

Sonoma County Water Agency
Stream Maintenance Program (SMP)
**Annual Notification for
2015 Maintenance Projects**

Prepared for:
The SMP Inter-Agency Working Group



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Sonoma County Water Agency Stream Maintenance Program 2015 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 2015 maintenance season:

Zone 1A

- **Five Localized Scale Sediment Removal Projects at:**
 - Coleman Creek Reach 2: outfalls from Hampton, Hamlet, Hazel and Harvard Courts
 - Colgan Creek Reach 7: on the west side of Santa Rosa Avenue
 - Kawana Springs Creek Reach 1A: at Colgan Avenue
 - Laguna de Santa Rosa Reach 2: at confluence of Gossage and Hinebaugh creeks
 - Peterson Creek Reach 1: at the confluence with Forestview Creek
- **One Reach Scale Sediment Removal Projects at:**
 - Peterson Creek Reach 2: between the Youth Community Park and Guerneville Road
- **One Bank Repair Project at:**
 - Peterson Creek Reach 1: approximately 900 feet upstream from the confluence with Santa Rosa Creek, STA 516+00
- **Five In-stream Basin Clearings at:**
 - Brush Creek Reach 2B: at the confluence with Austin Creek
 - College Creek Reaches 1 and 2: at West College Avenue
 - Copeland Creek Reaches 4 and 5: above and below Snyder Lane
 - Santa Rosa Creek Reach 1: nine locations between STA 429+60 to STA 377+00
 - Todd Creek Reach 5B: above and below the outfall at the top of the Reach

■ Five Reservoir Inlet Clearings at:

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

Zone 2A**■ One Localized Scale Sediment Removal Project at:**

- East Fork McDowell Creek Reach 1: at the uppermost culvert

■ One Reach Scale Sediment Removal Projects at:

- Adobe Creek Reaches 1 and 2: between Hwy 116 and Shollenberger Park

Zone 4A**■ One Localized Scale Sediment Removal Project at:**

- Wood Creek Reach 1: at the railroad crossing on Railroad Avenue

Zone 8A**■ One Reach Scale Sediment Removal Project at:**

- Bloomfield Channel Reach 1: Between Bloomfield Road and Valley Ford Road

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 2015 project sites.

Table 1-1: Location and Other Geographic Information for 2015 Project Sites

Project Site	Creek	Tributary To	SMP Reach(es)	USGS Quad, Township, Range, Section	Latitude/ Longitude
ZONE 1A					
<i>Localized Scale Sediment Removal Projects</i>					
Coleman Creek at four outfalls	Coleman Creek	Wilfred Ext. Wilfred Creek	Coleman 2	Cotati Quad, T6N,R8W, Section 13	38.369 N, -122.687 W
Colgan Creek on the West side of Santa Rosa Ave	Colgan Creek	Laguna de Santa Rosa	Colgan 7	Santa Rosa Quad, T7N,R8W, Section 26	38.420 N, -122.714 W
Kawana Springs Creek at Colgan Ave	Kawana Springs Creek	Colgan Creek	Kawana 1A	Santa Rosa Quad, T7N,R8W, Section 26	38.421 N, -122.712 W
Laguna de Santa Rosa at confluence with Gossage and Hinebaugh Creeks	Laguna de Santa Rosa	Mark West Creek	Laguna 2	Cotati Quad, T6N, R8W, Section 22	38.349 N, -122.732 W
Peterson Creek at the confluence with Forestview Creek	Peterson Creek	Santa Rosa Creek	Peterson 1	Sebastopol Quad, T7N, R8W, Section 18	38.45 N, -122.781 W
<i>Reach Scale Sediment Removal Projects</i>					
Peterson Creek from Youth Community Park to Guerneville Rd	Peterson Creek	Santa Rosa Creek	Peterson 2	Sebastopol Quad, T7N, R8W, Section 18	38.453 N, -122.78 W
<i>Bank Repair Projects</i>					
Peterson Creek 900 feet up from confluence with Santa Rosa Creek	Peterson Creek	Santa Rosa Creek	Peterson 1	Sebastopol Quad, T7N, R8W, Section 18	38.349 N, -122.732 W
<i>In-stream Sediment Basin Clearing Projects</i>					
Brush Creek at confluence with Austin Creek	Brush Creek	Santa Rosa Creek	Brush 2B	Santa Rosa Quad, T7N, R7W, Section 07	38.463 N, -122.676 W

Project Site	Creek	Tributary To	SMP Reach(es)	USGS Quad, Township, Range, Section	Latitude/ Longitude
College Creek at West College Ave	College Creek	Santa Rosa Creek	College 1 and 2	Santa Rosa Quad, T7N, R8W, Section 16	38.445 N, -122.752 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
Santa Rosa Creek at Delta Pond	Santa Rosa Creek	Laguna de Santa Rosa	Santa Rosa 1	Sebastopol Quad, T7N, R9W, Section 14	38.447 N, -122.821 W
Todd Creek above and below uppermost outfall	Todd Creek	Bellevue-Wilfred Channel	Todd 5B	Santa Rosa Quad, T6N, R8W, Section 02	38.397 N, -122.709 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
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					
Localized Scale Sediment Removal Projects					
East Fork McDowell Creek at uppermost culvert	East Fork McDowell Creek	McDowell Creek	E. Fork McDowell 1	Petaluma River Quad, T5N, R7W, Section 34	38.237 N, -122.614 W
Reach Scale Sediment Removal Projects					
Adobe Creek from Hwy 116 and Shollenberger Park	Adobe Creek	Petaluma River	Adobe 1 and 2	Petaluma River Quad, T5N, R7W, Section 35	38.232 N, -122.599 W
ZONE 4A					
Localized Scale Sediment Removal Projects					
Wood Creek at the RR crossing on Railroad Ave	Woods Creek	Russian River	Woods 1	Geyserville Quad, T10N, R10W, Section 13	38.713 N, -122.911 W

Project Site	Creek	Tributary To	SMP Reach(es)	USGS Quad, Township, Range, Section	Latitude/ Longitude
ZONE 8A					
<i>Reach Scale Sediment Removal Projects</i>					
Bloomfield Channel from Bloomfield Rd to Valley Ford Rd	Bloomfield Channel	Estero Americano	Bloomfield 1	Two Rock Quad, T6N, R9W, Section 33	38.312 N, -122.851 W

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

Channel Characterization Sheets and Site Photos

Channel characterization sheets for the 2015 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 2015 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) will be applied when conducting maintenance activities. Specifically, the BMPs that will be applied are listed in Table 1-2 according to maintenance activity type. 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 (below) presents habitat potential for listed species by reach. This table is an excerpt from Table 7-3 of the SMP Manual. 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. Nine project sites (Adobe 1 and 2, Brush 2B, Copeland 4 and 5, Laguna 2, Santa Rosa 1, Santa Rosa Creek Reservoir and Santa Rosa Creek Fish Ladder) provide potential habitat for, or there is a known occurrence in or adjacent to the reach, for Central California Coast Steelhead. Additionally, most of the project sites show potential habitat for the Western Pond Turtle, with the exceptions of Bloomfield 1 and Coleman 2.

Several project reaches are within 1.3 miles of a known California Tiger Salamander (CTS) occurrence and/or may provide potential upland aestivation habitat for CTS, specifically: Coleman 2, Colgan 7, College 1 and 2, Copeland 4 and 5, Kawana 1A, Laguna 2, Peterson 1 and 2, Santa Rosa 1 and Todd 5B. 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 CTS, areas of disturbance and compensatory mitigation can be found in Section 2D of this notification.

Maintenance reaches proposed for 2015 potentially supporting California red-legged frog (CRLF) include Adobe 1 and 2, Bloomfield 1, Brush 2B, Brush Creek Reservoir, E. Fork McDowell 1, Matanzas Creek Reservoir, Piner Creek Reservoir, Santa Rosa Creek Reservoir and Santa Rosa Creek Fish Ladder. Furthermore, Copeland 5, the Santa Rosa Creek Diversion Fish Ladder, and Wood 1 may include potential habitat for foothill yellow-legged frog. Finally, three of the anticipated 2015 maintenance reaches have the potential to support special-status plant species (i.e. Sonoma sunshine (*Blennosperma bakeri*), Burke's goldfields (*Lasthenia burkei*) and Sebastopol meadowfoam (*Limnathes vinulans*)), specifically Laguna 2, Peterson 2 and Santa Rosa 1.

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									
Localized Scale Sediment Removal Projects									
Coleman 2	U	U	3(1,142.7)	U	U	U	U	U	U
Colgan 7	U	U	3(503.4)	U	P	U	U	U	U
Kawana 1A	U	U	3(925.4)	U	P	U	U	U	U
Laguna 2	U	U	2(4,281.3) ; 3(2,295.4)	U	P	O (M)	U	U	P
Peterson 1	U	U	3(2,696.6)	U	P	U	U	O*	U
Reach Scale Sediment Removal Projects									
Peterson 2	U	U	3(3,652.2)	U	P	U	U	U	P
Bank Repair Projects									
Peterson 1	U	U	3(2,696.6)	U	P	U	U	O*	U
In-stream Sediment Basin Clearing Projects									
Brush 2B	U	P	U	U	P	O (M/R)	U	U	U
College 1	U	U	3(2,675.1)	U	P	U	U	U	U
College 2	U	U	3(540.9)	U	P	U	U	U	U
Copeland 4	U	U	3(2,769.0)	U	P	O(M)	U	U	U
Copeland 5	U	U	3(1,368.1)	P	P	O(M/R)	U	U	U
Santa Rosa 1	U	U	3(3,323.1)	U	P	O (M)	U	O (M/S/R)	P
Todd 5B	U	U	3(1,010.3)	U	P	U	U	U	U
Reservoir Inlet Clearing Projects									
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 (Fish Ladder)	U	P	U	P	P	O*	U	U	U

ZONE 2A									
Localized Scale Sediment Removal Projects									
E. Fork McDowell 1	U	P	U	U	P	U	U	U	U
Reach Scale Sediment Removal 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
ZONE 4A									
Localized Scale Sediment Removal Projects									
Wood 1	U	U	U	P	P	U	U	U	U
ZONE 8A									
Reach Scale Sediment Removal Projects									
Bloomfield 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 2015 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 2015, vegetation maintenance will be completed in the locations as shown below (Table 1-4). 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.

Vegetation management activities for 2015 are proposed within a total of eighteen modified or natural channel reaches (Table 1-4 below). Project specific notifications (PSNs), as specified by CDFW and RWQCB permit terms, are included in Appendix C of this Notification. The PSNs include photo documentation of existing conditions, a description of the proposed project, an assessment

of the need for the proposed maintenance activities and identification of potential impacts to channels identified as functioning as potential habitat for threatened or endangered species. Post-maintenance photo documentation for approved projects within modified and natural channels will be included in the 2015 SMP Annual Post-Maintenance Summary Report.

Table 1-4. 2015 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
Austin 2	x		
Austin 3	x		
BellevueWilfred 4			x
Brush 2A	x		x
Brush 2B	x		x
Brush 1			x
Coffey 1	x		x
Coleman 2			x
Copeland 5			x
Golf 1	x		
Gossage 2A			x
Gossage 2B			x
Hinebaugh 1			x
Hinebaugh 2			x
Laguna 1			x
Laguna 2			x
Laguna 3			x
Laguna 6			x
Laguna 7			x
Paulin 2		x	
Paulin 4	x	x	x
Paulin 1		x	
Peterson 2	x		
Piner 1		x	
Piner 2		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>
Piner 3B		x	
Piner 4		x	
Piner 5		x	
Roseland 3			x
Roseland 4			x
Santa Rosa 1	x		x
Santa Rosa 2			x
Santa Rosa 3			x
Santa Rosa 4			x
Santa Rosa 5			x
Starr Creek Trib 1			x
Todd 5A			x
Todd 5B			x
Windsor 1A	x	x	x
Zone 2A			
Adobe 1			x
Capri 4			x
Corona Creek Trib 2A			x
Corona 1			x
Corona 4			x
Corona 5			x
Corona 6			x
Corona 7			x
East Washington 4	x		x
East Washington 5			x
Lichau 2			x
Petaluma 1			x
Thompson 1			x
Washington 7			x
Zone 3A			
Fryer 1			x
Lower East Fork Fryer 1	x	x	
Zone 4A			
Wood 1			x
Zone 6A			
West Slough 1	x		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>
Modified Channels			
Zone 1A			
East Windsor 2	x		x
Oakmont 3	x		x
Zone 2A			
Petaluma 0C	x		x
Petaluma 0B	x		x
Petaluma 2	x		x
Lichau 3A	x		x
Lichau 3B	x		x
Lichau 3C	x		x
Lichau 3D	x		x
Zone 3A			
Nathanson 0	x		x
Rodgers 0A	x		x
Rodgers 1	x		x
Schell 2	x		x
Schell 3	x		x
Natural Channels			
Zone 5A			
Jonive 1	x		x
Jonive 2	x		x
Jonive 3	x		x
Hudspeth 1	x		x

Section 2

Summary of Maintenance Project Sizes, Extents, and Potential Effects

The following tables describe the areal and length extents of the 2015 maintenance projects and their potential effects to Waters of the State/U.S. and listed species. Designs for the 2015 maintenance projects are provided in Appendix D.

2A. 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*)	Total
ZONE 1A					
<i>Localized Scale</i>					
Coleman 2	64	300	0.002	0.001	0.003
Colgan 7	389	163	0.09	—	0.09
Kawana 1A	222	39	0.02	—	0.02
Laguna 2	600	3,433	0.71	—	0.71
Peterson 1	466	487	0.23	—	0.23
<i>Reach Scale</i>					
Peterson 2	3,510	1,373	1.06	—	1.06
<i>In-stream Sediment Basin Clearing</i>					
Brush 2B	100	230	0.05	—	0.05
College 1 & 2	200	129	0.09	—	0.09
Copeland 4 & 5	205	750	0.21	—	0.21
Santa Rosa 1	1,990	3,713	1.28	—	1.28
Todd 5B	50	60	0.02	—	0.02
<i>Reservoir Inlet Clearing</i>					
Brush Creek Reservoir	n/a	250	0.05	—	0.05
Matanzas Creek Reservoir	n/a	250	0.05	—	0.05
Piner Creek Reservoir	n/a	250	0.05	—	0.05
Santa Rosa Creek Reservoir	n/a	100	0.06	—	0.06

Project Site	Length (linear feet)	Volume Removed (cu. yds.)	Acres Disturbed		
			Waters of the U.S. (below OHWM*)	Waters of the State (below TOB*)	Total
Fish Ladder in Santa Rosa Div. 1	40	18	0.01	—	0.01
Zone 1A Project Totals	7,836	11,545	3.982	0.001	3.983
ZONE 2A					
<i>Localized Scale</i>					
E. Fork McDowell 1	103	46	0.04	—	0.04
<i>Reach Scale</i>					
Adobe 1 and 2	2,373	5,488	1.38	0.46	1.84
Zone 2A Totals	2,476	5,534	1.42	0.46	1.88
ZONE 4A					
<i>Localized Scale</i>					
Wood 1	200	196	0.10	0.005	0.005
Zone 4A Totals	200	196	0.10	0.005	0.005
ZONE 8A					
<i>Reach Scale</i>					
Bloomfield 1	1,245	1,252	0.55	—	0.55
Zone 8A Totals	1,245	1,252	0.55	—	0.55
Combined 2015 Project Totals	11,757	18,527	6.05	0.47	6.52

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

2B. 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)	Total		
Peterson 1 (Zone 1A)	43	0.008	0.012	0.02	43	5-6
Totals	43	0.008	0.012	0.02	43	

2C. Activities on Restriction-Imposed Creeks

The Stream Maintenance Program tracks maintenance in creeks that have annual or cumulative maintenance limits (for the term of the permit). Multi-year tracking of cumulative program activities is important to demonstrate compliance with the SMP’s own programmatic permits, as well as related conditions (such as the Russian River Biological Opinion conditions). These permit

conditions are intended to reduce the overall level of impacts and the associated frequency of disturbance. Previous SMP Annual Summary Reports (2010-14) discuss the purpose and approach behind the Water Agency's philosophy and implementation of vegetation management. In general, Vegetation Management involves a "frequent but light" approach and results in removing only between 10-20 percent of canopy contributing to hydraulic constrictions.

Proposed 2015 SMP maintenance activities on creeks with restrictions are documented below in Table 2-1.

Table 2-1. Proposed 2015 Activities on Creeks with Maintenance Limits

Creek Name	Permitting Conditions from Russian River Biological Opinion or developed for SMP Manual (NMFS 2008)			Proposed 2015 SMP Activities		Remaining Maintenance Activities Available on Creek
	Reach Scale Sediment Removal Limits	Localized Sediment Removal Limits	Vegetation Removal Limits	Sediment Removal Project Type/Extent (linear feet)	Vegetation Removal Reach(es)/ Total Length of Reach(es)***	Reach Scale Sediment Removal
ZONE 1A						
Laguna de Santa Rosa	2,400 ft of sediment removal 3 times for the next 15 years*	No more than 3 projects annually	12,000 ft of vegetation removed annually	Localized Scale Sediment Removal/ 600 ft	Laguna 1, 2, 3, 6, 7/ 24,246 ft	reached limits established in BO for sediment removals, requesting authorization for basin installation with NMFS
Copeland Creek	3,270 ft of sediment removal 6 times for the next 15 years*	No more than 3 projects annually	9,625 ft of vegetation removed annually	In-stream Sediment Basin Clearing/ 205 ft	Copeland 5/ 1,368 ft	5 projects
Windsor Creek	500 ft of sediment 2 times for the next 15 years*	No more than 3 projects annually	3,000 ft of vegetation removed annually	None	Windsor 1A/ 686 ft	1 project

Creek Name	Permitting Conditions from Russian River Biological Opinion or developed for SMP Manual (NMFS 2008)			Proposed 2015 SMP Activities		Remaining Maintenance Activities Available on Creek
	Reach Scale Sediment Removal Limits	Localized Sediment Removal Limits	Vegetation Removal Limits	Sediment Removal Project Type/Extent (linear feet)	Vegetation Removal Reach(es)/ Total Length of Reach(es)***	Reach Scale Sediment Removal
Santa Rosa Creek	4,000 ft three times for the next 15 years*	No more than 3 projects annually	12,100 ft of vegetation removed annually	In-stream Sediment Basin Clearing/ 1,990 ft	Santa Rosa 1, 2, 3, 4, 5/ 38,417 ft	1 project (3,163 feet remaining)
ZONES 2A & 3A						
Adobe Creek	4,153 ft, 3 times over 4 reaches for next 10 years**	n/a	5 projects, no more than 25% wood removed from any 1 reach, for next 10 years**	Reach Scale Sediment Removal / 2,373 ft	Adobe 1/ 1,513 ft	3 projects
Lichau Creek	2,919 ft, 6 times over 3 reaches for 10 years**		5 projects, no more than 25% wood removed from any 1 reach, for next 10 years**	None	Lichau 2, 3A, 3B, 3C, 3D/ 6,770 ft	2 projects (5,063 feet remaining)
Lynch Creek	1,277 ft, 2 times in 1 reach, for next 10 years**	--	1 project annually with no more than 25% wood removed, over next 10 years**	None	None	1 project (1,264 feet remaining)
Thompson Creek	1,856 ft, 2 times in 1 reach for next 10 years**	--	5 projects, no more than 25% wood removed, over next 10 years**	None	Thompson 1/ 1,856 ft	2 projects

Creek Name	Permitting Conditions from Russian River Biological Opinion or developed for SMP Manual (NMFS 2008)			Proposed 2015 SMP Activities		Remaining Maintenance Activities Available on Creek
	Reach Scale Sediment Removal Limits	Localized Sediment Removal Limits	Vegetation Removal Limits	Sediment Removal Project Type/Extent (linear feet)	Vegetation Removal Reach(es)/ Total Length of Reach(es)***	Reach Scale Sediment Removal
Fryer Creek	4,009 ft 3 times over 4 reaches for next 10 years**		5 projects in each reach, no more than 25% wood removed from any 1 reach, for next 10 years**	None	Fryer 1/ 2,805 ft	2 projects
Lower East Fork Fryer	--	683 ft, 1 time, in 1 reach, for next 10 years**	5 projects, no more than 25% of wood removed for next 10 years**	None	Lower East Fork Fryer 1/ 683 ft	0

*= limits for the next 15 years through 2023

**=limits for the next 10 years through 2020

***Actual vegetation removal may only occur within sub-portions of the total extent of the reach(es)

2D. Listed and Special-Status Species – Potential Area of Effect

California Tiger Salamander

As described above in Section 1C and Table 1-3, there are five wildlife species listed under the Federal Endangered Species Act that could be potentially impacted by the 2015 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 2015 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 2-2 below identifies 2015 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 2015 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 E.

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 2-2. 2015 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.)
ZONE 1A			
Localized Scale			
Coleman 2	3/50	0.2:1	10
Colgan 7	3/0	0.2:1	0
Kawana 1A	3/0	0.2:1	0
Laguna 2	2/0	1:1	0
Peterson 1	3/0	0.2:1	0
Reach Scale			
Peterson 2	3/0	0.2:1	0
Bank Repair			
Peterson 1	3/504	0.2:1	101
In-stream Sediment Basin Clearing			
College 1 & 2	3/0	0.2:1	0
Copeland 4 & 5	3/0	0.2:1	0
Santa Rosa 1	3/0	0.2:1	0
Todd 5B	3/0	0.2:1	0
Project Totals	554 sq. ft. (0.013 acres)		111 sq. ft. (0.003 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, 2013 and 2014 were 0.034, 0.05, 0.049, 0.237, and 0.039 acres, respectively. The total combined CTS impact mitigation for the past five seasons is 0.409 acre. As seen in Table 2-2 (above), 0.003 acre is the foreseen CTS credit needed for the 2015 season. To provide coverage for the 2014 and 2015 field seasons, the Water Agency is pursuing

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 2015 as well as associated BMPs described below (see Section 3).

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 BMP BR-10 Avoidance and Impact Minimization Measures for Ground-Disturbing 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, dip net 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.

In April 2015, Water Agency biologists evaluated CRLF habitat conditions at proposed ground-disturbing project sites. A summary of these reconnaissance-level surveys is provided in Table 2-3a. The 2015 surveys reassessed habitat conditions evaluated in 2008 during development of SMP Manual Table 7-3. Most reaches identified in the 2008 Habitat Assessment as “Unsuitable Habitat” continued to be unsuitable based on degraded habitat conditions, lack of cover and wetlands/riparian vegetation, abundance of nonnative predators, and urban isolation. Brush Creek Reservoir, Matanzas Creek Reservoir, Piner Creek Reservoir are operated with an open-valve that has changed the hydrology from a perennial pond/lake to intermittent creek with limited cover and pools. Previously these reservoirs had protocol-level surveys conducted with negative findings. Currently, these reservoirs do not provide suitable habitat for CRLF. In addition, the Fish Ladder at Santa Rosa Creek Diversion Structure, East Fork McDowell Creek Reach 1, and Corona Creek Reaches 6 and 7 are recommended to change designation from Potential Habitat to Unsuitable Habitat on Table 7-3 in the SMP Manual based on degraded habitat conditions observed during 2015. These reaches are primarily engineered channels located within high-density urban centers.

The SMP reach that was identified as “Potential Habitat” in the SMP Manual and during April 2015 reconnaissance visits was Bloomfield Creek Reach 1. Protocol-level surveys using USFWS Guidelines (USFWS 2005) are required for this reach prior to maintenance activities. Marginal habitat was identified during April 2015 visits at Brush Creek Reach 2A, Adobe Creek Reach 1, and Todd Creek Reach 5B. Truncated surveys, consisting of three evening visits, are proposed for reaches with marginal habitat due to degraded conditions. Also, Brush Creek Reach 2A and Adobe Creek Reach 1 have had previous focused surveys with negative findings nearby and similar habitat conditions. Todd Creek Reach 5B appears to dry by mid-spring in normal rainfall years. These three marginal sites do not appear to have suitable breeding habitat but may be used by adult frogs for foraging. The evening surveys will target this life stage. This approach was approved by the USFWS in 2013 for marginal sites. If these marginal habitats improve, protocol-levels may be warranted in the future.

Table 2-3a. California red-legged frog survey summary at 2015 SMP proposed sediment removal and bank repair project sites

Project Site	SMP Reach(es)	CRLF Habitat Assessment (SMP Table 7.3)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	CRLF Survey Expiration	2015 CRLF Surveys Warranted
ZONE 1A						
<i>Localized Scale Sediment Removal Projects</i>						
Coleman Creek	2	Unsuitable Habitat	None	Degraded engineered channel. No pools, lacks cover. Unsuitable habitat.	N/A	No
Colgan Creek	7	Unsuitable Habitat	None	Degraded engineered concrete channel in commercial area. Unsuitable habitat.	N/A	No
Laguna de Santa Rosa	2	Unsuitable Habitat	None	Degraded engineered channel with an abundance of invasive species. Unsuitable habitat.	N/A	No
Peterson Creek	1	Unsuitable Habitat	None	Small degraded engineered channel. Unsuitable habitat.	N/A	No
<i>Reach Scale Sediment Removal Projects</i>						
Peterson Creek	2	Unsuitable Habitat	None	Small degraded engineered channel. Unsuitable habitat.	N/A	No
<i>Bank Repair Projects</i>						
Peterson Creek	1	Unsuitable Habitat	None	Small degraded engineered channel. Unsuitable habitat.	N/A	No
<i>In-stream Sediment Basin Clearing Projects</i>						
Brush Creek	2A	Potential Habitat	Negative survey findings upstream at Brush Creek 2A and Austin Creek 1 in 2013, upstream at Brush Creek Reservoir in 2010, and tributary to Ducker Creek 2A in 2010.	Engineered channel with patchy marsh vegetation and mature riparian in residential area. Marginal habitat.	N/A	Recommend truncated 3 evening focused surveys

Project Site	SMP Reach(es)	CRLF Habitat Assessment (SMP Table 7.3)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	CRLF Survey Expiration	2015 CRLF Surveys Warranted
College Creek	2	Unsuitable Habitat	None	Degraded engineered concrete channel in urban area. Unsuitable habitat.	N/A	No
Copeland Creek (clearing)	4 and 5	Unsuitable Habitat	Reach 4 evaluated as unsuitable habitat in 2014	Urban degraded channel. Unsuitable habitat.	N/A	No
Kawana Creek	1A	Unsuitable Habitat	None	Degraded engineered channel in commercial area. Unsuitable habitat.	N/A	No
Santa Rosa Creek (several basins)	1	Unsuitable Habitat	None	Large engineered channel, mature riparian. Flatwater that lacks deeper pools with cover. Abundance of invasive predators. Unsuitable habitat.	N/A	No
Todd Creek	5B	Unsuitable Habitat	None	Small engineered channel with wetland vegetation and sparse riparian. Marginal habitat.	N/A	Yes
Reservoir Inlet Clearings Projects						
Brush Creek Reservoir	Brush Creek Reservoir Inlet	Potential Habitat (Recommend changing to Unsuitable Habitat)	Surveyed in 2010 with negative findings. Reconnaissance visits in 2013 and 2014 found degraded habitat.	Inlet dry. Reservoir barren. No suitable habitat.	N/A	No
Matanzas Creek Reservoir	Matanzas Creek Reservoir Inlet	Potential Habitat (Recommend changing to Unsuitable Habitat)	Surveyed in 2000, 2001, and 2010 with negative findings. Reconnaissance visits in 2013 and 2014 found degraded habitat.	Open-valve operation of reservoir has changed hydrology. Mudflat around inlet. No wetland vegetation. No suitable habitat.	N/A	No

Project Site	SMP Reach(es)	CRLF Habitat Assessment (SMP Table 7.3)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	CRLF Survey Expiration	2015 CRLF Surveys Warranted
Piner Creek Reservoir	Piner Creek Reservoir Inlet	Potential Habitat (Recommend changing to Unsuitable Habitat)	Surveyed in 2010 with negative findings. Reconnaissance visits in 2013 and 2014 found degraded habitat. Future colonization unlikely due to urban isolation.	Open-valve operation of reservoir has changed hydrology. Site mostly dry. Standing water at inlet and developing marsh at inflow provides marginal habitat. CRLF absent based on isolation and previous negative findings.	N/A	No (recommended based on degraded conditions and previous surveys)
Santa Rosa Creek Reservoir (Spring Lake)	Spring Lake Inlet	Unsuitable Habitat	Surveyed in 2010 with negative findings. Reconnaissance visits in 2013 and 2014 found degraded habitat.	Degraded habitat. Abundance of predators in Spring Lake	N/A	No
Fish Ladder in Santa Rosa Creek Diversion Structure	Santa Rosa Div. 1	Potential Habitat (recommend changing to Unsuitable Habitat)	Surveyed in 2012 with negative findings. Reconnaissance visits in 2013 and 2014 found degraded habitat.	Moderate-high flows in fish ladder. No suitable habitat.	N/A	No
ZONE 2A						
<i>In-stream Sediment Basin Clearing Projects</i>						
East Fork McDowell Creek	1	Potential Habitat (recommend revising to Unsuitable Habitat)	None	Degraded channel, isolated by urban development. No suitable habitat.	N/A	No
<i>Reach Scale Sediment Removal Projects</i>						

Project Site	SMP Reach(es)	CRLF Habitat Assessment (SMP Table 7.3)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	CRLF Survey Expiration	2015 CRLF Surveys Warranted
Adobe Creek	Adobe 1 and 2 (basin clearing incorporated)	Potential Habitat	Surveyed upstream of sediment basin in 2010 and 2013 with negative findings.	No wetland or riparian vegetation upstream of sediment basin. Mature riparian, shallow pools, partially tidal downstream of basin. Breeding unlikely due to shallow pools and brackish waters. Marginal habitat for adult frogs below basin.	2015 (above basin)	Valid Survey (above basin). Recommend truncated 3 evening surveys for adults below basin.
Corona Creek	6 and 7	Potential Habitat (recommend revising to Unsuitable Habitat)	Corona Creek 1, downstream, surveyed in 2010 with negative findings. No suitable habitat in Corona Tributary Reach 1 in 2013.	Degraded engineered channel, isolated by urban development. No suitable habitat.	N/A	No
ZONE 4A						
<i>Localized Scale Sediment Removal Projects</i>						
Wood Creek	1	Unsuitable Habitat	None	Channelized creek. No wetland vegetation, very seasonal. No suitable habitat.	N/A	No
ZONE 8A						
<i>Reach Scale Sediment Removal Projects</i>						
Bloomfield Creek	1	Potential Habitat	Survey completed at Bloomfield Road in 2011, negative findings and habitat was marginal due to channelization.	Deep pools with marsh vegetation, overhanging willows, and undercut banks upstream of Valley Ford Road provide suitable habitat frog frogs. Marginal habitat remains at Bloomfield Road.	2014	Yes

In addition to the conservation measures articulated for ground-disturbing activities, the Water Agency will (according to BMP BR-11 Avoidance and Impact Minimization Measures for Vegetation Management Activities and the USFWS BO) also implement the following measures to avoid potential impacts to CRLF during vegetation maintenance activities occurring within potential habitat for the species (2015 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.

In conjunction with CRLF habitat surveys at proposed ground-disturbing sites, Water Agency biologists also evaluated CRLF habitat conditions at proposed 2015 vegetation management sites (Table 2-3b, below). Based on these surveys, the following reaches are recommended to change to Unsuitable Habitat from Potential Habitat, as listed in SMP Manual Table 7-3, due to observed highly degraded habitat conditions: Starr Creek Trib Creek Reach 1, Windsor Creek Reach 1A, Corona Creek Trib Creek Reach 1, Corona Creek Reaches 1, 4-7, East Washington Creek Reaches 4 and 5, Fryer Creek Reach 1, and Lower East Fork Fryer Creek Reach 1. Although potential or marginal habitat is present, based on previous focused surveys with negative findings, the CRLF is absent from Lichau Creek Reaches 2 and 3-A-D. These reaches do not require implementing BMP BR-11.

SMP Reaches with Potential Habitat for the CRLF and require implementing BMP BR-11 include: Austin Creek Reach 1, Brush Creek Reaches 1, 2A, and 2B, Todd Creek Reach 5A, Adobe Creek Reach 1, Capri Creek Reach 1, Thompson Creek Reach 1, Washington Creek Reach 1, Hudspeth Creek Reach 1, Jonive Creek Reaches 1, 2, and 3, and West Slough Reach 1. Also, based on reconnaissance visits in 2015 or previous studies, the following reaches are recommended to change designation to Potential Habitat from Unsuitable Habitat on Table 7.3 of the SMP Manual: Todd Creek Reach 5B, Nathanson Creek Reach 0, and Schell Creek Reach 3.

The Petaluma River Reaches 0B, 0C, 1, and 2 are tidally influenced and likely contain brackish waters. Salinity levels known to impact CRLF egg development and survival is as low as 5 ppt (part per thousand) and salinity at 9 ppt would likely preclude the presence of adult frogs

(Jennings and Hayes 1990). The Petaluma River reaches should have water quality investigated as part of the BR-11 preconstruction surveys. If brackish conditions preclude the presence of CRLF, then implementation of BR-11 would not be warranted.

The Water Agency requests concurrence with the US Fish and Wildlife Service with the proposed 2015 survey plan for CRLF as listed in Table 2-3c (below).

Table 2-3b. California red-legged frog survey summary at 2015 SMP proposed sediment removal and bank repair project sites

Project Site	SMP Reach	CRLF Habitat Assessment ¹ (SMP Table 7.3 ²)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	SMP Manual BMP BR-11 Requirements
Zone 1A					
Abramson Creek	1	Unsuitable Habitat ²	None	None	None
Airport Creek	1 and 2	Unsuitable Habitat ²	None	None	None
Austin Creek	2	Potential Habitat ²	None	None	Pre-construction survey and construction monitoring
Austin Creek	3	Unsuitable Habitat ²	None	None	None
Bellevue Wilfred Creek	4	Unsuitable Habitat ²	None	None	None
Brush Creek	1, 2A, and 2B	Potential Habitat ²	None	None	Pre-construction survey and construction monitoring
Coffey Creek	1	Unsuitable Habitat ²	None	None	None
Coleman Creek	2	Unsuitable Habitat ²	None	None	None
Copeland Creek	5	Unsuitable Habitat ²	None	None	None
East Windsor	2	Unsuitable Habitat ¹	None	None	None

Project Site	SMP Reach	CRLF Habitat Assessment ¹ (SMP Table 7.3 ²)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	SMP Manual BMP BR-11 Requirements
Golf Creek	1	Unsuitable Habitat ¹	None	None	None
Gossage Creek	2A and 2B	Unsuitable Habitat ²	None	None	None
Hinebaugh Creek	1 and 2	Unsuitable Habitat ²	None	None	None
Laguna de Santa Rosa	1, 2, 3, 6, and 7	Unsuitable Habitat ²	None	None	None
Oakmont Creek	3	Unsuitable Habitat ¹	None	None	None
Paulin Creek	1, 2, and 4	Unsuitable Habitat ²	None	None	None
Peterson Creek	2	Unsuitable Habitat ²	None	Small degraded engineered channel. Unsuitable habitat.	None
Piner Creek	1, 2, 3B, 4, and 5	Unsuitable Habitat ²	None	None	None
Roseland Creek	3 and 4	Unsuitable Habitat ²	None	None	None
Santa Rosa Creek	1	Unsuitable Habitat ²	None	Large engineered channel, mature riparian. Flatwater that lacks deeper pools with cover. Abundance of invasive predators. Unsuitable habitat.	None
Santa Rosa Creek	2-5	Unsuitable Habitat ²	None	None	None

Project Site	SMP Reach	CRLF Habitat Assessment ¹ (SMP Table 7.3 ²)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	SMP Manual BMP BR-11 Requirements
Starr Creek Trib Creek	1	Potential Habitat ² (recommend changing to Unsuitable Habitat)	Protocol survey in 2010 with negative findings. Degraded habitat.	None	None (recommended)
Todd Creek	5A	Potential Habitat ²	None	Small engineered channel with wetland vegetation and sparse riparian. Marginal habitat.	Pre-construction survey and construction monitoring
Todd Creek	5B	Unsuitable Habitat ²	None	Small engineered channel with wetland vegetation and sparse riparian. Marginal habitat.	Pre-construction survey and construction monitoring
Windsor Creek	1A	Potential Habitat ² (recommend changing to Unsuitable Habitat)	Protocol survey in 2011 with negative findings. Degraded habitat.	None	None (recommended)
ZONE 2A					
Adobe Creek	1	Potential Habitat ²	Surveyed upstream of sediment basin in 2010 and 2013 with negative findings.	Mature riparian, shallow pools, partially tidal downstream of basin. Breeding unlikely due to shallow pools and brackish waters. Marginal habitat for adult frogs below basin.	Pre-construction survey and construction monitoring

Project Site	SMP Reach	CRLF Habitat Assessment ¹ (SMP Table 7.3 ²)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	SMP Manual BMP BR-11 Requirements
Capri Creek	4	Potential Habitat ²	None	None	Pre-construction survey and construction monitoring
Corona Creek Trib Creek	2A	Potential Habitat ² (recommend changing to Unsuitable Habitat)	Protocol survey at Corona Reach 1 in 2010 and truncated survey at Corona Trib 1 in 2013 with negative findings. Degraded habitat.	Evaluated as “Unsuitable Habitat” in CRLF Habitat Assessment ¹ . Based on previous studies the site is unsuitable habitat.	None (recommended)
Corona Creek	1	Potential Habitat ² (recommend changing to Unsuitable Habitat)	Protocol survey at Corona Reach 1 in 2010 with negative findings. Degraded habitat.	None	None (recommended)
Corona Creek	4-7	Potential Habitat ² (recommend revising to Unsuitable Habitat)	Corona Creek 1, downstream, surveyed in 2010 with negative findings. No suitable habitat in Corona Tributary Reach 1 in 2013.	Degraded engineered channel, isolated by urban development. No suitable habitat.	None (recommended)

Project Site	SMP Reach	CRLF Habitat Assessment ¹ (SMP Table 7.3 ²)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	SMP Manual BMP BR-11 Requirements
East Washington Creek	4 and 5	Potential Habitat ² (recommend revising to Unsuitable Habitat)	Protocol survey at E. Wash 5 in 2012 and truncated survey in E. Wash 4 in 2013. Also, protocol surveys in E. Wash 1-3 in 2012. All surveys with negative findings. Degraded habitat.	Degraded engineered channel, isolated by urban development. No suitable habitat.	None (recommended)
Lichau Creek	2	Potential Habitat ²	Several onsite and nearby focused surveys with negative findings: <ul style="list-style-type: none"> • Reach 1 in 2001 • Reach 2 in 2012 (onsite) • Reach 3 in 2012 • Reach 3B & 3D in 2001 • Reaches 4 & 5 in 2012 • Reach 6 in 2001 	None	None (recommended, based on previous negative findings on- and offsite)
Lichau Creek	3A-D	Unsuitable Habitat ¹	Several onsite and nearby focused surveys with negative findings: <ul style="list-style-type: none"> • Reach 3B & 3D in 2001 • Upstream Reaches 4 & 5 in 2012 • Upstream Reach 6 in 2001 • Downstream Reaches 2 & 3 in 2012 • Downstream Reach 1 in 2001 	Slow moving flatwater and pools, patchy overhanging vegetation provide frog habitat. However, predators (fish, crayfish) likely degrade or preclude CRLF occurrence. Several survey onsite and in the vicinity suggest that CRLF are absent.	None (recommended, based on previous negative findings on- and offsite)

Project Site	SMP Reach	CRLF Habitat Assessment ¹ (SMP Table 7.3 ²)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	SMP Manual BMP BR-11 Requirements
Petaluma River	1, 0B, 0C, and 2	Unsuitable Habitat ¹	None	River is tidal with mud and gravel substrate, shoreline wetland veg limited, mature riparian. Fish and abundance of invasive predators likely. Brackish water likely. Surrounding land use commercial and fallow fields.	Conduct water quality survey. Salinity of 5-9 ppt unsuitable habitat
Thompson Creek	1	Potential Habitat ²	None	None	Pre-construction survey and construction monitoring
Washington Creek	7	Potential Habitat ²	None	None	Pre-construction survey and construction monitoring
ZONE 3A					
Fryer Creek	1	Potential Habitat ² (recommend revising to Unsuitable Habitat)	Protocol surveys conducted in Fryer 2-4 in 2001 with negative findings. Degraded habitat.	The site in 2011 had the same degraded habitat as at Fryer 2-4.	None (recommended)
Lower East Fork Fryer Creek	1	Potential Habitat ² (recommend revising to Unsuitable Habitat)	Protocol surveys conducted in Fryer 2-4 in 2001 with negative findings. Degraded habitat.	The site in 2011 had more degraded habitat conditions as at Fryer 2-4. Also, upstream of Lower East Fork Fryer the creek is contained in a underground pipe.	None (recommended)

Project Site	SMP Reach	CRLF Habitat Assessment ¹ (SMP Table 7.3 ²)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	SMP Manual BMP BR-11 Requirements
Nathanson Creek	0	Unsuitable Habitat ¹	Surveys conducted downstream at Schell Creek Reach 2 in 2011 with negative findings.	Small creek with dense bank vegetation, open riparian, and patchy marsh veg. Potential habitat.	Pre-construction survey and construction monitoring
Rodgers Creek	0A and 1	Unsuitable Habitat ¹	None	Small shallow creek with cobble substrate, lacks cover. No suitable habitat.	None
Schell Creek	2	Unsuitable Habitat ¹	Surveys conducted at Schell Creek Reach 2 in 2011 with negative findings.	Flatwater with patchy marsh and overhanging blackberry. Marginal habitat for CRLF	None
Schell Creek	3	Unsuitable Habitat ¹	Surveys conducted downstream at Schell Creek Reach 2 in 2011 with negative findings.	Deep pools and flatwater with patchy marsh and overhanging blackberry. Potential habitat for CRLF.	Pre-construction survey and construction monitoring
ZONE 4A					
Wood Creek	1	Unsuitable Habitat ¹	None	Channelized creek. No wetland vegetation, very seasonal. No suitable habitat	None
ZONE 5A					
Hudspeth Creek	1	Marginal habitat ¹	None	Small natural creek with runs and pools. Dense riparian and understory. Pools with undercut banks and cover. Potential habitat for CRLF.	Pre-construction survey and construction monitoring
Jonive Creek	1, 2, and 3	Marginal habitat ¹	None	Small natural creek with runs and pools. Dense riparian and understory. Pools with undercut banks and cover. Potential habitat for CRLF.	Pre-construction survey and construction monitoring

Project Site	SMP Reach	CRLF Habitat Assessment ¹ (SMP Table 7.3 ²)	Background and Previous Study Results	Spring 2015 CRLF Reconnaissance Visit	SMP Manual BMP BR-11 Requirements
ZONE 6A					
West Slough	1	Potential Habitat ²	None	None	Pre-construction survey and construction monitoring

Table 2-3c. Proposed CRLF survey plan for projects that require focused studies and monitoring as well as recommended SMP Manual updates (as per reconnaissance-level surveys discussed above)

Action	Number of Reaches	SMP Reach
Ground-Disturbing (Sediment Removal and Bank Repairs) Sites		
Change designation to "Unsuitable Habitat" on SMP Table 7.3	7	Brush Creek Reservoir, Matanzas Creek Reservoir, Piner Creek Reservoir, Fish Ladder at Santa Rosa Creek Diversion Structure, East Fork McDowell Creek Reach 1, and Corona Creek Reaches 6 and 7
Change designation to "Potential Habitat" on SMP Table 7.3	0	None
Conduct Protocol-level CRLF Surveys (8 visits)	1	Bloomfield Creek Reach 1
Conduct Truncated CRLF Surveys (3 evening visits)	3	Brush Creek Reach 2A, Adobe Creek Reach 1, and Todd Creek Reach 5B
Vegetation Management Sites		
"Potential Habitat" present, implement BMP BR-11	14	Austin Creek Reach 1, Brush Creek Reaches 1, 2A, and 2B, Todd Creek Reach 5A, Adobe Creek Reach 1, Capri Creek Reach 1, Thompson Creek Reach 1, Washington Creek Reach 1, Hudspeth Creek Reach 1, Jonive Creek Reaches 1, 2, and 3, and West Slough Reach 1
Change designation to "Potential Habitat" on SMP Table 7.3 and implement BMP BR-11	3	Todd Creek Reach 5B, Nathanson Creek Reach 0, and Schell Creek Reach 3
Change designation to "Unsuitable Habitat" on SMP Table 7.3	12	Starr Creek Trib Creek Reach 1, Windsor Creek Reach 1A, Corona Creek Trib Creek Reach 1, Corona Creek Reach 1, 4-7, East Washington Creek Reach 4 and 5, Fryer Creek Reach 1, Lower East Fork Fryer Creek Reach 1

Fisheries Resources and Salmonids

Central California Coast Steelhead (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 BOs from 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 (above) 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.

As described above in Section 1C and Table 1-3, CCC Steelhead could potentially be affected by 2015 maintenance projects on the following sites: Adobe 1 and 2, Brush 2B, Copeland 4 and 5, Laguna 2, Santa Rosa Creek Reservoir and Santa Rosa Creek Diversion Fish Ladder. The actions that will be taken for each project in order to avoid, minimize or mitigate for general construction impacts are listed in Table 2-4 (below).

Table 2-4. Mitigation Actions for 2015 SMP Projects Potentially Affecting CCC Steelhead

Project Site	Steelhead Use	Mitigation action
Zone 1A		
<i>Localized Scale</i>		
Laguna 2	Migration	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue • Retain side bank trees • Implement erosion control BMPs • Implement Tier 1 Restoration
<i>In-stream Sediment Basin Clearing</i>		
Brush 2B	Migration/Rearing	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue • Retain side bank trees • Implement erosion control BMPs • Implement Tier 1 Restoration
Copeland 4 & 5	Migration/Rearing	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue • Retain side bank trees • Implement erosion control BMPs • Implement Tier 1 Restoration
Santa Rosa 1	Migration	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue • Retain side bank trees • Implement erosion control BMPs • Implement Tier 1 Restoration
<i>Reservoir Inlet Clearing</i>		
Santa Rosa Creek Reservoir	Migration	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue • Retain side bank trees • Implement erosion control BMPs • Implement Tier 1 Restoration
Santa Rosa Creek Fish Ladder	Migration/Rearing	<ul style="list-style-type: none"> • Survey for presence • Conduct fish rescue; or conduct work after creek goes dry • Retain side bank trees • Implement erosion control BMPs
Zone 2A		

Project Site	Steelhead Use	Mitigation action
Reach Scale		
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 side bank trees • Implement erosion control BMPs • Implement Tier 1 Restoration

Site Surveys for Presence of Special-Status Plants

The SMP BO finds that activities could result in adverse effects to Sonoma sunshine, Burke’s goldfields and Sebastopol meadowfoam. To address stream maintenance effects on these special status plant species, qualified Water Agency staff (according to BMP BR-7 *Special-Status Plants*) conduct appropriately-timed botanical surveys for these species in areas where they have been identified as potentially occurring.

As specified in BMP BR-7, state and federally listed plant populations identified during the field surveys with potential to be impacted will be enumerated, photographed and conspicuously flagged to maximize avoidance, and determine the total number of individuals affected. If feasible, the projects will be redesigned or modified to avoid direct and indirect impacts on special-status plant species. If impacts to state or federally listed plants are unavoidable, the Water Agency will coordinate with the appropriate resource agencies and local experts to determine whether transplantation of special-status plant species is feasible. If the agencies concur that it is a feasible mitigation measure a transplantation plan will be developed and implemented in coordination with the appropriate agencies. If no special status plants are observed, the project will be implemented as designed and no further measures will be put in place for protection of special status plants and results of the surveys will be appended to the SMP Annual Report.

The recommended blooming season for state and federally listed plant species in the SMP Program Area is April-June. The 2011-2014 Water Agency reference site surveys have shown Sonoma sunshine, Burke’s goldfields and Sebastopol meadowfoam to be blooming in mid to late April. This year (2015), Burke’s goldfields and Sebastopol meadowfoam were observed blooming at the Todd Road Preserve and Alton Lane Preserve on April 8th (Photos 1 and 2, respectively, below). On this date at Alton Preserve, Sonoma sunshine was near bud break and then in bloom on April 20th (Photos 3 and 4 below).



Photo 1 (above, left). Burke’s goldfields in bloom at Todd Road Preserve, April 8, 2015.

Photo 2 (above, right). Sebastopol meadowfoam in bloom at Todd Road Preserve, April 8, 2015.



Photos 3 and 4 (above). Sonoma Sunshine in bloom at Alton Road Preserve April 20, 2015.

For the 2015 project sites, three reaches have the potential to provide habitat for listed plant species, specifically: Laguna 2, Peterson 2 and Santa Rosa 1. Between April 15-20, 2015, these reaches were surveyed for the presence of special-status plants and potential habitat that could support these species. The results of these surveys are summarized below in Table 2-5 and expounded upon in the following paragraphs.

Table 2-5. 2015 Special-Status Plant Survey Summary (Conducted April 15th and 20th)

Project Reach	Target Species for Survey	Target Species Observed In Project Reach	Notes
Laguna 2	Burke’s goldfields, Sebastopol meadowfoam, Sonoma sunshine	None	No suitable habitat* observed at sediment removal site
Peterson 2	Burke’s goldfields, Sebastopol meadowfoam, Sonoma sunshine	None	No suitable habitat observed within sediment removal site
Santa Rosa 1	Burke’s goldfields, Sebastopol meadowfoam, Sonoma sunshine	None	No suitable habitat observed within sediment removal site.

*Suitable habitat for special-status plants includes vernal pool and vernal swales.

Laguna 2

Site assessments revealed that potential habitat for special-status plant species is limited on Laguna 2. Within the SMP easement (which ranges from about 80 to 120 feet from the fence line to the center of the channel on either side), intermittent wetland habitat associated with the low-lying portions of access road that road either side of the channel were observed supporting mainly ruderal grass species, and exhibited little vernal character.

The project on Laguna 2 involves the localized removal of sediment just below the confluence with Gossage and Hinebaugh Creeks. This work will be accomplished in willow scrub and perennial emergent wetland habitat. Dominant species occurring within the project area are cattail (*Typha* sp.) and water primrose (*Ludwigia* sp.). Other species include willow weed (*Polygonum* sp) curly dock (*Rumex crispus*), ditch carrot (*Oenanthe sarmentosa*) and various willows (*Salix laevigata/lasiolepis/lucida lasiandra*). The emergent wetland habitat precludes the presence of vernal pool species associated with intermittent wetland, and no special-status plant species were observed in or adjacent to the project footprint, or throughout the entire reach. Photos 5 and 6 below illustrate site conditions at the Laguna 2 project location.



Photo 5 (above, left). Ruderal vegetation typical of the access roads paralleling both sides of Laguna 2. **Photo 6** (above, right). Perennial emergent wetland habitat at Laguna 2 project site,

looking upstream from south access road, towards Hinebaugh and Gossage confluences. Both photos taken April 15, 2015.

Peterson 2

The Peterson 2 easement is narrow at approximately 40 feet from the channel center to the western fence line and 20-30 feet to the eastern fence line. The April 15, 2015, site survey of the reach showed that potential intermittent wetland habitat is limited to the v-ditch that runs along the west top of bank as well as several seasonal drainages that cross into the SMP easement and empty into the channel. The v-ditch was dry for the entire extent of the reach, and supporting typical ruderal species including Harding grass (*Phalaris aquatic*), riggut brome (*Bromus diandrus*), slender wild oat (*Avena barbata*) and spring vetch (*Vicia sativa*). The intermittent drainages that cross into the easement held various wetland indicator species, especially spike rush (*Eleocharis macrostachya*), Italian rye (*Lolium multiflorum*), and curly dock. No special-status plant species were observed in any of these areas. Outside of the SMP easement, in the field to the west, vernal pools and low-lying depressions that could support vernal pools were observed. In one such area, blooming snowy meadowfoam (*Limnanthes douglasii*) was observed. However, these intermittent wetland sites are completely outside of the Peterson 2 project footprint, which is focused in-channel below the ordinary high water mark (OHWM), and will not be affected by maintenance activities.

As mentioned above, the Peterson 2 project will remove sediment deposits below the OHWM throughout the reach. The in-stream habitat that will be impacted by these activities is predominately wetland emergent species including tule (*Scirpus sp.*), cattails, water plantain (*Alisma sp*), curly doc, and Himalayan blackberry (*Rubus armeniacus*). Though Peterson 2 channel supports intermittent wetland, the dominance of these species impedes the presence of vernal pool obligates and none were observed throughout the reach. Photos 7 and 8 below illustrate the habitat within the project footprint.



Photo 7 (above, left). Non-native grass and v-ditch habitat along Peterson 2 access road (where equipment will be staged). **Photo 8** (above, right). In-stream habitat conditions at Peterson 2, looking downstream from upper portion of reach. Both photos taken April 15, 2015.

Santa Rosa 1

The April 15, 2015, site survey revealed that potential intermittent wetland habitat on Santa Rosa 1 is limited to the v-ditch that runs along the top of bank access roads, as well as within the fields that flank the lower end of the reach. V-ditches supported ruderal grass species and largely lacked any vernal character. Several low-lying areas that could support vernal pools were observed in the field near the confluence with the Laguna on the south side of the channel. Within these areas, wetland indicator species including spike rush, pennyroyal (*Mentha pulegium*) and curly dock were present, however no special-status plant species were observed. Regardless, these areas that could potentially support vernal pool and associated intermittent wetland plant species are well outside of the project footprint and will not be affected by any related activities.

Specifically, the Santa Rosa 1 project will establish nine sediment basins ranging in size from 150 to 390 linear feet. Construction will be focused in-channel and will only impact areas below the OHWM. The 2015 survey revealed that vernal pool/vernal swale habitat is not present within the project footprint area. Rather, the project area supports dense woody riparian vegetation along the banks and down to the toe, with a dense understory dominated by Himalayan blackberry, poison hemlock (*Conium maculatum*), and various riparian tree saplings/willow scrub. The active channel within the purposed project area largely lacks emergent growth and holds large deposits of un-vegetated gravel. Special-status plant species surveys of Santa Rosa 1 were also conducted in 2011 and 2012, and to date no target species have been observed. Photos 9 and 10, below, depict representative site conditions within the project area.



Photo 9 (above, left). Non-vegetated gravel deposit and in-stream conditions typical of purposed basin sites. **Photo 10** (above, right). Woody riparian and dense understory habitat typical of the purposed sediment basin sites. Both photos taken April 20, 2015.

Foothill Yellow-legged Frog

Pre-construction surveys for foothill yellow-legged frog are required at Copeland 5, Santa Rosa Creek Diversion Fish Ladder and Wood 1 are required in 2015.

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 foothill yellow-legged 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 of the proposed 2015 SMP ground-disturbing project sites, except Bloomfield 1 and Coleman 2. However, these sites 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.

2E. Cultural Resources Protection

The 2015 Peterson 1 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 conducted a pedestrian survey for the Peterson 1 bank stabilization site on April 15, 2015. 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 3

Annual Mitigation Plan

This section describes the mitigation activities proposed for the 2015 maintenance projects. Sections 3A and 3B describe on-site and off-site mitigation activities, respectively. Table 3-6 summarizes maintenance project funding for the off-site Watershed Partnerships Program (WPP).

Table 3-5 provides summary statistics for areas impacted and mitigated for the 2015 maintenance season. Detailed project descriptions for each WPP project utilized for the 2015 field season are included in Appendix F.

3A. 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 3-1: Tier 1 Mitigation Summary

MAINTENANCE PROJECT	CHANNEL FORM	RESTORATION ACTIVITY*
ZONE 1A		
<i>Localized Scale Sediment Removal</i>		
Coleman 2	1C	Erosion control BMPs; Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes
Colgan 7	Concrete Lined	Tier 3
Kawana 1A	Concrete Lined	Tier 3
Laguna 2	1D	Erosion control BMPs; Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes
Peterson 1	1A	Erosion control BMPs; Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes
<i>Reach Scale Sediment Removal</i>		
Peterson 2	1A	Erosion control BMPs; Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes
<i>Bank Repair</i>		
Peterson 1	1A	Erosion Control BMPs; Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes
<i>In-stream Sediment Basin Clearing</i>		
Brush 2B	1C	Tier 3; Erosion control BMPs
College 1 & 2	1A	Tier 3; Erosion control BMPs
Copeland 4 & 5	1D	Erosion control BMPs
Santa Rosa 1	1D	Tier 3; Erosion control BMPs
Todd 5B	1C	Tier 3; Erosion control BMPs
<i>Reservoir Inlet Clearing</i>		
Brush Creek Reservoir	N/A	Erosion control BMPs
Matanzas Creek Reservoir	N/A	Erosion control BMPs
Piner Creek Reservoir	N/A	Erosion control BMPs
Santa Rosa Creek Reservoir	N/A	Erosion control BMPs
Fish Ladder in Santa Rosa Div. 1	Cement Lined	Erosion control BMPs

MAINTENANCE PROJECT	CHANNEL FORM	RESTORATION ACTIVITY*
ZONE 2A		
<i>Localized Scale Sediment Removal</i>		
E. Fork McDowell 1	1B	Erosion control BMPs; Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes; Establishing native trees, grasses and herbaceous perennials on upper and side banks
<i>Reach Scale Sediment Removal</i>		
Adobe 1 and 2	1C	Erosion control BMPs; Impacts assigned to Tier 3 (Note: on-site mitigation will be occurring through a Caltrans EEMP grant funded project) that will include 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 4A		
<i>Localized Scale Sediment Removal</i>		
Wood 1	1B	Erosion control BMPs; Establishing native riparian trees, herbaceous perennials and in-stream graminoids on both toes; Establishing native trees, grasses and herbaceous perennials on upper and side banks
ZONE 8A		
<i>Reach Scale Sediment Removal</i>		
Bloomfield 1	1B	Erosion control BMPs; 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

*Restoration activities (i.e. plant categories installed and spacings) will be in accordance with the SMP Channel Form Planting Plans

For the 2015 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

- Brush 2B (2015)
- College 1 & 2 (2015)
- Copeland 4 & 4 (2008)
- Santa Rosa 1 (2015)
- Todd 5B (2015)
- Brush Creek Reservoir inlet (2011)
- Matanzas Creek Reservoir Inlet (2011)
- Piner Creek Reservoir Inlet (2011)
- Santa Rosa Creek Reservoir (2011)
- Fish ladder in Santa Rosa Diversion 1 (2012)

3B. 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 2015 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 2015 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 mitigation 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 dependent on regulatory approval.

For 2015, four projects are being brought forward as Tier 3 Mitigation. Two projects are in Zone 1A: (1) The Center for Environmental Stewardship 2015 Pool Creek Habitat Enhancement Project, Phase II; and (2) the Point Blue Conservation Science 2015 STRAW Washoe Creek Restoration Project at Stony Point Quarry, Phase II. The third Tier 3 project is the 2015 STRAW Adobe Creek Restoration Project at Mota Ranch in Zone 2A. The fourth project, in Zone 3A, is the Sonoma Ecology Center 2015 Nathanson Creek Restoration Project. 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 2015 WPP project proposals are provided in Appendix F of this Notification. The individual 2015 WPP project locations are shown in Figures 3-1 a-d, below. Cost and area accounting for 2015 WPP proposed projects is indicated below in Tables 3-2 through 3-5.

Table 3-2: List of 2015 Tier 3 (Off-Site) Restoration Projects

Project Name	Project Size	Project Cost	Year to Be Completed*	Project Purpose
ZONE 1A				
Center for Environmental Stewardship: Pool Creek Habitat Enhancement Project, Phase II	0.15 acres	\$25,100	2020	Habitat enhancement through invasive Himalayan blackberry removal and establishment of native plant species
Point Blue Conservation Science: STRAW Washoe Creek Restoration Project at Stony Point Quarry, Phase II	0.83 acres	\$49,938	2020	Habitat enhancement and erosion control through the installation of cattle exclusionary fencing, invasive Himalayan blackberry removal and establishment of native plant species
Zone 1A subtotal	0.98 acres	\$75,038		
ZONE 2A				
Point Blue Conservation Science: STRAW Adobe Creek Restoration Project at Mota Ranch (ZONE 2A)	0.17 acres	\$49,995	2020	Bank stabilization and sediment input reduction through the establishment of native riparian grasses, trees and shrubs
ZONE 3A				
Sonoma Ecology Center: Nathanson Creek Restoration Project (ZONE 3A)	0.18 acres	\$33,684	2020	Habitat enhancement, erosion control and sediment input reduction through the removal of exotic/invasive plant species, the establishment of native riparian plants and the installation of biological revetments to stabilize eroding creek bank
Zones 2A/3A subtotal	0.35 acres	\$83,679		
Totals (All Zones)	1.33 acres	\$158,717		

*Completion date includes five years of project success monitoring

Figure 3-1a: General location map for the 2015 Tier 3 Pool Creek Project, Phase II (Zone 1A)

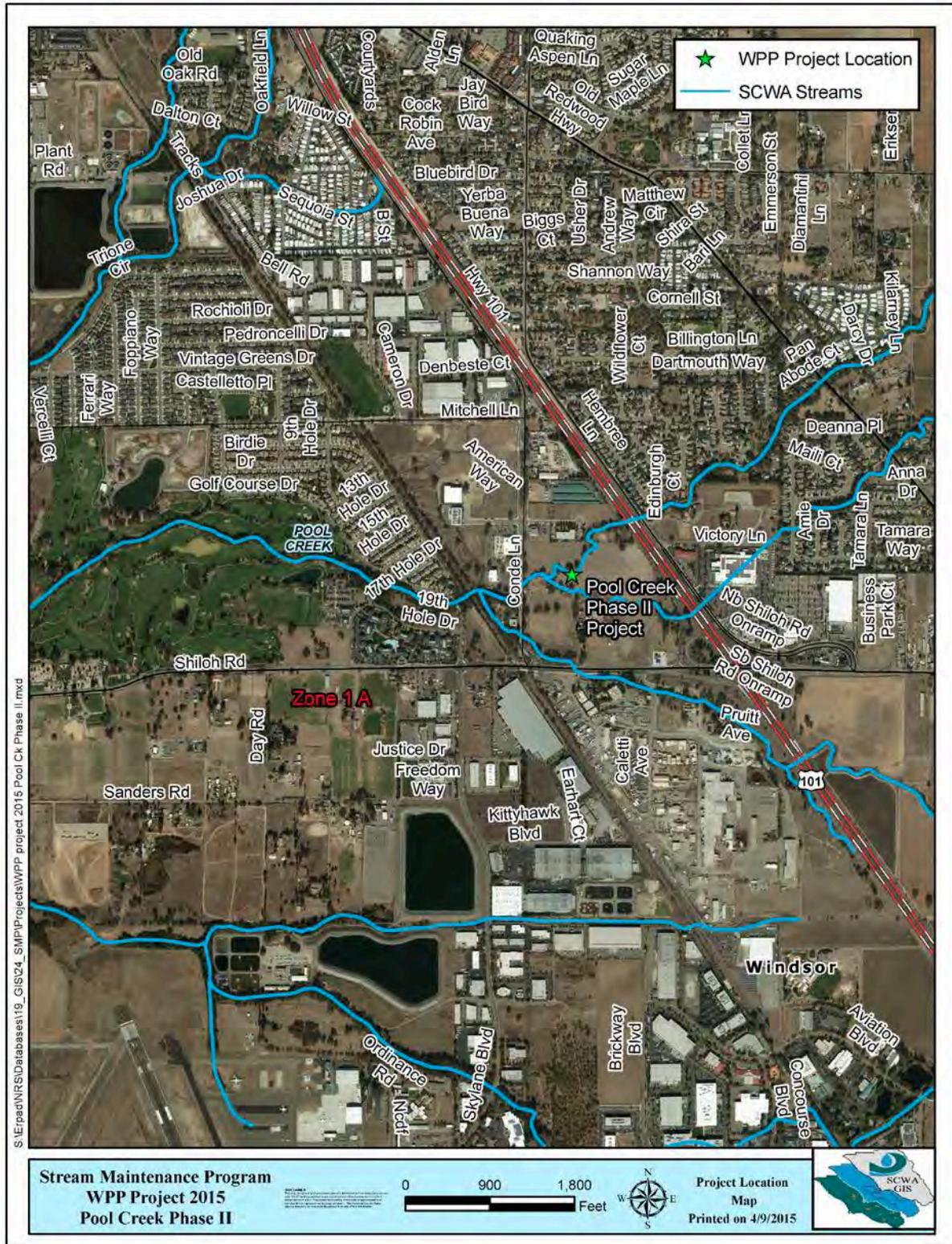


Figure 3-1b. General location map for the 2015 Tier 3 Washoe Creek Project, Phase II (Zone 1A)

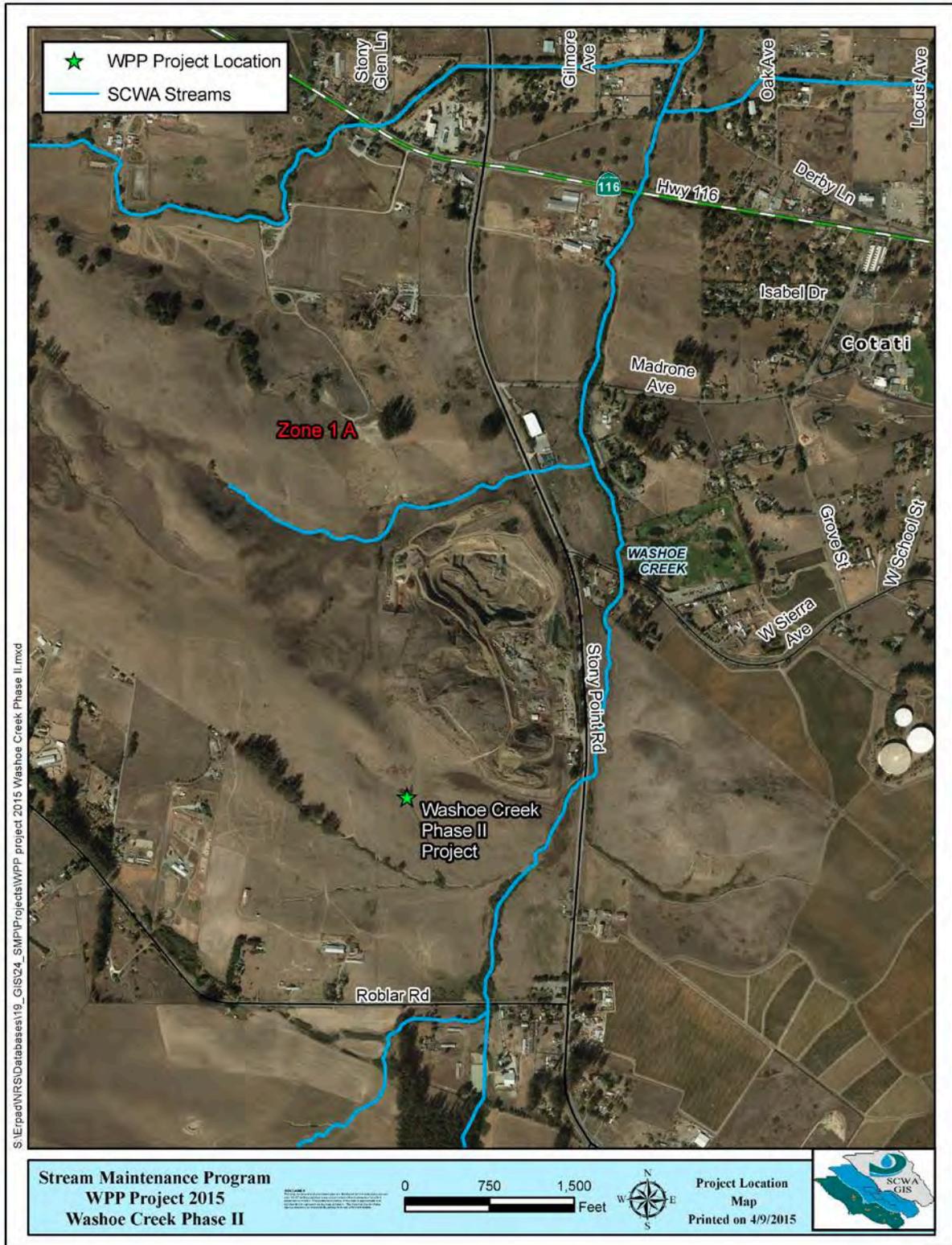


Figure 3-1c. General location map for the 2015 Tier 3 Adobe Creek Project (Zone 2A)

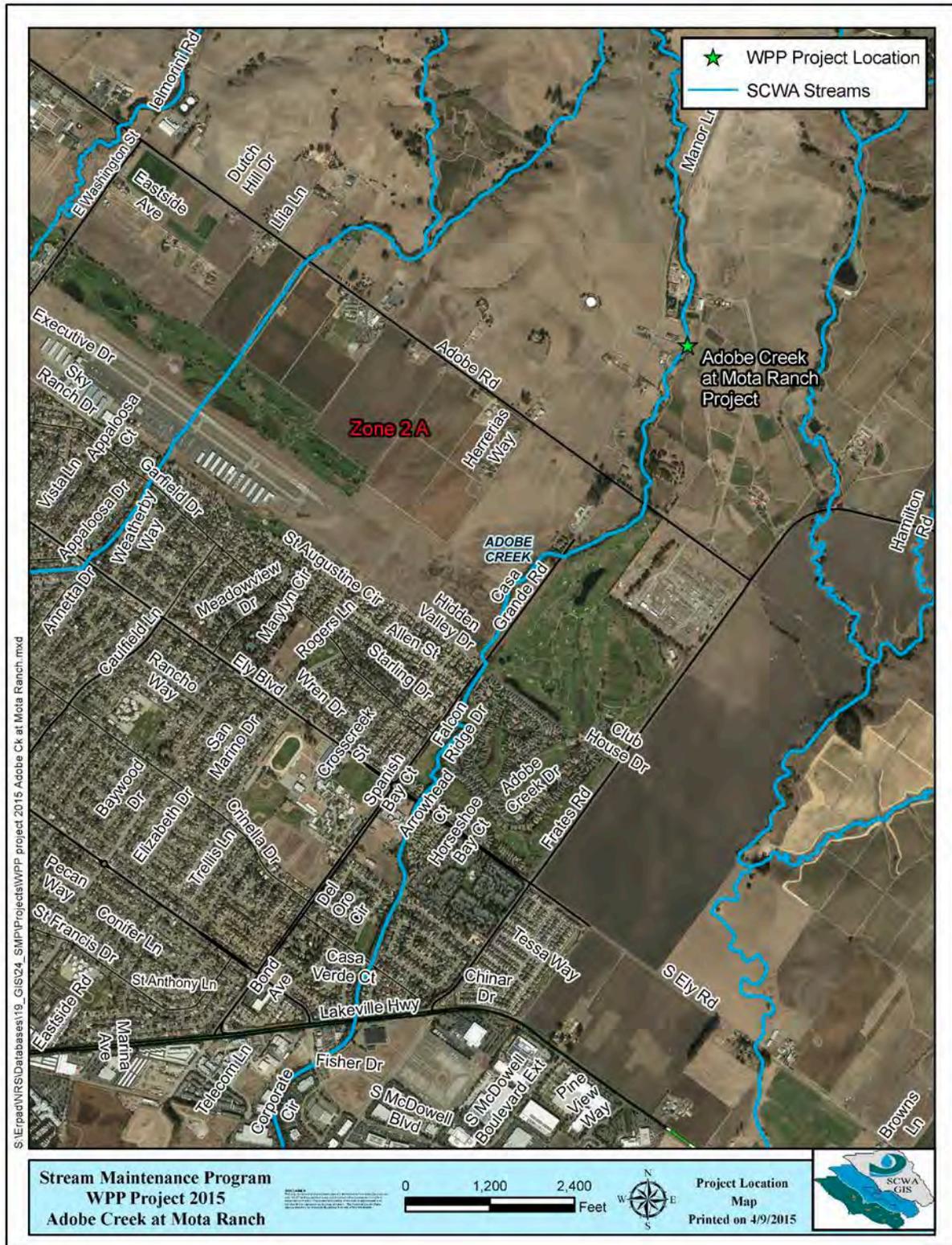


Figure 3-1d. General location map for the 2015 Tier 3 Nathanson Creek Project (Zone 3A)

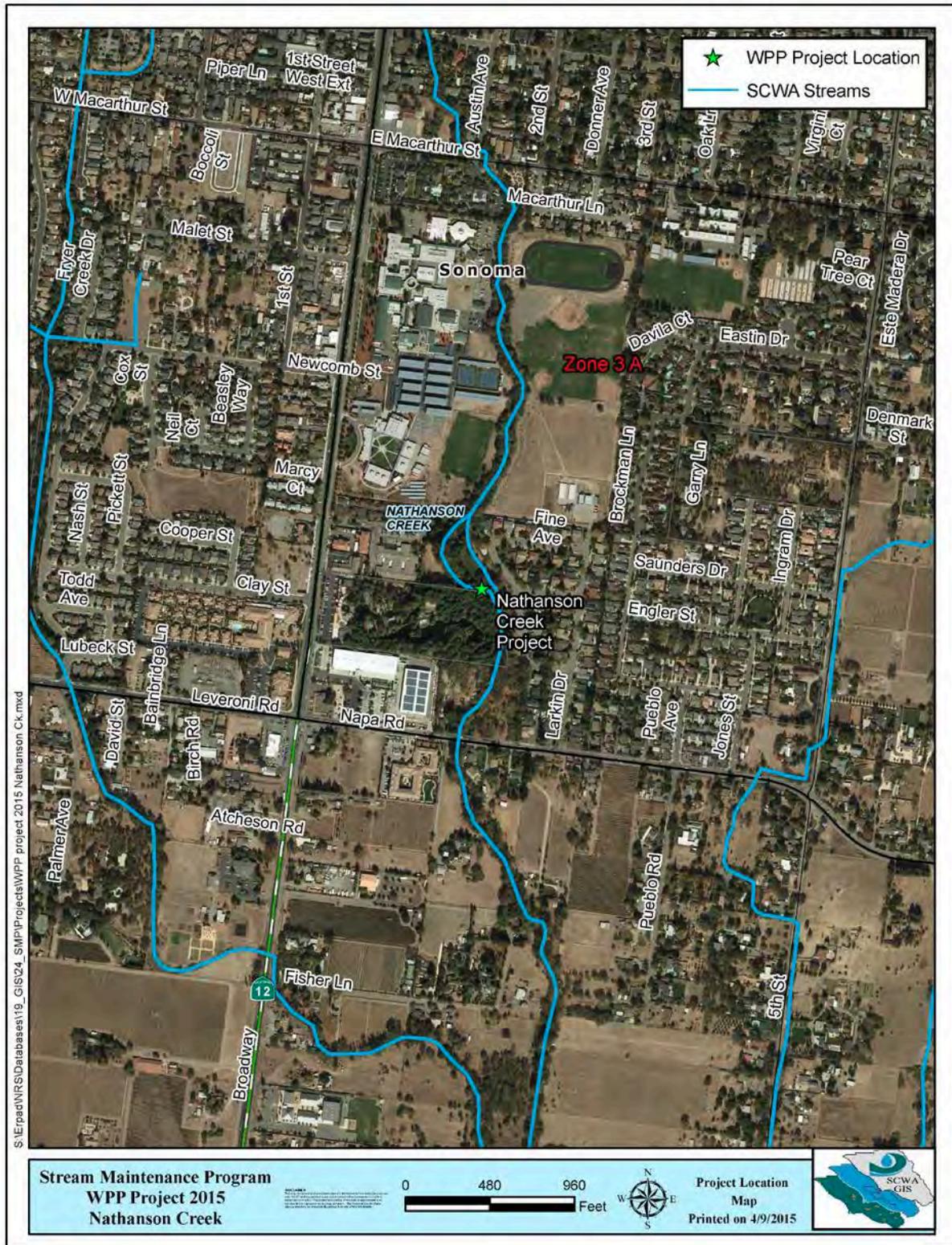


Table 3-3. Summary of 2015 Maintenance Costs and Off-Site Mitigation Contributions

Project Reach	Maintenance Cost	Off-Site Mitigation Contribution
ZONE 1A		
Coleman 2 – Localized Scale	\$13,550	\$1,355
Colgan 7 – Localized Scale	\$18,350	\$1,835
Kawana 1A – Localized Scale	\$15,821	\$1,582
Laguna 2 – Localized Scale	\$100,000	\$10,000
Peterson 1 – Localized Scale	\$28,775	\$2,878
Peterson 2 – Reach Scale	\$105,100	\$10,510
Peterson 1 – Bank Repair	\$23,750	\$2,375
Bush 2B – In-stream Sediment Basin	\$22,020	\$2,202
College 1 & 2 – In-stream Sediment Basin	\$15,821	\$1,582
Copeland 4 & 5 – In-stream Sediment Basin	\$42,877	\$4,288
Santa Rosa 1 – In-stream Sediment Basin	\$108,480	\$10,848
Todd 5B – In-stream Sediment Basin	\$10,550	\$1,055
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
Fish Ladder in Santa Rosa Div. 1 – Inlet Clearing	\$1,077	\$108
ZONE 1A TOTALS	\$533,758	\$53,376
ZONE 2A		
E. Fork McDowell – Localized Scale	\$17,998	\$1,800
Adobe 1 & 2 – Reach Scale	\$216,000	\$21,600
ZONE 2A TOTALS	\$233,998	\$23,400
ZONE 4A		
Wood 1 – Localized Scale	\$10,250	\$1,025
ZONE 4A TOTALS	\$10,250	\$1,025
ZONE 8A		
Bloomfield 1 – Reach Scale	\$55,750	\$5,575
ZONE 8A TOTALS	\$55,750	\$5,575
Combined 2015 Projects Totals	\$833,756	\$83,376

Table 3-4. 2015 Proposed Off-Site (Tier 3) Mitigation Project Costs

2015 WPP Off-Site Mitigation Projects	Cost
ZONES 1A, 4A, 8A	
Center for Environmental Stewardship: Pool Creek Habitat Enhancement Project, Phase II (Zone 1A)	\$25,100
Point Blue Conservation Science: STRAW: Washoe Creek Restoration Project at Stony Point Quarry, Phase II (Zone 1A)	\$49,938
Total Proposed WPP Project Costs Zones 1A, 4A, 8A	\$75,038
Off Site Mitigation Funding provided by SCWA in 2015	\$75,038
2015 Off Site Mitigation Funding Requirement	\$59,976
Carry-over Mitigation Funds from 2015	\$15,062
ZONES 2A & 3A	
Point Blue Conservation Science: STRAW: Adobe Creek Restoration Project at Mota Ranch (Zone 2A)	\$49,995
Sonoma Ecology Center: Nathanson Creek Restoration Project (Zone 3A)	\$33,684
Total Proposed WPP Project Costs Zone 2A/3A	\$83,679
Off Site Mitigation Funding provided by SCWA in 2015	\$83,679
2015 Off Site Mitigation Funding Requirement	\$23,400
Carry-over Mitigation Funds from 2015	\$60,279
Previously Funded and Banked Off-Site Credits (all Zones)	
Carry-over Mitigation Projects from 2015	\$75,341
Carry-over Mitigation Projects from 2011-2014	\$179,520
Total Funded Mitigation Credit Available to Apply to Subsequent Seasons	\$254,861

Table 3-5. 2015 Accounting of Impacts and Mitigation

Project by Type	Impact (acres)	Mitigation (acres)	Ratio of Mitigation to Impact
ZONES 1A, 4A, 8A			
On-Site Mitigation			
<i>Localized Sediment Removal</i>			
Coleman Creek Reach 2	0.003	0.003	1:1
Colgan Creek Reach 7	0.09	0.09	1:1
Kawana Creek Reach 1A	0.02	0.02	1:1
Laguna de Santa Rosa Reach 2	1.28	1.28	1:1
Peterson Creek Reach 1	0.23	0.23	1:1
Wood Creek Reach 1 (Zone 4A)	0.11	0.11	1:1
<i>Reach Scale Sediment Removal</i>			
Bloomfield Channel Reach 1 (Zone 8A)	0.55	0.55	1:1
Peterson Creek Reach 2	1.06	1.06	1:1
<i>Bank Repair</i>			
Peterson Creek Reach 1	0.02	0.02	1:1

Project by Type	Impact (acres)	Mitigation (acres)	Ratio of Mitigation to Impact
<i>Sediment Basin/Instream Basin Clearing</i>			
Brush Creek Reach 2B at confluence with Austin Creek	0.05	0.05	1:1
College Creek Reaches 1 & 2	0.09	0.09	1:1
Copeland Creek Reaches 4 & 5 at Snyder Ln	n/a	n/a	Sed-Basin* (2008)
Santa Rosa Creek Reach 1	1.28	1.28	1:1
Todd Creek Reach 5B	0.02	0.02	1:1
<i>Reservoir Inlet Clearing</i>			
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)
Zones 1A, 4A, 8A On-Site Mitigation Totals	4.80	4.80	
Off-Site Mitigation			
Center for Environmental Stewardship: 2014 Pool Creek Habitat Enhancement Project, Phase II	—	0.15	
Point Blue Conservation Science: STRAW: Washoe Creek Restoration Project at Stony Point Quarry, Phase II	—	0.83	
Zones 1A, 4A, 8A Off-Site Mitigation Total		0.98	
ZONES 2A, 3A			
On-Site Mitigation			
<i>Localized Scale Sediment Removal</i>			
East Fork McDowell Creek Reach 1	0.04	0.04	1:1
<i>Reach Scale Sediment Removal</i>			
Adobe 1 and 2	1.38	1.38	1:1
Zones 2A/3A On-Site Mitigation Totals	1.42	1.42	
Off-Site Mitigation			
Point Blue Conservation Science: STRAW: Adobe Creek Restoration Project at Mota Ranch	—	0.17	
Sonoma Ecology Center: Nathanson Creek Restoration Project	—	0.18	
Zones 2A, 3A Off-Site Mitigation Total		0.35	

(Table 3-5 continued on next page)

2015 Impact to Mitigation Accounting	Impact (acres)	Mitigated (acres)	Replacement Ratio
ZONES 1A, 4A, 8A			
Total Tier 1 Impact	4.80	4.80	1:1
Required Temporal Mitigation (10% of 4.79 acres)		0.48	1:0.10
Total Required Mitigation Area for 2015 (Tier 1 Impacts +10% for Temporal Impacts) (4.80+ 0.48 acres)		5.28	1:1.1
2015 Temporal Mitigation (Tier 3) Contribution Total		0.98	
2015 Tier 3 Requirement		0.48	
2015 Tier 3 Contribution Total Less the Required 10% Area (0.98-0.48 acres)		0.50	
2015 Tier 3 Mitigation Area Carryover (0.98-0.48 acres)		0.50	
2009-2014 Tier 3 Mitigation Area Carryover		21.7	
Current Combined Tier 3 Mitigation Carryover (0.50+21.7)		22.2	
ZONES 2A, 3A			
Total Tier 1 Impact	1.42	1.42	1:1
Required Temporal Mitigation (10% of 1.41 acres)		0.142	1:0.10
Total Required Mitigation Area for 2015 (Tier 1 Impacts +10% for Temporal Impacts) (1.42+ 0.142 acres)		1.56	1:1.1
2015 Temporal Mitigation (Tier 3) Contribution Total		0.35	
2015 Tier 3 Requirement		0.142	
2015 Tier 3 Contribution Total Less the Required 10% Area (0.35-0.142 acre)		0.21	
2015 Tier 3 Mitigation Area Carryover (0.35-0.142 acre)		0.21	
2009-2014 Tier 3 Mitigation Area Carryover		1.41	
Current Combined Tier 3 Mitigation Carryover (0.21+1.41)		1.62	

* Sed-Basins are in-stream 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 4

Annual Sediment Disposal Plan

The 2015 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 2013 to better target pollutant sources.

This section provides an overview of the refined sediment testing plan and the proposed disposal sites for the 2015 maintenance projects. At this time (May 5, 2015), sediment test results are pending and will be provided to regulatory agencies, once lab results are received, anticipated in late-May.

4A. Sediment Sampling and Testing

2015 Approach and Methods

For the 2015 season, sediment sampling and testing will be conducted according to the requirements of the MRP and as detailed in the Memorandums provided to the RWQCBs in spring 2015 (provided in Appendix G of this Notification). Project reaches, estimated quantities of sediment to be removed and the number of samples to be collected for Zones 1A/4A/8A and Zones 2A/3A are shown in Tables 4-1 and 4-2, respectively, below. Comments to explain the sampling proposal are also provided.

Table 4-1. Proposed Sediment Sampling Plan for 2015 in Zones 1A, 4A, and 8A

2015 SMP Project/ linear feet*	Estimated Amount of Sediment to be Removed (cubic yards)	Number and Group of Analytes to be Tested (full suite or subset)	Comments
Localized Scale			
Coleman 2/ 64 ft	300	No sampling	Anticipated to be similar to material excavated in 2008 from this reach

2015 SMP Project/ linear feet*	Estimated Amount of Sediment to be Removed (cubic yards)	Number and Group of Analytes to be Tested (full suite or subset)	Comments
Colgan 7/ 389 ft	163	1-full suite	1 sample to be collected where bulk of sediment is to be removed; a composite of 2 cores: Samples taken at: Sta 324+40 Sta 322+00
Kawana 1/ 222 ft	148	1-full suite	Sample to be collected where bulk of sediment is to be removed; Sta 8+00
Laguna 2/ 600 ft	3,433	1-full suite	To be established in coordination with the North Coast Regional Water Quality Control Board
Peterson 1/ 466 ft	487	1-full suite	Samples to be collected where bulk of sediment is to be removed; a composite of 2 cores: Samples taken at: Sta 529+55
Wood 1 (Zone 4A)/ 200	196	1-full suite	To be established in coordination with the North Coast Regional Water Quality Control Board
Reach Scale			
Bloomfield 1 (Zone 8A)/ 1,245 ft	1,252	No sampling for 5 years	Sampled in 2011
Peterson 2/ 3,510 ft	1373	1-full suite	1 sample to be collected; a composite of 4 cores spaced evenly throughout reach: Sta 550+50 Sta 539+33 Sta 527+66 Sta 516+50
Bank Repair			
Peterson 1/ 40 ft	30	1-sub-set suite	1 sample to be collected in center of bank failure at toe of slope. Will test for metals only (sub-set of full suite). Sediment removal is also proposed for this reach, 1,300 upstream from the bank repair site.
In-stream Sediment Basin Clearing			
Brush 28/ 100 ft	No sampling for 5 years		Sampled in 2014

2015 SMP Project/ linear feet*	Estimated Amount of Sediment to be Removed (cubic yards)	Number and Group of Analytes to be Tested (full suite or subset)	Comments
College 1 & 2/ 200 ft	79	1 -full suite	Sample to be collected where bulk of sediment is to be removed; a composite of two cores: Samples taken at Sta 27+00 Sta 26+00 Residential area to the north. Retail shopping area to the east.
Copeland 4 & 5/ 205 ft		No sampling for 5 years	Annual site. Sampled in 2011
Santa Rosa 1/ 1,990 ft		No sampling for 5 years	Sampled in 2012
Todd 5B/ 50ft		No sampling for 5 years	Sampled in 2013 (when project was first proposed)

*Zone 1A unless otherwise noted in parenthesis

Table 4-2. Proposed Sediment Sampling Plan for 2015 in Zones 2A/3A.

2015 SMP Project/ linear feet	Estimated Amount of Sediment to be Removed (cubic yards)	Number of Samples	Sampling Location and Comments
Localized Scale			
East Fork McDowell 1 103 ft	46	1 (Full Suite)	1 sample to be collected where bulk of sediment is to be removed; Sample taken at: Sta 12+67
Reach Scale			
Adobe Creek 1/2/ 2,373 ft	1,500	2 (Full Suite)	1 sample to be collected where bulk of sediment is to be removed; a composite of 2 cores in Reach 1: samples taken at: Sta 45+50 Sta 47+00 A composite of 3 cores in Reach 2: Samples taken at: Sta 26+50 Sta 29+58 Sta 35+02

4B. Sediment Disposal and Reuse

To support the 2015 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 and at various dairies in the Stony Point Road vicinity. These are the same sites used for the 2011-2014 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 4-1 (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 2015. 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.

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.

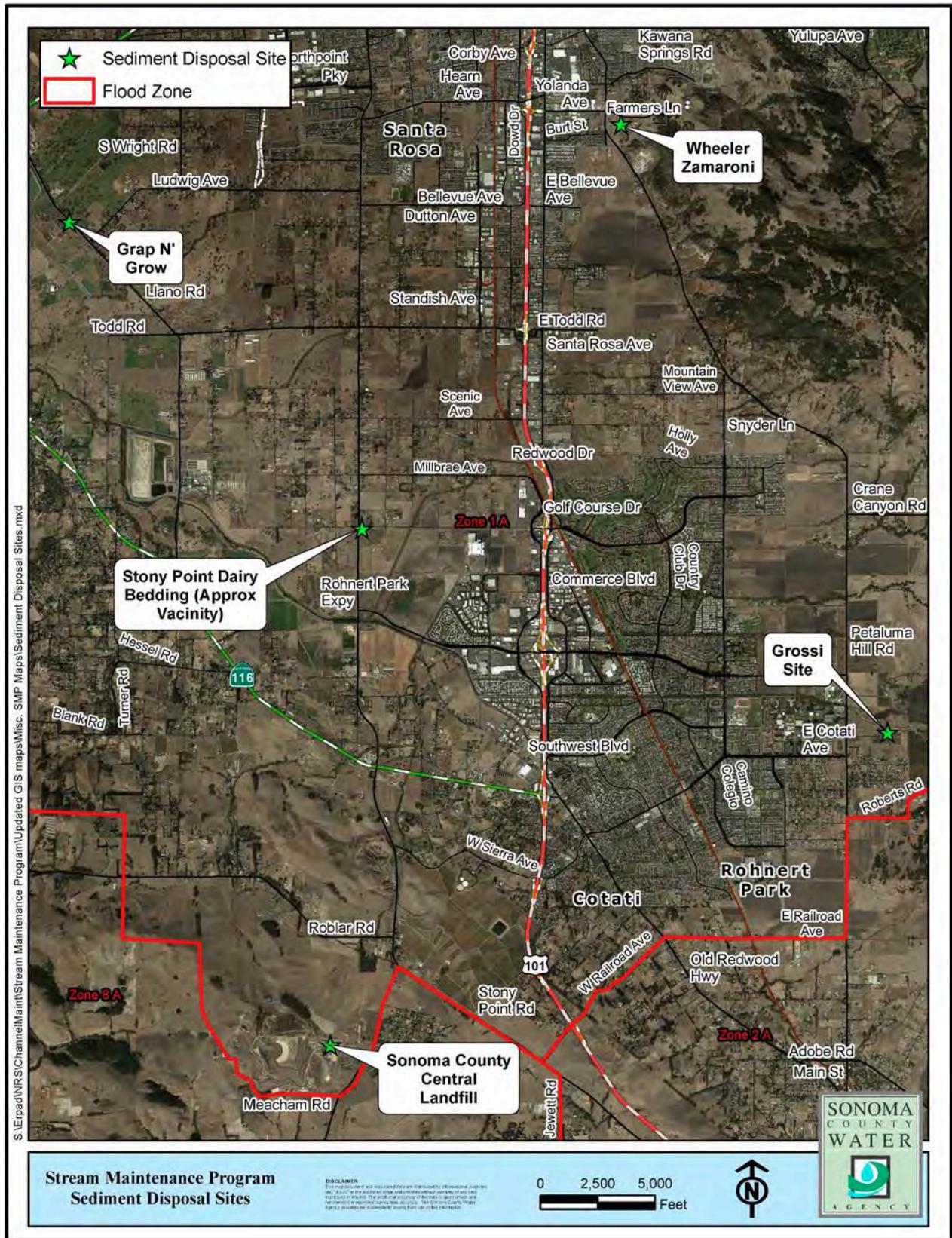
- **Sonoma County Central Landfill, Petaluma**

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.

