Eagle Scout Leadership Service Project Workbook

Scout's name: **Kilton James Tabor**

Address: **33 Littlejohn Road, Cape Elizabeth, ME 04107**

Telephone No.: **(207) 767-3789**

Unit No.: **30**

District: **Casco Bay**

Local council: **Pine Tree Council**

Unit leader's name: **Chris Salerno**

Address: **2 Brownstone Lane, Cape Elizabeth, ME 04107**

Telephone No.: (**207) 767-0225**

Unit advancement committee person's name: **Andy Tabor**

Address: **33 Littlejohn Road, Cape Elizabeth, ME 04107**

Telephone No.: **(207) 767-3789**

PROJECT DESCRIPTION

Describe the project you plan to do.

The Keoka Lake Association in Waterford, Maine is responsible for maintaining the Keoka Lake dam. The dam sluice gate channels have eroded away and the gate no longer works to control the water level. My project will be to install a Waterman type "C" automatic level control gate, mounted in a patented Waterman adjustable sliding weir sluiceway. This is a self-regulating gate mechanism. To do this, repairs must be made to the existing upstream dam face to either side of the sluiceway. This will require sandbagging of the area for the duration of the project. "Quick Crete" will be used to fill the existing sluice-gate channels and epoxy resin will be used to fill in and seal the bottom of the sluiceway. The surface of the existing concrete must be cleaned, smoothed, and have holes drilled, before adding DS-601 NS epoxy and attaching the new sluice-gate. I have already applied for a Permit-by-Rule with the DEP (attached).

What group will benefit from the project?

Name of religious institution, school, or community: **Keoka Lake Association – Dam and Water Safety Committee**
Telephone No.: **(207) 583-4989**
Street address: **P.O. Box 97**
City: **Waterford**
State: **ME**
Zip code: **04088**

My project will be of benefit to the group because:

The KLA, in order to meet its Water Control Plan, must replace the sluiceway gate. My project will provide all of the labor necessary. This will save the KLA the cost of hiring a contractor, and will enable the repair work to be completed in a timely fashion this October. The results will benefit all of the residents, landowners and the environment of the Waterford Area.

This concept was discussed with my unit leader on (Date): **08/21/2004**

The project concept was discussed with the following representative of the group that will benefit from the project.

Representative's name: **Andy Tabor**
Representative's Title: **Dam and Water Safety Committee Chairman**
Phone No.: **(207) 767-3789**
Date of meeting: **08/21/2004**

PROJECT DETAILS

Plan your work by describing the present condition, the method, materials to be used, project helpers, and a time schedule for carrying out the project. Describe any safety hazards you might face, and explain how you will ensure the safety of those carrying out the project.

If appropriate, include photographs of the area before you begin your project. Providing before-and-after photographs of your project area can give a clear example of your effort.

Description:

The face of the sluiceway has eroded. There is no working gate. The water level of the lake is being maintained by boards forced into the eroding channels in the concrete and are being held in place only by the force of the water. The level cannot be adjusted, so the lake level has been unusually high throughout the summer.

I have discussed with my Scoutmaster the possibility of having a camping weekend at our cottage with our troop when we perform the project, so that the scouts will also have the opportunity to work towards advancement. Other volunteers will come from the Keoka Lake Association membership. I plan to do the project over the 3-day Columbus Day weekend if possible in order to allow sufficient time for the concrete and epoxy resin to dry and cure.

On the first day, I'll organize a team of volunteers to sandbag the area around the sluiceway using sandbags already owned by the KLA and already on the site from a previous temporary repair last November. This will create a temporary dam above the sluiceway. We will fill any additional sandbags as necessary on the site.

Next, we will dry down the concrete to be worked on and scrape off any loose concrete and marine growth, and remove the existing boards and metal support currently in place. "Quick Crete" will be used to fill the existing sluice-gate channels and epoxy resin will be used to fill in and seal the bottom of the sluiceway. Compressed air will be used to clean and dry the upstream face of the concrete. Resin will also be applied to the upstream face to fill any cracks and to create a smooth surface for the new sluice gate to be attached to.

