

FINAL REPORT

SHEETPILE WEIR CONSTRUCTION IN THE H. F. LEE POWER PLANT
BYPASS CANAL AND DEMOLITION AND DISPOSAL OF THE QUAKER NECK
DAM AND ATTACHED FISH LADDER

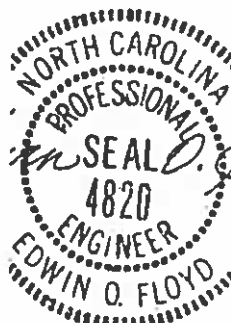
Prepared For

N. C. Department of Natural and Environmental Resources

By

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Cary, N.C.

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10-16-98

FINAL REPORT

Sheetpile Weir Construction in the H. F. Lee Power Plant Bypass Canal and Demolition and Disposal of the Quaker Neck Dam and Attached Fish Ladder

General Description

The Quaker Neck Dam was constructed in 1952 to control minimum water levels for the intake pumps which provide water to the cooling water lake at the H. F. Lee Power Plant. A bypass canal was constructed at the same time to convey water from the Neuse River to the pump basin. Originally, a low weir was planned to be built in the canal, but it was determined to be unnecessary after the Quaker Neck Dam was completed. After it was noted that the dam has been somewhat of a safety problem to unwary boaters and that the fish ladder has not been functional in allowing the passage of anadromous fish, it was agreed by CP&L, U.S. Fish and Wildlife Service, N.C.D.N.E.R., U.S. Corps of Engineers and the Coastal America Partnership that it was in the best interest of the public and the health of the Neuse River for the dam to be removed. CP&L agreed that a low weir in the bypass canal would adequately control minimum water levels in the pump basin and the river dam could be removed.

The Quaker Neck Dam was located in Wayne County, N.C. about four miles west of Goldsboro and 0.6 miles upstream from the Neuse River bridge on SR-1008 as shown on the attached "Vicinity Map".

The dam was constructed of heavily reinforced concrete, steel sheetpile and rip-rap stone of Class 2 or larger. Two flood gates were provided in the dam, but it appeared that they had never been opened until demolition began. See the attached "Plan of Quaker Neck Dam".

A celebration of the demolition project was held at the dam site on December 17, 1997. It was attended by 150 to 200 people including Bruce Babbitt, the Secretary of the U. S. Department of the Interior and Wayne McDevitt, Secretary of NCDENR, officials of USCE and U.S. Fish and Wildlife Service, CP&L, Coastal America, local dignitaries and interested citizens.

The solicitation of bids was publically advertised in the "News and Observer" as well as the Raleigh offices of AGC, F.W. Dodge Corporation and Construction Market Data. Four qualified bids were received on September 19, 1997 in the office of WRD of NCDNER in Raleigh, N.C. The bids ranged from \$181,067 up to \$285,000. Award of the contract was made to the low bidder, R & W Construction Company of Jacksonville, N.C.

A pre-construction conference was held at the H. F. Lee Power Plant on October 13, 1997, and the Notice to Proceed was issued for October 20, 1997 for a 120-day contract period. Mobilization and demolition began as planned, and dredging and weir installation in the bypass canal were completed on schedule. Unusually heavy rainfall during January through April caused very high water levels in the Neuse River and delayed progress until about the first week of June, 1998. A time-extension change order was issued to the Contractor which extended the contract period until August 12, 1998. Extreme difficulties were encountered in pulling the steel sheetpiles from the stiff clay of the river bottom. After trying several procedures, the Contractor developed a method of digging, soaking and pulling that was slowly effective. After the sheetpiles were removed, the concrete part of the dam was demolished with a wrecking ball and excavator bucket. The concrete wall was demolished down the specified elevation of 52.0 feet msl. See "Typical Section A - A'.

Actual demolition and adjustments to the weir sheetpiles were completed on September 12, 1998. Clean-up, rip-rap installation and seeding & mulching were completed on September 29. Final Inspection was held on that same day by John Sutherland of NCDNER, Mike Wicker of U.S. Fish and Wildlife Service, Randy Brown of CP&L, Joey Justice of R & W Construction Co., and Ed Floyd, the Project Engineer. Two minor items were called to attention of the Contractor who had them corrected that same day. The project was accepted. Because the Contractor had steadily worked on the project and no actual delay damages were incurred by the Owner, liquidated damages were not assessed.

