



November 4, 2022

Kleinfelder Project No.: 20221383.001A

Mr. Daniel J. Hartman, PE
All States Materials Group
Sent via Email

SUBJECT: Test Pit Results – River Road
Deerfield, MA

Dear Mr. Hartman:

Kleinfelder conducted soil suitability assessments (test pits) at the All-States Materials Group facility near Deerfield, MA on November 1, 2022 to confirm the soils present for two (2) proposed stormwater basins related to an on-going design project for the facility. Mr. Greg Avenia, PE conducted oversight, for Kleinfelder, of the activities performed on Site and has prepared the attached forms and certification of the soils encountered for each of the test pits completed.

Kleinfelder completed one (1) test pit for each basin location given the smaller affected area being proposed for each, three test pits in total. The attached **Exhibit B** shows the location for each test pit completed.

For the purposes of this project, Kleinfelder has utilized the Massachusetts Department of Environmental Protection's (MassDEP) "Form 11 – Soil Suitability Assessment for On-Site Sewage Disposal" for purposes of documenting stormwater soil evaluation logs. Although MassDEP does have standardized soil evaluation forms for On-Site Sewage Disposal (Title V), there are no State-issued soil evaluation forms for stormwater purposes. For this reason, as is industry standard, Form 11 was used for documenting soil morphology. Specific Title V regulatory documentation has been excluded, including Section E – Depth Pervious Material (deleted from the form) and Approving Authority / Witness in Section F.

Sincerely,

KLEINFELDER

A handwritten signature in blue ink that reads "Samantha Pretzel". The signature is fluid and cursive.

Samantha Pretzel
Senior Program Manager

cc: Stephanie Hubbard
Joe Wojnas, PE (Engineer of Record)
File

EXHIBIT A

Soil Assessment Forms



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

A. Facility Information

All States Materials

Owner Name

901 River Road

Street Address

Deerfield

City

MA

State

Map/Lot #

01342

Zip Code

B. Site Information

1. (Check one) New Construction Upgrade

2. Soil Survey NRCS Web Soil Survey 397B Weathersfield fine sandy loam, 3-8% slopes
Source Soil Map Unit Soil Series

Landform

Hydrologic soil group C
Soil Limitations

Glacial Till

Soil Parent material

3. Surficial Geological Report _____
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): _____ Range: Above Normal Normal Below Normal
Month/Day/ Year

8. Other references reviewed: _____
(Zone II, IWPA, Zone A, EEA Data Portal, etc.)



Commonwealth of Massachusetts
City/Town of Deerfield

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: 1 Hole # 11/1/22 Date 10:30am Time Rain Weather _____ Latitude _____ Longitude

1. Land Use Cleared area adjacent to road shoulder Grass N/A Moderate
 (e.g., woodland, agricultural field, vacant lot, etc.) Vegetation Surface Stones (e.g., cobbles, stones, boulders, etc.) Slope (%)

Description of Location: Northeast corner of access road intersection

2. Soil Parent Material: Till Toe of slope to woods
 Landform Position on Landscape (SU, SH, BS, FS, TS, Plain)

3. Distances from: Open Water Body 80 feet Drainage Way _____ feet Wetlands 125 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 to Weeping in Hole _____ Depth to 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			
0-4	A	LS	10YR3/2		Cnc : _____ Dpl: _____				Granular	Friable	
4-10	B	Sandy Loam	10YR6/1		Cnc : _____ Dpl: _____		40		Massive	Firm in Place	
10-18	C1	Sandy Loam	5YR4/4		Cnc : _____ Dpl: _____		40		Massive	Firm in Place	
18-36	C2	Sandy Loam	10YR4/4		Cnc : _____ Dpl: _____		30		Massive	Firm in Place	
36-48	C3	Medium Sand	10YR5/3		Cnc : _____ Dpl: _____				Massive	Firm in Place	
48-84	C4	Very Fine Sand	10YR5/1	*	Cnc : _____ Dpl: _____				Massive	Very Firm in Place	
84-156	C5	Fine Sand	10YR5/3	*	Cnc : _____ Dpl: _____				Massive	Firm in Place	

Additional Notes:

Slight signs of redox apparent in C4 & C5, however very deep pumped quarry is proximate to test hole. SHGW is expected to be significant deeper.



