

M E M O R A N D U M

TO: For the Record 
FROM: A. Peter Barranco, Jr., P.E., Dam Safety Engineer
DATE: October 25, 1989
SUBJECT: Weston Upper Dam - Weston

On September 26, 1989 the writer inspected subject dam at the request of Roy E. Varner, a representative of the owner, Weston Community Club, Weston, Vermont. Mr. Varner's mailing address is RR #1, Box 106-D, Weston, Vermont 05161; telephone 824-8172. The purpose of the inspection was to evaluate the condition of the dam and to make any recommendations regarding the dam and desilting the pond. The inspection was carried out under provisions of 10 V.S.A. § 1105.

BACKGROUND

The dam had previously been photographed but not inspected by the Department in 1979. Date of construction and other details of the history of this dam are unknown. At present it serves no purpose other than aesthetics.

DESCRIPTION OF DAM

The dam is a dry rubble stone masonry gravity structure 63' long and 9' high founded for the most part, it appears, on ledge. It has a top width of 3' and vertical downstream face. A 45' long by 1.1' deep spillway with a flat 3' wide concrete capped crest is provided in the central part of the dam.

An 18" diameter CGMP drain with invert 6' below the spillway crest is located 13' from the left end of the dam. A metal (?) gate buried in the sediments is located 8' upstream of the downstream portal of the pipe. A rather flimsy crank type gate operator is located on the upstream face above the drain. There is no chain attached to the gate operator.

The dam may have sloping concrete facing on the upstream side like the lower dam, however, this is speculative since the

pond is silted in to within inches of the spillway crest and upstream features are not visible. However, based on the length of the 18" drain pipe, the dam has a greater thickness than the 3' crest width at this point.

The dam has a drainage area of 1665 A (2.60 square miles) and the pond has a surface area about 0.1 A. Storage at normal water level (spillway) crest is about 0.35 A.F., however, it is practically all accumulated sediments. Storage at top of dam would be about 0.45 A.F. (including sediments).

INSPECTION

The dam was inspected on September 26, 1989 between the hours of 1030 - 1100 and 1200 - 1300. Weather: 55° and raining. The writer met with Mr. Varner between 1100 - 1200. Water level was at spillway crest and spilling. Perhaps half the discharge past the dam was leakage through the dam. The following was observed.

1. Downstream Face

Appears to be vertical except for side wall at left end which tips downstream somewhat. There appears to be leakage through most of the downstream face, however, difficult to tell because of rain and flow over the spillway. Moss and other vegetation growing out of stone work. Brush partially obscures both ends. There is flowing seepage emerging out of the stone wall along the downstream left side of the channel below the dam.

There is a void about 8' long, 1' high and 4' deep along the toe starting at a point below the left end of the spillway. The bottom of the void is ledge. There are a number of loose stones that may have come from this void. It is not clear what keeps other stones from falling in this area. It was not possible to see into the void due to overflowing water. Some leakage in void and some rust deposits.

2. Top of Dam (Almost all spillway)

Alignment good.

3. Spillway

Concrete cap in good condition. Spillway clear.
Alignment good.

4. Upstream Face

Configuration and condition unknown due to being buried by sediments. As previously noted upstream section probably has a greater bottom width than 3' crest width - based on pond drain length. Also the 4' deep void under left downstream face has not resulted in major leakage at this point.

5. Sluice (Pond Drain)

The 18" CGMP is rusted and there is some leakage through the upstream closure (gate?). The conduit is clear up to the gate. The gate is buried and unoperable in its present condition.

DOWNSTREAM HAZARD CLASSIFICATION

The only structure between the dam and the West River that could be subject to some damage if the dam failed are the Weston Lower Dam and the private road bridge. Due to the silted in condition of the dam there is little storage available to be released in event of a dam failure, however, sediments that would wash downstream could create a "mess". This dam is classified as a Class 3 ("low hazard") structure.

OVERALL CONDITION

Dam is judged to be, at best, in fair condition. The cavity under the left end of the dam is of some concern. Although there did not appear to be any imminent danger of failure, these old dams are unpredictable and can fail under conditions they have survived in the past.

