

DEPARTMENT OF PUBLIC WORKS

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Water, Wastewater, Highway & Solid Waste Divisions

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July 8, 2015

RE: Balch Pond Dam (MA00135) Follow-Up Inspection

Dear Mr. William C. Salomaa, Director, Office of Dam Safety:

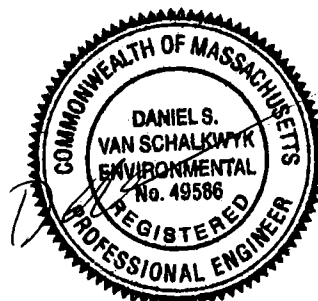
A Follow-Up Inspection of the Balch Pond Dam has been conducted in accordance with the Certificate of Non-Compliance and Dam Safety Order received, dated February 22, 2008, and a Notice of Failure to Comply with Dam Safety Order, dated June 11, 2015. Two (2) hard copies and one (1) electronic copy of the Follow-Up Inspection are attached to this submittal. I, Daniel Van Schalkwyk, a registered professional engineer working for the Ayer DPW, performed the inspection.

If you have any questions or comments please don't hesitate to contact me.

Regards,

AYER PUBLIC WORKS DEPARTMENT

Daniel Van Schalkwyk, P.E.
Town Engineer



07-08-2015

cc: Patricia Huckery, District Manager, Division of Fisheries and Wildlife
Marielle Stone, MassDEP Wetland Section Chief, Central Region
Jannice L. Livingston, Chair, Ayer Board of Selectmen
Robert Pedrazzi, Ayer Emergency Management Director
Abutters of impoundment upstream
Property owners within one-half mile downstream of the dam



Commonwealth of Massachusetts
Department of Conservation and Recreation
Office of Dam Safety Poor and Unsafe Condition Dam Follow-up Inspection Form

(Complete this inspection form and provide a cover letter on consulting firm letterhead that briefly summarizes the current follow-up inspection and findings. The cover letter shall be signed and stamped by the Registered Professional Engineer in charge of the inspection)

Dam Name: Balch Pond Dam

Dam Owner: Under Review

Nat. ID Number: MA00135

Hazard Potential: Significant

Location of Dam (town): Ayer

Coordinate location (lat,long): 42.55417°N / 71.57450°W

Date of Inspection: 06/24/2015

Weather: Clear, 75°F

Consultant Inspector(s): Town of Ayer Department of Public Works
Town Engineer
Daniel Van Schalkwyk, P.E.

Others in Attendance at Field Inspection:

Town of Ayer Department of Public Works
DPW Superintendent
Mark Wetzel, P.E.

Attachments: Updated site sketch with photo locations, Updated photos, and copy of locus map from Phase I report and other applicable attachments.

- I. Previous Inspection date/Overall Condition:** Phase II Inspection/Evaluation performed in 2014 by Pare Corporation of Foxboro, MA (Phase II implemented by MassDOT)
- **Date of most recent formal Phase I Inspection Report:** June 2012
 - **List the overall condition reported in most recent Phase I Inspection Report:** Poor
- II. Previous Inspection Deficiencies:**
- **List identified deficiencies in the most recent Phase I Inspection Report:**
 - a. The crest of the dam is not level. The left abutment is approximately three feet lower than the crest elevation over the spillway culvert and right abutment. The peak stage based on the SDF is 1.7 ft. above the Route 2A roadway level at this location indicating that pond could overtop the road in this area during heavy storm events.
 - b. The upstream slope is undercut in some areas, generally steep, and vegetated with trees and brush.
 - c. Erosion and surface sloughing has occurred on the upstream slope of the embankment.

- d. The upstream slope is not protected against wave impact. Embankment soils are exposed at some locations.
- e. Three wet areas possibly caused by seepage through the embankment were identified to the left of the culvert on the downstream side of the embankment.
- f. Several small animal burrows were observed on the downstream slope.
- g. Large trees and brush are present on the downstream slope.
- h. The culvert is in poor condition. The reinforced concrete upstream headwall is spalled, cracked, and chipped exposing aggregate and reinforcing steel. The fill behind the downstream culvert headwall has settled or eroded exposing loose embankment soils 12 to 18 inches below grade.
- i. Heavy leakage was observed around and through the stoplogs downstream of the culvert.
- j. Mortar is missing from the masonry joints on the downstream side of the spillway weir.
- k. Forest debris has accumulated on the upstream side of the stone masonry weir downstream of the stoplogs.
- l. The discharge channel stone masonry walls are overgrown with trees and brush.
- m. The granite capstones on the discharge channel walls are loose and some have shifted.
- n. The fill behind the discharge channel walls is settled in several locations.
- o. Some of the chainlink fence around the spillway and discharge channel is missing.

III. Overall Condition of Dam at the Time of the Current Follow-up Inspection:

a. State the current condition:

Poor

b. Have conditions changed since the previous inspection? Yes or no.

No

IV. Comparison of Current Conditions to Condition Listed in Previous Phase I Inspection Report:

a. Have any of the deficiencies listed in the previous Phase I Inspection Report worsened?

No.

b. If yes, list the changes.

c. Are there any additional deficiencies that have been identified in the current inspection?

None in addition to the Phase I and II.

d. If yes, list the deficiencies and describe.

V. Dam Safety Orders:

- **List dam safety orders that have been issued to the dam owner pertaining to this dam.**

Certificate of Non-Compliance and Dam Safety Order in a letter written by Department of Conservation and Recreation (DCR), Office of Dam Safety (ODS) dated February 22, 2008

VI. Maintenance:

1. Indicate if there exists an operation and maintenance plan for the dam.

No.

