SUSQUEHANNA RIVER BASIN

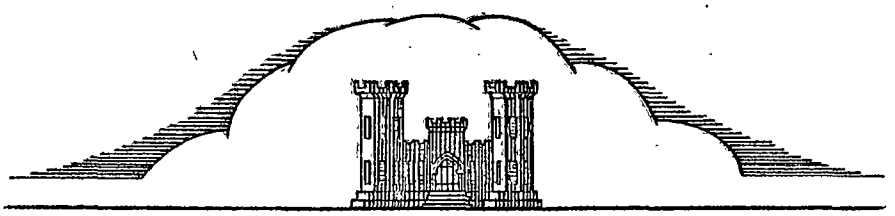
38

WHITNEY POINT RESERVOIR

OTSELIC RIVER, NEW YORK

DESIGN MEMORANDUM NO. 1

MASTER PLAN



U. S. ARMY ENGINEER DISTRICT, BALTIMORE
CORPS OF ENGINEERS
BALTIMORE 3, MARYLAND

SEPTEMBER 1961

ADDRESS REPLY TO
THE DISTRICT ENGINEER

U S ARMY ENGINEER DISTRICT, BALTIMORE
CORPS OF ENGINEERS
P O Box 1715
Baltimore 3, Maryland

REFER TO FILE NO
NABEN-R

25 September 1961

SUBJECT: Whitney Point Reservoir, New York, Design Memorandum No. 1, Master Plan

THRU: Division Engineer
U. S. Army Engineer Division, North Atlantic
ATTN: NADEN-R
New York, N. Y.

TO: Chief of Engineers
ATTN: ENGCW-O
Department of the Army
Washington, D. C.

1. Inclosed for review and approval, in accordance with EM 1130-2-302, paragraph 9.b., are six copies of the Master Plan for Whitney Point Reservoir, New York.

2. As provided by EM 405-2-835, paragraph 7.b., the Master Plan has been reviewed by the Real Estate Division of the District, and the recommendations of that Division have been incorporated in the plan.

FOR THE DISTRICT ENGINEER:

1 Incl
as (sext)

ORIN A. FAYLE
Lt. Colonel, Corps of Engineers
Deputy District Engineer

NADEN-R(25 Sept 61) 1st Ind
SUBJECT: Whitney Point Reservoir, New York, Design Memorandum No. 1, Master Plan

U.S. Army Engineer Division, North Atlantic, New York, New York
6 July 1962

TO: Chief of Engineers, Department of the Army, Washington, D.C.
ATTN: ENGCW-O

1. Subject master plan has been reviewed by this office and is recommended for approval subject to consideration of the comments in the following paragraphs.

2. Paragraph 24 - It is suggested that the following be included:

a. The responsibility for, and the estimated cost of, the maintenance and operation of the recreational facilities.(EM 1130-2-302, paragraph 9.c.(4)).

b. The existing policy regarding fees charged for the various services.

3. As a basis for OCE action with respect to the Secretary of the Army approval, a recommendation should be added to Section E, "Recommendations" worded somewhat as follows: "Since the rules and regulations governing the public use of reservoir areas (Title 36, Chapter III of Code of Federal Regulations) are compatible with the general management policies and planned development for flood control, it is recommended that these rules and regulations be prescribed for this project and published in the Federal Register." (See EM 1130-2-302, paragraph 18a).

4. Paragraph 31 - The words, "paragraph 9.c.(7),"in the 5th line of this paragraph should be changed to read: "paragraph 9.c.(6).

5. Appendix "A"-

a. The items listed in the estimate for Site No. 1 appear to be the items required to develope Site No. 2 as shown on Plate 3 and the items in the estimate listed for Site No. 2 appear to be the items required to develope Site No. 1.

b. Pages A-1 and A-2-In view of the previous clearing mentioned in paragraph 26, the costs for clearing the elevation 967 in the first season, shown as $32,000, and for clearing to elevation 973 in the second season, shown as $100,000, appear to be excessive.

NADEN-R(25 Sept 61) 1st Ind 6 July 1962
SUBJECT: Whitney Point Reservoir, New York, Design Memorandum No. 1, Master Plan

c. Pages A-3-The recapitulation of the total cost of Federal development should be $213,000 instead of $4213,000.

FOR THE ACTING DIVISION ENGINEER:

Paul H. Jaenichen

1 Incl
Cys 4,5&6 w/d

PAUL H. JAENICHEN
Chief, Engineering Division

ENGCW-OM (25 Sept 61) 2d Ind
SUBJECT: Whitney Point Reservoir, New York, Design Memorandum No. 1, Master Plan

Office, Chief of Engineers, Washington 25, D. C., 23 August 1962

TO: Division Engineer, U. S. Army Engineer Division, North Atlantic New York, New York

1. The Master Plan is approved subject to the comments contained in pars. 2 and 5 of the preceding 1st Indorsement and to the following additional comments.

a. Ref. par. 4, 1st Ind. Paragraph 9c (7) is correct as shown in Change 6, EM 1130-2-302, dated 1 Feb. 61.

b. Ref. par. 20b. Plans prepared for the project by the Broome County Planning Board should be made part of the Master Plan with 3 copies furnished OCE for record purposes.

c. Ref. par. 20c. All project lands should be classified for Priority 1 public use.

d. Ref. par. 21a.

(1) Licensing to the State for fish and wildlife purposes should not include subagreements to Broome County. Licensing to the State for wildlife purposes and leasing or licensing to the County for public park and recreation purposes should be two separate actions.

(2) Consideration should be given to referring to Whitney Point Reservoir Section 311.1 of Title 36 in the agreement (EM 1130-2-302). The procedure of the State referring to Title 36 in their lease or license has worked satisfactorily with other states.

2. The change in reservoir regulation plan to include a conservation pool at elevation 966.0 and a seasonal recreation pool at elevation 973.0 recommended in paragraph 29 is approved, subject to submission of a revision of the Whitney Point Reservoir Regulation Manual to include regulations and data related to those pools.

3. As requested in paragraph 4 of the preceding 1st Indorsement, Title 36, Part 311 is being recommended to the Secretary of the Army for revision to include Whitney Point Reservoir.

FOR THE CHIEF OF ENGINEERS:

Mark S. Gurnee

MARK S. GURNEE
Chief, Operations Division
Civil Works

1 Incl w/d

NADEN-R(25 Sept 61) 3d Ind
SUBJECT: Whitney Point Reservoir, New York Design Memorandum No. 1, Master Plan

U.S. Army Engineer Division, North Atlantic, New York, New York
29 August 1962

TO: District Engineer, U.S. Army Engineer District, Baltimore, Baltimore, Md. ATTN: NABEN-R

Forwarded noting approval of the Master Plan subject to comments and for your necessary action including submission of revision to the reservoir regulation manual.

FOR THE DIVISION ENGINEER:

Paul H. Jaenichen

PAUL H. JAENICHEN
Chief, Engineering Division

NABEN-R (25 Sept 61) 4th Ind
SUBJECT: Whitney Point Reservoir, New York, Design Memorandum No. 1, Master Plan

U. S. Army Engineer District, Baltimore, Baltimore, Md., 31 October 1962

THRU: Division Engineer, U. S. Army Engineer Division, North Atlantic, ATTN: NADEN-R

TO: Chief of Engineers, ATTN: ENGCW-O

1. Inclosed for review and approval are revised pages for subject Master Plan incorporating the comments contained in paragraphs 2, 5a, and 5c of the 1st Indorsement and paragraphs 1b, 1c, and 1d of the 2nd Indorsement.

2. Discussion on the remainder of the comments in the 1st and 2nd Indorsements follows:

a. 1st Indorsement:

(1) Paragraph 5b. Pages A-1 and A-2 have been corrected to show revised cost of the two clearing stages, but no change has been made in the total. The cost of clearing under recent contracts indicates that the estimate is not excessive.

b. 2nd Indorsement:

(1) Paragraph 1d(2). Licensing agreement to the State will contain reference to Title 36 Whitney Point Reservoir Section 311.1.

(2) Paragraph 2. Revision to Whitney Point Reservoir Regulation Manual will be submitted as directed.

FOR THE DISTRICT ENGINEER:

1 Incl
2. as (sext)

ORIN A. FAYLE
Lt. Col., Corps of Engineers
Deputy District Engineer

NADEN-R(25 Sept 61) 5th Ind
SUBJECT: Whitney Point Reservoir, New York, Design Memorandum No. 1 Master Plan

U.S. Army Engineer Division, North Atlantic, New York, New York
21 February 1963

TO: District Engineer, U.S. Army Engineer District, Baltimore, Baltimore, Md. ATTN: NABEN-R

1. Revised pages of subject Master Plan have been reviewed by this office and forwarded for your action.

2. With reference to Appendix B, the following inconsistencies, errors and omissions, are noted for your consideration and such consideration with local interests as may be appropriate.

a. The appendix could be improved by a more definitive organization and inclusion of an expanded table of contents. The Broom County Planning Commission's plates might be added to the table.

b. Cost estimate figures should be rounded. See EM 1120-2-101, par. 1-124C (12).

c. Plate 3 and Plate B-1 appear to be inconsistent with respect to use of the intended recreation areas. Some explanation seems necessary to account for the parking area between Picnic Area "A" and the boat launching parking area.

d. Plans for the project by the New York State Department of Conservation ought to be included in the Master Plan.

e. SITE PLANS AND COST ESTIMATES. Site Number 1. Total cost appears to include road costs instead of the costs for Picnic Area "A" alone.

f. STANDARD PICNIC AREA. COST ESTIMATES. An error appears to exist in the square footage for parking. The number of picnic tables appears low in view of the number of parking spaces. See EM 1130-2-312 Appendix A 4c which recommends one table per parking space.

NADEN-R(25 Sept 61) 5th Ind 21 February 1963
SUBJECT: Whitney Point Reservoir, New York, Design Memorandum No. 1, Master Plan

3. Reference to par. 3, 2d Ind. and par. 3, 1st Ind. Recommendations for addition to Section E have not been included in the revisions. In accordance with par. 3, 2nd Ind., Whitney Point Reservoir is being recommended for inclusion in Title 36, Part 311, and hence par. 3, 1st Ind. no longer applies.

FOR THE DIVISION ENGINEER:

Paul A Jaenichen

1 Incl
Sext cy w/d

PAUL H. JAENICHEN
Chief, Engineering Division

NABEN-R (25 Sep 61) 6th Ind
SUBJECT: Whitney Point Reservoir, New York, Design Memorandum No. 1, Master Plan

U. S. Army Engineer District, Baltimore, Baltimore, Md., 27 February 1963

TO: Division Engineer, U. S. Army Engineer Division, North Atlantic, ATTN: NADEN-R

1. As discussed with Mr. Hubbard of NAD during his recent visit to this office, appendix B is a plan prepared by Broome County; and, while it is realized that the plan could be improved in some areas, it presents, in general, the proposed plan of development by the county. This office did not feel justified in requesting the county to revise its plan.

2. It is recommended that the revisions, including the county's plan, be approved.

FOR THE DISTRICT ENGINEER:

Joseph A. Bacci

1 Incl
nc

JOSEPH A. BACCI
Lt. Colonel, Corps of Engineers
Deputy District Engineer

NADEN-R (25 Sep 61) 7th Ind
SUBJECT: Whitney Point Reservoir, New York, Design Memorandum No. 1, Master Plan

U. S. Army Engineer Division, North Atlantic, New York, New York
11 March 1963

TO: Chief of Engineers, Department of the Army, Washington, D. C.
ATTN: ENGCW-O

1. Inclosed are revised pages of subject Master Plan.

2. The revised pages including the county's plan are recommended for approval.

FOR THE DIVISION ENGINEER:

1 Incl
n/c

PAUL H. JAENICHEN
Chief, Engineering Division

ENGCW-OM (25 Sep 61) 8th Ind
SUBJECT: Whitney Point Reservoir, New York, Design Memorandum No. 1, Master Plan

Office, Chief of Engineers, Washington 25, D. C., 5 August 1963

TO: Division Engineer, U. S. Army Engineer Division, North Atlantic

The revised pages for the Master Plan are approved.

FOR THE CHIEF OF ENGINEERS:

Mark S. Gurnee

1 Incl w/d

MARK S. GURNEE
Chief, Operations Division
Civil Works

NAD EN-R (25 Sep 61) 9th Ind.
SUBJECT: Whitney Point Reservoir, New York, Design Memorandum No. 1, Master Plan

U. S. Army Engineer Division, North Atlantic, New York 7, N. Y.,
19 August 1963

TO: District Engineer, U.S. Army Engineer District, Baltimore, Baltimore, Md. ATTN: NABEN-R

- [ ] Approved.
- [ ] For review and comment.
- [ ] For necessary action.
- [ ] For your information and guidance.
- [ ] For the information requested.
- [ ] Request reply not later than _____.
- [ ] For information on which to base a reply.
- [ ] For compliance.
- [ ] Direct reply is authorized, copy to this office.
- [X] Forwarded noting approval of revised pages.

FOR THE DIVISION ENGINEER:

PAUL H. JAENICHEN
Chief, Engineering Division

NAD FL 1 Jun 58 0-199 (15-9) Edition of 1 Apr 57 may be used until exhausted.

GPO 953725

U. S. ARMY ENGINEER DIVISION, NORTH ATLANTIC
CORPS OF ENGINEERS
90 CHURCH STREET
NEW YORK 7, NEW YORK

IN REPLY REFER TO
NADEN-R

22 September 1961

SUBJECT: Whitney Point Reservoir, New York - Recreation Pool

TO: Chief of Engineers
Department of the Army
Washington 25, D. C.
ATTN: ENGCW

1. Reference is made to letter NADEN-R 1 August 1961, Whitney Point and E. Sidney Reservoirs - Recreation Estimates, letter ENGCW-P 28 February 1961 Recreational Development, Whitney Point Reservoir, New York and other recent correspondence on the above subject.

2. Baltimore District has received a request from the Regional Fisheries Office, State of New York, for information as to whether a recreation pool can be established in the Spring of 1962. Treatment of stream with rotenone in October is prerequisite to stocking with game fish in May. The District is prepared to perform necessary clearing during winter for impoundment in Spring. Failure to treat the stream with rotenone by 1 October will result in a one year delay in the fisheries program.

3. Inclosed is an advance copy of the Master Plan for this project which describes the proposed recreation plan in more detail.

4. The theoretically possible loss of flood control capability is small and considering the margin of error inherent in hydrologic analyses, probably academic. It is considered that this is far outweighed by the public benefit to be obtained from recreational use of the reservoir as planned and the important economic benefits that visitation to the reservoir will generate in the commerce of the surrounding area.

