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Umatilla River Basin Fish Habitat Enhancement
FY 1990 Annual Report

ABSTRACT

During the summer of 1990, construction continued on the Bonneville Power Administration funded anadromous fish habitat enhancement project in the Umatilla River sub-basin, Umatilla County, State of Oregon. Work started on 5/1/90 and ended 10/30/90. A total of five large log weirs, eight large rock weirs, 17 associated weir structures, 19 small to medium rock deflectors, four bank and island reinforcements, three rock flow controls, 19 woody debris placements, and 85 individual boulders were constructed in the South Fork of the Umatilla River. In addition, one large rock weir was constructed at the confluence of the North and South Forks of the Umatilla River, and repair work was completed on 33 structures in Thomas Creek. Also, 300 cubic yards of rock and some logs and woody material were moved on site for use in 1991.

Preconstruction activity consisted of moving approximately 1,500 cubic yards of large boulders, and five log truck loads of woody material to the construction site.

Project monitoring consisted of sediment sampling above and below the project area and, mapping and photographing the structures.

UMATILLA RIVER BASIN FISH HABITAT ENHANCEMENT

FY 1990 Annual Report

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INTRODUCTION

Project Location - The project area is located on Thomas Creek and the South Fork of the Umatilla River in northern Umatilla County on the Walla Walla Ranger District, Umatilla National Forest. Map coordinates are T.2 N., R.37 E., sections 4, 5, 9, 10, and T.3 N., R.37 E., sections 28, 33.

Background - The commercial, recreational, and cultural values of anadromous fish are well documented. Historically, the Umatilla River and its major tributaries were important anadromous salmonid producers. Over the years the river system's production of steelhead trout (Oncorhynchus mykiss) has significantly declined and runs of spring chinook salmon (Oncorhynchus tshawytscha) were eliminated. At the present time the Oregon Department of Fish and Wildlife (ODF&W), Bonneville Power Administration (BPA), Confederated Tribes of the Umatilla Indian Reservation (CTUIR), and the Umatilla National Forest are cooperating to improve runs of existing steelhead trout and to re-establish runs of spring chinook salmon. The Thomas Creek and South Fork of the Umatilla habitat enhancement projects are one phase of the overall project.

The primary habitat factor limiting chinook production in the south fork Umatilla has been a lack of summer holding water for adults. The pool/riffle ratio was 10:90 prior to project initiation, with most pools being less than two feet deep. Work in the south fork is geared to improving habitat for spring chinook. This work should also benefit steelhead trout and resident fish species.

Steelhead trout production in Thomas Creek was limited by extreme late summer flows that often left the channel dry. Structures were built in Thomas Creek 1986, 1987, and 1988 to dig pools deep enough into the channel to tap into sub-surface flows. These structures were damaged in 1988 by high spring runoffs and many now fail to function properly. Work in Thomas Creek consists of repairing and reconstructing damaged structures and cabling the rock work together to prevent future damage.

Project Goal and Objectives - The goal of the project is to increase production of steelhead trout smolts and habitat potential for spring chinook salmon. This overall goal will be achieved by meeting the following objectives.

1. Increase adult holding pool habitat for spring chinook in the South Fork of the Umatilla River.
2. Increase low flow pool rearing habitat for steelhead trout in Thomas Creek, and for steelhead trout and chinook salmon in the South Fork of the Umatilla River.
3. Increase streambank stability.
4. Decrease bedload movement.
5. Improve upstream adult fish passage.

In-stream Work Period - The in-stream work period was to be from July 15 to August 30. This time period was later modified to July 1 till the observation of the first spawning salmon in or downstream of the project area. On August 17, a salmon was observed constructing a redd at Umatilla Forks at the lower end of the project area. In-stream project work was discontinued on August 18.

