Allagash Wilderness Waterway
Background Paper
Eagle Lake Tramway

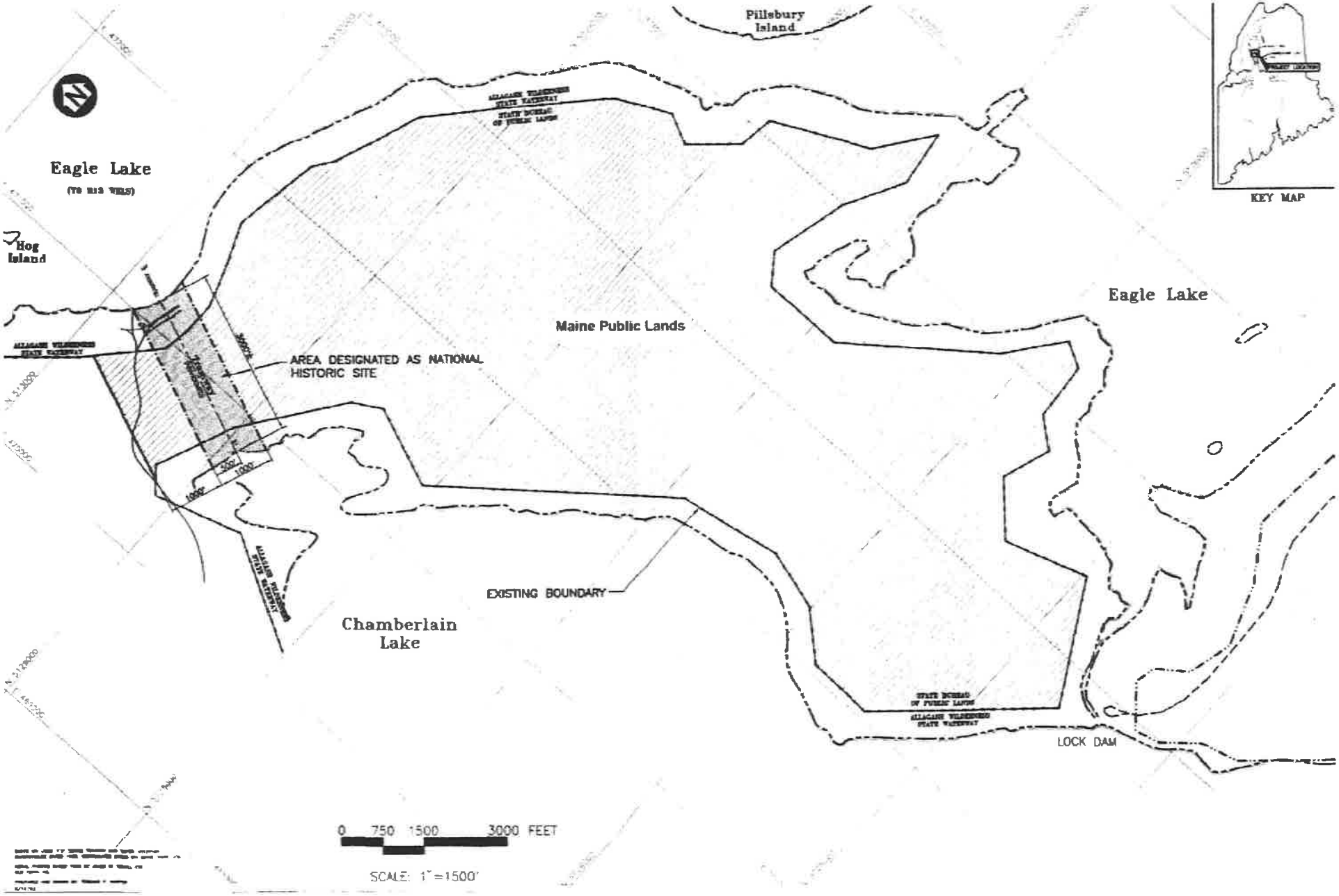
In the constant struggle to bring timber from Eagle and Churchill Lakes down to Chamberlain Lake and the via the Telos Cut and Webster Lake to the East Branch Penobscot, the first automated mechanical system arrived in the fall of 1902. With the help of steam power, Fred Dow, an engineer for lumber barons H.W. Marsh and F.W. Ayer, constructed a tramway to do the job. Essentially, the tramway was a small railroad pulled by a six thousand foot cable loop. Steel trucks attached to the cable carried logs across a three thousand foot passage between Eagle and Chamberlain Lakes at the rate of about three miles per hour. As the logs dropped off at the Chamberlain end, each empty truck looped underneath to a lower track and returned to Eagle Lake for another load. The tramway system worked remarkably well for more than six seasons, hauling one hundred million board feet before its use was discontinued.

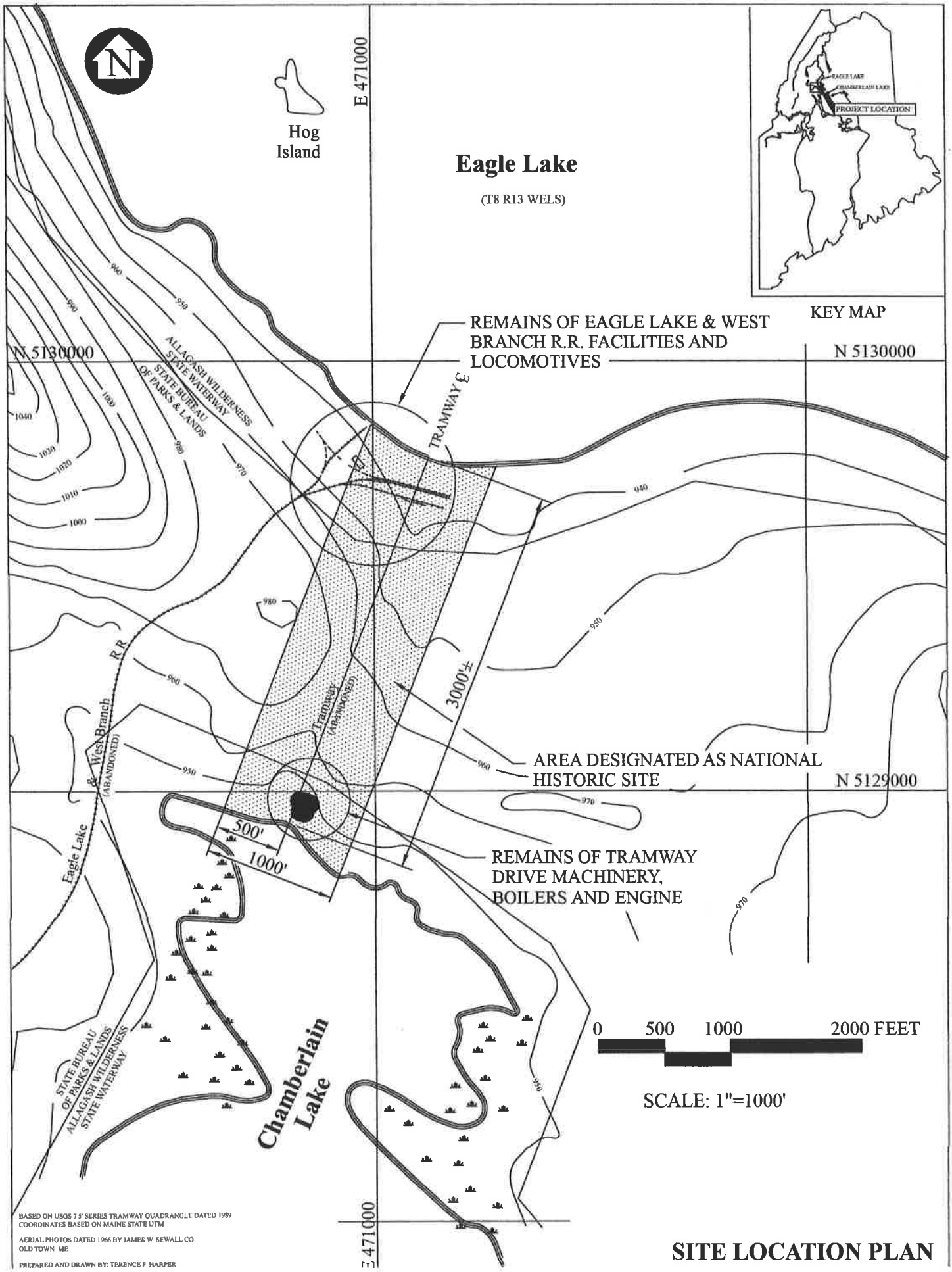
Most of the tramway parts were boated across Moosehead Lake during the summer and fall of 1901. That winter, H.N. Bartley hauled what remained at Greenville, particularly the 6,000 feet of continuous cable. It was an exhausting job using horse teams and skids, and by the time the teams reached Smith's halfway camp on the West Branch of the Penobscot, they cut the cable into two separate sections for easier hauling.

