1, 2 AND 3 (2014) REACH SCALE SEDIMENT REMOVAL



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

WASHINGTON CREEK SMP REACH 1, 2 AND 3 (2014)							
EXCAVATION							
DESIGNATION	PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
REACH 1	ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OPERATING FROM BANKS OR IN CHANNEL	STA 10+30 TO STA 12+00	170	21	ABOVE O.H.W. 434 BELOW O.H.W. 3,136 TOTAL: 3,570	1.7	ABOVE O.H.W. 27 BELOW O.H.W. 197 TOTAL: 224
REACH 2	ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OPERATING FROM BANKS OR IN CHANNEL	STA 12+00 TO STA 15+75	310	21	ABOVE O.H.W. 3,410 BELOW O.H.W. 3,100 TOTAL: 6,510	1.7	ABOVE O.H.W. 215 BELOW O.H.W. 195 TOTAL: 410
REACH 3	ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OPERATING FROM BANKS OR IN CHANNEL	STA 15+75 TO STA 16+50	75	21	ABOVE O.H.W. 192 BELOW O.H.W. 1,363 TOTAL: 1,575	1.7	ABOVE O.H.W. 12 BELOW O.H.W. 87 TOTAL: 99

INDEX TO DRAWINGS

SHEET No	SHEET TITLE	SHEET DESCRIPTION
1	G-1	INDEX TO DRAWINGS, TABLE, VICINITY AND LOCATION MAPS
2	C-1	PLAN AND PROFILE STA 10+00 TO STA 17+00
3	C-2	SECTIONS

BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY	AGENCY					

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: March 19, 2014

DRAWN: _____

REVIEWED: _____

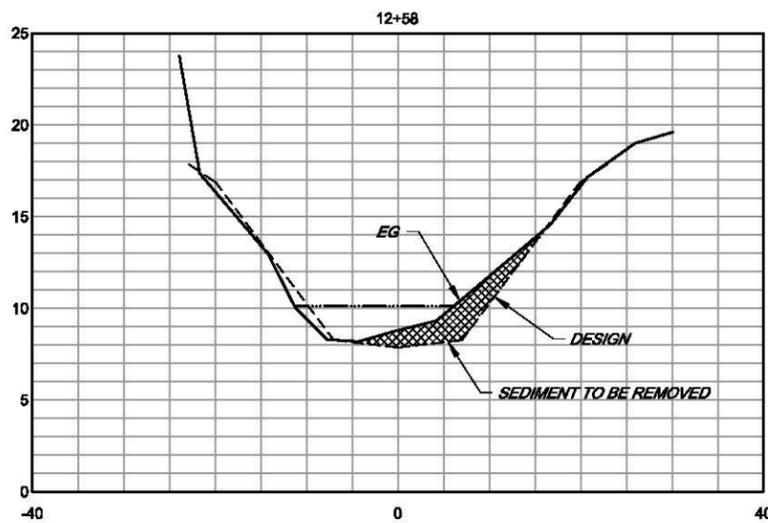
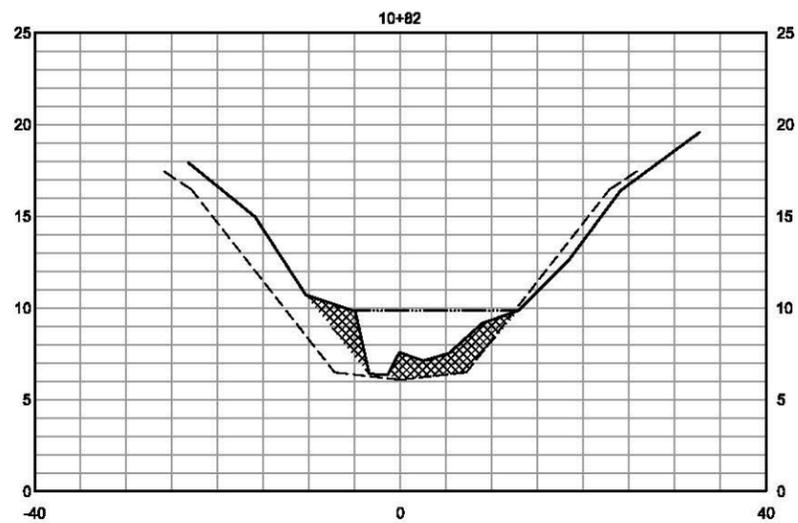
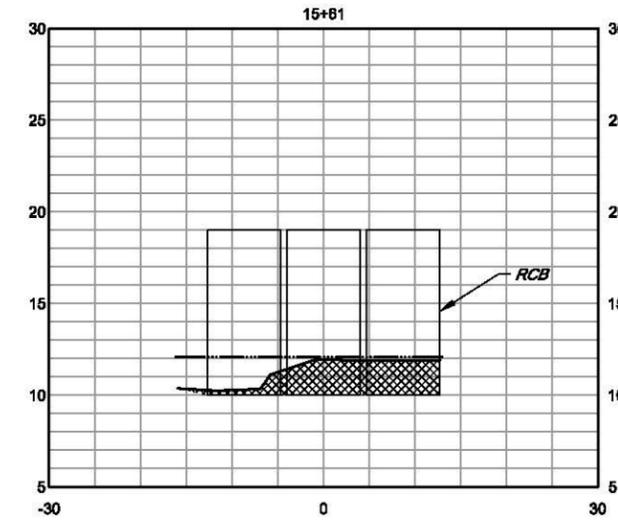
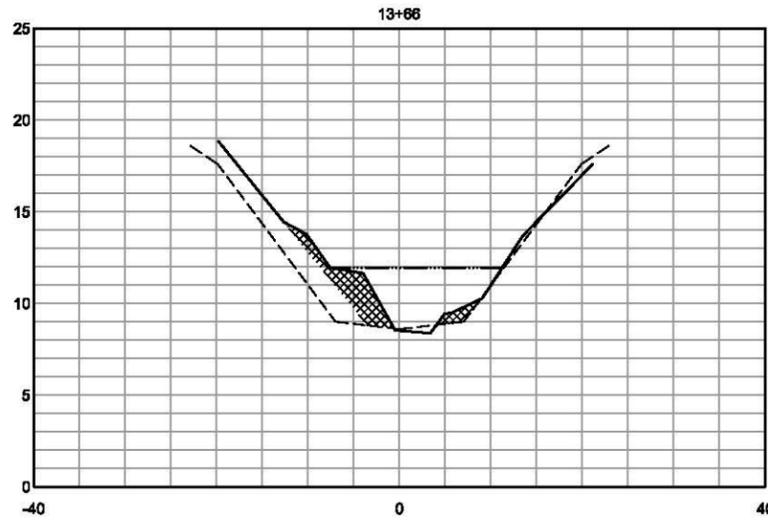
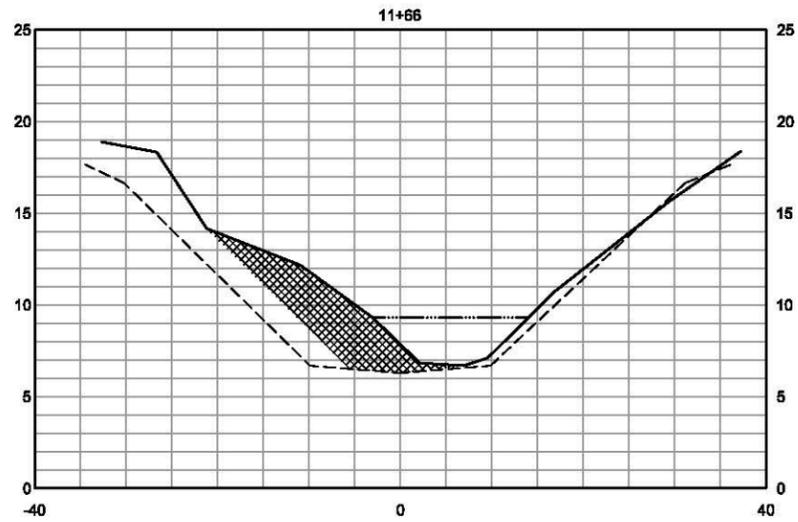
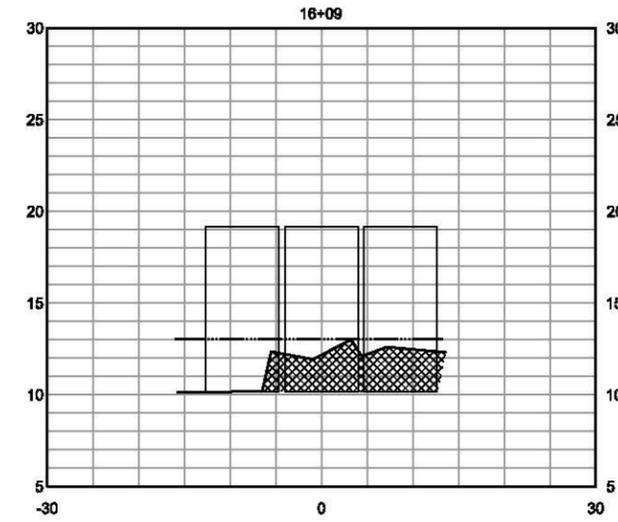
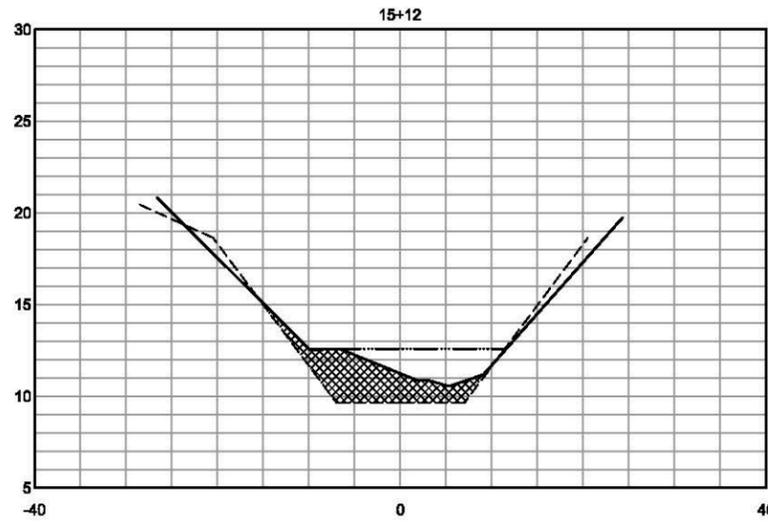
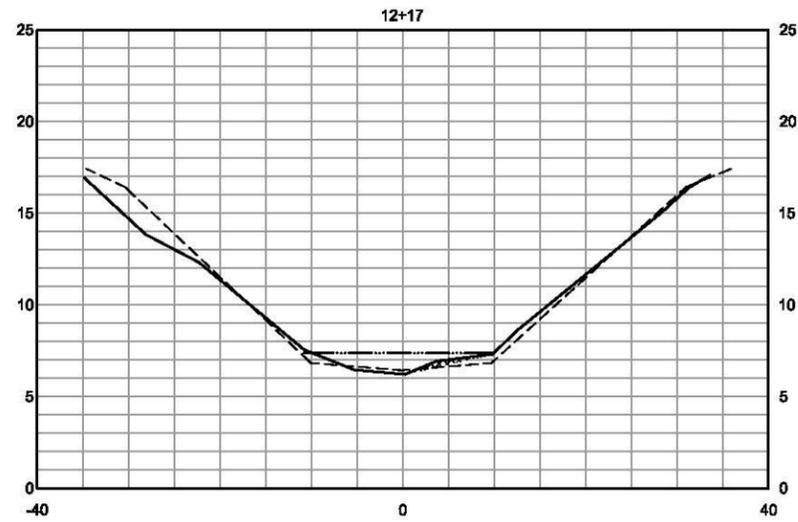
SMP PETALUMA BASIN WATERSHED ZONE 2A
WASHINGTON CREEK SMP REACH 1, 2 AND 3 (2014)
INDEX TO DRAWINGS, TABLE, VICINITY AND LOCATION MAPS

FILE NAME: 2014-Washington_General DRAWING NUMBER: G-1 SHEET 1 OF 3

CONTRACT NUMBER: _____

\\sdc\desig\p\ford\cmt\sonoma\2014\Washington Creek\sediment_removal\2014-washington

\\ak-ds01\proj\ford\cmt\shelton\2014\Washington_Creek\washcreek_removal\2014-washington

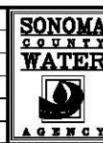


SECTIONS

SCALE HORIZ 1" = 10'
VERT 1" = 5'

BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY



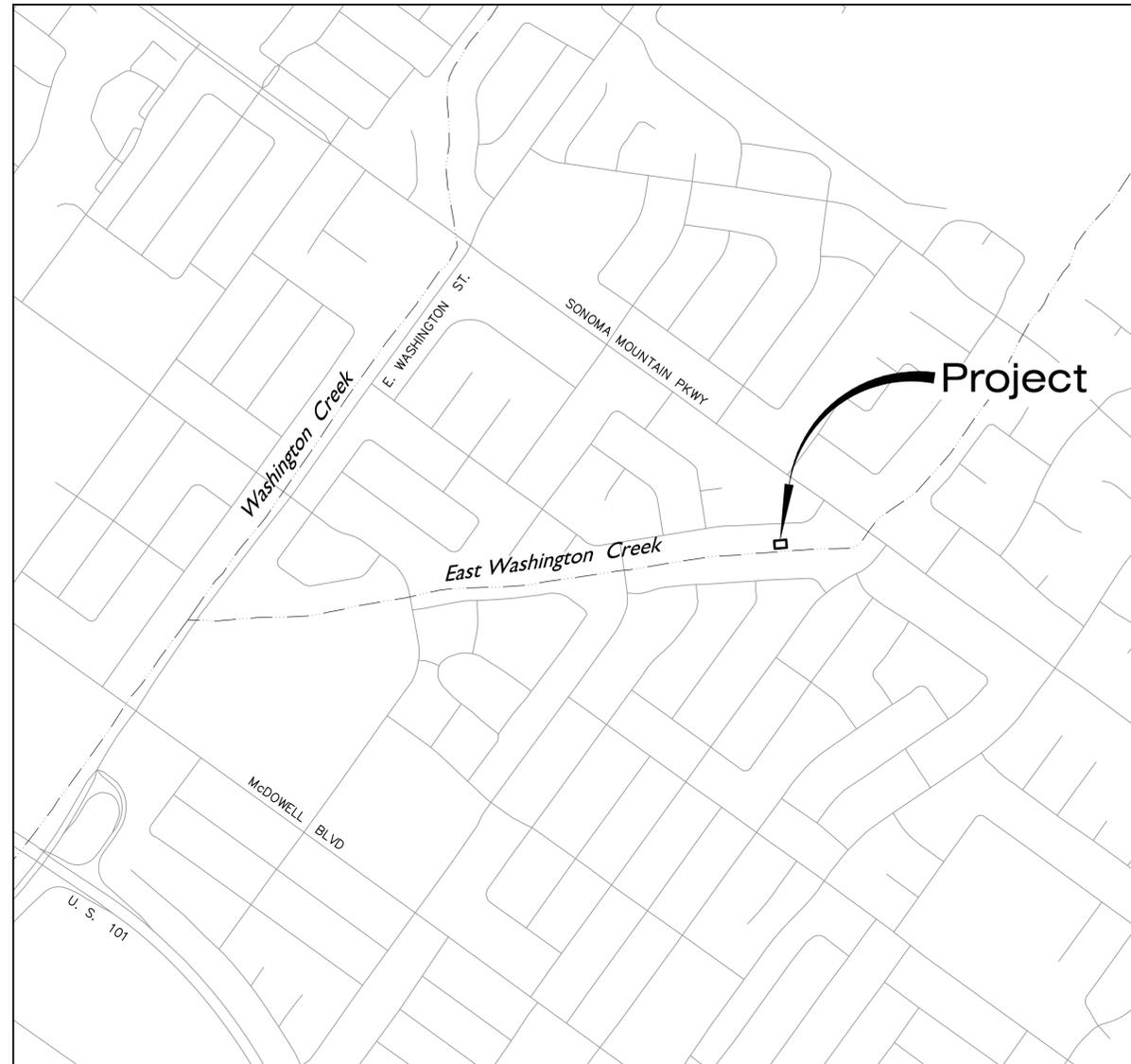
SCALE: AS SHOWN
DATE: March 11, 2014
DRAWN: _____
REVIEWED: _____

SMP PETALUMA BASIN WATERSHED ZONE 2A
WASHINGTON CREEK SMP REACH 1, 2 AND 3 (2014)
SECTIONS

FILE NAME: 2014-Washington_Civil
CONTRACT NUMBER: _____

DRAWING NUMBER: C-2
SHEET 3 OF 3

BANK REPAIR EAST WASHINGTON CREEK REACH 3



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

INDEX TO DRAWINGS

SHEET No	SHEET TITLE	SHEET DESCRIPTION
1	G-1	INDEX TO DRAWINGS, LOCATION, AND VICINITY MAPS
2	C-1	BANK REPAIR PLAN, PROFILE AND DETAILS



BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

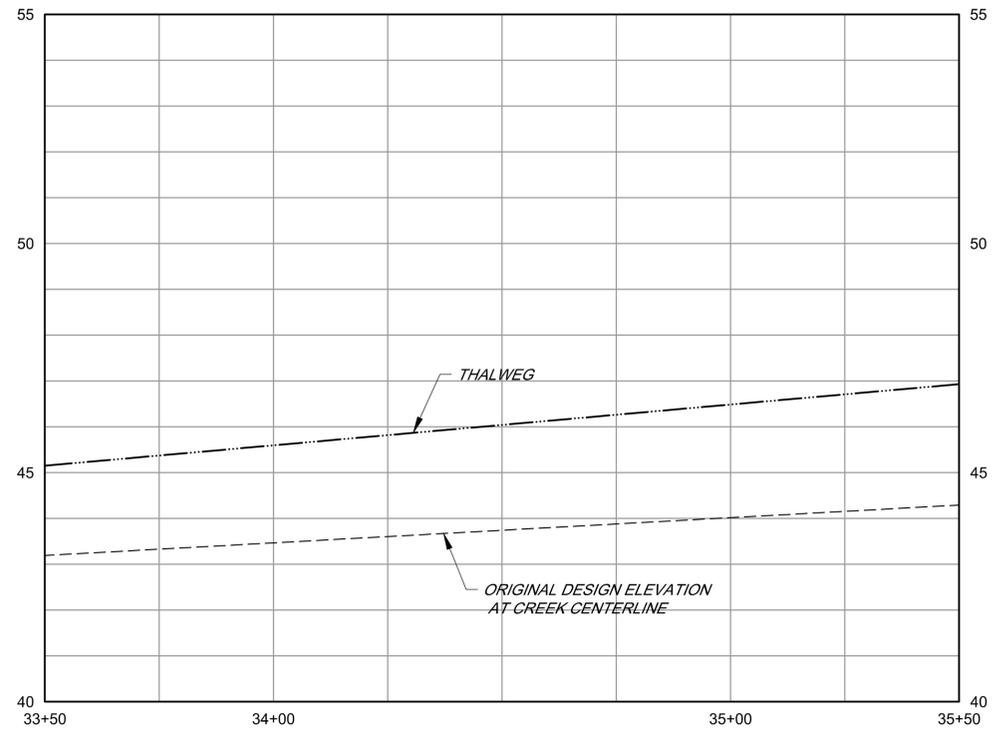
NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 3/31/2014
DRAWN: BJA	
REVIEWED:	

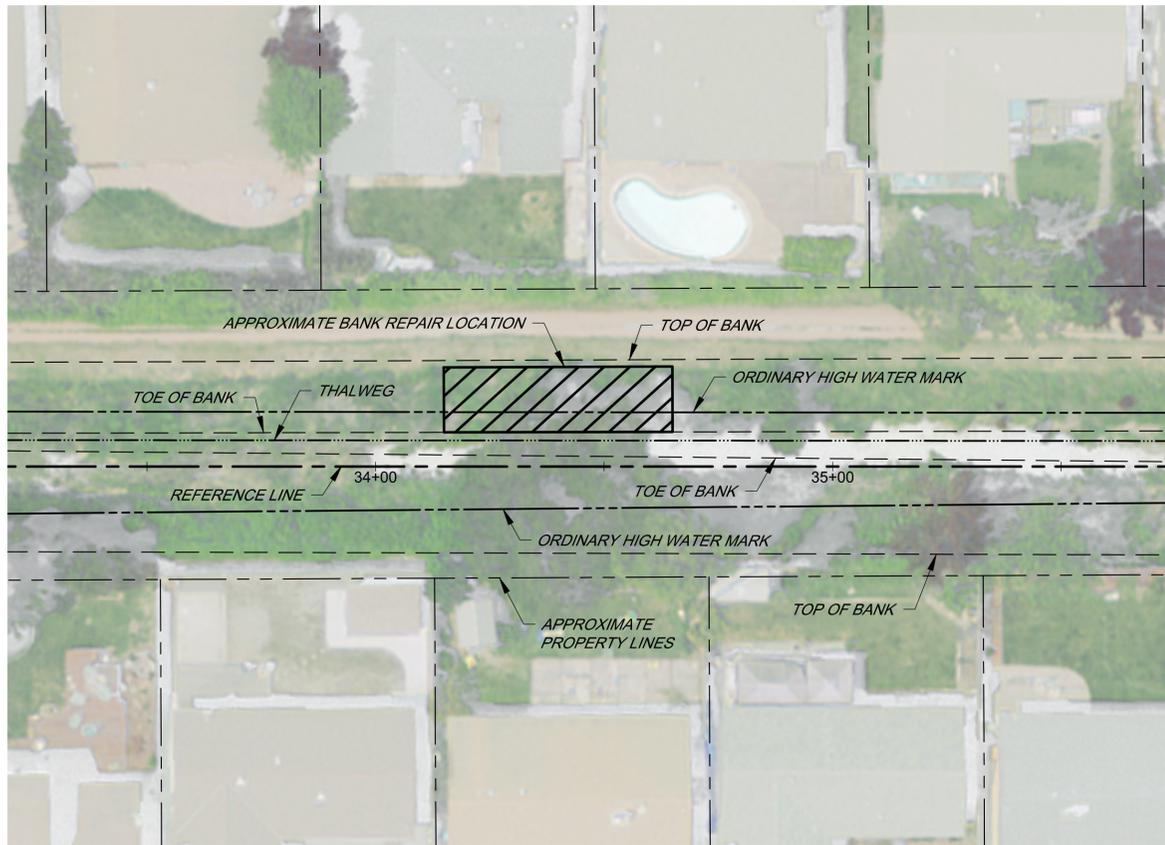
SMP - PETALUMA BASIN ZONE 2A	
EAST WASHINGTON CREEK REACH 3	
INDEX TO DRAWINGS, LOCATION, AND VICINITY MAPS	
FILE NAME: E-Washington_BankRepair-G-1.dwg	DRAWING NUMBER: G-1
CONTRACT NUMBER:	SHEET 1 OF 2

\\SDP\DATA\Proj\Flood_control\zone_2a\1748_E-Washington_BankRepair-E-Washington_BankRepair-G-1



PROFILE

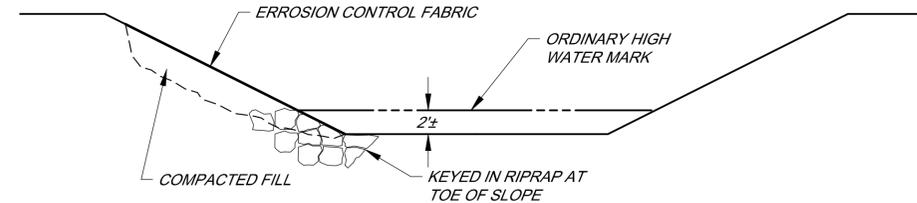
SCALE HORIZ 1" = 20'
VERT 1" = 2'



PLAN

SCALE 1" = 20'

BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY



FOR ADDITION DETAIL REGARDING BANK STABILIZATION
REFER TO THE SONOMA COUNTY WATER AGENCY
STREAM MAINTENANCE PROGRAM MANUAL FIGURE 5-6

TYPICAL BANK STABILIZATION SECTION

NOT TO SCALE

FILL BELOW OHWM
COMPACTED EARTH = 22 cu. yds.

FILL ABOVE OHWM
COMPACTED EARTH = 45 cu. yds.

TOTAL FILL = 67 cu. yds.

I:\SP-Data\Proj\100\control\zone 2a\748_E-Washington_BankRepair

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: 3/31/2014
DRAWN: BJA
REVIEWED:

SMP - PETALUMA BASIN ZONE 2A
EAST WASHINGTON CREEK REACH 3
BANK REPAIR PLAN, PROFILE AND DETAILS

FILE NAME: E-Washington_BankRepair-C-1
CONTRACT NUMBER:

DRAWING NUMBER: C-1
SHEET 2 OF 2

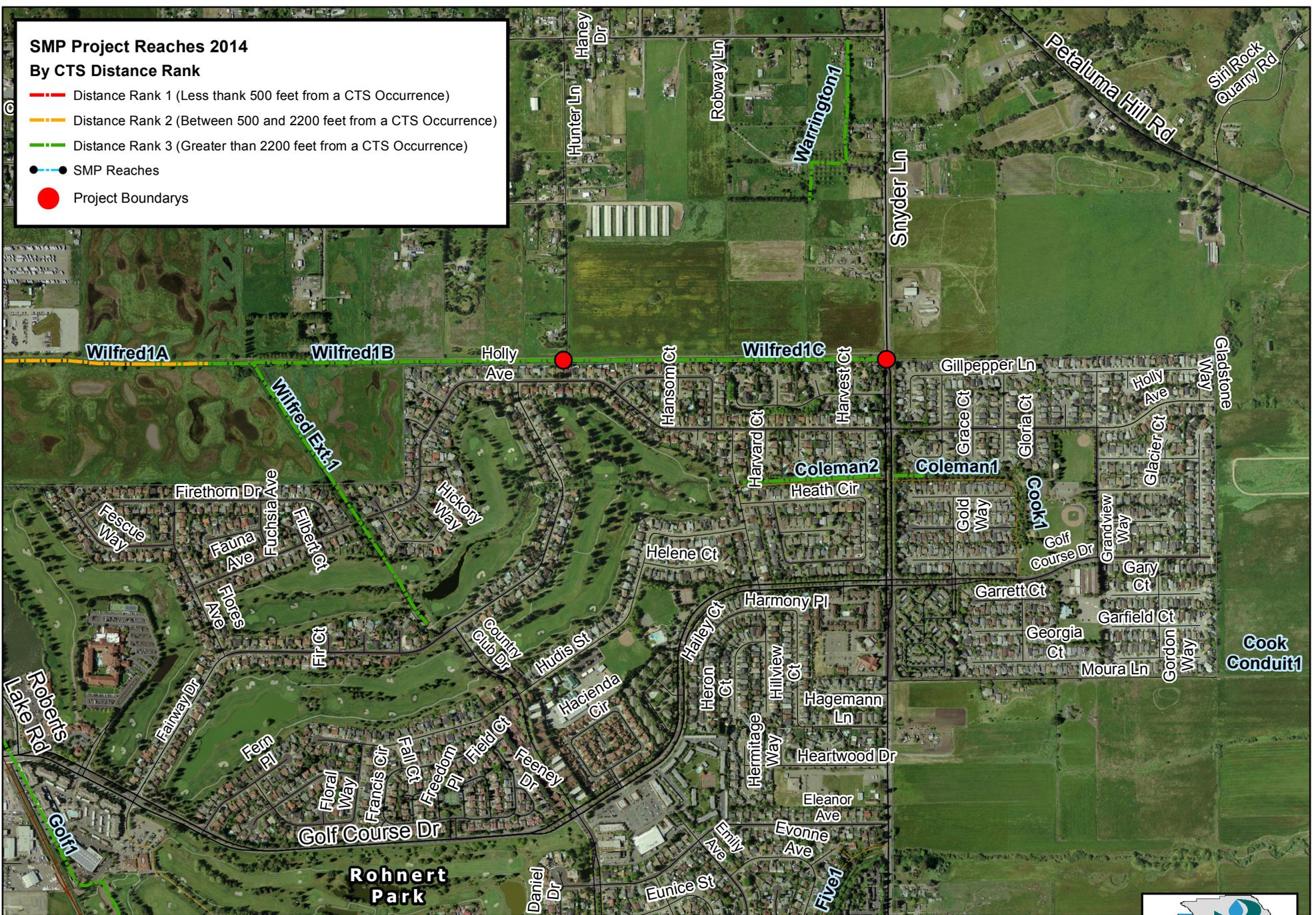
Appendix D

Project Location Maps with CTS Occurrence Overlay

SMP Project Reaches 2014

By CTS Distance Rank

- Distance Rank 1 (Less than 500 feet from a CTS Occurrence)
- Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)
- Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)
- SMP Reaches
- Project Boundaries



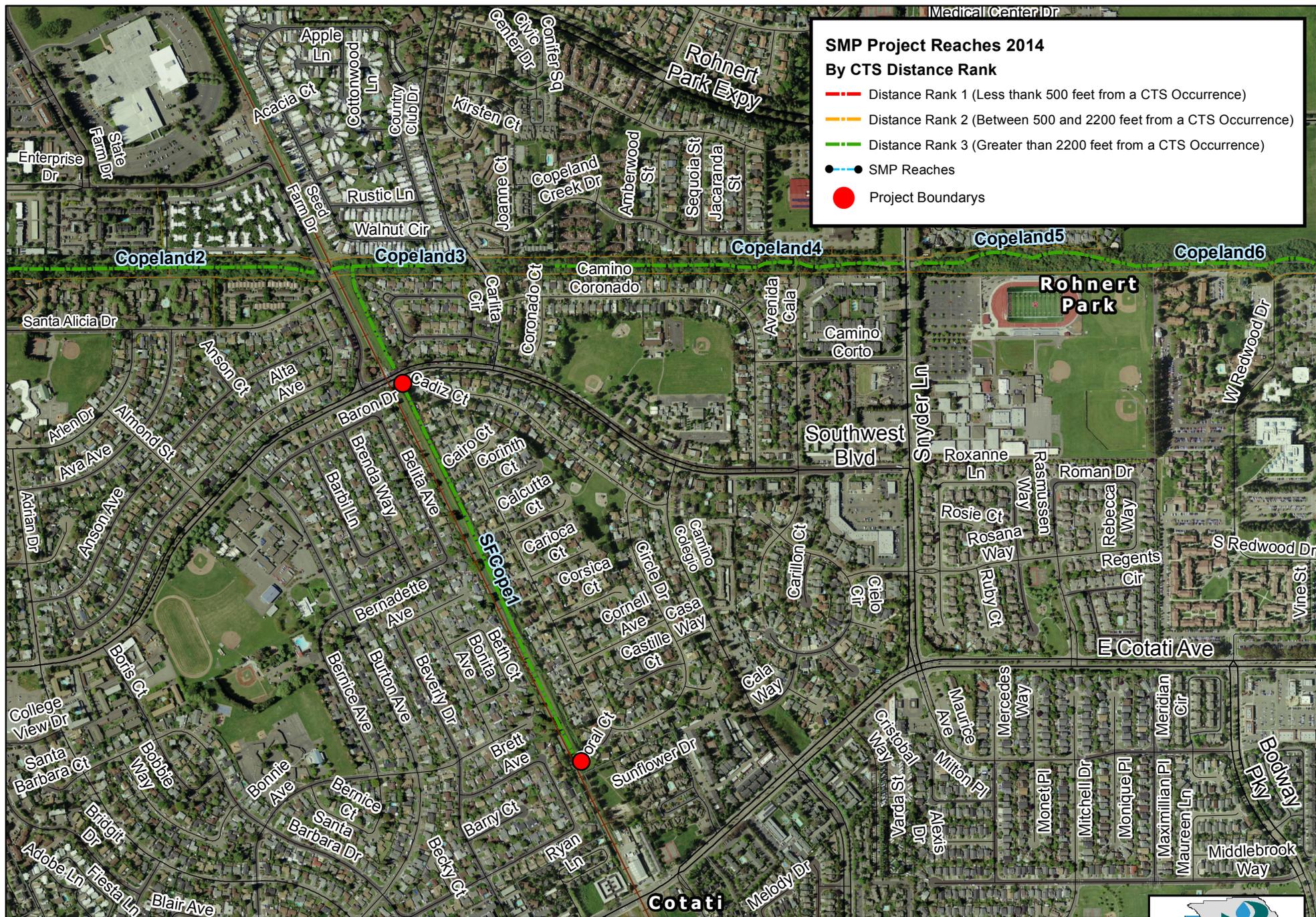
Potential Occurrence and Distance Ranks for California Tiger Salamander Operations and Maintenance Manual, Flood Zone 1A

DISCLAIMER
This map document and associated data are distributed for informational purposes only "AS-IS" at the published scale and provided without warranty of any kind expressed or implied. The positional accuracy of the data is approximate and not intended to represent survey map accuracy. The Sonoma County Water Agency assumes no responsibility arising from use of this information.