PROJECT DESCRIPTION

1990 project activities consisted of:

1. Preparing and administering a contract to:
 - a. Construct log and rock weirs, excavate downstream pools, and place woody material and rocks in the created pools to provide fish cover.
 - b. Construct log and rock deflectors where bank protection is needed.
 - c. Place individual boulders to create small mid-riffle pool habitat (pocket water).
 - d. Place clusters of woody debris (anchored with boulders) to create juvenile rearing habitat.
2. Haul 1500 cubic feet of boulders to the Forest Service project site on the South Fork of the Umatilla River.
3. Skid, and haul large pieces of woody debris (sections of blown over trees 30 feet long with roots or branches attached) to the project site.
4. Repair and anchor with steel cable structures damaged by winter high flows in Thomas Creek.

The contractor started work on June 28th at the Wilhelm rock pit near Elgin, OR, loading rock with a John Deere 690B excavator, and hauling it to the project site with seven dump trucks.

An upland site was located with a moderate concentration of blown over trees in close proximity to a road, for use as woody debris. The trees were skidded whole to the road with a John Deere 755 crawler/loader. Skidding whole trees with this piece of equipment proved difficult. In future operations, use of the excavator may prove easier and may cause less ground disturbance.

The trees were then bucked in half and loaded onto a self-loading log truck and hauled to the project site, with roots and limbs left attached. Use of the self-loader proved very efficient and it should be considered for use in other projects of this type.

Both rock and woody debris were moved to individual structure sites within the project area with the crawler/loader prior to final placement with the excavator.

Repair work on existing structures was done with a Schaeff model HS 40 superhoe (spyder). All repaired structures were cabled together using Hilde drills, glue, and steel cables.

New structures were also cabled at all stress points. Cable work was completed October 30th, ending project work for the season.

ACHIEVEMENTS

The following new structures were completed in FY 1990: (1) 5 log weirs creating summer holding pools for adult chinook salmon; (2) 8 rock weirs also creating summer holding pools; (3) 17 structures associated with holding pools; (4) 19 small and medium rock deflectors; (5) 4 bank and island reinforcements; (6) 19 woody debris placements; and (7) 81 individual boulders embedded in the stream channel. Thirty-three structures were repaired on Thomas Creek.

TYPE	LOG WEIRS	ROCK WEIRS	ASSOCIATED STRUCTURES	DEFLECTORS REINFORCEMENT	& WOODY DEBRIS	INDIVIDUAL BOULDERS	TOTAL
NUMBER	5	8	17	23	19	81	156

All of the repaired structures were cabled together to prevent possible damage from high stream flows. New structures were cabled where necessary. Woody debris placements were cabled to boulders to prevent displacement during high flows.

One rock weir, one island protector, and about 20 individual rock placements were laid out, but not completed, do to time constraints. In addition, 300 cubic yards of boulders were stockpiled at Corporation Work Center for use in 1991. This rock was stockpiled in one location instead of at each individual structure site, for safety and visual quality reasons. The rock was stockpiled during the rock haul phase of the project after it was estimated that the working window would not be long enough to complete all of the planned project this year.

Upon termination of in-channel activity disturbed areas were seeded with grass.

