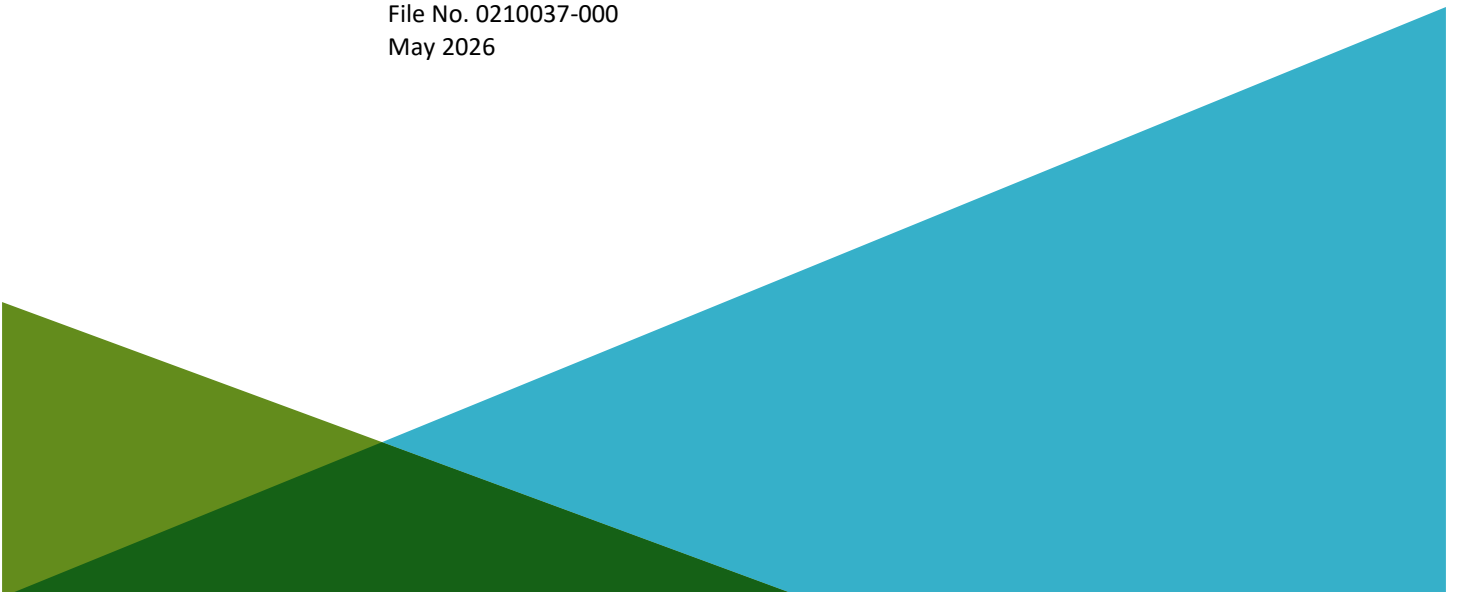


PHASE I GEOTECHNICAL DATA REPORT
INTERSTATE 395 OVER CSX RAILROAD
BRIDGE NO. 1559, MAINEDOT WIN 029484.00
BREWER, MAINE

by
Haley & Aldrich, Inc.
Portland, Maine

for
Maine Department of Transportation
Augusta, Maine

File No. 0210037-000
May 2026





HALEY & ALDRICH, INC.
75 Washington Avenue
Suite 1A
Portland, ME 04101
207.482.4600

May 15, 2026
File No. 0210037-000

Maine Department of Transportation
16 State House Station
Augusta, Maine 04333-0016

Attention: Laura Krusinski, P.E.
Senior Geotechnical Engineer

Subject: Phase I Geotechnical Data Report
Interstate 395 over CSX Railroad
Bridge No. 1559, MaineDOT WIN 029484.00
Brewer, Maine

Ladies and Gentlemen:

This Phase I Geotechnical Data Report presents the compilation of subsurface data and results of the historical geotechnical field investigation completed for construction of the existing Interstate 395 (I-395) over the CSX Railroad bridge (existing bridge) in Brewer, Maine (see Figures 1 and 2). This report is intended to provide Maine Department of Transportation (MaineDOT) and their bridge subconsultant (HNTB Corporation; HNTB) with initial geotechnical information for the proposed bridge rehabilitation. This work has been completed in accordance with our proposal dated March 5, 2024, which was authorized on March 18, 2024. This report supersedes our January 30, 2026 report.

A site-specific field investigation has been conducted to support development of the design build (DB) request for proposals (RFP) document and is summarized in the Phase II Geotechnical Data Report dated May 15, 2026.

Project Background

EXISTING BRIDGE STRUCTURE

The existing bridge is a 25-foot (ft) span by 26-ft rise, 286-ft-long, three-sided concrete frame that carries I-395 and two ramps over the CSX Railroad (see Figure 2). Based on our review of the historical bridge drawings (dated March 6, 1984) the existing bridge is a rigid frame structure that is supported on continuous footings that are in turn supported on vertical and battered steel, end-bearing, HP 14x89 H-piles with a maximum pile load of 118 tons (see historical bridge drawings Sheet Nos. 7 and 8).



Photograph 1 – Existing bridge

PROPOSED BRIDGE REHABILITATION

Based on discussions with HNTB, it is our understanding that minor rehabilitation of the existing bridge is planned, including repair and stabilization of the metal bin walls. Project scope also includes substructure patching and application of protective coating.

Geologic Setting

According to Maine Geological Survey's Bangor Surficial Geology Quadrangle, Maine (2011), the surficial geologic unit mapped within the site vicinity is the Presumpscot Formation which consists of silt, clay, and sand. According to Maine Geological Survey's Bangor Bedrock Geology Quadrangle, Maine (2011), bedrock at the site vicinity is mapped as the Bangor Formation of the Penobscot River Member which consists of Silurian Age medium- to very fine-grained feldspathic metawacke.

Historical Geotechnical Field Investigation

A geotechnical field investigation (investigation) was conducted at the subject site by MaineDOT in 1983. The results of this investigation is summarized in the report titled, "Soils Report 83-13, Brewer – Penobscot County, Project I-395-8(79), I-395 & Ramps over MCRR Bucksport Branch, April 1983," (Soils Report) and is included for reference in Appendix A. Based on Sheet No. 6 in the Soils Report, the investigation consisted of conducting eight wash borings (borings) to support design and construction of the existing bridge. Please note that a reference elevation datum was not indicated in the Soils Report. Refer to Figure 2 for approximate locations of the historical borings.

Generalized Subsurface Conditions

The subsurface conditions encountered in the investigations generally consisted of the following geologic units presented in order of increasing depth below ground surface (BGS) along the existing bridge alignment: in-situ fill, marine sand deposit, marine clay deposit (“upper” and “lower” layers), glacial till, and bedrock. The Soils Report did not provide a geologic unit classification for the marine deposits.

A general description of each geologic and bedrock unit encountered in the available historical borings is provided separately below.

GENERALIZED GEOLOGIC UNIT DESCRIPTIONS

Geologic Unit	Approximate Range in Encountered Thickness (ft)	Generalized Description
In-situ Fill	0 to 2	Coal ash, “silty Fill.”
Marine Sand Deposit ¹	3 to 5	Loose ² to medium dense, brown, silty fine SAND.
“Upper” Marine Clay Deposit ¹	3 to 7	Stiff, grey-brown, “weathered,” Sandy silty CLAY, with fine sand layers.
“Lower” Marine Clay Deposit ¹	0 to 17	Medium stiff, grey, silty CLAY, with sand layers.
Glacial Till	3 to 14	Medium dense to dense, grey-brown, Silty gravelly SAND.

Notes:

1. The Soils Report did not provide a geologic unit classification for these strata. Based on the descriptions of these strata on the boring logs and the surficial geology map of the site, we have classified these strata as a marine (sand and clay) deposits.
2. Please note that field blow counts per foot (i.e., uncorrected N-values) and corresponding densities in the table above were based on a Sprague & Henwood soil sampler.

BEDROCK CONDITIONS

Bedrock was cored in seven of the eight historical borings. In these borings, the top of the bedrock surface ranged from 15 ft to 28 ft BGS (El. 15.5 to El. 2.6). The cored bedrock was generally described as metasiltstone, with quartz and calcite veins and high angles of foliation.

GROUNDWATER ELEVATIONS

Historical groundwater levels were not recorded. An indication of soil sample saturation was not indicated on the historical boring logs. However, per Sheet No. 4 of the Soils Report, the groundwater level was assumed to be at the interface between the “upper” and “lower” marine clay deposit layers (i.e., approximately at El. 25).

HISTORICAL IN-SITU FIELD VANE SHEAR STRENGTH TESTING

The historical in-situ field vane shear strength testing results are summarized in the table below, and details can be found in the Soils Report included in Appendix A.

Historical Boring	Geologic Unit	Approximate Range of Field Vane ¹ Shear Strengths (pounds per square foot [psf])
GP-16-83	"Lower" Marine Clay Deposit	1,000
GP-21-83	"Lower" Marine Clay Deposit	680 to 1,020

Note:

1. Per the MaineDOT, the "homemade" tapered field vane was 7 in. by 3 in. (including the tapered end).

HISTORICAL GEOTECHNICAL LABORATORY TESTING

The historical geotechnical laboratory testing results are summarized in the tables below, and details can be found in the Soils Report included in Appendix A.

