NEW ELEMENTARY SCHOOL

SWAMPSCOTT, MA

APPENDIX A – SOIL BORING AND TEST PIT LOGS
EARTH REMOVAL PERMIT APPLICATION
07 APRIL 2022

LAVALLEE | BRENSINGER ARCHITECTS
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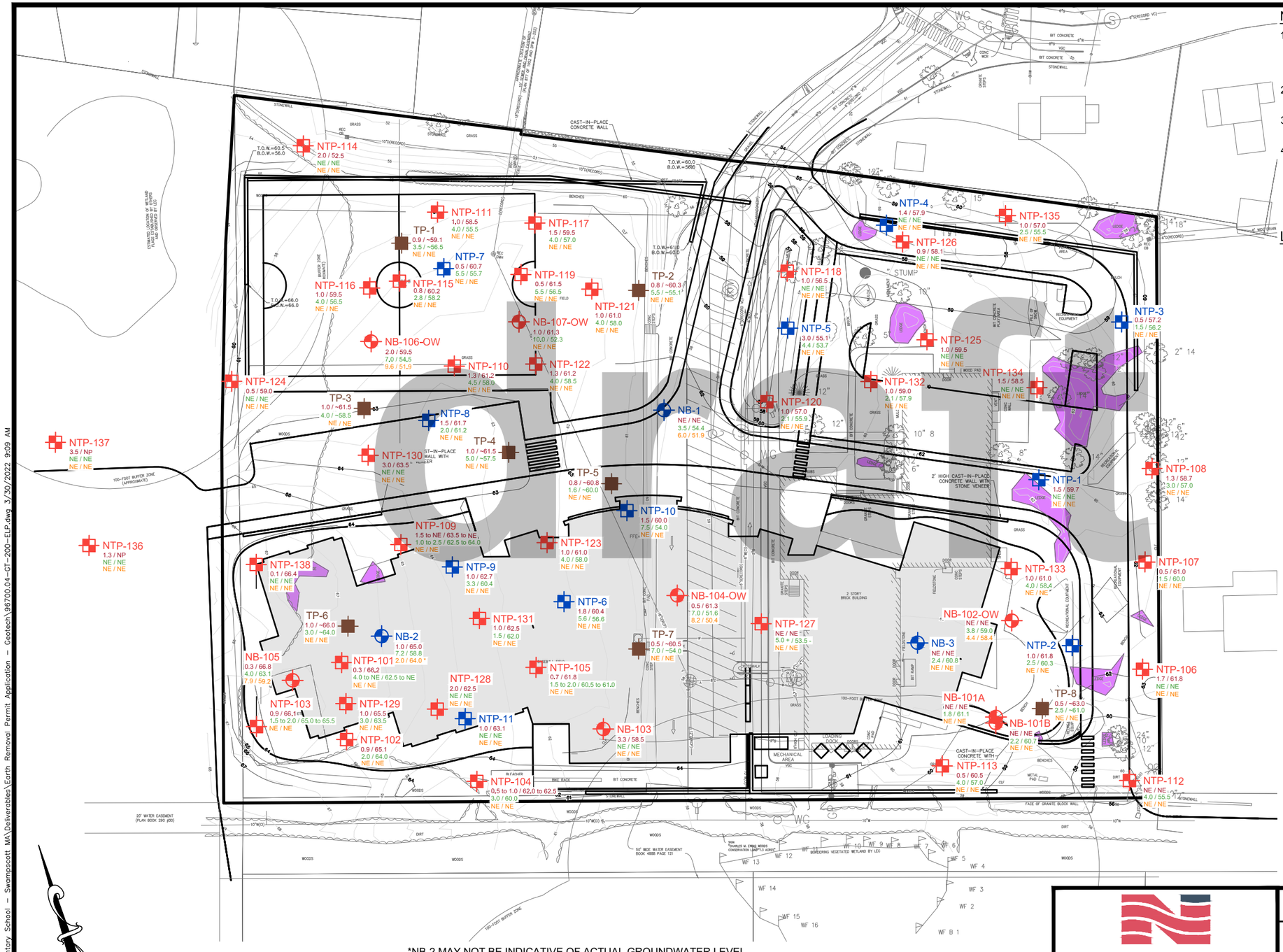
APPENDICES

A. Soil Boring and Test Pit Logs

Follows are the soil boring and test pit logs from explorations performed at the School and Unitarian Universalist Church sites. Exploration locations are shown on the Subsurface Exploration Plan drawing.



*NB-2 MAY NOT BE INDICATIVE OF ACTUAL GROUNDWATER LEVEL

0 70' 140'

GRAPHIC SCALE

NOTES

1. THIS PLAN WAS WAS DEVELOPED USING 2008/2009 ORTHOIMAGERY OBTAINED FROM THE MASSGIS WEBSITE AND AN AUTOCAD SURVEY DRAWING PREPARED BY NITSCH ENGINEERING AND PROVIDED BY LAVALLEE BRENSINGER ARCHITECTS ON NOVEMBER 22, 2021.
2. LOCATIONS AND SITE FEATURES DEPICTED ARE APPROXIMATE AND GIVEN FOR ILLUSTRATIVE PURPOSES.
3. ELEVATIONS REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
4. TOPSOIL THICKNESSES NOTED ABOVE ARE HIGHLY GENERALIZED AND SOMETIMES INCLUDES FILL AND SUBSOIL THICKNESSES. THESE THICKNESSES SHOULD NOT BE USED TO ESTIMATE TOPSOIL QUANTITIES FOR FUTURE CONSTRUCTION PHASES. QUALITY OF TOPSOIL MAY NOT BE SUITABLE FOR REUSE AND THIS SHOULD BE DETERMINED BY OTHERS.

LEGEND

NB-101	APPROXIMATE LOCATION OF TEST BORING DRILLED BY NEW ENGLAND BORING CONTRACTORS OF DERRY, NEW HAMPSHIRE AND OBSERVED BY NOBIS BETWEEN FEBRUARY 28, 2022 AND MARCH 2, 2022.
NB-101-OW	APPROXIMATE LOCATION OF OBSERVATION WELL INSTALLED BY NEW ENGLAND BORING CONTRACTORS OF DERRY, NEW HAMPSHIRE AND OBSERVED BY NOBIS BETWEEN FEBRUARY 28, 2022 AND MARCH 2, 2022.
NTP-101	APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY THE SWAMPSCOTT DPW AND OBSERVED BY NOBIS BETWEEN DECEMBER 1 AND DECEMBER 7, 2021.
NTP-1	APPROXIMATE LOCATION OF TEST PIT EXCAVATED BY SWAMPSCOTT DPW AND OBSERVED BY NOBIS ON MARCH 4, 2021.
NB-1	APPROXIMATE LOCATION OF TEST BORING DRILLED BY NEW ENGLAND BORING CONTRACTORS OF DERRY, NEW HAMPSHIRE AND OBSERVED BY NOBIS ON MARCH 3, 2021.
TP-8	APPROXIMATE LOCATION OF TEST PITS EXCAVATED BY SWAMPSCOTT DPW AND OBSERVED BY LAHLAF GEOTECHNICAL CONSULTING, INC (LGCI). ON AUGUST 12, 2013.
1.5 / 59.7	APPROXIMATE DEPTH OF BOTTOM OF TOPSOIL / APPROXIMATE ELEVATION OF BOTTOM OF TOPSOIL
1.5 / 59.7	APPROXIMATE DEPTH OF BOTTOM OF FILL/ APPROXIMATE ELEVATION OF BOTTOM OF FILL
2.0 / 59.2	APPROXIMATE DEPTH OF GROUNDWATER / APPROXIMATE ELEVATION OF GROUNDWATER
NE / NP	NOT ENCOUNTERED / NOT PROVIDED
	EXPOSED BEDROCK OUTCROPS

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FIGURE 2

SUBSURFACE EXPLORATION PLAN
PROPOSED HADLEY ELEMENTARY SCHOOL
10 WHITMAN ROAD
SWAMPSCOTT, MASSACHUSETTS

DRAWN BY:	SNP / PCC / SAK	CHECKED BY:	AJ
PROJECT NO.	96700.04	DATE:	MARCH 2022

J:\96700.04 – Hadley Elementary School – Swampscott MA\Deliverables\Earth Removal Permit Application – Geotech\96700.04-GT-200-ELP.dwg 3/30/2022 9:09 AM

TABLE 2
96700.04 - Hadley Elementary School
SUMMARY OF SUBSURFACE CONDITIONS

	NB-101A	NB-101B	NB-102	NB-103	NB-104	NB-105	NB-106	NB-107	NTP-101	NTP-102	NTP-103	NTP-104	NTP-105
Depth (ft) to Top of:	F	F	F	T	T	T	T	T	T	T	T	T	T
Asphalt/Topsoil	NE	NE	NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fill	0.0	0.0	0.0	NE	0.5	0.3	2.0	1.0	0.3	0.9	0.9	0.5 to 1.0	0.7
Organic Soils	NE	NE	NE	NE	5.0	NE	NE	NE	NE	NE	NE	NE	NE
Native	NE	NE	NE	NE	7.0	NE	NE	NE	4.0 / NE	NE	NE	NE	NE
Weathered/Fractured Bedrock	NE	2.2	NE	NE	NE	4.0	7.0	NE	NE	2.0	NE	NE	1.5 to 2.0
Competent Bedrock	1.8	4.0	3.8	3.3	9.0	4.5	7.5	10.0	3.0 / NE	3.0	1.5 to 2.0	3.0	2.5
Bottom of Exploration	1.8	8.5	9.0	8.3	9.0	13.0	12.5	10.4	9.0	3.0	1.5 to 2.0	3.0	2.5
Thickness (ft) of:													
Asphalt/Topsoil	NE	NE	NE	3.3	0.5	0.3	2.0	1.0	0.3	0.9	0.9	0.5 to 1.0	0.7
Fill	1.8	2.2	3.8	NE	4.5	3.7	5.0	9.0	2.7 to 3.7	1.1	0.6 to 1.1	2.0 to 2.5	0.8 to 1.3
Organic Soils	NE	NE	NE	NE	2.0	NE	NE	NE	NE	NE	NE	NE	NE
Native	NE	NE	NE	NE	2.0	NE	NE	NE	5.0 / NE	NE	NE	NE	NE
Weathered/Fractured Bedrock	NE	1.8	NE	NE	NE	0.5	0.5	NE	NE	1.0	NE	NE	0.5 to 1.0
Elev. (ft) top of:													
Asphalt/Topsoil	NE	NE	NE	61.8	58.6	67.1	61.5	62.3	66.5	66.0	67.0	63.0	62.5
Fill	62.9	62.9	62.8	NE	58.1	66.8	59.5	61.3	66.2	65.1	66.1	62.0 to 62.5	61.8
Organic Soils	NE	NE	NE	NE	53.6	NE	NE	NE	NE	NE	NE	NE	NE
Native	NE	NE	NE	NE	51.6	NE	NE	NE	62.5 / NE	NE	NE	NE	NE
Weathered/Fractured Bedrock	NE	60.7	NE	NE	NE	63.1	54.5	NE	NE	64.0	NE	NE	60.5 to 61.0
Competent Bedrock	61.1	58.9	59.0	58.5	49.6	62.6	54.0	52.3	63.5 / NE	63.0	65.0 to 65.5	60.0	60.0
Bottom of Exploration	61.1	54.4	53.8	53.5	49.6	54.1	49.0	51.9	57.5 to 63.5	63.0	65.0 to 65.5	60.0	60.0

Notes:
1.) NE = Not Encountered; NM = Not Measured; NP = Not Provided; NC=Not Cored
2.) Topsoil thicknesses noted above are highly generalized and sometimes includes fill and subsoil thicknesses. These thicknesses should not be used to estimate topsoil quantities for future construction phases. Quality of topsoil may not be suitable for reuse and this should be determined by others.
3.) Competent bedrock is reported as the depth at which the rock core recovery began or excavator refusal was encountered.
4.) Fills with organic content noted on the exploration logs are reported as organic soils.
5.) All elevations referenced to the North American Vertical Datum (NAVD88).
6.) Depths and elevations of strata should be considered approximate.

TABLE 2
96700.04 - Hadley Elementary School
SUMMARY OF SUBSURFACE CONDITIONS

	NTP-106	NTP-107	NTP-108	NTP-109	NTP-110	NTP-111	NTP-112	NTP-113	NTP-114	NTP-115	NTP-116	NTP-117	NTP-118
Depth (ft) to Top of:	T	T	T	T	T	T	F	T	T	T	T	T	T
Asphalt/Topsoil	0.0	0.0	0.0	0.0	0.0	0.0	NE	0.0	0.0	0.0	0.0	0.0	0.0
Fill	NE	0.5	1.3	1.5 / NE	1.3	1.0	0.0	0.5	NE	0.8	1.0	1.5	NE
Organic Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Native	NE	NE	3.0	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Weathered/Fractured Bedrock	NE	NE	NE	NE	4.5	4.0	NE	NE	NE	2.8	NE	4.0	1.0
Competent Bedrock	1.7	1.5	4.5	1.0 to 2.5	5.5	7.1	4.0	4.0	2.0	7.0	4.0	5.5	1.8
Bottom of Exploration	1.7	1.5	4.5	1.0 to 2.5	5.5	7.1	4.0	4.0	2.0	7.0	4.0	5.5	1.8
Thickness (ft) of:													
Asphalt/Topsoil	1.7	0.5	1.3	1.0 to 1.5	1.3	1.0	NE	0.5	2.0	0.8	1.0	1.5	1.0
Fill	NE	1.0	1.7	1.0 / NE	3.2	3.0	4.0	3.5	NE	2.0	3.0	2.5	NE
Organic Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Native	NE	NE	1.5	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Weathered/Fractured Bedrock	NE	NE	NE	NE	1.0	3.1	NE	NE	NE	4.2	NE	1.5	0.8
Elev. (ft) top of:													
Asphalt/Topsoil	63.5	61.5	60.0	65.0	62.5	59.5	NE	61.0	54.5	61.0	60.5	61.0	57.5
Fill	NE	61.0	58.7	63.5 / NE	61.2	58.5	59.5	60.5	NE	60.2	59.5	59.5	NE
Organic Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Native	NE	NE	57.0	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Weathered/Fractured Bedrock	NE	NE	NE	NE	58.0	55.5	NE	NE	NE	58.2	NE	57.0	56.5
Competent Bedrock	61.8	60.0	55.5	62.5 to 64.0	57.0	52.4	55.5	57.0	52.5	54.0	56.5	55.5	55.7
Bottom of Exploration	61.8	60.0	55.5	62.5 to 64.0	57.0	52.4	55.5	57.0	52.5	54.0	56.5	55.5	55.7

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TABLE 2
96700.04 - Hadley Elementary School
SUMMARY OF SUBSURFACE CONDITIONS

	NTP-119	NTP-120	NTP-121	NTP-122	NTP-123	NTP-124	NTP-125	NTP-126	NTP-127	NTP-128	NTP-129	NTP-130	NTP-131
Depth (ft) to Top of:	T	T	T	T	T	T	T	T	A	T	T	T	T
Asphalt/Topsoil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fill	0.5	1.0	1.0	1.3	1.0	NE	NE	NE	0.5	NE	1.0	NE	1.0
Organic Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Native	NE	2.1	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Weathered/Fractured Bedrock	5.5	3.0	4.0	4.0	4.0	NE	NE	NE	NE	NE	NE	NE	1.5
Competent Bedrock	9.5	3.5	7.0	7.5	6.5	0.5	1.0	0.9	NE	2.0	3.0	3.0	2.5
Bottom of Exploration	9.5	3.5	7.0	7.5	6.5	0.5	1.0	0.9	5.0	2.0	3.0	3.0	2.5
Thickness (ft) of:													
Asphalt/Topsoil	0.5	1.0	1.0	1.3	1.0	0.5	1.0	0.9	0.5	2.0	1.0	3.0	1.0
Fill	5.0	1.1	3.0	2.7	3.0	NE	NE	NE	4.5	NE	2.0	NE	0.5
Organic Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Native	NE	0.9	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Weathered/Fractured Bedrock	4.0	0.5	3.0	3.5	2.5	NE	NE	NE	NE	NE	NE	NE	1.0
Elev. (ft) top of:													
Asphalt/Topsoil	62.0	58.0	62.0	62.5	62.0	59.5	60.5	59.0	58.5	64.5	66.5	66.5	63.5
Fill	61.5	57.0	61.0	61.2	61.0	NE	NE	NE	58.0	NE	65.5	NE	62.5
Organic Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Native	NE	55.9	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Weathered/Fractured Bedrock	56.5	55.0	58.0	58.5	58.0	NE	NE	NE	NE	NE	NE	NE	62.0
Competent Bedrock	52.5	54.5	55.0	55.0	55.5	59.0	59.5	58.1	NE	62.5	63.5	63.5	61.0
Bottom of Exploration	52.5	54.5	55.0	55.0	55.5	59.0	59.5	58.1	53.5	62.5	63.5	63.5	61.0

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96700.04 - Hadley Elementary School
SUMMARY OF SUBSURFACE CONDITIONS

	NTP-132	NTP-133	NTP-134	NTP-135	NTP-136	NTP-137	NTP-138	NB-1	NB-2	NB-3	NTP-1	NTP-2	NTP-3
Depth (ft) to Top of:	T	T	T	T	T	T	T	A	T	A	T	T	T
Asphalt/Topsoil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fill	1.0	1.0	NE	1.0	NE	NE	NE	0.3	1.0	0.3	NE	1.0	0.5
Organic Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.9	NE	NE	1.5
Native	NE	NE	NE	2.5	NE	NE	NE	NE	NE	NE	NE	NE	2.0
Weathered/Fractured Bedrock	2.1	4.0	NE	3.4	NE	NE	NE	3.5	7.2	NE	1.5	NE	NE
Competent Bedrock	3.0	4.5	1.5	3.5	1.3	3.5	0.1	7.0	11.6	2.4	2.0	2.5	3.0
Bottom of Exploration	3.0	4.5	1.5	3.5	1.3	3.5	0.1	10.0	11.6	7.2	2.0	2.5	3.0
Thickness (ft) of:													
Asphalt/Topsoil	1.0	1.0	1.5	1.0	1.3	3.5	0.1	0.3	1.0	0.3	1.5	1.0	0.5
Fill	1.1	3.0	NE	1.5	NE	NE	NE	3.2	6.2	0.6	NE	1.5	1.0
Organic Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	1.5	NE	NE	0.5
Native	NE	NE	NE	0.9	NE	NE	NE	NE	NE	NE	NE	NE	1.0
Weathered/Fractured Bedrock	0.9	0.5	NE	0.1	NE	NE	NE	3.5	4.4	NE	0.5	NE	NE
Elev. (ft) top of:													
Asphalt/Topsoil	60.0	62.0	60.0	58.0	NP	NP	66.5	57.9	66.0	63.2	61.2	62.8	57.7
Fill	59.0	61.0	NE	57.0	NP	NP	NE	57.6	65.0	62.9	NE	61.8	57.2
Organic Soils	NE	NE	NE	NE	NP	NP	NE	NE	NE	62.3	NE	NE	56.2
Native	NE	NE	NE	55.5	NP	NP	NE	NE	NE	NE	NE	NE	55.7
Weathered/Fractured Bedrock	57.9	58.0	NE	54.6	NP	NP	NE	54.4	58.8	NE	59.7	NE	NE
Competent Bedrock	57.0	57.5	58.5	54.5	NP	NP	66.4	50.9	54.4	60.8	59.2	60.3	54.7
Bottom of Exploration	57.0	57.5	58.5	54.5	NP	NP	66.4	47.9	54.4	56.0	59.2	60.3	54.7

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	NTP-4	NTP-5	NTP-6	NTP-7	NTP-8	NTP-9	NTP-10	NTP-11	TP-1	TP-2	TP-3	TP-4
Depth (ft) to Top of:	T	T	T	T	T	T	T	T	T	T	T	T
Asphalt/Topsoil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fill	NE	3.0	1.8	0.5	1.5	1.0	1.5	NE	0.9	0.8	1.0	1.0
Organic Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	1.5	NE	NE
Native	1.4	4.4	NE	NE	2.0	3.3	7.5	1.0	NE	NE	4.0	NE
Weathered/Fractured Bedrock	NE	NE	NE	5.5	NE	NE	NE	NE	3.5	5.5	NE	5.0
Competent Bedrock	1.8	8.0	5.6	7.5	3.8	5.2	9.4	2.6 to 3.2	5.0	6.5	6.5	6.0
Bottom of Exploration	1.8	8.0	5.6	7.5	3.8	5.2	9.4	2.6 to 3.2	5.0	6.5	6.5	6.0
Thickness (ft) of:												
Asphalt/Topsoil	1.4	3.0	1.8	0.5	1.5	1.0	1.5	1.0	0.9	0.8	1.0	1.0
Fill	NE	1.4	3.8	5.0	0.5	2.3	6.0	NE	2.6	0.8	3.0	4.0
Organic Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	4.0	NE	NE
Native	0.4	3.6	NE	NE	1.8	1.9	1.9	1.6 to 2.2	NE	NE	2.5	NE
Weathered/Fractured Bedrock	NE	NE	NE	2.0	NE	NE	NE	NE	1.5	1.0	NE	1.0
Elev. (ft) top of:												
Asphalt/Topsoil	59.3	58.1	62.2	61.2	63.2	63.7	61.5	64.1	60.0	61.0	62.5	62.5
Fill	NE	55.1	60.4	60.7	61.7	62.7	60.0	NE	59.1	60.3	61.5	61.5
Organic Soils	NE	NE	NE	NE	NE	NE	NE	NE	NE	59.5	NE	NE
Native	57.9	53.7	NE	NE	61.2	60.4	54.0	63.1	NE	NE	58.5	NE
Weathered/Fractured Bedrock	NE	NE	NE	55.7	NE	NE	NE	NE	56.5	55.5	NE	57.5
Competent Bedrock	57.5	50.1	56.6	53.7	59.4	58.5	52.1	60.9 to 61.5	55.0	54.5	56.0	56.5
Bottom of Exploration	57.5	50.1	56.6	53.7	59.4	58.5	52.1	60.9 to 61.5	55.0	54.5	56.0	56.5

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96700.04 - Hadley Elementary School
SUMMARY OF SUBSURFACE CONDITIONS

	TP-5	TP-6	TP-7	TP-8
Depth (ft) to Top of:	T	T	T	T
Asphalt/Topsoil	0.0	0.0	0.0	0.0
Fill	0.8	1.0	0.5	0.5
Organic Soils	NE	2.0	4.5	NE
Native	1.6	NE	7.0	NE
Weathered/Fractured Bedrock	3.0	3.0	NE	NE
Competent Bedrock	4.0	3.5	8.3	2.5
Bottom of Exploration	4.0	3.5	8.3	2.5
Thickness (ft) of:				
Asphalt/Topsoil	0.8	1.0	0.5	0.5
Fill	0.9	1.0	4.0	2.0
Organic Soils	NE	1.0	2.5	NE
Native	1.4	NE	1.3	NE
Weathered/Fractured Bedrock	1.0	0.5	NE	NE
Elev. (ft) top of:				
Asphalt/Topsoil	61.5	67.0	61.0	63.5
Fill	60.8	66.0	60.5	63.0
Organic Soils	NE	65.0	56.5	NE
Native	59.9	NE	54.0	NE
Weathered/Fractured Bedrock	58.5	64.0	NE	NE
Competent Bedrock	57.5	63.5	52.7	61.0
Bottom of Exploration	57.5	63.5	52.7	61.0

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LGCI
Lahlaf Geotechnical Consulting, Inc.

