

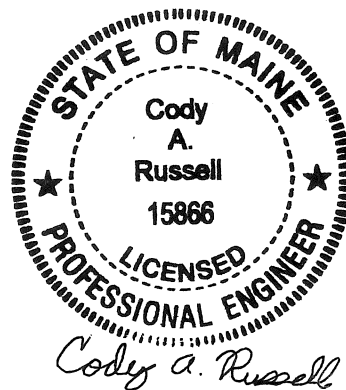
**MAINE DEPARTMENT OF TRANSPORTATION
HIGHWAY PROGRAM
GEOTECHNICAL SECTION
AUGUSTA, MAINE**

GEOTECHNICAL DATA REPORT

For the Replacement of

**KELLY BROOK BRIDGE
ROUTE 126
WHITEFIELD, MAINE**

Prepared by:
Yueh-Ti Lee
Assistant Geotechnical Engineer



Reviewed by:
Cody Russell, P.E.
Senior Geotechnical Engineer

Lincoln County
WIN 28244.00

October 14, 2025

Soils Report 2025-34
Bridge No. 2429

INTRODUCTION

The purpose of this Geotechnical Data Report is to document subsurface information collected for the proposed replacement of an approximately 170-inch span by 118-inch rise by 74-foot-long multi-plate pipe arch culvert on a skew of approximately 5 degrees to the roadway centerline (Kelly Brook Bridge #2429). This report presents the results of a limited geotechnical investigation performed at the existing culvert. Kelly Brook Bridge #2429 is located on Route 126, approximately 0.57 of a mile east of South Hunts Meadow Road, as shown in the attached Location Map. Route 126 is a Highway Corridor Priority 4 road. The proposed structure will match the existing culvert in type and dimensions.

SUBSURFACE INVESTIGATION

Subsurface conditions were explored by drilling four (4) borings (BW-4-90, B-1, BB-WWBER-10, and BB-WWBER-102) drilled near the existing structure. Two (2) borings (BW-4-90 and B-1) were drilled by the MaineDOT drill crew prior to the installation of the existing structure and two (2) borings (BB-WWBER-10 and BB-WWBER-102) were drilled by Seaboard Drilling in January 2025. Exploration locations are presented in the attached Boring Location Plan & Interpretive Subsurface Profile. The details and sampling methods used, field data obtained, soil conditions encountered, and exploration locations are presented in the attached 1991 Soils Report and Boring Logs.

An NETTCP certified Subsurface Inspector or experienced geotechnical engineer logged the subsurface conditions encountered. The MaineDOT geotechnical engineer selected the boring and probe locations and drilling methods, designated type and depth of sampling techniques, reviewed boring and probe logs and identified field testing requirements. The borings and probes were located in the field using taped measurements at the completion of the drilling program.

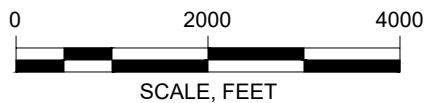
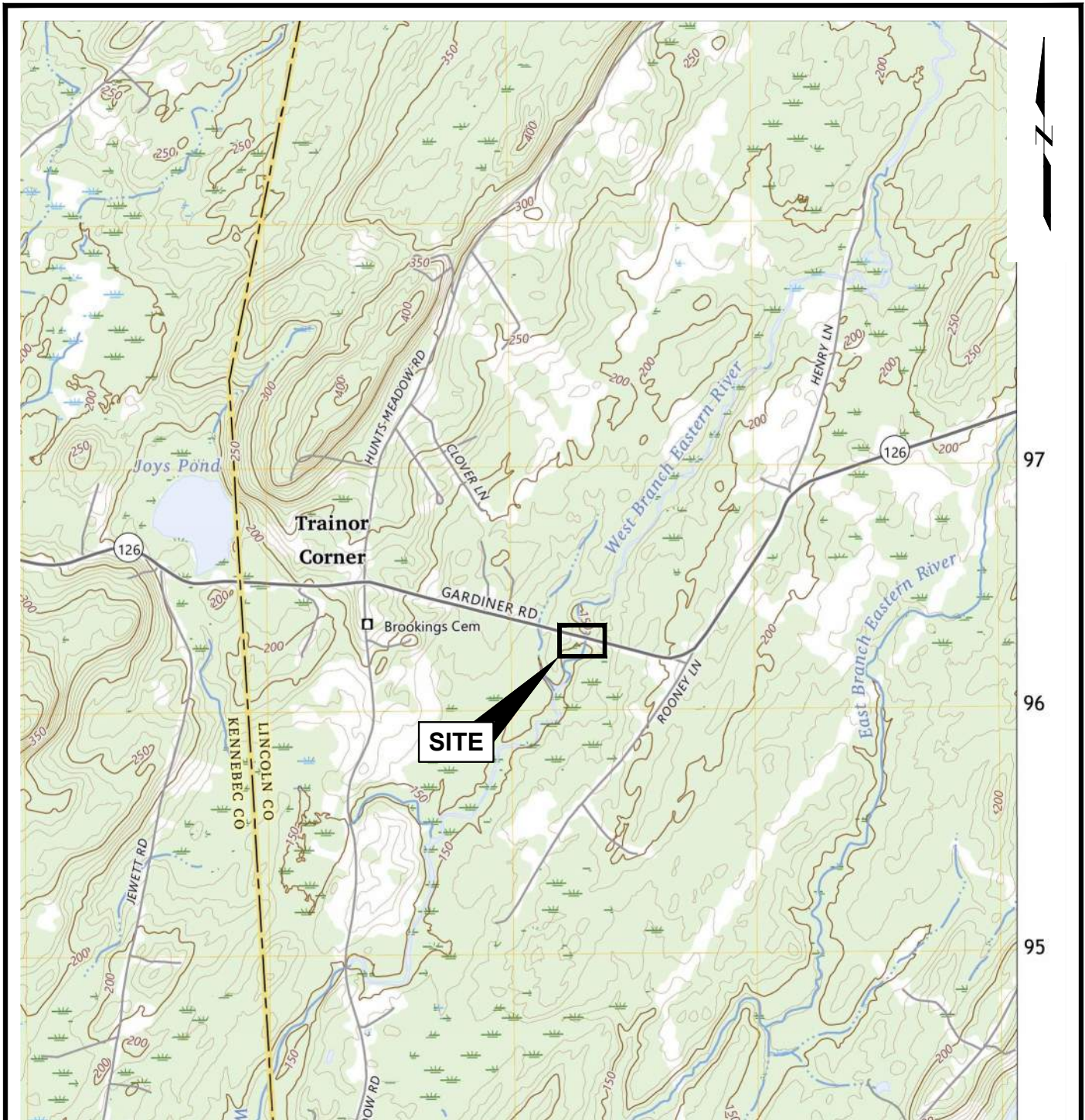
CLOSURE

This Geotechnical Data Report has been prepared to document the geotechnical work conducted at Kelly Brook Bridge #2429 on Route 126 in Whitefield, Maine in accordance with generally accepted geotechnical and foundation engineering practices. No other intended use or warranty is expressed or implied.

MaineDOT conducted a limited number of soil explorations at discrete locations at the culvert. No interpretations or conclusions have been derived from this geotechnical information. Data provided may not be representative of the subsurface conditions between exploration locations.

Attachments:

Location Map
Boring Location Plan & Interpretive Subsurface Profile
Key to Soil and Rock Descriptions and Terms
1991 Soils Report
Boring Logs
Rock Core Photographs
Laboratory Test Results



SOURCE:

USGS TOPOGRAPHIC QUADRANGLE, 7.5 MINUTE SERIES: EAST PISTON QUADRANGLE, MAINE, 2024.
NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)
10-FOOT CONTOUR INTERVAL

Kelley Brook Bridge (#2429) Replacement Project
MaineDOT WIN 028244.00
Whitefield, Maine



SITE LOCATION MAP

MaineDOT
Augusta, Maine

Project 2408984

August 2025

Sheet 1

WHITEFIELD 4222.00

Soils Report 91-01
Whitefield - Lincoln County
4222.00 Fed. No. RS-166S(3)
Kelly Brook Bridge
January 1991

91-01

Maine Department of Transportation
Technical Services Division
Geotechnical Section

A SUBSURFACE INVESTIGATION FOR THE PROPOSED REPLACEMENT OF
KELLY BROOK BRIDGE IN WHITEFIELD, LINCOLN COUNTY

Prepared by:

Alan R. King
Engineering Technician

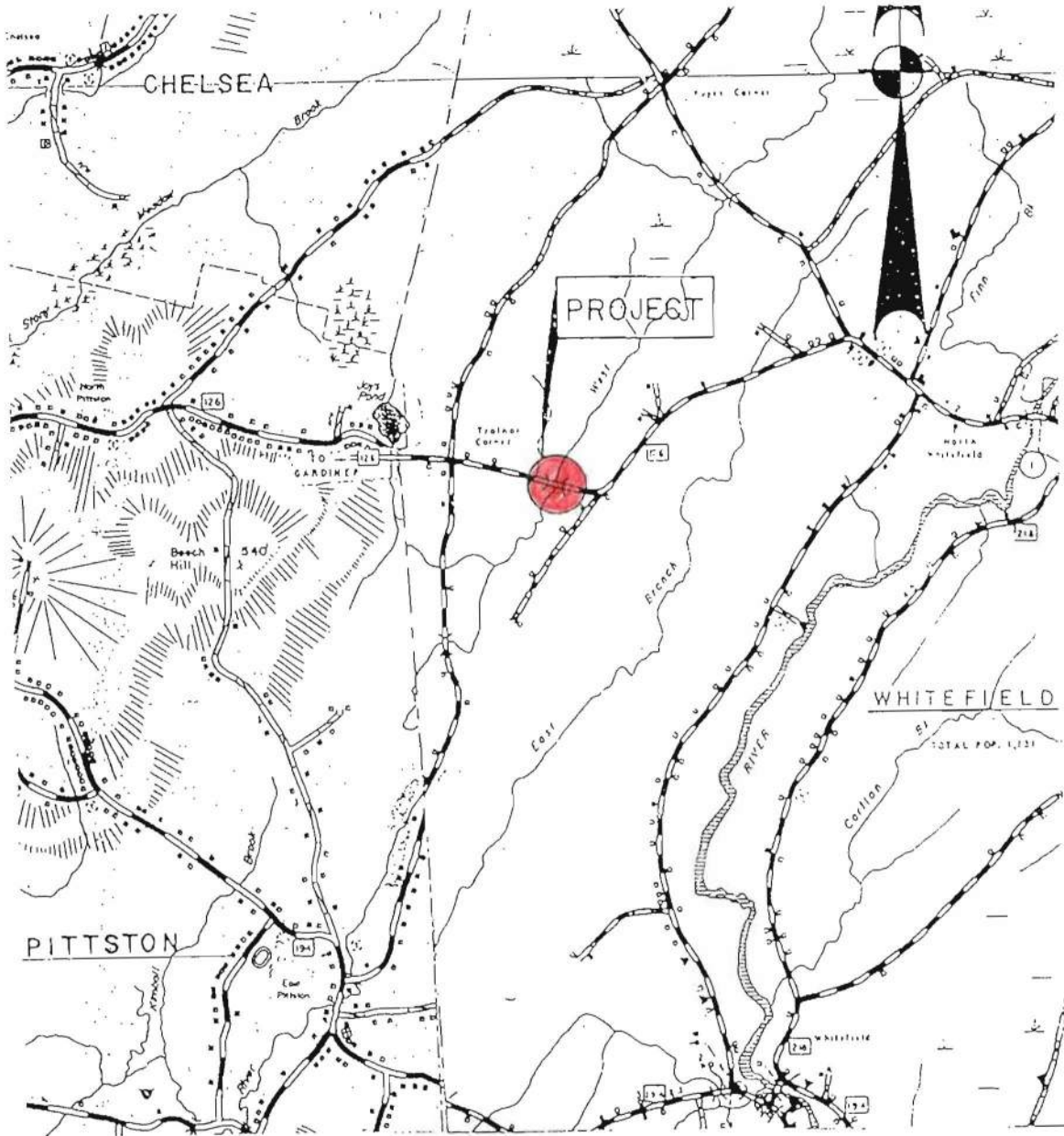
Approved by:

Melvin W. Morgan
Soils Engineer

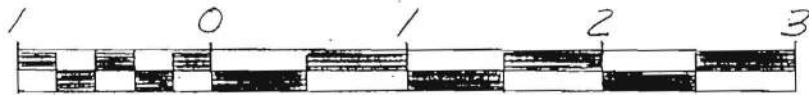
Lincoln County

PIN 4222.00
Fed. No. RS-166S(3)
January 1991

Soils Report 91-01



LOCATION MAP



Scale in miles

TABLE OF CONTENTS

<u>Text</u>	<u>Page No.</u>
INTRODUCTION.	1
GENERAL AND SUBSURFACE CONDITIONS	1
CONCLUSIONS AND RECOMMENDATIONS	3

<u>Illustrations</u>	<u>Sheet No.</u>
Foundation Survey Sheet	1

<u>Appendices</u>	
Drainage Study.	A

INTRODUCTION

A subsurface investigation has been completed for the proposed replacement of Kelly Brook Bridge in Whitefield, Lincoln County. Field explorations consisted of two core washborings. Details and locations of the two borings are shown on the Foundation Survey Sheet included as Sheet 1 of the illustrations following the text of this report. Also shown on this sheet is a profile along the survey centerline illustrating the underlying soil stratification and bedrock surface. The original of this sheet will be forwarded to the Bridge Design Section for inclusion in the construction plans.

A drainage study for this project, prepared by Sylvia Michaud, is included as Appendix A.

GENERAL AND SUBSURFACE CONDITIONS

The proposed project is located on Route 126 in the town of Whitefield, approximately 0.9 of a mile east of the Pittston/Whitefield town line. Kelly Brook is also the west Branch of the Eastern River and flows in a generally north to south direction joining the Kennebec River in the town of Dresden south of the project. The existing bridge has a wood plank deck on steel beams and has a clear span of about 18 feet. The west abutment is stone with a concrete cap. The east abutment is concrete. Both abutments appear to be on footings. The proposed replacement will be a structural plate pipe arch with a 14 foot 3 inch span and an 8 foot 11 inch rise. The new pipe arch will be at the same location as the existing bridge.

The subsurface soil profile and bedrock surface as determined from the two washborings made at the bridge site are shown on the survey centerline profile on Sheet 1. Boring BW-4-90 located behind the west abutment of the existing bridge penetrated 6 inches of pavement and then approximately 8 feet of dense brown slightly silty sand and gravel assumed to be fill material. Below this the boring encountered 4 feet of stiff brownish gray clayey sandy silt and then medium density gray gravelly silty sand extending to the bedrock surface which was reached at a depth of 22.8 feet or about elevation 133. The rock core from the boring was identified as gray fine to medium grained gneiss.

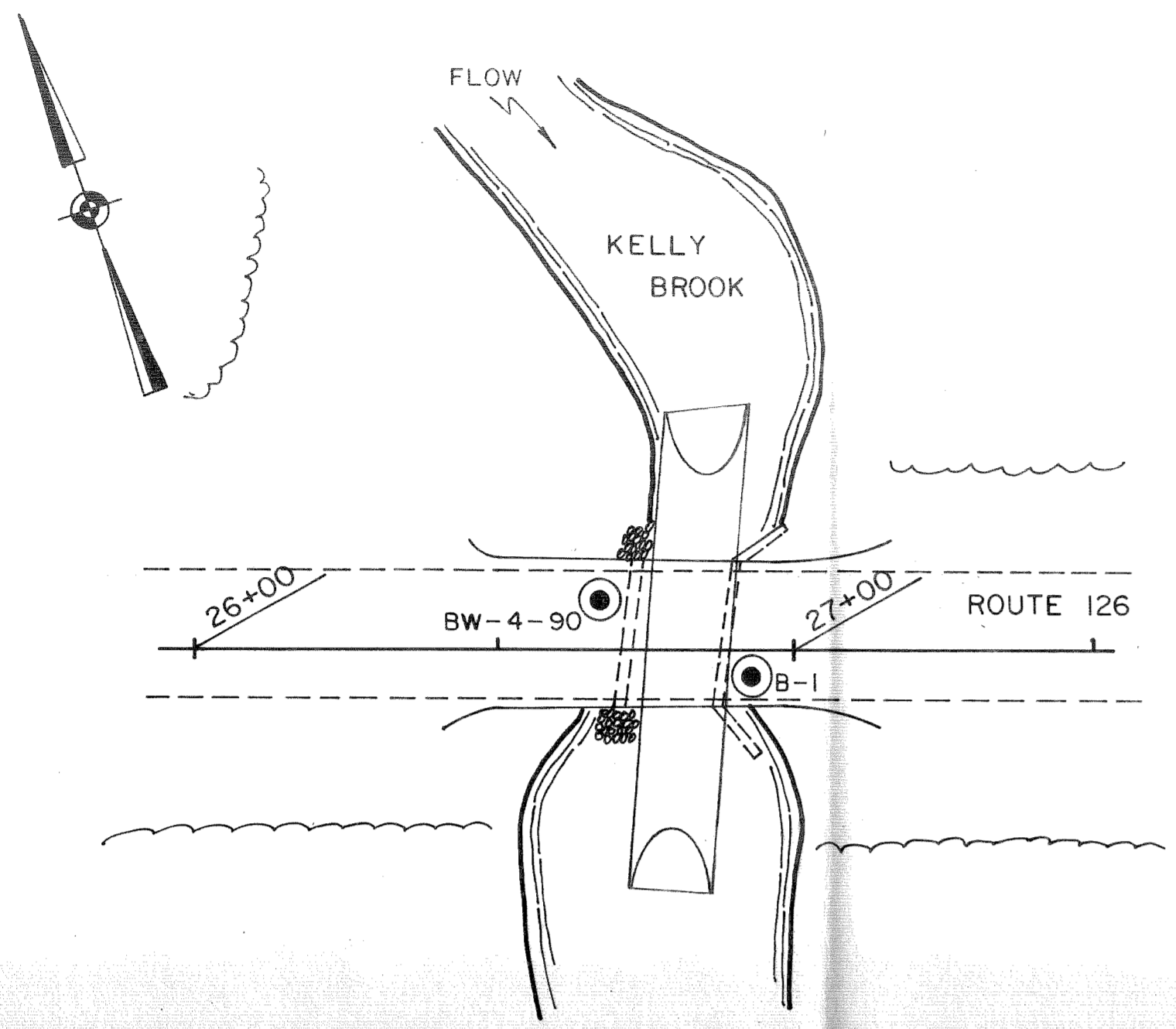
On the east side of the brook, boring B-1 encountered probable fill soils, medium density brown silty sand and gravel, cobbles and gray gravelly sandy clay silt, to a depth of 11 feet. From 11 to 14 feet, the field log indicated wood. The wood may be remnants of formwork for the concrete abutment which probably replaced an original stone abutment similar to the west abutment. From 14 feet to 18.5 feet where rock was encountered, the boring penetrated medium density gray gravelly silty sand similar to that on the west side of the brook. Because of mechanical problems with the drill rig, the boring was terminated with only 1.1 feet of rock cored. Recovery of the core was 100 percent. However, the core was lost and it is not known if this was ledge or a boulder.