The total cost of the project is outlined below:

Initial contract.....	\$ 181,067
Change Order No.1.....	\$ 8,505
Change Order No.2.....	No Cost
Total Contract.....	\$ 189,572
Engineering.....	\$ 15,876
TOTAL PROJECT COST.....	\$ 205,448

The attached photographs illustrate the progress of the work on the dates shown.

N

EXISTING GATE AND ENTRANCE SILL

ACCESS ROAD

H.F. LEE POWER PLANT, CP&L

FLOW →

AREA WHERE CANAL EXCAVATION IS REQUIRED.

NEW SHEETPILE WEIR

BY-PASS CANAL

QUAKER NECK DAM TO BE REMOVED AFTER WEIR CONSTRUCTION.

RIVER
SYSTEM

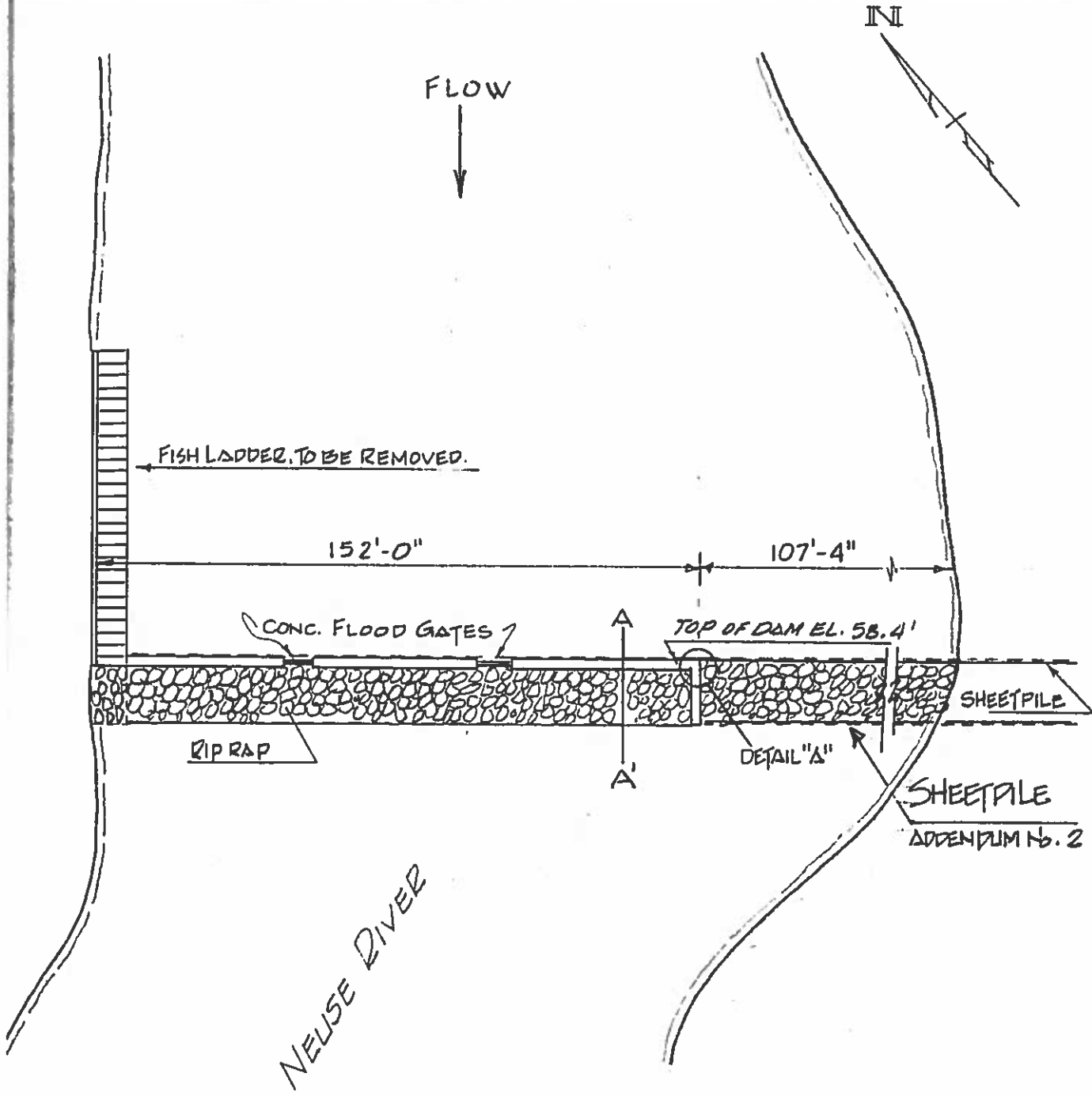
QUAKER NECK LAKE

FEATURE MAP



DWG - 2

7-23-97



PLAN OF QUAKER NECK DAM

NOT TO SCALE

NOTE FOR DEMOLITION CONTRACT.

DEMOLISH AND DISPOSE ALL STRUCTURE ABOVE ELEV. 52.0' MSL. LEAVE NO JAGGED EDGES OR PROTRUDING STEEL OR WOOD.

Cutoff sheet piling 1.520'

Screeded finish

6"x6" black steel strip at all const. jts.

