Route 100/26 Infrastructure Improvements Falmouth, Maine



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Sign-off Sheet

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1.0 INTRODUCTION

Stantec Consulting Services, Inc. (Stantec) performed a subsurface evaluation along Gray Road (Rt 100) in Falmouth, Maine (Site). The purpose of these services was to assess sufficial and subsurface conditions along the roadway to provide geotechnical engineering recommendations for the design and construction of six mast arm foundations, a box culvert, sewer pump station, proposed sewer line, and a small retaining wall.

The scope of the exploration consisted of eleven (11) test borings with associated sampling. This report presents our findings of the site observations and explorations, and provides geotechnical recommendations for the mast arm foundations, box culvert, retaining wall and sewer line. Construction considerations are based upon the proposed infrastructure improvements understood at the time of this study.

As part of this work we also reviewed a geotechnical report entitled Report on Proposed Widening of Route 100/26, Pin 9188, Falmouth, Maine, dated October 2005 and prepared by Haley & Aldrich. Pertinent Boring logs from the report have been extracted from the Haley & Aldrich report and used for our analysis. The boring logs are provided in Appendix A. It should be noted that the boring logs prepared by Haley & Aldrich are in metric units.



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2.0 PROJECT INFORMATION

The project area is located along Gray Road (Rt 100) roughly between Leighton Road and Mountain Road in Falmouth, Maine. The infrastructure improvements consist of the following elements:

- Four new traffic signals at the Gray Road and Leighton Road intersection.
- Two new traffic signals at the Gray Road and Mountain Road intersection.
- A new box culvert for Hobbs Creek at approximately Sta. 184+65 of Gray Road.
- A new sewer pump station at approximately Sta. 163+90 or Sta. 165+60 of Gray Road.
- New gravity and force main sewers along Gray Road between Leighton Road and Mill Road
- A new retaining wall along Falmouth Road from Sta 59+75 to Sta 61+00.

Subsurface conditions and design recommendations for each of the proposed infrastructure improvements are provided in separate sections of this report.



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3.0 EXPLORATION AND TESTING PROCEDURES

3.1 SUBSURFACE INFORMATION

As previously mentioned two subsurface exploration programs have been prepared for the project area. The program conducted in 2002 by Haley & Aldrich was intended for the widening of the roadway. The recent program conducted in 2016 was specific to the proposed improvements along the roadway which included the proposed mast arm foundations, box culvert, sewer pump station, retaining wall and sewer line.

3.2 2002 EXPLORATION PROGRAM

The 2002 exploration program consisted of 45 test borings designated B1-02 through B43-02, B42A-02 and B43A-02. The borings were generally spaced at intervals of 130 feet along the roadway. Most of the borings were drilled by Maine Test Borings, Inc. during the period between October 9 and October 15, 2002. Borings B42A-02 and B43A-02 were drilled on October 30, 2002. Test borings were advanced using solid stem and/or hollow stem augers. Samples were obtained using a split spoon sampler driven with a 140-pound safety hammer falling 30 inches. The borings were observed by Haley & Aldrich personnel. The boring logs are included as Appendix A. It is important to note that the boring logs prepared by Haley & Aldrich are in Metric Units.

3.3 2016 EXPLORATION PROGRAM

The 2016 subsurface exploration program consisted of drilling eleven test borings. The borings were drilled from November 15, 2016 to November 18, 2016 by New England Boring Contractors, Inc. of Derry, New Hampshire under subcontract to Stantec. The borings were drilled using a Mobile B-59 drill rig and were advanced using 2.25-inch inside diameter hollow stem augers or 4-inch diameter steel casing.

The borings and probe were observed and logged by Stantec personnel who performed field tests, recorded visual classifications, and collected samples of the various soil strata encountered. Details of drilling and sampling methods are indicated on the Borehole Logs within the Appendix B of this report. The boring locations were located by survey methods and are shown on the attached project plans.

Soil samples were obtained by driving a 24-inch long, 2-inch outside diameter split spoon sampler at five-foot sampling intervals with a 140-pound safety hammer falling 30 inches, in substantial accordance with ASTM D1586, the Standard Penetration Test (SPT). The blows for each 6-inches of penetration are recorded for a total of 24-inches. The sum of the blows required to drive the sampler from 6-inches to 18-inches penetration is referred to as the Standard Penetration Resistance, or N-value, which is an index of measure of in-situ soil density or



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consistency. The N-value for various soil types can be correlated with the engineering behavior of earthworks and foundations. For granular soils, N values less than 4 are considered to be very loose; between 4 and 10 loose; between 10 and 30 medium dense; between 30 and 50 dense; and greater than 50 very dense. For cohesive soils N values less than 2 are considered to be very soft; between 2 to 3 soft; between 4 and 6 firm; between 7 and 12 stiff; between 13 and 26 very stiff; and greater than 26 hard.

All soil samples recovered were stored in sealed containers and rock was placed in core boxes and returned to our office for further examination/classification. Samples will be stored for a period of six (6) months, at which time they will be disposed of unless we have been notified otherwise.

3.4 2016 EXPLORATION PROGRAM

Laboratory tests were conducted on representative soil samples obtained from the test borings to assist in classification and evaluate engineering properties. Grain size distribution, Atterberg limits, and moisture content tests were conducted in accordance ASTM D422 and ASTM D4318. Laboratory testing was conducted by GeoTesting Express of Acton, MA. Results of the tests are included in Appendix C and summarized in the tables below.

Boring/ Sample	Depth (feet)	Soil Description	Percent Gravel	Percent Sand	Percent Fines ⁽¹⁾
B-107/S-4	15-17	Brown, fine SAND, some silt (SM)	0	69.8	30.2
B-107/S-6	25-27	Light brown, medium to fine SAND, trace Silt (SP-SM)	0	92.4	7.6
B-110/S-5	8-10	Olive, medium to fine SAND, little Silt, trace Gravel (SM)	0.3	79.7	20.0
B-110/S-8	14-16	Brown, coarse to fine SAND, little Gravel, little silt (SM)	14.7	72.3	13.0

Table 1 – Laboratory Grain Size Test Summary

Notes: (1) Percent fines is the soil passing the #200 sieve.

(2) USCS classification is given in parenthesis.

Table 2 – Laboratory Atterberg Limit Test Summary

Boring/ Sample No.	Depth (feet)	Soil Description	Moisture Content	Liquid Limit	Plastic Limit	Plasticity Index
B-101/S-5	8-10	Olive, silty CLAY (CL)	23	34	19	15
B-103/S-4	6-8	Olive gray, silty CLAY (CL)	30	40	22	18
B-105/S-4	15-17	Olive gray, silty CLAY (CL)	30	38	19	19
B-107/S-2	5-7	Dark olive gray, silty CLAY (CH)	47	52	24	28
B-108/S-3	5-7	Olive gray, silty CLAY (CL)	24	38	21	17
B-110/S-3	4-6	Olive, silty CLAY (CL)	19	33	16	17
B-111/S-2	4-6	Olive, silty CLAY (CL)	27	39	21	18

Notes: (1) USCS classification is given in parenthesis.



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4.0 MAST ARM FOUNDATIONS

4.1 GENERAL

New traffic signals are proposed at the intersection of Route 100 and Leighton Road and at the intersection of Route 100 and Mountain Road. The traffic signals will be mounted on mast arms. The Leighton Road intersection will have one mast arm at each corner of the intersection, for a total of four new mast arms. The Mountain Road intersection will have a new arm at the southwest and northeast corners, for a total of two new mast arms. The test borings drilled at gray Road and Leighton Road intersection were designated B-101 through B-104. The test borings drilled at the Gray Road and Mountain Road Intersection were designated B-108 and B-109.

4.2 SUBSURFACE CONDITIONS

The subsurface conditions encountered at the boring locations are described in detail on the Borehole Logs are located in the Appendix B of this report and are summarized in the paragraphs below. The subsurface soil conditions encountered in the soil borings consisted of the following generalized strata in order of increasing depth.

4.2.1 Asphalt

Asphalt was encountered at borings B-104 and B-109, and was 8 and 7 inches thick, respectively.

4.2.2 Fill

Fill was encountered in all borings except B-101 and ranged from 0.8 to 2.4 feet thick. The fill is likely associated with the construction of the existing roadway. The fill was generally described as a medium to coarse sand with gravel and traces of silt. Recorded N-values ranged from 7 to 21 blows per foot (bpf) which is indicative of variable loose to medium dense consistency.

4.2.3 Topsoil

A topsoil layer was encountered beneath the fill in borings B-101 and B-102 and was 4 inches thick at each location. This deposit was generally described as brown, loose, organic with silty sand.



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4.2.4 Marine Silt/Clay

A deposit of marine silt and clay was encountered in all borings and ranged from 7.3 to greater than 20 feet thick. This deposit was generally described as an olive or gray silt and clay. Using the USCS system the soil classified as CL. Recorded N-values ranged from 4 to 48 bpf which is indicative of a soft to hard consistency. Recorded Torvane vane values ranged from 0.25 to 1.63 tsf.

4.2.5 Glacial Fluvial

A deposit of sandy glacial fluvial soil was encountered in borings B-101, B-103, B-104, and B-109 and was explored to a depth of 21 feet without encountering the bottom of the deposit. This deposit was generally described as a brown, coarse to fine sand, with trace silt. Using the USCS system the soil classified as SM or SP. Recorded N-values ranged from 8 to 49 bpf which is indicative of a loose to dense consistency.

4.2.6 Groundwater

Groundwater levels were observed in the completed boreholes upon completion and are presented in the table below. Hydrostatic levels may vary dramatically from those recorded at the time of the subsurface investigation. Actual groundwater levels may vary significantly over time due to seasonal changes in precipitation and temperature, snowmelt, and surrounding and on-site drainage characteristics.

Location	Ground Surface Elevation (feet)	Depth to Groundwater (feet)	Groundwater Elevation Feet)
B-101	82.75	19	63.75
B-102	82.1	20	62.1
B-103	83.6	10	73.6
B-104	83.2	15	68.2
B-108	92.3	14	78.3
B-109	91	9	82

Table 3 – Mast Arm Area Groundwater Data Summary



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4.3 DISCUSSION AND RECOMMENDATIONS

The bottom of the mast arm foundations are assumed to be approximately 15 feet below the adjacent ground surface and will be located within the medium stiff to stiff marine silt and clay layer. The mast arms for the traffic signals can be founded on drilled shaft type foundations, as outlined in MaineDOT Standard Specifications 626 and 643. The required length and shaft diameter should be determined in accordance with MaineDOT Standard Detail Section 626 and the recommendations provided in the table below. The table provides the subsurface conditions at each proposed signal location and recommended soil properties for use in design (friction angle or shear strength).

Location	Boring No.	Approx. Existing Ground Surface El. (feet)	Subsurface Conditions	Recommended Design Profile	Recommended Friction Angle (φ°) of Su (psf)
Leighton/Route 100 Southwest Corner	B-101	82.75	19 ft of medium stiff to hard clay	Medium Stiff Clay	Su = 800 psf
Leighton/Route 100 Southeast Corner	B-102	82.1	20 ft of medium stiff to very stiff clay	Medium Stiff Clay	Su = 800 psf
Leighton/Route 100 Northeast Corner	B-103	83.6	19 ft of medium stiff to hard clay	Medium Stiff Clay	Su = 800 psf
Leighton/Route 100 Northwest Corner	B-104	83.2	19 ft of medium stiff to very stiff clay	Medium Stiff Clay	Su = 800 psf
Mountain/Falmouth Southwest Corner	B-108	92.3	21 ft of medium stiff to very stiff clay	Medium Stiff Clay	Su = 800 psf
Mountain/Falmouth Northeast Corner	B-109	91	9 ft of stiff clay 12 ft of medium dene to dense sand	Medium Stiff Clay	Su = 800 psf

Table 4 – Mast Arm Soil Conditions Summary



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5.0 BOX CULVERT RECOMMENDATIONS

5.1 GENERAL

A concrete box culvert is proposed to be constructed at approximately Sta. 184+60. The culvert will have internal dimensions of approximately 15 feet by 6 feet. The culvert will be approximately 100 feet long and have mitered ends. Wingwalls are not proposed for the ends of the culvert. Test boring B-110 was drilled near the west end of the culvert. Haley & Aldrich test boring B33-02 was drilled near the middle of the culvert. Please note that the boring log for B33-02 uses Metric Units.

5.2 SUBSURFACE CONDITIONS

The subsurface conditions encountered at the boring locations are described in detail on the Borehole Logs located in Appendix A and B of this report, and are summarized in the paragraphs below. The conditions encountered are based on widely spaced explorations and variations in conditions should be anticipated. The subsurface soil conditions encountered in the soil borings consisted of the following generalized strata in order of increasing depth.

5.2.1 Fill

Fill was encountered in both borings and ranged from 2.1 to 6.5 feet thick. The fill is likely associated with the construction of the existing roadway. The fill directly below the asphalt was generally described as a medium to fine sand with trace gravel and silt. With depth the fill contains an increased amount of silt and clay. Recorded N-values ranged from 6 to 20 blows per foot (bpf) which is indicative of loose to medium dense consistency.

