

AD-A144 605

NATIONAL PROGRAM FOR INSPECTION OF NNN-FEDERAL DAMS
ENSIGN BICKFORD DAM (U) CORPS OF ENGINEERS WALTHAM
MA NEW ENGLAND DIV JAN 81

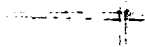
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AD-A144 605

ENSIGN BICKFORD DAM
CT 00567

FARMINGTON RIVER BASIN
SIMSBURY, CONNECTICUT

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PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER CT 00567	2. GOVT ACCESSION NO. AD-A144 605	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Ensign Bickford Dam	5. TYPE OF REPORT & PERIOD COVERED INSPECTION REPORT	
6. PERFORMING ORG. REPORT NUMBER		
7. AUTHOR(s) U.S. ARMY CORPS OF ENGINEERS NEW ENGLAND DIVISION		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS DEPT. OF THE ARMY, CORPS OF ENGINEERS NEW ENGLAND DIVISION, NEDED 424 TRAPELO ROAD, WALTHAM, MA. 02254		12. REPORT DATE January 1981
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		13. NUMBER OF PAGES 25
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) APPROVAL FOR PUBLIC RELEASE: DISTRIBUTION UNLIMITED		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES Cover program reads: Phase I Inspection Report, National Dam Inspection Program; however, the official title of the program is: National Program for Inspection of Non-Federal Dams; use cover date for date of report.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) DAMS, INSPECTION, DAM SAFETY, Farmington River Basin Simsbury, Connecticut		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Field observations indicated that the dam should be classified as "Low" potential hazard. The dam is too small to qualify under the Federal Dam Inspection Program.		

ROALD HAESTAD, INC.
CONSULTING ENGINEERS

37 Brookside Road • Waterbury, Conn. 06708 • Tel. 203 753-9800

January 2, 1981

The Department of the Army
Corps of Engineers
New England Division
424 Trapelo Road
Waltham, Massachusetts 02154

Attention: E.P. Gould
Project Management Division

Re: Ensign Bickford Dam
Simsbury, Connecticut

Gentlemen:

Following field surveys of Ensign Bickford Dam, we conclude that the dam is too small to qualify under the Federal Dam Inspection Program. Field observations also indicate that the dam should be classified as "Low" potential hazard.

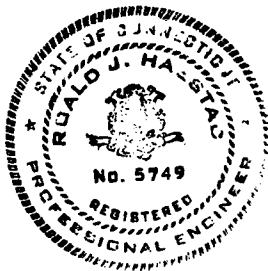
We are enclosing a brief letter report substantiating our findings.

Very truly yours,

ROALD HAESTAD, INC.