Atterberg Limits

Historical Boring	Geologic Unit	Plastic Limit (%)	Liquid Limit (%)
GP-15-83	"Upper" Marine Clay Deposit	20	30
	"Lower" Marine Clay Deposit	19	27
GP-16-83	"Upper" Marine Clay Deposit	18	25
GP-17-83	"Upper" Marine Clay Deposit	20	28
GP-19-83	"Upper" Marine Clay Deposit	20	29
GP-21-83	"Lower" Marine Clay Deposit	20	28
GP-38-78	"Upper" Marine Clay Deposit	22	33
	"Lower" Marine Clay Deposit	16	28
	"Lower" Marine Clay Deposit	18	26

Strength Testing Results

Historical Boring	Geologic Unit	Approximate Range of Laboratory Vane Shear Strengths (psf)
GP-15-83	"Upper" Marine Clay Deposit	1,320
	"Lower" Marine Clay Deposit	500 to 860
GP-16-83	"Lower" Marine Clay Deposit	660 to 740
GP-19-83	"Lower" Marine Clay Deposit	1,320
GP-21-83	"Upper" Marine Clay Deposit	1,400 to 1,700
	"Lower" Marine Clay Deposit	600 to 700

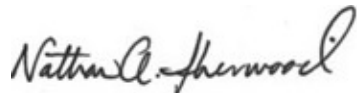
Consolidation Results

Historical Boring	Sample No.	Approximate Sample Elevation (ft)	Geologic Unit	Range in Water Content, WC (%)	Preconsolidation Pressure, P_p (psf)	Virgin Compression Index, C_c (unitless)
GP-15-83	2U	14	"Lower" Marine Clay Deposit	22 to 28	4,000	0.25
GP-16-83	1U	14	"Lower" Marine Clay Deposit	22 to 28	Not Conclusive	0.18
GP-21-83	2U	13	"Lower" Marine Clay Deposit	--	Not Conclusive	0.28

Closure

We appreciate the opportunity to provide engineering services on this project. Please do not hesitate to contact us if you have any questions or comments.

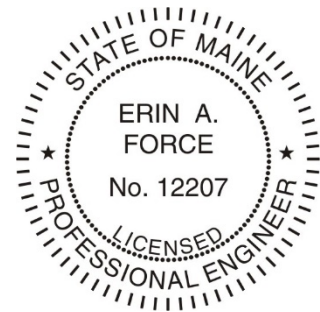
Sincerely yours,
HALEY & ALDRICH, INC.



Nathan A. Sherwood, P.E.
Senior Project Manager



Erin A. Force, P.E.
Senior Associate



Enclosures:

- Figure 1 – Project Locus
- Figure 2 – Historical Boring Location Plan
- Appendix A – Historical Soils Report

<https://haleyaldrich.sharepoint.com/sites/MaineDepartmentofTransportation2/Shared Documents/0210037.MaineDOT-Brewer I-395 Design Build/Deliverables/Phase 1 - Historic Geotech Data Reports/CSX Railroad Bridge No. 1559/2026-0515-HAI-I395 Over CSX-Phase I GR-F.docx>

References

1. Syverson, Kent M., & Thompson, Andrew H., *Surficial Geology Bangor Quadrangle, Maine*, Maine Geological Survey, Department of Conservation, Augusta, Maine, Open File Report No. 11-6, 2011.
2. Pollock, Stephen G., *Bedrock Geology of the Bangor Quadrangle, Maine*, Maine Geological Survey, Department of Conservation, Augusta, Maine, Open File Report No. 11-57, 2011.

<https://haleyaldrich.sharepoint.com/sites/MaineDepartmentofTransportation2/Shared Documents/0210037.MaineDOT-Brewer I-395 Design Build/Deliverables/Phase 1 - Historic Geotech Data Reports/CSX Railroad Bridge No. 1559/2026-0515-HAI-I395 Over CSX-Phase I GR-F.docx>

FIGURES



SITE COORDINATES: 44°46'59"N, 68°46'09"W



MAP SOURCE: USGS



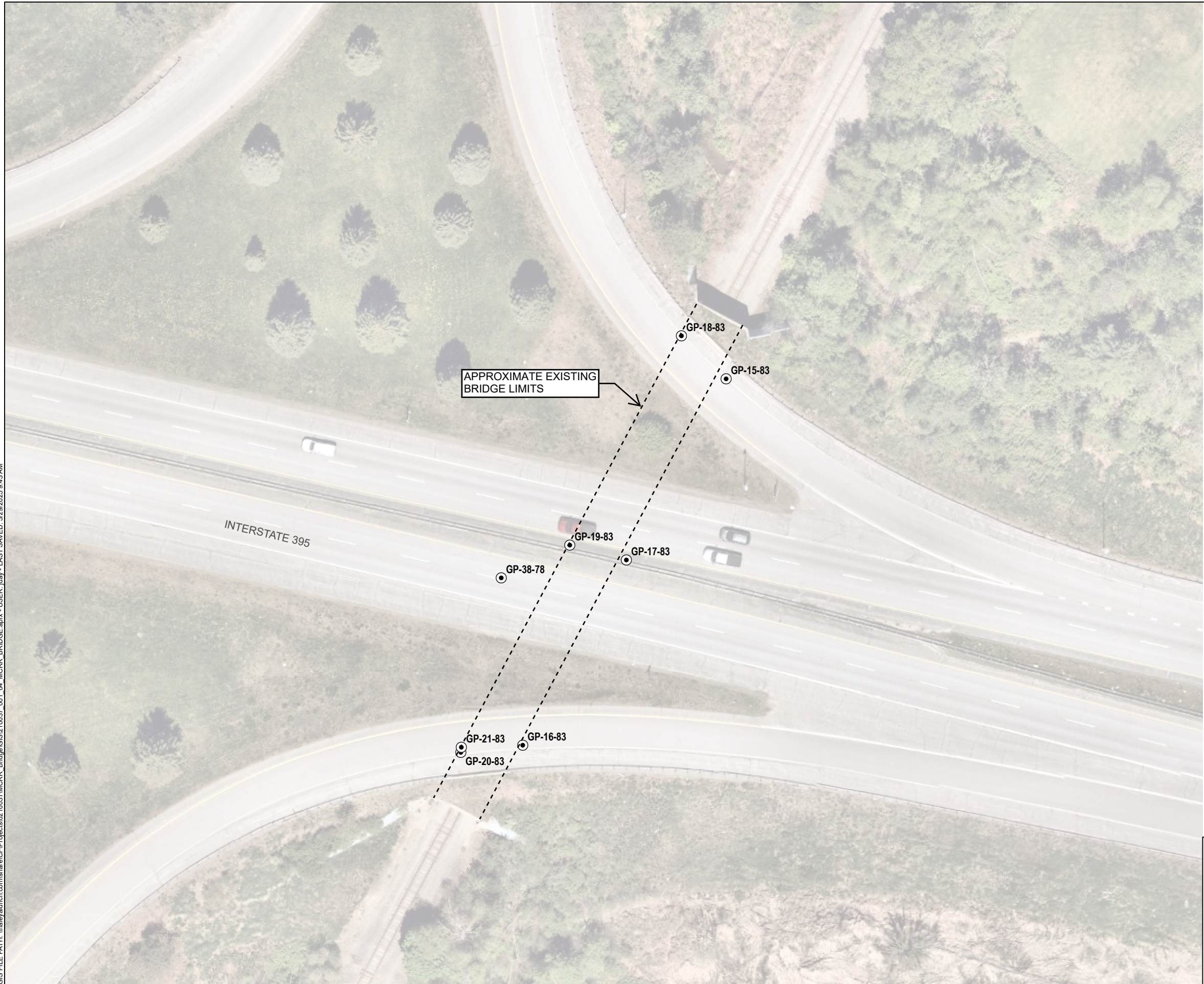
INTERSTATE 395 OVER CSX RAILROAD
BRIDGE NO. 1559, MAINEDOT WIN 029484.00
BREWER, MAINE

PROJECT LOCUS

APPROXIMATE SCALE: 1 INCH = 2,000 FEET
MAY 2026

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\CF\Projects\02 10037\MCRB Bridge\GIS\210037 001 04 MCRB BRIDGE.aprx - USER jday - LAST SAVED: 5/29/2025 9:43 AM

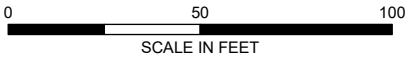


LEGEND

-  HISTORICAL BORING BASED ON APRIL 1983 SOILS REPORT

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: NEARMAP, 22 MAY, 2023



INTERSTATE 395 OVER CSX RAILROAD
BRIDGE NO. 1559, MAINEDOT WIN 029484.00
BREWER, MAINE

HISTORICAL BORING LOCATION PLAN

SCALE: AS SHOWN
MAY 2026

FIGURE 2

APPENDIX A

Historical Soils Report

Soils Report 83-13
Brewer - Penobscot County
Project I-395-8(79)
I-395 & Ramps Over MCRR Bucksport Branch
April, 1983