**Project Location
Map
Printed on 4/30/2014**





**Potential Occurrence and Distance Ranks
for California Tiger Salamander**
Operations and Maintenance Manual, Flood Zone 1A

DISCLAIMER
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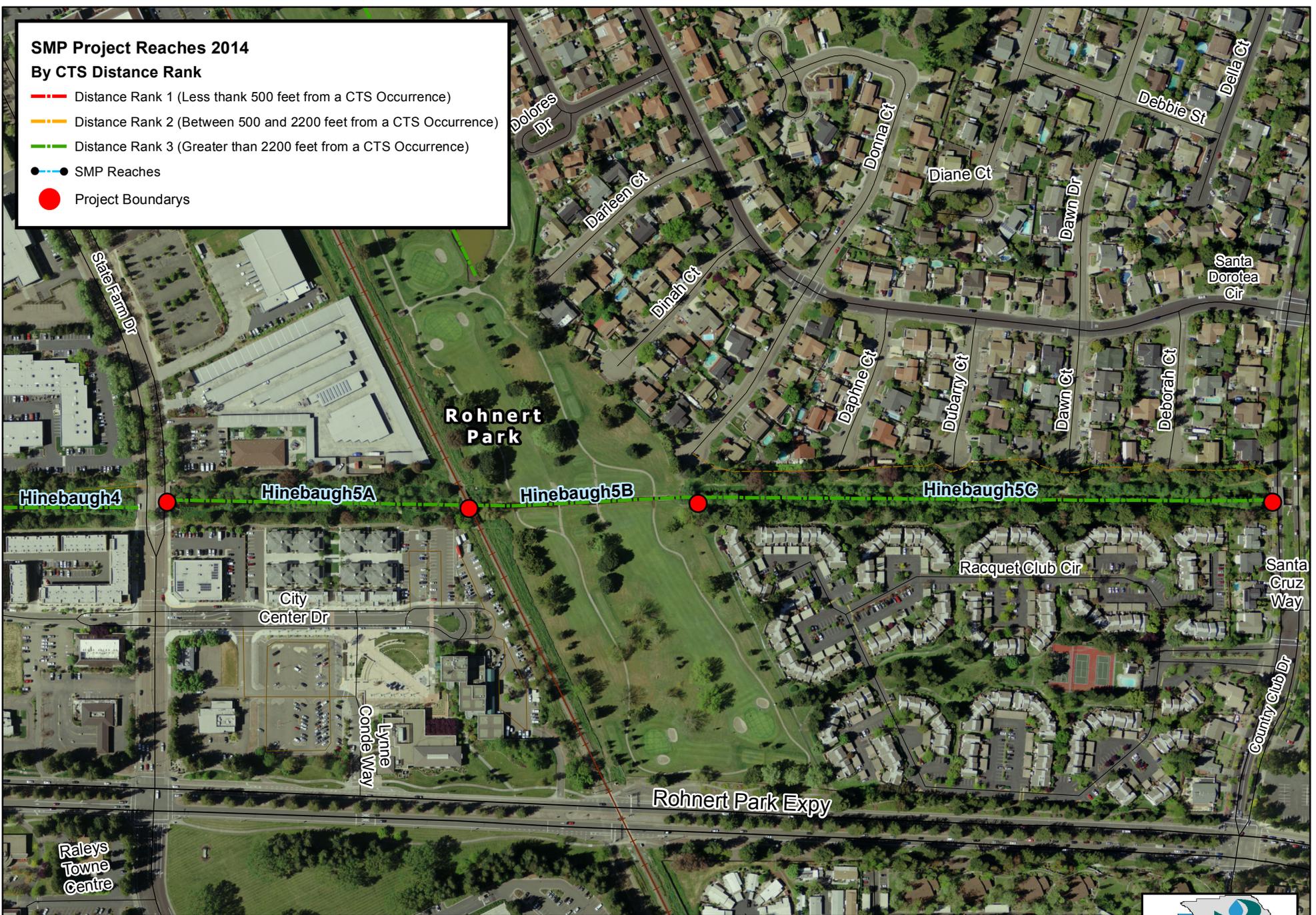
**Project Location
Map**
Printed on 4/30/2014



SMP Project Reaches 2014

By CTS Distance Rank

- Distance Rank 1 (Less than 500 feet from a CTS Occurrence)
- Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)
- Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)
- SMP Reaches
- Project Boundaries



Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

DISCLAIMER

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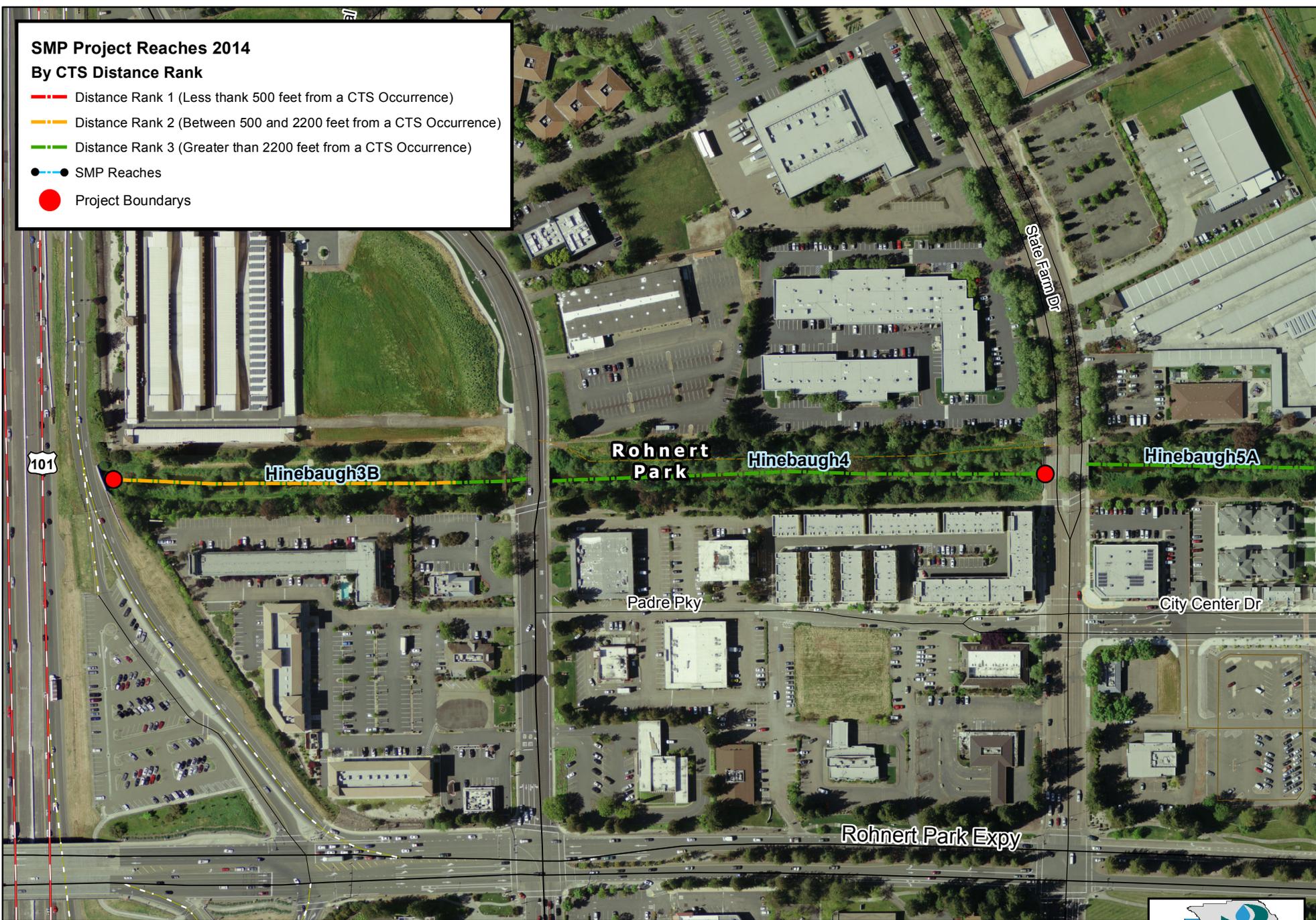
Project Location
Map
Printed on 4/30/2014



SMP Project Reaches 2014

By CTS Distance Rank

-  Distance Rank 1 (Less than 500 feet from a CTS Occurrence)
-  Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)
-  Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)
-  SMP Reaches
-  Project Boundaries



Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

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Project Location
Map
Printed on 4/30/2014



SMP Project Reaches 2014

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Potential Occurrence and Distance Ranks for California Tiger Salamander Operations and Maintenance Manual, Flood Zone 1A

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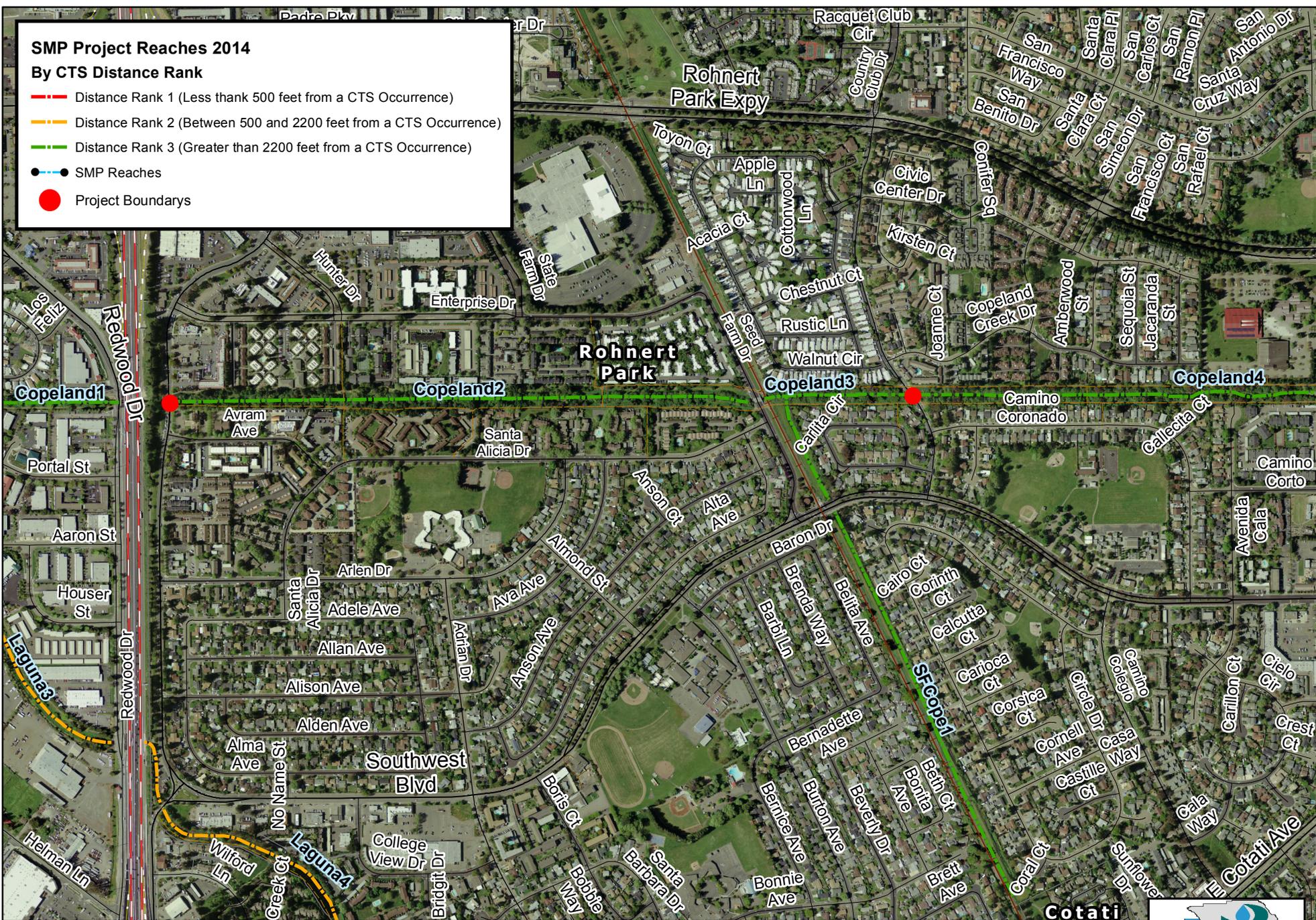
Project Location
Map
Printed on 4/30/2014



SMP Project Reaches 2014

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Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

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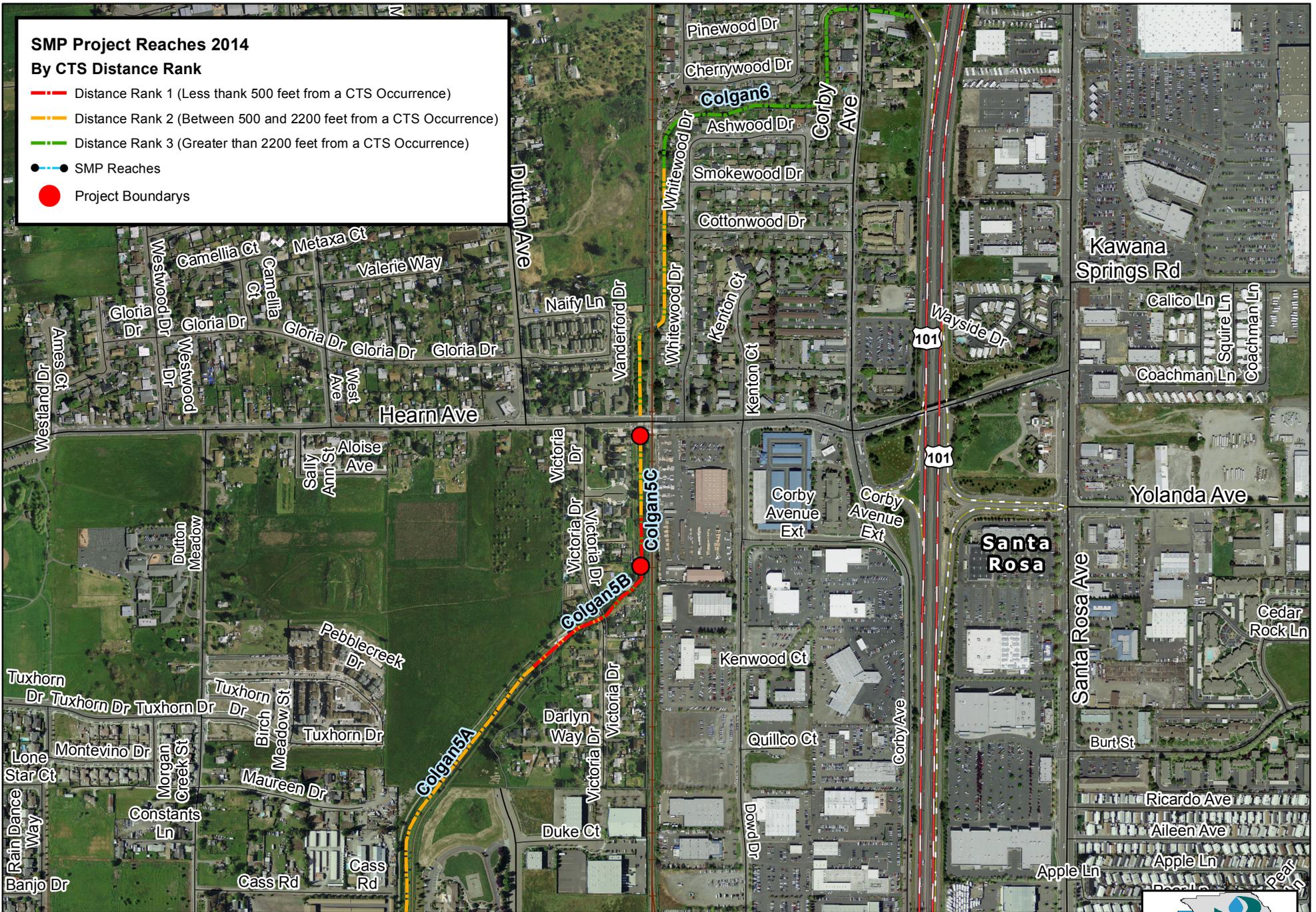
Project Location
Map
Printed on 4/30/2014



SMP Project Reaches 2014

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Potential Occurrence and Distance Ranks for California Tiger Salamander Operations and Maintenance Manual, Flood Zone 1A

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Project Location
Map
Printed on 4/30/2014



Appendix E

California Department of Fish and Wildlife Application Materials

- Annual Notification Checklist for CDFW MLSAA
- CDFW Notification of Lake or Streambed Alteration
- Copy of Check for Annual Master Agreement Fee
- CD with 2014 Annual Notification

Sonoma County Water Agency's Stream Maintenance Program

2014 Annual Notification Checklist for DFW Master LSAA

<u>Included</u>	<u>Component</u>
<input checked="" type="checkbox"/>	Check for Annual Master Agreement Fee
<input checked="" type="checkbox"/>	Completed Notification for Lake and Streambed Alteration Agreement Form <ul style="list-style-type: none"> • Check Item 5.G. Master • Check "Yes" and specify 1600-2009-0399-3 under Item 7.A.
<input checked="" type="checkbox"/>	Copy of this Checklist
<input checked="" type="checkbox"/>	Annual Work plan Notification Packet
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Cover Letter
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Project List and Locations <ul style="list-style-type: none"> o Project Site Name o Creek o Tributary to o SMP Reach name and number o United States Geological Survey (USGS) Quad, Township, Range, Section o plan view maps of project showing all areas where activity may occur, including areas traveled by equipment or used for storage of equipment or materials and known locations of sensitive species and sensitive habitats. o Latitude and Longitude o Permit Applicability o Deviations from SMP Manual activity descriptions and BMPs o Pre-construction sensitive species survey information, identification of pre-project surveys, results of prior surveys, submitted CNDDDB report forms¹
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Summary of Sediment Removal and Bank Stabilization Activities
<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> • Project Designs and Setting for Sediment Removal Projects <ul style="list-style-type: none"> o Channel characterization sheets² o Maps identifying location of planned maintenance work in relation to known sensitive species/habitat zones o Results of on-site biological surveys including presence of special-status plants¹

FOR DEPARTMENT USE ONLY

Date Received	Amount Received	Amount Due	Date Complete	Notification No.
	\$	\$		



STATE OF CALIFORNIA
DEPARTMENT OF FISH AND WILDLIFE
NOTIFICATION OF LAKE OR STREAMBED ALTERATION



Complete EACH field, unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.

1. APPLICANT PROPOSING PROJECT

Name			
Business/Agency			
Street Address			
City, State, Zip			
Telephone		Fax	
Email			

2. CONTACT PERSON *(Complete only if different from applicant)*

Name			
Street Address			
City, State, Zip			
Telephone		Fax	
Email			

3. PROPERTY OWNER *(Complete only if different from applicant)*

Name			
Street Address			
City, State, Zip			
Telephone		Fax	
Email			

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name				
B. Agreement Term Requested	<input type="checkbox"/> Regular (5 years or less) <input type="checkbox"/> Long-term (greater than 5 years)			
C. Project Term	D. Seasonal Work Period		E. Number of Work Days	
Beginning (year)	Ending (year)	Start Date (month/day)	End Date (month/day)	

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

5. AGREEMENT TYPE

Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment.	
A.	<input type="checkbox"/> Standard (Most construction projects, excluding the categories listed below)
B.	<input type="checkbox"/> Gravel/Sand/Rock Extraction (Attachment A) Mine I.D. Number: _____
C.	<input type="checkbox"/> Timber Harvesting (Attachment B) THP Number: _____
D.	<input type="checkbox"/> Water Diversion/Extraction/Impoundment (Attachment C) SWRCB Number: _____
E.	<input type="checkbox"/> Routine Maintenance (Attachment D)
F.	<input type="checkbox"/> CDFW Fisheries Restoration Grant Program (FRGP) FRGP Contract Number _____
G.	<input type="checkbox"/> Master
H.	<input type="checkbox"/> Master Timber Harvesting

6. FEES

Please see the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. **Note: The Department may not process this notification until the correct fee has been received.**

A. Project		B. Project Cost	C. Project Fee
1			
2			
3			
4			
5			
		D. Base Fee (if applicable)	
		E. TOTAL FEE ENCLOSED	

7. PRIOR NOTIFICATION OR ORDER

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, the Department for the project described in this notification?	
<input type="checkbox"/> Yes (Provide the information below) <input type="checkbox"/> No Applicant: _____ Notification Number: _____ Date: _____	
B. Is this notification being submitted in response to an order, notice, or other directive ("order") by a court or administrative agency (including the Department)?	
<input type="checkbox"/> No <input type="checkbox"/> Yes (Enclose a copy of the order, notice, or other directive. If the directive is not in writing, identify the person who directed the applicant to submit this notification and the agency he or she represents, and describe the circumstances relating to the order.)	
<input type="checkbox"/> Continued on additional page(s)	

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

8. PROJECT LOCATION

A. Address or description of project location. (Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway)					
<input type="checkbox"/> Continued on additional page(s)					
B. River, stream, or lake affected by the project.					
C. What water body is the river, stream, or lake tributary to?					
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?			<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown		
E. County					
F. USGS 7.5 Minute Quad Map Name		G. Township	H. Range	I. Section	J. ¼ Section
<input type="checkbox"/> Continued on additional page(s)					
K. Meridian (check one)		<input type="checkbox"/> Humboldt <input type="checkbox"/> Mt. Diablo <input type="checkbox"/> San Bernardino			
L. Assessor's Parcel Number(s)					
<input type="checkbox"/> Continued on additional page(s)					
M. Coordinates (If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes)					
Latitude/Longitude	Latitude:		Longitude:		
	<input type="checkbox"/> Degrees/Minutes/Seconds		<input type="checkbox"/> Decimal Degrees <input type="checkbox"/> Decimal Minutes		
UTM	Easting:	Northing:		<input type="checkbox"/> Zone 10 <input type="checkbox"/> Zone 11	
Datum used for Latitude/Longitude or UTM		<input type="checkbox"/> NAD 27		<input type="checkbox"/> NAD 83 or WGS 84	

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

9. PROJECT CATEGORY AND WORK TYPE *(Check each box that applies)*

PROJECT CATEGORY	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR/MAINTAIN EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bank stabilization – rip-rap/retaining wall/gabion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boat dock/pier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boat ramp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bridge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Channel clearing/vegetation management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culvert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Debris basin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diversion structure – weir or pump intake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filling of wetland, river, stream, or lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geotechnical survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Habitat enhancement – revegetation/mitigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low water crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Road/trail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sediment removal – pond, stream, or marina	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Storm drain outfall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temporary stream crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utility crossing : Horizontal Directional Drilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jack/bore	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open trench	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other <i>(specify):</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

10. PROJECT DESCRIPTION

A. Describe the project in detail. Photographs of the project location and immediate surrounding area should be included.

- Include any structures (e.g., rip-rap, culverts, or channel clearing) that will be placed, built, or completed in or near the stream, river, or lake.
- Specify the type and volume of materials that will be used.
- If water will be diverted or drafted, specify the purpose or use.

Enclose diagrams, drawings, plans, and/or maps that provide all of the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; an overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, and where the equipment/machinery will enter and exit the project area.

Continued on additional page(s)

B. Specify the equipment and machinery that will be used to complete the project.

Continued on additional page(s)

C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B).

Yes No (Skip to box 11)

D. Will the proposed project require work in the wetted portion of the channel?

Yes (Enclose a plan to divert water around work site)
 No

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

Continued on additional page(s)

B. Will the project affect any vegetation?

Yes (Complete the tables below) No

Vegetation Type	Temporary Impact	Permanent Impact
	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____
	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____

Tree Species	Number of Trees to be Removed	Trunk Diameter (range)

Continued on additional page(s)

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

Yes (List each species and/or describe the habitat below) No Unknown

Continued on additional page(s)

D. Identify the source(s) of information that supports a “yes” or “no” answer above in Box 11.C.

Continued on additional page(s)

E. Has a biological study been completed for the project site?

Yes (Enclose the biological study) No

Note: A biological assessment or study may be required to evaluate potential project impacts on biological resources.

F. Has a hydrological study been completed for the project or project site?

Yes (Enclose the hydrological study) No

Note: A hydrological study or other information on site hydraulics (e.g., flows, channel characteristics, and/or flood recurrence intervals) may be required to evaluate potential project impacts on hydrology.

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

12. MEASURES TO PROTECT FISH, WILDLIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment from entering watercourses during and after construction.

