



Consulting Engineers • Architects • Land Surveyors
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October 24, 1994

Michigan Department of Natural Resources
Land & Water Management Division
Dam Safety Unit
Attn: Mr. John W. Dexter, P.E.
P.O. Box 30028
Lansing, Michigan 48909

Re: Indian Lake Dam Inspection
JCK Project Number: 3844
MDNR ID # 00687

Dear Mr. Dexter,

This letter confirms that the Indian Lake Dam Inspection Report submitted to your office on October 18, 1994 has been reviewed and approved by a Professional Engineer licensed in the State of Michigan. If any further information is needed please contact me at (810) 348-2680.

Very truly yours,
JCK & Associates, Inc.

A handwritten signature in black ink, appearing to read 'Garey W. Foyt', is written over the typed name.

Garey W. Foyt, P.E.
Vice President of Municipal Engineering

cc: file

mdnrmem2.wpd

RECEIVED

OCT 26 1994

NATURAL RESOURCES
AND WATER MANAGEMENT



Consulting Engineers • Architects • Land Surveyors
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Main Office
45650 Grand River Ave.
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Attn: Mr. John W. Dexter, P.E.
P.O. Box 30028
Lansing, Michigan 48909

Re: Indian Lake Dam Inspection
JCK Project Number: 3844
MDNR ID # 00687

Dear Mr. Dexter,

Enclosed is the dam inspection report for the referenced dam located in Oakland County.
If you have any questions or would like to meet with us to discuss the report, please call.

Very truly yours,
JCK & Associates, Inc.

Gary M. Mekjian
Project Engineer

cc: Ms. Leslie Pielack, Indian Lake
Improvement Association

c:\damdocs\indnlake\mdnrmem.wpd

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OCT 20 1994

**NATURAL RESOURCES
LAND & WATER MANAGEMENT**

DAM SAFETY INSPECTION REPORT

Indian Lake Dam
Oakland County

W. Branch of Stoney Creek

MDNR DAM ID NUMBER: 00687

OWNER

Indian Lake Improvement Association
Attn. Ms. Leslie Pielack
75 Ridgemont
Oxford, Michigan 48370
Phone: (810) 693-6765

DAM HAZARD CLASSIFICATION: LOW

DATE OF INSPECTION: October 13, 1994

INSPECTION AND REPORT PREPARED BY:

JCK & Associates, Inc.
45650 Grand River Avenue
Novi, Michigan 48374
Phone: (313) 348-2680
Fax: (313) 348-2777

Gary M. Mekjian
Project Engineer

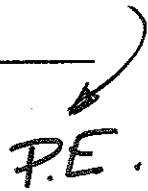

P.E.

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Introduction

The inspection on the Indian Lake Dam was performed under the *Michigan Dam Safety Act, Act 300, Public Acts of 1989*. JCK & Associates, Inc. has been retained by the owner to perform the 1994 dam inspection. Hydraulic and structural deficiencies of the dam embankments and outlet works will be noted along with recommendations to eliminate the deficiencies. All problem areas will be prioritized.

The inspection of the Indian Lake Dam was initiated to determine the existing condition of the Dam Embankments and outlet Works. The inspection was limited to a visual observation. We were not able to locate construction plans or files on the Dam from the Dam owner or the Michigan MDNR.

The contents of this report should not be treated as an in-depth engineering study. A more detailed engineering evaluation may be required based on the findings of this report.

Discussion

The Indian Lake Dam is located in Oakland County, SECTION-31, TOWN-05N, RANGE-11E, on the west branch of Stony Creek. The impoundment is used for recreational purposes. The total drainage area to the dam is approximately 1.20 square miles. The mean depth of the lake is unknown but has a surface area of approximately 58 acres and has a 100 year flood volume of 110 acres. As per the Michigan Department of Natural Resources (MDNR), the dam was constructed in approximately 1928.

The drainage area is a combination of undeveloped wetlands/woodlands, residential development, gravel pits and recreation areas. Developments noticed immediately upstream of the Dam included residential and recreation areas. Very little development was observed downstream of the Dam, therefore, we recommend that the current hazard classification remain.

The dam is of the concrete buttress type as described by the MDNR and has a relatively uniform elevation across its 103.0 ft. length. The outlet structure consists of a concrete weir and spillway. The weir is approximately 20.0 ft. long and 1.0 ft. wide. The spillway is also constructed of reinforced concrete and is approximately 20.0 ft in width and has a height of approximately 20.0 ft from the top of weir to the streambed. At the bottom of the spillway the flow enters a stilling basin and an energy dissipation sill is located at the downstream end of the stilling basin. The water is then discharge to the southern portion of Indian Lake. The outlet structure also has an orifice which was controlled by a slide gate. The owner informed us that the slide gate was no longer in operation. For the purposes of this inspection, we have assumed that the slide gate is fully closed.

Hydraulics/Spillway Capacity

The Indian Lake Dam has a low hazard rating. According to the *Dam Safety Act* (Act No. 300, Public Acts of 1989) the spillway capacity of this dam must pass the 100 year flood or the flood of record, whichever is greatest. The Michigan MDNR has provided us with the following inflow-return period information as follows:

10 year	60 cfs
50 year	150 cfs
100 year	200 cfs

The letter from the MDNR to JCK & Associates, Inc. regarding this information is included in *Appendix C*. A flood of record has not been found in our investigation therefore, we utilized the 100 year flood as the design flow rate. To determine the spillway capacity we measured the spillway in the field and utilized the field measurements in our calculations. We have used the computer program "Pondpack" by Haestad Methods to determine the spillway capacity. In this instance, the program is utilizing the weir formula, $Q=CLH^{3/2}$, when the water elevation is above the top slab of the control structure the program will use the orifice formula. We assumed that the spillway weir is operating without being submerged by the tail water due to the depth and steep slope of the spillway.

