H & L Partnership & Furlan Fish Screen Project

Project Information

1. **Proposal Title:**

   H & L Partnership & Furlan Fish Screen Project

2. **Proposal applicants:**

   Henry Richter, H & L Partnership
   Emile Furlan, Furlan

3. **Corresponding Contact Person:**

   Susan Sutton
   Family Water Alliance
   P.O. Box 365 Maxwell, CA 95955
   530 438-2026
   fwa@mako.com

4. **Project Keywords:**

   Anadromous salmonids
   Endangered Species
   Fish Passage/Fish Screens

5. **Type of project:**

   Fish Screen

6. **Does the project involve land acquisition, either in fee or through a conservation easement?**

   No

7. **Topic Area**:

   Fish Screens

8. **Type of applicant:**

   Landowner

9. **Location - GIS coordinates:**

   Latitude: 38.482

   Longitude: -121.421

   Datum:

Describe project location using information such as water bodies, river miles, road intersections, landmarks, and size in acres.

Sacramento River approximately one mile east of Knights Landing, Sutter County, California, river mile 88.6, east bank.

10. **Location - Ecozone:**

    3.4 Colusa to Verona

11. **Location - County:**

    Sutter

12. **Location - City:**

    Does your project fall within a city jurisdiction?

    No

13. **Location - Tribal Lands:**

    Does your project fall on or adjacent to tribal lands?

    No

14. **Location - Congressional District:**

    District 3 - Congressman Ose

15. **Location:**

    California State Senate District Number: District 4 - Senator Johannessen

    California Assembly District Number: District 2 - Assemblyman Dickerson

16. **How many years of funding are you requesting?**

    2 years

17. **Requested Funds:**
    a) Are your overhead rates different depending on whether funds are state or federal?

       No

       If no, list single overhead rate and total requested funds:

       Single Overhead Rate: 12%

       Total Requested Funds: 361,773.29

    b) Do you have cost share partners already identified?

Yes

If yes, list partners and amount contributed by each:

H&L Partnership & Furlan $ 40,197.03

c) Do you have potential cost share partners?

No

d) Are you specifically seeking non-federal cost share funds through this solicitation?

No

If the total non-federal cost share funds requested above does not match the total state funds requested in 17a, please explain the difference:

18. **Is this proposal for next-phase funding of an ongoing project funded by CALFED?**

No

Have you previously received funding from CALFED for other projects not listed above?

Yes

If yes, identify project number(s), title(s) and CALFED program.

98-FC-20-16630	**Phase 1: Richter Bros. Fish Screen Progect Feasibility Investigation**	**CALFED**

19. **Is this proposal for next-phase funding of an ongoing project funded by CVPIA?**

No

Have you previously received funding from CVPIA for other projects not listed above?

No

20. **Is this proposal for next-phase funding of an ongoing project funded by an entity other than CALFED or CVPIA?**

No

Please list suggested reviewers for your proposal. (optional)

John Lucas Hydravolt 916-371-7510 None

Scott Tucker Pelger Mutual Water District 530-662-6219 sctuck@pacbell.net

Roger Thomas Golden Gate Fishermens Assoc. 415-999-3206 None

21. **Comments:**

Environmental Compliance Checklist

H & L Partnership & Furlan Fish Screen Project

1. **CEQA or NEPA Compliance**
   a) Will this project require compliance with CEQA?

      Yes
   b) Will this project require compliance with NEPA?

      No
   c) If neither CEQA or NEPA compliance is required, please explain why compliance is not required for the actions in this proposal.

2. **If the project will require CEQA and/or NEPA compliance, identify the lead agency(ies).** *If not applicable, put "None".*

   CEQA Lead Agency: California Dept. of Fish and Game
   NEPA Lead Agency (or co-lead:)
   NEPA Co-Lead Agency (if applicable):

3. **Please check which type of CEQA/NEPA documentation is anticipated.**

   CEQA
   XCategorical Exemption
   -Negative Declaration or Mitigated Negative Declaration
   -EIR
   -none

   NEPA
   -Categorical Exclusion
   -Environmental Assessment/FONSI
   -EIS
   Xnone

   If you anticipate relying on either the Categorical Exemption or Categorical Exclusion for this project, please specifically identify the exemption and/or exclusion that you believe covers this project.

   Class 3 (Section 15303)

4. **CEQA/NEPA Process**
   a) Is the CEQA/NEPA process complete?

      No

      If the CEQA/NEPA process is not complete, please describe the dates for completing draft and/or final CEQA/NEPA documents.

      The draft will be completed upon comfirmation of funding of this project. The CEQA process will fall under the CA Dept of Fish and Game 1603 permit application.

b) If the CEQA/NEPA document has been completed, please list document name(s):

5. **Environmental Permitting and Approvals** (*If a permit is not required, leave both Required? and Obtained? check boxes blank.*)

LOCAL PERMITS AND APPROVALS

Conditional use permit

Variance

Subdivision Map Act

Grading Permit

General Plan Amendment

Specific Plan Approval

Rezone

Williamson Act Contract Cancellation

Other

STATE PERMITS AND APPROVALS

Scientific Collecting Permit

CESA Compliance: 2081

CESA Compliance: NCCP

1601/03 Required

CWA 401 certification Required

Coastal Development Permit

Reclamation Board Approval Required

Notification of DPC or BCDC

Other

FEDERAL PERMITS AND APPROVALS

ESA Compliance Section 7 Consultation Required

ESA Compliance Section 10 Permit

Rivers and Harbors Act

CWA 404 Required

Other

PERMISSION TO ACCESS PROPERTY

Permission to access city, county or other local agency land.
Agency Name:

Permission to access state land.
Agency Name:

Permission to access federal land.
Agency Name:

Permission to access private land.
Landowner Name:

6. **Comments.**

Land Use Checklist

H & L Partnership & Furlan Fish Screen Project

1. **Does the project involve land acquisition, either in fee or through a conservation easement?**

   No

2. **Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?**

   No

3. **Do the actions in the proposal involve physical changes in the land use?**

   No

   If you answered no to #3, explain what type of actions are involved in the proposal (i.e., research only, planning only).

   The actions to implement the project will include securing funding, planning and design of the screens, obtaining permits, drive piling, install pump platform and structure, install the fish screen, and monitor the screen after installation.