Continued on additional page(s)

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

Continued on additional page(s)

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

Continued on additional page(s)

13. PERMITS

List any local, state, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

- A. _____ Applied Issued
- B. _____ Applied Issued
- C. _____ Applied Issued
- D. Unknown whether local, state, or federal permit is needed for the project. (Check each box that applies)

Continued on additional page(s)

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

14. ENVIRONMENTAL REVIEW

A. Has a draft or final document been prepared for the project pursuant to the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), California Endangered Species Act (CESA) and/or federal Endangered Species Act (ESA)?			
<input type="checkbox"/> Yes (Check the box for each CEQA, NEPA, CESA, and ESA document that has been prepared and enclose a copy of each) <input type="checkbox"/> No (Check the box for each CEQA, NEPA, CESA, and ESA document listed below that will be or is being prepared)			
<input type="checkbox"/> Notice of Exemption	<input type="checkbox"/> Mitigated Negative Declaration	<input type="checkbox"/> NEPA document (type): _____	
<input type="checkbox"/> Initial Study	<input type="checkbox"/> Environmental Impact Report	<input type="checkbox"/> CESA document (type): _____	
<input type="checkbox"/> Negative Declaration	<input type="checkbox"/> Notice of Determination (Enclose)	<input type="checkbox"/> ESA document (type): _____	
<input type="checkbox"/> THP/ NTMP	<input type="checkbox"/> Mitigation, Monitoring, Reporting Plan		
B. State Clearinghouse Number (if applicable)			
C. Has a CEQA lead agency been determined?		<input type="checkbox"/> Yes (Complete boxes D, E, and F) <input type="checkbox"/> No (Skip to box 14.G)	
D. CEQA Lead Agency			
E. Contact Person		F. Telephone Number	
G. If the project described in this notification is part of a larger project or plan, briefly describe that larger project or plan.			
<input type="checkbox"/> Continued on additional page(s)			
H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?			
<input type="checkbox"/> Yes (Enclose proof of payment) <input type="checkbox"/> No (Briefly explain below the reason a filing fee has not been paid)			
<p><i>Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.</i></p>			

15. SITE INSPECTION

Check one box only.
<input type="checkbox"/> In the event the Department determines that a site inspection is necessary, I hereby authorize a Department representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant the Department such entry.
<input type="checkbox"/> I request the Department to first contact (insert name) _____ at (insert telephone number) _____ to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay the Department's determination as to whether a Lake or Streambed Alteration Agreement is required and/or the Department's issuance of a draft agreement pursuant to this notification.

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

Yes (Please enclose the information via digital media with the completed notification form)

No

17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, the Department may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless the Department has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.



Signature of Applicant or Applicant's Authorized Representative

4.16.14

Date

GRANT DAVIS

Print Name

Appendix F

SMP Manual Appendix B: Sediment Sampling & Analysis Guidelines Amended May 2013

Appendix B: Sediment Sampling and Analysis Guidelines

Amended May 2013~~December 2012~~

Introduction

These sediment sampling and analysis guidelines expand upon the description of sediment disposal in Chapter 5 of the Stream Maintenance Program (SMP) Manual, and identify disposal options based on the chemical quality of the sediment. Guidance is provided for identifying sediment sampling frequency, sampling methodology, sediment analysis, and other sediment characterization activities. Sediment sampling, disposal, monitoring, and reporting conditions issued by the North Coast Regional Water Quality Control Board (NCRWQCB) under *Order No. R1-2009-0049 Waste Discharge Requirements and 401 Water Quality Certification* and by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) under *Order No. R2-2011-0020* are included by reference. The sediment sampling and disposal process will be coordinated annually between the RWQCBs and SCWA as part of the review and approval process for annual SMP maintenance and disposal activities.

Sediment Disposal

Sediment disposal sites will be proposed to the RWQCBs Executive Officers for approval on an annual basis. The conditions for site approval will be based on analytical results from sediment sampling at the channels to be maintained and at the proposed disposal site(s). The conditions for approval will evolve as the RWQCB and SCWA become familiarized with the characteristics of sediment removed as part of maintenance activities and with sediment disposal and reuse conditions. The preference is to select disposal and reuse options with the lowest potential for detrimental environmental effects.

Beginning in 2012, SCWA has committed to only dispose of excavated sediment at upland agricultural or commercial reuse sites outside of aquatic environments, in a manner to minimize the risk of disposed sediments entering stream channels or other water bodies. Based on testing conducted since 2009, sediments in Sonoma County streams would generally meet criteria for reuse in aquatic/wetland environments. However, to support SCWA's commitment to environmental protection, all sediment excavated as part of the SMP will be reused or disposed only at upland sites. Excavated sediment will be used as construction fill, such as road bases or filling pits or leveling land, or at agricultural properties where the soil would not be used for crop production (e.g., the soil could be used for cattle bedding, but not spread on a field to grow corn or other food crops.)

Per federal and state requirements, if test results indicate that sediment quality is not suitable for reuse as construction fill, SCWA will dispose of sediment at local landfills or at a hazardous waste facility. For reuse as cover material at an approved and operating landfill, the soil would have to meet the landfill's soil quality criteria. The nearest operating landfill is the Redwood Landfill in

Novato, California. If stream sediments contain hazardous levels of contaminants, the excavated soil will be disposed at an appropriate hazardous waste facility. The nearest hazardous waste landfill is located in Kettleman City, California.

Annually, specific disposal sites will be identified as part of annual and long-term stream maintenance planning for approval by the RWQCBs Executive Officers.

~~In general, sediment disposal sites can be characterized into seven categories based on potential reuse or disposal opportunities. These categories include on-site reuse, other SCWA channel or easement reuse, other wetland supporting reuse, upland agricultural or commercial reuse (dry), upland agricultural or commercial reuse (wet), landfill disposal, and hazardous waste disposal options. These disposal options are listed below in preferential order according to how well they support program objectives for sustainability.~~

- ~~■ **Option 1: On-site reuse.** This includes reusing the sediment on-site (i.e., at the project site) within the channel or easement area for various fill or restoration purposes. For example, sediment excavated from the channel bottom could be placed adjacent to the active channel (remaining within the easement area), to enhance soil, vegetation, and riparian habitat conditions. Sediment could also be used on-site for bank stabilization purposes.~~
- ~~■ **Option 2: Other SCWA channel or easement reuse.** Similar to Option 1, this includes reusing the sediment within SCWA channel or easement areas for fill or restoration purposes. The key difference is that Option 2 would occur at a different channel or easement area within the program area, but in a similar setting to where the sediment was originally removed. For example, sediment removed from Colgan Reach 4 could be placed in Laguna Reach 1 to enhance channel habitats.~~
- ~~■ **Option 3: Wetland or floodplain restoration or enhancement.** Option 3 consists of beneficial reuse of the sediment outside or off-site of SCWA channel or easement areas, but in a wetland or floodplain setting to support ecologic functioning and habitat. As examples, gravel removed from one creek that does not support steelhead or salmonids could be placed in another creek that does in order to enhance salmonid habitat. Additionally, excavated sediment could be reused as part of habitat enhancement activities in the Laguna area. Because reuse sites under this option would potentially be located farther from the work site, increased sediment hauling distances would result. For the purposes of the sediment criteria discussed below, Option 3 sites are located in the vicinity of and potentially drain to wetlands or water bodies.~~
- ~~■ **Option 4: Upland agricultural or commercial reuse (dry).** Sediment would be reused for upland agricultural or commercial reuses that are dry, whereby the sediment would not be secondarily eroded to stream channels or water bodies. Demand for dry sediment is high, particularly for use as soil amendment for agricultural crops and construction of foundation pads for buildings or structures. It is likely that upland disposal sites within Sonoma County will be frequently available and can accept large quantities of sediment.~~
- ~~■ **Option 5: Upland agricultural or commercial reuse (wet).** Under this option, sediment would be used as fill in an already approved and permitted wetland project. This is a specific case where an approved and permitted project requires the use of sediment to fill a wetland. It is important to note that this sediment disposal plan in no way encourages or sanctions the filling of existing wetlands. However, for projects that are already approved~~

~~and permitted, it may be preferable to use sediment materials that share similar wetland properties. In this way, using good quality excavated channel sediment for reuse in a wetland setting may be preferable or advantageous to using other fill material or soils.~~

- ~~■ **Option 6: Landfill disposal.** In this option the sediment would be disposed at an approved and operating landfill for use as daily cover material for landfill operations. Currently, waste generated in the program area is hauled to a number of landfills in the greater Bay Area. The nearest operating landfill is the Redwood Landfill in Novato, California. Sediment would be taken to the nearest landfill in need of cover material.~~
- ~~■ **Option 7: Hazardous waste disposal.** This option involves the disposal of sediments containing hazardous levels of contaminants. Hazardous waste will be disposed at appropriate hazardous waste facilities. The nearest hazardous waste landfill is located in Kettleman City, California.~~

~~These seven disposal options will be evaluated in decreasing preference with potential site selection based on the quality of sediment. Due to the range of site locations for excavation and disposal, hauling distances will vary depending on the sediment removal project site location and the disposal option selected. The preference is to select disposal options that most beneficially reuse the sediment with the least environmental effects.~~

~~Multiple options can be selected in a given maintenance season for sediment disposal. It is anticipated that off-site disposal (Options 3, 4, 5, 6, and 7) will be required for the majority of maintenance activities. Option 7 would only be used if the sediment is deemed hazardous. The specific disposal sites for the options selected will be identified as part of annual and long-term sediment planning and approved by the RWQCB Executive Officer.~~

Sediment Sampling and Analysis Approach

As required by the current conditions of the RWQCB Waste Discharge Requirements (Monitoring and Reporting Program - Order Nos. R1-2009-0049 and R2-2011-0020), all sediment samples will be analyzed for the parameters/analytes listed in **Table 1 for sites located in Zone 1A (Laguna de Santa Rosa watershed within the NCRWQCB)** and **Table 2 for sites located in Zones 2A and 3A (Petaluma River and Sonoma Creek watersheds located within the SFBRWQCB)**. Sampling parameters/analytes listed in Tables 1 and 2 may be modified after a history of sampling is obtained. This may result in not requiring monitoring for some of these contaminants under certain situations or at certain locations, or the addition of more parameters/analytes if deemed necessary by the RWQCBs. ~~The sampling and analysis plan will be presented to the RWQCBs annually for review and approval.~~ A Sampling and Analysis Plan acceptable to the Water Board Executive Officer shall be submitted annually.

Sampling Frequency and Locations

- For localized sediment removal projects and bank stabilization projects that involve the removal and disposal of less than 250 cubic yards of sediment, one sample will be collected

and analyzed. Details on the methodology used to collect and composite samples are described below.

- For sediment removal or bank stabilization projects that require the removal and disposal of more than 250 cubic yards of sediment, one sample will be collected for every increment of 500 cubic yards of sediment to be removed. Details on the methodology used to collect and composite samples are described below.
- For project sites that require more than one sample, sampling locations will be selected to represent overall reach conditions. Sampling sites will be selected to target conditions at the upstream and downstream ends of the project zone. Sampling sites will also specifically target conditions downstream of culvert crossings, culvert outfalls, and key stream confluences.
- There may be situations, where for long channel reaches that are not particularly wide or deep with sediment, it will be preferable to take sediment samples for every 1,000 feet of project length rather than per 500 cubic yards of sediment removal. SCWA shall use whichever approach results in requiring more samples. It is expected that most often, the 500 cubic yard requirement will result in more sampling, but for certain projects the 1,000 ft length requirement will require more sampling and provide better representation.

Sediment Sampling Methodology

This guidance applies to discrete (single) samples and composite samples. All samples shall be collected by means of a hand trowel, a hand auger, or another sampling method approved by the regulatory agencies. The individual collecting the sample will have the discretion of choosing the sampling method which is the most efficient to perform.

Sampling will be conducted in accordance with the methods described below:

Equipment Decontamination Procedure

Due to the sensitive nature of the chemical analyses to be performed, every precaution will be taken to eliminate potential sources of cross-contamination, or unnecessary loss or degradation of contaminants during sediment sampling activities. All field personnel performing sample collection shall be trained prior to sample collection.

Start of Work Day: Clean and decontaminate all sampling equipment that will contact sediment at the start of each work day as follows:

- 1) Set up in an area away from gasoline, exhaust fumes, oil/grease. Lay out plastic sheets (flat garbage bags will due) and place sampling equipment on the plastic.
- 2) Wear latex-free gloves throughout the cleaning procedure.
- 3) Rinse sampling core/auger, mixing bowl/pan, spoons/knives, cleaning brush, wash buckets, and sieve with distilled/deionized water to remove visible sediment.

- 4) Using a brush, wash with dilute non-detergent cleaner (e.g., Alconox soap solution). Use a wash bucket to store soapy water.
- 5) Rinse with distilled/deionized water.
- 6) Rinse with Ethyl rubbing alcohol (you can find this at CVS). If you can't find Ethyl rubbing alcohol, Isopropyl rubbing alcohol may be used.
- 7) Lay equipment on plastic sheeting (garbage bags) and allow to air dry completely.
- 8) Once dry, keep all clean equipment covered inside a clean plastic garbage bag until you reach the sampling site.

Decontamination between Creek Sites: When moving to a different creek to collect samples, clean the equipment prior to arriving at the next creek site, as follows. When sampling from locations within the same creek, the equipment does not need to be washed.

- 1) Clean/Decontaminate equipment immediately prior to arriving at a new creek site:
 - a. Rinse all sampling and mixing equipment with distilled/deionized water
 - b. Using a brush, wash with dilute non-detergent (e.g., Alconox) cleaner (soap bucket)
 - c. Rinse with distilled/deionized water (capture rinse water in second bucket)
 - d. Shake off excess water and store equipment in a clean garbage bag until arrival at the next creek site.
- 2) Collect samples from the upstream end of the site, then work downstream.
- 3) Collect sub-samples for compositing (mixing) at least 10 feet apart. Target the bulk of sediment to be removed.
- 4) Ensure that the sampling equipment is never deployed or recovered through organic slicks (sheens) observed on the surface of the water or soil.
- 5) Keep sampling equipment covered and away from gasoline, oils, exhaust fumes when not being used or cleaned.

Hand Trowel Procedure

1. Remove vegetation and woody debris from the ground surface.
2. If collecting a subsurface sample, use a shovel to dig down to the desired sampling interval.
3. Use a stainless steel hand trowel to collect soil.
4. Place soil in an appropriate sampling container.
5. Replace all excavated soils to their original location (i.e., backfill the sampling hole).

Hand Auger Procedure

1. Remove vegetation and woody debris from the ground surface.
2. Use the hand auger to advance down to the top of the sampling interval.
3. Use a hand auger to collect soil from the desired depth.

4. Use a clean (decontaminated) tool to scoop the soil out of the auger and place in an appropriate sampling container.
5. Replace all excavated soils to their original location (i.e., backfill the sampling hole).
6. If hand auger refusal is encountered, sample will be collected from an alternate location.

Continuous Core Sediment Sampling

~~Continuous core sediment samples from sediment designated for removal will be collected using hand auger at a frequency of a maximum of one sample per site. Each continuous core sample will be composited by the laboratory, and analyses will be performed on the composite sample.~~

Composite Discrete Sediment Sampling

Where identified in the annual sampling plan, discrete sediment samples (cores) from different locations within the same stream reach sediment designated for removal shall be collected from desired depths using a hand auger. Sample cores shall be composited in the field by the laboratory, and prior to filling sample containers. Laboratory analyses shall be performed on the composite sample. Discrete samples shall be preserved along with the composite sample until the analytical results are available in order to identify the specific location of any detected contamination if necessary.

Sampling Depth

The sampling depth will be determined in the field. At each sampling location, the staff collecting the samples shall make an estimate of the depth of the sediment using visual clues and/or existing data. Sediment samples shall be collected at the surface and at 1 ft. intervals down to a maximum 4 ft level. In the event that the depth of the sediment is less than 1 foot, then the sample shall be collected at the surface. Samples will be collected up to a maximum depth of 4 feet because collection of samples below that depth is prohibitively difficult due to the finite strength of the individual collecting the sample, and the wet properties of the sediment, which may cause a borehole to collapse. In some locations it may even be infeasible to collect a sample at 3 or 4 feet deep due to the wet, unstable nature of the sediments. In the event that it is infeasible to collect a sample at the depth interval specified, the sample shall be collected at the deepest interval possible (using 1 foot increments). Also note that the maximum depth at the majority of sediment removal sites is not greater than 4 feet because sediment is removed at this threshold due to the significant reduction in channel conveyance capacity which occurs when sediment is accumulated higher than 4 feet.

Other Sediment Sampling Details

In general, samples will be taken from the finest sediments at a sampling site and every attempt will be made to collect sediments that are representative of the materials to be removed. Most contaminants are associated with fine-grained sediment, and it is therefore important that some of the samples contain the finest sediment that is present at a given project site. For SMP channels, fine sediments include mud, silts, and finer sandy materials. A suitable field test for grain size is to

rub sediments between the fingers: finer sediments will feel smooth, whereas coarser sediments will be gritty (SWRCB 2008). In Sonoma County channels, the grain size of accumulated sediments is generally in the large sand and small gravel ranges, which have lower surface area and therefore a lower capacity to adsorb contaminants.

As described above, ~~two~~ sub-samples will be collected at each sampling site with the sub-samples composited into a single representative sample. Every attempt will be made to collect representative samples, i.e. samples will be collected at least 10 feet apart from one another. As described above, sampling will target key locations such as culvert outfalls and stream confluences as actual site conditions dictate.

~~It is noted, in the past ten years of maintenance activities, sediment removal from a single reach has never resulted in the removal of more than 20,000 cubic yards of sediment in a single project. If more than 20,000 cubic yards of sediment will be removed from a single reach, an individual sampling plan will be submitted for Executive Officer review and approval.~~

SCWA will maintain records of field sampling methods, locations, depths, analysis, and results.

Reporting of Sediment Sampling Results

Laboratory results will be reviewed and compared to the most current federal and state sediment quality guidelines and objectives. These may include threshold values for freshwater sediment published in NOAA Quick Screening Reference Tables (aka SQUIRT) (NOAA 2008), guidance in the *Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines* (SFBRWQCB 2000), RWQCB Basin Plan Water Quality Objectives, the *Water Quality Control Plan for Enclosed Bays and Estuaries – Part I Sediment Quality* (SWRCB 2009), and guidelines from the state Office of Environmental Health Hazard Assessment (OEHHA 2010).

SCWA will submit the complete set of laboratory reports to the RWQCBs, along with a narrative report interpreting the results in comparison with the guidelines referenced above and any other guidance provided by the RWQCBs. The test results will be reviewed in conjunction with review of the annual stream maintenance notification report.

Observed Contamination and Results That Exceed Water Quality Criteria

For all projects, any observed contamination as evidenced by chemical-like odors, oily sheens, or irregularly colored sediment would be immediately reported to the local fire department's hazardous materials team and the appropriate RWQCB staff person in the Cleanups and Investigations Unit. These agencies will direct SCWA on how to handle and remove potentially hazardous sediment.

In addition, if results are found to exceed selected water quality criteria, SCWA will coordinate with the appropriate RWQCB to develop a contingency sampling plan. In this event, additional samples will be taken to determine the extent of contamination and pinpoint potential contamination

sources. Under the guidance of the RWQCB, selection of the number and location of additional samples will be determined based on potential contamination sources such as parking lots, automotive service centers, and dry cleaners. All excavated materials will be stockpiled separately on heavy plastic, covered, and stored until an appropriate disposal location is determined. Additional sampling results will then be compared to the Total Threshold Limit Concentrations (TTLCs) and STLCs specified in CCR Title 22 Chapter 11 for hazardous waste identification. Sediments not meeting the TTLC and/or STLC criteria will be disposed of at an appropriate treatment, storage, and/or disposal, facility.

Sediment Disposal Best Management Practices

Sediment Disposal Best Management Practices are discussed in Chapter 7 of the SMP Manual.

References Cited

California State Water Resources Control Board (SWRCB). 2008. *SWAMP Statewide Stream Contaminant Trend Monitoring at Integrator Sites*. Available: (http://www.swrcb.ca.gov/water_issues/programs/swamp/docs/workplans/statewide_stream_contaminants_trend_monitoring_plan.pdf)

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National Oceanic and Atmospheric Administration (NOAA) 2008. SQuirT – Screening Quick Reference Tables. NOAA Office of Response and Restoration. Report 08-1. (<http://response.restoration.noaa.gov/environmental-restoration/environmental-assessment-tools/squirt-cards.html>)

Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (OEHHA). 2010. Human-Exposure-Based Screening Numbers for Contaminated Soil. January 23, 2010. (<http://oehha.ca.gov/risk/chhsltable.html>)

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2007. Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin (Region 2). Oakland, CA. Available: http://www.waterboards.ca.gov/sanfranciscobay/basin_planning.shtml

San Francisco Bay Regional Water Quality Control Board (RWQCB). 2000. *Beneficial Reuse of dredged materials: sediment screening and testing guidelines. Draft Staff Report*. Available: (http://www.waterboards.ca.gov/sanfranciscobay/water_issues/available_documents/benreuse.pdf)

~~U.S. Environmental Protection Agency (USEPA) 2008. *Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites. RSL Table Update. Region 9. September 12, 2008. Available: http://www.epa.gov/region09/waste/sfund/prg/pdf/master_sl_table_bwrun_12SEP2008.pdf*~~

Table 1: Sediment Sample Analyte List for Zone 1A

<u>EPA Test Method</u> ¹	<u>Analyte</u>	<u>Reporting Limit for Soil</u> (dry weight mg/kg)	<u>Analyte</u>	<u>Reporting Limit for Soil</u> (mg/kg)
Conventional Parameters				
	<u>Grain Size (%)</u>	<u>0.1</u>		
9060	<u>Total organic carbon (TOC) (%)</u>	<u>0.1</u>		
	<u>Total solids (%)</u>	<u>0.1</u>		
6020	Total Metals			
	<u>Arsenic</u>	<u>0.1</u>	<u>Mercury (total)</u>	<u>0.02</u>
	<u>Cadmium (total)</u>	<u>0.1</u>	<u>Nickel (total)</u>	<u>0.1</u>
	<u>Chromium (total)</u>	<u>0.1</u>	<u>Selenium (total)</u>	<u>0.1</u>
	<u>Copper (total)</u>	<u>0.1</u>	<u>Silver (total)</u>	<u>0.1</u>
	<u>Lead (total)</u>	<u>0.1</u>	<u>Zinc (total)</u>	<u>1</u>
8081 or 8082A	Organochlorine Pesticides			
	<u>Aldrin</u>	<u>0.02</u>	<u>Dieldrin</u>	<u>0.02</u>
	<u>α-HCH</u> (hexachlorocyclohexane)	<u>0.02</u>	<u>Endosulfan I</u>	<u>0.02</u>
	<u>β-HCH</u>	<u>0.02</u>	<u>Endosulfan II</u>	<u>0.02</u>
	<u>γ-HCH (Lindane)</u>	<u>0.02</u>	<u>Endosulfan sulfate</u>	<u>0.02</u>
	<u>δ-HCH</u>	<u>0.02</u>	<u>Endrin</u>	<u>0.02</u>
	<u>Chlordane (tech)</u>	<u>0.02</u>	<u>Endrin aldehyde</u>	<u>0.02</u>
	<u>2,4'-DDD</u>	<u>0.02</u>	<u>Heptachlor</u>	<u>0.02</u>
	<u>4,4'-DDD</u>	<u>0.02</u>	<u>Heptachlor epoxide</u>	<u>0.02</u>
	<u>2,4'-DDE</u>	<u>0.02</u>	<u>Toxaphene</u>	<u>0.02</u>
	<u>4,4'-DDE</u>	<u>0.02</u>		
	<u>2,4'-DDT</u>	<u>0.02</u>		
	<u>4,4'-DDT</u>	<u>0.02</u>		
	<u>Total DDT</u>	<u>NA</u>		
8270C Modified or 8270D ²	Poly Aromatic Hydrocarbons (PAHs)			
	<u>2-Methylnaphthalene</u>	<u>0.2</u>	<u>Chrysene</u>	<u>0.2</u>
	<u>Acenaphthene</u>	<u>0.2</u>	<u>Dibenz(a,h)anthracene</u>	<u>0.2</u>
	<u>Acenaphthylene</u>	<u>0.2</u>	<u>Fluoranthene</u>	<u>0.2</u>
	<u>Anthracene</u>	<u>0.2</u>	<u>Fluorene</u>	<u>0.2</u>
	<u>Benz(a)anthracene</u>	<u>0.2</u>	<u>Indeno(1,2,3-cd)pyrene</u>	<u>0.2</u>
	<u>Benzo(a)pyrene</u>	<u>0.2</u>	<u>Naphthalene</u>	<u>0.2</u>
	<u>Benzo(b)fluoranthene</u>	<u>0.2</u>	<u>Perylene</u>	<u>0.2</u>
	<u>Benzo(k)fluoranthene</u>	<u>0.2</u>	<u>Phenanthrene</u>	<u>0.2</u>
			<u>Pyrene</u>	<u>0.2</u>
	<u>1-Methylnaphthalene</u>	<u>0.2</u>	<u>Low molecular weight PAHs, sum</u>	<u>NA</u>
	<u>1-Methylphenanthrene</u>	<u>0.2</u>	<u>High molecular weight PAHs, sum</u>	<u>NA</u>
	<u>2,3,5-Trimethylnaphthalene</u>	<u>0.2</u>	<u>PAHs, total</u>	<u>NA</u>
	<u>2,6-Dimethylnaphthalene</u>	<u>0.2</u>		

<u>EPA Test Method</u> ¹	<u>Analyte</u>	<u>Reporting Limit for Soil</u> (dry weight mg/kg)	<u>Analyte</u>	<u>Reporting Limit for Soil</u> (mg/kg)
	<u>Benzo(e)pyrene</u>	<u>0.2</u>		
	<u>Benzo(g,h,i)perylene</u>	<u>0.2</u>		
	<u>Biphenyl</u>	<u>0.2</u>		
8015-Modified and 3550A-cleanup ³	<u>Aliphatics (SHC) (aka TPH) (µg/g dry weight)</u>			
	<u>Individual n-alkanes from nC₉-nC₄₀</u>	<u>0.05</u>	<u>TPH as Diesel</u>	<u>1.0</u>
	<u>Pristane</u>	<u>0.05</u>	<u>TPH as Gasoline</u> <u>Gasoline (1,4-Bromofluorobenzene)</u>	<u>1.0</u>
	<u>Phytane</u>	<u>0.05</u>	<u>TPH as Motor Oil</u>	<u>2.0</u>

NOTE: this table is replicated from Table 5 “Routine Parameters and Target Analytes for Evaluation of Dredged Material” (RWQCB 2000)

¹ The most recent version of EPA’s Test Methods will be used.

² Analysis of an extended list of PAHs, including ~40 parent and alkylated PAH homologues, provides information on type of petroleum present, which can help determine if measured PAHs are from aerial fallout or from local potential sources to creek sediment.

³ Analysis of TPHs will be performed using appropriate cleanup methods (e.g., EPA Method 3550A with silica gel and alumina column) to remove naturally occurring biogenic material. In addition, results for individual alkanes, ranging from ~C9-C40 will be reported by the laboratory so that biogenic hydrocarbons can be distinguished from petrogenic (petroleum-related) sources.

Table 2: Sediment Sample Analyte List for Zone 2A and Zone 3A

<u>EPA Test Method</u> ¹	<u>Analyte</u>	<u>Reporting Limit for Soil</u> (dry weight mg/kg)	<u>Analyte</u>	<u>Reporting Limit for Soil</u> (mg/kg)
Conventional Parameters				
	Grain Size (%)	<u>0.1</u>		
9060	Total organic carbon (TOC) (%)	<u>0.1</u>		
	Total solids (%)	<u>0.1</u>		
6020	Total Metals			
	Arsenic	<u>0.1</u>	Mercury (total)	<u>0.02</u>
	Cadmium (total)	<u>0.1</u>	Nickel (total)	<u>0.1</u>
	Chromium (total)	<u>0.1</u>	Selenium (total)	<u>0.1</u>
	Copper (total)	<u>0.1</u>	Silver (total)	<u>0.1</u>
	Lead (total)	<u>0.1</u>	Zinc (total)	<u>1</u>
8082A	Polychlorinated biphenyls (PCBs)			
	Aroclor 1016	<u>0.20</u>		
	Aroclor 1221	<u>0.20</u>		
	Aroclor 1232	<u>0.20</u>		
	Aroclor 1242	<u>0.20</u>	Total Aroclors	<u>NA</u>
	Aroclor 1248	<u>0.20</u>		
	Aroclor 1254	<u>0.20</u>		
	Aroclor 1260	<u>0.20</u>		
8081 or 8082A	Organochlorine Pesticides			
	Aldrin	<u>0.02</u>	Dieldrin	<u>0.02</u>
	α -HCH (hexachlorocyclohexane)	<u>0.02</u>	Endosulfan I	<u>0.02</u>
	β -HCH	<u>0.02</u>	Endosulfan II	<u>0.02</u>
	γ -HCH (Lindane)	<u>0.02</u>	Endosulfan sulfate	<u>0.02</u>
	δ -HCH	<u>0.02</u>	Endrin	<u>0.02</u>
	Chlordane (tech)	<u>0.02</u>	Endrin aldehyde	<u>0.02</u>
	2,4'-DDD	<u>0.02</u>	Heptachlor	<u>0.02</u>
	4,4'-DDD	<u>0.02</u>	Heptachlor epoxide	<u>0.02</u>
	2,4'-DDE	<u>0.02</u>	Toxaphene	<u>0.02</u>
	4,4'-DDE	<u>0.02</u>		
	2,4'-DDT	<u>0.02</u>		
	4,4'-DDT	<u>0.02</u>		
	Total DDT	<u>NA</u>		
8270C or 8270D ²	Poly Aromatic Hydrocarbons (PAHs)			
	2-Methylnaphthalene	<u>0.2</u>	Chrysene	<u>0.2</u>
	Acenaphthene	<u>0.2</u>	Dibenz(a,h)anthracene	<u>0.2</u>
	Acenaphthylene	<u>0.2</u>	Fluoranthene	<u>0.2</u>
	Anthracene	<u>0.2</u>	Fluorene	<u>0.2</u>
	Benz(a)anthracene	<u>0.2</u>	Indeno(1,2,3-cd)pyrene	<u>0.2</u>
	Benzo(a)pyrene	<u>0.2</u>	Naphthalene	<u>0.2</u>
	Benzo(b)fluoranthene	<u>0.2</u>	Perylene	<u>0.2</u>

<u>EPA Test Method</u> ¹	<u>Analyte</u>	<u>Reporting Limit for Soil</u> (dry weight mg/kg)	<u>Analyte</u>	<u>Reporting Limit for Soil</u> (mg/kg)
	<u>Benzo(k)fluoranthene</u>	<u>0.2</u>	<u>Phenanthrene</u>	<u>0.2</u>
			<u>Pyrene</u>	<u>0.2</u>
			<u>Low molecular weight PAHs, sum</u>	<u>NA</u>
			<u>High molecular weight PAHs, sum</u>	<u>NA</u>
			<u>PAHs, total</u>	<u>NA</u>
<u>8015-Modified and 3550A-cleanup</u> ³	<u>Aliphatics (SHC) (aka TPH) (µg/g dry weight)</u>			
	<u>Individual n-alkanes from nC₉-nC₄₀</u>	<u>0.05</u>	<u>TPH as Diesel</u>	<u>1.0</u>
	<u>Pristane</u>	<u>0.05</u>	<u>TPH as Gasoline</u>	<u>1.0</u>
	<u>Phytane</u>	<u>0.05</u>	<u>TPH as Motor Oil</u>	<u>2.0</u>

NOTE: this table is modified from Table 5 “Routine Parameters and Target Analytes for Evaluation of Dredged Material” (RWQCB 2000)

¹ The most recent version of EPA’s Test Methods will be used.