As seen in the following computer output, the spillway will not have any difficulty passing the design flow. The weir can pass the 200 cfs while keeping the pond elevation approximately 1.0 ft below the bottom of the concrete slab covering the outlet weir. Thus, it appears that overtopping of the dam is very unlikely.

Field Inspection Observations

A. Embankments

As shown on the enclosed sketches, earthen embankments exists directly east and west of the concrete dam. The general condition of both the embankments is good. The slopes of the embankments are variable. Any large trees on the embankments have been removed leaving a good vegetative cover of scrub and grasses to prevent any erosion. From the visual inspection of the embankments there did not appear to be any sink holes, erosion, etc. of the embankments. Wetland vegetation was not observed on the downstream embankment, thus we conclude that if seepage is occurring it is at a very minimal rate.

B. Concrete Control Structure

The top of the concrete buttress dam is approximately 10 feet wide and 22 feet high from the top of slab to the streambed. The dam has three struts on both the north and south sides of the creek. The concrete wingwalls on the edges of the spillway have experienced some spalling along with other

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Outlet Structure File: INDNLAKE.STR

POND-2 Version: 5.15

S/N: 1295160144

Date Executed:

Time Executed:

INDIAN LAKE DAM SAFETY INSPECTION
ASSUMED ELEVATION 100.0 @ TOP OF WEIR
10/17/94

***** COMPOSITE OUTFLOW SUMMARY *****

Elevation (ft)	Q (cfs)	Contributing Structures
100.00	0.0	1
100.20	5.3	1
100.40	15.1	1
100.60	27.8	1
100.80	42.8	1
101.00	59.8	1
101.20	78.6	1
101.40	99.0	1
101.60	121.0	1
101.80	144.4	1
102.00	169.1	1
102.20	195.2	1
102.40	222.4	1
102.60	250.8	1
102.80	280.3	1
103.00	310.9	1
103.20	342.5	1
103.40	448.2	2
103.60	473.9	2
103.80	498.2	2
104.00	0.0	

Outlet Structure File: INDNLAKE.STR

POND-2 Version: 5.15

S/N: 1295160144

Date Executed:

Time Executed:

INDIAN LAKE DAM SAFETY INSPECTION
ASSUMED ELEVATION 100.0 @ TOP OF WEIR
10/17/94

Outlet Structure File: C:\PONDPACK\DATA1\INDNLAKE.STR
Planimeter Input File: *** NONE ***
Rating Table Output File: *** NONE ***

Min. Elev.(ft) = 100 Max. Elev.(ft) = 104 Incr.(ft) = .2

Additional elevations (ft) to be included in table:
* * * * *

SYSTEM CONNECTIVITY

Structure	No.	Q Table	Q Table
WEIR-XY	1	->	1
ORIFICE	2	+	1
WEIR-XY	4	+	3

Outflow rating table was not stored to disk.

Outlet Structure File: INDNLAKE.STR

POND-2 Version: 5.15

S/N: 1295160144

Date Executed:

Time Executed:

INDIAN LAKE DAM SAFETY INSPECTION
ASSUMED ELEVATION 100.0 @ TOP OF WEIR
10/17/94

>>>>> Structure No. 1 <<<<<
(Input Data)

WEIR-XY

Weir - Defined by X, Y Coordinates

E1 (ft) =100

E2 (ft) =103.4

X dist.(ft)	Y elev.(ft)
-----	-----
0	103.4
.1	100
20.01	100
20.02	103.4

Outlet Structure File: INDNLAKE.STR

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S/N: 1295160144

Date Executed:

Time Executed:

INDIAN LAKE DAM SAFETY INSPECTION
ASSUMED ELEVATION 100.0 @ TOP OF WEIR
10/17/94

>>>>> Structure No. 2 <<<<<<
(Input Data)

ORIFICE

Orifice - Based on Area and Datum Elevation

E1 elev.(ft)?	103.4
E2 elev.(ft)?	104.0
Orifice coeff.?	.63
Invert elev.(ft)?	100
Datum elev.(ft) ?	101.70
Orifice area (sq ft)?	68

Outlet Structure File: INDNLAKE.STR

POND-2 Version: 5.15
Date Executed:

S/N: 1295160144
Time Executed:

INDIAN LAKE DAM SAFETY INSPECTION
ASSUMED ELEVATION 100.0 @ TOP OF WEIR
10/17/94

>>>>> Structure No. 2 <<<<<
(Input Data)

ORIFICE
Orifice - Based on Area and Datum Elevation

E1 elev.(ft)?	103.4
E2 elev.(ft)?	104.0
Orifice coeff.?	.63
Invert elev.(ft)?	100
Datum elev.(ft) ?	101.70
Orifice area (sq ft)?	68

Outlet Structure File: INDNLAKE.STR

POND-2 Version: 5.15
Date Executed:

S/N: 1295160144
Time Executed:

