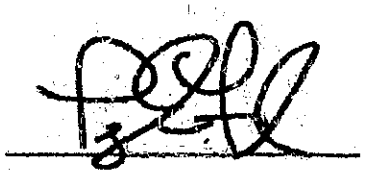
SEEPAGE PIT DESIGN

YIWEI ZHANG
269 CHESTNUT RIDGE ROAD
BLOCK 701 - LOT 1
BOROUGH OF WOODCLIFF LAKE
BERGEN COUNTY, NEW JERSEY
FILE #12116

April 23, 2021
Revised: June 25, 2021

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



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

YIWEI ZHANG
Block 701 – Lot 1
269 Chestnut Ridge Road
Borough of Woodcliff Lake
Bergen County, New Jersey

Prepared by: CDD
Checked by: PEF
Date: April 15, 2021
Revised: June 25, 2021
Job #12116

SEEPAGE PIT SYSTEM DESIGN

Drainage Area: 2,414 ft^2 (Impervious; Entire Dwelling Area) C=0.99
1,782 ft^2 (Impervious; Portion of Driveway Area) C=0.99

Design Storm: 10 Year – 60 minute
2.0 in./hr. Intensity
2.0 in. of Total Rainfall

Volume of Runoff: {2.0 in. / (12 in./ft.)} x 2,414 ft^2 x 0.99 = **398 ft^3**
{2.0 in. / (12 in./ft.)} x 1,803 ft^2 x 0.99 = **294 ft^3**
Total = **692 ft^3**

SEEPAGE PIT SYSTEM VOLUME

(2 Pits)
6.0 ft. Inside Diameter, 3.0' Deep
3.0' Stone Around, 2.0' Under
(See Plan for Detail)

Pit Volume: $(\pi R^2 H) = 2\{\pi(3.0^2)(2.67')\}$ = **151 ft^3**

Stone Volume around Pit: $\{(V_{Stone}) - (V_{2eepage\ Pit})\}$ x 40% Voids
$\{(WxLxH) - 2(\pi R^2_{outer} H)\}$ x 40% Voids
$\{(12.5'x25.0'x3.0') - 2(\pi(3.25)^2(3.0')\}$ x 0.40 = **295 ft^3**

Volume of Stone under Pit: (WxLxH) x 40% Voids = (12.5'x25.0'x2.0') x 0.40 = **250 ft^3**

Total Volume of Pit: 151 + 295 + 250= **696 ft^3**

Storage Provided 696 ft^3 > 692 ft^3 Storage Required