

## STRUCTURE 36

This structure is a reinforced concrete, gated spillway, with discharge controlled by a cable operated, vertical lift gate. Operation of the gate is automatically controlled so that the gate electric motor opens or closes the gate in accordance with the seasonal operational criteria. The structure is located on Canal 13 west of Oakland Park.

### PURPOSE

This structure maintains optimum water control stages upstream in Canal 13; it passes the design flood (50 percent of the Standard Project Flood) without exceeding upstream flood design stage, and restricts downstream flood stages and discharge velocities to non-damaging levels; and it prevents saline intrusion during periods of high flood tides.

### OPERATION

This structure will be operated to maintain an optimum headwater elevation of 4.5 feet when sufficient water is available to maintain this level. The automatic controls normally function as follows:

When the headwater elevation rises to 4.9 feet, the gates will open at six inches per minute;

When the headwater elevation rises or falls to 4.4 feet, the gates will become stationary;

When the headwater elevation falls to 4.0 feet, the gates will close at six inches per minute.

During dry periods, the automatic controls function as follows:

When the headwater elevation rises to 5.5 feet, the gate will open at six inches per minute;

When the headwater elevation rises or falls to 4.5 feet, the gate will become stationary;

When the headwater elevation falls to 4.2 feet, the gate will close at six inches per minute.

### Salinity Regulation

In addition to maintaining optimum upstream fresh water control, as described above under Flood Control Regulation, the automatic controls on this structure have an overriding control which closes the gates, regardless of the upstream water level in the rare event of the high flood tide, whenever the differential between the head and tailwater pool elevations reaches 0.2 feet.

### Lifting Mechanism

Normal power source commercial electricity

Emergency power source LP gas driven generator

Type Hoist direct drive electric motor, gear connected to cables

**ACCESS:** Structure located 1/2 mile west of NW 21st Avenue on NW 39th Street or 1/2 mile east of 31st Avenue on NW 39th Street.

**HYDRAULIC AND HYDROLOGIC MEASUREMENTS**

Water Level Digital upstream and downstream recorders, on-site (U.S.G.S.) and remote

Gate Position Recorder On-site analog & remote digital recorder

Rain Gauge: Remote, digital recorder

**DEWATERING FACILITIES**

Storage West Palm Beach Field Station

Type steel needle beam and aluminum needles

Size and Number (per bay)

Upstream and downstream

Beam 16WF88, 26' -11" long

Needles 5 each, 5' wide

**FLOOD DISCHARGE CHARACTERISTICS**

	Design*	Standard Project Flood*
Discharge Rate	<u>1090 cfs</u>	<u>1640 cfs</u>
	<u>50 % SPF</u>	<u>100 % SPF</u>
Headwater Elevation	<u>5.3 feet</u>	<u>7.7 feet</u>
Tailwater Elevation	<u>4.8 feet</u>	<u>6.9 feet</u>
Type Discharge	<u>uncontrolled submerged</u>	<u>uncontrolled submerged</u>

\*Flow conditions given in the Definite Project Report. No discharge curves for these flow conditions available.

**DESCRIPTION OF STRUCTURE**

Type reinforced concrete, gated spillway

Weir Crest

Net Length 25.0 feet

Elevation -7.0 feet

Service Bridge Elevation 11.5 feet

Water Level which will by-pass structure 11.5 feet

Gates

Number 1

Size 14.0 ft. high by 25.0 ft. wide

Type vertical slide gate

Bottom elevation of gates, full open 9.5 feet

Top elevation of gates, full closed 7.0 feet

Control On-site, automatic headwater control with differential water level override sensed by bubbler system and remote computer control.

Date of Transfer: November 1, 1954