² Analysis of an extended list of PAHs, including ~40 parent and alkylated PAH homologues, provides information on type of petroleum present, which can help determine if measured PAHs are from aerial fallout or from local potential sources to creek sediment.

³ Analysis of TPHs will be performed using appropriate cleanup methods (e.g., EPA Method 3550A with silica gel and alumina column) to remove naturally occurring biogenic material. In addition, results for individual alkanes, ranging from ~C9-C40 will be reported by the laboratory so that biogenic hydrocarbons can be distinguished from petrogenic (petroleum-related) sources.

EPA Test Method¹	Analyte	Reporting Limit for Soil² (mg/kg)	Analyte (cont.)	Reporting Limit for Soil (mg/kg)
9045	pH	pH Units		
6010/ CAM 17	Metals			
	Antimony (total)	1.1	Lead (total)	1.1
	Antimony (soluble)	1.0 mg/l	Lead (soluble)	0.50 mg/l
	Arsenic (total)	0.086	Mercury (total)	0.10
	Arsenic (soluble)	0.10 mg/l	Mercury (soluble)	0.10 mg/l
	Barium (total)	0.13	Molybdenum (total)	0.36
	Barium (soluble)	1.0 mg/l	Molybdenum (soluble)	0.10 mg/l
	Beryllium (total)	0.11	Nickel (total)	1.1
	Beryllium (soluble)	0.050 mg/l	Nickel (soluble)	0.10 mg/l
	Cadmium (total)	0.12	Selenium (total)	0.074
	Cadmium (soluble)	0.10 mg/l	Selenium (soluble)	0.10 mg/l
	Chromium (total)	0.66	Silver (total)	0.33
	Chromium (soluble)	0.10 mg/l	Silver (soluble)	0.10 mg/l
	Cobalt (total)	0.30	Thallium (total)	1.1
	Cobalt (soluble)	1.0 mg/l	Thallium (soluble)	0.10 mg/l
	Copper (total)	0.26	Vanadium (total)	0.55
	Copper (soluble)	0.10 mg/l	Vanadium (soluble)	0.10 mg/l
	Fluoride (total)	1.0	Zinc (total)	2.4
			Zinc (soluble)	0.50 mg/l
8081	Organochlorine Pesticides			
	Aldrin	0.0050	Endosulfan-I	0.0050
	α -HCH (hexachlorocyclohexane)	0.0050	Endosulfan-II	0.0050
	β -HCH	0.0050	Endosulfan-sulfate	0.0050
	γ -HCH (Lindane)	0.0050	Endrin	0.0050
	δ -HCH	0.0050	Endrin-aldehyde	0.0050
	Chlordane (tech)	0.20	Heptachlor	0.0050
	4,4'-DDD	0.0050	Heptachlor epoxide	0.0050
	4,4'-DDE	0.0050	Kepone	1.0
	4,4'-DDT	0.0050	Methoxychlor	0.0050
	Dieldrin	0.0050	Mirex	0.10
			Toxaphene	0.20
8141	Organophosphorus Pesticides			
	Azinphos-ethyl	0.10	Famphur	0.10
	Azinphos-methyl	0.10	Fenthion	0.025
	Bolstar (Sulprofos)	0.050	Malathion	0.025
	Chlorpyrifos	0.025	Mevinphos	0.050

¹ The most recent version of EPA's Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", also known as SW-846, will be used.

² All laboratory analytical reports will include the detection and reporting limits, any flags, and a QA/QC report. Electronic (PDF) submittals are preferred.

EPA Test Method ¹	Analyte	Reporting Limit for Soil ² (mg/kg)	Analyte (cont.)	Reporting Limit for Soil (mg/kg)
	Coumaphos	0.10	Parathion, ethyl	0.025
	Demeton-O	0.050	Parathion, methyl	0.025
	Demeton-S	0.050	Phorate	0.025
	Diazinon	0.025	Ronnel	0.050
	Dichlorvos (DDVP)	0.050	Simazine	0.050
	Dimethoate	0.10	Stirophos	0.025
	Disulfoton	0.025	Thionazin	0.050
	EPN	0.050	Tokuthion	0.050
	Ethion	0.025	Trichloronate	0.0050
	Ethoprop	0.050		
8082	Polychlorinated biphenyls (PCBs)			
	Aroclor 1016	0.20	Aroclor 1242	0.20
	Aroclor 1221	0.20	Aroclor 1248	0.20
	Aroclor 1232	0.20	Aroclor 1254	0.20
			Aroclor 1260	0.20
8260	Volatile Organic Compounds (VOCs)			
	Acetone	0.020	1,1-Dichloropropene	0.0050
	Benzene	0.0050	cis-1,3-Dichloropropene	0.0050
	Bromobenzene	0.0050	trans-1,3-Dichloropropene	0.0050
	Bromochloromethane	0.0050	Ethylbenzene	0.0050
	Bromodichloromethane	0.0050	Hexachlorobutadiene	0.0050
	Bromoform	0.0050	Isopropylbenzene	0.0050
	Bromomethane	0.0050	p-Isopropyltoluene	0.0050
	n-Butylbenzene	0.0050	Methyl ethyl ketone	0.015
	sec-Butylbenzene	0.0050	Methyl isobutyl ketone	0.010
	tert-Bertylbenzene	0.0050	Methyl tert-butyl ether (MTBE)	0.0050
	Carbon tetrachloride	0.0050	Methylene chloride	0.0050
	Chlorobenzene	0.0050	Naphthalene	0.0050
	Chloroethane	0.0050	n-Propylbenzene	0.0050
	Chloroform	0.0050	Styrene	0.0050
	Chloromethane	0.0050	1,1,1,2-Tetrachloroethane	0.0050
	2-Chlorotoluene	0.0050	1,1,2,2-Tetrachloroethane	0.0050
	4-Chlorotoluene	0.0050	Tetrachloroethene	0.0050
	Dibromochloromethane	0.0050	Toluene	0.0050
	1,2-Dibromo-3-chloropropane	0.0050	1,2,3-Trichlorobenzene	0.0050
	1,2-Dibromoethane	0.0050	1,2,4-Trichlorobenzene	0.0050
	Dibromomethane	0.0050	1,1,1-Trichloroethane	0.0050
	1,2-Dichlorobenzene	0.0050	1,1,2-Trichloroethane	0.0050
	1,3-Dichlorobenzene	0.0050	Trichloroethene	0.0050
	1,4-Dichlorobenzene	0.0050	Trichlorofluoromethane	0.0050
	Dichlorodifluoromethane	0.0050	Trichlorotrifluoroethane	0.0050
	1,1-Dichloroethane	0.0050	1,2,3-Trichloropropane	0.0050
	1,2-Dichloroethane	0.0050	1,2,4-Trimethylbenzene	0.0050
	1,1-Dichloroethene	0.0050	1,3,5-Trimethylbenzene	0.0050
	cis-1,2-Dichloroethene	0.0050	Vinyl chloride	0.0050

EPA Test Method ¹	Analyte	Reporting Limit for Soil ² (mg/kg)	Analyte (cont.)	Reporting Limit for Soil (mg/kg)
	trans-1,2-Dichloroethene	0.0050	m,p-Xylene	0.0050
	1,2-Dichloropropane	0.0050	o-Xylene	0.0050
	1,3-Dichloropropane	0.0050	Xylenes (total)	0.0050
8270	Poly Aromatic Hydrocarbons (PAHs)			
	Acenaphthene	0.062	Dimethyl phthalate	0.33
	Acenaphthylene	0.062	4,6-Dinitro-2-methylphenol	1.6
	Anthracene	0.062	2,4-Dinitrophenol	1.6
	Benzidine	1.6	2,4-Dinitrotoluene	0.33
	Benzoic acid	1.6	2,6-Dinitrotoluene	0.33
	Benz(a)anthracene	0.33	1,2-Diphenylhydrazine	0.33
	Benzo(b)fluoranthene	0.062	Fluoranthene	0.062
	Benzo(k)fluoranthene	0.062	Fluorene	0.062
	Benzo(g,h,i)perylene	0.062	Hexachlorobenzene	0.33
	Benzo(a)pyrene	0.062	Hexachlorobutadiene	0.33
	Benzyl alcohol	0.66	Hexachlorocyclopentadiene	1.6
	Bis(2-chloroethoxy) methane	0.33	Hexachloroethane	0.33
	Bis(2-chloroethyl) ether	0.33	Indeno(1,2,3-cd)pyrene	0.062
	Bis(2-chloroisopropyl) ether	0.33	Isophorone	0.33
	Bis(2-ethylhexyl) phthalate	0.33	2-Methylnaphthalene	0.062
	4-Bromophenyl phenyl ether	0.33	2-Methylphenol (o-cresol)	0.33
	Butyl-benzyl phthalate	0.33	3 & 4-Methylphenol (m,p-cresol)	0.33
	4-Chloroaniline	0.66	N-Nitrosodi-n-propylamine	0.33
	4-Chloro-3-methylphenol	0.33	N-Nitrosodimethylamine	0.66
	2-Chloronaphthalene	0.33	N-Nitrosodiphenylamine	0.33
	2-Chlorophenol	0.33	Naphthalene	0.062
	4-Chlorophenyl phenyl ether	0.33	2-Nitroaniline	1.6
	Chrysene	0.010	3-Nitroaniline	1.6
	Dibenz(a,h)anthracene	0.062	4-Nitroaniline	1.6
	Dibenzofuran	0.33	2-Nitrophenol	1.6
	Di-n-butyl phthalate	2.0	4-Nitrophenol	1.6
	Di-n-octyl phthalate	0.33	Nitrobenzene	0.33
	1,2-Dichlorobenzene	0.33	Pentachlorophenol	1.6
	1,3-Dichlorobenzene	0.33	Phenanthrene	0.062
	1,4-Dichlorobenzene	0.33	Phenol	0.33
	3,3'-Dichlorobenzidine	0.66	Pyrene	0.062
	2,4-Dichlorophenol	0.33	1,2,4-Trichlorobenzene	0.33
	Diethyl phthalate	0.33	2,4,5-Trichlorophenol	0.33
	2,4-Dimethylphenol	0.33	2,4,6-Trichlorophenol	0.33
8015³	Total Extractable Petroleum Hydrocarbons (TPHs)			
	TPH as Diesel	1.0		
	Motor Oil	2.0		
	Gasoline (1,4-Bromofluorobenzene)	1.0		

³ The full list of TPHs will be reported with all peaks (rather than specific compounds).

EPA Test Method⁴	Analyte	Reporting Limit for Soil² (mg/kg)	Analyte (cont.)	Reporting Limit for Soil (mg/kg)
8290 ⁴	Dioxin	1.0 pg/g		
	Asbestos	1% (PLM EPA Qualitative Method) 0.005 to 0.001 (TEM by EPA Quantitative Method)		
GCMS/IM	Nonylphenol	0.2		

⁴ For dioxin/furans all congeners and their TEQs will be reported.

Appendix G

WPP Project Descriptions

- Center for Environmental Stewardship: 2014 Pool Creek Habitat Enhancement Project
- Point Blue Conservation Science: 2014 STRAW Washoe Creek Restoration Project at Stony Point Quarry
- Point Blue Conservation Science: 2014 STRAW Corona Creek Restoration Project at Poppy Hill Farm

2014 Watershed Partnership Program Project Funding Application

APPLICATION INFORMATION

Applicant/Lead Organization Address

The Center for Social and Environmental Stewardship

Contact Name and Title

Nancy Lesa, Ph.D., Executive Director

Telephone

707-838-6641 ext. 217

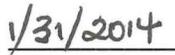
Email Address

Nancy.Lesa@cfses.org

Signature and Date



Nancy Lesa, Ph.D.



Date

PROJECT INFORMATION

Project Name

Pool Creek Habitat Enhancement Project

Project Location

The project is located on Pool Creek, on the Olufs Family Ranch Property adjacent to Conde Lane and Shiloh Road, in Windsor, CA. APN: 163-130-033.

Total Project Budget: \$73,800.00 (including a 5 year maintenance program).

Available Matching Funds: \$25,300.00 (landowner match)

Total Requested through SCWA - WPP: \$48,500.00

Proposal Narrative (maximum 5 pages); Respond in each of the following areas:

1. Project Description

The Center for Social and Environmental Stewardship (The Center) proposes to implement the Pool Creek Habitat Enhancement Project under the Sonoma County Water Agency's Watershed Partnership Program (WPP). The proposed WPP Project will mitigate for dredging activities that will occur in 2014 along Starr Creek as part of the SCWA's Stream Maintenance Program (SMP). The WPP Project proposed by The Center is to build a wildlife-friendly livestock exclusion fence and install native trees and willow sprigs, along a section of Pool Creek located on the Olufs Ranch at the intersection of Conde Lane and Shiloh Road in Windsor (Attachment A –Restoration Plan).

Pool Creek originates in the hills north of Windsor, draining an area of 2.5 square miles before converging with Windsor Creek 1 mile west of the Shiloh Road and Windsor Road intersection, next to the Shiloh Cemetery. Pool Creek is one of five major creeks that flow through the Town of Windsor, including East Windsor, Starr, Pruitt, and Windsor Creek. Combined, these creeks have a total watershed area of approximately 7,320 acres and provide important ecological habitat for the natural landscape.

The proposed WPP Project will enhance 1.25 acres of mixed riparian and emergent wetland habitat, by removing 0.15 acres of invasive non-native Himalayan blackberry (*Rubus armenicus*), planting California native trees and willow sprigs, broadcast seeding native grass and wetland emergent seeds, and installing 850 feet of wildlife friendly livestock exclusion fence. The proposed WPP project will enhance 1,200 feet of water way and 0.5 acres of mixed riparian woodland (Attachment A – Restoration Plan).

Himalayan blackberry will be mechanically removed using both hedge trimmers and manual labor followed by herbicide spot treatment of glyphosate mixed with a surfactant approved for aquatic use. Invasive Himalayan blackberry removal thinning is labor intensive and requires the effort of a skilled workforce that will include The Center's Qualified Applicator. The most cost-effective method for Himalayan blackberry removal will be employed and includes the mechanical removal of all above-ground bio-mass by The Center's skilled work crew employing hedge-trimmers and chipper. The initial blackberry removal will be immediately followed by discarding plant material at an approved disposal facility. Upon completion of this task, The Center's Licensed Qualified Applicator will return to spray emergent re-sprouts with herbicide, as necessary. (Attachment B – Photo-Documentation).

Fence construction will be set-back from the top of bank at a minimum of 25' and follow a simple wildlife friendly design incorporating galvanized t-posts every 8 feet, with a wood post installed after each 6th t-post. The maximum height of the fence will be 42". A total of 7 wires will be used to exclude both sheep and cattle. The top two wires will be fitted with reflective flagging to help water fowl identify a potential obstacle (A Landowner's Guide to Wildlife Friendly Fencing, Second Edition, 2012, Montana Fish, Wildlife and Parks).

lacking in multi-canopy habitat, especially in the form of herbaceous understory and diversity in riparian species. Many of the dense patches of exotics preclude the colonization of natives. Because of the size and habitat value of some of the existing exotic species (Arroyo willow, immature oaks, and blackberry) cannot be removed unless replacements can be installed. The in-channel portion needs strategic planting of aggressive but flood control friendly natives to limit growth of sediment catching willows and cattails.

A wildlife friendly livestock exclusion permanent fence installed correctly acts an important barrier for exclude from streams and riparian areas to improve water quality, improve native plant species diversity and shade streams to reduce water temperature for fish and macro-invertebrates. Specific benefits include reduced soil erosion, sedimentation, pathogen contamination and pollution from dissolved, particulate, and sediment-attached substances.

3. How does this project advance goals for the Water Agency Stream Maintenance Program and pertain to the 2013 planned maintenance work?

The proposed WPP Project is located within the same watershed drainage as the 2014 Starr Creek flood maintenance activities occurring along Starr Creek in Windsor. Annual SMP activities along Starr Creek include bank stabilization, sediment and debris removal and selectively thinning and removing overgrown vegetation. The proposed WPP Project will mitigate for these activities by eradicating exotic non-native and sediment catching plants, while installing ecologically appropriate native species. The proposed restoration activities will improve the creek corridor's multi canopy cover, species diversity, in stream hydraulic capacity and storm water runoff filtration functioning; reducing the necessity of SCWA SMP to remove sediment and debris downstream in the watershed in future years.

4. Location. Right of Way Access

The section of Pool Creek that will be the focus of this WPP Project is within the property boundaries of the Olufs Family Ranch Property, parcel APN: 163-130-033 (Attachment A – Restoration Plan).

5. Project Partners. Discuss the role of any project partners or public involvement.

The Center's Environmental Education, Stewardship and Service-Learning Programs engage community members in a variety of hands-on environmental education and stewardship activities designed to provide opportunities that increase stewardship efficacy and participate in the care of the local environment. To ensure the successful implementation of the restoration plan and safety of volunteers, The Center's Stewardship Manager will provide the necessary training and supervision of all activities. Work-days for volunteers will include invasive plant eradication, native plant installation and maintenance. A total of two community volunteer workdays are proposed in the first year of this project, with one volunteer workday occurring once year through the end of the contract agreement.

California native trees will be planted from liner size nursery container stock. Nursery plants will be propagated at The Center's Native Plant Nursery. The Center's Native Plant Nursery program educates community members on propagation and utilization of native plants in ecological communities while supplying Northern California restoration projects with native plant materials, plant storage and propagation services. Native trees will be planted along the top of the creek bank. Depending on channel capacity willow sprigs and specific native trees will be planted along the toe. Trees will be spaced approximately 25 feet on center to allow room for mature development and provide access to the channel. Example tree species include valley oak (*Quercus lobata*), cottonwood (*Populus fremontii*), California buckeye (*Aesculus californica*), and big leaf maple (*Acer macrophyllum*). Willow sprigs will be installed along the toe of the creek approximately 20 to 30 feet on center to assist with controlling the erosion of the steep creek bank (Attachment A – Restoration Plan).

Along the riparian corridor where cows and sheep had previously grazed causing exposed bare dirt, a seed mixture will be applied utilizing *Leymus triticoides*, *Elymus glaucus*, *Hordeum brachyantherum*, *elymus trachycaulus*, *Festuca californica*. Emergent wetland seeds broadcast at the toe of bank will include various species of *Carex sp.*, *Juncus sp.*, *Cyperus eragrostis*, and *Deschampsia sp.* Top of bank seed will be covered with a layer of straw to prevent bird predation and erosion of bank before germination.

The WWP Project will follow the SMP Manual, which includes recommended plant palettes according to channel geomorphic form. All listed plants are native riparian species found in Sonoma County waterways. The WWP Project will be developed in consideration of the current and known historic native flora of the site and the Starr Creek watershed. Planting is expected to improve boundary conditions that set basic stream dimensions and function, thereby improving stream stability.

Trees will be installed with two dri-water gel packs and will have supplemental hand-watering monthly between the months of May and October. The watering schedule will be based on seasonal temperatures and weather conditions.

2. Project Benefits

Wetlands and riparian corridors are extremely important to regional ecosystem function as well as providing for flood control and recreational opportunities. These habitats provide migration routes for terrestrial and aquatic organisms. The value of the wetland and riparian habitat lies in the benefits of habitat, water-quality, and hydrologic functions provided to the ecological landscape by controlling runoff and functioning as effective water filters that help improve surface water and attenuate storm flows.

The proposed WWP Project is designed to maximize existing native vegetation and provide for planting both upland and riparian shrub understory species. From an ecosystem functioning perspective the reach is

8. Length and area of restoration and number and species of plants installed

The proposed WPP Project will enhance 1.25 acres of mixed riparian and emergent wetland habitat, by removing 0.15 acres of invasive non-native Himalayan blackberry (*Rubus armenicus*), planting native trees and willow sprigs, broadcast seeding native grass and wetland emergent seeds, and installing 850 feet of wildlife friendly cattle exclusion fencing. The proposed WPP project will enhance 1,200 feet of water way and 0.5 acres of mixed riparian woodland (Attachment A – Restoration Plan).

9. Maintenance and Monitoring. Discuss planned maintenance.

Maintenance of the native plant installation will occur from April to October of each year after installation for a total of 5 years. Native plant maintenance will include a minimum of 3 hand-weeding visits (April-November), with one hand-weeding visit scheduled in early spring and late fall to catch emergent grasses, for the first year, and a minimum of 1 to 2 hand-weeding visits (April – November) for the subsequent 4 years. Dri-water will need to be replaced every 3 months with supplemental hand-watering monthly for years one through three, and every other month for the final 2 years thereafter.

The landowner will be responsible for spraying blackberry re-sprouts and fence maintenance after initial installation.

Annual monitoring will be conducted in the fall of each year following native plant installation and will be submitted in writing to SCWA by December 1 of each year with a required 75 percent survival rate. Project monitoring will consist of photo-documentation, plant survival count, summary of project conditions and effectiveness, and recommendations for additional supplemental plants, if necessary to reach the required 75 percent survival rate.

Volunteers are an important component to the WPP Project’s success. Including community member and high school students in the stewardship, monitoring and restoration of their community creek will increase knowledge of the riparian ecosystem, native plant identification, invasive non-native plants, the impact on the environment, water quality and conservation methods. The proposed WPP Project will allow students to gain a better understanding of how riparian communities function and will increase their familiarity with the natural history and taxonomy of the flora found in these habitats.

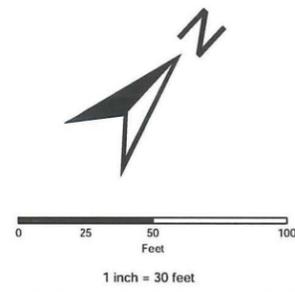
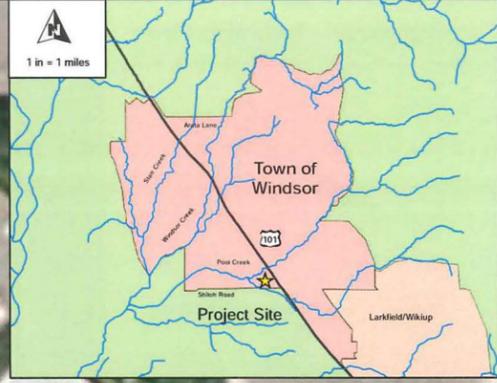
6. Project Schedule, including implementation, maintenance, and monitoring.

Year	Month	Deliverable
2014	July	SCPRMD Building Permit (fence) and CDFG 1600 Permit Application Submitted
2014	October	850 ft. livestock exclusion fence Installed
2015	January	Native tree and willow sprig installation
2015	November	First of 5 annual plant survival monitoring completed.

The remaining four years (November 2016 – December 2019) will consist of supplemental planting (if necessary), dri-water replacement supplemented with hand-watering, a minimum of 3 hand-weeding visits (April - November) annually, and yearly monitoring data collection and report submitted by December 1 of each year.

7. Project Permitting. Discuss any necessary permits or approvals that may be necessary.

The Center has confirmed with the Sonoma County Permits and Resource Management Department that a building permit will be necessary for the permanent fence, but should be easily obtained since it is limited to 850’ and to help water quality. The California Department of Fish and Wildlife will require a 1600 Streambed Alteration Agreement for the invasive removal and native plant installation.



OLUFS FAMILY RANCH PROPERTY
APN: 163-130-033

No Cattle and Sheep Grazing

Zone B

Pool Creek

Zone C

Cattle Exclusion Fence

Zone D

Unnamed Tributary of Pool Creek

Cattle and Sheep Grazing

Conde Lane

Zone A

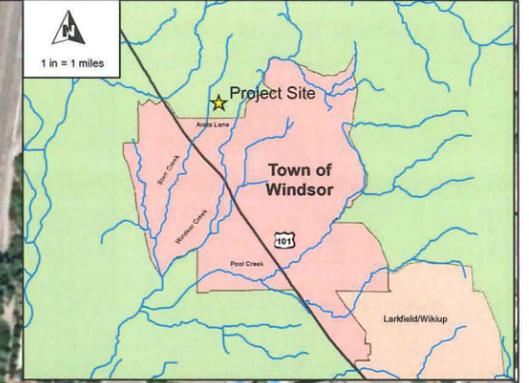
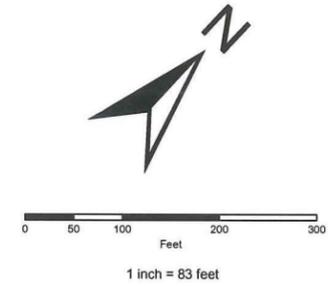
Zone F

Zone E



DESIGN:	REVISIONS	DATE	BY
Anya Perron-Burdick			
DRAWN:			
SCALE: 1 inch = 30 feet			
DATE: 01/29/2014			
FILE: pool_creek_olufs.mxd			

Attachment A: Restoration Plan



9619 Old Redwood Highway
Windsor, CA 95492
voice 707.838.6641
www.cfses.org

DESIGN:	REVISIONS	DATE	BY
Anya Perron-Burdick			
DRAWN:			
SCALE: 1 inch = 83 feet			
DATE: 01/29/2014			
FILE: pool_creek_olufs.mxd			

PRODUCED FOR:
SONOMA COUNTY WATER AGENCY
2014 WATERSHED PARTNERSHIP PROGRAM

POOL CREEK HABITAT ENHANCEMENT PROJECT
OLUFS FAMILY RANCH PROPERTY
899 SHILOH ROAD
WINDSOR, SONOMA COUNTY, CA

SHEET NO.
1
OF 3 SHEETS

Pool Creek Habitat Enhancement Project

Olufs Family Ranch Property
 899 Shiloh Road, Windsor, CA 95492

Pool Creek Habitat Enhancement Project Plant Table									
Scientific Name	Common Name	Number of Plants in each Zone						TOTAL	F.O.C. square feet
		Zone A	Zone B	Zone C	Zone D	Zone E	Zone F		
		4,000	6,000	6,000	4,500	4,000	4,000	28,500	
Trees									
<i>Acer macrophyllum</i>	big leaf maple	2	2	2	2	2	2	12	25'
<i>Aesculus californica</i>	California buckeye	2	3	3	3	2	2	15	25'
<i>Quercus lobata</i>	valley oak	3	4	4	2	3	3	19	25'
<i>Populus fremontii</i>	cottonwood	2	3	2	2	2	2	13	25'
SUB- TOTAL TREES		9	12	11	9	9	9	59	
Willows									
<i>Salix sp.</i>	willow sprigs	4	6	7	5	5	5	32	25'
SUB- TOTAL WILLOWS		4	6	7	5	5	5	32	
SUB-TOTAL PLANTS/ ZONE		13	18	18	14	14	14	91	

ATTACHMENT B

Photo-Documentation



Photo 1: North end of Zone D facing south. Fence would be placed 25' to the left of the top-of-bank. Date: 1/27/2014



Photo 2: Middle of Zone D, facing south. Fence would be placed 25' to the left of the top-of-bank. Date: 1/27/2014



Photo 3: Standing in middle of Zone D, looking west onto Zone C. Date: 1/27/2014



Photo 4: Zone D, facing North, fence 25' to the right. Date 1/27/2014



Photo 5: Zone E in foreground, with Zone B with blackberry thickets in background.
Date 1/27/2014



Photo 6: Zone E facing North, with fence placed 25' to the right. Date 1/27/2014



Photo 7: Zone E facing north. Date 1/27/2014



Photo 8: Zone A and B facing east, with blackberry thickets in foreground.



