

STRUCTURE 83

This structure is a reinforced concrete, gated spillway with discharge controlled by one stem operated, vertical lift gate. Operation of the gate is automatically controlled in accordance with the seasonal operational criteria. The structure is located on Canal 41A about 500 feet downstream from its junction with C-41 and 5 miles downstream from Lake Istokpoga.

PURPOSE

The structure will discharge the entire design flood flow of Canal 41A with no discharge into Canal 41 without causing damaging upstream stages or damaging downstream flows or stages. During dry periods, it will permit downstream agricultural releases into C-41A of up to 300 c.f.s. and will maintain optimum upstream water stages in C-41A. This structure has a tailwater weir to improve tailwater energy dissipation. The weir was constructed in 1997.

OPERATION

This structure will be operated, together with S-82, to maintain an optimum headwater elevation between 31.8 and 32.2, insofar as possible, through automatic controls as follows:

Flood Control Operation

When the headwater elevation rises to 32.2, the gate will open at 0.4 inches per minute;

When the headwater elevation rises or falls to 32.0, the gate will become stationary;

When the headwater elevation falls to 31.8, the gate will close at three inches per minute.

Moreover, an overriding control will close the gate, regardless of the headwater elevation, whenever the tailwater elevation reaches 31.0.

FLOOD DISCHARGE CHARACTERISTICS

	Design*	Standard Project Flood*
Discharge Rate	<u>3830</u> cfs	<u>5500</u> cfs
	<u>30</u> % SPF	<u>100</u> % SPF
Headwater Elevation	<u>32.0</u> feet	<u>39.8</u> feet
Tailwater Elevation	<u>28.5</u> feet	<u>33.7</u> feet
Type Discharge	controlled <u>submerged</u>	controlled <u>submerged</u>

*Gate openings required for given flow conditions are larger than allowable.

DESCRIPTION OF STRUCTURE

Type reinforced concrete, gated spillway

Weir Crest

Net Length 25.0 feet

Elevation 18.4 feet

Service Bridge Elevation 40.0 feet

Water Level which will by-pass structure 40.0 feet

Gates

Number 1

Size 13.6 ft. high by 25.8 ft. wide

Type vertical lift

Bottom elevation of gates, full open 33.1 ft. Normal

38.6 ft. Maximum

Top elevation of gates, full closed 32.0 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 14, 1965

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

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level Remote digital headwater and tailwater recorder

Gate Position Recorder Remote Digital Recorder 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 5 @ 4' wide, 1 @ 3' wide, 1 @ 2' wide

beam 33WF 200, 26'-11" long

Downstream

same number and size