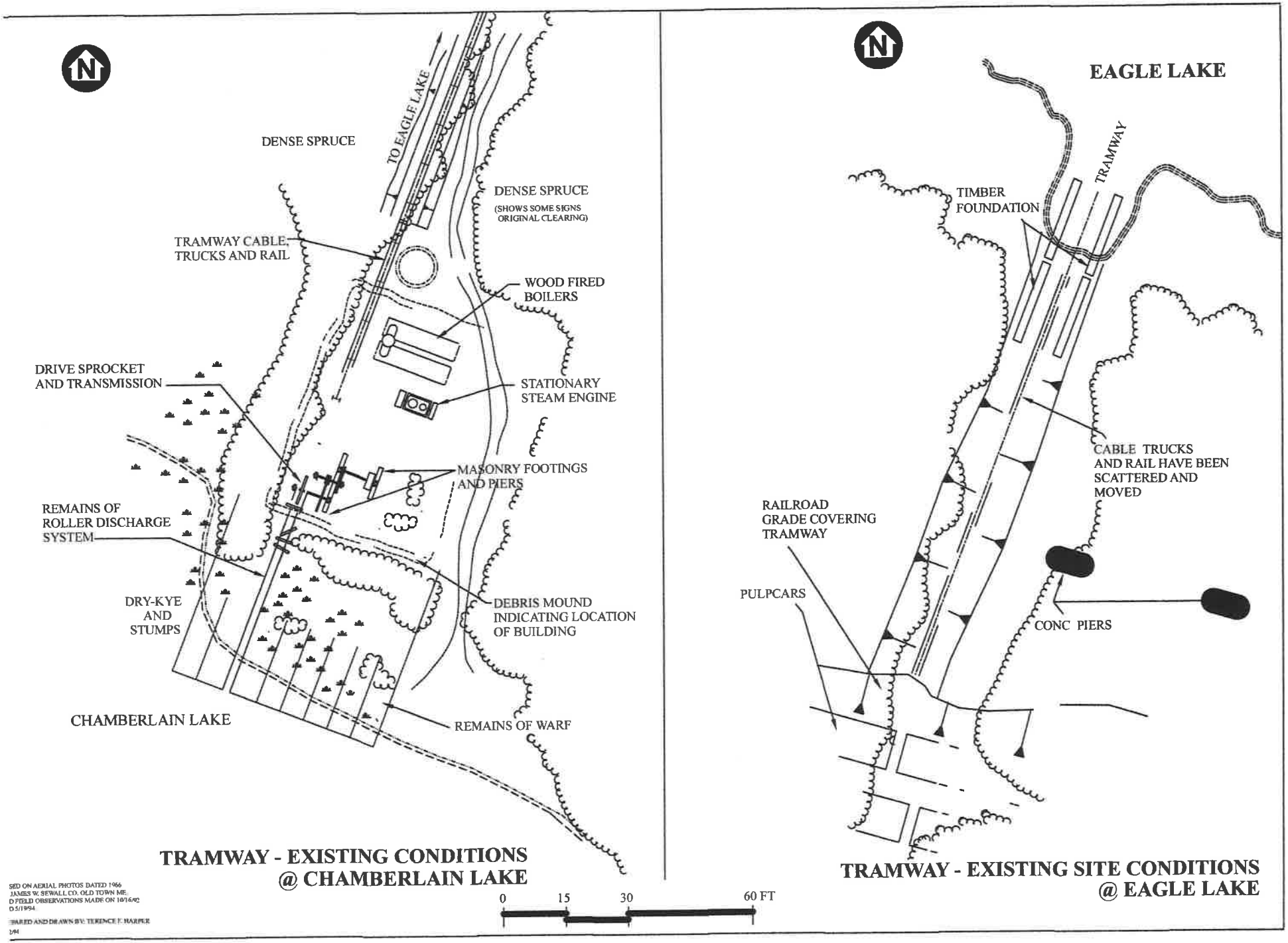
When construction was completed, the Tramway posed two problems. When the system was fired up and put in gear, workers discovered that none of the 7/8" bolts that held the 600 trucks and 600 clamps to the cable were tight enough and the whole system slipped. This occurred because the threads on each bolt did not reach far enough down the bolt shaft to tighten the nuts as much as was necessary. The only way to overcome this problem was to remove all 4,800 bolts and lengthen the threads with a hand dye. When this was finally accomplished and the system was again put into operation, workers watched nervously as the longs crawled onto the trucks but did not move at nearly the speed they had intended. Continuing to watch in dismay, they were relieved to find that as the first of the logs passed slowly over a rise in the ground along the route of the tramway their weight helped pull the cable along and increased the overall speed.

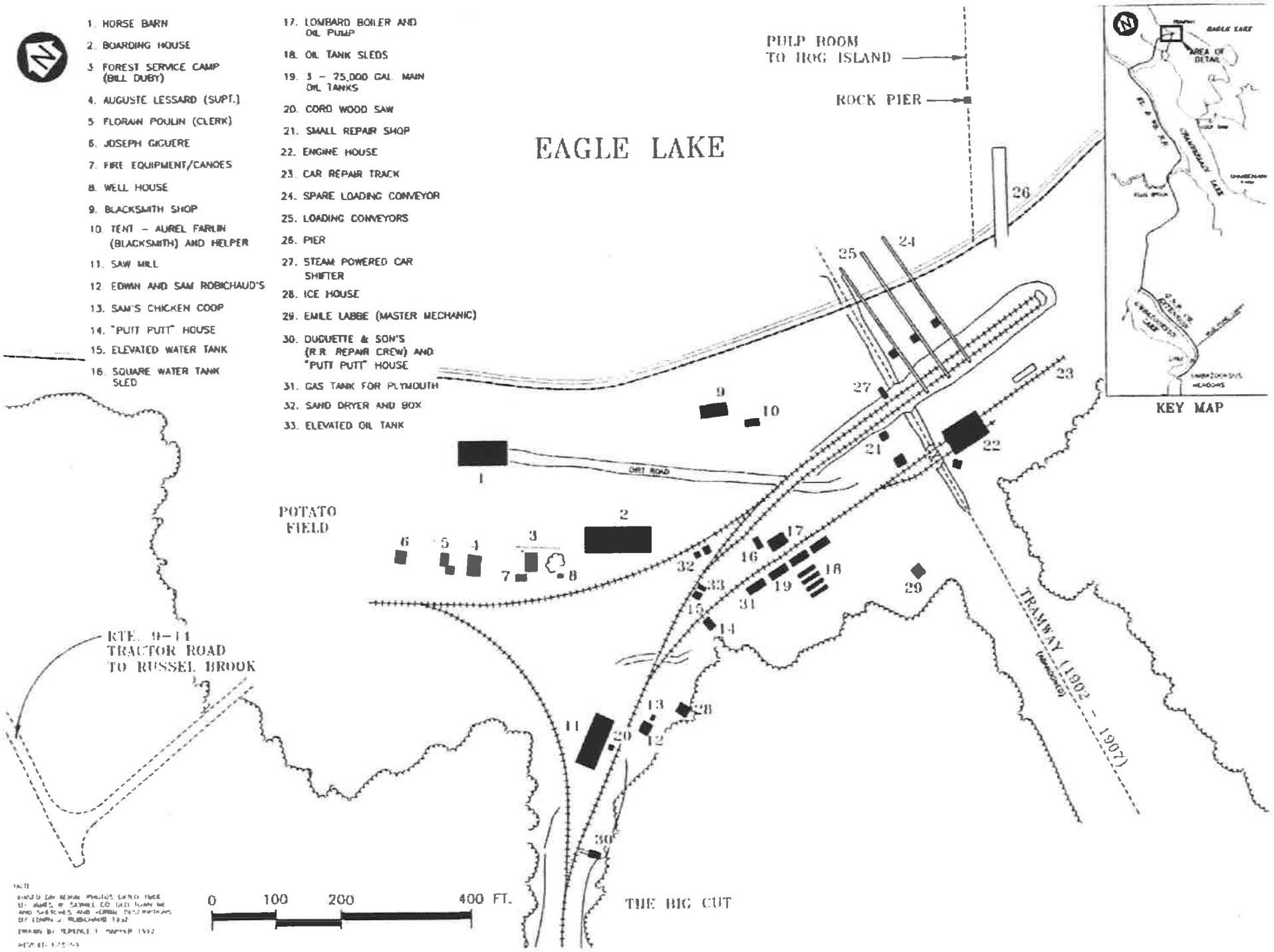
When finally under way successfully, the system could move a half million board feet per day, running from 4:00am to 8:00pm on the 22 inch gauge track. During the down hours, workers would walk the track, tightening bolts and performing regular maintenance. Sixty steel trucks attached to the cable at intervals of ten feet, had two tooth plates that held the log in place on top. In between each truck, also attached to the cable, was a clamp that fit into the sprocket wheel, helping it grip the cable at five-foot intervals (at both the clamp and truck). A Westinghouse Compound Engine, designed especially for electric light plants, powered the system. It had both twelve-inch and twenty-four inch cylinders with a fourteen-inch stroke. The engine made 255 revolutions per minute with 100 pounds of steam pressure.