INDIAN LAKE DAM SAFETY INSPECTION
ASSUMED ELEVATION 100.0 @ TOP OF WEIR
10/17/94

>>>>> Structure No. 4 <<<<<
(Input Data)

WEIR-XY
Weir - Defined by X, Y Coordinates
E1 (ft) =100.0 E2 (ft) =104.0

X dist.(ft)	Y elev.(ft)
-----	-----
0	104
10	104
20	104
30	104
50	104
60	104
70	104
80	104
90	104
100	104
103	104

Outlet Structure File: INDNLAKE.STR

POND-2 Version: 5.15
Date Executed:

S/N: 1295160144
Time Executed:

INDIAN LAKE DAM SAFETY INSPECTION
ASSUMED ELEVATION 100.0 @ TOP OF WEIR
10/17/94

Outflow Rating Table for Structure #1
WEIR-XY Weir - Defined by X, Y Coordinates

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation	Messages
100.00	0.0	E = Y min= 100	
100.20	5.3	W(ft)=19.916	Max. D(ft)=.2
100.40	15.1	W(ft)=19.923	Max. D(ft)=.4
100.60	27.8	W(ft)=19.929	Max. D(ft)=.6
100.80	42.8	W(ft)=19.936	Max. D(ft)=.8
101.00	59.8	W(ft)=19.942	Max. D(ft)=1.0
101.20	78.6	W(ft)=19.949	Max. D(ft)=1.2
101.40	99.0	W(ft)=19.955	Max. D(ft)=1.4
101.60	121.0	W(ft)=19.962	Max. D(ft)=1.6
101.80	144.4	W(ft)=19.968	Max. D(ft)=1.8
102.00	169.1	W(ft)=19.975	Max. D(ft)=2.0
102.20	195.2	W(ft)=19.981	Max. D(ft)=2.2
102.40	222.4	W(ft)=19.988	Max. D(ft)=2.4
102.60	250.8	W(ft)=19.994	Max. D(ft)=2.6
102.80	280.3	W(ft)=20.001	Max. D(ft)=2.8
103.00	310.9	W(ft)=20.007	Max. D(ft)=3.0
103.20	342.5	W(ft)=20.014	Max. D(ft)=3.2
103.40	0.0	E = or > E2=103.4	
103.60	0.0	E = or > E2=103.4	
103.80	0.0	E = or > E2=103.4	
104.00	0.0	E = or > E2=103.4	

Outlet Structure File: INDNLAKE.STR

POND-2 Version: 5.15
Date Executed:

S/N: 1295160144
Time Executed:

INDIAN LAKE DAM SAFETY INSPECTION
ASSUMED ELEVATION 100.0 @ TOP OF WEIR
10/17/94

Outflow Rating Table for Structure #2
ORIFICE Orifice - Based on Area and Datum Elevation

Elevation (ft)	Q (cfs)	Computation Messages
100.00	0.0	E < E1=103.4
100.20	0.0	E < E1=103.4
100.40	0.0	E < E1=103.4
100.60	0.0	E < E1=103.4
100.80	0.0	E < E1=103.4
101.00	0.0	E < E1=103.4
101.20	0.0	E < E1=103.4
101.40	0.0	E < E1=103.4
101.60	0.0	E < E1=103.4
101.80	0.0	E < E1=103.4
102.00	0.0	E < E1=103.4
102.20	0.0	E < E1=103.4
102.40	0.0	E < E1=103.4
102.60	0.0	E < E1=103.4
102.80	0.0	E < E1=103.4
103.00	0.0	E < E1=103.4
103.20	0.0	E < E1=103.4
103.40	448.2	H =1.7
103.60	473.9	H =1.9
103.80	498.2	H =2.1
104.00	0.0	E = or > E2=104.0

C = .63 A = 68 sq.ft.

H (ft) = Table elev. - Datum elev. (101.7 ft)

Q (cfs) = C * A * sqr(2g * H)

Outlet Structure File: INDNLAKE.STR

POND-2 Version: 5.15
Date Executed:

S/N: 1295160144
Time Executed:

INDIAN LAKE DAM SAFETY INSPECTION
ASSUMED ELEVATION 100.0 @ TOP OF WEIR
10/17/94

Outflow Rating Table for Structure #4
WEIR-XY Weir - Defined by X, Y Coordinates

***** INLET CONTROL ASSUMED *****

Elevation (ft)	Q (cfs)	Computation Messages
100.00	0.0	E < Y min= 104
100.20	0.0	E < Y min= 104
100.40	0.0	E < Y min= 104
100.60	0.0	E < Y min= 104
100.80	0.0	E < Y min= 104
101.00	0.0	E < Y min= 104
101.20	0.0	E < Y min= 104
101.40	0.0	E < Y min= 104
101.60	0.0	E < Y min= 104
101.80	0.0	E < Y min= 104
102.00	0.0	E < Y min= 104
102.20	0.0	E < Y min= 104
102.40	0.0	E < Y min= 104
102.60	0.0	E < Y min= 104
102.80	0.0	E < Y min= 104
103.00	0.0	E < Y min= 104
103.20	0.0	E < Y min= 104
103.40	0.0	E < Y min= 104
103.60	0.0	E < Y min= 104
103.80	0.0	E < Y min= 104
104.00	0.0	E = or > E2=104.0

Outlet Structure File: INDNLAKE.STR

POND-2 Version: 5.15
Date Executed:

