S-381 - 2 Bay - Vertical Lift Gate Spillway
Summary of Hydraulic Design Data

Revisions

16 February 2001 - Revised canal bottom width, upstream and downstream protection velocity and and riprap upstream and downstream lengths.

2 August 2000 - Original submission

XY Coord 846955 628562
Location On C-11 Canal, 4800 ft east of US-27 north bound lanes

Purpose Divides WCA seepage water from C-11 west basin water to be backpumped into WCA-3 via S-9A pump station.

Design Conditions

Discharge (CFS)			2,880	cfs
Headwater Elevation			4.00	ft,NGVD
Tailwater Elevation			3.00	ft,NGVD

Optimum Conditions

Headwater Elevation	High / Low	3.50	/	2.00	ft,NGVD
Tailwater Elevation	High / Low	2.00	/	1.00	ft,NGVD
Special Conditions - Reverse Head	Head / Tail	5.00	/	0.00	ft,NGVD

SPF Conditions

Discharge (CFS)			2,880	cfs
Headwater Elevation			6.00	ft,NGVD
Tailwater Elevation			5.00	ft,NGVD

Maximum Head Difference

Discharge (CFS)			2,880	cfs
Headwater Elevation			5.00	ft,NGVD
Tailwater Elevation			0.00	ft,NGVD

Crest Data

Shape			Ogee	
Design Head Hd			8.80	feet
Net Crest Length			46.00	feet
Crest Elevation			-4.80	ft, NGVD
Number and Width of Piers	1.00	/	3.25	feet
Upstream Approach Apron Elevation			-9.00	ft, NGVD

Gates

Weir Control	Vertical Slide Gates	
Number of Gates	2	
Gate Bay Width	23.00	feet
Gate Height	10.80	feet
Gate Clearance Elevation	7.00	feet NGVD
Base of Breastwall Elevation	N/A	feet NGVD

Stilling Basin

Design Discharge			2,880	cfs
Apron Elevation			-10.00	ft,NGVD
Apron Length from Toe of Ogee to Toe of Endsill			25.00	feet
Baffle Block Elevation			-8.00	ft,NGVD
Baffle Block height/Width	2.00	/	2.00	feet
Rows of Baffle Blocks			2.00	
Distance from toe of Ogee to 1st Row of Baffle Blocks			15.00	feet
Distance from toe of Ogee to 2st Row of Baffle Blocks			19.75	feet
Training Wall Elevation			5.00	ft,NGVD
End Sill Elevation			-9.00	ft,NGVD
Slope from apron to Top of End Sill	1 on 5			

S-381 - 2 Bay - Vertical Lift Gate Spillway
Summary of Hydraulic Design Data

Canal Section

Side Slopes (Ver. on Hor.)	1 on 3	
Upstream Bottom Width	80.00	feet
Upstream Bottom Elevation	-10.00	ft,NGVD
Downstream Bottom Width	80.00	feet
Downstream Bottom Elevation	-10.00	ft,NGVD

Structure Protection Elevation

Machinery	8.00	ft,NGVD

Riprap Requirements

Velocity Over the End Sill	6.50	fps
Upstream Length (feet)	30.00	feet
Upstream Protection Elevation	5.00	ft,NGVD
Upstream Protection Velocity	7.00	fps
Downstream Length (feet)	120.00	feet
Downstream Protection Elevation	5.00	ft,NGVD
Downstream Protection Velocity (Increased for Turbulence)	7.00	fps

Note: All elevations given in feet, NGVD