By

Roald Haestad
Roald Haestad



RH:DLS:cft

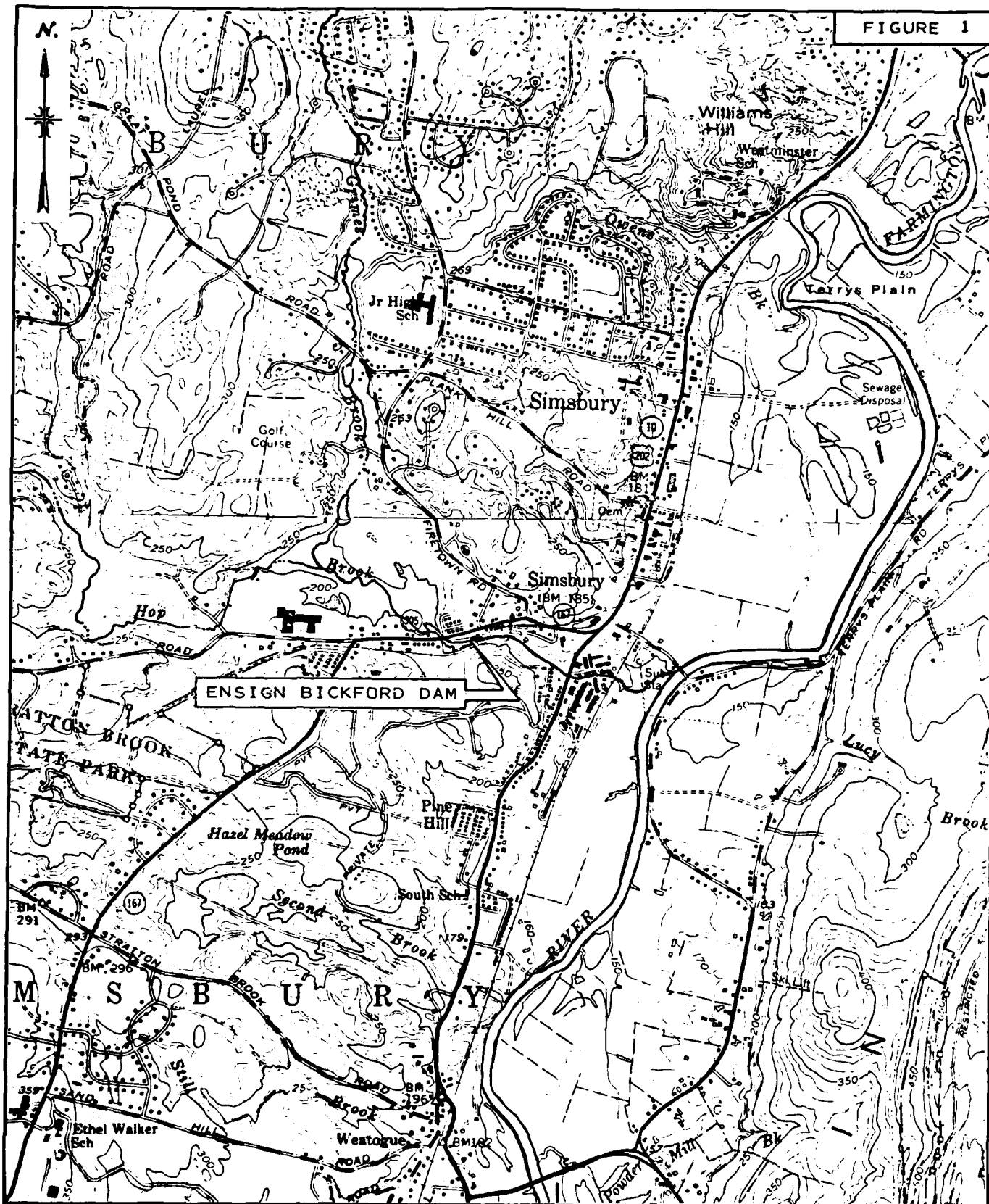
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FIGURE 1



LOCATION PLAN
 ENSIGN BICKFORD DAM
 SIMSBURY, CONNECTICUT

ROALD HAESTAD, INC.

SCALE: 1" = 2000'

AVON QUADRANGLE 1968



OVERVIEW PHOTO

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ROALD HAESTAD, INC.
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WATERBURY, CONNECTICUT

NATIONAL PROGRAM OF
INSPECTION OF
NON-FED. DAMS

ENSIGN BICKFORD DAM - CT 00567

HOP BROOK

SIMSBURY, CONNECTICUT

13 NOVEMBER 1980

DESCRIPTION

Ensign Bickford Dam
CT 00567
Town of Simsbury, Hartford County, Connecticut
On the Hop Brook
Owned and Operated by The Ensign Bickford Company

The Ensign Bickford Dam consists of a dry stone masonry wall with a maximum height of about 21 feet and an upstream earth embankment. The dam is about 60 feet long, including a 35 foot overflow spillway section in the center of the dam, Photo 1. The spillway has a concrete cap extending back about 10 feet from the crest. The right abutment is a ledge outcrop, Photo 3. An old mill building is located at the left abutment, Photo 5.

Outlets consist of a stone conduit discharging through the dam at the right abutment approximately 2' x 2' in size, Photo 2, a pipe estimated to be 36-inches in diameter discharging to a concrete flume at the left end of the spillway, Photo 8, and a 4 foot wide sluiceway under the old mill building controlled by a new 4' x 4' sluice gate, Photo 10. All outlets are controlled by upstream gates. The sluiceway also has a 19 foot long concrete weir about 2 feet above spillway level located downstream of the sluice gate, Photo 5, which would act as an auxiliary spillway discharging through the old conduit at the toe of the dam, Photos 5 and 6. The new sluice gate and concrete sluiceway were installed as part of a hydroelectric project in 1978 by GSA International. The project was never completed.

