

CANDERS DIVING SERVICES

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INSPECTION REPORT

CONSUMERS MAINE WATER CO.
855 ROCKLAND ST.
ROCKPORT, MAINE 04856

PER REQUEST MR. RICK KNOWLTON I INSPECTED THE INTAKE STRUCTURE AT SILVER LAKE , BUCKSPORT MAINE ON NOVEMBER 22, 2003. THE INSPECTION WAS REQUESTED DUE TO LARGE FOREIGN ORGANIC MATERIAL BEING FOUND INSIDE A PUMP AT THE WATER DISTRICT PUMPHOUSE.

MR. DAVE MICHAUD (CMW) MET US AT THE SILVER LAKE DAM AT 1:30 PM ON THE 22ND TO DISCUSS THE INSPECTION AND THEN HE PROCEEDED TO THE LOCAL PUMP STATION TO MONITOR TURBIDITY DURING THE INSPECTION AND CLEANING PROCESS. UNFORTUNATELY THE WIND HAD BEEN BLOWING HARD OUT OF THE NORTHWEST ALL AFTERNOON AND HAD CAUSED CONSIDERABLE WAVE ACTION ALONG THE FACE OF SILVER LAKE DAM. THIS WAVE ACTION INCREASED LOCAL TURBIDITY AND LOWERED UNDERWATER VISIBILITY AROUND THE INTAKE CRIBWORK. ALTHOUGH UNDERWATER VISIBILITY WAS NOT A PROBLEM DURING THE INSPECTION OF THE EQUIPMENT EXTERNAL TO THE CRIBWORK, IT CREATED A TREMENDOUS PROBLEM DOWN INSIDE THE CRIBWORK.

THE INITIAL INSPECTION OF THE INTAKE SCREEN WAS INCONCLUSIVE DUE TO THE TREMENDOUS AMOUNT OF ALGAE AND DEBRIS ON THE SCREEN (SEE ATTACHED PHOTOS). WE DECIDED TO CLEAN THE SCREEN AND RE-INSPECT / RE-PHOTOGRAPH.

AFTER CLEANING THE SCREEN WE INSPECTED IT AGAIN AND FOUND IT TO BE STRUCTURALLY SOUND, VOID OF HOLES. ALL FLANGES ARE SOUND AS ARE ALL SEAMS ALONG THE SCREEN. WE INSPECTED THE SEALING JOINT WHERE THE NEW (1985) STAINLESS STEEL PIPING MEETS THE OLD CAST IRON BELL HOUSING INTAKE PIPE AND THERE WERE NO GAPS OR INDICATIONS OF PIPE SHIFTING.

AT THIS POINT I DECIDED TO ATTEMPT TO GO DOWN INSIDE THE CRIBWORK AND INSPECT THE PIPELINE. I ATTEMPTED TO GO DOWN INSIDE FEET FIRST BUT DUE TO THE LIMITED SPACE INSIDE THE CRIBWORK I COULD NOT FEEL ANY OF THE PIPELINE. I HAD TO GO DOWN INTO THE CRIBWORK HEADFIRST (WITH ZERO VISIBILITY NOW) AND INSPECT BY FEEL. THERE IS A LOT OF DEBRIS (ROCKS, MUD, WOOD) DOWN INSIDE THE CRIBWORK COVERING THE PIPELINE AND THE MECHANICAL DEVICE (VALVE?). THE VALVE WAS UNRECOGNIZABLE AND I INSPECTED IT AS BEST I COULD BY HAND WHILE STANDING UPSIDE DOWN INSIDE THE CRIBWORK. I COULD NOT FEEL ANY MAJOR/ OBVIOUS BREACHES IN THE PIPE OR FLANGES.

FOLLOWING THE CRIBWORK INTERNAL INSPECTION I DID AN EXTERNAL INSPECTION WITH THE IDEA THAT PERHAPS SOMETHING HAD PENETRATED THE PIPE NEAR WHERE IT EXITS THE CRIBWORK BETWEEN THE SOUTH FACE AND THE DAM. I FOUND THAT THE PIPELINE IS NOT EXPOSED WHEN IT LEAVES THE CRIBWORK, IT IS COVERED WITH MUD.