TO REMAIN

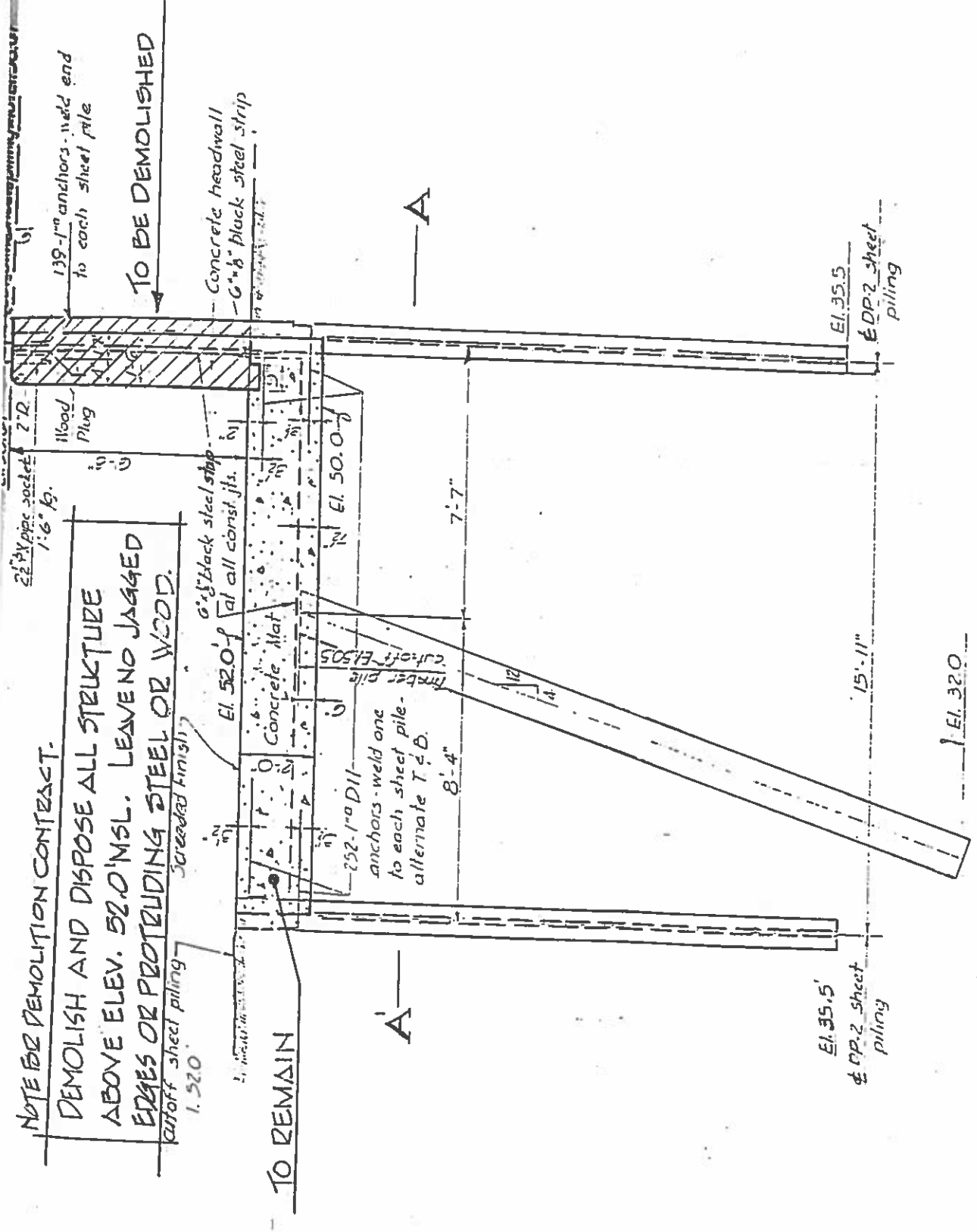
TO BE DEMOLISHED

139-1" anchors - weld end to each sheet pile

Concrete headwall - 6"x6" black steel strip