Project:	**Proposed Elementary School - Stanley School Site, Swampscott, MA**		
Client:	**Mount Vernon Group Architects, Inc.**		LGCI Project No.: 1319
Excavation Subcontractor:	Swampscott DPW	Date Started:	08/12/13
Excavation Foreman :	Paul J. Plourde	Date Completed:	08/12/13
LGCI Engineer:	J. MacGregor	Location:	Northwestern corner of ball fields
Ground Surface El:	not provided	Total Depth:	5.0 feet
Groundwater Depth:	not encountered	Excavator Type:	CAT 416C rubber tire backhoe
		Test Pit Dimensions:	3.0 x 6.0 feet

Depth Scale	Exc. Effort	Strata	Soil Description
	E	Topsoil	0 to 0.9 feet: Topsoil
	E	Fill ~3.5 ft	0.9 to 1.5 feet: Heterogeneous fill consisting of sand, gravel, stone dust, and brick
	M		1.5 to 3.5 feet: Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, 15-20% gravel, brown and gray, moist
	M	Rock	3.5 to 5.0 feet: rock, fractured, hard, fresh to slightly weathered; silt, sand, and mineral deposits on fracture faces, dark gray and white
5 ft	V		
			Bottom of test pit at 5.0 feet Backfilled with excavated material.
10 ft			
15 ft			

Remarks: E = Easy, M = Moderate, D = Difficult, V = Very Difficult

LGCI
Lahlaf Geotechnical Consulting, Inc.

TP-2

Project:	**Proposed Elementary School - Stanley School Site, Swampscott, MA**		
Client:	**Mount Vernon Group Architects, Inc.**		LGCI Project No.: 1319
Excavation Subcontractor:	Swampscott DPW	Date Started:	08/12/13
Excavation Foreman :	Paul J. Plourde	Date Completed:	08/12/13
LGCI Engineer:	J. MacGregor	Location:	Northeastern corner of ball fields
Ground Surface El:	not provided	Total Depth:	6.5 feet
Groundwater Depth:	not encountered	Excavator Type:	CAT 416C rubber tire backhoe
		Test Pit Dimensions:	3.0 x 6.0 feet

Depth Scale	Exc. Effort	Strata	Soil Description
	E	Topsoil	0 to 0.75 feet: Topsoil
	M	Fill	0.75 to 1.5 feet: Stone dust
	M		1.5 to 3.0 feet: layered sand with pockets of organic soil
	D		3.0 to 5.5 feet: rock fill with silty sand, few bricks, and pockets of organic soil
5 ft	D	~5.5 ft Rock	5.5 to 6.5 feet: fractured rock
	V		Bottom of test pit at 6.5 feet Backfilled with excavated material.
10 ft			
15 ft			

Remarks: E = Easy, M = Moderate, D = Difficult, V = Very Difficult

LGCI
Lahlaf Geotechnical Consulting, Inc.

TP-3

Project:	**Proposed Elementary School - Stanley School Site, Swampscott, MA**		
Client:	**Mount Vernon Group Architects, Inc.**		LGCI Project No.: 1319
Excavation Subcontractor:	Swampscott DPW	Date Started:	08/12/13
Excavation Foreman :	Paul J. Plourde	Date Completed:	08/12/13
LGCI Engineer:	J. MacGregor	Location:	Approx center of western side of field
Ground Surface El:	not provided	Total Depth:	6.5 feet
Groundwater Depth:	not encountered	Excavator Type:	CAT 416C rubber tire backhoe
		Test Pit Dimensions:	2.5 x 6.0 feet

Depth Scale	Exc. Effort	Strata	Soil Description
	E	Topsoil ~1.0 ft	0 to 1.0 foot: Topsoil
	M	Fill	1.0 to 4.0 feet: Silty SAND (SM), fine to coarse, 25-30% fines, 20-25% subrounded to subangular gravel, brown, dry-moist; several cobbles
	M		
	M	~4.0 ft	
5 ft	M	Subsoil	4.0 to 6.5 feet: Sandy SILT (ML), slightly plastic, 35-40% fine to coarse sand, 10-15% gravel, rusty brown, moist
	M		
		~6.5 ft	Refusal on possibe rock
			Bottom of test pit at 6.5 feet on probable rock Backfilled with excavated material.
10 ft			
15 ft			

Remarks: E = Easy, M = Moderate, D = Difficult, V = Very Difficult

LGCI
Lahlaf Geotechnical Consulting, Inc.

TP-4

Project:	**Proposed Elementary School - Stanley School Site, Swampscott, MA**		
Client:	**Mount Vernon Group Architects, Inc.**		LGCI Project No.: 1319
Excavation Subcontractor:	Swampscott DPW	Date Started:	08/12/13
Excavation Foreman :	Paul J. Plourde	Date Completed:	08/12/13
LGCI Engineer:	J. MacGregor	Location:	Approx center of ball field
Ground Surface El:	not provided	Total Depth:	6.0 feet
Groundwater Depth:	not encountered	Excavator Type:	CAT 416C rubber tire backhoe
		Test Pit Dimensions:	3.0 x 6.0 feet

Depth Scale	Exc. Effort	Strata	Soil Description
	E	Topsoil	0 to 1.0 foot: Topsoil
	M	Fill	1.0 to 1.25 feet: Stone dust
	M		1.25 to 5.0 feet: Silty SAND (SM), fine to coarse, 15-20% fines, 25-30% subrounded to subangular gravel, brown, moist
	M		
5 ft	M	~5.0 ft	
	V	ROCK	5.0 to 6.0 feet: Fractured rock
			Bottom of test pit at 6.0 feet Backfilled with excavated material.
10 ft			
15 ft			

Remarks: E = Easy, M = Moderate, D = Difficult, V = Very Difficult

LGCI
Lahlaf Geotechnical Consulting, Inc.

TP-5

Project:	**Proposed Elementary School - Stanley School Site, Swampscott, MA**		
Client:	**Mount Vernon Group Architects, Inc.**		LGCI Project No.: 1319
Excavation Subcontractor:	Swampscott DPW	Date Started:	08/12/13
Excavation Foreman :	Paul J. Plourde	Date Completed:	08/12/13
LGCI Engineer:	J. MacGregor	Location:	Approx center of eastern side of field
Ground Surface El:	not provided	Total Depth:	4.0 feet
Groundwater Depth:	not encountered	Excavator Type:	CAT 416C rubber tire backhoe
		Test Pit Dimensions:	2.5 x 6.0 feet

Depth Scale	Exc. Effort	Strata	Soil Description
	E	Topsoil	0 to 0.75 feet: Topsoil
	M	Fill ~1.6 ft	0.75 to 1.6 feet: Sand fill over stone dust
	D	SAND ~3.0 ft	1.6 to 3.0 feet: Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 10-15% fines, 30-35% gravel, light brown, moist; numerous cobbles
	V	ROCK	3.0 to 4.0 feet: Fractured rock with sand and silt on faces of fracture
5 ft			Bottom of test pit at 4.0 feet Backfilled with excavated material.
10 ft			
15 ft			

Remarks: E = Easy, M = Moderate, D = Difficult, V = Very Difficult

LGCI
Lahlaf Geotechnical Consulting, Inc.

TP-6

Project:	**Proposed Elementary School - Stanley School Site, Swampscott, MA**		
Client:	**Mount Vernon Group Architects, Inc.**		LGCI Project No.: 1319
Excavation Subcontractor:	Swampscott DPW	Date Started:	08/12/13
Excavation Foreman :	Paul J. Plourde	Date Completed:	08/12/13
LGCI Engineer:	J. MacGregor	Location:	Southwestern corner of ball field
Ground Surface El:	not provided	Total Depth:	3.5 feet
Groundwater Depth:	not encountered	Excavator Type:	CAT 416C rubber tire backhoe
		Test Pit Dimensions:	2.5 x 6.0 feet

Depth Scale	Exc. Effort	Strata	Soil Description
	E	Topsoil	0 to 1.0 foot: Topsoil
	M	Fill ~2.0 ft	1.0 to 2.0 feet: Silty SAND with Gravel (SM), fine to coarse, 30-35% fines, 15-20% gravel, pieces of brick, brown, moist
	D	Topsoil ~ 3.0 ft	2.0 to 3.0 feet: buried topsoil
	V	ROCK	3.0 to 3.5 feet: rock, fractured, hard, slightly weathered; silt and sand on faces of fracture, dark gray and white
5 ft			Bottom of test pit at 3.5 feet Backfilled with excavated material. Rock outcrops to north and west of TP-6
10 ft			
15 ft			

Remarks: E = Easy, M = Moderate, D = Difficult, V = Very Difficult

LGCI
Lahlaf Geotechnical Consulting, Inc.

TP-7

Project:	**Proposed Elementary School - Stanley School Site, Swampscott, MA**		
Client:	**Mount Vernon Group Architects, Inc.**		LGCI Project No.: 1319
Excavation Subcontractor:	Swampscott DPW	Date Started:	08/12/13
Excavation Foreman :	Paul J. Plourde	Date Completed:	08/12/13
LGCI Engineer:	J. MacGregor	Location:	Southeastern corner of ball field
Ground Surface El:	not provided	Total Depth:	8.3 feet
Groundwater Depth:	not encountered	Excavator Type:	CAT 416C rubber tire backhoe
		Test Pit Dimensions:	2.5 x 8.0 feet

Depth Scale	Exc. Effort	Strata	Soil Description
		Topsoil	0 to 0.5 feet: Topsoil
	E M M M	Fill ~4.5 ft	0.5 to 4.5 feet: Silty SAND with Gravel (SM), fine to coarse, 30-35% fines, 20-25% gravel, dark brown, moist; numerous cobbles and few boulders
5 ft	D D D	Organic soil with cobbles ~ 7.0 ft	4.5 to 7.0 feet: organic soil with cobbles
	V	Sandy SILT ~8.3 ft	7.0 to 8.3 feet: Sandy SILT (ML), moderately plastic, 30-35% fine sand, mottled rusty brown, tan, and gray, moist.
10 ft			Bottom of test pit at 8.0 feet on probable top of rock. Backfilled with excavated material.
15 ft			

Remarks: E = Easy, M = Moderate, D = Difficult, V = Very Difficult

LGCI
Lahlaf Geotechnical Consulting, Inc.

Project:	**Proposed Elementary School - Stanley School Site, Swampscott, MA**		
Client:	**Mount Vernon Group Architects, Inc.**		LGCI Project No.: 1319
Excavation Subcontractor:	Swampscott DPW	Date Started:	08/12/13
Excavation Foreman :	Paul J. Plourde	Date Completed:	08/12/13
LGCI Engineer:	J. MacGregor	Location:	Southeast of existing school
Ground Surface El:	not provided	Total Depth:	2.5 feet
Groundwater Depth:	not encountered	Excavator Type:	CAT 416C rubber tire backhoe
		Test Pit Dimensions:	2.5 x 5.0 feet

Depth Scale	Exc. Effort	Strata	Soil Description
		Topsoil	0 to 0.5 feet: Topsoil
	E	Fill ~2.5 ft	0.5 to 2.5 feet: Well Graded GRAVEL with SAND(GW), fine to coarse, <5% fines, 40-45% fine to corase sand, brown, moist
	M		
	M		
	M		
5 ft	D		Bottom of test pit at 2.5 feet on probable top of rock. Backfilled with excavated material. Rock outcrops to south and east of TP-8
	D		
	D		
	V		
10 ft			
15 ft			

Remarks: E = Easy, M = Moderate, D = Difficult, V = Very Difficult

BORING LOG

Project: Hadley Elementary School

Location: Swampscott, Massachusetts

Nobis Project No.: 96700.04

Boring No.: **NB-101A**

Boring Location: See exploration location plan.

N: 2997534.00 E: 818721.00

Checked by: SNP

Date Start: February 28, 2022

Date Finish: February 28, 2022

Contractor: New England Boring Contractors

Driller: W. Hoeckle

Nobis Rep.: S. Kurtzer

Rig Type / Model: ATV Track Rig / Mobile B-53

Hammer Type: Automatic Hammer

Hammer Hoist: Automatic

Ground Surface Elev.: (+/-) 62.9

Datum: NAVD 88

	Drilling Method	Sampler
Type	N/A	Split-Spoon
Size ID (in.)	N/A	1-3/8
Advancement	N/A	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
02/28/22	09:36	Not Encountered	N/A	1.8	0 min

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1	S-1	14	0-1.8	8 17			FILL	S-1: Medium dense, dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Frozen. Moist. (FILL).	1
2				6 50/3"			61.1 / 1.8	Boring terminated at 1.8 feet on refusal.	
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Borehole backfilled with drilling spoils upon completion.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

nobis

Project: Hadley Elementary School

Location: Swampscott, Massachusetts

Nobis Project No.: 96700.04

Boring No.: **NB-101B**

Boring Location: See exploration location plan.

N: 2997530.00 E: 818720.00

Checked by: SNP

Date Start: February 28, 2022

Date Finish: February 28, 2022

Contractor: New England Boring Contractors

Driller: W. Hoeckle

Nobis Rep.: S. Kurtzer

Rig Type / Model: ATV Track Rig / Mobile B-53

Hammer Type: Automatic Hammer

Hammer Hoist: Automatic

Ground Surface Elev.: (+/-) 62.9

Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
02/28/22	11:24	Not Encountered	3.8	8.5	0 min

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1	S-1	12	0-2	6 5 4 6					FILL	S-1: Loose, brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, very few concrete and asphalt fragments. Frozen. Moist. (FILL).	1
2									60.7 / 2.2		
3	S-2	3	2-2.3	100/3"					FRACTURED BEDROCK	S-2: Very dense, dark brown, fine to coarse SAND, some Silt, trace fine Gravel. Moist. (FILL).	
4									58.9 / 4.0	Fractured bedrock inferred from drilling activity.	
5	C-1	54	4-8.5		100/24	2.1			BEDROCK	C-1: Hard, slightly weathered, slightly to extremely fractured, gray, fine to medium-grained, GABBRO-DIORITE, Massively bedded, close to very close shallow primary joint set, very close steep to vertical secondary joints and cracks. 1-inch pink quartz vein at bottom of core.	
6						2.6					
7						2.6					
8						2.9					
9						9.4			54.4 / 8.5	Boring terminated at 8.5 feet.	
10											
11											
12											
13											
14											
15											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Borehole backfilled with drilling spoils and sand upon completion.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

nobis

Project:	Hadley Elementary School
Location:	Swampscott, Massachusetts
Nobis Project No.:	96700.04
Boring No.:	NB-102
Boring Location:	See exploration location plan.
N: 2997591.00 E: 818753.00	
Checked by:	SNP
Date Start:	February 28, 2022
Date Finish:	February 28, 2022
Contractor:	New England Boring Contractors
Driller:	W. Hoeckle
Nobis Rep.:	S. Kurtzer
Rig Type / Model:	ATV Track Rig / Mobile B-53
Hammer Type:	Automatic Hammer
Hammer Hoist:	Automatic
Ground Surface Elev.:	(+/-) 62.8
Datum:	NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
02/28/22	15:00	Not Encountered	N/A	1.8	0 min

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
1	S-1	9	0-2	2 3					S-1: Loose, dark brown, fine to coarse SAND, some Silt, trace fine Gravel. Moist. (FILL).	ROADBOX	1
2				3 2				FILL		CUTTINGS	
3	S-2	5	2-3.8	3 3					S-2: Loose, brown, fine to coarse SAND and fine to coarse Gravel, some Silt. Moist. (FILL).	2-INCH SOLID PVC PIPE	
4				3 50/3"				59.0 / 3.8		BENTONITE SEAL	
5	C-1	37	4-9		62/0				C-1: Hard, severely weathered, extremely fractured, gray, fine to medium-grained, GABBRO-DIORITE, Massively bedded, close to very close shallow primary joint set, very close steep to vertical secondary joints and cracks.		
6											
7								BEDROCK		SILICA SAND	
8										2-INCH SLOTTED PVC PIPE	
9								53.8 / 9.0			
10									Boring terminated at 9 feet.		
11											
12											
13											
14											
15											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Borehole restored as monitoring well upon completion.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BOREHOLE LOG

nobis

BORING LOG

Project: Hadley Elementary School

Location: Swampscott, Massachusetts

Nobis Project No.: 96700.04

Boring No.: **NB-103**

Boring Location: See exploration location plan.

N: 2997614.00 E: 818475.00

Checked by: SNP

Date Start: February 28, 2022

Date Finish: February 28, 2022

Contractor: New England Boring Contractors

Driller: W. Hoeckle

Nobis Rep.: S. Kurtzer

Rig Type / Model: ATV Track Rig / Mobile B-53

Hammer Type: Automatic Hammer

Hammer Hoist: Automatic

Ground Surface Elev.: (+/-) 61.8

Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
03/01/22	07:45	Not Encountered	3.3	8.3	0 min

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1	S-1	13	0-2	7 6					TOPSOIL/FILL	S-1: Medium dense, dark brown, fine to coarse SAND and Silt, little fine to coarse Gravel. Top 8 inches frozen. Moist.	1
2				7 7							
3	S-2	9	2-3.3	7 8						S-2: Medium dense, dark brown, fine to coarse SAND and Silt, little fine to coarse Gravel. Moist.	
4	C-1	60	3.3-8.3	50/3"	100/10	3.2			58.5 / 3.3	C-1: Hard, slightly weathered, moderately fractured, pinkish gray, fine to medium-grained, GABBRO-DIORITE, Massively bedded, close to very close shallow primary joint set, very close steep to vertical secondary joints and cracks.	
5						3.2					
6						2.7			BEDROCK		
7						3.4					
8						4.9			53.5 / 8.3		
9										Boring terminated at 8.3 feet.	
10											
11											
12											
13											
14											
15											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Borehole restored as monitoring well upon completion.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Project: Hadley Elementary School

Location: Swampscott, Massachusetts

Nobis Project No.: 96700.04

Boring No.: **NB-104**

Boring Location: See exploration location plan.

N: 2997681.00 E: 818550.00

Checked by: SNP

Date Start: March 1, 2022

Date Finish: March 1, 2022

Contractor: New England Boring Contractors

Driller: W. Hoeckle

Nobis Rep.: S. Kurtzer

Rig Type / Model: ATV Track Rig / Mobile B-53

Hammer Type: Automatic Hammer

Hammer Hoist: Automatic

Ground Surface Elev.: (+/-) 58.6

Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
03/01/22	12:00	Not Encountered	OUT	9	5 min

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	WELL DETAIL	NOTES
1	S-1	12	0-2	29 21			TOPSOIL 58.1 / 0.5	S-1A (4"): Medium dense, brown, Organic SILT, some fine to coarse Sand, trace fine Gravel. Moist. (TOPSOIL). S-1B (8"): Concrete fragments. (FILL).	ROADBOX CUTTINGS	1
2				9 6						
3	S-2	5	2-4	7 5			FILL	S-2: Medium dense, brown, fine to coarse SAND and fine to coarse Gravel, little Silt. Moist. (FILL).	2-INCH SOLID PVC PIPE BENTONITE SEAL	
4				8 6						
5	S-3	2	4-4.9	6 100/5"			53.6 / 5.0	S-3: Very dense, brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL).		
6	~~S-4~~	~~4~~	~~5.2-7.2~~	10 5			SAND & ORGANIC SILT	S-4: Loose, bluish gray, fine to coarse SAND, and Organic Silt, little fine to coarse Gravel. Wet.	SILICA SAND 2-INCH SLOTTED PVC PIPE	
7				3 4			51.6 / 7.0			
8	~~S-5~~	~~6~~	~~7.2-9~~	7 8			SAND & SILT	S-5A (3"): Medium dense, brown, fine to medium SAND, some Silt. Wet. S-5B (3"): Very dense, gray with orange, SILT, trace coarse Gravel. Wet.		
9				50 50/3"			49.6 / 9.0			
10								Boring terminated at 9 feet on refusal.		
11										
12										
13										
14										
15										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Borehole backfilled with drilling spoils, sand, and bentonite upon completion.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Project: Hadley Elementary School

Location: Swampscott, Massachusetts

Nobis Project No.: 96700.04

Boring No.: **NB-105**

Boring Location: See exploration location plan.