NADEN-R 22 September 1961

SUBJECT: Whitney Point Reservoir, New York - Recreation Pool

5. Expedited approval of the change in operation is desirable in order that the State may proceed with its fishery program. Teletype reply is requested.

T. H. LIPSCOMB
Brigadier General, USA
Division Engineer

1 Incl
Master Plan
Des Memo No 1
Whitney Pt. Res.
dtd Sep 61

ENGCW-OM (22 Sep 61) 1st Ind
SUBJECT: Whitney Point Reservoir, New York - Recreation Pool

Office, Chief of Engineers, Washington 25, D. C., 20 October 1961

TO: Division Engineer, U. S. Army Engineer Division, North Atlantic
New York, New York

1. The change in operation of the Whitney Point Reservoir as recommended by your office is approved.

2. Further information on the establishment of the conservation pool (elevation 966 feet) and a seasonal pool (elevation 973 feet) based on the following is requested when available.

a. Estimated increase (due to seasonal and conservation pools) in flood stages on Otselic, Tioughnioga, Chenago and North Branch Susquehanna Rivers for the project design flood and for larger floods up to the standard project flood.

b. Estimated exceedence period for these floods.

c. Estimated increase in flood damages for corresponding floods.

d. Estimated decrease in average annual flood control benefits.

e. Estimated average annual monetary benefits for recreation with proposed pool.

f. Proposed schedule for filling and emptying of seasonal pool with statistics as to associated filling probabilities.

g. Summary of studies providing basis for selection of optimum elevation for proposed seasonal pool.

FOR THE CHIEF OF ENGINEERS:

Stephen E. Smith

STEPHEN E. SMITH
Colonel, Corps of Engineers
Acting Director of Civil Works

1 Incl
w/d

NADEN-R (22 Sep 61) 2d Ind
SUBJECT: Whitney Point Reservoir, New York - Recreation Pool

U. S. Army Engineer Division, North Atlantic, New York, New York
24 October 1961

TO: District Engineer, U. S. Army Engineer District, Baltimore
Baltimore, Md.

1. Forwarded confirming oral notice of approval given Mr. Prentice in this office 20 October 1961.

2. Information requested in the preceding indorsement should be furnished at an early date.

FOR THE DIVISION ENGINEER:

Paul H. Jaenichen

PAUL H. JAENICHEN
Chief, Engineering Division

NABEN-R (22 Sep 61) 3rd Ind
SUBJECT: Whitney Point Reservoir, New York - Recreation Pool

U. S. Army Engineer District, Baltimore, Baltimore, Md., 17 November 1961

TO: Division Engineer, U. S. Army Engineer Division, North Atlantic, ATTN: NADEN-R, New York, N. Y.

1. The standard project flood (SPF) has a peak inflow of 40,000 c.f.s. Under present conditions (reservoir empty), the SPF would cause spillway flow beginning 32 hours after peak inflow and reaching a peak of 3,700 c.f.s. 62 hours after peak inflow. The seasonal pool (elev. 973) would cause spillway flow to begin 12 hours earlier and to peak 17 hours earlier at a flow of 6,200 c.f.s. The increased outflow would cause no damage in the 0.7-mile reach from the dam to the mouth of the Otselic River, as it would have already been flooded to a higher elevation by backwater from the Tioughnioga River. At all locations farther downstream, spillway flow would be too late to contribute to peak flow. Therefore, the seasonal pool would cause no increase in flood damage from the SPF. The effect of the conservation pool (elev. 966) would be less than the effect of the seasonal pool, and no increase in flood damage would result.

2. The effects described above for the SPF would also apply to the project design flood (25,400 c.f.s. peak inflow) and to other floods smaller than the SPF. The exceedence intervals of the SPF and the project design flood are estimated to be about 10,000 years and 200 years, respectively.

3. Floods substantially larger than the SPF would cause spillway flow to begin early enough to contribute to downstream peaks. The proposed pools would tend to increase peaks and thereby decrease flood control benefits. The effect would be minor, and floods of this magnitude are so rare that the effect on average annual flood control benefits would be negligible.

4. The estimated average annual benefits for recreation are $125,000.

5. During the filling period in late April and the first half of May, reduction of flow would cause no damage downstream except possibly in the 0.7-mile reach between the dam and the mouth of the Otselic River. To avoid stagnation in this reach, 10 c.f.s. would be released during the filling period. Review of 24 years of record, 1937-60, for a gage measuring flow from 85% of the watershed shows several years in which storage would have had to start during the last 5 days in April in order to have the 3,800 day-second-feet of water required to raise the pool from elevation 966 to elevation 973 by 15 May. The earliest required starting date was 26 April. It is planned to start raising the pool on 26 April if flow is relatively low, and appropriately later in years when higher flow assures

sufficient runoff to raise the pool to elevation 973 in a shorter period. This will assure filling by 15 May except in years when flow during the filling period is less than has been recorded to date. Such low flow periods, which may occur in about one out of 20 future years, will result in the filling to elevation 973 being delayed a few days, or, in extreme cases, a few weeks. The resulting loss in recreational benefits would be small.

6. It is planned to draw the reservoir down from elevation 973 to elevation 966 by discharging 100 c.f.s. more than inflow beginning on 15 September. This will increase natural flows by 100 c.f.s. for 38 days. Minimum annual flows occur within that 38-day period in more than half the years at the first 3 gages downstream from the dam (Tioughnioga River at Itaska, Chenango River at Chenango Forks, and Susquehanna River at Vestal). Minimum annual flows later than this 38-day drawdown period are rare and have not occurred in years that had any unusually low flow. The 100 c.f.s. of added flow would increase the flow at the times of record lows by 250% at Itaska, 120% at Chenango Forks, and 40% at Vestal, all of which occurred on 25 September 1939. If a substantial rise occurs during the drawdown period, precluding the possibility of exceptionally low flow within the period, the reservoir would be drawn down promptly to elevation 966.

7. Selection of elevations for summer and winter pools was based on the following considerations:

a. Summer pool. Study of topographic features to select an elevation or elevations within the desired range (that is, less than one inch of storage):

(1) that would result in a sufficiently large body of water with a minimum depth of 5 feet required for boating;

(2) that would not have an extensive nearly level area at or near the selected pool elevation which would be alternately flooded and drained with minor fluctuations of the pool thus creating an unsightly area with numerous stagnant pools;

(3) that would provide an adequate beach area with a slope of about five percent so that minor vertical fluctuations in the pool would not produce extensive horizontal changes in the shoreline; and

(4) that would not unnecessarily flood existing roads.

b. Winter pool. The winter pool elevation was selected as the minimum that would:

(1) provide four feet above the top of gate openings to protect the gate from freezing;

(2) provide the minimum depth, as recommended by the New York State Division of Fish and Game, that will support the type of fish contemplated for this reservoir.

8. Approval of Design Memorandum No. 1 is requested.

FOR THE DISTRICT ENGINEER:

ORIN A. FAYLE
Lt. Colonel, Corps of Engineers
Deputy District Engineer

NADEN-R(22 Sept 61) 4th Ind
SUBJECT: Whitney Point Reservoir, New York - Recreation Pool

U.S. Army Engineer Division, North Atlantic, New York, New York
23 July 1962

TO: Chief of Engineers, Department of the Army, Washington, D.C.
ATTN: ENGCW-O

1. The information requested in paragraph 2 of the 1st Indorsement is contained in the preceding indorsement.

2. There are forwarded herewith three copies of this indorsement for insertion in copies of the master plan forwarded your office by NAD 1st Indorsement dated 6 July 1962, on NAB letter of 25 September 1961, Subject: "Whitney Point Reservoir, New York, Design Memorandum No. 1, Master Plan."

FOR THE DIVISION ENGINEER:

1 Incl (trip)
2. Cy 3d Ind.

PAUL H. JAENICHEN
Chief, Engineering Division

cc: Balt Dist. ATTN: NABEN-R

SUSQUEHANNA RIVER BASIN

WHITNEY POINT RESERVOIR

OTSELIC RIVER, NEW YORK

DESIGN MEMORANDUM NO. 1

MASTER PLAN

U. S. ARMY ENGINEER DISTRICT, BALTIMORE

CORPS OF ENGINEERS

BALTIMORE 3, MARYLAND

SEPTEMBER 1961

U. S. ARMY ENGINEER DISTRICT, BALTIMORE

BALTIMORE 3, MARYLAND

SUSQUEHANNA RIVER BASIN

W H I T N E Y P O I N T R E S E R V O I R

OTSELIC RIVER, NEW YORK

DESIGN MEMORANDUM NO. 1

MASTER PLAN

Related Reports

Title	Submission Date	Approved by OCE
Definite Project	Jan. 1938	Mar. 1938
Potential Power Values	Jan. 1938	Feb. 1938
Design Analysis (dam)	Apr. 1938	June 1938
Definite Project, Upper Susquehanna	May 1939	Oct. 1939
Design Analysis (gates)	Feb. 1940	-
Hydraulic Model Tests (spillway)	Aug. 1940	-
Maintenance Manual	Apr. 1951	-
Regulation Manual	Apr. 1951	Feb. 1952
Master Plan	Sep. 1961	Aug. 1962

Revisions		
Date	New Pages or Drawings	Date Approved By C. of E.
Sept. 62	pp. A-1 thru A-3	
Oct. 62	pp. d, e, 9, 10, 11, 12, 13, Pl. 3 &4, appendix B	

Frontispiece -- WHITNEY POINT RESERVOIR AT ELEVATION 970

SUSQUEHANNA RIVER BASIN

WHITNEY POINT RESERVOIR

OTSELIC RIVER, NEW YORK

DESIGN MEMORANDUM NO. 1

MASTER PLAN

1961

C O N T E N T S

CONTENTS (Cont'd)

CONTENTS (Cont'd)

TABLES

PLATES

APPENDICES

SUSQUEHANNA RIVER BASIN

WHITNEY POINT RESERVOIR

OTSELIC RIVER, NEW YORK

DESIGN MEMORANDUM NO. 1

MASTER PLAN

1961

A. GENERAL INFORMATION

1. Project authorization. The Whitney Point Reservoir project is a part of the general plan for the control of floods in the upper Susquehanna River basin, authorized by the Flood Control Act of 22 June 1936. The project was included in the Definite Project for Flood Protection, Upper Susquehanna River Basin, approved by the Chief of Engineers on 13 October 1939.

2. Project purpose. The project is a part of the authorized plan for a comprehensive system of dams and reservoirs designed to provide flood protection along the main streams in the Upper Susquehanna River basin. The reservoir provides immediate flood protection for Binghamton, New York, and reduces flood heights on the lower Chenango River and in the North Branch of the Susquehanna River downstream from Binghamton in New York and Pennsylvania.

3. History. Construction of Whitney Point dam was initiated in September 1938, and the dam was operationally completed in June 1942.

4. Scope. The purposes of this Master Plan are:

(a) to present a sound, coordinated plan for the administration and development of the reservoir for all desirable uses so far as such uses are consistent with the operation and maintenance of the project for its primary purpose;

(b) to present data on the type of development which will return maximum sustained public benefits;

(c) assure coordination with interested Federal, State, and local agencies; and

(d) to furnish design data on those facilities to be constructed at Federal expense.

B. GENERAL CHARACTERISTICS OF PROJECT AREA

5. Location. Whitney Point Reservoir is located on the Otselic River in Broome County, New York. The dam forming the reservoir is about three-fourths of a mile above the confluence of the Otselic with the Tioughnioga River at the village of Whitney Point, New York. The Tioughnioga River flows into the Chenango River about 9 miles below Whitney Point. Binghamton, New York, is located at the confluence of the Chenango and Susquehanna Rivers about 24 miles below the dam site. A location map is shown on plate 1.

6. Topography. The general topography of the area is rolling with valleys having moderately steep side slopes. The Otselic Valley is relatively broad and flat with a gradient of 3 to 4 feet per mile. The reservoir area is mostly open farms or pastureland, with scattered wooded and brush areas along the valley slopes. The region surrounding the project is used largely for agricultural purposes. The timber cover in and around the reservoir is generally rather sparse.

7. Engineering features.

a. The dam is of rolled earthfill, has a total length, inclusive of dike sections, of 4,900 feet and stands 95 feet above the river bed. The embankment is protected by riprap cover on the upstream face and by topsoil and seeding on the downstream face. The concrete spillway is located in the left abutment and has a crest length of 220 feet. The outlet tunnel is a 13-foot horseshoe-shaped conduit through the left abutment and is controlled by three 5' x 10' vertical lift gates.

b. The reservoir, at spillway crest, covers 3,340 acres and has a capacity of 86,460 acre-feet. Reservoir storage at present is utilized only in time of flood. When the reservoir is at spillway crest, the lake formed will have a main valley length of 12 miles. The controlled drainage area is approximately 255 square miles, approximately 16 percent of the Chenango River watershed.

c. Engineering data pertaining to the dam and reservoir are given in table 1.

TABLE 1

PERTINENT DATA

LOCATION OF DAM	
Stream	Otselic River
Distance above mouth of Susquehanna River	353 miles
Distance above Binghamton, New York	24 miles
Distance above Whitney Point, New York	3/4 mile
DRAINAGE AREA	
Otselic River	256 sq. mi.
Otselic River controlled by Whitney Point Reservoir	255 sq. mi.
Chenango River above Binghamton	1,610 sq. mi.
Percentage of Chenango River drainage area above Binghamton controlled by Whitney Point Reservoir	16 percent
ELEVATIONS	
Top of dam	1,039.5
Spillway design flood	1,025.0
Fee acquisition	1,010
Spillway crest	1,010
Upper limit of clearing	974
Proposed summer pool	973
Proposed winter pool	966
Top of gates	960
Intake sill	950
RESERVOIR	
Length at elev. 973 (summer pool)	4 miles
Length at elev. 1,010 (spillway crest)	12 miles
Shoreline at elev. 973 (summer pool)	10.5 miles

Storage:	Acre-feet Net	Acre-feet Cumulative
Winter pool (elev. 966)	5,000	5,000
Summer pool (elev. 973)	7,500	12,500
Flood control (elev. 1,010)	73,960	86,460
Spillway surcharge (elev. 1,025)	59,790	146,250

TABLE 1 (Cont'd)

Surface area, winter pool	930 acres
Surface area, summer pool	1,200 acres
Surface area at spillway crest	3,340 acres
Flowage easements	42 acres
Lands acquired in fee	4,579 acres

DAM

Type	Rolled earthfill
Top elevation	1,039.5
Height above streambed	95 feet
Length - main embankment	1,300 feet
- dikes	3,600 feet

SPILLWAY

Type	Saddle type spillway with ogee weir
Length of spillway crest	220 feet
Height of crest above streambed	65 feet

OUTLET WORKS

Type	Gate controlled
Size and shape	13.0-ft. horseshoe
Length of tunnel	1,425 feet
Number and size of service gates	Three, 5 x 10 feet
Emergency closure	One spare gate

8. Description of reservoir area. Approximately 4,732 acres, 4,579 acres of which were acquired in fee, make up the reservoir area. A major portion of this land lies below elevation 1,010, the top of the flood control pool at spillway crest, all of which will be subject to inundation to varying depths at infrequent intervals during the operation of the reservoir for flood control. Plates 2 and 2A thru 2D show the land acquisition for this reservoir.