4. **Comments.**

   None

Conflict of Interest Checklist

H & L Partnership & Furlan Fish Screen Project

Please list below the full names and organizations of all individuals in the following categories:

- Applicants listed in the proposal who wrote the proposal, will be performing the tasks listed in the proposal or who will benefit financially if the proposal is funded.
- Subcontractors listed in the proposal who will perform some tasks listed in the proposal and will benefit financially if the proposal is funded.
- Individuals not listed in the proposal who helped with proposal development, for example by reviewing drafts, or by providing critical suggestions or ideas contained within the proposal.

The information provided on this form will be used to select appropriate and unbiased reviewers for your proposal.

Applicant(s):

Henry Richter, H & L Partnership
Emile Furlan, Furlan

Subcontractor(s):

Are specific subcontractors identified in this proposal? No

Helped with proposal development:

Are there persons who helped with proposal development?

Yes

If yes, please list the name(s) and organization(s):

Russ Berry **Intake Screens, Inc.**

Susan Sutton **Family Water Alliance**

Debra Lemburg **Family Water Alliance**

Don Trieu **MBK Engineers**

Comments:

Budget Summary

H & L Partnership & Furlan Fish Screen Project

Please provide a detailed budget for each year of requested funds, indicating on the form whether the indirect costs are based on the Federal overhead rate, State overhead rate, or are independent of fund source.

State Funds

Year 1												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
1	Construction & Installation of Fish Screen						284306.00			284306.0		284306.00
2	Engineering Review, Inspection, Documentation & Permit Costs						24000.00			24000.0		24000.00
3	Accounting & Grant Reconciliation						3500.00			3500.0		3500.00
4	Project Management & Coordination	800	32000.00	8000.00	2000.00	2500.00				44500.0	5340.00	49840.00
		800	32000.00	8000.00	2000.00	2500.00	311806.00	0.00	0.00	356306.00	5340.00	361646.00

Year 2												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
1	Monitoring & Adjustments, as needed						15000.00			15000.0		15000.00
2	Outside Monitoring Contractor						6000.00			6000.0		6000.00
3	Accounting & Grant Reconciliations						1000.00			1000.0		1000.00
4	Project Management & Coordination	272	10880.00	2720.00	1000.00	1761.00				16361.0	1963.32	18324.32
		272	10880.00	2720.00	1000.00	1761.00	22000.00	0.00	0.00	38361.00	1963.32	40324.32

Year 3												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grand Total=401970.32

Comments.

Budget Justification

H & L Partnership & Furlan Fish Screen Project

Direct Labor Hours. Provide estimated hours proposed for each individual.

Program Manager - 536 hours Project Coordinator - 536 hours

Salary. Provide estimated rate of compensation proposed for each individual.

Program Manager - $60 per hour Project Coordinator - $20 per hour

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

Program Manager - 25% Project Coordinator - 25%

Travel. Provide purpose and estimate costs for all non-local travel.

8,696 miles @ .345 p/mile = $3000 Meetings with landowner, contractor, permitting, engineers, onsite construction and installation documentation, agency inspections, monitoring

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

Office Supplies - $2130.50 Computing - $2130.50

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

Year One Task 1 Construcation and Installation of fish screen. 1a - Project design of fish screen - 30 days at $760 per day. 1b - Reinforcement of facility - 34 days @ $760 per day. 1c - Fabrication and installation of docking inlet, track and service platform - 61 days @ $760 per day. 1d - Fish Screen Construction and Installation - 86 days at $760 per day. Task 2 - Engineering, review, inspections & documemtation, & permits - Permit Costs = $1500 one time fee; Engineering responsible for reviewing and approving all engineering designs for assurance that fish screen criteria is met; on-site inspector at key milestones during project; assuring contractor performance meets design requirements; overall engineering technical oversight - 225 hours @ $100 p/hour, which includes expenses, such as mileage, telephone, certification documents, etc. Task 3 - Accounting and grant reconciliations. CPA setup of fund accounting, monthly grant reconciliations and journal entries, payroll adjustments and justifications = 2 days per month @ $145.00 per day. Year Two Task 1 - Contractor monitoring and system adjustments, if required = monthly dive inspections by contractor, reporting, system cleaning, and system adjustments if needed - 20 days @ $760 per day. Task 2 - Outside Monitoring. Outside dive contactor for visual inspections, underwater inspections, underwater video documentation, and reporting - 5 days/dives @ $1200 per day/dive. Task 3 - Accounting & grant reconciliations. Monthly grant reconciliations and journal entries, payroll adjustments and justifications - 1 day per month @ $83 per day.

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than $5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items.

None.

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentatons, reponse to project specific questions and necessary costs directly associated with specific project oversight.

Program Manager - $32,160 - Tasks include provide outreach and education related to fish entrainment and potential solutions for small diverters, which includes press releases, newsletter fish forum, etc; coordination of meetings with contractor, engineers, state and federal agencies, and landowner; preparation and initiation of landowner contracts, engineering, outside monitoring contractor, accounting, etc; Project presentations as needed; integrate project with the Sacramento River Small Fish Screen Program; on-site project inspections and documentation; semi annual and final program reporting; tours and onsite seminars as needed. Project Coordinator - $ 10,720 - Tasks include assisting with coordination and facilitation of meetings with contractor, engineers, state and federal agencies, and landowner; assisting with newsletter fish forum; responsible for collecting permit information and development of applications, communications and filing with respective permit agencies; fiscal quarterly reporting and project billing; on-site inspections and project documentation.

Other Direct Costs. Provide any other direct costs not already covered.

None.

Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs). Overhead should include costs associated with general office requirements such as rent, phones, furniture, general office staff, etc., generally distributed by a predetermined percentage (or surcharge) of specific costs.

