

NEW YORK STATE ELECTRIC & GAS CORPORATION

BINGHAMTON, NEW YORK 13902

April 25, 1979

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File Nos. T4.2P7  
B.1.5

Mr. Roger Boyd, Director  
Division of Project Management  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

ATTN: Mike Masnik

SUBJECT: New Haven 1 & 2  
Hudson River Shortnose Sturgeon Study

Dear Mr. Boyd:

NYSE&G is having Hazleton Environmental Sciences conduct a study of the shortnose sturgeon on the Hudson River. Enclosed for your information is a copy of the scope of work for this effort. If you have any questions, please contact Mr. Mark Buzel (607/729-2551, Ext. 477) of my staff.

Very truly yours,



M. J. Ray  
Manager - Nuclear Projects

MJR/MLB/lh

Enclosure

cc: T. J. Hadwin  
T. M. Turner  
N. L. Yezzi  
A. F. Zallnick  
A. F. Kalfopoulos (UE&C)  
B. G. Schultz (S&W)  
R. Schutt (HMLF)  
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J. DeMarte (Hazleton-Syracuse)

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ADD:  
M MASNIK w/ENCL  
R BOYD w/ENCL

# HAZLETON ENVIRONMENTAL SCIENCES

## 1979 Hudson River Shortnose Sturgeon Study

### Scope of Work

#### I. Objective

To determine the relative importance of the Stuyvesant area to the life history of the shortnose sturgeon in the Hudson River estuary.

#### II. Introduction

A study of the Shortnose Sturgeon population will be conducted from river mile (RM) 153 (Troy Dam) through RM65 (Roeston). See Appendix A, Hudson River Navigational Charts. The study program was designed in cooperation with Mr. William Dovel of the Oceanic Society, Stanford, Connecticut, who has been studying the Hudson River Shortnose Sturgeon population in recent years. A Three Phase Program was jointly developed to integrate our studies to provide a comparable data base and minimize duplication of effort between study areas. Phase I will document the distribution of spawning adults, Phase II will document the distribution of early life stages (eggs and larvae) and Phase III will document the distribution of young-of-the-year Shortnose Sturgeon within the study area. A concerted effort will be made to sample at the proposed Station's intake location. This location will be fished with each type of collection gear at least once during each sampling week.

#### III. Field and Analytical Procedures

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##### A. Phase I - Documentation of Shortnose Sturgeon Spawning Activity

The sampling program to be implemented in Phase I will encompass a 47 mile extent of the Hudson River (RM 153 through 106).

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Hazleton Environmental Sciences will sample from the Troy Dam to an area approximately 6 miles downriver of the Stuyvesant Site. The Oceanics Society will sample the area immediately below the Hazleton Environmental Sciences' study area.

Drift gill netting will be conducted with 450ft by 8ft experimental mesh gill nets. Each net will consist of alternating panels of 2, 2.5, and 3in bar mesh. During periods of slack tide, nets will be floated perpendicular to shore near the channel bottom. Nets will be fished four days per week for three weeks beginning on 23 April. Sampling will be initiated north of the site during each sampling week. In general, 2-4 drifts will be conducted during each sampling day at approximately 2 mile intervals for 15 minute duration each. A different segment of the river starting six miles north of the Stuyvesant Site and extending to six miles south of the Site will be sampled during each of three days. On the fourth day, sampling will occur at any of the areas requiring additional effort and/or the area near Troy Dam. In addition, 100ft by 6ft gill nets consisting of 2.0, 2.5, 3.0 and 3.5in bar mesh will be set parallel to shore overnight at Locations 13, 21, 23, 41, 43 and 63 (Figure 1), and 12 additional locations distributed evenly between river segments north and south of the Site. Both sides of the river will be sampled. Six locations will be sampled per day and will provide data comparable to 1977 and 1978 gill net data.

Water depth and temperature will be recorded at each sampling locations. Ponar grab samples will be taken at locations where sturgeon are collected to determine substrate type. Sampling