9. Accessibility. The Whitney Point area is served by a network of Federal, State, and county highways. U. S. Highway 11, a primary route of travel between Canada, northern New York, and the southern states, the principal north-south highway in central New York and Pennsylvania passes within 3/4 mile of the reservoir. Heavy tourist traffic uses this highway to visit the Finger Lakes area, Niagara Falls, and the Canadian Provinces. It runs from the Canadian border south to New Orleans, Louisiana. The New York State Thruway intersects U. S. Highway 11 at Syracuse, New York, and the Northeast Extension of the Pennsylvania Turnpike intersects it at Scranton, Pennsylvania. State Highway 17 passes through Binghamton approximately 20 miles south of the reservoir. This highway connects on the west with U. S. Highway 15 and other routes serving the Buffalo and Rochester areas and on the east with main routes extending to the New York City area. State Route 7 furnishes direct service to the Schenectady and Albany areas. A good network of secondary roads and highways serve the Binghamton and Whitney Point areas.

10. Population of surrounding area (1960 census). The surrounding area is thickly populated, Broome County having a population density of 298.1 persons per square mile. The adjoining counties have densities as follows: Tioga, 71.9; Chemung, 239.3; Otsego, 50.7; Delaware, 29.4. The major population centers within a 50-mile radius of the reservoir are listed in table 2.

TABLE 2

MAJOR POPULATION CENTERS

Community	Population	Airline mileage from reservoir
Binghamton urbanized area	144,011*	15
Owego	5,394	21
Cortland	19,111	22
Homer	3,617	24
Norwich	9,150	27
Ithaca	28,744	30
Sidney	5,142	30
Sayre, Pa.	7,888	38

* 1950 census

TABLE 2 (Cont'd)

Community	Population	Airline mileage from reservoir
Waverly	5,903	38
Athens, Pa.	4,520	39
Hamilton	3,342	41
Walton	3,827	45
Horseheads	7,209	46
Towanda, Pa.	4,269	46
Elmira	46,355	47
Elmira Heights	5,139	47
Watkins Glen	2,776	47
Oneonta	13,310	48

11. Past and present land usage. Since completion of the dam and reservoir in June 1942, a program of outleasing of project lands for agriculture and grazing purposes has been instituted. At present, 1,746 acres are under lease to 32 lessees at a total annual rental of $1,950.10. These leases are for a term of five years. Hunting and fishing have been permitted throughout the reservoir area. No organized recreational activities have been carried on.

12. Use of storage. To date the reservoir has been used for flood control storage only. About 1952 a plan for storage of about one inch of runoff for low-flow control was considered at Whitney Point in connection with a general plan for low flow control on the North Branch. This would have required storage to a maximum stage of 974, one foot higher than now recommended for the seasonal recreational pool. The matter was presented to OCE in connection with review of a draft of the North Branch survey report, and a decision was made that such use was possible under existing authority. The plan was never put into effect, and there has been no recent request for its adoption. While the adoption of the plan for a recreation pool would detract from the practicability of releases for low-flow control, future studies might develop the need for some releases from the pool under exceptional conditions of natural low flow. The possibility of such a requirement should not be overlooked. Particularly during September and October, after the principal recreational season in that area, releases could be made in accordance with a future low-flow control plan without adverse results to recreational interests.

13. Present recreational use.

a. Hunting and fishing. There is considerable use of the reservoir for small game hunting, and fishing from the banks of the outlet channel has been popular with local sportsmen.

b. Overlook. An overlook with space for 10 or 12 cars is provided on the left bank in the vicinity of the dam.

C. RECREATIONAL DEMAND

14. Local interest. In recent years considerable interest has developed among local organizations and individuals for the development of a recreation pool for swimming, boating, and fishing. Local interests requested that a permanent or seasonal pool be provided.

15. Recreational requirements of the area. The reservoir lies adjacent to an area of heavy population density. At the present time the recreational needs of this area are served by the public recreation areas shown in table 3. From the interest shown locally in the proposed development, it is evident that the area will attract heavy attendance. Boating facilities in the area are limited, and considerable boat usage can be expected if a pool of adequate size is furnished.

TABLE 3

PUBLIC RECREATION AREAS WITHIN
50-MILE RADIUS OF WHITNEY POINT RESERVOIR

	Airline mileage from reservoir	Park area, acres	Facilities available						
			Camping	Picnicking	Swimming	Boating	Fishing	Hunting	Hiking
Chenango Valley State Park	11	928	x	x	x	x	x		x
Buttermilk Falls State Park	30	675	x	x	x		x		x
Robert H. Tremon State Park	32	989	x	x	x		x		x
Newton Battlefield State Park	44	330	x	x			x		x
Fillmore Glen State Park	34	857	x	x	x				x
Watkins Glen State Park	47	604	x	x					x
Taughannock Falls State Park	35	535	x	x	x	x	x		x
Gilbert Lake State Park	46	1,569	x	x	x	x	x		x

D. RECREATION

16. Recreation pool. At present there is no permanent impoundment at this reservoir. In view of local demand, the feasibility of providing a seasonal recreation pool was investigated as outlined in paragraph 17. Hydrologic studies indicate that a pool to elevation 973 can be provided during the recreation season, from 15 May to 15 September of each year. Such a pool will not reduce the flood control storage to a degree which will endanger the reservoir's effectiveness against floods which might be experienced during this period. The New York State Conservation Department requested that a minimum pool to elevation 966 be maintained during the balance of the year to provide area for the development and management of

a comprehensive fisheries program. It has been determined that such a pool can be maintained without adverse affect on the primary purpose, flood control. The statistics of these pools are listed in table 4.

TABLE 4

POOL CAPACITY AND EFFECT

Elevation, ft., m.s.l.	Storage, acre ft.	Percent to total capacity	Inches of runoff used	Surface area, acres	Remarks
1,010	86,460	100	6.4	3,340	Spillway crest
973	12,500	14.5	0.94	1,200	Seasonal recreation pool
966	5,000	5.8	0.4	930	Permanent pool for fishery management

17. Hydrologic studies.

a. Review of previous correspondence and supporting computations regarding recreational use of the reservoir, shows that a flood hydrograph having a peak of about 25,000 c.f.s. and a volume of 8 inches of runoff was used as the 1935 flood. The hydrograph was based on a 2.5-day storm evenly distributed over the watershed. The actual 1935 storm has shorter duration and uneven distribution over the watershed. Available data indicate that its total volume was less than 5 inches, and that storage required for control would be less than 4 inches, or less than has been actually used by the spring floods of 1948 and 1960. A recreation pool at elevation 973 results in a loss of storage equivalent to 0.94 inch of runoff from the drainage area. This plus the approximately 4.0 inches required for maximum storage during a recurrence of the July 1935 flood gives a total of 4.94 inches or approximately 77 percent of available storage in the reservoir. This is considered entirely adequate protection against a summer-type storm.

b. During the 20 years that this reservoir has been in operation, the greatest storage requirements have been during spring floods. The 20 maximum annual reservoir stages during this period all occurred during the months of January through April. Based on this experience record, it is planned that the recreation pool be drawn down at the end of the recreation season to provide greater storage during the season of maximum flood occurrence. A pool drawn down to elevation 966 and maintained at that level during the non-recreation season, as requested by the State Division of Fish and Game, would require only 0.4 inch of storage. This amount of storage is usually

exceeded under present conditions before gates are closed under the present operating procedure. Hence, the conservation pool will not add significantly to the total storage during a flood.

c. The actual net loss in storage due to the above-discussed pools is even less than indicated by their volumes. Normally during any flood-producing storm, the first portion of the flood hydrograph is released through the outlet works before there is any requirement for closing the gates. At present, with a dry reservoir, inflow may greatly exceed outflow during the initial phase of a flood as there would be little or no head to provide flow through the outlet works. On the other hand, with the permanent conservation pool or the seasonal recreation pool, the dam tender would be operating under instructions to maintain as nearly as possible a constant pool level. Hence during the initial phase of the flood, before the need for downstream protection developed, he would be releasing the flood flow; and with the greater head due to the pool, he would discharge a greater volume than would be possible under present conditions with a dry reservoir. Due to this increased early release, the percentage of the total runoff to be stored would be less than under present conditions.

18. Local cooperation for recreational development. An inquiry was directed to the Park Division, Conservation Department, State of New York, relative to the development of the area as a State park facility. After investigation, that division stated that the area is too small for development as a State park and recommended that development be by a local body, such as Broome County, the county in which the reservoir lies. The Broome County Planning Board has expressed an interest in developing the area in conjunction with the State's plan for game and fish management.

19. Game and fish management. The Division of Fish and Game, Conservation Department, State of New York, has expressed a desire to develop the reservoir area for game and fish management. The division desires that a minimum permanent pool to elevation 966 be provided for fishery development. The division also expects the development of a waterfowl population. They have requested that the U. S. Fish and Wildlife Service, Department of the Interior, cooperate in the preparation of a General Plan for the game and fish management and development of the reservoir land and water areas.

20. Proposed development.

a. Game and fish management. The proposed General Plan will provide for the development of the reservoir area under a game and fish management plan. The entire reservoir will be available for such *development except for approximately 250 acres, in four separate areas, adjacent to the seasonal recreation pool, which will be retained for development as picnic and group recreation areas, and the area in the vicinity of the dam which will be retained for operational purposes

and safety of the public and operating personnel. No fishing or boating will be permitted within 400 feet upstream from the intake structure. Hunting will be prohibited within one-half mile upstream from the dam. The water area of the recreational pool will be made available for fish development but not exclusively for that purpose. Recreational boating will be permitted. The Fish and Game Division of the State of New York will cooperate with the Board of Supervisors of Broome County in recreational development. The division will provide boat launching and parking areas adjacent to the proposed picnic areas and will assist in the development of access roads. (See plate 3.)

b. Recreational development. The Broome County Planning Board *has prepared a plan for the recreational development of the Whitney Point Reservoir. This plan gives consideration to the immediate and future development of the reservoir area for recreation. (See appendix B for *county plan).

* c. Priority. All project lands are classified for priority *one public use as defined in EM 1130-2-302 and EM 405-2-835.

21. Plan of administration.

a. Agreements and licensing.

* (1) Fish and Game Division, State of New York. After approval of a General Plan for Game and Fish Management, a license will be issued granting the right to that agency to use the reservoir in their fish and game management program, except for areas retained for recreation development by Broome County and operation of the dam. (See Plate 4.) The State, in cooperation with Broome County, will provide boat launching ramps and parking areas adjacent to the picnic areas provided by the County. The State will be authorized, subject to approval by the District Engineer, to impose such restrictions on boating as may be deemed advisable. The State will also be authorized to set up such picnic and camping areas as may be required for the accommodation of hunters and fisher- *men.

* (2) Board of Supervisors, Broome County, New York. A license will be issued to the Board of Supervisors, Broome County, New York, covering four separate areas totaling approximately 250 acres for development as picnic areas and a bathing area. (See plate 4.) The county will also be authorized to construct camping facilities, above elevation 1010 (spillway crest), as required. The Broome County plan *of recreational development is included as appendix B.

b. Personnel. All personnel for operations, maintenance, and policing of the recreational area will be supplied by the State or the county. All personnel for the fish and wildlife program will be employed by the State. No increase in Federal personnel is anticipated as a

result of adopting the plans recommended in this Master Plan. Some additional work will be involved as the plan will require frequent adjustment of the gate opening and there will be more visitors requesting information in the operating area, but it is believed that these duties can be handled by the present staff.

22. Gate operation.

a. No structural changes are necessary in order to establish and maintain the proposed summer and winter pools. Limited operational tests made during 1960 indicate that satisfactory control of the pool level can be maintained through operation of the existing service gates. The Commonwealth of Pennsylvania maintains a conservation pool at George B. Stevenson dam, where regulation is accomplished by use of the main gates - two 8- by 16-foot slide gates. Pool fluctuations usually amount to less than one foot. Forty weekly readings reported to this office during the past year (excluding periods of flood control storage) show an average conservation pool elevation of 920.2 as compared to the adopted level of 920.0. Only four of these 40 readings exceeded 921.5 and only four were less than 919.0. The dam tender reports that during periods of fairly constant runoff, gate settings are changed every second day, while during periods of rapid fluctuations in stream flow, it may be necessary to adjust gate settings two or three times during a 24-hour period.

b. The proposed winter pool at elevation 966 provides 6 feet of water over the top of the gate openings. This amount of submergence is adequate to prevent the gates freezing in position.

23. Attendance. It is estimated that an annual attendance of 86,000 can be expected to visit this reservoir upon completion. Recreational facilities should be provided ultimately to care for a design load of 2,150 visitors at any one time.

* 24. Costs. A preliminary cost estimate, with various items alloted between the Federal Government, the State, and the county, is given in appendix A. The items shown as State costs can be readily financed from State funds. The items shown as county costs may not be forthcoming at one time, but it is believed the county can provide the most essential features the first year and complete the program within three years. No estimate of the cost of fish and wildlife management has been prepared. Broome County will be responsible for the operation and maintenance of day-use areas. Based on an expected annual attendance of 86,000 and using the National Park Service criteria of 20 cents per visitor day for operation and maintenance, the annual cost is estimated at $17,200.00. It is anticipated that fees charged for various services will defray a major portion of the operating expenses. Broome County does not at present operate any other park areas of this nature and no policy regarding *fees for services has as yet been developed.

25. Outlease program. Where consistent with the recreational development of the reservoir area, all lands not required for other uses will be made available for outleasing for agriculture and grazing purposes, including lands licensed for game management. Implementation of the proposed recreational plan will require certain existing leases to be cancelled or modified.