Overhead rate 12% of Project Management only, which includes rent, phones, and general office staff

Executive Summary

H & L Partnership & Furlan Fish Screen Project

The objective of this proposal is to install a self cleaning, cylindrical, brushed intake fish screen with a retrieving system. This project will screen three adjacent incline propellor pumps located on the same support structure. The two upstream pumps are owned and operated by H&L Partnership, and the downstream pump is owned and operated by Furlan. This project is located south of Knights Landing Bridge, Sutter County, California, and is located on the east side, left bank of the Sacramento River at river mile 88.6. The approach to implement the project will include securing funding, planning and design of the screens, obtaining permits, construction, installation, and monitoring. As part of this project the landowner will hire an engineer to provide certification of engineering designs and on-site construction inspections. The screen that has been selected has been tested in the Sacramento River as part of the Sacramento River Small Diversion Fish Screen Program. Three of these screen designs are currently operational and through monitoring have demonstrated that this technology meets the unique conditions of the Sacramento River, and because of the retrievable feature its operation and maintenance is cost effective for the landowner. This screen design meets National Marine Fisheries Service and California Department of Fish and Game fish screen criteria. Project uncertainties include the following: variability in river conditions during time of installation; permitting; and funding. The expected outcome is to assist in the restoration of the fisheries resources, while at the same time providing the landowner with a reliable, cost effective retrievable fish screen system. The project addresses CALFED's high priority goal of screening diversions on the Sacramento River, reducing entrainment, and advancing screen technology by demonstrating the highly successful retrievable feature in screen design. This project also addresses CALFED's objective to screen 25% of all smaller unscreened diversions in the Sacramento River Basin.

Proposal

H & L Partnership

H & L Partnership & Furlan Fish Screen Project

Henry Richter, H & L Partnership
Emile Furlan, Furlan

H & L PARTNERSHIP & FURLAN– SACRAMENTO RIVER FISH SCREEN PROJECT – THREE PUMPS
CALFED Proposal
September 21, 2001

A. PROJECT DESCRIPTION

Project: H & L Partnership & Furlan Fish Screen. This project will screen three adjacent incline propeller pumps located on the same support structure. The two upstream pumps are owned and operated by H & L Partnership and the downstream is owned and operated by Furlan. A self-cleaning fish screen and retrieval system supplied by Intake Screens, Inc. will be mounted and attached to the pumps using a trough and track configuration.

Location: This project is located south of the Knights Landing Bridge in Sutter County, California, on the east side, left bank of the Sacramento River, located at river mile 88.6.

Potential Impact to Fishery Resource: The Sacramento River traditionally produces some of the largest runs of salmon and steelhead of any West Coast River system. However, over recent years there has been a significant decline in certain chinook salmon and steelhead stocks. Currently, the winter-run chinook is listed as endangered; the spring-run chinook is listed as threatened, and steelhead is also listed as threatened under the state and federal Endangered Species Acts. While the causes of these declines are numerous; ocean conditions, over fishing, dams, water quality, and habitat loss or degradation; the seasonal diversion of irrigation water coincides with the seaward migration of these struggling fish populations, resulting in a loss of juvenile fish by entrainment as well. The Colusa to Verona, ecozone 3.4, is known to have numerous diversions which divert water during juvenile migration. The consolidation of diversions lessens the impact on juvenile fish during the migration period.

Partnerships: This project will become part of a community-based effort to screen family-owned, agricultural diversions along the Sacramento River with effective fish protection technology. It is a public-private partnership comprised of volunteer landowners, Family Water Alliance (FWA), National Marine Fisheries Service (NMFS), NOAA Community Based Restoration Program (NOAA), National Fish and Wildlife Foundation (NFWF), USDA Natural Resources Conservation Service (NRCS), Bureau of Reclamation (BOR), Department of Water Resources (DWR), U.S. Fish & Wildlife Service (USFWS), and California Department of Fish & Game (CDFG).

Cost/Benefit Comments: This project will consist of three distinct phases: 1) pre-project planning, conceptual design, and organization, 2) custom manufacturing, installation, and operations, and 3) post-installation evaluation, monitoring, and further refinements as needed.

The short-term benefit of this grant is to install one retrievable screen on three small slant pumps to make on pumping facility. Throughout this project, the landowner will receive technical, educational, and financial assistance in all phases of screening. This includes planning and design of screens, obtaining permits, construction, installation, monitoring, and funding securement.

This screening effort has three long term benefits:

- It will enhance or compliment the efforts of CALFED to reduce entrainment of endangered fish species and enhance several other agency efforts to aide salmon recovery along the Sacramento River as cumulative screening efforts will increase the number of salmon returning to spawn in these areas. Over time, the death of many millions of fish may be prevented through proliferation of this screening effort.

- It will benefit the landowner by assuring current water rights and meeting ESA requirements.

- While the up front cost may seem high, the long term operations and maintenance will be reasonable and affordable.

1. Problem

The Sacramento River traditionally produces some of the largest runs of salmon and steelhead of any West Coast River system. However, over recent years there has been a significant decline in certain chinook salmon and steelhead stocks. Currently, the winter-run chinook is listed as endangered; the spring-run chinook is listed as threatened, and steelhead is also listed as threatened under the state and federal Endangered Species Acts.

Literature cited in Section G of this proposal indicates that while individually small diversions do not substantially impact fish populations, the cumulative effect of multiple diversions substantially impacts the fishery resource. Thus, by the screening of diversions, fish numbers are positively impacted.

Extensive efforts to screen major diversions on the Sacramento River are ongoing and considered a high priority for realization of significant increases in salmon populations. While most large diverters have access to proven technology for intake screening, the same level of design is not available to small diverters (up to 40 cfs) on the Sacramento River. Landowners are hesitant to screen diversions without a proven method for screening. Through this project, the landowner will receive technical and

financial assistance in all phases of screening. This includes planning and design of screens, obtaining permits, construction, installation, monitoring, and funding.

In the summer of 1995, Richter abandoned a centrifugal pump and moved the point of diversion from that location downstream to an existing diversion. This diversion is 800 feet downstream from the abandoned pumping site.

H&L Richter & Furlan had a formal Consultation for Water Right Application 13646, performed in Sutter County. The consultation indicated that the project could avoid winter run Chinook salmon jeopardy through the installation, operation, and maintenance of a fish screen, which meets DF&G standards. H&L Richter & Furlan over the past 6 years have made numerous attempts to obtain funding to no avail. Unfortunately, at this point in time with the poor agricultural economy, they will require funding assistance.

H&L Partnership and Furlan have applied to CALFED for funding in 1999. This request was subsequently rejected. While CALFED was interested in screening this diversion the Technical Committee review comments noted that the recommended technology was a "new twist on technology" and that it needed further review. Additionally, comments from other reviewers noted the unusually high cost per cfs. However, the requirement to screen the diversion is still in place and in an attempt to meet this directive, H&L Partnership and the Furlan's has sought out other contractors and received a proposal for a retractable screen produced by Intake Screens, Inc.