WE INSPECTED THE SCREEN, ELBOW AND MATING JOINT (OLD CAST IRON PIPE TO STAINLESS STEEL PIPE) AGAIN AND FOUND NO GAPS IN THE MATING SURFACES.

CONCLUSIONS:

THE EQUIPMENT ADDED IN 1985 (HALF BANDS, SS THREADED ROD, ELBOW, SCREEN, BRACES ETC.) APPEARS TO BE SOLID AND HAS NOT MOVED SINCE INSTALLATION. ALL HARDWARE AND MOUNTING BOLTS ARE INTACT AND TIGHT.

I AM CONCERNED ABOUT THE OBVIOUS DISTORTION IN THE SCREEN AND WOULD LIKE TO COMPARE THESE PHOTOGRAPHS WITH THE ONES TAKEN IN 1991 (LAST INSPECTION) CAUSES OF THE DISTORTION NEED TO BE DISCUSSED/ INVESTIGATED FURTHER.

THERE WERE NO AREAS IN THE SCREEN MECHANISM (HOLES, GAPS) THAT WOULD ALLOW ANY LARGE FOREIGN BODIES INTO THE WATER SYSTEM.

THE AREA INSIDE THE CRIBWORK IS EXTREMELY DIFFICULT TO INSPECT DUE TO CONSTRUCTION CONSTRAINTS AND THE MATERIAL THAT HAS FALLEN INSIDE IT OVER THE YEARS.

WE NEED TO LOOK AT ALL PIPING PLANS AND QUESTION ANY SOURCE THAT WOULD ALLOW INTRODUCTION OF FOREIGN MATERIALS INTO THIS SYSTEM. IF ALL SOURCES (OF FOREIGN

MATERIAL) CAN BE ELIMINATED THEN THE ONLY LOCATION FOR A
BREACH WOULD BE DOWN INSIDE THE CRIBWORK.

RESPECTFULLY SUBMITTED

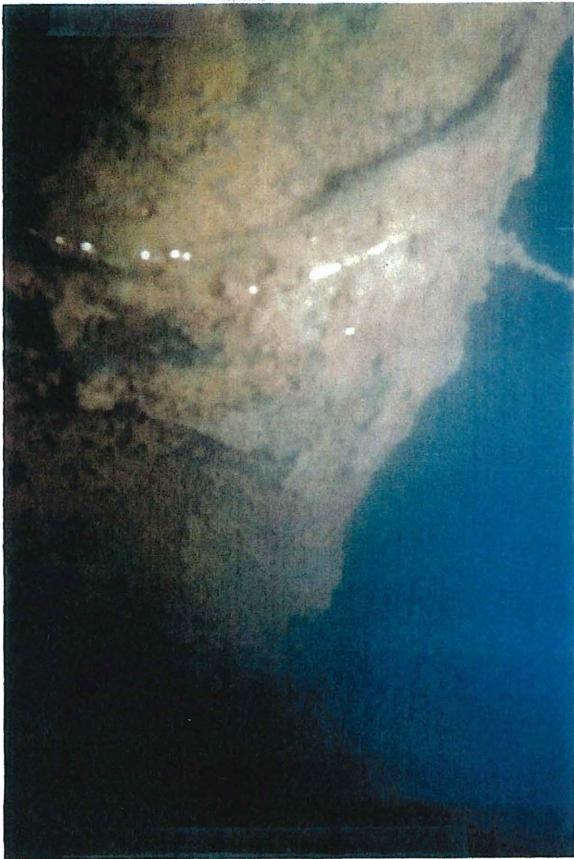
GREG CANDERS

11-25-2003

A handwritten signature in black ink, appearing to read "G Candery". The signature is fluid and cursive, with the first letter "G" being particularly large and stylized.

INITIAL INSPECTION AND
AFTER CLEANING PHOTOGRAPHS
OF THE INTAKE SCREEN
AT SILVER LAKE
BUCKSPORT, MAINE
NOVEMBER 22, 2003.