26. Reservoir clearing.

a. Clearing of the reservoir will be in accordance with *policies established in EM 415-2-301. Since sufficient funds were not made available to accomplish all the required clearing in a single year, it was necessary to divide the clearing project into several units. As of the date of this revision, three units have been completed, one by hired labor and two by contract. It is planned to accomplish as much additional clearing during fiscal year 1963 as funds will permit. It is expected that the cleared area will be adequate to establish a pool during the 1963 recreation season, although partial drawdown may be necessary at the end of the season to permit further clearing. Final *clearing will be to elevation 974, which will permit one foot of fluctuation in the summer recreation pool above its nominal elevation, 973. It is believed that the occasional flood above elevation 974 will not result in killing the remaining timber. After 20 years of operation there is still timber, including some second growth timber, in the lowest portion of the reservoir where flooding has been most frequent. The only additional clearing will be in areas required for roads, parking lots, or other operational purposes. More than 300 acres of the reservoir on the left bank between the dam and Upper Lisle were cleared of all timber over 3 inches in diameter in 1949 and 1950. Hence no large timber should be encountered in this area.

b. Where the ground surface is below elevation 961, no stumps will be permitted to extend above elevation 961. Where the ground surface is between 961 and 974, no stumps will be permitted to extend above ground surface. The beach area will be grubbed to remove all vegetation.

c. Submerged shoal areas above elevation 961 will be marked by buoys or other means for the safety of the boating public.

27. Roads. Access and circulation roads will have a 20-foot pavement with 4-foot shoulders. Maximum grades will be in accordance with appendix A to EM 1130-2-312, and the roads and parking area will be designed in accordance with the standard plans for recreation facilities referred to therein.

E. RECOMMENDATIONS

28. Approval of Master Plan. It is recommended that the Master Plan embracing the following proposals and plans be approved. The Master Plan provides:

a. Pool elevations. That a recreational pool, to a maximum elevation of 973, be maintained at this reservoir during the recreational period, 15 May to 15 September; that this pool be drawn down to elevation 966 during the remainder of the year for conservation of fish life.

b. Recreation. That the plan of Broome County as outlined in paragraph 21 and appendix B be adopted as the official recreation plan for this reservoir and that the county be granted a license for such development.

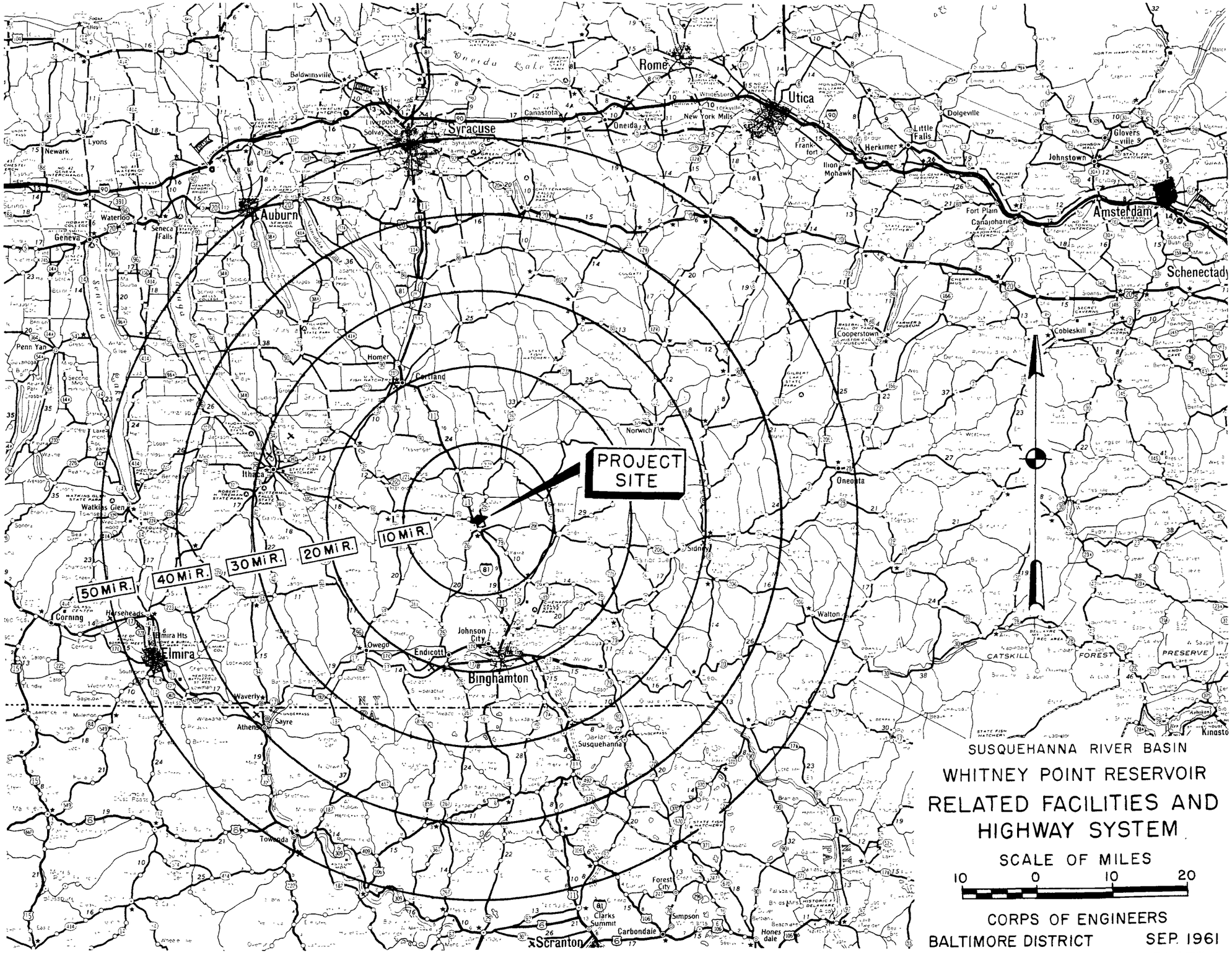
c. Game and Fish Management. That a General Plan for game and fish management be adopted and a license as outlined in paragraph 21 be granted to the State of New York.

d. Outlease program. That lands not set aside for recreational development be offered for outlease, the leases so granted to allow the access and management activities necessary under the game management program.

29. Change in reservoir regulation plan. It is recommended that OCE approval be given for a change in the regulation plan as required by ER 1110-2-240, paragraph 5, to provide for the recreation and conservation pools recommended by this Master Plan.

30. Low-flow control. It is recommended that in establishing a recreational pool, any agreements pertaining thereto retain for the Government the right to make release for low flow regulation or other purposes if and when required.

31. Construction design memorandum. Since most of the planned recreational facilities will be provided by the cooperating agencies and since this memorandum includes information on reservoir clearing and roads - the two principal items of Federal expense - it is recommended that the requirement of EM 1130-2-302, paragraph 9.c. (7) for a separate construction design memorandum be waived.