Aerial photographs from 1966 show that only two structures remained at Tramway when the Allagash Wilderness Waterway was created. Today, only parts of the Tramway still exist, including the large sprocket wheel, boilers, and scattered pieces of trucks, clamps, and track. The Tramway area is now on the National Register of Historic Places. The Patten Lumbermen's Museum has in its collection a set of four trucks and clamps mounted on a wooden structure, as it would have been in operation.

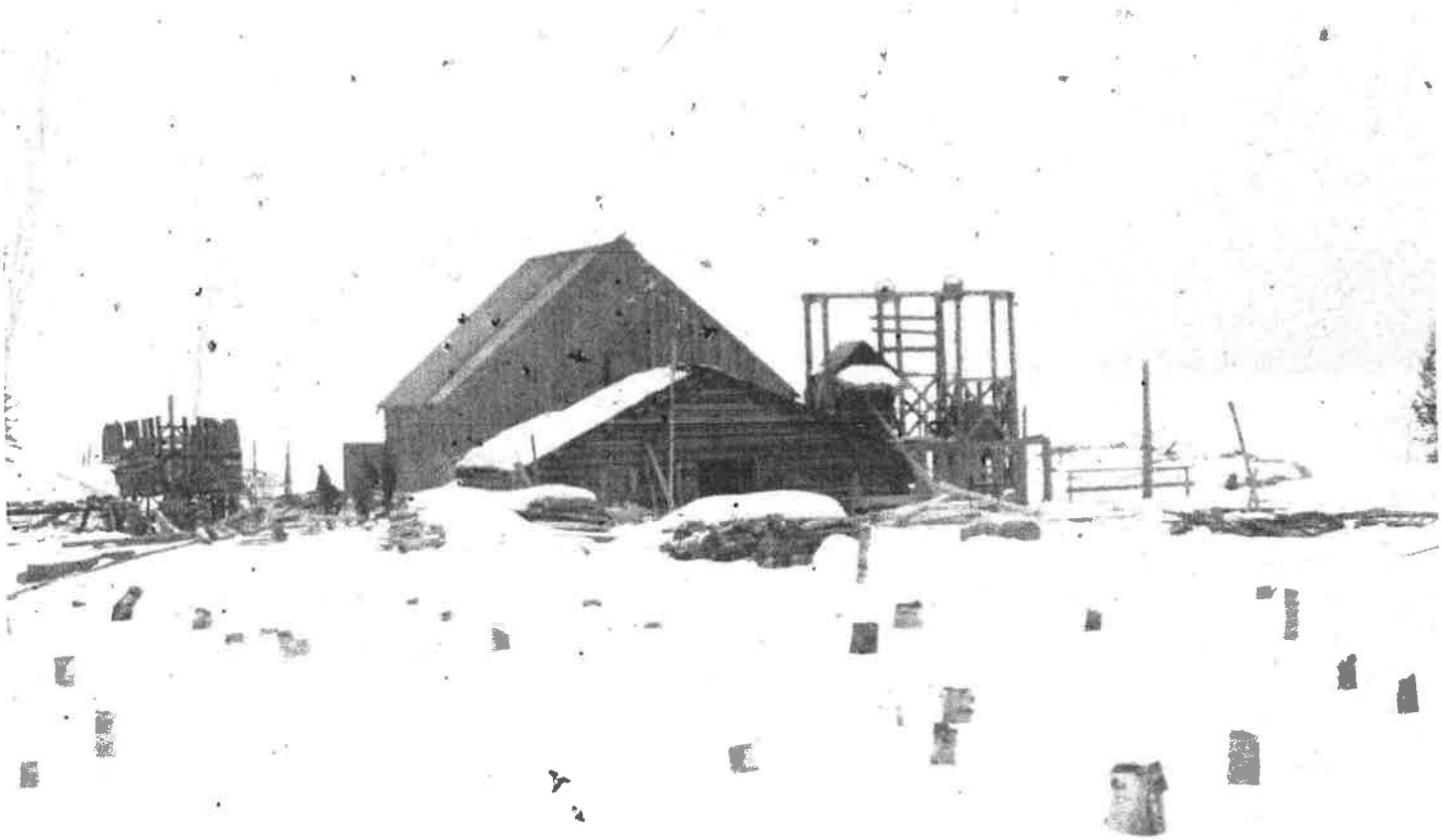

Pillsbury Island
Eagle Lake
(TO BAR HARBOR)
Hog Island
Maine Public Lands
AREA DESIGNATED AS NATIONAL HISTORIC SITE
Eagle Lake
EXISTING BOUNDARY
Chamberlain Lake
LOCK DAM
KEY MAP
0 750 1500 3000 FEET
SCALE: 1"=1500'


N
Hog Island
E 471000
Eagle Lake
(T8 R13 WELS)
EAGLE LAKE
CHAMBERLAIN LAKE
PROJECT LOCATION
KEY MAP
REMAINS OF EAGLE LAKE & WEST BRANCH R.R. FACILITIES AND LOCOMOTIVES
N 5130000
N 5129000
TRAMWAY
ALLAGASH WILDERNESS STATE WATERWAY
STATE BUREAU OF PARKS & LANDS
960
950
940
1040
1030
1020
1010
1000
990
980
970
R.R.
West Branch & Eagle Lake
(ABANDONED)
Tramway (Abandoned)
3000'±
500'
1000'
AREA DESIGNATED AS NATIONAL HISTORIC SITE
REMAINS OF TRAMWAY DRIVE MACHINERY, BOILERS AND ENGINE
Chamberlain Lake
STATE BUREAU OF PARKS & LANDS
ALLAGASH WILDERNESS STATE WATERWAY
0 500 1000 2000 FEET
SCALE: 1"=1000'
E 471000
BASED ON USGS 7.5' SERIES TRAMWAY QUADRANGLE DATED 1989
COORDINATES BASED ON MAINE STATE UTM
AERIAL PHOTOS DATED 1966 BY JAMES W SEWALL CO
OLD TOWN ME
PREPARED AND DRAWN BY: TERENCE F HARPER
SITE LOCATION PLAN


DENSE SPRUCE
TO EAGLE LAKE
DENSE SPRUCE
(SHOWS SOME SIGNS ORIGINAL CLEARING)
TRAMWAY CABLE, TRUCKS AND RAIL
WOOD FIRED BOILERS
DRIVE SPROCKET AND TRANSMISSION
STATIONARY STEAM ENGINE
MASONRY FOOTINGS AND PIERS
REMAINS OF ROLLER DISCHARGE SYSTEM
DRY-KYE AND STUMPS
DEBRIS MOUND INDICATING LOCATION OF BUILDING
CHAMBERLAIN LAKE
REMAINS OF WARF
TRAMWAY - EXISTING CONDITIONS @ CHAMBERLAIN LAKE
SED ON AERIAL PHOTOS DATED 1966
JAMES W. SEWALL CO., OLD TOWN ME.
D FIELD OBSERVATIONS MADE ON 10/16/92
D 5/1994
PARED AND DRAWN BY: TERENCE F. HARPER
1/94
0
15
30
60 FT
EAGLE LAKE
TRAMWAY
TIMBER FOUNDATION
CABLE TRUCKS AND RAIL HAVE BEEN SCATTERED AND MOVED
RAILROAD GRADE COVERING TRAMWAY
PULPCARS
CONC PIERS
TRAMWAY - EXISTING SITE CONDITIONS @ EAGLE LAKE


1. HORSE BARN
2. BOARDING HOUSE
3. FOREST SERVICE CAMP (BILL DUBY)
4. AUGUSTE LESSARD (SUPT.)
5. FLORAIN POULIN (CLERK)
6. JOSEPH GIGUERE
7. FIRE EQUIPMENT/CANOES
8. WELL HOUSE
9. BLACKSMITH SHOP
10. TENT – AUREL FARLIN (BLACKSMITH) AND HELPER
11. SAW MILL
12. EDWIN AND SAM ROBICHAUD'S
13. SAM'S CHICKEN COOP
14. "PUTT PUTT" HOUSE
15. ELEVATED WATER TANK
16. SQUARE WATER TANK SLED
17. LOMBARD BOILER AND OIL PUMP
18. OIL TANK SLEDS
19. 3 – 25,000 GAL. MAIN OIL TANKS
20. CORD WOOD SAW
21. SMALL REPAIR SHOP
22. ENGINE HOUSE
23. CAR REPAIR TRACK
24. SPARE LOADING CONVEYOR
25. LOADING CONVEYORS
26. PIER
27. STEAM POWERED CAR SHIFTER
28. ICE HOUSE
29. EMILE LABBE (MASTER MECHANIC)
30. DUGUETTE & SON'S (R.R. REPAIR CREW) AND "PUTT PUTT" HOUSE
31. GAS TANK FOR PLYMOUTH
32. SAND DRYER AND BOX
33. ELEVATED OIL TANK
EAGLE LAKE
PULP ROOM TO BOG ISLAND
ROCK PIER
DIRT ROAD
POTATO FIELD
RTE. 9–11 TRACTOR ROAD TO RUSSEL BROOK
TRAMWAY (1902 – 1907)
THE BIG CUT
0 100 200 400 FT.
KEY MAP