- **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.

Figure 4-1. General location map for 2015 sediment disposal and reuse.



Appendix A

Site Specific Photographs

Zone 1A Localized Scale Sediment Removal

Coleman 2. Four localized culvert clearings. All Photos taken April 27, 2015.

Culvert clearing at Harvard Ct (below, left) and at Hazel Ct (below, right).



Culvert clearing at Hamlet Ct (below, left) and Hampton Ct (below, right).



Colgan 7. Looking downstream from Santa Rosa Ave. Photo taken April 15, 2015



Kawana 1A. Looking upstream from Colgan Ave. Photo taken April 15, 2015



Laguna 2. Looking upstream at Gossage/Hinebaugh confluence. Photo taken April 15, 2015



Peterson 1. Looking upstream at Forestview confluence. Photo taken April 15, 2015



Zone 1A Reach Scale Sediment Removal

Peterson 2. Looking downstream from lowest bridge. Photo taken April 15, 2015



Zone 1A Bank Repair

Peterson 1. Photo taken April 15, 2015



Zone 1A In-stream Sediment Basin Sediment Removal

Brush 2A. Looking upstream from ~200 ft downstream of Brush/Austin confluence. Photo taken April 15, 2015



College 1. Looking downstream from W. College Ave. Photo taken April 15, 2015



College 2. Looking upstream from W. College Ave. Photo taken April 15, 2015



Copeland 4. Looking downstream from Snyder In. Photo taken April 15, 2015



Copeland 5. Looking upstream from Snyder Ln. Photo taken April 15, 2015



Santa Rosa 1. Nine in-stream sediment basin clearings. STA 427+10 to STA 429+60. Photo taken April 20, 2015



Santa Rosa 1. STA 418+00 to STA 420+00. Photo taken April 20, 2015



Santa Rosa 1. STA 413+45 to STA 415+00. Photo taken April 20, 2015



Santa Rosa 1. STA 408+00 to STA 410+00. Photo taken April 20, 2015



Santa Rosa 1. STA 402+60 to STA 406+50. Photo taken April 20, 2015



Santa Rosa 1. STA 394+10 to 396+00. Photo taken April 20, 2015



Santa Rosa 1. STA 386+80 to STA 388+ 90. Photo taken April 20, 2015



Santa Rosa 1. STA 382+00 to STA 383+50. Photo taken April 20, 2015



Santa Rosa 1. STA 377+00 to STA 379+25. Photo taken April 20, 2015



Todd 5B (Upstream). Looking upstream from access road. Photo taken April 15, 2015



Todd 5B (Downstream). Looking downstream from access road. Photo taken April 15, 2015



Zone 1A Reservoir Inlet Clearing Sediment Removal

Brush Creek Reservoir. Photo taken April 15, 2015



Matanzas Creek Reservoir. Photo taken April 13, 2015



Piner Creek Reservoir. Photo taken April 13, 2015



Santa Rosa Creek Reservoir (Spring Lake). Photo taken April 13, 2015



Santa Rosa Fish ladder. Photo taken April 13, 2015



Zone 2A Localized Sediment Removal

East Fork McDowell 1. Looking upstream at project site. Photo taken April 13, 2015



Zone 2A Reach Scale Sediment Removal

Adobe 1. Looking upstream from Mid Reach. Photo taken April 13, 2015



Adobe 2. Looking downstream from Mid Reach. Photo taken April 13, 2015



Zone 4A Localized Sediment Removal

Wood 1. Looking downstream from Railroad Tracks. Photo taken April 13, 2015



Zone 8A Reach Scale Sediment Removal

Bloomfield 1. Looking upstream from Valley Ford Rd. Photo taken April 13, 2015

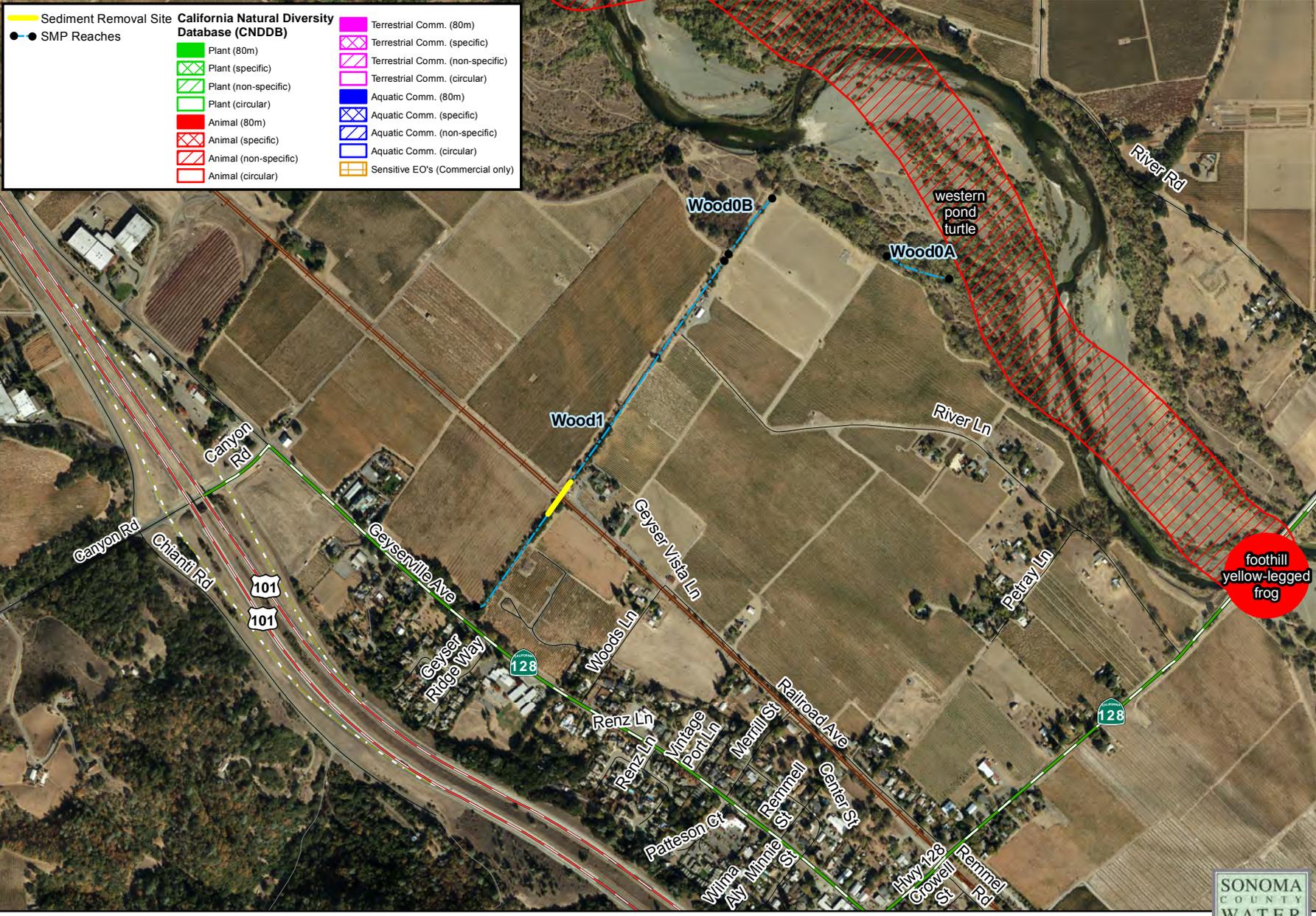


Appendix B

Project Maps with CNDDDB Overlay

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 Sediment Removal Site	California Natural Diversity Database (CNDDDB)	 Terrestrial Comm. (80m)
 SMP Reaches	 Plant (80m)	 Terrestrial Comm. (specific)
	 Plant (specific)	 Terrestrial Comm. (non-specific)
	 Plant (non-specific)	 Terrestrial Comm. (circular)
	 Plant (circular)	 Aquatic Comm. (80m)
	 Animal (80m)	 Aquatic Comm. (specific)
	 Animal (specific)	 Aquatic Comm. (non-specific)
	 Animal (non-specific)	 Aquatic Comm. (circular)
	 Animal (circular)	 Sensitive EO's (Commercial only)



**Stream Maintenance Program
Zone 4A, Geyserville**

This map document and associated data are distributed for informational purposes only. It is not intended to be used as a substitute for professional engineering or other services. The positional accuracy of the data in this map document and its contents is dependent on the accuracy of the source data. The Sonoma County Water Agency assumes no responsibility for use of this information.

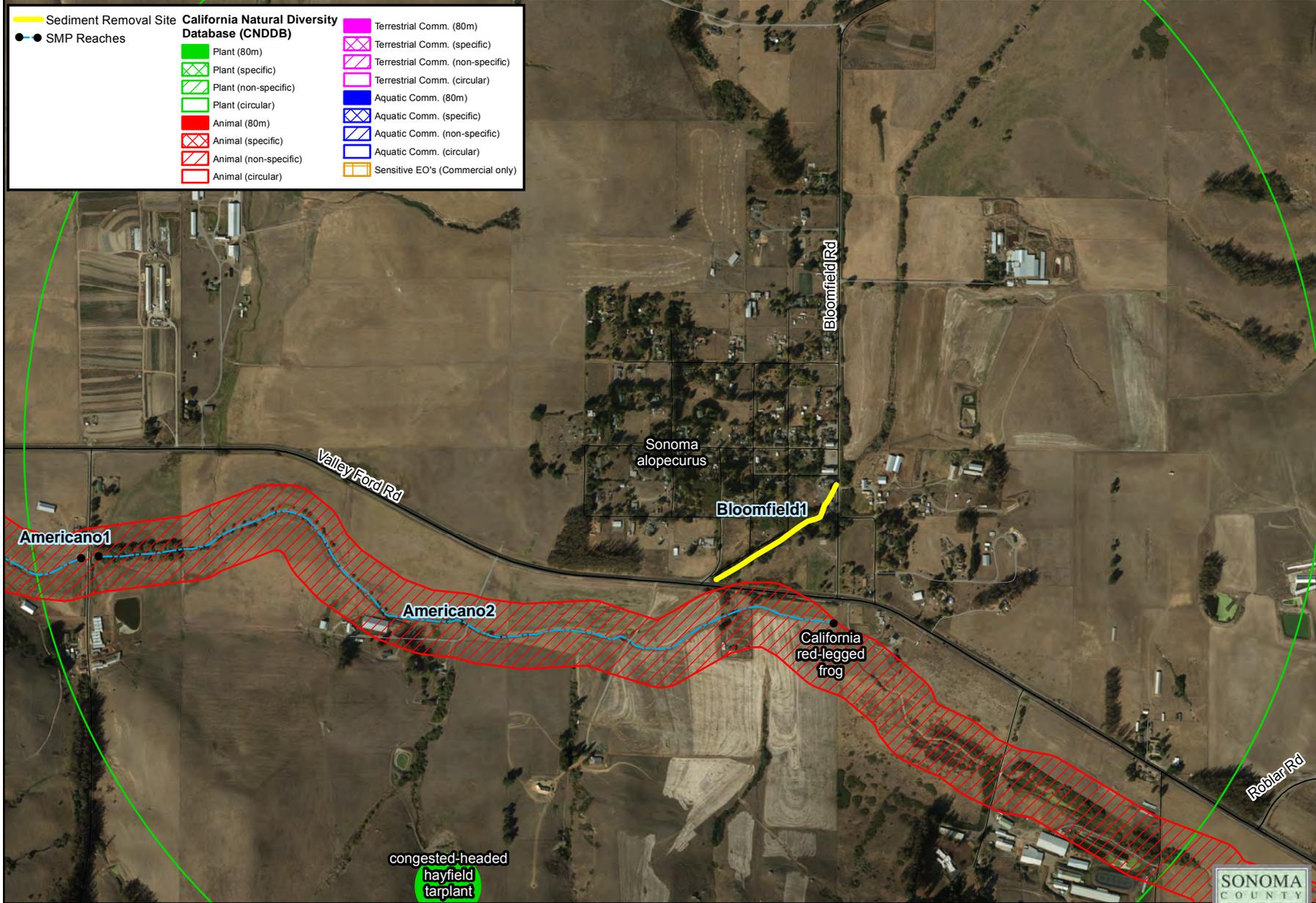


Project Location
Map
Printed on 4/15/2015



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 Sediment Removal Site	California Natural Diversity Database (CNDDDB)	 Terrestrial Comm. (80m)
 SMP Reaches	 Plant (80m)	 Terrestrial Comm. (specific)
	 Plant (specific)	 Terrestrial Comm. (non-specific)
	 Plant (non-specific)	 Aquatic Comm. (80m)
	 Plant (circular)	 Aquatic Comm. (specific)
	 Animal (80m)	 Aquatic Comm. (non-specific)
	 Animal (specific)	 Aquatic Comm. (circular)
	 Animal (non-specific)	 Sensitive EO's (Commercial only)
	 Animal (circular)	



**Stream Maintenance Program
Zone 8A, Bloomfield**

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Project Location
Map
Printed on 4/15/2015



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**Stream Maintenance Program
Zone 1A, East Santa Rosa**

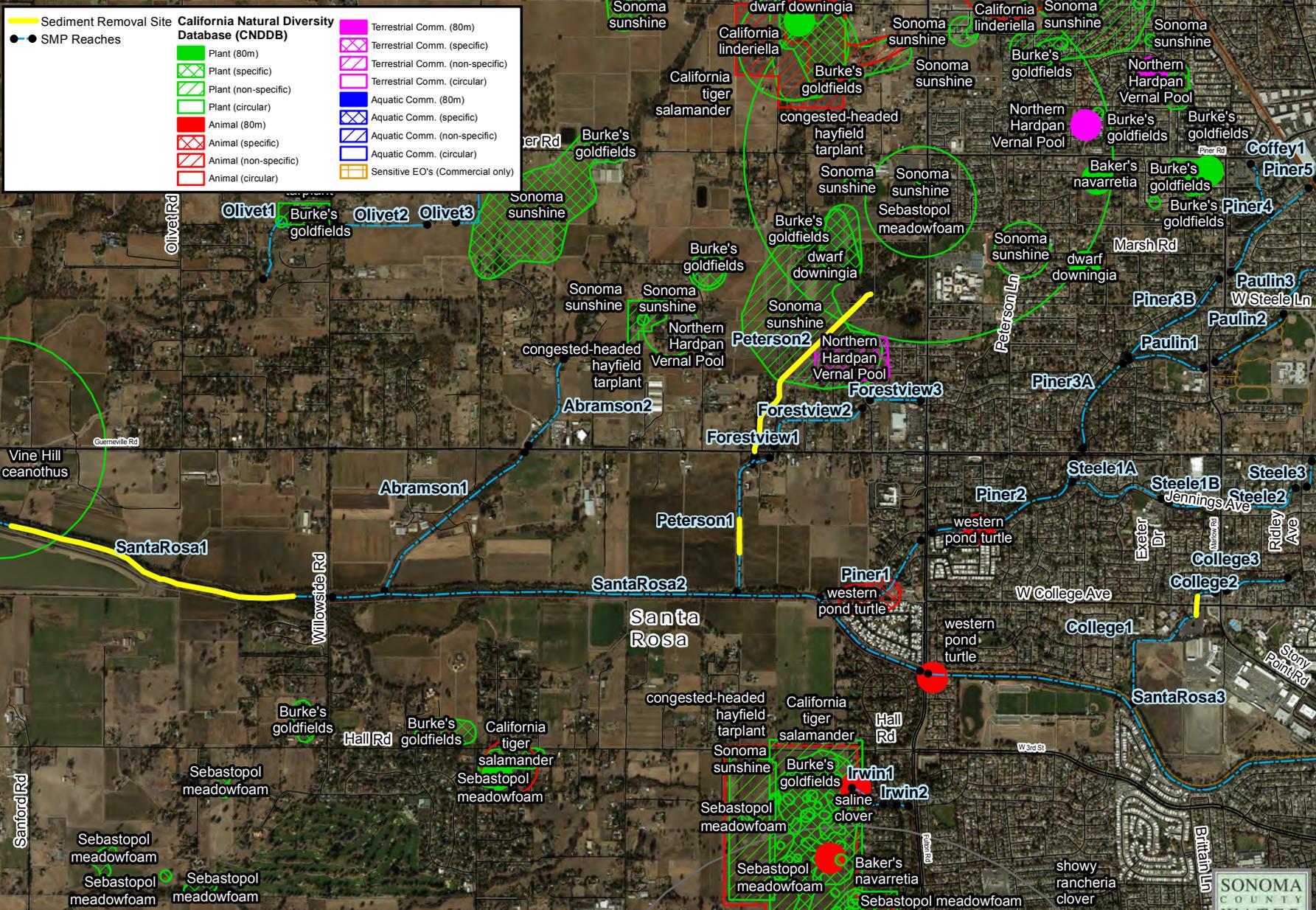
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Project Location
Map
Printed on 4/15/2015



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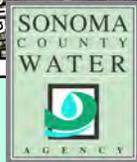


**Stream Maintenance Program
Zone 1A, West Santa Rosa**

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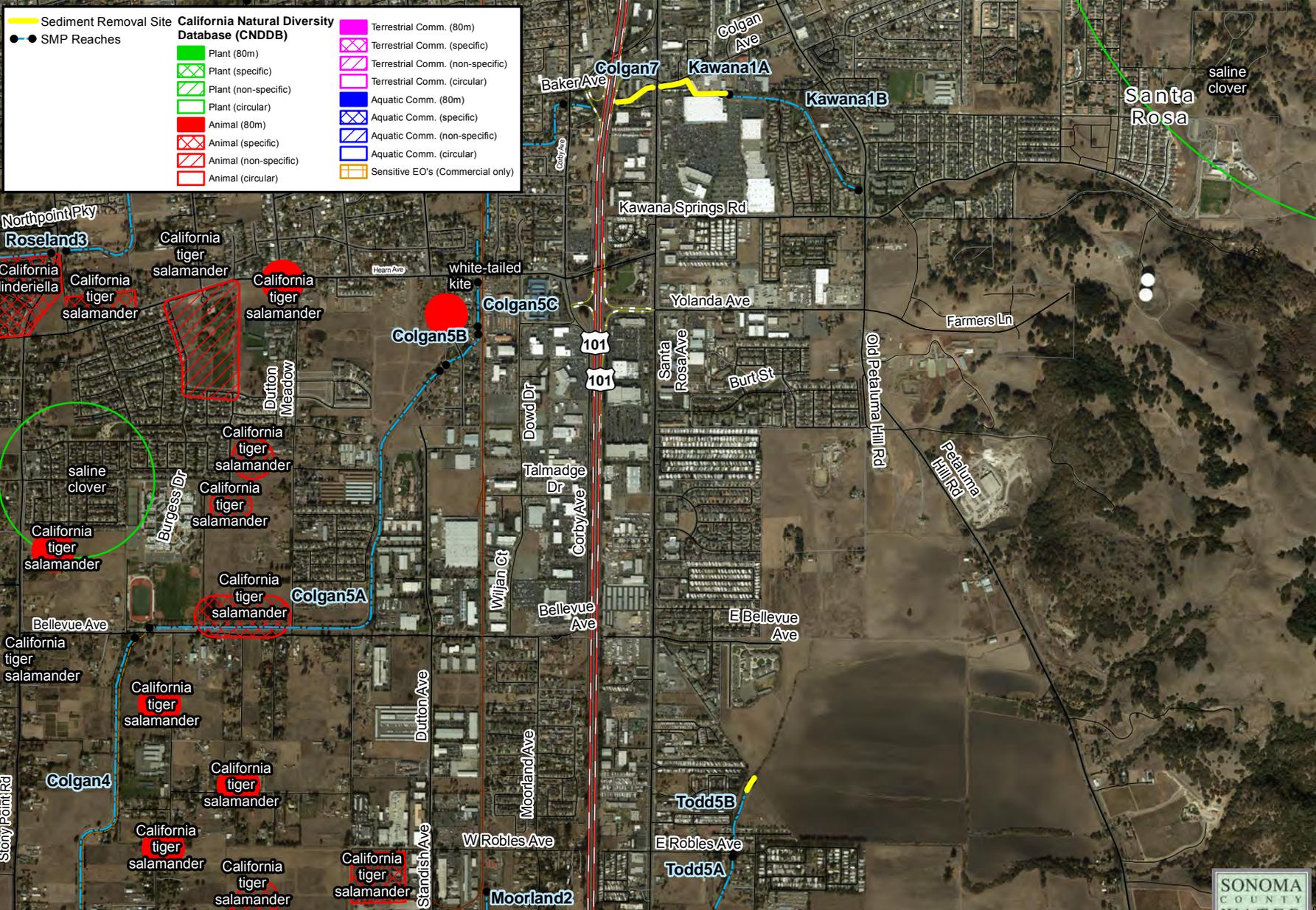


Project Location
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Printed on 4/15/2015



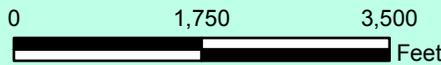
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Sediment Removal Site	California Natural Diversity Database (CNDDDB)	Terrestrial Comm. (80m)
SMP Reaches	Plant (80m)	Terrestrial Comm. (specific)
	Plant (specific)	Terrestrial Comm. (non-specific)
	Plant (non-specific)	Terrestrial Comm. (circular)
	Plant (circular)	Aquatic Comm. (80m)
	Animal (80m)	Aquatic Comm. (specific)
	Animal (specific)	Aquatic Comm. (non-specific)
	Animal (non-specific)	Aquatic Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)



**Stream Maintenance Program
Zone 1A, South Santa Rosa**

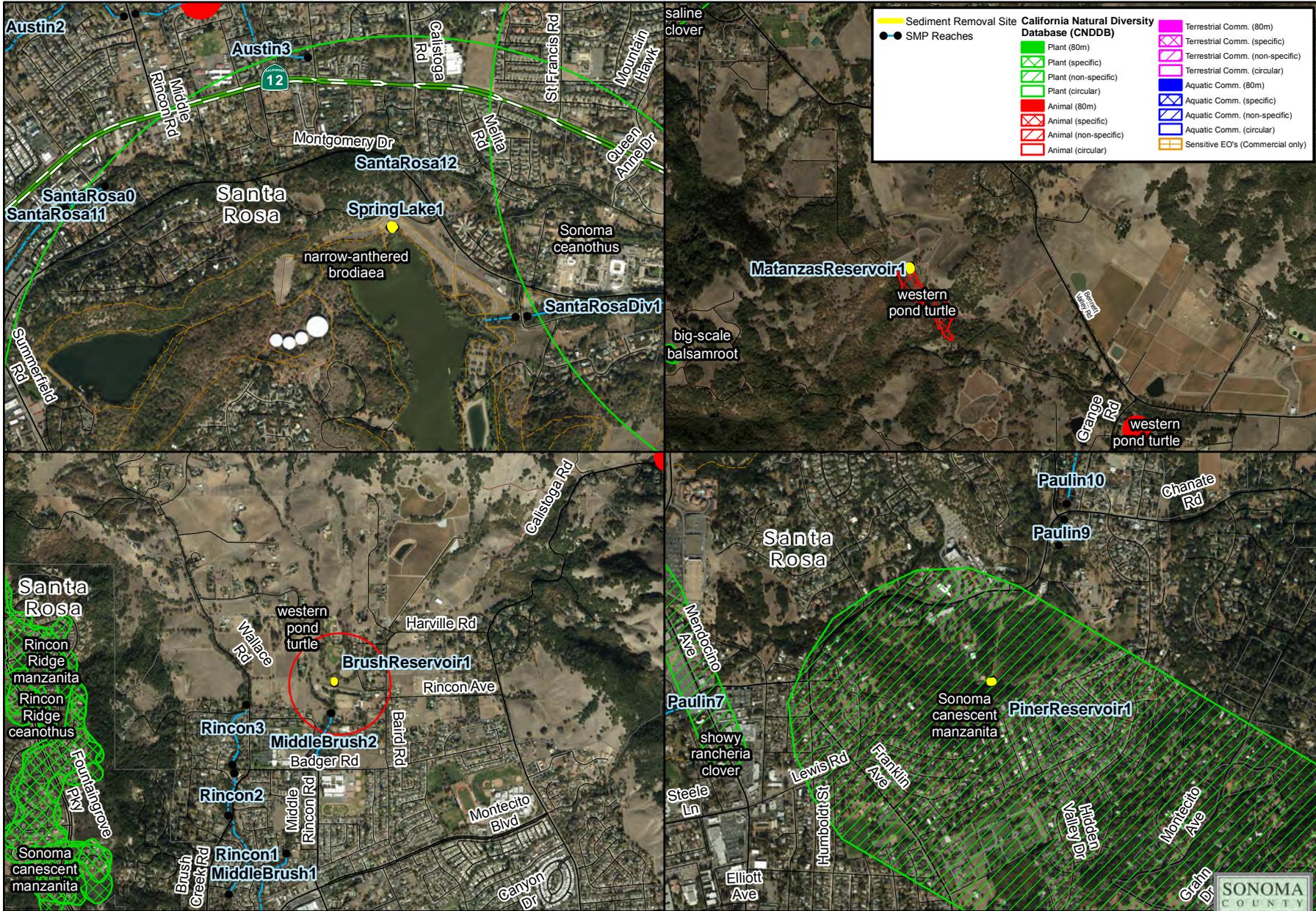
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Project Location
Map
Printed on 4/15/2015



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	Sediment Removal Site	California Natural Diversity Database (CNDDDB)		Terrestrial Comm. (80m)
	SMP Reaches			Terrestrial Comm. (specific)
				Terrestrial Comm. (non-specific)
				Terrestrial Comm. (circular)
				Aquatic Comm. (80m)
				Aquatic Comm. (specific)
				Aquatic Comm. (non-specific)
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				Sensitive EOs (Commercial only)

**Stream Maintenance Program
Zone 1A Reservoirs**

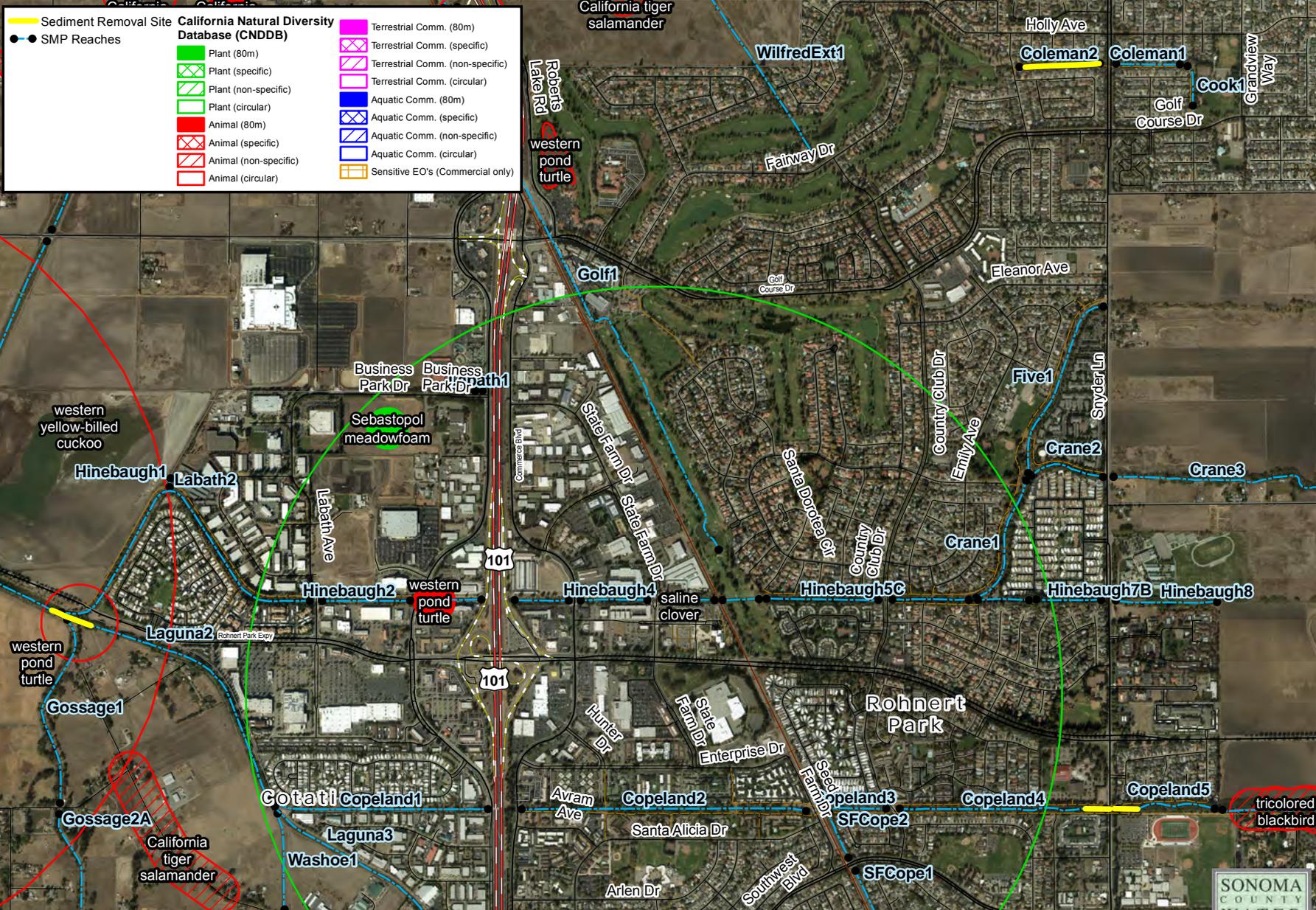
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Project Location
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**Stream Maintenance Program
Zone 1A, Rohnert Park/ Cotati**

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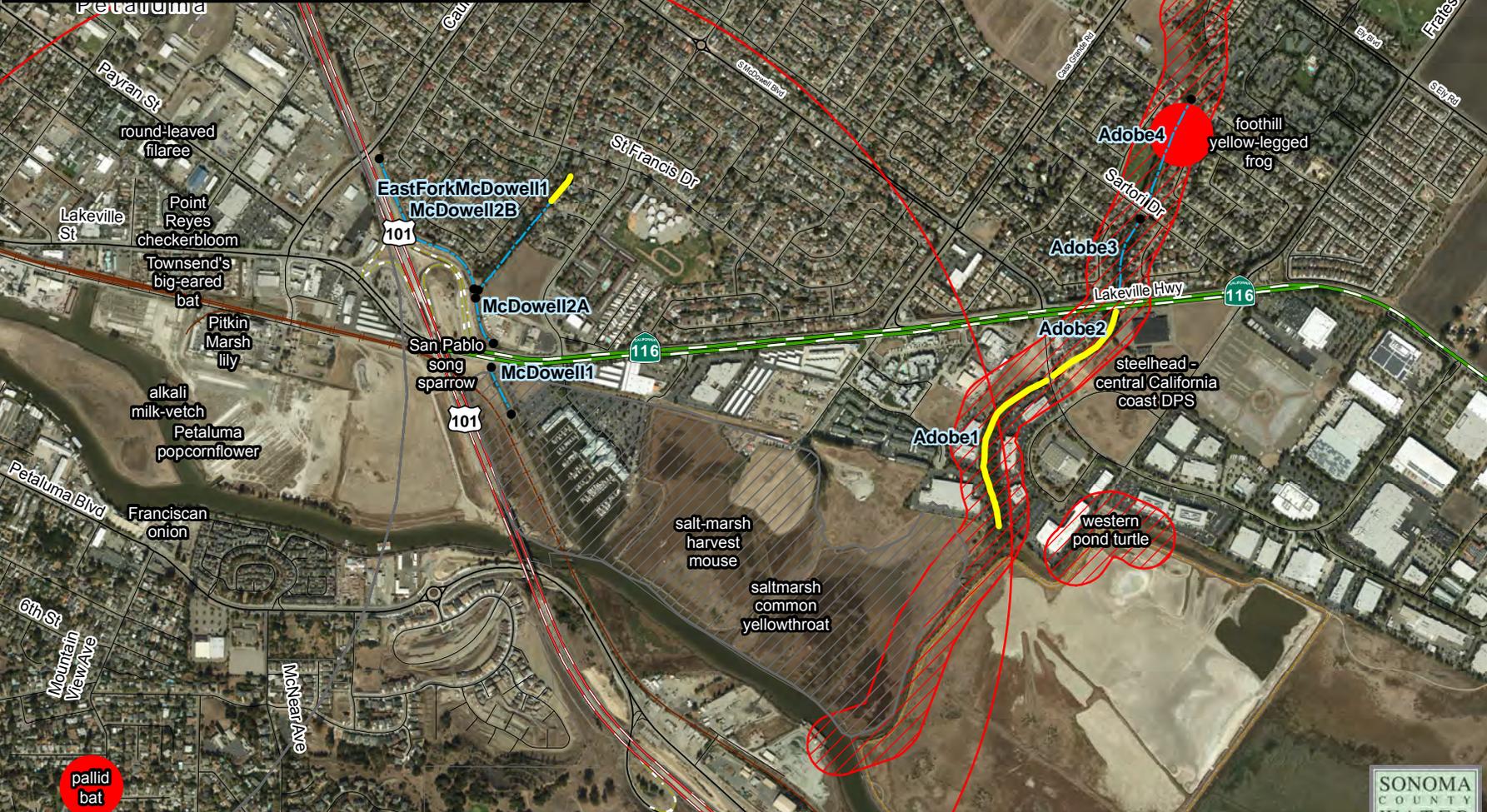


Project Location
Map
Printed on 4/15/2015



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Sediment Removal Site	California Natural Diversity Database (CNDDDB)	Terrestrial Comm. (80m)
SMP Reaches	Plant (80m)	Terrestrial Comm. (specific)
	Plant (specific)	Terrestrial Comm. (non-specific)
	Plant (non-specific)	Terrestrial Comm. (circular)
	Plant (circular)	Aquatic Comm. (80m)
	Animal (80m)	Aquatic Comm. (specific)
	Animal (specific)	Aquatic Comm. (non-specific)
	Animal (non-specific)	Aquatic Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)



Stream Maintenance Program
Zone 2A, Petaluma

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Project Location
 Map
 Printed on 4/15/2015



Appendix C

Project Specific Notifications

Zone 1A:

- East Windsor 2
- Oakmont 3

Zone 2A:

- Lichau 3A, 3B, 3C, 3D
- Petaluma 0C, 0B, 1, 2

Zone 3A:

- Nathanson 0
- Rodgers 0A, 1
- Schell 2, 3

Zone 4A:

- Wood 1

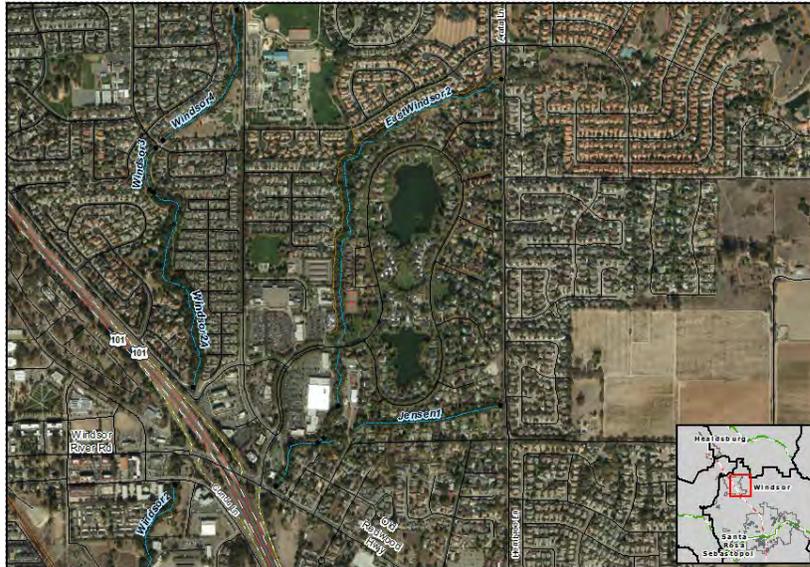
Zone 5A:

- Hudspeth 1
- Jonive 1, 2, 3

Project Specific Notification for 2015 Field Season

East Windsor Creek- Reach 2

DATE OF SURVEY: 4/12/2015
JURISDICTION: Modified Channel Easement
LOCATION: Windsor, extends ~600 ft. downstream and ~3,700 ft. upstream of Lakewood Dr.

LOCATION MAP

Reach	Length	Channel Easement Corridor Width	Average Top of Bank Width
East Windsor 2	4,346 ft.	150 ft.	45 ft.

ADJACENT LAND USE: Private Residential Housing and commercial buildings

PHYSICAL CONDITIONS

Reach setting: East Windsor Creek is located in the city of Windsor in a highly residential area. The channel is earthen, with steep side banks. At the time of the survey East Windsor Creek supported scattered pools throughout the channel. The riparian corridor through this reach supports a mix of large mature and young trees, such as red willow (*Salix laevigata*), coast live oak (*Quercus agrifolia*), arroyo willow (*Salix lasiolepis*), and Valley Oak (*Quercus lobata*).

Active channel: The active channel was largely occupied by dead fallen vegetation and varies in width from 5 to 15 feet.

Project Specific Notification for 2015 Field Season

East Windsor Creek- Reach 2

Bed sediments/texture: The substrate consists mostly of sand and gravel along the bed of the channel.

Bank structure: The channel is earthen, with steep side banks. Side banks are dominated by Himalayan blackberry (*Rubus discolor*) and poison oak (*Toxicodendron diversilobum*).

Water quality: At the time of the survey the reaches supported shallow stagnant pools. The water surface is largely shaded by the existing riparian canopy.

Channel processes: East Windsor Creek reach 2 is incising with its sediment depositing downstream.

Debris Accumulations and Blockages Assessed: Blockages and large woody debris was found in the channel and on side banks, with the main areas of accumulations being found along the side banks in the Blackberry. Locations and images of the obstructions can be found in the attached map.

BIOLOGICAL CONDITIONS

Vegetation composition: East Windsor 2 supports a relatively dense riparian corridor including a mix of large mature and young red willow, valley oak, coast live oak and arroyo willow. Side banks are dominated by Himalayan blackberry and poison oak. Upper bank trees associated with the riparian corridor include; Valley Oak coast live oak arroyo willow (*Salix lasiolepis*) and red willows (*Salix laevigata*).

Riparian corridor and canopy closure: The majority of the riparian canopy is provided by willows and oaks along the upper and side banks. The canopy cover is at 95% (derived from 2013 LIDAR flight).

In-stream habitat: Young arroyo and red willows are growing in the channel bottom, which may be precluded by scouring associated with flood flows, there are no medium aged or sized trees growing in the channel bottom.

Special-status species with potential to occur: Western Pond Turtle.

Significant Habitat Features: Significant in-stream habitat features that were observed during the time of the survey include undercut banks, and overhanging vegetation. The healthy riparian canopy provides significant shading and other habitat benefits. Besides the canopy, trees rooted low in the channel provide velocity breaks during high flow and fish migration and low hanging branches improve cover.

East Windsor Creek- Reach 2

Wildlife: Large standing pools were observed at the time of the survey, although no aquatic species were observed during that time. Referencing the California Natural Diversity Database, there are multiple species of protected plant species and western pond turtle occurrences in the surrounding area, exact locations and extent of all nearby occurrences can be found in the attached map.

MANAGEMENT CONSIDERATIONS AND OPPORTUNITIES

The dominant management considerations for East Windsor Creek should include preserving existing canopy to further reduce in-stream vegetation density and the removal of downed trees and accumulated debris. Fallen trees that span the channel should be removed depending on the level of hazard. Selective thinning of California blackberry (*Rubus ursinus*) and existing vegetation should be implemented to reduce competition and maximize shading by desirable species. Considering flood risk, it would be beneficial to thin and lift dead and dying vegetation along the creek to reduce potential for flooding.

ANTICIPATED BIOLOGICAL RESOURCES PROTECTION BEST MANAGEMENT PRACTICES TO EMPLOY

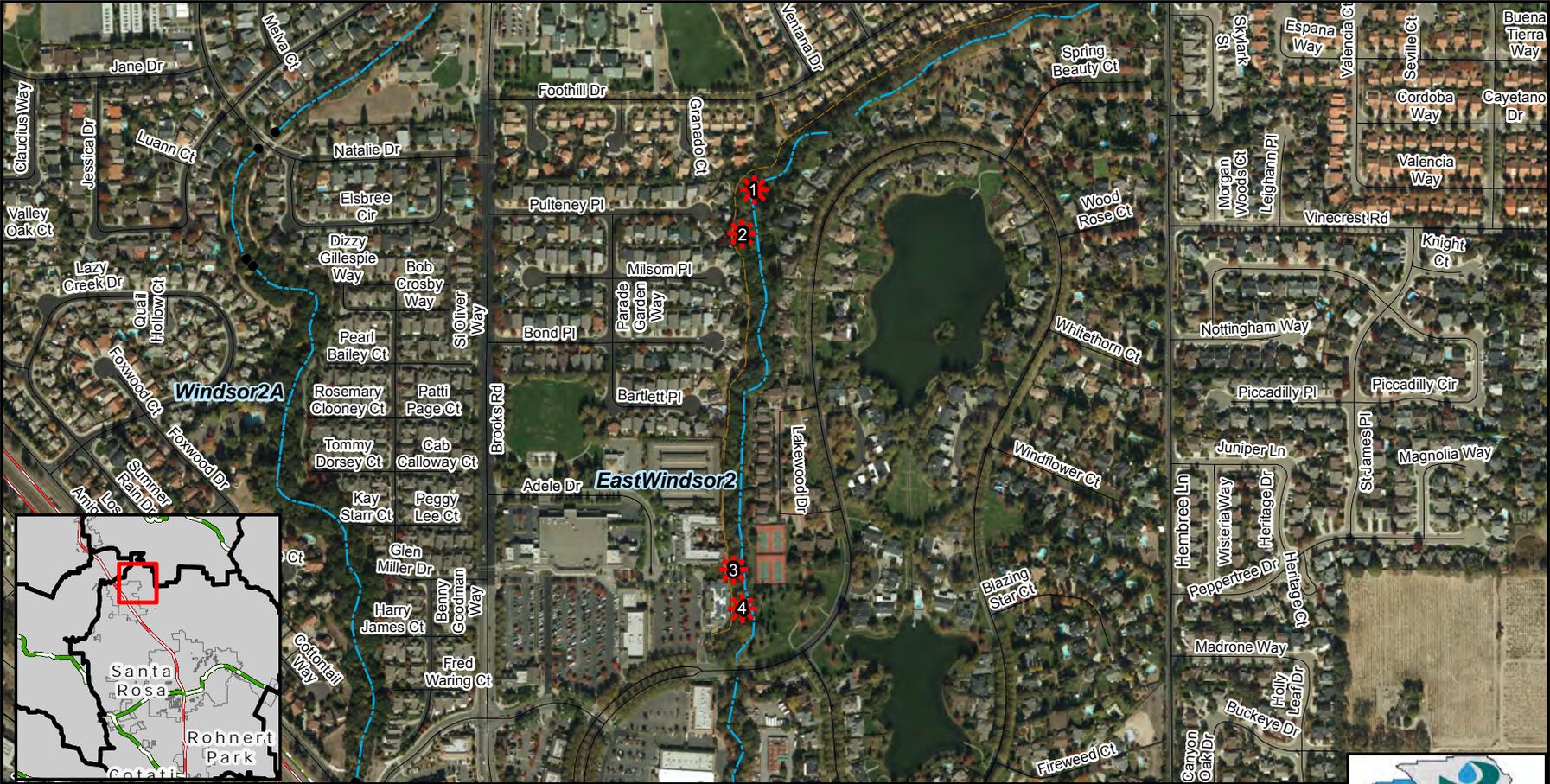
BR-1- Area of Disturbance

BR-2- Pre-Maintenance Educational Training

BR-6- On-Call Wildlife Biologist

BR-8- Nesting Migratory Bird and Raptor Pre-maintenance Surveys

BR-17- Western Pond Turtle Pre-Maintenance Surveys for Ground Disturbing Activities

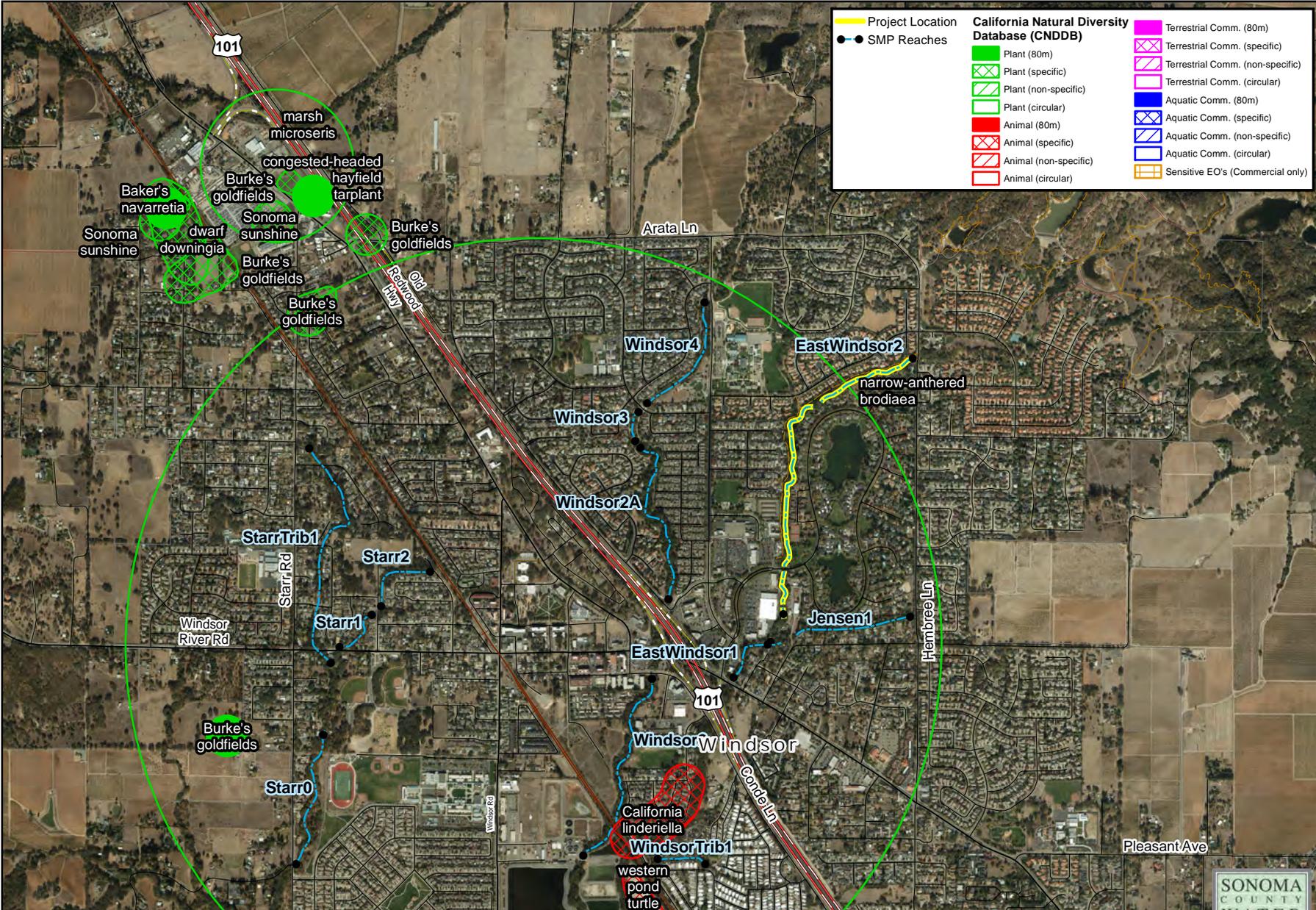


Stream Maintenance Program
Project Specific Notification 2015
East Windsor 2

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Project Location	California Natural Diversity Database (CNDDDB)	Terrestrial Comm. (80m)
SMP Reaches	Plant (80m)	Terrestrial Comm. (specific)
	Plant (specific)	Terrestrial Comm. (non-specific)
	Plant (non-specific)	Terrestrial Comm. (circular)
	Plant (circular)	Aquatic Comm. (80m)
	Animal (80m)	Aquatic Comm. (specific)
	Animal (specific)	Aquatic Comm. (non-specific)
	Animal (non-specific)	Aquatic Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)

Stream Maintenance Program
Windsor CNDDB
2015



Project Specific Notification for 2015 Field Season

Oakmont Creek-Reach 3

DATE OF SURVEY: 4/13/15
JURISDICTION: Modified Channel Easement
LOCATION: Oakmont, reach extends ~1,110 ft. downstream of White Oak Dr.
DOWNSTREAM: Non-SCWA managed Reach
LOCATION MAP:



<i>Reach</i>	<i>Length</i>	<i>Channel Easement Corridor Width</i>	<i>Average Top of Bank width</i>
Oakmont 3	1,107 ft.	93 ft.	71 ft.

ADJACENT LAND USE: Oakmont Creek meanders through the community of Oakmont through residential areas

Oakmont Creek-Reach 3

PHYSICAL CONDITIONS

Reach setting: Oakmont Cr Reach 3 is not far from the creek's headwaters, which appear to be in the Oakmont Golf Course and straddle the Santa Rosa Cr watershed and Sonoma Cr watershed. From the golf course, part of the creek flows to the west into the creek and eventually into Santa Rosa Cr and the other part flows to the east into Sonoma Cr. The riparian corridor through the creek supports a mix of large mature and young trees such as coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), madrone (*Arbutus menziesii*), arroyo willow (*Salix lasiolepis*), and red willow (*Salix laevigata*).

Active channel: 8-12 ft. wide, flat bottom, mostly earthen with armored culverts scattered throughout the reach.

Bed sediments/texture: The substrate consists mostly of coarse sand and gravel along the bed of the channel

Bank structure: the channel is mostly earthen with areas of cemented rip-rap armoring culverts that drain into the channel from the surrounding neighborhoods.

Water quality: Minimal perceptible flow observed. Reach is scattered with small pools of water stagnant covered with mats of algae.

Channel processes: The channel appears to be in equilibrium with sediment slugs and bars forming in areas upstream of vegetation occupying the channel bottom.

Debris Accumulations and Blockages Assessed: Blockages or debris accumulations were observed during the time of the survey. Locations and images of the obstructions can be found in the attached map.

BIOLOGICAL CONDITIONS

Vegetation composition: Oakmont Creek supports a relatively dense riparian corridor including a mix of large mature and young coast live oak, Valley Oak, red willow, and arroyo willow. Side banks and understory is dominated by Himalayan and California blackberry with young Oak trees scattered throughout the reach.

Riparian corridor and canopy closure: The majority of the riparian canopy is provided by oaks along the upper and side banks and has a Canopy Density of 91% (2013 LiDAR).

Oakmont Creek-Reach 3

In-stream habitat: Reach is scattered with large woody debris (LWD) spanning from one side bank to the other. Large vegetation that is growing along the toe have formed undercut banks, and armoring roots at the waterline which provide ideal habitat for aquatic species.

Special-status species with potential to occur: This reach is not currently known to support any federally or state listed aquatic species, although it is within the range of potential habitat for California red-legged frog.

Significant Habitat Features: Significant in-stream habitat features that were observed during the time of the survey include undercut banks, riprap at the toe of the channel and large deep pools of standing water. The healthy riparian canopy provides significant shading and other habitat benefits. Besides the canopy, trees rooted low in the channel provide velocity breaks during high flow and fish migration and low hanging branches improve cover.

Wildlife: there was no wildlife observed during survey. Referencing the CNDDDB, there are no protected species that have occurrences in the area.

MANAGEMENT CONSIDERATIONS AND OPPORTUNITIES

The dominant management considerations for Oakmont Creek should include preserving the existing canopy to further reduce in-stream vegetation density and the removal of downed trees and accumulated debris. Dense accumulations of dead and living willows should be reduced while preserving canopy. Fallen trees that span the channel should be removed depending on the level of hazard. Willow sprouts that are colonizing in channel should also be removed to prevent further obstructions. Selective thinning of Himalayan blackberry (*Rubus ursinus*) and existing vegetation should be implemented to reduce competition and maximize shading by desirable species. Considering flood risk, it would be beneficial to thin and lift dead and dying vegetation along the creek to reduce potential for flooding.

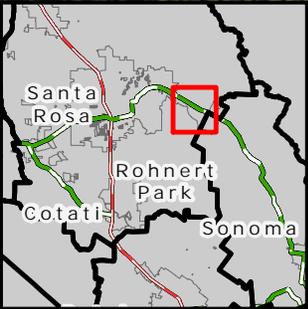
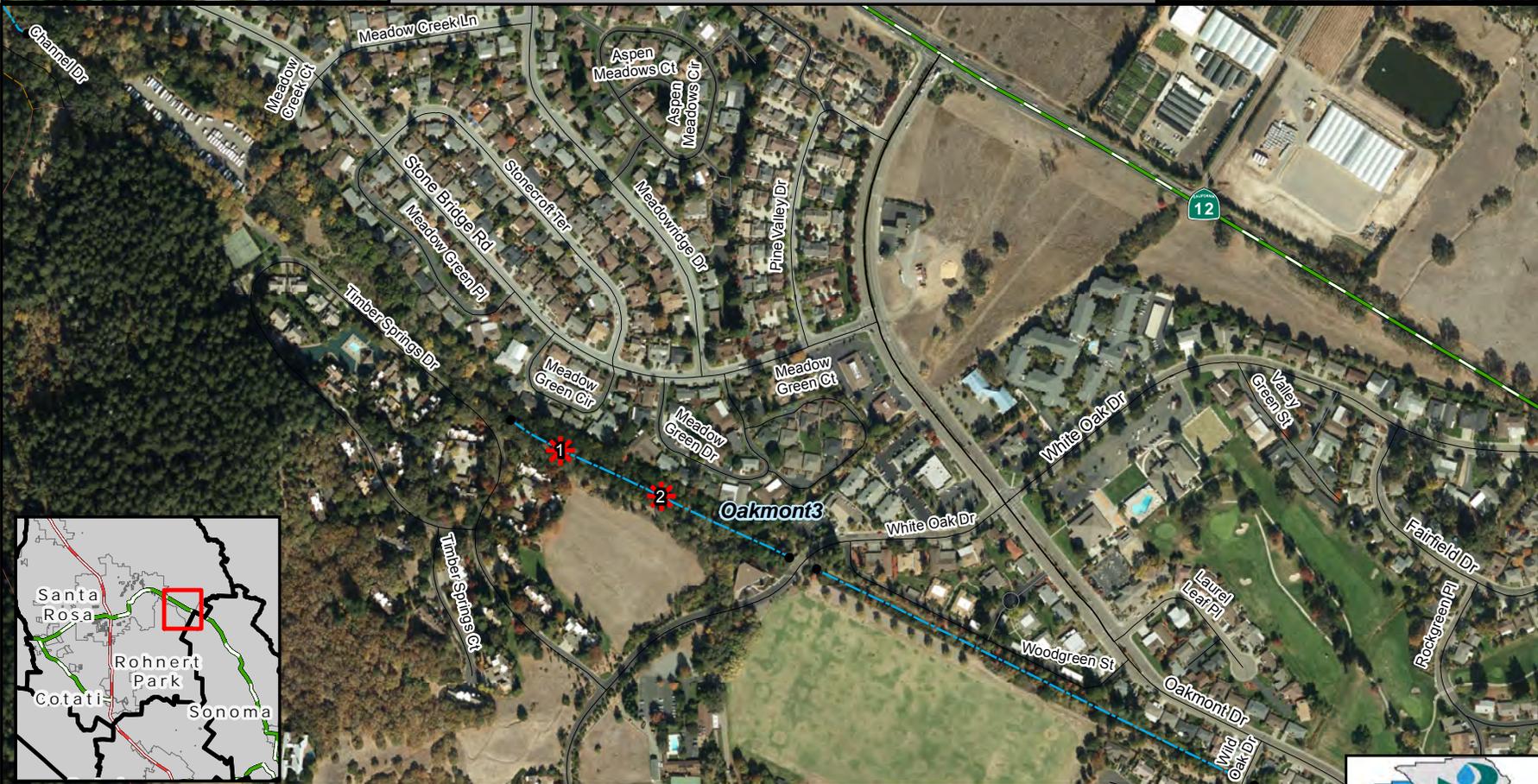
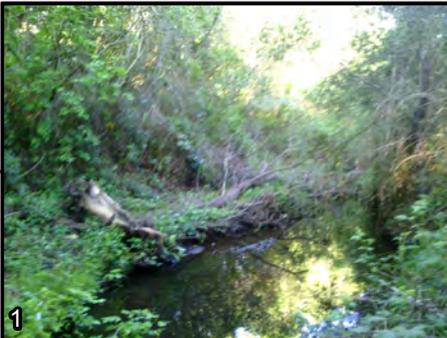
ANTICIPATED BIOLOGICAL RESOURCES PROTECTION BEST MANAGEMENT PRACTICES TO EMPLOY

BR-1- Area of Disturbance

BR-2- Pre-Maintenance Educational Training

BR-6- On-Call Wildlife Biologist

BR-8- Nesting Migratory Bird and Raptor Pre-maintenance Surveys

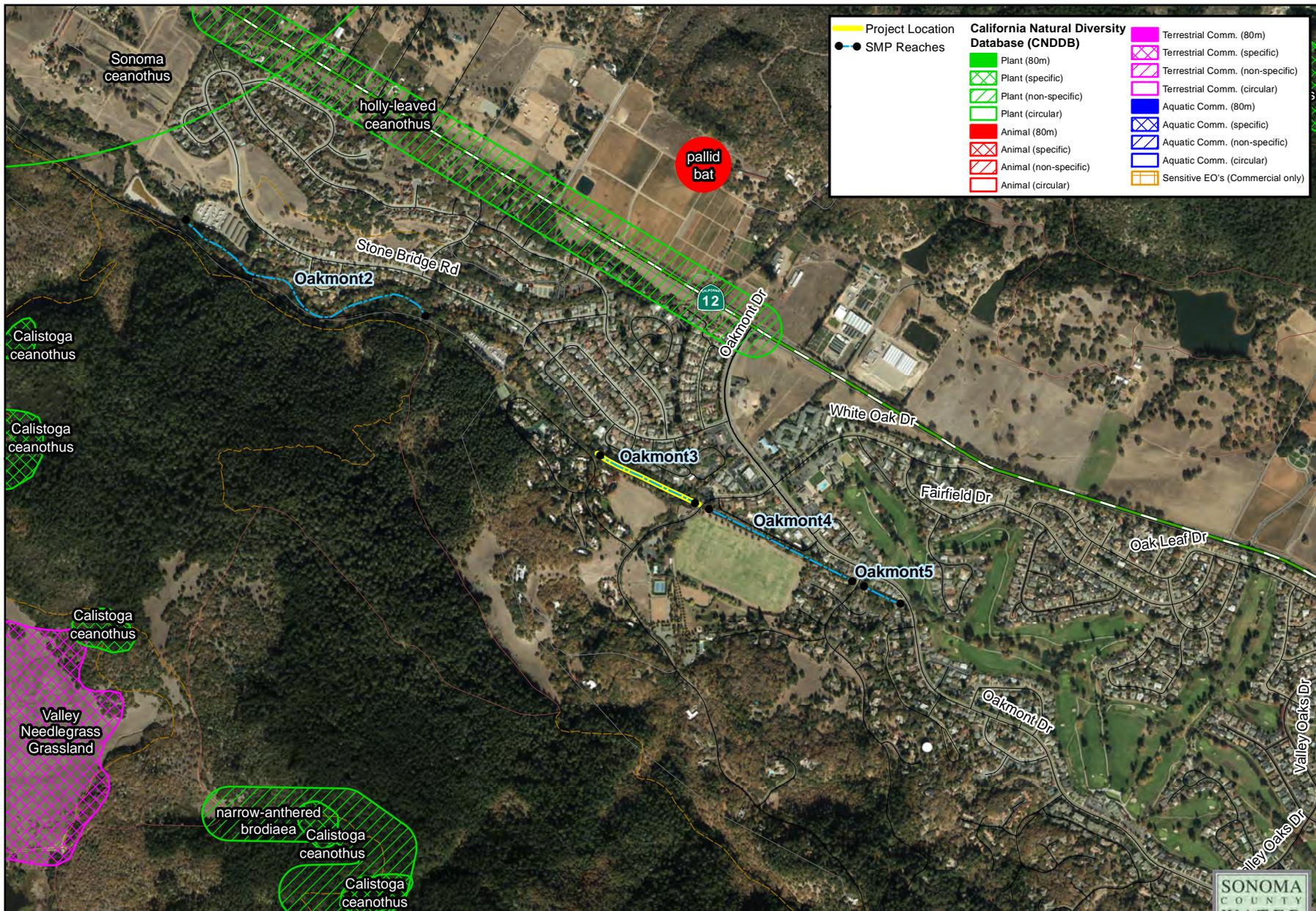


Stream Maintenance Program
Project Specific Notification 2015
Oakmont 3

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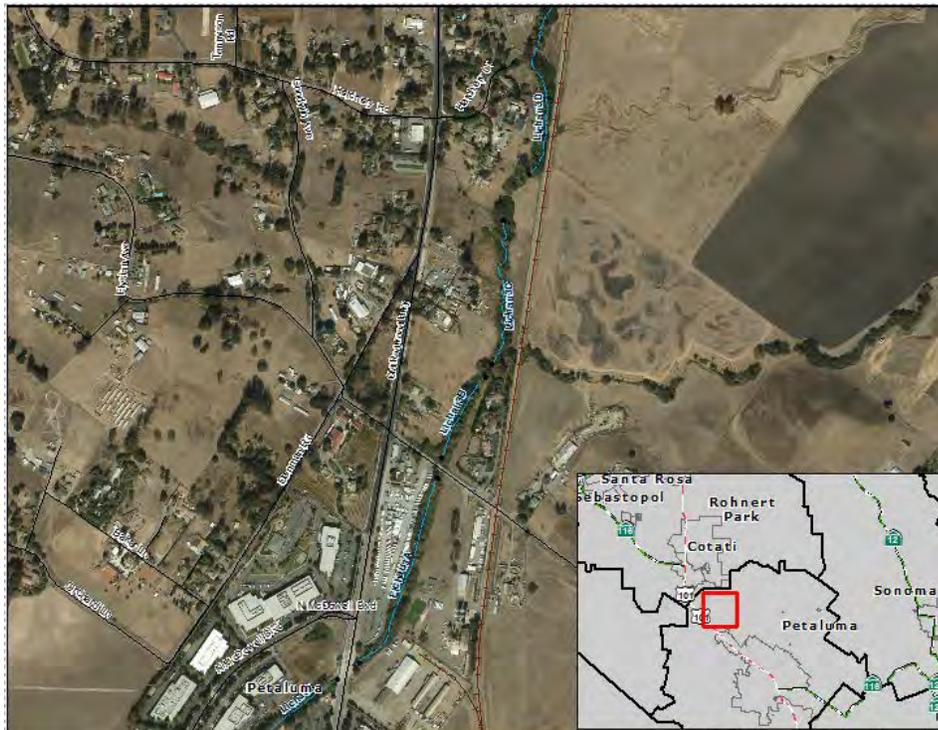


**Stream Maintenance Program
Oakmont CNDDB
2015**



*Project Specific Notification for 2015 Field Season***Lichau Creek- Reach 3A,3B,3C,3D**

DATE OF SURVEY: 8/26/2014
JURISDICTION: Modified Channel Easement
LOCATION: In the City of Petaluma. Between Old Red Wood Hwy and Hatchery Ct.
DOWNSTREAM: Lichau 2



Reach	Length	Channel Easement Corridor Width	Average Top of Bank width
Lichau 3A	1,365 ft.	40 ft.	25 ft.
Lichau 3B	628 ft.	40 ft.	25 ft.
Lichau 3C	1,045 ft.	40 ft.	25 ft.
Lichau 3D	2,617	40 ft.	25 ft.

ADJACENT LAND USE: The Creek meanders through a trucking yard and the rural residential neighborhood

PHYSICAL CONDITIONS

Reach setting: Lichau Creek is located in the city of Petaluma, and extends between Old Redwood Highway and Hatchery Ct. The active channel flows along a storage yard and rural residential neighborhoods. The Riparian corridor supports many large mature Riparian trees including red

*Project Specific Notification for 2015 Field Season****Lichau Creek- Reach 3A,3B,3C,3D***

willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*) and coast live oak (*Quercus agrifolia*) with the side and upper banks dominated by Himalayan blackberry (*Rubus discolor*).

Active channel: The active channel is densely filled with dead fallen vegetation and willow sprouts scattered throughout the reach. The channel varies in width from 15 to 35 feet.

Bed sediments/texture: The substrate consists mostly of cobble and small boulders along the bed of the channel. With sand and gravel concentrated on sediment bars forming in-channel.

Bank structure: The channel is earthen but armored with cement and rip rap at the toe in areas that chronically erode during high flows. Side banks are steep and dominated by Himalayan blackberry and California blackberry (*Rubus ursinus*).

Water quality: No perceptible flow observed. Reach is scattered with small pools of water stagnant covered with mats of algae.

Channel processes: Lichau creek between Old Redwood Hwy and Hatchery Ct is an area of incision. Accumulated debris and levee construction has increased velocity in places encouraging scour and incision. Where debris have fallen in the channel bottom and large pools have started to form. Up stream of these large pools sediment has been accumulating forming sediment bars in channel.

Debris Accumulations and Blockages Assessed: Blockages or debris accumulations were observed during the time of the survey. Locations and images of the obstructions can be found in the attached map.

BIOLOGICAL CONDITIONS

Vegetation composition: Lichau Creek supports a relatively dense riparian corridor including a mix of large mature and young red willow and arroyo willow. Side banks and understory is dominated by Himalayan and California blackberry. Upper bank trees associated with the riparian corridor include; Valley Oak (*Quercus lobata*), coast live oak, and Oregon white oak (*Quercus garryana*).

Riparian corridor and canopy closure: The majority of the riparian canopy is provided by willows along the upper and side banks and has a Canopy Density of 81%.

In-stream habitat: Blackberries, both non-native and native, dominate in-channel with large pools of stagnant water in areas not dominated by Blackberries. Reach is also scattered with large woody debris spanning from one side bank to the other.

*Project Specific Notification for 2015 Field Season***Lichau Creek- Reach 3A,3B,3C,3D**

Special-status species with potential to occur: Central California Coast Steelhead (*Oncorhynchus mykiss*), California Red Legged Frog (*Rana aurora*), Western Pond Turtle (*Actinemys marmorata*).

Significant Habitat Features: Significant in-stream habitat features that were observed during the time of the survey include undercut banks, riprap at the toe of the channel and large deep pools of standing water. The healthy riparian canopy provides significant shading and other habitat benefits. Besides the canopy, trees rooted low in the channel provide velocity breaks during high flow and fish migration and low hanging branches improve cover. Previous sampling in Lichau Creek downstream indicate that water temperatures stay cool through this reach throughout the summer but dissolved oxygen levels are very low.

Wildlife: There were multiple species of aquatic life observed in the reach including Mosquito Fish (*Gambusia affinis*), Threespine Stickleback (*Gasterosteus aculeatus*) and Steelhead are known to rear downstream. Referencing the CNDDDB, Western Pond Turtle, California Tiger Salamander (*Ambystoma californiense*) and protected plant species have occurrences in the area. Exact locations and extent of the occurrences can be found in the attached map.

MANAGEMENT CONSIDERATIONS AND OPPORTUNITIES

The dominant management considerations for Lichau Creek should include preserving the existing canopy to further reduce in-stream vegetation density and the removal of downed trees and accumulated debris. Dense accumulations of dead and living willows should be reduced while preserving canopy. Fallen trees that span the channel should be removed depending on the level of hazard. Willow sprouts that are colonizing in channel should also be removed to prevent further obstructions. Selective thinning of California blackberry and existing vegetation should be implemented to reduce competition and maximize shading by desirable species. Considering flood risk, it would be beneficial to thin and lift dead and dying vegetation along the creek to reduce potential for flooding.

ANTICIPATED BIOLOGICAL RESOURCES PROTECTION BEST MANAGEMENT PRACTICES TO EMPLOY

BR-1- Area of Disturbance

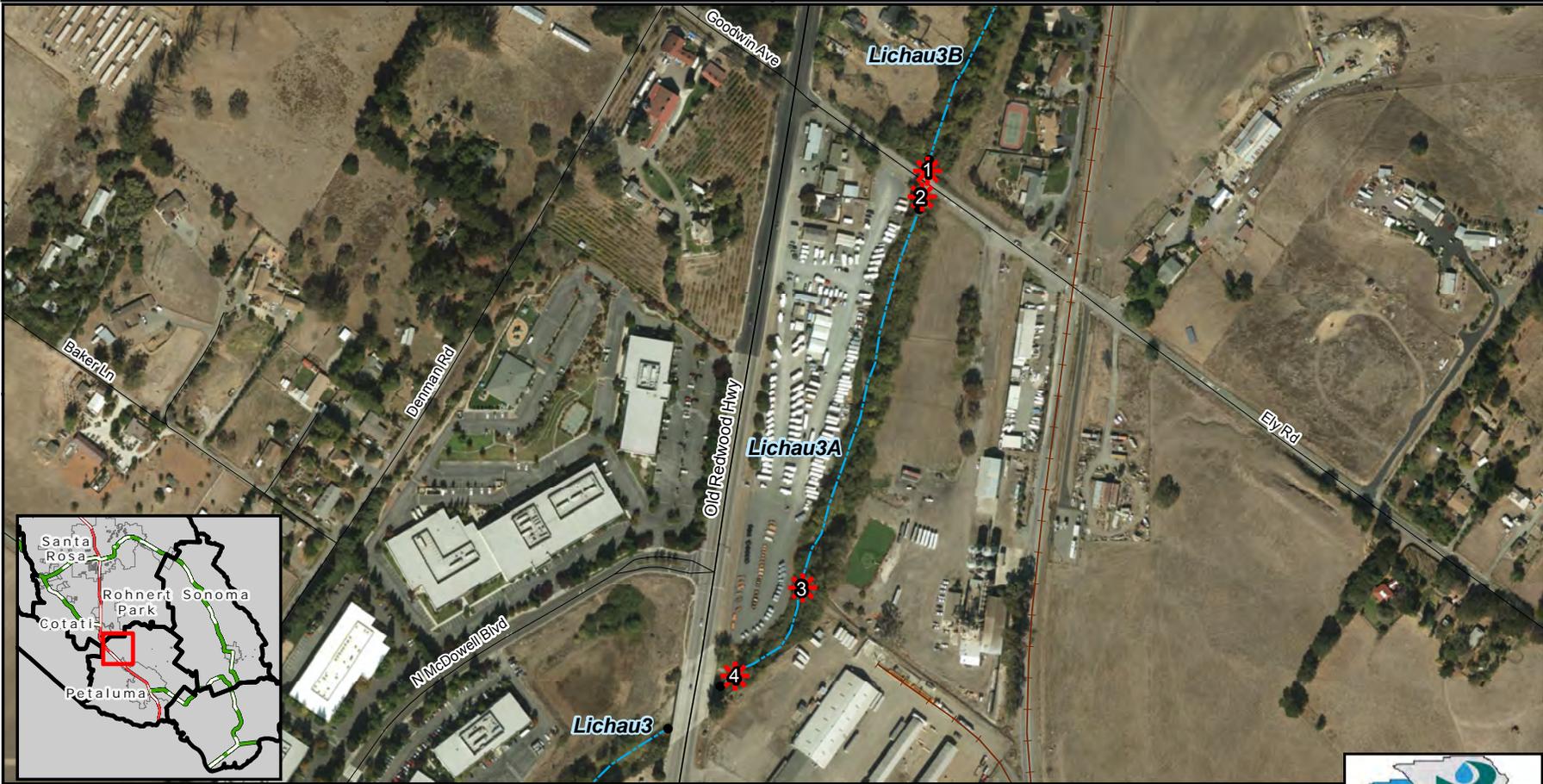
BR-2- Pre-Maintenance Educational Training

BR-6- On-Call Wildlife Biologist

BR-8- Nesting Migratory Bird and Raptor Pre-maintenance Surveys

BR-11- California Red-legged Frog Avoidance and Impact Minimization Measures for Vegetation Management

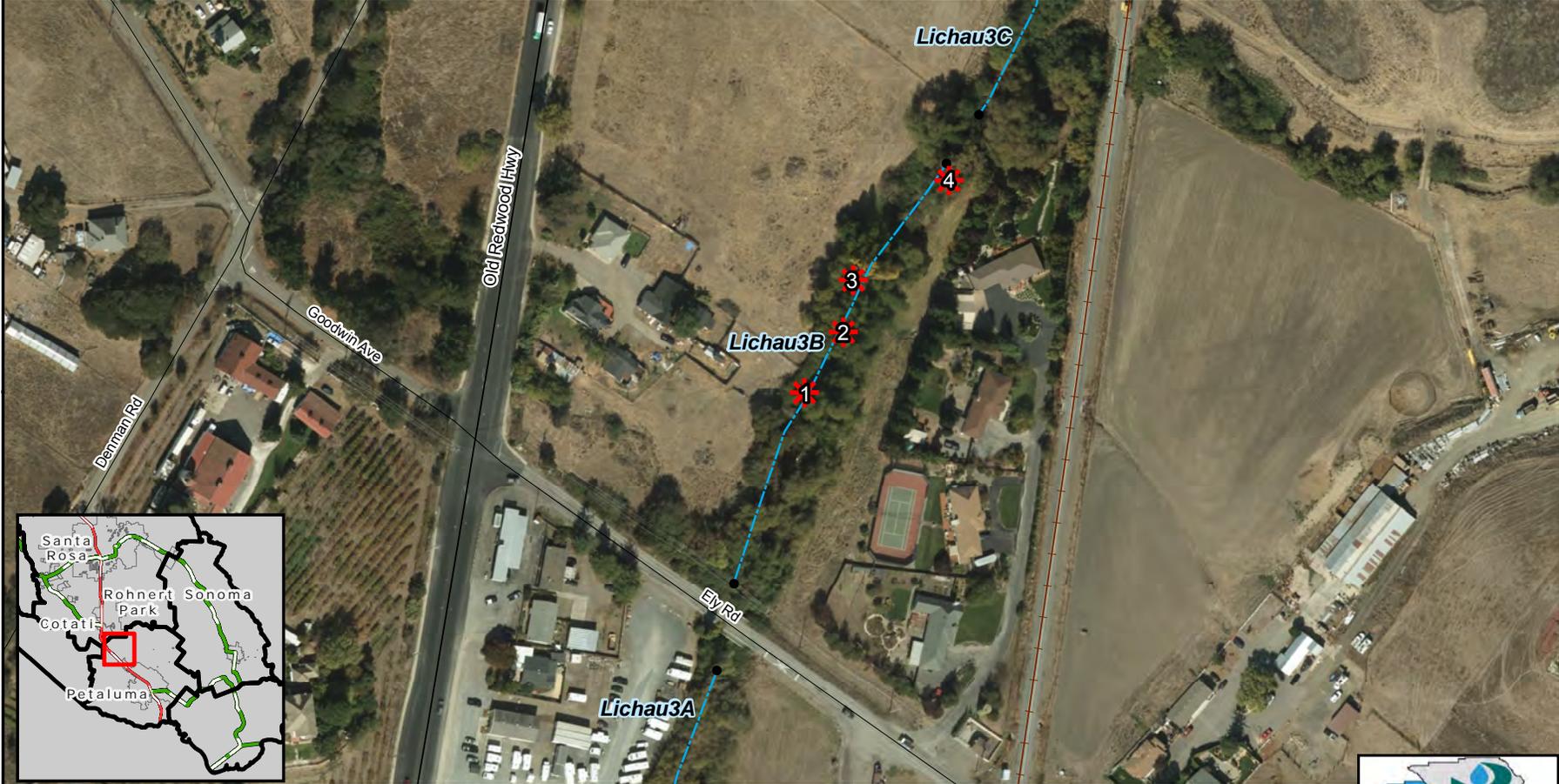
BR-18- Zone 2A and 3A Salmonid Avoidance and Impact Minimization Measures



**Stream Maintenance Program
Project Specific Notification 2015
Lichau 3A & 3B**

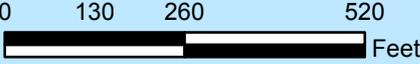
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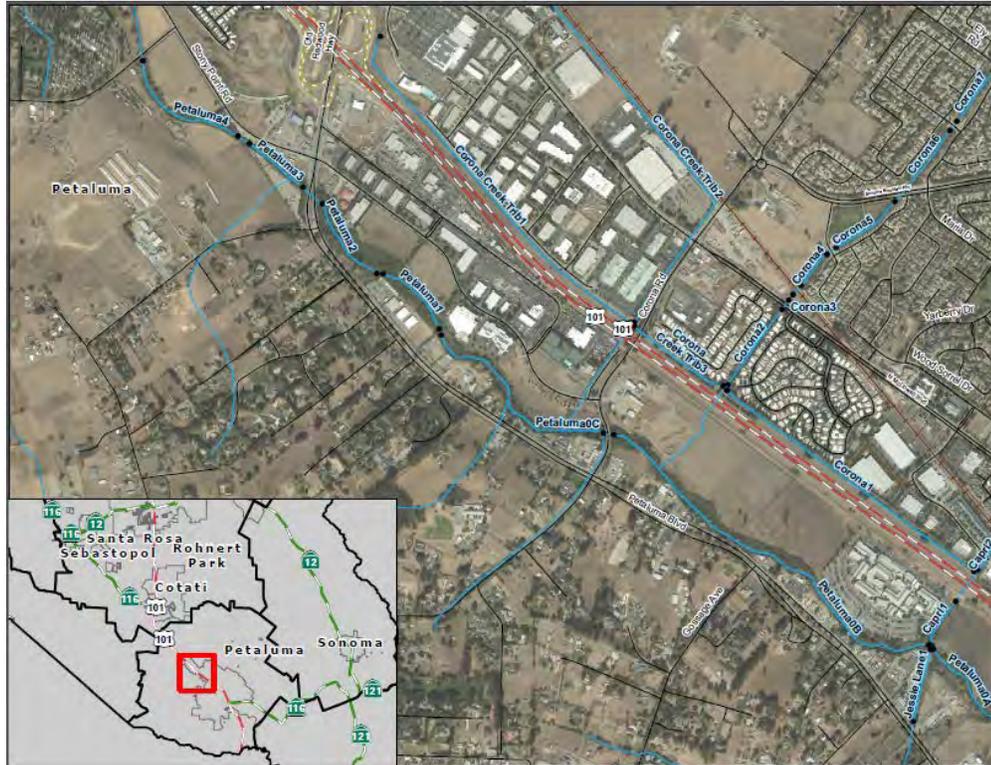
Stream Maintenance Program
Project Specific Notification 2015
Lichau 3B

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*Project Specific Notification for 2015 Field Season****Petaluma River – Reach 0C, 0B, 1, 2***

DATE OF SURVEY: 4/12/15
JURISDICTION: Modified Channel Easement
LOCATION: In Petaluma, reaches run parallel to HWY 101, on the West side of HWY 101, between Rainsville Rd. and Corona Rd.
DOWNSTREAM: Petaluma 0A

LOCATION MAP

ADJACENT LAND USE: Industrial buildings, agricultural fields and vacant lots.

<i>Reach</i>	<i>Length</i>	<i>Channel Easement Corridor Width</i>	<i>Average Top of Bank Width</i>
Petaluma 0C	2,296 ft.	30 ft.	60 ft.
Petaluma 0B	4,266 ft.	40 ft.	90 ft.
Petaluma 1	918 ft.	30 ft.	75 ft.
Petaluma 2	1,019 ft.	23 ft.	135 ft.

Petaluma River – Reach 0C, 0B, 1, 2

PHYSICAL CONDITIONS

Reach setting: Petaluma River is located in the city of Petaluma, parallel to Petaluma Blvd., and is largely surrounded by industrial buildings and open lots. The riparian corridor through this reach supports large mature trees, such as red willow (*Salix laevigata*), pacific willow (*Salix lucida lasiandra*), Fremont Poplar (*Populus fremontii*), N. California black walnut (*Juglans californica*), valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*) and arroyo willow (*Salix lasiolepis*). These reaches supported scattered large stagnant pools covered with duck weed (*Lemna* spp.) and planktonic filamentous algae.

Active channel: The water depth ranged from 2-6 ft. with the larger deeper pools located in areas where accumulations of debris (or other hard points) have exacerbated incision and erosion of the side banks.

Bed sediments/texture: Substrate through the reach consists largely of cobble and small boulders along the bed of the channel with sand and gravel accumulating on alternating sediment bars.

Bank structure: The channel is earthen, with steep side banks due to incision and levee construction.

Water quality: At the time of the survey the reaches supported large stagnant pools covered with duck weed and planktonic filamentous algae. The water surface is well shaded.

Channel processes: The Petaluma River is tidally influenced below the Petaluma Boulevard crossing. Salty water from the Petaluma River estuary pushes upstream with the ebb and flow of the tide affecting temperatures and water chemistry. Hard points and accumulated sediment and debris have caused the banks to incise and erode.

Debris accumulations and blockages assessed: The blockages being assessed consisted of large mature upper bank trees that have fallen across the channel and occupy a significant portion of the cross-sectional area needed for hydraulic capacity. Other blockages include vegetation growing in the middle of the channel that accumulates fallen and broken limbs and diverts water toward the side banks aggravating erosion. (See map and photos below for blockages to be removed) The blockages are sporadically spaced throughout the reaches. Locations of the blockages can be found in the attached map.

BIOLOGICAL CONDITIONS

Petaluma River – Reach 0C, 0B, 1, 2

Vegetation composition: The riparian corridor through this reach supports large mature trees, such as red willow, Pacific willow, N. California black walnut, Fremont poplar, valley oak, coast live oak and arroyo willow. The understory is dominated by extensive stands of Himalayan blackberry (*Rubus discolor*), and young Riparian trees trying to establish.

Riparian corridor and canopy closure: The majority of the riparian canopy is provided by large oaks, willows and walnut trees along the upper bank and side banks. Average percent canopy cover by reach are as follows: Petaluma 0B= 85%, Petaluma 0C = 97%, Petaluma 1 = 100%, Petaluma 2 = 86% (2013 LiDAR).

In-stream habitat: Above the tidal zone young arroyo and red willows are growing in the channel bottom, indicating they are not precluded by scouring associated with flood flows nor affected by salt levels in these areas. Despite the changing water chemistry moving downstream the influence of the brackish water becomes more evident. Generally fresh water floats as a layer on top of salt water and depths vary depending on the magnitude of the tide. In-stream and wetland conditions support healthy perennial emergent vegetation in patches associated with the edges of the pools. Wetland vegetation is dominated by mixed obligate grasses (*Agrostis sp. Paspalum sp. and Leersia sp.*), sedges (*Carex sp.*) and rushes (*Juncus sp.*).

Listed species with potential to occur: The Petaluma River is known to support Central California coast steelhead (*Oncorhynchus mykiss*) and western pond turtles (*Actinemys marmorata*). Steelhead have been identified to migrate through the Petaluma reaches, however, these reaches are identified as functioning as potential habitat for refugia and rearing as well. Also, these reaches have been identified as functioning as potential habitat for the western pond turtles for basking, feeding, breeding and rearing.

Significant habitat features: Petaluma River is perennially wet with large deep pools scattered throughout the reach. Emergent wetland vegetation is found in the reach around the large pools, which makes suitable habitat for steelhead and western pond turtles, both of which are known to occur in Petaluma River. The Petaluma River has the resources and habitat to support steelhead migration, and western pond turtle basking, breeding, rearing and feeding. Habitat features that are essential to these species include a perennial water source, pools, undercut banks, and canopy cover to regulate water temperature. The lower sections of the reach are influenced by tidal processes which changes the type of vegetation that is growing along the river.

Wildlife: Large standing pools were observed to support aquatic wildlife such as bullfrogs (*Lithobates catesbeianus*), mosquitofish (*Gambusia affinis*) and three-spine stickleback (*Gasterosteus aculeatus*). Referencing the CNDDDB, there are no occurrences in the immediate area. Exact locations and extent of all nearby occurrences can be found in the attached map.

Petaluma River – Reach 0C, 0B,1, 2

MANAGEMENT CONSIDERATIONS AND OPPORTUNITIES

Management considerations for the Petaluma River should include preserving the closed canopy to reduce in-stream density of blackberry and cattails, preserve water quality, while strategically removing downed trees and piled up debris. It is also important to retain canopy cover over the pools, velocity breaks presented by the base of riparian trees, root wads and non-dam forming large woody debris (LWD) in the reach. Wholesale removal of these would potentially affect aquatic wildlife that is dependent on these habitat features for shelter, breeding and food. Due to the habitat suitability, all avoidance measures to preserve the riparian aquatic habitat to the extent feasible. Unless strategically removing obstructions and debris, work should be focused on thinning and lifting vegetation located on the side and upper banks only.

ANTICIPATED BIOLOGICAL RESOURCES PROTECTION BEST MANAGEMENT PRACTICES TO EMPLOY

BR-1- Area of Disturbance

BR-2- Pre-Maintenance Educational Training

BR-6- On-Call Wildlife Biologist

BR-8- Nesting Migratory Bird and Raptor Pre-maintenance Surveys

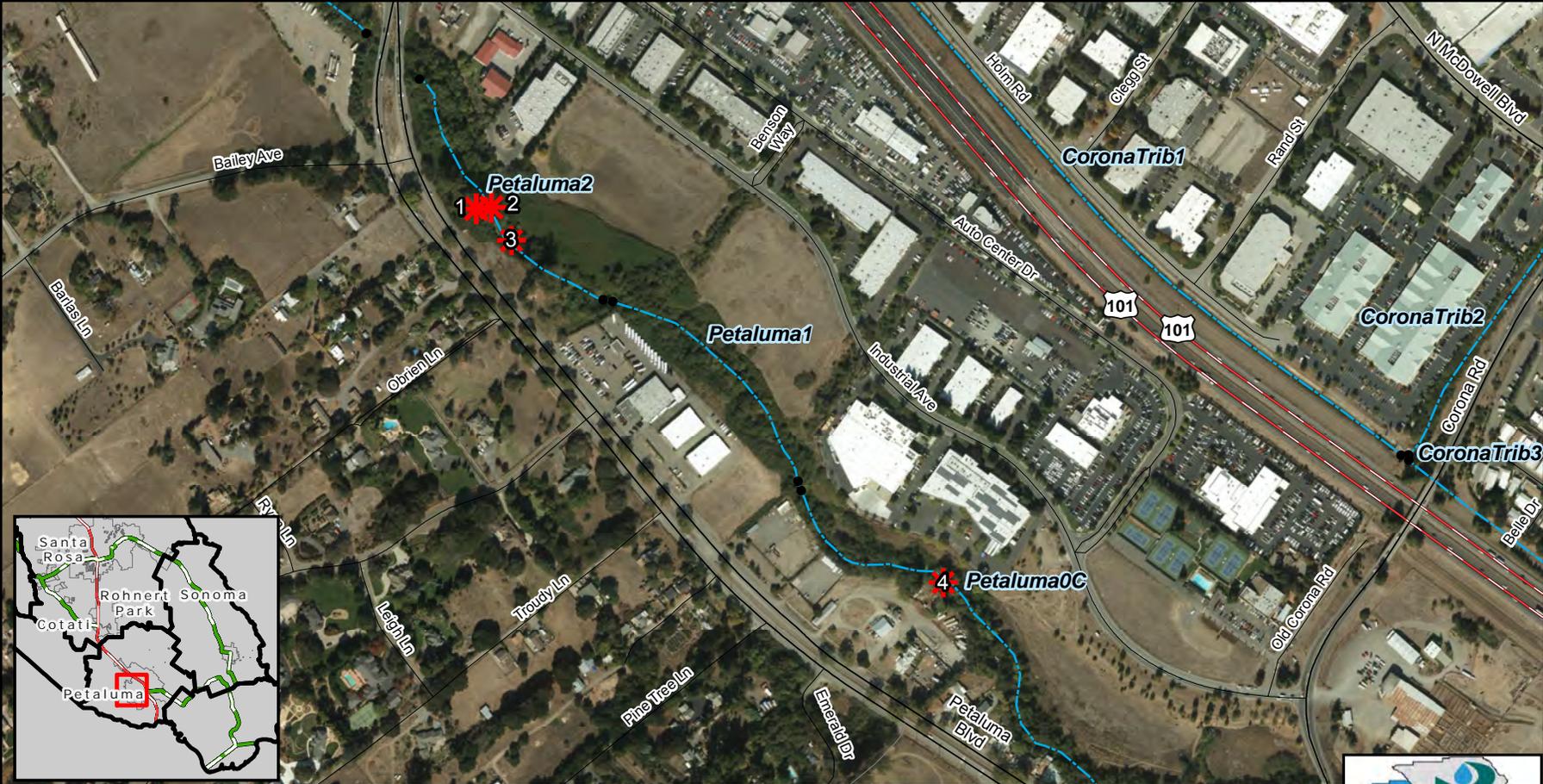
BR-11- California Red-legged Frog Avoidance and Impact Minimization Measures for Vegetation Management

BR-17- Western Pond Turtle Pre-Maintenance Surveys for Ground Disturbing Activities

BR-18- Zone 2A and 3A Salmonid Avoidance and Impact Minimization Measures

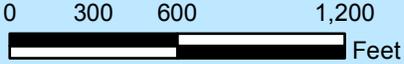
Project Specific Notification for 2015 Field Season

Petaluma River – Reach 0C, 0B,1, 2

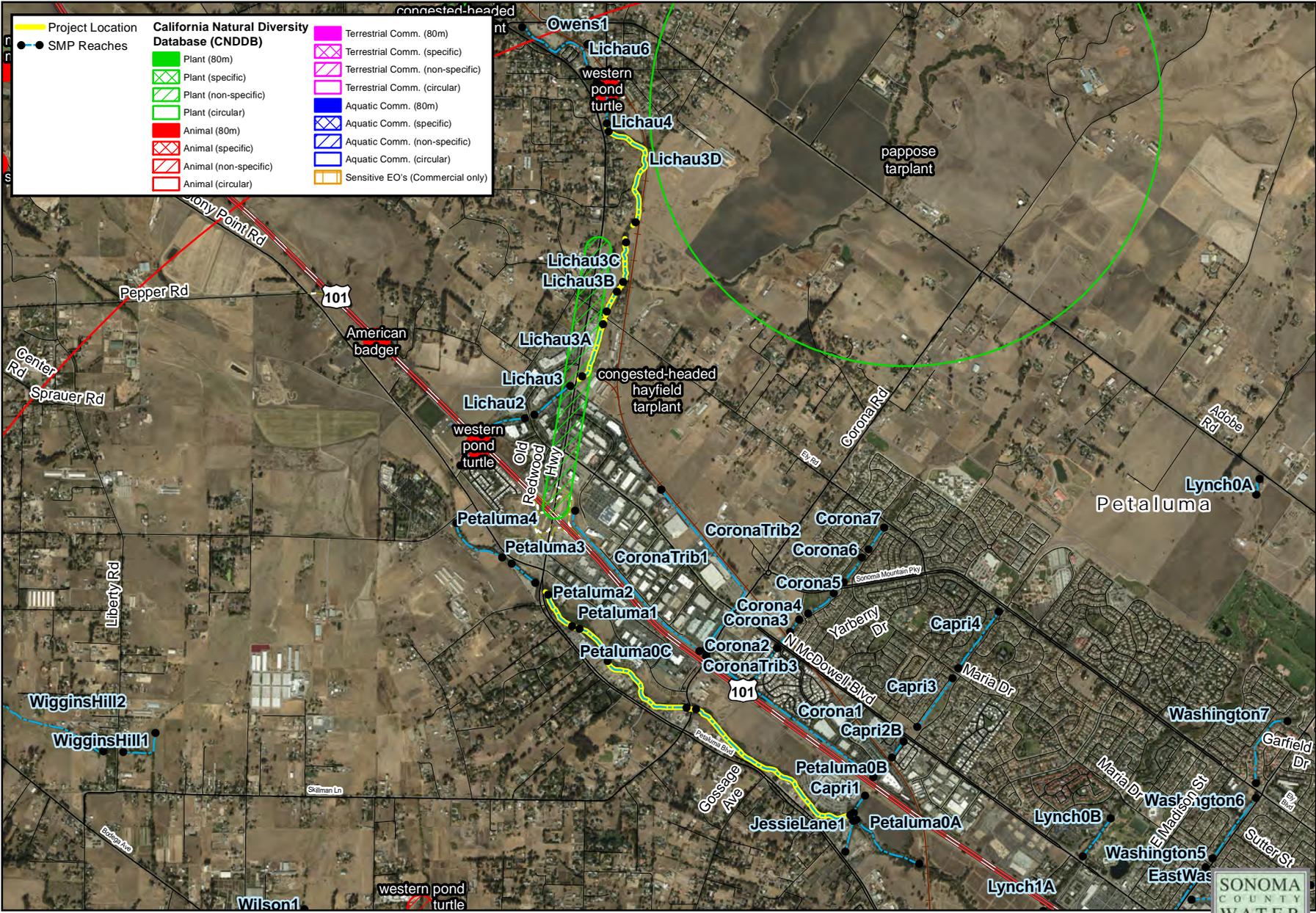


**Stream Maintenance Program
Project Specific Notification 2015
Petaluma 0C & 2**

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Stream Maintenance Program
Petaluma CNDDB
2015



Project Specific Notification for 2015 Field Season

Nathanson Creek-Reach 0

DATE OF SURVEY: 4/12/2015
JURISDICTION: Modified Channel Easement
Location: South of the City of Sonoma, between Splude Rd and 8th St.
LOCATION MAP



Reach	Length	Channel Easement Corridor Width	Average Top of Bank Width
Nathanson 0	2,971 ft.	40 ft.	37 ft.