SUSQUEHANNA RIVER BASIN

WHITNEY POINT RESERVOIR

RELATED FACILITIES AND HIGHWAY SYSTEM

SCALE OF MILES

10 0 10 20

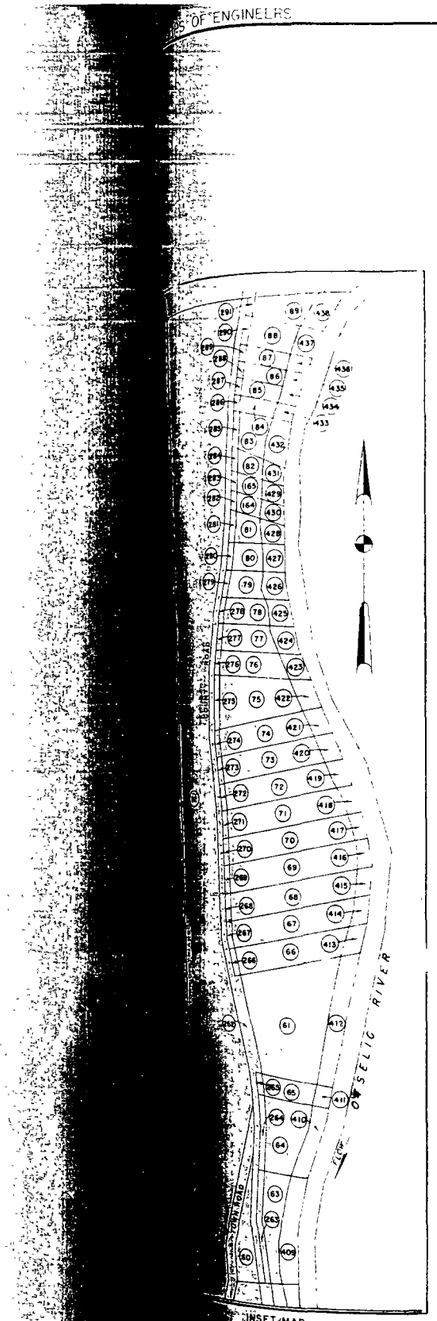
CORPS OF ENGINEERS

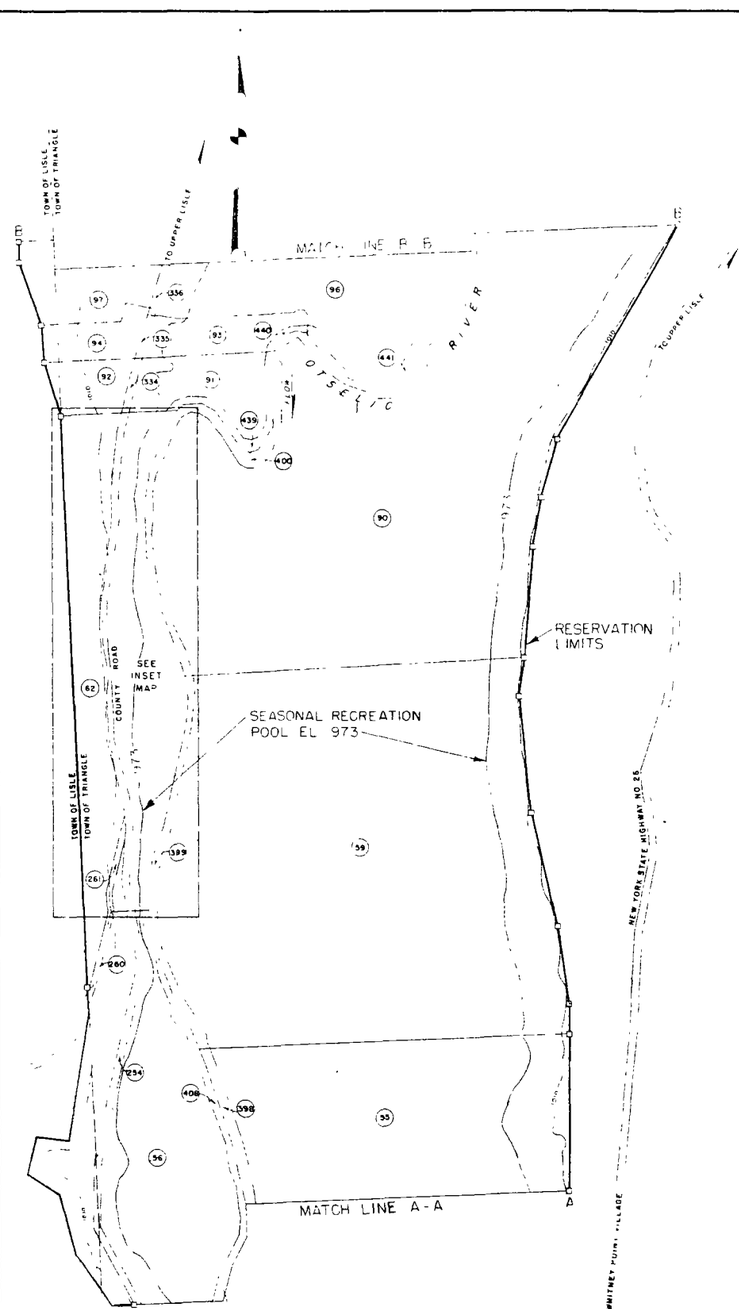
BALTIMORE DISTRICT SEP. 1961

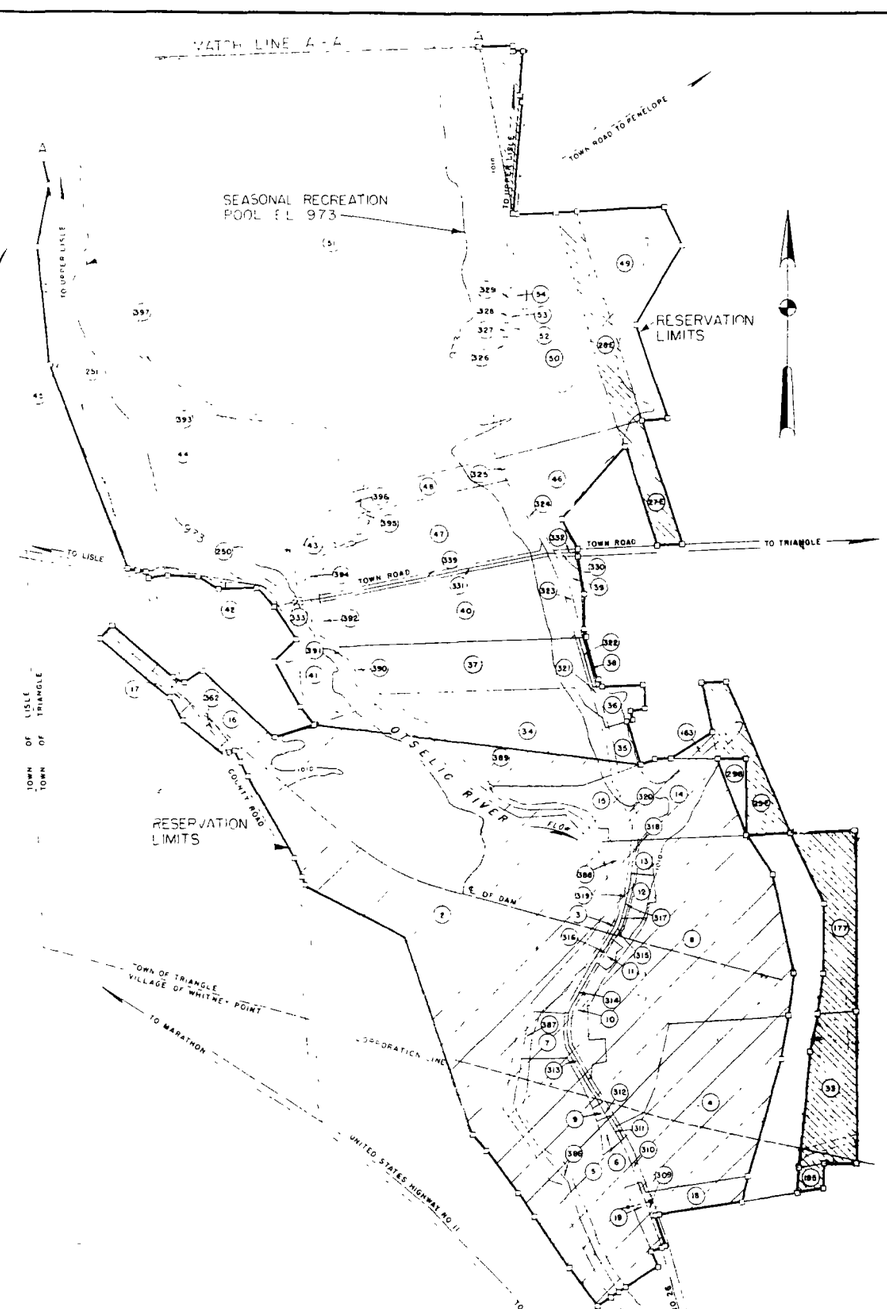
PLATE 1

OF ENGINEERS

U.S. ARMY







PLAN
SCALE IN FEET

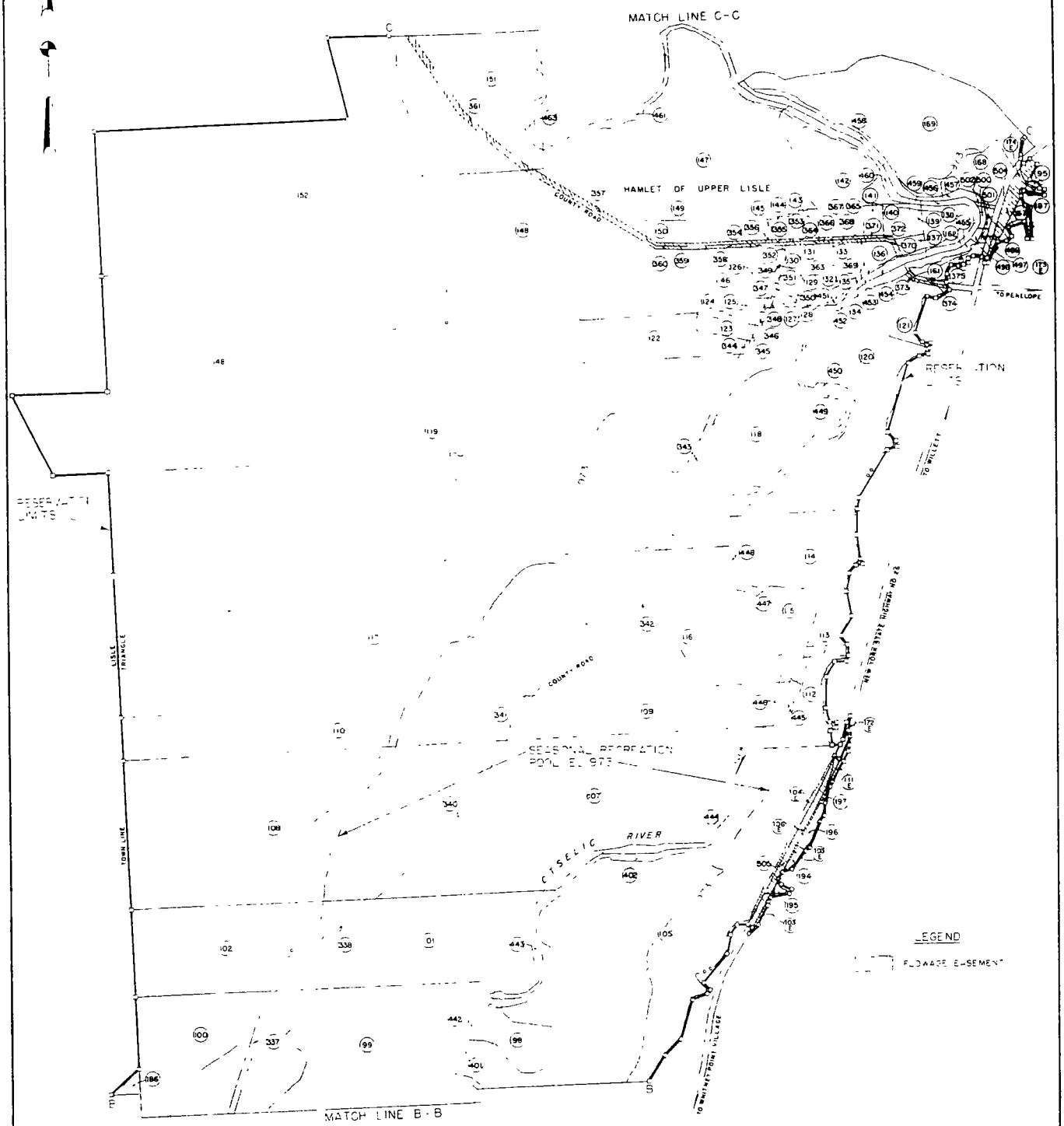
LEGEND

FLOWAGE EASEMENT

RESERVED FOR OPERATION AND MAINTENANCE OF DAM

SUSQUEHANNA RIVER BASIN
WHITNEY POINT RESERVOIR
PROPOSED LAND USAGE
SCALE AS SHOWN
BALTIMORE DISTRICT SEP. 1961

PLATE 2

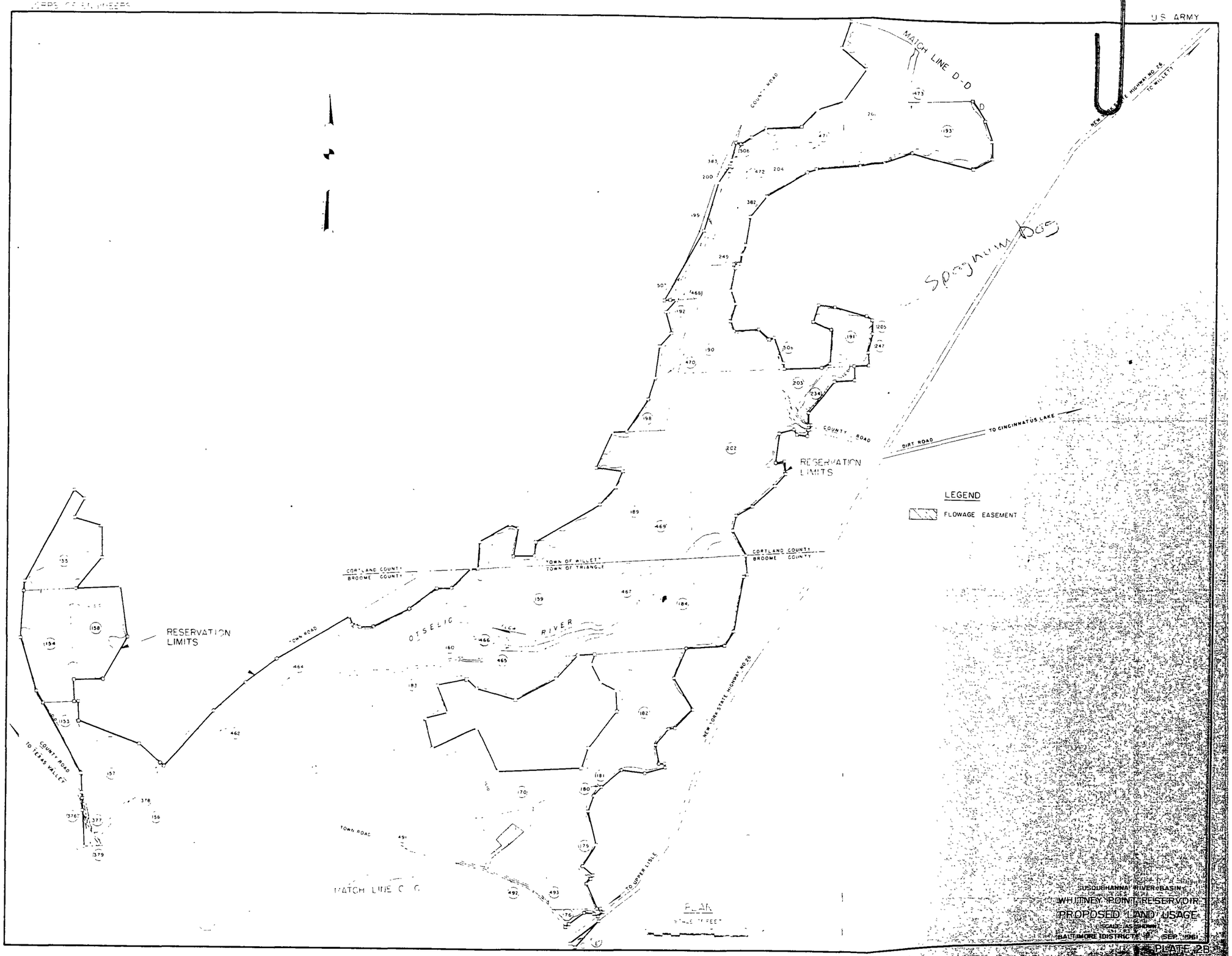


PLAN

SCALE OF FEET

SUSQUEHANNA RIVER BASIN
WHITNEY POINT RESERVOIR
PROPOSED LAND USAGE
SCALE AS SHOWN
BALTIMORE DISTRICT SEP 196

PLATE 2A

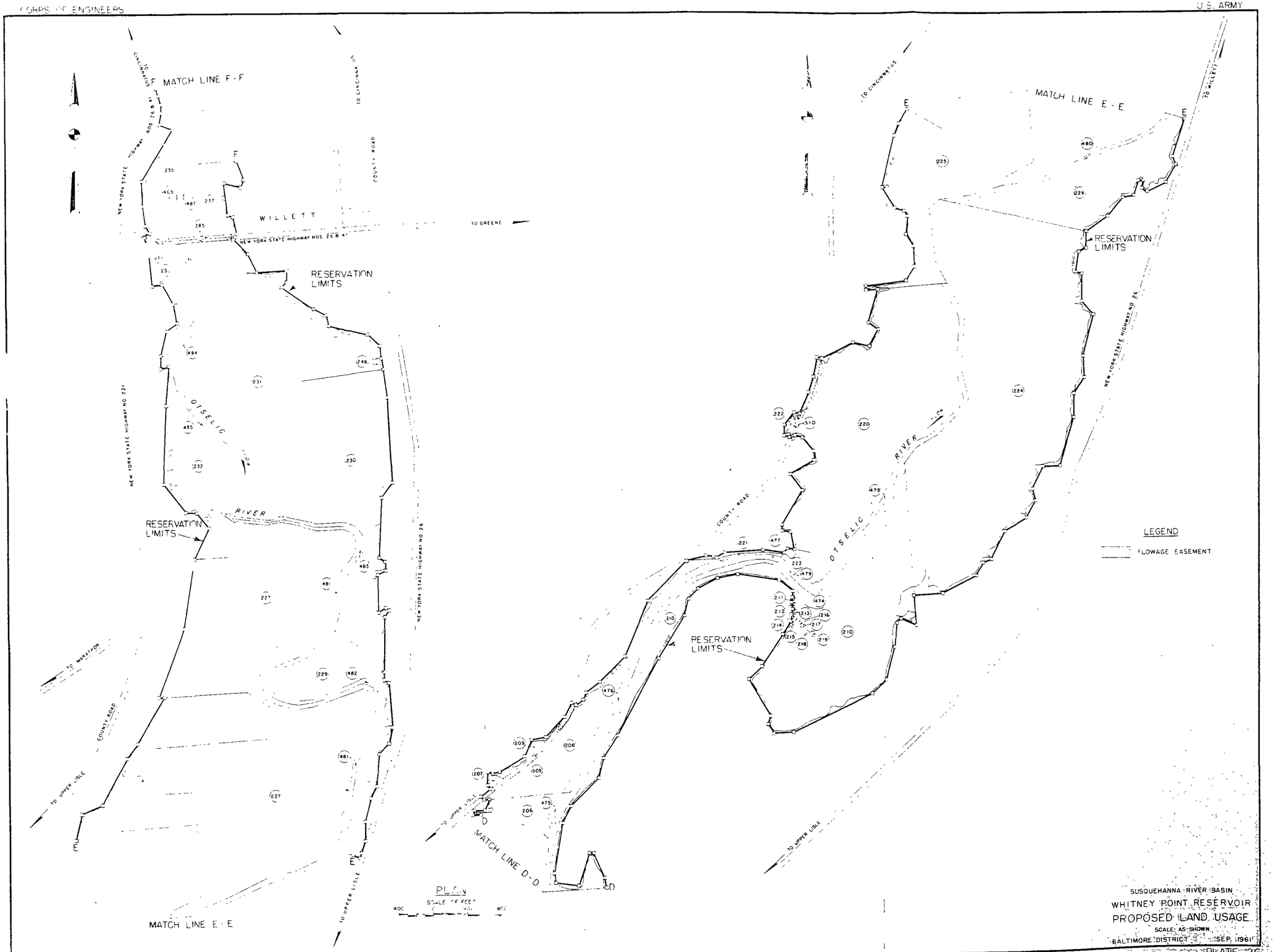


SUSQUEHANNA RIVER BASIN
WHITNEY POINT RESERVOIR
PROPOSED LAND USAGE
SCALE AS SHOWN
BALTIMORE DISTRICT, C.E. SEP. 1961

PLATE 2B

CORPS OF ENGINEERS

U.S. ARMY



SUSQUEHANNA RIVER BASIN

WHITNEY POINT RESERVOIR

PROPOSED LAND USAGE

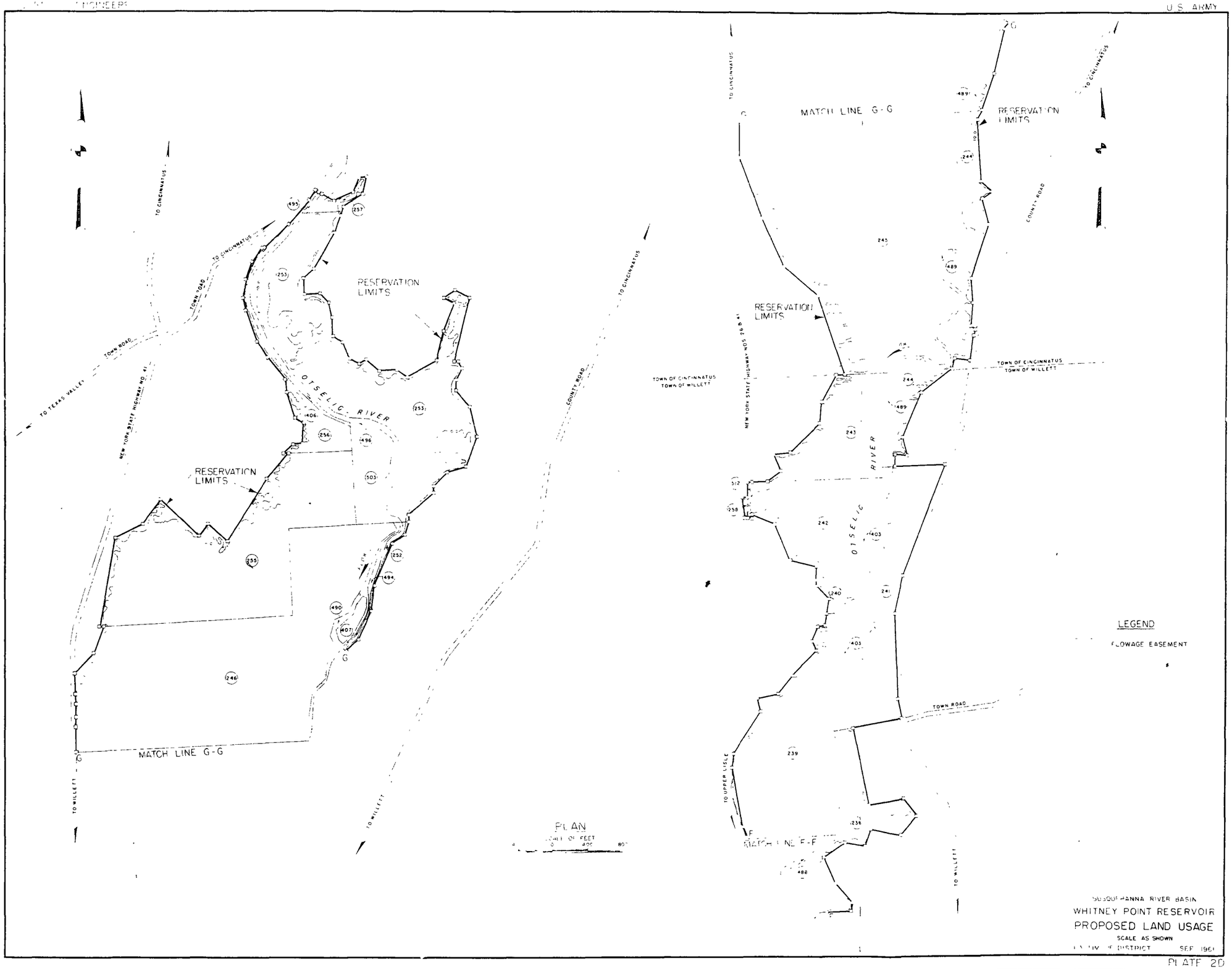
SCALE: AS SHOWN

BALTIMORE DISTRICT SEP. 1961

PLATE 2C

ENGINEERS

U.S. ARMY



SUSQUEHANNA RIVER BASIN

WHITNEY POINT RESERVOIR

PROPOSED LAND USAGE

SCALE AS SHOWN

U.S. DIV. E. DISTRICT SEP. 1961

PLATE 20

FUTURE PICNIC AREA

FUTURE ACCESS ROAD

PICNIC AREA

FOOT BRIDGE

BOAT LAUNCHING AND PARKING AREA

EXISTING ACCESS TO BE IMPROVED

RESERVED FOR OPERATION AND MAINTENANCE

Whitney Point Flood Control Dam

FUTURE BOAT LAUNCHING

FUTURE PARKING

FUTURE PICNIC AREA

SPILLWAY

OTSELIC

SUSQUEHANNA RIVER BASIN

WHITNEY POINT RESERVOIR

PLAN OF RECREATIONAL DEVELOPMENT

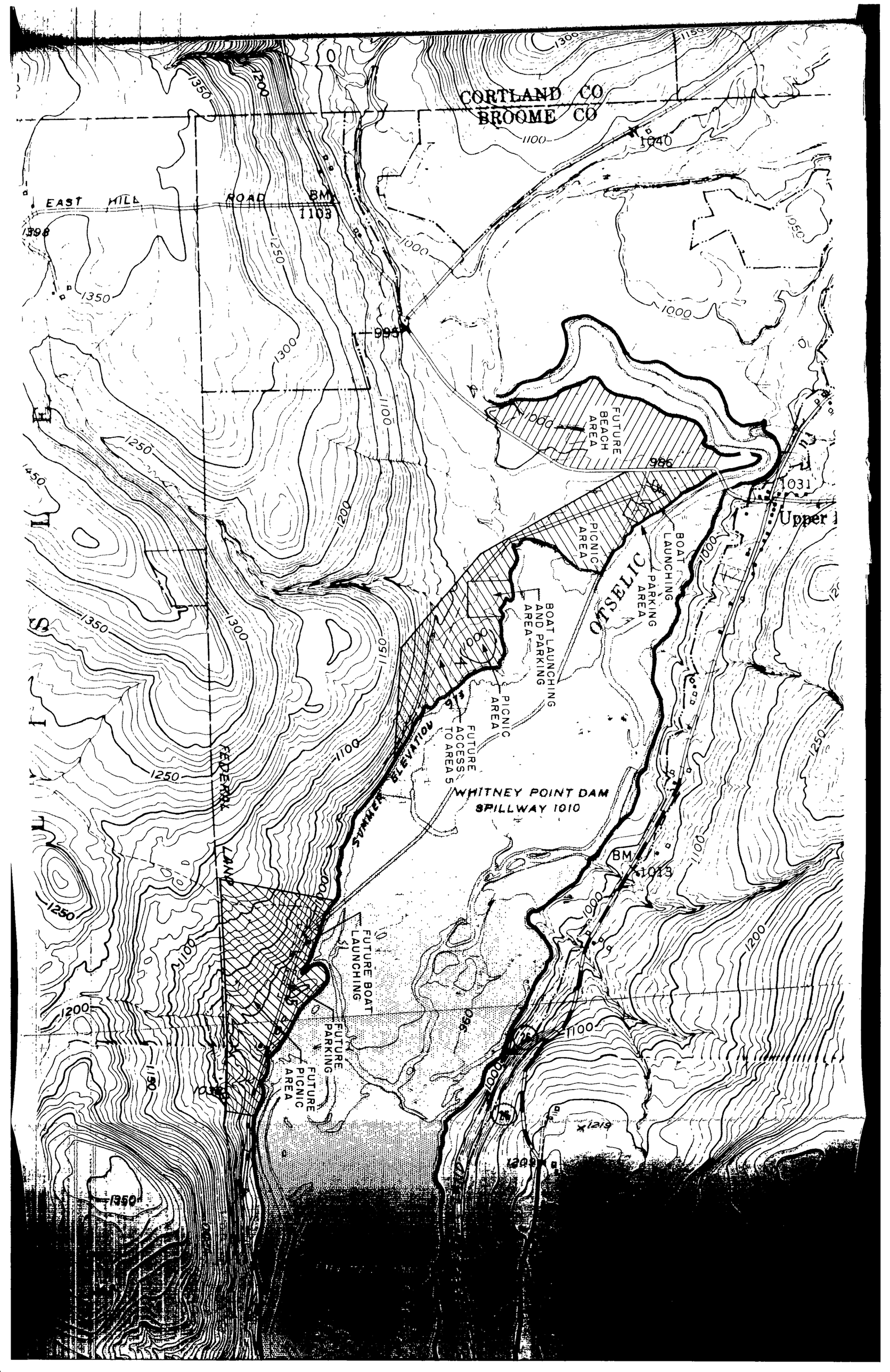
SCALE OF FEET

0 1000 2000 3000

SEP., 1961

R-1

PLATE 3


CORTLAND CO
BROOME CO
EAST HILL ROAD
BM 1103
1040
995
986
1031
FUTURE BEACH AREA
PICNIC AREA
BOAT LAUNCHING AND PARKING AREA
BOAT LAUNCHING PARKING AREA
OTSELIC
FUTURE ACCESS TO AREA 5
PICNIC AREA
WHITNEY POINT DAM
SPILLWAY 1010
SUMMER ELEVATION 915
PERENNIAL
LAND
FUTURE BOAT LAUNCHING
FUTURE PARKING
FUTURE PICNIC AREA
BM 1013
1219
1209

SUSQUEHANNA RIVER BASIN

WHITNEY POINT RESERVOIR

AREAS PROPOSED FOR LICENSING FOR RECREATIONAL USE

SCALE IN FEET

0 1000 2000 3000

JUNE, 1961

LEGEND

AREAS TO BE LICENSED TO BROOME COUNTY FOR DAY-USE RECREATIONAL DEVELOPMENT.

RESERVED FOR OPERATION AND MAINTENANCE.

ALL AREAS NOT OTHERWISE INDICATED WILL BE LICENSED TO NEW YORK STATE CONSERVATION DEPARTMENT UNDER GENERAL PLAN FOR FISH AND WILDLIFE MANAGEMENT.

PLATE 4

CORTLAND CO
BROOME CO
EAST HILL ROAD
BM 1103
WHITNEY POINT DAM
SPILLWAY 1010
SUMMER ELEVATION 971
FEDERAL LAND
OTSELIC
BM 1013
SPILLWAY 1010
FEDERAL LAND
1204
1219
1342
1031
986
960
1300
1350
1250
1200
1150
1100
1050
1000

SUSQUEHANNA RIVER BASIN

W H I T N E Y P O I N T R E S E R V O I R

NEW YORK

DESIGN MEMORANDUM NO. 1

MASTER PLAN

APPENDIX A

COST ESTIMATE

COST ESTIMATE
Whitney Point Reservoir

Item	Federal	State	County
Initial Recreational Development			
Clearing reservoir area - Elev. 968	$71,000		
Site No. 1			
Improve existing road	2,000		
Parking area, 50-car		$1,700	
Boat launching area		3,000	
Access road		300	
Site No. 2			
Repairs to abandoned bridge			$1,000
Sanitary facilities			500
Water supply			1,000
Picnic tables, 20 at $100			2,000
Fireplaces, 10 at $150			1,500
Site preparation			500
Site No. 3			
Access road, .2 mile	7,000		
Parking area, 50-car		1,700	
Boat launching area		3,200	
Picnic tables, 20 at $100			2,000
Fireplaces, 10 at $150			1,500
Sanitary facilities			500
Water supply			1,000
Site preparation			500
Total	$80,000	$9,900	$12,000

Item	Federal	State	County
Second Season Development			
Clearing reservoir area - Elev. 973	$61,000		
Site No. 4			
Access road, .7 mile	25,000		
Parking area, 50-car		$1,700	
Boat launching area		3,000	
Picnic area, 20 tables at $100			$2,000
Fireplaces, 10 at $150			1,500
Sanitary facilities			500
Water supply			1,000
Site preparation			500
Total	$86,000	$4,700	$5,500
Future Development			
Site No. 5			
Access road, 1 mile	$35,000		
Parking area, 50-car		$1,700	
Boat launching area		2,400	
Picnic tables, 20 at $100			$2,000
Fireplaces, 10 at $150			1,500
Sanitary facilities			500
Water supply			1,000
Site preparation			500