5.2.2 Marine Silt/Clay

A deposit of marine silt and clay was encountered in both borings. At B-110 this deposit was encountered from 2.1 to 6.7 feet below the ground surface and was described as an olivegray silt and clay. Recorded N-values were 9 and 26 bpf which is indicative of a stiff to very stiff consistency. At B-33-02 this deposit was encountered from 6.5 to 22 feet below the ground surface and was described as a lean clay or silt. Recorded N-values ranged from 1 to 4 bpf which is indicative of a very soft to soft consistency. Using the USCS system the soil classified as ML or CL.

5.2.3 Glacial Fluvial

At boring B-110 a glacial fluvial deposit was encountered below the marine silt and clay deposit. The glacial fluvial deposit was explored to a depth of 25 feet without fully penetrating the deposit. This deposit was generally described as a brown, coarse to fine



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sand and gravel with trace silt. Using the USCS system the soil classified as either SM or SP. Recorded N-values ranged from 13 to 38 bpf which is indicative of a medium dense to dense consistency.

5.2.4 Groundwater

Groundwater levels were observed in the completed boreholes and are presented in the table below. Hydrostatic levels may vary dramatically from those recorded at the time of the subsurface investigation. Actual groundwater levels may vary significantly over time due to seasonal changes in precipitation and temperature, snowmelt, and surrounding and on-site drainage characteristics.

Location	Location Ground Surface Elevation (feet)		Groundwater Elevation Feet)
B-110	76.6	13.5	63.1
B-33-02	76.5	15.7	60.8

Table 5 – Box Culvert Area Groundwater Data Summary

5.3 FOUNDATION RECOMMENDATIONS

We anticipate the bottom of the proposed culvert will bear approximately 8 to 10 feet below the existing ground surface. To assist the Contractor's dewatering efforts and to provide a stable work surface, we recommend 3 feet of ³/₄-inch diameter crushed stone be placed between the bottom of the footing and the subgrade. The crushed stone should be completely wrapped in a nonwoven geotextile fabric. The lateral limits of the crushed stone should extend 1 foot horizontally beyond the edge of the footing. The bottom of the crushed stone pad is expected to bear on the marine silt and clay deposit or on the glacial fluvial deposit.

Because the structure is four sided, the weight of the traffic loading and the weight of the structure will be spread across the bottom slab of the culvert. The proposed stress is expected to equal to or less than the existing stress on the underlying soils. Therefore settlement of the culvert is anticipated to be minimal

5.4 SEISMIC DESIGN PARAMETERS

The seismic site classification was evaluated in accordance with Section 3.10.3.1 of the AASHTO LRFD Code. The maximum boring depth was terminated in the medium dense to dense glacial fluvial deposit at a depth of 25 feet below the ground surface. Based on the soil conditions in the test borings the average SPT N values for the soils is between 15 and 50 blows per foot. Therefore in accordance with Table 3.10.3.1-1 the seismic site classification for the site is Site Class D.



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An evaluation of the liquefaction potential for the existing soils was also performed. Liquefaction denotes a condition where a soil undergoes continued deformation during the course of cyclic stress applications induced by an earthquake where pore water pressure becomes equal to the confining pressure (e.g. effective stress approaches zero) and large deformations occur. Significant factors influencing liquefaction include grain size distribution of sand, fines content insitu density, and vibration characteristics (e.g. design earthquake and acceleration coefficient). The subsurface conditions at the culvert location consist either a medium dense to dense sand or the cohesive silt and clay. Based upon the density and consistency of these materials they are not susceptible to liquefaction.

5.5 LATERAL EARTH PRESSURE RECOMMENDATIONS

We recommend the culvert side walls be backfilled horizontally with a minimum of 4 feet of compacted Maine DOT 703.19 Granular Borrow for Underwater Backfill which is considered to be Type 4 soil in accordance with the Maine DOT Bridge Design Guide (BDG). Because the culvert side walls are not allowed to rotate at the top, they should be designed based on at-rest pressure (Ko). The side walls should be designed using Ko equal to 0.47 and a unit weight of 125 pounds per cubic foot (pcf) for the backfill. The resulting equivalent fluid pressure is 60 pcf, which assumes no unbalanced hydrostatic pressure.

To prevent hydrostatic pressure foundation drainage should be provided in accordance with Section 5.4.1.9 of the Maine DOT BDG.

The walls should be also be designed for a live load surcharge equivalent to the earth fill height summarized in LRFD Tables 3.11.6.4-1 and 3.11.6.4-2.

5.6 CONSTRUCTION CONSIDERATIONS

5.6.1 Excavation Support

Construction of the culvert is expected to require an excavation approximately 10 to 12 feet below the surrounding ground surface. Therefore, a temporary excavation support system will be required. The type and design of the temporary earth support system should be the responsibility of the Contractor. It is expected that a system of steel sheet piles is a feasible method to support the excavation. The interlocking sheets will also limit groundwater infiltration from the sides of the excavation.

All excavations and support systems should be performed in accordance with current OSHA requirements under the observation and responsibility of the Contractor. Excavation slopes should be checked regularly for signs of instability and flattened as required. Temporary slopes should be protected from surface water run-off erosion by means of berms and swales located along the top of the slope and by means of plastic sheeting placed over the slope. Temporary shoring systems should be inspected periodically for excessive movement.



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5.6.2 Construction Dewatering

Dewatering will be required to allow the culvert to be constructed in the dry. Due to the sandy nature of the glacial fluvial deposit, a significant amount of groundwater is expected to flow into the excavation. The use of interlocking sheet piles will reduce the flow of groundwater from the sides of the excavation. The Contractor should be prepared to remove water using a system of sumps and pumps located within the excavation. If ground water flow cannot be handled by sumps and pumps then a system of drilled well points or deep wells may be needed. In addition to the dewatering, a water diversion system will be needed to convey the flow from the stream channel from the west to the east side of the roadway.

Ultimately, the Contractor is responsible for selecting the method of dewatering and water diversion to maintain a stable surface at the bottom of the excavation. The Contractor should develop a dewatering plan capable of lowering groundwater two feet below the lowest point of excavation. The Contractor should be prepared to remove groundwater that seeps from the soil into the excavations. The specifications should require that the General Contractor divert surface water runoff away from excavations so that the foundation can be constructed in-the-dry. Precipitation that results in standing water in the excavation should be removed immediately.



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6.0 PUMP STATION RECOMMENDATIONS

6.1 GENERAL

As part of the project, a pump station will be constructed along the eastern side of Gray Road. Two locations are being considered one at Sta. 163+90 and the other at Sta. 165+60. Test boring B-106 was drilled at Sta. 163+90 and test boring B-107 was drilled at Sta. 165+60. The borings encountered similar subsurface conditions at both locations. The pump station will consist of a wet well approximately 8 feet in diameter constructed of precast concrete rings. The well is expected to be approximately 25 feet below the ground surface. A submersible pump will be installed at the bottom of the well.

6.2 SUBSURFACE CONDITIONS

The subsurface conditions encountered at the boring locations are described in detail on the Borehole Logs located in the Appendix B of this report, and are summarized in the paragraphs below. The subsurface soil conditions encountered in the soil borings consisted of the following generalized strata in order of increasing depth.

6.2.1 Asphalt

Asphalt was encountered at B-106 and B-107, and was 6 and 12 inches thick, respectively.

6.2.2 Roadway Base

A thin layer of roadway base course material was encountered at B-106 and B-107, and was 7 and 12 inches thick, respectively. The base course was described as medium to coarse sand and gravel with trace silt.

6.2.3 Marine Silt and Clay Deposit

A deposit of marine silt and clay was encountered in B-106 and B-107 to depths of 15.5 and 10 feet below the ground surface, respectively. This deposit was generally described as an olive-gray silt and clay. Using the USCS system the soil classified as ML or CL. Recorded N-values ranged from 2 to 9 bpf which is indicative of a very soft to stiff consistency.

6.2.4 Glacial Fluvial

A glacial fluvial was encountered in B-106 and B-107 to depths of 33 and 36.5 feet, respectively overlaying the bedrock. This deposit was generally described as a light brown or tan medium to fine sand varying lesser amounts of gravel and silt. Using the USCS system the soil classified as either SM or SP. Recorded N-values generally ranged from 6 to 13 bpf which is indicative of a loose to dense consistency.



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6.2.5 Bedrock

Although bedrock was not cored at the pump station locations, based on drilling refusal the depth to the bedrock surface is expected to vary between 33.0 and 36.5 feet below the ground surface. A summary of the bedrock depth is provided in the table below.

Location	Ground Surface Elevation (feet)		Top of Bedrock Elevation Feet)	
B-106	52	33.0	19.0	
B-107	49	36.5	12.5	

Table 6 – Pump Station Area Bedrock Depth Summary

6.2.6 Groundwater

Groundwater levels were observed in the completed boreholes and are presented in the table below. Hydrostatic levels may vary dramatically from those recorded at the time of the subsurface investigation. Actual groundwater levels may vary significantly over time due to seasonal changes in precipitation and temperature, snowmelt, and surrounding and on-site drainage characteristics.

Table 7 – Pump	Station Area	Groundwater	Data	Summary
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Location	Location Ground Surface Elevation (feet)		Groundwater Elevation Feet)
B-106	52	20	31.5
B-107	49	16	32.8



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6.3 DESIGN PARAMETERS

6.3.1 Bearing and Settlement

We anticipate the proposed final grade for the pump station at Sta. 163+90 will be at approximately El. 51. The bottom of the proposed wet well will be at approximately El. 26. The proposed final grade for the pump station at Sta. 165+60 will be at approximately El. 48. The bottom of the proposed wet well will be at approximately El. 23. In both cases the wet wells are expected to bear on the sandy glacial fluvial deposit.

To provide a stable working surface and to aid in dewatering we recommend founding the proposed wet well on one foot of ³/₄ inch crushed stone wrapped in a non-woven filter fabric placed directly on the glacial fluvial sand. The filter fabric should be a Mirafi 140N or equivalent. Constructed as recommended herein, the total post-construction settlement is anticipated to be less than ¹/₂ inch.

6.3.2 Seismic Design Parameters

The seismic site classification was evaluated in accordance with the 2012 International Building Code(IBC) The borings drilled at the Site were terminated on bedrock. Based upon the average N values for the upper 100 feet of the soil and rock profile, in accordance with Section 1613.5.2 of the 2012 IBC the recommended site classification for the seismic design of the structure is seismic site Class "D" (stiff soil).

6.3.3 Lateral Earth Pressures

The walls of the wet well should be designed to resist the combined lateral forces resulting from earth pressure, water pressure and pressure from surcharge loadings. Backfill materials behind these walls should consist of a zone of granular fill with a minimum width of 2 feet. Because the walls of the wet well will be restrained they should be designed based on at-rest earth pressure. Lateral earth pressures for the structural design of walls are provided below:

	Backfill	Coefficient of At-	Equivalent Fluid	Pressure (psf)
Wall Condition	Туре	rest Earth Pressure (Ko)	Above Water	Below Water
Restrained (at-rest pressure)	Granular	Ko = 0.5	65	100

Table 8 – Pump Station Lateral Earth Pressure Summary



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The parameters contained in the table above are based on:

- Restrained walls.
- Level backfill behind wall.
- Backfill with the following properties: $\phi = 36^\circ$; c = 0; $\gamma_{dry} = 125 \text{ pcf}$; $\gamma_{moist} = 130 \text{ pcf}$
- Backfill within 3 feet of wall to be compacted utilizing light weight compaction equipment.
- No surcharge loading.
- No factors of safety have been included.
- No dynamic loading.

Walls should be designed to accommodate surcharge loads, if present. A surcharge load should be applied using uniformly distributed pressure superimposed along the back face of the wall with a magnitude equal to the surcharge pressure multiplied by the appropriate earth pressure coefficient. A minimum surcharge load of 250 psf should be included to account for vehicle and construction equipment loadings.

6.3.1 Uplift Resistance

Because the wet well will be significantly below the ground water level, it should be designed to resist buoyancy forces. Typically, buoyancy forces can be resisted by the dead weight of the wet well structure. If the dead weight of the structure is not enough to resist buoyancy forces, then the base thickness of the structure should be increased and extended beyond the sides to provide additional uplift resistance. The outside of the structure should be damp-proofed and any joints between precast units should have a water tight seal.

6.4 CONSTRUCTION CONSIDERATIONS

6.4.1 Excavation Support

Construction of the wet well is expected to require an excavation approximately 25 feet below the surrounding ground surface. Therefore, a temporary excavation support system will be required. The type and design of the temporary earth support system should be the responsibility of the Contractor. It is expected that internally braced steel sheet piles is a feasible method to support the excavation. The interlocking sheets will also limit groundwater infiltration from the sides of the excavation.