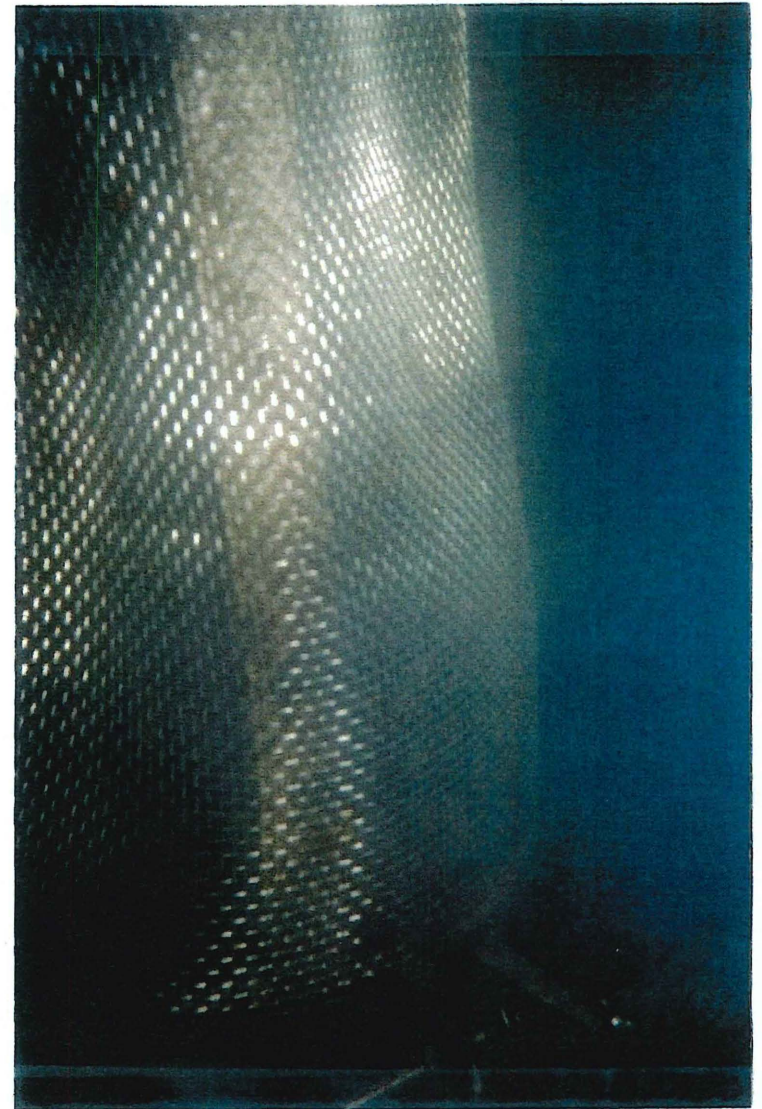
TOP OF SCREEN



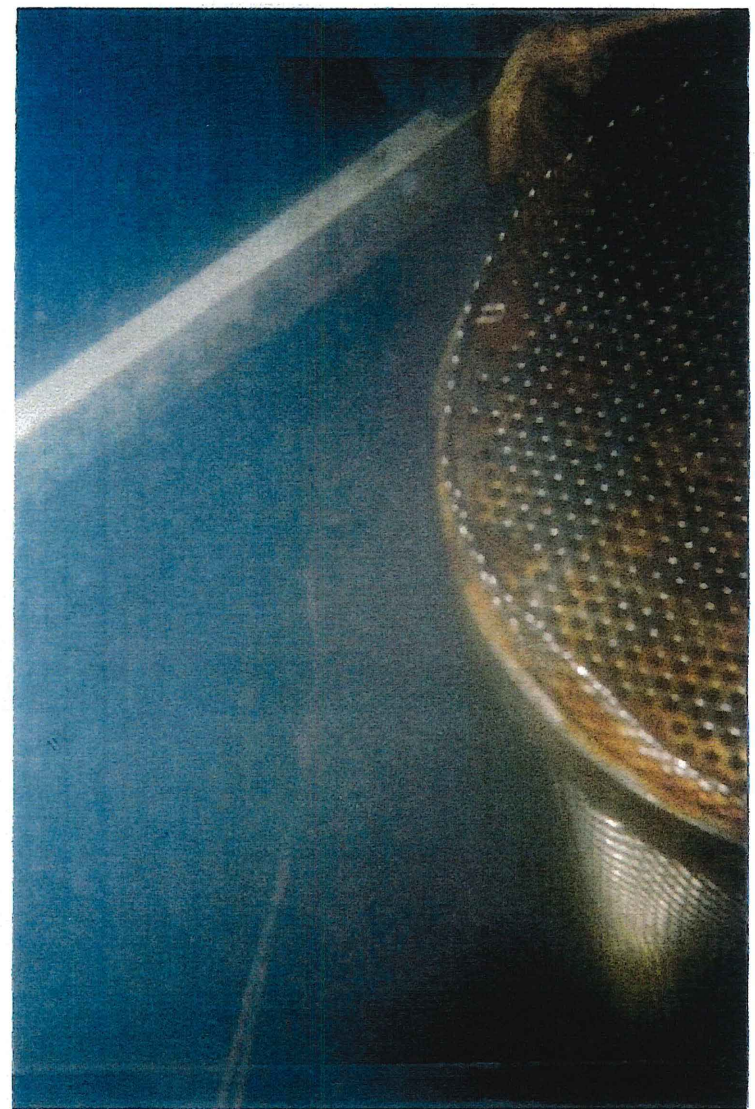
NOTE DISTORTION IN SCREEN



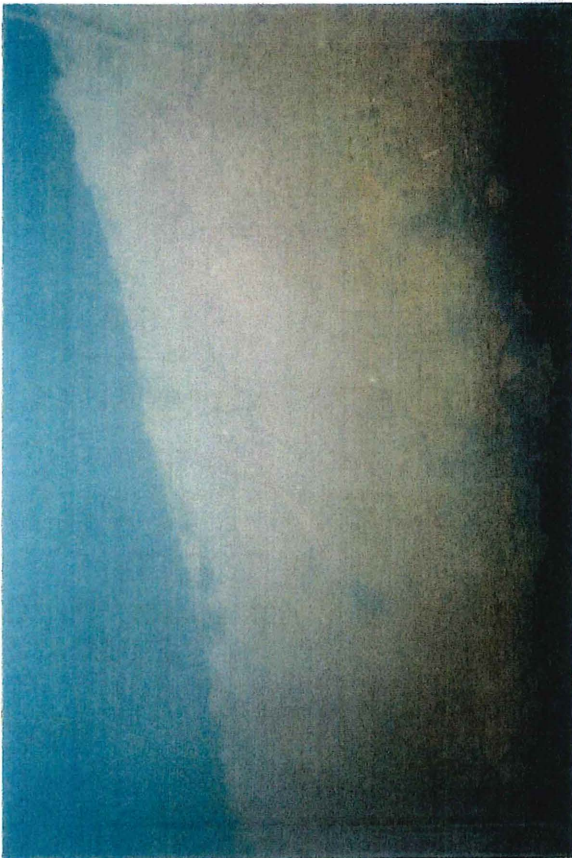
CENTER SECTION OF SCREEN



BASE OF SCREEN



TOP OF SCREEN