Intake Screens, Inc. proposal meets the requirements for retractability for small diversions to allow for ease of maintenance and operation, as well as all fish screening criteria. In addition, this proposal is approximately **42%** of the cost of the original proposal, submitted by Borcalli & Associates, Inc. The ISI proposal is $401,970 vs. the Borcalli & Associates, Inc., proposal of $950,000.

2. Justification

Not applicable

3. Approach

Project and Site Description – Fish Screen Installation:
Richter Brothers (Richter), operating as H&L Partnership, and Emile and Simone Furlan (Furlan) own an operate three adjacent inclined propeller pumps located on the left bank of the Sacramento, River, approximately one mile east of Knights Landing (river Mile 88.6). The three pumps are installed side-by side (3-ft center to center) on the same support structure and will be screened to 25 cfs. The two upstream units are owned and operated by Richter; the down stream is owned and operated by Furlan.

Richter and Furlan divert water from the Sacramento River to irrigate approximately 700 acres of farmland. Both Richter and Furlan have licenses with the State Water

Resources control Board (SWRCB) to divert water from the river, April to October. The existing diversion has a nominal combined capacity of 25 cfs.

Description of Construction & Components:
The self cleaning fish screen and retrieval system supplied by INTAKE SCREENS, Inc. (ISI) will be mounted and attached to the pumps without pulling the pumps. The actual down time for the pumps will be less than one week.

Divers will attach the prefabricated docking inlets to the end of the existing pump support troughs. One bed of support piles will be driven at the ends of the docking inlet to support the added weight of the fish screen.

The existing pump trough support piles that are located approximately 7ft. from the end of the pumps will be trimmed and the horizontal trough support beam will be relocated under the troughs so as not to interfere with the movement of the screens up and down the retrieval track.

Divers will install the first three track sections (6' X 10' long). The track will be attached to the docking inlet and the pump conductor troughs. The next two sections will also be mounted on the troughs. The next three sections will begin to arch up (about 5 degrees per section) to the service platform. This curving will approximately match the existing levee grade. The end of the track will be attached to the existing pump motor support structure. The track will be supported away from the troughs on two beds of new piles. A deck with handrails will be mounted to the end of the existing pump platform to provide a screen staging and maintenance platform.

The screen's power panel and hydraulic pump will be mounted adjacent and connected electrically to the pump power panels.

The fish screen with its umbilical will be mounted on the retrieval track and moved up and down the track using an electric winch.

Fish Screen and Retrieval Components:
INTAKE SCREENS, Inc.'s (ISI) Retrievable Fish Screen System is comprised of three main components. They are in order of installation:

1. The docking inlet and trash rack
2. The retrieval track and service platform
3. The fish screen and rolling manifold

The Docking Inlet & Trash Rack:
The docking inlet with trash rack attaches to extensions of the pump conductor troughs. These extensions isolate and seal the pump bowel inlets causing all incoming water to pass through a trash rack (1" louvers C to C). This trash rack covers the top of the docking inlet and is always in place to keep debris from entering the pump conductor. This trash rack will also allow pumping in an emergency if the fish screen malfunctions and has been pulled up to the service platform.

The Retrieval Track and Service Platform:
It may be necessary to remove the screen from its pumping position on the docking inlet to the service platform for safe storage during periods of high runoff, as well as for periodic inspection and maintenance. Divers may be needed in the spring to remove large debris that has accumulated over the winter.

This screen retrieval system adds a set of track rails on top of the pump conductor troughs. These tracks extend from the docking inlet at the mouth of the pump to a service platform near the pump motors at the top of levee. The track section mounting brackets allow room for pump column flange clearance. This flange clearance will allow the pumps to be pulled for maintenance without having to remove the track. The docking inlet will also be designed to allow for pump removal and replacement without the aid of divers.

This system will enable one person to remove the screen and manifold from its pump attachment, pull it up to the service platform, then lower it and reattach it back at the mouth of the pump. No crane will be needed.

The Screen and Rolling Manifold:
The screen will be a double cylinder, 36" diameter X 54" long (84 sq. ft. - 27.5 CFS @ .33 approach velocity). Cylinder construction will be of 304 stainless steel # 69 continuous slot wedgewire with a 0.068" slot opening (57% net open area). This design will satisfy the criteria for anadromous salmonoids set forth by the California Dept. of Fish & Game and the National Marine Fisheries Service for self cleaning screens (April 14, 1997 Rules).

The ISI Intake Screen and manifold unit will have four track wheels creating a cart. This screen and manifold unit will be mounted on the track which will allow it to be moved from its storage position on the levee service platform to the pumping position at the end of the pump docking inlet and back again using a 1 HP electric winch. This rolling manifold will also have rollers on the under side of the track flange to keep it from lifting up while the screen is being lowered into the pumping position. When the screen and manifold are lowered they will roll down the track until the opening on the bottom of the manifold has covered, sealed and locked on to the trash rack flanged opening on the docking inlet. All incoming water will then have to pass through the wedge wire fish screen to enter the pump. There will be a submersible normally open magnetically activated switch located inside the screen manifold. This switch will close and show continuity up at the control panel when the screen and manifold are properly locked in place over the magnet actuator imbedded in trash rack. The screen can also be locked in place when it is pulled to the top of the track for service or inspection.

Two hydraulic hoses along with the sensor switch electric cable will be shrouded in a stainless steel braid to create the screen power and monitoring umbilical. As the screen is being lowered into place this umbilical will be fed into a protective channel that is located between the tracks. As the screen is being retrieved, the umbilical will

be pulled up and coiled on the service platform. The winch will be easily detached for safe storage when not in use.

A high torque marine duty hydraulic motor using food grade hydraulic oil will be used to rotate the cylinder at a rate of approximately 4-rpm. There will also be a RPM indicator to verify rotation of the screen cylinder. A light in the control panel blinks for every revolution.

The screen surface will be thoroughly cleaned by rotating the cylinder CW & CCW, causing its surface to pass by, and be in contact with a stationary spring-loaded brush bar that is mounted parallel to the screen surface. The screen will be situated in the current longitudinally to take advantage of any sweeping current parallel to the screen's surface. The cleaning may be periodical or continuous. A timer and relays will be used to control the cleaning cycle and duration.

An electric motor driven hydraulic pump unit is used to power the hydraulic motor in the screen. This hydraulic pump can be supplied with AC or DC motors. At the Richter site a transformer will be used to step down the 480 VAC at the pump plant control panel to 120 VAC. All of the components in the ISI control panel power pack will operate off 120 VAC. All control components will be housed in a lockable enclosure near the pump's control panel. Also in this enclosure will be the timer, valves, rotation indicator and manifold proximity indicator.

