Sonoma County Water Agency
Stream Maintenance Program (SMP)

Annual Notification for 2012 Maintenance Projects

Prepared for:
The SMP Inter-Agency Working Group

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Sonoma County Water Agency
Stream Maintenance Program
2012 Projects

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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 2012 maintenance season:

- **Two Localized Sediment Removal Projects at:**
  - Laguna de Santa Rosa Reach 5: Downstream of East Cotati Ave
  - Russell Creek Reach 1: Remove Plug West of Range Ave.
- **Eight Reach Scale Sediment Removal Projects at:**
  - Coleman Creek Reach 1: Upstream of Snyder Lane
  - E. Washington Creek Reaches 1 & 2 : Clear Plugs below McGregor
  - Gossage Creek Reaches 1, 2 and 3: Lowell to Highway 116
  - Laguna de Santa Rosa Reach 1: Sta 70+00 to Sta 88+00
  - Lichau Creek Reaches 2 and 3: Between 101 and Old Redwood Highway
  - Lower East Fork Fryer Creek Reach 1: At Confluence with Fryer Creek
  - Santa Rosa Creek Reach 1: Downstream of Willowside Road
  - Santa Rosa Creek Reach 2: Upstream of 2011 work
- **Sediment Basin/Instream Basin Clearing at:**
  - Adobe Creek Sediment Basin: clearing sediment and vegetation at the Adobe Creek basin (Adobe Creek Reach 2)
  - Colgan Creek Reaches 3 & 4: Upstream and Downstream of Stony Point
  - Cook Creek Sediment Basin: clearing sediment and debris at the basin (Cook Creek Reach 2)
  - Copeland Creek at Country Club Dr.: clearing sediment and debris along the instream Copeland Creek basin located at the crossing at Country Club Road, Reaches 3 & 4

- Copeland Creek at Snyder Ln.: sediment removal at the Copeland Creek in-stream basin located at the Snyder Lane crossing, Reaches 4 & 5
- Five Creek at Snyder Ln: sediment removal at the Snyder Lane Crossing Reach 1
- Hinebaugh Creek Reaches 1 & 2: At Labath Road
- Hinebaugh Creek Reaches 3 & 4: Commerce Blvd.
- Hinebaugh Creek Reaches 4 & 5: State Farm Drive
- Hinebaugh Creek Reach 5: RR Tracks by golf course
- Piner Creek Reaches 4 & 5: Remove Plugs at RR tracks
- Piner Creek Reach 6: Remove Plugs at Piner Road
- Piner Creek Reach 7: Remove Plugs at Hopper Ave.
- Washington Creek Reach 5: Upstream of McDowell in Concrete Channel
- Wilfred Creek: sediment removal at Wilfred Creek instream basin located on Reach 1, downstream of the culvert outfall at Snyder Lane
- Windsor Creek Reach 1: Downstream of Windsor Road

- **Reservoir Inlet Clearing:**
  - Brush Creek Reservoir
  - Matanzas Creek Reservoir
  - Piner Creek Reservoir
  - Santa Rosa Creek Reservoir (Spring Lake)
  - Fish ladder in Santa Rosa Diversion Structure, adjacent to Montgomery Drive.
- **Bank Repairs at the following location:**
  - Russell Creek Reach 1: bank repair at Station 701+36

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 2012 project sites.

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

Project Site	Creek	Tributary To	SMP Reach	USGS Quad Township, Range, Section	Latitude/ Longitude
Localized Sediment Removal Projects					
Laguna de Santa Rosa at East Cotati Ave.	Laguna de Santa Rosa	Mark West Creek	Laguna 5	Cotati Quad, T6N, R8W, Section 26/35	38° 19' 41.753"N/ 122° 42' 14.294"W
Russell Creek Station 701+36	Russell Creek	Piner Creek	Russell 1	Santa Rosa Quad, T7N, R8W, Section 10	38° 28' 15.755"N/ 122° 44' 4.068"W
Reach Scale Sediment Removal Projects					
Coleman Creek at Snyder Lane	Coleman Creek	Wilfred Ext. Wilfred Creek	Coleman 1	Cotati Quad, T6N, R7W, Section 18/13	38° 22' 10.554"N/ 122° 41' 2.461"W
East Washington Creek below McGregor Avenue	East Washington Creek	Washington Creek	East Washington 1 & 2	Glen Ellen Quad, T5N, R7W, Section 27	38° 15' 4.352"N/ 122° 37' 5.369"W
Gossage Creek Lowell Ave to 116	Gossage Creek	Laguna de Santa Rosa	Gossage 1,2,3	Cotati Quad, T6N, R8W, Section 27, 22, 28	38° 20' 14.138"N/ 122° 43' 54.940"W
Laguna de Santa Rosa at Stony Point Road	Laguna de Santa Rosa	Mark West Creek	Laguna 1	Cotati and Two Rock Quads, T6N, R8W, Section 21	38° 21' 7.869"N/ 122° 44' 45.666"W
Lichau Creek Between 101 and Old Redwood Highway	Lichau Creek	Petaluma River	Lichau 2 & 3	Cotati Quad, T5N, R7W, Section 18	38° 16' 42.662"N/122° 40' 12.409"W
Lower East Fryer Creek at confluence with Fryer Creek	Lower East Fork Fryer Creek	Fryer Creek	Lower East Fork Fryer 1	Sonoma Quad, T5N, R5W, Section 7	38° 17' 10.766"N/ 122° 27' 47.781"W
Santa Rosa Creek Downstream of Willowside Road	Santa Rosa Creek	Laguna de Santa Rosa	Santa Rosa 1	Sebastopol Quad, T7N, R9W, Section 13	38° 26' 42.795"N/ 122° 48' 36.327"W

Project Site	Creek	Tributary To	SMP Reach	USGS Quad Township, Range, Section	Latitude/ Longitude
Santa Rosa Creek Downstream of Fulton Road	Santa Rosa Creek	Laguna de Santa Rosa	Santa Rosa 2	Sebastopol Quad, T7N, R8W, Section 18	38° 26' 43.957"N/ 122° 47' 9.951"W
Sediment Basin/ Instream Basin Clearing Projects					
Adobe Creek Sediment Basin	Adobe Creek	Petaluma River	Adobe 2	Petaluma River Quad T5N, R7W, Section 35	38°13'59.03"N 122°35'57.63"W
Colgan Creek upstream and ds of Stony Point Rd	Colgan Creek	Laguna de Santa Rosa	Colgan 3 & 4	Santa Rosa Quad, T6N, R8W, Section 4	38° 23' 19.785"/-122° 44' 30.425"
Cook Creek Sediment Basin	Cook Creek	Coleman Creek	Cook 2	Cotati Quad, T6N, R7W, Section 17	38°21'57.19"N 122°39'59.80"W
Copeland Creek Basin at Country Club Drive	Copeland Creek	Laguna de Santa Rosa	Copeland 3 & 4	Cotati Quad, T6N, R8W, Section 25	38°20'35.74"N 122°41'42.68"W
Copeland Creek Basin at Snyder Lane	Copeland Creek	Laguna de Santa Rosa	Copeland 4 & 5	Cotati Quad, T6N, R8W, Section 25	38°20'35.73"N 122°41'07.82"W
Five Creek at Snyder	Five Creek	Crane Creek	Five 1	Cotati Quad, T6N, R8W, Section 13	38°21’40.34”N 122°41’09.32”W
Hinebaugh Creek at Labath Road	Hinebaugh Creek	Laguna de Santa Rosa	Hinebaugh 1 & 2	Cotati Quad, T6N, R8W, Section 23	38° 21' 1.496"/-122° 43' 16.211"
Hinebaugh Creek at Commerce	Hinebaugh Creek	Laguna de Santa Rosa	Hinebaugh 3 & 4	Cotati Quad, T6N, R8W, Section 23	38° 21' 1.814"/-122° 42' 34.515"
Hinebaugh Creek at State Farm	Hinebaugh Creek	Laguna de Santa Rosa	Hinebaugh 4 & 5	Cotati Quad, T6N, R8W, Section 23	38° 21' 1.954"N/ 122° 42' 21.722"W
Hinebaugh Creek at RR Tracks by Golf Course	Hinebaugh Creek	Laguna de Santa Rosa	Hinebaugh 5	Cotati Quad, T6N, R8W, Section 23/24	38° 21' 2.002"N/ 122° 42' 11.384"W
Piner Creek at RR Tracks	Piner Creek	Santa Rosa Creek	Piner 4 & 5	Santa Rosa Quad, T7N, R8W, Section 9	38° 27' 56.576"N/ 122° 44' 45.424"W
Piner Creek at Piner Road	Piner Creek	Santa Rosa Creek	Piner 6	Santa Rosa Quad, T7N, R8W, Section 9	38° 28' 9.898"N/ 122° 44' 34.728"W

Project Site	Creek	Tributary To	SMP Reach	USGS Quad Township, Range, Section	Latitude/ Longitude
Piner Creek at Hopper Ave.	Piner Creek	Santa Rosa Creek	Piner 7	Santa Rosa Quad, T7N, R8W, Section 3	38° 28' 47.646"N/ 122° 44' 27.156"W
Washington Creek upstream of McDowell	Washington Creek	Petaluma River	Washington 5	Petaluma, Cotati and Glen Ellen Quads, T5N, R7W, Section 27	38° 14' 59.791"N/ 122° 37' 31.519"W
Wilfred Channel at Snyder Lane	Wilfred Creek	Bellview-Wilfred Channel	Wilfred 1	Cotati Quad, T6N, R7W, Section 13	38°22'20.05"N 122°41'09.67"W
Windsor Creek at Windsor Road	Windsor Creek	Mark West Creek	Windsor 1	Healdsburg Quad, T8N, R9W, Section 23	38° 31' 42.942"N/ 122° 49' 32.689"W
Inlet Clearing					
Brush Creek Reservoir	Brush Creek	Santa Rosa Creek	N/A	Santa Rosa Quad, T7N, R7W, Section 6	38°29'12.57"N 122°40'16.83"W
Matanzas Creek Reservoir	Matanzas Creek	Santa Rosa Creek	N/A	Santa Rosa Quad, T6N, R7W, Section 6	38°27'55.89"N 122°42'22.52"W
Piner Creek Reservoir	Paulin Creek	Santa Rosa Creek	N/A	Santa Rosa Quad, T7N, R7W, Section 4	38°24'19.57"N 122°49'09.01"W
Santa Rosa (Spring) Creek Reservoir	Santa Rosa Creek	N/A	N/A	Santa Rosa Quad, T7N, R7W, Section 17	38°27'35.48"N 122°39'15.62"W
Fish ladder in Santa Rosa Creek Diversion Structure	Santa Rosa Creek	Spring Lake	Santa Rosa Div. 1	Santa Rosa Quad, T7N, R7W, Section 16	38° 27' 25.704"N/-122° 38' 20.017"W
Bank Stabilization Projects					
Russell Creek Station 701+36	Russell Creek	Piner Creek	Russell 1	Santa Rosa Quad, T7N, R8W, Section 10	38° 28' 15.755"N/ 122° 44' 4.068"W

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

Channel Characterization Sheets and Site Photos

Channel characterization sheets for the 2012 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 viewing 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 2012 project sites are provided in Appendix A.

Potential Habitat for Listed Species

Based on possible species occurrence as shown in the table below, 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 which will be applied according to maintenance activity type are listed in Table 1-2. This table is an excerpt of Table 7-2 from the SMP Manual. Maps displaying the project location relative to known biological resources (California Natural Diversity Database) (CNDDB) are included in Appendix B.

Table 1-3 presents habitat potential for listed species by reach. As shown in the table, none of the project reaches are known to support or provide suitable habitat for California freshwater shrimp or Central California Coast Coho salmon. The presence of California Coastal Chinook salmon has been documented in Santa Rosa Creek 1 and 2. Sixteen project reaches (Hinebaugh 1, 2 4 and 5, Laguna de Santa Rosa 1 and 5, Lichau 2 and 3, Santa Rosa 1 and 2, Windsor 1, Adobe 2, Copeland 3, 4, and 5, Santa Rosa Creek (Spring Lake) Reservoir, and Santa Rosa Div. 1) provide potential habitat or there is a known occurrence, at or adjacent to the reach, for Central California Coast Steelhead. In addition, the project reaches that show potential habitat for the western pond turtle include; Colgan 3 and 4, Hinebaugh 1, 2, 3, 4 and 5, Laguna 1 and 5, Piner 4 and 5, Washington 5, Windsor 1, East Washington 1 and 2, Gossage 1, 2 and 3, Lichau 2 and 3, Lower East Fork Fryer 1, Santa Rosa 1 and 2, Russell 1, Adobe 2, Cook 2, Copeland 3, 4 and 5, Five 1, Wilfred 1, Brush Creek Reservoir, Matanzas Creek Reservoir, Piner Creek Reservoir, Santa Rosa Creek (Spring Lake) Reservoir, and Santa Rosa Div. 1.

Several project areas may provide potential upland aestivation habitat for California Tiger Salamander (CTS). CTS Best Management Practices (BMPs) (BR-12, BR-13, and BR-14) are implemented for vegetation management activities and ground disturbing projects in these areas. Gossage 1, Laguna de Santa Rosa 1 and 5, Santa Rosa 2, Todd 3 and 4, Copeland 3, 4 and 5, and Wilfred 1, may contain potential upland habitat for CTS. Additional information

regarding potential effects on California tiger salamander, areas of disturbance and compensatory mitigation can be found in Section 3C of this notification.

2012 maintenance reaches potentially supporting California red-legged include Washington 5, Windsor 1, East Washington 1 & 2, Lichau 2 & 3, Lower East Fork Fryer 1, Adobe 2, Cook 2, Brush Creek Reservoir, Matanzas Creek Reservoir, Piner Creek Reservoir, Santa Rosa Creek (Spring Lake) Reservoir, and Santa Rosa Div. 1. In addition, Copeland 5, Cook 2, and Santa Rosa Div. 1 may include potential habitat for Foothill yellow-legged frog. Finally, Laguna 1 and 5, Santa Rosa 1 and 2, and Windsor 1, have the potential to support special-status plant species.

Table 1-2: Best Management Practices by Activity

BMP	Name	Sediment Removal	Bank Stabilization	Vegetation Management							Other Activities	
				Willow Removal	Blackberry Removal	Cattail Removal	Tree Pruning and Exotics Removal	Tree Removal and Relocation	Mowing	Nursery Stock Tree Planting	Reservoir Debris Removal	Sediment Disposal
General Impact Avoidance and Minimization												
GEN-1	Work Window	X	X	X		X	X	X	X		X	X
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	
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	
BR-2	Pre-maintenance Educational Training	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
Localized Scale									
Laguna de Santa Rosa 5	U	U	2	U	P	O(M)	U	U	P
Piner 4	U	U	U	U	P	O*	U	U	U
Piner 5	U	U	U	U	P	U	U	U	U
Piner 6	U	U	U	U	U	U	U	U	U
Piner 7	U	U	U	U	U	U	U	U	U
Russell 1	U	U	U	U	P	U	U	U	U
Reach Scale									
Coleman 1	U	U	U	U	U	U	U	U	U
East Washington 1	U	P	U	U	P	U	U	U	U
East Washington 2	U	P	U	U	P	U	U	U	U
Gossage 1	U	U	2(2483.8)** 3(157.3)	U	P	O*	U	U	U
Gossage 2	U	U	2	U	P	U	U	U	U
Gossage 3	U	U	2	U	P	U	U	U	U
Laguna de Santa Rosa 1	U	U	3	U	P	O(M)	U	U	P
Lichau 2	U	P	U	U	P	O(M)	U	U	U
Lichau 3	U	P	U	U	P	O(M)	U	U	U
Lower East Fork Fryer 1	U	P	U	U	P	U	U	U	U
Santa Rosa 1	U	U	3(2416)	U	P	O (M)	U	O (M/S/R)	P
Santa Rosa 2	U	U	3	U	P	O (M/R)	U	O (M/S/R)	P
Sediment Basin/Instream Basin Clearing									
Adobe 2	U	P	U	U	P	O (M)	U	U	U
Colgan 3	U	U	2	U	P	U	U	U	U
Colgan 4	U	U	2(2305.3)	U	P	U	U	U	U
Cook 2	U	P	U	P	P	U	U	U	U
Copeland 3	U	U	3(151.6)	U	P	O (M/R)	U	U	U
Copeland 4	U	U	3(2305.3)	U	P	O(M)	U	U	U
Copeland 5	U	U	3	P	P	O (M/R)	U	U	U
Five1	U	U	U	U	P	U	U	U	U
Hinebaugh 1	U	U	2(1430.2)	U	P/O	P(M)	U	U	U

Reach	Listed Species								
	California Freshwater Shrimp	California Red-legged Frog	California Tiger Salamander	Foothill Yellow-legged Frog	Western Pond Turtle	Central California Coast Steelhead	Central California Coast Coho	California Coastal Chinook	Plants
			3(3450.5)						
Hinebaugh 2	U	U	1(678.3) 2(560.8)	U	P	P(M)	U	U	U
Hinebaugh 3	U	U	1(36.1) 2(1450.1) 3(142.7)	U	P	P(M)	U	U	U
Hinebaugh 4	U	U	3	U	P	P(M)	U	U	U
Hinebaugh 5	U	U	3	U	P	P(M)	U	U	U
Washington 5	U	P	U	U	P	U	U	U	U
Wilfred 1	U	U	2(1851.6) 3(6025.9)	U	P	U	U	U	U
Windsor 1	U	P	U	U	P	O (M/R)	U	U	P
Reservoir Inlet Clearing									
Brush Creek Reservoir	U	P	U	U	P	U	U	U	U
Matanzas Creek Reservoir	U	P	U	U	P	U	U	U	U
Piner Creek Reservoir	U	P	U	U	P	U	U	U	U
Santa Rosa Creek Reservoir	U	P	U	U	P	P	U	U	U
Santa Rosa Div. 1	U	P	U	P	P	O*	U	U	U
Bank Stabilization									
Russell 1	U	U	U	U	P	U	U	U	U

Source: SMP Manual Table 7-4 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)
A Aestivation/Upland habitat
M Migration corridor
S Known or potential spawning habitat
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)

**Distance of each mitigation rank occurring on reach

1D. Vegetation Management Activities

During the 2012 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 2012, vegetation maintenance will be completed in the locations as shown below. Note that maintenance generally occurs in only a portion of the identified reach, not the entire reach length. An addendum will be sent out in August to supplement this list if any subsequent requests for vegetation management are made for areas not shown below. The submission and approval of such an addendum is specified in the DFG Streambed Alteration Agreement (No. 1600-2009-0399-R3) for the SMP.

Table 1-4. 2012 Vegetation Management Activities

Creek	Vegetation Management Activity			
	Willow Pruning	*Blackberry Hand Removal*	*Blackberry Mowing*	*Exotics Removal*
Zone 1A				
Windsor Creek Subbasin				
Airport 1				✓
Airport 2	✓		✓	
Starr 1	✓			
Starr 2	✓		✓	
Windsor 1	✓			
Santa Rosa Creek Subbasin				
Abramson 2	✓			
Austin 1				✓
Austin 2				✓
Austin 3		✓		
Brush 1	✓			
Brush 2	✓			✓
Brush Creek Tributary 10		✓	✓	✓
Coffey 1	✓	✓		
College 2				✓
College 3	✓	✓		✓
Ducker 1				✓
Forestview 2	✓			✓
Indian		✓		✓
Matanzas 1	✓			✓
Oakmont 1	✓	✓		✓
Oakmont 2	✓	✓		✓
Oakmont 3	✓	✓		✓
Oakmont 4	✓	✓		✓
Oakmont 5	✓	✓		✓
Paulin 1	✓			
Paulin 2	✓			
Paulin 4				✓

Creek	Vegetation Management Activity			
	Willow Pruning	*Blackberry Hand Removal*	*Blackberry Mowing*	*Exotics Removal*
Paulin 6	✓	✓		✓
Peterson 1	✓			
Peterson 2	✓			✓
Piner 2	✓			
Piner 3	✓			
Piner 4	✓			
Piner 7	✓	✓		✓
Piner 8		✓		✓
Russell 2	✓			✓
Santa Rosa 1	✓			
Santa Rosa 2	✓			
Santa Rosa 4	✓			
Santa Rosa 5	✓			
Santa Rosa 6	✓			
Spring 3		✓		
Steele 1	✓	✓		✓
Steele 2		✓		✓
Steele 3	✓	✓		✓
Steele 4	✓	✓		✓
Steele 5	✓	✓	✓	✓
Roseland and Colgan Subbasin				
Colgan 3			✓	
Colgan 4	✓			
Colgan 5	✓	✓		
Colgan 7		✓		
Roseland 1	✓			
Roseland 2	✓			✓
Roseland 3	✓		✓	
Roseland 4	✓			
Upper Laguna Subbasin				
Bellevue-Wilfred 2			✓	
Bellevue-Wilfred 3			✓	
Bellevue-Wilfred 4			✓	
Coleman 2	✓			
Cook 1	✓			✓
Copeland 1	✓			
Copeland 3	✓			
Cotati 2	✓	✓		
Crane 1	✓			
Five 1	✓	✓		
Gossage 1	✓			
Gossage 2	✓			
Hinebaugh 1	✓			
Hinebaugh 2	✓		✓	
Hinebaugh 3	✓		✓	
Hinebaugh 4	✓	✓		✓
Hinebaugh 5	✓	✓		✓
Hinebaugh 6	✓	✓		✓
Hinebaugh 7		✓		✓

Creek	Vegetation Management Activity			
	Willow Pruning	*Blackberry Hand Removal*	*Blackberry Mowing*	*Exotics Removal*
Hunter 2		✓		
Hunter 3		✓		
Kawana 1	✓			
Laguna 1	✓		✓	
Laguna 2	✓	✓		
Laguna 3		✓		
Laguna 4	✓	✓		
Laguna 5	✓	✓		
South Fork Copeland 1		✓		✓
South Fork Copeland 2		✓		✓
Todd 1	✓			
Todd 2	✓	✓		
Todd 5	✓		✓	✓
Wilfred Extention1	✓	✓		
Wilfred 1	✓			
Zone 2A- Petaluma Subbasin				
Adobe 1	✓			
Adobe 2	✓	✓		
Adobe 3	✓	✓		
Capri 4	✓			
Corona Creek Tributary 1	✓	✓	✓	
Corona 1	✓	✓		
Corona 3	✓			
Corona 4	✓			
Corona 5	✓			
Corona 6	✓			
Corona 7	✓			
East Washington 1	✓	✓		✓
East Washington 2		✓		✓
East Washington 3	✓			✓
East Washington 4	✓	✓		
East Washington 5	✓			
Jessie Lane 1		✓		
Lichau 1				
Lichau 2	✓	✓	✓	
Lichau 3	✓	✓	✓	
Lynch 1	✓	✓		
Lynch 2	✓	✓	✓	
Thompson 1	✓			
Washington 1	✓			
Washington 3		✓		
Washington 6	✓	✓		
Washington 7	✓			
Zone 3A- Sonoma Subbasin				
Fryer 1	✓			✓
Fryer 3		✓		
Nathanson 1	✓	✓		✓
Zone 6A- Dry Creek				
West Slough 1	✓	✓		

Section 2
Site Specific Photographs/Project Designs

This section explains project designs and photographs which describe specific maintenance locations and site conditions. Appendix A shows before-maintenance site photos of each project location. Design drawings for each project are presented in Appendix C. These drawings display the following information for each 2012 project:

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

The project designs have been arranged in the following order:

- Laguna de Santa Rosa: localized designs
- Windsor Creek: sediment basin clearing designs
- Piner Creek: sediment basin clearing and bank repair designs
- Coleman Creek: reach-scale sediment removal design
- Washington Creek: sediment basin clearing designs
- East Washington Creek: reach-scale sediment removal design
- Gossage Creek: reach-scale sediment removal design
- Laguna de Santa Rosa: reach-scale sediment removal design
- Lichau Creek: reach-scale sediment removal design
- Lower East Fork Fryer Creek: reach-scale sediment removal design
- Santa Rosa: reach-scale sediment removal designs
- Five Creek: sediment basin clearing designs
- Wilfred Channel: sediment basin clearing designs
- Adobe Creek: sediment basin clearing design
- Copeland: sediment basin clearing designs
- Cook Creek: sediment basin clearing design

- Colgan Creek: sediment basin clearing design
- Hinebaugh Creek: sediment basin clearing designs
- Brush Creek Reservoir
- Matanzas Creek Reservoir
- Piner Creek Reservoir
- Santa Rosa Creek (Spring Lake) Reservoir
- Santa Rosa Diversion fish ladder Clearing

Section 3

Summary of Maintenance Project Sizes, Extents, and Potential Effects

The following tables describe the areal and length extents of the 2012 maintenance projects and their potential effects to Waters of the State/U.S. and listed species.

3A. Sediment Removal Projects

Project Site	Length (linear feet)	Volume Removed (cu. yds.)	Acres Disturbed	
			Waters of the U.S. (below OHWM)	Waters of the State (below TOB*)
Localized Scale				
Laguna de Santa Rosa 5	391	183	0.11	—
Russell 1	80	30	0.02	—
Reach Scale				
Coleman Creek 1	903	913	0.29	0.10
East Washington Creek below McGregor	1820	831	0.27	—
Gossage Creek, Lowell to Hwy 116	7600	5270	2.68	—
Laguna de Santa Rosa 1	1800	4533	0.09	0.01
Lichau Creek, 101 to Old Redwood Hwy	2000	740	0.46	—
Lower East Fryer Creek at confluence with Fryer Creek	900	765	0.05	—
Santa Rosa Creek 1	1200	3439	0.69	—
Santa Rosa Creek 2	4143	6716	4.55	—
Sediment Basin/Instream Basin Clearing				
Adobe Creek 2	80	500	0.08	—
Colgan Creek 3 & 4	90	100	0.03	—
Cook Creek 2	200	150	0.18	—
Copeland Creek at Country Club Dr.	200	333	0.21	—
Copeland Creek at Snyder Ln.	205	683	0.21	—
Five Creek 1	120	200	0.11	—
Hinebaugh Creek at Labath Rd	120	211	0.08	—
Hinebaugh Creek at Commerce	110	120	0.09	—

Hinebaugh Creek at State Farm	155	165	0.04	—
Hinebaugh Creek at railroad tracks	40	104	0.03	—
Piner Creek 4 and 5	145	108	0.03	—
Piner Creek 6	50	11	0.01	—
Piner Creek 7	60	58	0.02	—
Washington Creek 5	418	301	0.12	—
Wilfred Creek 1	200	110	0.05	—
Windsor Creek 1	226	129	0.11	—
Reservoir Inlet Clearing				
Brush Creek Reservoir	n/a	250	0.05	—
Matanzas Creek Reservoir	n/a	250	0.05	—
Piner Creek Reservoir	n/a	250	0.05	—
Santa Rosa (Spring Lake) Creek Reservoir	n/a	100	0.06	—
Fish ladder in Santa Rosa Div. 1	40	18	0.006	—
Project Totals	**23,296**	**27,471**	**10.83**	**0.11**

*TOB is short for Top of Bank

3B. Bank Stabilization Projects

Project Site	Length (linear feet)	Volume Removed (cu. yds.)	Acres Disturbed: Waters of the U.S. (below OHWM)	Acres Disturbed: Waters of the State (below TOB)	Treatment Approach (SMP Manual Figures 5-5, 5-6, or 5-7)
Russell Creek 1	15	10	0.0006	0.0004	5-6
Totals	**15**	**10**	**0.0006**	**0.0004**	

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

California Tiger Salamander

As described above in Section 1C and Table 1-3, there are three species listed under the Federal Endangered Species Act that could be potentially impacted by the 2012 maintenance projects. One of these species, California tiger salamander (CTS), is also listed under the California Endangered Species Act. The SMP Manual and its associated Biological Opinions (BOs) from the USFWS and National Marine Fisheries Service (NMFS) describes the necessary avoidance and minimization measures required for these species to provide incidental take authorization. SMP managers and biologists reviewed the 2012 maintenance project locations and proposed activities. Based on this review the Water Agency concluded that impacts to CTS are the only potential impacts to listed species that require compensatory mitigation for the season.

Table 3-1 below identifies 2012 SMP maintenance reaches within 1.3 miles of known CTS occurrences. Maintenance project areas (above the ordinary high water mark – the zone thought to potentially support rodent burrows and CTS) are given for the project areas within the 1.3 mile buffer zone of known occurrences. Resource maps indicating the location of 2012 SMP projects in relation to CNDDB data can be found in Appendix B, and maps used to calculate CTS distance rankings to determine this season's mitigation needs can be found in Appendix D.

SMP channels do not provide suitable breeding habitat for California tiger salamanders but the upper banks of channels may provide upland habitat. Gopher burrows that may support CTS will be flagged by a qualified biologist and avoided during project construction. SMP 2012 projects requiring CTS BMP implementation are Colgan 3 & 4, Hinebaugh 1-5, Laguna 1 & 5, Gossage 1-3, Santa Rosa 1 & 2, Copeland 3-5 and Wilfred 1.

Table 3-1. 2012 Projects Requiring Compensatory Mitigation for CTS

Project Site	Area Disturbed (above OHWM)	Compensatory Mitigation Required (as per FWS BO) Ratio	Total required (sq.ft.)
Localized Scale Sediment			
Laguna 5	0	1:1	0
Reach Scale Sediment			
	0	1:1	0
Gossage 1	0	0.2:1	0
Gossage 2	0	1:1	0
Gossage 3	0	1:1	0
Laguna 1	460	0.2:1	92
Santa Rosa 1	0	0.2:1	0
Santa Rosa 2	0	0.2:1	0
Sediment Basin			
Colgan 3	0	1:1	0
Colgan 4	0	1:1	0
Copeland 3	0	0.2:1	0
Copeland 4	0	0.2:1	0
Copeland 5	0	0.2:1	0
	0	1:1	0
Hinebaugh 1	0	0.2:1	0
	0	2:1	0
Hinebaugh 2	0	1:1	0
	0	2:1	0
	0	1:1	0
Hinebaugh 3	0	0.2:1	0
Hinebaugh 4	0	0.2:1	0
Hinebaugh 5	0	0.2:1	0
	0	1:1	0
Wilfred 1	0	0.2:1	0
Project Totals	**460 sq. ft. (0.007 acres)**		**92 sq. ft. (0.002 acres)**

Based on the guidance of the SMP's Programmatic USFWS Biological Opinion and Consistency Determination from the CDFG, the Water Agency agrees to compensate for effects to CTS through purchase of credits from a USFWS and CDFG approved conservation bank for the CTS. The Water Agency has purchased 0.14 acres of credit to date. This credit has been used to mitigate for impacts resulting from 2010 and 2011 Projects. In 2010 CTS impact mitigation requirements were 0.034, and for the 2011 season, CTS impact mitigation requirements are calculated to be 0.05 acres. The total requirements of CTS impact mitigation for 2010 (0.034) and 2011 (0.05) is 0.084. Therefore our current available CTS credits are equivalent to 0.056 acre. As seen in Table 3-1, 0.002 acre is the foreseen CTS credit needed for the 2012 season. This would leave 0.054 (0.056-0.002) credits available for 2013 field season. Depending on work priorities, to provide coverage for 2014 and 2015 field season, the Water Agency may pursue purchasing an additional 0.07 acres of credit from USFWS and CDFG approved local mitigation banks. The most current credit purchase agreements are included in the 2011 Annual Notification Report in Appendix F. 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 2012 (see Section 4 and Appendix E).

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

1. For sediment and debris removal maintenance activities occurring in areas where California tiger salamander (CTS) has been identified as potentially occurring (see SMP Manual Table 7-3), a qualified biologist will conduct pre-maintenance surveys of upland habitats and identify areas with small mammal burrows. Areas with an abundance of small mammal burrows will be flagged and avoided by maintenance crews.

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 CDFG 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 CTS measures to avoid potential impacts to salamaders 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 by maintenance crews.

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 CDFG regulations and permits.

5. The USFWS Sacramento Field Office will be contacted within 48 hours of any CTS observations.

As part of the Water Agency's SMP surveys will be conducted at several channelized streams for the threatened California red-legged frog. SMP projects for 2012 are described in the Annual Notification for 2012 Maintenance Projects. Below is a summary of the status of these surveys.

California Red-Legged Frog

California red-legged frog protocol level surveys will be conducted for SMP 2012 ground-disturbing projects within the area considered potential habitat. Protocol level surveys require eight visits and two of these visits must occur after July 1. The table below lists the new 2012 SMP projects, the status of surveys, and field observations. Frog surveys began on April 11, 2012 and should be completed in early July.

California red-legged frog protocol level surveys for SMP 2012 projects Location	Completed Surveys as of April 23, 2012	Observed Species to Date
Santa Rosa Div. 1 fish ladder	0*	
Washington Creek 5	3	Pacific tree frog
East Washington Creek 1 & 2	3	Pacific tree frog
Lichau Creek 2 & 3	3	Pacific tree frog

*CRLF surveys to begin April 23, but completed concurrently in time with all other CRLF surveys.

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

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

2. If suitable breeding is 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 CDFG regulations and permits. The biological monitor will have the authority to stop work if a red-legged frog is encountered until such a time as the frog may be moved to an area outside of the project area fencing.

5. If dewatering of a creek is required, dipnet and seine surveys for red-legged frog tadpoles will be completed prior to initiation of dewatering. Captured tadpoles will be moved to a safe location elsewhere in the creek.

For SMP vegetation maintenance activities occurring in areas where red-legged frog has been identified as potentially occurring, 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. Surveys will be coordinated with staff and be completed prior to maintenance activities. SMP vegetation maintenance project locations are listed in Table 1-4 of the 2012 Annual Notification.

As of May 1, 2012 Water Agency biologists are in the process of performing protocol level surveys for all 2012 ground-disturbing project sites within the area considered potential habitat for the California red-legged frog (SMP Table 7-3). If significant resources are encountered during ongoing surveys, field results will be sent to the USFWS prior to commencing project activities. Table 3-2, below, summarizes when and where these surveys were conducted. The table also notes whether protocol surveys are underway or complete. As protocol level surveys are completed for these stream segments and maintenance activities are monitored, the SMP database will continue to track current spatial presence or absence of the species and these data will be shared with the USFWS.

Table 3-2. 2012 Projects on Reaches requiring CRLF protocol level and habitat level surveys

Location	Protocol Level Survey Conducted
Localized Scale Sediment	
Washington Creek 5	Started in April 2012
Windsor Creek 1	Completed in 2011
Reach Scale Sediment	
East Washington Creek 1 and 2	Started in April 2012
Lichau Creek 2	Started in April 2012
Licahu Creek 3	Started in April 2012
Lower East Fork Fryer Creek	Completed in 2011
Sediment Basin Clearing	
Adobe Creek 2	Completed in 2010
Cook Creek 2	Completed in 2010
Reservoir Inlet Clearing (2009 permitted projects)	
Brush Creek Reservoir	Completed in 2010
Matanzas Creek Reservoir	Completed in 2010
Piner Creek Reservoir	Conducted in 2009, 2012 surveys pending
Santa Rosa Creek Reservoir (Spring Lake)	Completed in 2010

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

1. For vegetation maintenance activities occurring in areas where 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.

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. These adverse effects will be minimized by conducting appropriately timed pre-maintenance surveys for rare plants. Table 3-3 lists the 2012 project reaches from SMP Table 7-3 that could provide potential habitat for listed plants. A qualified botanist is required to conduct appropriately-timed botanical surveys for special-status species for projects located in areas where state and federally-listed plant species have been identified as potentially occurring. For the 2012 project sites, five reaches have the potential to provide habitat for state and federally-listed plant species: Laguna de Santa Rosa 1 and 5, Santa Rosa Creek 1 and 2, and Windsor Creek 1 (SMP Manual Table 7-3 [version dated June 2010, and Table 1-3 above).

In accordance with SMP Manual BMP BR-7: *Special Status Plants* of the SMP Manual, the Water Agency will conduct a survey for special-status plants during their blooming season. The recommended blooming season for state and federally-listed plants in the SMP program area is May-June. The Laguna de Santa Rosa Creek Reach 1 and 5, Santa Rosa Creek Reach 1 and 2, and Windsor Creek Reach 1 project sites will be evaluated for potential federally-listed plants during the recommended blooming season. The survey will document the presence of special-status plants and the results (if positive) will be relayed to the pertinent regulatory agencies through an addendum notification to this Annual Notification.

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 not 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 following six listed plants are known to occur within the SMP Program: Sonoma alopecurus (*Alopecurus aequalis sonomensis*) (alopecurus), Sonoma sunshine (*Blennosperma bakeri*), Sonoma white sedge (*Carex albida*) (white sedge), Burke's goldfields (*Lasthenia burkei*) (Burke's goldfields), Sebastopol meadowfoam (*Limnanthes vinculans*) (meadowfoam), and many-flowered navarretia (*Navarretia leucocephalis plieantha*) (navarretia). As per the SMP USFWS BO, white sedge, navarretia, or alopecurus are not likely to be adversely affected by the SMP Program. If white sedge, navarretia, or alopecurus are discovered during floristic surveys, no further SMP activities will occur within the reach, the Service and CDFG will be notified of their discovery within 48 hours, and the Water Agency will not continue any maintenance activities within the reach without Service and CDFG approval.

Stream reaches requiring floral surveys prior to the start of the 2012 field season include, Laguna 1, Laguna 5, Santa Rosa 1, Santa Rosa 2 and Windsor 1. Initial surveys for special-status species on these creeks were conducted April 10 and 11th, 2012. These vernal pool species typically bloom between April and June. Reference sites were evaluated to determine appropriate timing for the surveys. Several listed species were observed in a vegetative state (Sonoma sunshine, Sebastopol meadowfoam, and Burke's goldfields) on April 10th on the Santa Rosa Plain at one or more of the following reference sites: Todd Road Preserve, Alton Lane, fields adjacent to lands that included the Santa Rosa Naval Air Station, and some small mitigation ponds associated with the Water Agency's airport Treatment Plant in Santa Rosa. Follow-up surveys are scheduled for late April, mid May and early June. The bullets below summarize project site observations to date.

- **Laguna 1**. Laguna 1 supports vernal pool habitat along the southern portion of the property. The easement on the southside of the channel varies in width from between 150 to 200 feet from fence line to center of creek. This flood plain habitat can be characterized as remnant valley and foothill woodland grassland associated with remnant patches of valley oak (*Quercus lobata*) savanna. At least three intermittent drainages with associated wetland vegetation cross through the easement.

  In low-lying areas the upland grasses dominated by canary grass (*Phalarus aquatica*), creeping wild blue rye (*Leymus triticoides*), slender wild oat (*Avena barbata*), and ripgut grass (*Bromus diandrus*) grade into wetland indicator species including Italian rye (*Lolium multiflorum*), semaphore grass (*Pluropogon californica*), brown-headed sedge (Juncus phaeocephalus), curly dock (*Rumex crispus*), and pennyroyal (*Mentha pulegium*). Surveys in these areas over the last three seasons for listed vernal pool plants have not revealed these species utilizing the site. None of the southern area will be affected by the proposed project, but is the subject of a floodplain enhancement funds recently obtained from the state under Proposition 84 River and Parkways grant.

Suitable habitat (vernal pools, vernal swales) is not present at sediment removal locations. Project work will predominately be accomplished below the ordinary high water mark in willow scrub and/or perennial emergent wetland habitat, precluding the presence of vernal pool species associated with intermittent wetland. Dominant species occurring instream throughout include fat hen (*Atriplex triangularis*), hemlock (*Conium maculatum*), radish (*Raphanus sativa*), extensive patches of creeping wild rye, bur-reed (*Sparangium* sp.), cattails (*Typha* sp.), willow weed (*Polygonum emersum amphibum*, ludwigia (*Ludwigia hexapetala/L. peploides montevidensis)* and Italian ryegrass. No special status species have been observed to date inside or adjacent to the project footprint. As discussed above, potential habitat for special status species occurs on the south side of the property easement where there is seasonal ponding associated with fragmented swales and low lying areas. No special status plant species have been observed to date. Later surveys will evaluate emergent habitat in and adjacent to the project footprint for suitability to support white sedge and Sonoma alopecurus. The pictures below illustrate representative site conditions at this project location.

- **Laguna 5.**
  This section of the Laguna de Santa Rosa through the cities of Cotati and Rohnert Park has been highly modified over time. Side banks are either dominated by Himalayan blackberry and or non-native grasses and forbes. Landscape trees are scattered along the upper banks. Riparian cover is either provided by these non-native tree species or there are occasional willows that have established and been retained during vegetation maintenance. Instream habitat is dominated by lance-leaved water platain (*Alisma lanceolatum),nutsedge (Cyperus eragrostis),* and curly dock *(Rumex crispus)*, and several native and non-native grasses. Suitable habitat (vernal pools, vernal swales) not present at sediment removal locations. This area was surveyed in both 2011 and 2012. No special status species observed to date inside or adjacent to the project footprint. Later surveys will evaluate emergent habitat in and adjacent to the project footprint for suitability to support white sedge and Sonoma alopecurus. The pictures below illustrate site conditions at this project location.

- **Santa Rosa 1.**

  This project will target built up gravel bars that have established in the bottom of the flood control channel below Willowside Drive. Santa Rosa Reach 1 is at the bottom of the Santa Rosa flood control channel system. Maintenance along this section has been focused on vegetation management and addressing acute blockages that are causing localized flooding. Over the years sediment has accumulated in distinct bars long the channel. Trees have established on the bars and are exacerbating sedimentation along the reach. As indicated on the designs, these bars will be reduced in height to a few inches above the normal summer high water level. Future vegetation work will be accomplished to keep these bars relatively free of woody vegetation so sediment could be removed as needed to maintain

capacity without affecting mature riparian trees. Vegetation management through this lower reach will be limited to opening access routes and clearing the gravel bars. As all work will be accomplished below the ordinary high water mark, vernal pool species are not a viable concern for this action. Suitable habitat (vernal pools, vernal swales) not present at gravel bar removal locations. Intermittent wetland habitat associated with v-ditches along the top of bank support typical ruderal species (Harding grass, Italian ryegrass, Carolina geranium (Geranium carolineanum), and spring vetch (*Vicia sativa*)) with no vernal character. Surveys have been conducted in Santa Rosa 1 and 2 in 2011 and 2012. No special status plant species have been observed to date in v-ditches, associated habitat or inside or adjacent to the project footprint. Later surveys will evaluate emergent habitat in and adjacent to the project footprint for suitability to support white sedge and Sonoma alopecurus. The pictures below illustrate site conditions at this project location.


- **Santa Rosa 2.**
  Similar to the work description on Santa Rosa 1, this project involves continuing to lower built up gravel bars that have established in the bottom of the flood control channel above Willowside Drive. As all work will be accomplished below the ordinary high water mark, vernal pool species are not a viable concern for this action. Suitable habitat (vernal pools, vernal swales) not present at gravel bar removal locations. No special status species observed to date inside or adjacent to the project footprint. Later surveys will evaluate emergent habitat in and adjacent to the project footprint for suitability to support white sedge and Sonoma alopecurus. The pictures below illustrate site conditions at this project location.


- **Windsor 1.**
  This site is at the downstream end of the Water Agency's easement on Windsor Creek Reach 1. This section of creek supports a comparatively generous riparian canopy of native tree species, in-channel emergent wetland habitat with non-native grasses and forbs dominating the side banks. Oregon ash (*Fraxinus latifolia*) is one of the dominant tree species establishing and being retained along this section of flood control channel. Sediment perennially accumulates in this area and is restricting flow through the culverts. Emergent wetland habitat occurs on the sediment wedge dominated by mint (*Mentha* sp.), water plantain (*Alsima lanceolata*), and ditch carrot (*Oenanthe sarmentosa*). Suitable habitat (vernal pools, vernal swales) not present at sediment removal locations. This area has been surveyed in 2011 and 2012. To date no special status species observed to date inside or adjacent to the project footprint. Still evaluating and surveying wetland emergent habitat in and adjacent to the project footprint for suitability to support white sedge and Sonoma alopecurus. The pictures below illustrate site conditions at this project location.

Follow-up surveys will be conducted in May (by the 15th) and in early June 2012. If listed plants such as Sonoma sunshine, goldfields, or meadowfoam are observed during plant surveys, the USFWS and CDFG will be notified prior to project implementation. If effects are unavoidable through re-design or flagging, the plants will be transplanted at an appropriate and secure location on- or off-site. Transplantation will be conducted in consultation with the USFWS and/or CDFG. If transplantation is not feasible or not approved by the Service or CDFG, then credits will be purchased from a Service or DFG-approved preservation bank.

Table 3-3. 2011 Projects on Reaches requiring Listed Plant Species Surveys

Location	Target Species for Survey
Reach Scale & Localized Sediment	
Laguna 1	Sebastopol meadowfoam, Burke's goldfields, Sonoma sunshine, many - flowered navarretia
Laguna 5	Sebastopol meadowfoam, Burke's goldfields, Sonoma sunshine, many-flowered navarretia
Santa Rosa 1	Sebastopol meadowfoam, Burke's goldfields, Sonoma sunshine, many-flowered navarretia
Santa Rosa 2	Sebastopol meadowfoam, Burke's goldfields, Sonoma sunshine, many-flowered navarretia
Windsor 1	Sebastopol meadowfoam, Burke's goldfields, Sonoma sunshine, many-flowered navarretia

Foothill Yellow-legged Frog

Pre-construction surveys for foothill yellow-legged frog are required at Cook 2 and Copeland 5.

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 CDFG 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 CDFG regulations and permits.

4. CDFG 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 CRLF measures to avoid potential impacts to frogs during vegetation maintenance activities occurring within potential habitat for the species:

1. For vegetation maintenance activities occurring in areas where foothill yellow-legged frog has been identified as potentially occurring (see SMP Manual Table 7-3), a qualified biologist will conduct pre-maintenance surveys of aquatic habitats and identify potential foothill yellow-legged frog breeding and foraging areas. These areas will be flagged and avoided by maintenance crews.

2. Based on surveys, if foothill yellow-legged frog is identified as potentially present, then field crews will access channel banks by foot only and will avoid entering open water. Vehicles will be restricted to existing access roads.

Western Pond Turtle

Western pond turtles potentially occur in all SMP project sites listed in the 2012 Annual Notification except Piner Creek Reaches 6 and 7 and Coleman Creek Reach 1. These sites will be surveyed prior to construction activities. For vegetation maintenance activities occurring in areas where turtles have been identified as potentially occurring, a qualified biologist will conduct pre-maintenance surveys for turtles. The timing of surveys will be coordinated with the Maintenance Coordinator and be completed immediately prior to construction.

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-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.

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 CDFG 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 CDFG regulations and permits.

4. CDFG will be notified within 48 hours of any western pond turtle observations.

3D. Cultural Resources – Potential Area of Effect

Results of Site Surveys for Cultural Resources

One of the Water Agency's 2012 projects 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 a 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, Water Agency staff conducted a pedestrian survey for one bank stabilization site on April 10, 2012. These investigations concluded that there are no known cultural resources within the area of potential effect (APE) of the project sites. However, prior to the commencement of ground-disturbing activities, all Water Agency personnel will receive training on the importance of protecting cultural resources (BMP CR-5: *Staff Cultural Resources Training Program*), and if buried resources are accidentally discovered during ground-disturbing activities, appropriate measures will be implemented. These measures (BMPs CR-3: *Previously Undiscovered Cultural Resources* and CR-4: *Previously Undiscovered Paleontological Resources*) are described in detail in Chapter 7 of the SMP Manual.

Section 4
Annual Mitigation Plan

This section describes the mitigation activities proposed for the 2012 maintenance projects. Sections 4A and 4B describe on-site and off-site mitigation activities, respectively. Table 4-6 summarizes maintenance project funding for the off-site Watershed Partnerships Program (WPP).

Table 4-5 provides summary statistics for areas impacted and mitigated for the 2012 maintenance season. Details project descriptions for each WPP projects utilized for the 2012 field season are included in Appendix G.

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

On-site impact mitigation will be implemented at the specific project reach where the maintenance work was conducted. SMP Chapter 8 provides detail 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 restoration aims to add to existing vegetation and replace habitat that was disturbed during sediment removal or bank work. In general restoration is intended to shepherd the riparian zone through a successional process that incorporates transitioning the vegetation from an early seral state to a climax. 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 and grass understory) along with re-establishing instream graminoids (aquatic sedges, rushes and grasses). If a given reach has few trees or shrubs, then restoration focuses on establishing riparian habitat following the conceptual planting design (Figure 8-3 in the SMP Manual). Commonly, projects follow the

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

Table 4-1: Tier 1 Mitigation Summary

MAINTENANCE PROJECT	RESTORATION ACTIVITY
Localized Scale Sediment Removal	
Laguna de Santa Rosa 5	Upper bank plantings –upland and riparian trees and shrubs Toe riparian tree and shrub plantings Establishing native grasses Establishing instream graminoids
Russell 1	Upper bank plantings –upland and riparian trees and shrubs Toe riparian tree and shrub plantings Establishing native grasses Establishing instream graminoids
Reach Scale Sediment Removal	
Coleman 1	Upper bank plantings -upland and riparian trees and shrubs Toe riparian tree and shrub plantings Establishing native grasses Establishing instream graminoids
East Washington 1 and 2	Upper bank plantings -upland and riparian trees and shrubs Toe riparian tree and shrub plantings Establishing native grasses Establishing instream graminoids
Gossage 1,2 and 3	Upper bank plantings -upland and riparian trees and shrubs Toe riparian tree and shrub plantings Establishing native grasses Establishing instream graminoids
Laguna de Santa Rosa 1	Upper bank plantings -upland and riparian trees and shrubs Toe riparian tree and shrub plantings Thalweg planting of riparian trees (both sides) Mid-shelf planting riparian trees and shrubs Establishing native grasses Establishing instream graminoids
Lichau 2 and 3	Upper bank plantings -upland and riparian trees and shrubs Toe riparian tree and shrub plantings Establishing native grasses Establishing instream graminoids
Lower East Fork Fryer Creek	Toe riparian tree Establishing instream graminoids
Santa Rosa 1	Upper bank plantings -upland and riparian trees and shrubs Toe riparian tree and shrub plantings Establishing native grasses Establishing instream graminoids

MAINTENANCE PROJECT	RESTORATION ACTIVITY
Santa Rosa 2	Upper bank plantings -upland and riparian trees and shrubs Toe riparian tree and shrub plantings Establishing native grasses Establishing instream graminoids
Sediment Basin/Instream Basin Sediment	
Adobe 2	None*
Colgan 3 & 4	Tier 3
Cook 2	none
Copeland 3 & 4	none
Copeland 4 & 5	none
Five 1	none
Hinebaugh 1 & 2	Tier 3
Hinebaugh 3 & 4	Tier 3
Hinebaugh 4 & 5	Tier 3
Piner 4 & 5	Tier 3
Piner 6	Tier 3
Piner 7	Tier 3
Washington 5	Tier 3
Wilfred 1	none
Windsor 1	Tier 3
Reservoir Inlet Clearing	
Brush	none
Matanzas	none
Piner	none
Santa Rosa	none
Santa Rosa Div. 1 fish ladder	Tier 3
Bank repairs	
Russell 1	Toe riparian tree and shrub plantings Establishing native grasses Establishing instream graminoids

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

Bank Repairs

In general restoration of bank repair sites is implemented consistent with SMP Manual planting standards (Chapter 8). Generally, however, restoration is limited to the area disturbed and locations immediately adjacent to the repair. In most cases work involved requires filling and minor use of rock revetment in combination with installation of landscape fabric and plant species anticipated to further anchor the toe of the slope. Often this work occurs slightly above, at, or below the ordinary high water mark for any given channel. As a result most disturbances related to a bank repair is on the side slope of the channel or at the toe. Habitat generally disturbed by these repairs is instream emergent wetland habitat, open water habitat, or ruderal grassland on the side slopes. The SMP and current permits mandate that restoration be "in-kind" for the type of habitat disturbed at a 1 to 1 replacement ratio with a 75 percent success criterion after five years of monitoring and maintenance.

The restoration approach following bank stabilization is to plant riparian tree and instream graminoid species along the new toe and seed the disturbed portion of the bank with a native perennial grass mixture. Species such as, red and Pacific willows (*Salix laevigata/lasiandra lucida*), white alder (*Alnus rhombifolia*), Fremont poplar (*Populus fremontii*) and Oregon ash (*Fraxinus latifolia*) are installed at or slightly above the bottom of the channel (toe). Trees are installed on 20 foot centers on both sides of the channel in an alternating arrangement. Instream and wetland fringe graminoids are installed at the toe on 10 foot centers. Suitable species for use at the toe in flood control channels include Santa Barbara sedge (*Carex barbarae*), torrent sedge (*Carex nudata*), small-fruited bulrush (*Scirpus microcarpus*), tule (*Scirpus acutus occidentalis/ S. californica),* rushes (*Juncus* sp.) and creeping blue rye (*Leymus triticoides*). This strategy and other planting strategies will be articulated in the SMP Manual when it is updated in 2015.

For the 2012 maintenance year, projects either along concrete lined sections of channel or in previously established sediment removal areas or intended to serve as sediment removal areas in the future include the following (note that the date of establishment in include after the reach designation in parenthesis):

- Adobe 2 (2009)
- Colgan 3 & 4 (2012)
- Cook 2 (2008)
- Copeland 3 & 4 (2008)
- Copeland 4 & 5 (2008)
- Five 1 (2010)
- Hinebaugh 1 & 2 (2012)
- Hinebaugh 3 & 4 (2012)
- Hinebaugh 4 & 5 (2012)
- Hinebaugh 5 at railroad crossing (2012)
- Piner 4 & 5 (2012)
- Piner 6 at Piner Rd. (2012)
- Piner 7 at Hopper Ave. (2012)
- Washington 5 (2012)
- Wilfred 1 (2009)
- Windsor 1 (2012)
- Brush Creek Reservoir inlet (2011)
- Matanzas Creek Reservoir Inlet (2011)
- Piner Creek reservoir Inlet (2011)
- Santa Rosa Creek Reservoir (2011)
- Santa Rosa Div. 1 fish ladder (2012)

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

As described in the SMP Manual, off-site mitigation is provided to address the temporal gap between when on-site impacts occur and when on-site mitigation is provided. Tier 2 mitigation provides in-kind mitigation at neighboring SMP reaches that afford an opportunity for mitigation. Tier 3 mitigation projects provide restorative and mitigating watershed solutions that address SMP impacts at an off-site location. Tier 3 mitigation is implemented through a 10% matching contribution of SMP maintenance costs. 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 2012 maintenance activities by conducting in-kind riparian and stream restoration in geographic proximity to this year's SMP maintenance. 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 2012 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. 2012 WPP project locations are designated in Figure 4-1 below. WPP project proposals are included in Appendix C. Cost and area accounting for 2012 WPP proposed projects is indicated in Tables 4-2 through 4-5.

Construction costs and the quantity of WPP projects needed each year to meet the temporal need varies. On average the Water Agency's ten percent 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 ten percent of the area affected for each given year, specific partner's propose projects of a larger scale than the mitigation needed. For this reason the Water Agency has contributed between $200,000 and $250,000 to the WPP each year since 2008. This approach has provided for watershed restoration to be accomplished in advance of the impacts associated with stream maintenance, and has provided vitally needed support for local restoration nonprofits. Additionally, this approach has vastly increased program flexibility and has provided a way to bank temporal mitigation in advance of the actual work. The banked mitigation accounts can then be assigned as needed to appropriate impacts dependant on regulator approval.

Figure 4-1: General Location Map for the 2011 Off-site (Tier 2 and 3) mitigation projects.

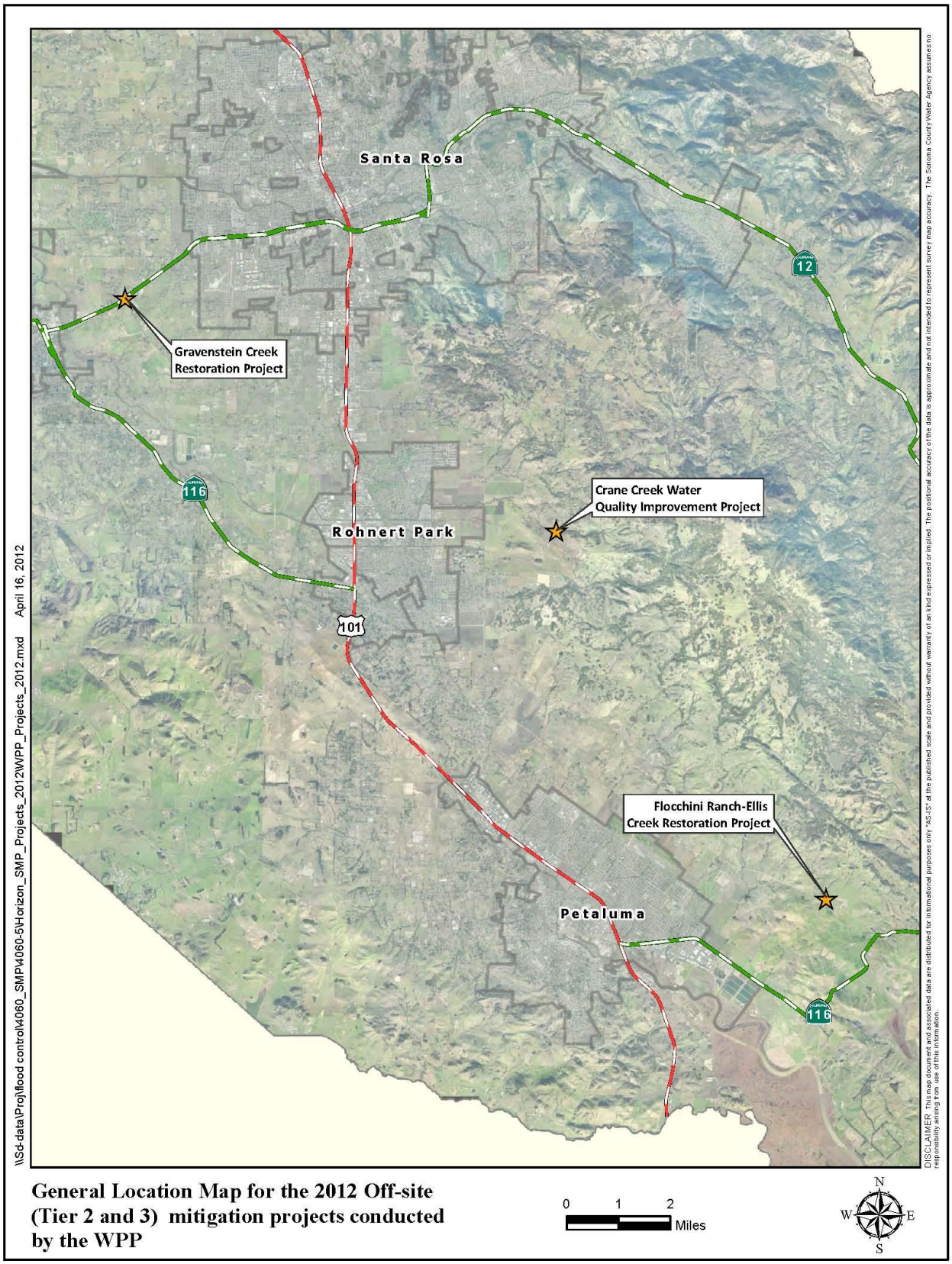

Table 4-2: List of Tier 3 Restoration Projects

Project Name	Project Size	Project Cost	Year Completed	Project Purpose
Laguna de Santa Rosa Foundation: 2012 Gravenstein Creek Restoration Project	0.63 acres	$25,000	2012	Invasive plant removal and plant installation on tributary channel to the Laguna de Santa Rosa, utilizing students, teachers from SSU, SRJC, and the City of Santa Rosa
Sotoyome RCD: 2012 Crane Creek Riparian Enhancement and Erosion Control Project	9.8 acres	$130,000	2013	Planting of native vegetation to improve habitat quality and reduce sediment inputs, utilizing STRAW, RCD and CCNB
PRBO: 2012 Ellis Creek Restoration Project (Zone 2A)	0.69 acres	$49,841	2013	Bank stabilization, invasive plant removal and installation of native trees and shrubs utilizing STRAW and SSCRCD
Totals	**11.12 acres**	**$204,841**		

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

Project	Cost	Off-Site Mitigation Contribution
Localized Sediment Removal Projects		
Laguna 5	$29,224	$2,922
Russell Creek 1	$3,913	$391
Reach Scale Sediment Removal Projects		
Coleman 2	$39,370	$3,937
E. Washington Creek 2 (Zone2A)	$49,362	$4,936
Gossage Creek 1, 2 and 3	$208,016	$20,802
Laguna de Santa Rosa 1	$180,320	$18,320
Lichau Creek 2 and 3 (Zone 2A)	$50,992	$5,099
Lower E. Fork Fryer Creek (Zone 3A)	$45,215	$4,522
Santa Rosa 1 and 2	$353,622	$35,362
Sediment Basin/Instream Basin Clearing Projects		
Adobe Creek (Zone 2A)	$39,895	$3,990
Colgan Creek at Stony Point Rd.	$15,773	$1,577
Cook Creek	$7,979	$798
Copeland Creek at Country Club	$21,278	$2,128
Copeland Creek at Snyder	$39,895	$3,990
Five 1 at Snyder Ln.	$5,319	$532
Hinebaugh Creek at Labath Rd.	$21,834	$2,183
Hinebaugh Creek at Commerce Blvd.	$12,418	$1,242
Hinebaugh Creek at State Farm Dr.	$17,074	$1,707
Hinebaugh Creek at railroad tracks	$10,762	$1,076
Piner 4, 5, 6 and 7	$52,383	$5,238
Washington Creek 5 (Zone 2A)	$18,257	$1,826

Project	Cost	Off-Site Mitigation Contribution
Wilfred Creek at Snyder	$5,319	$532
Windsor 1	$20,309	$2,031
Reservoir Inlet Clearing Projects		
Brush Creek Reservoir	$14,955	$1,496
Matanzas Creek Reservoir	$14,955	$1,469
Piner Creek Reservoir	$14,955	$1,496
Santa Rosa Creek (Spring Lake) Reservoir with Fish Ladder	$5,982	$598
Fish ladder in Santa Rosa Div. 1	$1,077	$108
Bank Repair Projects		
Russell Creek 1	$3,914	$391
Cost and Mitigation Totals		
Zone 1A total	$1,100,686	$110,069
Zone 2A total	$158,506	$15,851
Zone 3A total	$45,215	$4,522
Maintenance Cost and Mitigation Requirements (Total)	***$1,304,407***	***$130,441***

*located in Zone 1A unless otherwise denoted

Table 4-4. 2012 Proposed Mitigation Projects

2012 WPP Mitigation Projects	
Laguna de Santa Rosa Foundation: Gravenstein Creek	$25,000
Sotoyome RCD: Crane Creek	$130,000
PRBO: Ellis Creek (Zone 2A)	$49,841
WPP Zone 1A total	$155,000
WPP Zone 2A total	$49,841
Off Site Mitigation Funding provided by SCWA in 2012	**$204,841**
2012 Off Site Mitigation Funding Requirement	**$130,441**
Carry-over Mitigation Projects from 2012	**$74,400**
Carry-over Mitigation Projects from 2011	**$115,130**
Total Funded Mitigation Credit Available to Apply to Subsequent Seasons	**$189,530**

Table 4-5. Accounting of Impacts and Mitigation

Project by Type	Impact (acres)	Mitigation (acres)	Ratio of Mitigation to Impact
On-Site Mitigation			
Localized Sediment Removal			
Laguna de Santa Rosa 5	0.11	0.11	1:1
Russell Creek 1	0.02	0.02	1:1
Reach-Scale Sediment Removal			
Coleman Creek 1	0.39	0.39	1:1
E. Washington Creek 2 – (Zone 2A)	0.27	0.27	1:1
Gossage Creek 1, 2 & 3	2.68	2.68	1:1
Laguna de Santa Rosa 1	1.00	1.00	1:1
Lichau Creek 2 & 3 – (Zone 2A)	0.46	0.46	1:1
Lower East Fork Fryer Creek – (Zone 3A)	0.05	0.05	1:1
Santa Rosa Creek 1	0.69	0.69	1:1
Santa Rosa Creek 2	4.55	4.55	1:1
Sediment Basin/Instream Basin Clearing			
Adobe Creek 2 - (Zone 2A)	n/a	n/a	Sed-Basin**
Colgan Creek 3 and 4	0.03	0.03	Sed-Basin
Cook Creek 2	n/a	n/a	Sed-Basin
Copeland Creek 3&4	n/a	n/a	Sed-Basin
Copeland Creek 4&5	n/a	n/a	Sed-Basin
Five Creek 1	n/a	n/a	Sed-Basin
Hinebaugh Creek 1 & 2	0.08	0.08	Sed-Basin
Hinebaugh Creek 3 & 4	0.09	0.09	Sed-Basin
Hinebaugh Creek 4 & 5	0.04	0.04	Sed-Basin
Hinebaugh Creek 5	0.03	0.03	Sed-Basin
Piner Creek 4 and 5	0.03	0.03	1:1
Piner Creek 6	0.01	0.01	1:1
Piner Creek 7	0.02	0.02	1:1
Washington Creek 5 - (Zone 2A)	0.12	0.12	Sed-Basin
Wilfred Creek 1	n/a	n/a	Sed-Basin
Windsor Creek 1	0.11	0.11	Sed-Basin
Reservoir Inlet Clearing			
Brush Creek Reservoir	n/a	n/a	Sed-Basin
Matanzas Creek Reservoir	n/a	n/a	Sed-Basin
Piner Creek Reservoir	n/a	n/a	Sed-Basin
Santa Rosa Creek (Spring Lake) Reservoir	n/a	n/a	Sed-Basin
Santa Rosa Div. 1 fish ladder	0.006	0.006	1:1
Bank Stabilization			
Russell Creek 1	0.001	0.001	1:1
Total	**10.8**	**10.8**	**1:1**
Off-Site Mitigation (Projects new for 2012)			
Laguna de Santa Rosa Foundation: 2012 Gravenstein Creek		0.63	
Sotoyome RCD: 2012 Crane Creek		9.8	
PRBO: 2012 Ellis Creek		0.69	
New 2012 Offsite Mitigation Project(s) total		***11.12***	

2012 Impact to Mitigation Accounting	Impact (acres)	Mitigated (acres)	Replacement Ratio
Total Tier 1 Impact	**10.8**	**10.8**	**1:1**
Additional Required Temporal Mitigation (10% of 10.8)		**1.08**	**1:0.01**
Total Mitigation Area Required		**11.9**	
Total mitigation area required includes all affected Tier 1 areas (10.8 acres) plus 10 percent additional area (1.08 acres)			
Total Required Mitigation Area for 2012 (Tier 1 Impacts +10 % for Temporal Impacts) (10.8 + 1.08) (10.8/11.9)		**11.9**	**1:1.1**
2012 Tier 2 and 3 Contribution Total (Temporal Mitigation)		**11.12**	
2012 Tier 2 and Tier 3 Requirement		**1.08**	
2012 Temporal Mitigation Less the Required 10 Percent Area (11.12-1.08)		**10.4**	
2012 Tier 2 and 3 Mitigation Area Carryover (11.12-1.08)		**10.4**	
2011 Tier 2 and 3 Mitigation Area Carryover		**5.69**	
2011-2012 Combined Tier 2 and Tier 3 Mitigation Carryover (5.69+10.4)		**16.1**	

** Sed-Basins are instream or 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.

Section 5
Annual Sediment Disposal Plan

The 2012 annual sediment testing and disposal plan was developed in collaboration with the North Coast Regional Water Quality Control Board (Regional Board). 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 SCWA and through discussions with the Regional Board, the testing requirements were refined in 2010 to better target pollutant sources.

This section provides an overview of the refined sediment testing plan and the proposed disposal sites for the 2012 maintenance projects. At this time (April 28, 2012), sediment test results are pending and will be provided to regulatory agencies, once lab results are received, anticipated in mid-May.

5A. Sediment Sampling and Testing

Approach and Methods

At the time the MRP was developed, little was known regarding the nature and extent of potential environmental pollutants in stream sediments within the SMP area. Thus, the MRP was developed with a conservative and comprehensive analyte list that includes Resource Conservation and Recovery Act (RCRA) priority pollutants and emerging pollutants of concern.

The 2009 maintenance year was the first year which the MRP sediment testing requirements were implemented. Sediment testing results from 2009 varied due to methodology consistency issues at the laboratory and using different sediment sampling protocols during collection. In addition to these issues, in 2009 the Regional Board was uncertain about which standards the sediment disposal site should be held to. As a result, the 2009 sediment disposal site was not approved for use in 2009, and the majority of 2009 sediment removal activities were not conducted.

In preparation for the 2010 maintenance season, the Water Agency met with the Regional Board on two occasions in early 2010 to review the MRP sampling requirements, and the required analyte testing list in particular. Through discussions with Regional Board staff,

the analyte list was refined to better detect sediment characteristics relevant to the SMP program area.

Based on guidance from the Regional Board, the analyte list was refined to consider watershed position, surrounding land use, sediment type (gravel, sand, clay content) on site-by-site bases. This screening approach based on these watershed conditions improved the methodology for detecting anthropogenic contaminants (as opposed to naturally occurring contaminants). For example, maintenance sites located in or near industrial areas in the lower watershed would be tested for a wider range of potential contaminants; whereas, sites located in residential areas in the upper watershed would be tested for a smaller range of potential contaminants. Refinements to the MRP are described further below and illustrated in Tables 5-1 and 5-2.

Beginning in 2010, sediment sampling techniques were standardized and improved compared to previous sediment sampling efforts. Additional time was spent to train the sampling crew in proper decontamination and handing of sampling equipment and on proper sampling techniques. All equipment that contacts sediment samples were decontaminated with Alconox soap (an anionic, residue-free detergent) and isopropyl alcohol, then thoroughly rinsed with deionized water. The sampling equipment was rewashed with Alconox soap and thoroughly rinsed with deionized water immediately prior to and between each sampling event (between sampling sites, but not between composite samples). Latex-free gloves were worn by the sampling crew at all times. Decontaminated equipment and the lab sample containers were transported to and from the decontamination area and the sampling site in a plastic bag to prevent contamination.

To ensure the quality of test results received this year would meet MRP reporting level requirements, the Water Agency contracted with Columbia Analytical Laboratories (CAS) in Kelso, Washington. This laboratory specializes in analysis of freshwater sediments and operates a specialized lab for low-level detection of dioxin.

Analytes Tested by Site

Table 5-1 includes the EPA test methods and reporting limits applied to the 2010 sediment samples. This list reflects the modifications made to the original 2009 MRP analyte list. The specific revisions made to the MRP analyte table are listed below.

- Total Metals – list reduced to the following 9 metals consistent with Method 6020A for arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc.
- Volatile Organic Compounds (VOCs) – Method 8260B (no change)
- Polycyclic Aromatic Hydrocarbons (PAHs) – Method 8270C (using more targeted subset within broad Method 8270C list)
- Polychlorinated biphenyls (PCBs) and Organochlorine Pesticides – Method 8082A instead of 8081 (no analysis for Kepone because it is not used in the U.S.)

