HAMPDEN INTERSTATE
PENOBSCOT COUNTY
SOILS REPORT 61-24
SOUADABSCOOK RIVER
EAST BRIDGE
I-95-7(14)

SUBSTRUCTURE INVESTIGATION FOR
PROPOSED BRIDGES ACROSS SOUADABSCOOK STREAM
INTERSTATE HIGHWAY SYSTEM
HAMPDEN, MAINE

61-24.

State Highway Commission
Soils Division

MAY 1961

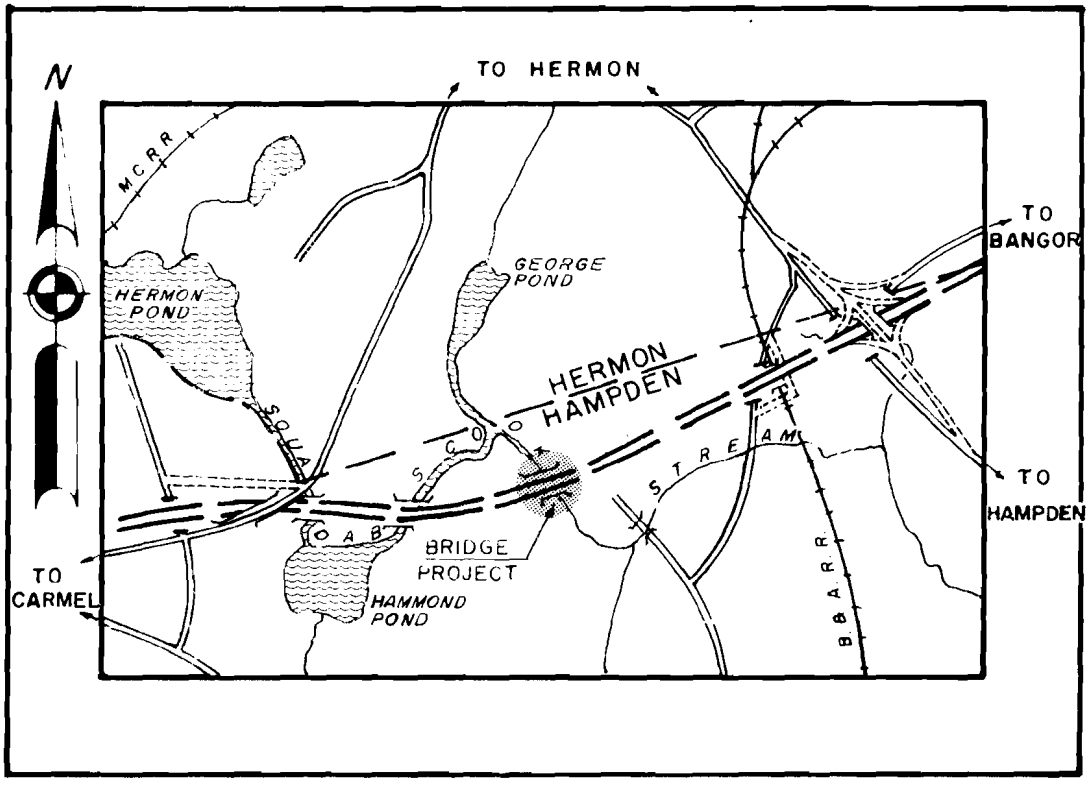
HAMPDEN

PENOBSCOT COUNTY

PROJECT NO. I-95-7(14)

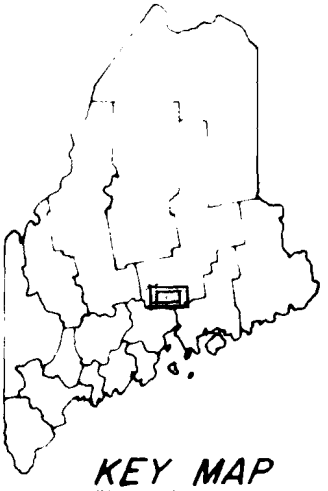
EAST BRIDGE, SOUADABSCOOK STREAM

1961



LOCATION MAP

Scale 1" = 1 Mile



KEY MAP

TEXT

ILLUSTRATIONS

INTRODUCTION

A subsurface investigation has been completed for the proposed substructure units for the two bridges required to carry the Interstate Highway across the east section of the Souadabscook Stream for both the North and South bound lanes. This location is the third crossing of the Souadabscook Stream necessitated by locating the Interstate to the southerly portion of the large and extensive bogs within the area. The southern alignment affords better subsurface soil conditions.

Eighteen borings were made at the proposed substructure locations and five soundings were made along the proposed new channel. These borings were completed in March and May of this year. Preliminary subsoil data was obtained by the geology crews during the winters of 1959 and 1960.

Boring notes are shown on Sheets 1 and 2, while the details for the eighteen borings are shown on Sheets 3 through 6 (inclusive). A plan showing the flow of the stream is shown on Sheet 7 while stream cross sections along the centerline of the northbound and southbound lanes as determined by rod soundings are shown on Sheet 8. The general plan of the proposed crossing together with transfers and centerline profiles left and right of both north and south bound lanes are shown on Sheet 9.

GENERAL CONDITIONS

In locating the Interstate Highway between Newport and Bangor, it was necessary to transverse a large and extensive swamp area north and south of Hermon Pond. In the final location, it was proved that the best alignment,

soils wise, was to the south of Hermon Pond crossing slightly to the north of Hammond Pond and passing well to the south of the so called, "extensive," Hermon Bog. In this southerly alignment, the new centerline is adjacent to the existing Bog Road and the second two locations are required since the Souadabscook Stream flows to the north in an ox-bow - like fashion with the centerlines piercing the bow. This report covers the easternmost crossing of the Souadabscook Stream. Soils reports will be completed shortly for the Center and West crossing of this stream.

The Souadabscook Stream begins at Etna Pond and flows southeasterly picking up flow from Harvey Stream, Tracey Brook, Hill Brook, and Black Stream enroute into Hermon Pond where the flow is picked up from Tracey Pond and Ben Annis Pond before it continues into Hammond Pond. In swinging from George's Pond by Wheeler's Stream which extends north to Hermon Center and the Hermon Bog area. Southeast of the proposed crossing of the Souadabscook Stream, ledge outcrops were observed within the stream bed and extensive outcrops were noted 2000 feet downstream from the proposed crossing. These ledge outcrops indicate the probable reason why the wet and boggy areas have been developed in that the dammed-up water has resulted from the shallow ledge outcrops. No heavy flows should be expected within this stream. However, the drainage area serviced by the stream is extensive and it was noted that the high water elevation of 130.5 was reached in the flood of 1936 as well as 1955, with normal spring elevation water annually running between elevation 120 and 123. Thus, scour is not one of the critical factors for the substructure units within this bridge location.

The shallow ledge surface which was mentioned to lie in this stream southerly of the crossing was picked up in all the borings within the area. This shallow ledge surface is within reachable limits such that the footings for the piers can be placed directly on the ledge surface with a minimum of clearing of the overburden. Behind the bridge abutments, the grade line rides at about elevation 136. Since the ground elevation at the southerly abutment is at elevation 125, and the northerly abutment is below elevation 120, fills will be completed behind the proposed bridge abutments. It is believed that it is more economical to drive piles through the approach fills into the underlying material and support the bridge substructures through end bearing piles on ledge.

