PROPOSED ELEMENTARY SCHOOL
FFE: 205.00
PROPOSED BUILDING
OUTDOOR CLASSROOM
PLAYGROUND
ATHLETIC FIELDS
PARENT DROP-OF LOOP
DROP-OFF LOOP
BUS LOOP
GEOTHERMAL WELL FIELD
CONCORD STREET
LIMIT OF WORK
DRAINAGE SWALE
UNDERGROUND RECHARGE SYSTEM
BIORETENTION BASIN WITH SEDIMENT FOREBAY
CURB OPENING
GREASE TRAP
12" TRENCH DRAIN
LEVEL SPREADER
4" SANITARY SEWER SERVICE
10" CPP ROOF DRAIN
ELECTRICAL SERVICE REFER TO MEP PLANS FOR DETAILS
GAS SERVICE REFER TO MEP PLANS FOR DETAILS
CONNECT TO EXISTING DRAIN MAIN
CONNECT TO EXISTING WATER MAIN WITH TEE AND VALVES
CONSTRUCT DOGHOUSE MANHOLE OVER EXISTING SANITARY SEWER MAIN
APPROXIMATE 100' BUFFER TO BVW
APPROXIMATE 25' NO DISTURB ZONE
30' FRONT YARD SETBACK
10' SIDE YARD SETBACK
FEMA ZONE "X" (SHADED)
FEMA ZONE"AE" LINE
ZONE"AE" (183)
WOODED AREA
GRASS FIELD
TP-1
TP-2
TP-3
TP-4
TP-5
TP-6
TP-7
TP-8
TP-9
TP-10
TP-11
TP-12
TP-13
TP-14
TP-15
TP-16
TP-17
TP-18
SCALE: 1" = 30'
30 15 0 30 60

90 Concord Street, Ashland, MA#

FLANSBURGH

77 NORTH WASHINGTON STREET
BOSTON, MA 02114-1910
FLANSBURGH.COM

Consultants

No.	Date	Note
REVISIONS		
No.	Date	Note
ISSUE		

Stamp

Schematic Design

Key Plan

TEST PIT LOCATION PLAN

Drawn By	Project ID
Reviewed By	Scale
Issue Date 07.24.2020	Plot Date 07.24.2020
Sheet No. C4.0	

Date: 6/8/20
File name: 2BR Plans 05-27-2020.vwx

Commonwealth of Massachusetts
City/Town of

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

A. Facility Information

David Mindess Elementary School
Owner Name

90 Concord Street
Street Address

Map/Lot #

Ashland
City

MA
State

MA
Zip Code

B. Site Information

1. (Check one) ☒ New Construction ☐ Upgrade ☐ Repair

2. Soil Survey Available? ☒ Yes ☐ No If yes:

USDA-NRCS
Source

654
Soil Map Unit

Udorthents, loamy
Soil Name

Soil Limitations

Loamy alluvium and/or sandy glacioflucial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and.or loamy lodgement till
Soil Parent material

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):

Month/Day/ Year

Range: ☐ Above Normal ☐ Normal ☐ Below Normal

8. Other references reviewed:

Mindess Elementary School
Nitsch Project #13609
Performed by: Brian Biagini, SE#14419

Commonwealth of Massachusetts
City/Town of

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: TP-101 (Hole #) | 12/8/20 (Date) | 9:34 am (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Open Space (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | Stones & boulders, rockwalls, ledge outcrops (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 0-3 percent (Slope (%))

Description of Location: Front of school

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			
0-10	Ap	-	-	-	-	-	-	-	-	-	-
10-20	Fill	Sandy Loam	10YR 5/3	-	-	-	10	-	Massive	Friable	
20-53	C1	Sand	10YR 5/6	-	-	-	35	10	Single Grain	Loose	Very Gravelly

Additional Notes: No groundwater table observed
Ledge encountered at 53"

Commonwealth of Massachusetts
City/Town of

Mindess Elementary School
Nitsch Project #13609
Performed by: Brian Biagini, SE#14419

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: TP-102 (Hole #) | 12/9/20 (Date) | 1:00 pm (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Open Space (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | Stones & boulders, rockwalls, ledge outcrops (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 3-5 percent (Slope (%))

Description of Location: Front of school

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: 99" Depth Weeping from Pit | N/A 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			
0-14	Ap	-	-	-	-	-	-	-	-	-	-
14-30	Fill	Sandy Loam	10YR 5/4	-	-	-	-	-	Massive	Friable	
30-72	C1	Silt Loam	5Y 5/2	30-40"	2.5 YR 3/6	20%	10	10	Massive	Friable	
72-126	C2	Sandy Loam	10YR 4/6	-	-	-	40	10	Massive	Friable	Very Gravelly Very Moist, viscous