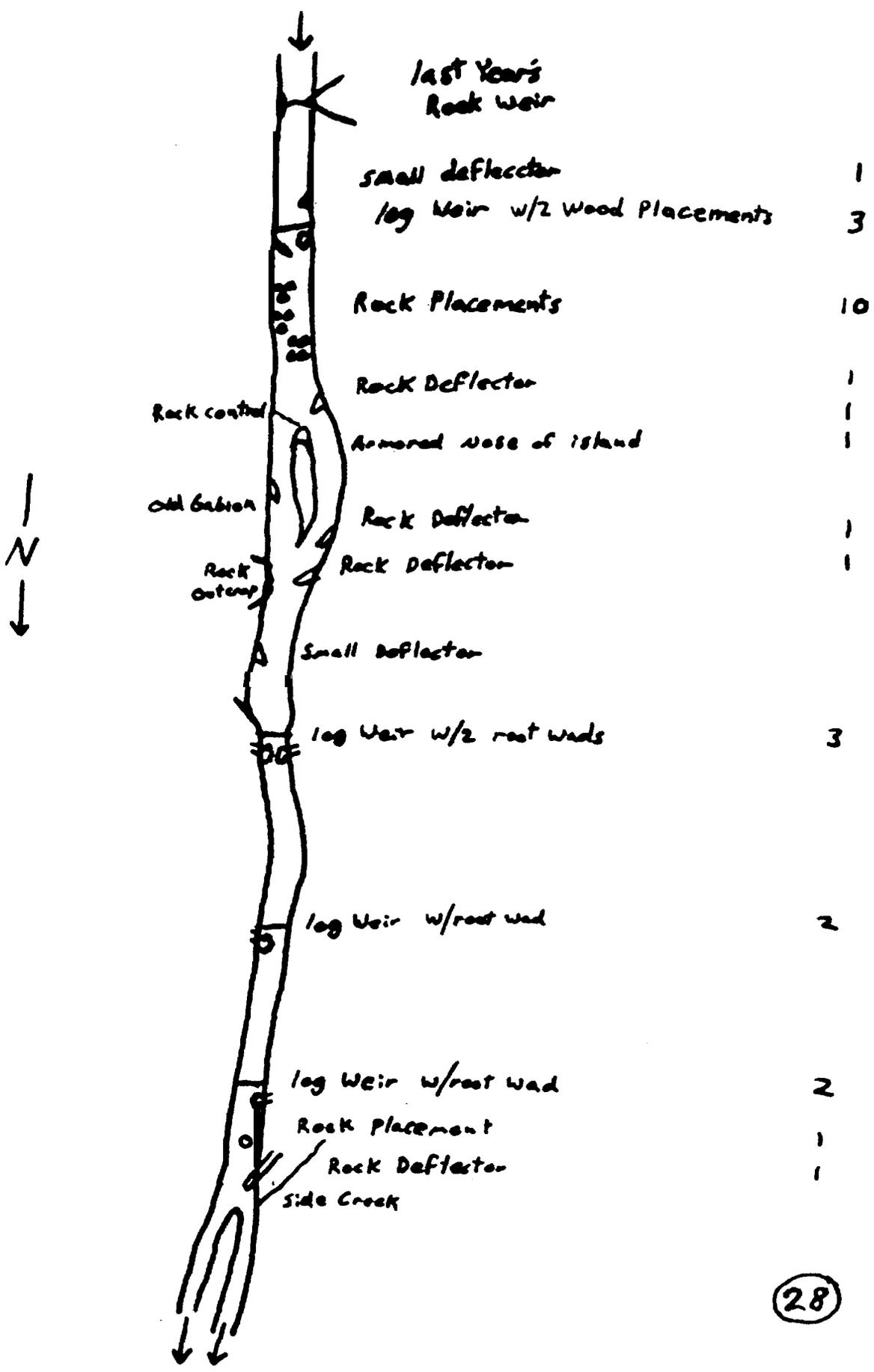
PROJECT MONITORING

Monitoring this year consisted of mapping and photographing all new structures and photographing all repaired structures. Turbidity samples were taken above and below the project area to determine affects of sediment. Sediment data will be analyzed during the winter of 1991. Pool size will be determined in the summer of 1991 after the spring high flows have had the opportunity to modify the pools.

