

## STRUCTURE 72

This structure is a reinforced concrete, gated spillway with discharge controlled by two cable hoist operated, vertical lift gates. Operation of the gates is automatically controlled in accordance with the established operational criteria. The structure is located on Canal 40 about 4 miles upstream from Lake Okeechobee.

### PURPOSE

This structure maintains optimum upstream water control stages in Canal 40; 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 during excessive stages in the lake caused by floods or wind tides.

### OPERATION

This structure will be operated, subject to hydraulic and structural restraint, to maintain an optimum headwater elevation between 20.2 and 21.2, insofar as possible, through automatic controls as follows:

When the headwater elevation rises to 21.2, the gates will open at six inches per minute;

When the headwater elevation rises or falls to 20.7, the gates will become stationary;

When the headwater elevation falls to 20.2, the gates will close at six inches per minute.

When the tailwater rises to within 0.2 feet of the headwater, the gates close to prevent backflow through the structure.

### FLOOD DISCHARGE CHARACTERISTICS

|                     | Design*                          | Standard Project Flood**         |
|---------------------|----------------------------------|----------------------------------|
| Discharge Rate      | <u>3120</u> cfs                  | <u>3800</u> cfs                  |
|                     | <u>30</u> % SPF                  | <u>100</u> % SPF                 |
| Headwater Elevation | <u>20.4</u> feet                 | <u>23.5</u> feet                 |
| Tailwater Elevation | <u>19.9</u> feet                 | <u>19.9</u> feet                 |
| Type Discharge      | uncontrolled<br><u>submerged</u> | uncontrolled<br><u>submerged</u> |

\*Design discharge apparently not obtainable with given headwater and tailwater

elevations, even with uncontrolled discharge.

\*\*For Standard Project Flood discharge, headwater and tailwater elevation, gates have to be opened more than allowable. If gates limited to allowable opening, discharge would be 2000 cfs, given headwater and tailwater elevations.

## DESCRIPTION OF STRUCTURE

Type reinforced concrete, gated spillway

Weir Crest

Net Length 54.0 feet

Elevation 9.9 feet

Service Bridge Elevation 27.0 feet

Water Level which will by-pass structure 27.0 feet

Gates

Number 2

Size 12.0 ft. high by 27.8 ft. wide

Type vertical lift

Bottom elevation of gates, full open 21.8 ft. Normal

25.8 ft. Maximum

Top elevation of gates, full closed 21.9 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 electric motor driven speed reducer connected to cable drum  
hoist

ACCESS: from State Road 78 via access road on west bank of C-40

Points of possible flooding \_\_\_\_\_

## 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, 710 Compound

Type steel needle beam and aluminum needles

Size and Number (per bay)

Upstream

needles 5 @ 5' wide, 1 @ 2' wide

beam 30WF 210, 28'-10" long

Downstream

Same