



Commonwealth of Massachusetts
City/Town of Southborough

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

A. Facility Information

FD 120 Turnpike, LLC

Owner Name

120 Turnpike Road

Street Address

Southborough

City

MA
State

37/0120

Map/Lot #

01772

Zip Code

B. Site Information

1. (Check one) New Construction Upgrade Repair

DH 182

2. Soil Survey Available? Yes No If yes:

Web soil survey
Source

310B
Soil Map Unit

9-7-2021

Woodbridge

Soil Name

severe

Soil Limitations

Till

Soil Parent material

uncertain

Landform

3. Surficial Geological Report Available? Yes No

If yes:

Year Published/Source

Map Unit

Description of Geologic Map Unit:

4. Flood Rate Insurance Map Within a regulatory floodway? Yes No

5. Within a velocity zone? Yes No

6. Within a Mapped Wetland Area? Yes No

If yes, MassGIS Wetland Data Layer:

Wetland Type

7. Current Water Resource Conditions (USGS):

09/07/22

Month/Day/ Year

Range: Above Normal

Normal

Below Normal

8. Other references reviewed:



Commonwealth of Massachusetts
City/Town of Southborough

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C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number:	1	Hole #	9-7-2026	Date	60°	Time	CWON	Weather	Latitude	Longitude:	
1. Land Use (e.g., woodland, agricultural field, vacant lot, etc.)	WOODLAND	Vegetation	MOSTLY PINE TREES				SOME STONES			Slope (%)	
Description of Location:		JUST ABOVE DRAINAGE SWALE									
2. Soil Parent Material:	TILL			UNCERTAIN	Landform	UNCERTAIN					Position on Landscape (SU, SH, BS, FS, TS)
3. Distances from:	Open Water Body	feet		Drainage Way	feet		Wetlands	feet			
	Property Line	feet		Drinking Water Well	feet		Other	feet			
4. Unsuitable Materials Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If Yes:		<input type="checkbox"/> Disturbed Soil	<input type="checkbox"/> Fill Material	<input type="checkbox"/> Weathered/Fractured Rock	<input type="checkbox"/> Bedrock				
5. Groundwater Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes:		Depth Weeping from Pit		Depth Standing Water in Hole					

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-7"	A	SANDY LOAM	10YR3/2								
7-27"	B	SANDY LOAM	10YR7/6								
27-42"	C1	SANDY LOAM	10YR7/3				15	5			
42-70"	C2	SANDY LOAM	10YR7/3			5%	10YR7/1	15	5		

Additional Notes:

— NO REFLUX

— NO WEEPING



Commonwealth of Massachusetts
City/Town of Southborough

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D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Depth to adjusted seasonal high groundwater (S_h)
(USGS methodology)

Obs. Hole # 1

NOT OBSERVED inches

NOT OBSERVED inches

42 inches
_____ inches

Obs. Hole # 2

NOT OBSERVED inches

NOT OBSERVED inches

39 inches
_____ inches

Index Well Number

Reading Date

$$S_h = S_c - [S_r \times (OW_c - OW_{max})/OW_r]$$

Obs. Hole/Well#

S_c _____

S_r _____

OW_c _____

OW_{max} _____

OW_r _____

S_h _____

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?

Yes No

b. If yes, at what depth was it observed (exclude A and O Horizons)?

c. If no, at what depth was impervious material observed?

Upper boundary:

Upper boundary:

7 1/2 inches

Lower boundary:

7 inches

Lower boundary:

70 1/2 inches

inches



Commonwealth of Massachusetts
City/Town of Southborough

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F. Certification

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.

Signature of Soil Evaluator

Typed or Printed Name of Soil Evaluator / License #

James T. Tetreault

SE 2421

Name of Approving Authority Witness

Dennis Costello

9-7-2022

Date

July 2025

Expiration Date of License

SOUTHBOROUGH, MA

Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with Percolation Test Form 12.