ADJACENT LAND USE: Rural residential housing, and agricultural fields

PHYSICAL CONDITIONS

Reach setting: Nathanson Creek reach 0 is located south of the city of Sonoma in an area that is largely surrounded by rural housing and agricultural fields. The channel is earthen, with poorly defined side banks. At the time of the survey Nathanson Creek supported scattered pools. Reach 0 is on alluvium typical of the Sonoma valley floor. The riparian corridor through this reach supports a mix of large mature and young trees, such as red willow (*Salix laevigata*), Oregon ash (*Fraxinus latifolia*), white alder (*Alnus rhombifolia*) and arroyo willow (*Salix lasiolepis*), valley oak (*Quercus lobata*).

*Project Specific Notification for 2015 Field Season****Nathanson Creek-Reach 0***

Active channel: The active channel was largely devoid of vegetation and varies in width from 5 to 15 feet.

Bed sediments/texture: The substrate consists mostly of cobble and small boulders along the bed of the channel.

Bank structure: The channel is earthen, with steep side banks. Side banks are dominated by Himalayan blackberry (*Rubus discolor*) and California blackberry (*Rubus ursinus*).

Water quality: At the time of the survey the reaches supported large shallow stagnant pools covered with duck weed (*Lemna* sp.) and planktonic filamentous algae. The water surface is largely shaded by the existing riparian canopy.

Channel processes: Nathanson 0 is a depositional section of the creek with sediment depositing in-channel and around the bridgeheads. Upstream of the bridge heads sediment has been accumulating and forming alternating sediment bars in channel.

Debris Accumulations and Blockages Assessed: Blockages and accumulations of large woody debris (LWD) was observed in the channel, with the main areas of accumulations being found along the side banks in the Himalayan blackberry. Locations and images of the obstructions can be found in the attached map.

BIOLOGICAL CONDITIONS

Vegetation composition: Nathanson 0 supports a relatively dense riparian corridor including a mix of large mature and young red willow, white alder and arroyo willow. Side banks are dominated by Himalayan and California blackberry. Upper bank trees associated with the riparian corridor include; valley oak, coast live oak (*Quercus agrifolia*), Oregon white oak (*Quercus garryana*), arroyo willow and red willows.

Riparian corridor and canopy closure: The majority of the riparian canopy is provided by willows, ash and alders along the upper and side banks. The Canopy cover is at 98% (2013 LiDAR)

In-stream habitat: Young arroyo and red willows are growing in the channel bottom, which may be precluded by scouring associated with flood flows, there are no medium aged or sized trees growing in the channel bottom. In-stream and wetland conditions support perennial emergent vegetation in patches associated with the edges of the pools dominated by mixed wetland obligate grasses, sedges, Ludwigia, water plantain and rushes.

*Project Specific Notification for 2015 Field Season****Nathanson Creek-Reach 0***

Special-status species with potential to occur: Central California Coast Steelhead (*Oncorhynchus mykiss*), Western Pond Turtle (*Actinemys marmorata*), Foothill yellow-legged frog (*Rana boylei*).

Significant Habitat Features: Significant in-stream habitat features that were observed during the time of the survey include LWD, undercut banks, scattered patches of riprap along the toe of the channel and large deep pools of standing water. The healthy riparian canopy provides significant shading and other habitat benefits. Besides the canopy, trees rooted low in the channel provide velocity breaks during high flow and fish migration and low hanging branches improve cover.

Wildlife: Large standing pools were observed to support aquatic wildlife such as bullfrogs (*Lithobates catesbeianus*), mosquitofish (*Gambusia affinis*) and three-spine stickleback (*Gasterosteus aculeatus*). Referencing the California Natural Diversity Database, there are multiple species of protected plant species in the surrounding area, ~~exact~~ locations and extent of all nearby occurrences can be found in the attached map.

MANAGEMENT CONSIDERATIONS AND OPPORTUNITIES

The dominant management considerations for Nathanson Creek should include preserving existing canopy to further reduce in-stream vegetation density and the removal of downed trees and accumulated debris. Fallen trees that span the channel should be removed depending on the level of hazard. Selective thinning of California blackberry (*Rubus ursinus*) and existing vegetation should be implemented to reduce competition and maximize shading by desirable species. Considering flood risk, it would be beneficial to thin and lift dead and dying vegetation along the creek to reduce potential for flooding.

ANTICIPATED BIOLOGICAL RESOURCES PROTECTION BEST MANAGEMENT PRACTICES TO EMPLOY

BR-1- Area of Disturbance

BR-2- Pre-Maintenance Educational Training

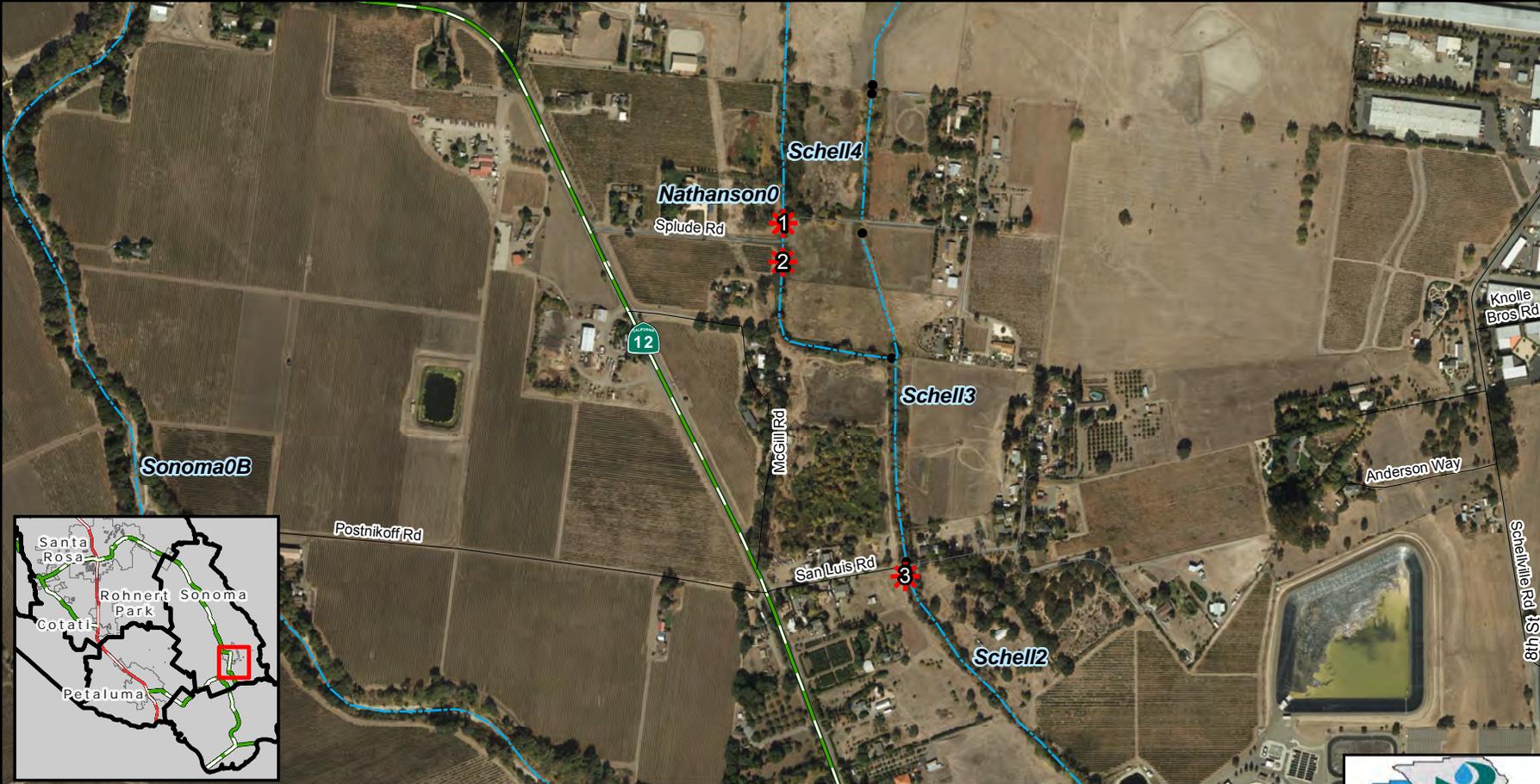
BR-6- On-Call Wildlife Biologist

BR-8- Nesting Migratory Bird and Raptor Pre-maintenance Surveys

BR-11- California Red-legged Frog Avoidance and Impact Minimization Measures for Vegetation Management

BR-16- Foothill yellow-legged frog avoidance and impact Minimization Measures for Vegetation

BR-18- Zone 2A and 3A Salmonid Avoidance and Impact Minimization Measures

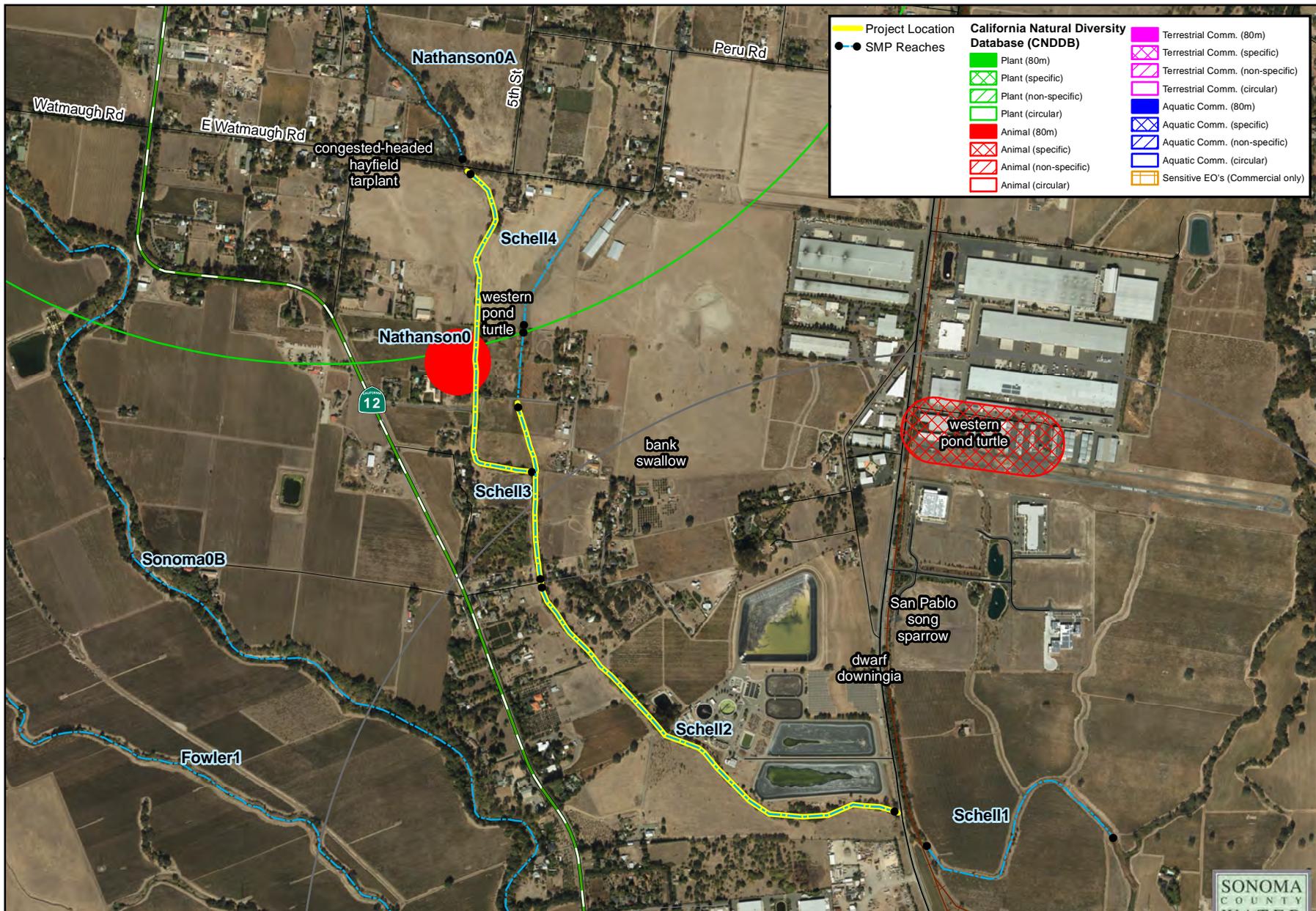


Stream Maintenance Program
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Nathanson0 & Schell 2

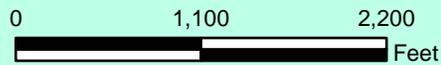
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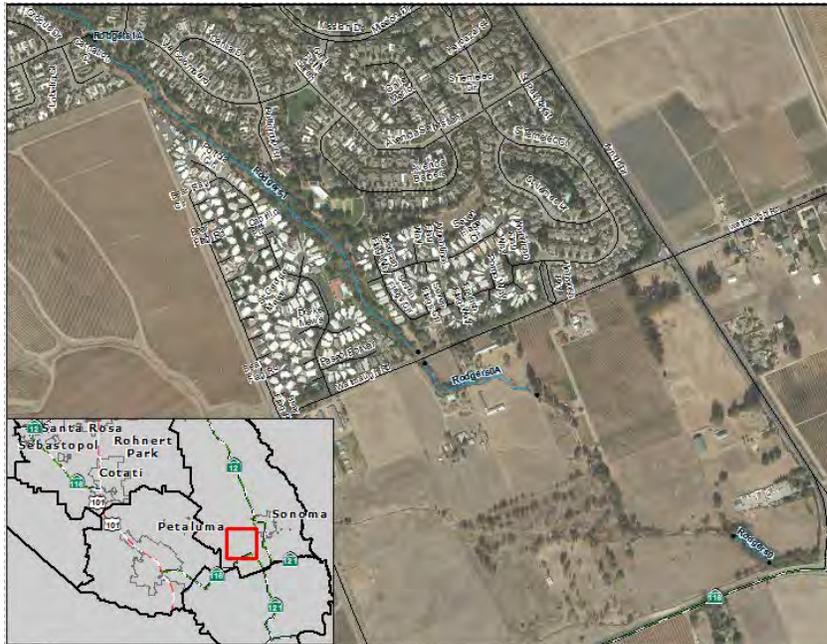


Stream Maintenance Program
Sonoma CNDDDB
2015



*Project Specific Notification for 2015 Field Season***Rodgers Creek - Reaches 0A, 1**

DATE OF SURVEY: 4/12/15
JURISDICTION: Modified Channel Easement
LOCATION: Southeast of the City of Sonoma; runs somewhat along Arnold Dr. between Watmaugh Rd. and Temelec Circle.

Location Map

ADJACENT LAND USE: Residential housing, Temelec is an unincorporated area just outside the town of Sonoma, California. Temelec consists of three major communities of single family homes, each with their own Home Owners Association (Temelec, Creekside and Chanterelle).

Reach	Length	Channel Easement Corridor Width	Average Top of Bank Width
Rodgers 0A	892 ft.	50 ft.	40 ft.
Rodgers 1	3,010 ft.	20 ft.	50 ft.

PHYSICAL CONDITIONS

Reach setting: Rodgers Creek is located in the city of Sonoma in the residential area of Temelec and is largely surrounded by residential housing. The channel is earthen, with little to no side banks. At the time of the survey Rodgers Creek was lacking any surface water. The riparian corridor through this reach supports a mix of large mature and young trees, such as red willow

Rodgers Creek - Reaches 0A, 1

(*Salix laevigata*), Oregon ash (*Fraxinus latifolia*), white alder (*Alnus rhombifolia*) and arroyo willow (*Salix lasiolepis*).

Active channel: The active channel was largely devoid of vegetation and varies in width from 5 to 15 feet.

Bed sediments/texture: The substrate consists mostly of sand, cobble and small boulders along the bed of the channel.

Bank structure: The channel is earthen, with shallow side banks. Side banks are dominated by Himalayan blackberry (*Rubus discolor*) and California blackberry (*Rubus ursinus*).

Water quality: At the time of the survey Rodgers Creek supported clear flowing water. The water surface was partially shaded by the existing riparian canopy. The range of the wetted width fluctuates from 2-5 ft.

Channel processes: The portion of Rodgers Creek where the Water Agency holds a permissive easement is located on an alluvial fan approximately half-way across the valley floor to convergence with Sonoma Creek. It is a depositional area, however the size of the substrate indicates that considerable flow is possible through these reaches. These reaches of Rodgers Creek appear to be depositing larger gravel and cobble, with finer materials setting out lower on the valley floor.

Debris Accumulations and Blockages Assessed: Blockages or debris accumulations were observed during the time of the survey. Locations and images of the obstructions can be found in the attached map.

BIOLOGICAL CONDITIONS

Vegetation composition: Rodgers Creek reaches 0A, 1 support a relatively dense riparian corridor including a mix of large mature and young red willows, Oregon ash, white alders and arroyo willows. Side banks are dominated by Himalayan and California blackberry. Upper bank trees associated with the riparian corridor include; valley Oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), Oregon white oak (*Quercus garryana*), and Douglas fir (*Pseudotsuga menziesii*).

Riparian corridor and canopy closure: The majority of the riparian canopy is provided by willows, ash and alders along the upper and side banks. An average percent canopy cover by reach are as follows: Rodgers 0A = 49%, Rodgers 1 = 82% (2013 LiDAR).

*Project Specific Notification for 2015 Field Season***Rodgers Creek - Reaches 0A, 1**

In-stream habitat: Blackberries, both non-native and native, dominate in-channel. The channel bottom is largely bare, with scattered patches of facultative wetland species: nutsedge (*Cyperus* sp.), hemlock (*Conium maculatum*), Italian rye grass (*Lolium multiflorum*) subtending the blackberry in the less rocky areas.

Special-status species with potential to occur: Central California Coast Steelhead (*Oncorhynchus mykiss*), California Freshwater Shrimp (*Syncaris pacifica*), California Red legged Frog (*Rana aurora*), Foothill Yellow-Legged Frog (*Rana boylei*), Western Pond Turtle (*Actinemys marmorata*).

Significant Habitat Features: No significant in-stream habitat features were observed during the time of the survey. The healthy riparian canopy provides significant shading and other habitat benefits. Besides the canopy, trees rooted low in the channel provide velocity breaks during high flow and fish migration and low hanging branches improve cover.

Wildlife: Due to the lack of water present throughout the reach there was no aquatic life observed during the time of the survey. Referencing the CNDDDB, Pallid Bat (*Antrozous Pallidus*) and Bank Swallow (*Riparia Riparia*) have occurrences in the area. Exact locations and extent of the occurrences can be found in the attached map.

MANAGEMENT CONSIDERATIONS AND OPPORTUNITIES

The dominant management considerations for Rodgers Creek should preserving existing canopy to further reduce in-stream vegetation density and the removal of downed trees and accumulated debris. Fallen trees that span the channel should be removed depending on the level of hazard. Selective thinning of California blackberry (*Rubus ursinus*) and existing vegetation should be implemented to reduce competition and maximize shading by desirable species. Considering flood risk, it would be beneficial to thin and lift dead and dying vegetation along the creek to reduce potential for flooding.

ANTICIPATED BIOLOGICAL RESOURCES PROTECTION BEST MANAGEMENT PRACTICES TO EMPLOY

BR-1- Area of Disturbance

BR-2- Pre-Maintenance Educational Training

BR-6- On-Call Wildlife Biologist

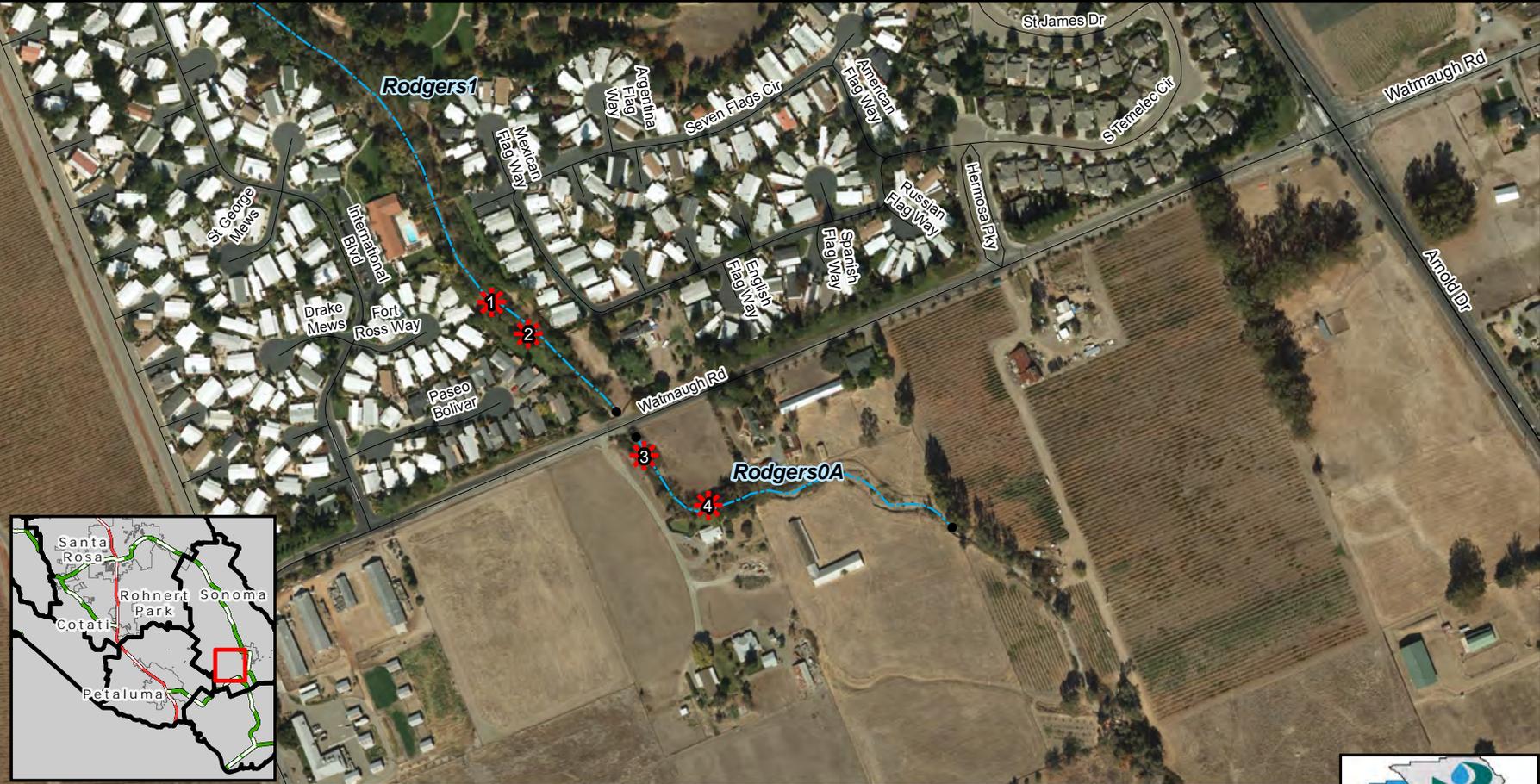
BR-8- Nesting Migratory Bird and Raptor Pre-maintenance Surveys

BR-11- California Red-legged Frog Avoidance and Impact Minimization Measures for Vegetation Management

BR-14- California Tiger Salamander Avoidance and Impact Minimization Measures for Vegetation Management

BR-16- Foothill yellow-legged frog avoidance and impact minimization measures for vegetation management

BR-18- Zone 2A and 3A Salmonid Avoidance and Impact Minimization Measures



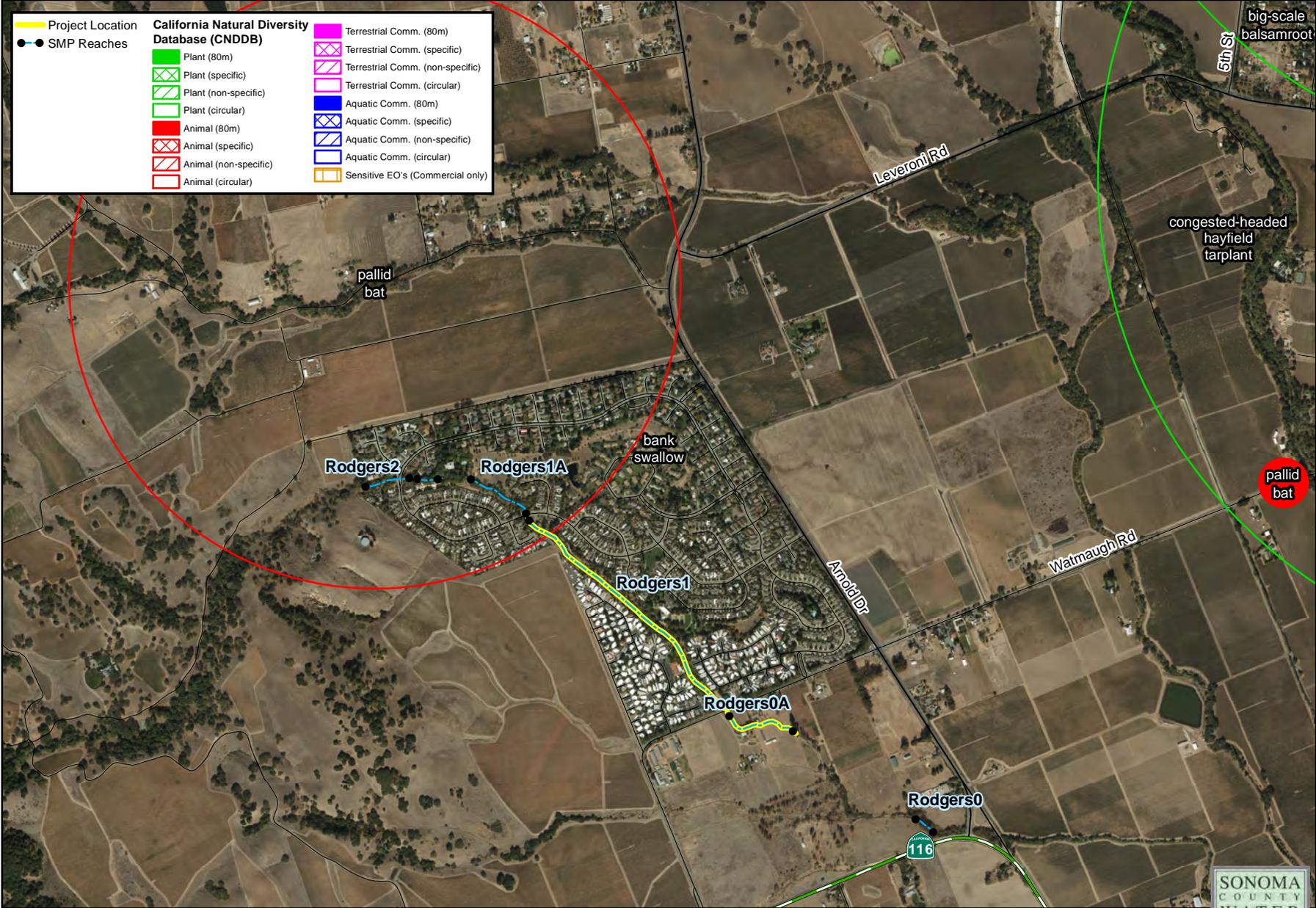
**Stream Maintenance Program
Project Specific Notification 2015
Rodgers 0A & 1**

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Project Location	California Natural Diversity Database (CNDDDB)	Terrestrial Comm. (80m)
SMP Reaches	Plant (80m)	Terrestrial Comm. (specific)
	Plant (specific)	Terrestrial Comm. (non-specific)
	Plant (non-specific)	Terrestrial Comm. (circular)
	Plant (circular)	Aquatic Comm. (80m)
Animal (80m)	Aquatic Comm. (specific)	Aquatic Comm. (non-specific)
Animal (specific)	Aquatic Comm. (circular)	Sensitive EO's (Commercial only)
Animal (non-specific)		
Animal (circular)		



Stream Maintenance Program
Sonoma CNDDB
2015



Project Specific Notification for 2015 Field Season

Schell Creek-Reach 2,3

DATE OF SURVEY: 4/12/2015
JURISDICTION: Modified Channel Easement
LOCATION: Southern Sonoma, Reach extends between Splude Rd and 8th St
LOCATION MAP



Reach	Length	Channel Easement Corridor Width	Average Top of Bank Width
Schell 2	3,748 ft.	40 ft.	25 ft.
Schell 3	1,481 ft.	40 ft.	25 ft.

ADJACENT LAND USE: Rural residential housing, and agricultural fields

PHYSICAL CONDITIONS

Reach setting: Schell Creek is located south of the city of Sonoma in an area that is largely surrounded by rural housing and agricultural fields. The channel is earthen, with Himalayan Blackberry dominating the side banks. At the time of the survey Schell Creek supported sections of still and running water. Schell Creek is on alluvium typical of the Sonoma valley floor. The riparian corridor through this reach supports a mix of large mature and young trees, such as red willow (*Salix laevigata*), N. California Black Walnut (*Juglans hindsii*), Oregon ash (*Fraxinus latifolia*), arroyo willow (*Salix lasiolepis*), and valley oak (*Quercus lobata*).

*Project Specific Notification for 2015 Field Season***Schell Creek-Reach 2,3**

Active channel: The active channel was dominated by Himalayan blackberry (*Rubus discolor*) and Cattails (*Typha latifolia*) and varies in width from 5 to 15 feet.

Bed sediments/texture: The substrate consists mostly of sand and gravel along the bed of the channel.

Bank structure: The channel is earthen, with steep side banks. Side banks are dominated by Himalayan blackberry and California blackberry (*Rubus ursinus*).

Water quality: At the time of the survey the reaches supported flowing clear water with filamentous algae growing in areas where the water is stagnant. The water surface is largely shaded by the existing riparian canopy.

Channel processes: Schell Creek is a depositional area with sediment depositing around the bridgeheads. Upstream of the bridge heads sediment has been accumulating forming alternating sediment bars in channel.

Debris Accumulations and Blockages Assessed: No blockages spanning the whole width of the channel were identified although Himalayan blackberry dominating the side banks are reducing the flood control capacity of the channel. Locations and images of the obstructions can be found in the attached map.

BIOLOGICAL CONDITIONS

Vegetation composition: Schell Creek supports a relatively dense riparian corridor including a mix of large mature and young red willow, N. California Black Walnut (*Juglans hindsii*) and arroyo willow. Side banks are dominated by Himalayan and California blackberry. Upper bank trees associated with the riparian corridor include; valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), Oregon white oak (*Quercus garryana*), arroyo willow (*Salix lasiolepis*) and red willows (*Salix laevigata*).

Riparian corridor and canopy closure: The majority of the riparian canopy is provided by willows, ash, walnut, and alders along the upper and side banks. The Canopy cover; Schell 2: 67%, Schell 3:49% (2013 LiDAR)

In-stream habitat: In-stream and wetland conditions support perennial emergent vegetation in patches associated with the edges of the pools dominated by mixed wetland obligate grasses, sedges, Ludwigia, water plantain and rushes.

Special-status species with potential to occur: Western pond turtle (*Actinemys marmorata*).

Schell Creek-Reach 2,3

Significant Habitat Features: Significant in-stream habitat features that were observed during the time of the survey include undercut banks, pools, overhanging vegetation, and armoring roots at the water line. The healthy riparian canopy provides significant shading and other habitat benefits. Besides the canopy, trees rooted low in the channel provide velocity breaks during high flow and fish migration and low hanging branches improve cover.

Wildlife: Large standing pools were observed to support aquatic wildlife such as bullfrogs (*Lithobates catesbeianus*), mosquitofish (*Gambusia affinis*) and three-spine stickleback (*Gasterosteus aculeatus*). Referencing the California Natural Diversity Database (CNDDDB), there are Western pond turtle occurrences in the surrounding area, exact locations and extent of all nearby occurrences can be found in the attached map.

MANAGEMENT CONSIDERATIONS AND OPPORTUNITIES

The dominant management considerations for Schell Creek should include preserving existing canopy to further reduce in-stream vegetation density and the removal of downed trees and accumulated debris. Fallen trees that span the channel should be removed depending on the level of hazard. Selective thinning of California blackberry and existing vegetation should be implemented to reduce competition and maximize shading by desirable species. Considering flood risk, it would be beneficial to thin and lift dead and dying vegetation along the creek to reduce potential for flooding.

ANTICIPATED BIOLOGICAL RESOURCES PROTECTION BEST MANAGEMENT PRACTICES TO EMPLOY

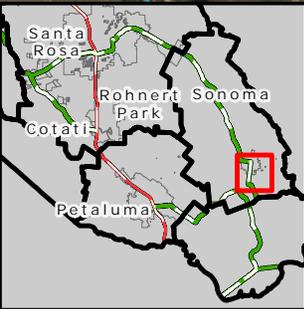
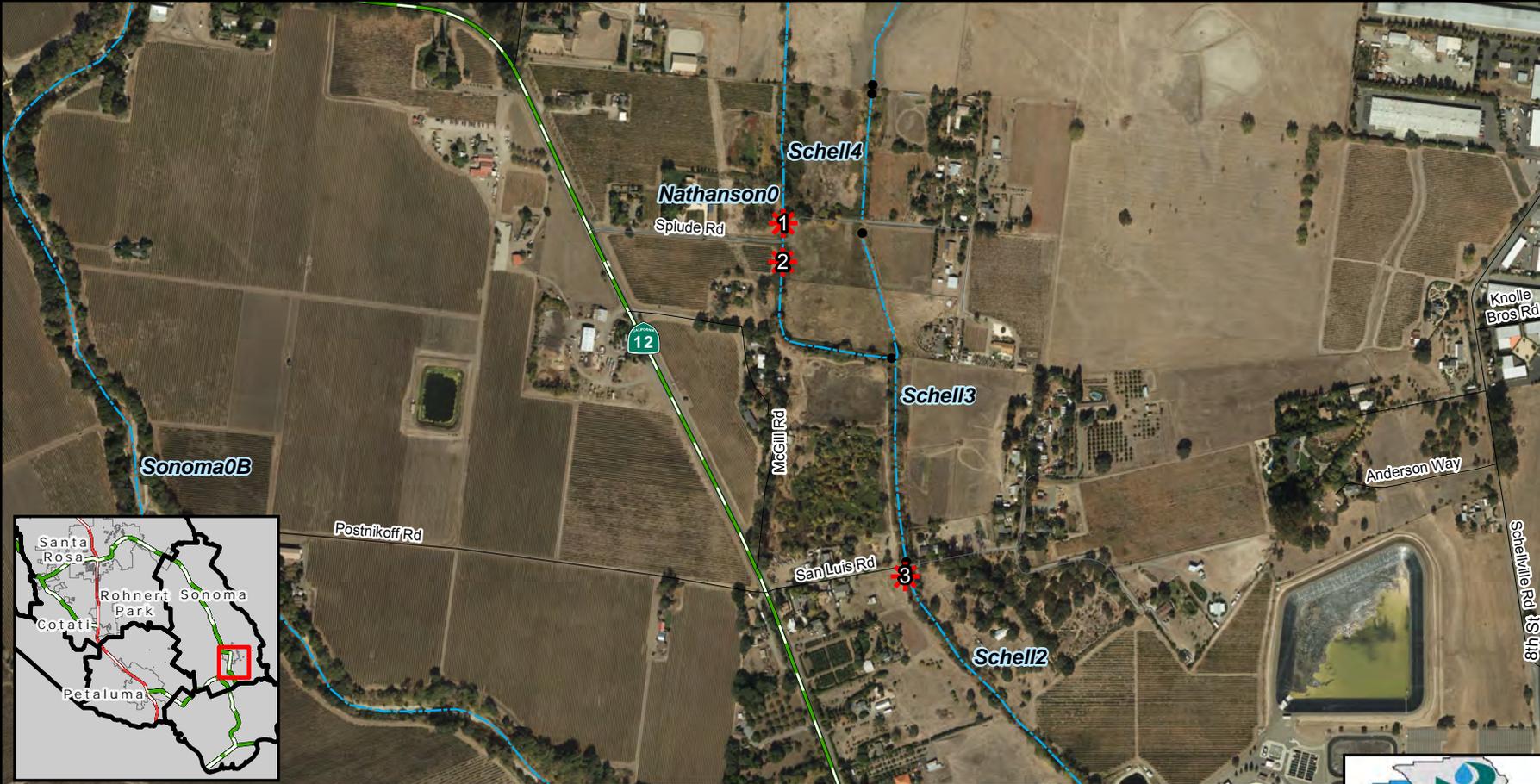
BR-1- Area of Disturbance

BR-2- Pre-Maintenance Educational Training

BR-6- On-Call Wildlife Biologist

BR-8- Nesting Migratory Bird and Raptor Pre-maintenance Surveys

BR-17- Western Pond Turtle Pre-Maintenance Surveys for Ground Disturbing Activities

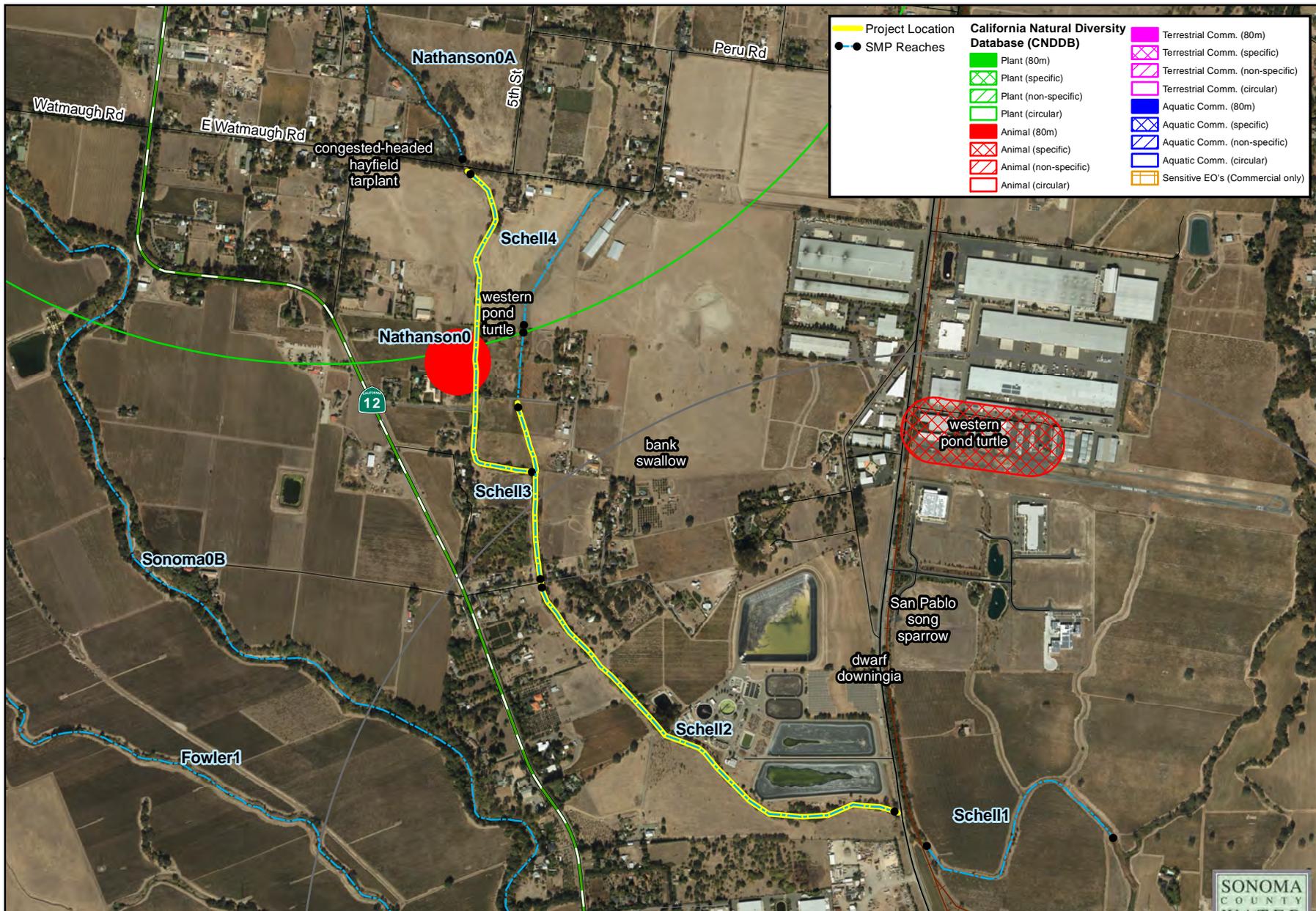


**Stream Maintenance Program
Project Specific Notification 2015
Nathanson0 & Schell 2**

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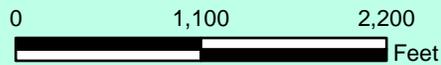


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Project Location	California Natural Diversity Database (CNDDB)	Terrestrial Comm. (80m)
SMP Reaches	Plant (80m)	Terrestrial Comm. (specific)
	Plant (specific)	Terrestrial Comm. (non-specific)
	Plant (non-specific)	Terrestrial Comm. (circular)
	Plant (circular)	Aquatic Comm. (80m)
Animal (80m)	Animal (specific)	Aquatic Comm. (specific)
Animal (non-specific)	Animal (circular)	Aquatic Comm. (non-specific)
		Aquatic Comm. (circular)
		Sensitive EO's (Commercial only)

Stream Maintenance Program
Sonoma CNDDB
2015



*Project Specific Notification for 2015 Field Season***Wood Creek- Reach 1**

DATE OF SURVEY: 4/8/2015
JURISDICTION: Modified Channel Easement
LOCATION: Geyserville, Reach extends ~525 ft. downstream and ~2,120 ft. upstream of the most northern extent of River Ln

Location Map

ADJACENT LAND USE: Vineyard/ Agricultural

<i>Reach</i>	<i>Length</i>	<i>Channel Easement Corridor Width</i>	<i>Average Top of Bank Width</i>
Wood 1	2,719 ft.	25 ft.	20 ft.

PHYSICAL CONDITIONS

Reach setting: Wood Creek is located in the city of Geyserville in Northern Sonoma County. The channel bed is earthen, with shallow side banks. At the time of the survey Wood Creek was lacking any surface water. The riparian corridor through this reach supports a mix of large mature and young trees, such as coast live oak (*Quercus agrifolia*), sandbar willow (*Salix exigua*), and arroyo willow (*Salix lasiolepis*).

Active channel: The active channel had young sprouting vegetation in channel and varies in width from 5 to 15 feet.

Bed sediments/texture: The substrate consists mostly of sand, gravel and cobble along the bed of the channel.

Wood Creek- Reach 1

Bank structure: The channel is earthen, with shallow side banks. Side banks are dominated by Himalayan blackberry (*Rubus discolor*), California blackberry (*Rubus ursinus*), sandbar willow and arroyo willow.

Water quality: At the time of the survey Wood creek was lacking any surface water.

Channel processes: This section of Wood Creek is largely a depositional area, with majority of sediment being deposited in the section of the creek that is bisected by the railroad tracks.

Debris Accumulations and Blockages Assessed: Blockages or debris accumulations were observed during the time of the survey. Locations and images of the obstructions can be found in the attached map.

BIOLOGICAL CONDITIONS

Vegetation composition: Wood Creek reach 1 supports a sparse riparian corridor including a mix of large mature and young sandbar willows, Coast live oak, and arroyo willows. Side banks are dominated by Himalayan and California blackberry and mixed annual grasses. Upper bank trees associated with the riparian corridor include; coast live oak, arroyo willow, sandbar willow.

Riparian corridor and canopy closure: The majority of the riparian canopy is provided by oaks and willows along the upper and side banks. An average percent canopy cover is 1-25% (2013 LiDAR).

In-stream habitat: The channel bottom is largely bare, with scattered patches of young sandbar willows and Mugwort (*Artemisia douglasiana*) a facultative wetland species.

Special-status species with potential to occur: Foothill Yellow-Legged Frog (*Rana boylei*), Western Pond Turtle (*Actinemys marmorata*).

Significant Habitat Features: No significant in-stream habitat features were observed during the time of the survey. The healthy riparian canopy provides significant shading and other habitat benefits.

Wildlife: Due to the lack of water present throughout the reach there was no aquatic life observed during the time of the survey. Referencing the CNDDDB, Western Pond Turtle and Foothill Yellow Legged Frog have occurrences in the area. Exact locations and extent of the occurrences can be found in the attached map.

Wood Creek- Reach 1

MANAGEMENT CONSIDERATIONS AND OPPORTUNITIES

The dominant management considerations for Wood Creek should preserving existing canopy to further reduce in-stream vegetation density and the removal of downed trees and accumulated debris. Accumulated sediment forming at railroad tracks should be monitored and removed as needed. Fallen trees that span the channel should be removed depending on the level of hazard. Selective thinning of Himalayan blackberry and existing vegetation should be implemented to reduce competition and maximize shading by desirable species. Considering flood risk, it would be beneficial to thin and lift dead and dying vegetation along the creek to reduce potential for flooding.

ANTICIPATED BIOLOGICAL RESOURCES PROTECTION BEST MANAGEMENT PRACTICES TO EMPLOY

BR-1- Area of Disturbance

BR-2- Pre-Maintenance Educational Training

BR-6- On-Call Wildlife Biologist

BR-8- Nesting Migratory Bird and Raptor Pre-maintenance Surveys

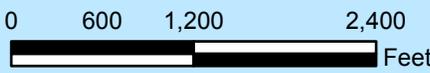
BR-17- Western Pond Turtle Pre-Maintenance Surveys for Ground Disturbing Activities

BR-16- Foothill yellow-legged frog avoidance and impact minimization measures for vegetation management



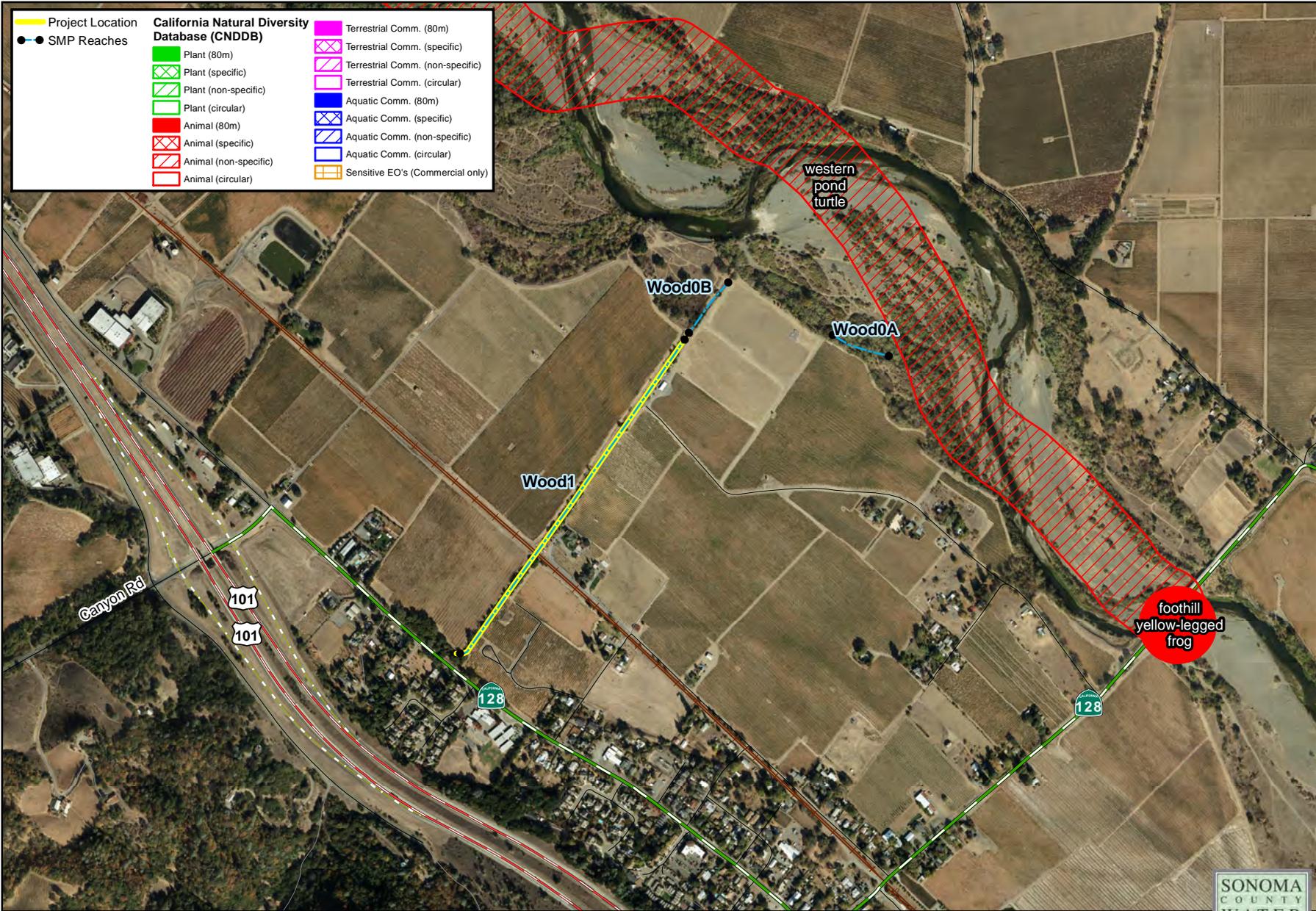
Stream Maintenance Program
Project Specific Notification 2015
Wood 1

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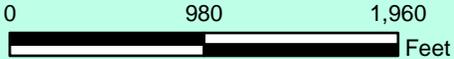


S:\E:\pad\NRS\Channel\Maint\Stream Maintenance Program\Updated GIS maps\CNDDDB maps\Wood_PSN_2015_CNDDDB.mxd

Project Location	California Natural Diversity Database (CNDDDB)	Terrestrial Comm. (80m)
SMP Reaches	Plant (80m)	Terrestrial Comm. (specific)
	Plant (specific)	Terrestrial Comm. (non-specific)
	Plant (non-specific)	Terrestrial Comm. (circular)
	Plant (circular)	Aquatic Comm. (80m)
	Animal (80m)	Aquatic Comm. (specific)
	Animal (specific)	Aquatic Comm. (non-specific)
	Animal (non-specific)	Aquatic Comm. (circular)
	Animal (circular)	Sensitive EO's (Commercial only)



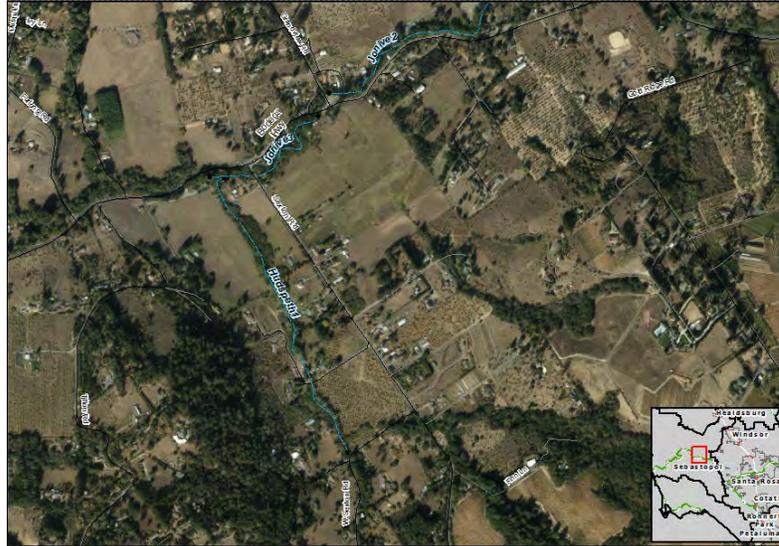
Stream Maintenance Program
Geyserville CNDDB
2015



Project Specific Notification for 2015 Field Season

Hudspeth Creek-Reach 1

DATE OF SURVEY: 4/8/2015
JURISDICTION: Modified Channel Easement
LOCATION: Sebastopol, Extends from Bodega Hwy to W Sexton Rd.
Location Map



ADJACENT LAND USE: Rural residential housing and agricultural fields are located along the creek

Reach	Length	Channel Easement Corridor Width	Average Top of Bank Width
Hudspeth 1	4,345 ft.	40 ft.	20 ft.

PHYSICAL CONDITIONS

Reach setting: Hudspeth Creek is located in the city of Sebastopol off of Bodega Hwy and is largely surrounded by rural residential housing and large agricultural fields. The channel is earthen, with steep side banks due to incision. At the time of the survey there was flowing clear water found throughout the creek. The riparian corridor through this reach supports a mix of large mature and young trees such as California bay (*Umbellularia californica*), white alder (*Alnus rhombifolia*), arroyo willow (*Salix lasiolepis*), and California buckeye (*Aesculus californica*).

Active channel: The active channel had sections of young vegetation growing in channel and the range of the wetted width varied from 4-10 ft.

Project Specific Notification for 2015 Field Season

Hudspeth Creek-Reach 1

Bed sediments/texture: The substrate consists of mostly gravel, bedrock and sand along the bed of the channel.

Bank structure: The channel is earthen, with steep side banks. Side banks are dominated by Himalayan blackberry (*Rubus discolor*), California blackberry (*Rubus ursinus*) and arroyo willows.

Water quality: At the time of the survey Hudspeth Creek supported clear flowing water. The water surface was shaded by the existing riparian canopy. The range of the wetted width fluctuates from 4-10 ft.

Channel processes: Hudspeth Creek is a predominately in equilibrium although the sections where the channel narrows incision is taking place. The substrate suggest that high flows are frequent in the channel due to large cobble scattered throughout the bed of the channel.

Debris Accumulations and Blockages Assessed: Blockages or debris accumulations were observed during the time of the survey. Locations and images of the obstructions can be found in the attached map.

BIOLOGICAL CONDITIONS

Vegetation composition: Hudspeth Creek supports a relatively dense riparian corridor including a mix of large mature and young California bay, white alder, arroyo willow, and California buckeye. Side banks are dominated by Himalayan and California blackberry and English and Algerian ivy.

Riparian corridor and canopy closure: The majority of the riparian canopy is provided by willows and ash along the upper and side banks. An average percent canopy cover for Hudspeth Creek varies between 90-100%. (2013 LIDAR data)

In-stream habitat: The channel bottom is largely bare, with scattered patches of Basket sedge (*Carex babarae*), Horsetail (*Equisetum* sp.), and lady fern (*Anthyrium* sp.) found in the channel sides and bottom.

Special-status species with potential to occur: California Freshwater Shrimp (*Syncaris pacifica*), California Red legged Frog (*Rana draytonii*)

Significant Habitat Features: Hudspeth Creek supports a number of different types of habitat features; runs, riffles, overhanging vegetation, armoring roots at the water line, and scattered pools are all found throughout the creek bed. The healthy riparian canopy provides significant shading and other habitat benefits. Besides the canopy, trees rooted low in the channel

Hudspeth Creek-Reach 1

provide velocity breaks during high flow and fish migration and low hanging branches improve cover.

Wildlife: even though there was a flowing water throughout the reach there was no aquatic life observed during the time of the survey. Referencing the CNDDDB, California Fresh Water Shrimp and Western Pond turtle (*Emys marmorata*) have occurrences in the area. Exact locations and extent of the occurrences can be found in the attached map.

MANAGEMENT CONSIDERATIONS AND OPPORTUNITIES

The dominant management considerations for Hudspeth Creek should preserving existing canopy to further reduce in-stream vegetation density and the removal of downed trees and accumulated debris. Fallen trees that span the channel should be removed depending on the level of hazard. Selective thinning of California blackberry (*Rubus ursinus*) and existing vegetation should be implemented to reduce competition and maximize shading by desirable species. Considering flood risk, it would be beneficial to thin and lift dead and dying vegetation along the creek to reduce potential for flooding.

ANTICIPATED BIOLOGICAL RESOURCES PROTECTION BEST MANAGEMENT PRACTICES TO EMPLOY

BR-1- Area of Disturbance

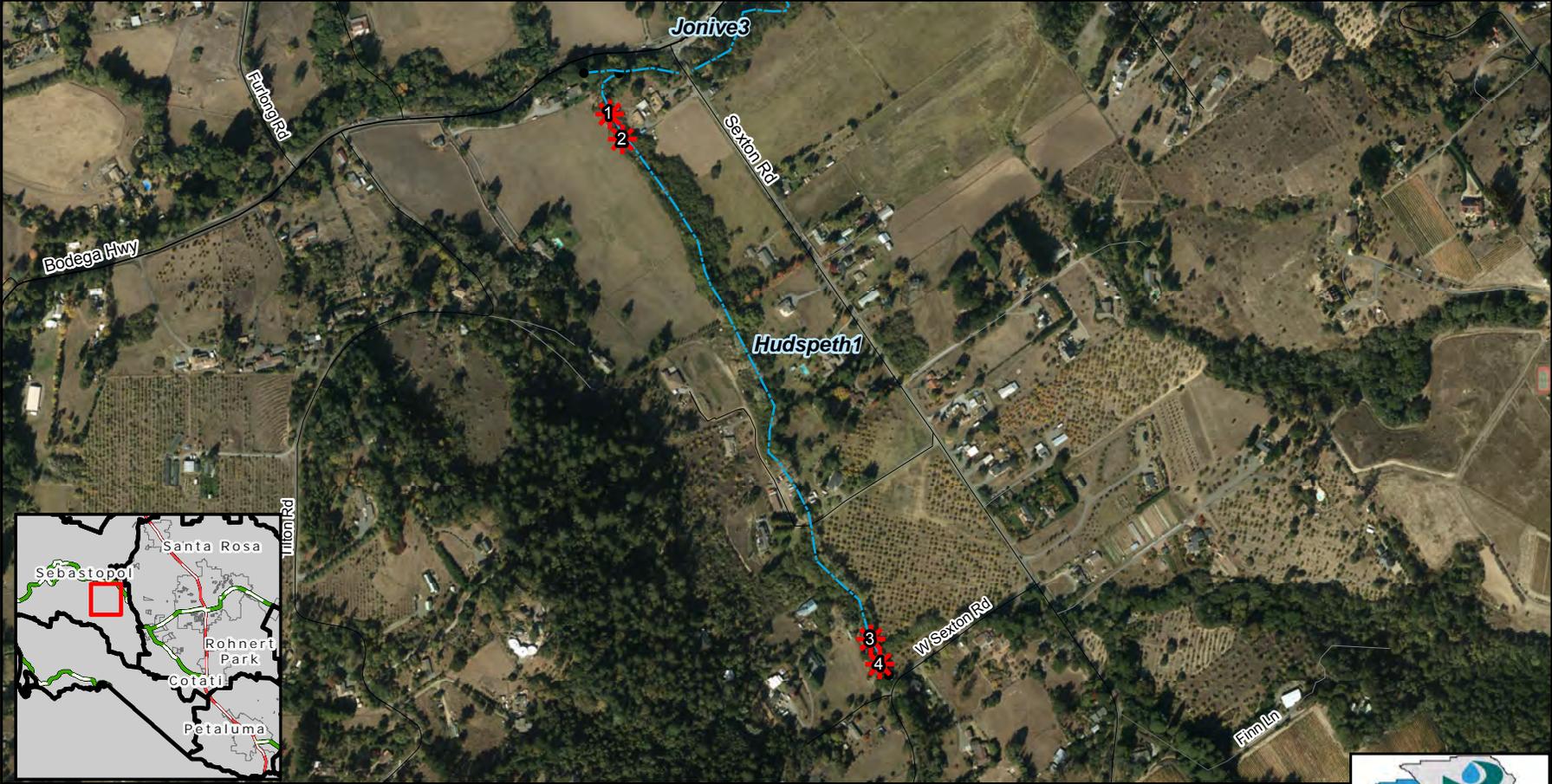
BR-2- Pre-Maintenance Educational Training

BR-6- On-Call Wildlife Biologist

BR-8- Nesting Migratory Bird and Raptor Pre-maintenance Surveys

BR-9-California Freshwater Shrimp Avoidance and Impact Minimization for Vegetation Management

BR-11-California Red-Legged Frog Avoidance and Impact Minimization for Vegetation Management



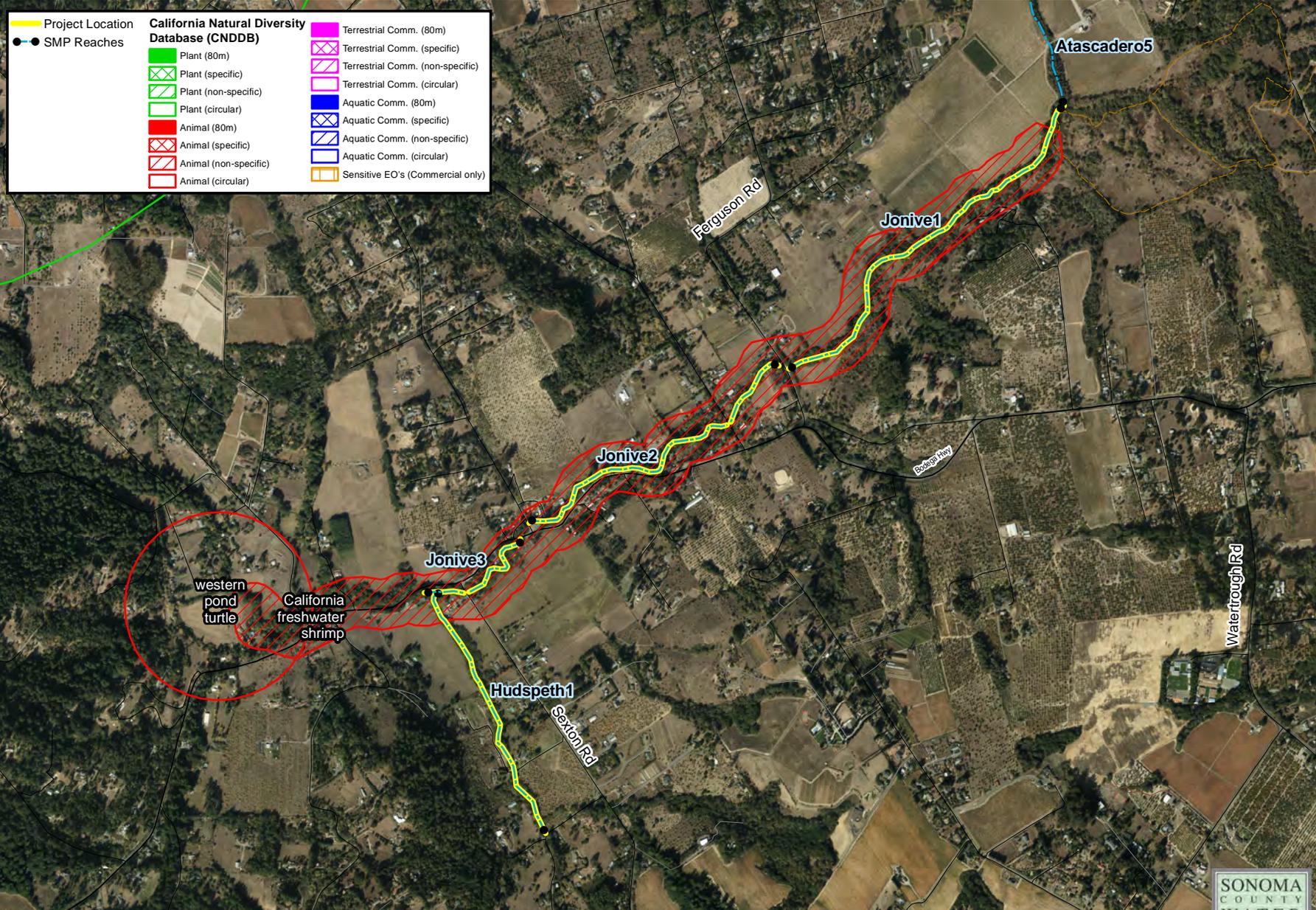
**Stream Maintenance Program
Project Specific Notification 2015
Hudspeth 1**

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S:\E:\pad\NRS\Channel\Maint\Stream Maintenance Program\Updated GIS maps\CNDDDB maps\Sebastopol_PSN_2015_CNDDDB.mxd

Project Location	California Natural Diversity Database (CNDDDB)	Terrestrial Comm. (80m)
SMP Reaches	Plant (80m)	Terrestrial Comm. (specific)
	Plant (specific)	Terrestrial Comm. (non-specific)
	Plant (non-specific)	Terrestrial Comm. (circular)
	Plant (circular)	Aquatic Comm. (specific)
	Animal (80m)	Aquatic Comm. (non-specific)
	Animal (specific)	Aquatic Comm. (circular)
	Animal (non-specific)	Sensitive EO's (Commercial only)
	Animal (circular)	



Stream Maintenance Program
Sebastopol CNDDB
2015

0 1,500 3,000
 Feet



*Project Specific Notification for 2015 Field Season****Jonive Creek-Reaches 1,2,3***

DATE OF SURVEY: 4/8/2015
JURISDICTION: Modified Channel Easement
LOCATION: Sebastopol, flows alongside Bodega Hwy between Ferguson Rd and Sexton Rd

Location Map

ADJACENT LAND USE: Rural residential housing and agricultural fields are located along the creek

Reach	Length	Channel Easement Corridor Width	Average Top of Bank Width
Jonive 1	4,345 ft.	63 ft.	59 ft.
Jonive 2	3,480 ft.	99 ft.	41 ft.
Jonive 3	1,406 ft.	52 ft.	52 ft.

*Project Specific Notification for 2015 Field Season****Jonive Creek-Reaches 1,2,3***

PHYSICAL CONDITIONS

Reach setting: Jonive Creek is located in the city of Sebastopol off of Bodega Hwy and is largely surrounded by rural residential housing and large agricultural fields. The channel is earthen, with steep side banks due to incision. At the time of the survey there was flowing clear water found throughout the creek. The riparian corridor through this reach supports a mix of large mature and young trees such as California bay (*Umbellularia californica*), white alder (*Alnus rhombifolia*), arroyo willow (*Salix lasiolepis*), Oregon ash (*Fraxinus latifolia*), and box elder (*Acer negundo*).

Active channel: The active channel had sections of young vegetation growing in channel and the range of the wetted width varied from 4-10 ft.

Bed sediments/texture: The substrate consists of mostly gravel, bedrock and cobble along the bed of the channel.

Bank structure: The channel is earthen, with steep side banks. Side banks are dominated by English Ivy (*Hedera helix*) Himalayan blackberry (*Rubus discolor*) and California blackberry (*Rubus ursinus*).

Water quality: At the time of the survey Jonive Creek supported clear flowing water. The water surface was shaded by the existing riparian canopy. The range of the wetted width fluctuates from 4-10 ft.

Channel processes: Jonive Creek is a predominately in equilibrium although the sections where the channel narrows incision is taking place. The substrate suggest that high flows are frequent in the channel due to large cobble scattered throughout the bed of the channel.

Debris Accumulations and Blockages Assessed: Blockages or debris accumulations were observed during the time of the survey. Locations and images of the obstructions can be found in the attached map.

BIOLOGICAL CONDITIONS

Vegetation composition: Jonive Creek supports a relatively dense riparian corridor including a mix of large mature and young California bay, white alders, arroyo willows, Oregon ash, and box elder. Side banks are dominated by Himalayan and California blackberry and English ivy.

Riparian corridor and canopy closure: The majority of the riparian canopy is provided by willows, ash, bays, alders along the upper and side banks. An average percent canopy cover for Jonive Creek varies between 90-100%. (2013 LIDAR)

*Project Specific Notification for 2015 Field Season****Jonive Creek-Reaches 1,2,3***

In-stream habitat: The channel bottom is largely bare, with scattered patches of Basket sedge (*Carex babarae*), Horsetail (*Equisetum*), and lady fern (*Anthyrium* sp.) found in the channel bottom.

Special-status species with potential to occur: California Freshwater Shrimp, California Red legged Frog, Western Pond Turtle

Significant Habitat Features: Jonive Creek supports a number of different types of habitat features; runs, riffles, overhanging vegetation, armoring roots at the water line, and scattered pools are all found throughout the creek bottom. The healthy riparian canopy provides significant shading and other habitat benefits. Besides the canopy, trees rooted low in the channel provide velocity breaks during high flow and fish migration and low hanging branches improve cover.

Wildlife: even though there was a flowing water throughout the reach there was no aquatic life observed during the time of the survey. Referencing the CNDDDB, California Fresh Water Shrimp (*Syncaris pacifica*), and Western Pond turtles (*Emys marmorata*) have occurrences in the area. Exact locations and extent of the occurrences can be found in the attached map.

MANAGEMENT CONSIDERATIONS AND OPPORTUNITIES

The dominant management considerations for Jonive Creek should preserving existing canopy to further reduce in-stream vegetation density and the removal of downed trees and accumulated debris. Fallen trees that span the channel should be removed depending on the level of hazard. Selective thinning of California blackberry (*Rubus ursinus*) and existing vegetation should be implemented to reduce competition and maximize shading by desirable species. Considering flood risk, it would be beneficial to thin and lift dead and dying vegetation along the creek to reduce potential for flooding.

ANTICIPATED BIOLOGICAL RESOURCES PROTECTION BEST MANAGEMENT PRACTICES TO EMPLOY

BR-1- Area of Disturbance

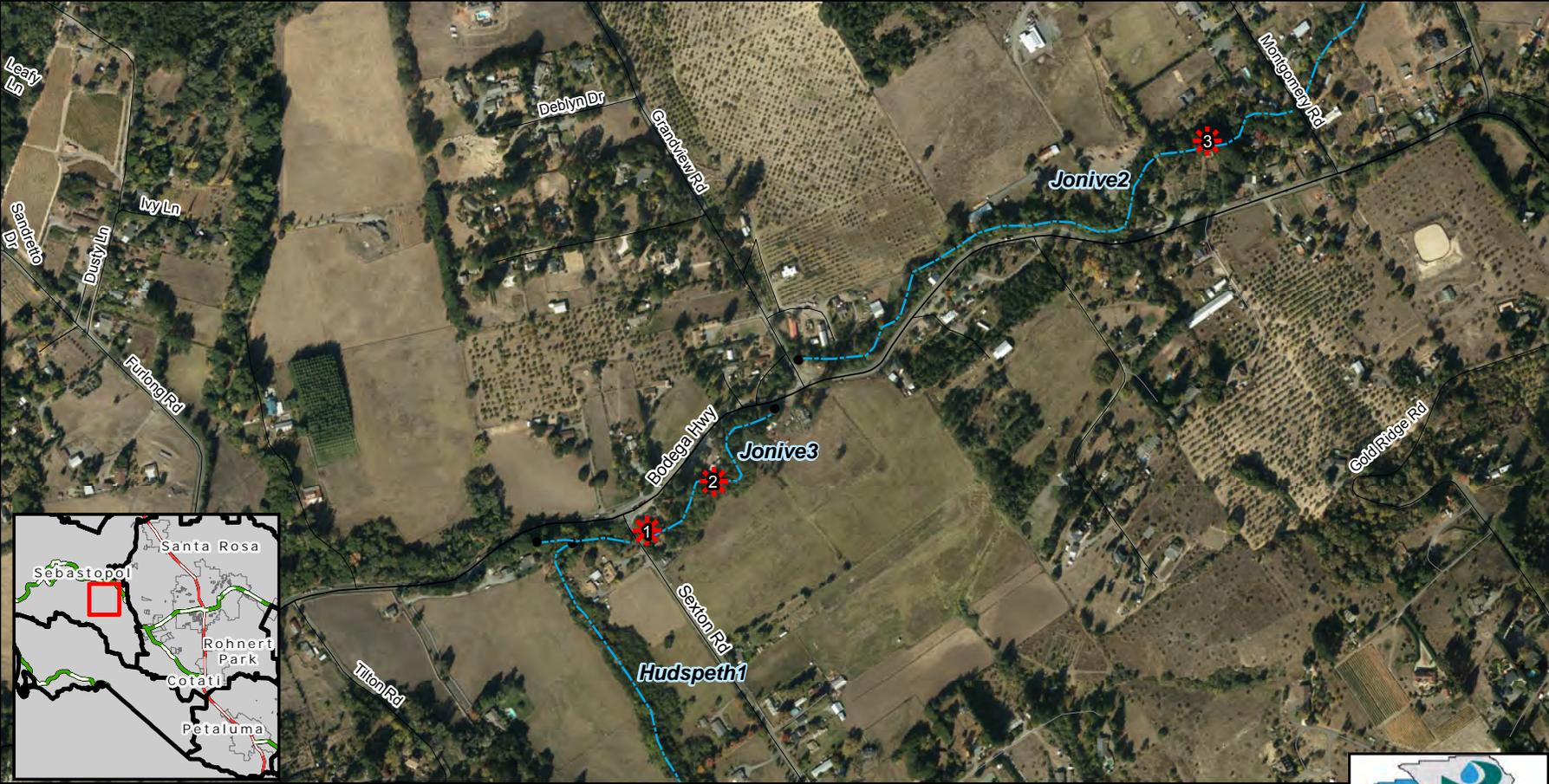
BR-2- Pre-Maintenance Educational Training

BR-6- On-Call Wildlife Biologist

BR-8- Nesting Migratory Bird and Raptor Pre-maintenance Surveys

BR-9- California Fresh Water Shrimp Avoidance and Impact Minimization Measures for vegetation management

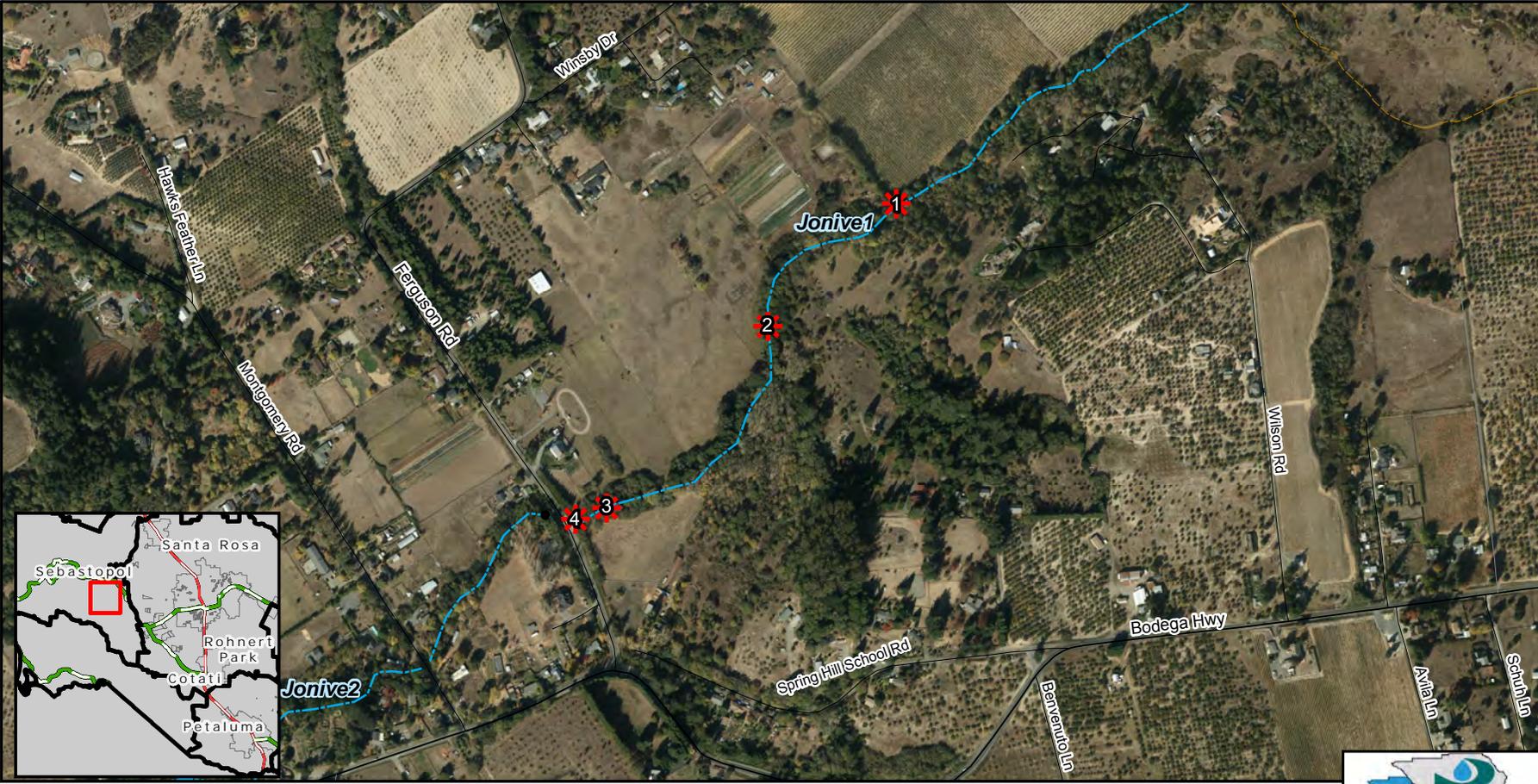
BR-17-Western Pond Turtle Pre-Maintenance Surveys for Ground Disturbing Activities



Stream Maintenance Program
Project Specific Notification 2015
Jonive 2 & 3

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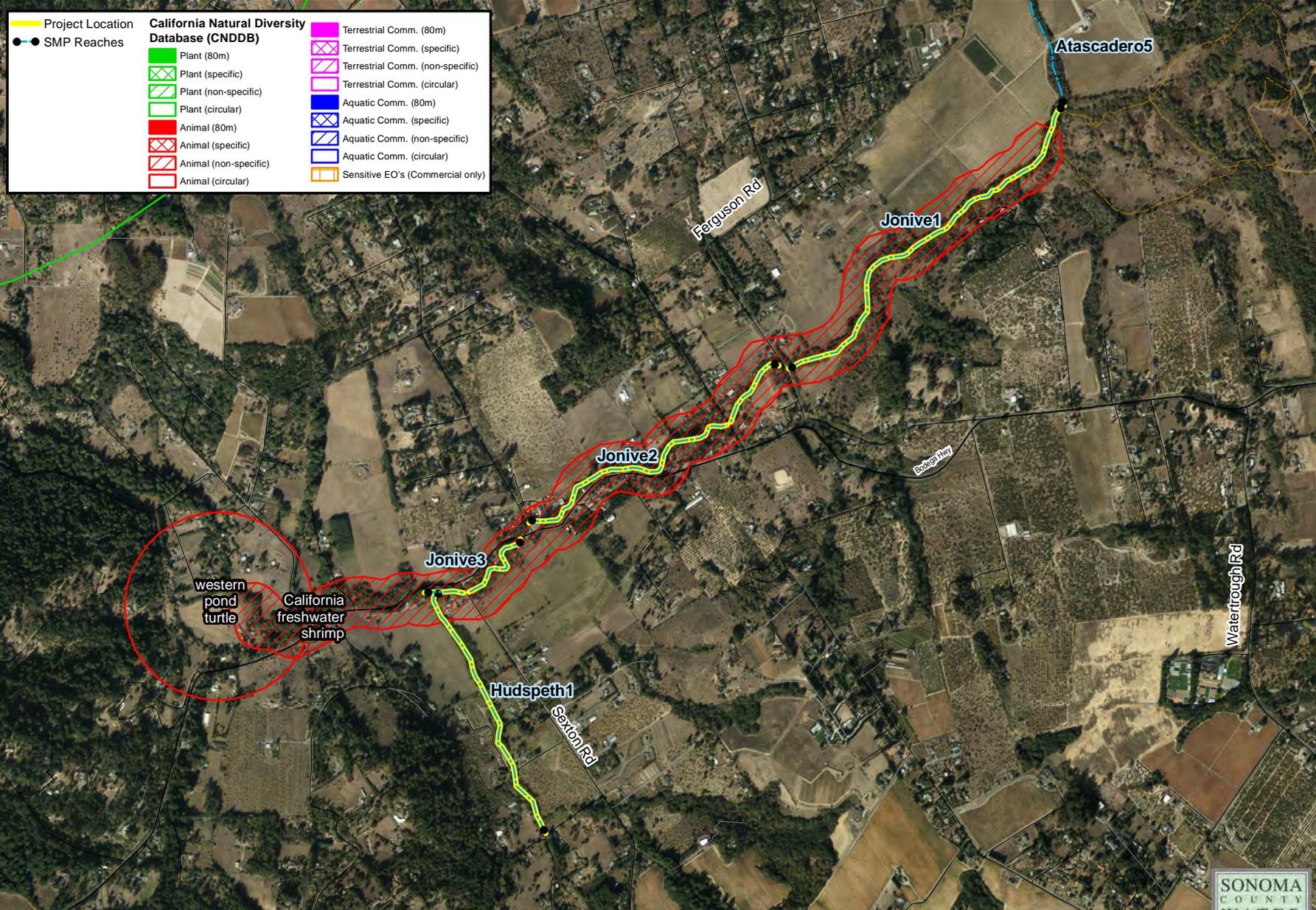
**Stream Maintenance Program
Project Specific Notification 2015
Jonive 1**

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S:\E:\pad\NRS\Channel\Maint\Stream Maintenance Program\Updated GIS maps\CNDDDB maps\Sebastopol_PSN_2015_CNDDDB.mxd

Project Location	California Natural Diversity Database (CNDDDB)	Terrestrial Comm. (80m)
SMP Reaches	Plant (80m)	Terrestrial Comm. (specific)
	Plant (specific)	Terrestrial Comm. (non-specific)
	Plant (non-specific)	Terrestrial Comm. (circular)
	Plant (circular)	Aquatic Comm. (specific)
	Animal (80m)	Aquatic Comm. (non-specific)
	Animal (specific)	Aquatic Comm. (circular)
	Animal (non-specific)	Sensitive EO's (Commercial only)
	Animal (circular)	



Stream Maintenance Program
Sebastopol CNDDDB
2015

0 1,500 3,000
 Feet



Appendix D

Project Designs

Zone 1A

- Coleman 2 Localized Scale
- Colgan 7 Localized Scale
- Kawana 1A Localized Scale
- Laguna 2 Localized Scale
- Peterson 1 Localized Scale and Bank Repair
- Peterson 2 Reach Scale
- Brush 2B In-stream Sediment Basin
- College 1 & 2 In-stream Sediment Basin
- Copeland 4 & 5 In-stream Sediment Basin
- Santa Rosa 1 In-stream Sediment Basin
- Todd 5B In-stream Sediment Basin
- Brush-Matanzas-Piner-Santa Rosa-Fish Ladder Inlet Clearings

Zone 2A

- E. Fork McDowell 1 Localized
- Adobe Creek 1 and 2 Reach Scale

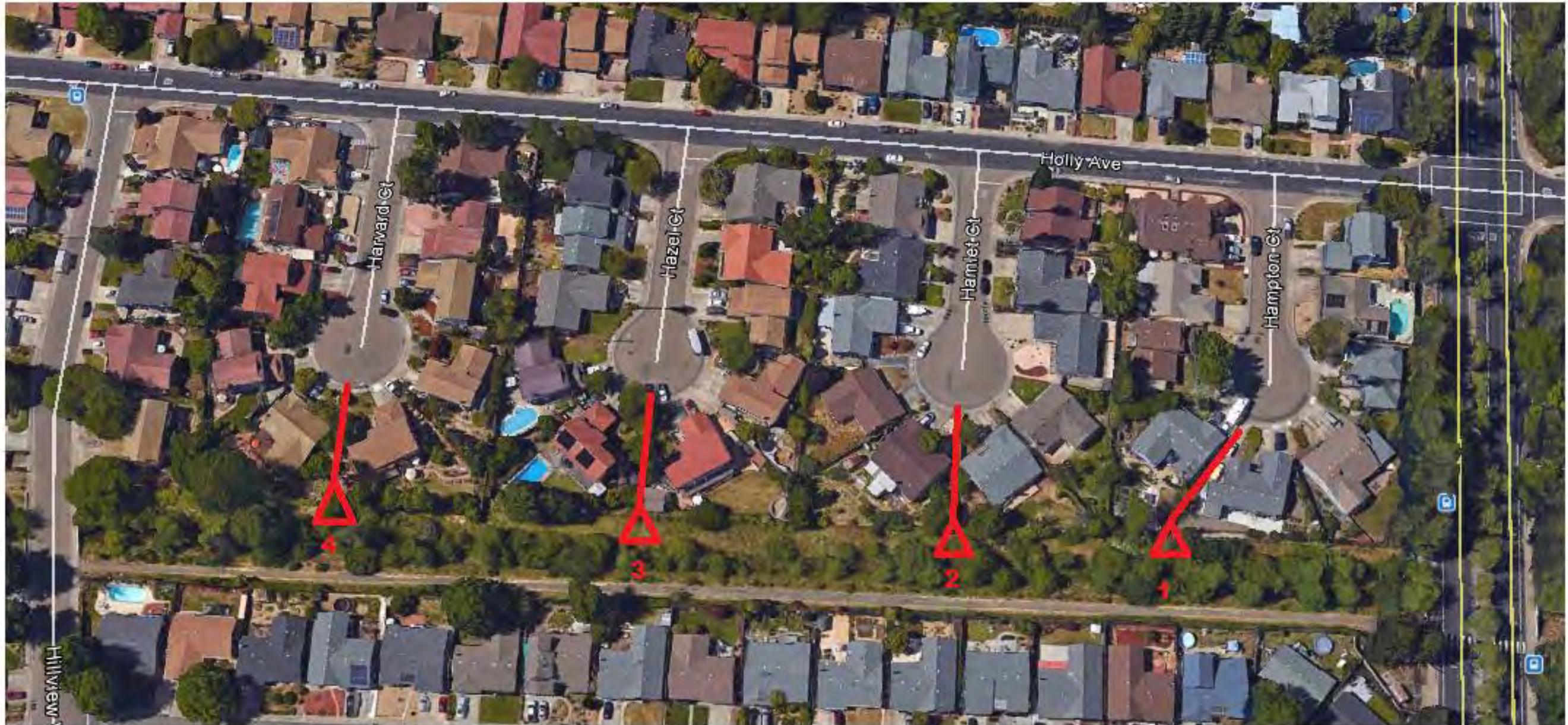
Zone 4A

- Wood 1 Localized Scale

Zone 8A

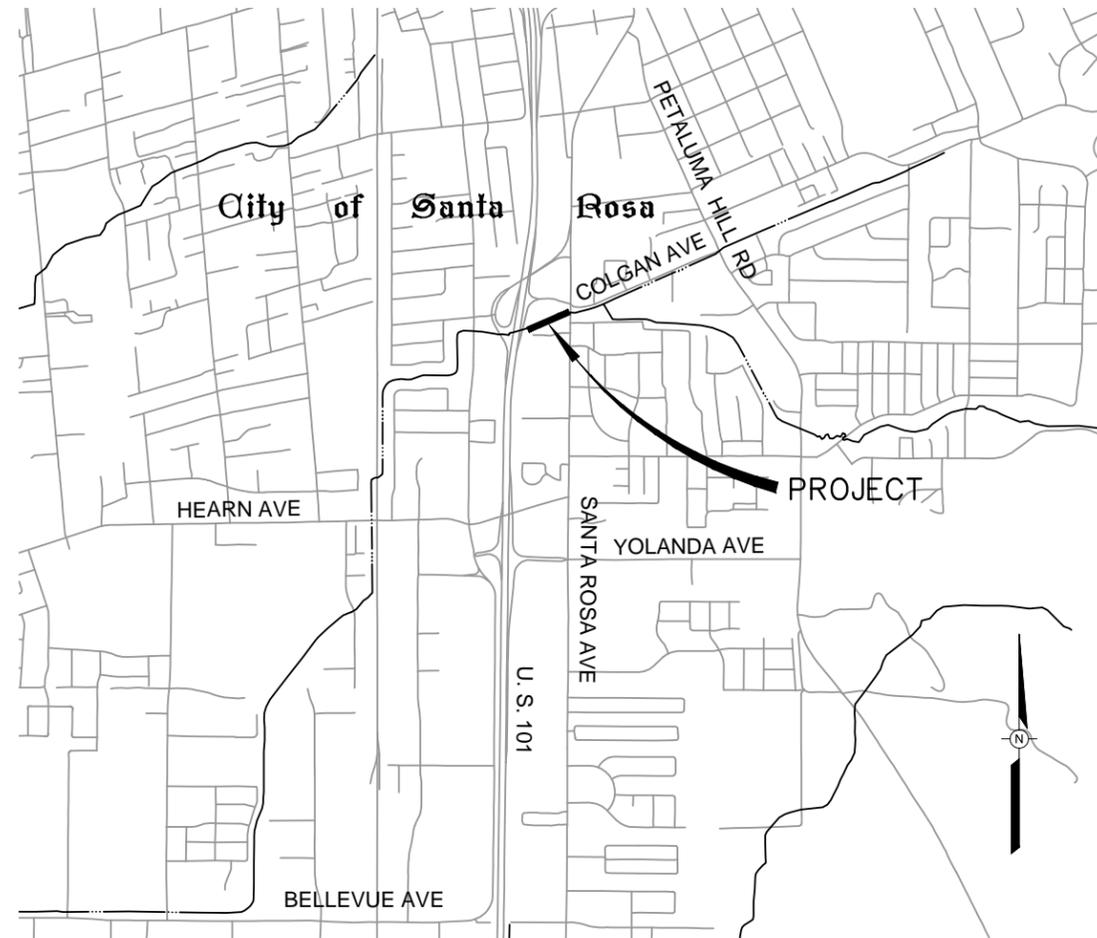
- Bloomfield 1 Reach Scale

2015 COLEMAN 2 LOCALIZED SCALE CULVERT CLEARING



Total Length: 64 linear feet
Total Area: 140 square feet
 Total Above OHWM: 50 square feet
 Total Disturbed Below OHWM: 90 square feet
Total Sediment To Remove: 300 cubic yards

