

STRUCTURE 78
Ortona Lock

This structure is a reinforced concrete, gated spillway with discharge controlled by two cable operated, vertical lift gates and two tainter gates. The structure is located on Canal 43 (the Caloosahatchee River) about 16 miles downstream from Lake Okeechobee.

PURPOSE

The structure maintains optimum upstream water control stages in Canal 43; 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 the non-damaging levels.

OPERATION

This structure is operated and maintained by the Corps of Engineers to maintain an optimum headwater elevation of 11.1 feet, insofar as possible, through automatic controls and to pass the design flood as follows:

When the headwater elevation rises to 11.3, the northerly vertical lift, which is the only gate equipped with automatic controls, will open at 6 inches per minute;

When the headwater elevation rises or falls to 11.1, the northerly gate will become stationary;

When the headwater elevation falls to 10.9, the northerly gate will close at 6 inches per minute.

The southerly vertical gate, which is manually controlled, functions as a skimmer gate, to remove debris which accumulates upstream of the structure. All four gates will be operated to discharge flood flows.

FLOOD DISCHARGE CHARACTERISTICS

	Design	Standard Project Flood
Discharge Rate	<u>8660</u> cfs	<u>8660</u> cfs
	<u>30</u> % SPF	<u>100</u> % SPF
Headwater Elevation	<u>10.6</u> feet	<u>14.1</u> feet
Tailwater Elevation	<u>8.0</u> feet	<u>8.0 to 12.0</u> feet

NOTE: This SPF is not simultaneous with the SPF at S-77.

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DESCRIPTION OF STRUCTURE

Type reinforced concrete, gated spillway

Weir Crest

Net Length 86.5 feet

Elevation -.03 to 1.6 feet

Service Bridge Elevation 19.6 feet

Water Level which will by-pass structure 19.6 feet

Gates

Number 2

Size 12.8 ft. high by 24.2 ft. wide

Type vertical lift gates

Bottom elevation of gates, full open 11.7 feet

Top elevation of gates, full closed 12.0 feet

Control On-site automatic on north gate; manual on south gate

Number 2

Size 8.5 feet high

Type Tainter

Bottom elevation of gates, full open _____ feet

Top elevation of gates full closed 10.1 feet

Control manual

Lifting Mechanism

Normal power source commercial electricity

Emergency power source gasoline motor driven generator

Type Hoist Tainter gates--motor operated floor pedestal gear connected to shaft and cable drums. Vertical lift gates--hydraulic cylinder actuated sheave block and cable hoist.

ACCESS: from SR 80 via access road on south bank of C-43

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HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level On-site, upstream and downstream recorders

Gate Position Recorder On-site

DEWATERING FACILITIES

Type needle beam and vertical needles