Photo 8: Zone F, facing south. Date: 1/27/2014



Photo 8: Zone A, facing west towards Conde Lane. Date: 1/27/2014

ATTACHMENT C

Proposed Project Budget

TOTAL BUDGET: (July 2014 - December 2019)

TOTAL PROPOSED BUDGET	Water Agency Share	Landowner Cost Share	TOTAL COST
Personnel Services	\$40,700.00	\$23,800.00	\$64,500.00
Supplies and Materials Expenses	\$7,800.00	\$1,500.00	\$9,300.00
TOTAL	\$48,500.00	\$25,300.00	\$73,800.00

Task 1: Permitting/Fence Installation/ Blackberry Removal (July 2014 - November 2014)

	Water Agency Share	Landowner Cost Share	TOTAL COST
Personnel Services	\$6,500.00	\$ 6,800.00	\$13,300.00
Supplies and Materials Expenses	\$3,500.00	\$ 500.00	\$4,000.00
TOTAL	\$10,000.00	\$7,300.00	\$17,300.00

Task 2: Revegetation Plan Design and Installation (November 2014 - April 2015)

	Water Agency Share	Landowner Cost Share	TOTAL COST
Personnel Services	\$4,610.00	\$ -	\$4,610.00
Supplies and Materials Expenses	\$1,500.00	\$ -	\$1,500.00
TOTAL	\$6,110.00	\$0.00	\$6,110.00

Task 3: Maintenance, Monitoring, and Supplemental Planting (May 2015 - December 2019)

	Water Agency Share	Landowner Cost Share	TOTAL COST
Personnel Services	\$29,590.00	\$ 17,000.00	\$46,590.00
Supplies and Materials Expenses	\$2,800.00	\$ 1,000.00	\$3,800.00
TOTAL	\$32,390.00	\$18,000.00	\$50,390.00

2014 Watershed Partnership Program Project Funding Application

APPLICATION INFORMATION

Applicant/Lead Organization Address

Point Blue Conservation Science
3820 Cypress Dr. #11
Petaluma, CA 94954

Contact Name and Title: John Parodi, Restoration Manager

Telephone: (707) 781-2555 ext.359

Email Address: jparodi@pointblue.org

Signature and Date



Education and Outreach Director
PRBO Conservation Science

List of Other Participating Organizations

The project team consists of the following organizations: Soiland Co. Inc.; Prunuske Chatham, Inc. (PCI); Trout Unlimited; Conservation Corps North Bay; Sonoma County Schools

PROJECT INFORMATION

Project Name: STRAW: Washoe Creek Restoration Project at Stony Point Quarry

Project Location: Washoe Creek

Project Budget: \$70,715

Available Matching Funds: \$20,918

STRAW will contribute a minimum in-kind match in the form of volunteer hours totaling \$20,918.40. Restoration activities will engage six classes of students from Sonoma County (6 teachers, 120 students, 34 community volunteers = 160 volunteers x 6 hours = 960 hours x @21.79/hr = \$20,918.40)

Total Requested through WPP: \$49,797

Proposal Narrative

1. Project Description

Point Blue Conservation Science's Students and Teachers Restoring A Watershed (STRAW) Project proposes to work with students, teachers, community volunteers and professional restorationists on a professionally-designed and student implemented riparian habitat restoration project at a tributary to Washoe Creek at The Stony Point Rock Quarry, owned and operated by Soiland Co. Inc. Washoe Creek is a perennial stream located southwest of Cotati. It is about 2 mi (3 km) long and discharges to the Laguna de Santa Rosa. The variety of native habitats in the Washoe Creek watershed have been largely altered or replaced due to the modern uses of grazing, agriculture, and urban development.

With the exception of one heritage Arroyo willow (*Salix lasiolepis*) and an isolated stand of Himalayan Blackberry (*Rubus armeniacus*), this site is lacking any substantial vegetation and has an actively eroding channel which is thereby discharging elevated levels of sediments and nutrients into the greater Laguna de Santa Rosa Watershed. Through revegetation and invasive plant removal, the resulting project will enhance over 1400 linear feet of riparian waterway, improving the habitat quality of the reach, as well as reducing sediment inputs into the Laguna de Santa Rosa.

We propose a one-year project that will include the removal of an isolated population of Himalayan Blackberry (*Rubus armeniacus*) and the revegetation of the drainage with appropriate native vegetation. Non-native vegetation removal will be performed by Conservation Corps North Bay, and classes from various Sonoma County communities will install approximately 100 willow sprigs (*Salix spp.*) and 80 native shrubs and grasses. These species will be selected from studies of reference reaches within the Laguna de Santa Rosa watershed under the guidance of PCI staff and based on the site's ecological needs and prior performance of candidate species in similar sites. In addition, species will be selected to maximize long term success with regards to an uncertain future climate.

Students will receive at least one in-class presentation from our program staff or our STRAW Faculty about the project including watershed and restoration science as well as site specific training and details in the field. Each of the teachers will have the opportunity to attend Watershed Week, a three-day annual professional development workshop in August and two additional STRAW Teacher Network events to support them in providing their classrooms with a rich context for learning about complicated environmental issues.

The project will be installed in the 2014-2015 school year with summer maintenance performed for three consecutive years, and annual monitoring performed for five consecutive years.

2. Project Benefits

One benefit of this project is to enhance the riparian habitat structure and resulting function through the installation of a multi-plant palette that will include specific plant-based erosion control practices. Through revegetation, resulting benefits will include the reduction of sediment inputs into the Laguna de Santa Rosa drainage, thereby reducing the frequency of future sediment removal activities downstream. In addition, revegetation will dramatically enhance the habitat value of the riparian corridor. This site was selected because of its proximity to the Sonoma County Water Agency's proposed stream maintenance sites for 2014 within the Laguna de Santa Rosa watershed.

Another benefit of this project is community involvement in the active enhancement of the watershed. Through Point Blue's STRAW Project, Sonoma County school children, teachers and parents will play an active role in improving Sonoma's watersheds and learn about factors that contribute to the management and health of their waterways. In addition, CCNB, a nationally recognized leader in youth service, will engage a team of ethnically diverse corps members to implement portions of the project scope. These experiences give corps members the knowledge, values, and skills to become productive and responsible members of their community and stewards of the environment.

An additional benefit of this project is the opportunity to highlight how many of our local businesses are actively working to improve the health of Sonoma County's communities through initiating innovative environmental and energy-saving practices at their business locations. In addition to many other practices, Soiland Co., Inc. has just installed a new 210kW solar array adjacent to the proposed restoration site, which supplements the existing 13.4 kW system making the Stony Point Rock Quarry almost completely powered by renewable energy.

3. How does this project advance goals for the Water Agency's Stream Maintenance Program and pertain to the 2014 planned maintenance work?

The STRAW: Washoe Creek Restoration Project at Stony Point Quarry advances the goals for SCWA's Stream Maintenance Program to reduce sediment and improve stream function for flood protection. The project will implement best management practices (BMPs) to stabilize creek banks and improve the habitat quality of the riparian corridor. These practices will dramatically reduce the sediment inputs into the Laguna de Santa Rosa system, resulting in a reduced need for sediment removal at downstream locations. In addition, the project will reduce invasive species populations which will also help to improve stream function for flood protection. These invasive species provide poor sediment retention due to their shallow root structures and are components of poor quality habitat. This project pertains to the Sonoma County

Water Agency's 2014 proposed stream maintenance work for reach scale stream maintenance work in Flood Zone 1A.

4. Location. Right of Way Access.

The project site on Washoe Creek is located at the Stony Point Rock Quarry, owned and operated by Soiland Co., Inc. near the intersection of Stony Point Road and Highway 116 in Cotati. Soiland Co., Inc. will provide access to the STRAW Project for restoration, maintenance and monitoring activities.

5. Project Partners.

Point Blue is dedicated to conserving birds and ecosystems through research and education. Our highest priority is to reduce the negative impacts of changes in land-use, the ocean and climate on birds and ecosystems while promoting adaptation to future conditions. Point Blue's STRAW Project provides a valuable community connection and educational opportunities for students and teachers while enhancing ecosystems by reducing sedimentation and habitat loss. Since 1993, STRAW has restored over 25 miles of creek through 450 restoration projects involving more than 30,000 K-12 students who have planted over 30,000 native plants.

The mission of Stony Point Rock Quarry is to supply our community's needs for construction and landscape materials. We serve wholesale and retail customers for major construction projects and individual home landscaping needs. We value long-term relationships and believe our employees, customers, and vendors are vital to our success. A fundamental tenet of our business is to remain good stewards of our resources and talents so that we can continue to support and improve our community into the future.

Prunuske Chatham, Inc. (PCI) is an environmental engineering firm that specializes in ecological restoration, hydrology, revegetation, and erosion control. PCI designs professional quality habitat restorations for students to conduct.

Founded in 1982 as the nation's 1st local nonprofit conservation corps, Conservation Corps North Bay (CCNB) is committed to developing youth and conserving natural resources for a strong, sustainable community. Through community service and civic engagement, corpsmembers address critical needs in the North Bay, helping land-management agencies, municipalities, public schools, neighborhood associations and others accomplish environmental and human-service goals. In addition to providing environmental stewardship, each corpsmember has his or her individual achievement plan, and CCNB works with the youth in our Education Program either toward the completion of a high school diploma or to lead into technical skills training or college level courses. Since our inception, our organization has improved the lives of more

than 5,000 youth while performing more than three million hours of work on hundreds of thousands of acres of public lands.

Trout Unlimited’s mission is to conserve, protect and restore North America's coldwater fisheries and their watersheds and is dedicated to ensuring that by the next generation, robust populations of native and wild coldwater fish once again thrive within their North American range, so that our children can enjoy healthy fisheries in their home waters.

6. Project Schedule, including implementation, maintenance, and monitoring.

STRAW uses the following annual timeline for restoration, monitoring, and maintenance activities:

Month(s)	Activities
July/August	Site reconnaissance/restoration planning and design Teacher professional development at Watershed Week Begin scheduling classes to restoration sites
September/October	Finalize restoration planning and design Finalize scheduling classes to restoration sites Conduct in-class presentations for restoration Conduct fall teacher professional development seminar Conservation Corps implements invasive species removal
November-March	Restoration implementation Conduct spring teacher professional development seminar
April-October	On-going maintenance of project site
September/October	Monitoring conducted

7. Project Permitting.

No permitting is required for revegetation efforts.

8. Length and area and number and species of plants installed.

Minimum Project Dimensions:

1,400 ft x 15 ft= 21,000ft²

Minimum Number of Plants Installed:

80 container plants, 100 willow sprigs

The plant species will be selected from studies of reference reaches within the Laguna de Santa Rosa watershed under the guidance of PCI staff.

9. Maintenance and Monitoring.

Plants are maintained and monitored for a five-year establishment period. Monitoring data facilitate the project team in adaptively managing project sites by identifying site specific variables that contribute to plant mortality. Plant maintenance work begins in spring 2014. Should survival of container plants fall below 70% by the end of the first year after installation of each phase, Point Blue will replace dead plants to bring the totals up to 80% or more of the originally installed plants. However, Point Blue is not responsible for damages due to vandals, fire, livestock, flooding, erosion, extreme drought, or other disasters out of Point Blue's control.

Maintenance and monitoring activities will include:

- Regularly inspect plantings from late spring through early fall for three years – as often as once per week, but no less than once per month for the first year, and once per month for the following two years.
- Maintain plantings at a minimum by weeding and repairing browse protectors.
- Irrigate plantings with most efficient and cost-effective means available; possibilities include temporary drip systems, DriWater, and hand watering.
- Monitor plant survival by species in October to inform future planting designs for five years.
- Perform annual photomonitoring using the State Water Resources Control Board's SOP 4.2.1.4.

Budget: Please see the attached project budget (Attachment A).

Supporting documents.

- Attachment B - Project map
- Attachment C - Documentation of status as a federally recognized nonprofit organization
- Letters of commitment from participating partners:
 - 1.Attachment D – Soiland Co., Inc.
 - 2.Attachment E -- Prunuske Chatham, Inc.
 - 3.Attachment F -- Conservation Corps North Bay
 - 4.Attachment G – Trout Unlimited

Point Blue

Conservation science
for a healthy planet.

STRAW: Washoe Creek at Stony Point Rock Quarry

LABOR*	
Installation	\$14,971.05
Maintenance & Monitoring	\$15,456.71
Total Labor	\$30,427.76
OTHER DIRECT COSTS	
Materials	
Installation, Maintenance & Monitoring	\$5,938.45
Mileage	
Installation	\$309.12
Maintenance & Monitoring	\$685.44
Subcontractors	
STRAW Faculty	\$910.00
Conservation Corps North Bay	\$5,774.40
Prunuske Chatham, Inc.	\$1,610.00
Total Other Direct Costs	\$15,227.41
Indirect on Other Direct Costs	\$4,141.90
TOTAL	\$49,797.07

* includes salary, fringe benefits and indirect expense

Total Funding Request	\$49,797.07
MATCH	
960 Volunteer hours @ \$21.79	\$20,918.40
Total Project Budget	\$70,715.47

Attachment B: Project Map



Internal Revenue Service

Date: August 29, 2006

POINT REYES BIRD OBSERVATORY
3820 CYPRESS DR STE 11
PETALUMA CA 94954-6964

Department of the Treasury
P. O. Box 2508
Cincinnati, OH 45201

Person to Contact:

Kathy Masters ID# 31-04015
Customer Service Representative

Toll Free Telephone Number:
877-829-5500

Federal Identification Number:
94-1594250

Dear Sir or Madam:

This is in response to your request of August 29, 2006, regarding your organization's tax-exempt status.

In May 1965 we issued a determination letter that recognized your organization as exempt from federal income tax. Our records indicate that your organization is currently exempt under section 501(c)(3) of the Internal Revenue Code.

Our records indicate that your organization is also classified as a public charity under sections 509(a)(1) and 170(b)(1)(A)(vi) of the Internal Revenue Code.

Our records indicate that contributions to your organization are deductible under section 170 of the Code, and that you are qualified to receive tax deductible bequests, devises, transfers or gifts under section 2055, 2106 or 2522 of the Internal Revenue Code.

If you have any questions, please call us at the telephone number shown in the heading of this letter.

Sincerely,



Janna K. Skufca, Director, TE/GE
Customer Account Services



CORRESPONDENCE

Soiland Co., Inc.

7171 Stony Point Road, Cotati, CA 94931
(707) 795-1775 (tel) • (707) 795-9426 (fax)

www.soilandrocks.com

January 30, 2014

Grant Davis
Sonoma County Water Agency
404 Aviation Blvd
Santa Rosa, CA 94503

Dear Mr. Davis,

I am writing to express my support for Point Blue Conservation Science's Students and Teachers Restoring A Watershed (STRAW) Program and their application to the Sonoma County Water Agency Watershed Partnership Program for Washoe Creek in Cotati, CA. For the past 21 years STRAW has provided excellent watershed science education, including teaching thousands of North Bay students and teachers professional quality habitat restoration practices.

Since its inception in 1993, STRAW has provided over 35,000 students with opportunities to participate in 450 completed restorations on both rural and urban creeks and wetlands. Together they have planted over 36,000 native plants and restored over 30 miles of habitat. STRAW is directly responsible for connecting schools, businesses, government agencies and ranches to restore local ecosystems. Many partners depend on STRAW to help facilitate their education and land management goals.

Soiland is a 52 year-old company with roots in the North Bay construction and development community. We provide construction and landscaping materials to contractors and homeowners alike. We strongly value both our commitment to environmental responsibility and our involvement in the local community. We are excited to partner with STRAW to provide a learning experience for young students working in the outdoors to preserve our local streams.

We urge you to consider funding this project to benefit our local ecosystem, schools and community. Thank you.

Sincerely,

Mark Soiland
President



PRUNUSKE CHATHAM, INC.

January 30, 2014

Re: STRAW application for SCWA Watershed Partnership Program

To Whom It May Concern:

I am writing to express my strong support for the Students and Teachers Restoring a Watershed (STRAW) efforts to continue to care for Sonoma County streams. This year's projects, in Corona and Washoe Creeks, will help support critical watershed health for both the Petaluma and Laguna de Santa Rosa systems. STRAW's fundamental approach of investing school children with pride and hope in their ability to take care of the environment combined with projects in such visible creeks multiplies the immediate benefits of their work for many years to come.

Prunuske Chatham, Inc. (PCI) continues to provide technical support to STRAW. Their work inspires all of our staff.

Please support STRAW's proposal for this year's Watershed Partnership Program. The high quality of STRAW's work combined with their track record of achieving long-lasting educational benefits is a truly economical use of public funds.

Sincerely,
Prunuske Chatham, Inc.

Liza Prunuske
President



January 27, 2014

Grant Davis
Sonoma County Water Agency
404 Aviation Blvd.
Santa Rosa, CA 94503

Dear Mr. Davis:

Conservation Corps North Bay enthusiastically supports Point Blue Conservation Science's Students and Teachers Restoring a Watershed (STRAW) projects to restore tributaries to Washoe Creek in Cotati, CA.

Conservation Corps North Bay's mission is to develop youth and conserve natural resources for a strong, sustainable community. CCNB has been providing natural resource management services to agencies and environmental non-profits for 30 years. Similar to STRAW, CCNB puts education at the forefront of our programs.

The restoration of these sites will not only enhance the ecosystems and water quality by removing exotic plants and installing natives, but will offer youth and students the chance to connect with the environment in their community and become local stewards.

Conservation Corps North Bay has been a partner with STRAW for 15 years and is looking forward to another collaboration that will restore our watersheds and engage youth in environmental service.

Sincerely,

Marilee Eckert
CEO



POB 3237
Santa Rosa, CA 95402
redwoodempiretu.org

January 26, 2014

Grant Davis
Sonoma County Water Agency
404 Aviation Blvd.
Santa Rosa, CA 94503

Dear Mr. Davis:

We are writing to express our support for Point Blue Conservation Science's Students and Teachers Restoring A Watershed (STRAW) Program's application to Sonoma County Water Agency's Watershed Partnership Program for Washoe Creek in Cotati, CA. For the past 21 years, STRAW has provided excellent watershed science education, including professional quality habitat restoration for thousands of North Bay students and teachers.

Since its inception in 1993, STRAW has a proven track record of success, with over 35,000 students with opportunities to participate in 450 completed restorations on rural and urban creeks and wetlands, planting over 36,000 native plants and restoring over 30 miles of habitat. As always, STRAW remains a collaborative, connecting schools, businesses, government agencies and ranches to restore local ecosystems. Many partners depend on STRAW to serve their education and land management goals.

The Redwood Empire Chapter of Trout Unlimited includes over 500 members locally who support Conservation, Protection and Restoration of our Russian River watershed and it's largest tributary, the Laguna de Santa Rosa. We are strongly committed to watershed education to help achieve this goal and improve water quality for our cold water fisheries which include Steelhead, Coho Salmon, and Chinook salmon.

We urge you to consider funding this project to benefit our local ecosystem, schools and community. Thank you.

Sincerely,
REDWOOD EMPIRE CHAPTER
TROUT UNLIMITED

A handwritten signature in black ink, appearing to read "Rick Jorgensen", is written over the typed name.

Rick Jorgensen, Vice President

2014 Watershed Partnership Program Project Funding Application

APPLICATION INFORMATION

Applicant/Lead Organization Address

Point Blue Conservation Science
3820 Cypress Dr. #11
Petaluma, CA 94954

Contact Name and Title: John Parodi, Restoration Manager

Telephone: (707) 781-2555 ext.359

Email Address: jparodi@prbo.org

Signature and Date



Education and Outreach Director
PRBO Conservation Science

List of Other Participating Organizations

The project team consists of the following organizations: Richard King, Poppy Hill Farm; Prunuske Chatham, Inc. (PCI); Sonoma County Schools

PROJECT INFORMATION

Project Name: STRAW: Corona Creek Restoration Project at Poppy Hill Farm

Project Location: Corona Creek

Project Budget: \$50,721

Available Matching Funds: \$10,459

STRAW will contribute a minimum in-kind match in the form of volunteer hours totaling \$10,459. Restoration activities will engage three classes of students from Corona Elementary (3 teachers, 62 students, 15 community volunteers = 80 volunteers x 6 hours = 480 hours x @21.79/hr = \$10,459.20)

Total Requested through WPP: \$40,262

Proposal Narrative

1. Project Description

PRBO Conservation Science's Students and Teachers Restoring A Watershed (STRAW) Project proposes to work with students, teachers, community volunteers and professional restorationists on a professionally-designed and student implemented riparian habitat restoration project at Corona Creek on Poppy Hill Farm owned by the King Family. Corona Creek is a tributary to Petaluma River which drains into San Pablo Bay, the northern most portion of San Francisco Bay. The site currently has sparse large overstory vegetation and a grassy understory. This is a single-phase project in the headwaters of Corona Creek. The resulting project will enhance over 470 linear feet of riparian waterway, improving the habitat quality of the reach, as well as reducing sediment inputs into the Corona Creek drainage.

We propose a one-year project that will include the installation of approximately 80 trees and shrubs by classes from Sonoma County schools. These species will be selected from studies of reference reaches within the Corona and Petaluma river watersheds under the guidance of PCI staff and based on the site's ecological needs and prior performance of candidate species in similar sites. In addition, species will be selected to maximize long term success with regards to an uncertain future climate.

Students will receive at least one in-class presentation from our program staff or our STRAW Faculty about the project including watershed and restoration science as well as site specific training and details in the field. Each of the teachers will have the opportunity to attend Watershed Week, a three-day annual professional development workshop in August and two additional STRAW Teacher Network events to support them in providing their classrooms with a rich context for learning about complicated environmental issues.

The project will be installed in the 2014-2015 school year with summer maintenance performed for three consecutive years, and annual monitoring performed for five consecutive years.

2. Project Benefits

One benefit of this project is to enhance the riparian habitat structure and resulting function through the installation of a multi-plant palette that will include specific plant-based erosion control practices. Through revegetation, resulting benefits will include the reduction of sediment inputs into the Corona Creek drainage, thereby reducing the frequency of future sediment removal activities downstream. In addition, revegetation will dramatically enhance the habitat value of the riparian corridor. This site was selected because of its proximity to the Sonoma County Water Agency's proposed stream maintenance sites for 2014 on Washington and McDowell Creeks.

Another benefit of this project is community involvement in the active enhancement of the watershed. Through Point Blue's STRAW Project, Sonoma County school children, teachers and parents will play an active role in improving Sonoma's watersheds and learn about factors that contribute to the management and health of their waterways.

An additional benefit of this project is that it could open up more restoration opportunities to continue to enhance riparian areas on private land east of Petaluma. This project is on a private ranch owned by Richard King, an active member of the ranching community with connections to adjacent private ranch properties. He works with other ranchers in the area to improve their management practices and could link us to other landowners and critical project sites on private land for future work.

3. How does this project advance goals for the Water Agency's Stream Maintenance Program and pertain to the 2014 planned maintenance work?

The STRAW: Corona Creek Restoration Project at Poppy Hill Farm advances the goals for SCWA's Stream Maintenance Program to reduce sediment and improve stream function for flood protection. The project will implement best management practices (BMPs) to stabilize creek banks and improve the habitat quality of the riparian corridor. These practices will dramatically reduce the sediment inputs into the Corona Creek system, resulting in a reduced need for sediment removal at downstream locations. This project pertains to the Sonoma County Water Agency's 2014 proposed stream maintenance work for reach scale stream maintenance work in Flood Zone 2A.

4. Location. Right of Way Access.

The project site on Corona Creek is located on Poppy Hill Farm near the intersection of Adobe Road and Corona Road in Petaluma. The farm is run and owned by Richard and Cynthia King who will provide access to the STRAW Project for restoration, maintenance and monitoring.

5. Project Partners.

Richard King, owner of Poppy Hill Farm worked with the USDA Natural Resources Conservation Service for 36 years as a rangeland specialist, ecologist, and biologist. King is a Certified Educator in Holistic Management® (Holistic Management International); Certified Professional in Rangeland Management (Society for Range Management); and Certified Rangeland Manager (California State Board of Forestry and Fire Protection). He is also working with other ranchers in the area to improve their management practices.

Point Blue is dedicated to conserving birds and ecosystems through research and education. Our highest priority is to reduce the negative impacts of changes in land-use, the ocean and climate on birds and ecosystems while promoting adaptation to future conditions. Point Blue's STRAW Project provides a valuable community connection and educational opportunities for students and teachers while enhancing

ecosystems by reducing sedimentation and habitat loss. Since 1993, STRAW has restored over 25 miles of creek through 450 restoration projects involving more than 30,000 K-12 students who have planted over 30,000 native plants.

Prunuske Chatham, Inc. (PCI) is an environmental engineering firm that specializes in ecological restoration, hydrology, revegetation, and erosion control. PCI designs professional quality habitat restorations for students to conduct.

6. Project Schedule, including implementation, maintenance, and monitoring.

STRAW uses the following annual timeline for restoration, monitoring, and maintenance activities:

Month(s)	Activities
July/August	Site reconnaissance/restoration planning and design Teacher professional development at Watershed Week Begin scheduling classes to restoration sites
September/October	Finalize restoration planning and design Finalize scheduling classes to restoration sites Conduct in-class presentations for restoration Conduct fall teacher professional development seminar Conservation Corps implements invasive species removal
November-March	Restoration implementation Conduct spring teacher professional development seminar
April-October	On-going maintenance of project site
September/October	Monitoring conducted

7. Project Permitting.

No permitting is required for revegetation efforts.

8. Length and area and number and species of plants installed.

Minimum Project Dimensions:

470 ft x 75 ft= 35,250ft²

Minimum Number of Plants Installed:

80 plants

The plant species will be selected from studies of reference reaches within Corona Creek and the Petaluma River watershed under the guidance of PCI staff.

9. Maintenance and Monitoring.

Plants are maintained and monitored for a five-year establishment period. Monitoring data facilitate the project team in adaptively managing project sites by identifying site

specific variables that contribute to plant mortality. Plant maintenance work begins in spring 2014. Should survival of container plants fall below 70% by the end of the first year after installation of each phase, Point Blue will replace dead plants to bring the totals up to 80% or more of the originally installed plants. However, Point Blue is not responsible for damages due to vandals, fire, livestock, flooding, erosion, extreme drought, or other disasters out of Point Blue's control.

Maintenance and monitoring activities will include:

- Regularly inspect plantings from late spring through early fall for three years – as often as once per week, but no less than once per month for the first year, and once per month for the following two years.
- Maintain plantings at a minimum by weeding and repairing browse protectors.
- Irrigate plantings with most efficient and cost-effective means available; possibilities include temporary drip systems, DriWater, and hand watering.
- Monitor plant survival by species in October to inform future planting designs for five years.
- Perform annual photomonitoring using the State Water Resources Control Board's SOP 4.2.1.4.

Budget: Please see the attached project budget (Attachment A).

Supporting documents.

- Attachment B - Project map and photo
- Attachment C - Documentation of status as a federally recognized nonprofit organization
- Letters of commitment from participating partners:
 - 1.Attachment D – Richard King, Poppy Hill Farm
 - 2.Attachment E -- Prunuske Chatham, Inc.

Point Blue

Conservation science
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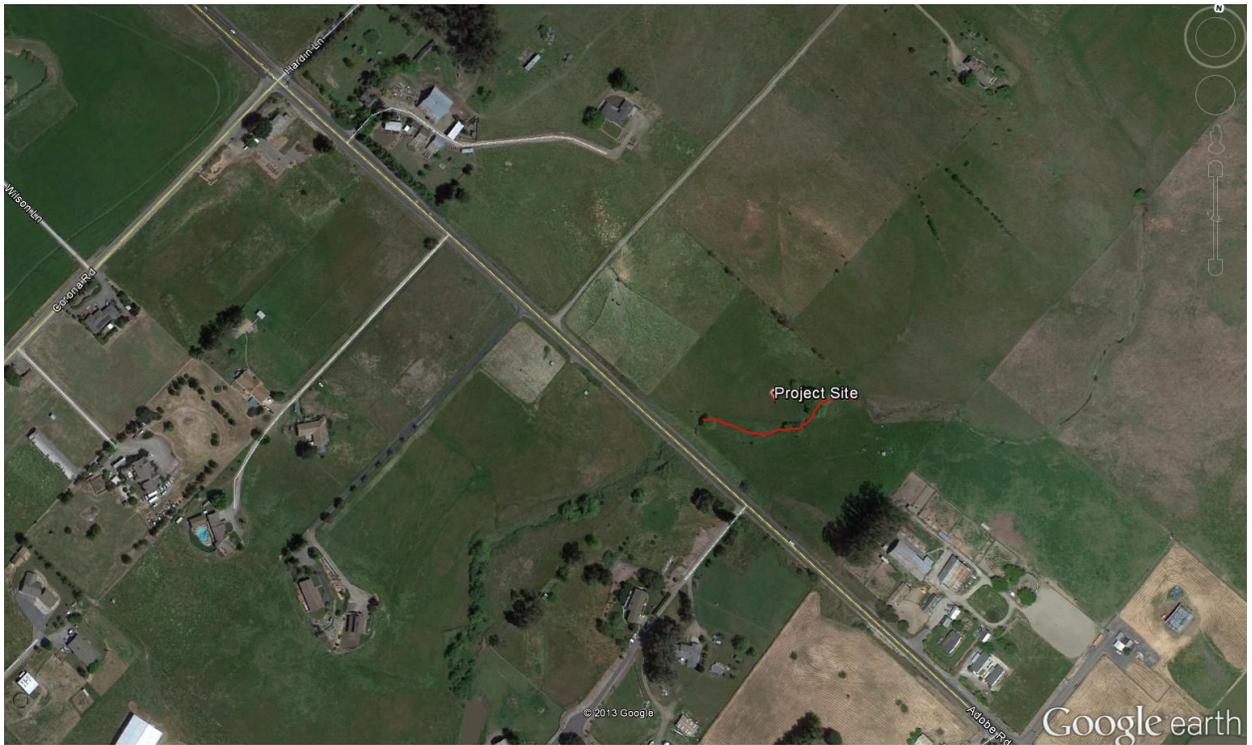
STRAW: Corona Creek at Poppy Hill Farm

LABOR*	
Education	\$4,195.71
Installation	\$14,078.83
Maintenance & Monitoring	\$14,672.30
Total Labor	\$32,946.85
OTHER DIRECT COSTS	
Materials	
Installation, Maintenance & Monitoring	\$3,022.86
Mileage	
Installation	\$148.96
Maintenance & Monitoring	\$399.84
Subcontractors	
STRAW Faculty	\$455.00
Prunuske Chatham, Inc.	\$1,840.00
Total Other Direct Costs	\$5,866.66
Indirect on Other Direct Costs	\$1,448.76
TOTAL	\$40,262.27

* includes salary, fringe benefits and indirect expense

Total Funding Request	\$40,262.27
MATCH	
480 Volunteer hours @ \$21.79	\$10,459.20
Total Project Budget	\$50,721.47

Attachment B: Project Map and Photos



STRAW: Corona Creek Restoration Project at Poppy Hill Farm

Internal Revenue Service

Date: August 29, 2006

POINT REYES BIRD OBSERVATORY
3820 CYPRESS DR STE 11
PETALUMA CA 94954-6964

Department of the Treasury
P. O. Box 2508
Cincinnati, OH 45201

Person to Contact:

Kathy Masters ID# 31-04015
Customer Service Representative

Toll Free Telephone Number:
877-829-5500

Federal Identification Number:
94-1594250

Dear Sir or Madam:

This is in response to your request of August 29, 2006, regarding your organization's tax-exempt status.