Field Diagrams: Use this area for field diagrams:

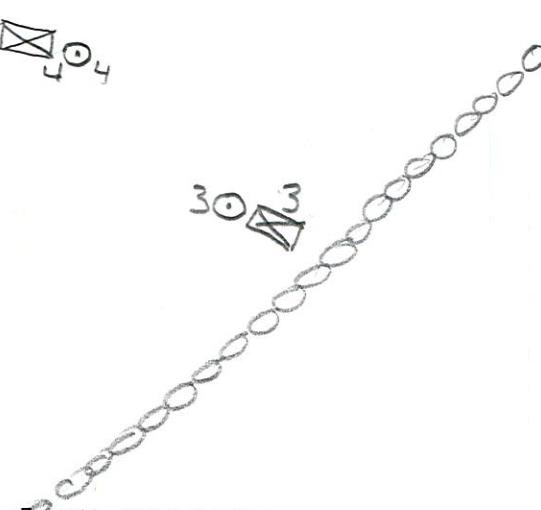
PARKING



02
X2

404

303





Commonwealth of Massachusetts
City/Town of Southborough

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

A. Facility Information

FD 120 Turnpike, LLC

Owner Name

120 Turnpike Road

Street Address

Southborough

City

MA

State

37/0120

Map/Lot #

01772

Zip Code

B. Site Information

1. (Check one) New Construction Upgrade Repair

DH3&4

2. Soil Survey Available? Yes No

If yes:

Web soil survey

Source

310B

9-7-2007

Soil Map Unit

Woodbridge

Soil Name

severe

Soil Limitations

Till

Soil Parent material

uncertain

Landform

3. Surficial Geological Report Available? Yes No

If yes:

Year Published/Source

Map Unit

Description of Geologic Map Unit:

4. Flood Rate Insurance Map Within a regulatory floodway? Yes No

5. Within a velocity zone? Yes No

6. Within a Mapped Wetland Area? Yes No

If yes, MassGIS Wetland Data Layer:

7. Current Water Resource Conditions (USGS):

9/7/22

Month/Day/ Year

Wetland Type

Normal

Below Normal

Range: Above Normal

8. Other references reviewed:



Commonwealth of Massachusetts
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Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: 3 Hole # 9-7-2022 Date 10 Time 60° away Weather Latitude Longitude: 2301.2 Slope (%)

1. Land Use WOODLAND (e.g., woodland, agricultural field, vacant lot, etc.) Vegetation MOSTLY PINE TREES Surface Stones (e.g., cobbles, stones, boulders, etc.) SOME STONES

Description of Location: NEAR STONE WALL PROPERTY BOUNDARY

2. Soil Parent Material: TUL Landform UNCERTAIN Position on Landscape (SU, SH, BS, FS, TS) UNCERTAIN

3. Distances from: Open Water Body — feet Drainage Way — feet Wetlands >200 feet
Property Line 20+ feet Drinking Water Well — feet Other — feet

4. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No If yes: _____ Depth Weeping from Pit _____ Depth Standing Water in Hole

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-7"	A	SANDY LOAM	10-12-3/2								
7-25"	B	SANDY LOAM	10-12-7/6								
25-44"	C1	SANDY LOAM	10-12-7/3				15	2			
44-78"	C2	SANDY LOAM	10-12-7/3				5-10 10-12-7/1	15	2		

Additional Notes:

- NO REFUSAL
- SOME LOAMY SAND POCKETS IN C1-C2



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Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number:

4

Hole #

9-7-22

Date

10:30

Time

62° cloudy

Weather

Latitude

Longitude:

≈ 10° 10'

Slope (%)

1. Land Use: WOODLAND
(e.g., woodland, agricultural field, vacant lot, etc.)

MOSILY PINES
Vegetation

SOME STONES
Surface Stones (e.g., cobbles, stones, boulders, etc.)

Description of Location: ABOUT 60' DRAINTAGE SWALE

2. Soil Parent Material: TILL

UNCERTAIN

UNCERTAIN

Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body ~ feet

Drainage Way feet

Wetlands 7200 feet

Property Line ≈ 100 feet

Drinking Water Well feet

Other feet

4. Unsuitable

Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No

If yes: Depth Weeping from Pit Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistency (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-7"	A	SAVY LOAM	10YR3/2								
7-26"	B	SAVY LOAM	10YR7/4								
26-46"	C1	SAVY LOAM	10YR7/3				15	5			
46-80"	C2	SAVY LOAM	10YR27/3			5%	15	5			

Additional Notes:

- NO REFUSAL

- SOME AREAS IN C1 & C2 WERE LOAMY SAND TEXTURE



Commonwealth of Massachusetts
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D. Determination of High Groundwater Elevation

1. Method Used:

Depth observed standing water in observation hole
 Depth weeping from side of observation hole
 Depth to soil redoximorphic features (mottles)
 Depth to adjusted seasonal high groundwater (S_h) (USGS methodology)

Obs. Hole # 3

NOT OBSERVED inches

Obs. Hole # 4

NOT OBSERVED inches

44 inches

46 inches

 inches

 inches

Index Well Number

Reading Date

$$S_h = S_c - [S_r \times (OW_c - OW_{max})/OW_r]$$

Obs. Hole/Well# _____ S_c _____ S_r _____ OW_c _____ OW_{max} _____ OW_r _____ S_h _____

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?

