



State of North Carolina  
Department of Environment, Health, and Natural Resources  
Division of Land Resources

James G. Martin, Governor  
William W. Cobey, Jr., Secretary

January 31, 1992

Charles H. Gardner  
Director

**MEMORANDUM:**

TO: Melba McGee  
Division of Planning and Assessment

FROM: Jim Leumas *Jim*  
Dam Safety Engineer  
Division of Land Resources

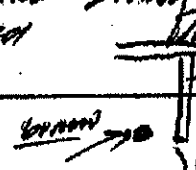
RE: Lake Lure Hydro Project  
Rutherford County  
Project Number 92-0499

This dam is under FERC's jurisdiction, and thus, it is exempt from the provisions of the Dam Safety Law of 1967. We have no comments regarding the re-licensing of the subject project.

JKL/sl

cc: Mr. Richard Phillips, P.E.

# DAM SAFETY INSPECTION REPORT

|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| NAME<br><b>LAKE LUKE DAM</b>                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | COUNTY<br><b>Rutherford</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      | NO.<br><b>003</b>                                                                                                                       | INSPECTED BY<br><b>JCA</b>                                                                                                                                                                                                                                                                                                                                                                                                                                          | DATE<br><b>4/9/91</b> |
| OWNER                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ADDRESS                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | PHONE                 |
| TYPE DAM<br><input type="checkbox"/> Embankment <input checked="" type="checkbox"/> Concrete gravity <input type="checkbox"/> Concrete arch <input type="checkbox"/> Other<br><input type="checkbox"/> Concrete buttress <input type="checkbox"/> Stone masonry |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | TYPE INSPECTION<br><input type="checkbox"/> Initial <input type="checkbox"/> Followup <input checked="" type="checkbox"/> Periodic <input type="checkbox"/> Other                                                                                                                                                                                                                                                                                                |                                                                                                                                         | SITE CONDITIONS<br><input checked="" type="checkbox"/> Dry <input type="checkbox"/> Snowcover <input type="checkbox"/> Wet<br><input type="checkbox"/> Other                                                                                                                                                                                                                                                                                                        |                       |
| HAZARD DESCRIPTION<br><b>N.C.</b>                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | HAZARD CLASS<br><input type="checkbox"/> Low (A) <input type="checkbox"/> Intermediate (B) <input checked="" type="checkbox"/> High (C) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |
| REMARKS<br><b>Had removed Kutyra slay right abutment. Reinspect within next 6 months to see if seepage is back at end of buttress</b>                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ACTION<br><input checked="" type="checkbox"/> None <input type="checkbox"/> Maintenance <input type="checkbox"/> Monitoring <input type="checkbox"/> Minor repair <input type="checkbox"/> Engineering                                                                                                                                                                                                                                                           |                                                                                                                                         | RECOMMENDATIONS<br><input type="checkbox"/> Inspection letter <input type="checkbox"/> Deficiency letter <input type="checkbox"/> RE notice <input type="checkbox"/> Engineering study <input type="checkbox"/> Inspection by RE<br><input type="checkbox"/> Inspection by DSE <input type="checkbox"/> Dam safety order <input type="checkbox"/> Enforcement <input checked="" type="checkbox"/> Periodic reinspection <input type="checkbox"/> Other reinspection |                       |
| AREA                                                                                                                                                                                                                                                            | PROBLEMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | COMMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |
| UPSTREAM SLOPE / FACE                                                                                                                                                                                                                                           | <input checked="" type="checkbox"/> 1. None <input type="checkbox"/> 11. Displaced rip rap<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Cracks<br><input type="checkbox"/> 3. High bushes <input type="checkbox"/> 13. Undermining<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Holes<br><input type="checkbox"/> 5. Wave erosion <input type="checkbox"/> 15. Spalling<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Displaced joints<br><input type="checkbox"/> 7. Slides <input type="checkbox"/> 17. Deteriorated joints<br><input type="checkbox"/> 8. Depressions <input type="checkbox"/> 18. Exposed reinforcement<br><input type="checkbox"/> 9. Bulges <input type="checkbox"/> 19. Other<br><input type="checkbox"/> 10. Sparse rip rap             | COVER: <input type="checkbox"/> Vegetation <input type="checkbox"/> Rip rap <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Asphalt <input type="checkbox"/> Other                                                                                                                                                                                                                                                                         |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |
| TOP OF DAM                                                                                                                                                                                                                                                      | <input checked="" type="checkbox"/> 1. None <input type="checkbox"/> 11. Cracks<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Spalling<br><input type="checkbox"/> 3. High bushes <input type="checkbox"/> 13. Deteriorated joints<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Displaced joints<br><input type="checkbox"/> 5. Ruts <input type="checkbox"/> 15. Exposed reinforcement<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Other<br><input type="checkbox"/> 7. Depressions<br><input type="checkbox"/> 8. Uneven<br><input type="checkbox"/> 9. Misalignment<br><input type="checkbox"/> 10. Has overtopped                                                                                                                                          | COVER: <input type="checkbox"/> Vegetation <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Asphalt <input type="checkbox"/> Other                                                                                                                                                                                                                                                                          |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |
| DOWNSTREAM SLOPE / FACE                                                                                                                                                                                                                                         | <input type="checkbox"/> 1. None <input type="checkbox"/> 11. Seepage<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Bolls<br><input type="checkbox"/> 3. High bushes <input checked="" type="checkbox"/> 13. Cracks<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Holes<br><input type="checkbox"/> 5. Erosion <input checked="" type="checkbox"/> 15. Spalling<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Displaced joints<br><input type="checkbox"/> 7. Slides <input type="checkbox"/> 17. Deteriorated joints<br><input type="checkbox"/> 8. Depressions <input type="checkbox"/> 18. Exposed reinforcement<br><input type="checkbox"/> 9. Bulges <input type="checkbox"/> 19. Other<br><input type="checkbox"/> 10. Wetness                              | COVER: <input type="checkbox"/> Vegetation <input type="checkbox"/> Rip rap <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Other                                                                                                                                                                                                                                                                                                          |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |
| TOE CONTACT                                                                                                                                                                                                                                                     | <input type="checkbox"/> 1. None <input checked="" type="checkbox"/> 1. Seepage<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Bolls<br><input type="checkbox"/> 3. High bushes <input type="checkbox"/> 13. Cracks<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Holes<br><input type="checkbox"/> 5. Erosion <input type="checkbox"/> 15. Spalling<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Displaced joints<br><input type="checkbox"/> 7. Slides <input type="checkbox"/> 17. Deteriorated joints<br><input type="checkbox"/> 8. Depressions <input type="checkbox"/> 18. Exposed reinforcement<br><input type="checkbox"/> 9. Bulges <input type="checkbox"/> 19. Undermining<br><input type="checkbox"/> 10. Wetness <input type="checkbox"/> 20. Other | COVER: <input type="checkbox"/> Vegetation <input type="checkbox"/> Rip rap <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Other<br><br><b>Leak at end of 2nd buttress. <del>Leak at end of 2nd buttress</del> appears to have been flowing for some period of time. Small burrow above 2nd buttress.</b><br><div style="text-align: center;">  </div> |                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |

Leak flowing down across road.



State of North Carolina  
Department of Environment, Health, and Natural Resources  
Division of Land Resources

James G. Martin, Governor  
William W. Cobey, Jr., Secretary

Charles H. Gardner  
Director

October 23, 1990

Town Manager  
Town of Lake Lure  
P.O. Box 255  
Lake Lure, North Carolina 28746

RE: Approval to Modify  
Lake Lure Dam  
Rutherford County

RECEIVED

NOV - 1 1990  
LAND QUALITY SECTION  
ASHEVILLE

Dear Sir/Madam:

This is in response to your submission on October 4, 1990 of plans and design data for the modification of the subject dam in Rutherford County on the Broad River in compliance with the Dam Safety Law of 1967. These plans have been prepared under the supervision of Mr. M. Keith Webb, P.E. of McGill and Associates, P.A.

This letter constitutes approval of your proposal to modify the subject dam according to the plans submitted to this Division on October 4, 1990 with the following stipulations:

1. Project construction shall be supervised by Mr. M. Keith Webb, P.E.
2. During construction the Division of Land Resources may require such progress reports as is deemed necessary.
3. Upon completion of the project, Mr. M. Keith Webb, P.E. shall inspect the completed work and upon finding that the work has been done as specified, shall file with the Division of Land Resources "As-Built" drawings and a certificate stating that the work has been completed in accordance with approved plans, specifications and other requirements.
4. You must notify Mr. Richard Phillips, P.E., Land Quality Section, Interchange Bldg., 59 Woodfin Place, Asheville, North Carolina 28801, (704) 251-6208, ten days before the start of construction.

Very truly yours,

Charles H. Gardner, P.G., P.E.

CHG/JDS/sl

cc: Mr. Richard Phillips, P.E.  
Mr. M. Keith Webb, P.E.

P.O. Box 27687 • Raleigh, N.C. 27611-7687 • Telephone (919) 733-3833

An Equal Opportunity Affirmative Action Employer



**McGILL ASSOCIATES, P.A.**  
CONSULTING ENGINEERS

RECEIVED

October 1, 1990

OCT - 3 1990

Mr. Jim Simmons  
North Carolina Dam Safety  
Post Office Box 27687  
Raleigh, North Carolina 27611

LAND QUALITY SECTION  
ASHEVILLE

RE: Floodgate Modification  
Hydroelectric Dam  
Town of Lake Lure

Dear Mr. Simons:

On behalf of the Town of Lake Lure we are enclosing sketches which indicate the proposed modifications to the existing floodgates on the hydroelectric dam. There are currently four (4) gates on the dam which are used to control lake level. The four (4) consist of one 9.5 foot wide trash gate, two (2) 28.5 foot wide and one (1) 29.0 foot wide flood gates. The existing gates have a crest elevation of 992.0.