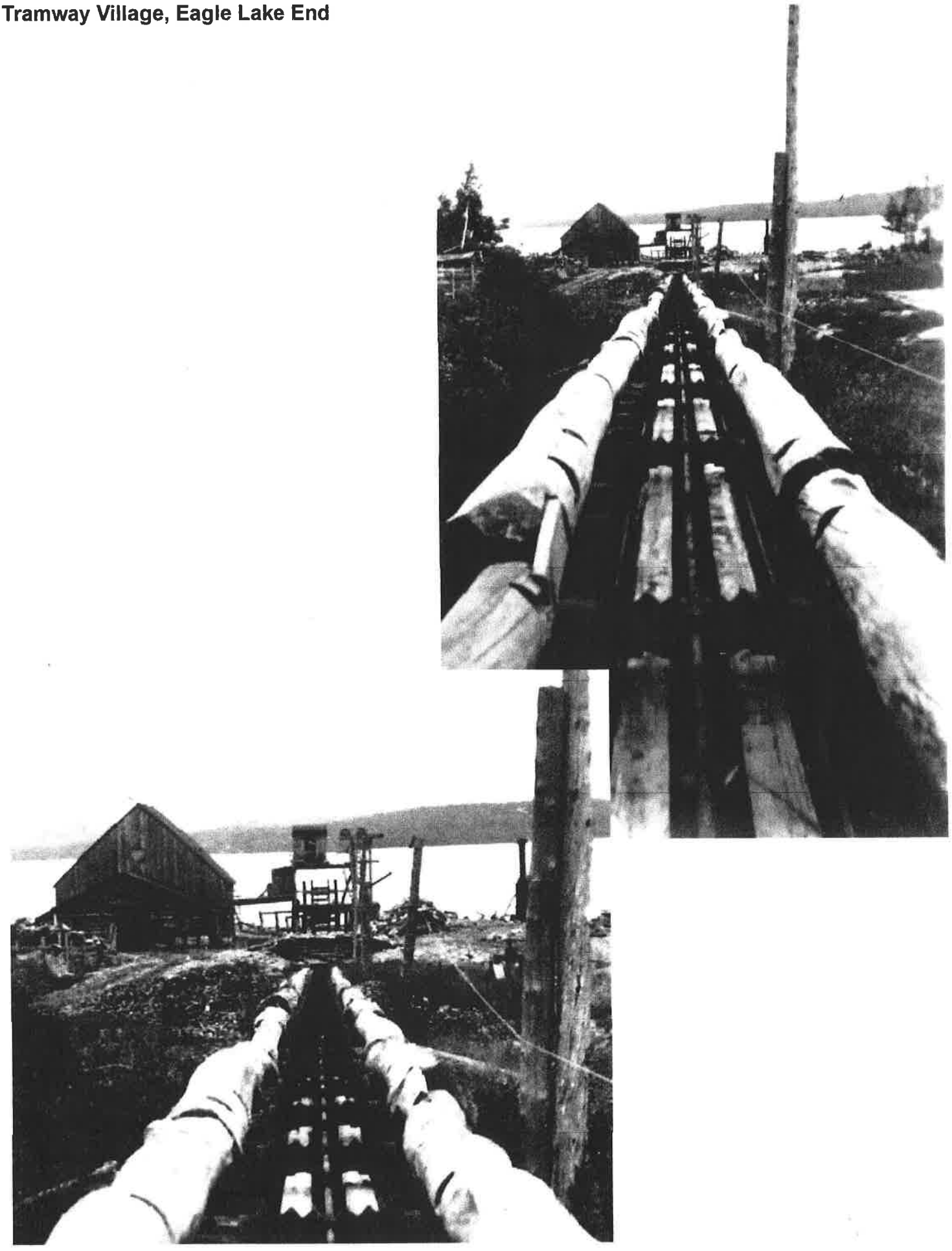
Tramway Village, Eagle Lake End



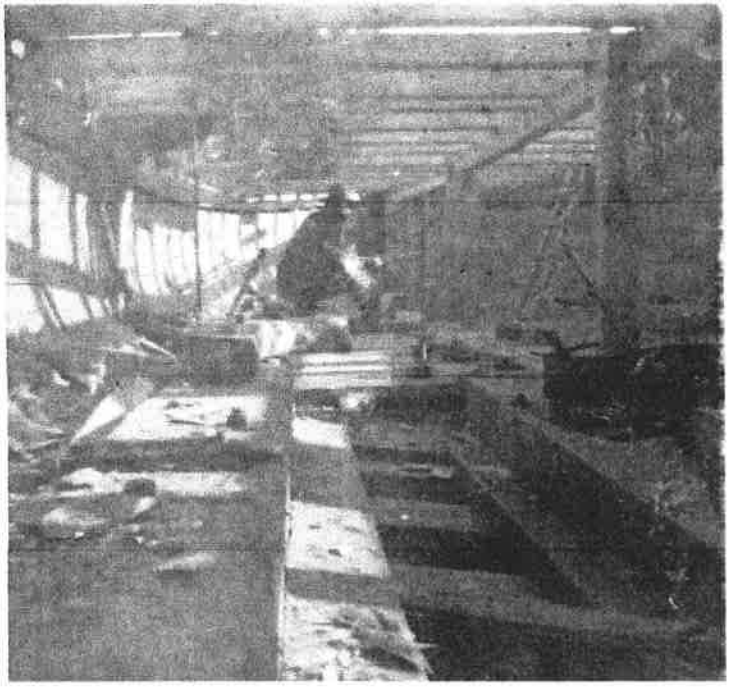
Tramway Village, Post Office

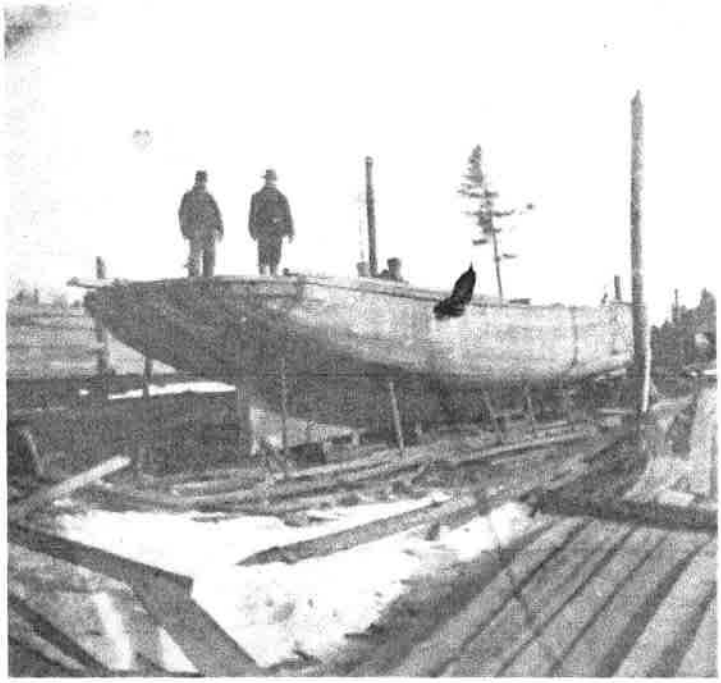
Tramway Village, Eagle Lake End

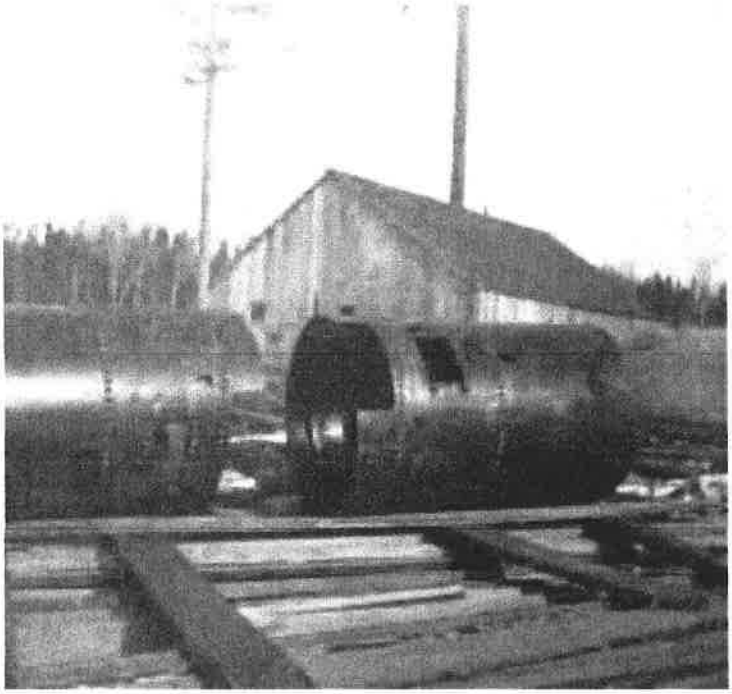
Tramway Village, Eagle Lake End