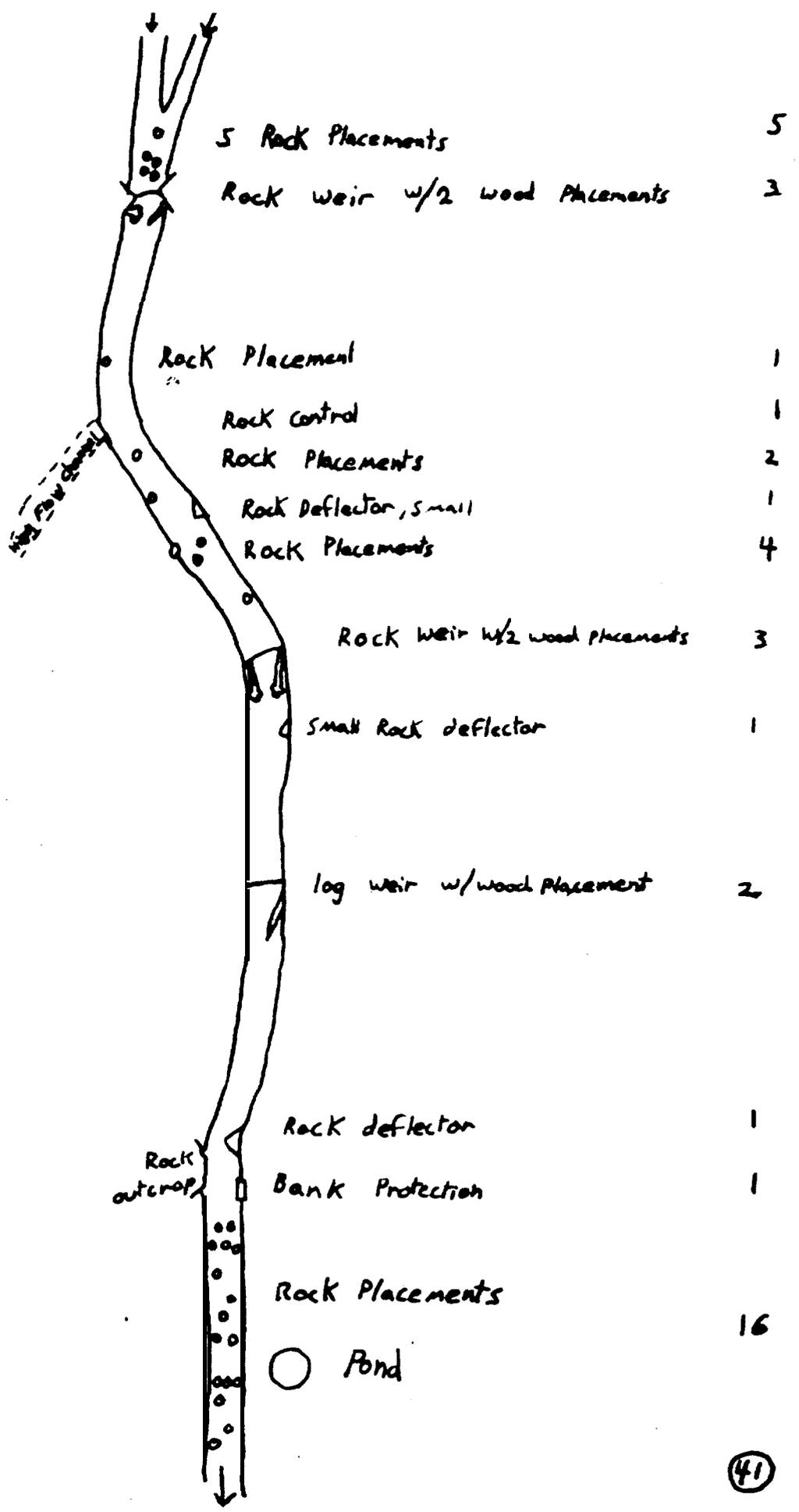
PROJECT COSTS