Item	Federal	State	County
Future Development (Cont'd)			
Site 1 enlargement			
Access road	$7,000		
Parking area, 50-car			$2,000
Picnic tables, 20 at $100			2,000
Fireplaces, 10 at $150			1,500
Sanitary facilities			500
Water supply			1,000
Site preparation			500
Bathing area			
Access and parking	5,000		
Bathhouse, w/sanitary facilities			20,000
Water supply			1,000
Beach area including sand, life guard stands, buoy line			15,000
Total	$47,000	$4,100	$49,000
RECAPITULATION			
Initial development	80,000	9,900	12,000
Second season development	86,000	4,700	5,500
Future development	47,000	4,100	49,000
Total	$213,000	$18,700	$62,500
Cost account 14 -- Recreation facilities			$192,000
Cost account 30 -- Engineering & design			10,000
Cost account 31 -- Supervision & administration			11,000
Total Federal cost			$213,000

SUSQUEHANNA RIVER BASIN

W H I T N E Y P O I N T R E S E R V O I R

NEW YORK

DESIGN MEMORANDUM NO. 1

MASTER PLAN

APPENDIX B

BROOME COUNTY PLAN OF DEVELOPMENT
OF
RECREATION FACILITIES

WHITNEY POINT DAM AREA

I. GENERAL

A. Whitney Point Dam

The Whitney Point Dam Area is a flood control detention reservoir located on the Otselic River north of the Village of Whitney Point. Completed in 1942, the reservoir is designed to provide flood protection for communities along the Susquehanna River in New York State and Pennsylvania. The dam structure and reservoir basin cover some 4,000± acres of federally owned land located in Broome and Cortland Counties. Of this, approximately 3,340 acres are located below the dam spillway crest (elevation of 1010') and thus subject to possible inundation by flood waters during a portion of the year.

B. Recreational Use of the Dam Area

Through the joint cooperation of the U. S. Corps of Engineers, New York State Conservation Department, and Broome County contracts are being executed for recreational use of the reservoir. This will be in addition to its primary function of flood control.

C. The Reservoir

At this time clearing operations are under way to permit the impoundment of a permanent water pool in the reservoir basin. Determinations by the U. S. Corps of Engineers indicate that a permanent water pool can be maintained, throughout the summer season, sufficient to establish a lake of approximately 1,240 acres extending from the dam structure up-stream to Upper Lisle. A distance of some 4½ miles. (See Key Map entitled "Whitney Point Dam Area"). (Not included - See Plates 3 & 4)

The reservoir level will be reduced seven feet to elevation 966' from September 15 to May 15, in order to provide sufficient storage capacity during the flood season. From May 15 to September 15, the water level will flucuate not more than one to two feet, except during short period of high run-off

D. Cooperating Agencies

Once the permanent water pool is established the New York State Department of Conservation and Broome County will participate in the joint development of adjacent land areas for picnic grounds, boat launching ramps, and for water fowl propagation areas. In addition, the Conservation Department will stock and maintain a fish management program in the lake.

The procedure required to permit use of this federally owned land for public recreation is:

1) The U.S. Corps of Engineers will issue a long term license to the New York State Conservation Department for development and use of the basin as a public recreation site.

2) The ~~New York State Conservation Department~~ U S Corps of Engineers will issue a license to Broome County for specific areas to be used by the County for public picnic areas.

3) No charge will be made for use of the land. All development plans will be subject to approval by the U.S. Corps of Engineers prior to installation.

E. Agency Responsibilities

Successful development of the Whitney Point Dam Area for public recreation will depend upon completion of work to be undertaken by each agency. Responsibilities are as follows:

U.S. Corps of Engineers

1) Clearance of the reservoir basin of trees, brush and debris for the establishment of a permanent water pool to elevation 973' (water surface approximately 1,240 acres) during the months of May 15 to September 15, and to elevation 966' during the remainder of the year.