S/N: 1295160144
Time Executed:

INDIAN LAKE DAM SAFETY INSPECTION
ASSUMED ELEVATION 100.0 @ TOP OF WEIR
10/17/94

Outflow Rating Table 3
Table 3 = 1 + 2

Elevation (ft)	Q (cfs)	Contributing Structures
100.00	0.0	1
100.20	5.3	1
100.40	15.1	1
100.60	27.8	1
100.80	42.8	1
101.00	59.8	1
101.20	78.6	1
101.40	99.0	1
101.60	121.0	1
101.80	144.4	1
102.00	169.1	1
102.20	195.2	1
102.40	222.4	1
102.60	250.8	1
102.80	280.3	1
103.00	310.9	1
103.20	342.5	1
103.40	448.2	2
103.60	473.9	2
103.80	498.2	2
104.00	0.0	-

Outlet Structure File: INDNLAKE.STR

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INDIAN LAKE DAM SAFETY INSPECTION
ASSUMED ELEVATION 100.0 @ TOP OF WEIR
10/17/94

Outflow Rating Table 5
Table 5 = 3 + 4

Elevation (ft)	Q (cfs)	Contributing Structures
100.00	0.0	1
100.20	5.3	1
100.40	15.1	1
100.60	27.8	1
100.80	42.8	1
101.00	59.8	1
101.20	78.6	1
101.40	99.0	1
101.60	121.0	1
101.80	144.4	1
102.00	169.1	1
102.20	195.2	1
102.40	222.4	1
102.60	250.8	1
102.80	280.3	1
103.00	310.9	1
103.20	342.5	1
103.40	448.2	2
103.60	473.9	2
103.80	498.2	2
104.00	0.0	-

portions of the structure. However, none of the spalling seems to be endangering the structural integrity of the dam (see photos #7 and #8). There are a few areas of water seeping through the concrete both north and south of the spillways (see photos #5 and #6). Repair of these areas was attempted by the previous owner as per the current owners notes in *Appendix C*. These areas of seepage should be repaired immediately. The spalled concrete should also be repaired in order to prevent continued degradation of the dam.

C. Downstream Conditions

The concrete spillway, stilling basin and energy dissipation sill are all in relatively good condition having only slight spalling of the concrete. Scour and erosion were not apparent.

Conclusions

The earthen embankments of the Indian Lake Dam are generally in good condition and maintenance should be continued to prevent the growth of any large trees or shrubs. The concrete buttress dam is also in relatively good condition, however, repair of the dam to prevent seepage of water is an issue which needs to be addressed relatively soon. Repair of the spalled concrete in those areas previously mentioned should also be addressed. These deficiencies, if not corrected may lead to problems in the future. Also, an operation and maintenance program is recommended and should be implemented as soon as possible. The dam should also be inspected after every major storm event.

Recommendations

We recommend the following deficiencies be corrected within the next year to eliminate the potential for future problems that could arise if these deficiencies are left un-checked. They are prioritized as follows:

1. Repair the seepage cracks on both the north and south downstream sides of the dam.
2. Repair the spalled concrete in the areas mentioned in this report.
3. Continue to keep the upstream and downstream earthen abutments clear of large trees and shrubs.
4. Set up Operation and Maintenance Plan. (see below)

