CESWD-CO-RP (CESWT-OD-RP/13 May 91) 1st End Mr. McCauley/vm
FTS 729-2434
SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Supplement No. 6 to Design Memorandum No. 3B, Public Use Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242-0216 23 MAY 1991

FOR Commander, Tulsa District, ATTN: CESWT-OD-RP

Approved.

FOR THE COMMANDER:

BARRY G. ROUGHT, P.E.
Director, Directorate of Construction-Operations

Encl
wd

CF (w/basic & encl):
CECW-ON
CESWD-RE-M
CESWD-PL-R

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121-0061

REPLY TO
ATTENTION OF:

CESWT-OD-RP (1130) 13 MAY 1991

MEMORANDUM FOR Commander, Southwestern Division
ATTN: CESWD-CO-R

SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Supplement No. 6 to Design Memorandum No. 3B, Public Use Plan

Enclosed subject supplement is submitted for review and approval.

FOR THE COMMANDER:

Encl (4 cys)

JOHN P. CLARK, P.E.
Chief, Operations Division

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

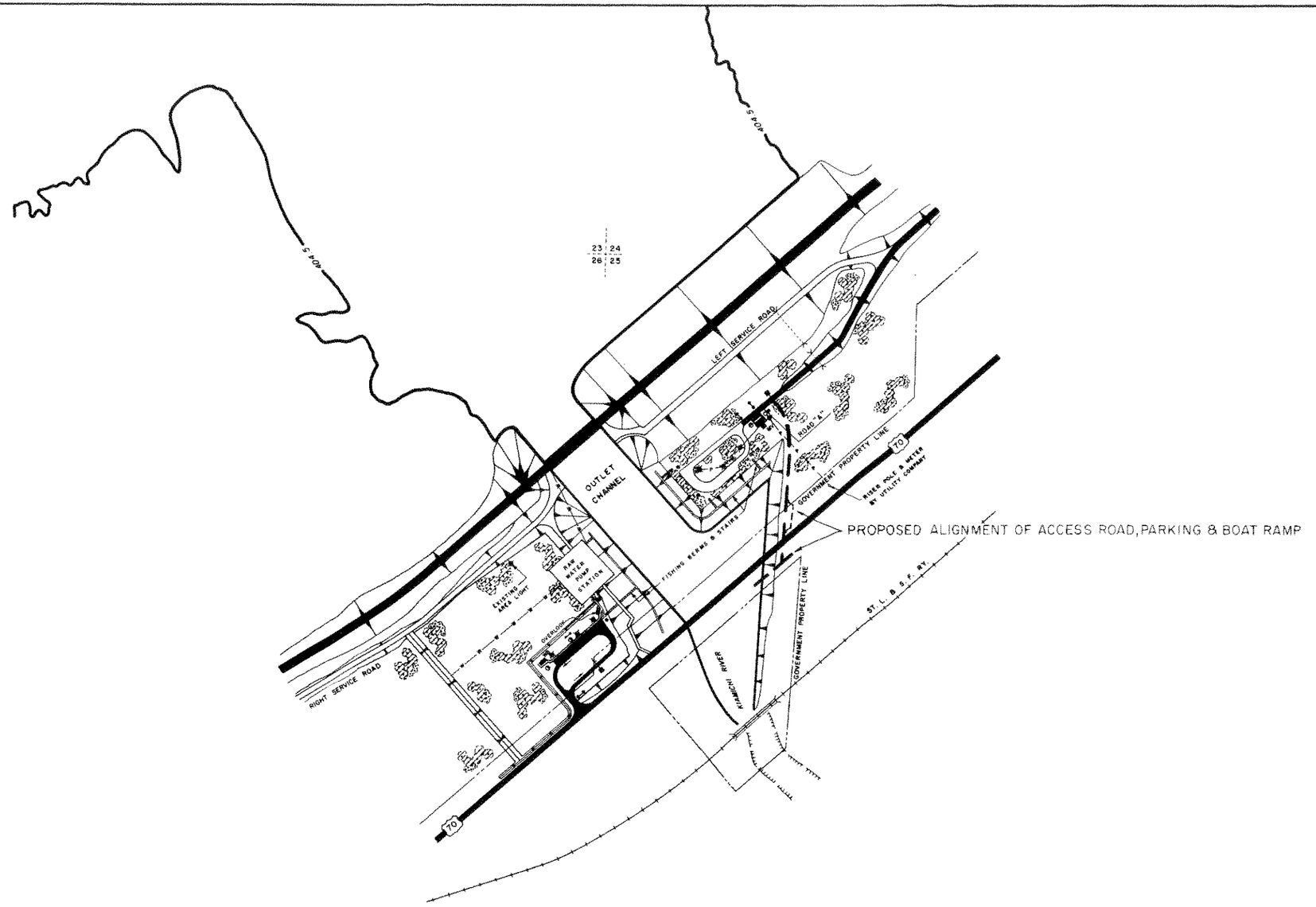
SUPPLEMENT NO. 6
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

1. Purpose. The purpose of this supplement is to request approval for the installation of an access road in the Bridge View Public Use Area to serve a boat ramp to be installed by the State of Oklahoma.

2. Discussion. The Oklahoma Department of Wildlife Conservation has proposed construction of a concrete boat ramp downstream of Hugo Dam. The ramp and parking area will be located on state property within the right-of-way for the U.S. Highway 70 bridge over the Kiamichi River. Access to the ramp will be across Corps property in the Bridge View Public Use Area, where the State of Oklahoma will build a gravel road from our existing park road. All roads and facilities associated with the new ramp will be maintained by the state.

3. Recommendation. I recommend that this supplement be approved as submitted.

JOHN P. CLARK, P.E.
Chief, Operations Division



T 6 S

R 18 E

LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET, WOOD VAULT	WV
TOILET, MASONRY VAULT	MV
TOILET, WATERBORNE	WB
TOILET, WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	
PICNIC SITE (1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)	
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)	
PEDESTAL COOKER	
FIRERING	
REFUSE CAN (SINGLE)	
REFUSE CAN (DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	R
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES			
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET	1		
MASONRY VAULT TOILET	1		
WOOD VAULT TOILET			
* CAMPSITES			
* PICNIC SITES			
PEDESTAL COOKERS			
FIRERINGS			
LANTERN STANDS			
UTILITY TABLES			
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	9		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	1		
PICNIC SHELTER (GROUP)			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

BRIDGE VIEW

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/14

REVISED FEB. 1982

CESWD-CO-RP(CESWT-CO-RP/28 Nov 88)(1130) 1st End McCauley/te/7-2434
SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Supplement No. 5 to Design Memorandum No. 3B

Commander, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, Texas 75242-0216 13 DEC 1988

FOR: Commander, Tulsa District, ATTN: CESWT-OD-RP

Approved.

FOR THE COMMANDER:

for James D. Harrison
GENE R. DRETKE, P.E.
Acting Chief, Construction-Operations Division

Encl
wd

CF (w/basic & encl):
CECW-ON
CESWD-RE-M
CESWD-PL-R

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121-0061

REPLY TO
ATTENTION OF:

CESWT-OD-RP (1130) 26 NOV 1988

MEMORANDUM FOR: Commander, Southwestern Division
ATTN: CESWD-CO-RP

SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Supplement No. 5 to Design memorandum No. 3B

Enclosed subject supplement is submitted for review and approval.

FOR THE COMMANDER:

for JOHN P. CLARK, P.E.
Chief, Operations Division

Encl (4 cys)

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SUPPLEMENT NO. 5
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

1. Purpose. The purpose of this supplement is to provide an updated P.U.A. map showing the rehabilitation of 13 campsites in the Salt Creek Cove Public Use Area.

2. Scope of Work. The scope of work will consist of relocating 13 campsites across the park roadway to a higher elevation.

3. Justification. Relocation of the campsites from their present area will result in greater availability of sites at high pool elevations, and reduce site erosion caused by pool fluctuations. Increased site occupancy will result in higher fee revenues, and the improved location will result in lower O&M costs. See drawing No. 1400-DM3B-93/8 for the location of these new sites.

4. Recommendation. I recommend that this supplement be approved as presented.

JOHN P. CLARK, P.E.
Chief, Operations Division

RELOCATE CAMPSITES TO WEST SIDE OF ROAD

ROAD C-1

ROAD "C"

POND

COLLECTOR DITCH

ROAD "B"

OXIDATION POND

WATER TREATMENT PLANT

WATER TURNOUT

POND

BORROW AREA

POND

ROAD "A"

GOVERNMENT PROPERTY LINE

R 18 E

T 6 S

LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET, WOOD VAULT	WV
TOILET, MASONRY VAULT	MV
TOILET, WATERBORNE	WB
TOILET, WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	
PICNIC SITE (1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)	
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)	
PEDESTAL COOKER	
FIRERING	
REFUSE CAN (SINGLE)	
REFUSE CAN (DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	R
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	2		
WATERBORNE TOILET W/SHOWER	1		
WATERBORNE TOILET			
MASONRY VAULT TOILET	1		
WOOD VAULT TOILET	2		
* CAMPSITES	25		
* PICNIC SITES			
PEDESTAL COOKERS	19		
FIRERINGS	25		
LANTERN STANDS			
UTILITY TABLES	25		
ELECTRICAL HOOK-UPS		13	
REFUSE CANS (SINGLE)	24		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	6		
PICNIC SHELTER (GROUP)			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE

KIAMICHI RIVER, OKLAHOMA

SALT CREEK COVE

SCALE OF FEET
200 0 200 400

U. S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/8

REVISED FEB 1982

CESWD-CO-RP (CESWT-OD-RO/9 Jul 87) (1130) 1st End McCauley/pr/72434
SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Supplement No. 4 to Design Memorandum No. 3B, Public Use Plan

Cdr, Southwestern Division, Corps of Engineers, 1114 Commerce St., Dallas, TX 75242-0216 24 JUL 1987

FOR: Commander, Tulsa District, Corps of Engineers, ATTN: CESWT-OD-RO, P.O. Box 61, Tulsa, OK 74121-0061

Approved.

FOR THE COMMANDER:

for A. P. HUTCHISON
Chief, Construction-
Operations Division

Encl
wd

CF (w/basic & encls):
CECW-ON (5 cys)

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121-0061

REPLY TO
ATTENTION OF:

9 JUL 1987

CESWT-OD-RO

MEMORANDUM FOR: Commander, Southwestern Division,
ATTN: CESWD-CO-R

SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Supplement No. 4 to Design Memorandum No. 3B, Public Use Plan

Enclosed subject supplement is submitted for review and approval.

FOR THE COMMANDER:

Encl (9 copies)

JOHN P. CLARK, P.E.
Chief, Operations Division

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SUPPLEMENT NO. 4
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

1. PURPOSE. The purpose of this supplement is to request approval for the installation of two group picnic shelters at Kiamichi Park Public Use Area and one group picnic shelter at Wilson Point Public Use Area. This work will be accomplished with FY 88 SRUF funds.

2. SCOPE OF WORK.

a. Relocate two group picnic shelters from the closed portion of Sawyer Bluff PUA to Kiamichi Park PUA.

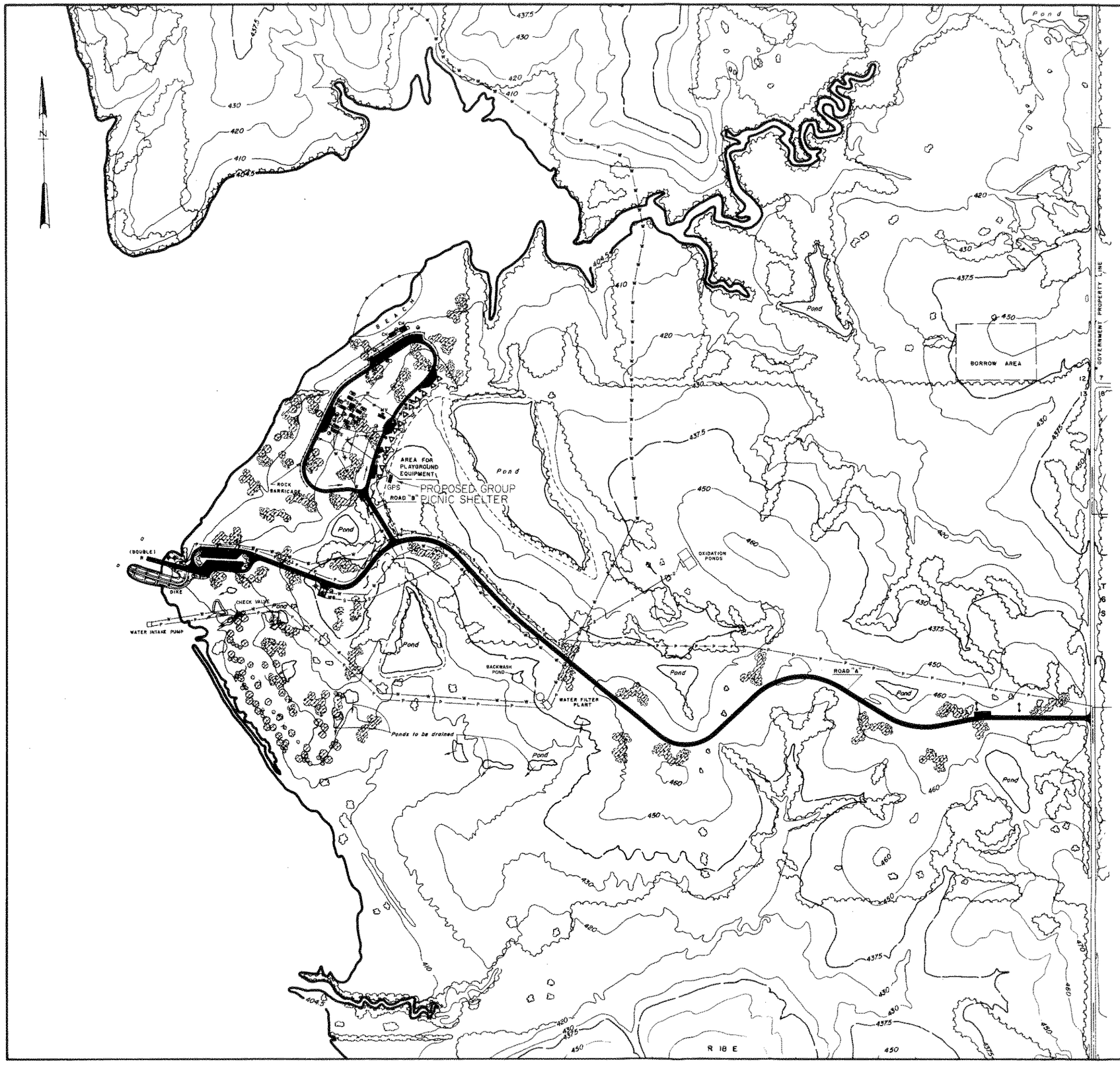
b. Relocate one picnic shelter from the closed portion of Sawyer Bluff PUA to Wilson Point PUA.

3. JUSTIFICATION. All three of the proposed group picnic shelters are currently located in an area of Sawyer Bluff PUA that is now closed to public use. Their relocation will provide group facilities not available in Kiamichi Park or Wilson Point, and will be a source of additional user fee revenue.

4. RECOMMENDATION. I recommend that this supplement be approved as presented.

FOR THE COMMANDER:

JOHN P. CLARK, P.E.
Chief, Operations Division



LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET,WOOD VAULT	WV
TOILET,MASONRY VAULT	MV
TOILET,WATERBORNE	WB
TOILET,WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	△
PICNIC SITE (1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)	▲
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)	▲
PEDESTAL COOKER	
FIRERING	
REFUSE CAN(SINGLE)	
REFUSE CAN(DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	2		
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET	1		
MASONRY VAULT TOILET	1		
WOOD VAULT TOILET			
* CAMPSITES			
* PICNIC SITES	21		
PEDESTAL COOKERS	10		
FIRERINGS	9		
LANTERN STANDS			
UTILITY TABLES			
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	16		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	6		
PICNIC SHELTER(GROUP)			
PICNIC SHELTER(SINGLE)	8		

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

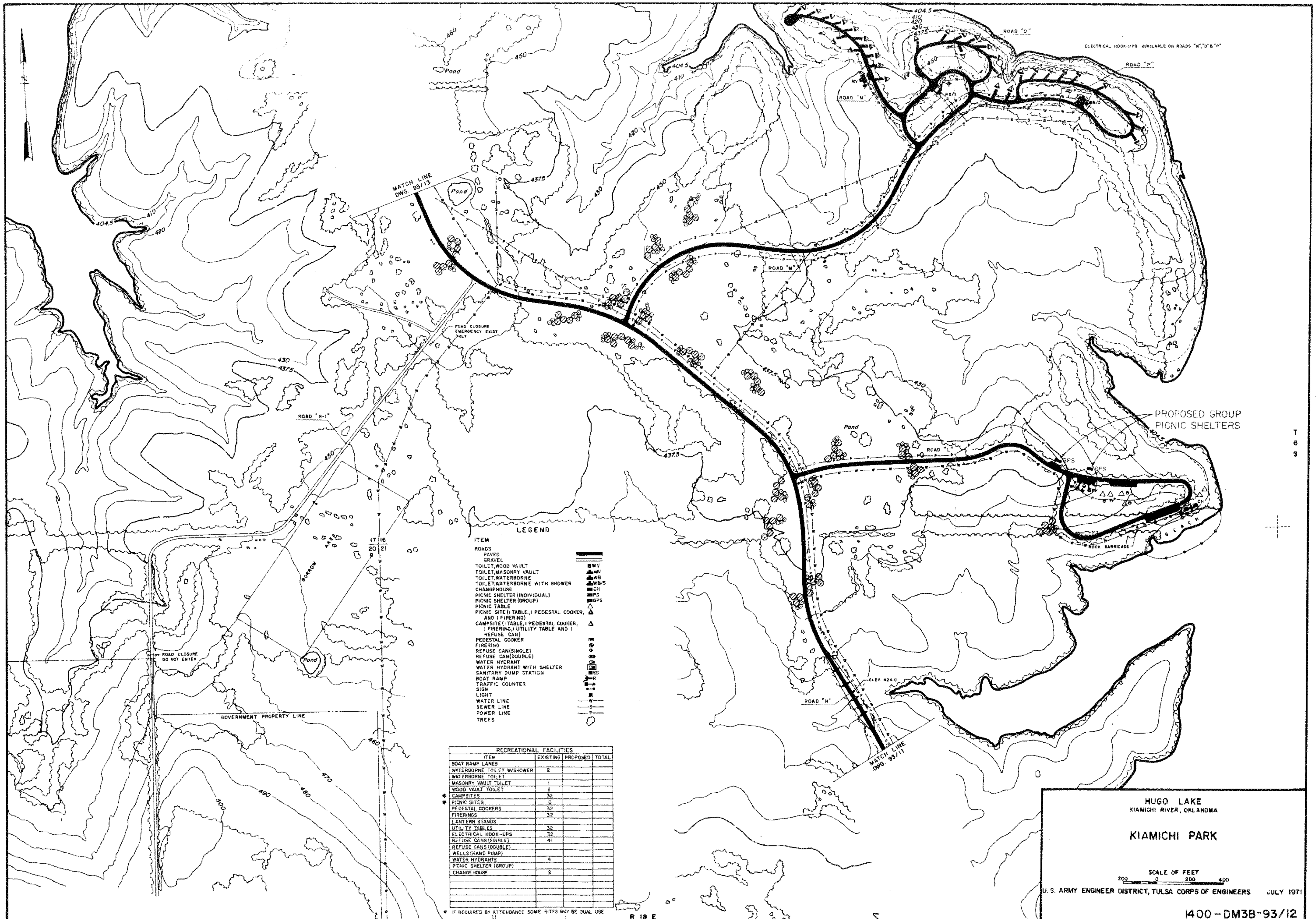
TWIN COVES
(WILSON POINT)

SCALE OF FEET
200 0 200 400

U. S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/6

REVISED FEB. 1982


ROAD "O"
ELECTRICAL HOOK-UPS AVAILABLE ON ROADS "N","O" & "P"
ROAD "P"
ROAD "N"
ROAD "M"
ROAD "L"
ROAD "H"
ROAD "H-1"
MATCH LINE DWG. 93/13
MATCH LINE DWG. 93/11
PROPOSED GROUP PICNIC SHELTERS
ROAD CLOSURE EMERGENCY EXIST ONLY
ROAD CLOSURE DO NOT ENTER
GOVERNMENT PROPERTY LINE
BORROW AREA
ROCK BARRICADE
BEACH
ELEV. 424.0
Pond
T 6 S
R 18 E
LEGEND
ITEM
ROADS
PAVED
GRAVEL
TOILET, WOOD VAULT WV
TOILET, MASONRY VAULT MV
TOILET, WATERBORNE WB
TOILET, WATERBORNE WITH SHOWER WB/S
CHANGEHOUSE CH
PICNIC SHELTER (INDIVIDUAL) PS
PICNIC SHELTER (GROUP) GPS
PICNIC TABLE
PICNIC SITE (1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)
PEDESTAL COOKER
FIRERING
REFUSE CAN (SINGLE)
REFUSE CAN (DOUBLE)
WATER HYDRANT
WATER HYDRANT WITH SHELTER
SANITARY DUMP STATION SS
BOAT RAMP R
TRAFFIC COUNTER
SIGN
LIGHT
WATER LINE W
SEWER LINE S
POWER LINE P
TREES

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES			
WATERBORNE TOILET W/SHOWER	2		
WATERBORNE TOILET			
MASONRY VAULT TOILET	1		
WOOD VAULT TOILET	2		
* CAMPSITES	32		
* PICNIC SITES	6		
PEDESTAL COOKERS	32		
FIRERINGS	32		
LANTERN STANDS			
UTILITY TABLES	32		
ELECTRICAL HOOK-UPS	32		
REFUSE CANS (SINGLE)	41		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	4		
PICNIC SHELTER (GROUP)			
CHANGEHOUSE	2		

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

KIAMICHI PARK

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

SHEET 4 OF 5

1400-DM38-93/12

REVISED FEB. 1982

SWDCO-RP (SWTOD-RO/21 Nov 86) 1st End
SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Supplement No. 3 to Design Memorandum No. 3B, Public Use Area

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242-0216 18 DEC 1986

TO: Commander, Tulsa District, ATTN: SWTOD-RO

Approved, subject to the following comment:

Work proposed in this supplement must be approved in the SRUF program prior to construction.

FOR THE COMMANDER:

A. P. HUTCHISON
Chief, Construction-
Operations Division

Encl wd

CF (w/basic & encl):
DAEN-CWO-R (5 cys)

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121-0061

REPLY TO
ATTENTION OF

SWTOD-RO

SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Supplement No. 3 to Design Memorandum No. 3B, Public Use Area

21 NOV 1986

Commander, Southwestern Division
ATTN: SWDCO-RM

Subject supplement is submitted for review and approval.

FOR THE COMMANDER:

JERRY P. MCNEIL, P.E.
Acting Chief, Operations Division

Encls (9 cys)

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA
SUPPLEMENT NO. 3
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

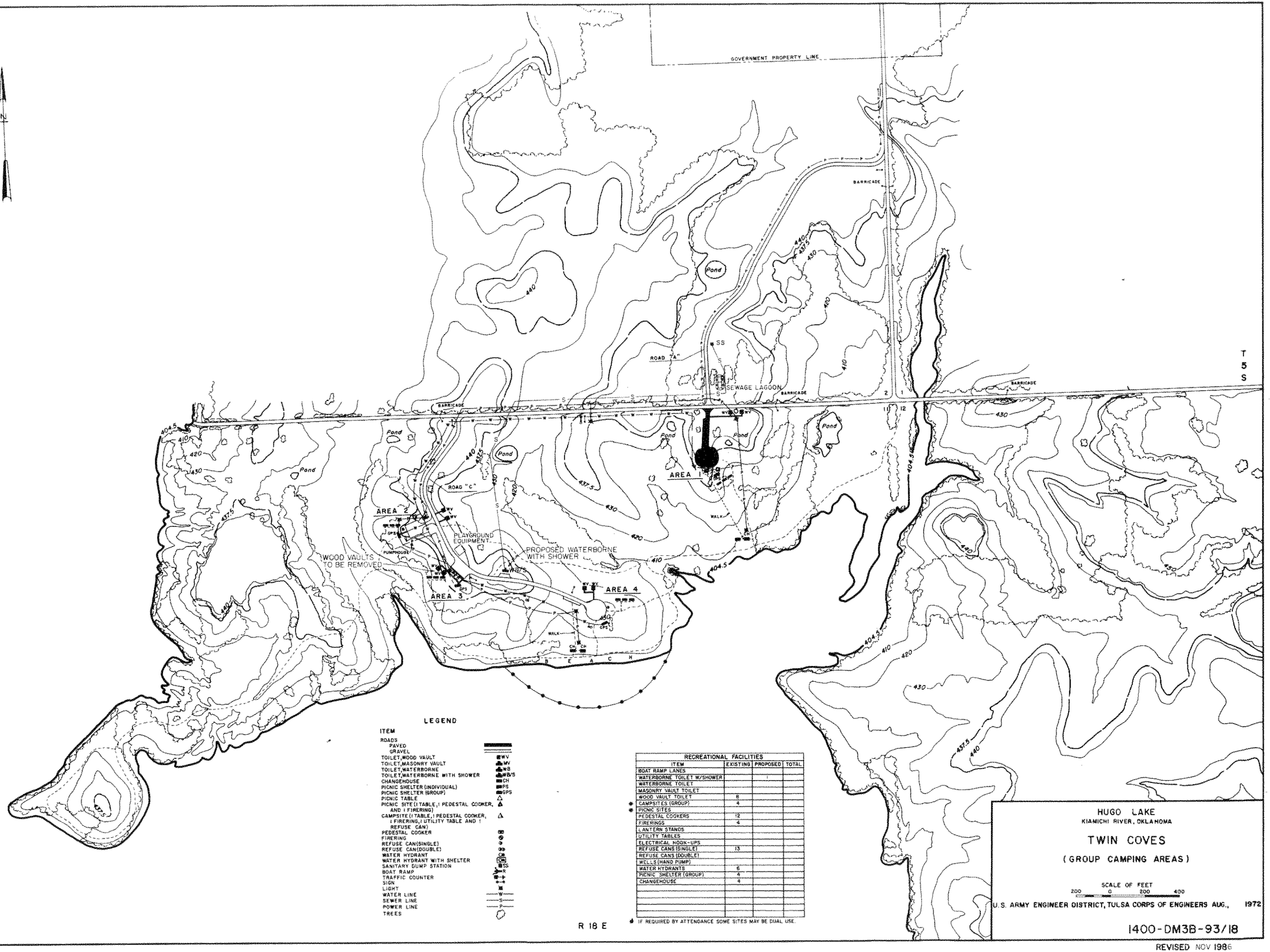
1. PURPOSE. The purpose of this supplement is to request authority to replace two wood vault toilets in the Group Camp public use area with a waterborne shower and toilet building. The proposed work will be funded through the FY 87 SRUF program.

2. SCOPE OF WORK. The work will consist of removal of two wood vault toilets and construction of a waterborne toilet and shower building. A sanitary sewage line will be constructed from the new building to an existing lagoon to the north.

3. JUSTIFICATION. Existing sanitary facilities in the Group Camp public use area of Hugo Lake consist of four wood vault toilets. These facilities are inadequate to meet current sanitary requirements and satisfy the needs of campers using the area. Fee collections in the park will increase because campers will stay for longer lengths of time and because the addition of a shower will change the campground to a Class "A" fee area thus allowing an increase in fees charged for overnight use.

4. RECOMMENDATION. I recommend that this supplement be approved as submitted.

JERRY P. MCNEIL, P.E.
Acting Chief, Operations Division



LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET,WOOD VAULT	WV
TOILET,MASONRY VAULT	MV
TOILET,WATERBORNE	WB
TOILET,WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	
PICNIC SITE (1 TABLE,1 PEDESTAL COOKER, AND 1 FIRERING)	
CAMPSITE (1 TABLE,1 PEDESTAL COOKER, 1 FIRERING,1 UTILITY TABLE AND 1 REFUSE CAN)	
PEDESTAL COOKER	
FIRERING	
REFUSE CAN(SINGLE)	
REFUSE CAN(DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	R
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES			
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET			
MASONRY VAULT TOILET			
WOOD VAULT TOILET	8		
* CAMPSITES (GROUP)	4		
* PICNIC SITES			
PEDESTAL COOKERS	12		
FIRERINGS	4		
LANTERN STANDS			
UTILITY TABLES			
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	13		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	6		
PICNIC SHELTER (GROUP)	4		
CHANGEHOUSE	4		

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

TWIN COVES

(GROUP CAMPING AREAS)

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

1400-DM3B-93/18

REVISED NOV 1986

SWDCO-RP (7 Apr 82) 1st Ind
SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Supplement No. 2 to Design Memorandum No. 3B, Public Use Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, TX 75242 23 APR 1982

TO: Commander, Tulsa District, ATTN: SWTOD-RM

Approved.

FOR THE COMMANDER:

A. P. HUTCHISON
Chief, Construction-Operations Division

w/d all incl

CF: w/basic & incl
DAEN-CWO-R (5 cys)

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74121

REPLY TO
ATTENTION OF:

SWTOD-RM

SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Supplement No. 2 to Design Memorandum No. 3B, Public Use Plan

Commander, Southwestern Division
ATTN: SWDCO-RM

Subject supplement (Incl 1) is submitted for review and approval.

FOR THE COMMANDER:

JAMES P. JONES
Chief, Operations Division

1 Incl (9 cys)
as

30 copies prepared

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SUPPLEMENT NO. 2
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

US ARMY CORPS OF ENGINEERS
TULSA DISTRICT
OKLAHOMA
MARCH 1982

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SUPPLEMENT NO. 2
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

TABLE OF CONTENTS

TABLE INDEX

DRAWING INDEX

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SUPPLEMENT NO. 2
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

1. Purpose. The purposes of this supplement are to:

a. To revise and update the public use area site plans to reflect as-built conditions. This required the correction of some road alignments, correcting the type number and location of facilities, and the addition of a facility table as an aid in maintaining an accurate and current facility inventory.

b. To revise and update the land utilization plan in accordance with change 3 to ER 1120-2-400 dated 12 February 1976 and with current land uses. The changes required a change in classification of some lands and the recalculation of acreages alloted to each classification. The land and water use and classifications are discussed in paragraph 2 and subparagraphs 2a through 2d. The utilization plan is shown on drawings 93/15 through 93/17 and the acreages alloted to each classification are shown on table I.

c. To revise the pertinent data table in accordance with the information shown on the pertinent data sheets for Tulsa District projects dated 1 June 1980.

2. Land and water use classifications. The lake waters are open to boating, skiing, swimming, fishing, and other water-oriented activities. Where there is a conflict of interests or a hazard endangers life or property, limitations are imposed.

a. Project operations. Lands acquired for project operations and allocated for the safe and efficient operation of the project for those authorized purposes other than fish and wildlife. In all cases this included, but was not restricted to, land on which the operational structures are located. Agricultural uses of this land are permitted on an interim basis only when it is not in conflict with use for an authorized purpose.

b. Operations: Recreation-Intensive Use. Lands acquired for operations and allocated for use as developed public use areas for intensive recreational activities by the visiting public, including areas for concession and quasi-public developments. No agricultural uses are permitted on this land except on an interim basis.

c. Operations: Recreation-Low Density. Lands acquired for project operations and allocated for low density recreational activities by the visiting public as required as open space between intensive recreational developments or between an intensive recreational development and land which, by virtue of use, is incompatible with the recreational development and would detract from the quality of the public use. Such incompatible land may be located either on the project or adjacent to the project. Land required for

ecological workshops and forums, hiking trails, primitive camping, or similar low density recreational use available for a significant role in shaping public understanding of the environment will be under this allocation. No agricultural uses are permitted on this land except on an interim basis.

d. Operations: Wildlife Management. Lands acquired for project operations and allocated as habitat for fish and wildlife or for propagation of such species. Such lands should be continuously available for low density recreation. The wildlife management lands at Hugo Lake along with 2,307 surface acres of water have been licensed to the Oklahoma Department of Wildlife Conservation for management.

3. Discussion. The changes and/or additions as proposed in this supplement are considered necessary to maintain the master plan's usability as a working document in the operation and maintenance of the project. When funds become available for aerial photography, mosaics reflecting current conditions will be made of each public use and furnished for insertion into the master plan.

4. Recommendation. I recommend that this supplement be approved as presented herein.

JAMES P. JONES
Chief, Operations Division

TABLE I

LAND USE ALLOCATIONS

Lands acquired in fee	38,536 acres(1)
Conservation Pool	13,250 acres(2)
Total lands allocated	25,286 acres

Zoning Classification	Total acres from fee boundary to conservation pool (elev. 404.50).
Project operations	354
Operations: Recreation-Intensive Use	
Bridgeview	28
Kiamichi Park	2,578
Salt Creek Cove	393
Sawyer Bluff	231
Twin Coves (Wilson Point)	495
Twin Coves (Virgil Point)	495
Twin Coves (Group Camping Area)	203
Frazier Point	205
Rattan Landing	54
Subtotal - Recreation-Intensive Use	4,682
Operations: Recreation-Low Density	2,399
Operations: Wildlife Management	17,851(3)
TOTAL LANDS ALLOCATED	25,286

(1)Acreage as shown in 1980 Real Estate audit.

(2)Acreage as shown in 1980 pertinent data book.

(3)Lands licensed to the Oklahoma Department of Wildlife Conservation. The state license also encompasses 2,307 surface acres of water.

TABLE II

PERTINENT DATA

LOCATION: Kiamichi River Mile 17.6

DRAINAGE AREA: 1,709 square miles

SHORELINE: 110 miles (at elevation 404.5)

ELEVATIONS, AREAS, AND STORAGES

Feature	Elevation (NGVD)	Area (Acres)	Capacity (Acre-Feet)	Equivalent Runoff (Inches)
Top of dam	452.5	-	-	-
Maximum pool	445.2	39,320	1,249,800	13.71
Top of flood control pool	437.5	34,490	966,700	10.61
Top of conservation pool	404.5	13,250	157,600	1.73
Top of inactive pool	390.0	4,500	30,440	0.33
Flood control storage	404.5-437.5	-	-	-
Initial conditions	-	-	809,100	8.88
After 100-year sediment	-	-	808,300	8.87
Conservation storage	390.0-404.5	-	-	-
Initial conditions	-	-	127,160(1)	1.40
After 100-year sediment	-	-	121,500	1.33
Inactive storage				
Initial storage	352.0-390.0	-	30,400	0.33
After 100-year sediment	378.0-390.0	-	6,900	0.08
50-year pool	437.5	34,490	966,700	10.61
10-year drawdown pool	394.0	6,680	52,590	0.58

(1)Includes 47,700 acre-feet for water supply (58 m.g.d. yield) and 74,050 acre-feet for water quality control (90 m.g.d. yield).

LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET,WOOD VAULT	WV
TOILET,MASONRY VAULT	MV
TOILET,WATERBORNE	WB
TOILET,WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	
PICNIC SITE (1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)	
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)	
PEDESTAL COOKER	
FIRERING	
REFUSE CAN(SINGLE)	
REFUSE CAN(DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	DS
BOAT RAMP	R
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	1		
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET			
MASONRY VAULT TOILET	2		
WOOD VAULT TOILET			
* CAMPSITES	10		
* PICNIC SITES	2		
PEDESTAL COOKERS	8		
FIRERINGS	10		
LANTERN STANDS			
UTILITY TABLES			
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	10		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	3		
PICNIC SHELTER (GROUP)			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE

KIAMICHI RIVER, OKLAHOMA

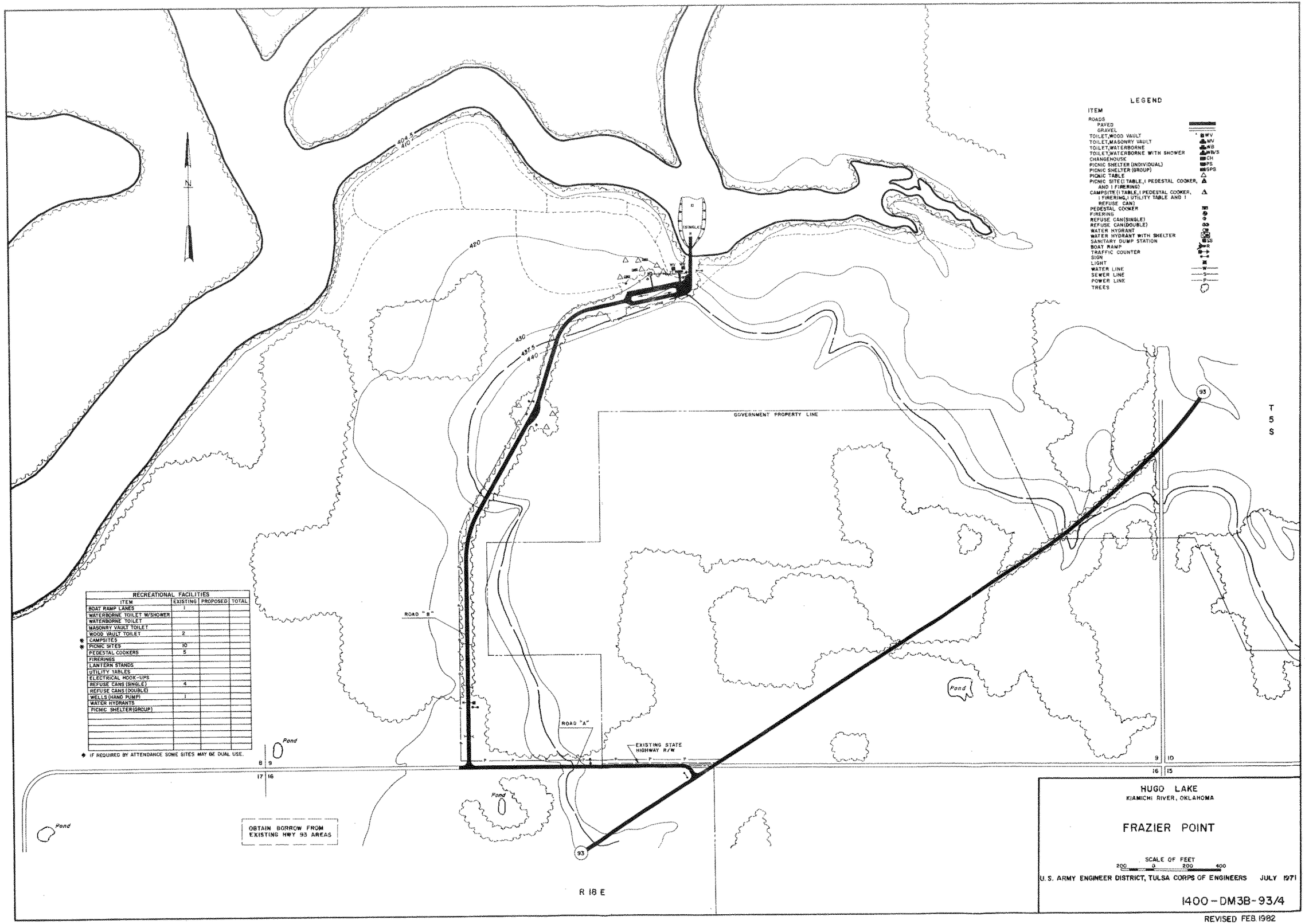
RATTAN LANDING

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/3

REVISED FEB. 1982



RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	1		
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET			
MASONRY VAULT TOILET			
WOOD VAULT TOILET	2		
* CAMPSITES			
* PICNIC SITES	10		
PEDESTAL COOKERS	5		
FIRERINGS			
LANTERN STANDS			
UTILITY TABLES			
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	4		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)	1		
WATER HYDRANTS			
PICNIC SHELTER (GROUP)			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

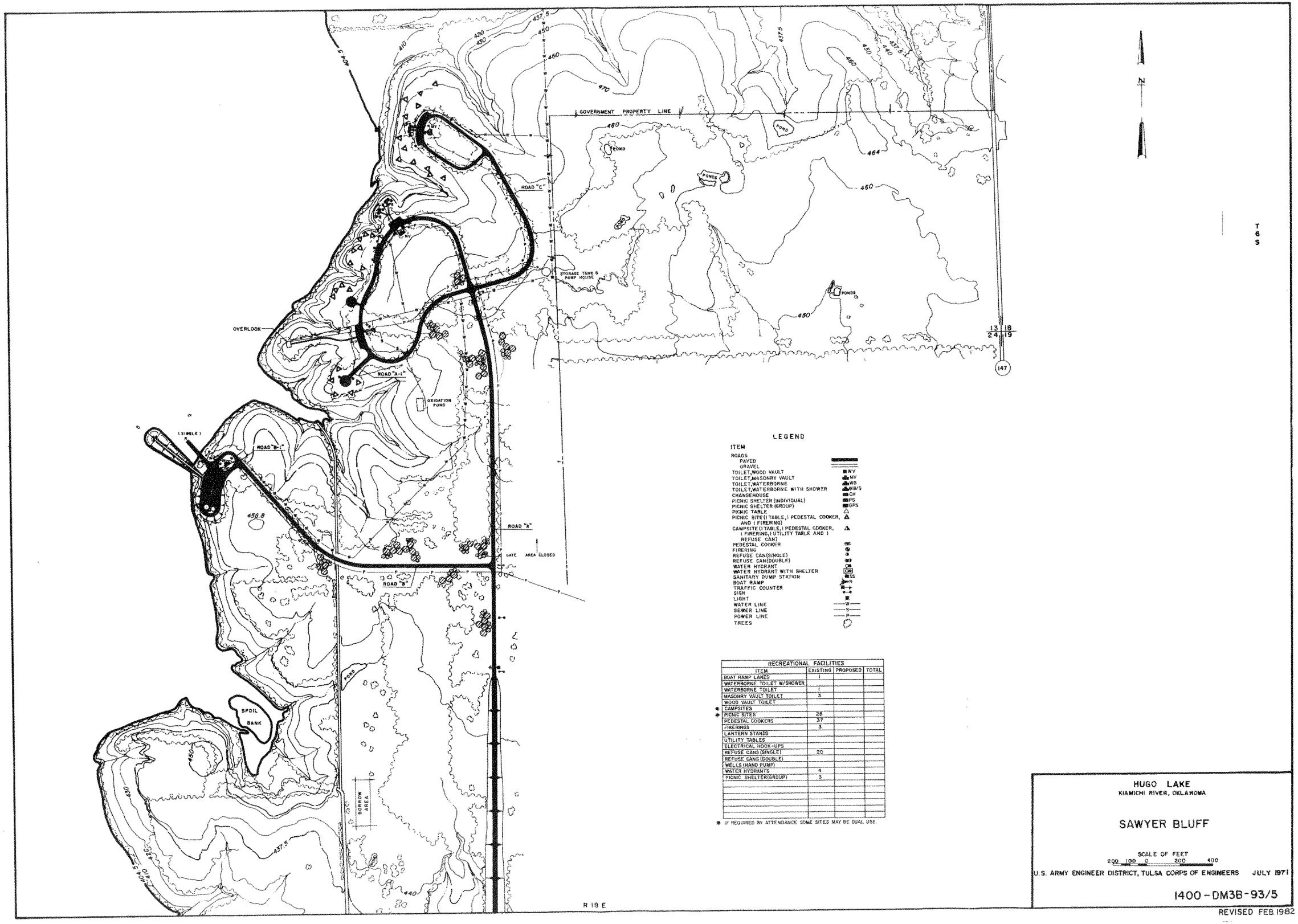
FRAZIER POINT

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/4

REVISED FEB 1982



LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET,WOOD VAULT	WV
TOILET,MASONRY VAULT	MV
TOILET,WATERBORNE	WB
TOILET,WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	
PICNIC SITE (1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)	
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)	
PEDESTAL COOKER	
FIRERING	
REFUSE CAN(SINGLE)	
REFUSE CAN(DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	R
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	1		
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET	1		
MASONRY VAULT TOILET	3		
WOOD VAULT TOILET			
* CAMPSITES			
* PICNIC SITES	28		
PEDESTAL COOKERS	37		
FIRERINGS	3		
LANTERN STANDS			
UTILITY TABLES			
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	20		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	4		
PICNIC SHELTER(GROUP)	3		

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

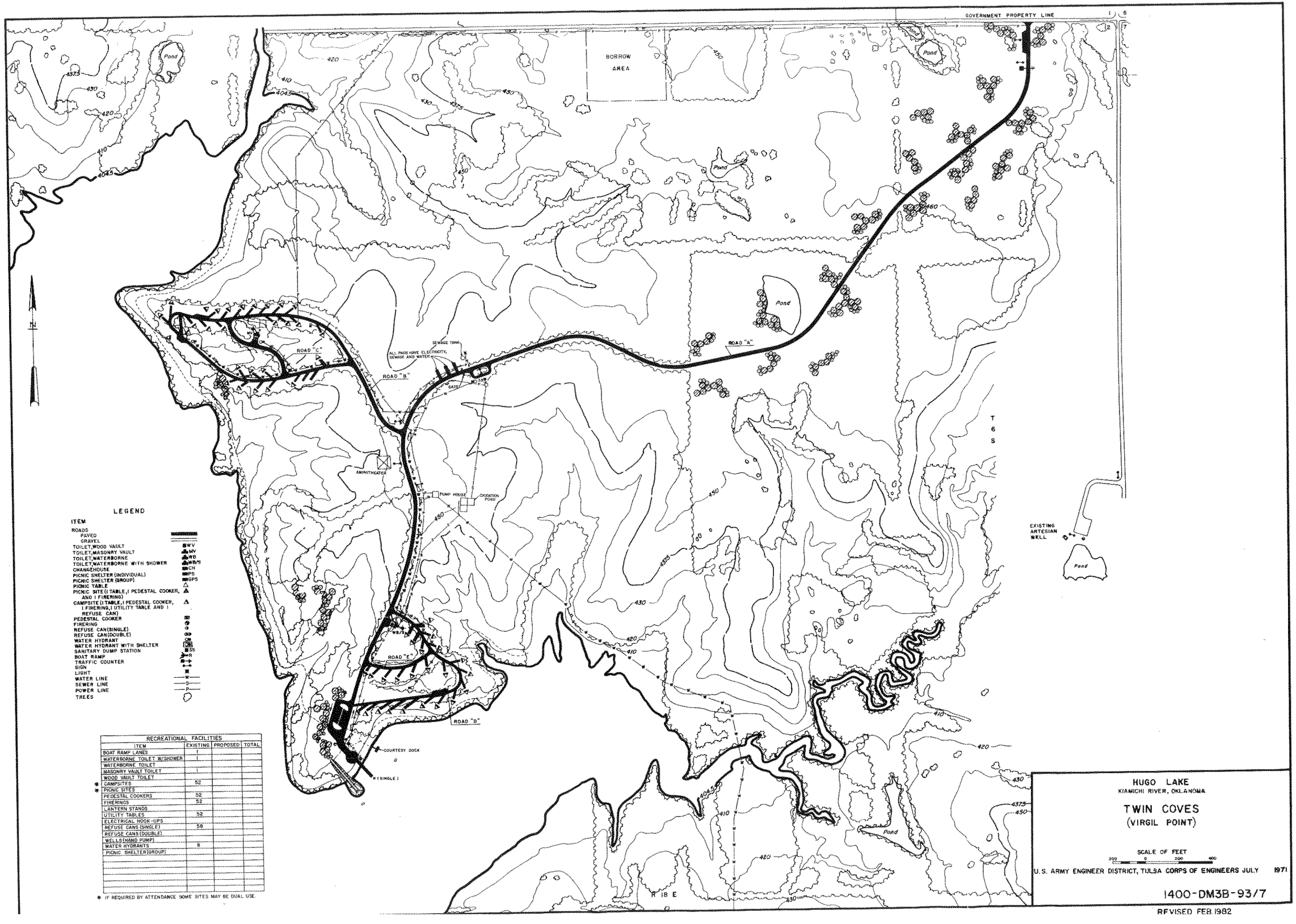
SAWYER BLUFF

SCALE OF FEET
200 100 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM38-93/5

REVISED FEB. 1982



LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET,WOOD VAULT	WV
TOILET,MASONRY VAULT	MV
TOILET,WATERBORNE	WB
TOILET,WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	
PICNIC SITE(1 TABLE,1 PEDESTAL COOKER, AND 1 FIRERING)	
CAMPSITE (1 TABLE,1 PEDESTAL COOKER, 1 FIRERING,1 UTILITY TABLE AND 1 REFUSE CAN)	
PEDESTAL COOKER	
FIRERING	
REFUSE CAN(SINGLE)	
REFUSE CAN(DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	R
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	1		
WATERBORNE TOILET W/SHOWER	1		
WATERBORNE TOILET			
MASONRY VAULT TOILET	1		
WOOD VAULT TOILET			
* CAMPSITES	52		
* PICNIC SITES			
PEDESTAL COOKERS	52		
FIRERINGS	52		
LANTERN STANDS			
UTILITY TABLES	52		
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	58		
REFUSE CANS (DOUBLE)			
WELLS(HAND PUMP)			
WATER HYDRANTS	8		
PICNIC SHELTER(GROUP)			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

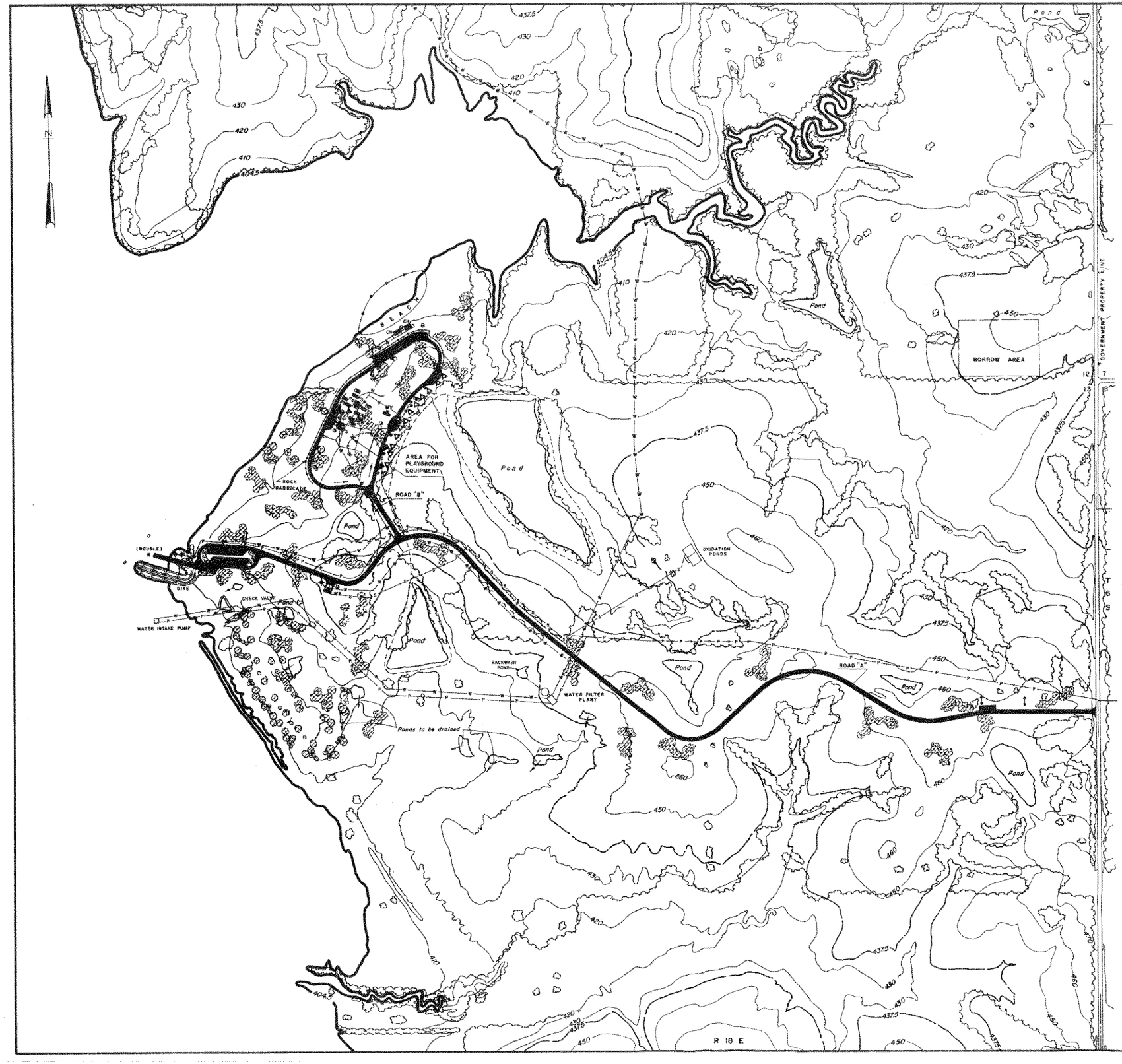
TWIN COVES
(VIRGIL POINT)

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/7

REVISED FEB 1982



LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET, WOOD VAULT	WV
TOILET, MASONRY VAULT	MV
TOILET, WATERBORNE	WB
TOILET, WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	△
PICNIC SITE (1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)	▲
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)	▲
PEDESTAL COOKER	
FIRERING	
REFUSE CAN (SINGLE)	
REFUSE CAN (DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	
BOAT RAMP	
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	2		
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET	1		
MASONRY VAULT TOILET			
WOOD VAULT TOILET	1		
* CAMPSITES			
* PICNIC SITES	21		
PEDESTAL COOKERS	10		
FIRERINGS	9		
LANTERN STANDS			
UTILITY TABLES			
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	16		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	6		
PICNIC SHELTER (GROUP)			
PICNIC SHELTER (SINGLE)	8		

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

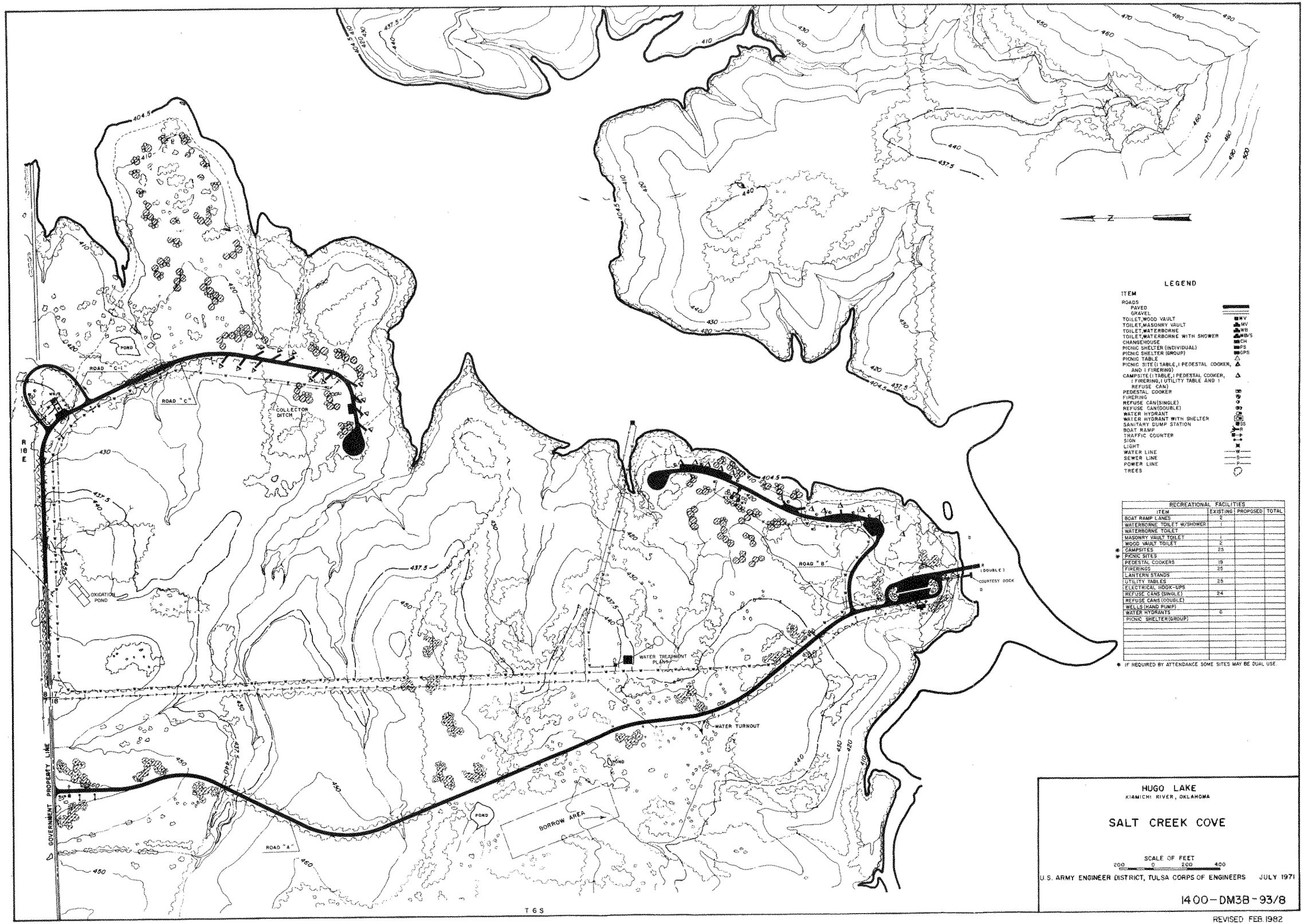
TWIN COVES
(WILSON POINT)

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/6

REVISED FEB 1982



RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	2		
WATERBORNE TOILET W/SHOWER	1		
WATERBORNE TOILET			
MASONRY VAULT TOILET	1		
WOOD VAULT TOILET	2		
* CAMPSITES	25		
* PICNIC SITES			
PEDESTAL COOKERS	19		
FIRERINGS	25		
LANTERN STANDS			
UTILITY TABLES	25		
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	24		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	8		
PICNIC SHELTER (GROUP)			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE

KIAMICHI RIVER, OKLAHOMA

SALT CREEK COVE

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM38-93/8

REVISED FEB. 1982

MATCH LINE
DWG. - 93/10

21 | 22
28 | 27

22 | 23
27 | 26

ROAD CLOSED

GATE

ROAD "A"

GOVERNMENT PROPERTY LINE

SERVICE ROAD

GATE NORMALLY CLOSED

ROAD "B"

KIAMICHI HIKING TRAIL

PRIMITIVE CAMPING AREA

GOVERNMENT PROPERTY LINE

POND

LIMITS OF PUBLIC USE AREA

GOVERNMENT PROPERTY LINE

PROJECT BUILDINGS

T 8 S

R 18 E

LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET,WOOD VAULT	WV
TOILET,MASONRY VAULT	MV
TOILET,WATERBORNE	WB
TOILET,WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	
PICNIC SITE (1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)	
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)	
PEDESTAL COOKER	
FIRERING	
REFUSE CAN (SINGLE)	
REFUSE CAN (DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

N

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES			
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET			
MASONRY VAULT TOILET			
WOOD VAULT TOILET	6		
* CAMPSITES			
* PICNIC SITES			
PEDESTAL COOKERS			
FIRERINGS			
LANTERN STANDS			
UTILITY TABLES			
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	5		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	1		
PICNIC SHELTER (GROUP)			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

KIAMICHI PARK

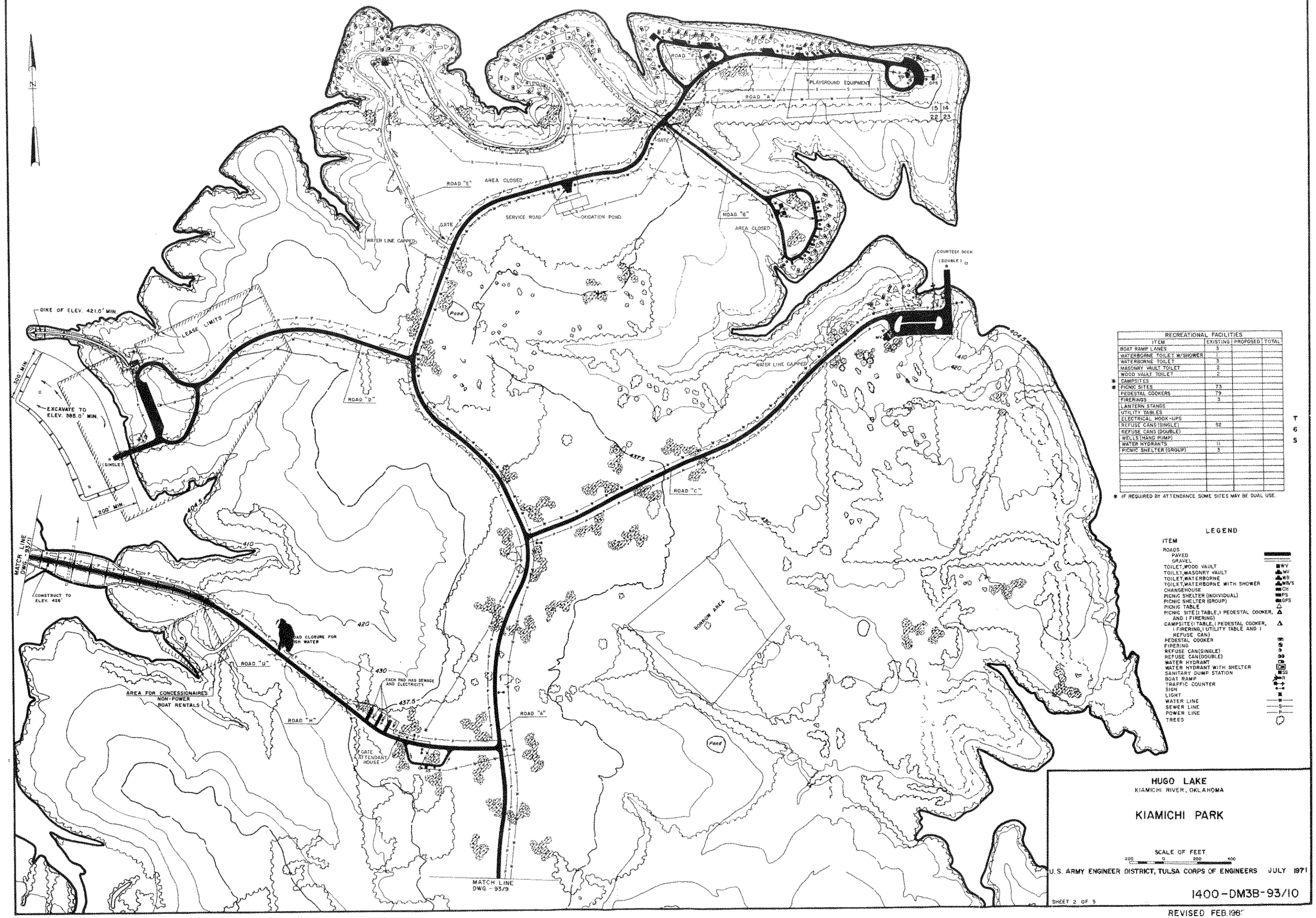
SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400 - DM3B-93/9

SHEET 1 OF 5

REVISED FEB. 1982



RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	3		
WATERBORNE TOILET W/SHOWER	1		
WATERBORNE TOILET	3		
MASONRY VAULT TOILET	2		
WOOD VAULT TOILET	2		
* CAMPSITES			
* PICNIC SITES	73		
PEDESTAL COOKERS	79		
FIRERINGS	3		
LANTERN STANDS			
UTILITY TABLES			
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	52		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	11		
PICNIC SHELTER (GROUP)	3		

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET, WOOD VAULT	WV
TOILET, MASONRY VAULT	MV
TOILET, WATERBORNE	WB
TOILET, WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	
PICNIC SITE (1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)	
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)	
PEDESTAL COOKER	
FIRERING	
REFUSE CAN (SINGLE)	
REFUSE CAN (DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	R
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