As a result of development around the lake it is no longer acceptable to allow lake levels to reach the 992.0 elevation due to flooding of docks and boat houses. The lake level is normally operated at approximately elevation 989.5. This level is maintained through the release of water through the hydropower generators. However during major storm events it is sometimes necessary to open the existing floods to stabilize the lake level. The gate must be opened manually through the use of a gasoline powered winch and requires that a member of the Town's staff be on duty during all storm events to monitor lake levels.

In order to provide for a more fail safe system we are proposing to cut and remove the top 16 inches of each of the 3 floodgates. The proposed work will remove only the skin plate and braces and will not effect the main structure of each gate. With the crest of each gate lowered to elevation 990.67 the gates will act as weir gates allowing water to discharge across the top of each gate. With this set up in place the Town will no longer have to be concerned with having a person on duty at all times to monitor lake levels. The mechanism for opening the gates will remain in place in case the gates must be opened in the future.

I have discussed the project with Richard Phillips in the Asheville Regional office and he has indicated that no permits are required to do this work. Please review the enclosed and if there are any questions, or if we need to provide additional information, please do not hesitate to call.

Sincerely,

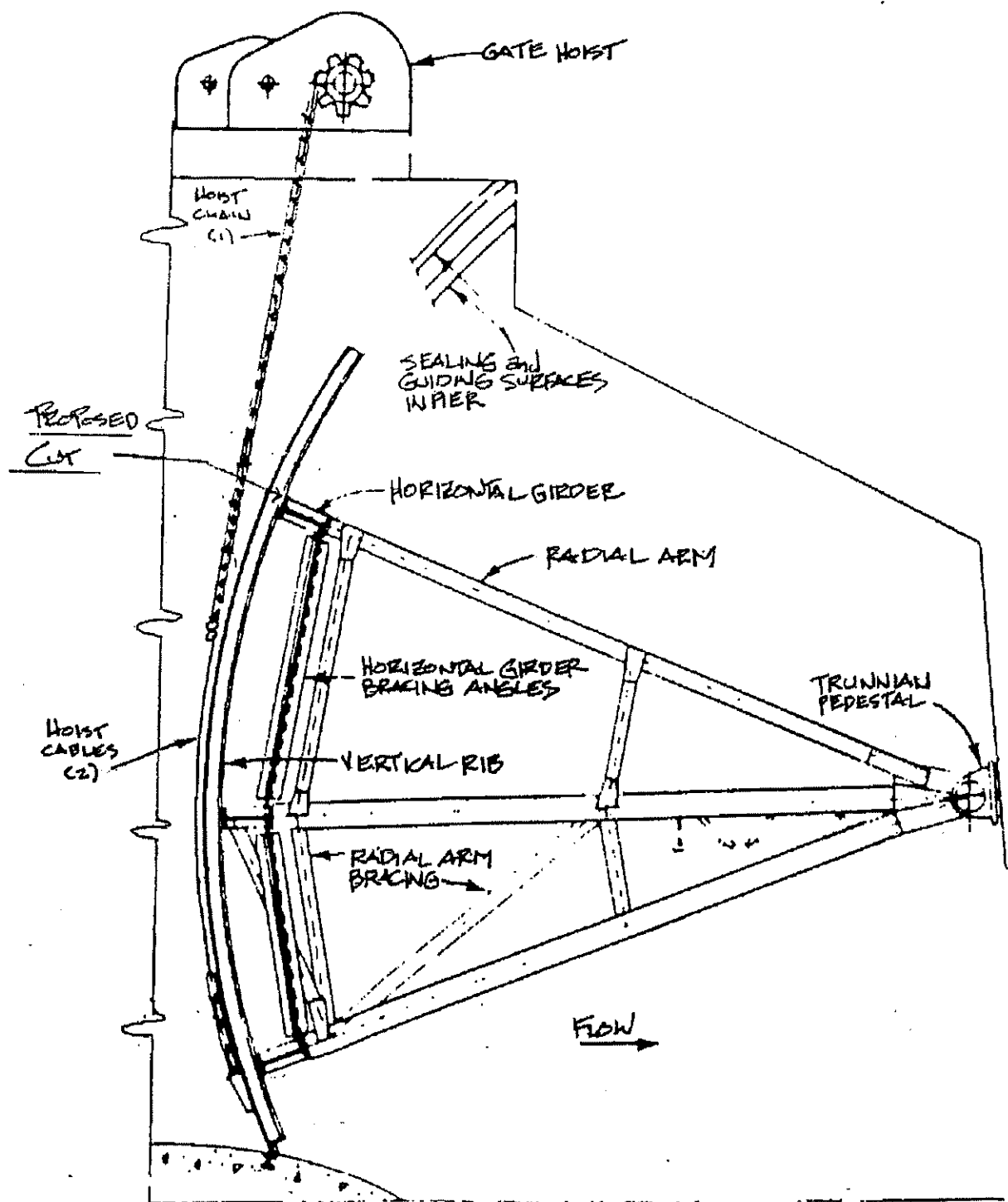
McGILL ASSOCIATES, P.A.

*Keith Webb*  
M. KEITH WEBB, P.E.

MKW/drj

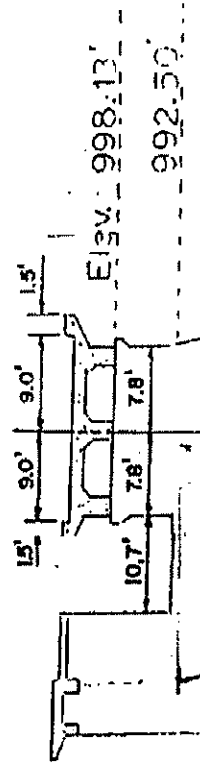
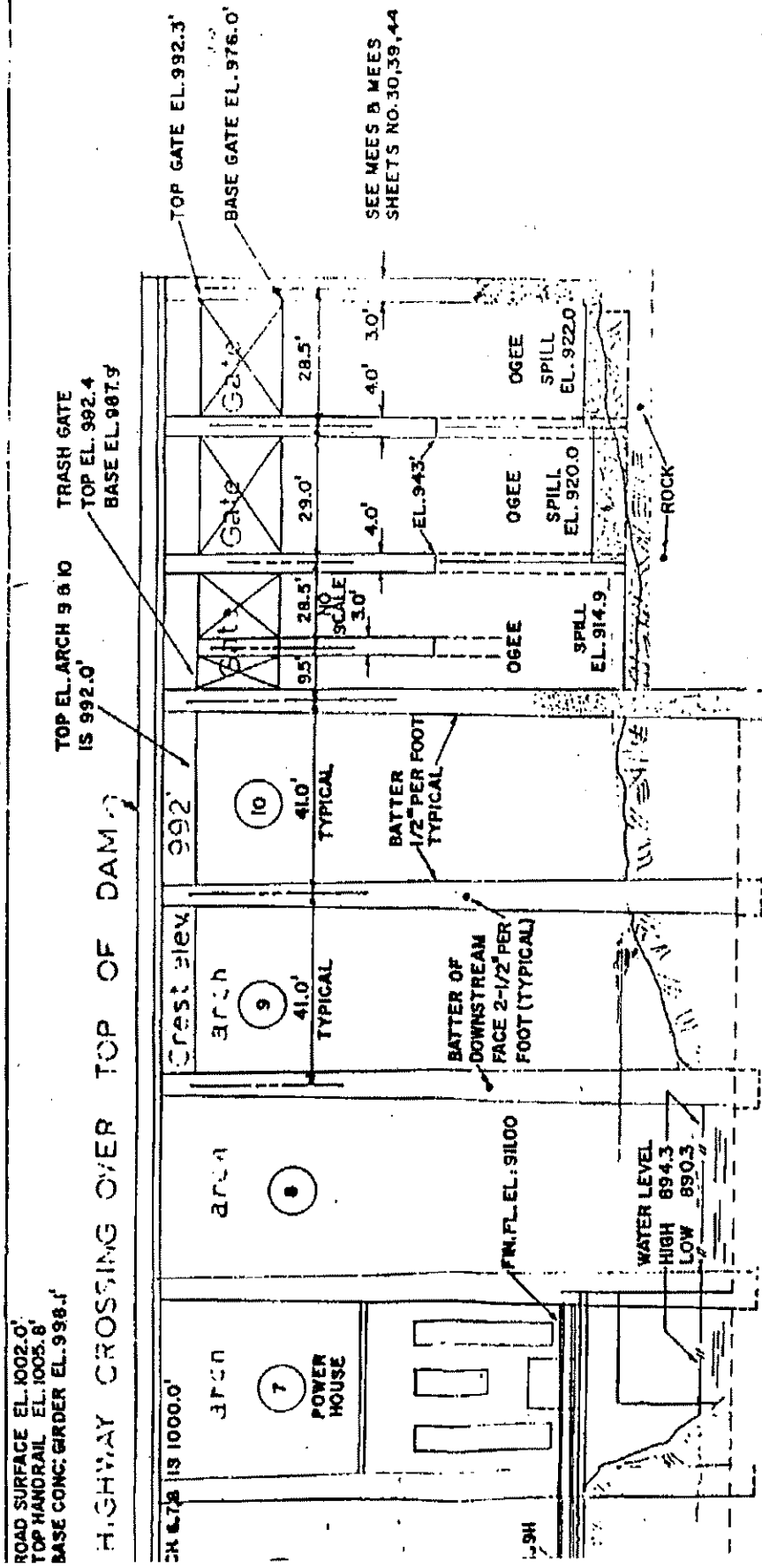
cc: Jerry King w/enclosure  
Richard Phillips w/enclosure

90233



SECTION THROUGH GATE

N.T.S.





