# **SCVWD Stewardship Grant**



# **FOLAW Hacienda Mercury Signs Project**

# **Planning Document**



By Michael Boulland

Friends of Los Alamitos Watershed

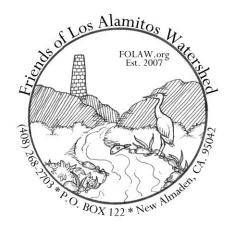
11.20.12

- 2 June 2012 Added photos of interpretive signs
- 5 June 2012 Added photos of 3 possible sites
- 13 June 2012 Final Draft interpretive signs added

First Quarter Report

- 16 June 2012 Site Locations edited
- 21 June 2012 Rob Courtney Meeting
- 20 June 2012 Bill Burr / Dan Hill Meeting
- 27 June 2012 Robin Schaut
- 14 October 2012 Burr /Hill Meeting
- 7 November 2012 Rich Robinson / CAD Designs

# **Revision History**



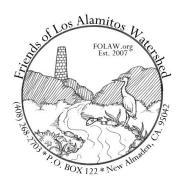


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# The Friends of Los Alamitos Watershed

## **Mission Statement**



Mercury is one of the top water and fish contamination issues in California and in the nation. The San Francisco Bay Area is among the world's most significant areas of environmental mercury concern and science. Public outreach is a consistent challenge for government and non-government agencies and working groups.

FOLAW, a 501(c)3 non-profit corporation was founded in 2008. The missions for which this corporation was organized are:

1) to foster the creek protection and restoration of the Los Alamitos watershed surrounding New Almaden;

2) to promote community awareness of creek restoration and protection issues through the use of outreach demonstrations programs;

3) to share educational research information; and

4) to support community and/or public agency creek projects where they are the most significant of the total community benefit.



# Background

## LOS ALAMITOS WATERSHED STEWARDSHIP GRANT

## **Project Description**

FOLAW is concerned that the latest environmental information about mercury is not readily available in an easy-to-understand format, especially the latest findings concerning the different chemical compounds of mercury and the potential impacts of these compounds to the environment and to human health. Our goal is to educate residents of the Los Alamitos Watershed and to present the environmental issues in a nonadvocacy and neutral manner. FOLAW also believes that better interpretive information and distribution pathways will help residents and users of the watershed better understand the issues and how to support successful studies, plans, and projects for watershed protection.

# Project Overview Objectives



• Educational Outreach Interpretive Signs

In recognition that the public may not know the impact of mercury on their health and the environment, these signs will specifically address the current scientific issues involved in the health of humans, animals, birds and fish. We will design, manufacture and install several science-based interpretive signs in cooperation with the Santa Clara County Parks and Recreation Department.

The following proposed interpretive signage topics have been adopted for drafts mockups:

1. Mercury Compounds

2. Why is methylemercury in our fish?

3. How did/does mercury get to New Almaden?

4. How can we reduce the amount of mercury compounds in the Los Alamitos Watershed?

Future Signs 5. The World of Mercury 6. Sources

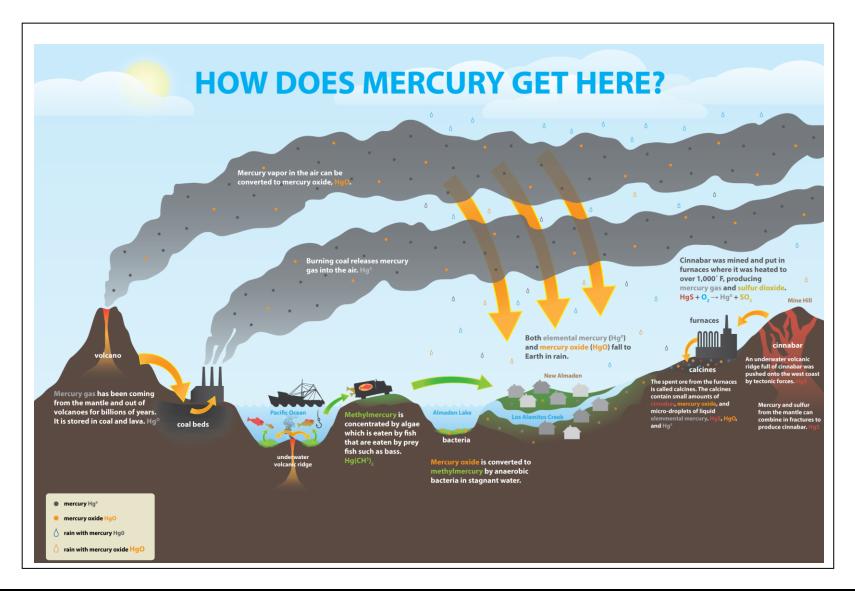
# **Interpretive Mercury Signs**

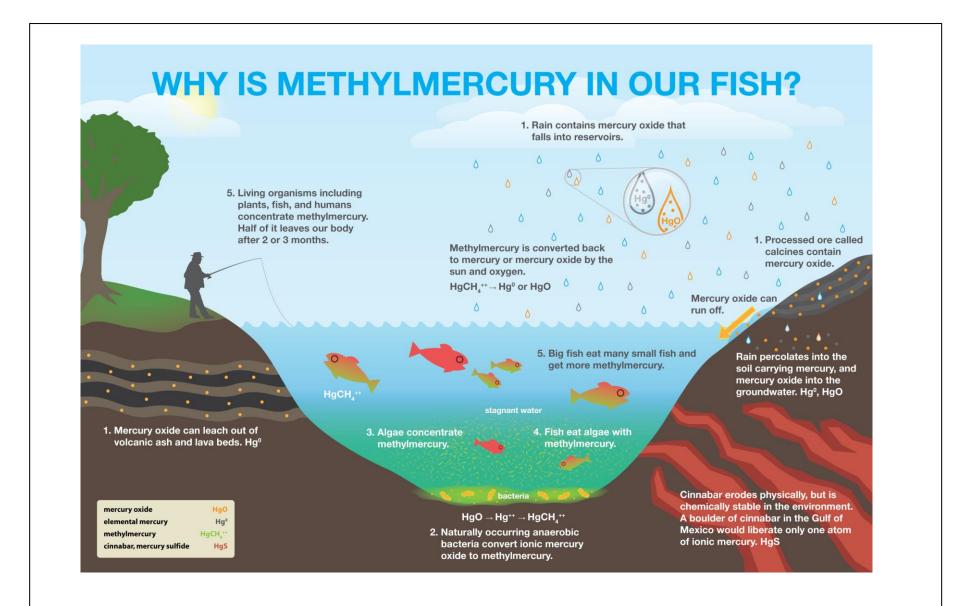
### The following final interpretive signage topics have been adopted:

The following 3 sets of double sided signs are designed:

- Set I Panel A Sign 1- HOW DOES MERCURY GET TO HERE? with Panel B – Sign 2 – WHY IS METHYL MERCURY IN OUR FISH?
- Set II Panel C Sign 3 TODAY'S METHODS WE USED TO REDUCE METHYL MERCURY IN OUR WATERSHED? Pt1 with Panel D - Sign 3 – TODAY'S METHODS WE USED TO REDUCE METHYL MERCURY IN OUR WATERSHED? P1 continued
- Set III Panel E Sign 4 MERCURY & COMPOUNDS OF MERCURY with Panel F – Sign 5 - WHY MERCURY AND IT'S COMPOUNDS IS A CONCERN?







# What are Today's Methods Used to Reduce Mercury in the Watershed?

### **Soil and Erosion Management**

#### **Stream Bed Deposits**

Calcines are rocks that have been heated in a furnace. They contain small amounts of cinnabar, mercury oxide, and elemental mercury.

During major winter storms calcine waste is pushed down stream by high flows of storm water. This continued erroding process cuts through the old calcine streambed deposits and pushes calcine waste futher down stream. Using the Restoration Method calcines deposits are removed and the streambank is restored back to its original natural landscape.



Calcine cliff in Jacque Gulch stream before restoration method

#### Mining Sites Removal Method



The 1890's furnaces used at the Hacienda de Beneficio, was in the field ahead of you.