KIAMICHI PARK

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

SHEET 2 OF 5

1400-DM3B-93/10

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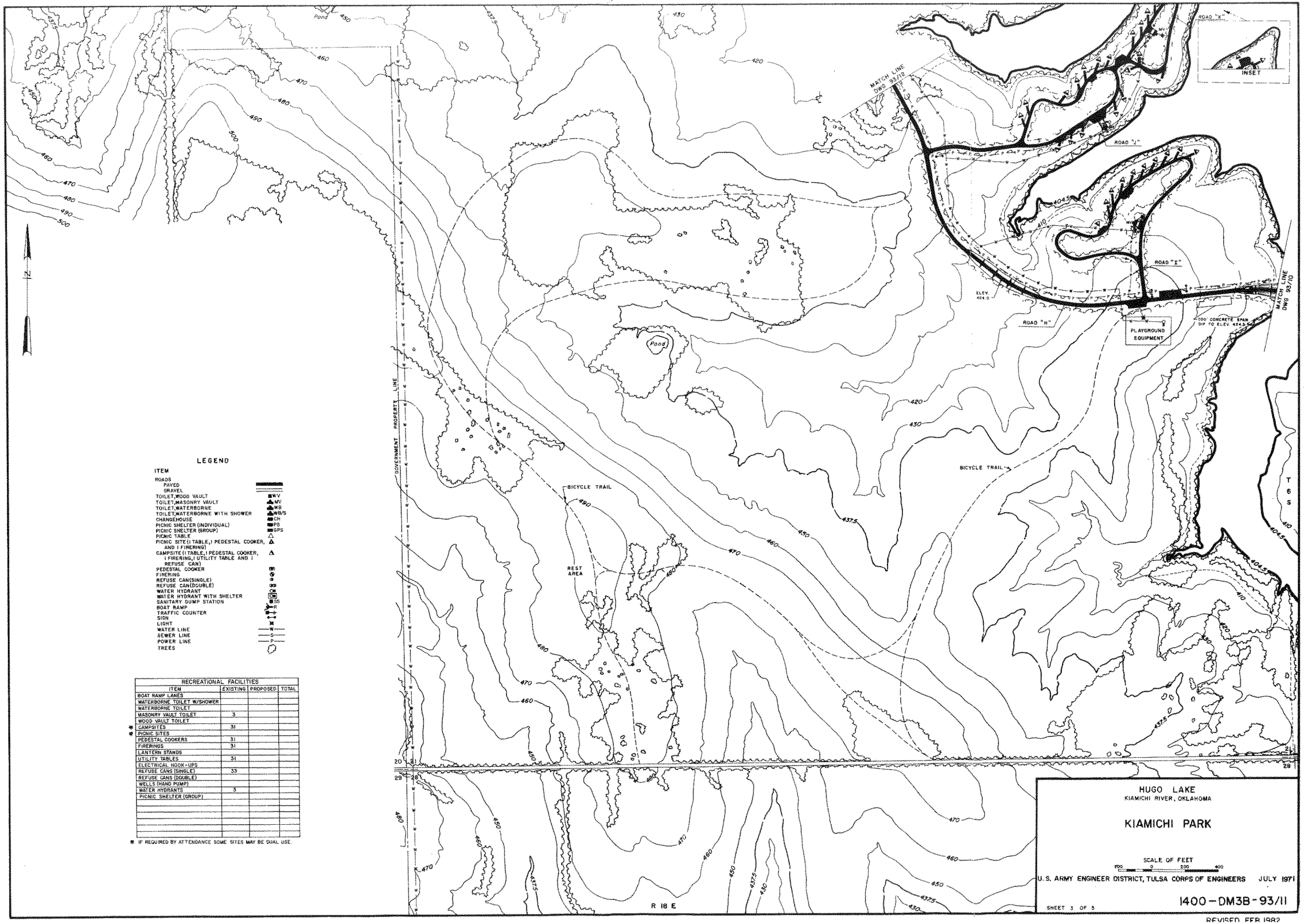


LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET,WOOD VAULT	WV
TOILET,MASONRY VAULT	MV
TOILET,WATERBORNE	WB
TOILET,WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	
PICNIC SITE(1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)	
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)	
PEDESTAL COOKER	
FIRERING	
REFUSE CAN(SINGLE)	
REFUSE CAN(DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES

	ITEM	EXISTING	PROPOSED	TOTAL
	BOAT RAMP LANES			
	WATERBORNE TOILET W/SHOWER			
	WATERBORNE TOILET			
	MASONRY VAULT TOILET	3		
	WOOD VAULT TOILET			
*	CAMPSITES	31		
*	PICNIC SITES			
	PEDESTAL COOKERS	31		
	FIRERINGS	31		
	LANTERN STANDS			
	UTILITY TABLES	31		
	ELECTRICAL HOOK-UPS			
	REFUSE CANS (SINGLE)	33		
	REFUSE CANS (DOUBLE)			
	WELLS (HAND PUMP)			
	WATER HYDRANTS	5		
	PICNIC SHELTER (GROUP)			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

KIAMICHI PARK

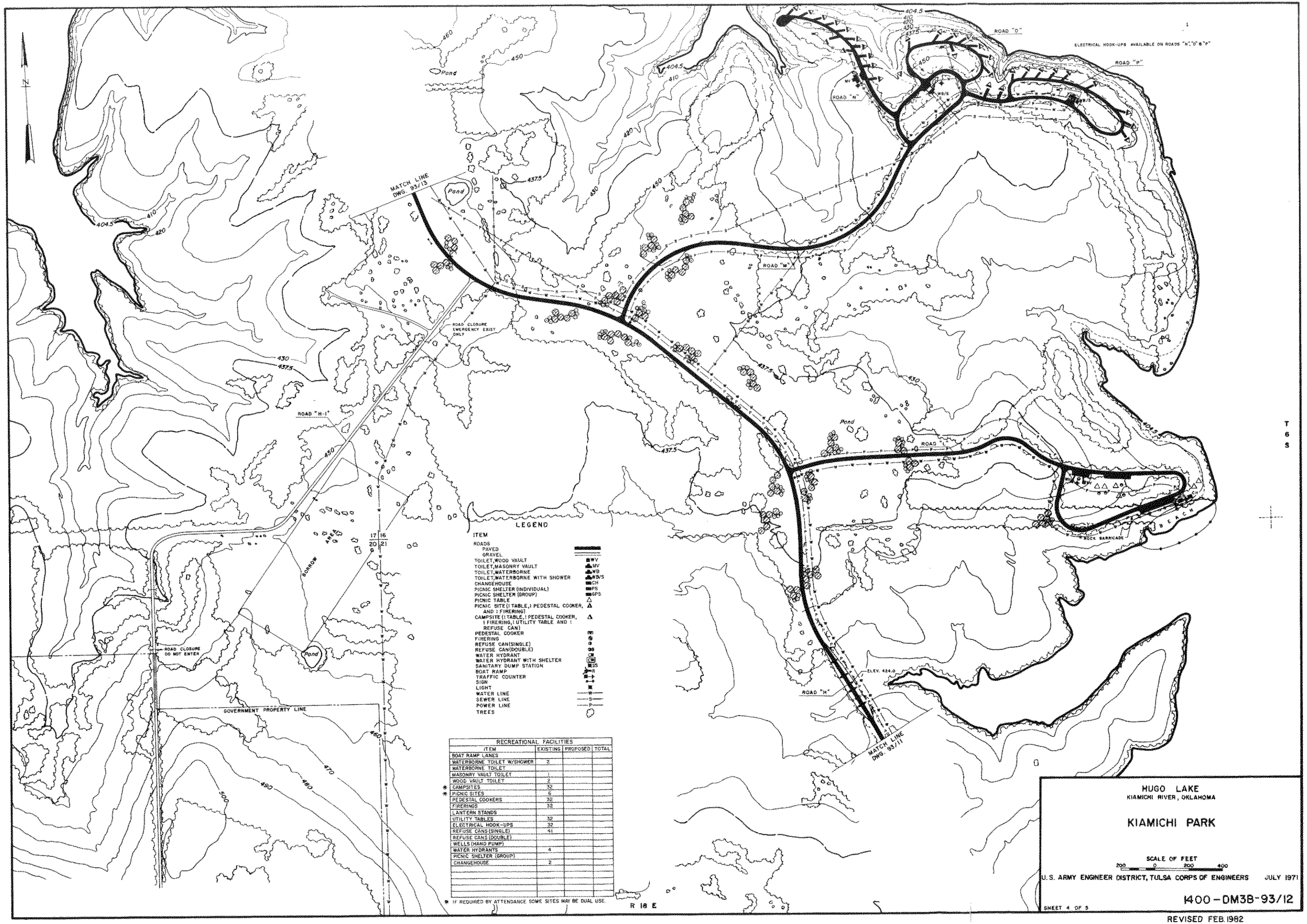
SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

SHEET 3 OF 5

1400-DM3B-93/11

REVISED FEB 1982



LEGEND

ITEM	
ROADS PAVED	
ROADS GRAVEL	
TOILET, WOOD VAULT	WV
TOILET, MASONRY VAULT	MV
TOILET, WATERBORNE	WB
TOILET, WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	△
PICNIC SITE (1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)	△
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)	△
PEDESTAL COOKER	
FIRERING	
REFUSE CAN (SINGLE)	
REFUSE CAN (DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	R
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES			
WATERBORNE TOILET W/SHOWER	2		
WATERBORNE TOILET			
MASONRY VAULT TOILET	1		
WOOD VAULT TOILET	2		
* CAMPSITES	32		
* PICNIC SITES	6		
PEDESTAL COOKERS	32		
FIRERINGS	32		
LANTERN STANDS			
UTILITY TABLES	32		
ELECTRICAL HOOK-UPS	32		
REFUSE CANS (SINGLE)	41		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	4		
PICNIC SHELTER (GROUP)			
CHANGEHOUSE	2		

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

KIAMICHI PARK

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/12

SHEET 4 OF 5

REVISED FEB. 1982

N

LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET,WOOD VAULT	WV
TOILET,MASONRY VAULT	MV
TOILET,WATERBORNE	WB
TOILET,WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	△
PICNIC SITE(1 TABLE,1 PEDESTAL COOKER, AND 1 FIRERING)	▲
CAMPSITE(1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING,1 UTILITY TABLE AND 1 REFUSE CAN)	△
PEDESTAL COOKER	
FIRERING	
REFUSE CAN(SINGLE)	
REFUSE CAN(DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	R
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES			
ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES	2		
WATERBORNE TOILET W/SHOWER	1		
WATERBORNE TOILET	1		
MASONRY VAULT TOILET	1		
WOOD VAULT TOILET			
* CAMPSITES	26		
* PICNIC SITES			
PEDESTAL COOKERS	26		
FIRERINGS	26		
LANTERN STANDS			
UTILITY TABLES	26		
ELECTRICAL HOOK-UPS	26		
REFUSE CANS (SINGLE)	28		
REFUSE CANS (DOUBLE)			
WELLS (HAND PUMP)			
WATER HYDRANTS	3		
PICNIC SHELTER (GROUP)			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

T 6 S

ROAD "R"
ROAD "Q"
ROAD "H"
ROAD "H"
TRANSFORMER
ALL SITES HAVE ELECTRIC HOOK-UPS
ALL SITES HAVE ELECTRIC HOOK-UPS
OXIDATION POND
COURTESY DOCK
(DOUBLE)
Pond
Pond
MATCH LINE DWG. 93/12
404.5
410
420
430
437.5
450
R 16 E

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

KIAMICHI PARK

SCALE OF FEET
200 0 200 400

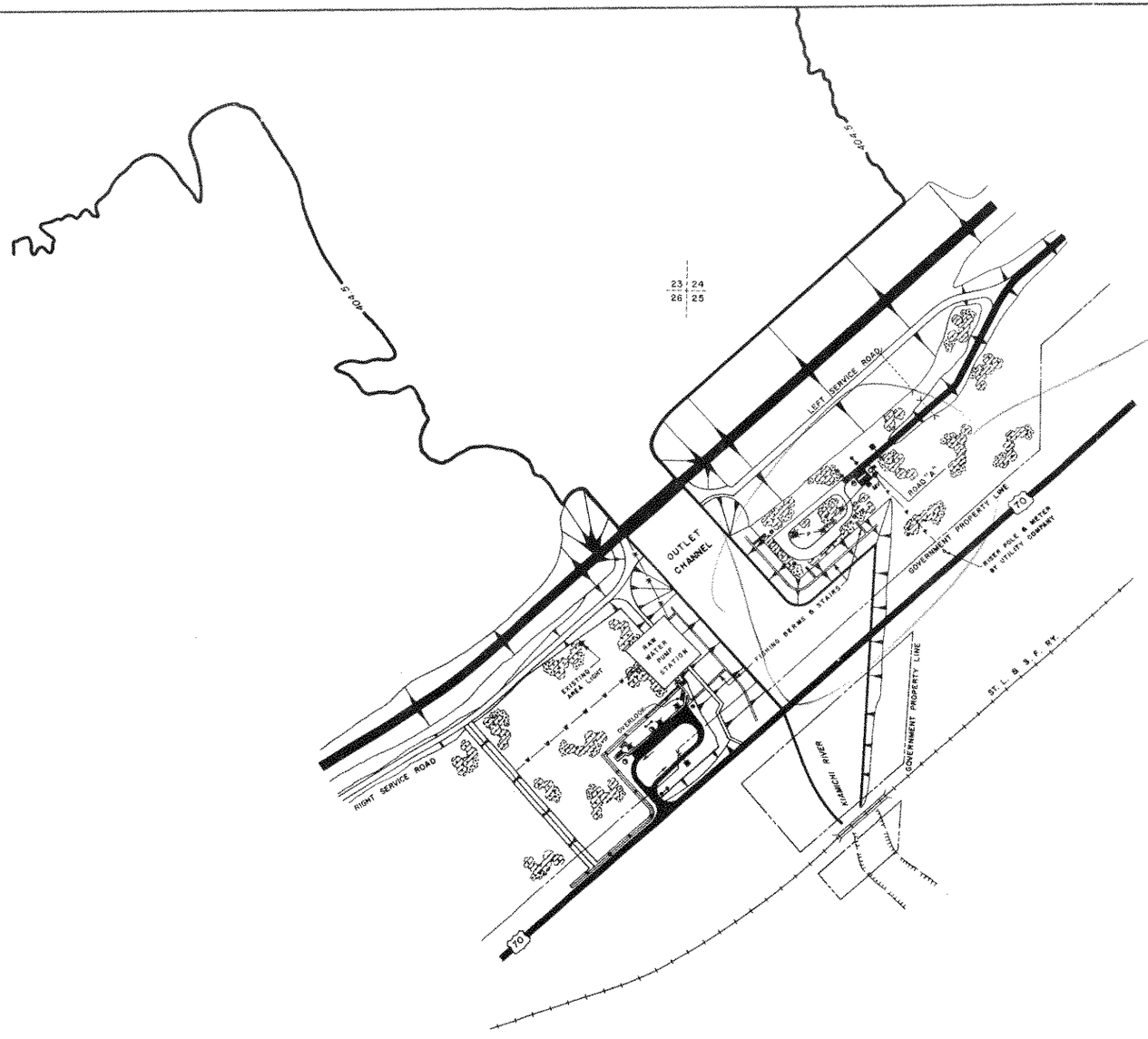
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/13

SHEET 5 OF 5

REVISED FEB. 1982

Redraw



T 6 S

LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET,WOOD VAULT	WV
TOILET,MASONRY VAULT	MV
TOILET,WATERBORNE	WB
TOILET,WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	△
PICNIC SITE (1 TABLE, 1 PEDESTAL COOKER, AND 1 FIRERING)	▲
CAMPSITE (1 TABLE, 1 PEDESTAL COOKER, 1 FIRERING, 1 UTILITY TABLE AND 1 REFUSE CAN)	▲
PEDESTAL COOKER	
FIRERING	
REFUSE CAN(SINGLE)	
REFUSE CAN(DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	
SANITARY DUMP STATION	SS
BOAT RAMP	R
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES

ITEM	EXISTING	PROPOSED	TOTAL
BOAT RAMP LANES			
WATERBORNE TOILET W/SHOWER			
WATERBORNE TOILET	1		
MASONRY VAULT TOILET	1		
WOOD VAULT TOILET			
* CAMPSITES			
* PICNIC SITES			
PEDESTAL COOKERS			
FIRERINGS			
LANTERN STANDS			
UTILITY TABLES			
ELECTRICAL HOOK-UPS			
REFUSE CANS (SINGLE)	9		
REFUSE CANS (DOUBLE)			
WELLS(HAND PUMP)			
WATER HYDRANTS	1		
PICNIC SHELTER (GROUP)			

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

R 18 E

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

BRIDGE VIEW

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/14

REVISED FEB. 1982

SKIING PROHIBITED

STATE WILDLIFE REFUGE

MESSER

STATE WILDLIFE MANAGEMENT AREA

PARTIALLY CLEARED AREA

CLEARED AREA

(CAMPING AREA)

TWIN COVES (VIRGIL POINT)

VIRGIL

TWIN COVES (WILSON POINT)

SAWYER BLUFF

SALT CREEK COVE

SALT CREEK

KIAMICHI PARK

FALLEN

SAWYER BRIDGE VIEW

KIAMICHI RIVER

S.L.-S.F. RY.

HUGO

T 5 S

T 6 S

R 17 E R 18 E R 19 E

N

LEGEND

- PAVED ROADS
- GRAVEL ROADS
- PROPOSED ROAD RELOCATIONS
- TOP OF CONSERVATION POOL - ELEV. 404.5
- TOP OF FLOOD CONTROL POOL - ELEV. 437.5
- TOP OF INACTIVE POOL - ELEV. 390.0
- 110 MILES OF SHORELINE AT ELEV. 404.5

LAND USE

- PROJECT OPERATIONS
- RECREATION-INTENSIVE USE
- RECREATION-LOW DENSITY
- WILDLIFE MANAGEMENT

SHEET INDEX

93/17

93/16

93/15

HUGO

1400-DM3B-93/15

REVISED MAR. 1982

N

RATTAN LANDING

DELA

RATTAN

BELZONI

PUSHMATAHA CO.
CHOCTAW CO.

STATE WILDLIFE REFUGE

SKIING PROHIBITED

FRAZIER POINT

APPLE

SKIING PROHIBITED

T 4 S
T 5 S

93/17
93/15
93/15

SHEET INDEX

LEGEND

- PAVED ROADS
- GRAVEL ROADS
- PROPOSED ROAD RELOCATIONS
- TOP OF CONSERVATION POOL - ELEV. 404.5
- TOP OF FLOOD CONTROL POOL - ELEV. 437.5
- 110 MILES OF SHORELINE AT ELEV. 404.5
- TOP OF INACTIVE POOL - ELEV. 390.0

LAND USE

- RECREATION-INTENSIVE USE
- RECREATION-LOW DENSITY
- WILDLIFE MANAGEMENT

HUGO

1400-DM3B-93/16

REVISED MAR. 1982

LEGEND

PAVED ROADS
GRAVEL ROADS
PROPOSED ROAD RELOCATIONS
TOP OF CONSERVATION POOL - ELEV. 404.5
TOP OF FLOOD CONTROL POOL - ELEV. 437.5
TOP OF INACTIVE POOL - ELEV. 390.0
110 MILES OF SHORELINE AT ELEV. 404.5

LAND USE

RECREATION-LOW DENSITY

SHEET INDEX

93/17
93/16
93/15

MOYERS
FINLEY
ANTLERS
RAILWAY
SAN FRANCISCO
KIAMICHI
ST. LOUIS
RIVER
CREEK
CEDAR

T 2 S
T 3 S
T 4 S
R 16 E
R 17 E

HUGO
1400-DM3B-93/17
REVISED MAR. 1982

GOVERNMENT PROPERTY LINE

BARRICADE

ROAD "A"

ROAD "B"

ROAD "C"

PLAYGROUND EQUIPMENT

AREA 1

AREA 2

AREA 3

AREA 4

PUMPHOUSE

Pond

WALK

T 5 S

R 18 E

LEGEND

ITEM	
ROADS	
PAVED	
GRAVEL	
TOILET,WOOD VAULT	WV
TOILET,MASONRY VAULT	MV
TOILET,WATERBORNE	WB
TOILET,WATERBORNE WITH SHOWER	WB/S
CHANGEHOUSE	CH
PICNIC SHELTER (INDIVIDUAL)	PS
PICNIC SHELTER (GROUP)	GPS
PICNIC TABLE	
PICNIC SITE(1 TABLE,1 PEDESTAL COOKER, AND 1 FIRERING)	
CAMPSITE(1 TABLE,1 PEDESTAL COOKER, 1 FIRERING,1 UTILITY TABLE AND 1 REFUSE CAN)	
PEDESTAL COOKER	
FIRERING	
REFUSE CAN(SINGLE)	
REFUSE CAN(DOUBLE)	
WATER HYDRANT	
WATER HYDRANT WITH SHELTER	WH
SANITARY DUMP STATION	SS
BOAT RAMP	BR
TRAFFIC COUNTER	
SIGN	
LIGHT	
WATER LINE	W
SEWER LINE	S
POWER LINE	P
TREES	

RECREATIONAL FACILITIES

	ITEM	EXISTING	PROPOSED	TOTAL
	BOAT RAMP LANES			
	WATERBORNE TOILET W/SHOWER			
	WATERBORNE TOILET			
	MASONRY VAULT TOILET			
	WOOD VAULT TOILET	8		
*	CAMPSITES (GROUP)	4		
*	PICNIC SITES			
	PEDESTAL COOKERS	12		
	FIRERINGS	4		
	LANTERN STANDS			
	UTILITY TABLES			
	ELECTRICAL HOOK-UPS			
	REFUSE CANS (SINGLE)	13		
	REFUSE CANS (DOUBLE)			
	WELLS (HAND PUMP)			
	WATER HYDRANTS	6		
	PICNIC SHELTER (GROUP)	4		
	CHANGEHOUSE	4		

* IF REQUIRED BY ATTENDANCE SOME SITES MAY BE DUAL USE.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

TWIN COVES

(GROUP CAMPING AREAS)

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

1400-DM3B-93/18

REVISED FEB. 1982

DAEN-CWP-V (11 Apr 73) 2nd Ind
SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Revision to DM No. 3B, Public Use Plan

DA, Office of the Chief of Engineers, Washington, DC 20314 27 Apr 73

TO: Division Engineer, Southwestern

Approved as recommended in the preceding 1st Indorsement.

FOR THE CHIEF OF ENGINEERS:

wd incl

for IRWIN REISLER
Chief, Planning Division
Directorate of Civil Works

SWDPL-R (SWTED-PE 11 Apr 73) 1st Ind
SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Revision of DM No. 3B, Public Use Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, Texas 75202 19 Apr 73

TO: HQDA (DAEN-CWP-V) WASH DC 20314

1. Forwarded recommending approval.

2. Additional information pertaining to developmental considerations of the project is as follows:

a. Rattan Landing and Frazier Point. As indicated on Plate 93/16.1 of the Master Plan, these areas are located within a proposed National Wildlife Refuge. In this regard, District personnel advise that development of these areas has been coordinated with the Bureau of Sport Fisheries and Wildlife.

b. Salt Creek Cove. As indicated on Plate 93/8.1 of the Master Plan, a camping area is planned in the portion of this site designated as a fee area. In view of current policies for capturing O&M costs through collection of user fees, there is some question as to the development of fee camping in this area, particularly located adjacent to a proposed State park. Also, city officials of Hugo have indicated interest in managing an area on the project and the Salt Creek Cove area is best located for their use and management. In view of the above, development of the camping area will be deferred pending further discussion with Hugo officials and determination as to whether they would be willing to administer the camping area as well as the day-use facilities presently planned.

c. District personnel have advised that construction costs will not change appreciably due to the revisions required here to implement the fee program. Accordingly, submission of a revised cost estimate is not considered necessary.

3. In accordance with paragraph 7 of the basic letter, it is requested that action on this correspondence be expedited.

FOR THE DIVISION ENGINEER:

1 Incl
wd 4 cys

EDWARD R. BARE
for Chief, Planning Division

CF:
SWTED-PE

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA OKLAHOMA 74102

28

SWTED-PE

11 April 1973

SUBJECT: Hugo Lake, Kiamichi River, Oklahoma, Revision to DM No 3B, Public Use Plan

Division Engineer, Southwestern
ATTN: SWDPL-R

1. Reference:

a. DAEN-CWO-R message, 16 March 1973, subject: Achievement of Recreation Construction.

b. SWDPL-R message dated 6 April 1973, subject: Achievement of Recreation Construction.

c. letter SWTED-PD, dated 9 April 1973, subject: Advancement of Recreation Facilities for FY 73.

2. Subject revision is submitted for review and approval in accordance with references 1a and 1b.

3. Reference 1c transmitted cost of proposed work for this project.

4. The inclosed marked drawing presents the proposed plan to accommodate CMB policy for recapture O&M cost through collection of use fees at this project. The plan as approved in the subject DM foresaw the possibility of fees for camping. Therefore, the plan for development is compatible with current CMB policy.

5. The method of collecting fees in the designated areas will be by the "Roving Ranger" except for Salt Creek Cove and Rattan Landing areas where the "Honor System" will be utilized. The group camping areas in Twin Coves will be managed on a reservation basis from the project office.

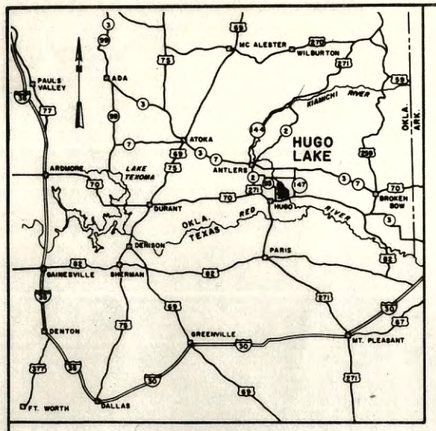
6. The Master Plan (Public Use Plan) will be updated in FY 75 to include this plan of development to recapture operation and maintenance cost.

7. Please expedite. The advertising date is scheduled for 2 May 1973 and bid opening is scheduled for 31 May 1973.

FOR THE DISTRICT ENGINEER:

1 Incl (9 cys)
as

EDDIE L. MORRIS
Lieutenant Colonel, CE
Deputy District Engineer



LOCALITY MAP
SCALE OF MILES
5 0 5 10

T 4 S T 5 S
T 5 S T 6 S
R 19 E
R 18 E
R 17 E
T 2 S T 3 S
T 3 S T 4 S
T 6 S

SAWYER BLUFF
TWIN COVES
(VIRGIL POINT)
(WILSON POINT)
(GROUP CAMPING AREAS)
FUTURE HUGO WATER TREATMENT PLANT
SAWYER
BRIDGE VIEW
KIAMICHI PARK
FALLEN
FRAZIER POINT
RATTAN
SALT CREEK COVE
RATTAN LANDING
BELZONI
MESSER
SIMMATAHA
LOCTAW
HUGO
FINLEY
CEDAR
RIVER
CREEK

Area	Camping (Initial & Future)	Picknicking (Initial & Future)	Ramp	Primitive Camp
Rattan Landing	—	Fee *	Free	—
Frazier Point	—	Free	Free	—
Salt Creek	Fee	Free	Free	—
Kiamichi Park	Fee *		Fee *	Free
Kiamichi Park	—	Fee *	Free	—
Sawyer Bluff	—	Free	Free	—
Twin Coves				
Wilson Point	—	Fee	Fee	—
Virgil Point	Fee	—	Fee	—
Group Camp	Fee	—	—	—

* Fee until management is assumed by Fish & Wildlife Service or State of Oklahoma.

FREE

FEE

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

PUBLIC USE PLAN

SCALE OF MILES
1 3/4 1/2 1/4 0

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

Incl.

1400-DM3B-93/2.1

AUG., 1972

SWDPL-R (SWTED-AD 10 Nov 72) 3d Ind
SUBJECT: Hugo Lake, Kiamichi River, Okla., Supplement No. 1 to DM No. 3B, Public Use Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, Texas 75202 30 JAN 1973

TO: District Engineer, Tulsa

Approved subject to comments contained in the 1st Ind.

FOR THE DIVISION ENGINEER:

HOWARD R. BARE
Chief, Planning Division

1 Incl
wd 2 cys

CF:
DAEN-CWP-V w 2 cys
incl

DAEN-CWP-V (10 Nov 72) 2nd Ind
SUBJECT: Hugo Lake, Kiamichi River, Okla., Supplement No. 1 to DM No. 3B, Public Use Plan

DA, Office of the Chief of Engineers, Washington, DC 20314 19 Jan 73

TO: Division Engineer, Southwestern

1. Review of preceding indorsement and basic correspondence indicates that this supplement would appropriately be approved at Division level as prescribed in DAEN-CWP-V teletype dated 10 January 1972, "Delegation of Authority."

2. As requested in cited teletype, two copies of the approved supplement should be provided for insertion in OCE Record copies of the Master Plan.

FOR THE CHIEF OF ENGINEERS:

Norman E. Jacobsen
for IRWIN REISLER
Chief, Planning Division
Directorate of Civil Works

1 Incl (5 cys)
nc

SWDPL-R (SWTED-AD 10 Nov 72) 1st Ind
SUBJECT: Hugo Lake, Kiamichi River, Okla, Suppl No 1 to DM No 3B, Public Use Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, Texas 75202 8 January 1973

TO: HQDA (DAEN-CWP-V) WASH DC 20314

Forwarded recommending approval subject to the following:

a. Paragraph 4e, Salt Creek Cove, page 6. Since part of the area is below the 2-year frequency flood (elev. 414.0), we do not concur with the recommendation that the area served by road "D" should be developed as a camping area. The site layout plan (Drawing 1400-DM3B-93/8.1) should be revised accordingly.

b. Appendix I. Since the flood stages in the upper extremities of the reservoir (in the vicinity of Rattan Landing and perhaps Frazier Point) will be considerably higher than the reservoir level in the vicinity of the dam, a writeup should be included in this appendix explaining the duration curves and their area of applicability. This should be accomplished in future updating of the master plan.

c. Drawings

(1) Drawing No. 1400-DM3B-93/6.1. Development of the northern most loop road requires traffic to drive through the camping area to get to the beach and picnic areas. The layout should be revised providing separation of uses and subsequent ease in collection of camping fees.

(2) Drawing No. 1400-DM3B-93/11.1. The location of the "area for playground equipment" is too removed from the other development and presents a safety hazard, requiring children to cross road "H". In view of the above, it is recommended that the playground equipment area be relocated to the north of road "H", possibly between the two camping areas. Also, regarding this and other proposed playground areas, planned development should include a specific play area for smaller children (Kindergarten age and younger).

(3) Drawing Nos. 1400-DM3B-93/15.1, 16.1 and 17. Future updating actions submitted on this DM should include land use allocations in accordance with Change 1 to ER 1120-2-400.

(4) Drawing 1400-3B-93/20. Reference is made to paragraph 3a of Appendix A to EM 1110-2-400 and M/L SWDPL-R/SWDED-T dated 15 December 1970, subject: Standard Plans, Boat Launching Ramps - SWD. The single ramp width should be reduced to 14 feet in accordance with design criteria referenced above.

SWDPL-R (SWTED-AD 10 Nov 72) 1st Ind 8 January 1973
SUBJECT: Hugo Lake, Kiamichi River, Okla, Suppl No 1 to DM No 3B, Public Use Plan

(5) Drawings, general.

(a) It is noted from Supplement No. 1 to DM No. 5 that the exterior of the Administration and Maintenance Building is face brick and the Overlook and Comfort Station is ledge stone. The painted CMU is not harmonious with other project buildings or the environment and is a constant maintenance problem. In view of the above, facing brick, ledge stone or split face block should be used in lieu of CMU on the changehouse and masonry toilet buildings. Also, consideration should be given to using a 3 on 12 or 4 on 12 pitched roof with shingles on these buildings.

(b) Epoxy coating should be used for all masonry interiors and delete 6' GSFU.

(c) Wood routed signs should be used for "Men" and "Women" on changehouse and toilet structures.

FOR THE DIVISION ENGINEER:

HOWARD R. BARE
Chief, Planning Division

1 Incl
wd 4 cys

CF:
DE, Tulsa

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74102

'28

SWTED-AD

10 November 1972

SUBJECT: Hugo Lake, Kiamichi River, Okla, Suppl No 1 to DM No 3B, Public Use Plan

Division Engineer, Southwestern
ATTN: SWDPL-R

Subject supplement is submitted for review and approval.

FOR THE DISTRICT ENGINEER:

1 Incl (9 cys)
as

M. W. DEGEER
Chief, Engineering Division

35 copies prepared

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SUPPLEMENT NO. 1
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

DEPARTMENT OF THE ARMY
TULSA DISTRICT CORPS OF ENGINEERS
OKLAHOMA
NOVEMBER 1972

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SUPPLEMENT NO. 1
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

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EXHIBIT INDEX

APPENDIX INDEX

DRAWING INDEX

TABLE OF CONTENTS (CON.)

DRAWING INDEX (CON.)

Drawing	Title	Photo No.
1400-DM3B-93/29	Waterborne Toilet Building	
93/30	Trailer Sanitary Station	
93/31	Water Supply	
93/32	Typical Roadway Sections	
93/33	Drainage Structures	
93/34	Playground Layout I	
93/35	Playground Layout II	
93/36	Playground Layout III	
93/37	Playground Layout IV	

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SUPPLEMENT NO. 1
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

1. Purpose. - The purpose of this supplement is to provide additional design details, to add a group camping area, to revise the location of the Frazier Point public-use area, to revise the location of facilities in certain public-use areas, and to revise the utilization plan of project lands and waters. See drawing 93/2.1 for the public-use plan.

2. Description of public-use areas.

a. Rattan Landing (drawings 93/3.1 and 93/3A). - This area is bounded on the north by Oklahoma State Highway 3 and 7 and is located on the left bank of the Kiamichi River. A deep ditch divides and screens this area into two segments. Each segment is relatively flat but drops off sharply near the ditch and near the banks of the river. The tree cover along the ditch and near the river is sufficient; however, the flat areas are being used as pasture lands. This area contains 60 acres delineated for development as a public-use area and is in the upper end of the planned Federal wildlife refuge.

b. Frazier Point (drawings 93/4.1 and 93/4A.1). - Access to this scenic wooded area on the Frazier Creek arm of the lake will be from the relocated Oklahoma State Highway 93. The terrain in this area changes from a steep rocky slope along the southern and eastern boundaries to a flat flood plain near the banks along Frazier Creek. The tree cover in this area is excellent and the wildlife habitat is plentiful. This area is within the area designated as a Federal wildlife refuge and the 285 acres delineated within this area for public use will function as a integral part of this refuge.

c. Sawyer Bluff (drawings 93/5.1 and 93/5A). - Access to this area will be from the left abutment access road. The terrain is characterized by very sharp dropoffs which expose layers of limestone. These dropoffs produce plateaus which will provide the visitor with an excellent vantage point from which to view the lake. The tree cover on the northern two-thirds of the area is good and is only interrupted by areas where limestone outcroppings and varied depths of overburden have produced a variety of tree sizes. A borrow area at the south end of the area between the embankment and the lake

will require screening and erosion protection. This area contains 280 acres that will be utilized as a day-use area and will contain the overlook and comfort station.

d. Twin Coves (Wilson Point, Virgil Point, and group camping area).

(1) Wilson Point (drawings 93/6.1 and 93/6A). - Access to this area will be from Oklahoma State Highway 147 (gravel). The terrain in this area is rolling and the landscape is dotted with farm ponds and small lakes. The grass cover over most of the area is excellent. The tree cover is limited to the areas around the ponds and lakes. The small lakes within the area are in good condition and will be conserved and maintained. With the excellent grass cover, small lakes, and limited tree cover, the area is aesthetically pleasing and gives the viewer the feeling of being within a golf course. Of special interest in this area are the artesian wells, located just west of Oklahoma State Highway 147, which have been providing a constant flow of drinking water for many years. This area contains 476 acres that will be developed as a day-use area in conjunction with Virgil Point (all camping) and the group camping area.

(2) Virgil Point (drawing 93/7.1). - Access to this camping area will be from Oklahoma State Highway 147 (gravel) via a short section of graveled county road. The terrain is rolling, with some eroded areas along the western slopes of this designated area. Where the access road enters this area, the terrain is relatively flat and has been cleared and used as pasture land. However, most of the area is covered with a dense growth of hardwood trees. This area contains 481 acres that will be developed as a camping area in conjunction with Wilson Point and the group camping area.

(3) Group camping area (drawings 93/18 and 93/18A). - Access to this area will be from Oklahoma State Highway 147, via 1-3/4 miles of county road connecting with a short section of gravel public-use road that will be constructed to link sections of an existing county road. The terrain is rolling, with areas that have extreme erosion problems. Some of the eroded areas will be repaired and the erosion checked. The remainder will add aesthetically to the foot trail system to be provided with this development. Most of the area has been cleared of trees, and the areas that are to be developed have an excellent grass cover. The south shoreline has a gentle slope, and the soil contains enough sand to provide an excellent natural swimming beach. This area contains 213 acres designated for development as group camping areas.

e. Salt Creek Cove (drawings 93/8.1 and 93/8A). - Access to this area will be from Oklahoma State Highway 93, via three-fourths mile of county road. The terrain is rolling, with a few steep slopes where layers of limestone have outcropped. Most of the area has small fossilized limestone lying on the ground surface. The tree cover varies from bushes intermingled with saw vines to

very large trees completely free from underbrush. Extensive underbrush clearing will be required near the boat ramp. The existing creek bottom is rocky and will develop into an excellent fishing area. This area contains 418 acres designated for public-use development.

f. Kiamichi Park (drawings 93/9.1, 93/9A, 93/10.1, 93/10A, 93/11.1, 93/11A, 93/12.1, 93/12A, 93/13.1, and 93/13A). - Access to this 2,662-acre public-use area will be from U.S. Highway 70, then three-fourths mile of county road. The terrain is rolling, with several steep slopes which were created by erosion and exposed layers of limestone. Rock outcroppings are common throughout the entire area. The tree cover is heavy over approximately one-half of the area. The remainder has a cover of tall grasses. Several select areas are infested with saw vines and heavy underbrush, and in some areas wild rose vines grow in the tall grasses and in the underbrush. This large area is divided by a small scenic creek. The terrain and tree cover east of the creek (except for an area set aside for primitive camping) are conducive to development of a day-use area. The area on the west side of the creek has a heavier tree cover. Generally, the trees are larger and will be very conducive to development of camping areas.

g. Bridge View (drawings 93/14.1 and 93/14A). - This area gives access to both sides of the stilling basin. Access to the west bank will be from U.S. Highway 70, through the existing overlook area. Access to the east bank will be from the left abutment access road. The area will be bare of trees except those that were planted around the existing construction overlook and comfort station. The steps and fishing berms for this area were constructed as part of the embankment and spillway and are existing. This area contains 38 acres below the dam delineated for public use.

3. Scope of work.

a. Rattan Landing (drawing 93/3.1). - The revision to this area consists of separating the boat ramp from the parking area, providing an access lane and two maneuvering areas to accommodate this revised ramp, and revising the alignment of road "B" which crosses the drainage ditch.

b. Frazier Point (drawing 93/4.1). - This area has been moved upstream to the Frazier Creek arm of the lake. The number of picnic tables at this new site has been reduced from 10 to six in the initial development and tables in the future development have been deleted. In addition, the wood vault toilets have been reduced to two units. An extensive nature trail system has been adapted to the revised site. The previous area, which was determined to be subject to frequent flooding, will be available for the Fish

and Wildlife Service to develop for nature studies. The revised location of the boat ramp requires the addition of an access lane and maneuvering areas to aid in the launching of boats from this ramp.

c. Sawyer Bluff (drawing 93/5.1). - The revision to this public-use area consists of realignment of road "C", revising the parking area on road "B", and sloping the top of the dike adjacent to the boat ramp.

d. Twin Coves (Wilson Point, Virgil Point, and group camping area).

(1) Wilson Point (drawing 93/6.1). - The revision to this public-use area consists of draining several small ponds and the realignment of the picnic roads to a higher elevation. In addition, playground equipment has been added to the open area near the beach.

(2) Virgil Point (drawing 93/7.1). - The revision to this public-use area consists of shifting the ramp, dike, and parking area. The ramp has been revised to provide an access lane and maneuvering area close to the water surface, and the bottom elevation of the ramp has been raised. In addition, a gravel road extending from Oklahoma State Highway 147 to the artesian wells was added, including a parking area.

(3) Group camping area (drawing 93/18). - This is a new area. The facilities to be provided in each group camping site include a group picnic shelter, one large cooker or three small pedestal fireplaces, a water well, a set of wood vault toilets, a large gravel parking area, and electrical outlets. Tent pads will not be required since the entire area around the sites is suited for this use. In addition to the individual development at each site, changehouses, trails, and a set of playground equipment are to be provided to complete the overall camping area.

e. Salt Creek Cove (drawing 93/8.1). - The revisions to this public-use area consist of changing name from Salter Creek Cove to Salt Creek Cove, raising the lower end of the ramp, redesigning the area to separate camping from picnicking, and moving most of the camping sites to an elevation above the 5-year-frequency flood contour.

f. Kiamichi Park (drawings 93/9.1 through 93/13.1). - The revisions to this area consist of a minor realignment of road "A", realignment of the parking area on road "C", the addition of road "U" and including this road (and area) as a part of the concession area, the addition of playground equipment in two areas, the addition of marine sanitary stations, the paving of the bicycle trails, the raising of the top elevation of the creek crossing, the addition of an emergency access road, deletion of a future camping loop just north of the ramp on road "H", and the restrictive zoning of the lake surface upstream of the creek crossing to non-power boats.

g. Project utilization (drawings 93/15.1, 93/16.1, and 93/17). - The utilization plan for this project has been revised to indicate the addition of the group camping area, the deletion of the quasi-public group areas, the expansion of the concession area, and the movement of Frazier Point public-use area.

h. Facility plans. - Details of planned facilities are shown on drawings 93/20 through 93/37.

4. Justification.

a. Rattan Landing. - The Fish and Wildlife Service is planning to manage this public-use area after construction as a part of the proposed wildlife refuge. This agency requested that the boat ramp in this area be deleted (see their letter dated 3 May 1971 in exhibit A of the design memorandum). However, upon further coordination, this agency agreed that a revised ramp location and access system would be acceptable. The separate access road and maneuvering areas to the ramp provide the control over the use of this facility that this agency desired. Skiing will be prohibited within the general area of Rattan Landing due to the lack of sufficient open water necessary for this type of water sport. The change in the alignment of road "B" was made to shorten the length of this road. Exhibit A of this supplement includes a letter dated 16 August 1972 from the Fish and Wildlife Service concurring with the changes planned for Rattan Landing and Frazier Point.

b. Frazier Point. - Additional topography obtained in this area indicated that the previously proposed site would be subject to flooding on the average of once each year. For this reason, the area has been moved upstream onto the Frazier Creek arm of the lake. This revised location has been coordinated with the Fish and Wildlife Service, and this agency agreed to the revised location of this area. Sedimentation near the mouth of Frazier Creek may require future restrictions for boating within this area. The reduction in the number of facilities was required because the design concept for this area was changed from primarily one of picnicking to one directed toward wildlife with limited facilities provided for picnicking. A system of nature trails has been added to provide additional emphasis upon wildlife within this area. The previous area will be available for the Fish and Wildlife Service to develop for nature studies. The revised location of the boat ramp required that an access lane and maneuvering areas be provided to aid in the launching of boats from this long boat ramp.

c. Sawyer Bluff. - The revision of the parking area location was made to provide parking closer to the boat ramp and to the dike. The fishing from the top of this dike is expected to be good; therefore, the quarry-run stone along the top of the dike will be choked and sloped parallel to the slope of the ramp to provide a fishing dike. The sloping of the top of the dike will reduce the cost of constructing this facility. The change in the alignment of road "C" was made to keep the road out of an exceptionally scenic area while still developing the area to its potential.

d. Twin Coves (Wilson Point, Virgil Point, and group camping area).

(1) Wilson Point. - As a result of comments contained in 1st Ind. SWDPL-R, to letter SWTED-AD, dated 9 July 1971, subject: Hugo Lake, Kiamichi River, Okla., DM No. 3B, Public Use Plan, several small ponds are to be drained and the alignment of the roads moved to a higher elevation. In addition, a survey of the facilities to be provided within this day-use area indicated a need for playground equipment. This supplement proposes the addition of this equipment within the initial loop (road "B") and near the beach. The playground equipment proposed is relatively vandalproof and has a life approximately equal to that of the project.

(2) Virgil Point. - The parking area, ramp, and dike have been revised to reduce the impact of these facilities upon the terrain and to reduce the quantities of construction materials required. In addition, the ramp was not extended down to elevation 390.0 because the existing creek channel at this elevation was too narrow to permit safe boating and the channel leading to the lake from this ramp passed in front of the double ramp in the Wilson Point public-use area. The access road to the artesian wells will permit public access to this natural phenomenon.

(3) Group camping area. - This new area was added in accordance with subparagraph b(3) of 1st Ind. SWDPL-R and subparagraph d of 2d Ind. DAEN-CWP-V to letter SWTED-AD, dated 9 July 1971, subject: Hugo Lake, Kiamichi River, Okla., DM No. 3B, Public Use Plan, after a field investigation indicated that this scenic area could be developed and managed by the Corps to serve this need. The facilities to be provided at each site are considered a minimum development for a group camping area. The changehouses, trails, and playground equipment are facilities proposed for common use and will provide a well rounded experience to the groups using this area.

e. Salt Creek Cove. - As a result of a comment from U.S. Geological Survey indicating that the name of the creek for which this area is named was Salt Creek rather than Salter Creek, the name of this area was changed to Salt Creek Cove. As a result of comments contained in subparagraphs a and b of 2d Ind. DAEN-CWP-V to letter SWTED-AD, dated 9 July 1971, subject: Hugo Lake, Kiamichi River, Okla., DM No. 3B, Public Use Plan, the road alignments were revised to separate camping from picnicking and to move most of the camping site to an elevation above the 5-year-frequency flood contour. However, as a result of field investigation, it was determined that the area served by road "D" should be developed as a camping area, even though it is below the 5-year-frequency flood contour, because of its exceptional scenic view and the large trees available for shade. In addition, the bottom elevation of the ramp was raised to match the elevation of the creek channel bed.

f. Kiamichi Park. - As a result of field surveys, minor revisions were made to the road alignments. Road "U" was added

to provide access to the creek upstream of the crossing. The concessionaire will utilize this access to this restricted section of the lake to provide and rent non-power boats (paddle boats, canoes, etc.). As a result of a hydraulic study, the top elevation of the creek crossing was raised from elevation 421.0 to elevation 426.0. A 96-inch coated corrugated metal pipe was required with an invert elevation of 390.0, and a 200-foot section of concrete surfacing, designed to be overtopped, was required to control floods and to prevent damage to the roadway surfacing up to the 8-year flooding frequency on an average. To provide emergency access to the camping sites in Kiamichi Park, road "H-1" was added. This road will be barricaded to prevent use except during emergencies. A future camping loop north of the ramp on road "H" was deleted when a field investigation indicated that construction of the proposed facilities would have an adverse impact upon this area and that this area could be better utilized if it remained undeveloped. Playground equipment was added to two areas within this park for common use and to provide a well rounded experience to the users of this area. A re-evaluation of the bicycle trails led to a recommendation for paving these paths. The addition of marine sanitary dump stations at the double ramps within this area are being made in accordance with EM 1110-2-400.

g. Facility plans (drawings 93/20 through 93/37). - As a result of comments contained in 1st Ind. SWDPL-R to letter SWTED-AD, dated 9 July 1971, subject: Hugo Lake, Kiamichi River, Okla., DM No. 3B, Public Use Plan, facility plans are included as referred to in subparagraph 3h of this supplement. Costs of facilities not included in these details were based upon similar features of work as included on other Corps of Engineers projects.

h. Project utilization. - As a result of comments contained in 1st Ind. SWDPL-R, subparagraph b(3), and 2d Ind. DAEN-CWP-V, subparagraph d, to letter SWTED-AD, dated 9 July 1971, subject: Hugo Lake, Kiamichi River, Okla., DM No. 3B, Public Use Plan, the group camping area was added to the planned public-use development; thus eliminating the need for the two areas designated as priority two lands. The remainder of the utilization changes were made to reflect changes in the individual public-use areas. The portion of the conservation pool where clearing was limited to fishing lanes or clearing for relocated highways has been zoned as indicated by legend on drawings 93/15.1 and 93/16.1. A revised summary of land use allocation is shown in table 1 below.

TABLE 1

LAND USE ALLOCATION

Drawing	Area designation	Acreage from fee boundary to normal pool (elevation 404.5)
	1. Public use	
	a. Developed areas	
93/3.1	1 Rattan Landing	60
93/4.1	2 Frazier Point	285
93/5.1	3 Sawyer Bluff	280
	4 Twin Coves	
93/6.1	Wilson Point	476
93/7.1	Virgil Point	481
93/18	Group camping area	213
93/8.1	5 Salt Creek Cove	418
93/9.1 through 93/13.1	6 Kiamichi Park	2,662
93/14.1	7 Bridge View (below dam)	38
	Subtotal	4,913
	b. Scenic areas, undeveloped	3,701
	2. Wildlife management	
93/15.1, 19/16.1, and 93/17.1	a. Wildlife refuge	(1)14,051
	b. Game management area	3,800
	3. Operation and maintenance	374
	Total	26,839

(1) Excludes 345 acres included in Rattan Landing and Frazier Point.

5. Recommendation. - I recommend that this supplement be approved as presented herein.

FOR THE DISTRICT ENGINEER:

M. W. DEGEER
Chief, Engineering Division

EXHIBIT A

CORRESPONDENCE

IN REPLY REFER TO:RF

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
POST OFFICE BOX 1306
ALBUQUERQUE, NEW MEXICO 87103

August 16, 1972

District Engineer
Department of the Army
Tulsa District, Corps of Engineers
Post Office Box 61
Tulsa, Oklahoma 74102

Attention: Mr. Tony Kramer
Engineering Division - Planning

Dear Sir:

This letter is to confirm the Bureau's concurrence with your planned locations for Frazier Point and Rattan Landing public use areas as indicated in Mr. Degeer's letter to us of May 10, 1972 and as discussed by telephone by our respective staffs prior and subsequent to the above date. I understand that this change in plan was required when improved topographic information indicated a shoreline somewhat different than previously anticipated.

I also concur in the other expressions in the May 10 correspondence regarding recreational planning on the proposed refuge portion of Hugo Lake.

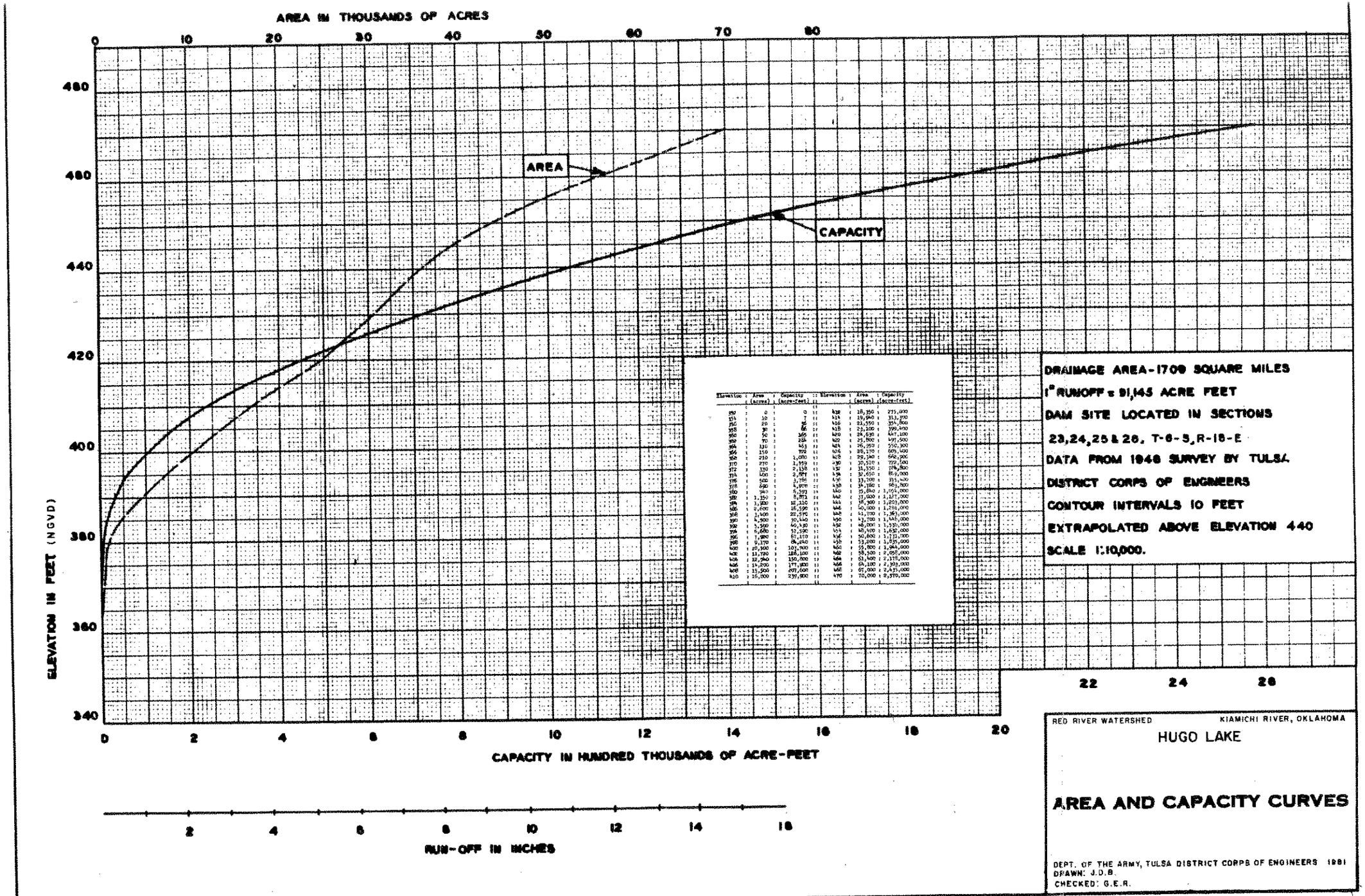
Sincerely yours,

William R. Hutt

Deputy Regional Director

APPENDIX I

POOL ELEVATION PROBABILITY AND DURATION CURVES AND AREA AND CAPACITY CURVE



Elevation	Area (acres)	Capacity (acre-feet)	Elevation	Area (acres)	Capacity (acre-feet)
350	0	0	428	18,350	275,000
351	10	7	434	19,940	313,700
352	20	26	436	21,550	354,800
353	30	66	438	23,205	399,400
354	50	166	440	24,895	447,100
355	70	289	442	25,800	497,500
356	110	453	444	26,950	550,300
357	150	708	446	28,170	605,400
358	210	1,085	448	29,340	662,300
359	270	1,559	450	30,510	720,700
360	330	2,156	452	31,550	779,800
361	400	2,867	454	32,650	839,900
362	460	3,756	456	33,700	901,400
363	530	4,974	458	34,780	963,800
364	640	6,393	460	35,840	1,026,900
365	1,150	8,873	462	37,020	1,091,000
366	1,920	12,310	464	38,300	1,203,800
367	2,600	16,590	466	40,000	1,219,000
368	3,400	22,590	468	41,700	1,361,000
369	4,500	30,140	470	43,700	1,445,000
370	5,500	40,130	472	46,000	1,530,700
371	6,600	52,390	474	48,400	1,632,000
372	7,980	67,110	476	50,800	1,111,000
373	9,170	84,260	478	53,200	1,859,000
374	10,360	103,700	480	55,800	1,944,000
375	11,790	124,100	482	58,500	2,035,000
376	12,960	146,800	484	61,400	2,135,000
377	14,200	171,800	486	64,100	2,243,000
378	15,500	197,000	488	67,000	2,431,000
380	18,200	299,900	490	70,000	2,370,000

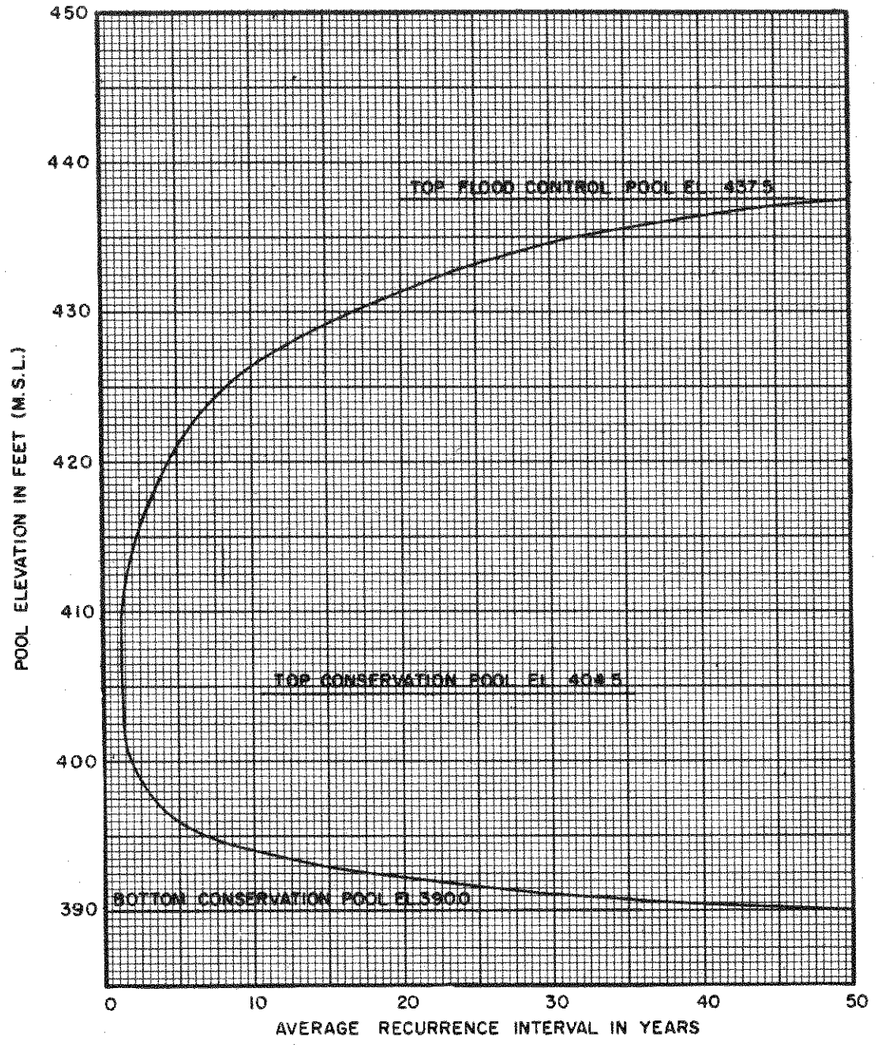
DRAINAGE AREA-1709 SQUARE MILES
1" RUNOFF = 91,145 ACRE FEET
DAM SITE LOCATED IN SECTIONS
23,24,25 & 26, T-6-S, R-18-E
DATA FROM 1948 SURVEY BY TULSA
DISTRICT CORPS OF ENGINEERS
CONTOUR INTERVALS 10 FEET
EXTRAPOLATED ABOVE ELEVATION 440
SCALE 1:10,000.

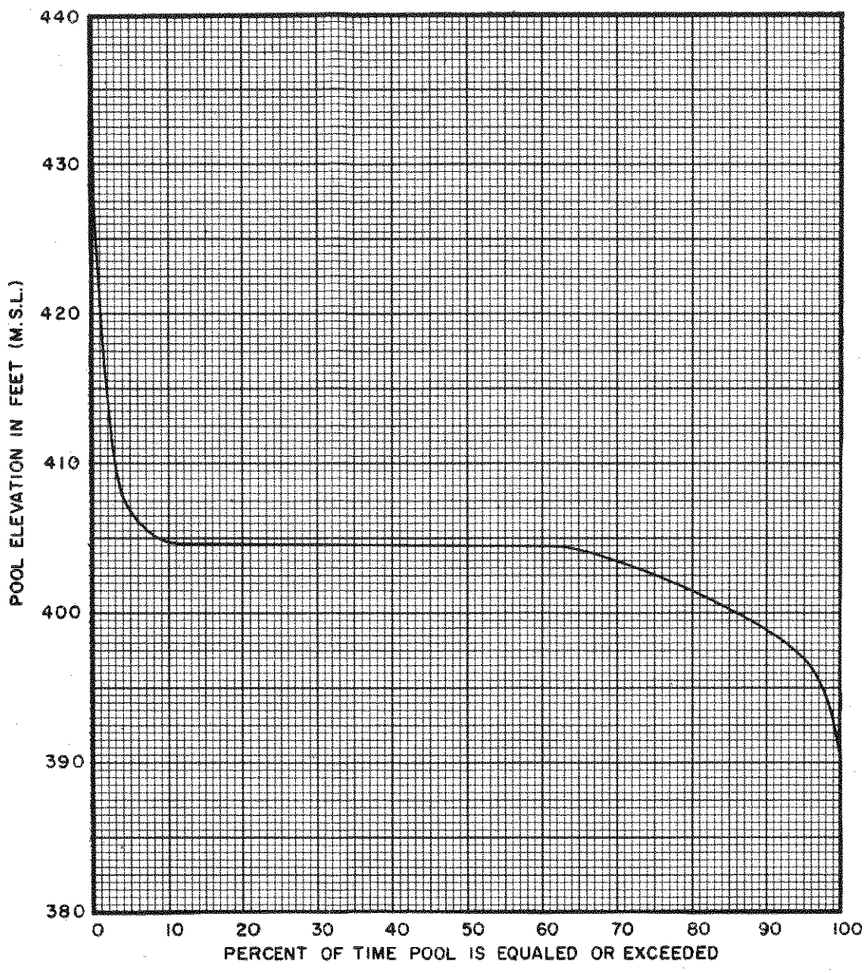
RED RIVER WATERSHED KIAMICHI RIVER, OKLAHOMA

HUGO LAKE

AREA AND CAPACITY CURVES

DEPT. OF THE ARMY, TULSA DISTRICT CORPS OF ENGINEERS 1981
DRAWN: J.D.B.
CHECKED: G.E.R.





HUGO RESERVOIR
KIAMICHI RIVER, OKLAHOMA

POOL ELEVATION PROBABILITY AND DURATION CURVES

U. S. ARMY ENGINEER DIST., TULSA, CORPS OF ENGINEERS MAY 65
DRAWN: C.F.M.
CHECKED: E.B.S.

APPENDIX II

COST ESTIMATE

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SUPPLEMENT NO. 1
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

APPENDIX II - COST ESTIMATE

TABLE OF CONTENTS

TABLE INDEX

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SUPPLEMENT NO. 1
TO
DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

APPENDIX II - COST ESTIMATE

II-01. General. - This appendix presents the cost estimate of public-use facilities proposed in this supplement.

II-02. Estimate of cost. - The summary of the total estimated construction cost for development of facilities in the seven public-use areas is shown in table II-1. An itemized cost estimate for the proposed initial, future, and total development in each public-use area is shown in table II-2. A comparison between the estimate of cost contained in this supplement and the latest approved PB-3 estimate is shown in table II-3.

