

STRUCTURE 65A

This structure is a reinforced concrete, gated spillway with discharge controlled by three cable operated vertical lift gates and a reinforced concrete lock structure with two pairs of sector gates. Operation of the spillway gates is manually controlled. The structure is located on Canal 38 about 10½ miles downstream from Lake Kissimmee.

PURPOSE

This structure maintains optimum upstream water control stages in Canal 38, the Kissimmee River; it passes the design flood (30% of the Standard Project Flood) without exceeding the upstream flood design stage and restricts downstream flood stages and channel velocities to the non-damaging levels of the design flood, even if the inflow exceeds that flood; and it passes sufficient discharge during low-flow periods to maintain downstream stages and irrigation demands.

SPILLWAY OPERATION

This structure will be operated, subject to hydraulic restraint, to maintain an optimum headwater elevation of 46.3 insofar as possible.

Hydraulic Limitations

To prevent damage from high velocity discharge, the gate opening will be limited in accordance with the "Maximum Allowable Gate Opening Curve" for tailwater above 38 feet. For tailwater below 38 feet, the maximum allowable gate opening (MAGO) should be as follows:

Headwater	Tailwater	Gate Opening (feet)
46	34	0.75
46	35	1.3
46	36	1.5
46	37	1.8
46	38	2.1

Structure Limitation

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The maximum water level drop across the structure will be 12 feet.

LOCK OPERATION

The hydraulic system is designed to provide two gate speeds of operation. The normal speed is determined by the hydraulic pump capacity and will result in a peripheral gate speed of approximately 6.75 feet per minute which is equivalent to a full gate travel in three minutes. A manually variable slow speed is achieved by reducing the quantity of oil flowing to the hydraulic motor accomplished by energizing a solenoid valve thereby connecting in a variable flow bleedoff or bypass system. Slow speed will be considered as effecting a three feet per minute peripheral gate speed.

Starting and stopping of pump power unit and the direction and normal or slow speed of gate travel will be manually controlled by the operator except that the gate speed will automatically shift to slow for the last six inches of gate travel to either the full open or closed position. This six inch limit may be changed in the field as conditions dictate and the slow speed is manually variable by an adjustment of the flow control valve to compensate for seasonal or other extreme variations of differential water levels.

The schedule of lock operation, as established by the U.S. Corps of Engineers in accordance with the River and Harbor Act of August 8, 1917 (40 Stat. 266; 33 U.S.C.1) is as follows:

Monday through Friday	All year	8:00 a.m. to 5:00 p.m.
Saturday and Sunday	Mar. 1 through Oct. 31	5:30 a.m. to 7:30 p.m.
Saturday and Sunday	Nov. 1 through Feb. 28	5:30 a.m. to 6:30 p.m.

FLOOD DISCHARGE CHARACTERISTICS

	Design	Standard Project Flood
Discharge Rate	<u>11,000</u> cfs <u>30 %</u> SPF	<u>14,200</u> cfs <u>100 %</u> SPF
Headwater Elevation	<u>46.3</u> feet	<u>51.5</u> feet
Tailwater Elevation	<u>42.1</u> feet	<u>46.4</u> feet
Type Discharge	controlled <u>submerged</u>	controlled <u>submerged</u>

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DESCRIPTION OF SPILLWAY STRUCTURE

Type reinforced concrete gated spillway

Weir Crest

Net Length 81.0 feet

Elevation 34.5 feet

Service Bridge Elevation 54.0 feet

Water Level which will by-pass structure 54.0 feet

Gates

Number 3

Size 13.8 ft. high by 27.8 ft. wide

Type vertical lift gates (one gate equipped with 4.4' high skimmer gate to facilitate debris removal from upper pool

Bottom elevation of gates, full open 47.4 feet Normal,
51.9 feet Maximum

Top elevation of gates, full closed 48.2 feet

Control manual

Lifting Mechanism

Normal power source commercial electricity

Emergency power source gasoline motor driven generator

Type Hoist each gate operated by a hydraulic cylinder, actuated by electric motor driven pump, with emergency hand pump; connected to gate by steel cables.

Date of Transfer: October 16, 1967

DESCRIPTION OF LOCK STRUCTURE

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Type reinforced concrete lock, with two pairs of gates

Operating Deck Elevations 54.0 feet

Lock

Length 90 feet

Width 30 feet

Invert Elevations 31.0 and 38.0 feet

Gates

Type sector

upper 14

Size lower 21 feet high; 18.8 feet radius

Control manual

Operating Mechanism

Normal Power Source commercial electricity

Emergency Power Source LP engine driven generator

Type double wire rope drum unit with worm type special reducer,
powered by electric motor driven hydraulic motor.

Dewatering Facilities

Location Okeechobee Field Station

Type steel bulkheads

Size and Number upstream 5 each, 1'-6" wide, 3'-6" high,
31'-3" long
downstream - same

ACCESS: from State Road 60 via access road constructed for this structure

Points of Possible flooding _____

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level upstream recorder in control house on lock, downstream recorder on
wingwall of lock, remote digital headwater and tailwater recorder

Gate Position Recorder Remote digital recorder

Other _____

DEWATERING FACILITIES

Storage Okeechobee Field Station

Type steel bulkhead

Size and Number (per bay)

The spillway gate section can be dewatered by using eleven standard bulkheads and one special bulkhead. The bulkheads shall be oriented and placed in the bulkhead recesses of Structure 65A spillway with the skin plate side of the bulkheads facing the spillway gate. The bulkheads can be stacked on top of each other to a maximum of 6 bulkheads on the upstream side and 6 bulkheads on the downstream side in order to dewater the spillway gate section. The one special bulkhead shall be placed first in the upstream bulkhead recess and then up to 5 standard bulkheads may be stacked on top of the special bulkhead. Each bulkhead is 3'-5" high, 1'-9" wide, and 28'-7" long.

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