Maine Department of Transportation

Materials and Research Division

Soils Section

SUBSURFACE INVESTIGATION FOR THE PROPOSED CONSTRUCTION
OF A STRUCTURE TO CARRY I-395 AND RAMPS SM-3 and SM-4A
OVER THE BUCKSPORT BRANCH OF MCRR IN THE CITY OF BREWER

Penobscot County

Project I-395-8(79)

Soils Report 83-13

April, 1983

BANGOR

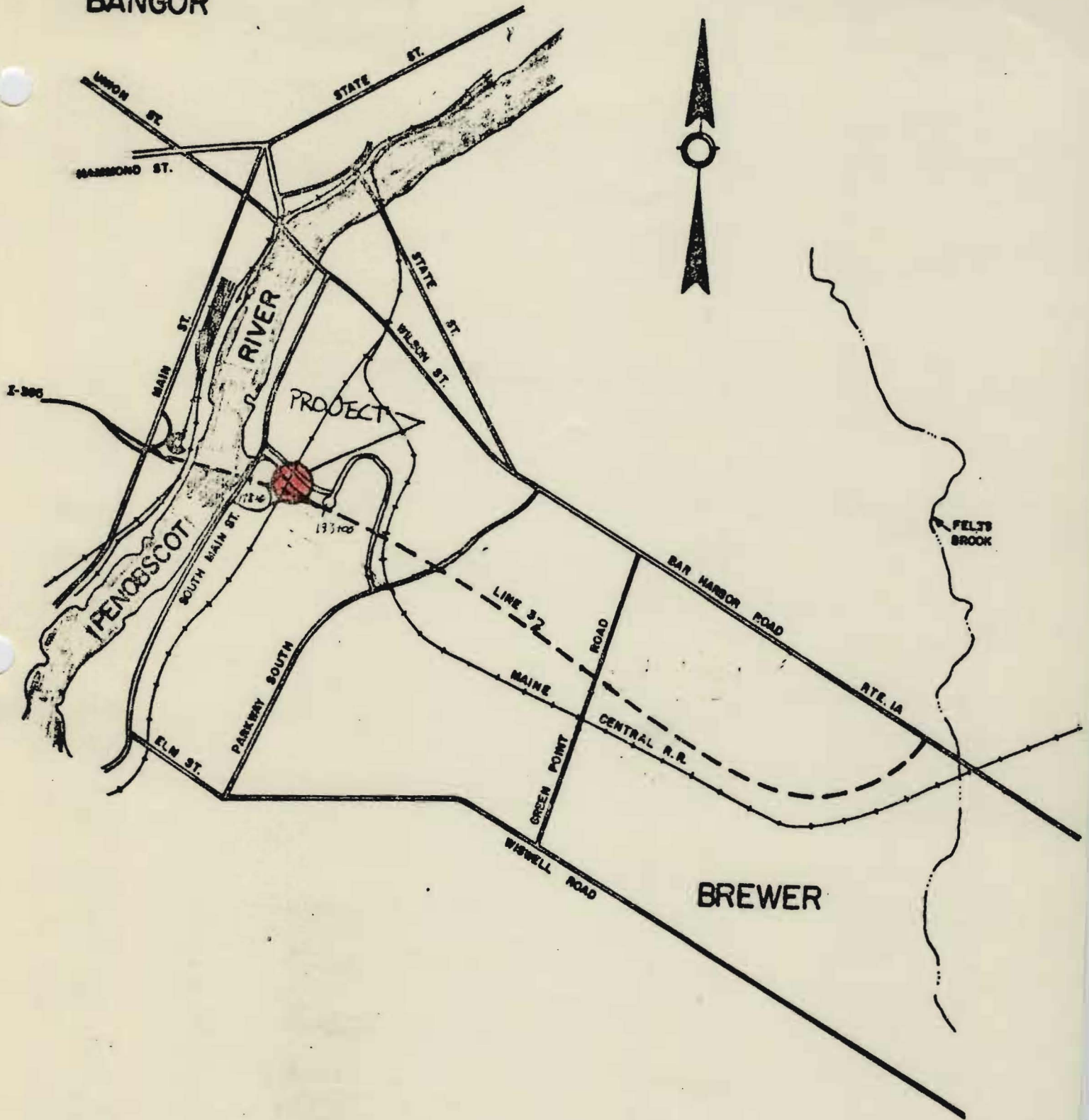


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<u>West Side of Railroad Track.</u>	2
<u>East Side of Railroad Track.</u>	4
DESIGN CONSIDERATIONS	5
<u>Settlement</u>	5
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Pressure-Void Ratio Curves	
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GP-16-83, 1U.	2
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INTRODUCTION

A subsurface soils investigation has been completed for the construction of a structure to carry traffic on the proposed I-395 highway over the Bucksport Branch line of the Maine Central Railroad (MCRR) in Brewer, Penobscot County. Eight washborings were made in the immediate vicinity of the proposed rigid frame structure by a washboring crew under the supervision of Mr. Gary Paine. All soil and ledge samples were sent to the Central Laboratory in Bangor for testing and analysis. The details of the eight washborings are shown on Sheet 5.

The locations of these borings and profiles along each wall of the structure are shown on Sheet 6. The masters of these sheets will be forwarded to the Design Section for inclusion in the construction plans.

GENERAL CONDITIONS

The existing MCRR branch line runs in a relatively straight northeast-southwest orientation through Brewer and carries rail traffic from the Bangor area to Bucksport. The topography in the project area is relatively flat with the land to the east of the rails thickly wooded and the land to the west open, grassy fields. Drainage from the east is carried under the railroad line via two separate culverts on each end of the proposed structure.

Subsurface explorations indicate that there exists at this site 3 to 5 feet of surficial brown silty fine sand over marine clay and/or glacial till. The upper 3 to 7 feet of silty clay is stiff, grayish-brown weathered clay with sand lines and layers and the lower gray silty clay stratum ranges up to 17 feet in thickness and is of medium consistency. Underlying these marine deposits is up to 14 feet of glacial till described as medium to dense gray-brown silty gravelly sand. Ledge was core drilled in all of the borings and described as metasilstone with quartz and calcite veins and a high angle of foliation.

DETAILED CONDITIONS

West Side of Railroad Track

Four washborings were made along the proposed westerly footing of the proposed structure and one washboring was made approximately 35 feet to the west of the track in 1978 as part of the preliminary subsurface investigation for I-395. The approach fills for two ramps, SM-3 and SM-4A, and the mainline reach a maximum height of 32+ feet above the existing ground surface.

Washboring GP-18-83 (Elevation 28.99) was made along the control edge of Ramp SM-4A at Station 2+95 about 15 feet from the railroad track. Four feet of brown silty fine sand is found at the surface and this is underlain by 6 1/2 feet of stiff gray-brown mottled and weathered silty clay and then 12 feet 4 inches of glacial till described as medium density gray-brown silty gravelly sand. Ledge was encountered at Elevation +6.2 and core drilled 5 feet. After 2 feet of rock drilling, an apparent void in the ledge was encountered and the drill bit dropped 6 inches. The ledge sample was later identified as metasiltstone and phyllite with quartz and calcite veins and a high angle of foliation.

Washboring GP-19-83 (Elevation 30.49) was made on the I-395 mainline center-line at Station 185+42 which is approximately 10 feet from the railroad track. At this location there exists 5 feet of loose brown silty sand over 6 feet 10 inches of stiff gray-brown sandy silty clay which has many sand lines and layers. A laboratory vane test measured shear strength of 0.6 TSF and natural water contents averaged 26 percent on one clay sample. Below this clay is over 3 feet of brown silty sand and rocks which is probably glacial till. Ledge was encountered at Elevation +15.5 and core drilled 4 feet and later described as metaquartzite with calcite and quartz veins and a high angle of foliation.

At the southwest corner of this proposed structure, two washborings were made about 10 feet from the track along Ramp SM-3. Washboring GP-20-83 (Elevation 30.99)

was made three feet right of Station 11+00 on Ramp SM-3 and Washboring GP-21-83 was made one foot right of Station 11+00 primarily for obtaining "undisturbed" tube samples of the gray silty clay encountered at this location. These borings encountered 5 feet of surficial brown silty sand over a thin layer of stiff gray-brown weathered silty clay and then 16 feet of medium consistency gray silty clay with sand layers and lines and faint black streaks. This gray silty clay appears to be stiffer in the upper portions than in the lower portions. Average water content of samples of this clay was 27 percent and the shear strengths measured by vane tests and unconfined compression tests decrease from top to bottom of the layer from 0.75 TSF to 0.26 TSF. Gray silty glacial till was encountered at Elevation +9.5₊ and is 6 1/2 feet thick at this location. Ledge was found at Elevation +2.6 and the 5 feet of recovered ledge was described as metasiltstone with quartz and calcite veins and some pyrite and a high angle of foliation.

Washboring GP-38-78 (B-12) is a preliminary washboring made in 1978 at 21 feet right of Station 185+10 on the mainline centerline. This is located 25₊ feet from the proposed rigid frame structure in an open field. There exists at this location one foot of topsoil over 4 feet of brown fine sand and then 5 feet of stiff grayish brown mottled silty clay. From depths 10 feet to 16 feet, a marine deposit of medium consistency gray silty clay with fine sand lines and layers exists and this is underlain by 9 feet 10 inches of glacial till described as medium to dense gray and brown silty sandy clay and gravel. Ledge was encountered at Elevation +4.7 and core drilled for 8 feet. At Elevation 0, the drill bit dropped 3 inches through a void or a calcite seam in the bedrock. The recovered sample was described as metasiltstone with calcite veins and a high angle of foliation.