N: 2997713.00 E: 818292.00

Checked by: SNP

Date Start: March 1, 2022

Date Finish: March 2, 2022

Contractor: New England Boring Contractors

Driller: W. Hoeckle

Nobis Rep.: S. Kurtzer

Rig Type / Model: ATV Track Rig / Mobile B-53

Hammer Type: Automatic Hammer

Hammer Hoist: Automatic

Ground Surface Elev.: (+/-) 67.1

Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 03/02/22	07:30	7.9	4	8.5	15.5 hrs

Depth (ft.)	Sample Info: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	Lithology: Graphic	Lithology: Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)	Notes
	S-1	10	0-2	20					ASPHALT 66.8 / 0.3	S-1A (4"): Approximately 4 inches of asphalt. (ASPHALT).	1
1				9						S-1B (6"): Medium dense, brown-gray, fine to coarse SAND, little Silt, little fine to coarse Gravel. Moist. (FILL).	
				10							
2				34							
	S-2	6	2-3.7	10					FILL	S-2: Medium dense, brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, very few roots. Moist. (FILL).	
3				11							
				8							
4				50/2"					63.1 / 4.0		
									FRACTURED BEDROCK 62.6 / 4.5	Fractured bedrock inferred from drilling activity.	
5	C-1	36	4.5-7.5		100/0	2.6				C-1: Hard, severely weathered, moderately to extremely fractured, pinkish gray, fine to medium-grained, GABBRO-DIORITE, Massively bedded, close to very close shallow primary joint set, very close steep to vertical secondary joints and cracks. Dropped at 7 feet due to fracture.	
6						3.3					
7						6					
8	C-2	12	7.5-8.5		100/0	2	▽			C-2: Hard, slightly weathered, moderately to extremely fractured, pinkish gray, fine to medium-grained, GABBRO-DIORITE, Massively bedded, close to very close shallow primary joint set, very close steep to vertical secondary joints and cracks. Significant water loss.	
9	C-3	12	8.5-12		29/0	2.9			BEDROCK	C-3: Hard, slightly weathered, extremely fractured, pinkish gray, fine to medium-grained, GABBRO-DIORITE, Massively bedded, close to very close shallow primary joint set, very close steep to vertical secondary joints and cracks. Approximately 1 foot of core at bottom of run did not break off of bedrock mass.	
10						4.6					
11						6.9					
12						2.3					
13						3.7			54.1 / 13.0		
14										Boring terminated at 13 feet.	
15											

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Borehole backfilled with drilling spoils and sand upon completion.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Project: Hadley Elementary School

Location: Swampscott, Massachusetts

Nobis Project No.: 96700.04

Boring No.: **NB-106**

Boring Location: See exploration location plan.

N: 2997906.00 E: 818416.00

Checked by: SNP

Date Start: March 2, 2022

Date Finish: March 2, 2022

Contractor: New England Boring Contractors

Driller: W. Hoeckle

Nobis Rep.: S. Kurtzer

Rig Type / Model: ATV Track Rig / Mobile B-53

Hammer Type: Automatic Hammer

Hammer Hoist: Automatic

Ground Surface Elev.: (+/-) 61.5

Datum: NAVD 88

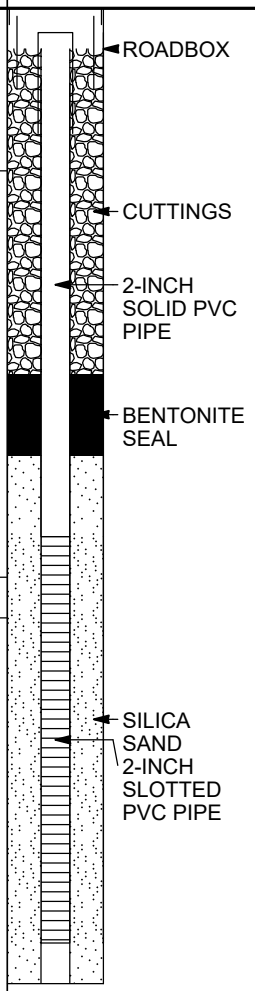
	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
03/02/22	12:00	Not Encountered	7.5	12.5	0 min

Depth (ft.)	Sample Info: Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Drilling Rate (min/ft)	Ground Water	Lithology: Graphic	Lithology: Stratum Elev. / Depth (ft.)	Sample Description and Remarks (Classification System: Modified Burmister)
1	S-1	13	0-2	1 3					TOPSOIL	S-1: Loose, brown, fine to coarse SAND, and Organic Silt, little fine to coarse Gravel, few fine roots. Moist.
2				3 4					59.5 / 2.0	
3	S-2	6	2-4	8 5					FILL	S-2: Loose, brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL).
4				3 2						
5	S-3	1	4-6	4 5						S-3: Medium dense, brown, fine to coarse SAND, some Silt, trace fine Gravel. Moist. (FILL).
6				5 8						
7	S-4	6	6-7.1	13 45		2.9			54.5 / 7.0	S-4A (4"): Medium dense, brown, fine to coarse SAND, some Silt, trace fine Gravel. Moist. (FILL).
8	C-1	56	7.5-12.5	50/1"	93/37	2.8			WEATHERED BEDROCK 54.0 / 7.5	S-4B (2"): Very dense, gray, pulverized rock. C-1: Hard, severely weathered, slightly to extremely fractured, pinkish gray, fine to medium-grained, GABBRO-DIORITE, Massively bedded, close to very close shallow primary joint set, very close steep to vertical secondary joints and cracks.
9						3.9				
10									BEDROCK	
11						3.1				
12						4.2				
13									49.0 / 12.5	Boring terminated at 12.5 feet.
14										
15										

WELL DETAIL



NOTES: 1

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Borehole restored as monitoring well upon completion.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

nobis

Project: Hadley Elementary School

Location: Swampscott, Massachusetts

Nobis Project No.: 96700.04

Boring No.: **NB-107**

Boring Location: See exploration location plan.

N: 2997886.00 E: 818512.00

Checked by: SNP

Date Start: March 2, 2022

Date Finish: March 2, 2022

Contractor: New England Boring Contractors

Driller: W. Hoeckle

Nobis Rep.: S. Kurtzer

Rig Type / Model: ATV Track Rig / Mobile B-53

Hammer Type: Automatic Hammer

Hammer Hoist: Automatic

Ground Surface Elev.: (+/-) 62.3

Datum: NAVD 88

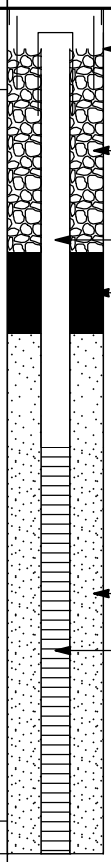
	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
03/02/22	14:30	Not Encountered	7.5	12.5	0 min

Depth (ft.)	Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	Ground Water	Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)
1	S-1	15	0-2	2 5			TOPSOIL 61.3 / 1.0	S-1A (12"): Medium dense, brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, very few fine roots. Moist. (TOPSOIL).
2				13 17				S-1B (1"): Medium dense, gray, fine to coarse SAND, little Silt. Moist. (FILL). S-1C (2"): Medium dense, brown, fine to coarse SAND, little Silt, trace fine Gravel. Moist. (FILL).
3	S-2	7	2-4	14 17				S-2: Dense, brown, fine to coarse SAND and fine to coarse Gravel, little Silt. Moist. (FILL).
4				17 7				
5	S-3	2	4-6	10 5				S-3: Medium dense, brown, fine to coarse GRAVEL, little fine to coarse Sand, trace Silt. Wet. (FILL). Rock in tip of sampler.
6				5 4			FILL	
7	S-4	0	6-8	6 5				S-4: No recovery.
8				3 2				
9	S-5	1	8-10	4 3				S-5: Loose, dark brown, SILT and fine to coarse Sand, trace fine Gravel. Wet. (FILL).
10				4 1			52.3 / 10.0	
11	S-6	0	10-10.3	50/3"			BEDROCK 51.9 / 10.4	S-6: Very dense, pulverized rock. Boring terminated at 10.4 feet on refusal.
12								
13								
14								
15								

WELL DETAIL



NOTES: 1

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Borehole restored as monitoring well upon completion.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-101
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	66.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 0.3'±	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL	Brown, fine to coarse SAND, some fine to coarse Gravel, some Silt. Very few bricks and few cobbles. Moist. (FILL)	E	5A, 2B	Sandy Loam
3					
4	3.0 - 4.0'				
5	ROCK	Tan, fine to coarse SAND, some Silt, little fine to coarse Gravel. Very few cobbles. Moist.	E	1B	Sand
6					
7	NATIVE				
8					
9	9.0'±				
10		Test pit terminated at approximately 3.0' bgs to north side of exploration on probable bedrock. Test pit terminated at approximately 9.0' bgs due to reach of bucket.			
11					
12					
13					
14					
15					

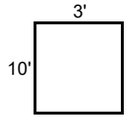
Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.

2.) Groundwater not encountered.

WATER SYMBOLS

▼ Groundwater

▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy

M = Moderate

D = Difficult

TEST PIT LOG

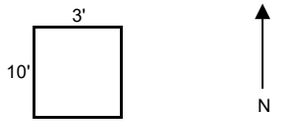
nobis

PROJECT		TEST PIT NO.	NTP-101
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	66.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Notes: 1.) Photo of NTP-101 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

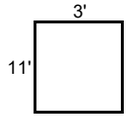
PROJECT		TEST PIT NO.	NTP-102
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	66.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (TOPSOIL)	E	-	Sandy Loam
	0.9'± FILL				
2	2.0'±	Brown, fine to coarse SAND and Silt, some fine to coarse Gravel. Several cobbles. Moist. (FILL)	M-D	3A, 1B	Sandy Loam
3	FRACTURED ROCK	Chunks of rock that appear to be fractured bedrock.	D	1B	-
4	3.0'±	Test pit terminated at approximately 3.0' bgs on probable fractured bedrock/bedrock.			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.
3.) Laboratory Grain Size Analysis 0-3': 39.1% Gravel, 42.2 % Sand, 18.5% Fines.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

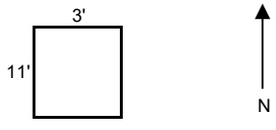
nobis

PROJECT		TEST PIT NO.	NTP-102
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	66.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Notes: 1.) Photo of NTP-102 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

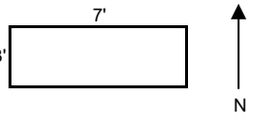
PROJECT		TEST PIT NO.	NTP-103
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	67.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 0.9'±	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL	Brown, fine to coarse SAND and Silt, some fine to coarse Gravel. Very few cobbles. Moist. (FILL)	M-D	2A	Sandy Loam
3	1.5 - 2.0'	Test pit terminated between approximately 1.5 and 2.0' bgs on probable bedrock.			
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
- Groundwater
- Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
- 0-10% Trace
- 10-20% Little
- 20-35% Some
- 35-50% And

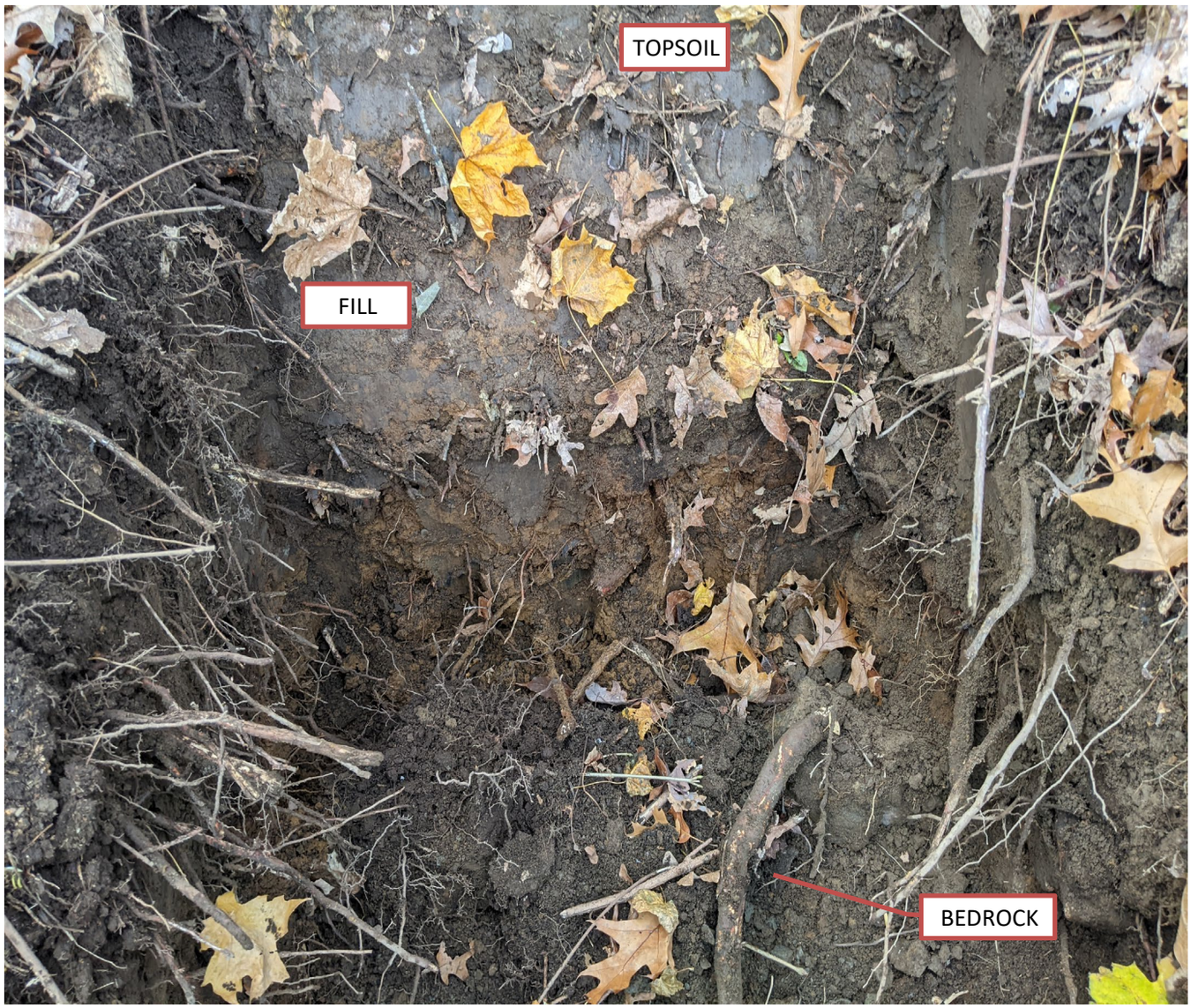
EXCAVATION EFFORT
- E = Easy
- M = Moderate
- D = Difficult

TEST PIT LOG

nobis

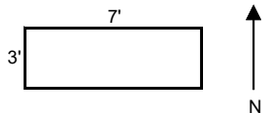
PROJECT		TEST PIT NO.	NTP-103
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	67.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021



Notes: 1.) Photo of NTP-103 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

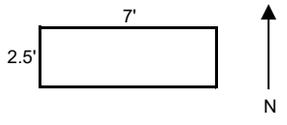
TEST PIT NO. NTP-104
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	63.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (TOPSOIL)	E	-	Sandy Loam
2	0.5 - 1.0' FILL	Brown, fine to coarse SAND and Silt, some fine to coarse Gravel. Few cobbles. Occasional roots and branches. Moist. (FILL)	M-D	4A, 3B	Sandy Loam
3	3.0'±				
4		Test pit terminated at approximately 3.0' bgs on probable bedrock.			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-104
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	63.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Notes: 1.) Photo of NTP-104 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater

TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

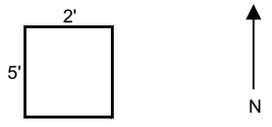
TEST PIT NO. NTP-105
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 0.7'±	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (TOPSOIL)	E	-	Sandy Loam
	FILL 0.9'±	Gray, fine to coarse SAND, some Silt. Moist (FILL)	E	-	Sandy Loam
2	1.5' 2.0'	Tan, fine to coarse SAND, little Silt, little fine to coarse Gravel. Moist (FILL)	M	-	Loamy Sand
	FRACTURED BR	Chunks of rock that appear to be fractured bedrock.	D	-	-
3	2.5'±	Test pit terminated at approximately 2.5' bgs on probable bedrock.			
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.
3.) Laboratory Grain Size Analysis 0-2': 45.1% Gravel, 30.1 % Sand, 24.8% Fines.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

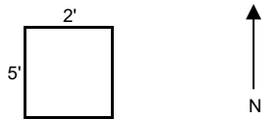
nobis

PROJECT		TEST PIT NO.	NTP-105
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Notes: 1.) Photo of NTP-105 in progress.

WATER SYMBOLS
- Groundwater
- Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

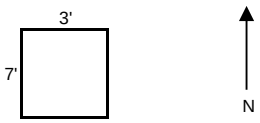
TEST PIT NO. NTP-106
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	63.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL/FILL	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Very few bricks. Moist. (TOPSOIL/FILL)	E - M	-	Sandy Loam
2	1.7'±				
3		Test pit terminated at approximately 1.7' bgs on probable fractured bedrock/bedrock.			
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

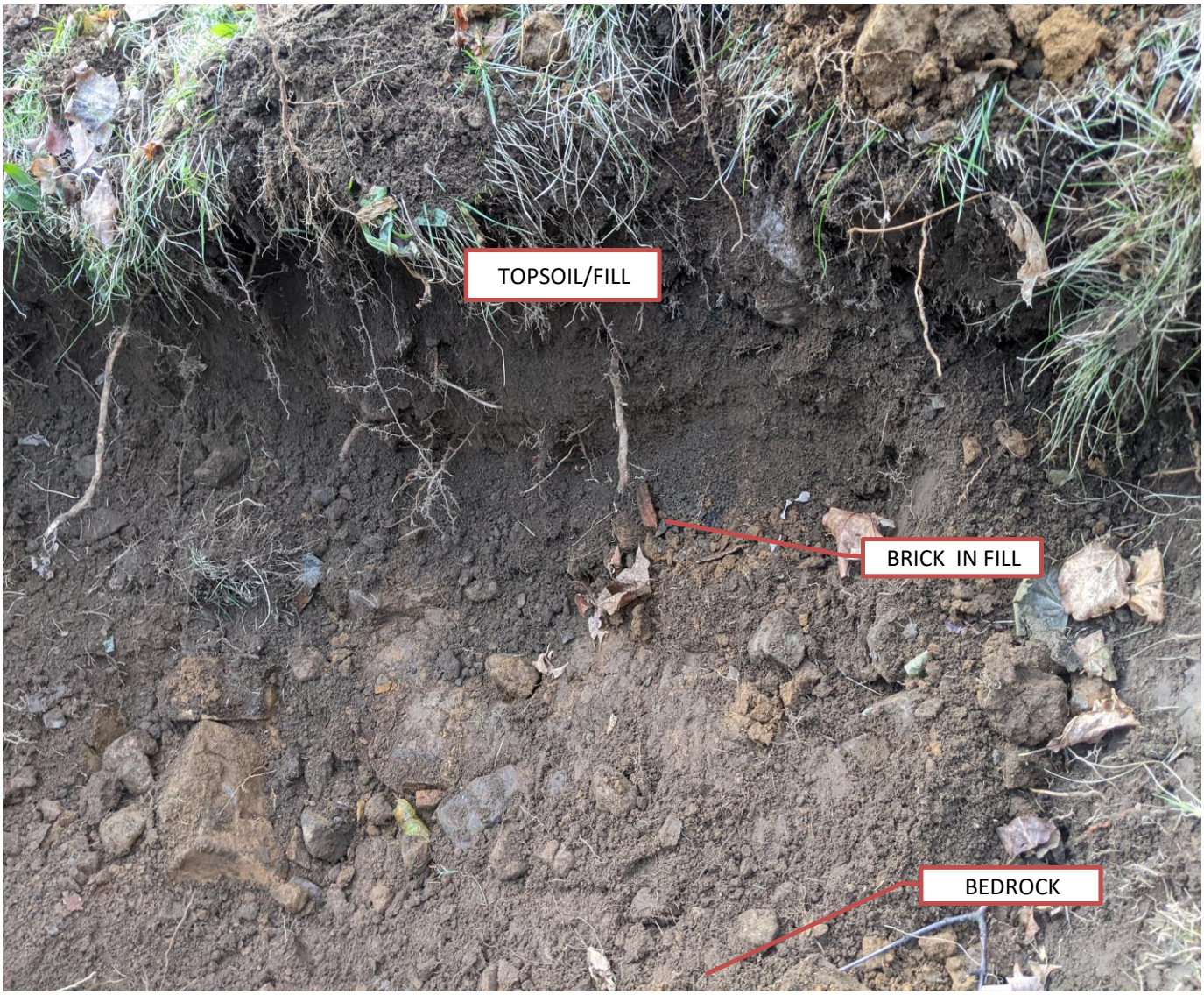
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

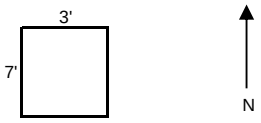
PROJECT		TEST PIT NO.	NTP-106
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	63.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021



Notes: 1.) Photo of NTP-106 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