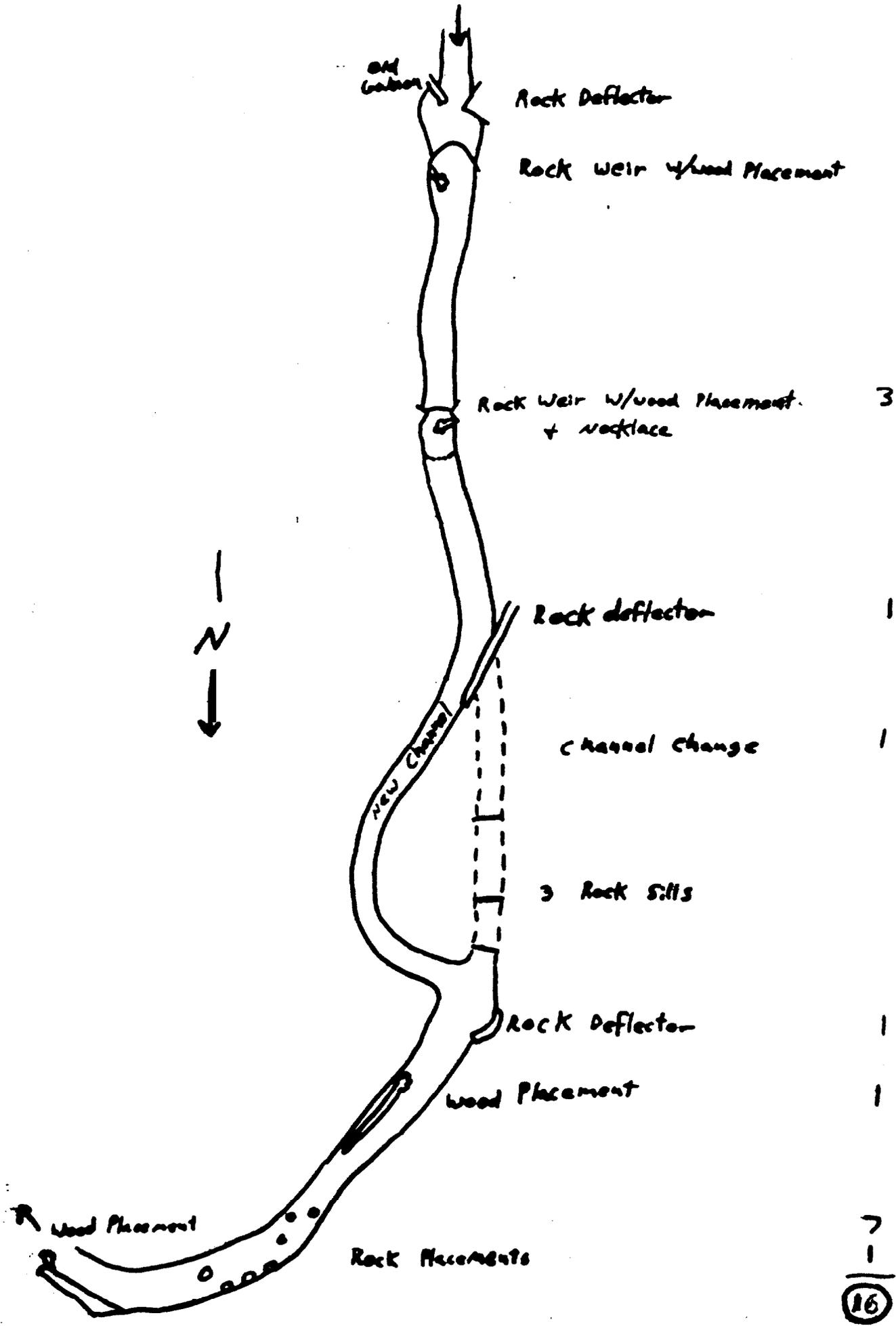
Project costs are estimated to be as follows.

