



## Certification Form for Detention/Water Quality Basin

Project Name: Parker and Stroh  
 Project Description: Commercial Lot Subdivsion and Infrastructure  
 Date: 04-14-2025

THIS DOCUMENT MUST BE PREPARED, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER.

Description	Design	As-Constructed	Notes/Comments
EURV Volume (Including WQCV)	1.472 acre-ft	1.772 acre-ft	
EURV Water Surface Elevation	68.03	68.00	
100-Year Volume	2.753 acre-ft	3.240 acre-ft	
100-Year Water Surface Elevation	70.05	70.05	
EURV Weir Elevation	N/A	N/A	
Bottom Width of EURV Weir	N/A ft	N/A ft	
Water Quality Plate Configuration (Rows/Quantity/Size)	4 holes @ 1.5"	4 holes @ 1.5"	elev 62.32, 63.32, 64.32, 65.32 Design = As Built
Lowest Water Quality Hole Elevation	62.32	62.32	
Invert Elevation of Outlet Structure Outlet Pipe	62.07	62.10	
Outlet Pipe Orifice Size (Diameter for circular orifice and height from pipe invert for plate orifice)	23 in	23 in	
Emergency Spillway Crest Elevation	72.00	72.10	
Emergency Spillway Crest Length	50' ft	51.5 ft	
Emergency Spillway Crest Depth	2.00 ft	1.95 ft	
Emergency Spillway Capacity (With 1 foot min freeboard)	157 cfs	148 cfs	82.5 required = 100yr peak inflow from UD Det Spreadsheet

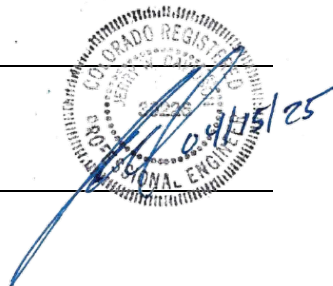
Jerry W. Davidson P.E.

Printed Name

30226

P.E. #

Signature



$$5227.04 \times 27 = 141,129\text{cf} = 3.240 \text{ ac-ft}$$

Name	Boundary	Cut(adjusted)(Cu. Yd.)	Fill(adjusted)(Cu. Yd.)
100 yr volume at	70.05	198.48	5227.04
EURV Volume at	68.0	1.18	2859.18

$$2859.18 \times 27 = 77,198\text{cf} = 1.772 \text{ ac-ft}$$

# Irregular Weir Flow Calculator

## Parker Stroh

### Overflow Weir Capacity - Design Condition

Inputs

Headwater elevation	73.00
Weir coefficient, Cw ?	3

Weir points +/- (or Copy/Paste using data area)

Station (distance)	Elevation	Ponding Height	Incremental Flow	Cumulative Flow
0	74.00	0.00		
6	72.00	1.00	3.60	3.60
56	72.00	1.00	150.00	153.60
62	74.00	0.00	3.60	157.20

## Notes

### Weir Equation

$q = \text{if } (\text{length} = 0) \text{ then } 0 \text{ else if } (\text{slope} = 0) \text{ then } cw * \text{length} * d_0^{1.5} \text{ else } cw / (2.5 * \text{slope}) * (d_0^{2.5} - d_1^{2.5})$  where  $d_1$  and  $d_0$  are always positive or zero

# Irregular Weir Flow Calculator

## Parker Stroh

### Overflow Weir Capacity - As-Built Condition

Inputs

Headwater elevation	73.05
Weir coefficient, Cw ?	3

Weir points +/- (or Copy/Paste using data area)

Station (distance)	Elevation	Ponding Height	Incremental Flow	Cumulative Flow
0	74.05	0.00		
5	72.10	0.95	2.71	2.71
56.5	72.10	0.95	143.06	145.77
61.5	74.05	0.00	2.71	148.47

## Notes

### Weir Equation

$q = \text{if } (\text{length} = 0) \text{ then } 0 \text{ else if } (\text{slope} = 0) \text{ then } cw * \text{length} * d_0^{1.5} \text{ else } cw / (2.5 * \text{slope}) * (d_0^{2.5} - d_1^{2.5})$  where  $d_1$  and  $d_0$  are always positive or zero