An onsite inspection shows the stream bed in the vicinity of and under the bridge to consist mostly of rocks, cobbles, and small boulders with some sandy gravelly soils. The maximum depth

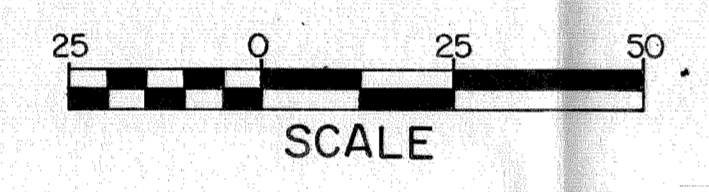
of penetration with a hand auger and probing with sounding rods was about one foot.

CONCLUSIONS AND RECOMMENDATIONS

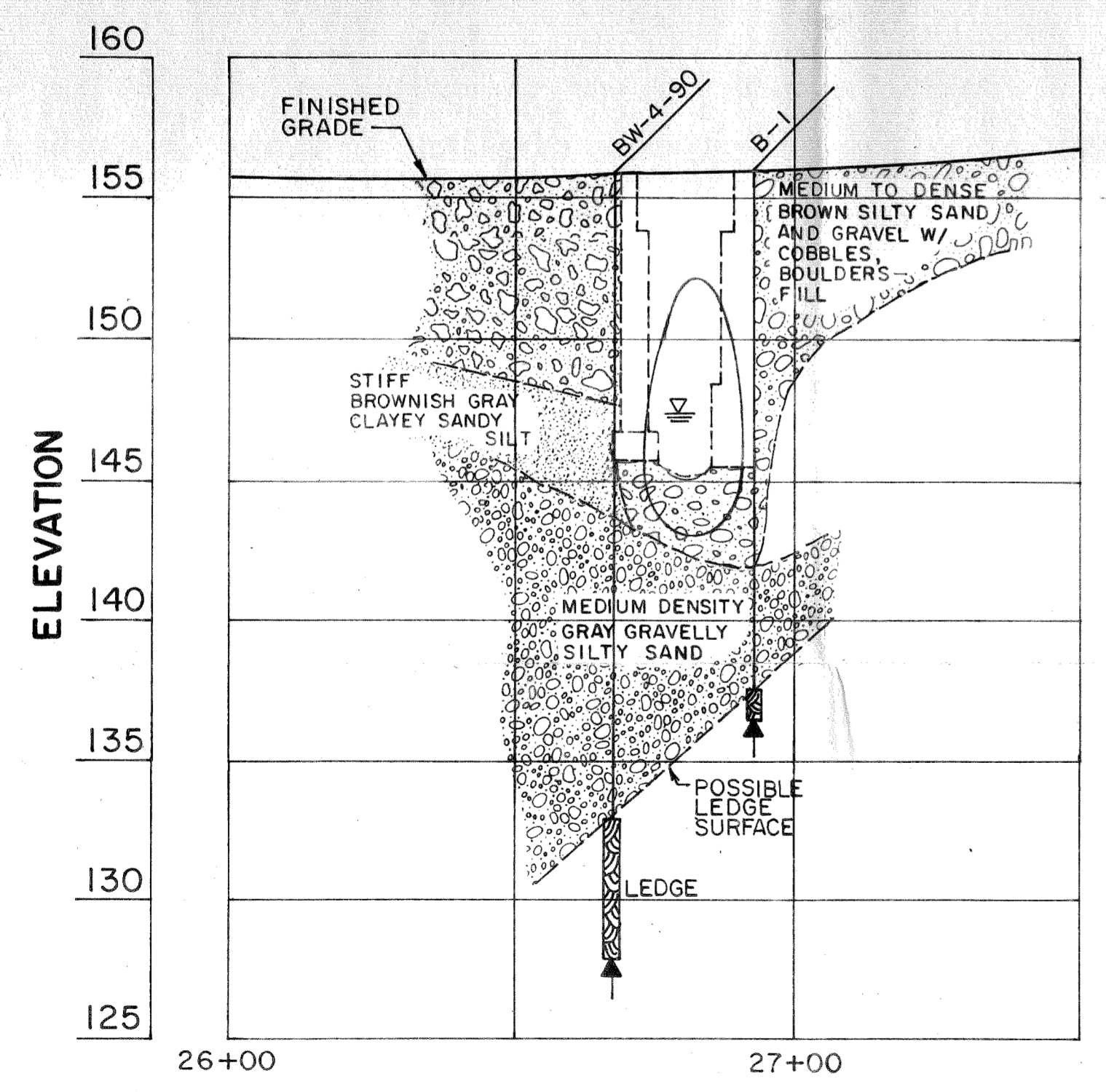
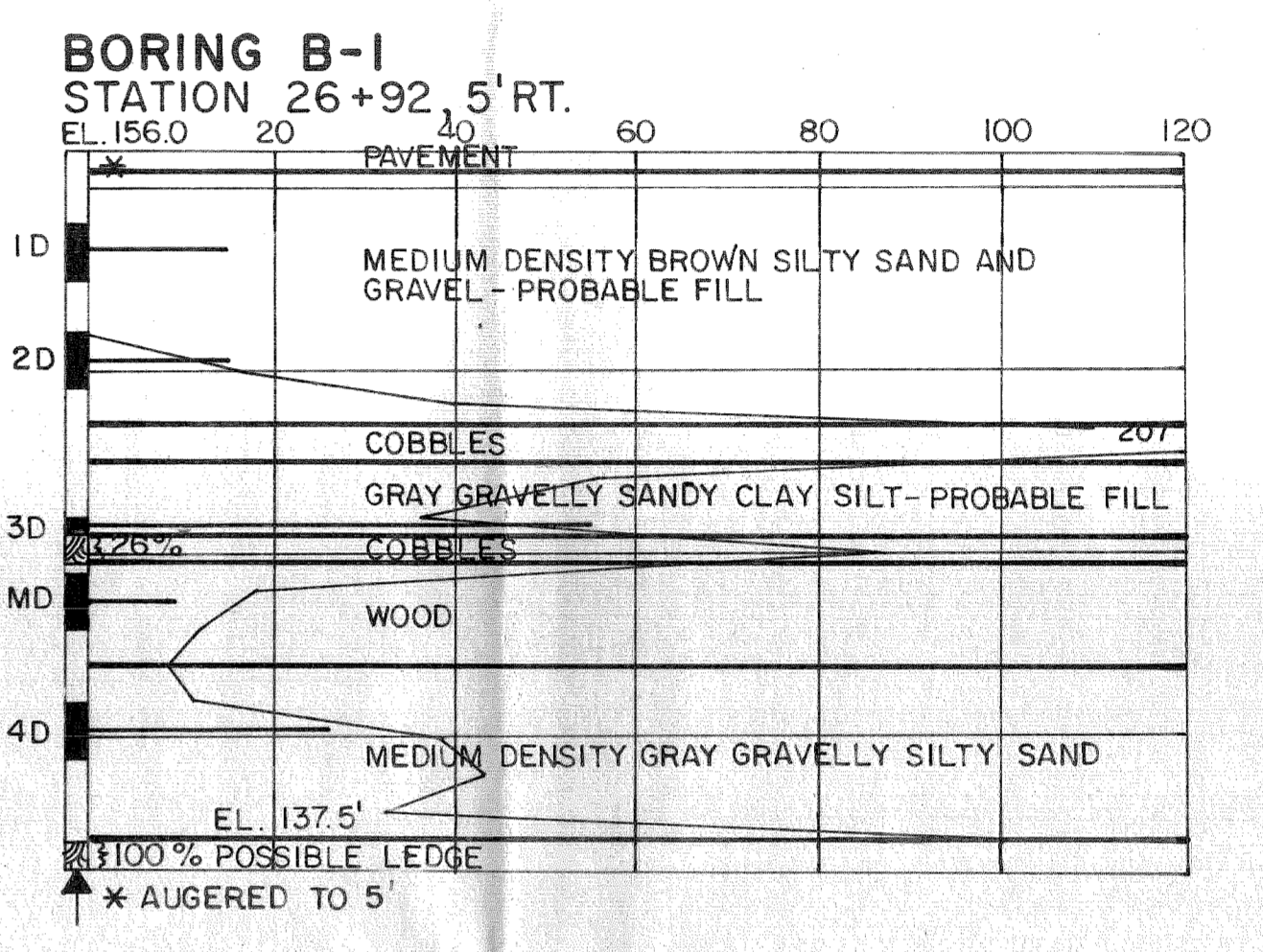
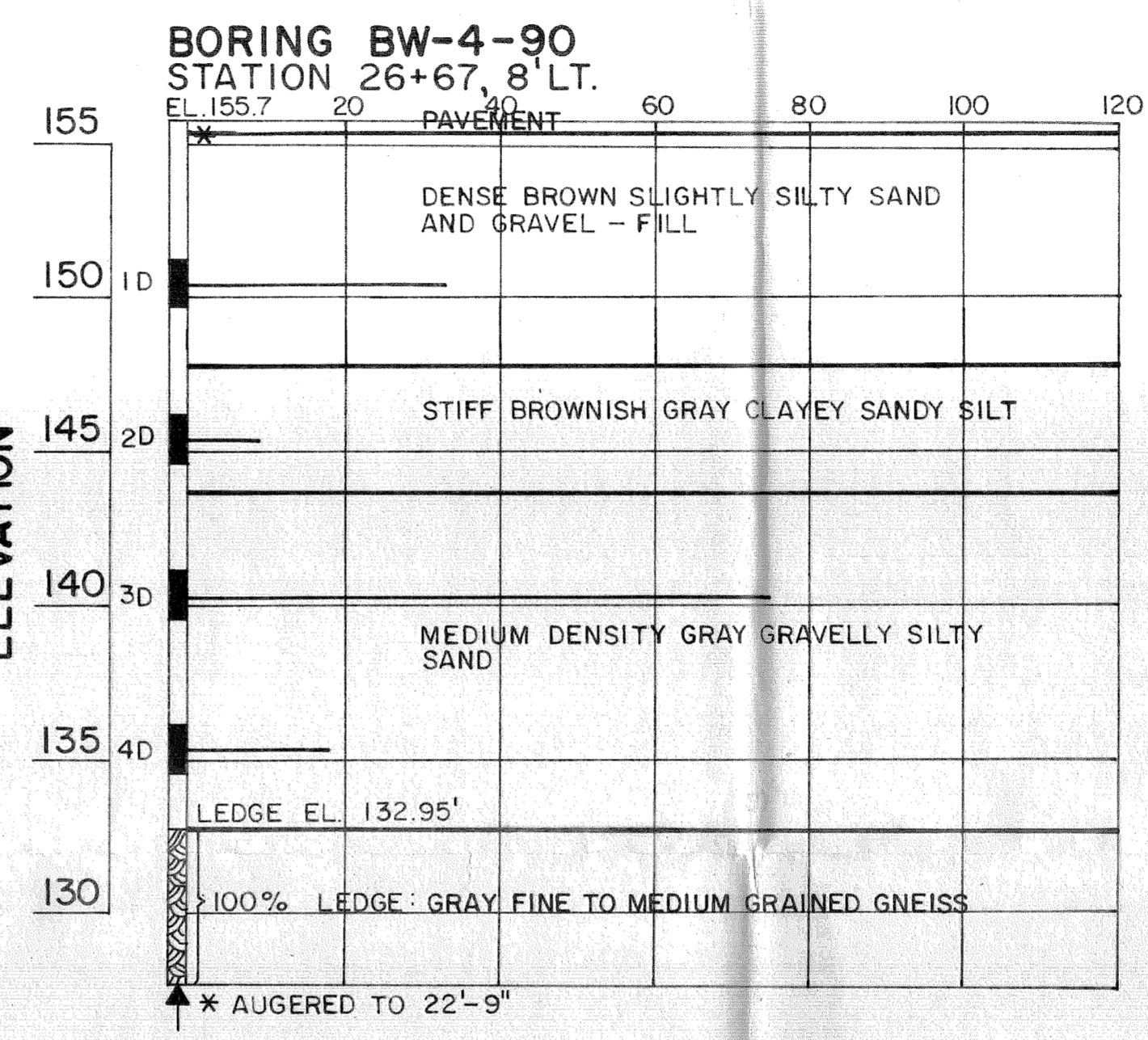
The two washborings for this bridge indicate that although bedrock is not deep, it appears to be below any excavation required for installation of the proposed pipe arch. Excavation for the pipe will include granular fill materials of the roadway embankment, cobbles, boulders and silty sand and gravel of the stream bed, and a small amount of sandy clay silt material. The soils below the proposed flow line or bottom of the pipe appear to consist of firm granular materials which should provide more than adequate support.



