

APRIL 10, 2012

SUPPLEMENTAL CALCULATIONS

FOR

BROADSTONE SANTA MONICA
San Pedro Blvd. and Santa Monica Ave. NE

BY



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4-10-12

Date

- **WEIR CALCULATIONS FOR STILLING BASIN
NORTH OF SAN PEDRO ENTRANCE**
- **ORIFICE CALCULATIONS FOR 4" PIPE FROM
STILLING BASIN TO SIDEWALK CULVERT
NORTH OF SAN PEDRO ENTRANCE**

Weir Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2012 by Autodesk, Inc.

Tuesday, Apr 10 2012

OVERFLOW WEIR AT CONCRETE STILLING BASIN @ NW CORNER

Rectangular Weir

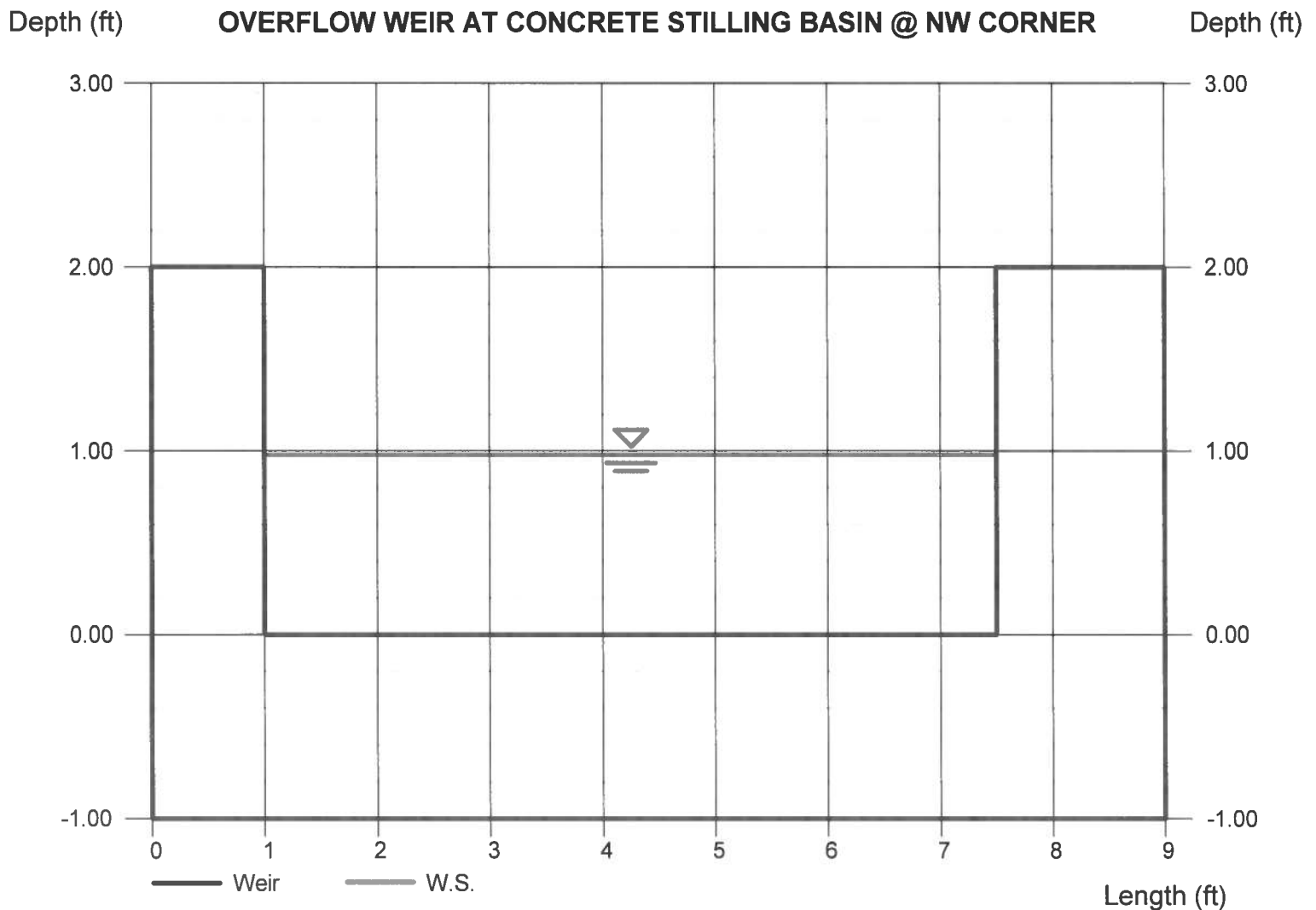
Crest = Sharp
Bottom Length (ft) = 6.50
Total Depth (ft) = 2.00

Calculations

Weir Coeff. Cw = 3.33
Compute by: Known Q
Known Q (cfs) = 21.00

Highlighted

Depth (ft) = 0.98
Q (cfs) = 21.00
Area (sqft) = 6.37
Velocity (ft/s) = 3.30
Top Width (ft) = 6.50



BROADSTONE SANTA MONICA

ORIFICE EQUATION - 4" PIPE FROM STILLING BASIN TO SIDEWALK CULVERT

The Orifice Equation is used to calculate the Flow at the opening of a Channel

$$Q = C * A * (2 * g * h)^{0.5}$$

Where	Q	=	0.52	cfs	
	C	=	0.6		(indicating that the opening will function at 60% capacity)
	A	=	0.0872665	sq.ft.	
	g	=	32.2	ft/sec^2	
	h	=	1.55	ft	depth of flow at opening from the center of culvert

Inv 4" pipe=61.3; WSEL=63.0