To inhibit corrosion, all structural components, that are not stainless steel, will be painted with an epoxy coating.

4. Feasibility

The goal of this project is to prevent entrainment mortality of juvenile fish species by installing a state-of-the-art, retractable self-cleaning fish screen at this diversion site. The selected screen has been proven to incorporate reliable fish screen technology, with reasonable operation and maintenance requirements. A total of three retractable screens have been installed on the Sacramento River. Two of these systems service a capacity of 15 cfs, and have been monitored over the past year under the CALFED Monitoring Program. A third larger system servicing 20 cfs has recently been installed, and will be incorporated into the CALFED Monitoring Program in the upcoming year. These screens incorporate the design features and improvements recommended by the National Marine Fisheries Service and USDA Natural Resources Conservation Service. The screen has a proven track record and, thus, demonstrates no major technical obstacles.

There are no foreseen legal obstacles as the landowner is in full consent of this project. The landowner agrees to agency access to his property upon confirmation of funding.

All regulatory permits will be obtained prior to implementation. They include: a California Department of Fish and Game (CDF&G) 1603 Stream Bed Alteration

Permit, a Section 7 consultation through the National Marine Fisheries Service, Army Corps of Engineers Nationwide Permit #4, Department of Water Resources State Reclamation Board Permit (if applicable), landowner access agreements, and State Water Quality Control Board CWA 401 (if applicable). In addition, this project will comply with all NEPA and CEQA requirements. These permits will be obtained upon confirmation of funding by CALFED. Staff has full knowledge, experience and contacts with key permit personnel in each agency, or appropriate liaisons for permit application and filings.

All work planned on this fish screen project is contingent on the fabrication and installation of the fish screen by the contractor during the seasonal limits of the permits. Weather and river conditions will also impact the timing of installations.

5. Performance Measures:

To complete this project, the following performance milestones are identified as follows:

Milestone 1: Project Design

1.1 Site visit. Debris removal and measurement
1.2 Preliminary dive at project location and site survey, preliminary plan.
1.3 Contractor submits proposed drawings for engineering review and approval by agencies and project engineering staff.
1.4 Design acceptance.
1.5 Final cost estimate.
1.6 Contracts developed and signed by landowner, contractor, and Family Water Alliance.

Milestone 2: Permits

2.1 All permits are applied for and obtained using approved design.

Milestone 3: Reinforcement of Facility

3.1 Conductor trough support piling modification and securing.
3.2 Fabricate and installation of pump motor extensions.

Milestone 4: Fabrication & Installation

4.1 Fabricate docking inlet and track.
4.2 Installation of docking inlet and first 30’ of track.
4.3 Installation of remaining 50’ of track
4.4 Fabricate and installation of service platform.

Milestone 5: Fish Screen Construction and Installation

5.1 Fabricate fish screen.
5.2 Installation of fish screen unit.
5.3 Installation of rolling manifold and power pack.

Milestone 6 – Monitoring

6.1 Monthly monitoring of system with minor adjustments as needed.
6.2 Develop Operations and Maintenance Manual

Milestone 7: Periodic Engineering Review during Construction and Installation

Milestone 8: Ongoing Project Management

6. Data Handling and Storage

Family Water Alliance will be the clearinghouse for information and data gathered from this project and all information will be available at their office. The following information will be collected and stored for this project:

- Documentation of the planning, design, installation and monitoring of the installed fish screen.
- Photograph documentation of pre and post installation.
- As-built drawings.
- All monitoring information including videos, monthly logs and necessary repairs or system adjustments.
- Quarterly fiscal reports, programmatic reports, and semi-annual reports.
- Final report upon completion of the fish screen installation.
- Semi-annual reports on monitoring for one year.
- Final operations and maintenance report after one year of installation.

7. Expected Products/Outcomes

The expected outcome is the installation of a fully operational, retractable, self-cleaning fish screen.

8. Work Schedule

None of the tasks listed are considered separable from any other portion of the project. Incremental funding of this project is not feasible or desired. Important milestones are noted in the aforementioned performance measures. Tasks are broken down for the entire project. It is anticipated that construction and installation will primarily occur between April and November 2003, weather and permits permitting.

Work Schedule

Tasks/Milestones	Dates	Payments
Milestone 1: Project Design		
1.1 Site visit. Debris removal and measurement		
1.2 Preliminary dive at project location and site survey, preliminary plan.		
1.3 Contractor submits proposed drawings for engineering review and approval by agencies and project engineering staff.		
1.4 Design acceptance.		
1.5 Final cost estimate.		
1.6 Contracts developed and signed by landowner, contractor, and Family Water Alliance.	4/2003	Payment Due
Milestone 2: Permits	5/2003 to 8/2003	
2.1 All permits are applied for and obtained using approved design.		
Milestone 3: Reinforcement of Facility	8/2003 to 9/2003	
3.1 Conductor trough support piling modification and securing.		
3.2 Fabricate and installation of pump motor extensions.		Payment Due
Milestone 4: Fabrication & Installation		
4.1 Fabricate docking inlet and track.		
4.2 Installation of docking inlet and first 30' of track.	8/2003 to 9/2003	
4.3 Installation of remaining 50' of track		Payment Due
4.4 Fabricate and installation of service platform.		Payment Due
Milestone 5: Fish Screen Construction and Installation		
5.1 Fabricate fish screen.		
5.2 Installation of fish screen unit.		
5.3 Installation of rolling manifold and power pack.	8/2003 to 10/2003	Final Payment Due
Milestone 6 – Monitoring		
6.1 Monthly monitoring of system with minor adjustments as needed.	11/2003 to 10/2004	Payment Due Quarterly
6.2 Develop Operations and Maintenance Manual		
Milestone 7: Periodic Engineering Review during Construction and Installation	4/2003 to 11/2004	Monthly
Milestone 8: Ongoing Project Management	4/2003 to 11/2004	Monthly

B. APPLICABILITY TO CALFED ERP GOALS AND IMPLEMENTATION PLAN AND CVPIA PRIORITIES

1. ERP Goals and CVPIA Priorities

This proposal addresses the CALFED ERP Goal of implementing fish screen projects on the Sacramento River to reduce entrainment, demonstrate retrievable screen technology and consolidate pumping facilities. The species targeted for recovery include the Winter-Run, Spring-Run, Late-Fall-Run, Fall-Run of Chinook Salmon, Steelhead and Splittail. Protections will focus on the fry stage of the species. This screening project will contribute to CALFED's goal of screening 25% of all smaller unscreened diversions in the Sacramento Basin.

