



# AZZOLINA & FEURY ENGINEERING, INC.

*Professional Engineers and Land Surveyors*

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## ON SITE RETENTION DESIGN

**AUSTIN & DOREEN SIBONI**  
63 CENTRAL AVENUE  
BLOCK 74 - LOT 8  
BOROUGH OF DEMAREST  
BERGEN COUNTY, NEW JERSEY  
FILE #12429

April 30, 2024

AZZOLINA & FEURY ENGINEERING, INC.  
CONSULTING ENGINEERS  
PARAMUS, NEW JERSEY

Perry E. Frenzel, P.E.  
Professional Engineer  
N. J. Lic. #28190

**AUSTIN & DOREEN SIBONI**

Block 74 - Lot 8  
63 Central Avenue  
Borough of Demarest  
Bergen County, New Jersey

Prepared by: JF  
Checked by: PEF  
Date: April 30, 2024  
Job #12429

**SEEPAGE PIT SYSTEM DESIGN**

Drainage Area: 1,437 ft<sup>2</sup> (Impervious; Entire Driveway Area) C=.99  
2,363 ft<sup>2</sup> (Pervious; Lawn Area) C=.25

Design Storm: 3.0 in./hr. Intensity, 1 hr. Duration  
3.0 in. of Total Rainfall

Volume of Runoff: {3.0 in. / (12 in./ft.)} x 1,437 ft<sup>2</sup> x .99 = **356 ft<sup>3</sup>**  
{3.0 in. / (12 in./ft.)} x 2,363 ft<sup>2</sup> x .25 = **148 ft<sup>3</sup>**  
Total = **504 ft<sup>3</sup>**

**SEEPAGE PIT SYSTEM VOLUME**

(2 Pit)  
6.0' Diameter, 3' Deep  
2' Stone Around, 2.5' Under  
(See Plan for Detail)

Pit Volume:  $2(\pi R^2 H) = 2\{\pi(3^2)(2.67')\} = **151 ft^3**$

Stone Volume around Pit:  $\{(V_{\text{Stone}}) - (V_{\text{seepage Pit}})\} \times 40\% \text{ Voids}$   
 $\{(W \times L \times H) - 2(\pi R_{\text{outer}}^2 H)\} \times 40\% \text{ Voids}$   
 $\{(10.5' \times 21' \times 3') - 2(\pi(3.25)^2(3'))\} \times 0.40 = **185 ft^3**$

Volume of Stone under Pit:  $(W \times L \times H) \times 40\% \text{ Voids} = (10.5' \times 21' \times 2.5') \times 0.40 = **221 ft^3**$

Total Volume of Pit:  $151 + 185 + 221 = **557 ft^3**$

**Storage Provided 557 ft<sup>3</sup> > 504 ft<sup>3</sup> Storage Required**