All excavations and support systems should be performed in accordance with current OSHA requirements under the observation and responsibility of the Contractor. Excavation slopes should be checked regularly for signs of instability and flattened as required. Temporary slopes should be protected from surface water run-off erosion by means of berms and swales located along the top of the slope and by means of plastic sheeting placed over the slope. Temporary shoring systems should be inspected periodically for excessive movement.



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6.4.2 Construction Dewatering

Groundwater observed in the test borings at the time of drilling was at approximately El. 33. The bottom of the excavation is expected to be approximately El. 23. Significant dewatering is expected to allow the wet well to be constructed in the dry. Since the borings were drilled in November, the water elevations are expected to rise during the spring and summer months. Due to the sandy nature of the soil and relatively shallow ground water, a significant amount of groundwater is expected to flow into the excavation. The use of interlocking sheet piles will reduce the flow of groundwater from the sides of the excavation. The temporary shoring should be seated into the bedrock to reduce the groundwater flow into the excavation. However, water is expected to flow through the gaps between the bottom of the sheets and the bedrock surface. The Contractor should be prepared to remove water using a system of sumps and pumps located within the excavation. If ground water flow may be needed.

Ultimately, the Contractor is responsible for selecting the method of dewatering to maintain a stable surface at the bottom of the excavation. The Contractor should develop a dewatering plan capable of lowering groundwater two feet below the lowest point of excavation. The Contractor should be prepared to remove groundwater that seeps from the soil into the excavations. The specifications should require that the General Contractor divert surface water runoff away from excavations so that the foundation can be constructed in-the-dry. Precipitation that results in standing water in the excavation should be removed immediately.



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7.0 SEWER LINE

7.1 GENERAL

New gravity and force main sewer pipelines are proposed between Sta. 143+50 and Sta. 172+00. Based on the available plans the location of the force and gravity sewers are as follows:

- Gravity Sewer: Sta. 143+50 to Sta. 150+50
- Gravity Sewer: Sta. 157+50 to Sta. 165+50 (pump station)
- Gravity Sewer: Sta. 172+00 to Sta. 165+50 (pump station)
- Force Main: Sta. 165+50 (pump station) to Sta. 150+50

The gravity sewer will range from approximately 8 to 16 feet below the ground surface. The force main will range from approximately 6 to 16 feet below the ground surface. Where the gravity sewer and force main pipelines share an alignment they will be placed in the same trench at roughly the same elevation.

7.2 SUBSURFACE CONDITIONS

Test borings drilled in the area of the proposed pipelines include B1-02 through B25-02 drilled in 2002 and observed by Haley & Aldrich, and B-105, B-106 and B-107 drilled in 2016 and observed by Stantec. The 2002 test borings are included in Appendix A. The 2016 test boring logs are included in Appendix B. In general, the test borings encountered asphalt pavement overlying, roadway/fill, marine silt and clay deposit, glacial fluvial deposit and glacial till. Drilling refusal on boulders or bedrock was encountered at location of B-106, B-107 and B19-02.

The subsurface conditions are summarized in the paragraphs below. The conditions encountered are based on widely spaced explorations and variations in conditions should be anticipated. The subsurface soil conditions encountered in the soil borings consisted of the following generalized strata in order of increasing depth.

7.2.1 Asphalt

Bituminous asphalt pavement was encountered at all the borings except B10-02. The asphalt ranged in thickness from 3.5 to 12 inches.

Concrete pavement was encountered below the asphalt pavement at B4-02, B8-02, B12-02, B13-02, B14-02, B15-02, B17-02, B18-02, B21-02 and B25-02. The thickness of the concrete pavement ranged from 3.5 to 13 inches.



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7.2.2 Fill

Fill associated with the existing roadway was encountered in all the borings. The fill ranged in thickness from 6 inches to 17.0 feet, but was generally 2 to 4 feet thick. The deposit generally consists of sand with lesser amounts of gravel and silt. At some locations the fill consisted of lean clay. Recorded N-values ranged from 3 and 44 bpf which is indicative of a very loose to dense consistency. Using the USCS system the soil classified as SM, SP.

7.2.3 Marine Deposit – Silt and Clay

A deposit of marine silt and clay was encountered in most of the borings. When fully penetrated by the boring, the deposit ranged from 5.7 to 13.6 feet thick. The deposit was described as an olive-gray silt and clay or lean clay. Recorded N-values ranged from 2 to 21 bpf which is indicative of a firm to very stiff consistency. Using the USCS system the soil classified as ML or CL.

7.2.4 Marine Deposit – Fine Sand

A deposit of marine sand was encountered at borings B1-02, B2-02, B3-02, B5-02, B17-02, B18-02, and B20-02. When fully penetrated the sandy portion of the marine deposit ranged from 4.1 to 4.7 feet thick. The deposit was generally described as poorly-graded fine sand with trace silt. Recorded N-values ranged from 5 to 19 bpf which is indicative of a loose to medium dense consistency. Using the USCS system the soil classified as SP.

7.2.5 Glacial Fluvial Deposit

A deposit of glacial fluvial sand was encountered at B8-02, B-106, and B-107. When fully penetrated this deposit ranged from 17.8 to 26.5 feet thick. The deposit was generally described as light brown or light tan, fine to medium sand, trace silt. Recorded N-values ranged from 6 to 57 bpf which is indicative of a loose to very dense consistency. Using the USCS system the soil classified as SM or SP.

7.2.6 Glacial Till

A deposit of glacial till was encountered at B-19-02 and was 2.1 feet thick. The deposit was generally described as gray, gravelly lean clay. Recorded N-value was 50 bpf which is indicative of a very dense consistency. Using the USCS system the soil classified as CL.

7.2.7 Drill Refusal

Drill refusal was encountered in borings B19-02, B-106 and B-107 at a depth of 12 feet, 33 feet and 36.5 feet, respectively. The refusals are considered an indication of bedrock or boulders.



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7.2.8 Groundwater

Groundwater levels observed in the completed boreholes drilled along the alignment of the proposed sewer ranged from a depth of 1.5 to 20.5 feet below the ground surface. Hydrostatic levels may vary dramatically from those recorded at the time of the subsurface investigation. Actual groundwater levels may vary significantly over time due to seasonal changes in precipitation and temperature, snowmelt, and surrounding and on-site drainage characteristics.

7.3 **RECOMMENDATIONS**

Based the conditions encountered in the test borings and the proposed depth of the pipelines, we anticipate the majority of the gravity sewer and force main pipelines will be founded in the marine silt and clay deposit. Near the proposed pump station, where the sewer line is the deepest, it will likely be founded in the sandy glacial fluvial deposit. Both deposits are suitable for supporting the proposed pipelines provided the final bearing surface is not disturbed during the excavation and that the trenches are properly dewatered.

In areas where the marine silt and clay deposit is encountered at the proposed subgrade, the final two feet of excavation should be conducted with a smooth edge bucket. Using a smooth edge bucket will help limit the disturbance to the clay subgrade. If the clay subgrade becomes disturbed the Contractor should not attempt to recompact the clay, rather the disturbed clay should be removed and replaced with ³/₄-inch crushed stone wrapped in a filter fabric. The fabric should consist of Mirafi 140N or equivalent.

In areas where granular deposits are encountered, disturbed soils can either be replaced by over excavating and replacing with ³/₄-inch crushed stone wrapped in a filter fabric or recompacted with small vibratory plate compactor. However, vibratory plate compactor should not be used in areas where the subgrade is saturated. The vibrations from the plate compacted will further increase the disturbance of the sandy soils.

Based on drilling refusal encountered at the location of B19-02, it is possible bedrock will be encountered during the excavation of the sewer trench. The bedrock in the coastal area of Maine is known to be highly variable and bedrock may be encountered in other areas of the proposed sewer line. The Contractor should be prepared to remove bedrock by either mechanical methods such as hoe-ramming, blasting methods if allowed by the Town or by chemical methods such as expansive grout.



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7.4 CONSTRUCTION RECOMMENDATIONS

7.4.1 Excavation Support

Given the anticipated depths of the proposed sewer pipelines and proximity to the vehicular traffic, temporary support of the trench excavation will be required. The type and design of the temporary earth support system should be the responsibility of the Contractor. Temporary earth support for these types of excavation generally consists trench boxes or slide rail type trench boxes. All excavations and support systems should be performed in accordance with current OSHA requirements under the observation and responsibility of the Contractor. Temporary shoring systems should be inspected periodically for excessive movement.

7.4.2 Construction Dewatering

Dewatering will be required for the construction of the proposed sewer lines. The Contractor should be prepared to remove water using a system of sumps and pumps located within the excavation. If ground water flow cannot be handled by sumps and pumps then a system of drilled well points or deep wells may be needed. Ultimately, the Contractor is responsible for selecting the method of dewatering and water diversion to maintain a stable surface at the bottom of the excavation. The Contractor should develop a dewatering plan capable of lowering groundwater two feet below the lowest point of excavation. Precipitation that results in standing water in the excavation should be removed immediately.



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8.0 RETAINING WALL RECOMMENDATIONS

8.1 GENERAL

A retaining is proposed along the north side of Falmouth Road from approximately Sta. 59+75 to Sta. 61+00. The maximum height of the wall is expected to be approximately 4 feet. The wall will be a Contractor designed wall and will likely be a precast concrete modular block wall. Test boring B-111 was located in the area of the proposed wall.

8.2 SUBSURFACE CONDITIONS

The subsurface conditions encountered at the boring locations are described in detail on the Borehole Logs located in the Appendix B of this report, and are summarized in the paragraphs below. The subsurface soil conditions encountered in the soil boring consisted of the following generalized strata in order of increasing depth.

8.2.1 Asphalt

Asphalt was encountered at B-111, and was 6 inches thick.

8.2.2 Roadway Base

A thin layer of roadway base course material was encountered at B-111 was approximately 18 inches thick. The base course was described as medium to coarse sand and gravel with trace silt.

8.2.3 Marine Silt/Clay

A deposit of marine silt and clay was encountered in the boring and was explored to a depth of 15 feet below the ground surface without penetrating the deposit. The deposit was described as an olive-gray silt and clay. Recorded N-values ranged from 5 and 22 bpf which is indicative of a firm to very stiff consistency. Using the USCS system the soil classified as ML or CL.

8.2.4 Groundwater

Groundwater level was observed in the completed B-111 at 13.5 feet below the ground surface. Hydrostatic levels may vary dramatically from those recorded at the time of the subsurface investigation. Actual groundwater levels may vary significantly over time due to seasonal changes in precipitation and temperature, snowmelt, and surrounding and on-site drainage characteristics.



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8.3 FOUNDATION RECOMMENDATIONS

Based on the subsurface conditions encountered in the boring, conventional shallow spread footings can be used to support the proposed structure. We anticipate the marine silt and clay deposit will be encountered at the bearing elevation of the wall. The footings for the wall should be designed in accordance with the following:

- To provide a firm and stable surface for the wall, the bottom of the wall should be placed on 12 inches of compacted Maine DOT 703.19 Granular Borrow for Underwater Backfill or on 12 inches of ³/₄ inch crushed stone wrapped in a non-woven filter fabric.
- For the Strength Limit State a nominal bearing resistance (qn) of 9.0 kips per square foot (ksf) is recommended in combination with a resistance factor (φb) of 0.45 for footings bearing on undisturbed marine silt and clay deposit. The resistance factor is based on Table 10.5.5.2.2-1 of the AASHTO LRFD code.
- For the Service Limit State a factored bearing resistance of 3.0 ksf is recommended. This factored resistance is based on a resistance factor of 1.0.
- Based on the anticipated loading and relatively low wall height, settlement of footings bearing on alluvium is expected to be less than 1 inch. The maximum differential settlement along the wall footing is expected to be less than ½ inch over the length of the wall.
- Assuming the wall will be a precast concrete modular block type wall, the bottom of the footings should be founded a minimum depth of 2 feet below the surrounding ground surface.

8.4 LATERAL EARTH PRESSURE RECOMMENDATIONS

The proposed retaining wall should be designed based on the following lateral earth pressure recommendations:

- We recommend the walls that retain earth be backfilled horizontally with a minimum of 3 feet of compacted Maine DOT 703.19 Granular Borrow for Underwater Backfill which is considered to be Type 4 soil in accordance with the Maine DOT Bridge Design Guide (BDG). The 4 feet of Granular Borrow for Underwater Backfill will provide free draining and less frost susceptible materials in the zone behind the wall.
- Because the retaining wall is free to rotate at the top, it should be designed based on active earth pressure (Ka) and Maine DOT Type 4 backfill. Assuming the wall has a level backfill it should be designed using Ka equal to 0.31 and a unit weight of 125 pounds per



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cubic foot (pcf) for the backfill. The resulting equivalent fluid pressure is 40 pcf, which assumes no unbalanced hydrostatic pressure.