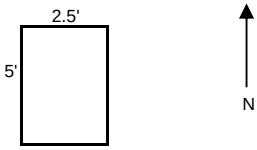
TEST PIT NO. NTP-107
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	61.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL	Dark brown, fine to coarse SAND and Silt. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
	0.5'± FILL/SUBSOIL				
2		Brown, fine to coarse SAND and Silt, little fine to coarse Gravel. Moist. (FILL/SUBSOIL)	E - D	-	Sandy Loam
	1.5'±				
3		Test pit terminated at approximately 1.5' bgs on probable slightly fractured bedrock/bedrock.			
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

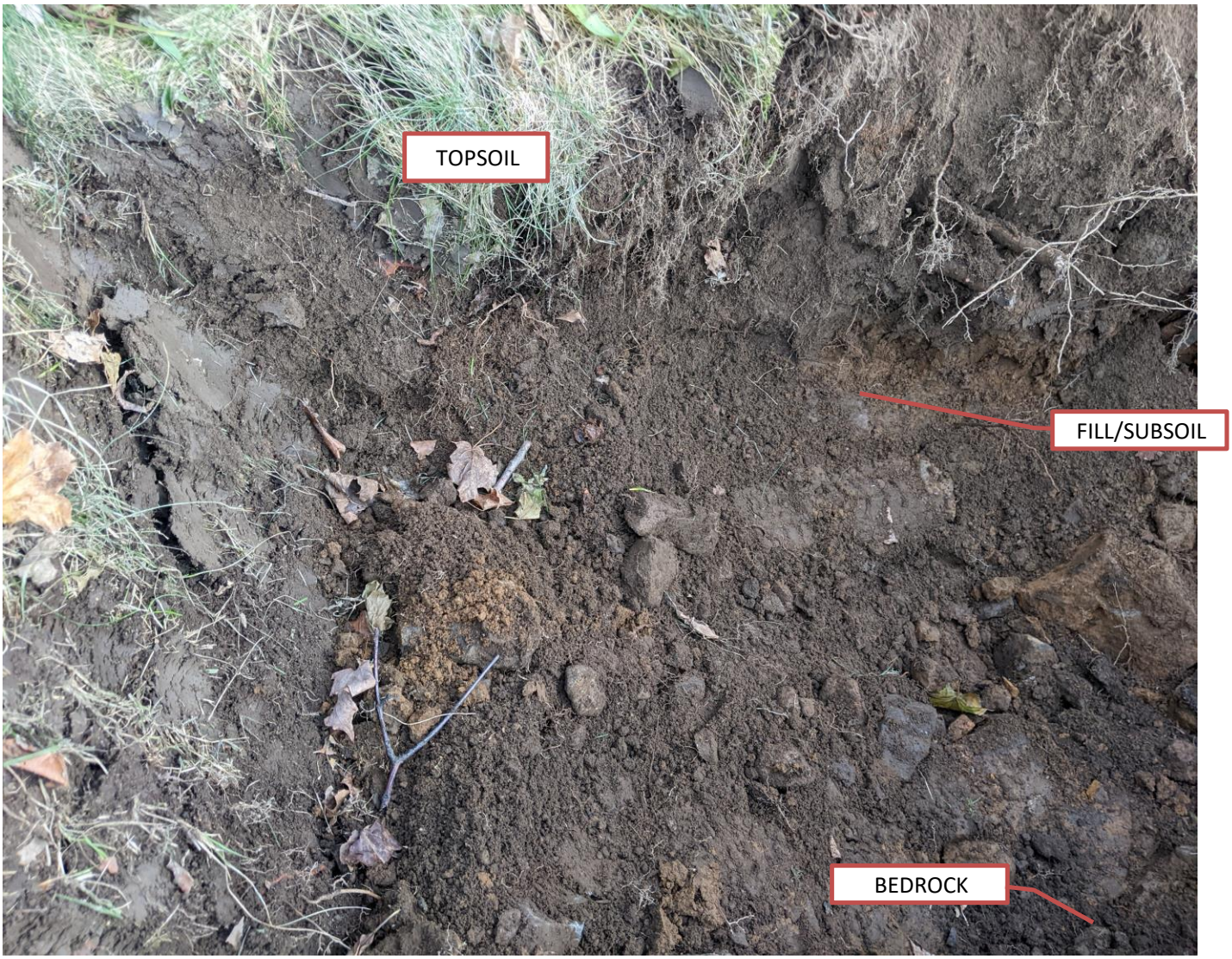
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

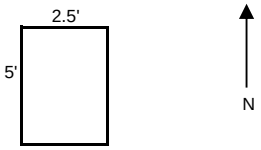
PROJECT		TEST PIT NO.	NTP-107
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	61.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021



Notes: 1.) Photo of NTP-107 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

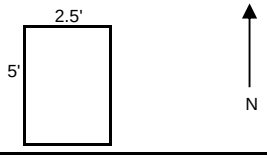
PROJECT		TEST PIT NO.	NTP-108
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	60.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.3'±	Dark brown, fine to coarse SAND and Silt. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL 3.0'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL)	E - M	-	Sandy Loam
3					
4	NATIVE 4.5'±	Tan, fine to coarse SAND, little Silt, little fine to coarse Gravel. Moist.	M	-	Loamy Sand
5		Test pit terminated at approximately 4.5' bgs on probable bedrock.			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

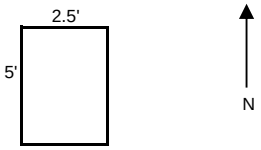
nobis

PROJECT			
Hadley Elementary School		TEST PIT NO.	NTP-108
10 Whitman Road		SHEET	2 of 2
Swampscott, Massachusetts		FILE NO.	96700.04
		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	60.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/1/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/1/2021

Notes: 1.) Photo of NTP-108 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

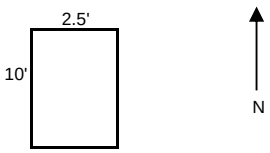
PROJECT		TEST PIT NO.	NTP-109
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	65.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/2/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/2/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0 - 1.5'	Dark brown, fine to coarse SAND, some Silt. Several roots. Very few cobbles. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Very few cobbles. Moist. (FILL)	E	1A	Sandy Loam
3	2.5'±	Test pit terminated between approximately 1.0 and 2.5' bgs on probable bedrock.			
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

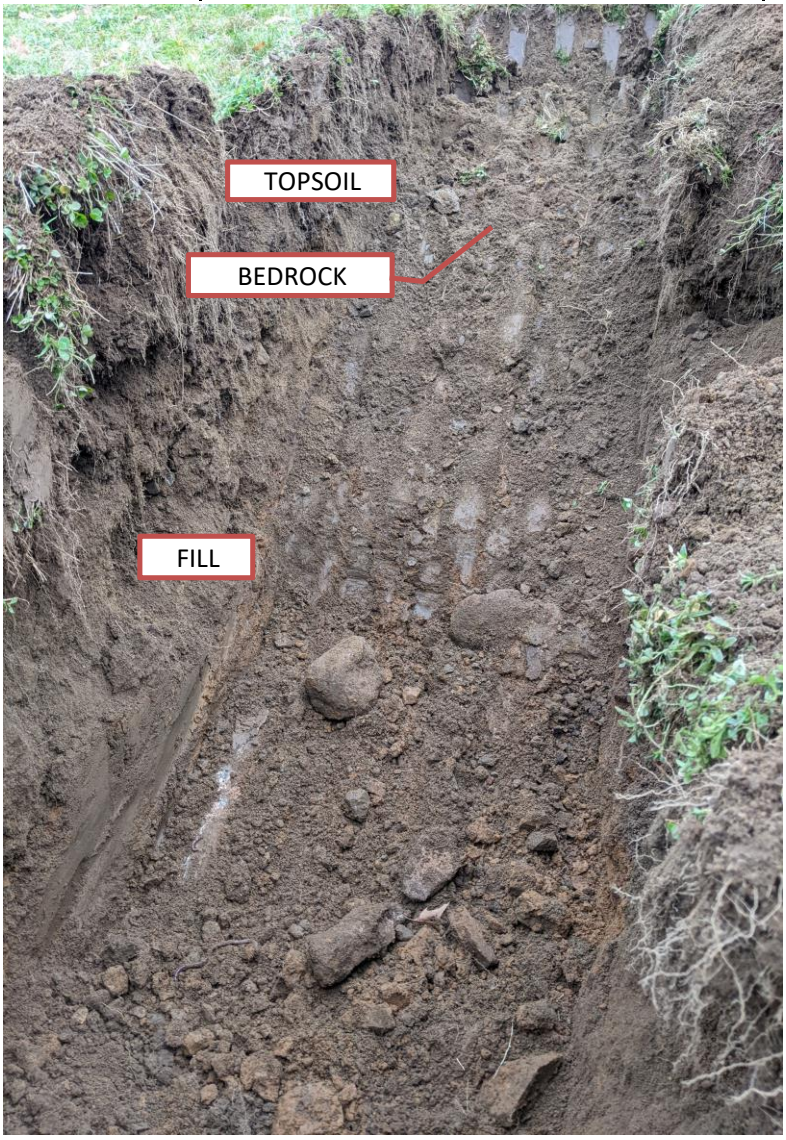
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

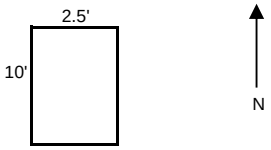
PROJECT		TEST PIT NO.	NTP-109
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	65.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/2/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/2/2021



Notes: 1.) Photo of NTP-109 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

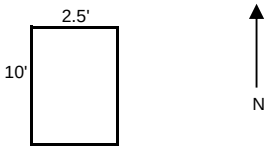
PROJECT		TEST PIT NO.	NTP-110
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/2/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/2/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL/FILL 1.3'±	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (TOPSOIL/FILL)	E	-	Sandy Loam
2	1.9'±	Gray, fine to coarse SAND, little Silt. Moist (FILL)	E	-	Loamy Sand
3	FILL 2.3'±	Orangish brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. Moist (FILL)			
4	4.5'±	Grayish brown, fine to coarse SAND, some fine to coarse Gravel some Silt. Moist (FILL)			Sandy Loam
5	FRACTURED BEDROCK 5.5'±	Chunks of rock that appear to be fractured bedrock mixed with fine to coarse sand and silt.	D	3A, 2B, 2C	-
6		Test pit terminated at approximately 5.5' bgs on probable bedrock.			
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.
3.) Laboratory Grain Size Analysis 2.3-4': 29.7% Gravel, 50.1 % Sand, 20.2% Fines.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

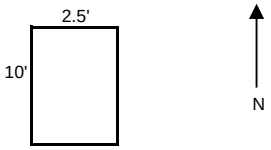
nobis

PROJECT		TEST PIT NO.	NTP-110
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/2/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/2/2021

Notes: 1.) Photo of NTP-110 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

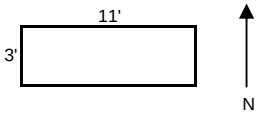
TEST PIT NO. NTP-111
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	59.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/2/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/2/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Dark brown, fine to coarse SAND and Silt, little fine to coarse Gravel. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL	Brown, fine to coarse SAND, some fine to coarse Gravel, some Silt. Moist. (FILL)	E	4A. 3B, 2C	Sandy Loam
3					
4	4.0'±				
5	DECOMPOSED/ FRACTURED BEDROCK	Tan, fine to coarse GRAVEL and fine to coarse Sand, little Silt. Moist.	D	1B	Loamy Sand
6					
7	7.1'±	Chunks of rock that appear to be fractured bedrock.			
8		Test pit terminated at approximately 7.1' bgs on probable bedrock.			
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.
3.) Laboratory Grain Size Analysis 1-4': 31.2% Gravel, 46.7 % Sand, 22.1% Fines.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

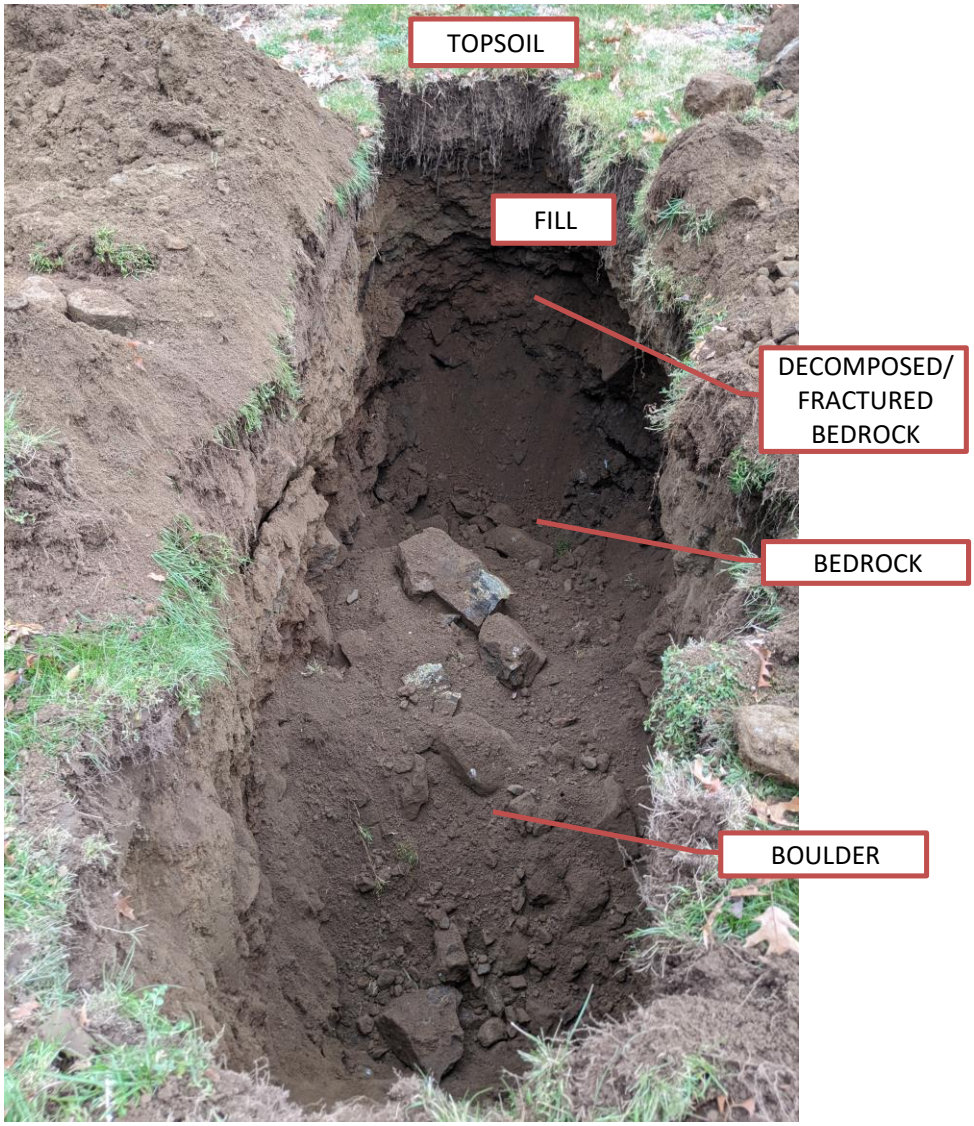
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

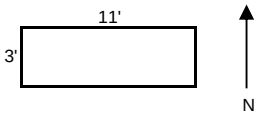
PROJECT		TEST PIT NO.	NTP-111
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	59.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/2/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/2/2021



Notes: 1.) Photo of NTP-111 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

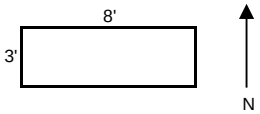
PROJECT		TEST PIT NO.	NTP-112
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	59.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/2/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/2/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1					
2	URBAN FILL	Dark brown, fine to coarse SAND and Silt, some fine to coarse Gravel. Few cobbles. Contains metal, glass, plastic, ash, and other debris. Moist.	E	1A	Loam
3					
4	4.0' ±				
5		Test pit terminated at approximately 4.0' bgs on probable bedrock.			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED

0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

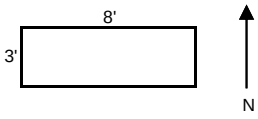
nobis

PROJECT		TEST PIT NO.	NTP-112
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	59.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/2/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/2/2021

Notes: 1.) Photo of NTP-112 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

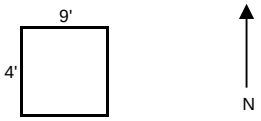
TEST PIT NO. NTP-113
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	61.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/2/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/2/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 0.5'±	Dark brown, fine to coarse SAND and Silt, little fine to coarse Gravel. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL	Brown, fine to coarse SAND, little fine to coarse Gravel, trace Silt. Very few bricks and masonry pieces (more debris on northern side of exploration). Moist.	E	1A	Loamy Sand
3					
4	4.0'±				
5		Test pit terminated at approximately 4.0' bgs on probable bedrock.			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.
3) Laboratory Grain Size Analysis 0-4': 23.4% Gravel, 68.2 % Sand, 8.4% Fines.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

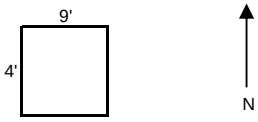
nobis

PROJECT		TEST PIT NO.	NTP-113
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	61.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/2/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/2/2021

Notes: 1.) Photo of NTP-113 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

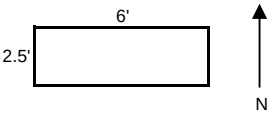
TEST PIT NO. NTP-114
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	54.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/3/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (TOPSOIL)	E	-	Sandy Loam
2	SUBSOIL 2.0'±	Orangish brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (SUBSOIL)	E	3A	Sandy Loam
3		Test pit terminated at approximately 2.0' bgs on probable bedrock.			
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

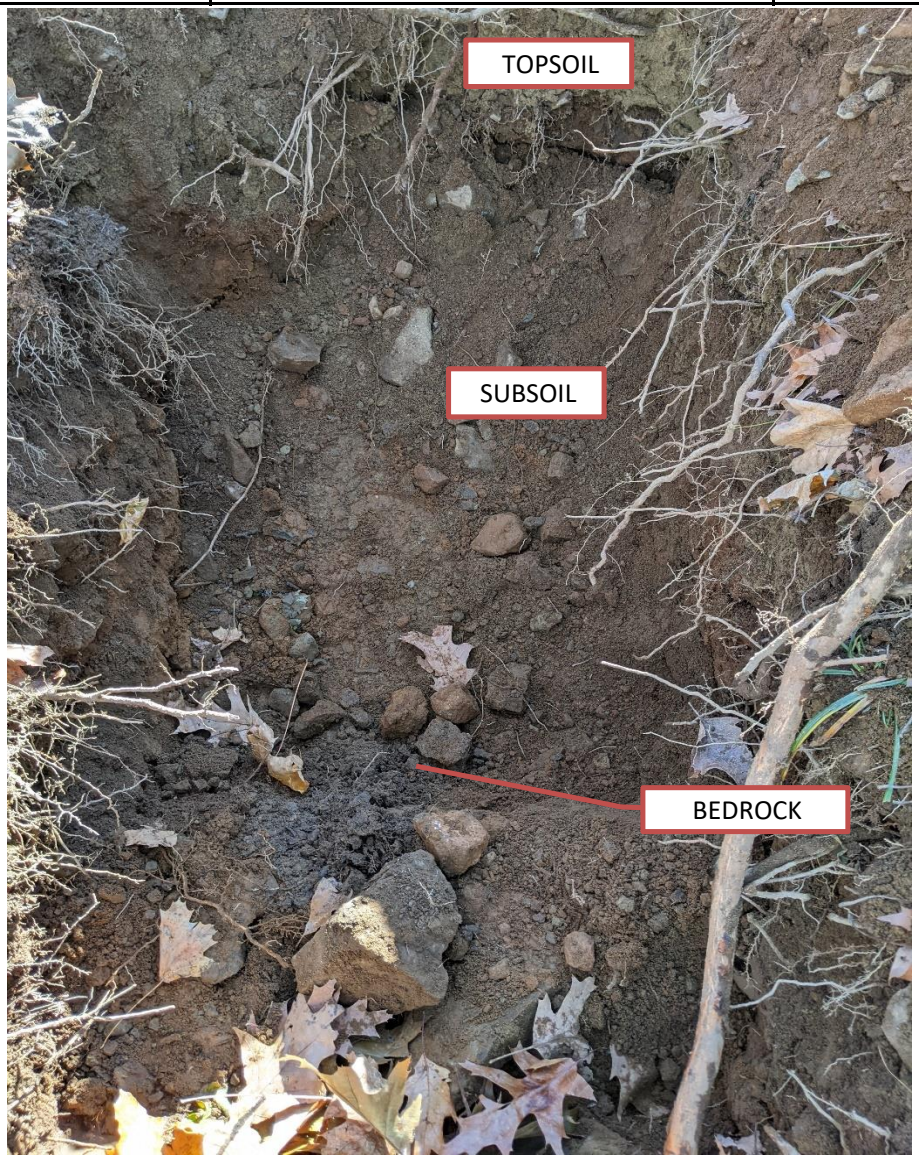
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

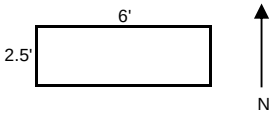
PROJECT		TEST PIT NO.	NTP-114
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	54.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/3/2021



Notes: 1.) Photo of NTP-114 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