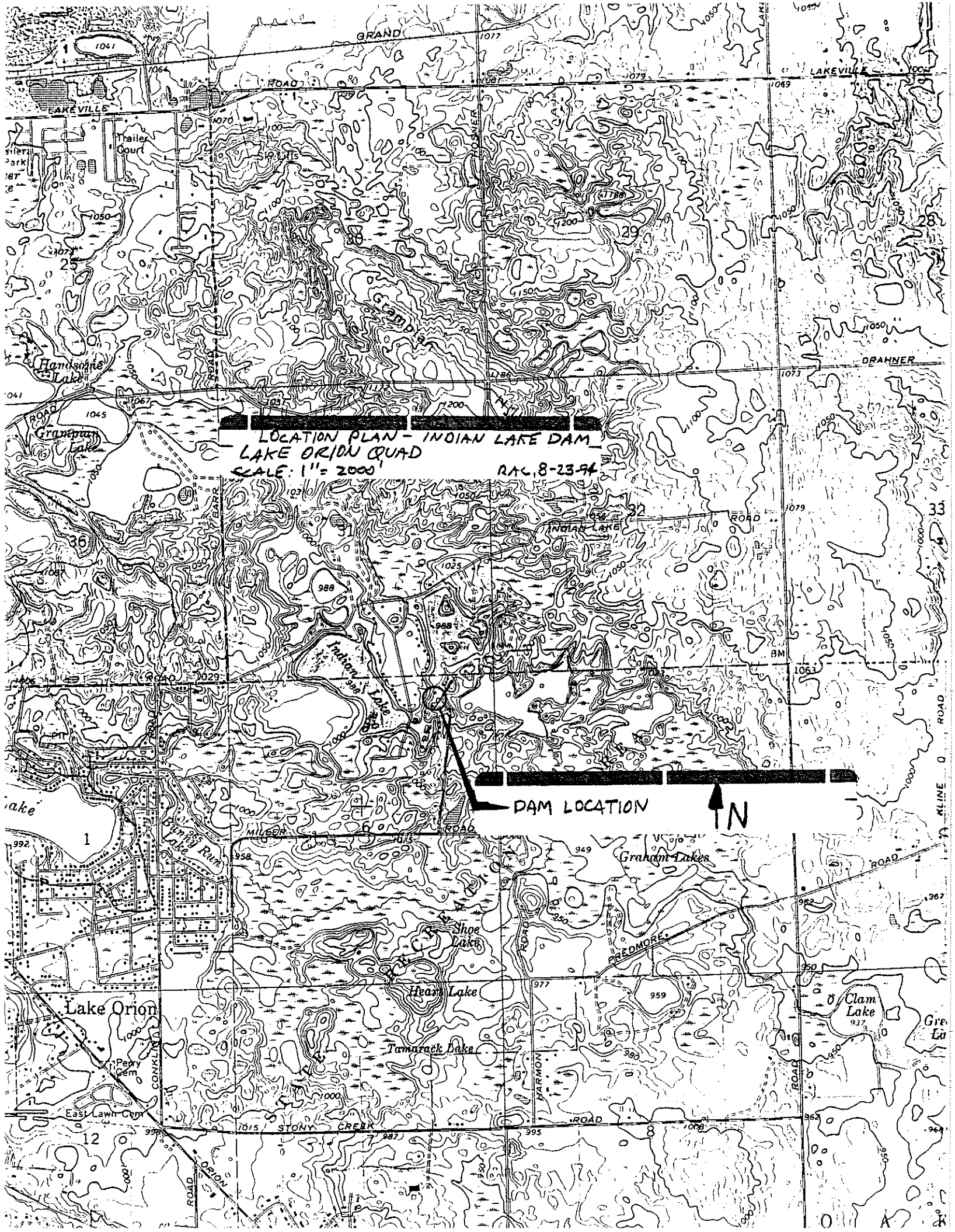
Operation & Maintenance Plan

From our conversations with Ms. Leslie Pielack, representative for the Indian Lake Improvement Association, we have found that the association has been responsible for the past operation and maintenance performed on the dam. The dam is not inspected on a regular basis nor has a formal operation and maintenance plan been set-up by the association. We would like to note that the following items should be included in the operation and maintenance plan and placed in a log book for future reference.

1. Note water surface over the weir, date and time at least once a month and during all major flood events. This information will aid in future inspections and in recording major floods.
2. Bi-yearly, perform a visual inspection noting any deficiencies in the concrete dam, weir and spillway, and the earthen embankment.
3. All deficiencies which are corrected should be noted within the log book. Items completed and dates of each should be recorded.

All of this information should be kept in the log book for future reference.

APPENDIX A
MAPS AND SKETCHES

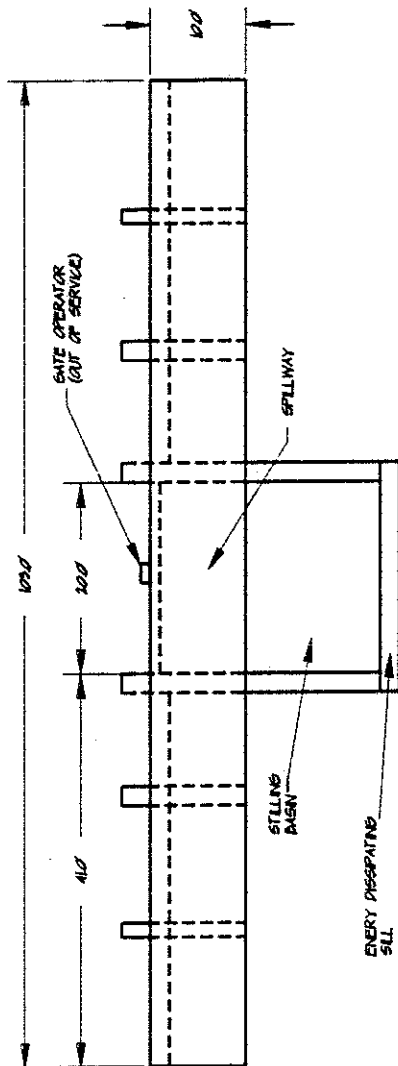


LOCATION PLAN - INDIAN LAKE DAM
LAKE ORION QUAD
SCALE: 1" = 2000' RAL 8-23-94

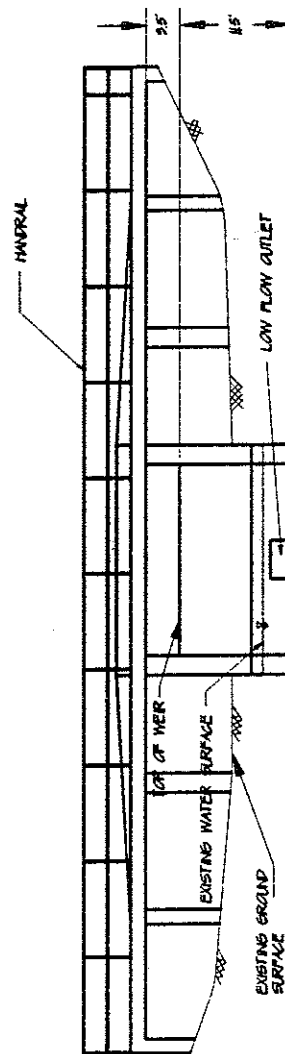
DAM LOCATION



INDIAN LAKE DAM OAKLAND COUNTY W.BRANCH STONEY CREEK MDNR DAM ID NUMBER 00687



PLAN
NTS



PROFILE
NTS

J&K
J&K & ASSOCIATES, INC.
45650 GRAND RIVER AVENUE
NOVI, MICHIGAN 48376
PHONE (313) 348-2580
FAX (313) 348-2777

DAM DETAILS

**INDIAN LAKE DAM
OXFORD, MICHIGAN**

Sht. No.