At the present crossing, it was noted that the cross section area was much larger along the south bound crossing than at the north bound crossing. This is attributed to the more scourable material being encountered along this south bound lane. In excavation for the new drainage channel, the deepest elevation of this stream was noted to be at elevation 108 on the north end of the south bound lane. The ledge surface was encountered along the proposed channel in the vicinity of elevation 115. It is believed that if the ledge surface is cleaned off within the proposed drainage channel and the embankments on the easterly side of the stream are well compacted, no serious difficulty should arise provided the substructures for the piers are placed directly on the ledge surface.

An examination of the existing slopes of the stream

shows that the granular sand and rock lies on a 1:1 slope because of their denseness, but these will tend to remain on a 2:1 slope with time. Unfortunately, the underlying clays are soft and very sensitive and at present, remain on a near 5:1 slope. The material is very sensitive to remoulding as the water content was at the liquid limit of the soil. This means that the material will act as a liquid if remoulded or disturbed. Further complications arise since the stream is a secondary source of water for the town of Hampden four miles downstream, and this clay would take over twelve hours to settle out of suspension. Part of the stream is in rapids but if the average was 3 m.p.h., this would mean that some silting would probably arise. Thus, a minimum of disturbance is required.

The ledge within the area was noted to be of phyllite with allowable bearing values of 10 tons per square foot since some of this ledge may be fractured due to weathering and also, since the footings for the bridge will be placed within water without de-watering.

SUBSTRUCTURE DETAILS

NORTH BOUND LANE

Abutment No. 1: Borings AB-11 and AB-12 were made on the left and right ends of the proposed substructure for Abutment No. 1 at Station 3587+25. The details for these two borings are shown on Sheet 3 with the transverse and centerline profiles shown on Sheet 9. As can be seen on the latter profile, ledge was encountered in the vicinity of elevation 114 with an overburden of 10.5 feet of dense gravelly silt noted in Boring 11 and with 8½ feet of the

same material located on the right except two feet of weathered silty clay was noted to lie on top in Boring 12. Since the finished grade on the north bound lane is at elevation 136.1 and the ground surface along centerline is that of elevation 125, it will probably be more economical to complete the approach fill and drive piles through the fill into the dense gravelly silt. It is believed that piles can be driven to the ledge surface, however occassionally, piles may be stopped by boulders in the dense gravelly silt. Steel or cast-in-place concrete piles should prove satisfactory and wooden piles are not recommended since the ground water table will be low.

Pier No. 1: Borings AB -9 and A B -10 were made on centerline and to the left of the proposed location of Pier No. 1 at Station 3557+62. The details for these two borings are shown on Sheet 3 while the transverse section and centerline profiles are shown on Sheet 9. The proposed location of Pier No. 1 is on land, however, it is proposed to excavate the drainage channel to the vicinity of elevation 114. The ledge surface was encountered in these two borings at elevation 112.5 and 111.5 with the overburden being the same gravelly silt previously encountered at the Abutment. It is therefore recommended that the additional 1 to 2 feet of material be completely removed and the footing for the Piers be placed directly on the ledge. If the footings are placed within the water and not de-watered, then allowable bearing for the ledge would be 10 tons per square foot.

Pier No. 2: Boring A B-24, A B-27 and C B-42 were made at the left and right ends of the proposed location of

Pier No. 2 at Station 3558+15. The details for these two borings are shown on Sheet 6 while the transverse section and centerline profiles are shown on Sheet 9. As can be seen on the details for these three borings, there is but 2 to 2.5 feet of overburden at the substructure units. Five feet of ledge was cored in each boring. It was noted that the percent recovery was low along the left side in Boring AB-24 and a higher recovery was noted on the right. Since the channel will be at this proposed ledge elevation, it is recommended that the substructure for the Pier be placed directly on the ledge surface. Allowable bearings for the ledge surface would be 10 tons per square foot.

Abutment No. 2: Borings AB-25 and AB-26 were made on the left and right ends respectively, of Abutment No. 2 at Station 3558+55. The details for these two borings are shown on Sheet 6 while the transverse section and centerline profiles are shown on Sheet 9. While the ledge surface was encountered at approximately the same elevation in both borings, the borings indicated that there was five to six and one-half feet of overburden being classified as a gray silty sand and rocks. Abutment No. 2 is within the present stream area and it is proposed to fill in the stream to the east of the Abutment. A maximum fill is proposed along centerline behind the Abutment of 16.3 feet. Since it will be more economical to place the approach fill and drive piles, steel or cast-in-place concrete piles driven to the ledge surface are recommended. Twenty (20) and twenty-five (25) tons pile loads could be used. Granular fill must be used in the river.

SOUTH BOUND LANE

Abutment No. 1: Borings AB-16 and AB-17 were made at the right and left ends respectively, of the proposed location of Abutment No. 1. The details for these two borings are shown on Sheet 4 while the transverse section and centerline profiles are shown on Sheet 9. Boring AB-17 encountered the ledge surface at elevation 119.9 overlain by four feet of pebbly sands. However, Boring AB-16 encountered an eight foot deposit of soft brown silty clay overlying three feet of silty sands in turn resting on the ledge surface at elevation 113.3. The finished grade elevation of the south bound lane is at elevation 136.3 and the present ground surface at elevation 124 or a fill of twelve feet is proposed behind the abutment. This deposit of soft brown clay will cause some minor settlement. This brown clay is underlian by a gray clay with black spots as noted in the Boring AB-15 at Pier No. 1. This gray clay is soft and should be expected to undergo some settlement as well as being troublesome since its angle of repose, existing, is probably near 5:1 although computed values are of 3:1. This the front of the abutment may be difficult to stabilize and it may be more economical to excavate the material along the right side from an area twenty feet on either side of centerline from Pier 1 to a point 25 feet behind the Abutment and replace the material with a granular fill. In this manner, a more stable slope could be maintained. Further details are included under "Drainage Channel" in this report. It is therefore recommended that since it will be more economical to place the approach

fill first, piles are recommended to support the substructure of the Abutment. Steel or cast-in-place concrete piles would be recommended. Because of a fluctuation of the ground water table, wooden piles are not recommended.

Pier No. 1: Borings AB-14 and AB-15 were made to the left and right ends, respectively, of the proposed location of Pier No. 1. The details for these two borings are shown on Sheet 4 while the transverse section and centerline profiles are shown on Sheet 9. Ledge was encountered on the left side at elevation 115.3 with 7½ feet of medium density pebbly sands. On the right side, however, the ledge surface again dropped down to elevation 108.3 with the same gray silty clay being encountered, only the deposit was 10½ feet thick with the top four feet being partly weathered. Five (5) feet of pebbly sands and gravelly silts were noted to lie between the ledge surface in the clay. The proposed elevation of the drainage channel is at elevation 114; but since ledge was encountered in Boring AB-14 at 115.3, it is believed sufficient flow would be secured if the overburden was stripped to this elevation. Since excavation for the channel will be at ledge on the left and but seven feet deeper on the right side, it is believed that the footing should be placed directly on the ledge surface. The difference in elevations of the ledge may require some structural ledge excavation.