2) Construction of access roads to sites suggested for development by New York State and Broome County. (At such time as money is available).

3) Provision of government owned land for local recreational use at no cost to New York State and Broome County.

New York State Conservation Department

1) The construction of boat launching ramps and parking areas at the suggested sites.

2) The establishment of a fish management and water fowl development program in the reservoir basin.

3) The supervision and regulation of boating and fishing on the lake.

Broome County

1) The construction and maintenance of picnic areas including supporting parking lots, water supply

and toilet facilities at the suggested sites.

F. Suggested Picnic Areas

Four picnic areas are suggested for development by Broome County. Each suggested site adjoins land selected by the New York State Conservation Department, Division of Fish and Game for installation of State operated boat launching ramps. (See Key Map entitled "Whitney Point Dam Area").

Sites shown were chosen on the basis of the site's physical characteristics. Factors investigated include: the accessibility of the site from existing roads and to the proposed lake shore; the location and extent of level land appropriate for construction of access roads, parking areas, and picnic grounds; and the limiting boundary of the federally owned land.

G. General Site Plans

General site plans are presented for each picnic site in the following section. These plans provide for the assembly of standardized picnic units at each location. They consist of groupings of picnic tables, benches, cooking stoves, and related equipment located near a water supply(obtained from driven wells), and public toilet facilities. Sites will be rough graded, seeded, and maintained throughout the summer months.

Suggested boat launching ramps are shown at locations, selected by Conservation Department representatives after preliminary reconnaisance of the reservoir area. These ramps may, or may not, be located as shown once detailed investigations are completed.

Cost Estimates for development of each site is presented. Variations in cost between sites result from distances that water and electric lines must be extended, as well as the type of sanitation facility required. Sanitation facilities located on land subject to flooding during winter months involve more expensive installations.

A cost analysis of a standard picnic area, not including water supply and sanitation is presented in the appendices. Details of construction, design, and costs not presented in this report are available in the files of the Planning Board.

H. Priorities

Priority for picnic site development are assigned in accordance with the site designation number. For example,

Site No. 1, Area "A" is recommended for construction during 1962 or early 1963. The remaining sites are recommended for development in the order given. Timing should be governed by experience, and volume of use, and the ability of the County to finance and maintain them. Timing and construction of picnic areas should be carefully coordinated as part of the county's overall recreation program.

First priority is assigned Site No. 1, Area "A" because:

a) The completed site can be constructed at the lowest cost.

b) It is not dependent upon the development of water or other facilities provided at adjoing sites.

c) Large areas of the site are located above the dam spillway crest thus permitting permanent installation of utilities above maximum flood levels.

d) Once completed it will accommodate the greatest number of people and achieve the greatest impact.

I. Operation

Operation and maintenance of the recreation facilities will be the responsibility of the State Conservation Department and Broome County. If the sites are developed for boating, picnicking, and play areas, constant supervision should not be necessary. However, daily policing of the grounds, mowing of grass, and general maintenance of park equipment will be necessary.

During the winter months, when the park areas are not in operation picnic tables and other movable equipment will have to be removed and stored at elevations above the established flood water level.

J. Adjoining Land Areas

The recreational value of the Whitney Point Dam Area to Broome County is inherent in its size, location, and setting. On all sides it is surrounded by rural countryside composed of meadows, pasture land, and wooded hillsides. Unfortunately, the greater extent of this setting is not owned or under the jurisdiction of any governmental agency. In some areas privately owned lands extend to within several hundred feet of the proposed reservoir shore line

II. SITE

Once a permanent water body is established, measures should be taken by the responsible agencies to protect this fine setting for maximum use and enjoyment by the public. Indiscriminate scattering of residences, cottages, and commercial uses should be prevented along the banks bordering the reservoir. Their location must be carefully regulated, if the public investment and interest in the dam area is to be protected for the future.

A suggested course of action could include:

a) Regulation of the reservoir by :

1) Limiting boat launching to State constructed ramps.

2) Prohibiting the over-night mooring of all boats.

3) Restricting swimming to public constructed and supervised areas.

b) Regulation of adjacent privately owned land areas through zoning and other regulatory controls. A study should be undertaken to identify areas suitable for residential, cottage and commercial uses.

c) Where necessary, land areas important for the full development and protection of the reservoir shoreline should be purchased by either the State or Federal agencies.

II. SITE PLANS AND COST ESTIMATES

A. Site Number 1 (See map entitled, "Whitney Point Dam Area, Site No. 1)

Site Number 1 is located on the reservoir's east shore approximately one mile north of the present dam structure. The extensive acreage shown for eventual development is comprised of relatively flat lying land formed by Page Creek as it flows into the Otselic River. Sufficient area is available, without crowding, for the construction of boat launching ramps, parking areas, and picnic sites. The location of Page Creek as it flows through the site permits it to serve as a physical separation between these areas. The plan shows use of the existing iron bridge, now in disrepair, for pedestrian access over the creek.

Vehicular access to the site is provided from the north along the abandoned black-top road which is proposed for widening and improvement. New construction over new right-of-way at

a future time is suggested to permit its reintersection with NYS 26 to the south.

Areas for the construction of two separate picnic areas are shown on the plan. Picnic Area "A" is recommended for initial construction. Picnic Area "B" is indicated for future expansion when the need for additional facilities develops. A site to the south, at an elevation above flood levels, is designated as the location for the well and sanitation facilities.

The proposed facilities will be constructed by the participating agencies as follows:

Access Roads	-	U.S. Corps of Engineers
Boat Launching Ramps	-	New York State Conservation Dept.
Picnic Areas	-	Broome County

Estimates of Cost

Roads - Responsibility of the U. S. Corps of Engineers

Reconditioning of abandoned NYS 26	
1800' @ 20¢ per lineal foot	$3,600
New Construction	
1200' @ $3.40 per lineal foot	$4,080

Picnic Area "A" - Responsibility of Broome County

Road to parking lot from reconditioned road, new construction 400' @ $3.40 per lineal foot	$ 1,360
Old Highway Bridge	
Repair of bridge for pedestrian traffic	1,000
Standard Picnic Area (See Appendix)	5,785
Water Supply (See Appendix)	
Well, pump, tank	1,500
Electricity, 500' @ $1.50 per foot	750
Water main, 400' @ $5.00 per foot	2,000
5 Water Fountains @ $50 each	250
Sanitation (with water supply) (See Appendix)	
Water main, 150' @ $5.00 per foot	750
2 Standard Toilets (men & women) @ $1,525 each	3,050
TOTAL - - - - - -	$ 16,445

Area "B" - (Future expansion of Site No. 1)

Entrance road from Route #26, including branch road to Area "A" parking lot.

Standard Picnic Area (See Appendix)	$ 5,785
Water Supply (See Appendix)	
Extension of water mains, 200' @ $5 per foot	1,000
5 Water Fountains @ $50 each	250
Sanitation (with water supply) (See Appendix)	
Water main, 120' @ $5 per foot	750
2 Standard Toilets (men & women) @ $1,525 each	3,050
TOTAL - - - - - - - -	$10,835

B. Site Number 2 (See map entitled, "Whitney Point Dam Area, Site No.2)

Site Number 2 is located at the reservoir's northern end in the vicinity of Upper Lisle. The area designated for recreational use comprises a small portion of the extensive river bottom land at the reservoir's northern end. Roughly 15-20 acres located between the reservoir and existing County Road 13 are allocated for development.

Access to this site is provided directly from County Road 13. No additional new road construction is necessary. The boat launching ramp is located to facilitate use of the present Otselic River channel. Water depths along a considerable portion of the shore line in this area are shallow - gradually sloping to the main channel.

Two picnic areas are suggested. Picnic Area "A" is recommended for initial construction. Picnic Area "B" is intended as future expansion of Area "A". Construction of Area "B" will require extension of water and electric lines considerable distances and resurfacing of the abandoned black-top road.

Because this site is located on land subject to flooding additional expense is involved in providing adequate sanitation facilities. (See Appendix). The water supply (well) is suggested at a site to the east (Upper Lisle) which is free from contamination by flood waters. Utility costs are generally higher for development of this site in comparison to Site No. 1, because of the distances utility lines must be extended and special problems of flooding during the winter season.

The plan shows a suggested swimming beach and supporting facilities north of County Road 13 on the Otselic River. If

such a development can be justified at a later time, this area should be investigated.

Estimates of Cost

Picnic Area "A" - Responsibility of Broome County

Standard Picnic Area (See Appendix)	$ 5,785
Water Supply (See Appendix)	
Well, pump, tank	1,500
Electricity, 600' @ $1.50 per foot	900
Water main, 1,300' @ $5 per foot	6,500
5 Water Fountains @ $50 each	250
Sanitation (ground subject to flooding) (See Appendix)	
Submersible type latrine (men and women)	5,000
TOTAL - - - - -	$19,940

Area "B" - (Future expansion of Site No. 2)

Standard Picnic Area (See Appendix)	$ 5,785
Water Supply (See Appendix)	
Water Main (extended from Area "A"), 1,550' @ $5 per foot	7,750
5 Water Fountains @ $50 each	250
Sanitation (ground subject to flooding) (See Appendix)	
Submersible type latrine (men and women)	5,000
TOTAL - - - - -	$18,785

C. Sites Number 3 and 4 (See maps entitled "Whitney Point Dam Area, Sites No. 3 and 4")

Sites Number 3 and 4 are located on the north-west shore of the reservoir. Access, at this time, to these sites is extremely poor or non-existant. Extensive reconstruction over new alignment of access roads, including a proposed causeway passing through a shallow portion of the reservoir will be required prior to the development of either site. In addition, extension of electric utility lines to service these areas will involve considerable expenditure.

Both sites are presented as long range possibilities. Sites Number 1 and 2 are suggested for full development prior to any development of Sites 3 and 4.

Further plan development by the New York State Conservation Department of waterfowl and other wildlife management programs in these areas might affect specific allocation of these areas for picnic site development in the future.

Estimates of Cost

Roads Responsibility of the U.S. Corps of Engineers

No Cost Estimates available.

Site No. 3 - Responsibility of Broome County

Standard Picnic Area (See Appendix)	$ 5,785
Water Supply (See Appendix)	
Water main (extended from Site #2, Area "B")	
2,000' @ $5 per foot	10,000
Sanitation (ground subject to flooding) (See Appendix)	
Submersible type latrine (men & women)	5,000
TOTAL - - - - - -	$20,785

Site No. 4 - Responsibility of Broome County

Standard Picnic Area (See Appendix)	$ 5,785
Water Supply (See Appendix)	
Well, pump, tank	1,500
Electricity, 10,000' @ $1.50 per foot	15,000
Water main, 500' @ $5 per foot	2,500
5 Water Fountains @ $50 each	250
Sanitation (with water supply) (See Appendix)	
Water main, 150' @ $5 per foot	750
2 Standard toilets (men & women) @ $1,525 each	3,050
TOTAL - - - - - -	$28,835

A P P E N D I X

1. STANDARD PICNIC AREA (Not including Water Supply and Sanitation - COST ESTIMATES

2. WATER SUPPLY - COST ESTIMATES

3. SANITATION - COST ESTIMATES

   a) With Water Supply
   b) In Areas Subject to Flooding

4. OTHER

   a) General Grading
   b) Electric Service
   c) Swimming Beach and Bath House

APPENDIX

1. STANDARD PICNIC AREA (Not including Water Supply and Sanitation - COST ESTIMATES

A standard picnic area consists of groupings of 20 picnic tables and benches, 20 cooking stoves or reinforced concrete fire rings, and parking lot facilities for 50 cars. It is designed to provide accomodations for approximately 200 persons.

Units of this size are readily adapatable to the type of development proposed for the reservoir area. Individual picnic sites may be increased in size by adding additional units as the need arises.

Definition and Cost

*Parking for 50 cars		
65' x 250' = 1,625 sq. ft. @ 10¢ per sq. ft.	$ 1,625	
Roads into Parking Lot		
Entrance and exit - total 80' x 20' wide = 1,600 sq. ft. @ 10¢ per sq. ft.	160	
20 Picnic Sites (each site 1/4 acre, total 5 acres)		
20 tables, benches attached, @ $45 plus assembly and erection = $60	1,200	
20 park stoves @ $35 installed	700	
* (or 20 reinforced concrete fire rings @ $15 = $300)		
20 Refuse cans @ $5 each	100	
Grading, Seeding, etc. - five acres	2,000	
		$5,785

(*) Parking lot and roads - Broome County Highway Department unit cost figures

Reinforced concrete fire rings - Cost calculated with the assistance of Broome County Highway Department

2. WATER SUPPLY

Each picnic site is provided with a water supply distributed through five separate outlets. It is obtained from driven wells which are located on land at elevations above spillway crest in order to prevent contamination from flood waters. In several instances two or more sites utilize a single well. Variations in the cost of water supplied to individual sites results primarily from the footage of main required to service the site.

Equipment and Costs

Drilled Well

6" casing, depth variable, assumed depth 150' @ $5 per foot	$ 750	
Manhole, 3' diam. 4' deep	200	
Electric deep-well submersible pump and submersible cable	330	
Tank, 120 gal. capacity	70	
Installation	150	
		$1,500

Water Mains

2" plastic or copper tubing @ $5 per foot

Water Fountain

Fixture with bubble fountain, tap control valve, overflow, installed @ $50 each, 4 or 5 per picnic area

Electricity

Per lineal foot of line including poles - $1.50

3. SANITATION

Each picnic site is provided with toilet facilities for men and women. Separate buildings (8' x 12') containing following facilities are recommended:

Women - 3 toilets, 1 lavoratory
Men - 2 toilets, 1 urinal, 1 lavoratory

Cost estimates are presented for two types of systems. Installations located on land above flood level utilize a water supply, ordinary septic tanks, and seepage units. Installations located on land subject to flooding require a system capable of being closed by a water tight seal during periods when flood conditions prevail.

a) Sanitation With Water Supply

Installation suggested by the District Engineer of the New York State Department of Health:

Women's Toilet
3 water closets, 3 lavatory

Men's Toilet
2 water closets, 1 urinal, 2 lavatories

Water supply from nearest point of connection with water main

2" plastic or copper tubing @ $5 per foot

Septic Tank

1,000 gal. commercial tank	$ 125

$1,500

Seepage Unit

10' x 10' x 10' pit	200
Necessary piping 4" V.T., assume 40' @ $3.50 per foot	140
4 plumbing fixtures @ $40 installed	160

Building

8' x 12' frame, concrete slab floor	900
	$1,525

b) Sanitation (In Ground Subject to Flooding)

In the Whitney Point Dam Area, Sites 2 and 3, lying below elevation 1,000, are subject to seasonable flooding. The top of the dam impounding the reservoir is El. 1,010.