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: 2 11/2/22 11:30 Light Rain _____
Hole # Date Time Weather Latitude Longitude

1. Land Use: Roadway shoulder Grass N/A _____
(e.g., woodland, agricultural field, vacant lot, etc.) Vegetation Surface Stones (e.g., cobbles, stones, boulders, etc.) Slope (%)

Description of Location: Northwest corner of intersection

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

3. Distances from: Open Water Body _____ feet Drainage Way _____ feet Wetlands 100 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 to Weeping in Hole _____ 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			
0-72	HTM				Cnc : Dpl:						4" loam atop crushed choker stone
72-84	C1	Silt Loam	10YR5/2		Cnc : Dpl:				Platy	Compacted	Appears manually compacted
84-120	C2	Silt Loam	2.5Y6/1		Cnc : Dpl:				Massive	Friable	
120-180	C3	Clay	2.5Y5/2	All	Cnc :5YR5/8 Dpl:				Massive	Friable	
					Cnc : Dpl:						
					Cnc : Dpl:						

Additional Notes:
SHGW likely perched on silt loam layer



Commonwealth of Massachusetts
City/Town of Deerfield

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 11/2/22 12:30 Light Rain _____
Hole # Date Time Weather Latitude Longitude

1. Land Use: Roadway shoulder Grass N/A _____
(e.g., woodland, agricultural field, vacant lot, etc.) Vegetation Surface Stones (e.g., cobbles, stones, boulders, etc.) Slope (%)

Description of Location: Northeast corner of intersection

2. Soil Parent Material: Till _____ Roadway shoulder / swale
Landform Position on Landscape (SU, SH, BS, FS, TS, Plain)

3. Distances from: Open Water Body _____ feet Drainage Way 0 feet Wetlands 125 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 to Weeping in Hole _____ 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			
0-2	A				Cnc : Dpl:						
2-18	C1	Sandy Loam	10YR5/3		Cnc : Dpl:		10		Platy	Very firm	Appears manually compacted
18-72	C2	Sandy Loam	10YR4/3		Cnc : Dpl:		30		Massive	Very firm in place	
72-96	R				Cnc : Dpl:			80			Broken Rock
					Cnc : Dpl:						
					Cnc : Dpl:						

Additional Notes:
SHGW likely perches at 72". Natural soil profile appears to be cut for roadway installation.



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

D. Determination of High Groundwater Elevation

- | | | | |
|--|----------------------|----------------------|----------------------|
| 1. Method Used (Choose one): | Obs. Hole # <u>1</u> | Obs. Hole # <u>2</u> | Obs. Hole # <u>3</u> |
| <input checked="" type="checkbox"/> Depth to soil redoximorphic features | _____ inches | _____ inches | _____ inches |
| <input checked="" type="checkbox"/> Depth to observed standing water in observation hole | <u>156</u> inches | <u>72</u> inches | <u>72</u> inches |
| <input type="checkbox"/> Depth to adjusted seasonal high groundwater (S_h)
(USGS methodology) | _____ 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 _____



