

**Pompano Beach Snack Bar**  
**STORMWATER MANAGEMENT CALCULATIONS**

PRE		
LAND USE BREAKDOWN		
LAND USE BREAKDOWN	ACRES	PERCENT %
Building	0.012	9.6%
concrete	0.041	32.1%
Green	0.074	58.3%
TOTAL	0.128	100.0%

Impervious surface	0.053	41.7%
Pervious surface	0.074	58.3%

POST		
LAND USE BREAKDOWN		
LAND USE BREAKDOWN	ACRES	PERCENT %
Building	0.035	27.3%
concrete	0.060	46.7%
Green	0.033	26.0%
TOTAL	0.128	100.0%

Impervious surface	0.094	74.0%
Pervious surface	0.033	26.0%

Water Table Elevation: 2.50 NAVD

Compute the water quality volume required based on the increas of impervious area from PRE and POST tables above:

**1. Increase in impervious surface:**

$$\text{Proposed Impervious surface} - \text{existing impervious surface} = 0.094 - 0.053 = 0.041 \text{ ac}$$

**2. Water Quality Calculations**

- A. Compute the first inch of runoff from the entire site.
- $$= 1 \text{ inch} \times \text{Total Area} \times (1 \text{ ft} / 12 \text{ in})$$
- $$= 0.0034 \text{ ac-ft}$$
- B. For 2.5 inches times percentage of imperviousness
- $$= 2.5 \text{ inches} \times \% \text{imp}$$
- $$= 0.0086 \text{ inches} \quad \text{(CONTROLS)}$$
- C. Volume to be treated: 0.0086 ac-ft

**3. Exfiltration Trench Calculations**

$$L_{min} = \frac{FS \cdot V}{[K \times (H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + (1.39 \times 10^{-4})WD_u]}$$

$$= 0.52 \text{ feet}$$

Trench Characteristics

volume, V: 0.0086 ac-ft

L= 8 used

W= 4

K (CFS/ft<sup>2</sup>)= 2.50E-04

H<sub>2</sub>= 9.00 ft

D<sub>u</sub>= 7.50 ft

D<sub>s</sub>= 0.00

Top of Trench Elev.= 10.00 ft

Bottom of Trench Elev.= 2.50 ft

Rim Elev.= 11.50 ft

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