- Walls with a backfill slope of 2 horizontal to 1 vertical (2H:1V) should be designed using Ka equal to 0.48 and a unit weight of 125 pcf for the backfill. The resulting equivalent fluid pressure is 60 pcf, which assumes no unbalanced hydrostatic pressure.
- The wall should be properly drained to prevent hydrostatic pressure from developing behind the wall.
- For calculating nominal sliding resistance (R_n) for footings bearing on a clean granular soil or crushed stone wrapped in a geotextile filter fabric we recommend the coefficient of friction and resistance factor in the table below. The nominal passive resistance (R_{ep}) for soil in front of the retaining walls should be ignored.

Footing Type	Coefficient of Friction (Ταnδ) Table 3.11.5.3-1	Resistance Factor (φ _τ) Table 10.5.5.2.2-1
Precast	0.40	0.90
Cast-in-place	0.45	0.80

Table 9 – Retaining Wall Summary of Sliding Factors

8.5 CONSTRUCTION CONSIDERATIONS

8.5.1 Excavation Support

Construction of the retaining may require temporary excavation support system. The type and design of the temporary earth support system should be the responsibility of the Contractor. All excavations and support systems should be performed in accordance with current OSHA requirements under the observation and responsibility of the Contractor. Excavation slopes should be checked regularly for signs of instability and flattened as required. Temporary slopes should be protected from surface water run-off erosion by means of berms and swales located along the top of the slope and by means of plastic sheeting placed over the slope. Temporary shoring systems should be inspected periodically for excessive movement.

8.5.2 Construction Dewatering

Dewatering may be required for the construction of the retaining wall. The Contractor should be prepared to remove water using a system of sumps and pumps located within the excavation. If ground water flow cannot be handled by sumps and pumps then a system of drilled well points or deep wells may be needed.



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Ultimately, the Contractor is responsible for selecting the method of dewatering and water diversion to maintain a stable surface at the bottom of the excavation. The Contractor should develop a dewatering plan capable of lowering groundwater two feet below the lowest point of excavation. The Contractor should be prepared to remove groundwater that seeps from joints in the bedrock and from the soil into the excavations. The specifications should require that the General Contractor divert surface water runoff away from excavations so that the foundation can be constructed in-the-dry. Precipitation that results in standing water in the excavation should be removed immediately.



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9.0 GENERAL CONSTRUCTION CONSIDERATIONS

9.1 STRIPPING

All vegetation, mulch, trees, root balls, topsoil, topsoil fill, root mat, and other materials with significant organic content should be stripped from within the area of proposed structures such as the culvert and retaining wall. Topsoil may be stockpiled for re-use in non-structural areas. The extent of stripping should be determined during construction based on observations of stability and organic content.

9.2 MATERIAL REUSE

Stantec anticipates that the excavated granular soils will not be suitable for reused as Maine DOT Item No. 703.19, Granular Borrow for Underwater Backfill, but can be used as common fill. The excavated marine silt and clay deposit is not expected to be suitable for reuse as Granular Borrow for Underwater Backfill or as common fill. Reuse of the existing materials will be contingent on careful inspection in the field by the Owner's Resident Engineer. Any deleterious materials and miscellaneous debris that may be encountered during excavation activities within the fill should be removed from the site. On-site materials placed as backfill material should be sealed on a daily basis using a smooth drum roller to promote drainage and prevent ponding of storm water. Alternatively, imported fill materials may be used to attain the desired grades and expedite earthwork operations during wet weather periods.

9.3 SUBGRADE STABILIZATION

The subgrade soils encountered at the box culvert and retaining walls sites may require stabilization in their existing condition. Once exposed, the on-site soils are considered to be sensitive to weather and construction traffic disturbance and specifications should contain provisions for subgrade repair. The subgrade should be graded to promote positive runoff to a suitable drainage feature at all times during construction, and all excavations and exposed subgrades should be maintained in a moist, but unsaturated, condition throughout construction. The degree of subgrade disturbance will be dependent on the Contractor's means and methods, such as coordinating site activities around anticipated precipitation, and protecting exposed subgrades due to disturbance from excess moisture and construction equipment traffic.

Subgrade repair can include one or more of the following:

- Scarification, moisture conditioning, and recompaction (sand/gravel soils only).
- Over excavation to a stable subgrade.
- Partial over excavation and stabilization with coarse graded aggregate and/or geotextile.



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Frozen subgrade should be stripped and replaced with compacted Maine DOT Item No. 703.19, Granular Borrow for Underwater Backfill. Optionally, the frozen subgrade may be thawed by means approved by Stantec, scarified, and recompacted.

Every effort should be made to minimize disturbance of the on-site soils by construction traffic and surface runoff. The on-site soils are moisture sensitive and will deteriorate when subjected to repeated construction traffic and likely will require removal and replacement. The services of a Geotechnical Engineer should be retained to inspect soil conditions during construction and verify the suitability of prepared foundation and floor slab subgrade for support of design loads.

9.4 STRUCTURAL FILL, PLACEMENT AND COMPACTION

Maine DOT Item No. 703.19, Granular Borrow for Underwater Backfill should meet the requirements of State of Maine Department of Transportation Standard Specifications. Any imported material placed as fill to raise elevations or restore design grades should consist of clean soil and/or aggregate, free of organics, clay lumps, deleterious materials, ice, snow, and waste of any kind, and meet the following gradation: should be comprised of clean soil and/or aggregate, free of organics, ice, snow, and waste of any kind, and meet the following gradation: should be comprised of clean soil and/or aggregate, free of organics, deleterious materials, ice, snow, and waste of any kind, and meet the following gradation:

Sieve Size	% Passing by Weight
3-inch	100
No. 4	0 – 70
No. 200	0 – 10

Table 10 – Granular Borrow for Underwater Backfill Gradation Requirements

The soil moisture content range should be ± 3 percent of its optimum moisture content and Structural Fill should be placed in uniform lifts not exceeding 10 inches loose thickness compacted to at least 95% of Maximum Dry Density as determined by ASTM D1557 (Modified Proctor). The percent compaction is determined in the field by ASTM D-6938 (nuclear densometer). A minimum of two in place density tests should be performed for each lift of fill placed.

9.5 BACKFILL TESTING

The project specifications should require the Contractor to submit test results provided by an approved soils testing laboratory along with a sample of the imported fill material or any on-site material proposed for reuse as backfill material. The proposed materials should include gradation testing (ASTM D422) and moisture-density relationship testing (ASTM D1557) submitted for approval. The placement of all fill and backfill should be monitored by a qualified soils technician to observe and make accurate records regarding proof-rolling operations of the



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subgrade prior to backfill placement, types of materials used, thickness of lifts, densities, percent compaction, type of compaction equipment and number of passes, etc.

9.6 WINTER CONSTRUCTION

Frozen subgrade should be removed and replaced with compacted Structural Fill. If excavation and backfilling operations are conducted during winter months, at the end of each day, the fill should be covered with a sacrificial 6-inch thick layer of fill that is to be stripped off at the start of the day to remove any hoar frost. The subgrade would then be recompacted and field density testing performed to ensure that the required compaction has been achieved. Optionally, the subgrade of the building footprint may be protected with insulated blankets and heated with circulated glycol lines to prevent the subgrade from freezing. Imported and/or on-site stockpiled backfill material should be covered with insulated blankets to minimize snow intrusion and/or rainfall infiltration. Any surficial frozen soil in the stockpile/borrow pit should be removed prior to placement in the work area.

10.0 LIMITATIONS

10.1 USE OF REPORT

This report has been prepared for the exclusive use of The Town of Falmouth and their respective assigns and designees. This report is not intended for the use or reliance of other (third) parties, without the express consent of Stantec and Town of Falmouth. Any use, which a third party makes of this report, or any reliance on decisions made based on this report, is the responsibility of such third parties. Further, the findings of this study apply only to the specific Site and project described herein. The findings herein are inapplicable to other Sites, and to developments of different grading, layout, loading, and performance requirements. Stantec accepts no responsibility for damages, real or perceived, suffered by parties as a result of decisions made or actions based on the unintended and/or inappropriate use of this report.

The Geotechnical Report provides recommendations and is intended for informational use requiring interpretation by the owner, design team, and Contractor for the design and construction of the project, and interpretation of final quantities and construction costs. The Geotechnical Report is not intended, or suitable, by itself, for use as a technical specification or to determine quantities. Anticipated quantities and/or costs may be provided in the Geotechnical Report; such information is an Engineer's interpretation, and may vary dramatically from Contractor bids, which are based on potentially differing interpretations, and several other variables not available or considered by the Engineer.



Town of Falmouth, Maine Route 100/26 Infrastructure Improvements October 5, 2018

10.2 SUBSEQUENT INVOLVEMENT

The geotechnical process incorporates initial exploration and recommendations as summarized herein, and is followed by continuous involvement during key design and construction benchmarks. The recommendations provided herein are based on information and assumptions regarding proposed site grading, structural loading and performance requirements. It is recommended that a Professional Engineer review final foundation, grading, and other applicable plans to assess whether or not these recommendations require modification.

During construction, additional geotechnical soil samples should be collected and analyzed in the laboratory for moisture content, gradation, and moisture density relationship tests to evaluate the reuse of onsite soils (existing fill and natural sand strata) as backfill material.

A Professional Engineer should be retained to observe excavations and subgrade preparation to assess whether the intent of these recommendations is followed during construction, and whether or not other appropriate and/or cost-effective solutions may be warranted based on the actual conditions encountered. Further, a soil exploration is a random sampling of a Site. During the project, should any conditions at the Site be encountered that differ from those summarized in the report, Stantec should be notified immediately in order to permit reassessment of these conditions and the recommendations contained in the report.

10.3 REPRESENTATION AND INTERPRETATION OF DATA

Surficial and subsurface information presented herein is based on field measurements obtained during the course of the exploration and site reconnaissance. The precision and accuracy of surficial data is a function of the references, benchmarks, methods and instruments employed, as summarized in the report. Subsurface data is based on measurements within the borehole or test pit using the sampling methods described on the exploration logs. The completeness, precision, and accuracy of such data is a function of the frequency and type of exploration and sampling employed, as well as the precision and accuracy of the surface location and elevation of the borehole, and may vary from actual conditions encountered during excavations. Subsurface conditions between, beyond and below explorations, may vary dramatically from the nearest exploration, due to natural geologic action, deposition and weathering, or man-made activities.

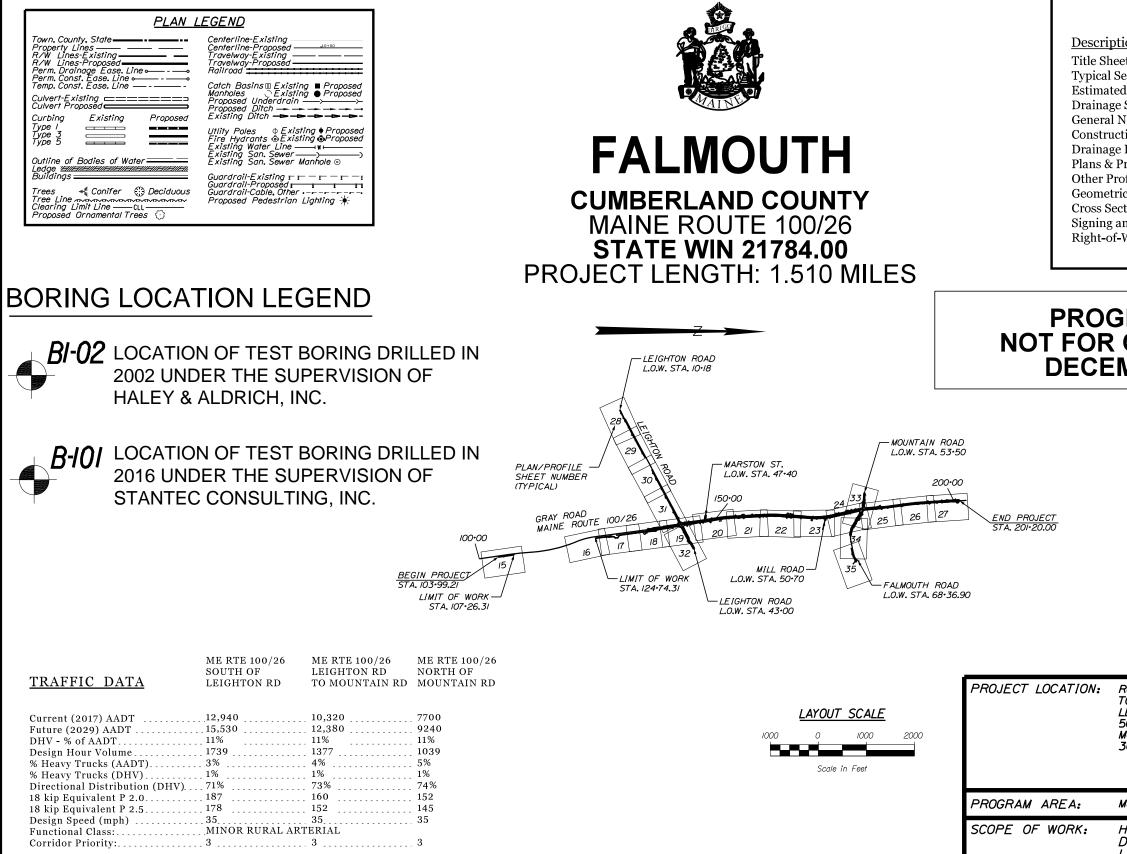
Groundwater levels were recorded during the time periods and frequencies noted on the explorations. It is important to note that groundwater levels are disrupted by the exploration, and require equilibration periods to determine actual hydrostatic levels, which exceed the duration of the measurement period. Multiple hydrostatic groundwater levels may exist, including perched or trapped water, which may not necessarily be accurately represented by one water level reading. Groundwater levels fluctuate due to seasonal variations, adjacent surface water bodies, precipitation, and on-Site and nearby land use.