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

Gregory Avenia / SE #12913

Typed or Printed Name of Soil Evaluator / License #

11/2/2022

Date

6/30/2023

Expiration Date of License

Name of Approving Authority Witness

Approving Authority

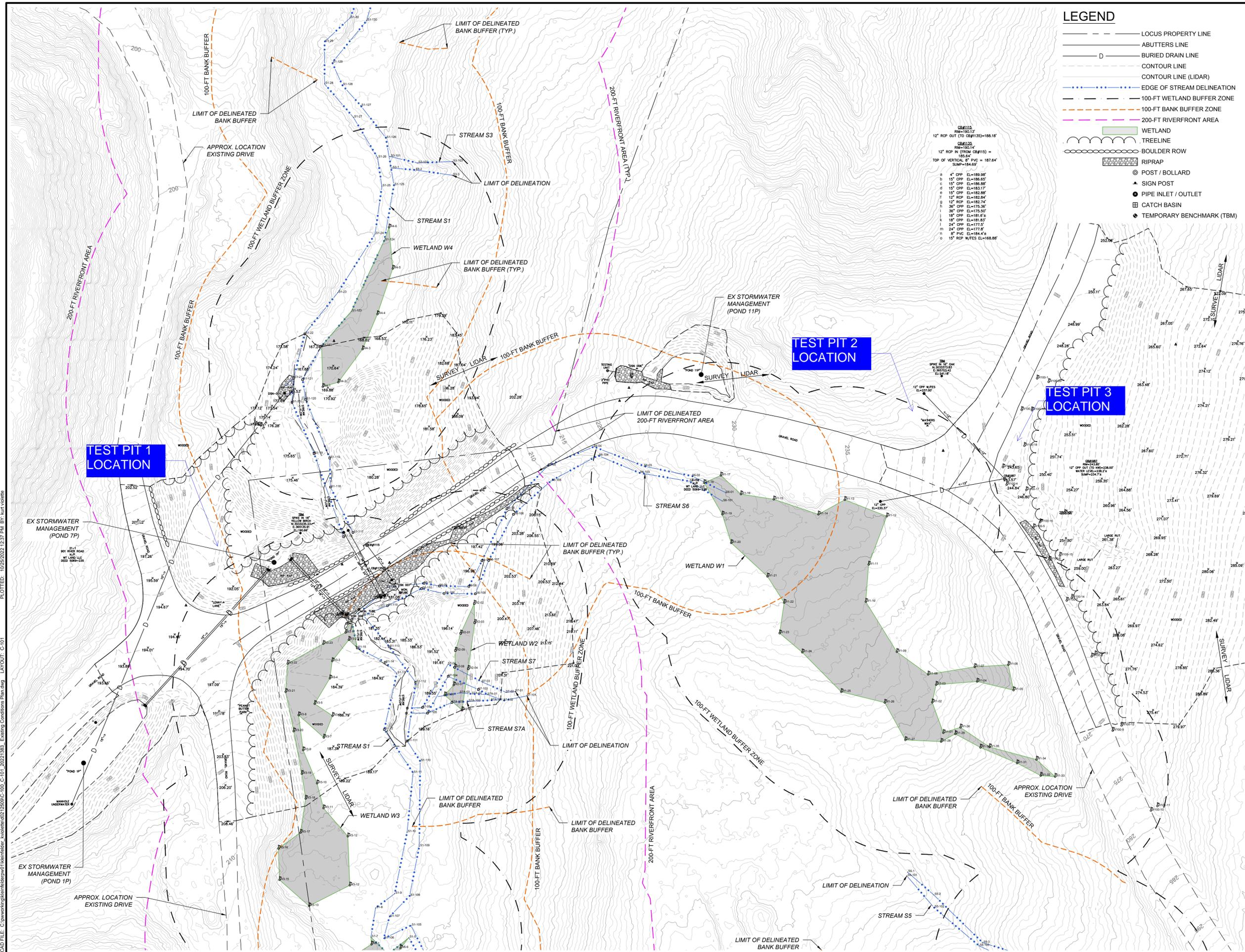
Note: In accordance with 310 CMR 15.018(2) this form must be submitted to the approving authority within 60 days of the date of field testing, and to the designer and the property owner with [Percolation Test Form 12](#).

Field Diagrams: Use this area for field diagrams:

EXHIBIT B

Location Map

CAD FILE: C:\pwworking\kleinfelder\2022\2529\C-100_C-101_20221383_Existing Conditions Plan.dwg LAYOUT: C-101
 PLOTTED: 10/25/2022 12:37 PM BY: kurt.vande...
 C:\pwworking\kleinfelder\2022\2529\C-100_C-101_20221383_Existing Conditions Plan.dwg LAYOUT: C-101



C&G#115
 P&M#151.17
 12" RCP OUT (TO C&G#115)=188.18'
 C&G#115
 P&M#151.17
 12" RCP IN (FROM C&G#115) =
 185.64'
 TOP OF VERTICAL 8" PVC = 187.64'
 SUMP=184.69'
 a 4" CPP EL=189.98'
 b 15" CPP EL=186.85'
 c 15" CPP EL=186.85'
 d 15" CPP EL=183.17'
 e 15" CPP EL=182.86'
 f 12" RCP EL=182.84'
 g 12" RCP EL=182.74'
 h 36" CPP EL=175.36'
 i 36" CPP EL=175.36'
 j 15" CPP EL=181.50'
 k 18" CPP EL=181.57'
 l 24" CPP EL=177.7'
 m 8" PVC EL=184.4-2'
 o 15" RCP W/YES EL=188.88'