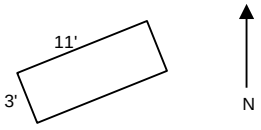
PROJECT		TEST PIT NO.	NTP-115
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	61.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/3/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 0.8'±	Dark brown, fine to coarse SAND and Silt, little fine to coarse Gravel. Few roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL 1.5'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL)	E	-	Sandy Loam
3	2.0'±	Gray, fine to coarse SAND, little Silt. Moist. (FILL)	E	-	Sand
4	2.8'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL)	E	-	Sandy Loam
5	DECOMPOSED/ FRACTURED BEDROCK	Dark brown, fine to coarse SAND and fine to coarse Gravel, some Silt. Several Cobbles. Moist.	M - D	3A, 2B, 1C	Sandy Loam
6					
7	7.0'±				
8		Test pit terminated at approximately 7.0' bgs on probable bedrock.			
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED

0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

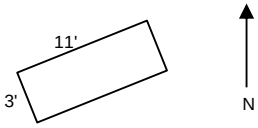
nobis

PROJECT		TEST PIT NO.	NTP-115
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	61.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/3/2021

Notes: 1.) Photo of NTP-115 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

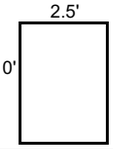
PROJECT		TEST PIT NO.	NTP-116
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	60.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/3/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Dark brown, fine to coarse SAND and Silt, trace fine Gravel. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	1.5'±	Brown, fine to coarse SAND, little Silt, little fine to coarse Gravel. Moist. (FILL)	E	-	Loamy Sand
3	2.0'± FILL	Gray, fine to coarse SAND, little Silt. Moist. (FILL)	E	-	Sand
4	4.0'±	Brown, fine to coarse SAND, little Silt, little fine to coarse Gravel. Moist. (FILL)	E	2A	Loamy Sand
5		Test pit terminated at approximately 4.0' bgs on probable bedrock.			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.
3.) Laboratory Grain Size Analysis 1-4': 25.8% Gravel, 50.7 % Sand, 23.5% Fines.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

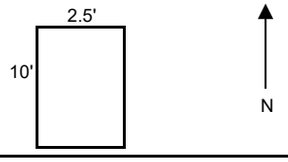
nobis

PROJECT		TEST PIT NO.	NTP-116
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	60.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/3/2021

Notes: 1.) Photo of NTP-116 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

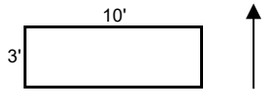
TEST PIT NO. NTP-117
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	61.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/3/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL	Dark brown, fine to coarse SAND and Silt, trace fine Gravel. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	1.5±'				
2	2.0'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL)	E	-	Sandy Loam
3	2.1'± FILL	Gray, fine to coarse SAND, little Silt. Moist. (FILL)	E	-	Sand
4	4.0'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL)	E	4A, 3B	Sandy Loam
5	VERY WEATHERED BEDROCK	Brown, fine to coarse SAND and fine to coarse Gravel, some Silt. Moist.	M - D	-	-
6	5.5'±	Test pit terminated at approximately 5.5' bgs on probable bedrock.			
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

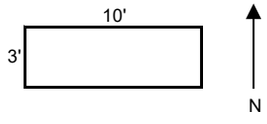
nobis

PROJECT		TEST PIT NO.	NTP-117
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	61.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/3/2021

Notes: 1.) Photo of NTP-117 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-118
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	57.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/3/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Dark brown, fine to coarse SAND and Silt, trace fine Gravel. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
	WEATHERED BEDROCK	Brown, fine to coarse SAND and fine to coarse Gravel, little to some silt. Moist.	D	-	Loamy Sand
2	1.8'±	Test pit terminated at approximately 1.8' bgs on probable bedrock.			
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater

2.5' × 5' ↑ N

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED

0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-118
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	57.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/3/2021

Notes: 1.) Photo of NTP-118 in progress.

WATER SYMBOLS
- Groundwater
- Estimated Seasonal High Groundwater

2.5'
5'

TEST PIT LOG

nobis

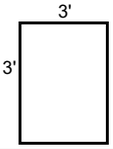
PROJECT		TEST PIT NO.	NTP-119
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/3/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 0.5'±	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel. Few roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	1.5'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL)	E	-	Sandy Loam
3	2.0'±	Gray, fine to coarse SAND, little Silt. Moist. (FILL)	E	-	Sand
4	FILL	Brown, fine to coarse SAND, little Silt, little fine to coarse Gravel. Moist. Few cobbles, several boulders. (FILL)	M - D	3A, 4B	Sandy Loam
5					
6	5.5'±				
7	WEATHERED/ DECOMPOSED BEDROCK	Brown, fine to coarse SAND and fine to coarse Gravel, some Silt. Moist.	D	5A, 3B	Sandy Loam
8					
9					
10	9.5'±	Test pit terminated at approximately 9.5' bgs on probable bedrock.			
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.
3.) Laboratory Grain Size Analysis 0-4': 34.3% Gravel, 41.1 % Sand, 24.6% Fines.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

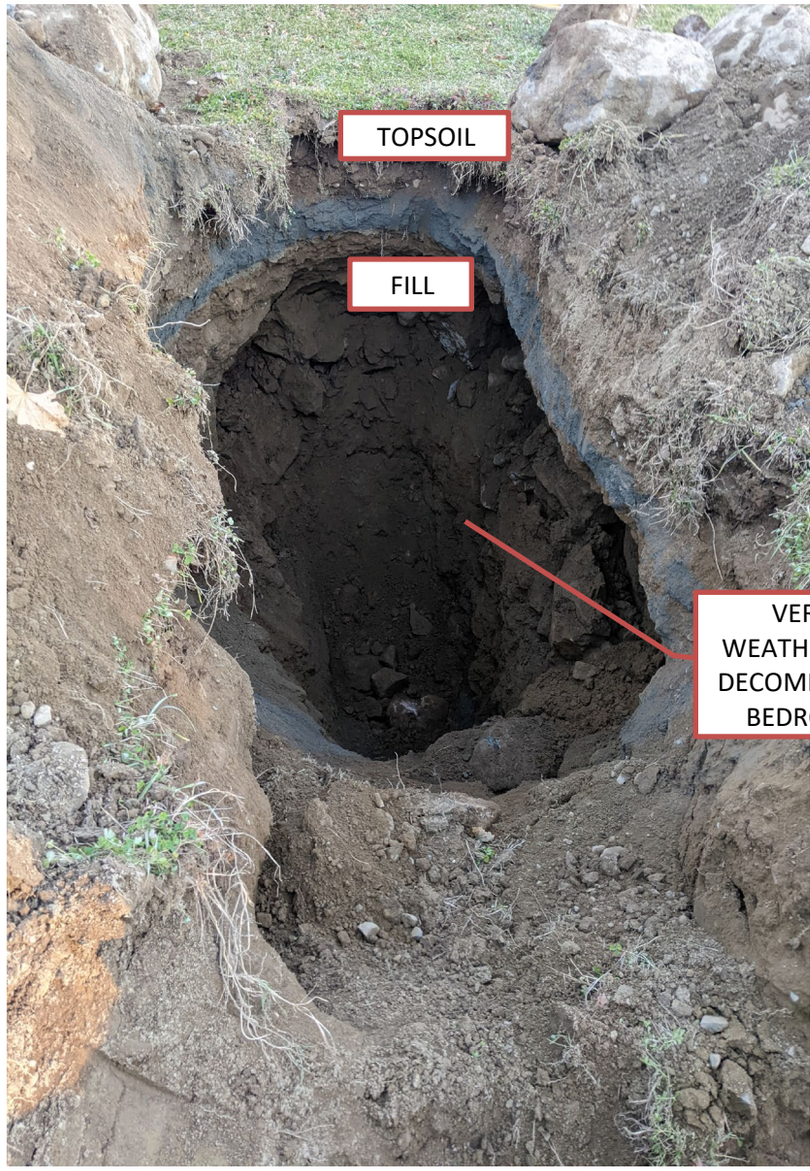
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

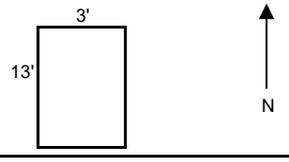
PROJECT			
Hadley Elementary School		TEST PIT NO.	NTP-119
10 Whitman Road		SHEET	2 of 2
Swampscott, Massachusetts		FILE NO.	96700.04
		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/3/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/3/2021



Notes: 1.) Photo of NTP-119 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

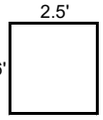
PROJECT		TEST PIT NO.	NTP-120
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	58.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	50s, Overcast	Reach	15 Feet	Date Finish	12/6/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Dark brown, fine to coarse SAND and Silt, trace fine Gravel. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL 2.1'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL)	E	-	Sandy Loam
3	NATIVE 3.0'±	Tan, fine to coarse SAND, little Silt. Moist.	E	-	Loamy Sand
	FRACTURED ROCK	Chunks of rock that appear to be fractured bedrock.	D	-	-
4	3.5'±	Test pit terminated at approximately 3.5' bgs on probable bedrock.			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

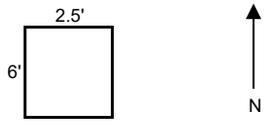
nobis

PROJECT		TEST PIT NO.	NTP-120
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	58.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	50s, Overcast	Reach	15 Feet	Date Finish	12/6/2021

Notes: 1.) Photo of NTP-120 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-121
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/6/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Dark brown, fine to coarse SAND and Silt, trace fine Gravel. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	1.5'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL)	E	-	Sandy Loam
3	2.0'± FILL	Gray, fine to coarse SAND, little Silt. Moist. (FILL)	E	-	Sand
4	4.0'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL)	M	-	Sandy Loam
5	SEVERELY WEATHERED BEDROCK	Brown, fine to coarse SAND and fine to coarse Gravel, some Silt. Several cobbles. Moist.	D	1A	Sandy Loam
6					
7	7.0'±				
8		Test pit terminated at approximately 7.0' bgs on probable bedrock.			
9					
10					
11					
12					
13					
14					
15					

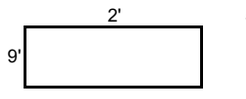
Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.

2.) Groundwater not encountered.

WATER SYMBOLS

▼ Groundwater

▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy

M = Moderate

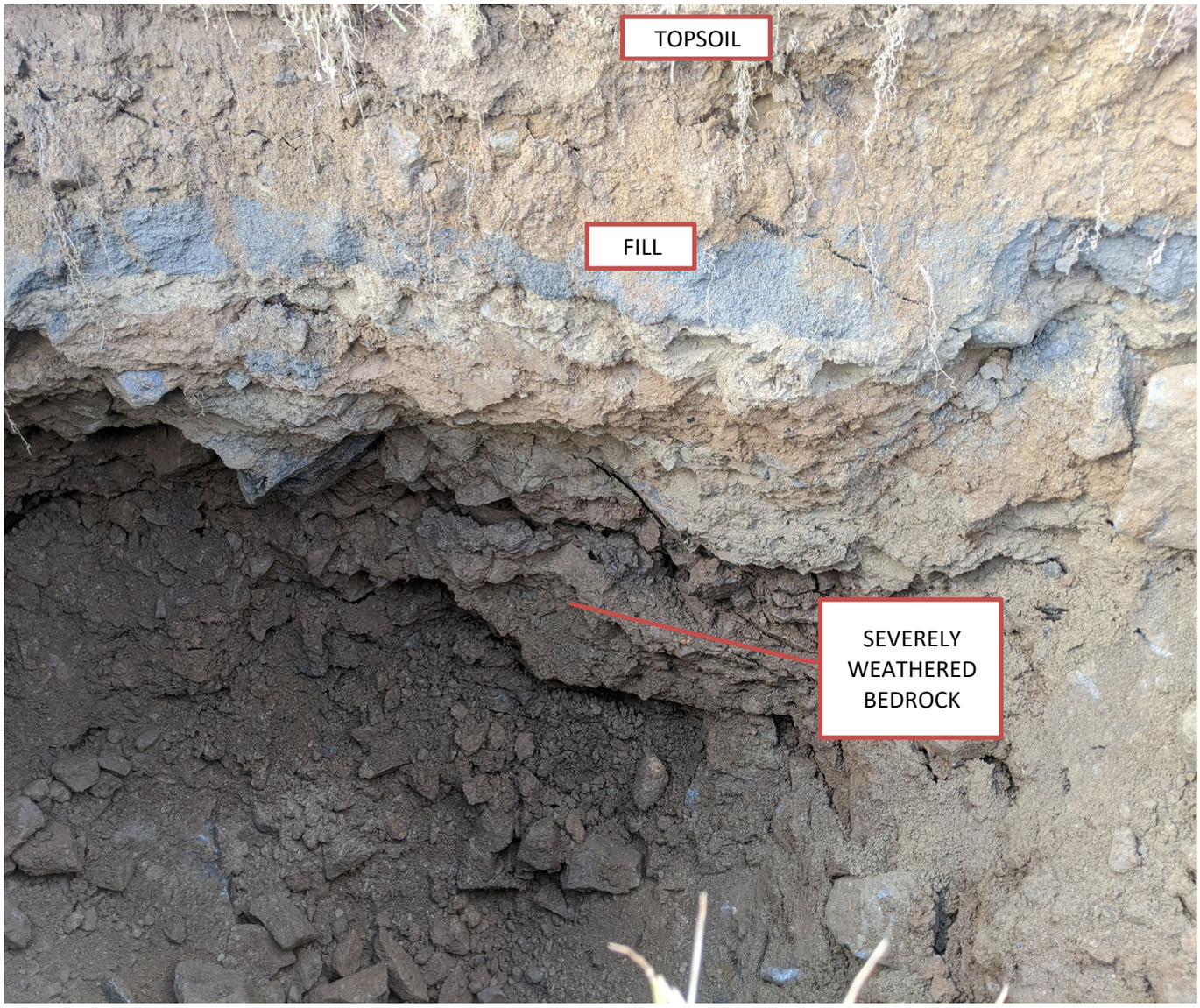
D = Difficult

TEST PIT LOG

nobis

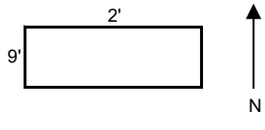
PROJECT		TEST PIT NO.	NTP-121
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/6/2021



Notes: 1.) Photo of NTP-121 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

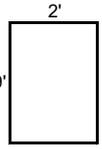
TEST PIT NO. NTP-122
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	60s, Cloudy	Reach	15 Feet	Date Finish	12/6/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.3'±	Dark brown, fine to coarse SAND and Silt, trace fine Gravel. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	1.5'±	Gray, fine to coarse SAND, little Silt. Moist. (FILL)	E	-	Sand
3	FILL	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Moist. (FILL)	E	-	Sandy Loam
4	4.0'±				
5	SEVERELY WEATHERED BEDROCK	Brown, fine to coarse SAND and fine to coarse Gravel, some Silt. Several cobbles. Moist.	D	3A, 2B, 1C	Sandy Loam
6					
7	7.5'±				
8		Test pit terminated at approximately 7.5' bgs due to caving.			
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

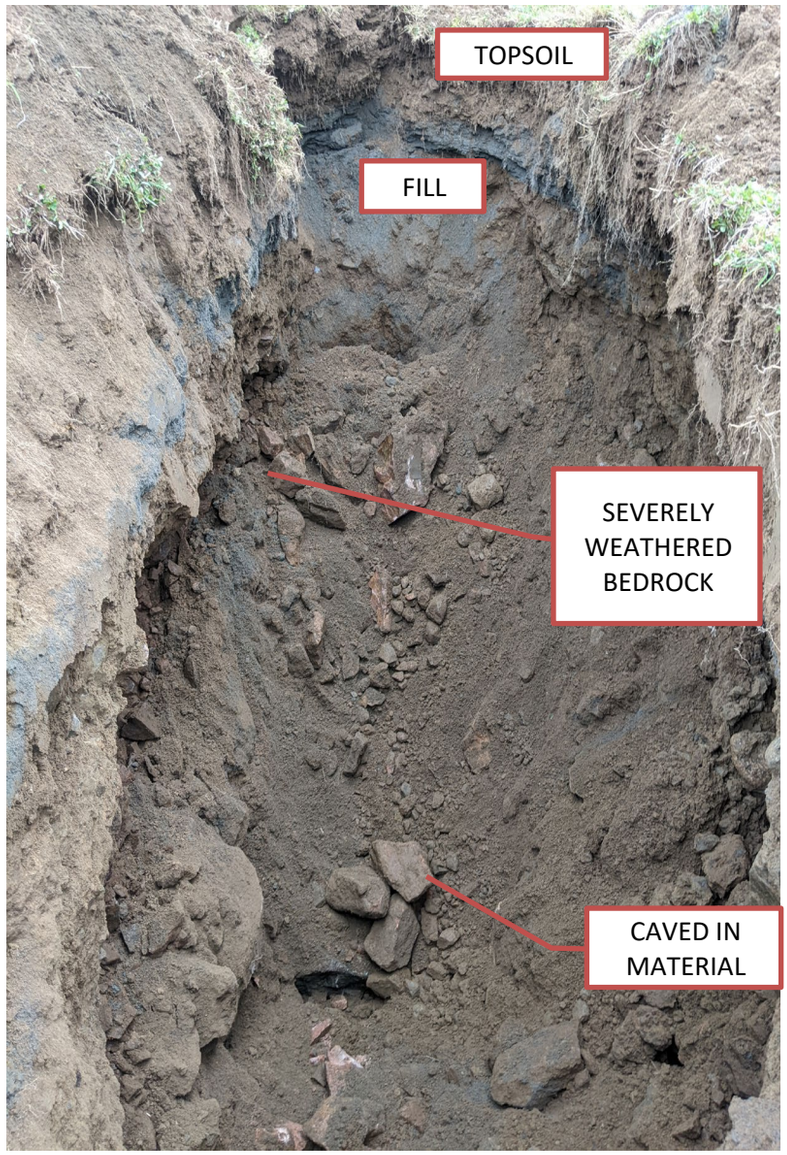
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

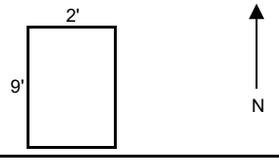
PROJECT		TEST PIT NO.	NTP-122
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	60s, Cloudy	Reach	15 Feet	Date Finish	12/6/2021



Notes: 1.) Photo of NTP-122 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

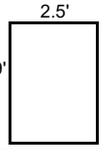
PROJECT		TEST PIT NO.	NTP-123
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	50s, Partly Sunny	Reach	15 Feet	Date Finish	12/6/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Dark brown, fine to coarse SAND and Silt, trace fine Gravel. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	1.5'±	Gray, fine to coarse SAND, little Silt. Moist. (FILL)	E	-	Sand
3	FILL	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Few cobbles and few boulders. Moist. (FILL)	E	2A	Sandy Loam
4	4.0'±				
5	SEVERELY WEATHERED BEDROCK	Brown, fine to coarse SAND and fine to coarse Gravel, some Silt. Several cobbles. Moist.	D	-	Sandy Loam
6	6.5'±				
7		Test pit terminated at approximately 6.5' bgs due to caving.			
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.
3.) Laboratory Grain Size Analysis 0-4': 21.0% Gravel, 51.8 % Sand, 27.2% Fines.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

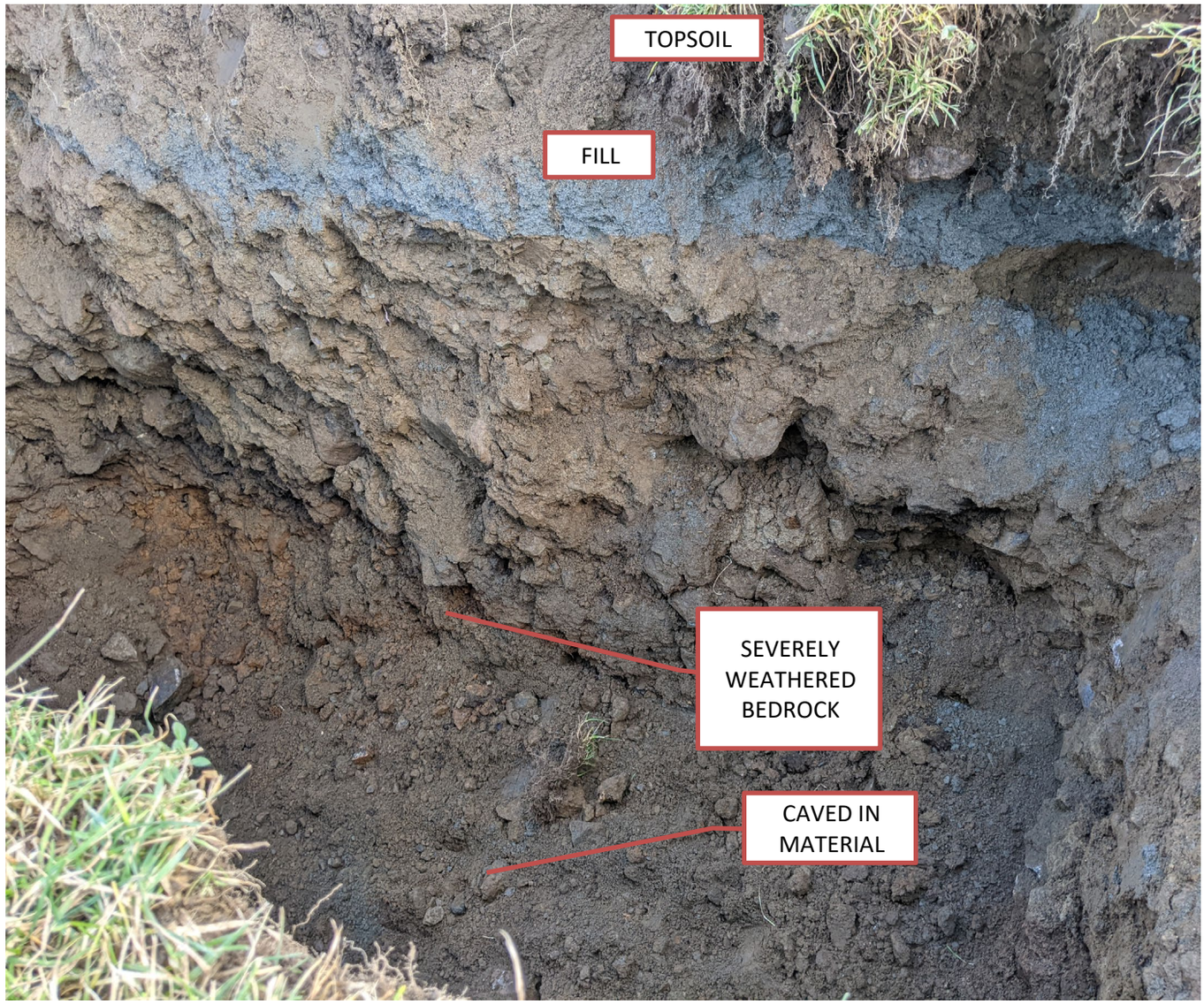
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

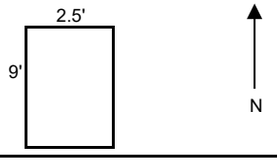
PROJECT		TEST PIT NO.	NTP-123
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	50s, Partly Sunny	Reach	15 Feet	Date Finish	12/6/2021



Notes: 1.) Photo of NTP-123 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-124
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	Shovel	Ground El.	59.5 FT
Contractor	Swampscott DPW	Model	-	Datum	NAVD88
Operator	Scot	Capacity	-	Date Start	12/6/2021
Weather	50s, Partly Sunny	Reach	-	Date Finish	12/6/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	FOREST MAT 0.5'±	Dark brown, Organic SILT. Many roots, Very few cobbles. Moist. (FOREST MAT)	E	-	Loam
2		Test pit terminated at approximately 0.5' bgs on probable bedrock.			
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

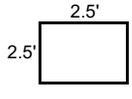
Notes: 1.) Test pit backfilled with excavated soils and compacted with shovel to ground surface.