PROJECT PLANS WITH TEST BORINGS



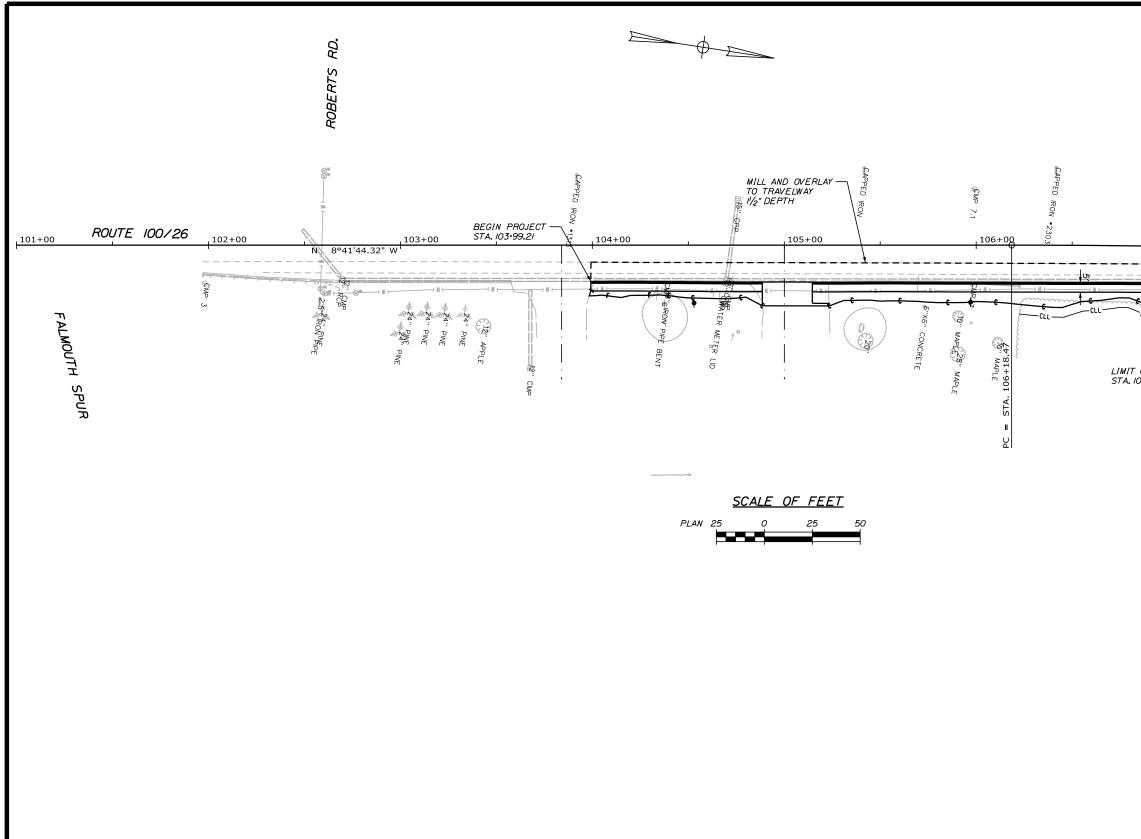
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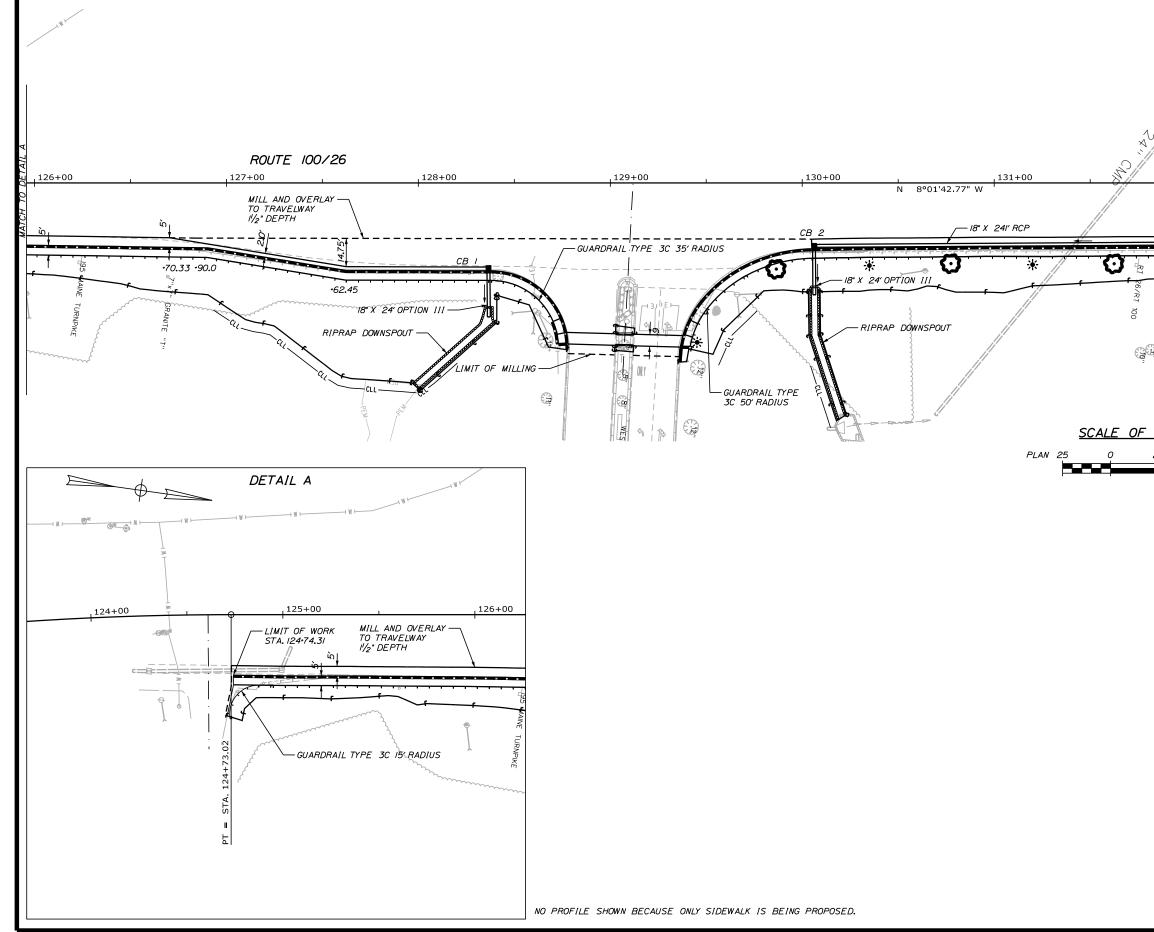
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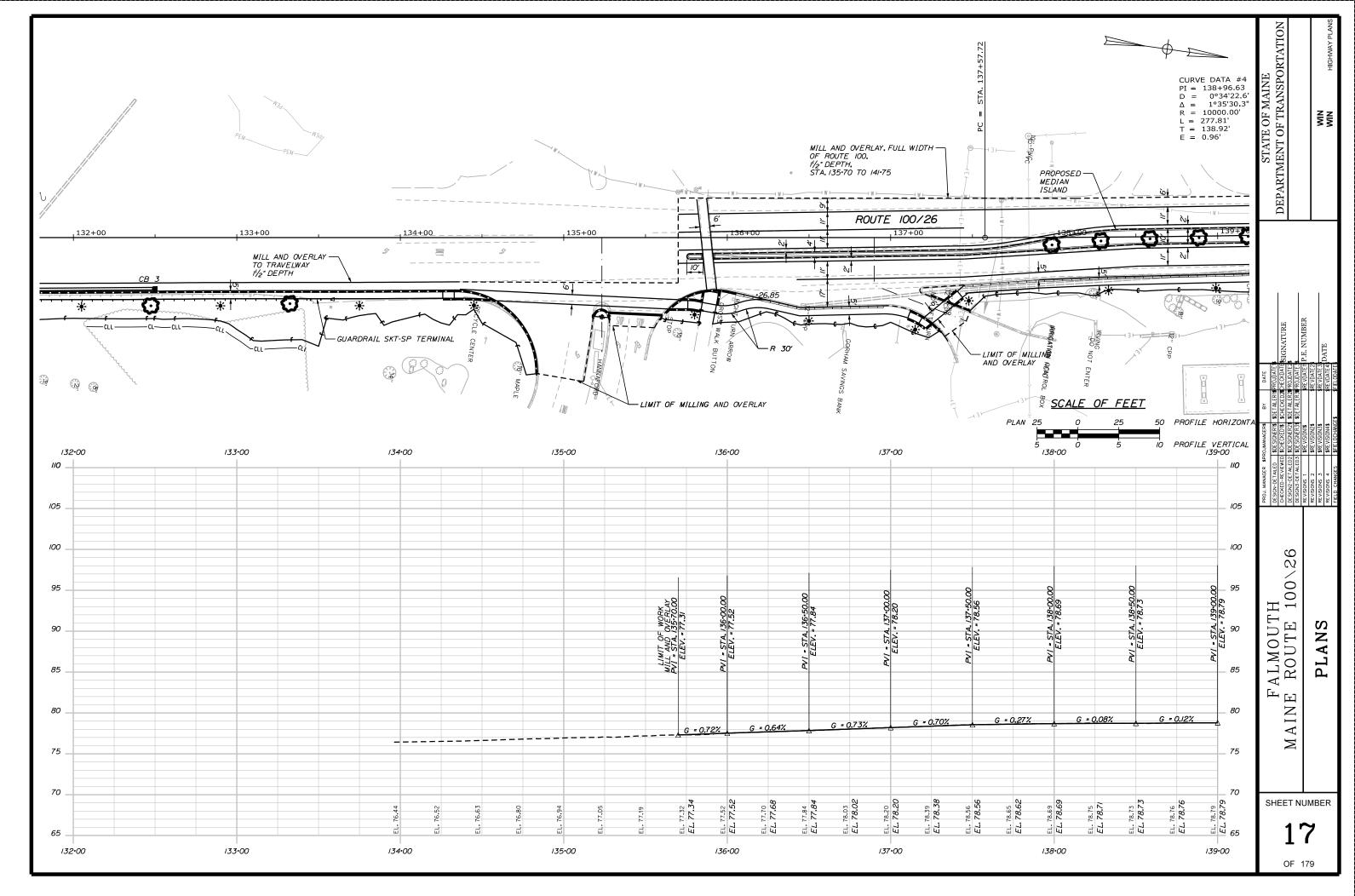
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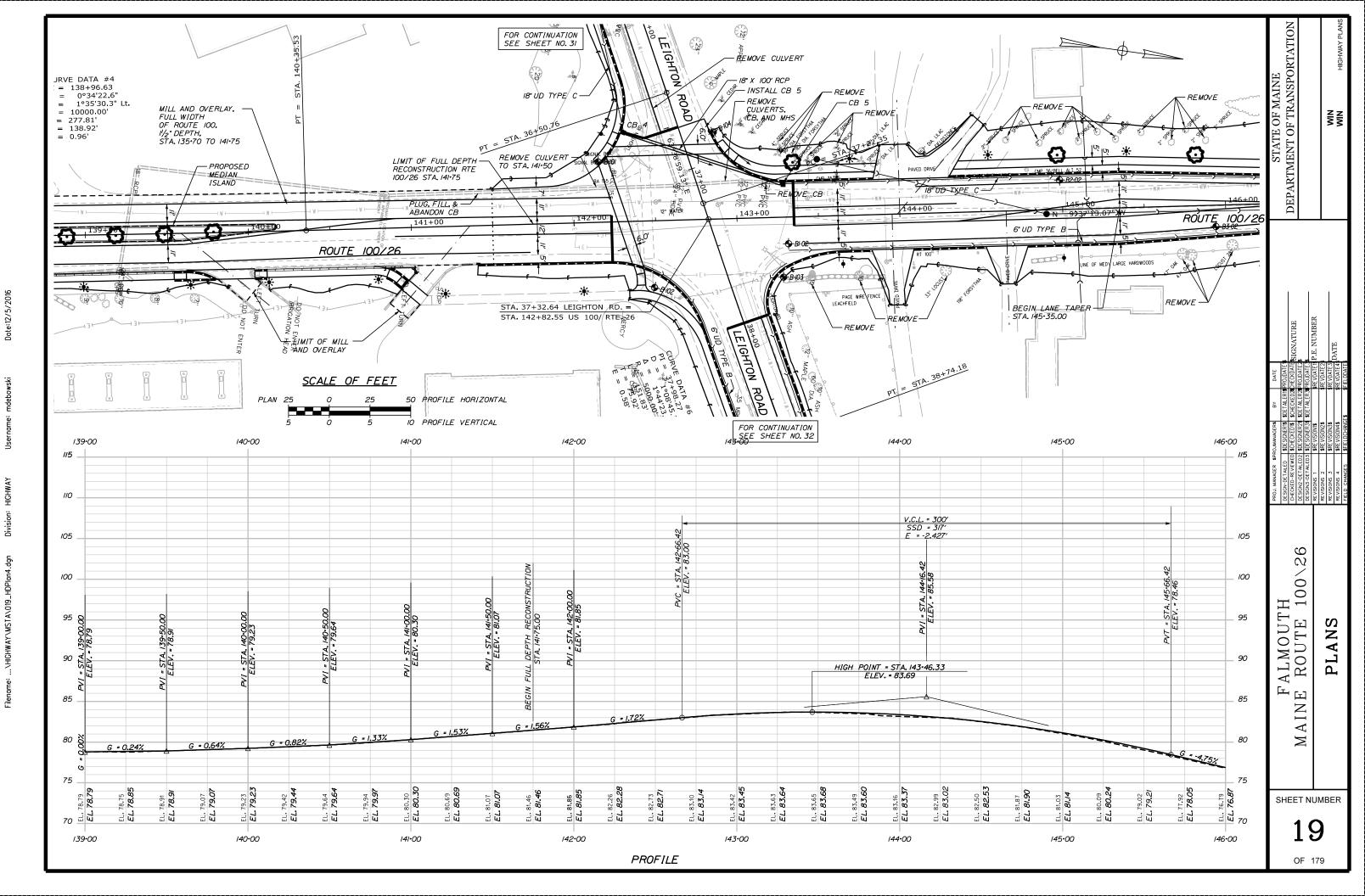
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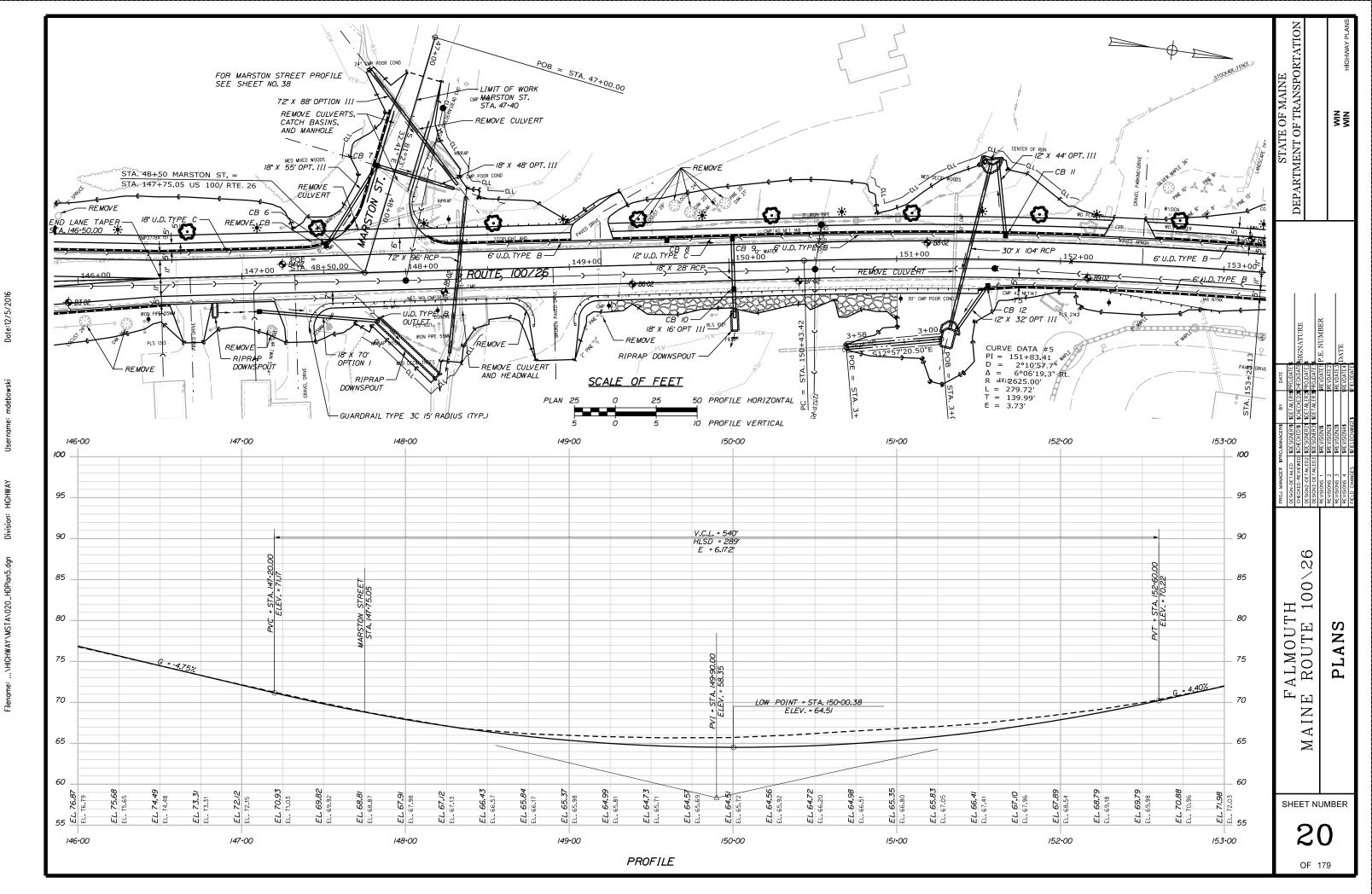