These washboring details are shown on Sheet 5.

East Side of Railroad Track

Three washborings were made along the proposed footing location on this side of the track. The approach fill to this side of the structure reaches a maximum height of 31+ feet above the existing ground.

Washboring GP-15-83 (Elevation 30.29) was made at Station 2+63 on the control edge of Ramp SM-4A. At this location there exists 5 feet of brown medium sand over 4 1/2 feet of brown silty clay which has some rocks in it. At the depth of 9 1/2 feet, the boring encountered stiff gray silty clay with many sand or silt lines and layers for 4 1/2 feet and then 5 feet of medium consistency gray sandy silty clay with sand lines and layers. Natural water content of a sample of the latter clay was 27 percent and laboratory vane tests average slightly below 0.4 TSF. From the depths of 19 feet to 21 feet 7 inches, there exists dense gray gravelly till. Ledge was encountered at Elevation +8.7 and core drilled 5 feet. The recovered sample was described as metasiltstone with quartz and calcite veins and zones and a high angle of foliation.

Along the I-395 mainline centerline at Station 185+70, Washboring GP-17-83 (Elevation 29.79) was made near the railroad tracks. There exists at this location 2 feet of coal ash fill over 5 feet of stiff weathered gray sandy silty clay mixed with fine brown sand. Underlying this material 14 1/2+ feet of till was quarry drilled. At Elevation +8.3 ledge was encountered and core drilled 4 feet 3 inches and later described as interbedded metasiltstone, phyllite and quartzite with thin quartz and calcite veins along the foliation planes.

On the control edge of Ramp SM-3 at Station 11+35, Washborings GP-16-83 (Elevation 30.89) was made. Two feet of dark brown silty fill was encountered over 3 feet of medium density brown silty medium sand and two feet of weathered gray-brown silty clay. At the depth of 8 feet, a softer layer of gray clay was found that is 10 feet thick. It is described as medium consistency gray silty clay

with many thin sand lines and layers and black bands. A field vane test near the bottom of this clay stratum measured 0.51 TSF and water contents averaged 27 percent. Underlying this marine clay is 8 feet 5 inches of glacial till described as dense gray silty gravelly sand. Ledge, described as metasiltstone with quartz and calcite intrusions and a high angle of foliation, was encountered at Elevation +4.5 and core drilled for 5 feet with a 100 percent recovery.

The washboring details of these three explorations are shown on Sheet 5.

DESIGN CONSIDERATIONS

It is recommended to support the proposed rigid frame structure on steel end-bearing H-piles driven to the ledge surface or practical refusal. Along the west wall of the structure, the ledge surface apparently rises in elevation from the north end to the center and drops off toward the south end. At the north end, ledge was encountered at Elevation +6.2 and it apparently rises to Elevation 15.5 at the I-395 centerline and drops off again to Elevation +2.6 at the southerly end along Ramp SM-3. Along the east wall, the ledge surface appears to be less variable in elevation and slopes gently to the south. The ledge at the north end was encountered at Elevation +8.7, at the I-395 centerline at Elevation +8.3, and at Elevation +4.5 on the south end.

Settlement

The wide embankments that approach this structure will produce significant stress increases in the underlying soil strata. These additional stresses will cause the compressible marine soils to consolidate and settlement of the new fills will result.

The westerly approach fill, which includes embankments for I-395 and Ramps SM-3 and SM-4, reaches an average height of 33 feet above the existing ground and this will increase the total effective stress within the clay strata by over 2 tons/ft². The stiffer, weathered clay and the underlying medium consistency gray silty clay are apparently in an overconsolidated state and thus,

the recompression portion of the laboratory pressure-void ratio curves was utilized in the settlement calculations. These curves are shown on Sheets 1 through 3. Predicted total settlement of the fill at Station 185+00 is 2 1/2 to 4 inches and an average of 95 percent of this consolidation should theoretically take place within two months after construction. In the vicinity of Ramp SM-3, the underlying gray clay is more compressible and is thicker. Thus, settlement estimates range from 6 to 8 inches and an average of 95 percent consolidation of the clay layer is expected within 5 months after construction of the full embankment.

On the other side of the structure, the easterly approach fill reaches a height of 30 feet above the existing ground and more settlement of the two ramp embankments is expected than the mainline embankment because the more compressible medium consistency gray silty clay was not encountered in the boring made on centerline. A total of 1 inch to 2 inches of mainline embankment settlement is expected and 3 1/2 inches to 5 inches of ramp embankment settlement is expected. An average of 95 percent of this consolidation should occur within one to two months after full embankment construction.

Embankment Stability

The combination of the proposed high embankments and the subsurface cohesive marine clay dictated the completion of several computer analyses to check for the possibility of a longitudinal rotational shear failure across the railroad tracks. As shown on the profiles on Sheet 6, the marine deposits consist generally of stiff weathered grayish brown sandy silty clay over a softer layer of medium consistency gray silty clay. However, borings done along the I-395 median centerline did not encounter any of the softer gray clay and computer stability analyses along the mainline centerline produced safety factors that were well above the accepted minimum value of 1.25. To the left and right of the mainline embankment on the proposed ramp alignments, there does exist relatively significant depths of gray clay under the stiffer, weathered clay stratum. Several analyses were run along the Ramp SM-3 control edge using the final design geometrics and soil

parameters from field and lab tests. The first analysis involved the completed fill on the west approach and no fill on the east side. The computed safety factors range between 1.15 and 1.20 - below the generally accepted minimum value of 1.25. For this reason, it is recommended that construction of the two approach fills be relatively simultaneous so that balanced loading conditions will exist on each side of the rails. At no time should the approach embankment on one side of the tracks be more than 10 feet higher than the approach embankment on the opposite side of the tracks. The second analysis involves the final condition with each approach embankment and bridge structure in place. Computed safety factors range from 1.21 to 1.38 along the control edge of Ramp SM-3. If the upper stiff clay stratum is any thicker or the structure's foundation piles are in-place prior to fill placement directly behind the structure, the actual safety factor will probably be higher than the theoretical values and adequate stability will be attained.

SUMMARY

A subsurface soils investigation has been completed for the construction of a 286+ foot long structure that will carry I-395 traffic over the Bucksport branch of the Maine Central Railroad. Several washborings were done near the existing rails at locations shown on the plan view on Sheet 6 and the subsurface details are shown on Sheet 5.

Along the proposed footing locations there generally exists 3 feet to 5 feet of brown silty fine sand over 3 feet to 7 feet of stiff grayish-brown weathered silty clay. Underlying this stiff material is up to 17 feet of medium consistency gray silty clay and/or 3 feet to 14 feet of glacial till described as medium to dense gray-brown silty gravelly sand. The gray clay was found in the three borings along Ramps SM-3 and SM-4A. Ledge was core drilled in seven borings and described as metasiltstone with quartz and calcite veins and a high angle of foliation.

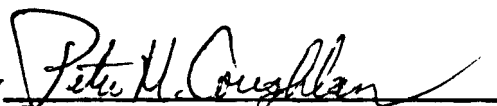
Settlement of the adjacent approach fills is expected due to the presence of compressible marine clay beneath the embankment area. The more compressible gray

silty clay was not found in the borings made on mainline centerline and thus, 1 inch to 4 inches of total settlement is anticipated due to consolidation of the stiffer, weathered clay. To the left and right of the I-395 centerline along Ramps SM-3 and 4A, the presence of up to 18 feet of gray silty clay will produce settlement of 5 inches to 8 inches. Generally, an average of 95 percent consolidation should occur within 5 months after full embankment construction.

Embankment stability was also analyzed and it is recommended to construct the approach embankments behind the structure on each side of the track at the same time. This will assure more balanced loading conditions and improved safety factors relative to longitudinal shear across the track.

It is recommended to support the proposed structure on steel end-bearing H-piles driven to the ledge surface or practical refusal. Along the proposed west wall of this structure, the ledge is somewhat variable in elevation. It rises from Elevation +6.2_± on the north end to Elevation +15.5 near the I-395 centerline and drops to +2.6 on the south end. Along the east wall, the ledge gently slopes downward from Elevation +8.7 on the north end to Elevation +4.5 on the south end.