TABLE II-1

SUMMARY OF ESTIMATED COST FOR PUBLIC-USE DEVELOPMENT
(Based on August 1972 prices)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	Roads and parking areas								
	Machine grading, two-way roads	Sta.	310.00	970	300,700	101	31,310	1,071	332,010
	Machine grading, one-way roads	Sta.	275.00	398	109,450	167	45,925	565	155,375
	Machine grading, parking area	S.Y.	2.50	24,990	62,475	1,500	3,750	26,490	66,225
	Crushed stone	C.Y.	8.50	60,200	511,700	9,510	80,835	69,710	592,535
	Asphalt	Gal.	0.25	243,200	60,800	33,500	8,375	276,700	69,175
	Cover material, No. 1	C.Y.	12.00	5,530	66,360	890	10,680	6,420	77,040
	Cover material, No. 2	C.Y.	12.00	3,590	43,080	540	6,480	4,130	49,560
	Granular subbase	C.Y.	1.00	6,000	6,000	-	-	6,000	6,000
	Lime	Ton	32.00	2,417	77,344	532	17,024	2,949	94,368
	Borrow, roadway	C.Y.	0.60	204,550	122,730	15,850	9,510	220,400	132,240
	Bedding	C.Y.	6.50	2,100	13,650	-	-	2,100	13,650
	Riprap	C.Y.	7.50	6,000	45,000	-	-	6,000	45,000
	Stone, quarry-run	C.Y.	7.00	4,000	28,000	-	-	4,000	28,000
	Drainage structures								
	Pipe, metal, galvanized, 18"	L.F.	6.00	382	2,292	118	708	500	3,000
	Pipe, metal, galvanized, 24"	L.F.	7.50	530	3,975	-	-	530	3,975
	Pipe, metal, galvanized, 36"	L.F.	15.00	226	3,390	44	660	270	4,050

TABLE II-1 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Drainage structures (con.)								
	Pipe, metal, galvanized, 48"	L.F.	26.00	130	3,380	-	-	130	3,380
	Pipe, metal, galvanized, 96"	L.F.	80.00	234	18,720	-	-	234	18,720
	Low water crossing	Each	700.00	22	15,400	7	4,900	29	20,300
	Boat ramps, double	Each	13,000.00	4	52,000	-	-	4	52,000
	Boat ramps, single	Each	8,000.00	2	16,000	-	-	2	16,000
	Boat ramps, single, w/maneuvering area	Each	10,000.00	3	30,000	-	-	3	30,000
	Boat docks	Each	3,200.00	8	25,600	-	-	8	25,600
	Dikes								
	Borrow	C.Y.	0.60	35,400	21,240	-	-	35,400	21,240
	Stone, quarry-run	C.Y.	7.00	7,390	51,730	-	-	7,390	51,730
	Stone, choked quarry-run	C.Y.	9.00	900	8,100	-	-	900	8,100
	Buoys	Each	150.00	16	2,400	-	-	16	2,400
	Water supply	Job	L.S.	-	300,200	-	43,200	-	343,400
	Toilets								
	Waterborne, w/shower	Each	37,000.00	5	185,000	2	74,000	7	259,000
	Waterborne	Each	35,000.00	6	210,000	1	35,000	7	245,000
	Masonry vault	Each	16,000.00	13	208,000	6	96,000	19	304,000
	Wood vault	Each	2,100.00	26	54,600	10	21,000	36	75,600

TABLE II-1 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Changehouse, w/shower	Each	4,500.00	5	22,500	4	18,000	9	40,500
	Trailer sanitary station, w/vault	Each	2,500.00	2	5,000	1	2,500	3	7,500
	Trailer sanitary station, waterborne	Each	3,000.00	1	3,000	-	-	1	3,000
	Marine sanitary dump station	Each	9,000.00	2	18,000	-	-	2	18,000
	Sewage treatment system	Job	L.S.	-	93,300	-	47,300	-	140,600
	Electrical system	Job	L.S.	-	126,350	-	24,650	-	151,000
	Camping, pulloff unit, gravel	Each	650.00	179	116,350	121	78,650	300	195,000
	Picnic facilities								
	Tables, w/pad	Each	250.00	153	38,250	73	18,250	226	56,500
	Fireplaces, pedestal	Each	100.00	165	16,500	73	7,300	238	23,800
	Firepits	Each	75.00	25	1,875	-	-	25	1,875
	Refuse cans	Each	100.00	125	12,500	40	4,000	165	16,500
	Shelters, group	Each	5,000.00	10	50,000	-	-	10	50,000
	Shelters, individual	Each	650.00	11	7,150	-	-	11	7,150
	Paths								
	Bicycle trails, paved, 4'	L.F.	1.25	16,664	20,830	-	-	16,664	20,830
	Foot trails, gravel or wood chip, 4'	L.F.	0.40	80,275	32,110	6,950	2,780	87,225	34,890
	Walks, paved, 3'	L.F.	3.50	3,418	11,963	740	2,590	4,158	14,553

TABLE II-1 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	(CON.)								
	Fishing walk	L.F.	4.50	1,300	5,850	-	-	1,300	5,850
	Fence, chain link, 4'	L.F.	3.00	2,000	6,000	-	-	2,000	6,000
	Removing chain link fence	L.F.	1.00	200	200	-	-	200	200
	Rock barrier	L.F.	2.50	1,700	4,250	-	-	1,700	4,250
	Beautification								
	Trees, shade	Each	40.00	1,238	49,520	-	-	1,238	49,520
	Trees, ornamental	Each	25.00	1,333	33,325	-	-	1,333	33,325
	Landscaping toilets	Each	500.00	40	20,000	14	7,000	54	27,000
	Clearing and cleanup	Job	L.S.	-	10,600	-	1,400	-	12,000
	Turfing and erosion control	Job	L.S.	-	21,000	-	-	-	21,000
	Grading and shaping large areas	Job	L.S.	-	3,500	-	-	-	3,500
	Beach	Job	L.S.	-	7,000	-	7,500	-	14,500
	Signs	Job	L.S.	-	21,490	-	2,900	-	24,390
	Playground equipment	Job	L.S.	-	35,000	-	7,500	-	42,500
	Barricade	Each	400.00	6	2,400	-	-	6	2,400
	Subtotal				3,455,953		721,677		4,177,630
	Contingencies, 12%+				412,047		87,323		499,370
	TOTAL, RECREATION FACILITIES				3,868,000		809,000		4,677,000

TABLE II-1 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
030.	ENGINEERING AND DESIGN				359,000		75,000		434,000
031.	SUPERVISION AND ADMINISTRATION				252,000		53,000		305,000
	TOTAL COST				4,479,000		937,000		5,416,000

TABLE II-2

DETAILS OF ESTIMATED COST FOR RECREATIONAL FACILITIES

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	Rattan Landing								
	Roads and parking areas								
	Machine grading, two-way roads	Sta.	310.00	23	7,130	-	-	23	7,130
	Machine grading, one-way roads	Sta.	275.00	24	6,600	-	-	24	6,600
	Machine grading, parking area	S.Y.	2.50	1,700	4,250	-	-	1,700	4,250
	Crushed stone	C.Y.	8.50	2,000	17,000	-	-	2,000	17,000
	Asphalt	Gal.	0.25	8,800	2,200	-	-	8,800	2,200
	Cover material, No. 1	C.Y.	12.00	200	2,400	-	-	200	2,400
	Cover material, No. 2	C.Y.	12.00	110	1,320	-	-	110	1,320
	Drainage structures								
	Pipe, metal, galvanized, 24"	L.F.	7.50	80	600	-	-	80	600
	Low water crossing	Each	700.00	2	1,400	-	-	2	1,400
	Boat ramps, single, w/maneuvering area	Each	10,000.00	1	10,000	-	-	1	10,000
	Boat docks	Each	3,200.00	1	3,200	-	-	1	3,200
	Buoys	Each	150.00	2	300	-	-	2	300
	Water supply	Job	L.S.	-	4,100	-	-	-	4,100
	Toilets, masonry vault	Each	16,000.00	2	32,000	-	-	2	32,000

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Rattan Landing (con.)								
	Electrical system	Job	L.S.	-	2,650	-	-	-	2,650
	Picnic facilities								
	Tables, w/pad	Each	250.00	12	3,000	10	2,500	22	5,500
	Fireplaces, pedestal	Each	100.00	12	1,200	10	1,000	22	2,200
	Refuse cans	Each	100.00	7	700	5	500	12	1,200
	Paths								
	Foot trails, gravel or wood chip, 4'	L.F.	0.40	1,200	480	-	-	1,200	480
	Walks, paved, 3'	L.F.	3.50	130	455	-	-	130	455
	Fishing walk	L.F.	4.50	1,300	5,850	-	-	1,300	5,850
	Beautification								
	Trees, shade	Each	40.00	73	2,920	-	-	73	2,920
	Trees, ornamental	Each	25.00	78	1,950	-	-	78	1,950
	Landscaping toilets	Each	500.00	2	1,000	-	-	2	1,000
	Clearing and cleanup	Job	L.S.	-	300	-	-	-	300
	Turfing and erosion control	Job	L.S.	-	800	-	-	-	800
	Signs	Job	L.S.	-	1,900	-	-	-	1,900
	Subtotal				115,705		4,000		119,705
	Contingencies, 12%+				13,095		500		13,595
	Total, Rattan Landing				128,800		4,500		133,300

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Frazier Point								
	Roads and parking areas								
	Machine grading, two-way roads	Sta.	310.00	53	16,430	-	-	53	16,430
	Machine grading, parking area	S.Y.	2.50	1,300	3,250	-	-	1,300	3,250
	Crushed stone	C.Y.	8.50	2,850	24,225	-	-	2,850	24,225
	Asphalt	Gal.	0.25	28,000	7,000	-	-	28,000	7,000
	Cover material, No. 1	C.Y.	12.00	300	3,600	-	-	300	3,600
	Cover material, No. 2	C.Y.	12.00	180	2,160	-	-	180	2,160
	Drainage structures								
	Pipe, metal, galvanized, 24"	L.F.	7.50	138	1,035	-	-	138	1,035
	Pipe, metal, galvanized, 36"	L.F.	15.00	50	750	-	-	50	750
	Boat ramps, single, w/maneuvering area	Each	10,000.00	1	10,000	-	-	1	10,000
	Boat docks	Each	3,200.00	1	3,200	-	-	1	3,200
	Buoys	Each	150.00	2	300	-	-	2	300
	Water supply	Job	L.S.	-	3,100	-	-	-	3,100
	Toilets, wood vault	Each	2,100.00	2	4,200	-	-	2	4,200
	Electrical system	Job	L.S.	-	5,200	-	-	-	5,200

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Frazier Point (con.)								
	Picnic facilities								
	Tables, w/pad	Each	250.00	6	1,500	-	-	6	1,500
	Fireplaces, pedestal	Each	100.00	6	600	-	-	6	600
	Refuse cans	Each	100.00	3	300	-	-	3	300
	Paths								
	Foot trails, gravel or wood chip, 4'	L.F.	0.40	10,300	4,120	-	-	10,300	4,120
	Walks, paved, 3'	L.F.	3.50	100	350	-	-	100	350
	Beautification								
	Landscaping toilets	Each	500.00	1	500	-	-	1	500
	Clearing and cleanup	Job	L.S.	-	800	-	-	-	800
	Turfing and erosion control	Job	L.S.	-	1,000	-	-	-	1,000
	Signs	Job	L.S.	-	1,900	-	-	-	1,900
	Subtotal				95,520		-		95,520
	Contingencies, 12%+				11,480		-		11,480
	Total, Frazier Point				107,000		-		107,000
	Sawyer Bluff								
	Roads and parking areas								
	Machine grading, two-way roads	Sta.	310.00	88	27,280	-	-	88	27,280

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Sawyer Bluff (con.)								
	Roads and parking areas (con.)								
	Machine grading, one-way roads	Sta.	275.00	19	5,225	-	-	19	5,225
	Machine grading, parking area	S.Y.	2.50	3,000	7,500	-	-	3,000	7,500
	Crushed stone	C.Y.	8.50	5,600	47,600	-	-	5,600	47,600
	Asphalt	Gal.	0.25	23,200	5,800	-	-	23,200	5,800
	Cover material, No. 1	C.Y.	12.00	540	6,480	-	-	540	6,480
	Cover material, No. 2	C.Y.	12.00	590	7,080	-	-	590	7,080
	Granular subbase	C.Y.	1.00	6,000	6,000	-	-	6,000	6,000
	Pipe, metal, galvanized, 18"	L.F.	6.00	128	768	-	-	128	768
	Boat ramps, single	Each	8,000.00	1	8,000	-	-	1	8,000
	Boat docks	Each	3,200.00	1	3,200	-	-	1	3,200
	Dikes								
	Borrow	C.Y.	0.60	10,400	6,240	-	-	10,400	6,240
	Stone, quarry-run	C.Y.	7.00	1,950	13,650	-	-	1,950	13,650
	Stone, choked quarry-run	C.Y.	9.00	170	1,530	-	-	170	1,530
	Buoys	Each	150.00	2	300	-	-	2	300
	Water supply	Job	L.S.	-	23,000	-	-	-	23,000
	Toilets, masonry vault	Each	16,000.00	3	48,000	-	-	3	48,000
	Sewage treatment system	Job	L.S.	-	5,500	-	-	-	5,500
	Electrical system	Job	L.S.	-	9,300	-	-	-	9,300

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	(CON.)								
	Sawyer Bluff (con.)								
	Picnic facilities								
	Tables, w/pad	Each	250.00	28	7,000	-	-	28	7,000
	Fireplaces, pedestal	Each	100.00	28	2,800	-	-	28	2,800
	Refuse cans	Each	100.00	23	2,300	-	-	23	2,300
	Shelters, group	Each	5,000.00	3	15,000	-	-	3	15,000
	Walks, paved, 3'	L.F.	3.50	444	1,554	-	-	444	1,554
	Fence, chain link, 4'	L.F.	3.00	400	1,200	-	-	400	1,200
	Beautification								
	Trees, shade	Each	40.00	50	2,000	-	-	50	2,000
	Trees, ornamental	Each	25.00	55	1,375	-	-	55	1,375
	Landscaping toilets	Each	500.00	3	1,500	-	-	3	1,500
	Clearing and cleanup	Job	L.S.	-	1,000	-	-	-	1,000
	Turfing and erosion control	Job	L.S.	-	2,000	-	-	-	2,000
	Signs	Job	L.S.	-	2,300	-	-	-	2,300
	Subtotal				272,482		-		272,482
	Contingencies, 12%+				31,818		-		31,818
	Total, Sawyer Bluff				304,300		-		304,300
	Wilson Point								
	Roads and parking areas								
	Machine grading, two-way roads	Sta.	310.00	62	19,220	3	930	65	20,150

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	Wilson Point (con.)								
	Roads and parking areas (con.)								
	Machine grading, one-way roads	Sta.	275.00	24	6,600	18	4,950	42	11,550
	Machine grading, parking area	S.Y.	2.50	2,300	5,750	-	-	2,300	5,750
	Crushed stone	C.Y.	8.50	4,250	36,125	570	4,845	4,820	40,970
	Asphalt	Gal.	0.25	17,700	4,425	1,900	475	19,600	4,900
	Cover material, No. 1	C.Y.	12.00	410	4,920	50	600	460	5,520
	Cover material, No. 2	C.Y.	12.00	250	3,000	30	360	280	3,360
	Drainage structures								
	Low water crossing	Each	700.00	1	700	1	700	2	1,400
	Boat ramps, double	Each	13,000.00	1	13,000	-	-	1	13,000
	Boat docks	Each	3,200.00	1	3,200	-	-	1	3,200
	Dikes								
	Borrow	C.Y.	0.60	7,000	4,200	-	-	7,000	4,200
	Stone, quarry-run	C.Y.	7.00	1,640	11,480	-	-	1,640	11,480
	Stone, choked quarry-run	C.Y.	9.00	210	1,890	-	-	210	1,890
	Buoys	Each	150.00	2	300	-	-	2	300
	Water supply	Job	L.S.	-	44,000	-	2,000	-	46,000
	Toilets								
	Waterborne	Each	35,000.00	1	35,000	-	-	1	35,000
	Masonry vault	Each	16,000.00	1	16,000	1	16,000	2	32,000
	Changehouse, w/shower	Each	4,500.00	1	4,500	-	-	1	4,500

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Wilson Point (con.)								
	Sewage treatment system	Job	L.S.	-	14,600	-	-	-	14,600
	Electrical system	Job	L.S.	-	5,800	-	750	-	6,550
	Picnic facilities								
	Tables, w/pad	Each	250.00	23	5,750	20	5,000	43	10,750
	Fireplaces, pedestal	Each	100.00	23	2,300	20	2,000	43	4,300
	Refuse cans	Each	100.00	12	1,200	8	800	20	2,000
	Shelters, individual	Each	650.00	10	6,500	-	-	10	6,500
	Paths								
	Foot trails, gravel or wood chip, 4'	L.F.	0.40	5,200	2,080	-	-	5,200	2,080
	Walks, paved, 3'	L.F.	3.50	50	175	100	350	400	525
	Fence, chain link, 4'	L.F.	3.00	400	1,200	-	-	400	1,200
	Rock barrier	L.F.	2.50	1,300	3,250	-	-	1,300	3,250
	Beautification								
	Trees, shade	Each	40.00	250	10,000	-	-	250	10,000
	Trees, ornamental	Each	25.00	251	6,275	-	-	251	6,275
	Landscaping toilets	Each	500.00	3	15,000	1	500	4	2,000
	Clearing and cleanup	Job	L.S.	-	200	-	-	-	200
	Turfing and erosion control	Job	L.S.	-	1,500	-	-	-	1,500
	Grading and shaping large areas	Job	L.S.	-	3,500	-	-	-	3,500

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Wilson Point (con.)								
	Beach	Job	L.S.	-	3,500	-	-	-	3,500
	Signs	Job	L.S.	-	1,900	-	200	-	2,100
	Playground equipment	Job	L.S.	-	11,100	-	3,000	-	14,100
	Subtotal				296,640		43,460		340,100
	Contingencies, 12%+				35,560		5,340		40,900
	Total, Wilson Point				332,200		48,800		381,000
	Virgil Point								
	Roads and parking areas								
	Machine grading, two-way roads	Sta.	310.00	83	25,730	5	1,550	88	27,280
	Machine grading, one-way roads	Sta.	275.00	43	11,825	20	5,500	63	17,325
	Machine grading, parking area	S.Y.	2.50	900	2,250	100	250	1,000	2,500
	Crushed stone	C.Y.	8.50	5,720	48,620	840	7,140	6,560	55,760
	Asphalt	Gal.	0.25	21,600	5,400	3,000	750	24,600	6,150
	Cover material, No. 1	C.Y.	12.00	550	6,600	80	960	630	7,560
	Cover material, No. 2	C.Y.	12.00	330	3,960	50	600	380	4,560
	Lime	Ton	32.00	243	7,776	51	1,632	294	9,408
	Borrow, roadway	C.Y.	0.60	11,750	7,050	950	570	12,700	7,620

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Virgil Point (con.)								
	Drainage structures								
	Pipe, metal, galvanized, 18"	L.F.	6.00	80	480	26	156	106	636
	Pipe, metal, galvanized, 24"	L.F.	7.50	32	240	-	-	32	240
	Low water crossing	Each	700.00	3	2,100	1	700	4	2,800
	Boat ramps, single, w/maneuvering area	Each	10,000.00	1	10,000	-	-	1	10,000
	Boat docks	Each	3,200.00	1	3,200	-	-	1	3,200
	Dikes								
	Borrow	C.Y.	0.60	5,000	3,000	-	-	5,000	3,000
	Stone, quarry-run	C.Y.	7.00	1,200	8,400	-	-	1,200	8,400
	Stone, choked quarry-run	C.Y.	9.00	170	1,530	-	-	170	1,530
	Buoys	Each	150.00	2	300	-	-	2	300
	Water supply	Job	L.S.	-	22,000	-	2,400	-	24,400
	Toilets								
	Waterborne, w/shower	Each	37,000.00	1	37,000	1	37,000	2	74,000
	Masonry vault	Each	16,000.00	1	16,000	-	-	1	16,000
	Trailer sanitary station, w/vault	Each	2,500.00	1	2,500	1	2,500	2	5,000
	Sewage treatment system	Job	L.S.	-	6,800	-	6,800	-	13,600
	Electrical system	Job	L.S.	-	6,700	-	1,200	-	7,900

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	(CON.)								
	Virgil Point (con.)								
	Camping, pulloff unit, gravel	Each	650.00	50	32,500	30	19,500	80	52,000
	Picnic facilities								
	Refuse cans	Each	100.00	3	300	1	100	4	400
	Paths								
	Foot trails, gravel or wood chip, 4'	L.F.	0.40	5,900	2,360	-	-	5,900	2,360
	Walks, paved, 3'	L.F.	3.50	100	350	50	175	150	525
	Fence, chain link, 4'	L.F.	3.00	400	1,200	-	-	400	1,200
	Beautification								
	Trees, shade	Each	40.00	150	6,000	-	-	150	6,000
	Trees, ornamental	Each	25.00	170	4,250	-	-	170	4,250
	Landscaping toilets	Each	500.00	2	1,000	1	500	3	1,500
	Clearing and cleanup	Job	L.S.	-	1,700	-	-	-	1,700
	Turfing and erosion control	Job	L.S.	-	2,200	-	-	-	2,200
	Signs	Job	L.S.	-	2,300	-	-	-	2,300
	Subtotal				293,621		89,983		383,604
	Contingencies, 12%+				35,279		10,717		45,996
	Total, Virgil Point				328,900		100,700		429,600

TABLE 11-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Group camping area								
	Roads and parking areas								
	Machine grading, two-way roads	Sta.	310.00	39	12,090	-	-	39	12,090
	Machine grading, parking area	S.Y.	2.50	2,700	6,750	-	-	2,700	6,750
	Crushed stone	C.Y.	8.50	950	8,075	-	-	950	8,075
	Water supply	Job	L.S.	-	16,000	-	-	-	16,000
	Toilets, wood vault	Each	2,100.00	8	16,800	-	-	8	16,800
	Changehouse, w/shower	Each	4,500.00	2	9,000	-	-	2	9,000
	Picnic facilities								
	Fireplaces, pedestal	Each	100.00	12	1,200	-	-	12	1,200
	Refuse cans	Each	100.00	4	400	-	-	4	400
	Shelters, group	Each	5,000.00	4	20,000	-	-	4	20,000
	Paths								
	Foot trails, gravel or wood chips, 4'	L.F.	0.40	11,000	4,400	-	-	11,000	4,400
	Walks, paved, 3'	L.F.	3.50	824	2,884	-	-	824	2,884
	Beautification								
	Landscaping toilets	Each	500.00	6	3,000	-	-	6	3,000
	Clearing and cleanup	Job	L.S.	-	400	-	-	-	400
	Signs	Job	L.S.	-	1,350	-	-	-	1,350
	Playground equipment	Job	L.S.	-	9,500	-	2,500	-	12,000
	Barricades	Each	400.00	4	1,600	-	-	-	1,600

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Group camping area (con.)								
	Subtotal				113,449		2,500		115,949
	Contingencies, 12%+				13,551		300		13,851
	Total, Group camping area				127,000		2,800		129,800
	Salt Creek Cove								
	Roads and parking areas								
	Machine grading, two-way roads	Sta.	310.00	130	40,300	28	8,680	158	48,980
	Machine grading, one-way roads	Sta.	275.00	18	4,950	1	275	19	5,225
	Machine grading, parking area	S.Y.	2.50	2,800	7,000	900	2,250	3,700	9,250
	Crushed stone	C.Y.	8.50	7,100	60,350	1,600	13,600	8,700	73,950
	Asphalt	Gal.	0.25	26,600	6,650	6,300	1,575	32,900	8,225
	Cover material, No. 1	C.Y.	12.00	640	7,680	150	1,800	790	9,480
	Cover material, No. 2	C.Y.	12.00	390	4,680	90	1,080	480	5,760
	Lime	Ton	32.00	390	12,480	90	2,880	480	15,360
	Borrow, roadway	C.Y.	0.60	11,800	7,080	2,800	1,680	14,600	8,760

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Salt Creek Cove (con.)								
	Drainage structures								
	Pipe, metal, galvanized, 18"	L.F.	6.00	40	240	40	240	80	480
	Pipe, metal, galvanized, 24"	L.F.	7.50	42	315	-	-	42	315
	Pipe, metal, galvanized, 36"	L.F.	15.00	88	1,320	-	-	88	1,320
	Pipe, metal, galvanized, 48"	L.F.	26.00	46	1,196	-	-	46	1,196
	Low water crossing	Each	700.00	2	1,400	-	-	2	1,400
	Boat ramps, double	Each	13,000.00	1	13,000	-	-	1	13,000
	Boat docks	Each	3,200.00	1	3,200	-	-	1	3,200
	Buoys	Each	150.00	2	300	-	-	2	300
	Water supply	Job	L.S.	-	24,000	-	8,000	-	32,000
	Toilets								
	Waterborne, w/shower	Each	37,000.00	1	37,000	-	-	1	37,000
	Masonry vault	Each	16,000.00	1	16,000	1	16,000	2	32,000
	Wood vault	Each	2,100.00	6	12,600	-	-	6	12,600
	Changehouse, w/shower	Each	4,500.00	-	-	2	9,000	2	9,000
	Trailer sanitary station, waterborne	Each	3,000.00	1	3,000	-	-	1	3,000
	Sewage treatment system	Job	L.S.	-	9,000	-	8,000	-	17,000
	Electrical system	Job	L.S.	-	8,000	-	2,000	-	10,000

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Salt Creek Cove (con.)								
	Camping, pulloff unit, gravel	Each	650.00	24	15,600	12	7,800	36	23,400
	Picnic facilities								
	Tables, w/pad	Each	250.00	13	3,250	7	1,750	20	5,000
	Fireplaces, pedestal	Each	100.00	13	1,300	7	700	20	2,000
	Refuse cans	Each	100.00	10	1,000	4	400	14	1,400
	Paths								
	Foot trails, gravel or wood chip, 4'	L.F.	0.40	11,300	4,520	-	-	11,300	4,520
	Walks, paved, 3'	L.F.	3.50	620	2,170	100	350	720	2,520
	Beautification								
	Trees, shade	Each	40.00	201	8,040	-	-	201	8,040
	Trees, ornamental	Each	25.00	218	5,450	-	-	218	5,450
	Landscaping toilets	Each	500.00	5	2,500	1	500	6	3,000
	Clearing and cleanup	Job	L.S.	-	3,000	-	-	-	3,000
	Turfing and erosion control	Job	L.S.	-	2,600	-	-	-	2,600
	Signs	Job	L.S.	-	2,800	-	200	-	3,000
	Subtotal				333,971		93,760		427,731
	Contingencies, 12%+				40,029		11,240		51,269
	Total, Salt Creek Cove				374,000		105,000		479,000

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Kiamichi Park								
	Roads and parking areas								
	Machine grading, two-way roads	Sta.	310.00	482	149,420	65	13,000	547	169,570
	Machine grading, one-way roads	Sta.	275.00	269	73,975	128	19,200	397	109,175
	Machine grading, parking area	S.Y.	2.50	9,430	23,575	500	1,250	9,930	24,825
	Crushed stone	C.Y.	8.50	31,100	264,350	6,500	42,250	37,600	319,600
	Asphalt	Gal.	0.25	114,300	285,575	22,300	5,575	136,000	34,150
	Cover material, No. 1	C.Y.	12.00	2,830	33,960	610	6,100	3,440	41,280
	Cover material, No. 2	C.Y.	12.00	1,700	20,400	370	3,700	2,070	24,840
	Lime	Ton	32.00	1,784	57,088	391	12,512	2,175	69,600
	Borrow, roadway	C.Y.	0.60	181,000	108,600	12,100	6,050	193,100	115,860
	Bedding	C.Y.	6.50	2,100	13,650	-	-	2,100	13,650
	Riprap	C.Y.	7.50	6,000	45,000	-	-	6,000	45,000
	Stone, quarry-run	C.Y.	7.00	4,000	28,000	-	-	4,000	28,000
	Drainage structures								
	Pipe, metal, galvanized, 18"	L.F.	6.00	134	804	52	312	186	1,116
	Pipe, metal, galvanized, 24"	L.F.	7.50	238	1,785	-	-	238	1,785
	Pipe, metal, galvanized, 36"	L.F.	15.00	88	1,320	44	660	132	1,980

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development		Future development		Total development	
				Quantity	Cost	Quantity	Cost	Quantity	Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	(CON.)								
	Kiamichi Park (con.)								
	Drainage structures (con.)								
	Pipe, metal, galvanized, 48"	L.F.	26.00	84	2,184	-	-	84	2,184
	Pipe, metal, galvanized, 96"	L.F.	80.00	234	18,720	-	-	234	18,720
	Low water crossing	Each	700.00	14	9,800	5	3,500	19	13,300
	Boat ramps, double	Each	13,000.00	2	26,000	-	-	2	26,000
	Boat ramps, single	Each	8,000.00	1	8,000	-	-	1	8,000
	Boat docks	Each	3,200.00	2	6,400	-	-	2	6,400
	Dikes								
	Borrow	C.Y.	0.60	13,000	7,800	-	-	13,000	7,800
	Stone, quarry-run	C.Y.	7.00	2,600	18,200	-	-	2,600	18,200
	Stone, choked quarry-run	C.Y.	9.00	350	3,150	-	-	350	3,150
	Buoys	Each	150.00	4	600	-	-	4	600
	Water supply	Job	L.S.	-	160,500	-	38,000	-	198,500
	Toilets								
	Waterborne, w/shower	Each	37,000.00	3	111,000	1	37,000	4	148,000
	Waterborne	Each	35,000.00	5	175,000	1	35,000	6	210,000
	Masonry vault	Each	16,000.00	4	64,000	4	64,000	8	128,000
	Wood vault	Each	2,100.00	10	21,000	10	21,000	20	42,000
	Changehouse, w/shower	Each	4,500.00	2	9,000	2	9,000	4	18,000
	Trailer sanitary station, w/vault	Each	2,500.00	1	2,500	-	-	1	2,500

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Kiamichi Park (con.)								
	Marine sanitary dump station	Each	9,000.00	2	18,000	-	-	2	18,000
	Sewage treatment system	Job	L.S.	-	57,400	-	32,500	-	89,900
	Electrical system	Job	L.S.	-	87,400	-	20,700	-	108,100
	Camping, pulloff unit, gravel	Each	650.00	105	68,250	79	51,350	184	119,600
	Picnic facilities								
	Tables, w/pad	Each	250.00	71	17,750	36	9,000	107	26,750
	Fireplaces, pedestal	Each	100.00	71	7,100	36	3,600	107	10,700
	Firepits	Each	75.00	25	1,875	-	-	75	1,875
	Refuse cans	Each	100.00	58	5,800	22	2,200	80	8,000
	Shelters, group	Each	5,000.00	3	15,000	-	-	3	15,000
	Shelters, individual	Each	650.00	1	650	-	-	1	650
	Paths								
	Bicycle trails, paved, 4'	L.F.	1.25	16,644	20,830	-	-	16,644	20,830
	Foot trails, gravel or wood chip, 4'	L.F.	0.40	35,375	14,150	6,950	2,780	42,325	16,930
	Walks, paved, 3'	L.F.	3.50	800	2,800	490	1,715	1,290	4,515
	Fence, chain link, 4'	L.F.	3.00	800	2,400	-	-	800	2,400
	Rock barrier	L.F.	2.50	400	1,000	-	-	400	1,000

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Kiamichi Park (con.)								
	Beautification								
	Trees, shade	Each	40.00	415	16,600	-	-	415	16,600
	Trees, ornamental	Each	25.00	466	11,650	-	-	466	11,650
	Landscaping toilets	Each	500.00	17	8,500	11	5,500	28	14,000
	Clearing and cleanup	Job	L.S.	-	3,100	-	1,400	-	4,500
	Turfing and erosion control	Job	L.S.	-	10,000	-	-	-	10,000
	Beach	Job	L.S.	-	3,500	-	2,500	-	6,000
	Signs	Job	L.S.	-	5,940	-	2,200	-	8,140
	Playground equipment	Job	L.S.	-	14,400	-	2,000	-	16,400
	Barricades	Each	400.00	2	800	-	-	2	800
	Subtotal				1,889,251		494,874		2,384,125
	Contingencies, 12%±				226,749		59,226		285,975
	Total, Kiamichi Park				2,116,000		554,100		2,670,100
	Bridge View								
	Roads and parking areas								
	Machine grading, two-way roads	Sta.	310.00	10	3,100	-	-	10	3,100
	Machine grading, one-way roads	Sta.	275.00	1	275	-	-	1	275

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	(CON.)								
	Bridge View (con.)								
	Roads and parking								
	areas (con.)								
	Machine grading,								
	parking area	S.Y.	2.50	860	2,150	-	-	860	2,150
	Crushed stone	C.Y.	8.50	630	5,355	-	-	630	5,355
	Asphalt	Gal.	0.25	3,000	750	-	-	3,000	750
	Cover material, No. 1	C.Y.	12.00	60	720	-	-	60	720
	Cover material, No. 2	C.Y.	12.00	40	480	-	-	40	480
	Water supply	Job	L.S.	-	3,500	-	-	-	3,500
	Toilets, masonry vault	Each	16,000.00	1	16,000	-	-	1	16,000
	Electrical system	Job	L.S.	-	1,300	-	-	-	1,300
	Picnic facilities								
	Refuse cans	Each	100.00	5	500	-	-	5	500
	Walks, paved, 3'	L.F.	3.50	350	1,225	-	-	350	1,225
	Removing chain link								
	fence	Job	L.S.	-	200	-	-	-	200
	Beautification								
	Trees, shade	Each	40.00	90	3,960	-	-	90	3,960
	Trees, ornamental	Each	25.00	95	2,375	-	-	95	2,375
	Landscaping toilets	Each	500.00	1	500	-	-	1	500
	Clearing and cleanup	Job	L.S.	-	100	-	-	-	100
	Turfing and erosion								
	control	Job	L.S.	-	900	-	-	-	900
	Signs	Job	L.S.	-	1,100	-	-	-	1,100

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Bridge View (con.)								
	Subtotal				44,490		-		44,490
	Contingencies, 12%+				5,310		-		5,310
	Total, Bridge View				49,800		-		49,800

II-03. Comparison of present estimate of cost with latest approved estimate. - A comparison of the estimate contained in this supplement with the latest approved PB-3 estimate, effective 1 July 1972, is shown in table II-3.

TABLE II-3

COMPARISON OF PRESENT ESTIMATE OF COST FOR INITIAL DEVELOPMENT WITH PB-3 ESTIMATE

Cost Acct. No.	Item	Present estimate	Latest approved PB-3 estimate	Difference
		$	$	$
014.	RECREATION FACILITIES	3,868,000	3,660,000	+208,000
030.	ENGINEERING AND DESIGN	359,000	341,000	+18,000
031.	SUPERVISION AND ADMINISTRATION	252,000	239,000	+13,000
	TOTAL COST	4,479,000	4,240,000	+239,000

II-04. Explanation of changes in cost.

a. Recreation facilities. - The estimated cost presented for initial development of the recreation facilities in the public-use areas is $3,868,000. The increase in cost of $208,000 is a result of the following:

(1) The addition of the group camping area.

(2) The raising of the creek crossing in Kiamichi Park from elevation 421.0 to elevation 426.0.

(3) The revision of the road alignment in Salt Creek Cove.

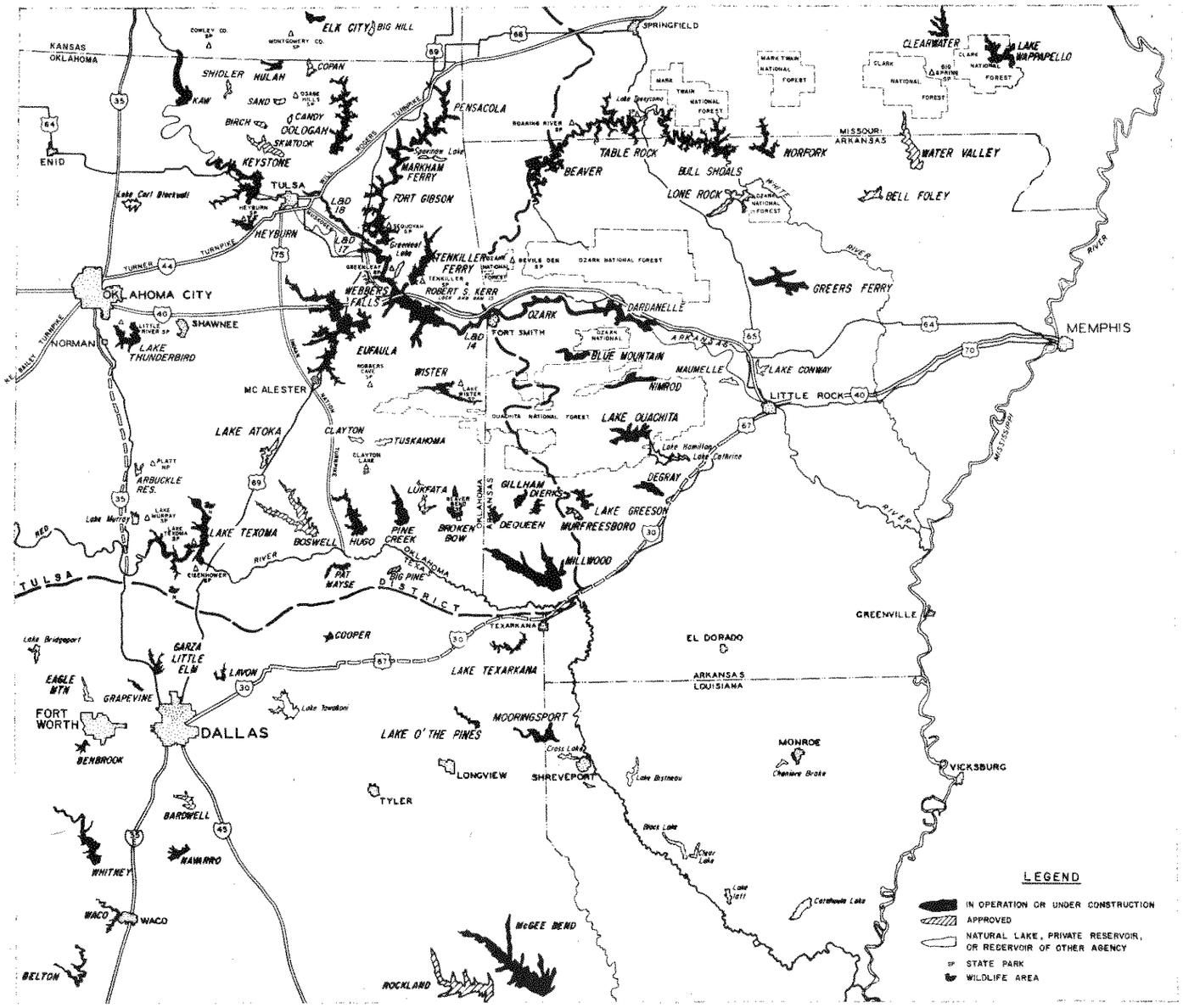
(4) The increased cost of road construction materials based upon similar projects in this area.

b. Engineering, design, supervision, and administration. - Engineering, design, supervision, and administration increases are in proportion to the increased cost of recreational facilities.

PUBLIC USE PLAN

HUGO LAKE

KIAMICHI RIVER, OKLAHOMA



INDEX TO DRAWINGS

District File No.	Title	Photo No.
1400-DM3B-93/1.1	PROJECT LOCATION	
1400-DM3B-93/2.1	PUBLIC USE PLAN	
1400-DM3B-93/3.1	RATTAN LANDING	3A
1400-DM3B-93/4.1	FRAZIER POINT	4A.1
1400-DM3B-93/5.1	SAWYER BLUFF	5A
1400-DM3B-93/6.1	TWIN COVES (WILSON POINT)	6A
1400-DM3B-93/7.1	TWIN COVES (VIRGIL POINT)	7A
1400-DM3B-93/8.1	SALT CREEK COVE	8A
1400-DM3B-93/9.1	KIAMICHI PARK (Sheet 1)	9A
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1400-DM3B-93/11.1	KIAMICHI PARK (Sheet 3)	11A
1400-DM3B-93/12.1	KIAMICHI PARK (Sheet 4)	12A
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1400-DM3B-93/14.1	BRIDGE VIEW	14A
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1400-DM3B-93/16.1	PROJECT UTILIZATION	
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1400-DM3B-93/18	TWIN COVES (Group Camping Area)	18A
1400-DM3B-93/19	PROJECT OPERATION FACILITIES	
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1400-DM3B-93/21	LANDING DOCK	
1400-DM3B-93/22	PICNIC FACILITIES (Table, Fireplace & Refuse Container)	
1400-DM3B-93/23	PICNIC FACILITIES (Picnic Table Canopy)	
1400-DM3B-93/24	PICNIC SHELTER	
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1400-DM3B-93/30	TRAILER SANITARY STATION	
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1400-DM3B-93/35	PLAYGROUND LAYOUT II	
1400-DM3B-93/36	PLAYGROUND LAYOUT III	
1400-DM3B-93/37	PLAYGROUND LAYOUT IV	

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

PROJECT LOCATION AND
RELATED RECREATION AREAS

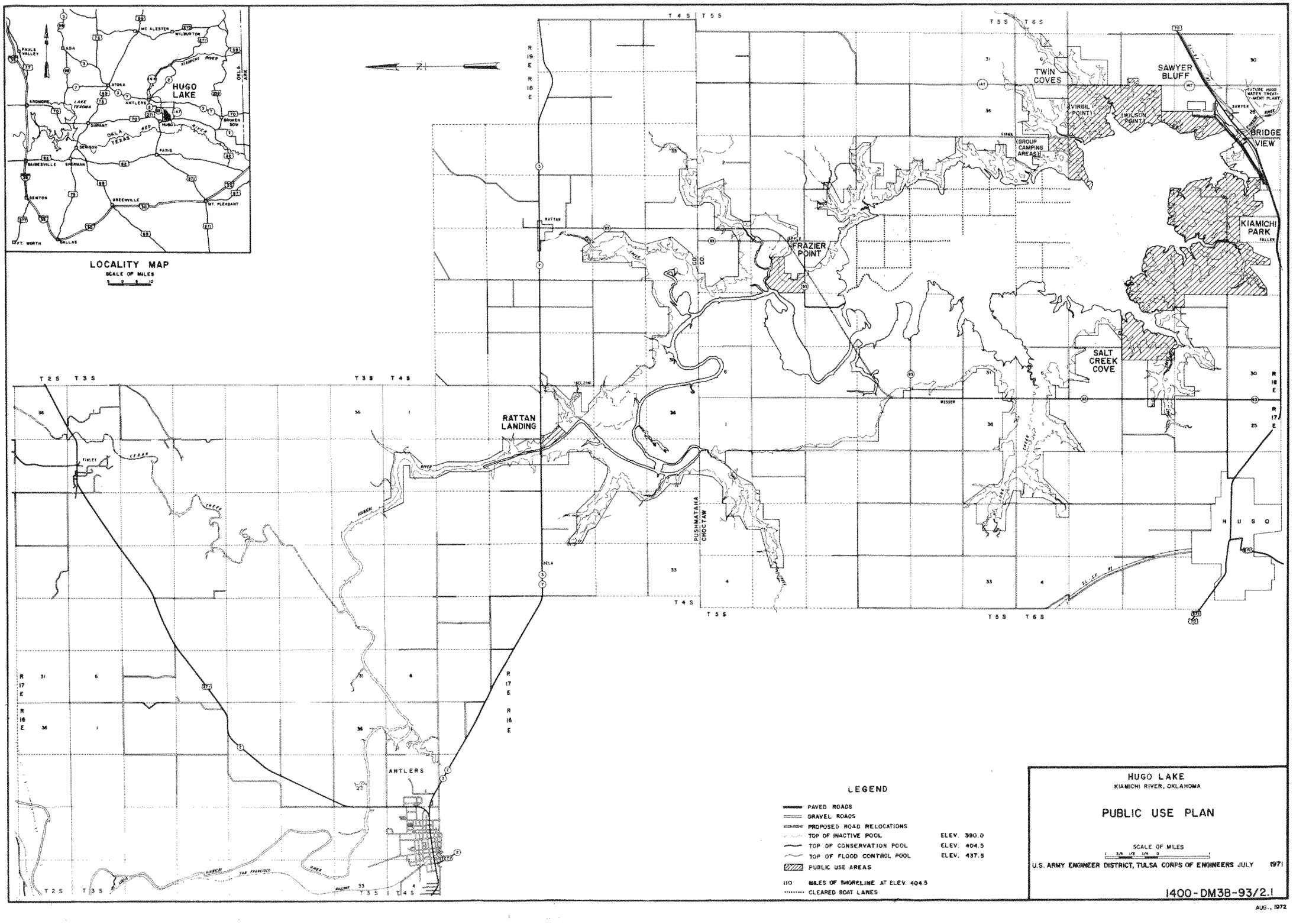
SCALE OF MILES
10 0 10 20 30 40 50

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/1.1

AUG., 1972

LOCALITY MAP
SCALE OF MILES
0 5 10



LEGEND

- PAVED ROADS
- GRAVEL ROADS
- PROPOSED ROAD RELOCATIONS
- TOP OF INACTIVE POOL — ELEV. 390.0
- TOP OF CONSERVATION POOL — ELEV. 404.5
- TOP OF FLOOD CONTROL POOL — ELEV. 437.5
- PUBLIC USE AREAS
- 110 MILES OF SHORELINE AT ELEV. 404.5
- CLEARED BOAT LANES

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

PUBLIC USE PLAN

SCALE OF MILES
1 3/8 1/8 1/4 0

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM38-93/2.1

AUG., 1972

LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
ROAD STRUCTURES			
Drainage Structure			
Low Water Crossing			
TRAILS			
WALK			
STEPS			
BOAT RAMP		R	R
LANDING DOCK			
TOILETS		WV	WV
Wood Vault		WV	WV
Masonry Vault		WB	WB
Waterborne		WB/S	WB/S
Waterborne w/shower		PS	PS
PICNIC SHELTER		CM	CM
CHANGE HOUSE		BS	BS
TRAILER SANITARY STATION			
WATER WELL			
W/shelter & hand pump		P	P
W/shelter & pressure pump			
WATER TAP		W	W
WATERLINE		S	S
SEWERLINE		P	P
POWERLINE			
PICNIC FACILITIES			
Table w/shelter			
Table w/shelter & fireplace			
Table & fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BUOY			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH		BEACH (C)	BEACH (C)
CONCESSION			
BY OTHERS			
Floodlight			
Powerline		P	
Waterline		W	

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

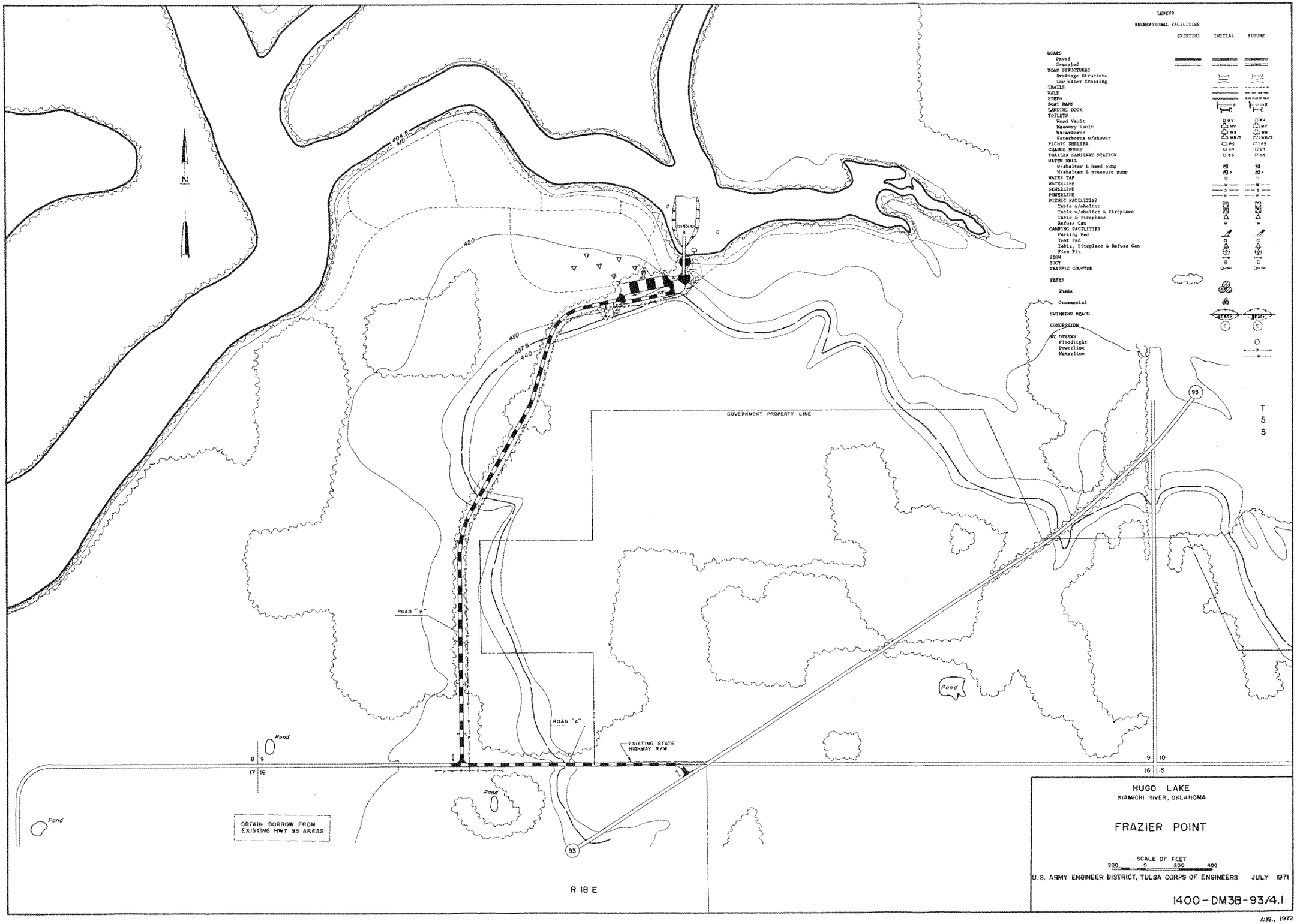
RATTAN LANDING

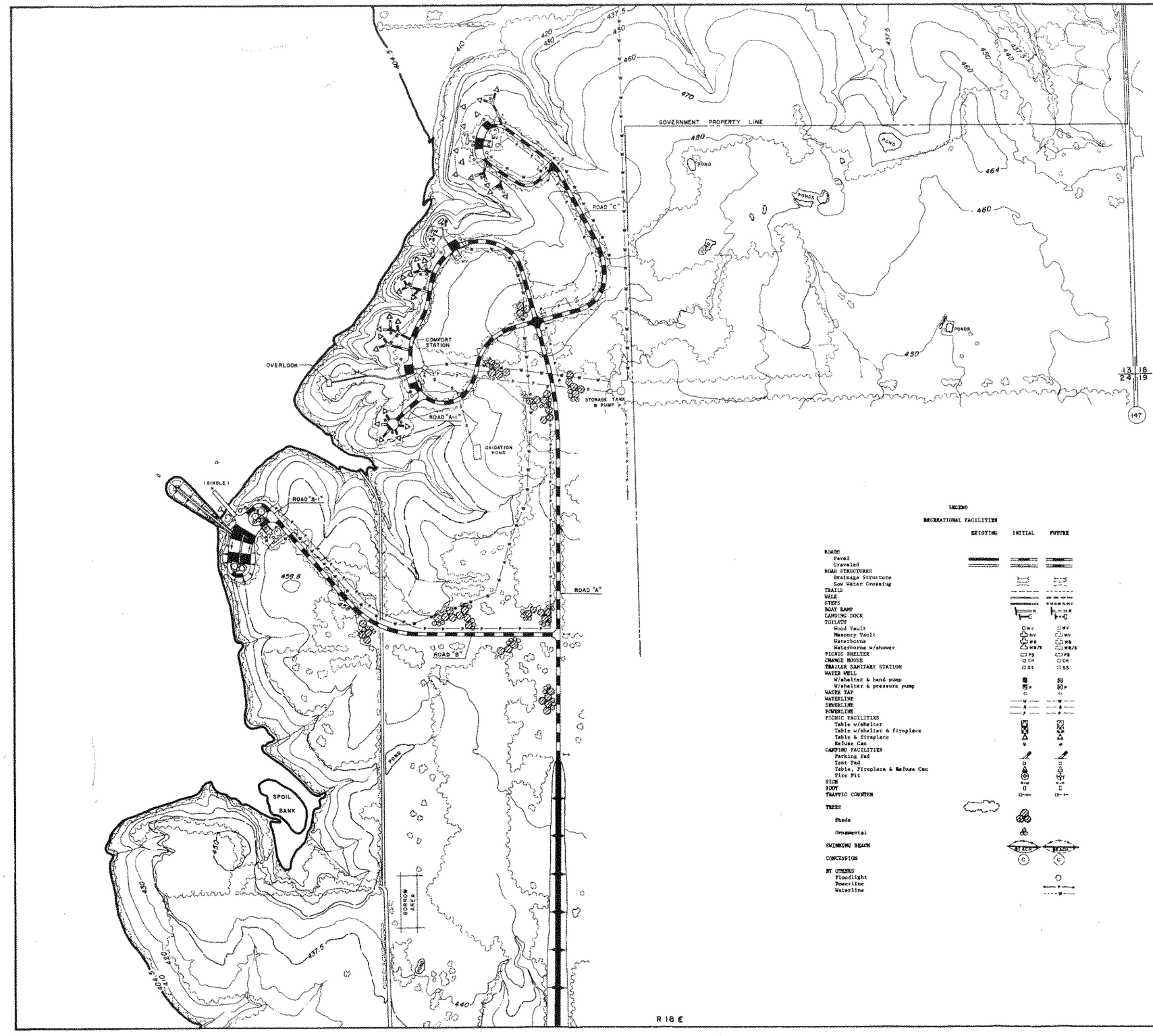
SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/3.1

AUG., 1972


LEGEND
RECREATIONAL FACILITIES
EXISTING
INITIAL
FUTURE
ROADS
Paved
Graveled
ROAD STRUCTURES
Drainage Structure
Low Water Crossing
TRAILS
WALK
STEPS
BOAT RAMP
LANDING DOCK
TOILETS
Wood Vault
Masonry Vault
Waterborne
Waterborne w/shower
PICNIC SHELTER
CHANGE HOUSE
TRAILER SANITARY STATION
WATER WELL
W/shelter & hand pump
W/shelter & pressure pump
WATER TAP
WATERLINE
SEWERLINE
POWERLINE
PICNIC FACILITIES
Table w/shelter
Table w/shelter & fireplace
Table & fireplace
Refuse Can
CAMPING FACILITIES
Parking Pad
Tent Pad
Table, Fireplace & Refuse Can
Fire Pit
SIGN
POST
TRAFFIC COUNTER
TREES
Shade
Ornamental
SWIMMING BEACH
CONCESSION
MY OTHERS
Floodlight
Powerline
Waterline
GOVERNMENT PROPERTY LINE
ISINGLE
424.5
410
420
450
437.5
440
ROAD "B"
ROAD "A"
EXISTING STATE HIGHWAY R/W
OBTAIN BORROW FROM EXISTING HWY 93 AREAS
Pond
93
T 5 S
R 18 E
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA
FRAZIER POINT
SCALE OF FEET
200 0 200 400
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971
1400-DM38-93/4.1
AUG., 1972



LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
ROAD STRUCTURES			
Drainage Structure			
Low Water Crossing			
TRAILS			
WALK			
STEPS			
BOAT RAMP			
LANDING DOCK			
TOILETS			
Wood Vault		WV	WV
Masonry Vault		MV	MV
Waterborne		WB	WB
Waterborne w/shower		WB/S	WB/S
PICNIC SHELTER		PS	PS
CHANGE HOUSE		CH	CH
TRAILER SANITARY STATION		SS	SS
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump		P	P
WATER TAP			
WATERLINE		W	W
SEWERLINE		S	S
POWERLINE		P	P
PICNIC FACILITIES			
Table w/shelter			
Table w/shelter & fireplace			
Table & fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN		Sng	
BUOY			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH		BEACH C	BEACH C
CONCESSION			
BY OTHERS			
Floodlight			
Powerline		P	
Waterline		W	

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

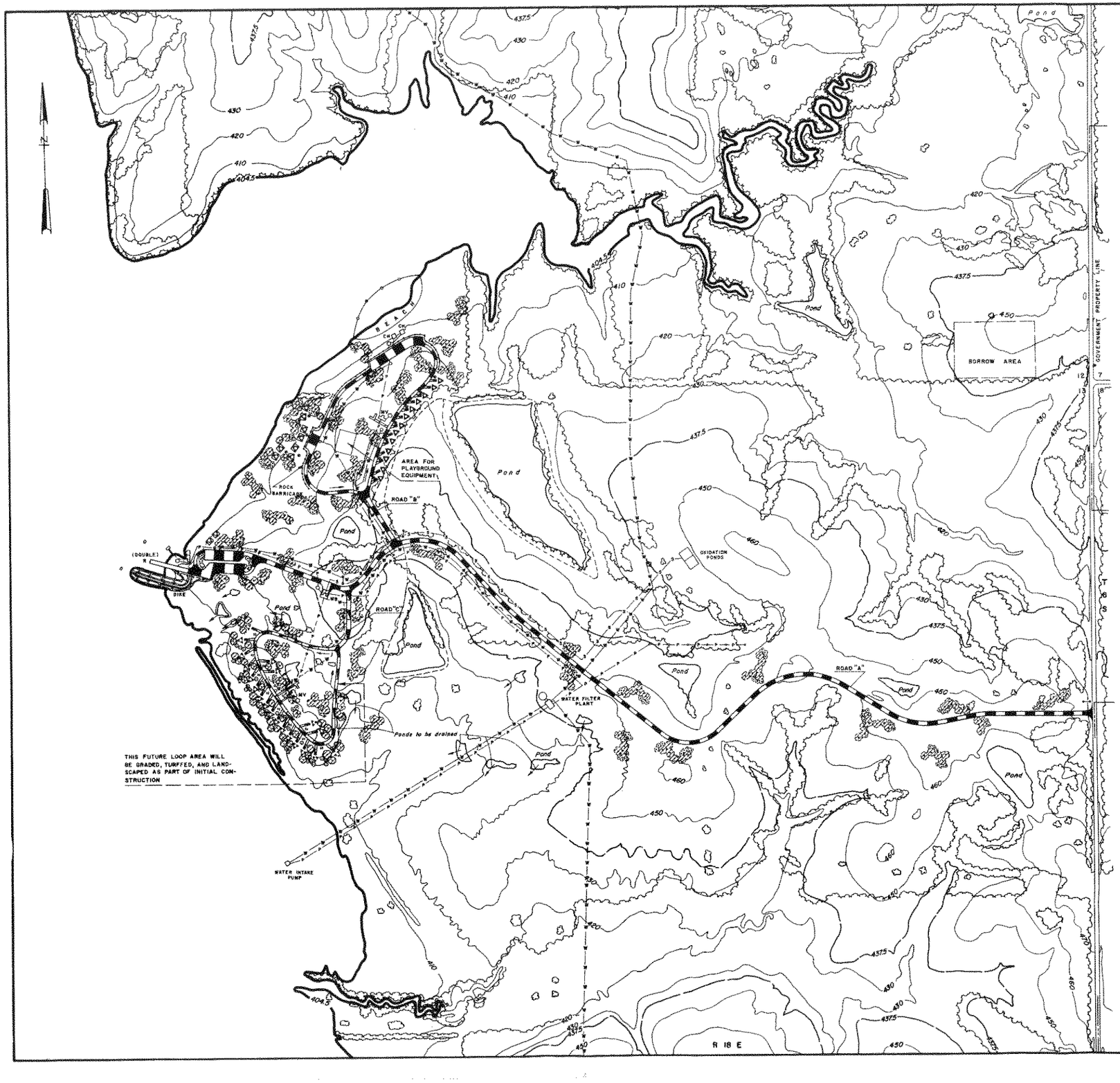
SAWYER BLUFF

SCALE OF FEET
200 100 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/5.1

AUG., 1972



LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
ROAD STRUCTURES			
Drainage Structure			
Low Water Crossing			
TRAILS			
WALK			
STEPS			
BOAT RAMP		R	R
LANDING DOCK			
TOILETS			
Wood Vault	WV		WV
Masonry Vault	MV		MV
Waterborne	WB		WB
Waterborne w/shower	WB/S		WB/S
PICNIC SHELTER	PS		PS
CHARGE HOUSE	CH		CH
TRAILER SANITARY STATION	SS		SS
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump	P		P
WATER TAP			
WATERLINE	W		W
SEWERLINE	S		S
POWERLINE	P		P
PICNIC FACILITIES			
Table w/shelter			
Table w/shelter & fireplace			
Table & fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BUOY			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH		BEACH C	BEACH C
CONCESSION			
BY OTHERS			
Floodlight			
Powerline		P	
Waterline		W	

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

TWIN COVES
(WILSON POINT)

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/6.1

AUG., 1972

GOVERNMENT PROPERTY LINE

BORROW AREA

Pond

ROAD "A"

ROAD "B"

ROAD "C"

ROAD "D"

ROAD "E"

OXIDATION POND

BOOSTER PUMP PLANT

EXISTING ARTESIAN WELL

Pond (To be drained)

T 6 S

R 18 E

LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
ROAD STRUCTURES			
Drainage Structure			
Low Water Crossing			
TRAILS			
WALK			
STEPS			
BOAT RAMP			
LANDING DOCK			
TOILETS			
Wood Vault		WV	WV
Masonry Vault		MV	MV
Waterborne		WB	WB
Waterborne w/shower		WB/S	WB/S
PICNIC SHELTER		PS	PS
CHARGE BOOTH		CH	CH
TRAILER SANITARY STATION		DS	DS
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump		WP	WP
WATER TAP			
WATERLINE		W	W
SEWERLINE		S	S
POWERLINE		P	P
PICNIC FACILITIES			
Table w/shelter			
Table w/shelter & fireplace			
Table & fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BARN			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH		BEACH (C)	BEACH (C)
CONCESSION			
BY OTHERS			
Floodlight			
Powerline			P
Waterline			W

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

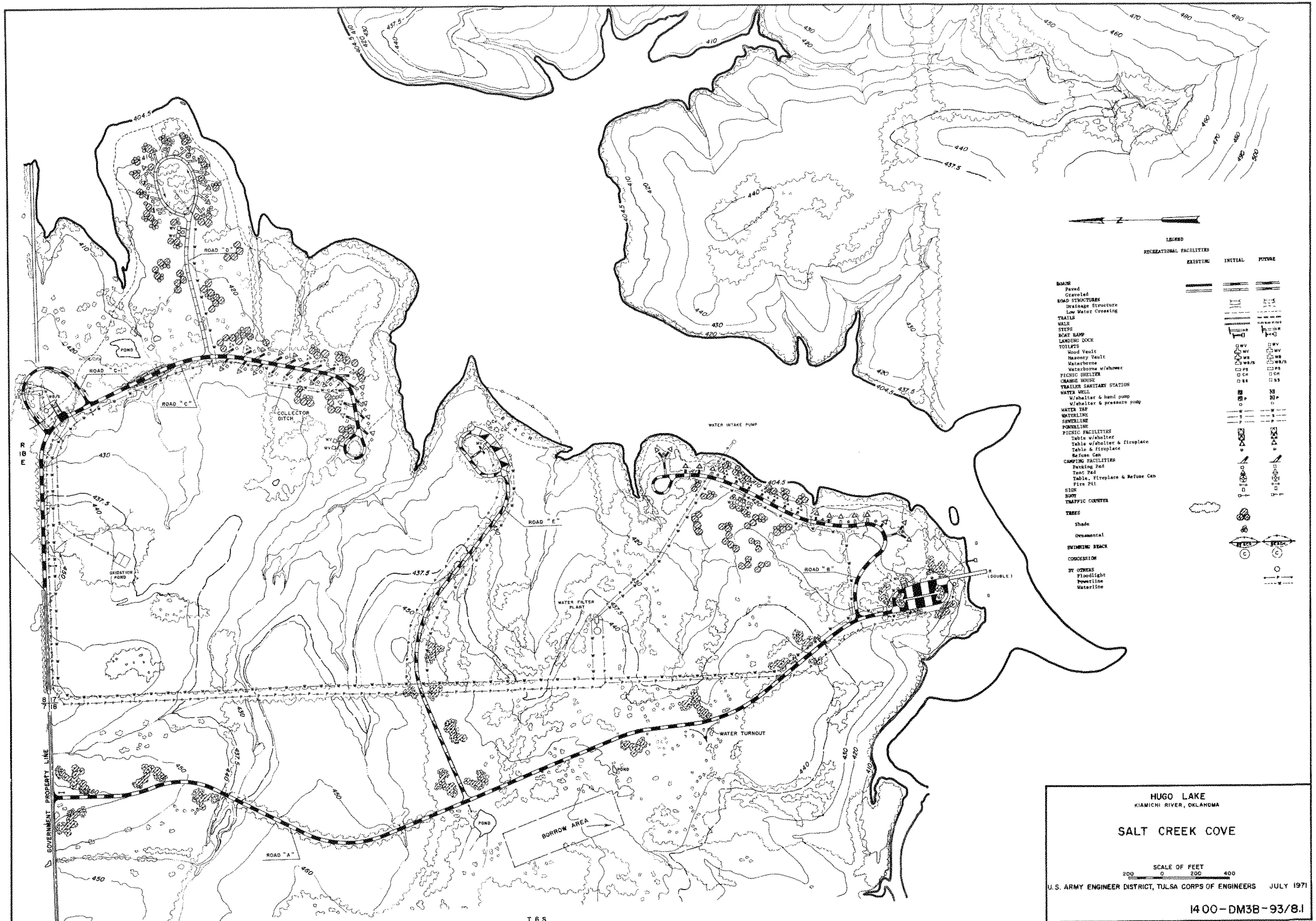
TWIN COVES
(VIRGIL POINT)

SCALE OF FEET
200 0 200 400

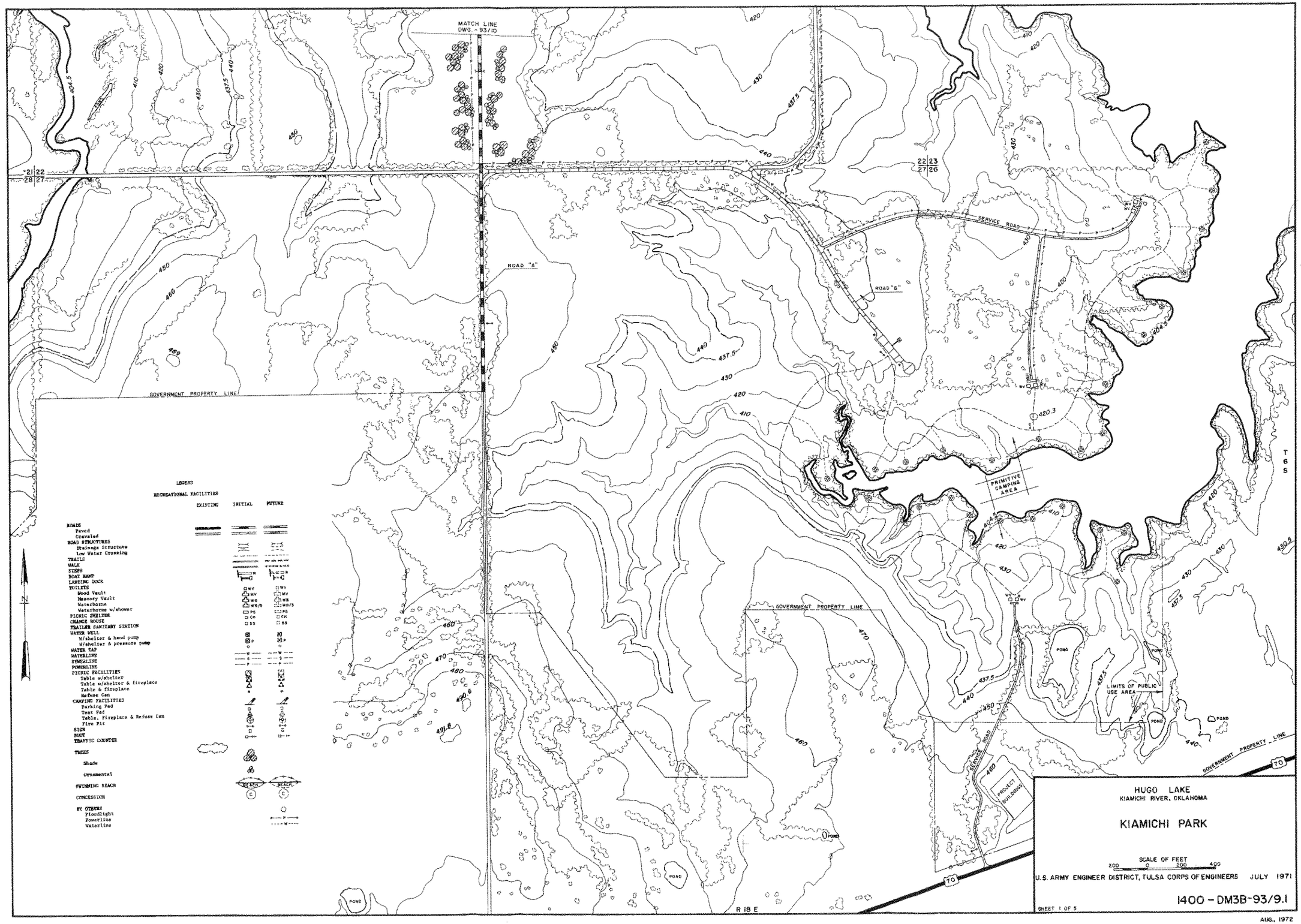
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM38-93/7.1

AUG., 1972


LEGEND
RECREATIONAL FACILITIES
EXISTING
INITIAL
FUTURE
ROADS
Paved
Graveled
ROAD STRUCTURES
Drainage Structure
Low Water Crossing
TRAILS
WALK
STEPS
BOAT RAMP
LANDING DOCK
TOILETS
Wood Vault
Masonry Vault
Waterborne
Waterborne w/shower
PICNIC SHELTER
CHANGE HOUSE
TRAILER SANITARY STATION
WATER WELL
W/shelter & hand pump
W/shelter & pressure pump
WATER TAP
WATERLINE
SEWERLINE
POWERLINE
PICNIC FACILITIES
Table w/shelter
Table w/shelter & fireplace
Table & fireplace
Refuse Can
CAMPING FACILITIES
Parking Pad
Tent Pad
Table, Fireplace & Refuse Can
Fire Pit
SIGN
BUOY
TRAFFIC COUNTER
TREES
Shade
Ornamental
SWIMMING BEACH
CONCESSION
BY OTHERS
Floodlight
Powerline
Waterline
ROAD "A"
ROAD "B"
ROAD "C"
ROAD "C-1"
ROAD "D"
ROAD "E"
COLLECTOR DITCH
OXIDATION POND
POND
WATER INTAKE PUMP
WATER FILTER PLANT
WATER TURNOUT
BORROW AREA
GOVERNMENT PROPERTY LINE
T6S
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA
SALT CREEK COVE
SCALE OF FEET
200 0 200 400
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971
1400-DM3B-93/8.1

AUG., 1972


MATCH LINE
DWG. - 93/10
21 22
28 27
22 23
27 26
ROAD "A"
ROAD "B"
SERVICE ROAD
GOVERNMENT PROPERTY LINE
PRIMITIVE CAMPING AREA
LIMITS OF PUBLIC USE AREA
PROJECT BUILDINGS
POND
T 6 S
R 18 E
LEGEND
RECREATIONAL FACILITIES
EXISTING
INITIAL
FUTURE
ROADS
Paved
Graveled
ROAD STRUCTURES
Drainage Structure
Low Water Crossing
TRAILS
WALK
STEPS
BOAT RAMP
LANDING DOCK
TOILETS
Wood Vault
Masonry Vault
Waterborne
Waterborne w/shower
PICNIC SHELTER
CHANGE HOUSE
TRAILER SANITARY STATION
WATER WELL
W/shelter & hand pump
W/shelter & pressure pump
WATER TAP
WATERLINE
SEWERLINE
POWERLINE
PICNIC FACILITIES
Table w/shelter
Table w/shelter & fireplace
Table & fireplace
Refuse Can
CAMPING FACILITIES
Parking Pad
Tent Pad
Table, Fireplace & Refuse Can
Fire Pit
SIGN
BUOY
TRAFFIC COUNTER
TREES
Shade
Ornamental
SWIMMING BEACH
CONCESSION
MY OTHERS
Floodlight
Powerline
Waterline
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA
KIAMICHI PARK
SCALE OF FEET
200 0 200 400
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971
SHEET 1 OF 5
1400 - DM3B-93/9.1
AUG., 1972

LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
ROAD STRUCTURES			
Drainage Structure			
Low Water Crossing			
TRAILS			
WALK			
STEPS			
BOAT RAMP			
LANDING DOCK			
TOILETS			
Wood Vault		WV	WV
Masonry Vault		MV	MV
Waterborne		WB	WB
Waterborne w/shower		WB/S	WB/S
PICNIC SHELTER		PS	PS
CHANGE HOUSE		CH	CH
TRAILER SANITARY STATION		SS	SS
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump		P	P
WATER TAP			
WATERLINE		W	W
SEWERLINE		S	S
POWERLINE		P	P
PICNIC FACILITIES			
Table w/shelter			
Table w/shelter & fireplace			
Table & fireplace			
Refuse Can		R	R
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BUOY			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH		BEACH (C)	BEACH (C)
CONCESSION			
BY OTHERS			
Floodlight			
Powerline			P
Waterline			W

ROAD "E"

ROAD "F"

ROAD "A"

AREA FOR PLAYGROUND EQUIPMENT

15 14 22 23

ROAD "G"

MARINE SANITARY DUMP STATION (DOUBLE)

SERVICE ROAD

OXIDATION POND

Pond

DIKE OF ELEV. 421.0' MIN.