- Organophosphorus Pesticides – Method 8270C instead of 8141A (no analysis for azinphos-ethyl, ethion, famphur, simazine, thionazin because these pesticides are not used in the U.S.)
- Dioxin/Furans – Method 8290 (lab that can properly meet the detection limits)
- Total Organic Carbon – added to better detect for anthropogenic hydrocarbons in conjunction with Method 8270C (PAHs) which substitutes for TPH testing.
- pH, fluoride, asbestos, nonylphenol – no change from MRP

Table 5-1: 2010 SMP Analyte List

Analyte and EPA Method[1]	Reporting Limit for Soil[2] (mg/kg)	Analyte and EPA Method[1] (cont.)	Reporting Limit for Soil[2] (mg/kg)
pH – Method 9045	pH Units		
Total Metals – Method 6020A			
Arsenic	0.086	Mercury (or 7470/7471- cold vapor)	0.05
Cadmium	0.12	Nickel	1.1
Chromium	0.66	Selenium	0.074
Copper	0.26	Zinc	2.4
Lead	1.1		
Polychlorinated biphenyls (PCBs) – Method 8082A			
8 - 2,4'-Dichlorobiphenyl	0.002	126 - 3,3',4,4',5-Pentachlorobiphenyl	0.002
18 - 2,2',5-Trichlorobiphenyl	0.002	128 - 2,2',3,3',4,4'-Hexachlorobiphenyl	0.002
28 - 2,4,4'-Trichlorobiphenyl	0.002	138 - 2,2',3,4,4',5'-Hexachlorobiphenyl	0.002
44 - 2,2',3,5'-Tetrachlorobiphenyl	0.002	153 - 2,2',4,4',5,5'-Hexachlorobiphenyl	0.002
52 - 2,2',5,5'-Tetrachlorobiphenyl	0.002	170 - 2,2',3,3',4,4',5-Heptachlorobiphenyl	0.002
66 - 2,3',4,4'-Tetrachlorobiphenyl	0.002	180 - 2,2',3,4,4',5,5'-Heptachlorobiphenyl	0.002
77 - 3,3',4,4'-Tetrachlorobiphenyl	0.002	187 - 2,2',3,4',5,5',6-Heptachlorobiphenyl	0.002
101 - 2,2',4,5,5'-Pentachlorobiphenyl	0.002	195 - 2,2',3,3',4,4',5,6-Octachlorobiphenyl	0.002
105 - 2,3,3',4,4'-Pentachlorobiphenyl	0.002	206 - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	0.002
118 - 2,3',4,4',5-Pentachlorobiphenyl	0.002	209 - 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl	0.002
Volatile Organic Compounds (VOCs) – Method 8260B (MDL and MRLs may be elevated due to moisture content)			
Acetone	0.020	1,1-Dichloropropene	0.0050
Benzene	0.0050	cis-1,3-Dichloropropene	0.0050
Bromobenzene	0.0050	trans-1,3-Dichloropropene	0.0050
Bromochloromethane	0.0050	Ethylbenzene	0.0050
Bromodichloromethane	0.0050	Hexachlorobutadiene	0.0050
Bromoform	0.0050	Isopropylbenzene	0.0050
Bromomethane	0.0050	p-Isopropyltoluene	0.0050

Table 5-1: 2010 SMP Analyte List

Analyte and EPA Method[1]	Reporting Limit for Soil[2] (mg/kg)	Analyte and EPA Method[1] (cont.)	Reporting Limit for Soil[2] (mg/kg)
n-Butylbenzene	0.0050	Methyl ethyl ketone	0.015
sec-Butylbenzene	0.0050	Methyl isobutyl ketone	0.010
tert-Bertylbenzene	0.0050	Methyl tert-butyl ether (MTBE)	0.0050
Carbon tetrachloride	0.0050	Methylene chloride	0.0050
Chlorobenzene	0.0050	Naphthalene	0.0050
Chloroethane	0.0050	n-Propylbenzene	0.0050
Chloroform	0.0050	Styrene	0.0050
Chloromethane	0.0050	1,1,1,2-Tetrachloroethane	0.0050
2-Chlorotoluene	0.0050	1,1,2,2-Tetrachloroethane	0.0050
4-Chlorotoluene	0.0050	Tetrachloroethene	0.0050
Dibromochloromethane	0.0050	Toluene	0.0050
1,2-Dibromo-3-chloropropane	0.0050	1,2,3-Trichlorobenzene	0.0050
1,2-Dibromoethane	0.0050	1,2,4-Trichlorobenzene	0.0050
Dibromomethane	0.0050	1,1,1-Trichloroethane	0.0050
1,2-Dichlorobenzene	0.0050	1,1,2-Trichloroethane	0.0050
1,3-Dichlorobenzene	0.0050	Trichloroethene	0.0050
1,4-Dichlorobenzene	0.0050	Trichlorofluoromethane	0.0050
Dichlorodifluoromethane	0.0050	Trichlorotrifluoroethane	0.0050
1,1-Dichloroethane	0.0050	1,2,3-Trichloropropane	0.0050
1,2-Dichloroethane	0.0050	1,2,4-Trimethylbenzene	0.0050
1,1-Dichloroethene	0.0050	1,3,5-Trimethylbenzene	0.0050
cis-1,2-Dichloroethene	0.0050	Vinyl chloride	0.0050
trans-1,2-Dichloroethene	0.0050	m,p-Xylene	0.0050
1,2-Dichloropropane	0.0050	o-Xylene	0.0050
1,3-Dichloropropane	0.0050	Xylenes (total)	0.0050
Polycyclic Aromatic Hydrocarbons (PAHs) – Method 8270C			
Naphthalene	0.0050	C1-Fluoranthenes/Pyrenes	0.0050
C1-Naphthalenes	0.0050	C2-Fluoranthenes/Pyrenes	0.0050
C2-Naphthalenes	0.0050	C3-Fluoranthenes/Pyrenes	0.0050
C3-Naphthalenes	0.0050	C4-Fluoranthenes/Pyrenes	0.0050
C4-Naphthalenes	0.0050	Benz[a]anthracene	0.0050
Biphenyl	0.0050	Chrysene	0.0050
Acenaphthylene	0.0050	C1-Chrysenes	0.0050
Acenaphthene	0.0050	C2-Chrysenes	0.0050
Fluorene	0.0050	C3-Chrysenes	0.0050
C1-Fluorenes	0.0050	C4-Chrysenes	0.0050
C2-Fluorenes	0.0050	Benzo[b]fluoranthene	0.0050
C3-Fluorenes	0.0050	Benzo[k]fluoranthene	0.0050
Anthracene	0.0050	Benzo[e]pyrene	0.0050
Phenanthrene	0.0050	Benzo[a]pyrene	0.0050
C1-Phenanthrenes/Anthracenes	0.0050	Perylene	0.0050
C2-Phenanthrenes/Anthracenes	0.0050	Indeno[1,2,3-cd]pyrene	0.0050
C3-Phenanthrenes/Anthracenes	0.0050	Dibenz[a,h]anthracene	0.0050
C4-Phenanthrenes/Anthracenes	0.0050	Benzo[g,h,i]perylene	0.0050
Fluoranthene	0.0050	Benz[a]anthracene	0.0050
Pyrene	0.0050		
Organochlorine pesticides – Method 8181A			

Table 5-1: 2010 SMP Analyte List

Analyte and EPA Method[1]	Reporting Limit for Soil[2] (mg/kg)	Analyte and EPA Method[1] (cont.)	Reporting Limit for Soil[2] (mg/kg)
Aldrin	0.0050	Endosulfan I	0.0050
α-HCH (hexachlorocyclohexane)	0.0050	Endosulfan II	0.0050
β-HCH	0.0050	Endosulfan sulfate	0.0050
γ-HCH (Lindane)	0.0050	Endrin	0.0050
δ-HCH	0.0050	Endrin aldehyde	0.0050
Chlordane (tech)	0.20	Heptachlor	0.0050
4,4'-DDD	0.0050	Heptachlor epoxide	0.0050
4,4'-DDE	0.0050	Methoxychlor	0.0050
4,4'-DDT	0.0050	Mirex	0.10
Dieldrin	0.0050	Toxaphene	0.20
Organophosphorous pesticides – Method 8270C			
Azinphos-methyl	0.10	Fenthion	0.025
Bolstar (Sulprofos)	0.050	Malathion	0.025
Chlorpyrifos	0.025	Mevinphos	0.050
Coumaphos	0.10	Parathion, ethyl	0.025
Demeton-O	0.050	Parathion, methyl	0.025
Demeton-S	0.050	Phorate	0.025
Diazinon	0.025	Ronnel	0.050
Dichlorvos (DDVP)	0.050	Stirophos	0.025
Dimethoate	0.10	Tokuthion	0.050
Disulfoton	0.025	Trichloronate	0.0050
EPN	0.050		
Ethoprop	0.050		
Nonylphenol (GC/MS SIM) ASTM	0.2		
Asbestos	1% (PLM EPA Qualitative Method) 0.005 to 0.001 (TEM by EPA Quantitative Method)		
Fluoride – Method 340.2	1 mg/L in water		
Total organic carbon (TOC) – Method 9060 (%)	0.1		
Dioxins/Furans – Method 8290[3]	1.0 pg/g		

[1] The most recent version of EPA's Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", also known as SW-846, will be used with modification to achieve lower detection limits, and reduce potential laboratory contamination and sample matrix interferences.

[2] All laboratory analytical reports will include the detection and reporting limits, any flags, and a QA/QC report. All results will be reported as dry-weight concentrations. Electronic (PDF) submittals and Electronic Data Deliverables (EDD) as MS Excel are preferred.

[3] For dioxin/furans all congeners and their TEQs will be reported.

Approach for 2012 Sediment Sampling and Testing

For the 2012 season, sediment sampling and testing will be conducted according to the requirements of the MRP and as detailed in the Sediment Sampling and Analysis Guidelines in Appendix B of the SMP Manual. 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 2 below. Notes to explain the sampling proposal are also provided. As indicated in the table, the "full suite" of analytes includes those listed in Table 3 of the amended MRP. However,

analysis for TPH and PCB congeners will not be conducted, per Regional Board approvals received on February 24, 2012. Test results since 2010 have not detected elevated traces of PCB congeners in any of the samples collected from a wide variety of locations. Detected levels of TPH's since 2010 indicated that all measured hydrocarbon concentrations detected originated from terrestrial plants, not anthropogenic petroleum or petroleum-based products. The "subset" list of analytes includes metals listed in Table 3, total organic carbon, and total solids.

Table 5-2: Proposed Sediment Sampling Plan for 2012

Maintenance Reach and Type Number (see SMP Manual for reach locations)	**Estimated Amount of Sediment to be Removed (cubic yards)**	**Number and Group of Analytes to be Tested (full suite or subset)**	**Comments**
Reach Scale			
Laguna de Santa Rosa 1	4,533	2 – Full suite	The samples were taken in the upper section downstream of Stony Point Road and in the lower section of the work area
Gossage 2/3	5,270	2- Full suite	The samples were collected from the upstream end of work site, closer to Hwy 116, and the downstream end of the work site, closer to Lowell Avenue
Lichau 2/3	740	2- Full suite	The samples were taken from the upstream end of work site and downstream end of worksite
East Washington 2	831	1- Full suite	A composite sample from the entire reach from McGregor Avenue to confluence with Washington Creek were taken
East Fork Fryer Creek	765	1- Full suite	The samples were collected on the downstream end of the work site
Localized			
Piner 6	99	1-Full suite	Downstream of the SMART tracks
Colgan 4	100	1- Subset	Culvert under Stony Point Road
Hinebaugh 1	211	1- Full suite	At Labath Ave. crossing. Sample from downstream end of box culvert
Hinebaugh 4	285	1–Full suite	At Commerce Ave. crossing. Sample from downstream end of box culvert
Sediment Basin/Instream Basin Clearing			
Five Creek at Snyder Lane	No sampling for 5 years		Annual site. Sampled in 2010
Wilfred Channel at Snyder Ln	No sampling for 5 years		Annual site. Sampled in 2009
Copeland Creek at Snyder Lane and Country Club Drive	1- Subset		No history of sampling.

Maintenance Reach and Type Number (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
Cook Creek Sediment Basin	1- Subset		No history of sampling.

Representative Sampling Photos

The exact locations of all the sediment sampling sites will be provided in a matrix along with the sample results. Below are two photos taken during sediment sampling events conducted in March and April 2012.

Colgan Creek 4 - Sampling Site (3/26/12)

Piner Creek 6 – Sampling Site (4/9/12)

5B. Sediment Disposal and Reuse

As described in the SMP Manual, the Water Agency will continue to make every effort to beneficially reuse as much of the excavated materials from the maintenance sites as possible. The Water Agency also supports local businesses and seeks partnerships with landowners and local businesses in close proximity to the maintenance sites who may wish to use the collected sediment. To support the 2012 maintenance activities, the Water Agency has identified three local landowners and businesses to potentially receive sediment excavated from the stream channels. These include Wheeler Zamaroni, Grab N' Grow Soil Products, and Ed Grossi. Each of these sites are upland and would not directly discharge water or sediment to surface waterbodies.

Use of these sites would be 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 2012.

- **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 2012 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 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 the Water Agency to accept sediment from stream channels in the SMP area. As approved by the Regional Board's Executive Officer, 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 was previously submitted to the regulatory agencies and does not expire until 2023.

- **BoDean Company**

  BoDean Company is a supplier of aggregate and asphalt to the Santa Rosa area and Napa County. The company operates the Mark West Quarry, the Forestville Quarry, and an asphalt plant in Santa Rosa. More information on the BoDean Company is available at their website: http://www.bodeancompany.com.

  Excavated material from Santa Rosa Creek would be taken to BoDean's Forestville plant located at 7888 Highway 116 in Forestville for sorting and reuse as fill for construction projects only.

Looking north from southeast corner of Grossi property to area where sediment will be placed for sorting and reuse (3/24/2010)

This site has the potential capacity to receive the entirety of sediment excavated from the 2012 maintenance sites. Sediment excavated from the Rohnert Park and Cotati areas would be taken to Grossi's property to reduce transportation costs. SMP sediment would not be used for agricultural purposes, such as growing feed grasses or reuse as potting soils. The sediment will be reused as fill material only.

- **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 will discuss this option further with Water Board staff.

Appendix A

Site Specific Photos

2012 Maintenance Activities: Site Specific Photographs

Localized Sediment Removal

Laguna 5. Looking downstream of East Cotati Ave. from bridge. Photo taken April 12, 2012.

Piner 4. Looking downstream from railroad tracks. Photo taken April 10, 2012.

Piner 5. Looking upstream from railroad tracks. Photo taken April 10, 2012.

Piner 6. Looking upstream of Piner Road from bridge. Photo taken April 10, 2012.

2012 Maintenance Activities: Site Specific Photographs

Piner 7. Looking upstream of Hopper Ave. from bridge. April 10, 2012.

Russell 1. From East end of project site looking downstream. Photo taken April 11, 2012.

2012 Maintenance Activities: Site Specific Photographs

Reach Scale Sediment Removal

Coleman 1. Looking upstream from Snyder Ln. Photo taken April 10, 2012.

E. Washington 1. Looking downstream from Maria Dr. Photo taken April 11, 2012.

2012 Maintenance Activities: Site Specific Photographs

East Washington 2. Looking downstream from McGregor Ave. Photo taken April 11, 2012.

Gossage 1. Looking downstream at Lowell Ave. Photo taken April 11, 2012.

2012 Maintenance Activities: Site Specific Photographs

Gossage 2. Looking upstream from West bank mid-reach. Photo taken April 11, 2012.

Gossage 3. Looking downstream from Hwy. 116. Photo taken April 11, 2012.

2012 Maintenance Activities: Site Specific Photographs

Laguna 1. Looking downstream from North bank near Stony Point Rd. Photo taken April 9, 2012.

Laguna 1. Looking upstream from North bank mid-reach. Photo taken April 9, 2012.

2012 Maintenance Activities: Site Specific Photographs

Lichau 2. Looking downstream from N. McDowell Extension. Photo taken April 11, 2012.

Lichau 3. Looking downstream from Old Redwood Hwy. Photo taken March 21, 2012.

2012 Maintenance Activities: Site Specific Photographs

Lower East Fork Fryer 1. Looking downstream from 2nd St. W. Photo taken April 11, 2012.

Lower East Fork Fryer 2. Looking upstream from Bettencourt St. Photo taken April 11, 2012.

2012 Maintenance Activities: Site Specific Photographs

Santa Rosa 1. Looking downstream from Willowside Rd. Photo taken April 12, 2012.

Santa Rosa 2. Looking upstream, from North bank, at West end of project site. Photo taken April 12, 2012.

2012 Maintenance Activities: Site Specific Photographs

Sediment Basin/Instream Basin Clearing Projects

Adobe 2. Looking upstream from S. McDowell Blvd. Photo taken April 11, 2012.

Colgan 3. Looking downstream of Stony Point Rd. Photo taken March 21, 2012.

2012 Maintenance Activities: Site Specific Photographs

Colgan 4. Looking upstream from Stony Point Rd. Photo taken March 21, 2012.

Cook 2. Looking upstream from Petaluma Hill Rd. Photo taken April 11, 2012.

2012 Maintenance Activities: Site Specific Photographs

Copeland 4. Looking upstream from Country Club Dr. Photo taken April 12, 2012.

Copeland 5. Looking upstream from Snyder Ln. Photo taken April 12, 2012.

2012 Maintenance Activities: Site Specific Photographs

Five 1. Looking downstream, near Snyder. Photo taken April 10, 2012.

Hinebaugh 2. Looking downstream towards Labath. Photo taken April 9, 2012.

2012 Maintenance Activities: Site Specific Photographs

Hinebaugh 3. Looking upstream from foot bridge. Photo taken April 9,212.

Hinebaugh 4. Looking downstream from State Farm Dr. Photo taken April 9, 2012.

2012 Maintenance Activities: Site Specific Photographs

Hinebaugh 5. Looking downstream from railroad tracks. Photo taken April 9, 2012.

Washington 5. Looking upstream from N. McDowell Blvd. Photo taken April 11, 2012.

2012 Maintenance Activities: Site Specific Photographs

Wilfred 1. Looking upstream towards Snyder Ln. Photo taken April 10, 2012.

Windsor 1. Looking downstream towards culverts at Starr Creek confluence. Photo taken April 11, 2012.

2012 Maintenance Activities: Site Specific Photographs

Reservoir Inlet Clearing

Brush Creek Reservoir Inlet. Photo taken April 21, 2011.

Matanzas Creek Reservoir Inlet. Photo taken April 11, 2012.

2012 Maintenance Activities: Site Specific Photographs

Piner Creek Reservoir Inlet. Photo taken April 11, 2012.

Santa Rosa Creek Reservoir Inlet. Photo taken April 11, 2012.

2012 Maintenance Activities: Site Specific Photographs

Bank Repair

Russell 1. Looking at bank repair from North bank. Photo taken April 11, 2012.

Appendix B

Project Maps with CNDDB Overlay

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

AVLCODE

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

Sebastopol meadowfoam
Limnanthes vinculans
California tiger salamander
Ambystoma californiense

California tiger salamander
Ambystoma californiense

California tiger salamander
Ambystoma californiense

California tiger salamander
Ambystoma californiense

white seaside tarplant
Hemizonia congesta ssp. congesta

Laguna4
Laguna5
Laguna6
Laguna7
Laguna De Santa Rosa
Cotati1
Cotati2
Cotati Creek

Redwood Dr
Commerce Blvd
Hwy 116
Old Redwood Hwy
Rohnert P
Cotati
Nicholas Ct
Arbor Ct
Meadowbrook Ct
Pinewood Way
Pinewood Ct
Gravenstein Way
Wilford Ln
Gilbert Way
Ahlstrom Dr
Ahlstrom Cir
Wilford Cir
St Joseph Way
W Cotati Ave
W Cotati Oaks Ct
Maple Ave
Clifford St
Oak Cir
Woodland Hills Dr
Amber Ln
Christensen Ct
El Rancho Dr
E School St
W School St
Juniper Dr
Terrace Dr
W Sierra Ave
Cypress Ave
Olof St
William St
Charles St
Ross St
Henry St
Page St
Delano St
Ramble Creek Dr
Kingston Ln
Nina Ct
Valparaiso Ave
Forno Way
Park Ave
Marsh Way
Village Ct
Rio Vista Ln
Las Casitas Dr
Sonoma Ln
Lorna Verde Ln
Chadwick Way
George St
E Sierra Ave
Arthur St
La Plaza
Matteri Cir
Burton Ct
Bruce Ave
Adobe Ln
Fiesta Ln
Bridgit Dr
Santa Barbara Ct
Bobbie Way
Boris Ct
Blair Ave
Bonnie Ave
Bonnie Ct
Burton Ave
Greenleaf Ln
Quisto Way
Tree Ct
Lipton Way
Lincoln Ave
La Salle Ave
Liberty Ave
Lisbon Ct
Lindsay Ave
Lakewood Ave
Linden Ave
Linden Ct
Larch Ave
Livery Ct
Lombard Way
Santero Way
Liana Ct
Lords Manor Way
Lancaster Dr
Laurelwood Dr
Limann Way
Loretto Ave
Benson Ln
McGinnis Cir
Schindler Ln
Olsen Ln
Mattson Ln
Eagle Dr
Robin Ave
Myrtle Ave
Wren Dr
Lark Dr
Flamingo Rd
Falcon Dr
Hahn Way
Landsdown Cir

101
116

\\Sd-data\proj\flood control\4060_SMP\4060-5\Horizon_SMP_Projects_2012\SMP_Template_2012.mxd 4/18/2012

Stream Maintenance Program Projects - 2012 Field Season

Figure
Cotati A

0 500 1,000 Feet

N W E S

SCWA GIS

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

AVLCODE

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

American badger
Taxidea taxus

marsh microseris
Microseris paludosa

western pond turtle
Emys marmorata

white seaside tarplant
Hemizonia congesta ssp. congesta

Orchard Creek
Petaluma River
Wiggins Hill Creek
Marin Creek
Norian Creek
Coronation Creek tributary 2

Goodwin Ave
Denman Rd
Baker Ln
Orchard Ln
N McDowell Blvd
Lichau3
Lichau2
Lichau1
Old Redwood Hwy
Willow Brook Ct
Montero Way
Redwood Way
Petaluma
Stony Point Rd
Park Ln
Club Cir
Drake Dr
Palm Ct
Rainsville Rd
101

\\Sd-data\proj\flood control\4060_SMP\4060-5\Horizon_SMP_Projects_2012\SMP_Template_2012.mxd 4/18/2012

Stream Maintenance Program Projects - 2012 Field Season

Figure
Petaluma A

0 500 1,000 Feet

N W E S

SCWA GIS

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

AVLCODE

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

Franciscan onion
Allium peninsulare var. franciscanum
Reyes checkerbloom
Sidalcea [illegible]osa ssp. [illegible]
alkali milk-vetch
Astragalus tener var. tener
Petaluma popcorn-flower
Plagiobothrys mollis var. vestitus
Sonoma spineflower
Chorizanthe valida
round-leaved filaree
California macrophylla

Stream Maintenance Program Projects - 2012 Field Season

Figure
Petaluma B

DISCLAIMER

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0 500 1,000 Feet

N W E S

SCWA GIS

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Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

AVLCODE

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

Adobe4
Adobe3
Adobe2
Adobe1
Adobe Creek
Petaluma River

foothill yellow-legged
Rana boylii

steelhead - central California coast DPS
Oncorhynchus mykiss irideus

San Pablo song sparrow
Melospiza melodia samuelis

saltmarsh common yellowthroat
Geothlypis trichas sinuosa

salt-marsh harvest mouse
Reithrodontomys raviventris

western pond turtle
Emys marmorata

S McDowell Blvd
Casa Grande Rd
Petaluma
Lakeville Hwy
Daniel Dr
Bungalow Ln
Trellis Ln
Catalpa Way
Palmetto Way
Pecan Way
Aspen Way
Carob Ct
Baywood Dr
Beechwood Dr
Conifer Ln
Evergreen Ln
Santa Barbara Way
St Vincent Ct
St Andrew Ct
St Francis Dr
San Jose Way
St Anthony Ln
San Juan Way
Wieling Way
Anna Way
Cielia Ct
Cielia Ln
Filippini Way
Henry Way
Crinella Dr
Del Oro Cir
Del Sol Ct
Del Sol Way
Countrywood Ct
Miller Ct
Sartori Dr
Casa De Arroyo Dr
Casa Verde Cir
Casa Verde Ct
Cerro Sonoma Cir
Rancho Bonito Cir
Gateside Dr
Chinar Dr
Bond Ave
Stokes Ct
St Joseph Way
Santa Clara Ln
San Rafael Dr
Westside Rd
Eastside Rd
Marina Ave
Indigo Dr
Technology Ln
Telecom Ln
Fisher Dr
Cader Ln
Corporate Cir
Schollenberger Park Rd
S McDowell Boulevard Ext
Cypress Dr
Pine View Way
Baywood Dr
116

SCWA GIS

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Stream Maintenance Program Projects - 2012 Field Season

Figure
Petaluma C

0 500 1,000 Feet

N W E S

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

AVLCODE

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

Wilfred1
Wilfred Creek
Coleman2
Coleman Creek Trl
Coleman1
Coleman Creek
Cook1
Cook2
Five1
Five Creek
Cook Creek
Cook Creek Conduit
Gillpepper Ln
Gladstone Way
Heritage Ln
Holly Ave
Hemingway Ct
Hatteras Ct
Hawthorne Cir
Hedge Ct
Harvard Ct
Hazel Ct
Hamlet Ct
Hampton Ct
Goodson Way
Grace Ct
Gilford Ln
Gloria Ct
Grove Ct
Grandview Way
Griffin Way
Genesis Ct
Galaxy Ct
Graywhaler Ln
Garmont Ct
Gaspar Ct
Graymill Ct
Golf Course Dr
Gary Ct
Garfield Ct
Gretchen Ct
Garrett Ct
Gavin Way
Gregory Ct
Georgia Ct
Gold Way
Moura Ln
Heath Cir
Snyder Ln
Hillview Way
Hudis St
Hemp Ct
Helene Ct
Rohnert Park
Golf Course Dr
Golf Course Dr
Hillview Ct
Harmony Pl
Hailey Ct
Heron Ct
Honey Brook Pl
Hagemann Ln
Hummingbird Ct
Hermitage Way
Heartwood Dr
Eleanor Ave
Emily Ave
Emily Ave
Evonne Ave
Eric Ct
Five Creek Trl
Crane Canyon Rd

\\Sd-data\proj\flood control\4060_SMP\4060-5\Horizon_SMP_Projects_2012\SMP_Template_2012.mxd 4/18/2012

Stream Maintenance Program Projects - 2012 Field Season

Figure

Rohnert Park A

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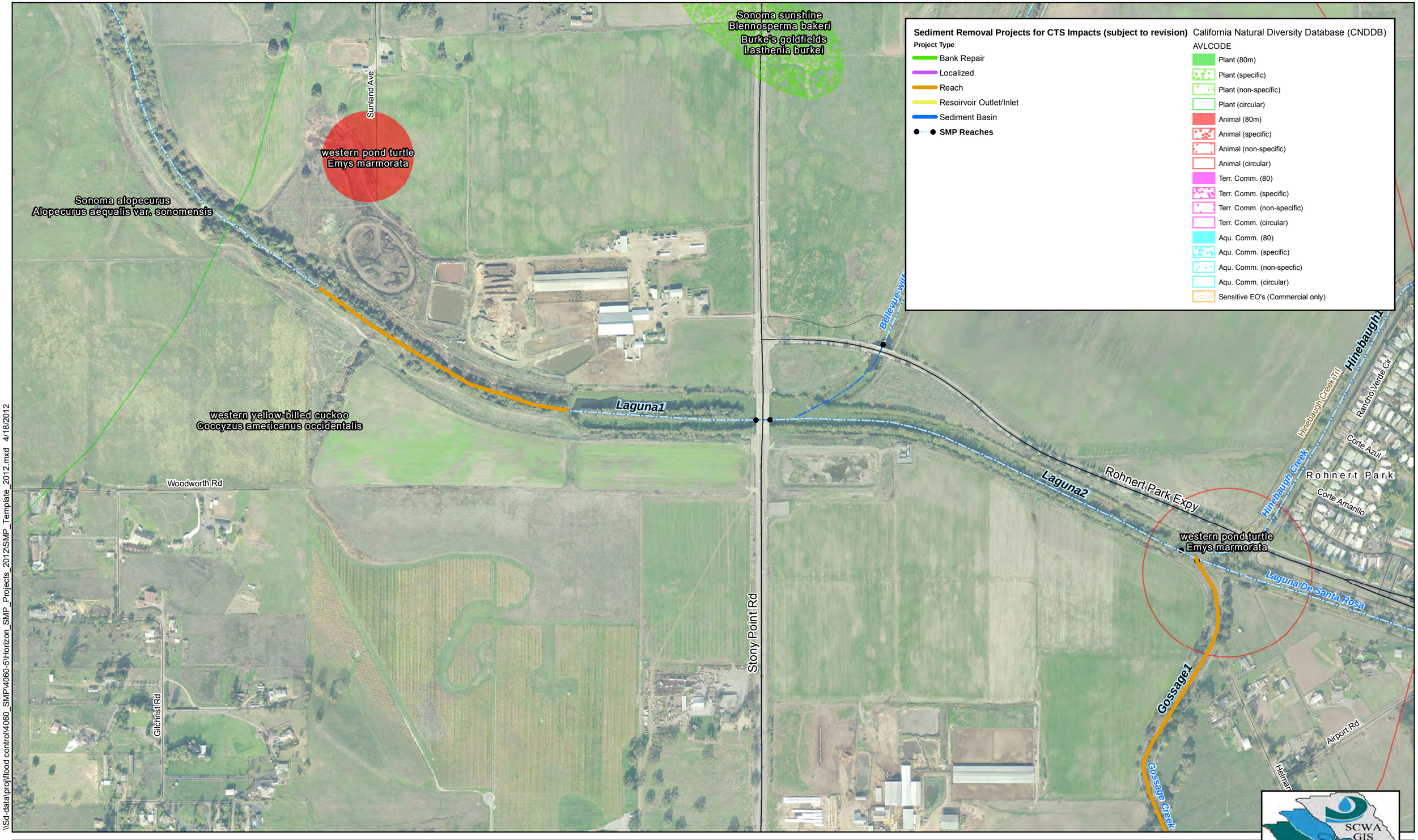
0 500 1,000 Feet

N W E S

SCWA GIS



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Stream Maintenance Program Projects - 2012 Field Season

Figure
Rohnert Park B

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0 500 1,000 Feet

N W E S

SCWA GIS

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

AVLCODE

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

Park Ct
Labath Creek
J Rogers Ln
Redwood Dr
Commerce Blvd
Martin Ave
Carlson Ct
Carlson Ave
Labath Ave
Dowdell Avenue Ext
Martin Avenue Ext
Rancho Verde Cir
Hinebaugh Creek Trl
Corte Pintado
Corte Reposano
Corte Rosa
western yellow-billed cuckoo
Coccyzus americanus occidentalis
Hinebaugh1
Hinebaugh Creek
Hinebaugh2
Hinebaugh3
western pond turtle
Emys marmorata
Rohnert Park
101
Hinebaugh Creek Trl
Hinebaugh5
Dinah Ct
Donna Ct
Calle Roja
Rohnert Park Expy
Padre Pky
City Center Dr
Lynne Conde Way
State Farm Dr
Laguna De Santa Rosa
Laguna2
Laguna Dr
Raleys Towne Centre
Toyon Ct
Walnut Cir
Hunter Dr
Enterprise Dr
Madrigal St
Zaragoza St
Estrella Dr
Alicante St
Bilboa Ct
Salamanca St
Ronda St
Soria Ct
Alfaro Ct
Chiva Ct
Laredo St
Los Feliz

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Stream Maintenance Program Projects - 2012 Field Season

Figure
Rohnert Park C

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0 500 1,000 Feet

N W E S

SCWA GIS

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

AVLCODE

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

Gossage1
Airport Rd
Helman Ln
Laguna2
Laguna De Santa Rosa
Labath Ave
Laguna Dr
Rohnert Park
Estrella Dr
Bilboa Ct
Alicante St
Salamanca St
Zaragoza St
Madrigal St
Madrigal Dr
Copeland Creek
Copeland1
Portal St
Mercantile Dr
Laguna3
Washoe1
Cotati
Lowell Ct
Gilmore Ave
California tiger salamander
Ambystoma californiense
Moss Rd
Gossage2
Stony Glen Ln
Oak Ave
Gossage Creek
Gossage3
Washoe Creek
Derby Ln
116
Locust Ave
California tiger salamander
Ambystoma californiense
California tiger salamander
Ambystoma californiense
California tiger salamander
Ambystoma californiense

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Stream Maintenance Program Projects - 2012 Field Season

Figure
Rohnert Park D

0 500 1,000 Feet

N W E S

SCWA GIS

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

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

foothill yellow-legged frog
Rana boylii
tricolored blackbird
Agelaius tricolor

Stream Maintenance Program Projects - 2012 Field Season

Figure
Rohnert Park E

0 500 1,000 Feet

N W E S

SCWA GIS

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Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

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

Burke's goldfields
Lasthenia burkei

western pond turtle
Emys marmorata

Fountain Grove Creek

Piner8
Piner7
Piner6
Piner Creek

Old Redwood Hwy
Airway Dr
Industrial Dr
Cleveland Ave
Indian Creek
Mendocino Ave
Fountaingrove Pky
Mendocino Ov
Round Barn Cir
Round Barn Blvd
Centrum Pl
Airway Ct
Center Dr
Claire St
Loretta Way
Angelus St

101
101

Brandee Ln
Keoke Ct
Mocha Ln
Hillary Ct
Perk Pl
Hopper Ave
Starview Ct
Crestview Dr
Crestview Ct
View Ct
Starview Dr
Skyview Dr
Hemlock St
Nina Ct
Amanda Pl
Coffey Ln
Kerry Ln
Santa Rosa
Hemlock Ct
Banyan Pl
Jenna Pl
Tuliptree Rd
Dogwood Dr
Cashew Rd
Coffey Meadow Pl
Berwick Ct
Pinyon St
Pine Meadow Dr
Holly Park Way
Sweetgum St
Camino Del Prado
Banyan St
San Miguel Ave
San Marcos Dr
Plantain Ct
Industrial Dr

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Stream Maintenance Program Projects - 2012 Field Season

Figure
Santa Rosa A

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0 500 1,000 Feet

N W E S

SCWA GIS

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

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- Localized
- Reach
- Resoirvoir Outlet/Inlet
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California Natural Diversity Database (CNDDB)

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

western pond turtle
Emys marmorata

Rincon Creek
Creekmont Ct
Twin Pillar Way
Baird Rd
Wagon Wheel Ln
East Fork Brush Creek
Rincon Ave
Calistoga Rd
Saddle Club Ln
Ranchette Rd
MiddleBrush2
Deer Trail Rd
Deer Trail Ct
Williams Rd
Wallace Rd
Anderson Dr
Rincon Meadows Ct
Zachary Pl
Badger Rd
Lockwood Cir
Melissa Ct
Williams Rd
Selene Ct
Wild Lilac Ln
Badger Rd
Patrick Ct
Petrie Ln
Estes Dr
Badger Ct
Rick Dr
Hoyal Dr
Canyonside Dr
Jaylee Dr
Santa Rosa
Brush Creek Rd
Byrne Ct
Offner Ln
Middle Fork Brush Creek
Middle Rincon Rd
Gregory Ct

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Stream Maintenance Program Projects - 2012 Field Season

Figure
Santa Rosa B

0 500 1,000 Feet

N W E S

SCWA GIS

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

AVLCODE

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

Camino Del Prado
Holly Park Way
an Miguel Ave
Banyan St
Plantain Ct
Piner Creek
Piner6
Walnut Creek Dr
Industrial Dr
Center Dr
Airway Ct
Airway Dr
Piner Pl
Indian Creek
Clare St
Margaret
Mary
Nonie
Mercie Dr
Loreta Way
Opal
Mendocino Ov
Fountaingrove Pky
Mendocino Ave
Flamingo Rd
Angelus St
Biltmore St
Columbia St
Paramont St
Sahara St
Russell2
Russell1
Russell Creek
Butte Ct
Butte Dr
Home Rd
Mono Dr
Modoc Dr
Bicentennial Way
101
Russell Ave
Santa Rosa
Piner5
Condo Ct
Aloha Ln
Plumeria Dr
Ditty Ave
Chapala Dr
Hardies Ln
State Farm Dr
Range Ave
Katy Ct
Cleveland Ave
Terry Ln
McBride Ln
Paulin6
Paulin Creek
Paulin5
Paulin4
Paulin3
Becky Ct
Snoopy Pl
Bluebell Dr
Lamberson Ct
Estrella Dr
Anacapa Dr
Cynthia Ln
Verdugo Ct
Coffee Tree Ct
Sola Ct
Terry Rd
Piner4
Coffey1
Cherokee Ct
Aztec St
Comanche St
Navajo St
Cherokee Ave
Apache St
Windmill Dr
Wind Mill Cir
Northfield Dr
Marlow Rd
Bay Village Cir
Bay Village Ave
Piner Rd
Bay Meadow Dr
Sebastopol meadowfoam
Limnanthes vinculans
Burke's goldfields dwarf downingia
Lasthenia burkei Downingia pusilla
Burke's goldfields
Lasthenia burkei
Manning Ct
Alexander Dr
Marsh Rd
Macintosh Cir
Burke's goldfields
Lasthenia burkei
Pinercrest Dr
Plum Tree Ln
Empire Industrial Ct
Cherry Blossom Dr
Morning Glory Dr
Peach Tree Ln
Orchard Blossom Dr
Fig Tree Ln
Genoa Pl

\\Sd-data\proj\flood control\4060_SMP\4060-5\Horizon_SMP_Projects_2012\SMP_Template_2012.mxd 4/18/2012

Stream Maintenance Program Projects - 2012 Field Season

Figure

Santa Rosa C

0 500 1,000 Feet

N W E S

SCWA GIS

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

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

showy rancheria clover
Trifolium amoenum
Paulin7

Sonoma canescent manzanita
Arctostaphylos canescens ssp. sonomensis

Stream Maintenance Program Projects - 2012 Field Season

Figure
Santa Rosa D

0 500 1,000 Feet

N W E S

SCWA GIS

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Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

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- Terr. Comm. (non-specific)
- Terr. Comm. (circular)
- Aqu. Comm. (80)
- Aqu. Comm. (specific)
- Aqu. Comm. (non-specfic)
- Aqu. Comm. (circular)
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narrow-anthered California brodiaea
Brodiaea californica var. leptandra

Sonoma ceanothus
Ceanothus sonomensis

western pond turtle
Emys marmorata

coastal triquetrella
Triquetrella californica

Raters Dr
St Francis Rd
Evening Way
Indian Creek Dr
Maria Ln
Alana Dr
Royal Gorge
S Boas Dr
Santa Rosa Creek Dr
Firestone Pl
Calistoga Rd
Brookcreek Pl
Peppertree Ln
Diane Way
Evonne Ave
Carolyn Ave
Melita Rd
Hazelwood Ct
Sharon St
Skyhawk Creek
Buckthorn Ct
Santa Rosa Creek
Gold Dr
Kathleen Ct
Queen Anne
Eastside
Fairmont
Shallows Pl
Santa Rosa Reservoir Spillway
Brey Rd
Los Alamos Rd
Montgomery Dr
Santa Rosa Div.1
Santa Rosa Creek Diversion
Spring Lake Outfall
Violetti Rd
Aleppo Dr
Peppenwood Rd
Bader Rd
Santa Rosa
Oakmont Creek
Melita Gen Pl
Slate Dr
Quarry Pointe
Hardstone Ct
Sr Reservoir Spillway

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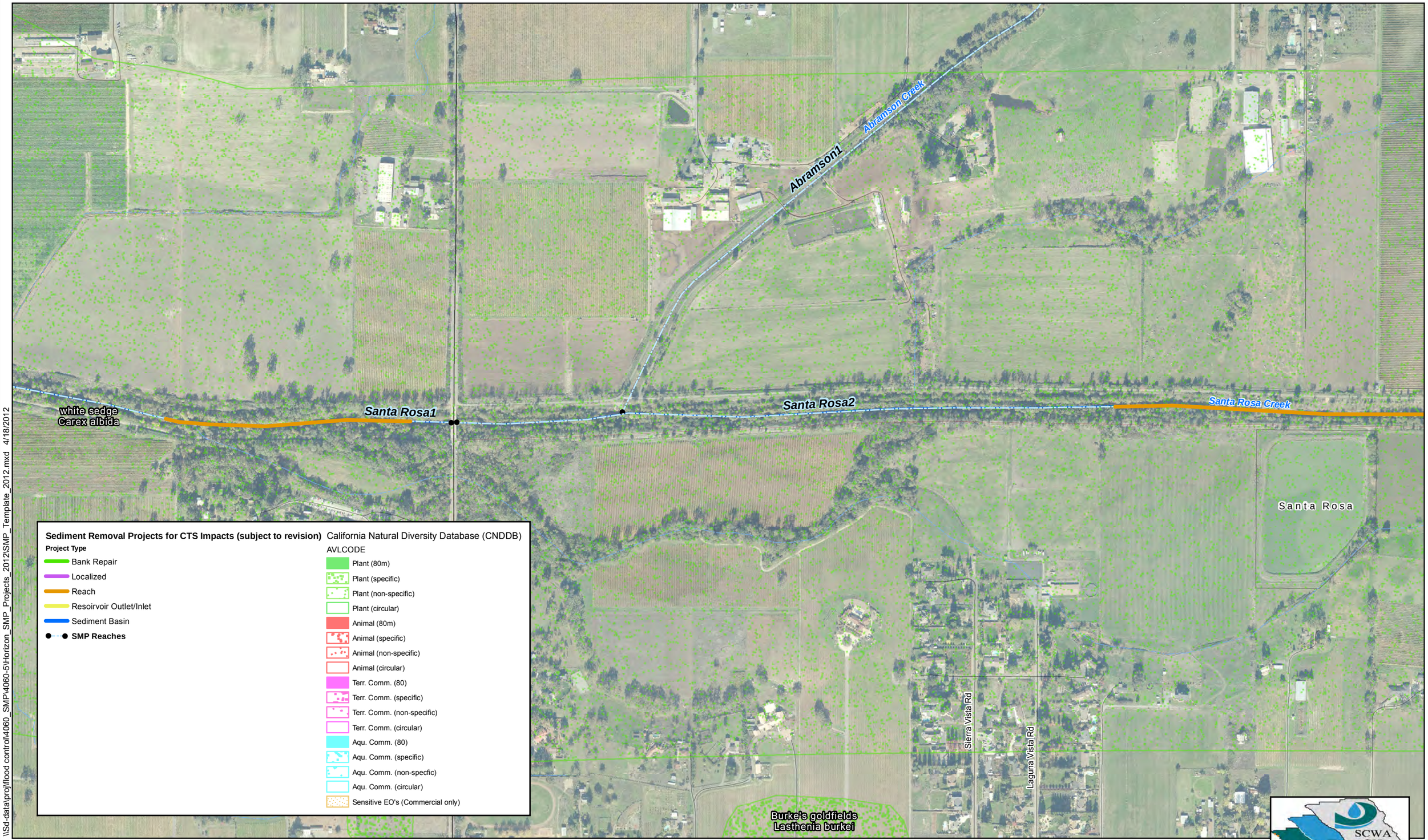
Stream Maintenance Program Projects - 2012 Field Season

Figure
Santa Rosa E

0 500 1,000 Feet

N W E S

SCWA GIS



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Stream Maintenance Program Projects - 2012 Field Season

Figure
Santa Rosa F

0 500 1,000 Feet

N W E S

\\Sd-data\proj\flood control\4060_SMP\4060-5\Horizon_SMP_Projects_2012\SMP_Template_2012.mxd 4/18/2012

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

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

Stream Maintenance Program Projects - 2012 Field Season

Figure

Santa Rosa G

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0 500 1,000 Feet

N W E S

SCWA GIS

California tiger salamander
Ambystoma californiense

California tiger salamander
Ambystoma californiense

California tiger salamander
Ambystoma californiense

Sonoma sunshine
Blennosperma bakeri

Sebastopol meadowfoam
Limnanthes vinculans

Blennosperma vernal pool andrenid bee
Andrena blennospermatis

California tiger salamander
Ambystoma californiense

California tiger salamander
Ambystoma californiense

California tiger salamander
Ambystoma californiense

Sebastopol meadowfoam
Limnanthes vinculans

fragrant fritillary
Fritillaria liliacea

Sebastopol meadowfoam
Limnanthes vinculans

California tiger salamander
Ambystoma californiense

California tiger salamander
Ambystoma californiense

California tiger salamander
Ambystoma californiense

St Olga Ct

Phillips Ave

Colgan Creek Trl

Colgan4

Colgan Creek

Primrose Ave

Juniper Ave

Colgan3

Todd Rd

Stony Point Rd

Colgan2

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

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

\\Sd-data\proj\flood control\4060_SMP\4060-5\Horizon_SMP_Projects_2012\SMP_Template_2012.mxd 4/18/2012

Stream Maintenance Program Projects - 2012 Field Season

Figure

Santa Rosa H

0 500 1,000 Feet

N W E S

SCWA GIS

\\Sd-data\proj\flood control\4060_SMP\4060-5\Horizon_SMP_Projects_2012\SMP_Template_2012.mxd 4/18/2012

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

AVLCODE

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

Matanzas Creek

western pond turtle
Emys marmorata

Bennett Valley Rd

SCWA GIS

Stream Maintenance Program Projects - 2012 Field Season

Figure

Santa Rosa I

DISCLAIMER

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

0 500 1,000 Feet

N W E S

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

AVLCODE

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

oval-leaved viburnum
Viburnum ellipticum

Sonoma sunshine
Blennosperma bakeri

white seaside tarplant
Hemizonia congesta ssp. congesta

Sonoma sunshine
Blennosperma bakeri

Fryer1
Fryer2
Fryer3
Fryer4

Fryer Creek
East Fork Fryer Creek
Dowdall Creek
Engler Creek
Sonoma Creek

W Napa St
Church St
Broadway
E Macarthur St
W Macarthur St
Andrieux St
Perkins St
Bettencourt St
Arroyo Way
Nicoli Ln
Piper Ln
1st Street West Ext
Chase St
France St
Malet St
Macarthur Ln
Newcomb St
Denmark St
Eastin Dr
Davila Ct
Pear Tree Ct
Este Madera Dr
Gregory Cir
Studley St
Anthony Ct
Oregon St
Curtin Ln
Creek Ln
Iris Way
Park Ln
Garland Ave
White Briar Dr
Heather Ln
Ivy Ct
Mayan Dr
Sonora Dr
Guadalajara Dr
Guaymas Dr
Merida Dr
Pepito Dr
5th St
6th St
7th St
4th St
3rd St
2nd St
1st St
Alley
Banchero St
Robinson St
Barracchi Way
Vigna St
Spring Ln
Hayes St
Pas Pajaros Calle
Chiquita Camino
Buena Vista Dr
Paseo Palencia
Chico Dr
Del Rio Paseo
Cazares Cir
Troy Ln
Lee Ct
Brownstone Ln
Evans Ave
Emilys Meadow Ct
Manuella Ln
La Serena Way
Janero Pl
El Castillo Vis
Smith St
La Quinta Ln
Harrington Dr
Manor Dr
Amedeo Ct
Bernyessa Dr
Fryer Creek Dr
Cox St
Beasley Way
Austin Ave
Donner Ave
Oak Ln
Vischer Ct
Hudson Ct
York Ct
Virginia Ct
McDo
Maple S
Oak

\\Sd-data\proj\flood control\4060_SMP\4060-5\Horizon_SMP_Projects_2012\SMP_Template_2012.mxd 4/18/2012

Stream Maintenance Program Projects - 2012 Field Season

Figure
Sonoma A

0 500 1,000 Feet

N W E S

SCWA GIS

\\Sd-data\proj\flood control\4060_SMP\4060-5\Horizon_SMP_Projects_2012\SMP_Template_2012.mxd 4/18/2012

Flora Marie Ln
Amber Ridge Way
Cooper Way
Starr Creek
Windsor1
Windsor Creek
Oak Way
narrow-anthered California brodiaea
Brodiaea californica var. leptandra
Vintage Greens Dr
Vercelli Ct
Trione Cir
Luisa Way
Leno Dr
Ferrari Way
Carano Way
Mitchell Ln
Windsor Rd
Jones Rd
Windsor
western pond turtle
Emys marmorata
Pool Creek
Shiloh Rd
Windsor Rd
Windsor Rd

Sediment Removal Projects for CTS Impacts (subject to revision)

Project Type

- Bank Repair
- Localized
- Reach
- Resoirvoir Outlet/Inlet
- Sediment Basin
- **SMP Reaches**

California Natural Diversity Database (CNDDB)

AVLCODE

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

SCWA GIS

Stream Maintenance Program Projects - 2012 Field Season

Figure
Windsor A

0 500 1,000 Feet

N W E S

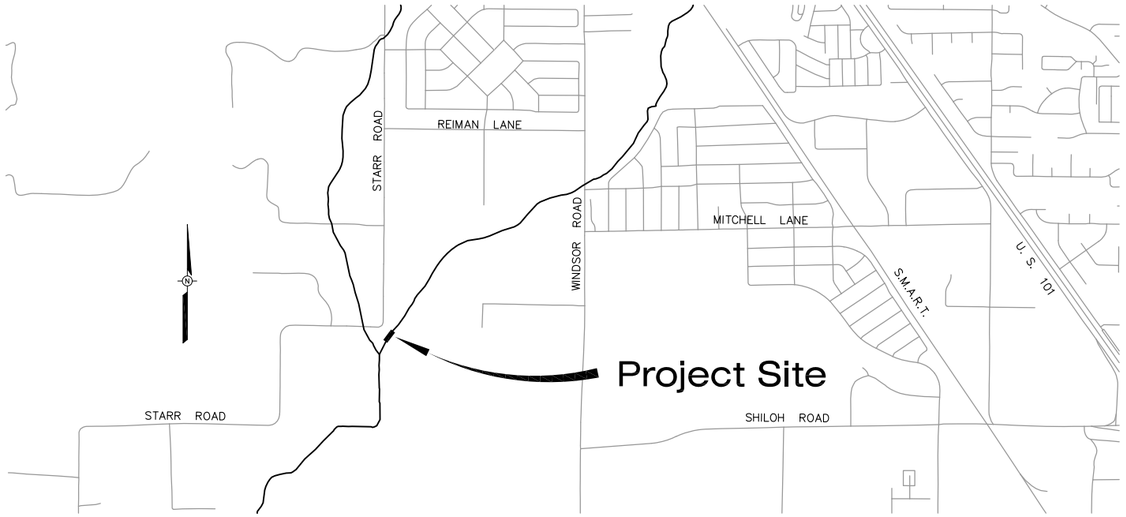
Appendix C

Project Designs

LOCALIZED SEDIMENT REMOVAL

LAGUNA MARK WEST ZONE 1A

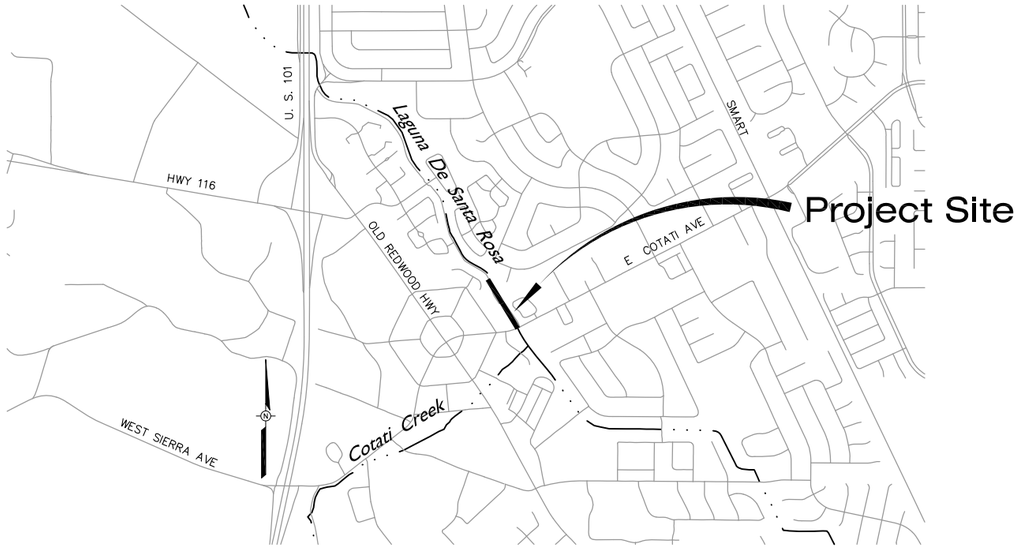
WINDSOR CREEK
LAGUNA DE SANTA ROSA



WINDSOR CREEK–VICINITY MAP

LOCATION MAP

NOT TO SCALE



LAGUNA DE SANTA ROSA–VICINITY MAP

NOT TO SCALE

INDEX TO DRAWINGS:

SHEET NO.	DRAWING NO.	TITLE
1.	G–1	INDEX TO DRAWINGS, LOCATION AND VICINITY MAPS
WINDSOR CREEK:		
2.	C–1	TABLE, PLAN & PROFILE AND SECTIONS
LAGUNA DE SANTA ROSA E–LINE:		
3.	C–2	PLAN AND PROFILE STA 40+00 TO STA 46+00
4.	C–3	PLAN AND PROFILE STA 46+00 TO STA 51+50
5.	C–4	TABLE AND SECTIONS

PRELIMINARY
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FOR REVIEW PURPOSES ONLY
20 APR 2012

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

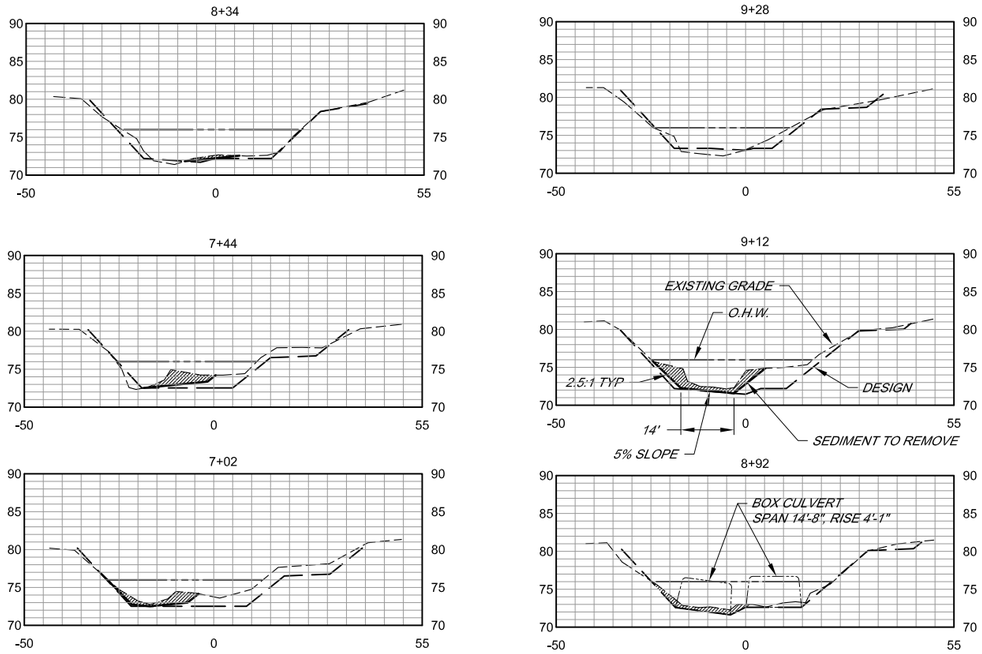
SCALE: AS SHOWN | DATE: 4/20/2012
DRAWN: ---
REVIEWED:

LAGUNA MARK WEST ZONE 1A

INDEX TO DRAWINGS, LOCATION AND VICINITY MAPS

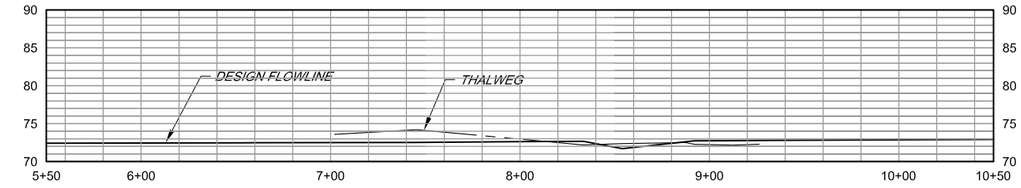
FILE NAME: 2012-Windsor_E-Line_General
CONTRACT NUMBER:
DRAWING NUMBER: G-1
SHEET 1 OF 5

\\scd-data\proj\flood control\sediment-removal\2012-Windsor_E-Line_General



SECTIONS

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



PROFILE

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

WINDSOR 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 CHANNEL	STA 7+02 TO STA 9+28	226	22	BELOW O.H.W. 4,972	0.7	BELOW O.H.W. 129

PLAN

SCALE 1" = 40'

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

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20 APR 2012

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

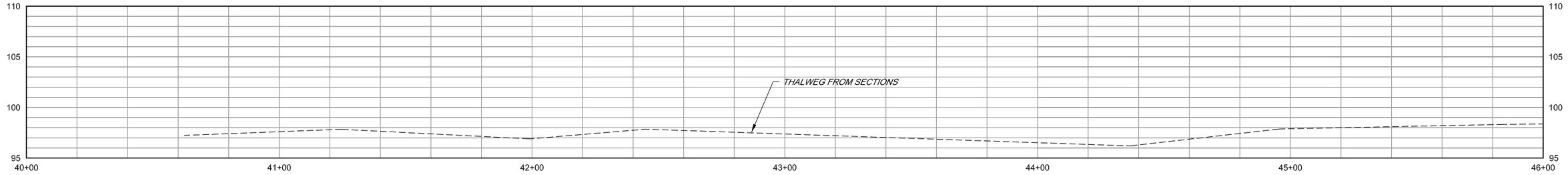
SCALE: AS SHOWN
DATE: 4/20/2012
DRAWN: ---
REVIEWED:

LAGUNA MARK WEST ZONE 1A - WINDSOR CREEK

TABLE, PLAN & PROFILE AND SECTIONS STA 7+02 TO STA 9+28

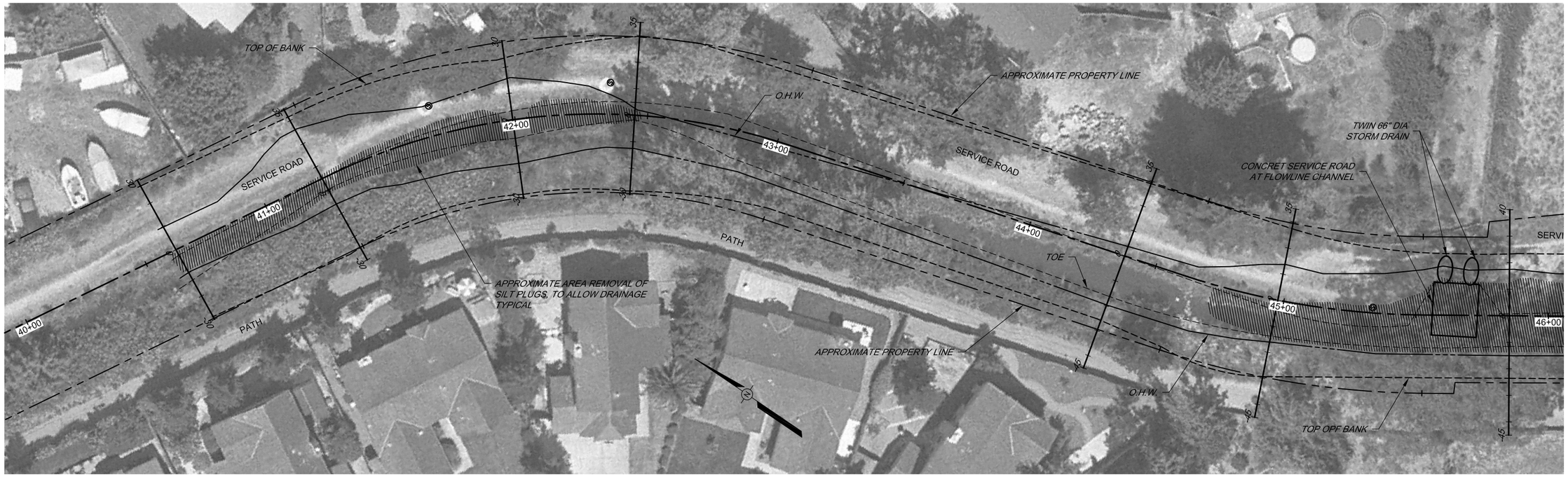
FILE NAME: 2011_WINDSOR_C
CONTRACT NUMBER:
DRAWING NUMBER: C-1
SHEET 2 OF 5

\\sd-data\proj\flood control\zone 1a\windsor-cr\2011-maintenance



PROFILE

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



PLAN

SCALE 1" =20'

NOTE:
NO DESIGN INFORMATION FROM COMMERCE BLVD TO UPSTREAM OF EAST COTATI AVENUE

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

PRELIMINARY
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20 APR 2012

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

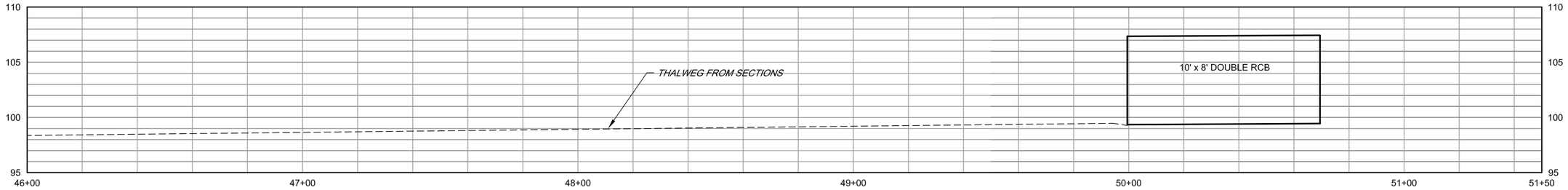
SCALE : AS SHOWN
DATE : 4/20/2012
DRAWN : ---
REVIEWED :

LAGUNA MARK WEST ZONE 1A - LAGUNA DE SANTA ROSA E-LINE

PLAN & PROFILE STA 40+00 TO STA 46+00

FILE NAME: 2011_E-LINE_C
CONTRACT NUMBER:
DRAWING NUMBER: C-2
SHEET 3 OF 5

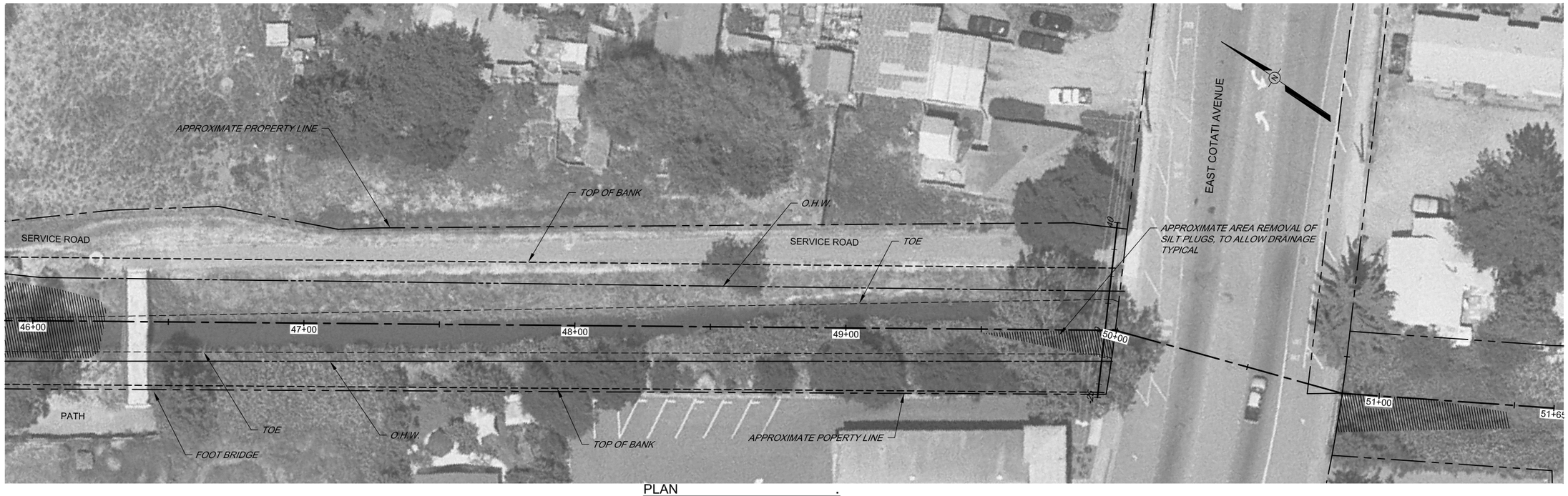
\\sd-data\proj\flood control\zone 1a\LAGUNA_E-LINE\2011-MAINTENANCE



PROFILE

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
20 APR 2012



PLAN

SCALE 1" =20'

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

NOTE:
NO DESIGN INFORMATION FROM COMMERCE BLVD TO UPSTREAM OF EAST COTATI AVENUE

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

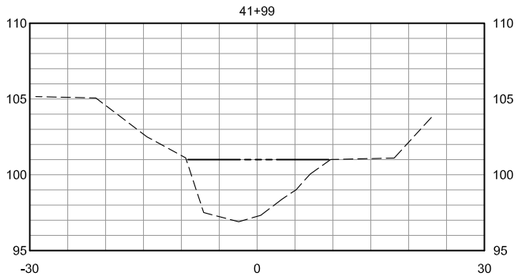
SCALE: AS SHOWN
DATE: 4/20/2012
DRAWN: ---
REVIEWED:

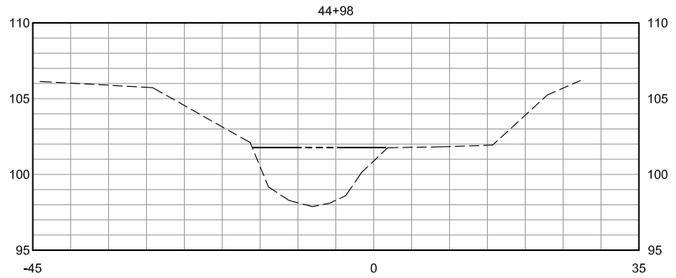
LAGUNA MARK WEST ZONE 1A - LAGUNA DE SANTA ROSA E-LINE

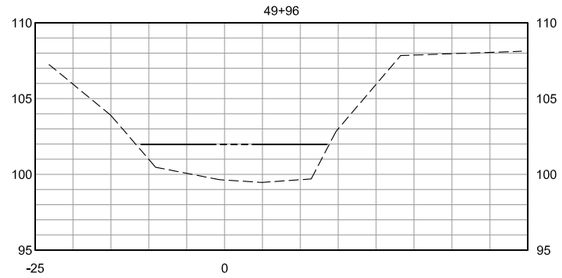
PLAN AND PROFILE STA 46+00 TO STA 51+50

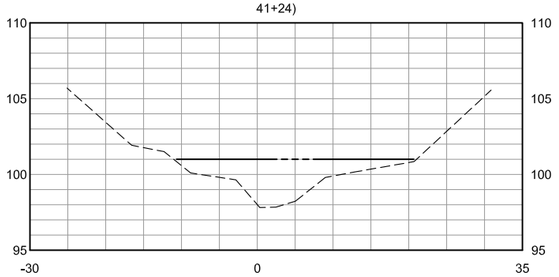
FILE NAME: 2011_E-LINE_C
CONTRACT NUMBER:
DRAWING NUMBER: C-3
SHEET 4 OF 5

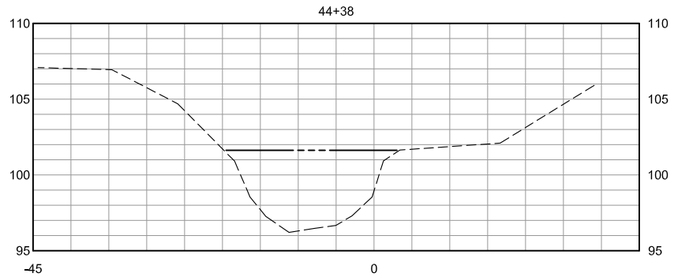
\\sd-data\proj\flood control\zone 1a\LAGUNA_E-LINE\2011-MAINTENANCE

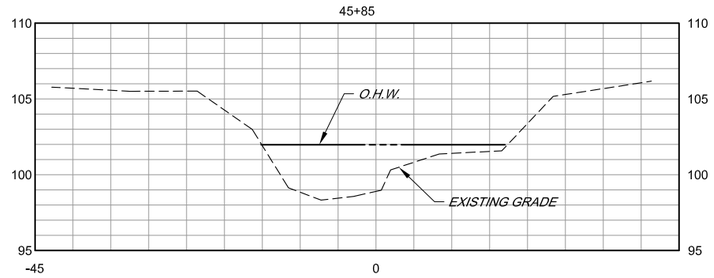


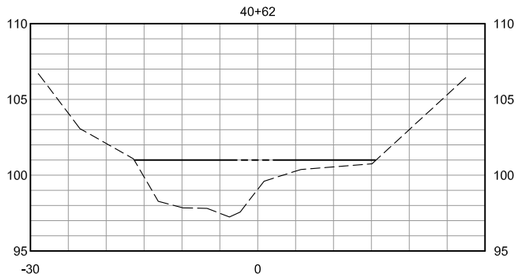


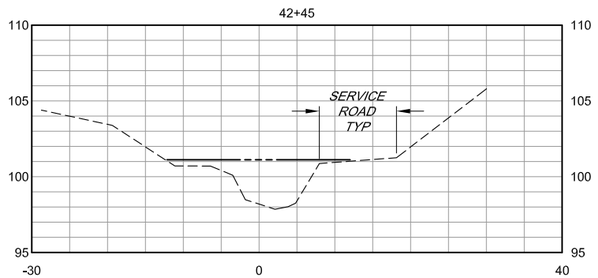












NOTE:
NO DESIGN INFORMATION FROM COMMERCE BLVD TO UPSTREAM OF EAST COTATI AVENUE

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

LAGUNA DE SANTA ROSA E–LINE						
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 IN THE DEWATERED CHANNEL. (APPROXIMATE AREA SHOWN FOR REMOVAL SILT PLUGS AND VEGETATION TO ALLOW DRAINAGE)	STATION 40+60 TO STATION 42+48	188	11	2,068 BELOW OHW	0.5	38 BELOW OHW
	STA 44+72 TO STA 46+25	153	15	2,295 BELOW OHW	1.4	120 BELOW OHW
	STA 49+50 STA 51+50	100	6	600 BELOW OHW	2.3	50 BELOW OHW

PRELIMINARY
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20 APR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE : AS SHOWN
DATE : 4/20/2012
DRAWN : ---
REVIEWED :

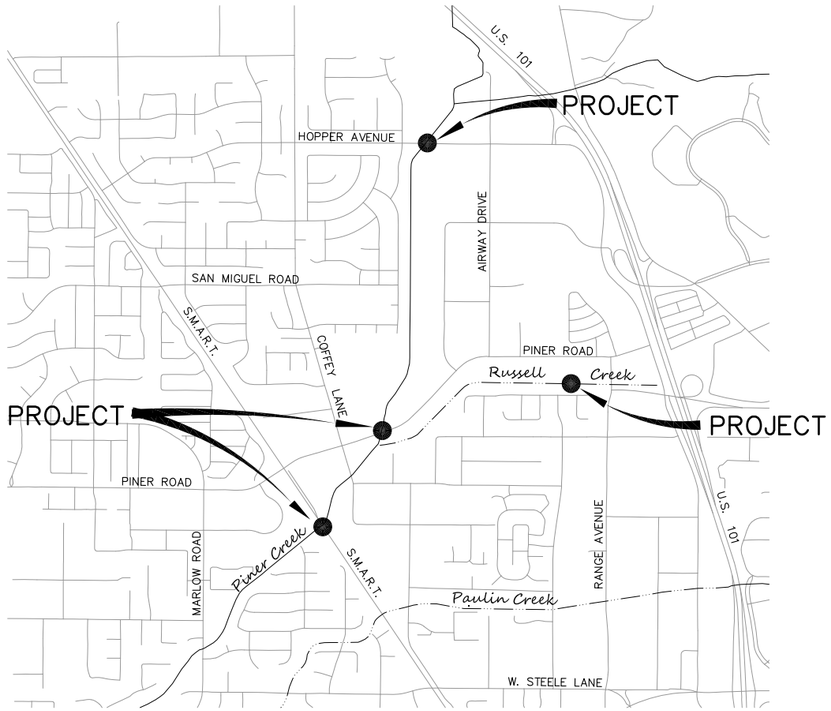
LAGUNA MARK WEST ZONE 1A - LAGUNA DE SANTA ROSA E-LINE

TABLE AND SECTIONS

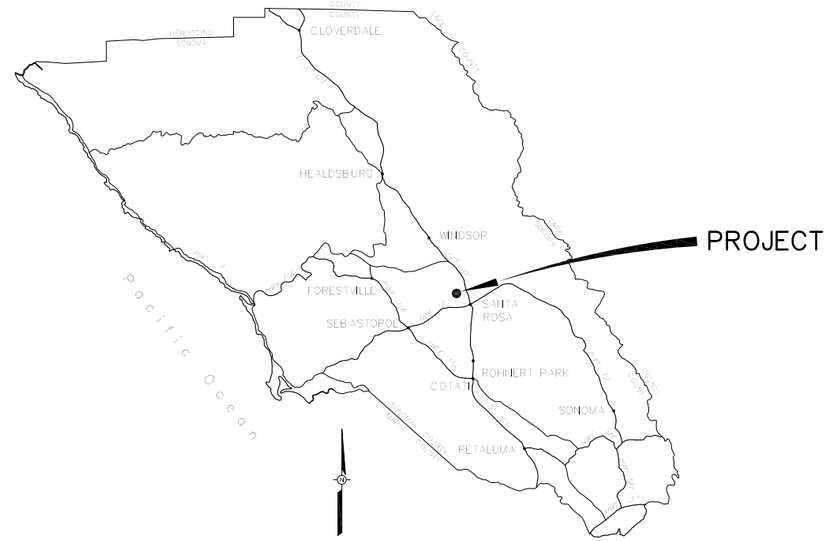
FILE NAME: 2011_E-LINE_C
CONTRACT NUMBER:
DRAWING NUMBER: C-4
SHEET 5 OF 5

\\sd-data\proj\flood control\zone 1a\LAGUNA_E-LINE\2011-MAINTENANCE

PINER CREEK
SEDIMENT PLUG REMOVAL
AND
RUSSELL CREEKS
BANK REPAIR AND SEDIMENT REMOVAL



VICINITY MAP .
SCALE 1" = 1000'



LOCATION MAP .
N.T.S.