In May 1965 we issued a determination letter that recognized your organization as exempt from federal income tax. Our records indicate that your organization is currently exempt under section 501(c)(3) of the Internal Revenue Code.

Our records indicate that your organization is also classified as a public charity under sections 509(a)(1) and 170(b)(1)(A)(vi) of the Internal Revenue Code.

Our records indicate that contributions to your organization are deductible under section 170 of the Code, and that you are qualified to receive tax deductible bequests, devises, transfers or gifts under section 2055, 2106 or 2522 of the Internal Revenue Code.

If you have any questions, please call us at the telephone number shown in the heading of this letter.

Sincerely,



Janna K. Skufca, Director, TE/GE
Customer Account Services

January 9, 2014

Dear Leia, John, and Vanessa—

Thank you kindly for stopping by yesterday and for your interest in helping me accelerate improving habitat diversity on my small ranch. I particularly like the methods STRAW uses to transform habitat improvement to hands-on learning with youngsters in nearby schools.

Your interest in focusing on the riparian corridor and improving vegetation composition definitely fits my own long-term objectives for the property. Should other portions of the property interest you as well (grasslands, another very small riparian corner of the property you didn't see), just let me know.

I'm confident my skills at planning and controlling livestock use to build diversity of life above and below ground will suit your needs. And I'm confident that with your expertise and leadership, the students and teachers alike will be able to pass by on the outskirts of Petaluma and see how their work develops for the rest of their lives. It will be great fun helping youngsters and their teachers create the future we all desire.

Sincerely,

Richard

Richard J. King
Poppy Hill Farm



PRUNUSKE CHATHAM, INC.

January 30, 2014

Re: STRAW application for SCWA Watershed Partnership Program

To Whom It May Concern:

I am writing to express my strong support for the Students and Teachers Restoring a Watershed (STRAW) efforts to continue to care for Sonoma County streams. This year's projects, in Corona and Washoe Creeks, will help support critical watershed health for both the Petaluma and Laguna de Santa Rosa systems. STRAW's fundamental approach of investing school children with pride and hope in their ability to take care of the environment combined with projects in such visible creeks multiplies the immediate benefits of their work for many years to come.

Prunuske Chatham, Inc. (PCI) continues to provide technical support to STRAW. Their work inspires all of our staff.

Please support STRAW's proposal for this year's Watershed Partnership Program. The high quality of STRAW's work combined with their track record of achieving long-lasting educational benefits is a truly economical use of public funds.

Sincerely,
Prunuske Chatham, Inc.

Liza Prunuske
President

Appendix H

SMP Addendums

- **Tier 1 Mitigation Updates**
- **Native Tree Mitigation Updates**
- **Updated SMP Reach Maps**

2013 Mitigation Activities Completed in Winter 2014

Tier 1 Mitigation Activities

The following describes the Tier 1 (on-site) mitigation activities enacted for 2013 maintenance projects, but not completed in time to be included in the 2013 SMP Annual Summary Report. Restoration efforts at some project sites were not completed because of lack of available material or extremely dry site conditions during the fall planting season. Additional efforts to install in-stream and upper bank graminoids and herbaceous perennials are anticipated to be implemented in Fall 2014. Early success evaluations at several 2014 work sites illustrate that additional plantings will be needed to bring restoration up to SMP standards. Channels where additional in-stream mitigation plantings are anticipated to be needed include:

Colgan 2, 3 and 4

Lynch 1

Corona 1

Washington 6

Additional plantings in these channels will be conducted in November and December 2014. These augmented efforts will be described in the 2014 Annual Monitoring Report.

Brush 2 and Austin 1

The Tier 1 plant installation for Brush 2 and Austin 1 was completed on February 22nd 2013 using local volunteers and Water Agency staff. Large boulders lining the left and right channel toe made riparian plantings difficult, but to the highest extent possible, toe trees were installed at 20 foot intervals in an alternating pattern on both sides. Similarly, native instream herbaceous perennial and graminoid species were installed where conditions allowed on both sides of the channel within the toe zone. Tables A-1 and A-2 provides a breakdown of the species installed and Photo A shows site conditions after the initial installation (below).

Table A-1. Brush 2 - 2013 Plantings

Brush 2 – 2013 plantings			
Scientific Name	Common Name	Size	QTY
Toe Trees			
<i>Alnus rhombifolia</i>	white alder	5 gal	15
<i>Fraxinus latifolia</i>	Oregon ash	Tree Tube	15
Shrubs/Shrub Analogs			
<i>Artemisia douglasiana</i>	mugwort	1 gal	6
<i>Baccharis douglasii</i>	marsh baccharis	1 gal	6
Graminoids			
<i>Elocharis macrostachya</i>	pale spike rush	1 gal	10
<i>Juncus patens</i>	common rush	1 gal	12

Brush 2 – 2013 plantings			
<i>Leersia oryzoides</i>	rice cut grass	Transplants	10
<i>Scirpus microcarpus</i>	small fruited bulrush	1 gal	10
Summary			
Toe Tree Total			30
Shrubs/Shrub Analogs Total			12
Graminoid Total			42

Table A-2. Austin 1 - 2013 Plantings

Austin 1 – 2013 plantings			
Scientific Name	Common Name	Size	QTY
Shrubs/Shrub Analogs			
<i>Artemisia douglasiana</i>	mugwort	1 gal	4
<i>Baccharis douglasii</i>	marsh baccharis	1 gal	4
Graminoids			
<i>Elocharis macrostachya</i>	pale spike rush	1 gal	7
<i>Juncus patens</i>	common rush	1 gal	7
<i>Leersia oryzoides</i>	rice cut grass	Transplants	10
Summary			
Shrubs/Shrub Analogs Total			8
Graminoid Total			24

Photo A: Brush 2, Austin 1 after initial installation (photo taken April 21, 2014).



Mitigation for Vegetation Management Activities

In compliance with the SMP’s Vegetation Management Plan, all Class 1 and Class 3 tree species with a diameter at breast height (DBH) of at least four inches are mitigated for at a 2:1 ratio (for further details related to mitigation for vegetation management activities, refer to Appendix E of the SMP Manual). For the 2009-2012 seasons, the total mitigation requirement was 1,525 trees. Of the installs made to meet that requirement, only 252 were observed to be alive in December of 2013. In addition to the backlog of trees that need to be re-planted due to the failure of initial 2009-2012 installs, an additional 937 new trees were required to meet the 2013 mitigation requirements. This brings the total of tree installations needed to 2,462. Table C (below) provides an updated accounting of the planting efforts made in winter of 2013-2014.

Table C. Native Tree Mitigation Accounting

Year	Class 1 Trees Removed	Class 3 Trees Removed	Mitigation Requirement	Reach Installed	Amount Installed (2009-2012)	Total Observed Surviving 2013	Amount Installed Jan - March 2014
2009	193	0	386	Colgan 3 & 4	386	0	
2010	61	6	131		311	61	
2011	360	14	741	Wilfred 1	131	48	
2012	127	8	267	Corona 5, 6, 7	250	15	

				Washoe 1	80	2	
				Hinebaugh 1, 2	160	42	
				Bellevue-Wilfred 1,2,3	300	53	
				Roseland 1,2,3	50	31	
				Laguna 2	50	N/A	
2013	458	14	937	Colgan 3			82
				Colgan 4			393
				Gossage 2			93
				Gossage 3			45
				Hinebaugh 3			52
				Todd 1			22
				Todd 2			152
				East Washington 3			112
				Lynch 1			70
				Washington 6			104
Totals	1199	42	2,462		1,718	252	1,125
Initial 2009-2012 (backlog) native tree mitigation requirements							1,525
Backlog re-planting requirements (1,525-252)							1,273
2013 native tree mitigation requirements							937
Backlog re-planting plus 2013 new planting requirements (1,273+937)							2,210
Total Native tree mitigation planting needs as of April 25, 2014 (2,210 – 1,125)							1,085

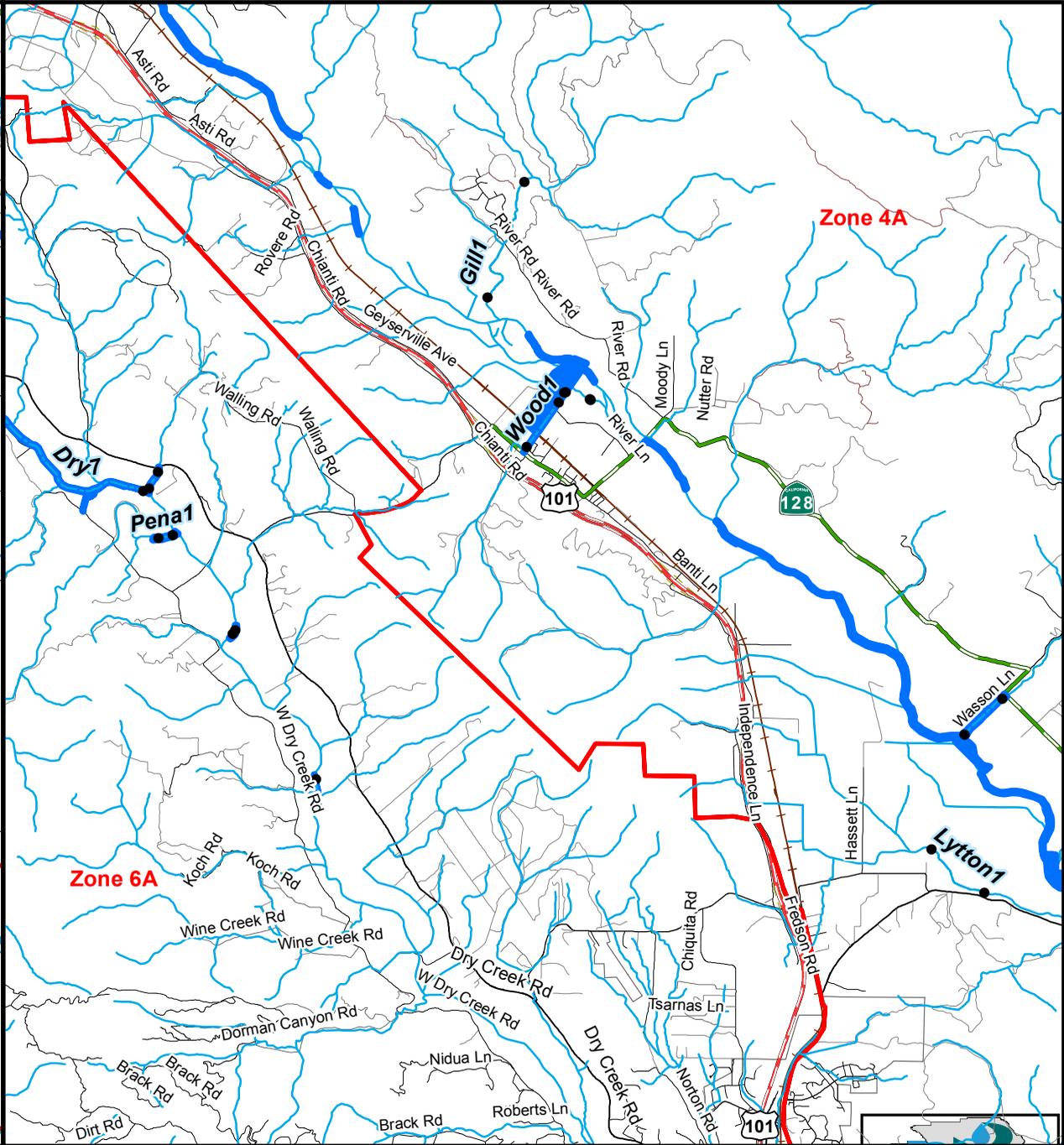
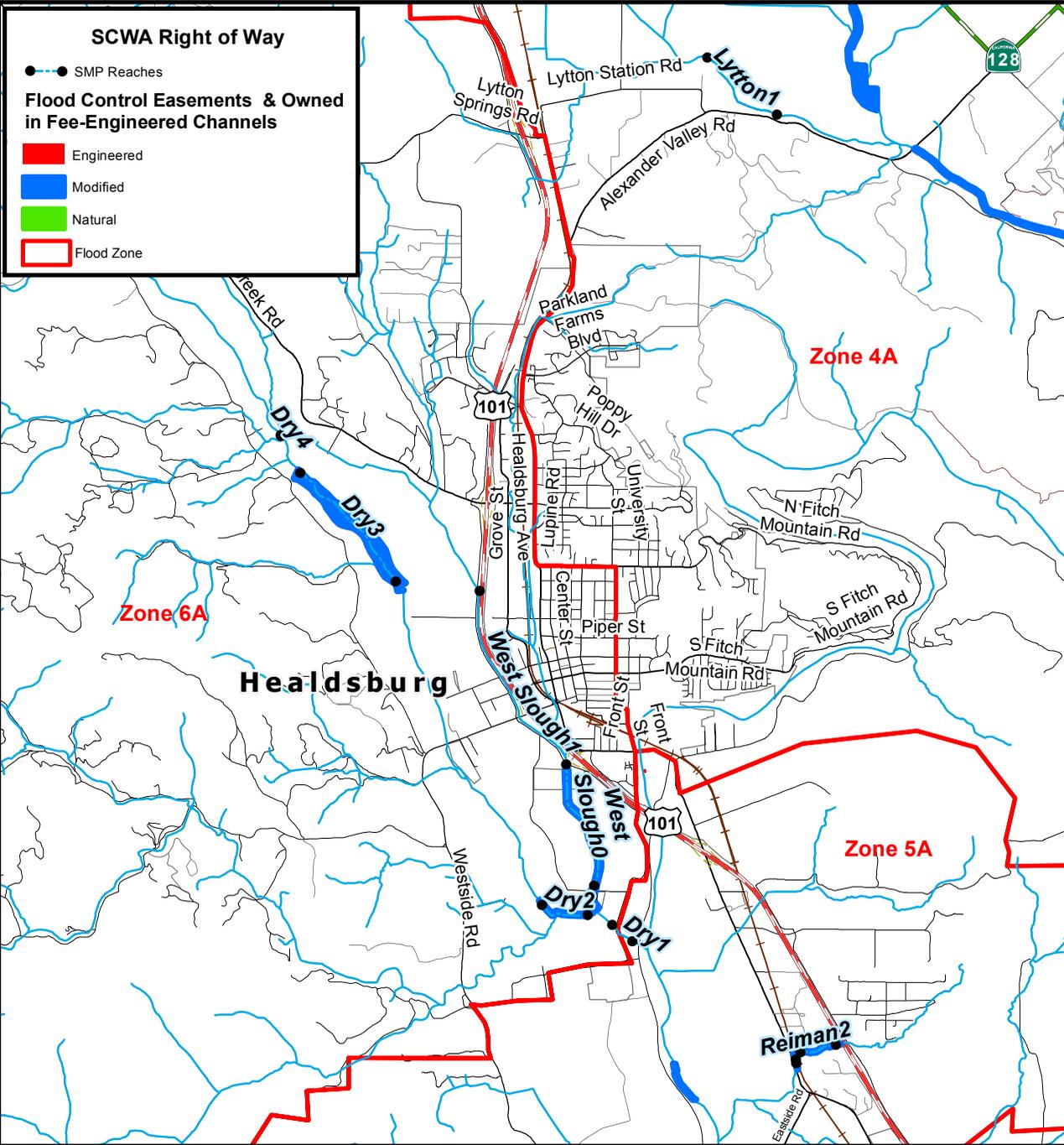
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SCWA Right of Way

- SMP Reaches

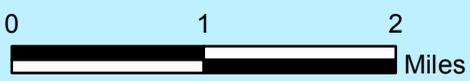
Flood Control Easements & Owned in Fee-Engineered Channels

- Engineered
- Modified
- Natural
- Flood Zone



Stream Maintenance Program
Flood Zone 4A,5A,6A
Healdsburg, Windsor, Cloverdale

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Project Location
Map
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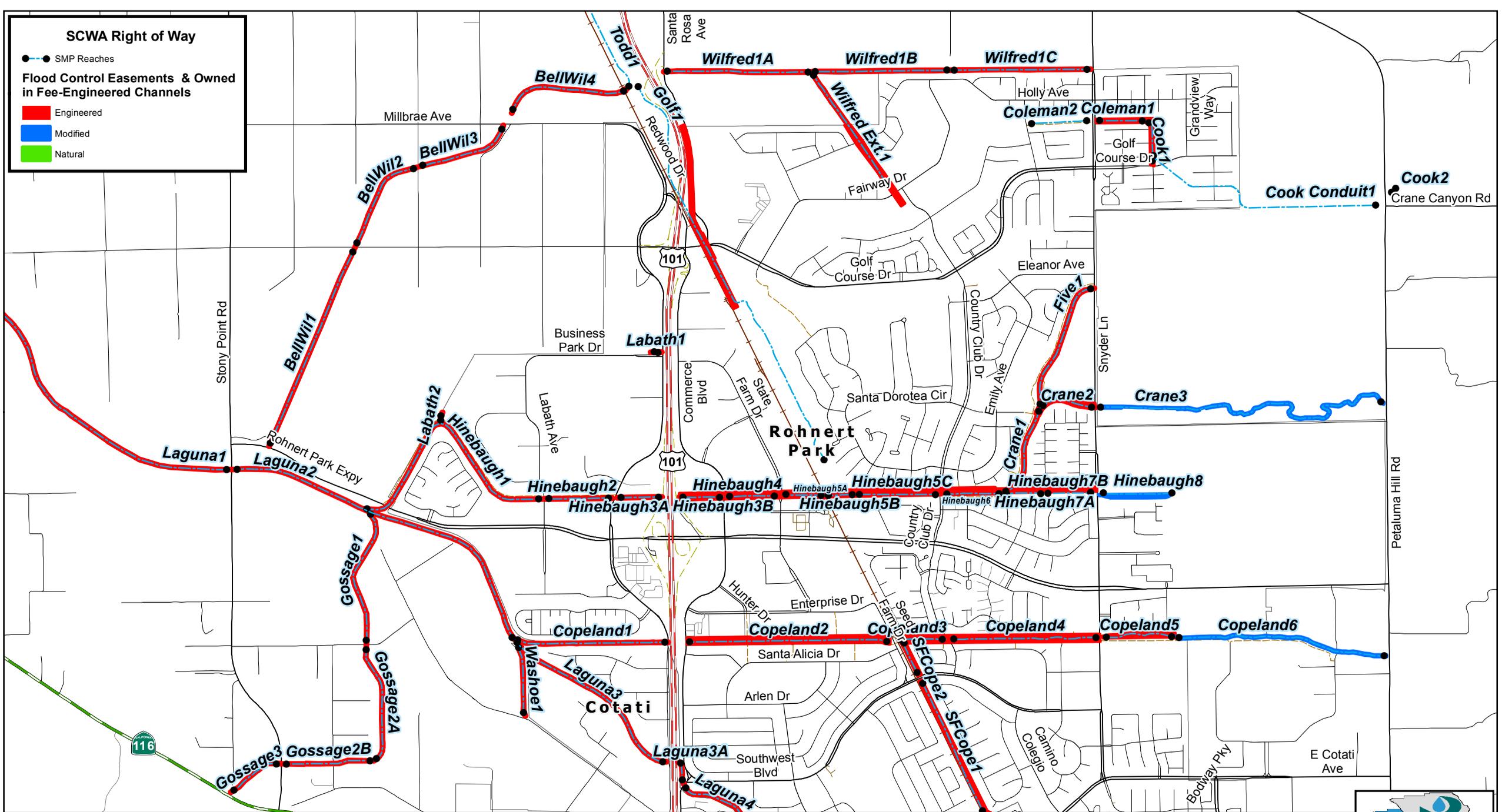
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SCWA Right of Way

- SMP Reaches

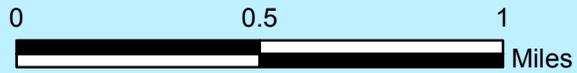
Flood Control Easements & Owned in Fee-Engineered Channels

- Engineered
- Modified
- Natural



**Stream Maintenance Program
Flood Zone 1A
Rohnert Park**

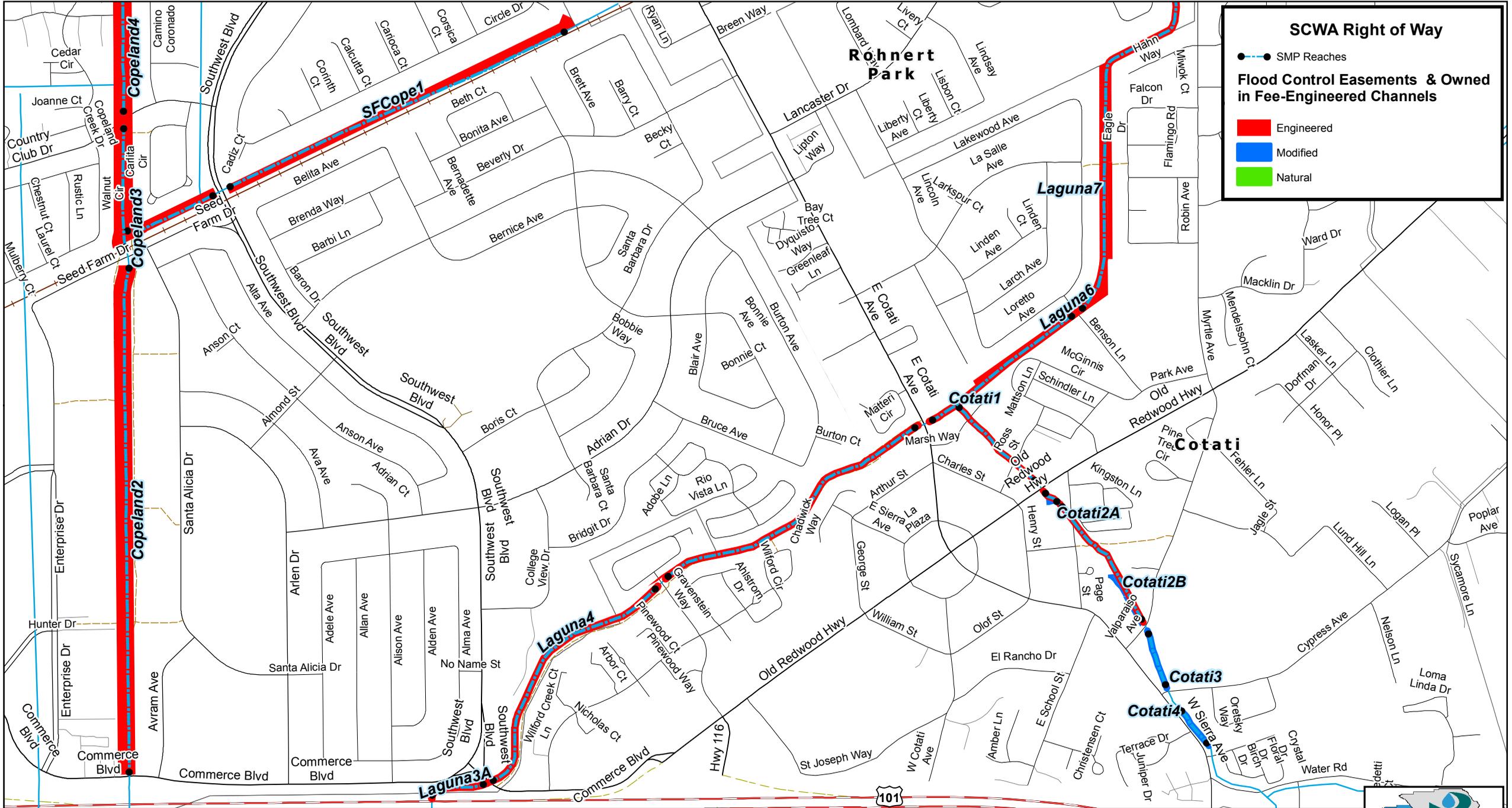
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**Project Location
Map
Printed on 4/29/2014**

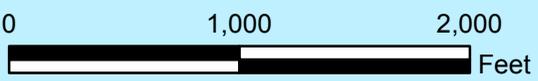


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Stream Maintenance Program
Flood Zone 1A
Cotati

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Project Location
Map
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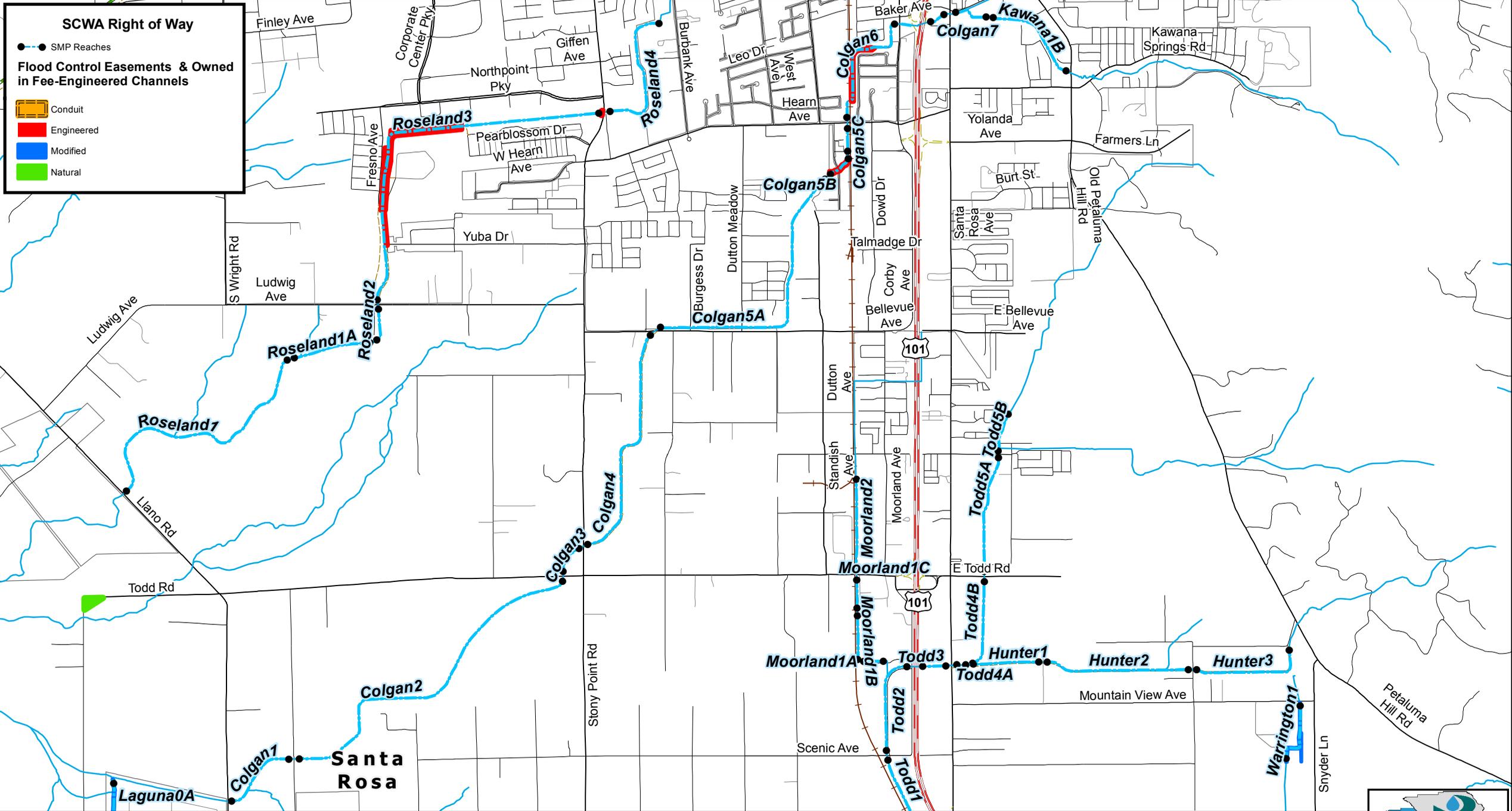
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SCWA Right of Way