LEASE LIMITS

300' MIN.

EXCAVATE TO ELEV. 385.0' MIN.

(SINGLE)

200' MIN.

METERING POLE FOR CONCESSIONAIRES POWER

BOOSTER PUMP PLANT

ROAD "D"

404.5

410

420

437.5

ROAD "C"

430

ROAD "Y-1"

ROAD "Y"

MATCH LINE DWG. - 93/11

CONSTRUCT TO ELEV. 438'

ROAD CLOSURE FOR HIGH WATER

ROAD "U"

AREA FOR CONCESSIONAIRES NON-POWER BOAT RENTALS

ROAD "H"

BORROW AREA

Pond

ROAD "Z"

ROAD "A"

MATCH LINE DWG. - 93/9

T 6 S

HUGO LAKE

KIAMICHI RIVER, OKLAHOMA

KIAMICHI PARK

SCALE OF FEET

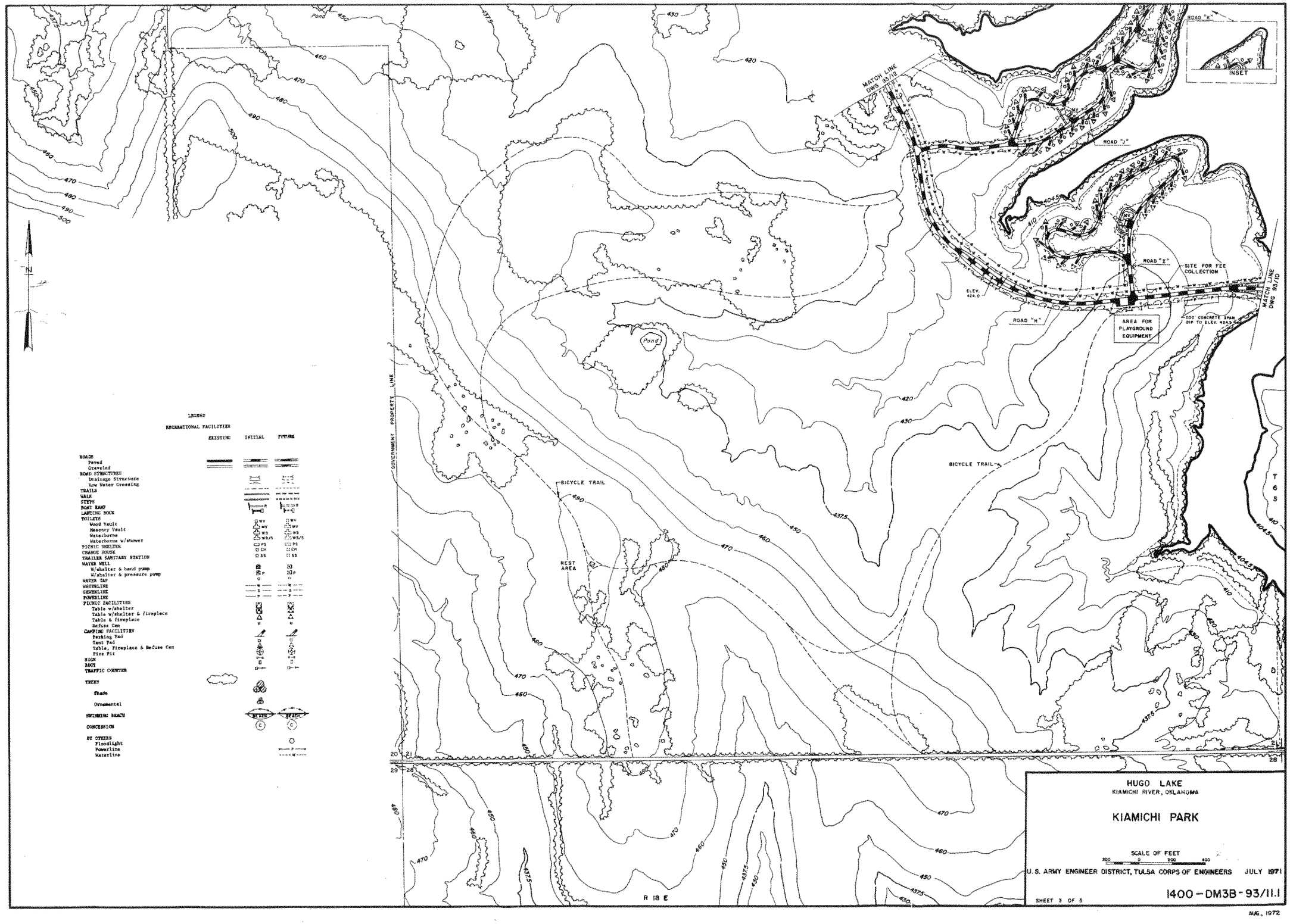
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/10.1

SHEET 2 OF 5

AUG., 1972


LEGEND
RECREATIONAL FACILITIES
EXISTING
INITIAL
FUTURE
ROADS
Paved
Graveled
ROAD STRUCTURES
Drainage Structure
Low Water Crossing
TRAILS
WALK
STEPS
BOAT RAMP
LANDING DOCK
TOILETS
Wood Vault
Masonry Vault
Waterborne
Waterborne w/shower
PICNIC SHELTER
CHANGE HOUSE
TRAILER SANITARY STATION
WATER WELL
W/shelter & hand pump
W/shelter & pressure pump
WATER TAP
WATERLINE
SEWERLINE
POWERLINE
PICNIC FACILITIES
Table w/shelter
Table w/shelter & fireplace
Table & fireplace
Refuse Can
CAMPING FACILITIES
Parking Pad
Tent Pad
Table, Fireplace & Refuse Can
Fire Pit
HIGH
BOAT
TRAFFIC COUNTER
TREES
Shade
Ornamental
SWIMMING BEACH
CONCESSION
BY OTHERS
Floodlight
Powerline
Waterline
GOVERNMENT PROPERTY LINE
MATCH LINE DWG 93/12
MATCH LINE DWG 93/10
ROAD "K"
INSET
ROAD "J"
ROAD "I"
ROAD "H"
SITE FOR FEE COLLECTION
ELEV. 424.0
AREA FOR PLAYGROUND EQUIPMENT
200' CONCRETE SPAN DIP TO ELEV. 424.5
BICYCLE TRAIL
REST AREA
Pond
N
T 6 S
R 18 E
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA
KIAMICHI PARK
SCALE OF FEET
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971
SHEET 3 OF 5
1400-DM3B-93/11.1
AUG., 1972

N

MATCH LINE DWG. 93/13

OXIDATION PONDS

ROAD CLOSURE EMERGENCY EXIST ONLY

ROAD "H-1"

ROAD CLOSURE DO NOT ENTER

GOVERNMENT PROPERTY LINE

BORROW AREA

ROAD "G"

ROAD "P"

ROAD "N"

ROAD "V"

ROAD "W"

ROAD "M"

ROAD "X"

ROAD "H"

ROCK BARRICADE

BEACH

ELEV. 464.0

MATCH LINE DWG. 93/11

T 6 S

R 18 E

LEGEND

RECREATIONAL FACILITIES	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
ROAD STRUCTURES			
Drainage Structure			
Low Water Crossing			
TRAILS			
WALK			
STEPS			
BOAT RAMP			
LANDING DOCK			
TOILETS			
Wood Vault		WV	WV
Masonry Vault		MV	MV
Waterborne		WB	WB
Waterborne w/shower		WB/S	WB/S
PICNIC SHELTER		PS	PS
CHANGE HOUSE		CH	CH
TRAILER SANITARY STATION		SS	SS
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump			
WATER TAP			
WATERLINE		W	W
SPRINKLINE		S	S
POWERLINE		P	P
PICNIC FACILITIES			
Table w/shelter			
Table w/shelter & fireplace			
Table & fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BUOY			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH		BEACH (C)	BEACH (C)
CONCESSION			
BY OTHERS			
Floodlight			
Powerline		P	P
Waterline		W	W

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

KIAMICHI PARK

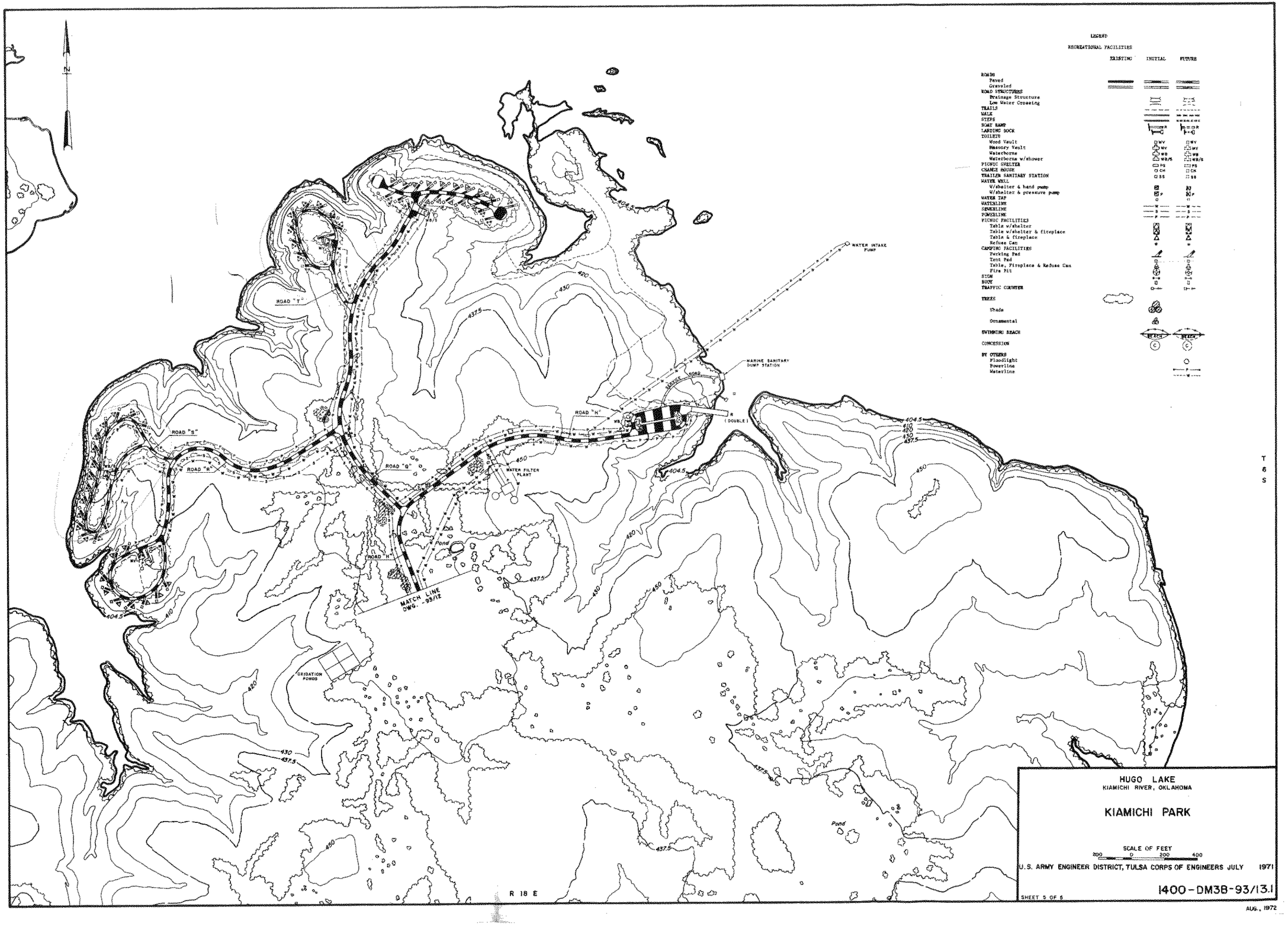
SCALE OF FEET
200 0 200 400

U. S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/12.1

SHEET 4 OF 5

AUG., 1972


N
LEGEND
RECREATIONAL FACILITIES
EXISTING
INITIAL
FUTURE
ROADS
Paved
Graveled
ROAD STRUCTURES
Drainage Structure
Low Water Crossing
TRAILS
WALK
STEPS
BOAT RAMP
LANDING DOCK
TOILETS
Wood Vault
Masonry Vault
Watercborne
Watercborne w/shower
PICNIC SHELTER
CHANGE HOUSE
TRAILER SANITARY STATION
WATER WELL
W/shelter & hand pump
W/shelter & pressure pump
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WATERLINE
SEWERLINE
POWERLINE
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Table w/shelter
Table w/shelter & fireplace
Table & fireplace
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Parking Pad
Tent Pad
Table, Fireplace & Refuse Can
Fire Pit
SIGN
BUOY
TRAFFIC COUNTER
TREES
Shade
Ornamental
SWIMMING BEACH
CONCESSION
BY OTHERS
Floodlight
Powerline
Waterline
WATER INTAKE PUMP
MARINE SANITARY DUMP STATION
ROAD "T"
ROAD "S"
ROAD "R"
ROAD "Q"
ROAD "H"
WATER FILTER PLANT
Pond
MATCH LINE DWG. - 93/12
OXIDATION PONDS
404.5
410
420
430
437.5
450
460
R 18 E
T 6 S
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA
KIAMICHI PARK
SCALE OF FEET
200 0 200 400
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971
SHEET 5 OF 5
1400-DM38-93/13.1
AUG., 1972

LEGEND

RECREATIONAL FACILITIES

EXISTING INITIAL FUTURE

ROADS
Paved
Graveled
ROAD STRUCTURES
Drainage Structure
Low Water Crossing
TRAILS
WALK
STEPS
BOAT RAMP
LANDING DOCK
TOILETS
Wood Vault (WV)
Masonry Vault (MV)
Waterborne (WB)
Waterborne w/shower (WB/S)
PICNIC SHELTER (PS)
CHANGE HOUSE (CH)
TRAILER SANITARY STATION (SS)
WATER WELL
W/shelter & hand pump
W/shelter & pressure pump
WATER TAP
WATERLINE
SEWERLINE
POWERLINE
PICNIC FACILITIES
Table w/shelter
Table w/shelter & fireplace
Table & fireplace
Refuse Can
CAMPING FACILITIES
Parking Pad
Tent Pad
Table, Fireplace & Refuse Can
Fire Pit
SIGN
BUOY
TRAFFIC COUNTER
TREES
Shade
Ornamental
SWIMMING BEACH (BEACH)
CONCESSION (C)
BY OTHERS
Floodlight
Powerline
Waterline

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

BRIDGE VIEW

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/14.1

SKIING PROHIBITED

NATIONAL WILDLIFE REFUGE

MESSER

STATE WILDLIFE MANAGEMENT AREA

LONG CREEK

STATE WILDLIFE MANAGEMENT AREA

UNCLEARED AREA

VIRGIL

TWIN COVES (CAMPING AREA)

TWIN COVES (VIRGIL POINT)

TWIN COVES (WILSON POINT)

SALT CREEK COVE

SALT CREEK

SAWYER BLUFF

KIAMICHI PARK

SAWYER

BRIDGE VIEW

KIAMICHI RIVER

FALLEN

H U G O

T 5 S
T 6 S

R 17 E R 18 E R 19 E

N

LEGEND

- PAVED ROADS
- GRAVEL ROADS
- PROPOSED ROAD RELOCATIONS
- TOP OF CONSERVATION POOL - ELEV. 404.5
- TOP OF FLOOD CONTROL POOL - ELEV. 437.5
- TOP OF INACTIVE POOL - ELEV. 390.0
- 110 MILES OF SHORELINE AT ELEV. 404.5

LAND AND WATER USE

- PUBLIC USE - DEVELOPMENT AREA
- PUBLIC USE - SCENIC AREA (UNDEVELOPED)
- CONCESSION LEASE AREA
- STATE WILDLIFE MANAGEMENT AREAS
- NATIONAL WILDLIFE REFUGE
- HAZARDOUS AREAS (PARTIAL CLEARING)
- HAZARDOUS AREAS (PARTIAL CLEARING-SEASONALLY CONTROLLED BY WILDLIFE AGENCIES)
- POWER BOATING PROHIBITED
- PROJECT OPERATIONS

SHEET INDEX

93/17
93/16
93/15

HUGO

1400-DM3B-93/15.1

N

RATTAN LANDING

DELA

RATTAN

BELZONI

PUSHMATAHA CO.
CHOCTAW CO.

NATIONAL WILDLIFE REFUGE

SKIING PROHIBITED

FRAZIER POINT

APPLE

SKIING PROHIBITED

R17E R18E

T 4 S
T 5 S

93/17
93/16
93/15

SHEET INDEX

LEGEND

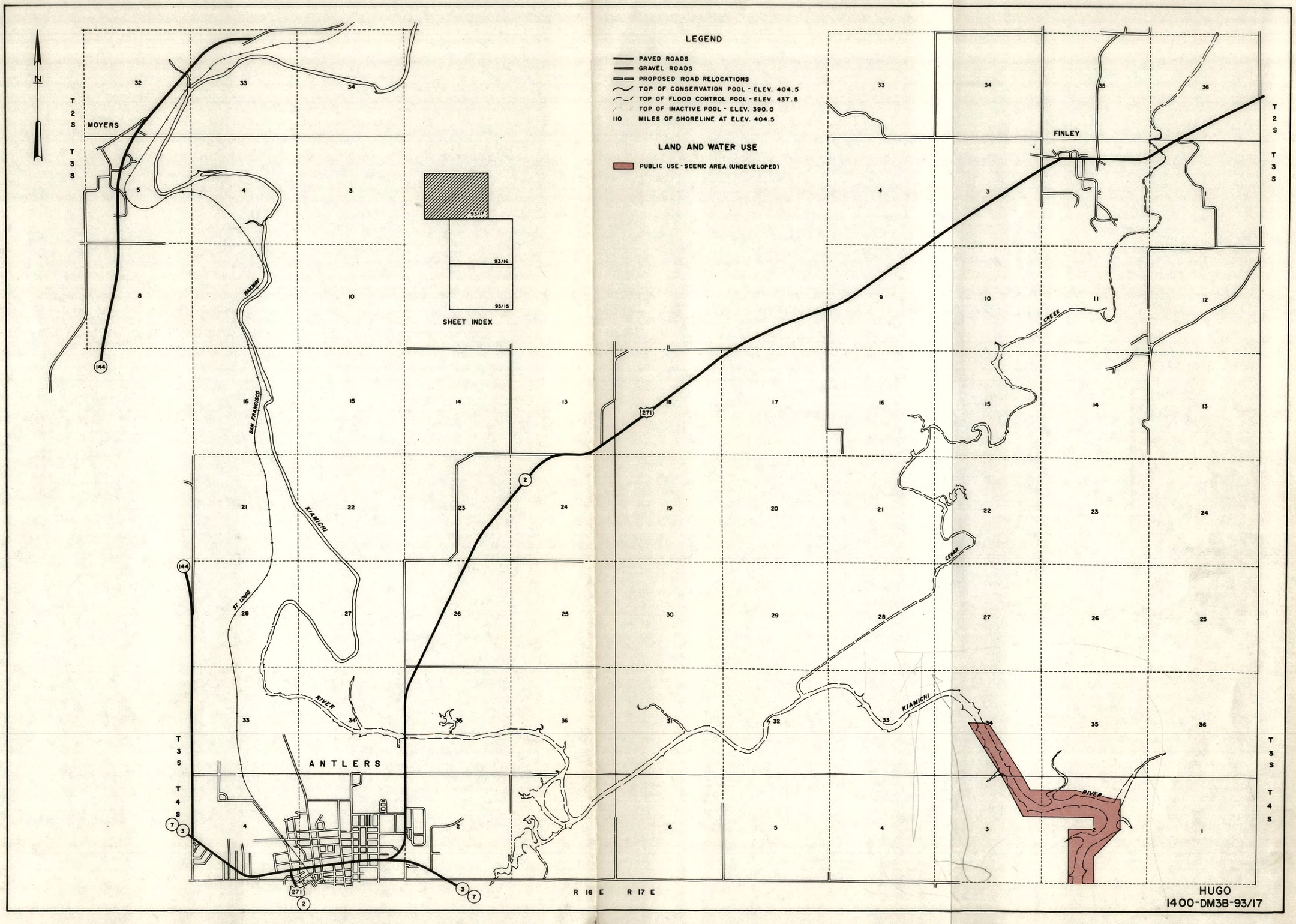
- PAVED ROADS
- GRAVEL ROADS
- PROPOSED ROAD RELOCATIONS
- TOP OF CONSERVATION POOL - ELEV. 404.5
- TOP OF FLOOD CONTROL POOL - ELEV. 437.5
- 110 MILES OF SHORELINE AT ELEV. 404.5
- TOP OF INACTIVE POOL - ELEV. 390.0

LAND AND WATER USE

- PUBLIC USE - DEVELOPMENT AREA
- PUBLIC USE - SCENIC AREA (UNDEVELOPED)
- NATIONAL WILDLIFE REFUGE
- HAZARDOUS AREAS (PARTIAL CLEARING)
- HAZARDOUS AREAS (PARTIAL CLEARING - SEASONALLY CONTROLLED BY WILDLIFE AGENCIES)

HUGO

1400-DM3B-93/16.1



HUGO
1400-DM3B-93/17


LEGEND
RECREATIONAL FACILITIES
EXISTING
INITIAL
FUTURE
ROADS
Paved
Graveled
ROAD STRUCTURES
Drainage Structure
Low Water Crossing
TRAILS
WALK
STEPS
BOAT RAMP
LANDING DOCK
TOILETS
Wood Vault
Masonry Vault
Waterborne
Waterborne w/shower
PICNIC SHELTER
CHANGE HOUSE
TRAILER SANITARY STATION
WATER WELL
W/shelter & hand pump
W/shelter & pressure pump
WATER TAP
WATERLINE
SEWERLINE
POWERLINE
PICNIC FACILITIES
Table w/shelter
Table w/shelter & fireplace
Table & fireplace
Refuse Can
CAMPING FACILITIES
Parking Pad
Tent Pad
Table, Fireplace & Refuse Can
Fire Pit
SIGN
HUNT
TRAFFIC CONTROL
TREES
Shade
Ornamental
SWIMMING BEACH
CONCESSION
BY OTHERS
Floodlight
Powerline
Waterline
GOVERNMENT PROPERTY LINE
BARRICADE
ROAD "A"
ROAD "B"
ROAD "C"
AREA FOR PLAYGROUND EQUIPMENT
AREA 1
AREA 2
AREA 3
AREA 4
Pond
T 5 S
R 18 E
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA
TWIN COVES
(GROUP CAMPING AREAS)
SCALE OF FEET
200 0 200 400
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972
1400-DM38-93/18

T
5
S

R 18 E

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

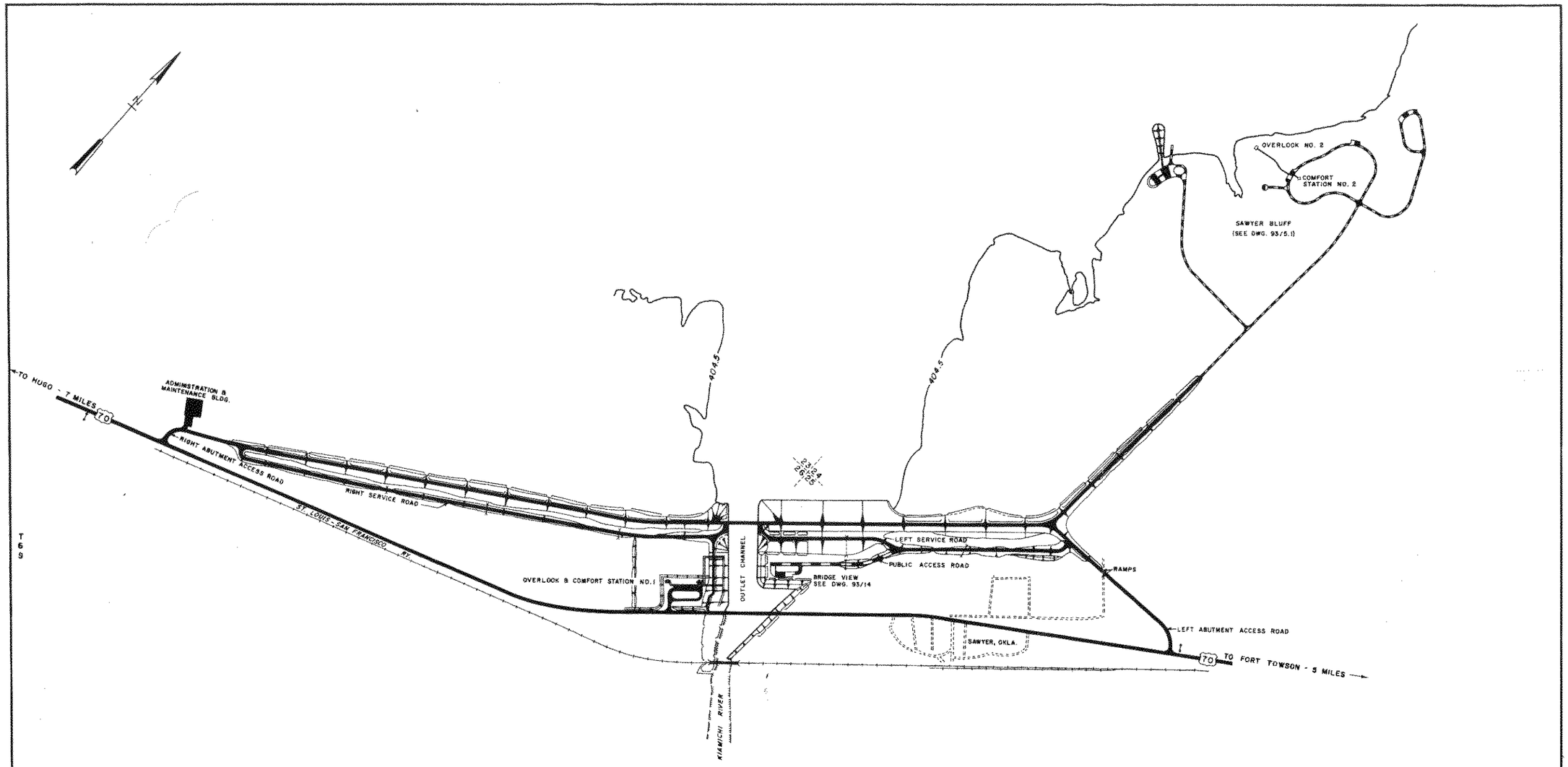
TWIN COVES

(GROUP CAMPING AREAS)

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

1400-DM38-93/18A



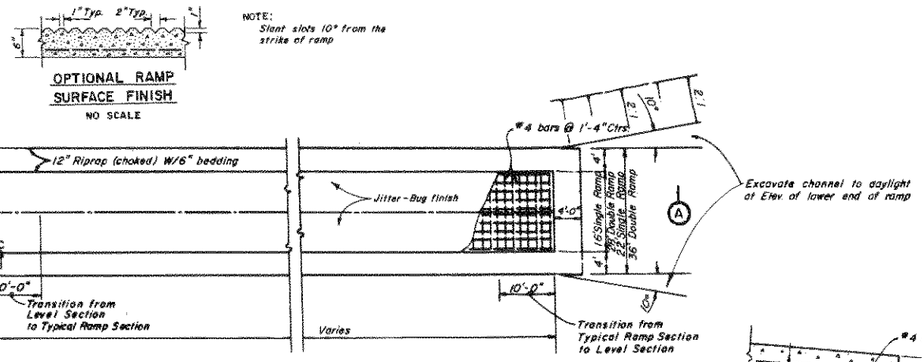
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

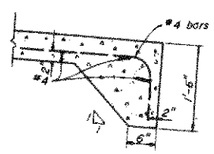
PROJECT OPERATIONS FACILITIES

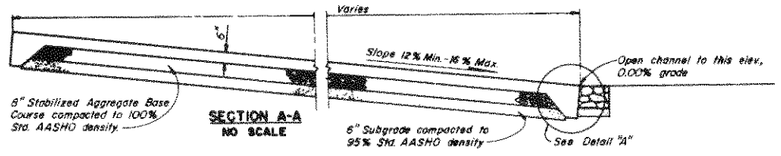
SCALE OF FEET
400 0 400 800

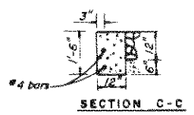
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

1400-DM3B-93/19

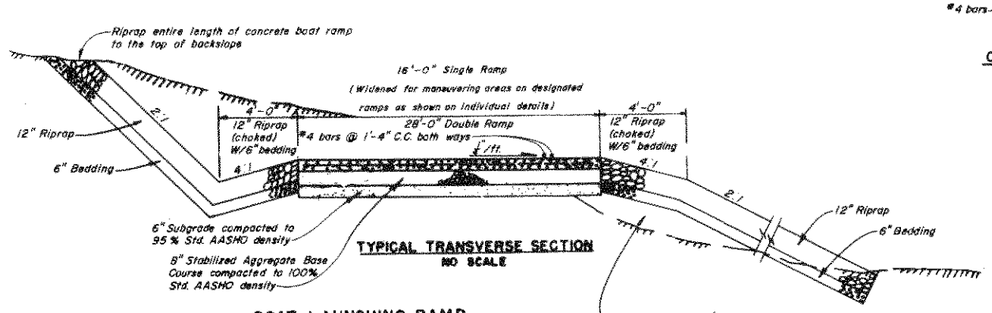




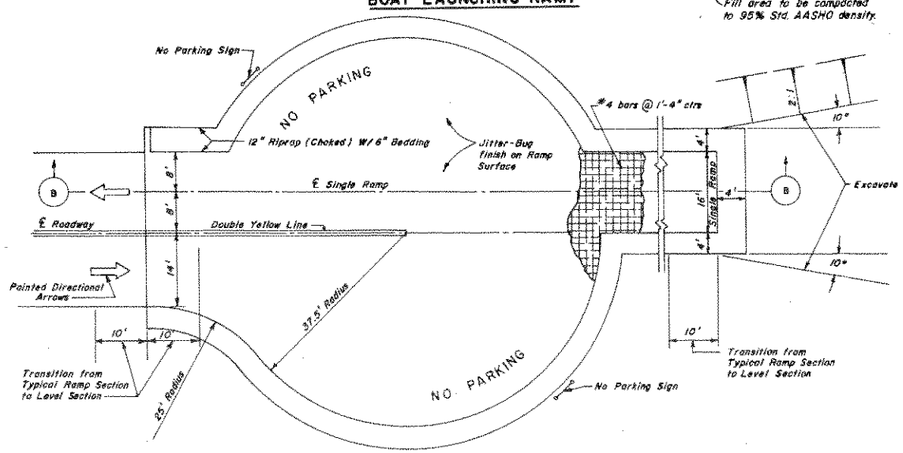




CONCRETE RAMP HEADER

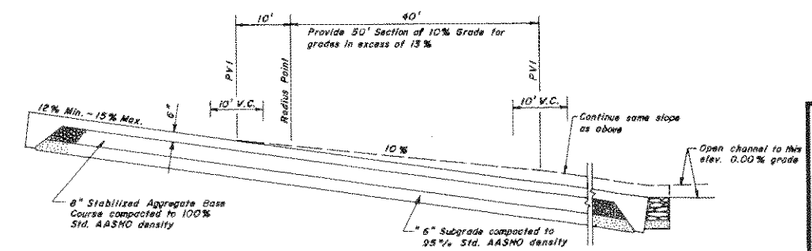


BOAT LAUNCHING RAMP



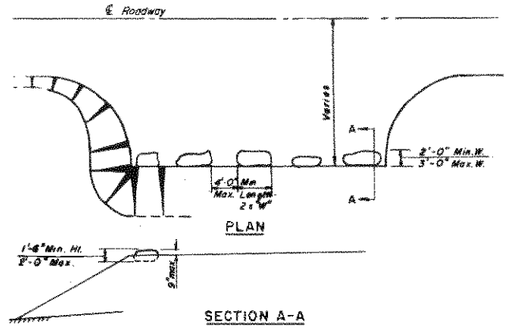
HUGO LAKE RAMPS

Public Use Area	RD	Double, Single, or Special Ramp	Upper Elevation	Lower Elevation
Rattan Landing	A	Special	426.0	400.0
Prosley Point	A	Special	421.0	390.0
Sawyer Bluff	B	Single	421.0	390.0
Twin Coves (Wilson Point)	A	Double	421.0	390.0
(Virgil Point)	A	Special	422.0	394.0
Salt Creek Cove	A	Double	421.0	392.0
Kiamichi Park	C	Double	421.9	390.0
Kiamichi Park	D	Single	421.0	390.0
Kiamichi Park	H	Double	421.0	390.0

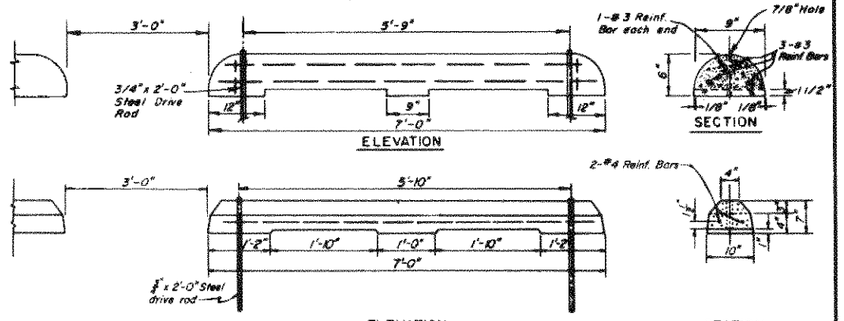


NOTES:

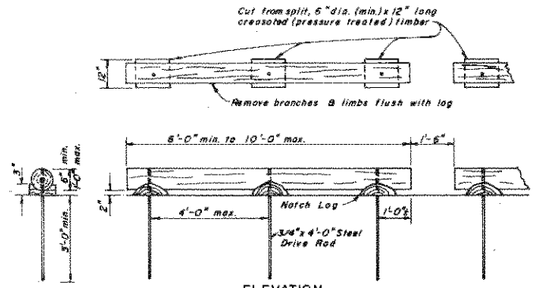
1. Wheel stops shall be placed at the back side of parking areas as shown on the plan and profile sheets and detail sheets of Parking Areas and Boat Ramps.
2. Contractor may furnish any one of wheel stops shown. Once selection is made, that type of wheel stop shall be used throughout.
3. Place drive rods for concrete wheel stops 1'-0" from edge of parking lot shoulder.



DETAILS OF ROCK WHEEL STOPS
NO SCALE



DETAIL OF PRECAST CONCRETE WHEEL STOPS
NO SCALE



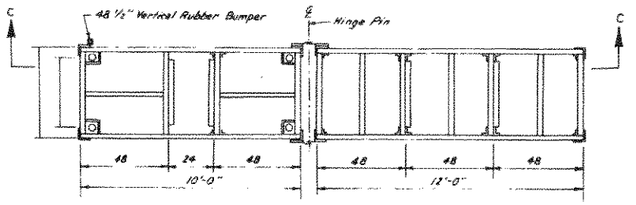
DETAIL OF LOG WHEEL STOPS
NO SCALE

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

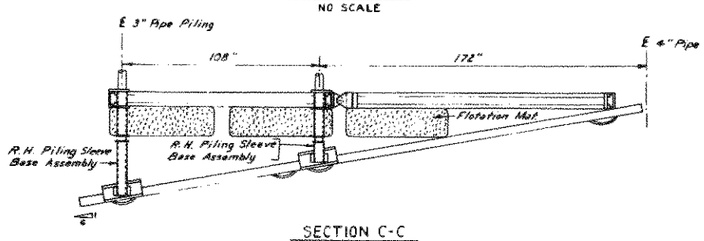
BOAT RAMP
LOG WHEEL STOPS, CONCRETE WHEEL STOPS, ROCK WHEEL STOPS & OTHER DETAIL

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

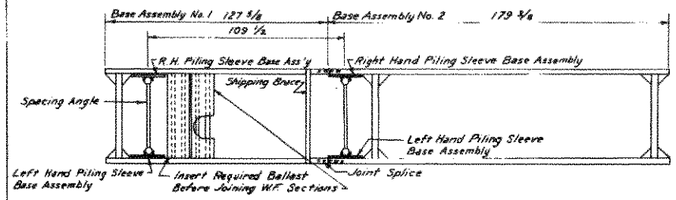
1400-38-93/20



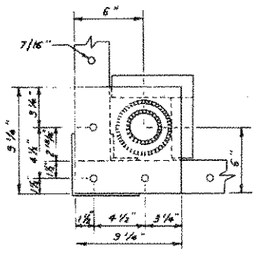
PLAN VIEW
NO SCALE



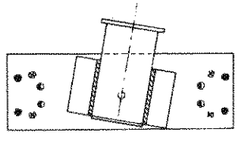
SECTION C-C
NO SCALE



PLAN VIEW - BASE ASSEMBLY
NO SCALE

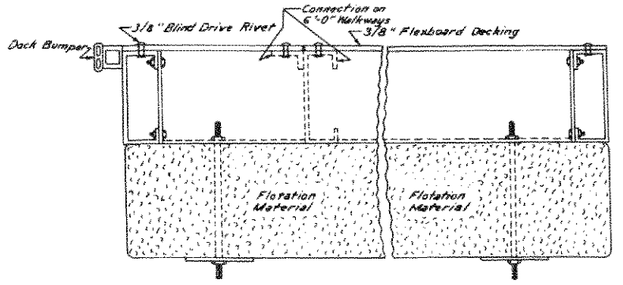


TOP VIEW
PILING SLEEVE ASSEMBLY
NO SCALE

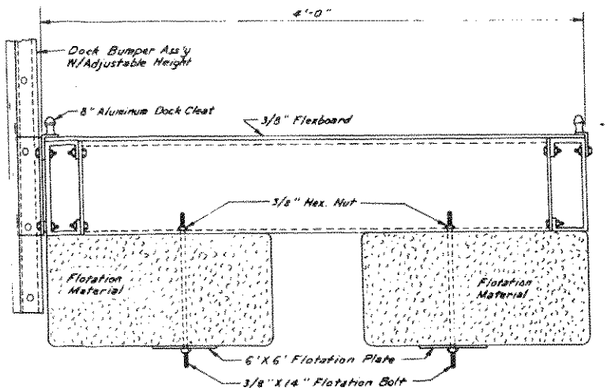


FRONT VIEW
R.H. PILING SLEEVE BASE ASSEMBLY
NO SCALE

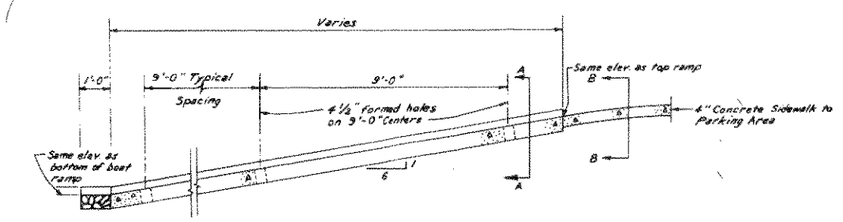
Pitch Schedule
℄ 1 to 5
● 1 to 6
⊗ 1 to 7



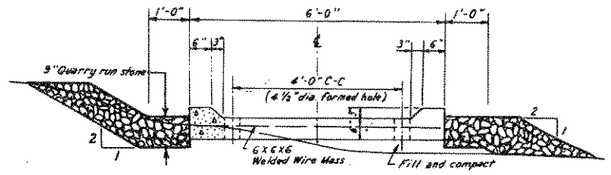
CENTER WALKWAY
NO SCALE



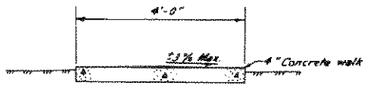
WELL WALKWAY
NO SCALE



TYPICAL PROFILE OF CONCRETE BASE
SCALE 1/2" = 1'-0"



SECTION A-A
SCALE 3/4" = 1'-0"



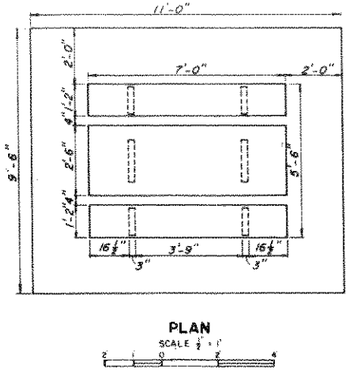
SECTION B-B
SCALE 3/4" = 1'-0"

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

LANDING DOCK
PLAN, ELEVATION AND SECTIONS

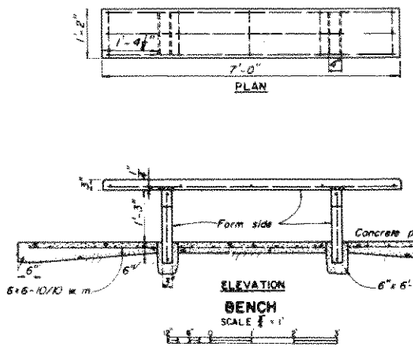
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

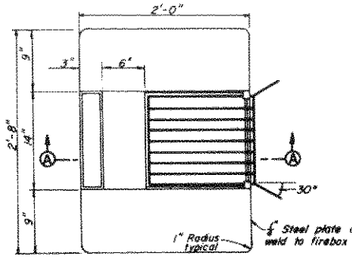
1400 - 3B - 93/21



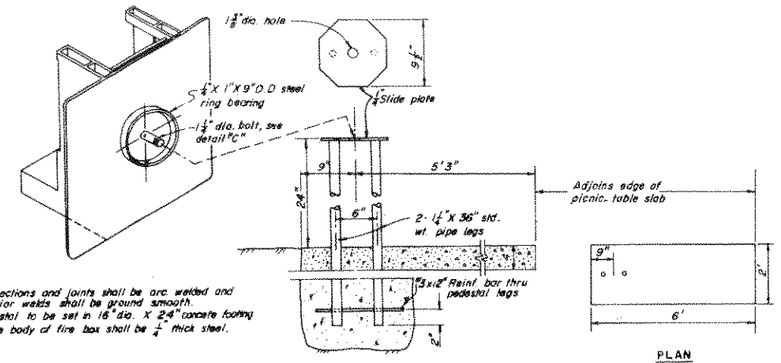
PLAN

SCALE ½" = 1'





PLAN

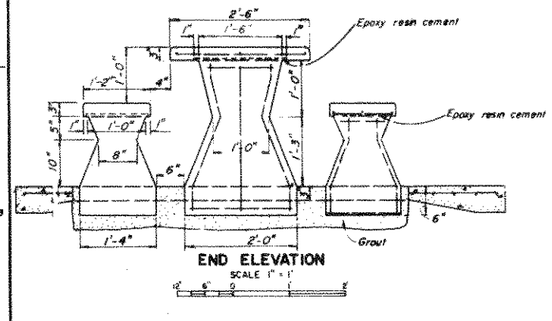


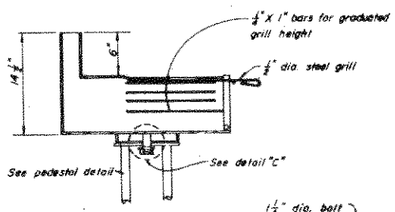
NOTES:
1. All sections and joints shall be arc welded and exterior welds shall be ground smooth.
2. Pedestal to be set in 16" dia. X 24" concrete footing
3. Entire body of fire box shall be ¼" thick steel.

SECTION

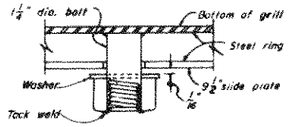
PLAN

PEDESTAL DETAIL



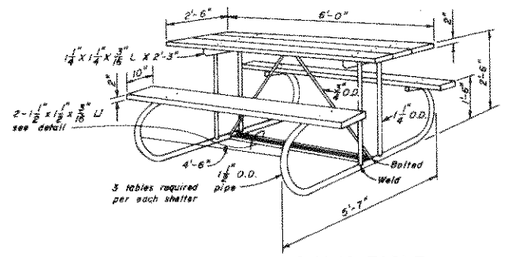


SECTION A-A

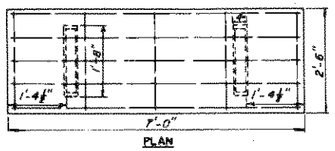


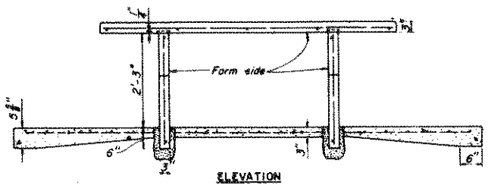
DETAIL C
NO SCALE

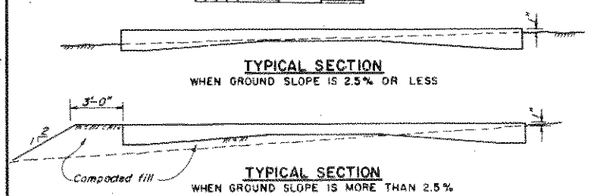
FIREPLACE
SCALE: ½" = 1'



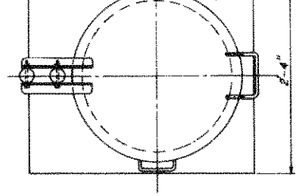
METAL FRAME PICNIC TABLE
NO SCALE

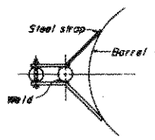


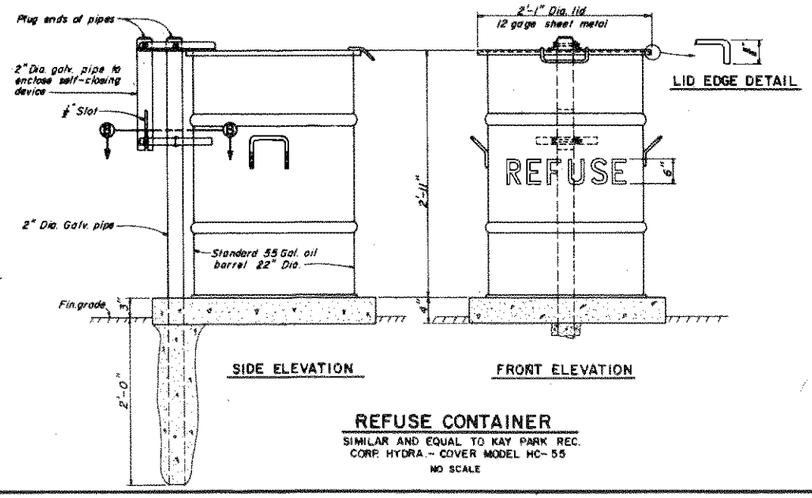




PICNIC TABLE







REFUSE CONTAINER
SIMILAR AND EQUAL TO KAY PARK REC. CORP. HYDRA - COVER MODEL HC-55
NO SCALE

For location and number of tables, refuge containers, and fireplaces, SEE PLAN SHEETS.

NOTES:

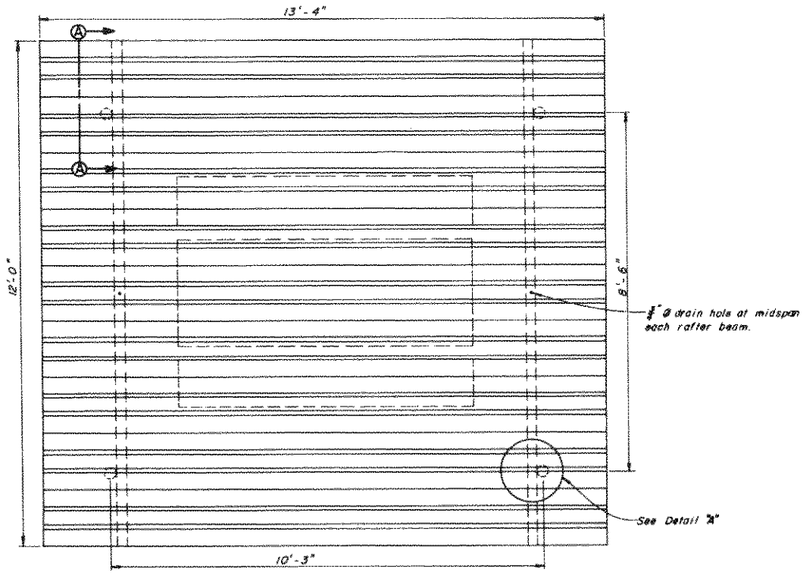
1. Color for Oil barrel and lid shall be number 14062.
2. Color for "Refuse" lettering on refuse container shall be 17875.
3. Table and benches reinforced with #3 bars.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

PICNIC FACILITIES
TABLE, FIREPLACE AND REFUSE CONTAINER

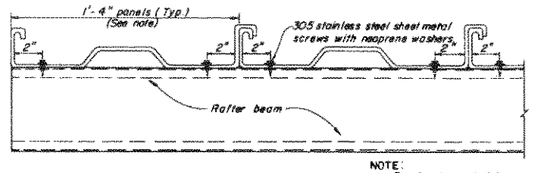
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

1400-38-93/22



PLAN

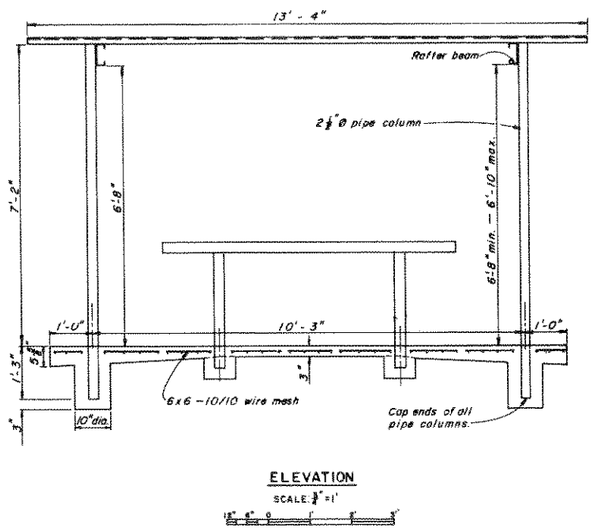
SCALE: ¾" = 1'



SECTION A-A

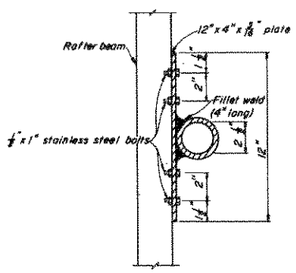
SCALE: 3" = 1'

NOTE:
Panels shown depict general mounting plan and do not specify a particular panel configuration. Min. 24 ga. zinc coated steel.



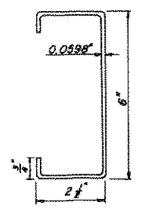
ELEVATION

SCALE: ¾" = 1'



DETAIL "A"

SCALE: 3" = 1'



RAFTER BEAM DETAIL

SCALE: 6" = 1'

SCHEDULE OF PICNIC TABLE CANOPYS

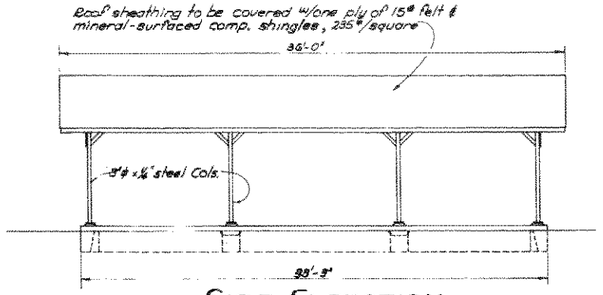
Area	Road	No. Required	Other
Kiamichi Park	N	1	Rest area on Bike trail
Twin Coves (Wilson Point)	A	2	
"	B	10	
Salt Creek Cove	C	4	Tables in Camping area

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

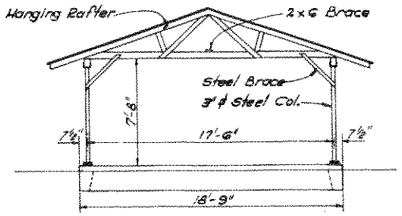
PICNIC FACILITIES
PICNIC TABLE CANOPY

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

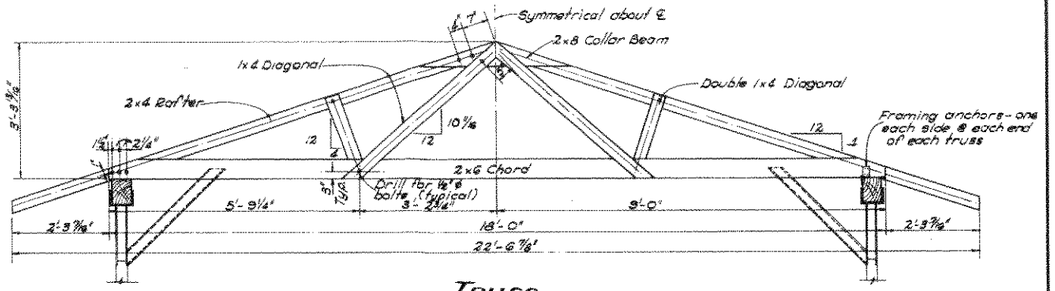
1400 - 3B - 93/23



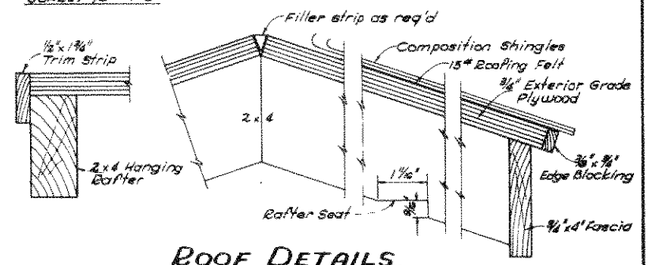
SIDE ELEVATION
SCALE: ¼" = 1'-0"



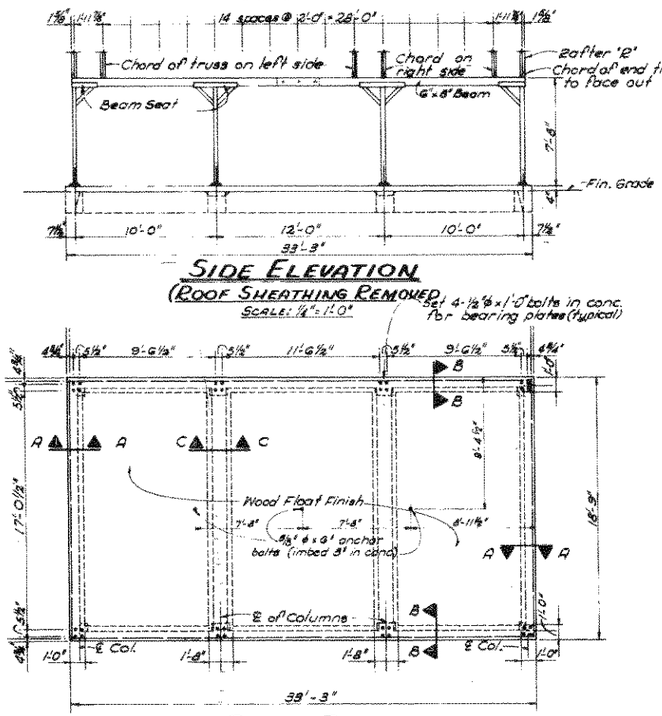
END ELEVATION
SCALE: ⅛" = 1'-0"



TRUSS
SCALE: ¾" = 1'-0"

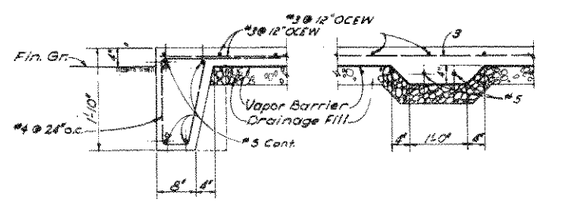


ROOF DETAILS
SCALE: 6" = 1'-0"



SIDE ELEVATION
(ROOF SHEATHING REMOVED)
SCALE: ¼" = 1'-0"

SLAB PLAN
SCALE: ¼" = 1'-0"



SECTION A-A
SECTION B-B
SCALE: 1" = 1'-0"

SECTION C-C
SCALE: 1" = 1'-0"

PICNIC SHELTER SCHEDULE

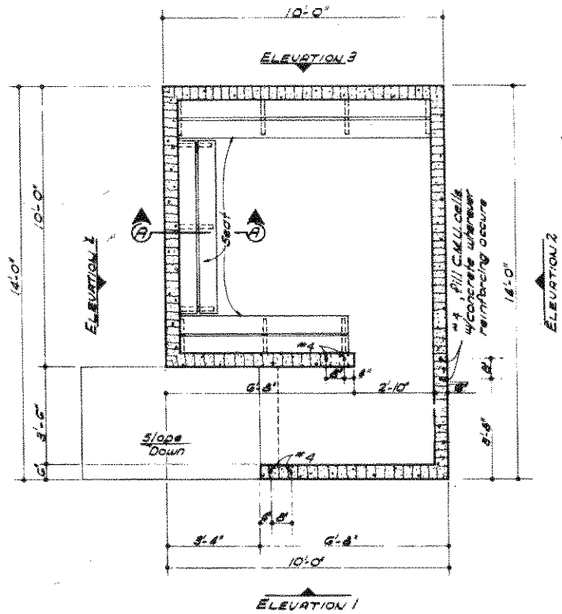
Area	Road	Approx. Floor Elevation	Other
Sawyer Bluff	A	450.0	
Sawyer Bluff	A	450.0	
Sawyer Bluff	C	450.0	
Kiamichi Park	A	440.0	
Kiamichi Park	A	444.0	
Kiamichi Park	A	442.0	
Twin Coves (Group Camping Areas)	B	436.0	Area 1
	C	436.0	Area 2
	C	439.0	Area 3
	C	428.0	Area 4

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

PICNIC SHELTER
FLOOR PLAN, ELEVATIONS AND MISCELLANEOUS DETAILS

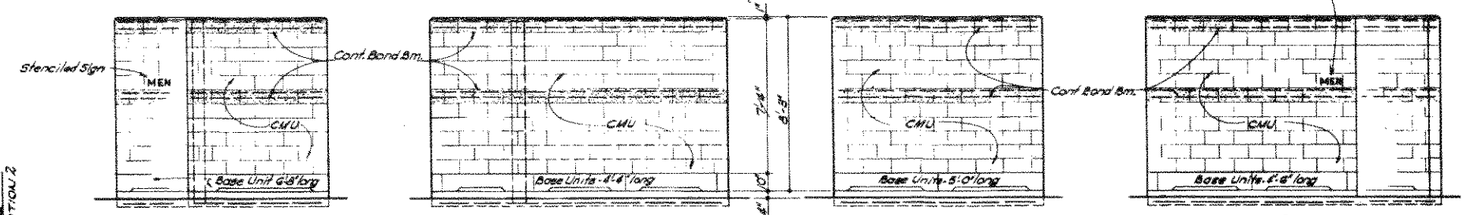
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

1400-3B-93/24



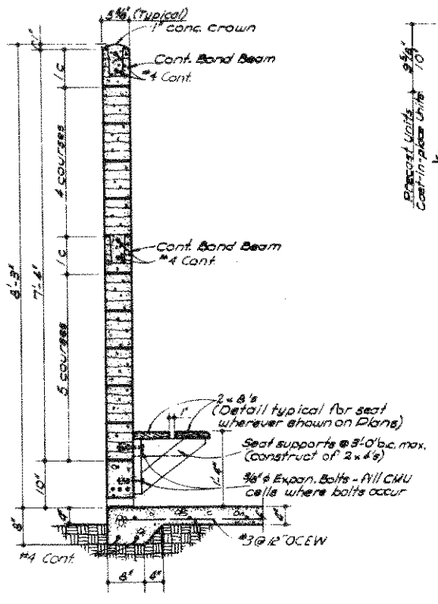
FLOOR PLAN
MENS SHELTER
SCALE: 1/4" = 1'-0"

Note: Install 1 #4 ($\frac{1}{2}$") for each longitudinal bar in each bond beam & footing @ each corner.