McGILL ASSOCIATES, P.A.

CONSULTING ENGINEERS

704/252-0575

38 ORANGE STREET  
ASHEVILLE, N.C. 28801

P.O. BOX 2259  
ASHEVILLE, N.C. 28802

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_

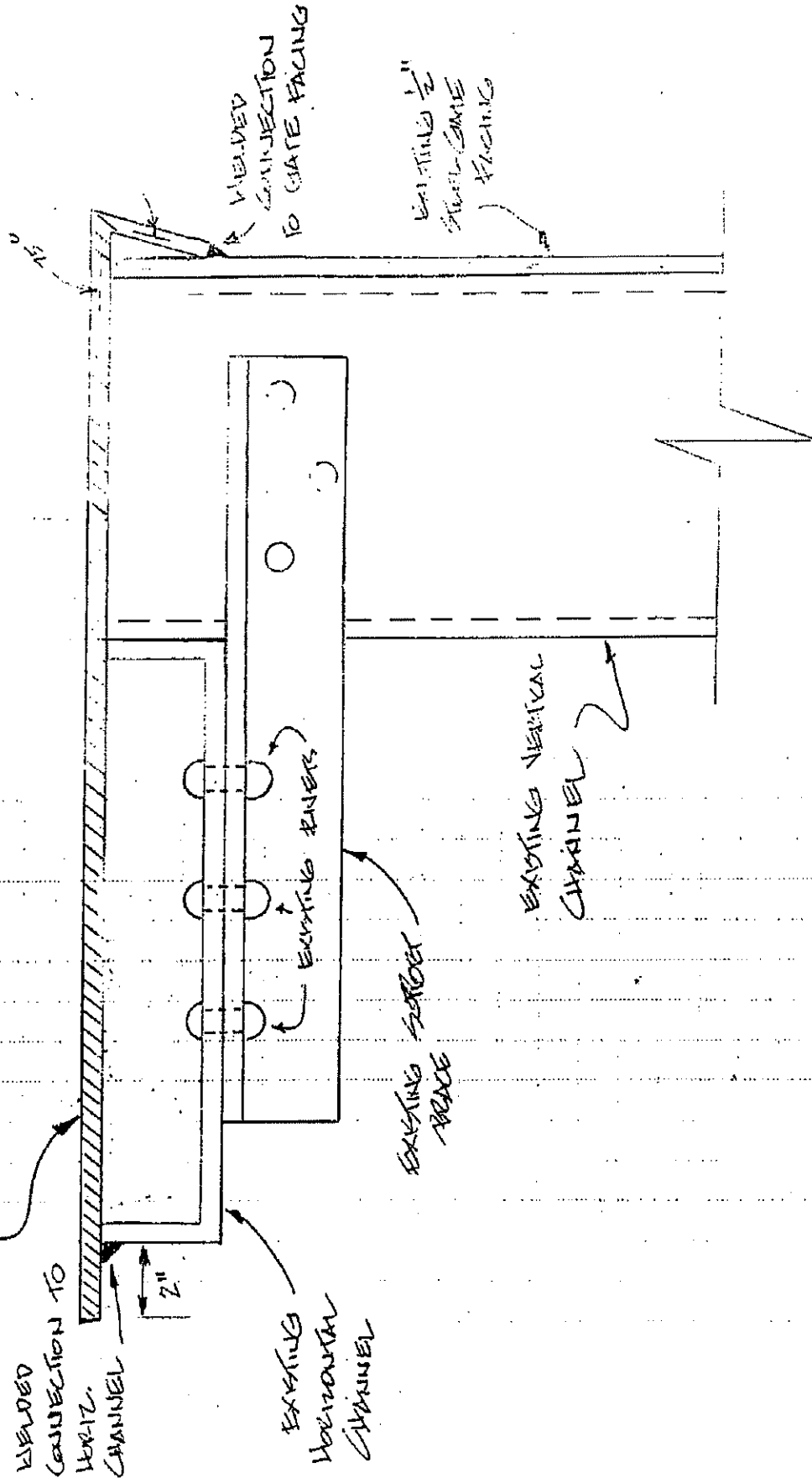
CALCULATED BY \_\_\_\_\_ DATE \_\_\_\_\_

DESCRIPTION \_\_\_\_\_

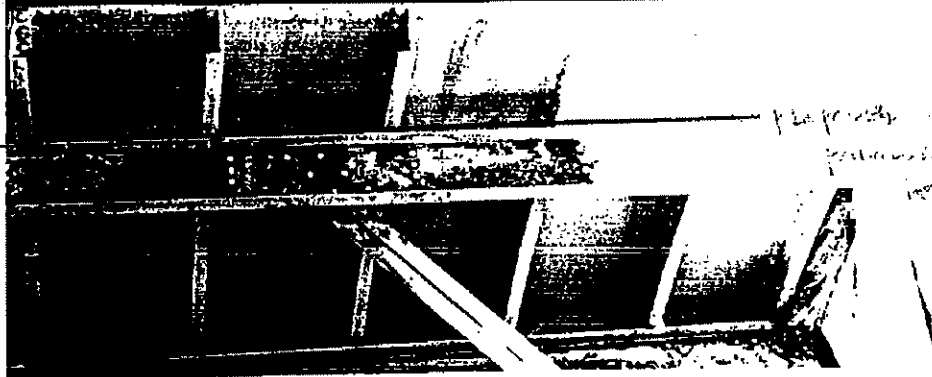
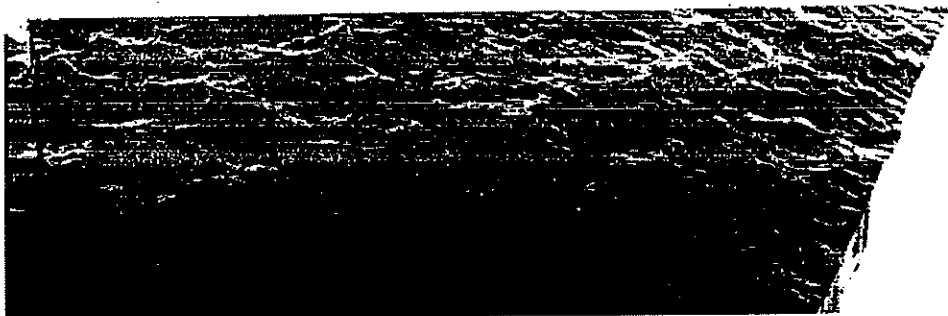
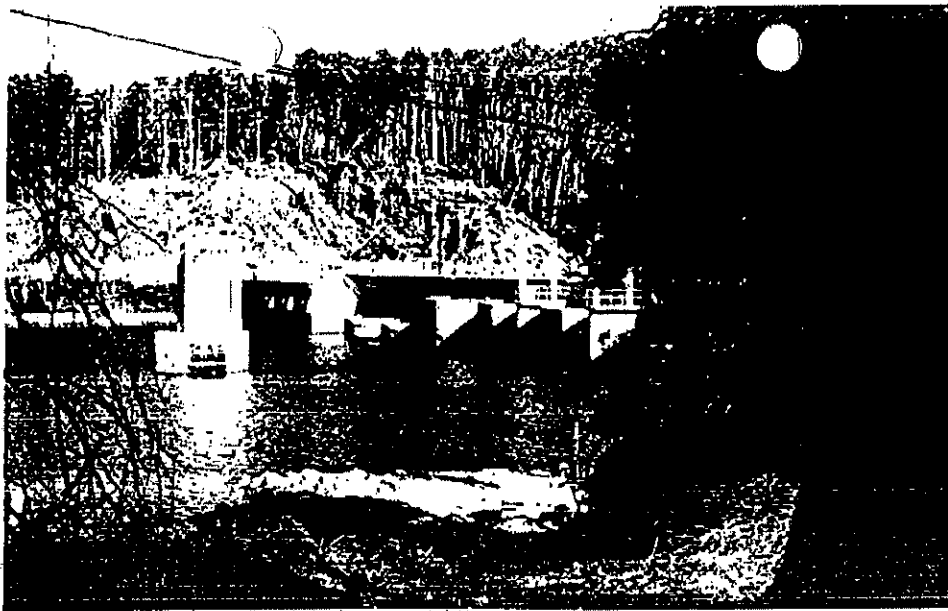
SCALE \_\_\_\_\_ PROJECT NO. \_\_\_\_\_

NOTE: GATE FACING AND VERTICAL CHANNEL SURFACE TO BE PAINTED ALONG A HORIZONTAL LINE @ ELEV. OF: TOP OF HORIZONTAL 12" WIDE FLANGE