A

A

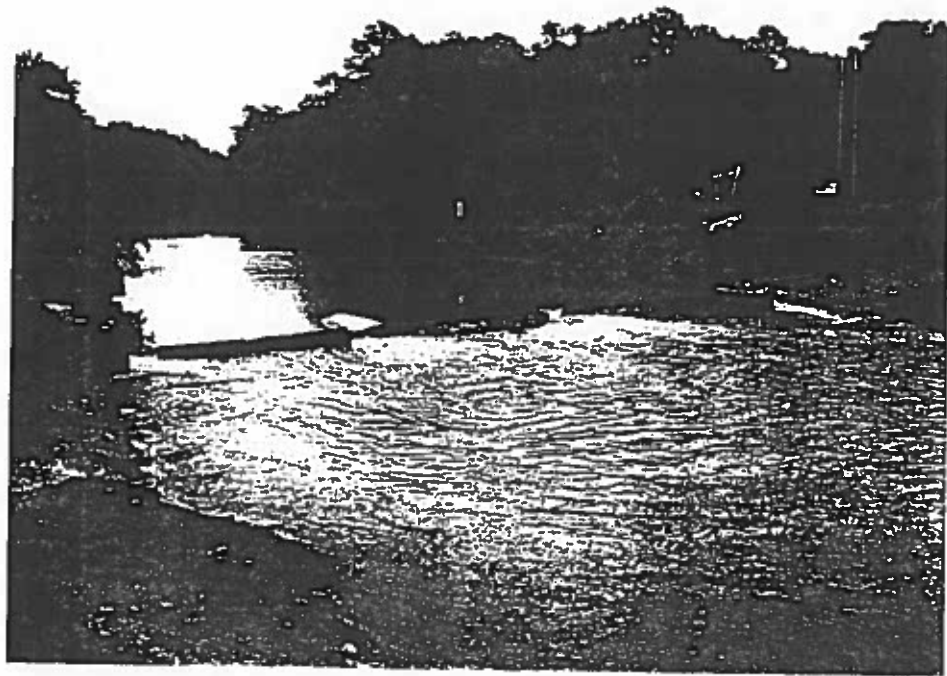


TYPICAL SECTION A-A

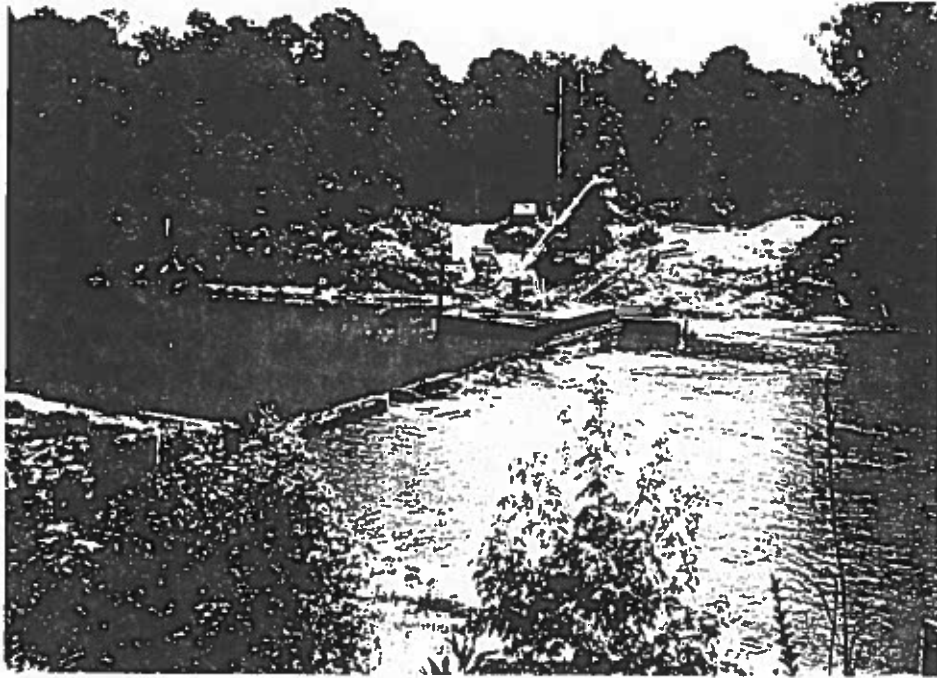
Quaker Neck Dam Cross Section

DWG-8