LEGEND

- LOCUS PROPERTY LINE
- ABUTTERS LINE
- BURIED DRAIN LINE
- CONTOUR LINE
- CONTOUR LINE (LIDAR)
- EDGE OF STREAM DELINEATION
- 100-FT WETLAND BUFFER ZONE
- 100-FT BANK BUFFER ZONE
- 200-FT RIVERFRONT AREA
- WETLAND
- TREELINE
- BOULDER ROW
- RIPRAP
- POST / BOLLARD
- SIGN POST
- PIPE INLET / OUTLET
- CATCH BASIN
- TEMPORARY BENCHMARK (TBM)

1500 Main Street, Suite 1506
 PO Box 16511
 Springfield, MA 01115-5511
 Phone: 413-739-1307

REVISIONS

REV	DESCRIPTION	DSN	CHK	DATE
A	ISSUED FOR PERMITTING	KRV	AGB	4/29/2022
B	ISSUED FOR PERMITTING	KRV	SH	10/25/2022

ISSUED FOR PERMITTING

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

SCALE: 1" = 40' SCALE IN FEET
 ORIGINAL DRAWING SIZE IS 22 x 34

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

ISSUE FOR PERMIT (IFP) PLANS

ASM Haul Road Design
 901 RIVER ROAD
 FRANKLIN COUNTY, MASSACHUSETTS

All States Materials Group

ALL STATES MATERIALS GROUP
 901 RIVER ROAD
 DEERFIELD, MA 01342

EXISTING CONDITIONS PLAN

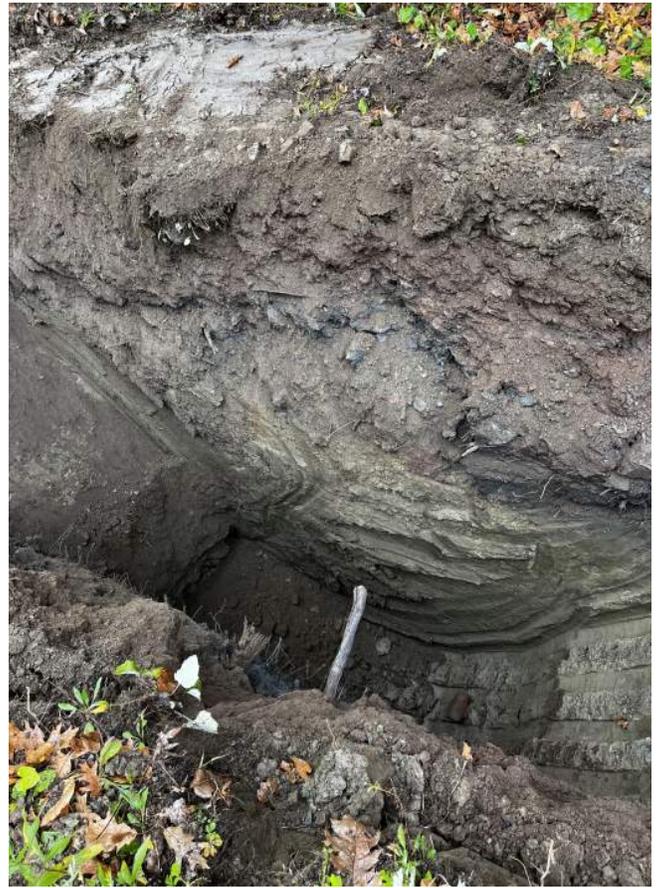
PROJECT NO.	20221383.001A	C-101
ISSUE DATE	10/25/2022	
CURRENT REVISION	B	
DESIGNED BY	KRV	
DRAWN BY	KRV	
CHECKED BY	SH	
APPROVED BY	JW	

EXHIBIT C

Photos - Test Pits



Test Pit #1



Test Pit #2



Test Pit #3