Yes No

b. If yes, at what depth was it observed (exclude A and O Horizons)?

Upper boundary:

7 1/2 inches

Lower boundary:

78' 80' inches

c. If no, at what depth was impervious material observed?

Upper boundary:

 inches

Lower boundary:

 inches



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F. Certification

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.

Signature of Soil Evaluator

Typed or Printed Name of Soil Evaluator / License #

James T. Treadau

Name of Approving Authority Witness

Dennis Costello

9-7-22

Date

July 2025

Expiration Date of License

Southborough Board

Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with [Percolation Test Form 12](#).

Field Diagrams: Use this area for field diagrams:



Commonwealth of Massachusetts
City/Town of Southborough

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A. Facility Information

FD 120 Turnpike, LLC

Owner Name

120 Turnpike Road

Street Address

Southborough

City

MA
State

37/0120

Map/Lot #

01772

Zip Code

B. Site Information

1. (Check one) New Construction Upgrade Repair

2. Soil Survey Available? Yes No If yes:

Web soil survey

Source

310B

Soil Map Unit

DA 5
9-7-2021

Woodbridge

Soil Name

severe

Soil Limitations

Till

Soil Parent material

uncertain

Landform

3. Surficial Geological Report Available? Yes No

If yes:

Year Published/Source

Map Unit

Description of Geologic Map Unit:

4. Flood Rate Insurance Map Within a regulatory floodway? Yes No

5. Within a velocity zone? Yes No

6. Within a Mapped Wetland Area? Yes No If yes, MassGIS Wetland Data Layer:

Wetland Type

7. Current Water Resource Conditions (USGS):

9/7/22

Month/Day/ Year

Range: Above Normal

Normal

Below Normal

8. Other references reviewed:



Commonwealth of Massachusetts
City/Town of Southborough

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: 5 Hole # 972022 Date 11/20 Time 6:00 AM Weather Some clouds Latitude _____
Longitude _____ Slope (%) _____

1. Land Use WOODLAND (e.g., woodland, agricultural field, vacant lot, etc.) Vegetation MOSTLY PINES Surface Stones (e.g., cobbles, stones, boulders, etc.) Some stones

Description of Location: EAST OF DR 44

2. Soil Parent Material: TILL Landform UNCERTAIN Position on Landscape (SU, SH, BS, FS, TS) _____

3. Distances from: Open Water Body _____ feet Drainage Way _____ feet Wetlands _____ feet
Property Line ~50 feet Drinking Water Well _____ feet Other _____ feet

4. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No If yes: _____ Depth Weeping from Pit _____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistency (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-7"	A	SAND LOAM	10/12/3/1								
7-25"	B	SAND LOAM	10/12/7/6								
25-42"	C1	SAND LOAM	10/12/7/3				15	2			
42-81"	C2	SAND LOAM	10/12/7/3				5/10 WEATHERED	15	2		
							5/10 WEATHERED				

Additional Notes:



Commonwealth of Massachusetts
City/Town of Southborough

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number:

Hole # _____ Date _____ Time _____ Weather _____ Latitude _____ Longitude _____

1. Land Use: _____ (e.g., woodland, agricultural field, vacant lot, etc.) Vegetation _____ Surface Stones (e.g., cobbles, stones, boulders, etc.) _____ Slope (%) _____
Description of Location: _____

2. Soil Parent Material: _____ Landform _____ Position on Landscape (SU, SH, BS, FS, TS) _____

3. Distances from: Open Water Body _____ feet Drainage Way _____ feet Wetlands _____ feet
Property Line _____ feet Drinking Water Well _____ feet Other _____ feet

4. Unsuitable
Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No If yes: _____ Depth Weeping from Pit _____ Depth Standing Water in Hole _____

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			

Additional Notes:



Commonwealth of Massachusetts
City/Town of Southborough

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D. Determination of High Groundwater Elevation

1. Method Used:

Depth observed standing water in observation hole
 Depth weeping from side of observation hole
 Depth to soil redoximorphic features (mottles)
 Depth to adjusted seasonal high groundwater (S_h) (USGS methodology)

Obs. Hole # 5

NOT OBSERVED inches

Obs. Hole # _____

_____ inches

NOT OBSERVED inches

_____ inches

42 1/2 inches

_____ inches

_____ inches

_____ inches

Index Well Number _____

Reading Date _____

$$S_h = S_c - [S_r \times (OW_c - OW_{max})/OW_r]$$

Obs. Hole/Well# _____ S_c _____ S_r _____ OW_c _____ OW_{max} _____ OW_r _____ S_h _____

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil system? _____ absorption

Yes No

b. If yes, at what depth was it observed (exclude A and O Horizons)? _____

Upper boundary:

7 inches

Lower boundary:

81 inches

c. If no, at what depth was impervious material observed?