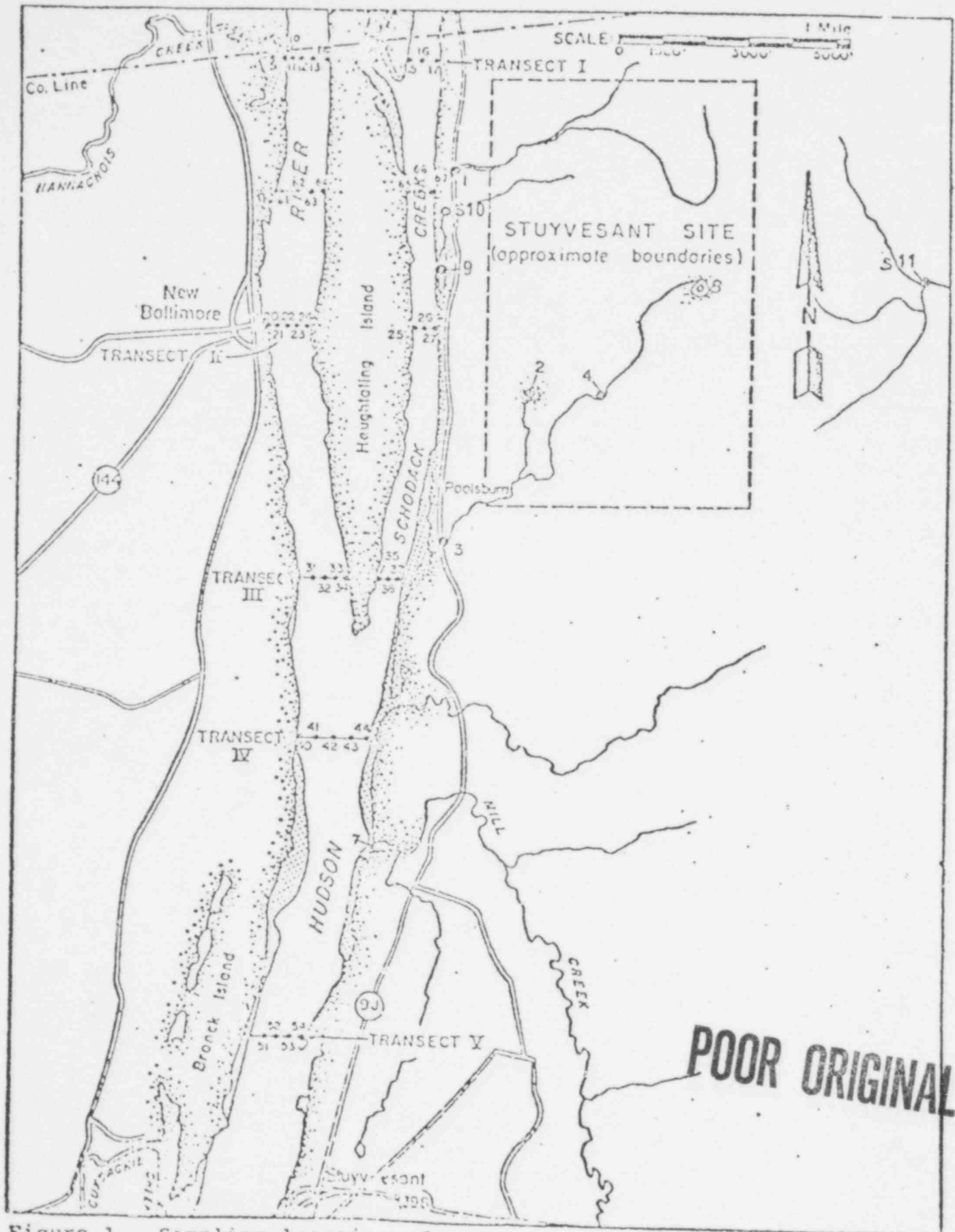


Figure 1. Sampling locations for aquatic studies conducted near the Stuyvesant Site. Locations 11, 15-17, 31-37, 51-54, 2, 4, 5-9 and S10 have been deleted from the 1978 program.

locations will be delineated on Hudson River navigational charts.

Sturgeon will be measured for length and weight. These measurements and spawning condition as determined by external examination will be recorded. Sturgeon larger than 10in total length will be tagged and all sturgeon will be released at the location of capture. Tag number and location of capture will be recorded.

B. Phase II - Documentation of Distribution of Early Life Stages (Eggs and Larvae)

The sampling program to be implemented in Phase II will encompass an approximate 88 mile extent of the Hudson River (RM 153 through 65). Phase II will be initiated following the documentation of sturgeon spawning and will probably start during the week of 15 Mar. The duration of sampling will be four days per week for approximately 2 to 3 weeks.

Collections will be made using 1.0m diameter Hensen nets of #0 Nitex mesh attached to an epibenthic sled. During the day and at approximately one mile intervals, single three-minute tows will be taken in the river channel against the current. Occasional side channel samples will be taken to document use of nearshore habitats. Approximately 20 miles of river and 35 tows will be made each day. The volume of water sampled will be determined for each sample with a net-mounted General Oceanics flow meter. Each week of sampling will commence at the southern extent of the study area and progress northward.

Samples will be sorted and the sturgeon identified and measured immediately after collection. Identification will be aided by use

of dissecting microscopes and macroscopes on board the research vessel. Every attempt will be made to return the larvae and young-of-the-year sturgeon alive to the river at the locations captured.

Water depth and temperature will be recorded at each sampling location. Ponar grab samples will be taken at locations where sturgeon are collected to determine substrate type. Sampling locations will be lineated on Hudson River navigational charts.

C. Phase III - Documentation of the Distribution of Young-of-the-Year Shortnose Sturgeon

The sampling program to be implemented during Phase III will cover the same sampling area as Phase II. Each week of sampling will commence at the southern extent of the study area and progress northward. Phase III will commence when the shortnose sturgeon larvae collected in Phase II attain 20-30mm in total length. Trailing techniques will be implemented in Phase III to minimize the stress and avoidance of y-o-y sturgeon associated with the use of Hensen nets. The duration of sampling will be for 2 to 3 weeks which may be non-consecutive. Each sampling week will consist of four days.

Bottom trawling will be conducted with a 21ft headrope, 26ft foot rope trawl with a 1/2in stretch codend liner. During the day and at approximately one mile intervals, single five-minute tows will be conducted with the current primarily in channel areas. Approximately 20 miles of river and 25 tows will be made each day.

During periods of slack tide, experimental gill nets (200ft by 8ft) consisting of 0.5in bar mesh will be drifted perpendicular

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to shore; along the channel bottom. If successful, approximately 2-4 drifts will be conducted during each sampling day for a duration of approximately 15 minutes.

Samples will be sorted and the sturgeon identified and measured immediately after collection. Identifications will be aided by use of dissecting microscopes and macroscopes on board the research vessel. Every attempt will be made to return the sturgeon alive to the river at the location captured.

Water depth and temperature will be recorded at each sampling location. Ponar grab samples will be taken at locations where sturgeon are collected to determine substrate type. Sampling locations will be delineated on Hudson River navigational charts.

#### IV. Reports

A final report will be submitted to UE&C and NYSE&G that will:

- 1) describe all field and analytical methods; 2) present and discuss results; and 3) make comparisons with data collected by the Oceanic Society and earlier years of study at the Stuyvesant Site. A copy of all field data will be submitted to the New York State Department of Environmental Conservation at the completion of each study phase.