Job No.
3844-00

Date
10-17-94

Scale
N.T.S.

Drawn
Designed
Checked

G.M.M.
G.W.F.

REVISIONS

C. VORAWINGS, DAMS AND EARTHWORKS
VIEW -> REDUCED

APPENDIX B
PHOTOGRAPHS



PHOTO #1
DOWNSTREAM OF DAM



PHOTO #2
UPSTREAM
OF DAM



PHOTO #3
UPSTREAM FACE
OF DAM



PHOTO #4
DOWNSTREAM FACE
OF DAM



PHOTO #5
SEEPAGE OF WATER THROUGH
DAM, SOUTH OF CREEK



PHOTO #6
SEEPAGE OF WATER THROUGH
DAM, NORTH OF CREEK

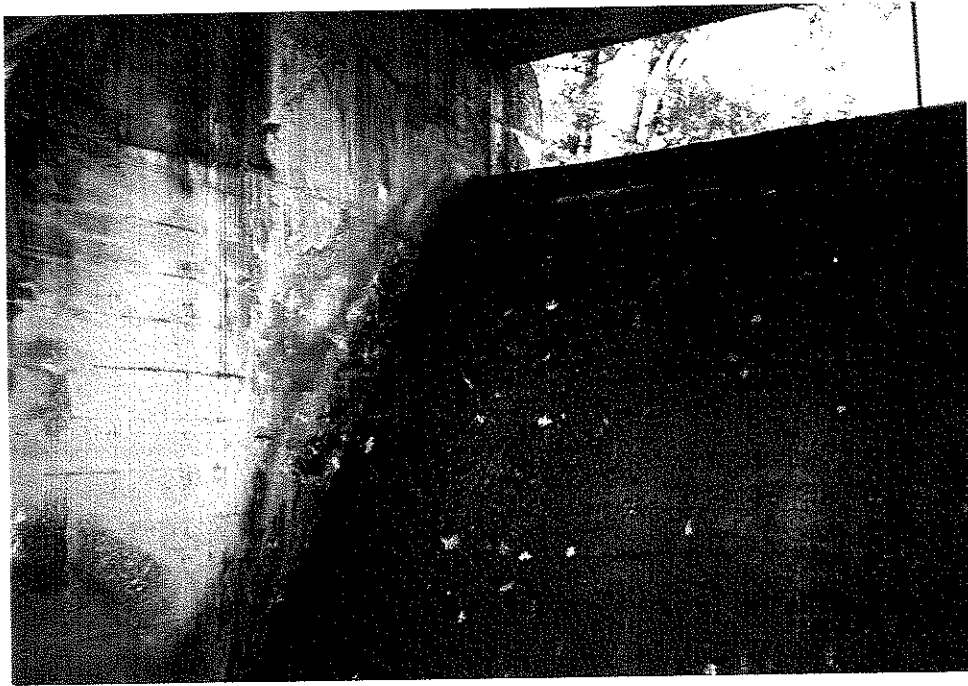


PHOTO #7
SPALLED CONCRETE NEAR
SPILLWAY, SOUTH OF CREEK



PHOTO #8
SPALLED CONCRETE
WINGWALL, SOUTH OF
CREEK



PHOTO #9
VIEW FROM DOWNSTREAM
LOOKING WEST TOWARDS
SPILLWAY

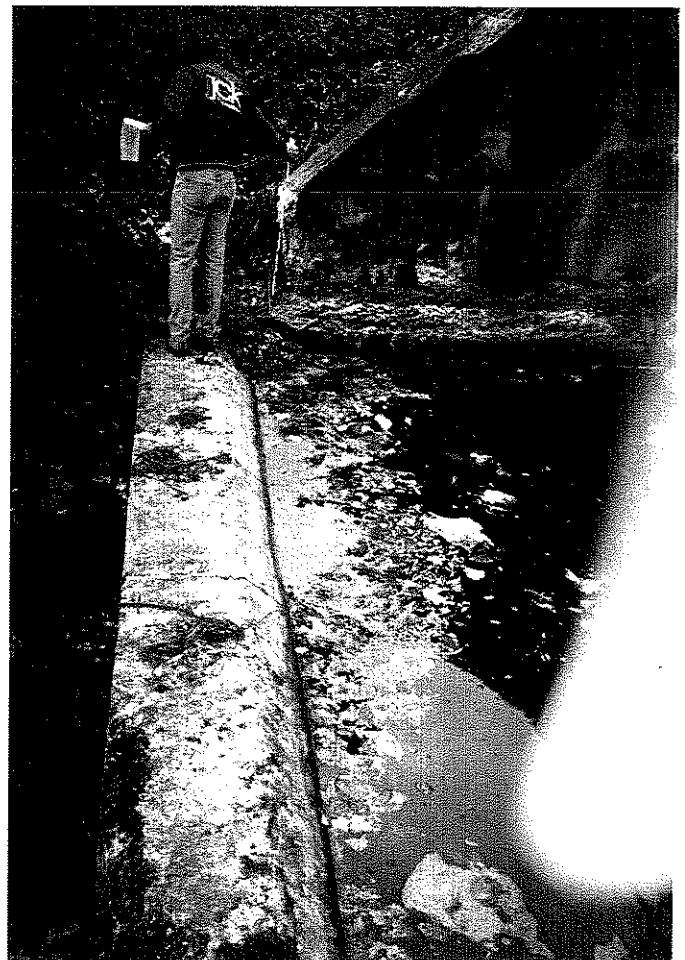


PHOTO #10
ENERGY DISSIPATION SILL
AND STILLING BASIN

APPENDIX C
FIELD INSPECTION REPORT

GENERAL DAM INFORMATION

Date of Inspection: 10/13/94

Project Name: Indian Lake Dam
Dam Inspection

DNR ID Number: 00687

County: Oakland

Dam Name: Indian Lake Dam

Pond Acres: 58

QSec/Sec/Town/Range: 31/05N/11E

Town: Oxford

River: Trib. W. Branch of Stony Creek

Height: 20' (As per MDNR)

Hazard: 3 (Low)

General Dam Description: CB

Owner/Operator: Association

Address: 75 Ridgemont
Oxford, MI 48370

Water Elevation (at time of inspection): _____

Phone: (810) 693-6765

Datum/Reference: Top of weir (100')

Inspectors: Gary Mekjian
Lynn Schwartz

Others Present: _____

GENERAL DAM INFORMATION & BACKGROUND

	YES	NO
1. Operation & Maintenance Plan & Reports	☐	☒
2. Past Inspection Reports	☐	☐
3. Construction Plans	☐	☒
4. Original Structural Analysis Available	☐	☒
5. Original Hydraulic Analysis Available	☐	☒
6. Geology Reports	☐	☒
7. History of Floods	☐	☒ - <i>JS</i>
8. Monitoring System Records	☐	☒
9. Water Level Records	☐	☒

INSPECTION CHECKLIST

1. EARTH EMBANKMENT

SETTLEMENT (Depression/sinkholes):

N/A Concrete Dam

SLOPE STABILITY (Erosion/Cracks/Sinkholes/Vegetative growth/riprap protection/debris)
UPSTREAM FACE:

N/A

DOWNSTREAM FACE:

N/A

SEEPAGE AND DRAINAGE (Locations of: downstream/upstream slopes, trees, toe, contact points with concrete structures):