RECOMMENDATIONS TO OWNER

1. Owner should have a qualified professional engineer experienced with dams further investigate the void under the left downstream toe and design and supervise construction of needed repairs. If the dam is desilted, a further evaluation of the dam should be made by owner's engineer.
2. Cut brush along downstream face so dam can be better observed.
3. Provide routine monitoring to observe any changes that might further effect the dam. Observations during "high water" conditions is also important.

4. Same comments on desilting as for lower dam except there is no upstream sediment trap.
5. If the dam is desilted, the pond drain should be made operational.

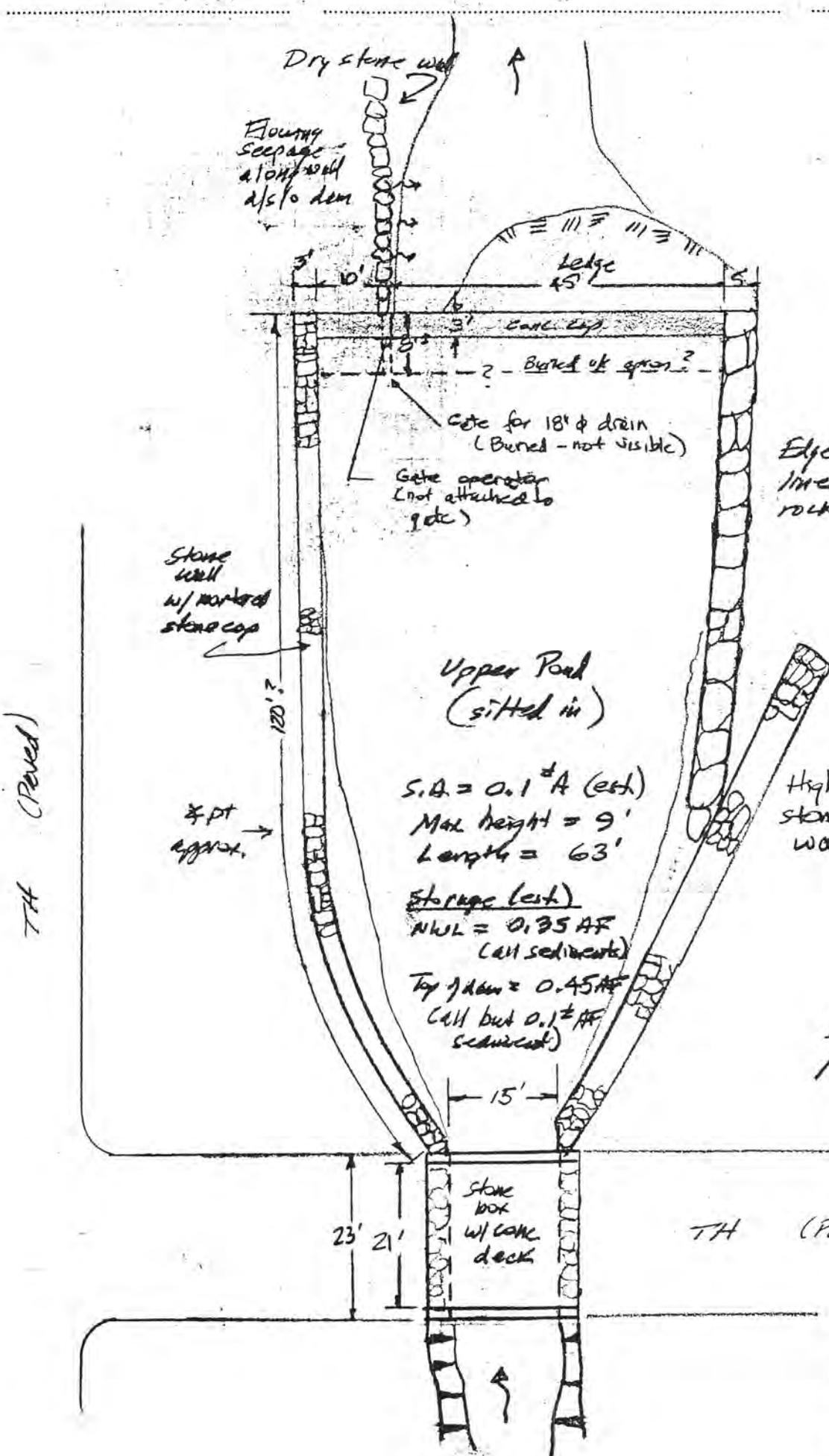
JURISDICTION

Since this dam impounds less than 500,000 cubic feet any reconstruction, alteration or removal would not require approval from the Department under 10 V.S.A. Chapter 43. Since the drainage area is less than 10 square miles the Stream Alteration Statute (10 V.S.A. Chapter 41, Subchapter 2) also would not apply. However, "desilting" or draining the pond would probably require Department authorization under 10 V.S.A. § 1272.

APB:arm

- Enc: (1) Drawing of dam from field notes taken 9/26/89
(2) Topo map of drainage area and downstream channel
(3) Photos (in file)
(4) Inspection of Dams DEC/DWREE 8/87

2.14



Class 3
 and
< 500,000 FT³

Alignment of both
wells is approx.