- SMP Reaches

Flood Control Easements & Owned in Fee-Engineered Channels

- Conduit
- Engineered
- Modified
- Natural



Stream Maintenance Program
Flood Zone 1A
Santa Rosa

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Project Location Map
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SCWA Right of Way

- SMP Reaches

Flood Control Easements & Owned in Fee-Engineered Channels

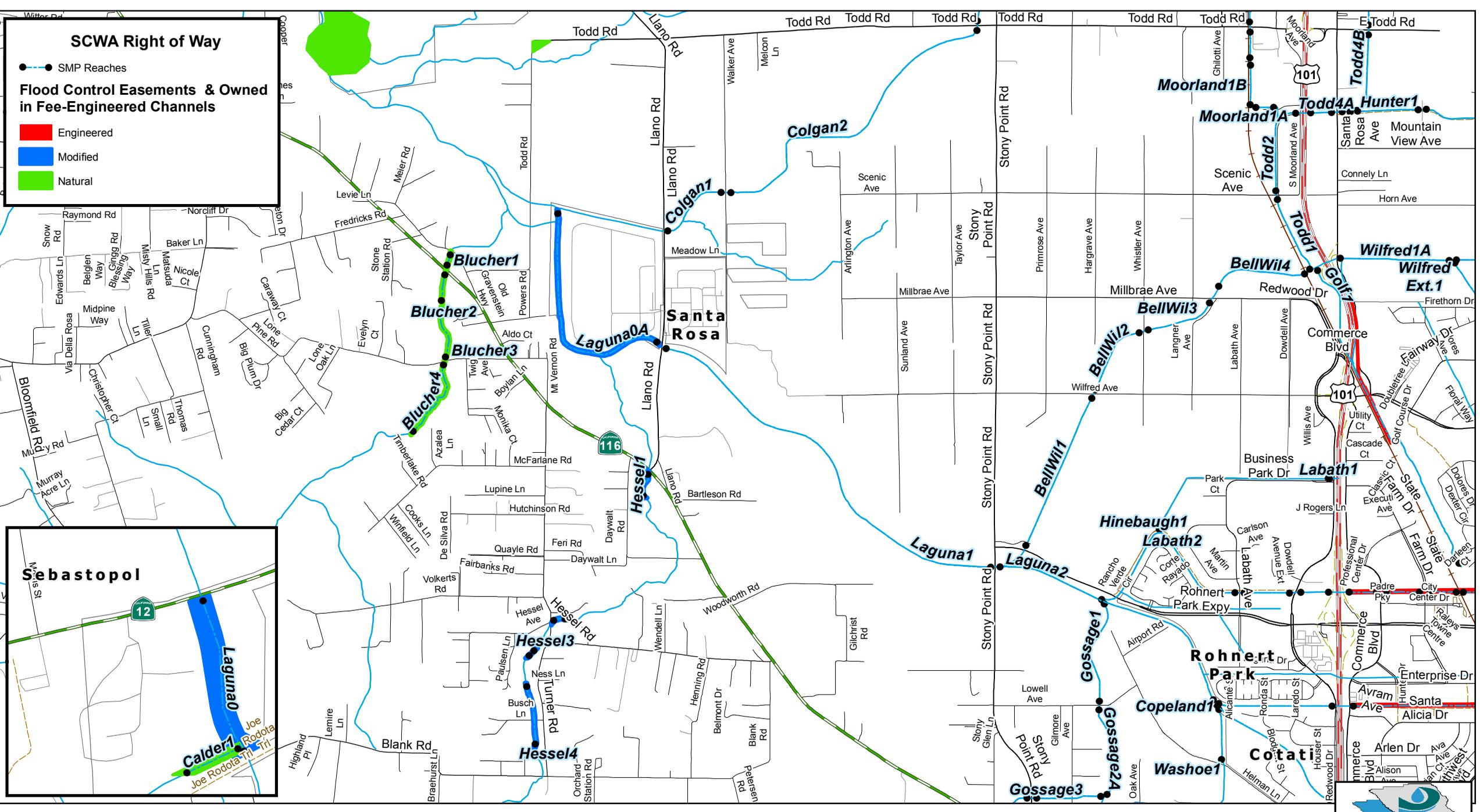
- Engineered
- Modified
- Natural

Sebastopol

Laguna00

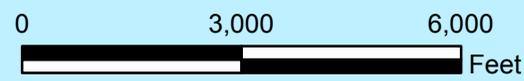
Calder1

Joe Rodota Trl
Joe Rodota Trl



Stream Maintenance Program
Flood Zone 1A
Santa Rosa/Cotati

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Project Location
Map
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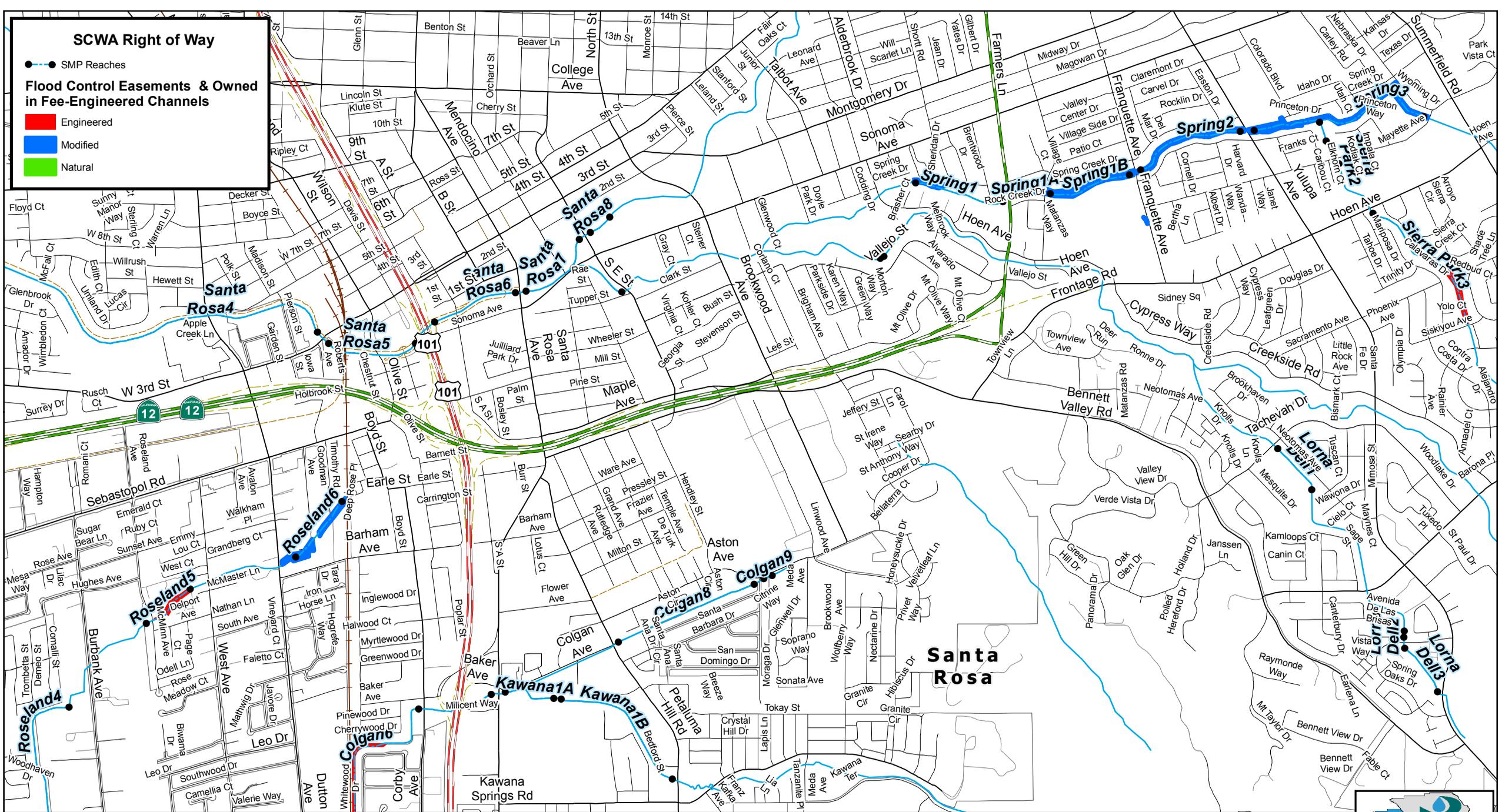
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SCWA Right of Way

- SMP Reaches

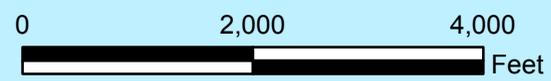
Flood Control Easements & Owned in Fee-Engineered Channels

- Engineered
- Modified
- Natural



**Stream Maintenance Program
Flood Zone 1A
Santa Rosa**

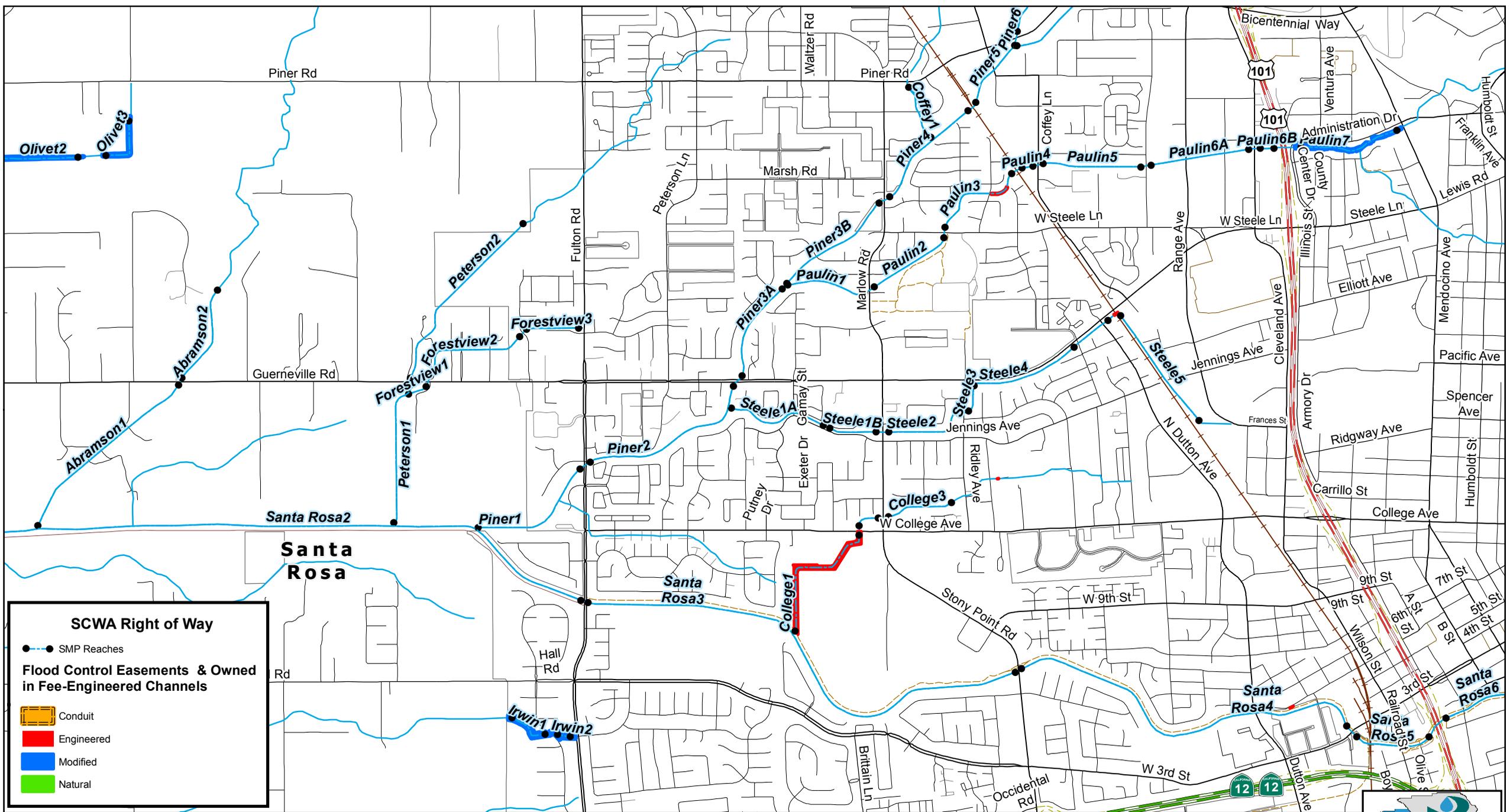
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**Project Location
Map
Printed on 4/29/2014**

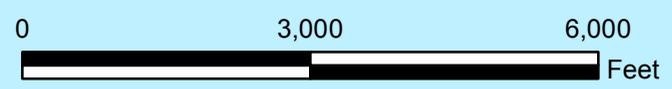


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**Stream Maintenance Program
Flood Zone 1A
Santa Rosa**

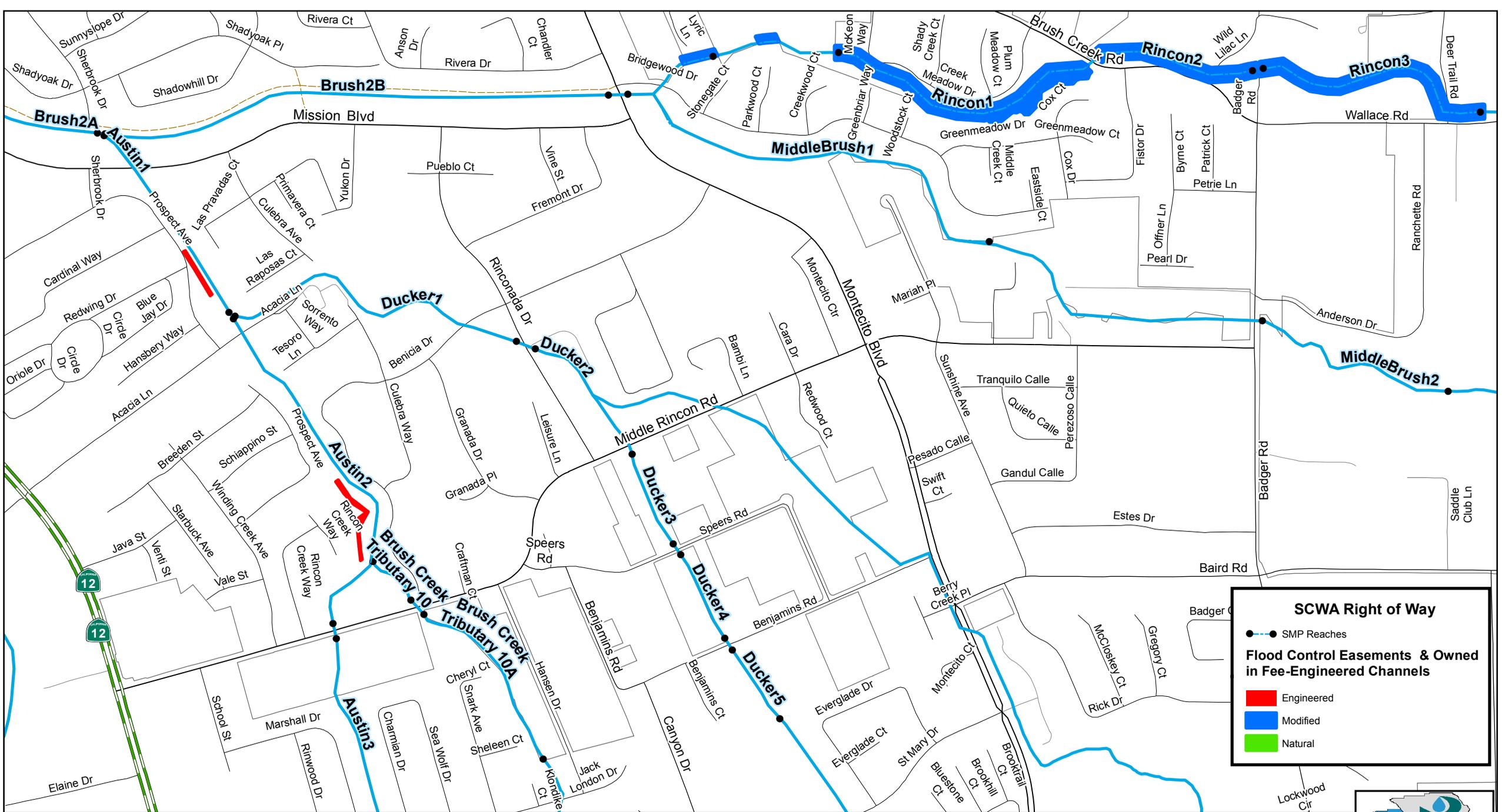
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**Project Location
Map
Printed on 4/29/2014**

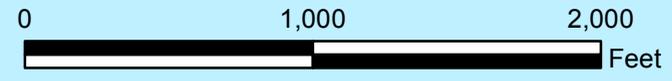


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Stream Maintenance Program
Flood Zone 1A
Santa Rosa

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Project Location
Map
Printed on 4/29/2014



SCWA Right of Way

- SMP Reaches

Flood Control Easements & Owned in Fee-Engineered Channels

- Red Box: Engineered
- Blue Box: Modified
- Green Box: Natural

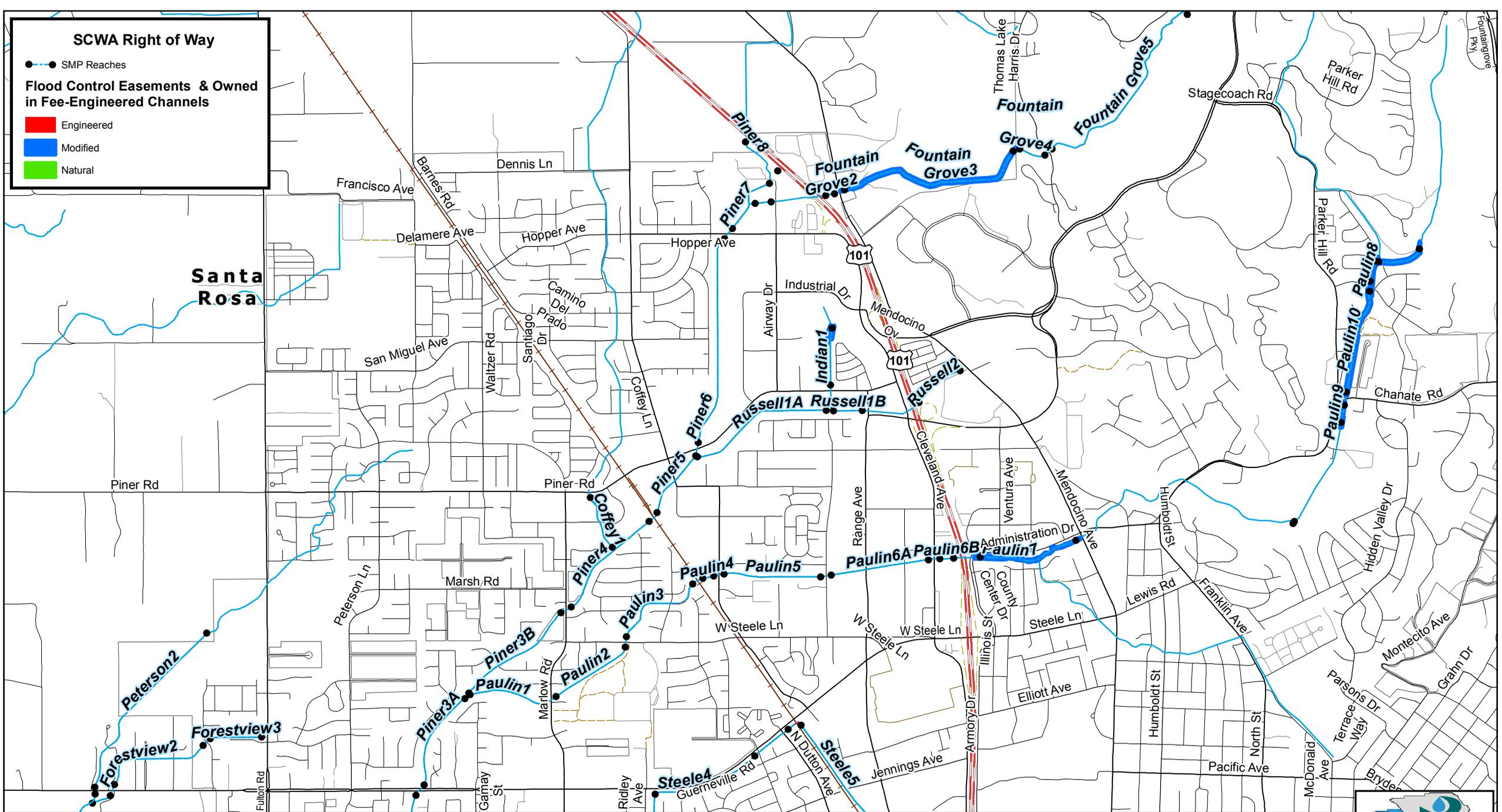
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SCWA Right of Way

- SMP Reaches

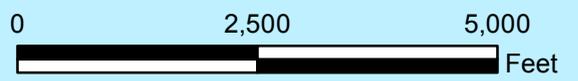
Flood Control Easements & Owned in Fee-Engineered Channels

- Engineered
- Modified
- Natural



Stream Maintenance Program
Flood Zone 1A
Santa Rosa

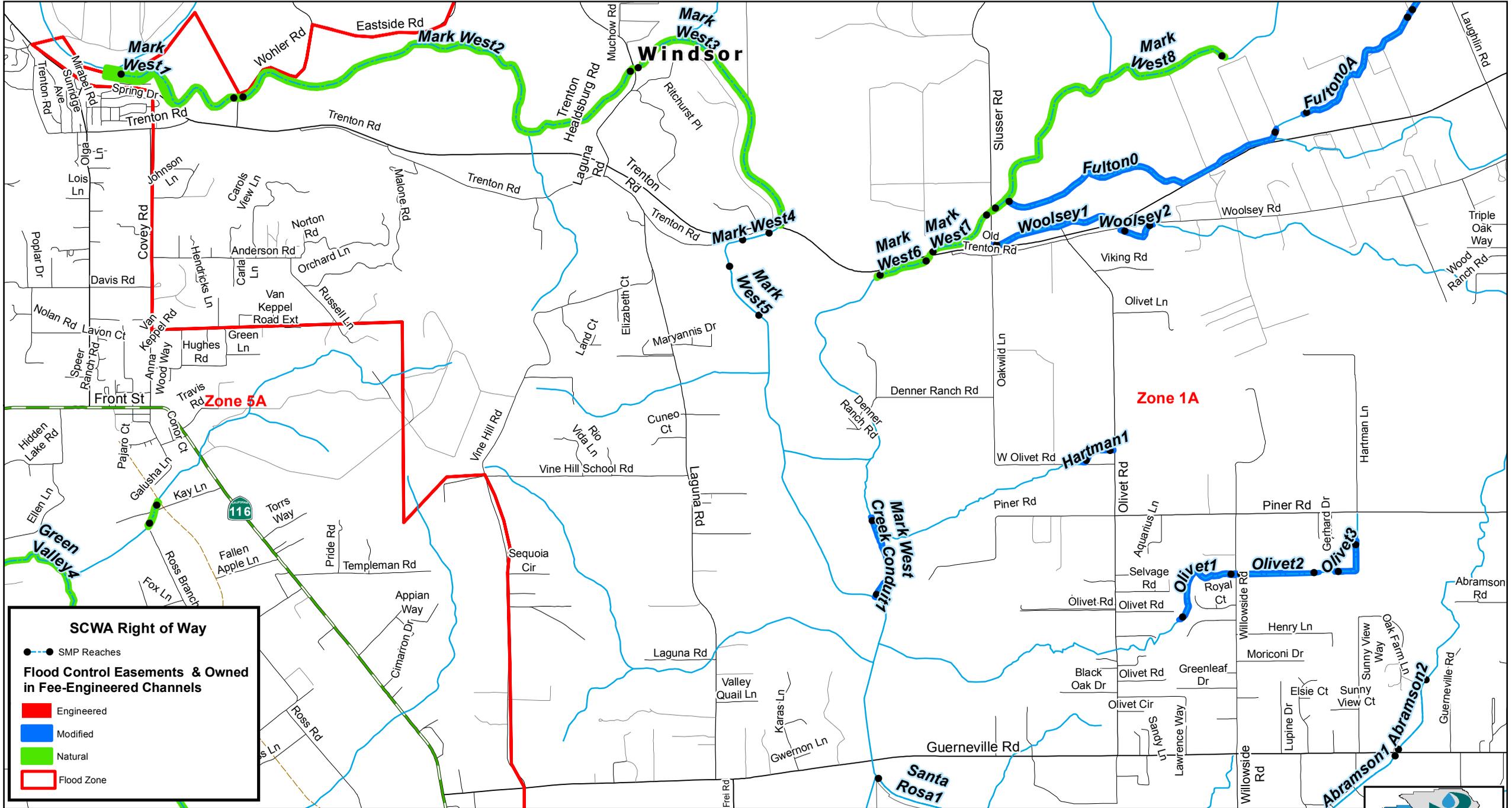
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Project Location
Map
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SCWA Right of Way

- SMP Reaches

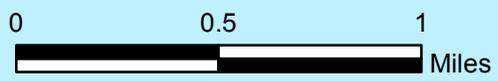
Flood Control Easements & Owned in Fee-Engineered Channels

- Engineered
- Modified
- Natural

Flood Zone

Stream Maintenance Program
Flood Zone 1A
Santa Rosa

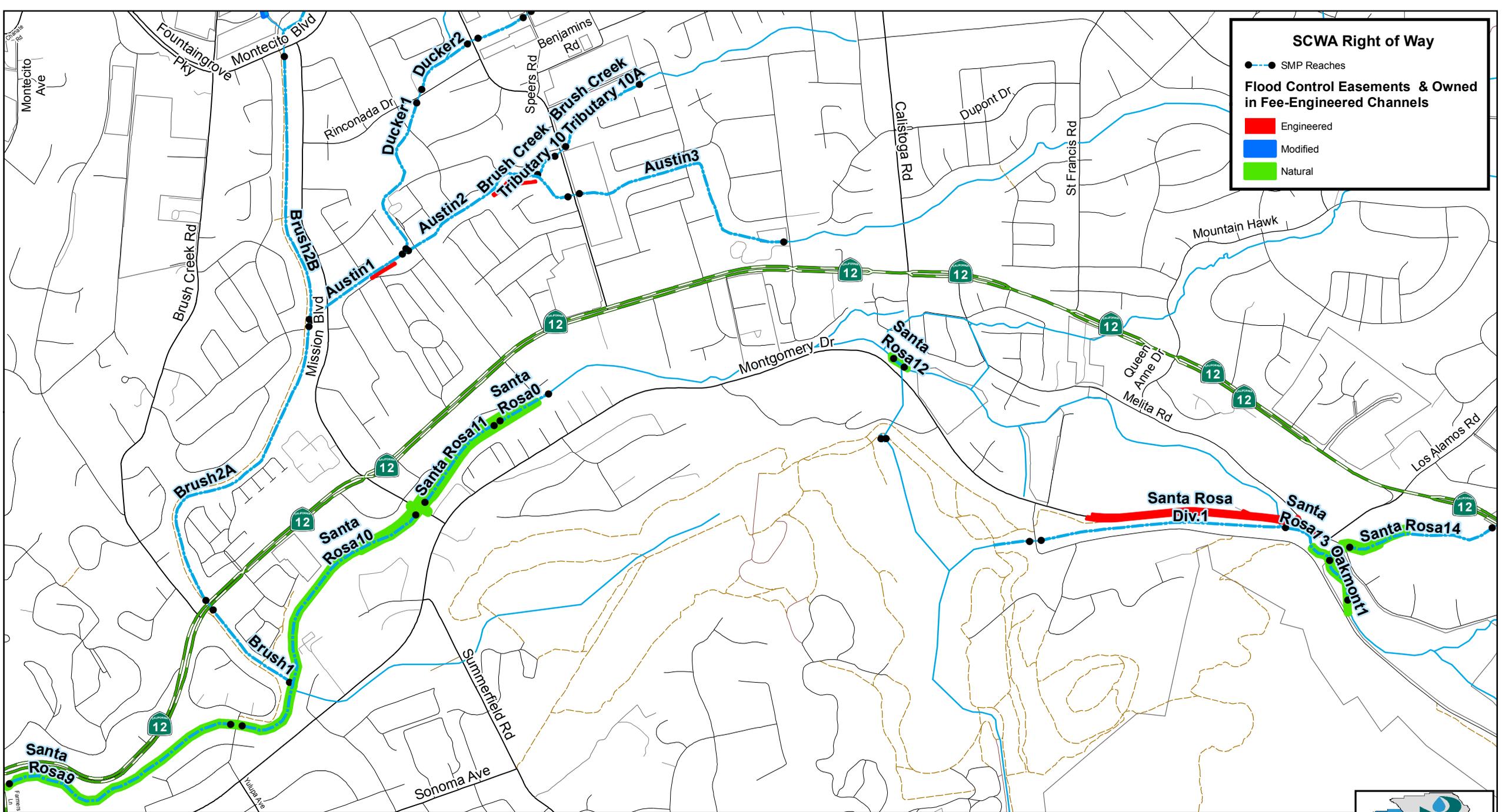
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Project Location
Map
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SCWA Right of Way