Cinnabar ore, liquid mercury, and waste rock (calcine) were all spilled here during mining operations. Early in mine history, calcine was used to firm up muddy roads, and was used around the area as clean fill.

#### **Capping Method**

In the above photo, you see the same 1890 legacy reduction site field covered using the capping method.



In the late 1990's, after the legacy mining waste was removed, the field was encapsulated (capped) by a 3' layer of clean fill and topped with a clay cap during the site cleaned up.

#### **Burial Method**



The Burial Method was used to prevent calcine waste from eroding into the streams from the Hacienda site. Calcine waste was taken up to the top of Mine Hill where bulldozers buried the calcine in an open pit. Later calcine from other parts of the park (Jacques Gulch) were added to the site, then a final soil and clay cap covered all the buried calcine.



Reports and source information downloaded between September 2011 and October 2012 from the mercury information webpages of the following agencies maybe view at the FOLAW blog site at http://foiawwordpress.com or folaw.org

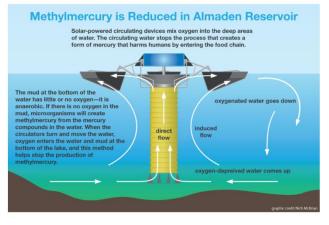
# What are Today's Methods Used to Reduce Mercury in the Watershed?

### **Reservoirs**

**Solar Water Circulators Method** 



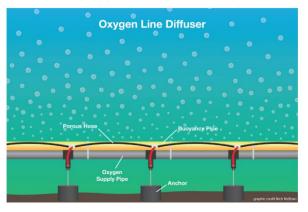
Methylmercury is made by bacteria in the stagnant bottom of lakes and reservoirs where rotting leaves and biota use up almost all of the oxygen. Stirring the lake water brngs more oxygen to the bottom water. This drastically cuts the number of anaerobic bacteria, and thus the amount of methylmercury in the water.