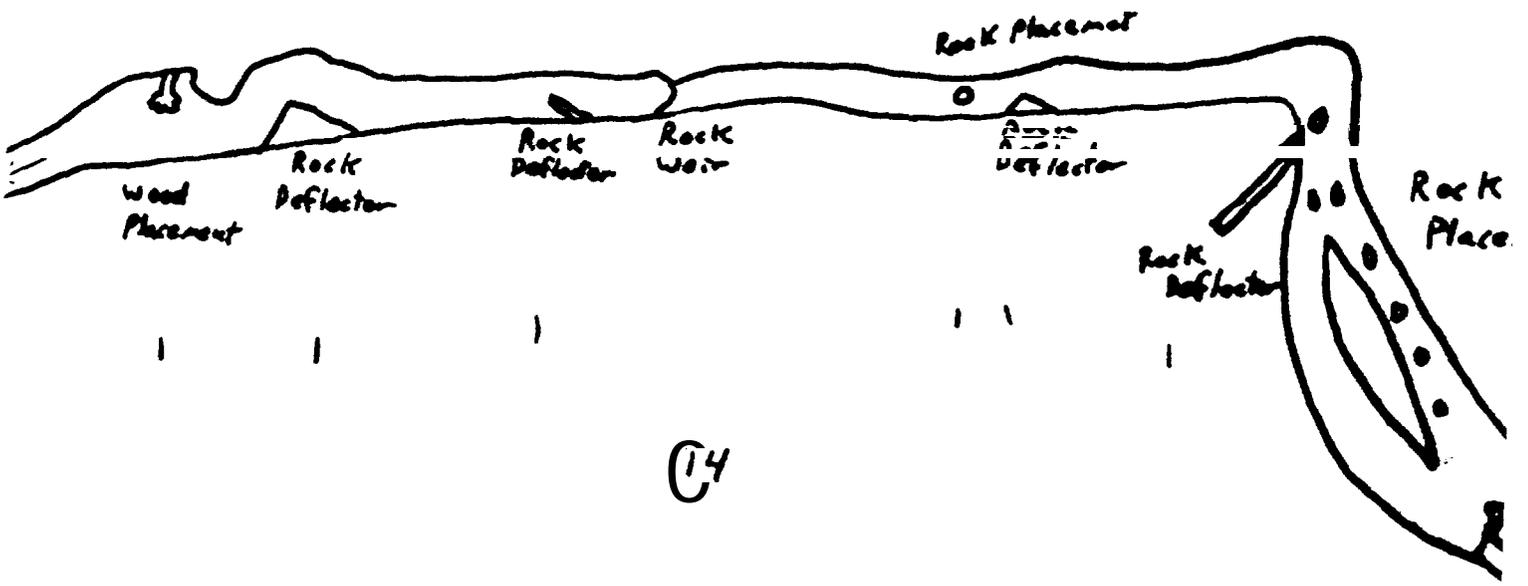
A. Salaries.....	\$ 44,744
B. Transportation/Travel/Per Diem	\$ 5,388
C. Expendable Supplies.....	\$ 9,006
D. Non-expendable Supplies	\$ 0
E. Overhead.....	\$ 15,298
F. Subcontracts.....	\$ 83,748
	<u>Total \$ 158,184</u>