On the second day, holes will be drilled into the concrete face of the dam, as determined by the final gate design. The gate components will be assembled and anchor bolts and resin will be used to attach the new

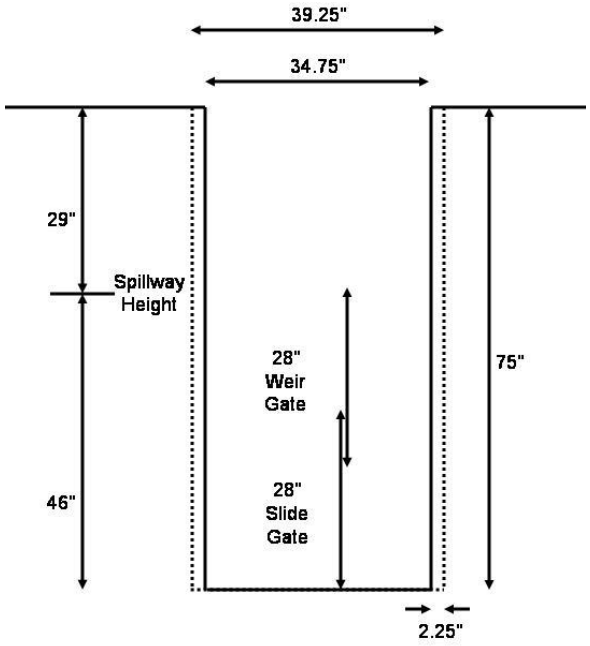
sluice-gate. Resin will also be used to seal the edges of the gate and to mount a Staff Gage ruler (see picture to the right) on the face of the dam to measure the water height.

Late on the second day, or possibly on the morning of the third day, the top rows of sandbags will be removed, allowing water to flow again. The Chairman of the Dam Committee will then responsible for the water level adjustments of the new sluice gate. This may require replacing the sandbags and removing the water from the sluiceway area several times to adjust the balance of the gate and the amount of water that flows below the gate to maintain the proper downstream flow.

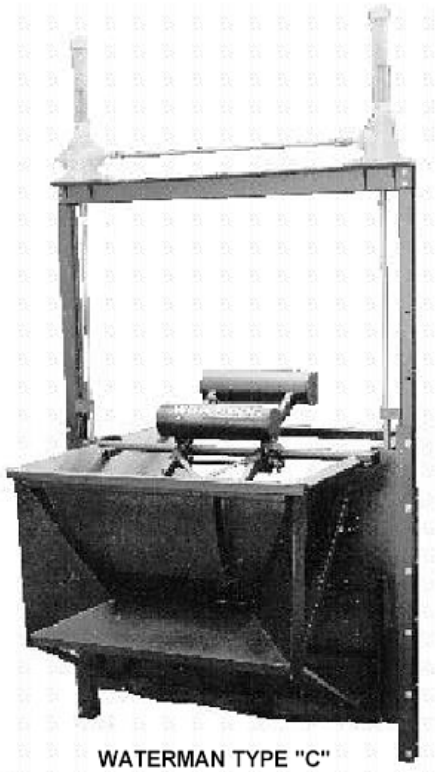
I will enforce safety precautions to ensure everyone's safety while helping on my project. It will be early to mid October when work on my project will take place, so I will make sure that my volunteers wear clothing appropriate for the conditions. Water, other beverages, and snacks will be provided to make sure everyone is hydrated and alert. If it is hot, I'll make sure that people take several breaks in the shade and get plenty of water. We will have a portable heater if needed for anyone who gets chilled or wet.

I will make sure that everyone wears a mask and goggles when scraping the concrete. Since the project is outside, ventilation won't be a problem. Anyone working with the epoxy and Quick Crete will be given an understanding that these are dangerous chemicals and that exposure should be avoided. There will be a first aid kit present as well as at least two qualified adults in attendance at all times. All power tools for drilling and other tasks will be run by adults.