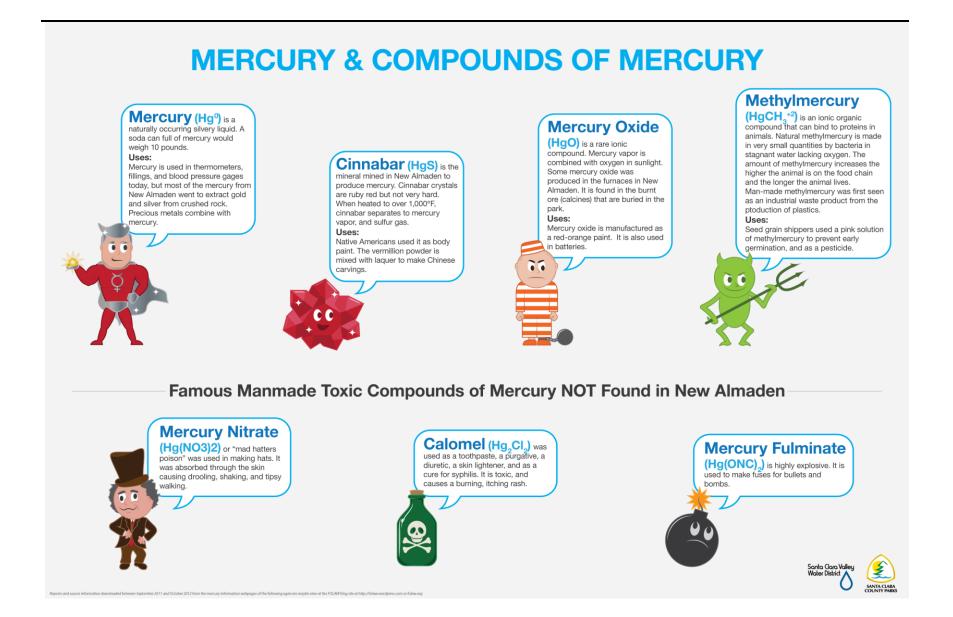
#### **Oxygenation Method**

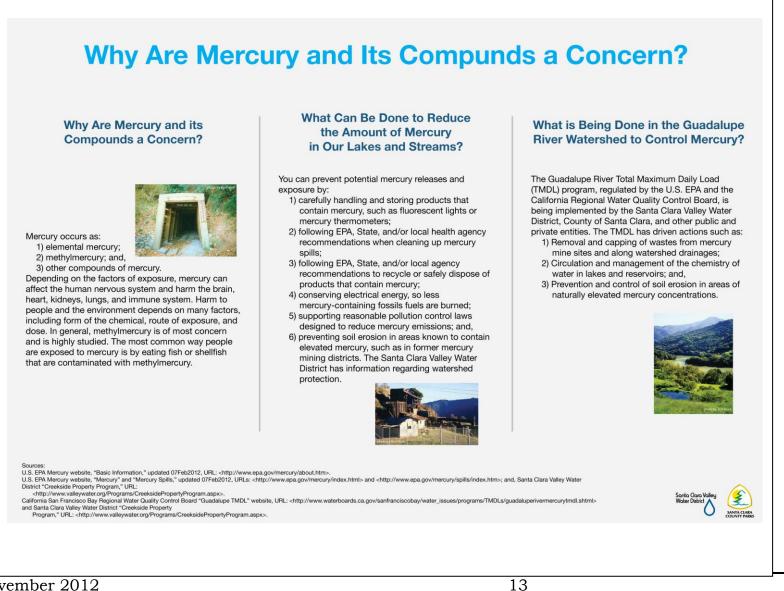


The Oxygenation method planned for Almaden Reservoir will produce oxygen in a trailer as shown. Added oxygen will then be pumped into the reservoir by circulating water through a contact chamber on the surface and then be distributed by pipes to the bottom. Pumping more oxygen to the bottom of the lake will help prevent an increase of methylmercury.











## Specific Location of Project

#### Educational Outreach Signs

Interpretive signs will be installed inside the Hacienda parking lot. They will be located at the south west side picnic area next to the entrance to the overflow parking. The location has been approved by Senior Ranger Bill Burr of the Santa Clara County Park department.

The site is in an excellent viewing location that is next to the Hacienda Trail head where the Deep Gulch and Mine hill trails begin.

While not part of this project, these signs could also be installed near other county facilities, such as Almaden Lake, Almaden Reservoir, the New Almaden Community Club and other public areas in the county.







Site is located near: -The new restrooms -Near the street entrance and water trough and drinking fountain - North west shade area and entrance to the overflow parking lot.

### Site Location Givens

1) Construction work will affect the timing of the mounting of the signs.

- a. Deep Gulch Remediation Project
- b. New Restrooms

2) Sign location is based on present layout before construction.

3) Additional features such as water fountain, extra benches and covers

may be added later.

4) FOLAW's support for additional features will depend on the amount of funds left over after cost of design, manufacturing and mounting.

5) Volunteers may do the work to weld, construct and install the display

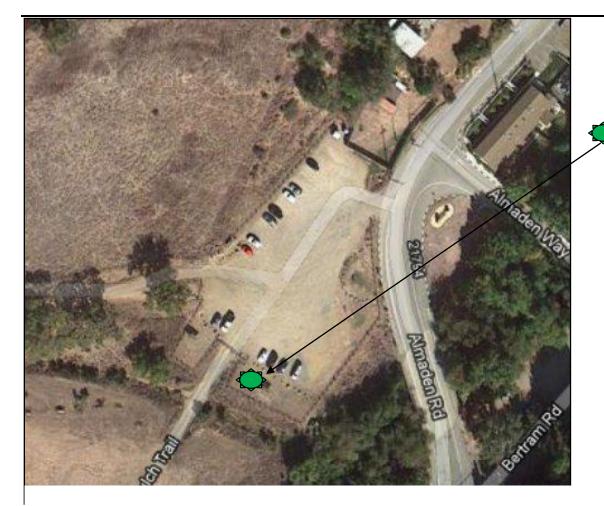
6) Signs need to be placed in an area where park users can see them.