Appendix A

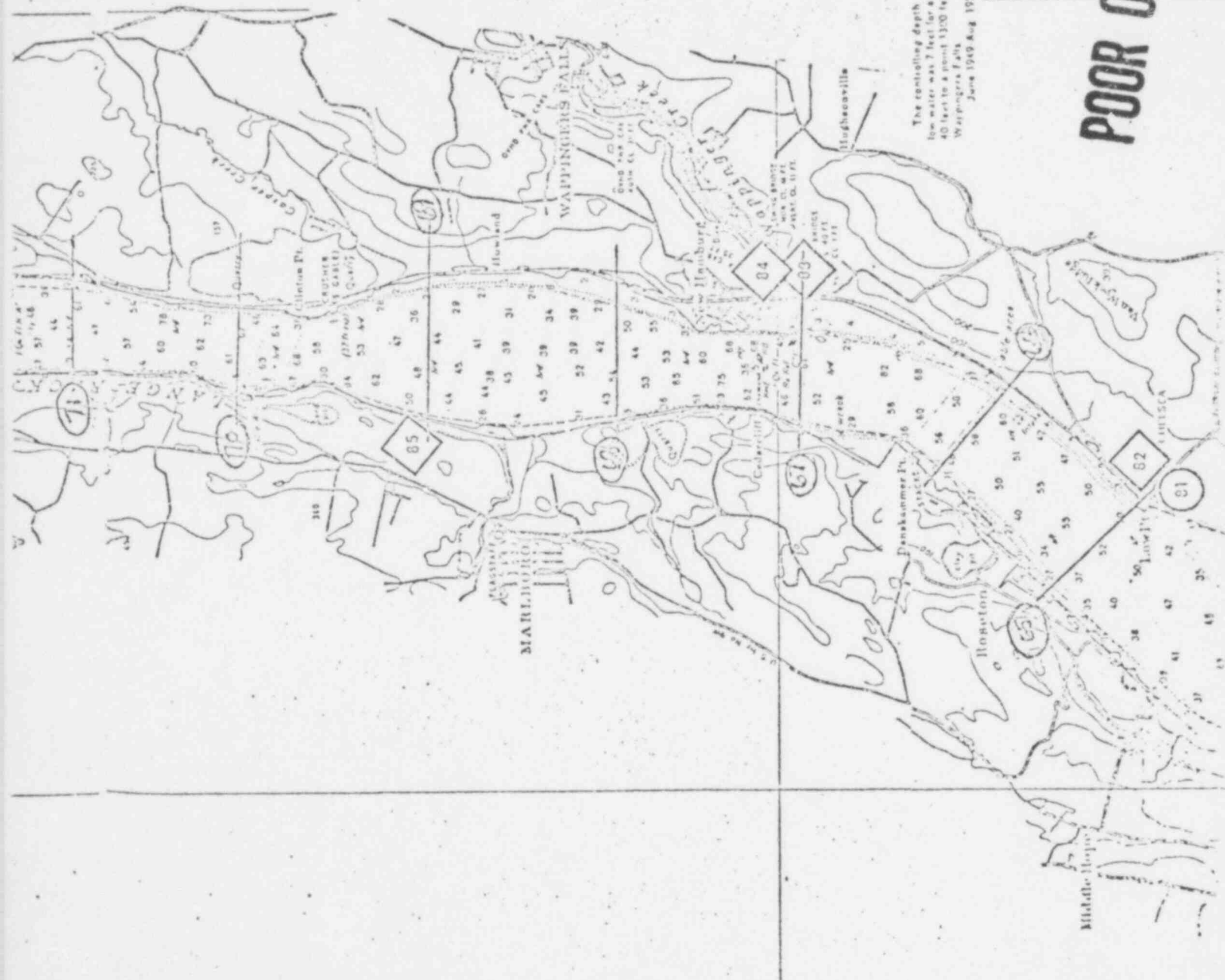
Hudson River Navigational Charts

River Mile 153 to River Mile 65

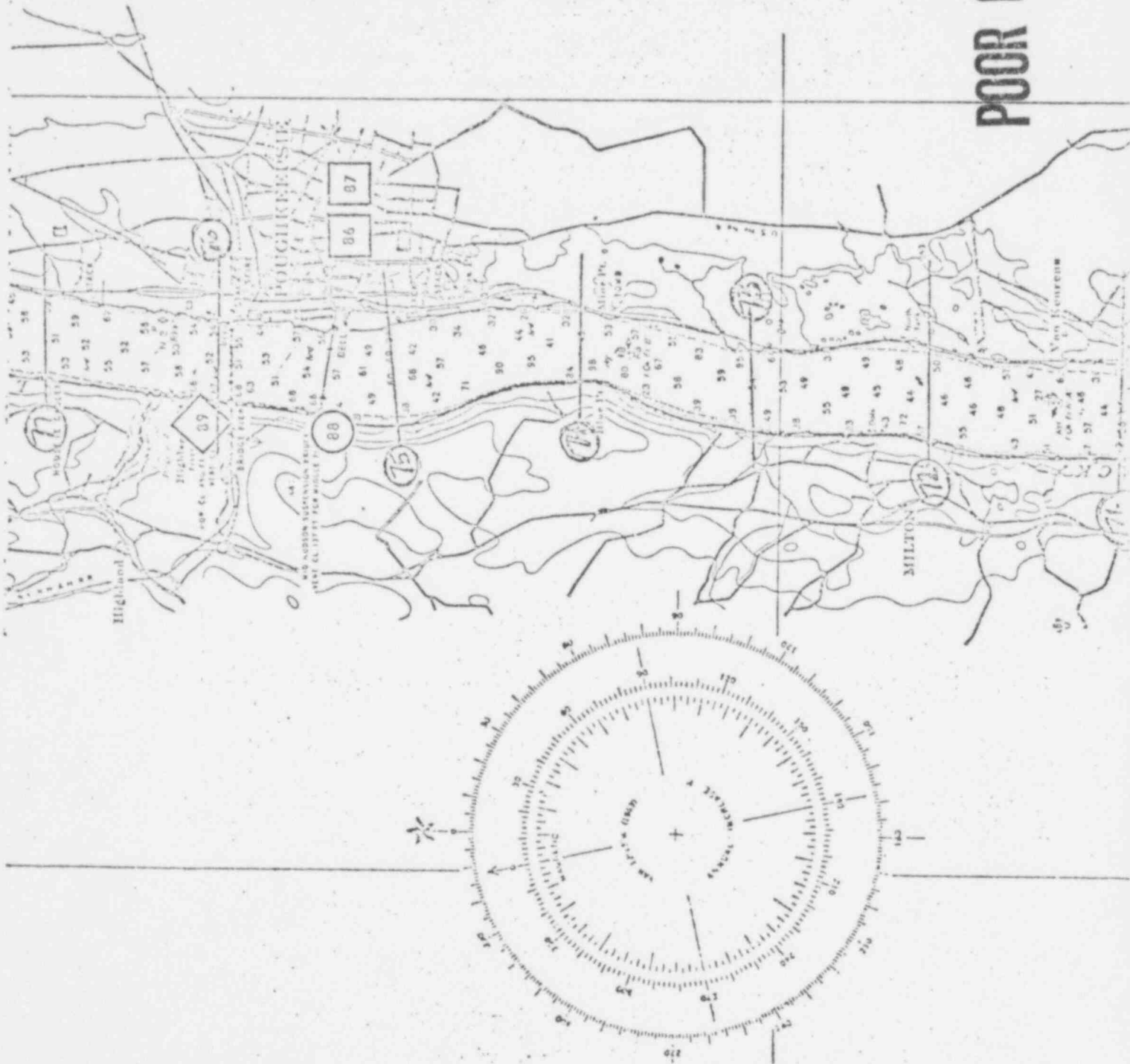


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The contouring depth at mean  
low water was 7 feet for a width of  
40 feet to a point 1300 feet below  
Wappingers Falls  
June 1949 Aug 1955