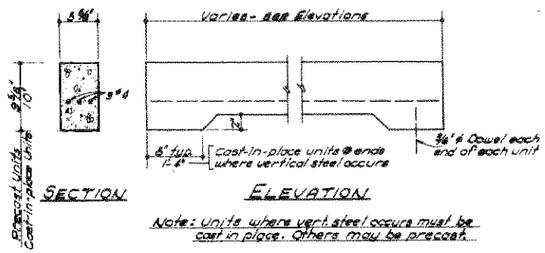


Note: Exterior showers are not shown on these plans. They will be detailed on the contract drawings.

ELEVATIONS
SCALE: 3/8" = 1'-0"

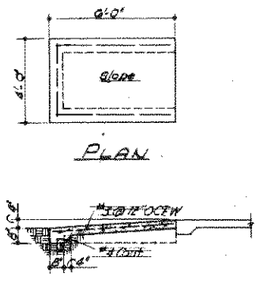


SECTION A-A
SCALE: 1" = 1'-0"

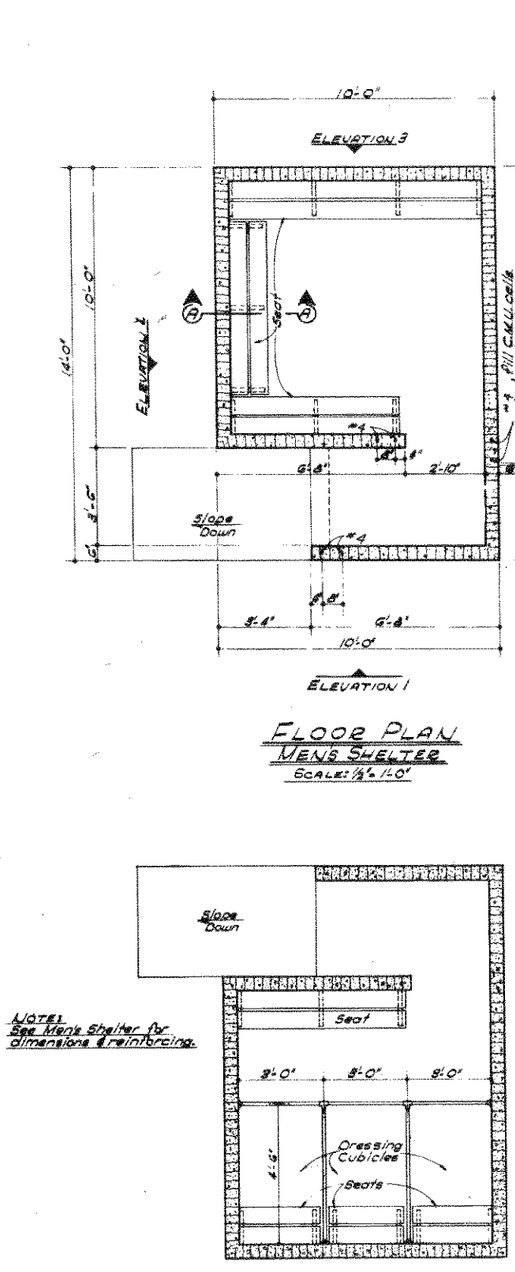


Note: units where vert. steel occurs must be cast in place. Others may be precast.

BASE UNIT DETAILS
SCALE: 1 1/2" = 1'-0"

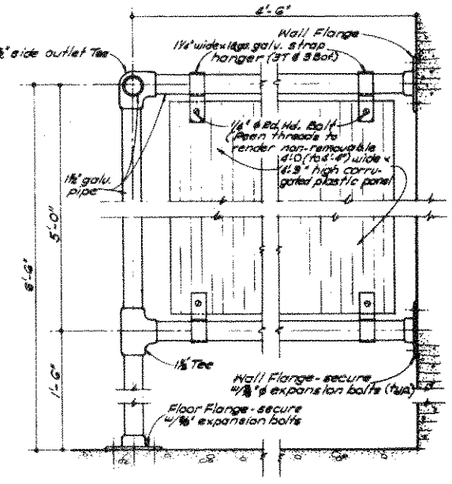


RAMP DETAILS
SCALE: 3/8" = 1'-0"



NOTE: See Men's Shelter for dimensions & reinforcing.

FLOOR PLAN
WOMENS SHELTER
SCALE: 1/4" = 1'-0"



DRESSING CUBICLE PART'L
SCALE: 3" = 1'-0"

CHANGE HOUSE SCHEDULE

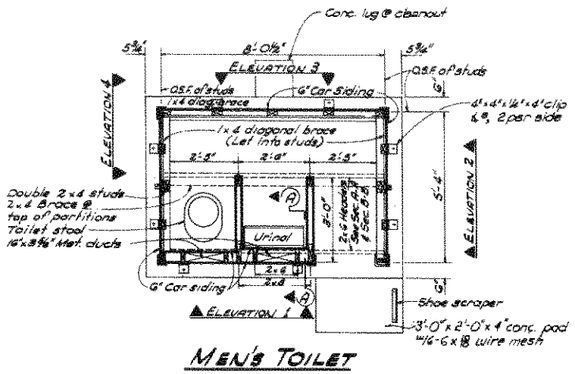
Area	Road	Approx. Floor Elevation	Other
Twin Coves (Wilson Point)	B	412.0	
Salt Creek Cove	E	414.0	Future
Kiamichi Park	L	412.0	
Kiamichi Park	Z	411.0	Future
Twin Coves (Group Camping Areas)	B	410.0	
"	C	413.0	

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

CHANGE HOUSE
FLOOR PLANS, ELEVATIONS, & DETAILS

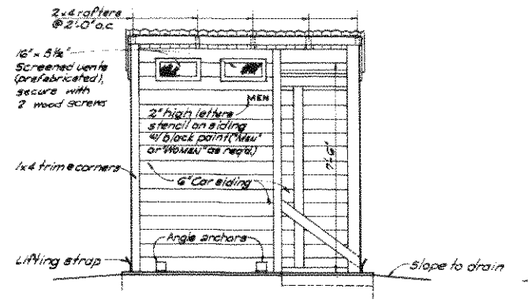
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

1400 - 3B - 93/25



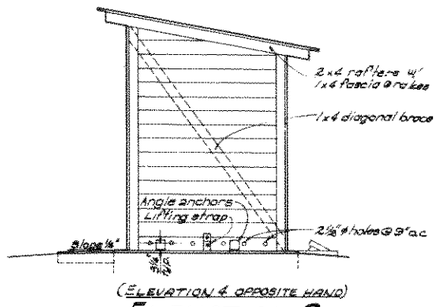
MEN'S TOILET FLOOR PLAN

Scale: ½"=1'-0"



ELEVATION 1

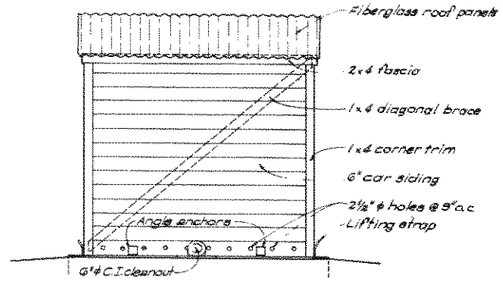
Scale: ½"=1'-0"



(ELEVATION 4 OPPOSITE HAND)

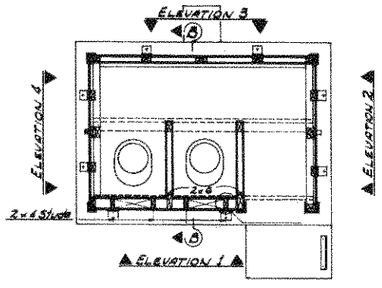
ELEVATION 2

Scale: 1½"=1'-0"



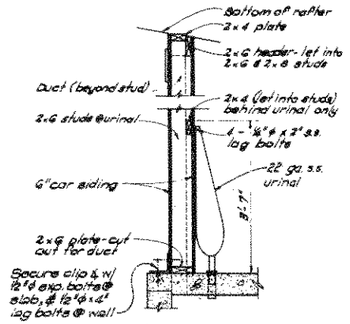
ELEVATION 3

Scale: ½"=1'-0"



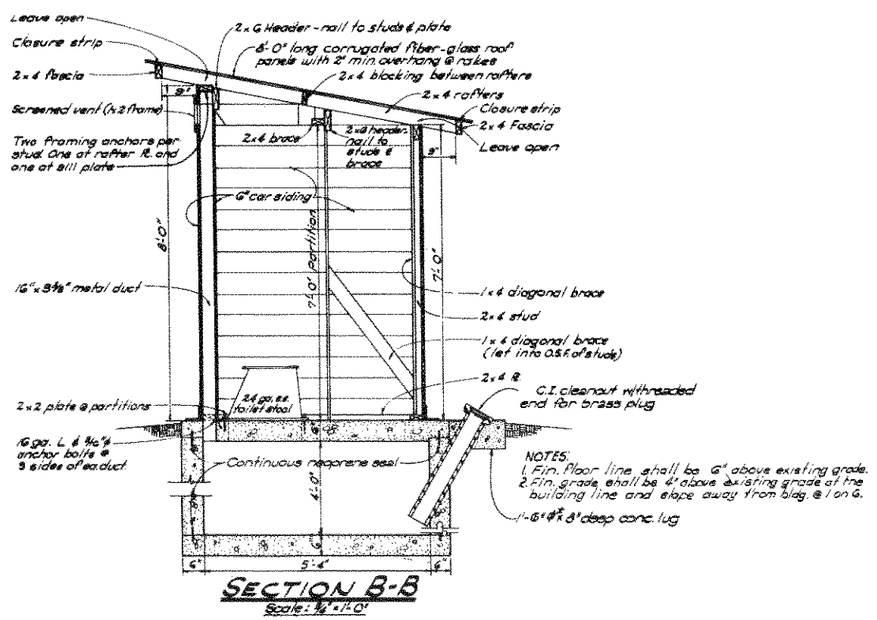
WOMEN'S TOILET FLOOR PLAN

Scale: ½"=1'-0"



SECTION A-A

Scale: 1"=1'-0"



SECTION B-B

Scale: ½"=1'-0"

SCHEDULE OF WOOD VAULT TOILETS
(LISTED AS A SET IN THIS TABLE)

Area	Road	Approx Finished Floor Elevation of Set	Other
Frazier Point	A	430.0	
Salt Creek Cove	B	422.0	
Salt Creek Cove	C	424.0	
Salt Creek Cove	D	418.0	
Kiamichi Park	B	418.0	(Primitive Area
Kiamichi Park	B	418.0	located on Dwg
Kiamichi Park	S	435.0	93/8)
Kiamichi Park	G	434.0	
Kiamichi Park	L	422.0	
Kiamichi Park	X	420.0	Future
Kiamichi Park	Y	424.0	Future
Kiamichi Park	Y	418.0	Future
Kiamichi Park	Z	413.0	Future
Twin Coves (Group camping areas)	B	444.0	Area 1
"	C	438.0	Area 2
"	C	438.0	Area 3
"	C	433.0	Area 4

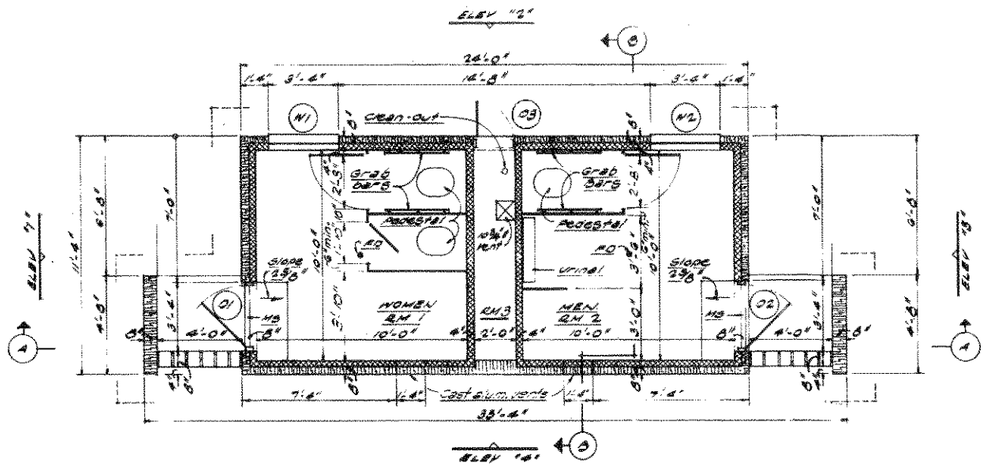
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

WOOD VAULT TOILET

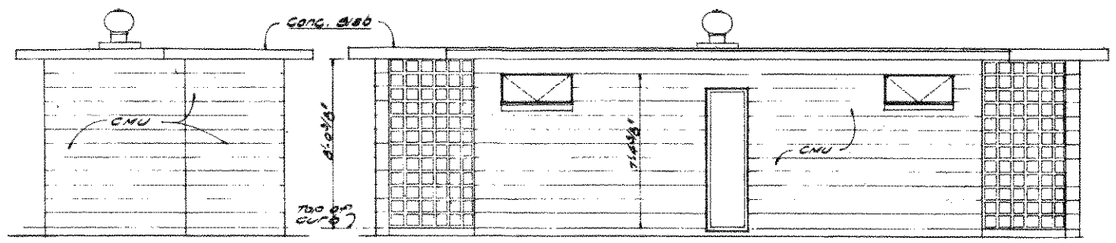
FLOOR PLANS, ELEVATIONS AND DETAILS

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

1400-38-93/26

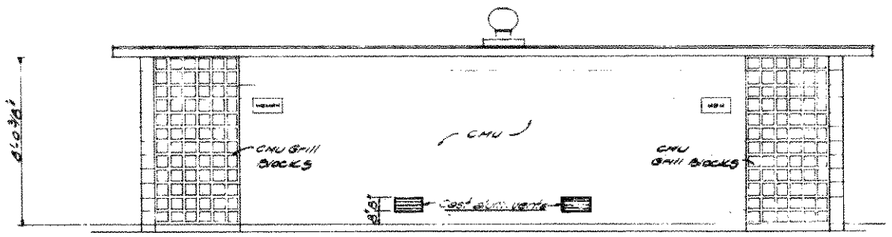


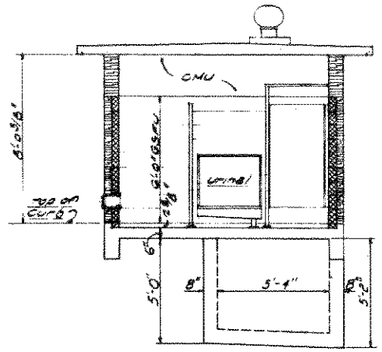
FLOOR PLAN
3/8"=1'-0"



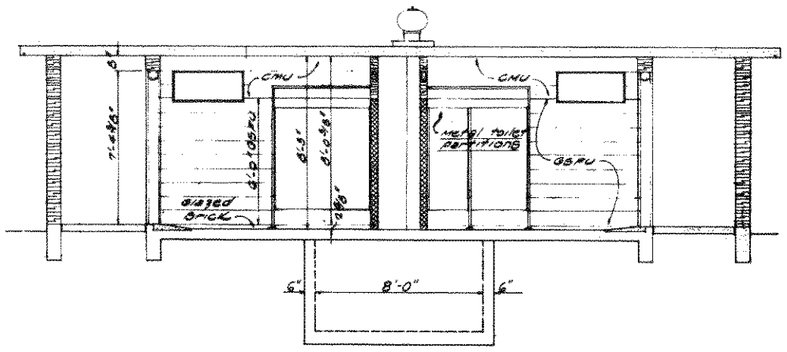
ELEV "1"
Elev "B" opposite hand
3/8"=1'-0"

ELEV "2"
3/8"=1'-0"





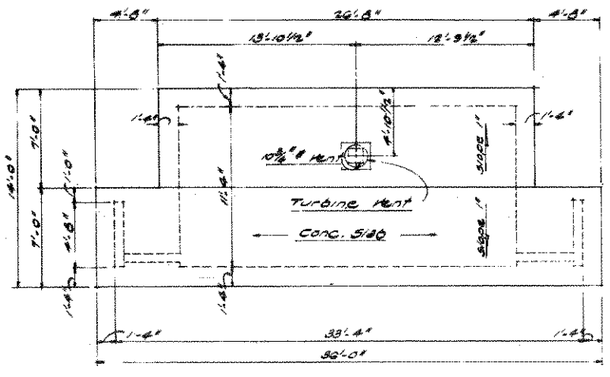
SECTION B-B



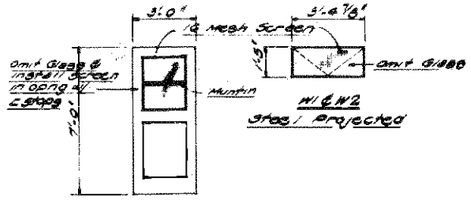
3/8"=1'-0"

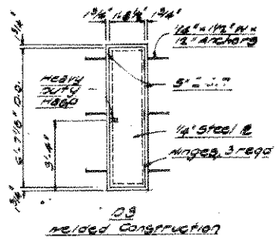
SECTION A-A

ELEV "A"
3/8"=1'-0"



ROOF PLAN
1/4"=1'-0"





09
Welded Construction

SCHEDULE OF MASONRY VAULT TOILET

Area	Road	Approx Fin. Floor Elevation	Other
Rattan Landing	A	434.0	
Rattan Landing	A	432.0	
Sawyer Bluff	B	458.0	
Sawyer Bluff	A	468.0	
Sawyer Bluff	C	466.0	
Twin Coves (Wilson Point)	B	428.0	
"	C	424.0	Future
Twin Coves (Virgil Point)	C	427.0	
Salt Creek Cove	A	422.0	
Salt Creek Cove	E	423.0	Future
Kiamichi Park	C	421.0	
Kiamichi Park	D	426.0	
Kiamichi Park	I	426.0	
Kiamichi Park	J	425.0	
Kiamichi Park	K	425.0	
Kiamichi Park	N	431.0	
Kiamichi Park	R	427.0	
Kiamichi Park	T	454.0	Future
Kiamichi Park	W	428.0	Future
Bridge View	A	(Term of Cmb)	

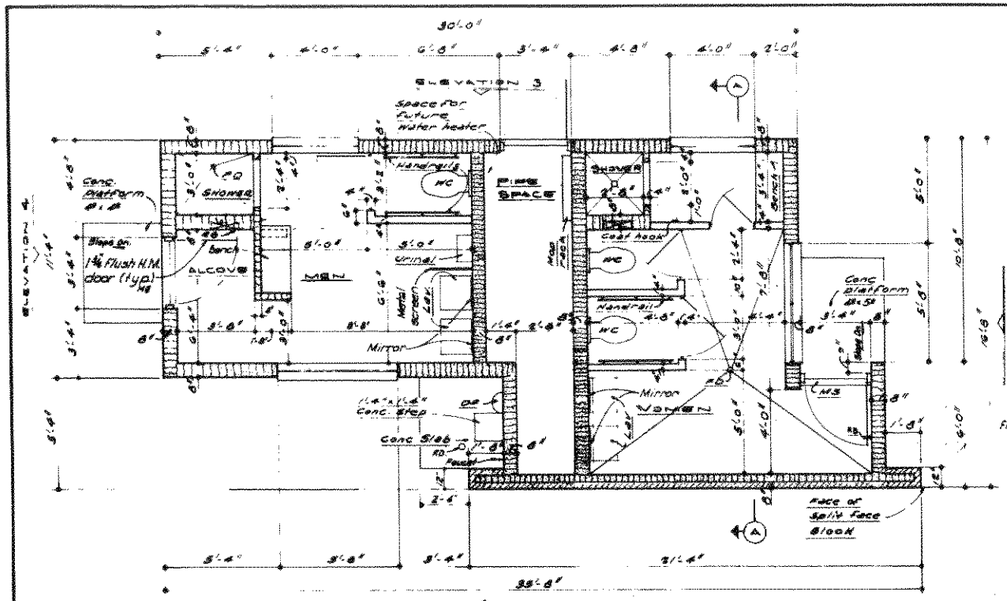
NOTES:
1. Slabs shall be 6" thick with carborundum finish.
2. Footings shall be 18" min. below finish grade.
3. Men and women rooms shall have glazed brick base and GSFU wainscot

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

MASONRY VAULT TOILET
FLOOR PLAN, ELEVATIONS AND SECTIONS

U.S ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

1400-38-93/27

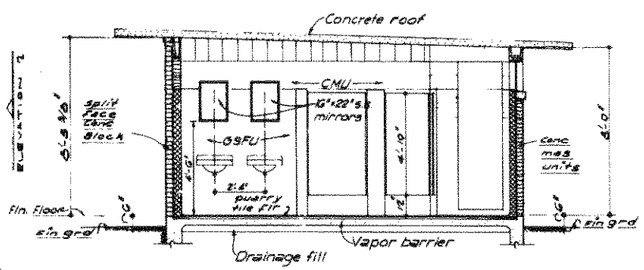


FLOOR PLAN

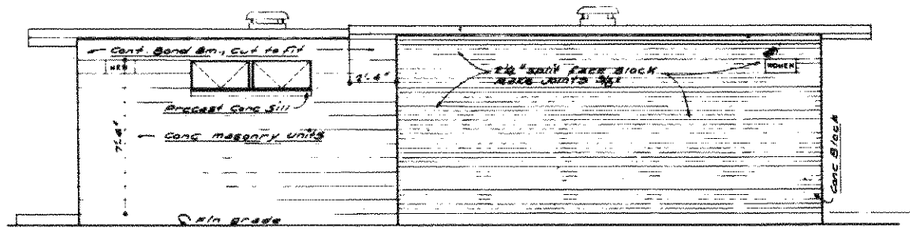
Scale: ⅛"=1'-0"

NOTES:

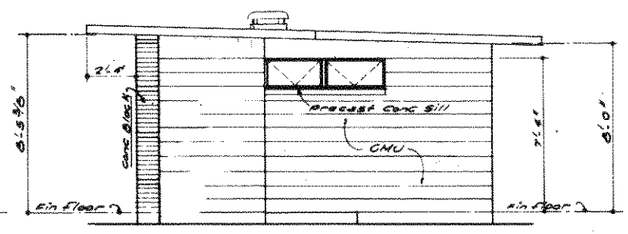
1. Floors shall be quarry tile except in pipe space.
2. Base shall be coved G5FU except in pipe space.
3. Wainscot shall be G5FU except in pipe space.
4. Floor slab shall be 5" thick except in pipe space where it shall be 6½" thick.
5. Footings shall be 18" min. below finish grade.



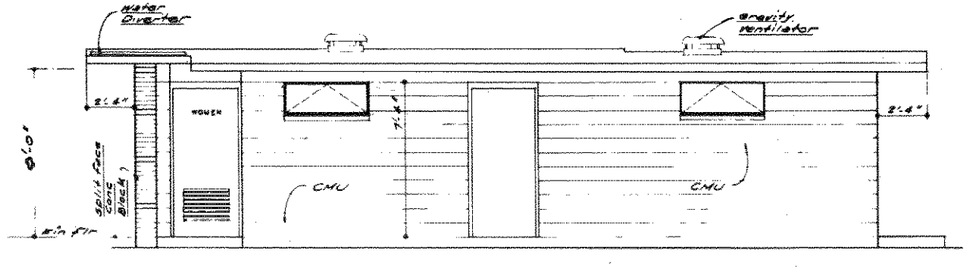
SECTION A-A



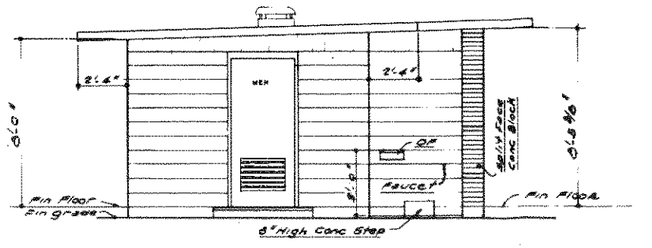
ELEVATION 1



ELEVATION 2



ELEVATION 3



ELEVATION 4

SCALE: ⅛ INCH = 1 FOOT

SCHEDULE OF SHOWER AND TOILET BUILDINGS

Area	Road	Approx. Fin. Floor Elevation	Other
Twin Coves (Virgil Point)	A	437.5	
"	F	442.0	Future
Salt Creek Cove	C	438.0	
Kiamichi Park	M	456.0	
Kiamichi Park	V	440.0	Future
Kiamichi Park	Q	438.0	
Kiamichi Park	S	444.0	Future
Kiamichi Park	P	443.0	

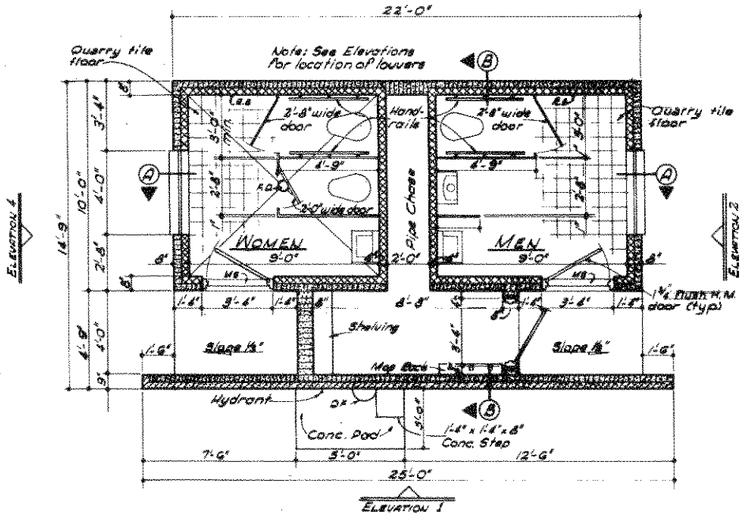
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SHOWER AND TOILET BUILDING

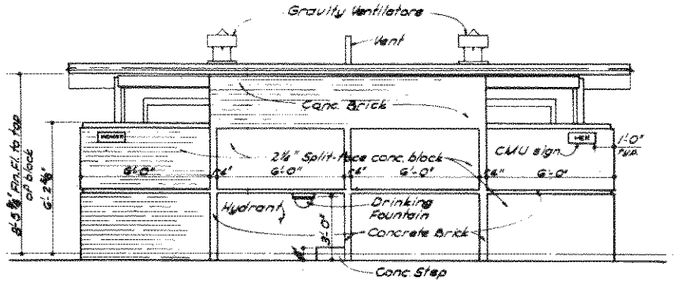
PLAN, ELEVATIONS, SECTION AND DETAIL

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG. 1972

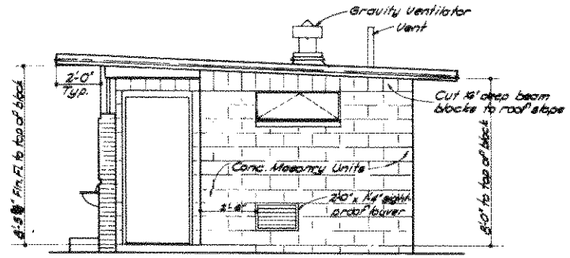
1400-38-93/28



FLOOR PLAN

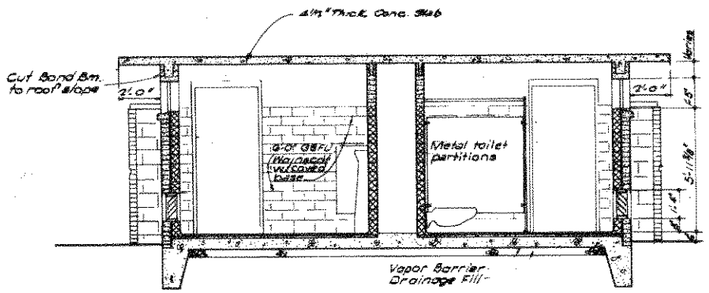


ELEVATION 1

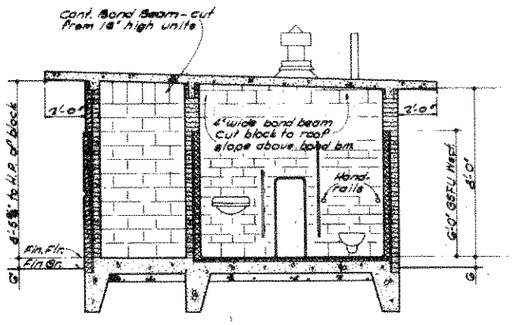


ELEVATION 2

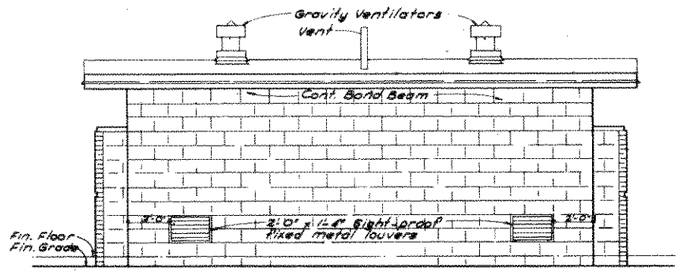
Elevation 4 similar except opposite hand & CMU in lieu of Door



SECTION A-A



SECTION B-B



ELEVATION 3

WATERBORNE TOILET BUILDING SCHEDULE

Area	Road	Elevation (Approx elev of Finished Grade)	Other
Twin Coves (Wilson Point)	A	442.0	
Kiamichi Park	A	441.9	First WB
Kiamichi Park	A	448.0	Second WB
Kiamichi Park	E	440.0	First WB
Kiamichi Park	E	441.0	Second WB
Kiamichi Park	H	440.0	

LEGEND

- Conc. Brick or Split-face Block
- Concrete Masonry Units
- Glazed Structural Facing Units
- Concrete
- Wood
- Blocking (Wood)
- Rigid Insulation

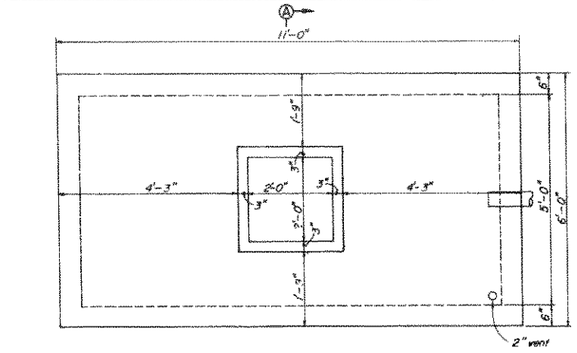
Notes
1. Scale of all drawings this sheet: 3/16" = 1'-0"
2. See Site Plan for orientation and F.F. & F.G. elevations.
3. Slabs shall be 6" thick on 4" drainage fill.
4. Footings shall be 18" min. below finish grade.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

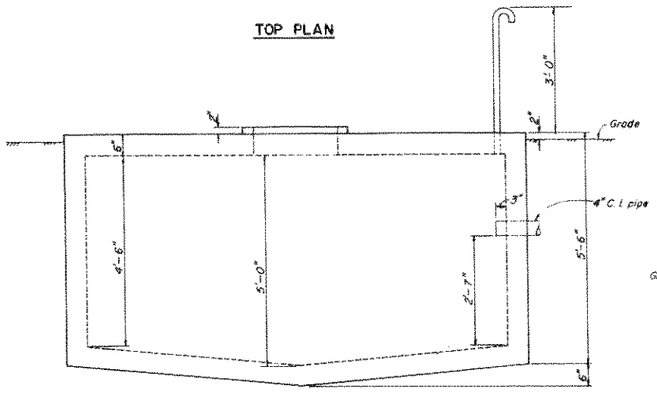
WATERBORNE TOILET BUILDING
FLOOR PLAN, ELEVATIONS AND SECTIONS

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

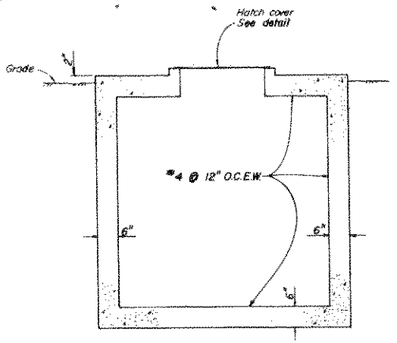
1400-3B-93/29



TOP PLAN



SIDE ELEVATION



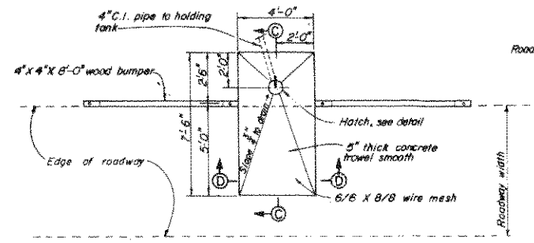
SECTION A-A

SEWAGE HOLDING TANK

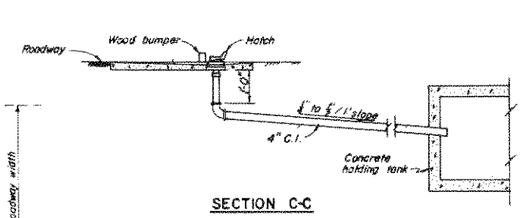
SCALE: 3/4" = 1'

TRAILER SANITARY STATION SCHEDULE

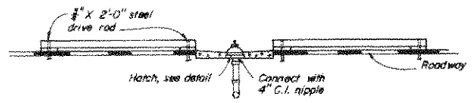
Area	Road	Elevation	Other
Twin Coves (Virgil Point)	A	449.0	
Salt Creek Cove	C	438.0	
Kiamichi Park	B	444.0	(over sized tank to be designed)



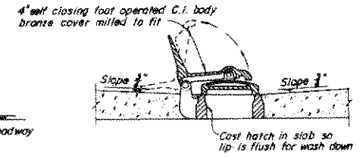
PLAN



SECTION C-C



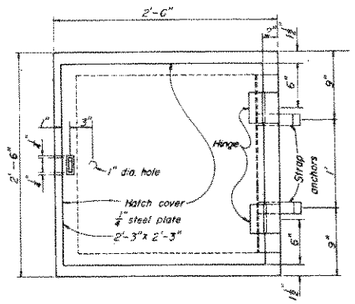
SECTION D-D



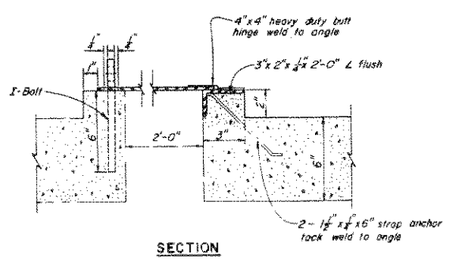
HATCH DETAIL

SANITARY STATION

NO SCALE



PLAN



SECTION

HOLDING TANK HATCH COVER

NO SCALE

NOTES:

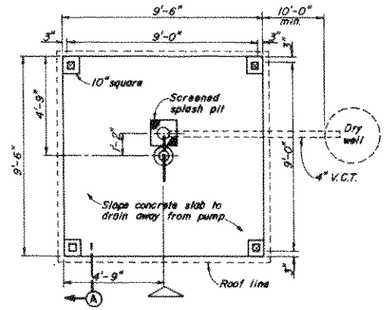
1. All concrete shall have a min. compressive strength of 3000 psi @ 28 days.
2. All reinforcing shall be bent in accordance with ACI Manual of Standard Practice For Detailing Reinforced Concrete Structures (latest edition)
3. The clear distance between surfaces of concrete and steel reinforcement shall be 2".

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

TRAILER SANITARY STATION
PLANS, ELEVATIONS, SECTIONS & DETAILS

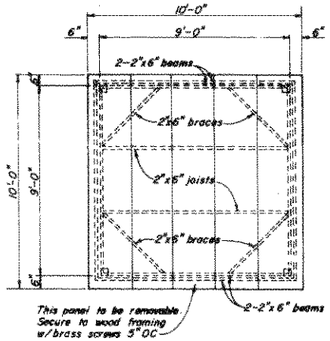
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

1400-3B-93/30



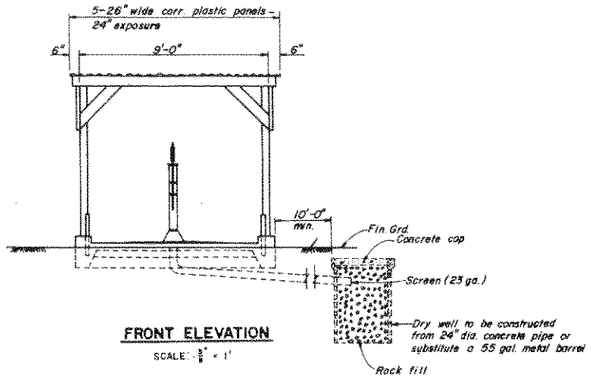
PLAN

SCALE: $\frac{1}{2}$" = 1'



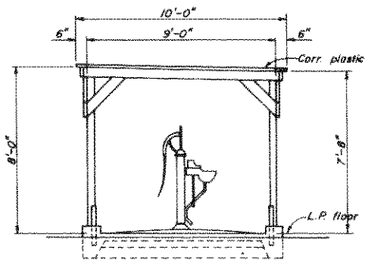
ROOF PLAN

SCALE: $\frac{1}{2}$" = 1'



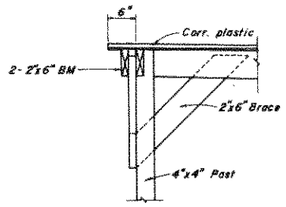
FRONT ELEVATION

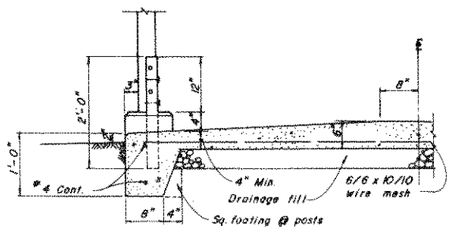
SCALE: $\frac{1}{2}$" = 1'



SIDE ELEVATION

SCALE: $\frac{1}{2}$" = 1'

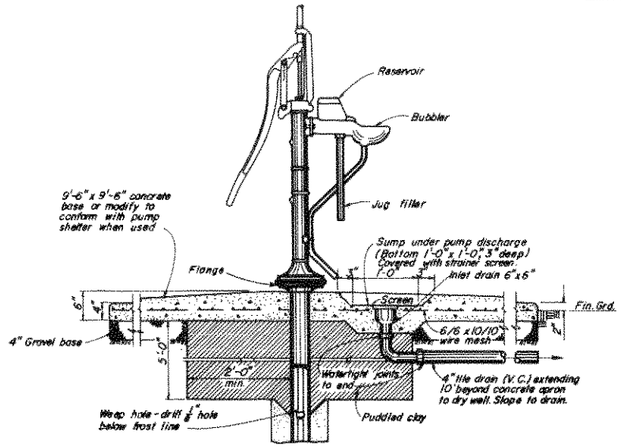


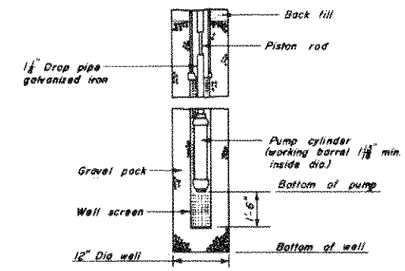


SECTION A

SCALE: 1" = 1'

PUMP SHELTER





SECTION THRU BASE AND WELL PIPE

HAND PUMP AND WELL

NO SCALE

HAND PUMP SCHEDULE

Area	Road	Approx Elev
Frasier Point	B	422.0
Kiamichi Park	B	433.0
Bridge View	A	(Scem elev)
Twin Coves (Group Camping Areas)	B	433.0
"	C	436.0
"	C	440.0
"	C	426.0

NOTES:

1. Drainage away from pump to be provided by tile leading into dry well.
2. Slope of roof to be away from avenue of approach to pump, front designated by ◿
3. Rafters fastened to lower wood framing with metal angles.
4. Corner posts are anchored to masonry by lag screws thru. 2 $\frac{1}{2}$" x 2 $\frac{1}{2}$" x $\frac{1}{4}$" L's which are embedded as shown in foundation detail.
5. Rough size lumber to be used.
6. Chamfer all concrete corners $\frac{3}{4}$".

HUGO LAKE

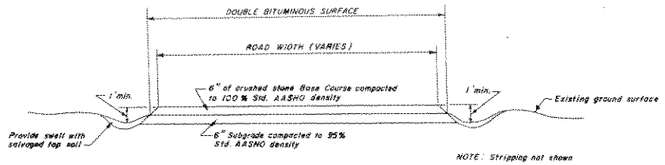
KIAMICHI RIVER, OKLAHOMA

WATER SUPPLY

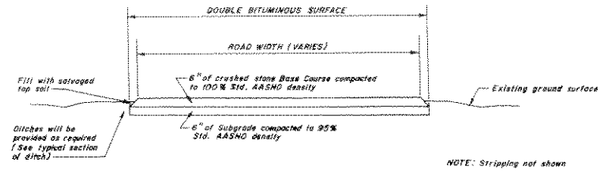
HAND PUMP AND SHELTER DETAIL

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

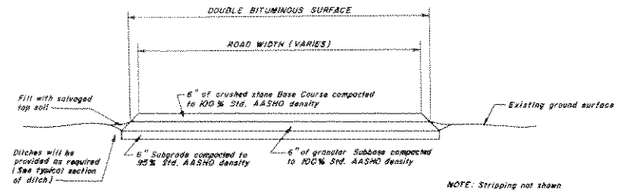
1400-38-93/31



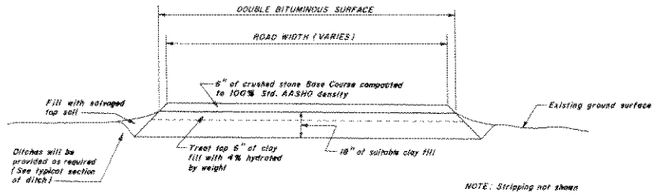
SECTION A



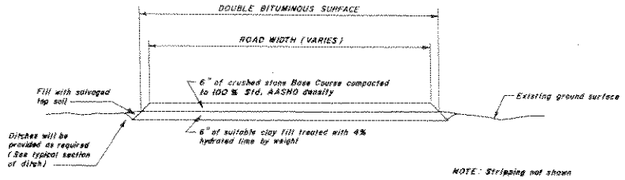
SECTION B



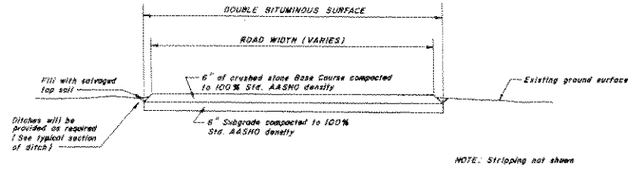
SECTION C



SECTION D



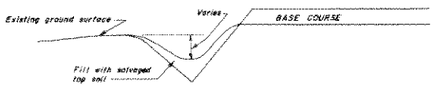
SECTION E



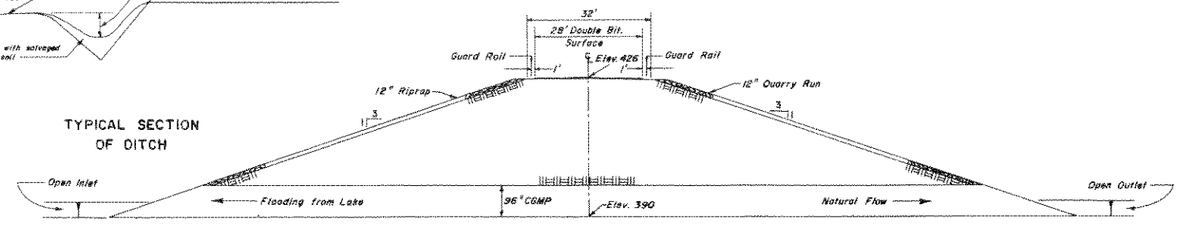
SECTION F

NOTE: PARKING AREAS WILL BE WIDENED TO 20 FEET TO ACCOMMODATE CARS AND TO 40 FEET TO ACCOMMODATE CAR AND TRAILER UNITS

SECTION G



TYPICAL SECTION OF DITCH



ROAD FILL SECTION

PUBLIC USE AREA	ROAD	ROAD CLASSIFICATION	ROADWAY WIDTH	TYPICAL SECTION
RATTAN LANDING	A	ACCESS	28	A
	B	CIR, 2-WAY PICNIC	26	A
	B	CIR, 1-WAY PICNIC	12	A
FRAZIER POINT	A	ACCESS	28	A
	B	ACCESS	28	A
SAWYER BLUFF	A	ACCESS	28	C
	A-1	CIR, 2-WAY PICNIC	26	C
	B	ACCESS	28	C
	C	CIR, 2-WAY PICNIC	26	C
	C	CIR, 1-WAY PICNIC	12	C
TWIN COVES (WILSON POINT)	A	ACCESS	28	B
	B	CIR, 2-WAY PICNIC	26	B
	B	CIR, 1-WAY PICNIC	12	B
	C	CIR, 2-WAY PICNIC	26	B
	C	CIR, 1-WAY PICNIC	12	B
TWIN COVES (VIRGIL POINT)	A	ACCESS (TO STA 60+00)	28	D
	A	ACCESS (STA 60+00 TO END)	28	F
	B	CIR, 2-WAY CAMP	26	D
	B	CIR, 1-WAY CAMP	14	E
	C	CIR, 2-WAY CAMP	26	E
	D	CIR, 1-WAY CAMP	14	F
	E	CIR, 1-WAY CAMP	14	F
	F	CIR, 2-WAY CAMP	26	E
	F	CIR, 1-WAY CAMP	14	E
TWIN COVES (GROUP CAMPING AREAS)	A	CIR, 2-WAY	20	3" CR. STONE
	B	CIR, 2-WAY	20	3" CR. STONE
	C	CIR, 2-WAY	20	3" CR. STONE
SALT CREEK COVE	A	ACCESS	28	G
	B	CIR, 2-WAY PICNIC	26	G
	C	CIR, 2-WAY CAMP	26	G
	C-1	CIR, 1-WAY	14	G
	D	CIR, 2-WAY CAMP	20	3" CR. STONE
	D	CIR, 1-WAY CAMP	14	3" CR. STONE
	E	CIR, 2-WAY BEACH	26	G
KIAMICHI PARK	A	ACCESS (TO BEGINNING OF ROAD "D")	28	G
	A	CIR, 2-WAY PICNIC (FROM ROAD "D" TO END)	26	G
	B	CIR, 2-WAY (PRIMITIVE)	20	3" CR. STONE
	C	ACCESS	28	G
	D	ACCESS	28	G
	E	CIR, 1-WAY PICNIC	12	G
	F	CIR, 1-WAY PICNIC	12	G
	G	CIR, 2-WAY PICNIC	26	G
	G	CIR, 1-WAY PICNIC	12	G
	H	ACCESS	28	G[1]
	H-1	EMERGENCY EXIST	20	3" CR. STONE
	I	CIR, 2-WAY CAMP	26	G
	I	CIR, 1-WAY CAMP	14	G
	J	CIR, 2-WAY CAMP	26	G
	J	CIR, 1-WAY CAMP	14	G
	K	CIR, 2-WAY CAMP	26	G
	K	CIR, 1-WAY CAMP	14	G
	L	ACCESS	28	G
	M	CIR, 2-WAY CAMPING	26	G
	N	CIR, 2-WAY CAMPING	26	G
	N	CIR, 1-WAY CAMPING	14	G
	O	CIR, 1-WAY CAMPING	14	G
	P	CIR, 2-WAY CAMPING	26	G
	P	CIR, 1-WAY CAMPING	14	G
	Q	CIR, 2-WAY CAMPING	26	G
	Q	CIR, 1-WAY CAMPING	14	G
	R	CIR, 2-WAY CAMPING	26	G
	R	CIR, 1-WAY CAMPING	14	G
	S	CIR, 2-WAY CAMPING	26	G
	S	CIR, 1-WAY CAMPING	14	G
	T	CIR, 2-WAY CAMPING	26	G
	T	CIR, 1-WAY CAMPING	14	G
	U	CIR, 2-WAY CONCESSION	20	3" CR. STONE
	V	CIR, 2-WAY CAMPING	26	G
	V	CIR, 1-WAY CAMPING	14	G
	W	CIR, 1-WAY CAMPING	14	G
	X	CIR, 2-WAY CAMPING	28	G
	X	CIR, 1-WAY CAMPING	14	G
	Y	CIR, 2-WAY PICNIC	26	G
	Y	CIR, 1-WAY PICNIC	12	G
	Y-1	CIR, 1-WAY PICNIC	12	G
	Z	CIR, 2-WAY BEACH	26	G
BRIDGE VIEW	A	CIR, 2-WAY FISHING	26	F

[1] OVERFLOW SECTION SURFACED WITH 6" CONCRETE SLAB

ROAD CLASSIFICATION

Use	Lanes (10' wide)	Max Design Speed	Total Roadway Width (ft)
Access	2	45	28
Circulation Loops			
(1) Two-way camp & picnic	2	25	26
(2) One-way camp	1	15	*14
(3) One-way picnic	1	15	12
Service and maintenance			
(1) Water wells	1	-	14
(2) Trailer sanitary station	1	-	14
(3) Toilets	1	-	10
Pullouts, pullthroughs & parallel parking			
(1) camp pullout	1	-	14
(2) Picnic pullout	1	-	12
(3) Trailer pullthrough	1	-	14
(4) Parallel parking			
a. Camp	1		12
b. Picnic	1		11
c. Water well	1		11

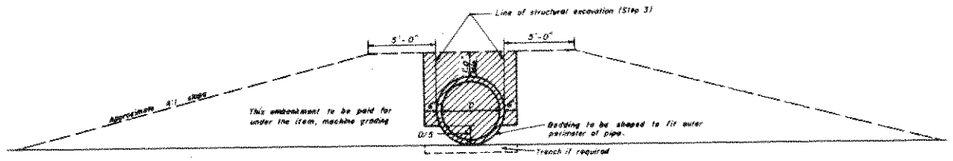
* Roadway width having curves with radius less than 145' may be widened 3'-6".

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

TYPICAL ROADWAY SECTIONS

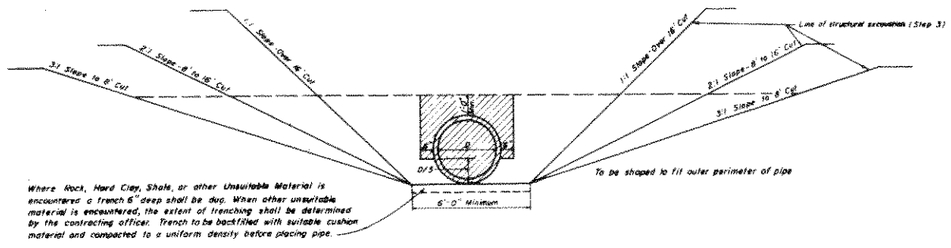
U. S. ARMY ENGINEER DISTRICT, TULSA, CORPS OF ENGINEERS AUG., 1972

1400-DM3B-93/32



DETAIL OF BEDDING OF PIPE CULVERT IN FILL

USE STEPS 2, 3, & 4 AND DETAILS AS BELOW



PIPE CULVERT IN CUTS

OPERATIONS

Step 1 Excavate to lines of structural excavation.

Step 2 Fill and compact shaded area with acceptable material.

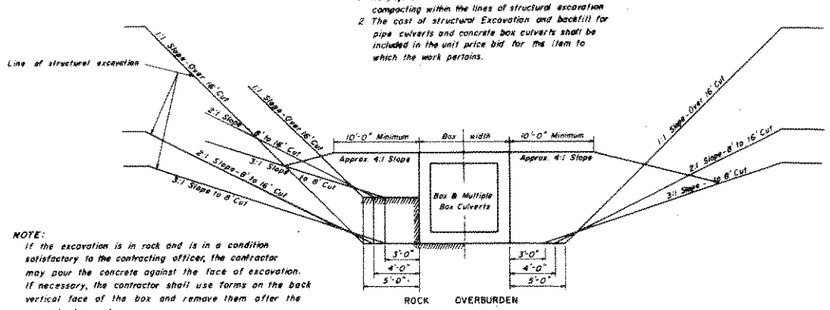
Step 3 Excavate the hachured area to properly fit and bed the pipe.

Step 4 Backfill and compact with mechanical tampers to 1'-0" above the top of pipe.

NOTE: All operations shall be in accordance with the technical specifications.

PAYMENT NOTES:

1. No payment will be allowed for backfilling and compacting within the lines of structural excavation
2. The cost of structural Excavation and backfill for pipe culverts and concrete box culverts shall be included in the unit price bid for the item to which the work pertains.

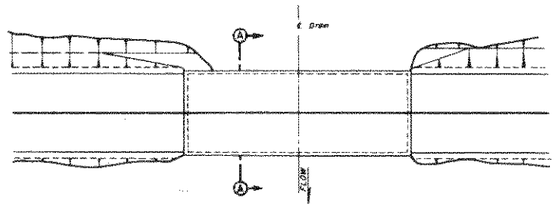


NOTE:
If the excavation is in rock and is in a condition satisfactory to the contracting officer, the contractor may pour the concrete against the face of excavation. If necessary, the contractor shall use forms on the back vertical face of the box and remove them after the concrete has set.

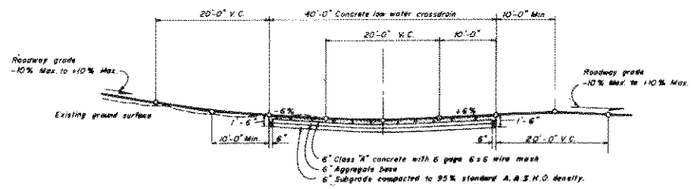
BOX CULVERTS

Step 1 Excavate to lines of structual excavation

Step 2 After construction of box culvert, fill and compact to meet the density specified for this project.



PLAN



ELEVATION

NOTE:

1. *Aggregate base shall not be used when bottom of existing drain is rock.*
2. *When rock is encountered, the concrete shall be placed directly on the rock in such a manner that the minimum thickness of the concrete crossdrain shall not be less than 6"*

LOW WATER CROSSDRAIN

SCHEDULE OF DRAINAGE STRUCTURES

AREA	ROAD	DRAINAGE STRUCTURE NO.	TYPE	OUTFALL VELOCITY (FPS)	APPROX. INVERT EL.
RATTAN	B	1	24" CMP	5.7	418.0
		2	24" CMP	5.7	416.0
		3	LWC	-	430.0
		4	LWC	-	431.0
FRAZIER	B	1	24" CMP	-	424.0
		2	24" CMP	-	423.0
		3	24" CMP	-	423.0
		4	36" CMP	7.0	424.0
SAWYER BLUFF	A	1	18" CMP	5.0	462.0
		2	18" CMP	6.0	468.0
	C	1	18" CMP	-	463.0
		2	18" CMP	-	464.0
WILSON POINT	B	1	LWC	-	416.0
	C	1	LWC	-	416.0
VIRGIL POINT	A	1	18" CMP	-	457.0
	B	1	24" CMP	4.3	417.0
	C	1	18" CMP	5.0	423.0
	D	1	LWC	-	416.0
		2	LWC	-	415.0
	E	1	LWC	-	425.0
	F	1	LWC	-	420.0
		2	18" CMP	5.0	416.0
SALT CREEK COVE	A	1	48" CMP	10.0	436.0
		2	36" CMP	7.5	440.0
	B	1	24" CMP	-	410.0
		2	18" CMP	-	413.0
	C	1	36" CMP	-	416.0
		2	LWC	-	421.0
	C-1	1	LWC	-	418.0
	E	1	18" CMP	-	420.0
KIAMICHI PARK	A	1	18" CMP	-	446.0
	B	1	18" CMP	5.0	422.0
	E	1	LWC	-	439.0
		2	LWC	-	437.0
		3	LWC	-	437.0
	F	1	LWC	-	435.0
	G	1	LWC	-	421.0
	H	1	96" CORP	-	390.0
		2	36" CMP	9.0	412.0
		3	48" CMP	9.5	407.0
	H-1	1	24" CMP	-	434.0
	I	1	LWC	-	417.0
		2	24" CMP	4.0	424.0
	J	1	24" CMP	3.8	423.0
	K	1	LWC	-	420.0
	L	1	24" CMP	4.0	415.0
	M	1	18" CMP	4.3	464.0
	N	1	LWC	-	444.0
	P	1	LWC	-	436.0
	Q	1	LWC	-	434.0
		2	LWC	-	433.0
	R	1	LWC	-	419.0
	S	1	LWC	-	435.0
	T	1	18" CMP	4.3	450.0
	V	1	LWC	-	422.0
	W	1	LWC	-	418.0
		2	LWC	-	436.0
	X	1	18" CMP	5.8	414.0
	Y	1	36" CMP	7.0	410.0
		2	LWC	-	408.0
		3	LWC	-	408.0
	Y-1	1	LWC	-	408.0

CMP = GALVANIZED METAL PIPE

LWC = LOW WATER CROSSING

CORP = COATED GALVANIZED METAL PIPE

HUGO LAKE

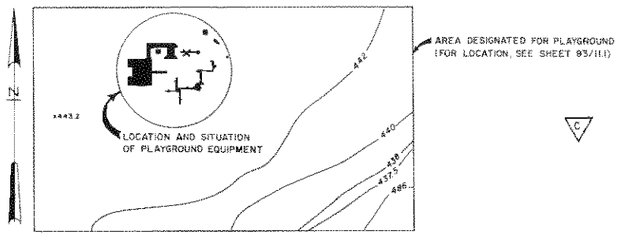
KIAMICHI RIVER, OKLAHOMA

DRAINAGE STRUCTURES

NO SCALE

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS, AUG., 1972

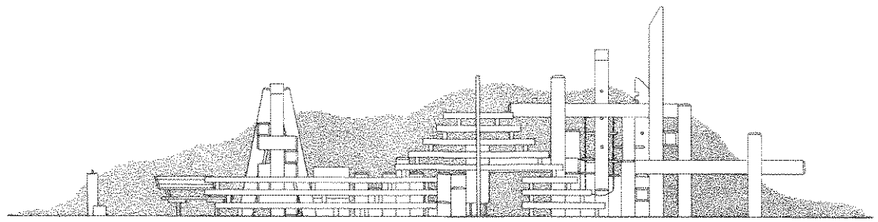
1400 - DM3B-93/33



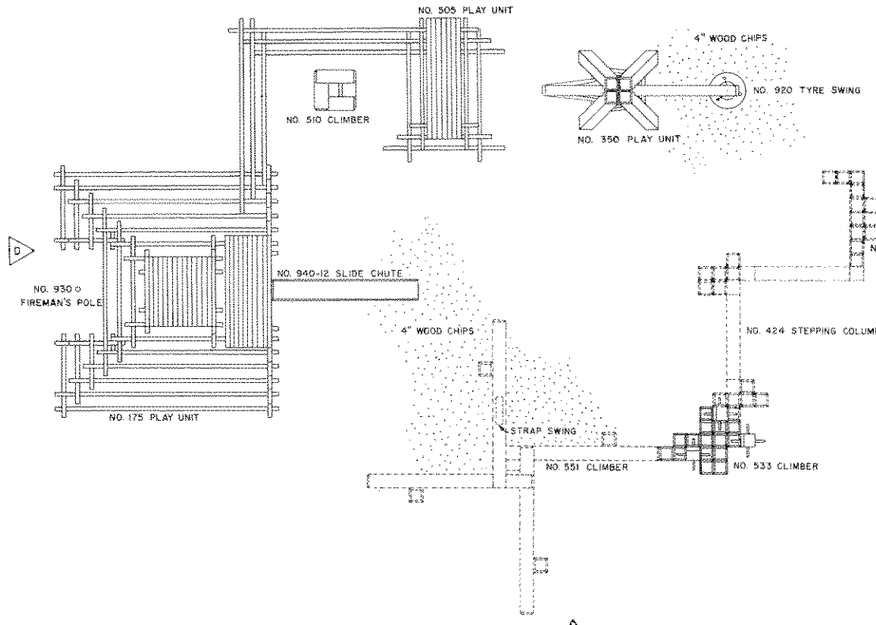
PLOT PLAN
SCALE: 1"=40'-0"

C

DRINKING FOUNDATION

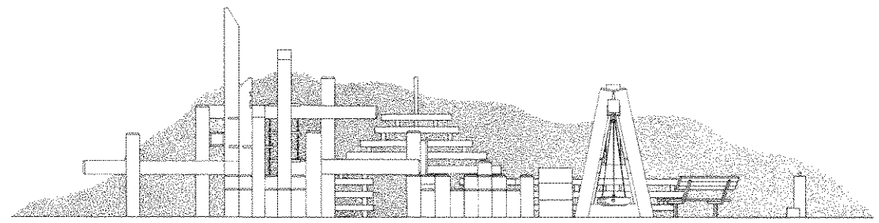


ELEVATION D
SCALE: 1"=4'-0"

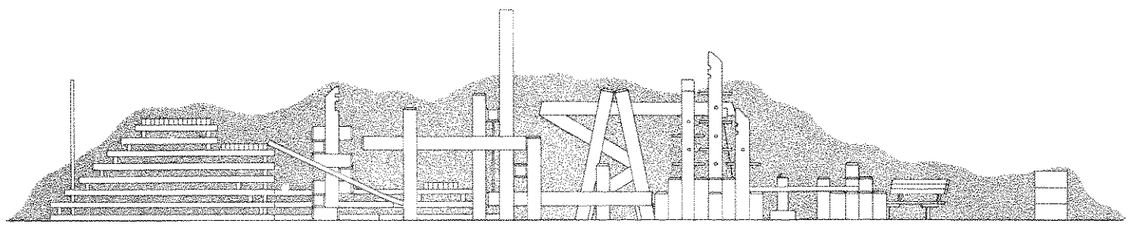


A

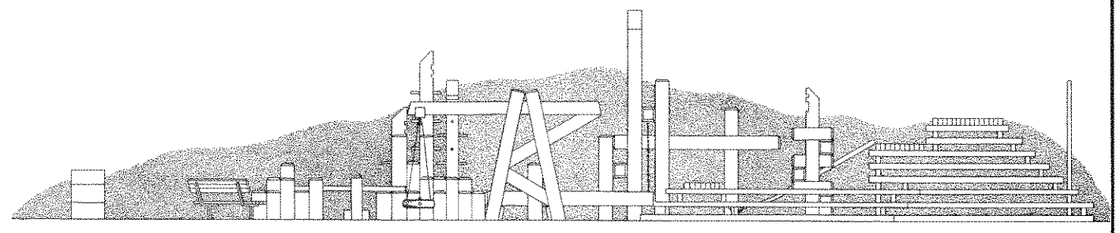
PLAN
SCALE: 1"= 4'-0"



ELEVATION B
SCALE: 1"=4'-0"



ELEVATION A
SCALE: 1"=4'-0"



ELEVATION C
SCALE 1"=4'-0"

NOTE:

1. All play apparatuses shown shall be manufactured by the TimberForm Division, Niedermeyer-Martin Co., Portland, Oregon, 97212, or approved equal.
2. Refer to TimberForm catalog #3, Play Units catalog, Stepping Columns Catalog, and Temporary Catalog Supplement for model numbers shown on plan.