7) Project was recognized during the Coastal CleanUp Celebration on September 15, 2012.

8. A sponsoring sign indicating support from the County Parks, FOLAW and Santa Clara Water District needs to be posted near the project.

9. These interpretive signs are intended not to make the Hacienda Parking lot a destination site.





Mercury Interpretive Sign Layout South West Picnic Area

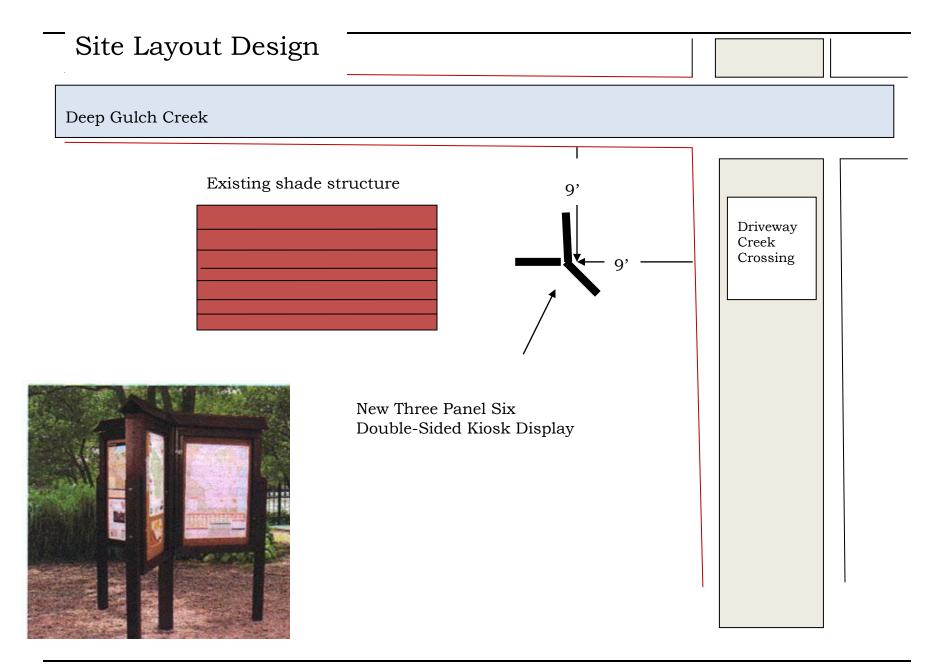
#### Aerial View of Hacienda Parking Lot and sign project location

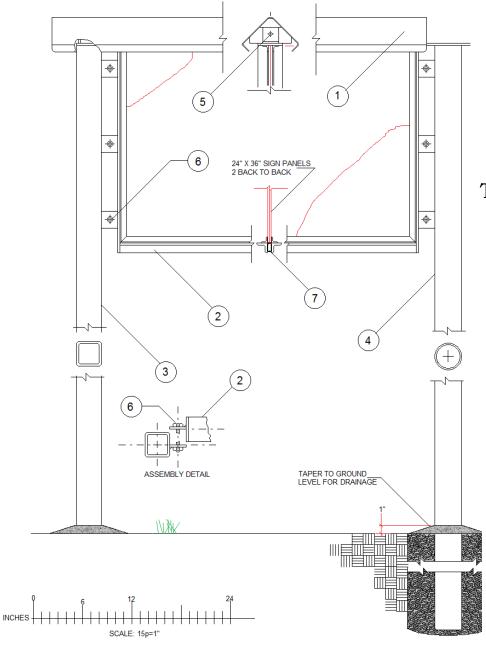
Present location of a shade structure, split rail fence and picnic area.

The interpretive signs will be located near the original site where the first mercury was discovered in New Almaden .

The location is close to trail heads.