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A
COLGAN CREEK SMP REACH 7
 2015 - REACH SEDIMENT REMOVAL



VICINITY MAP

NOT TO SCALE



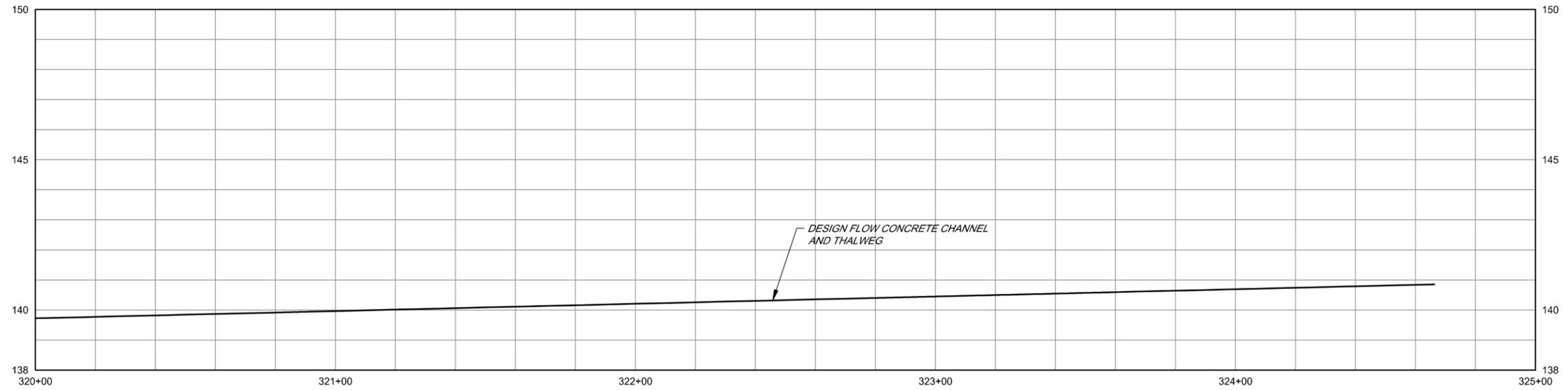
LOCATION MAP

NOT TO SCALE

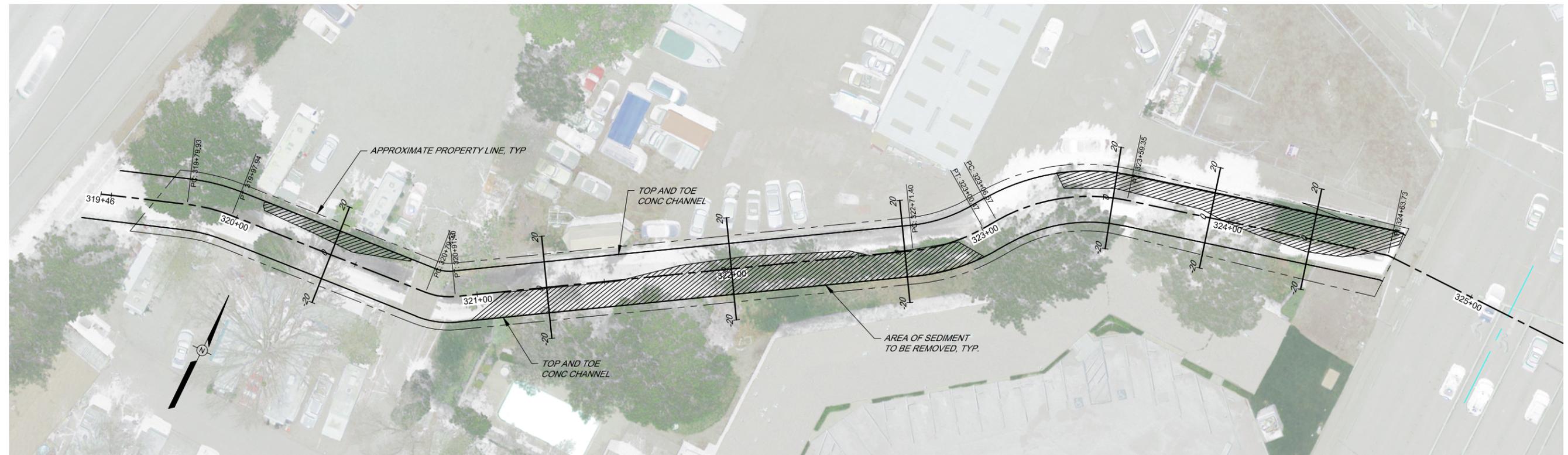
COLGAN CREEK SMP REACH 7						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING FROM SERVICE ROAD OR IN THE DEWATERED CHANNEL.	STA 320+08 TO STA 320+70 NORTH SIDE CHANNEL	62	5	310	0.8	9
	STA 320+95 TO STA 322+95 SOUTH SIDE CHANNEL	200	12	2,400	1.2	107
	STA 323+33 TO STA 3324+60 NORTH SIDE CHANNEL	127	11	1,397	0.9	47

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 320+00 TO STA 325+00
3	C-2	SECTIONS

		SCALE: AS SHOWN DATE: 4/1/2015	SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A COLGAN CREEK SMP REACH 7 INDEX TO DRAWINGS, TABLE, VICINITY AND LOCATION MAPS	
NO.	DATE	REVISION	BY	FILE NAME: 2015_Colgan_G CONTRACT NUMBER:
			DRAWING NUMBER: G-1	SHEET 1 OF 3



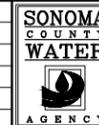
PROFILE
 SCALE HORIZ 1" = 40'
 VERT 1" = 4'



PLAN
 SCALE 1" = 40'

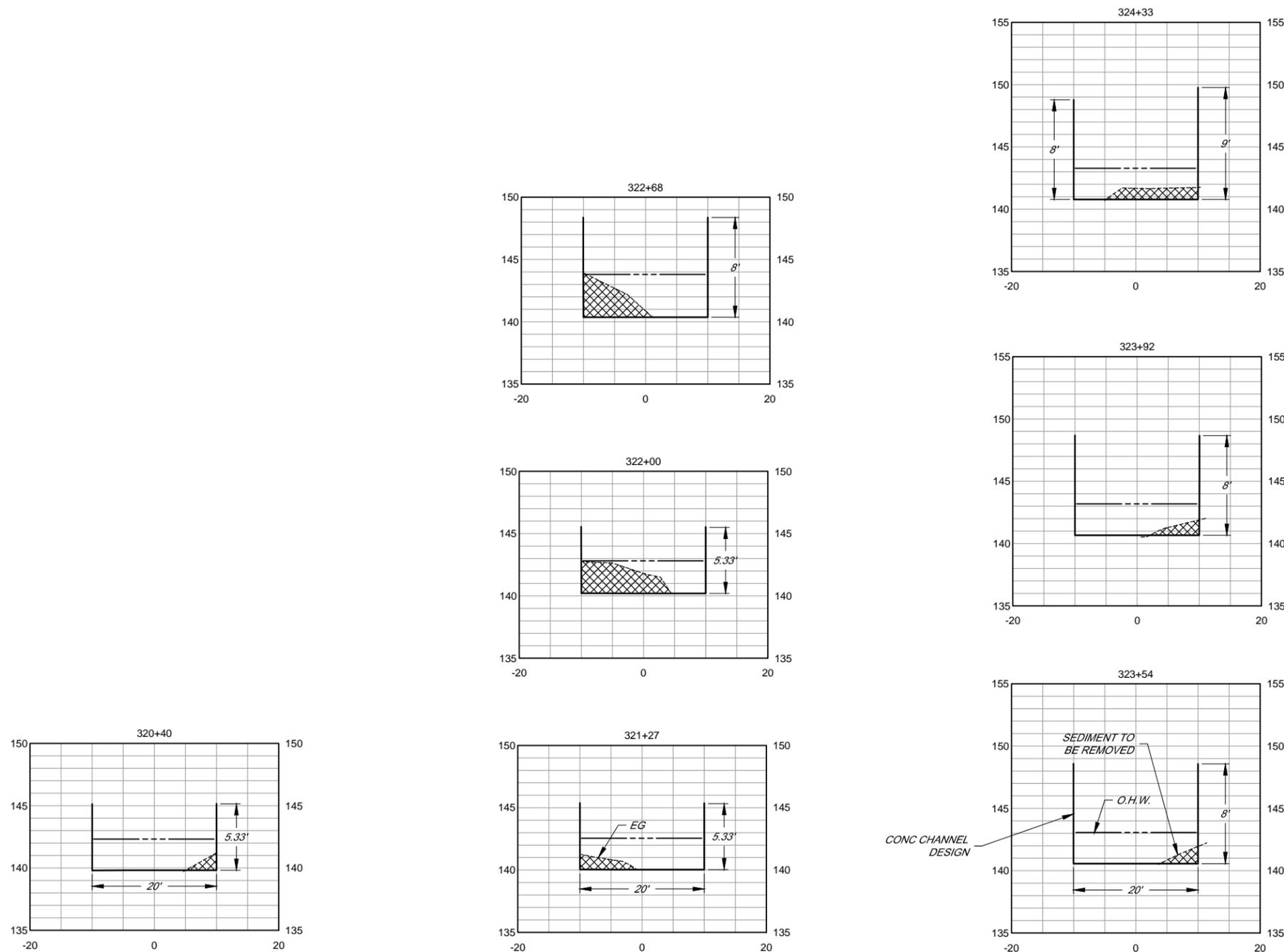
BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH,
 ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 4/1/2015
DRAWN: ----	
REVIEWED: _____	

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A	
COLGAN CREEK SMP REACH 7	
PLAN AND PROFILE STA 320+00 TO STA 325+00	
FILE NAME: 2015_Colgan_civil	DRAWING NUMBER: C-1
CONTRACT NUMBER: _____	SHEET 2 OF 3



SECTIONS

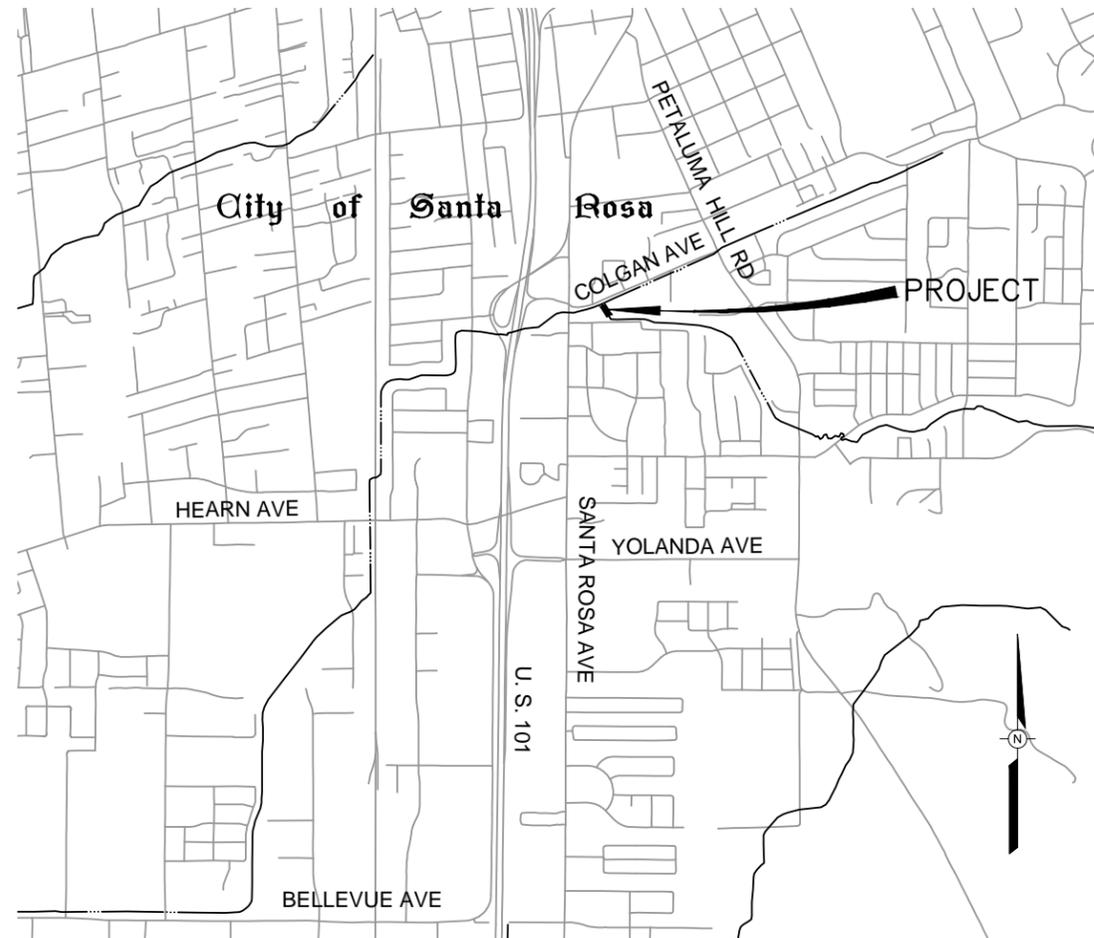
SCALE HORIZ 1" = 10'
VERT 1" = 5'



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

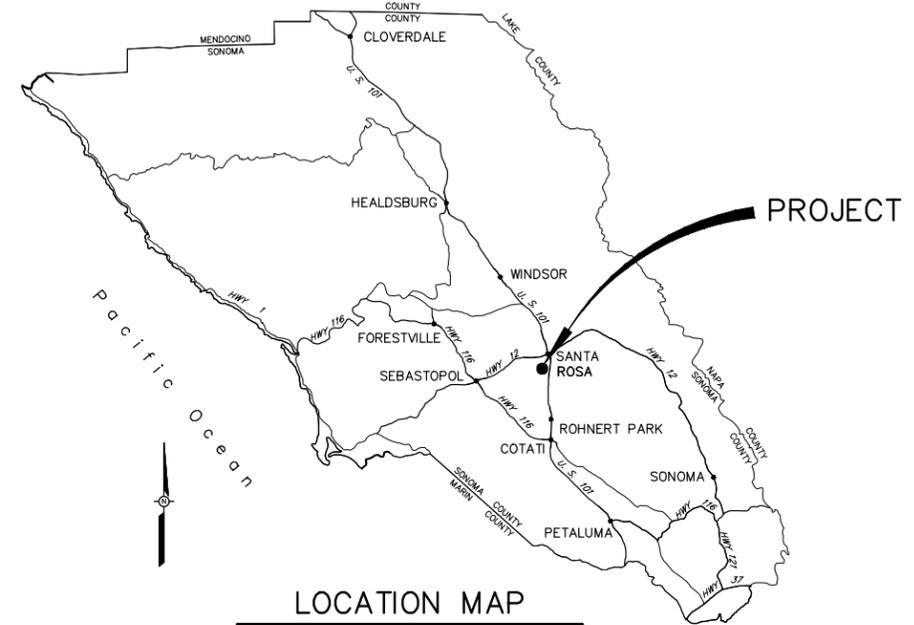
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NO.	DATE	REVISION		BY		FILE NAME: 2015_Colgan_civil	DRAWING NUMBER: C-2	SHEET 3 OF 3

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A
 KAWANA CREEK SMP REACH 1A
 LOCALIZED SEDIMENT REMOVAL



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

KAWANA CREEK SMP REACH 1A

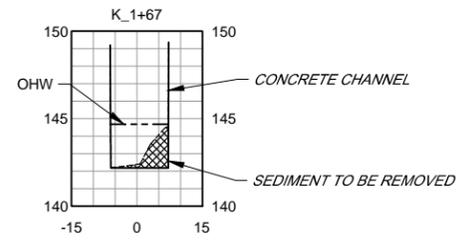
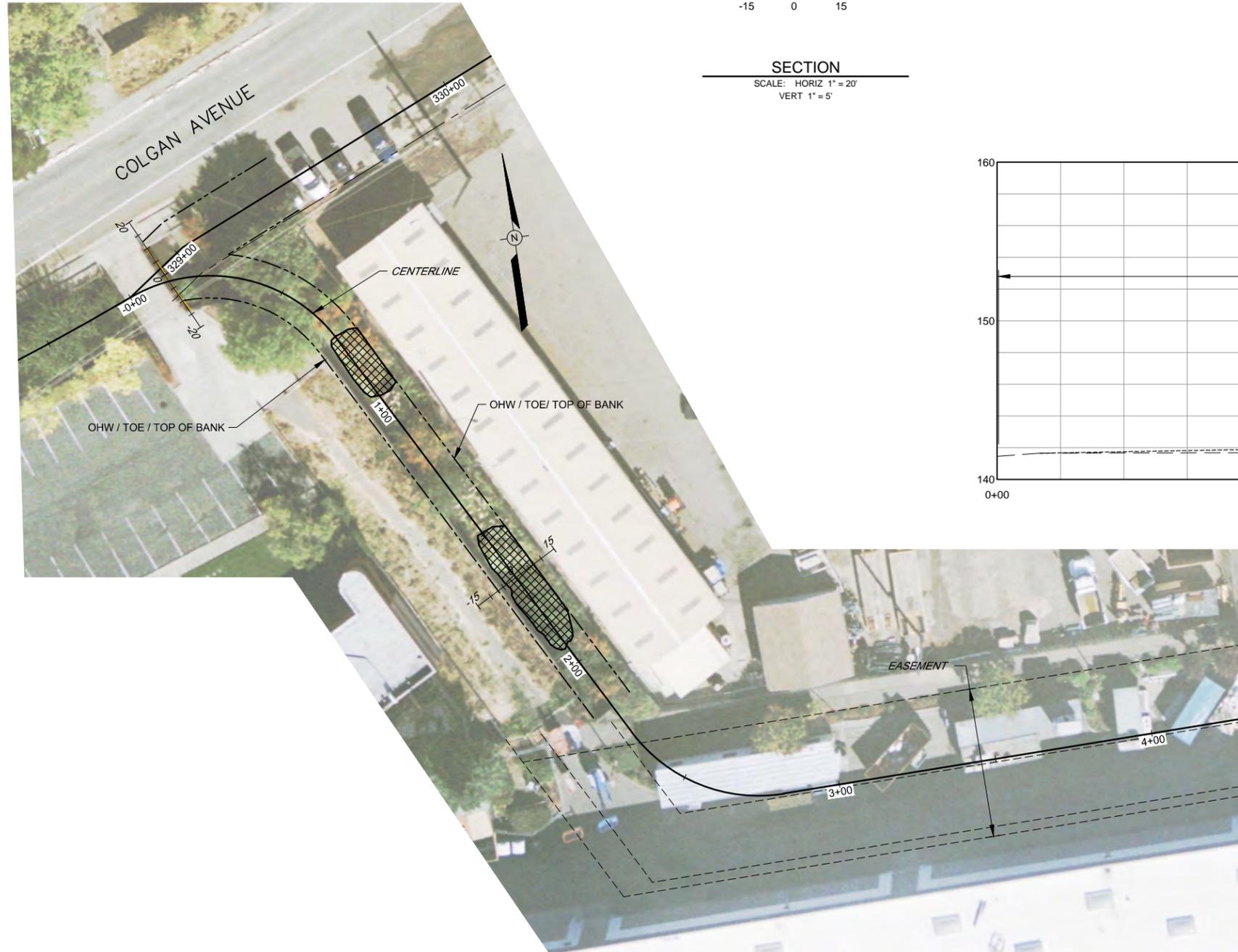
EXCAVATION

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 FROM SERVICE ROAD OR IN THE DEWATERED CHANNEL.	STA 0+72 TO STA 0+94	22	10.4	228	1.5	13
	STA 1+49 TO STA 1+95	200	10	460	1.5	26

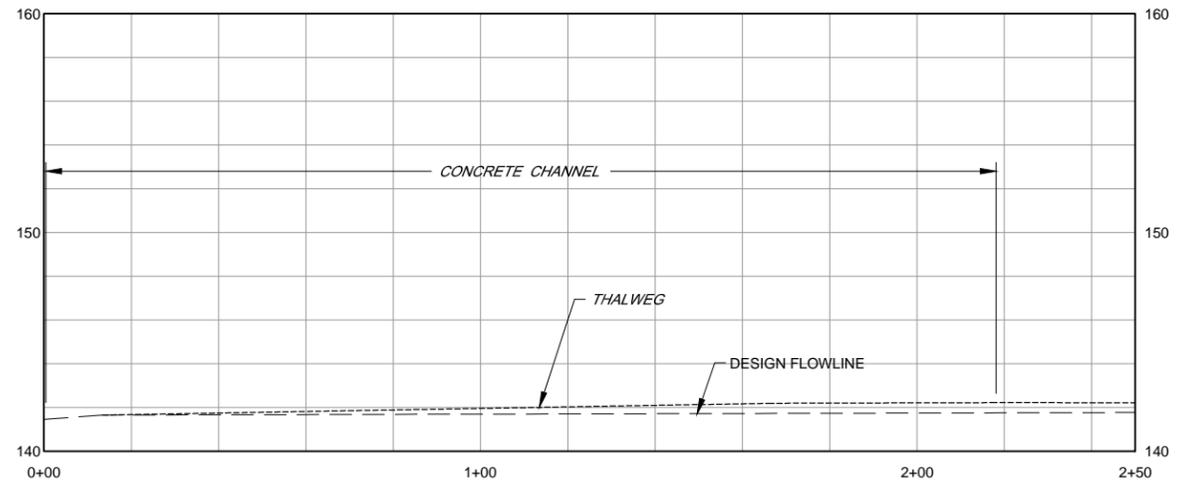
INDEX TO DRAWINGS

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

						SCALE: AS SHOWN DATE: 4/1/2015 DRAWN: ---- REVIEWED:		SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A KAWANA CREEK SMP REACH 1A ----			
NO.	DATE	REVISION	BY	FILE NAME: 2015_KAWANA-G CONTRACT NUMBER:		DRAWING NUMBER: G-1	SHEET 1 OF 2				



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

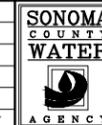


PROFILE
 SCALE HORIZ 1" = 20'
 VERT 1" = 5'

PLAN
 SCALE 1" = 20'

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

NO.	DATE	REVISION	BY

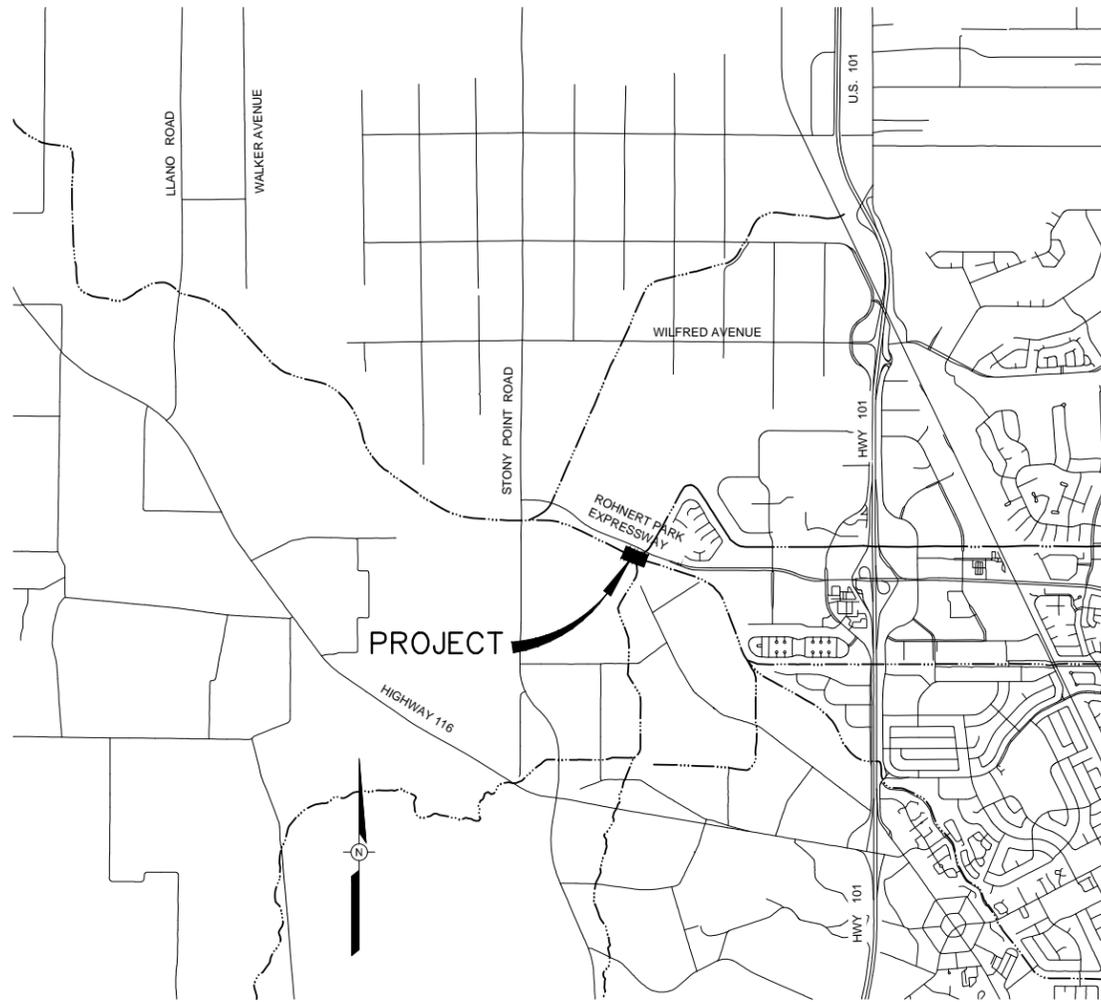


SCALE: AS SHOWN	DATE: 4/29/2015
DRAWN: ----	
REVIEWED: _____	

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A	
KAWANA CREEK SMP REACH 1A	
PLAN RPROFILE AND SECTION	
FILE NAME: 2015_KAWANA-C	DRAWING NUMBER: C-1
CONTRACT NUMBER: _____	SHEET 2 OF 2

\\s-data\proj\food\com\zone 1a\Kawana_Springs\2015-kawana

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A LAGUNA DE SANTA ROSA SMP REACH 2 LOCALIZED SEDIMENT REMOVAL



PROJECT

VICINITY MAP

NTS



PROJECT

LOCATION MAP

NTS

INDEX TO DRAWINGS

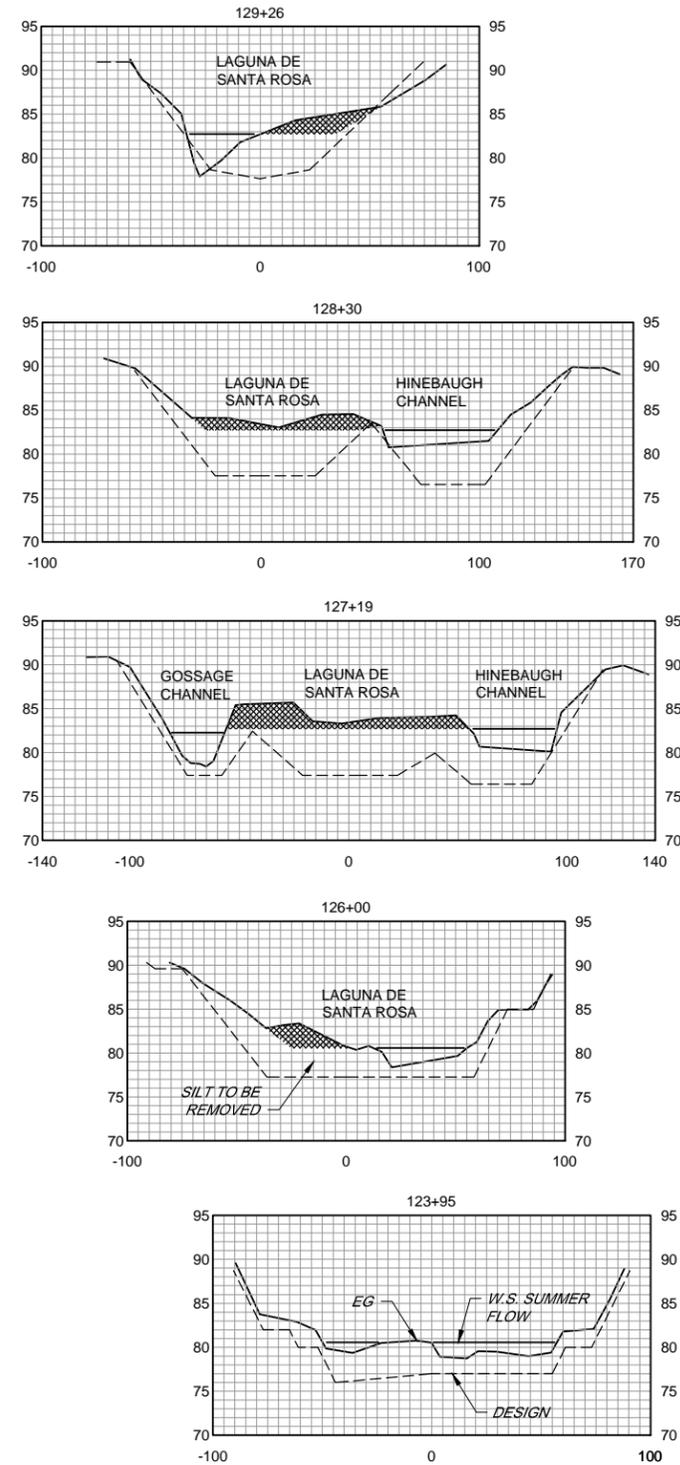
LAGUNA DE SANTA ROSA SMP REACH 2						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE OR FILL)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING IN CHANNEL	STA 124+00 TO STA 130+00	600	51.5	30,900	3	(BELOW O.H.W.) 3,433

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

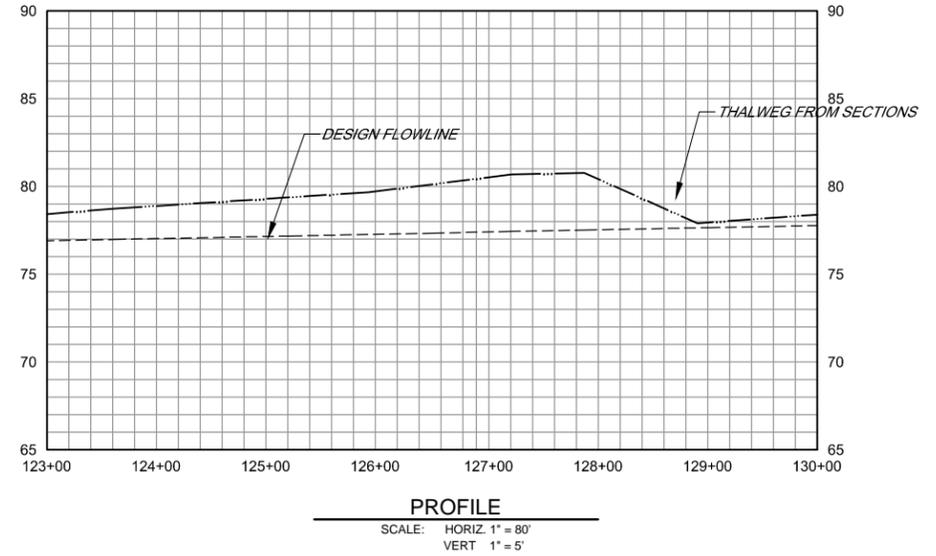


BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH. ADJUST SCALE ACCORDINGLY

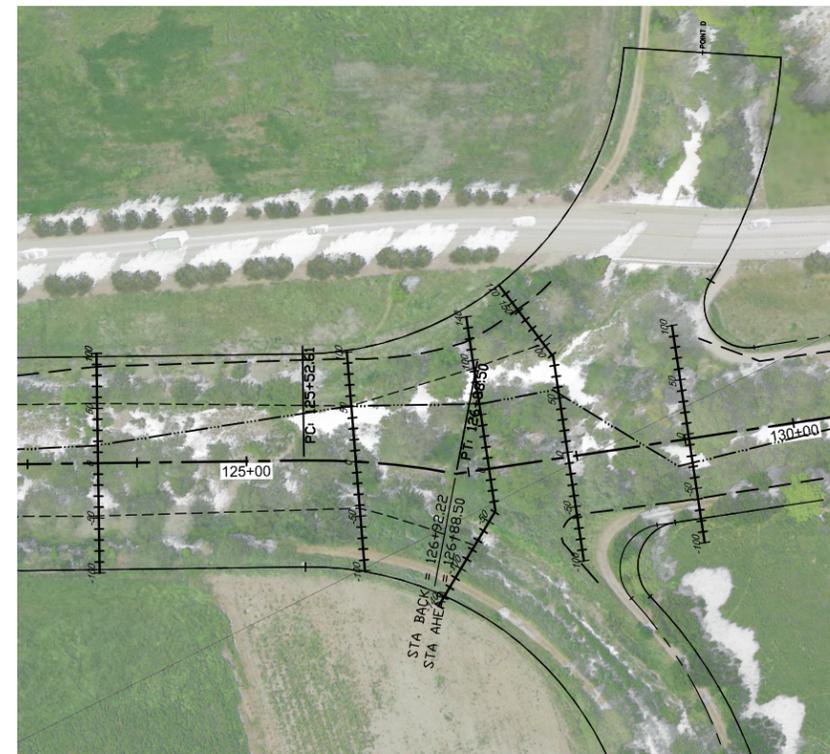
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		DRAWN: SMP REVIEWED:	FILE NAME: 2015_LAGUNA-G.dwg CONTRACT NUMBER: ---	DRAWING NUMBER: G-1	SHEET 1 OF 2		
NO.	DATE	REVISION	BY				



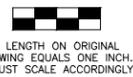
SECTIONS
SCALE: HORIZ 1" = 40'
VERT 1" = 10'



PROFILE
SCALE: HORIZ 1" = 80'
VERT 1" = 5'



PLAN
SCALE: 1" = 80'



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

NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 60%
DRAWN: SMP	
REVIEWED:	

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A
LAGUNA DE SANTA ROSA SMP REACH 2
PLAN, PROFILE AND SECTIONS

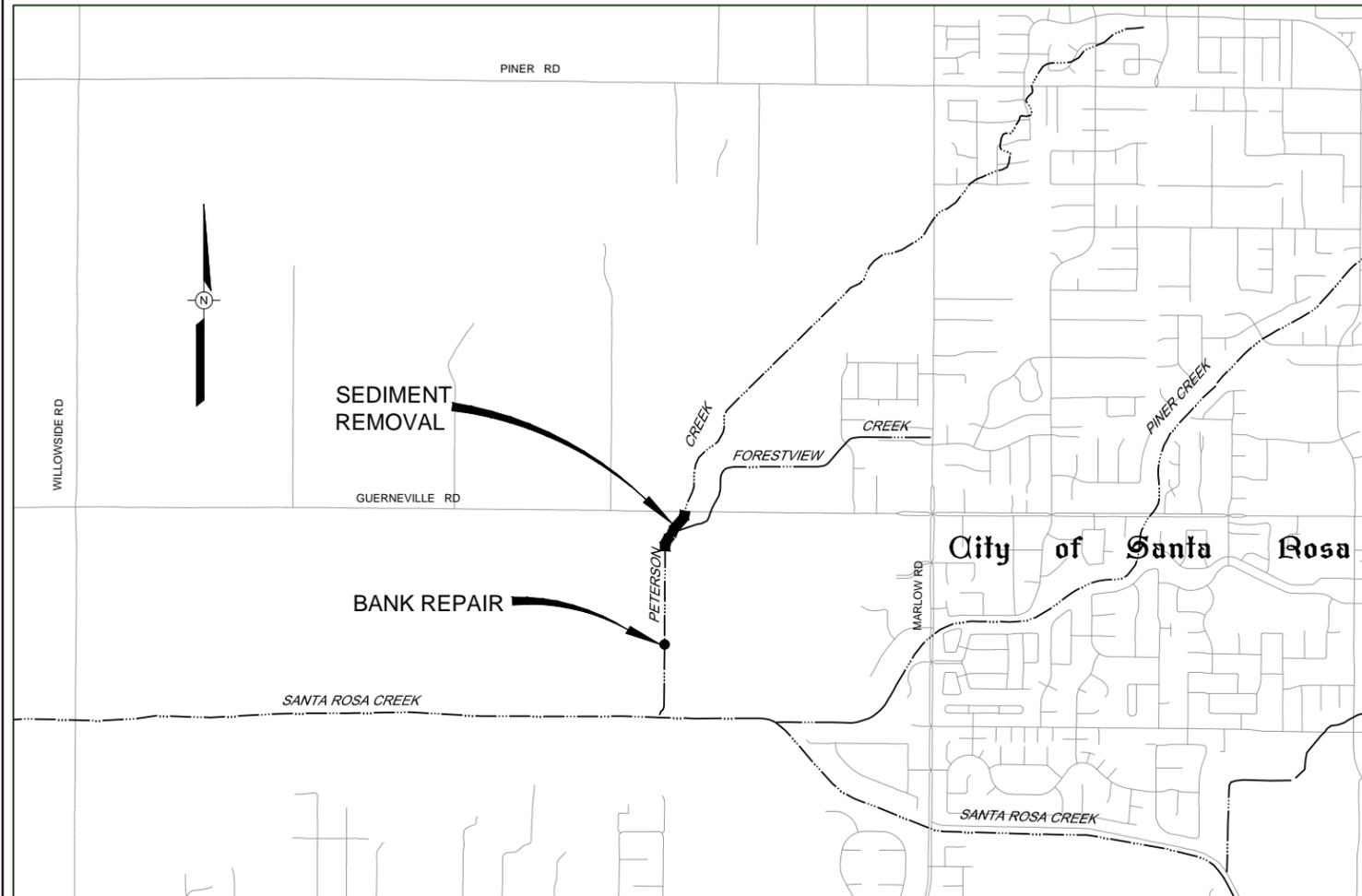
FILE NAME: 2015_LAGUNA-C.dwg
CONTRACT NUMBER: ---

DRAWING NUMBER: C-1

SHEET 2 OF 2

\\sfd-data\proj\150001\control\zone_1a\LAGUNA 2015\LAGUNA-C

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A PETERSON CREEK SMP REACH 1 2015 - LOCALIZED SEDIMENT REMOVAL AND BANK REPAIR



VICINITY MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

PETERSON CREEK SMP REACH 1 - LOCALIZED

EXCAVATION

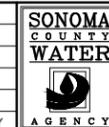
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	AVERAGE DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAR OR FRONT END LOADER OPERATING IN CHANNEL	STA 528+00 TO STA 532+63 EQUATION STA 514+96 TO STA 515+39	506	20	10,120	1.3	487

INDEX TO DRAWINGS		
SHEET NUMBER	DRAWING NUMBER	TITLE
1	G-1	INDEX TO DRAWINGD, TABLES, VICINITY AND LOCATION MAPS
2	C-1	SITE PLAN
3	C-2	PROFILE STA 532+30 TO STA 516+00
4	C-3	CROSS SECTIONS
5	C-4	BANK REPAIR



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

NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 3/31/2015
DRAWN: ----	REVIEWED: ----

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A	
INDEX TO DRAWINGD, TABLES, VICINITY AND LOCATION MAPS PETERSON CREEK SMP REACH 1	
FILE NAME: 2015-peterson_G-REVISED	DRAWING NUMBER: G-1
CONTRACT NUMBER:	SHEET 1 OF 4

\\sd-data\proj\food\comp\zone 1a\Peterson\CA\2015-Peterson



PLAN
SCALE 1" = 40'

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

NO.	DATE	REVISION	BY

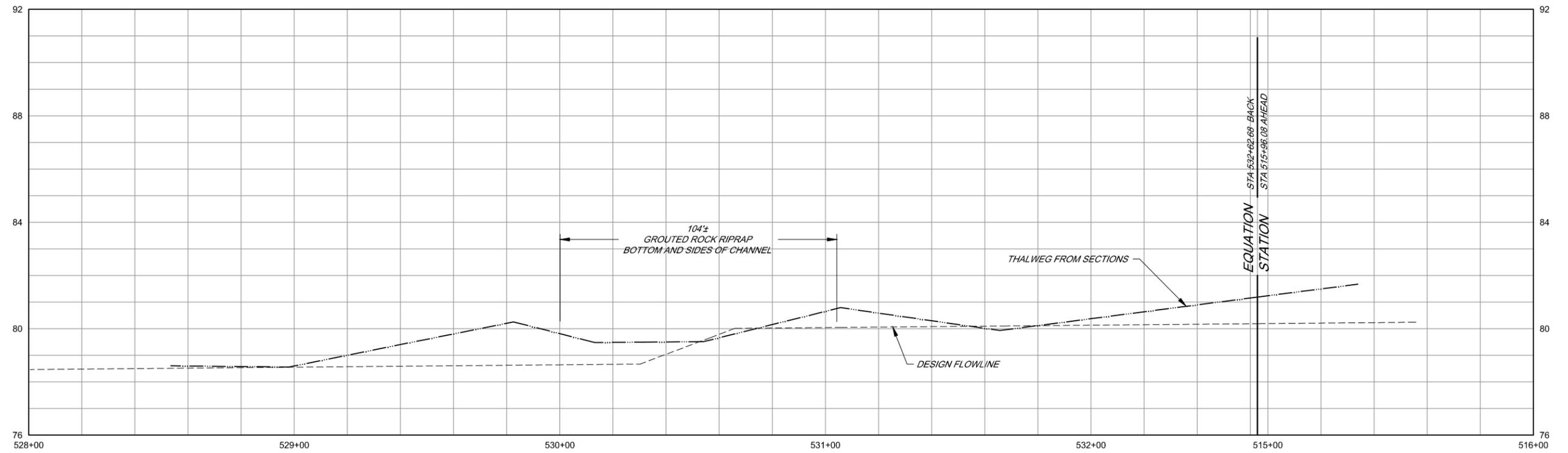
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: 3/31/2015
 DRAWN: ADF
 REVIEWED: _____

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A
**PETERSON CREEK SMP REACH 1
 SITE PLAN**

FILE NAME: 2015-peterson_C-revised DRAWING NUMBER: C-1
 CONTRACT NUMBER: _____ SHEET 2 OF 4

\\s:\data\Proj\Flood\contol\zone 1a\Peterson\CK\2015-Peterson

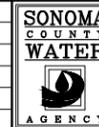


PROFILE - PETERSON CREEK
 SCALE HORIZ 1" = 20'
 VERT 1" = 2'



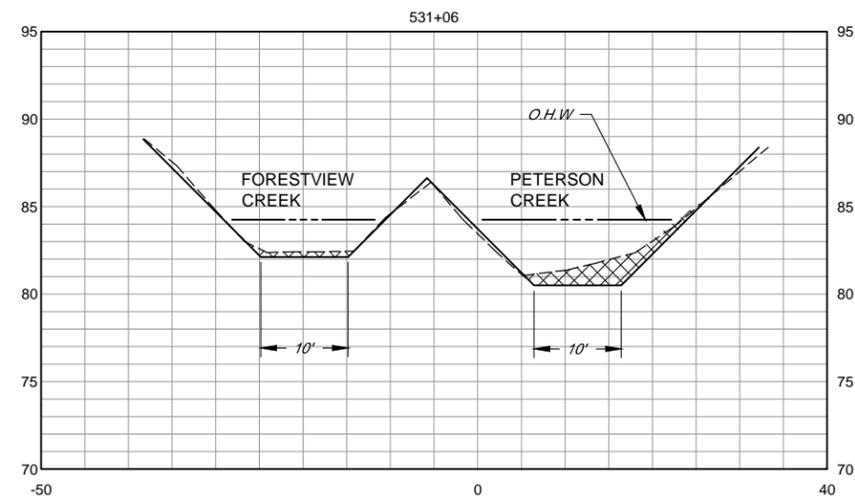
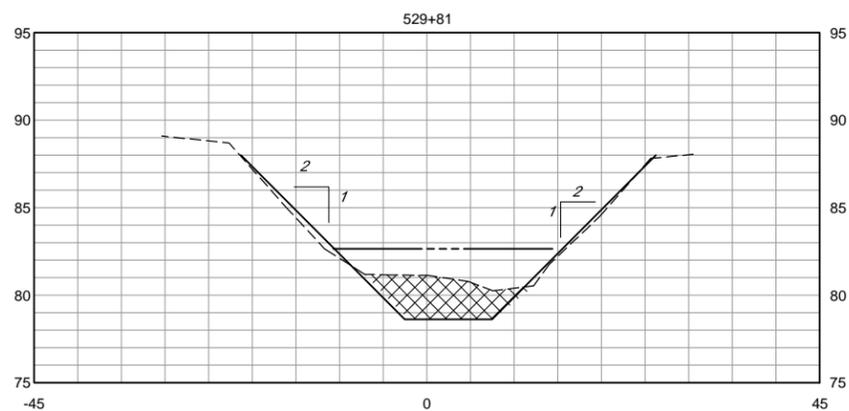
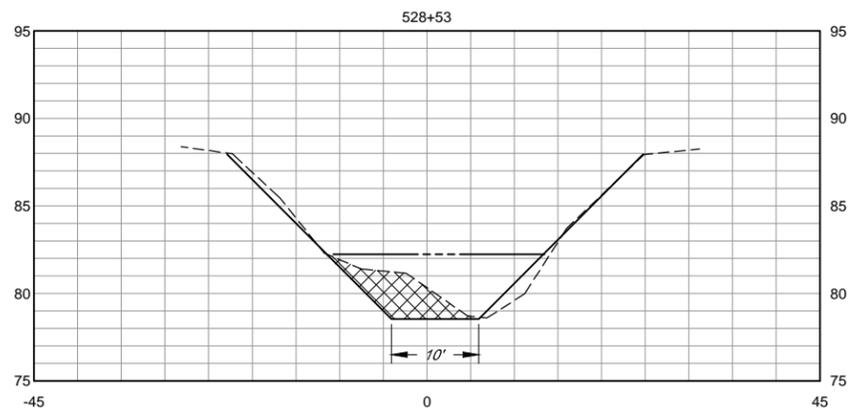
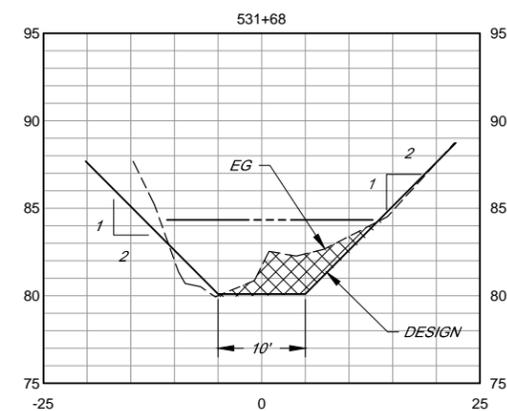
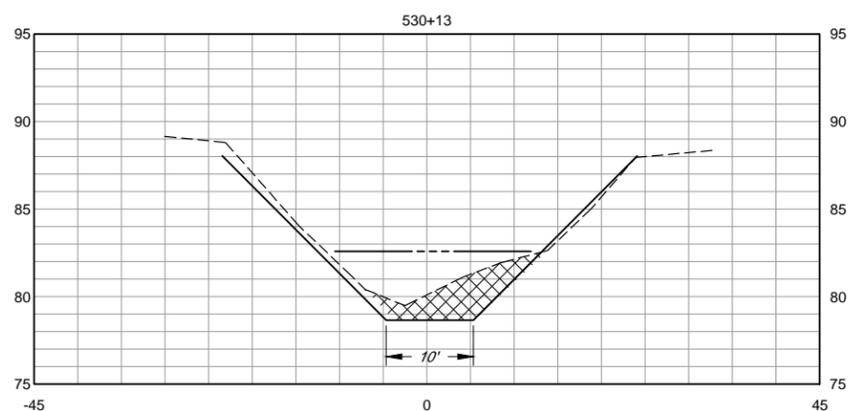
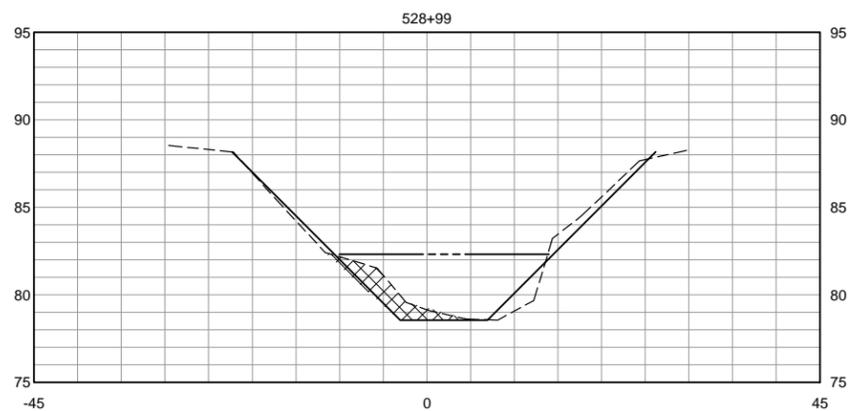
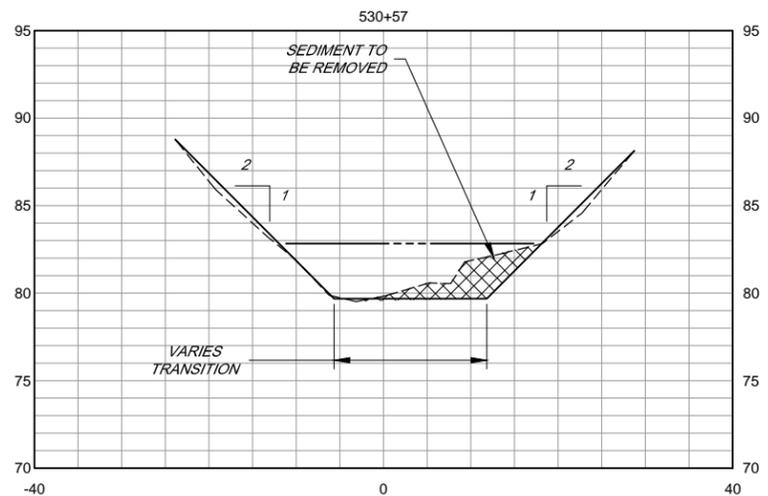
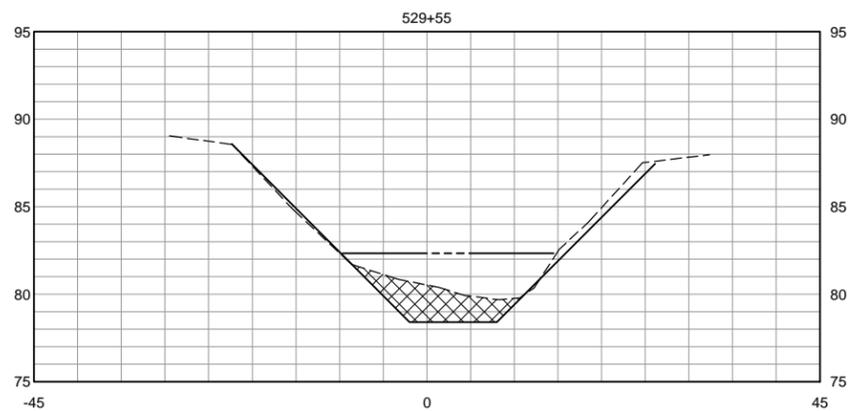
BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH,
 ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 3/31/2015
DRAWN: ADF	
REVIEWED:	

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A		
PETERSON CREEK SMP REACH 1		
PROFILE STA 532+30 TO STA 516+00		
FILE NAME: 2015-peterson_C-revised	DRAWING NUMBER: C-2	SHEET 3 OF 4
CONTRACT NUMBER:		

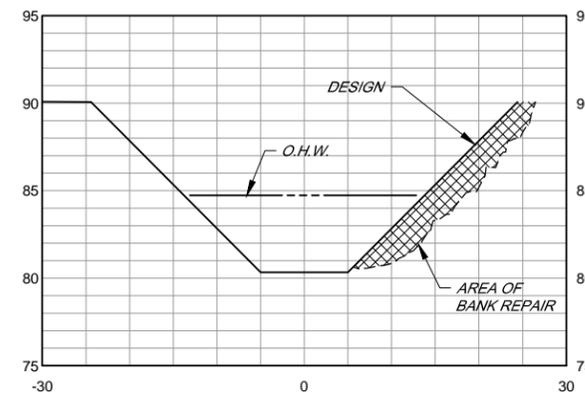


529+55
SECTIONS
 SCALE HORIZ 1" = 10'
 VERT 1" = 5'

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

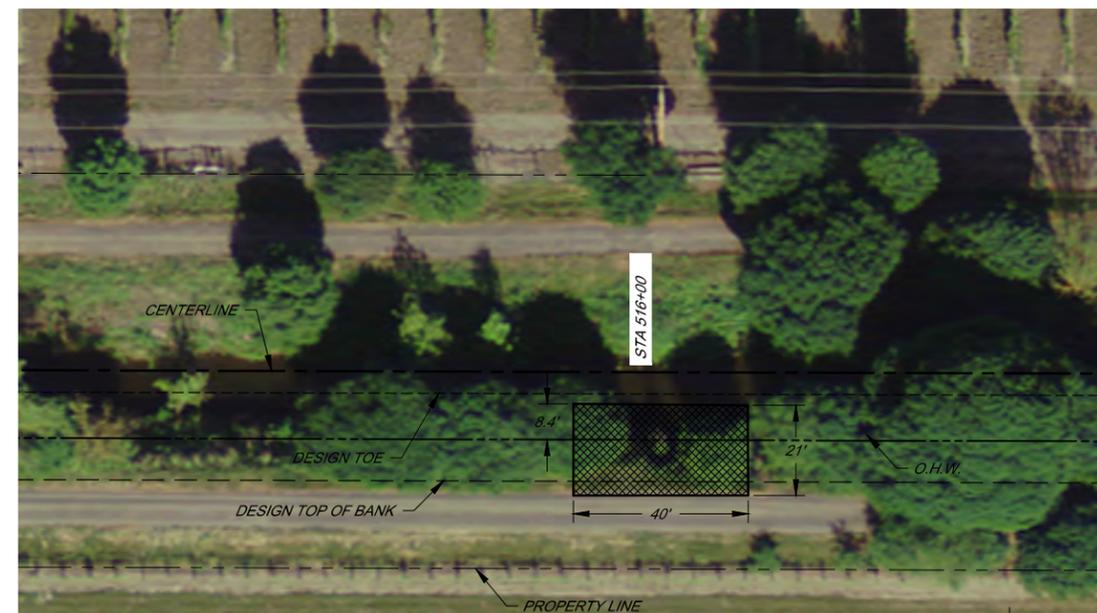
NO.		DATE		REVISION		BY	
				SCALE: AS SHOWN DATE: 3/31/2015 DRAWN: ADF REVIEWED:		SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A CROSS SECTIONS PETERSON CREEK SMP REACH 1 FILE NAME: 2015-peterson_C-revised CONTRACT NUMBER:	
				DRAWING NUMBER: C-3		SHEET 4 OF 4	

\\s:\data\Proj\food control\zone 1a\Peterson\CK\2015-Peterson



SECTION (LOOKING DOWNSTREAM)

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



PLAN

SCALE 1" = 20'

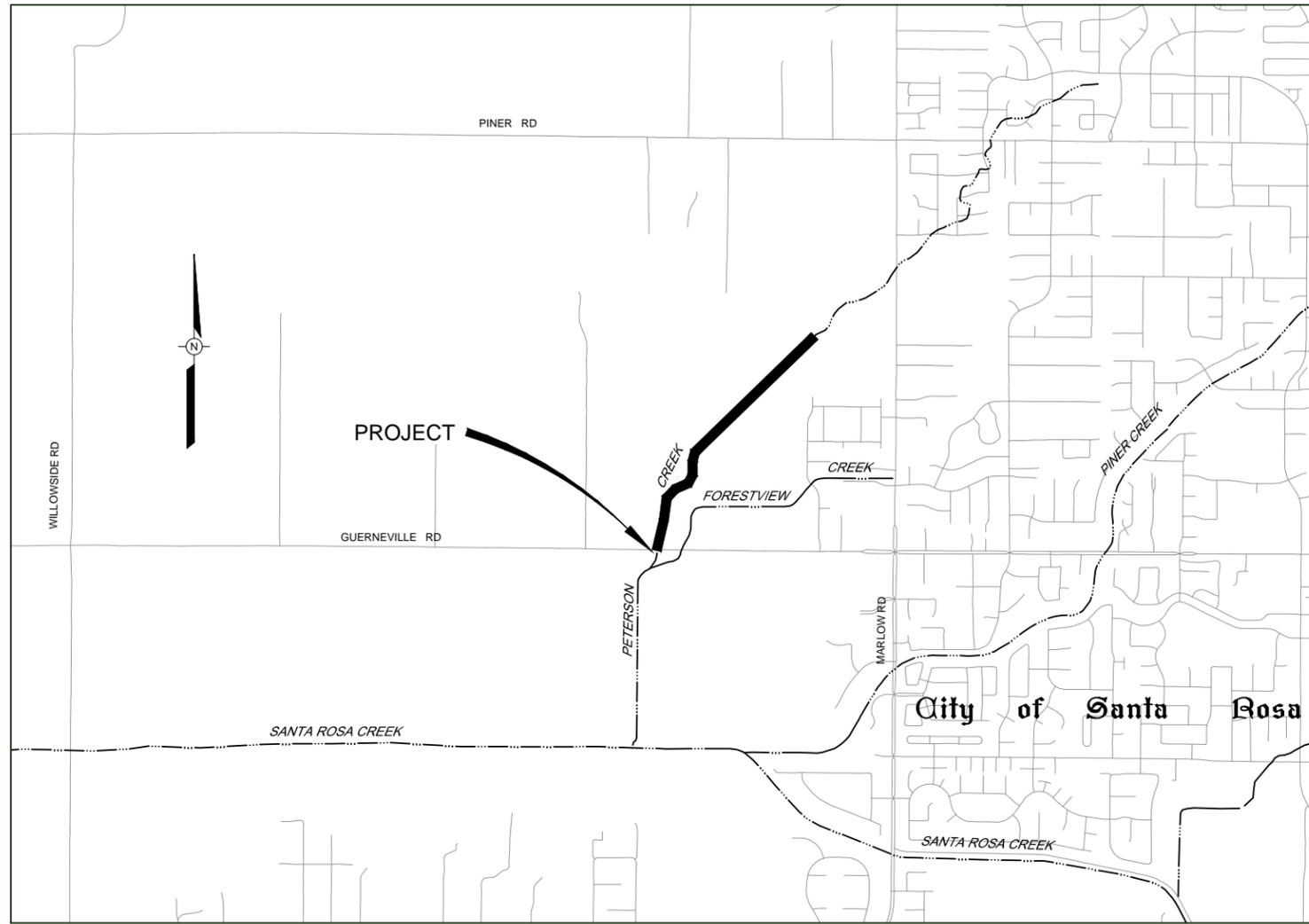
BANK REPAIR	
AREA SQ. FT.	FILL LOOSE ROCK RIPRAP CU. YDS.
ABOVE O.H.W. 504	ABOVE O.H.W. 28
BELOW O.H.W. 336	BELOW O.H.W. 15
TOTAL: 840	TOTAL 43



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

				SCALE: AS SHOWN DATE: 3/31/2015	SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A PETERSON CREEK SMP REACH 1 BANK REPAIR	
				DRAWN: ADF REVIEWED:	FILE NAME: 2015-peterson_C-revised CONTRACT NUMBER:	DRAWING NUMBER: C-4
NO.	DATE	REVISION	BY	SHEET 5 OF 4		

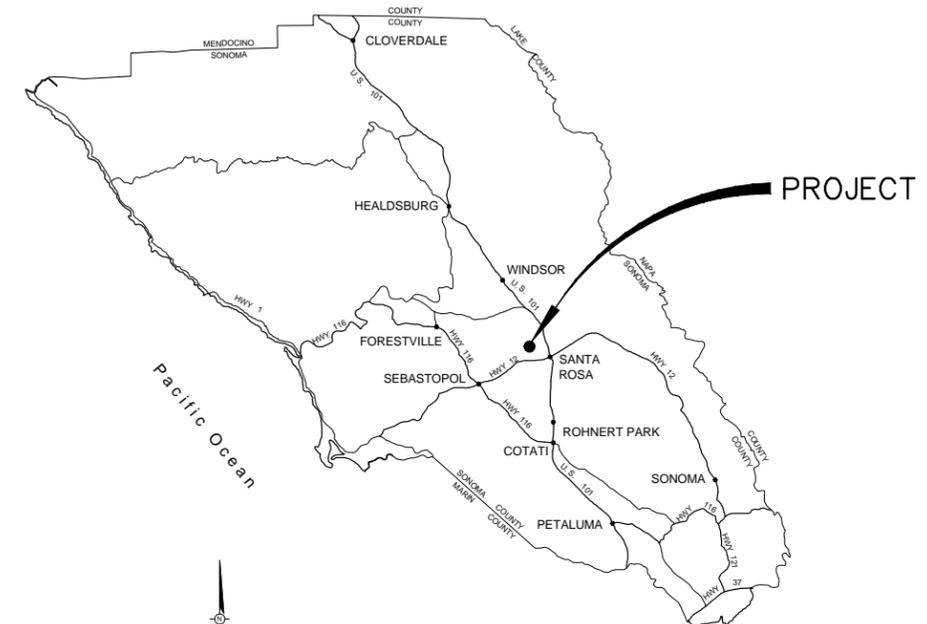
\\s01-datalp01\food control\zone 1a\peterson\CK2015-Peterson



VICINITY MAP

NOT TO SCALE

PETERSON CREEK - SMP REACH 2 SEDIMENT REMOVAL



LOCATION MAP

NOT TO SCALE

PETERSON CREEK - SMP REACH 2						
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 515+75 TO STA 550+85	3,510	13.2	ABOVE O.H.W. 0 BELOW O.H.W. 0 TOTAL = 46,332	0.8	ABOVE O.H.W. 0 BELOW O.H.W. 0 TOTAL = 1,373



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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: March 31, 2015

DRAWN: ----

REVIEWED: _____

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A

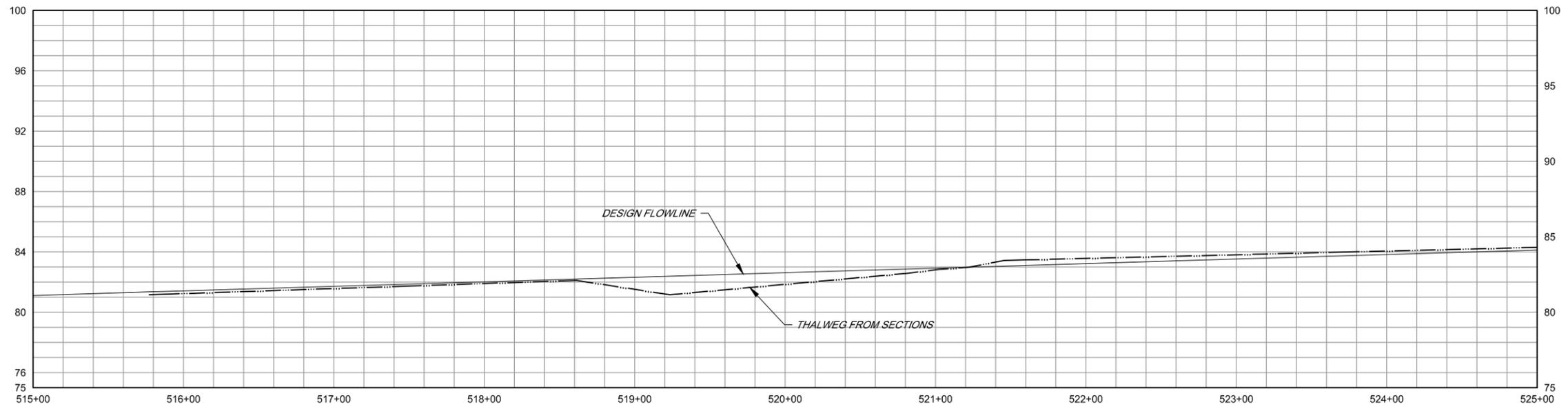
INDEX TO DRAWINGS, TABLE, VICINITY AND LOCATION MAPS

PETERSON CREEK SMP REACH 1

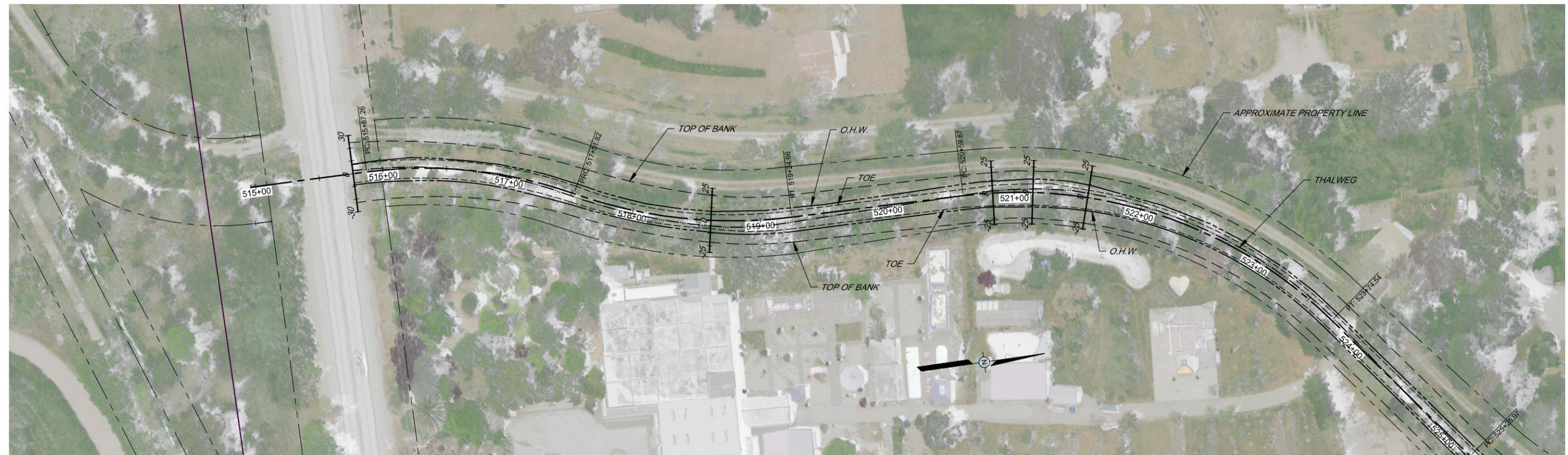
FILE NAME: 2014-PETERSON_GENERAL DRAWING NUMBER: G-1 SHEET 1 OF 6

CONTRACT NUMBER: _____

\\sdr-datalp01\food\com\l\sonoma\14\ Peterson\CA\2014\ Peterson



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



PLAN
 SCALE 1" = 40'



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

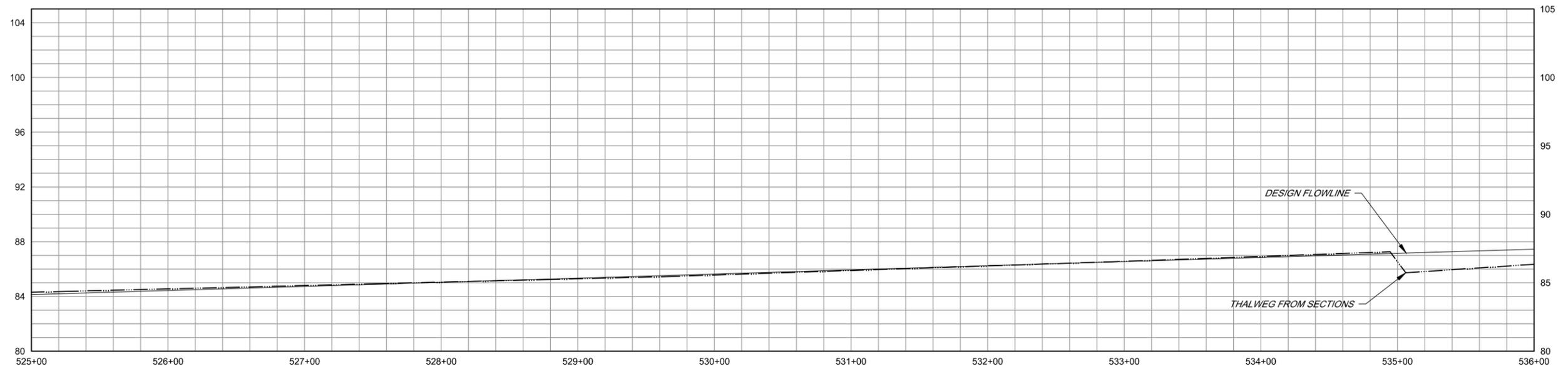
NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

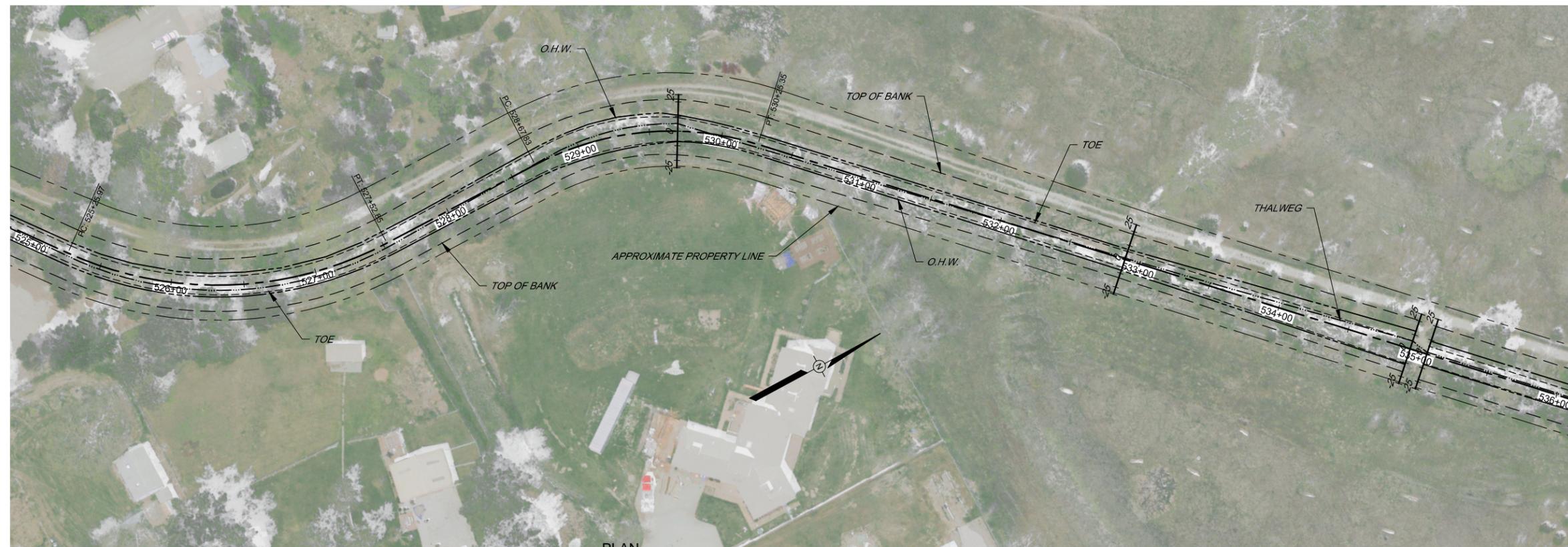
SCALE: AS SHOWN DATE: 3/31/2015
 DRAWN: ADF
 REVIEWED:

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
 PETERSON CREEK - SMP REACH 2
 PLAN AND PROFILE STA 515+00 TO 525+00

FILE NAME: 2014-PETERSON_CIVIL CONTRACT NUMBER:
 DRAWING NUMBER: C-1 SHEET 2 OF 6



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

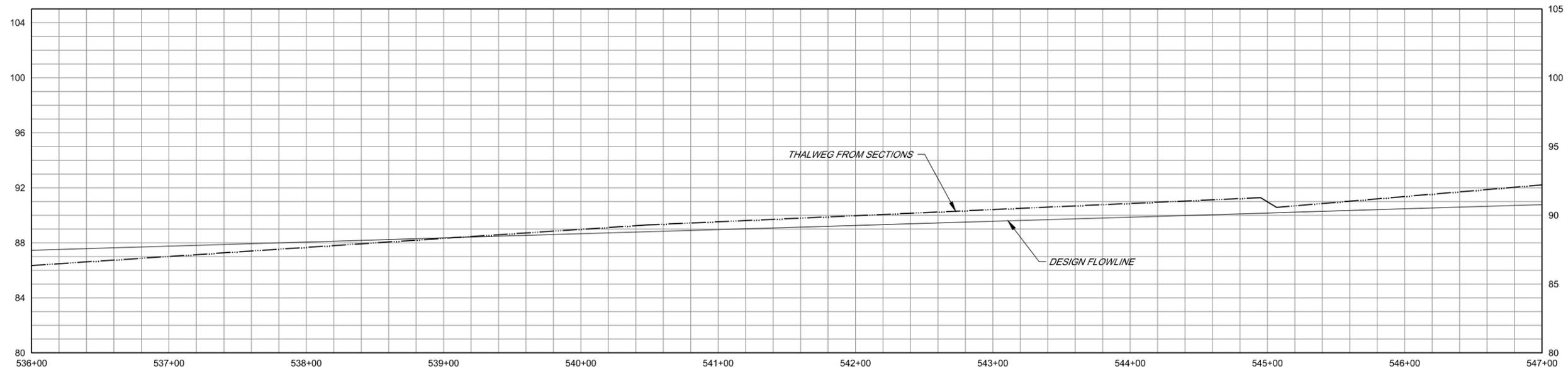
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: 3/31/2015
 DRAWN: ADF
 REVIEWED:

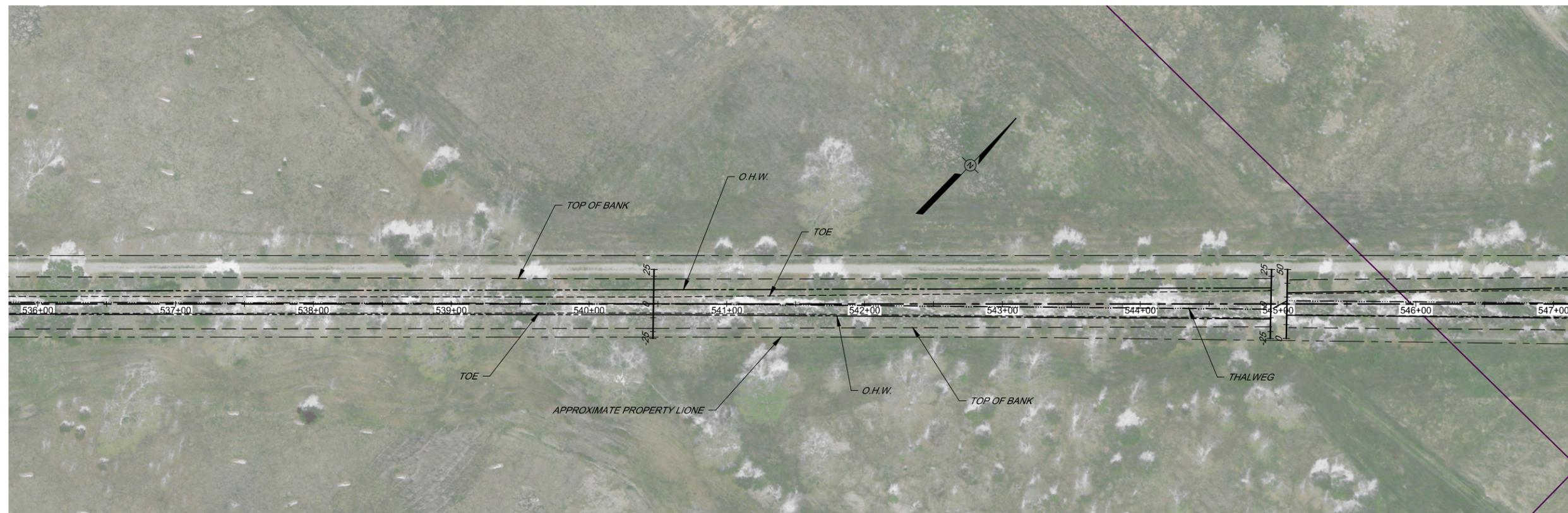
SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
 PETERSON CREEK - SMP REACH 2
 PLAN AND PROFILE STA 525+00 TO STA 536+00

FILE NAME: 2014-PETERSON_CIVIL DRAWING NUMBER: C-2 SHEET 3 OF 6
 CONTRACT NUMBER:

\\s01-datalp\proj\food control\zone 1a\ Peterson\CK2014-peterson



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

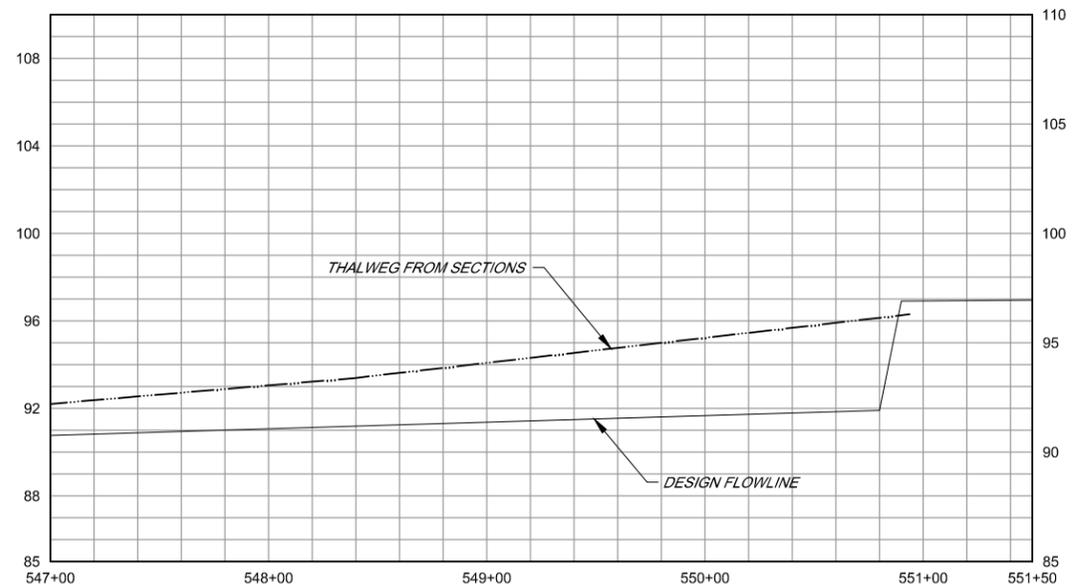
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: 3/31/2015
 DRAWN: ADF
 REVIEWED:

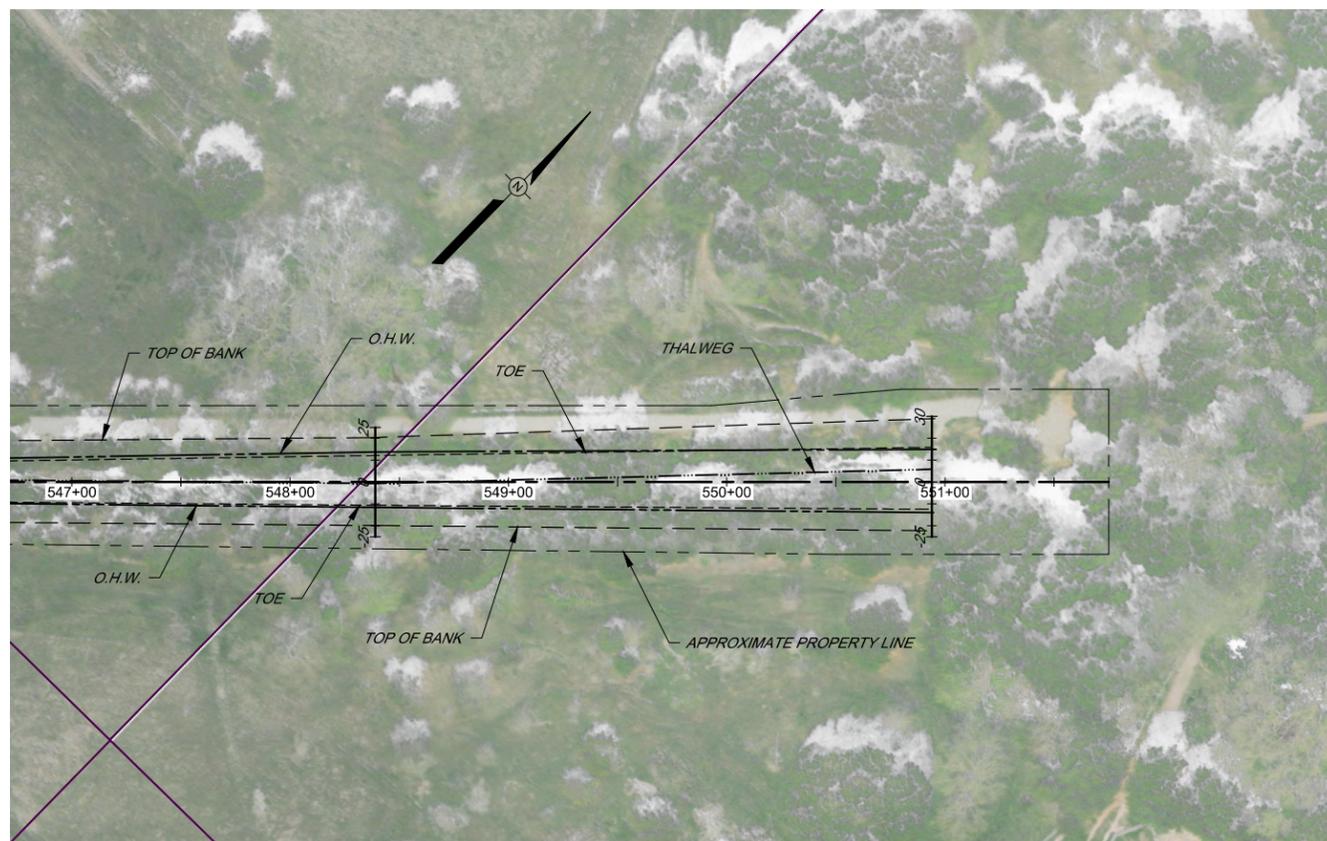
SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
 PETERSON CREEK - SMP REACH 2
 PLAN AND PROFILE STA 536+00 TO STA 547+00

FILE NAME: 2014-PETERSON_CIVIL CONTRACT NUMBER:
 DRAWING NUMBER: C-3 SHEET 4 OF 6

\\s01-datal\Proj\food control\zone 1a\ Peterson\CK2014-peterson



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

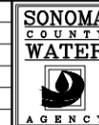


PLAN
 SCALE 1" = 40'



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

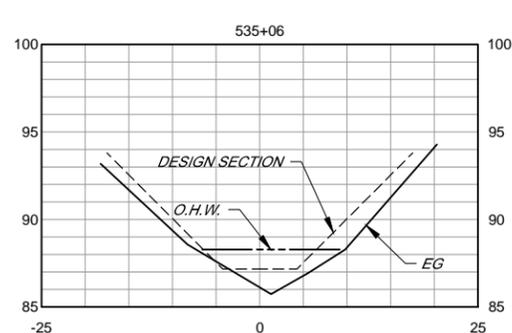
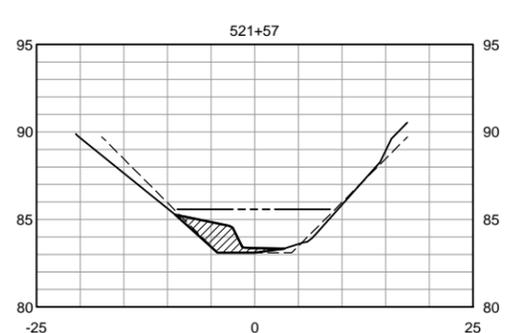
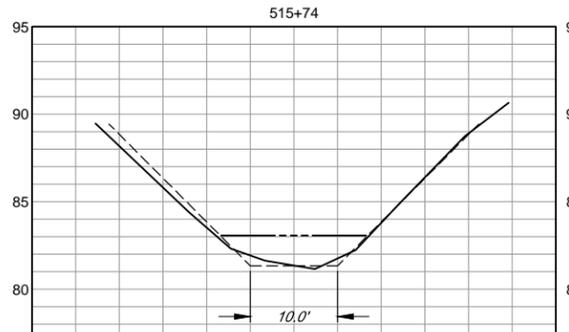
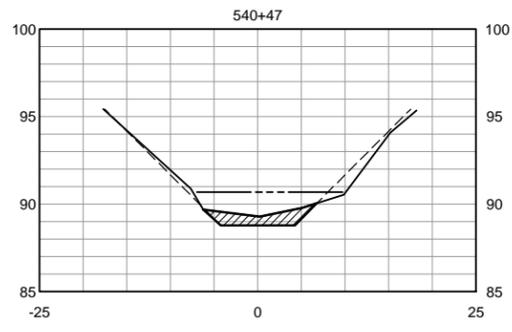
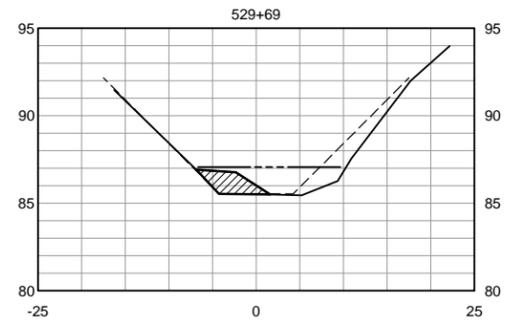
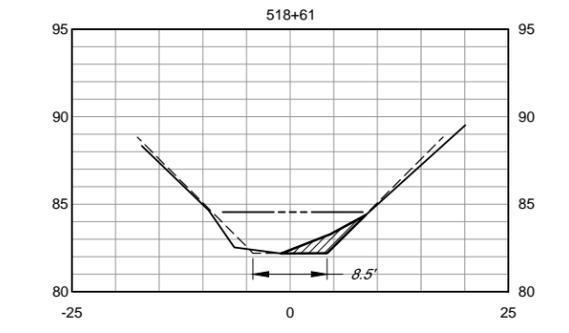
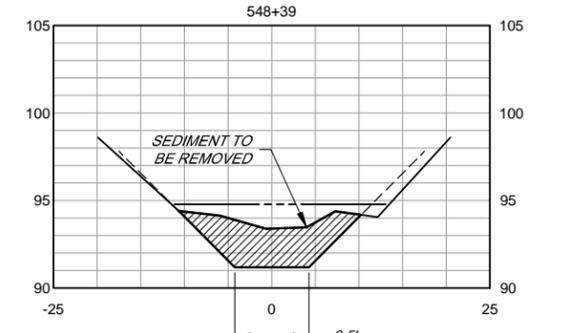
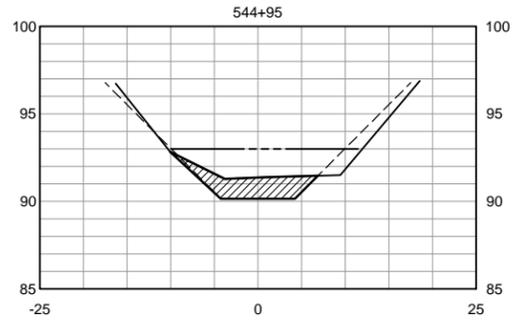
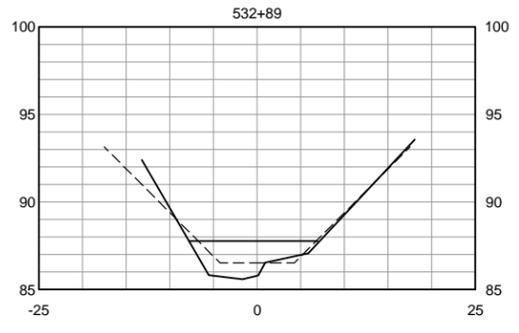
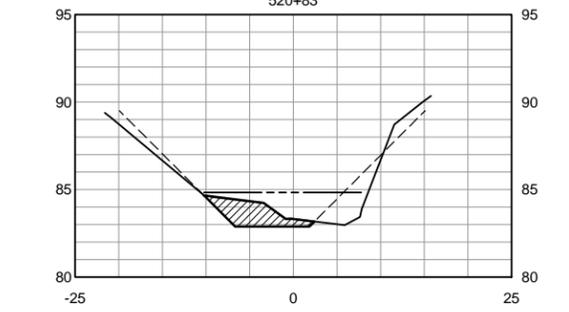
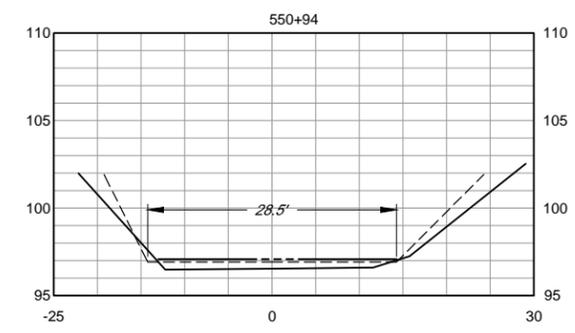
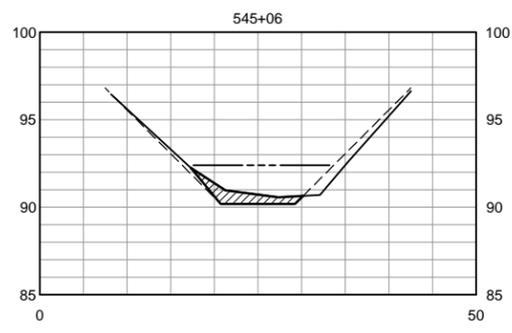
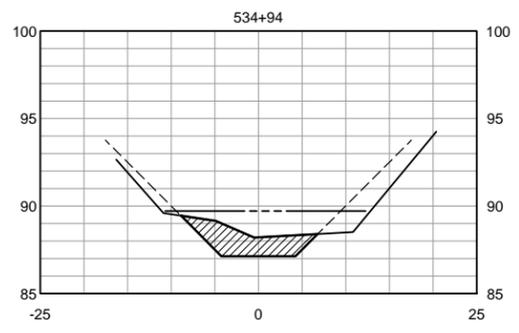
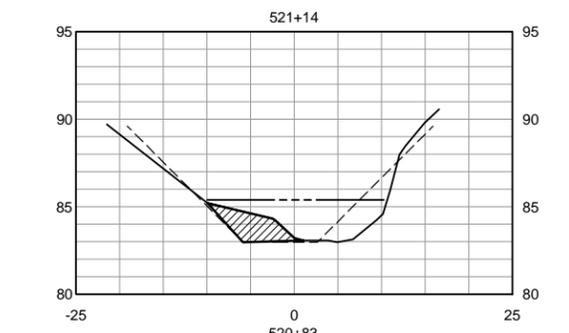
NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 3/31/2015
DRAWN: ADF	
REVIEWED:	