Pier No. 2: Borings AB-20 and AB-21 were made on the right and left ends, respectively, of the proposed location of Pier No. 2. The details for these two borings are shown on Sheet 5 while the transverse sections and centerline

profiles are shown on Sheet 9. The ledge surface encountered in these two borings more nearly coincided with the ledge surface encountered at Boring AB-15 with the elevations at 108.2 and 106.9, respectively. The stream elevation was at 121.4 this spring and the proposed channel elevation is at 114. As can be seen on the transverse sections, gray silty clay overlies the granular soils in both these borings and since the ground surface is in the vicinity of elevation 115, it would take but eight feet to get down to the ledge surface. Since the flow of water will be increased and these soils are scourable, it is believed that insufficient thickness of cover exists for the use of piles. It is recommended that the eight feet of soil be excavated and the footing placed directly on the ledge surface. Allowable bearings values for the ledge would be ten tons per square foot.

Abutment No. 2: Borings AB-22 and AB-23 were made on the left and right ends, respectively, of the proposed location of Abutment No. 2. The details for these two borings are shown on Sheets 5 and the transverse sections and centerline profiles are shown on Sheet 9. This proposed location of the Abutment is within the existing stream area and two to three feet of granular soils were noted to overlie the ledge surface. At the time of the borings there was ten feet of water above the bottom of the stream bed. It is proposed to place a fill along centerline to the east of the abutment to elevation 136.3. Since the ground stream bed is at elevation 111 to 112, this means a fill of twenty-four to twenty-five feet is proposed. It therefore, appears more

economical to place the approach fill and drive piles through the fill into the shallow ledge surface. Steel or cast-in-place concrete piles would be recommended. The approach fill placed in water should be made with free draining materials. Wooden piles are not recommended.

Drainage Channel: It is proposed to relocate the stream between the two sets of Piers on each bridge. As can be seen on Sheet 8, the cross section area of the south bound lane is substantially larger than the cross sectional area of the stream along the north bound lane. The maximum depth of the stream bed along the south bound lane is at elevation 108. It is proposed to construct a new drainage channel near elevation 114. Piers 1 and 2 would be constructed within the channel area and the backslopes of both the fills extending away from the footings such that earth pressures do not build up against the bases. Since a good portion of the drainage channel will be within the west bank of the present river, an additional boring was made along the proposed centerline to the left of Pier No. 1 on the south bound lane and to the right of Pier No. 2 on the north bound lane. These borings indicated that to the left of the south bound lane the ledge elevation was at high of elevation 115.3 with the overburden a granular silty sand. It is believed that since the stream elevation on the north bound centerline is presently well above elevation 115, sufficient flow per cross sectional area could be recorded if the overburden is cleared off to the ledge surface or to elevation 114. Between the south bound and the north bound lanes, excavation should encounter a layer of clay underlain by a dense density gravelly silt. The clay deposit is weathered

or brown colored and of medium consistency near the surface. With depth, however, black spots with blue clay indicate a sensitive material. This was confirmed when water contents of this material were found to be at the liquid limit of the soil. Since the liquid limit is defined as the water content above which a soil will act as a liquid if disturbed (remoulded), the slopes of the material may cause difficulty.

On the present cross sectional areas of the stream on Sheet 8, the slopes submerged were observed to be 1:1, 2:1, and 5:1. The 1:1 and 2:1 slopes are believed to be the gravelly silt with rocks which lie on the surface where as the 5:1 slope is of the soft clay. A 2:1 submerged slope would be recommended for the granular silt and design wise, a 3:1 for the clay would have appeared satisfactory had not the cross sections been made. Fortunately, only a small amount of this material lies within the highway fill sections under the south bound lane, and thus it is believed the western slope between the two centerlines can be substantially flattened without materially effecting the highways.

A further difficulty on this project will be the suspension of the clays in the stream flowing downstream where four miles below the crossing, is a secondary water source for the town of Hampden. The silt size particles should not cuase any difficulties. The shallow ledge surface downstream together with a dry summer would minimize all disturbances.

SUMMARY

It is proposed to complete a drainage channel on the western bank of the existing stream and construct the

approach fill on the easterly side within the present stream area. The new channel cross sectional area will be slightly larger than the existing cross sectional area at the north bound lane. Severe scour at depth should not occur since ledge outcrops were noted within the stream bed but a short distance downstream from the proposed crossing.

A deposit of medium consistency changing to soft consistency clay was noted to extend along the right side of the Abutment 1 and Pier 1 on the south bound lane. Since this material is well above the proposed excavation grade and a fill of twelve feet is proposed behind the abutment, it is recommended that the clay material be removed completely from within the Abutment and Pier location prior to completion of the approach fill. In this manner, once the drainage channel is excavated, the back slopes should be stable. Since the ledge surface was noted to lie above elevation 115 to the left of the south bound lane, it is recommended that the overburden be stripped and the channel placed directly on this ledge surface. This ledge surface was substantially lower than the existing bottom of the stream bed as noted along the north bound lane as shown on Sheet 8.

Between the south bound and north bound lanes, excavation for the drainage channel on the west bank of the present stream should encounter blue soft clay. It is recommended that this excavated material not be allowed to be stockpiled on the west of the channel since this would induce shearing of the clay into the excavated channel. The granular soils should remain on a 2:1 submerged slope, but

the soft clay tends to remain on a 5:1 slope. Fortunately, most of the soft clay is between the two lines and thus the channel can be substantially widened between lanes without effecting the highway or substructure units.

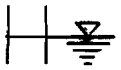
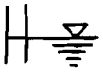
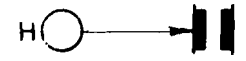
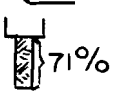
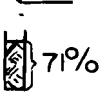
Since fills are proposed behind the two Abutments of twelve and over twenty-four feet, it is believed it will be more economical to place the approach fills and then drive piles through the fills into the underlying soils penetrating directly on the ledge surface. Steel or cast-in-place concrete piles would be recommended with an allowable pile load of twenty to twenty-five tons.

Since the two piers on both bridges would require but shallow excavation to reach the ledge surface, it is recommended that the substructure for the piers be placed directly on the ledge surface. The water is five to ten feet deep and these footings may be placed directly on the ledge surface without de-watering. There is insufficient cover at the proposed pier locations for piles. Some difficulty should be anticipated along the south bound lane at Pier No. 1 due to a change in ledge elevations. Allowable values for the ledge surface would be ten tons per square foot. If the ledge is exposed and found to be sound, the allowable values could be increased to fifteen tons per square foot.