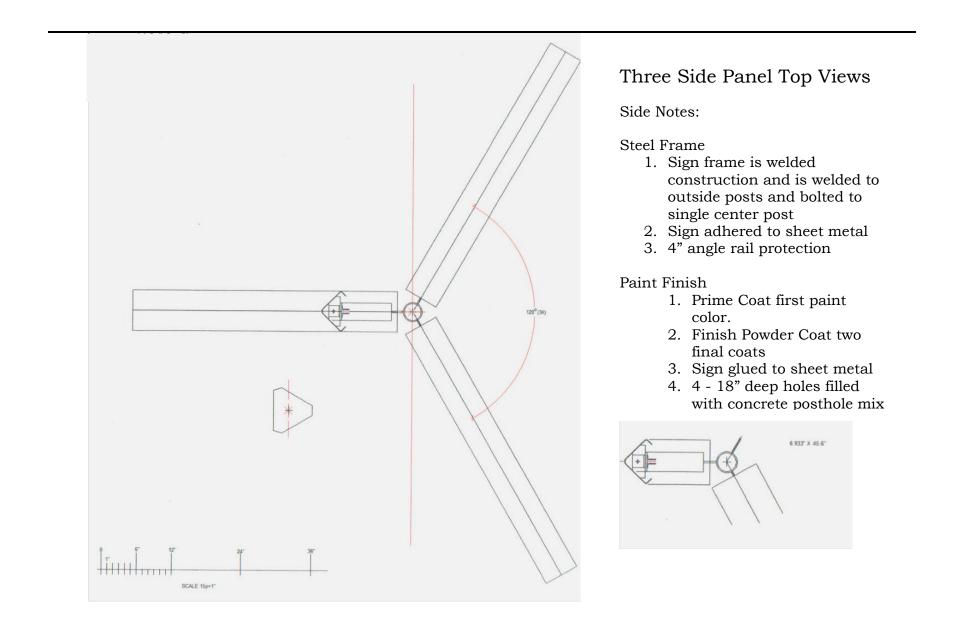


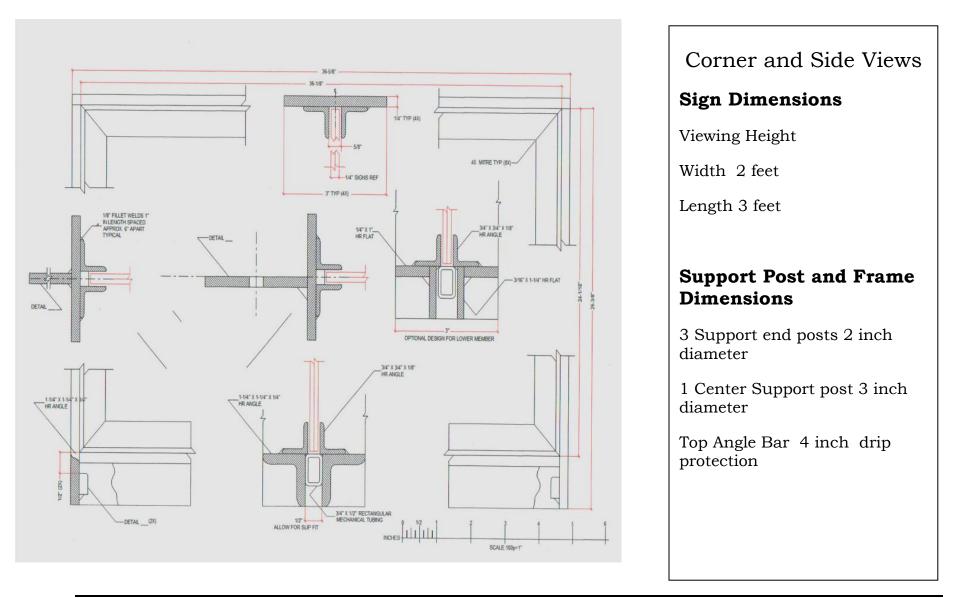
# Rich Robertson's Steel Construction Design Blue Prints and Drawings