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A PETERSON CREEK - SMP REACH 2 PLAN AND PROFILE STA 547+00 TO STA 551+00	
FILE NAME: 2014-PETERSON_CIVIL	DRAWING NUMBER: C-4
CONTRACT NUMBER:	SHEET 5 OF 6

\\s01-datalp01\food\com\zone 1a\ Peterson\CK\2014-peterson



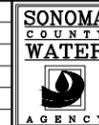
SECTIONS

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



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

NO.	DATE	REVISION	BY

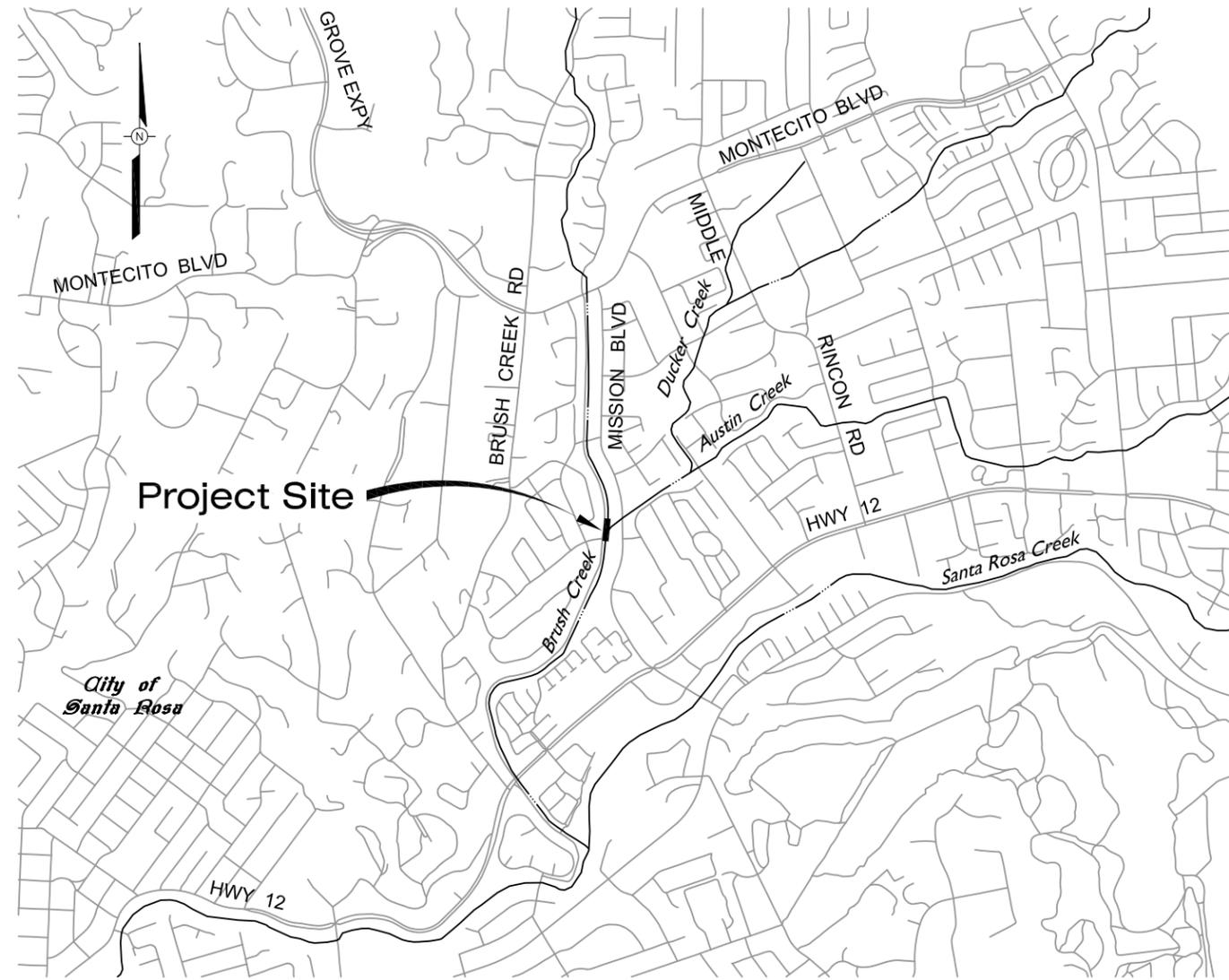


SCALE: AS SHOWN	DATE: 3/31/2015
DRAWN: ADF	
REVIEWED:	

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A		
PETERSON CREEK - SMP REACH 2		
SECTIONS		
FILE NAME: 2014-PETERSON_CIVIL	DRAWING NUMBER: C-5	SHEET 6 OF 6
CONTRACT NUMBER:		

\\sra-datalp\proj\food control\zone 1a\ Peterson\CK2014-peterson

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A BRUSH CREEK - REACH 2 INSTREAM SEDIMENT BASIN CLEARING



VICINITY MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

INDEX TO DRAWINGS

Sheet Number	Sheet Title	Sheet Description
1	G-1	INDEX TO DRAWINGS, LOCATION AND VICINITY MAPS
2	C-1	SEDIMENT REMOVAL, BASIN PLAN AND BASIN SECTION
3	C-2	SEDIMENT REMOVAL SECTIONS AND TABLES

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

		SCALE: AS SHOWN DRAWN: SMP REVIEWED:	DATE: 4/29/15	SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A BRUSH CREEK - REACH 2 INDEX TO DRAWINGS, LOCATION AND VICINITY MAPS	
NO.	DATE	REVISION	BY	FILE NAME: 2013_BrushCrk_General.dwg CONTRACT NUMBER:	DRAWING NUMBER: G-1 SHEET 1 OF 3



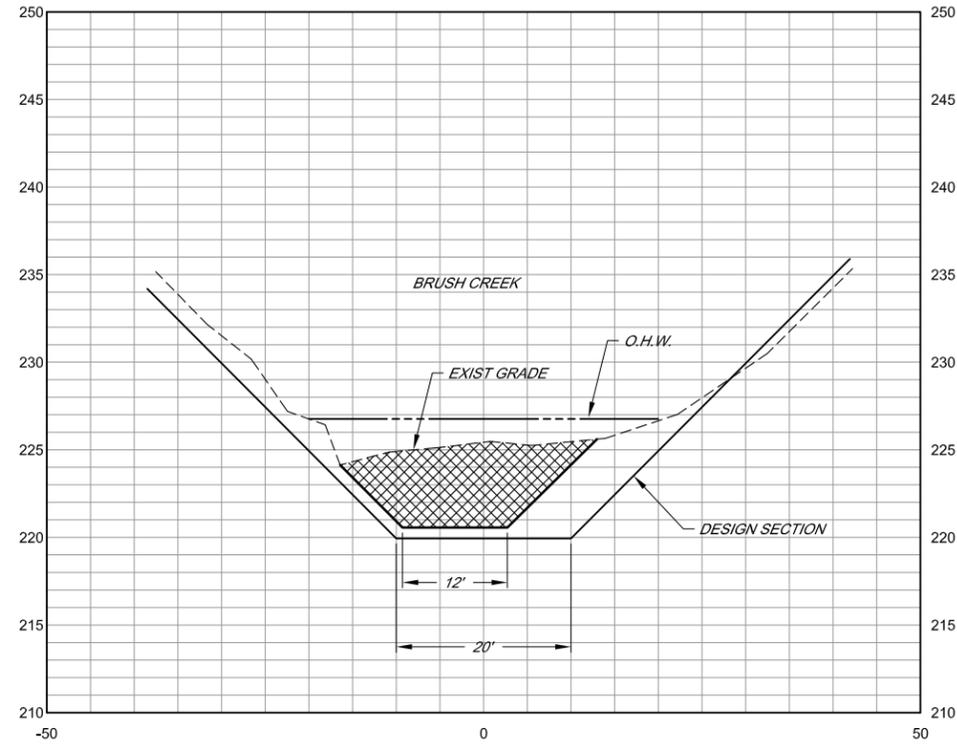
PLAN
SCALE 1" = 20'


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

NO.	DATE	REVISION	BY

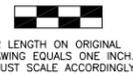
	SCALE: AS SHOWN	DATE: 4/29/15
	DRAWN: —	
	REVIEWED: —	

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A BRUSH CREEK - REACH 2 SEDIMENT REMOVAL, BASIN PLAN AND SEDIMENT REMOVAL		
FILE NAME: 2015_brush_crk-c	DRAWING NUMBER: C-1	SHEET 2 OF 3
CONTRACT NUMBER:		



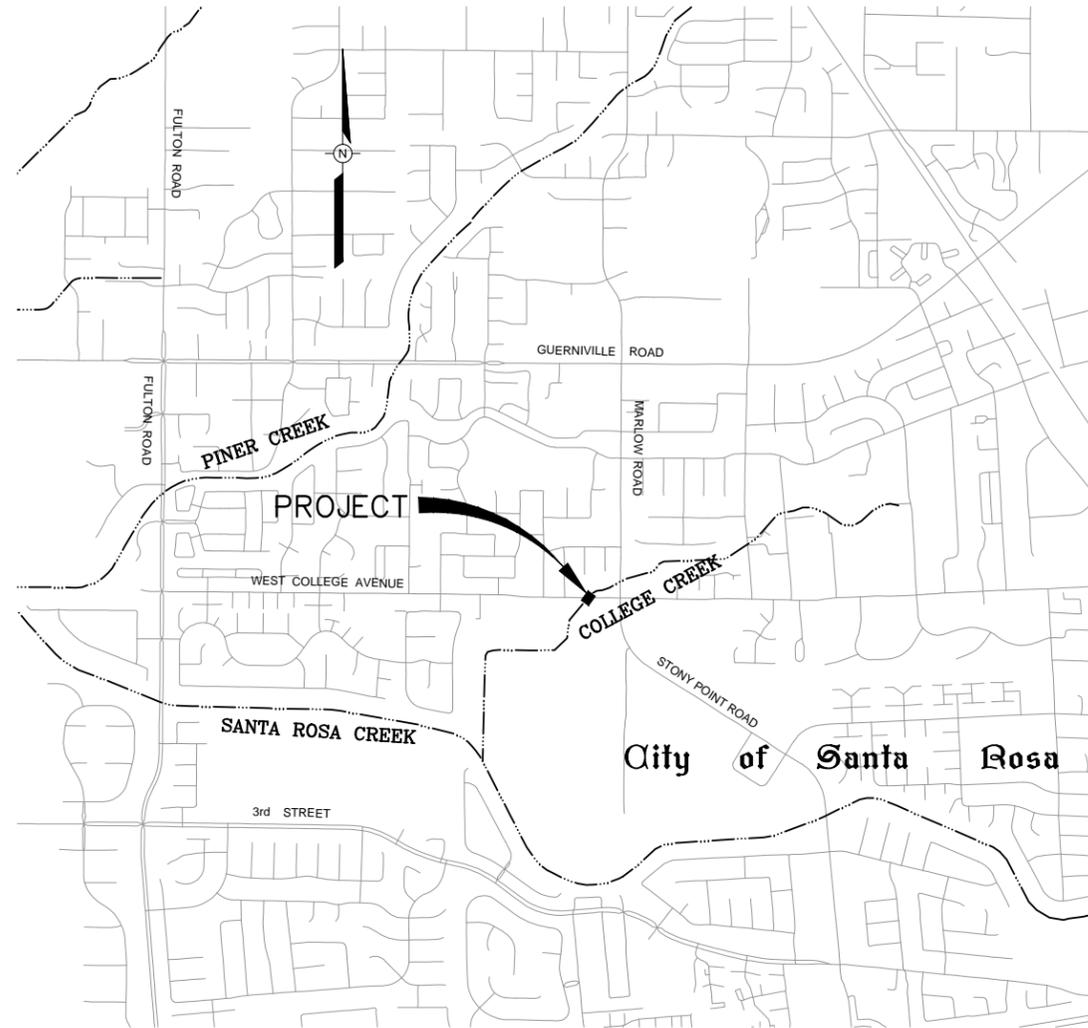
TYP SECTION
 SCALE HORIZ 1" = 10'
 VERT 1" = 5'

BRUSH CREEK (CHANNEL 40)						
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	SEDIMENT BASIN	100	20	2000	3	230



				SCALE: AS SHOWN DATE: 4/29/15 DRAWN: --- REVIEWED:	SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A BRUSH CREEK - REACH 2 SEDIMENT REMOVAL SECTIONS AND TABLE	
NO.	DATE	REVISION	BY	FILE NAME: 2015_brush_crk-c	DRAWING NUMBER: C-2	SHEET 3 OF 3

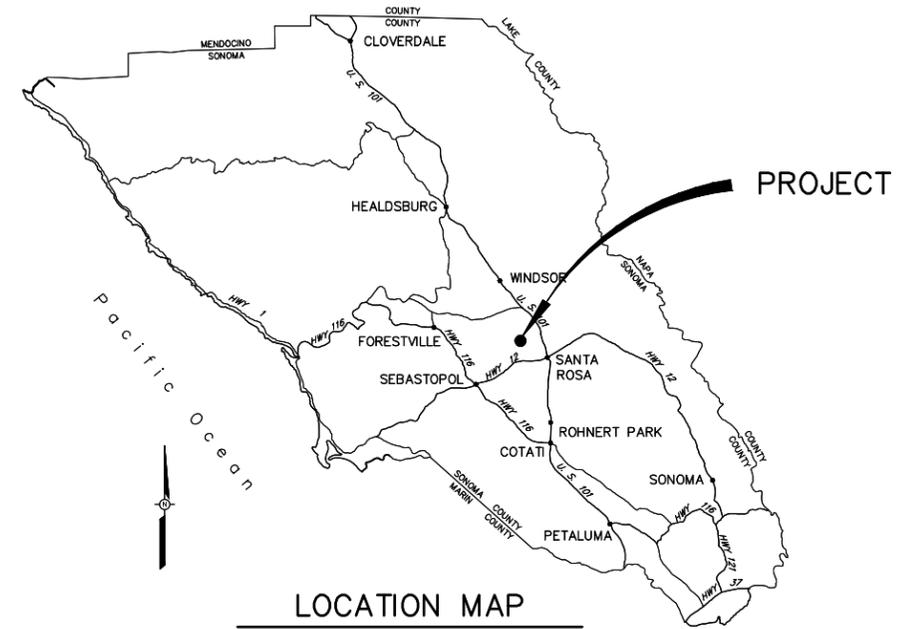
\\sdr\dataplanning\ford\com\mz\zone 1a\Brush Creek\2015-Brush



VICINITY MAP

NOT TO SCALE

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A
COLLEGE CREEK SMP REACH 1 AND 2
 2015 - LOCALIZED SEDIMENT REMOVAL



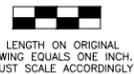
LOCATION MAP

NOT TO SCALE

COLLEGE CREEK SMP REACH 1 AND 2						
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.	SMP REACH 1 STATION 25+50 TO STATION 26+43	93	18	1,674	0.8	50
	SMP REACH 2 STATION 26+43 TO STATION 27+50	107	20	2,140	1	79

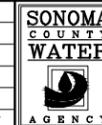
INDEX TO DRAWINGS		
SHEET NUMBER	DRAWING NUMBER	TITLE
1	G-1	INDEX TO DRAWINGS, TABLE, LOCATION AND VICINITY MAPS
2	C-1	PLAN AND PROFILE STA 25+50 TO STA 27+50
3	C-2	CROSS SECTIONS

PRELIMINARY
60% SUBMITTAL
 FOR REVIEW PURPOSES ONLY
 JUNE 24, 2014



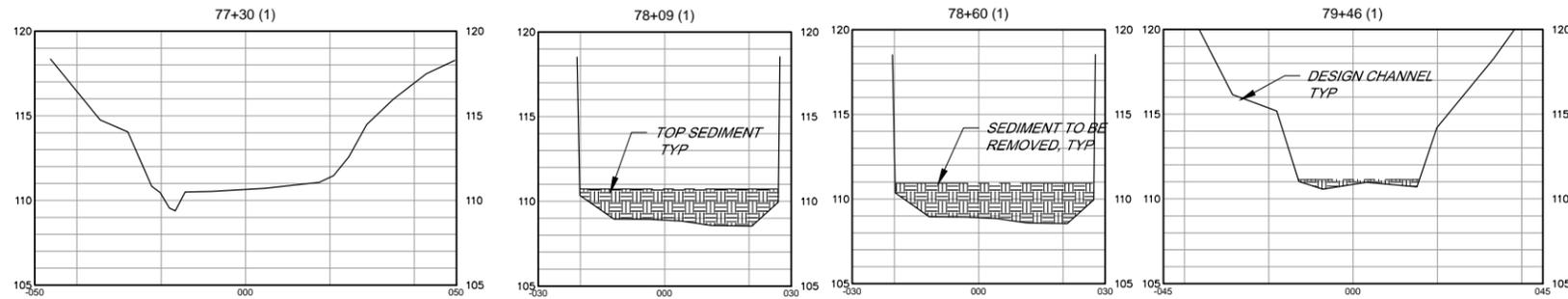
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 DRAWING EQUALS ONE INCH,
 ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY



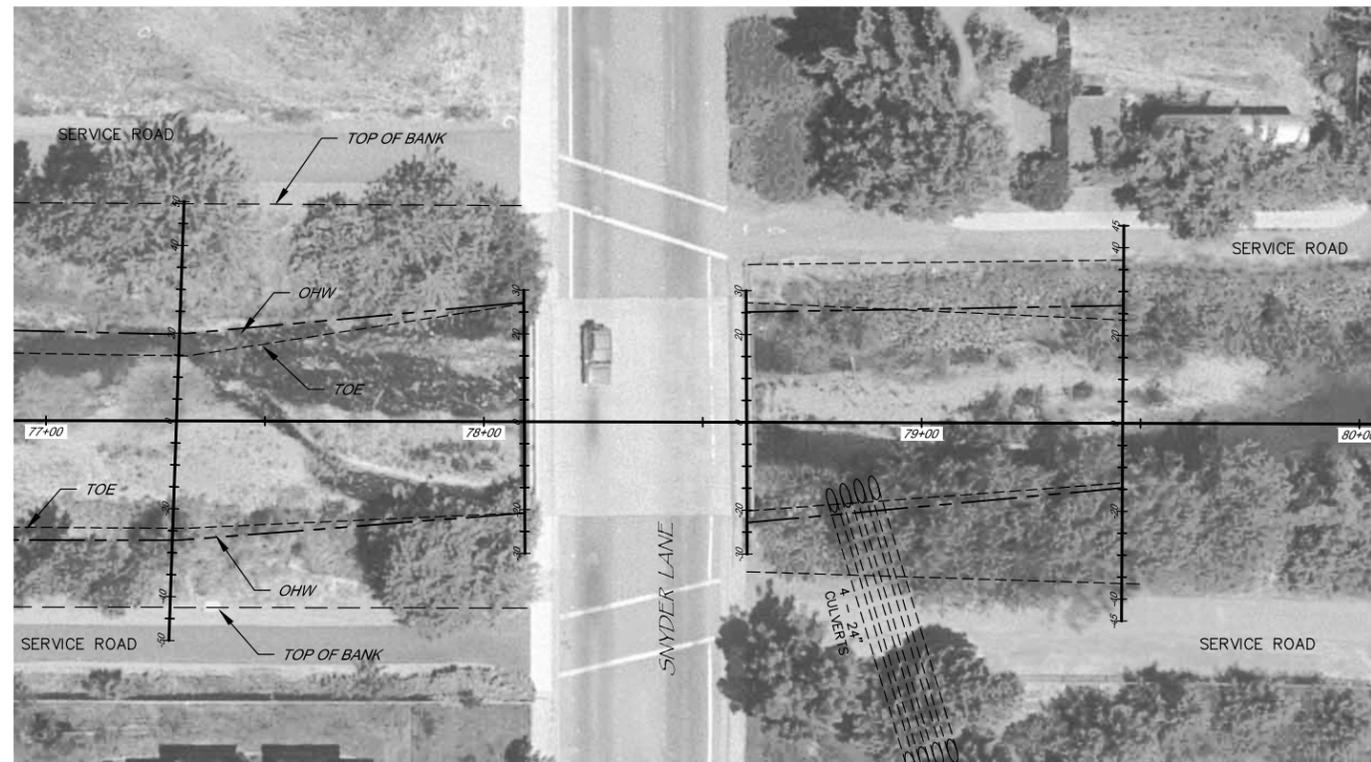
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DRAWN: ----	REVIEWED: ----

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A	
COLLEGE CREEK SMP REACH 1 AND 2	
INDEX TO DRAWINGS, TABLE, LOCATION AND VICINITY MAPS	
FILE NAME: 2015-College_G	DRAWING NUMBER: G-1
CONTRACT NUMBER:	SHEET 1 OF 3



SECTIONS

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

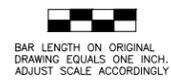


PLAN

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

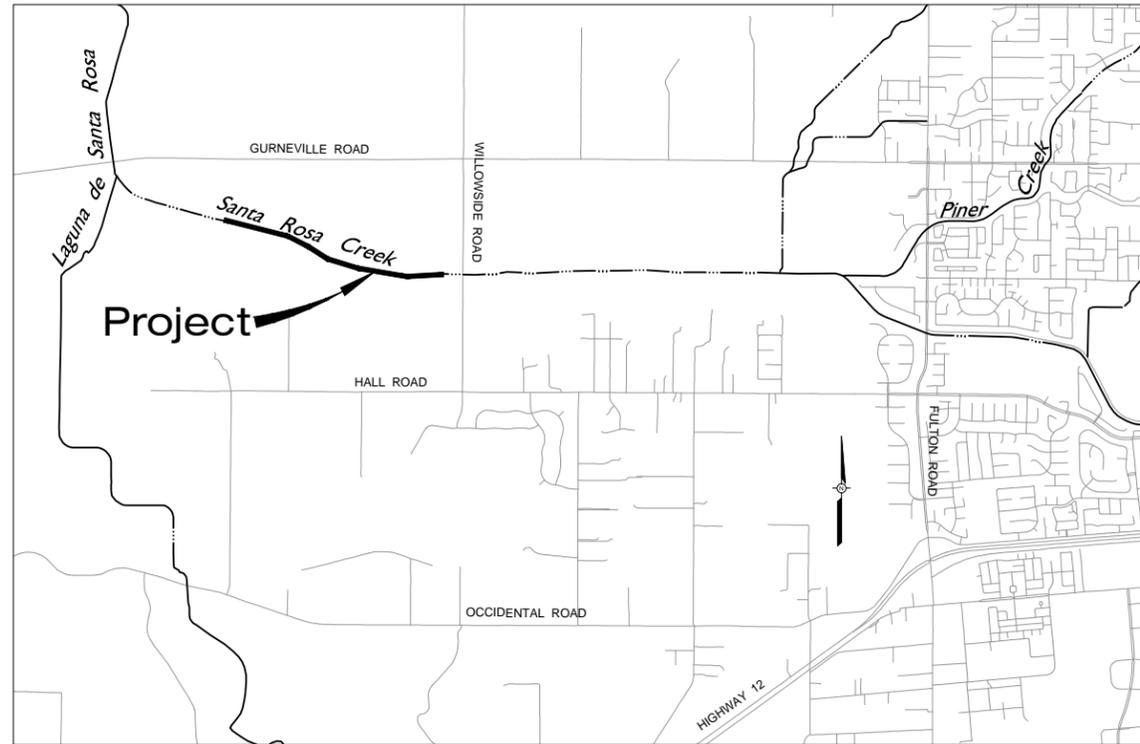
**PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY**
29 MAR 2012



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

NOTE:
AERIAL PHOTOGRAPHY FLOWN IN 2000

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 CONTRACT NUMBER: --	DRAWING NUMBER: C-2	SHEET 7 OF 8
-----	--	------	----------	----	--	--	--	--	--	--	---	---------------------	--------------



VICINITY MAP
NOT TO SCALE

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A SANTA ROSA CREEK SMP REACH 1 LOCALIZED SEDIMENT REMOVAL

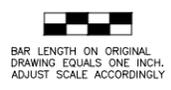


LOCATION MAP
NOT TO SCALE

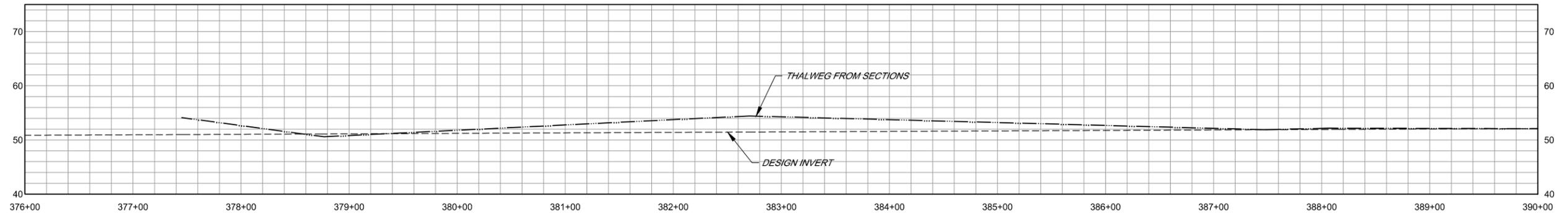
SANTA ROSA CREEK SMP REACH 1						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAR OR FRONT END LOADER OPERATING IN CHANNEL	STA 377+00 TO STA 379+25	225	22	4,950	1.9	345
	STA 382+00 TO STA 383+50	150	30	4,500	1.1	183
	STA 386+80 TO STA 388+90	210	28.5	5,985	1.8	399
	STA 394+10 TO STA 396+00	210	18.5	3,885	1.5	216
	STA 402+60 TO STA 406+50	390	40.2	15,678	2.3	1,336
	STA 408+00 TO STA 410+00	200	26.1	5,220	1.9	367
	STA 413+45 TO STA 415+00	155	26.8	4,154	1.3	200
	STA 418+00 TO STA 420+00	200	17.3	3,460	0.9	115
	STA 427+10 TO STA 429+60	250	31.4	7,850	1.9	552
	TOTALS:		1,990	28	55,682	1.8

INDEX TO DRAWINGS		
SHEET NUMBER	DRAWING NUMBER	TITLE
1	G-1	INDEX TO DRAWINGS, TABLE, LOCATION AND VICINITY MAPS
2	C-1	PLAN AND PROFILE STA 376+00 TO STA 390+00
3	C-2	PLAN AND PROFILE STA 390+00 TO STA 405+00
4	C-3	PLAN AND PROFILE STA 405+00 TO STA 420+00
5	C-4	PLAN AND PROFILE STA 420+00 TO STA 431+00
6	C-5	SECTIONS STA 408+44 TO STA 429+56
7	C-6	SECTIONS STA 382+71 TO STA 405+82
8	C-7	SECTIONS STA 377+46 TO STA 378+76

\\g:\data\proj\food\com\zone 1a\smu\02015_Santa_Rosa_Crk_SMP-1

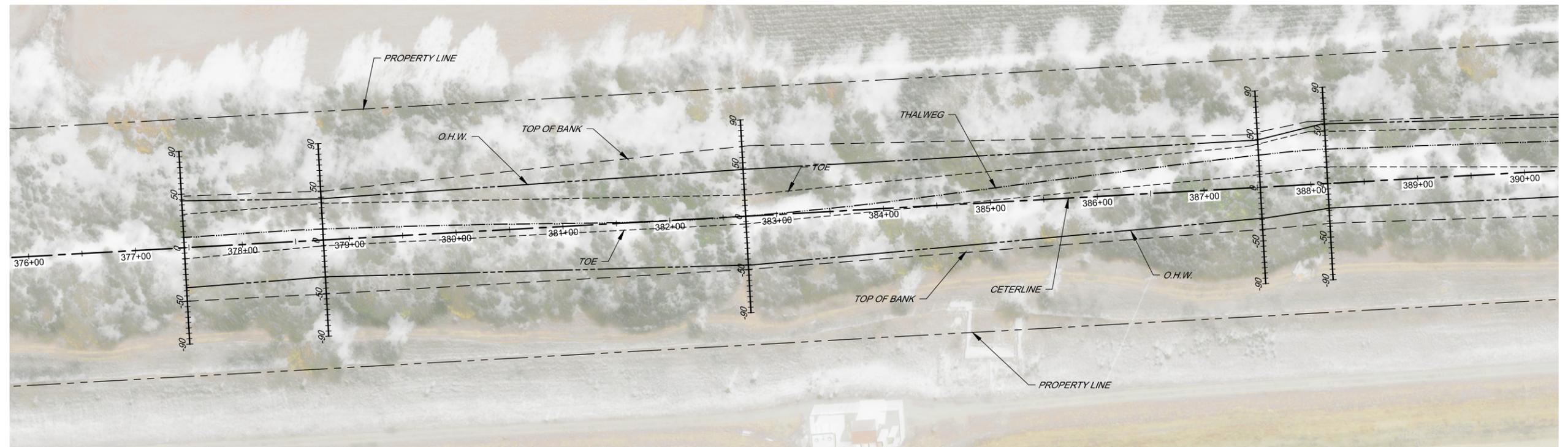


		SCALE: AS SHOWN DATE: ##### DRAWN: ---- REVIEWED:	SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A SANTA ROSA CREEK SMP REACH 1 INDEX TO DRAWINGS, TABLE, LOCATION AND VICINITY MAPS	
NO.	DATE	REVISION	BY	FILE NAME: 2015_SR-CRK_G CONTRACT NUMBER:
			DRAWING NUMBER: G-1	SHEET 1 OF 8



PROFILE

SCALE HORIZ 1" = 50'
VERT 1" = 10'



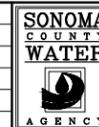
PLAN

SCALE 1" = 50'



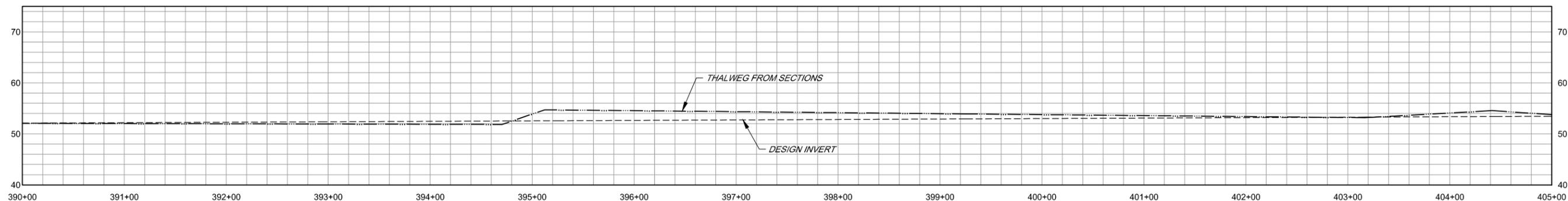
BAR LENGTH ON ORIGINAL DRAWING EQUALS ONE INCH, ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

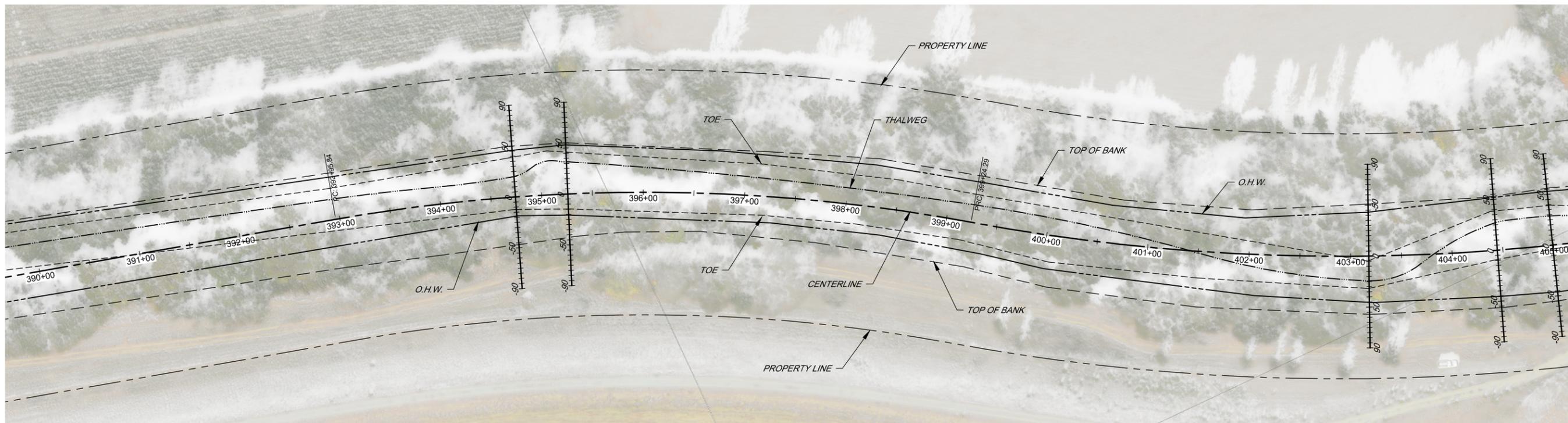


SCALE: AS SHOWN	DATE: 4/29/2015
DRAWN: ----	
REVIEWED: _____	

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A		
SANTA ROSA CREEK SMP REACH 1		
PLAN AND PROFILE STA 376+00 TO STA 390+00		
FILE NAME: 2015_SR-CRK_CIVIL	DRAWING NUMBER: C-1	SHEET 2 OF 8



PROFILE
 SCALE HORIZ 1" = 50'
 VERT 1" = 10'



PLAN
 SCALE 1" = 50'



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

NO.	DATE	REVISION	BY

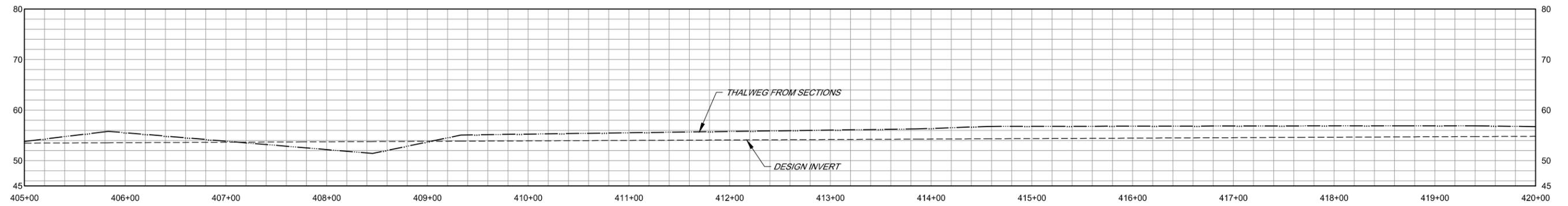
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: 4/29/2015
 DRAWN: ----
 REVIEWED: _____

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A
 SANTA ROSA CREEK SMP REACH 1
 PLAN AND PROFILE STA 390+00 TO STA 405+00

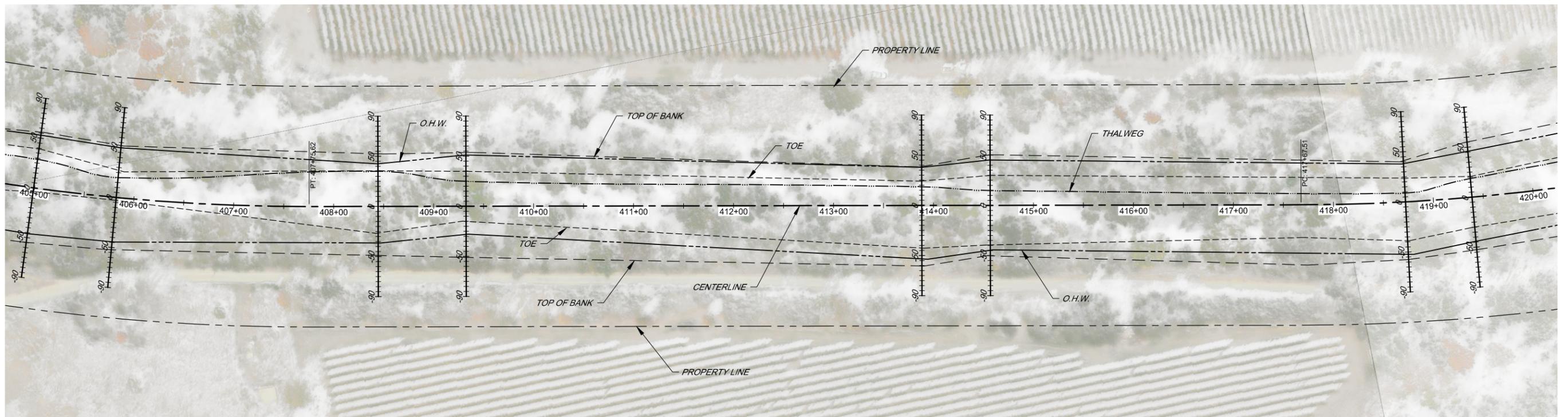
FILE NAME: 2015_SR-CRK_CIVIL CONTRACT NUMBER: _____
 DRAWING NUMBER: C-2 SHEET 3 OF 8

\\g:\data\proj\food\com\zone 1a\smr\files\2015_Santa_Rosa_Crk_SMP-1



PROFILE

SCALE HORIZ 1" = 50'
VERT 1" = 10'



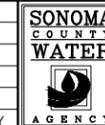
PLAN

SCALE 1" = 50'



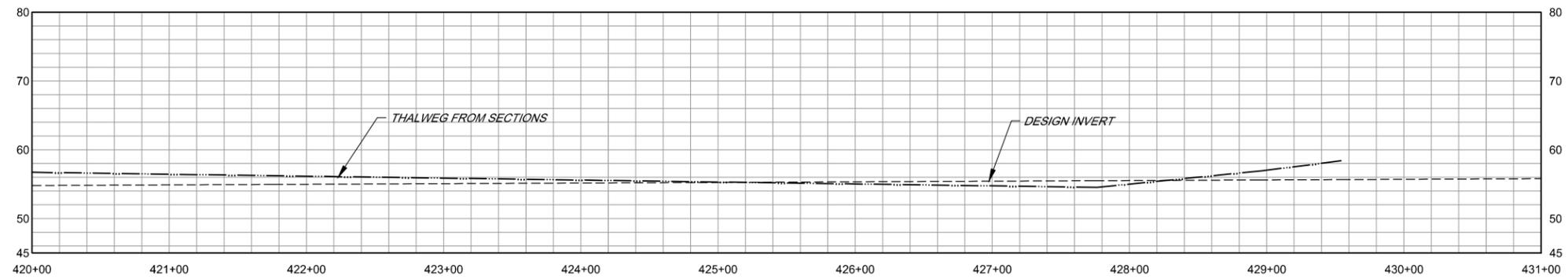
BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

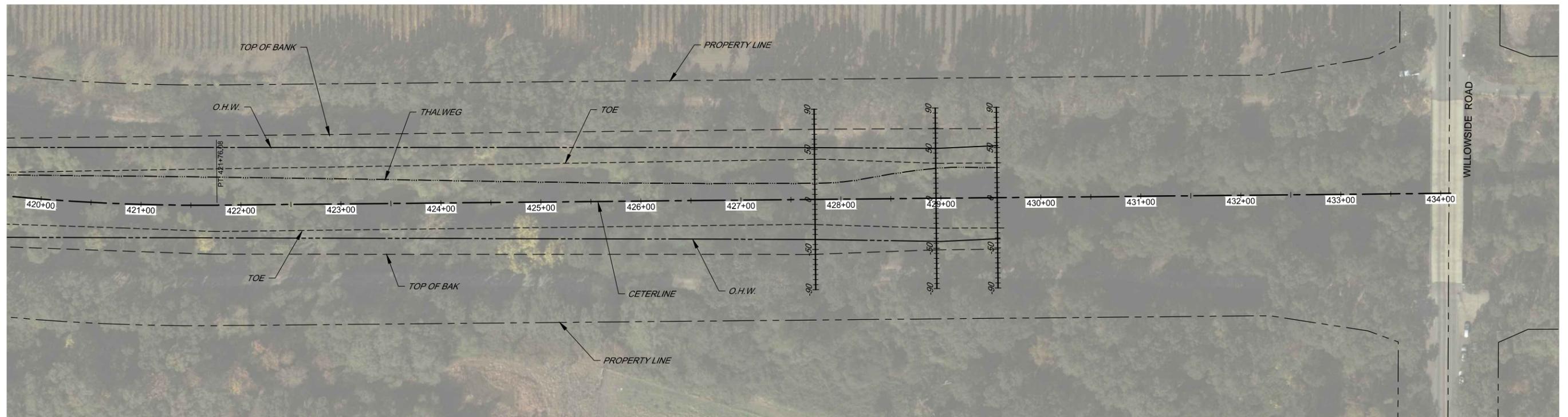


SCALE: AS SHOWN	DATE: 4/29/2015
DRAWN: ----	
REVIEWED: _____	

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A		
SANTA ROSA CREEK SMP REACH 1		
PLAN AND PROFILE STA 405+00 TO STA 420+00		
FILE NAME: 2015_SR-CRK_CIVIL	DRAWING NUMBER: C-3	SHEET 4 OF 8
CONTRACT NUMBER: _____		



PROFILE
 SCALE HORIZ 1" = 50'
 VERT 1" = 10'



PLAN
 SCALE 1" = 50'



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

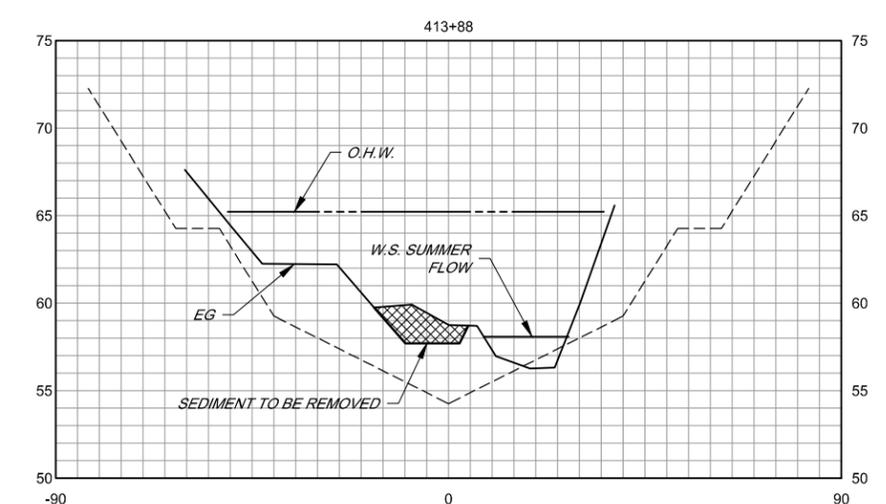
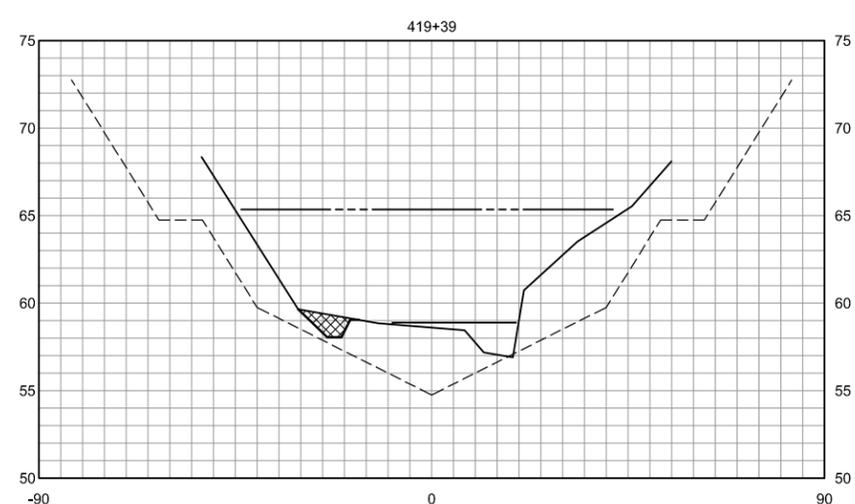
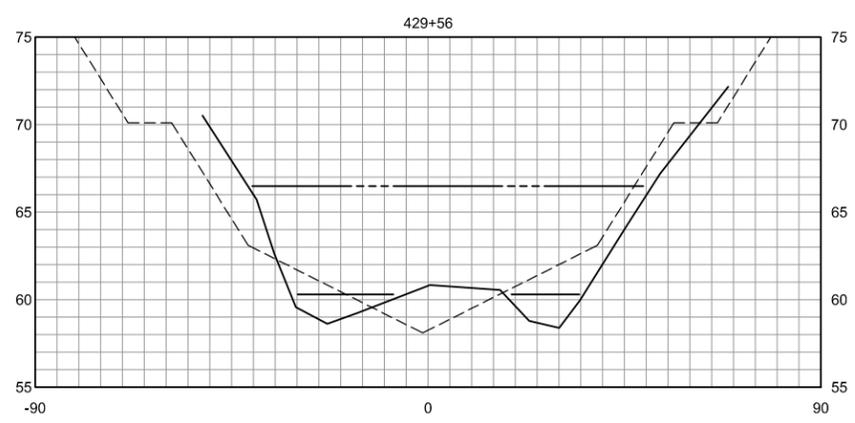
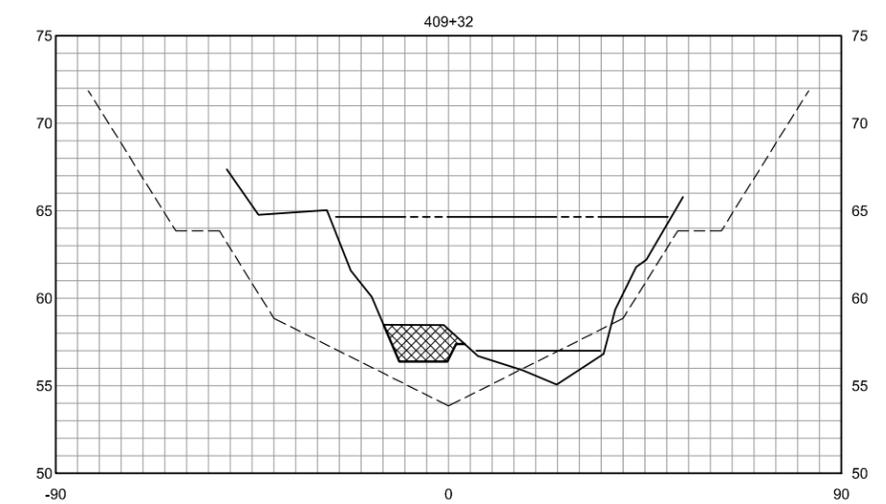
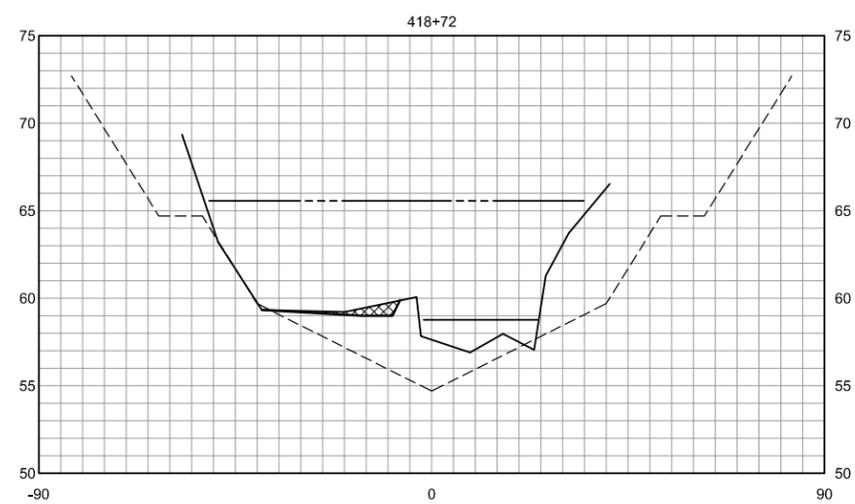
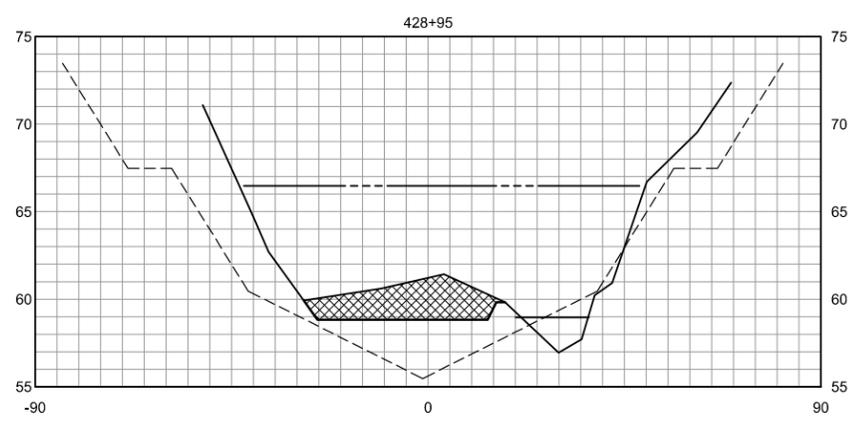
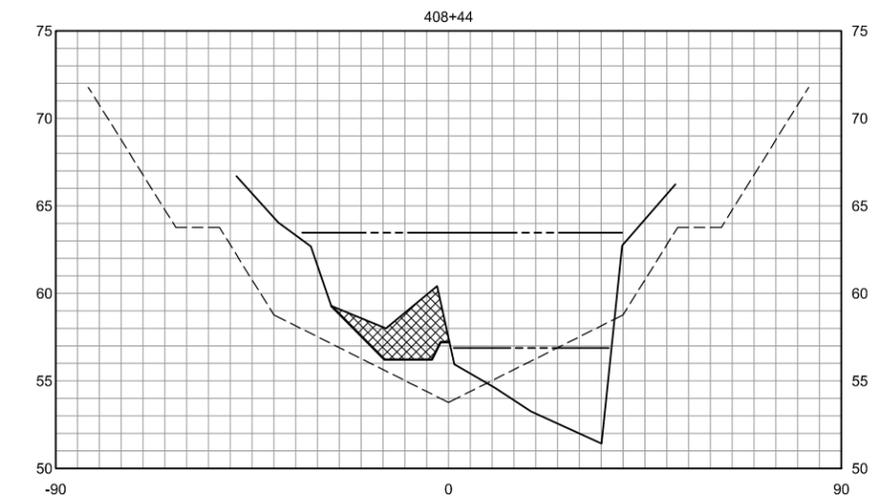
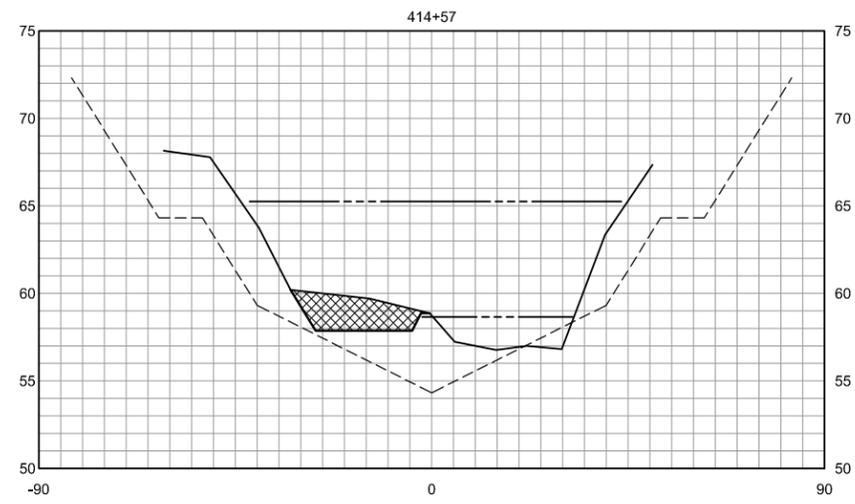
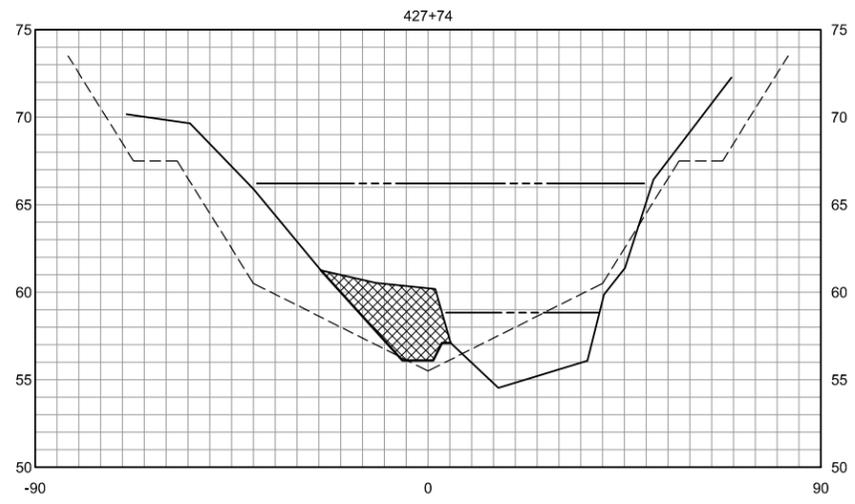
NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: 4/29/2015
 DRAWN: ----
 REVIEWED: _____

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A
 SANTA ROSA CREEK SMP REACH 1
 PLAN AND PROFILE STA 420+00 TO STA 431+00

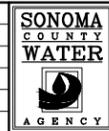
FILE NAME: 2015_SR-CRK_CIVIL DRAWING NUMBER: C-4 SHEET 5 OF 8
 CONTRACT NUMBER: _____



SECTIONS (LOOKING DOWNSTREAM)
 SCALE HORIZ 1" = 10'
 VERT 1" = 5'

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

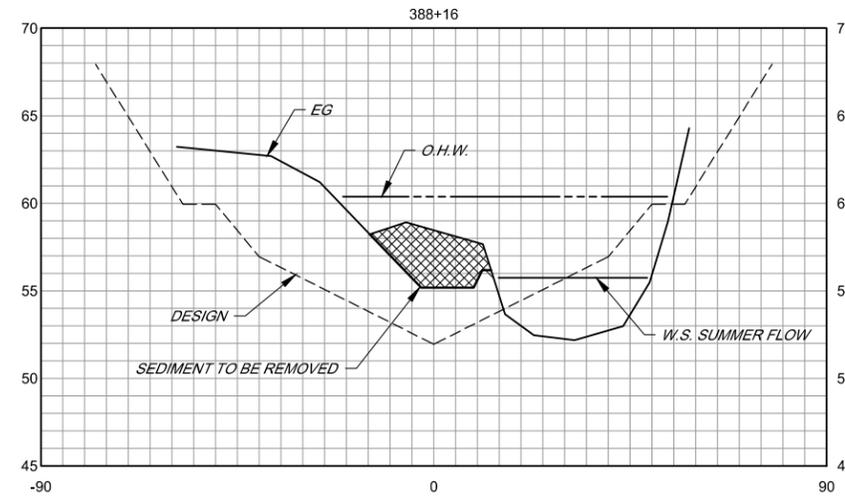
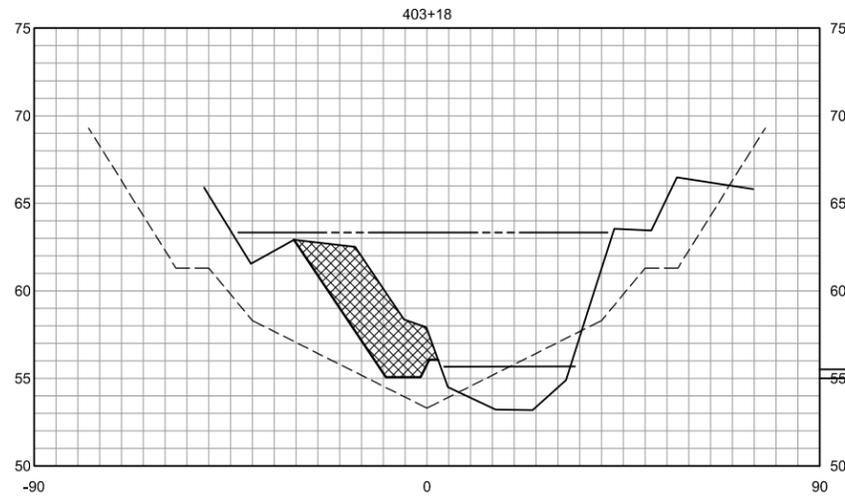
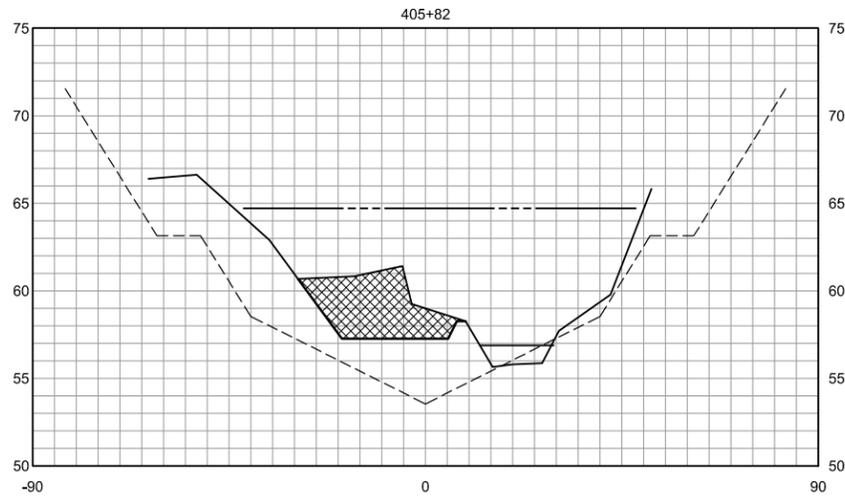
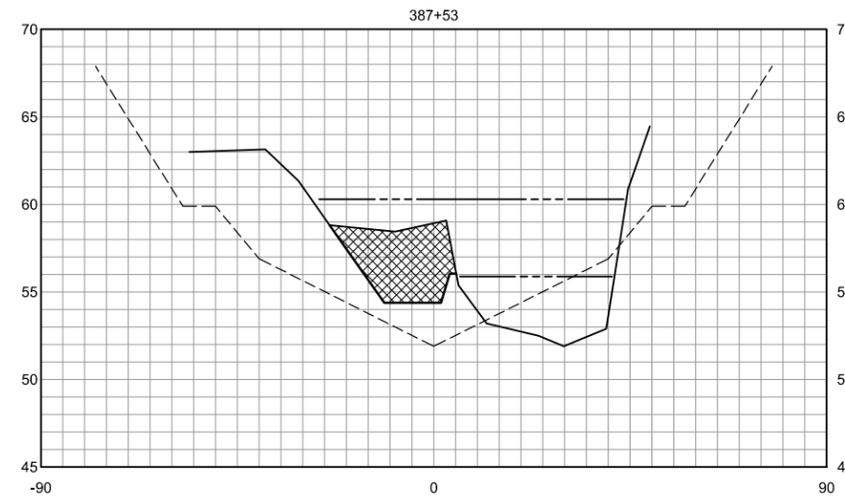
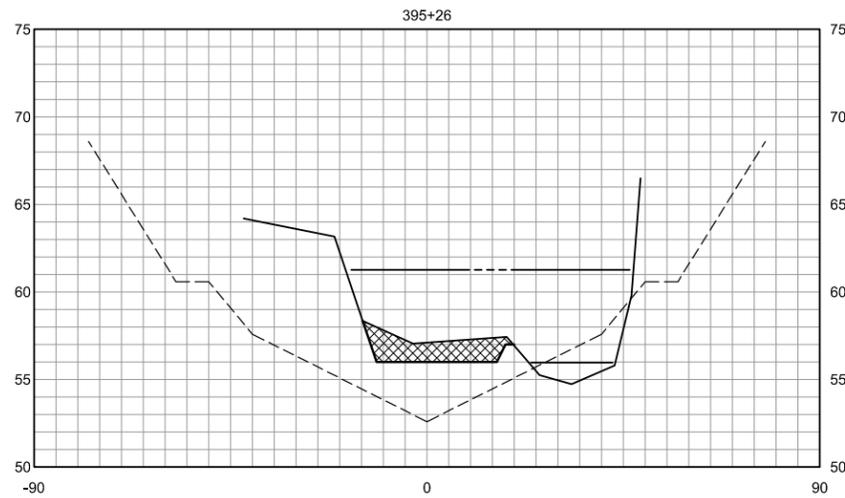
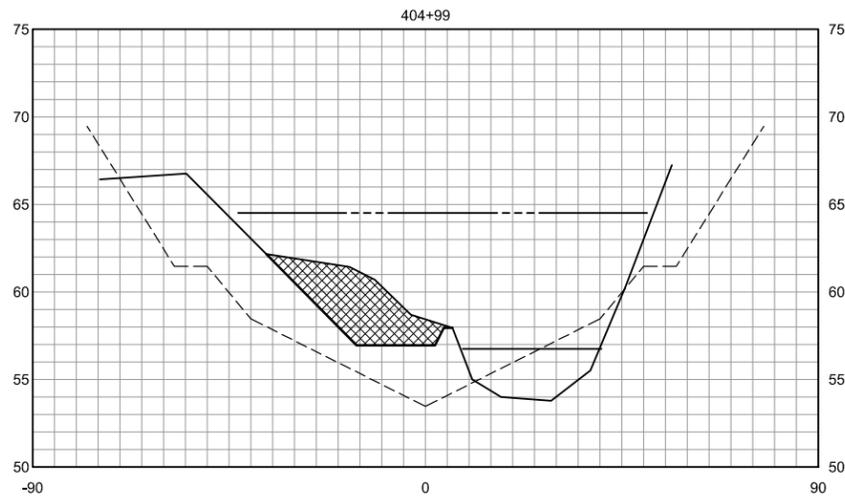
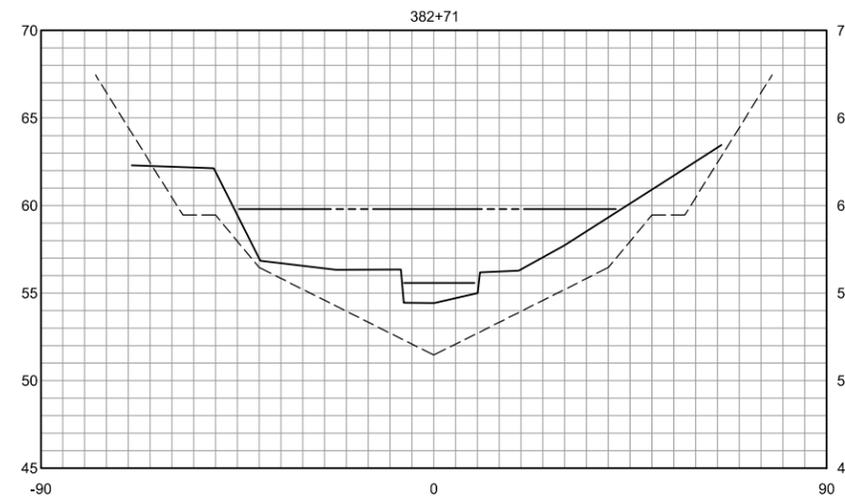
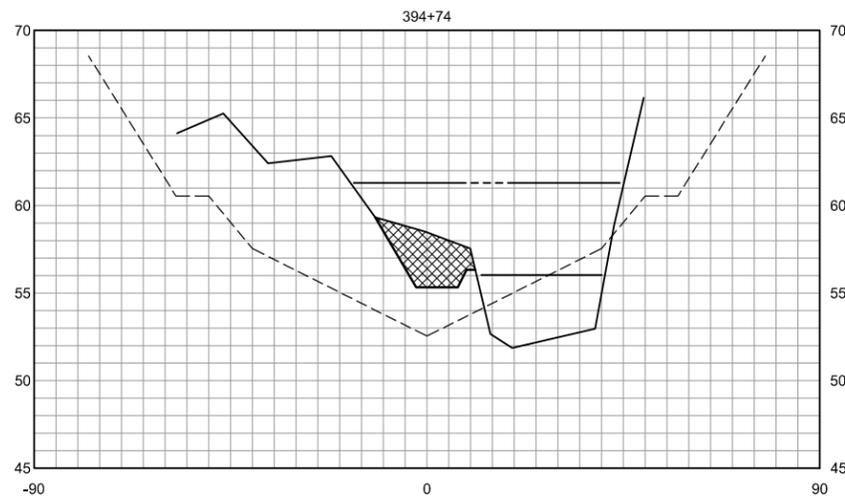
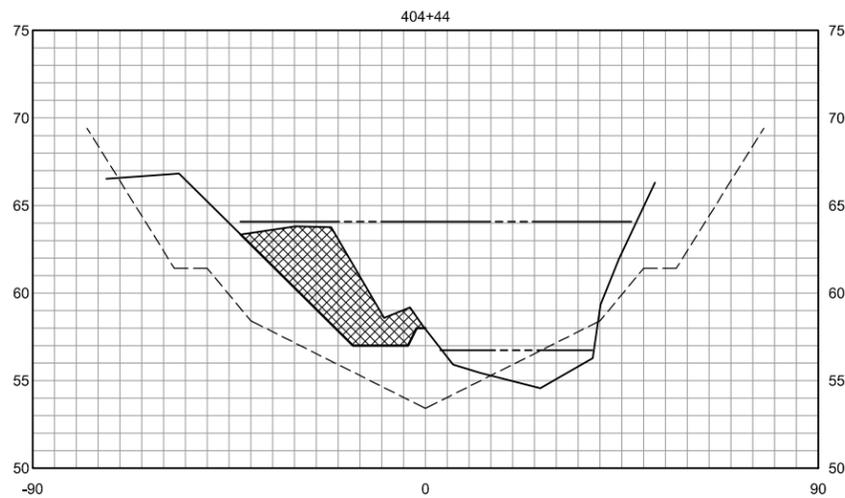
NO.	DATE	REVISION	BY



SCALE: AS SHOWN
 DATE: 4/29/2015
 DRAWN: ----
 REVIEWED: _____

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A
 SANTA ROSA CREEK SMP REACH 1
 SECTIONS STA 408+44 TO STA 429+56
 FILE NAME: 2015_SR-CRK_CIVIL
 CONTRACT NUMBER: _____
 DRAWING NUMBER: C-5
 SHEET 6 OF 8

\\sdr-data\proj\food\com\zone1a\SantaRosa\2015_Santa_Rosa_Crk_SMP-1

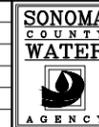


SECTIONS (LOOKING DOWNSTREAM)
 SCALE HORIZ 1" = 10'
 VERT 1" = 5'



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

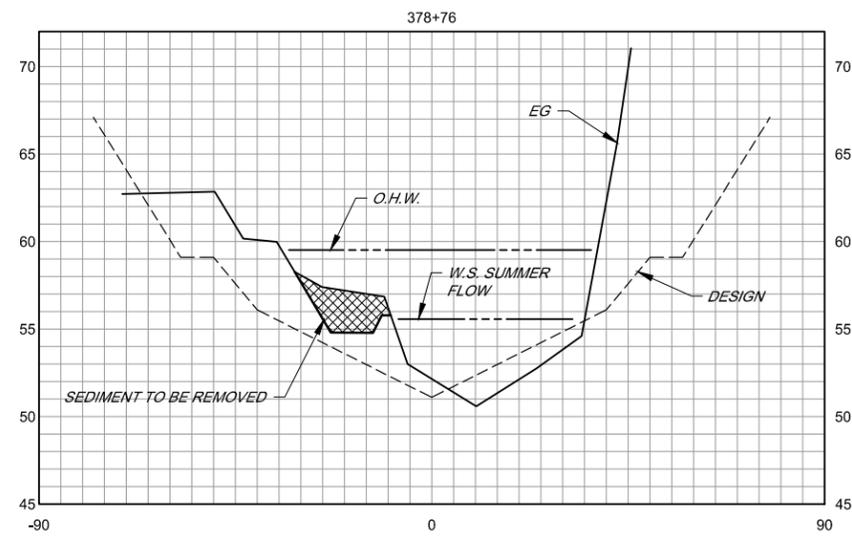
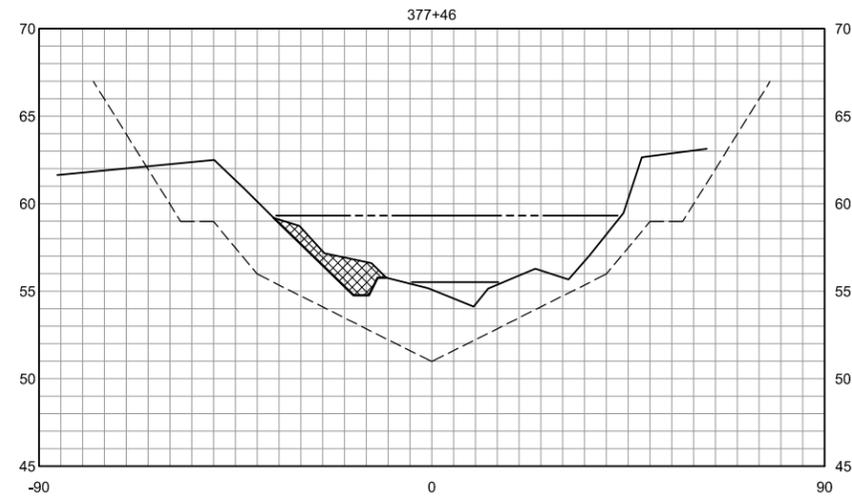
NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 4/29/2015
DRAWN: ----	
REVIEWED: _____	

SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A	
SANTA ROSA CREEK SMP REACH 1	
SECTIONS STA 382+71 TO STA 405+82	
FILE NAME: 2015_SR-CRK_CIVIL	DRAWING NUMBER: C-6
CONTRACT NUMBER: _____	SHEET 7 OF 8

\\sdr-data\proj\food\com\zone1a\SR\2015\2015_Santa_Rosa_Crk_SMP-1



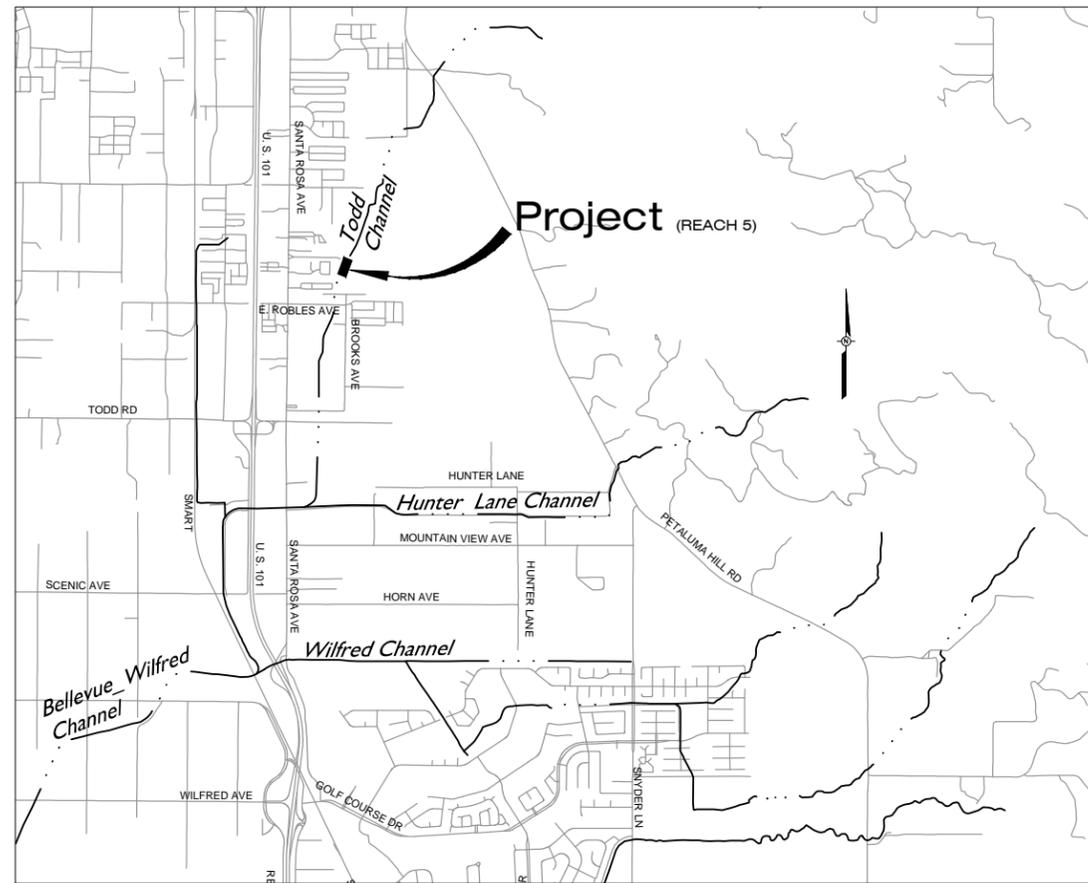
SECTIONS (LOOKING DOWNSTREAM)
 SCALE HORIZ 1" = 10'
 VERT 1" = 5'



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

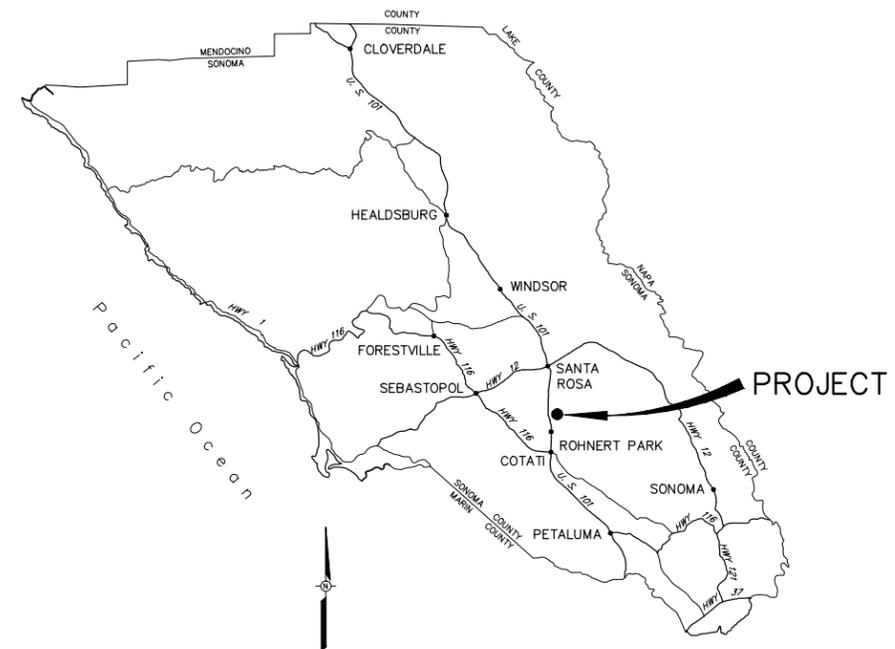
						SCALE: AS SHOWN DATE: 4/29/2015	SMP - LAGUNA - MARK WEST WATERSHED ZONE 1A SANTA ROSA CREEK SMP REACH 1 SECTIONS STA 377+46 TO STA 378+76		
						DRAWN: ---- REVIEWED:	FILE NAME: 2015_SR-CRK_CIVIL CONTRACT NUMBER:	DRAWING NUMBER: C-7	SHEET 8 OF 8
NO.	DATE	REVISION		BY					

SMP LAGUNA DE SANTA ROSA WATERSHED ZONE 1A TODD CHANNEL - REACH 5B INSTREAM SEDIMENT BASIN CLEARING



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

INDEX TO DRAWINGS

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

TODD CHANNEL						
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)
	SMP 5 STA 115+50 TO STA 116+15	50	20	1000	1.5	60
TOTAL:		50		1000		60



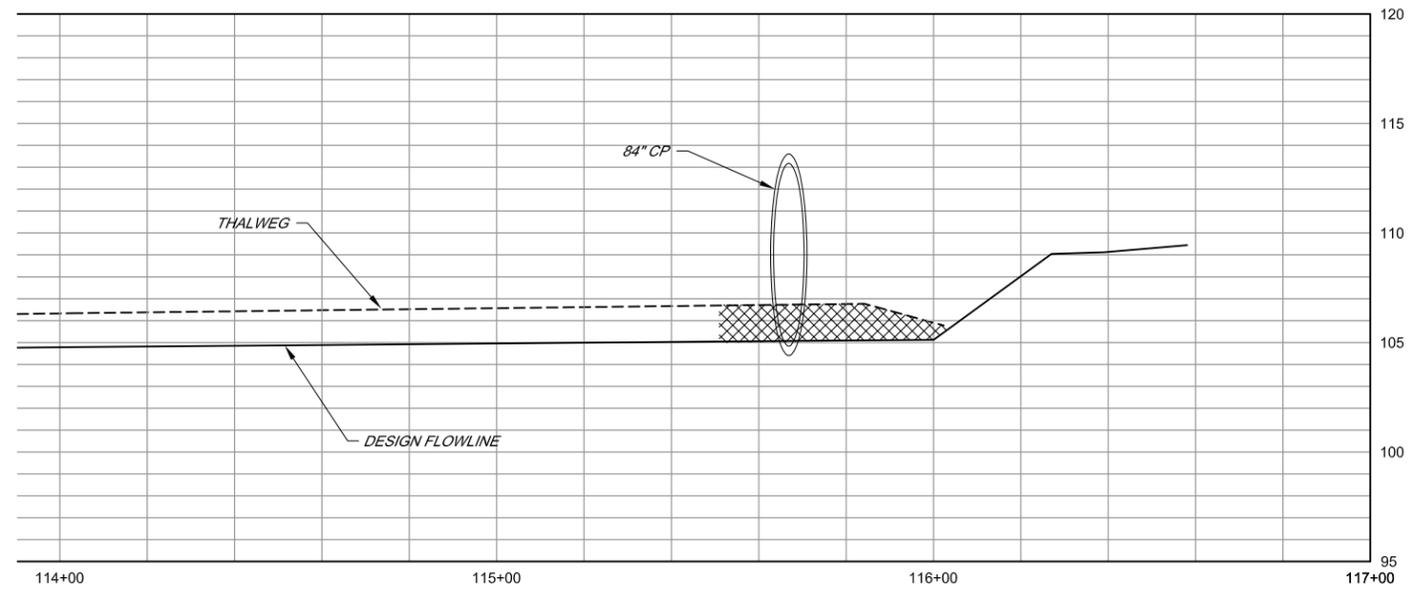
BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH.
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

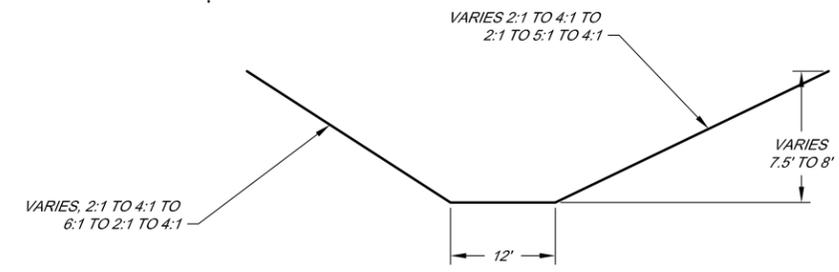
SCALE:	AS SHOWN	DATE:	4/29/15
DRAWN:	SMP	REVIEWED:	

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A TODD CHANNEL - REACH 5B INDEX TO DRAWINGS, VICINITY AND LOCATION MAPS	
FILE NAME: 2015_TODD-GENERAL	DRAWING NUMBER: G-1
CONTRACT NUMBER:	SHEET 1 OF 2

\\net-data\proj\filed_control\zone 1a\TODD\2015-Todd\2015-Todd-General



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



TYPICAL SECTION
 STA 114+00 TO STA 116+00+/-



PLAN
 SCALE 1" = 20'

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

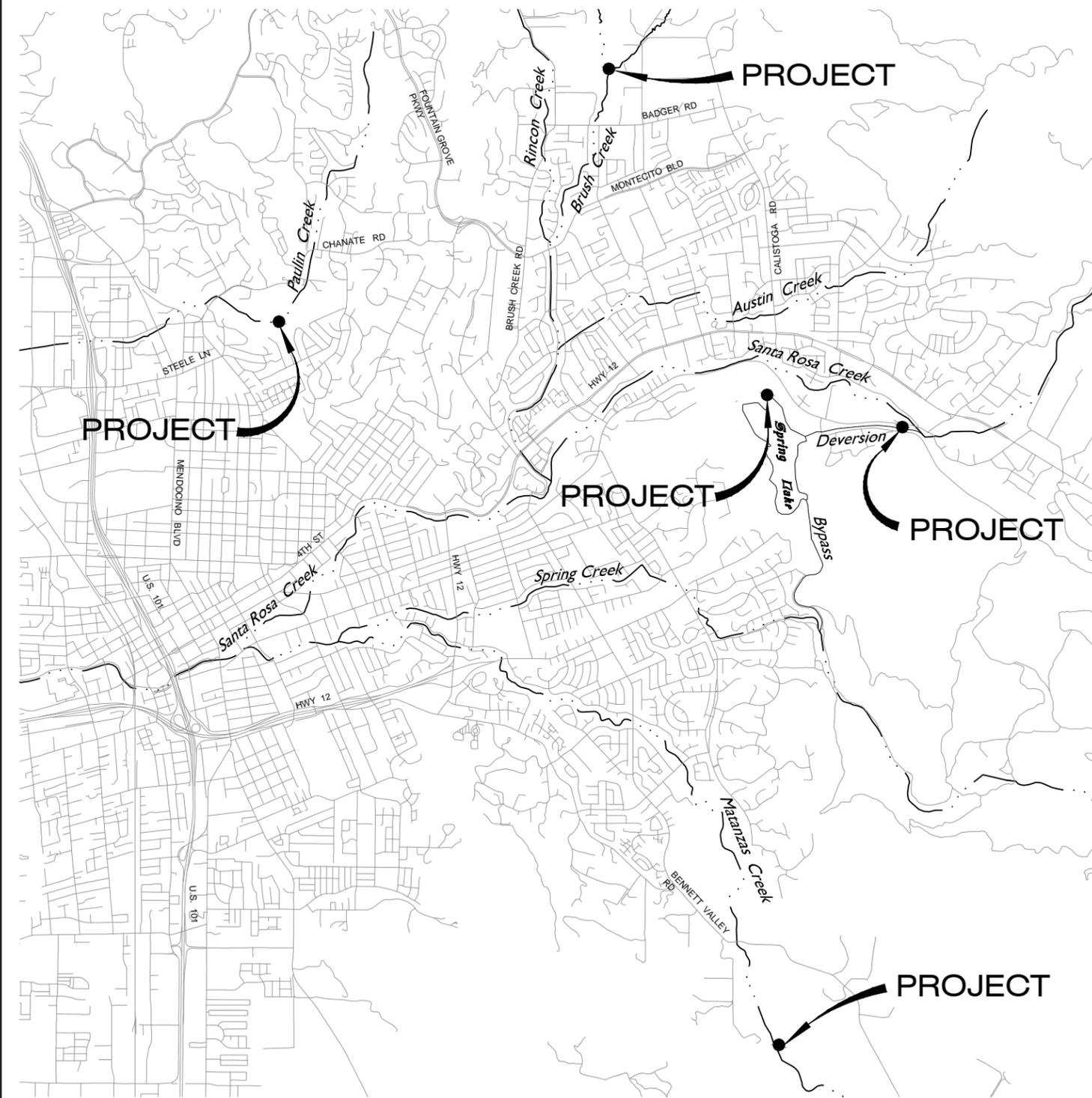
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 DRAWN: SMP
 REVIEWED:

SMP - LAGUNA DE SANTA ROSA WATERSHED ZONE 1A
 TODD CHANNEL - REACH 5B
 PLAN AND PROFILE

FILE NAME: 2015_TODD-CIVIL CONTRACT NUMBER:
 DRAWING NUMBER: C-1 SHEET 2 OF 2

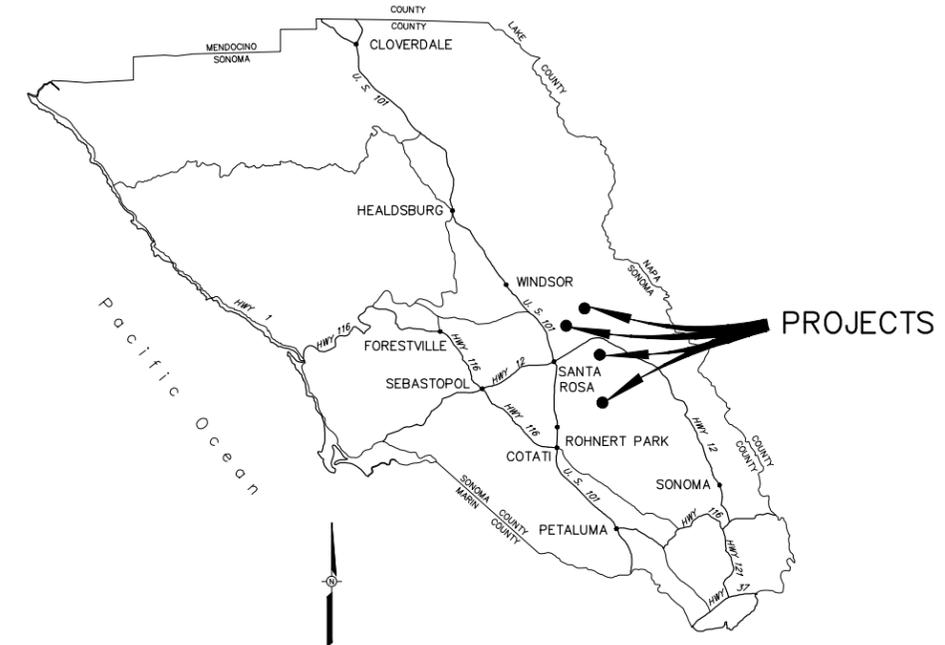
\\sdr\data\proj\flow_control\zone 1a\TODD\2015-Todd

**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

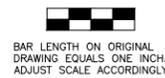


LOCATION MAP

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 ENCASUREMENT 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



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

**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:

LAGUNA - MARK WEST ZONE 1A
INDEX TO DRAWINGS, VICINITY AND LOCATION MAPS

FILE NAME: G-1_RESERVOIRS_2012.dwg DRAWING NUMBER: G-1 SHEET 1 OF 11

CONTRACT NUMBER:

\\SD-DATA\Proj\food_control\Zone 1a\Brush_Crk-reservoir\2012_BRUSH_Crk-reservoir\G-1_RESERVOIRS_2012



PLAN

1"=40'

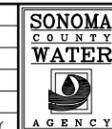
**PRELIMINARY
90% SUBMITTAL**
FOR REVIEW PURPOSES ONLY
07 MAR 2012



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

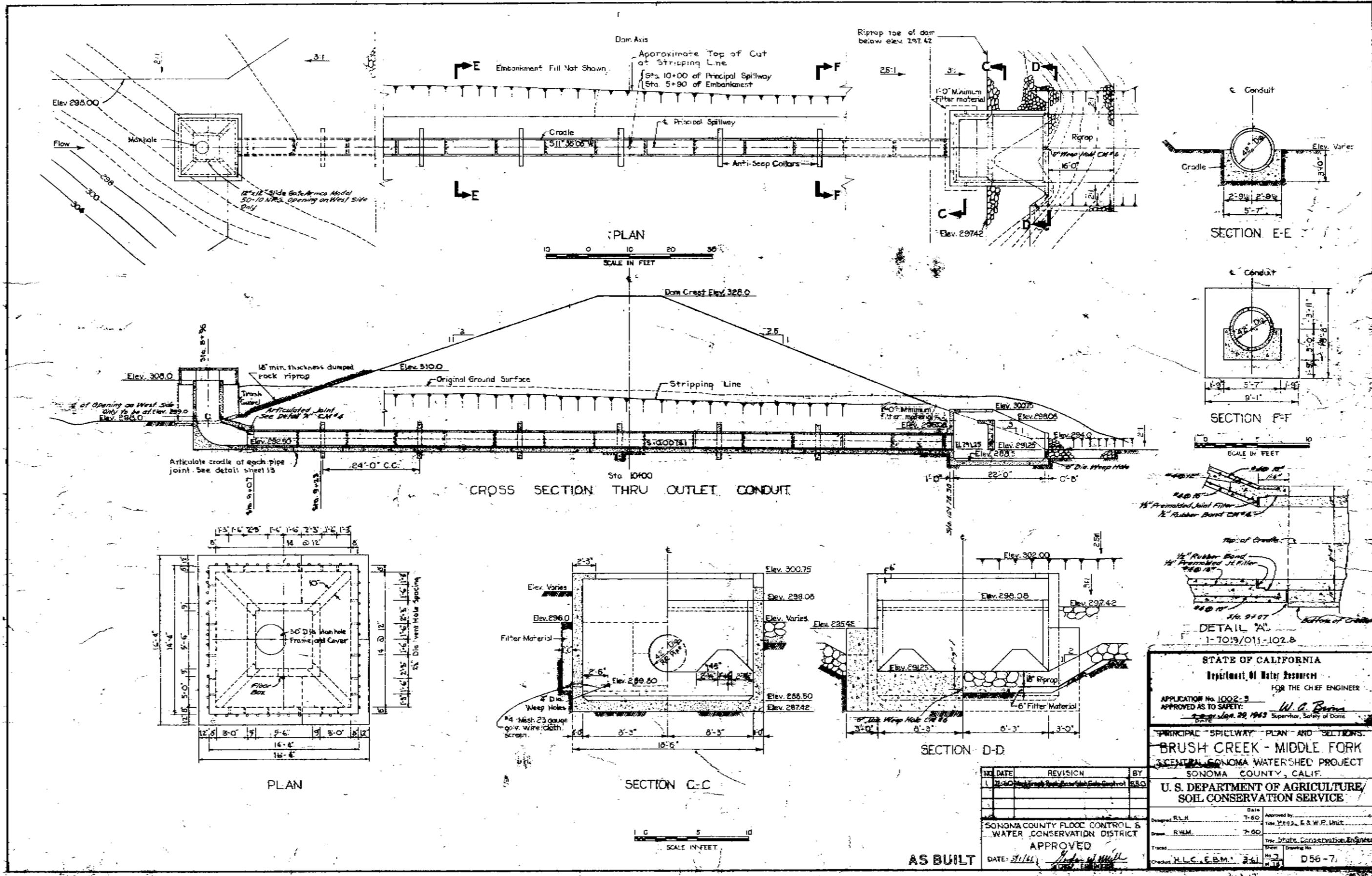
NO.	DATE	REVISION	BY



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	DRAWING NUMBER: C-1	SHEET 2 OF 11

\\SD-DATA\proj\floor\contrib\zone 1a\Brush_Crk_Res_C-1_2012.dwg



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* Superior, Safety of Dams

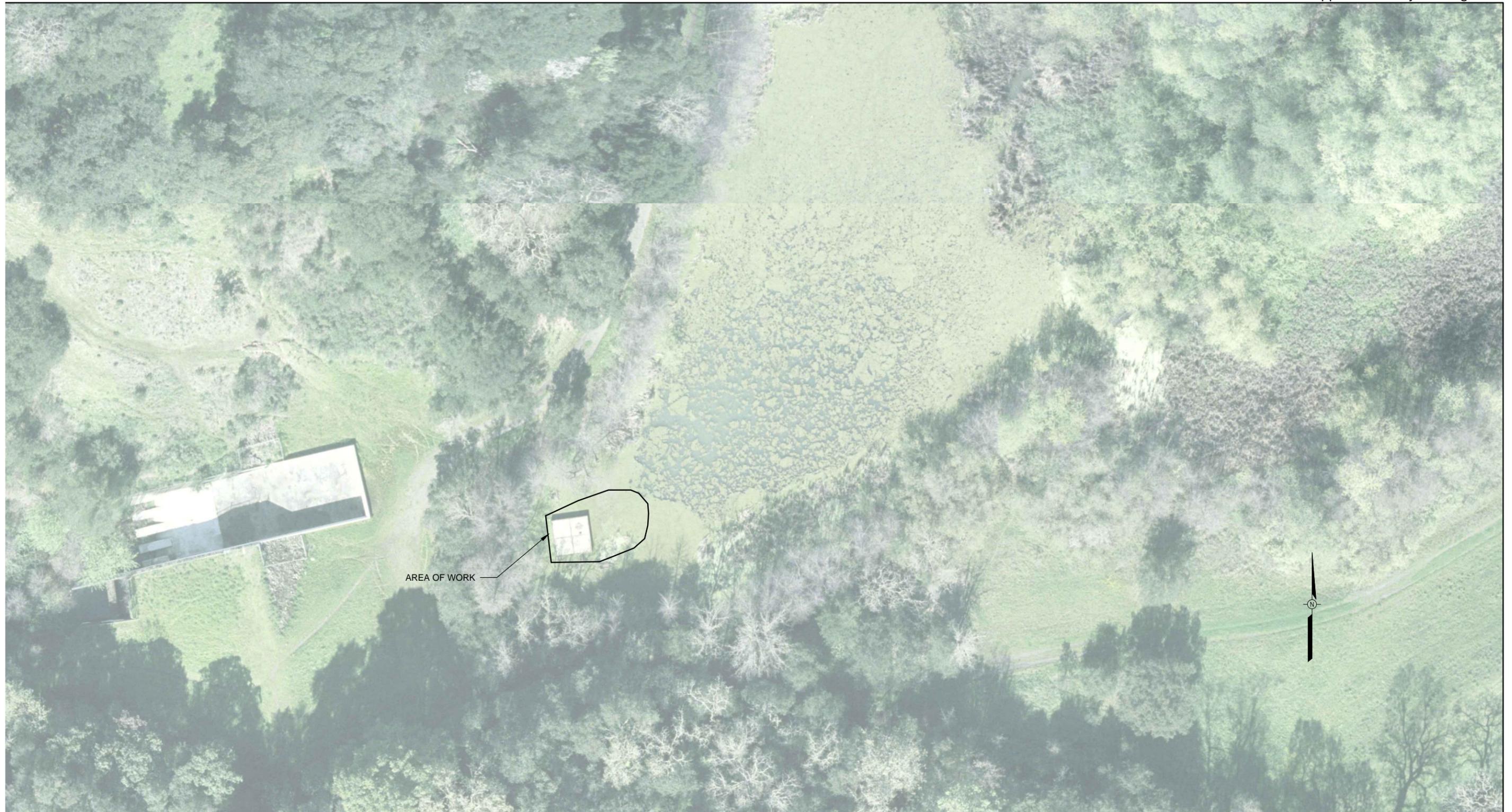
PRINCIPAL SPILLWAY - PLAN AND SECTIONS
 BRUSH CREEK - MIDDLE FORK
 CENTRAL SONOMA WATERSHED PROJECT
 SONOMA COUNTY, CALIF.