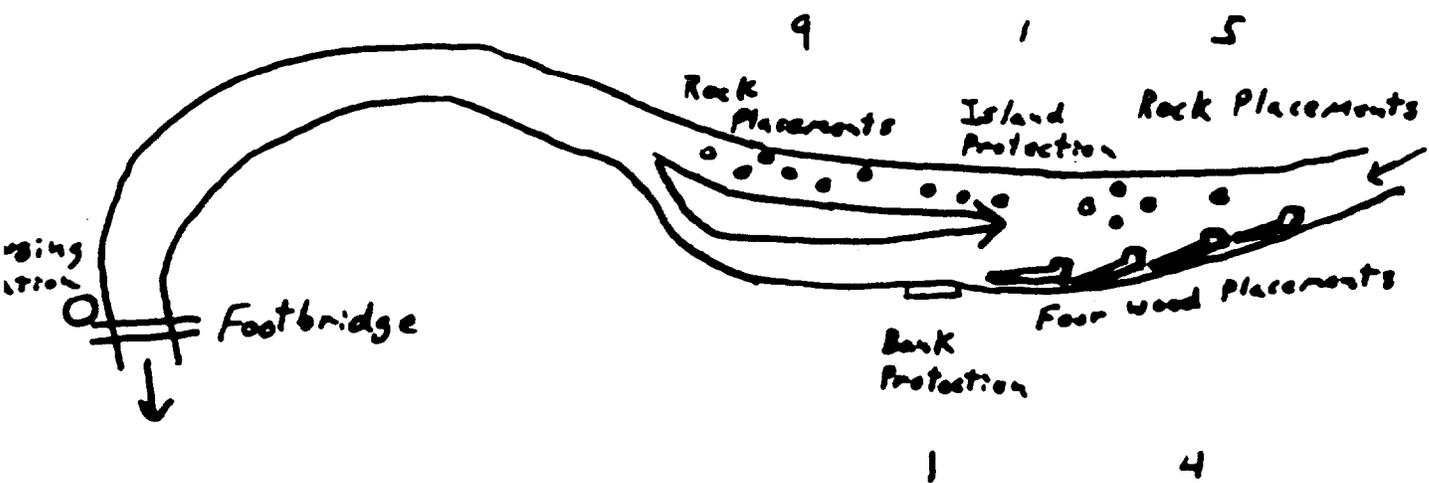


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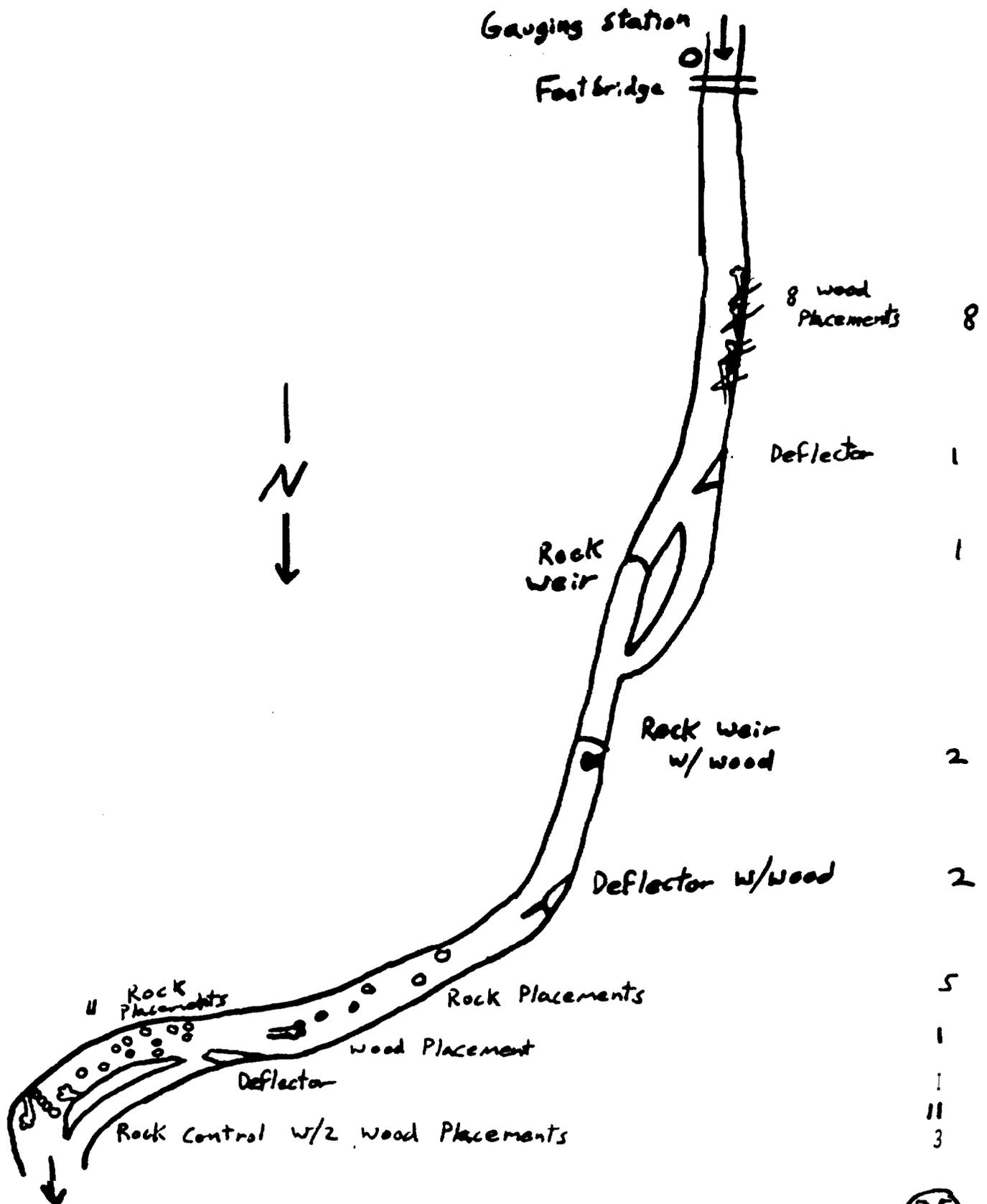