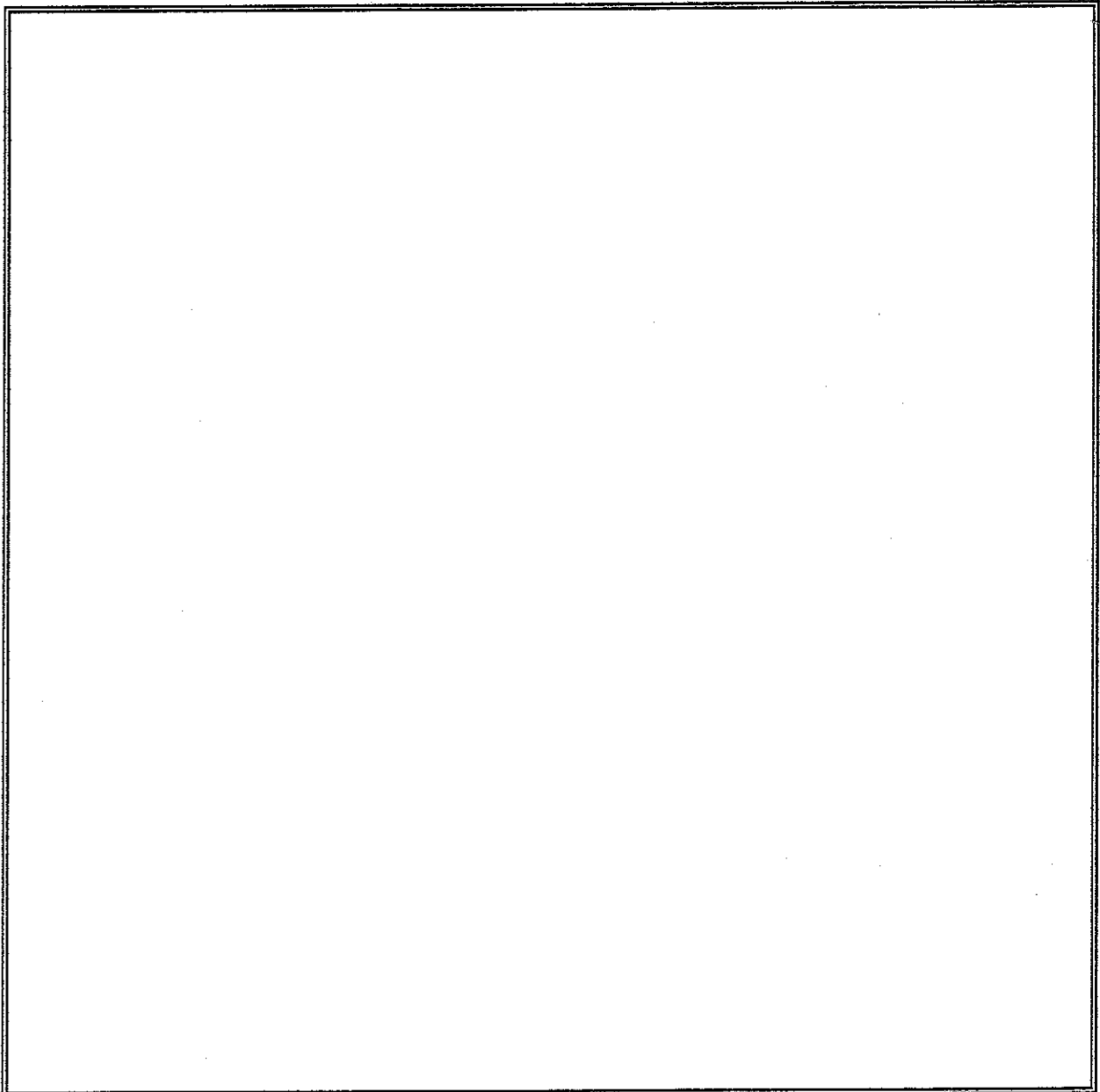
N/A

(Drainage systems: Location of toe drains/ditches/filters):

N/A

2. **SPILLWAYS & OUTLET STRUCTURES**

A. CAPACITY - SPILLWAY DIMENSIONS (Include sketch and note high water marks):



A. CAPACITY (Cont'd)

DIVERSION CHANNELS

N/A

DRAWDOWN FACILITIES - CAPACITY & OPERATION

N/A

DOWNSTREAM CONSTRUCTIONS

None

B. SEDIMENTATION AND OBSTRUCTION PROBLEMS
OUTLET CHANNEL; OBSTRUCTIONS/SEDIMENTATION

The effect of obstruction is:

1. Negligible ☒
2. Minor ☐
3. Appreciable ☐
4. Severe ☐

DIVERSION CHANNELS:

N/A

ENERGY DISSIPATION DEVICES; RIPRAP/BAFFLES:

Energy dissipator at Toe of spillway
Some spalling of concrete.

3. CONCRETE STRUCTURES

A. SURFACE CONDITIONS (Spalling/Cavation/Cracks/Seepage/Separation):

Top - slightly spalled
South Wing wall also has spalling
Seepage on downstream sides Both north
& South of outlet structure

B. JOINTS (Sealant/Movement/Seepage):

N/A

4. GENERAL COMMENTS

A. WATERSHED DEVELOPMENT:

Residential

B. SHORELINE EROSION, VEGETATION & PROTECTION:

Good vegetative cover. Scrub is cut back
off the abutments but grasses and
other protective cover remain

APPENDIX D
CORRESPONDENCE

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

Stevens T. Mason Building, P.O. Box 30028, Lansing, MI 48909

ROLAND HARMES, Director

NATURAL RESOURCES
COMMISSION

JERRY C. BARTNIK
LARRY DEVUYST
PAUL EISELE
JAMES P. HILL
DAVID HOLLI
JOEY M. SPANO
JORDAN B. TATTER

September 22, 1994

Mr. Ronald A. Cavallaro, Jr., P.E.
JCK & Associates, Inc.
P.O. Box 759
Novi, Michigan 48376

Dear Mr. Cavallaro:

We have estimated the flood frequency discharges requested in your letter dated August 23, 1994, as follows.

W. Branch Stoney Creek at Indian Lake Dam (Dam ID 00687), Section 31, T5N, R11E, Oakland County, has a drainage area of 1.2 square miles. The 10%, 2% and 1% chance peak inflows are estimated to be 60 cfs, 150 cfs and 200 cfs, respectively. The 1% flood volume is 110 acre-feet.