U. S. DEPARTMENT OF AGRICULTURE/
 SOIL CONSERVATION SERVICE

NO.	DATE	REVISION	BY
1	12-20-60	As Built	R.M.M.

SONOMA COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
 APPROVED
 DATE: *5/11/61* *[Signature]*

Drawn: R.M.M. Date: 7-60
 Checked: H.L.C., E.B.M. Date: 3-61
 Title: State Conservation Engineer
 Drawing No: D56-7



PLAN

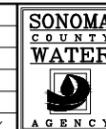
SCALE: 1" = 20'

**PRELIMINARY
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FOR REVIEW PURPOSES ONLY
07 MAR 2012

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

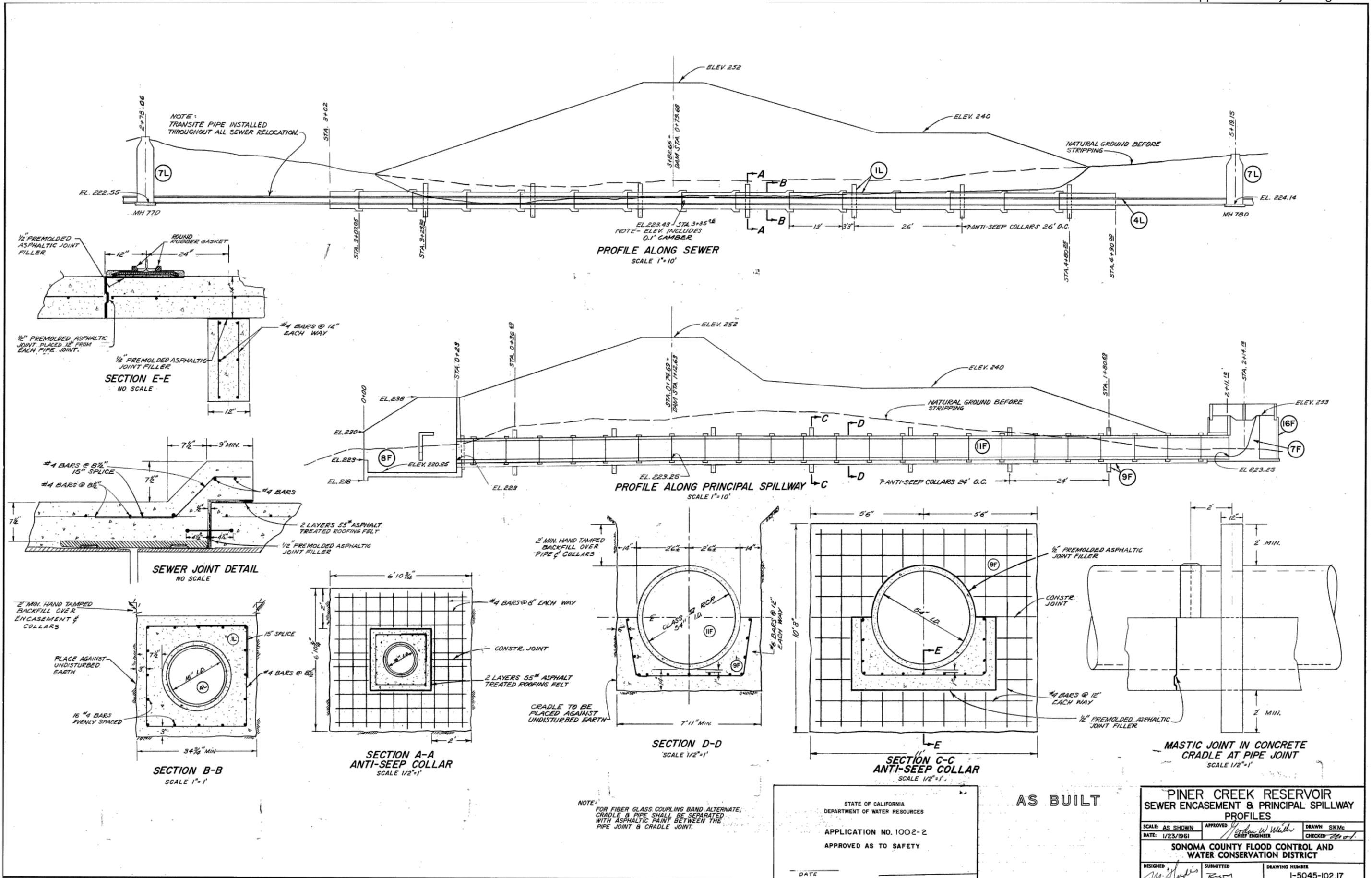
EXCAVATION				
PROJECT ACTIVITY DESCRIPTION	LOCATION	AREA (SQUARE FT.)	AVERAGE DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING IN THE DEWATERED AREA IN RESERVOIR	AROUND OUTLET STRUCTURE	2,250	3	250

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
CONTRACT NUMBER:	SHEET 4 OF 11





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

NO.	DATE	REVISION	BY

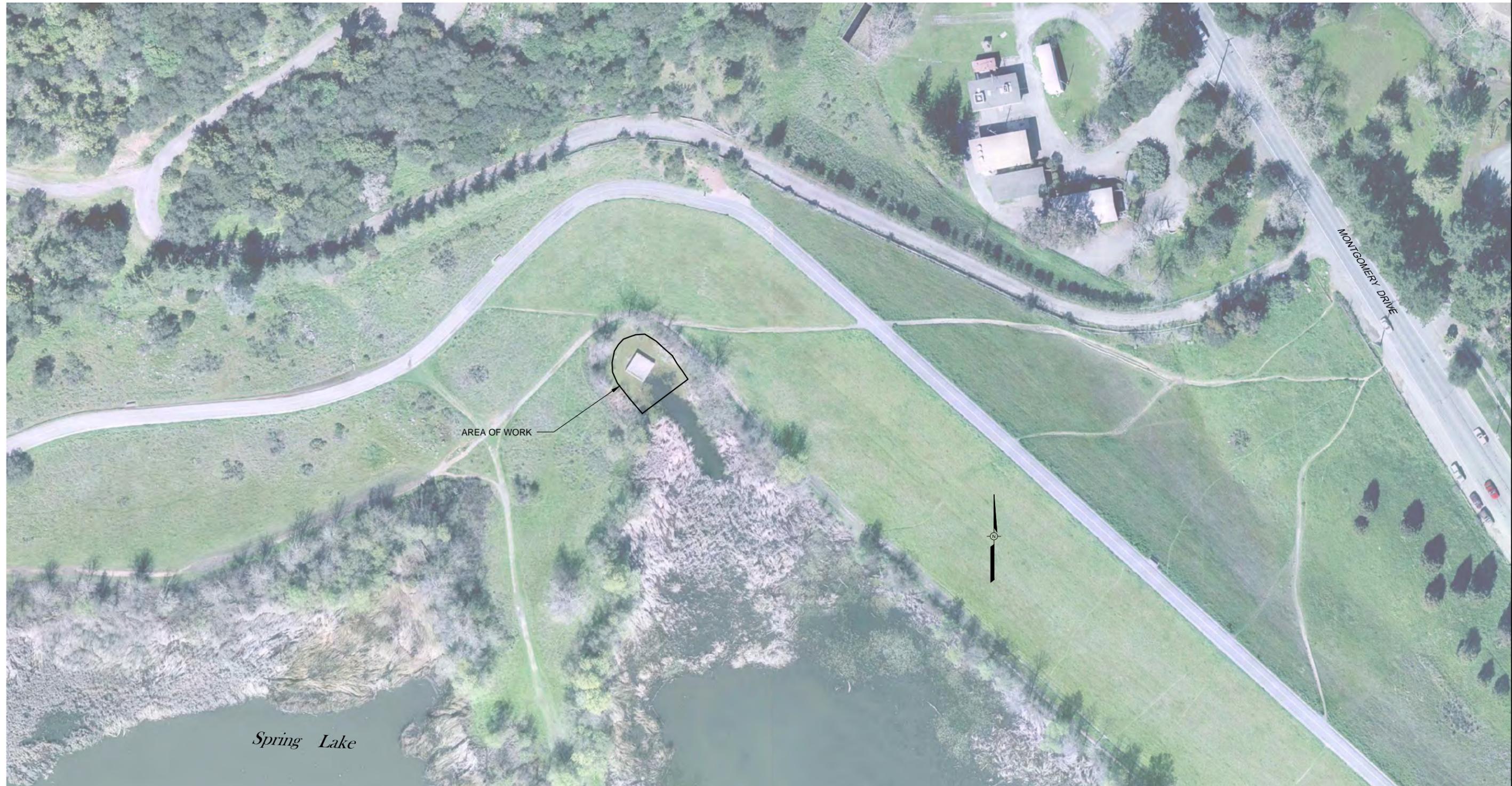
SONOMA COUNTY WATER AGENCY

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 DRAWING NUMBER: C-3 SHEET 6 OF 11
 CONTRACT NUMBER:

USD-DATA\p\pood\com\edzone\1\matanzas_crk_reservoir\outlet\012_SED-REMOVAL\MatanzasCrk_Res_C-3_2012



PLAN

SCALE: 1" = 40'

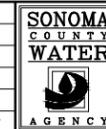
**PRELIMINARY
90% SUBMITTAL**
FOR REVIEW PURPOSES ONLY
07 MAR 2012

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	2,700	1	100

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
CONTRACT NUMBER:

DRAWING NUMBER: C-4
SHEET 8 OF 11



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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

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

LAGUNA - MARK WEST ZONE 1A
SANTA ROSA CREEK FISH LADDER - PLAN

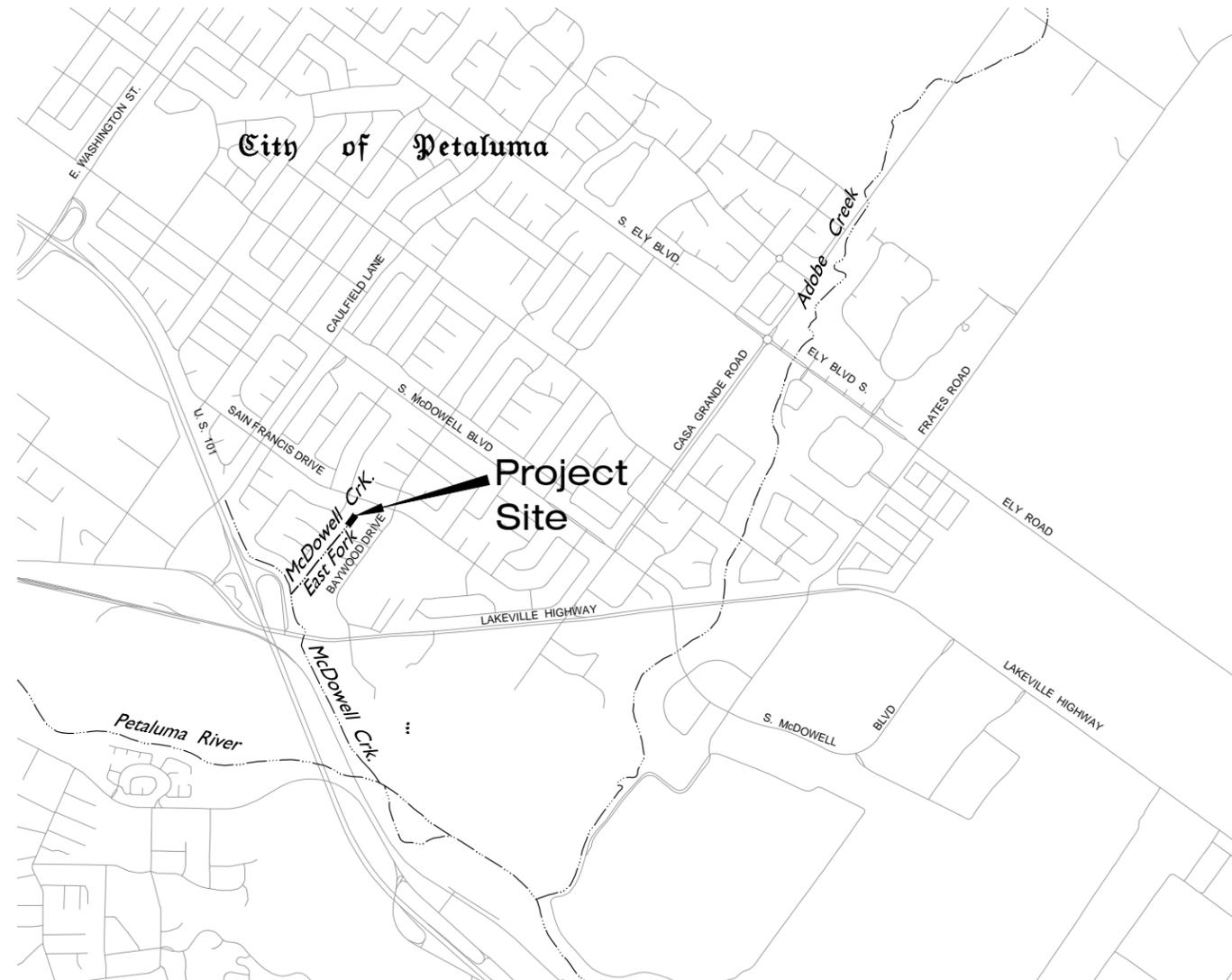
FILE NAME: 2012_FISH-LADDER_C-5 CONTRACT NUMBER:
 DRAWING NUMBER: C-5 SHEET 10 OF 11

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

PRELIMINARY
90% SUBMITTAL
 FOR REVIEW PURPOSES ONLY
 07 MAR 2012

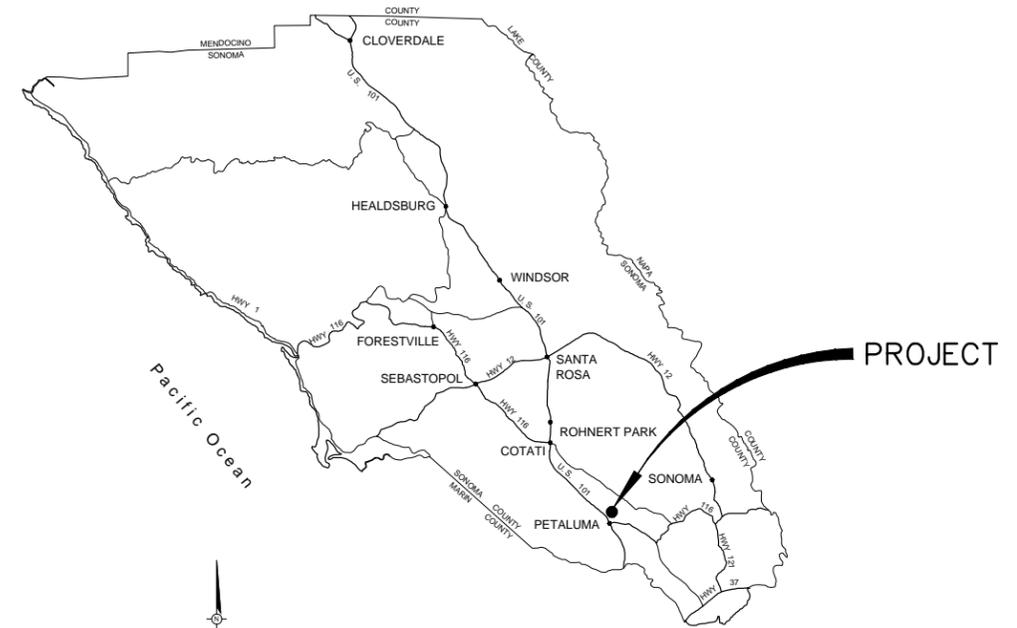
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SMP - PETALUMA RIVER WATERSHED ZONE 2A McDOWELL CREEK EAST FORK SMP REACH 1 2015 - LOCALIZED SEDIMENT REMOVAL



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

McDOWELL CREEK EAST FORK SMP REACH 1						
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 12+00 TO STA 13+03	103	15'	BELOW O.H.W. 1,545	0.8	BELOW O.H.W. 46

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


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

NO.	DATE	REVISION	BY



SCALE: AS SHOWN DATE: 4/1/2015

DRAWN: ----

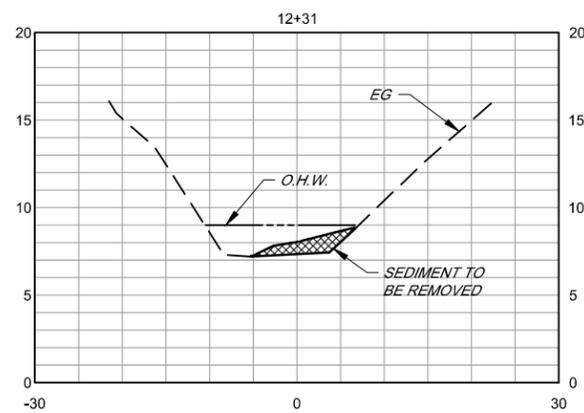
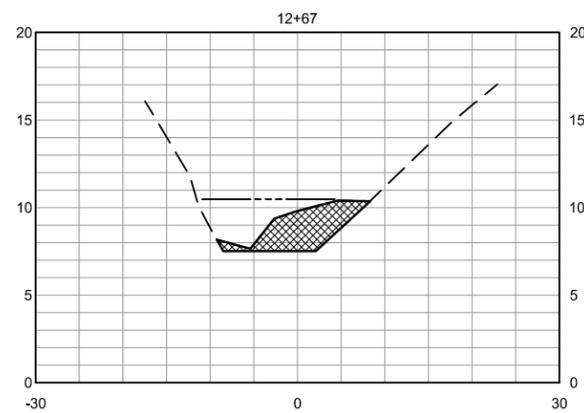
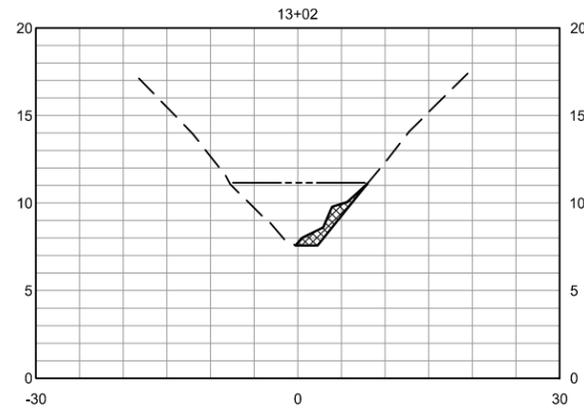
REVIEWED: _____

SMP - PETALUMA RIVER WATERSHED ZONE 2A
McDOWELL CREEK EAST FORK SMP REACH 1
INDEX TO DRAWINGS, TABLE, LOCATION AND VICINITY MAPS

FILE NAME: 2015_McDOWELL_E-FORK DRAWING NUMBER: G-1

CONTRACT NUMBER: _____ SHEET 1 OF 2

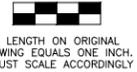
\\s01-ds01\proj\files\com\sonoma\2015\2015_McDowell\2015_E_FORK



SECTIONS (LOOKING DOWNSTREAM)
 SCALE HORIZ 1" = 10'
 VERT 1" = 5'



PLAN
 SCALE 1" = 20'



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

**PRELIMINARY
 60% SUBMITTAL**
 FOR REVIEW PURPOSES ONLY
 JUNE 24, 2014

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

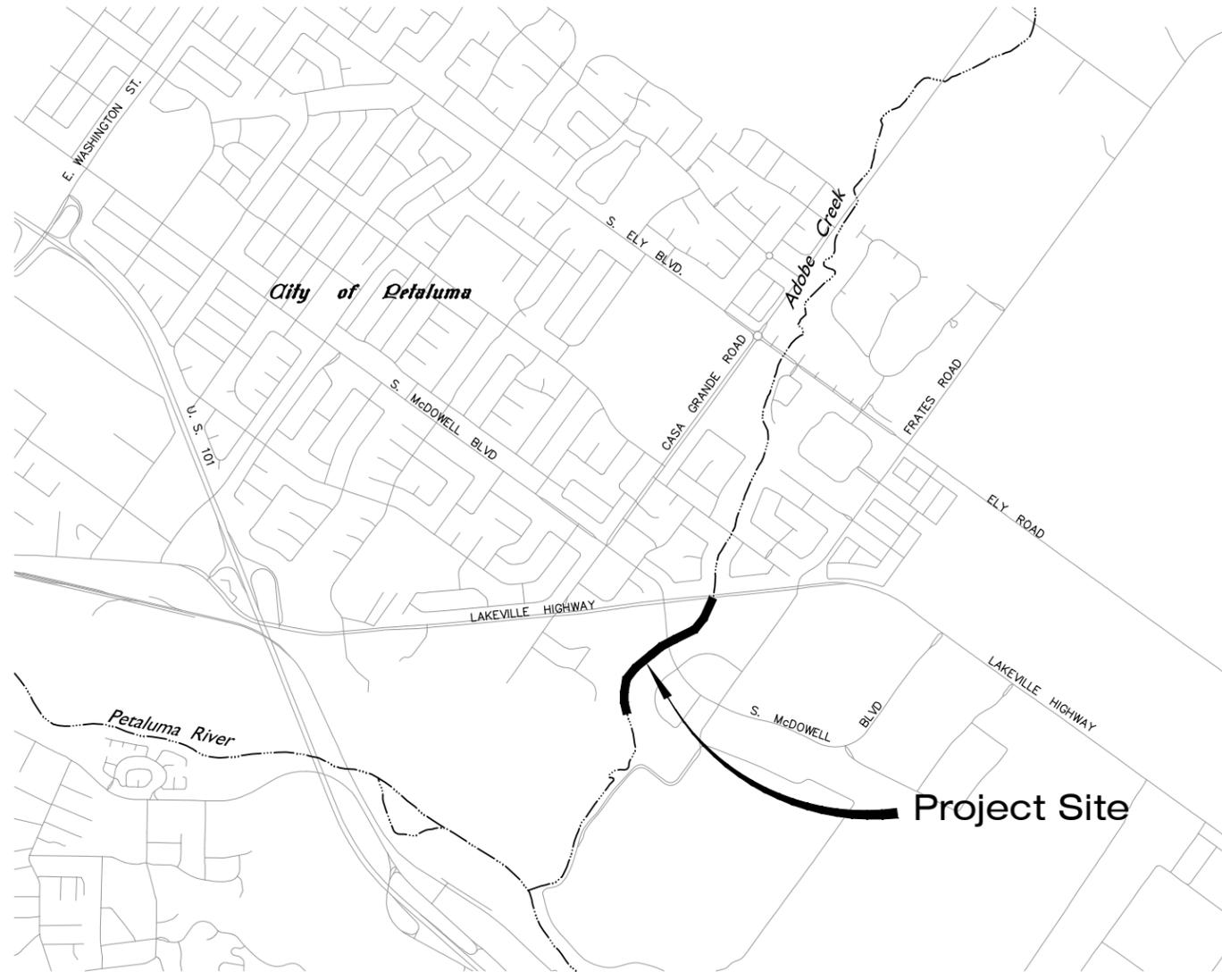
SCALE: AS SHOWN DATE: 4/1/2015
 DRAWN: ----
 REVIEWED: ----

SMP -PETALUMA RIVER WATERSHED ZONE 2A
 MCDOWELL CREEK EAST FORK SMP REACH 1
 SITE PLAN AND CROSS SECTIONS

FILE NAME: 2015_McDOWELL_E-FORK CONTRACT NUMBER:
 DRAWING NUMBER: C-1 SHEET 2 OF 2

PETALUMA BASIN ZONE 2A
ADOBE CREEK SMP REACHES 1 AND 2

LOWER ADOBE CREEK ENVIRONMENTAL ENHANCEMENT
MITIGATION PROGRAM HABITAT RESTORATION



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

INDEX TO DRAWINGS ADOBE CREEK SMP REACHES 1 AND 2

SHEET NUMBER	DRAWING NUMBER	TITLE
GENERAL		
1	G-1	INDEX TO DRAWINGS, VICINITY AND LOCATION MAPS
2	G-2	TABLES AND TYPICAL DETAILS
SMP-1		
3	C-1	PLAN AND PROFILE STA 25+00 TO STA 30+50
4	C-2	PLAN AND PROFILE STA 30+50 TO STA36+00
5	C-3	PLAN AND PROFILE STA 36+00 TO STA 40+75
6	C-4	SECTIONS
7	C-5	SECTIONS
SMP-2		
8	C-6	PLAN AND PROFILE STA 40+75 TO STA 46+50
9	C-7	PLAN AND PROFILE STA 46+50 TO STA 49+00
10	C-8	SECTIONS

LOWER ADOBE CREEK ENVIRONMENTAL ENHANCEMENT
MITIGATION PROGRAM HABITAT RESTORATION

ADOBE CREEK SMP REACHES 1 AND 2

ADOBE CREEK SMP REACHES 1 AND 2
INDEX TO DRAWINGS, VICINITY AND LOCATION MAPS

FILE NAME: 7728-adobe_G
CONTRACT NUMBER:

DRAWING NUMBER: G-1

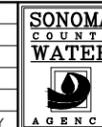
SHEET 1 OF 10



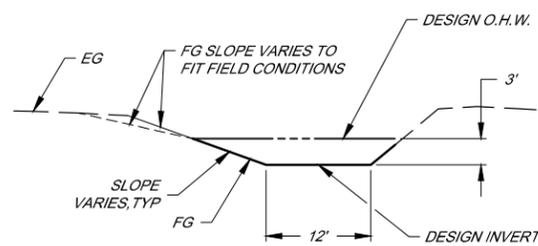
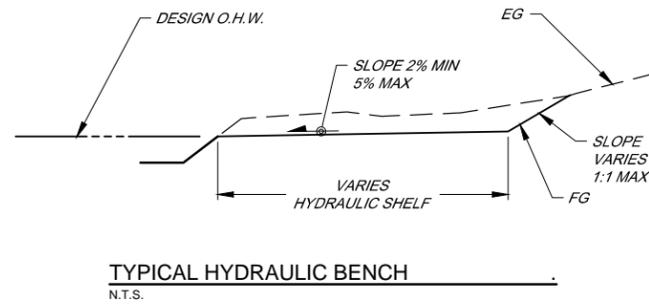
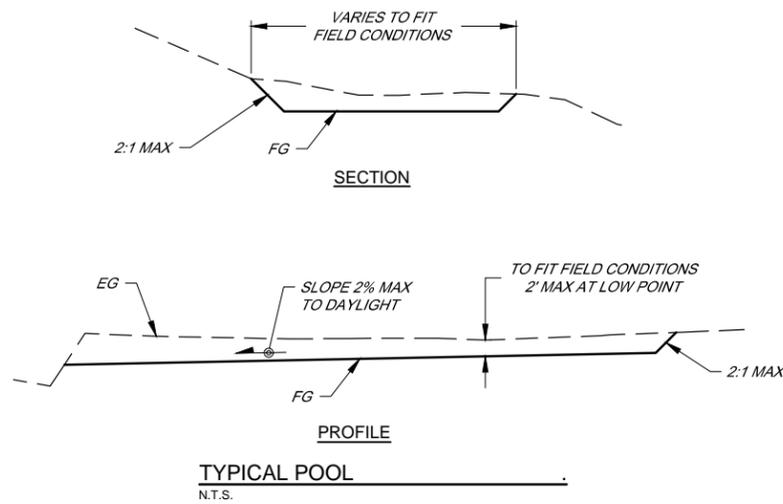
BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH,
ADJUST SCALE ACCORDINGLY

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
APRIL 8, 2015

NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 4/8/2015
DRAWN: ----	
REVIEWED: _____	



NOTE:
LOW FLOW CHANNEL TO MEANDER ALONG
EXISTING THALWEG.

ADOBE CREEK SMP REACH 1						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
LOW FLOW CHANNEL	STA 25+55 TO STA 39+01	1,346	26.3	ABOVE O.H.W. 354 BELOW O.H.W. 35,046	1.7	ABOVE O.H.W. 224 BELOW O.H.W. 2,005 TOTAL: 2,229
HYDRAULIC SHELVES (4 TOTAL)	STA 26+16 TO STA 26+98 STA 29+74 TO STA 31+91 STA 32+76 TO STA 34+21 STA 39+02 TO STA 40+21	82 217 145 119	23.2 26.3 20.0 29.8	ABOVE O.H.W. 1900 5,710 2,902 3,543	2	141 423 215 262 ABOVE O.H.W. TOTAL = 1,041
SILT BASIN	STA 39+01 TO STA 40+38	137	36.8	BELOW O.H.W. 5,042	2	BELOW O.H.W. 220

ADOBE CREEK SMP REACH 2						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
LOW FLOW CHANNEL	STA 43+57 TO STA 48+94	537	25.9	BELOW O.H.W. 13,908	1.9	BELOW O.H.W. 979
HYDRAULIC SHELF	STA 45+00 TO STA 46+61	161	33.8	ABOVE O.H.W. 5,450	2	ABOVE O.H.W. 404
POOL	STA 43+44 TO STA 44+17	73	13.7	ABOVE O.H.W. 200 BELOW O.H.W. 800 TOTAL: 1,000	2.3	ABOVE O.H.W. 17 BELOW O.H.W. 68 TOTAL: 85
SILT BASIN	STA 41+76 TO STA 43+57	175	34	BELOW O.H.W. 5,950	2.5	BELOW O.H.W. 551

LOWER ADOBE CREEK ENVIRONMENTAL ENHANCEMENT
MITIGATION PROGRAM HABITAT RESTORATION

PETALUMA BASIN ZONE 2A

ADOBE CREEK SMP REACHES 1 AND 2
TABLES AND TYPICAL DETAILS

FILE NAME: 7728-adobe_civil
CONTRACT NUMBER:

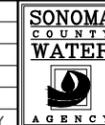
DRAWING NUMBER: G-2

SHEET 2 OF 10

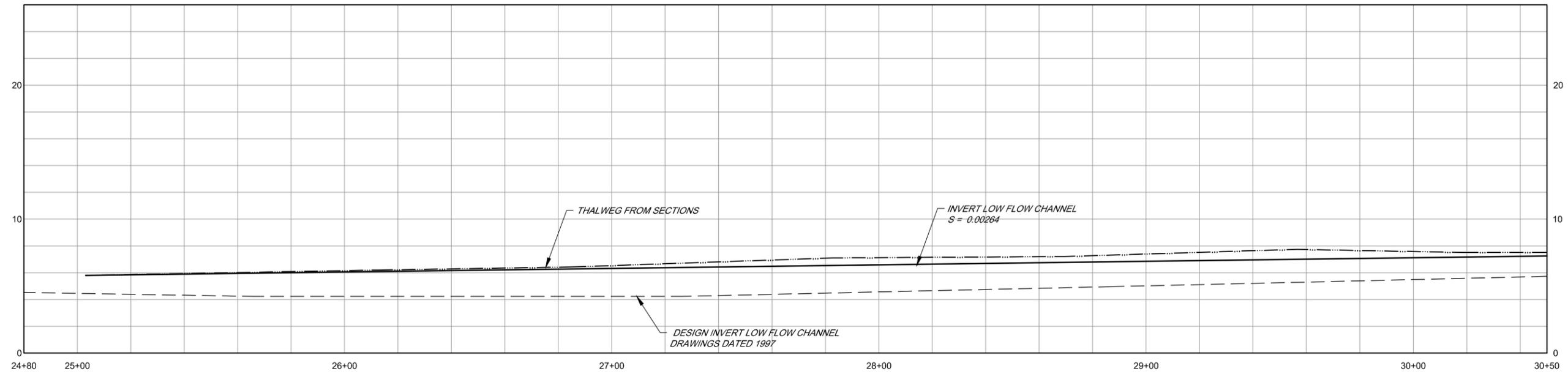
BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH,
ADJUST SCALE ACCORDINGLY

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
APRIL 8, 2015

NO.	DATE	REVISION	BY

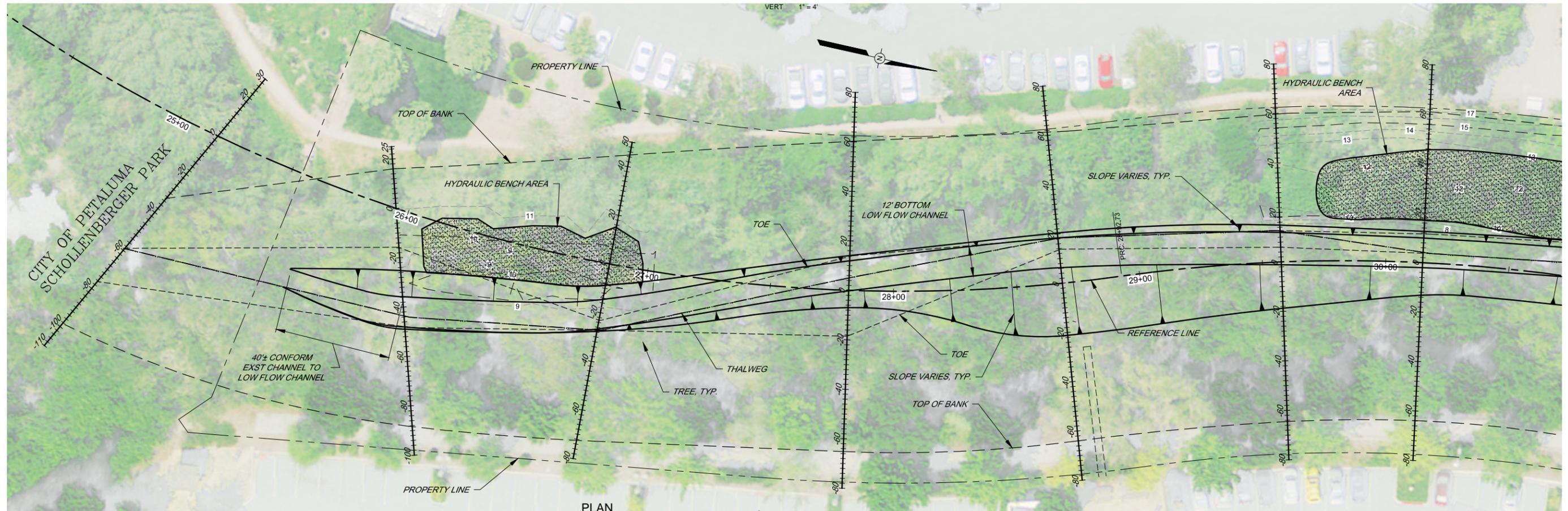


SCALE: AS SHOWN DATE: 4/8/2015
DRAWN: ----
REVIEWED: _____



PROFILE

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



PLAN

SCALE 1" = 20'

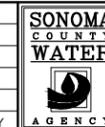
PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
APRIL 8, 2015

LOWER ADOBE CREEK ENVIRONMENTAL ENHANCEMENT
MITIGATION PROGRAM HABITAT RESTORATION

PETALUMA BASIN ZONE 2A
ADOBE CREEK SMP REACH 1
PLAN AND PROFILE STA 25+00 TO STA 30+50

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

NO.	DATE	REVISION	BY



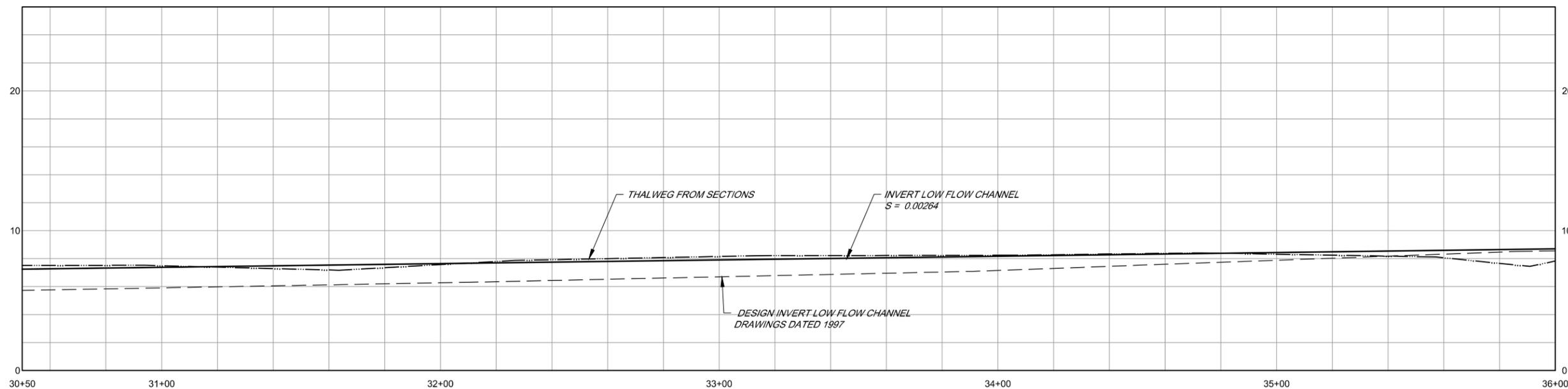
SCALE: AS SHOWN DATE: 4/8/2015
DRAWN: ---
REVIEWED: ---

FILE NAME: 7728-adobe_civil
CONTRACT NUMBER:

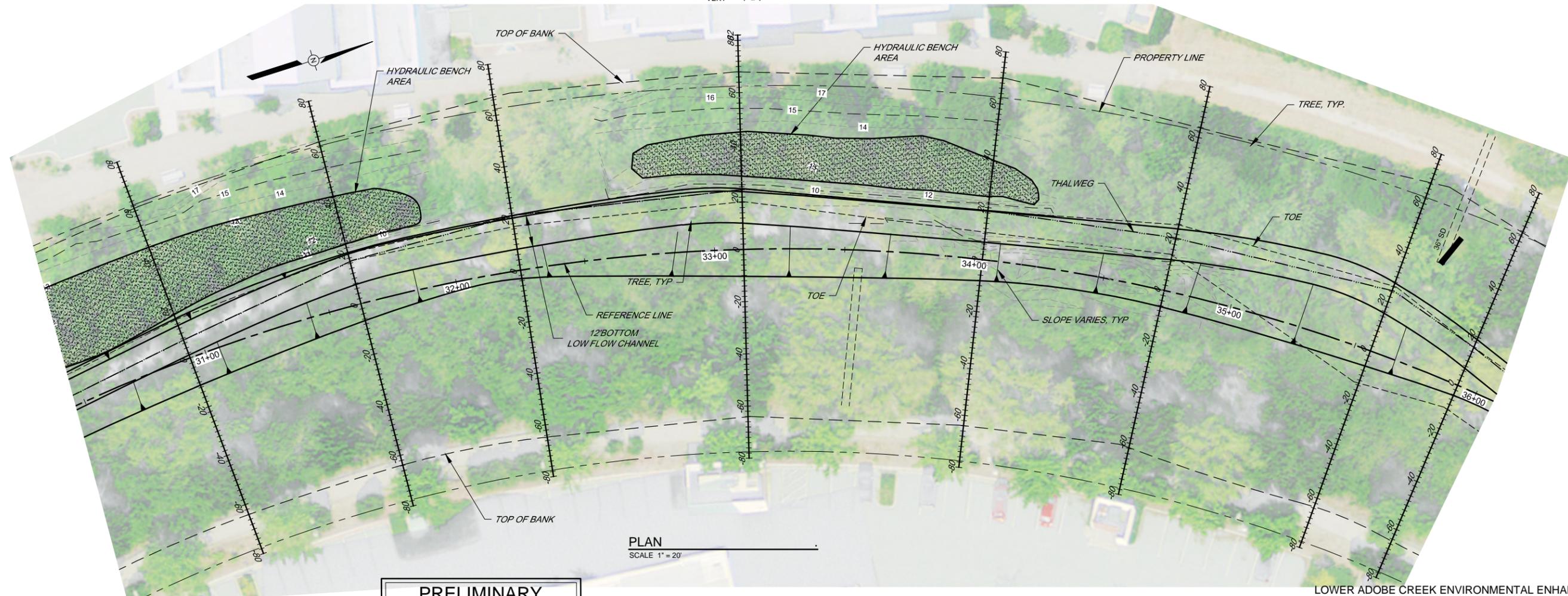
DRAWING NUMBER: C-1

SHEET 3 OF 10

T:\local\control\zone 2a\adobe_creek\7728-adobe_grant



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



PLAN
 SCALE 1" = 20'

PRELIMINARY
90% SUBMITTAL
 FOR REVIEW PURPOSES ONLY
 APRIL 8, 2015

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

NO.	DATE	REVISION	BY

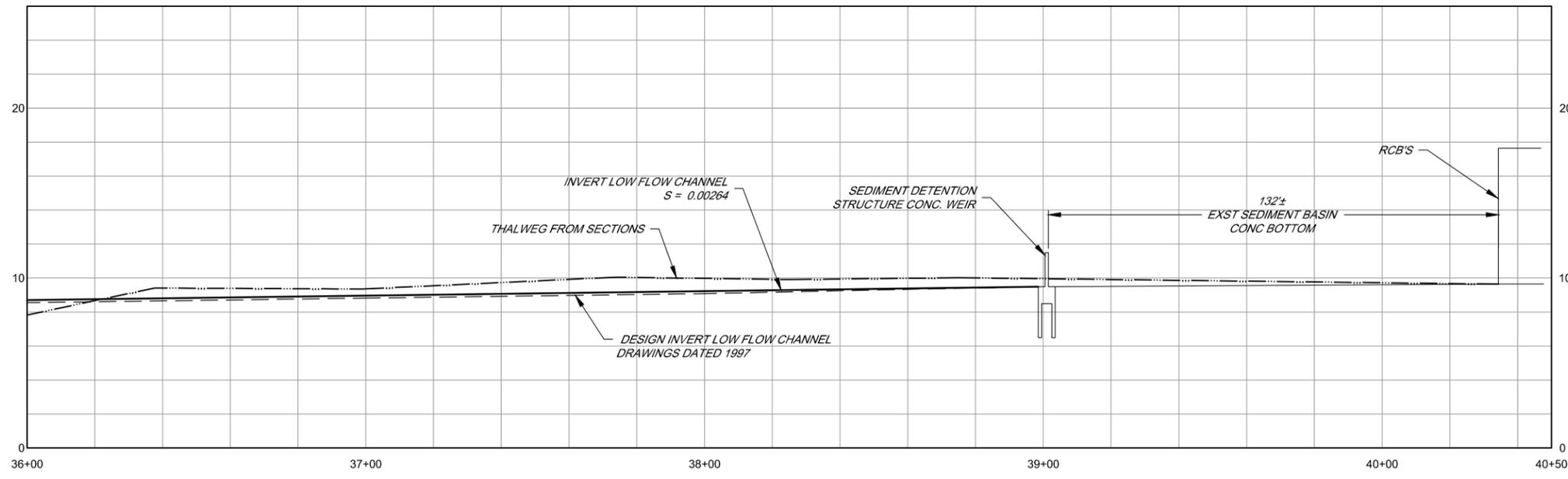
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: 4/8/2015
 DRAWN: ---
 REVIEWED: ---

LOWER ADOBE CREEK ENVIRONMENTAL ENHANCEMENT
 MITIGATION PROGRAM HABITAT RESTORATION
 PETALUMA BASIN ZONE 2A
ADOBE CREEK SMP REACH 1
PLAN AND PROFILE STA 30+50 TO STA36+00

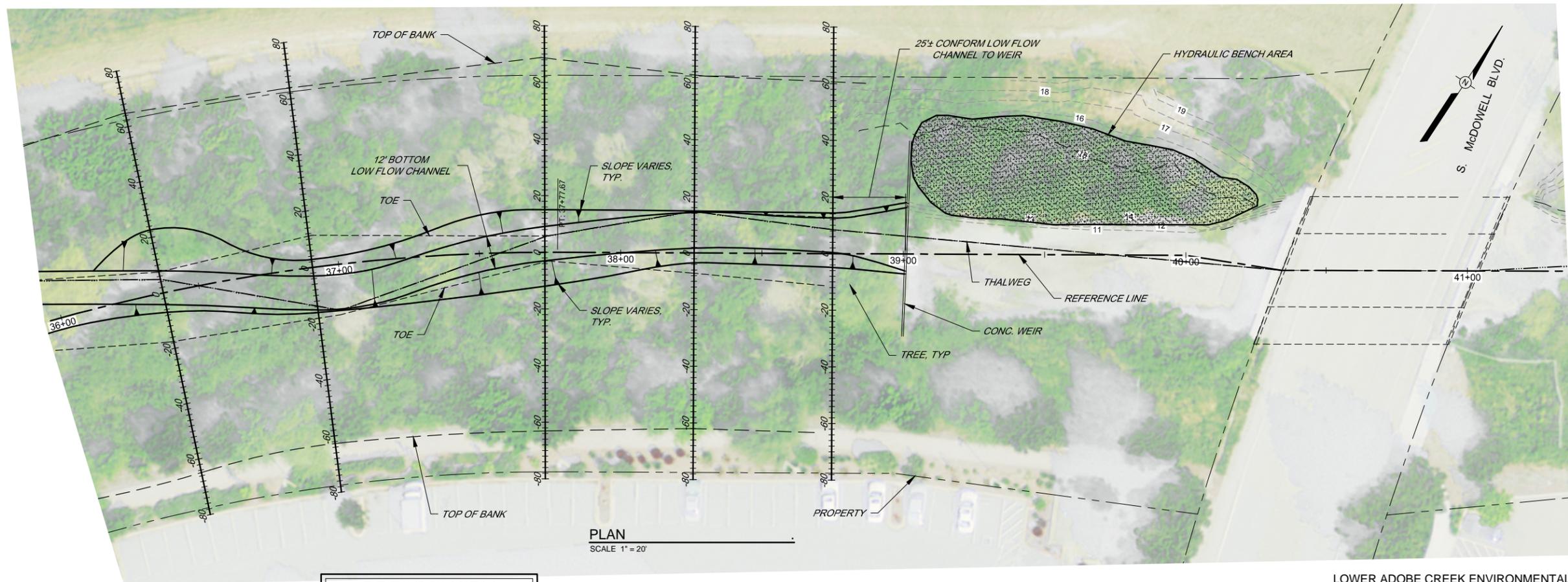
FILE NAME: 7728-adobe_civil
 CONTRACT NUMBER: _____
 DRAWING NUMBER: C-2
 SHEET 4 OF 10

T:\hcd\com\zone 2\adobe_creek\7728-adobe_grant



PROFILE

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



PLAN

SCALE 1" = 20'

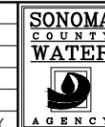
**PRELIMINARY
90% SUBMITTAL**
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APRIL 8, 2015

LOWER ADOBE CREEK ENVIRONMENTAL ENHANCEMENT
MITIGATION PROGRAM HABITAT RESTORATION

PETALUMA BASIN ZONE 2A
ADOBE CREEK SMP REACH 1
PLAN AND PROFILE STA 36+00 TO STA 40+75

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

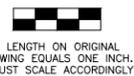
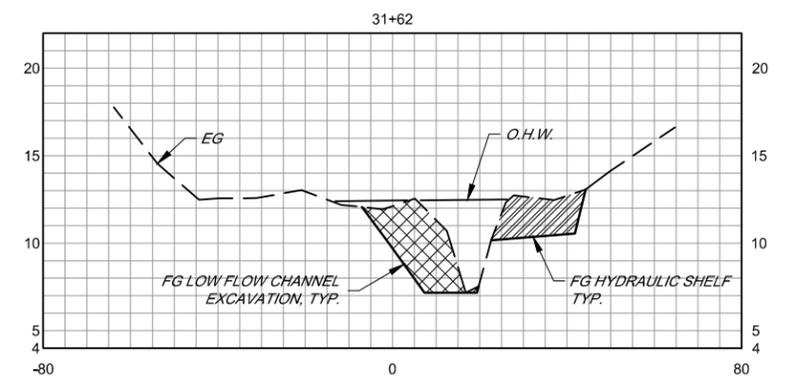
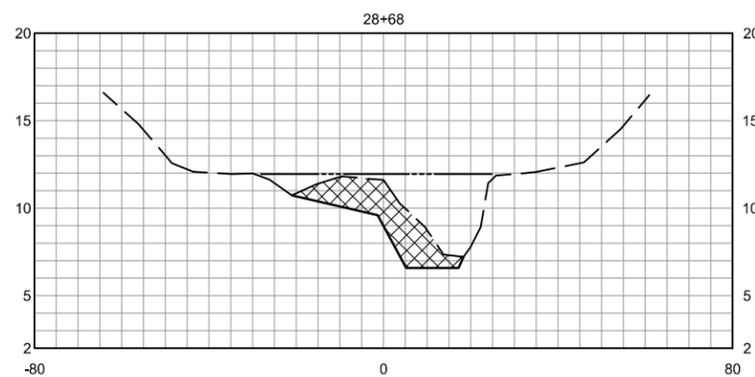
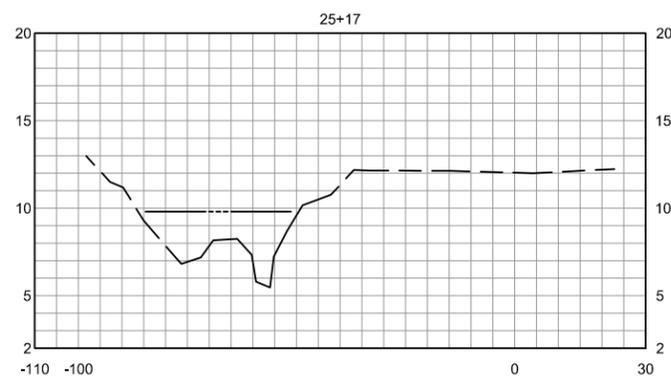
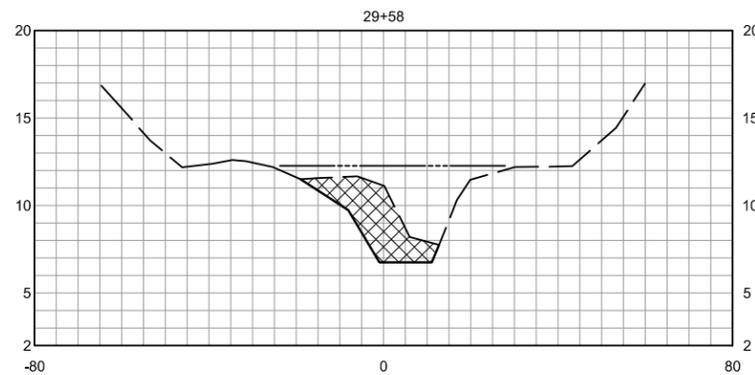
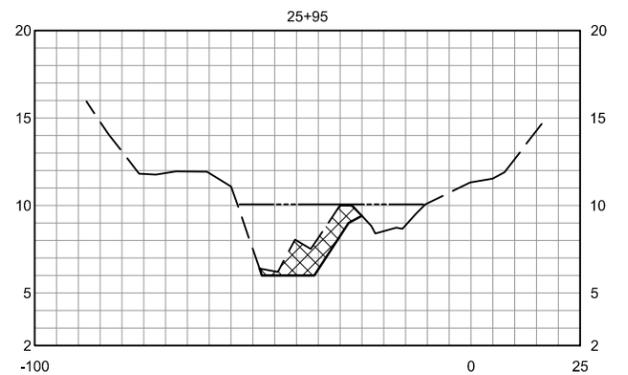
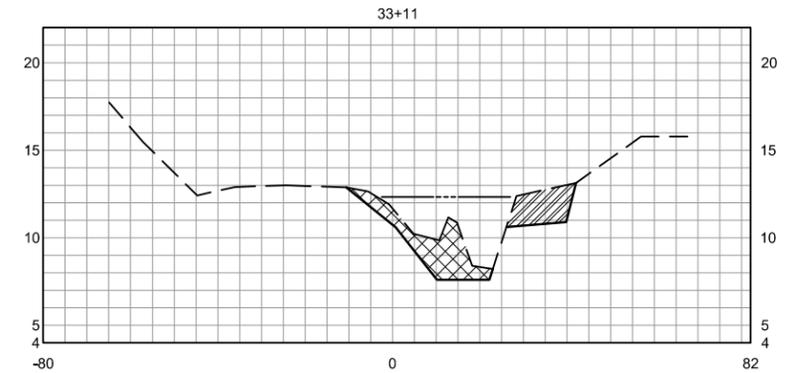
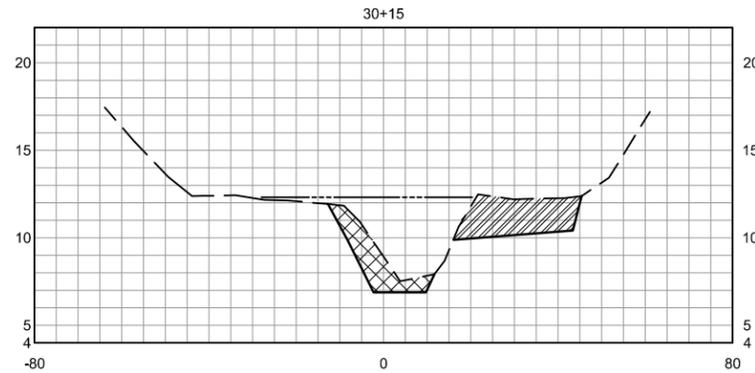
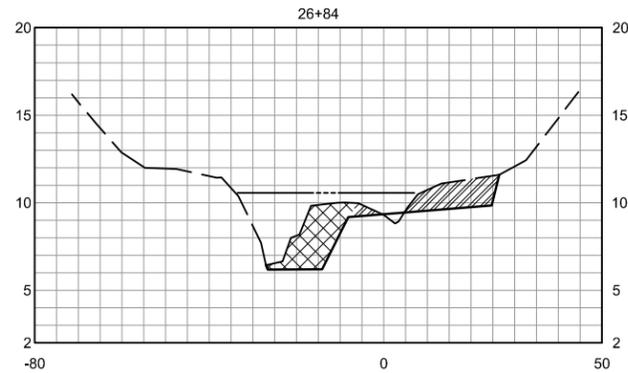
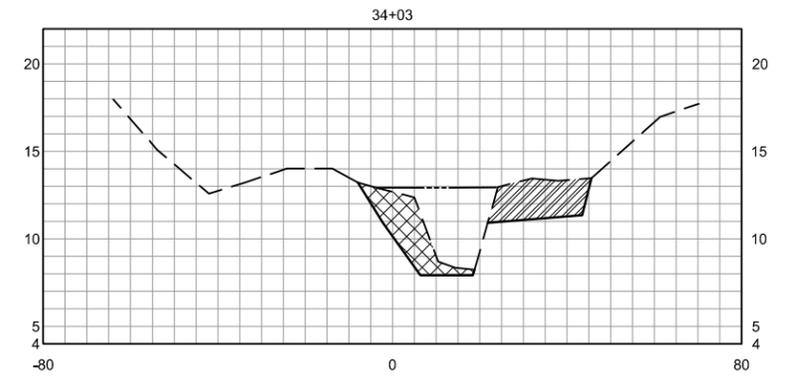
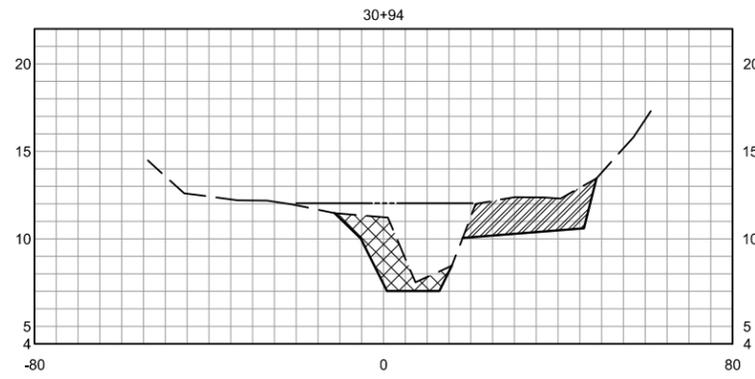
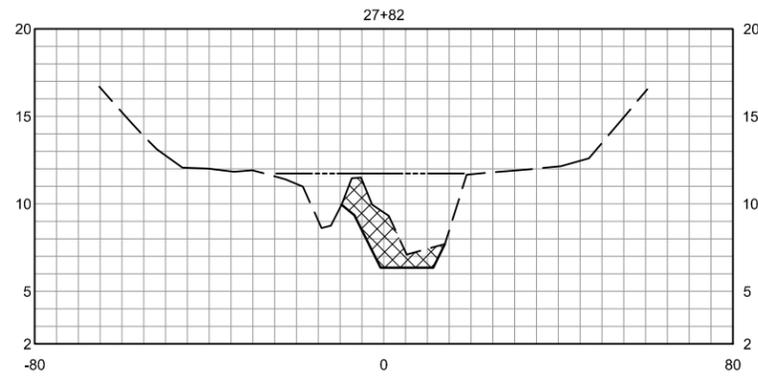
NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 4/8/2015
DRAWN: ---	
REVIEWED: ---	

FILE NAME: 7728-adobe_civil	DRAWING NUMBER: C-3	SHEET 5 OF 10
CONTRACT NUMBER: ---		

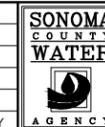
T:\local\control\zone 2\adobe creek\7728-adobe_grant



PRELIMINARY
90% SUBMITTAL
 FOR REVIEW PURPOSES ONLY
 APRIL 8, 2015

SECTIONS (LOOKING DOWNSTREAM)
 SCALE HORIZ 1" = 20'
 VERT 1" = 5'

NO.	DATE	REVISION	BY



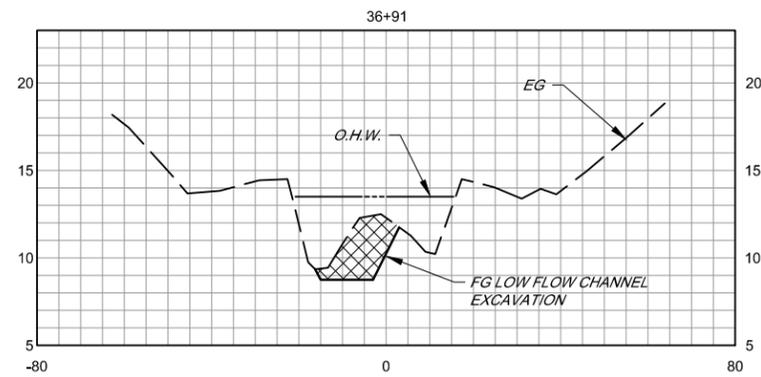
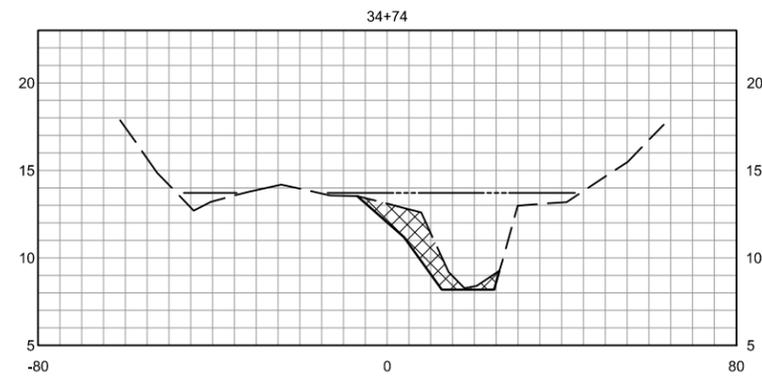
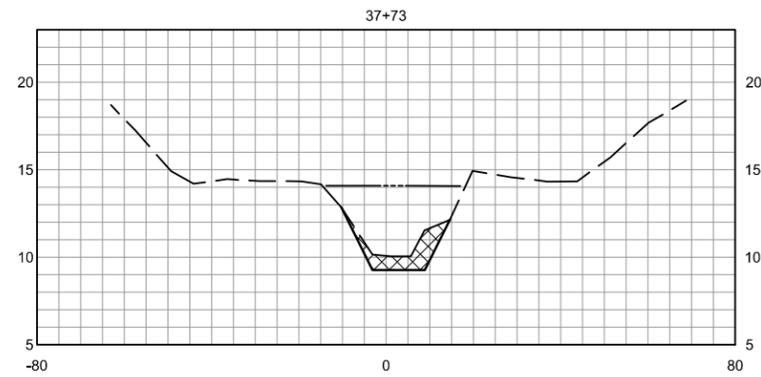
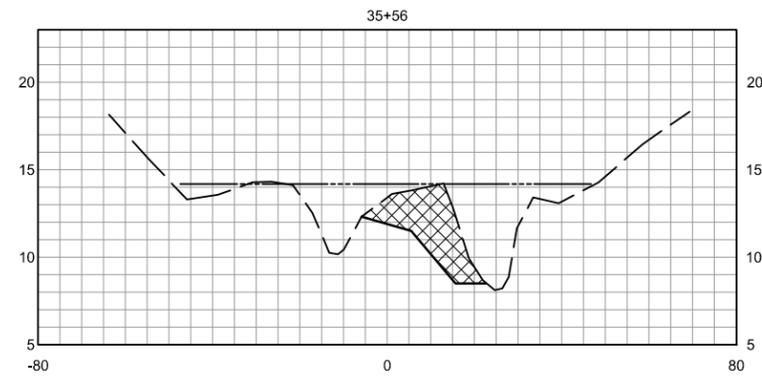
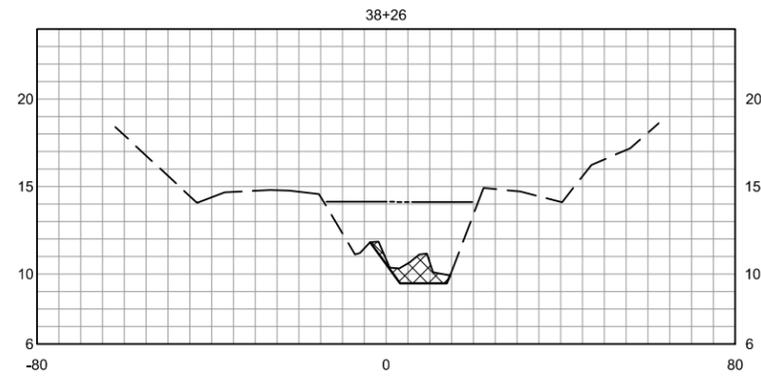
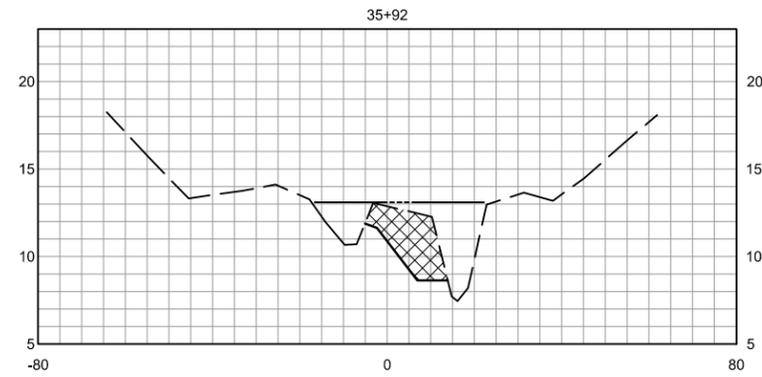
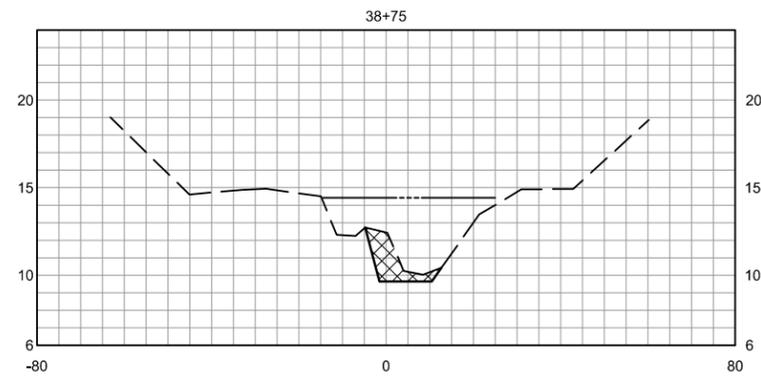
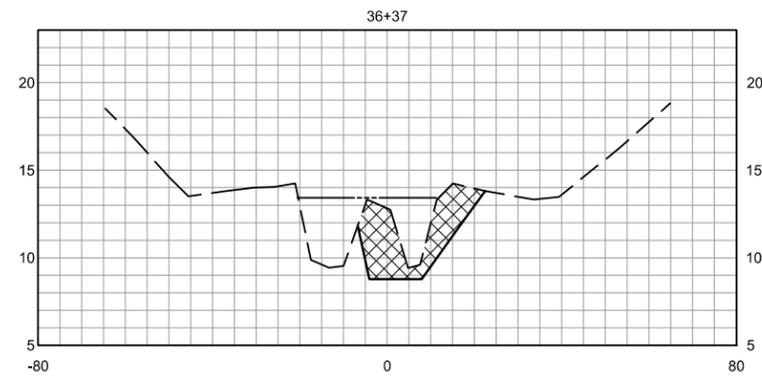
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DRAWN: ----	
REVIEWED: _____	

LOWER ADOBE CREEK ENVIRONMENTAL ENHANCEMENT
 MITIGATION PROGRAM HABITAT RESTORATION

PETALUMA BASIN ZONE 2A
 ADOBE CREEK SMP REACH 1
 SECTIONS

FILE NAME: 7728-adobe_civil	DRAWING NUMBER: C-4	SHEET 6 OF 10
CONTRACT NUMBER: _____		

T:\local\com\zone 2\adobe creek\7728-adobe_grant



SECTIONS (LOOKING DOWNSTREAM)
 SCALE HORIZ 1" = 20'
 VERT 1" = 5'

LOWER ADOBE CREEK ENVIRONMENTAL ENHANCEMENT
 MITIGATION PROGRAM HABITAT RESTORATION

PETALUMA BASIN ZONE 2A
 ADOBE CREEK SMP REACH 1
 SECTIONS

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 CONTRACT NUMBER:

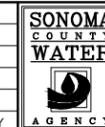
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SHEET 7 OF 10

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 APRIL 8, 2015

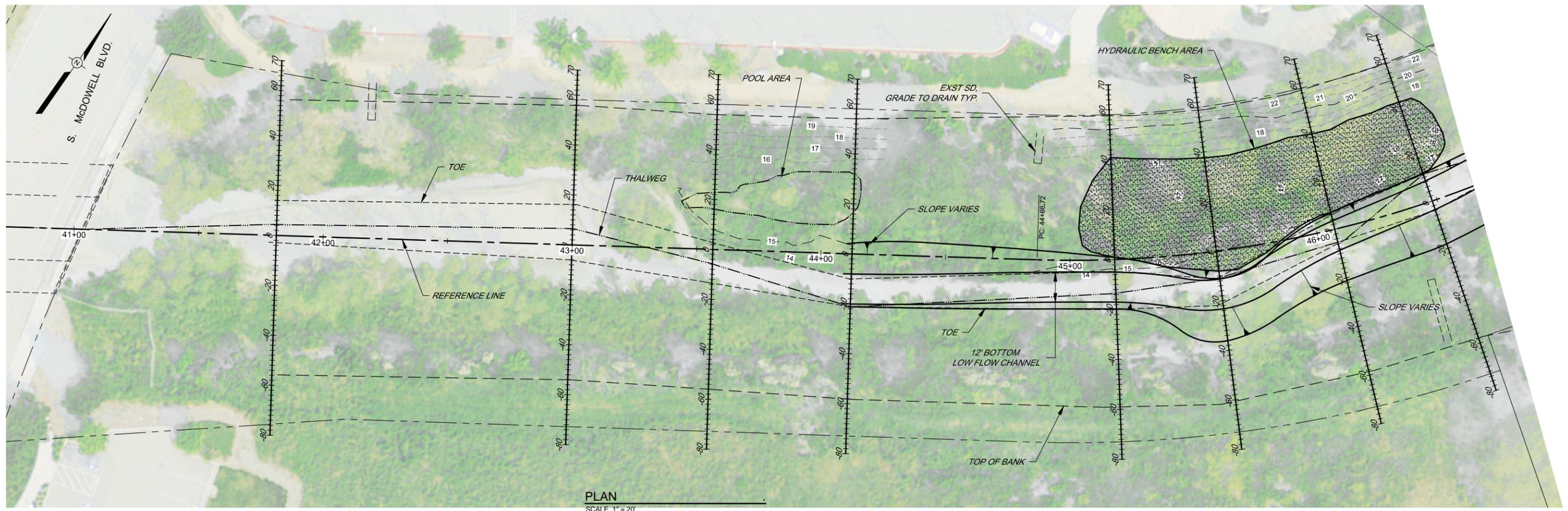
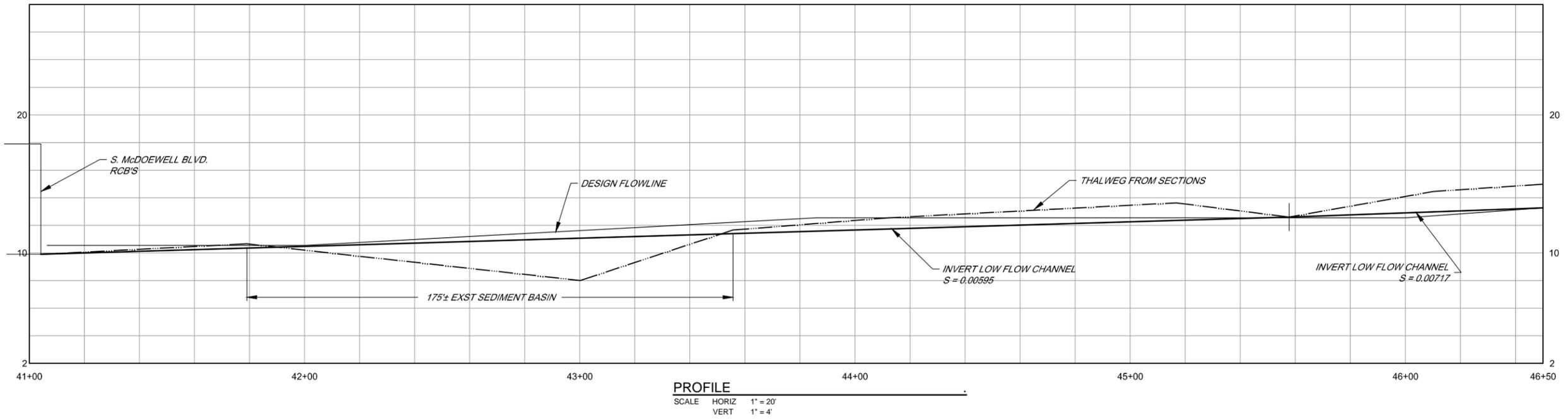
BAR LENGTH ON ORIGINAL
 DRAWING EQUALS ONE INCH.
 ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY



SCALE: AS SHOWN DATE: 4/8/2015
 DRAWN: ----
 REVIEWED: _____

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PRELIMINARY
90% SUBMITTAL
 FOR REVIEW PURPOSES ONLY
 APRIL 8, 2015

LOWER ADOBE CREEK ENVIRONMENTAL ENHANCEMENT
 MITIGATION PROGRAM HABITAT RESTORATION

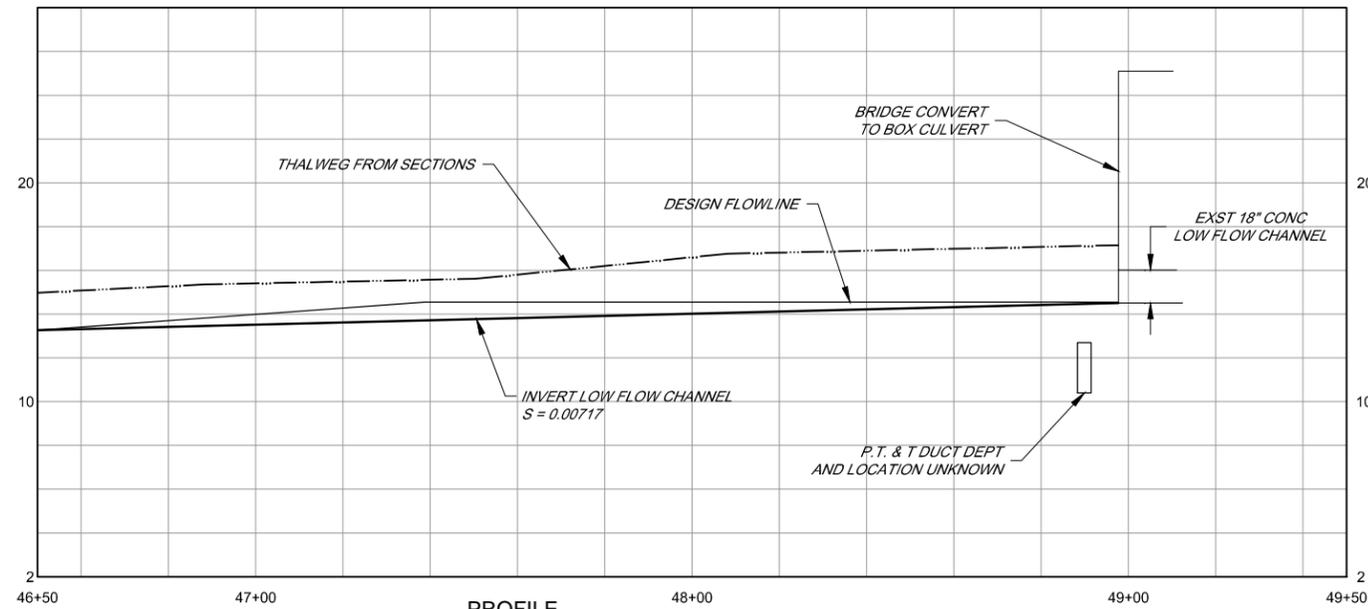
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 ADOBE CREEK SMP REACH 2
 PLAN AND PROFILE STA 40+75 TO STA 46+50

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

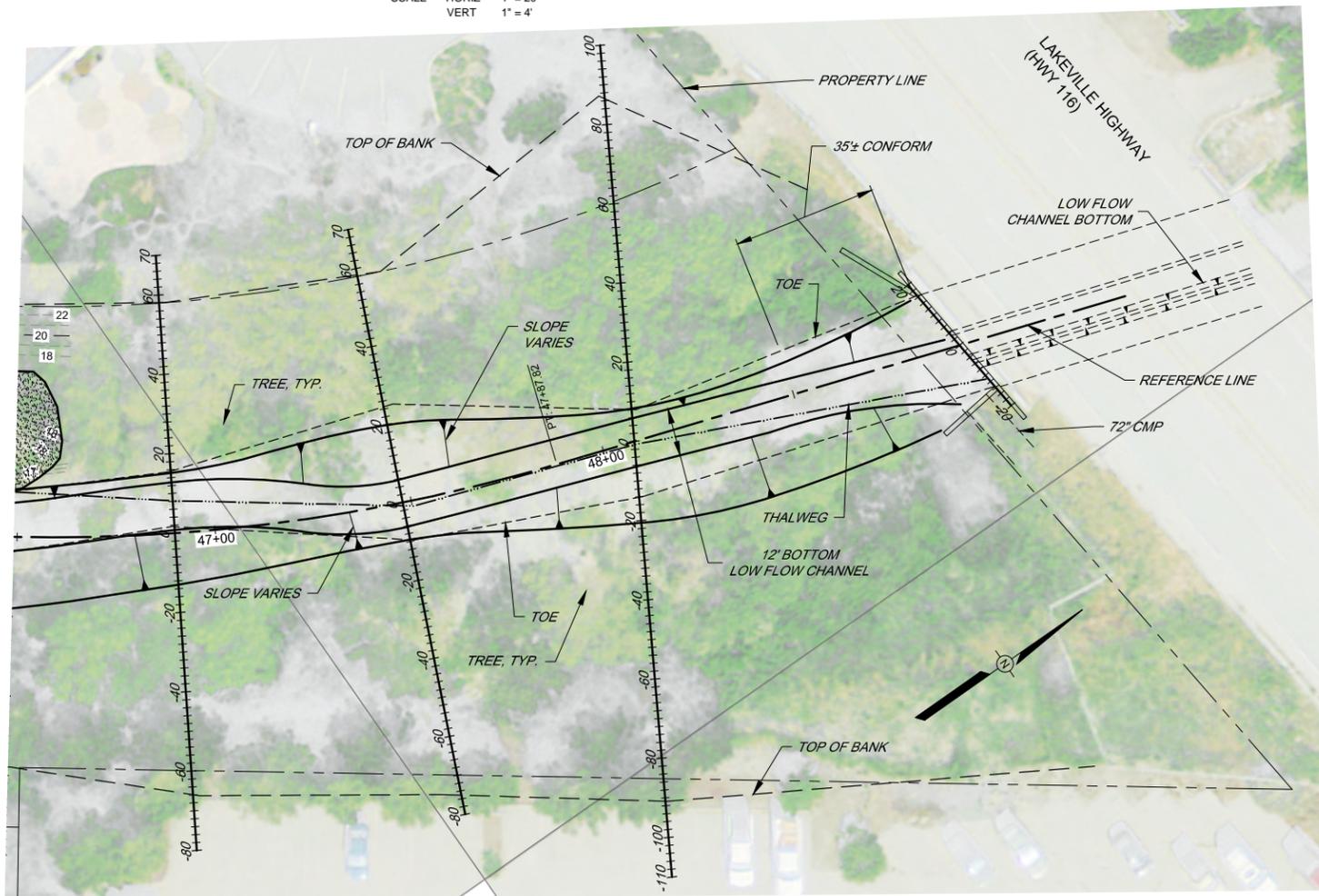
NO.	DATE	REVISION	BY

SCALE: AS SHOWN	DATE: 4/8/2015
DRAWN: ---	
REVIEWED: ---	

FILE NAME: 7728-adobe_civil	DRAWING NUMBER: C-6	SHEET 8 OF 10
CONTRACT NUMBER: ---		



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



PLAN
 SCALE 1" = 20'

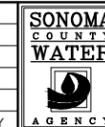
**PRELIMINARY
 90% SUBMITTAL**
 FOR REVIEW PURPOSES ONLY
 APRIL 8, 2015

LOWER ADOBE CREEK ENVIRONMENTAL ENHANCEMENT
 MITIGATION PROGRAM HABITAT RESTORATION

PETALUMA BASIN ZONE 2A
 ADOBE CREEK SMP REACH 2
 PLAN AND PROFILE STA 46+50 TO STA 49+00

FILE NAME: 7728-adobe_civil
 CONTRACT NUMBER: DRAWING NUMBER: C-7 SHEET 9 OF 10

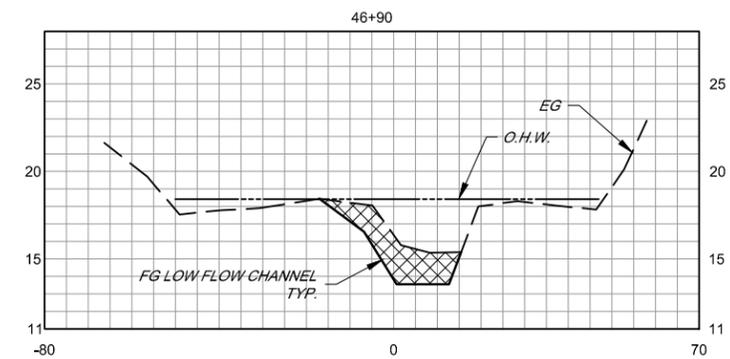
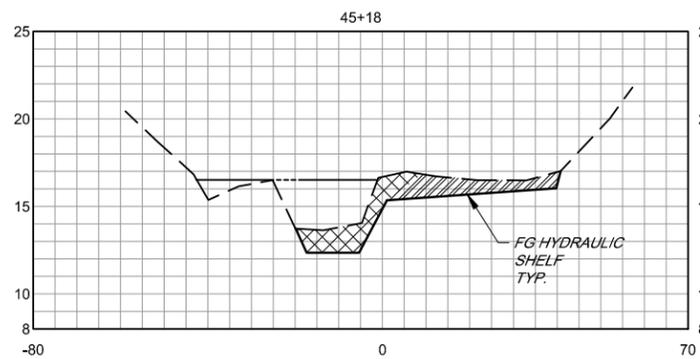
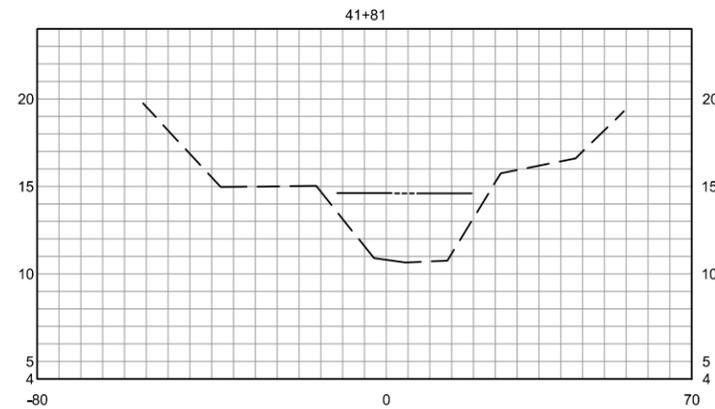
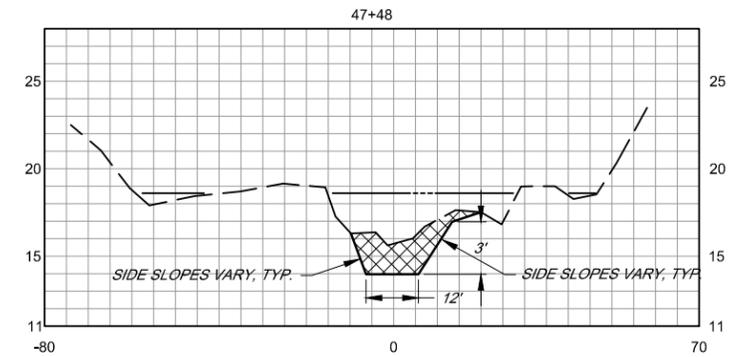
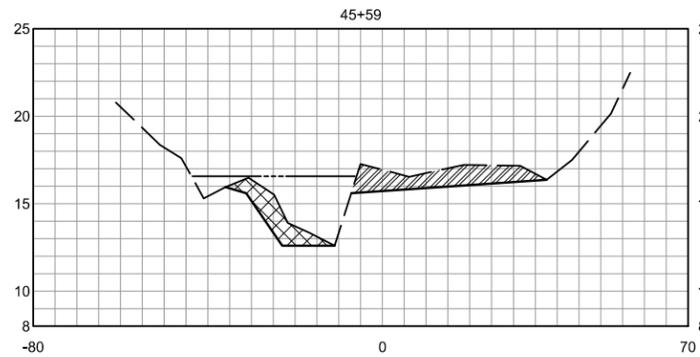
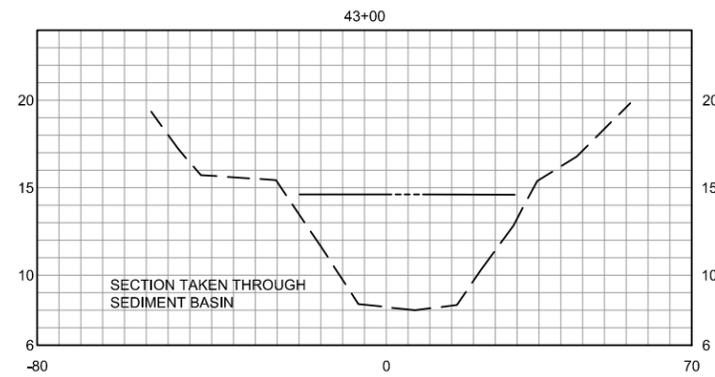
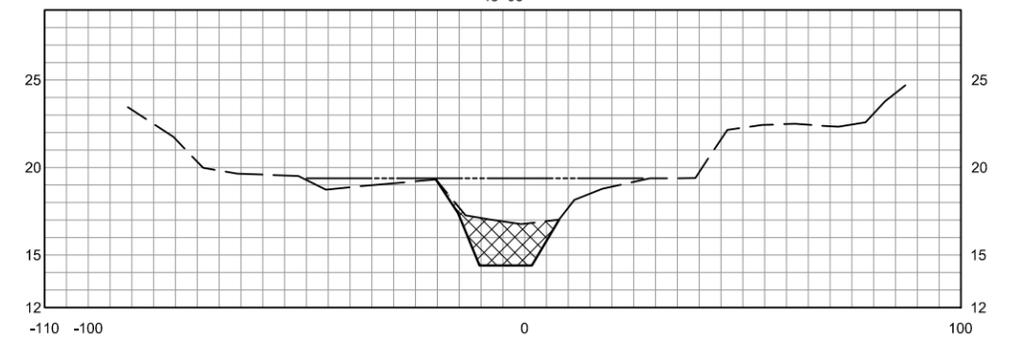
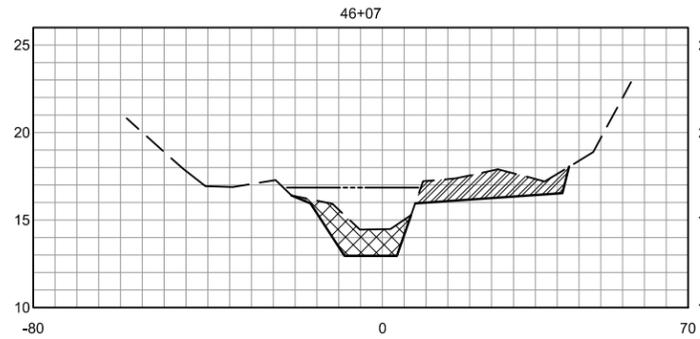
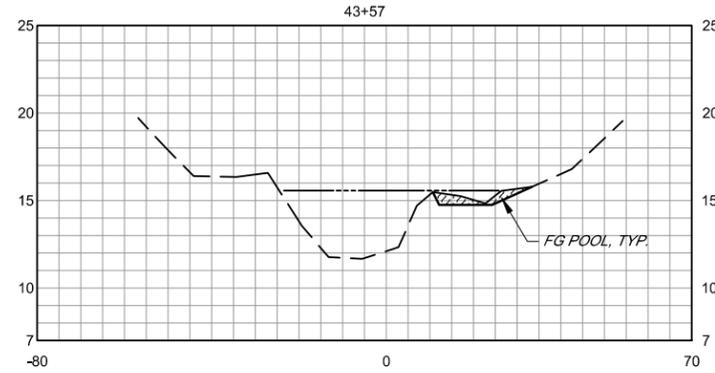
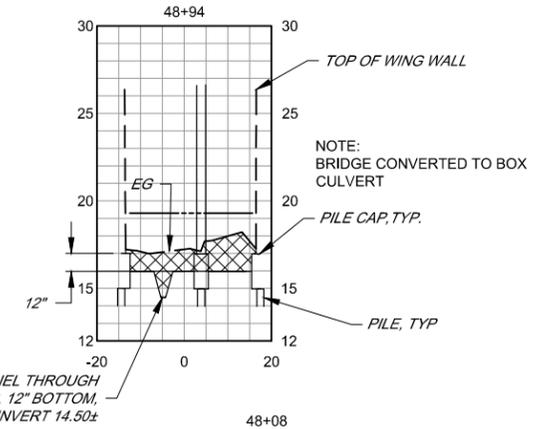
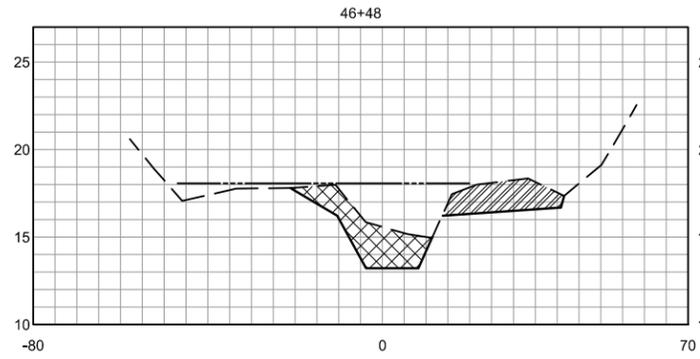
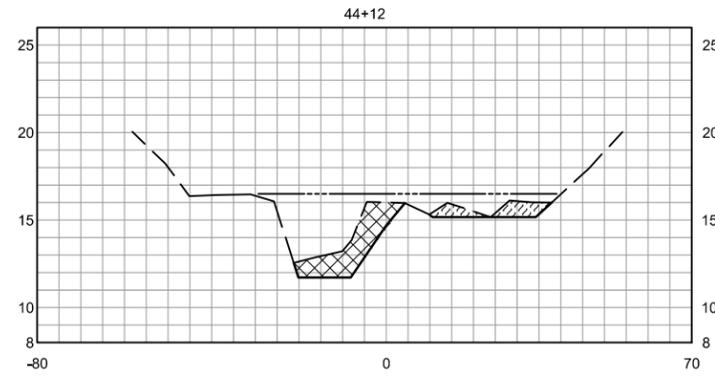
NO.	DATE	REVISION	BY