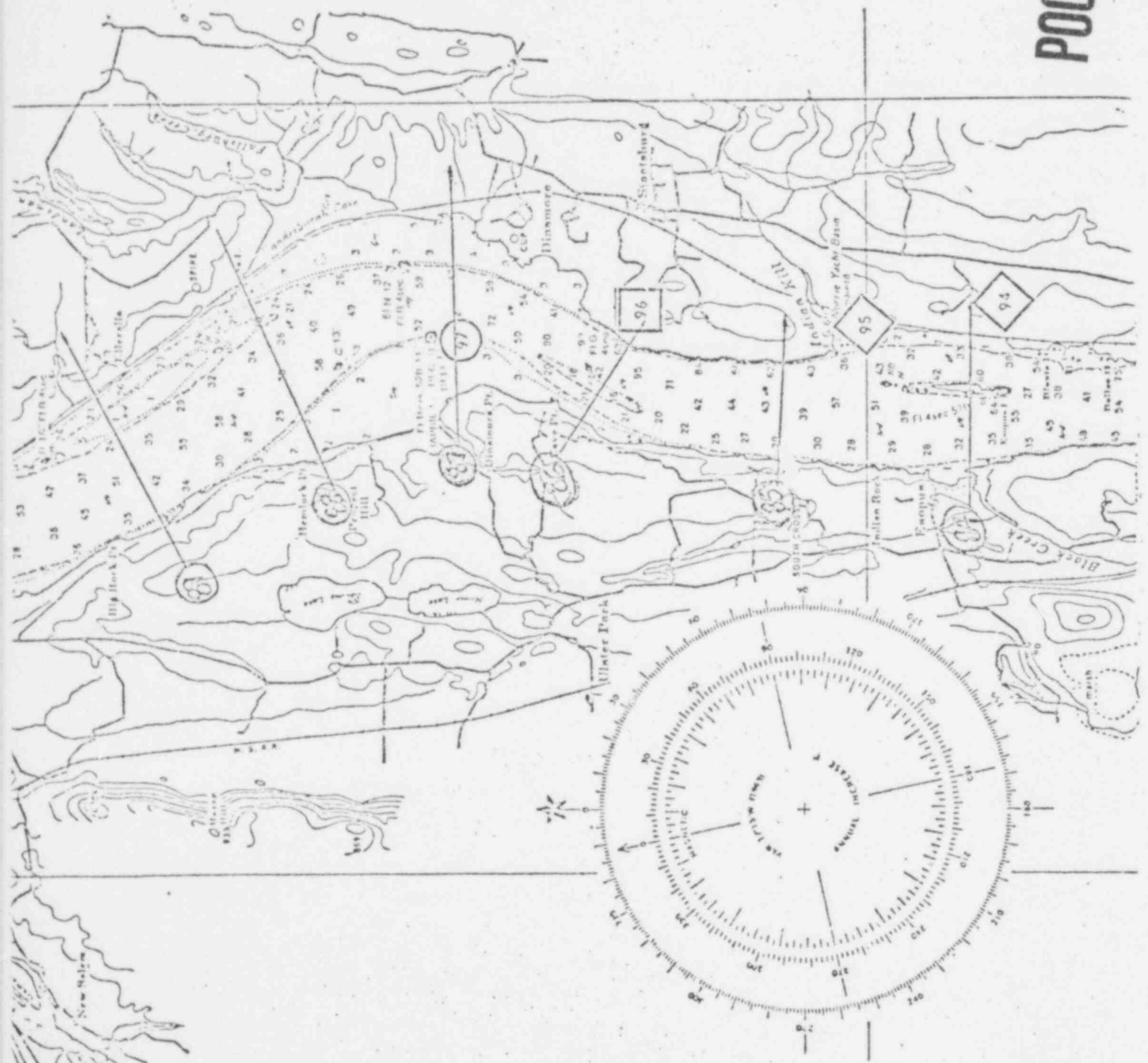
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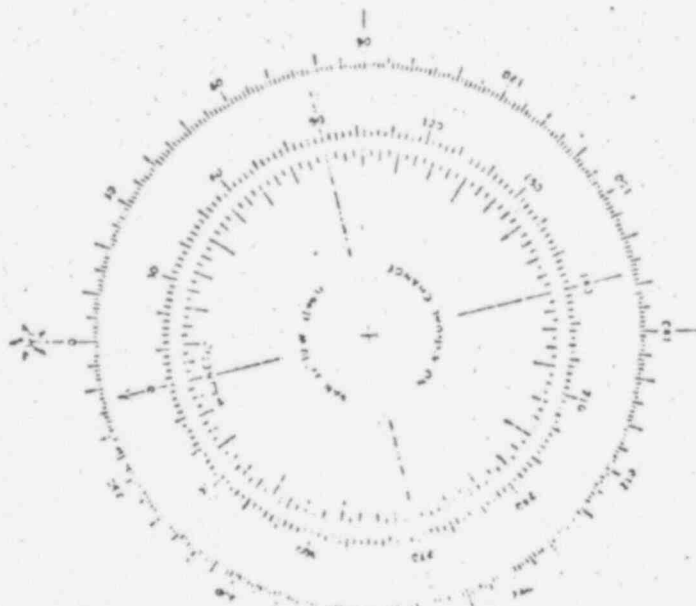
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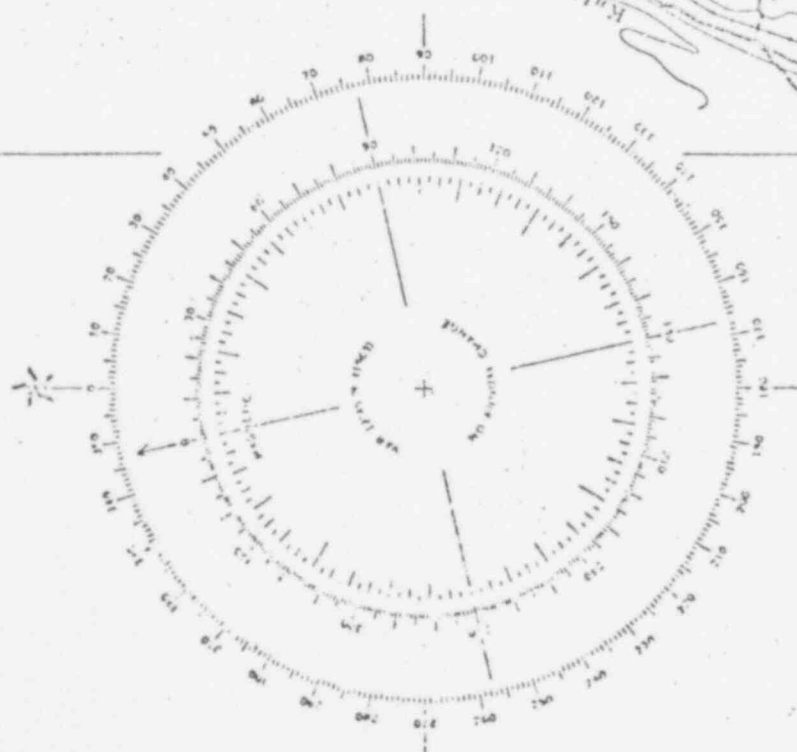