Upper boundary:

_____ inches

Lower boundary:

_____ inches



Commonwealth of Massachusetts
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Signature of Soil Evaluator

Typed or Printed Name of Soil Evaluator / License #

James T. Pearson SE 2021

Name of Approving Authority Witness

Southborough Board

9-7-21

Date

July 2025

Expiration Date of License

Dover, MA

Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with [Percolation Test Form 12](#).

Field Diagrams: Use this area for field diagrams:



Commonwealth of Massachusetts
City/Town of Southborough

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A. Facility Information

FD 120 Turnpike, LLC

Owner Name

120 Turnpike Road

Street Address

Southborough

City

MA
State

37/0120

Map/Lot #

01772

Zip Code

B. Site Information

1. (Check one) New Construction Upgrade Repair

2. Soil Survey Available? Yes No If yes:

DH 687

10-19-2022

Web soil survey
Source

310B
Soil Map Unit

Woodbridge

Soil Name

severe

Soil Limitations

Till

Soil Parent material

uncertain

Landform

3. Surficial Geological Report Available? Yes No

If yes:

Year Published/Source

Map Unit

Description of Geologic Map Unit:

4. Flood Rate Insurance Map Within a regulatory floodway? Yes No

5. Within a velocity zone? Yes No

6. Within a Mapped Wetland Area? Yes No If yes, MassGIS Wetland Data Layer:

7. Current Water Resource Conditions (USGS):

10/19/22

Month/Day/ Year

8. Other references reviewed:

Wetland Type

Normal

Below Normal



Commonwealth of Massachusetts
City/Town of Southborough

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: 6
Hole #

Date 10-19-22 Time 9:15

Weather 46°

Latitude _____

Longitude: ≈ 10
Slope (%) _____

1. Land Use WOODLAND
(e.g., woodland, agricultural field, vacant lot, etc.)

Vegetation PINES

Surface Stones (e.g., cobbles, stones, boulders, etc.) SOME STONES

Description of Location: SOUTHEAST OF DH 2

2. Soil Parent Material: TIL

Landform UNDETERMINED

Position on Landscape (SU, SH, BS, FS, TS) UNDETERMINED

3. Distances from: Open Water Body — feet

Drainage Way — feet

Wetlands >200 feet

Property Line 255 feet

Drinking Water Well — feet

Other — feet

4. Unsuitable Materials Present: Yes No

If Yes: Disturbed Soil Fill Material

Weathered/Fractured Rock

Bedrock

5. Groundwater Observed: Yes No

If yes: _____ Depth Weeping from Pit

_____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistency (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-9	A _p	SANDY LOAM	10R3/2								
9-25	B	SANDY LOAM	10R27/10								
25-78	C	SANDY LOAM	10R27/3				5%	15	5		
							5%	10			

Additional Notes:

— NO REFUSAL

— SOME POCKETS OF WET SAND IN C



Commonwealth of Massachusetts
City/Town of Southborough

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number:

7
Hole #

10-19-22 10:00
Date

Time

46°
Weather

Latitude

Longitude

1. Land Use:

WOODLAND
(e.g., woodland, agricultural field, vacant lot, etc.)

PINE
Vegetation

60% STONES
Surface Stones (e.g., cobbles, stones, boulders, etc.)

≈ 10%
Slope (%)

Description of Location:

SWN OF DR 7

2. Soil Parent Material:

TU

UNCERTAIN

UNCERTAIN

Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body _____ feet

Drainage Way _____ feet

Wetlands 750 feet

Property Line ≈ 75' feet

Drinking Water Well _____ feet

Other _____ feet

4. Unsuitable

Materials Present: Yes No

If Yes: Disturbed Soil Fill Material

Weathered/Fractured Rock

Bedrock

5. Groundwater Observed: Yes No

If yes: _____ Depth Weeping from Pit

_____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-9	A	SAWY LOAM	10YR3/2								
9-29	B	SAWY LOAM	10YR7/6								
29-75	C	SAWY LOAM	10YR7/3			5%	15	10			
						2%	10	7/6			

Additional Notes:

- NO REFUSAL
- SOME LOAMY SAND IN C



Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Depth to adjusted seasonal high groundwater (S_h)
(USGS methodology)

Obs. Hole # 6

NOT OBSERVED inches

Obs. Hole # 7

NOT OBSERVED inches

25 inches

 inches

29 inches

 inches

Index Well Number

Reading Date

$$S_h = S_c - [S_r \times (OW_c - OW_{max})/OW_r]$$

Obs. Hole/Well#

S_c

S_r

OW_c

OW_{max}

OW_r

S_h

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?