SCALE: AS SHOWN	DATE: 4/8/2015
DRAWN: ----	
REVIEWED: _____	

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



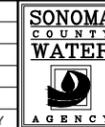
SECTIONS (LOOKING DOWNSTREAM)
SCALE HORIZ 1" = 20'
VERT 1" = 5'

LOWER ADOBE CREEK ENVIRONMENTAL ENHANCEMENT
MITIGATION PROGRAM HABITAT RESTORATION

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

**PRELIMINARY
90% SUBMITTAL**
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APRIL 8, 2015

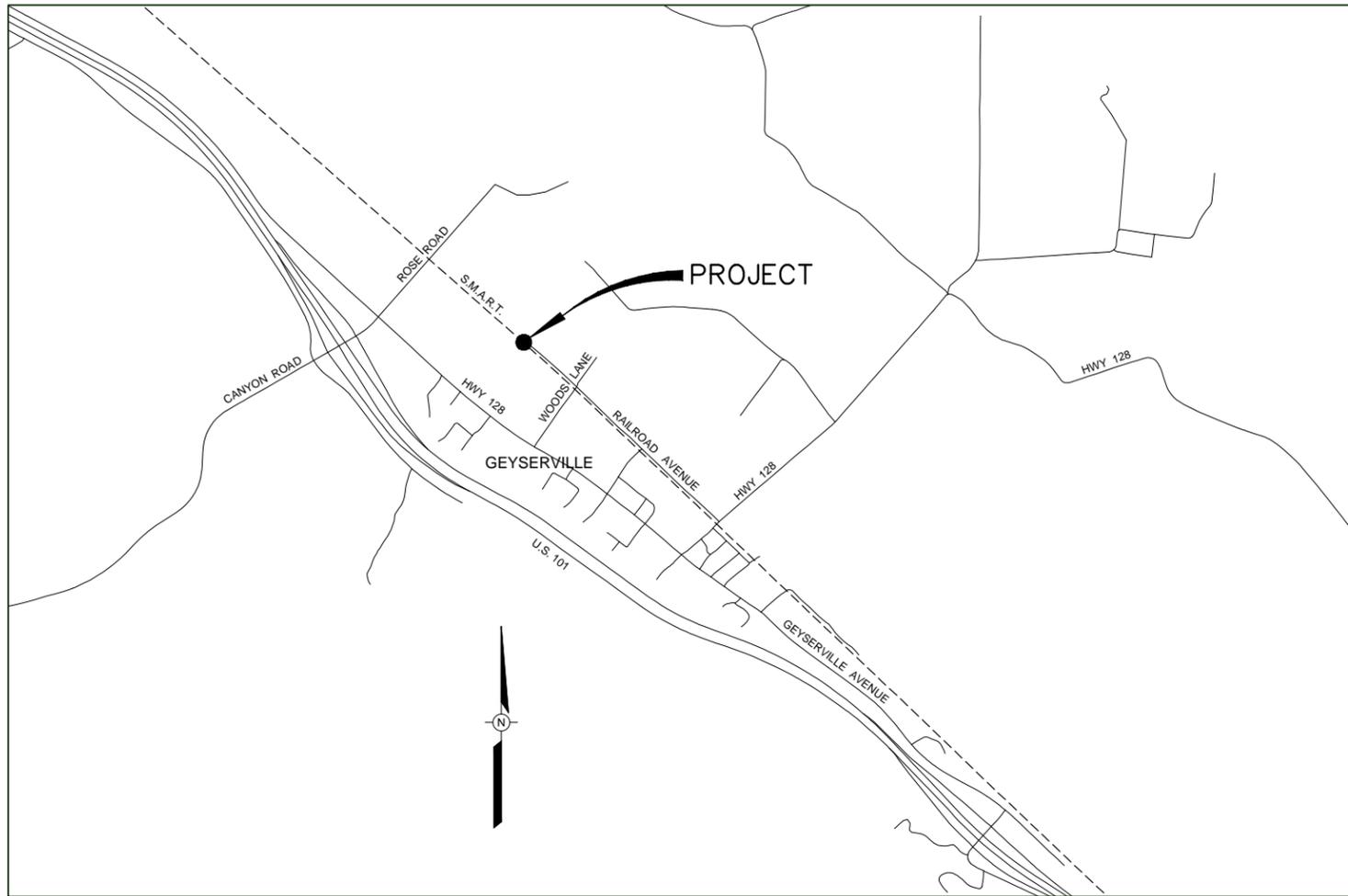
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SCALE: AS SHOWN DATE: 4/8/2015
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REVIEWED: _____

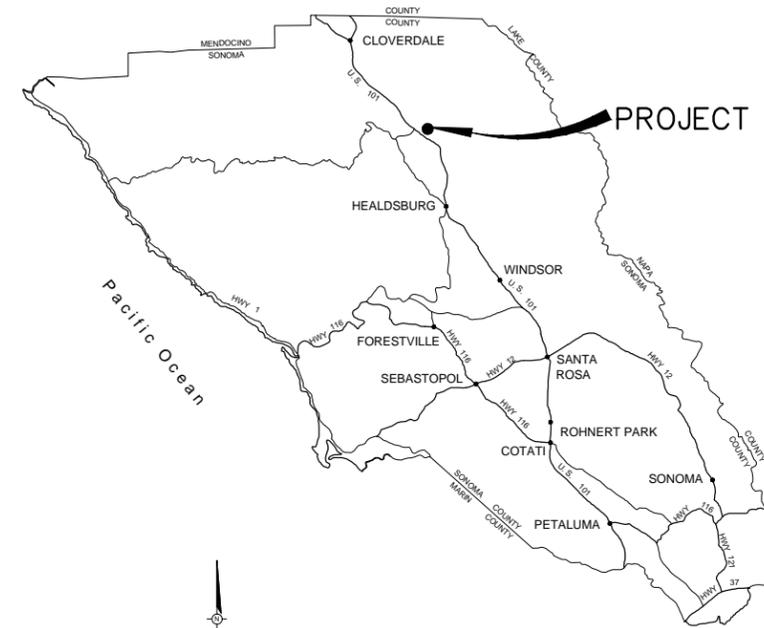
PETALUMA BASIN ZONE 2A
ADOBE CREEK SMP REACH 2
SECTIONS
FILE NAME: 7728-adobe_civil
CONTRACT NUMBER: _____
DRAWING NUMBER: C-8
SHEET 10 OF 10

UPPER RUSSIAN RIVER WATERDHD ZONE 4A WOOD CREEK SMP REACH 1 LOCALIZED SEDIMENT REMOVAL



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

WOOD CREEK SMP REACH 1 LOCALIZED SEDIMENT REMOVAL

EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	AVERAGE DEPTH (FT.)	C.Y. (TO REMOVE)
M	STA 27+00 TO STA 29+00	200	23.4	ABOVE O.H.W. 209 BELOW O.H.W. 4,471 TOTAL: 4,680	1.1	ABOVE O.H.W. 22 BELOW O.H.W. 174 TOTAL: 196

INDEX TO DRAWINGS

Sheet Number	Drawing Number	TITLE
1	G-1	INDEX TO DRAWINGS, TABLE LOCATION AND VICINITY MAPS
2	C-1	PLAN, PROFILE AND SECTIONS

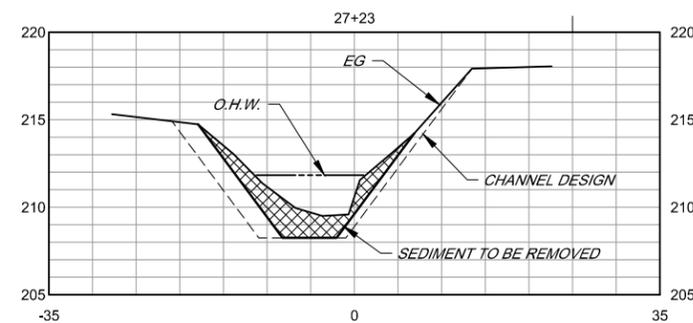
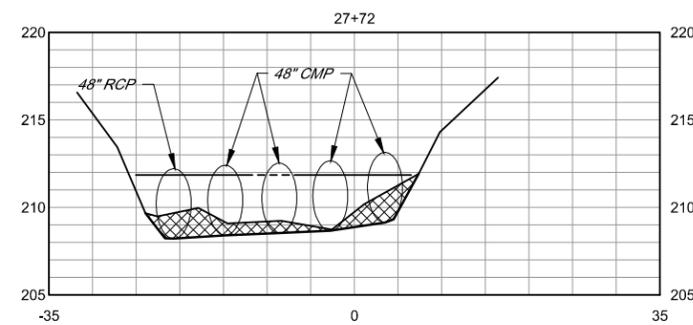
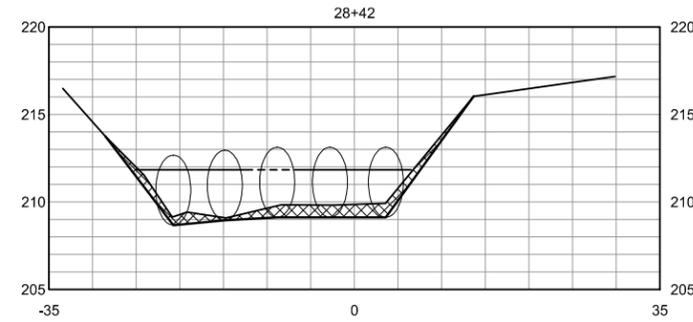
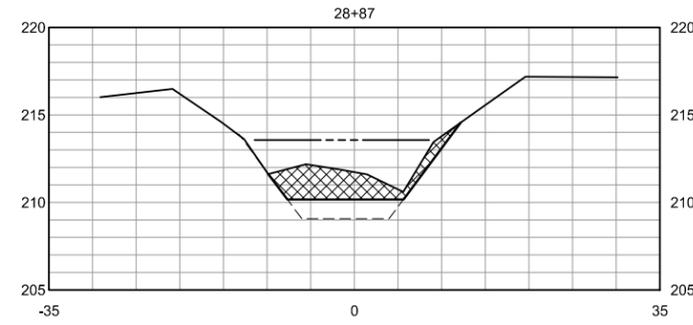


BAR LENGTH ON ORIGINAL
DRAWING EQUALS ONE INCH,
ADJUST SCALE ACCORDINGLY

NO.	DATE	REVISION	BY

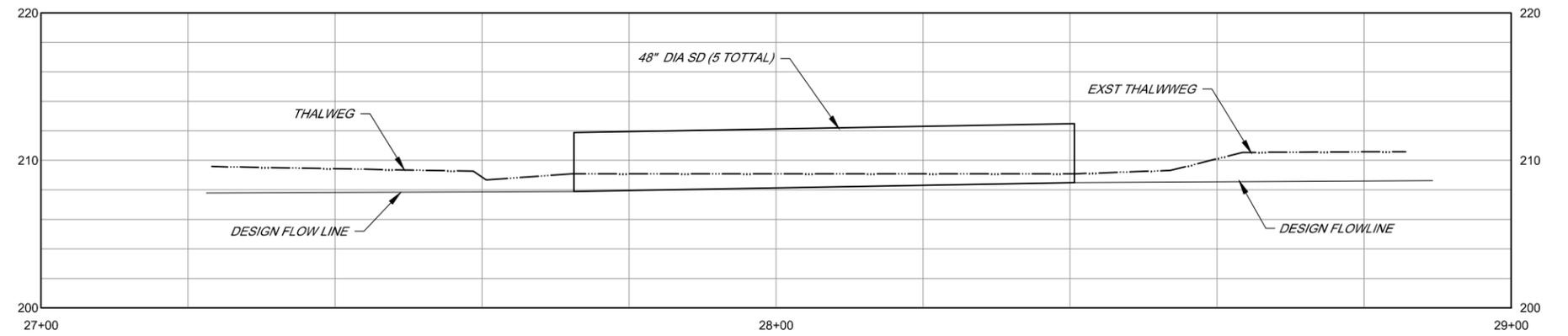

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 DRAWN: ----
 REVIEWED:

UPPER RUSSIAN RIVER WATERDHD ZONE 4A
WOOD CREEK SMP REACH 1 LOCALIZED SEDIMENT REMOVAL
 INDEX TO DRAWINGS, TABLE LOCATION AND VICINITY MAPS
 FILE NAME: 2015_Wood_Crk-G DRAWING NUMBER: G-1 SHEET 1 OF 2
 CONTRACT NUMBER:



SECTIONS

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



PROFILE

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



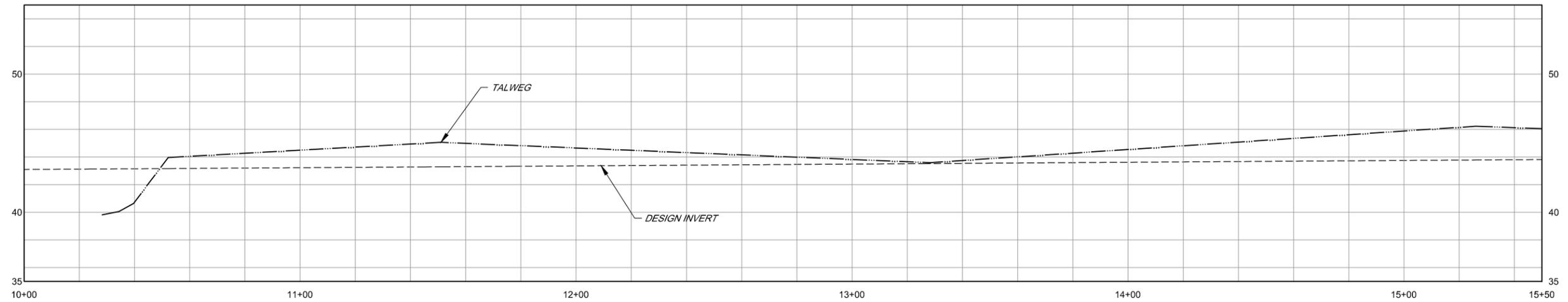
PLAN

SCALE 1" = 10'

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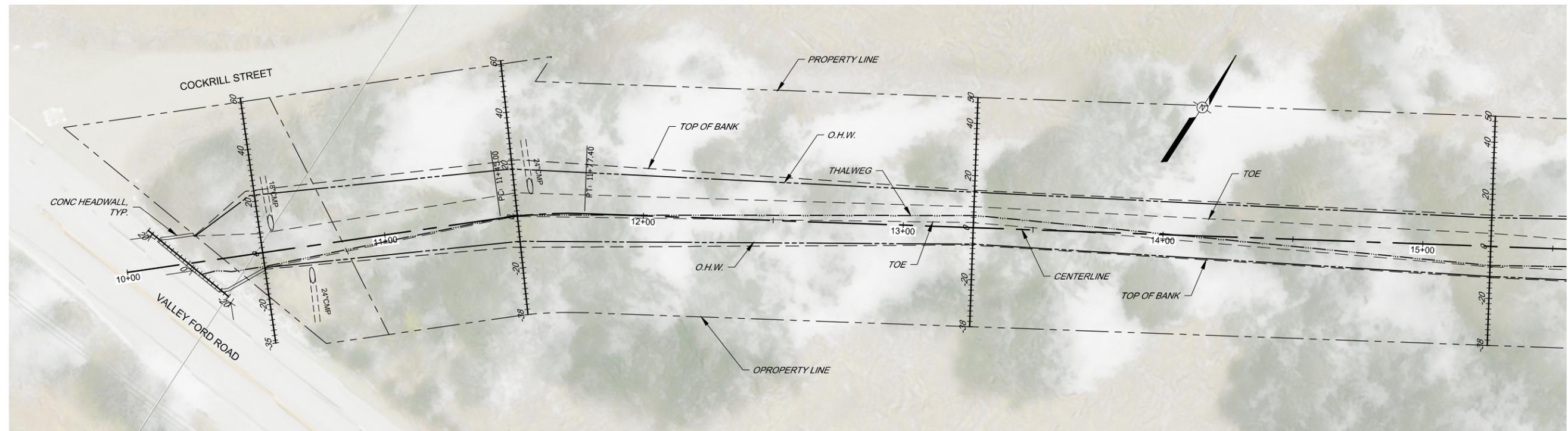
						SCALE: AS SHOWN DATE: 4/28/2015 DRAWN: ---- REVIEWED:		UPPER RUSSIAN RIVER WATERSHED ZONE 4A WOOD CREEK SMP REACH 1 LOCALIZED SEDIMENT REMOVAL PLAN, PROFILE AND SECTIONS		
NO.	DATE	REVISION	BY	FILE NAME: 2015_Wood_Crk-c		DRAWING NUMBER: C-1		SHEET 2 OF 2		

bloomfield-cl
10+00 15+50



PROFILE

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



PLAN

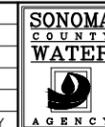
SCALE 1" = 20'

NOTE:
OUTLET OF SIDE DRAINS AT INVERT CHANNEL.



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

NO.	DATE	REVISION	BY

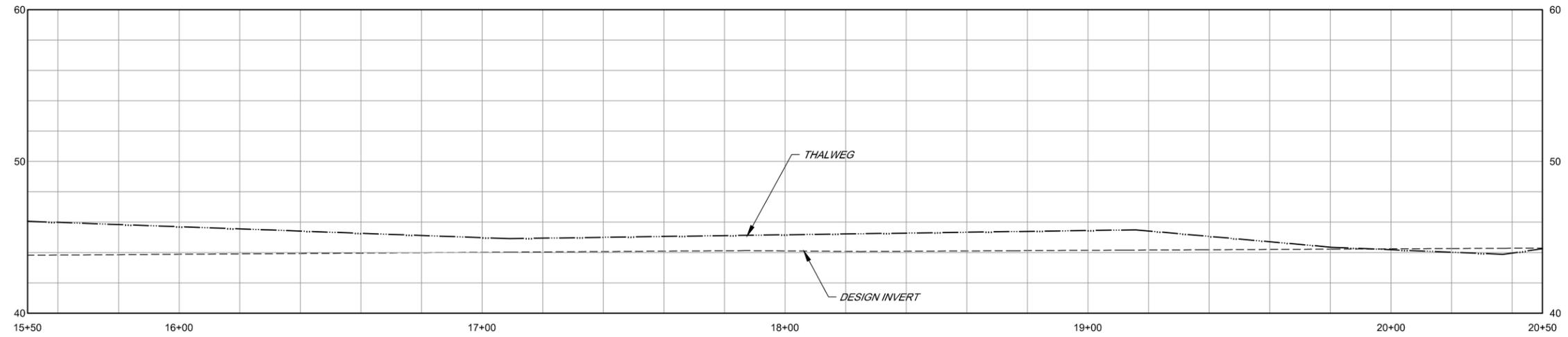


SCALE: AS SHOWN	DATE: 4/29/2015
DRAWN: ----	
REVIEWED: _____	

SMP - SOUTH COASTEL ZONE 8A BLOOMFIELD CREEK SMP REACH 1 PLAN AND PROFILE STA 10+00 TO STA 15+50	
FILE NAME: 2015 Bloomfield_C	DRAWING NUMBER: C-1
CONTRACT NUMBER: _____	SHEET 2 OF 5

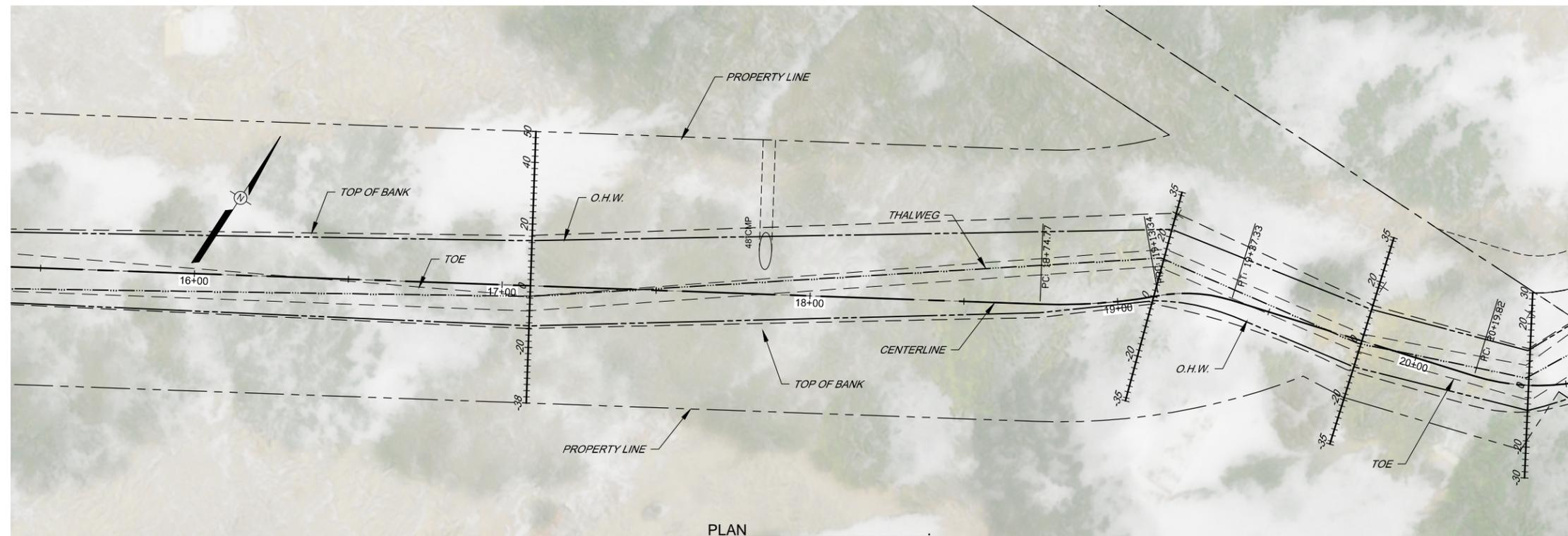
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bloomfield-cl
15+50 20+50



PROFILE

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



PLAN

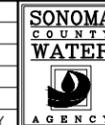
SCALE 1" = 20'

NOTE:
OUTLET OF SIDE DRAINS AT INVERT CHANNEL.



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

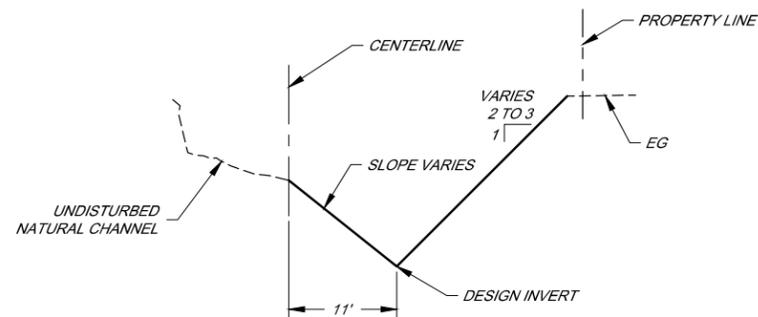
NO.	DATE	REVISION	BY



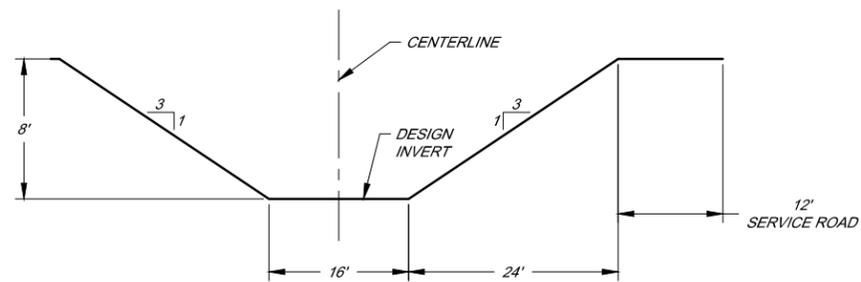
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DRAWN: ----	
REVIEWED: _____	

SMP - SOUTH COASTEL ZONE 8A BLOOMFIELD CREEK SMP REACH 1 PLAN AND PROFILE STA 15+50 TO STA 20+50		
FILE NAME: 2015 Bloomfield_C	DRAWING NUMBER: C-2	SHEET 3 OF 5

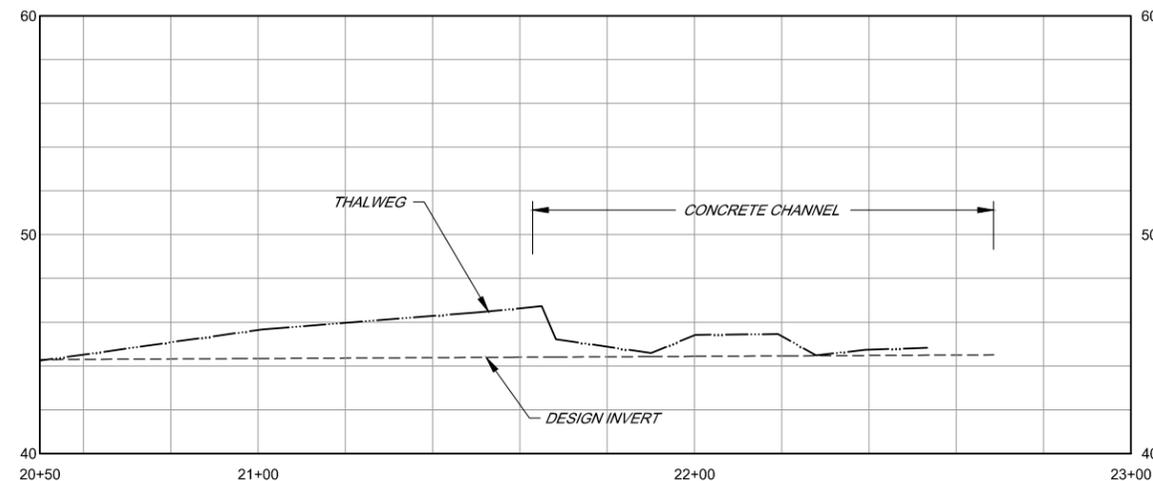
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TYPICAL AS-BUILT SECTION (1985)
 STA 19+37± TO STA 21+36±.
 NOT TO SCALE

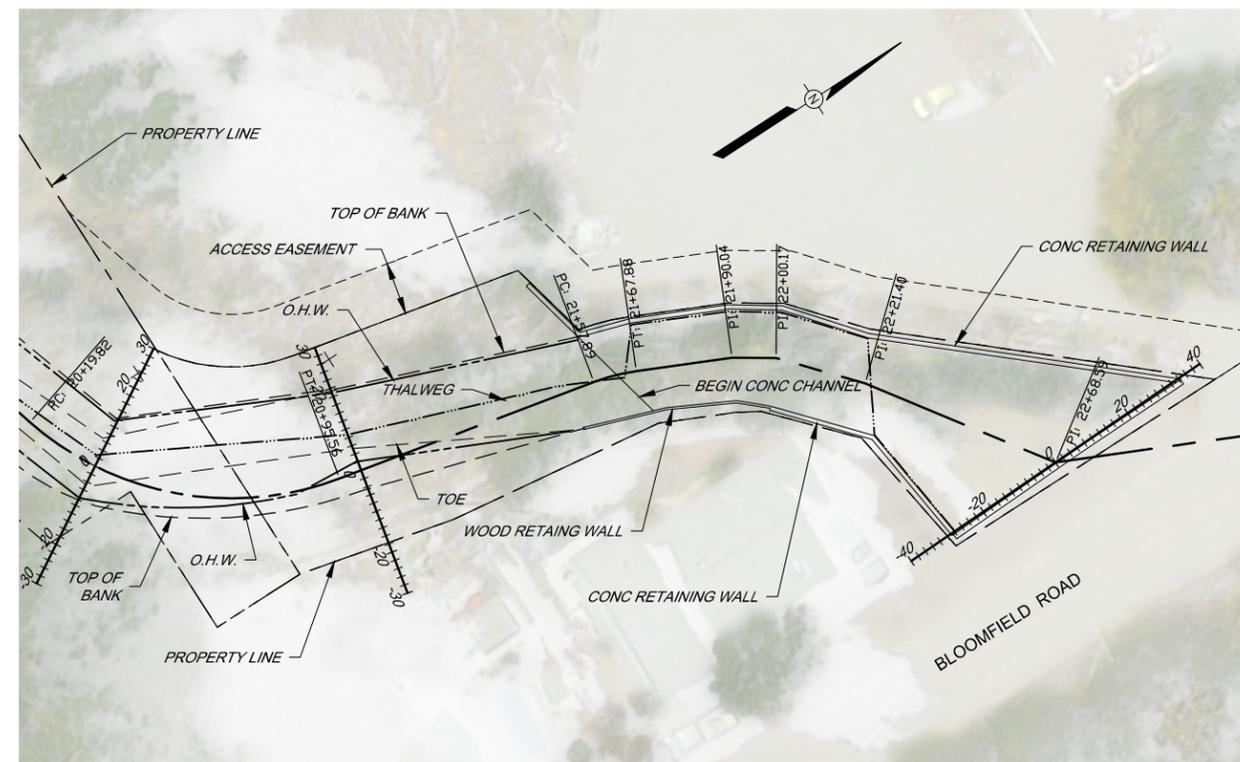


TYPICAL AS-BUILT SECTION (1977)
 STA 10+41± TO STA 18+75±.
 NOT TO SCALE



PROFILE

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



PLAN

SCALE 1" = 20'



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

NO.	DATE	REVISION	BY

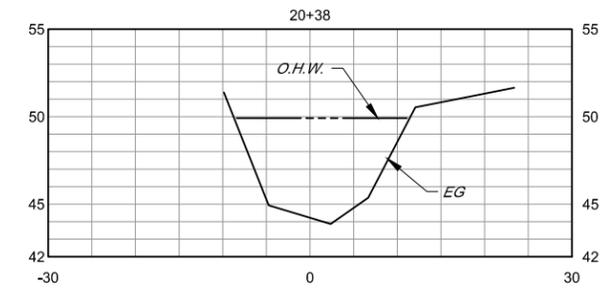
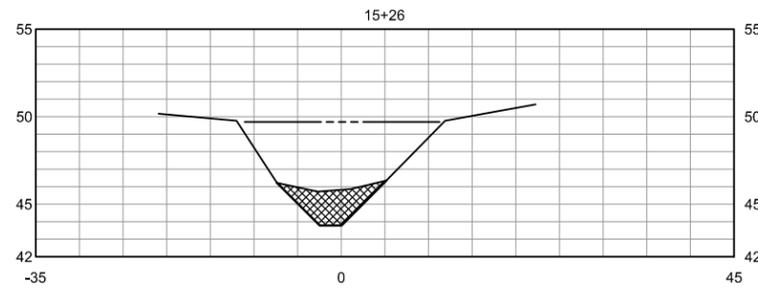
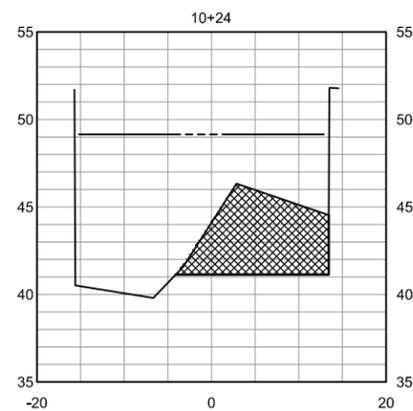
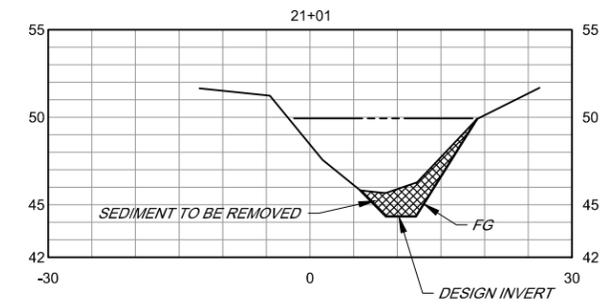
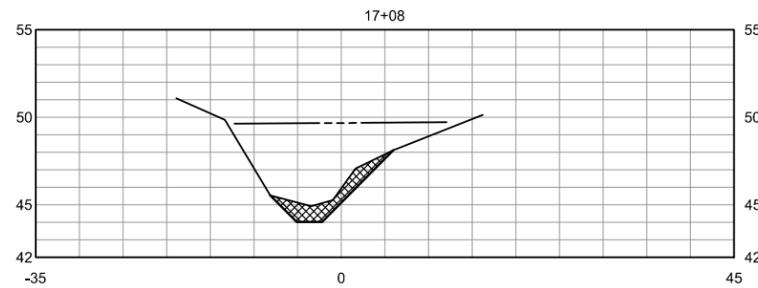
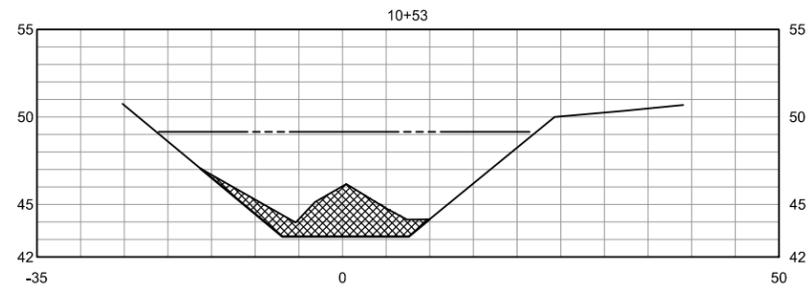
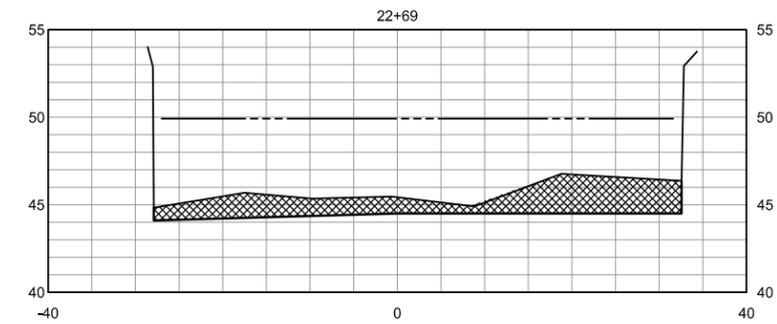
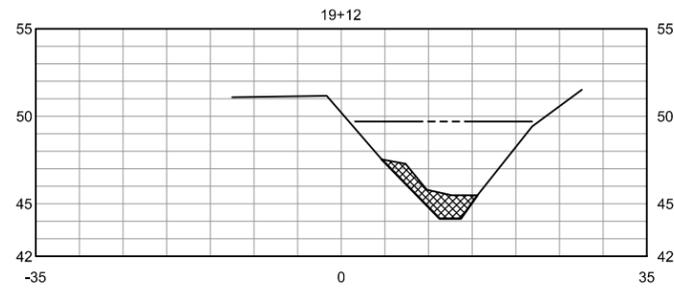
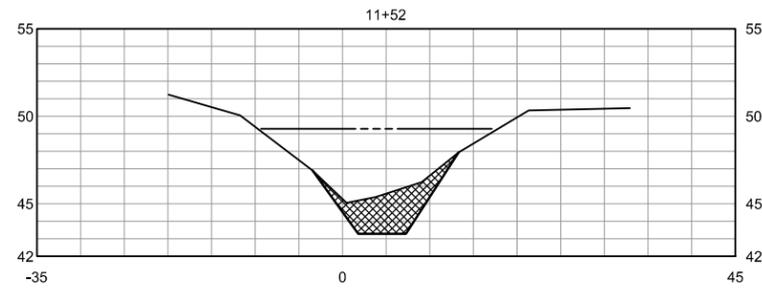
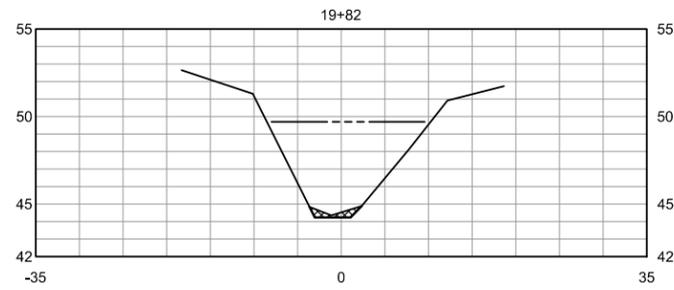
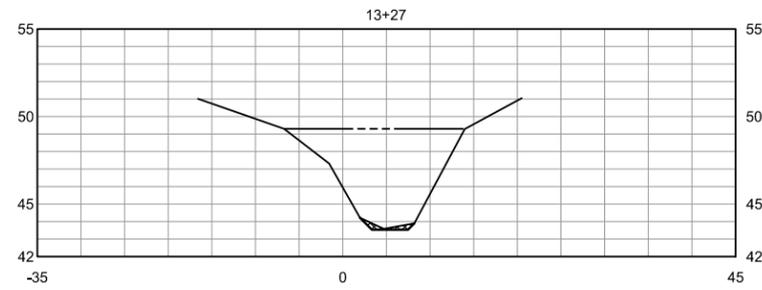
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN DATE: 4/29/2015
 DRAWN: ----
 REVIEWED: _____

SMP - SOUTH COASTEL ZONE 8A
 BLOOMFIELD CREEK SMP REACH 1
 PLAN AND PROFILE STA 20+50 TO STA 22+70

FILE NAME: 2015 Bloomfield_C CONTRACT NUMBER: _____
 DRAWING NUMBER: C-3 SHEET 4 OF 5

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SECTIONS (LOOKING DOWNSTREAM)

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: 4/29/2015
DRAWN: ----
REVIEWED: _____

SMP - SOUTH COASTAL ZONE 8A
BLOOMFIELD CREEK SMP REACH 1
SECTIONS

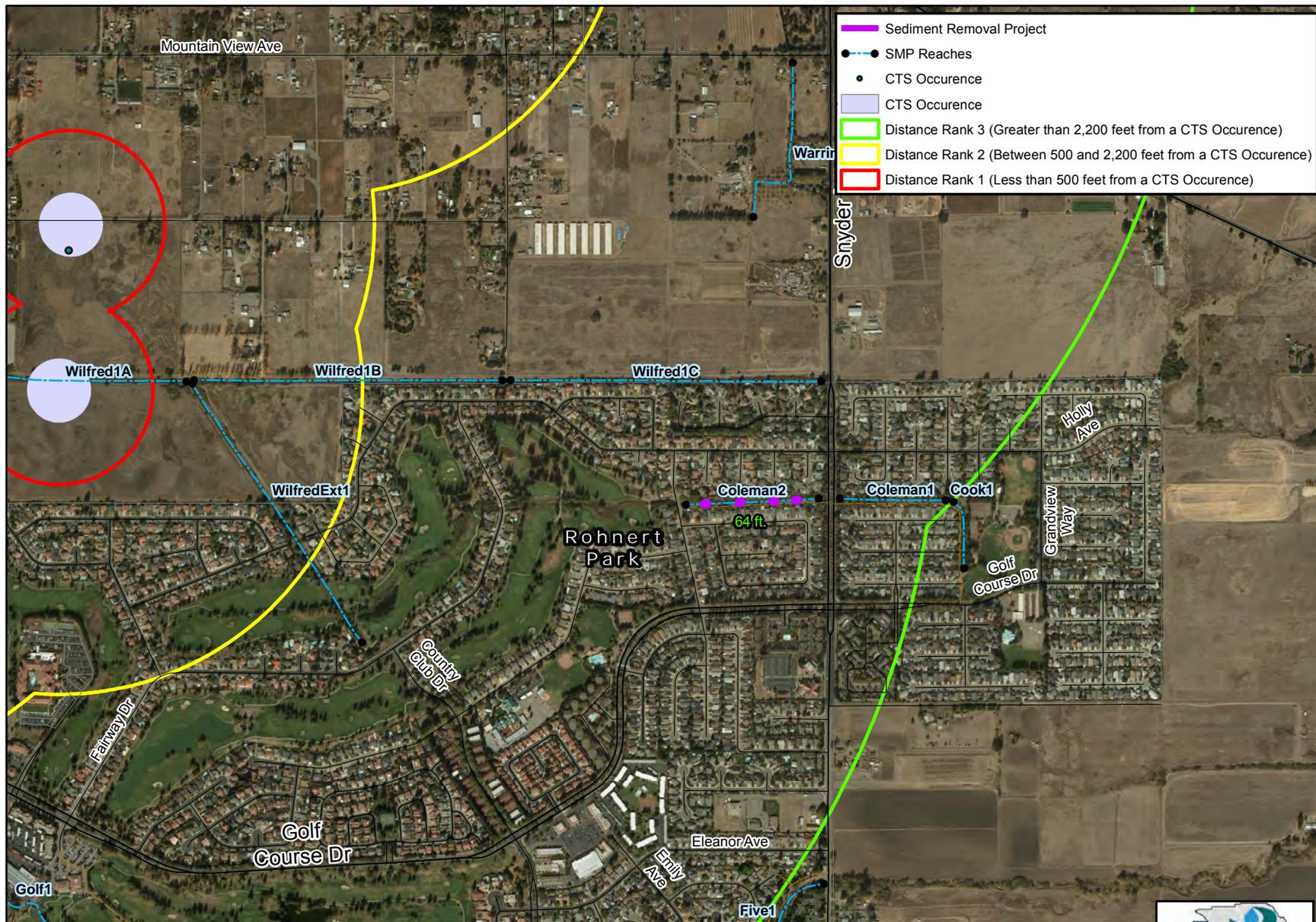
FILE NAME: 2015 Bloomfield_C
CONTRACT NUMBER: _____

DRAWING NUMBER: C-4 SHEET 5 OF 5

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Appendix E

Project Location Maps with CTS Occurrence Overlay



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

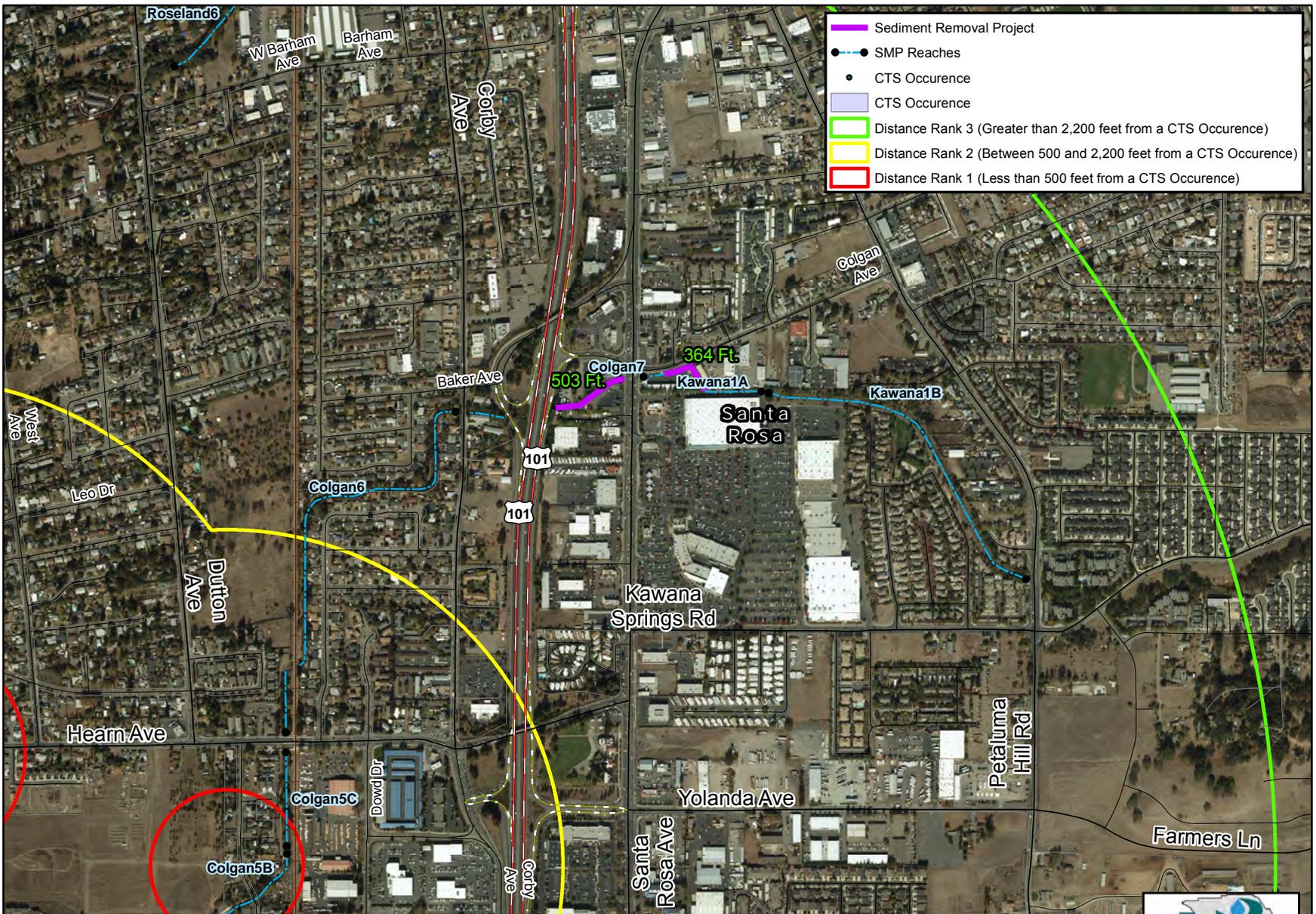
DISCLAIMER

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**Project Location
Map
Printed on 4/27/2015**





- Sediment Removal Project
- SMP Reaches
- CTS Occurrence
- CTS Occurrence
- Distance Rank 3 (Greater than 2,200 feet from a CTS Occurrence)
- Distance Rank 2 (Between 500 and 2,200 feet from a CTS Occurrence)
- Distance Rank 1 (Less than 500 feet from a CTS Occurrence)

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

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**Project Location
Map
Printed on 4/23/2015**





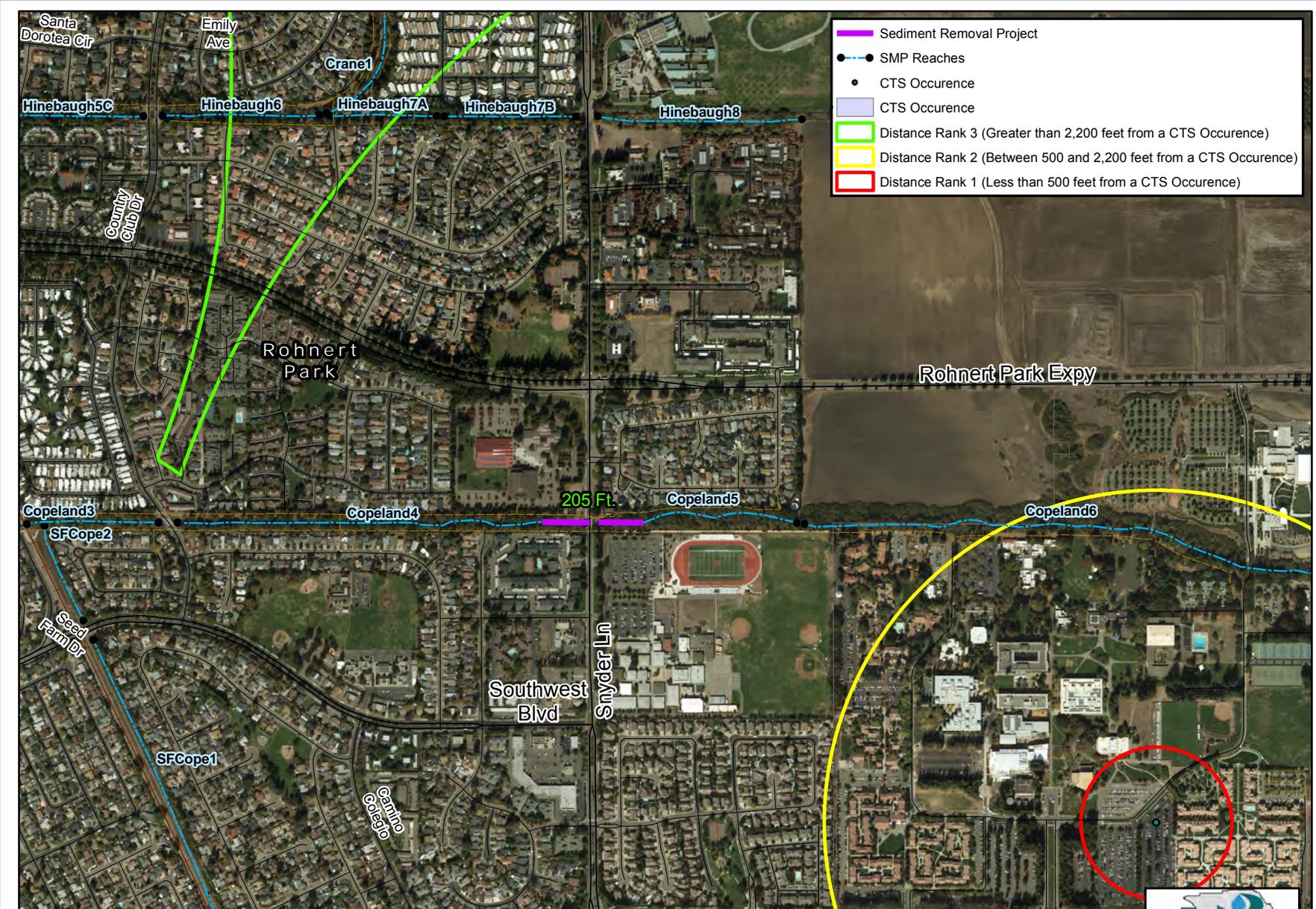
**Potential Occurrence and Distance Ranks
for California Tiger Salamander
Stream Maintenance Program, Flood Zone 1A**

DISCLAIMER
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**Project Location
Map
Printed on 4/23/2015**





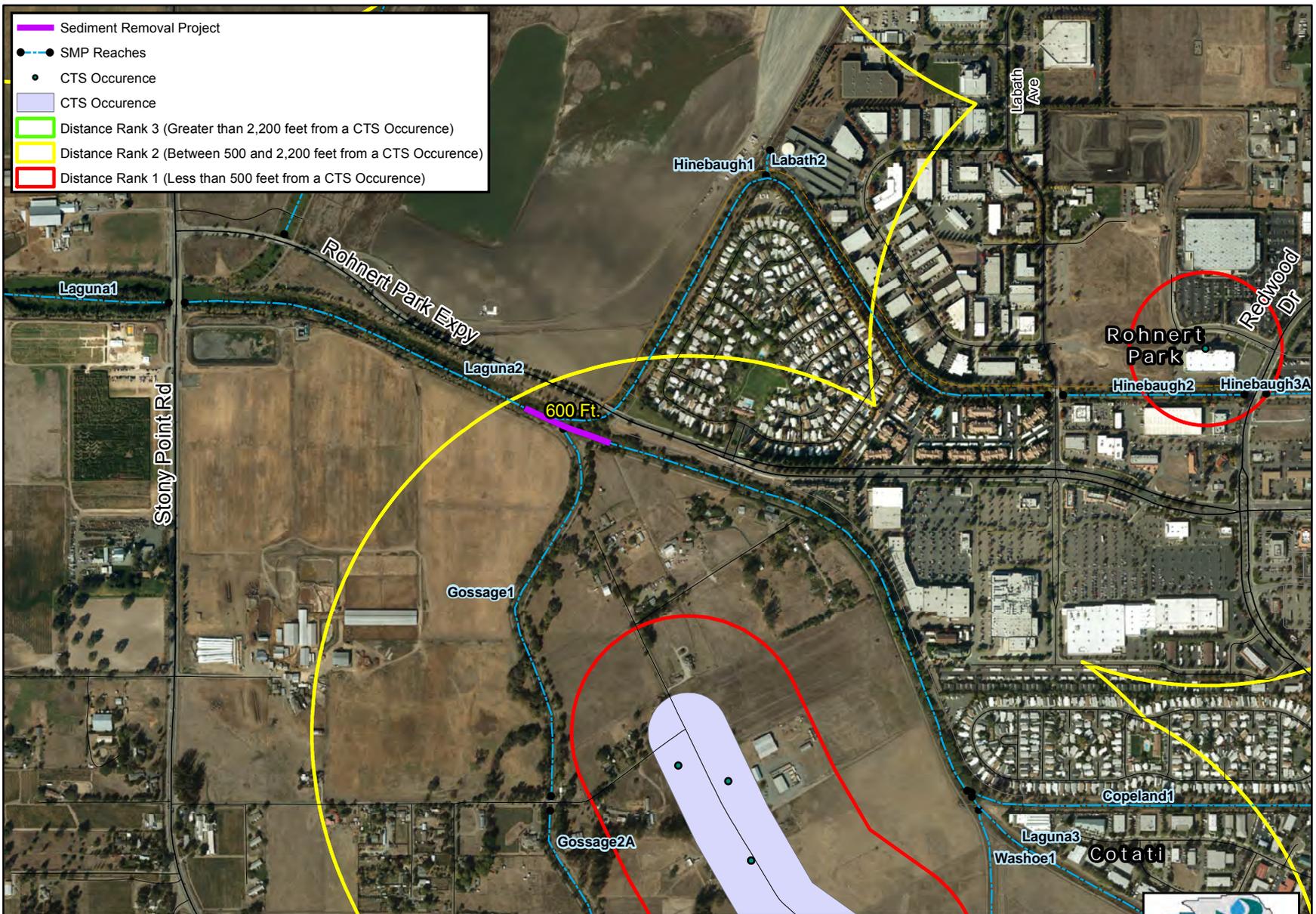
**Potential Occurrence and Distance Ranks
for California Tiger Salamander
Stream Maintenance Program, Flood Zone 1A**

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**Project Location
Map
Printed on 4/23/2015**





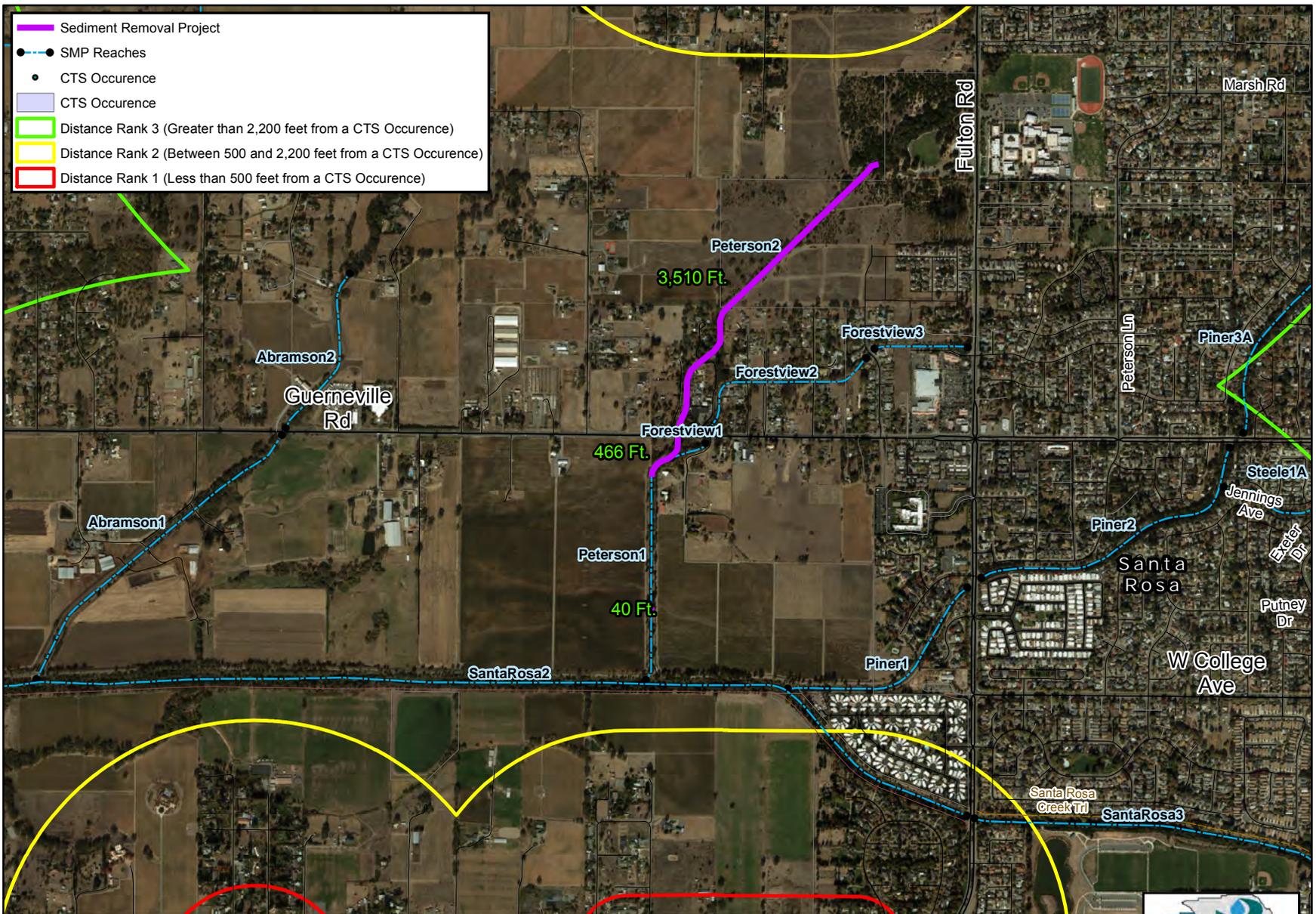
Potential Occurrence and Distance Ranks for California Tiger Salamander Stream Maintenance Program, Flood Zone 1A

DISCLAIMER
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Project Location Map
 Printed on 4/23/2015





- Sediment Removal Project
- - - SMP Reaches
- CTS Occurrence
- CTS Occurrence
- Distance Rank 3 (Greater than 2,200 feet from a CTS Occurrence)
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- Distance Rank 1 (Less than 500 feet from a CTS Occurrence)

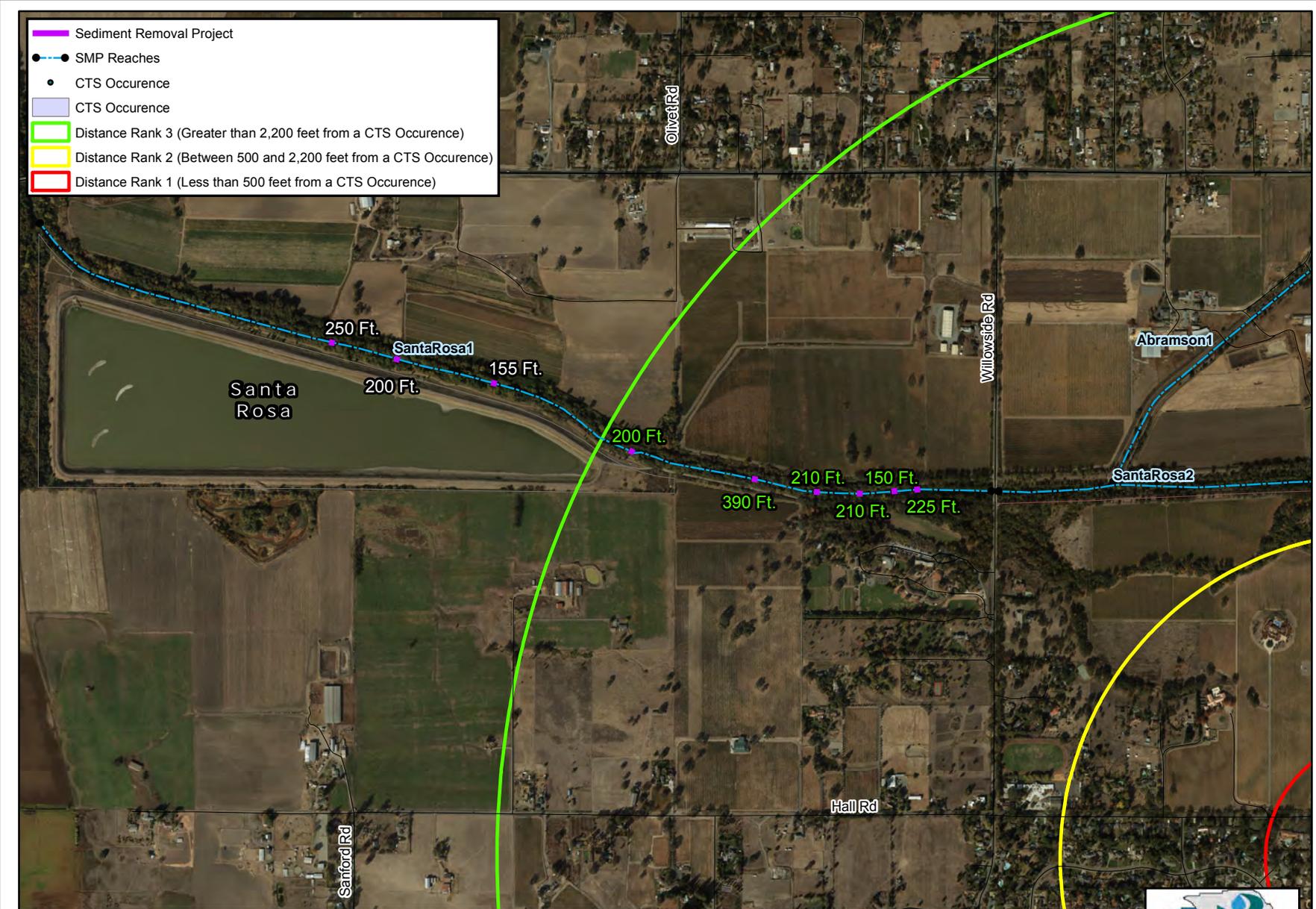
**Potential Occurrence and Distance Ranks
for California Tiger Salamander
Stream Maintenance Program, Flood Zone 1A**

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**Project Location
Map
Printed on 4/23/2015**





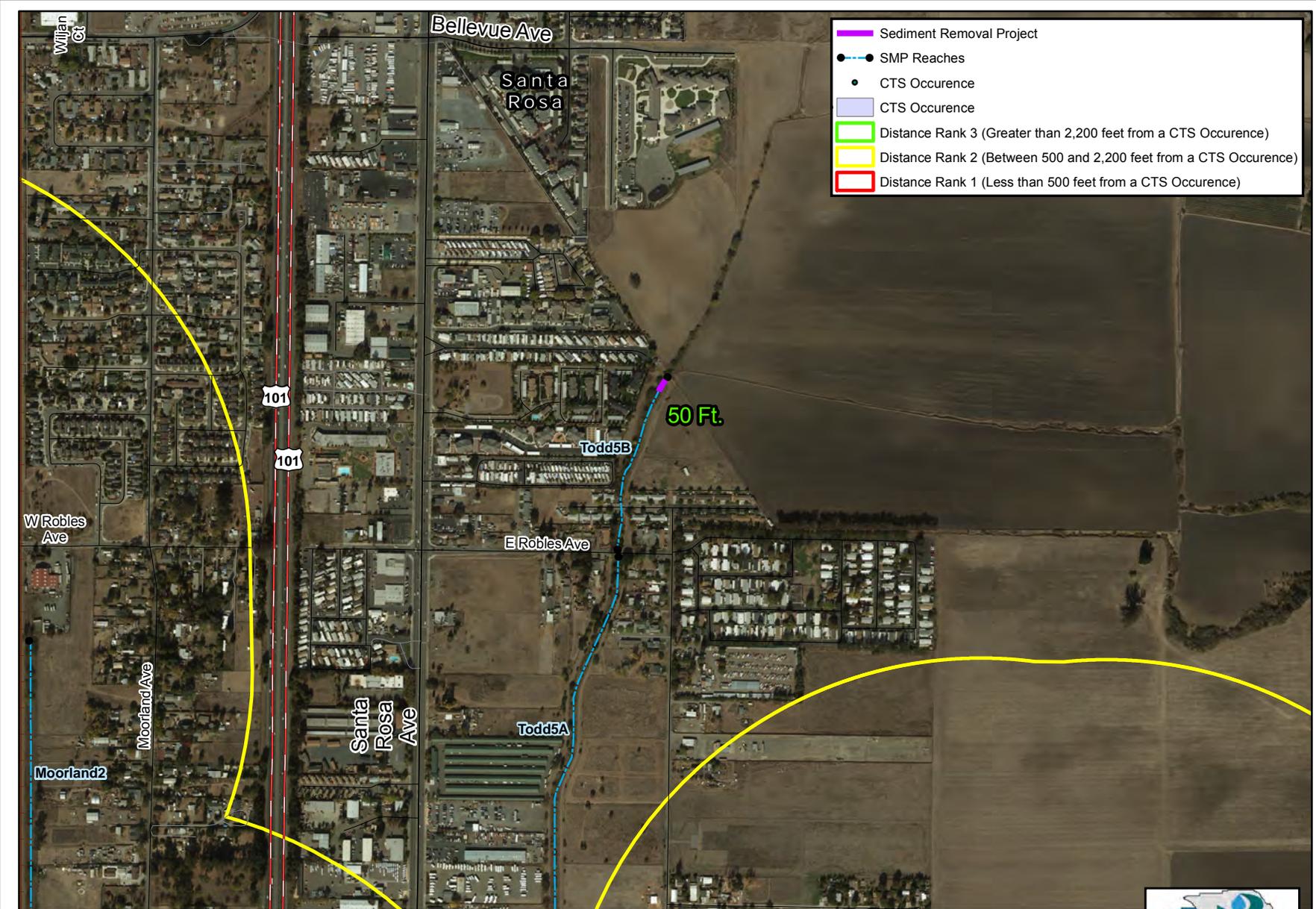
**Potential Occurrence and Distance Ranks
for California Tiger Salamander
Stream Maintenance Program, Flood Zone 1A**

DISCLAIMER
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**Project Location
Map
Printed on 4/30/2015**





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

DISCLAIMER
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**Project Location
Map
Printed on 4/30/2015**



Appendix F

WPP Project Descriptions

Zone 1A

- Center for Environmental Stewardship: 2015 Pool Creek Habitat Enhancement Project, Phase II
- Point Blue Conservation Science: 2015 STRAW Washoe Creek Restoration Project at Stony Point Quarry, Phase II

Zone 2A

- Point Blue Conservation Science: 2015 STRAW Adobe Creek Restoration Project at Mota Ranch

Zone 3A

- Sonoma Ecology Center: 2015 Nathanson Creek Restoration Project

SCWA – 2015 Watershed Partnership Program
Pool Creek Habitat Enhancement Project – Phase II

2015 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

PROJECT INFORMATION

Project Name

Pool Creek Habitat Enhancement Project – Phase II

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: \$31,200.00 (including a 5 year maintenance program).

Available Matching Funds: \$6,100.00 (landowner match)

Total Requested through SCWA - WPP: \$25,100.00

SCWA – 2015 Watershed Partnership Program
Pool Creek Habitat Enhancement Project – Phase II

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 – Phase II under the Sonoma County Water Agency’s Watershed Partnership Program (WPP). The proposed WPP Project will mitigate for dredging activities that will occur in 2015 along Starr Creek as part of the SCWA’s Stream Maintenance Program (SMP). The WPP Project proposed by The Center is to remove invasive non-native blackberry patches located along a reach 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*), followed by and broadcast seeding native grass and wetland emergent seeds in areas left bare after the initial treatment. The proposed WPP project will enhance 1,144 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).

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

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 WPP 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 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.

3. How does this project advance goals for the Water Agency Stream Maintenance Program and pertain to the 2015 planned maintenance work?

The proposed WPP Project is located within the same watershed drainage as the 2015 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 award winning 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. Workdays for volunteers will include invasive plant eradication 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.

SCWA – 2015 Watershed Partnership Program
Pool Creek Habitat Enhancement Project – Phase II

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
2015	July	CDFG 1600 Permit Application Submitted
2015	September - October	Non-native Invasive Blackberry Removed
2015	October	Broadcast native grass mixture and straw hay
2015	November	First of 5 project monitoring completed.
2016-2020	May-November	Blackberry maintenance (3 times annually) Project monitoring

The remaining four years (May 2016 – December 2020) will consist of 3 visits per year to the non-native blackberry matches to remove root balls and spray re-sprouts, 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 California Department of Fish and Wildlife will require a 1600 Streambed Alteration Agreement for the invasive removal and native plant installation.

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*). The proposed WWP project will enhance 1,144 feet of water way and 0.5 acres of mixed riparian woodland (Attachment A – Restoration Plan).

SCWA – 2015 Watershed Partnership Program
Pool Creek Habitat Enhancement Project – Phase II

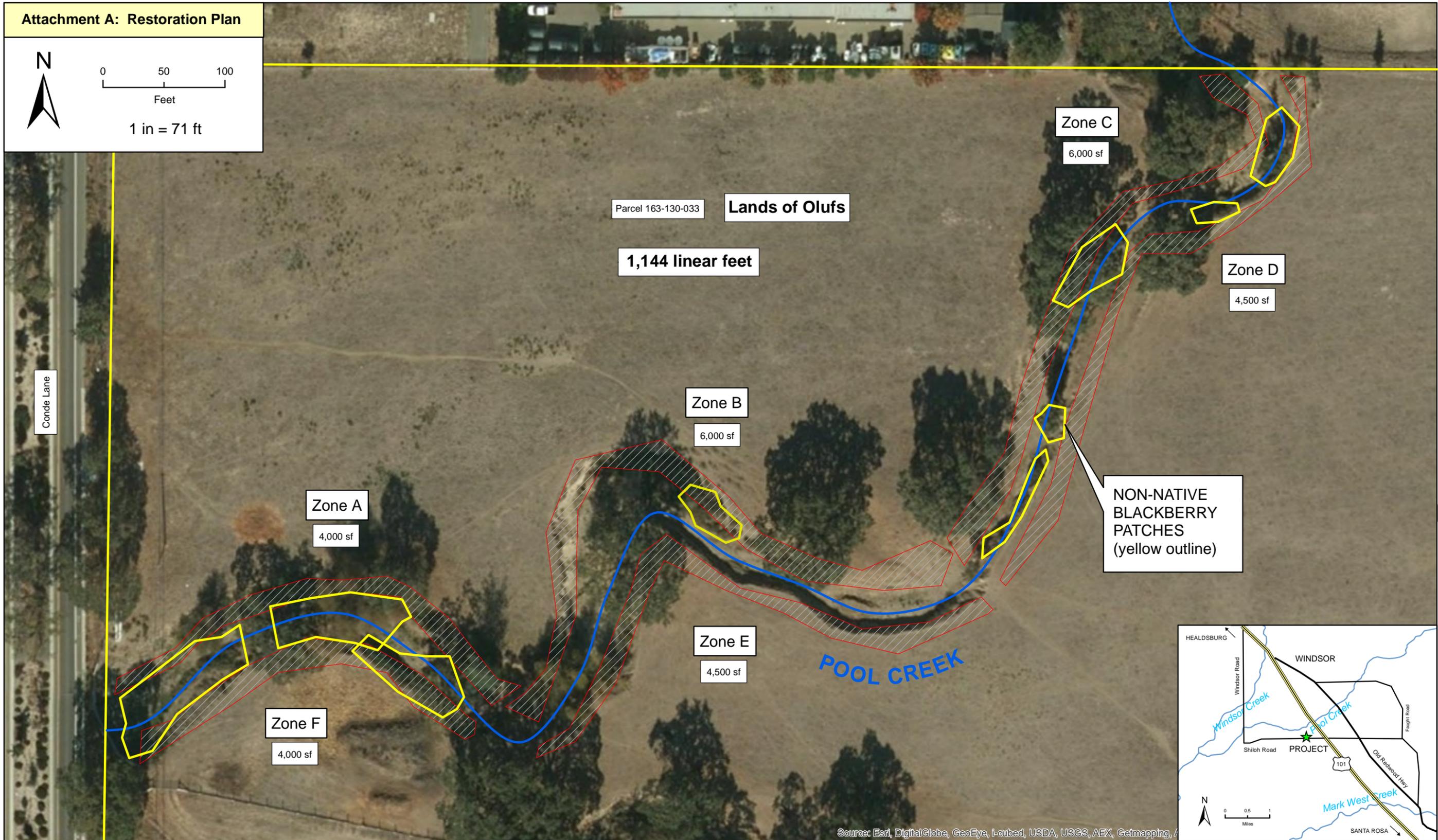
9. Maintenance and Monitoring. Discuss planned maintenance.

Maintenance of the initial non-native blackberry matches will occur from May to October of each year after removal for a total of 5 years. Yearly maintenance will consist of 3 visits to the treated blackberry matches to remove root balls and spray re-sprouts. The Center will share responsibility with the landowner to remove blackberry root balls and spray blackberry re-sprouts after initial removal.

Annual monitoring will be conducted in the fall of each year following the initial non-native blackberry removal and will be submitted in writing to SCWA by December 1 of each year. Project monitoring will consist of photo-documentation, summary of project conditions and effectiveness, and recommendations for additional treatment.

ATTACHMENT A

Restoration Plan



401 College Avenue
 Santa Rosa, CA 95401
 voice 707.838.6641
 email TheCenter@cfses.org

DESIGN:	Anya Perron-Burdick	REVISION	DATE	BY
DRAWN:	Kesley Setliff			
SCALE:	see above			
DATE:	2/27/15			
FILE:	Pool_Creek_Project_2.27.15.mxd			

PRODUCED FOR:
SONOMA COUNTY WATER AGENCY
 2015 Watershed Partnership Program
 404 Aviation Blvd, Santa Rosa, CA

**POOL CREEK HABITAT ENHANCEMENT
 - PHASE II -**
 Lands of Olufs
 899 Shiloh Rd, Windsor, CA

1
 OF 1 SHEETS

ATTACHMENT B

Photo-Documentation



Photo 1: North end of Zone D facing south. Blackberry along left bank. Date: 2/24/2015



Photo 2: Middle of Zone D, facing south. Blackberry in background and down the creek. Date: 2/24/2015



Photo 3: Standing in middle of Zone D, looking west onto Zone C. Blackberry on left.
Date: 2/24/2015



Photo 4: Zone D, facing North. Blackberry on right. Date: 2/24/2015



Photo 5: Zone E in foreground, with Zone B with blackberry thickets in background.
Date: 2/24/2015



Photo 6: Zone A and B facing east, with blackberry thickets in foreground. Date: 2/24/2015



Photo 7: Zone A, facing west towards Conde Lane. Blackberry in back left of photo.
Date: 2/24/2015

ATTACHMENT C

Proposed Project Budget

TOTAL BUDGET: (July 2015 - December 2020)

TOTAL PROPOSED BUDGET	
Personnel Services	\$22,900.00
Supplies and Materials Expenses	\$2,200.00
TOTAL	\$25,100.00

Task 1: Permitting and Blackberry Removal (July 2015 - November 2015)	
	Water Agency Share
Personnel Services	\$8,000.00
Supplies and Materials Expenses	\$1,650.00
TOTAL	\$9,650.00
Task 2: Maintenance & Monitoring (May 2016 - December 2020)	
	Water Agency Share
Personnel Services	\$14,900.00
Supplies and Materials Expenses	\$2,200.00
TOTAL	\$17,100.00

2015 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 Phase II

Project Location: Washoe Creek

Project Budget: \$56,928.36

Available Matching Funds: \$6,990.50.00

STRAW will contribute a minimum in-kind match in the form of volunteer hours totaling \$6,990.50. Restoration activities will engage two classes of students from Sonoma County (2 teachers, 50 students, 10 community volunteers = 62 volunteers x 5 hours = 310 hours x @22.50/hr = \$6,990.50.00)

Total Requested through WPP: \$49,937.86
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. Phase I of the Washoe WPP installed 13 native riparian species in the drainage. Through installation of exclusionary fencing, invasive plant removal and installation of native plant seed, the resulting project will enhance the 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 enhance the current restoration efforts. Phase II of this project will include the installation of exclusionary fencing around the eroding drainage and newly installed vegetation, removal of an isolated population of Himalayan Blackberry (*Rubus armeniacus*) and the revegetation of the drainage using appropriate native plant seeds. Non-native vegetation removal will be performed by Conservation Corps North Bay (CCNB) and the STRAW Program. CCNB will remove the blackberry brush and classes from Sonoma County communities will remove the blackberry root crowns. Native plant species used in the seed application 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. The exclusionary fencing will allow for establishment of the existing plants as well as natural recruitment of existing vegetation to provide ground cover to prevent erosion.

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 2015-2016 school year with minimal summer maintenance and annual monitoring performed for five consecutive years.

2. Project Benefits

One benefit of this project is to enhance the riparian habitat and resulting function through the installation of a multi-plant palette that will include specific plant-based erosion control practices. Through invasive removal and seeding, 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. The installation of exclusionary fencing will further protect native plants installed during Phase I from cattle grazing pressure. This site was selected because of its proximity to the Sonoma County Water Agency's proposed stream maintenance sites for 2015 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 2015 planned maintenance work?

The STRAW: Washoe Creek Restoration Project at Stony Point Quarry Phase II 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 2015 proposed stream maintenance work for sediment basin maintenance work at Reach 2 of the Laguna de Santa Rosa 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, corps members 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 corps member 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
August- 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 Exclusionary Fence Installation
November-March	Student invasive species removal and restoration 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:

1200ft x 30 ft= 36,000ft²

1020 ft² Himalayan Blackberry Removal

2403 ft of exclusionary fencing

Minimum Number of Plants Installed:

1 lb of native plant seed

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 2016.

Maintenance and monitoring activities will include:

- Regularly inspect project from late spring through early fall for five years – no less than two visits a year for five years.
- If necessary, hand watering seeded areas to get adequate establishment.
- 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 – Conservation Corps North Bay
 - 3.Attachment F – Trout Unlimited



STRAW - Washoe Creek at Stony Point Quarry Phase II

LABOR*		
Education		\$1,296.26
Installation		\$17,067.81
Maintenance & Monitoring		\$1,326.97
	Total Labor	\$19,691.05
OTHER DIRECT COSTS		
Materials		
Installation, Maintenance & Monitoring		\$14,868.00
Mileage		
Education		\$76.27
Installation		\$559.33
Maintenance & Monitoring		\$127.12
Subcontractors		
STRAW Faculty		\$1,135.00
Prunuske Chatham, Inc.		\$920.00
Conservation Corps North Bay/		\$7,000.00
Fence Contractor		\$5,600.00
	Total Other Direct Costs	\$30,285.72
TOTAL		\$49,976.77

no indirect

* includes salary, fringe benefits and indirect expense

Total Funding Request	\$49,976.77
MATCH	
310 Volunteer hours @ \$22.55	\$6,990.50
Total Project Budget	\$56,967.27

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,

A handwritten signature in black ink, appearing to be "A. [unclear]", written over a light blue horizontal line.



February 24, 2015

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 in the greater Laguna Watershed.

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.

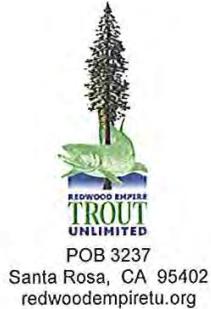
The restoration of these sites will not only enhance the ecosystems and water quality by removing exotic plants and installing natives, but will offer youth and students the chance to connect with the environment in their community and become local stewards.

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

Sincerely,

A handwritten signature in blue ink that reads 'Marilee Eckert'. The signature is fluid and cursive.

Marilee Eckert
CEO- Conservation Corps North Bay



March 5, 2015

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

Dear Mr. Davis:

We are writing to express our support for PHASE 2 of Point Blue Conservation Science's Students and Teachers Restoring Watershed (STRAW) Program's application to Sonoma County Water Agency's Watershed Partnership Program for Washoe Creek in Cotati, CA. For the past 22 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. This should be an excellent opportunity to build on the successful riparian tree planting accomplished with the Phase 1 grant. Thank you.

Sincerely,
REDWOOD EMPIRE CHAPTER
TROUT UNLIMITED

Jerry Bender, President

2015 Watershed Partnership Program Project Funding Application

APPLICATION INFORMATION

Applicant/Lead Organization Address

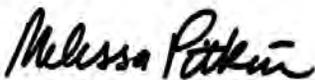
Point Blue Conservation Science
3820 Cypress Dr. #11
Petaluma, CA 94954

Contact Name and Title: John Parodi, Restoration Manager

Telephone: (707) 781-2555 ext.359

Email Address: jparodi@Point Blue.org

Signature and Date



Education and Outreach Director
Point Blue Conservation Science

List of Other Participating Organizations

The project team consists of the following organizations: Prunuske Chatham, Inc. and Mota Ranch

PROJECT INFORMATION

Project Name: STRAW: Adobe Creek Restoration Project at Mota Ranch

Project Location: Adobe Creek

Total Project Budget: \$65,819

Available Matching Funds: \$15,824

Private foundation funds = \$5,000 – pending.

STRAW will contribute an in-kind match in the form of volunteer hours totaling \$8,388.60. Restoration activities will engage teachers and students from local school(s) (80 volunteers x 6 hours = 480 hours x @22.55/hr = \$10,824).

Total Requested through WPP: \$49,995

Proposal Narrative (Maximum 5 pages)

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 Adobe Creek on the Mota Ranch. Adobe Creek is a tributary to the Petaluma River. The site currently has a healthy, well maintained population of previously installed native vegetation with areas of bare and eroding bank. This is a single-phase project along the right bank of the reach within the Mota Ranch.

We propose a one-year project that will include the stabilization of creek bank through vegetative means along approximately 300 linear feet of creek bank. The resulting project will enhance the riparian waterway by improving the habitat quality of the reach, as well as reducing sediment inputs into the Adobe Creek drainage. Students will install biotechnical erosion control structures, plugs of appropriate native grasses, sedges, and rushes and approximately 30 native trees and shrubs. These species will be selected from studies of reference reaches within Adobe Creek and the Petaluma River watershed under the guidance of Prunuske Chatham, Inc (PCI) staff. 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. Through additional matching funds, each of the teachers 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 2015-2016 school year with summer maintenance and annual monitoring to be performed by STRAW staff for five consecutive years.

2. Project Benefits

This project will accomplish two primary goals: enhance habitat and engage community. One is to enhance the riparian corridor by installing native trees, shrubs, grasses and forbs, connecting with high-quality habitat both up and down stream. Strategic revegetation will also reduce sediment inputs into the Adobe Creek drainage, thereby reducing the frequency of future sediment removal activities downstream. This site was selected because of its location within the Sonoma County Water Agency's Zone 2A and connectivity to proposed stream maintenance site for 2015 at Adobe Creek's reach 1/2.

The other goal of this project is to engage students and teachers from the neighboring school and other community members in the active enhancement of their watershed. Through Point Blue's STRAW Project, students from the greater Petaluma area, will play an active role in the enhancement of their community watershed and learn about factors that contribute to the management of their waterways in Sonoma County.

3. How does this project advance goals for the Water Agency's Stream Maintenance Program and pertain to the 2015 planned maintenance work?

The STRAW: Adobe Creek Restoration Project at Mota Ranch helps advance the goals for SCWA's Stream Maintenance Program improve stream function for flood protection, as well as enhancing the habitat value of the riparian area, connecting high quality habitat present both up and downstream from the site. These invasive species provide poor sediment retention due to their shallow root structures and are components of poor quality habitat. The installation of appropriate natives will enhance both understory and overall riparian habitat quality. This project pertains specifically to the Sonoma County Water Agency's planned 2015 sediment basin and reach scale maintenance work in Zone 2A at the 1/2 reach of Adobe Creek.

4. Location. Right of Way Access.

The project site on Adobe Creek is located at Mota Ranch. The landowner of the property is the Mota family. The landowner will provide access to the STRAW Project for restoration, maintenance, and monitoring.

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. Point Blue will provide grant administration, project management, oversight, training and education for project participants and volunteers, and leadership in implementation, maintenance and monitoring of the project.

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. PCI will provide project design and consultation services.

Alda and Liberto Mota have owned their property on Adobe Creek for over 35 years. As Portuguese immigrants, they dreamed of owning a property they could steward

both for themselves and future generations. They have a strong sense of connection to the land and the abundance it can provide when carefully managed with regards to both food production and environmental health.

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
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:

$$300 \text{ ft} \times 25 \text{ ft} = 7500 \text{ ft}^2$$

Minimum Number of Plants Installed:

30 trees and shrubs and additional graminoids

The plant species will be selected from studies of reference reaches within Adobe 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 2016.

Maintenance and monitoring activities will include:

- Regularly inspect plantings from late spring through early fall for five years – as often as once per week, but no less than once per month for the first three years and twice a year for the final two years. Landowners will inspect plantings regularly and on an as needed basis.
- Maintain plantings at a minimum by weeding and repairing browse protection cages.
- Irrigate plantings with most efficient and cost-effective means available. For this site, it will likely be drip irrigation and/or hand watering for the first two summers.
- Monitor plant survival by species in October each year for five years to inform future planting designs.
- 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 – Mota Ranch



STRAW - Adobe Creek at Mota Ranch

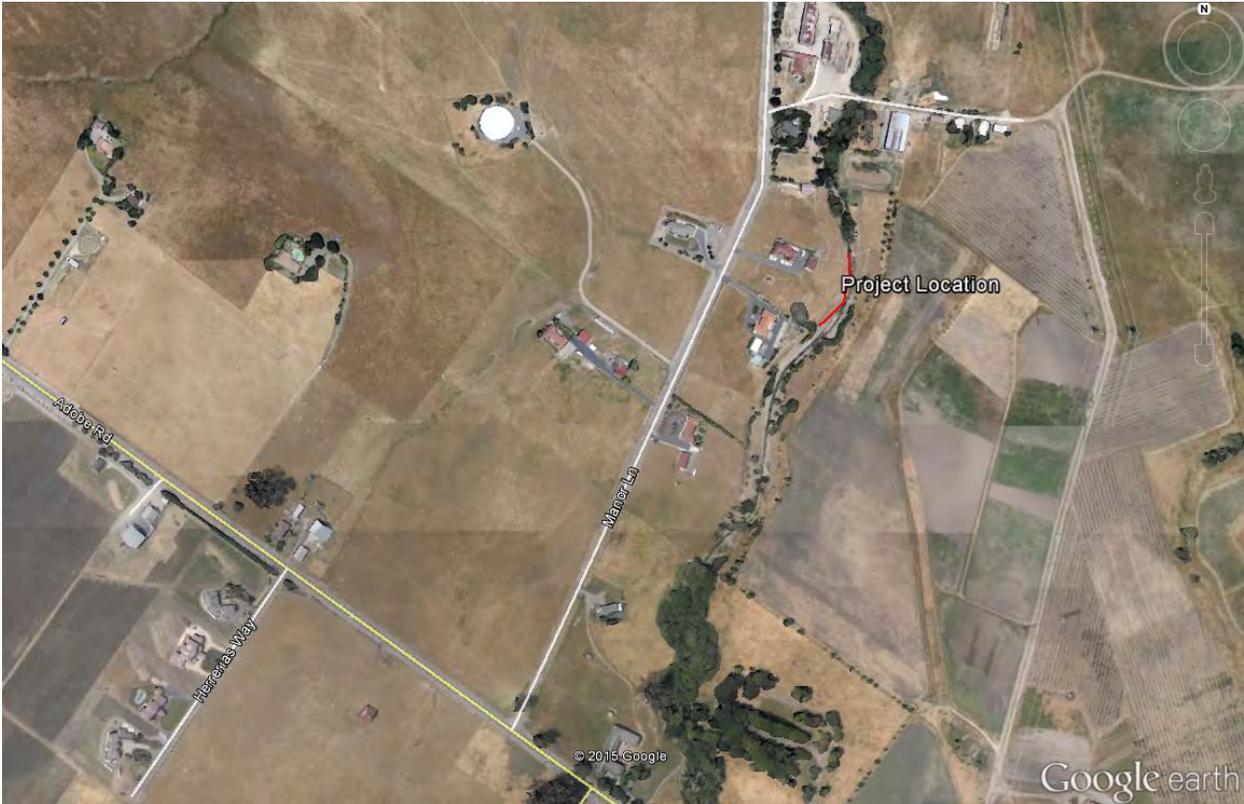
LABOR*		
	Installation	\$15,548.55
	Maintenance & Monitoring	\$29,399.54
	Total Labor	\$44,948.09
OTHER DIRECT COSTS		
Materials		
	Installation, Maintenance & Monitoring	\$2,892.25
Mileage		
	Installation	\$40.32
	Maintenance & Monitoring	\$104.16
Subcontractors		
	STRAW Faculty	\$630.00
	Prunuske Chatham, Inc.	\$1,380.00
	Total Other Direct Costs	\$5,046.73
TOTAL		\$49,994.82

* includes salary, fringe benefits and indirect expense

Total Funding Request	\$49,994.82
MATCH	
Private Foundation Funds - Pending	\$5,000.00
480 Volunteer hours @ \$22.55	\$10,824.00
Total Project Budget	\$65,818.82

Attachment B - Project Map

STRAW: Adobe Creek Restoration Project at Mota Ranch



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

February 20, 2015

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 STRAW Project to complete our habitat restoration project on Adobe Creek with local school students. We have been fortunate to have STRAW work on our place in the past and the project has been hugely successful, with our current project experiencing over 95% survival after 6 years.