The impoundment has a water surface area of less than 2 acres and an average depth of about 10 to 12 feet with the water level at the top of the dam. Thus maximum storage capacity is about 24 Acre-Feet.

The dam height of 21 feet and storage capacity of 24 Acre-Feet are both below the requirements for a small dam. The dam, therefore, does not qualify for the Corps inspection program.

Without performing a flood routing, the hazard potential appears to be low. A dam breach with water at spillway level would produce a peak discharge of about 1900 cfs, which would not flood any homes. The uninhabited downstream reach is long enough to dissipate the flood wave because of the low storage capacity of the impoundment.

The dam was overtopped in the August 1955 flood without failure. Flooding at the downstream Engsign Bickford industrial complex was severe at that time because of inundation from the Farmington River. Failure of the dam during such a flood would not have added substantially to the inundation.

APPENDIX A

Photographs

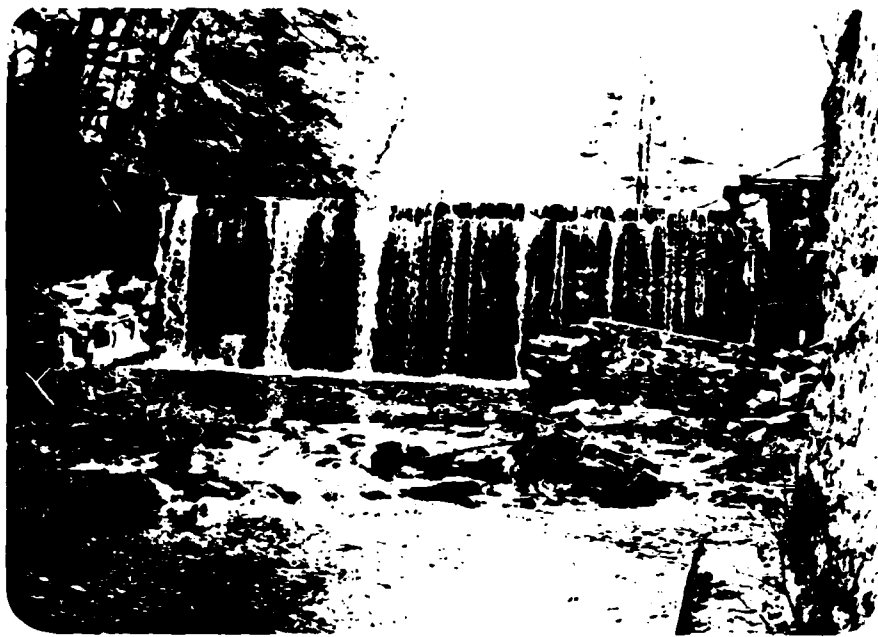


PHOTO NO. 1

SPILLWAY



PHOTO NO. 2*

SPILLWAY. NOTE LEAKAGE THROUGH DAM AND
DISCHARGE FROM CONDUIT AT RIGHT SIDE OF DAM

*7 SEPT '80

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ENSIGN BICKFORD DAM
HOP BROOK
SIMSBURY, CONNECTICUT
CT 00567
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PHOTO NO. 3