Yes No

b. If yes, at what depth was it observed (exclude A and O Horizons)?

Upper boundary:

9" 9" Lower boundary:
inches inches

c. If no, at what depth was impervious material observed?

Upper boundary:

 Lower boundary:
inches inches



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F. Certification

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.


Signature of Soil Evaluator

 SE 2421
Typed or Printed Name of Soil Evaluator / License #

DENNIS COSTELLO
Name of Approving Authority Witness

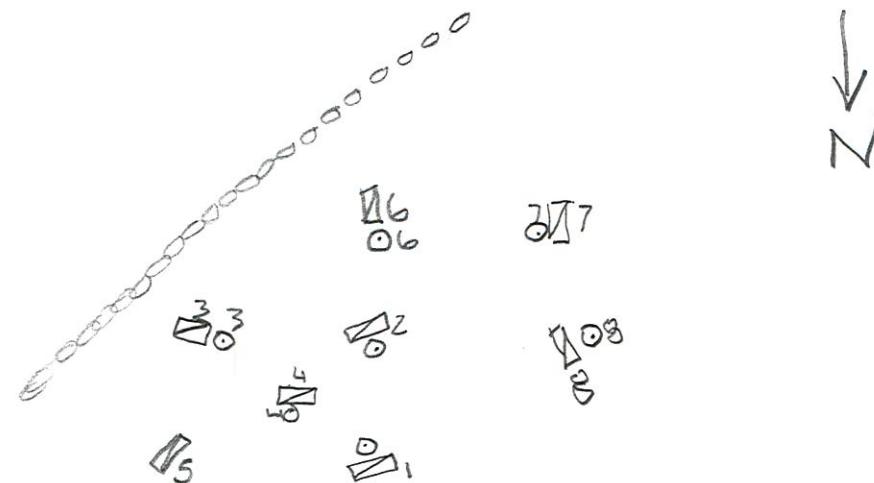
10-19-26
Date

July 228
Expiration Date of License

Southborough Board
Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with [Percolation Test Form 12](#).

Field Diagrams: Use this area for field diagrams:





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City/Town of Southborough

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A. Facility Information

FD 120 Turnpike, LLC

Owner Name

120 Turnpike Road

Street Address

Southborough

City

MA
State

37/0120

Map/Lot #

01772

Zip Code

B. Site Information

1. (Check one) New Construction Upgrade Repair

2. Soil Survey Available? Yes No If yes:

Woodbridge

Soil Name

Till

Soil Parent material

3. Surficial Geological Report Available? Yes No

Web soil survey
Source

889
310B
10-19-2022
Soil Map Unit

severe
Soil Limitations

uncertain
Landform

If yes:

Year Published/Source

Map Unit

Description of Geologic Map Unit:

4. Flood Rate Insurance Map Within a regulatory floodway? Yes No

5. Within a velocity zone? Yes No

6. Within a Mapped Wetland Area? Yes No If yes, MassGIS Wetland Data Layer:

7. Current Water Resource Conditions (USGS):

10/19/22
Month/Day/ Year

Wetland Type
 Above Normal
 Normal Below Normal

8. Other references reviewed:



Commonwealth of Massachusetts
City/Town of Southborough

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: 8

Hole #

Date 10-19-2022 Time 11

Weather 48°

Latitude

Longitude

210

Slope (%)

1. Land Use WOODLAND (e.g., woodland, agricultural field, vacant lot, etc.)

Vegetation PINES

Surface Stones (e.g., cobbles, stones, boulders, etc.) SOME STONES

Description of Location: WEST OF DAZ

2. Soil Parent Material: TILL

Landform UNKNOWN

Position on Landscape (SU, SH, BS, FS, TS) UNKNOWN

3. Distances from: Open Water Body _____ feet

Drainage Way _____ feet

Wetlands _____ feet

Property Line _____ feet

Drinking Water Well _____ feet

Other _____ feet

4. Unsuitable Materials Present: Yes No

If Yes: Disturbed Soil Fill Material

Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No

If yes: _____ Depth Weeping from Pit

_____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-8"	A	SANDY LOAM	10YR3/1								
8-24"	B	SANDY LOAM	10YR7/6								
24-76"	C	SANDY LOAM	10YR7/7				50 14%	15	S		