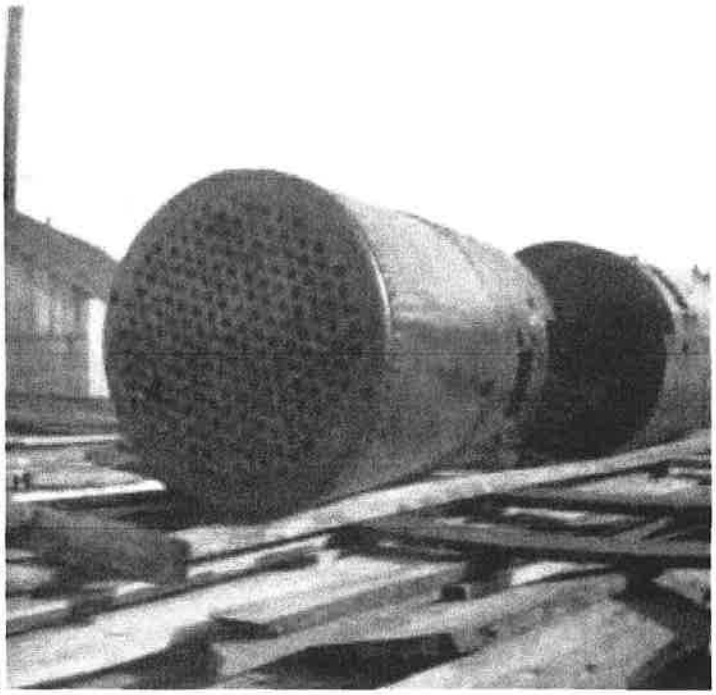


Tramway, Chamberlain Lake End - Construction of the *George A. Dugan*





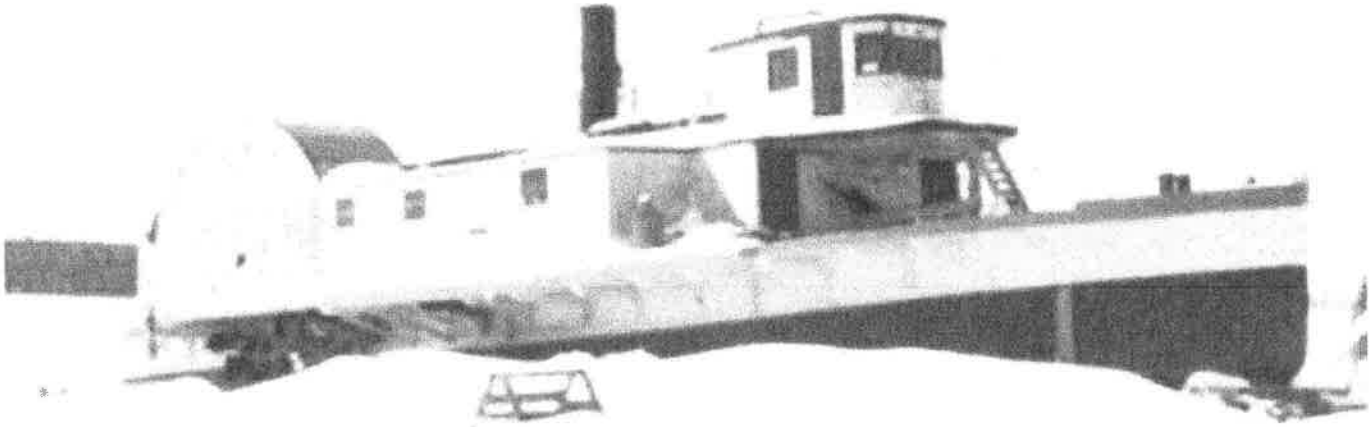




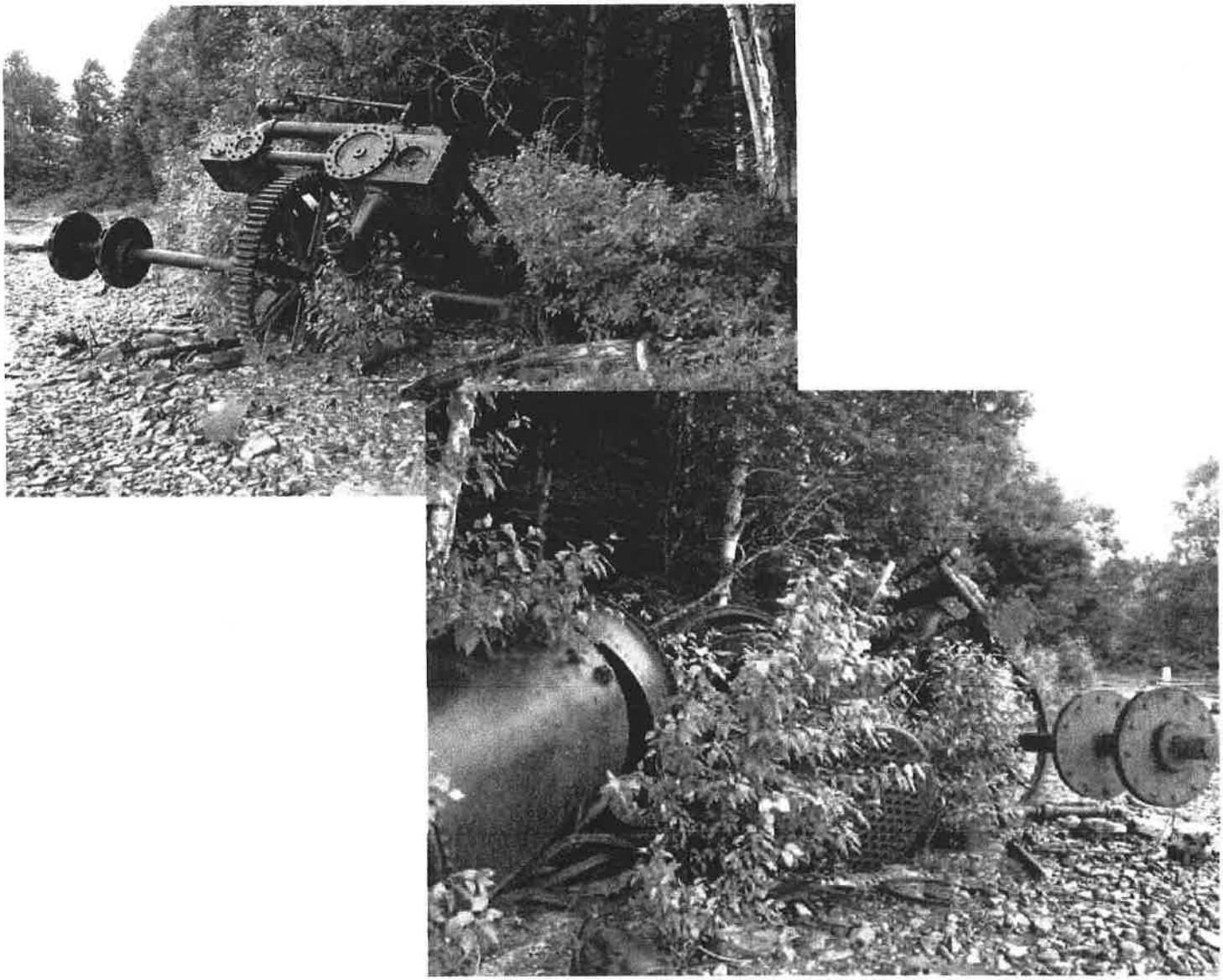
Tramway, Chamberlain Lake End - Construction of the *George A. Dugan*