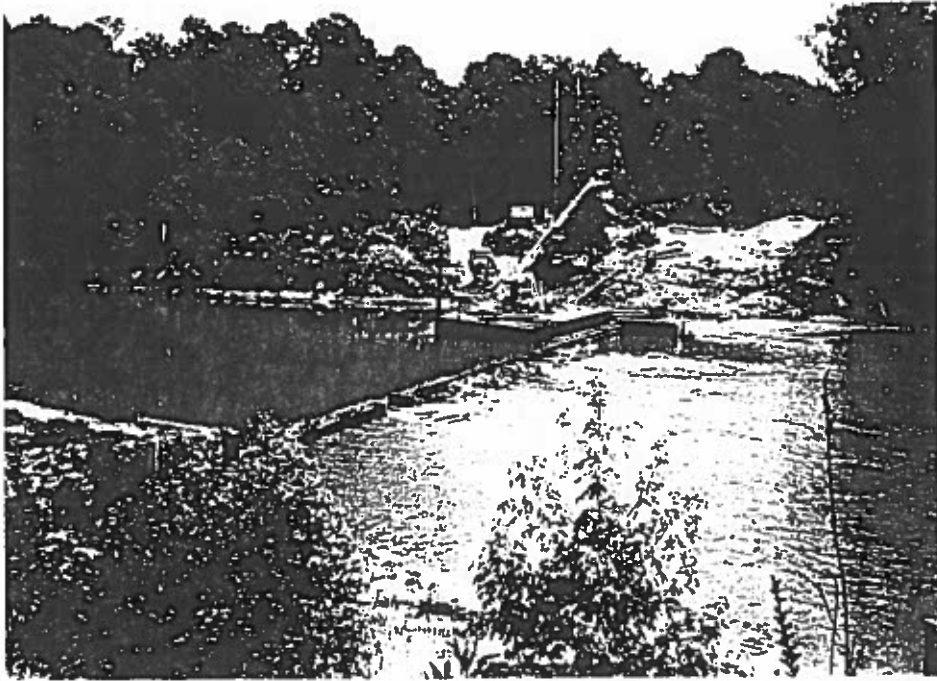
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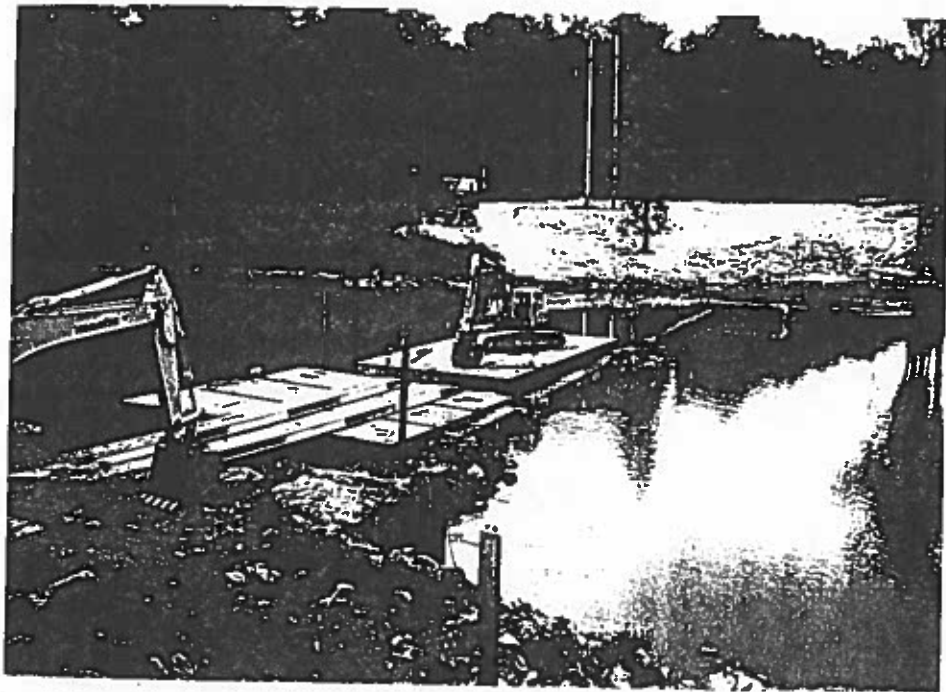
JULY 17, 1998
QUAKER NECK DAM