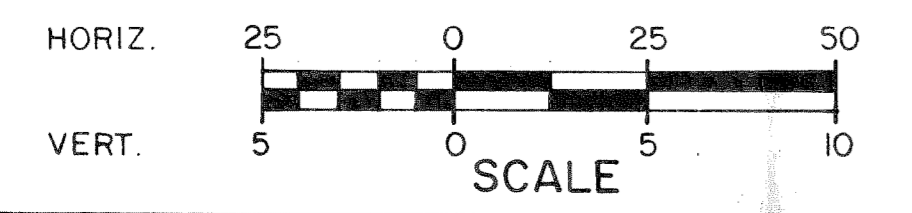
PLAN



LEGEND
 WASH BORING



PROFILE



BORING NOTES

- All casing 3"
- All samples and vanes are made ahead of casing
- Number of blows required to drive extra heavy casing one foot with 400 ft. lbs. of energy per blow
- Location of sample or sample attempt
- Number and type of dry sample
- 1 D S & H Sampler # 1290's
- M D Unsuccessful sample attempt and type of sampler
- Number of blows required to drive spoon or tubing one foot with 350 ft. lbs. of energy per blow
- Bottom of boring (may not be bottom of soil strata)
- 25% Locations cored by diamond bit and percent recovery of rock

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION

KELLY BROOK BRIDGE
 over
 KELLY BROOK
 in the town of
 WHITEFIELD
 LINCOLN COUNTY
 FOUNDATION SURVEY
 AUGUSTA, MAINE

SHEET OF

BRIDGE DRAINAGE BASIN CHARACTERISTICS

WHITEFIELD - KELLY BRIDGE

2424

DATE: November 9, 1989

BY: Sylvia Michaud

AREA NO.	DRAINAGE AREA (A)	STORAGE		SLOPE (S)	ELEVATION		REMARKS
		(K)	(ST)		(1)	(2)	
-	6.84	5.7	1.1	10.7	345±	149±	Bridge No. 2429 over West Branch of Eastern River at Route 126.

AREA NO.: SUBDIVISION OF WATERSHED INTO BASINS, WHERE APPLICABLE.

DRAINAGE AREA (A): SQUARE MILES, DETERMINED BY AIRPHOTO AND/OR TOPOGRAPHIC MAP INTERPRETATION

STORAGE (K): PERCENTAGE OF TOTAL AREA COVERED BY SWAMPS, PONDS, LAKES AND RESERVOIRS.

STORAGE (ST): PERCENTAGE OF TOTAL AREA COVERED BY PONDS AND LAKES, PLUS 1.00%.

SLOPE (S): MAJOR STREAM CHANNEL SLOPE, IN FEET PER MILE, BETWEEN THE POINTS 85% TO 10% OF THE TOTAL STREAM LENGTH FROM THE SITE TO THE RIDGE LINE.

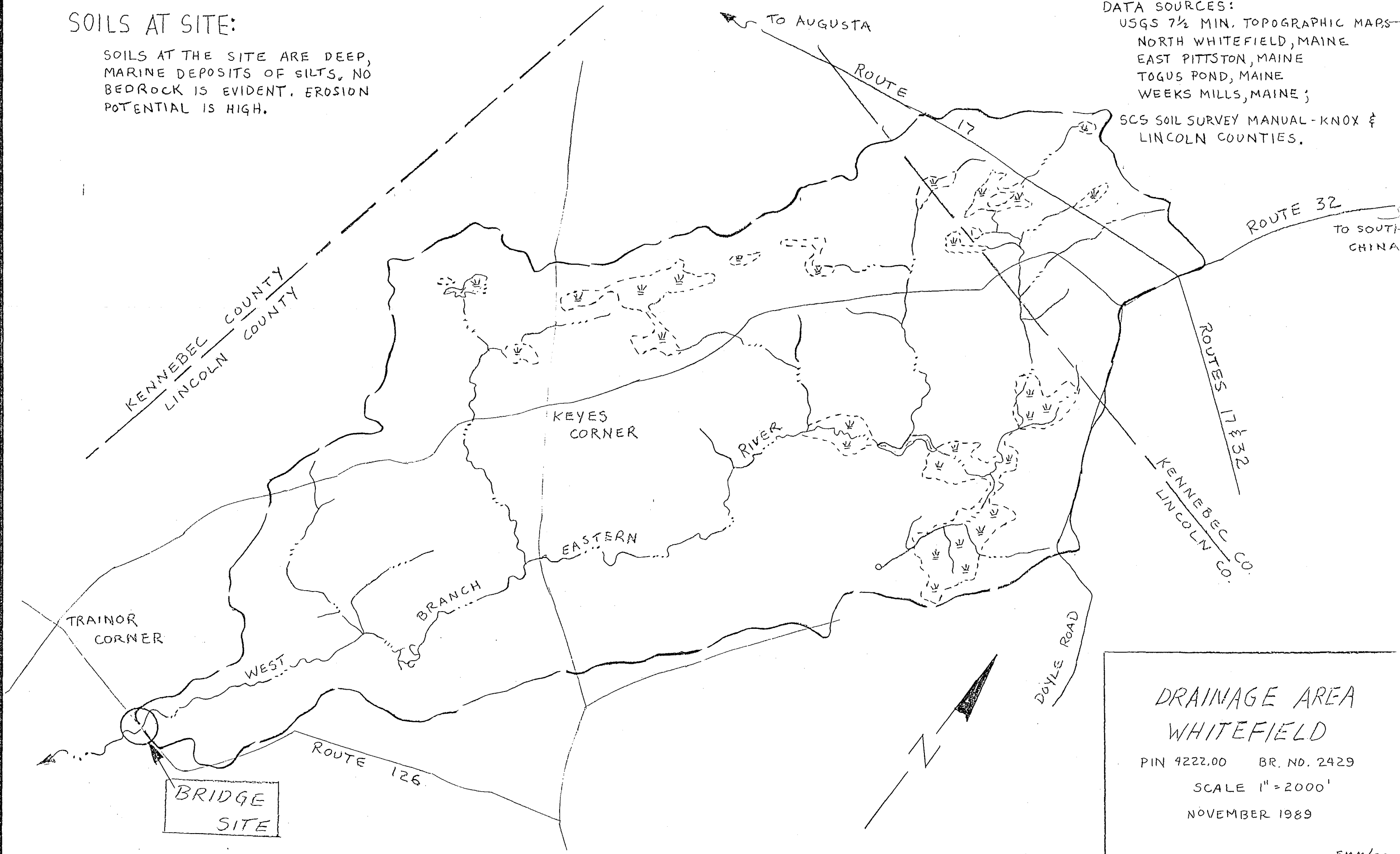
ELEVATION (1): ELEVATION OF MAIN CHANNEL AT THE RIDGE LINE (U.S.G.S. DATUM)

ELEVATION (2): ELEVATION OF MAIN CHANNEL AT THE SITE (U.S.G.S. DATUM)

SOILS AT SITE:

SOILS AT THE SITE ARE DEEP,
MARINE DEPOSITS OF SILTS, NO
BEDROCK IS EVIDENT. EROSION
POTENTIAL IS HIGH.