Additional Notes:

- NO REFUSAL

- SOME LOAMY SAND TEXTURED SOIL INC



Commonwealth of Massachusetts
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Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: 9 Hole # 10-19-22 Date 11:30 Time 48° Weather Latitude _____ Longitude: _____

1. Land Use: WOODLAND (e.g., woodland, agricultural field, vacant lot, etc.) Vegetation PINEs Surface Stones (e.g., cobbles, stones, boulders, etc.) SOME STONES Longitude: ~10 Slope (%)

Description of Location: ON WEST SIDES OF WL

2. Soil Parent Material: TIL Landform UNCERTAIN Position on Landscape (SU, SH, BS, FS, TS) UNCERTAIN

3. Distances from: Open Water Body _____ feet Drainage Way _____ feet Wetlands 90 feet

Property Line 70 feet Drinking Water Well _____ feet Other _____ feet

4. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No If yes: _____ Depth Weeping from Pit _____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-7	A	SAND LOAM	10YR3/6								
7-23	B	SAND LOAM	10YR7/6								
23-48	C1	WADEY SAND	10YR7/3				15	5			
48-81	C2	WADEY SAND	10YR7/3				5%	15	5		

Additional Notes:

- NO REFUSAL
- TOOK MULTIPLE SOIL SAMPLES CONFIRMING TEXTURES OF C1, C2 NOT A GREAT LS, JUST over THE LIMS FROM SL.



Commonwealth of Massachusetts
City/Town of Southborough

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Depth to adjusted seasonal high groundwater (S_h) (USGS methodology)

Obs. Hole #	8	Obs. Hole #	9
NOT OBSERVED	inches	NOT OBSERVED	inches
NOT OBSERVED	inches	NOT OBSERVED	inches
29	inches	48 ⁴	inches
	inches		inches

Index Well Number

Reading Date

$$S_h = S_c - [S_r \times (OW_c - OW_{max})/OW_r]$$

Obs. Hole/Well# _____ S_c _____ S_r _____ OW_c _____ OW_{max} _____ OW_r _____ S_h _____

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?

Yes No

b. If yes, at what depth was it observed (exclude A and O Horizons)?

c. If no, at what depth was impervious material observed?

Upper boundary: 8⁴ inches Lower boundary: 7⁴ inches
Upper boundary: _____ inches Lower boundary: _____ inches
Upper boundary: _____ inches Lower boundary: _____ inches



Commonwealth of Massachusetts
City/Town of Southborough

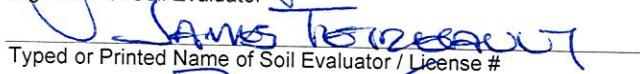
Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

F. Certification

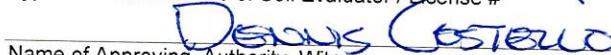
I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.