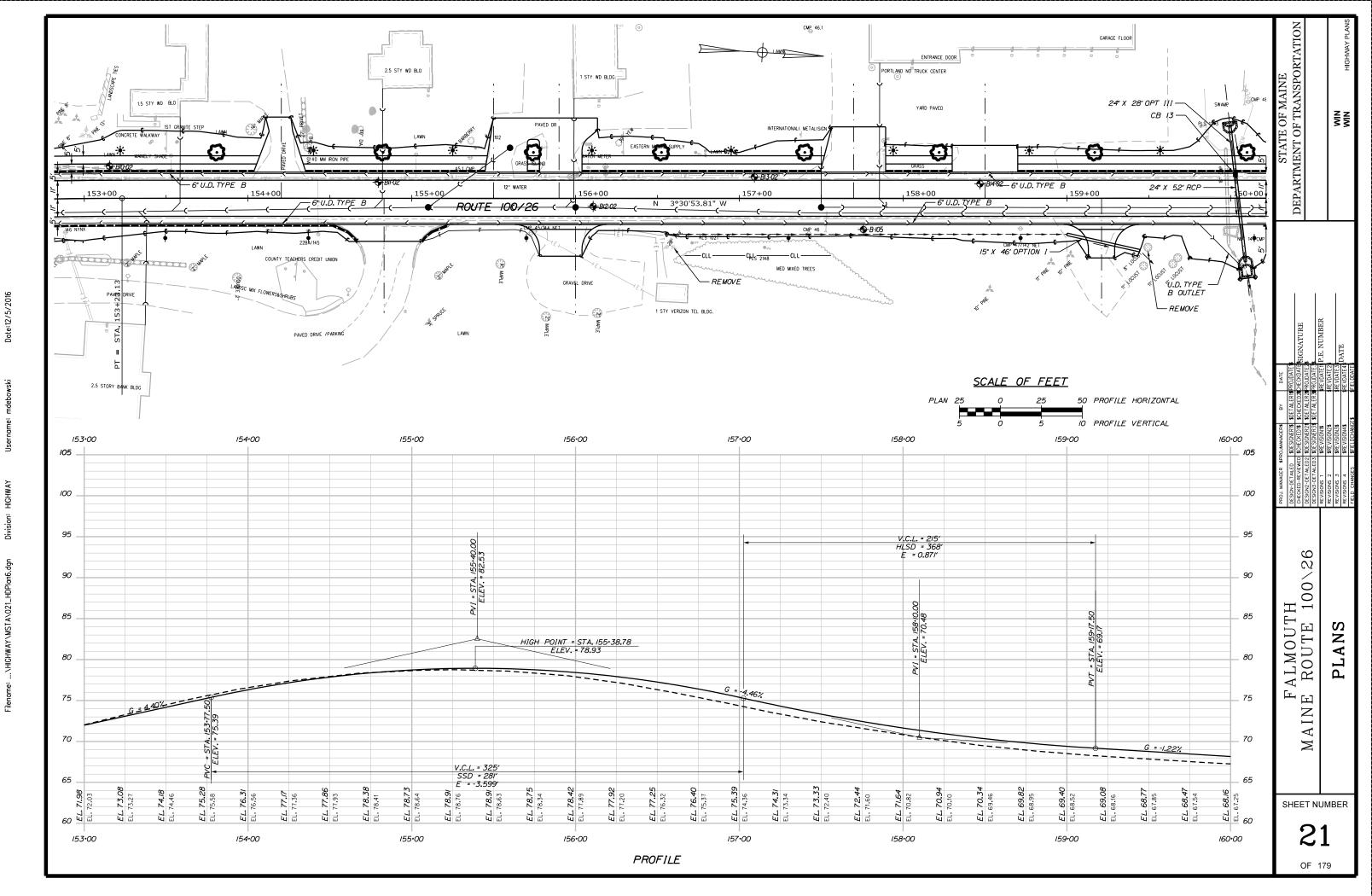
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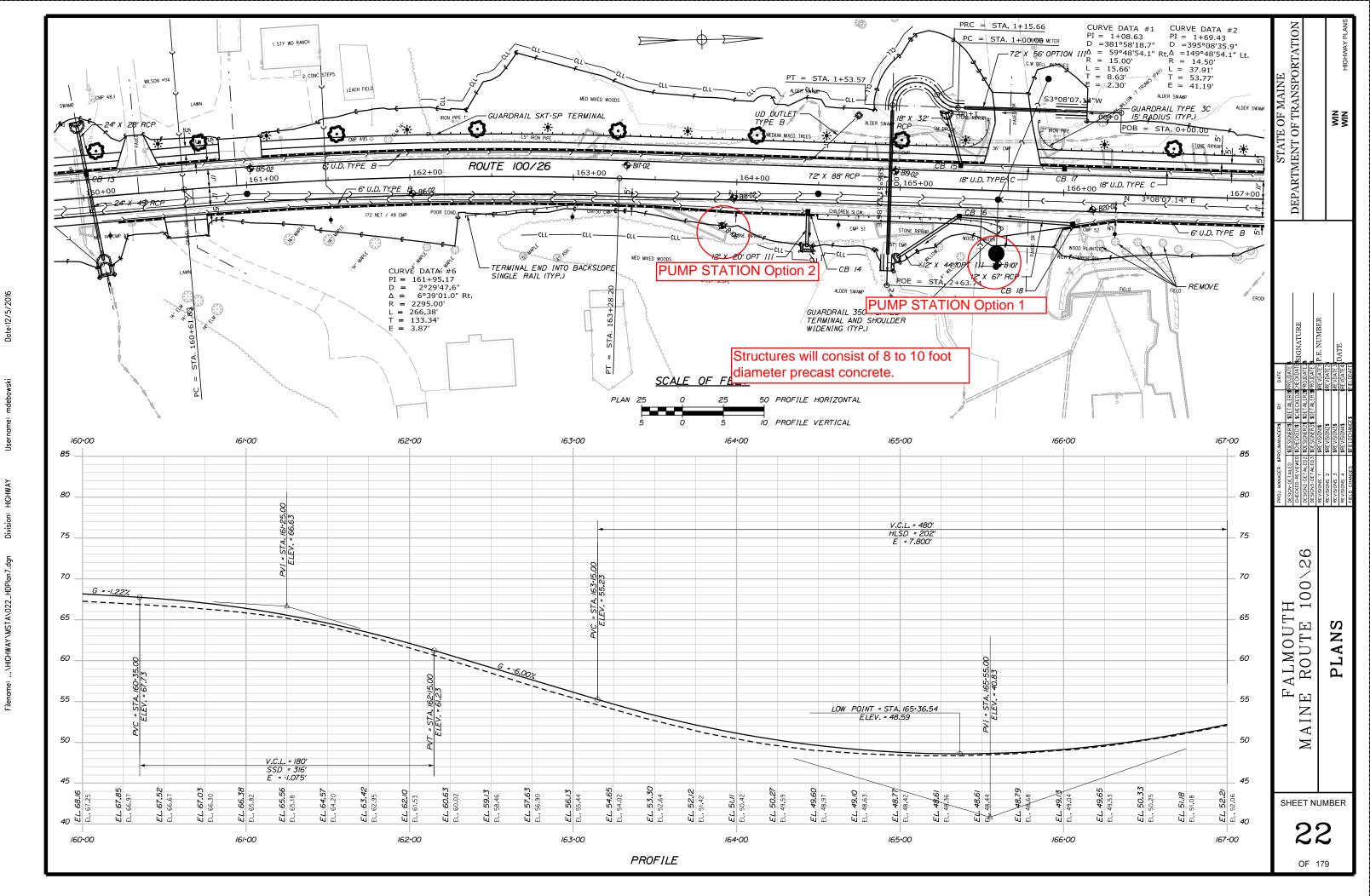
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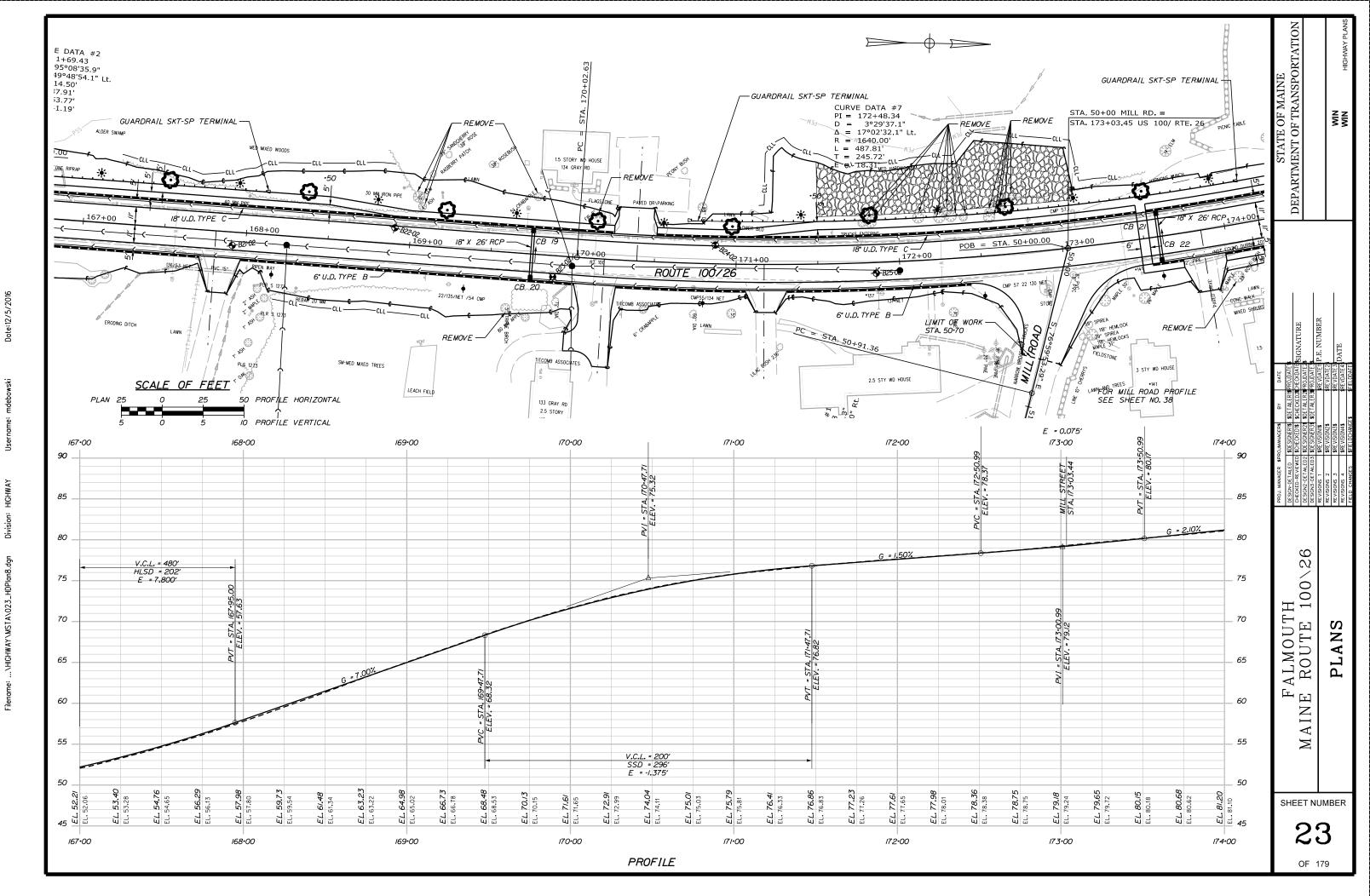




