

Richard F. Mihok, P.E.

Consulting Engineer

18 Laurel Lane
(860) 295-9049
6906@ATT.NET

Date: 04-27-2020

**Mr. Thomas Mocko, Environmental Planner
Town Of Glastonbury
2155 Main Street P.O. Box 6523
Glastonbury, CT 06033-6523**

**Re: Dorothy's Place I Subdivision
181A Main Street
Glastonbury, Connecticut**

Dear Mr. Mocko:

Tabulated below are the Groundwater Recharge Volume Calculations for the subject subdivision.

Hydrologic Soil Group: A, F= 0.4 Inches

GRV = (F)(A)(I)/12

Lot 1 Roof, Drive Area – (Area 1)

F=0.4

I= 4,796/32,172 = 14.9%

GRV= 0.4 x 32,172/43,560 x 0.149/12 x 43,560 = 160 Cu.Ft.

Provide 22'L x 3'Base x 2.5'Deep w/4:1 Slopes Level Spreader = 715 Cu.Ft.

Lot 2 Drive, Shared Drive – (Area 2)

F=0.4

I=7,578/38,939 = 19.5%

GRV = 0.4 x 38,939/43,560 x 0.195/12 x 43,560 = 253 Cu.Ft.

Provide 23'L x 3'Base x 2.5'Deep w/4:1 Slopes Level Spreader = 748 Cu.Ft.

Lot 2 Roof

F=0.4

GRV = 0.4 x 1,696/43560 x 1.00/12 x 43560 = 56 Cu.Ft.

Install 2 Cultec 100HD Units w/12" Stone = 58 Cu.Ft.

If you have any questions regarding this submittal, please do not hesitate to Contact me.

Respectfully submitted,



Richard F. Mihok, P.E. & L.S.

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Consulting Engineer

18 Laurel Lane

Marlborough, CT 06447

6906@att.net

Date: 04-27-2020

Mr. Stephen M. Braun, P.E., Assistant Town Engineer

Town Of Glastonbury

2155 Main Street P.O.Box 6523

Glastonbury, CT 06033-6523

Re: Dorothy's Place I Subdivision

181A Main Street

Glastonbury, Connecticut

Dear Mr. Braun :

**Tabulated below are the requirements for Water Quality Volumes
For the Two Lot Subdivision Houses and Drives.**

Water Quality Volume

Lot 1

Drive & Roof Drainage Area to Level Spreader: 29,966 Sq.Ft.

Impervious Area(Drive & Roof) = 7,475 Sq.Ft.

Contributing Area: 29,966 Sq.Ft.

$I = 7,475/29,966 = 24.9\%$

$R = 0.05 + 0.009 \times 24.9 = 0.2741$

$WQV = 1 \times 0.2741 \times 29,966/43560 / 12 = 0.0157 \text{ Ac.Ft.} = 684 \text{ Cu.Ft.}$

22'L x 3'Base x 2.5'Deep w/4:1 Slopes Level Spreader = 715 Cu.Ft.

Lot 2 Drive Area

Drive Area: 7,578 Sq.Ft.

Contributing Area: 38,939 Sq.Ft.

$I = 7,578/38,939 = 19.52\%$

$R = 0.05 + 0.009 \times 19.52 = 0.2257$

$WQV = 1 \times 0.2257 \times 38,939/43,560/12 = 1.68 \text{ Ac.Ft.} = 732 \text{ Cu.Ft.}$

23'L x 3'Base x 2.5'Deep w/4:1 Slopes Level Spreader = 748 Cu.Ft.

**Soil Characteristics in this area are predominantly sand which will
Facilitate recharge infiltration.**

Respectfully submitted,



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Marlborough, Connecticut 06447

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Date: 11-21-2019

Nitrogen Loading

Dorothy's Place I Subdivision – 181A Main Street

Glastonbury, Connecticut

Zone: GW-1

2 Lots

5 people/Dwelling (Proposed Rear Lot)

4 People/Dwelling (Proposed Rear Lot)

Parcel Area: 187,695 Sq.Ft. = 4.309 Ac.

Impervious Surface

Roof Area = 5,392 Sq.Ft.

Drives- Stone = 13,690 Sq.Ft.

Pervious Surface

Lawn Area = 80,000 Sq.Ft.

Natural Area = 168,613 Sq.Ft.

Connecticut Rainfall = 44 In./Yr.

Loading Factors:

Cape Cod Technical Bulletin 91-001

Roof: 0.75 mg/L

Paved Drive: 1.5 mg/L

Lawns: 3 Lb/1,000 SF @ 25% Leaching

Natural Area Infiltration: 25%

Estimated Loading

Wastewater

1 Dwelling x 5 People/Dwelling x 75 GPD x 3.785 L/Gal = 1,419 L/D x 24 mg/L = 34,056 mg/D

1 Dwelling x 4 People/Dwelling x 75 GPD x 3.785 L/Gal = 1,136 L/D x 24 mg/L = 27,264 mg/D

Roofs

$$5,392 \text{ Sq.Ft.} \times 44 \text{ In./Yr.} \times 1 \text{ Ft./12 In.} \times 1 \text{ Yr./365 D} \times 28.32 \text{ L/CF} = 1,534 \text{ L/D} \times 0.75 \text{ mg/L} \\ = 1,150 \text{ mg/D}$$

Drives- Stone

$$13,690 \text{ Sq.Ft.} \times 44 \text{ In./Yr.} \times 1 \text{ Ft./12 In.} \times 1 \text{ Yr./365 D} \times 28.32 \text{ L/CF} = 3,894 \text{ L/D} \times 1.5 \text{ mg/L} \\ = 5,842 \text{ mg/D}$$

Lawn

$$80,000 \text{ Sq.Ft.} \times 3 \text{ Lb./1,000 Sq.Ft./Yr.} \times 1 \text{ Yr./365 D} \times 454,000 \text{ mg/Lb.} \times 0.25 = 74,630 \text{ mg/D}$$

Natural Area

$$169,613 \text{ Sq.Ft.} \times 1.5 \text{ Ft./Yr.} \times 1 \text{ Yr./365 D} \times 28.32 \text{ L/CF} = 19,740 \text{ L/D}$$

Summary

<i>Wastewater</i>	+	<i>Roofs</i>	+	<i>Drives</i>		+	<i>Lawn</i>		<u><i>Total</i></u>
61,320 mg/D		1,150 mg/D		5,842 mg/D			74,630 mg/D		= 142,942 mg
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2,555 L/D		1,534 L/D		3,894 L/D			19,740 L/D		= 27,723 L

Nitrogen Loading of 5.156 ppm is within the Acceptable Range of Section 20.13.1 of the Groundwater Protection Regulations of Glastonbury Zoning Regulations

Respectfully Submitted,



Richard F. Mihok, P.E.&L.s.