Tramway, Chamberlain Lake End - Construction of the *H.W. Marsh*

The *H.W. Marsh* Frozen Into the Ice at Chamberlain Farm

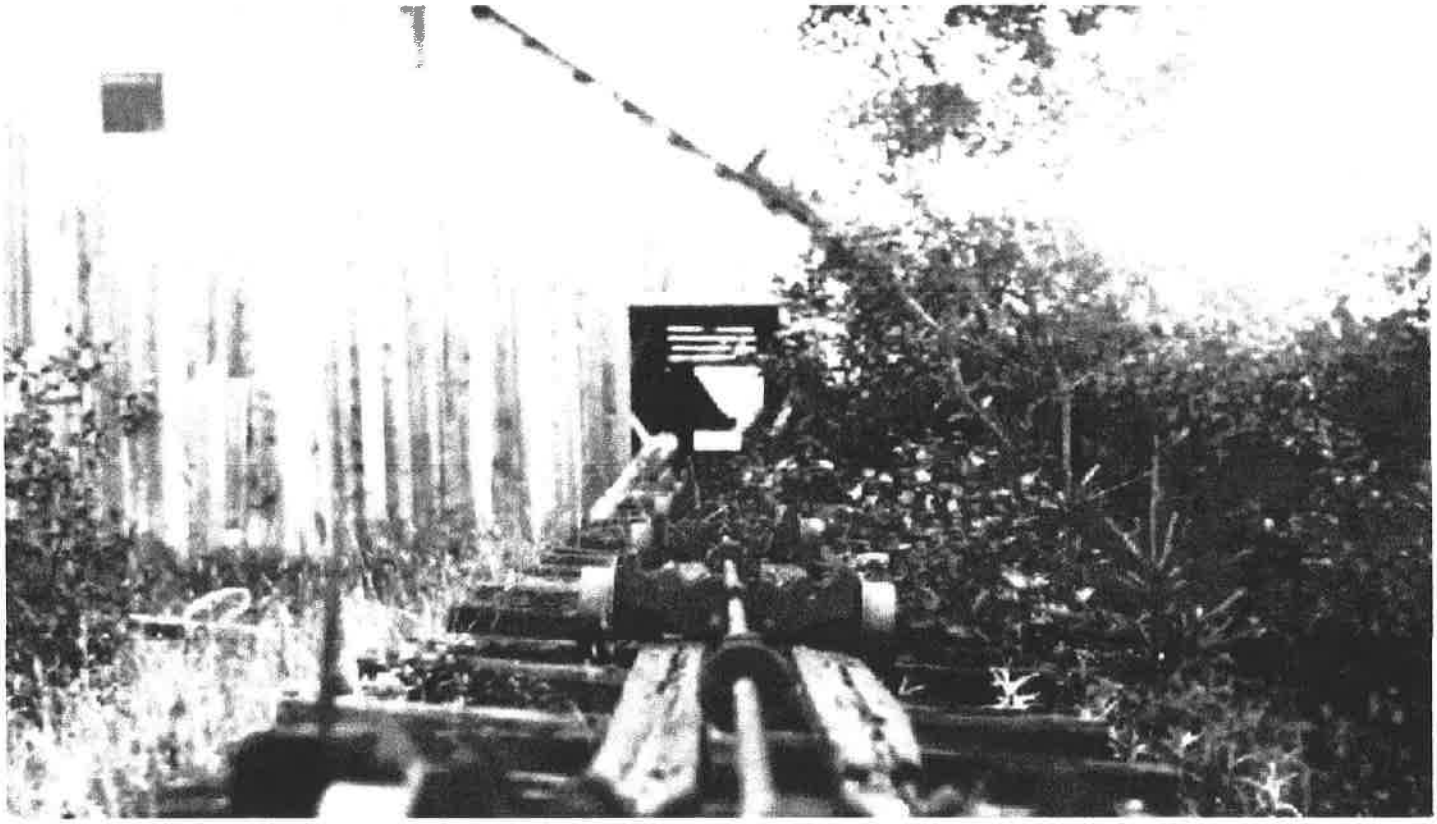


Remains of the *H.W. Marsh* at Chamberlain Farm, 2004

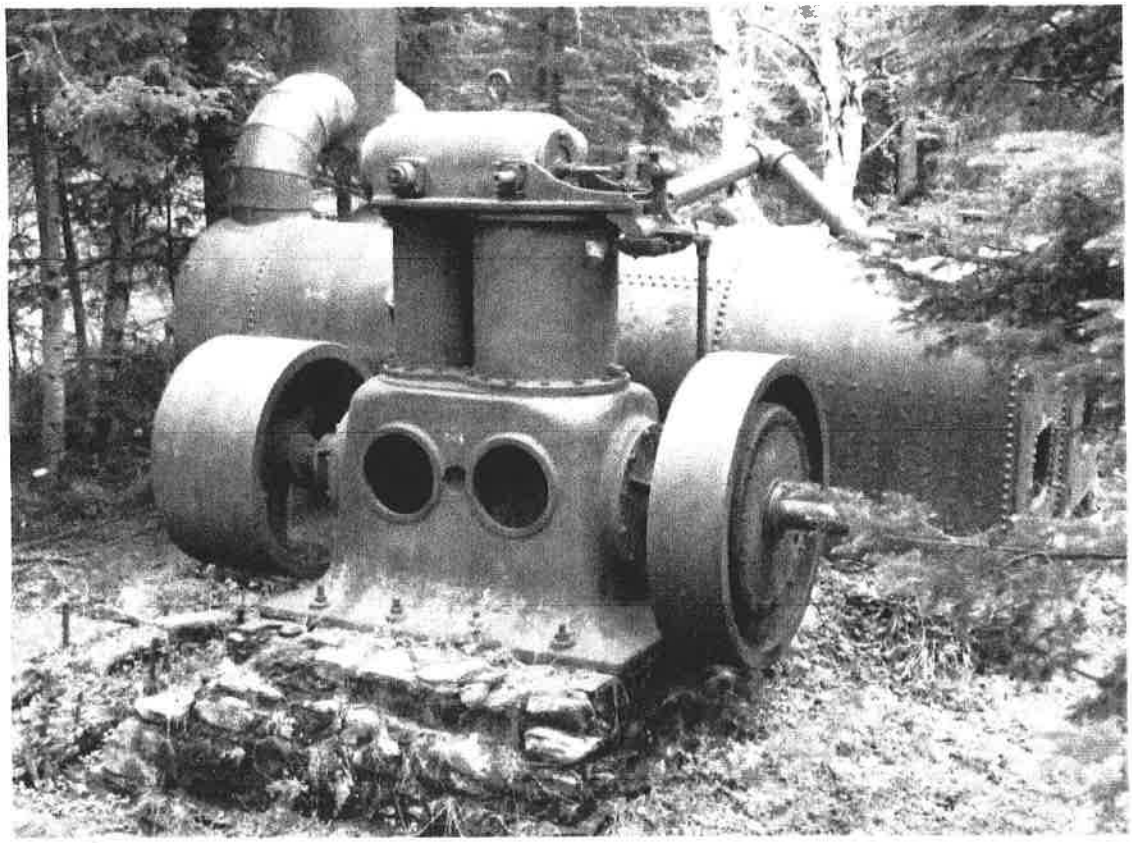


Tramway, Chamberlain Lake End - Power House

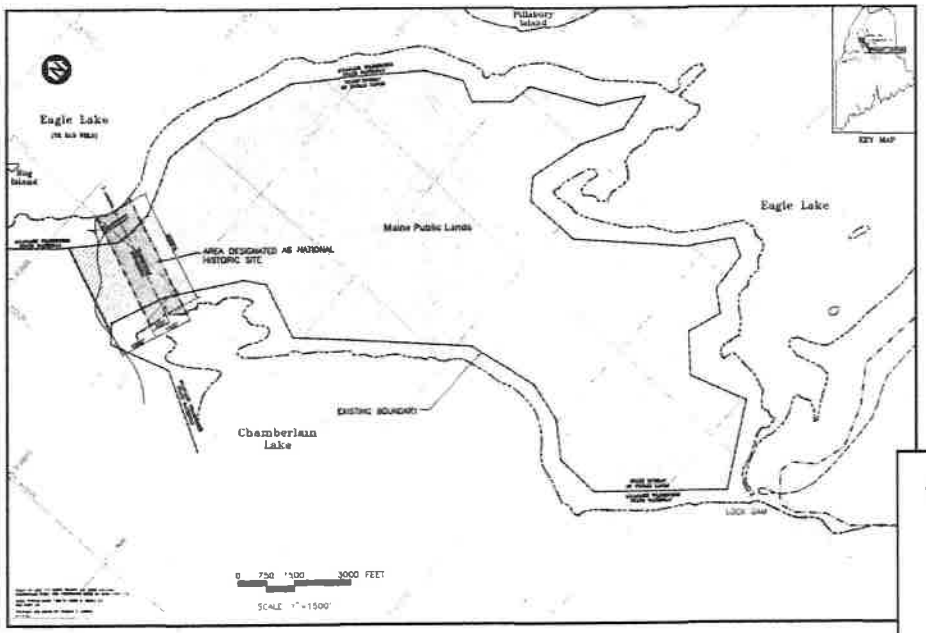
Tramway, Chamberlain Lake End - Power House and Trucks