It would be unhygienic to install septic tanks and leaching fields in this ground.

The Pennsylvania Division of State Parks has furnished the Broome County Planning Board with information concerning a "submersible type latrine" which has been built in areas subject to flood in Pennsylvania State Parks. We have

been unable to learn of any sanitary installations in floodable ground in New York State Parks.

The Pennsylvania design includes a sealed cesspool emptied by pumping. The entire plumbing installation is closed by a watertight seal during the portion of the year when the parks are not open to the public.

The drawing sent to the Planning Board by the Pennsylvania Division of State Parks shows a single building housing toilet facilities for men and women. On the women's side 4 toilet stools are provided. On the men's side 2 toilet stools and 2 urinals are shown.

From the best information available, one of these facilities would cost approximately $5,000.

4. OTHER

a) General Grading

Grading will be necessary in certain areas of the parks. The cost of this earth work cannot be estimated until surveys of the existing conditions have been made and the proposed redesign of the surface determined.

b) Electric Service

Indeterminate information now available are the costs of bringing electric service into the park areas, necessary transformers and distribution lines.

c) Swimming Beach and Bath House

The cost of these facilities has not as yet been investigated

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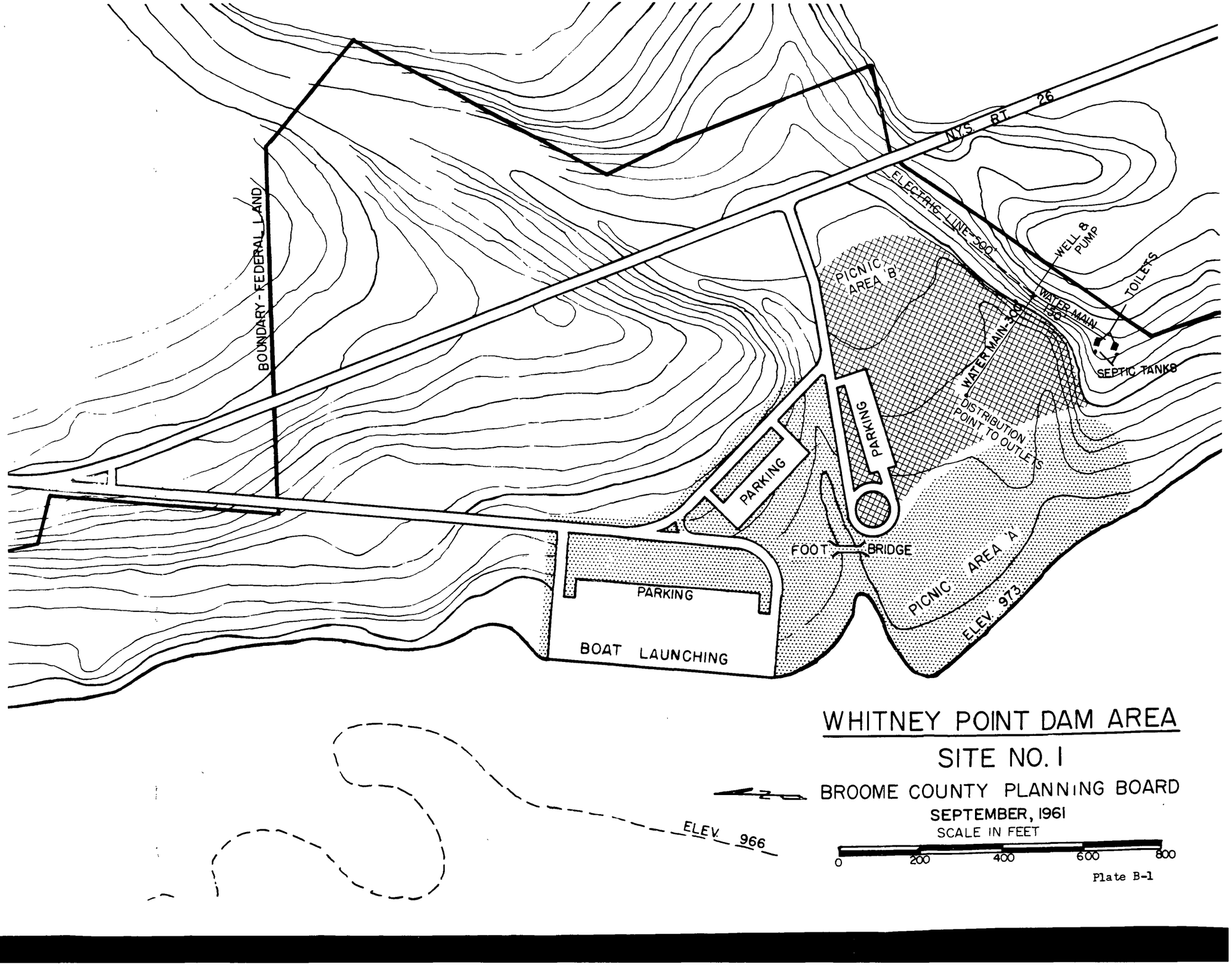

WHITNEY POINT DAM AREA

SITE NO. 1

BROOME COUNTY PLANNING BOARD

SEPTEMBER, 1961

SCALE IN FEET

0 200 400 600 800

Plate B-1

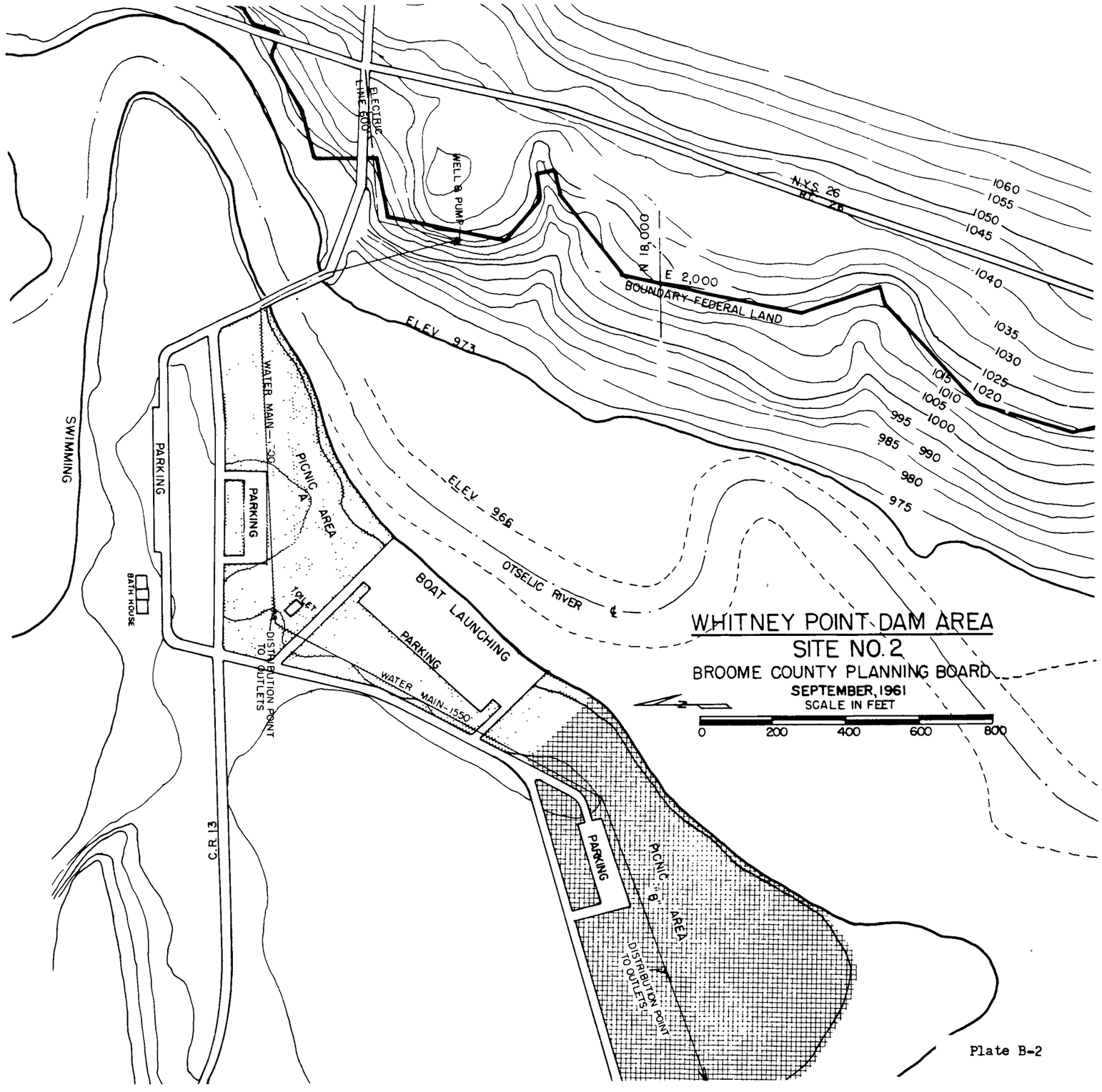
ELECTRIC LINE 500'
WELL & PUMP
N.Y.S. 26
RT. 26
N 18,000'
E 2,000
BOUNDARY-FEDERAL LAND
1060
1055
1050
1045
1040
1035
1030
1025
1020
1010
1005
1000
995
990
985
980
975
ELEV 973
ELEV 966
SWIMMING
PARKING
WATER MAIN-1300'
PICNIC "A" AREA
PARKING
BATH HOUSE
TOILET
DISTRIBUTION POINT TO OUTLETS
OTSELIC RIVER ℄
BOAT LAUNCHING
PARKING
WATER MAIN-1550'
C.R. 13
PARKING
PICNIC "B" AREA
DISTRIBUTION POINT TO OUTLETS
WHITNEY POINT DAM AREA
SITE NO. 2
BROOME COUNTY PLANNING BOARD
SEPTEMBER, 1961
SCALE IN FEET
0
200
400
600
800

Plate B-2

WHITNEY POINT DAM AREA
SITE NO. 3
BROOME COUNTY PLANNING BOARD
SEPTEMBER, 1961
SCALE IN FEET

0 200 400 600 800

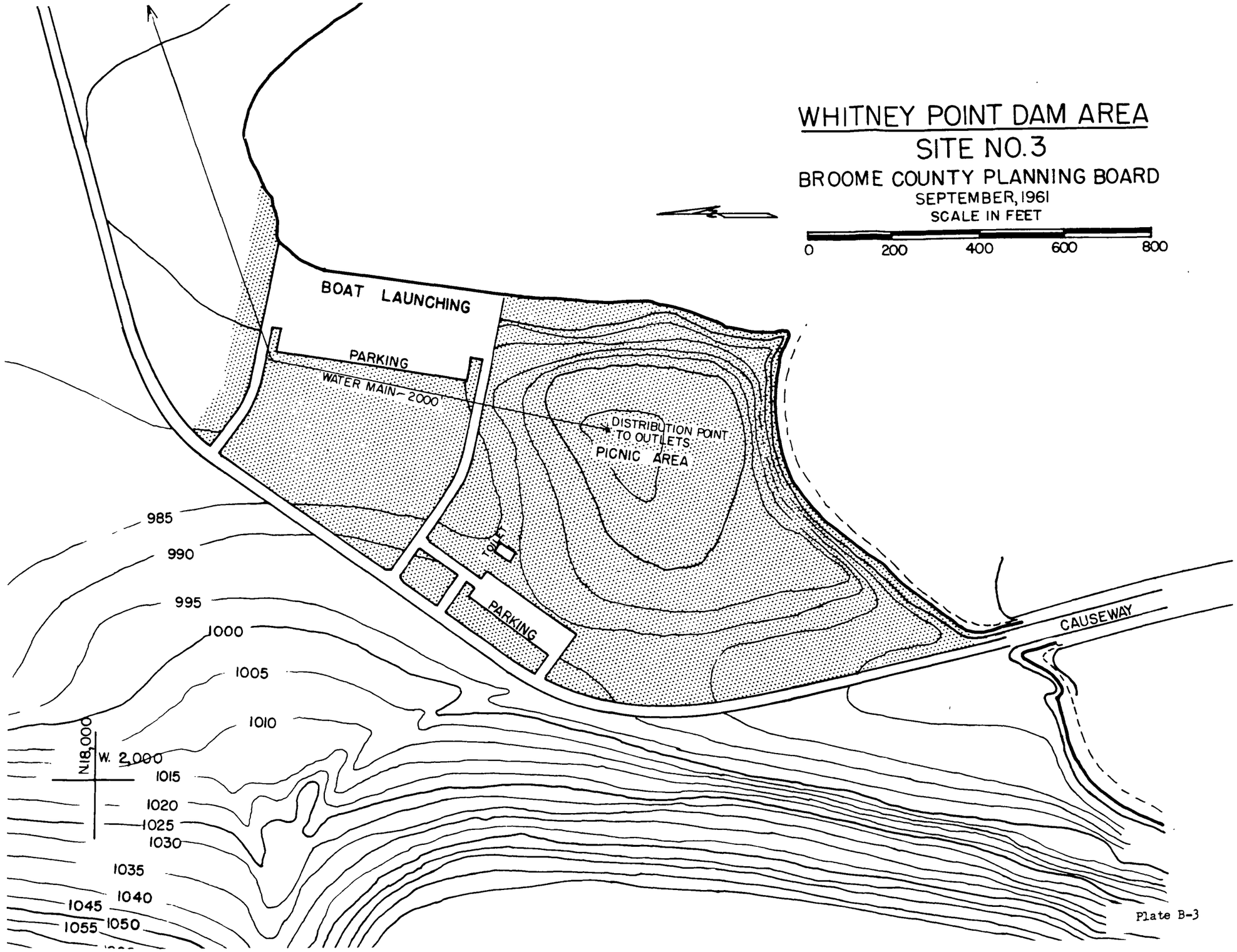

Plate B-3

WHITNEY POINT DAM AREA

SITE NO. 4

BROOME COUNTY PLANNING BOARD

SEPTEMBER, 1961

SCALE IN FEET

0 200 400 600 800

CAUSEWAY

BOAT LAUNCHING

PARKING

PARKING

ELECTRIC LINE, 10,000' TO NEAREST CONNECTION WITH EXISTING POWER LINE

N. 13,000

W 4,000

985 980 975 990

995

DISTRIBUTION POINT TO OUTLETS

PICNIC AREA

WATER MAIN 500'

1000

1005

1010

WELL & PUMP

Plate B-4