Additional Notes: Water weeping from pit @ 99"
Estimated seasonal high groundwater 30-40"

Mindess Elementary School
Nitsch Project #13609
Performed by: Brian Biagini, SE#14419

Commonwealth of Massachusetts
City/Town of

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: TP-103 (Hole #) | 12/8/20 (Date) | 9:01 am (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Open Space/Athletic Field (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | None present (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 0-3 percent (Slope (%))

Description of Location: East of school in the athletic field

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: 55" 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			
0-10	Ap	-	-	-	-	-	5-10	-	-	-	-
10-28	Fill	Sandy Loam	2.5Y 5/3	-	-	-	20	-	Massive	Friable	
28-55	C1	Silt Loam	10.5Y 5/3	-	-	-	20	-	Massive	Friable	Small gravel Moist

Additional Notes: Ledge encountered at 55" - some water seeping into pit

Commonwealth of Massachusetts
City/Town of

Mindess Elementary School
Nitsch Project #13609
Performed by: Brian Biagini, SE#14419

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: TP-104 (Hole #) | 12/9/20 (Date) | 1:30 pm (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Open Space/Athletic Field (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | None present (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 0-3 percent (Slope (%))

Description of Location: East of school in the athletic field

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: 65" 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	Ap	-	-	-	-	-	-	-	-	-	-
6-54	C1	Silt Loam	5Y 5/2	-	-	-	15	5	Massive	Friable	
54-120	C2	Loamy sand	10YR 5/6	-	-	-	25	-	Massive	Friable	Very moist towards bottom of pit

Additional Notes: Observed groundwater depth of 65"
The east side of the pit had a 2" layer of organic material at a depth from 54-56" that did not appear to be present on the west side of the pit

Commonwealth of Massachusetts
City/Town of

Mindess Elementary School
Nitsch Project #13609
Performed by: Brian Biagini, SE#14419

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: TP-106 (Hole #) | 12/9/20 (Date) | 10:40 am (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Open Space (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | Stones & boulders, ledge outcrops (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 10-15 percent (Slope (%))

Description of Location: Front of school behind firehydrant

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: 96" 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	Ap	-	-	-	-	-	-	-	-	-	-
6-96	Fill	Sandy Loam	10YR 5/3	-	-	-	15	10	Massive	Friable	
96-104	Ab	Silt Loam	5Y 2.5/1	-	-	-	5	-	-	-	
104-134	C1	Silt Loam	5Y 5/1	-	-	-	5	-	Massive	Friable	Hard in place, friable out of place

Additional Notes: During excavation an unmarked sewer pipe was hit at 65". DPW came on-site and helped fix the issue. Moved pit back away from school 5-10 feet.
Ground water table observed at 96"
Some redox features present at approx 5' but not consistent.
There appeared to be a thin layer of gravel within the fill material at approx 4'

Commonwealth of Massachusetts
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Nitsch Project #13609
Performed by: Brian Biagini, SE#14419

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: TP-107 (Hole #) | 12/1/20 (Date) | (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Overgrown Woodland (e.g., woodland, agricultural field, vacant lot, etc.) | Brush (Vegetation) | Stones & boulders, rockwalls (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 0-3 percent (Slope (%))

Description of Location: Benhind firstbase dugout, next to batting cage

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			
0-12	Ap										
12-36	Fill	Sandy Loam	10YR 4/4				20	10	Massive	Friable	
36-42	Ab	Sandy Loam					10		Massive	Friable	Water seeping @ 36"
42-72	C1	Silt Loam	2.5Y 5/2				15	20	Massive	Friable	
72-126	C2	Silt Loam	2.5Y 5/3	72-84	7.5 YR 5/4	30	20	15	Massive	Friable	Formed ribbon

Additional Notes:
No Groundwater Table observed
Estimated Seasonal High Groundwater 72"
Boulders present while excavating
Top layer of soil was very moist, pit initially filled with water after excavating 3-4 feet depth. Continued digging and observed water seeping in from upper layers (approx 36")
High water content in all soils

Mindess Elementary School
Nitsch Project #13609
Performed by: Brian Biagini, SE#14419

Commonwealth of Massachusetts
City/Town of

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: TP-108 (Hole #) | 12/1/20 (Date) | Time | Weather | Latitude | Longitude:

1. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) | Vegetation | Boulders (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 5-10% (Slope (%))