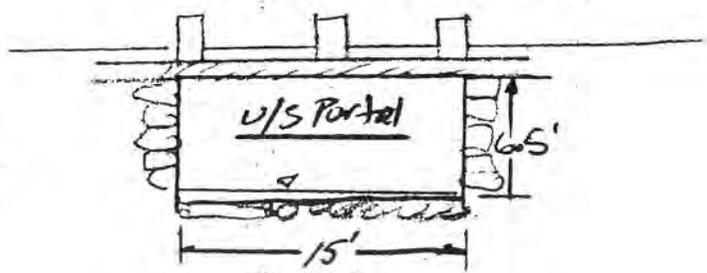
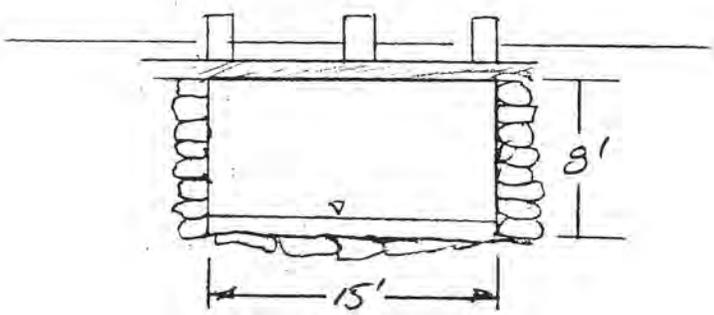
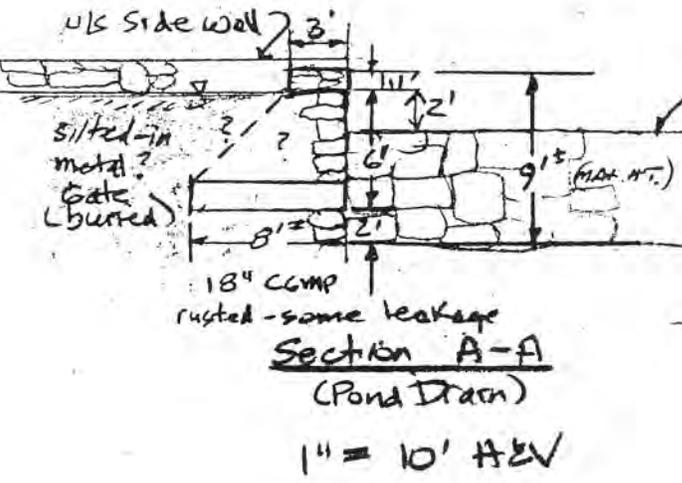
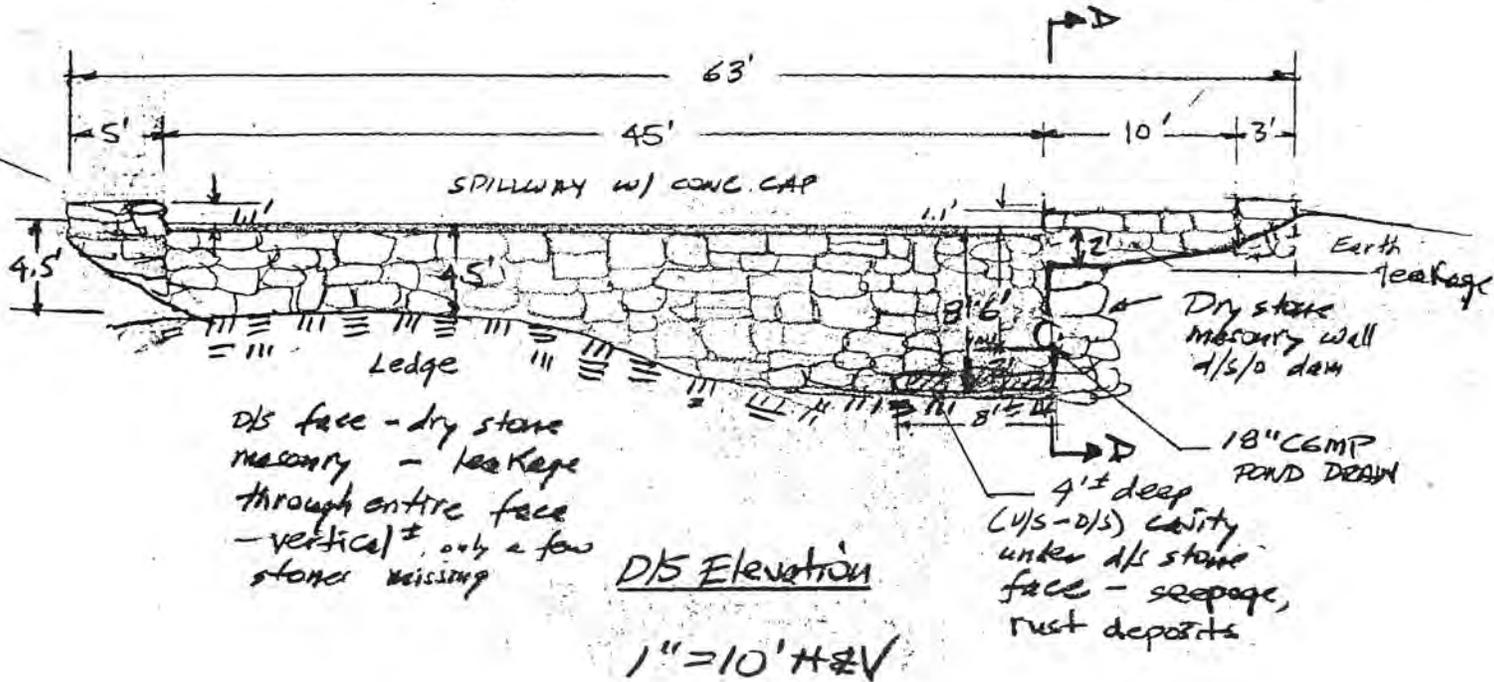
Upper Pond
 (silted in)
 $S.A. = 0.1 A$ (est.)
 Max height = 9'
 Length = 63'
Storage (est.)
 $NWL = 0.35 AF$
 (all sediments)
 $Ty \uparrow dam = 0.45 AF$
 (all but 0.1 AF
 sediment)

Plan
1" = 20'

TH (Paved)

TH (Paved)

Drawn from
field notes &
photographs
taken 9-26-89
(6' rule, cloth tape, hand
level) by A.P.B.



- D/S Channel**
- Lower Dam
 - Private bridge
 - No buildings subject to flooding by a failure of the dam from dam to West River.
 - Failure not likely to affect lower dam or bridge. Damage likely only from release of sediments.

Class 3