PINER CREEK						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAR OR FRONT END LOADER OPERATING IN CHANNEL	S.M.A.R.T. TRACKS STA 658+80 TO STA 659+70 (SMP-4)	90	12	BELOW O.H.W. 1080	2	BELOW O.H.W. 80
	S.M.A.R.T. TRACKS STA 660+14 TO STA 660+69 (SMP-5)	55	7	BELOW O.H.W. 385	2	BELOW O.H.W. 28
	PINER RD STA 675+40 TO STA 675+90 (SMP-6)	50	11	BELOW O.H.W. 550	2	BELOW O.H.W. 41
	HOPPER AVE. STA 715+20 TO STA 715+80 (SMP-6)	60	13	BELOW O.H.W. 780	2	BELOW O.H.W. 58
TOTALS		255		BELOW O.H.W. 2795		BELOW O.H.W. 207

RUSSELL CREEK						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAR OR FRONT END LOADER OPERATING IN CHANNEL	STA 700+97 TO STA 701+77	80	10	BELOW O.H.W. 800	1	BELOW O.H.W. 30

INDEX TO DRAWINGS .

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03/07/2012

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

NO.	DATE	REVISION	BY

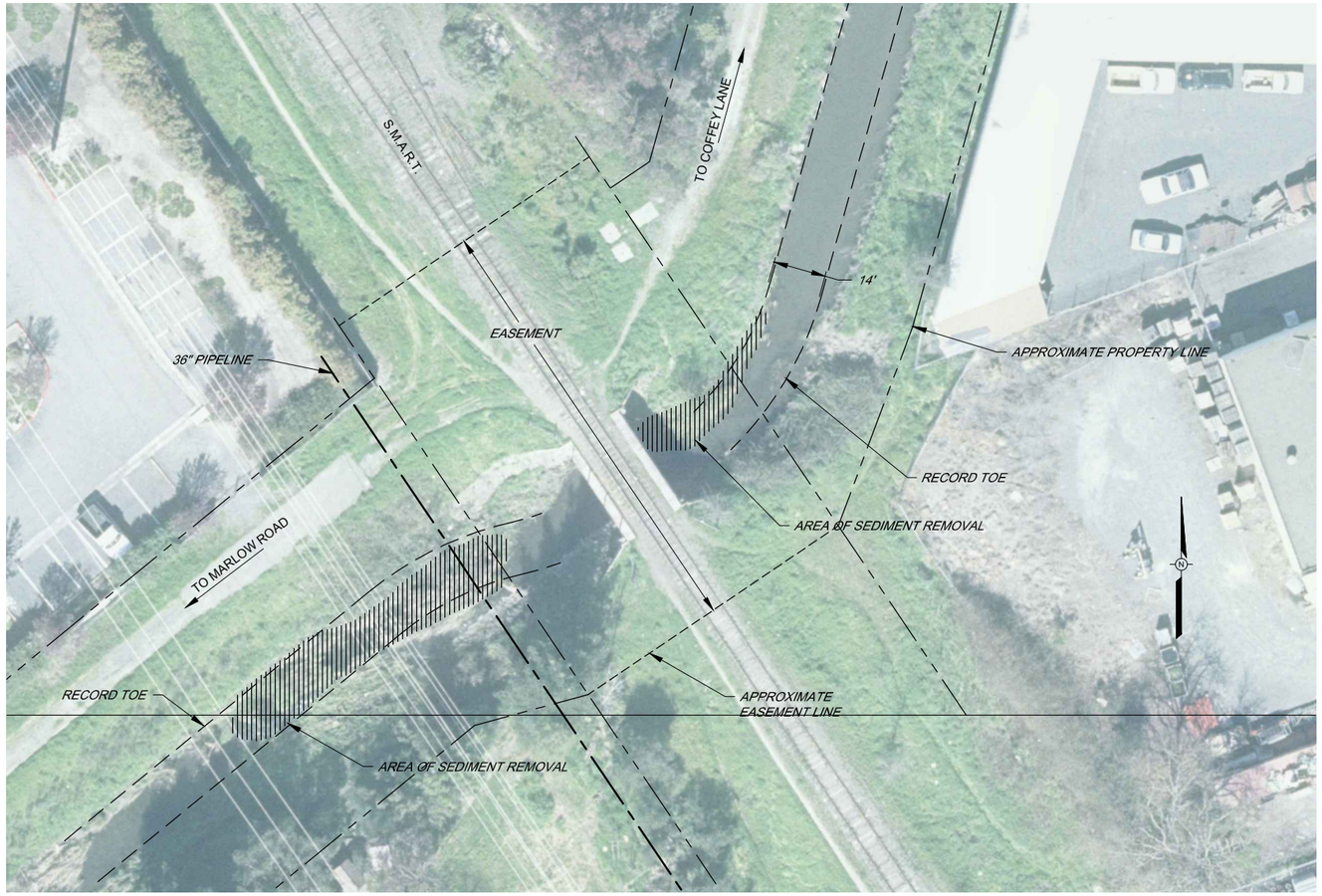
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 01/04/2012
DRAWN: ADF
REVIEWED:

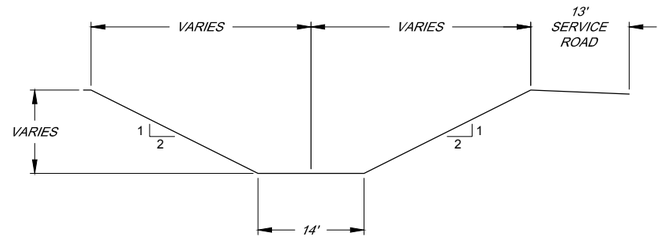
LAGUNA MARK WEST ZONE 1A - PINER CREEK
INDEX TO DRAWINGS, TABLE, LOCATION AND VICINITY MAP

FILE NAME: PINER-2012_G
CONTRACT NUMBER:
DRAWING NUMBER: G-1
SHEET 1 OF 5

\\SD-DATA\Proj\flood control\zone 1a\PINER\2012_SED-REMOVAL



PLAN .
SCALE 1" = 20'



TYPICAL SECTION - LOOKING DOWNSTREAM .
(STA 637+50 TO STA 659+65.5 AND STA 660+32.3 TO STA 667+41)
N.T.S.

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03/07/2012

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

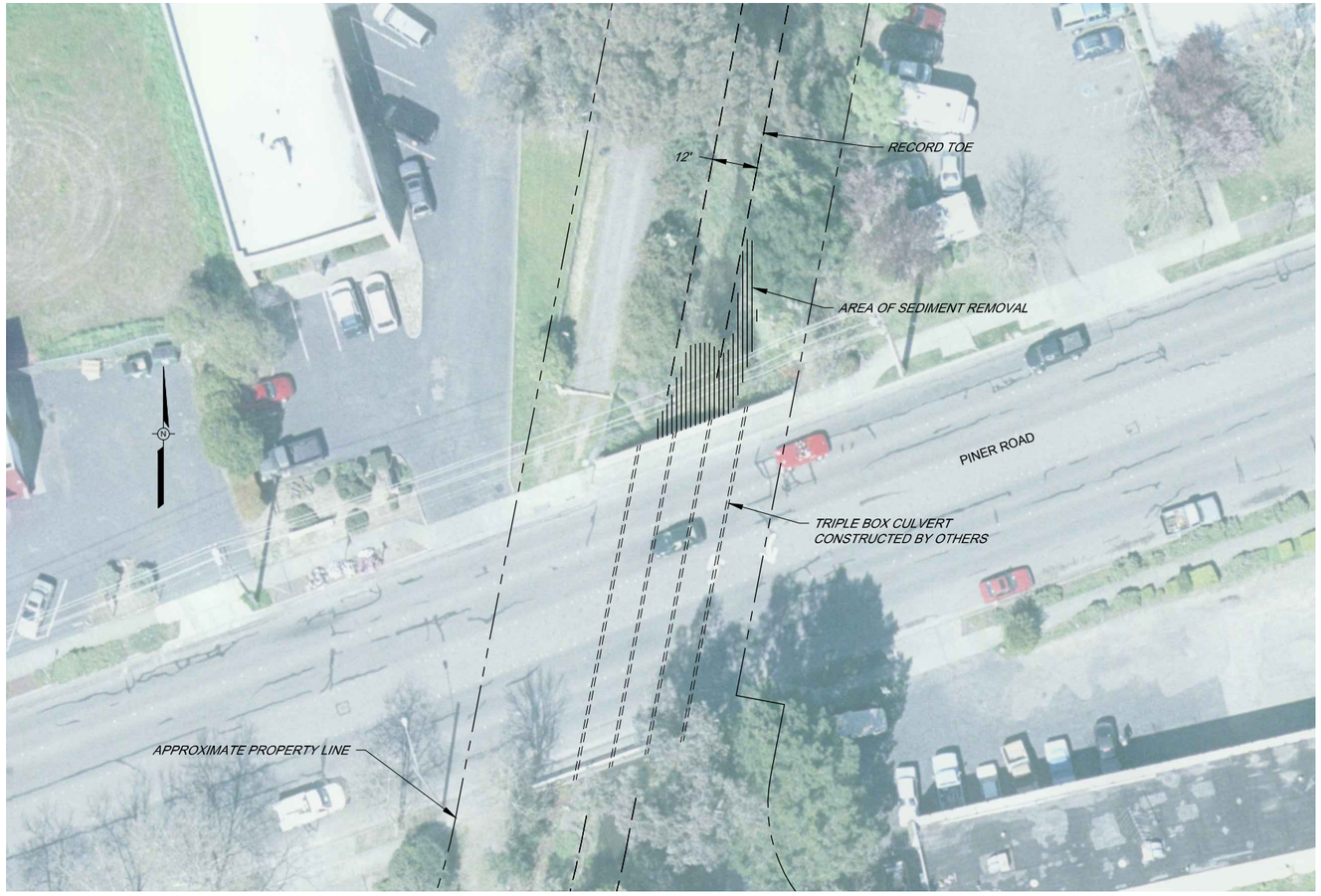
SCALE : AS SHOWN
DATE : 01/04/2012
DRAWN : ADF
REVIEWED :

LAGUNA MARK WEST ZONE 1A - PINER CREEK

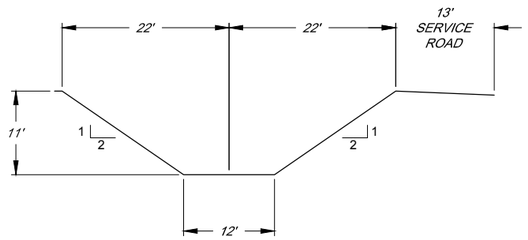
PINER CREEK - S.M.A.R.T. RR X-ING PLAN STA 658+80 TO STA 660+69

FILE NAME: PINER-2012_C
CONTRACT NUMBER:
DRAWING NUMBER: C-1
SHEET 2 OF 5

\\sd-data\proj\flood control\zone 1a\PINER\2012_SED-REMOVAL



PLAN .
SCALE 1" = 20'



TYPICAL SECTION - LOOKING DOWNSTREAM .
(CHANNEL CONSTRUCTED PRIOR TO PINER ROAD)
N.T.S.

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03/07/2012

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

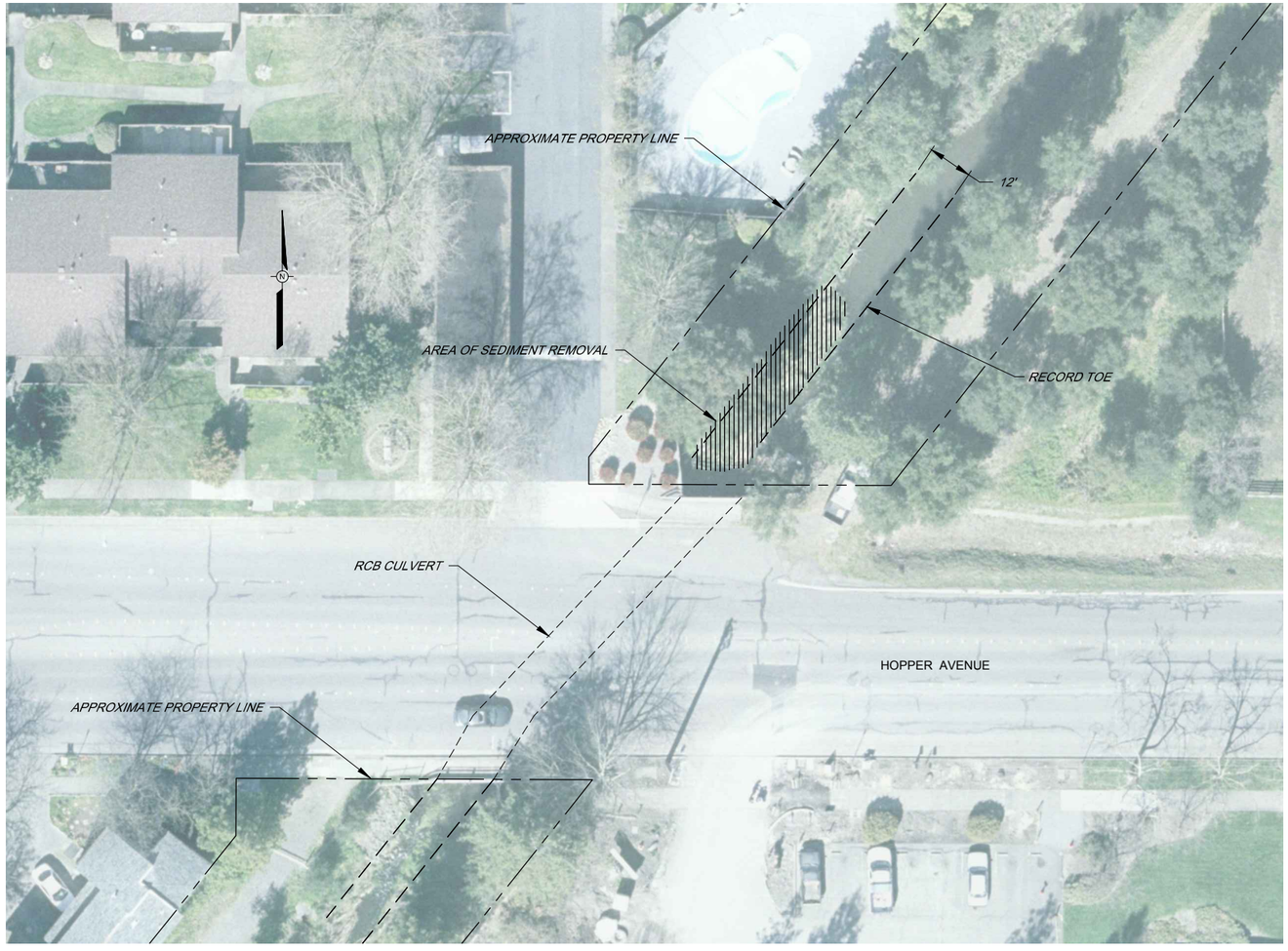
SCALE : AS SHOWN
DATE : 01/04/2012
DRAWN : ADF
REVIEWED :

LAGUNA MARK WEST ZONE 1A - PINER CREEK

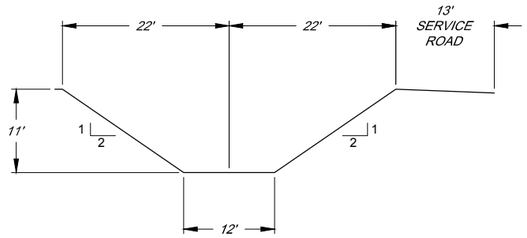
PINER CREEK - PINER ROAD PLAN STA 675+40 TO STA675+90

FILE NAME: PINER-2012_C
CONTRACT NUMBER:
DRAWING NUMBER: C-2
SHEET 3 OF 5

\\sd-data\proj\flood control\zone 1a\PINER\2012_SED-REMOVAL



PLAN .
SCALE 1" = 20'



TYPICAL SECTION - LOOKING DOWNSTREAM .
(STA 681+93.9 TO STA 714+01 AND STA 715+36 TO STA 719+15)
N.T.S.

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
03/07/2012

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE : AS SHOWN | DATE : 01/04/2012
DRAWN : ADF
REVIEWED :

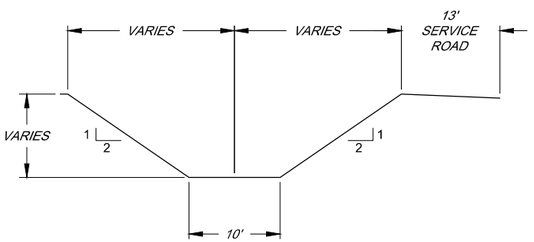
LAGUNA MARK WEST ZONE 1A - PINER CREEK

PINER CREEK - HOPPER AVENUE PLAN STA 715+20 TO STA 715+80

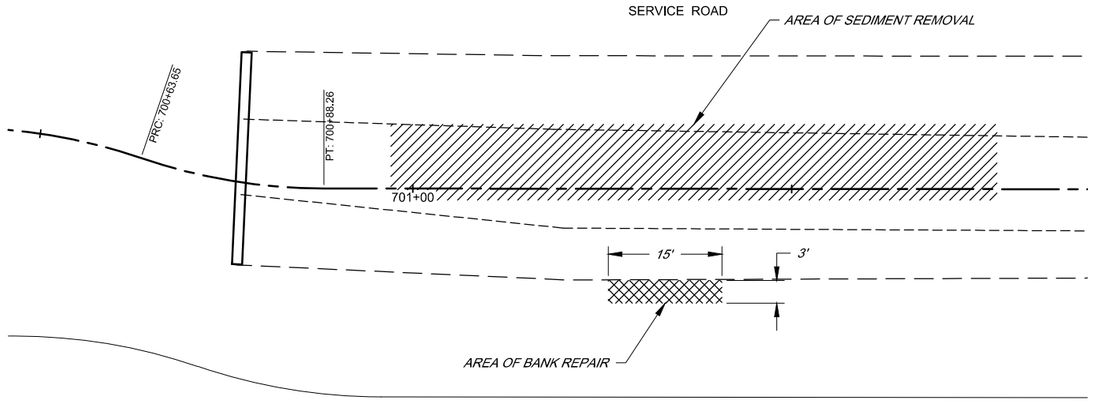
FILE NAME: PINER-2012_C
CONTRACT NUMBER:
DRAWING NUMBER: C-3
SHEET 4 OF 5

\\sd-data\proj\flood control\zone 1a\PINER\2012_SED-REMOVAL

VIEW FROM SERVICE ROAD .



RECORD SECTION - LOOKING DOWNSTREAM .
N.T.S.



PLAN .
SCALE 1" = 10'

GENERAL NOTE:
FIGURE 5-6 TYPICAL SECTION OF SMP MANUEL FOR BANK REPAIR STABILIZATIOMNDESIGN WILL BE USED.

BANK REPAIR:
ROCK RIPRAP FILL 45 SQ. FT.
ABOVE O.H.W. = 4 CU. YDS.
BELOW O.H.W. = 6 CU. YDS.
TOTAL:

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
03/07/2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE : AS SHOWN | DATE : 01/04/2012
DRAWN : ADF
REVIEWED :

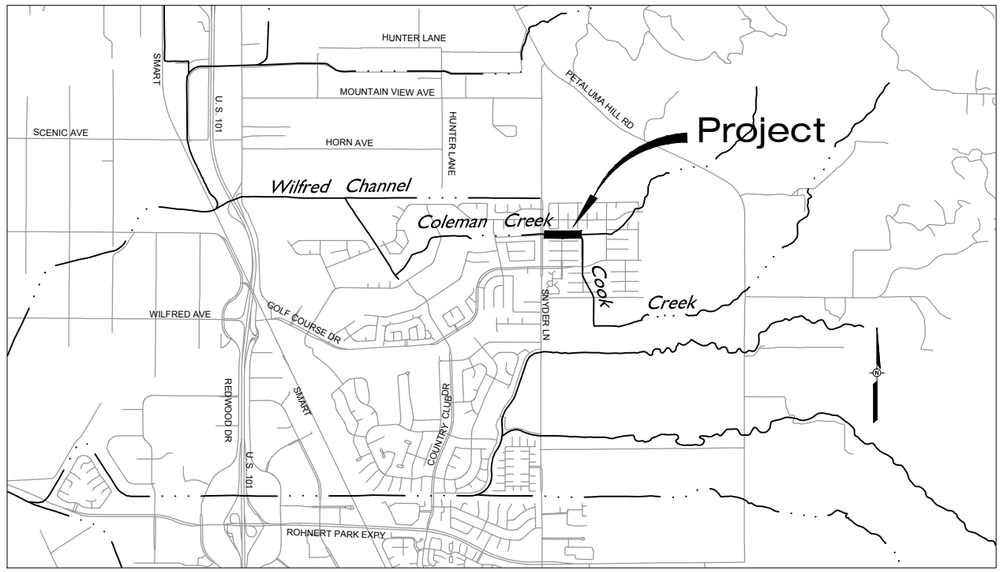
LAGUNA MARK WEST ZONE 1A - RUSSELL CREEK

RUSSELL CREEK - BANK REPAIR AND SEDIMENT REMOVAL

FILE NAME: 2012_RUSELL-CRK
CONTRACT NUMBER:
DRAWING NUMBER: C-4
SHEET 5 OF 5

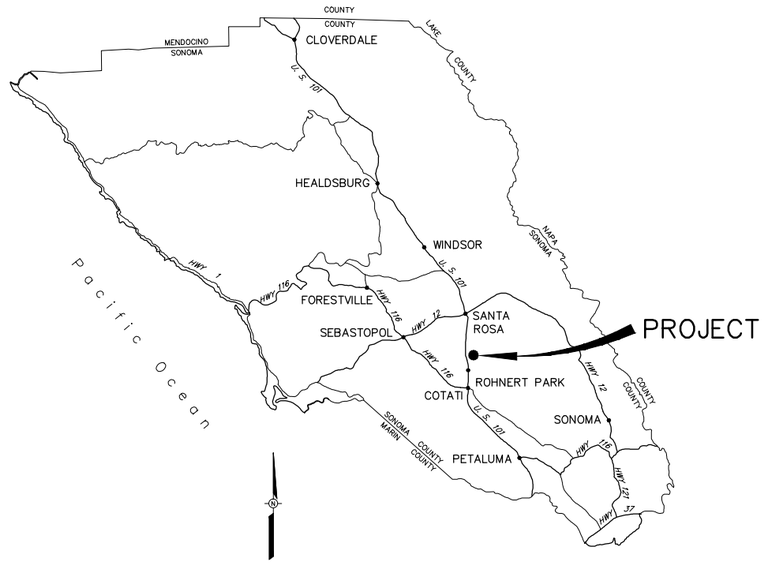
\\sd-data\proj\flood control\zone 1a\RUSSELL\2012_RUSSELL-CRK

COLEMAN CHANNEL
SEDIMENT REMOVAL



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

COLEMAN CREEK						
EXVAVATION						
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.	STATION 43+97 TO STATION 53+00	903	19'	4,472 ABOVE OHW 12,528 BELOW OHW 17,300 TOTAL	1.3	102 ABOVE OHW 731 BELOW OHW 833 TOTAL

INDEX TO DRAWINGS:

SHEET NO.	DRAWING NO.	TITLE
1.	G-1	INDEX TO DRAWINGS, TABLE, LOCATION & VICINITY MAPS
2.	C-1	PLAN, PROFILE STA 43+00 TO STA 49+00
3.	C-2	PLAN AND SECTIONS STA 49+00 TO STA 53+00
4.	C-3	CROSS SECTIONS

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
9 MAR 2011

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

NO.	DATE	REVISION	BY

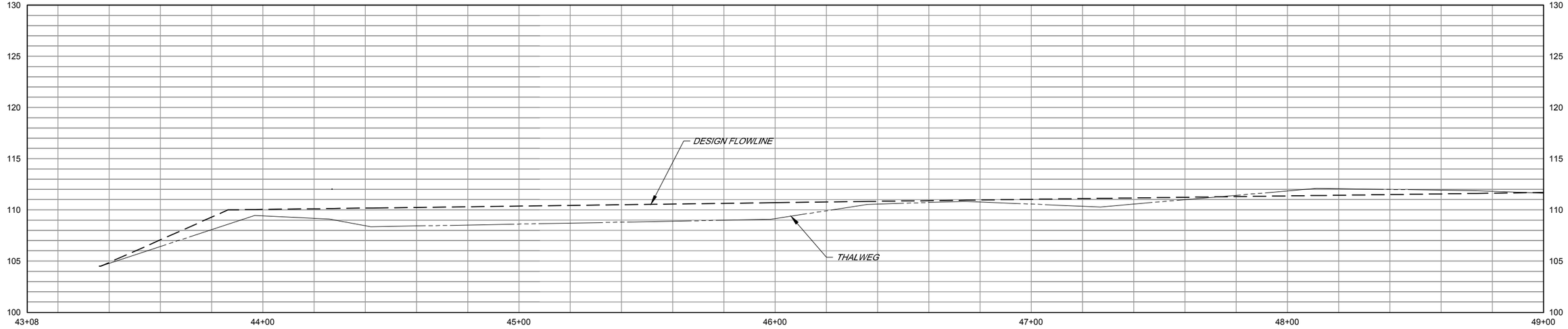
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 1/18/2011
DRAWN: ADF
REVIEWED:

COLEMAN CREEK
INDEX TO DRAWINGS, TABLE, VICINITY & LOCATION MAPS

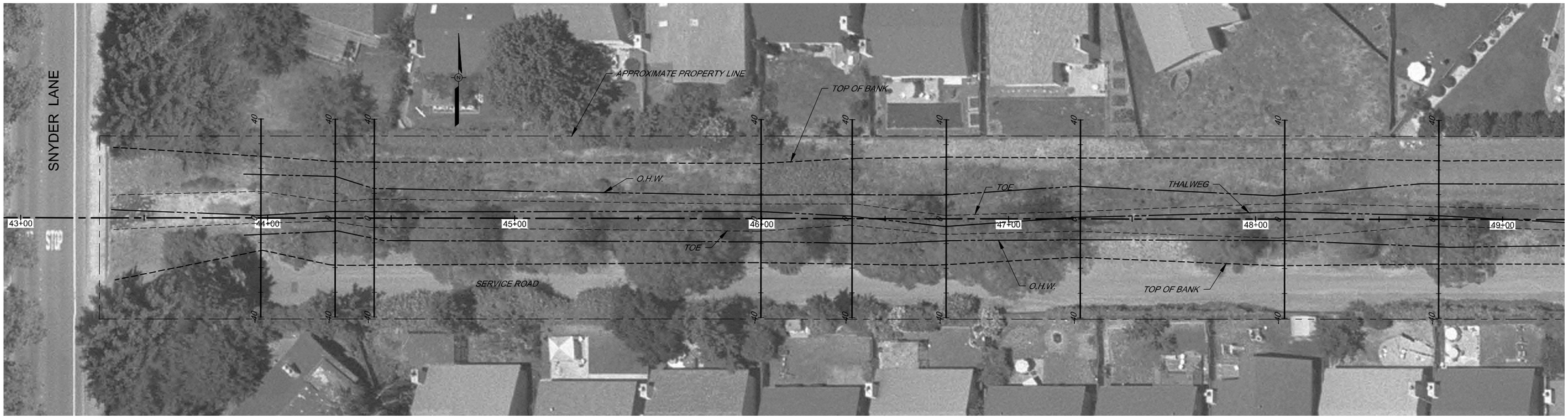
FILE NAME: colman-2011_G
CONTRACT NUMBER:
DRAWING NUMBER: G-1
SHEET 1 OF 5

\\Sd-data\Proj\flood control\zone 1a\COLEMAN\2011_MAINTENANCE\colman-2011_G



PROFILE

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



PLAN

SCALE 1" =20'

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
9 MAR 2011

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

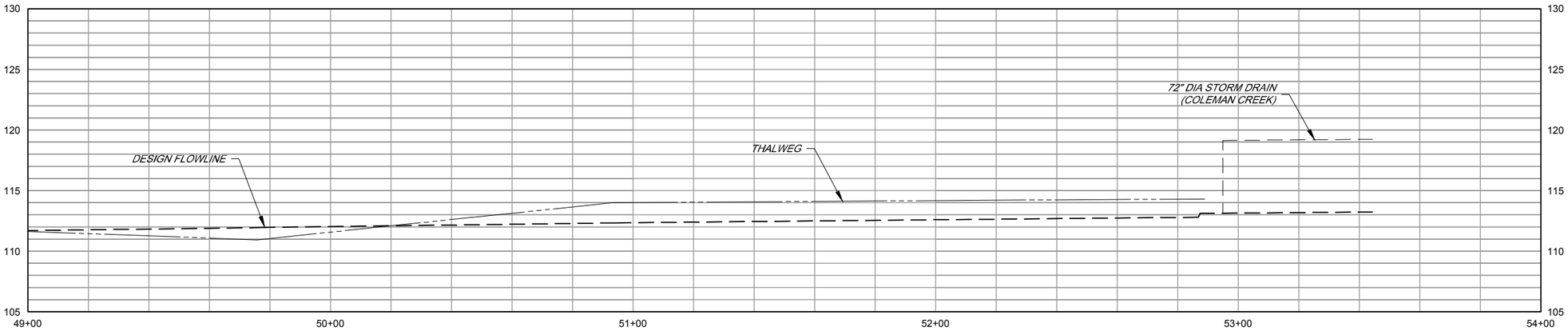
SCALE : AS SHOWN
DATE : 1/18/2011
DRAWN : ----
REVIEWED :

COLEMAN CREEK

PLAN AND PROFILE STA 43+00 TO STA 49+00

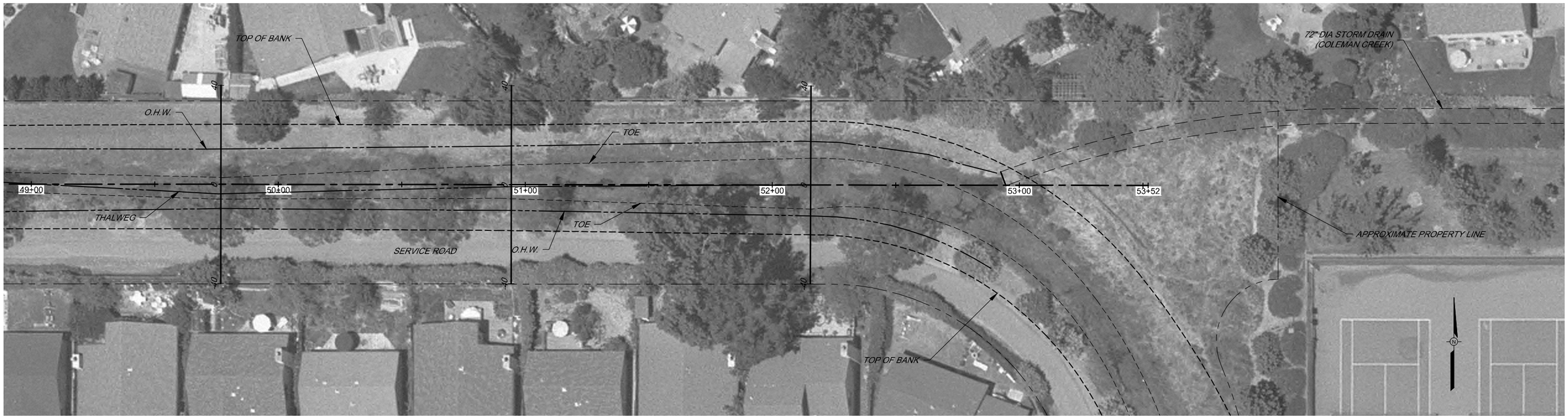
FILE NAME: COLEMAN_C
CONTRACT NUMBER:
DRAWING NUMBER: C-1
SHEET 2 OF 5

\\Sd-data\Proj\flood control\zone 1a\COLEMAN\2011_MAINTENANCE



PROFILE

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



PLAN

SCALE 1" =20'

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
9 MAR 2011

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

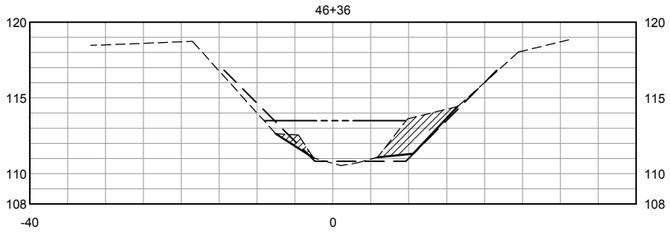
SCALE : AS SHOWN
DATE : 1/18/2011
DRAWN : ----
REVIEWED :

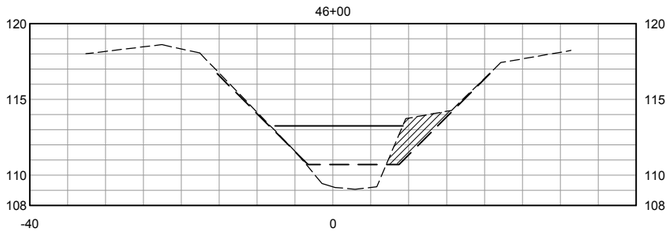
COLEMAN CREEK

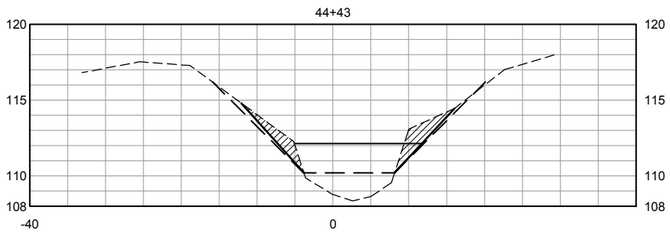
PLAN AND PROFILE STA 49+00 TO STA 53+00

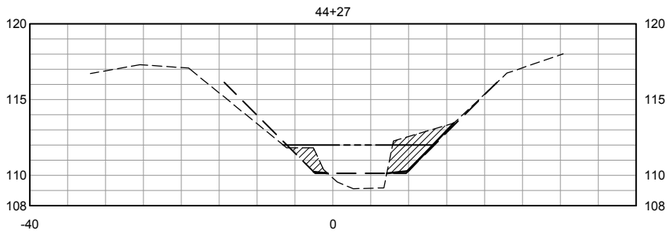
FILE NAME: COLEMAN_C
CONTRACT NUMBER:
DRAWING NUMBER: C-2
SHEET 3 OF 5

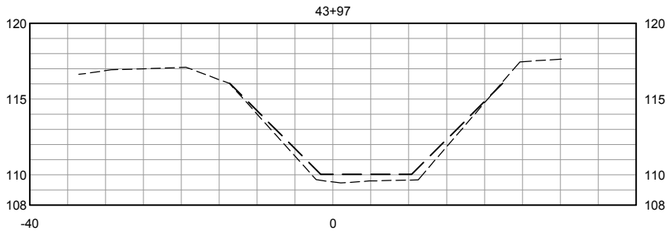
\\Sd-data\Proj\flood control\zone 1a\COLEMAN\2011_MAINTENANCE

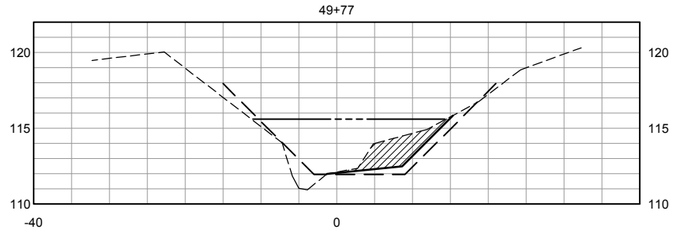


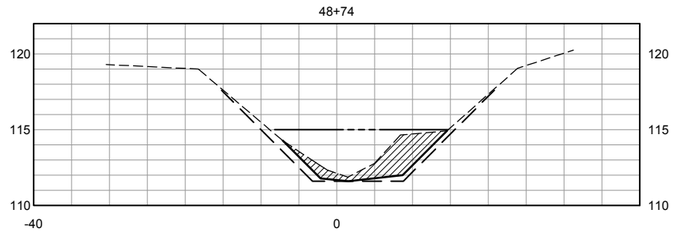


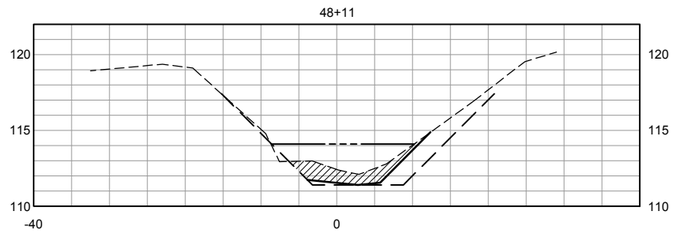


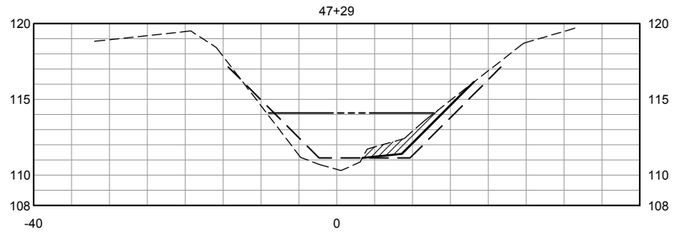


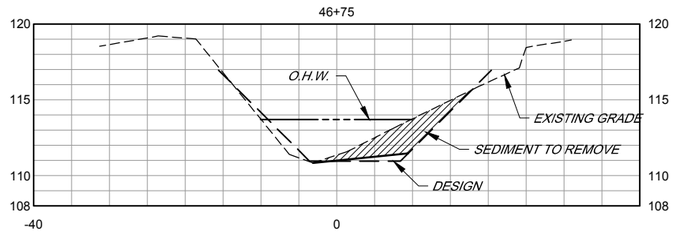






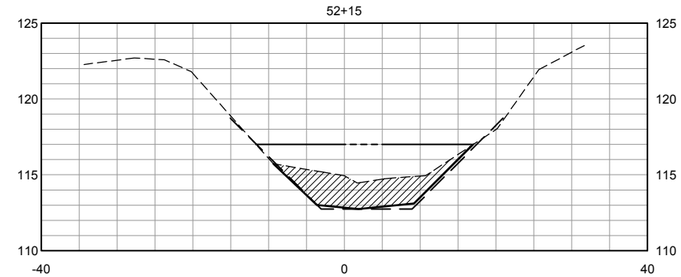


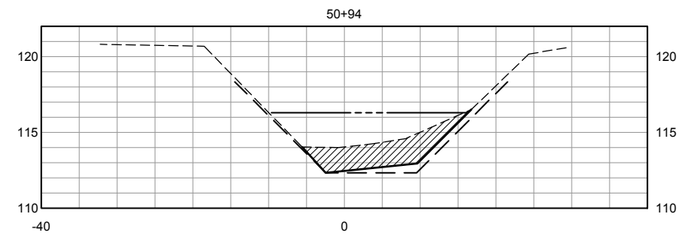


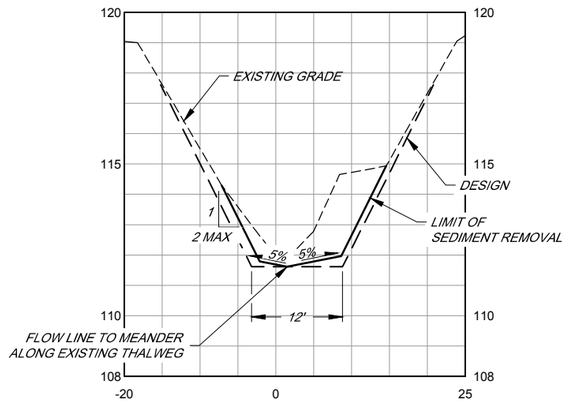


SECTIONS

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







TYPICAL SECTION

NOT TO SCALE

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
9 MAR 2011

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE : AS SHOWN
DATE : 1/18/2011
DRAWN : ----
REVIEWED :

COLEMAN CREEK

CROSS SECTIONS

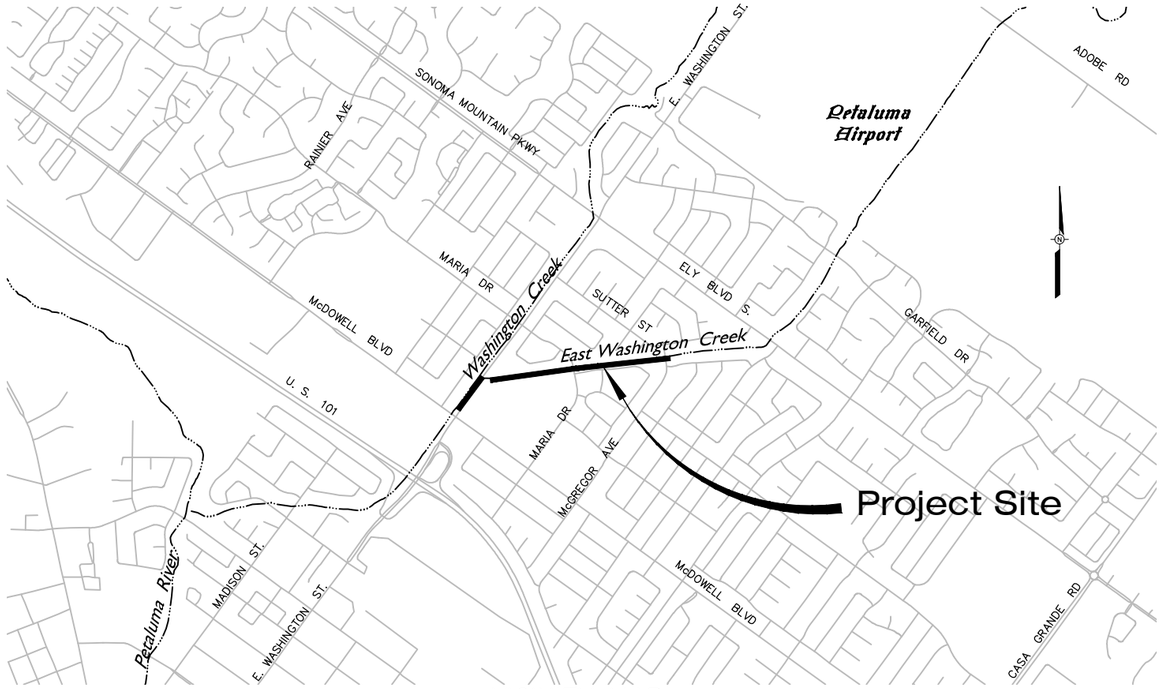
FILE NAME: COLEMAN_C
CONTRACT NUMBER:

DRAWING NUMBER: C-3

SHEET 4 OF 5

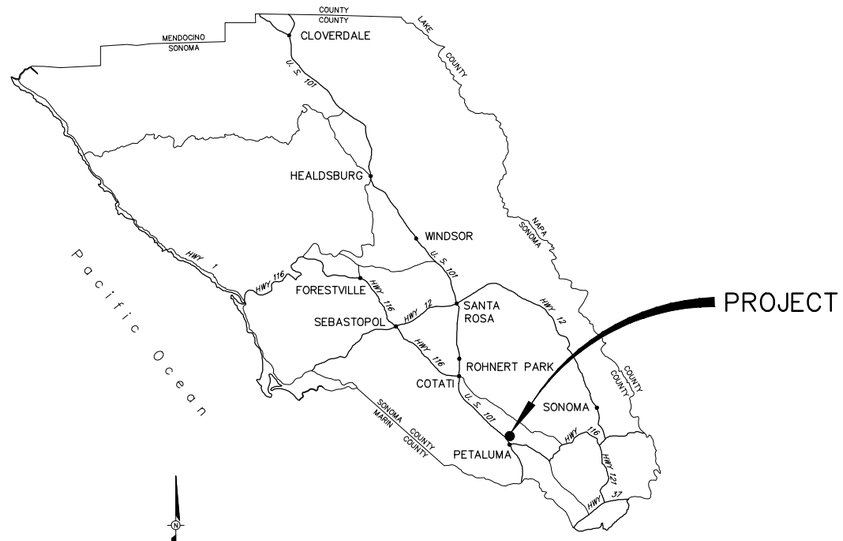
\\Sf-data\Proj\flood control\zone 1a\COLEMAN\2011_MAINTENANCE

WASHINGTON AND EAST WASHINGTON CREEK
SEDIMENT REMOVAL



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

INDEX TO DRAWINGS:		
SHEET NUMBER	DRAWING NUMBER	TITLE
1	G–1	INDEX TODRAWINGS, TABLE ,VICINITY AND LOCATION MAPS
2	C–1	WASHINGTON CREEK PLAN & PROFILE STA 43+00 TO 51+00
3	C–2	EAST WASHINGTON CREEK PLAN & PROFILE STA 0+00 TO 10+00
4	C–3	EAST WASHINGTON CREEK PLAN & PROFILE STA 10+00 TO 20+00
5	C–4	EAST WASHINGTON CREEK PLAN & PROFILE STA 20+00 TO 25+25
6	C–5	EAST WASHINGTON CREEK SECTIONS

WASHINGTON CREEK						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM ROADWAY	STA 44+42 TO STA 47+56	314	15	BELOW O.H.W. 4,710	1.5	BELOW O.H.W. 262
	STA 47+92 TO STA 48+96	104	5	BELOW O.H.W. 520	2	BELOW O.H.W. 39
		TOTAL: 418				TOTAL: BELOW O.H.W. 301

EAST WASHINGTON 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 PLUG REMOVAL USING EXCAVATOR FROM ROADWAY	STA 1+50 TO STA 7+20	300*	N/A	BELOW O.H.W.	N/A	BELOW O.H.W. 100
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM ROADWAY	STA 7+20 TO STA 17+40	1,020	1105	BELOW O.H.W. 11,960	1.2	BELOW O.H.W. 531
ACCUMULATED SEDIMENT PLUG REMOVAL USING EXCAVATOR FROM ROADWAY	STA 17+40 TO STA 26+40	500*	N/A	BELOW O.H.W.	N/A	BELOW O.H.W. 200
		TOTAL: 1,820				TOTAL: BELOW O.H.W. 831

*TOTAL LENGTH WITHIN REACH OF SEDIMENT TO BE REMOVED

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2011

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

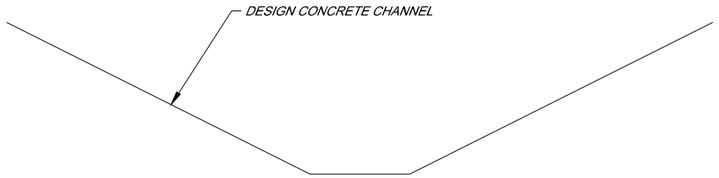
SCALE : AS SHOWN
DATE : 2/08/2011
DRAWN : ADF
REVIEWED :

WASHINGTON AND EAST WASHINGTON CREEKS

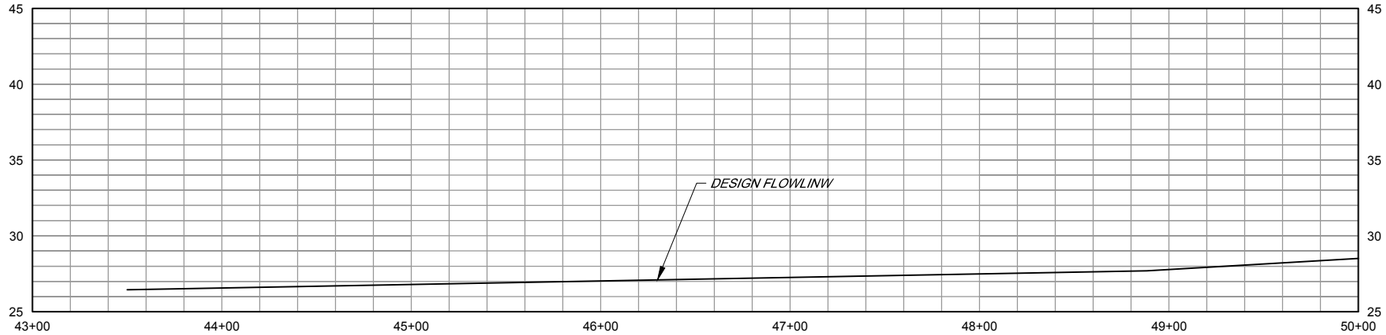
INDEX TODRAWINGS, TABLE ,VICINITY AND LOCATION MAPS

FILE NAME: 2012_WASH_G
CONTRACT NUMBER:
DRAWING NUMBER: G-1
SHEET 1 OF 6

\\SD-DATA\Proj\flood control\zone 2a\Washington Creek\sediment-removal\SMP-5_2012



TYPICAL SECTION
NOT TO SCALE



PROFILE
SCALE HORIZ 1" = 40'
VERT 1" =5'

PLAN
SCALE 1" = 40'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2011

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

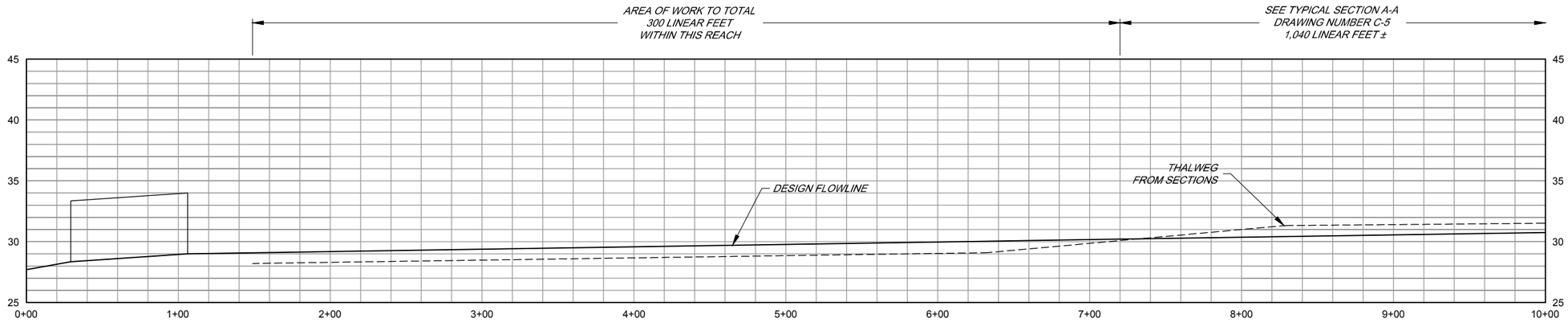
SCALE : AS SHOWN
DATE : 2/08/2011
DRAWN : ----
REVIEWED :

WASHINGTON AND EAST WASHINGTON CREEKS

WASHINGTON CREEK PLAN & PROFILE STA 43+00 TO 51+00

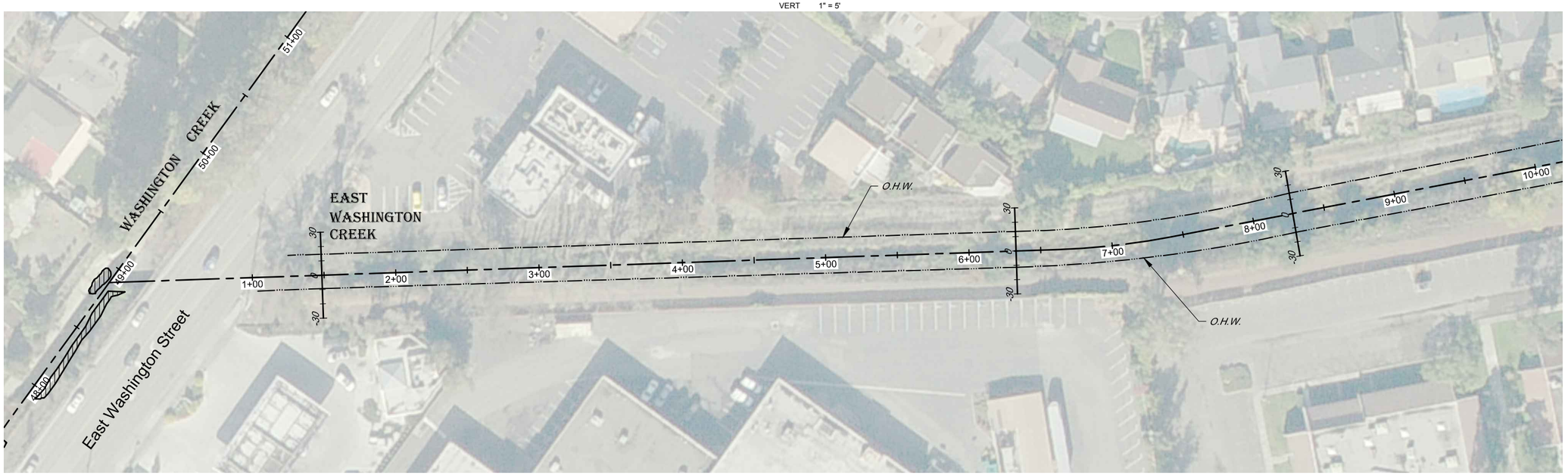
FILE NAME: 2012_WASH_C
CONTRACT NUMBER:
DRAWING NUMBER: C-1
SHEET 2 OF 6

\\SD-DATA\Proj\flood control\zone 2a\Washington Creek\sediment-removal\SMP-5_2012



PROFILE

SCALE HORIZ 1" = 40'
VERT 1" = 5'



PLAN

SCALE 1" = 40'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2011

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

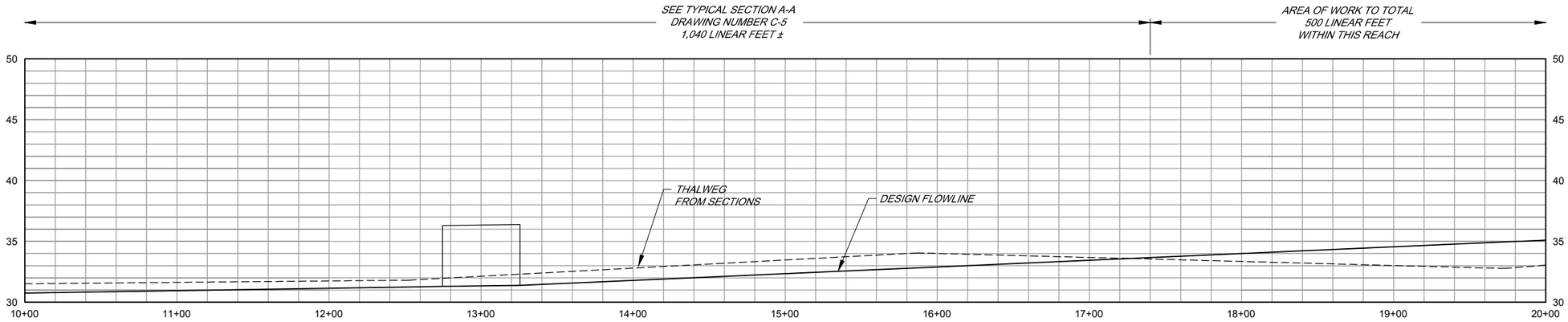
SCALE : AS SHOWN
DATE : 2/08/2011
DRAWN : ----
REVIEWED :

WASHINGTON AND EAST WASHINGTON CREEKS

EAST WASHINGTON CREEK PLAN & PROFILE STA 0+00 TO 10+00

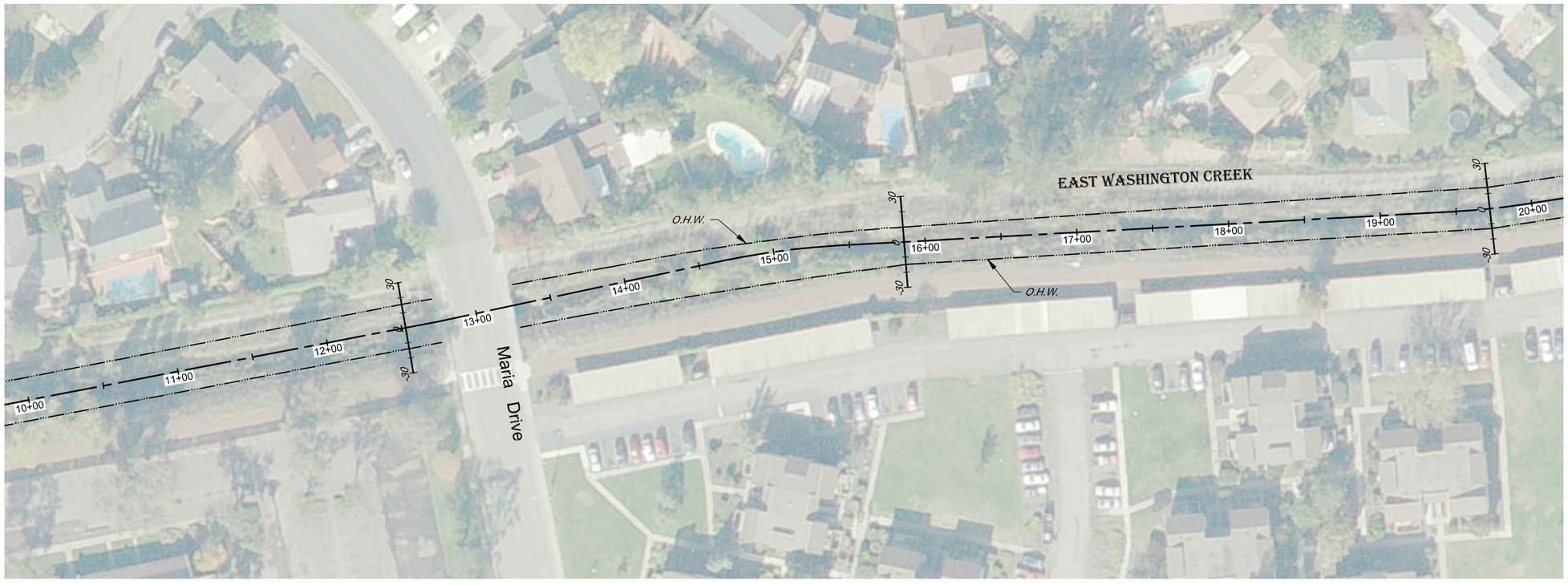
FILE NAME: 2012_WASH_C
CONTRACT NUMBER:
DRAWING NUMBER: C-2
SHEET 3 OF 6

\SD-DATA\Proj\flood control\zone 2a\Washington Creek\sediment-removal\SMP-6_2012



PROFILE

SCALE HORIZ 1" = 40'
VERT 1" = 5'



PLAN

SCALE 1" = 40'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2011

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

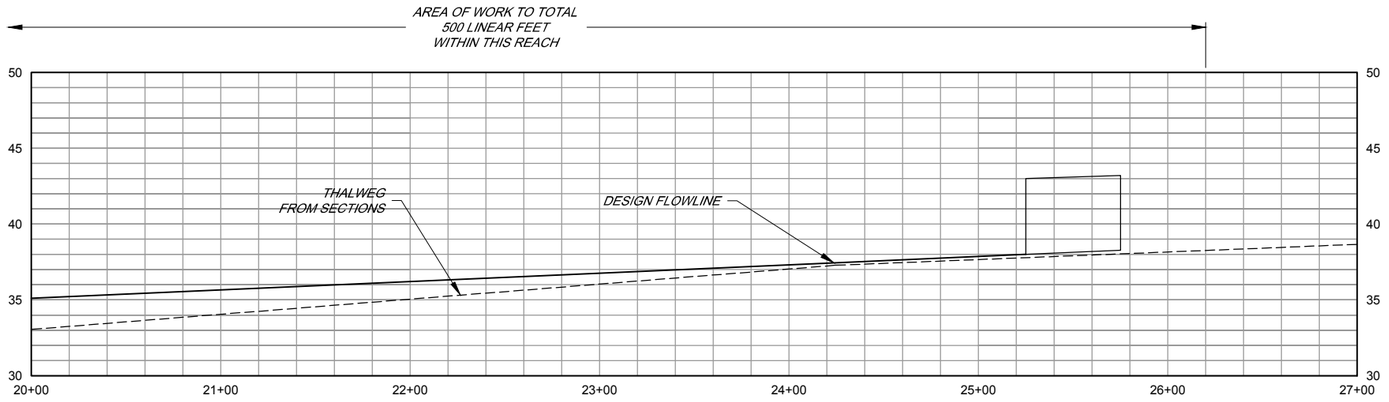
SCALE: AS SHOWN
DATE: 2/08/2011
DRAWN: ----
REVIEWED:

WASHINGTON AND EAST WASHINGTON CREEKS

EAST WASHINGTON CREEK PLAN & PROFILE STA 10+00 TO 20+00

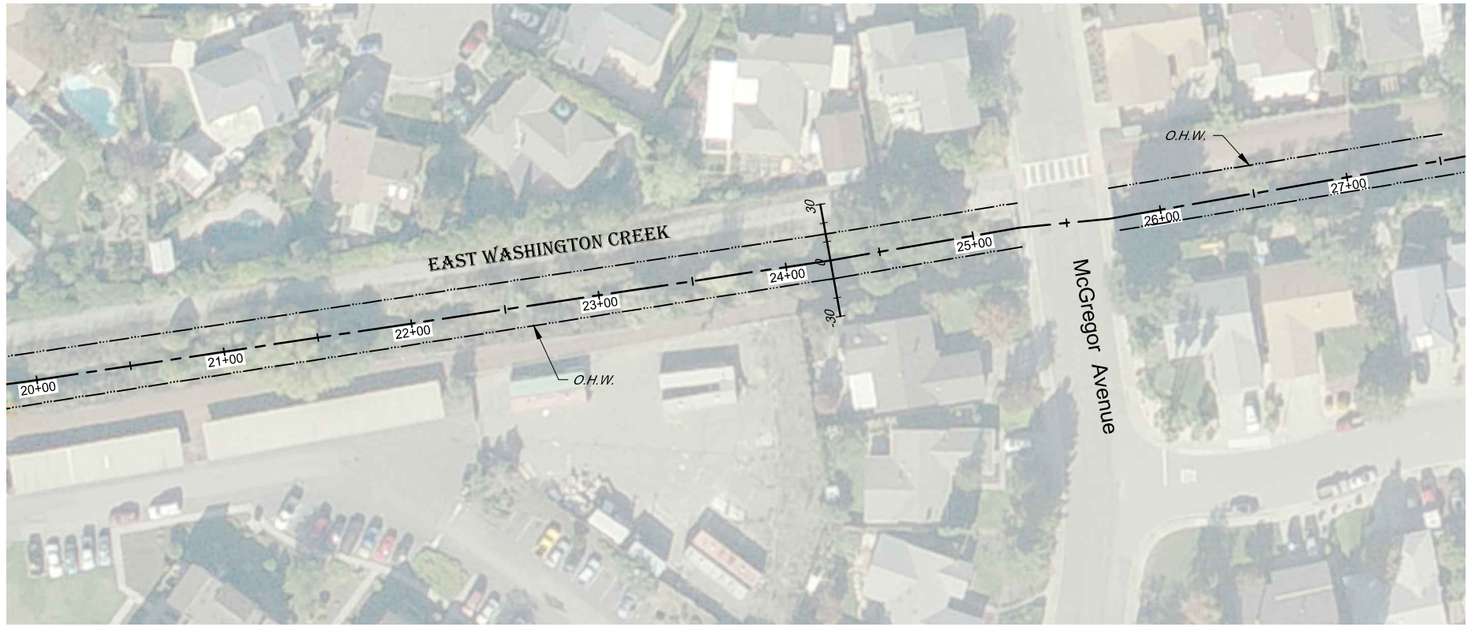
FILE NAME: 2012_WASH_C
CONTRACT NUMBER:
DRAWING NUMBER: C-3
SHEET 4 OF 6

\SSD-DATA\Proj\flood control\zone 2a\Washington Creek\sediment removal\SMP-5_2012



PROFILE

SCALE HORIZ 1" = 40'
VERT 1" = 5'



PLAN

SCALE 1" = 40'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2011

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

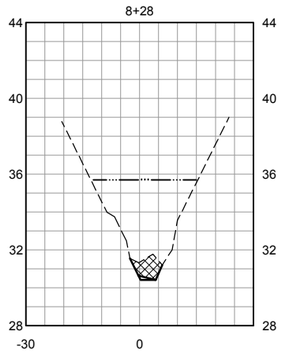
SCALE : AS SHOWN
DATE : 2/08/2011
DRAWN : ----
REVIEWED :

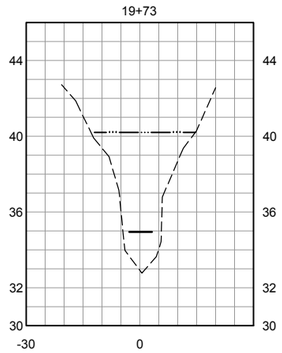
WASHINGTON AND EAST WASHINGTON CREEKS

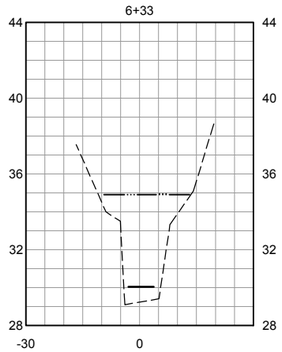
EAST WASHINGTON CREEK PLAN & PROFILE STA 20+00 TO 25+25

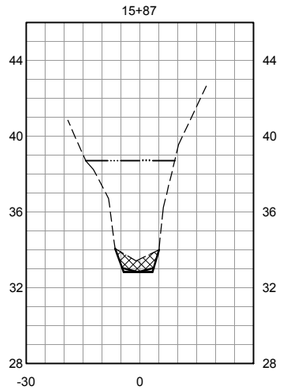
FILE NAME: 2012_WASH_C
CONTRACT NUMBER:
DRAWING NUMBER: C-4
SHEET 5 OF 6

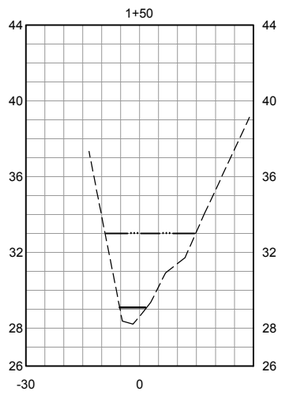
\SD-DATA\Projflood control\zone 2a\Washington Creek\sediment-removal\SMP-5_2012

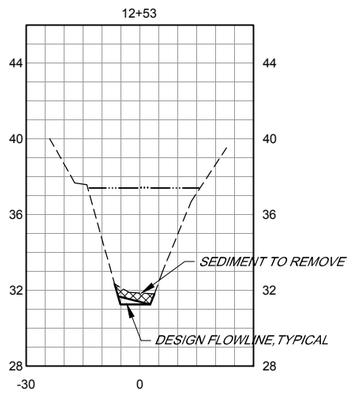


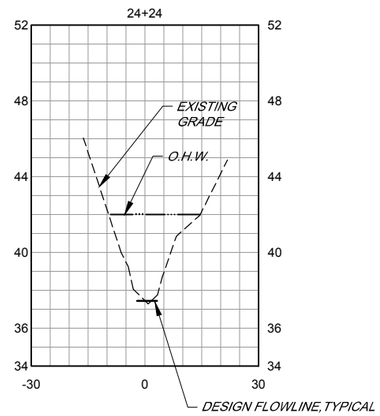






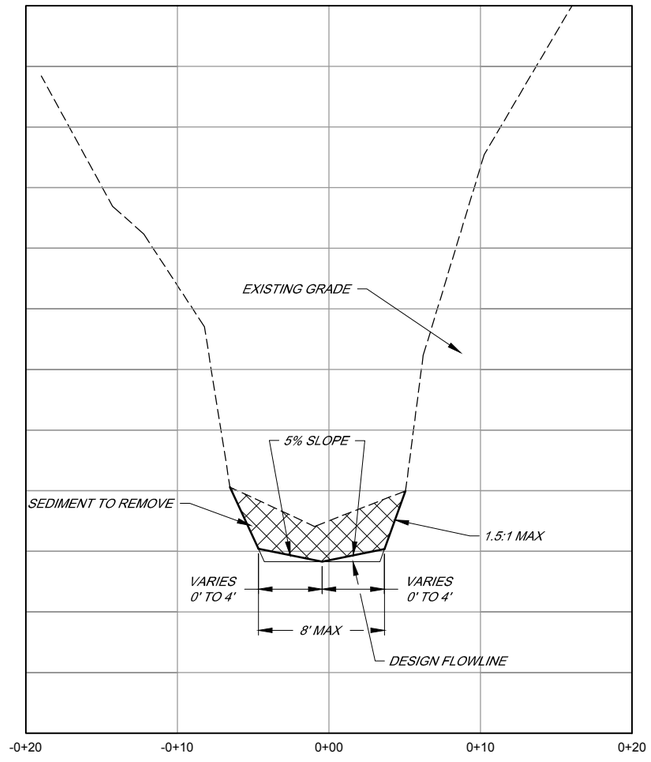






SECTIONS .