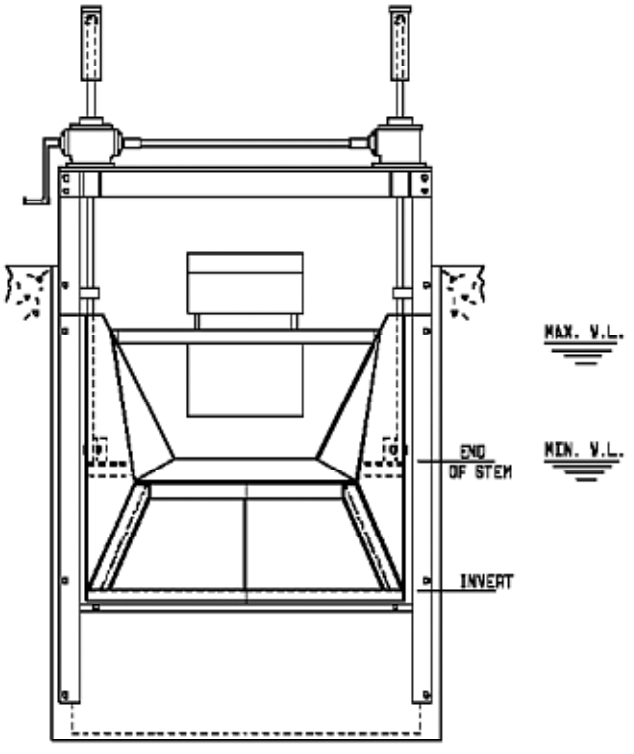
Drawings of the Waterman Type C gate and the measurements I took of the sluiceway are shown below.