SPILLWAY AND RIGHT ABUTMENT

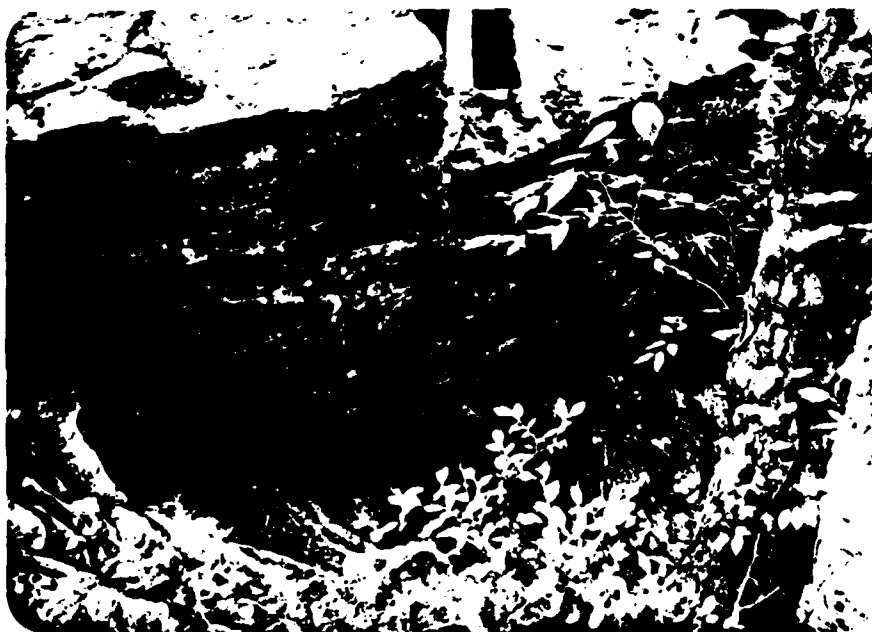


PHOTO NO. 4

RIGHT ABUTMENT SHOWING DETERIORATION
AND UNDERMINING OF STONE MASONRY

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PHOTO NO. 5*

MILL BUILDING AT LEFT ABUTMENT. NOTE AUXILIARY
SPILLWAY UPSTREAM OF DAM AND DETERIORATED
CONCRETE CAP ON MAIN SPILLWAY

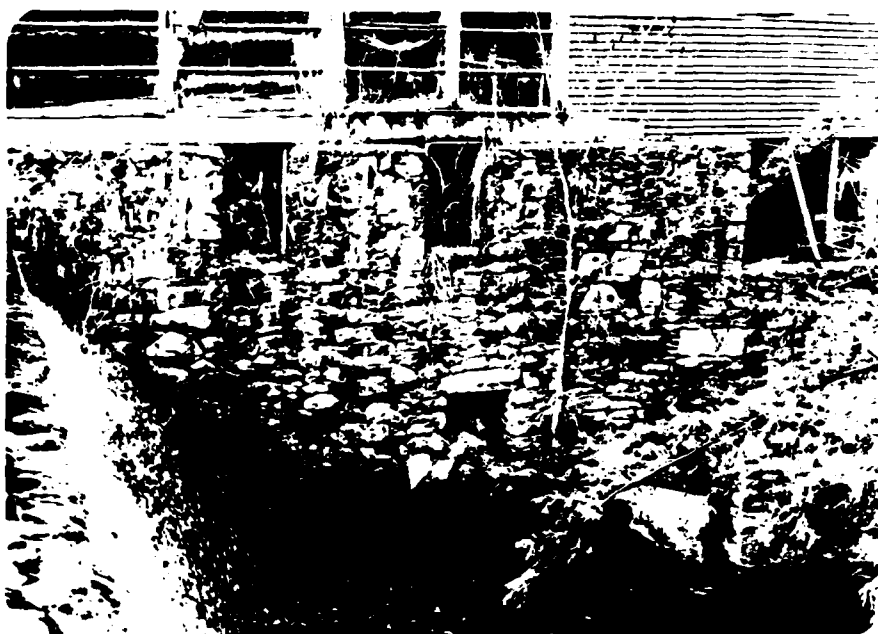


PHOTO NO. 6

FOUNDATION OF OLD MILL DOWNSTREAM OF DAM.
ARCHED CONDUIT DISCHARGES FLOW FROM NEW SLUICE GATE
AND AUXILIARY SPILLWAY

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PHOTO NO. 7*

DETERIORATION OF
CONCRETE AT LEFT
SPILLWAY
TRAINING WALL



PHOTO NO. 8

DETERIORATED TRAINING WALL
AND 30-INCH OUTLET AT
LEFT END OF SPILLWAY

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PHOTO NO. 9
OPERATOR FOR 36-INCH
OUTLET AT LEFT
SPILLWAY TRAINING
WALL



PHOTO NO. 10
NEW 4'X4' SLUICE GATE AND
CONCRETE SLUICWAY AT LEFT
END OF DAM

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PHOTO NO. 11

RIGHT ABUTMENT. NOTE OPERATOR
IN POND FOR STONE MASONRY SLUICEWAY



PHOTO NO. 12*

RIVER CHANNEL DOWNSTREAM OF DAM. NOTE OLD
RAILROAD RETAINING WALL AT RIGHT AND TRESTLE
PIER AT CENTER REAR

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