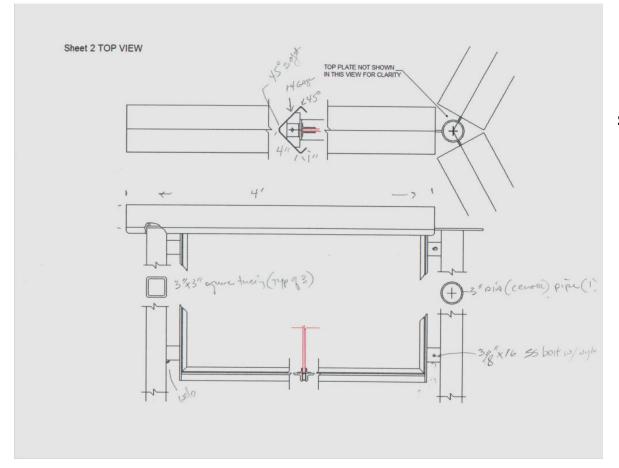
Front Facing Panel View

Three Panel Six Double-Sided Kiosk Display







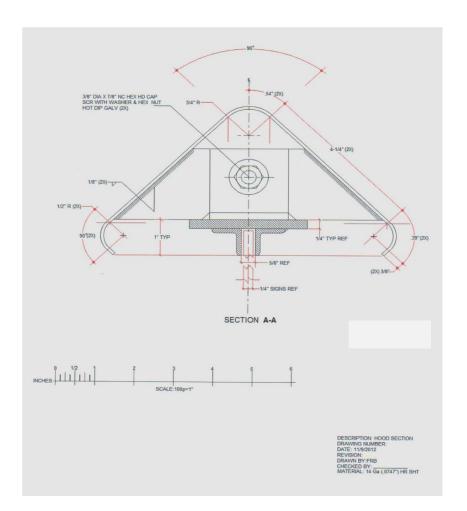


### Top and Side Panel Views

#### Givens

Sign display must meet the following conditions:

- 1. Must be constructed to last 20 years
- 2. Constructed as a three sided kiosk
- 3. Made of natural material that can easily be purchased locally
- 4. Designed to have safe edges
- 5. Allows the display to be viewed on the front side as well as the backside
- 6. Must meet County park and grant requirements
- 7. Costs of the display signs must be reasonable
- 8. Joining points need to be considered
- 9. Color of the display must match existing park colors
- 10. No movable doors
- 11. Easy access to accommodate signage updates
- 12. Must be Powder Coated



Side View of Hood Section Rain Cap



Suggested Project Materials:				
Sign materials : Steel				
Est. cost \$1100.00				1,100
Display/mounting mater	ials : In ground Po	wder Coated painted	brown iron steel	
Sign printing : N	Netal Est. cost S	\$1000.00		1,000
Powder Coating	Est. Cost	550		550
Project Budget:				
Graphic designer Nicho	las McBrian	Est. Cost \$9	00.00	900
Artist	Est.Cost:\$	800.00		800
Fabrication: Rich	n Robertson Black	Iron Design	Est. Cost \$990.00	990
Installation (who?): Ricl	n Robertson and F	OLAW Volunteers		-
Est. d	cost: \$Included in I	Fabrication quote		
Yearly maintenance (wh	o?): FOLAW mer	nbers and park volur	iteers	
Est. cost: > \$50.	00			
Reserve mainter	nance fund: SCWE	O Stewardship Grant		
Est. d	cost: \$1000.00			
Total cost of Kios	k			
Display				\$2650.00
Total cost of mate	erials, labor, design g	graphics and printing		
for a Three Doub	le Sided Panel Kiosk	Display including 6 sign	15	4,240
Total Estimated Project	Budget \$4500.00			

# **Comparison Vendors**

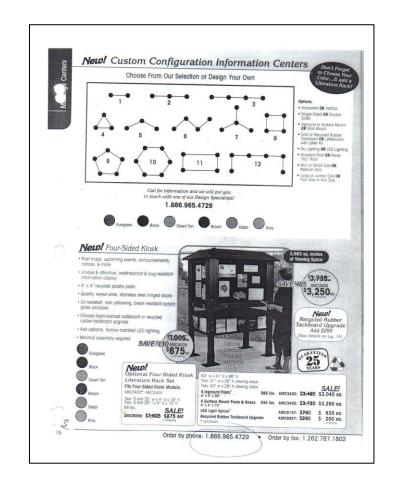
#### Kirby Built Signs

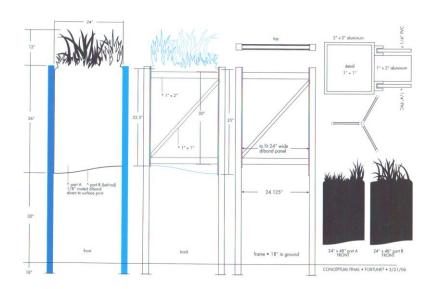
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#### **School Outfitters**