Respectfully yours,

Frederick M. Boyce, Jr.
Soils Engineer

FMB:jr

BORING NOTES	LOG SHEETS	DETAIL SHEETS
1. All samples and vanes are made ahead of casing.		
2. Scales and casing size as noted on drawings.		
3. Ground water table indicated thus:		
4. Number of blows of 275# hammer falling 18 inches required to drive extra heavy casing one foot thus:		
5. Location and designation of "dry" samples taken in S&H sampler #1290s indicated thus:		
6. Location and designation of "dry" samples taken in 2" O.D. 16 ga. seamless tubing indicated thus:		
7. Location and designation of "dry" samples taken in 3½" O.D. 16 ga. seamless tubing indicated thus:		
8. Location and designation of wash samples indicated thus:		
9. Unsuccessful attempts to secure dry sample indicated thus, followed by type of sampler:		
10. Location of field vane test indicated thus:		
11. Number of blows of 275# hammer falling 15" required to drive spoon or tubing one foot indicated thus:		
12. Sampling spoon or seamless tubing driven by static weight of drill rods and 275# hammer indicated thus:		
13. 3½" O.D. "dry" samples taken with piston sampler.		
14. Natural water contents, given as percent of dry weight are indicated thus:		Graphical
15. Bottom of boring indicated thus:		
16. Refusal of drill rods or casing indicated thus:		
17. Percent recovery of rock core by diamond bit thus:		

SHEAR AND WATER CONTENT NOTES

Shear Notes:

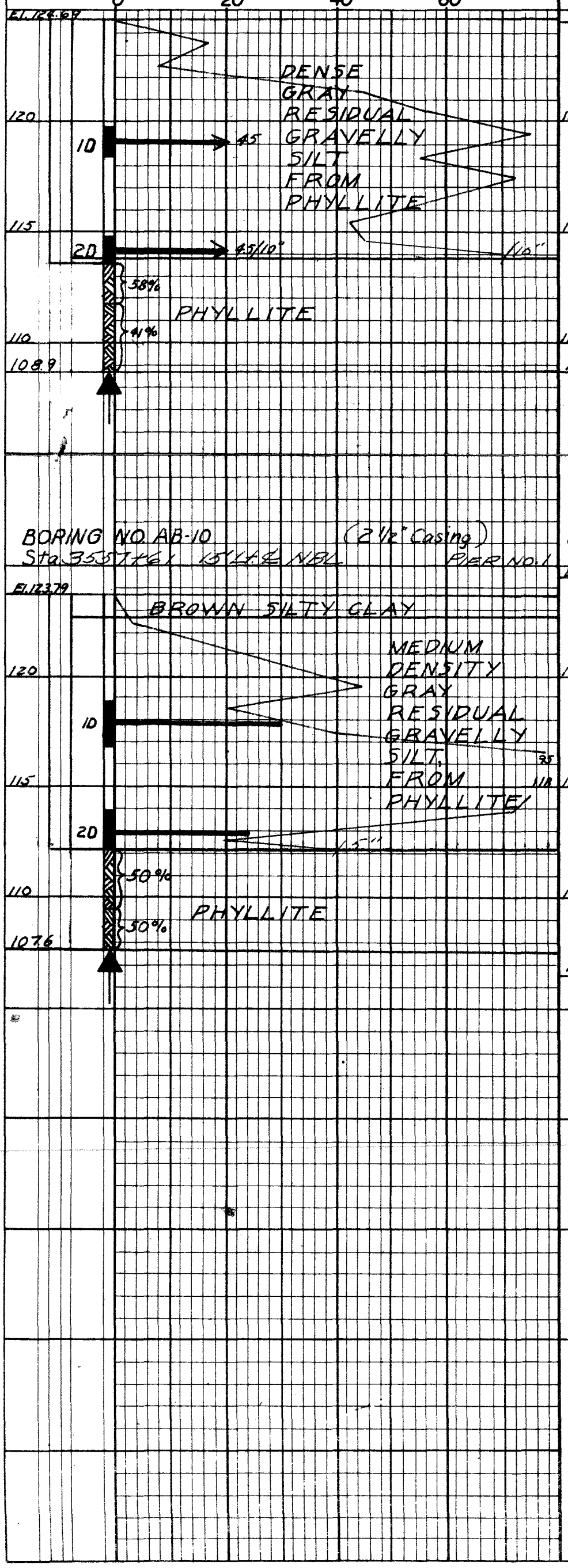
1. Field vane shear strengths indicated thus: ●
2. Laboratory vane shear strengths indicated thus: x
3. One half unconfined compressive strengths indicated thus: o
4. Strengths beyond range of plot indicated at right edge of plot by numerical values and symbols thus: 1.62●
5. Field vane shear strengths in excess of capacity of equipment indicated thus: —●→
6. Laboratory vane shear strengths in excess of capacity of equipment (1.0 T/sf) indicated thus: —x→
7. Field vane shear strengths in excess of capacity of equipment and beyond range of plot indicated at right edge of plot thus: 1.50(+)●
8. Laboratory vane shear strength in excess of capacity of equipment (1.0T/sf) and beyond range of plot indicated at right edge of plot thus: 1.00 (+)x

Water Content Notes:

1. Natural water contents, given as percent of dry weight, are indicated thus: o
2. Plastic and liquid limits are indicated thus: ⊗— — —x
3. Ignition losses are given as percent of dry weight.

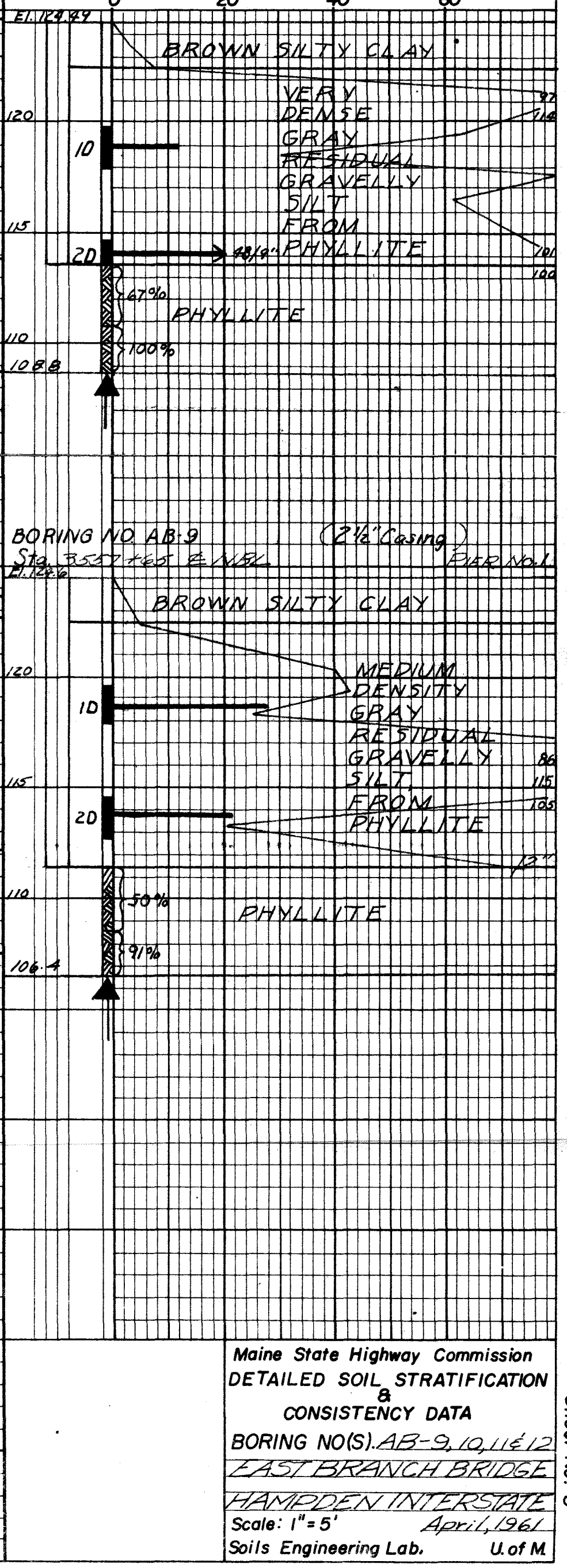
DRIVING RESISTANCE
(Blows/Ft.)