2.) Groundwater not encountered.

WATER SYMBOLS

▼ Groundwater

▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy

M = Moderate

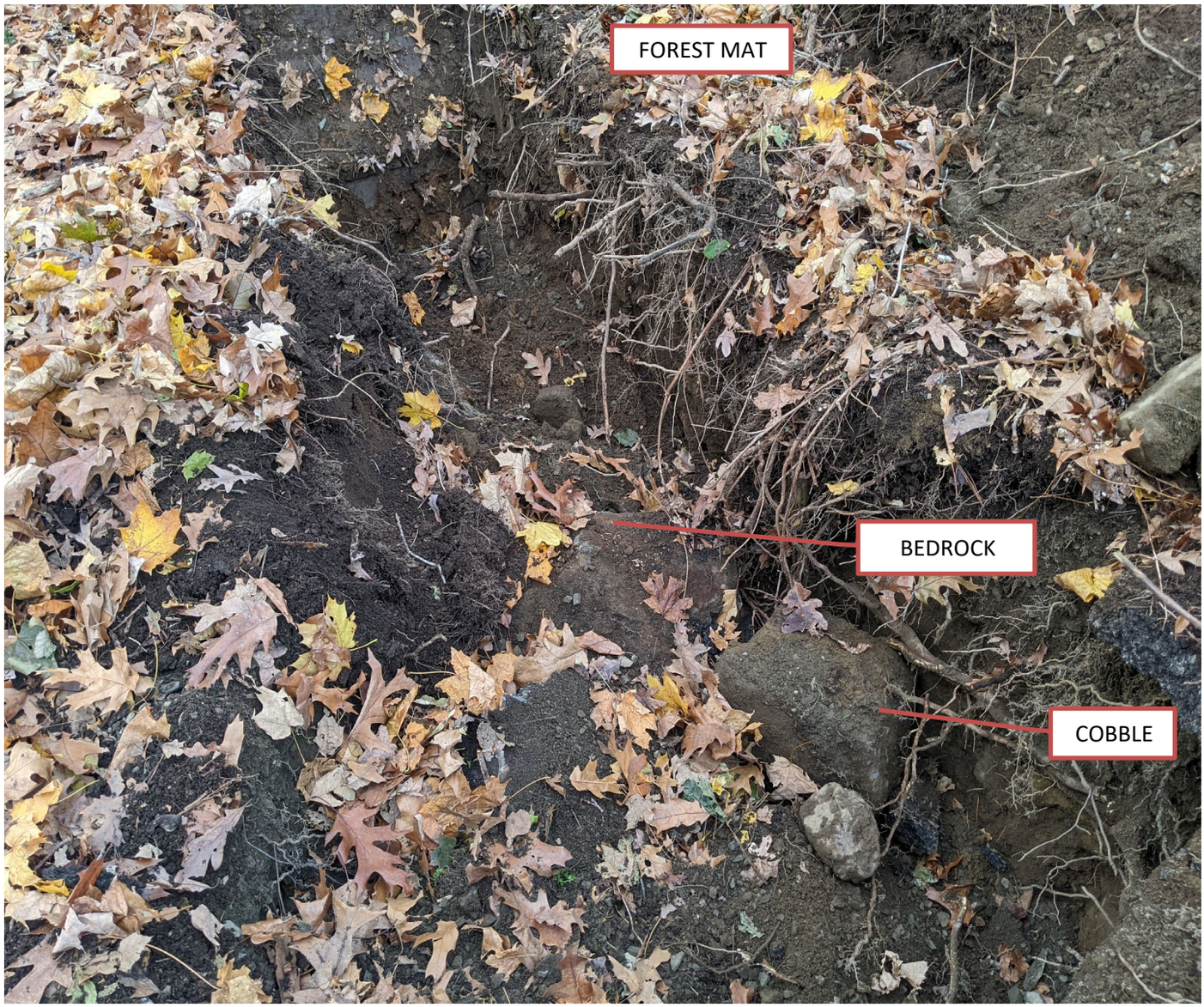
D = Difficult

TEST PIT LOG

nobis

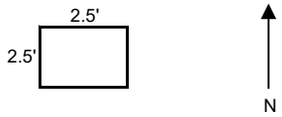
PROJECT		TEST PIT NO.	NTP-124
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	Shovel	Ground El.	59.5 FT
Contractor	Swampscott DPW	Model	-	Datum	NAVD88
Operator	Scot	Capacity	-	Date Start	12/6/2021
Weather	50s, Partly Sunny	Reach	-	Date Finish	12/6/2021



Notes: 1.) Photo of NTP-124 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

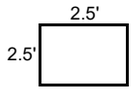
TEST PIT NO. NTP-125
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	60.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	50s, Partly Sunny	Reach	15 Feet	Date Finish	12/6/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL	Dark brown, fine to coarse SAND and Silt, trace fine Gravel. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	1.0'±	Test pit terminated at approximately 1.0' bgs on probable bedrock.			
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

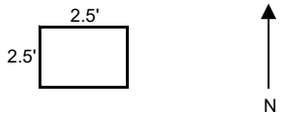
PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

TEST PIT NO.	NTP-125
SHEET	2 of 2
FILE NO.	96700.04
CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	60.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	50s, Partly Sunny	Reach	15 Feet	Date Finish	12/6/2021

Notes: 1.) Photo of NTP-125 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-126
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	59.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	50s, Partly Sunny	Reach	15 Feet	Date Finish	12/6/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL/FILL	Dark brown, fine to coarse SAND and Silt, some fine to coarse Gravel. Few roots. Moist. (TOPSOIL/FILL)	E	-	Sandy Loam
	0.9'±	Test pit terminated at approximately 0.9' bgs on probable bedrock.			
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

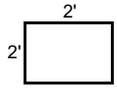
Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.

2.) Groundwater not encountered.

WATER SYMBOLS

▼ Groundwater

▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy

M = Moderate

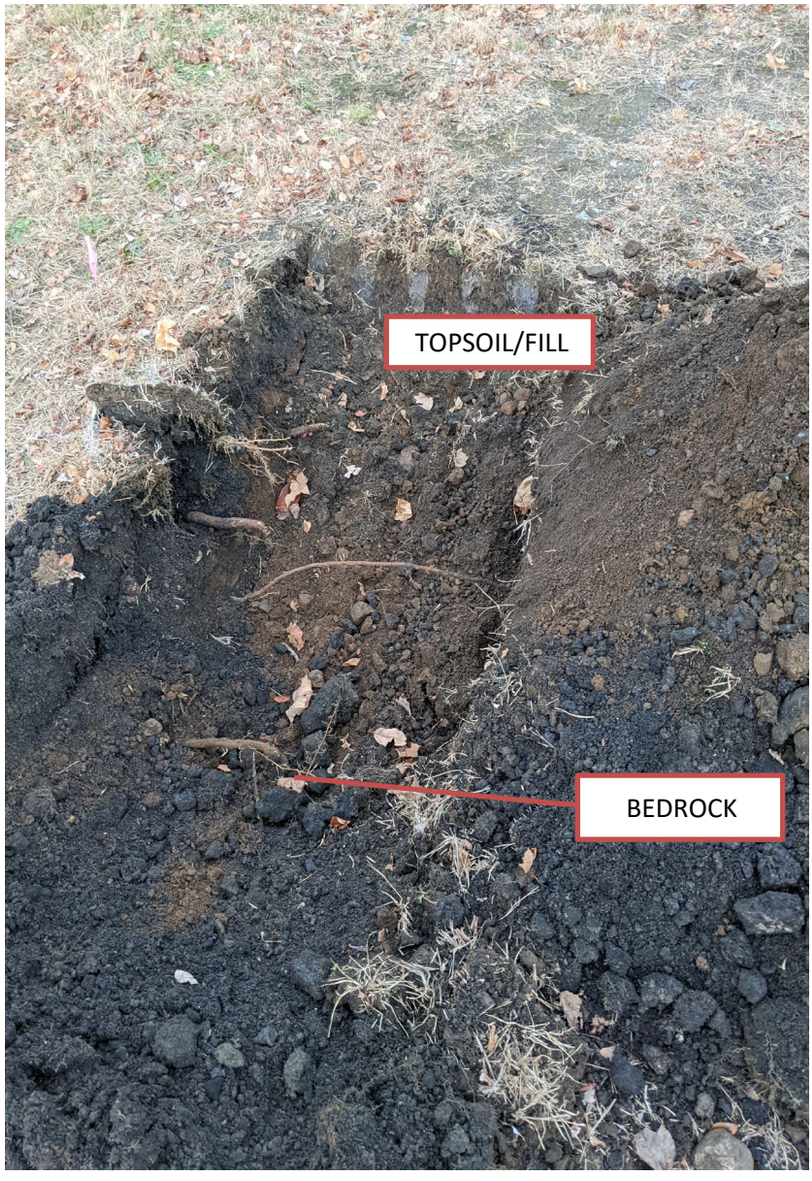
D = Difficult

TEST PIT LOG

nobis

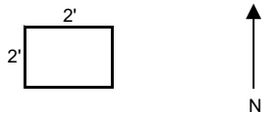
PROJECT		TEST PIT NO.	NTP-126
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	59.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	50s, Partly Sunny	Reach	15 Feet	Date Finish	12/6/2021



Notes: 1.) Photo of NTP-126 in progress.

WATER SYMBOLS
- Groundwater
- Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

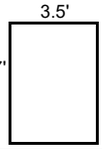
TEST PIT NO. NTP-127
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	58.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/6/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
	ASPHALT	Approximately 6-inches of Asphalt	-	-	-
1	0.5'±	Dark brown, fine to coarse GRAVEL, some fine to coarse Sand, little Silt. Several asphalt pieces. Moist. (SUBBASE)	E - M	-	Loamy Sand
2	1.2'±				
3	FILL	Brown, fine to coarse GRAVEL and fine to coarse Sand, trace Silt. Few cobbles. Moist. (FILL)	M - D	3A	Sand
4					
5	5.0'±	Test pit terminated at approximately 5.0' bgs in fill due to proximity of underground gas and water utility lines.			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.
3.) Laboratory Grain Size Analysis 1.2-5': 48.7% Gravel, 45.3 % Sand, 6.0% Fines.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

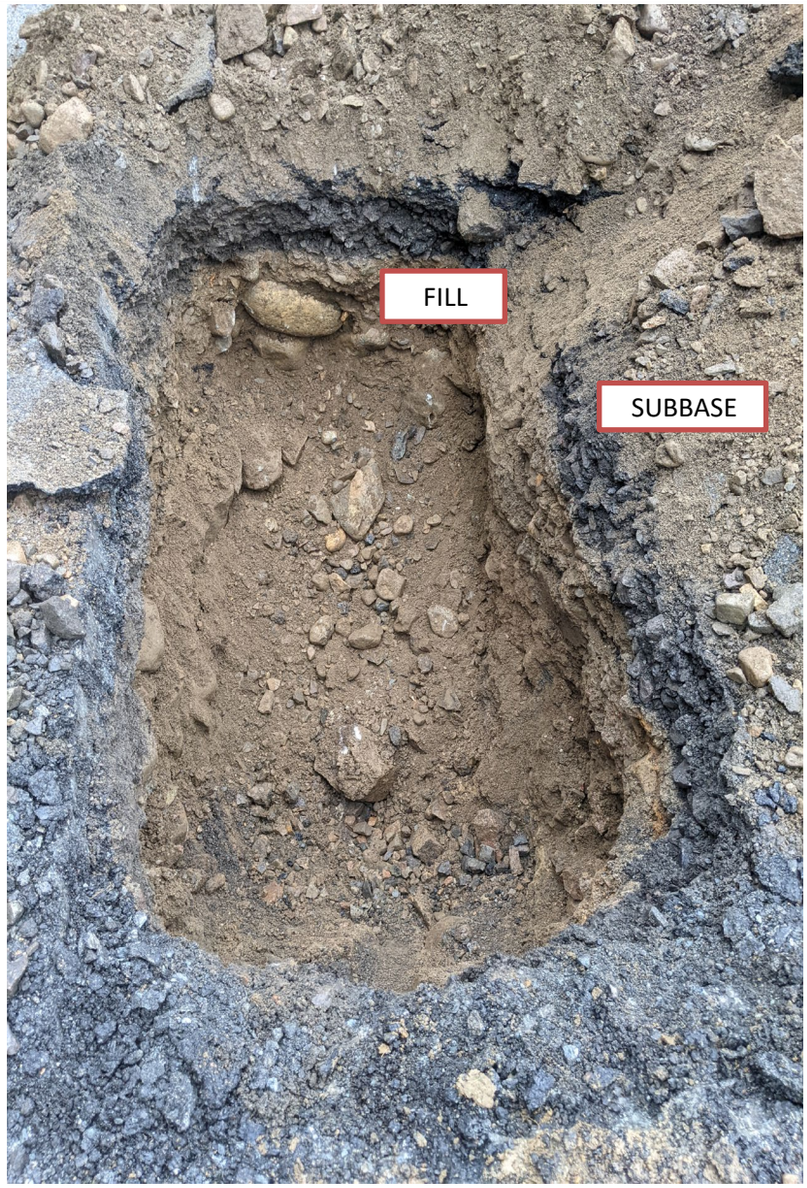
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

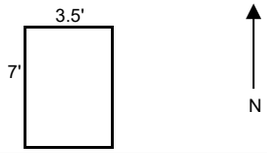
PROJECT		TEST PIT NO.	NTP-127
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	58.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/6/2021
Weather	40s, Overcast	Reach	15 Feet	Date Finish	12/6/2021



Notes: 1.) Photo of NTP-127 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

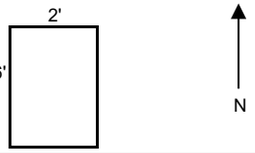
TEST PIT NO. NTP-128
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	64.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.3'±	Dark brown, fine to coarse SAND and Silt, little fine to coarse Gravel. Few roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	SUBSOIL 2.0'±	Brown to tan, fine to coarse SAND and Silt, little fine to coarse Gravel. Very few cobbles. Moist. (SUBSOIL)	E	-	Sandy Loam
3		Test pit terminated at approximately 2.0' bgs on probable bedrock.			
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

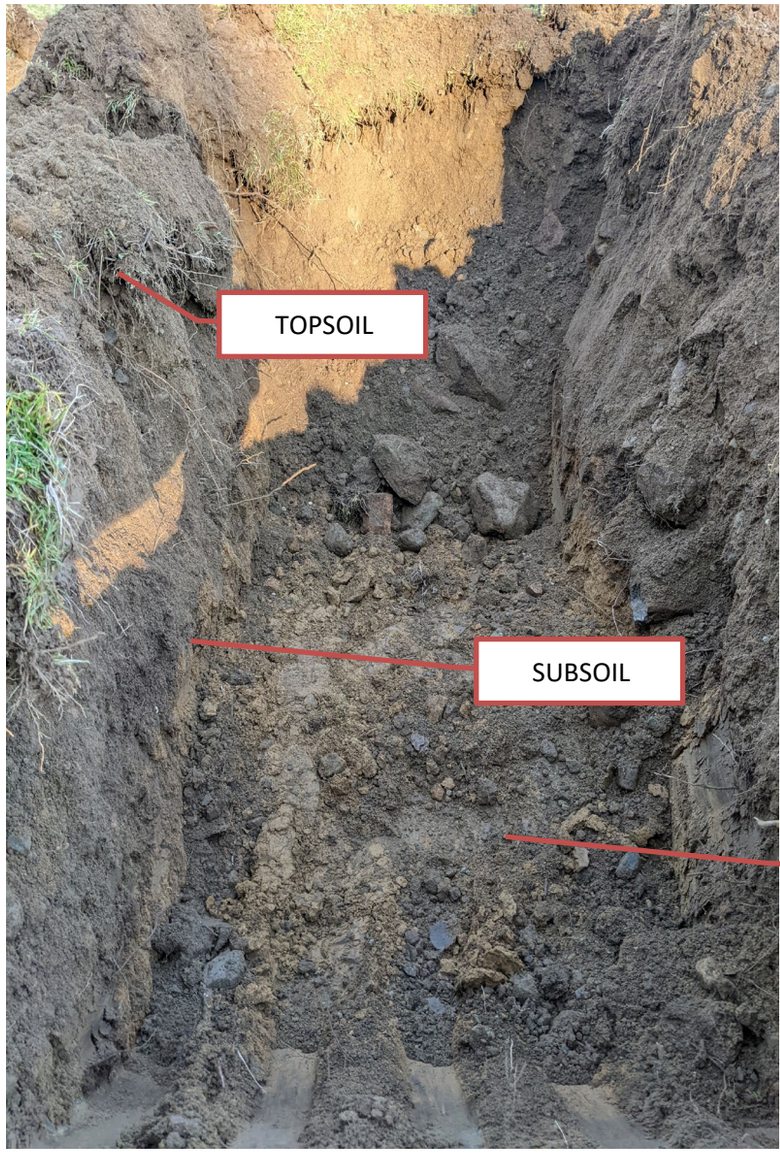
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-128
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

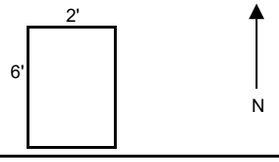
Engineer	S. Kurtzer	Make	John Deere	Ground El.	64.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/7/2021



TOPSOIL

Notes: 1.) Photo of NTP-128 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

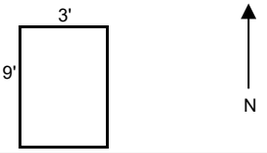
PROJECT		TEST PIT NO.	NTP-129
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	66.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Few roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Few cobbles, very few boulders. Moist. (FILL)	E	1A	Sandy Loam
3	3.0'±				
4		Test pit terminated at approximately 3.0' bgs on probable bedrock.			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

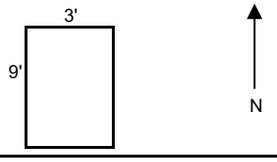
nobis

PROJECT		TEST PIT NO.	NTP-129
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	66.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Notes: 1.) Photo of NTP-129 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

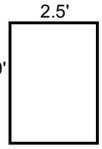
TEST PIT NO. NTP-130
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	66.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL/FILL	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Several roots, few cobbles. Moist. (TOPSOIL/FILL)	E - M	-	Sandy Loam
2					
3					
4	3.0'±	Test pit terminated at approximately 3.0' bgs on probable bedrock.			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

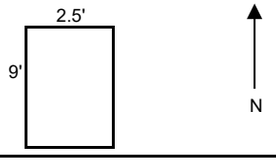
nobis

PROJECT		TEST PIT NO.	NTP-130
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	66.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Notes: 1.) Photo of NTP-130 in progress.

WATER SYMBOLS
- Groundwater
- Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

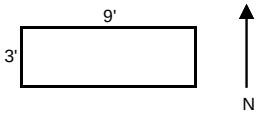
PROJECT		TEST PIT NO.	NTP-131
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	63.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Several roots, few cobbles. Moist. (TOPSOIL)	E	-	Sandy Loam
	FILL 1.5'±	Gray, fine to coarse SAND, little Silt. Moist. (FILL)	E	-	Sand
2	WEATHERED BR	Brown, fine to coarse SAND and fine to coarse Gravel, little Silt.	M	-	Loamy Sand
	FRACTURED BR 2.0'±	Few cobbles. Moist.			
3	2.5'±	Chunks of rock that appear to be fractured bedrock.	D	-	-
4		Test pit terminated at approximately 2.5' bgs on probable bedrock.			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

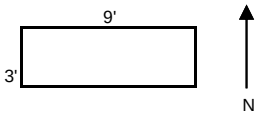
nobis

PROJECT		TEST PIT NO.	NTP-131
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	63.5 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Notes: 1.) Photo of NTP-131 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-132
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	60.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Several roots, few cobbles. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL 2.1'±	Dark brown to tan, fine to coarse SAND, some Silt, little fine to coarse Gravel. Few to several brick and ash particles. Moist. (FILL)	E	-	Sandy Loam
3	WEATHERED BEDROCK	Brown, fine to coarse SAND and fine to coarse Gravel, little Silt. Few cobbles. Moist.	D	-	Loamy Sand
4	3.0'±	Test pit terminated at approximately 3.0' bgs on probable bedrock.			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

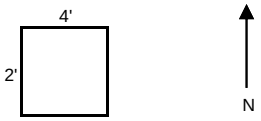
Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.