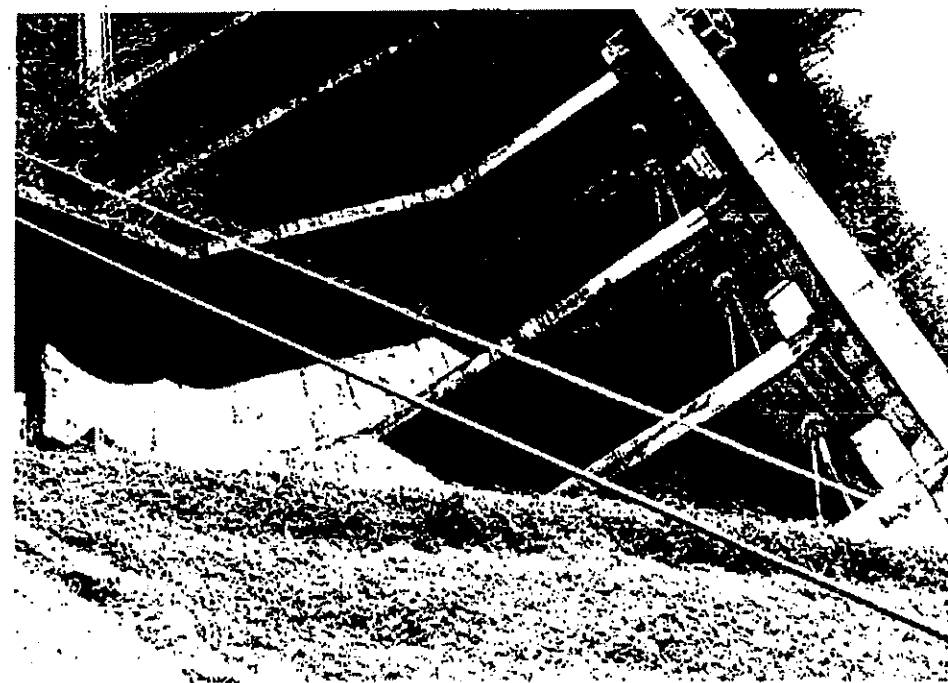
PROPOSED 1/2" STEEL OVERFLOW RATE \*  
TO FIT ALONG ENTIRE WIDTH OF GATE \*



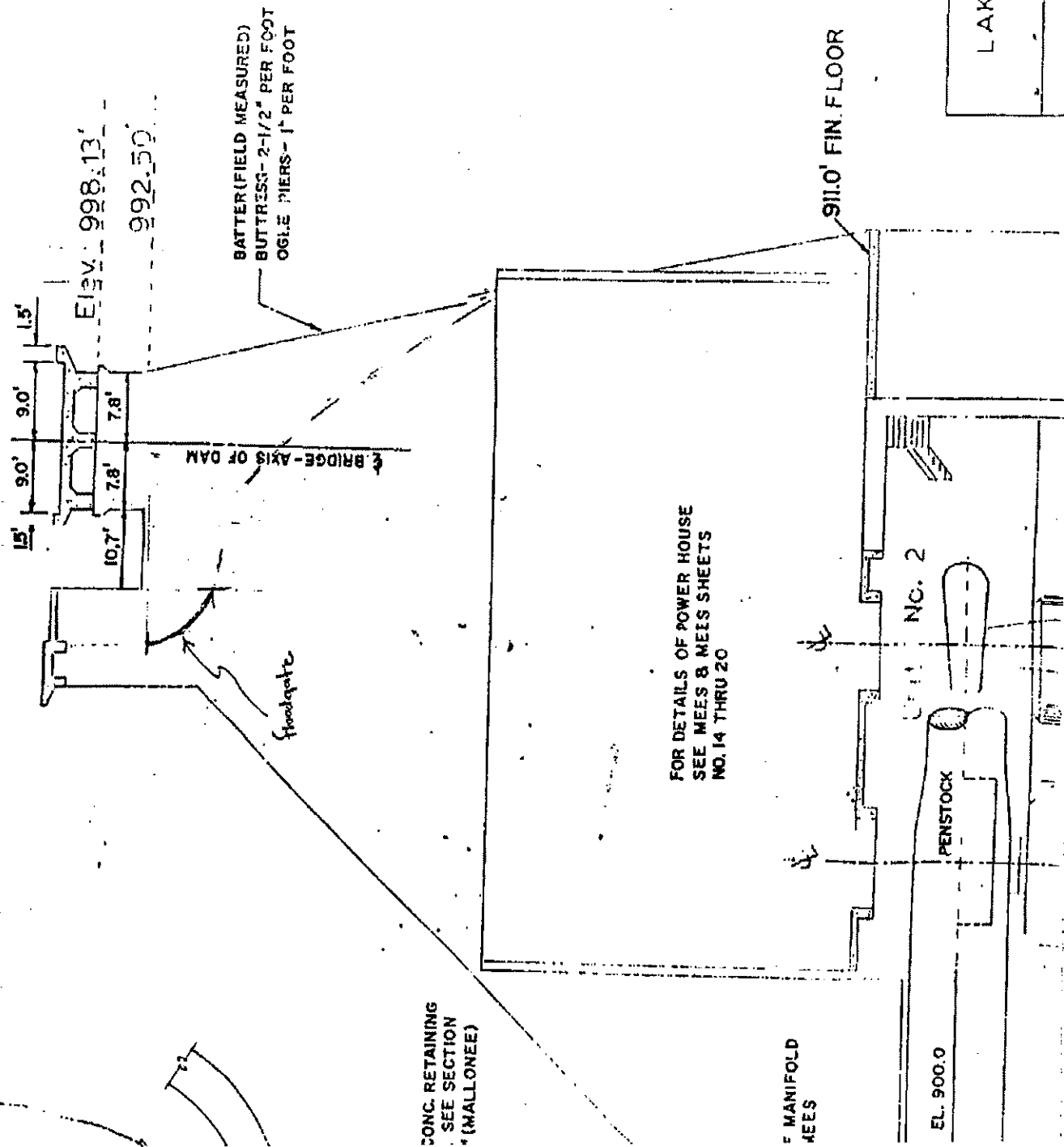
\* CONTRACTOR TO VERIFY ACTUAL CHANNEL DIMENSIONS AND GATE WIDTHS BEFORE DIMENSIONING LENGTH AND WIDTH OF OVERFLOW RATE



PROPOSED DRAINAGE LINE  
 THROUGH IT TOP OF  
 10' CH. CHANNEL  
 FLANGE



# REAR SIDE OF DAM.



THIS DRAWING IS A PART OF THE APPLICATION FOR LICENSE MADE BY THE UNDERSIGNED THIS THE 12TH DAY OF DEC 1967.

TOWN LAKE LURE

VERTICAL DATUM:  
THIS SHEET - MEAN SEA LEVEL

EXHIBIT "L" REVISED JULY 1970 BY MALLONEE SURVEYING INC. - ELEVATORS, DIMENSIONS AND OTHER DATUM ADDED BY REQUEST

EXHIBIT L

LAKE LURE HYDROELECTRIC PLANT  
LAKE LURE, N. C.



State of North Carolina  
Department of Natural Resources and Community Development  
Asheville Regional Office

James G. Martin, Governor  
S. Thomas Rhodes, Secretary

March 1, 1989

David R. Spain  
Regional Manager

Town of Lake Lure  
P. O. Box 255  
Lake Lure, NC 28746

RE: Lake Lure Dam - Rutherford County

Gentlemen:

On February 13, 1989, the referenced dam was visually inspected by personnel of this office. The inspection was made under jurisdiction of the N. C. Dam Safety Law of 1967 which requires owners of dams under its jurisdiction to maintain such dams in a safe operating condition. The inspection revealed the following maintenance problems which must be addressed: Kudzu growing on the abutments should be controlled and replaced with a ground cover which would allow this area to be visible for the inspection of seepage areas.

When these problems are corrected, please contact this office. You should also inspect the dam periodically and report any changes in the dam's condition to this office for evaluation.

Most dam owners have received a Dam Operation and Inspection Manual from this office to aid them in maintaining their dam in a proper manner. If you have not received this manual and want a copy, please inform me and one will be sent to you free of charge.

Your dam will continue to be inspected on a regular basis as part of this office's dam inspection program. If you have any questions, please contact the Land Quality Section in the Asheville Regional Office of the Department of Natural Resources and Community Development. In an effort to update our Dam Inventory, we would appreciate your contacting us (704/251-6208) to provide the addresses and phone numbers of those persons to be notified in the event of a dam emergency.

Sincerely,

A handwritten signature in dark ink, appearing to read "R. A. Phillips".