BORING NO. AB-11 (2½"Casing)
Sta. 355+21 15' Lt. ℄ NBL ABUT No. 1



DRIVING RESISTANCE
(Blows/Ft)

BORING NO. AB-12 (2½"Casing)
Sta. 3551+29 15' Rt. ℄ NBL ABUT No. 1



BORING NO. AB-10 (2½" Casing)
Sta. 355+16 15' Lt. ℄ NBL PIER No. 1

BORING NO. AB-9 (2½" Casing)
Sta. 355+05 ℄ NBL PIER No. 1

Maine State Highway Commission
DETAILED SOIL STRATIFICATION & CONSISTENCY DATA
BORING NO(S). AB-9, 10, 11 & 12
EAST BRANCH BRIDGE
HAMPDEN INTERSTATE
Scale: 1" = 5' April, 1961
Soils Engineering Lab. U. of M.

Sheet No. 3

DRIVING RESISTANCE
(Blows/Ft.)

BORING NO. AB-17 (2½"Casing)
Sta. 3556+78 175'Lt & NBL

0 20 40 60

El. 123.99

120

BROWN SILTY SAND & PEBBLES

81

66%

PHYLLITE WITH CALCITE STRINGERS

84%

114.99

DRIVING RESISTANCE
(Blows/Ft)

BORING NO. AB-16 (2½"Casing)
Sta. 3556+86 145'Lt & NBL

0 20 40 60

El. 123.91

120

SOFT BROWN SILTY CLAY

10

115

DENSE BROWN SILTY SAND & 18" LEDGE PIECES

20

93%

PHYLLITE WITH CALCITE STRINGERS

84%

108.25

BORING NO. AB-14 (2½"Casing)
Sta. 3557+18 175'Lt. & NBL

El. 122.79

120

MEDIUM DENSITY FINE PEBBLY SAND

10

6"/10'

115

75%

70%

PHYLLITE

110.29

BORING NO. AB-15 (2½"Casing)
Sta. 3557+26 145'Lt. & NBL

123.7

120

BROWN & GRAY CLAY

10

14

GRAY SILTY CLAY WITH BLACK SPOTS

115

20

GRAY PEBBLY SILTY SAND

110

DENSE RESIDUAL GRAVELLY SILT

30

93

4"/6"

33%

PHYLLITE

103.3

Maine State Highway Commission
DETAILED SOIL STRATIFICATION & CONSISTENCY DATA
BORING NO(S). AB-14, 15, 16 & 17
EAST BRANCH BRIDGE
HAMPDEN INTERSTATE
Scale: 1" = 5' April, 1961
Soils Engineering Lab. U. of M.

Sheet No. 4

DRIVING RESISTANCE (Blows/Ft.)

BORING NO. AB-21 (2½" Casing)
Sta. 3557+68 175' Lt. ± NBL

0 20 40 60

El. 115.09

110

GRAY SILTY CLAY

ID

MEDIUM DENSITY BROWN SILTY SAND & LEDGE PIECES

105

65%

PHYLLITE WITH QUARTZ STRINGERS

35%

101.3

DRIVING RESISTANCE (Blows/Ft)

BORING NO. AB-20 (2½" Casing)
Sta. 3557+76 145' Lt. NBL

0 20 40 60

El. 115.39

GRAY SANDY CLAY

110

MEDIUM DENSITY GRAY

ID

SILTY SAND & LEDGE PIECES

5"

