Richard F. Mihok, P.E.
Consulting Engineer
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Date: 11-21-2019

Mr. Thomas Mocko, Environmental Planner
Town Of Glastonbury
1125 Main Street P.O. Box 6523
Glastonbury, CT 06033-6523

Dear Mr. Mocko:

Tabulated below are the Nitrogen Loadings for the subject subdivision.

Nitrogen Loading

Dorothy's Place II Subdivision – 180 Main Street
Glastonbury, Connecticut

Zone: GW-2
4 Lots
5 People/Dwelling (2 Proposed Rear Lots)
5 People/Dwelling (2 Proposed Front Lots)
Parcel Area: 362,964 Sq.Ft. = 8.3325 Ac.

Impervious Surface

Roof Area	*= 7,428 Sq.Ft.*
Drives- Paved	*= 14,963 Sq.Ft.*

Pervious Surface

Lawn Area	*= 160,000 Sq.Ft.*
Natural Area	*= 340,573 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

4 Dwellings x 5 People/Dwelling x 75 GPD x 3.785 L/Gal = 5,678 L/D x 24 mg/L = 136,272mg/D

Roofs

7,428 Sq.Ft. x 44 In./Yr. x 1 Ft./12 In. x 1 Yr./365 D x 28.32 L/CF = 2,113 L/D x 0.75 mg/L = 1,585 mg/D

Drives- Paved

14,963 Sq.Ft. x 44 In./Yr. x 1 Ft./12 In. x 1 Yr./365 D x 28.32 L/CF = 4,257 L/D x 1.5 mg/L = 6,385 mg/D

Lawns

160,000 Sq.Ft. x 3 Lb./1,000 Sq.Ft./Yr. x 1 Yr./365 D x 454,000 mg/Lb. x 0.25 = 149,260 mg/D

Natural Area

340,573 Sq.Ft. x 1.5 Ft./Yr. x 1 Yr./365 D x 28.32 L/CF = 39,637 L/D

Summary

Wastewater	+ *Roofs*	+ *Drives*	+ *Lawn*	*Total*	
136,272 mg/D	*1,585 mg/D*	*6,385 mg/D*	*149,260 mg/D*	*= 293,502 mg*	
					= 5.679 ppm
5,678 L/D	*2,113 L/D*	*4,257 L/D*	*39,637 L/D*	*= 51,685 L*	

Nitrogen Loading of 5.679 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.

Richard F. Mihok, P.E.
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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 II Subdivision
180 Main Street
Glastonbury, Connecticut

Dear Mr. Braun :

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

Water Quality Volume

Lot 1

Drive & Roof Drainage Area to Level Spreader: 33,547 Sq.Ft.
Impervious Area(Drive & Roof) = 4,657 Sq.Ft.
Contributing Area: 33,547 Sq.Ft.
I = 4,657/33,547 = 13.9%
R = 0.05 + 0.009 x 13.9 = 0.175
WQV = 1 x 0.175 x 33,547/43560 / 12 = 0.0123 Ac.Ft. = 489 Cu.Ft.
23'L x 3'Base x 2'Deep w/4:1 Slopes Level Spreader = 489 Cu.Ft.

Lot 2

Drive & Roof Drainage Area to Level Spreader: 3,941 Sq.Ft.
Contributing Area: 11,729 Sq.Ft.
I = 3,941/11,729 = 33.6%
R = 0.05 + 0.009 x 33.6 = 0.352
WQV = 1 x 0.352 x 11,729/43,560/12 = 0.007907 Ac.Ft. = 344 Cu.Ft.
16'L x 3'Base x 2'Deep w/4:1 Slopes Level Spreader = 344 Cu.Ft.

Lot 3

Drive & Roof Drainage Area to Level Spreader: 3,734 Sq.Ft.
Contributing Area: 5,851 Sq.Ft.
I = 3,734/5,851 = 63.8%
R = 0.05 + 0.009 x 63.8 = 0.624
WQV = 1 X 0.624 X 5,581/43,560/12 = 304 Cu.Ft.
14'L x 3'Base x 2'Deep w/4:1 Slopes Level Spreader = 304 Cu.Ft.

Lot 4

Drive & Roof Drainage Area to Level Spreader: 3,333 Sq.Ft.
Contributing Area: 7,888 Sq.Ft.
I = 3,333/7,888 = 42.25%
R = 0.05 + 0.009 x 42.25 = 0.430
WQV = 1 x 0.4225 x 7,888/43560/12 = 283 Cu.Ft.
13'L x 3'Base x 2'Deep w/4:1 Slopes Level Spreader = 283 Cu.Ft.

Lot 3 & 4 Shared Drive

Pavement: 4,400 Sq.Ft.
Grass Shoulders: 1,540 Sq.Ft.
Contributing Area: 5,940 Sq.Ft.
I = 4,400/5,940 = 74.07%
R = 0.05 + 0.009 x 74.07 = 0.7166
WQV = 1 x 0.7166 x 5,940/43560/12 = 354 Cu.Ft.
4-Cultec 280HD Units w/18"Stone = 354 Cu.Ft.

If you have any question regarding this submittal, please do not hesitate To contact me.

Respectfully submitted,

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

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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 II Subdivision
180 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
F=0.4
Roof: 1,857 Sq.Ft.
Drive: 2,800 Sq.Ft.
Grass: 28,890 Sq.Ft.
Total: 33,547 Sq.Ft.
I= 4,657/33,550 = 13.9%
GRV= 0.4 x 33,547/43,560 x 0.139/12 x43,560 = 155 Cu.Ft.
Provide 23'L x 3'Base x 2'Deep w/4:1 Slopes Level Spreader = 489 Cu.Ft.

Lot 2 House, Drive
F=0.4
Roof: 1,857 Sq.Ft.
Drive: 2,084 Sq.Ft.
Grass: 7,788 Sq.Ft.
Total: 11,729 Sq.Ft.
I=3,941/11,729 = 33.6%
GRV = 0.4 x 11,729/43,560 x 0.336/12 x 43,560 = 144 Cu.Ft.
Provide 16'L x 3'Base x 2'Deep w/4:1 Slopes Level Spreader = 344 Cu.Ft.

Lot 3 Roof, Drive
F=0.4
Roof: 1,857 Sq.Ft.
Drive: 1,877 Sq.Ft.
Grass: 2,117 Sq.Ft.
Total: 5,851 Sq.Ft.
I = 3,734/5,851 = 63.8%
GRV = 0.4 x 5,851/43,560 x 0.638/12 x 43,560 = 124 Cu.Ft.
Install 14'L x 3'Base x 2'Deep w/4:1 Slopes Level Spreader = 304 Cu.Ft.

Lot 4 Roof, Drive
F = 0.4
Roof: 1,857 Sq.Ft.
Drive: 1,476 Sq.Ft.
Grass: 4,555 Sq.Ft.
Total: 7,888 Sq.Ft.
I = 3,333/7,888 = 42.3%
GRV = 0.4 x 7,888/43,560 x 0.423/12 x 43,560 = 111 Cu.Ft.
Install 13'L x 3'Base x 2"Deep w/4:1 Slopes Level Spreader = 283 Cu.Ft.

Shared Drive – Lots 3 & 4
F = 0.4
Pavement: 4,480 Sq.Ft.
Total: 6,020 Sq.Ft.
I = 4,480/6,020 = 74.4%
GRV = 0.4 x 6,020/43,560 x 0.744/12 x 43,560 = 150 Cu.Ft.
Install 20'L x 3'W x 3'Deep Infilt. Pool = 180 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.