

## **STRUCTURE 62**

This structure is a reinforced concrete, gated spillway with discharge controlled by a cable operated, vertical lift gate. Operation of the gate is manually controlled in accordance with seasonal operational criteria. The structure is located on Canal 29 at the outlet of Lake Hart.

### **PURPOSE**

This structure maintains optimum upstream water control stages in Canal 29 and in Lakes Hart and Mary Jane; 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; it prevents overtopping of the structure by breaking waves from Lake Hart during the design storm and wind tide; it prevents overtopping of the structure during the Standard Project Flood and hurricane wind tide, though it will be overtopped by breaking waves under such conditions; and it passes sufficient discharge during low-flow periods to maintain downstream stages and irrigation demands.

### **OPERATION**

This structure is operated in accordance with the Lake Hart-Mary Jane Regulation Schedule. This schedule, which ranges between elevations 59.5 and 61.0 indicates the desirable water level throughout the year. If the level is above the prescribed level, flood operation is followed; if the level is below the prescribed level, low-water operation is followed. The operation is also dependent on hydraulic and structural limitations of the structure.

#### Flood Operation

When the lake level is within 0.5 foot of the prescribed level, a release schedule, based on forecasted inflow, will be established to return the lake to that level within 15 days. When the lake stage is over 0.5 foot from the prescribed level, maximum releases, subject to hydraulic and structural limitation, will be made.

#### Low-water Operation

Whenever the lake level is below the prescribed level, minimum releases will be made to satisfy downstream irrigation and navigation demands.

#### Structural Limitations

The maximum head on the structure will be 7.2 feet.

### Hydraulic Limitations

To prevent damage from high velocity discharge, the gate opening will be limited in accordance with the "Maximum Allowable Gate Opening Curve". Moreover, the gate shall be opened gradually to allow tailwater stages to rise before large releases are made.

Because of East Lake Tohopekaliga drawdown to remove the muck, a weir at downstream of S-62 was constructed to prevent S-62 tailwater from dropping too low. The weir was completed on or about January 30, 1990. Weir crest is at elevation 56 feet.

### **FLOOD DISCHARGE CHARACTERISTICS**

|   | Design                                |                                       | Standard Project Flood                  |
|---|---------------------------------------|---------------------------------------|---|
|   | Lower Profile*                        | Peak Stage*                           |   |
| Discharge Rate                            | <u>410</u> cfs<br><u>30 %SPF</u>      | <u>600</u> cfs<br><u>30 %SPF</u>      | <u>900</u> cfs<br><u>100 %SPF</u>       |
| Headwater Elevation                       |                                       |                                       |   |
| Static                                    | <u>59.6</u> feet                      | <u>61.3</u> feet                      | <u>66.7</u> feet                        |
| Wind Tide                                 | <u>    </u> feet                      | <u>62.3</u> feet                      | <u>67.3</u> feet                        |
| Wind Tide plus<br>Breaking Wave<br>Height | <u>    </u> feet                      | <u>68.6</u> feet                      | <u>76.6</u> feet                        |
| Tailwater Elevation                       | <u>58.8</u> feet                      | <u>60.1</u> feet                      | <u>65.9</u> feet                        |
| Type Discharge                            | <u>submerged</u><br><u>controlled</u> | <u>submerged</u><br><u>controlled</u> | <u>submerged</u><br><u>uncontrolled</u> |

\*Peak Stage is based on lake operation for design flood which allows 2.0 feet of storage above historic average levels. Lower Profile is based on no rise in lake levels from historic average. Actual operation will probably be close to Lower Profile for the design flood.

### **DESCRIPTION OF STRUCTURE**

Type reinforced concrete, gated spillway

Weir Crest

Net Length 14.0 feet

Elevation 55.3 feet

Service Bridge Elevation 68.6 feet

Water Level which will by-pass structure 68.6 feet

Gates

Number 1

Size 6.8 ft. high by 14.8 ft. wide

Type vertical slide gate

Bottom elevation of gates, full open 59.75 feet normal  
66.5 feet maximum

Top elevation of gates, full closed 62.0 feet

Two manually operated slide gates 2'6" high by 5' long on main gate,  
sill elevation 59.0

Control manual

Lifting Mechanism

Normal power source commercial electricity

Emergency power source LP gas driven generator

Type Hoist hydraulic cylinder activated by electric motor driven  
pump with emergency hand pump, connected to steel cables.

**ACCESS:** from Duda Road via access road on west side of C-29

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

**HYDRAULIC AND HYDROLOGIC MEASUREMENTS**

Water Level Remote digital upstream and downstream recorders

Gate Position Recorder Remote digital recorder

**DEWATERING FACILITIES**

Storage Kissimmee Field Station

Type Stop logs (same as S-63)

Size and Number (per bay) \_\_\_\_\_

Upstream 13, 12" X 12" X 16'-8" long

Downstream - same

Size and Number 5 upstream and downstream

1'-6" wide X 3'-6" high X 31'-3" long