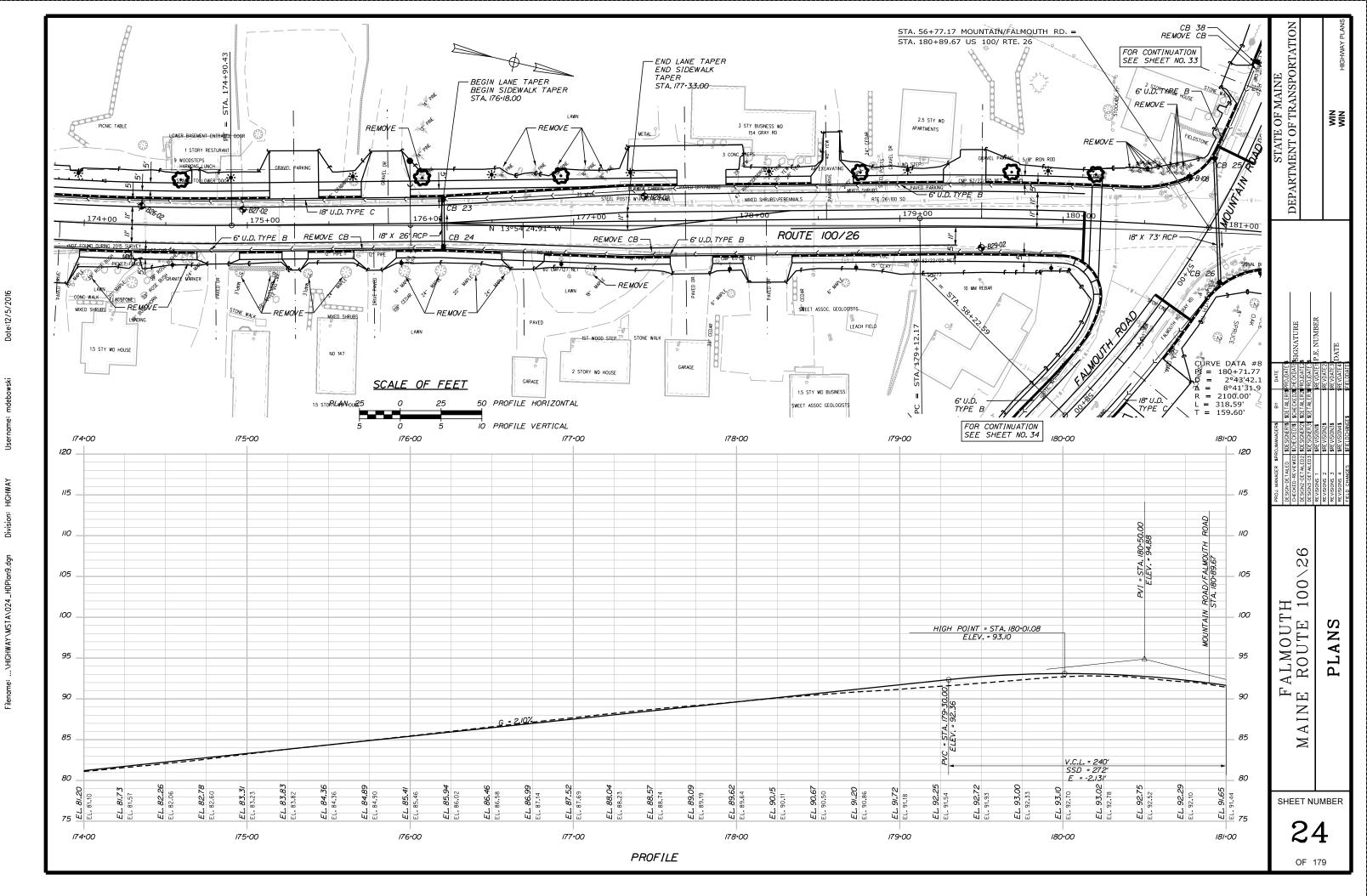
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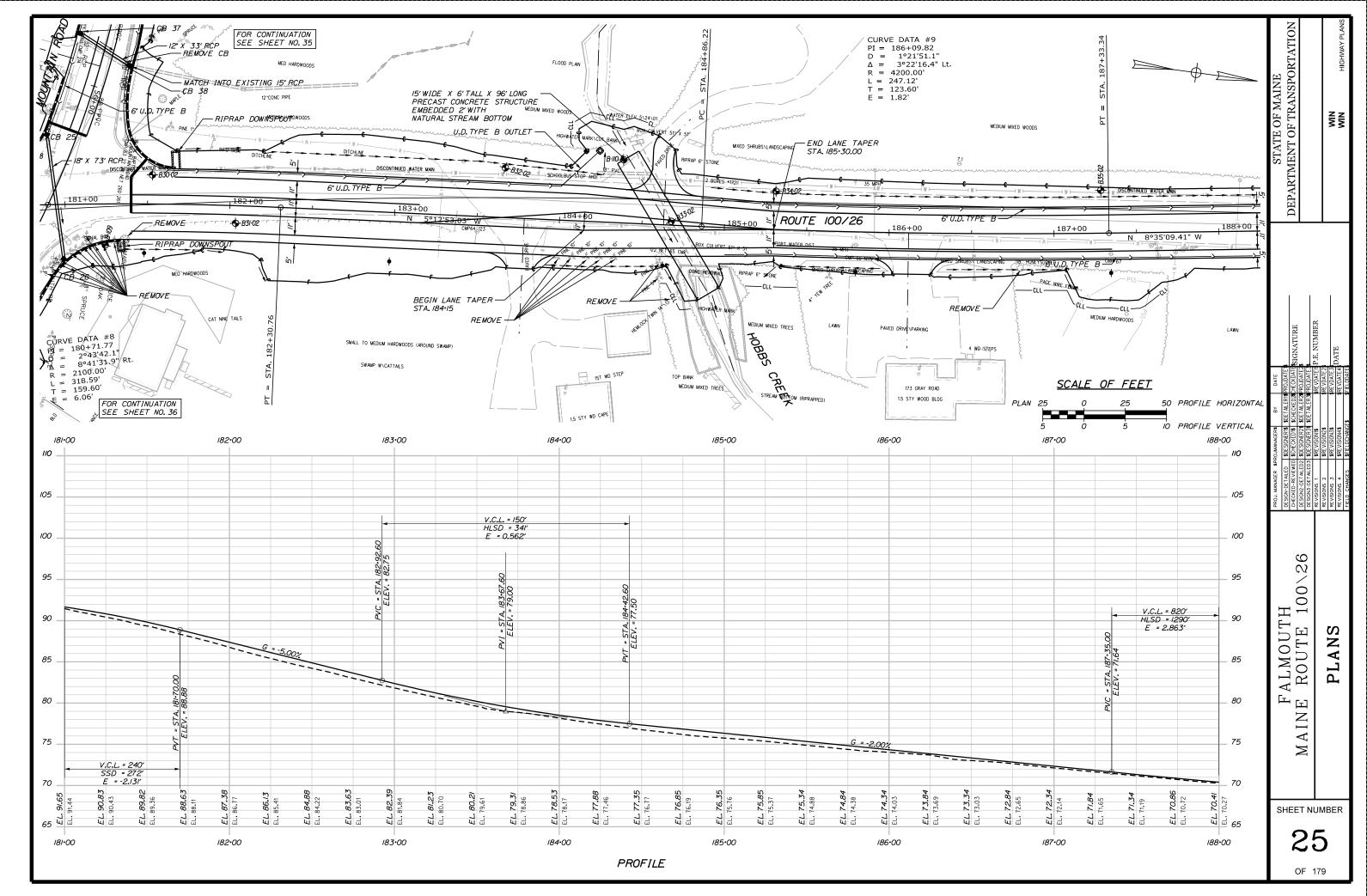