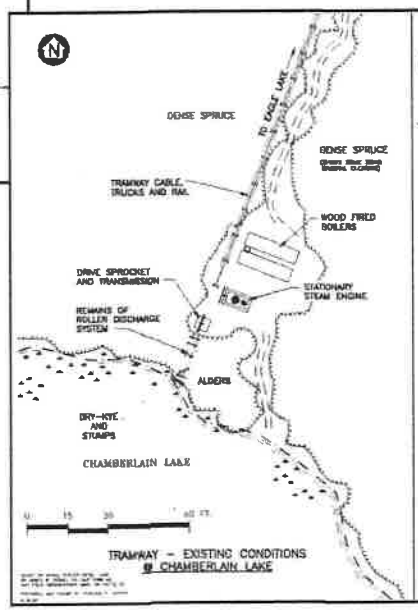


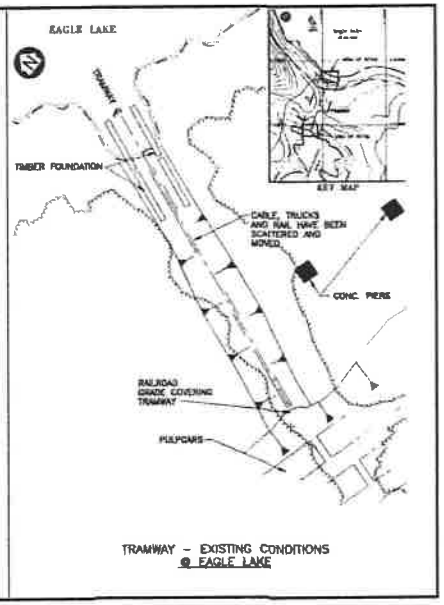
Tramway Remains, Chamberlain Lake End, 2009

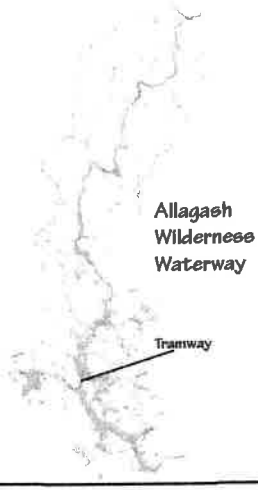


Tramway Remains, Chamberlain Lake End, 2009









MAPS OF THE AREA

RECORDED BY THOMAS A. REGAN, ESQ.

ALLAGASH TRAMWAY RECORDING PROJECT
MAINE BUREAU OF PARKS AND LANDS
DEPARTMENT OF CONSERVATION

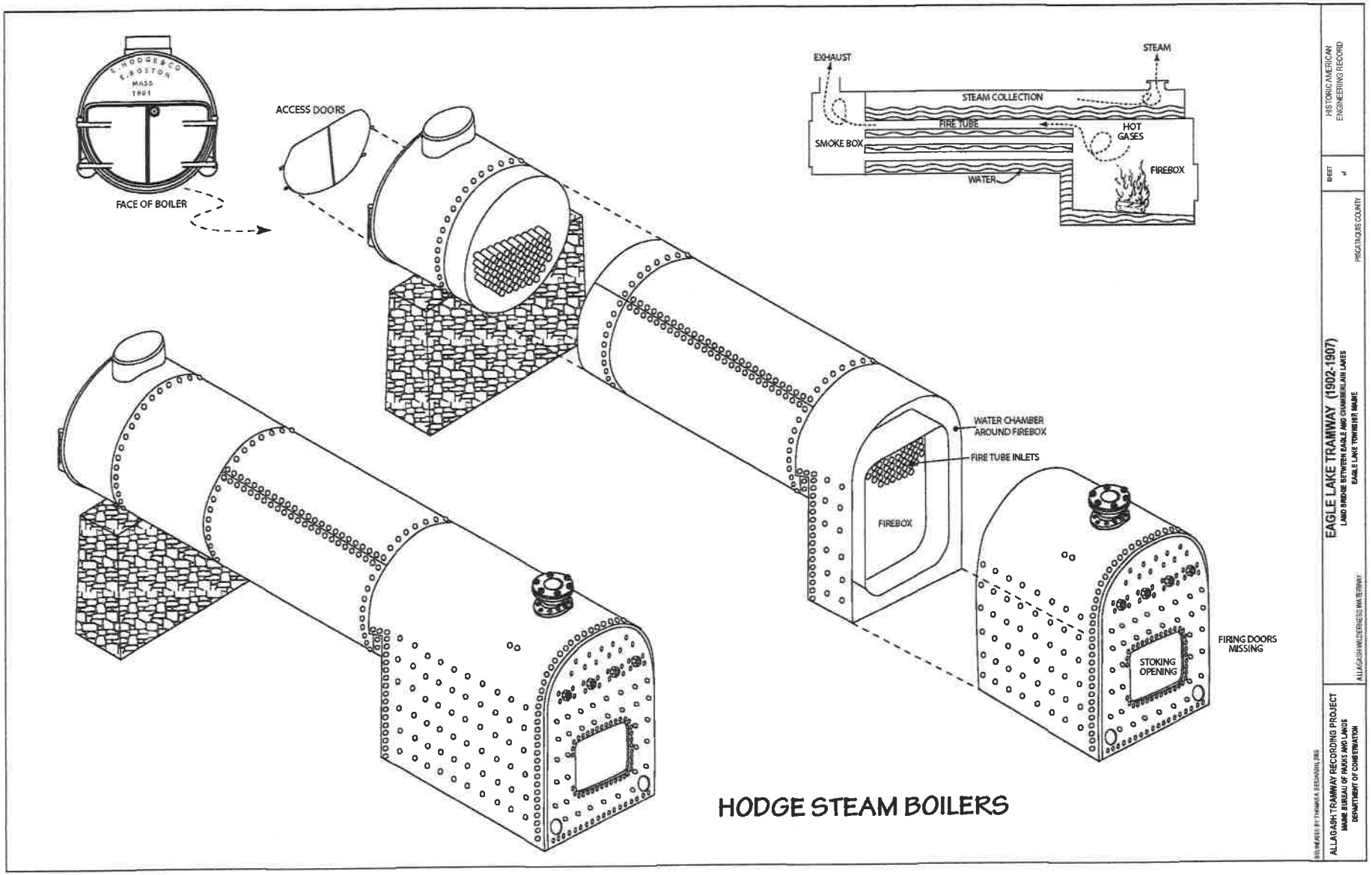
ALLAGASH WILDERNESS WATERWAY

EAGLE LAKE TRAMWAY (1902-1907)
LAND BRIDGE BETWEEN EAGLE AND CHAMBERLAIN LAKES
EAGLE LAKE TOWNSHIP, MAINE

PISCATAQUIS COUNTY

SHEET 4

HISTORIC AMERICAN ENGINEERING RECORD



HODGE STEAM BOILERS

HISTORIC AMERICAN ENGINEERING RECORD

SHEET #

PISCATAQUIS COUNTY

EAGLE LAKE TRAMWAY (1902-1907)
LAND BRIDGE BETWEEN EAGLE AND CHAMBERLAIN LAKES
EAGLE LAKE TOWNSHIP, MAINE

ALLAGASH WILDERNESS WATERWAY

ALLAGASH TRAMWAY RECORDING PROJECT
MAINE BUREAU OF PARKS AND LANDS
DEPARTMENT OF CONSERVATION

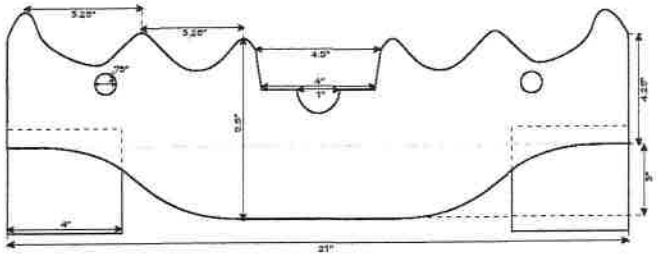
Patent Application Drawing

Westinghouse Compound Engine

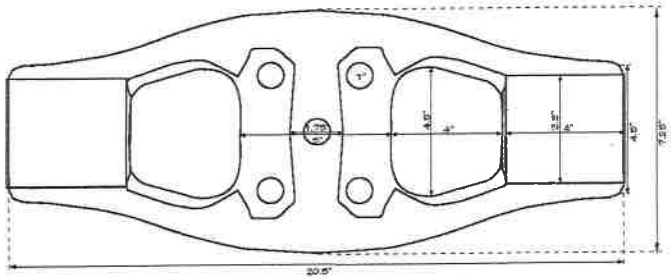
Photograph 2006

Patent Application Drawing

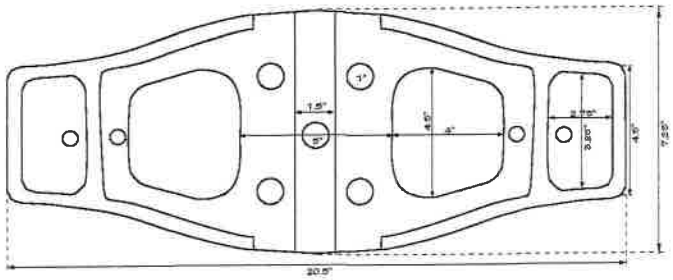
ALLAGASH TRAMWAY RECORDING PROJECT MAINE BUREAU OF PARKS AND LANDS DEPARTMENT OF CONSERVATION	EAGLE LAKE TRAMWAY (1902-1907) LAND BRIDGE BETWEEN EAGLE AND CHAMBERLAIN LAKES ALLAGASH WILDERNESS WATERWAY — EAGLE LAKE TOWNSHIP, MAINE — PISCATAQUIS COUNTY	SHEET of	HISTORIC AMERICAN ENGINEERING RECORD