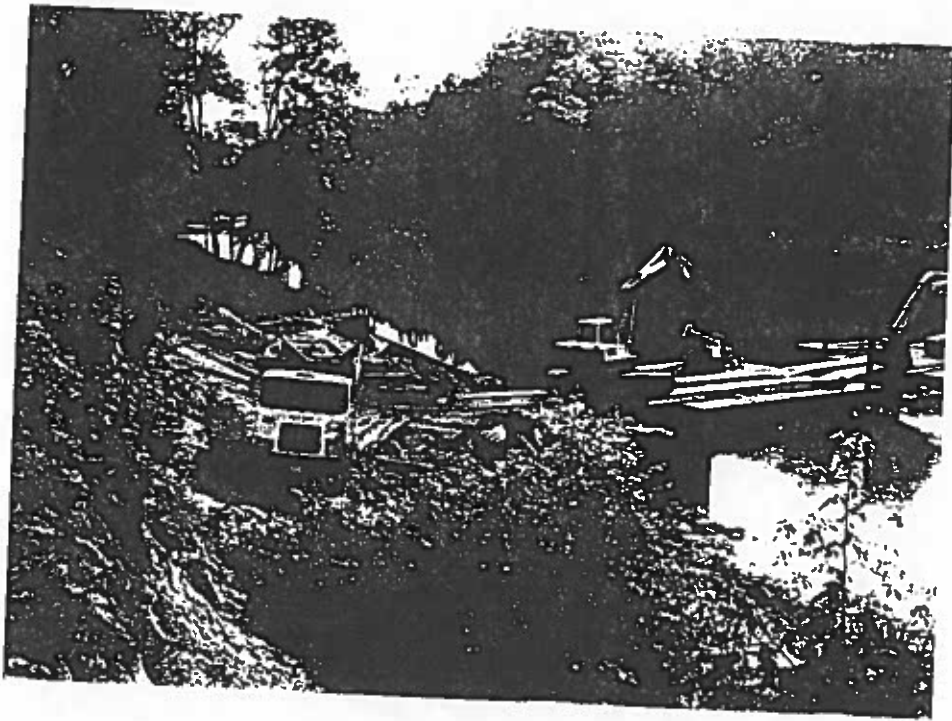
JULY 22, 1995
QUAKER NECK DAM



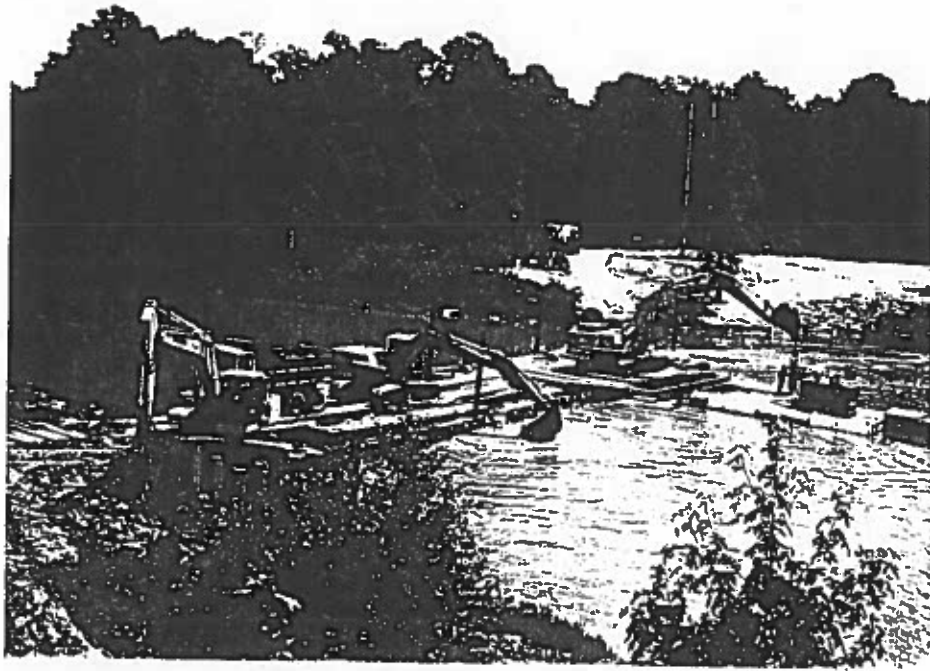
JULY 22, 1998
QUAKER NECK DAM



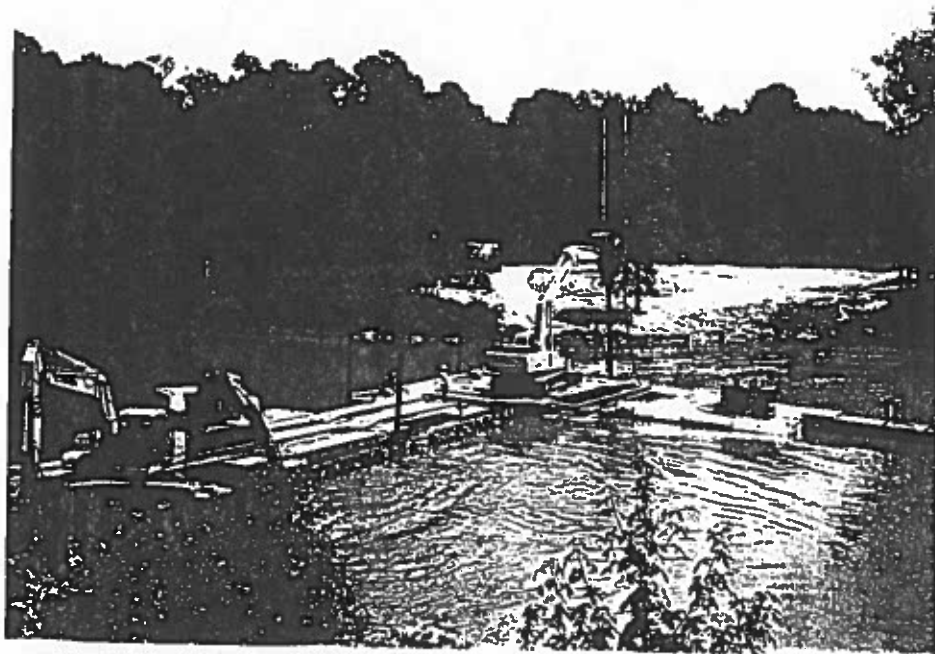