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



TYPICAL SECTION A-A .

NOT TO SCALE

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2011

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE : AS SHOWN
DATE : 2/08/2011
DRAWN : ----
REVIEWED :

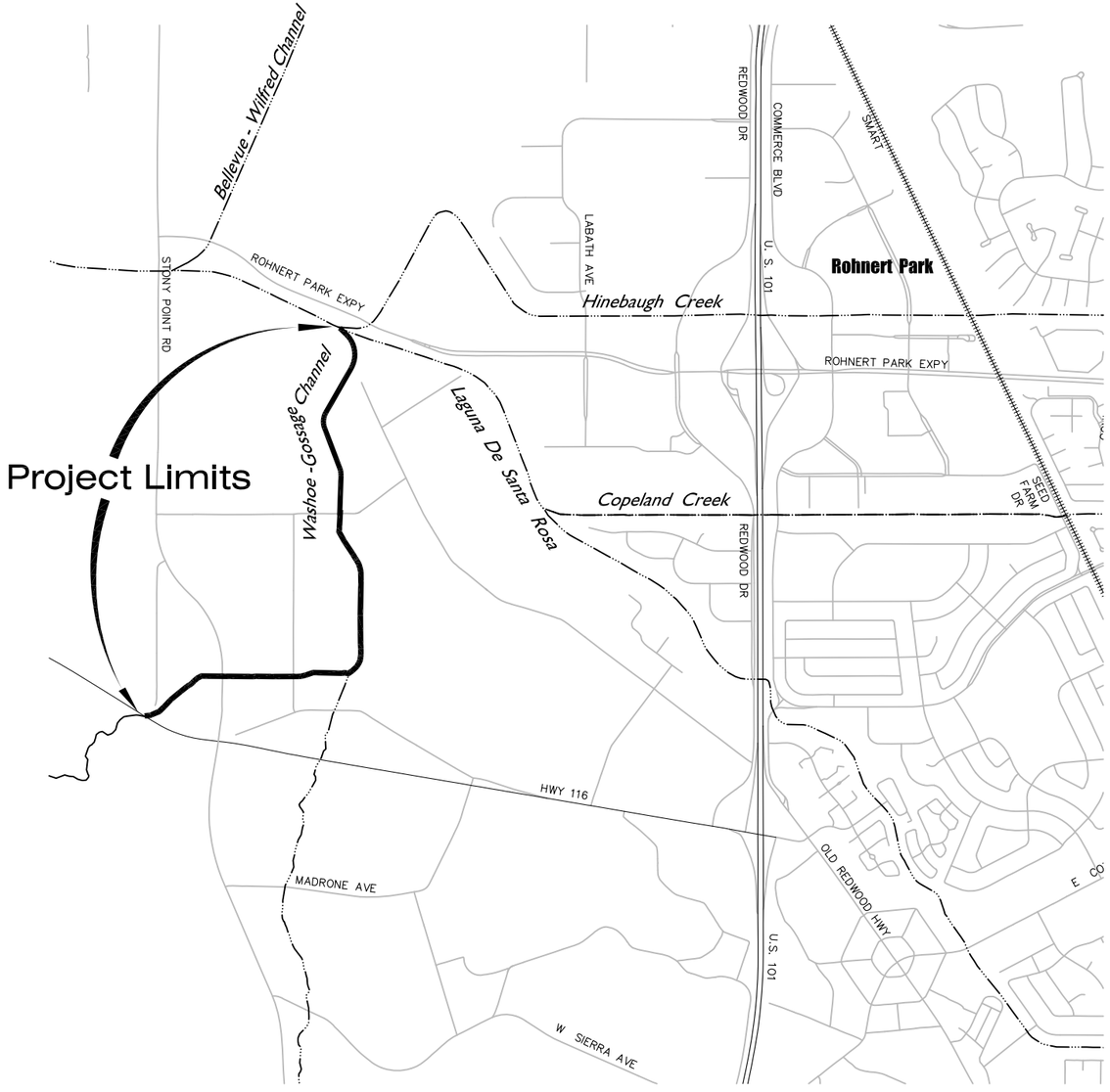
WASHINGTON AND EAST WASHINGTON CREEKS

EAST WASHINGTON CREEK CROSS SECTIONS AND TYPICAL SECTION

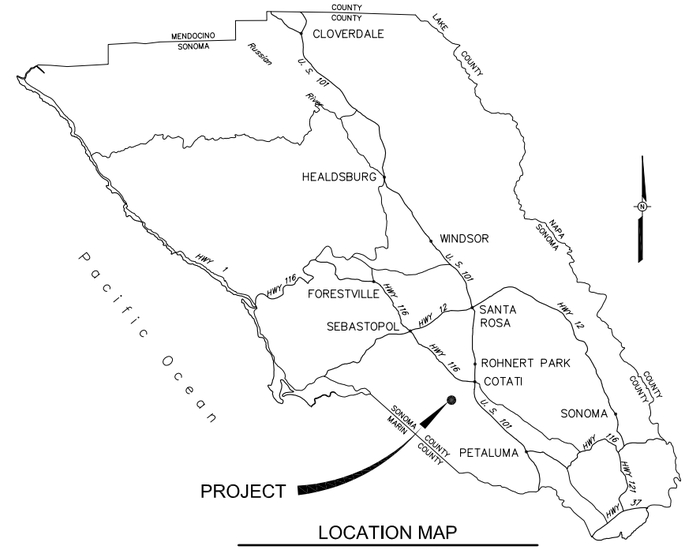
FILE NAME: 2012_WASH_C
CONTRACT NUMBER:
DRAWING NUMBER: C-5
SHEET 6 OF 6

\SD_DATA\Pgi\flood control\stone 2a\Washington Creek\sediment-removal\SMP-5_2012

GOSSAGE CHANNEL SEDIMENT REMOVAL



VICINITY MAP
SCALE: 1" = 1000'



LOCATION MAP
SCALE: NOT TO SCALE

SHEET LIST TABLE

SHEET No	SHEET TITLE	SHEET DESCRIPTION
1	G-1	GOSSAGE CHANNEL SEDIMENT REMOVAL LOCATION AND VICINTY MAPS AND INDEX TO DRAWINGS
2	G-2	GOSSAGE CHANNEL SEDIMENT REMOVAL TYPICAL CROSS SECTION AND EXCAVATION
3	C-1	GOSSAGE CREEK SEDIMENT REMOVAL PLAN AND PROFILE STA 2+17 TO STA 16+00
4	C-2	GOSSAGE CREEK SEDIMENT REMOVAL PLAN AND PROFILE STA 16+00 TO STA 27+00
5	C-3	GOSSAGE CHANNEL SEDIMENT REMOVAL PLAN & PROFILE STA 27+00 TO STA 45+00
6	C-4	GOSSAGE CHANNEL SEDIMENT REMOVAL PLAN & PROFILE STA 45+00 TO STA 63+00
7	C-5	GOSSAGE CHANNEL SEDIMENT REMOVAL PLAN & PROFILE STA 63+00 TO STA 78+00
8	C-6	GOSSAGE CHANNEL SEDIMENT REMOVAL CROSS SECTIONS
9	C-7	GOSSAGE CHANNEL SEDIMENT REMOVAL CROSS SECTIONS
10	C-8	GOSSAGE CHANNEL SEDIMENT REMOVAL CROSS SECTIONS
11	C-9	GOSSAGE CHANNEL SEDIMENT REMOVAL CROSS SECTIONS
12	C-10	GOSSAGE CHANNEL SEDIMENT REMOVAL CROSS SECTIONS

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 FEB 2012

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

NO.	DATE	REVISION	BY

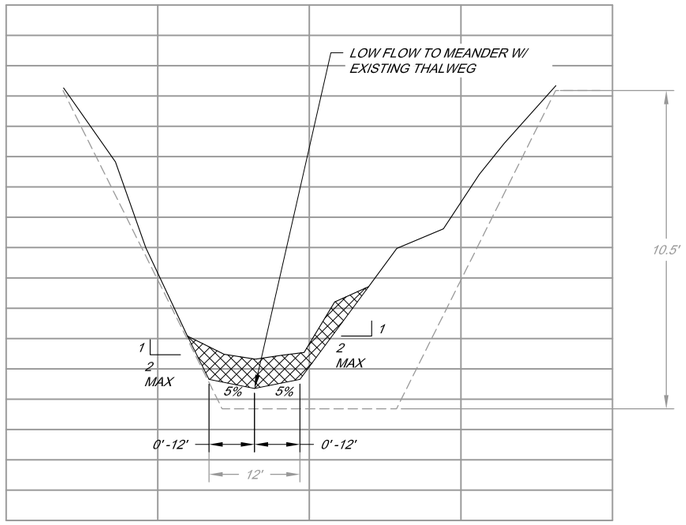
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN | DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

LAGUNA - MARK WEST ZONE 1A
GOSSAGE CHANNEL SEDIMENT REMOVAL
LOCATION AND VICINITY MAPS AND INDEX TO DRAWINGS

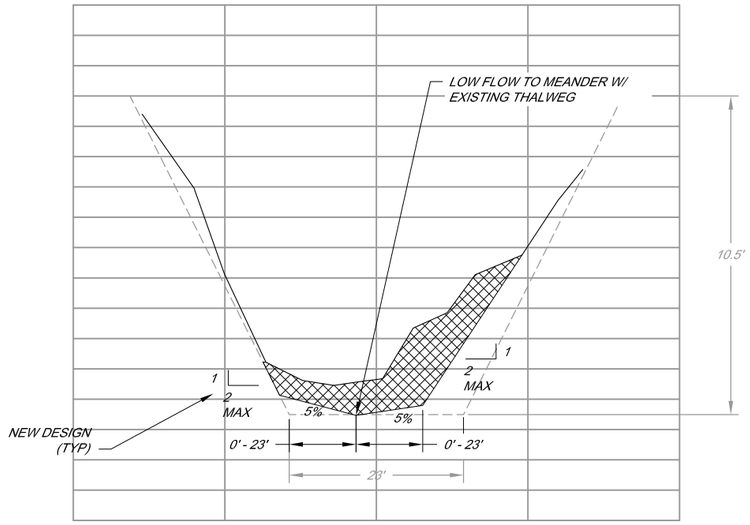
FILE NAME: GossChan_G1-G2_2012.dwg
CONTRACT NUMBER: ##
DRAWING NUMBER: G-1
SHEET 1 OF 12

\\sd-data\proj\flood control\zone 1a\gossage\gossage 2012\GossChan_G1-G2_2012



TYPICAL CROSS SECTION
STA 2+00 TO STA 27+00
STA 50+00 TO STA 77+00

SCALE: NOT TO SCALE



TYPICAL CROSS SECTION
STA 27+00 TO STA 50+00

SCALE: NOT TO SCALE

LAGUNA DE SANTA ROSA 'D' LINE						
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 CHANNEL	STA 2+00 TO STA 27+00	2500	14	BELOW O.H.W. 35,000	2.2	BELOW O.H.W. 2853
	STA 27+00 TO STA 78+00	5100	16	BELOW O.H.W. 81,600	0.8	BELOW O.H.W. 2417
	TOTAL	7600		116,600		5270

PRELIMINARY
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29 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

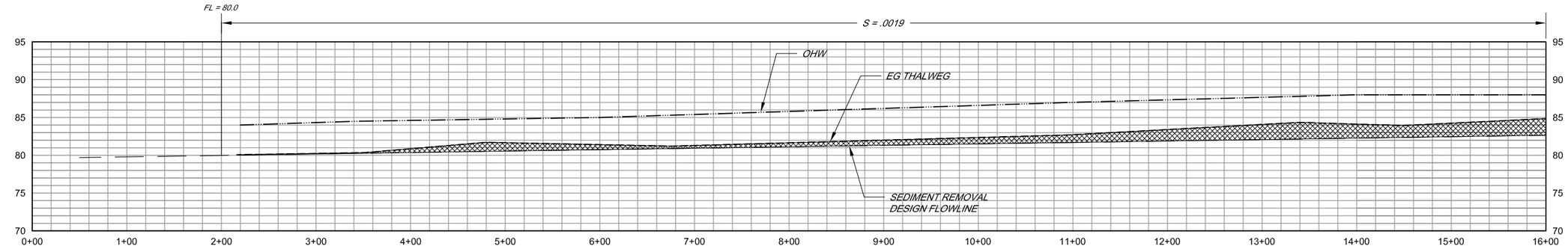
SCALE: AS SHOWN
DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

LAGUNA - MARK WEST ZONE 1A

GOSSAGE CHANNEL SEDIMENT REMOVAL
TYPICAL CROSS SECTION AND EXCAVATION

FILE NAME: GossChan_G1-G2_2012.dwg
CONTRACT NUMBER: ##
DRAWING NUMBER: G-2
SHEET 2 OF 12

\\sd-data\proj\flood control\zone 1a\gossage\gossage 2012\GossChan_G1-G2_2012



PROFILE

SCALE: HORIZ 1" = 60'
VERT 1"= 7.5'

PLAN

SCALE: HORIZ 1" = 60'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

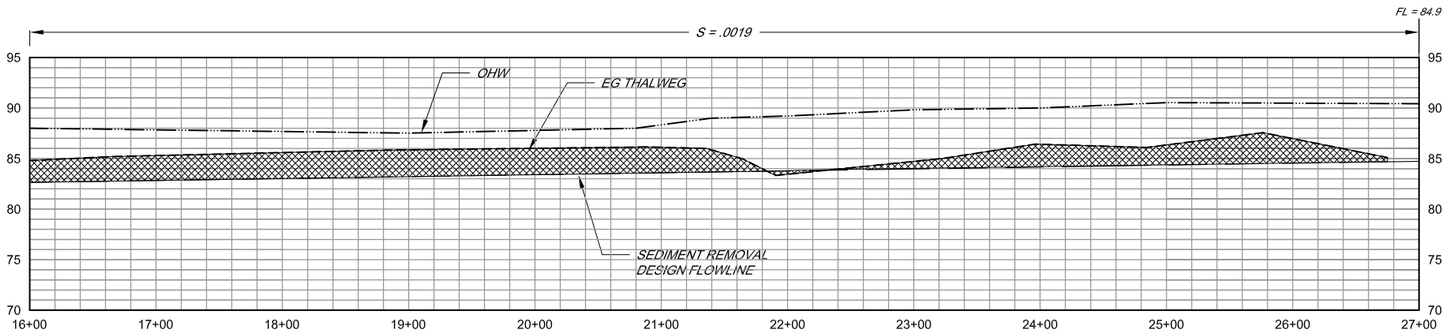
SCALE: AS SHOWN
DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

LAGUNA - MARK WEST ZONE 1A

GOSSAGE CREEK SEDIMENT REMOVAL
PLAN AND PROFILE STA 2+17 TO STA 16+00

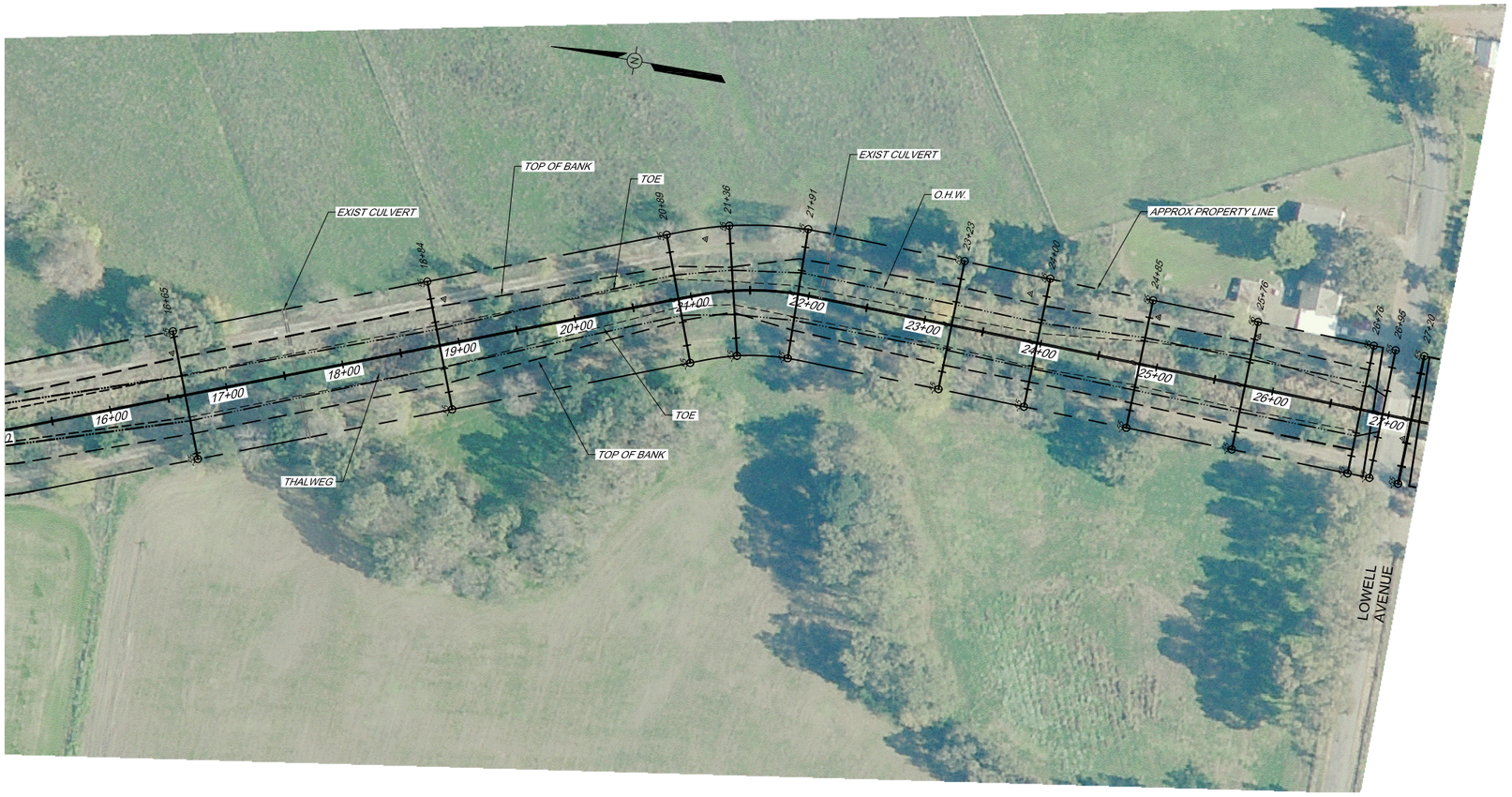
FILE NAME: GossChan_CivilShts.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: C-1
SHEET 3 OF 12

\\sd-data\proj\flood control\zone 1a\gossage\GossChan_CivilShts



PROFILE

SCALE: HORIZ 1" = 60'
VERT 1"= 7.5'



PLAN

SCALE: HORIZ 1" = 60'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 FEB 2012

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

NO.	DATE	REVISION	BY

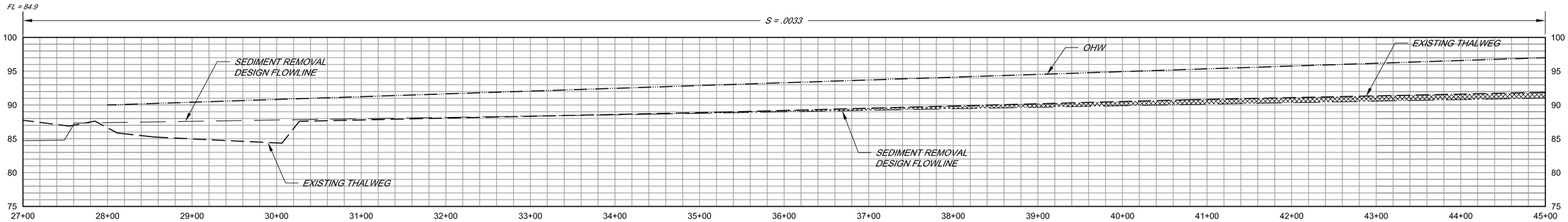
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

LAGUNA - MARK WEST ZONE 1A
GOSSAGE CREEK SEDIMENT REMOVAL
PLAN AND PROFILE STA 16+00 TO STA 27+00

FILE NAME: GossChan_CivilShts.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: C-2
SHEET 4 OF 12

\\sd-data\proj\flood control\zone 1a\gossage\GossChan_CivilShts



PROFILE

SCALE: HORIZ 1" = 60'
VERT 1"= 7.5'

PLAN

SCALE: HORIZ 1" = 60'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

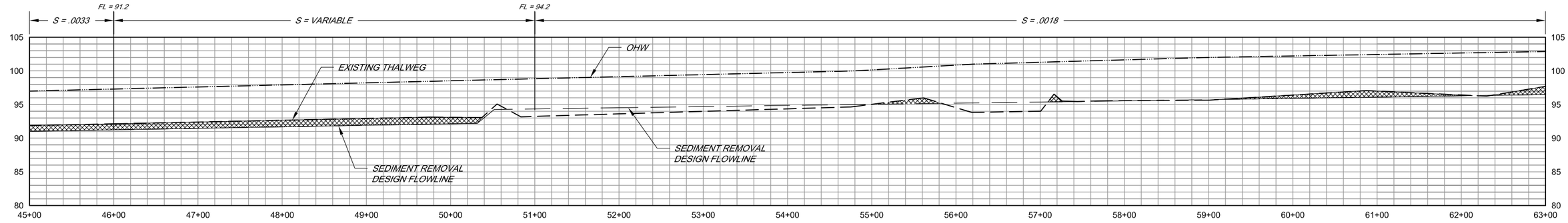
SCALE: AS SHOWN
DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

LAGUNA - MARK WEST ZONE 1A

GOSSAGE CHANNEL SEDIMENT REMOVAL
PLAN & PROFILE STA 27+00 TO STA 45+00

FILE NAME: GossChan_CivilShts_2012_Lowell-to-116.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: C-3
SHEET 5 OF 12

\\sd-data\pro\flood control\zone 1a\gossage\gossage 2012\GossChan_CivilShts_2012_Lowell-to-116



PROFILE

SCALE: HORIZ 1" = 60'
VERT 1"= 7.5'

PLAN

SCALE: HORIZ 1" = 60'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

LAGUNA - MARK WEST ZONE 1A

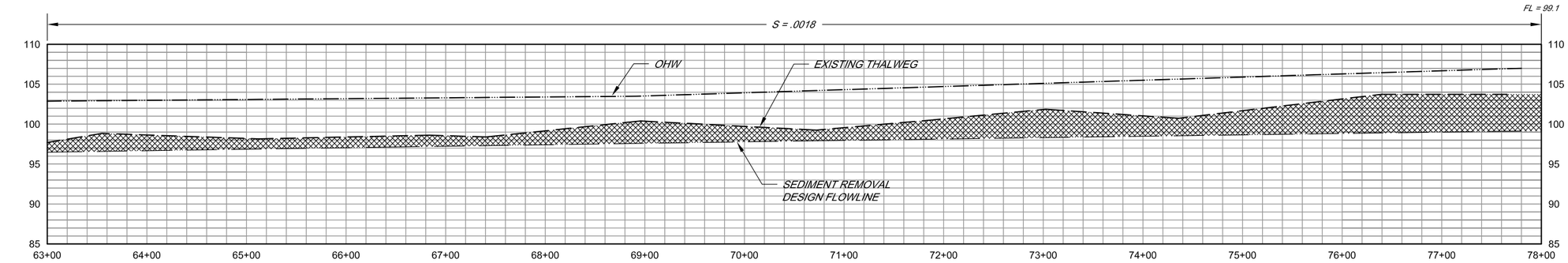
GOSSAGE CHANNEL SEDIMENT REMOVAL
PLAN & PROFILE STA 45+00 TO STA 63+00

FILE NAME: GossChan_CivilShts_2012_Lowell-to-116.dwg
CONTRACT NUMBER: --

DRAWING NUMBER: C-4

SHEET 6 OF 12

\\sd-data\proj\flood control\zone 1a\gossage\gossage 2012\GossChan_CivilShts_2012_Lowell-to-116



PROFILE

SCALE: HORIZ 1" = 60'
VERT 1"= 7.5'

PLAN

SCALE: HORIZ 1" = 60'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

LAGUNA - MARK WEST ZONE 1A

GOSSAGE CHANNEL SEDIMENT REMOVAL
PLAN & PROFILE STA 63+00 TO STA 78+00

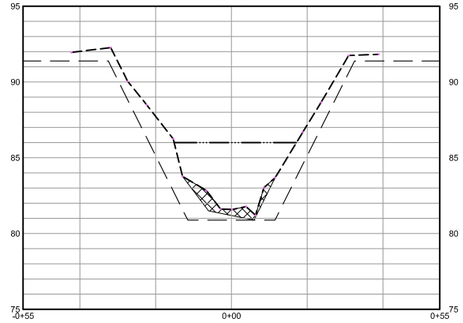
FILE NAME: GossChan_CivilShts_2012_Lowell-to-116.dwg
CONTRACT NUMBER: --

DRAWING NUMBER: C-5

SHEET 7 OF 12

\\sd-data\pro\flood control\zone 1a\gossage\gossage 2012\GossChan_CivilShts_2012_Lowell-to-116

6+75



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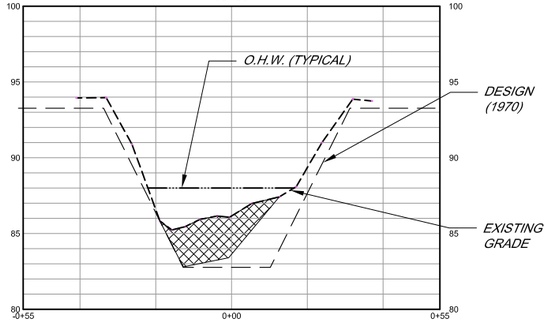

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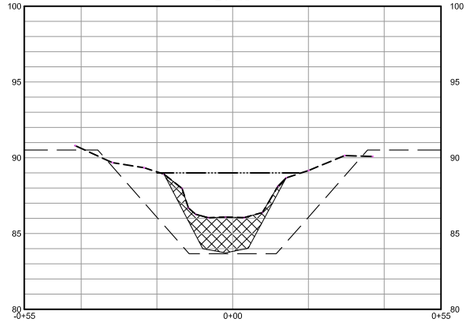

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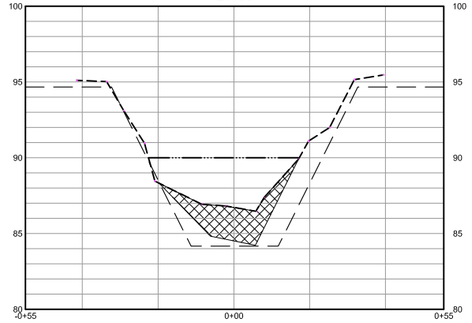

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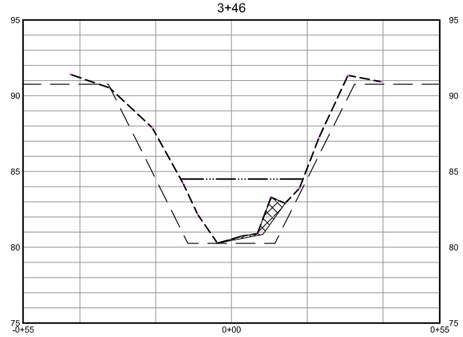

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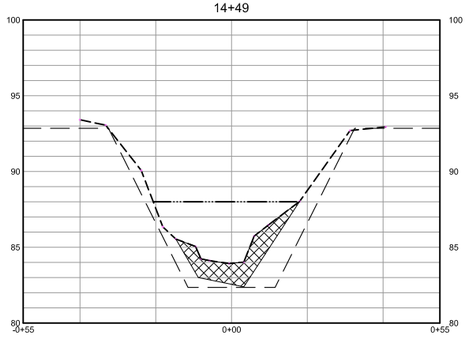

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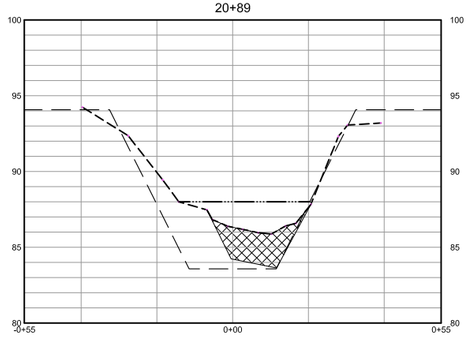

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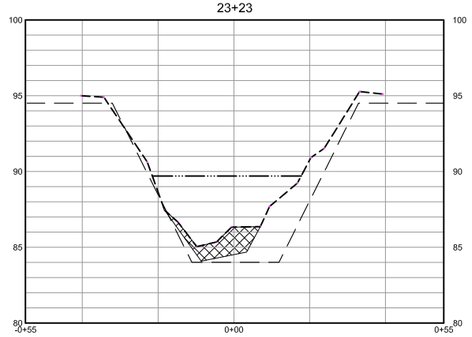

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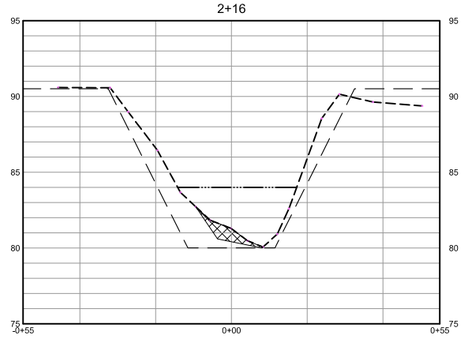

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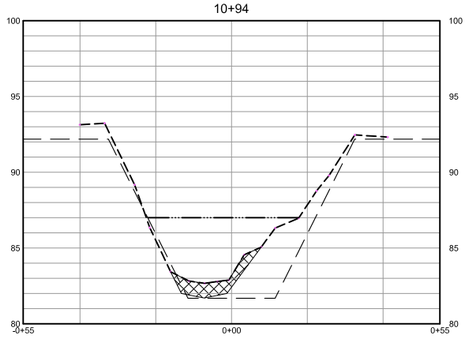

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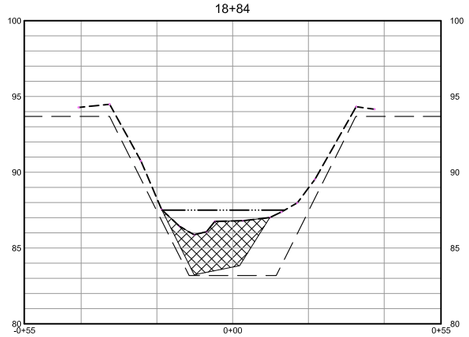

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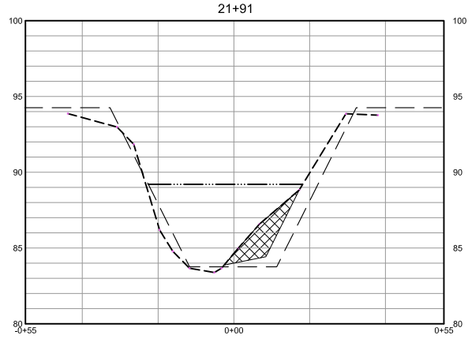


SECTIONS

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 03/07/2011
DRAWN: SMP
REVIEWED:

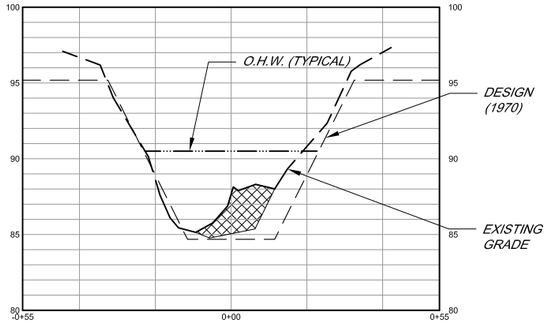
LAGUNA - MARK WEST ZONE 1A

GOSSAGE CHANNEL SEDIMENT REMOVAL
CROSS SECTIONS

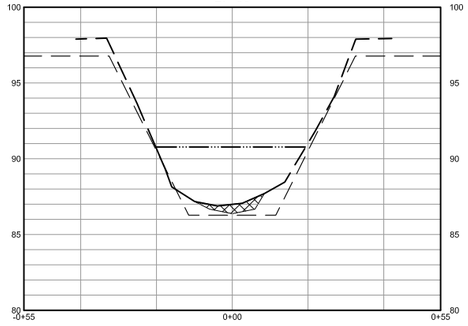
FILE NAME: GossChan_CivilShts.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: C-6
SHEET 8 OF 12

\\sd-data\proj\flood control\zone 1a\gossage\GossChan_CivilShts

26+76



27+56



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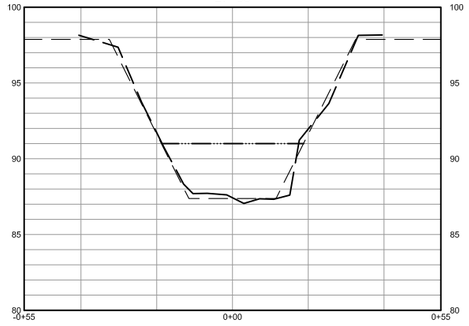
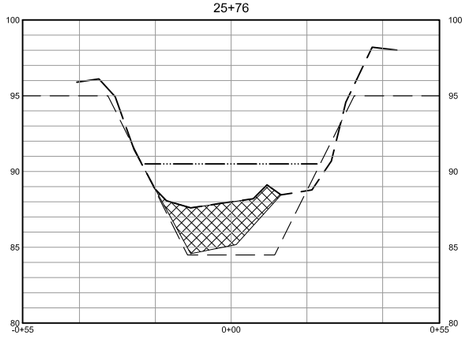
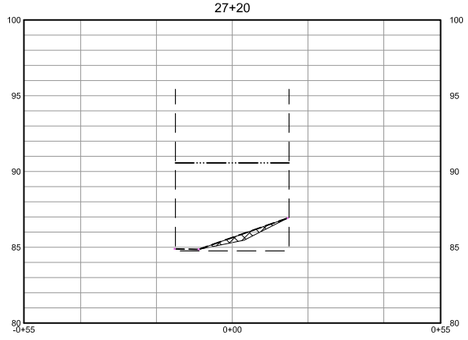


25+76



27+20



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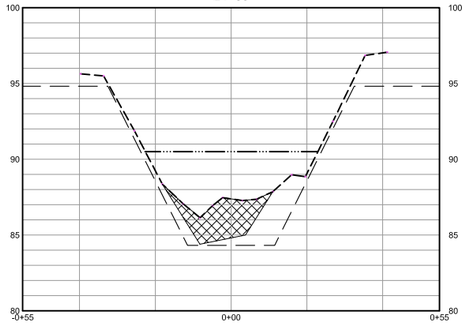

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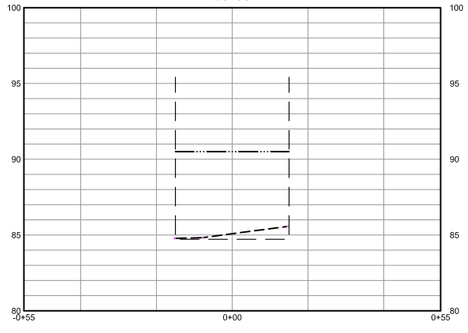


SECTIONS

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 FEB 2012

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

NO.	DATE	REVISION	BY
		PRELIMINARY SUBJECT TO REVISION	

SONOMA COUNTY WATER AGENCY

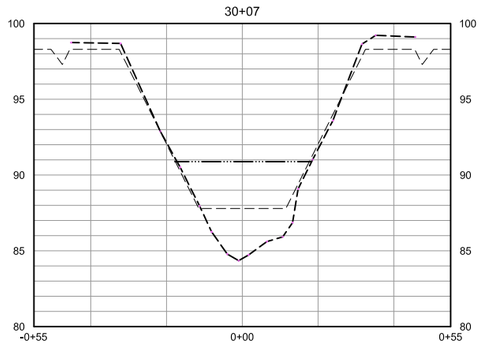
SCALE: AS SHOWN
DATE: 03/07/2011
DRAWN: SMP
REVIEWED:

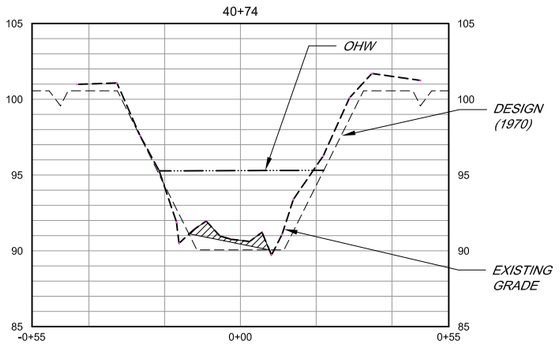
LAGUNA - MARK WEST ZONE 1A

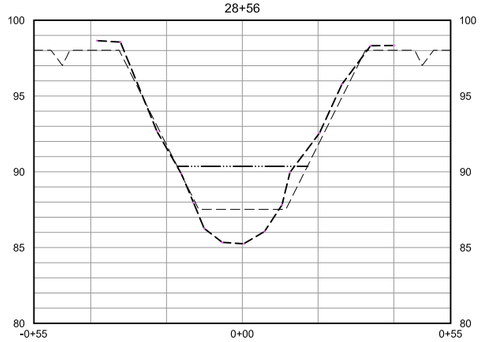
GOSSAGE CHANNEL SEDIMENT REMOVAL CROSS SECTIONS

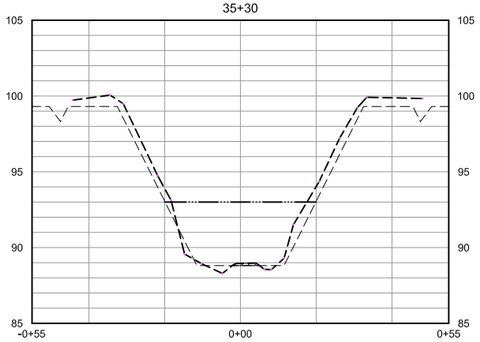
FILE NAME: GossChan_CivilShts.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: C-7
SHEET 9 OF 12

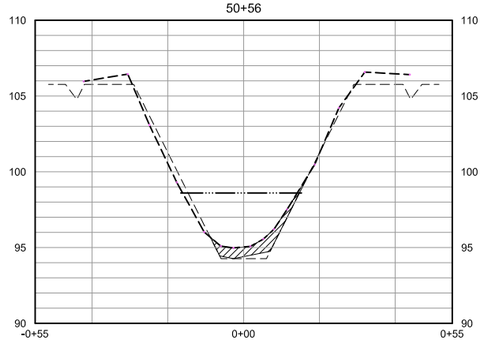
\\sd-data\pro\flood control\zone 1a\gossage\GossChan_CivilShts

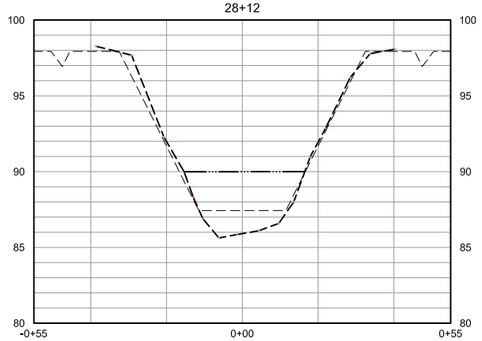


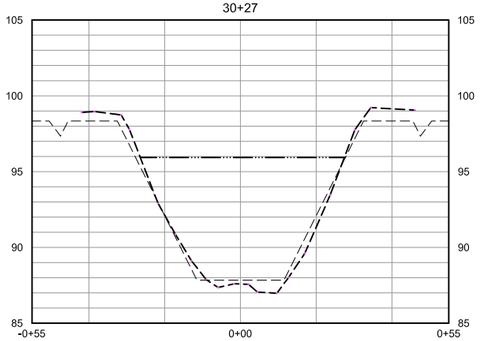


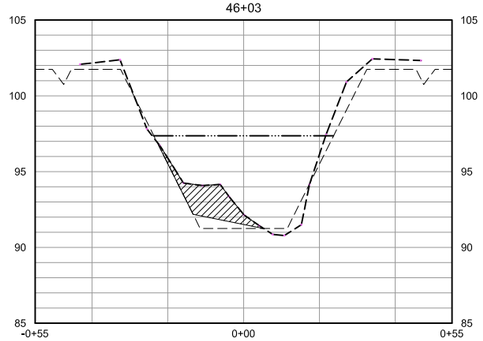












SECTIONS

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

LAGUNA - MARK WEST ZONE 1A

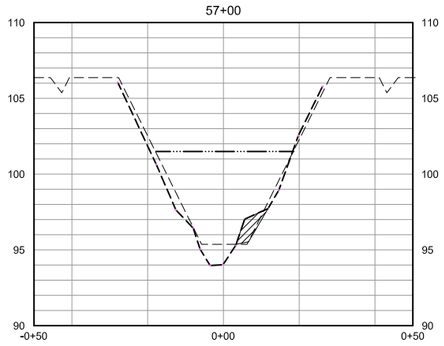
GOSSAGE CHANNEL SEDIMENT REMOVAL
CROSS SECTIONS

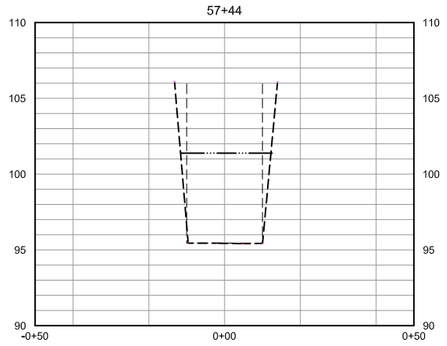
FILE NAME: GossChan_CivilShts_2012_Lowell-to-116.dwg
CONTRACT NUMBER: --

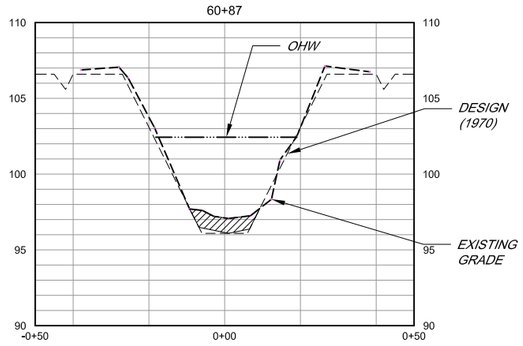
DRAWING NUMBER: C-8

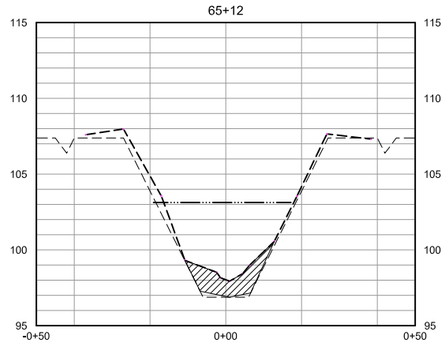
SHEET 10 OF 12

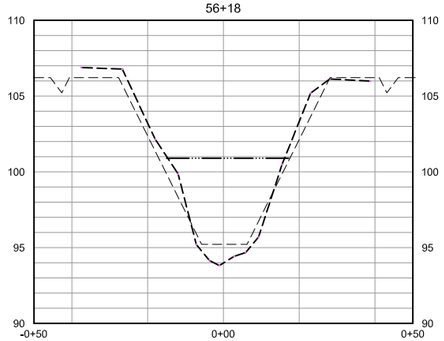
\\sd-data\proj\flood control\zone 1a\gossage\gossage 2012\GossChan_CivilShts_2012_Lowell-to-116

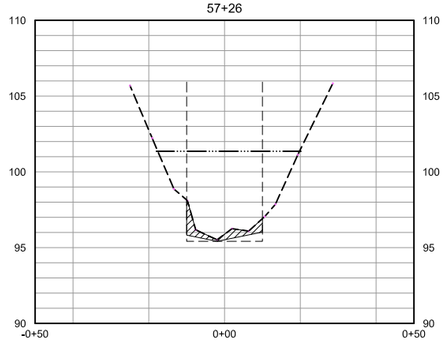


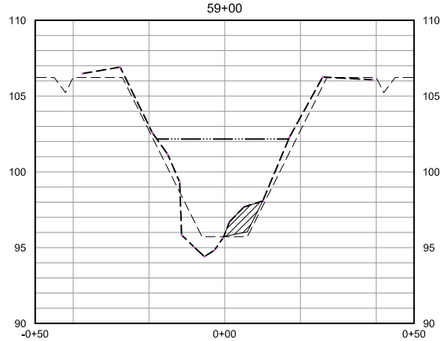


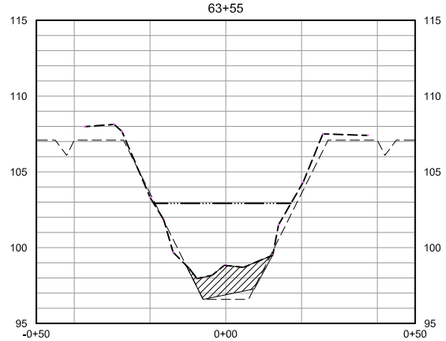


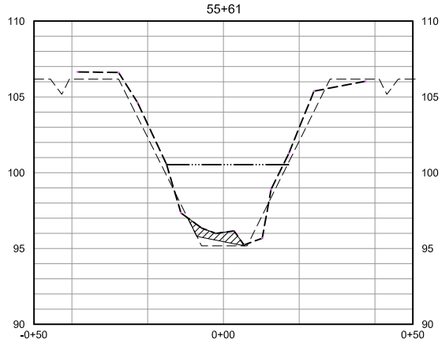


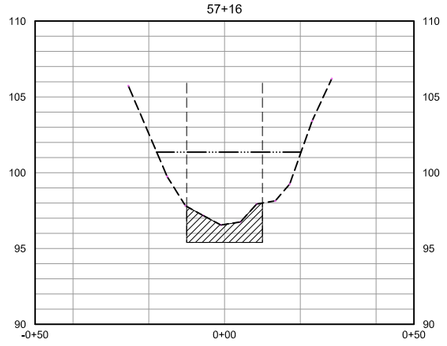


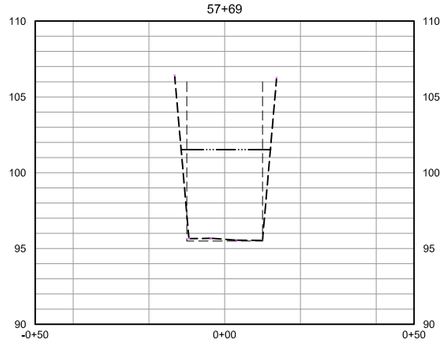


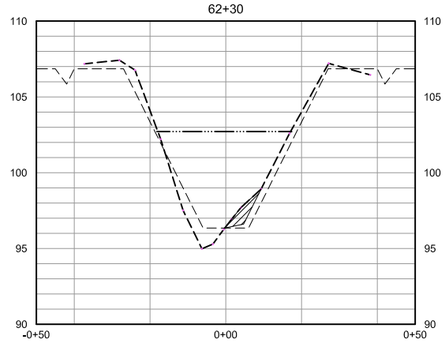












SECTIONS

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

LAGUNA - MARK WEST ZONE 1A

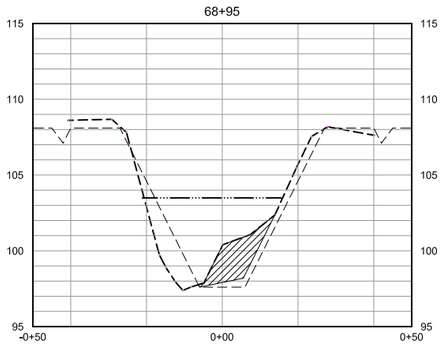
GOSSAGE CHANNEL SEDIMENT REMOVAL
CROSS SECTIONS

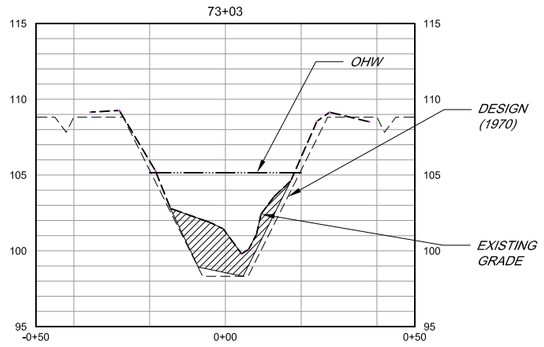
FILE NAME: GossChan_CivilShts_2012_Lowell-to-116.dwg
CONTRACT NUMBER: --

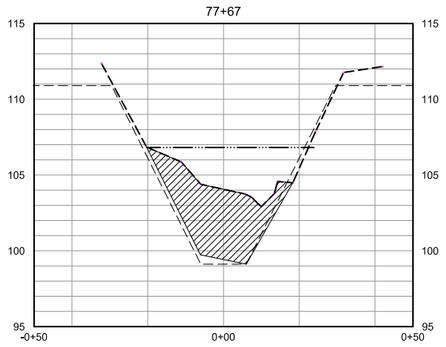
DRAWING NUMBER: C-9

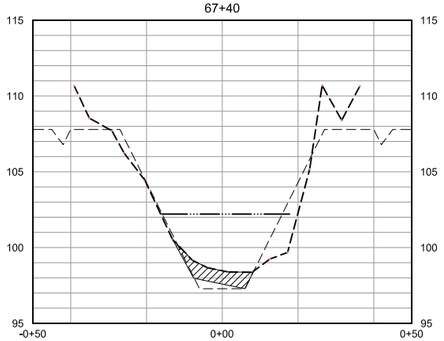
SHEET 11 OF 12

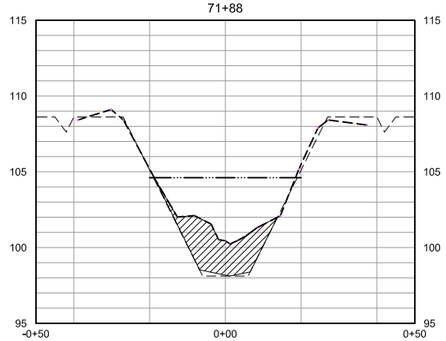
\\sd-data\pro\flood control\zone 1a\gossage\gossage 2012\GossChan_CivilShts_2012_Lowell-to-116

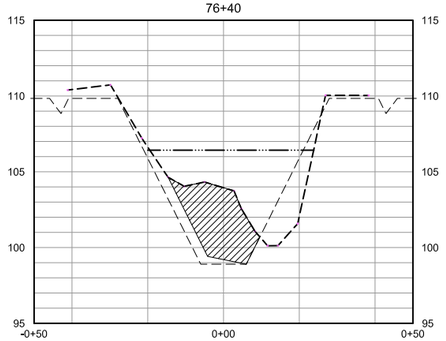


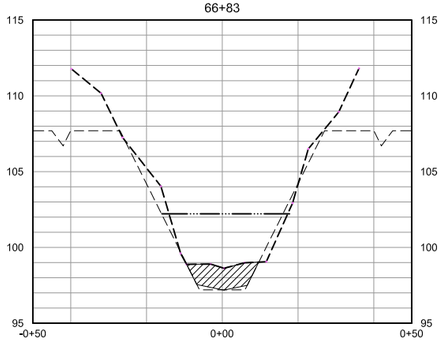


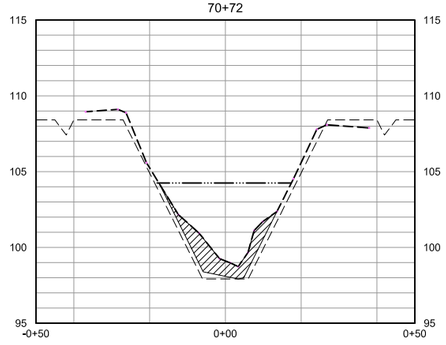


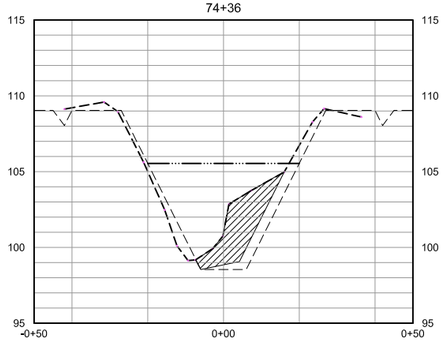


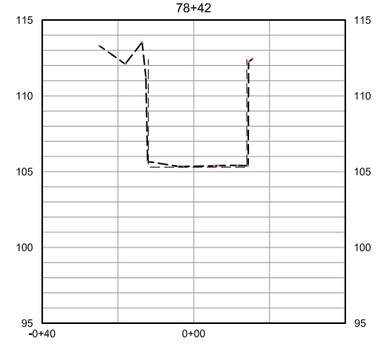












SECTIONS

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

PRELIMINARY
90% SUBMITTAL
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29 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

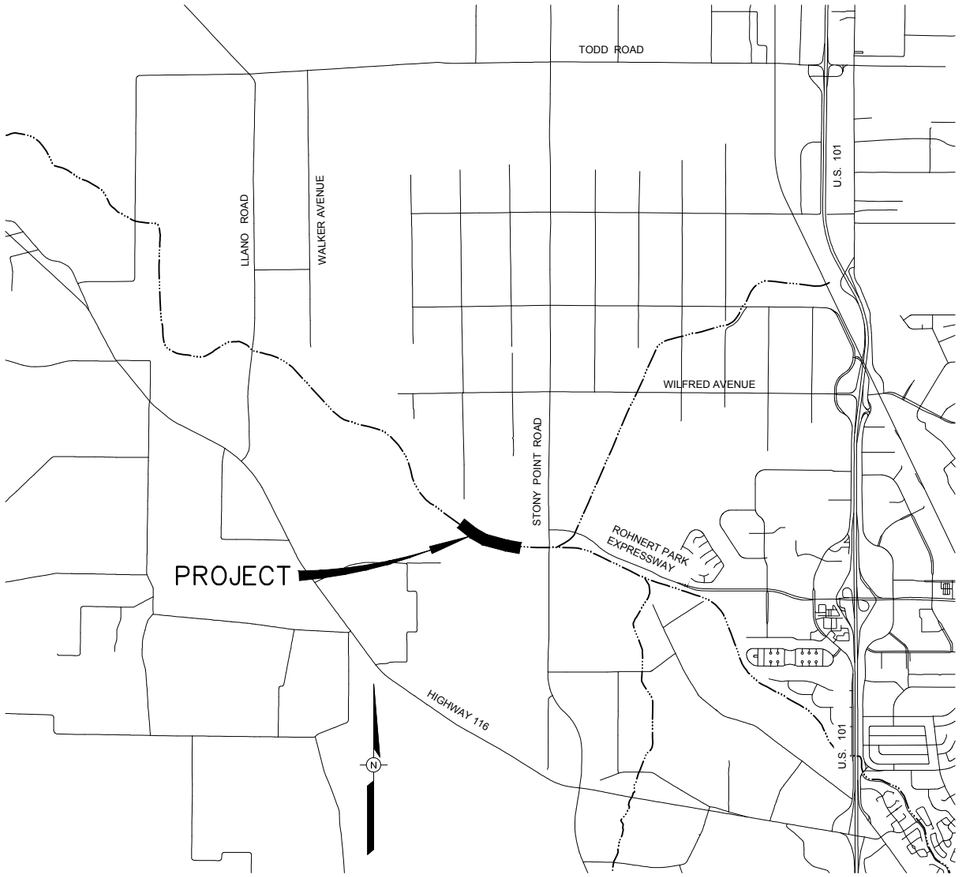
LAGUNA - MARK WEST ZONE 1A

GOSSAGE CHANNEL SEDIMENT REMOVAL
CROSS SECTIONS

FILE NAME: GossChan_CivilShts_2012_Lowell-to-116.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: C-10
SHEET 12 OF 12

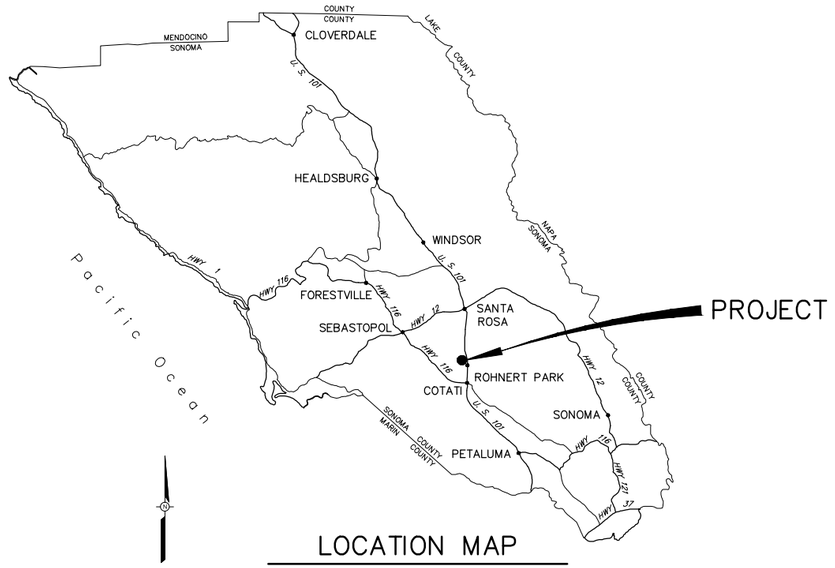
\\sd-data\proj\flood control\zone 1a\gossage\gossage 2012\GossChan_CivilShts_2012_Lowell-to-116

LAGUNA DE SANTA ROSA 'D' LINE
(SMP REACH 1)
SEDIMENT REMOVAL



VICINITY MAP

NTS



LOCATION MAP

NTS

LAGUNA DE SANTA ROSA 'D' LINE						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO EXCAVATE) (SEE NOTE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING IN CHANNEL	STA 70+00 TO STA 88+00	1,800	40	ABOVE O.H.W. 7,306 BELOW O.H.W. 64,694 TOTAL = 72,000	1.7	ABOVE O.H.W. 460 BELOW O.H.W. 4,073 TOTAL = 4,533

NOTE:
EXCAVATED MATERIAL TO BE PLACED ADJACENT TO EXCAVATION WITHIN CHANNEL PER TYPICAL SECTION DRAWING NUMBER C-2.

INDEX TO DRAWINGS:		
SHEET NUMBER	DRAWING NUMBER	TITLE
1	G-1	INDEX TO DRAWINGS,LOCATION & VICINITY MAPS AND TABLE
2	C-1	PLAN & PROFILE STA 70+00 TO STA 85+00
3	C-2	RWL CROSS SECTION AND TYPICAL SECTION
4	C-3	CROSS SECTIONS

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

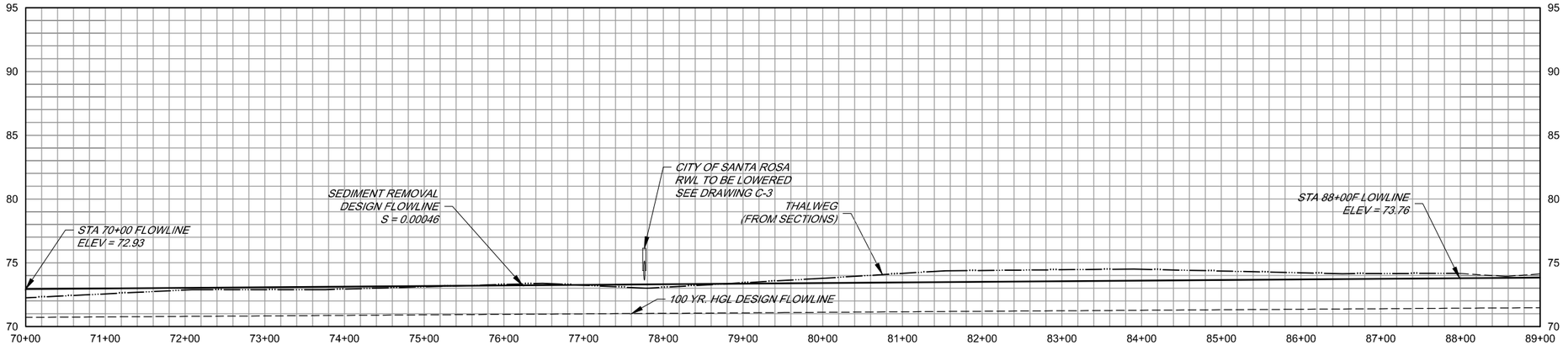
SCALE : AS SHOWN
DATE : 01/04/2012
DRAWN : ADF
REVIEWED :

LAGUNA MARK WEST ZONE 1A - PINER CREEK

INDEX TO DRAWINGS,LOCATION & VICINITY MAPS AND TABLE

FILE NAME: 2012-LAGUNA_G
CONTRACT NUMBER:
DRAWING NUMBER: G-1
SHEET 1 OF 4

\\SD-DATA\Proj\flood control\zone 1a\LAGUNA\2199_llano-stony_point\2012_Maintenance



PROFILE

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

PLAN

SCALE: 1" = 80'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

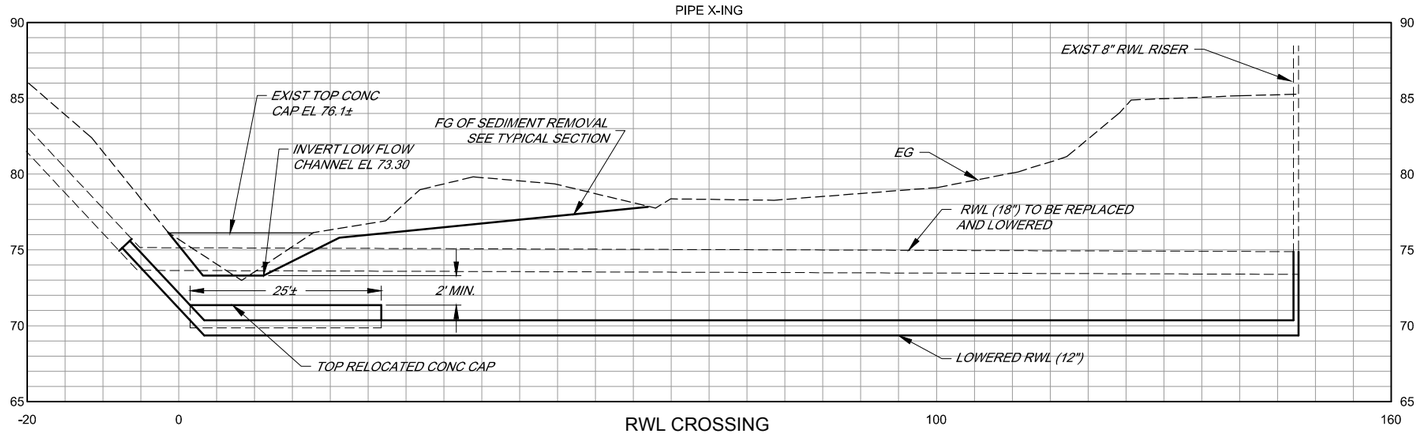
SCALE: AS SHOWN
DATE: 01/04/2012
DRAWN: ADF
REVIEWED:

LAGUNA MARK WEST ZONE 1A - PINER CREEK

PLAN & PROFILE STA 70+00 TO STA 88+00

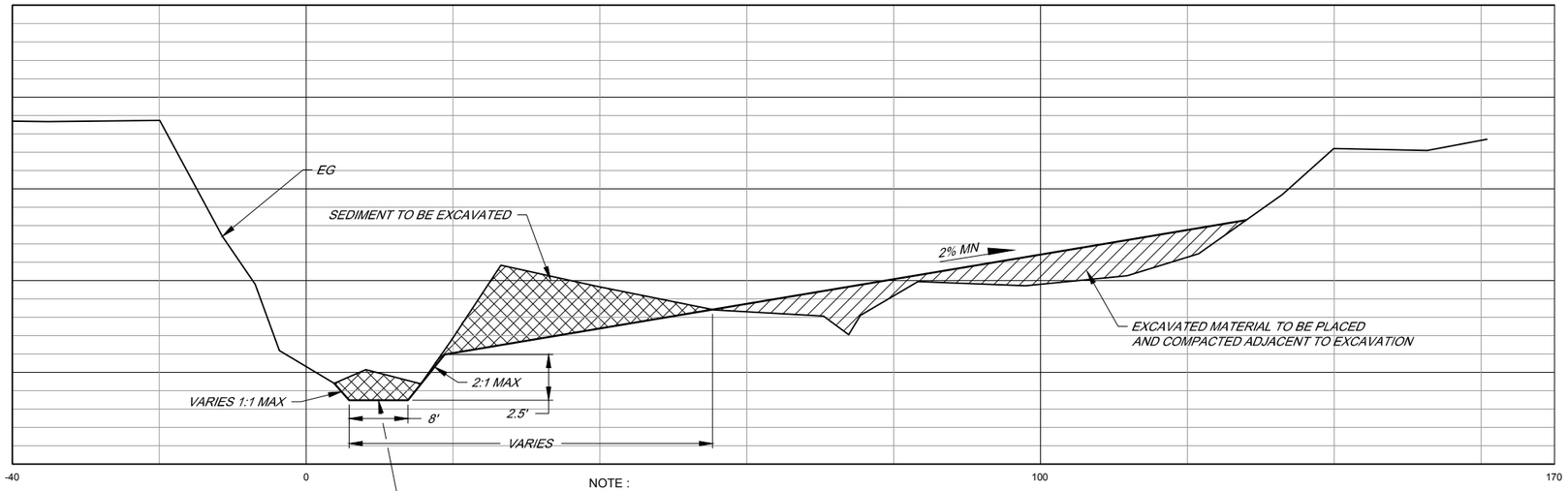
FILE NAME: 2012-LAGUNA_C
CONTRACT NUMBER:
DRAWING NUMBER: C-1
SHEET 2 OF 4

\\SD-DATA\Proj\flood control\zone 1a\LAGUNA\2199_llano-story_point\2012_Maintenance\2012-LAGUNA_C



RWL CROSSING
SECTION STA 77+77±

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



NOTE :
FISH HABITAT POOLS (2' - 3' DEEP x 5' WIDE x 50' LONG) TO BE CONSTRUCTED IN THALWEG, LOCATION BASED ON SITE CONDITIONS, NOT SHOWN ON SECTIONS.