2. Indicate if it appears the dam is being maintained.

Maintenance is conducted as needed. Mowing crews are scheduled to maintain the vegetated areas around the dam/dike. Stop logs are installed and removed as needed to maintain a consistent normal pool elevation.

VII. Recommendations:

Continue follow-up inspections. Discuss Phase II Report with MassDOT.

VIII. Other Comments or Observations: None

IX. Updated Site Sketch with Photo Locations: Attached

X. Updated Photos: Attached

XI. Copy of Locus Map from Phase I Report: Attached

XII. Other applicable attachment: None

Attachments

O:\Ayer\Balch Pond Dam and Dike - MA00135, MA01186\2012 Phase I Inspection\Figures\Balch Pond Figures.dwg

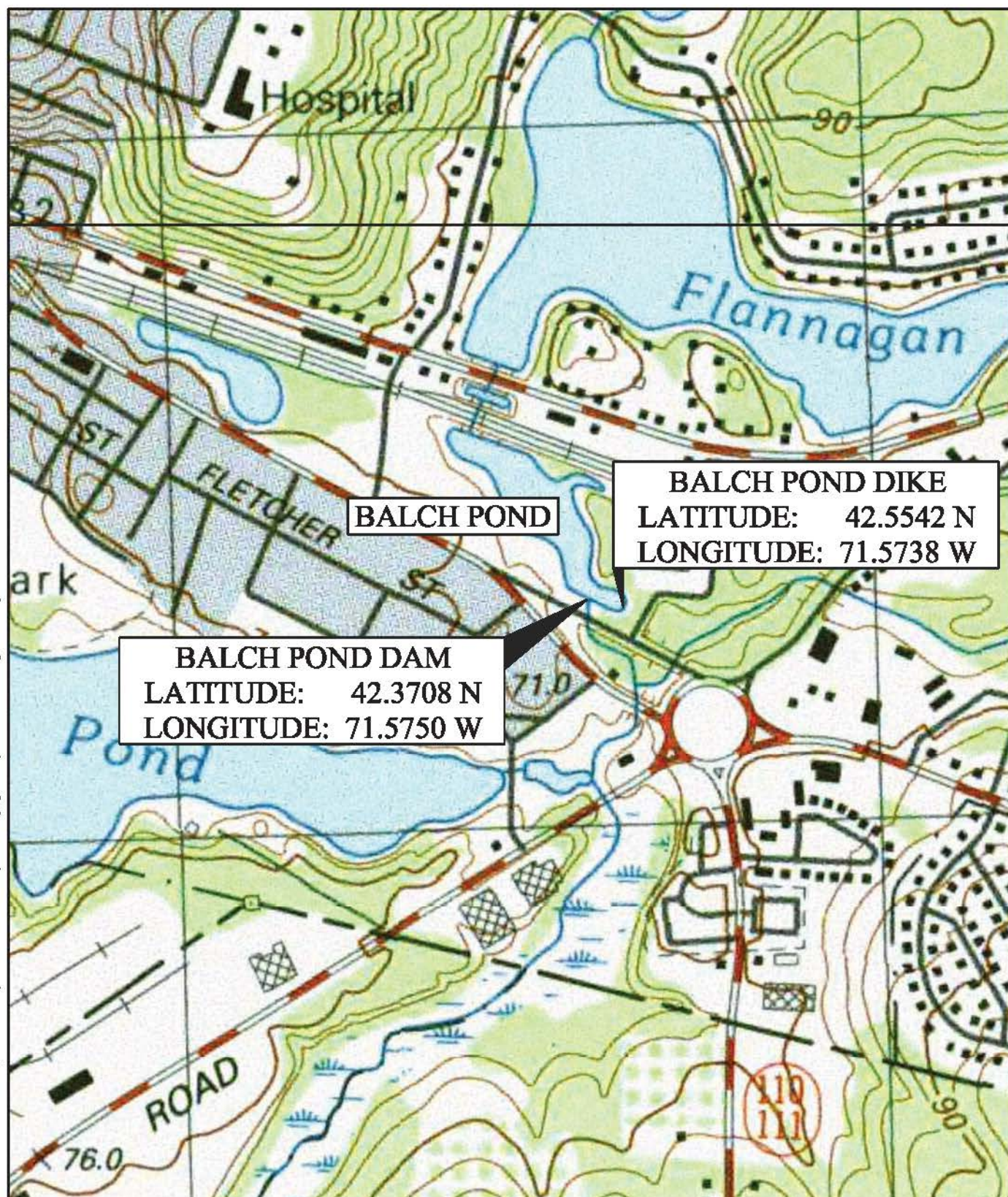


FIGURE 1
 AYER, MASSACHUSETTS
 BALCH POND DAM (MA00135), DIKE (MA01186)
 LOCUS MAP (MASSGIS TOPOGRAPHIC QUADRANGLE)

APPROXIMATE SCALE: 1"=200'

0 200 400



Balch Pond Dam Inspection Photos

June 24, 2015



Photo 1:

View of Dam Structure from left side of Dam. Displacement of headwall and exposed reinforcing in similar condition to Phase II inspection.



Photo 2:

View of left side of Dam.

Balch Pond Dam Inspection Photos
June 24, 2015



Photo 3:
Overview of the upstream slope from
the Dike.



Photo 4:
Downstream slope at crest. Minor
erosion, rotation of downstream
headwall.

Balch Pond Dam Inspection Photos
June 24, 2015



Photo 5:
View of stop logs and spillway from outlet.



Photo 6:
Vegetation surrounding spillway scheduled to be removed.