45%

PHYLLITE WITH

105

100%

QUARTZ STRINGERS

103.2

BORING NO. AB-22 (2½" Casing)
Sta. 3558+08 175' Lt. ± NBL

El. 110.59

BROWN SAND & ROCKS

58%

PHYLLITE

105

66%

102.8

BORING NO. AB-23 (2½" Casing)
Sta. 3558+16 145' Lt. ± NBL

El. 111.79

110

GRAY SAND & ROCKS

36%

PHYLLITE

105

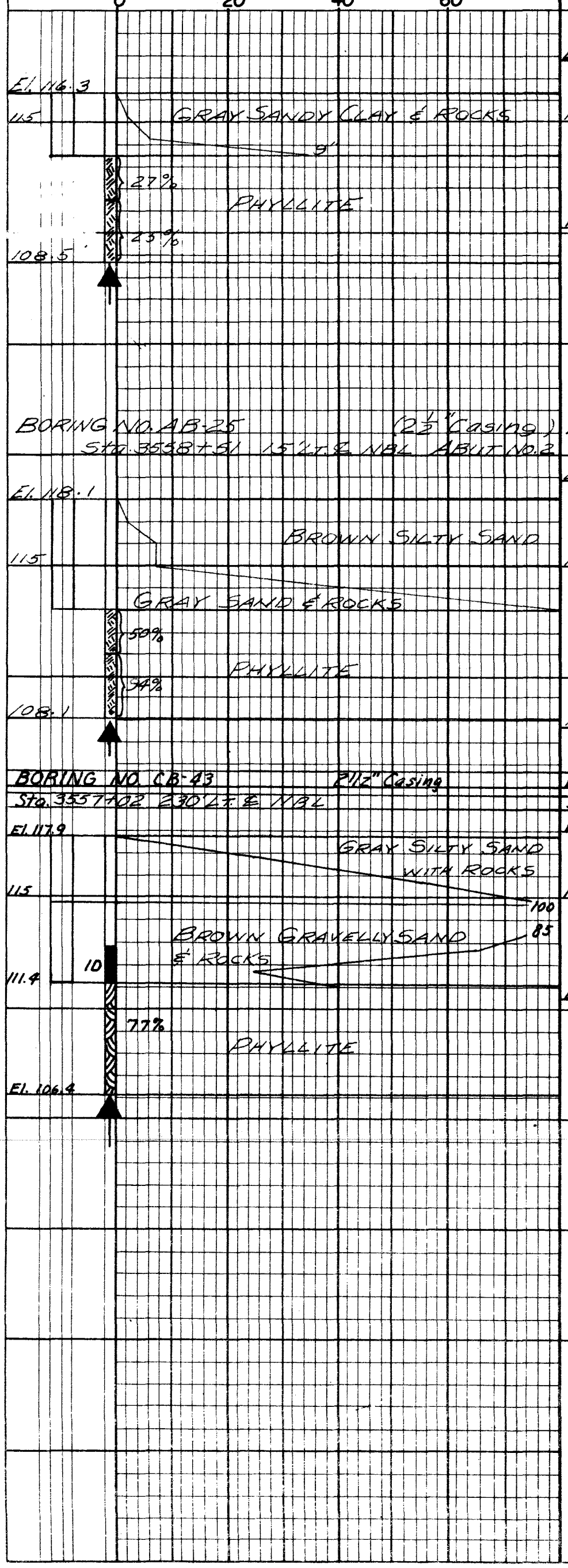
86%

104.3

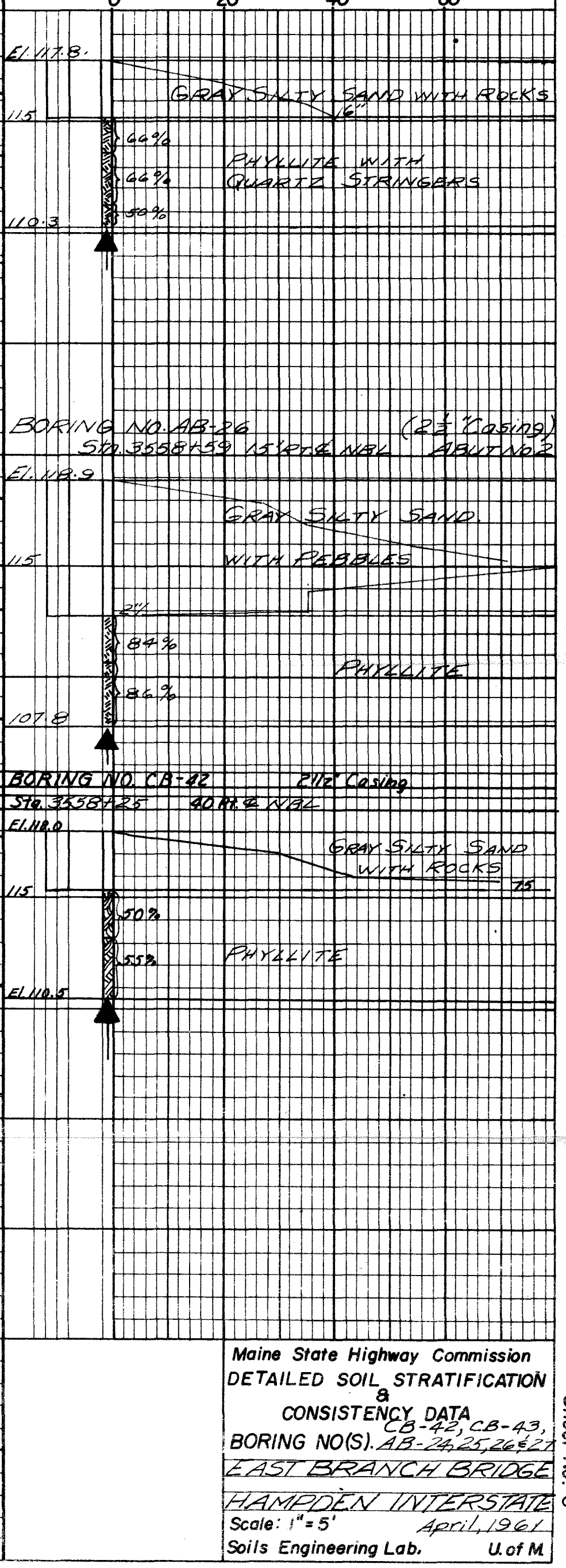
Maine State Highway Commission
DETAILED SOIL & STRATIFICATION
CONSISTENCY DATA
BORING NO(S) AB-20, 21, 22 & 23
EAST BRANCH BRIDGE
HAMPDEN INTERSTATE
Scale: 1" = 5' April, 1961
Soils Engineering Lab. U. of M.

Sheet No. 5

DRIVING RESISTANCE
(Blows/Ft.)
BORING NO. AB-24 (2½"Casing)
Sta. 3558+11 15'Lt.℄ NBL PIER No.2



DRIVING RESISTANCE
(Blows/Ft)
BORING NO. AB-27 (2½"Casing)
Sta. 3558+19 15'Rt ℄ NBL PIER No.2



BORING NO. AB-25 (2½"Casing)
Sta. 3558+51 15'Lt.℄ NBL ABUT No.2

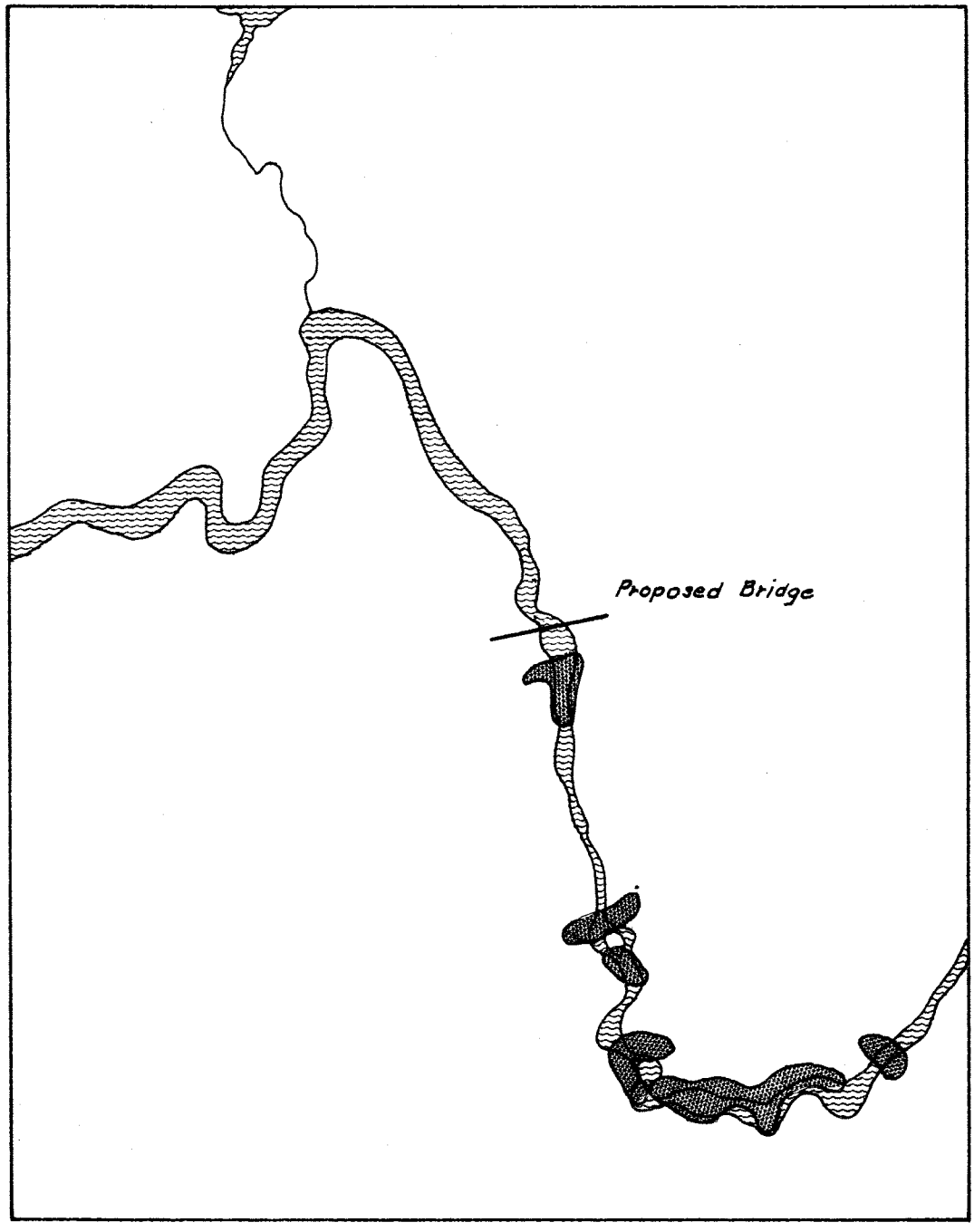
BORING NO. AB-26 (2½"Casing)
Sta. 3558+59 15'Rt℄ NBL ABUT No.2

BORING NO. CB-43 2½" Casing
Sta. 3557+02 230'Lt.℄ NBL

BORING NO. CB-42 2½" Casing
Sta. 3558+25 40 Rt.℄ NBL

Maine State Highway Commission
DETAILED SOIL STRATIFICATION
&
CONSISTENCY DATA
BORING NO(S). CB-42, CB-43, AB-24, 25, 26 & 27
EAST BRANCH BRIDGE
HAMPDEN INTERSTATE
Scale: 1" = 5' April, 1961
Soils Engineering Lab. U. of M.