TYPICAL SECTION 70+00 TO STA 88+00

SCALE: HORIZ 1" = 10'
VERT 1" =4'

PRELIMINARY
90% SUBMITTAL
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07 MAR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

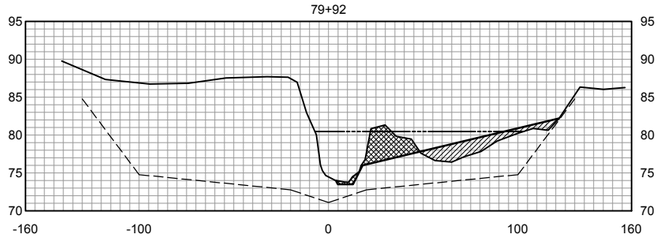
SCALE : AS SHOWN
DATE : 01/04/2012
DRAWN : ADF
REVIEWED :

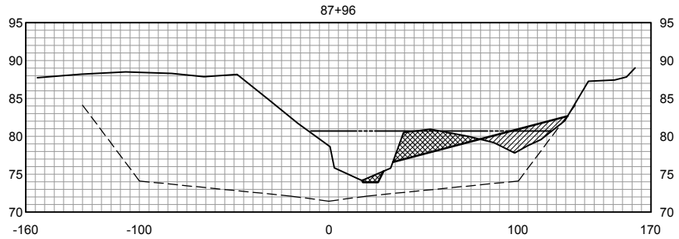
LAGUNA MARK WEST ZONE 1A - PINER CREEK

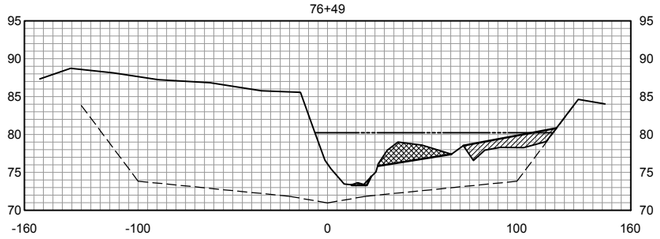
RWL CROSS SECTION AND TYPICAL SECTION

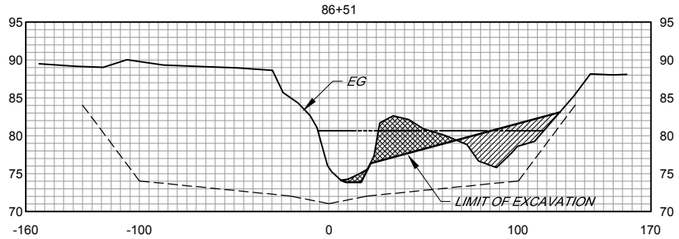
FILE NAME: 2012-LAGUNA_C
CONTRACT NUMBER:
DRAWING NUMBER: C-2
SHEET 3 OF 4

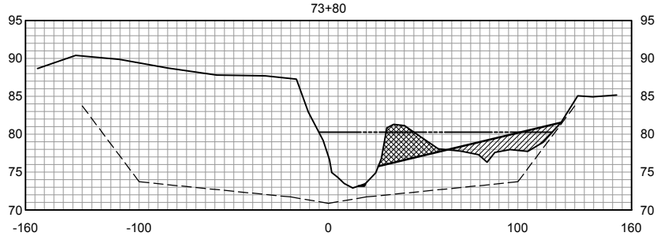
\\SD-DATA\Proj\flood control\zone 1a\LAGUNA\2199_llano-stony_point\2012_Maintenance\2012-LAGUNA_C

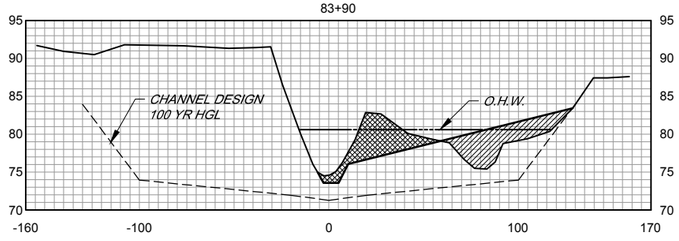


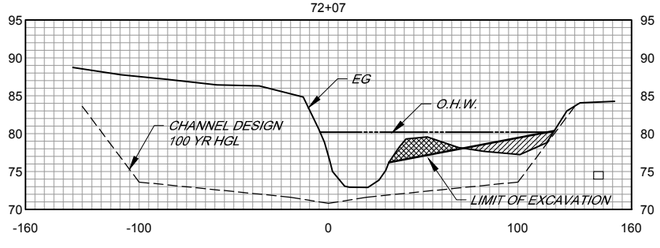


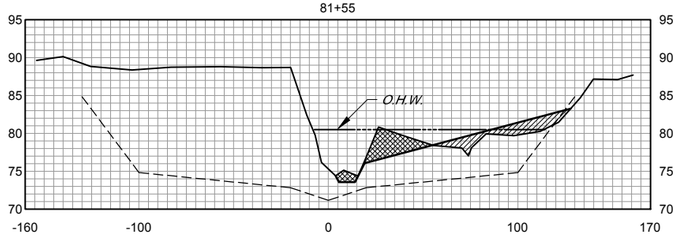












PRELIMINARY
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07 MAR 2012

SECTIONS

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

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 01/04/2012
DRAWN: ADF
REVIEWED:

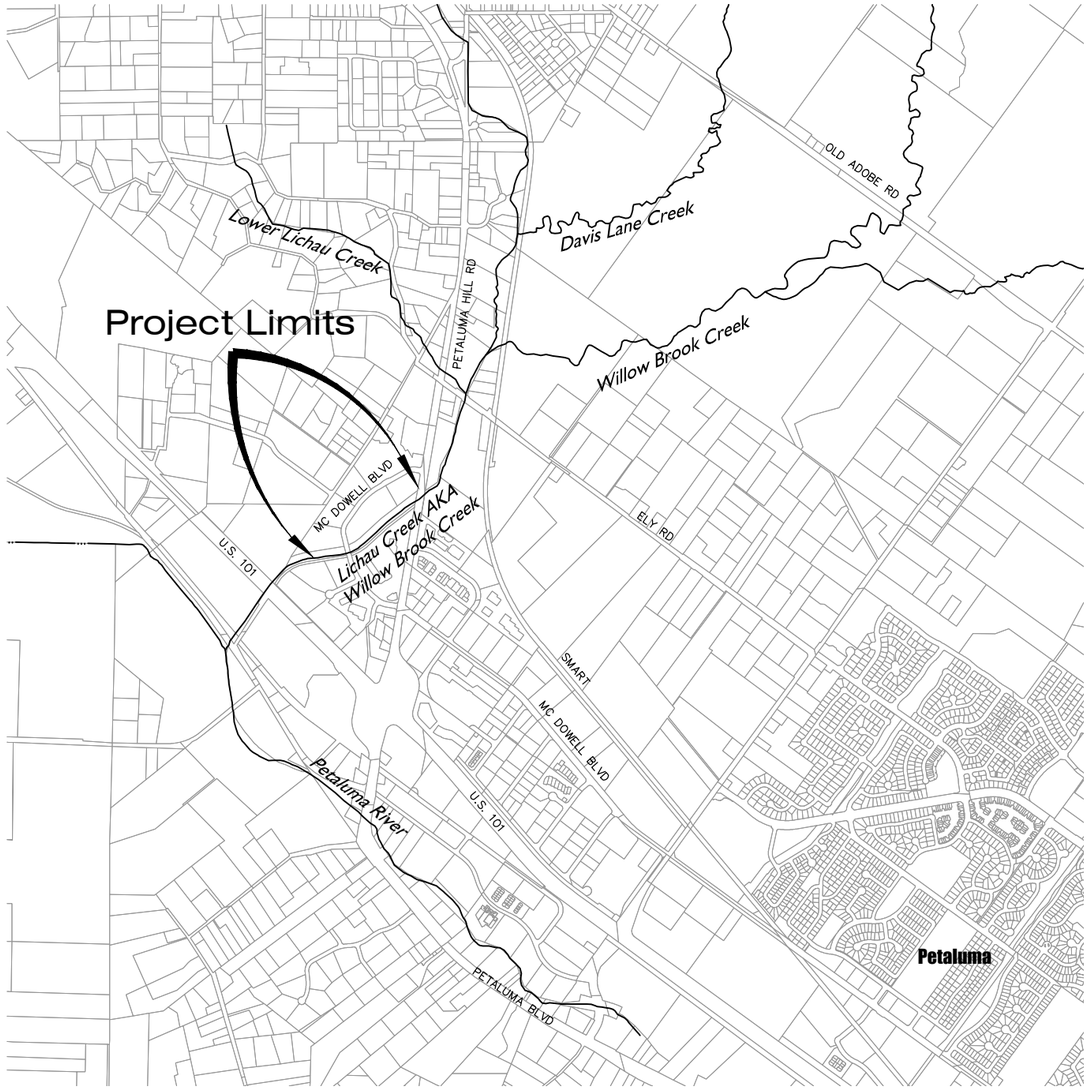
LAGUNA MARK WEST ZONE 1A - PINER CREEK

CROSS SECTIONS

FILE NAME: 2012-LAGUNA_C
CONTRACT NUMBER:
DRAWING NUMBER: C-3
SHEET 4 OF 4

\\SD-DATA\Proj\flood control\zone 1a\LAGUNA\2199_llano-stony_point\2012_Maintenance\2012-LAGUNA_C

WILLOW BROOK CREEK SEDIMENT REMOVAL



VICINITY MAP

SCALE: 1" = 1000'

LOCATION MAP

SCALE: NOT TO SCALE

DRAWING INDEX

SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION
1	G-1	WILLOW BROOK CREEK SEDIMENT REMOVAL LOCATION AND VICINITY MAPS, INDEX TO DRAWINGS
2	C-1	WILLOW BROOK CREEK SEDIMENT REMOVAL PLAN AND PROFILE STA 14+00 TO STA 26+00
3	C-2	WILLOW BROOK CREEK SEDIMENT REMOVAL PLAN AND PROFILE STA 26+00 TO STA 38+00
4	C-3	WILLOW BROOK CREEK SEDIMENT REMOVAL CROSS SECTIONS

WILLOW BROOK CREEK aka LICHAU 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 CHANNEL	STA 17+00 TO STA 37+00	2000	10	BELOW O.H.W. 20,000	1.0	BELOW O.H.W. 740
	TOTAL	2000		20,000		740

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
16 APR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

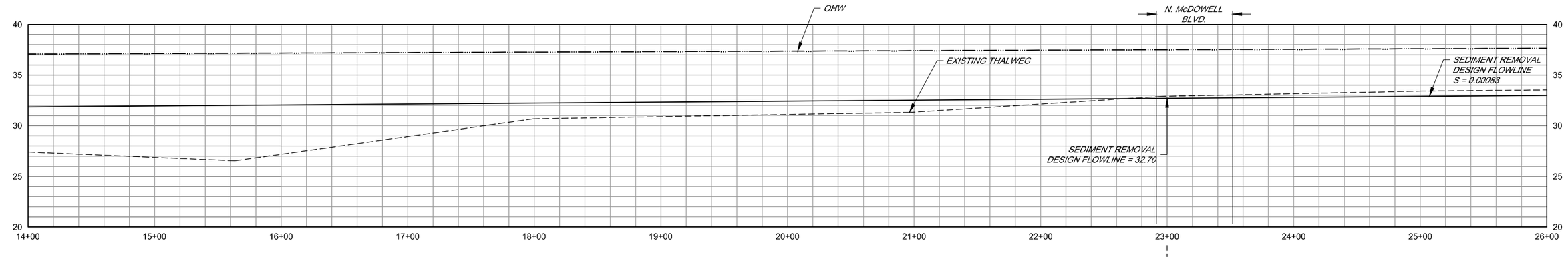
SCALE: AS SHOWN
DATE: 04/13/2012
DRAWN: SMP
REVIEWED:

PETALUMA RIVER BASIN ZONE 2A

WILLOW BROOK CREEK SEDIMENT REMOVAL
LOCATION AND VICINITY MAPS, INDEX TO DRAWINGS

FILE NAME: 2012_Willowbrook_Gen.dwg
CONTRACT NUMBER: xx-xx
DRAWING NUMBER: G-1
SHEET 1 OF 4

\\SD-DATA\Proj\flood control\zone 2a\WILLOWBROOK\sed-removal\2012_Willowbrook_Gen



PROFILE

SCALE: HORIZ 1" = 40'
VERT 1"= 5'

PLAN

SCALE: HORIZ 1" = 40'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
16 APR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 04/13/2012
DRAWN: ----
REVIEWED:

PETALUMA RIVER BASIN ZONE 2A

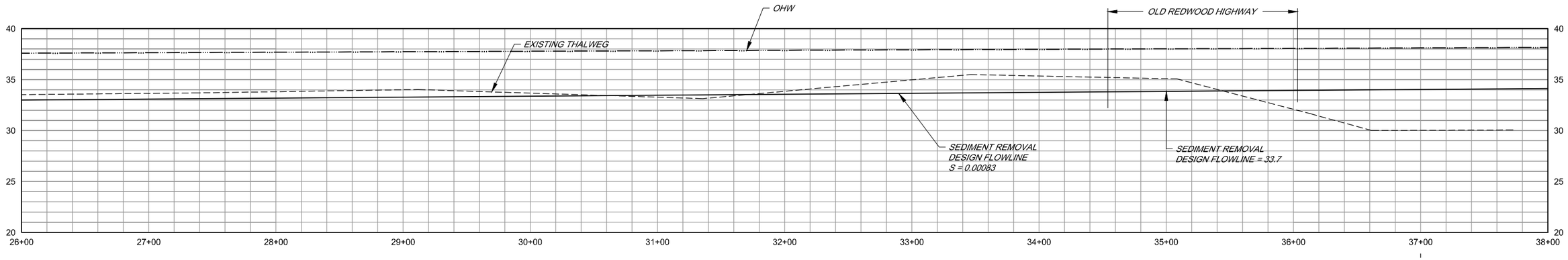
WILLOW BROOK CREEK SEDIMENT REMOVAL
PLAN AND PROFILE STA 14+00 TO STA 26+00

FILE NAME: 2012-Willowbrook_C.dwg
CONTRACT NUMBER: xx-xx

DRAWING NUMBER: C-1

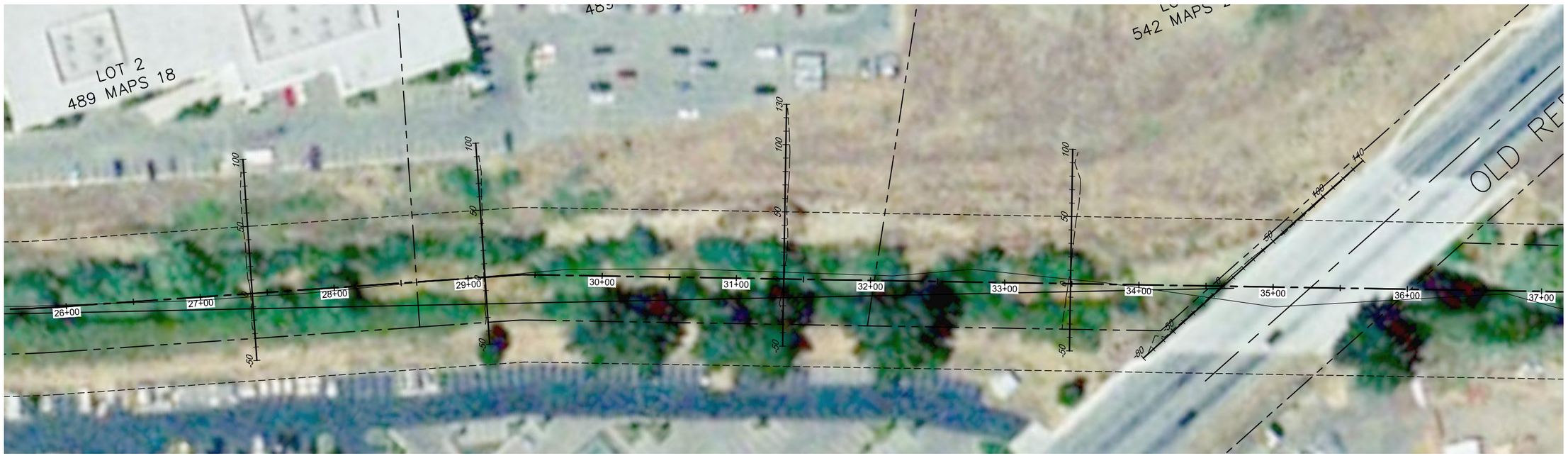
SHEET 2 OF 4

\\SD-DATAP\cg\flood control\zone 2a\WILLOWBROOK\sed-removal\2012-Willowbrook_C



PROFILE

SCALE: HORIZ 1" = 4O'
VERT 1"= 5'



PLAN

SCALE: HORIZ 1" = 4O'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
16 APR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

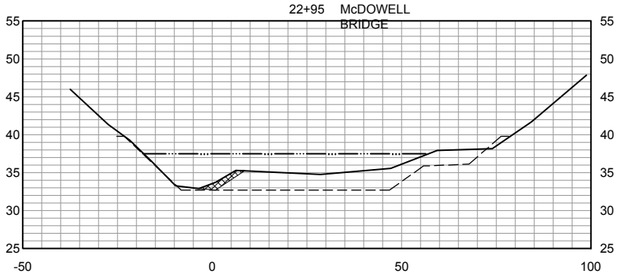
SCALE : AS SHOWN
DATE : 04/13/2012
DRAWN : ----
REVIEWED :

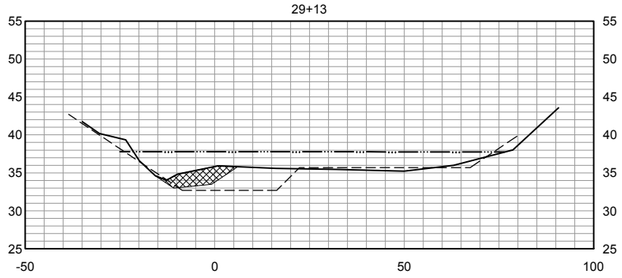
PETALUMA RIVER BASIN ZONE 2A

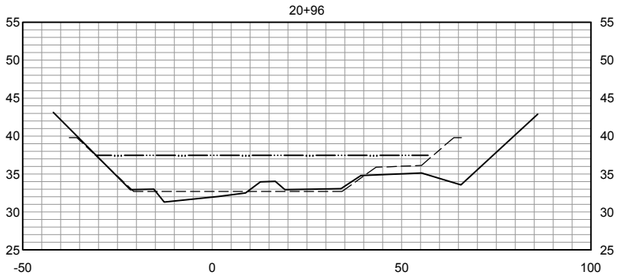
WILLOW BROOK CREEK SEDIMENT REMOVAL
PLAN AND PROFILE STA 26+00 TO STA 38+00

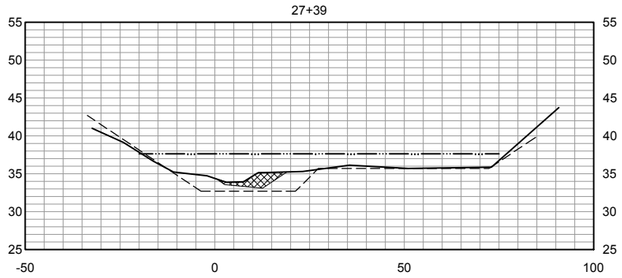
FILE NAME: 2012-Willowbrook_C.dwg
CONTRACT NUMBER: xx-xx
DRAWING NUMBER: C-2
SHEET 3 OF 4

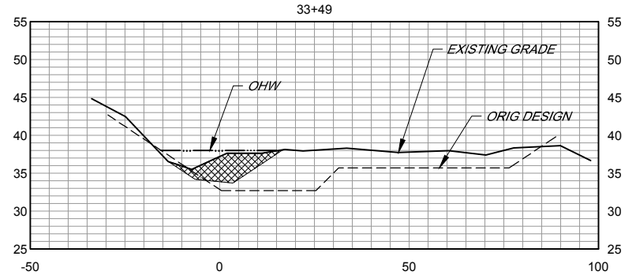
\\SD-DATAP\cg\flood control\zone 2a\WILLOWBROOK\sed-removal\2012-Willowbrook_C

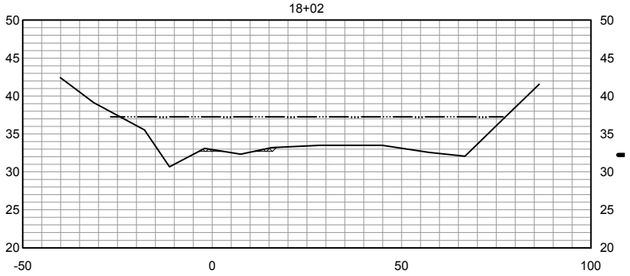


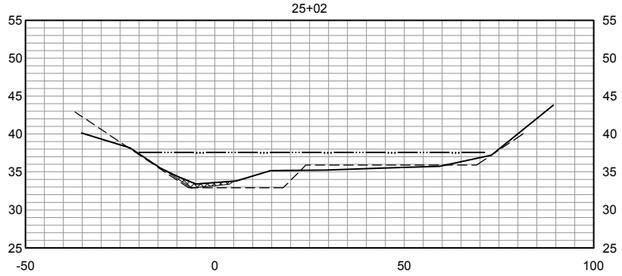


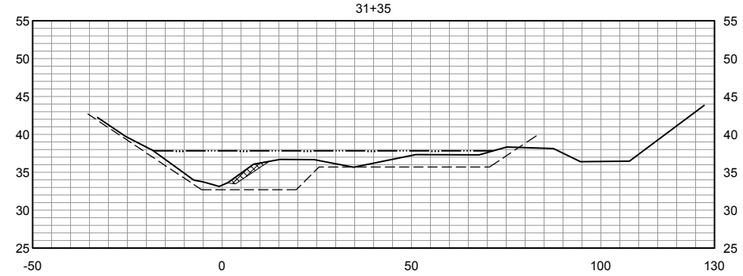






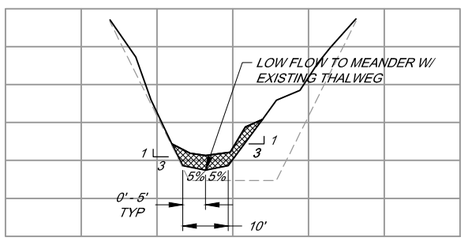






SECTIONS

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



TYPICAL CROSS SECTION

SCALE: NOT TO SCALE

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
16 APR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE : AS SHOWN
DATE : 04/13/2012
DRAWN : ---
REVIEWED :

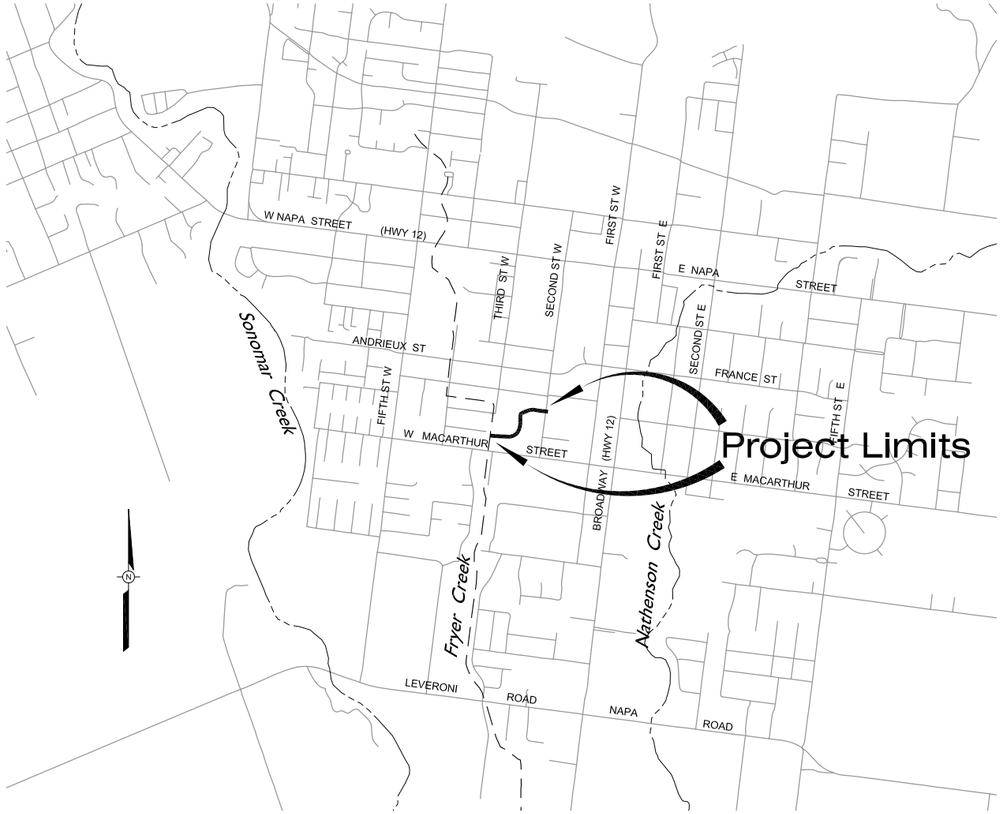
PETALUMA RIVER BASIN ZONE 2A

WILLOW BROOK CREEK SEDIMENT REMOVAL CROSS SECTIONS

FILE NAME: 2012-Willowbrook_C.dwg
CONTRACT NUMBER: xx-xx
DRAWING NUMBER: C-3
SHEET 4 OF 4

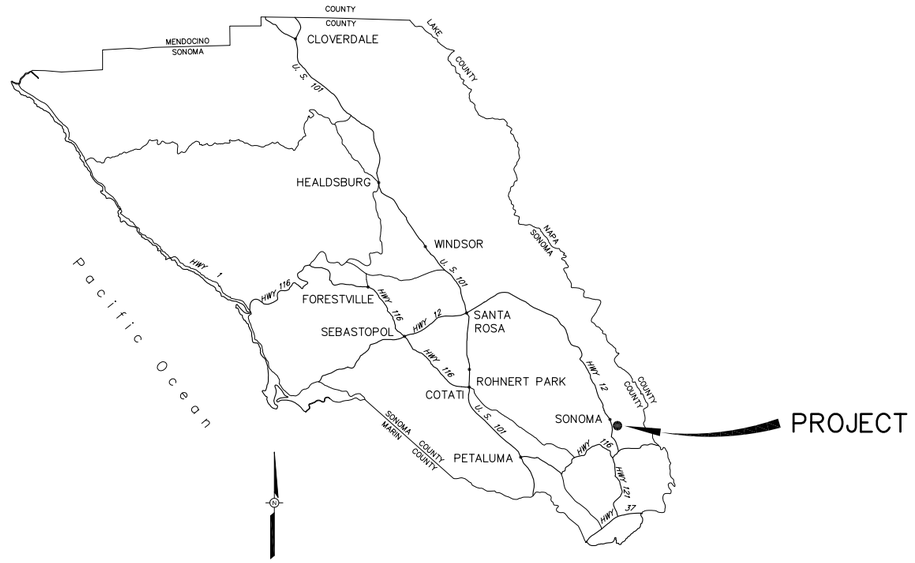
\\SD-DATA\Proj\flood control\zone 2a\WILLOWBROOK\sed-removal\2012-Willowbrook_C

EAST FRYER CREEK
SEDIMENT REMOVAL



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

EAST FRYER CREEK						
VALLEY OF THE MOON ZONE 3A						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE/FILL)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR OR FRONT END LOADER OPERATING IN THE DEWATERED CHANNEL.	STATION 1+00 TO STATION 10+00	900	20	2100 BELOW OHW	1.0	765 CY (ALL BELOW OHW)

INDEX TO DRAWINGS

SHEET NUMBER	SHEET TITLE	DESCRIPTION
1	G-1	INDEX TO DRAWINGS, TABLELOCATION, AND VICINITY MAPS
2	C-1	PLAN AND PROFILES
3	C-2	SECTIONS

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
20 APR 2012

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

NO.	DATE	REVISION	BY

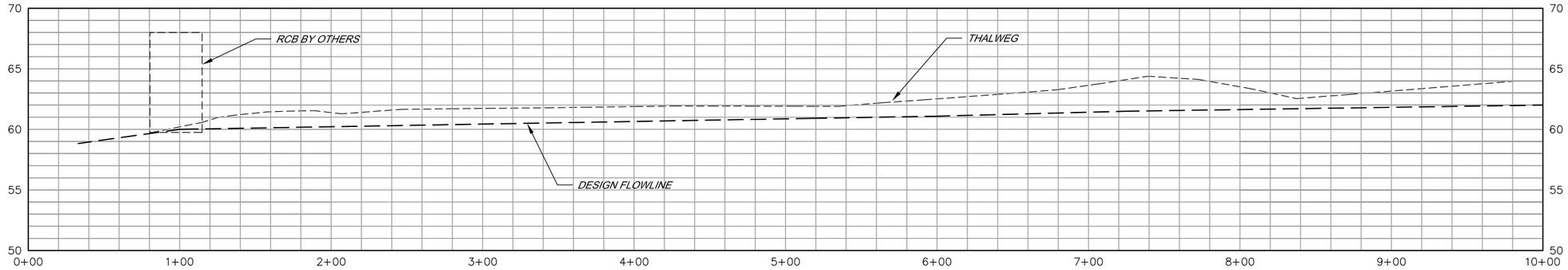
SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 01/24/12
DRAWN: SMP
REVIEWED:

EAST FRYER CREEK SEDIMENT REMOVAL
PLAN AND PROFILES

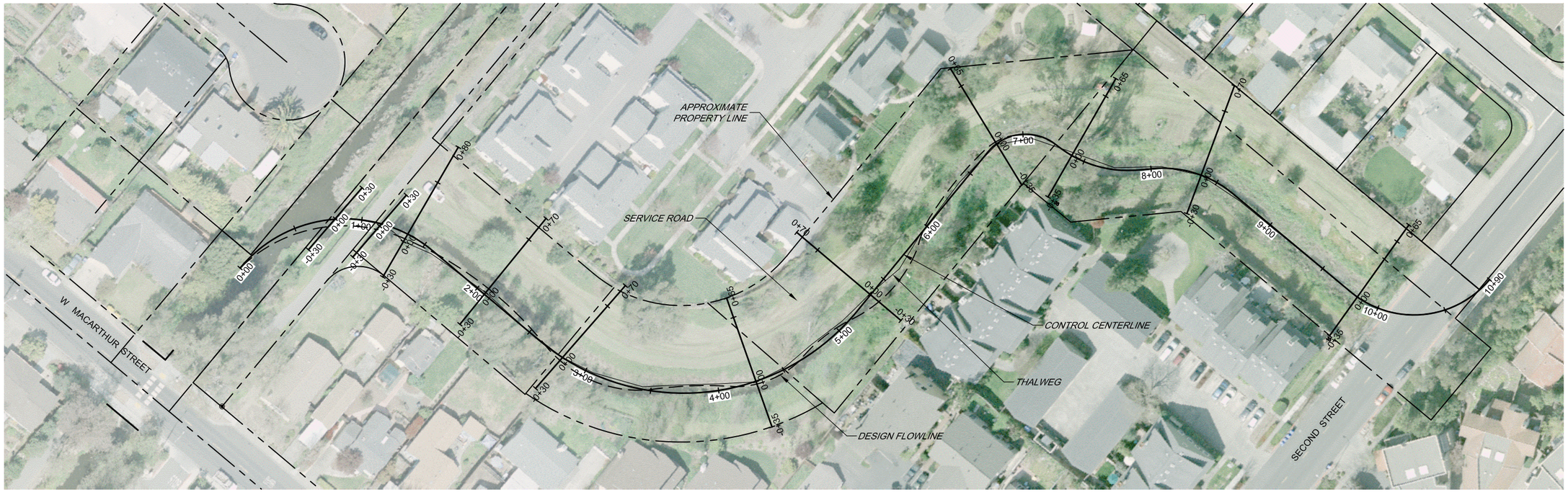
FILE NAME: 2012_EastFryer_G-1.dwg
CONTRACT NUMBER: ##
DRAWING NUMBER: G-1
SHEET 1 OF 3

\\sd-data\proj\flood control\zone 3a\east_fryer-creek



PROFILE

SCALE: HORIZ 1" = 40'
VERT 1"= 5'



PLAN

SCALE: HORIZ 1" = 40'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
20 APR 2012

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

NO.	DATE	REVISION	BY

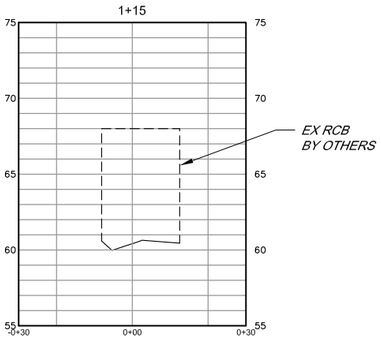
SONOMA COUNTY WATER AGENCY

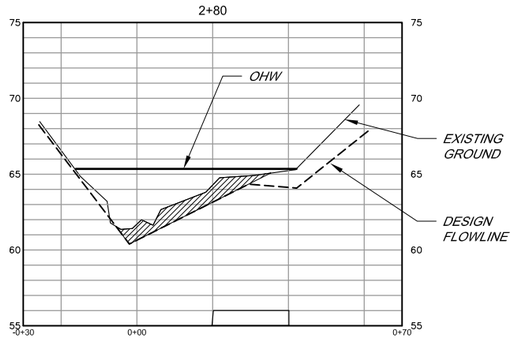
SCALE: AS SHOWN
DATE: 01/24/12
DRAWN: SMP
REVIEWED:

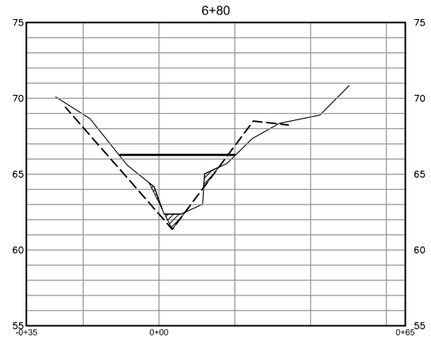
EAST FRYER CREEK SEDIMENT REMOVAL
PLAN AND PROFILES

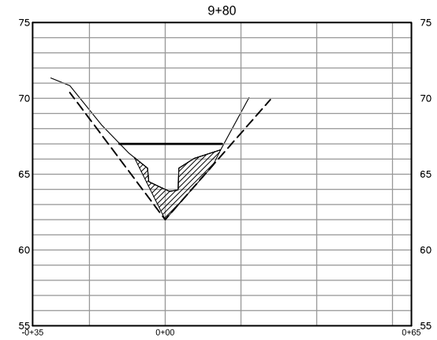
FILE NAME: 2012_EastFryer_Civil.dwg
CONTRACT NUMBER: ##
DRAWING NUMBER: C-1
SHEET 2 OF 3

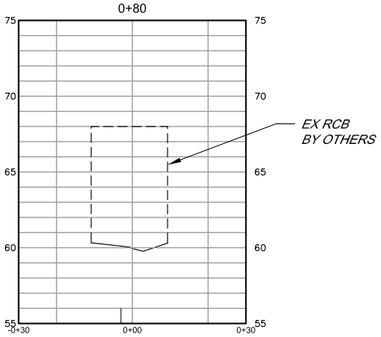
\\sd-data\proj\Flood control\zone 3a\east_fryer-creek\2012_EastFryer_Civil

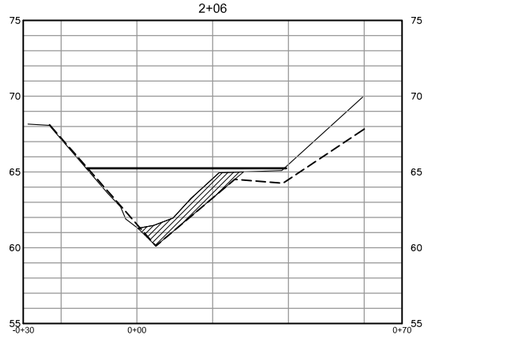


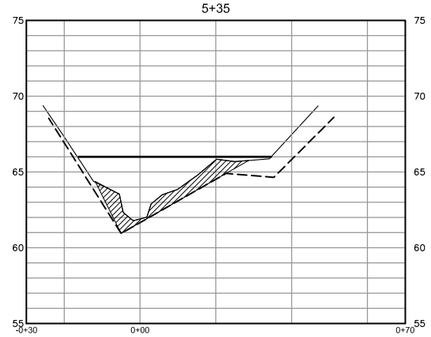


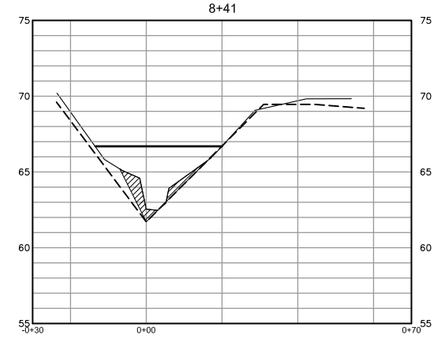


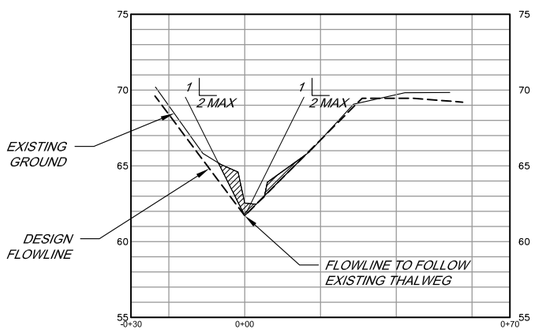






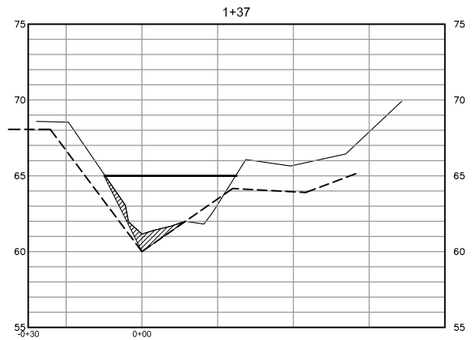


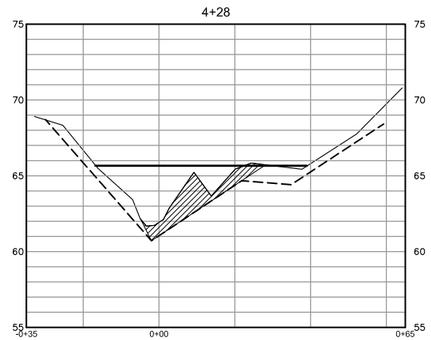


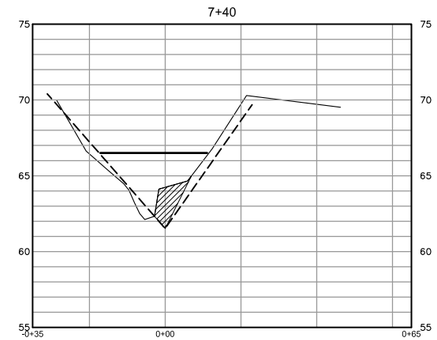


TYPICAL SECTION

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







SECTION

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
20 APR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 01/24/12
DRAWN: SMP
REVIEWED:

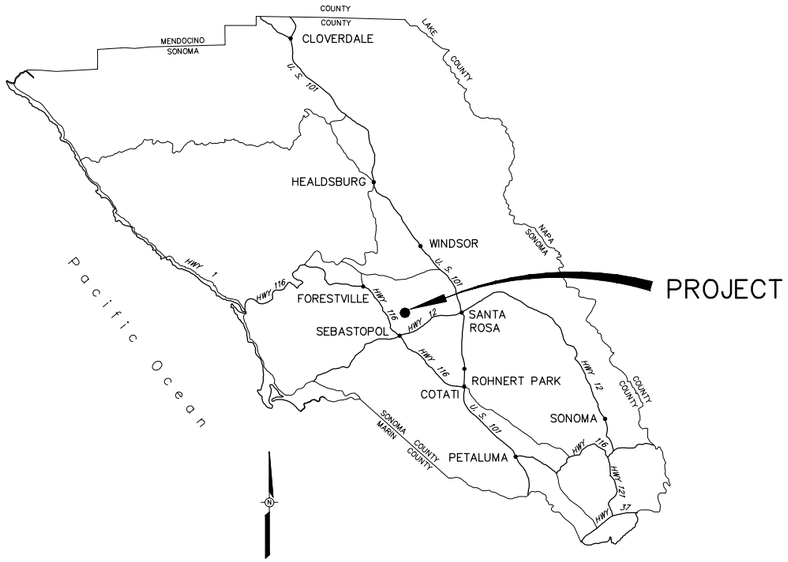
EAST FRYER CREEK SEDIMENT REMOVAL
SECTIONS

FILE NAME: 2012_EastFryer_Civil.dwg
CONTRACT NUMBER: ##
DRAWING NUMBER: C-2
SHEET 3 OF 3

\\sd-data\proj\flood control\zone 3a\east_fryer-creek\2012_EastFryer_Civil

LAGUNA MARK WEST ZONE 1A

SANTA ROSA CREEK SEDIMENT REMOVAL



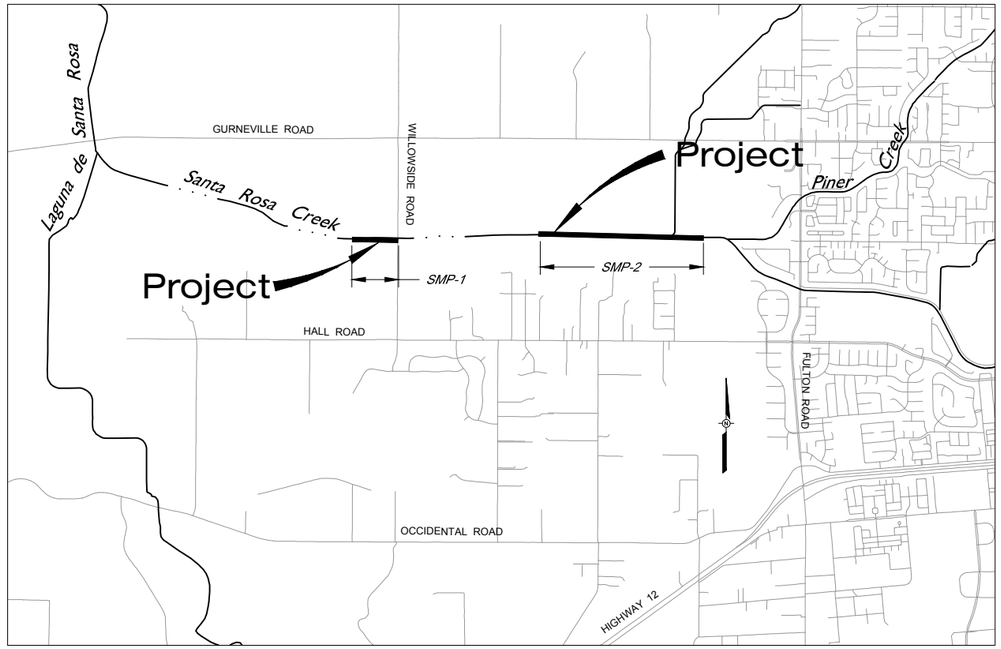
LOCATION MAP

NOT TO SCALE

SANTA ROSA 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 CHANNEL ON EITHER SIDE OF SUMMER FLOW	SOUTH SIDE CHANNEL STA 418+00 TO STA 420+00 SMP-1	200	11	2,200	3.5	285
	NORTH SIDE CHANNEL STA 420+00 TO STA 425+50 SMP-1	550	23	12,650	2.5	1,171
	SOUTH SIDE CHANNEL STA 426+00 TO STA 430+50 SMP-1	450	34	15,300	3.5	1,983
	SUB TOTAL SMP-1	1,200	25	BELOW O.H.W. 30,150	3.1	BELOW O.H.W. 3439
	SOUTH SIDE CHANNEL STA 470+00 TO STA 482+00 SMP-2	1,200	48	57,600	0.9	1,920
	NORTH SIDE CHANNEL STA 471+00 TO STA 473+38 SMP-2	238	26	6188	1	229
	NORTH SIDE CHANNEL STA 481+75 TO STA 493+46 SMP-2	1171	58	67,918	0.5	1,258
	NORTH SIDE CHANNEL STA 494+75 TO STA 503+37 SMP-2	862	53	45,686	1.5	2,538
	NORTH SIDE CHANNEL STA 506+66 TO STA 507+60 SMP-2	94	30	2,820	0.5	52
	NORTH SIDE CHANNEL STA 509+79 TO STA 514+00 SMP-2	421	43	18,103	0.7	469
	SUB TOTAL SMP-2	3,723*	48.6	BELOW O.H.W. 198,315	0.9	BELOW O.H.W. 6,466
TOTALS:		4,923		BELOW O.H.W. 228,465		BELOW O.H.W. 9,905

2,346

* SMP-2 SUB TOTAL EQUALS LINEAR FEET BY CHANNEL LENGTH OF WORK TO BE DONE WITHIN CHANNEL



VICINITY MAP

NOT TO SCALE

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 417+00 TO STA 434+00
3	C-2	PLAN AND PROFILE STA 469+00 TO STA 492+00 (SMP-2)
4	C-3	PLAN AND PROFILE STA 492+00 TO STA 515+00 (SMP-2)
5	C-4	TYPICAL DETAILS
6	C-5	SECTIONS STA 417+00 TO STA 433+00 (SMP-1)
7	C-6	SECTIONS STA 479+52 TO STA 488+38 (SMP-2)
8	C-7	SECTIONS STA 492+52 TO STA 505+07 (SMP-2)
9	C-8	SECTIONS STA 507+78 TO STA 517+61 (SMP-2)

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
15 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

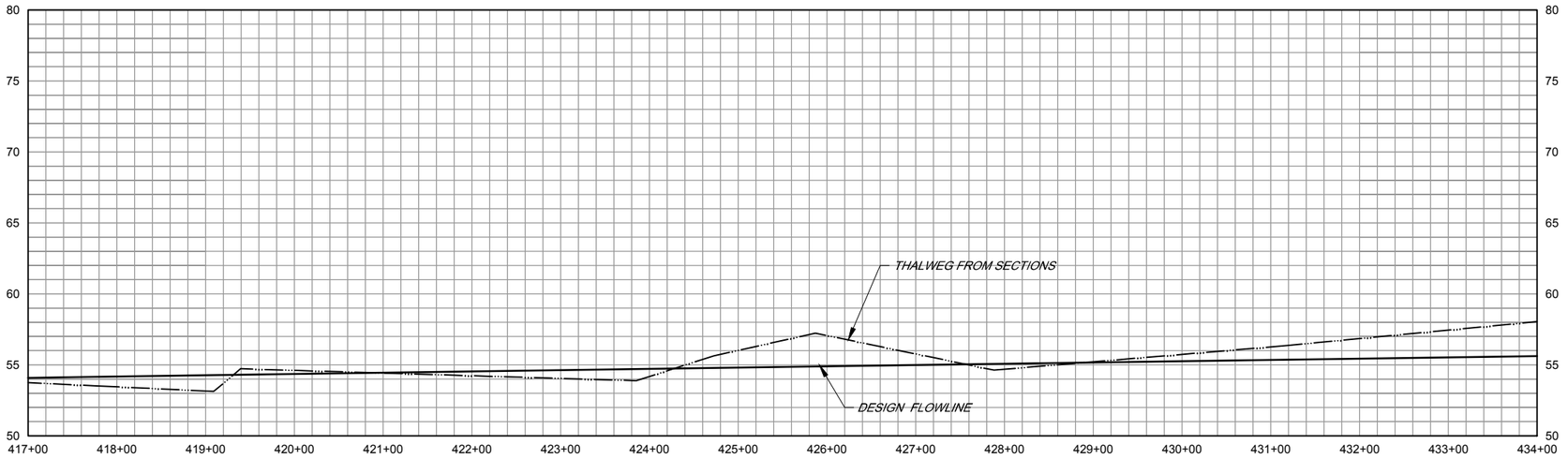
SCALE: AS SHOWN | DATE: 1/18/2012
DRAWN: ----
REVIEWED:

SANTA ROSA CREEK

INDEX TO DRAWINGS,TABLE, LOCATION AND VICINITY MAPS

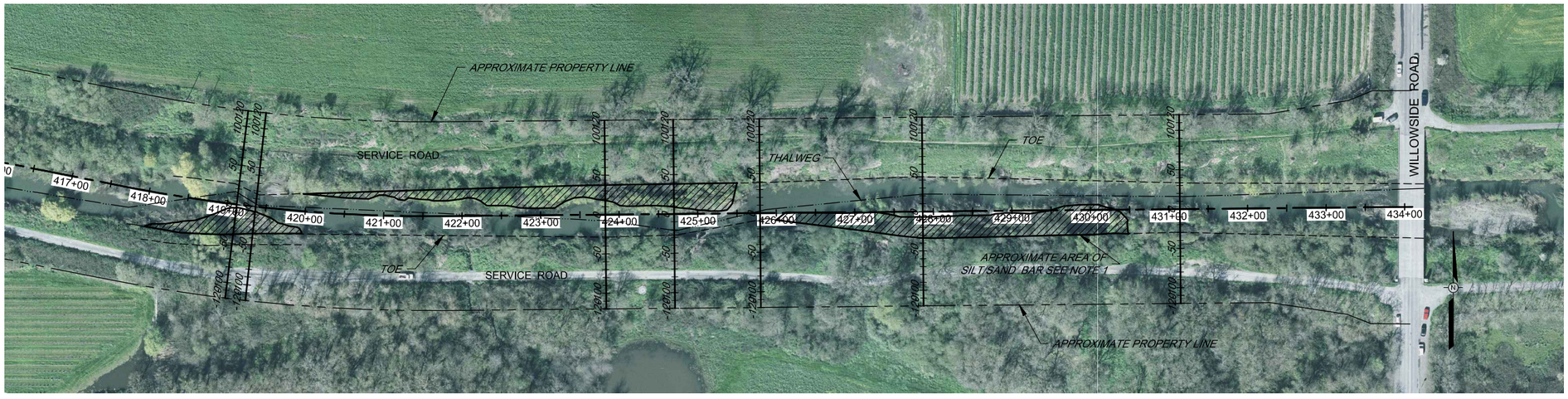
FILE NAME: 2012-G_SR-CRK
CONTRACT NUMBER:
DRAWING NUMBER: G-1
SHEET 1 OF 9

\\SD-DATA\Proj\flood control\zone 1a\SantaRosa\2012_Maintenance



PROFILE

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



PLAN

SCALE 1" = 80'

NOTES:

1. *SEDIMENT REMOVAL WILL BE BELOW O.H.W. AND OUTSIDE OF EXISTING SUMMER STREAM FLOW. SEE DRAWING NO. C-4 FOR DETAILS.*

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
15 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

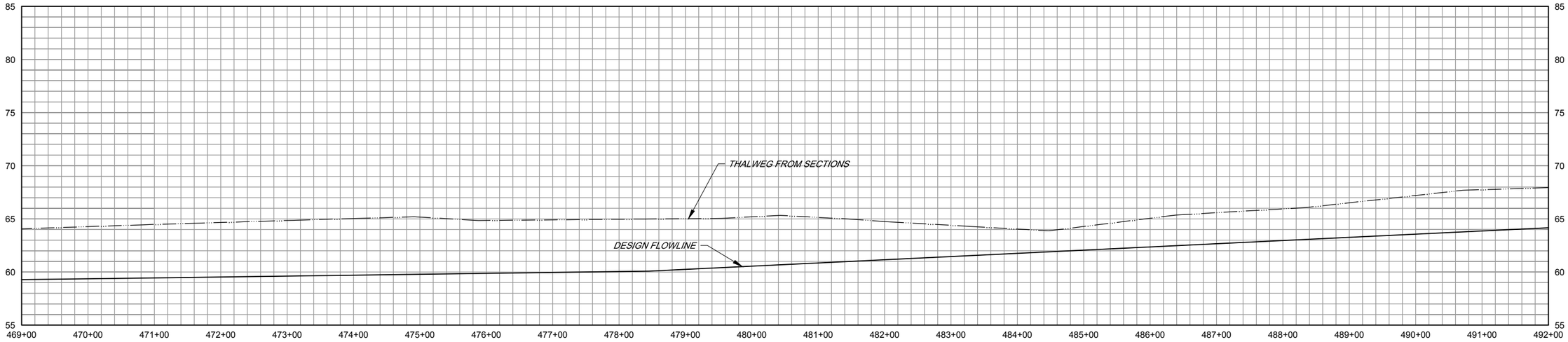
SCALE : AS SHOWN
DATE : 1/18/2012
DRAWN : ADF
REVIEWED :

SANTA ROSA CREEK

PLAN AND PROFILE STA 417+00 TO STA 434+00

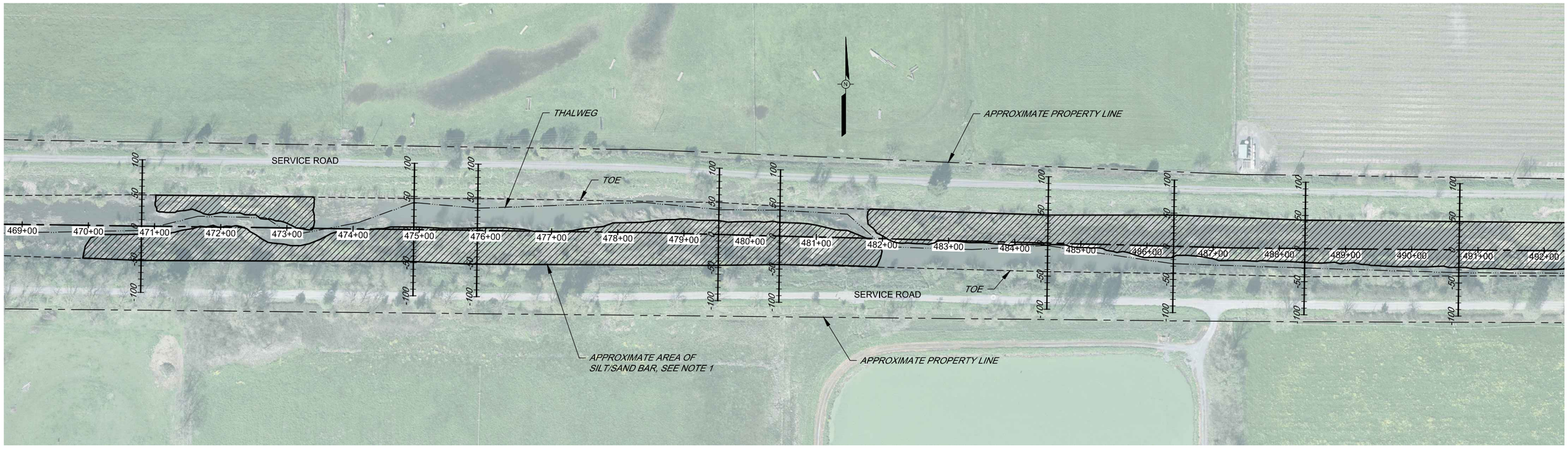
FILE NAME: 2012SR-CRK_SMP-1_C
CONTRACT NUMBER:
DRAWING NUMBER: C-1
SHEET 2 OF 9

\\Sd-data\Proj\flood control\zone 1a\SantaRosa\2012_Maintenance\SMP-1



PROFILE

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



PLAN

SCALE 1" = 80'

NOTES:
SEDIMENT REMOVAL WILL BE BELOW O.H.W. AND OUTSIDE OF EXISTING SUMMER STREAM FLOW. SEE DRAWING NO. C-4 FOR DETAILS.

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
15 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

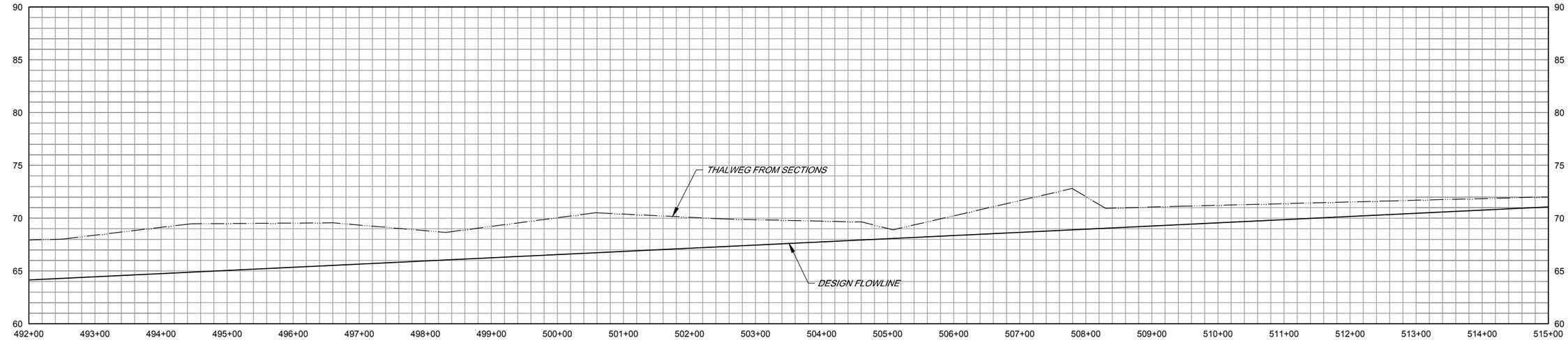
SCALE : AS SHOWN
DATE : 1/18/2012
DRAWN : ADF
REVIEWED :

SANTA ROSA CREEK

PLAN AND PROFILE STA 469+00 TO STA 492+00 (SMP-2)

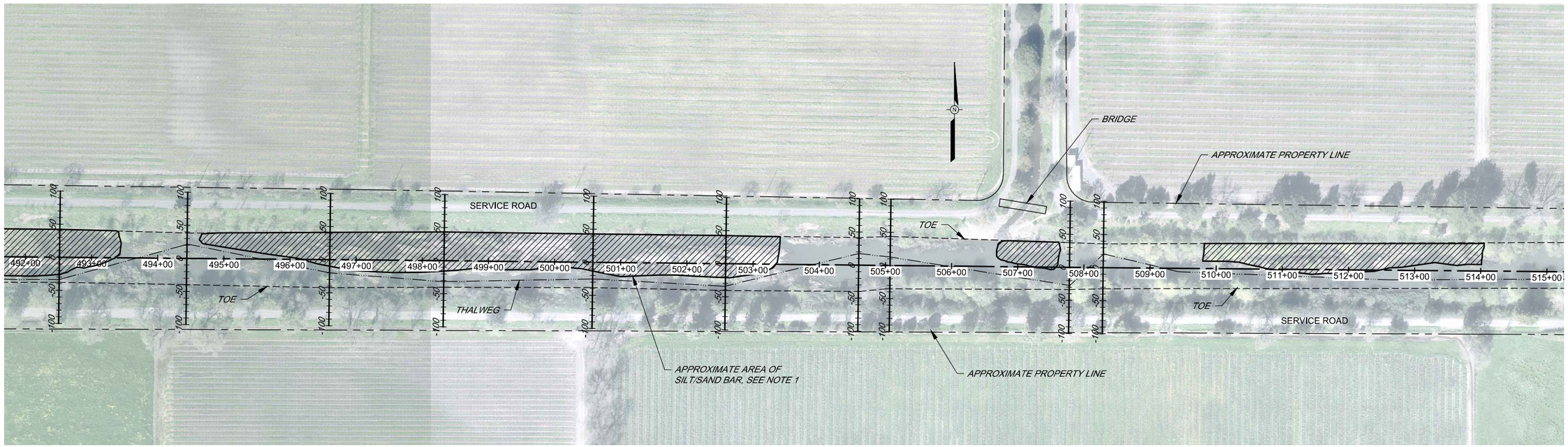
FILE NAME: 2012SR-CRK_SMP-2_C
CONTRACT NUMBER:
DRAWING NUMBER: C-2
SHEET 3 OF 9

\\SD-DATA\Proj\flood control\zone 1a\SantaRosa\2012_Maintenance\SMP-2



PROFILE

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



PLAN

SCALE 1" = 80'

NOTES:
SEDIMENT REMOVAL WILL BE BELOW O.H.W. AND OUTSIDE OF EXISTING SUMMER STREAM FLOW. SEE DRAWING NO. C-4 FOR DETAILS.

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
15 FEB 2012

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

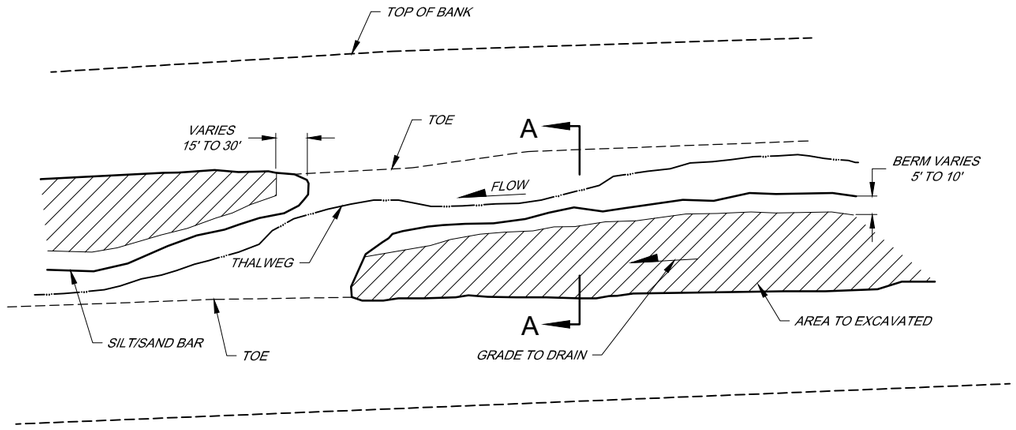
SCALE : AS SHOWN
DATE : 1/18/2012
DRAWN : ADF
REVIEWED :

SANTA ROSA CREEK

PLAN AND PROFILE STA 492+00 TO STA 515+00 (SMP-2)

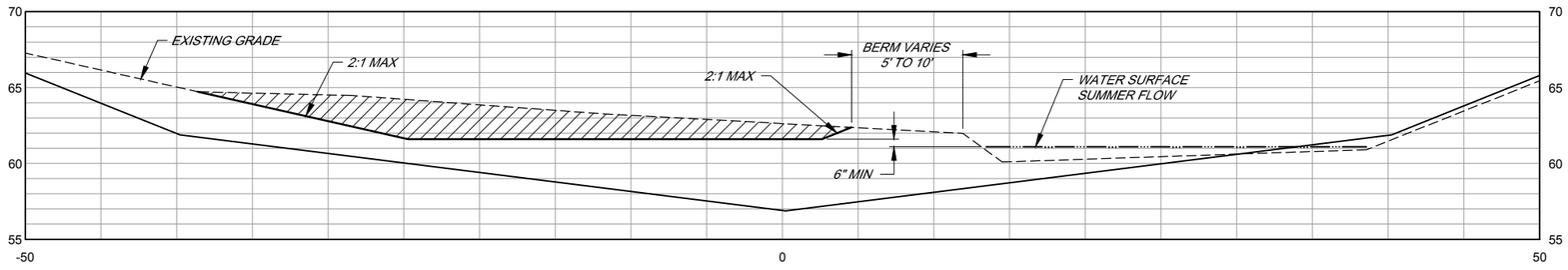
FILE NAME: 2012SR-CRK_SMP-2_C
CONTRACT NUMBER:
DRAWING NUMBER: C-3
SHEET 4 OF 9

\\SD-DATA\Proj\flood control\zone 1a\SantaRosa\2012_Maintenance\SMP-2



TYPICAL PLAN

NOT TO SCALE



TYPICAL SECTION A-A

NOT TO SCALE

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
15 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

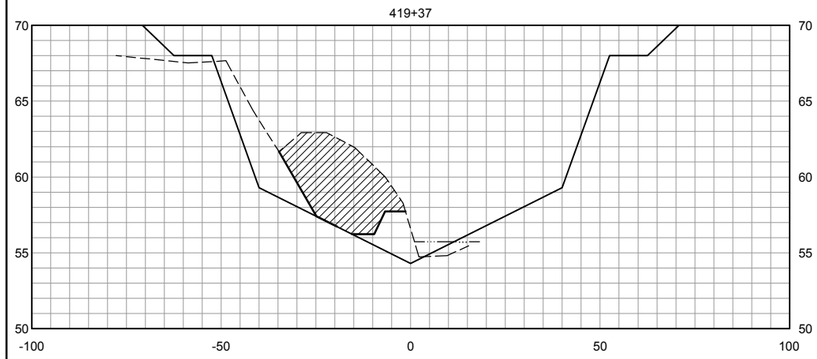
SCALE : AS SHOWN
DATE : 1/18/2012
DRAWN : ADF
REVIEWED :

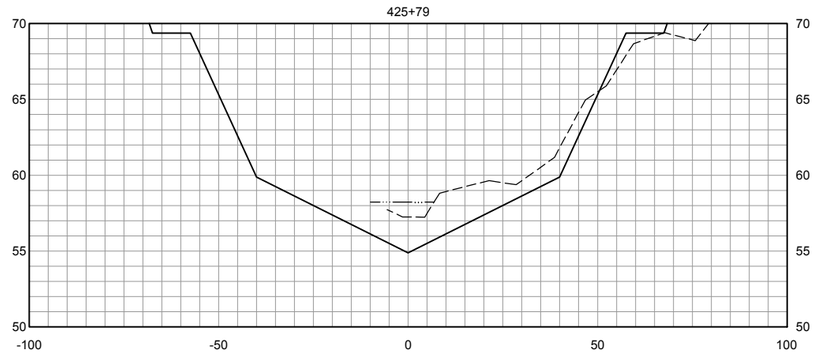
SANTA ROSA CREEK

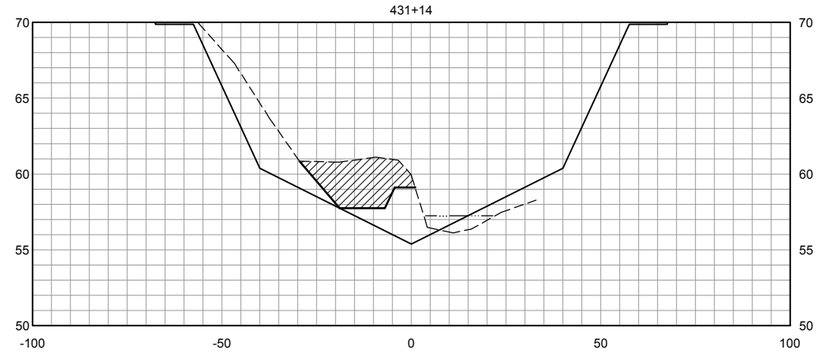
TYPICAL DETAILS

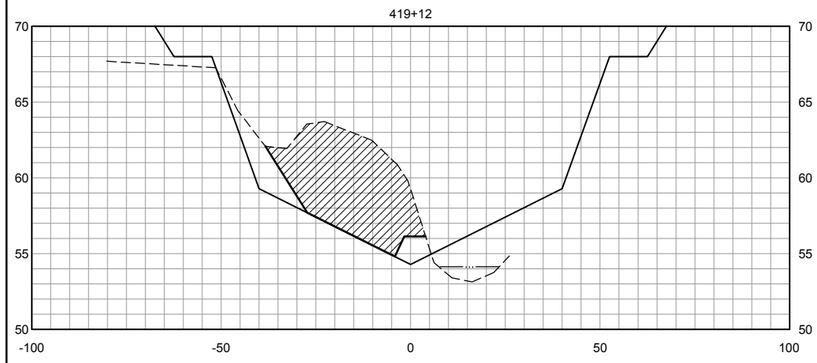
FILE NAME: 2012SR-CRK_SMP-2_C
CONTRACT NUMBER:
DRAWING NUMBER: C-4
SHEET 5 OF 9

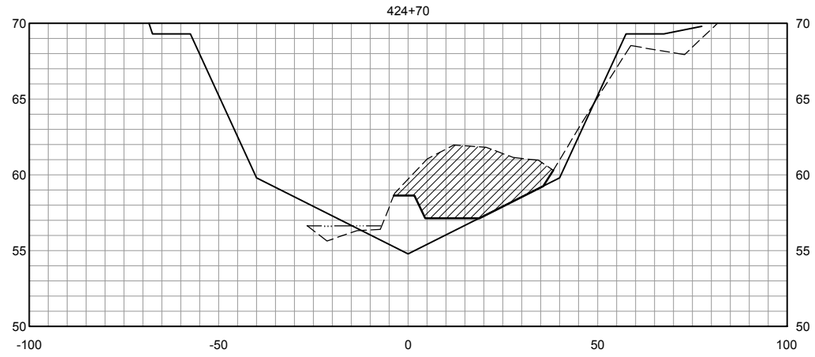
\\SD-DATA\Proj\flood control\zone 1a\SantaRosa\2012_Maintenance\SMP-2

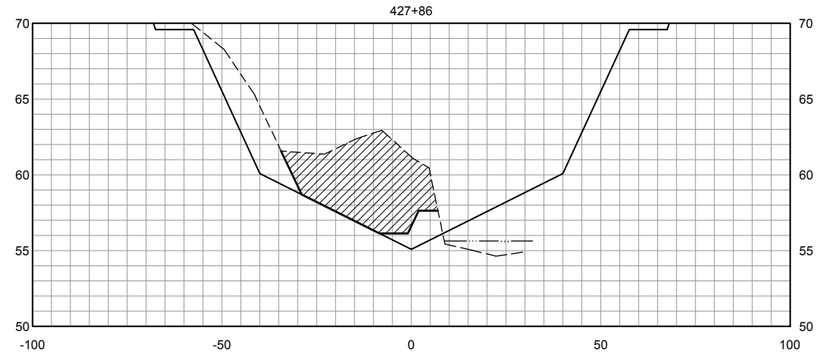


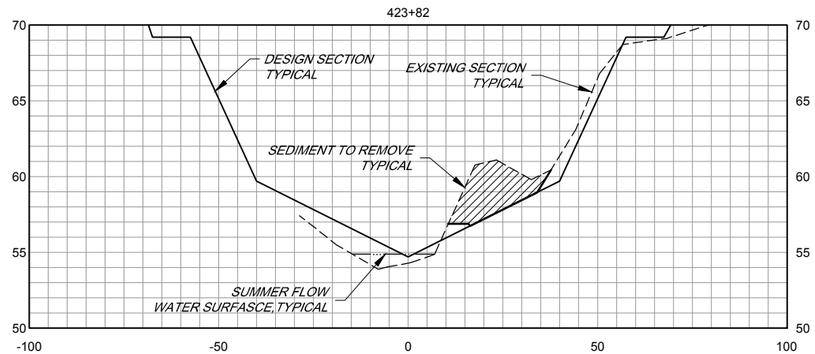












SECTIONS

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
15 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

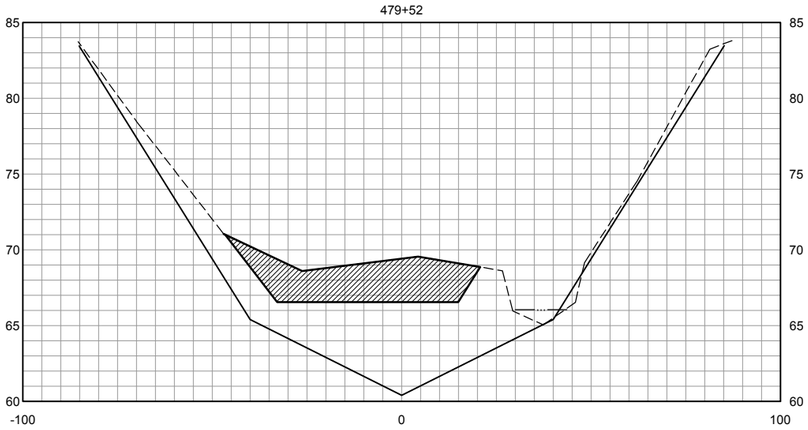
SCALE : AS SHOWN
DATE : 1/18/2012
DRAWN : ADF
REVIEWED :

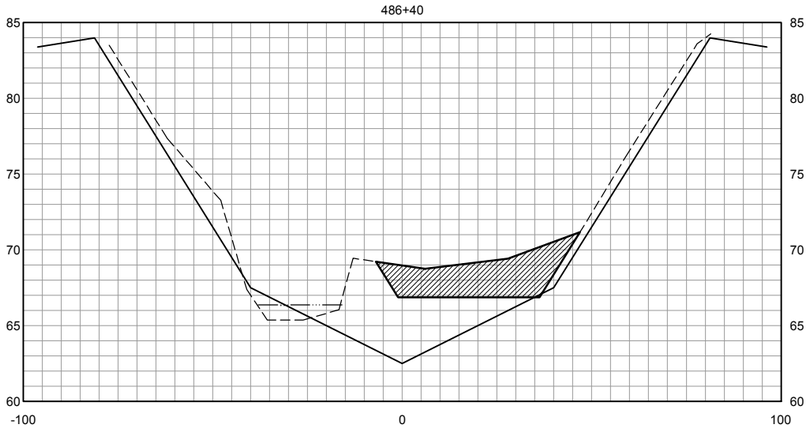
SANTA ROSA CREEK

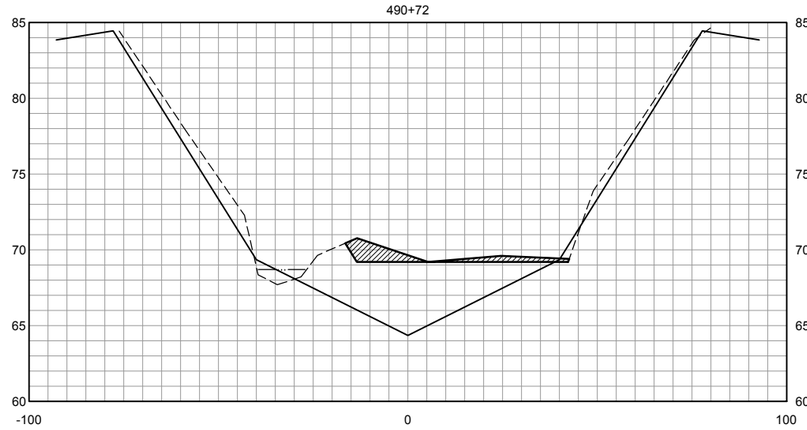
SECTIONS STA 417+00 TO STA 433+00 (SMP-1)

