

STRUCTURE 99

This structure is a reinforced concrete, gated spillway with discharge controlled by cable operated, vertical lift gates. Operation of the gates is automatically controlled so that the gate operating system opens or closes the gates in accordance with the seasonal operational criteria. The structure is located on Canal 25, about 1/2 mile west of the Sunshine State parkway, and about 8½ miles west of S-50.

PURPOSE

This structure maintains optimum upstream water control stages in Canal 25; 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.

OPERATING CRITERIA:

This structure is operated under either high or low ranges based on basin conditions; control is automatic in each mode but transfer from one mode to the other is manual.

Low Range

When the headwater elevation rises to 20.2 feet, the gates begin to open at three inches per minute, to the opening shown on the Maximum Gate Opening curve;

When the headwater elevation rises or falls to elevation 19.7, the gates become stationary;

When the headwater elevation falls to 19.2, the gates begin to close at three inches per minute.

High Range

When the headwater elevation rises to 22.5 feet, the gates begin to open at three inches per minute, to the opening shown on the Maximum Gate Opening curve;

When the headwater elevation rises or falls to 22.0 feet, the gates become stationary;

When the headwater elevation falls to 21.5 feet, the gates begin to close at three inches per minute.

FLOOD DISCHARGE CHARACTERISTICS

	Design*	Standard Project Flood
Discharge Rate	<u>3860</u> cfs	<u>3860</u> cfs
	<u>30</u> % SPF	<u>100</u> % SPF
Headwater Elevation	<u>20.0</u> feet	<u>26.0</u> feet
Tailwater Elevation	<u>19.5</u> feet	<u>19.5</u> feet
Type Discharge	uncontrolled <u>submerged</u>	controlled <u>submerged</u>

*Design flow conditions given in Detail Design Memorandum. No discharge curves for this flow condition available, moreover, question of discharge rate with high submergence.

DESCRIPTION OF STRUCTURE

Type reinforced concrete, gated spillway

Weir Crest

Net Length 50.0 feet

Elevation 5.6 feet

Service Bridge Elevation 28.0 feet

Water Level which will by-pass structure 28.0 feet

Gates

Number 2

Size 15.4 ft. high by 25.8 ft. wide

Type vertical slide gates

Bottom elevation of gates, full open 21.0 ft. Normal

26.35 ft. Maximum

Top elevation of gates, full closed 22.5 ft.

Control On-site automatic and remote computer control

Lifting Mechanism

Normal power source commercial electricity

Emergency power source LP engine driven generator

Type Hoist direct drive motor, gear connected to cables.

Date of Transfer: December 8, 1961 (beneficial occupancy); May 22, 1962

ACCESS: from State Road 68 via Header Canal Rd. to C-25 on south bank access road

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level Remote digital headwater and tailwater recorders

Gate Position Recorder Remote digital recorder on all gates

Other _____

DEWATERING FACILITIES

Storage Okeechobee Field Station

Type Steel needle beams and aluminum needles

Size and Number (per bay)

Upstream & Downstream

Needles 6 needles 4' x 20', 6 needles 4' x 22'

Beams 33 WF 200, 26'-11" long