Prepared by



Peter M. Coughlan

Associate Geotechnical Engineer

Approved by



Guy L. Baker

Assistant Soils Engineer

VANE .372 P_{max} 1.6 C_v 10#-291
W.C.'s 28-22 P_{max} 2.7 20#-357
G 2.76 P_f 2.0 40#-184
 h_s .4966 C_c .723 80#-188
 C_c .25

MED. COAR. GRAY SANDY SILTY CLAY w/
SAND LAYERS INT. LINES

VOID RATIO (e)

(TSF)

LC-7

CV

OVERCONSOLIDATED

PRESSURE-VOID RATIO DIAGRAM

BREWER

395 - 8 (79)

BORING GP15-83 SAMPLE 2U

APRIL 1983

SHEET No. 1

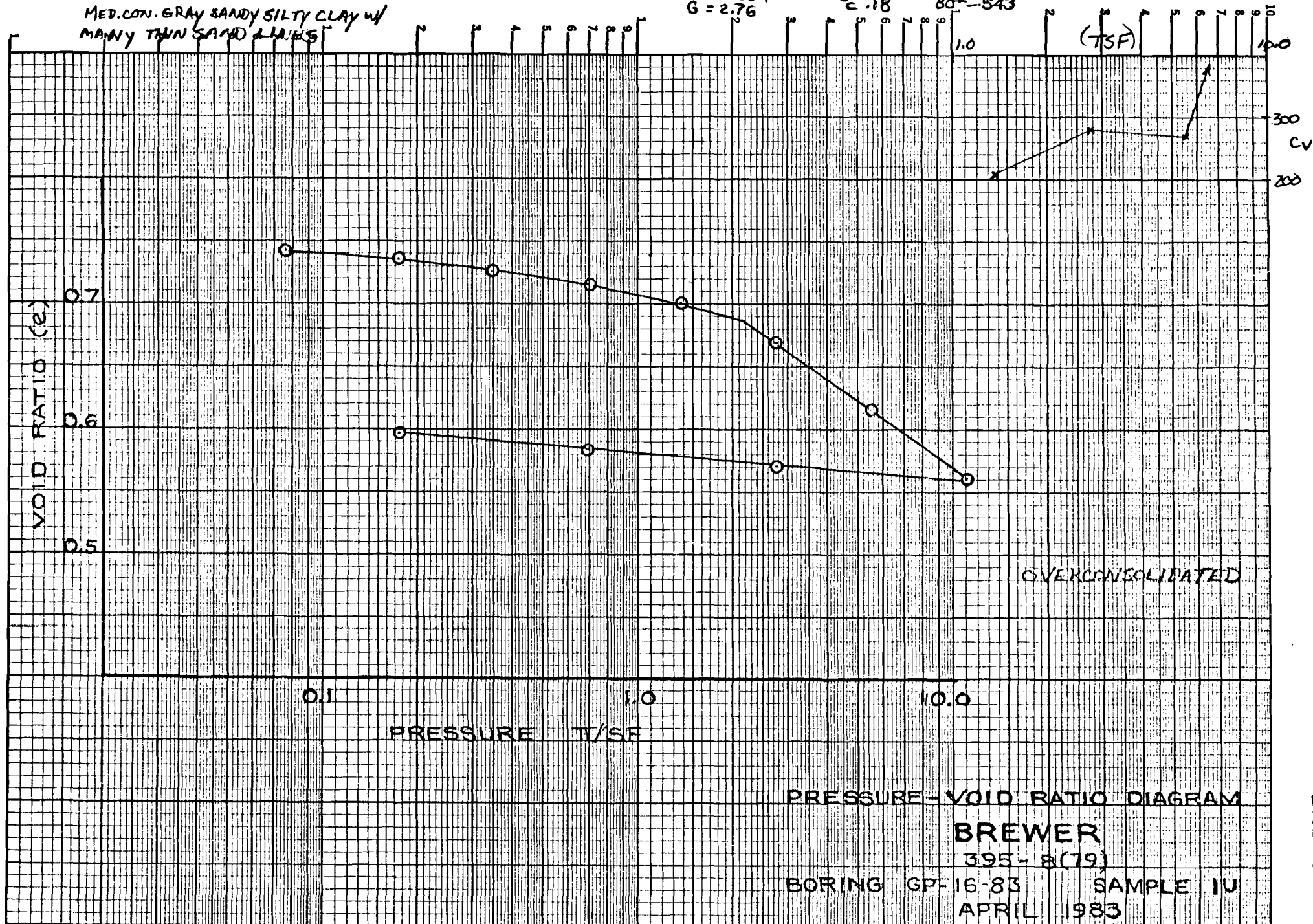
15-17'

Vane .348
Wc 28-22
h_c .8753
h_s .4994
G = 2.76

MIN 1.1
MAX 2.2
PROB 1.5
e .718
c .18

CV -207
10# -281
20# -268
40# -543

MED. CON. GRAY SANDY SILTY CLAY w/
MANY THIN SAND LENSES



15'-17'

UNC -
WC -
h_i - .8780
h_s - .4687
G - 2.761

MIN
MAX - 2.5
Prob - 1.55
e - .820
C_c - .28

C_v 10# - 359
20# - 178
40# - 120
60# - 159
90# - 171

MEDIUM CONS. GRAY SANDY SILTY CLAY
w/ sand water on left

VOID RATIO (e)

PRESSURE T/SF

PRESSURE-VOID RATIO DIAGRAM

BREWER

395-8 (79)