DATA SOURCES:
USGS 7½ MIN. TOPOGRAPHIC MAPS—
NORTH WHITEFIELD, MAINE
EAST PITTSSTON, MAINE
TOGUS POND, MAINE
WEEKS MILLS, MAINE;
SCS SOIL SURVEY MANUAL-KNOX &
LINCOLN COUNTIES.



DRAINAGE AREA WHITEFIELD

PIN 4222.00 BR. NO. 2429
SCALE 1" = 2000'
NOVEMBER 1989

Driller: Seaboard Drilling	Elevation (ft.): 156.2	Auger ID/OD: 5" Solid Stem Auger
Operator: E. Baron	Datum: NAVD88	Sampler: 2" Split Spoon
Logged By: M. Johnescu	Rig Type: Diedrich D50 Turbo	Hammer Wt./Fall: 140lb/30"
Date Start/Finish: 1/8/2025-1/9/2025	Drilling Method: Drive & Wash	Core Barrel: 2" (NQ)
Boring Location: N:262155.3, E:1503516.5	Casing ID/OD: 4"/4.5"	Water Level*: 8.8 ft

Hammer Efficiency Factor: 1.00 Hammer Type: Automatic Hydraulic Rope & Cathead

Definitions: R = Rock Core Sample S_{u/r} = Peak/Remolded Field Vane Undrained Shear Strength (psf) T_v = Pocket Torvane Shear Strength (psf)
D = Split Spoon Sample SSA = Solid Stem Auger S_{u(lab)} = Lab Vane Shear Strength (psf) WC = Water Content, percent
MD = Unsuccessful Split Spoon Sample Attempt HSA = Hollow Stem Auger q_p = Unconfined Compressive Strength (ksf) LL = Liquid Limit
U = Thin Wall Tube Sample RC = Roller Cone N-uncorrected = Raw Field SPT N-value PL = Plastic Limit
MU = Unsuccessful Thin Wall Tube Sample Attempt WOH = weight of 140lb. hammer Hammer Efficiency Factor = Rig Specific Annual Calibration Value PI = Plasticity Index
V = Field Vane Shear Test, PP = Pocket Penetrometer WOR/C = Weight of Rods or Casing N₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency G = Grain Size Analysis
MV = Unsuccessful Field Vane Shear Test Attempt WO1P = Weight of One Person N₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected C = Consolidation Test

Depth (ft.)	Sample Information							Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows				
0							SSA	155.7	- ASPHALT -		
5	1D	24/12	2.0 - 4.0	20/19/24/19	43	72			Brown, dry, very dense, GRAVEL, some fine to coarse sand, trace silt, (Fill).	A-1-a, GW-GM WC=2.2%	
5	2D	24/12	5.0 - 7.0	17/15/14/11	29	48			Brown, moist, dense, Sandy GRAVEL, little silt, (Fill).		
10	3D	24/10	10.0 - 12.0	8/4/3/3	7	12	47	145.8	0"-5": Brown, wet, medium dense, Gravelly fine to coarse SAND, little silt, (Fill).		
15	4D	24/24	15.0 - 17.0	1(12")/1(12")	1	2	-		5"-10": Grey, wet, stiff, SILT, some sand, trace gravel, medium plasticity fines, wood in bottom 1", (Presumpscot Formation).	A-6, CL WC=34.3% LL=32.3 PL= 19.6 PI=12.7	
15	5D	24/24	17.0 - 19.0	WOH(12")/5/22	5	8	-		0"-23": Grey, wet, medium stiff, Silty CLAY, trace fine sand, (Presumpscot Formation).		
20	6D	24/9	20.0 - 22.0	11/11/12/22	23	38	38	137.3	23"-24": Grey, wet, SILT, little fine sand, little gravel, (Till).	A-2(0), SM WC=12.3%	
25	R1	60/56	23.5 - 28.5	RQD = 27%			70/4" CORE	132.9	Grey, wet, dense, fine to coarse SAND, some gravel, some silt, (Till).		
25									Approximate Top of Bedrock at Elev. 132.9 ft. R1: Light grey, fine to coarse grained, GNEISS, hard, fresh. Joints are horizontal to vertical, very close to close, tight to open, silt infilling.		

Remarks:

- Seaboard Drilling Automatic Hammer 367. Energy Transfer Ratio = 100%.
- Advance SSA to 10 ft; switched to Drive & Wash with 4-in casing and advanced casing to top of bedrock.
- Water level measured 8.8 ft before drilling activities on 1/9/2025 at 08:30.
- Borehole backfilled with soil cuttings and gravel, and pavement patched with cold patch asphalt.
- Boring location and elevation were estimated using tape ties and should be considered accurate to the degree implied.

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS	Project: Kelley Brook Bridge (#2429) Location: Whitefield, Maine	Boring No.: <u>BB-WWBER-101</u> WIN: <u>28244.00</u>
--	---	---

Driller: Seaboard Drilling	Elevation (ft.): 156.2	Auger ID/OD: 5" Solid Stem Auger
Operator: E. Baron	Datum: NAVD88	Sampler: 2" Split Spoon
Logged By: M. Johnescu	Rig Type: Diedrich D50 Turbo	Hammer Wt./Fall: 140lb/30"
Date Start/Finish: 1/8/2025-1/9/2025	Drilling Method: Drive & Wash	Core Barrel: 2" (NQ)
Boring Location: N:262155.3, E:1503516.5	Casing ID/OD: 4"/4.5"	Water Level*: 8.8 ft

Hammer Efficiency Factor: 1.00 Hammer Type: Automatic Hydraulic Rope & Cathead

Definitions: R = Rock Core Sample S_{u/r} = Peak/Remolded Field Vane Undrained Shear Strength (psf) T_v = Pocket Torvane Shear Strength (psf)
D = Split Spoon Sample SSA = Solid Stem Auger S_{u(lab)} = Lab Vane Shear Strength (psf) WC = Water Content, percent
MD = Unsuccessful Split Spoon Sample Attempt HSA = Hollow Stem Auger q_p = Unconfined Compressive Strength (ksf) LL = Liquid Limit
U = Thin Wall Tube Sample RC = Roller Cone N-uncorrected = Raw Field SPT N-value PL = Plastic Limit
MU = Unsuccessful Thin Wall Tube Sample Attempt WOH = weight of 140lb. hammer Hammer Efficiency Factor = Rig Specific Annual Calibration Value PI = Plasticity Index
V = Field Vane Shear Test, PP = Pocket Penetrometer WOR/C = Weight of Rods or Casing N₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency G = Grain Size Analysis
MV = Unsuccessful Field Vane Shear Test Attempt WO1P = Weight of One Person N₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected C = Consolidation Test

Depth (ft.)	Sample Information								Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows					
25										[Nehumkeag Pond Formation] Rock Quality: Poor 93% Recovery (23.5'-24.5'): 7:45 (24.5'-25.5'): 4:33 (25.5'-26.5'): 4:48 (26.5'-27.5'): 4:30 (27.5'-28.5'): 4:52 R2: Light grey, fine to coarse grained, GNEISS, hard, fresh. Joints are horizontal to steep, very close to close, tight to open, silt infilling. [Nehumkeag Pond Formation] Rock Quality: Good 100% Recovery (28.5'-29.5'): 4:06 (29.5'-30.5'): 3:16 (30.5'-31.5'): 3:56 (31.5'-32.5'): 2:50 (32.5'-33.5'): 3:24		
	R2	60/60	28.5 - 33.5	RQD = 87%								
30												
								122.7				
35										Bottom of Exploration at 33.5 feet below ground surface.	33.5	
40												
45												
50												

Remarks:

- Seaboard Drilling Automatic Hammer 367. Energy Transfer Ratio = 100%.
- Advance SSA to 10 ft; switched to Drive & Wash with 4-in casing and advanced casing to top of bedrock.
- Water level measured 8.8 ft before drilling activities on 1/9/2025 at 08:30.
- Borehole backfilled with soil cuttings and gravel, and pavement patched with cold patch asphalt.
- Boring location and elevation were estimated using tape ties and should be considered accurate to the degree implied.

Driller: Seaboard Drilling	Elevation (ft.): 156.4	Auger ID/OD: 5" Solid Stem Auger
Operator: E. Baron	Datum: NAVD88	Sampler: 2" Split Spoon
Logged By: M. Johnescu	Rig Type: Diedrich D50 Turbo	Hammer Wt./Fall: 140lb/30"
Date Start/Finish: 1/8/2025 - 1/9/2025	Drilling Method: Drive & Wash	Core Barrel: 2" (NQ)
Boring Location: N:262170.2, E:1503551.5	Casing ID/OD: 4"/4.5"	Water Level*: Dry at 11.0'

Hammer Efficiency Factor: 1.00 Hammer Type: Automatic Hydraulic Rope & Cathead

Definitions: R = Rock Core Sample S_{u/r} = Peak/Remolded Field Vane Undrained Shear Strength (psf) T_v = Pocket Torvane Shear Strength (psf)
D = Split Spoon Sample SSA = Solid Stem Auger S_{u(lab)} = Lab Vane Shear Strength (psf) WC = Water Content, percent
MD = Unsuccessful Split Spoon Sample Attempt HSA = Hollow Stem Auger q_p = Unconfined Compressive Strength (ksf) LL = Liquid Limit
U = Thin Wall Tube Sample RC = Roller Cone N-uncorrected = Raw Field SPT N-value PL = Plastic Limit
MU = Unsuccessful Thin Wall Tube Sample Attempt WOH = weight of 140lb. hammer Hammer Efficiency Factor = Rig Specific Annual Calibration Value PI = Plasticity Index
V = Field Vane Shear Test, PP = Pocket Penetrometer WOR/C = Weight of Rods or Casing N₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency G = Grain Size Analysis
MV = Unsuccessful Field Vane Shear Test Attempt WO1P = Weight of One Person N₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected C = Consolidation Test