Signature of Soil Evaluator

 JAMES HORRIBAULT SE 2421

Typed or Printed Name of Soil Evaluator / License #

 Dennis Costello

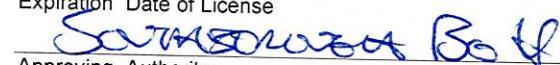
Name of Approving Authority Witness

10-19-2028

Date

July 2025

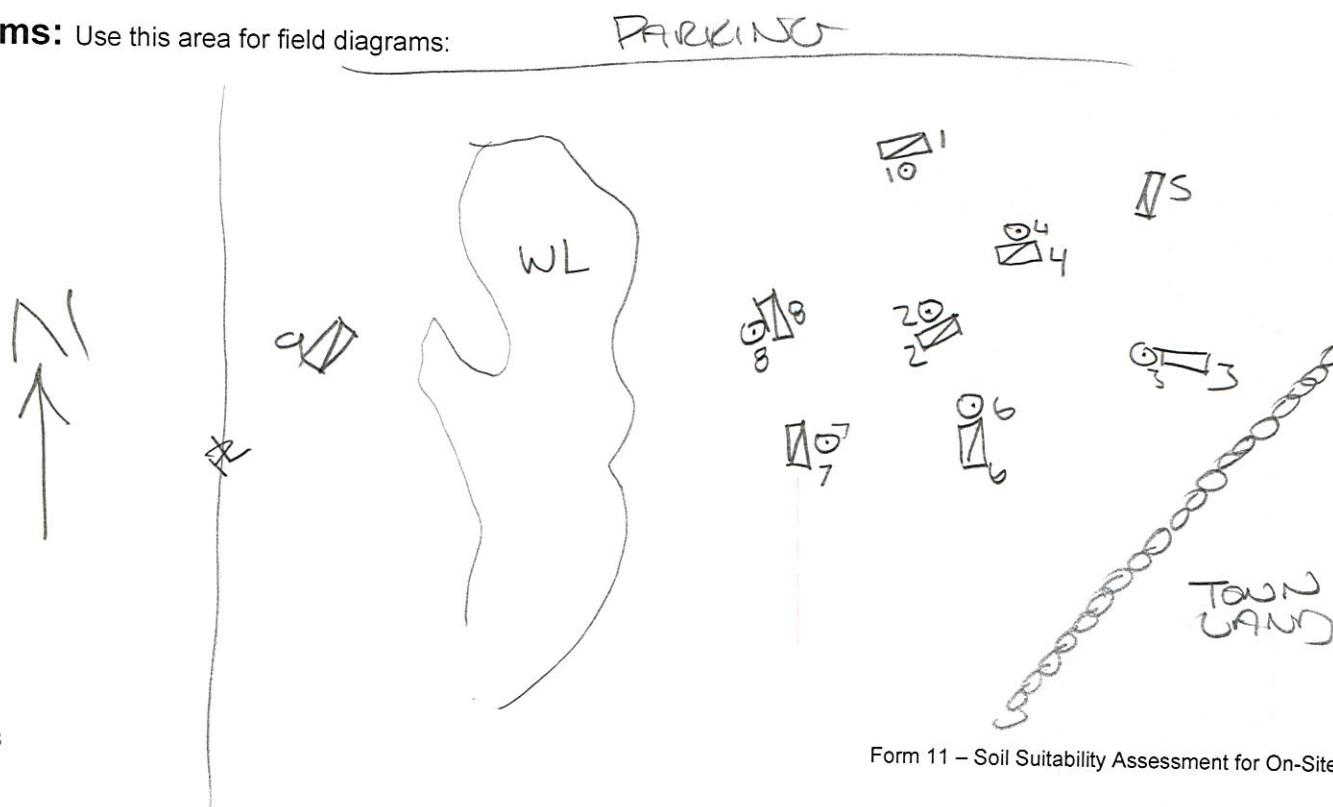
Expiration Date of License

 Southborough Board of Health

Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with [Percolation Test Form 12](#).

Field Diagrams: Use this area for field diagrams:





Commonwealth of Massachusetts
City/Town of Southborough

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

A. Facility Information

FD 120 Turnpike, LLC

Owner Name

120 Turnpike Road

Street Address

Southborough

City

MA

State

37/0120

Map/Lot #

01772

Zip Code

B. Site Information

1. (Check one) New Construction Upgrade Repair

DH 10

2. Soil Survey Available? Yes No If yes:

Web soil survey
Source

310B

Soil Map Unit 10-16-2023
810-24-2023

Woodbridge

Soil Name

severe

Soil Limitations

Till

Soil Parent material

uncertain

Landform

3. Surficial Geological Report Available? Yes No

If yes:

Year Published/Source

Map Unit

Description of Geologic Map Unit:

4. Flood Rate Insurance Map Within a regulatory floodway? Yes No

5. Within a velocity zone? Yes No

6. Within a Mapped Wetland Area? Yes No If yes, MassGIS Wetland Data Layer:

Wetland Type

7. Current Water Resource Conditions (USGS):

10/16/23

Month/Day/ Year

Range: Above Normal

Normal

Below Normal

8. Other references reviewed:



Commonwealth of Massachusetts
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UNOFFICIAL

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: 10
Hole #

Date 10-16-2023 Time 10:40

Weather 55° CLOUDY

Latitude _____

Longitude _____

1. Land Use WOODLAND
(e.g., woodland, agricultural field, vacant lot, etc.)

Vegetation

SOME COBBLES & SMALL STONES
Surface Stones (e.g., cobbles, stones, boulders, etc.)