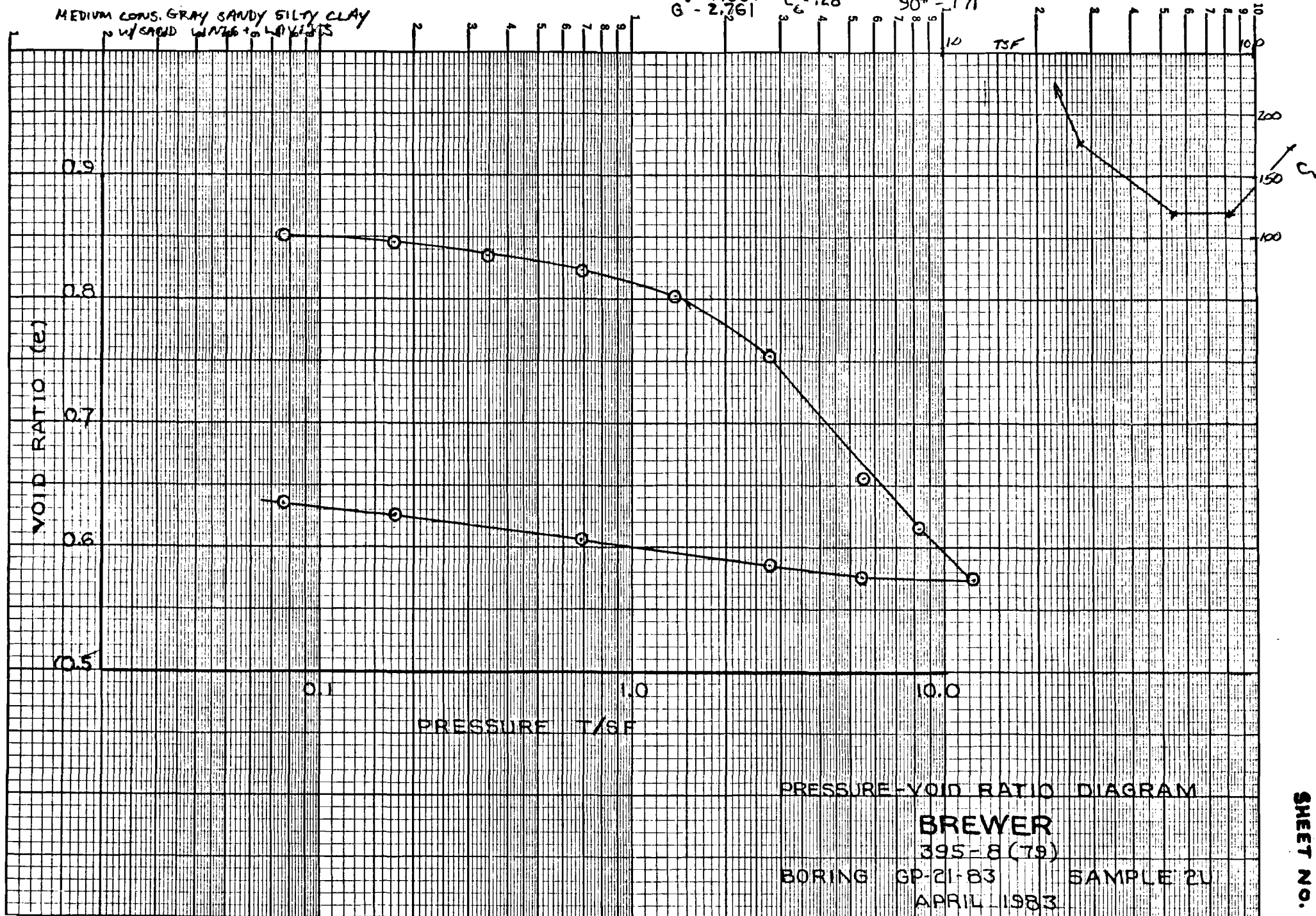
BORING GP-21-83

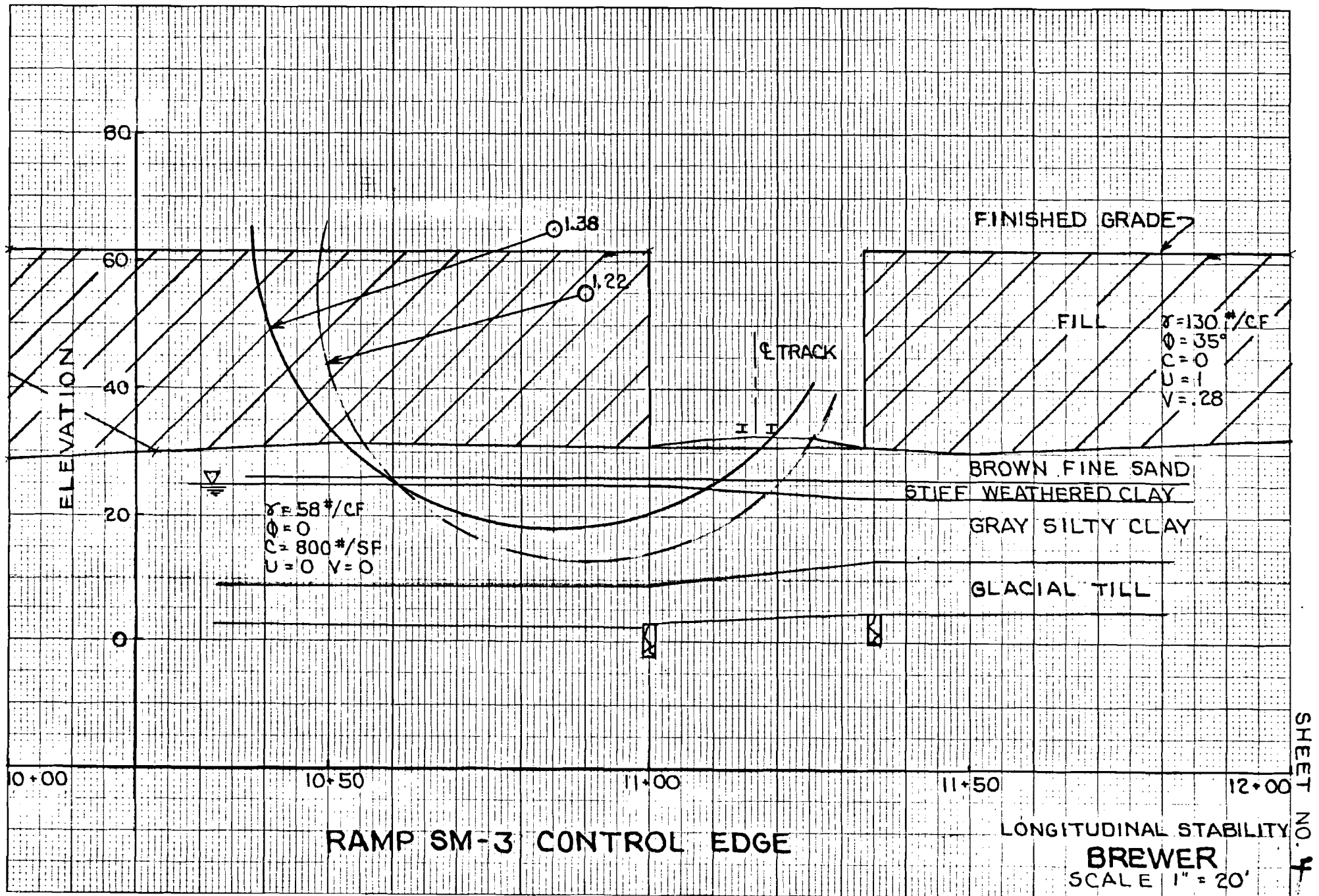
SAMPLE 2L

APRIL 1983

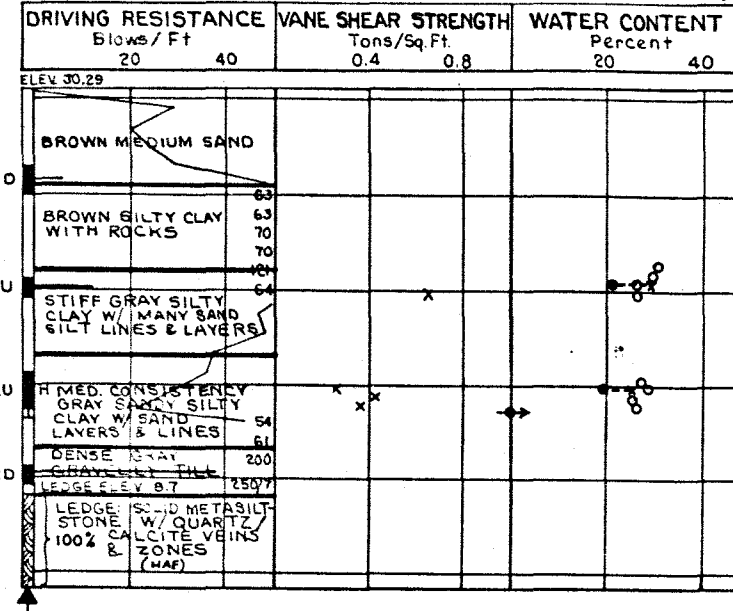
SHEET NO. 3

17'-19'

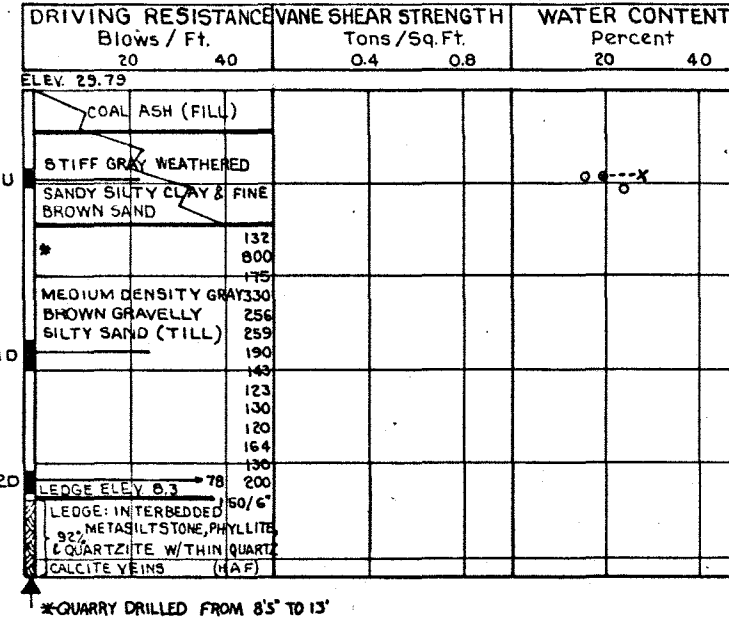




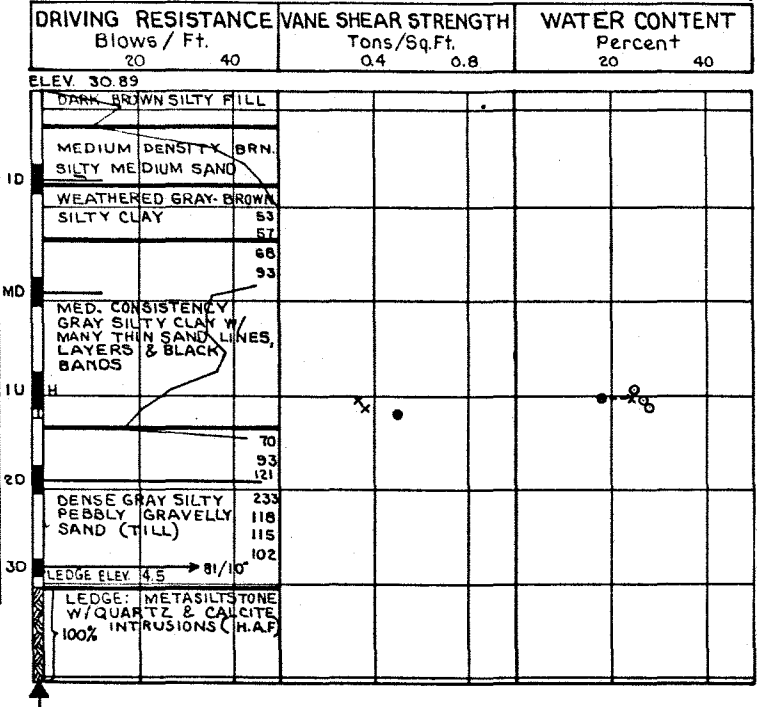
BORING GP-15-83 STATION 2+63 E (RAMP SM-4A)