2.) Groundwater not encountered.

WATER SYMBOLS

▼ Groundwater

▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy

M = Moderate

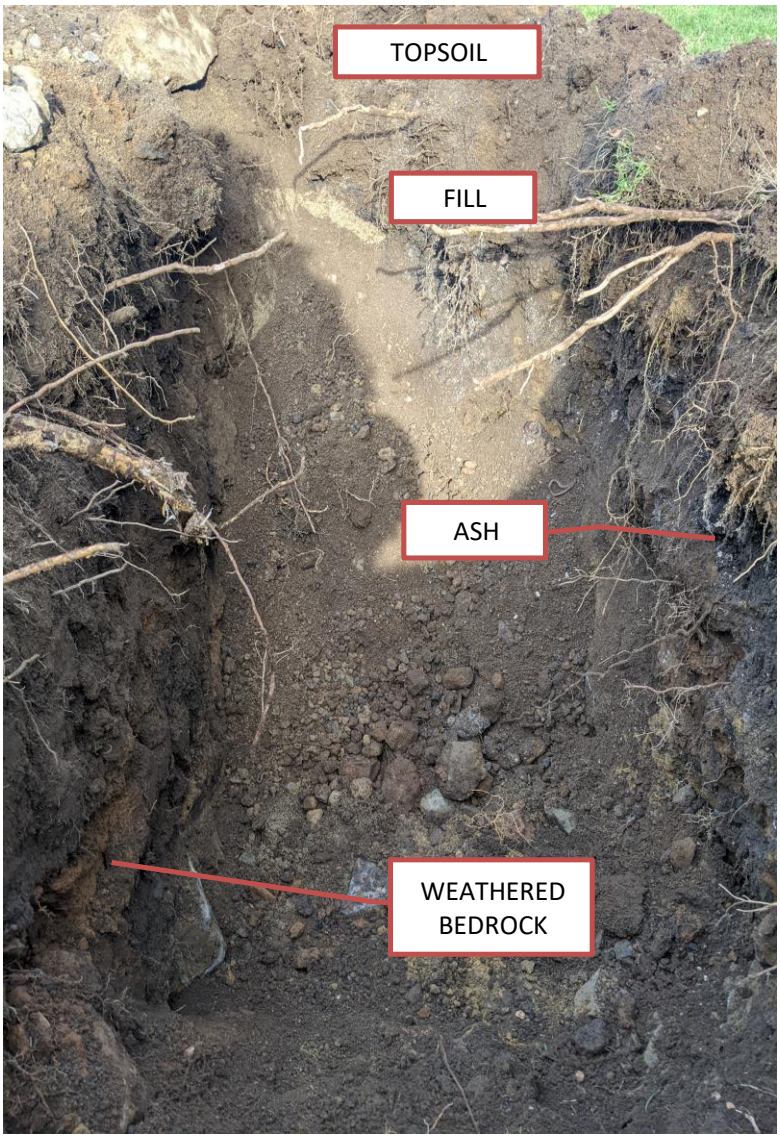
D = Difficult

TEST PIT LOG

nobis

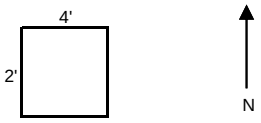
PROJECT		TEST PIT NO.	NTP-132
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	60.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Sunny	Reach	15 Feet	Date Finish	12/7/2021



Notes: 1.) Photo of NTP-132 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-133
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Several roots, few cobbles. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Few cobbles, few glass, ash, brick, and other debris. Moist. (FILL)	E	-	Sandy Loam
3					
4	4.0'±				
	FRACTURED BR	Chunks of rock that appear to be fractured bedrock.	D	-	
5	4.5'±	Test pit terminated at approximately 4.5' bgs on probable bedrock.			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

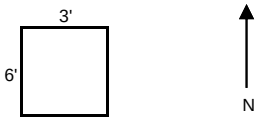
Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.

2.) Groundwater not encountered.

WATER SYMBOLS

▼ Groundwater

▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy

M = Moderate

D = Difficult

TEST PIT LOG

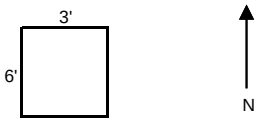
nobis

PROJECT		TEST PIT NO.	NTP-133
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	62.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Notes: 1.) Photo of NTP-133 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

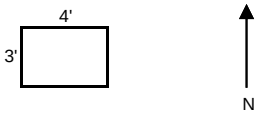
TEST PIT NO. NTP-134
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	60.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Partly Cloudy	Reach	15 Feet	Date Finish	12/7/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.5'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Several roots, few cobbles. Moist. (TOPSOIL)	E	-	Sandy Loam
2		Test pit terminated at approximately 1.5' bgs on probable bedrock.			
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

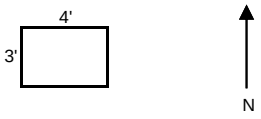
nobis

PROJECT		TEST PIT NO.	NTP-134
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	60.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Partly Cloudy	Reach	15 Feet	Date Finish	12/7/2021

Notes: 1.) Photo of NTP-134 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

TEST PIT NO. NTP-135
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	58.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Partly Cloudy	Reach	15 Feet	Date Finish	12/7/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Several roots, few cobbles. Moist. (TOPSOIL)	E	-	Sandy Loam
2	FILL	Dark brown to brown, fine to coarse SAND, little Silt, little fine to coarse Gravel. Moist. (FILL)	E	-	Loamy Sand
3	2.5'± NATIVE	Tan to brown, fine to coarse SAND, little Silt, little fine to coarse Gravel. Moist.	E	-	Loamy Sand
4	3.4'±	Approx. 2-inches of chunks of rock that appear to be fractured bedrock.	D	-	-
5	3.5'±	Test pit terminated at approximately 3.5' bgs on probable bedrock.			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.
3.) Laboratory Grain Size Analysis 1.2-5': 22.4% Gravel, 44.8 % Sand, 32.8% Fines.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater

6' N

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

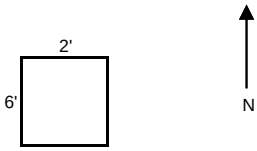
nobis

PROJECT		TEST PIT NO.	NTP-135
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	58.0 FT
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Partly Cloudy	Reach	15 Feet	Date Finish	12/7/2021

Notes: 1.) Photo of NTP-135 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

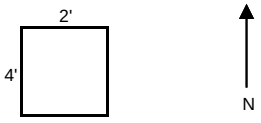
TEST PIT NO. NTP-136
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	N/A
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Partly Cloudy	Reach	15 Feet	Date Finish	12/7/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL 1.0'±	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Several roots. Moist. (TOPSOIL)	E	-	Sandy Loam
2	SUBSOIL 1.3'±	Tan, fine to coarse SAND and Silt, little fine to coarse Gravel. Moist. (SUBSOIL)	E	-	Sandy Loam
3		Test pit terminated at approximately 1.3' bgs on probable bedrock.			
4					
5		Electrical conduit for light poles was encountered at approximately 8-inches bgs. The town and the DPW are going to return to site to repair damage. Area backfilled and coned off until they return.			
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

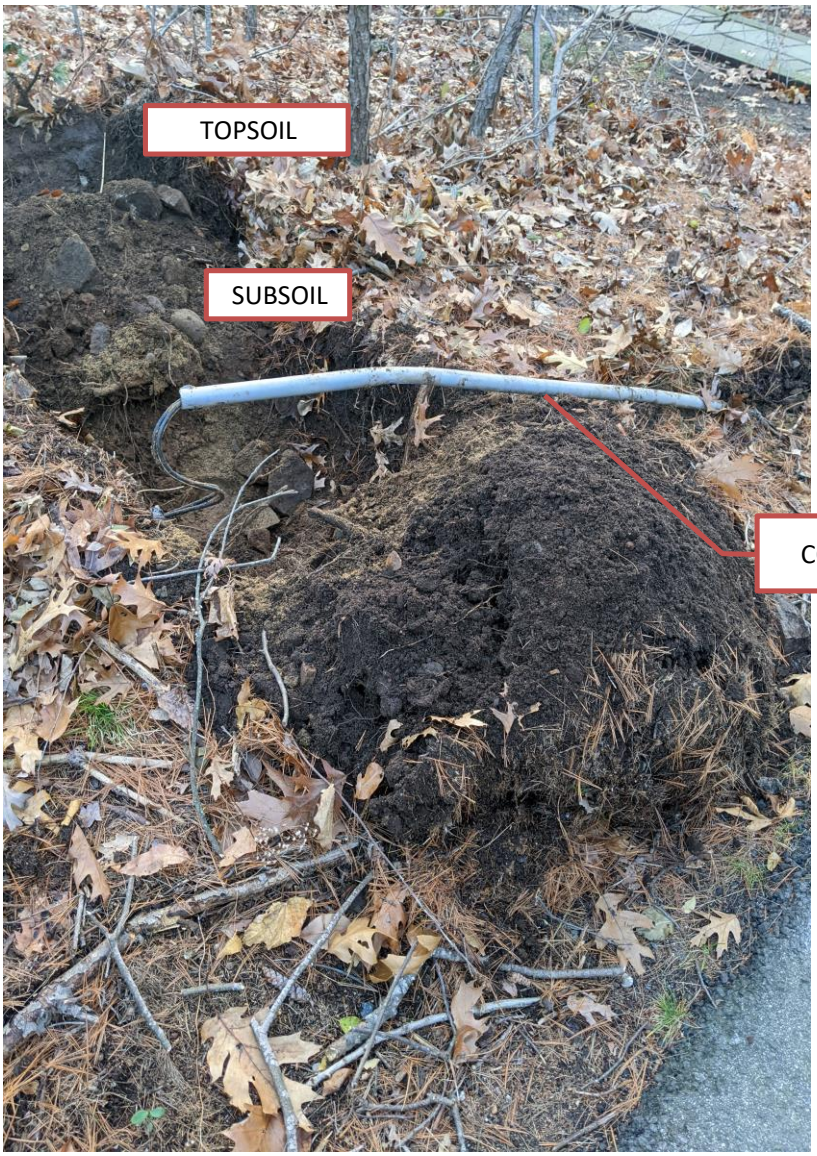
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

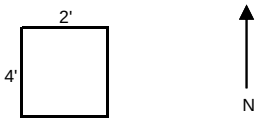
PROJECT		TEST PIT NO.	NTP-136
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	N/A
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	40s, Partly Cloudy	Reach	15 Feet	Date Finish	12/7/2021



Notes: 1.) Photo of NTP-136 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

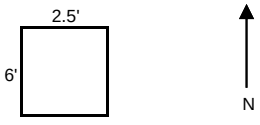
TEST PIT NO. NTP-137
SHEET 1 of 2
FILE NO. 96700.04
CHKD BY SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	N/A
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Few cobbles, very few boulders, many roots. Moist. (TOPSOIL)	E	1A	Sandy Loam
2					
3					
4	3.5'±	Test pit terminated at approximately 3.5' bgs on probable bedrock.			
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

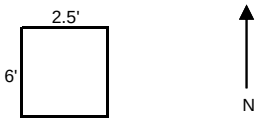
nobis

PROJECT		TEST PIT NO.	NTP-137
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	John Deere	Ground El.	N/A
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Notes: 1.) Photo of NTP-137 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-138
Hadley Elementary School		SHEET	1 of 1
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

Engineer	S. Kurtzer	Make	Shovel	Ground El.	66.5
Contractor	Swampscott DPW	Model	-	Datum	NAVD88
Operator	Scot	Capacity	-	Date Start	12/7/2021
Weather	30s, Sunny	Reach	-	Date Finish	12/7/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	USDA Textural Class
1	TOPSOIL	Less than 1 inch of: Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel. Several roots, few cobbles. Moist. (TOPSOIL)	E	-	Sandy Loam
2		Test pit terminated at approximately 0.1' bgs on probable bedrock.			
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

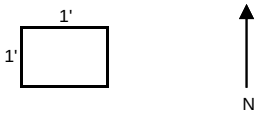
Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket in lifts to ground surface.

2.) Groundwater not encountered.

WATER SYMBOLS

▼ Groundwater

▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT

E = Easy

M = Moderate

D = Difficult

TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-138
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.04
Swampscott, Massachusetts		CHKD BY	SNP

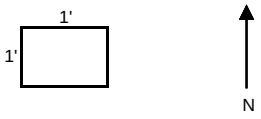
Engineer	S. Kurtzer	Make	John Deere	Ground El.	66.5
Contractor	Swampscott DPW	Model	310 SL HL	Datum	NAVD88
Operator	Scot	Capacity	~1/4 CY	Date Start	12/7/2021
Weather	30s, Sunny	Reach	15 Feet	Date Finish	12/7/2021

Notes: 1.) Photo of NTP-138 in progress.

WATER SYMBOLS

Groundwater

Estimated Seasonal High Groundwater



TEST PIT LOG

nobis

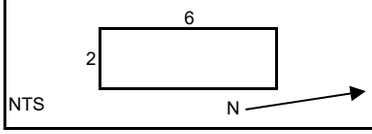
PROJECT		TEST PIT NO.	NTP-1
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	61.2 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	TOPSOIL /FILL	Brown, fine to coarse SAND, some organic matter, trace fine to coarse Gravel, trace cobbles. Moist.	M	TRACE/A	
2	BEDROCK 1.5'±	2.0'± Extremely fractured rock. Bucket sparking.	D	N/A	
3		Bottom of exploration 2 feet bgs; Excavator refusal on bedrock.			1, 2
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

TEST PIT NO.	NTP-1
SHEET	2 of 2
FILE NO.	96700.03
CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	61.2 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Notes: 1.) Photo of NTP-1 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater

NTS
6
2
N

TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

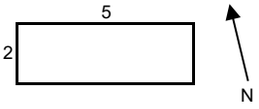
TEST PIT NO. NTP-2
SHEET 1 of 2
FILE NO. 96700.03
CHKD BY AJ

Engineer	S. Pape	Make	John Deere	Ground El.	62.8 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	TOPSOIL	Brown, fine to coarse SAND, some organic matter, trace fine to coarse Gravel, trace cobbles. Moist. (12 inches) 1.0'±	M	Trace/A	Frozen
2	FILL	Brown, fine to coarse SAND, little fine to coarse Gravel, little silt. Moist. 2.5'±	M	Little/A+B	
3		Bottom of exploration 2.5 feet bgs; Excavator refusal on bedrock.			1,2
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



NTS

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

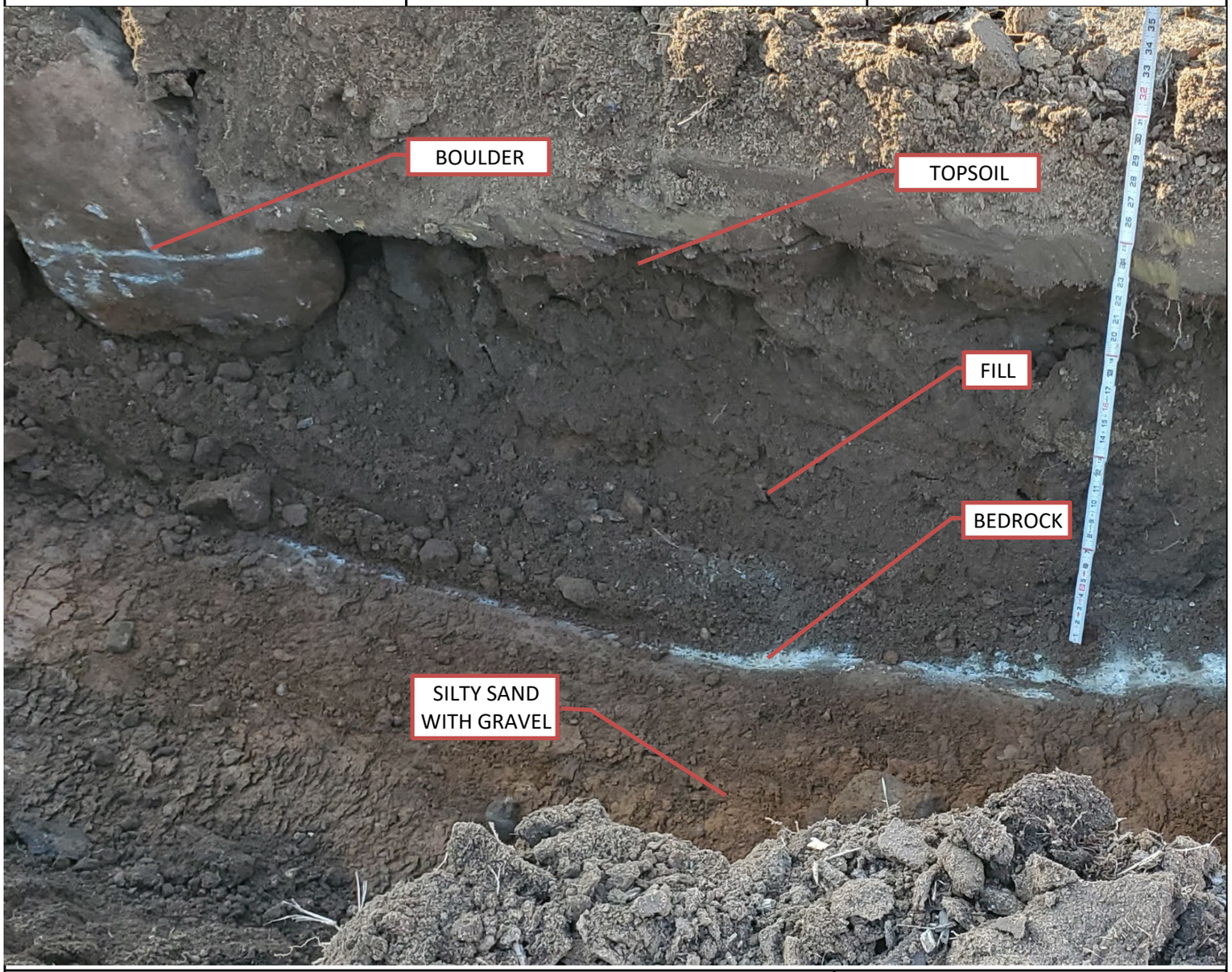
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-2
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

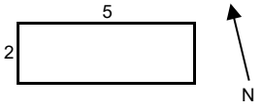
Engineer	S. Pape	Make	John Deere	Ground El.	62.8 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021



Notes: 1.) Photo of NTP-2 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater

NTS



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

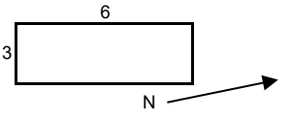
TEST PIT NO. NTP-3
SHEET 1 of 2
FILE NO. 96700.03
CHKD BY AJ

Engineer	S. Pape	Make	John Deere	Ground El.	57.7 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	TOPSOIL	0.5'± Brown, fine to coarse SAND, some organic material. Moist.	E	None Obs.	
	SAND FILL	1.0'± Tan, fine to medium SAND, trace silt. Moist.	E	None Obs.	1
2		1.5'± Becomes grayish brown, some silt.			
	BURIED TOPSOIL	2.0'± Brown, organic SILT, some organic fibers. Buried topsoil.	E	None Obs.	
3	SANDY SILT	3.0'± Orangish brown, SILT, some fine to medium Sand. Moist	E	None Obs.	
4		Bottom of exploration 3 feet bgs; Excavator refusal on bedrock.			2,3
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) 1 foot thick buried swingset foundation encountered 1'± bgs on East side of NTP-3.
2.) Test pit backfilled with excavated soils and compacted with excavator bucket.
3.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

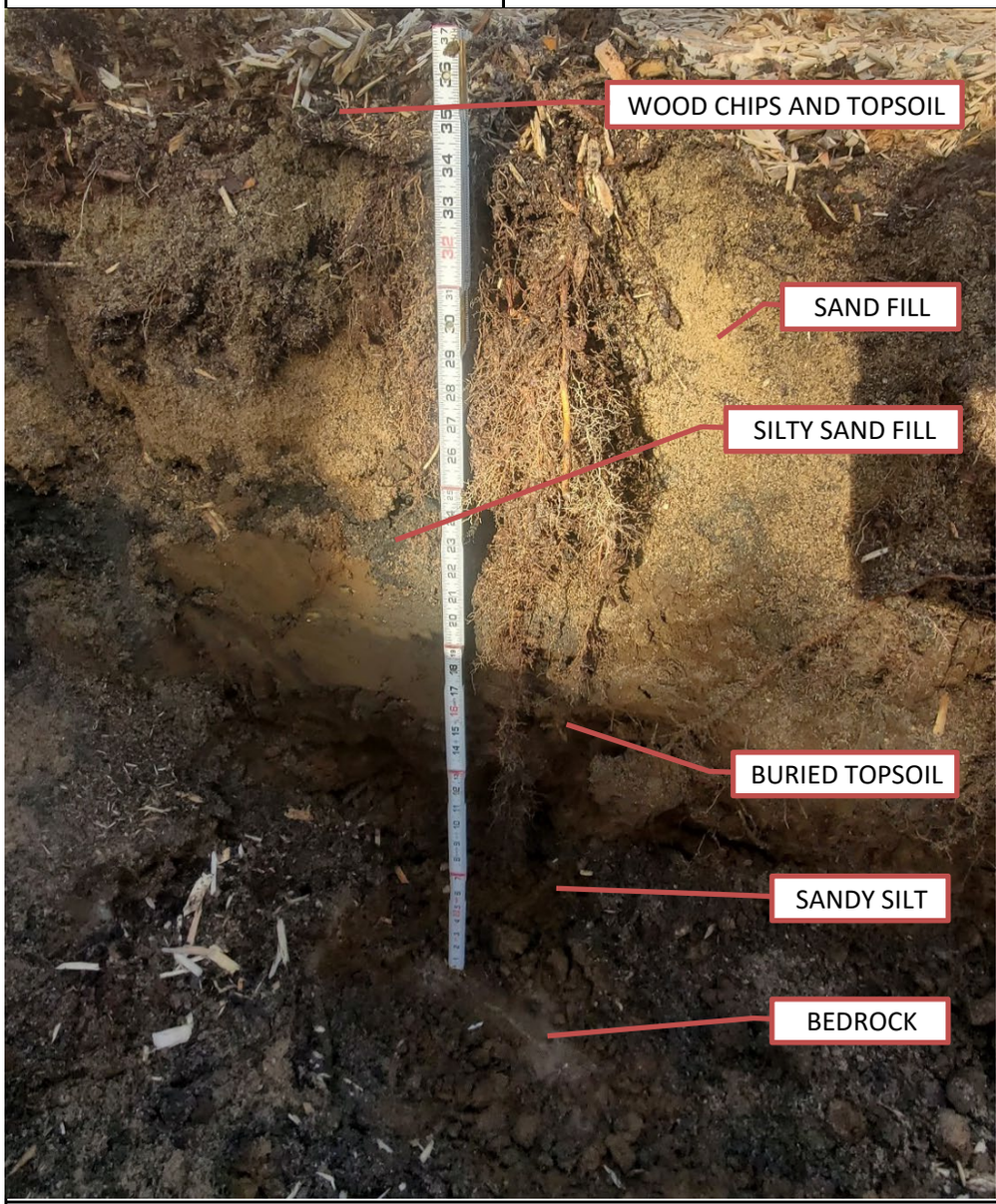
EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-3
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

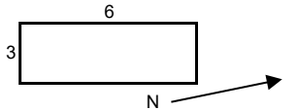
Engineer	S. Pape	Make	John Deere	Ground El.	57.7 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021



Notes: 1.) Photos of NTP-3 in progress.