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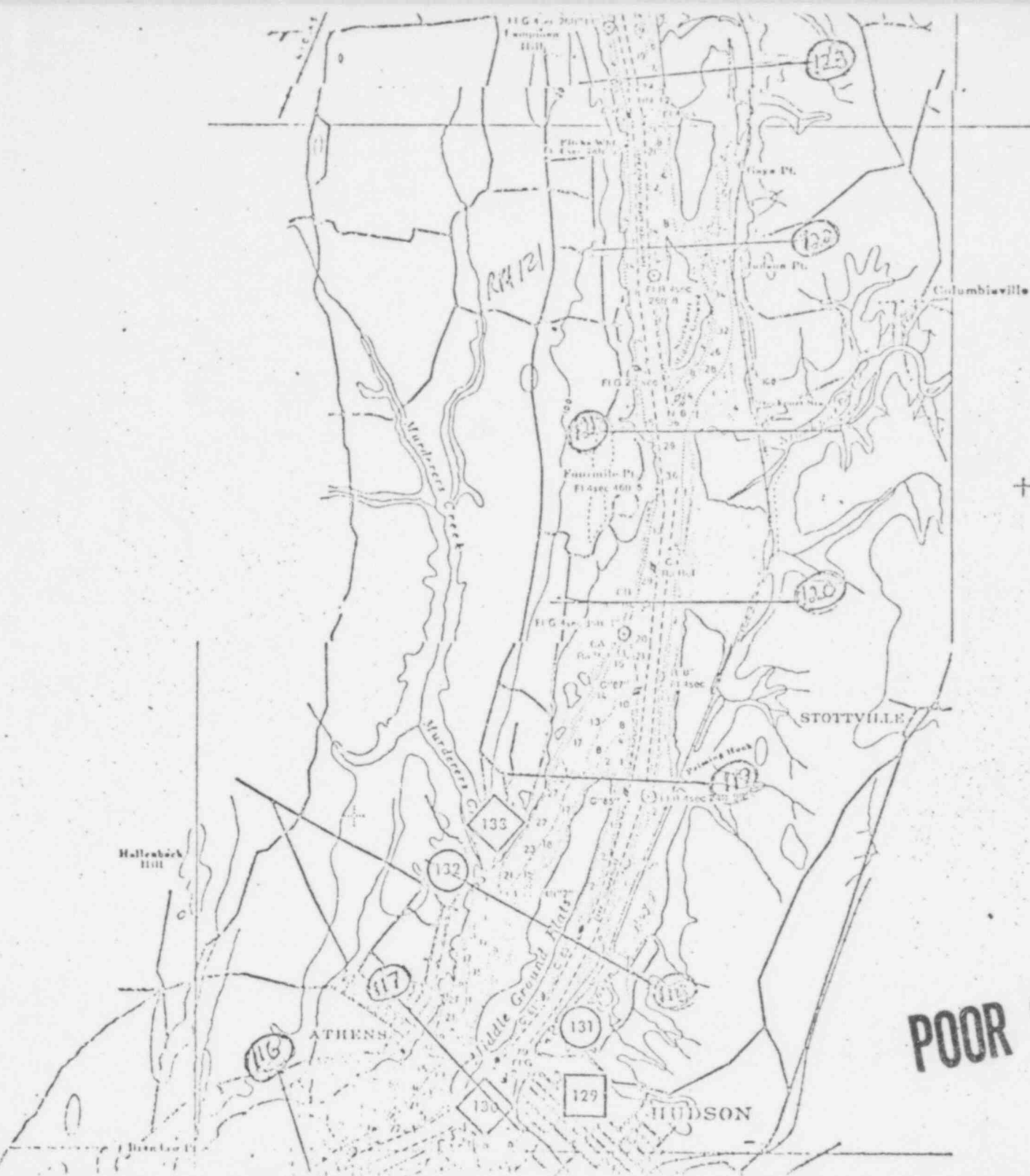








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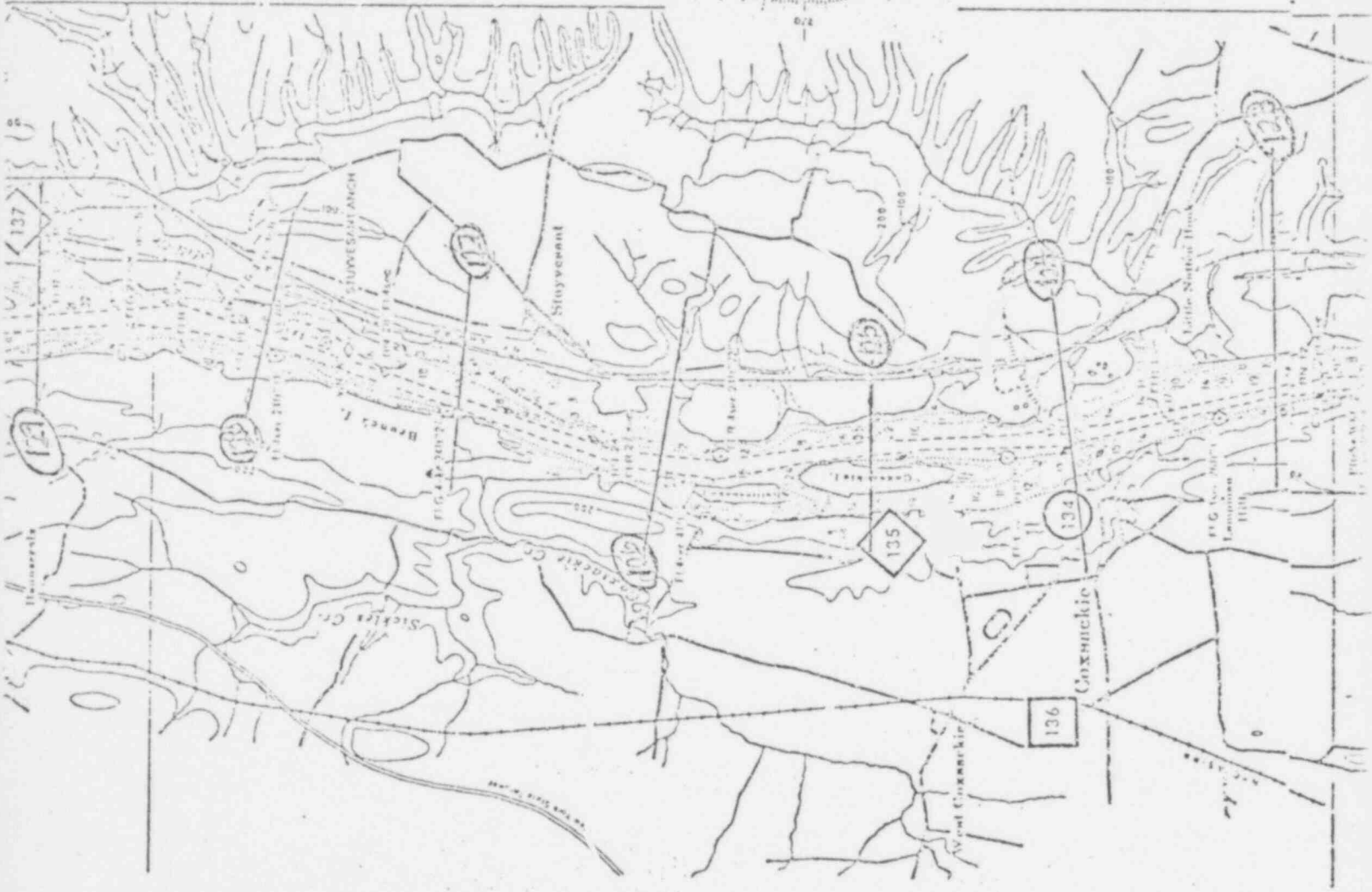