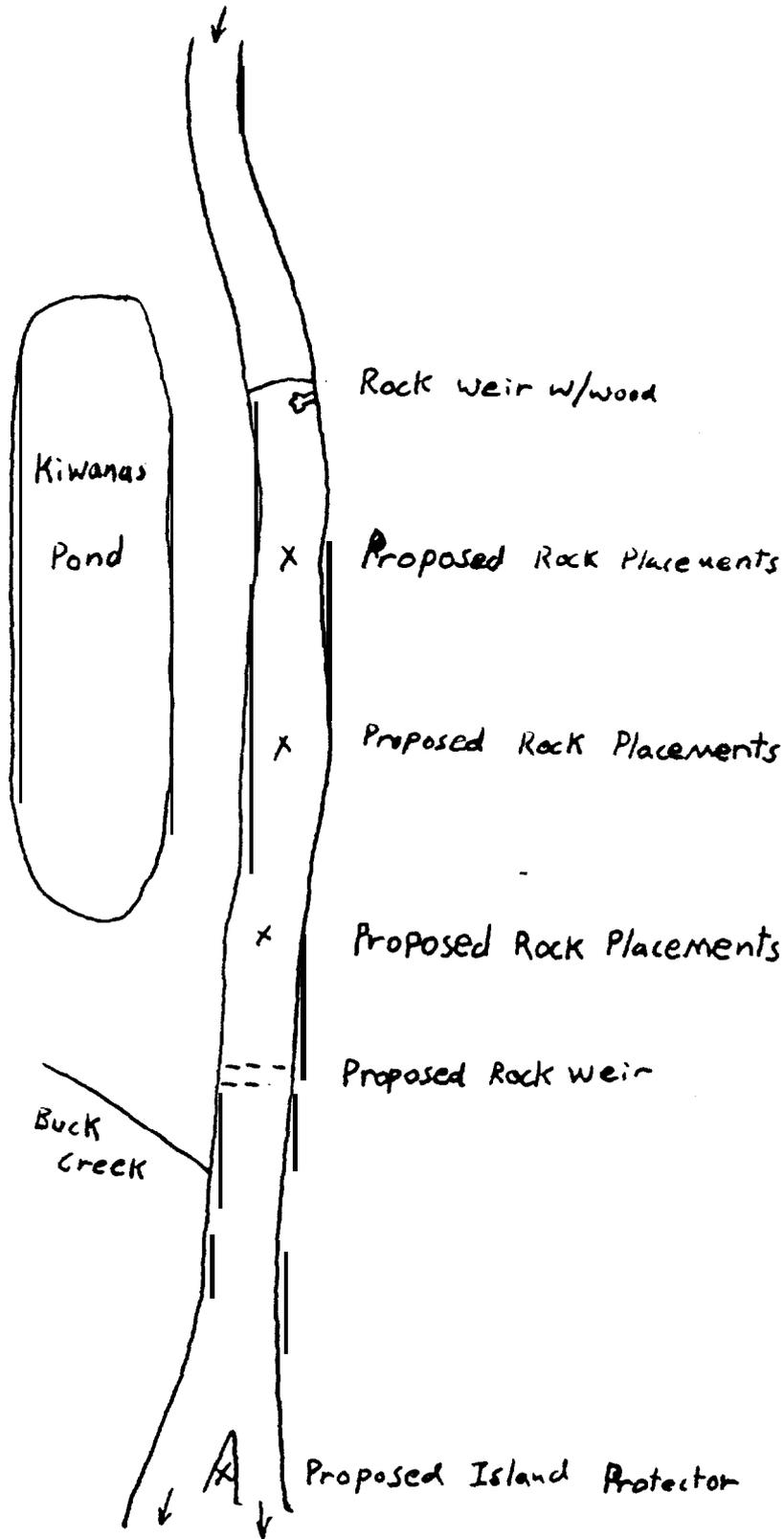




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