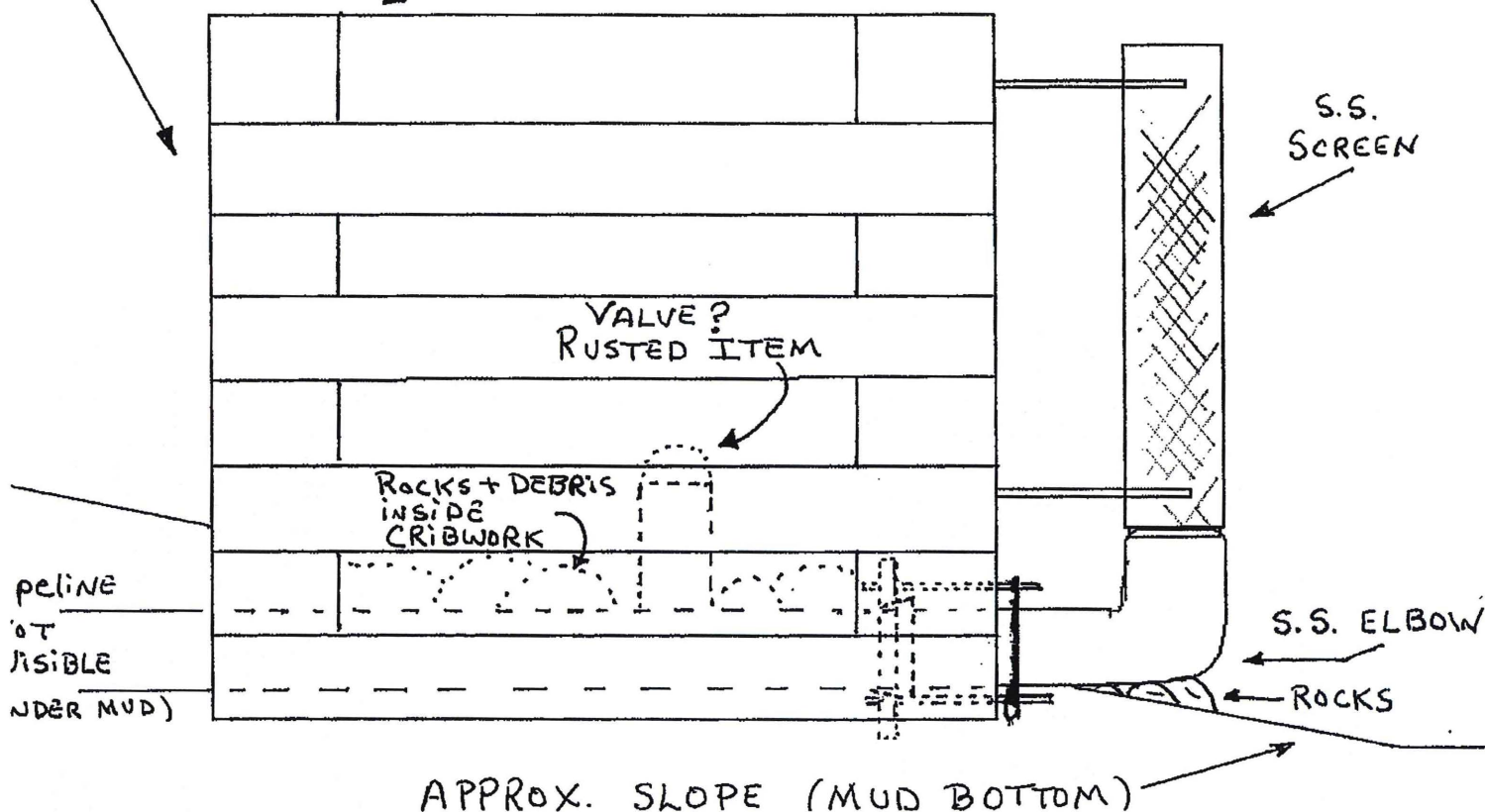


CENTER SECTION OF SCREEN

THIS SIDE FACES DAM

ENGINEERING PAGE 1

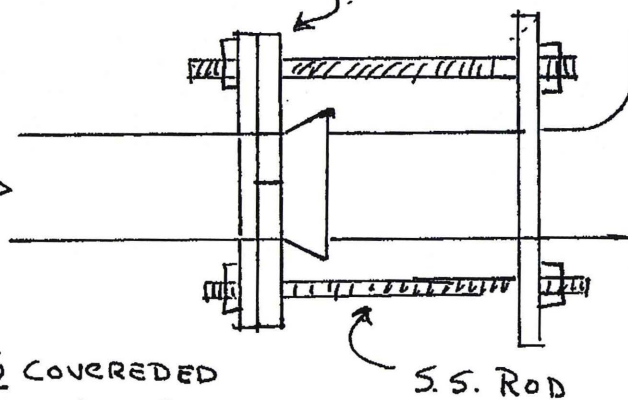
CRIBWORK



OLD EXISTING
CAST IRON
BELL HOUSING
WATERLINE

IN 1985 WAS 1/2 COVERED