Description of Location: Wooded area behind school

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: 12-48" Depth Weeping from Pit | 132" 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			
0-16	Ap										
16-24	B	Sandy Loam	10YR 5/4						Massive	Friable	Very Moist
24-48	C1	Sandy Loam	10YR 5/6	60"	7.5 YR 5/4	30	25	20	Massive	Friable	Very Moist
48-138	C2	Sandy Loam	2.5Y 5/4				25	20	Massive	Friable	Moist soil, but much drier than C1 and B layers

Additional Notes:
Groundwater observed at bottom of pit (approx 132")
Estimated Seasonal High Groundwater at 60"
0-48" very moist with ponding water (similar to TP#107). Indicative of recent rainfall infiltrating.
Multiple 24" boulders encountered while excavating, surface stones present throughout wooded area.

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Mindess Elementary School
Nitsch Project #13609
Performed by: Jared Gentilucci, SE#13143

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: TP-109 (Hole #) | 12/10/20 (Date) | 9:30 am (Time) | Cloudy, 38 degrees F (Weather) | (Latitude) | (Longitude:)

1. Land Use: Open Space (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | None present (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 0-3 percent (Slope (%))

Description of Location: West wing of school

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: 78" Depth Weeping from Pit | 112" 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	Ap	Sandy Loam	-	-	-	-	-	-	-	-	-
7-120	C1	Sandy Loam	10YR 5/4	70"	7.5YR 5/6	15	25-30	15-20	Massive	Friable	Possible fill material

Additional Notes: Dig down 2'+/-, hit gravel/stone, possible utility pipe below, moved test pit 10' west
Fair amount of cobbles and stone, some 24"+ in diameter

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Mindess Elementary School
Nitsch Project #13609
Performed by: Jared Gentilucci, SE#13143

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: TP-110 (Hole #) | 12/10/20 (Date) | 8:00 am (Time) | Sunny, 35 degrees F (Weather) | _____ (Latitude) | _____ (Longitude:)

1. Land Use: Open Space (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | None present (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 0-3 percent (Slope (%))

Description of Location: Third base line of softball field in front of school

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: 60" Depth Weeping from Pit | 140" 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			
0-10	Ap	Sandy Loam	-	-	-	-	0-5	-	Massive	Friable	
10-27	Fill	Sandy Loam	10YR 5/4	-	-	-	0-5	-	Massive	Friable	
27-33	C1	Loamy Sand	10YR 6/4	-	-	-	5	-	Single Grain	Loose	
33-60	C2	Sandy Loam	10YR 6/4	-	-	-	0-5	-	Massive	Friable	
60-116	C3	Silt Loam	Gley 1 7/N	-	-	-	-	-	Platy	Firm	Very plastic material
116-144	C4	Sandy Loam	10YR 6/4	-	-	-	25	10	Massive	Friable	

Additional Notes:
Upper soil layers are moist from recent snow melt
Some weeping at 30"-34", not consistent around pit, assume due to recent snow melt and texture change
Consistent weeping at top of C3 layer (60")
No redox features visible

Commonwealth of Massachusetts
City/Town of

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Nitsch Project #13609
Performed by: Brian Biagini, SE#14419

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: TP-111 (Hole #) | 12/9/20 (Date) | 7:50 am (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Open Space (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | ledge outcrops (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 0-3 percent (Slope (%))

Description of Location: Third base line of softball field in front of school

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: 88" 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			
0-10	Ap	-	-	-	-	-	-	-	-	-	-
10-28	Fill	Loamy Sand	10YR 3/4	-	-	-	15	10	Single	Loose	
28-34	Ab	-	10YR 2/1	-	-	-	5	-	Massive	Very Firm	Hard in place -old bitumin?
34-60	C1	Loamy Sand	7.5YR 4/6	-	-	-	40	0-5	Single	Firm	Very gravelly, hard in place
60-88	C2	Silt Loam	10YR 3/3				0	0	Massive	Firm	relatively plastic material
88-144	C3	Silt Loam	Gley 1 4/10Y				0	0	Massive	N/A (plastic)	very plastic material

Additional Notes: First few buckets at original TP location appeared to consist of mostly imported gravel. Moved TP location approx 5-10 feet to the east to avoid possible conflict
Groundwater observed at approximately 88"
No pooled groundwater present at bottom of pit, likely trapped in silt layer.