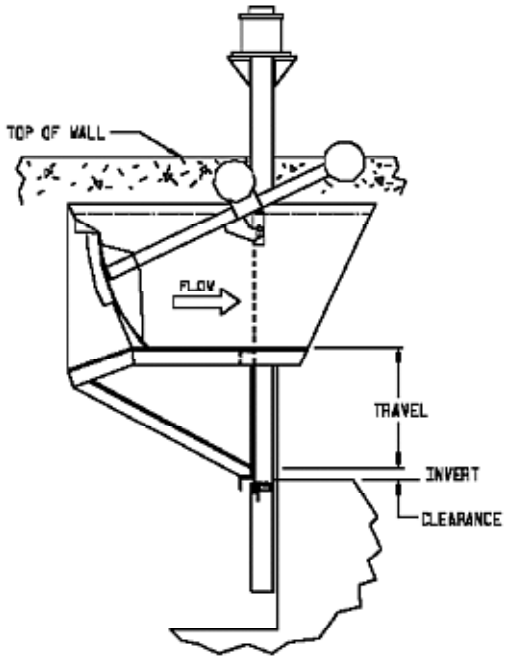


Keoka Lake Association Dam
Sluiceway & Gates



WATERMAN TYPE "C"
AUTOMATIC LEVEL CONTROL GATE
MOUNTED IN A PATENTED WATERMAN
ADJUSTABLE SLIDING WEIR SLUICEWAY





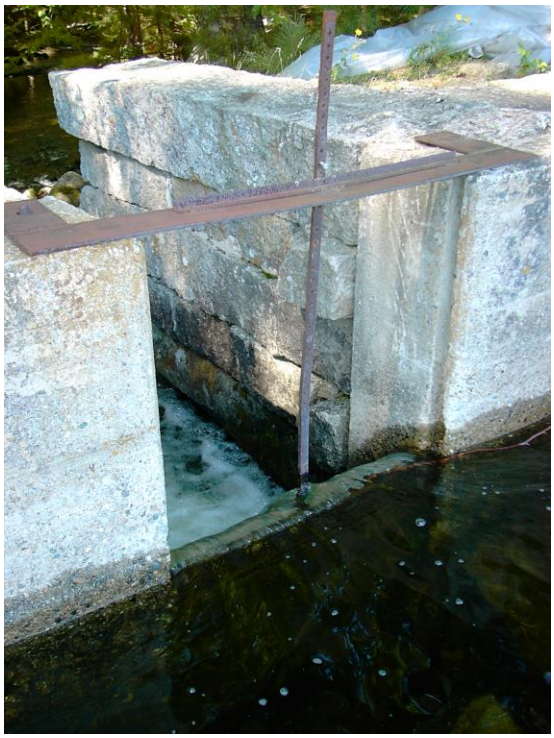
Materials

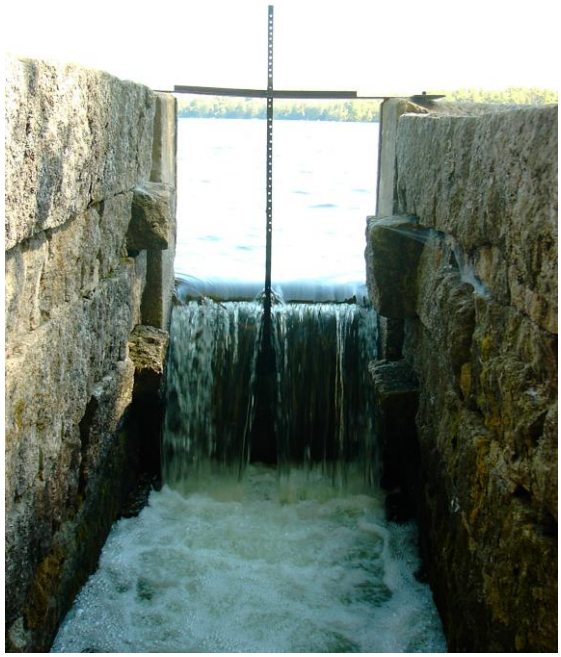
All materials will be paid for by the Keoka Lake Association:

Description	Quantity	Price
Waterman C-1 Gate	1	~ $12,000
6 ft Staff Gage	1	$77.47
Quick Crete bags	2 @	$10.00 = $20.00
3M DS-601 NS Epoxy 12 Oz Tube	18 @	$22.75 = $409.50
3M Applicator	1	$57.59
3M Mixing Nozzles	18 @	$0.69 = $12.42
Mounting Bolts	~12	~ $25.00 (to be determined based on final gate design)
Air Compressor	1	Provided by KLA Members
Generator	1	
Electric drill and concrete drill bit	1	
Dust masks/goggles	10-20	
Wire brushes	5	
Portable Sump Pump and Hose	1	
Concrete mixing bucket and shovel	1	
Portable Propane Heater	1	
Miscellaneous hand tools, including hammers and socket wrenches		
Food & Beverages		~ $200
Total Costs		~ $12,800

"Before" Photographs

Dam Spillway and Sluiceway viewed from Keoka Lake



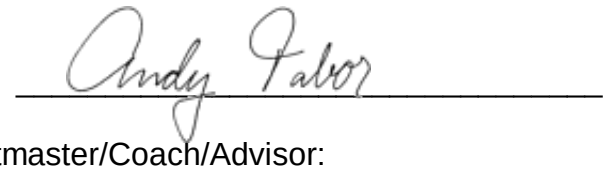


Sluiceway views

Approval Signatures for Project Plan

Project plans were reviewed and approved by:

Religious institution, school, or community representative:


_____ Date: 08-22-2004

Scoutmaster/Coach/Advisor:

_____ Date: _____

Unit committee member:

_____ Date: _____

Council or district advancement committee member:

_____ Date: _____

IMPORTANT NOTE: You may proceed with your leadership project only when you have …

- Completed all the above mentioned planning details
- Shared the project plans with the appropriate persons
- Obtained approval from the appropriate persons