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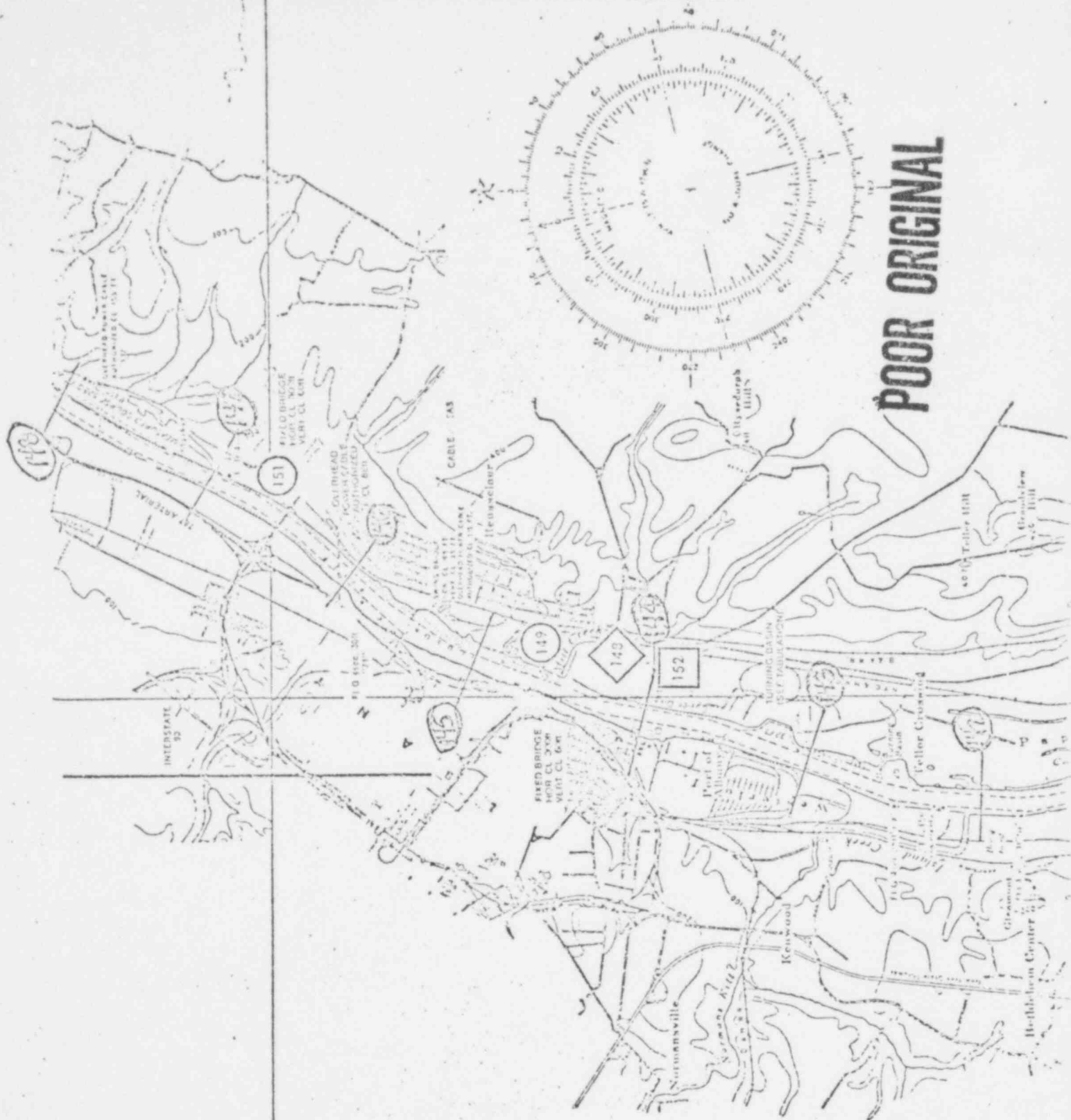
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