Commonwealth of Massachusetts
City/Town of

Mindess Elementary School
Nitsch Project #13609
Performed by: Brian Biagini, SE#14419

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: TP-112 (Hole #) | 12/9/20 (Date) | 11:25 am (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) | woods (Vegetation) | - (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 0-3 percent (Slope (%))

Description of Location: East side of access road exiting school near wetlands

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

3. Distances from: Open Water Body _____ feet | Drainage Way _____ feet | Wetlands 10 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: 90" 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			
0-28	Ap	-	-	-	-	-	-	-	-	-	-
28-42	B	Silt Loam	10YR 4/3	-	-	-	0-5	0	Massive	Friable	
42-108	C1	Loamy Sand	10YR 4/3	-	-	-	25	15	Massive	Friable	Gravelly
108-138	C2	Silt Loam	Gley 1 4/10Y	-	-	-	0	0	Massive	-	Plastic

Additional Notes: Water seeping at 10" from nearby wetlands
recent rain/snow storm increased surface water elevation of wetlands and froze over

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Performed by: Brian Biagini, SE#14419

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: TP-113 (Hole #) | 12/9/20 (Date) | 10:20 am (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Woodland (e.g., woodland, agricultural field, vacant lot, etc.) | woods (Vegetation) | - None present (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 0-3 percent (Slope (%))

Description of Location: West side of access road exiting school

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: 90" 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			
0-13	Ap	-	-	-	-	-	-	-	-	-	-
13-40	B	Silt Loam	-	-			0	5	Massive	Friable	
40-68	C1	Loamy Sand	10YR 4/2	46-50"	10 YR 3/6	30	20	15	Massive	Friable	
68-132	C2	Silt Loam	Gley 1 4/10Y	-	-	-	0	0	Massive	Friable	

Additional Notes:

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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: TP-114 (Hole #) | 12/9/20 (Date) | 2:00 pm (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Open Space (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | None Present (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 0-3 percent (Slope (%))

Description of Location: West wing of school

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: 84" 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			
0-10	Ap	-	-	-	-	-	-	-	-	-	-
10-126	C1	Silt Loam	2.5Y 5/3	-	-	-	5	-	Massive	Firm/Friable	Hard in place Possible fill material refusal at 126"

Additional Notes: Observed water table 84"
Bright colors throughout pit, inconsistent - Color 7.5 YR 5/8

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Performed by: Jared Gentilucci, SE#13143

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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: TP-115 (Hole #) | 12/10/20 (Date) | 1:30 pm (Time) | Cloudy, 44 degrees F (Weather) | _____ (Latitude) | _____ (Longitude:)

1. Land Use: Open Space (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | None present (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 5 (Slope (%))

Description of Location: Front of school behind fire hydrant

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: XX" Depth Weeping from Pit _____ Depth Standing Water in Hole

X

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			
0-12	Ap	Sandy Loam	-	-	-	-	-	-	-	-	-
12-60	Fill	Sandy Loam	10YR 6/4	-	-	-	10-15	0-5	Massive	Friable	

Additional Notes: Test pit terminated at 60", ran out of time to continue digging after infiltrometer test was complete

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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: TP-116 (Hole #) | 12/9/20 (Date) | 1:10 pm (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Open Space (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | ledge outcrops (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 0-3 percent (Slope (%))

Description of Location: Behind first base dugout of softball field in front of school

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: 96" 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			
0-10	Ap	-	-	-	-	-	-	-	-	-	-
10-32	B	Silt Loam	10YR 5/1	-	-	-	5	0	Massive	Friable	
32-48	C1	Silt Loam	5Y 5/2	32-40"	10 YR 5/6	10	0-5	0	Massive	Friable	Root zone ends approx 32"
48-84	C2	Sandy Loam	7.5 YR 5/1	-	-	-	30	0	Massive	Friable	
84-126	C3	Loamy Sand	10YR 3/4	-	-	-	60	15	Single	Weak	Extremely Gravelly

Additional Notes: Observed water table 7'
Boulder at approx. 7' that extended to bottom of pit.

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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: TP-117 (Hole #) | 12/9/20 (Date) | 9:30 am (Time) | (Weather) | (Latitude) | (Longitude:)

1. Land Use: Open Space (e.g., woodland, agricultural field, vacant lot, etc.) | Grass (Vegetation) | ledge outcrops (Surface Stones (e.g., cobbles, stones, boulders, etc.)) | 3-5 percent (Slope (%))

Description of Location: Behind backstop of softball field in front of school

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: 84" 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	Ap	-	-	-	-	-	-	-	-	-	-
8-28	B	Silt Loam	2.5Y 5/3	-	-	-	5	-	Massive	Friable	
28-132	C1	Loamy Sand	10YR 4/3	24-34	10 YR 5/6	20	35	15	Single	Weak	Very gravelly Gravel content increases with depth

Additional Notes: Observed water table 7'