Richard A. Phillips, P.E.  
Regional Engineer

RAP:a

# DAM SAFETY INSPECTION REPORT

| NAME<br><b>Lake Lure Dam</b>                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | COUNTY<br><b>Rutherford</b>                                                                                                                                       | NO.<br><b>003</b>                                                                                                                                                                                                                                                                                                             | INSPECTED BY<br><b>Larry Adair</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  | DATE<br><b>02-13-89</b>  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| OWNER<br><b>Town of Lake Lure</b>                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ADDRESS<br><b>P.O. Box 255 Lake Lure, NC 28146</b>                                                                                                                |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | PHONE<br><b>605-9983</b> |
| TYPE DAM<br><input type="checkbox"/> Embankment <input type="checkbox"/> Concrete gravity <input type="checkbox"/> Concrete arch <input type="checkbox"/> Other<br><input checked="" type="checkbox"/> Concrete buttress <input type="checkbox"/> Stone masonry |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | TYPE INSPECTION<br><input type="checkbox"/> Initial <input type="checkbox"/> Followup <input checked="" type="checkbox"/> Periodic <input type="checkbox"/> Other |                                                                                                                                                                                                                                                                                                                               | SITE CONDITIONS<br><input checked="" type="checkbox"/> Dry <input type="checkbox"/> Snowcover <input type="checkbox"/> Wet<br><input type="checkbox"/> Low (A) <input type="checkbox"/> Intermediate (B) <input checked="" type="checkbox"/> High (C)                                                                                                                                                                                                               |                          |
| HAZARD DESCRIPTION                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                               | HAZARD CLASS                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |
| REMARKS<br><b>THE DAM HAS BEEN MAINTAINED SINCE THE LAST INSPECTION.</b>                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                               | ACTION<br><input checked="" type="checkbox"/> None <input type="checkbox"/> Maintenance <input type="checkbox"/> Monitoring <input type="checkbox"/> Minor repair <input type="checkbox"/> Engineering                                                                                                                                                                                                                                                              |                          |
|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                               | RECOMMENDATIONS<br><input checked="" type="checkbox"/> Inspection letter <input type="checkbox"/> Deficiency letter <input type="checkbox"/> RE notice <input type="checkbox"/> Engineering study <input type="checkbox"/> Inspection by RE<br><input type="checkbox"/> Inspection by DSE <input type="checkbox"/> Dam safety order <input type="checkbox"/> Enforcement <input type="checkbox"/> Periodic reinspection <input type="checkbox"/> Other reinspection |                          |
| AREA                                                                                                                                                                                                                                                            | PROBLEMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                   | COMMENTS                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
| UPSTREAM SLOPE / FACE                                                                                                                                                                                                                                           | <input checked="" type="checkbox"/> 1. None <input type="checkbox"/> 11. Displaced rip rap<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Cracks<br><input type="checkbox"/> 3. High bushes <input type="checkbox"/> 13. Undermining<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Holes<br><input type="checkbox"/> 5. Wave erosion <input type="checkbox"/> 15. Spalling<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Displaced joints<br><input type="checkbox"/> 7. Slides <input type="checkbox"/> 17. Deteriorated joints<br><input type="checkbox"/> 8. Depressions <input type="checkbox"/> 18. Exposed reinforcement<br><input type="checkbox"/> 9. Bulges <input type="checkbox"/> 19. Other<br><input type="checkbox"/> 10. Sparse rip rap                         |                                                                                                                                                                   | COVER: <input type="checkbox"/> Vegetation <input type="checkbox"/> Rip rap <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Asphalt <input type="checkbox"/> Other                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
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|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
| DOWNSTREAM SLOPE / FACE                                                                                                                                                                                                                                         | <input checked="" type="checkbox"/> 1. None <input type="checkbox"/> 11. Seepage<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Bolls<br><input type="checkbox"/> 3. High bushes <input type="checkbox"/> 13. Cracks<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Holes<br><input type="checkbox"/> 5. Erosion <input type="checkbox"/> 15. Spalling<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Displaced joints<br><input type="checkbox"/> 7. Slides <input type="checkbox"/> 17. Deteriorated joints<br><input type="checkbox"/> 8. Depressions <input type="checkbox"/> 18. Exposed reinforcement<br><input type="checkbox"/> 9. Bulges <input type="checkbox"/> 19. Other<br><input type="checkbox"/> 10. Wetness                                                     |                                                                                                                                                                   | COVER: <input checked="" type="checkbox"/> Vegetation <input type="checkbox"/> Rip rap <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Other<br><br><b>KUDZU IS PRESENT ON THE <del>ROCK</del> ABUTMENTS.</b><br><b>SPALLING OF CONCRETE IS PRESENT ON THE (E. DETERIORATION) BACKSLOPE OF THE DAM.</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
| TOE CONTACT                                                                                                                                                                                                                                                     | <input checked="" type="checkbox"/> 1. None <input checked="" type="checkbox"/> 11. Seepage<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Bolls<br><input type="checkbox"/> 3. High bushes <input type="checkbox"/> 13. Cracks<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Holes<br><input type="checkbox"/> 5. Erosion <input type="checkbox"/> 15. Spalling<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Displaced joints<br><input type="checkbox"/> 7. Slides <input type="checkbox"/> 17. Deteriorated joints<br><input type="checkbox"/> 8. Depressions <input type="checkbox"/> 18. Exposed reinforcement<br><input type="checkbox"/> 9. Bulges <input type="checkbox"/> 19. Undermining<br><input type="checkbox"/> 10. Wetness <input type="checkbox"/> 20. Other |                                                                                                                                                                   | COVER: <input type="checkbox"/> Vegetation <input type="checkbox"/> Rip rap <input checked="" type="checkbox"/> Concrete <input checked="" type="checkbox"/> Other <b>ROCK</b>                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |
|                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |

| AREA                   | PROBLEMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | COMMENTS                                                                                                                                                                                                                                                                                                      |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ADJUTANT CONTACTS      | <input type="checkbox"/> 1. None <input type="checkbox"/> 11. Seepage<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Bolts<br><input type="checkbox"/> 3. High bushes <input type="checkbox"/> 13. Cracks<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Holes<br><input type="checkbox"/> 5. Erosion <input type="checkbox"/> 15. Spalling<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Displaced joints<br><input type="checkbox"/> 7. Slides <input type="checkbox"/> 17. Deteriorated joints<br><input type="checkbox"/> 8. Depressions <input type="checkbox"/> 18. Exposed reinforcement<br><input type="checkbox"/> 9. Bulges <input type="checkbox"/> 19. Undermining<br><input type="checkbox"/> 10. Wetness <input type="checkbox"/> 20. Other                                                     | COVER: <input checked="" type="checkbox"/> Vegetation <input type="checkbox"/> Rip rap <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Other <u>KUDZU</u><br><u>GRANT</u><br><u>KUDZU SHOULD BE CONTROLLED TO ENSURE</u><br><u>PROPER VISUAL INSPECTION OF THE</u><br><u>ADJUTANTS.</u> |
| PRINCIPAL SPILLWAY     | <input checked="" type="checkbox"/> 1. None <input type="checkbox"/> 11. Joint displacement<br><input type="checkbox"/> 2. No trashguard <input type="checkbox"/> 12. Undermined<br><input type="checkbox"/> 3. Obstructed <input type="checkbox"/> 13. Voids<br><input type="checkbox"/> 4. Plugged <input type="checkbox"/> 14. Erosion<br><input type="checkbox"/> 5. Rusted <input type="checkbox"/> 15. Holes<br><input type="checkbox"/> 6. Damaged <input type="checkbox"/> 16. Conduit collapsed<br><input type="checkbox"/> 7. Gates leaking <input type="checkbox"/> 17. Spalling<br><input type="checkbox"/> 8. Joints leaking <input type="checkbox"/> 18. Outlet undercutting<br><input type="checkbox"/> 9. Cracks <input type="checkbox"/> 19. Misalignment<br><input type="checkbox"/> 10. Joint deterioration <input type="checkbox"/> 20. Other                    | TYPE/SIZE: <u>10 ARCHES</u>                                                                                                                                                                                                                                                                                   |
| EMERGENCY SPILLWAY     | <input checked="" type="checkbox"/> 1. None <input type="checkbox"/> 11. Joint displacement<br><input type="checkbox"/> 2. No ES <input type="checkbox"/> 12. Undermining<br><input type="checkbox"/> 3. Same as PS <input type="checkbox"/> 13. Voids<br><input type="checkbox"/> 4. Obstructed <input type="checkbox"/> 14. Holes<br><input type="checkbox"/> 5. Erosion <input type="checkbox"/> 15. Exposed reinforcement<br><input type="checkbox"/> 6. Displaced rip rap <input type="checkbox"/> 16. Spalling<br><input type="checkbox"/> 7. Sparse rip rap <input type="checkbox"/> 17. Outlet erosion<br><input type="checkbox"/> 8. Joints leaking <input type="checkbox"/> 18. Misalignment<br><input type="checkbox"/> 9. Cracks <input type="checkbox"/> 19. Inadequate capacity<br><input type="checkbox"/> 10. Joint deterioration <input type="checkbox"/> 20. Other | TYPE/SIZE: <u>3 GATES (16' X 25')</u><br><u>NO PROBLEMS NOTED</u>                                                                                                                                                                                                                                             |
| TRAINS / OTHER OUTLETS | <input type="checkbox"/> 1. None<br><input type="checkbox"/> 2. No bottom drain<br><input type="checkbox"/> 3. Bottom drain inoperable<br><input type="checkbox"/> 4. Subsurface drain dry<br><input type="checkbox"/> 5. Subsurface drain muddy flow<br><input type="checkbox"/> 6. Subsurface drain obstructed<br><input type="checkbox"/> 7. No animal guard<br><input type="checkbox"/> 8. Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | TYPE:                                                                                                                                                                                                                                                                                                         |
| SKETCHES/COMMENTS      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                               |

# DAM SAFETY INSPECTION REPORT

|                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                |                                                                                                                                                                                                     |                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NAME<br><b>Lake Lure Dam</b>                                                                                                                                                                                                                                            |  | COUNTY<br><b>Rutherford</b>                                                                                                                                    | NO.<br><b>003</b>                                                                                                                                                                                   | INSPECTED BY<br><b>NORTH. ADARSEN</b>                                                                                                                  | DATE<br><b>02-13-89</b>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| OWNER<br><b>Town of Lake Lure</b>                                                                                                                                                                                                                                       |  | ADDRESS<br><b>Box 255 Lake Lure, NC 28140</b>                                                                                                                  |                                                                                                                                                                                                     |                                                                                                                                                        | PHONE<br><b>625-9983</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| TYPE DAM <input checked="" type="checkbox"/> Concrete gravity <input type="checkbox"/> Concrete arch <input type="checkbox"/> Other<br><input type="checkbox"/> Embankment <input checked="" type="checkbox"/> Concrete buttress <input type="checkbox"/> Stone masonry |  | TYPE INSPECTION <input checked="" type="checkbox"/> Periodic <input type="checkbox"/> Initial <input type="checkbox"/> Followup <input type="checkbox"/> Other |                                                                                                                                                                                                     | SITE CONDITIONS <input type="checkbox"/> Wet <input checked="" type="checkbox"/> Dry <input type="checkbox"/> Snowcover <input type="checkbox"/> Other |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| HAZARD DESCRIPTION                                                                                                                                                                                                                                                      |  |                                                                                                                                                                |                                                                                                                                                                                                     | HAZARD CLASS <input type="checkbox"/> Intermediate (B) <input checked="" type="checkbox"/> Low (A) <input type="checkbox"/> High (C)                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| REMARKS<br><b>THE DAM HAS BEEN MAINTAINED SINCE THE LAST INSPECTION.</b>                                                                                                                                                                                                |  |                                                                                                                                                                | ACTION <input checked="" type="checkbox"/> None <input type="checkbox"/> Maintenance <input type="checkbox"/> Monitoring <input type="checkbox"/> Minor repair <input type="checkbox"/> Engineering |                                                                                                                                                        | RECOMMENDATIONS <input checked="" type="checkbox"/> Inspection letter <input type="checkbox"/> Deficiency letter <input type="checkbox"/> RE notice <input type="checkbox"/> Engineering study <input type="checkbox"/> Inspection by RE <input type="checkbox"/> Inspection by DSE <input type="checkbox"/> Dam safety order <input type="checkbox"/> Enforcement <input type="checkbox"/> Periodic reinspection <input type="checkbox"/> Other reinspection |