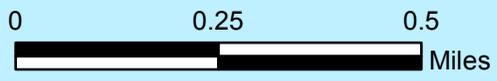
- SMP Reaches

Flood Control Easements & Owned in Fee-Engineered Channels

- Engineered
- Modified
- Natural

Stream Maintenance Program
Flood Zone 1A
Santa Rosa

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Project Location
Map
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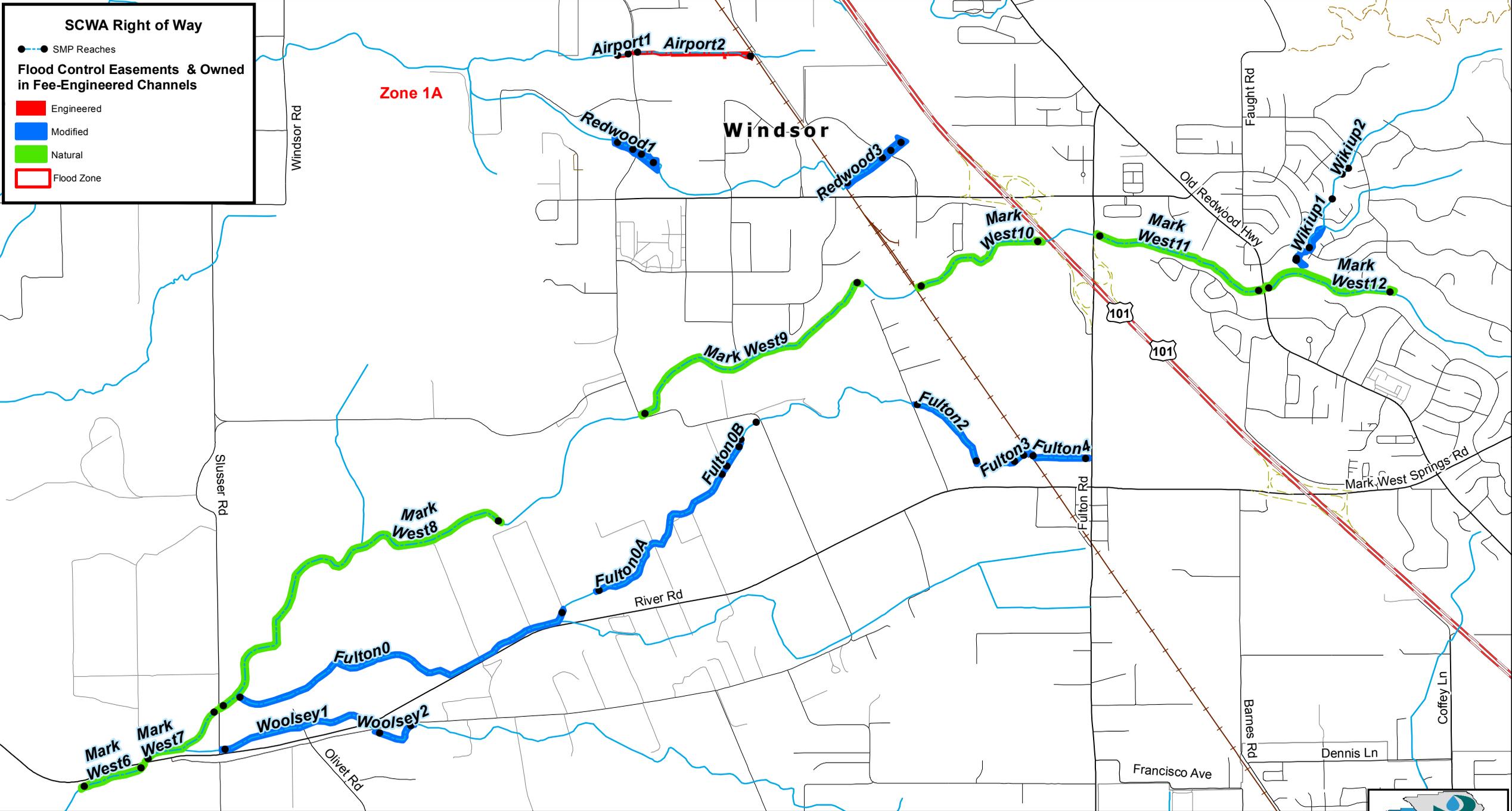
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SCWA Right of Way

- SMP Reaches

Flood Control Easements & Owned in Fee-Engineered Channels

- Engineered
- Modified
- Natural
- Flood Zone



**Stream Maintenance Program
Flood Zone 1A
Windsor**

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**Project Location
Map
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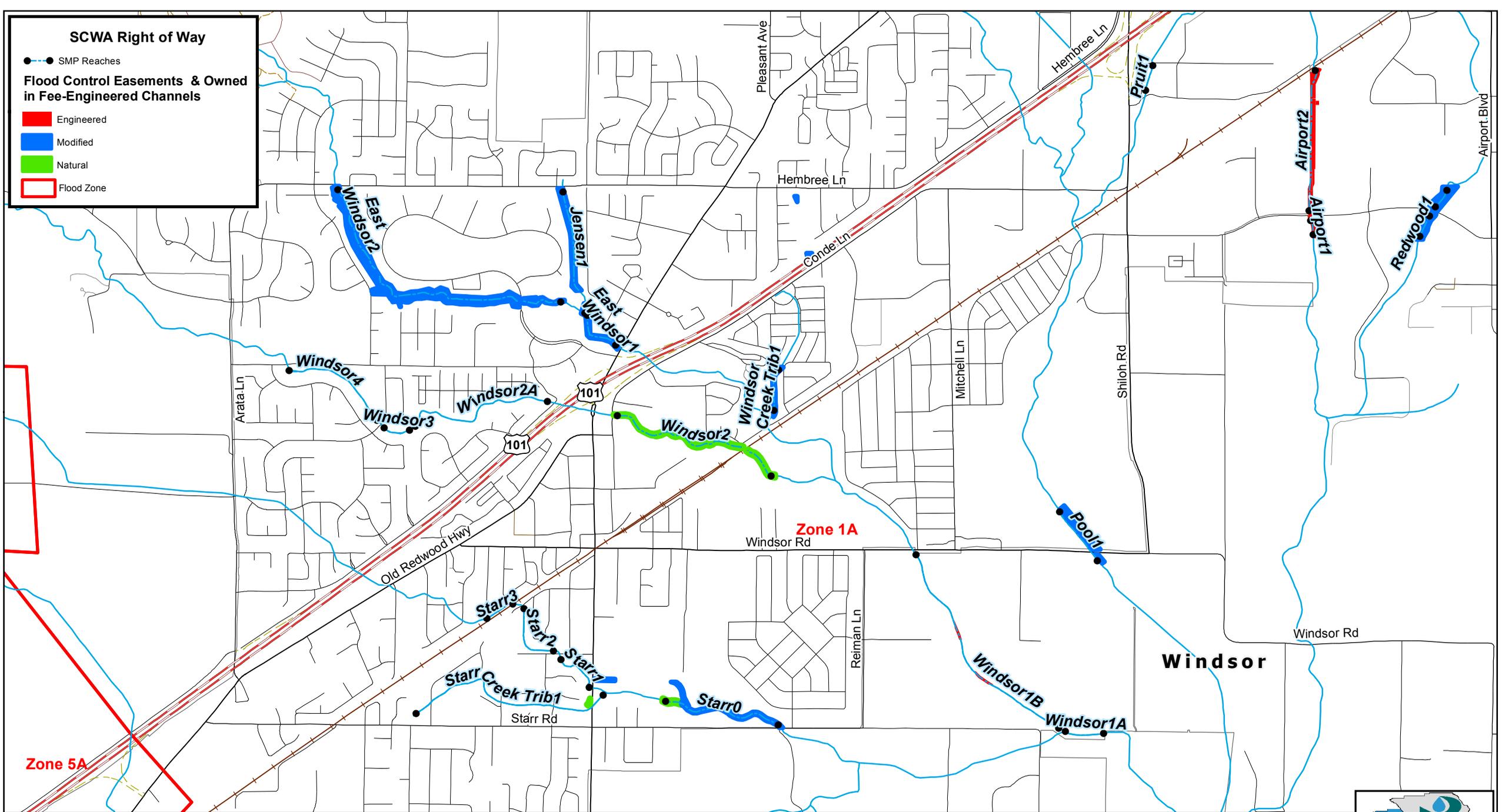
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SCWA Right of Way

- SMP Reaches

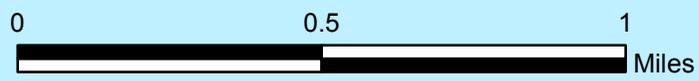
Flood Control Easements & Owned in Fee-Engineered Channels

- Engineered
- Modified
- Natural
- Flood Zone



**Stream Maintenance Program
Flood Zone 1A
Windsor**

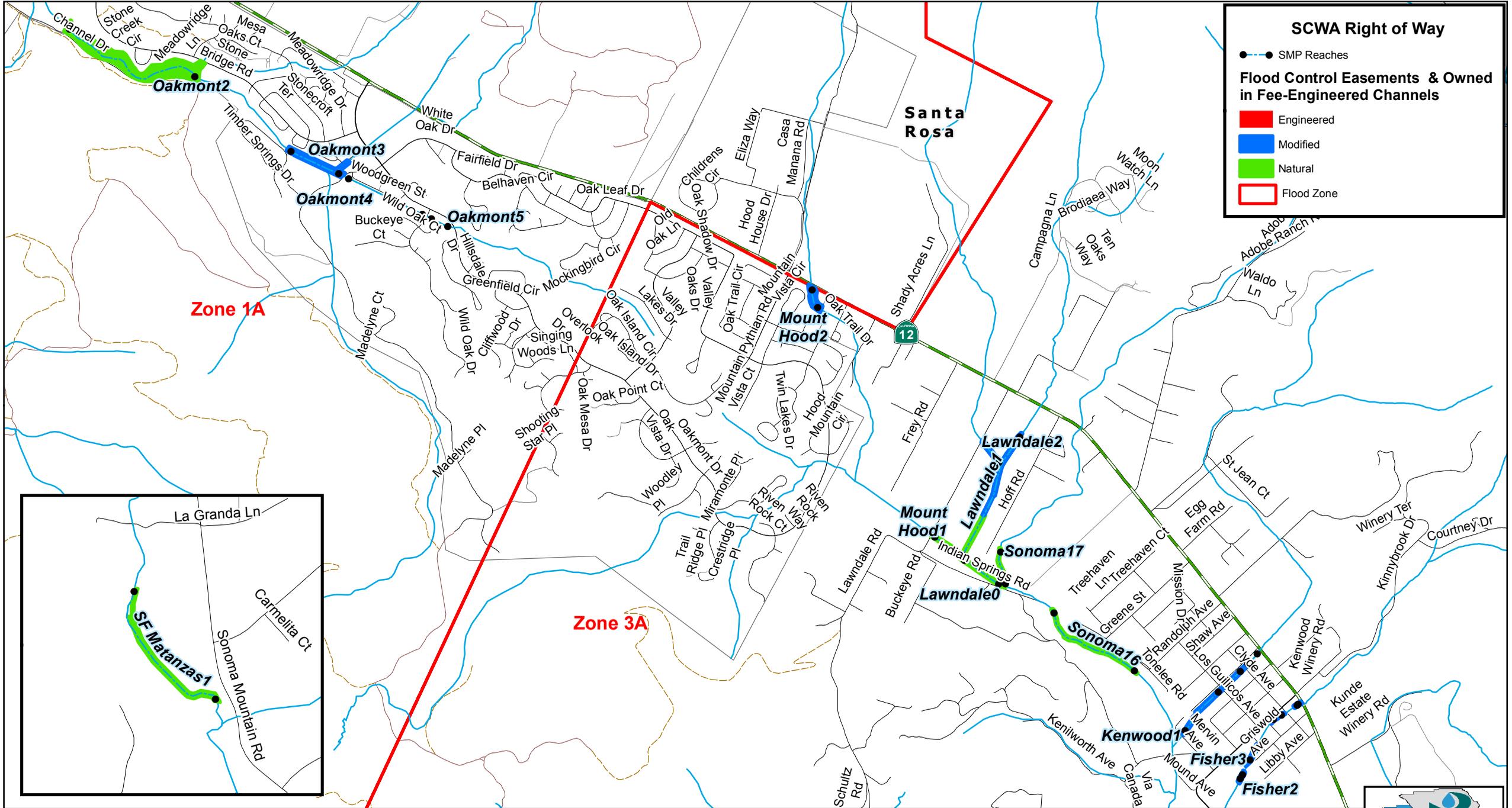
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**Project Location
Map
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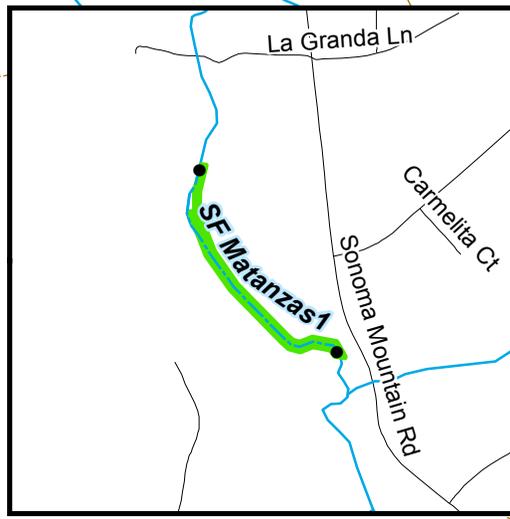


SCWA Right of Way

- SMP Reaches

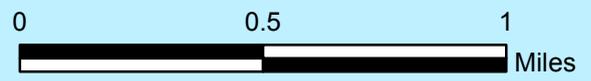
Flood Control Easements & Owned in Fee-Engineered Channels

- Engineered
- Modified
- Natural
- Flood Zone



Stream Maintenance Program
Flood Zone 1A/3A
Santa Rosa/ Sonoma

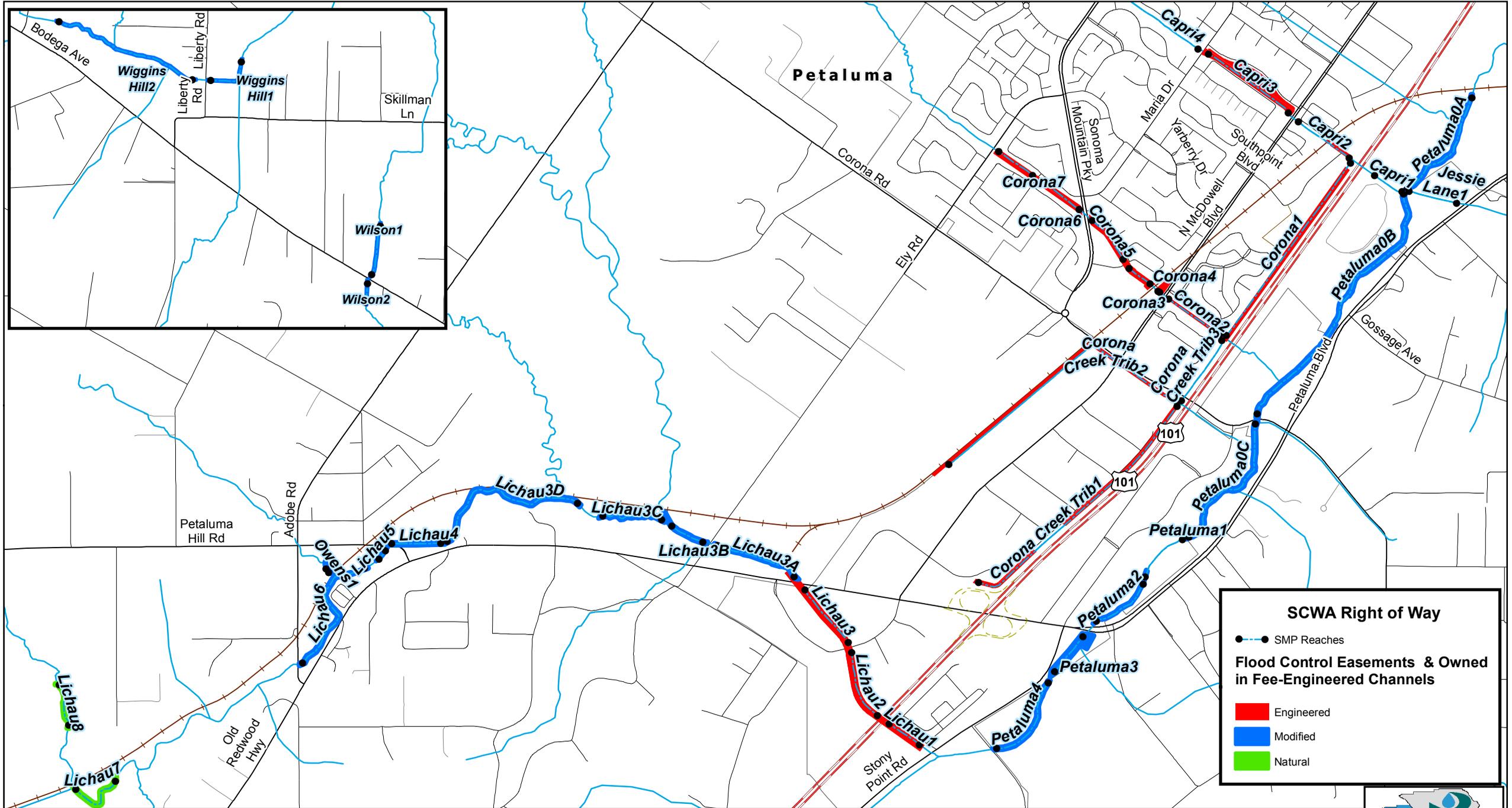
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Map
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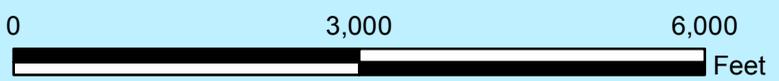


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Stream Maintenance Program
Flood Zone 2A
Petaluma

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Map
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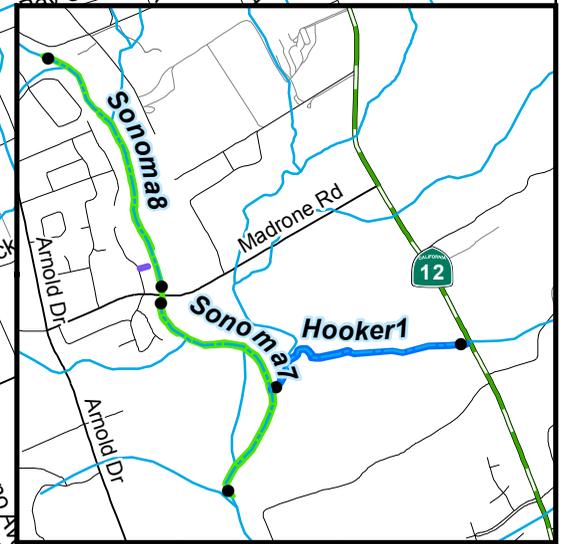
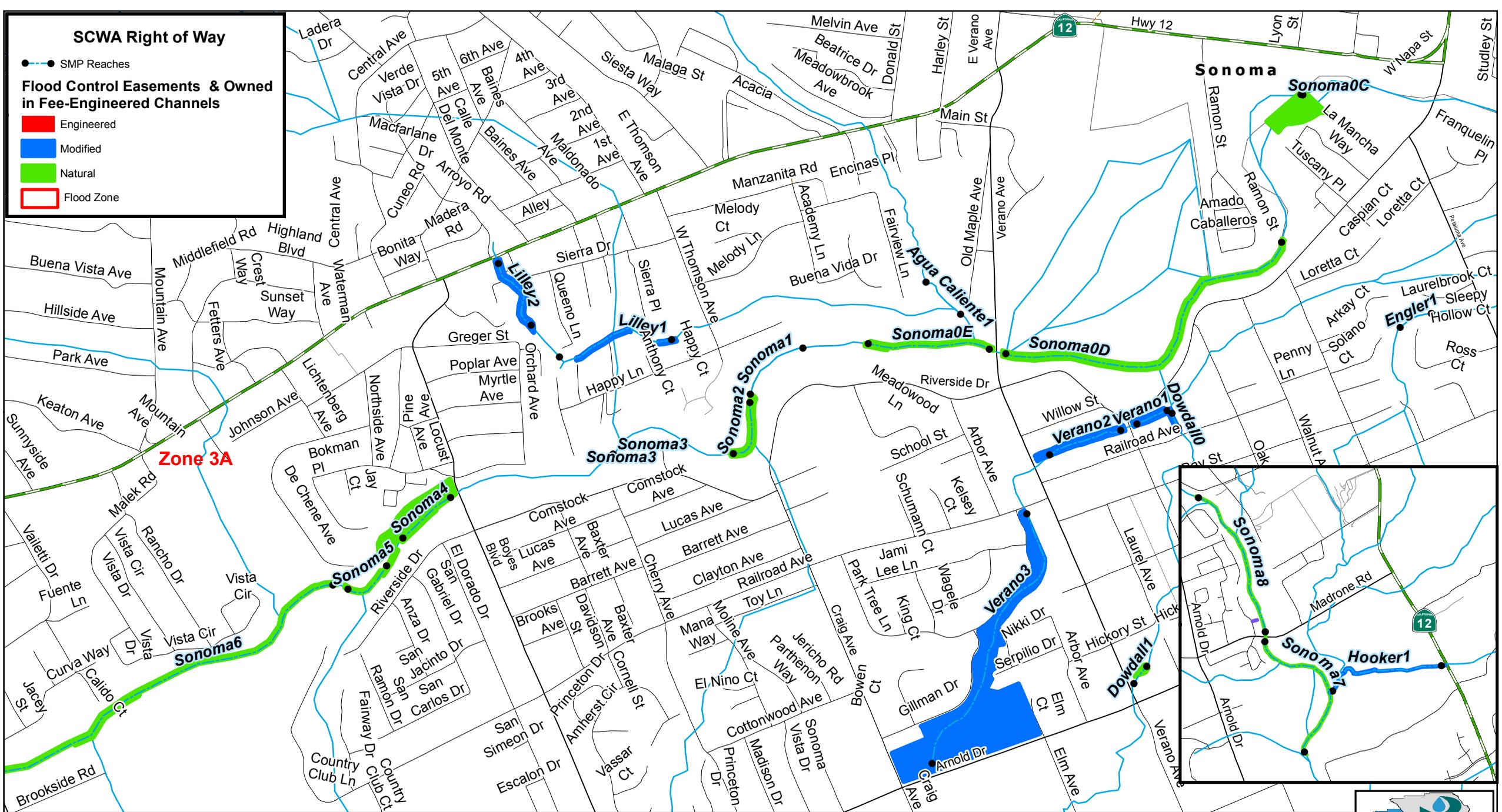
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SCWA Right of Way

- SMP Reaches

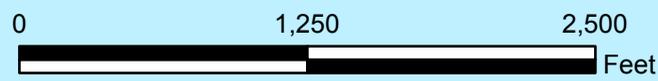
Flood Control Easements & Owned in Fee-Engineered Channels

- Engineered
- Modified
- Natural
- Flood Zone



**Stream Maintenance Program
Flood Zone 3A
Sonoma**

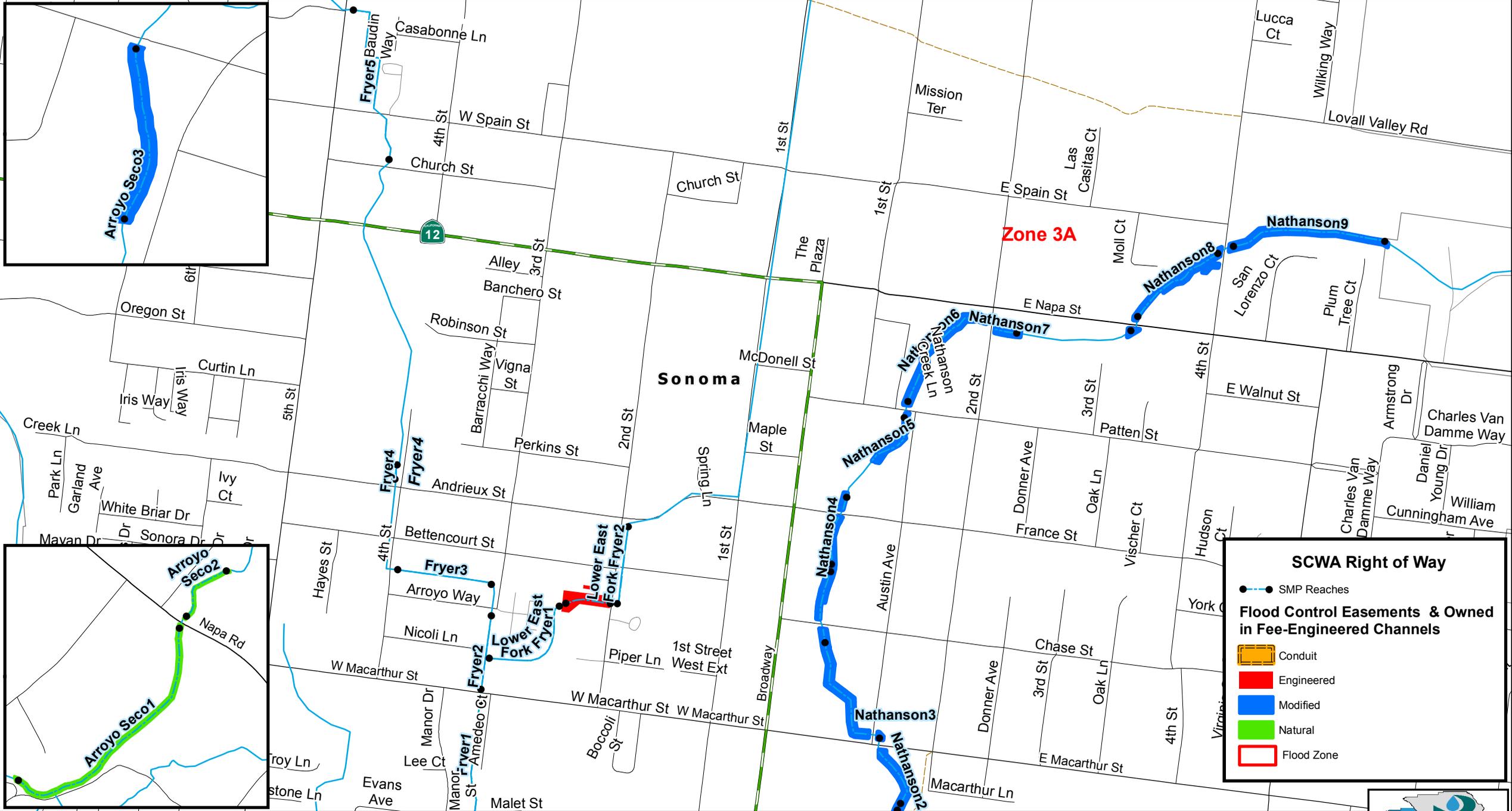
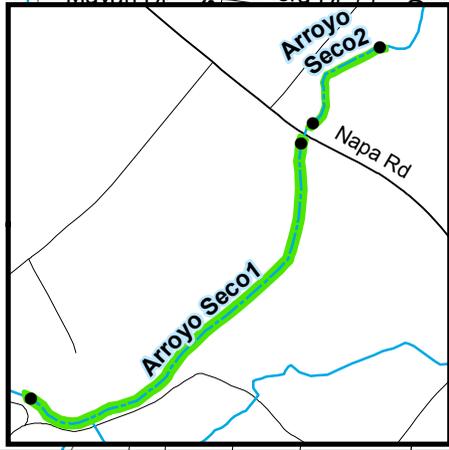
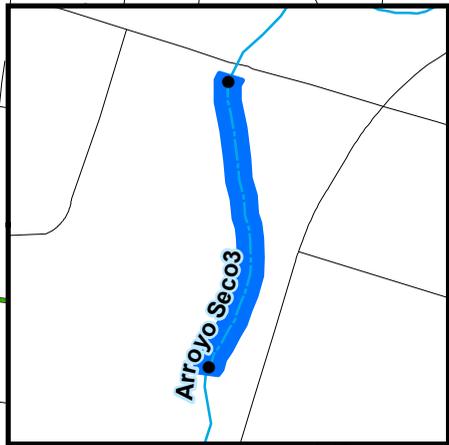
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Map
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SCWA Right of Way

- SMP Reaches

Flood Control Easements & Owned in Fee-Engineered Channels

- Conduit
- Engineered
- Modified
- Natural
- Flood Zone

Stream Maintenance Program
Flood Zone 3A
Sonoma

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