Depth (ft.)	Sample Information							Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows				
0							SSA	155.9	- ASPHALT -		
	1D	24/16	2.0 - 4.0	19/23/44/34	67	112				Brown, dry, very dense, GRAVEL, some fine to coarse sand, trace silt, (Fill).	
5	2D	24/19	5.0 - 7.0	16/16/15/11	31	52				Brown, moist, very dense, Sandy GRAVEL, little silt, (Fill).	A-1-a, GW-GM WC=4.1%
10	3D	24/12	10.0 - 12.0	8/9/10/9	19	32				Brown, wet, dense, Gravelly fine to coarse SAND, little silt, (Fill).	A-1-b, SM WC=8.8%
15	4D	24/5	15.5 - 17.5	10/11/34/4	45	75	9			0"-4": Brown, wet, very dense, Gravelly fine to coarse SAND, little silt, (Fill).	
	5D	24/10	17.5 - 19.5	7/14/17/33	31	52	264	139.4		4D: 4"-5": Grey, wet, Silty fine to coarse SAND, some gravel, (Till). Layer of silty clay at the very tip of spoon. 5D: Grey, wet, very dense, fine to coarse SAND, some gravel, some silt, (Till).	A-1-b, SM WC=10.2%
20	6D R1	4/4 31/13	20.0 - 20.3 20.5 - 23.1	72(4") RQD = 0%	--		CORE	136.1		6D: Grey, wet, fine to coarse SAND, some gravel, some silt, (Till). Weathered rock in spoon tip.	
	R2	41/41	23.1 - 26.5	RQD = 22%						Approximate Top of Bedrock at Elev. 136.1 ft. R1: Light grey, fine to coarse grained GNEISS, hard, fresh to mod. weathered. Rock is crushed. [Nehumkeag Pond Formation] Rock Quality: Very Poor 42% Recovery (20.5'-21.5'): 2:46 (21.5'-22.5'): 5:32	

Remarks:

- Seaboard Drilling Automatic Hammer 367. Energy Transfer Ratio = 100%.
- Advance SSA to 15 ft; switched to Drive & Wash with 4-in casing and advanced casing to top of bedrock.
- Water level measured as dry at a depth of 11.0 ft before drilling activities on 1/9/2025 at 08:30. Water level measured at 4.1 ft after pulling casing.
- Borehole backfilled with soil cuttings and gravel, and pavement patched with cold patch asphalt.
- Boring location and elevation were estimated using tape ties and should be considered accurate to the degree implied.



**Kelley Brook Bridge (#2429) carrying Route 126 over West Branch Eastern River
Whitefield, ME**

Rock Core Photographs

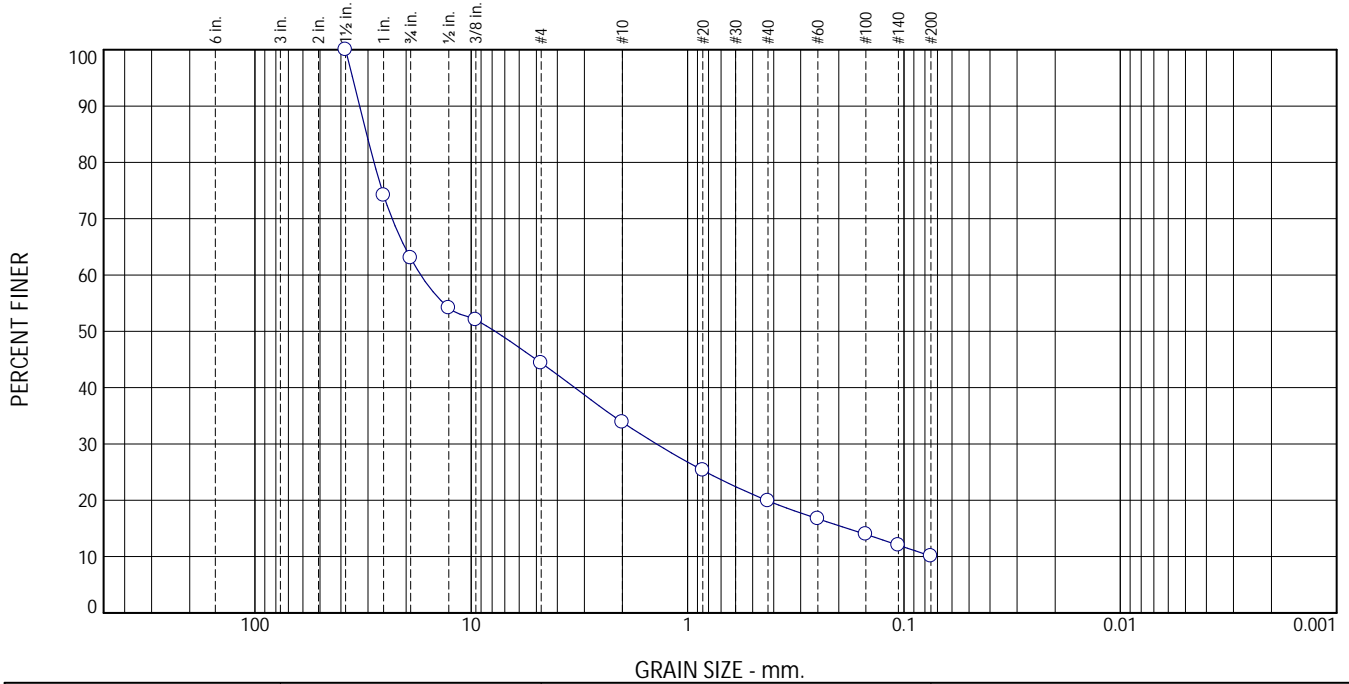
Boring No.	Run	Depth (ft)	Penetration (in)	Recovery (in)	RQD (in)	RQD (%)	Rock Type	Box Row
BB-WWBER-101	R1	23.5-28.5	60	56	16	27	Gneiss	1
BB-WWBER-101	R2	28.5-33.5	60	60	52	87	Gneiss	2
BB-WWBER-102	R1	20.5-23.1	31	13	0	0	Gneiss	3
BB-WWBER-102	R2	23.1-26.5	41	41	9	22	Gneiss	3
BB-WWBER-102	R3	26.5-31.5	60	60	18	30	Gneiss	4



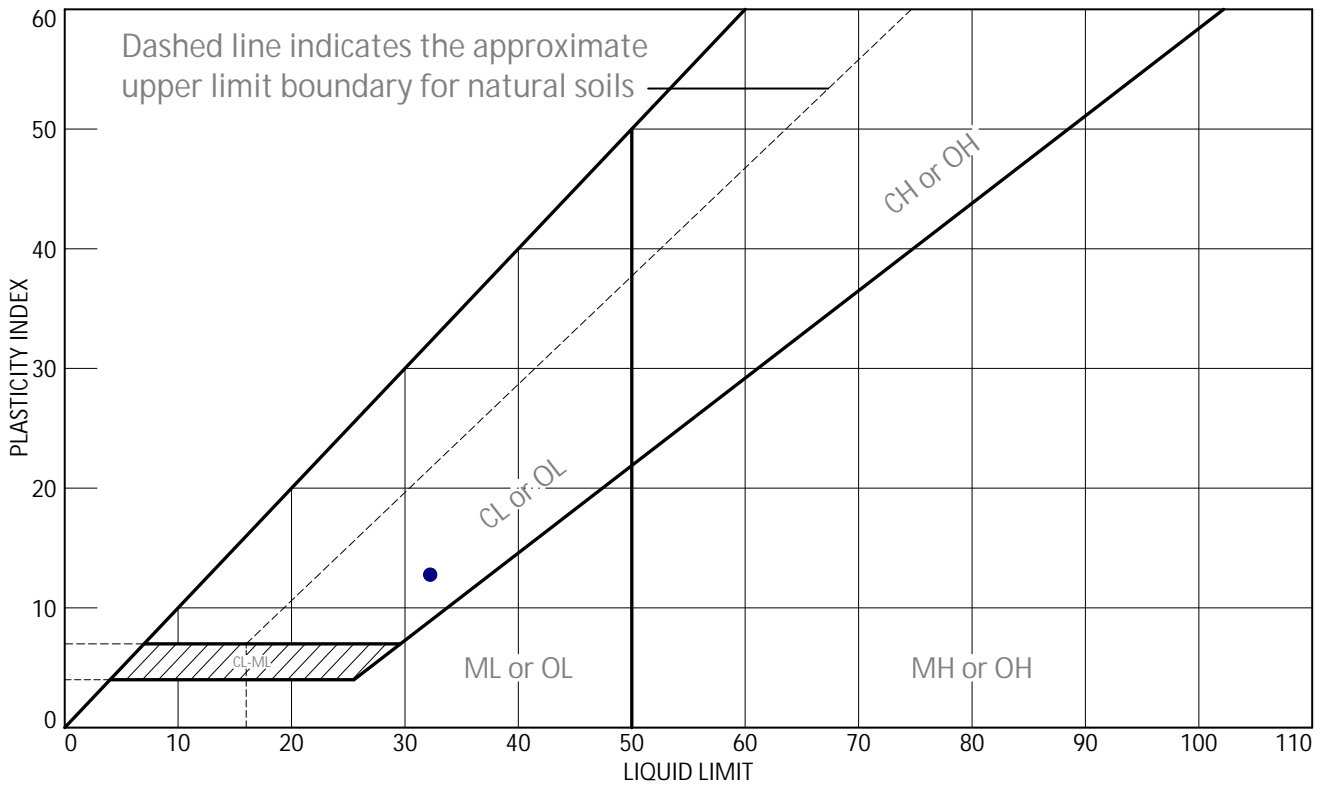
Notes:

1. "Box Row" indicates the section of the box where core run is contained: 1 = top, 4 = bottom.
2. Top of core at left. Increasing depth left to right.
3. Top photo is dry, bottom photo is wet

Particle Size Distribution Report



LIQUID AND PLASTIC LIMITS TEST REPORT

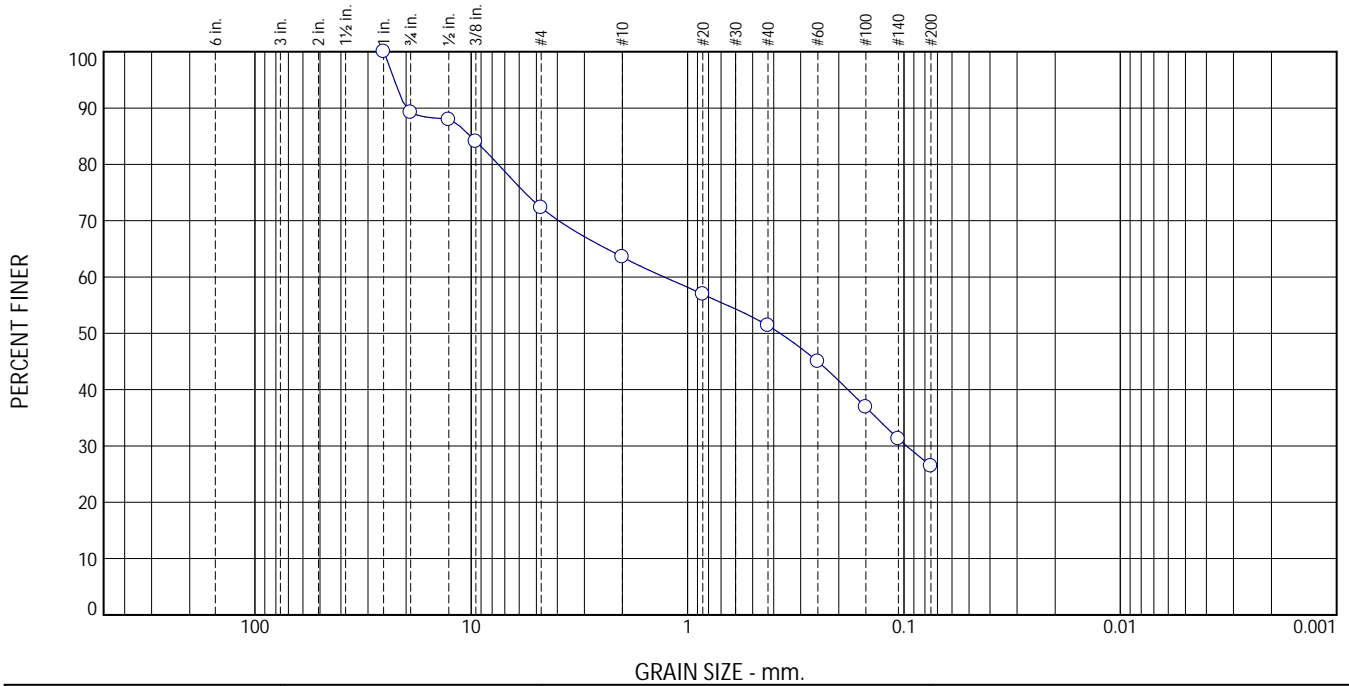


SOIL DATA									
	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	LIQUIDITY INDEX	USCS
●	BB WWBER-101	4D	15-17	34.3	19.6	32.3	12.7	1.2	CL

<p style="text-align: center; font-weight: bold;">Soil Metrics LLC</p> <p style="text-align: center;">Cape Elizabeth, Maine</p>	<p>Client: GEI Consultants Project: Kelly Brook Bridge WIN 28244.00 Project No.: GEI PN 2408984, Task 1.1</p> <p style="text-align: right;">Figure</p>
---	--

Tested By: sjr Checked By: sjr

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	10.8	16.9	8.8	12.1	25.0	26.4	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
1	100.0		
.75	89.2		
.5	87.9		
.375	84.0		
#4	72.3		
#10	63.5		
#20	56.9		
#40	51.4		
#60	45.0		
#100	36.9		
#140	31.2		
#200	26.4		

(no specification provided)

Material Description
Brown silty, gravelly, fine to coarse SAND.

Atterberg (ASTM D4318)
PL= LL= PI=

Sieve Test (ASTM D6913)
Test Date: 1/12/2025 Technician: sjr

Coefficients
D₉₀= 19.9243 D₈₅= 10.1009
D₆₀= 1.2818 D₅₀= 0.3737
D₃₀= 0.0973 D₁₅=
D₁₀=
C_u= C_c=

Test Notes
Tested entire sample. As-received moisture content = 12.3%

Hydrometer Test
Test Date: _____ Technician: _____

USCS (ASTM D2487)
SM

Test Notes

Date Sampled: 1/8-1/9/2025
Date Received: 1/10/2025
Checked By: sjr
Title: _____

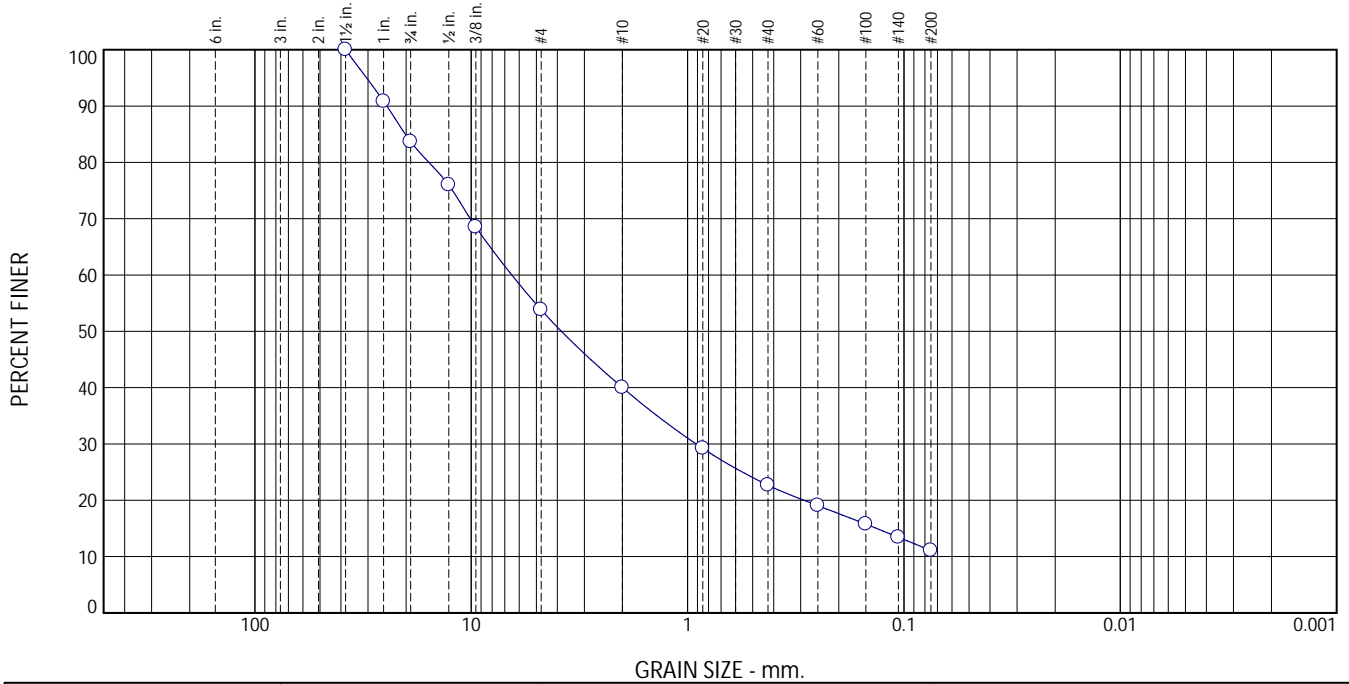
Source of Sample: BB WWBER-101
Sample Number: 6D

Depth: 20-22

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: GEI Consultants Project: Kelly Brook Bridge WIN 28244.00</p> <p>Project No: GEI PN 2408984, Task 1.1</p>
---	---

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	16.3	29.9	13.8	17.3	11.6	11.1	

Test Results (ASTM D6913)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
1.5	100.0		
1	90.8		
.75	83.7		
.5	76.0		
.375	68.5		
#4	53.8		
#10	40.0		
#20	29.2		
#40	22.7		
#60	19.1		
#100	15.8		
#140	13.4		
#200	11.1		

(no specification provided)

Source of Sample: BB-WWBER-102
Sample Number: 2D

Depth: 5-7

Material Description
Brown sandy GRAVEL, little silt.