| AREA                    | PROBLEMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | COMMENTS                                                                                                                                                                                                                                                                                                                          |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UPSTREAM SLOPE / FACE   | <input checked="" type="checkbox"/> 1. None <input type="checkbox"/> 11. Displaced rip rap<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Cracks<br><input type="checkbox"/> 3. High bushes <input type="checkbox"/> 13. Undermining<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Holes<br><input type="checkbox"/> 5. Wave erosion <input type="checkbox"/> 15. Spalling<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Displaced joints<br><input type="checkbox"/> 7. Slides <input type="checkbox"/> 17. Deteriorated joints<br><input type="checkbox"/> 8. Depressions <input type="checkbox"/> 18. Exposed reinforcement<br><input type="checkbox"/> 9. Bulges <input type="checkbox"/> 19. Other<br><input type="checkbox"/> 10. Sparse rip rap                         | COVER: <input type="checkbox"/> Vegetation <input type="checkbox"/> Rip rap <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Asphalt <input type="checkbox"/> Other                                                                                                                                          |
| TOP OF DAM              | <input checked="" type="checkbox"/> 1. None <input type="checkbox"/> 11. Cracks<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Spalling<br><input type="checkbox"/> 3. High bushes <input type="checkbox"/> 13. Deteriorated joints<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Displaced joints<br><input type="checkbox"/> 5. Ruts <input type="checkbox"/> 15. Exposed reinforcement<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Other<br><input type="checkbox"/> 7. Depressions<br><input type="checkbox"/> 8. Uneven<br><input type="checkbox"/> 9. Misalignment<br><input type="checkbox"/> 10. Has overtopped                                                                                                                                                      | COVER: <input type="checkbox"/> Vegetation <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Asphalt <input checked="" type="checkbox"/> Other <b>ROADWAY</b>                                                                                                                 |
| DOWNSTREAM SLOPE / FACE | <input checked="" type="checkbox"/> 1. None <input type="checkbox"/> 11. Seepage<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Boils<br><input type="checkbox"/> 3. High bushes <input type="checkbox"/> 13. Cracks<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Holes<br><input type="checkbox"/> 5. Erosion <input type="checkbox"/> 15. Spalling<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Displaced joints<br><input type="checkbox"/> 7. Slides <input type="checkbox"/> 17. Deteriorated joints<br><input type="checkbox"/> 8. Depressions <input type="checkbox"/> 18. Exposed reinforcement<br><input type="checkbox"/> 9. Bulges <input type="checkbox"/> 19. Other<br><input type="checkbox"/> 10. Wetness                                                     | COVER: <input checked="" type="checkbox"/> Vegetation <input type="checkbox"/> Rip rap <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Other<br><br><b>KUDZU IS PRESENT ON THE <del>DOWN</del> ABUTMENTS.</b><br><br><b>SPALLING OF CONCRETE IS PRESENT ON THE (E. DETERIORATION) BACKSLOPE OF THE DAM.</b> |
| TOE CONTACT             | <input checked="" type="checkbox"/> 1. None <input checked="" type="checkbox"/> 11. Seepage<br><input type="checkbox"/> 2. Trees <input type="checkbox"/> 12. Boils<br><input type="checkbox"/> 3. High bushes <input type="checkbox"/> 13. Cracks<br><input type="checkbox"/> 4. Burrows <input type="checkbox"/> 14. Holes<br><input type="checkbox"/> 5. Erosion <input type="checkbox"/> 15. Spalling<br><input type="checkbox"/> 6. Livestock damage <input type="checkbox"/> 16. Displaced joints<br><input type="checkbox"/> 7. Slides <input type="checkbox"/> 17. Deteriorated joints<br><input type="checkbox"/> 8. Depressions <input type="checkbox"/> 18. Exposed reinforcement<br><input type="checkbox"/> 9. Bulges <input type="checkbox"/> 19. Undermining<br><input type="checkbox"/> 10. Wetness <input type="checkbox"/> 20. Other | COVER: <input type="checkbox"/> Vegetation <input type="checkbox"/> Rip rap <input checked="" type="checkbox"/> Concrete <input checked="" type="checkbox"/> Other <b>Back</b>                                                                                                                                                    |

# SKETCHES AND MEASUREMENTS

|               |            |      |                   |          |
|---------------|------------|------|-------------------|----------|
| NAME          | COUNTY     | NO.  | INSPECTED BY      | DATE     |
| LAKE LUGO DAM | Rutherford | 1003 | W. P. H. Anderson | 02-13-89 |



