



25500 Road 204 , Exeter, Ca. 93221
 Phone: (303) 288-7873 * Fax: (303) 287-8531
 www.WatermanUSA.com

Desc. **RB-17-0487 Hydrostatic Load calc**

Order No. M028960C

Calculated by **Amanuel Wubneh P.E.**

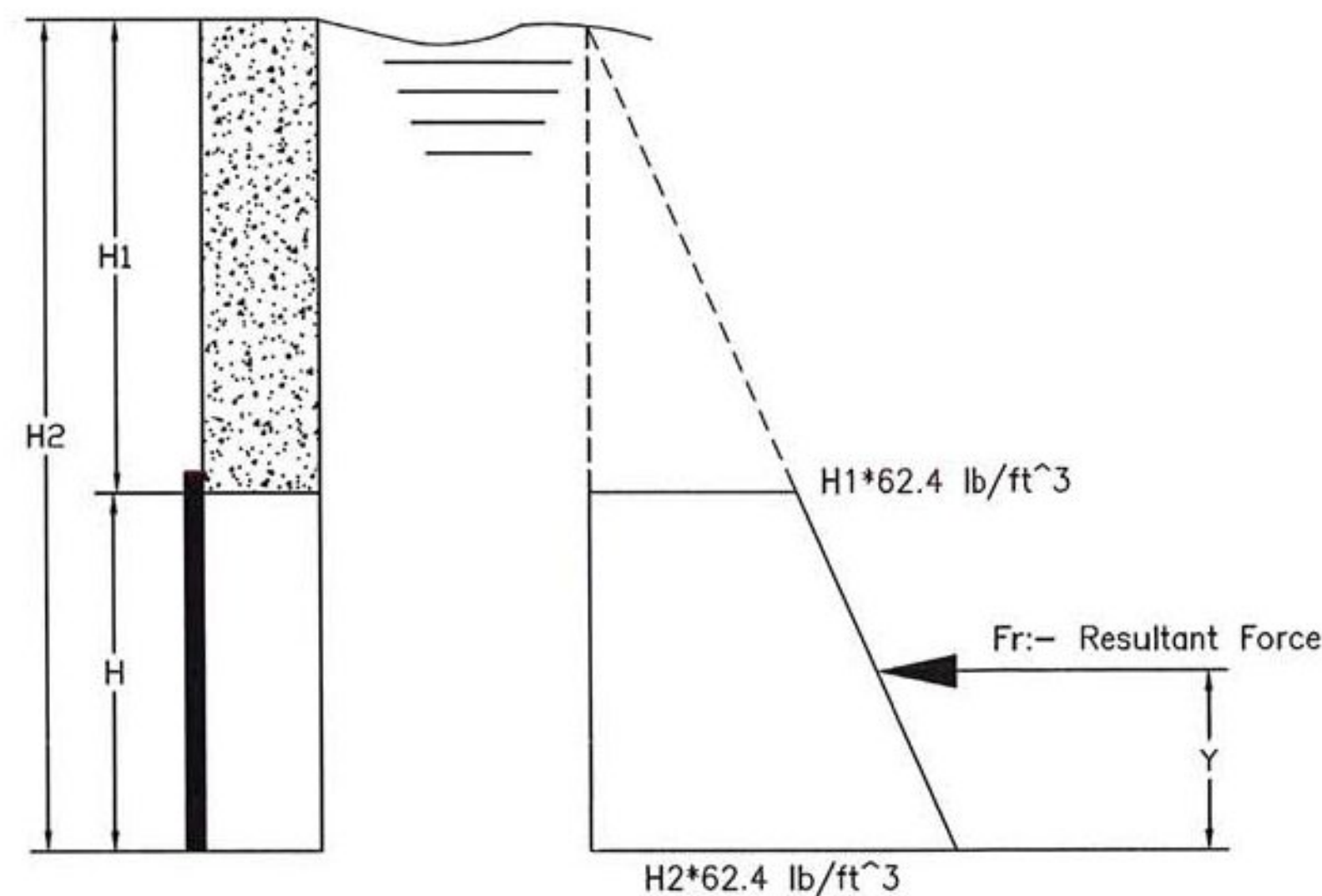
Date 9/21/2017

Checked by **REM**

DWG RB-17-0487

Revision. 1

Tag# STP SCR(4)



Design Parameters

Density of Water, $\gamma = 62.4 \text{ lb/ft}^3$
 Height of the gate Opening = **72** in
 Measurement from max. water level to top of opening, $H_1 = 144$ in
 Hydraulic Head to the invert, $H_2 = 216.00$ in
 Width Of the Gate, $W = 72$ in
 Hydraulic Head to the center of opening, $H_c = 180$ in = 15 ft

Approved AsNoted

BY: Ken Upmal
 DATE: 11/29/2017
 RESUBMIT: NO
 RECEIVED: November 13, 2017
 CKD BY: DV/BK (Green Int'l)

**STATE OF VERMONT
 AGENCY OF TRANSPORTATION**

Applied Load

Hydrostatic Load, $F := 62.4 \cdot \left(\frac{W}{12}\right) \cdot \left(\frac{H}{12}\right) \cdot H_c = 33696 \text{ lbs}$

Hydrostatic load per side of the gate, $F/2 = 16848 \text{ lbs}$

Moment created due to eccentrical loading, $Me = 29484 \text{ lb.in}$

Point of application of the resultant force, $Y = \frac{[(H_1 * H / 2 + 1/2 * (H_2 - H_1) * H / 3)]}{(H_2 + H_1) * 0.5}$

$Y = 33.6 \text{ in}$



Auf
 11-7-2017