——— Future
——— Initial

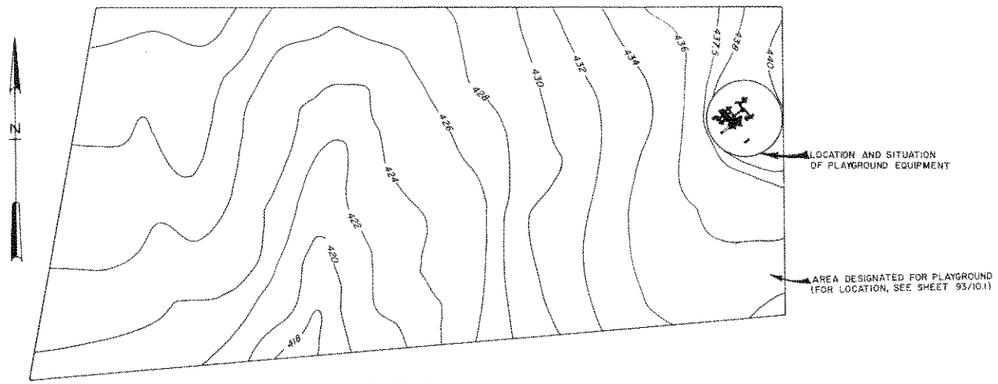
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

PLAYGROUND LAYOUT I

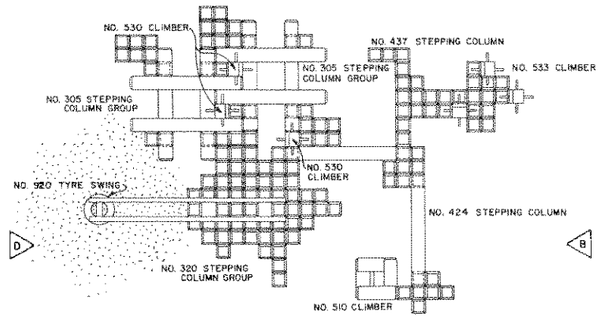
SCALE AS SHOWN

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

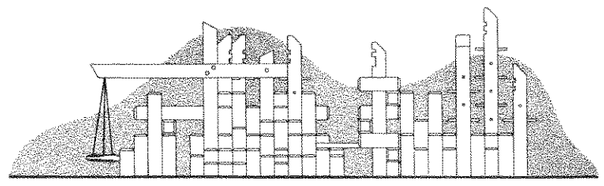
1400-DM3B-93/34



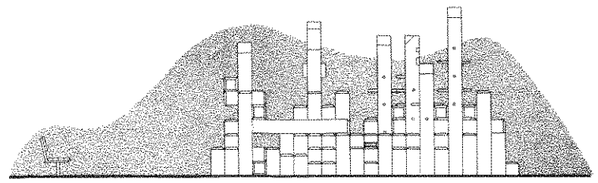
PLOT PLAN
SCALE: 1"=40'-0"



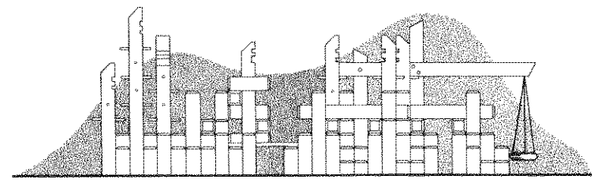
PLAN
SCALE: 1"=4'-0"



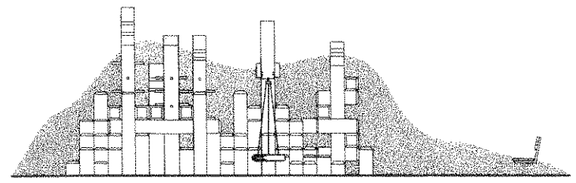
ELEVATION
SCALE 1"=4'-0"
A



ELEVATION
SCALE: 1"=4'-0"
B



ELEVATION
SCALE: 1"=4'-0"
C



ELEVATION
SCALE: 1"=4'-0"
D

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——— Future
- - - - - Initial

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

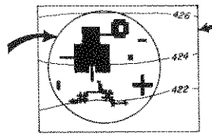
PLAYGROUND LAYOUT II

SCALE AS SHOWN

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

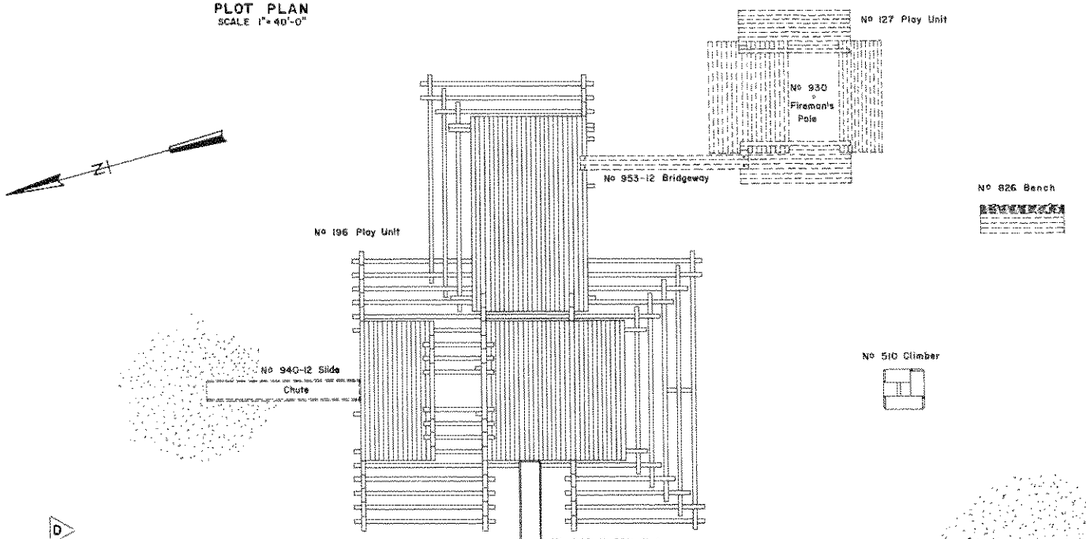
1400-DM38-93/35

Location and situation of playground equipment

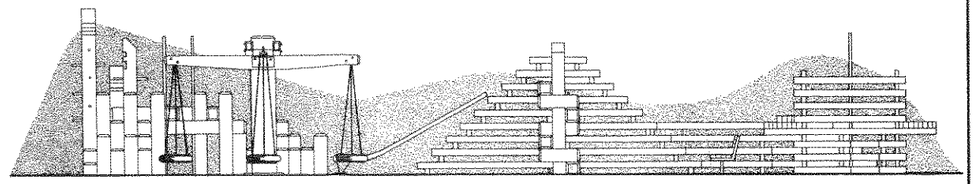


Area designated for playground
(For location, see sheet 93/6.1)

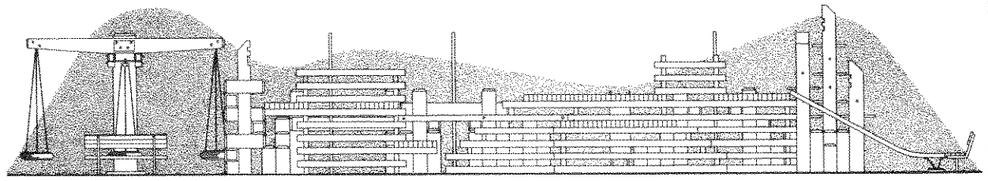
PLOT PLAN
SCALE 1"=40'-0"



PLAN
SCALE 1"=4'-0"



ELEVATION
SCALE 1"=4'-0"



ELEVATION
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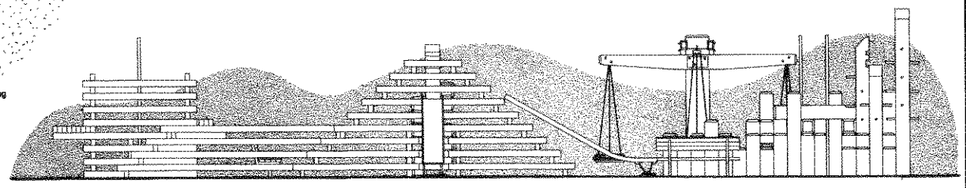
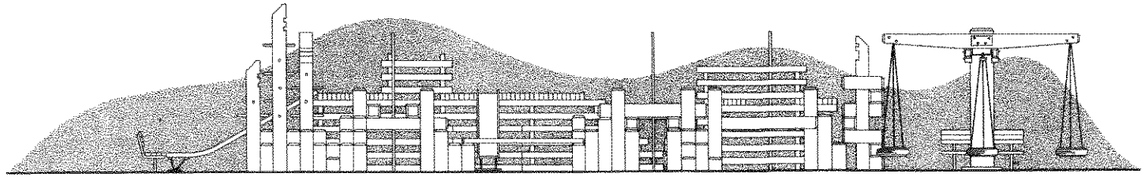


ELEVATION
SCALE 1"=4'-0"



ELEVATION
SCALE 1"=4'-0"

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2. Refer to TimberForm catalog #3, Play Units catalog, Stepping Columns catalog, and Temporary Catalog Supplement for model numbers shown on plan.

——— Future
——— Initial

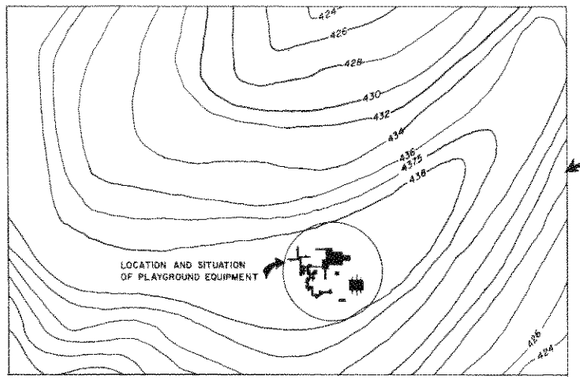
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

PLAYGROUND LAYOUT III

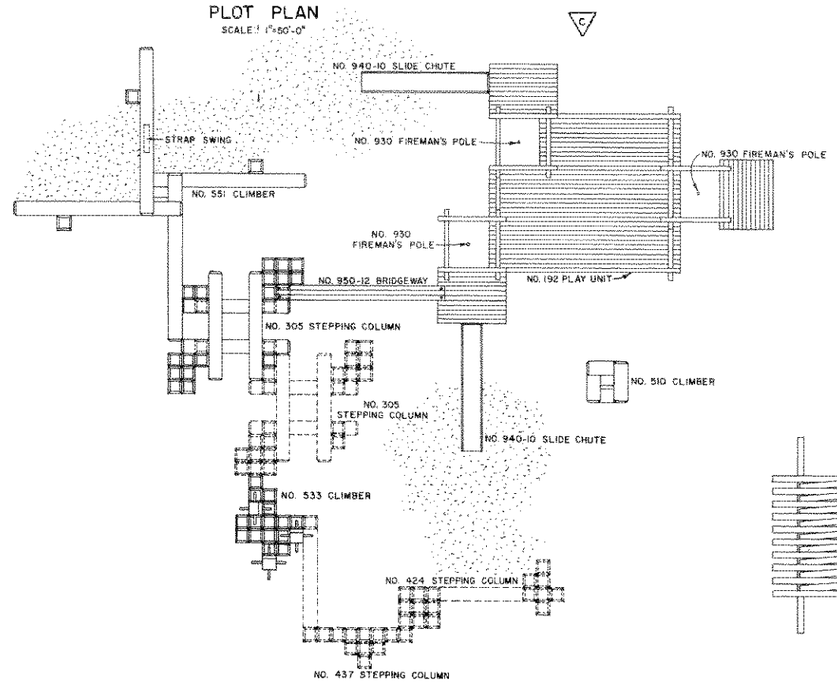
SCALE AS SHOWN

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS, AUG. 1972

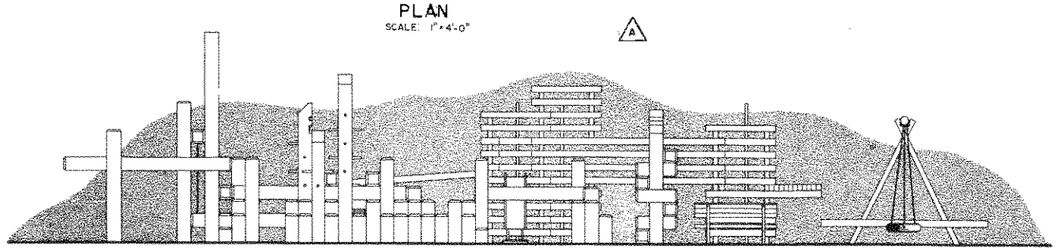
1400-DM3B-93/36



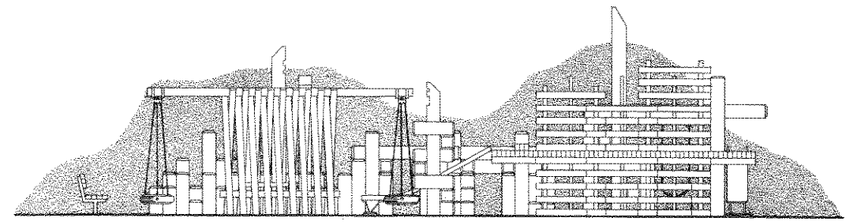
PLOT PLAN
SCALE: 1"=50'-0"



PLAN
SCALE: 1"=4'-0"

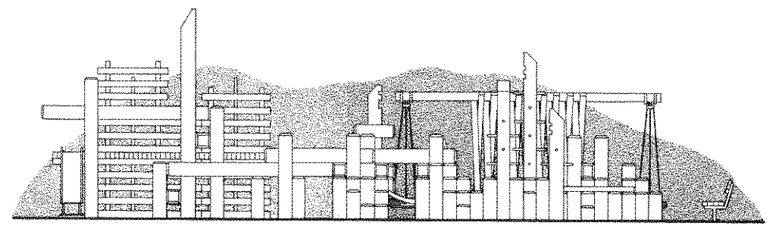


ELEVATION
SCALE: 1"=4'-0"



ELEVATION
SCALE: 1"=4'-0"

ELEVATION
SCALE: 1"=4'-0"



ELEVATION
SCALE: 1"=4'-0"

NOTE:
1. All play apparatuses shown shall be manufactured by the TimberForm Division, Niedermeyer-Martin Co., Portland, Oregon, 97212, or approved equal.
2. Refer to TimberForm catalog "3, Play Units catalog, Stepping Columns Catalog, and Temporary Catalog Supplement for model numbers shown on plan.

——— Future
——— Initio

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

PLAYGROUND LAYOUT IV

SCALE AS SHOWN

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS AUG., 1972

1400-DM3B-93/37

SWDPL-R (SWTED-AD 9 Jul 71) 3rd Ind
SUBJECT: Hugo Lake, Kiamichi River, Okla., DM No. 3B, Public Use Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, Texas 75202 5 Jan 72

TO: HQDA (DAEN-CWP-V) WASH DC 20314

The subject correspondence is returned for clarification of DAEN-CWP-V comment made in para k of the previous 2nd Ind. Interpretation of this comment and para 13 of ER 1130-2-400, with respect to our present policy of allowing mobile homes in the concession lease area for operators quarters and/or rental units, is requested.

FOR THE DIVISION ENGINEER:

HOWARD R. BARE
Chief, Planning Division

CF:
Tulsa District

DAEN-CWP-V (9 Jul 71) 2nd Ind
SUBJECT: Hugo Lake, Kiamichi River, Okla., DM No. 3B, Public Use Plan

DA, Office of the Chief of Engineers, Washington, D. C. 20314 13 Dec 71

TO: Division Engineer, Southwestern

Subject DM is approved in accordance with recommendations contained in paragraph a(1) of your first indorsement, subject to resolution of comments in your indorsement and the following:

a. Campsites at Salter Creek Cove PU Area should be relocated away from the boat ramps to facilitate fee collection.

b. Campsites should be located above the 5-year frequency pool level, elevation 421, msl.

c. To avoid inevitable conflicts which arise between day users and campers, and to facilitate fee collection, further consideration should be given to developing Wilson Point for day use only and Virgil Point for overnight use only.

d. Consideration should be given to Corps development and management of group use areas as discussed in paragraph 9 of ER 1165-2-400.

e. In view of the recommendation of the Fish and Wildlife Service that no boat ramp should be provided in the Rattan Point area within the Federal wildlife refuge, this facility should be omitted from the plan.

f. It is noted that the plan for Rattan Point does not include the elaborate environmental education - interpretation center proposed by the Fish and Wildlife Service. Omission of this facility is concurred in since the justification for Corps development of any facilities to be turned over to another Federal agency is not apparent (see paragraph 4-02). The Fish and Wildlife Service has general authority to provide recreation facilities at refuges.

g. In the interest of economy and of reducing impact on the environment, further attention should be given to re-siting power, water and sewer lines so as to shorten runs.

h. Potable water supply should be provided in the concession area.

i. Paragraph 5-01. No lands should be made available for row crop agriculture in order to stabilize erodible soils. There is no objection to temporary use of project lands for grazing.

j. Paragraph 5-02. Considering the extent of taking in relation to the conservation pool, there does not appear to be much potential for subdivision development at this project. Consideration should be given to implementing the Fort Worth District's policy of no private boat docks at this project.

k. Mobile homes should not be permitted in the concession area.

FOR THE CHIEF OF ENGINEERS:

wd all incl

for IRWIN REISLER
Acting Chief, Planning Division
Civil Works Directorate

SWDPL-R (SWTED-AD 9 Jul 71) 1st Ind
SUBJECT: Hugo Lake, Kiamichi River, Okla., DM No. 3B, Public Use Plan

DA, Southwestern Division, Corps of Engineers, 1114 Commerce Street, Dallas, Texas 75202 27 Sep 71

TO: Chief of Engineers, ATTN: ENGCW-PV

Forwarded recommending approval subject to the following:

a. General.

(1) Reference is made to SWDR 1110-2-9 dated 30 Nov 70, subject: "Initial Master Plan - Civil Works Projects (Public Use Plans)," copy of which was previously furnished your office. Information presented in this DM is not considered sufficiently responsive to the above referenced SWDR as to the detail desired for initial work. Accordingly, it is recommended that this design memorandum be supplemented to reflect the detail required by the above SWDR and that this office be authorized to approve same. Information should be presented to reflect the nature of the facilities proposed and the basis of the estimated costs for same. The information should include proposed sizes, types, foundations and elevations of structures and typical road sections. The design detail should be sufficient to serve as the basis for preparation of project plans and specifications. This information should be based on accomplished field work.

(2) In accordance with para 18e of ER 1110-2-1150 dated 19 Jun 70, subject: "Engineering and Design, Post-Authorization Studies," numbering of design memorandums "will be confined to whole Arabic numerals and will not be hyphenated or contain letters." Numbering of future DMs should be as prescribed above.

b. Narrative.

(1) Para 1-07. It should have been noted that there are project lands to be acquired in fee and managed for Fish and Wildlife in accordance with recommendations of the Fish and Wildlife Service as presented in Supp. No. 1 to the GDM.

(2) Para 1-08a(3). The concepts for development presented in this plan have been based primarily on access to the reservoir and related activities. The proposed plans are recommended for approval if the refuge is not established. In the event the refuge is established, plans acceptable to the Fish and Wildlife Service will be developed.

(3) Para 3-02. Those portions of the plan dealing with land use classification should be reevaluated and revised to conform with the zoning policies prescribed in ER 1165-2-400, subject: "Recreational Planning, Development, and Management Policies," dated 3 Aug 70. This reevaluation should more fully recognize the utilization of Corps-developed and managed group facilities as discussed in para 9 of the ER. The plan should be specific as to where the groups will be accommodated, whether in public use areas on a non-exclusive basis or on lands allocated especially on an exclusive basis. In this respect, it is noted on the site layout plans that six group picnic shelters are provided but no group camping areas are provided. It is expected that revision of the site layout plans, with the addition of group camping areas, will be required as a result of the reevaluation.

(4) Para 4-02. This para should include a subpara for each public use area. Each subpara should contain a brief description of the area, including accessibility, topography, amount of tree cover, acreage, etc., and a discussion of development proposed for the site making reference to the applicable plate.

(5) Para 4-03a. Reference is made to ER 1110-2-400 dated 1 Feb 71, "Design of Recreation Sites, Areas and Facilities" which supersedes Appendix B (Standard Plans) referred to in para 8 of ER 1130-2-312 dated 30 Nov 67 and Civil Works Engineer letter 65-3 dated 15 Jan 65. Reference to the "source plan" or inclusion of the concept plan or design for all facilities should be furnished in accordance with para 14 of the above referenced ER. See comment a(1) above.

(6) Para 4-03b. Roads should also be designed in accordance with ER 1110-2-400.

(7) Para 5-01b. Reference should be made to para 18-2 of SWDR 1130-2-7 dated 25 Sep 68, subject: "Administration of Reservoir Lands and Waters" concerning soil and wildlife conservation practices for agricultural and grazing leases. This para should address itself specifically to wildlife management practices to be accomplished in conjunction with the A&G program.

c. Appendix II, Cost Estimate. A detailed cost estimate similar to the cost estimate presented in other feature design memorandums should be included in the supplement required by comment a(1) above.

SWDPL-R (SWTED-AD 9 Jul 71) 1st Ind 27 Sep 71
SUBJECT: Hugo Lake, Kiamichi River, Okla., DM No. 3B, Public Use Plan

d. Plates.

(1) Plate 93/4. Consideration should be given to paving one of the existing gravel access roads to the junction with the proposed State Highway 93 relocation.

(2) Plate 93/6.

(a) From the contours shown on this plate, it appears that some facilities will be inundated upon raising the pool to elevation 409.5 in 1980 as stated in para 1-05d. In view of the above, consideration should be given to locating these facilities at a higher elevation during actual siting.

(b) It is noted that several ponds exist within close proximity to the proposed development. These should be examined to determine if they are suitable for recreation, wildlife and/or erosion control. If not, in view of the health, safety and maintenance problems involved, they should be drained and reshaped.

(3) Plates, general.

(a) Consideration should be given to either revising appropriate existing plates or adding another plate to include the project operations facilities.

(b) For convenience of reference, camping and picnic areas should be numbered where there is more than one such area at a site.

(c) Pool elevation probability and duration curves should be included in this and future master plans.

FOR THE DIVISION ENGINEER:

Howard R. Bare

HOWARD R. BARE
Chief, Planning Division

1 Incl
wd 4 cys

CF:
Tulsa District

DEPARTMENT OF THE ARMY
TULSA DISTRICT, CORPS OF ENGINEERS
POST OFFICE BOX 61
TULSA, OKLAHOMA 74102

SWTED-AD

9 July 1971

SUBJECT: Hugo Lake, Kiamichi River, Okla., DM No. 3B, Public Use Plan

Division Engineer, Southwestern
ATTN: SWDPL-R

1. Subject design memorandum is submitted for review and approval in accordance with EM 1130-2-302.

2. Questions regarding the estimates should be referred to Mr. Jerry L. Greer, Chief, Environmental Resources Section, Planning Branch.

3. I recommend that the Code of Federal Regulations be revised as proposed in subparagraph 5-02g of the design memorandum.

Vernon W. Pinkey

VERNON W. PINKEY
Colonel, CE
District Engineer

1 Incl (9 cys)
as

35 copies prepared

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

U.S. ARMY CORPS OF ENGINEERS
TULSA DISTRICT
OKLAHOMA
JUNE 1971

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

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HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

DESIGN MEMORANDUMS PREVIOUSLY SUBMITTED

Memorandum No.	Title	Date submitted	Date approved
1	Hydrology - Part I	10 Jun 64	10 Dec 64
1	Hydrology - Part II	8 Oct 65	4 Mar 66
2	General Design	24 Nov 65	17 Oct 66
3A	Preliminary Master Plan	3 Jun 66	20 Sep 66
4-1	Real Estate - Dam Site	4 Nov 66	4 May 67
4-2	Real Estate - Remainder of Reservoir	10 Apr 67	28 Jul 67
5	Project Building and Right Abutment Access Road	18 Oct 66	1 Dec 66
6	Embankment	30 Dec 66	14 Apr 67
7	Spillway	7 Dec 67	8 Apr 68
8	Concrete Aggregates	21 Dec 66	7 Feb 67
10	Reservoir Clearing	10 May 68	8 Jul 68
11	Relocation - Oklahoma Highway 93	19 May 69	20 Aug 70
12	Relocation - Southwestern Bell Telephone Company Facilities	18 Feb 69	18 Mar 69
13	Relocation - Choctaw Electric Coop. Facilities	27 Sep 68	24 Oct 68
14	Relocation - Public Service Company Facilities	29 Feb 68	25 Mar 68
15	Relocation - Choctaw County Roads	13 Nov 67	25 Mar 68
18	Relocation - Oklahoma Highway 147	28 Jul 67	25 Oct 67
20	Sedimentation and Degradation Ranges	21 Jan 70	10 Feb 70

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

PERTINENT DATA

LOCATION

Kiamichi River mile 17.6

DRAINAGE AREA

1,709 square miles

SHORELINE

110 miles (at elevation 404.5)

ELEVATIONS, AREAS, AND STORAGES

Feature	Elevation (feet, m.s.l.)	Area (acres)	Storage (acre-feet)	Storage (inches)
Top of dam	452.5	-	-	-
Top of flood control pool (50-year pool)	437.5	34,490	966,500	10.60
Top of conservation pool(1)	404.5	13,250	157,300	1.73
Top of inactive pool	390.0	4,500	30,400	0.33
10-year drawdown pool	394.0	6,680	52,600	0.58

(1) Stage I.

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

I - GENERAL

1-01. Purpose. - This design memorandum presents the public-use plan for the progressive development, management, and administration of the recreational, scenic, and biological resources of Hugo Lake.

1-02. Authority. - Hugo Lake was authorized for construction by Public Law 526, 79th Congress, 1946, and modified by Public Law 87-874, Senate Document No. 145, 87th Congress, 2d Session.

1-03. Implementation of Public Law 89-72. - Hugo Lake is in category C, which is the category for projects funded for advance engineering and design before fiscal year 1966. The Federal Water Project Recreation Act (Public Law 89-72) does not apply to projects in this category; therefore, non-Federal cost sharing will not be required for recreational development.

1-04. Status of project. - Construction of the project was started in November 1967 and is presently scheduled for completion in June 1974, with impoundment scheduled for March 1973.

1-05. Description of project.

a. Location. - The Hugo damsite is located at river mile 17.6 on the Kiamichi River in Choctaw County, Oklahoma, near the town of Sawyer.

b. Project area. - The terrain is gently rolling, with relief of usually less than 100 feet from the flood plain to the hilltops. The river follows a meandering course in a wide valley with gently sloping sides. About 85 percent of the area is heavily wooded, and the remaining 15 percent is open land used for pasture or farming.

c. Project structures. - The major structures include an earth embankment about 11,000 feet long, a controlled valley spillway with water supply and low flow outlets, an administration and maintenance building, two overlooks with comfort stations, and supporting facilities.

d. Pool level fluctuation. - The plan of water resource development for the Kiamichi River system provides for construction

of Hugo Lake first (stage I), Clayton Lake second (stage II), and Tuskahoma Lake third (stage III). When Clayton Lake is completed (1980), the storage in Hugo Lake will be reallocated, raising the top of the conservation pool from elevation 404.5 to elevation 409.5. When Tuskahoma Lake is completed (2000), reallocation of storage in Hugo Lake will raise the top of the conservation pool to elevation 416.5. The public-use plan presented in this memorandum is based on a stage I conservation pool at elevation 404.5. The pool elevation duration and frequency curves are included in Design Memorandum No. 1, Hydrology - Part II. Pool elevation probabilities for stage I are summarized in table 1-1.

TABLE 1-1

POOL ELEVATION PROBABILITIES

Frequency	Maximum (feet, m.s.l.)	Minimum (feet, m.s.l.)
Once in 50 years	437.5	390.0
Once in 20 years	431.3	392.2
Once in 10 years	426.4	394.0
Once in 5 years	421.0	396.0
Once in 2 years	414.0	399.5

e. Clearing. - Details of reservoir clearing are presented in Design Memorandum No. 10, Reservoir Clearing. Trees, brush, structures, and debris will be flush cleared within the pool between elevation 389.0 (5 feet below the 10-year drawdown pool) and elevation 404.5 within 1 mile of each public-use area.

1-06. Project resources. - The principal recreational resources of the project will be the 13,250-acre lake formed at the conservation pool (elevation 404.5) and the bordering lands. Although most of the lake will be shallow, the expanse and depth of water in the vicinity of the dam will be favorable for water-oriented activities such as boating, water skiing, swimming, picnicking, camping, and fishing.

1-07. Land acquisition. - About 42,000 acres, including public-use area land, will be purchased in fee along with the necessary flowage easements required in accordance with the current land acquisition policy. Mineral rights will be purchased or subordinated consistent with the current land acquisition policy. Acreages of land purchased for public use are shown in table 4-1.

1-08. Coordination with other agencies.

a. Federal agencies.

(1) Environmental Protection Agency (HEW). - Project plans have been coordinated with this agency. A copy of a letter dated 18 March 1968 from the Department of Health, Education, and Welfare and a copy of a letter dated 2 May 1968 from the Tulsa District were included in exhibit A of Design Memorandum No. 10, Reservoir Clearing.

(2) Archeology. - Hugo Lake was surveyed by the Oklahoma River Basin Survey Project, University of Oklahoma Research Institute, under a grant from the National Park Service. The University of Oklahoma's report entitled "Recommendation for Salvage Archeology, Hugo Reservoir, Choctaw, and Pushmataha Counties, Oklahoma," dated 1 March 1967, is included in exhibit A. Based on the recommendations for archeological salvage, the Oklahoma River Basin Survey team spent the summer of 1970 carrying out recommended site excavations. Approximately 50 percent of the work was completed in that season. The remaining work will be completed in the 1971 season. Constant coordination between the National Park Service, Oklahoma River Basin Survey, the University of Oklahoma Anthropology Department, and the Tulsa District has been maintained.

(3) Fish and Wildlife Service. - The Bureau of Sport Fisheries and Wildlife report contained in supplement No. 1 to Design Memorandum No. 2, General Design, which was concurred in by the Oklahoma Department of Wildlife Conservation, suggested Federal and State game management areas at the project. Plans indicating the proposed limits of the areas were sent to them for review by the Tulsa District. Their reply of 3 May 1971 is included in exhibit A. In this reply, they requested omission of camping sites and boat ramps in the Rattan public-use area. Camping was not provided in this area; however, to satisfy the need for access to the upper regions of the lake and to serve the communities along Highway 3 and 7, a boat ramp was provided.

b. State agencies.

(1) Oklahoma State Department of Health. - Project plans have been coordinated with this agency. A copy of a letter dated 20 March 1968 from the State Department of Health was included in exhibit A of Design Memorandum No. 10, Reservoir Clearing.

(2) Oklahoma Industrial Development and Parks Commission. - Preliminary plans on the proposed Kiamichi Park public-use area were furnished to this agency by Tulsa District letter

dated 22 January 1971. This agency is reviewing these plans and considering the possibility of taking over this area as a State park. A copy of the letter is included in exhibit A.

(3) Oklahoma Department of Wildlife Conservation. - This agency concurred in the plan indicating proposed Federal and State game management areas by letter dated 3 May 1971, which is included in exhibit A.

c. Local interest. - The city of Hugo, Oklahoma, has expressed an interest in leasing Government land for construction of a park and golf course. The city of Hugo's letter dated 19 March 1971 and the Tulsa District's reply thereto, dated 16 April 1971, are included in exhibit A. The city of Hugo's plans for development of the requested area will be reviewed in detail before this area is leased to the city.

II - FACTORS INFLUENCING DEVELOPMENT

2-01. Region served. - Hugo Lake is located in a sparsely populated area. The nearest town is Sawyer, Oklahoma, located adjacent to the left abutment of the damsite. The recreation-use market area is the area from which a majority of the project recreationists originate.

2-02. Population data. - About 104,000 people live within the recreation-use market area of Hugo Lake. Cities within the recreation-use market area with populations of over 500 are shown in table 2-1.

TABLE 2-1

POPULATION DATA

State	City	Population
Oklahoma	Hugo	6,459
	Idabel	5,823
	Atoka	3,293
	Broken Bow	2,869
	Antlers	2,651
	Wright City	1,050
	Boswell	720
	Kiowa	648
	Bokchito	634
	Clayton	620
	Valliant	514
Texas	Paris	23,194
	Clarksville	3,307

2-03. Economic status of region. - The principal sources of income in the region are livestock and timber. Land and real property improvements range from poor to fair and generally are not well maintained. Economic trends within the area have changed very little in the past; however, the potential for growth in the future will be enhanced by the project.

2-04. Related recreational areas. - The major recreational areas of the region are shown on drawing 93/1. Data for the major lakes and parks within the recreation-use market area of Hugo Lake are given in table 2-2.

TABLE 2-2

RELATED RECREATIONAL AREAS

Recreational area	Distance to project (air miles)	Lake surface (acres, normal pool)	Annual visitation	Latest visitation record (year)
Cooper Lake	50	9,440	Unknown	-
Broken Bow Lake	38	14,200	879,600	1970
Beavers Bend State Park	38	1,300	Unknown	-
Pat Mayse Lake	20	5,990	634,900	1970
Pine Creek Lake	18	3,800	276,600	1970

2-05. Regional interest in recreation. - The continuing increase in attendance at existing lakes in the region is indicative of the growing interest in water-oriented recreation. Hunting and fishing are also popular in this region.

2-06. Access. - The lake is accessible from population centers by Federal and State highways and county roads, as shown on drawing 93/2.

2-07. Climate. - The climate is favorable for recreational activities, with short winters and relatively long summers. The mean annual temperature of the area is about 63° F. Normal annual precipitation is about 48 inches.

2-08. Effects of sedimentation and wave action on public-use areas. - The Kiamichi River is a light sediment-bearing stream. The upper two-thirds of the river basin is in the rugged Kiamichi Mountains area and the remaining portion consists of gently rolling hills. The banks and bed of the river are generally stable. The estimated average annual accumulation of sediment deposit for stage I will be about 400 acre-feet. Adverse effects on the shoreline or boat ramps from wave action or sedimentation should be insignificant.

2-09. Principal types of recreational use. - The largest use of the project will be by individuals or groups visiting for a single day's outing or a weekend. This includes fishermen, hunters, campers, boaters, picnickers, swimmers, and sightseers.

2-10. Visitation. - A study of the estimated visitation over the life of the project is presented in appendix I.

III - PROJECT USE

3-01. General. - The plan for development and management of the environmental resources associated with this project is to preserve the shoreline lands in their natural state insofar as practicable. Appropriate facility development will be confined to approved recreation areas, and remaining lands will be managed to enhance the natural wildlife and scenic resources of the project. Accordingly, all except 260 acres of the land is currently allocated to priority one use or wildlife management. The two areas designated as priority two should satisfy the need for lower priority use at this project.

3-02. Land-use allocation. - Acreages are shown in table 3-1.

a. Public use.

(1) Priority one. - Lands allocated for this use consist of seven public-use areas for recreational development and all other lands not designated as wildlife management or priority two.

(2) Priority two. - Two areas on the east side of the lake have been designated for this priority. Removed when Group Camp added (213 Acres)

(3) Priorities three and four. - No areas have been assigned to these priorities.

(4) Wildlife management. - The Bureau of Sport Fisheries and Wildlife and the Oklahoma Department of Wildlife Conservation have both expressed an interest in this project. In supplement No. 1 to Design Memorandum No. 2, General Design, two areas, a national wildlife refuge and a State game management area, were proposed. These areas are shown on drawings 93/15 and 93/16.

b. Operation and maintenance. - This area is required for safe and efficient operation and maintenance of the project.

TABLE 3-1

SUMMARY OF LAND-USE ALLOCATION

Drawing	Area designation	Acreage from fee boundary to normal pool (elevation 404.5)
	1. Public use	
	a. Developed areas	
93/3	Rattan Landing	60
93/4	Frazier Point	50
93/5	Sawyer Bluff	280
93/6 and 93/7	Twin Coves	950
93/8	Salter Creek Cove	418
93/9 through 93/13	Kiamichi Park	2,662
94/14	Bridge View (below dam)	38
	Subtotal	4,458
	b. Scenic areas, undeveloped	3,654
	2. Priority two	260
93/15 and 93/16	3. Wildlife management	
	a. Wildlife refuge	(1)14,286
	b. Game management area	3,800
	4. Operation and maintenance	374
	Total	26,832

(1) Excludes 110 acres included in Rattan Landing and Frazier Point.

3-03. Water use. - The lake will be open to boating, skiing, fishing, swimming, and other water sports. Where conflict of interests or hazards endanger life and property, limitations will be imposed. The placement and maintenance of buoys and markers and enforcement of regulations will be coordinated with the State agency responsible for administration of the boating laws.

3-04. Commercial development.

a. Commercial concession site. - One commercial concession site has been designated to provide the public with services and

supplies ordinarily required for water-oriented recreation. The site is located in the Kiamichi Park public-use area and is shown on drawing 93/10. Businesses in the small towns near the lake, on the major access highways, and along county access roads can be expected to supplement the facilities provided at the concession site. The selected concession site should sustain and stimulate recreational use of the lake. The concession site includes approximately 900 feet of shoreline and extends inland to include an area above the effects of the flood pool for the concessionaire's permanent facilities.

b. Facilities to be provided by concessionaire. - Commercial services and facilities will include small boat slips, boat storage sheds for large boats, a commercially operated concession float and office, a gasoline storage and dispensing facility, and floating walkways.

c. Facilities to be provided by the Federal Government. - Roads, parking areas, a boat ramp, and masonry vault toilets will be constructed by the Corps of Engineers before advertising for offers on the concession site. In addition, the Corps will provide protection against wave action by constructing a dike to the 5-year flood pool elevation and provide against extreme drawdowns by deepening the channel in the concession area. The boat ramp within the lease limits of the concession site will be used to service boats and for the convenience of the concessionaire; however, the concessionaire will be permitted to charge a fee for the use of this facility. The concessionaire will be responsible for any additional site preparation, grading, and landscaping required. Federal funds will not be expended in the concession area for maintenance, except for the basic road system. Maintenance and preservation of the concession area will be the responsibility of the concessionaire.

d. Condition of lease. - The concession site will be advertised for bids about 6 months before impoundment begins to permit construction of facilities before the project becomes operational. The term of the lease will not exceed 25 years. The concession will be classified as a major concession requiring a minimum initial investment of $75,000. Rental will be based on the criteria contained in EC 405-2-12, dated 16 March 1970.

LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
MALE			
STEPS			
BOAT RAMP			
CONCRETE DOCK			
TOILETS			
Wood Vault			
Masonary Vault			
Waterborne			
Waterborne w/shower			
CHANGE HOUSE			
TRAILER SANITARY STATION			
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump			
WATER TAP			
WATER LINE			
SEWER LINE			
POWER LINE			
PICNIC FACILITIES			
Table w/shelter			
Table and fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
MARY			
TRAFFIC CONTROL			
TREES			
Shade			
Ornamental			
SWIMMING BEACH			
CONCESSION			
BY OTHERS			
Flood Light			
Sewer Line			
Water Line			
Trails			

DIKE OF ELEV. 421.0' MIN.

LEASE LIMITS

300' MIN.

EXCAVATE TO ELEV. 385.0' MIN.

200' MIN.

MATCH LINE DWG. -93/1

SERVICE ROAD

OXIDATION POND

Pond

BOOSTER PUMP PLANT

MATCH LINE DWG. -93/3

R 18 E

T 6 S

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

KIAMICHI PARK

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/10

SHEET 2 OF 3

IV - PLAN OF DEVELOPMENT

4-01. General. - The initial development of seven public-use areas is planned to provide for the visitation expected 3 years after the project is in useful operation. The future development will provide expansion of the initial areas to accommodate the expected increase in visitation during the life of the project. The selection of the public-use areas was determined by extensive map studies and field reconnaissance. Factors considered include: terrain, accessibility, depth of water, scenic qualities, and degree of protection from winds. Interest of Federal, State, and local governmental agencies for the use of areas suitable for public parks and recreational purposes on Government-owned lands was also considered. The plan is subject to modification at the time any of these agencies desire to participate in the construction, maintenance, management, and operation of recreational facilities.

4-02. Public-use areas. - Eight public-use areas were proposed in the Preliminary Master Plan (Bridge View, Kiamichi Park, Salter Creek Cove, Sawyer Bluff, Twin Coves, Quarry Landing, Frazier Point, and Rattan Landing). Quarry Landing was deleted when contours indicated an insufficient water depth adjacent to this area. The acreages allotted to Rattan Landing and Frazier Point were increased to provide room for additional facilities in these public-use areas which are within the limits of the proposed Federal wildlife refuge and are planned to be developed initially by the Corps and turned over to the Bureau of Sport Fisheries and Wildlife for supervision, operation, and maintenance. The land requirements for public use are shown in table 4-1.

TABLE 4-1

LAND REQUIREMENTS FOR PUBLIC-USE AREAS

Public-use areas	Acreage above normal pool (elevation 404.5, m.s.l.)	Additional acreage required exclusively for public use
Bridge View(1)	N/A	0
Kiamichi Park	2,662	430
Salter Creek Cove	418	90
Sawyer Bluff	280	0
Twin Coves	950	180
Frazier Landing	50	0
Rattan Landing	60	0
Total	4,420	700

(1) About 38 acres below the dam.

4-03. Criteria. - General criteria for design and development of the recreational facilities proposed for construction by the Government will conform to the following requirements.

a. Facilities. - Recreational facilities will conform to the requirements of the "Standard Plans for Recreational Facilities," issued by the Office, Chief of Engineers, the approved Tulsa District standard plans, and ER 1130-2-312.

b. Roads. - Roads will be generally designed in accordance with "Park Road Standards," published by the National Park Service, May 1968.

c. Signs. - Signs will be provided in accordance with SWD Sign Handbook, dated 30 June 1969.

d. Boat ramps. - The lower limits of the ramps will be established at elevation 390.0. Where water depths are inadequate, a 100-foot-wide channel to deeper water will be provided. The upper limits of the ramps will vary with location but will be elevation 421.0 when practicable.

e. Beautification. - Drawings 93/3 through 93/14 show the project features subject to the provisions of ER 1165-2-2, dated 6 March 1967. The drawings indicate the principal features of construction and the general grading and planting plan that will provide the final appearance to the public-use areas.

(1) Clearing and cleanup. - Clearing within the public-use areas will be held to the minimum required to provide pleasant, usable areas that can be maintained efficiently. The mechanical equipment used for clearing will be restricted to rubber-tired tractor or hand-operated machines. Trees, shrubs, vines, and other desirable vegetation will be left in their natural state. Clearing of dead and undesirable undergrowth will be confined to the developed portions of the public-use areas, at road intersections to provide sight distances, and along access roads where it is desirable for project maintenance and scenic views. In camp areas, only individual campsites will be cleared, except for footpaths to the lake, toilets, and other facilities serving the campers. Undesirable vegetation, such as briers, matted vines, and poison ivy, will be completely removed or killed by chemicals in the areas of general use. Clearing will include satisfactory disposal of slash, fences, posts, and other debris. All growth to be removed will be cut flush with the ground. Clearing for roads and parking will be held to the minimum necessary for construction.

(2) Preservation of trees and shrubs. - All trees and shrubs in the public-use areas will be left standing, where

possible, to preserve the natural beauty. Fire control measures will be effected to prevent destruction by fire. Care will be taken to prevent damage to trees and shrubs during mowing and maintenance operations.

(3) Planting of trees, shrubs, and grass. - Planting programs will be developed for initial plantings in those areas requiring trees, shrubs, and grass. Particular attention will be given to planting in camping areas to provide screening for individual campsites. Trees will be planted in those areas included in the development program as early as is consistent with the construction program to attain a park-like appearance of project lands.

(4) Pruning. - Pruning of trees will be done only in the developed portions of the public-use areas such as camping and picnicking sites, building areas, and for safety at road intersections. Minimum pruning of trees will be done to remove dead, broken, and low branches only. Conifers will not be pruned.

f. Erosion control. - Open areas within public-use areas which were formerly or are now in cultivation or pasture and do not have adequate turf to control erosion will be fertilized and sprigged or seeded. Turfing will be done as soon after construction of public-use facilities as the planting season will permit. Road slopes and areas denuded by construction will also be turfed. Ditch checks will be provided as determined by field inspection.

g. Water and sewage systems. - Preliminary coordination with local municipal and rural water districts indicates only one of these systems can be utilized for water supply to a public-use area. However, before developing contract plans for the water systems shown on drawings 93/3 through 93/14, additional coordination and appropriate consideration will be given to contracting with any new or expanded municipal or rural water systems. Each facility for water supply and sewage will be coordinated with the Oklahoma State Department of Health as to general type and location.

4-04. Development costs. - An estimated $3,607,000 will be required to develop the initial recreational resources of the project, and $932,000 will be required to develop the future program. Both sums include engineering, design, supervision, and administration. Details of the estimated costs are shown in appendix II.

V - ADMINISTRATION

5-01. Land management.

a. General. - About 28,600 acres of land will be above the conservation pool. Approximately 22,850 acres not required for the operation of the project are planned to be used for Federal and State wildlife management and other public-use purposes. About 5,750 acres and any of the above-mentioned lands not being currently utilized but zoned for recreation will be available for agricultural and grazing purposes in accordance with ER 405-2-835, and management of forest and wildlife resources in accordance with EM 1130-2-302, subparagraphs 9b and c.

b. Method of procedure. - This plan, which is subject to revision, has been coordinated with agencies of the Department of Agriculture who are recognized as working continuously in the public interest and education in matters relating to proper land use and soil conservation. It is in the public interest to cooperate with these agencies in administering and using lands within the areas served by them. All leased land will be inspected by project personnel, and special inspections will be made by the Tulsa District Real Estate personnel to determine the use and to ensure that the lessees are complying with the terms of their leases. Grazing will be in accordance with good land management. About one-third of the normal annual grass production should be left on the land for cover and winter grazing. If overgrazing exists, the lessee may be required to remove part or all of his livestock to allow the grass to recover. Reforestation is not recommended although shortleaf pine is compatible to the area and has high economic value. The forested areas at this project have been overcut for merchantable products, burned, and grazed to the extent that it will probably take 15 to 20 years to build back to the point where the yield of merchantable products will pay the costs of management. With proper management, however, near maximum erosion protection can be attained on these tracts in less than 10 years.

c. Cultivation. - Lessees will be encouraged to seed or sprig former cropland to permanent water-tolerant grasses to improve grazing, or to develop hay meadows. The use of commercial fertilizer will be encouraged and should be applied when it appears to be economically feasible. Row cropping will be discouraged to help prevent erosion. When renovation or improvements are planned, the local agriculture agencies will be consulted for recommendations as to time, method, and kinds of seeds, plants, and fertilizer.

d. Fire control. - Every effort will be made to prevent and control grass fires on Government-owned lands and to cooperate with local organizations and farmers to control fires on Government

land as well as adjacent privately owned land. The agricultural leases will contain a condition that the lessee will not burn the area and will extinguish any fires which occur on the leased premises. Project personnel will have adequate fire control equipment.

5-02. Control.

a. General. - Public interests will be safeguarded by adequate control over the use of Government-owned lands adjacent to the lake. The general public will have use of the water area and shoreline. Owners of land adjacent to the project boundary will be allowed reasonable pedestrian access to the water.

b. Access roads. - Construction and maintenance of access roads at the expense of the Government will be confined to Government-owned lands. Roads that lead to the project will be constructed and maintained by others. Where possible, agreements will be made with the State or county for maintenance of access roads, turnarounds, and parking areas on the Government-owned lands. If road access to the shoreline is desired by other interests, each request will be given consideration in accordance with the existing policies and regulations.

c. Health, sanitation, and pollution control. - The development and use of the project is planned for the public interest, and every effort will be made to maintain the high standards of pollution control prescribed in ER 1165-2-116, dated 28 February 1968. The health laws, rules, and regulations of the Oklahoma State Department of Health, the U.S. Public Health Service, and the Environmental Protection Agency will be applicable to the facilities located on project land. Disposal and emission of waste, trash, and debris will meet the requirements of Executive Orders 11288 and 11282.

d. Law enforcement. - Enforcement of civil and criminal laws at the project will remain the responsibility of duly constituted officers of Federal, State, and local governmental agencies. Corps of Engineers personnel will cooperate fully with all law enforcement officers, including those responsible for civil actions, game and fish conservation, public health and sanitation, and pollution.

e. Permits. - Permits will be issued by the project engineer for boathouses, boat docks, boat moorings, and duck blinds in accordance with existing regulations.

f. Flowage easement restrictions. - Construction of buildings for habitation or alteration of the existing terrain will not be permitted in flowage easement areas. Construction of

other structures and improvements for use other than habitation will require written authorization.

g. Rules and regulations. - Rules and regulations governing public use of certain projects administered by the Corps of Engineers are established by the Secretary of the Army and published in the Code of Federal Regulations as Title 36, Chapter III, Part 311. Section 311.1 of Title 36 should be revised by adding Hugo Lake, Kiamichi River, Oklahoma.

5-03. Responsibility. - Administration of the project management program will be carried out by field and office personnel of the Tulsa District.

a. District office. - District office personnel will be principally concerned with determining the nature and extent of development; preparing construction codes and requirements; initiating, coordinating, and reconciling activities relative to policies and regulations; coordinating with other agencies; management; public relations; and processing permits.

b. Field office. - Field office personnel will be concerned with direct maintenance, management, and supervision of the project development program. They will supervise the use of the lands and waters of the project area, protect and maintain Government property, and ensure high standards of public health and safety. The project engineer will be responsible for the program of management and will be delegated the authority necessary to maintain an expeditious and beneficial administration of the project.

VI - RECOMMENDATION

6-01. Recommendation. - I recommend that the public-use plan for Hugo Lake, Kiamichi River, Oklahoma, be approved as presented herein.

VERNON W. PINKEY
Colonel, CE
District Engineer

EXHIBIT A

CORRESPONDENCE

Oklahoma River Basin Survey Project
University of Oklahoma Research Institute / 1808 Newton Drive / Norman, Okla. 73069

February 19, 1968

Mr. Robert M. Black
Recreational Planning Division
U. S. Army Engineer District, Tulsa
P. O. Box 61
Tulsa, Oklahoma

Dear Bob:

Enclosed you will find our recommendation for the Hugo and Waurika reservoir areas.

With reference to Hugo, none of the sites which we plan to dig are in the first plot of land you said the Corps would buy. However, with Waurika there are 3 sites we wish to dig that are in relatively close proximity to the dam axis. Can you provide me with the timetable for the various construction phases at Waurika? If the first construction phase is going to involve tearing up the area near the dam, then we will need to plan the salvage work soon.

Thank you for your help.

Sincerely,

Don

Don G. Wyckoff
Project Archaeologist

Recommendations for Salvage Archaeology

Hugo Reservoir, Choctaw and Pushmataha Counties, Oklahoma

by

Don G. Wyckoff

Partial Fulfillment N.P.S. Contract 14-10-3:930-2
Oklahoma River Basin Survey Project
University of Oklahoma Research Institute
1808 Newton Drive
Norman, Oklahoma

March 1, 1967

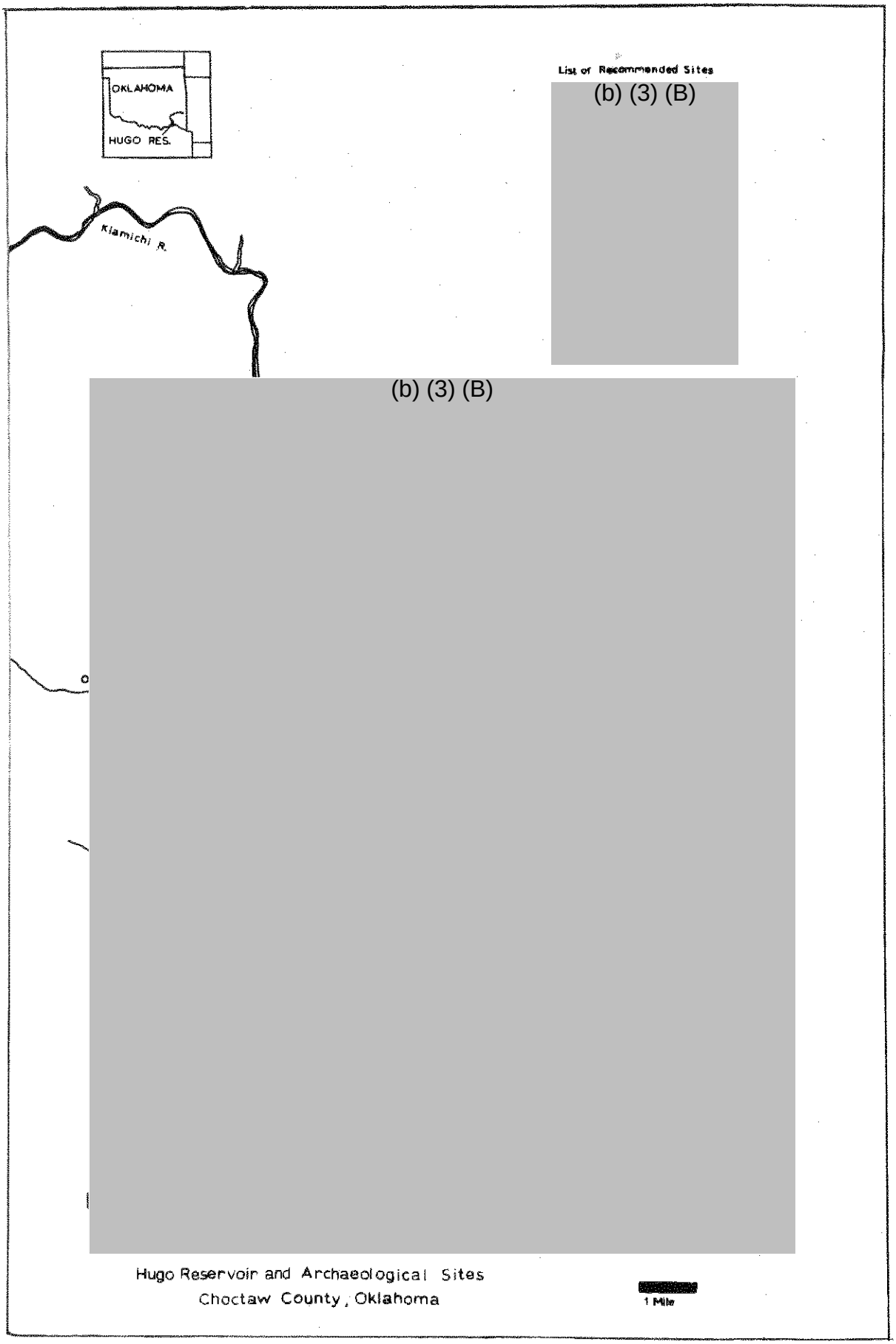
SALVAGE ARCHAEOLOGY IN THE HUGO RESERVOIR AREA

The Hugo Reservoir Area

The Hugo Reservoir is to be located on the lower Kiamichi River in Choctaw and Pushmataha counties of southeastern Oklahoma (see Figure 1). This particular reservoir is one of several planned by the U. S. Army Corps of Engineers, Tulsa District, and its construction will provide flood control measures, water conservation, and recreation facilities. The dam for this reservoir is to be built on the Kiamichi River at a point approximately seven miles east of Hugo, Oklahoma (see Figure 1). This dam will create a lake which will vary from three to four miles in width and which will extend to a point some fifteen miles north.

Geographically, the Hugo Reservoir is situated on the boundary between the Kiamichi Mountains (a part of the Ouachita system) and the Gulf Coastal Plains (see Snider 1917:64 and 75-77; Gray and Galloway 1959). The northern part of the reservoir is in the southern foothills of the mountains and has a terrain of rough, rounded hills with a forest cover of oak and pine. The southern, and major, portion of the reservoir is in the Gulf Coastal Plains where the terrain is hilly with prairie-like vegetation of grasses as well as scattered forests of oak and hickory. The river bottom in this southern section is wide with poor drainage and relatively poorly developed terrace systems. This bottom land is dissected by many sloughs, swamps, and creeks.

Climatically, the Hugo Reservoir will be in an area with a mean annual temperature of around 63 degrees, an annual precipitation of around 45 inches


OKLAHOMA
HUGO RES.
Kiamichi R.
List of Recommended Sites
(b) (3) (B)
(b) (3) (B)
Hugo Reservoir and Archaeological Sites
Choctaw County, Oklahoma
1 Mile

(evapotranspiration rate is 36 inches), and a growing season of around 240 days (Gray and Galloway 1959:13-15).

Hugo Reservoir Archaeological Survey (1960)

The main archaeological survey of the Hugo Reservoir was conducted in July and August of 1960. This work was done by Dr. Sherman Lawton of the University of Oklahoma.

A total of ninety-four prehistoric sites were recorded as a result of this survey (Lawton 1960). A good majority of these sites appeared to have been temporary camping stations as well as lithic working stations. But some sites seemed to have been more favored as occupation areas, and these sites did contain relatively greater quantities of cultural debris. Most of the sites in the total are located in what will be the main lake area; it was in this locale that the 1960 survey was concentrated.

This survey consisted mainly of hiking over the various terraces and other potential site locations and looking for signs (flakes, pottery sherds, stone tools, etc.) of a prehistoric Indian occupation. Test excavations were extremely limited in scope with four sites being tested over a two day period.

As a result of this initial survey, a series of fifteen sites were listed (Lawton 1960:vi) as recommended for archaeological excavations. However, these recommendations did not include specific statements about how much work and money should be spent at each of the respective sites.

Subsequent Archaeological Excavations in Hugo Reservoir Locale

One of the sites tested during the 1960 survey was the (b) (3) (B) Site (b) (3) (B). During

the survey, it was found that (b) (3) (B) had exposed an occupational area littered with debris consisting of flakes, tools, faunal debris, and human skeletal fragments. The destruction of this site (b) (3) (B) (b) (3) (B) made salvage excavations increasingly important, and such excavations were conducted late in 1960. This work and the recovered materials have been reported (Lawton 1962) and indicate that the main occupation was by Archaic peoples but there had been minor inhabitations by later, pottery-making groups.

1967 Reevaluation Survey

In order to determine the quantity of work and the amount of funds to do such work, it was necessary to conduct a reevaluation survey of the Hugo Reservoir sites. Such a survey was undertaken between January 23 and January 28, 1967, with funds provided by National Park Service Contract 14-10-03:930-2. During this period, a series of thirty-five of the previously reported sites was visited. Included in these thirty-five were fourteen of the fifteen sites originally recommended by Lawton as well as an additional twenty-one of the more productive and interesting sites described by Lawton.

In this reevaluation survey, the effort was made to determine the areal extent and potential depth of each of the visited sites. Whenever possible, any exposures of the soil profile were examined, and, when permission could be obtained, small test pits were dug to aid in discovering the depth and nature of the cultural deposits.

The Recommended Sites

The fifteen sites recommended by Lawton are listed below along with some relevant comments based on data recovered during the reevaluation survey.

Lawton's Recommended Sites	Comments
(b) (3) (B)	Should be worked; see below.
	Should be worked; see below.
	Destroyed by sand-gravel quarrying.
	Destroyed by sand-gravel quarrying.
	Should be worked; see below.
	Should be worked; see below.
	No concentrations of material.
	No concentrations of material.
	Should be worked; see below.
	Permission to visit not obtained.
	No concentrations of material.
	Should be worked; see below.
	Little depth and no concentration.
	Should be worked; see below.
	Little concentration of material.

As a result of the more recent survey of the Hugo Reservoir, an altered list of twelve sites is presented below and is recommended for excavations. This list includes those sites at which materials were in such quantity that excavations would be merited as well as sites which are believed to represent a complete spectrum of the cultural prehistory for this particular locale. The recommended sites and their potential cultural affiliations are:

The Sites	Archaic	Gibson Aspect	Fulton Aspect	Historic Choctaw
(b) (3) (B)				

The Proposed Budget

ARCHAEOLOGICAL FIELDWORK

(b) (3) (B) 10 days with a crew of 10

Laborer wages ($1.40/hour)	$1120.00	
Use of machinery (4 hours)	60.00	
Expendible supplies	20.00	
Truck operation	30.00	
Archaeologist-salary	300.00	
Archaeologist-per diem	70.00	
Total:	$1600.00	$1600.00

(b) (3) (B) 10 days with a crew of 10

Laborer wages ($1.40/hour)	$1120.00	
Use of machinery (16 hours)	240.00	
Expendible supplies	20.00	
Truck operation	30.00	
Archaeologist-salary	300.00	
Archaeologist-per diem	70.00	
Total:	$1780.00	3380.00

(b) (3) (B) 5 days with a crew of 10

Laborer wages ($1.40/hour)	$ 560.00	
Use of machinery (4 hours)	60.00	
Expendible supplies	10.00	
Truck operation	15.00	
Archaeologist-salary	150.00	
Archaeologist-per diem	35.00	
Total:	$ 830.00	4210.00

(b) (3) (B) 10 days with a crew of 10

Laborer wages ($1.40/hour)	$1120.00	
Use of machinery (8 hours)	120.00	
Expendible supplies	20.00	
Truck operation	30.00	
Archaeologist-salary	300.00	
Archaeologist-per diem	70.00	
Total:	$1660.00	5870.00

(b) (3) (B) 10 days with a crew of 10

Laborer wages ($1.40/hour)	$1120.00	
Use of machinery (24 hours)	360.00	
Expendible supplies	20.00	
Truck operation	30.00	
Archaeologist-salary	300.00	
Archaeologist-per diem	70.00	
Total:	$1900.00	7770.00

(b) (3) (B) 15 days with a crew of 10

Laborer wages ($1.40/hour)	$1680.00	
Use of machinery (8 hours)	120.00	
Expendible supplies	30.00	
Truck operation	45.00	
Archaeologist-salary	450.00	
Archaeologist-per diem	105.00	
Total:	$2430.00	10,200.00

(b) (3) (B) 5 days with a crew of 10

Laborer wages ($1.40/hour)	$ 560.00	
Use of machinery (4 hours)	60.00	
Expendible supplies	10.00	
Truck operation	15.00	
Archaeologist-salary	150.00	
Archaeologist-per diem	35.00	
Total:	$ 830.00	11,030.00

(b) (3) (B) 10 days with a crew of 10

Laborer wages ($1.40/hour)	$1120.00	
Use of machinery (4 hours)	60.00	
Expendible supplies	20.00	
Truck operation	30.00	
Archaeologist-salary	300.00	
Archaeologist-per diem	70.00	
Total:	$1600.00	12,630.00

(b) (3) (B) 5 days with a crew of 10

Laborer wages ($1.40/hour)	$ 560.00	
Use of machinery (4 hours)	60.00	
Expendible supplies	10.00	
Truck operation	15.00	
Archaeologist-salary	150.00	
Archaeologist-per diem	35.00	
Total:	$ 830.00	13,460.00

(b) (3) (B) 5 days with a crew of 10

Laborer wages ($1.40/hour)	$ 560.00	
Use of machinery (4 hours)	60.00	
Expendible supplies	10.00	
Truck operation	15.00	
Archaeologist-salary	150.00	
Archaeologist-per diem	35.00	
Total:	$ 830.00	14,290.00

(b) (3) (B) 5 days with a crew of 10

Laborer wages ($1.40/hour)	$ 560.00	
Use of machinery (4 hours)	60.00	
Expendible supplies	10.00	
Truck operation	15.00	
Archaeologist-salary	150.00	
Archaeologist-per diem	35.00	
Total:	$ 830.00	15,120.00

(b) (3) (B) 10 days with a crew of 10

Laborer wages ($1.40/hour)	$1120.00	
Use of machinery (8 hours)	120.00	
Expendible supplies	20.00	
Truck operation	30.00	
Archaeologist-salary	300.00	
Archaeologist-per diem	70.00	
Total:	$1660.00	16,780.00

ARCHAEOLOGICAL LAB WORK

Salaries----------60 weeks

Archaeologist	$ 9,000.00	
Laboratory help		
1 full time ($75/week)	4,500.00	
1 half time ($1.40/hour)	1,680.00	
Total:	$15,180.00	31,960.00

Laboratory Operation

Expendible supplies	$ 600.00	
Truck operation (2 trucks X 7.50 a week), includes tages, insurance, upkeep	900.00	
Publication costs ($300/site)	3,600.00	
Total:	$ 5,100.00	37,060.00

Administration Costs		
20% of $37,060	$ 7,412.00	44,472.00
Overhead-University of Oklahoma Research Institute		
20% of $44,472	$ 8,894.00	53,366.00
TOTAL BUDGET		$53,366.00

Bibliography

Gray, F. and H. M. Galloway
1959 Soils of Oklahoma. Oklahoma State University Experiment Station, Miscellaneous Publications, No. 56. Stillwater.

Lawton, S. P.
1960 Archaeological Survey of the Hugo Reservoir. Unpublished manuscript on file at the Oklahoma River Basin Survey Project. Norman.

1962 "Test Excavations at the George Smith-I Site, Choctaw County, Oklahoma." Bulletin of the Oklahoma Anthropological Society, Vol. 10, pp. 153-162. Oklahoma City.

Snider, L. C.
1917 Geography of Oklahoma. Oklahoma Geological Survey, Bulletin, No. 27. Norman.

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE
POST OFFICE BOX 1306
ALBUQUERQUE, NEW MEXICO 87103

May 3, 1971

In reply refer to: RB

District Engineer
Corps of Engineers, U. S. Army
P. O. Box 61
Tulsa, Oklahoma 74101

Dear Sir:

Mr. M. W. DeGeer's letter of February 3, 1971, transmitted maps of Hugo Lake, Oklahoma, showing two proposed public use sites within the planned national wildlife refuge area. Mr. DeGeer requested our comments on plans for the two sites.

Personnel of this office, together with Mr. Perry Kuykendall of your office in Hugo, Oklahoma, made an on-site inspection of the reservoir area. Our people learned that a total of eight public-use areas will be developed, seven on the lake proper and one downstream from the dam. Plans for each area include roads, parking areas, walkways, boat-launching ramp, water supply, sanitary facilities, picnic tables, shelters, and fireplaces. Two proposed public-use areas, Frazier Point and Rattan, would be within the national wildlife refuge area.