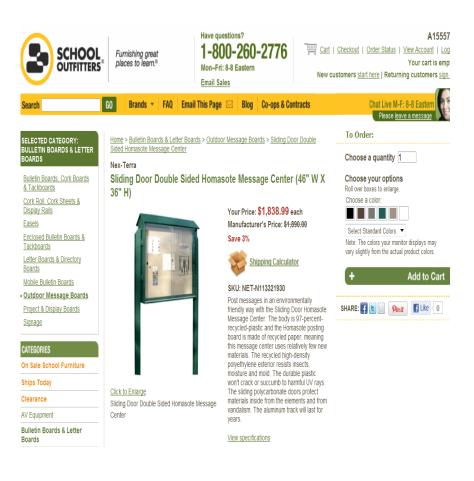
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	www.schooloutfitters.com	Phone: 888-619-69:	22		Quote # C	UO1371851	
	1-800-260-2776 3736 Regent Ave. Cincinnati, Ohio 45212-3724	Fax: 888-619-6923 david.chang@schoo	loutfitters.co	m	Valid through Page 1 of 1	1: Oct 25, 2012	
Bill To FOLAW Mike Boulland 21600 Almade	ın Rd			ulland Imaden Rd			
Phone: Fax:	95120-4312 USA ulland@yahoo.com		Phone:	Fax:	0-4312 USA I@yahoo.com		
SKU #	Description		Qty	List	% off	Your Cost	Ext. Co
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Items shipping	from: Shipping Via:	Cost		Shippi	ng & Handlir	ig: \$3	327.97
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## Fred Fortune Design



					QUOT
Rich Robinson	Black Iron I	Design			
1573 Puerto Vallartz San Jose, Ca. 95120 Phone 1 408 375 31 Richrobertson15730 TO Mike Boulland Friends of Los. P.O. Box 122 New Almaden 1 408 268 2703	62 sbcglobal.net Alamitos Watersh Ca 95042	ed			DATE: NOVEMBER 20, 2
SALESPERSON		JOB	PAYMENT TE	PAYMENT TERMS	
Rich		FOLAW	Due on rece	ript	
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	Material Iron/ 1. % 2. 2 3. 3 4. 4		8'	1000.00	1000.00
				SUBTOTAL SALES TAX	1000.00

	<b>Comparison Quotes</b>
Kirby Custom Sign Gallery	
3 Message Centers – Large Horiz Double sided with two in ground Additional installation fees not in	l post –Plastic
	\$5,108.83
School Outfitters	
3 Sliding Door Double Sided Hor Plastic and recycled paper	
Additional installation fees not in	
	\$5,104.45
<b>Rich Robertson Black Iron Design</b> Black (Brown Paint) iron steel d 3 doubled sided signs / installed Custom designed to SCCP&R star Powder Coated	
Fred Fortune Design	
Black (Brown Paint) iron steel Design – Wrong size Additional installation fees not in	ncluded
	\$1500.00

#### FOLAW - Stewardship Grant Hacienda Sign Display Meeting Agenda

- 1. Purpose of the meeting is to:
  - a. Submit the final SVCWD Stewardship Grant- FOLAW Hacienda Mercury Sign Project Planning Document
  - b. Obtain a Staff Lead/Liaison signature
  - C.
- 2. Next Steps
- 3. Calendar
- 4. Action
  - a. Include this agreed Senior Park Ranger and Senior Park Maintenance sign displays recommendation in the SCVWD Stewardship Grant FOLAW Hacienda Mercury Signs Project Planning Document