AUGUST 6, 1998
QUAKER NECK DAM



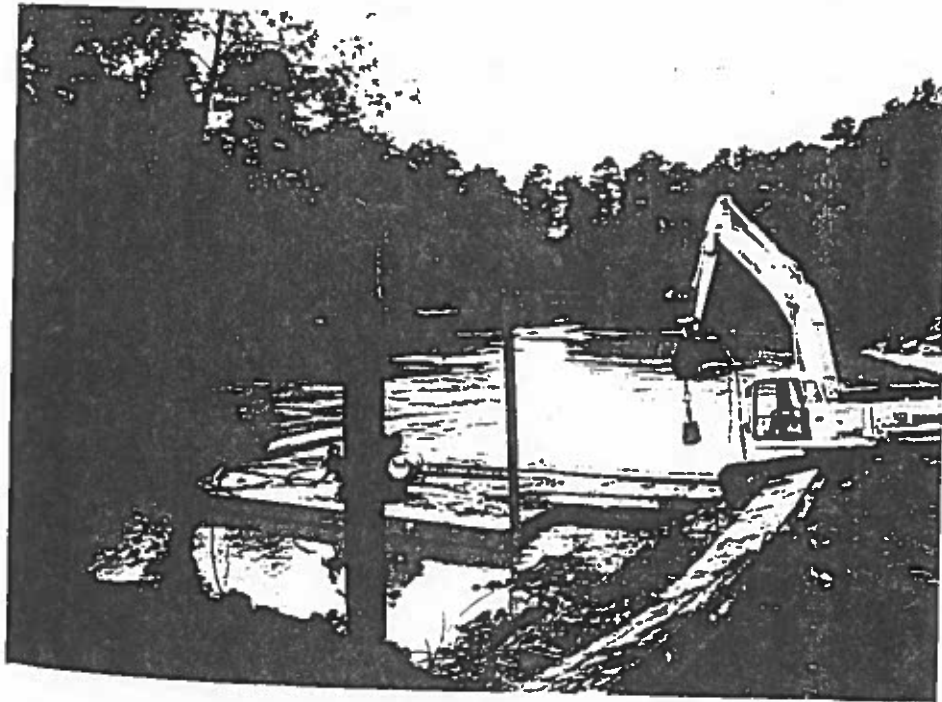
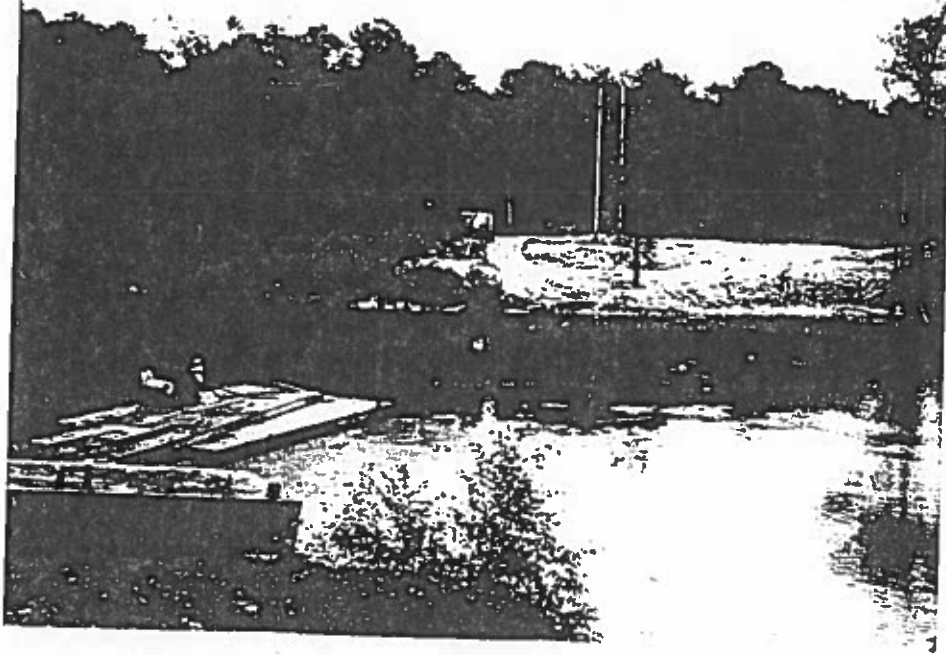
AUGUST 18, 1998
QUAKEE NECK DAM



REMOVING ROCKS



AUGUST 21, 1998
PULLING A SHEETPILE
QUAKER NECK DAM



SEPTEMBER 3, 1993
LAST WHEEL ON THE FISHLIFT
QUAKER NECK DAM



SEPTEMBER 12, 1998
VIEW OF EAST BANK OF RIVER