The Frazier Point area would be located on the east side of the lake on a hilly outlook surrounding a small cove. It would be entirely within the boundary of the national wildlife refuge. To prevent undue conflict between public use and management of the refuge, it is suggested that the public-use area be developed for day-use only. Thus, facilities at this area should not include camping or trailer parking sites. We recommend provision for parking sites, covered picnic tables, necessary roads and walkways, water supply, sanitary facilities, and a boat-launching ramp.

The Rattan area would be located at the extreme upper end of the lake alongside State Highways Nos. 3 and 7 which cross the Kiamichi River via a modern bridge. The area selected includes a beautiful wooded overlook surrounded by scenic wildlife habitat. We believe this area would be ideal for development as an environmental education-interpretive center. Facilities here should be limited

to a building suitable for the interpretive center, parking area, picnic tables, walkways, water supply, and sanitary facilities. No camping or trailer parking sites or boat-launching ramp should be provided.

We will be pleased to assist your office in drawing up detailed specifications for the two public-use areas.

Mr. DeGeer's courtesy in providing the proposed plans for our review is appreciated.

Sincerely yours,

W. O. Nelson, Jr.
Regional Director

cc:
Field Supervisor, BSFW, Div. of River Basin Studies, Tulsa, Oklahoma

COPY
DC

SWTED-PE 22 January 1971

Mr. Tye Bledsoe, Director
Division of State Parks
Industrial Development & Parks Commission
533 Will Rogers Office Building
Oklahoma City, Oklahoma 73105

Dear Mr. Bledsoe:

Inclosed are the preliminary prints showing the Kiamichi Park public use area on Hugo Lake that you requested during your visit to Tulsa on 19 January 1971. At this time, only preliminary plans are available.

Representatives of this office will be glad to review the proposed recreation development with you and if the State is interested in this area or any other area on Hugo Lake as a State Park, we would be glad to meet with you in Oklahoma City, Tulsa, or at Hugo to discuss the plans in detail.

Sincerely yours,

2 Incl
1. Area map
2. 5 sheets, prelim prints of Kiamichi Park public use area

M. W. DEGEER
Chief, Engineering Division

OKLAHOMA

FARRELL COPELIN, DIRECTOR

DEPARTMENT OF WILDLIFE CONSERVATION

1801 NORTH LINCOLN OKLAHOMA CITY, OKLAHOMA 73105 PHONE 521-3851

May 3, 1971

Colonel Vernon W. Pinkey
District Engineer
U.S. Army Corps of Engineers
P.O. Box 61
Tulsa, Oklahoma 74102

Dear Colonel Pinkey:

The Oklahoma Department of Wildlife Conservation concurs in the proposed zoning plan for Hugo Reservoir which you submitted to us February 3, 1971.

We hope that public hunting will be allowed on a significant portion of the federal waterfowl refuge.

Sincerely,

Farrell Copelin
Director

FC:RJE:mg

CITY OF HUGO

The Circus Center of the Southwest

"THE FRIENDLY CITY"

GENE THOMSON, Mayor
WALDO J. BEADLE, Clerk

HUGO, OKLAHOMA 74743

March 19, 1971

Mr. David A. Helms, Chief
Real Estate Division
Department of the Army
Tulsa District, Corps of Engineers
Post Office Box 61
Tulsa, Oklahoma 74102

Dear Mr. Helms:

Sometime ago, as Mayor of the City of Hugo, I contacted you in regard to a lease of a landsite at the Hugo Reservoir. At that time you advised me that your plans would probably be finalized in March of this year.

I would like to inquire at this time as to the status of our request in regard to the land to be utilized by this City for the construction of a public park.

I want to assure you of our continued interest in this regard. I do hope that you will see fit to make available to us a suitable site, and will be pleased to discuss with you in detail our plans for this project.

Looking forward to hearing from you, I remain

Yours very truly,

Gene Thomson

GENE THOMSON
Mayor

GT:j

COPY
DC

SWTED-PE

16 April 1971

Honorable Gene Thomson
Mayor of Hugo
Hugo, Oklahoma 74743

Dear Mayor Thomson:

I am replying to your recent letter concerning the leasing of land at the Hugo Lake for city park purposes.

Our master plan for the utilization of land at this project is being developed and is scheduled for completion in May 1971. Approval of the plan by the Office, Chief of Engineers, must be obtained before we can enter into any lease agreement. However, we will be glad to meet with you at your convenience to explain our leasing program and acquaint you with the areas we are recommending for recreational development.

Please advise us when a meeting is desired.

Sincerely yours,

M. W. DEGEER
Chief, Engineering Division

APPENDIX I

VISITATION

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

APPENDIX I - VISITATION

TABLE OF CONTENTS

TABLE INDEX

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

APPENDIX I - VISITATION

I-01. General. - Procedures and formulative data used in determining the annual visitation at Hugo Lake were taken from Technical Report No. 2, Plan Formulation and Evaluation Studies - Recreation: Estimating Initial Reservoir Recreation Use, Sacramento District, dated October 1969. Estimates of facilities required to support the annual visitation were developed from basic criteria as contained in ER 1130-2-312 and Tulsa District surveys.

I-02. Recreation-use market area. - The recreation-use market area is the area from which a majority of the project recreationists originate. Criteria for establishing this market area were taken from Technical Report No. 2 referred to in the preceding paragraph. The market area counties are shown in table I-1.

I-03. Day use. - Day use per capita rate is the number of expected annual visits to a project by each recreationist living within the market area. In determining the rates for market area counties applicable to Hugo Lake, statistical information of two similar projects, Canton Lake, Oklahoma, and Dam B Lake, Texas, was used in connection with the guidelines contained in Technical Report No. 2. The day use per capita rate factors for each county were applied to projected base year 1976 (3 years after the project is in useful operation) population figures, and the resulting day use visitors are shown in table I-1.

TABLE I-1

DAY USE

County	Base year (1976) population	Day use per capita rate factor	Day use visitors (1)
Oklahoma			
Choctaw	16,400	10.0	164,000
Pushmataha	10,200	10.0	102,000
McCurtain	30,500	2.0	61,000
Atoka	18,100	1.8	32,580
Texas			
Lamar	38,900	2.5	97,250
Total			456,830

(1) Camping excluded.

I-04. Initial annual visitation. - As the result of Tulsa District surveys, it was determined that 10 percent of the total visitation was camping. Hence, the day use contribution to total use is 90 percent. Using the day use estimate of 456,830 and including camping, the total initial visitation is determined as follows:

$$\text{Initial annual visitation} = \frac{456,830}{.90} = 507,588 \text{ (use } 510,000)$$

I-05. Optimum visitation. - Future visitation is based on the assumption that recreational use will increase from the base year (1976) at the same rate of growth as the population. The maximum practical use level (optimum visitation) for the project is 900,000 annual visitors. It is estimated that this increase of 390,000 annual visitors will be reached by year 2014. Land and water areas of the project available for recreation and the degree of crowding that recreationists will tolerate before seeking alternate areas for recreation or alternate types of recreation are the bases for the optimum visitation estimate. The visitation should remain at about this level throughout the remaining life of the project.

I-06. Average annual visitation. - Evaluation of the initial and optimum visitations for a 100-year life gives an estimated average annual visitation of 826,000.

I-07. Summary of estimated visitation. - The initial recreational visitation will be 510,000; the optimum visitation, 900,000; and the average annual visitation, 826,000.

I-08. Facilities required to support visitation.

a. General. - The Tulsa District surveys indicate that about 17 percent of the annual visitors attend during the peak month of use and that the visitation on weekends during this period is about 65 percent of the 17 percent total. The number of visitors that are expected to visit the project on a weekend day during the peak month of use is:

(1) Initial.

$$\text{Visitation on a weekend day} = 510{,}000 \times .17 \times .65 \times \frac{1}{8} = 7{,}044$$

(2) Future increase.

$$\text{Visitation on a weekend day} = 390{,}000 \times .17 \times .65 \times \frac{1}{8} = 5{,}387$$

Explanation of factors:

510,000 and 390,000 = estimated visitation
.17 = percent of annual use occurring during peak month
.65 = percent of peak month use occurring on weekends
8 = number of weekend days during peak month

b. Determination of facilities for initial and future development.

(1) Initial development.

(a) Picnic tables. - The Tulsa District surveys indicate that the average percentage of visitors who use the picnic tables is about 23; there is an average of 3.2 persons per table use; and a turnover rate of 1.5 each day per table. The number of tables required is:

$$\text{Number of tables} = \frac{7{,}044 \times .23}{3.2 \times 1.5} = 338$$

Proposed number of tables = 329

(b) Boat ramps. - The Tulsa District surveys indicate that about 10 percent of the vehicles at a project have boat and trailers, and the average number of persons per vehicle

is 3.2. ER 1130-2-312, dated 30 November 1967, states each ramp will accommodate 40 boat launchings per normal weekend day. On this basis, the number of boat ramps required is:

$$\text{Number of ramps} = \frac{7{,}044 \times .10}{3.2 \times 40} = 5.5$$

Proposed number of ramps = 9 (includes ramp provided in concessionaire area)

(2) Future development.

(a) Picnic tables.

$$\text{Number of tables} = \frac{5{,}387 \times .23}{3.2 \times 1.5} = 258$$

Proposed number of tables = 254

(b) Boat ramps.

$$\text{Number of ramps} = \frac{5{,}387 \times .10}{3.2 \times 40} = 4.2$$

Proposed number of ramps = 0

Nine ramps, of which four are double ramps, are programmed for initial development instead of six as computed. This will provide at least one ramp in each public-use area on the project and additional ramps in those with widely separated areas of use. For this reason, no ramps are proposed in the future development.

APPENDIX II

COST ESTIMATES

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

APPENDIX II - COST ESTIMATES

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TABLE INDEX

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

DESIGN MEMORANDUM NO. 3B
PUBLIC USE PLAN

APPENDIX II - COST ESTIMATES

II-01. General. - This appendix presents the cost estimate of public-use facilities proposed for construction at Hugo Lake, Oklahoma.

II-02. Estimate of cost. - The summary of the total estimated construction cost for development of facilities in the seven public-use areas is shown in table II-1. An itemized cost estimate for the proposed initial, future, and total development in each public-use area is shown in table II-2. A comparison between the present estimate of cost and the latest approved PB-3 estimate is shown in table II-3.

TABLE II-1

SUMMARY OF ESTIMATED COST FOR PUBLIC-USE DEVELOPMENT
(Based on January 1971 prices)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	Roads								
	Paved, 24'	Mile	46,500.00	14.01	651,465	2.49	115,785	16.50	767,250
	Paved, 14'	Mile	29,000.00	6.91	200,390	3.71	107,590	10.62	307,980
	Gravel, 20'	Mile	20,000.00	0.64	12,800	-	-	0.64	12,800
	Gravel, 10'	Mile	8,000.00	1.30	10,400	0.23	1,840	1.53	12,240
	Parking area								
	Paved	S.Y.	3.30	24,210	79,893	2,400	7,920	26,610	87,813
	Gravel	S.Y.	1.80	550	990	-	-	550	990
	Boat ramps								
	Single	Each	7,500.00	5	37,500	-	-	5	37,500
	Double	Each	13,000.00	4	52,000	-	-	4	52,000
	Boat docks	Each	1,200.00	8	9,600	-	-	8	9,600
	Buoys	Each	100.00	15	1,500	-	-	15	1,500
	Dikes	Job	L.S.	-	24,500	-	-	-	24,500
	Retaining walls	Job	L.S.	-	22,900	-	-	-	22,900
	Rock barrier	L.F.	2.50	1,800	4,500	-	-	1,800	4,500
	Drainage structure	Job	L.S.	-	34,000	-	-	-	34,000
	Embankment	C.Y.	0.50	72,000	36,000	-	-	72,000	36,000
	Riprap and bedding	C.Y.	6.00	13,000	78,000	-	-	13,000	78,000
	Water supply	Job	L.S.	-	284,200	-	43,200	-	327,400
	Toilets								
	Wood vault	Each	1,600.00	14	22,400	8	12,800	22	35,200
	Masonry vault	Each	13,000.00	15	195,000	4	52,000	19	247,000
	Waterborne	Each	34,000.00	6	204,000	1	34,000	7	238,000
	Waterborne, w/shower	Each	36,000.00	5	180,000	3	108,000	8	288,000

TABLE II-1 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development		Future development		Total development	
				Quantity	Cost	Quantity	Cost	Quantity	Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Changehouse, w/shower	Each	2,000.00	4	8,000	4	8,000	8	16,000
	Trailer sanitary station, w/vault	Each	2,000.00	3	6,000	-	-	3	6,000
	Sewage treatment system	Job	L.S.	-	92,300	-	47,300	-	139,600
	Electrical system	Job	L.S.	-	123,560	-	32,150	-	155,710
	Camping, tent pad pull-off unit, paved	Each	600.00	185	111,000	134	80,400	319	191,400
	Picnic facilities								
	Tables, w/pad	Each	200.00	144	28,800	120	24,000	264	52,800
	Fireplaces, pedestal	Each	100.00	143	14,300	120	12,000	263	26,300
	Firepits	Each	70.00	24	1,680	-	-	24	1,680
	Refuse cans	Each	70.00	125	8,570	72	5,040	197	13,610
	Shelters, group	Each	4,200.00	6	25,200	-	-	6	25,200
	Shelters, individual	Each	400.00	3	1,200	-	-	3	1,200
	Paths								
	Gravel, 4'	L.F.	0.35	70,900	24,815	1,500	525	72,400	25,340
	Paved, 3'	L.F.	2.50	1,510	3,775	620	1,550	2,130	5,325
	Fishing walks	L.F.	3.25	2,300	7,475	-	-	2,300	7,475
	Fence, chain link, 4'	L.F.	1.25	2,400	3,000	-	-	2,400	3,000
	Remove chain link fence	Job	L.S.	-	200	-	-	-	200
	Beautification								
	Trees, shade	Each	40.00	1,267	50,680	-	-	1,267	50,680
	Trees, ornamental	Each	25.00	1,410	35,250	-	-	1,410	35,250
	Landscaping toilets	Each	500.00	30	15,000	15	7,500	45	22,500

TABLE II-1 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Beautification (con.)								
	Clearing and cleanup	Job	L.S.	-	9,800	-	1,400	-	11,200
	Turfing and erosion control	Job	L.S.	-	20,800	-	-	-	20,800
	Grading and shaping large areas	Job	L.S.	-	3,500	-	-	-	3,500
	Signs	Job	L.S.	-	19,240	-	3,300	-	22,540
	Beaches	Job	L.S.	-	7,000	-	7,500	-	14,500
	Subtotal				2,763,183		713,800		3,476,983
	Contingencies, 12%+				331,817		86,200		418,017
	TOTAL, RECREATION FACILITIES				3,095,000		800,000		3,895,000
030.	ENGINEERING AND DESIGN				286,000		74,000		360,000
031.	SUPERVISION AND ADMINISTRATION				226,000		58,000		284,000
	TOTAL COST				3,607,000		932,000		4,539,000

TABLE II-2

DETAILS OF ESTIMATED COST FOR RECREATIONAL FACILITIES

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	Bridge View								
	Roads								
	Paved, 24'	Mile	46,500.00	0.19	8,835	-	-	0.19	8,835
	Gravel, 10'	Mile	8,000.00	0.01	80	-	-	0.01	80
	Parking area, paved	S.Y.	3.30	700	2,310	-	-	700	2,310
	Water supply	Job	L.S.	-	3,500	-	-	-	3,500
	Toilets, masonry vault	Each	13,000.00	1	13,000	-	-	1	13,000
	Electrical system	Job	L.S.	-	1,300	-	-	-	1,300
	Picnic facilities								
	Refuse cans	Each	70.00	5	350	-	-	5	350
	Paths, paved, 3'	L.F.	2.50	350	875	-	-	350	875
	Remove chain link fence	Job	L.S.	-	200	-	-	-	200
	Beautification								
	Trees, shade	Each	40.00	101	4,040	-	-	101	4,040
	Trees, ornamental	Each	25.00	99	2,475	-	-	99	2,475
	Landscaping, toilets	Each	500.00	1	500	-	-	1	500
	Clearing and cleanup	Job	L.S.	-	100	-	-	-	100
	Turfing and erosion control	Job	L.S.	-	900	-	-	-	900
	Signs	Job	L.S.	-	1,100	-	-	-	1,100
	Subtotal				39,565		-		39,565
	Contingencies, 12%+				4,735		-		4,735
	Total, Bridge View				44,300		-		44,300

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Rattan Landing								
	Roads								
	Paved, 24'	Mile	46,500.00	0.40	18,600	-	-	0.40	18,600
	Paved, 14'	Mile	29,000.00	0.50	14,500	-	-	0.50	14,500
	Gravel, 10'	Mile	8,000.00	0.03	240	-	-	0.03	240
	Parking area, paved	S.Y.	3.30	1,400	4,620	-	-	1,400	4,620
	Boat ramps, single	Each	7,500.00	1	7,500	-	-	1	7,500
	Boat docks	Each	1,200.00	1	1,200	-	-	1	1,200
	Buoys	Each	100.00	2	200	-	-	2	200
	Water supply	Job	L.S.	-	4,100	-	-	-	4,100
	Toilets, masonry vault	Each	13,000.00	2	26,000	-	-	2	26,000
	Electrical system	Job	L.S.	-	2,650	-	-	-	2,650
	Picnic facilities								
	Tables, w/pad	Each	200.00	12	2,400	10	2,000	22	4,400
	Fireplaces, pedestal	Each	100.00	12	1,200	10	1,000	22	2,200
	Refuse cans	Each	70.00	7	490	5	350	12	840
	Paths								
	Paved, 3'	L.F.	2.50	150	375	-	-	150	375
	Gravel, 4'	L.F.	0.35	1,200	420	-	-	1,200	420
	Fishing walk	L.F.	3.25	1,500	4,875	-	-	1,500	4,875
	Beautification								
	Trees, shade	Each	40.00	73	2,920	-	-	73	2,920
	Trees, ornamental	Each	25.00	81	2,025	-	-	81	2,025
	Landscaping, toilets	Each	500.00	2	1,000	-	-	2	1,000
	Clearing and cleanup	Job	L.S.	-	300	-	-	-	300
	Turfing and erosion control	Job	L.S.	-	800	-	-	-	800
	Signs	Job	L.S.	-	1,900	-	-	-	1,900

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Rattan Landing (con.)								
	Subtotal				98,315		3,350		101,665
	Contingencies, 12%+				11,785		450		12,235
	Total, Rattan Landing				110,100		3,800		113,900
	Frazier Point								
	Roads								
	Paved, 24'	Mile	46,500.00	0.53	24,645	-	-	0.53	24,645
	Paved, 14'	Mile	29,000.00	0.20	5,800	-	-	0.20	5,800
	Gravel, 10'	Mile	8,000.00	0.05	400	-	-	0.05	400
	Parking area, paved	S.Y.	3.30	1,000	3,300	-	-	1,000	3,300
	Boat ramps, single	Each	7,500.00	1	7,500	-	-	1	7,500
	Boat docks	Each	1,200.00	1	1,200	-	-	1	1,200
	Buoys	Each	100.00	2	200	-	-	2	200
	Water supply	Job	L.S.	-	3,100	-	-	-	3,100
	Toilets, wood vault	Each	1,600.00	4	6,400	-	-	4	6,400
	Electrical system	Job	L.S.	-	3,510	-	-	-	3,510
	Picnic facilities								
	Tables, w/pad	Each	200.00	10	2,000	4	800	14	2,800
	Fireplaces, pedestal	Each	100.00	10	1,000	4	400	14	1,400
	Refuse cans	Each	70.00	5	350	2	140	7	490
	Path, gravel, 4'	L.F.	0.35	300	105	400	140	700	245
	Fishing walk	L.F.	3.25	800	2,600	-	-	800	2,600

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Frazier Point (con.)								
	Beautification								
	Trees, shade	Each	40.00	72	2,880	-	-	72	2,880
	Trees, ornamental	Each	25.00	80	2,000	-	-	80	2,000
	Landscaping, toilets	Each	500.00	2	1,000	-	-	2	1,000
	Clearing and cleanup	Job	L.S.	-	400	-	-	-	400
	Turfing and erosion control	Job	L.S.	-	800	-	-	-	800
	Signs	Job	L.S.	-	1,900	-	-	-	1,900
	Subtotal				71,090		1,480		72,570
	Contingencies, 12%+				8,510		220		8,730
	Total, Frazier Point				79,600		1,700		81,300
	Salter Creek Cove								
	Roads								
	Paved, 24'	Mile	46,500.00	1.25	58,125	1.0	46,500	2.25	104,625
	Paved, 14'	Mile	29,000.00	0.53	15,370	0.47	13,630	1	29,000
	Gravel, 10'	Mile	8,000.00	-	-	0.05	400	0.05	400
	Parking area, paved	S.Y.	3.30	1,550	5,115	700	2,310	2,250	7,425
	Boat ramps, double	Each	13,000.00	1	13,000	-	-	1	13,000
	Boat docks	Each	1,200.00	1	1,200	-	-	1	1,200
	Buoys	Each	100.00	1	100	-	-	1	100
	Water supply	Job	L.S.	-	24,000	-	8,000	-	32,000

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	(CON.)								
	Salter Creek Cove								
	(con.)								
	Toilets								
	Masonry vault	Each	13,000.00	-	-	2	26,000	2	26,000
	Waterborne, w/showers	Each	36,000.00	1	36,000	-	-	1	36,000
	Changehouse, w/shower	Each	2,000.00	-	-	2	4,000	2	4,000
	Trailer sanitary								
	station, w/vault	Each	2,000.00	1	2,000	-	-	1	2,000
	Sewage treatment								
	system	Job	L.S.	-	8,000	-	8,000	-	16,000
	Electrical system	Job	L.S.	-	6,900	-	9,500	-	16,400
	Camping, tent pad								
	pulloff unit, paved	Each	600.00	30	18,000	10	6,000	40	24,000
	Picnic facilities								
	Tables, w/pad	Each	200.00	-	-	34	6,800	34	6,800
	Fireplaces, pedestal	Each	100.00	-	-	34	3,400	34	3,400
	Refuse cans	Each	70.00	3	210	20	1,400	23	1,610
	Paths								
	Gravel, 4'	L.F.	0.35	2,900	1,015	-	-	2,900	1,015
	Paved, 3'	L.F.	2.50	40	100	80	200	120	300
	Fence, chain link, 4'	L.F.	1.25	400	500	-	-	400	500
	Beautification								
	Trees, shade	Each	40.00	129	5,160	-	-	129	5,160
	Trees, ornamental	Each	25.00	161	4,025	-	-	161	4,025

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	(CON.)								
	Salter Creek Cove								
	(con.)								
	Beautification (con.)								
	Landscaping, toilets	Each	500.00	1	500	3	1,500	4	2,000
	Clearing and cleanup	Job	L.S.	-	3,000	-	-	-	3,000
	Turfing and erosion control	Job	L.S.	-	2,600	-	-	-	2,600
	Signs	Job	L.S.	-	1,900	-	600	-	2,500
	Beaches	Job	L.S.	-	-	-	5,000	-	5,000
	Subtotal				206,800		143,240		350,060
	Contingencies, 12%				24,680		17,260		41,940
	Total, Salter Creek Cove				231,500		160,500		392,000
	Twin Coves (Virgil Point)								
	Roads								
	Paved, 24'	Mile	46,500.00	1.55	72,075	0.10	4,650	1.65	76,725
	Paved, 14'	Mile	29,000.00	0.83	24,070	0.40	11,600	1.23	35,670
	Gravel, 10'	Mile	8,000.00	0.03	240	-	-	0.03	240
	Parking area, paved	S.Y.	3.30	6,500	21,450	100	330	6,600	21,780
	Boat ramps, single	Each	7,500.00	1	7,500	-	-	1	7,500
	Boat docks	Each	1,200.00	1	1,200	-	-	1	1,200

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Twin Coves (Virgil Point) (con.)								
	Buoys	Each	100.00	2	200	-	-	2	200
	Dikes	Job	L.S.	-	7,500	-	-	-	7,500
	Riprap and bedding	C.Y.	6.00	2,300	13,800	-	-	2,300	13,800
	Water supply	Job	L.S.	-	22,000	-	2,400	-	24,400
	Toilets								
	Masonry vault	Each	13,000.00	1	13,000	-	-	1	13,000
	Waterborne, w/shower	Each	36,000.00	1	36,000	1	36,000	2	72,000
	Trailer sanitary station, w/vault	Each	2,000.00	1	2,000	-	-	1	2,000
	Sewage treatment system	Job	L.S.	-	6,800	-	6,800	-	13,600
	Electrical system	Job	L.S.	-	6,700	-	1,200	-	7,900
	Camping, tent pad pulloff unit, paved	Each	600.00	50	30,000	30	18,000	80	48,000
	Picnic facilities								
	Refuse cans	Each	70.00	3	210	1	70	4	280
	Paths								
	Gravel, 4'	L.F.	0.35	5,600	1,960	-	-	5,600	1,960
	Paved, 3'	L.F.	2.50	100	250	40	100	140	350
	Fence, chain link, 4'	L.F.	1.25	400	500	-	-	400	500
	Beautification								
	Trees, shade	Each	40.00	156	6,240	-	-	156	6,240
	Trees, ornamental	Each	25.00	180	4,500	-	-	180	4,500

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	Twin Coves (Virgil Point) (con.)								
	Beautification (con.)								
	Landscaping, toilets	Each	500.00	2	1,000	1	500	3	1,500
	Clearing and cleanup	Job	L.S.	-	1,700	-	-	-	1,700
	Turfing and erosion control	Job	L.S.	-	2,200	-	-	-	2,200
	Signs	Job	L.S.	-	2,300	-	300	-	2,600
	Subtotal				285,395		81,950		367,345
	Contingencies, 12%+				34,405		9,850		44,255
	Total, Twin Coves (Virgil Point)				319,800		91,800		411,600
	Twin Coves (Wilson Point)								
	Roads								
	Paved, 24'	Mile	46,500.00	1.02	47,430	0.06	2,790	1.08	50,220
	Paved, 14'	Mile	29,000.00	0.43	12,470	0.38	11,020	0.81	23,490
	Gravel, 10'	Mile	8,000.00	0.03	240	0.03	240	0.06	480
	Parking area, paved	S.Y.	3.30	2,800	9,240	-	-	2,800	9,240
	Boat ramps, double	Each	13,000.00	1	13,000	-	-	1	13,000
	Boat docks	Each	1,200.00	1	1,200	-	-	1	1,200
	Buoys	Each	100.00	2	200	-	-	2	200
	Dikes	Job	L.S.	-	5,500	-	-	-	5,500

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Twin Coves (Wilson Point) (con.)								
	Rock barriers	L.F.	2.50	1,400	3,500	-	-	1,400	3,500
	Riprap and bedding	C.Y.	6.00	1,300	7,800	-	-	1,300	7,800
	Water supply	Job	L.S.	-	44,000	-	2,000	-	46,000
	Toilets								
	Masonry vault	Each	13,000.00	1	13,000	1	13,000	2	26,000
	Waterborne	Each	34,000.00	1	34,000	-	-	1	34,000
	Changehouse, w/shower	Each	2,000.00	2	4,000	-	-	2	4,000
	Sewage treatment system	Job	L.S.	-	14,600	-	-	-	14,600
	Electrical system	Job	L.S.	-	5,800	-	750	-	6,550
	Picnic facilities								
	Tables, w/pad	Each	200.00	25	5,000	19	3,800	44	8,800
	Fireplaces, pedestal	Each	100.00	25	2,500	19	1,900	44	4,400
	Refuse cans	Each	70.00	15	1,050	11	770	26	1,820
	Shelters, individual	Each	400.00	2	800	-	-	2	800
	Paths								
	Gravel, 4'	L.F.	0.35	5,200	1,820	-	-	5,200	1,820
	Paved, 3'	L.F.	2.50	60	150	150	375	210	525
	Fence, chain link, 4'	L.F.	1.25	400	500	-	-	400	500
	Beautification								
	Trees, shade	Each	40.00	265	10,400	-	-	265	10,400
	Trees, ornamental	Each	25.00	268	6,700	-	-	268	6,700

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Twin Coves (Wilson Point) (con.)								
	Beautification (con.)								
	Landscaping, toilets	Each	500.00	3	1,500	1	500	4	2,000
	Clearing and cleanup	Job	L.S.	-	200	-	-	-	200
	Turfing and erosion control	Job	L.S.	-	1,500	-	-	-	1,500
	Grading and shaping large areas	Job	L.S.	-	3,500	-	-	-	3,500
	Signs	Job	L.S.	-	1,900	-	200	-	2,100
	Beaches	Job	L.S.	-	3,500	-	-	-	3,500
	Subtotal				257,000		37,345		294,345
	Contingencies, 12%+				30,800		4,855		35,655
	Total, Twin Cove (Wilson Point)				287,800		42,200		330,000
	Sawyer Bluff								
	Roads								
	Paved, 24'	Mile	46,500.00	1.36	63,240	-	-	1.36	63,240
	Paved, 14'	Mile	29,000.00	0.76	22,040	-	-	0.76	22,040
	Gravel, 10'	Mile	8,000.00	0.07	560	-	-	0.07	560
	Parking area, paved	S.Y.	3.30	2,100	6,930	-	-	2,100	6,930
	Boat ramps, single	Each	7,500.00	1	7,500	-	-	1	7,500

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Sawyer Bluff (con.)								
	Boat docks	Each	1,200.00	1	1,200	-	-	1	1,200
	Buoys	Each	100.00	2	200	-	-	2	200
	Dikes	Job	L.S.	-	8,000	-	-	-	8,000
	Retaining walls	Job	L.S.	-	900	-	-	-	900
	Riprap and bedding	C.Y.	6.00	2,500	15,000	-	-	2,500	15,000
	Water supply	Job	L.S.	-	23,000	-	-	-	23,000
	Toilets, masonry vault	Each	13,000.00	3	39,000	-	-	3	39,000
	Sewage system	Job	L.S.	-	5,500	-	-	-	5,500
	Electrical system	Job	L.S.	-	9,300	-	-	-	9,300
	Picnic facilities								
	Tables, w/pad	Each	200.00	29	5,800	-	-	29	5,800
	Fireplaces, pedestal	Each	100.00	29	2,900	-	-	29	2,900
	Refuse cans	Each	70.00	27	1,890	-	-	27	1,890
	Shelters, group	Each	4,200.00	3	12,600	-	-	3	12,600
	Paths								
	Gravel, 4'	L.F.	0.35	400	140	-	-	400	140
	Paved, 3'	L.F.	2.50	60	150	-	-	60	150
	Fence, chain link, 4'	L.F.	1.25	400	500	-	-	400	500
	Beautification								
	Trees, shade	Each	40.00	51	2,040	-	-	51	2,040
	Trees, ornamental	Each	25.00	64	1,600	-	-	64	1,600
	Landscaping, toilets	Each	500.00	4	2,000	-	-	4	2,000
	Clearing and cleanup	Job	L.S.	-	1,000	-	-	-	1,000

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Sawyer Bluff (con.)								
	Beautification (con.)								
	Turfing and erosion control	Job	L.S.	-	2,000	-	-	-	2,000
	Signs	Job	L.S.	-	2,300	-	-	-	2,300
	Subtotal				237,290		-		237,290
	Contingencies, 12%+				28,610		-		28,610
	Total, Sawyer Bluff				265,900		-		265,900
	Kiamichi Park								
	Roads								
	Paved, 24'	Mile	45,500.00	7.71	358,515	1.33	61,845	9.04	420,360
	Paved, 14'	Mile	29,000.00	3.66	106,140	2.46	71,340	6.12	177,480
	Gravel, 20'	Mile	20,000.00	0.64	12,800	-	-	0.64	12,800
	Gravel, 10'	Mile	8,000.00	1.08	8,640	0.15	1,200	1.23	9,840
	Parking areas								
	Paved	S.Y.	3.30	8,160	26,928	1,600	5,280	9,760	32,208
	Gravel	S.Y.	1.80	550	990	-	-	550	990
	Boat ramps								
	Single	Each	7,500.00	1	7,500	-	-	1	7,500
	Double	Each	13,000.00	2	26,000	-	-	2	26,000
	Boat docks	Each	1,200.00	2	2,400	-	-	2	2,400
	Buoys	Each	100.00	4	400	-	-	4	400

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES (CON.)								
	Kiamichi Park (con.)								
	Dikes	Job	L.S.	-	3,500	-	-	-	3,500
	Retaining walls	Job	L.S.	-	22,000	-	-	-	22,000
	Rock barriers	L.F.	2.50	400	1,000	-	-	400	1,000
	Drainage structures	Job	L.S.	-	34,000	-	-	-	34,000
	Embankment	C.Y.	0.50	72,000	36,000	-	-	72,000	36,000
	Riprap and bedding	C.Y.	6.00	6,900	41,400	-	-	6,900	41,400
	Water supply	Job	L.S.	-	160,500	-	30,800	-	191,300
	Toilets								
	Wood vault	Each	1,600.00	10	16,000	8	12,800	18	28,800
	Masonry vault	Each	13,000.00	7	91,000	1	13,000	8	104,000
	Waterborne	Each	34,000.00	5	170,000	1	34,000	6	204,000
	Waterborne, w/shower	Each	36,000.00	3	108,000	2	72,000	5	180,000
	Changehouse, w/shower	Each	2,000.00	2	4,000	2	4,000	4	8,000
	Trailer sanitary station, w/vault	Each	2,000.00	1	2,000	-	-	1	2,000
	Sewage treatment system	Job	L.S.	-	57,400	-	32,500	-	89,900
	Electrical system	Job	L.S.	-	87,400	-	20,700	-	108,100
	Camping, tent pad pulloff unit, paved	Each	600.00	105	63,000	94	56,400	199	119,400
	Picnic facilities								
	Tables, w/pad	Each	200.00	68	13,600	53	10,600	121	24,200
	Fireplaces, pedestal	Each	100.00	67	6,700	53	5,300	120	12,000
	Firepits	Each	70.00	24	1,680	-	-	24	1,680

TABLE II-2 (CON.)

Cost Acct. No.	Item	Unit	Unit cost	Initial development Quantity	Initial development Cost	Future development Quantity	Future development Cost	Total development Quantity	Total development Cost
			$		$		$		$
014.	RECREATION FACILITIES								
	(CON.)								
	Kiamichi Park (con.)								
	Picnic facilities (con.)								
	Refuse cans	Each	70.00	60	4,020	33	2,310	93	6,330
	Shelters, group	Each	4,200.00	3	12,600	-	-	3	12,600
	Shelters, individual	Each	400.00	1	400	-	-	1	400
	Paths								
	Gravel, 4'	L.F.	0.35	55,300	19,355	1,100	385	56,400	19,740
	Paved, 3'	L.F.	2.50	750	1,875	350	875	1,100	2,750
	Fence, chain link, 4'	L.F.	1.25	800	1,000	-	-	800	1,000
	Beautification								
	Trees, shade	Each	40.00	420	17,000	-	-	420	17,000
	Trees, ornamental	Each	25.00	477	11,925	-	-	477	11,925
	Landscaping, toilets	Each	500.00	15	7,500	10	5,000	25	12,500
	Clearing and cleanup	Job	L.S.	-	3,100	-	1,400	-	4,500
	Turfing and erosion control	Job	L.S.	-	10,000	-	-	-	10,000
	Signs	Job	L.S.	-	5,940	-	2,200	-	8,140
	Beaches	Job	L.S.	-	3,500	-	2,500	-	6,000
	Subtotal				1,567,708		446,435		2,014,143
	Contingencies, 12%+				188,292		53,565		241,857
	Total, Kiamichi Park				1,756,000		500,000		2,256,000

II-03. Comparison of present estimate of cost with latest approved estimate. - A comparison of the present estimate of cost for the initial development with the latest approved PB-3 estimate, effective date 1 July 1970, is shown in table II-3.

TABLE II-3

COMPARISON OF PRESENT ESTIMATE OF COST FOR INITIAL DEVELOPMENT WITH PB-3 ESTIMATE

Cost Acct. No.	Item	Present estimate	Latest approved PB-3 estimate	Difference
		$	$	$
014.	RECREATION FACILITIES	3,095,000	778,000	2,317,000
030.	ENGINEERING AND DESIGN	286,000	72,000	214,000
031.	SUPERVISION AND ADMINISTRATION	226,000	57,000	169,000
	TOTAL COST	3,607,000	907,000	2,700,000

II-04. Explanation of changes in cost. - The estimated cost presented for initial development in the public-use areas is $3,607,000. The increase in cost of $2,700,000 is the result of the following:

a. Increasing facilities to provide for the increase in estimated number of visitors.

b. Increasing landscape work to enhance the attractiveness of the public-use areas.

c. Upgrading most roads from gravel surface to double bitumunous surface.

d. Installing masonry vault and waterborne toilets in lieu of wood vault toilets where possible.

e. Providing water supply and electrical systems to serve the expanded areas and the future needs.

f. Upgrading all facilities to meet current standards.

g. Providing expanded trail and path systems.

h. Providing wave protection for exposed boat ramps.

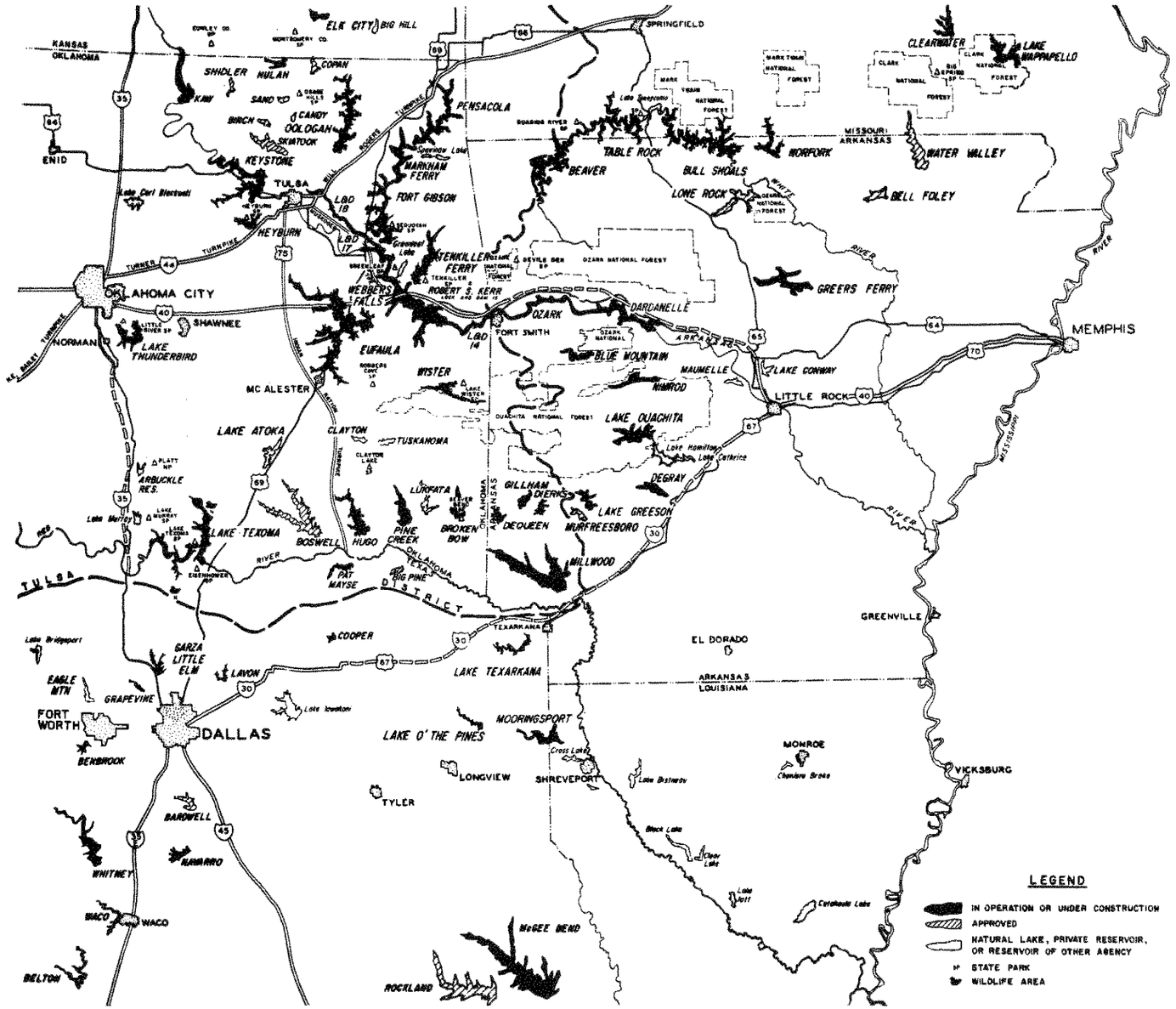
i. Making a more complete design study using up-to-date topographic information.

j. Making a detailed cost study as required in ER 1110-2-400.

PUBLIC USE PLAN

HUGO LAKE

KIAMICHI RIVER, OKLAHOMA



INDEX TO DRAWINGS

DISTRICT FILE NO.	TITLE	PHOTO NO.
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1400-DM3B-93/2	PUBLIC USE PLAN	
1400-DM3B-93/3	RATTAN LANDING	3A
1400-DM3B-93/4	FRAZIER POINT	4A
1400-DM3B-93/5	SAWYER BLUFF	5A
1400-DM3B-93/6	TWIN COVES (WILSON POINT)	6A
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1400-DM3B-93/15	PROJECT UTILIZATION	
1400-DM3B-93/16	PROJECT UTILIZATION	
1400-DM3B-93/17	PROJECT UTILIZATION	

LEGEND

- IN OPERATION OR UNDER CONSTRUCTION
- APPROVED
- NATURAL LAKE, PRIVATE RESERVOIR, OR RESERVOIR OF OTHER AGENCY
- SP STATE PARK
- WA WILDLIFE AREA

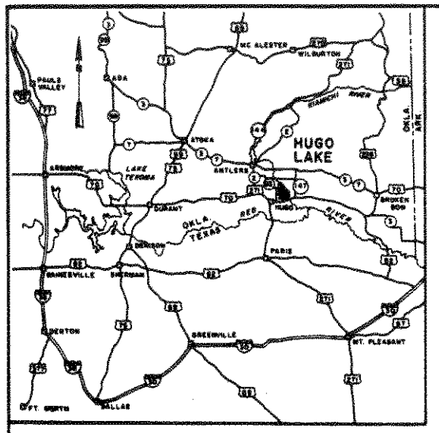
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

PROJECT LOCATION AND RELATED RECREATION AREAS

SCALE OF MILES 0 5 0 10 15 20

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/1



LOCALITY MAP
SCALE OF MILES

LEGEND

- PAVED ROADS
- GRAVEL ROADS
- PROPOSED ROAD RELOCATIONS
- TOP OF INACTIVE POOL — ELEV. 390.0
- TOP OF CONSERVATION POOL — ELEV. 404.5
- TOP OF FLOOD CONTROL POOL — ELEV. 437.5
- PUBLIC USE AREAS
- 110 MILES OF SHORELINE AT ELEV. 404.5

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

PUBLIC USE PLAN

SCALE OF MILES

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/2

LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
WALK			
STEPS			
BOAT RAMP			
COURTESY DOCK			
TOILETS			
Wood Vault			
Masonry Vault			
Waterborne			
Waterborne w/shower			
CHANGE HOUSE			
TRAILER SANITARY STATION			
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump			
WATER TAP			
WATER LINE			
SEWER LINE			
POWER LINE			
PICNIC FACILITIES			
Table w/shelter			
Table and fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BUOY			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH			
CONCESSION			
BY OTHERS			
Flood Light			
Power Line			
Water Line			
Trails			

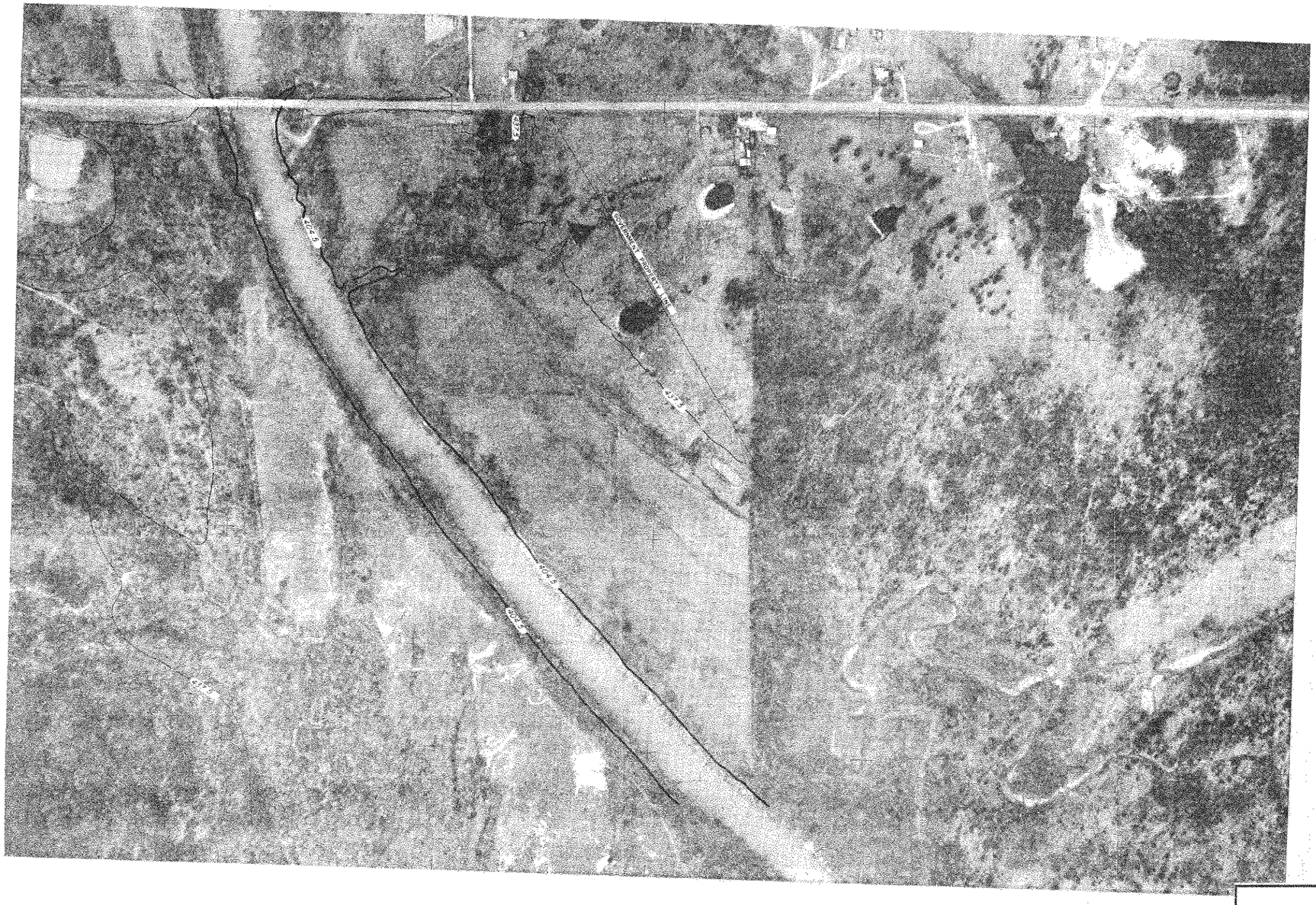
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

RATTAN LANDING

SCALE OF FEET
200 0 200 400

U. S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/3



T 4 S

R 17 E

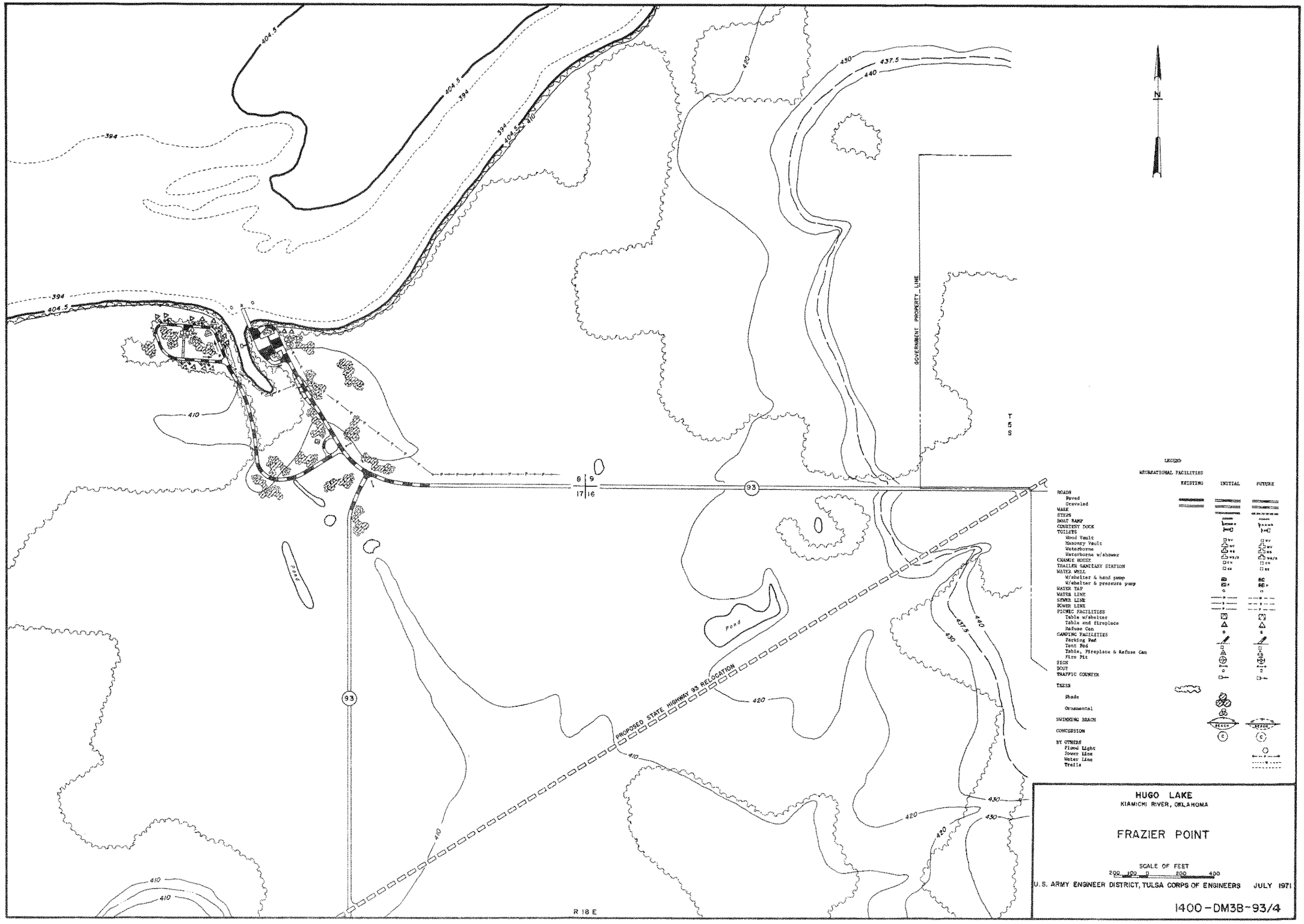
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

RATTAN LANDING

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/3A



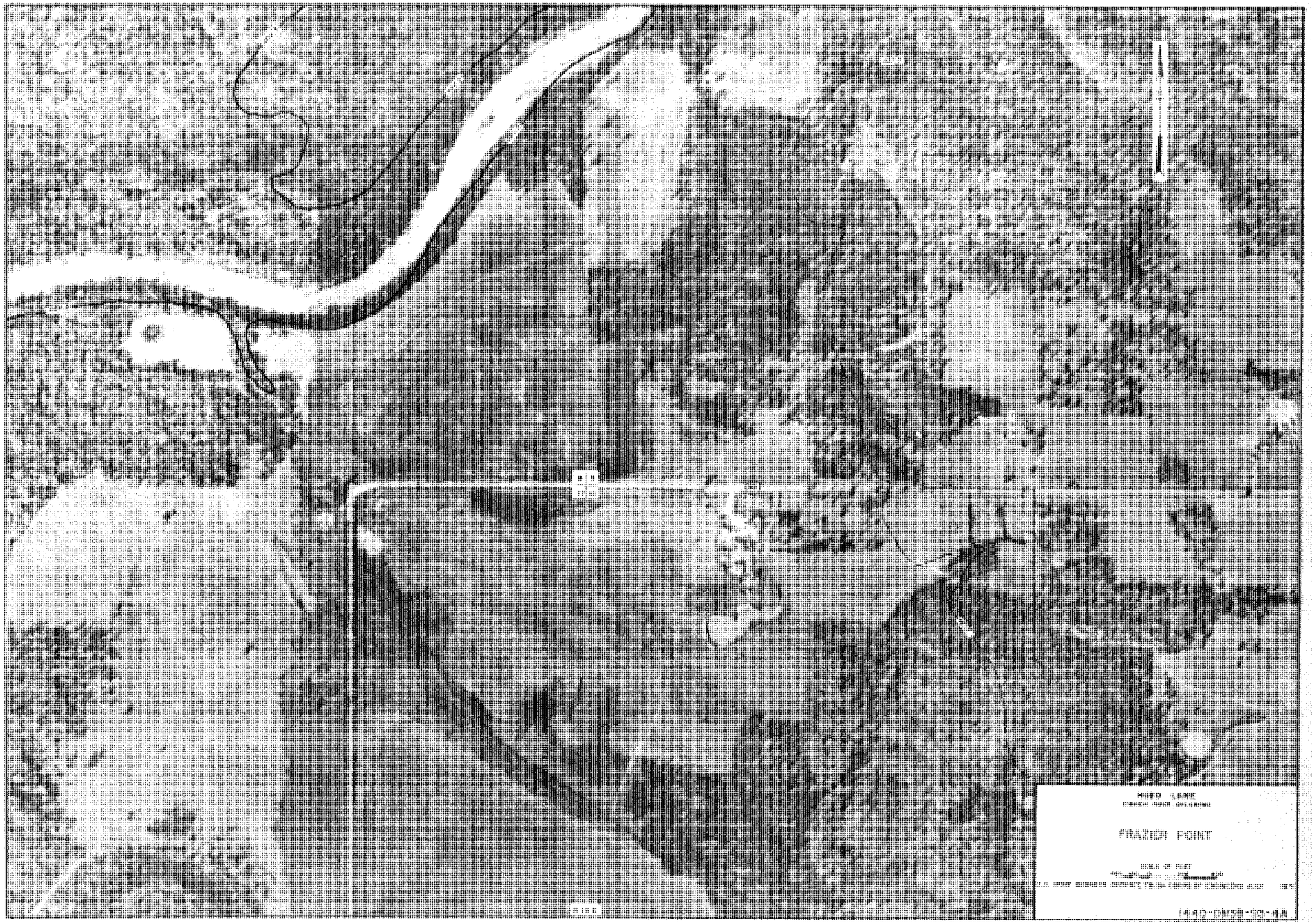
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

FRAZIER POINT

SCALE OF FEET
200 100 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/4


REED LANE
FRAZIER POINT

LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
WALK			
STEPS			
BOAT RAMP			
COURTESY DOCK			
TOILETS			
Wood Vault			
Masonry Vault			
Waterborne			
Waterborne w/shower			
CHANGE HOUSE			
TRAILER SANITARY STATION			
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump			
WATER TAP			
WATER LINE			
SEWER LINE			
POWER LINE			
PICNIC FACILITIES			
Table w/shelter			
Table and fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BUOY			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH		BEACH	BEACH
CONCESSION		C	C
BY OTHERS			
Flood Light			
Power Line			
Water Line			
Trails			

HUGO LAKE

KIAMICHI RIVER, OKLAHOMA

SAWYER BLUFF

SCALE OF FEET

200 100 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/5

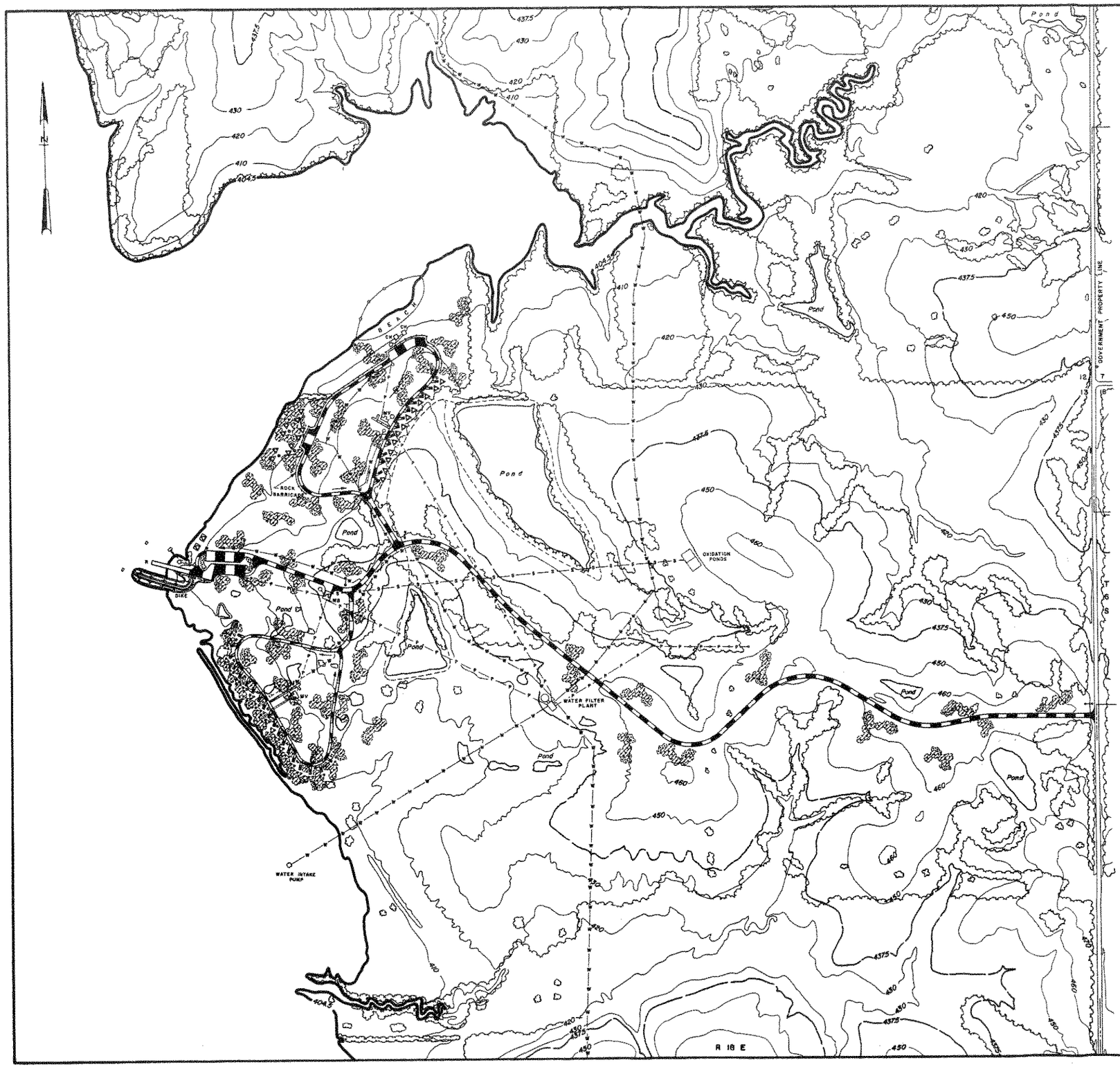
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

SAWYER BLUFF

SCALE OF FEET
200 100 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/5A



LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
WALK			
STEPS			
BOAT RAMP			
COURTESY DOCK			
TOILETS			
Wood Vault		wv	wv
Masonry Vault		mv	mv
Waterborne		ww	ww
Waterborne w/shower		ww/s	ww/s
CRANES HOUSE		ch	ch
TRAILER SANITARY STATION		ts	ts
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump			
WATER TAP			
WATER LINE			
SEWER LINE			
POWER LINE			
PICNIC FACILITIES			
Table w/shelter			
Table and fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BOAT			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH		BEACH	BEACH
CONCESSION		C	C
BY OTHERS			
Flood Light			
Power Line			
Water Line			
Trails			

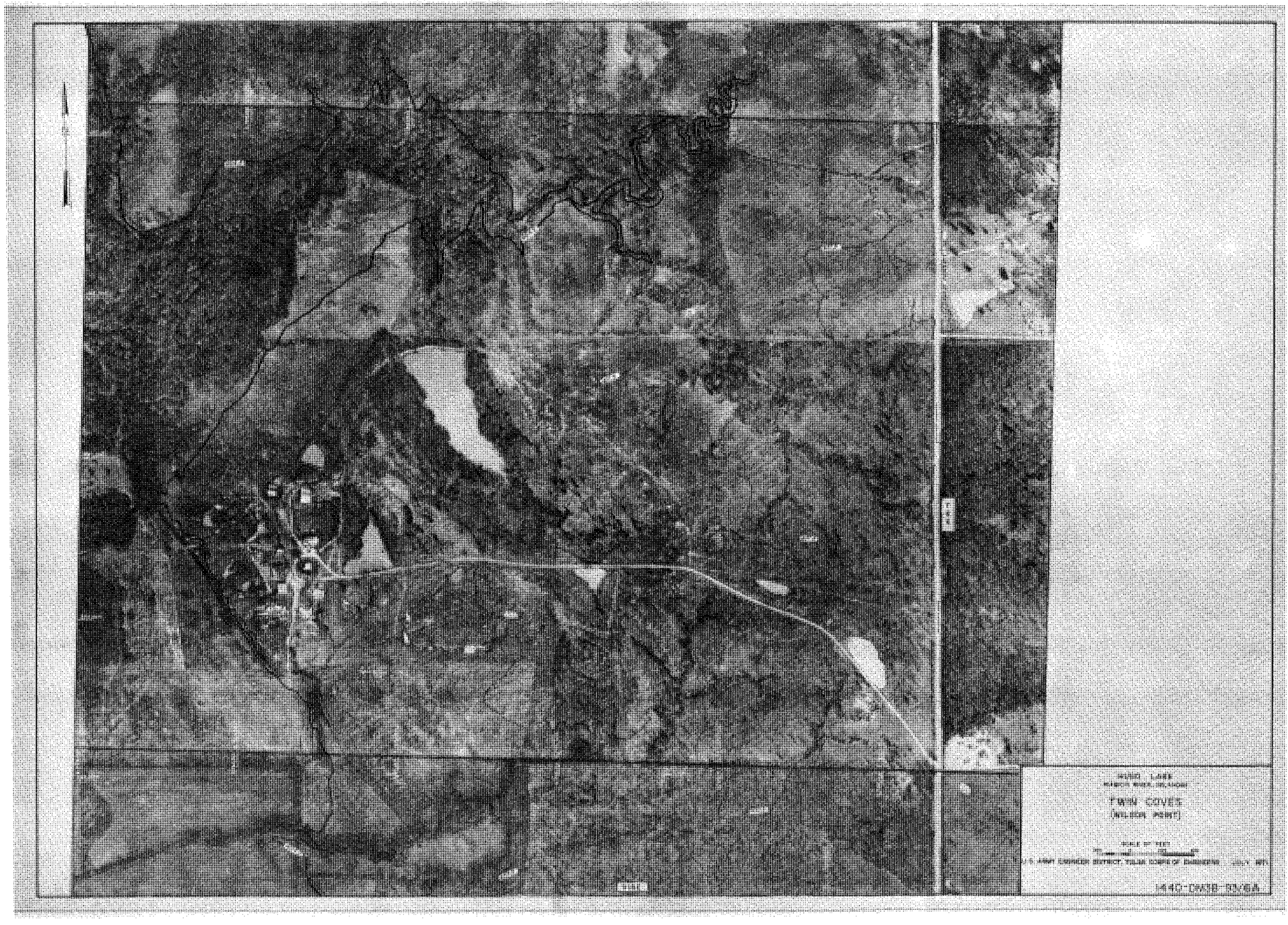
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