IN MUD AND HAD NO SCREEN

HALF BANDS

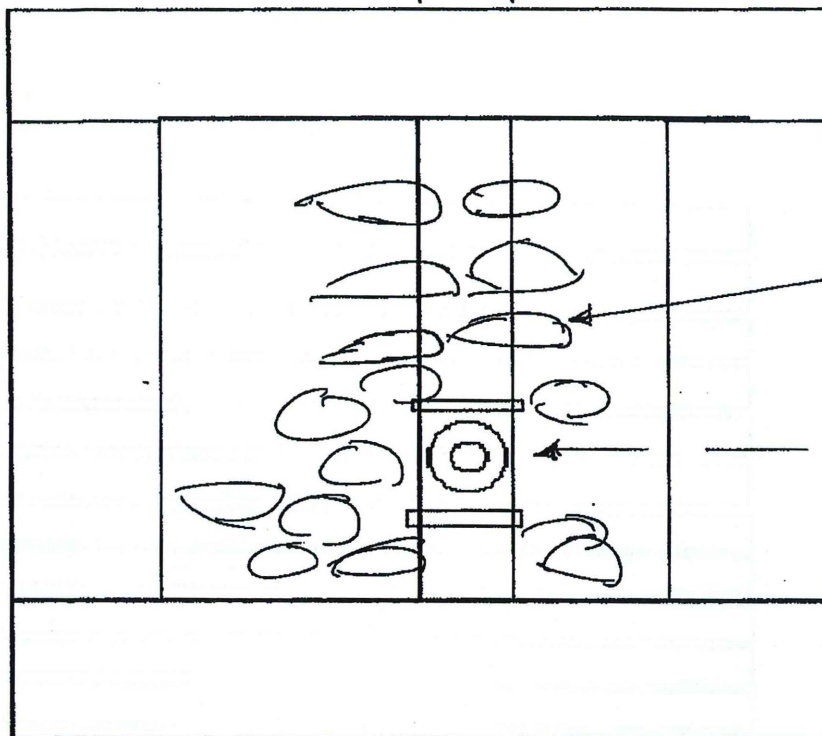


DETAIL
OF OLD PIPE
TO SCREEN ELBOW
INSTALLED 1985

JDC

TOWARD DAM

PIPELINE IS NOT EXPOSED ON THIS SIDE



ROCKS AND DEBRIS
INSIDE CRIBWORK
COVERING OLD
PIPELINE