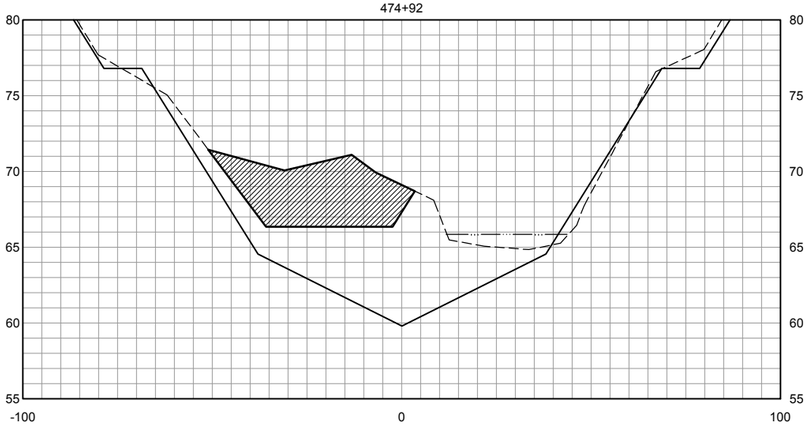
FILE NAME: 2012SR-CRK_SMP-1_C
CONTRACT NUMBER:
DRAWING NUMBER: C-5
SHEET 6 OF 9

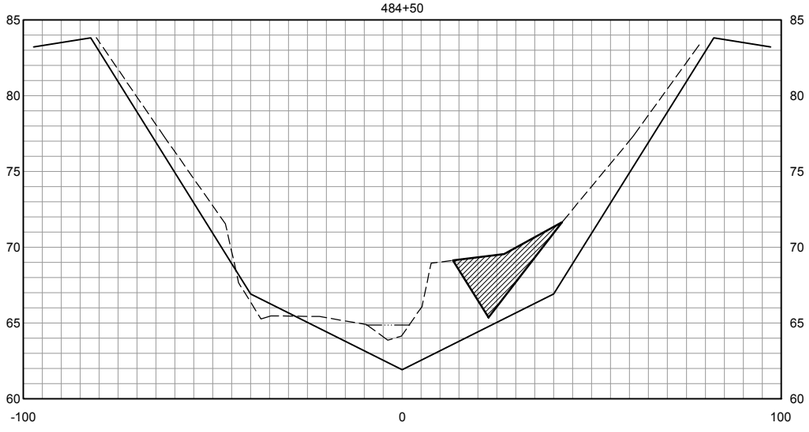
\\Sr-data\Proj\flood control\zone 1a\SantaRosa\2012_Maintenance\SMP-1

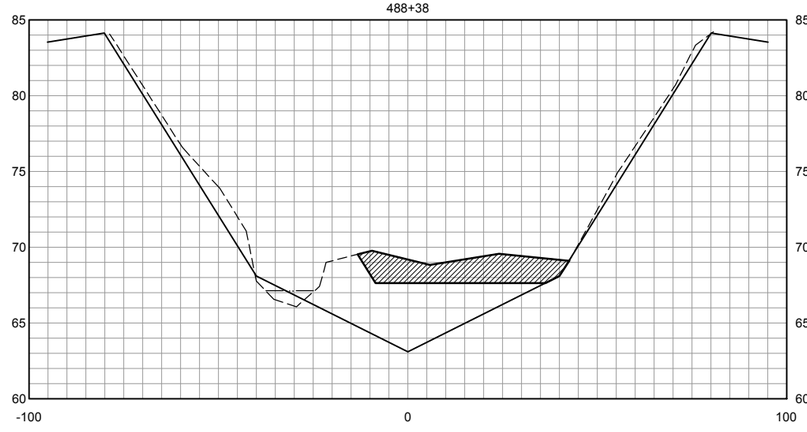


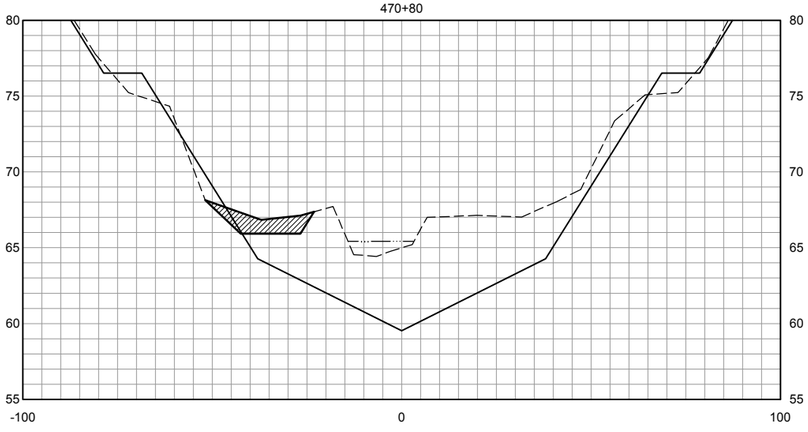


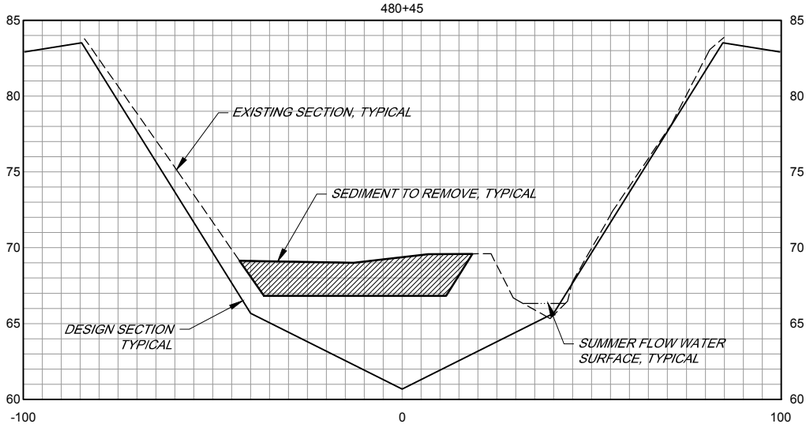












SECTIONS

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
15 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

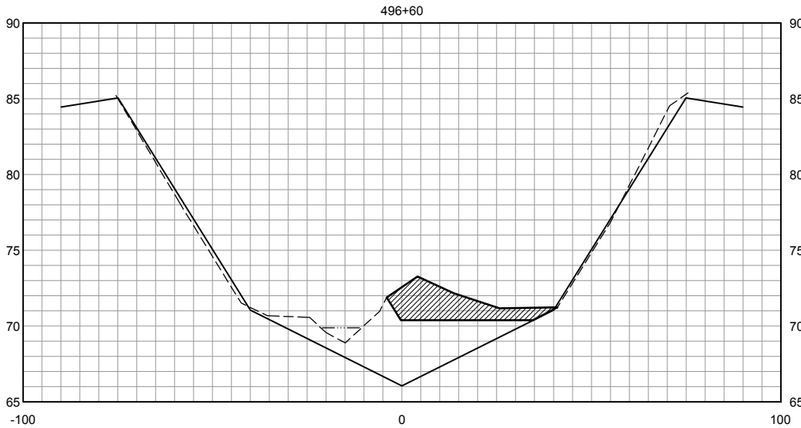
SCALE : AS SHOWN
DATE : 1/18/2012
DRAWN : ADF
REVIEWED :

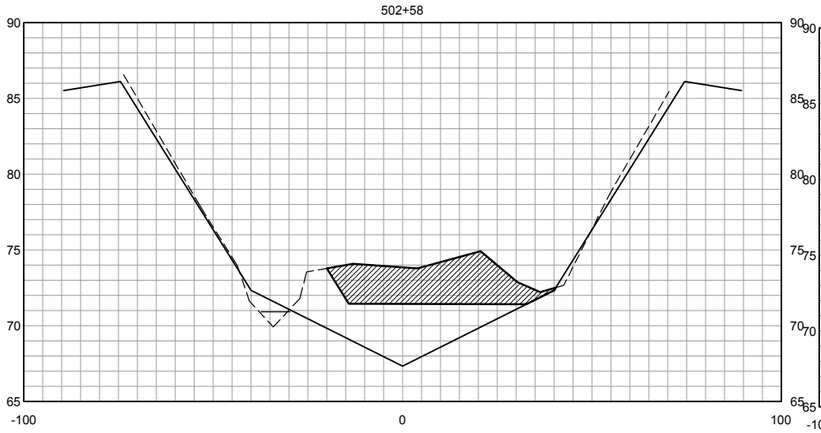
SANTA ROSA CREEK

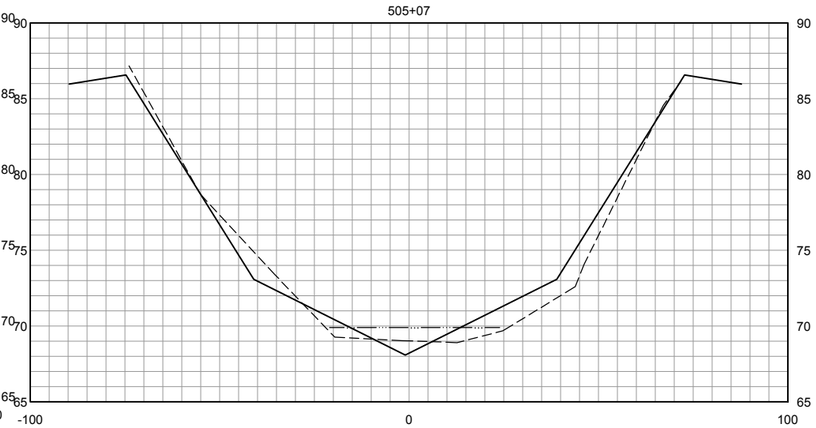
SECTIONS STA 479+52 TO STA 488+38 (SMP-2)

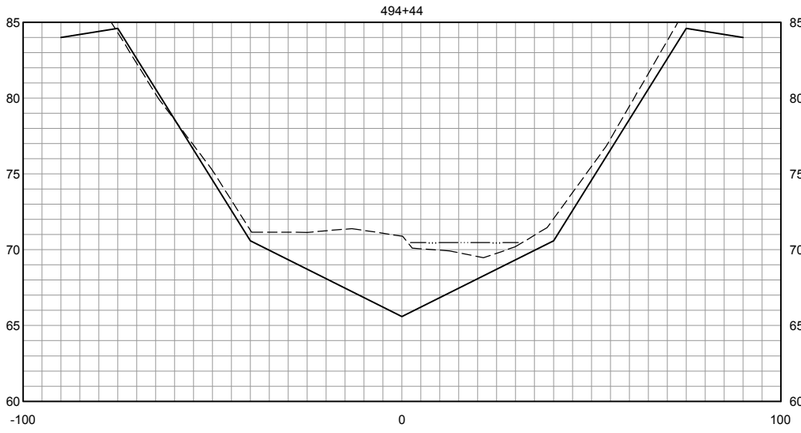
FILE NAME: 2012SR-CRK_SMP-2_C
CONTRACT NUMBER:
DRAWING NUMBER: C-6
SHEET 7 OF 9

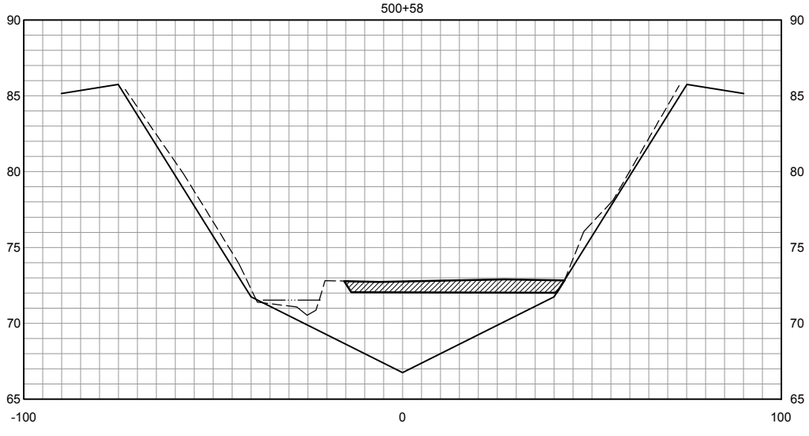
\\SD-DATA\Proj\flood control\zone 1a\SantaRosa\2012_Maintenance\SMP-2

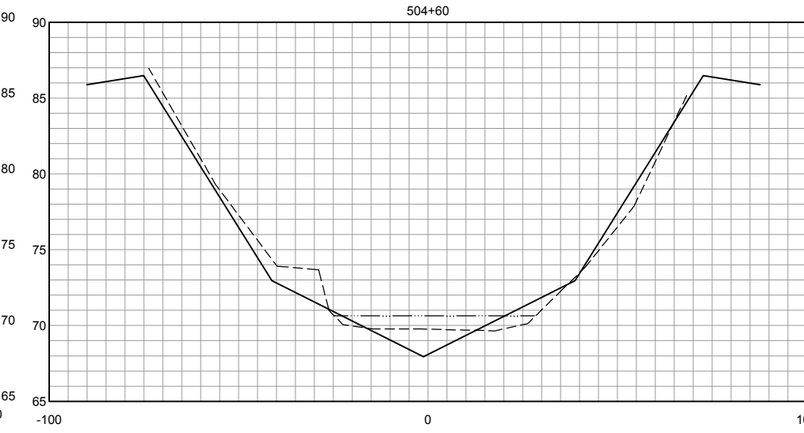


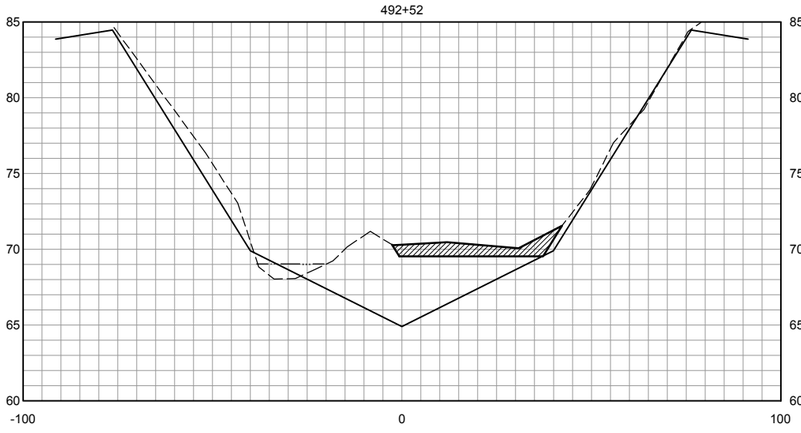


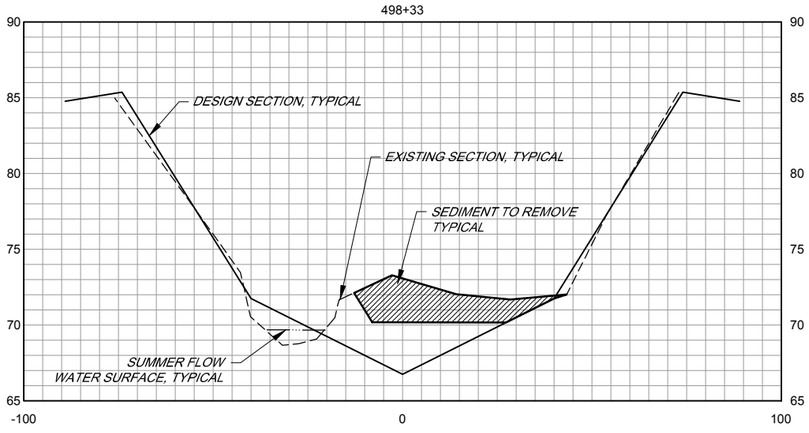












SECTIONS

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
15 FEB 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

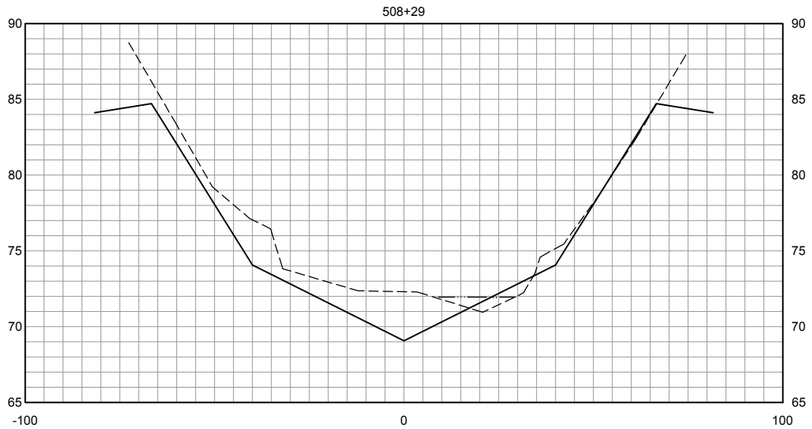
SCALE : AS SHOWN
DATE : 1/18/2012
DRAWN : ADF
REVIEWED :

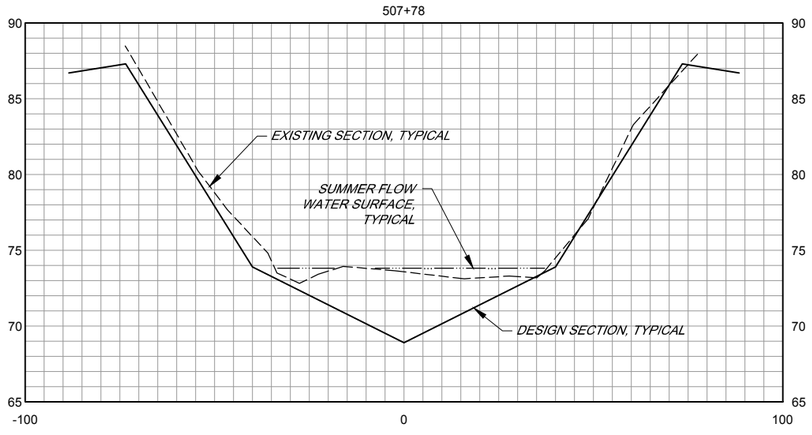
SANTA ROSA CREEK

SECTIONS STA 492+52 TO STA 505+07 (SMP-2)

FILE NAME: 2012SR-CRK_SMP-2_C
CONTRACT NUMBER:
DRAWING NUMBER: C-7
SHEET 8 OF 9

\\Sd-data\Proj\flood control\zone 1a\SantaRosa\2012_Maintenance\SMP-2





SECTIONS

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

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
15 FEB 2012

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE : AS SHOWN
DATE : 1/18/2012
DRAWN : ADF
REVIEWED :

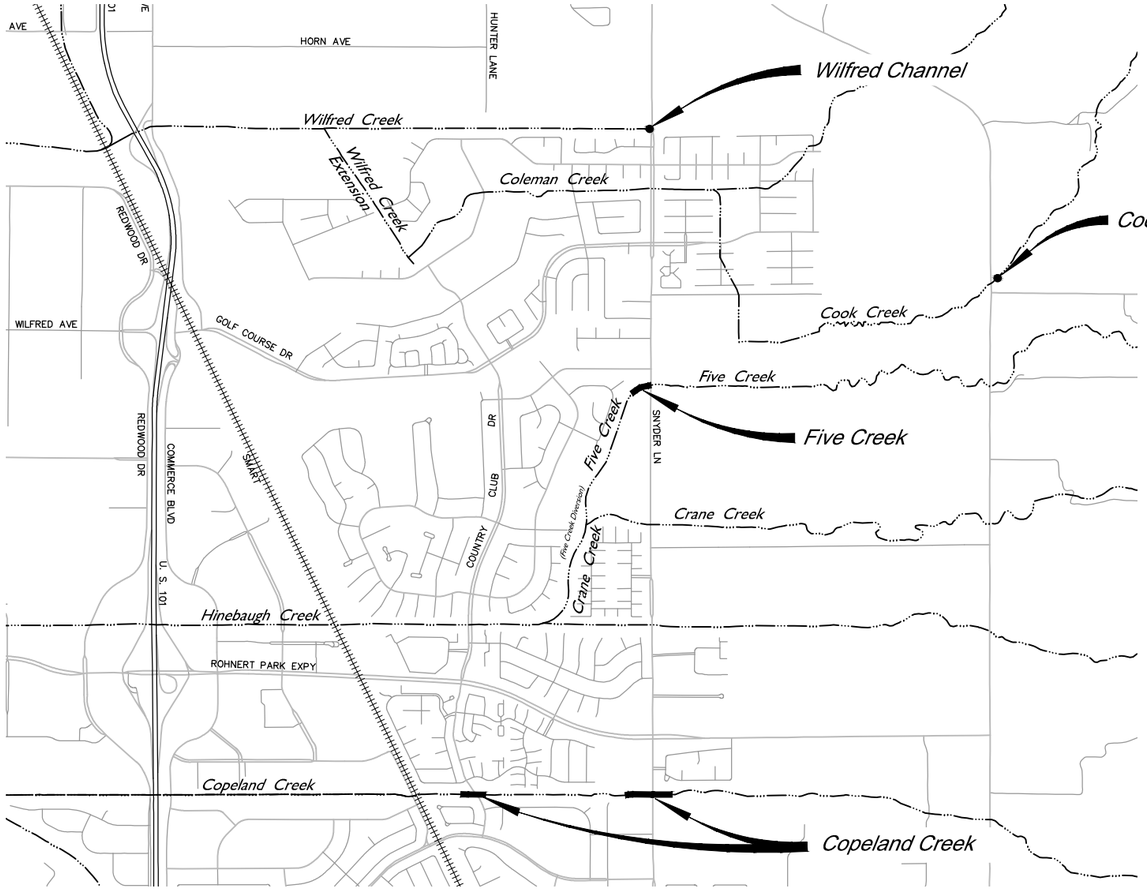
SANTA ROSA CREEK

SECTIONS STA 507+78 TO STA 517+61 (SMP-2)

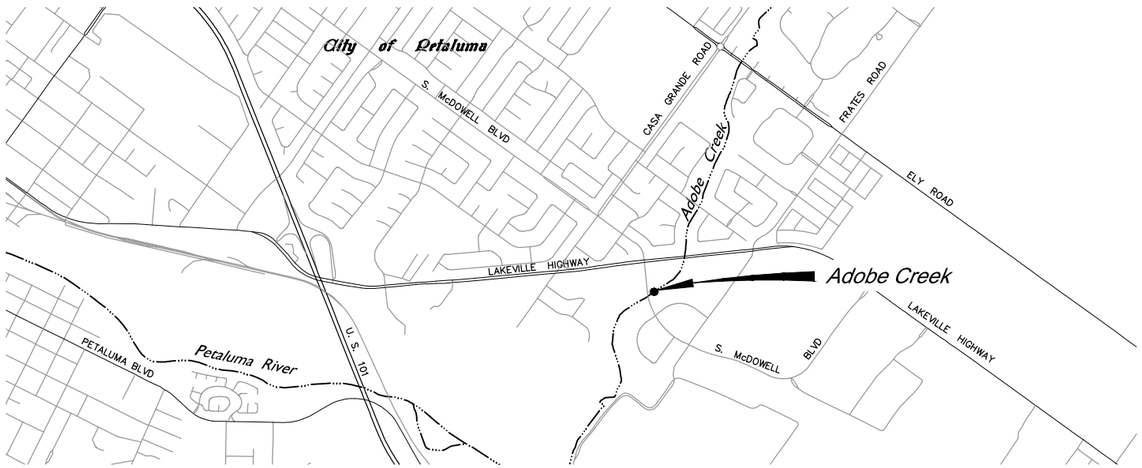
FILE NAME: 2012SR-CRK_SMP-2_C
CONTRACT NUMBER:
DRAWING NUMBER: C-8
SHEET 9 OF 9

\\SD-DATA\Proj\flood control\zone 1a\SantaRosa\2012_Maintenance\SMP-2

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



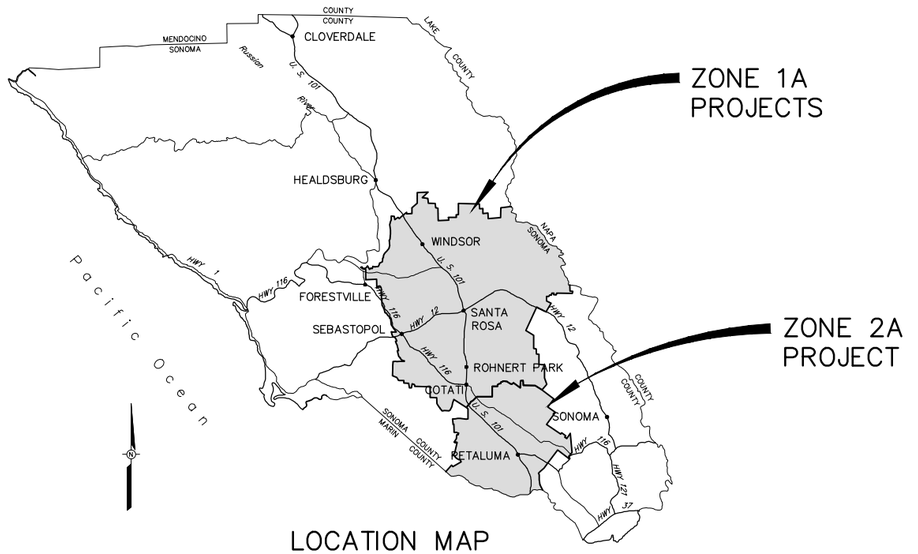
ZONE 1A



ZONE 2A

VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

DRAWING INDEX

SHEET NO	DRAWING NO	TITLE
1	G–1	LOCATION AND VICINITY MAPS
2	G–2	DETAILS AND TABLES
3	C–5	FIVE CREEK SEDIMENT REMOVAL PLAN AND PROFILE
4	C–7	FIVE CREEK SEDIMENT REMOVAL CROSS SECTIONS
6	C–3	WILFRED CREEK SEDIMENT REMOVAL
7	C–1	ADOBE CREEK SEDIMENT REMOVAL PLAN
8	C–2	ADOBE CREEK SEDIMENT REMOVAL CROSS SECTIONS
9	C–1	COPELAND CREEK AT COUNTRY CLUB DRIVE SEDIMENT REMOVAL PLAN AND CROSS SECTIONS
10	C–2	COPELAND CREEK AT SNYDER LANE SEDIMENT REMOVAL PLAN AND CROSS SECTIONS
11	C–1	COOK CREEK SEDIMENT REMOVAL

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 MAR 2012

NOTE:
ALL EXCAVATION IS BELOW OHW

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

NO.	DATE	REVISION	BY

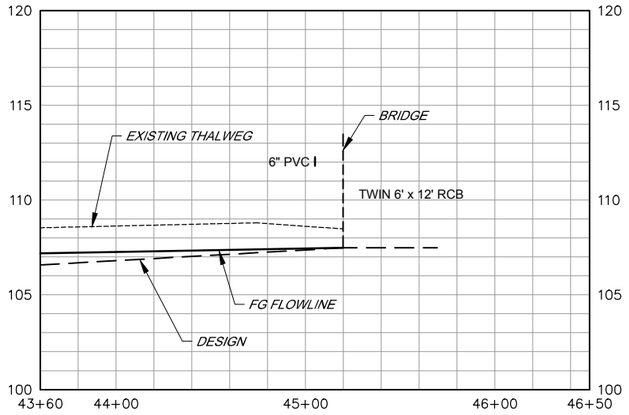
SONOMA COUNTY WATER AGENCY

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

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

FILE NAME: 2011SedRemov_BasinAndInstream_Index.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: G–1
SHEET 1 OF 8

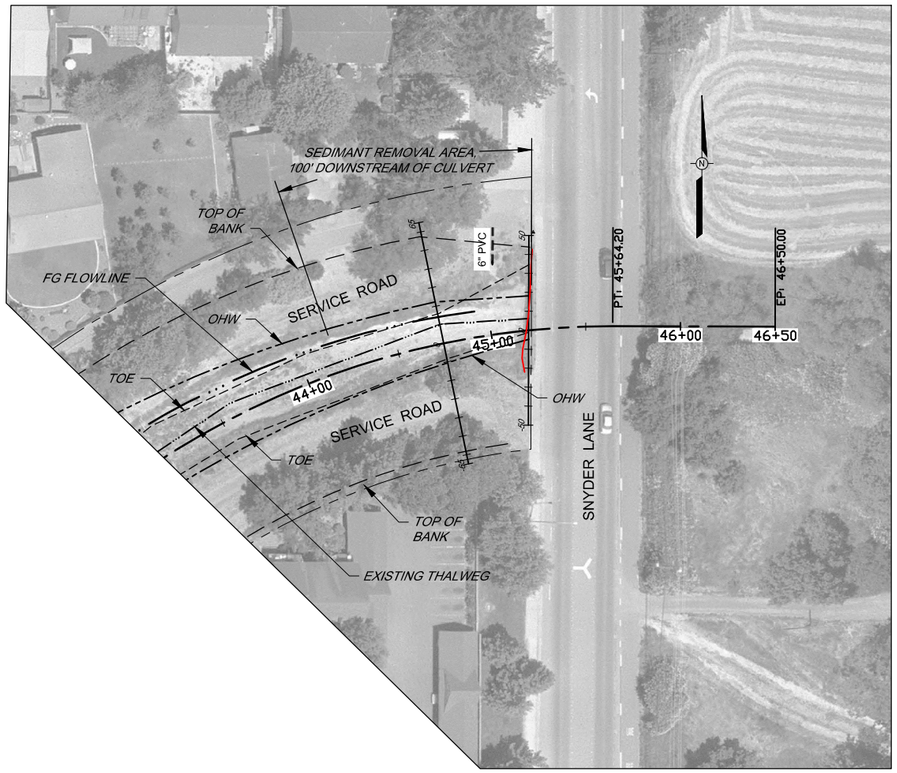
\\sd-data\proj\flood control\zone 1a\FIVE_CRK-deversion\2011\2011SedRemov_BasinAndInstream_Index



PROFILE

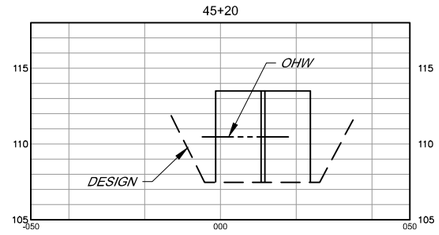
SCALE: HORIZ 1" = 40'
VERT 1"= 4'

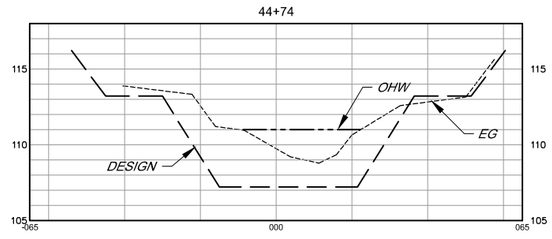
FIVE CREEK						
EXCAVATION						
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y. (TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAD AND DOZER IN CHANNEL	STA 44+00 TO STA 45+20	120	40	4,800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



PLAN

SCALE: 1"= 40'





PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 MAR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

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

SEDIMENT REMOVAL – ZONE 1A AND ZONE 2A

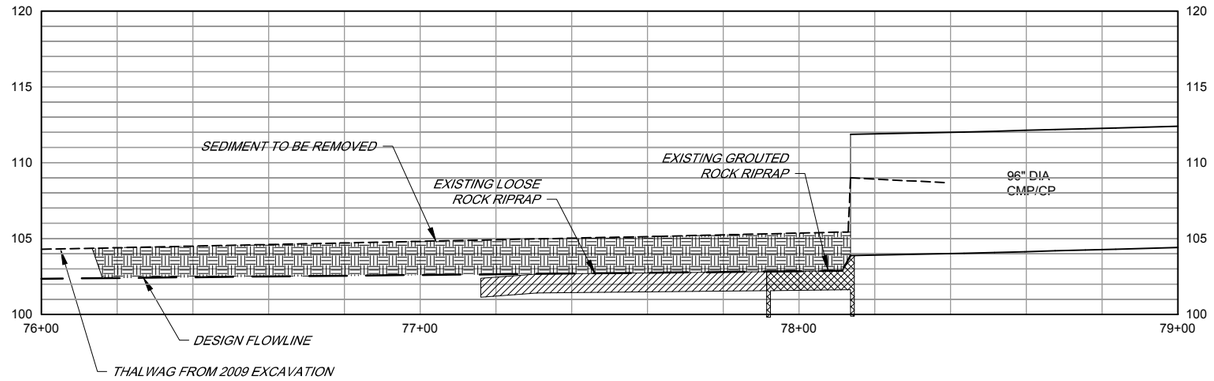
FIVE CREEK SEDIMENT REMOVAL PLAN, PROFILE, AND CROSS SECTIONS

FILE NAME: FIVE_02-17-11_P&P.dwg
CONTRACT NUMBER: --

DRAWING NUMBER: C-5

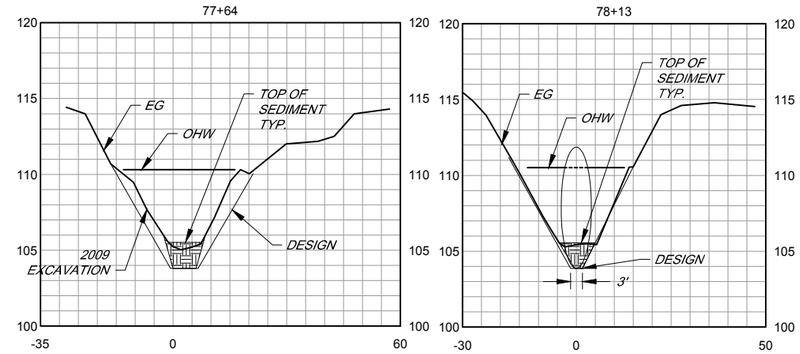
SHEET 2 OF 8

\\sd-data\proj\flood control\zone 1a\FIVE_CRK-deversion\2011\FIVE_02-17-11_P&P



PROFILE

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



SECTIONS

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

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

PLAN

SCALE: 1"= 20'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 MAR 2012

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

NO.	DATE	REVISION	BY

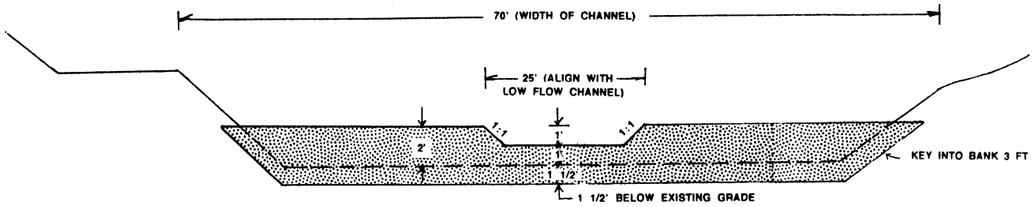
SONOMA COUNTY WATER AGENCY

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

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

FILE NAME: C-3.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: C-3
SHEET 3 OF 8

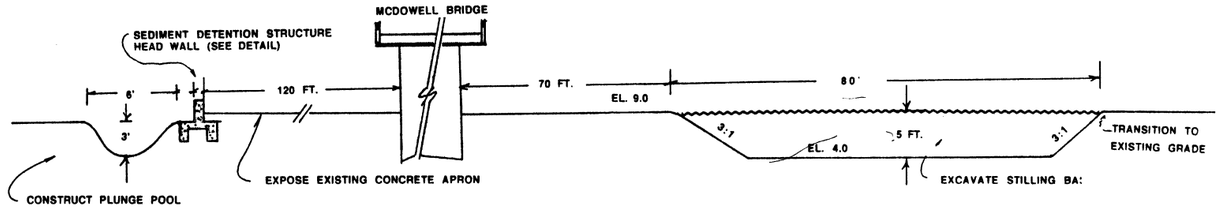
\\sd-data\proj\flood control\zone 1a\WILFRED\2011\C-3



SEDIMENT DETENTION STRUCTURE--FRONT VIEW

N.T.S.

(DESIGN)



SEDIMENT DETENTION STRUCTURE--PROFILE

N.T.S.

(DESIGN)

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 MAR 2012

PLAN

SCALE: 1"= 20'

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

NO.	DATE	REVISION	BY

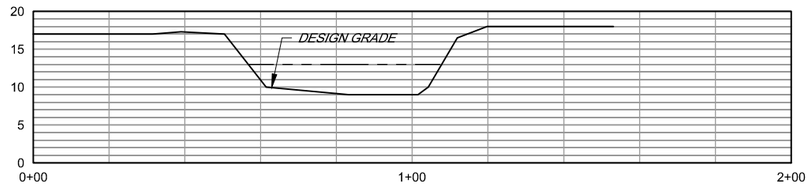
SONOMA COUNTY WATER AGENCY

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

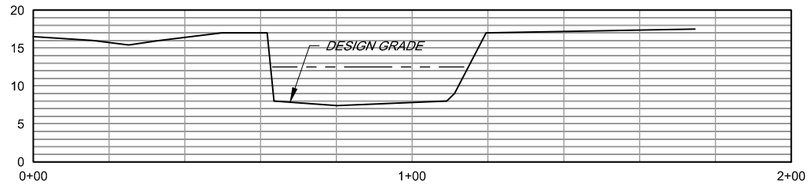
SEDIMENT REMOVAL – ZONE 1A AND ZONE 2A
ADOBE CREEK SEDIMENT REMOVAL
PLAN

FILE NAME: C-adobe_2011.dwg
CONTRACT NUMBER: ##
DRAWING NUMBER: C-1
SHEET 4 OF 8

\\sd-data\proj\flood control\zone 2a\adobe creek\SED-BASIN_adobe\2011\C-adobe_2011



SECTION 4



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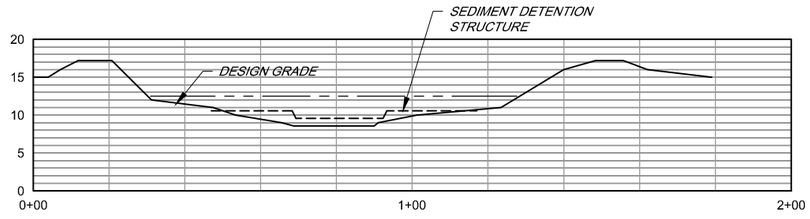

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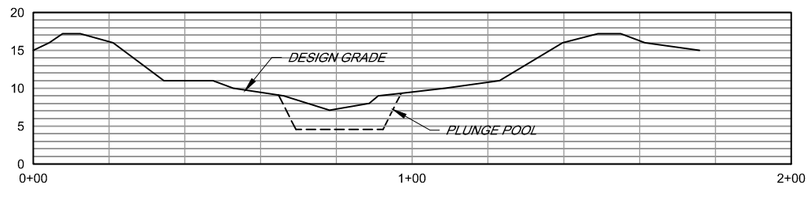

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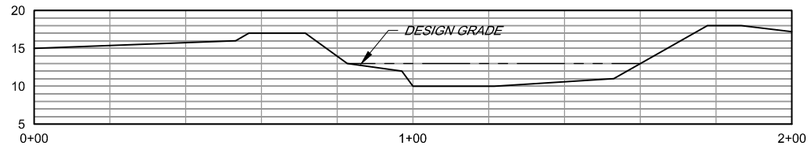
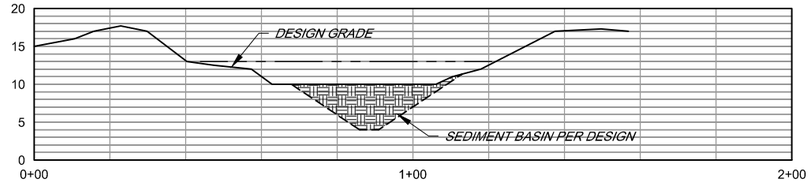
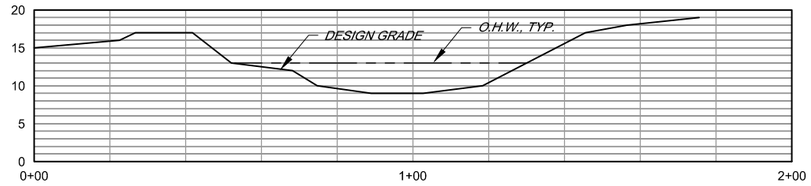


SECTION 7



SECTION 6



SECTION 5

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 MAR 2012

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

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

NO.	DATE	REVISION	BY

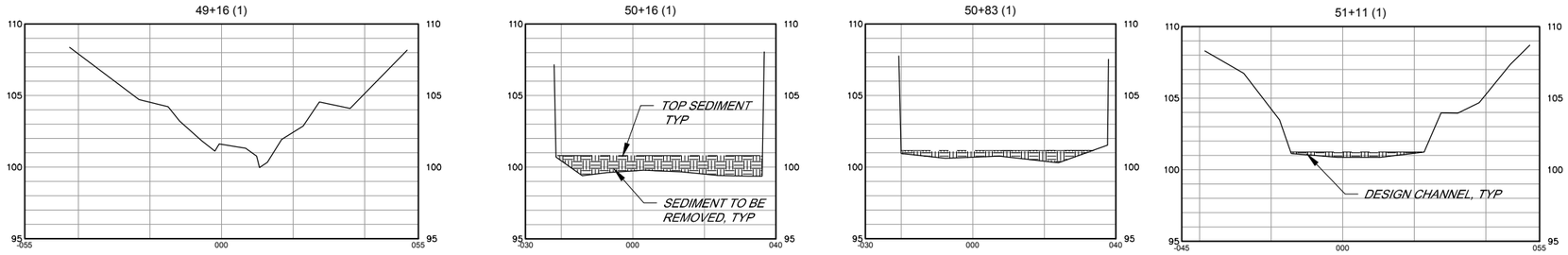
SONOMA COUNTY WATER AGENCY

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

SEDIMENT REMOVAL – ZONE 1A AND ZONE 2A
ADOBE CREEK SEDIMENT REMOVAL
CROSS SECTIONS

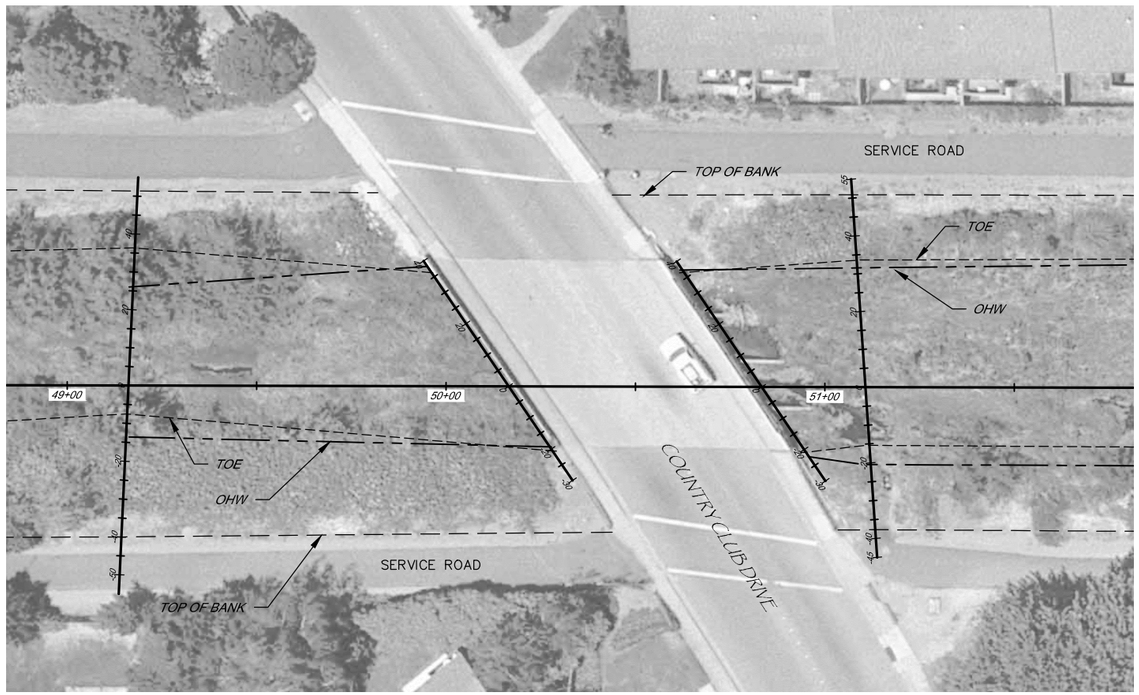
FILE NAME: C-adobe_2011.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: C-2
SHEET 5 OF 8

\\sd-data\proj\flood control\zone 2a\adobe creek\SED-BASIN_adobe\2011\C-adobe_2011



SECTIONS

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



PLAN

SCALE: 1"= 20'

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 MAR 2012

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

NOTE:
AERIAL PHOTOGRAPHY FLOWN IN 2000

NO.	DATE	REVISION	BY

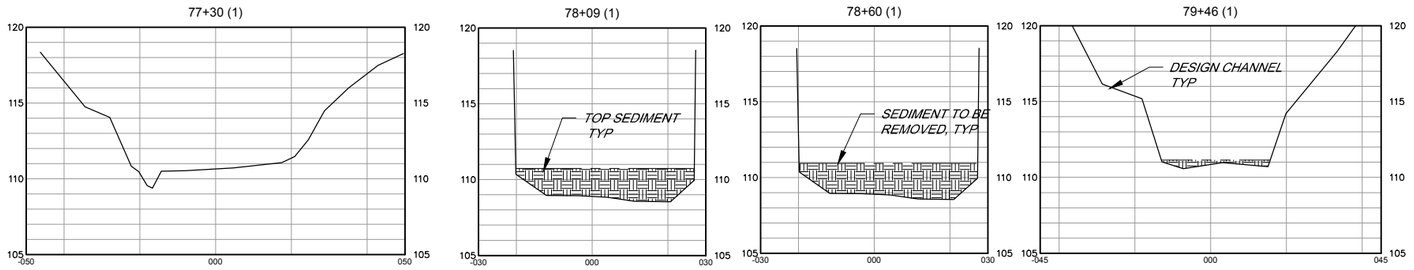
SONOMA COUNTY WATER AGENCY

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

SEDIMENT REMOVAL – ZONE 1A AND ZONE 2A
COPELAND CREEK AT COUNTRY CLUB DRIVE
SEDIMENT REMOVAL PLAN AND CROSS SECTIONS

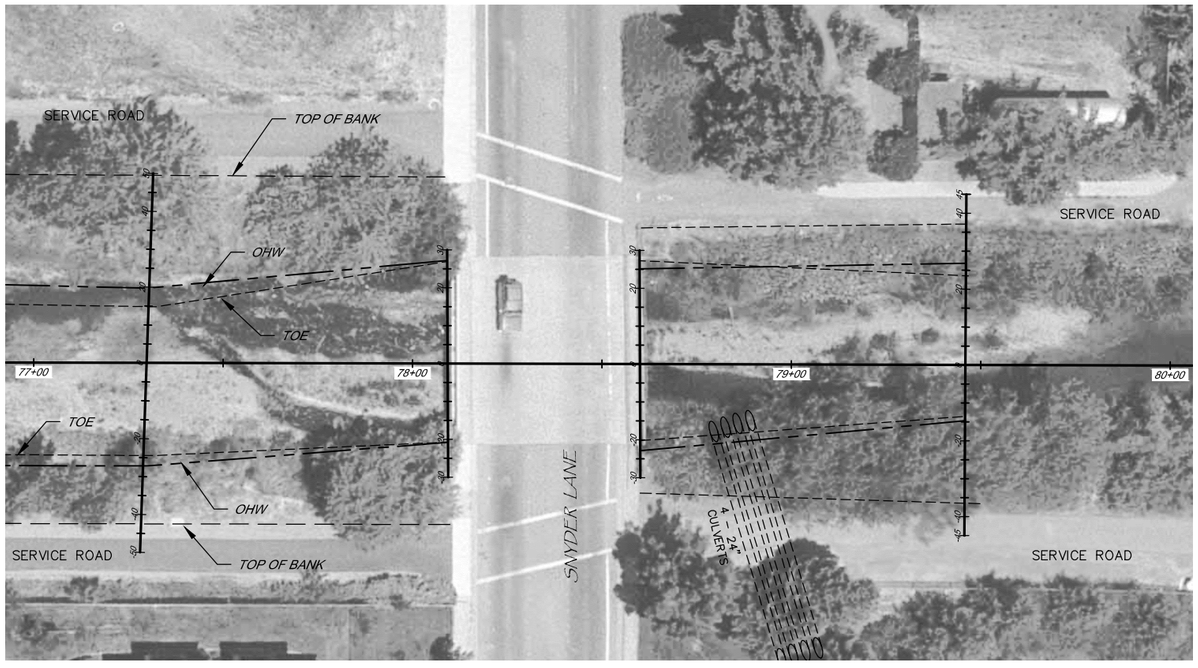
FILE NAME: C1-2_COPELAND.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: C-1
SHEET 6 OF 8

\\sd-data\pro\Flood control\zone 1a\copeland\sediment_removal\2011\C1-2_COPELAND



SECTIONS

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



PLAN

SCALE: 1"= 20'

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

PRELIMINARY
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

SONOMA COUNTY WATER AGENCY

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

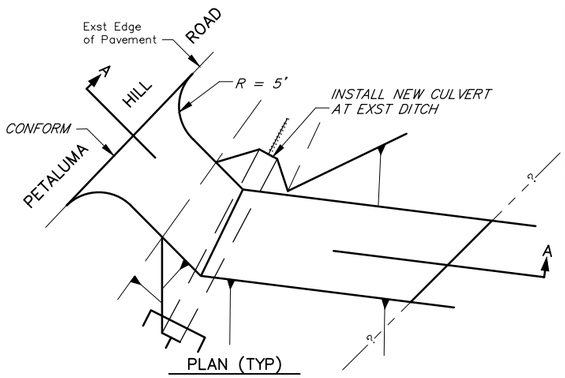
FILE NAME: C1-2_COPELAND.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: C-2
SHEET 7 OF 8

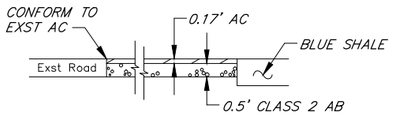
\\sd-data\proj\flood control\zone 1a\copeland\sediment_removal\2011\C1-2_COPELAND

COOK CREEK

EXCAVATION

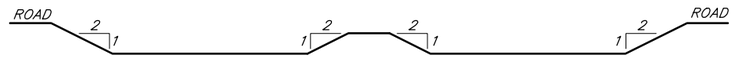
PROJECT ACTIVITY DESCRIPTION	LOCATION AND STATIONING	LENGTH (LINEAR FT.)	AVERAGE WIDTH (LINEAR FT.)	AREA (SQUARE FT.)	DEPTH (FT.)	C.Y(TO REMOVE)
ACCUMULATED SEDIMENT REMOVAL USING EXCAVATOR FROM SERVICE ROAD AND DOZER IN CHANNEL	NA	200	40	8,000	0.5	150
	TOTAL = 200		TOTAL = 8,000		TOTAL = 150	





STANDARD DRIVEWAY DETAILS

NOT TO SCALE



SECTION

NOT TO SCALE

B

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
29 MAR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

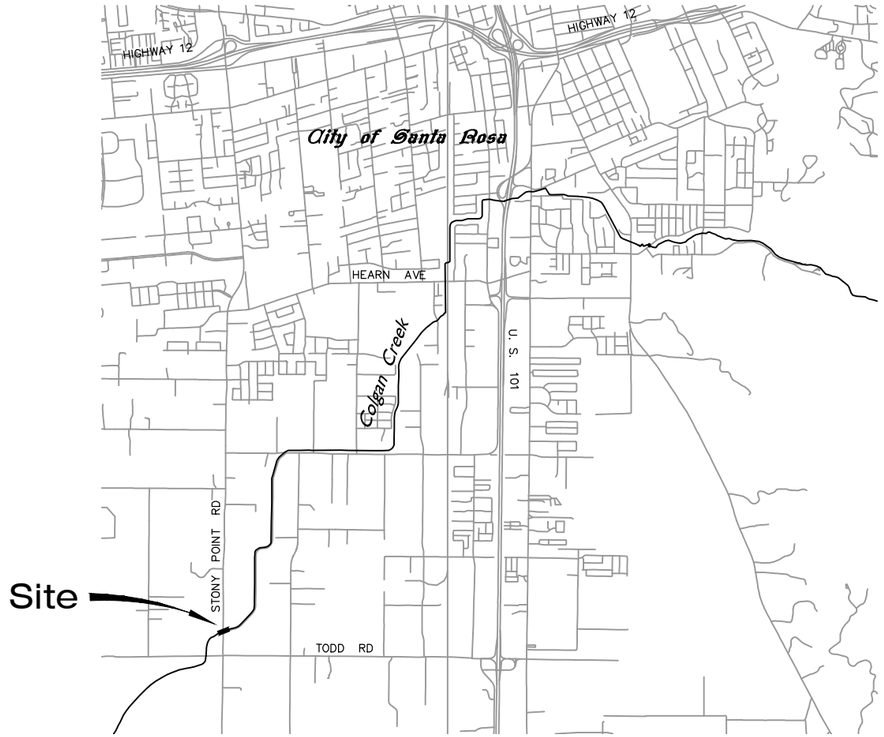
SCALE : AS SHOWN | DATE : 03/29/12
DRAWN : SMP
REVIEWED :

SEDIMENT REMOVAL – ZONE 1A AND ZONE 2A
COOK CREEK SEDIMENT REMOVAL

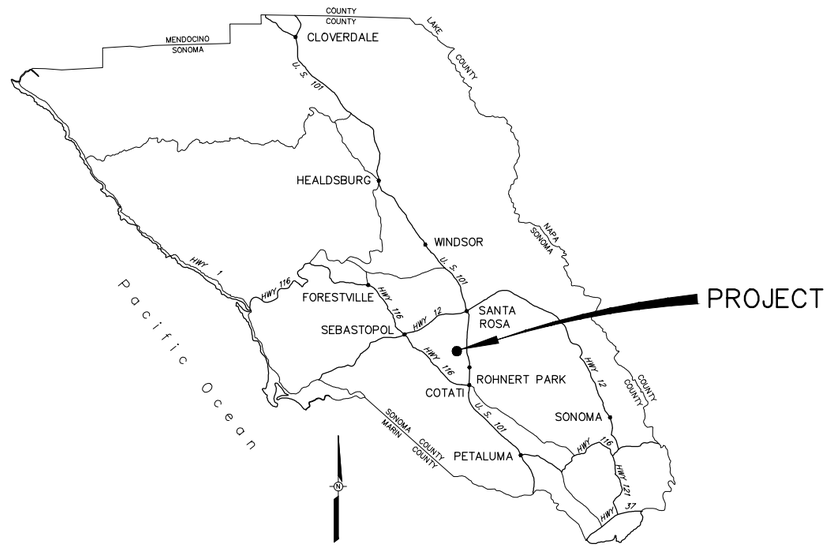
FILE NAME: grading-plan.dwg
CONTRACT NUMBER: --
DRAWING NUMBER: C-1
SHEET 8 OF 8

\\sd-data\proj\flood control\zone 1a\cook crk basin\sed-removal\2011\grading-plan

COLGAN CREEK SEDIMENT PLUG REMOVAL



PLAN
SCALE: 1"= 2000'



LOCATION MAP
N.T.S.

INDEX TO DRAWINGS

SHEET No	SHEET TITLE	SHEET DESCRIPTION
1	G-1	INDEX TO DRAWINGS, LOCATION, AND VICINITY MAPS
2	C-1	SEDIMENT REMOVAL PLAN AT STONEY POINT ROAD

90% SUBMITTAL

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

NO.	DATE	REVISION	BY
		PRELIMINARY SUBJECT TO REVISION	

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN
DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

COLGAN CREEK
INDEX TO DRAWINGS, LOCATION, AND VICINITY MAPS

FILE NAME: COLGAN_Gen2012.dwg
CONTRACT NUMBER: -
DRAWING NUMBER: G-1
SHEET 1 OF 2

\\SD-DATA\Proj\flood control\zone 1a\Colgan Creek\2012 Sed Removal\COLGAN_Gen2012

PLAN

SCALE: 1"= 20'

COLGAN CREEK						
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 AND/OR ROADWAY	AREA 1 SEDIMENT REMOVAL	50	15	750	2	55
	AREA 2 SEDIMENT REMOVAL	40	15	600	2	45
	TOTALS:	90		1350		100

NOTE:
ALL EXCAVATION BELOW O.H.W.

90% SUBMITTAL

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

PRELIMINARY
SUBJECT TO REVISION

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

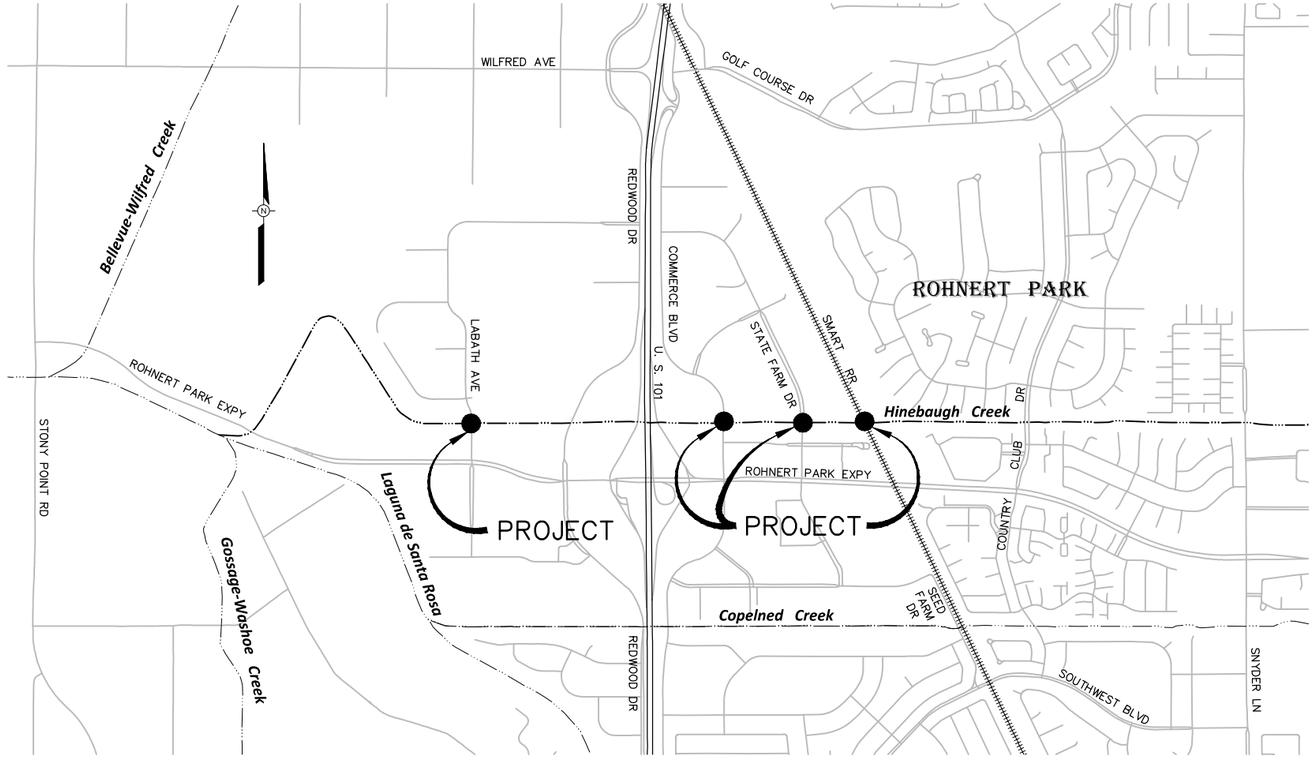
SCALE: AS SHOWN
DATE: 03/12/2012
DRAWN: SMP
REVIEWED:

COLGAN CREEK
SEDIMENT REMOVAL PLAN AT STONEY POINT ROAD

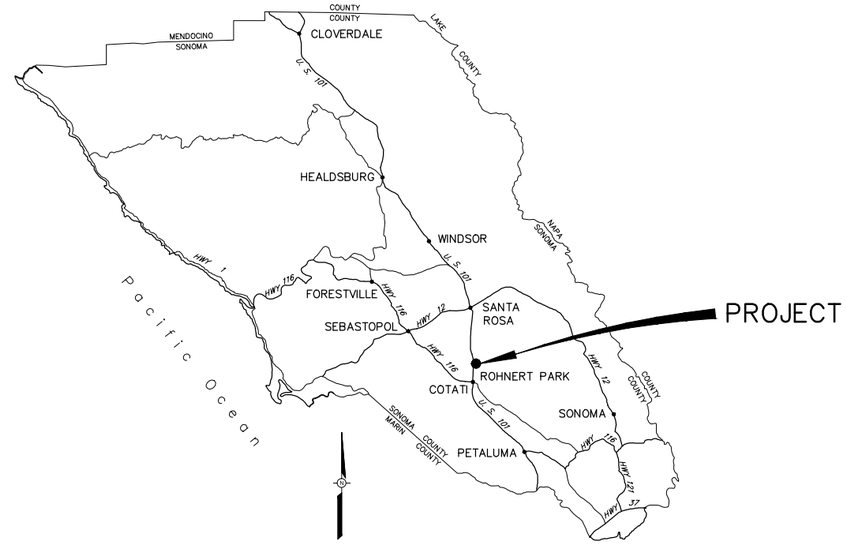
FILE NAME: COLGAN_Civil2012.dwg
CONTRACT NUMBER: -
DRAWING NUMBER: C-1
SHEET 2 OF 2

\\SD-DATA\Proj\flood control\zone 1a\Colgan Creek\2012 Sed Removal\COLGAN_Civil2012

HINEBAUGH CREEK SEDIMENT REMOVAL AT CROSSINGS



VICINITY MAP
SCALE 1" = 1000'



HINEBAUGH CREEK						
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	LABATH AVE. STA 173+34 TO STA 174+58 (SMP-1 & 2)	NORTH SIDE 105 SOUTH SIDE 120	NORTH 10 SOUTH 20	BELOW O.H.W. 3450	NORTH 2 SOUTH 1.5	BELOW O.H.W. 211
	COMMERACE BLVD. STA 7+68 TO STA 8+78 (SMP-3 & 4)	NORTH SIDE 110 SOUTH SIDE 70	NORTH 11.5 SOUTH 5	BELOW O.H.W. 1615	2	BELOW O.H.W. 120
	STATE FARM DR. STA 17+44 TO STA 19+45 (SMP-4 & 5)	NORTH SIDE 155 SOUTH SIDE 100	NORTH 5 SOUTH 14.5	BELOW O.H.W. 2225	2	BELOW O.H.W. 165
	S.M.A.R.T. RR X-ING STA 26+19 TO STA 27+12 (SMP-5)	NORTH SIDE 40 SOUTH SIDE 40	NORTH 20 SOUTH 15	BELOW O.H.W. 1400	2	BELOW O.H.W. 104
TOTALS:		TOTAL LENGTH = 528 L.F.		BELOW O.H.W. TOTAL AREA = 8690		BELOW O.H.W. TOTAL C.Y. = 600

INDEX TO DRAWINGS:

SHEET NUMBER	DRAWING NUMBER	TITLE
1	G-1	INDEX TO DRAWINGS, LOCATION AND VICINITY MAPS, AND TABLE OF WORK
2	C-1	SEDIMENT REMOVALE AT LABATH AVE.
3	C-2	SEDIMENT REMOVAL AT COMMERACE BLVD.
4	C-3	SEDIMENT REMOVAL AT STATE FARM DR.
5	C-4	SEDIMENT REMOVAL AT S.M.A.R.T. RR X-ING

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
01/17/2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

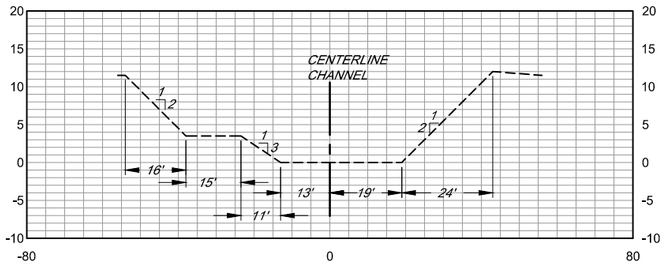
SCALE : AS SHOWN
DATE : 01/10/2012
DRAWN : ADF
REVIEWED :

HINEBAUGH CREEK - SEDIMENT REMOVAL AT CROSSINGS

INDEX TO DRAWINGS, LOCATION AND VICINITY MAPS, AND TABLE OF WORK

FILE NAME: 2012_HINEBAUGH_G
CONTRACT NUMBER:
DRAWING NUMBER: G-1
SHEET 1 OF 5

\\SD-DATA\Proj\flood control\zone 1a\hinebaugh\2012_SED-REMOVAL



TYPICAL SECTION
(LOOKING DOWNSTREAM)
SCALE HORIZ 1" = 20'
VERT 1" = 10'

NOTE:
CHANNEL WAS CONSTRUCTED PRIOR TO ROAD CROSSING

PLAN
SCALE 1" = 20'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
01/17/2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

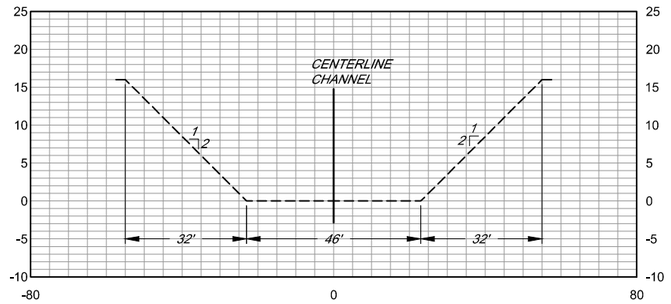
SCALE : AS SHOWN
DATE : 01/10/2012
DRAWN : ADF
REVIEWED :

HINEBAUGH CREEK - SEDIMENT REMOVAL AT CROSSINGS

SEDIMENT REMOVALE AT LABATH AVE.

FILE NAME: 2012_HINEBAUGH_C
CONTRACT NUMBER:
DRAWING NUMBER: C-1
SHEET 2 OF 5

\\Sd-data\Prg\flood control\zone 1a\Hinebaugh\2012_SED-REMOVAL



TYPICAL SECTION A-A

(STA 7+33± TO STA 7+97± AND STA 8+42± TO STA 8+68±)

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

PLAN

SCALE 1" = 20'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
01/17/2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

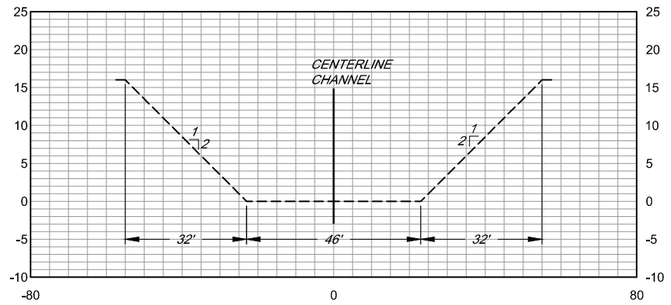
SCALE : AS SHOWN
DATE : 01/10/2012
DRAWN : ADF
REVIEWED :

HINEBAUGH CREEK - SEDIMENT REMOVAL AT CROSSINGS

SEDIMENT REMOVAL AT COMMERACE BLVD.

FILE NAME: 2012_HINEBAUGH_C
CONTRACT NUMBER:
DRAWING NUMBER: C-2
SHEET 3 OF 5

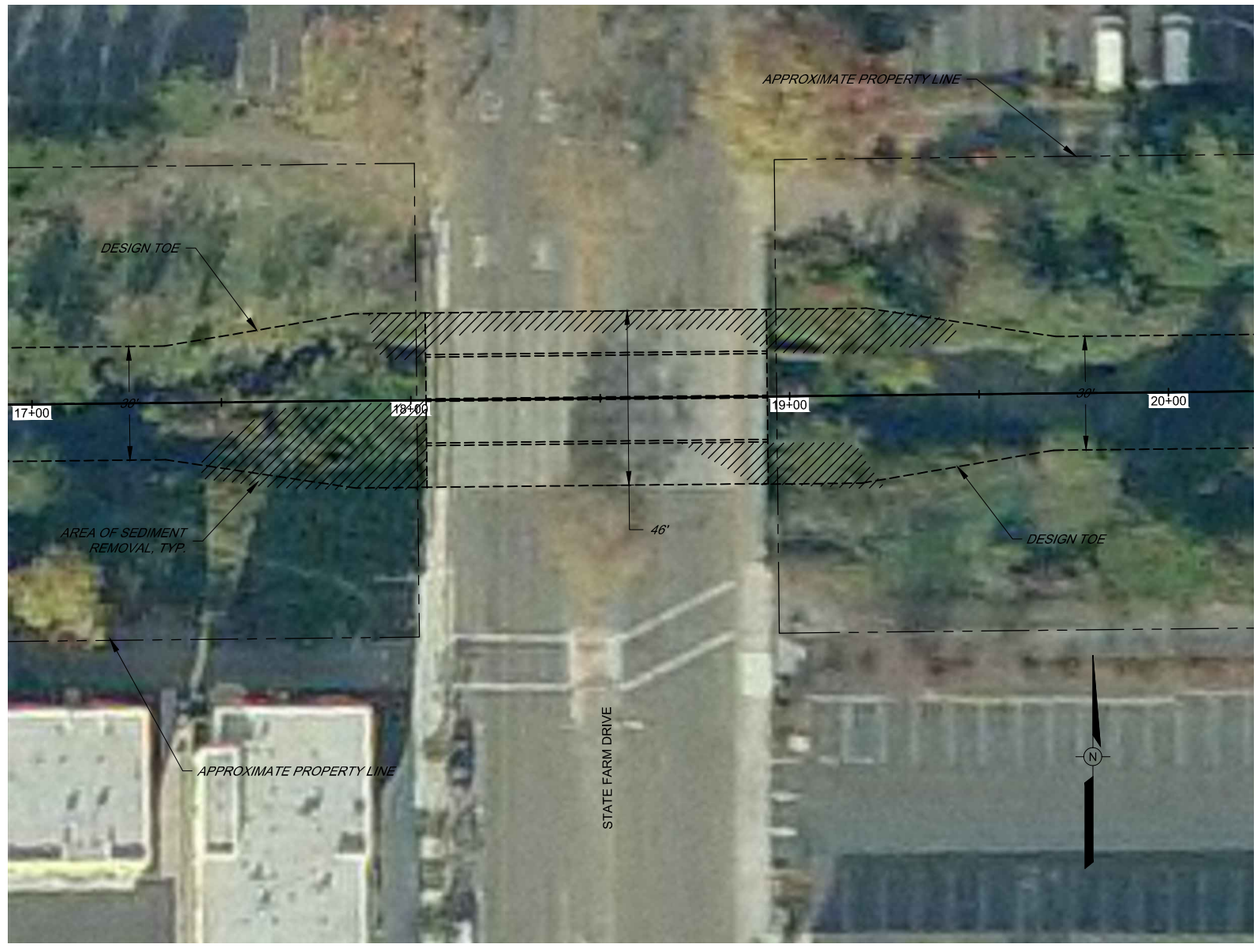
\\Sd-data\Prg\flood control\zone 1a\Hinebaugh\2012_SED-REMOVAL



TYPICAL SECTION A-A

(STA 17+84± TO STA 18+04± AND STA 18+94± TO STA 19+20±)

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



PLAN

SCALE 1" = 20'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
01/17/2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE : AS SHOWN
DATE : 01/10/2012
DRAWN : ADF
REVIEWED :

HINEBAUGH CREEK - SEDIMENT REMOVAL AT CROSSINGS

SEDIMENT REMOVAL AT STATE FARM DR.