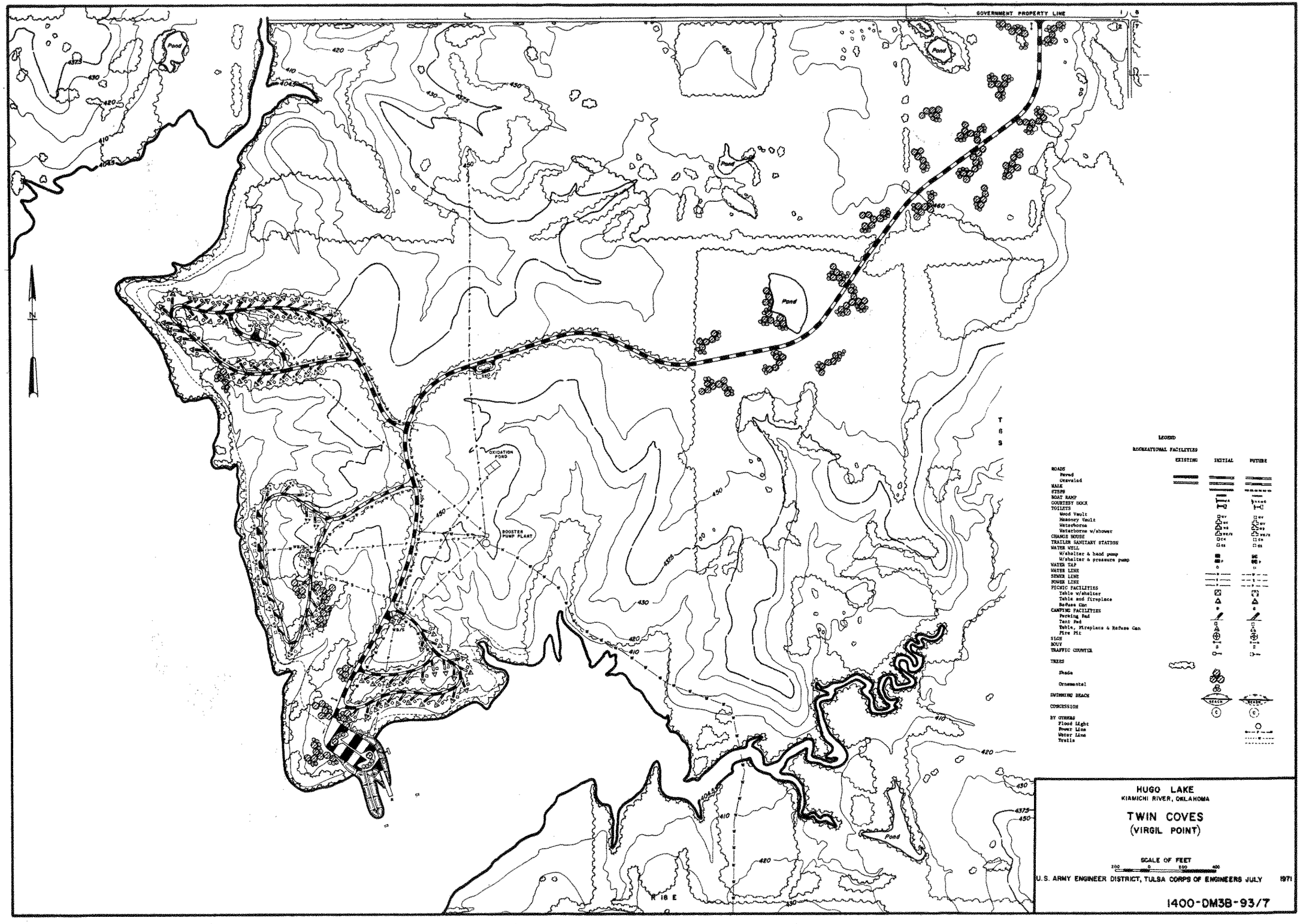
TWIN COVES
(WILSON POINT)

SCALE OF FEET
200 0 200 400

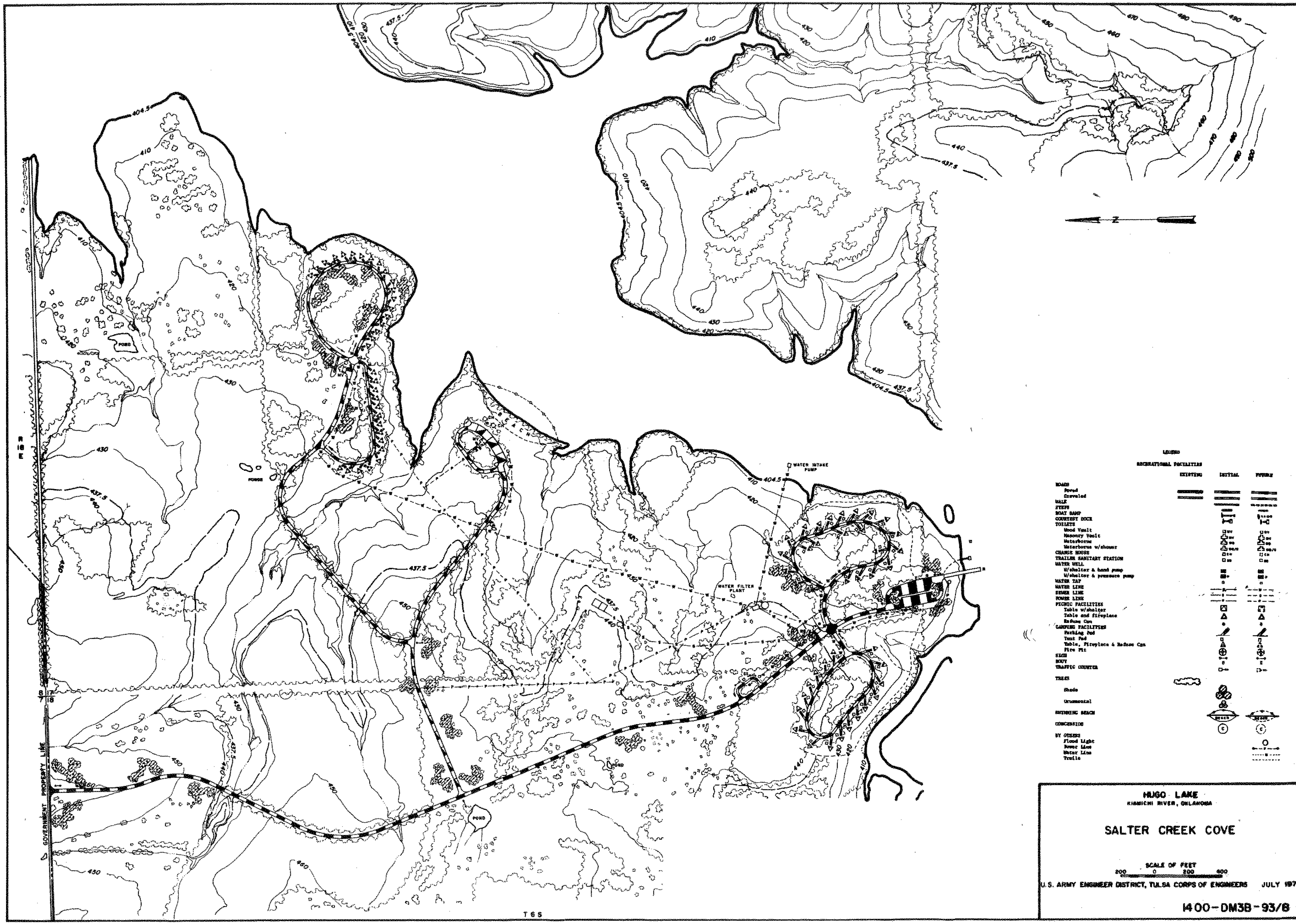
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/6

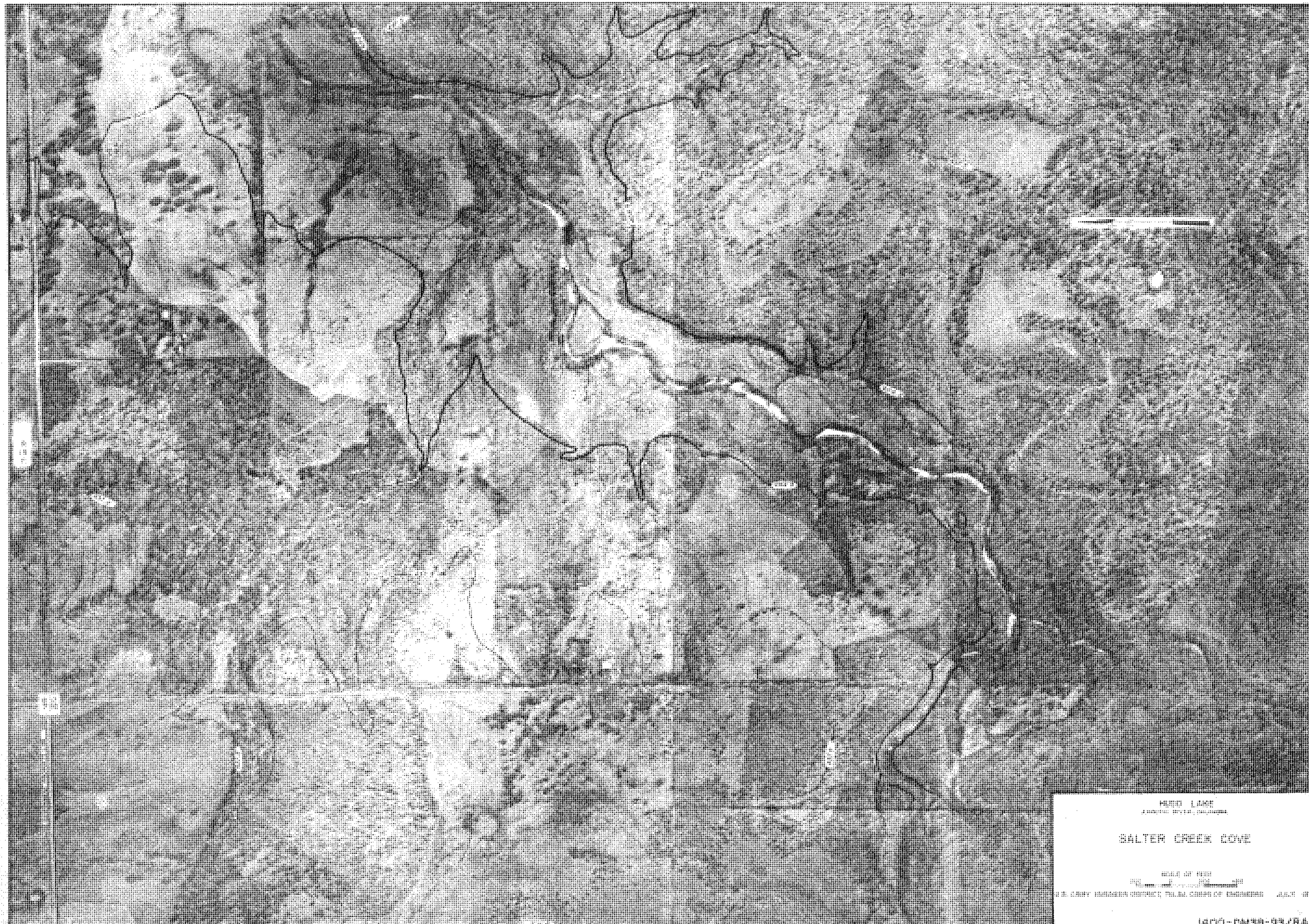

TWIN COVES
(WILSON POINT)


GOVERNMENT PROPERTY LINE
Pond
OXIDATION POND
BOOSTER PUMP PLANT
T 6 S
R 18 E
LEGEND
RECREATIONAL FACILITIES
EXISTING
INITIAL
FUTURE
ROADS
Paved
Graveled
TRAIL
STEPS
BOAT RAMP
COURTESY DOCK
TOILETS
Wood Vault
Masonry Vault
Waterborne
Waterborne w/shower
CHANGE HOUSE
TRAILER SANITARY STATION
WATER WELL
W/shelter & hand pump
W/shelter & pressure pump
WATER TAP
WATER LINE
SEWER LINE
POWER LINE
PICNIC FACILITIES
Table w/shelter
Table and Fireplace
Refuse Can
CAMPING FACILITIES
Parking Pad
Tent Pad
Table, Fireplace & Refuse Can
Fire Pit
SIGN
BUOY
TRAFFIC COUNTER
TREES
Shade
Ornamental
SWIMMING BEACH
CONCESSION
BY OTHERS
Flood Light
Power Line
Water Line
Trails
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA
TWIN COVES
(VIRGIL POINT)
SCALE OF FEET
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971
1400-DM3B-93/7


TWIN COVES



LEGEND
RECREATIONAL FACILITIES
EXISTING
INITIAL
FUTURE
ROADS
Paved
Graveled
WALK
STEPS
BOAT RAMP
COURTESY DOCK
TOILETS
Wood Vault
Masonry Vault
Waterborne
Waterborne w/shower
CHANGE HOUSE
TRAILER SANITARY STATION
WATER WELL
W/shelter & hand pump
W/shelter & pressure pump
WATER TAP
WATER LINE
SEWER LINE
POWER LINE
PICNIC FACILITIES
Table w/shelter
Table and fireplace
Refuse Can
CAMPING FACILITIES
Parking Pad
Tent Pad
Table, Fireplace & Refuse Can
Fire Pit
SIGN
BUOY
TRAFFIC COUNTER
TREES
Shade
Ornamental
SWIMMING BEACH
CONCESSION
BY OTHERS
Flood Light
Power Line
Water Line
Trails
WATER INTAKE PUMP
WATER FILTER PLANT
POND
GOVERNMENT PROPERTY LINE
R 18 E
T 6 S
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA
SALTER CREEK COVE
SCALE OF FEET
200 0 200 400
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971
1400-DM3B-93/8


SALTER CREEK COVE
1400-DM38-93/8A

MATCH LINE DWG. 93/10

21 | 22
28 | 27

22 | 23
27 | 26

SERVICE ROAD

BARRICADE

GOVERNMENT PROPERTY LINE

PRIMITIVE CAMPING AREA

LIMITS OF PUBLIC USE AREA

POND

T 8 S

R 18 E

LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
WALK			
STEPS			
BOAT RAMP			
COURTESY DOCK			
TOILETS			
Wood Vault		WV	WV
Masonry Vault		MV	MV
Waterborne		WB	WB
Waterborne w/shower		WB/S	WB/S
CHANGE HOUSE		CH	CH
TRAILER SANITARY STATION		TS	TS
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump			
WATER TAP			
WATER LINE			
SEWER LINE			
POWER LINE			
PICNIC FACILITIES			
Table w/shelter			
Table and fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BOOTH			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH		BEACH (C)	BEACH (C)
CONCESSION			
BY OTHERS			
Flood Light			
Power Line			
Water Line			
Trails			

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

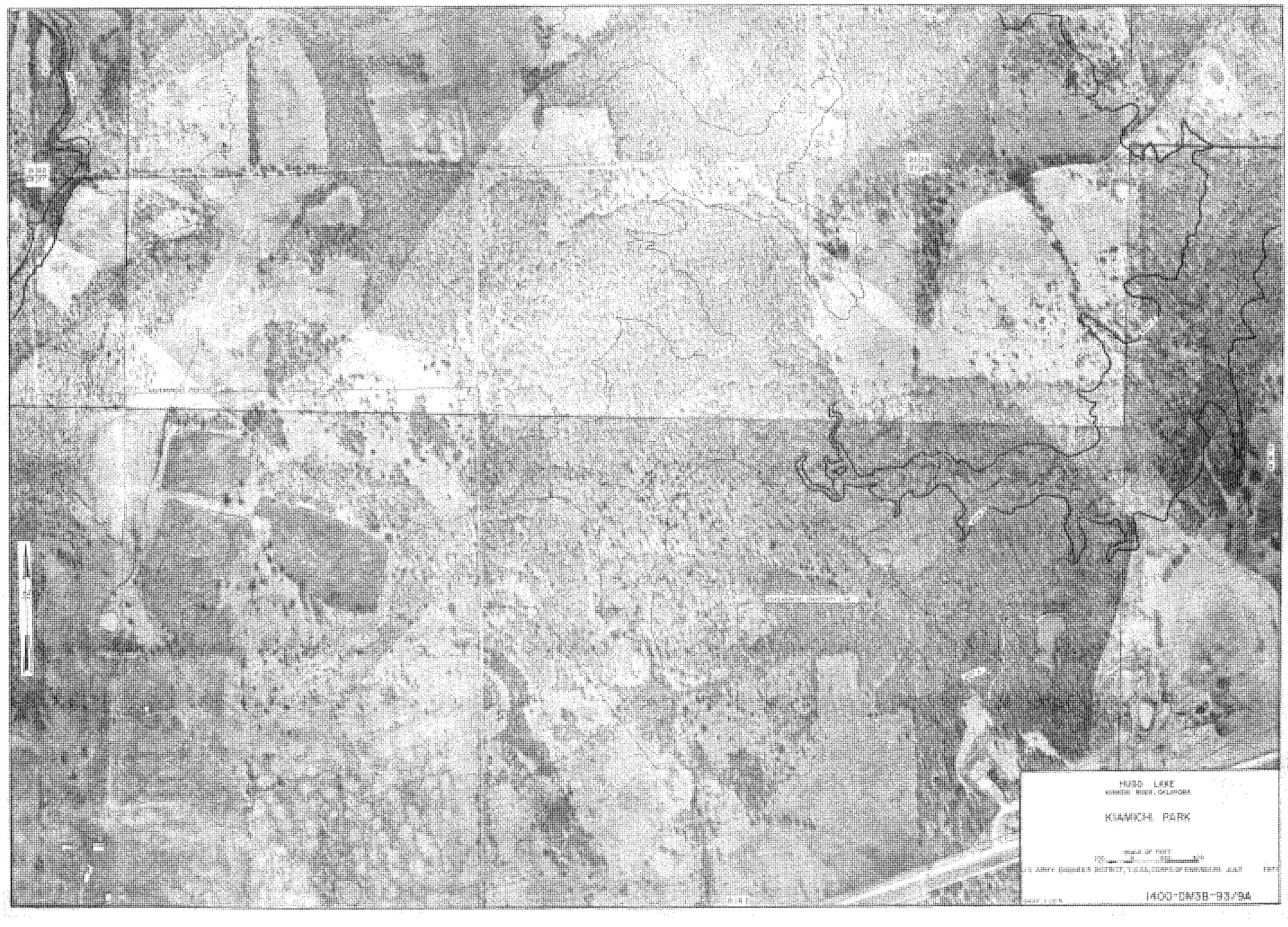
KIAMICHI PARK

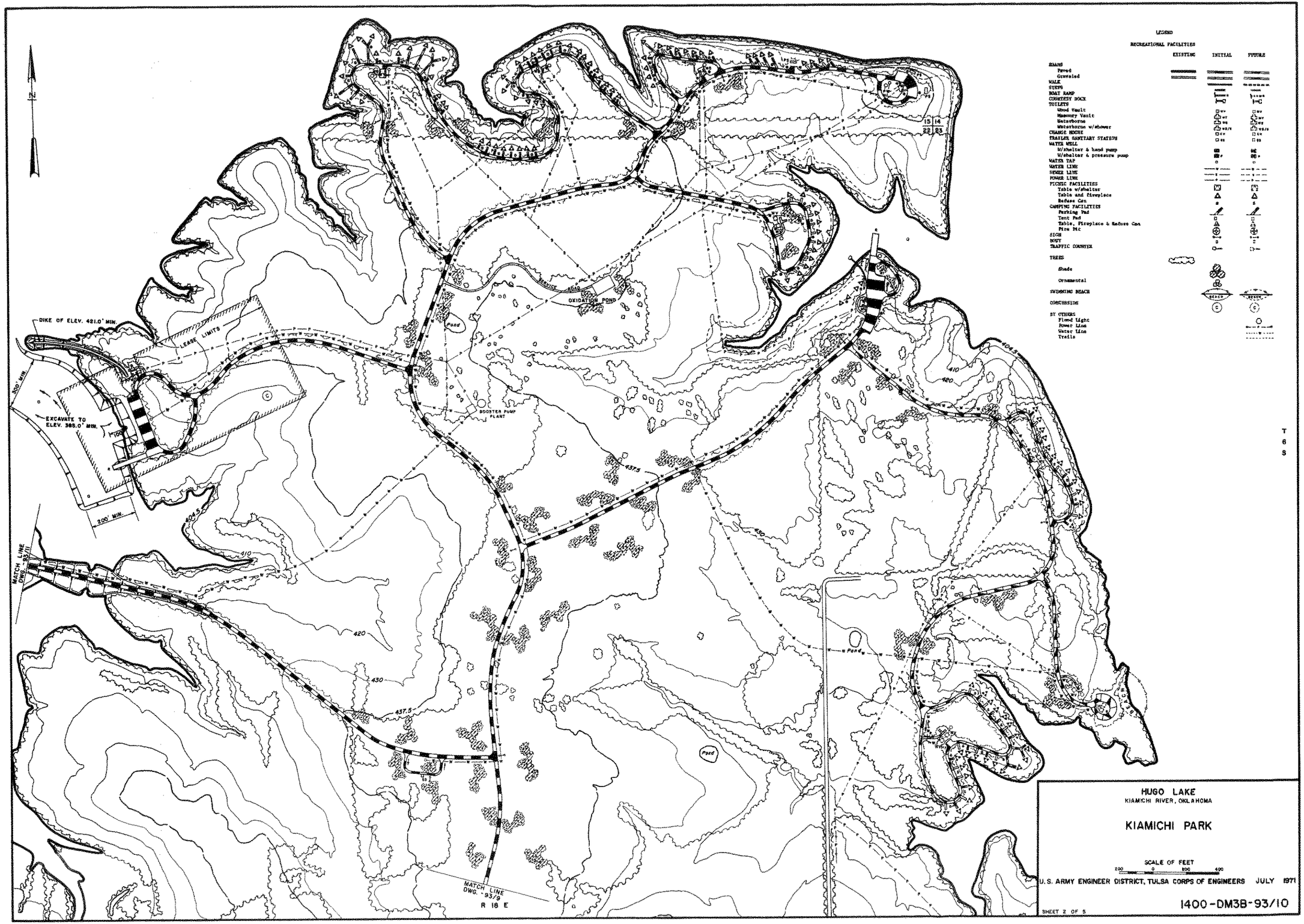
SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

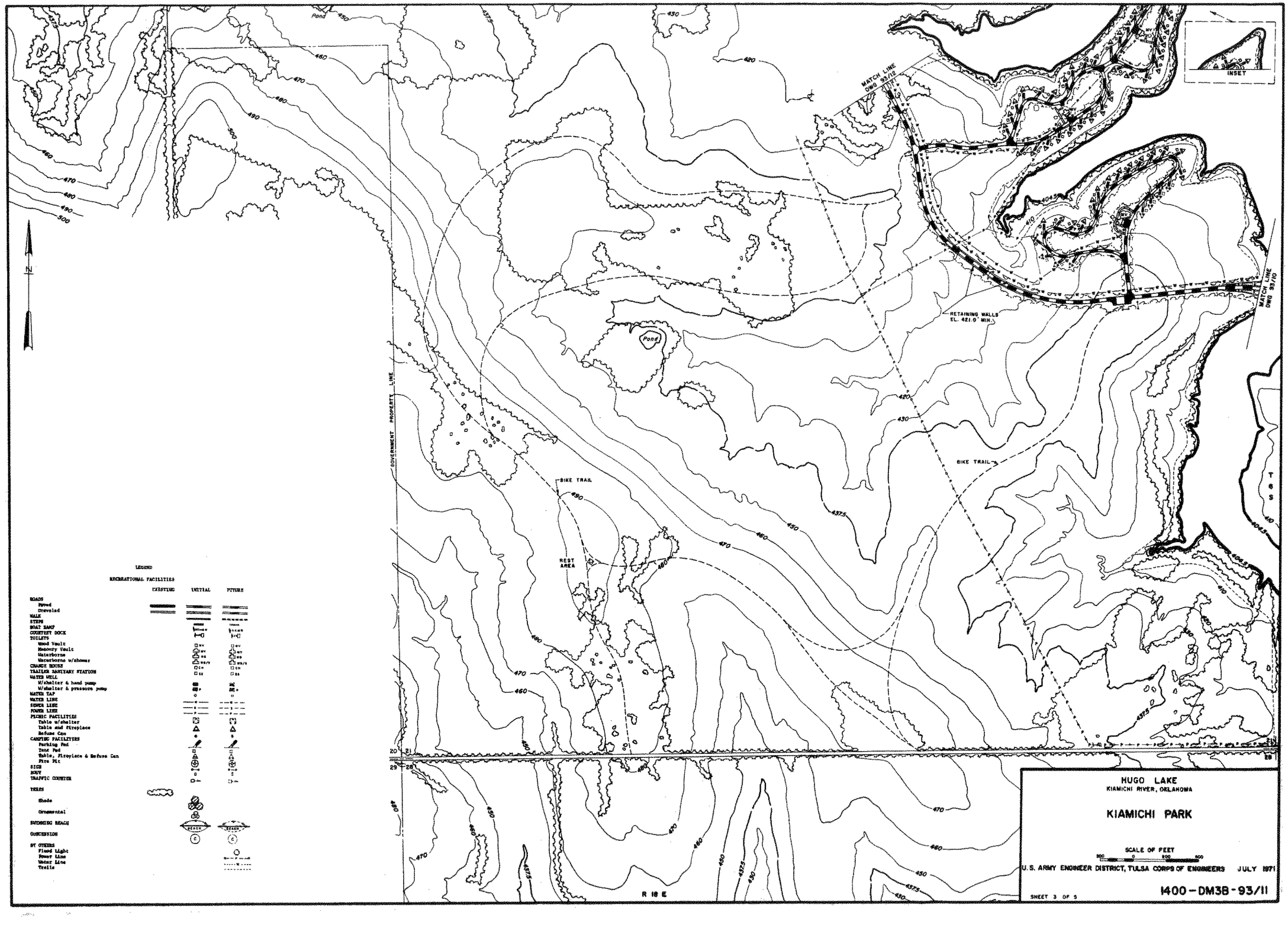
1400 - DM3B-93/9

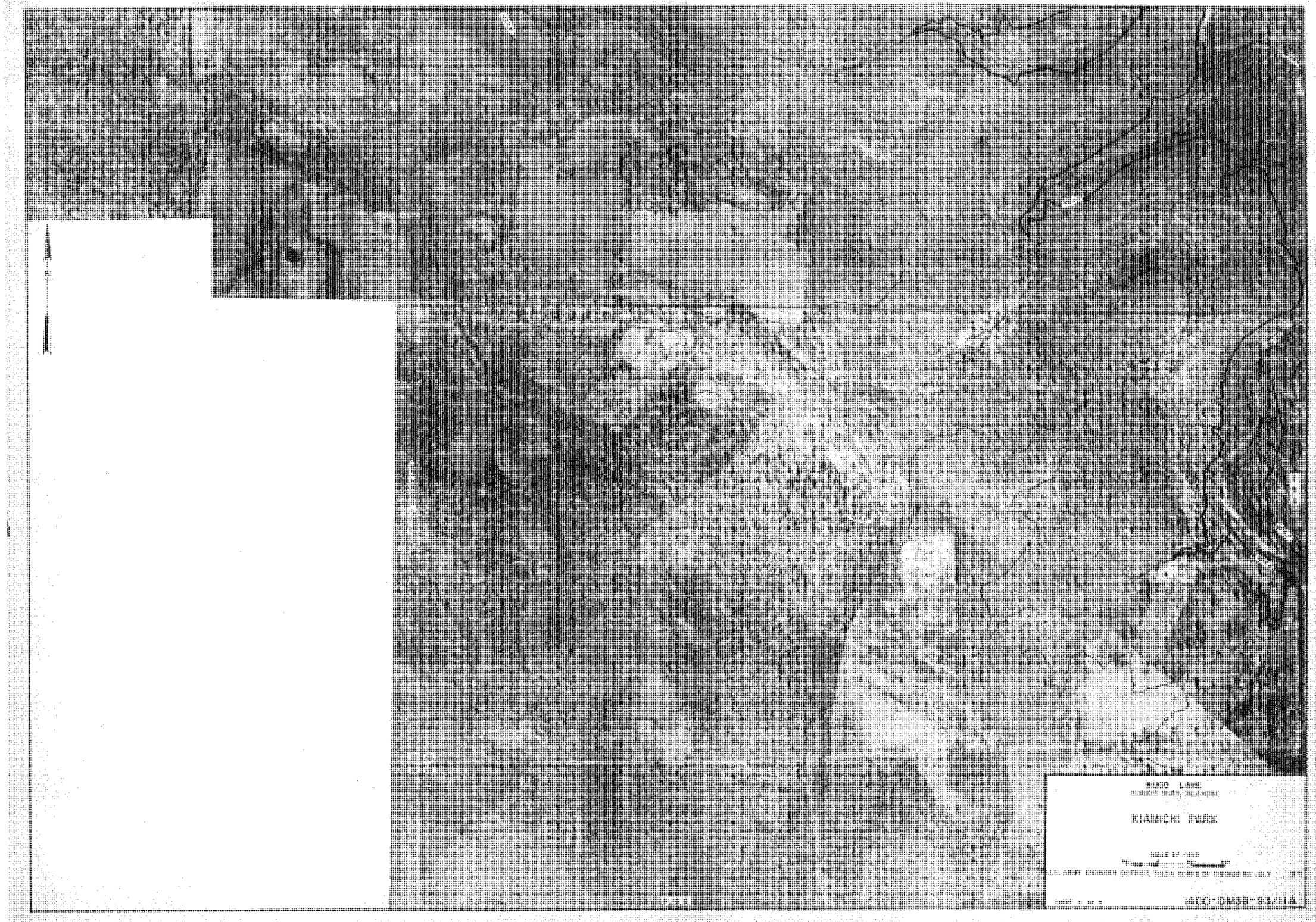
SHEET 1 OF 5


KLAMATH PARK


N
DIKE OF ELEV. 421.0' MIN.
LEASE LIMITS
EXCAVATE TO ELEV. 385.0' MIN.
200' MIN.
300' MIN.
OXIDATION POND
BOOSTER PUMP PLANT
Pond
MATCH LINE DWG. 93/11
MATCH LINE DWG. 93/9
R 18 E
404.5
410
420
430
437.5
LEGEND
RECREATIONAL FACILITIES
EXISTING
INITIAL
FUTURE
ROADS
Paved
Graveled
WALK
STEPS
BOAT RAMP
COMMERCY DOCK
TOILETS
Wood Vault
Masonry Vault
Watercborne
Watercborne w/shower
CHANGE HOUSE
TRAILER SANITARY STATION
WATER WELL
W/shelter & hand pump
W/shelter & pressure pump
WATER TAP
WATER LINE
SEWER LINE
POWER LINE
PICNIC FACILITIES
Table w/shelter
Table and fireplace
Refuse Can
CAMPING FACILITIES
Parking Pad
Tent Pad
Table, Fireplace & Refuse Can
Fire Pit
SIGN
BUOY
TRAFFIC COUNTER
TREES
Shade
Ornamental
SWIMMING BEACH
CONCESSION
BY OTHERS
Flood Light
Power Line
Water Line
Trails
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA
KIAMICHI PARK
SCALE OF FEET
200 0 800 400
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971
1400-DM3B-93/10
SHEET 2 OF 5
T 6 S


HUGO LAKE
KIAMICHI PARK
SCALE OF FEET
U.S. ARMY ENGINEER DISTRICT, TULSA, CORPS OF ENGINEERS JULY
1400-DM38-83/10A


INSET
MATCH LINE DWG 93/10
MATCH LINE DWG 93/10
RETAINING WALLS EL. 421.0 MIN.
Pond
Pond
BIKE TRAIL
BIKE TRAIL
REST AREA
GOVERNMENT PROPERTY LINE
R 18 E
T 6 S
N
LEGEND
RECREATIONAL FACILITIES
EXISTING
INITIAL
FUTURE
ROADS
Paved
Graveled
WALK
STEPS
BOAT RAMP
COURTESY DOCK
TOILETS
Wood Vault
Masonry Vault
Waterborne
Waterborne w/shower
CHANGE HOUSE
TRAILER SANITARY STATION
WATER WELL
W/shelter & hand pump
W/shelter & pressure pump
WATER TAP
WATER LINE
SEWER LINE
POWER LINE
PICNIC FACILITIES
Table w/shelter
Table and fireplace
Refuse Can
CAMPING FACILITIES
Parking Pad
Tent Pad
Table, Fireplace & Refuse Can
Fire Pit
SIGN
BOAT
TRAFFIC COUNTER
TREES
Shade
Ornamental
SWIMMING BEACH
CONCESSION
ST OTHERS
Flood Light
Power Line
Water Line
Trails
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA
KIAMICHI PARK
SCALE OF FEET
U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971
1400-DM3B-93/11
SHEET 3 OF 5


RIAMICHI PARK

N

MATCH LINE DWG. 93/13

OXIDATION PONDS

OXIDATION PONDS

Pond

Pond

Pond

Pond

Pond

GOVERNMENT PROPERTY LINE

17 | 16
20 | 21

T 6 S

R 18 E

BEACH

ROCK BARRICADE

RETAINING WALL EL. 421.0 MIN.

MATCH LINE DWG. 93/11

LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
WALK			
STEPS			
BOAT RAMP			
COURTESY DOCK			
TOILETS			
Wood Vault			
Masonry Vault			
Waterborne			
Waterborne w/shower			
CHANGE HOUSE			
TRAILER SANITARY STATION			
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump			
WATER TAP			
WATER LINE			
SEWER LINE			
POWER LINE			
PICNIC FACILITIES			
Table w/shelter			
Table and fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BOOY			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH			
CONCESSION			
BY OTHERS			
Flood Light			
Power Line			
Water Line			
Trails			

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

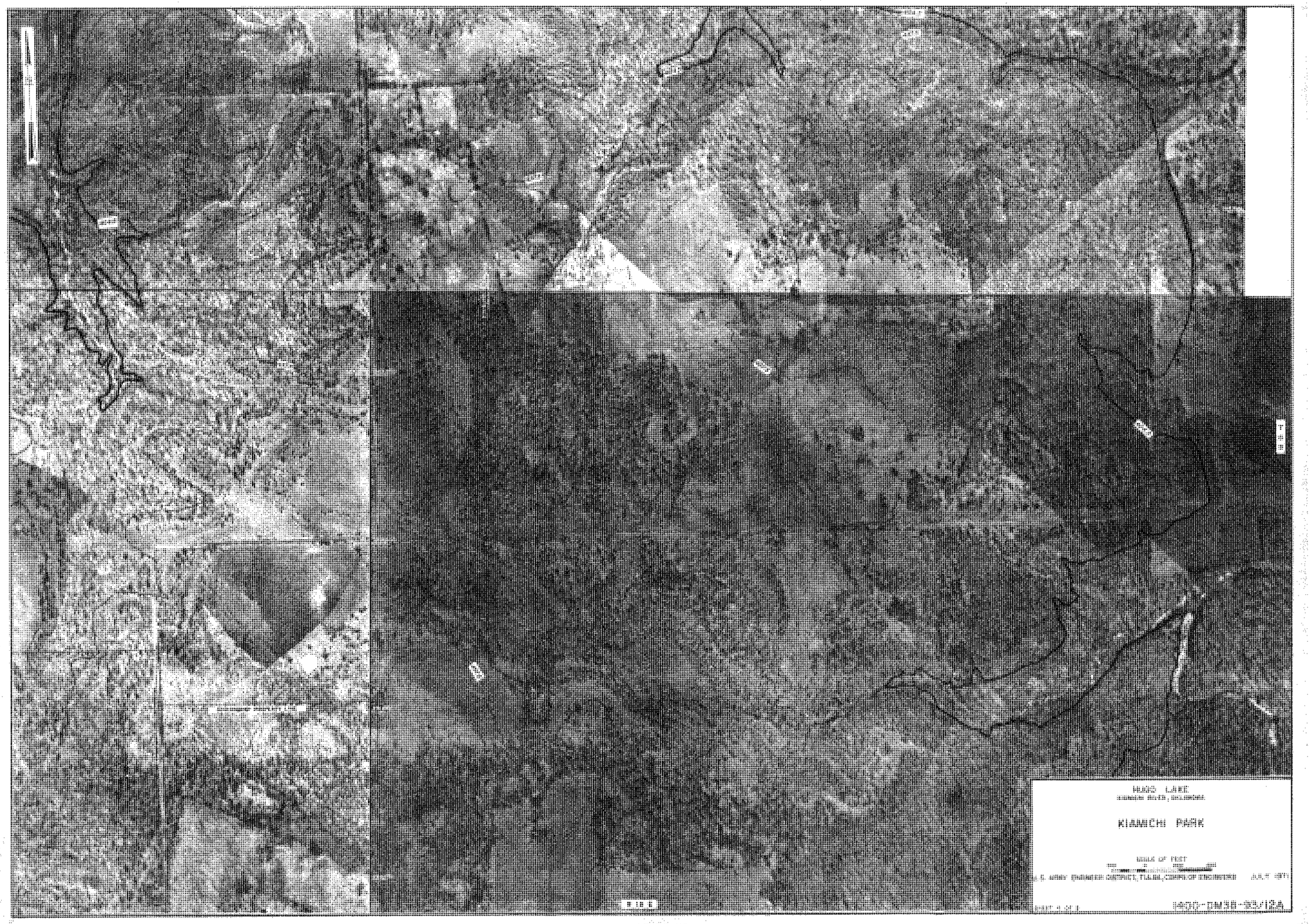
KIAMICHI PARK

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/12

SHEET 4 OF 5


HEAD LAKE
KIAMICHI PARK

LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
WALK			
STEPS			
BOAT RAMP			
COURTESY DOCK			
TOILETS			
Wood Vault		WV	WV
Masonry Vault		MV	MV
Waterborne		WB	WB
Waterborne w/shower		WB/S	WB/S
CHANGE HOUSE		CH	CH
TRAILER SANITARY STATION		SS	SS
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump		P	P
WATER TAP			
WATER LINE		W	W
SEWER LINE		S	S
POWER LINE		P	P
PICNIC FACILITIES			
Table w/shelter			
Table and fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BUOY			
TRAFFIC COUNTER			
TREES			
Shade			
Ornamental			
SWIMMING BEACH		BEACH (C)	BEACH (C)
CONCESSION			
BY OTHERS			
Flood Light			
Power Line			
Water Line			
Trails			

WATER INTAKE PUMP

WATER FILTER PLANT

Pond

MATCH LINE DWG. 93/12

OXIDATION PONDS

Pond

404.5 410 420 430 437.5 450

T 6 S

R 18 E

HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

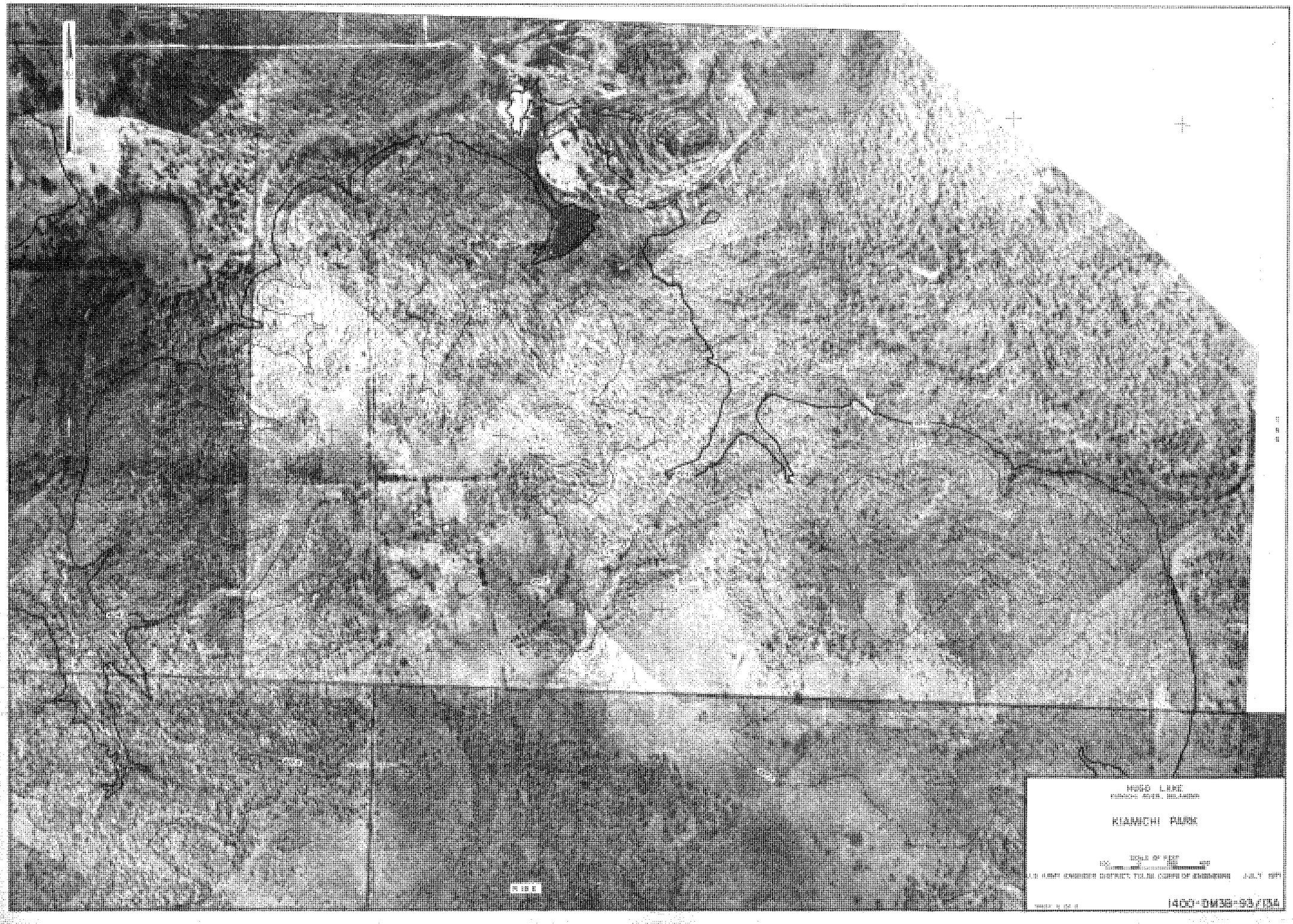
KIAMICHI PARK

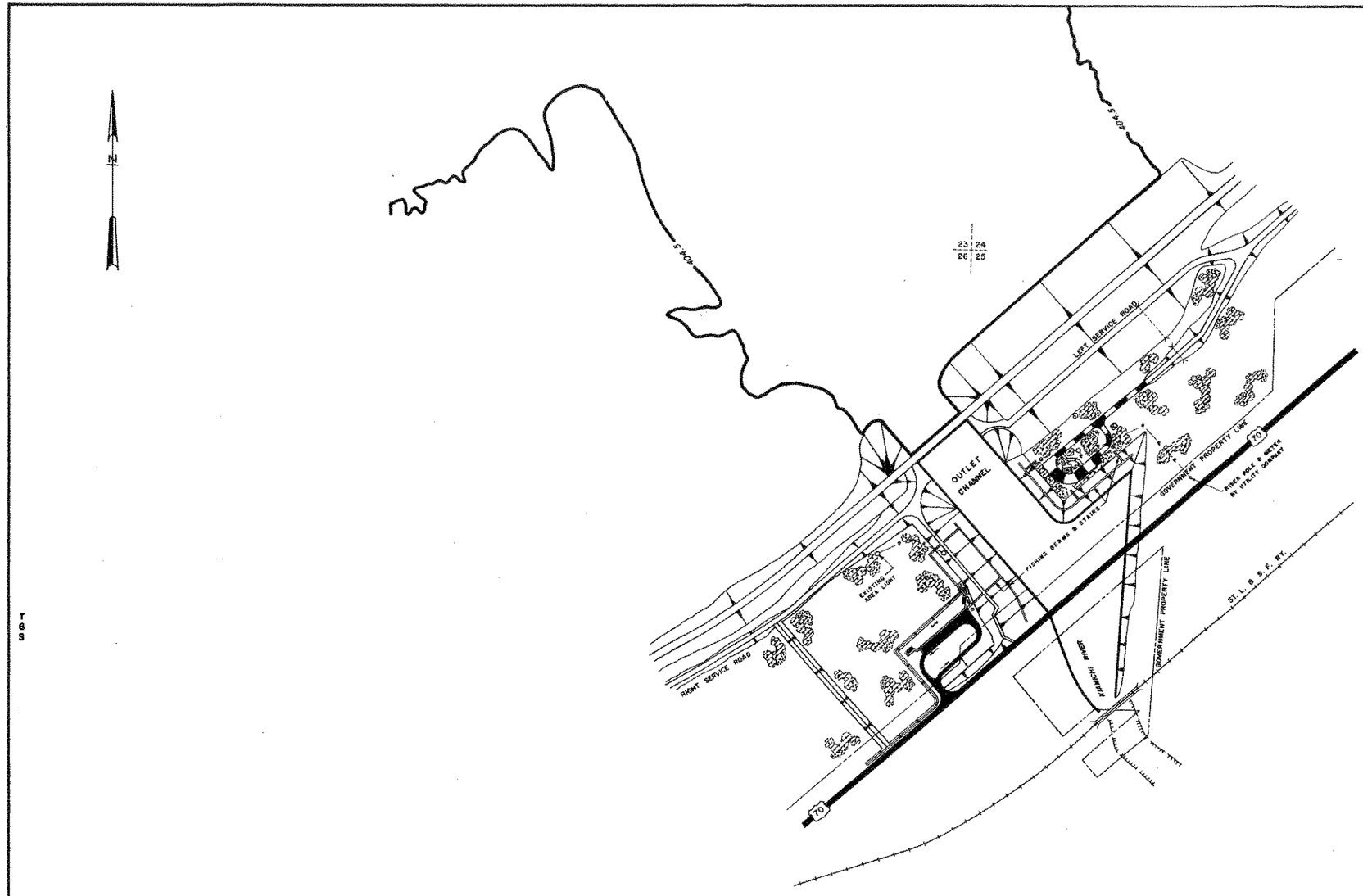
SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

SHEET 5 OF 5

1400-DM3B-93/13


HOSO LINE
KIAMICHI PARK



T 6 S

R 18 E

LEGEND

RECREATIONAL FACILITIES

	EXISTING	INITIAL	FUTURE
ROADS			
Paved			
Graveled			
WALK			
STEPS			
BOAT RAMP			
CONCRETE DOCK			
TOILETS			
Wood Vault			
Masonry Vault			
Waterborne			
Waterborne w/shower			
CHANGE HOUSE			
TRAILER SANITARY STATION			
WATER WELL			
W/shelter & hand pump			
W/shelter & pressure pump			
WATER TAP			
WATER LINE			
SEWER LINE			
POWER LINE			
PICNIC FACILITIES			
Table w/shelter			
Table and fireplace			
Refuse Can			
CAMPING FACILITIES			
Parking Pad			
Tent Pad			
Table, Fireplace & Refuse Can			
Fire Pit			
SIGN			
BOUY			
TRAFFIC CONTROL			
TREES			
Shade			
Ornamental			
SWIMMING BEACH		BEACH	BEACH
CONCESSION		C	C
BY OTHERS			
Flood Light			O
Power Line			
Water Line			
Trails			

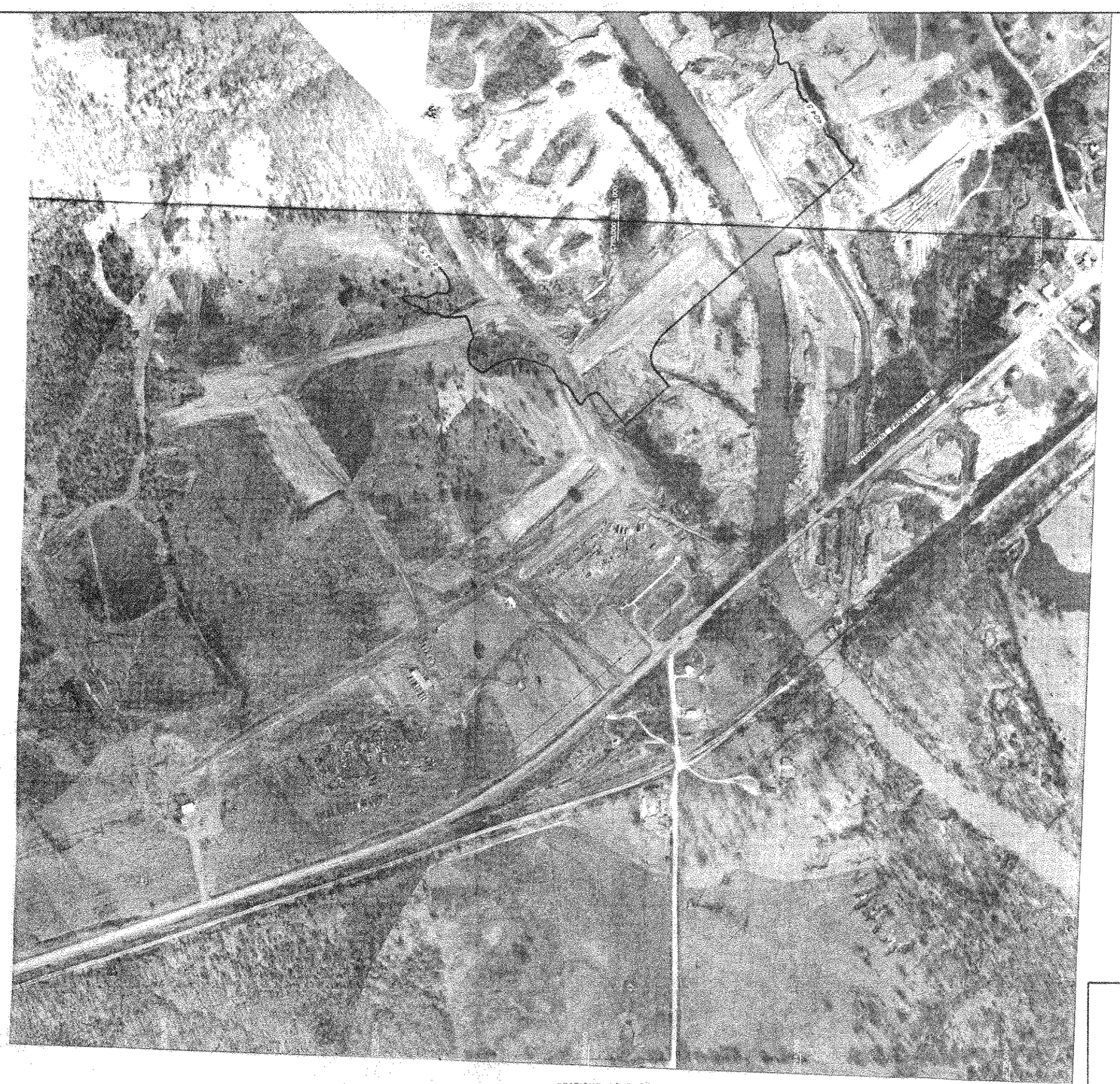
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

BRIDGE VIEW

SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM38-93/14



T 6 S

SECTIONS 26 & 25

R 18 E

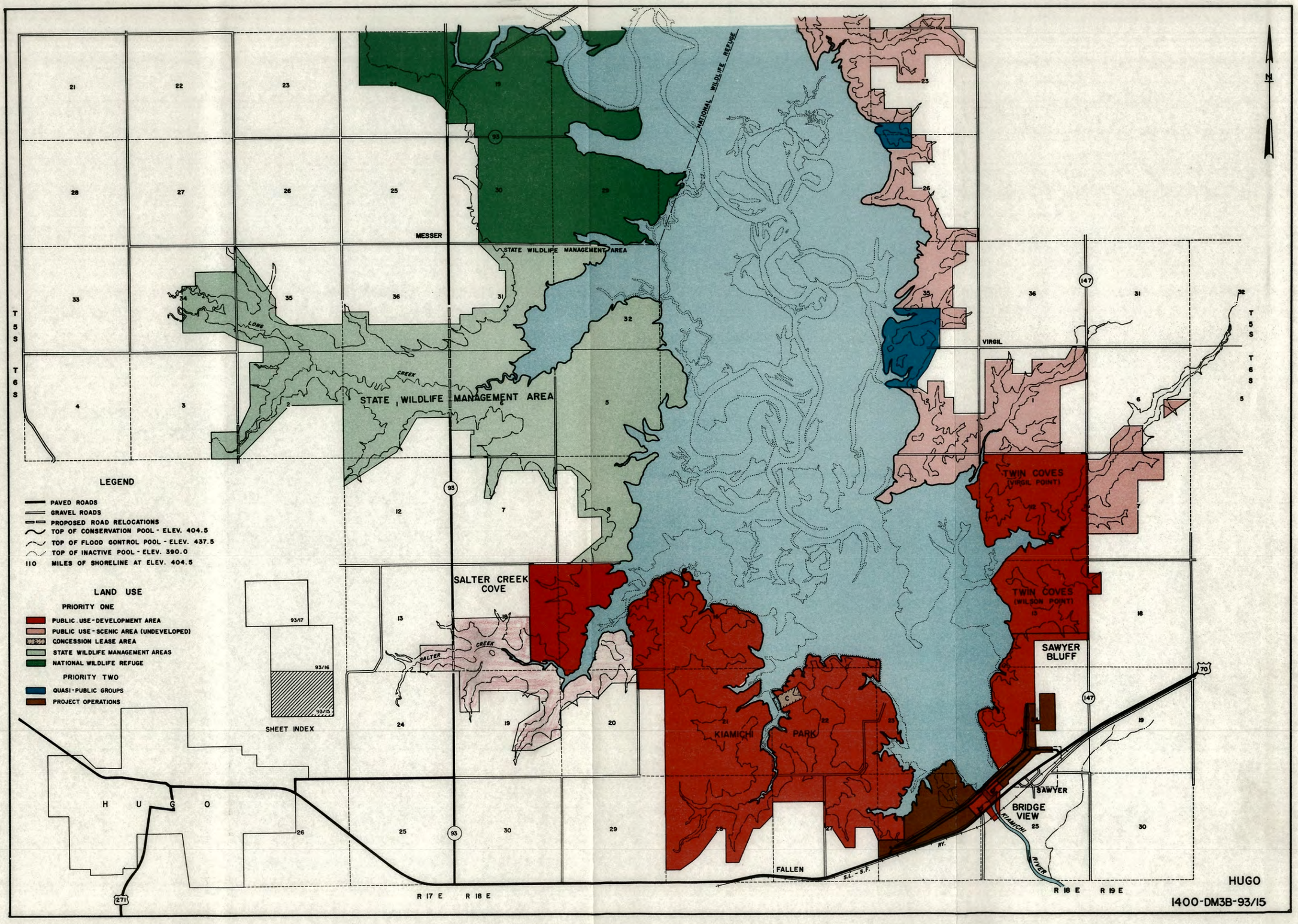
HUGO LAKE
KIAMICHI RIVER, OKLAHOMA

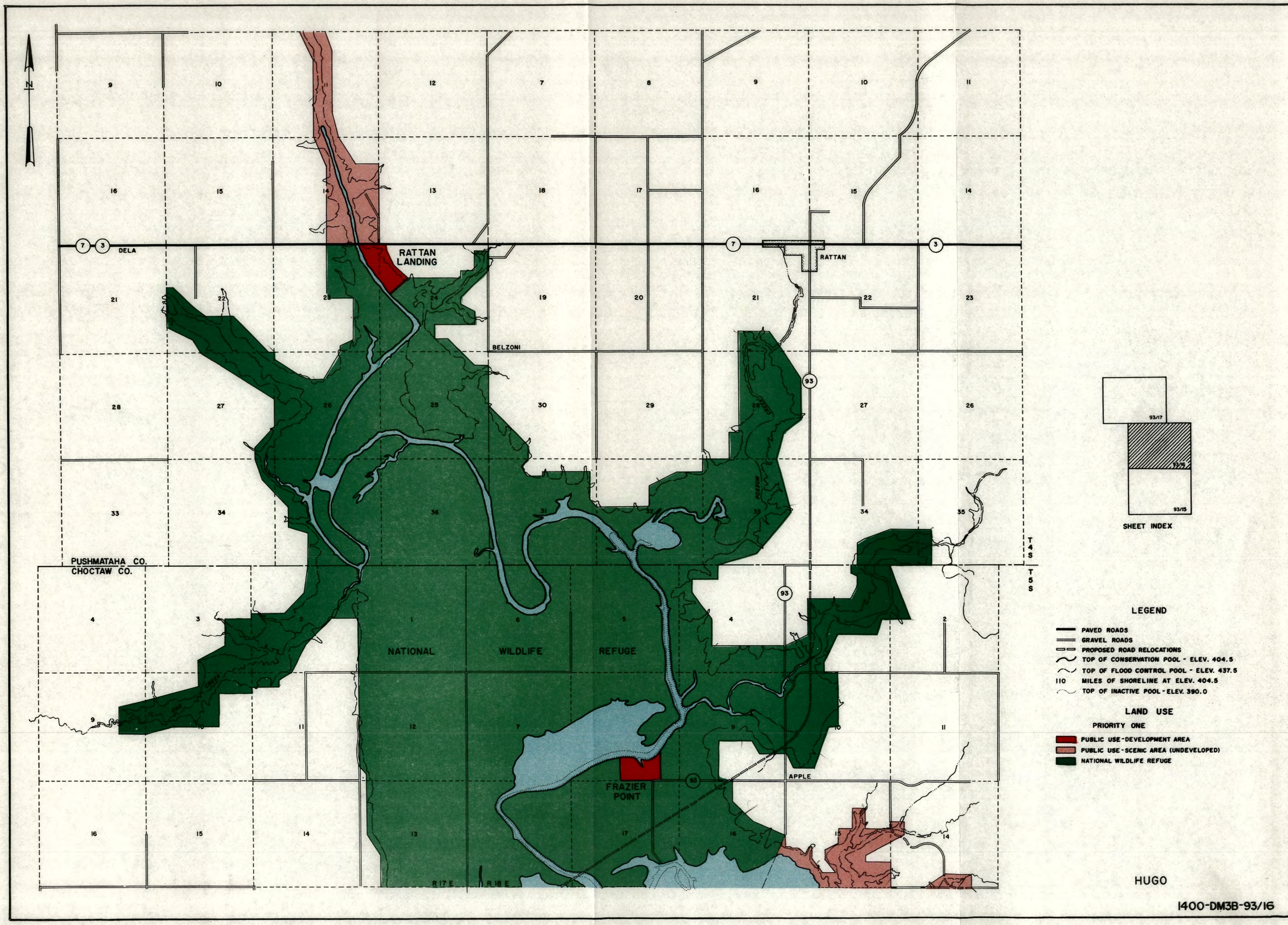
BRIDGE VIEW

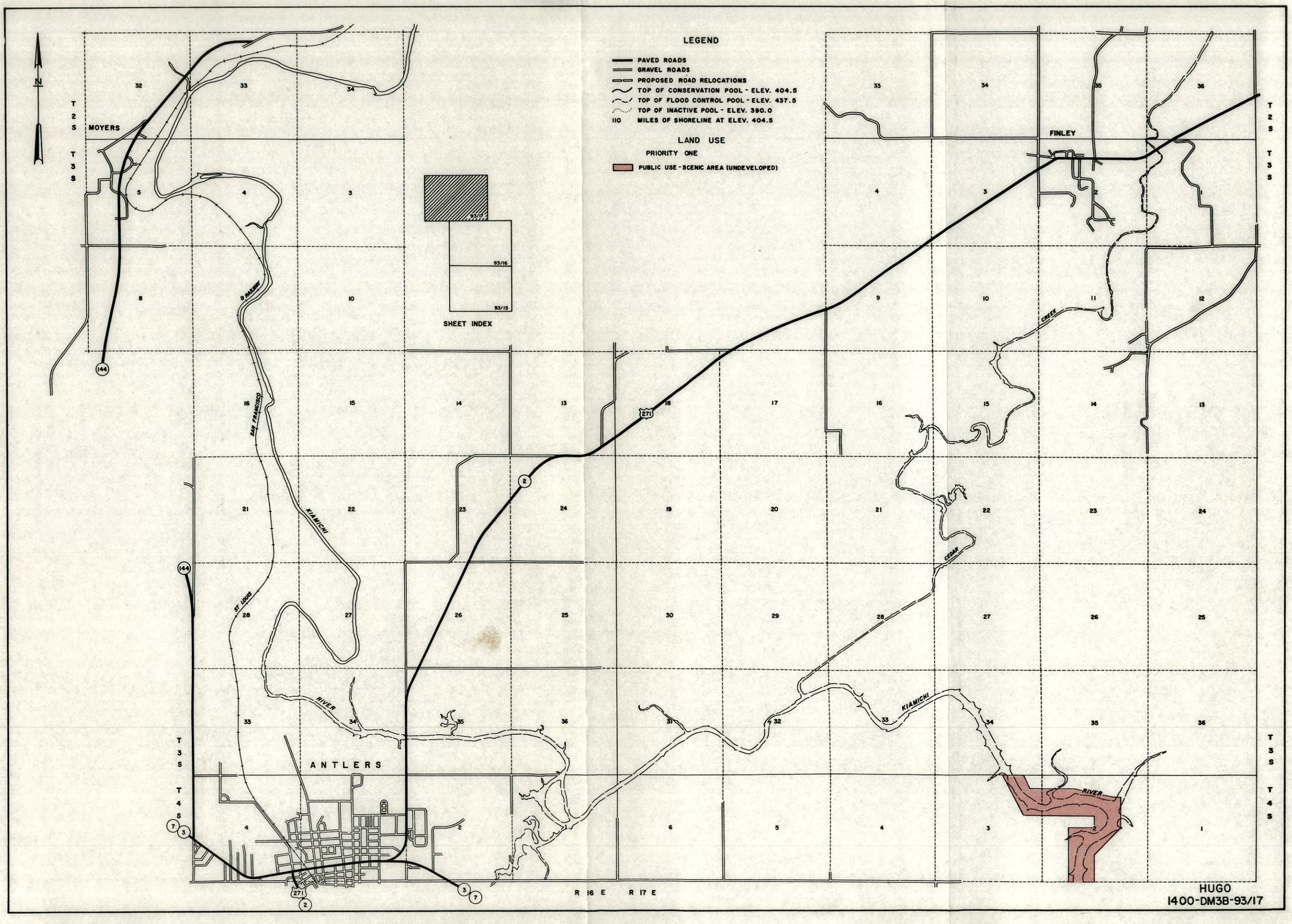
SCALE OF FEET
200 0 200 400

U.S. ARMY ENGINEER DISTRICT, TULSA CORPS OF ENGINEERS JULY 1971

1400-DM3B-93/14A


NATIONAL WILDLIFE REFUGE
MESSER
STATE WILDLIFE MANAGEMENT AREA
LONG CREEK
STATE WILDLIFE MANAGEMENT AREA
VIRGIL
TWIN COVES (VIRGIL POINT)
TWIN COVES (WILSON POINT)
SALTER CREEK COVE
SALTER CREEK
SAWYER BLUFF
KIAMICHI PARK
SAWYER
BRIDGE VIEW
KIAMICHI RIVER
FALLEN
H U G O
SHEET INDEX
93/17
93/16
93/15
T 5 S
T 6 S
R 17 E
R 18 E
R 19 E
N
LEGEND
PAVED ROADS
GRAVEL ROADS
PROPOSED ROAD RELOCATIONS
TOP OF CONSERVATION POOL - ELEV. 404.5
TOP OF FLOOD CONTROL POOL - ELEV. 437.5
TOP OF INACTIVE POOL - ELEV. 390.0
110 MILES OF SHORELINE AT ELEV. 404.5
LAND USE
PRIORITY ONE
PUBLIC USE - DEVELOPMENT AREA
PUBLIC USE - SCENIC AREA (UNDEVELOPED)
CONCESSION LEASE AREA
STATE WILDLIFE MANAGEMENT AREAS
NATIONAL WILDLIFE REFUGE
PRIORITY TWO
QUASI-PUBLIC GROUPS
PROJECT OPERATIONS
HUGO
1400-DM3B-93/15


N
RATTAN LANDING
DELA
RATTAN
BELZONI
APPLE
FRAZIER POINT
PUSHMATAHA CO.
CHOCTAW CO.
NATIONAL WILDLIFE REFUGE
T 4 S
T 5 S
R 17 E
R 18 E
SHEET INDEX
93/17
93/16
93/15
LEGEND
PAVED ROADS
GRAVEL ROADS
PROPOSED ROAD RELOCATIONS
TOP OF CONSERVATION POOL - ELEV. 404.5
TOP OF FLOOD CONTROL POOL - ELEV. 437.5
110 MILES OF SHORELINE AT ELEV. 404.5
TOP OF INACTIVE POOL - ELEV. 390.0
LAND USE
PRIORITY ONE
PUBLIC USE - DEVELOPMENT AREA
PUBLIC USE - SCENIC AREA (UNDEVELOPED)
NATIONAL WILDLIFE REFUGE
HUGO
1400-DM3B-93/16


LEGEND
PAVED ROADS
GRAVEL ROADS
PROPOSED ROAD RELOCATIONS
TOP OF CONSERVATION POOL - ELEV. 404.5
TOP OF FLOOD CONTROL POOL - ELEV. 437.5
TOP OF INACTIVE POOL - ELEV. 390.0
110 MILES OF SHORELINE AT ELEV. 404.5
LAND USE
PRIORITY ONE
PUBLIC USE - SCENIC AREA (UNDEVELOPED)
SHEET INDEX
93/17
93/16
93/15
N
MOYERS
FINLEY
ANTLERS
T 2 S
T 3 S
T 4 S
R 16 E
R 17 E
144
271
2
3
7
SAN FRANCISCO
KIAMICHI
ST. LOUIS
RIVER
CREEK
CEDAR
HUGO
1400-DM3B-93/17