WATER SYMBOLS
- Groundwater
- Estimated Seasonal High Groundwater

NTS



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

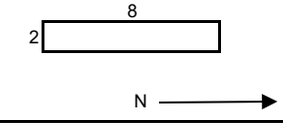
TEST PIT NO. NTP-4
SHEET 1 of 2
FILE NO. 96700.03
CHKD BY AJ

Engineer	S. Pape	Make	John Deere	Ground El.	59.3 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	TOPSOIL	Brown, fine to coarse SAND, some organic material, trace fine to coarse Gravel, trace cobbles. Moist. (17 inches)	E	None Observed	
2	SILT & SAND	1.4'± 1.8'± Orangish brown, fine to medium SILT & SAND. Moist.	E	None Obs.	
3		Bottom of exploration 1.8 feet bgs; Excavator refusal on bedrock.			1,2
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-4
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	59.3 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Notes: 1.) Photo of NTP-4 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater

8
2
NTS
N

TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-5
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	58.1 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	TOPSOIL /FILL	Brown, fine to coarse SAND, some fine to coarse Gravel, little silt, little cobbles, trace organic matter. Moist.	E	Little/A	1
2					
3		3.0'±			
4	FILL	Dark grayish brown, fine to coarse SAND & SILT. Moist.	E	Trace/A	
5		4.4'±			
6	SAND & SILT	Light gray, mottled, fine SAND & SILT, trace cobbles up to 8 inches in diameter. Moist.	M	Trace/A	
7					
8		8.0'±			
9		Bottom of exploration 8 feet bgs; Excavator refusal on bedrock.			2,3
10					
11					
12					
13					
14					
15					

Notes:
1.) Two 4-inch C.I. conduits encountered at North end of test pit. Appeared to run from LC&ECo manhole cover to East wing of existing building.
2.) Test pit backfilled with excavated soils and compacted with excavator bucket.
3.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater

7
2
NTS
N

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

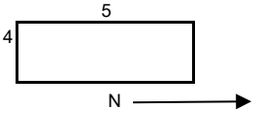
TEST PIT NO.	NTP-5
SHEET	2 of 2
FILE NO.	96700.03
CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	58.1 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Notes: 1.) Photo of NTP-5 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater

NTS



TEST PIT LOG

nobis

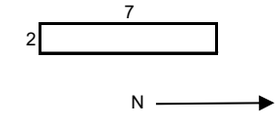
PROJECT		TEST PIT NO.	NTP-6
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	62.2 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	TOPSOIL /FILL	Brown, fine to coarse SAND, little fine to coarse Gravel, little Silt, little organic material. Moist	M	None Observed	Top Frozen
2		1.8'±			
	SAND FILL	2.3'± Gray, fine to medium SAND, little fines. Moist.	E	None Obs.	1
3	FILL	Brown, fine to coarse SAND, some fine to coarse Gravel, little Silt, little cobbles. Moist.	E	Little/A+B	
4		G-2 Laboratory Particle Size Analysis [13% Cobble, 17% Coarse Gravel, 12% Fine Gravel, 8% Coarse Sand, 16% Medium Sand, 15% Fine Sand, 18.7% Fines]			
5		5.6'±			
6		Bottom of exploration 5.6 feet bgs; Excavator refusal on bedrock.			2,3
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) G-1 Laboratory Particle Size Analysis [0.3% Fine Gravel, 3% Coarse Sand, 45% Medium Sand, 28% Fine Sand, 23.5% Fines]
2.) Test pit backfilled with excavated soils and compacted with excavator bucket.
3.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED	
0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-6
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	62.2 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Notes: 1.) Photo of NTP-6 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater

7
2
NTS
N

TEST PIT LOG

nobis

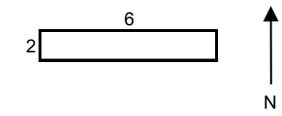
PROJECT		TEST PIT NO.	NTP-7
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	61.2 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	TOPSOIL	0.5'± Topsoil and organic material (6 inches).	E	None Obs.	
	SAND FILL	1.0'± Gray, fine to medium SAND, some silt. Moist. (3 inches)	E	None Obs.	
2	FILL	Brown, fine to coarse SAND, some fine to coarse Gravel, some silt. Moist. G-1 (1-4') Laboratory Particle Size Analysis [8% Coarse Gravel, 20 % Fine Gravel, 8% Coarse Sand, 21% Medium Sand, 20% Fine Sand 23% Fines]	M	Little/A+B	
3					
4					
5					
		5.5'±			
6	BEDROCK	Gray, extremely fractured, Salem GABBRO-DIORITE.	D	N/A	
7					
		7.5'±			
8		Bottom of exploration 7.5 feet bgs; Excavator refusal on bedrock.			1,2
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



NTS

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

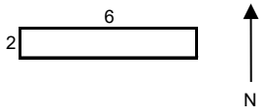
PROJECT		TEST PIT NO.	NTP-7
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	61.2 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Notes: 1.) Photo of NTP-7 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater

NTS



TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

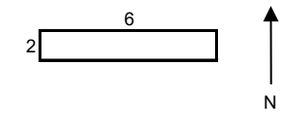
TEST PIT NO. NTP-8
SHEET 1 of 2
FILE NO. 95780.00
CHKD BY AJ

Engineer	S. Pape	Make	John Deere	Ground El.	63.2 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	TOPSOIL /FILL	Topsoil and organic material	E	None Observed	
2	SAND FILL	1.5'± Gray, fine to medium SAND, some silt. Moist. 2.0'±	E	None Obs.	
3	SAND & SILT	Tan, fine to medium SAND & SILT, trace fine to coarse gravel, trace cobbles. Moist	M	Trace/A+B	
4		3.8'±			
5		Bottom of exploration 3.8 feet bgs; Excavator refusal on bedrock.			1,2
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



NTS

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

TEST PIT NO.	NTP-8
SHEET	2 of 2
FILE NO.	96700.03
CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	63.2 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Notes: 1.) Photo of NTP-8 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater

2 6 NTS

N

TEST PIT LOG

nobis

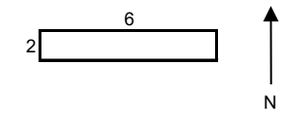
PROJECT		TEST PIT NO.	NTP-9
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	63.7 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	TOPSOIL /FILL	Brown, fine to medium SAND & SILT, little organic material, trace fine to coarse Gravel. Moist. 1.0'±	E	None Observed	
2	SAND FILL	1.5'± Gray, fine to medium SAND, some Silt. Moist.	E	None Obs.	
3	FILL	Brown, fine to coarse SAND, some fine to coarse Gravel, trace silt, trace cobbles. Moist. 3.3'±	M	Little/A+B	
4					
5	SILTY CLAY	Orangish tan, CLAY & SILT, and fine to coarse Sand, little fine to coarse Gravel, trace Cobbles. Moist. 5.2'±	E	None Observed	1
6		Bottom of exploration 5.2 feet bgs; Excavator refusal on bedrock.			2,3
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes:
1.) G-1 (3.3-4.3') Laboratory Particle Size Analysis [3% Coarse Gravel, 10% Fine Gravel, 5% Coarse Sand, 14% Medium Sand, 24% Fine Sand, 44% Fines.
2.) Test pit backfilled with excavated soils and compacted with excavator bucket.
3.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



NTS

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED

0-10%	Trace
10-20%	Little
20-35%	Some
35-50%	And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

PROJECT		TEST PIT NO.	NTP-9
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	63.7 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Notes: 1.) Photo of NTP-9 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater

2 6

NTS

N

TEST PIT LOG

nobis

PROJECT
Hadley Elementary School
10 Whitman Road
Swampscott, Massachusetts

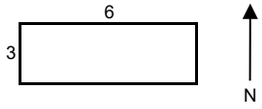
TEST PIT NO. NTP-10
SHEET 1 of 2
FILE NO. 96700.03
CHKD BY AJ

Engineer	S. Pape	Make	John Deere	Ground El.	61.5 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	TOPSOIL /FILL	Brown, fine to coarse SAND & SILT, some organic material, trace fine to coarse Gravel. Moist.	E	None Observed	
2	SAND FILL	1.5'± Gray, fine to medium SAND, some silt. Moist. 2.0'±	E	None Obs.	
3	FILL	Brown, fine to coarse SAND, some fine to coarse Gravel, little Silt, trace cobbles. G-1 Laboratory Particle Size Analysis [13% Coarse Gravel, 19% Fine Gravel, 9% Coarse Sand, 21% Medium Sand, 20% Fine Sand, 18% Fines] 7.5'±	M	Some/A-C	Sidewalls caved.
4					
5					
6					
7					
8	SILTY CLAY	Orangish tan, Silty CLAY, trace fine sand, trace cobbles. Moist. 9.4'±	M	Trace/A	G-2
9					
10		Bottom of exploration 9.4 feet bgs; Excavator refusal on bedrock.			1,2
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



NTS

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

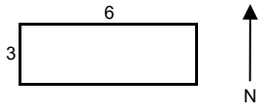
PROJECT		TEST PIT NO.	NTP-10
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	61.5 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Notes: 1.) Photo of NTP-10 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater

NTS



TEST PIT LOG

nobis

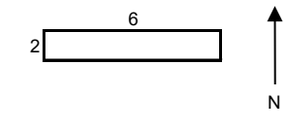
PROJECT		TEST PIT NO.	NTP-11
Hadley Elementary School		SHEET	1 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	64.1 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Remarks
1	TOPSOIL	Brown, fine to coarse SAND, some organic Silt, trace fine to coarse gravel, trace organic fibers. Moist. 1.0'±	E	None Obs.	
2	SILTY SAND WITH GRAVEL	Orangish brown, fine to coarse SAND, some silt, little fine to coarse gravel. Moist.	E	Little/A+B	
3		2.6-3.2'±			
4		Bottom of exploration 2.6 to 3.2 feet bgs; Excavator refusal on bedrock.			1,2
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Notes: 1.) Test pit backfilled with excavated soils and compacted with excavator bucket.
2.) Groundwater not encountered.

WATER SYMBOLS
▼ Groundwater
▽ Estimated Seasonal High Groundwater



NTS

BOULDER	CLASS
12" - 24"	A
24" - 36"	B
>36"	C

PROPORTIONS USED
0-10% Trace
10-20% Little
20-35% Some
35-50% And

EXCAVATION EFFORT
E = Easy
M = Moderate
D = Difficult

TEST PIT LOG

nobis

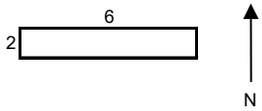
PROJECT		TEST PIT NO.	NTP-11
Hadley Elementary School		SHEET	2 of 2
10 Whitman Road		FILE NO.	96700.03
Swampscott, Massachusetts		CHKD BY	AJ

Engineer	S. Pape	Make	John Deere	Ground El.	64.1 FT
Contractor	Swampscott DPW	Model	310SL HL	Datum	NAVD88
Operator	Evan Segal	Capacity	0.2 CY	Date Start	3/4/2021
Weather	40°F Partly cloudy	Reach	12 ft	Date Finish	3/4/2021

Notes: 1.) Photo of TP-11 in progress.

WATER SYMBOLS
Groundwater
Estimated Seasonal High Groundwater

NTS



BORING LOG

Project: Hadley Elementary School

Location: Swampscott, Massachusetts

Nobis Project No.: 96700.03

Boring No.: **NB-1**

Boring Location: N: 2997799.00 E: 818583.00

Checked by: AJ

Date Start: March 3, 2021

Date Finish: March 3, 2021

Contractor: New England Boring Contractors

Driller: P. Schofield

Nobis Rep.: S. Pape

Rig Type / Model: Truck / B-48 Mobile

Hammer Type: Automatic Hammer

Hammer Hoist: Automatic

Ground Surface Elev.: 57.9

Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 03/03/21	11:20	6	5	10	10 min.

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
								57.6 / 0.3 ASPHALTIC PAVEMENT	3" ASPHALT.	1
1	S-1	11	0.5-2	12					S-1A (8"): Medium dense, grayish brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. Wet. (FILL).	
2				9 6				FILL	S-1B (3"): Medium dense, dark brown, fine to coarse SAND & SILT. Wet. (FILL).	
3	S-2	13	2-4	11 8					S-2A (10"): Medium dense, brown, fine to coarse SAND, little fine to coarse Gravel, little Silt. Wet. (FILL).	
4				10 19				54.4 / 3.5		
5	S-3	8	4-4.9	48 50/5"				WEATHERED BEDROCK	S-2B (3"): Medium dense, dark gray, fine to coarse GRAVEL, trace fine to coarse Sand. Bedrock particles and fragments. Wet. (WEATHERED BEDROCK). S-3: Very dense, dark gray, fine to coarse GRAVEL, trace fine to coarse Sand. Bedrock particles and fragments. Wet. (WEATHERED BEDROCK).	
6	C-1	24	5-7		100/0	▽			C-1: Hard, moderately weathered, extremely fractured, gray, fine-grained, GABBRO-DIORITE, Massively bedded, very close to close shallow primary joint set, very close steep to vertical secondary joints.	
7								50.9 / 7.0		
8	C-2	36	7-10		100/50			BEDROCK	C-2: Hard, slightly weathered, moderately fractured, gray, fine-grained, GABBRO-DIORITE, Massively bedded, close horizontal to shallow primary joint set, very close steep to vertical secondary joints and cracks.	
9										
10								47.9 / 10.0		
11									Boring terminated at 10 feet.	2
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Water introduced to borehole to advance roller cone bit through pavement, and during rotary wash.
2) Borehole backfilled with drilling spoils and sand upon completion. Pavement patched with asphalt cold patch.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

nobis

Project: Hadley Elementary School

Location: Swampscott, Massachusetts

Nobis Project No.: 96700.03

Boring No.: **NB-2**

Boring Location: N: 2997721.00 E: 818357.00

Checked by: AJ

Date Start: March 3, 2021

Date Finish: March 3, 2021

Contractor: New England Boring Contractors

Driller: P. Schofield

Nobis Rep.: S. Pape

Rig Type / Model: Truck / B-48 Mobile

Hammer Type: Automatic Hammer

Hammer Hoist: Automatic

Ground Surface Elev.: 66

Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 03/03/21	13:45	2	0	11.6	5 min.

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
1	S-1	15	0-2	5 7				TOPSOIL 65.0 / 1.0	S-1A (7"): Medium dense, brown, Organic SILT, some fine to coarse Sand, trace fine Gravel. Moist. (TOPSOIL).	
2				9 7		▽			S-1B (8"): Medium dense, brown, fine to coarse SAND, little Silt, trace fine Gravel. Moist. (FILL).	
3	S-2	8	2-4	2 2					S-2: Loose, brown-tan, fine to coarse SAND, little fine Gravel, trace Silt. Wet. (FILL).	
4				6 4						
5	S-3	9	4-6	15 8				FILL	S-3: Medium dense, grayish tan, fine to coarse SAND, some Silt, little fine Gravel. Wet.	1
6				8 15						
7	S-4	14	6-7.2	32 85					S-4: Very dense, dark tan, fine to coarse SAND, some fine to coarse Gravel, little Silt. Wet.	
8				50/2"				58.8 / 7.2		
9	~~C-1~~	~~17~~	~~7.8-10.3~~		57/17			WEATHERED BEDROCK	C-1: Hard, severely weathered, extremely fractured, gray, fine-grained, GABBRO-DIORITE, Slightly weathered section from 7.8 to 8.3 feet below ground surface. Becomes very severely weathered and gravel-like at about 8.3 feet bgs.	
10										
11	~~C-2~~	~~14~~	~~10.3-11.6~~		88/0				C-2: very severely weathered, extremely fractured, gray, fine-grained, GABBRO-DIORITE, Very severely weathered, gravel-like.	
12								54.4 / 11.6	Boring terminated at 11.6 feet.	2
13										
14										
15										
16										
17										
18										
19										
20										
21										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Water introduced to borehole for rotary wash.
2) Borehole backfilled with drilling spoils and sand upon completion.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.

BORING LOG

Project: Hadley Elementary School

Location: Swampscott, Massachusetts

Nobis Project No.: 96700.03

Boring No.: **NB-3**

Boring Location: N: 2997598.00 E: 818689.00

Checked by: AJ

Date Start: March 3, 2021

Date Finish: March 3, 2021

Contractor: New England Boring Contractors

Driller: P. Schofield

Nobis Rep.: S. Pape

Rig Type / Model: Truck / B-48 Mobile

Hammer Type: Automatic Hammer

Hammer Hoist: Automatic

Ground Surface Elev.: 63.2

Datum: NAVD 88

	Drilling Method	Sampler
Type	Casing	Split-Spoon
Size ID (in.)	4	1-3/8
Advancement	Drive and Wash	140-lb Hammer

Groundwater Observations

Date	Time	Depth Below Ground (ft.)	Depth of Casing (ft.)	Depth to Bottom of Hole (ft.)	Stabilization Time
▽ 03/03/21	15:30	1.5	0	7.2	5 min.

Depth (ft.)	SAMPLE INFORMATION Type & No.	Rec (in.)	Depth (ft.)	Blows/ 6 in.	REC % / RQD %	Ground Water	LITHOLOGY Graphic	Stratum Elev. / Depth (ft.)	SAMPLE DESCRIPTION AND REMARKS (Classification System: Modified Burmister)	NOTES
								62.9 / 0.3 ASPHALTIC PAVEMENT	4" ASPHALT.	1
1	S-1	11	0.5-2	7					S-1A (3"): Loose, tan, fine to coarse SAND, little fine to coarse Gravel, trace Silt. Wet. (FILL).	
				5		▽		FILL 62.3 / 0.9		
2				4				ORGANIC MATERIAL 60.8 / 2.4	S-1B (8"): Loose, brown, Organic SILT, some fine Sand, trace Organic Fibers. Wet. (TOPSOIL).	
	S-2	6	2-2.5	50					S-2A (5"): Very dense, brown, Organic SILT, some fine to coarse Sand, some fine to coarse Gravel. Wet. (TOPSOIL).	
3	C-1	43	2.5-7.3	50/0"	75/18				S-2B (1"): Gray, rock fragments. Wet. (BEDROCK).	
4										
5								BEDROCK		
6									C-1: Hard, slightly weathered, moderately fractured, gray, fine-grained, GABBRO-DIORITE, Massively bedded, close to very close shallow primary joint set, very close steep to vertical secondary joints and cracks.	
7								56.0 / 7.2		
8									Boring terminated at 7.2 feet.	2
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										

Soil	Percentage	Non-Soil
trace	5 - 10	very few
little	10 - 20	few
some	20 - 35	several
and	35 - 50	numerous

NOTES:

1) Water introduced to borehole to advance roller cone bit through pavement, and during rotary wash.
2) Borehole backfilled with drilling spoils and sand upon completion. Pavement patched with asphalt cold patch.

Soil descriptions, and lithology, are based on visual classifications and should be considered approximate. Stratification lines are approximate boundaries between stratums; transitions may be gradual.