The screening of diversions will protect endangered fry as they migrate out to sea. There are close to 800 small diverters on the Sacramento River identified as stressors. While many of the larger diverters have been screened or are in the process of being screened, the small diversions have not been screened due to lack of technology and funding.

2. Relationship to Other Ecosystem Restoration Projects

The small screen program will enhance or complement the efforts of CALFED to reduce entrainment of endangered fish species at large and small diversions along the Sacramento River. This project will enhance several other agency efforts to aid salmon recovery along the Sacramento River. This is all part of a cooperative effort among several agencies including California Department of Fish and Game's Unscreened Diversion Program, the Anadromous Fish Screen Program of the CVPIA, and USDA Natural Resource Conservation Service's Fish Screen Program. This project will complement other restoration work within the Sacramento watershed, as well as restoration work on Deer Creek, Mill Creek, Battle Creek and Butte Creek.

3. Request for Next-Phase Funding

Not applicable.

4. Previous Recipients of CALFED or CVPIA Funding

H&L Partnership & Furlan applied for funding from CALFED to screen their diversion in 1998. They received $49,000 for Phase 1 in funding for the development of an anadromous fish screen project feasibility investigation, prepared by Borcalli & Associates, Inc in August of 1999. The project did not go through to fruition for numerous reasons. The Cooperative Agreement number was 98-FC-20-16630.

5. System-Wide Ecosystem Benefits

This project not only complements state and federal programs and projects, but also complements projects within the upper watershed in the Sacramento River including Deer Creek, Mill Creek, Battle Creek and Butte Creek. These projects will benefit by increasing the number of salmon returning to spawn in these areas.

6. Additional Information for Proposals Containing Land Acquisition

Not applicable.

C. QUALIFICATIONS

H&L Partnership & Furlan

Richter Brothers operation as H&L Partnership, and Emile and Simone Furlan (Furlan) own and operate three adjacent pumps on the Sacramento River approximately one mile east of Knights Landing, Sutter County California, at river mile 88.6. The combined capacity of this facility is 25 cfs. The facility irrigates approximately 700 acres of farmland.

H&L Partnership & Furlan are interested in the progressive development of fish screens for its river pumping facility and will continue this effort until their facility is screened. The owners place a very high value on the fishery resources while maintaining their farming operations.

Family Water Alliance

Family Water Alliance (FWA) is a 501(c)(3) non-profit corporation established in 1991. The primary mission of FWA is to educate the public about rural issues. Six years ago, Family Water Alliance participated in the initiation of the Sacramento River Small Diversion Fish Screen Program, and has been a driving force in the screening of small diversions along the Sacramento River. During this time, Family Water Alliance has provided overall project management, outreach and education, funding through grants, and represented the landowner on key issues relating to the screening program. Family Water Alliance's primary motto, "As long as there are fish in the river there will be water on the land," demonstrates FWA's commitment to the protection of the fisheries resource.

Intake Screens, Inc.
State of California Contractors License No. 796197 – Class C-61

Russell Berry, the Vice President of Intake Screens, Inc. has been involved in the designing and manufacturing a variety of intake screens for 20 years. In 1979, Berry started a custom welding and fabrication business. At the same time he began to manufacture rotating back-washed drum screens under the name of Plum Creek Manufacturing. These were used mostly in the agricultural and turf markets. Selling Plum Creek to the Claude Laval Corporation (Lakos) in 1990, Berry moved to Fresno, California and worked for a Laval unit until 1995. While working for Laval

he developed the "Trash Blaster," a stationary drum screen with rotating backwash header, and a rotating drum screen with air purge.

In 1995, he left Laval and designed and manufactured the ISI solar powered Brushed Cone, self-cleaning fish screens now in use in Suisun Marsh. Berry has designed hundreds of site specific screen installations, has two patents, and one patent pending pertaining to self-cleaning intake screens. Intake Screens, Inc. (Berry's new company) currently has completed three ISI Retrievable Fish Screen System installations on the Sacramento River ranging from 15 to 20 cfs. All systems are currently working and have demonstrated that the ISI retrievable features and brush cleaning mechanism address the adverse conditions of the Sacramento River. Berry attributes his successes to an innate talent for design, fabrication, and a desire for excellence. Berry regularly consults a network of associate experts/engineers in order to design the best solution for specific problems.

Davis Machine Shop, Inc.
State of California Contactors License No. 776953 – Class A
Davis Machine Shop, Inc. is a family run corporation and has been in existence since 1914. Over the 85 years in servicing the agricultural community relating to pump manufacturing and installation, Davis Machine has prided themselves in providing top quality workmanship at a low price. It has been the family's goal to meet the needs of the local farm community in all areas of irrigation. Davis Machine has a customer base of approximately 400 and services the community within a 50 mile radius of their headquarters in Meridian, California.

Davis Machine is a custom manufacturing machine shop that specializes in pump design, manufacture, and installation of commercial, domestic, and agricultural pumps. Davis Machine typically works on submersible, centrifugal, low-head mixed flow and propeller pumps. Davis Machine is capable of performing all types of pump work within their own shop facilities without the use of sub-contractors, the only exception being cement work, pressure grouting, and some excavation jobs.

In 2000, Davis Machine completed five levee crossings, many of which were permitted through the Department of Water Resources (DWR). Davis Machine is aware of and conforms to DWR permits and works with farmers and agency personnel to meet the permit requirements.

MBK Engineers
MBK Engineers is a consulting civil engineering firm whose main emphasis is water resources. Its three main areas of specialization include water supply planning, flood control and water rights. MBK represents many water diverters located in the Sacramento/San Joaquin Delta watershed. This association has resulted in MBK personnel involvement in many existing and planned fish screen facilities. The services provided include feasibility design and environmental/regulatory review. The list of projects includes Pelger Mutual Water Company, Deseret Farms Wilson Ranch, Maxwell Irrigation District, Thousand Acre Ranch, Browns Valley Irrigation District, Boeger Family Farms, and Hastings Island Land Company.