Please include a copy of this letter with your inspection report or any subsequent application for permit. These estimates should be confirmed by our office if an application is not submitted within one year. If you have any questions concerning the discharge estimates, please do not hesitate to contact me. Any questions concerning the hydraulics or the requirements for the dam safety inspection report should be directed to Mr. John Dexter of this office (telephone number: 517-335-3171).

Sincerely,

Gerald W. Fulcher, Jr., P.E., Chief
Hydrologic Studies Unit
Land and Water Management Division
517-335-3172

GWF:JSC/cg

cc: Mr. John Dexter, MDNR



1989

last 5 years - repaired a crack/hole on the face
of the dam - not done by board - large enough
to put fist through, toward Indian lake
on our side of property

Sandbagged / boarded, pumped crack running in dam,
used pressure hose to clean, then concrete to patch it - could see it below
feet long, could set hard - 3 bags - the middle bag of lake side - but 3rd bag
is where most serious seepage. Minor repairs to the concrete prior to this -
water lines - used concrete

sluice gate is no longer operable (because
kids were letting water out)

1982

Mike McPherson - 693-9524

12 yrs. ago
can see
patches

Friend in construction gave cement and
epoxy additive 5 gal cans - plastic weeping
pipes - cement + epoxy - dries immed, push
it through water was seeping through, gradually
packed it, then pulled out weeping pipes, pushed
more in - on Prince lake side - on the east side
of the Spillover - several areas where water
was seeping - about shoulder level, towards the
top - took out alot of trees, roots, etc. (on Christen-
sen) one seeping pipe was left - couldn't stop it

completely - were going to come back and finish up but new owner
1928
Guy who helped worked
for a construction company
that
wanted to
it left in to
help receive
some pressure
water doesn't
come through it

Patch Coat of cement on weeping areas - in
past -