FILE NAME: 2012_HINEBAUGH_C
CONTRACT NUMBER:
DRAWING NUMBER: C-3
SHEET 4 OF 5

\\Sd-data\Proj\flood control\zone 1a\Hinebaugh\2012_SED-REMOVAL

PLAN

SCALE 1" = 20'

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
01/17/2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

SCALE: AS SHOWN | DATE: 01/10/2012
DRAWN: ADF
REVIEWED:

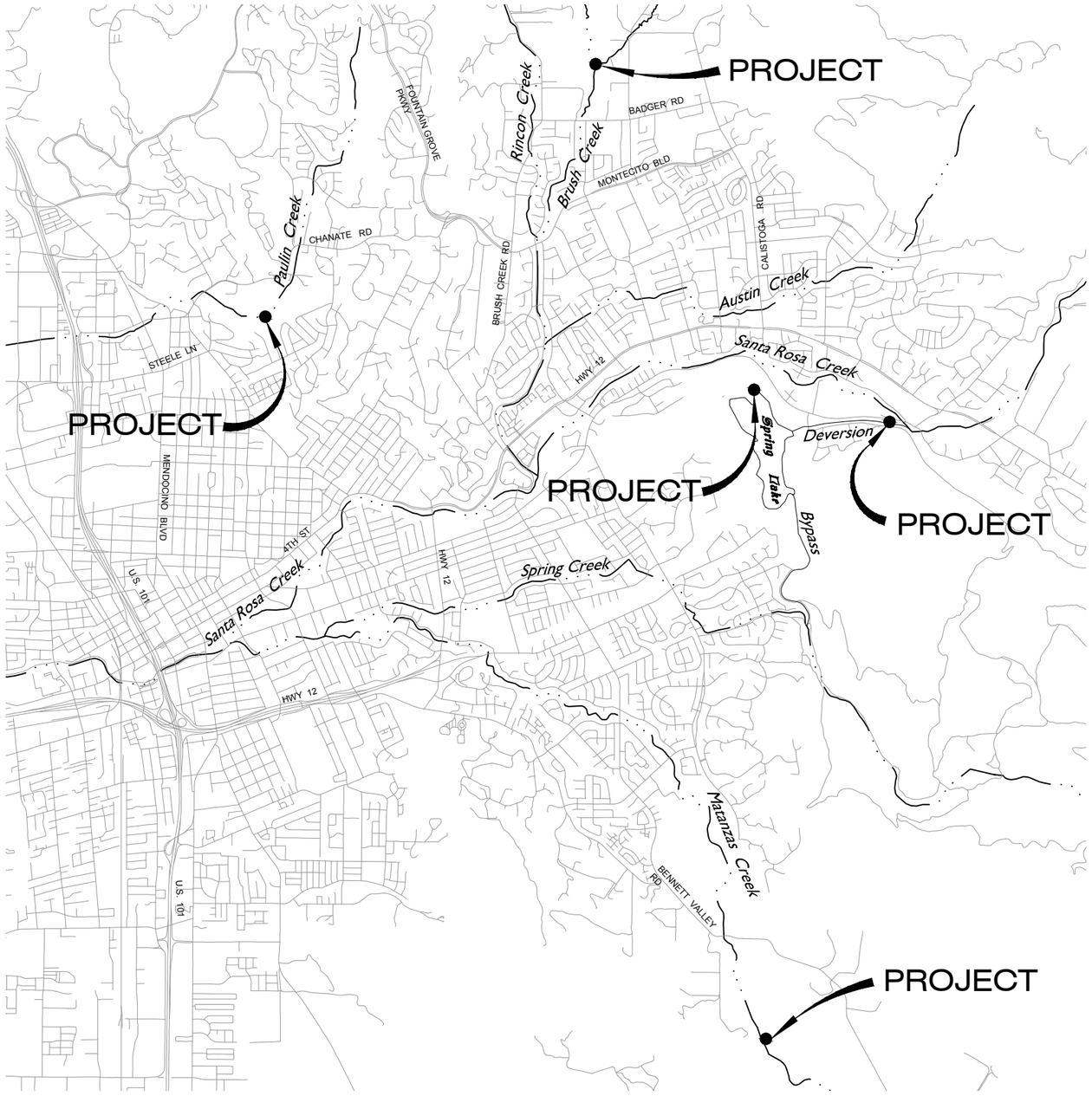
HINEBAUGH CREEK - SEDIMENT REMOVAL AT CROSSINGS

SEDIMENT REMOVAL AT S.M.A.R.T. RR X-ING

FILE NAME: 2012_HINEBAUGH_C
CONTRACT NUMBER:
DRAWING NUMBER: C-4
SHEET 5 OF 5

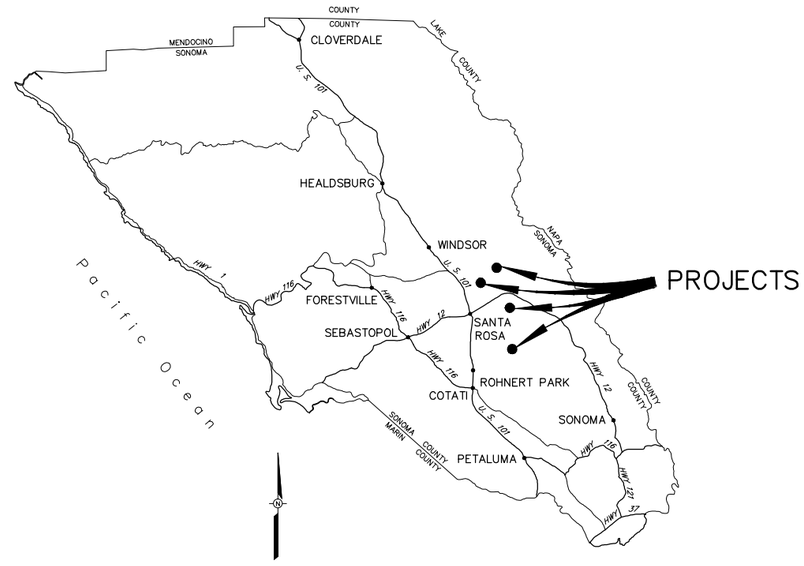
\\Sd-data\Prq\flood control\zone 1a\Hinebaugh\2012_SED-REMOVAL

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



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

INDEX TO DRAWINGS:

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

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2012

NO.	DATE	REVISION	BY

PRELIMINARY
SUBJECT TO REVISION

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
CONTRACT NUMBER:
DRAWING NUMBER: G-1
SHEET 1 OF 11

\\SD-DATA\Proj\flood control\zone 1a\Brush_Crk-reservoir\2012_BRUSH-CRK_RESERVOIR\G-1_RESERVOIRS_2012

PLAN

1"=40'

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2012

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

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

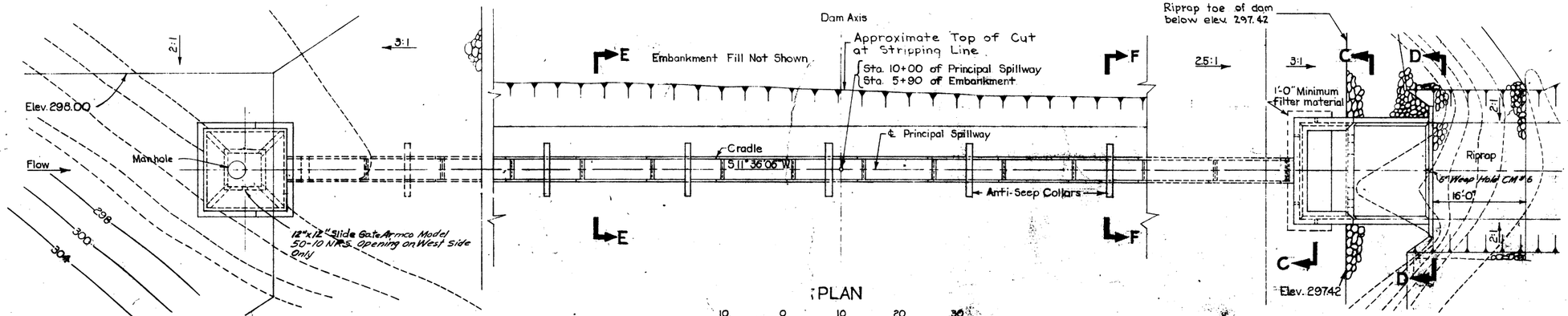
SCALE : NONE
DATE : 3/7/2012
DRAWN : SMP
REVIEWED :

LAGUNA – MARK WEST ZONE 1A

BRUSH CREEK RESERVOIR OUTLET PLAN - OUTLET

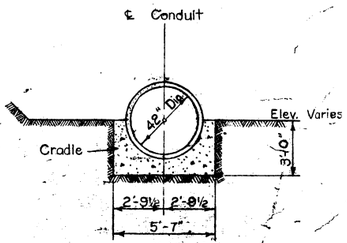
FILE NAME: Brush-Crk_Res_C-1_2012.dwg
CONTRACT NUMBER:
DRAWING NUMBER: C-1
SHEET 2 OF 11

\\SD-DATA\Proj\flood control\zone 1a\Brush_Crk-reservoir\2012_BRUSH-CRK_RESERVOIR\Brush-Crk_Res_C-1_2012

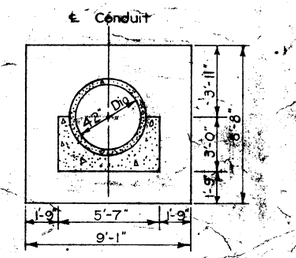


PLAN

SCALE IN FEET

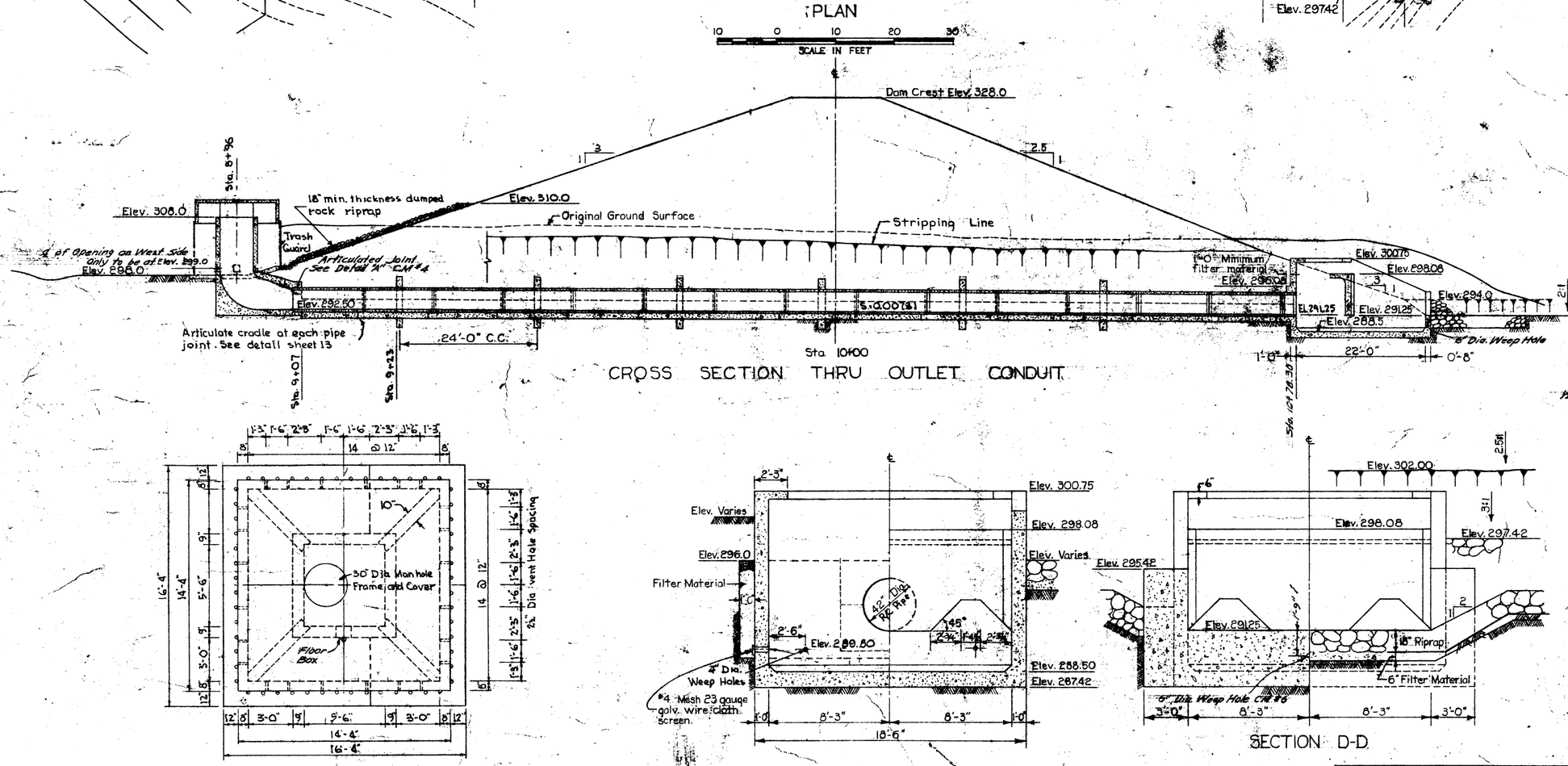


SECTION E-E



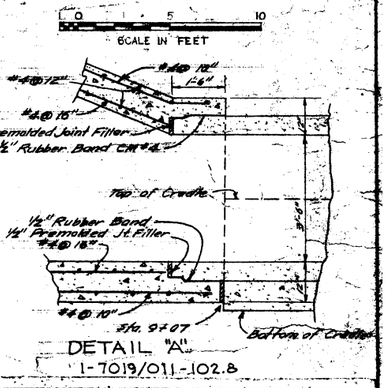
SECTION F-F

SCALE IN FEET



Sta. 10+00

CROSS SECTION THRU OUTLET CONDUIT



DETAIL "A"

PLAN

SECTION C-C

SECTION D-D

SCALE IN FEET

AS BUILT

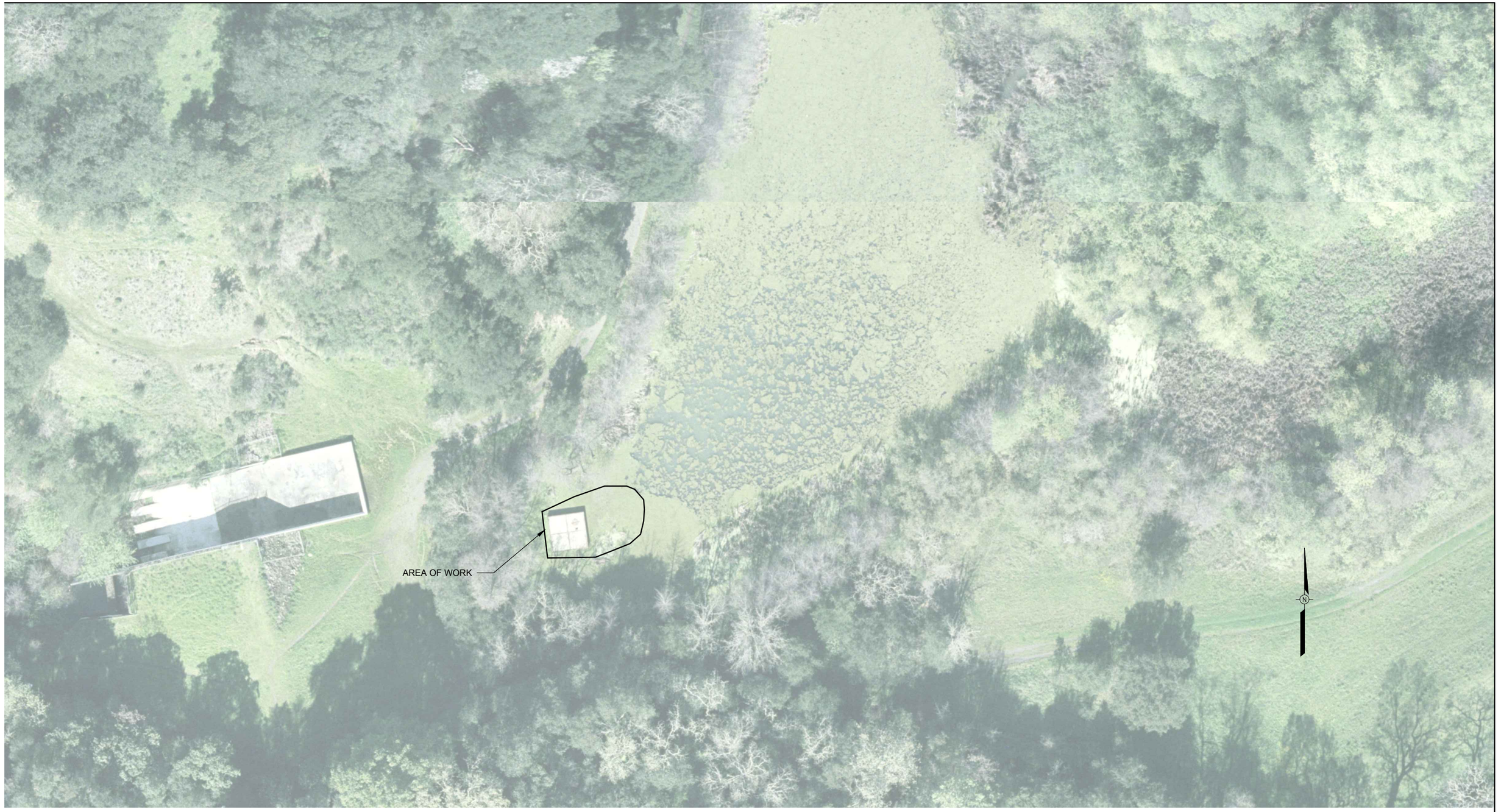
NO.	DATE	REVISION	BY
1	12-60	New Trash Rack, Pier Slab Gate Control	R.B.O.

SONOMA COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
APPROVED
DATE: 5/1/61

STATE OF CALIFORNIA
Department Of Water Resources
FOR THE CHIEF ENGINEER
APPLICATION No. 1002-3
APPROVED AS TO SAFETY: W. A. Berna
Jan. 29, 1963 Supervisor, Safety of Dams
DATE

PRINCIPAL SPILLWAY PLAN AND SECTIONS
BRUSH CREEK - MIDDLE FORK
CENTRAL SONOMA WATERSHED PROJECT
SONOMA COUNTY, CALIF.
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed R.L.H.	Date 7-60	Approved by	
Drawn R.W.M.	7-60	Title Head, E & W.P. Unit	
Traced		Title State Conservation Engineer	
Checked H.L.C., E.B.M.'	3-61	Sheet No. 7 of 15	Drawing No. D 56-7



PLAN

SCALE: 1" = 20'

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2012

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

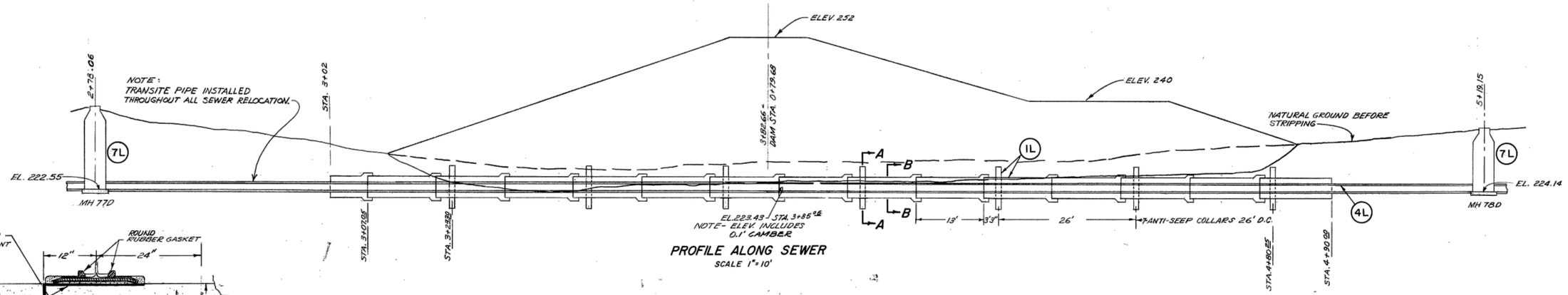
NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

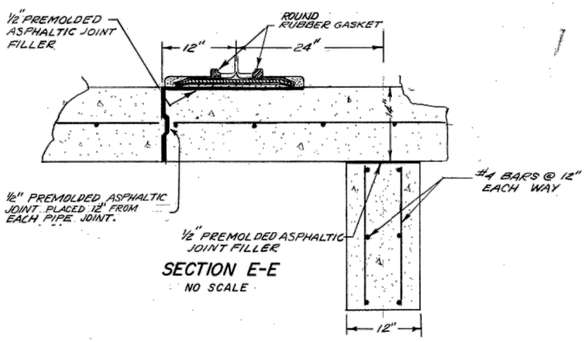
SCALE : NONE
DATE : 3/7/2012
DRAWN : SMP
REVIEWED :

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

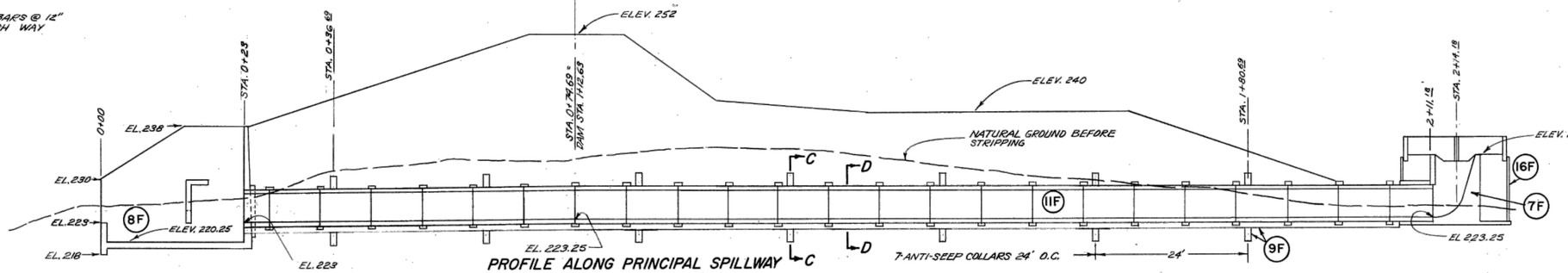
FILE NAME: Piner-Crk_Res_C-2___2011.dwg
CONTRACT NUMBER:
DRAWING NUMBER: C-2
SHEET 4 OF 11



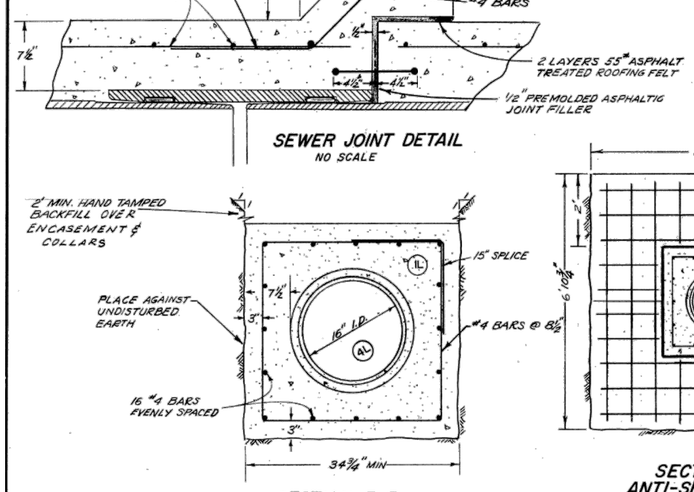
PROFILE ALONG SEWER
SCALE 1"=10'



SECTION E-E
NO SCALE

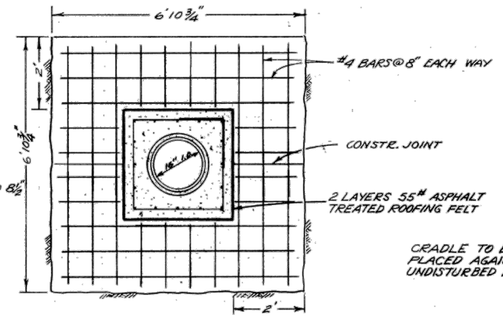


PROFILE ALONG PRINCIPAL SPILLWAY
SCALE 1"=10'

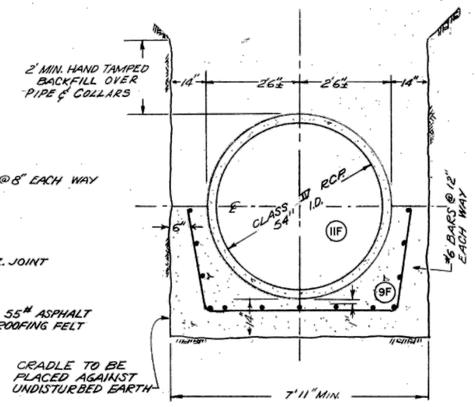


SEWER JOINT DETAIL
NO SCALE

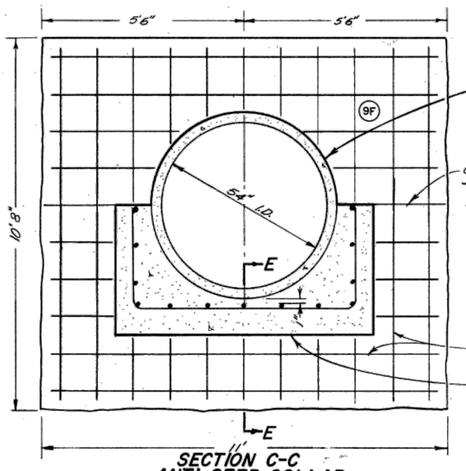
SECTION B-B
SCALE 1"=1'



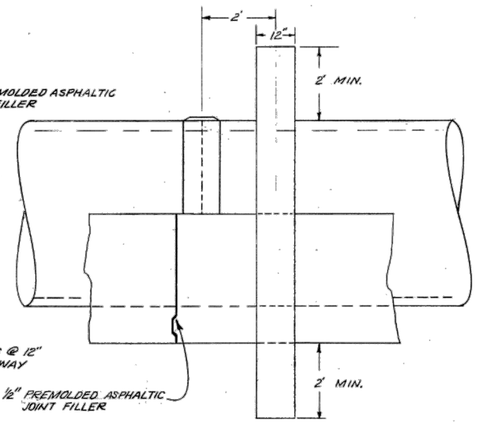
SECTION A-A
ANTI-SEEP COLLAR
SCALE 1/2"=1'



SECTION D-D
SCALE 1/2"=1'



SECTION C-C
ANTI-SEEP COLLAR
SCALE 1/2"=1'



MASTIC JOINT IN CONCRETE CRADLE AT PIPE JOINT
SCALE 1/2"=1'

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

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

APPLICATION NO. 1002-2

APPROVED AS TO SAFETY

DATE

AS BUILT

PINER CREEK RESERVOIR
SEWER ENCASEMENT & PRINCIPAL SPILLWAY PROFILES

SCALE: AS SHOWN	APPROVED [signature] CHIEF ENGINEER	DRAWN SKMc
DATE: 1/23/1961		CHECKED [signature]

SONOMA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED	SUBMITTED	DRAWING NUMBER
[signature]	[signature]	1-5045-102.17

PLAN

SCALE: 1" = 20'

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2012

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

NO.	DATE	REVISION	BY

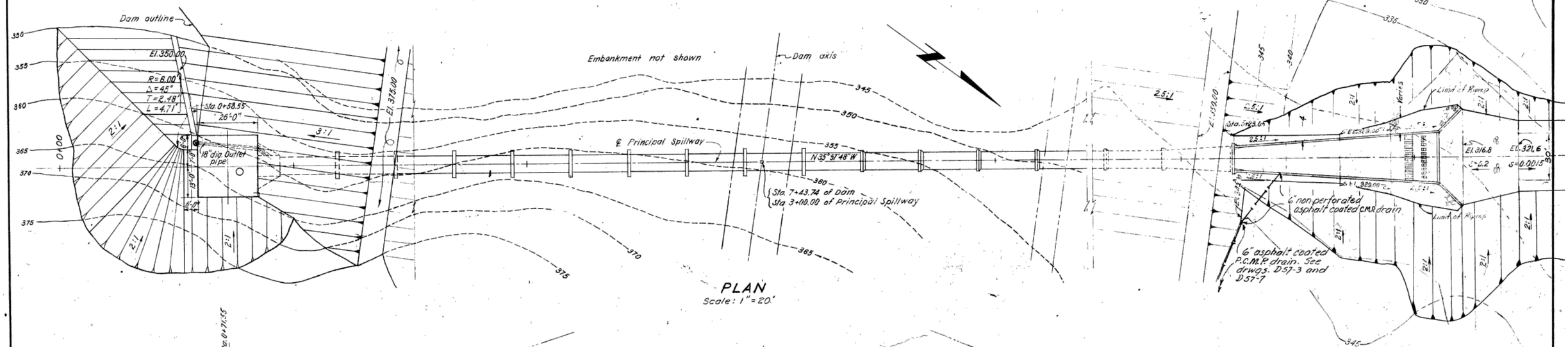
SONOMA COUNTY WATER AGENCY

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

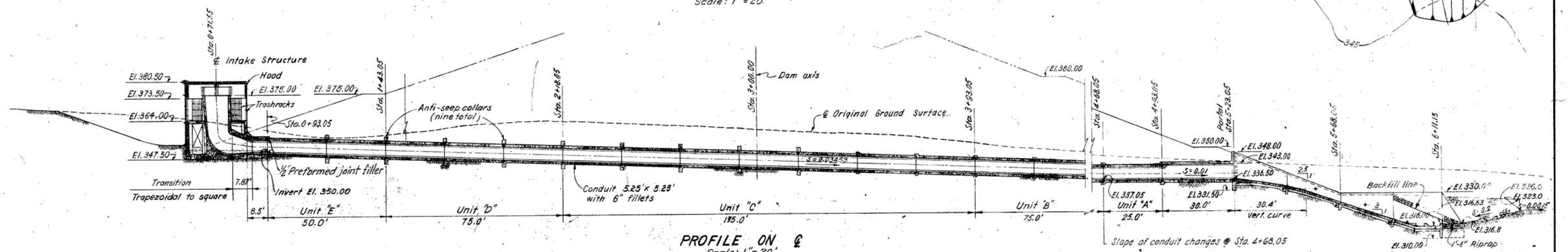
LAGUNA – MARK WEST ZONE 1A
MATANZAS CREEK RESERVOIR PLAN - OUTLET

FILE NAME: Matanzas-Crk_Res_C-3_2012.dwg
CONTRACT NUMBER:
DRAWING NUMBER: C-3
SHEET 6 OF 11

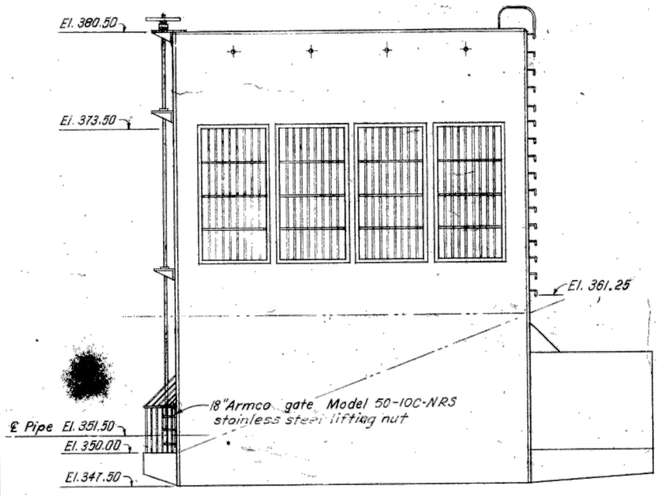
\\SD-DATA\Proj\flood control\zone 1a\matanzas_crk_reservoir\outlet\2012_SED-REMVAL\Matanzas-Crk_Res_C-3_2012



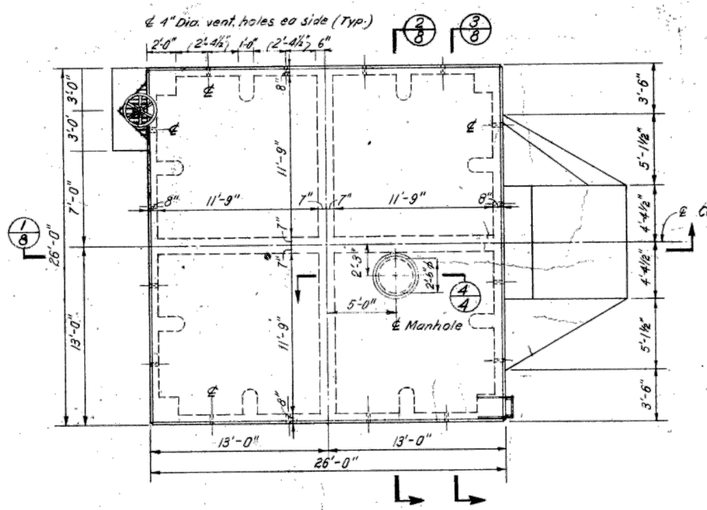
PLAN
Scale: 1" = 20'



PROFILE ON ℄
Scale: 1" = 20'



INTAKE STRUCTURE ELEVATION
Scale: 3/16" = 1'-0"

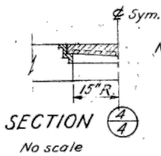


INTAKE STRUCTURE PLAN
Scale: 3/16" = 1'-0"

GRAPHIC SCALES

0 20 40 60 Feet
Scale: 1" = 20'

0 6 12 18 Feet
Scale: 3/16" = 1'-0"



SECTION
No scale

Note: C.I. Frome and locking cover to weigh not less than 500 #

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

REGISTERED PROFESSIONAL ENGINEER STANLEY F. GILCHRIST #10352 CIVIL STATE OF CALIFORNIA

AS BUILT 1-6054-102.12AB

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

APPLICATION No. 1002-4

APPROVED AS TO SAFETY

FOR THE CHIEF ENGINEER

AUG 5 1966

Robert E. Jansen
DIVISION ENGINEER REG. C.E. No. 9218

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

DESIGNED: V.I.T.	APPROVED BY: Stanley F. Gilchrist
CHECKED: V.S.D.	
DRAWN: G.B.L.	

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

MATANZAS CREEK
PRINCIPAL SPILLWAY
GENERAL PLAN

APPROVED — SOIL CONSERVATION SERVICE		APPROVED — SONOMA COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT	
STATE CONSERVATION ENGINEER		CHIEF ENGINEER	
DATE	SCALE	DRWG. NO.	SHEET OF
MARCH, 1962	AS NOTED	D57 - 4	

PHG-4c 1002-4

7-Sd-172 75

USDA-SCS-PORTLAND, OREG. 1962 M-3706

PLAN

SCALE: 1" = 40'

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2012

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

NO.	DATE	REVISION	BY

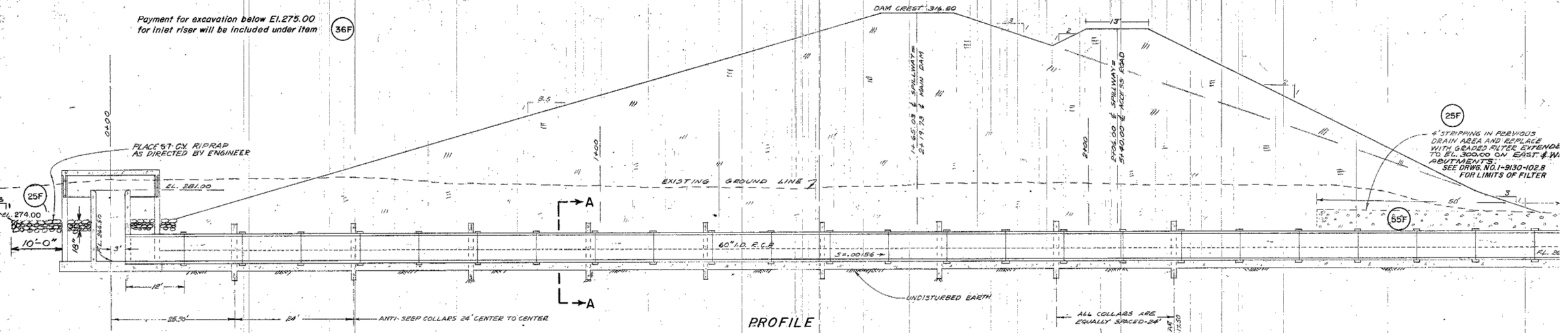
SONOMA COUNTY WATER AGENCY

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

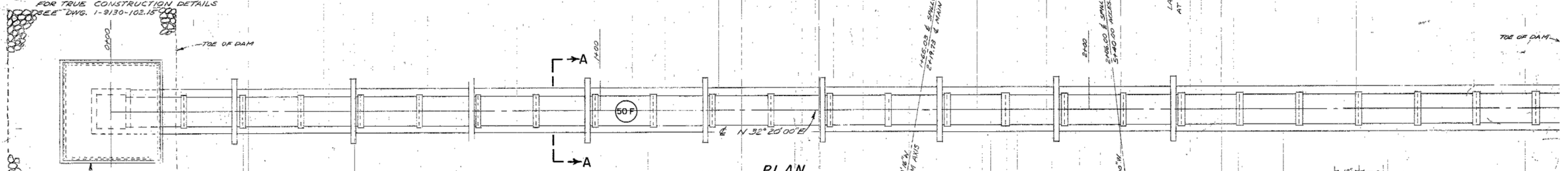
LAGUNA – MARK WEST ZONE 1A
SANTA ROSA CREEK RESERVOIR (SPRING LAKE)
- OUTLET

FILE NAME: SpringLake_Out_C-4_2012.dwg
CONTRACT NUMBER:
DRAWING NUMBER: C-4
SHEET 8 OF 11

Payment for excavation below El.275.00 for inlet riser will be included under item (36F)

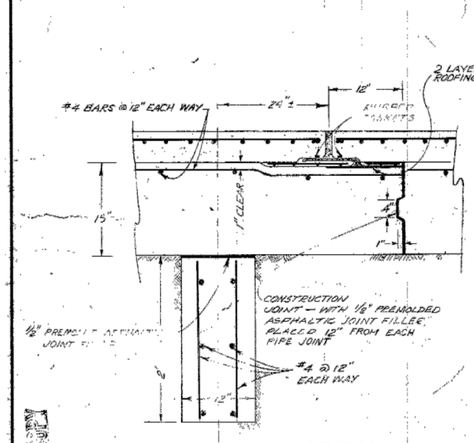


NOTE:
PRINCIPAL INLET RISER SHOWN HERE FOR REFERENCE ONLY FOR TRUE CONSTRUCTION DETAILS SEE DWG. 1-9130-102.15



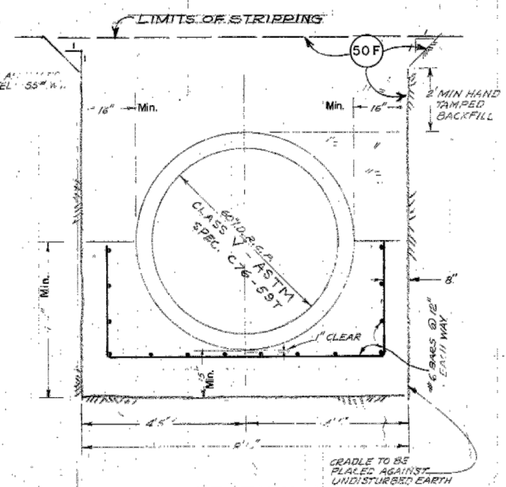
NOTE: CRADLE TO BE ARTICULATED AT EACH PIPE JOINT.

PLAN
10 0 10 20
SCALE IN FEET



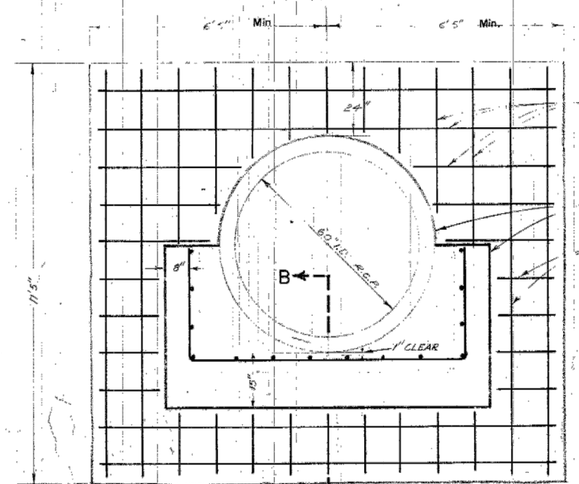
JOINT DETAIL SECTION B-B
SHOWING RELATIONSHIP OF PIPE JOINTS AND COLLARS BASED ON 12' PIPE LENGTHS END TO END AND DOES NOT REFLECT THE STYLE OF REINFORCED CONCRETE PIPE.

0 1 2
SCALE IN FEET

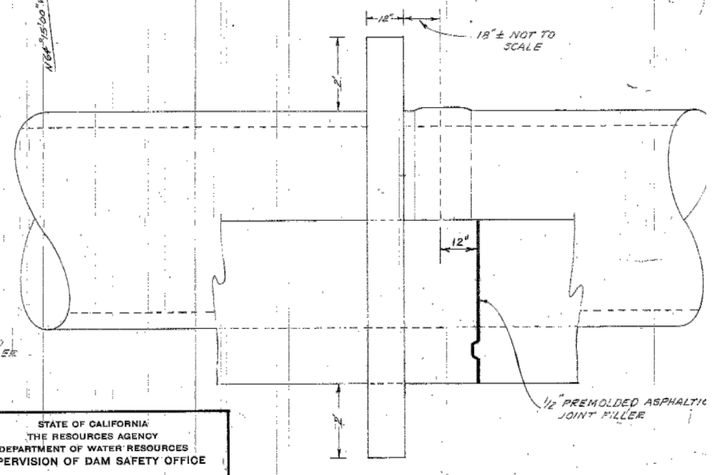


SECTION A-A
(46F)

2 0 2 4
SCALE IN FEET



ANTI-SEEP COLLAR
(46F) AS BUILT



MASTIC JOINT IN CONCRETE CRADLE AT PIPE JOINT
2 0 2 4
SCALE IN FEET

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SUPERVISION OF DAM SAFETY OFFICE
APPLICATION No. 1002-5
APPROVED AS TO SAFETY FOR THE CHIEF ENGINEER
FEB 4 1965
Albert B. Jensen
Supervising Engineer

SCHEDULE -

SANTA ROSA CREEK RESERV
PRINCIPAL SPILLWAY DETAILS S
0+00 TO 3+00

SCALE: AS SHOWN	APPROVED	DRAWN
DATE: 4/1/1960	CHIEF ENGINEER	CHECKED

SONOMA COUNTY FLOOD CONTROL AN
WATER CONSERVATION DISTRICT

DESIGNED	SUBMITTED	DRAWING NUMBER
		1-9130-10

7-64

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 DEVERSION	40	240	2	18

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

PRELIMINARY
90% SUBMITTAL
FOR REVIEW PURPOSES ONLY
07 MAR 2012

NO.	DATE	REVISION	BY

SONOMA COUNTY WATER AGENCY

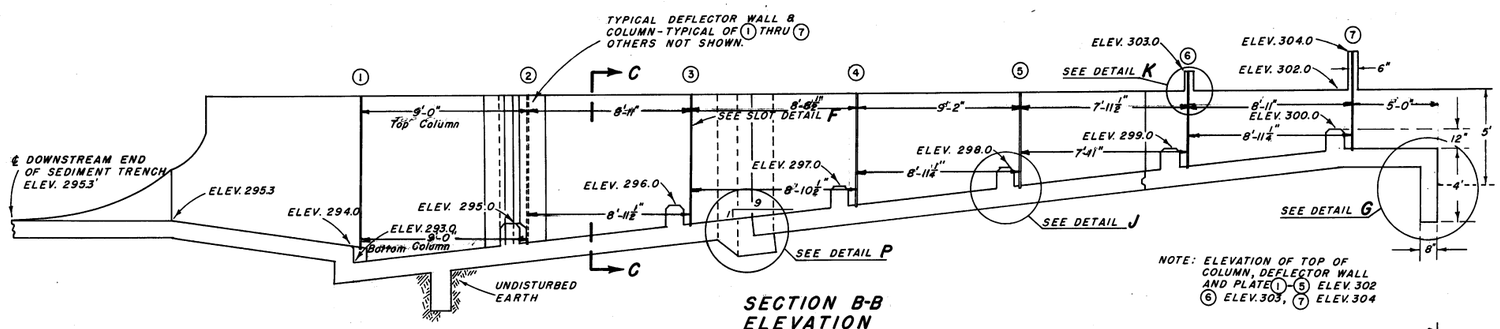
SCALE : AS SHOWN
DATE : 3/7/2012
DRAWN : ADF
REVIEWED :

LAGUNA - MARK WEST ZONE 1A

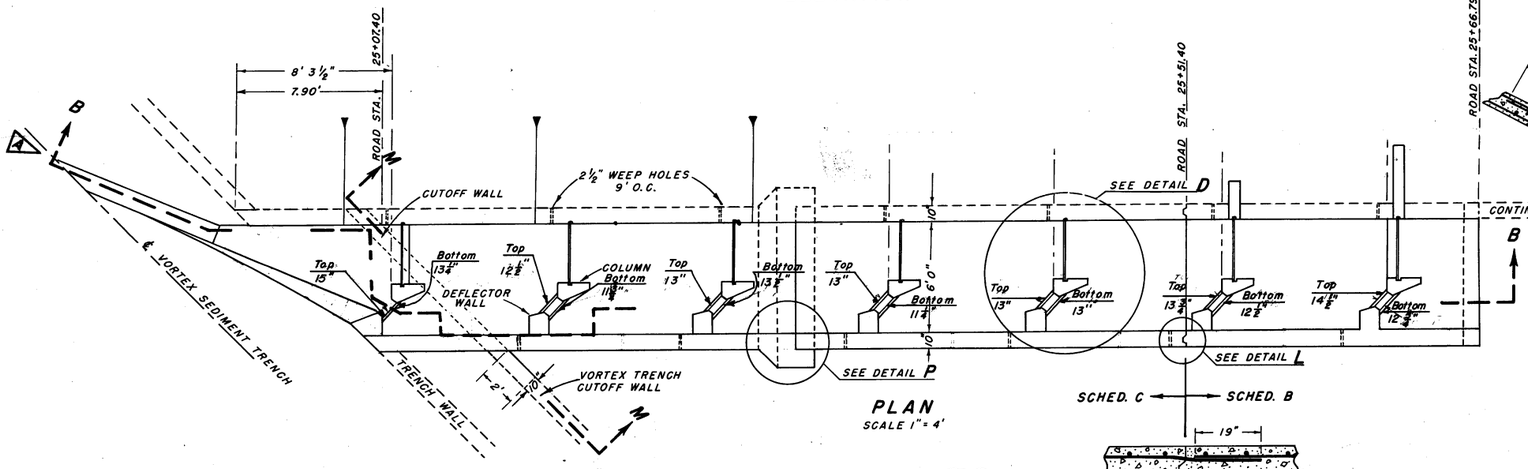
SANTA ROSA CREEK FISH LADDER - PLAN

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

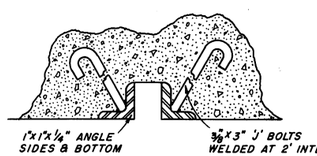
\\SD-DATA\Proj\flood control\zone 1a\SantaRosa\Vortex_Chan-Sediment_Removal\2012_FISH-LADDER



SECTION B-B ELEVATION



PLAN
SCALE 1" = 4'



DETAIL N
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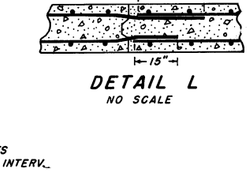
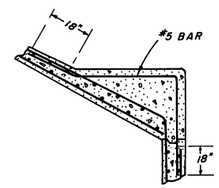


DETAIL L
NO SCALE



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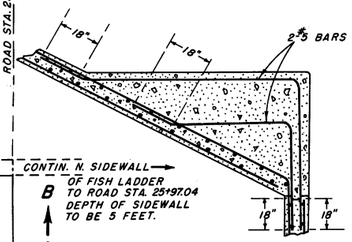
NO SCALE



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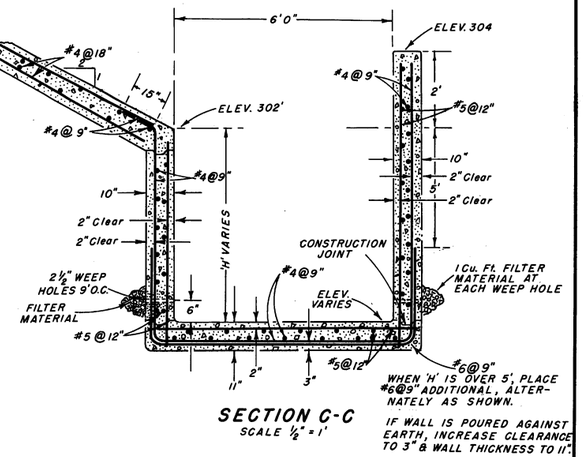
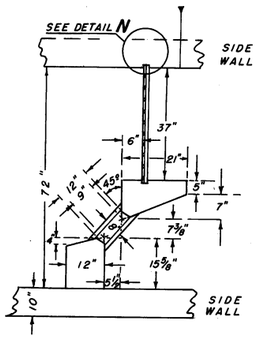
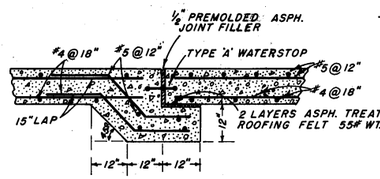


SECTION C-C
SCALE ½" = 1'



DETAIL D
NO SCALE



DETAIL P
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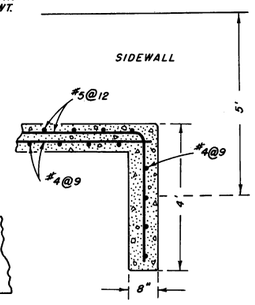
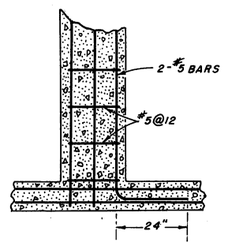
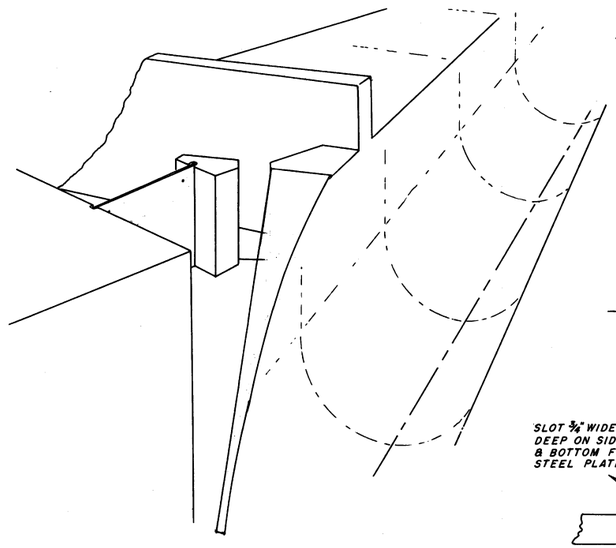


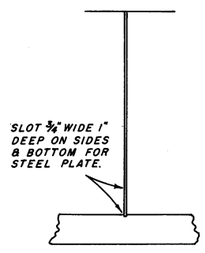
DETAIL G
SCALE ½" = 1'



SECTION H-H
SCALE ½" = 1'



PERSPECTIVE VIEW A



DETAIL F
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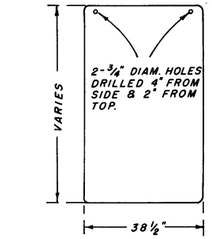
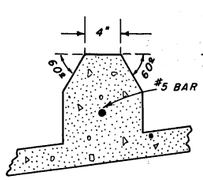


STEEL PLATE

NO.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
HEIGHT	8'1"	8'1"	7'1"	6'1"	5'1"	5'1"	5'1"
THICK.	⅜"	⅜"	⅜"	¼"	¼"	¼"	¼"

DETAIL E
NO SCALE



DETAIL J
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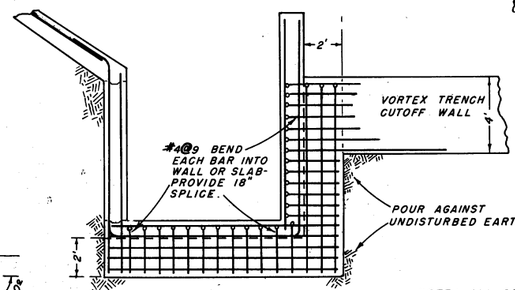

SECTION M-M
NO SCALE

NOTE: ALL CONCRETE TO BE CLASS 'B'.

AS BUILT

SCHEDULE C

SANTA ROSA CREEK RESERVOIR
FISH LADDER DETAILS

SCALE: AS SHOWN	APPROVED Jordan W. Smith, CHIEF ENGINEER	DRAWN J. R.
DATE: JULY 28, 1962		CHECKED

SONOMA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

DESIGNED	SUBMITTED	DRAWING NUMBER
P. FULLER	RE 12316	1-9140-102.9 A

Appendix D

Project Location Maps with CTS Occurrence Overlay

SMP Project Reaches (2012)

By CTS Distance Rank

Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)

Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)

Lowell Ct
Gilmore Ave
Helman Ln
Moss Rd
Oak Ave
Stony Glen Ln
Stony Point Rd
Gossage Creek
Washoe Creek Conduit
Washoe Creek
Derby Ln
116
Cotati

\\SD-DATA\Proj\flood control\4060_SMP\4060-5\OM_Manual\OM_Manual_CTS_DFG_Data\2012\SMP_Projects_2012_CTSimpacts.mxd 4/18/2012

Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

0 250 500 Feet

N W E S

SCWA GIS

Figure

Cotati A

SMP Project Reaches (2012)

By CTS Distance Rank

Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)

Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)

Hwy 116
Gilbert Ct
Gilbert Ct
Ahlstrom Dr
Ahlstrom Cir
Wilford Cir
Village Ct
Fiesta Ln
Adobe Ln
Bridgit Dr
Rio Vista Ln
Las Castas Dr
Sonoma Ln
Loma Verde Ln
Adobe Ln
Bruce Ave
Adrian Dr
Blair Ave
Bonnie Ave
Rohnert Park
Bonnie Ct
Burton Ave
Becky Ct
Santa Barbara Dr
Beverly Dr
Bay Tree Ct
Greenleaf Ln
Dyquisto Way
E Cotati Ave
Lancaster Dr
Lipton Way
Lincoln Ave
Liberty Ave
Liberty Ct
Lisbon Ct
La Salle Ave
Larkspur Ct
Lakewood Ave
Linden Ave
Linden Ct
Larch Ave
Loretto Ave
Chadwick Way
Burton Ct
George St
Old Redwood Hwy
E Sierra Ave
Arthur St
Matteri Cir
Mattson Ln
St Joseph Way
William St
La Plaza
W Cotati Ave
Cotati
El Rancho Dr
Oliori St
W Sierra Ave
Charles St
Marsh Way
Laguna De Santa Rosa
Ross St
Cotati Creek
McGinnis Cir
Amber Ln
Henry St

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Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

0 250 500 Feet

N W E S

SCWA GIS

Figure

Cotati B

SMP Project Reaches (2012)

By CTS Distance Rank

Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)

Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)

Warrington Creek
Snyder Ln
Wilfred Creek
Hawthorne Cir
Hatteras Ct
Harrington Ct
Heritage Ln
Holly Ave
Hedge Ct
Harvard Ct
Hazel Ct
Hamlet Ct
Rohnert Park
Coleman Creek Trl
Coleman2
Coleman Creek
Hillview Way
Heath Cir
Hudis St
Hudis St
Hemp Ct
Gillpepper Ln
Gladstone Way
Goodson Way
Grace Ct
Gilford Ln
Gloria Ct
Grove Ct
Grandview Way
Grange Ct
Grandview Way
Griffin Way
Glacier Ct
Coleman Creek Trl
Genesis Ct
Garmont Ct
Gold Way
Gaspar Ct
Cook Creek

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Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

0 250 500 Feet

N W E S

SCWA GIS

Figure

Rohnert Park A

SMP Project Reaches (2012)

By CTS Distance Rank

Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)

Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)

Rohnert Park Expy

Bellevue-Wilfred Channel

Laguna De Santa Rosa

Woodworth Rd

Stony Point Rd

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Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

0 250 500 Feet

N W E S

SCWA GIS

Figure

Rohnert Park B

SMP Project Reaches (2012)

By CTS Distance Rank

Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)

Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)

Hinebaugh Creek
Calle Roja
Rancho Verde Cir
Rohnert Park
Rohnert Park Expy
Cossaye Creek
Airport Rd
Laguna De Santa Rosa
Hahman Ln
Madrigal St
Lowell Ave
Lowell Ct
Climore Ave

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Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

0 250 500 Feet

N W E S

SCWA GIS

Figure

Rohnert Park C

SMP Project Reaches (2012)

By CTS Distance Rank

- Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)
- Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)

Labath Ave
Dowdell Avenue Ext
Martin Ave
Martin Avenue Ext
Redwood Dr
Professional Center Dr
State Farm Dr
Hinebaugh Creek Trl
Hinebaugh Creek
Rohnert Park
101
Padre Pky
City Center Dr
Commerce Blvd
Rohnert Park Expy
Raleys Towne Centre

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Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

0 250 500 Feet

N W E S

SCWA GIS

Figure

Rohnert Park D

SMP Project Reaches (2012)

By CTS Distance Rank

Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)

Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)

Dolores Dr
Santa Dorotea Cir
Diane Ct
Dawn Dr
Debbie St
Della Ct
Country Club Dr
Elsa Ave
Eve Ct
Evelyn Ave
Emma Ct
Edith Ct
Etta Ct
State Farm Dr
Darleen Ct
Dinah Ct
Donna Ct
Daphne Ct
Dubarry Ct
Dawn Ct
Deborah Ct
Emily Ave
Elsa Ct
Elaine Ct
Ethel Ct
Crane Creek Trl
Crane Creek
Hinebaugh Creek Trl
Hinebaugh Creek
Rohnert Park
Racquet Club Cir
Santa Cruz Way
San Bruno Ct
San Mateo Ct
City Center Dr
Lynne Conde Way
Rohnert Park Expy
San Benito Dr
San Francisco Way
Santa Clara Pl
Santa Clara Ct
Raleys Towne Centre
Toyon Ct
Walnut Cir
Civic Center Dr
Apple Ln
Conifer Sq

\SD-DATA\Proj\flood control\4060_SMP\4060-5\OM_Manual\OM_Manual_CTS_DFG_Data\2012\SMP_Projects_2012_CTSimpacts.mxd 4/18/2012

Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

0 250 500 Feet

N W E S

SCWA GIS

Figure

Rohnert Park E

SMP Project Reaches (2012)

By CTS Distance Rank

- Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)
- Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)

Rohnert Park Expy
Oak View Cir
Jasmine Cir
Jubilee Ct
Jade Ct
Joyce Ct
Snyder Ln
Ambenwood St
Sequoia St
Jacaranda St
Cedar Ct
Meadow Pines Ave
Copeland Creek Dr
Copeland Creek
Copeland Creek Trl
Rohnert Park
Camino Coronado
Coronado Ct
Calecita Ct
Camino Corto
Avenida Cala
Circle Dr
Southwest Blvd
Roxanne Ln
Roman Dr
W Redwood Dr

\\SD-DATA\Proj\flood control\4060_SMP\4060-5\OM_Manual\OM_Manual_CTS_DFG_Data\2012\SMP_Projects_2012_CTSImpacts.mxd 4/18/2012

Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

0 250 500 Feet

N W E S

Figure

Rohnert Park F

SCWA GIS

SMP Project Reaches (2012)

By CTS Distance Rank

- Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)
- Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)

Santa Rosa

Santa Rosa Creek

Willowside Rd

Abramson Creek

Lowman Rd

Hall Creek

\\SD-DATA\Proj\flood control\4060_SMP\4060-5\OM_Manual\OM_Manual_CTS_DFG_Data\2012\SMP_Projects_2012_CTSimpacts.mxd 4/18/2012

Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

0 250 500 Feet

N W E S

SCWA GIS

Figure

Santa Rosa A

SMP Project Reaches (2012)

By CTS Distance Rank

Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)

Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)

Santa Rosa Creek

Peterson Creek

Santa Rosa

Park Royal Ave

Abbey Ln

Coronation Dr

\\SD-DATA\Proj\flood control\4060_SMP\4060-51OM_Manual\OM_Manual_CTS_DFG_Data\2012\SMP_Projects_2012_CTSimpacts.mxd 4/18/2012

Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

0 250 500 Feet

N W E S

SCWA GIS

Figure

Santa Rosa B

SMP Project Reaches (2012)

By CTS Distance Rank

Distance Rank 2 (Between 500 and 2200 feet from a CTS Occurrence)

Distance Rank 3 (Greater than 2200 feet from a CTS Occurrence)

Stony Point Rd

Colgan Creek

Colgan Creek Trl

Angus Way

Primrose Ave

Phillips Ave

Todd Rd

\\SD-DATA\Proj\flood control\4060_SMP\4060-5\OM_Manual\OM_Manual_CTS_DFG_Data\2012\SMP_Projects_2012_CTSimpacts.mxd 4/18/2012

Potential Occurrence and Distance Ranks for California Tiger Salamander

Operations and Maintenance Manual, Flood Zone 1A

0 250 500 Feet

N W E S

SCWA GIS

Figure

Santa Rosa C

Appendix E

California Department of Fish and Game Application Materials

- DFG Notification of Lake or Streambed Alteration;
- Annual Notification Checklist For DFG MLSAA;
- Copy of Check for Annual Master Agreement Fee
- CD with 2012 Annual Notification

FOR DEPARTMENT USE ONLY				
Date Received	*Amount Received*	*Amount Due*	*Date Complete*	*Notification No.*
	$	$		

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

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) 547-1900	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) 547-1941	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	☐ Regular (*5 years or less*) ☑ 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*)	
2012	2012	06/15	10/31	

5. AGREEMENT TYPE

Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment.

A.	☐ Standard *(Most construction projects, excluding the categories listed below)*	
B.	☐ Gravel/Sand/Rock Extraction (*Attachment A*)	*Mine I.D. Number:* _____
C.	☐ Timber Harvesting (*Attachment B*)	THP *Number:* _____
D.	☐ Water Diversion/Extraction/Impoundment (*Attachment C*)	*SWRCB Number:* _____
E.	☐ Routine Maintenance (*Attachment D*)	
F.	☐ DFG Fisheries Restoration Grant Program (FRGP)	*FRGP Contract Number:* _____
G.	☑ Master	
H.	☐ 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		$2,801.50
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	$2,801.50

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: 04/26/12

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)*

8. PROJECT LOCATION

A. Address or description of project location.

(*Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway*)

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.

☑ *Continued on additional page(s)*

B. River, stream, or lake affected by the project.	
C. What water body is the river, stream, or lake tributary to?	
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?	☐ Yes ☑ No ☐ Unknown
E. County	

F. USGS 7.5 Minute Quad Map Name	G. Township	H. Range	I. Section	J. ¼ Section

☐ *Continued on additional page(s)*

K. Meridian (*check one*) ☐ Humboldt ☑ Mt. Diablo ☐ San Bernardino

L. Assessor's Parcel Number(s)

Multiple, please see the SMP Annual Notification (attached)for project locations and conditions.

☐ *Continued on additional page(s)*

M. Coordinates (*If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes)*

Latitude/Longitude	*Latitude:* see Notification (attached)	*Longitude:*	
	☐ Degrees/Minutes/Seconds	☐ Decimal Degrees	☐ Decimal Minutes
UTM	*Easting:*	*Northing:*	☐ Zone 10 ☐ Zone 11
Datum used for Latitude/Longitude or UTM	☐ NAD 27	☑ NAD 83 or WGS 84	

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	☐	☐	☑
Bank stabilization – rip-rap/retaining wall/gabion	☐	☐	☑
Boat dock/pier	☐	☐	☐
Boat ramp	☐	☐	☐
Bridge	☐	☐	☐
Channel clearing/vegetation management	☐	☐	☐
Culvert	☐	☑	☑
Debris basin	☐	☐	☑
Dam	☐	☐	☑
Diversion structure – weir or pump intake	☐	☐	☐
Filling of wetland, river, stream, or lake	☐	☐	☐
Geotechnical survey	☐	☐	☐
Habitat enhancement – revegetation/mitigation	☑	☐	☑
Levee	☐	☐	☐
Low water crossing	☐	☑	☐
Road/trail	☐	☐	☑
Sediment removal – pond, stream, or marina	☐	☐	☑
Storm drain outfall structure	☐	☐	☑
Temporary stream crossing	☐	☐	☑
Utility crossing : Horizontal Directional Drilling	☐	☐	☐
Jack/bore	☐	☐	☐
Open trench	☐	☐	☐
Other *(specify)*:	☐	☐	☐

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 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 2012 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 2012 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

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 2012 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.

CNDDB, survey data, Water Agency biologists (David Cook, Keenan Foster, Shawn Chase), 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.

12. MEASURES TO PROTECT FISH, WILDIFE, 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 2012 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 2012 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. RWQCB Section 401 Certification (North Coast and SF Bay) ☐ Applied ☐ Issued

B. USACE Individual Permit ☐ Applied ☐ Issued

C. BOs from FWS and NMFS (Russian River and Zones 2A, 3A) ☐ Applied ☐ Issued

D. Unknown whether ☐ local, ☐ state, or ☐ federal permit is needed for the project. (*Check each box that applies*)

☐ *Continued on additional page(s)*

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)?

☑ Yes (*Check the box for each CEQA, NEPA, CESA, and ESA document that has been prepared and enclose a copy of each*)

☐ No (*Check the box for each CEQA, NEPA, CESA, and ESA document listed below that will be or is being prepared*)

☑ Notice of Exemption	☐ Mitigated Negative Declaration	☐ NEPA document (*type*):
☐ Initial Study	☐ Environmental Impact Report	☑ CESA document (*type*): CD
☐ Negative Declaration	☐ Notice of Determination *(Enclose)*	☑ ESA document (*type*): BOs
☐ THP/ NTMP	☐ Mitigation, Monitoring, Reporting Plan	

B. State Clearinghouse Number (*if applicable*)	2005-082131		
C. Has a CEQA lead agency been determined?	☑ Yes (*Complete boxes D, E, and F*)	☐ 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.

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.

☐ *Continued on additional page(s)*

H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?

☑ Yes (*Enclose proof of payment*) ☐ No (*Briefly explain below the reason a filing fee has not been paid)*

Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.

15. SITE INSPECTION

Check one box only.

☐ 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.

☑ I request the Department to first contact (*insert name*) Keenan Foster at (*insert telephone number*) (707) 547-1941 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.

16. DIGITAL FORMAT

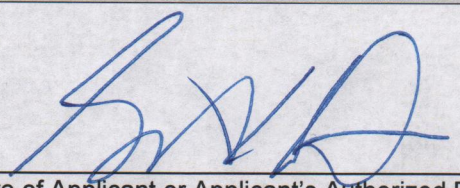
Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

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

☐ No

17. SIGNATURE

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



Signature of Applicant or Applicant's Authorized Representative

APRIL 30, 2012

Date

GRANT DAVIS

Print Name

Sonoma County Water Agency's Stream Maintenance Program

Annual Notification Checklist For DFG Master LSAA

Included	Component
☑	Check for Annual Master Agreement Fee
☑	Completed Notification for Lake and Streambed Alteration Agreement Form • Check Item 5.G. Master • Check "Yes" and specify 1600-2009-0399-3 under Item 7.A.
☑	Copy of this Checklist
☑ ☑ ☑	Annual Workplan Notification Packet • Cover Letter • Project List and Locations 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 CNDDB report forms[1]
☑ ☑	• Summary of Sediment Removal and Bank Stabilization Activities • Project Designs and Setting for Sediment Removal Projects o Channel characterization sheets[2] 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 plants[1] o Identification of other biological surveys that will be conducted during the maintenance year o Longitudinal Profiles o Plan Views

☑ ☑ ☑	○ Channel Cross Sections ○ Sediment Sampling Locations • Annual Mitigation Plan ○ On-Site ○ Off-Site • Annual Sediment Disposal Plan • Permits and Fees
☑	Status of on-site program mitigation from prior year projects. Should include status of riparian planting and reveg reports from preceding five years.[3]

Table notes:

1. Pre-construction surveys (i.e. nesting birds, etc) are generally conducted 1-2 weeks prior to commencing work and associated reporting. The Annual Notification materials include a schedule and timeline for all pre-construction surveys.). As such, we propose submitting the pre-construction survey data and evidence of appropriate BMP implementation with the Annual Report versus the Annual Notification.
2. Channel Characterization sheets are incorporated into the SMP Manual. New Channel Characterization Sheets are included in the Annual Notification only if there are changes or revisions.
3. The Annual Report provides a thorough accounting of the status of Tiers 1-3 on and off site mitigation programs for a period of 5 years. The Annual Report is generally submitted in December or January of each year.

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 WARRANT
REVOLVING FUND 10-052-000

WARRANT NO.
1265650

11-35
1210

DATE 04/10/2012
VOID AFTER SIX MONTHS

PAY THIS AMOUNT
*****$2,801.50

PAY *Two thousand eight hundred one and 50/100 Dollars*

To The Order Of
CA ST DEPT-FISH & GAME
PO BOX 47
YOUNTVILLE CA 94599

DAVID SUNDSTROM
AUDITOR-CONTROLLER

⑈001265650⑈ ⑆121000358⑆ 00439⑈80050⑈

TO THE TREASURER OF THE
COUNTY OF SONOMA
SANTA ROSA, CALIFORNIA

VENDOR NO. 004889 01 DATE PAID 04/10/2012 201 01265650 No. 1265650

VOUCHER NUMBER	P.O. NUMBER	DESCRIPTION	AMOUNT
CP1227170 01		NOTIFICATION NO.1600-2009-0399-R3	2,801.50
			$2,801.50

Appendix F

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 Stream Maintenance Program – 2012, revised final**

February 27, 2012

To: Mark Neely, North Coast Regional Water Quality Control Board (NCRWQCB)
Stephen Bargsten (NCRWQCB)

From: Ken Schwarz, Horizon Water and Environment
Jill Sunahara, Horizon Water and Environment

CC. Jon Niehaus, Sonoma County Water Agency (SCWA)

This is the proposed sediment sampling and disposal plan for the SCWA's 2012 Stream Maintenance Program (SMP) maintenance sites for review and approval by the NCRWQCB (or Regional Board), as required under the Monitoring and Reporting Program (MRP No. R1-2009-0049), as part of WDR No. R1-2009-0049 and Section 401 Water Quality Certification WDID No. 1B09026WNSO, as amended on July 29, 2010. This plan has been revised based on input from Regional Board staff received during the meeting with Regional Board staff on February 22, 2012.