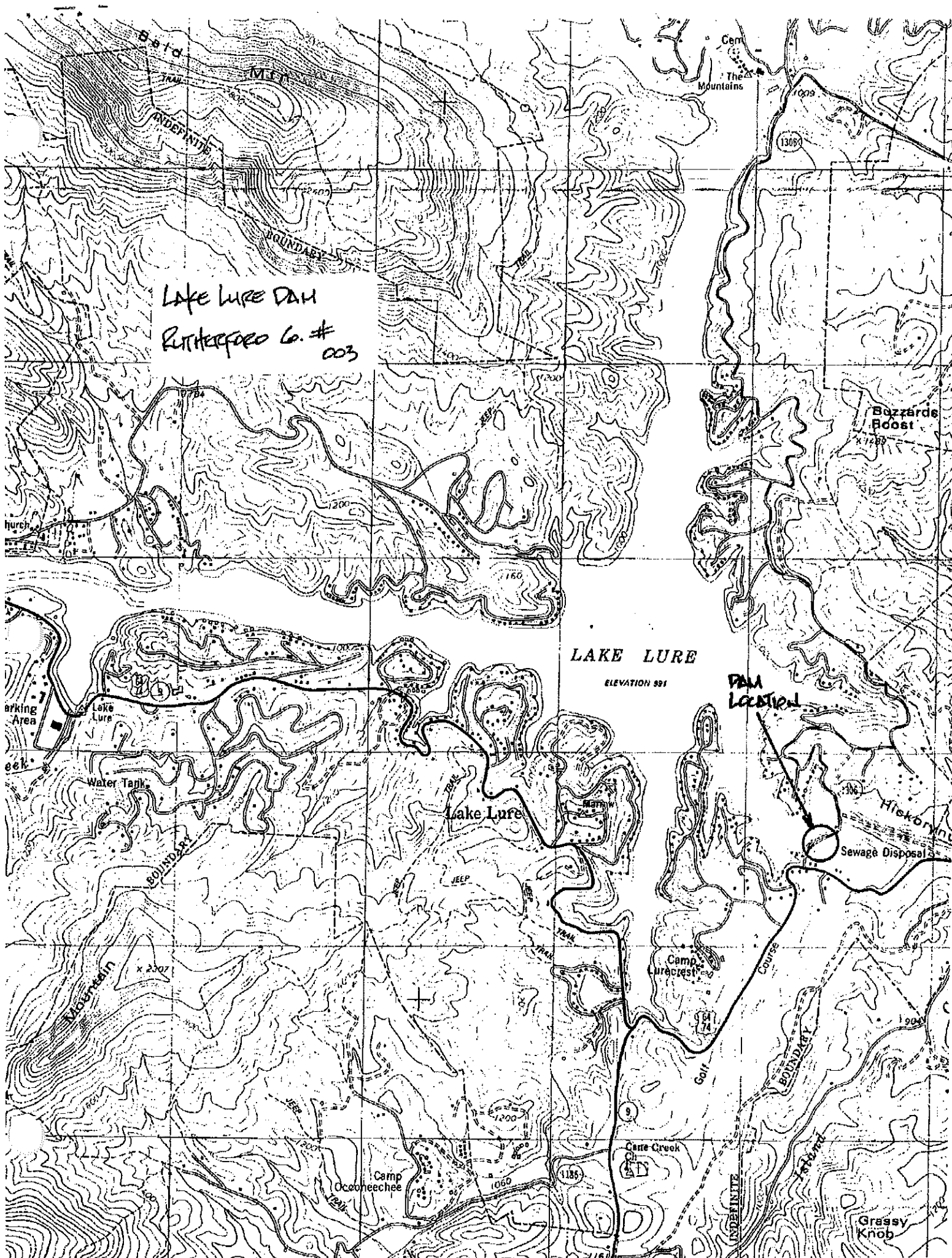
North

US  
64  
74

Lake Lugo

US  
64  
74

US  
64  
74



LAKE LURE DAM  
RUTHERFORD Co. # 003

LAKE LURE  
ELEVATION 991

DAM  
LOCATED

Bozards  
Post

Hickory  
Knob

Sewage Disposal

Grassy  
Knob

Lake Lure

Camp  
Lurecrest

Camp  
Oconeechee

Cane Creek

Water Tank

parking  
Area

Lake  
Lure

Camp  
Lure

JEEP

CART

CART

CART

CART

CART

CART

# DAM INVENTORY/PERMIT

STATUS: IMPOUNDING DAM NAME: LAKE LURE DAM <sup>1</sup>HAZ:       
<sup>2</sup>DAM ID: ERTH -003 COUNTY: ERTH LAT: 0 LONG: 0 REG:       
 RIVER/STREAM: 35° 25' 30" DAM TYPE: ERTH 11' 00"  
 QUAD:      LAKE AREA (NP): 740 AC NOR CAP: 32,295 AC-FT  
 MAX CAP: 44,914 AC-FT <sup>3</sup>NOR OF FREEBOARD: 2' ~~NOT RECORDED~~  
 STR HGT: 12.4' HYD HGT: 122' DAM VOL:      CREST LGTH: 480'  
<sup>4</sup>ESPGY TYPE: 3 RAPID STEEL GATES (16' X 25') <sup>4</sup>ESPGY TYPE: (10 GATES) SEE FILE FOR DETAILS  
 MAX SPWY CAP:      DRAINAGE AREA (sq. mi.): 95 mi<sup>2</sup> DAM PURPOSE:       
 LOW FLOW REQ:      <sup>5</sup>PHASE I:      <sup>6</sup>BOTTOM DRAIN: N <sup>7</sup>BOT DRAIN OPER: N  
 RAINFALL OF RECORD:      RAINFALL OF RECORD DATE:      /      /       
 DOWNST TOWN: UREE DIST FROM DAM: 1 MI POPULATION: 100  
 OWNER:      YEAR CONST. COMP:       
 ADDRESS:       
 ALT ADD:       
 OWNERS PHONE:      ALT OWNERS PHONE(S):       
 ENGINEER:      ENGR PHONE:       
 ADDRESS:       
 MET WITH MR. WILLIAM GRIMES TO INSPECT THE DAM.  
 LAST INSP DATE: 02/13/89 NEXT INSP DATE:      /      /       
 COMMENTS: FROM LAKE LURE TAKE US 64-74 EAST TO SR 1306 (BUFFALO RD).  
TURN LEFT ON SR 1306 WHICH WILL CROSS THE DAM.

<sup>1</sup> Use high, intermediate, low (H,I,L)

<sup>2</sup> Anne will provide number

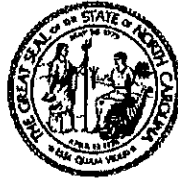
<sup>3</sup> Normal Operating Freeboard

<sup>4</sup> Type: N-None C-Controlled U-Uncontrolled

<sup>5</sup> Phase I: Y-Yes N-No

<sup>6</sup> Drain: N-None Y-Yes

<sup>7</sup> Bot drain oper: Y-Yes N-No



State of North Carolina  
Department of Natural Resources and Community Development  
Asheville Regional Office

James G. Martin, Governor

S. Thomas Rhodes, Secretary

October 22, 1986

Mr. Norman Newell  
Town Manager  
Town of Lake Lure  
Post Office Box 255  
Lake Lure, NC 28746

RE: Lake Lure Dam  
Rutherford County

Dear Mr. Newell:

This letter is to summarize the results of an inspection we made of the referenced dam on October 21, 1986. Also present during the inspection were Jan Anderson and Brian North of this office.

The inspection revealed no apparent serious problems as far as the immediate condition of the dam is concerned. There are, however, several items which should be more closely investigated and pursued to assure maintenance of the dam in a safe condition.

The following items should be addressed:

1. The concrete in several areas is showing signs of surface deterioration. Also, several leaking construction joints were found with the two largest leaks being in the first two bays nearest the spillway gates. Although these leaks and areas of concrete deterioration do not appear to be serious at this time, treatment of the problems should be addressed as a maintenance item.
2. Leaks in the powerhouse area should be repaired in that they allow standing water to remain in areas where electrical shock could occur.

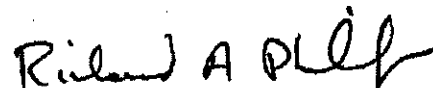
Mr. Norman Newell  
October 22, 1986  
Page two

3. Kudzu growing on the abutments should be controlled and replaced with a ground cover which would allow this area to be visible for inspection for areas of seepage.

The North Carolina Dam Safety Law of 1967 requires dam owners to maintain dams under its jurisdiction in safe working order. It is also required that if repairs to a dam are necessary, the repairs be designed and supervised by an engineer legally qualified in North Carolina. For these reasons, I must ask that you retain the services of such an engineer or engineering firm to evaluate the leaks and concrete deterioration and to design repairs and a maintenance program to address these matters.

Please proceed with retaining an engineer as soon as possible. If you or your engineer have any questions, please call.

Sincerely,



Richard A. Phillips, P.E.  
Regional Engineer

RAP:a

cc: Mr. Jim Simons, P.E.

Enclosure

DAM INSPECTION

RUTHERFORD COUNTY

10/21/86 DATE

NAME OF DAM: LAKE LUKE DAM

(if initial inspection - fill out long inspection report and inventory form)

NO APPARENT CHANGES IN DAM'S CONDITION SINCE LAST INSPECTION: \_\_\_\_\_

INSPECTION ITEMS

- |                  |                                             |
|------------------|---------------------------------------------|
| 1. Reservoir     | 4. Downstream slope                         |
| 2. Upstream face | 5. Spillways                                |
| 3. Crest         | 6. Hazard potential<br>(from tainter gates) |

COMMENTS: Leaks in #1 + #2 (from left to Rt) bays  
are fairly substantial. Smaller leaks apparent  
in other bays. Tainter gate section apparently  
O.K. Leak at 2nd rail from bottom in 4th bay  
from Rt. abutment (has been there a long time)  
Downstream toe of dam appears O.K. Several  
slight seepage areas on left abutment  
appear to be not serious

NORMAN NEWELL

TOWN MANAGER

Box 225

LAKE LUKE 28746

Inspected by: RAP/JCA/BN

INVENTORY UPDATE

CHANGE IN OWNERSHIP // YES NO

OTHER: \_\_\_\_\_

CHARLES F. HICKS, MAYOR  
MARY T. FICKER, CLERK  
MARLENE W. WILSON, DEPUTY CLERK

## Town of Lake Lure

COMMISSIONERS  
DAVID B. BOND  
SADYE V. BRUVER  
J. WOODROW PRICE  
FRANCES B. QUEEN

LAKE LURE, N. C. 28746

(704) 625-9396

(704) 625-9982

October 4, 1983

N.C. Dept. of Natural Resources  
and Community Development  
Attn: Mr. Richard A. Phillips, P.E.  
Regional Engineer  
P.O. Box 370  
Asheville, N.C. 28802-0370

Re: Lake Lure Dam

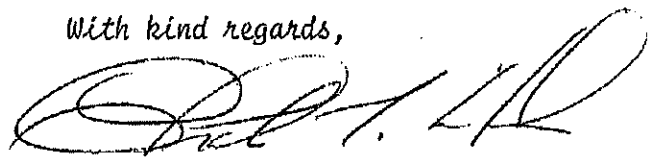
Dear Mr. Phillips,

I have perused an inspection report, prepared by Charles T. Main, Inc., of the Lake Lure Dam. The report, dated September, 1981, recommended an annual inspection of the Dam to insure prompt discovery of any problems.

The Town would appreciate it if you and your fine staff would coordinate a similar routine inspection for us at some future date and at your convenience.

Thank you for your continued interest in our North Carolina resources.

With kind regards,



Charles F. Hicks, Mayor

RECEIVED

OCT 6 1983

LAND QUALITY DIVISION  
ASHEVILLE

151



United States  
Department of  
Agriculture

Soil  
Conservation Service P.O. Box 1109, Waynesville, North Carolina 28786

Subject: ENG

Lake Lure Golf Course Pond  
Breach Routing Results

Date: November 2, 1982

To: Albert D. Moore, District Conservationist  
Rutherfordton, North Carolina 28139

File Code: 210  
WESTERN

The pond designed by your office in February, 1982 for the Lake Lure Golf Course was submitted to the North Carolina Department of Natural Resources & Community Development, Division of Land Resources in request for a permit to construct. I received a letter from N.C. DNR&CD dated June 10, 1982 denying the request for a construction permit. The denial of the permit is based on the assumed damage potential to U.S. Hwy 64 and 74 approximately 4500 feet below the proposed pond site. This denial was a reversal of a previous determination by DNR&CD but should not be considered unreasonable by virtue of the nature of the status of the highway involved.

Your office requested that a breach routing be performed to determine the effect of a sudden failure of the impoundment on the downstream highway. This office concurred with your request since I had personally judged this to be a low hazard impoundment at the time of design and since the area downstream from the proposed impoundment would pose few problems in surveying to gather data for the breach routing. Data for the breach routing was prepared and reviewed by Samuel C. Bingham, Construction Engineer for the Second Broad River Watershed Project, and myself. The breach routing was performed using Soil Conservation Service computer programs employing TR-66 procedures.

Review of the results of the computer breach routing indicate that a sudden failure of the proposed impoundment will not produce flood flows downstream sufficient to overtop or otherwise cause damage to U.S. Hwy 64 and 74. The surveyed profile of the road at the bridge below the proposed impoundment indicates that the lowest point on the road is at assumed elevation 131.3 feet. The highest elevation of flood flow produced by the breach routing at the reach immediately above the bridge at U.S. Hwy 64 and 74 is at elevation 130.5 feet. This indicates that for flood flows no greater than that for which this impoundment would be designed using Soil Conservation Service Hazard Class "A" criteria, and an accompanied sudden failure of the impoundment, the existing culvert under U.S. Hwy 64 and 74 is sufficient to carry the flow without damage to the highway.