FRONT VIEW



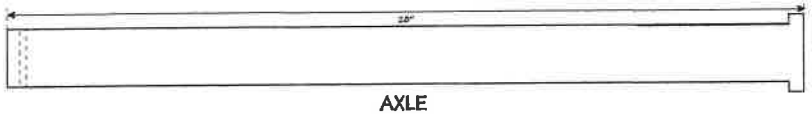
BOTTOM VIEW



TOP VIEW

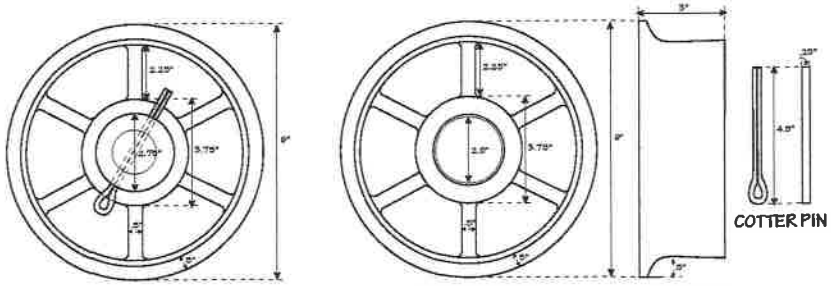
Six hundred of these trucks were fastened along the cable of the tramway at intervals of ten feet. Logs were placed on top of the teeth of the trucks which held them in place for the 3,000 foot journey. The sprocket wheel that drove the tramway caught each truck, pulling it through until it grabbed the next, and moving the logs along at a speed of 250 feet per minute (about 3 miles per hour).

TRAMWAY TRUCK



AXLE

The axles of the truck slid through the hub of one wheel which held the end in place where a cap on the axle slipped into a slot on the wheel hub (opposite view). The other end of the axle was then sent through the hub of the other wheel and held fast by a cotter pin before the axle end was hammered into a flange, doubling the holding strength on that end.



FRONT VIEW

WHEELS

OPPOSITE VIEW

SIDE VIEW

COTTER PIN

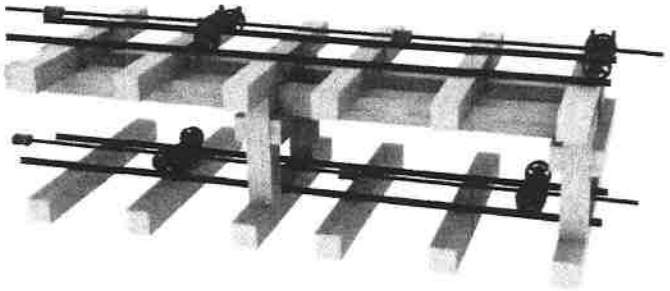
DOCUMENTED BY THOMAS A. BENJAMIN 1988

ALLAGASH TRAMWAY RECORDING PROJECT
MAINE BUREAU OF PARKS AND LANDS
DEPARTMENT OF CONSERVATION

EAGLE LAKE TRAMWAY (1902-1907)
LAND BRIDGE BETWEEN EAGLE AND CHAMBERLAIN LAKES
EAGLE LAKE TOWNSHIP, MAINE
ALLAGASH WILDERNESS WATERWAY
PISCATAQUIS COUNTY

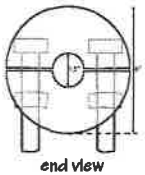
SHEET
of

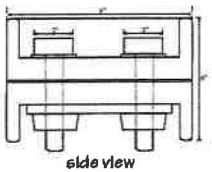
HISTORIC AMERICAN
ENGINEERING RECORD

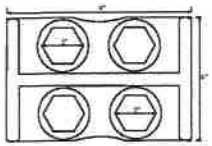


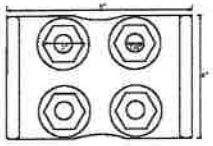
The "Button"

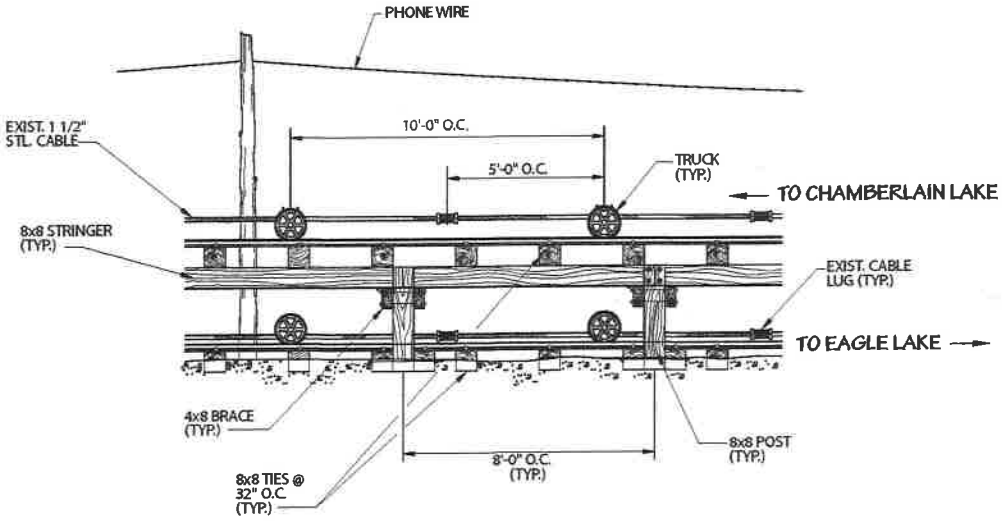
The cable clamp. These "buttons" as the workers called them, were bolted to the cable at ten foot intervals spaced evenly between the trucks. This allowed the sprocket wheel that drove the cable to grasp either a truck or clamp every five feet while continuously pulling the cable through it scircular route.



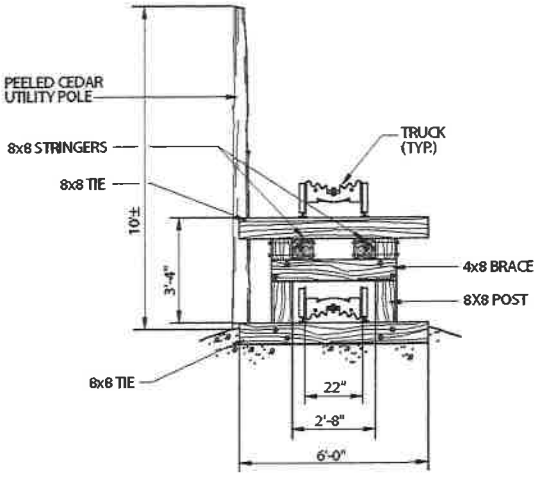








TYPICAL ELEVATION



SECTION

NOTE:
DETAILS SHOWN ARE CONCEPTUAL ONLY.
ACTUAL CONFIGURATION MAY VARY.

TRAMWAY CRIB STRUCTURE

HISTORIC AMERICAN ENGINEERING RECORD

SHEET 4

EAGLE LAKE TRAMWAY (1902-1907)
LAND BRIDGE BETWEEN EAGLE AND CHAMBERLAIN LAKES
EAGLE LAKE TOWNSHIP, MAINE

PISCATAQUIS COUNTY

ALLAGASH WILDERNESS WATERWAY

ALLAGASH TRAMWAY RECORDING PROJECT
MAINE BUREAU OF PARKS AND LANDS
DEPARTMENT OF CONSERVATION

DELINEATED BY THOMAS REGNIERE, 2006