Our section of Adobe Creek can experience substantial flows during large storms, and vegetation along the creek has been critical in reducing erosion and stabilizing our banks. A final planting day with STRAW will stabilize the right bank of the stream on our property, ultimately reducing further sediment from entering the waterway.

Having the students out on our last project was a real treat for us. As grandparents of four boys who spend a lot of time down at our creek, we see the value of children enjoying the outdoors firsthand. We love the idea of sharing that experience with other Petaluma schoolchildren. In addition, we are confident that this expansion of our previous project will be successful, as we are equally invested in its success and will support the project by frequently checking to make sure the irrigation system and browse protection systems are functioning properly. Thanks for considering supporting STRAW at our ranch.

Sincerely,



Liberto and Alda Mota

2015 Watershed Partnership Program Project Funding Application

Application Information

Applicant/Lead Organization Address

Sonoma Ecology Center
P.O. Box 1486
Eldridge, CA 95431

Mark Newhouser, project manager

Telephone: 707-996-0712 x103

Email Address: mark@sonomaecologycenter.org

Signature and Date

 2/25/15

List of Other Participating Organizations

City of Sonoma

Sonoma Valley Unified School District

Sonoma County Agricultural Preservation and Open Space District (SCAPOS)

Project Information

Project Name: Nathanson Creek Restoration

Project Location: Nathanson Creek, City of Sonoma

Total Project Budget: \$113,284.00

Available Matching Funds: \$79,600.00 from DWR USRP

Total Requested through WPP: \$33,684.00

Proposal Narrative

1. Project Description

This project is proposed to complement recent sediment removal completed by the Sonoma County Water Agency (SCWA) on the Nathanson Creek bypass. Proposed work will consist of invasive weed removal, biotechnical bank stabilization, and native plant restoration on the natural channel of Nathanson Creek adjacent to and intersecting the bypass at Nathanson Creek City Park. This work will be integrated with a larger watershed scale flood reduction and habitat enhancement planning, design, and construction project initiated under a currently funded DWR USRP project. The current Phase 2 USRP implementation project is improving flood capacity and enhancing riparian habitat on the Nathanson Creek Preserve, a 0.7 mile reach of a flood prone urban stream.

The project reach will include removal of invasive species, such as acacia, Himalayan blackberry, periwinkle, and privet. Appropriate native plants, grown from propagules sourced from the watershed, will be installed to replace the invasive species. Drip irrigation will be installed to ensure survival of native plants. In areas of bank erosion, debris will be removed or relocated and willow staking or biological revetments will be installed to check erosion and establish plants at the toe of the bank. Non-invasive willow or other species will be used to prevent debris accumulation and maintain flood conveyance in the channel.

The project will also incorporate stormwater management principles using vegetated filter strip planting to help remove sediment runoff from upland runoff. The site is adjacent to the City owned Nathanson Creek City Park, a publicly visible location where it would be beneficial to exhibit best management practices for stream restoration.

2. Project Benefits

The proposed project will provide multiple benefits for local residents and fish and wildlife. The larger project will benefit the community by addressing existing flood risk and the associated property damage along Nathanson Creek. Current and proposed channel improvements upstream will increase channel capacity and improve habitat along the entire length of the Preserve. Improvements in the flood capacity of the project area may also serve to create flood control benefits for upstream and downstream properties.

The project will also contribute to water quality improvements to enhance fish and wildlife habitat. Invasive weed eradication, native plant revegetation, debris removal, and bioengineering erosion control will benefit the ecological health of the stream and improve habitat for steelhead and Chinook salmon populations.

SEC programs in the Nathanson Preserve also provide education opportunities to local students, and the location of the Preserve provides educational, aesthetic, and recreational opportunities that enhance an adjacent recreation complex. In the next phase of the project, we have proposed the installation of interpretive signage to illustrate the interaction of the proposed flood control features with the several innovative stormwater management elements utilized along the Preserve. Educational opportunities for the public will include volunteer restoration workdays, public meetings, and tours of the Preserve.

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

This project complements the Water Agency's Stream Maintenance Program project along Nathanson Creek. The Water Agency's Nathanson Creek Bypass Upstream of Napa Rd is included in the plan as a Sediment Removal Project. This project will assist in reducing sediment entering Nathanson Creek and will assist the water agency in achieving its stream maintenance goals.

4. Location. Right of Way Access.

Refer to Attachment 2: Project Site Maps for the exact location of the proposed WPP project site within the larger Nathanson Creek Restoration project area. The Sonoma Ecology Center has full access to the Nathanson Creek Preserve for implementation and maintenance of the proposed project. SEC has an MOU with the City of Sonoma and the Sonoma Valley Unified School District to implement the Nathanson Creek Master Plan on the Nathanson Creek Preserve. Attachment 4 contains a copy of the landowner MOU for reference. Under this MOU and Plan, SEC is granted access and permission to restore fish and wildlife habitat through invasive species control and native plant establishment, as well as conceptual approval to implement channel modifications to improve flood conveyance and improve in-stream fish habitat

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

SEC is currently collaborating with the City, SCWA, and the Sonoma County Agricultural Preservation and Open Space District (SCAPOSD) on flood control, groundwater recharge, and habitat enhancement projects within and near the City of Sonoma. This partnership was formalized in the City Watersheds of Sonoma Project included in the Bay Area IRWMP.

SEC has strong partnerships to support this project. The City of Sonoma and Sonoma Valley Unified School District are participating partners and landowners; Sonoma County Agricultural Preservation and Open Space District is a funding partner; and the two participating engineering and design consulting firms, Prunuske Chatham, Inc. and Environmental Science Associates, have expertise in local river restoration planning and implementation.

The public is involved in the planning, design and implementation of this project. SEC has conducted several public meetings to discuss the project and get input. SEC also sponsors creek cleanups and community service workdays on an ongoing basis. Student and community members regularly volunteer. SEC will continue to provide public updates and received feedback from the community on restoration work along Nathanson Creek. SEC will acknowledge the funder in any media outreach including press releases, Facebook posts or volunteer outreach.

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

Task #	Task Description - subtasks	Start Date	End Date
1	Project Management	8/1/2015	7/31/2020
2a	Revegetation/Irrigation	12/1/2015	3/30/2018
2b	Erosion Control/ Bioengineering	8/1/2016	10/15/2016
3a	Maintenance/Invasive Weed Control	9/1/2015	3/30/20
3b	Monitoring	9/1/2015	7/31/2020

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

Regulatory compliance (CEQA review and permits) for work along the Preserve was funded by DWR and will be complete by the end of spring 2015. A Joint Aquatic Resources Permit Application (JARPA) to the USACE, RWQCB, and CDFW was prepared for federal Clean Water Act §404 Nationwide Permit 27 for habitat restoration and §401 Certification and F&G §1602 Streambed Alteration Agreement (SAA); there is also an existing SAA for eradication of non-native vegetation species. If work will require dewatering and/or relocation of listed species, USACE will consult with NMFS or USFWS as part of §404 review to obtain the appropriate permits. Project partner, the City of Sonoma's Dept. of Public Works, will review grading plans, and the City's Tree Committee will oversee removal of trees under Ord. No. 11-2009. Costs are included to host an on-site meeting with regulators and to summarize requirements for the construction contract documents to ensure conformity with all permit conditions; no regulatory issues that would delay the project are expected.

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

The overall length of the Preserve restoration project area is 0.7 mile and approximately 9 acres, with the WPP proposed revegetation area is approximately 400 linear feet of stream length and 8,000 sq. ft. Planting will be conducted from the toe to the top of bank. A diverse mix of trees, shrubs and understory vegetation will be placed according to appropriate location on the bank. A total of 600 plants will be installed, approximately 30 trees, 100 shrubs/groundcovers, 40 vines, 140 herbs, and 290 grasses. See representative species list in Attachment 5.

9. *Maintenance and Monitoring. Discuss planned maintenance.*

The project will be monitored and maintained for 5 years following initial planting. Yearly maintenance will include inspecting plant installations, irrigation systems, and erosion control features to ensure survival and functionality. Maintenance will also include removing weeds within a minimum of a 3-foot diameter around planted trees and shrubs, installing tree protection cages as needed, and replacing dead plants. Maintenance will occur on a monthly basis during the growing season.

Non-native invasive plant species control will be implemented using a combination of control methods, including manual, mechanical, and herbicide treatments. Choice of control methods depends on site-specific conditions and appropriate methods for individual species. Weeds will be hand pulled or brush

cut around sensitive areas and new plantings. Treatment areas will be monitored for efficacy and retreatment will be conducted as necessary to control invasive species with a targeted 75% reduction.

Herbicide treatments will be done in accordance with California Department of Fish and Game regulations by a licensed applicator. Weed eradication methods recommended by Cal-IPC (California Invasive Plant Council) will be followed for each invasive species. Only herbicide and adjuvants approved for aquatic habitats will be used near the stream.

SEC will install irrigation to provide adequate water for plant survival. Plants will be irrigated from approximately May through September using drip irrigation or hand watering. Irrigation will be coordinated with the landowner and will be set up with one emitter per plant, ranging from 1 to 2 gallons per week during the growing season. Trees and shrubs will receive 3-5 gallons of water per plant every week in the growing season the first year. Plants will be gradually weaned off the irrigation system in the second and third years of the project. The irrigation system will be checked monthly through the summer to ensure that all lines and emitters are functioning properly.

SEC will monitor revegetated areas for plant mortality and establishment. Dead plants will be replaced that winter to reach a target of 75% survivorship. Photo monitoring will take place annually for the project period and beyond, as funding allows.

Supporting Documents

Attachment 1: Project Budget

Attachment 2: Project Site Maps

Attachment 3: Project Site Photos

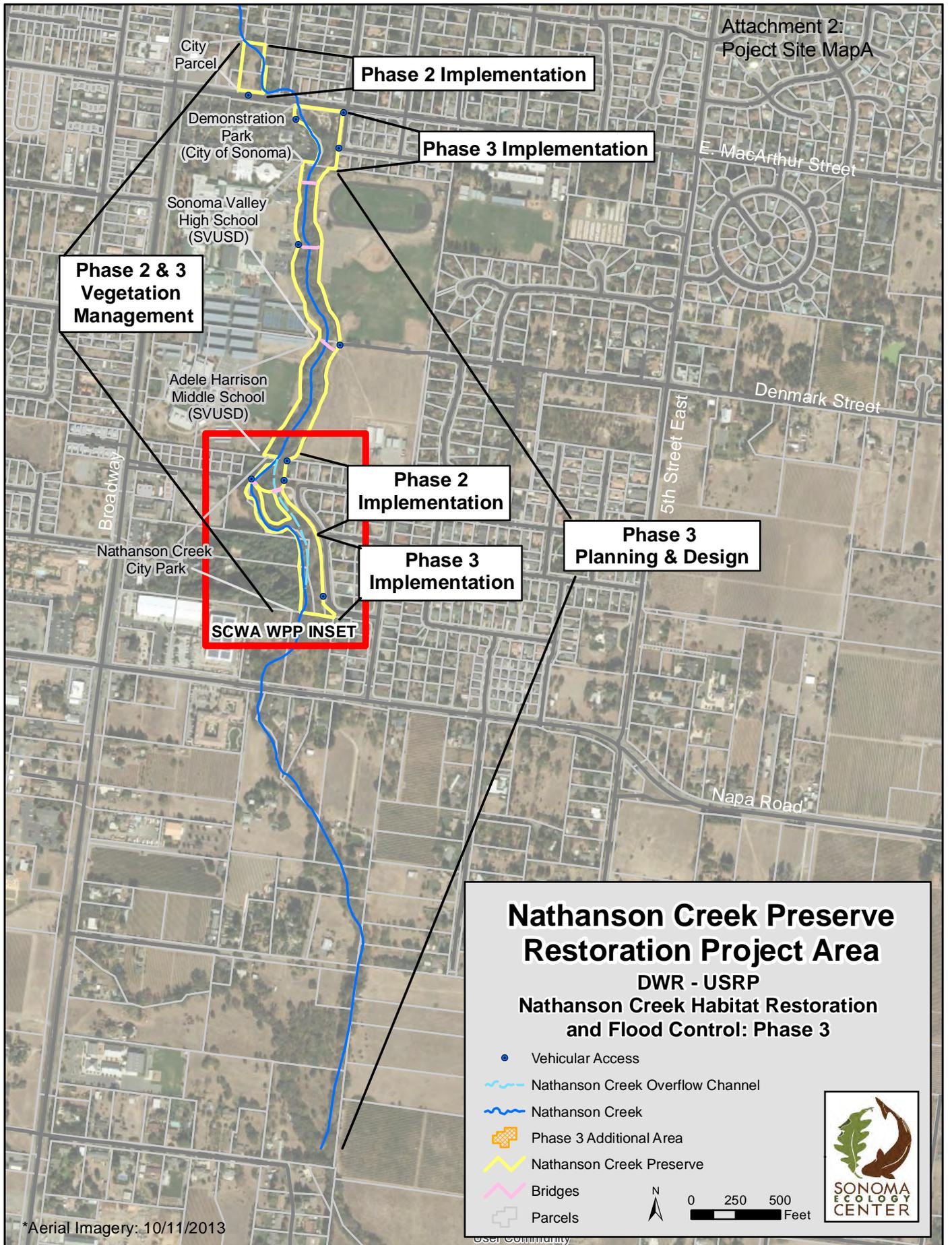
Attachment 4: Landowner Agreement MOU

Attachment 5: List of plant species to be planted

Attachment 6: Documentation of 501c3 non-profit status.

Attachment 1: Nathanson Creek Restoration Project Budget SCWA Watershed Partnership Program Project 2015				
Task #	Item	WPP	DWR Match	Total Project
1	Project Management	\$ 3,310	\$ 6,500	\$ 9,810
2	Revegetation and Erosion Control	\$ 15,495	\$ 35,850	\$ 51,345
3	Maintenance and	\$ 10,248	\$ 24,600	\$ 34,848
	Materials	\$ 4,631	\$ 12,650	\$ 17,281
	(plants, irrigation, supplies)			
Total		\$ 33,684	\$ 79,600	\$ 113,284

Attachment 2:
Project Site MapA



Nathanson Creek Preserve Restoration Project Area

DWR - USRP

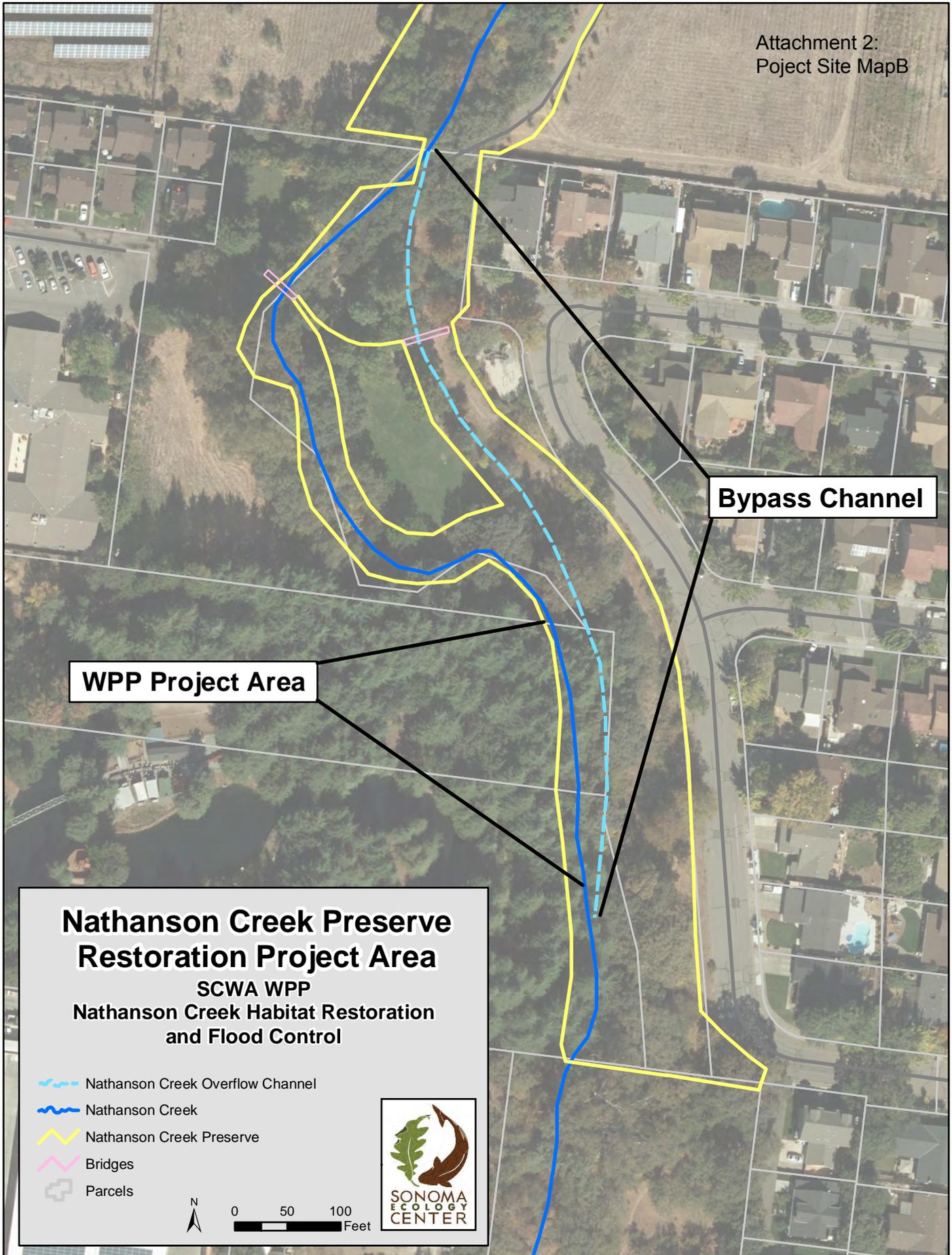
Nathanson Creek Habitat Restoration and Flood Control: Phase 3

- Vehicular Access
- ~ Nathanson Creek Overflow Channel
- ~ Nathanson Creek
- Phase 3 Additional Area
- ~ Nathanson Creek Preserve
- ~ Bridges
- Parcels



*Aerial Imagery: 10/11/2013

Attachment 2:
Project Site MapB



Attachment 3: Nathanson Creek Restoration Project Site Photos

Invasive species along the banks of the Nathanson Creek City Park to be replaced with native vegetation.



Photo 1: Himalayan blackberry, toe erosion



Photo 2: More Himalayan blackberry

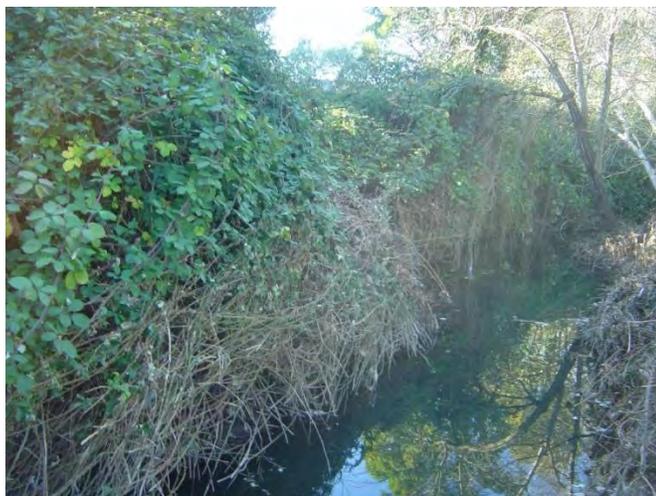


Photo 3: Even more Himalayan blackberry, and other weeds

**Memorandum of Understanding
between the City of Sonoma,
the Sonoma Valley Unified School District,
and the Sonoma Ecology Center,
for the restoration and enhancement of Nathanson Creek.**

This agreement (“Agreement”) is entered into this 19th day of September 2005, by and between the City of Sonoma (CITY), a municipal corporation, the Sonoma Valley Unified School District (DISTRICT), and the Sonoma Ecology Center (SEC), a 501(c)(3) non-profit corporation, collectively referred to as “the parties”.

I. General

A. The purpose of this Agreement is to clarify and establish the roles and responsibilities of each of the parties in the planning and implementation of the restoration and enhancement of Nathanson Creek, and to clarify the locations of restoration activities and protected areas along the creek.

B. All references to Nathanson Creek, the “creek,” “project area,” and Nathanson Creek Preserve and Trailway Corridor for the purposes of this agreement, are understood to be that portion of Nathanson Creek from the northwestern corner of the City-owned parcel north of East MacArthur Street (APN#018-412-14) to Napa Road, as shown on Figure 5 in the Nathanson Creek Preserve and Trailway Corridor Master Plan adopted by the City Council of the CITY on August 19, 1998. References to the “project” are understood to be the restoration and enhancement of this portion of Nathanson Creek, including the creek setback area as defined under Section II, 2b. and 2c.

C. Within the project area, the parties desire to preserve and enhance Nathanson Creek and its riparian habitat and provide environmental educational opportunities. These activities will be pursued in a manner consistent with maintaining or enhancing existing levels of flood protection. The restoration of Nathanson Creek will be planned and implemented to enhance and restore local native plant species and plant communities, native fish habitat, native bird and other faunal habitats for the benefit of the local and regional natural environment and the public, including students in the Sonoma Valley Unified School District, citizens of the City of Sonoma, and other Sonoma Valley and Sonoma County residents.

D. The parties will cooperate at all times so that the Nathanson Creek and Trailway Corridor will be fully utilized and provide maximum enjoyment and education to students and the general public. The parties agree to keep each other informed of all activities, projects, and plans relating to or taking place within the project area. Generally, the CITY’s role will be to preserve the City-owned parcels along Nathanson Creek depicted in the Nathanson Creek Preserve Master Plan, to make them available to the public for restoration and park purposes, and to participate in restoration and park creation and maintenance activities. The DISTRICT’s role will be to preserve the area along

Nathanson Creek MOU, page 2

Nathanson Creek depicted on the DISTRICT's Master Plan, and to accommodate and support restoration, educational, and stewardship activities in this area. The SEC's role will be planning and implementation of the restoration and enhancement of Nathanson Creek, education of students and the public about the natural resources of the area and stormwater pollution prevention, and helping to organize stewardship of the creek.

E. The term of this Agreement shall commence on September 19, 2005, and shall continue until June 30, 2024, unless sooner terminated as set forth below.

F. Any party may withdraw from this Agreement by giving ninety (90) days written notice to the other parties. If DISTRICT exercises its right to withdraw from the Agreement pursuant to this provision, permission to enter and use DISTRICT property pursuant to this Agreement shall terminate upon the effective date of the withdrawal. *Termination of the agreement shall not affect contracts or grants pursuant to I.C. above, and H.1.a. below that are in progress at the time of termination.*

G. This Agreement may only be modified by a written instrument executed by all parties.

H. No assignment or transfer in whole or in part of this Agreement shall be made without the prior written consent of all parties.

II. Specific Understandings

A. Upon execution of this Agreement, and in consideration of mutual promises made to work toward the success of the restoration of Nathanson Creek, the parties agree to perform the following as specified:

1. *Planning & Permitting:*

a. Any of the parties may seek and obtain grants to further the restoration and enhancement of the creek, but shall do so with the knowledge of the other parties involved, and consistent with I.C above. The SEC will take the lead and actively seek grants to restore and enhance the creek.

b. The SEC shall be generally responsible for the preparation of plans and the oversight or management of implementation for the ecological restoration and enhancement of Nathanson Creek. The SEC shall undertake planning and implementation in accordance with the CITY's and DISTRICT's processes and plans in existence at this time, including the Sonoma Valley High School Master Plan, the Nathanson Creek Preserve and Trailway Corridor Master Plan, and the City of Sonoma General Plan. During the planning phase, prior to permits being obtained, preliminary plans shall be made available by SEC to CITY or DISTRICT, depending on whose lands implementation is planned, so that modifications can be made to the preliminary plans if determined necessary by the affected property owner, i.e., CITY or DISTRICT. At least ___ days prior to construction or implementation, plans shall be made available by SEC for final review and approval to CITY and DISTRICT staff. Similarly, plans or projects prepared by the CITY or DISTRICT within the project

area shall be made available to the SEC for review and comment prior to permitting and construction. Each party shall exercise best efforts to review and respond to proposed plans within four (4) weeks of the date that the plans are submitted to that party. A response requesting a need for additional review time shall specify the date that the review will be final. All plans and projects shall be planned and implemented to be consistent with, or not in conflict with, I.C above, and shall obtain all necessary permitting from, and/or provide necessary notification to, responsible agencies such as USFWS, NMFS, ACOE, CDFG, RWQCB, SCWA*.

c. In planning and implementation of actions affecting the project area, all proposed restoration actions will be evaluated by qualified staff or agents of SEC to ensure that the flood capacity of Nathanson Creek at the time the parties into this Agreement (“current flood capacity”) shall be maintained or enhanced throughout the term of the Agreement, and to ensure that the current flood capacity shall not be decreased at any time as a result of any such restoration actions. Such planning and implementation will be performed in full coordination with the DISTRICT and the CITY, and all responsible permitting agencies.

d. The SEC shall be responsible for obtaining required permits to implement plans prepared under their oversight for the restoration and enhancement of the project area. The other parties (CITY and DISTRICT) shall be responsible for obtaining permits for projects proposed by them within the project area.

e. The CITY shall be responsible for the preparation of required environmental documents for the project on city-owned lands. The SEC shall be responsible for the preparation of required environmental documents for the project on DISTRICT lands, subject to DISTRICT approval, in accordance with the California Environmental Quality Act (“CEQA”).

2. *Locations of Restoration Activities:*

a. Restoration and enhancement of Nathanson Creek will generally take place within the creek and its setback as shown on Figure 5 of the Nathanson Creek Preserve and Trailway Corridor Master Plan, and within the project area as shown on the Nathanson Creek Project Area Map accompanying this agreement.

b. Restoration and enhancement of the creek and setback area on the two undeveloped CITY-owned parcels north of the high school will occur, at a minimum, within the area from the center of the creek to fifty feet from the top of bank. Restoration and enhancement on the developed CITY park property south of DISTRICT lands will occur within the creek and setback area for a minimum of thirty feet from the top of bank, and within and along the low-flow secondary channel.

c. Restoration and enhancement of the creek and setback area on DISTRICT lands will occur within the area shown on the High School Master Plan, indicated as 50 feet from centerline of creek, on both sides of the creek. However, where development has already occurred within this area by this date, restoration and enhancement activities shall be delayed or not undertaken until future redevelopment occurs and the DISTRICT agrees to restoration in these areas.

d. The project area shall not be developed or disturbed by the parties, apart from the restoration and enhancement set forth herein. All reasonable measures to prevent harm to the project area shall be taken by the parties. For example, employees,

associates, contractors, and other groups or entities who use or maintain the project area shall be provided the information (including maps) necessary to make them aware of the locations and sensitivity of the project area. Signage or physical demarcation of restoration areas may be used.

3. *Materials/Resources:*

a. Water. The CITY shall be responsible for providing water for irrigation from a nearby source on CITY-owned property to be identified and approved by the Department of Public Works. The CITY agrees to schedule and document water usage. The DISTRICT shall not be responsible for providing water for the project. Water provided for the project shall be used in a drought-conscious way. It is understood that irrigation water will be used only during the establishment of native plants. The CITY shall audit water use on a regular basis to ensure that plantings are irrigated in an efficient manner.

b. Irrigation. The SEC shall be responsible for planning and implementing the provision of water to the plantings.

c. Plants. The SEC shall be responsible for providing, installing, and maintaining all plants within the Nathanson Creek project area, and for oversight of the restoration effort. The SEC shall not plant trees closer than 10 feet from the bicycle-pedestrian path.

4. *Maintenance:*

a. Trash. The DISTRICT shall be responsible for picking up trash on DISTRICT properties. The CITY shall be responsible for picking up trash on CITY properties. The SEC will help the DISTRICT organize a stewardship program on its school campuses for maintaining the project area in a clean and trash-free condition.

b. Creek clean-ups. The SEC shall be responsible for organizing and managing periodic creek clean-ups of trash within the project area. Trash picked up during these events shall be deposited in a location for the CITY to pick up, and the CITY shall be responsible for picking up trash collected during these periodic events. The SEC shall coordinate with the CITY and the DISTRICT on planned creek clean-up dates at least two weeks prior to the events, and shall place the trash at collection points specified by the CITY.

c. Vegetation Management. Vegetation management includes weeding, mowing, and pesticide/herbicide use. Prior to restoration plantings having occurred, vegetation management within the project area shall remain the responsibility of the DISTRICT on DISTRICT properties, and the CITY on CITY properties, unless other arrangements have been established with the SEC. Where restoration and enhancement plantings have occurred, vegetation management shall be the responsibility of the SEC, or shared between the SEC and the party that owns the land, and governed by a Management Plan. All parties shall make their best efforts to prevent and avoid impacts to restoration plantings during maintenance activities. No

pesticides/herbicides shall be used within the creek setback area by the CITY, DISTRICT, or SEC except in consultation and with the approval of the property owner and the SEC, and then only to remove invasive non-native species. Any party planning to use pesticides/herbicides within the creek setback shall inform the appropriate other parties and obtain all necessary approvals and permits prior to the use, and shall use a licensed pesticide/herbicide applicator. It should be noted that pesticide/herbicide use on DISTRICT grounds requires extensive public notification.

d. Pathway. The 1998 agreement between the DISTRICT and CITY regarding maintenance of the bicycle-pedestrian path on DISTRICT properties specifies that the CITY is responsible for maintenance of the bicycle-pedestrian path. The CITY shall make its best efforts to repair the path without causing harm to native tree roots and restoration plantings.

5. *Security/Liability*

a. Keeping in mind that the Nathanson Creek Preserve and Trailway Corridor is intended to benefit students and the general public alike, the DISTRICT may use any measure it deems necessary to protect students from unauthorized entry into classroom areas or disruption or harm from intruders accessing the schools from the project area. The DISTRICT, CITY, and SEC will cooperate to devise solutions that protect students while also retaining the benefits of the Nathanson Creek Preserve and Trailway Corridor.

b. When the SEC uses volunteers in restoration and creek clean-up activities, the SEC shall provide a form covering release of liability to be signed by all volunteers. The DISTRICT and CITY shall also be released from liability for restoration activities occurring on their properties. The forms used shall be approved by each party prior to first use, and when revised.

c. When classes enter and use the Nathanson Creek project area to perform research and educational activities, including restoration and enhancement under the supervision of teachers, the DISTRICT shall be responsible for any necessary release of liability forms to be signed by parents.

d. Any agency or organization employing the use of volunteer minors shall be responsible to perform screening of the adults supervising the minors as may be required by state or local law or regulations or DISTRICT policy and procedures, provide verification of such screening, and hold harmless the other agencies party to the agreement.

e. SEC shall indemnify, hold harmless, and defend the DISTRICT and the CITY, and their respective officers, agents and employees, from and against any and all claims, damages, losses and expenses, including reasonable costs and attorney fees (collectively, "Liability"), arising out of SEC's acts or omissions under this Agreement, excepting therefrom any Liability arising from the sole negligence or willful misconduct of DISTRICT and/or CITY. This obligation shall continue beyond the term of this Agreement as to any acts or omissions which occurred during or under this Agreement.

f. SEC shall file with the DISTRICT and the CITY proof of a policy of liability and property insurance, issued by a company duly and legally licensed to transact business in the State of California, covering personal injuries, including wrongful

Nathanson Creek MOU, page 6

death, and claims for property damage arising from SEC's activities under this Agreement. Said insurance shall be in the following amount: comprehensive general liability insurance in a combined single limit of not less than one million dollars (\$1,000,000) on account of any one occurrence.

The insurance policy shall be issued at the cost and expense of SEC and maintained by SEC during the entire term of this Agreement, and shall be primary to DISTRICT's and CITY's insurance coverage. The insurance policy shall name the DISTRICT and the CITY, and their respective officers, agents and employees as additional insureds. The insurance policy shall not be cancelled, changed or allowed to lapse unless SEC has first provided written notice to the DISTRICT and the CITY at least thirty (30) days in advance.

III. Contacts:

[Note: over the course of a 19 year MOU, the names of the individuals involved will change, so it is advisable to use titles rather than individual names for contacts.—CMG]

A. SEC contacts:

- Nathanson Creek Restoration Project Manager: Lisa Micheli, micheli@vom.com, 996-0712 x 107
- Nathanson Creek Task Force: Will Pier, co-chair, sec-pier@vom.com, 996-0712 x 101, *and* Jacqueline Steuer, co-chair, jast126@jps.net, 935-0808
- Assistant Director, SEC: Caitlin Cornwall, sec-cornwall@vom.com, 996-0712 x 106

B.. CITY contacts:

- City/Associate Planner: Rob Gjestland, robg@sonomacity.org, 933-2202
- City Engineer: John Bonnoitt, johnbonn@sonomacity.org, 933-2207
- Community Services Administrator: David Goodison, davidg@sonomacity.org, 938-3681
- Public Works Administrator (for creek clean-ups): Al Bandur, alb@sonomacity.org, 938-3681)

C.. DISTRICT contacts:

- Superintendent: D. Kim Jamieson, kimj@sonomavly.k12.ca.us, 935-6001
- Manager of Operations: Brian Clark, briancl@sonomavlyk12.ca.us, 935-6090

IV. Notice

All notices required to be given under this Agreement shall be in writing and shall be served either by personal delivery or by first class mail, postage prepaid, and addressed as follows:

DISTRICT:

Attn: Director of Fiscal Services
17850 Railroad Avenue
Sonoma, CA 95476

Nathanson Creek MOU, page 7

CITY: Attn: Mike Fuson
City Manager
No. 1 The Plaza
Sonoma CA 95476

SEC: Attn: Caitlin Cornwall, SEC
205 First Street West
Sonoma, 95476

IN WITNESS WHEREOF, the parties have executed this Agreement as of the day and year first written above.

DISTRICT
By: D. Kim Jamieson
D. Kim Jamieson, Superintendent

CITY
By: Mike Fuson

SEC
By: Paul [Signature]

By: _____

Abbreviations Used in Document:

- *USFWS, NMFS, ACOE, CDFG, RWQCB, SCWA
- USFWS: U.S. Fish & Wildlife Service
- NMFS: National Marine Fisheries Service
- ACOE: Army Corps of Engineers
- CDFG: California Department of Fish & Game
- RWQCB: Regional Water Quality Control Board
- SCWA: Sonoma County Water Agency

Memorandum of Understanding
Between the City of Sonoma,
the Sonoma Valley Unified School District,
and the Sonoma Ecology Center,
for the restoration and enhancement of Nathanson Creek

FIRST ADDENDUM

On November 1, 2007, the following were added to the Memorandum of Understanding entered into by and between the parties on September 19, 2005:

1. Section I.E. is modified to delete "June 30, 2024," and substitute instead "June 30, 2030".

2. Section II.A.1.b. is modified to insert "30" into the blank space, thereby specifying that at least 30 days prior to construction or implementation, plans shall be made available by SEC for final review and approval to CITY and DISTRICT staff.

3. Section I.F is modified by adding the following sentence:

"In the event of any party's withdrawal from this MOU, SEC will resume responsibility for completing the scope of work described by the California Resources Agency River Parkways Grant Agreement # R81754-0, Exhibit A, within the specified project timeline."

4. SEC's contact address is changed to: 20 East Spain Street, Sonoma, CA 95476.

5. The contacts listed in Section III are changed to:

A. SEC contacts:

- Nathanson Creek Restoration Project Manager: 996-0712 x 122
- Executive Director, SEC: 996-0712 x 106

B. CITY contacts:

- City/Associate Planner: 938-3743
- City Engineer: 938-3743
- Community Services Administrator: 938-3743
- Public Works Administrator: 938-3681

- C. DISTRICT contacts:
- Superintendent: 935-4246
 - Manager of Operations: 935-6090

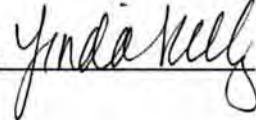
By affixing their signatures below, the parties and their authorized representatives consent to the foregoing:

DISTRICT

CITY

SEC

By: 
12-10-07

By: 

By: 

Attachment 5: Nathanson Creek Restoration Project Plant List		
Common Name	Latin Name	Planting Location C=channel, F=floodprone zone, T=top of bank
TREES		
Big leaf maple	<i>Acer macrophyllum</i>	F
Blue elderberry	<i>Sambucus mexicana</i>	F
Box elder	<i>Acer negundo var. californicum</i>	F
California buckeye	<i>Aesculus californica</i>	F, T
Coast live oak	<i>Quercus agrifolia</i>	T
Oregon ash	<i>Fraxinus latifolia</i>	C, F
Valley oak	<i>Quercus lobata</i>	T
SHRUBS & GROUNDCOVERS		
Coyote brush	<i>Baccharis pilularis</i>	T
Fuchsia, California	<i>Epilobium californicum</i>	T
Monkeyflower	<i>Mimulus spp.</i>	T
Mugwort	<i>Artemisia douglasiana</i>	F
Ninebark	<i>Physocarpus capitatus</i>	F
Ocean spray	<i>Holodiscus discolor</i>	F
Rose, California	<i>Rosa californica</i>	C, F, T
Rose, wood	<i>Rosa gymnocarpa</i>	F, T
Snowberry	<i>Symphoricarpos albus</i>	F
Toyon	<i>Heteromeles arbutifolia</i>	T
VINES		
California blackberry	<i>Rubus ursinus</i>	F
Dutchman's pipe	<i>Aristolochia californica</i>	F, T
Honeysuckle	<i>Lonicera hispidula</i>	F, T
Virgin's bower	<i>Clematis ligusticifolia</i>	F, T
Wild cucumber	<i>Marah fabaceus</i>	F
HERBACEOUS SPECIES		
Beeplant	<i>Scrophularia californica</i>	T
Fringe cup	<i>Tellima grandiflora</i>	F
Milkweed	<i>Asclepias spp.</i>	T
Yarrow	<i>Achillea millefolium</i>	T
GRASSES, RUSHES AND SEDGES		
Blue wildrye	<i>Elymus glaucus</i>	T
California fescue	<i>Festuca californica</i>	T, F
Creeping wildrye	<i>Leymus triticoides</i>	C, F, T
Field Sedge	<i>Carex praeegracilis</i>	
Gray rush	<i>Juncus patens</i>	F
Meadow barley	<i>Hordeum brachyantherum</i>	F, T
Red fescue	<i>Festuca rubra</i>	F, T
Santa Barbara sedge	<i>Carex barbarae</i>	C, F
Soft rush	<i>Juncus effusus</i>	C, F
Spike rush	<i>Eleocharis macrostachya</i>	C, F
Torrent sedge	<i>Carex nudata</i>	C, F

Attachment 6: 501c3 Letter

Internal Revenue Service

Date: June 11, 2005

SONOMA ECOLOGY CENTER
PO BOX 1486
ELDRIDGE CA 95431

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

Person to Contact:
Steve Brown 31-07422
Customer Service Specialist
Toll Free Telephone Number:
8:30 a.m. to 5:30 p.m. ET
877-829-5500

Fax Number:
513-263-3756

Federal Identification Number:
94-3136500

Dear Sir or Madam:

This is in response to the amendment to your organization's Articles of Incorporation filed with the state on October 22, 1998. We have updated our records to reflect the name change as indicated above. We have also updated our records to reflect the address change.

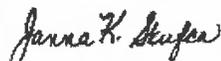
In March 1996 we issued a determination letter that recognized your organization as exempt from federal income tax. Our records indicate that your organization is currently exempt under section 501(c)(3) of the Internal Revenue Code.

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

Appendix G

2015 Sediment Disposal Memorandum to North Coast Regional Water Quality Control Board

Memorandum

Subject: Sediment Sampling and Disposal Notification for the Sonoma County Water Agency's 2015 Stream Maintenance Program

March 26, 2015

To: Kaete King, North Coast Regional Water Quality Control Board (NCRWQCB)
Stephen Bargsten, (NCRWQCB)

From: Jill Sunahara, Horizon Water and Environment

CC: Jon Niehaus, Sonoma County Water Agency (SCWA)
Keenan Foster, SCWA
David Royall, SCWA

This is the proposed sediment sampling and disposal plan for the SCWA's 2015 Stream Maintenance Program (SMP) maintenance sites for review and approval by the NCRWQCB (or Regional Board), as required under the Monitoring and Reporting Program, as part of WDR No. R1-2009-0049 and Section 401 Water Quality Certification WDID No. 1B09026WNSO, as amended on July 29, 2010.

This memo includes the following sections:

1. Summary of sampling efforts to date.
2. Proposed sediment sampling and testing plan for 2015.
3. Proposed sediment reuse and disposal plan for sediment removed from 2015 maintenance sites.

Excel Attachments submitted with this memo are:

- A. SCWA Sediment Sampling Site History 2009-2014
- B. SCWA Historical Analytical Sediment Test Results 2010-2014

1. Summary of SMP sampling efforts to date

Regulatory approval of the SMP by the NCRWQCB was provided in July 2009. In 2009, SCWA conducted sediment sampling at six maintenance sites and a sediment reuse site (at the Grossi site). The sediment sampling approach was refined for the 2010 maintenance season; 14 maintenance sites were sampled and the Grossi site was sampled again. In 2011, 11 project sites were sampled and the majority of the material was reused or disposed at the Grossi site. In 2012, a total of 8 sediment samples were collected from 5 project sites throughout the Zone 1A. All material

removed was reused or disposed at the sites listed in section 3. In 2013, a total of 14 sediment samples were collected from 10 project sites. In 2014, a total of 3 sediment samples were collected from 3 project sites. It is important to note that while all of the material removed was reused or disposed of at the sites listed in section 3, not all of the proposed projects were initiated. The enclosed Attachment A Excel workbook (file name "SCWA_Sediment_Sample_Site_History_2009-2014") lists the sites and analytes tested since 2009. Sediment test results from all sites tested since 2010 are provided in the enclosed Excel workbook with the file name "SCWA_Historic_Analytical_Results_2010-2014" (Attachment B). Note that test results from 2009 were conducted by a different laboratory and could not be formatted into this file. However, a complete set of test results was submitted to the RWQCB in 2009.

2. Approach for 2015 Sediment Sampling and Testing

Project List

The 2015 list of maintenance activities includes projects approved in 2013 but not implemented. Proposed sediment removal projects for 2015 are:

1. Colgan Creek Reach 7 – new for 2015 (previously tested in 2010)
2. College Creek Reach 2 – new for 2015 (Reach 3 upstream was tested in 2010)
3. Coleman Creek Reach 2 – new for 2015 (previously tested in 2011)
4. Ducker Creek Reaches 1 and 2 – new for 2015 (Ducker 2 tested in 2010)
5. Kawana Creek Reach 1A – new for 2015 (previously tested in 2009)
6. LaBath Creek Reach 1 – new for 2015
7. Paulin Creek Reach 6B – approved in 2013
8. Peterson Creek Reaches 1 & 2 – new for 2015 (Reach 2 tested in 2010)
9. Russell Creek Reach 2 – new for 2015 (Russell 1 downstream tested in 2010)
10. Todd Creek Reach 5 – approved in 2013
11. Santa Rosa Creek Reach 1 – new for 2015 (previously tested in 2012, no testing in 2015)

Preliminary project designs for these projects are included with this submittal. Note that project designs approved in 2013 have been revised to reflect minor refinements; no changes to the sediment removal quantity or locations are proposed. At Santa Rosa Creek Reach 1, sediment basins will be installed immediately downstream from sediment removal work previously conducted in 2012 at Willowside Road. Project designs for LaBath Creek are forthcoming.

Additionally, annual clearing of in-stream sediment basins will be conducted: Cook Creek Sediment Basin, Copeland Creek at Commerce, Copeland Creek at Country Club, Copeland Creek at Snyder Lane, and Wilfred Channel at Snyder Lane. The history of testing at these basins is included in Table 1.

Sampling Approach

SCWA updated the Sediment Sampling and Analysis Guidelines in Appendix B of the SMP Manual in January 2013. The updates improved the sampling methods, laboratory analytes, and test result evaluation guidelines. The appendix was subsequently updated in January 2013 in coordination with the San Francisco Bay RWQCB. The updates relate to the test methods for organochlorine pesticides, poly aromatic hydrocarbons (PAH's), and aliphatics; updates to the Zone 1A analyte list to be consistent with the Zone 2A/3A analyte list. For the 2015 season, sediment sampling and testing will be conducted according to the requirements of the MRP and as detailed in the January

2013 version of amended Appendix B of the SMP Manual.

Only new sites proposed for maintenance in 2015 that have not been tested previously or were tested over five years ago will be tested this year. 2013 maintenance work was previously sampled and approved and those sites will not be tested again this year.

Maintenance reaches, estimated quantities of sediment to be removed, the number of samples to be collected, suite of analytes to be tested are shown in Table 1 below. Notes to explain the sampling proposal are also provided in the table, and project design drawings are included with this submittal. Sampling locations are targeted to evaluate the largest bulk of sediment to be removed, such that the samples are representative of the entire bulk of sediment to be removed from each creek.

Proposed 2015 Zone 1A sampling includes 9 “full suite” samples and 1 “subset” sample, for a total of 10 samples from 7 streams.

The “full suite” of analytes includes those listed in Table 3 of the 2013 amended MRP. The “subset” list of analytes includes metals listed in Table 3, total organic carbon, and total solids.

Table 1: Proposed Sediment Sampling Plan for 2015

Maintenance Reach Number and Maintenance Scale (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
Localized Sediment Removal			
Colgan Creek 7 (389 lf)	163	1 – full suite	1 sample to be collected where bulk of sediment is to be removed; a composite of 2 cores: Samples taken at Sta 324+40 Sta 322+00
College Creek 2 (107 lf)	79	1 -full suite	Sample to be collected where bulk of sediment is to be removed; a composite of two cores: Samples taken at Sta 27+00 Sta 26+00 Residential area to the north. Retail shopping area to the east.
Ducker 2 (50 lf)	36	1-full suite	Sample to be collected where bulk of sediment is to be removed; Sta 990+75
Kawana 1 (195 lf)	148	1-full suite	Sample to be collected where bulk of sediment is to be removed; Sta 8+00
LaBath 1	50	1-full suite	Sampling locations will be identified in the field. At a minimum, the sample will be representative of the bulk of sediment to be removed.
Peterson 1 (506 lf)	487	1-full suite	Samples to be collected where bulk of sediment is to be removed; a composite of 2 cores: Samples taken at Sta 529+55
Reach Scale			
Ducker 1 (1445 lf)	1495	1 -full suite	1 sample to be collected where bulk of sediment is to be removed; a composite of 4 cores: Sta 988+00 Sta 985+00 Sta 981+00 Sta 976+00
Peterson 2 (3,510 lf)	1373	1-full suite	1 sample to be collected; a composite of 4 cores spaced evenly throughout reach: Sta 550+50 Sta 539+33 Sta 527+66 Sta 516+50
Russell 2 (1155 lf)	684	1-full suite	1 sample to be collected; a composite of 3 cores spaced evenly throughout reach: Sta 727+50 Sta 722+12 Sta 716+50 Residential area to the north. Hospital to the south.
Bank Repair			
Peterson 1 (40 lf)	30	1-sub-set suite	1 sample to be collected in center of bank failure at toe of slope. Will test for metals only (sub-set of full suite). Sediment removal is also proposed for this reach, 1,300 upstream from the bank repair site.
Sediment Basin/Instream Basin Clearing			
Brush Creek Sediment Basin	No sampling for 5 years	Annual site. Sampled in 2014	

Cook Creek Sediment Basin	No sampling for 5 years	Annual site. Sampled in 2011
Copeland Creek at Commerce	No sampling for 5 years	Annual site. Sampled in 2014
Copeland Creek at County Club	No sampling for 5 years	Annual site. Sampled in 2011
Copeland Creek at Snyder Lane	No sampling for 5 years	Annual site. Sampled in 2011
Five Creek at Snyder Lane	No sampling for 5 years	Annual site. Sampled in 2010
Santa Rosa Creek below Willowside Road	No sampling for 5 years	Annual Site. Sampled in 2012
Wilfred Channel at Snyder Lane	No sampling for 5 years	Annual site. Sampled in 2009

3. Sediment Disposal and Reuse Plan for 2015

The following sites are proposed for sediment disposal and reuse. These are the same sites as used for the last three maintenance seasons (2011 through 2014).

▪ **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. SCWA 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. SCWA has an agreement with this company. A copy of the finalized agreement was provided to the Regional Board as part of the 2010 Notification process.

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 SCWA to accept sediment from stream channels in the SMP area. As approved by the Regional Board, the Grossi property has received and reused sediment from stream maintenance activities for the past three years. The memorandum of agreement between Mr. Grossi and SCWA for sediment 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. Sediment excavated from sites in Zone 2A (Petaluma) and Zone 3A (Sonoma) within the San Francisco Bay RWQCB are taken to Grossi's property for reuse. SMP sediment would not be used for agricultural purposes, such as growing feed grasses or reuse as potting soils for edible plants. The sediment will be reused as fill material only.

- **Dairy Bedding**

SCWA 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 SCWA staff and could not be used as fill in wetlands or sensitive areas. SCWA obtained approval for this type of sediment reuse from Water Board staff in 2011.

- **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 disposal of excavated sediment.

- **SCWA Pond #5 Mirabel Facility**

SCWA 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 #5. This site was used in 2014.

Appendix H

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

2015 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	Grant Davis			
Business/Agency	Sonoma County Water Agency			
Street Address	404 Aviation Boulevard			
City, State, Zip	Santa Rosa, CA 95403			
Telephone	(707) 5471900	Fax	(707) 524-3782	
Email	grant.davis@scwa.ca.gov			

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

Name	Keenan Foster			
Street Address	404 Aviation Boulevard			
City, State, Zip	Santa Rosa, CA 95403			
Telephone	(707) 5471941	Fax	(707) 524-3782	
Email	kfoster@scwa.ca.gov			

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	Stream Maintenance Program			
B. Agreement Term Requested	<input type="checkbox"/> Regular (5 years or less) <input checked="" 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)	
2015	2015	06/15	10/31	

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 checked="" 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	Annual Fee		2801.50
2	(annual project fees paid with annual report after project complete)		
3			
4			
5			
		D. Base Fee (if applicable)	0.00
		E. TOTAL FEE ENCLOSED	2801.50

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?

Yes (Provide the information below) No

Applicant: Sonoma County Water Agency Notification Number: 1600-2009-0399-R3 Date: 04/25/15

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)?

No 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.)

Continued on additional page(s)

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

8. PROJECT LOCATION

<p>A. Address or description of project location. <i>(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)</i></p> <p>This application covers all the projects listed in the SMP's 2015 Annual Notification (attached). All of these projects should be appropriate under the Master Streambed Alteration Agreement # 1600-2009-0399-R3.</p> <p style="text-align: right;"><input checked="" type="checkbox"/> Continued on additional page(s)</p>				
<p>B. River, stream, or lake affected by the project.</p>				
<p>C. What water body is the river, stream, or lake tributary to?</p>				
<p>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 checked="" type="checkbox"/> No <input type="checkbox"/> Unknown</p>				
<p>E. County</p>				
<p>F. USGS 7.5 Minute Quad Map Name</p>		<p>G. Township</p>	<p>H. Range</p>	<p>I. Section</p>
<p>J. ¼ Section</p>				
<p style="text-align: right;"><input type="checkbox"/> Continued on additional page(s)</p>				
<p>K. Meridian (check one)</p>		<p><input type="checkbox"/> Humboldt <input checked="" type="checkbox"/> Mt. Diablo <input type="checkbox"/> San Bernardino</p>		
<p>L. Assessor's Parcel Number(s)</p> <p>Multiple, please see the 2015 SMP Annual Notification (attached) for project locations and conditions.</p> <p style="text-align: right;"><input type="checkbox"/> Continued on additional page(s)</p>				
<p>M. Coordinates (If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes)</p>				
<p>Latitude/Longitude</p>		<p>Latitude: see Notification (attached)</p>		<p>Longitude:</p>
<p><input type="checkbox"/> Degrees/Minutes/Seconds</p>		<p><input type="checkbox"/> Decimal Degrees</p>		<p><input type="checkbox"/> Decimal Minutes</p>
<p>UTM</p>	<p>Easting:</p>		<p>Northing:</p>	<p><input type="checkbox"/> Zone 10 <input type="checkbox"/> Zone 11</p>
<p>Datum used for Latitude/Longitude or UTM</p>		<p><input type="checkbox"/> NAD 27</p>		<p><input checked="" type="checkbox"/> NAD 83 or WGS 84</p>

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 checked="" type="checkbox"/>
Bank stabilization – rip-rap/retaining wall/gabion	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>
Debris basin	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Dam	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>
Sediment removal – pond, stream, or marina	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Storm drain outfall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Temporary stream crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 (specify):	<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.

This application covers all the projects listed in the SMP's 2015 Annual Notification (attached). All of these projects should be appropriate under the Master Streambed Alteration Agreement # 1600-2009-0399-R3. The Annual Notification contains all pertinent information for each 2015 project.

Continued on additional page(s)

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

This application covers all the projects listed in the SMP's Annual Notification (attached). All of these projects should be appropriate under the Master Streambed Alteration Agreement # 1600-2009-0399-R3. The Annual Notification contains all pertinent information for each 2015 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.

This application covers all the projects listed in the SMP's Annual Notification (attached). All of these projects should be appropriate under the Master Streambed Alteration Agreement # 1600-2009-0399-R3. The Annual Notification contains all pertinent information for each 2015 project.

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

Details are included in the Annual Notification (attached)

Continued on additional page(s)

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

CNDDDB, survey data, Water Agency Reports and routine maintenance habitat evaluations

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.

This application covers all the projects listed in the SMP's Annual Notification (attached). All of these projects should be appropriate under the Master Streambed Alteration Agreement # 1600-2009-0399-R3. The Annual Notification contains all pertinent information for each 2015 project. All projects will follow the terms and conditions of the Master Agreement and BMPs defined in the SMP Manual.

Continued on additional page(s)

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

This application covers all the projects listed in the SMP's Annual Notification (attached). All of these projects should be appropriate under the Master Streambed Alteration Agreement # 1600-2009-0399-R3. The Annual Notification contains all pertinent information for each 2015 project. All projects will follow the terms and conditions of the Master Agreement and BMPs defined in the SMP Manual.

Continued on additional page(s)

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

The mitigation program for the SMP Manual and in the Master Agreement. All projects will follow the terms and conditions of the Master Agreement and BMPs defined in the SMP Manual. The Annual Notification describes the mitigation plan for each project.

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. | <u>RWQCB Section 401 Certification (North Coast and SF Bay)</u> | <input type="checkbox"/> Applied | <input checked="" type="checkbox"/> Issued |
| B. | <u>USACE Individual Permit</u> | <input type="checkbox"/> Applied | <input checked="" type="checkbox"/> Issued |
| C. | <u>BOs from FWS and NMFS (Russian River and Zones 2A, 3A)</u> | <input type="checkbox"/> Applied | <input checked="" type="checkbox"/> Issued |
| D. | Unknown whether <input type="checkbox"/> local, <input type="checkbox"/> state, or <input type="checkbox"/> 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 checked="" 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 checked="" type="checkbox"/> Notice of Exemption <input type="checkbox"/> Initial Study <input type="checkbox"/> Negative Declaration <input type="checkbox"/> THP/ NTMP	<input type="checkbox"/> Mitigated Negative Declaration <input type="checkbox"/> Environmental Impact Report <input type="checkbox"/> Notice of Determination (Enclose) <input type="checkbox"/> Mitigation, Monitoring, Reporting Plan <input type="checkbox"/> NEPA document (type): _____ <input checked="" type="checkbox"/> CESA document (type): <u>CD</u> <input checked="" type="checkbox"/> ESA document (type): <u>BOs</u>
B. State Clearinghouse Number (if applicable)	2005-082131
C. Has a CEQA lead agency been determined?	<input checked="" type="checkbox"/> Yes (Complete boxes D, E, and F) <input type="checkbox"/> No (Skip to box 14.G)
D. CEQA Lead Agency	Sonoma County Water Agency
E. Contact Person	Keenan Foster
F. Telephone Number	(707) 547-1941
G. If the project described in this notification is part of a larger project or plan, briefly describe that larger project or plan.	
<p>This application covers all the projects listed in the SMP's Annual Notification (attached). All of these projects should be appropriate under the Master Streambed Alteration Agreement # 1600-2009-0399-R3. The SMP's guiding document is the SMP Manual prepared in coordination with all the regulating agencies.</p> <p style="text-align: right;"><input type="checkbox"/> Continued on additional page(s)</p>	
H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?	
<input checked="" type="checkbox"/> Yes (Enclose proof of payment) <input type="checkbox"/> No (Briefly explain below the reason a filing fee has not been paid)	
<p>Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.</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 checked="" type="checkbox"/> I request the Department to first contact (insert name) <u>Keenan Foster</u> at (insert telephone number) <u>(707) 547-1941</u> 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.

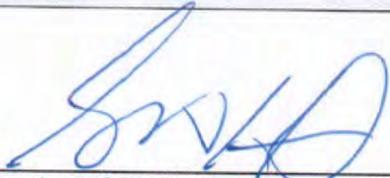
NOTIFICATION OF LAKE OR STREAMBED ALTERATION

16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?
<input checked="" type="checkbox"/> Yes (Please enclose the information via digital media with the completed notification form)
<input type="checkbox"/> 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	_____ Date
<u>GRANT DOVIS</u> _____ Print Name	

THIS CHECK IS VOID WITHOUT A GREEN & BLUE BORDER AND BACKGROUND PLUS A DIAMOND & FINGERPRINT WATERMARK ON THE BACK - HOLD AT ANGLE TO VIEW



TO THE TREASURER OF THE
COUNTY OF SONOMA
SANTA ROSA, CALIFORNIA

CLAIMS CHECK

DATE 04/27/2015

VOID AFTER SIX MONTHS

CHECK NO.
1482094

11-35
1210

PAY THIS AMOUNT

*****\$2,801.50

BANK OF AMERICA

PAY *Two thousand eight hundred one and 50/100 Dollars*

To The Order Of

ST OF CA DEPT OF FISH & WILDLIFE
DEPT OF FISH & WILDLIFE
7329 SILVERADO TRAIL
NAPA CA 94558



DAVID SUNDSTROM
AUDITOR-CONTROLLER

⑈01482094⑈ ⑆121000358⑆ 00439⑈80050⑈



TO THE TREASURER OF THE
COUNTY OF SONOMA
SANTA ROSA, CALIFORNIA

VENDOR NO. 0000000386	01	DATE PAID 04/27/2015	201	1482094	No. 1482094
VOUCHER NUMBER	P.O. NUMBER	DESCRIPTION	AMOUNT		
00063270		04/21/2015 ANNUAL NOTIFICATION	2,801.50		
			\$2,801.50		

REORDER D968 - U.S. PATENT NO. 5538290, 5575508, 5641183, 5785353, 5984364, 6030000

Appendix I

SMP Addendums

- **2014 Tier 1 Initial Installation/Re-planting Data**
 - Colgan 2, 3, 4 (Zone 1A)
 - Laguna 1 (Zone 1A)
 - South Fork Copeland 1 (Zone 1A)
- **2014 SMP Sediment Removal Project Cross Sections**
 - Nathanson Bypass (Zone 3A)
- **2014 WPP Annual Monitoring Reports**
 - 2009 Adobe Creek (Lower Cherbero) – Year 5
 - 2010 Matanzas Creek (Hoen Ave) – Year 5

Colgan 2, 3 and 4 (2013)

Scientific Name	Common Name	2013 Initial Plantings		2014	
		Size	Quantity	Monitored	Replanted
<i>Upper Bank Trees</i>					
<i>Acer macrophyllum</i>	big leaf maple	5 gal	47	18	0
<i>Aesculus californica</i>	buckeye	5 gal	0	n/a	4
<i>Fraxinus latifolia</i>	Oregon ash	5 gal	1	1	0
<i>Quercus agrifolia</i>	coast live oak	5 gal	64	64	102 (79 are initial install on left bank)
<i>Quercus lobata</i>	valley oak	D-pot	0	n/a	2
TOTALS			112	83	108
<i>Toe Trees</i>					
<i>Alnus rhombifolia</i>	white alder	5 gal	59	33	
<i>Fraxinus latifolia</i>	Oregon ash	D-pot	50	15	
<i>Salix laevigata</i>	red willow	cuttings	511	265	401
TOTALS			620	313	401
<i>Herbaceous Perennials</i>					
<i>Achillea millefolium</i>	yarrow	1 gal	0	n/a	25 (initial install, left bank)
<i>Artemisia douglasiana</i>	mugwort	1 gal	62	minimal presence	25 (initial install, left bank)
<i>Aster chilensis</i>	California aster	1 gal	0	n/a	55 (initial install, left bank)
<i>Baccharis douglasii</i>	marsh baccharis	1 gal	10	0	0
<i>Oenanthe sarmentosa</i>	water parsley	1 gal	47	present and spreading	0
<i>Rosa californica</i>	California rose	1 gal	0	n/a	20 (initial install, left bank)
TOTALS			119	minimal presence	125
<i>In-stream Graminoids</i>					
<i>Carex barbarae</i>	Santa Barbara sedge	1 gal	0	n/a	
<i>Carex nudata</i>	torrent sedge	4"	32	0	
<i>Eleocharis macrostachya</i>	pale spikerush	1 gal	35	minimal presence	
<i>Elymus glaucus</i>	wild blue ryegrass	1 gal	85	present and spreading	
<i>Festuca rubra</i>	red fescue	1 gal	90	minimal presence	
<i>Juncus effusus</i>	common rush	1 gal	50	minimal presence	
<i>Juncus patens</i>	spreading rush	2"/1 gal	102	minimal presence	
<i>Leersia oryzoides</i>	rice cutgrass	transplants	260	present and spreading	
<i>Leymus triticoides</i>	creeping wild ryegrass	1 gal	434	present and spreading	
TOTALS			1,088	present and spreading (Colgan 3 only)	
<i>Upland Grasses</i>					
LeBallister's "Hold Fast Native Blend" seed mix*		hydro-seed application		minimal establishment	0
<i>Carex barbarae</i>	basket sedge	1 gal	0	n/a	100 (left bank, only)
<i>Elymus glaucus</i>	wild blue ryegrass	1 gal	0	n/a	59 (left bank, only)
<i>Festuca californica</i>	California fescue	1 gal	193	present and spreading	0
<i>Leymus triticoides</i>	creeping wild ryegrass	1 gal	0	n/a	241 (left bank, only)
TOTALS			193	present (one specie only)	400

<i>Summary</i>				
Plant Category	Target Baseline	2014		
		Monitored	Success Rate	Success Rate with Replanting
<i>Upper Bank Trees</i> **	191	83	42%	100%
<i>Toe Trees</i>	778	313	40%	92%
<i>Herbaceous Perennials</i>	present and spreading	minimal presence		present
<i>In-stream Graminoids</i>	present and spreading	present and spreading (reach 3, only)		n/a
<i>Upland Grasses</i>	present and spreading	present (one specie, only)		present (multiple species)

*Seed mix includes the following: California brome grass (Cucamonga), blue wild ryegrass, three weeks Fescue, California brome grass (perennial), California poppy and arroyo blue lupine

**Target baseline for upper bank trees is total planted, target for toe trees is based on Channel Form (1D) planting standard math: 6,538/15*2

Linear feet: 6,538; linear feet suitable for toe tree installation: 5,838 (five bridegheads and twenty culverts)
Channel Form 1D

Laguna 1, Phases I, II and III (2010-2012)

Scientific Name	Common Name	2010-2012 Initial Plantings (All Phases)		2013		2014	
		Quantity	Size	Monitored	Replanted*	Monitored	Replanted
<i>Riparian Trees</i>							
<i>Acer macrophyllum</i>	big leaf maple	23	5 gal	3	0	2	
<i>Acer negundo</i>	box elder	52	15/5 gal	61	0	45	
<i>Alnus rhombifolia</i>	white alder	55	10 gal	4	0	5	
<i>Fraxinus latifolia</i>	Oregon ash	28	D-pot/5 gal	10	50	53	
<i>Populus fremontii</i>	Fremont poplar	96	5 gal	18	0	17	
<i>Salix laevigata/lasiandra lucida</i>	red/Pacific willow	752	cuttings	287	0	323	145
TOTALS		1,006		383	50	445	145
<i>Upper Bank Trees</i>							
<i>Acer macrophyllum</i>	big leaf maple	5	5 gal	3	4	4	
<i>Acer negundo</i>	box elder	7	5 gal	0	0	15	
<i>Aesculus californica</i>	California buckeye	27	5 gal	23	0	19	
<i>Juglans californica</i>	walnut	10	5 gal	9	0	7	
<i>Quercus agrifolia</i>	coast live oak	39	15 gal	35	6	32	
<i>Quercus kelloggii</i>	California black oak	3	5 gal	2	0	1	
<i>Quercus lobata</i>	valley oak	62	15/5 gal	72	0	73	
<i>Sambucus mexicana</i>	elderberry	5	5/1 gal	6	0	7	
TOTALS		158		150	10	158	
<i>Shrubs</i>							
<i>Acer circinatum</i>	vine maple	10	1 gal	0	0	0	
<i>Baccharis pilularis</i>	coyote brush	198	1 gal	109	40	113	80
<i>Calycanthus occidentalis</i>	spice bush	126	1 gal	7	0	0	
<i>Ceanothus sp.</i>	California lilac	28	1 gal	12	0	1	
<i>Cornus sericea/stolonifera</i>	western dogwood	151	1 gal	27	0	13	
<i>Corylus cornuta</i>	hazelnut	3	1 gal	0	0	0	
<i>Garrya elliptica</i>	silk tassel	22	1 gal	6	0	1	
<i>Heteromeles arbutifolia</i>	toyon	45	1 gal	1	0	4	20
<i>Holodiscus discolor</i>	cream bush	0	1 gal	n/a	n/a	n/a	66
<i>Lonicera involucrata</i>	twinberry	93	1 gal	25	0	21	
<i>Myrica californica</i>	wax myrtle	27	1 gal	0	0	0	50
<i>Petasites palmatus</i>	western coltsfoot	59	1 gal	0	0	0	
<i>Physocarpus capitatus</i>	ninebark	30	1 gal	0	0	0	
<i>Rhamnus californica</i>	coffeeberry	134	1 gal	63	0	60	
<i>Rhus trilobata</i>	sumac	5	1 gal	0	0	0	
<i>Ribes malvaecum/sanguineum</i>	current	91	1 gal	14	0	5	
<i>Rosa californica</i>	California rose	108	1 gal	25	0	16	
<i>Rubus ursinus</i>	California blackberry	9	1 gal	0	0	0	
<i>Sambucus mexicana</i>	elderberry	144	5/1 gal	22	60	59	
<i>Symphoricarphos alba</i>	snowberry	107	1 gal	26	0	17	20
TOTALS		1,390		337	100	310	236
<i>Herbaceous Perennials</i>							
<i>Asymphytrichum lentum</i>	marsh aster	20	1 gal	present and spreading	0	present and spreading	
<i>Baccharis douglasii</i>	marsh baccharis	60	1 gal	present and spreading	0	present and spreading	
<i>Epilobium 'Chaparral Silver'</i>	California fuchsia	0	1 gal	n/a	10	0	
TOTALS		80		present and spreading	10	present and spreading	
<i>Graminoids</i>							
<i>Agrostis sp.</i>	bent grass	13	1 gal	present	0	present and spreading	
<i>Bromus carinatus</i>	California brome	72	1 gal	0	0	present and spreading	
<i>Carex barbarae</i>	Santa Barbara sedge	412	1 gal	present and spreading	0	present and spreading	
<i>Carex nudata</i>	torrent sedge	50	1 gal	present and spreading	0	present and spreading	
<i>Carex pansa</i>	sand dune sedge	40	1 gal	present and spreading	0	present and spreading	
<i>Festuca californica</i>	California fescue	107	1 gal	0	0	0	
<i>Festuca idahoensis</i>	Idaho fescue	0	1 gal	n/a	100	0	
<i>Eleocharis macrostachya</i>	pale spikerush	130	1 gal	present and spreading	0	present and spreading	
<i>Juncus effusus</i>	common rush	155	1 gal	present and spreading	0	present and spreading	
<i>Juncus patens</i>	spreading rush	171	1 gal	present and spreading	0	present and spreading	
<i>Juncus phaeocephalus</i>	brownheaded rush	50	1 gal	0	0	0	
<i>Leersia oryzoides</i>	rice cutgrass	226	1 gal	present and spreading	0	present and spreading	
<i>Leymus triticoides</i>	creeping wild ryegrass	345	1 gal	present and spreading	0	present and spreading	
<i>Scirpus acutus occidentalis</i>	hardstem bulrush	40	1 gal	0	0	0	
<i>Scirpus microcarpus</i>	small fruited bulrush	104	1 gal	present and spreading	0	present and spreading	
TOTALS		1,915		present and spreading	100	present and spreading	

Summary						
Plant Category	Target Baseline (All Phases)	2013 (All Phases)		2014 (All Phases)		
		Monitored	Success Rate	Monitored	Success Rate	Success with Replanting
Riparian Trees	660	383	58%	445	67%	89%
Upper Bank Trees**	158	150	95%	158	100%	n/a
Shrubs***	594	337	57%	310	52%	92%
Herbaceous Perennials	present and spreading	present and spreading		present and spreading		n/a
Graminoids	present and spreading	present and spreading		present and spreading		n/a

*For brevity and readability purposes, this table does not include re-planting numbers for years previous to 2013. Please see previous SMP Annual Reports for this information

**Target baseline for upper bank trees based on what was originally planted (which is very close to the Channel 1D math); baseline for toe trees (6,600/30)*3

***Target baseline for shrubs does not include midline: ((.3*6,600)/10)*3

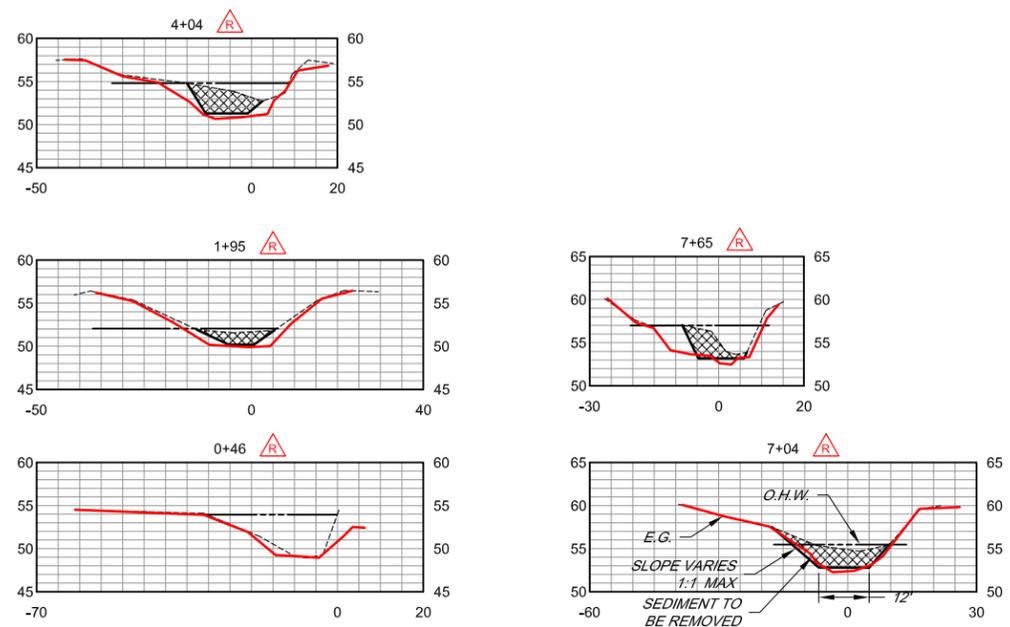
South Fork Copeland 1 (2014) As-built

Scientific Name	Common Name	2014 Initial Plantings	
		Size	Quantity
<i>Toe Trees</i>			
<i>Acer macrophyllum</i>	big leaf maple	5 gal	19
<i>Acer negundo</i>	box elder	5 gal	90
<i>Fraxinus latifolia</i>	Oregon ash	5 gal	85
<i>Populus fremontii</i>	fremont poplar	5 gal	35
TOTALS			229
<i>Herbaceous Perennials</i>			
<i>Artemisia douglasiana</i>	mugwort	1 gal	84
<i>Oenanthe sarmentosa</i>	water parsely	1 gal	42
<i>Scrophularia californica</i>	California figwort	1 gal	42
TOTALS			168
<i>In-stream Graminoids</i>			
<i>Carex babarae</i>	Santa Barbara sedge	1 gal	100
<i>Eleocharis macrostachya</i>	spike rush	1 gal	100
<i>Juncus balticus</i>	Baltic rush	1 gal	50
<i>Juncus effusus</i>	common rush	1 gal	50
<i>Leersia oryzoides</i>	rice cutgrass	1 gal	260
<i>Leymus triticoides</i>	creeping wild ryegrass	1 gal	20
TOTALS			580

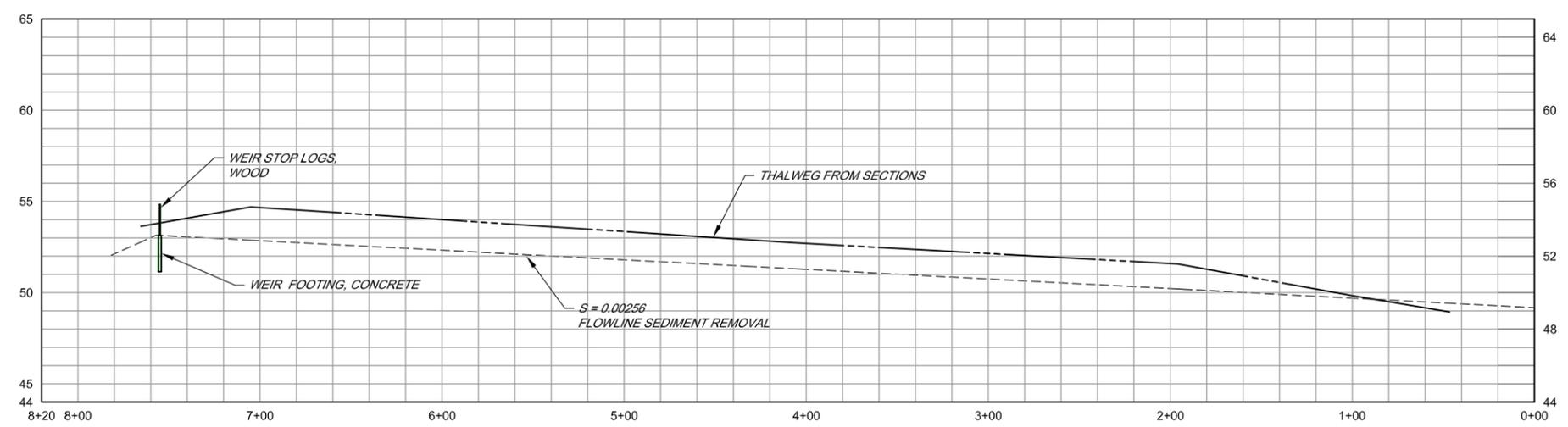
<i>Summary</i>	
Plant Category	Target Baseline
<i>Toe Trees</i>	229
<i>Herbaceous Perennials</i>	present and spreading
<i>In-stream Graminoids</i>	present and spreading

Linear feet: 2,805; linear feet suitable for installing toe trees: 2,495 (two bridgeheads and nine culverts)

Channel Form 1A



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



PROFILE - BYPASS CHANNEL
SCALE: HORIZ 1" = 40'
VERT 1" = 4'

RECORD DRAWING
DATE: BY:

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

		SONOMA COUNTY WATER AGENCY		SCALE: AS SHOWN	DATE: 11/22/2013	NATHANSON CREEK BYPASS CHANNEL - REACH 1	
				DRAWN: —		PROFILE AND SECTIONS	
				REVIEWED:		FILE NAME: 2013_Nathanson_C -	DRAWING NUMBER: C-2
						CONTRACT NUMBER:	SHEET 2 OF 3
R	01-27-2015	RECORD DRAWING					
NO.	DATE	REVISION	BY				

I:\SD-DATA\Project\control\bone_3\NATHANSON\2013\NATHANSON_CRK



Annual Report – Year 5 Final Report
Adobe Creek, Lower Cherbero Ranch

Report to the Sonoma County Water Agency
March, 2015

Conservation science for a healthy planet

3820 Cypress Drive, #11 Petaluma, CA 94954

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PROJECT SUMMARY

Adobe Creek is a tributary to the Petaluma River. This project is located on Adobe Creek at the Lower end of Cherbero Ranch on Manor Lane, Petaluma (See Figure 1 for location details). STRAW facilitated one restoration day at this project through Sonoma County Water Agency funding during the 2008/2009 school year. In addition, another day of restoration was performed using funds from the Community Foundation Sonoma County.

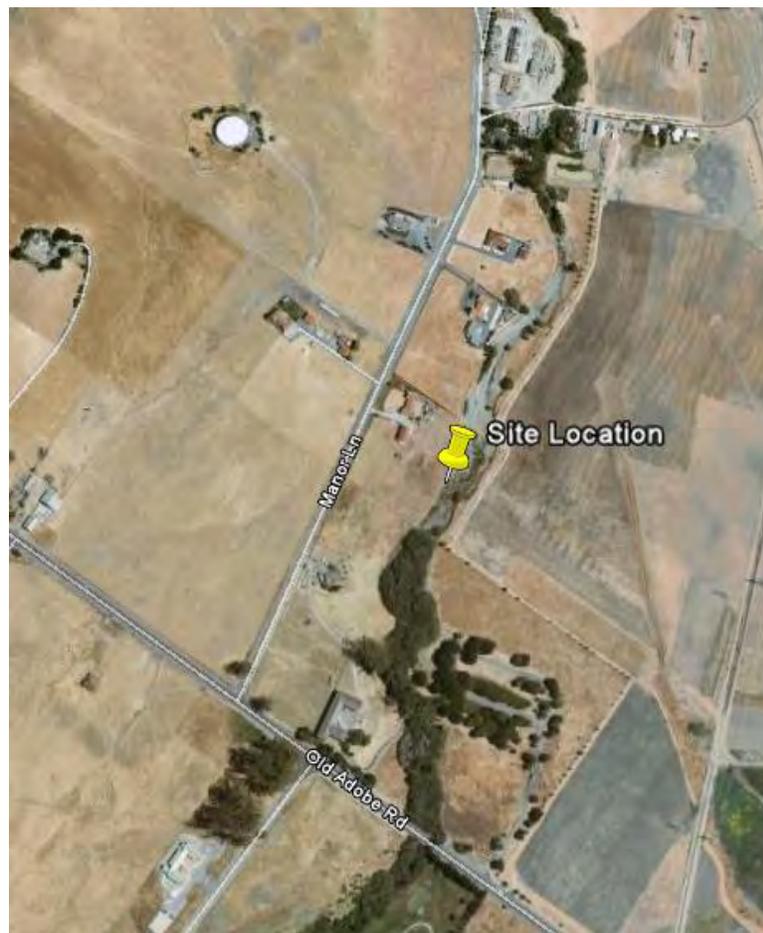


Figure 1. Location of Adobe Creek at: Lower Cherbero Ranch on Manor Lane in Petaluma.

This section of Adobe Creek at the base of Sonoma Mountain was selected as a restoration site because of an actively-eroding left bank and its potential to greatly increase habitat connectivity by linking existing quality habitat up and down stream. This section connects work previously completed by STRAW and many others within the watershed. The goals of this project are to stabilize one exposed bank with native vegetation to reduce sediment inputs and create functioning habitat. In addition, this

project will engage students from local schools in active enhancement of their community watershed.

This project has been quite successful due to excellent growing conditions, highly dedicated landowners, and the ability to design the project using data from previous work on adjacent properties. The overall growth and rate of establishment at this site has been substantial. The final round of plant survival monitoring was completed on March 6, 2015, the sixth year after plant installation (monitoring was not completed during the fifth year). Overall plant survival is 80%.

PLANTING IMPLEMENTATION

Planting was completed with school volunteers as shown in Table 1. Total container plants installed at Adobe Creek are listed in Table 2. An additional 27 willow sprigs and one 42 foot long willow wall were installed. Work was completed along 445 linear feet along the creek and 95 feet wide across the creek for a total of 42,275 square feet.

Table 1. Community participation in STRAW restoration of Adobe Creek.

Date	School	Grade	Number of students	Other volunteers	Total Volunteers
12/9/2008	Hanna Boys School	HS	69	12	81
	Mary Collins	1, 2, 6, 8			
1/13/2009	La Tercera Elementary	5 th	53	14	67
					148

WORK PERFORMED

No maintenance was performed for the summer of 2014. Plant survival monitoring was completed on March 6, 2015.

CURRENT SURVIVAL AND SITE CONDITIONS

Table 2 shows the species and number of plants installed as well as 2014 plant survival numbers, height class, and health rating, either as high vigor (HV) showing healthy new growth or buds or as low vigor (LV) showing systemic stress. Overall, the plants are establishing at a rate of 80% and nearly all are above three feet tall and high vigor.

Table 2. Plant list and 2014 establishment of Adobe Creek Lower Cherbero (Year 6).

The STRAW Project					HV = High Vigor			
Plant Establishment Data					LV = Low Vigor			
Site: Lower Cherbero, Adobe Creek								
Date Monitored: 3/6/2015								
Date(s) Planted: 12/9/08 & 1/13/09								
Species	Common Name	Number Planted	Total Alive	% Survival	<3ft, LV	<3ft, HV	>3ft, LV	>3ft, HV
<i>Acer macrophyllum</i>	Big Leaf Maple	10	6	60.0%	0	0	0	6
<i>Acer negundo</i>	Box Elder	5	5	100.0%	0	1	0	4
<i>Aesculus californica</i>	California Buckeye	10	2	20.0%	0	0	0	2
<i>Alnus rhombifolia</i>	White Alder	35	35	100.0%	0	0	0	35
<i>Juglans hindsii</i>	Walnut	5	5	100.0%	0	0	0	5
<i>Quercus lobata</i>	Valley Oak	10	6	60.0%	0	0	0	6
<i>Sambucus nigra</i>	Elderberry	5	5	100.0%	0	0	0	5
		80	64	80.0%	0	1	0	63
				Percent	0%	2%	0%	98%

At the end of this project's sixth year, there is an overall survival of 80% of installed container plants. This is a decrease from 2012's 85% survival. Since 2012, one big leaf maple and three valley oak have died. The cause of mortality is unknown, but in the past, high flows and channel instability have been a challenge to plant establishment. There are many mature individuals that show evidence of fruiting. Over the long-term, natural regeneration might be hindered due to grazing pressure near the planting site, but substantial willow establishment and recruitment is occurring. Weed pressure is very low due to sheep grazing.

SITE MONITORING PHOTOS

The following Figures 2 and 3 illustrate changes over time from the perspective of two different established photo points at Adobe Creek. Original photo points and first two years of photomonitoring were lost. The 5th year of monitoring was not conducted during 2013.



January, 2012 – Year 3



November, 2012 – Year 4



March, 2015 – Year 6

Figure 2. Adobe Creek Photo Point 1. On left bank with back to fence looking downstream.



January, 2012 – Year 3



November, 2012 – Year 4



March, 2015 – Year 6

Figure 3. Adobe Creek Photo Point 2. Right bank at the gate between upper and lower Cherbero properties, looking downstream.



Annual Report – Year 5 Final Report

Matanzas Creek at Hoen Avenue

Report to the Sonoma County Water Agency
March, 2015

Conservation science for a healthy planet

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PROJECT SUMMARY

Matanzas Creek is a tributary to the Laguna de Santa Rosa, the largest sub-watershed of the Russian River. This project is located on Matanzas Creek at Montgomery High School on Hoen Avenue, Santa Rosa (See Figure 1 for location details). The site currently has healthy, heritage over story vegetation and a low-functioning understory, consisting of dense populations of non-native English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus discolor*).

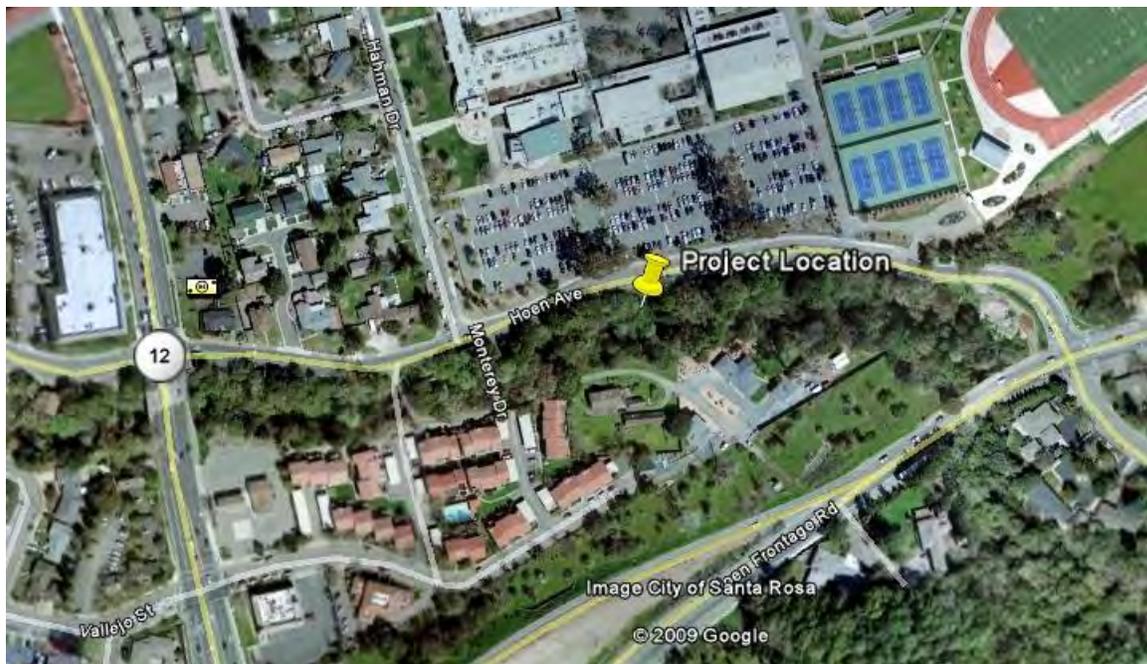


Figure 1. Location of STRAW restoration project on Matanzas Creek at Hoen Avenue in Santa Rosa.

The purpose of this project was to re-establish native understory riparian vegetation to stabilize stream banks and to filter overland water flow and increase riparian habitat. In addition, this project engaged students from local schools in active enhancement of their community watershed. In partnership with Santa Rosa Creek Stewards and Land Paths, STRAW facilitated two restoration days with student volunteers in the 2009/2010 school year.

Plant survival monitoring was completed on March 12, 2015, the fifth year after plant installation. Survival of the installed shrubs is 60%. This is the final annual monitoring report for this site.

PLANTING IMPLEMENTATION

Over two restoration days during the 2009/2010 school year, a total of 5 cubic yards of non-native invasive plants, primarily English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus discolor*), were removed from an area of 9,350 square feet. The area was replanted with 70 container plants along 170 linear feet of creek bank. Planting was completed with school volunteers as shown in Table 1. Total plants installed at Matanzas Creek are listed in Table 2.

An additional 3 cubic yards of non-natives were removed from the same area in the 2010/2011 school year by students from Montgomery High School.

Table 1. Community participation in STRAW restoration of Matanzas Creek.

Date	School	Grade	Number of students	Other volunteers	Total Volunteers
2/9/2010	Brookhill Elementary	2 nd	100	27	127
	Doyle Park Elementary	3 rd			
	Montgomery High School	10 th			
2/11/2010	Brookhill Elementary	5 th	57	13	70
					197

WORK PERFORMED

No maintenance was performed for the summer of 2014. The 4th year of monitoring was not conducted. Plant survival monitoring for the 5th year after installation was completed on March 12, 2015.

CURRENT SURVIVAL AND SITE CONDITIONS

Table 2 shows the species and number of plants installed as well as 2014 plant survival numbers, height class, and health rating, either as high vigor (HV) showing healthy new growth or buds or as low vigor (LV) showing systemic stress. Monitoring graminoids (grasses and sedges) was impossible due to location and successful spread and colonization of the immediate area around the initial installed population. Overall, 60% of the installed shrubs survive.

Table 2. Plant list and 2014 establishment of Matanzas Creek (Year 5). Graminoids are not monitored or included in survival calculations.

The STRAW Project					HV = High Vigor			
Plant Establishment Data					LV = Low Vigor			
Site: Matanzas Creek- Hoen Ave. @ Montgomery High School								
Date Monitored:	3/12/2015							
Date(s) Planted:	2/9/10, 2/11/10							
Species	Common Name	Number Planted	Total Alive	% Survival	<3ft, LV	<3ft, HV	>3ft, LV	>3ft, HV
<i>Symphoricarpos albus</i>	Snowberry	10	6	60.0%	0	6	0	0
<i>Carex barbarae</i>	Santa Barbara sedge	40	N/A	N/A				
<i>Festuca rubra</i>	Molate red fescue	10	N/A	N/A				
<i>Melica spectabilis</i>	Onion grass	10	N/A	N/A				
	Total	10	6	60.0%	0	6	0	0
				<i>Percent</i>	0%	100%	0%	0%

At the end of the 2014 season, there is an overall survival of 60% of installed container plants. This is consistent with the last survival count conducted in 2012. There are many snowberry growing in a healthy population at this site, making it difficult to distinguish between planted, spreading or previously existing individuals.

Reemerging populations of non-native English ivy (*Hedera helix*) and Himalayan blackberry (*Rubus discolor*) continue to spread slowly into the work area. Additional removal of these species was conducted in the 2010/2011 school year, but this area will need continual removal efforts to maintain the area free of these invasive populations.

SITE MONITORING PHOTOS

The following Figures 2-4 illustrate changes over time from the perspective of three different established photo points at Matanzas Creek. The 4th year of monitoring was not conducted.



February, 2010 – at time of installation



November, 2010 – Year 1



September, 2011 – Year 2



October, 2012 – Year 3



March, 2015 – Year 5

Figure 2. Matanzas Creek Photo Point 1. On right bank facing downstream looking at creek bank bench.



February, 2010 – at time of installation



November, 2010 – Year 1



September, 2011 – Year 2



October, 2012 – Year 3



March, 2015 – Year 5

Figure 3. Matanzas Creek Photo Point 2. On creek bank bench on the right bank, looking upslope at the bowl planting.



February, 2010 – at time of installation



November, 2010 – Year 1



September, 2011 – Year 2



October, 2012 – Year 3



March, 2015 – Year 5

Figure 4. Matanzas Creek Photo Point 3. On right bank facing upstream looking at creek bank bench.