

STRUCTURE 84

This structure is a reinforced concrete, gated spillway with discharge controlled by two cable operated, vertical lift gates. Operation of the gates is automatically controlled in accordance with the established operational criteria. The structure is located on Canal 41A about 12 miles downstream from S-83 and about a mile upstream from the junction of C-41A with C-38, the Kissimmee River.

PURPOSE

This structure maintains optimum upstream water control stages in Canal 41A; 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 non-damaging levels; and it prevents backflow from Lake Okeechobee through C-38 during excessive stages in the lake resulting from floods or wind tides.

OPERATION

This structure will be operated to maintain an optimum headwater elevation between 24.3 and 25.2, insofar as possible, through automatic controls as follows:

When the headwater elevation rises to 25.2, the gates will open at two feet per hour;

When the headwater elevation rises or falls to 24.7, the gates will become stationary;

When the headwater elevation falls to 24.3, the gate will close at three inches per minute.

There is a time delay in automatic gate control. The stage may drop quite lower than the closing level before the gates are closed.

FLOOD DISCHARGE CHARACTERISTICS

	Design*	Standard Project Flood*
Discharge Rate	<u>5680</u> cfs <u>30</u> % SPF	<u>9000</u> cfs <u>100</u> % SPF
Headwater Elevation	<u>24.5</u> feet	<u>32.8</u> feet
Tailwater Elevation	<u>19.3</u> feet	<u>24.1</u> feet
Type Discharge	_____	_____

*To obtain required discharge with given headwater and tailwater elevations, gates must be opened wider than allowable.

DESCRIPTION OF STRUCTURE

Type reinforced concrete, gated spillway

Weir Crest

Net Length 42.0 feet

Elevation 13.2 feet

Service Bridge Elevation 35.0 feet

Water Level which will by-pass structure 35.0 feet

Gates

Number 2

Size 11.8 ft. high by 21.0 ft. wide

Type vertical lift

Bottom elevation of gates, full open 25.7 ft. Normal

33.7 ft. Maximum

Top elevation of gates, full closed 25.0 ft.

Control automatic, on-site control, actuated by headwater elevation, and remote computer control

Lifting Mechanism

Normal power source commercial electricity

Emergency power source LP engine driven generator

Type Hoist direct drive electric motor, gear connected to lifting cables.

Date of Transfer: December 8, 1961 (beneficial occupancy); March 25, 1963

ACCESS: from State Road 70 via access road on south side of C-41A

Points of possible flooding _____

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level Remote digital headwater and tailwater recorder

Gate Position Recorder Remote digital recorders on all gates

Other _____

DEWATERING FACILITIES

Storage West Palm Beach Field Station

Type needle beams and aluminum needles

Size and Number (per bay)

Upstream

needles 4 @ 4' wide, 1 @ 3' wide, 1 @ 2' wide

beam 27WF 145, 22'-9" long

Downstream

same number and size