Atterberg (ASTM D4318)
PL= LL= PI=

Sieve Test (ASTM D6913)

Test Date: 10/12/2025 Technician: sjr

Coefficients
D₉₀= 24.5362 D₈₅= 20.1651
D₆₀= 6.4951 D₅₀= 3.8271
D₃₀= 0.9133 D₁₅= 0.1338
D₁₀=
C_u= C_c=

Test Notes

Entire sample tested. As-received moisture content = 4.1 %

Hydrometer Test

Test Date: _____ Technician: _____

USCS (ASTM D2487)
GW/GM

Test Notes

Date Sampled: 1/8-1/9/2025

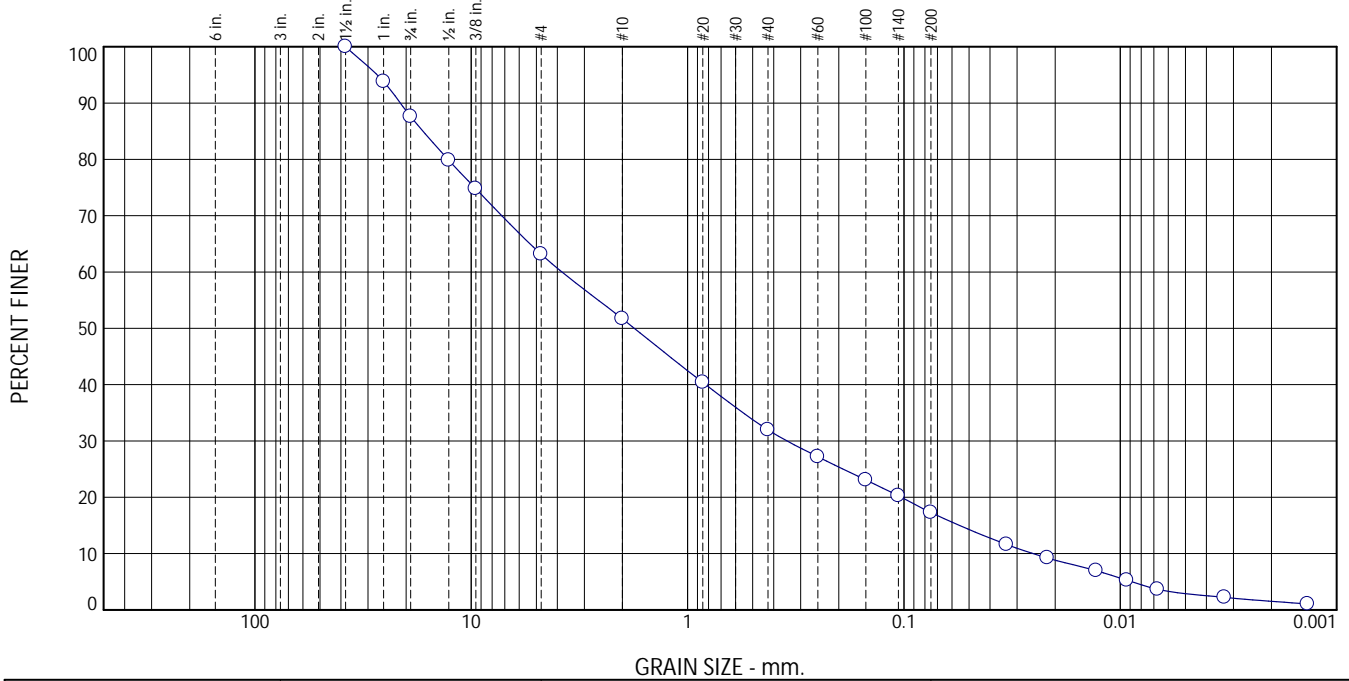
Date Received: 1/10/2025

Checked By: sjr

Title: _____

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: GEI Consultants Project: Kelly Brook Bridge WIN 28244.00</p> <p>Project No: GEI PN 2408984, Task 1.1</p>
<p>Figure</p>	

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	12.4	24.4	11.5	19.7	14.7	15.8	1.5

Test Results (ASTM D422 & D1140)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
1.5	100.0		
1	93.8		
.75	87.6		
.5	79.9		
.375	74.8		
#4	63.2		
#10	51.7		
#20	40.4		
#40	32.0		
#60	27.2		
#100	23.1		
#140	20.2		
#200	17.3		
0.0335 mm.	11.6		
0.0217 mm.	9.2		
0.0129 mm.	7.0		
0.0093 mm.	5.3		
0.0067 mm.	3.6		
0.0033 mm.	2.2		
0.0014 mm.	1.0		

(no specification provided)

Material Description
Gravelly fine to coarse SAND, little silt, trace clay.

Atterberg (ASTM D4318)
PL= LL= PI=

Sieve Test (ASTM D422 & D1140)

Test Date: 1/14/2025 Technician: sjr

Coefficients
D₉₀= 21.2586 D₈₅= 16.7042
D₆₀= 3.8044 D₅₀= 1.7615
D₃₀= 0.3469 D₁₅= 0.0553
D₁₀= 0.0253
C_u= 150.08 C_c= 1.25

Test Notes
Entire sample tested. As-Received Moisture Content = 8.8 %

Hydrometer Test (ASTM D422)

Test Date: 1/14/2025 Technician: sjr

USCS (ASTM D2487)
SM

Test Notes

Date Sampled: 1/8-1/9/2025

Date Received: 1/10/2025

Checked By: sjr

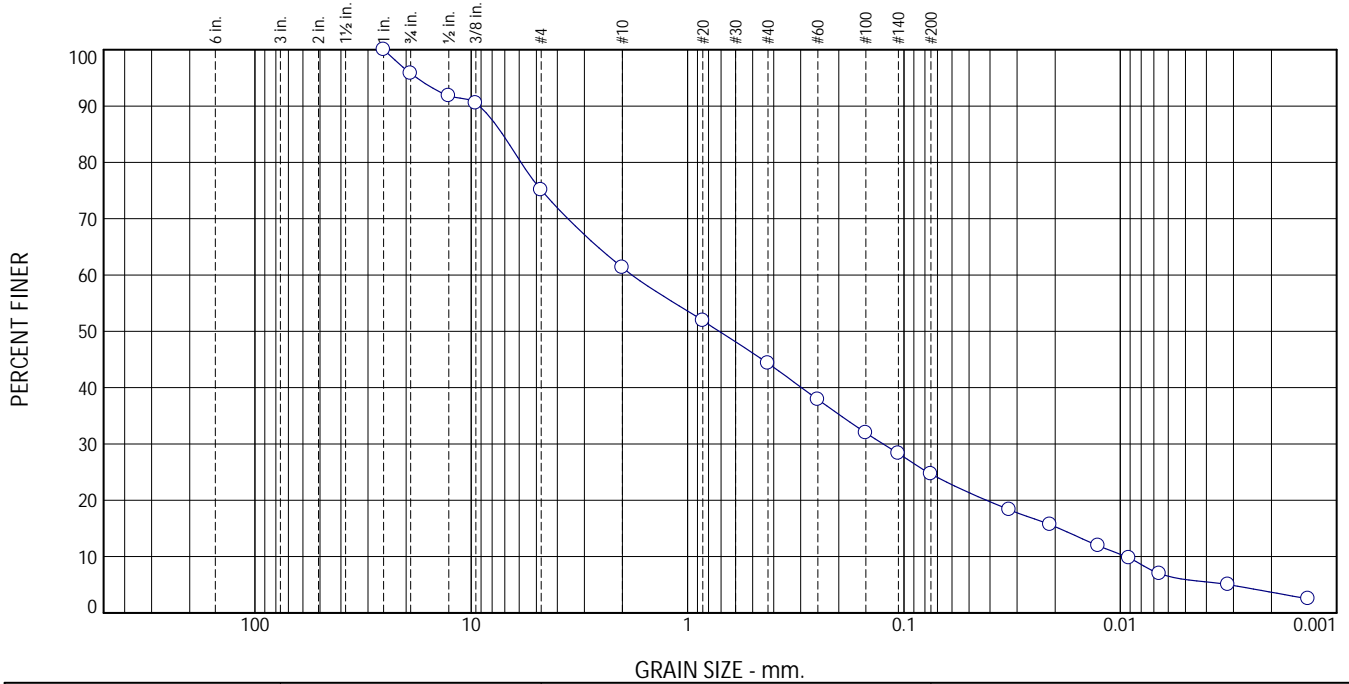
Title: _____

Source of Sample: BB-WWBER-102
Sample Number: 3D

Depth: 10-12

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: <u>GEI Consultants</u> Project: <u>Kelly Brook Bridge WIN 28244.00</u> Project No: <u>GEI PN 2408984, Task 1.1</u></p>
<p>Figure _____</p>	

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.2	20.7	13.8	17.0	19.6	21.0	3.7

Test Results (ASTM D422 & D1140)			
Sieve Size or Diam. (mm.)	Finer (%)	Spec.* (%)	Out of Spec. (%)
1	100.0		
.75	95.8		
.5	91.8		
.375	90.5		
#4	75.1		
#10	61.3		
#20	51.9		
#40	44.3		
#60	37.9		
#100	32.0		
#140	28.3		
#200	24.7		
0.0326 mm.	18.3		
0.0211 mm.	15.7		
0.0126 mm.	11.9		
0.0091 mm.	9.8		
0.0066 mm.	7.0		
0.0032 mm.	5.0		
0.0014 mm.	2.5		

(no specification provided)

Material Description
Gravelly fine to medium SAND, some silt, trace clay

Atterberg (ASTM D4318)
PL= LL= PI=

Sieve Test (ASTM D422 & D1140)

Test Date: 1/14/2025 Technician: sjr

Coefficients
D₉₀= 9.1592 D₈₅= 7.1617
D₆₀= 1.8074 D₅₀= 0.7141
D₃₀= 0.1249 D₁₅= 0.0192
D₁₀= 0.0094
C_u= 192.03 C_c= 0.92

Test Notes
Entire sample tested. As-Received moisture content = 10.2%

Hydrometer Test (ASTM D422)

Test Date: _____ Technician: sjr

USCS (ASTM D2487)
SM

Test Notes

Source of Sample: BB-WWBER-102
Sample Number: 5D

Depth: 17.5-19.5

Date Sampled: 1/8-1/9/2025

Date Received: 1/10/2025

Checked By: sjr

Title: _____

<p>Soil Metrics LLC</p> <p>Cape Elizabeth, Maine</p>	<p>Client: <u>GEI Consultants</u> Project: <u>Kelly Brook Bridge WIN 28244.00</u></p> <p>Project No: <u>GEI PN 2408984, Task 1.1</u></p>
<p>Figure _____</p>	