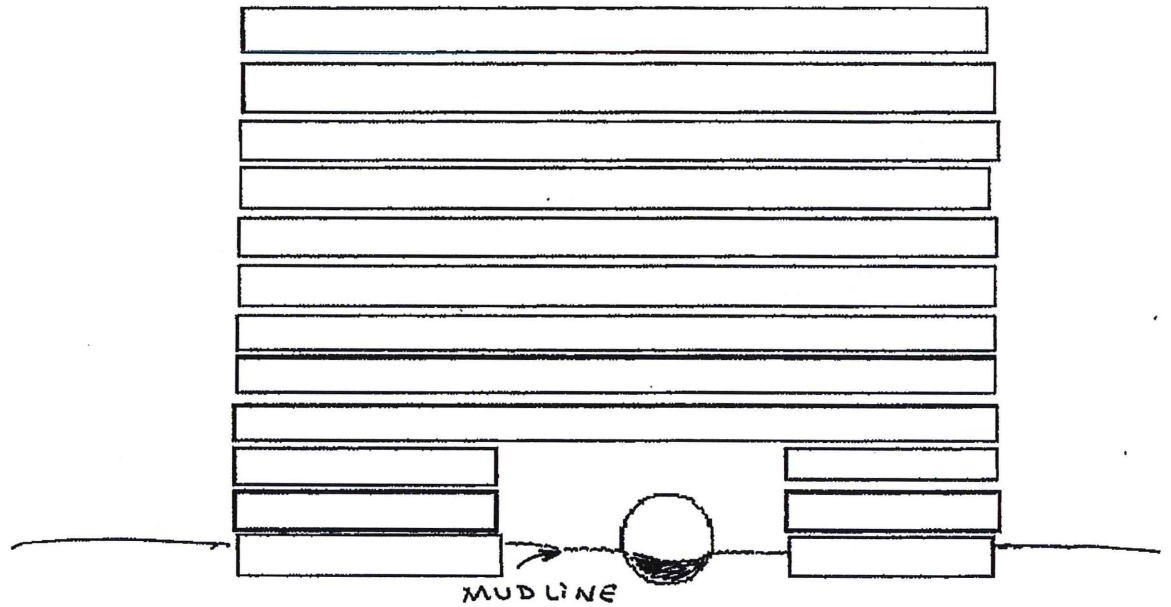
VALVE DOWN INSIDE
CRIBWORK

CRIBWORK

TOP OF SCREEN

OVERHEAD VIEW

drawing 1174-5



END OF INTAKE PIPELINE INSIDE CRIBWORK AS IT EXISTED IN 1985.
THIS FACE OF CRIBWORK IS TOWARD CENTER OF LAKE.