Consideration of the results of the breach routing provides grounds for resubmission of a request to DNR&CD for a construction permit based on Soil Conservation Service Hazard Class "A" (Low Hazard) Design. You may advise the Lake Lure Golf Course owners of the results of the breach routing and cooperate with the owners and DNR&CD as necessary in obtaining a permit. All hydrologic and hydraulic data and computations used in design of the dam and in performing the breach routing are filed in the Area Office here in Waynesville and will



The Soil Conservation Service  
is an agency of the  
Department of Agriculture

North Carolina Department of Natural  
Resources & Community Development

James B. Hunt, Jr., Governor

Joseph W. Grimsley, Secretary

September 28, 1981

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Town of Lake Lure  
Post Office Box 255  
Lake Lure, North Carolina 28746

Re: Lake Lure Dam  
Rutherford County

Gentlemen:

Enclosed is a copy of the Phase I Investigation Report on the Lake Lure Dam in Rutherford County.

The report was prepared by Charles T. Main, Inc. for the Land Quality Section of the North Carolina Department of Natural Resources and Community Development and for the U.S. Army Corps of Engineers under authority of the National Dam Safety Act of 1972 (PL-92-367).

The inspection followed the guidelines of the National Program for the inspection of non-Federal dams. The purpose and scope of the investigations are outlined in the preface of the report.

Under provisions of the Freedom of Information Act, the report will be subject to release by the Corps of Engineers to the public.

The investigation showed that the dam is generally well maintained and in need of no repairs. Inspections of the dam should be made on an annual basis in the future to insure that any problems are promptly discovered.

If you have any questions, please feel free to contact me.

Sincerely,

*Richard A. Phillips*

Richard A. Phillips, P. E.  
Regional Engineer

RAP:a

Enclosure

cc: U. S. Army Corps of Engineers  
Mr. Roger Edwards  
Mr. Steve McEvoy

PS Form 3811, Jan. 1979

● **SENDER:** Complete Item 1 and 3. Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one.)

☐ Show to whom and date delivered.....\$

☐ Show to whom, date and address of delivery.....\$

☐ **RESTRICTED DELIVERY**  
Show to whom and date delivered.....\$

☐ **RESTRICTED DELIVERY**  
Show to whom, date, and address of delivery \$

(CONSULT POSTMASTER FOR FEES)

2. **ARTICLE ADDRESSED TO:**  
*Lure of Lake Lure*  
*Putnam Co*

3. **ARTICLE DESCRIPTION:**

|                |               |             |
|----------------|---------------|-------------|
| REGISTERED NO. | CERTIFIED NO. | INSURED NO. |
|                | 9710077       |             |

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐ Addressee ☐ Authorized agent

*Mary T. Jacobs*

DATE OF DELIVERY

6. ADDRESS (Complete only if registered)

7. UNABLE TO DELIVER BECAUSE

POSTMARK  
SEP 30 AM 1981

★ GPO : 1979-285-848

# Department of Natural Community Development

Joseph W. Grimsley, Secretary

September 28, 1981

Investigation Report on the Lake Lure

in, Inc. for the Land Quality  
Natural Resources and Community  
Engineers under authority of the

The inspection followed the guidelines of the National Program for the inspection of non-Federal dams. The purpose and scope of the investigations are outlined in the preface of the report.

Under provisions of the Freedom of Information Act, the report will be subject to release by the Corps of Engineers to the public.

The investigation showed that the dam is generally well maintained and in need of no repairs. Inspections of the dam should be made on an annual basis in the future to insure that any problems are promptly discovered.

If you have any questions, please feel free to contact me.

Sincerely,

*Richard A. Phillips*

Richard A. Phillips, P. E.  
Regional Engineer

RAP:a

Enclosure

cc: U. S. Army Corps of Engineers  
Mr. Roger Edwards  
Mr. Steve McEvoy



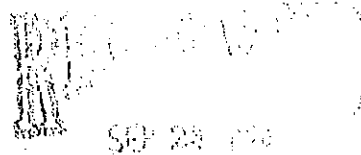
DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 1890  
WILMINGTON, NORTH CAROLINA 28402

IN REPLY REFER TO

SAWEN-DF

22 September 1981

Mr. Richard Phillips  
Interchange Building  
159 Woodfin Street  
Asheville, NC 28802



LAND QUALITY SECTION  
WESTERN FIELD OFFICE

Dear Mr. Phillips:

Inclosed is the owner's copy of the Phase I Inspection Report on the Lake Lure Dam (N.C. 100) in Rutherford County. We request that you forward this report to the present owner. Please notify us of your action by furnishing us a copy of your forwarding letter.

Sincerely,

E. G. LANIER, P.E.  
Authorized Representative of the  
Contracting Officer

1 Incl  
As stated

Copy Furnished w/o incl:  
Mr. Charles Gardner  
Chief, Land Quality Section  
N.C. Department of Natural Resources  
and Community Development  
PO Box 27687  
Raleigh, NC 27611



DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 1890  
WILMINGTON, NORTH CAROLINA 28402

IN REPLY REFER TO

SAWEN-DF

22 September 1981

Honorable James B. Hunt, Jr.  
Governor of North Carolina  
Raleigh, NC 27611

Dear Governor Hunt:

Inclosed is a Phase I Inspection Report on the Lake Lure Dam (N.C. 100) in Rutherford County. The report contains the findings, evaluations, and recommendations from the recent inspection performed by Chas. T. Main, Inc., under the guidelines of the National Program of Inspection of Non-Federal Dams by the Land Quality Section, N.C. Department of Natural Resources and Community Development, under contract DACW54-78-C-0041 with the Corps. As indicated in the report, the condition of the dam is a nonemergency situation.

Under the provisions of the Freedom of Information Act, the report will be subject to release upon request 10 days after 22 September 1981. A copy of the report has been furnished to the owner by separate correspondence. You may desire to issue an appropriate public statement with respect to the report.

The Federal investment in this inspection program necessitates that a reporting system be established whereby the Corps of Engineers is kept informed of the implementation of the recommendations in the inspection report. To facilitate this, it is requested that you inform this office of actions already taken or proposed to implement the recommendations in the report.

We appreciate your efforts and the efforts of your staff in the development and implementation of a strong State Dam Safety Program under the North Carolina Dam Safety Law and the National Program of Inspection of Non-Federal Dams.

If we can be of further assistance, please contact us.

Sincerely,

1 Incl  
As stated

ROBERT K. HUGHES  
Colonel, Corps of Engineers  
District Engineer

Mr. Richard Phillips

SAWEN-DF

Honorable James B. Hunt, Jr.

18 September 1981

Copy Furnished:

Mr. Charles Gardner (w/3 cys incl)  
Chief, Land Quality Section  
N.C. Department of Natural Resources  
and Community Development  
PO Box 27687  
Raleigh, NC 27611

Mr. Richard Phillips  
Interchange Building  
159 Woodfin Street  
Asheville, NC 28802



DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 1890  
WILMINGTON, NORTH CAROLINA 28402

IN REPLY REFER TO

SAWEN-DF

22 September 1981

Mr. Emery Searcy  
Disposal Plant and Electric  
Power Facility Operator  
Town of Lake Lure,  
PO Box 255  
Lake Lure, NC 28746

Dear Mr. Searcy:

A Phase I Inspection Report has been issued on the Lake Lure Dam (N.C. 100) in Rutherford County. The report contains the findings, evaluations, and recommendations from the recent inspection performed by Chas. T. Main, Inc. for the Land Quality Section, N.C. Department of Natural Resources and Community Development. The inspection followed the guidelines of the National Program of Inspection of Non-Federal Dams. As indicated in the report, the condition of the dam is a nonemergency situation.

Our records show that the dam is owned by the Town of Lake Lure. You can expect a copy of the report and any requests for follow-on actions to come from the Land Quality Section under authority of the State Dam Safety Law. Under the provisions of the Freedom of Information Act, the report will be subject to release to the public upon request 10 days after 22 September 1981.

We appreciate your cooperation with the State of North Carolina to implement a strong Dam Safety Program. If I can provide additional information, please contact me.

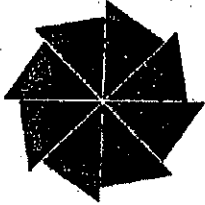
Sincerely,

ROBERT K. HUGHES  
Colonel, Corps of Engineers  
District Engineer

Copy Furnished:  
Mr. Charles Gardner  
Chief, Land Quality Section  
N.C. Department of Natural Resources  
and Community Development  
PO Box 27687  
Raleigh, NC 27611

Mr. Richard Phillips ✓  
Interchange Building  
159 Woodfin Street  
Asheville, NC 28802

Mr. Richard Phillips



# North Carolina Department of Natural Resources & Community Development

James B. Hunt, Jr., Governor

Howard N. Lee, Secretary

April 6, 1981

The Honorable J. Paul Wilson  
Mayor, Town of Lake Lure  
Post Office Box 255  
Rutherfordton, NC 28746

Re: Lake Lure Dam  
Rutherford County

Dear Mayor Wilson:

This letter is to inform you that the Lake Lure dam will soon be inspected under the authority of the National Dam Safety Program. This Phase I inspection will involve a visual inspection of the dam as to its general condition and an evaluation of the spillway system's capacity to pass flood flows.

The National Dam Safety Program in North Carolina is being administered by the U. S. Army Corps of Engineers' office in Wilmington. The North Carolina Department of Natural Resources and Community Development, Division of Land Resources, Land Quality Section, is acting as a contractor for the Corps in the inspection of dams in North Carolina, and we will be doing many of the inspections with our own personnel, however, some of the inspections will be subcontracted to private engineering firms.

You may be aware that the Lake Lure dam has been inspected by personnel of the Division of Land Resources' Land Quality Section. This inspection was brief and solely visual in nature and included no spillway analysis. The Phase I inspection will be more thorough and should provide a better evaluation of the condition of your dam. You will, of course, be provided with a copy of the Phase I inspection report.

Should you have any questions, please feel free to contact either Bill Allen or me at this office.

Sincerely,

Richard A. Phillips, P. E.  
Regional Engineer

RAP:a

cc: Roger Edwards  
Steve McEvoy