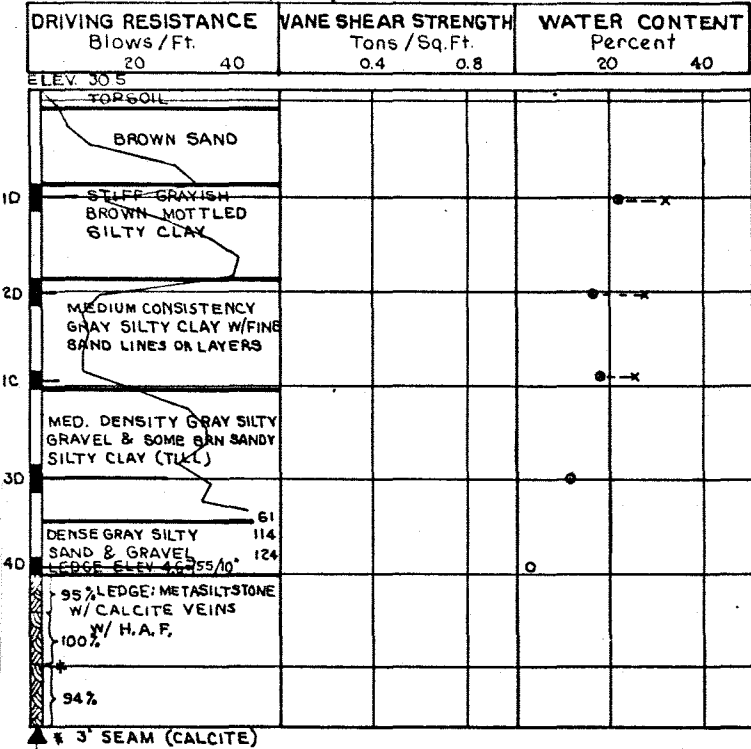
BORING GP-17-83 STATION 185+70 E



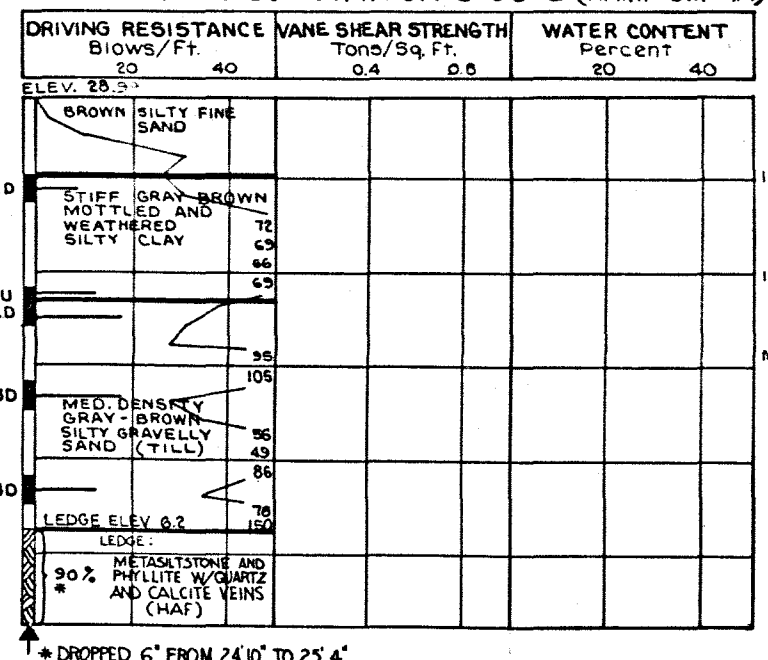
BORING GP-16-83 STATION 11+35 E (RAMP SM-1)



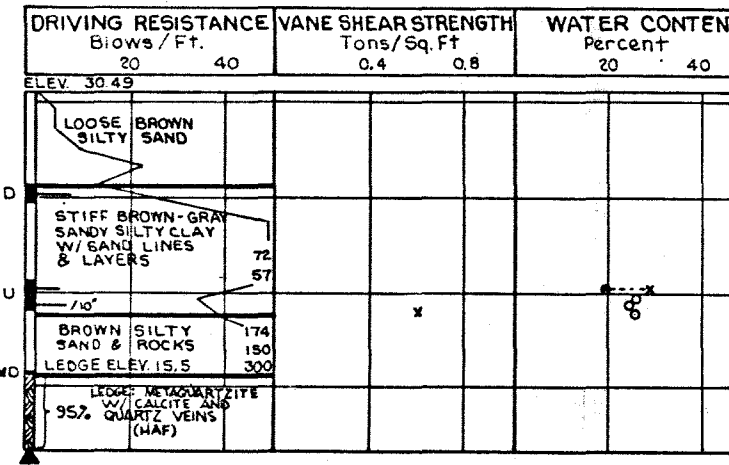
BORING GP-38-78 (B-12) STATION 185+10 21 RT.



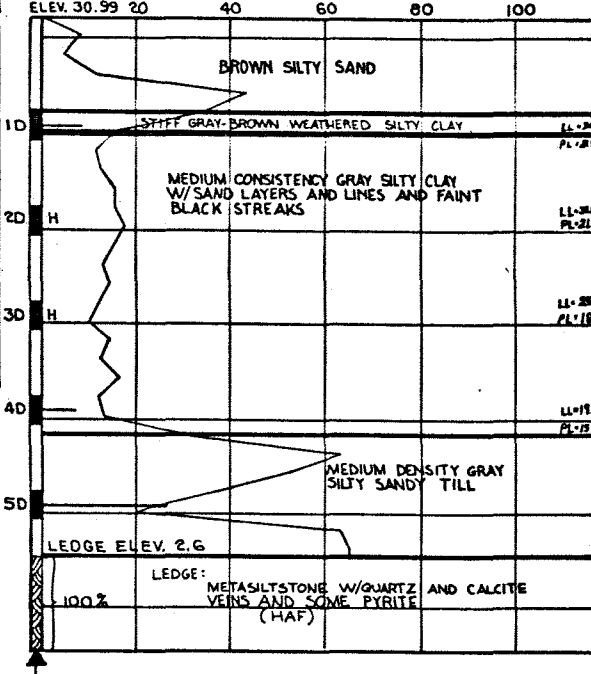
BORING GP-18-83 STATION 2+95 E (RAMP SM-4A)



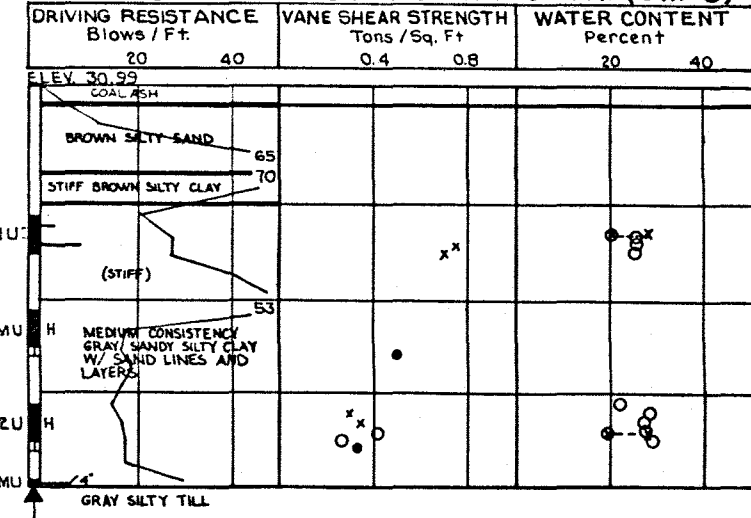
BORING GP-19-83 STATION 185+42 E



BORING GP-20-83 STATION 11+00 3RT. (SM-3)



BORING GP-21-83 STATION 11+00 1 RT. (SM-3)



BORING NOTES

- All samples and vane 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
- S & H Sampler #1290's
- 2" O.D. 16ga. seamless tubing
- 3 1/2" O.D. 16ga. seamless tubing
- 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
- Sampling spoon or seamless tubing driven by static weight of drill rods and hammer
- Field vane test
- Bottom of boring (may not be bottom of soil strata)
- Refusal of drill rods or casing (may not be ledge)
- Locations cored by diamond bit and percent recovery of rock

SHEAR NOTES

- Field vane shear strengths
- Laboratory vane shear strengths
- One half unconfined compressive strengths

WATER CONTENT NOTES

- Natural water contents, given as percent of dry weight
- Plastic and liquid limits

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

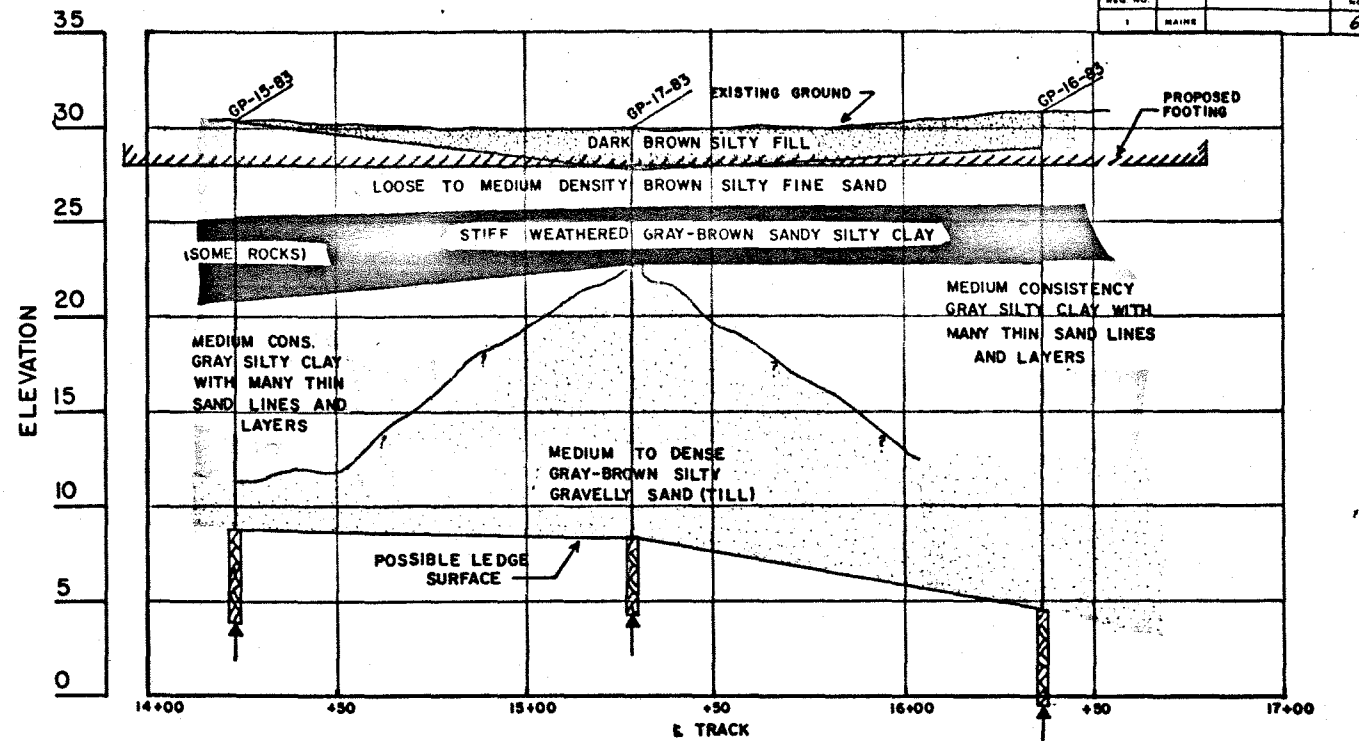
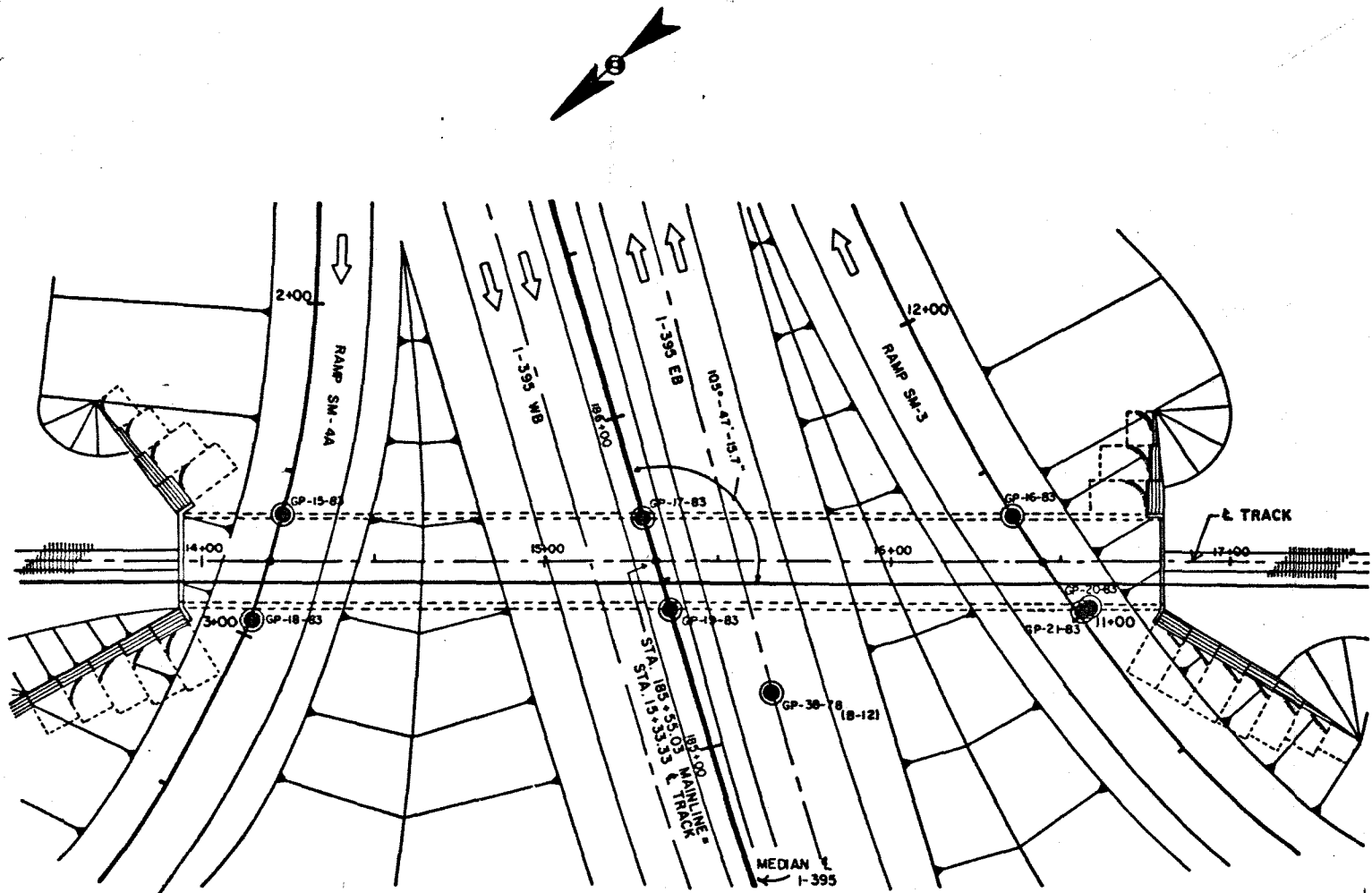
1-395, RAMP SM-3, SM-4A
OVER
MAINE CENTRAL RAILROAD
BUCKSPORT BRANCH
IN THE TOWN
BREWER
PENOBSCOT COUNTY
BORING DETAILS

SHEET OF AUGUSTA, MAINE

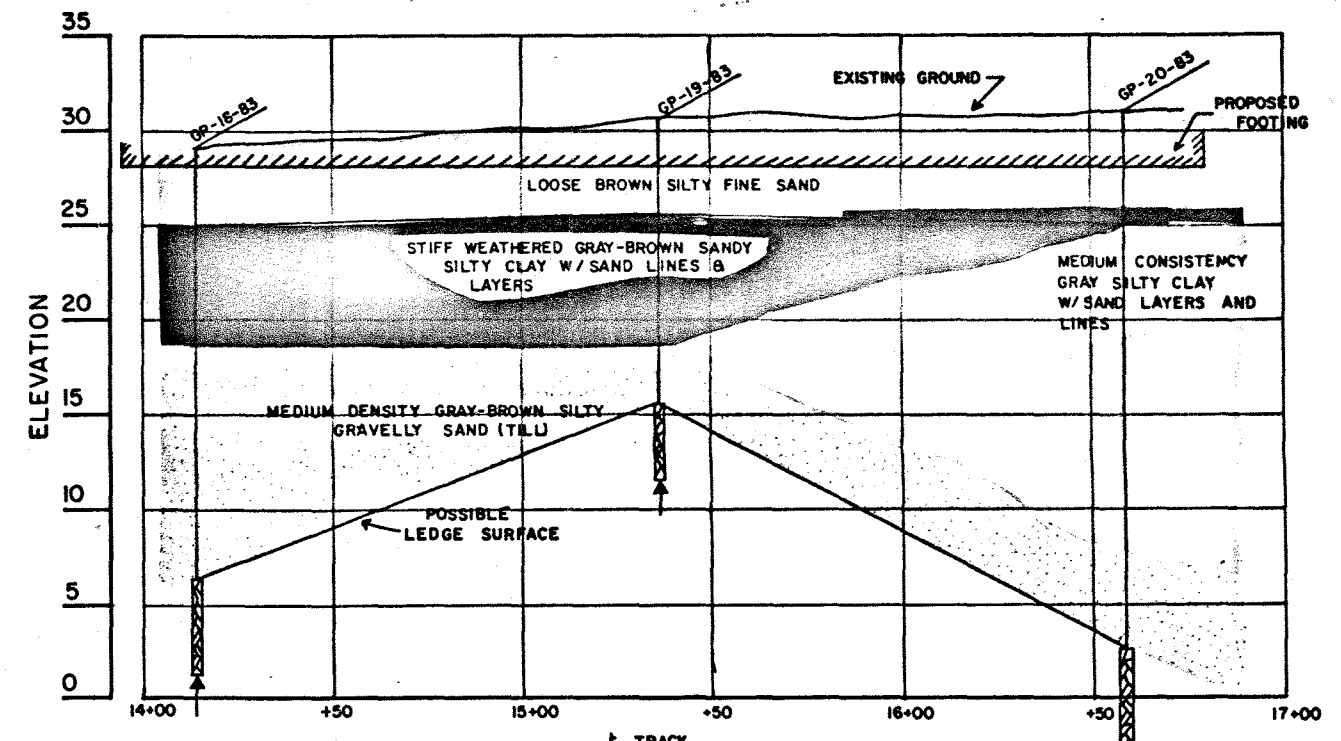
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DESIGN - DETAILED
CHECKED
REVISIONS
FIELD CHANGES

BORING 44-132 5710

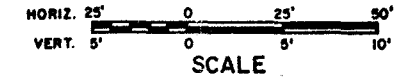
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DESIGN - DETAILED		
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REVISIONS		
FIELD CHANGES		
PLANS		



PROFILE ALONG EAST WALL



PROFILE ALONG WEST WALL



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

1-395, RAMP SM-3, SM-4A
OVER
MAINE CENTRAL RAILROAD
BUCKSPORT BRANCH
IN THE TOWN OF
BREWER
PENOBSCOT COUNTY
PLAN & PROFILES

SHEET OF AUGUSTA, MAINE