

Draft

**Pump Station S-520  
Summary of Hydraulic Design Data**

Revisions:

- 3 November October 2000 – Original submission

XY Coordinate<sup>1</sup> – 837505 518880

Location: North of C-4 in the immediate proximity of the confluence of C-4 and C-503 (Dade-Broward Levee Canal) canals.

Purpose/Operational Intent: Water Supply Deliveries and Flood Control

- Provides hydraulic head for conveyance of Lake Okeechobee delivery water south to the SDCS.
- Provides hydraulic lift in Bird Drive Recharge Area (BDRA) for groundwater recharge and seepage control for the NESRS and WCA-3B areas.
- Runoff events in the western C-4 Basin can be backpumped into the BDRA at rates of 200 cfs or more that will provide supplemental flood protection and reduce regional water losses to tide.
- Pumps are designed to operate in coordination with discharges from S-519A when making water deliveries from C-503 to C-504 (SDCS deliveries) or S-519B when backpumping western C-4 into BDRA.

Design Condition:	Non-Flood Control	800 cfs
	Flood Control (C-4)	200+ cfs

Pump Station Capacity Criteria:

- Meet SDCS water supply dry season demands.
- Maximum pump capacity was based on 100% delivery plus, allowing for minor losses along conveyance route.

Number of Pumps 5

Pump Mix Type and Size

Diesel	4 @ 200 cfs
Electric	1 @ 50 cfs

Mix Criteria:

- The pump size matches the design discharge capacity of S-519A structure minus 300 cfs used for deliveries to C-4/2 canals during dry-season demands.
- The pump mix allows for intermediate flow values while having duplicate pumps throughout the system for maintenance considerations.
- The small 50 cfs pump can be utilized to capture minor runoff without the need to use larger pumps. In addition, the 50 cfs pump can be used to capture seepage from higher groundwater levels in Pennsuco and west of S-381 in C-4 and direct it into BDRA.

Control Remote by SCADA or Local

Design Heads

Normal (4.00 HW to 8.20 TW)	4.20	feet
Maximum (2.50 HW to 9.20 TW)	6.70	feet

Intake Water Surface Elevations

Maximum Non-Pumping	8.50	ft-NGVD
Maximum Pumping	8.50	ft-NGVD
Start Pumping	4.70	ft-NGVD
Normal Pumping	4.00 to 4.50	ft-NGVD
Minimum Drawdown Pumping	3.00	ft-NGVD
Minimum Non-Pumping	3.00	ft-NGVD
Channel Invert	-14.00	ft-NGVD

Discharge Water Surface Elevations

Maximum Non-Pumping	10.50	ft-NGVD
Maximum Pumping	9.20	ft-NGVD
Normal Pumping	8.20	ft-NGVD
Minimum Pumping	3.00	ft-NGVD

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Minimum Non-Pumping	3.00	ft-NGVD
Channel Invert	-5.00	ft-NGVD

### Notes:

- <sup>1</sup> XY coordinates system used is NAD 83, Florida east, state plane.
- All elevations are in feet, NGVD (National Geodetic Vertical Datum of 1929)
- Diesel generator is required for control station operations and electric pump in cases of power outage.

Data Compiled from: C-111 Modwaters and WPA project plans. Canal stage expectations for C-4 Canal was found from G-119 TW and S-25A HW data records.