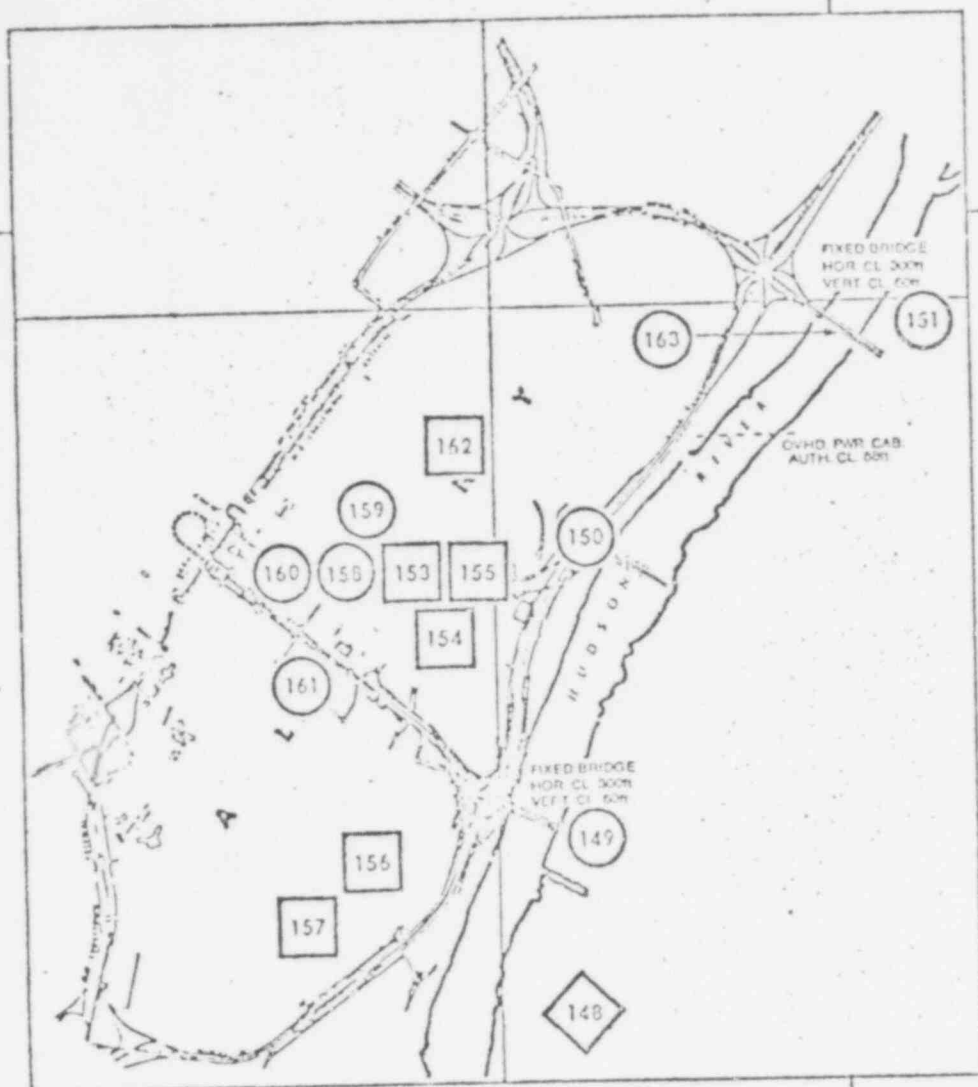
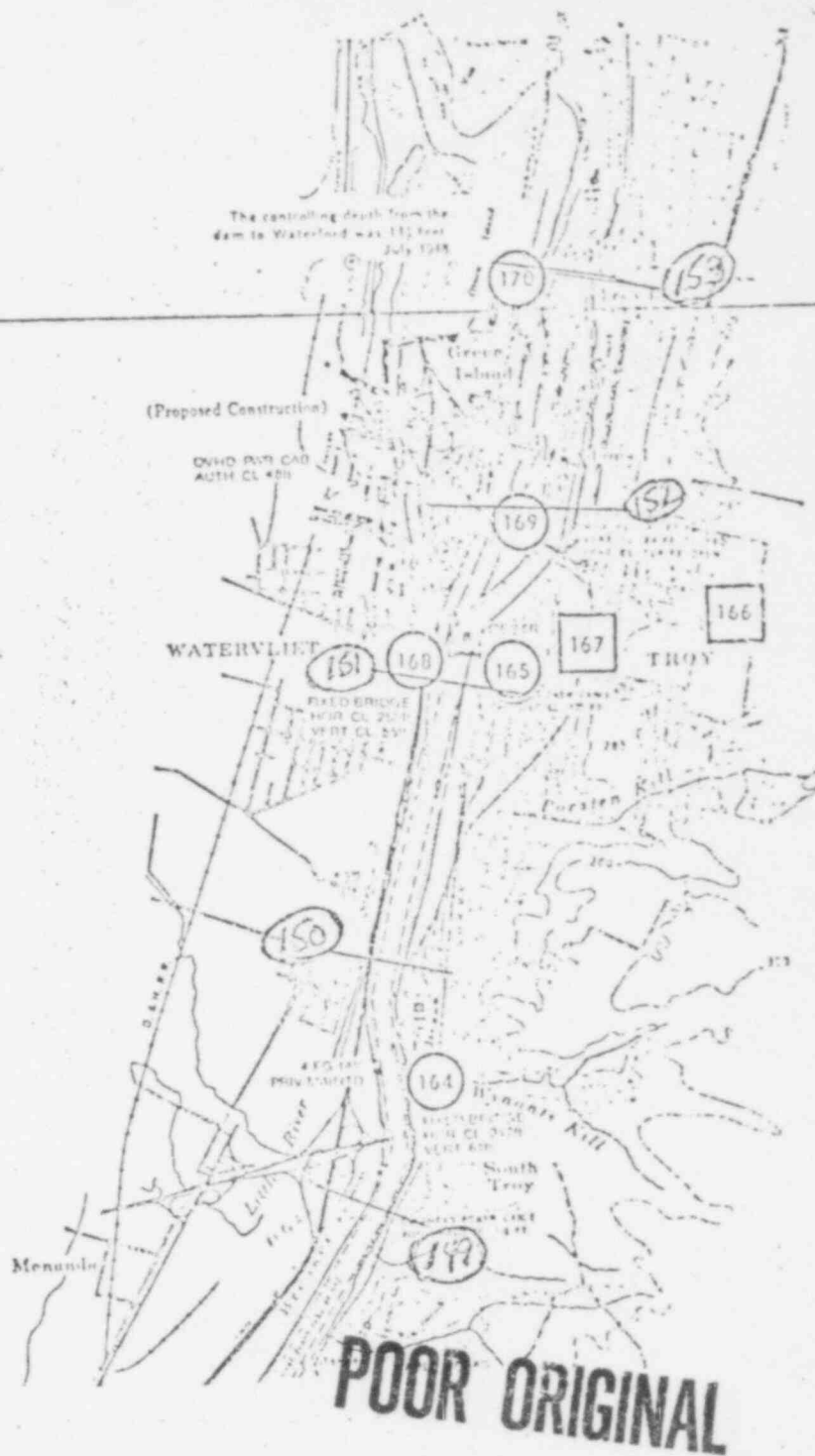
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