Sheet No. 6



Note:

Ledge Locations
Based On Air Photo Interpretations

Maine State Highway Commission

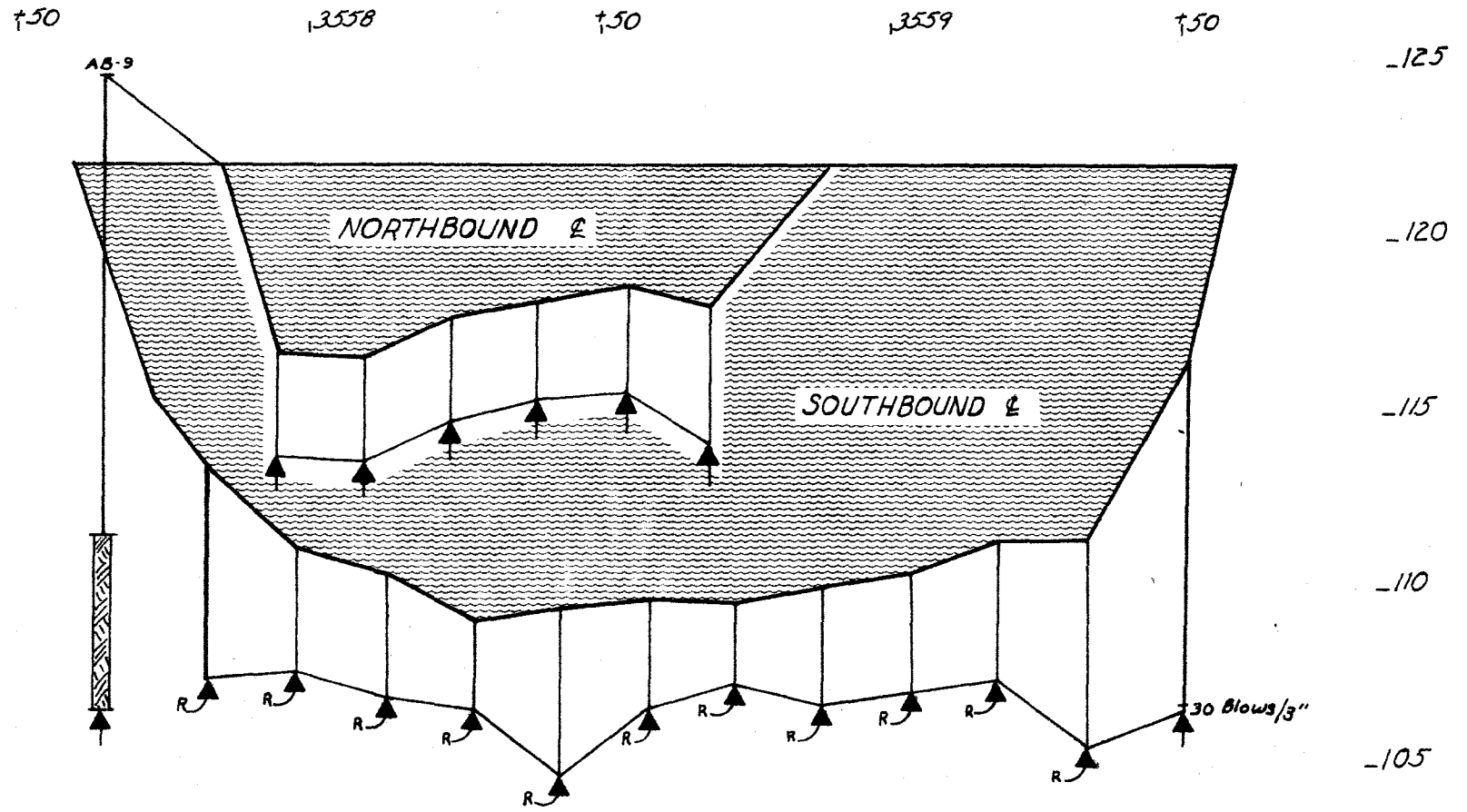
SOUADABSCOOK RIVER

EAST BRANCH

LEDGE LOCATIONS

Scale: 1"=1000' April 1961

Soils Engineering Lab. U. of M.



MAINE STATE HIGHWAY COMMISSION

SOUADABSCOOK RIVER

EAST BRANCH BRIDGE

PROFILE

NORTHBOUND & SOUTHBOUND ℄

Scale: Horizontal 1"=30'

Vertical 1"=5'

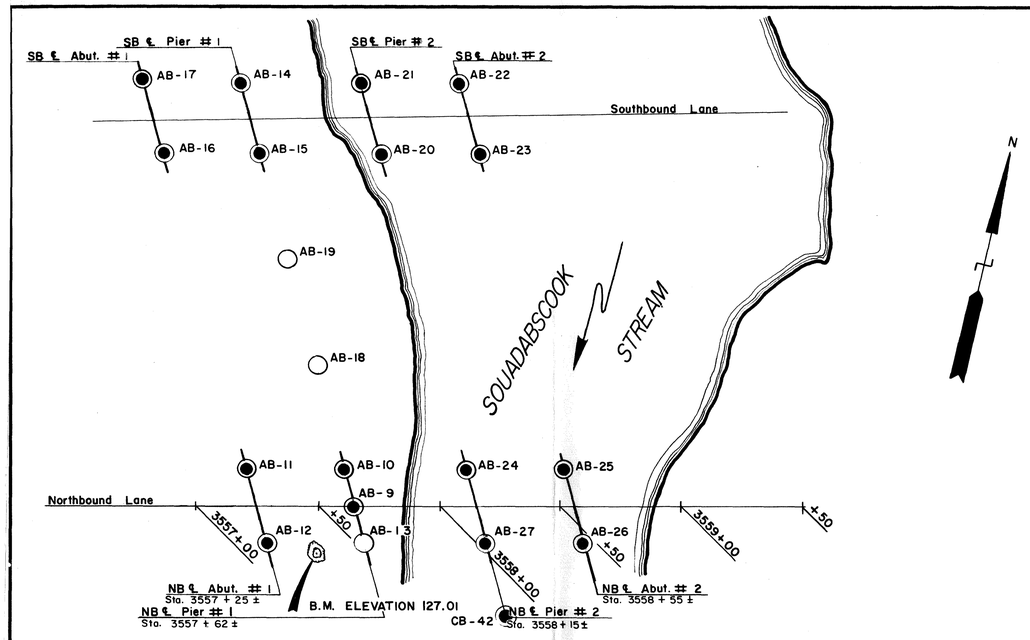
April 1961

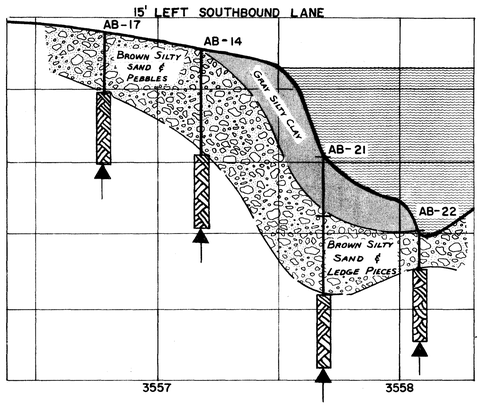
Soils Engineering Lab. U. of M.