Gilbert Cosio, PE, is a Principal Engineer with MBK. MBK's work in regard to fish screen facilities is performed under his supervision and management. His experience includes performance of all aspects of fish screen design and construction including topographic surveys, preliminary design and cost estimates, design plans, vendor and contractor coordination, construction inspection and performance monitoring. In addition, his fish screen expertise includes environmental and regulatory aspects such as environmental assessments, CEQA coordination and documentation, and coordination with federal and state regulatory agencies.

Don Trieu, PE, is an Engineer with MBK under the supervision of Gilbert Cosio. His experience includes performance of all aspects of fish screen design and construction including topographic surveys, preliminary design and cost estimates, design plans, and environmental and regulatory requirements.

Sierra View Divers
State of California Contractors License No. 757776
Co-owner Scott Smith started his own company in 1986. His company, North State Divers, was involved in north state hydro-electric and irrigation needs for eight years. In 1994 he met Doug Maxfield, who in that same year started Sierra View Divers and the two joined in partnership. Since 1994 Sierra View Divers has developed to a full service dive company that is locally owned and operated in Northern California. Sierra View Divers has established a base of experience, manpower, and equipment that enables them to offer a full complement of dive services. The staff of Sierra View Divers has been diving commercially for 15 years and is made up of professional divers who have been trained in every aspect of diving operations. This includes working in the Gulf of Mexico in the oil fields. Their customers include: The U.S. Department of the Interior, The U.S. Bureau of Reclamation, U.S. Fish and Wildlife, Pacific Gas and Electric, and many local agencies.

Commercial training was received from the College of Oceaneering in Wilmington, California. Additional training was received from P.A.D.I. and N.A.U.I. Divers have also received CPR, Advanced Lifesaving, and First Responder training from the American Red Cross, Confined Spaces Entry and Rescue Training. Sierra View Divers has all equipment required to perform diving operations to a depth of 150 feet. Dives of greater depth or requiring special equipment will require advance notice

Sierra View has previous and current experience in fish screen installations, maintenance, and monitoring.

D. COST

1. Budget

See web budget.

2. Cost-Sharing

The landowner will provide 10% cost-sharing of project total. H&L Partnership & Furlan have been contributing to the restoration fund of the 1991 Central Valley Improvement Act. To date they have contributed over $45,000.00. It is the consensus of H&L Partnership & Furlan that if farmers must mitigate for water contracts, and if they have viable mitigation projects on their own property, that such mitigation funding should apply directly to their own projects. Currently, farmers must pay mitigation funds to the Bureau of Reclamation and then try to fund their own projects on their own property. So in effect, they are duplicating mitigation. Based on this, H&L Partnership & Furlan believe there is full justification for getting 90% funding from CALFED to complete this project. As they have contributed and will continue to contribute to the CVPIA fund.

E. LOCAL INVOLVEMENT

Education and outreach by Family Water Alliance will notify neighboring landowners of the pending project. This project will be incorporated into the Sacramento River Small Diversion Fish Screen Program. Information and outreach activities notify the public about positive actions that farmers are taking to help the resource.

Information about the project will be included on the Internet web page: www.fwafishforum.com. This website will address the salmon recovery issue and specifically the small diversion screening project. FWA distributes a quarterly newsletter called the Fish Forum, which is used to educate people on fish screening issues. The Fish Forum is distributed throughout the Sacramento Valley and reaches over 5,200 people in at least seven counties. FWA will coordinate activities relating to fish screening projects to reach as broad and diverse an audience within the Sacramento valley and along the Sacramento River Ecological Management Zone as possible.

There will not be any negative third party impacts. Positive impacts include protecting the farming industry in the Sacramento valley by allowing farmers to continue diverting water, maintaining community economic stability, and offer new job opportunities such as contractors, dive teams, manufacturers and installers of fish screen and related project materials.

F. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

(1) H&L Partnership & Furlan agrees to comply with standard terms and conditions as identified in Attachments D and E, except as noted in this proposal. H&L Partnership & Furlan further agrees to comply with standard public works/construction contract clauses (4099) and additional standard clauses (4099a).

(2) Either party may terminate this agreement by a written notice to the other party at least 60 calendar days in advance of the effective date of the termination. FWA the grant administrator and the contractors will be entitled to reimbursement for expenses

incurred prior to termination. FWA and the contractors will be reimbursed for obligations/commitments that cannot be cancelled at time of termination.