1. Summary of SMP sampling efforts to date

Regulatory approval of the SMP by the NCRWQCB was provided in July 2009. SCWA conducted sediment sampling at each of the six maintenance sites and at the sediment reuse site (at the Grossi site). The sediment sampling approach was refined for the 2010 maintenance season; fourteen 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.

Table 1, below lists the sites and analytes tested since 2009.

Table 1: SMP Sediment Sampling Tracking Table (2009 - 2011)

Creek Name & Reach	SMP Project Type	Volume of Sediment Removed (cy)[1]	Watershed Position (Headwater, Upper, Middle, Lower)	Number of Samples Taken	Sediment Analytes and EPA Test Method									
					Total Metals (6020A)	pH	Total Organic Carbon (9060)	Semivolatile Organics – PAH extended list (8270D or C Modified)	Organochlorine Pesticide and PCB Congeners (8081B/8082A)[2]	Organophosphorus Pesticides (8141B or 8270D)	TPH (8015)[3]	VOCs (8260B)	Asbestos, Fluoride, Nonylphenol	Dioxin (8290)
Sediment Disposal Sites														
Grossi Site			Middle											
2009	--	--		5	X						X	X		
2010	--	--		2	X	X	X	X	X	X		X	X	X
Zone 1 A														
Windsor Creek Subbasin														
Windsor Creek 1														
2011	Localized**	tbd	Middle	1	X	X	X							
Starr Creek 1			Middle											
2009	Localized* *	215		1	X	X	X	X	X	X	X	X	X	X
2010	Localized	215		1	X	X	X	X	X	X		X	X	
Santa Rosa Creek Subbasin														
Austin Creek 3														
2011	Reach**	tbd	Upper	2	X	X	X	X	X		X			
College Creek 3			Middle											
2010	Bank Stabilization	--		1	X	X	X	X	X	X		X	X	
Ducker Creek 2			Middle											
2010	Localized	56		1	X	X	X	X	X	X		X	X	X

[1] Note that the Annual SMP Reports should be referenced for the most accurate accounting of the volume of sediment removed that year.
[2] Method used for 2011 samples was changed to 1668 HRGC/HRMS per 2010 permit updates.
[3] Method used for 2011 samples was changed to 3550A and 8015-Modified per 2010 permit updates.

Table 1: SMP Sediment Sampling Tracking Table (2009 - 2011)

Creek Name & Reach	SMP Project Type	Volume of Sediment Removed (cy)[1]	Watershed Position (Headwater, Upper, Middle, Lower)	Number of Samples Taken	Sediment Analytes and EPA Test Method									
					Total Metals (6020A)	pH	Total Organic Carbon (9060)	Semivolatile Organics – PAH extended list (8270D or C Modified)	Organochlorine Pesticide and PCB Congeners (8081B/8082A)[2]	Organophosphorus Pesticides (8141B or 8270D)	TPH (8015)[3]	VOCs (8260B)	Asbestos, Fluoride, Nonylphenol	Dioxin (8290)
Lorna Dell Creek 1			Upper											
2010	Reach	1,260		1	X	X	X	X	X	X		X	X	
Paulin Creek 2-4, 6			Middle											
2010	Localized	805		1	X	X	X	X	X	X		X	X	
Peterson Creek 2			Lower											
2010	Bank Stabilization	--		1	X	X	X	X	X	X			X	X
Russell Creek 1			Middle											
2010	Localized	74		1	X	X	X	X	X	X		X	X	
Santa Rosa Creek 1			Lower											
2010	Bank Stabilization	--		1	X	X	X	X	X	X			X	X
Santa Rosa Creek 2														
2011	Reach	3,835	Lower	3	X	X	X	X	X		X			
Roseland and Colgan Subbasin														
Kawana Creek 1 / Colgan Creek 7			Middle											
2009	Reach **	1,059		3	X	X		X	X	X	X	X		
2010	Reach	1,059		2	X	X	X	X	X	X		X	X	
Colgan Creek 6														
2011	Reach**	tbd	Middle	3	X	X	X	X	X		X			
Colgan Creek 5			Middle											
2009	Localized**	200		1	X	X	X	X	X	X	X	X	X	X
2010	Localized	200		1	X	X	X	X	X	X		X	X	X

Table 1: SMP Sediment Sampling Tracking Table (2009 - 2011)

Creek Name & Reach	SMP Project Type	Volume of Sediment Removed (cy)[1]	Watershed Position (Headwater, Upper, Middle, Lower)	Number of Samples Taken	Sediment Analytes and EPA Test Method									
					Total Metals (6020A)	pH	Total Organic Carbon (9060)	Semivolatile Organics – PAH extended list (8270D or C Modified)	Organochlorine Pesticide and PCB Congeners (8081B/8082A)[2]	Organophosphorus Pesticides (8141B or 8270D)	TPH (8015)[3]	VOCs (8260B)	Asbestos, Fluoride, Nonylphenol	Dioxin (8290)
Upper Laguna Subbasin														
Cook Creek Sediment Basin			Upper											
2011	Sediment Basin/Instream Basin Clearing	150		1	X	X	X							
Coleman Creek 2			Middle											
2011	Reach**	tbd		2	X	X	X	X	X		X			
Copeland Creek 4			Middle											
2011	Sediment Basin/Instream Basin Clearing	683		1	X	X	X							
Cotati Creek 1			Middle											
2009	Reach	416		1	X	X		X	X	X	X	X		
Crane Creek 1/ Five Creek 1			Upper											
2009	Reach**	5,213		5	X	X		X	X	X	X	X		
2010	Reach	5,213		5	X	X	X	X	X	X		X	X	X
Gossage Creek 1			Lower											
	Reach**	tbd		3	X	X	X	X	X		X			
Hinebaugh Creek 5			Middle											
2010	Localized	78	City of RP project	1	X	X	X	X	X	X		X	X	
Laguna 1			Lower											

Table 1: SMP Sediment Sampling Tracking Table (2009 - 2011)

Creek Name & Reach	SMP Project Type	Volume of Sediment Removed (cy)[1]	Watershed Position (Headwater, Upper, Middle, Lower)	Number of Samples Taken	Sediment Analytes and EPA Test Method									
					Total Metals (6020A)	pH	Total Organic Carbon (9060)	Semivolatile Organics – PAH extended list (8270D or C Modified)	Organochlorine Pesticide and PCB Congeners (8081B/8082A)[2]	Organophosphorus Pesticides (8141B or 8270D)	TPH (8015)[3]	VOCs (8260B)	Asbestos, Fluoride, Nonylphenol	Dioxin (8290)
2010	Reach	14,485		5	X	X	X	X	X	X			X	X
Laguna 4/5			Lower											
2011	Localized	176		1	X	X	X							
Todd Creek 4			Middle											
2010	Localized**	325		1	X	X	X	X	X	X		X	X	X
Todd Creek 3			Middle											
2011	Reach	3744		1	X	X	X	X	X		X			
Wilfred Creek 1			Upper											
2009	Intermediate	3,250		4	X	X		X	X	X	X	X		
Zone 8 A														
Bloomfield Creek			Middle											
2011	Localized	340		1	X	X	X							

** Sediment sample collected and analyzed but maintenance activity not conducted in that year

2. Approach for 2012 Sediment Sampling and Testing

For the 2012 season, sediment sampling and testing will be conducted according to the requirements of the MRP and as detailed in the Sediment Sampling and Analysis Guidelines in Appendix B of the SMP Manual.

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 2 below. Notes to explain the sampling proposal are also provided.

As indicated in the table, the "full suite" of analytes includes those listed in Table 3 of the amended MRP. However, analysis for TPH and PCB Congers will not be conducted, per Regional Board approvals received on February 24, 2012. Test results since 2010 have not detected elevated traces of PCB congeners in any of the samples collected from a wide variety of locations. Detected levels of TPHs since 2010 indicated that all measured hydrocarbon concentrations detected originated from terrestrial plants, not anthropogenic petroleum or petroleum-based products.

The "subset" list of analytes includes metals listed in Table 3, total organic carbon, and total solids.

Table 2: Proposed Sediment Sampling Plan for 2012

Maintenance Reach and Type Number (see SMP Manual for reach locations)	**Estimated Amount of Sediment to be Removed** (cubic yards)	**Number and Group of Analytes to be Tested** (full suite or subset)	**Comments**
Reach Scale			
Laguna de Santa Rosa 1	6,950	2 – Full suite	This site is upstream of the maintenance area which was sampled in 2010. Samples will be collected adjacent to the dairy farm and near Stony Point Road where the bulk of sediment will be removed.
Santa Rosa Creek 1 Santa Rosa Creek 2	3,438 6,716	To be sampled in 2013	The Reach 1 site is downstream from Willowside Road. However, the sediment bars to be removed are greater than 350ft downstream from the road crossing. The Reach 2 site is immediately adjacent and upstream from the reach that was maintained in 2011. If these reaches are maintained in 2013, sampling will be conducted then.
Gossage 2/3	2,500	2 – Full suite	Maintenance site extends from Hwy 116 to Lowell Ave. This site is upstream from the site maintained in 2011. Full suite samples due to the agricultural land surrounding the site.

Localized

Colgan 4	100	1 - Subset	Clear under Stony Point Road.
Hinebaugh 1, 4, 5	600	1 – Full suite 1 - Subset	1 full suite sample from Hinebaugh 1 near Labath Ave. at downstream end of project area 1 subset sample from Hinebaugh 4 near Commerce Ave. Hinebaugh 5 was sampled in 2010.
Piner 4, 5 and 6	207	1 – Full suite	Railroad tracks will likely have metals and hydrocarbons. Industrial area with no history of sampling.

Sediment Basin/Instream Basin Clearing

Five Creek at Snyder Lane	No sampling for 5 years	Annual site. Sampled in 2010
Wilfred Channel at Snyder Lane	No sampling for 5 years	Annual site. Sampled in 2009
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
Cook Creek Sediment Basin	No sampling for 5 years	Annual site. Sampled in 2011

3. Sediment Disposal and Reuse Plan for 2012

The following sites are proposed for sediment disposal and reuse. These are the same sites as used for the 2011 maintenance season.

- **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 2012 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's Executive Officer, 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 SCWA was previously submitted to the regulatory agencies and does not expire until 2023.

  This site has the potential capacity to receive the entirety of sediment excavated from the 2012 maintenance sites. Sediment excavated from the Rohnert Park and Cotati areas would be taken to Grossi's property to reduce transportation costs. SMP sediment would not be used for agricultural purposes, such as growing feed grasses or reuse as potting soils. The sediment will be reused as fill material only.

- **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.

- **BoDean Company**
  BoDean Company is a supplier of aggregate and asphalt to the Santa Rosa area and Napa County. The company operates the Mark West Quarry, the Forestville Quarry, and an asphalt plant in Santa Rosa. More information on the BoDean Company is available at their website: http://www.bodeancompany.com
  Excavated material from Santa Rosa Creek will be taken to BoDean's Forestville plant located at 7888 Highway 116 in Forestville for sorting and reuse as fill for construction projects only.

Appendix G

WPP Project Descriptions

2012 Watershed Partners Program Project Funding Application

APPLICATION INFORMATION

Applicant/Lead Organization Address

Laguna de Santa Rosa Foundation
900 Sanford Road
Santa Rosa, CA 95401

Contact Name and Title

John Guardino, Restoration Program Manager

Telephone

(707) 527-9277 ext. 108

Email Address

john@lagunafoundation.org

Signature and Date

List of Other Participating Organizations

City of Santa Rosa
Sotoyome Resource Conservation District (Partner on attendant TMDL outreach)

PROJECT INFORMATION

Project Name

Gravenstein Creek Restoration Project

Project Location

Gravenstein Creek on the City of Santa Rosa's Brown Farm in Santa Rosa, CA just west of Llano Road.

Total Project Budget

$36,175

Available Matching Funds

$10,875

Total Requested through WPP

$25,300

Proposal Narrative

1. Project Description

The Proposed Project (Project) will restore approximately 275 linear feet of riparian habitat in a 100 feet wide setback along the north side of Gravenstein Creek on the City of Santa Rosa's Brown Farm. The Project directly benefits water quality and reduces sediment loading through the reestablishment of riparian vegetation to stabilize stream banks and filter overland flow. It integrates a diverse set of project components that will directly benefit water quality, habitat and provide significant outreach and education opportunities to advance future sediment reduction work throughout the Laguna de Santa Rosa watershed.

The proposed work will also integrate with current and future agricultural uses on the site and allow for maximum flexibility of the working landscape – serving as a model project for outreach and education for future sediment reduction and riparian revegetation efforts. Furthermore, the project will enhance aesthetic values for pedestrians and cyclists accessing the adjacent County maintained Joe Rodota trail.

City of Santa Rosa Farm Restoration

This Project is part of a larger City of Santa Rosa Farm Restoration Project to restore 100 foot buffers along both sides of all streams on City of Santa Rosa (City) Farm properties. This Project will occur on Brown Farm, one of four properties purchased by the City for this purpose of distributing reclaimed wastewater. Brown Farm and the area containing the Graventstein Creek Restoration Project are protected in perpetuity under conservation easements held by the Sonoma County Agricultural Preservation and Open Space District. Once completed, the total restored area of the Santa Rosa Farm Restoration Project will total 128 acres or 5.7 miles. This project will contain minimum 100 foot setbacks in accordance with the City's Ranch Management Plan.

Middle Reach Restoration

The proposed Irwin Creek Restoration Project is situated within a nearly contiguous 8-mile corridor of public and private protected lands collectively referred to as the Middle Reach of the Laguna de Santa Rosa. The Laguna de Santa Rosa Foundation (Foundation) is actively working on restoration projects within the Middle Reach project area. This work is largely focused on planting of structurally diverse riparian woodlands paralleling the Laguna and confluences with its tributaries. The Foundation has installed native vegetation in over 50 acres of riparian and oak woodland forest in the Middle Reach region to date.

Gravenstein Creek Restoration

The Brown Farm reach of Gravenstein Creek runs roughly east-west bisecting Brown Farm. Additional restoration is planned in the immediately downstream of the proposed restoration project which will complement our work in this area. The project area, known as "Grid 11" (see attached maps), has been designated a natural area by the City and expressly targeted for environmental enhancements. In addition to the aforementioned benefits, this work will help to buffer adjacent drainages and the downstream Laguna wetland complex from agricultural uses on the property. Windmill Creek as well as several unnamed drainages and the main channel of the Laguna de Santa Rosa are also on the property. Please see attached maps. The Gravenstein Creek Restoration Project contains multiple, phased elements:

Phase I

1. Plant 275 linear feet of riparian vegetation in a 100' setback along the north side of Gravenstein Creek to directly reduce sediment loading in the Laguna de Santa Rosa and enhance riparian habitat;

2. Concurrent: Leverage Phase I work as a teaching model for TMDL outreach and education to identify and advance regulatory-driven sediment reduction projects throughout the watershed.

Phase II

3. Continue restoration efforts along Gravenstein Creek downstream of the work proposed in Phase I
4. Continue concurrent TMDL outreach work also utilizing Phase II sediment reduction work as a teaching and demonstration tool for future regulatory-driven sediment reduction projects.

Phase I, elements 1 and 2 are the subject of this proposal. Phase II will be the subject of a future WPP application.

2. Project Benefits

This Project will contribute to enhancement of conditions along Gravenstein Creek and amelioration of systemic problems within the Laguna de Santa Rosa. As noted, the Foundation and Sotoyome RCD Project sites will also serve as teaching tools for concurrent WPP-funded TMDL outreach work to advance sediment reduction projects throughout the watershed. The Project will also be highly visible from the Joe Rodota Trail – a heavily used bike and pedestrian path connecting Santa Rosa and Sebastopol.

TMDL

The Laguna is listed under section 303(d) of the Clean Water Act as impaired for several constituents including: sediment, nitrogen, phosphorus, mercury, dissolved oxygen, temperature, and indicator bacteria. This project will help to improve water quality within Gravenstein Creek and the greater Laguna by increasing agricultural setbacks and preventing overland flow of irrigation waters and preventing sediment discharges.

3. How Project Advances SMP Goals

This Project directly supports the SMP purpose and objectives in addressing sediment inputs by restoring riparian habitat directly upstream of an internationally important watershed lowland area –the Laguna de Santa Rosa (Section 8.7.1). The Project site is immediately upstream of the Laguna de Santa Rosa middle reach area. In addition, it also supports important coordinating activities (Section 1.2) in establishing an integrated watershed mitigation program through stream restoration and complimentary education and outreach activities (concurrent TMDL outreach).

4. Project Location/Right of Way Access

The Project site is along Gravenstein Creek, which enters the Laguna de Santa Rosa main channel south of the Highway 12 Bridge.

The Project will take place entirely on the City of Santa Rosa's Brown Farm. The Sonoma County Assessor Parcel Number for the property are 060-060-059 and 060-060-060. The site is currently leased to a private operation and used for haying. The City's lease agreement with the operator protects permanent natural areas. The project will occur in a natural area which is unleaseable land. The lessee does not have access to the Project area and lease agreements will not affect the Project.

5. Project Partners

Laguna de Santa Rosa Foundation

The Laguna Foundation is the primary applicant. The Foundation will provide management, oversight and implement the Project including planting, maintenance and monitoring.

City of Santa Rosa

The City will provide site access and in-kind support for the project. The City also shares in the costs of the Stone Farm Nursery which will supply plants for the revegetation of the wet crossing and future revegetation work. The City will participate in site visits and provide input on Project design and construction and assist in the promotion of any site volunteer opportunities.

Sonoma State University/Santa Rosa Junior College

2-4 interns from SSU and/or SRJC will provide hands-on support for the Project.

6. Project Schedule

The Laguna Foundation will adhere to the Project schedule. Project Tasks and Timeline, Year One:

<u>Summer 2012</u>

Site preparation and invasive plant control including physical (mowing, weed-eating) and chemical (herbicide) control if necessary, and restoration planning.

<u>Fall 2012</u>

Planting, installation of weed suppression and browse protection

<u>Spring 2012</u>

Irrigation installation

<u>2012-end of term</u>

Maintenance of plantings and irrigation

<u>2016</u>

Removal and disposal of non-biodegradable materials

7. Project Permitting

The Project site is owned by the City and no regulatory permits are required as all work will occur above top of bank. The property is protected under a Conservation Easement by the Sonoma County Agricultural Preservation and Open Space District.

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

For the proposed project, the riparian setback will be increased to 100 ft. The planting plan will follow the recommendations of PRBO Conservation Science to maximize structural diversity (Kreitinger and Gardali 2006). This includes selecting a palette of plants representative of existing reference sites within the Laguna including groundcover, shrub, sub-canopy and canopy species. A list of proposed plants is provided in the table below.

Canopy	
Fraxinus latifolia	Oregon ash
Quercus lobata	valley oak
Subcanopy	
Acer negundo	California box elder
Crataegus douglasii	Hawthorn
Salix lasiolepis	arroyo willow
Salix laevigata	red willow
Salix lasiandra	yellow willow
Shrub	
Baccharis pilularis	coyote brush
Rosa californica	California Wild Rose
Rubus ursinus	California blackberry
Sambucus mexicana	blue elderberry
Symphoricarpos albus	snowberry
Groundcover	
Carex barbarae	Santa Barbara sedge
Elymus glaucus	blue wild rye
Lonicera hispidula	California honeysuckle

The total site area is roughly 0.63 acres. Approximately 275 plants will be planted within the project area. In addition, graminoids (*Carex,* Juncus) and willow sprigs (*Salix sp.)* will be installed at the ordinary high water mark to help stabilize the creek bank, enhance habitat and mitigate future sediment releases. Plants will be protected from weed competition and herbivory and irrigated for three years following installation. Where possible, plants will be propagated from Laguna genetic stock.

9. Maintenance and Monitoring

Maintenance will consist of weed suppression via physical (mowing and weed-whacking) and chemical control (as necessary) will occur throughout the Project term. Native plantings will be assessed annually and mortalities replaced to achieve a minimum of 75% survival. Photo monitoring will capture before and after the wet crossing removal and plant installation. GPS mapping of the site will occur prior to final Project reporting

10. Budget

	SCWA WPP	City of Santa Rosa Match*	Laguna Foundation In-Kind Match*	Project Total
Task 1: Project Planning & Management	$3,750			$3,750
Task 3: Riparian Planting	$2,800	$2,750	$1,875	$7,425
Task 5: Maintenance & Monitoring	$17,750	$1,250	$5,000	$24,000
Task 6: Clean up & Disposal	$1,000			$1,000
SCWA WPP funding requested	$25,300			
Total match total by source		$4,000	$6,875	
Project Total				**$36,175**

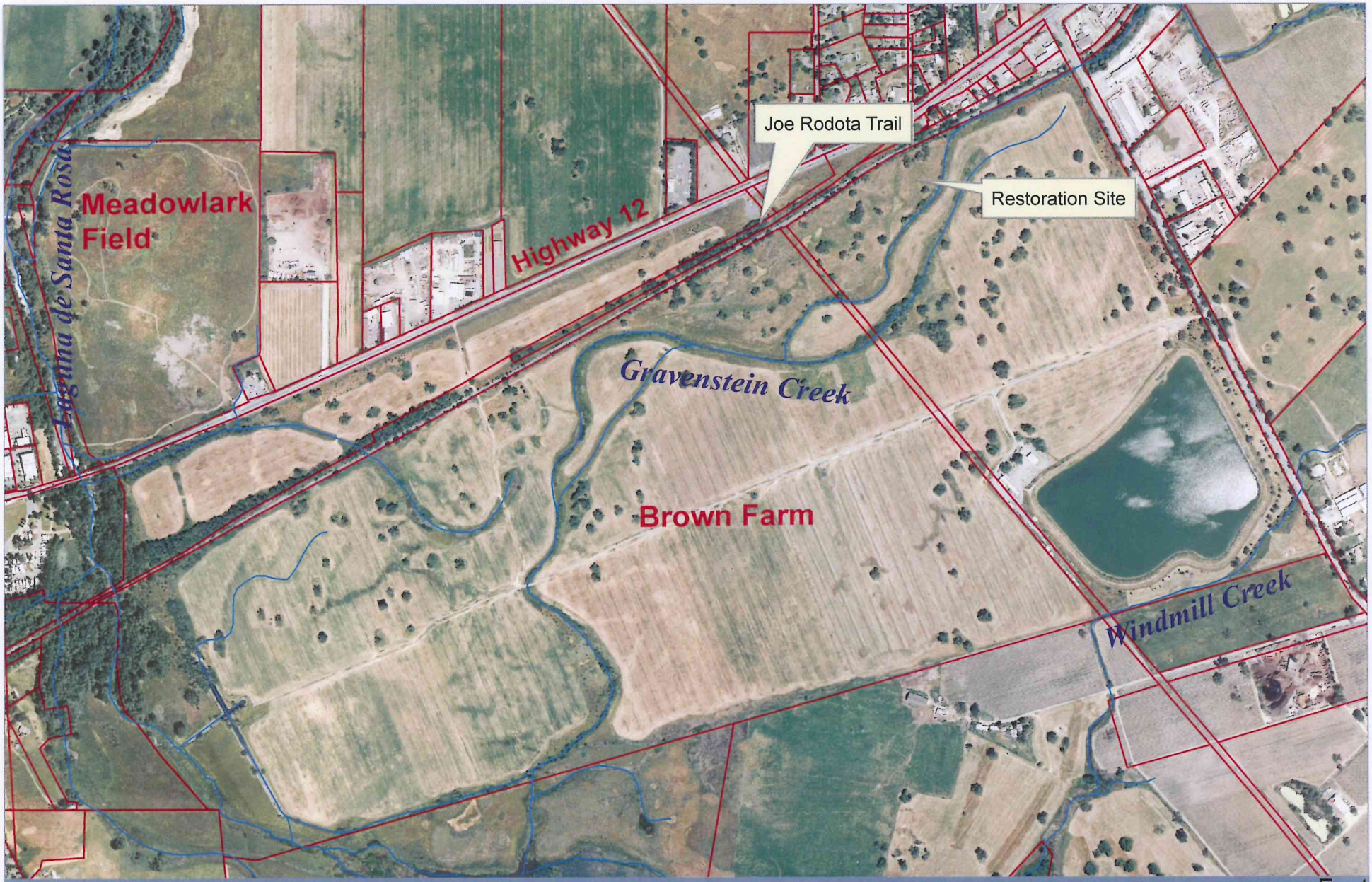
*Laguna Foundation and City of Santa Rosa in-kind match consists of planting materials, hardware, irrigation, land prep, chemical weed control materials, and volunteer/intern labor inputs

Laguna de Santa Rosa Foundation

SCWA-WPP Proposal 2012 Gravenstein Creek Restoration Project. Map 1 of 2.

Map ID: LdSR 738-A

Photo date: June 2007



Laguna de Santa Rosa Foundation

SCWA-WPP Proposal 2012 Gravenstein Creek Restoration Project. Map 1 of 2.

Map ID: LdSR 737-A

Photo date: June 2007

City of
Santa Rosa

January 30, 2012

Marc Bautista
Sonoma County Water Agency
404 Aviation Boulevard, Santa Rosa, CA 95403

RE: Letter of Commitment for Proposed Work on City Farms through the SCWA Watershed Partnership Program

Dear Mr. Bautista,

The City of Santa Rosa is pleased to participate in and support the Laguna Foundation's proposed restoration work on city owned farm properties. The Foundation is proposing important sediment reduction projects on Irwin Creek on Stone Farm and Gravenstein Creek on Brown Farm that will yield significant environmental benefits and directly advance the larger City of Santa Rosa Ranch Plans to restore 100 feet of riparian buffers along both sides of all streams on City of Santa Rosa Reclamation Farm properties. As a project partner, we are committed in our support of these efforts and look forward to working with the Foundation and the Agency to implement the proposed sediment reduction & revegetation projects.

Randell Piazza
Reclamation Superintendent

UTILITIES DEPARTMENT
4300 Llano Road • Santa Rosa, CA 95407
Phone: (707) 543-3350 • Fax: (707) 543-3399
www.SantaRosaUtilities.com

INTERNAL REVENUE SERVICE
DISTRICT DIRECTOR
2 CUPANIA CIRCLE
MONTEREY PARK, CA 91755-7406

DEPARTMENT OF THE TREASURY

Date: MAY 17 1995

LAGUNA DE SANTA ROSA FOUNDATION
C/O KIM CORDELL
P O BOX 797
SEBASTOPOL, CA 95473

Employer Identification Number:
94-3155180
Case Number:
955118035
Contact Person:
TYRONE THOMAS
Contact Telephone Number:
(213) 894-2289
Our Letter Dated:
May 15, 1992
Addendum Applies:
No

Dear Applicant:

This modifies our letter of the above date in which we stated that you would be treated as an organization that is not a private foundation until the expiration of your advance ruling period.

Your exempt status under section 501(a) of the Internal Revenue Code as an organization described in section 501(c)(3) is still in effect. Based on the information you submitted, we have determined that you are not a private foundation within the meaning of section 509(a) of the Code because you are an organization of the type described in section 509(a)(2).

Grantors and contributors may rely on this determination unless the Internal Revenue Service publishes notice to the contrary. However, if you lose your section 509(a)(2) status, a grantor or contributor may not rely on this determination if he or she was in part responsible for, or was aware of, the act or failure to act, or the substantial or material change on the part of the organization that resulted in your loss of such status, or if he or she acquired knowledge that the Internal Revenue Service had given notice that you would no longer be classified as a section 509(a)(2) organization.

If we have indicated in the heading of this letter that an addendum applies, the addendum enclosed is an integral part of this letter.

Because this letter could help resolve any questions about your private foundation status, please keep it in your permanent records.

If you have any questions, please contact the person whose name and telephone number are shown above.

Sincerely yours,

Richard R. Orosco
District Director

Letter 1050 (DO/CG)

1675208

State of California

OFFICE OF THE SECRETARY OF STATE

CORPORATION DIVISION

I, *MARCH FONG EU*, Secretary of State of the State of California, hereby certify:

That the annexed transcript has been compared with the corporate record on file in this office, of which it purports to be a copy, and that same is full, true and correct.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this

OCT 2 9 1990

THE GREAT SEAL OF THE STATE OF CALIFORNIA
EUREKA

March Fong Eu

Secretary of State

SCWA WPP 2112: Gravenstein Creek Riparian Restoration Project Budget

LABOR

Task	Description	Quantity	Units	Cost/Unit	Total Cost	
1	**Project Management**					
	Restoration Program Manager	50	Hours	$70	3,500.00	
2	**Riparian Planting**					
	Restoration Program Manager	20	Hours	$70	1,400.00	
	Restoration Assistant	70	Hours	$45	3,150.00	
3	**Maintenance & Monitoring**					
	Restoration Program Manager	80	Hours	$70	5,600.00	
	Restoration Assistant	200	Hours	$45	9,000.00	
4	**Hardware Removal & Site Closure**					
	Restoration Assistant	30	Hours	$45	1,350.00	
				Subtotal Labor	24,000.00	**WPP**

DIRECT COSTS

Vehicle Mileage	1,500	Miles	$0.55	$825.00	
Materials: Equipment fuel, trimmer line, parts, etc. Disposal fees			Lump Sum	$175.00	
			Subtotal Direct Costs	$1,000.00	**WPP**

SANTA ROSA MATCH

Description	Quantity	Units	Cost/Unit	Total Cost
1/2" Drip Line	3,000	ft.	$0.07	$210.00
3'x3' Weed Mat	300	ea.	$1.00	$300.00
1 GPH PC Emitters	275	ea.	$0.44	$121.00
Staples	2,200	ea.	$0.11	$242.00
Browse protection	275	ea.	$0.08	$22.00
Stakes - 2/irrigated plant	550	ea.	$0.16	$88.00
Pine Shaving Mulch	1	ea.	$11.00	$11.00
2" Irrigation Line	1,000	ft.	$0.43	$430.00
2" couplers and clamps	8	ea.	$7.00	$56.00
2" to 1" couplers	4	ea.	$1.50	$6.00
Field Manifold Assembly	1	ea.	$100.00	$100.00
Native Plants	382	ea.	$6.00	$2,292.00
Tractor Rental	10	Days	$325.00	$3,250.00
Reclaimed water & connection	1	ea.	$3,061.00	$3,061.00
			Subtotal Santa Rosa Match	$10,189.00

LAGUNA FOUNDATION IN-KIND

Task	Description	Quantity	Units	Cost/Unit	Total Cost
2 & 3	Equivalent to Restoration Technician @ $25/hr.	275	Hours	$25	$6,875
				Subtotal Laguna In-Kind	$6,875
				PROJECT GRAND TOTAL	**$42,064**

2012 Watershed Partnership Program Project Funding Application

APPLICATION INFORMATION

Applicant/Lead Organization Address:

Sotoyome Resource Conservation District
PO Box 11526
Santa Rosa, CA 95406

Copy
Sonoma County Water Agency
JAN 3 1 2012

Contact Name and Title: Andy Casarez, Physical Scientist

Telephone: 707-569-1448 x 105
Email Address: acasarez@sotoyomercd.org

Signature and Date

Kara Heckert

List of Other Participating Organizations

The project team consists of the following organizations: Sotoyome Resource Conservation District (RCD), Sonoma County Regional Parks (landowner), Conservation Corps North Bay (CCNB), PRBO Conservation Science Students and Teachers Restoring a Watershed (STRAW) Project, and the Laguna de Santa Rosa Foundation.

PROJECT INFORMATION

Project Name: Crane Creek Water Quality Improvement and Education Project
Project Location: Crane Creek Regional Park, Sonoma County, CA
Total Project Budget: $321,425
Available Matching Funds:
STRAW will contribute an in-kind match in the form of volunteer hours totaling $18,480 per phase for a total $55,440 over the entire project.
Three Schools - (6 teachers, 180 students, 45 community volunteers = 231 volunteers x 4 hours = 924 hours x $20/hr = $18,480).
Sotoyome RCD will provide an in-kind match related to outreach activities in the watershed=100 hours @$75/hour=$7,500

Total match funds through this project **$62,940**
Total Requested through WPP:
We respectfully request $104,515 for the first year and $76,985 for each of the next two consecutive years for a total of **$258,485**

To: Bautista

CF/15-0-2 Stream Maintenance & Flood Protection Services Program

1. *Crane Creek Water Quality Improvement and Education Project Description*

The Crane Creek Water Quality Improvement and Education Project is a multi-faceted project that will reduce sediment in Crane Creek while providing ample and varied public education, from engagement of elementary school children through the Students and Teachers Restoring a Watershed (STRAW) Project, to youth development through the Conservation Corps of the North Bay (CCNB), to installation of interpretive signage along park trails, to engagement of diverse stakeholders to help shape watershed management in the Laguna, with a focus on the Laguna de Santa Rosa TMDL implementation policy. Each of these elements is discussed in greater detail below.

Per the 2008-2010 Section 303(d) List, the Laguna de Santa Rosa is listed as an impaired waterbody for nitrogen, phosphorus, dissolved oxygen, sediment, temperature, mercury, and indicator bacteria. North Coast Regional Water Board (Region I) staff are currently developing new Total Maximum Daily Loads (TMDLs) for nitrogen, phosphorus, dissolved oxygen, temperature, and sediment in the Laguna de Santa Rosa watershed to address continuing water quality impairments.

Upon completion of the technical TMDL, the State is charged with ensuring the necessary actions are taken so that the loading of the pollutant of concern does not exceed the TMDL and associated load allocations. In order for the Laguna TMDLs to be successful in addressing water quality impairments in the Laguna de Santa Rosa, it is imperative for staff to work with key stakeholders and members of the community in developing an implementation strategy and implementing publicly visible projects that demonstrate on-the-ground water quality improvements.

The Sotoyome RCD and PRBO Conservation Science's STRAW Project propose to work with students, teachers, community volunteers, professional restorationists and the CCNB on professionally-designed riparian habitat restorations on Crane Creek within Crane Creek Regional Park. This watercourse flows through Crane Canyon and the Crane Creek Regional Park situated on the northwestern flank of Sonoma Mountain. Crane Creek forms a confluence with Hinebaugh Creek in the city of Rohnert Park; thereafter, Hinebaugh Creek flows westerly to discharge to the Laguna de Santa Rosa. This site was selected because of its proximity to the Sonoma County Water Agency's proposed stream maintenance sites for 2012, and the opportunities it affords for community benefits above and beyond water quality improvement, namely improved aesthetics in a public recreation setting and opportunities for watershed and water quality outreach and education.

The riparian areas within the park currently contain sporadic heritage overstory vegetation, and minimal quality understory, consisting of intermittent populations of non-native plants such as Himalayan Blackberry (*Rubus armeniacus*), interspersed with large sections of non-native annuals. In addition, many sections of the two drainages are experiencing exacerbated erosion, which is resulting in substantial sediment inputs into the system due to a high frequency of denuded and incised channel banks.

The proposed project will occur over 3 years along two stream reaches within the park. The resulting project will enhance over 3400 linear feet of riparian waterway, improving the habitat quality of the reach, as well as substantially reducing sediment inputs into the Crane Creek drainage. In addition to improvement of habitat and water quality in Crane Creek, the project will also provide a learning opportunity for park visitors. To this end, a series of interpretive signs will be established along park trails in proximity to the restoration work. These signs will highlight watershed issues, restoration opportunities, and how SCWA, Regional Parks, the RCD and other project partners are working to improve the watersheds of Sonoma County.

The TMDL outreach work proposed as a companion to the Crane Creek project is based on a highly successful, model sediment TMDL outreach program jointly developed and delivered over a three year period by the Southern Sonoma County RCD and the Sonoma Ecology Center. The overall goal of this program was to improve and optimize the policy development process as well as the finished product and to facilitate proactive, streamlined implementation of the sediment TMDL. To this end, the project delivered highly developed stakeholder outreach and technical support for the development and implementation of the Sonoma Creek Sediment TMDL action plan. This work yielded a broad range of highly beneficial outcomes including: enriched stakeholder involvement & buy-in, local capacity building, development of innovative approaches to implementation, pilot project identification, improved working relationships between the Regional Water Quality Control Board (RWQCB), stakeholders and natural resource managers, and grant awards for project implementation.

The Laguna Foundation and Sotoyome RCD propose to develop and deploy a similar public outreach program in the Laguna de Santa Rosa watershed. This program will be phased over three years to coincide with the development of Laguna TMDL regulatory programs.

Sotoyome RCD and the Laguna Foundation have met with Regional Water Board staff to discuss the proposed outreach work which would require close collaboration among the RCD, Foundation and Region I staff. They are highly supportive of this work as noted in the attached letter of support.

2. Project Benefits

This project will directly support many Watershed Partnership Project primary goals including the reduction of sediment input into Crane Creek (upstream of a reach planned for Stream Maintenance Program activities in 2012), the reduction in frequency of future sediment removal activities downstream, and education of the public and vital stakeholders in the importance of such projects. In addition, revegetation will dramatically enhance the habitat value of the upper Crane Creek watershed, greatly extending the habitat corridor by linking with quality habitat above the park boundaries.

Community involvement and exposure will be large benefits resulting from this project. Through the STRAW Project, students from the neighboring schools will play an active role in the enhancement of their community watershed, and learn about all of the factors that contribute to the management of their waterways in Sonoma County. CCNB, a nationally recognized as a leader in youth service, will engage multiple teams 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.

With its highly complex sociopolitical landscape, the Laguna watershed presents formidable challenges for the implementation of any resource management program. TMDL outreach and coordination efforts will contribute to the overall success of the TMDL, and outcomes that are beneficial not only to the TMDL effort, but to other resource management efforts within the watershed, such as SCWA's Stream Maintenance Program. The TMDL action plan strategy will be largely focused on reduction of sediment loads and associated pollutants. Implementation, therefore, will largely focus on execution of projects designed to reduce sediment loads including riparian canopy and understory restoration, bank stabilization work, etc.

Resource managers, who are often in the unfortunate position of playing catch-up with the sheer number and complexity of emergent regulatory programs, will benefit from the TMDL outreach aspect of the project. By initiating and facilitating a structured interaction between stakeholders, resource

managers, and regulators, the partners will greatly further the goal of proactive, streamlined sediment reduction implementation of in the watershed.

3. ***Advancement of SCWA Stream Maintenance Program Goals and Relation to 2012 Planned Maintenance***

Restoration work on Crane Creek helps advance the goals for SCWA's Stream Maintenance Program to reduce sediment and improves stream function for flood protection. The project will implement proven best management practices to stabilize creek banks and improve the habitat quality of the riparian corridor. The project site is on Crane Creek, upstream of its confluence with Hinebaugh Creek, where Stream Maintenance Program activities are planned for 2012. Sediment reduction at the Crane Creek project site will reduce sediment inputs to Crane and Hinebaugh creeks, reducing the need for maintenance in future years.

This outreach work dovetails with, compliments and advances SCWA's ongoing SMP work by building local capacity to rapidly identify and implement sediment reduction projects in the watershed. The proposed companion sediment reduction project (Crane Creek) is located on a parcel with active public access. This creates a synergy between the public outreach and sediment reduction project components that will allow the Partners to demonstrate successful on-the-ground sediment reduction projects.

4. ***Location. Right of Way Access.*** The project lies completely within the boundary of Crane Creek Regional Park and Sonoma County Regional Parks has agreed to participate in the project. Please see Regional Parks letter of support attached.

5. Project Partners The Sotoyome Resource Conservation District (RCD), in existence since 1945, is a local non-regulatory organization whose mission is to promote responsible natural resource management through voluntary community stewardship and technical assistance. The RCD will provide services for revegetation/erosion control design services and development of interpretive signage for the Crane Creek Project. The RCD will act as co-lead (with the Laguna Foundation) on TMDL outreach/stakeholder involvement, and will act as fiscal administrator for this agreement.

The Point Reyes Bird Observatory (PRBO) is dedicated to conserving birds and ecosystems through research and education. Since 1993, PRBO's Students and Teachers Restoring a Watershed (STRAW) Project has provided a valuable community connection and educational opportunities for students and teachers while reducing sedimentation and habitat loss. The STRAW Project will coordinate installation, maintenance, and monitoring of the Crane Creek revegetation, including the student education and volunteer element. STRAW Project staff will provide teacher training and coordination of field days for student education and planting at the Crane Creek site.

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. CCNB will assist with installation of plants and associated elements (erosion control, plant hardware, irrigation) at the Crane Creek project site. CCNB staff will perform tasks that are beyond the purview of the volunteer labor provided by the STRAW program.

Founded in 1989, the Laguna de Santa Rosa Foundation (Laguna Foundation) is a place-based organization focused on preserving, protecting, restoring and educating the public about the Laguna de Santa Rosa. The Laguna Foundation will act as co-lead (with the Sotoyome RCD) on TMDL outreach/stakeholder involvement. The Laguna Foundation is not included in the budget for this proposal, as they are seeking funds through a separate proposal with a complementary project on Irwin Creek.

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

Activity	Timeframe		
	Phase I	***Phase II***	***Phase III***
Site reconnaissance/restoration planning and design (STRAW; RCD)	July/August 2012	N/A	N/A
Identify and recruit policy affected stakeholders in the watershed to form a core policy development Steering Committee and larger stakeholder group. (RCD; Laguna Foundation)	July 2012	N/A	N/A
Teacher Professional development - Watershed Week, Fall Session, Spring Session (STRAW)	July/August 2012 September/ October 2012 March/April 2012	July/August 2013 September/ October 2013 March/April 2013	July/August 2013 September/ October 2013 March/April 2013
Scheduling classes/crews to restoration sites (STRAW)	July-October 2012	July-October 2013	July-October 2014
Finalize restoration planning and design (STRAW; RCD)	September/ October 2012	N/A	N/A
Conduct in-class presentations for restoration (STRAW)	September/ October 2012	September/ October 2013	September/ October 2014
Restoration implementation (STRAW; CCNB)	November 2012-March 2013	November 2013-March 2014	November 2014-March 2015
With input from Regional Parks and SCWA, design and install permanent interpretive signage along trails proximal to the restoration sites. (RCD)	November 2012-March 2013	N/A	N/A
Organize, notice and host Laguna TMDL Steering Committee meetings. The Steering Committee will meet with the Region I TMDL project manager to receive updates on the development and progress of the TMDL, discuss process, technical details and timing, receive feedback and potential projects. The group will also discuss Regional Board's next steps for TMDL development; framework for how Steering Committee can assist with policy development and outreach to the larger public. (RCD; Laguna Foundation)	First meeting November 2012, then quarterly thereafter (February, May, August 2013)	November 2013; February, May August 2014	November 2014; February, May August 2015
On-going maintenance of project site (STRAW; CCNB)	April-	April-	April-

	October 2013	October 2014	October 2015
Monitoring conducted with photos for project success determination (STRAW)	October 2013	October 2014	October 2015
Organize and host an annual, broad stakeholder meeting to report on progress and results of outreach and policy development work. The Partners and The Regional Water Board TMDL Project Manager will present a summary of work in the previous year including status of TMDL development, future compliance considerations, Steering Committee accomplishments and recommendations. A key component of this meeting will be the presentation of respective WPP sediment reduction projects by the Partners. On-the-ground WPP projects will be leveraged as a teaching tool to demonstrate successful sediment reduction efforts in the watershed. (RCD; Laguna Foundation)	October 2013	October 2014	October 2015
Annual Reports	November 2013	November 2014	N/A
Final Report	N/A	N/A	November 2015

7. ***Project Permitting.*** *N/A* **8.** ***Length and area and number of species of plants installed.***
Minimum Project Dimensions (per phase): 1200 ft x 50ft = 60,000ft^2 per year for a total of 180,000 ft^2 or 4.13 acres.
Minimum Number of Plants Installed (per phase): 200

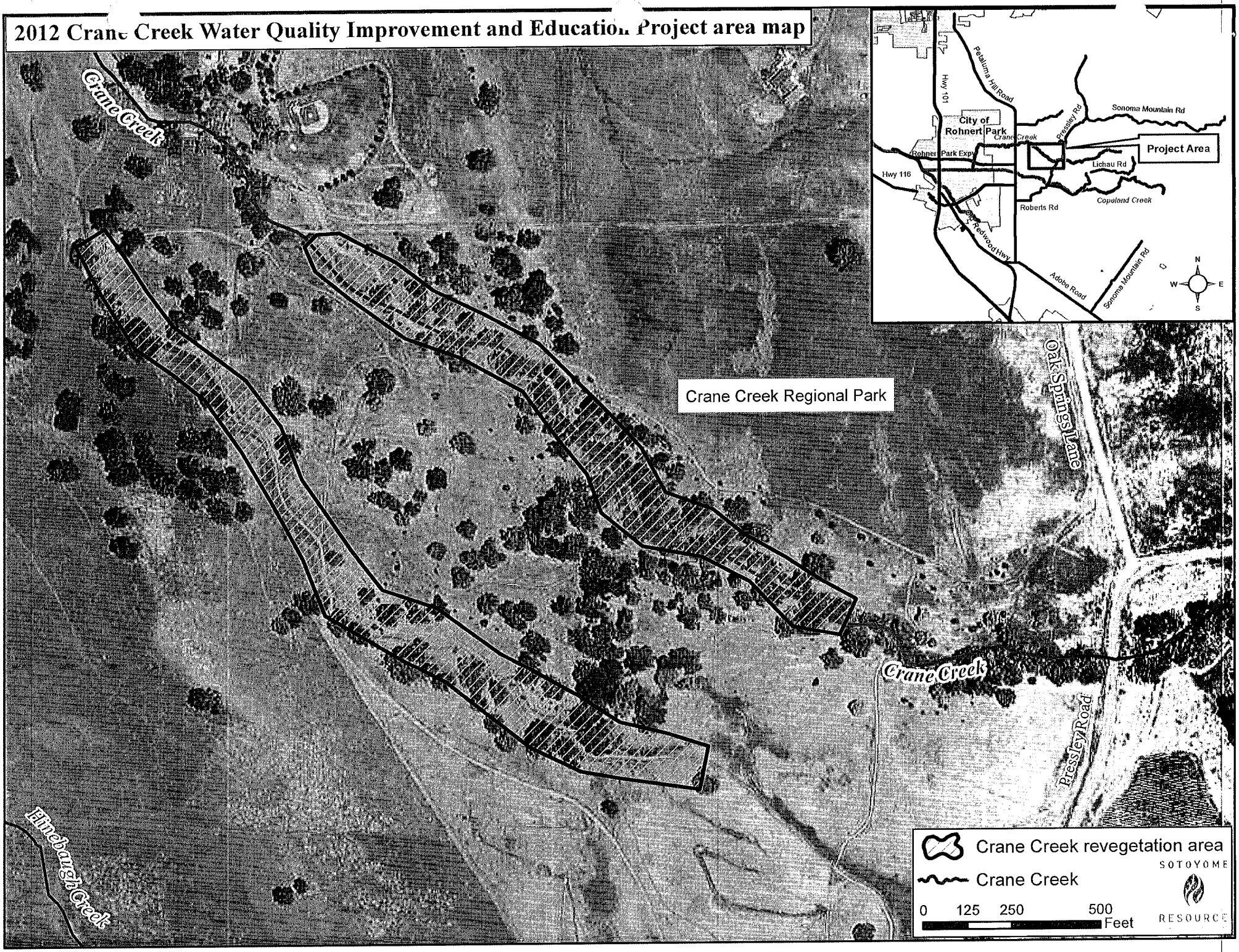
9. ***Maintenance and Monitoring.***
Plants are maintained and monitored for a five-year establishment period, and monitoring data facilitate the project team in adaptively managing project sites by identifying site specific variables that contribute to plant mortality. Maintenance and monitoring activities will include:

- Regularly inspect plantings from late spring through early fall for three years – as often as once per week, but no less that once per month for the first year, and once per month for the following two years.
- Maintain plantings at a minimum by weeding, repairing browse protectors and spraying of deer repellent if required.
- Irrigate plantings with most efficient and cost-effective means available; possibilities include temporary drip systems, DriWater, and hand watering.
- Monitor plant survival by species in October to inform future planting designs.
- Perform annual photomonitoring using the State Water Resources Control Board's SOP 5.2.3.

10. *Budget.*

Crane Creek Water Quality Improvement and Education Project				
		Phase I	**Phase II**	**Phase III**
Revegetation Installation				
	PRBO (STRAW)	$22,993	$21,702	$21,702
	SRCD	$2,500	$2,500	$2,500
	CCNB	$6,900	$6,900	$6,900
	Water Tank maintenance	$1,200	$0	$0
	LABOR MATCH	*$18,480*	*$18,480*	*$18,480*
Maintenance and Monitoring				
	PRBO (STRAW)	$18,681	$4,144	$4,144
Education				
	PRBO (STRAW)	$8,841	$8,841	$8,841
TMDL Stakeholder Engagement		~~$19,875~~	~~$19,875~~	~~$19,875~~
	SRCD			
	LABOR MATCH	~~*$2,500*~~	~~*$2,500*~~	~~*$2,500*~~
Interpretative Signage				
	SRCD	$3,000	$0	$0
	Materials, design, installation	$5,000	$0	$0
Contract Admin				
	SRCD	$6,024	$6,024	$6,024
	subtotal	$95,014	$69,986	$69,986
	overhead at 10%	$9,501	$6,999	$6,999
Total requested from WPP per phase		$104,515	$76,985	$76,985
	TOTAL LABOR MATCH	***$20,980***	***$20,980***	***$20,980***
Total for all phases				**$258,485**

2012 Crane Creek Water Quality Improvement and Education Project area map



SOTOYOME
RESOURCE
CONSERVATION DISTRICT

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PHYSICAL ADDRESS
201 Concourse Blvd. Suite B
Santa Rosa CA 95403

MAILING ADDRESS
PO Box 11526
Santa Rosa CA 95406

Tax ID 95-2863255

The Sotoyome Resource Conservation District is a special district of the State of California that is locally governed by an appointed Board of Directors. The District operates under the California Public Resource Code Division 9. Section 9003 Designation as agencies of the state which states that: "The legislature hereby finds and declares that resource conservation districts are legal subdivisions of the state, and, as such are not-for-profit entities. For the purpose of contracting with state agencies only, resource conservation districts shall be considered agencies of the state."

As a California State Subdivision, the Sotoyome Resource Conservation District is an instrumentality of the United States and so is tax exempt under section 501.C.1 of the Internal Revenue Code.

All grants and donations to the Sotoyome Resource Conservation District are tax deductible under law.

A copy of Division 9, Section 9003, as well as, a copy of IRS Section 501.C.1 can be provided upon request.

Kara Heckert
Executive Director
Sotoyome Resource Conservation District

December 17, 2009

SONOMA
COUNTY
REGIONAL
PARKS

CARYL HART, Ph.D
DIRECTOR

2300
County Center Drive
Suite 120A
Santa Rosa
CA 95403
Tel: 707 565-2041
Fax: 707 579-8247
www.sonomacountyparks.org

January 25, 2012

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

Dear Mr. Davis:

Sonoma County Regional Parks supports the Sotoyome Resource Conservation District's (SRCD) request for funding from the Sonoma County Water Agency (SCWA) for the Crane Creek Water Quality Improvement and Education Project. Sonoma County Regional Parks has partnered with SRCD at Crane Creek Regional Park in an effort to improve the vegetation regime along the banks of Crane Creek. This project will include partners such as North Bay Conservation Corps and PRBO's STRAW.

Sonoma County Regional Parks is committed to being good stewards of the lands within the parks system. This project aligns with our organization's core values and goals for our protected lands. The Crane Creek Regional Park site is a popular area that gets large volumes of visitors throughout the year. This means that this will be a high visibility site where the public will be able to see and be educated by the restoration efforts of Sonoma County Regional Parks, SCWA, and the local non-profits on the importance of good land stewardship. The Sonoma County Regional Parks will provide access to the site for restoration, monitoring, and maintenance.

Sonoma County Regional Parks is committed to working with SRCD to restore Crane Creek in Crane Creek Regional Park.

Sincerely,

Bert Whitaker,
Park Manager

cc: Mark Cleveland, Senior Park Planner

From: Rebecca Fitzgerald
To: John Guardino
Cc: Valerie Minton; David Leland
Subject: Letter of Support for SCWA Grant Proposal
Date: Tuesday, January 31, 2012 10:50:07 AM

To Whom It May Concern:

I understand that the Laguna de Santa Rosa Foundation and Sotoyome Resource Conservation District are proposing a project for Sonoma County Water Agency funding to, in part, develop and deploy a public outreach program in the Laguna de Santa Rosa watershed. The project scope will include the formation of a policy development steering committee and a larger stakeholder group to work with staff of the North Coast Regional Water Quality Control Board in developing an implementation strategy to achieve nutrient, dissolved oxygen, temperature, and sediment water quality standards and total maximum daily loads. The proposed project will also undertake sediment reduction pilot projects.

I support this proposed project as it will likely result in a water quality control and restoration policy that is more successful, as it will have been developed with a broader range of options considered, increased stakeholder input, and hopefully, stakeholder support for policy adoption and implementation. This project will likely help improve the nitrogen, phosphorus, dissolved oxygen, temperature, and sediment quality of the mainstem Laguna and its tributary creeks, including Mark West Creek, Santa Rosa Creek, Copeland Creek, and others. I look forward to working with the Laguna Foundation and Sotoyome RCD throughout the TMDL process and as part of this project.

Please feel free to contact me if there are any questions or comments. I'll follow this e-mail with a letter in the coming days.

Sincerely,

Rebecca Fitzgerald, Senior Environmental Scientist
TMDL Unit Supervisor
North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403
707-576-2650
Fax 523-0135
rfitzgerald@waterboards.ca.gov

Crane Creek Water Quality Improvement and Education Project
Scope of Work

GENERAL

The implementation of this project will occur over 2 years along two stream reaches within Crane Creek Regional Park. The resulting project will enhance over 3400 linear feet of riparian waterway, improving the habitat quality of the reach, as well as substantially reducing sediment inputs into the Crane Creek drainage. In addition to improvement of habitat and water quality in Crane Creek, the project will also provide a learning opportunity for park visitors by establishing a series of interpretive signs along park trails in proximity to the restoration work.

TASK 1 – DESIGN, PLANTING, IRRIGATION AND SIGNAGE

Planting Design:
Site visits with partner agencies will be conducted to finalize the design layout and restoration plan for the plants and signage.

Planting:
A total of 400 native riparian plants will be installed over two years (200 plants per year) along the two stream reaches within the park. The plants used in this riparian enhancement project shall be locally collected and propagated in a nursery near the project area. This will ensure that genetically appropriate material will be out-planted to maintain the integrity of the current plant community and allow for an appropriate biologic response to site-specific conditions. All liner-sized plants will be installed with protective plant hardware and weed mats or mulch.

Irrigation Water Source

The irrigation system water source will be designed with oversight from Sonoma County Regional Parks and will likely include a water tank with a gravity-fed, flexible tubing drip irrigation system. Some DriWater© product may be used for the plants farthest away from the irrigation source, where water pressure in the irrigation line would be too low to sufficiently water these plants.

Interpretive Signage:
A series of permanent interpretive signs will be established along park trails in proximity to the restoration work highlighting watershed issues, restoration opportunities, and how SCWA, Regional Parks, the RCD and other project partners are working to improve the watersheds of Sonoma County.

TASK 2 - MAINTENANCE AND MONITORING

Maintenance and Monitoring

Plants will be maintained and monitored for a five-year establishment period. Monitoring data will assist the project team in adaptively managing project sites by identifying site specific variables that contribute to plant mortality. Maintenance and monitoring activities will include:

- Regularly inspect plantings from late spring through early fall for two years – as often as once per week, but no less that once per month for the first year, and once per month for the following two years.
- Maintain plantings at a minimum by weeding, repairing browse protectors and spraying of deer repellent if required.
- Irrigate plantings with most efficient and cost-effective means available; possibilities include temporary drip systems, DriWater, and hand watering.
- Monitor plant survival by species in October to inform future planting designs.
- Perform annual photomonitoring using the State Water Resources Control Board's SOP 5.2.3.

TASK 3 – CONTRACT ADMINISTRATION ANNUAL REPORTS ETC

Various administration duties including:

a. Business Manager (invoicing and budget tracking)

b. Project Technician (annual report, contract progress reports)

Reports shall be due: December 1, Each year. (7 Reports Total)

PROJECT SCHEDULE

Activity	Timeframe	
	Phase I	***Phase II***
Site reconnaissance/restoration planning and design (STRAW; RCD)	July/August 2012	N/A
Teacher Professional development - Watershed Week, Fall Session, Spring Session (STRAW)	July/August 2012 September/ October 2012 March/April 2012	July/August 2013 September/ October 2013 March/April 2013
Scheduling classes/crews to restoration sites (STRAW)	July-October 2012	July-October 2013
Finalize restoration planning and design (STRAW; RCD)	September/ October 2012	N/A
Conduct in-class presentations for restoration (STRAW)	September/ October 2012	September/ October 2013
Restoration implementation (STRAW; CCNB)	November 2012-March 2013	November 2013-March 2014
With input from Regional Parks and SCWA, design and install permanent interpretive signage along trails proximal to the restoration sites. (RCD)	November 2012-March 2013	N/A
On-going maintenance of project site (STRAW; CCNB)	April-October 2013	April-October 2014
Monitoring conducted with photos for project success determination (STRAW)	October 2013	October 2014
Annual Reports	November 2013	November 2014

BUDGET

Crane Creek Water Quality Improvement and Education Project		
	Phase I	**Phase II**
Revegetation Installation Subcontractors		
PRBO (STRAW)	$21,993	$20,702
SRCD	$2,500	$2,500
CCNB	$6,900	$6,900
Water Tank maintenance	$1,200	$0
Labor Match	$18,480	$18,480
Maintenance and Monitoring		
PRBO (STRAW)	$17,681	$3,744
Education		
PRBO (STRAW)	$8,041	$8,041
Interpretative Signage		
SRCD	$3,000	$0
Materials, design, installation	$3,700	$0
Contract Admin		
SRCD	$6,024	$6,024
Subtotal	$71,039	$47,911
Overhead at 10%	$7,104	$4,791
Total requested from WPP per phase	$78,143	$52,702
Total Labor Match		**$36,960**
Total for all phases		**$130,845**

2012 Watershed Partnership Program Project Funding Application

APPLICATION INFORMATION

Applicant/Lead Organization Address
PRBO Conservation Science
3820 Cypress Dr. #11
Petaluma, CA 94954

Contact Name and Title: John Parodi, Restoration Manager

Telephone: (707) 781-2555 ext.359

Email Address: jparodi@prbo.org

Signature and Date

Education and Outreach Director
PRBO Conservation Science

List of Other Participating Organizations
The project team consists of the following organizations: Southern Sonoma County Resource Conservation District and Prunuske Chatham, Inc.

PROJECT INFORMATION

Project Name: Flocchini Ranch Ellis Creek Restoration Project

Project Location: Ellis Creek Watershed

Project Budget: $72,641

Available Matching Funds: $22,800

STRAW and FARMS will contribute an in-kind match in the form of volunteer hours totaling $22,800 over the entire project. Restoration activities will engage four elementary and two high school classes of students from local Petaluma schools (6 teachers, 244 students, 35 community volunteers = 221 volunteers x 4 hours = 1140 hours x $20/hr = $22,800).

Total Requested through WPP: $49,841

Proposal Narrative

1. **Project Description**

PRBO Conservation Science's Students and Teachers Restoring A Watershed (STRAW) Project and Southern Sonoma County Resource Conservation District's (SSCRCD) FARMS Leadership Program propose to work with students, teachers, community volunteers, and professional restorationists on professionally-designed and student implemented riparian habitat restoration projects on Ellis Creek at the Flocchini Ranch. Ellis Creek is an approximately 5.7 mile long tributary to the Petaluma River, draining an area of approximately 9.4 square miles that is comprised of soils known for a very high erosion hazard. The site currently has sporadic overstory and understory vegetation, interspersed with large sections of annual and perennial grasses. In addition, sections of the drainage are experiencing varying degrees of erosion, resulting in sediment inputs into the system due to deep meanders along the denuded channel banks.

The proposed project on the Flocchini property is a continuation of SSCRCD's Ellis Creek Phase 3 project, funded by the Coastal Conservancy with landowner cost-share. Phase 3 work was completed in support of a large gully/bank repair for sediment control along a seasonal tributary to Ellis Creek, and included revegetation in isolated locations along Ellis Creek (areas targeted due to erosion potential). This proposed project will build on these recent efforts to create a continuous corridor, enhancing over 1200 linear feet of riparian waterway, improving the habitat quality of the reach, and further reducing sediment inputs into the Ellis Creek drainage.

This 1200 linear foot section will expand the project area within the property. Revegetation will be accomplished with locally-grown, appropriate native species. In addition, biotechnical work using willow cuttings to stabilize erosive banks will be installed as necessary. Classes will install approximately 100 native trees, shrubs and grasses. These species will be selected from studies of reference reaches within the Petaluma River Watershed under the guidance of PCI staff. Each year, grade school students will each receive at least one in-class presentation from STRAW staff and faculty about the project including watershed and restoration science as well as site specific training and details. Each of the teachers will 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. In addition, high school students enrolled in the FARMS Leadership Program will attend one field day each school year to work alongside the STRAW Program and learn about resource conservation practices on agricultural lands while taking part in this hands-on enhancement work.

This project will be installed in the 2012-2013 school year.

2. Project Benefits

This project will accomplish two primary goals. One is to enhance the riparian habitat structure and resulting function through the installation of a multi-plant palette that will include specific plant-based erosion control practices that will stabilize many of the denuded sections of the channel. Through revegetation, benefits will include the reduction of sediment inputs into the Ellis Creek drainage, thereby reducing the frequency of future sediment removal activities downstream. In addition, revegetation will dramatically enhance the habitat value of the upper Ellis Creek watershed, greatly extending the useable area of quality habitat.

The other is community involvement in the active enhancement of their watershed. Through PRBO's STRAW Project, students from the neighboring schools will play an active role in the enhancement of their community watershed, and learn about all of the factors that contribute to the management of their waterways in Sonoma County. Through the FARMS Leadership Program, high school students will learn about the various strategies for resource conservation on agricultural lands through participation in hands-on field trips and activities throughout the school year. They will have the opportunity to connect with professional mentors from a variety of careers and backgrounds, all working towards the same goals of resource conservation and sustainable farming practices.

3. How does this project advance goals for the Water Agency's Stream Maintenance Program and pertain to the 2012 planned maintenance work?

Restoration work on Ellis Creek 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 Ellis Creek system, resulting in a reduced need for sediment removal at downstream locations. This project pertains to the Sonoma County Water Agency's 2012 proposed stream maintenance work for localized scale sediment removal on Ellis Creek in Flood Zone 2A.

4. Location. Right of Way Access.

The project site is located at 4550 Adobe Road in Petaluma, CA. SSCRCD staff will negotiate landowner access for the duration of the project.

5. Project Partners.

PRBO 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. PRBO'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 22 miles of creek through 350 restoration projects involving more than 30,000 K-12 students who have planted over 27,000 native plants.

The Southern Sonoma County Resource Conservation District is a tax exempt Special District authorized by the State of California to conduct natural resource conservation projects, serving our local constituents and providing assistance to other local government and non-profit partners. Our purpose is to provide technical assistance, education and funding sources to empower landowners to be committed stewards working to improve water quality, prevent soil erosion and improve natural habitat. SSCRCD is currently in our 13th year of delivering the award-winning FARMS Leadership Program, educating local high school students about sustainable agriculture through hands-on field trips. FARMS Leadership is an intensive college prep program that offers 30 local high school students each academic year 7 field trips to various locations and opportunities to meet professional mentors from a variety of backgrounds.

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

6. **Project Schedule, including implementation, maintenance, and monitoring.**
   STRAW uses the following annual timeline for restoration, monitoring, and maintenance activities:

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

7. **Project Permitting.**
   No permitting is required for revegetation efforts.

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

   Minimum Project Dimensions:
   1200 ft x 25 ft = 30,000 ft^2
   Minimum Number of Plants Installed:
   100 container plants, plus willow sprigs (*Salix sp.*) as determined by design team.

The plant species will be selected from studies of reference reaches within Ellis Creek and Petaluma River watersheds 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 2013. Should survival of container plants fall below 80% by the end of the first year after installation of each phase, PRBO will replace dead plants to bring the totals up to 90% or more of the originally installed plants. However, PRBO is not responsible for damages due to vandals, fire, livestock, flooding, erosion or other disasters out of PRBO's control.

Maintenance and monitoring activities will include:

- Regularly inspect plantings from late spring through early fall for three years – as often as once per week, but no less than once per month for the first year, and once per month for the following two years.
- Maintain plantings at a minimum by weeding and repairing browse protectors.
- Irrigate plantings with most efficient and cost-effective means available; possibilities include temporary drip systems, DriWater, and hand watering.
- Monitor plant survival annually by species to inform future planting designs.
- Perform annual photomonitoring using the State Water Resources Control Board's SOP 5.2.3.

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 - Prunuske Chatham, Inc.

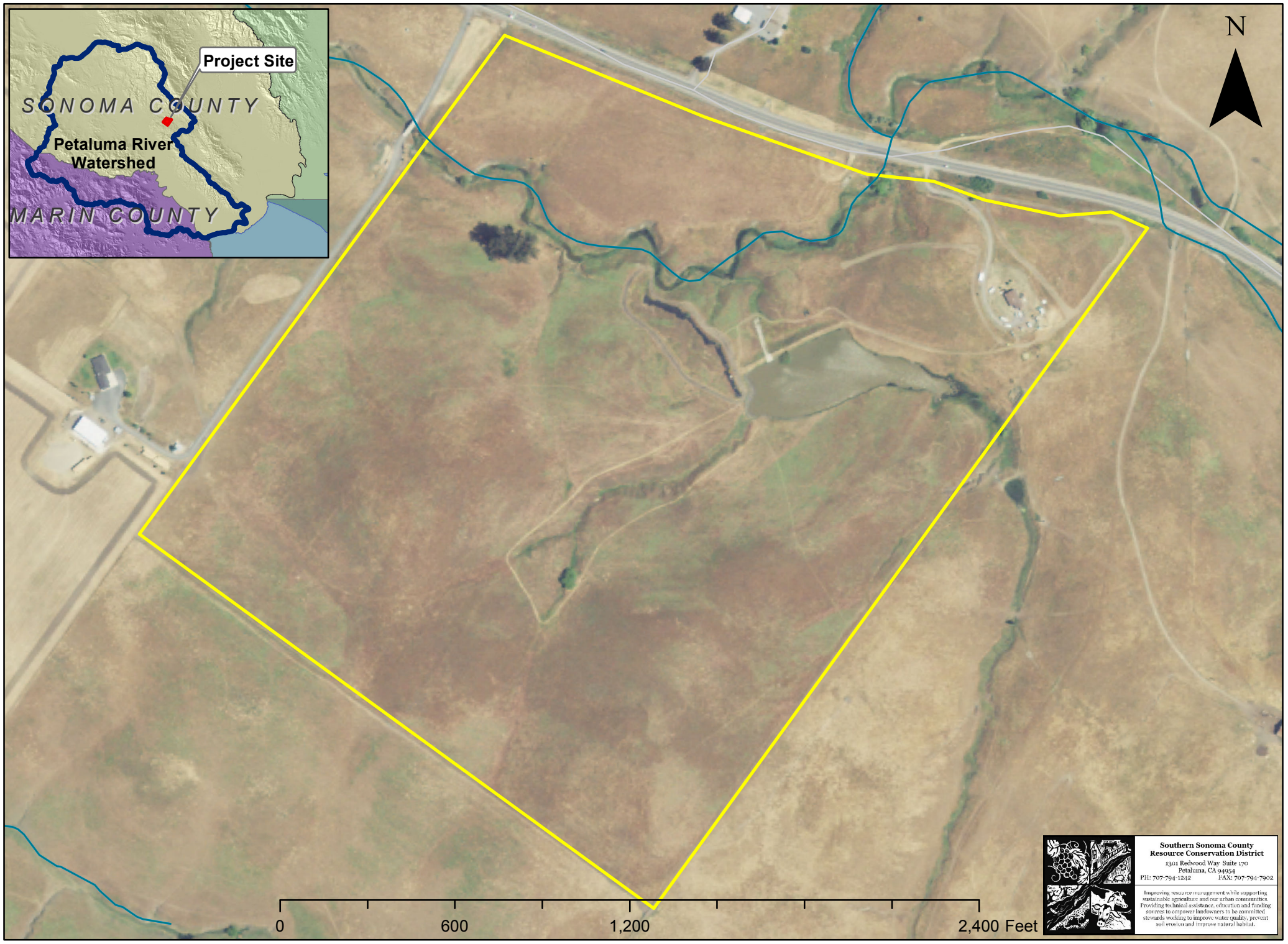
Attachment A

STRAW: Flocchini Ranch Restoration Project

PRBO Project Budget

		Phase I
LABOR		
	Installation	$16,204.05
	Maintenance & Monitoring	$15,447.64
	Education	$5,583.30
	Total Labor	**$37,235**
OTHER DIRECT COSTS		
Materials		
	Installation	$2,179.17
	Maintenance & Monitoring	$500.00
Mileage		
	Installation	$88.80
	Maintenance & Monitoring	$499.77
	Education	$61.05
Subcontractors		
	Prunuske Chatham, Inc	$2,070.00
	STRAW Faculty	$1,600.00
	Southern Sonoma County RCD	$5,607.00
	Total Other Direct Costs	**$12,606**
Total		**$49,841**
Overall Total Requested from WPP		**$49,841**
MATCH		
	Total STRAW match	$22,800
Overall Budget		**$72,641**

Flocchini Ellis Creek Revegetation Project



Southern Sonoma County Resource Conservation District
1301 Redwood Way Suite 170
Petaluma, CA 94954
PH: 707-794-1242 FAX: 707-794-7902

Improving resource management while supporting sustainable agriculture and our urban communities. Providing technical assistance, education and funding sources to empower landowners to be committed stewards working to improve water quality, prevent soil erosion and improve natural habitat.

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

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

PRUNUSKE CHATHAM, INC.

January 27, 2012

To Whom It May Concern:

I am writing to express my strong support for the Students and Teachers Restoring a Watershed (STRAW) work for riparian enhancement projects that help the Sonoma County Water Agency and its partners manage for healthy streams.

Prunuske Chatham, Inc. (PCI) is honored to have been working with STRAW since its inception. With STRAW's outstanding in-house skills and considerable experience, we are thrilled that our role now is primarily limited to assisting with restoration design and maintenance recommendations.

The STRAW program offers ongoing support to schools, teachers, and other community members to build a strong network of local expertise capable of informed action. STRAW not only accomplishes important ecological work, it provides K-12 students with role models of environmental professionals, and with hope. Please support STRAW's work in Sonoma County streams.

Sincerely,
Prunuske Chatham, Inc.

Liza Prunuske
President

400 MORRIS STREET, SUITE G · SEBASTOPOL CA 95472 · 707 824-4600 · FAX 707 824-6854