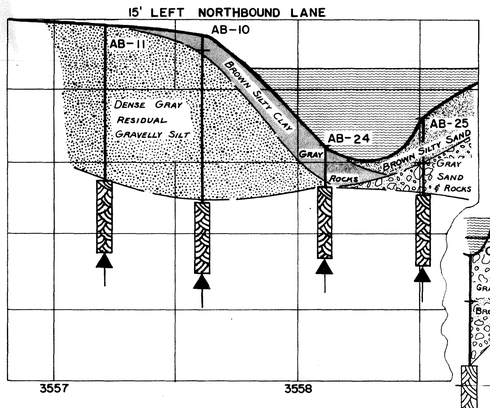
Sheet No. 8

B. P. R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE			

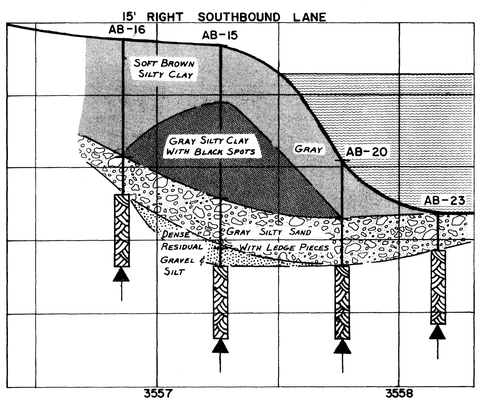
CB-43

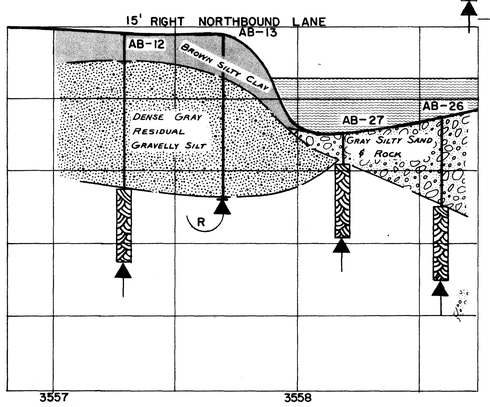




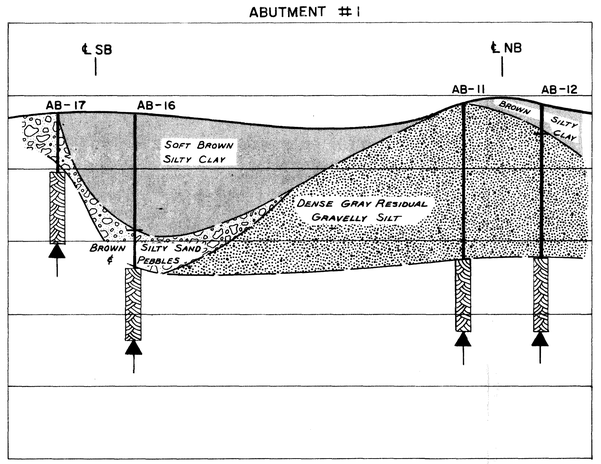


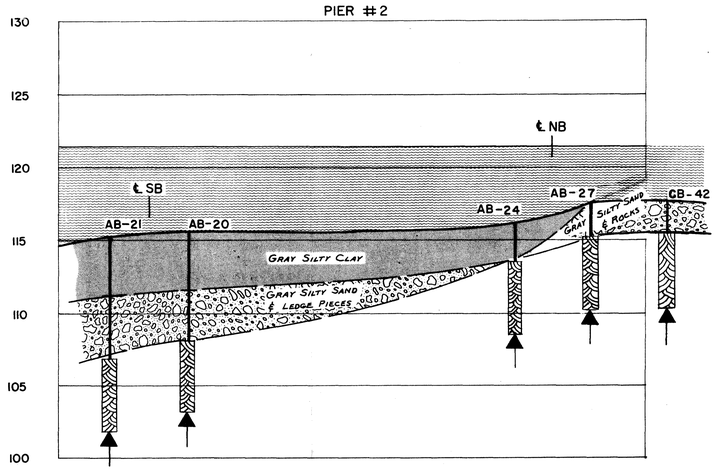
CENTERLINE PROFILES

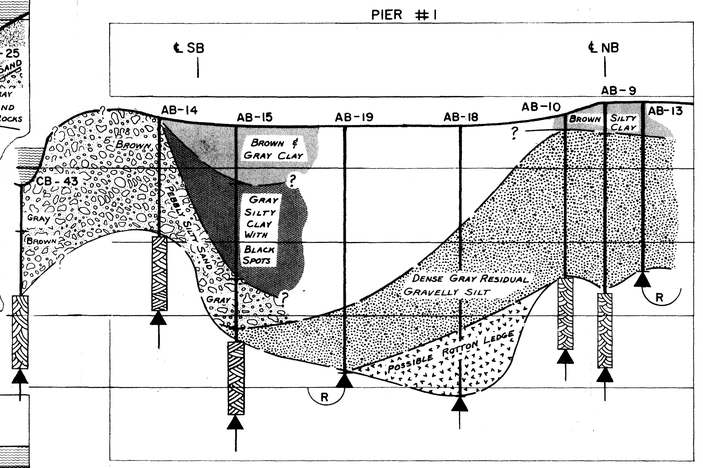


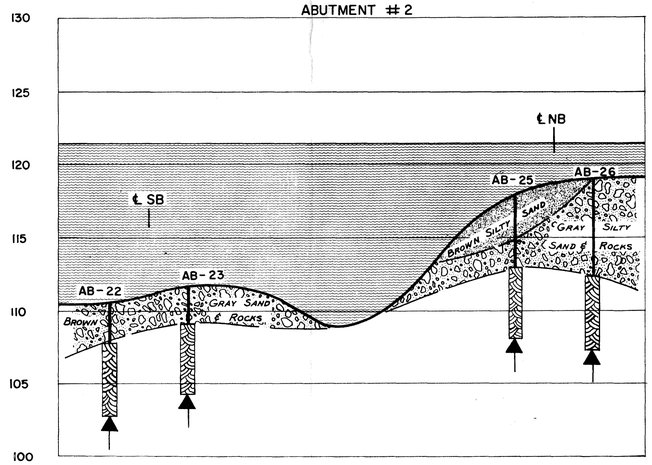


TRANSVERSE SECTIONS









WATER ELEVATION
SPRING 1961, 121.42'
HIGH WATER ELEVATION
1936 & 1955, 130.5'

DESIGN– TRACE– CHECK–	BRIDGE NO. SURVEY– PLOT–

STATE HIGHWAY COMMISSION
BRIDGE DIVISION

SOUADABSCOOK STREAM BRIDGE EAST

IN THE TOWN OF

HAMPDEN

PENOBSCOT COUNTY

FOUNDATION SURVEY

SHEET OF AUGUSTA, MAINE

C. B. CO., NO. 379 24627