

STRUCTURE 46

This structure is a reinforced concrete, gated spillway with discharge controlled by three stem operated, vertical lift gates. Operation of the gates is automatically controlled so that the gates operating system opens or closes the gates in accordance with the operational criteria. The structure is located on Canal 18, 2400 feet east of the Sunshine State Parkway.

PURPOSE

This structure maintains optimum upstream water control stages in Canal 18; it passes the design flood (50% 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 saline intrusion.

OPERATING CRITERIA

This structure will be operated to maintain an optimum headwater elevation of 14.8 feet, when sufficient water is available to maintain this level, through automatic operation of the gates. The automatic controls on the gates function as follows:

When the headwater elevation rises to 15.0 feet, the gates will open at a speed of 6 inches per minute.

When the headwater elevation rises or falls to 14.8 feet, the gates will become stationary.

When the headwater elevation falls to 14.5 feet, the gates will close at 6 inches per minute.

During major storm events, the gates are operated manually to lower and maintain a headwater stage of 12.8. A major storm event is defined as any event which causes a tailwater stage at the C-18 Weir to rise above 17.6 feet.

During large eastern basin storm events, the gates are operated manually to lower and maintain an S-46 headwater stage of between 13.0 to 14.0 feet. A large eastern basin storm event is defined as one which prevents adequate gravity drainage of the agricultural area at the junction of C-18 and the Turnpike. This operation will be maintained for 24 hours (or longer if conditions warrant).

Any manual gate operation is subject to the Maximum Gate Operation curve.

FLOOD DISCHARGE CHARACTERISTICS

	Design	Standard Project Flood
Discharge Rate	<u>3420</u> cfs	<u>3420</u> cfs
	<u>50</u> % SPF	<u>100</u> % SPF
Headwater Elevation	<u>12.8</u> feet	<u>16.4</u> feet
Tailwater Elevation	<u>2.2</u> feet	<u>2.2</u> feet
Type Discharge	uncontrolled <u>free</u>	controlled <u>free</u>

DESCRIPTION OF STRUCTURE

Type reinforced concrete gated spillway

Weir Crest

Net Length 60 feet

Elevation 6.7 feet

Service Bridge Elevation 24.5 feet

Water Level which will by-pass structure 20.0 feet

Gates

Number 3

Size 8.0 ft. high by 20.7 ft. wide

Type vertical lift gate

Bottom elevation of gates, full open 12.9 feet Normal

Top elevation of gates, full closed 14.7 feet

Control On-site automatic and remote computer control

Lifting Mechanism

Normal power source commercial electricity

Emergency power source LP gas engine driven generator

Type Hoist direct drive motor, gear connected to cables

Date of Transfer: November 1, 1958

ACCESS: from Indiantown Road (State Road 706)

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level Upstream and downstream remote digital recorder

Gate Position Recorder Remote digital recorder

Rain Gauge Remote digital recorder

DEWATERING FACILITIES

Storage On-site

Type stop logs

Size and Number (per bay) _____

upstream only

12" X 12" X 21' -0 long, 12 each