≈ 10
Slope (%)

Description of Location: ON HILL EAST OF WL FLAG A-4

2. Soil Parent Material: TILL

Landform

UNCERTAIN

Position on Landscape (SU, SH, BS, FS, TS)

3. Distances from: Open Water Body — feet

Drainage Way — feet

Wetlands ≈ 60 feet

Property Line ≈ 105 feet

Drinking Water Well — feet

Other — feet

4. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock

5. Groundwater Observed: Yes No

If yes: _____ Depth Weeping from Pit

_____ Depth Standing Water in Hole

Soil Log

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-6"	A	SANDY LOAM	10/12-3/2								
6"-23"	B	SANDY LOAM	10/12-8/6				20	10			
23"-54"	C1	LOAMY SAND	10/12-7/3				20	10			
54"-70"	C2	LOAMY SAND	10/12-7/3			5%	10/12-7/6	20	10		

Additional Notes:

— NO REFUSE

— MULTIPLE SOIL TEXTURE TESTS DONE
IN C1 & C2, LIKE DH 9, JUST BARING
A LOAMY SAND



Commonwealth of Massachusetts
City/Town of Southborough

UNOFFICIAL

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

C. On-Site Review (minimum of two holes required at every proposed primary and reserve disposal area)

Deep Observation Hole Number: 11 Hole # 10-24-23 8:40 Date Time 50° SOUTHERN Weather Latitude _____ Longitude: _____
 1. Land Use: WOODLAND (e.g., woodland, agricultural field, vacant lot, etc.) EDGES OF PINES Vegetation SOME STONES Surface Stones (e.g., cobbles, stones, boulders, etc.)
 Description of Location: JUST ABOVE DRENAGED SWALE
 2. Soil Parent Material: TILL Landform UNIDENTIFIED Position on Landscape (SU, SH, BS, FS, TS) UNIDENTIFIED
 3. Distances from: Open Water Body _____ feet Drainage Way _____ feet Wetlands 110 feet
 Property Line _____ feet Drinking Water Well _____ feet Other _____ feet
 4. Unsuitable Materials Present: Yes No If Yes: Disturbed Soil Fill Material Weathered/Fractured Rock Bedrock
 5. Groundwater Observed: Yes No If yes: _____ Depth Weeping from Pit _____ Depth Standing Water in Hole

Depth (in)	Soil Horizon /Layer	Soil Texture (USDA)	Soil Matrix: Color-Moist (Munsell)	Redoximorphic Features			Coarse Fragments % by Volume		Soil Structure	Soil Consistence (Moist)	Other
				Depth	Color	Percent	Gravel	Cobbles & Stones			
0-12"	A	SANDY LOAM	10/23/2					5			
12-27"	B	SANDY LOAM	10/23/0					15			
27-60"	C1	LOAMY SAND	10/27/3				20	15			
60-80"	C2	LOAMY SAND	10/27/3				20	15			

Additional Notes:

- NO REJECTION
- SOIL TEXTURE JUST A LITTLE BETTER THAN SANDY LOAM BUT 4 SAMPLES TAKEN AND ALL TESTED AS LOAMY SAND



Commonwealth of Massachusetts
City/Town of Southborough

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

D. Determination of High Groundwater Elevation

1. Method Used:

- Depth observed standing water in observation hole
- Depth weeping from side of observation hole
- Depth to soil redoximorphic features (mottles)
- Depth to adjusted seasonal high groundwater (S_h) (USGS methodology)

Obs. Hole # 10

NOT OBSERVED inches

Obs. Hole # 11

NOT OBSERVED inches

54 inches

 inches

60 inches

 inches

Index Well Number

Reading Date

$$S_h = S_c - [S_r \times (OW_c - OW_{max})/OW_r]$$

Obs. Hole/Well#

S_c

S_r

OW_c

OW_{max}

OW_r

S_h

2. Estimated Depth to High Groundwater: _____ inches

E. Depth of Pervious Material

1. Depth of Naturally Occurring Pervious Material

a. Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system?

Yes No

b. If yes, at what depth was it observed (exclude A and O Horizons)?

Upper boundary:

6,12 inches Lower boundary:

c. If no, at what depth was impervious material observed?

Upper boundary:

70,80 inches Lower boundary:



Commonwealth of Massachusetts
City/Town of Southborough

Form 11 - Soil Suitability Assessment for On-Site Sewage Disposal

F. Certification

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluation, as indicated in the attached Soil Evaluation Form, are accurate and in accordance with 310 CMR 15.100 through 15.107.


Signature of Soil Evaluator

JAMES TESTAOUT
Typed or Printed Name of Soil Evaluator / License #

SE 2421

10-24-2023
Date

July 2025
Expiration Date of License

Name of Approving Authority Witness

Approving Authority

Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with [Percolation Test Form 12](#).

Field Diagrams: Use this area for field diagrams:

