STRUCTURE 58

This structure is a double-barreled corrugated metal pipe culvert, with discharge controlled by stem operated, vertical lift gates. Operation of the gates is manually in accordance with the seasonal operational criteria. The structure is located on Canal 32 about 3700 feet downstream from Trout Lake.

PURPOSE

This structure maintains optimum upstream water control stages in Canal 32 and in Lakes Alligator, Lizzie, Coon, Center and Trout; it passes the design flood (30% of the Standard Project Flood) without exceeding the upstream flood design stage, and it restricts downstream flood stages and channel velocities to non-damaging levels; it prevents overtopping of the structure by breaking waves from Lake Trout 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 Alligator Regulation Schedule. This schedule, which ranges between elevations 62.0 and 64.0, 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 Control Operation

Both S-60 and S-58 discharge from Lake Alligator, consequently discharges from both structures must be considered in establishing release schedules. 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, no releases will be made.

Structural Limitations

The maximum water level drop across the structure will be 4 feet.

The maximum headwater elevation will be 64.0 feet.

FLOOD DISCHARGE CHARACTERISTICS

	Design		Standard Project Flood
	Lower Profile*	Peak Stage*	
Discharge Rate	105 cfs	160 cfs	14.0 cfs
	30 %SPF	30 %SPF	100 %SPF
Headwater Elevation			
Static	62.9 feet	64.8 feet	67.4 feet
Wind Tide	feet	65.5 feet	67.9 feet
Wind Tide plus Breaking Wave Height	feet	69.1 feet	75.8 feet
Tailwater Elevation	61.3 feet	63.0 feet	66.7 feet
Type Discharge	Controlled Submerged	Controlled Submerged	Uncontrolled Submerged

*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 culvert with upstream control

Number of barrels: 2

Size of barrels: 54 inch diameter

Length of barrels: 70 feet

Flow line elevation: 54.5 feet

Service bridge elevation: 70.0 feet

Water Level which will by-pass structure 70.0 feet

GATES

Number 2

Type vertical slide gates

Size 54 inch diameter

Control manual

Lifting Mechanism

Type pedestal mounted electric motor

Source of Power Commercial electricity

Auxiliary Power LP gas engine driven generator

ACCESS: from Nova Road via access road on west (left) side C-32

HYDRAULIC AND HYDROLOGIC MEASUREMENTS

Water Level Remote digital (upstream and downstream) recorders

Gate Position Recorder Remote digital recorders

Other _____

DEWATERING FACILITIES (per barrel) None