G. LITERATURE CITED

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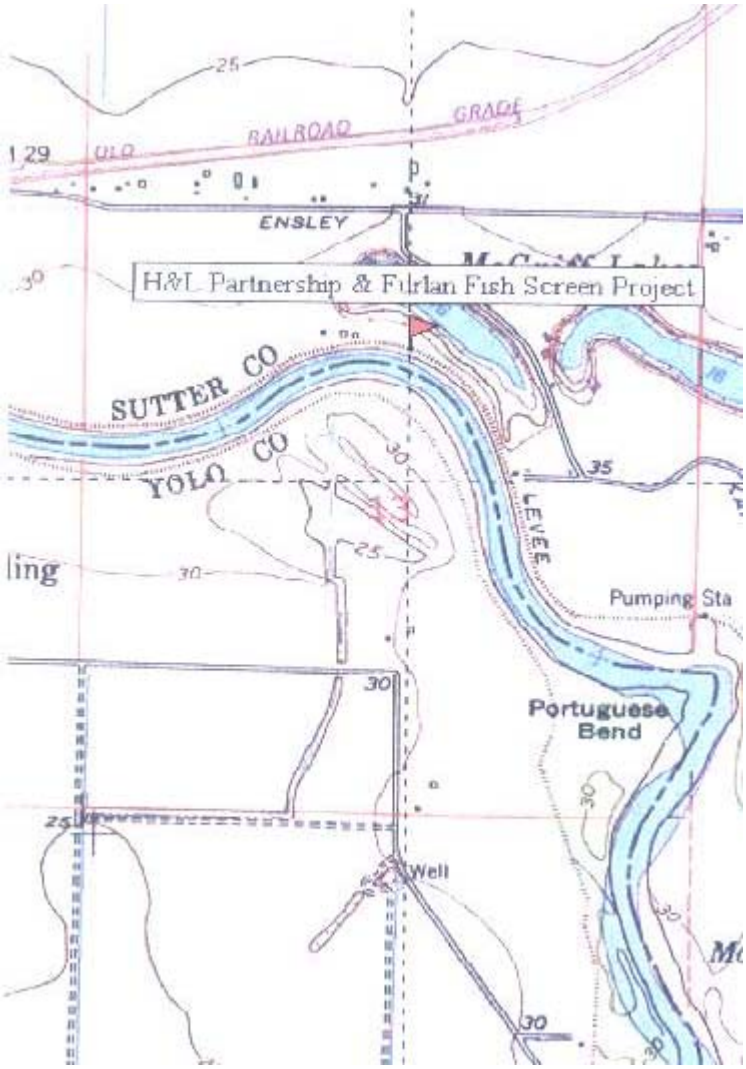
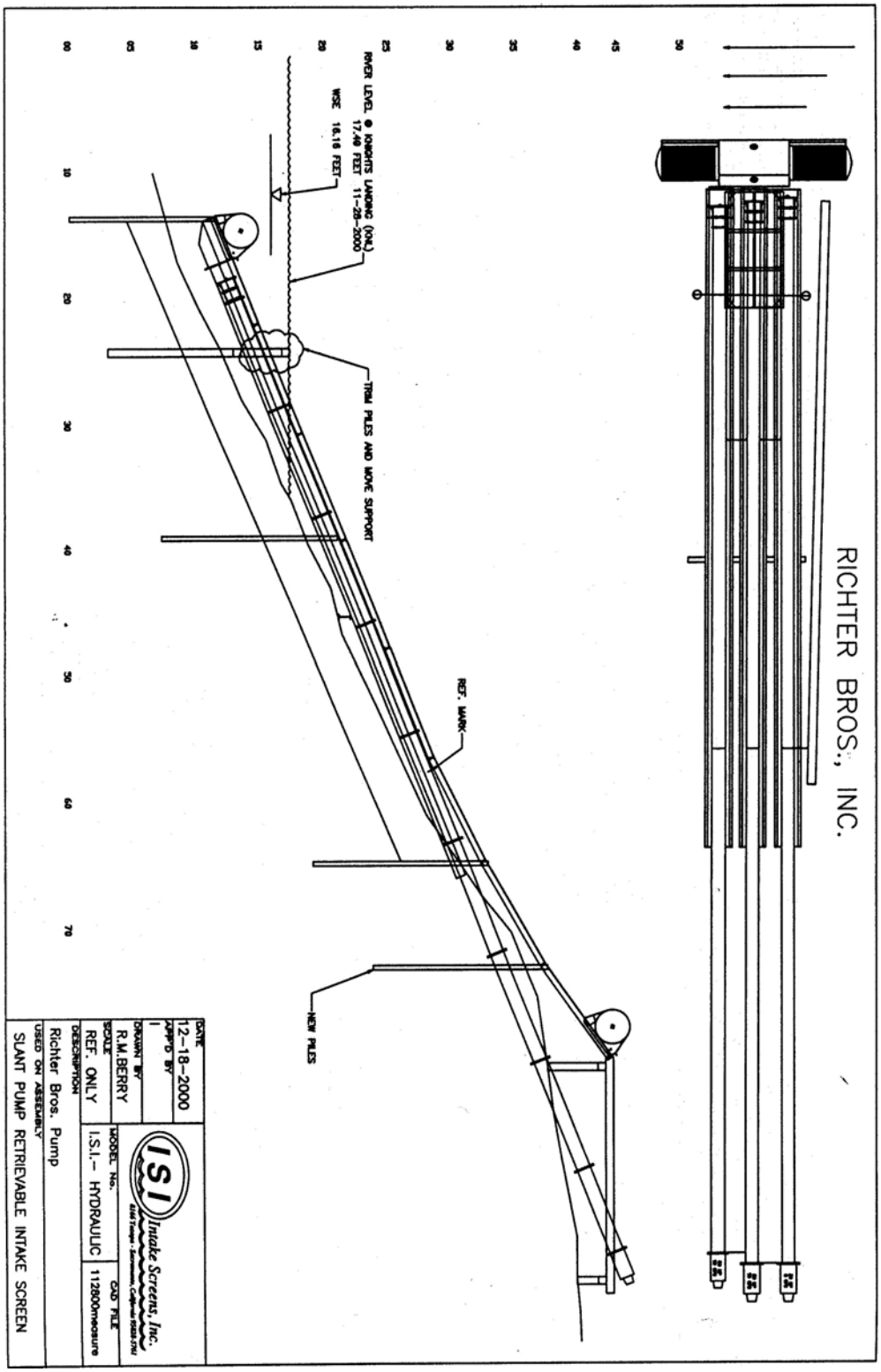
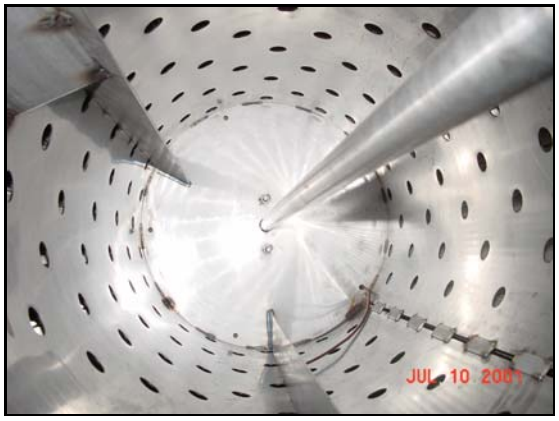
H&L Partnership & Furlan Fish Screen Project



H&L Partnership & Furlan
Fish Screen Design



Self-Cleaning Fish Screen
Intake Screens, Inc. Shop—Sacramento
July 10, 2001
(Oji Fish Screen - 20cfs)



H&L Partnership & Furlan
Original Site Pictures

STATE OF CALIFORNIA

NONDISCRIMINATION COMPLIANCE STATEMENT

STD. 19 (REV. 2-93)

H & L Partnership & Furlan

COMPANY NAME

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), martial status, and denial of family care leave.

CERTIFICATION

I, the official named below, hereby swear that I am dully authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

OFFICIAL'S NAME

Henry D. Richter Jr.

DATE EXECUTED	EXECUTED IN THE COUNTY OF
9-25-01	Colusa

PROSPECTIVE CONTRACTOR'S SIGNATURE

Henry D. Richter Jr.

PROSPECTIVE CONTRACTOR'S TITLE

Partner

PROSPECTIVE CONTRACTOR'S LEGAL BUSINESS NAME

H. & L. Partnership & Furlan

CRL:039:05/01/97