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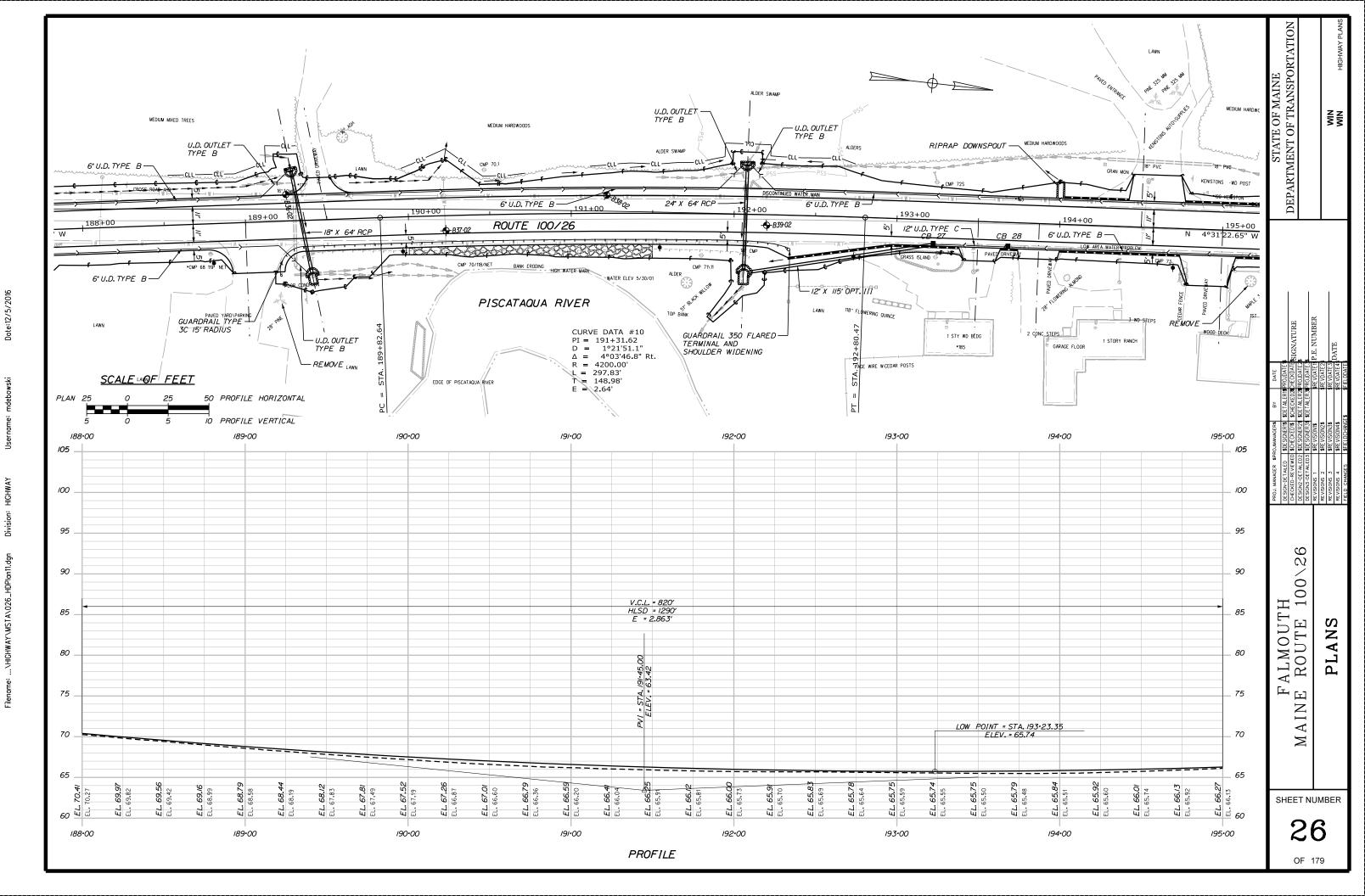


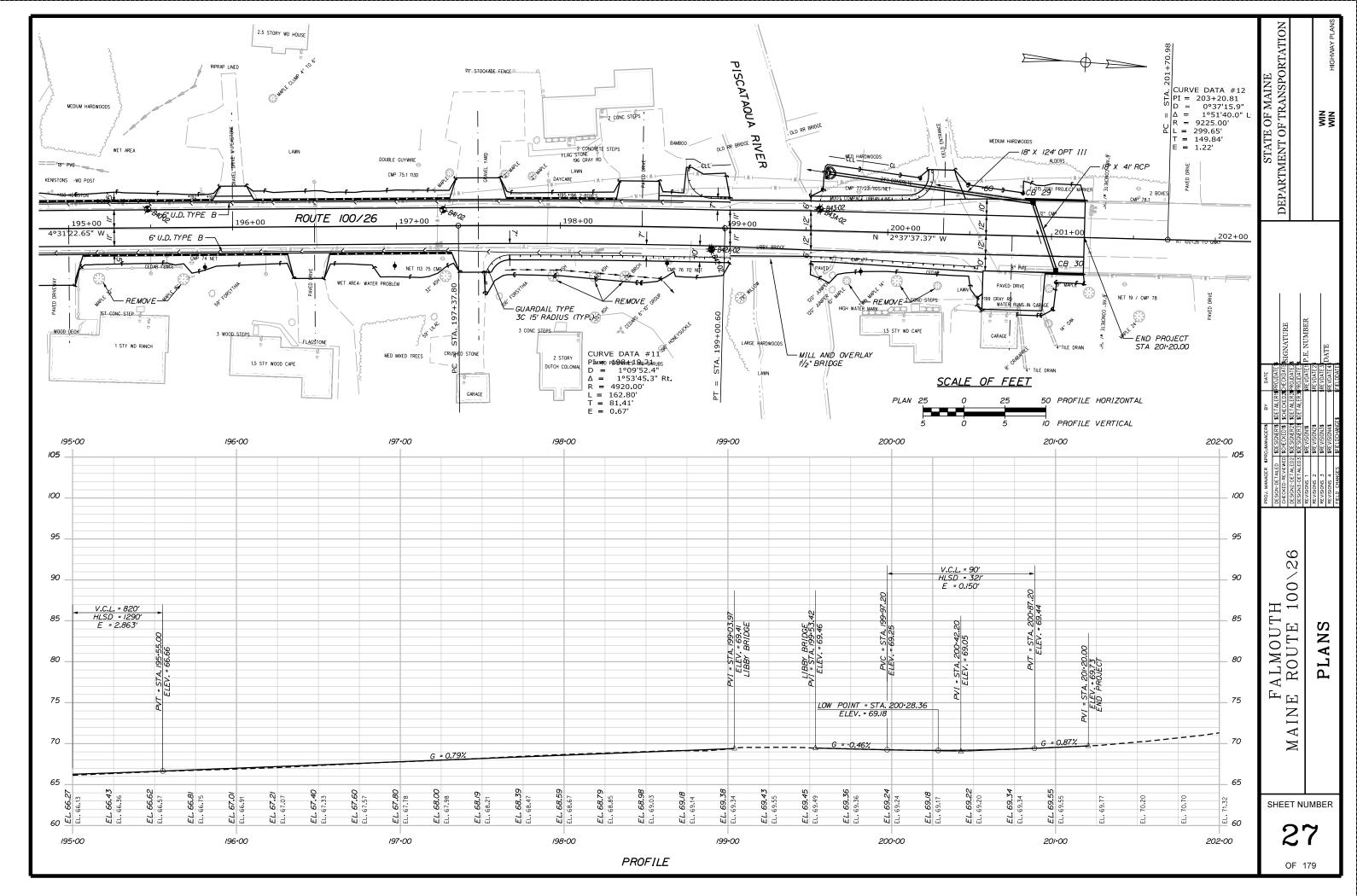
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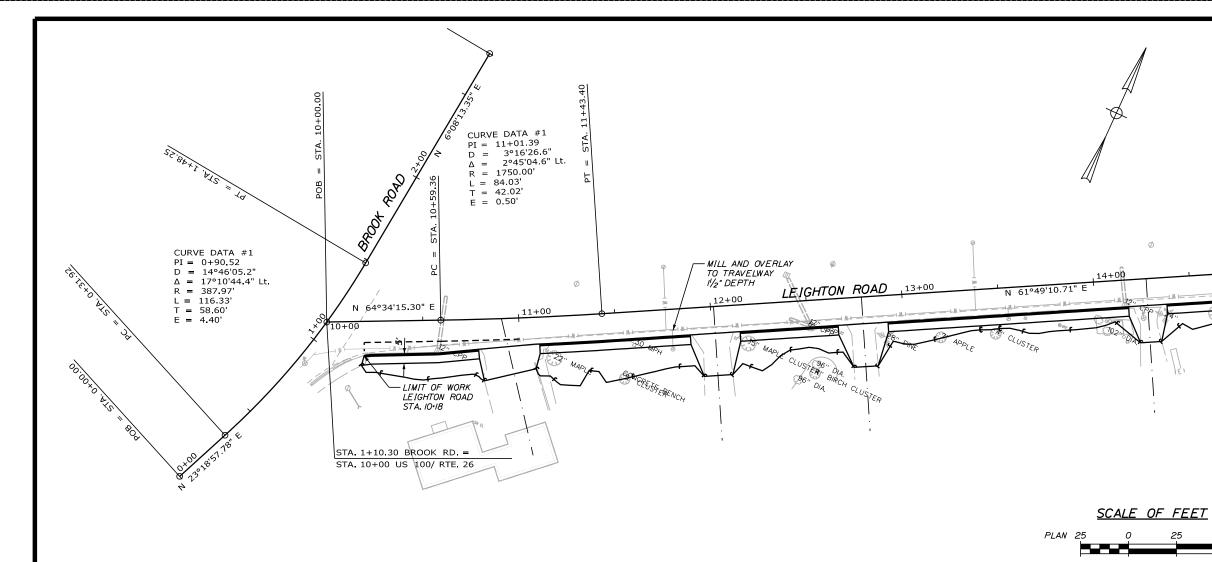




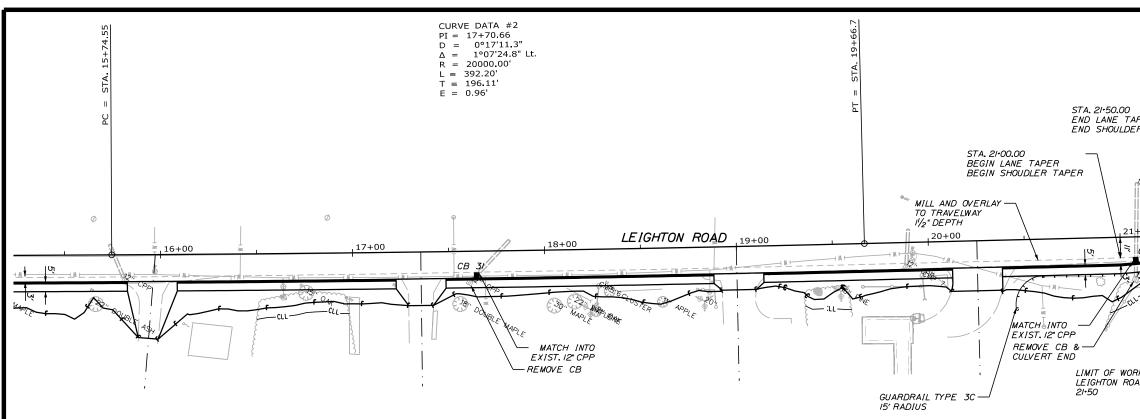
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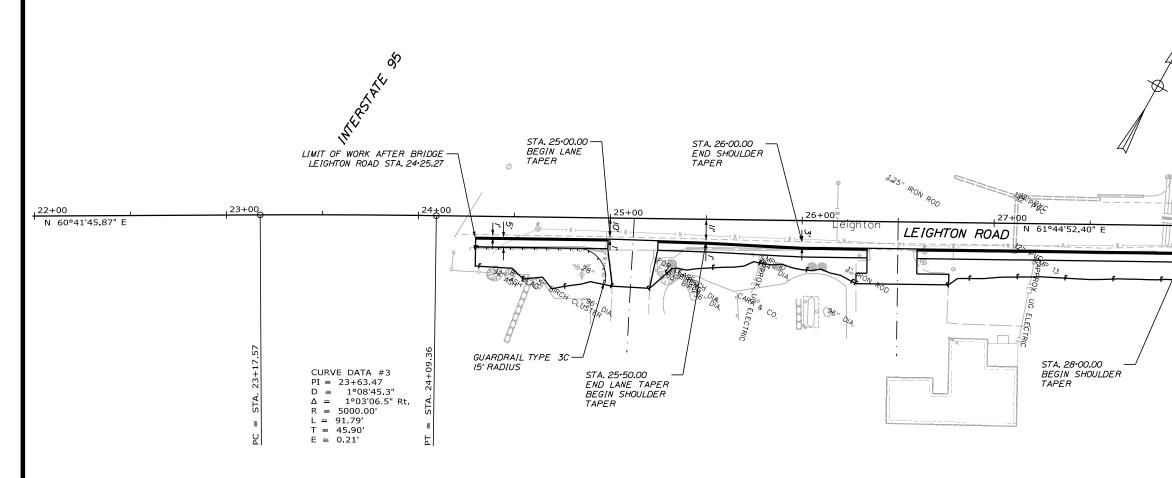


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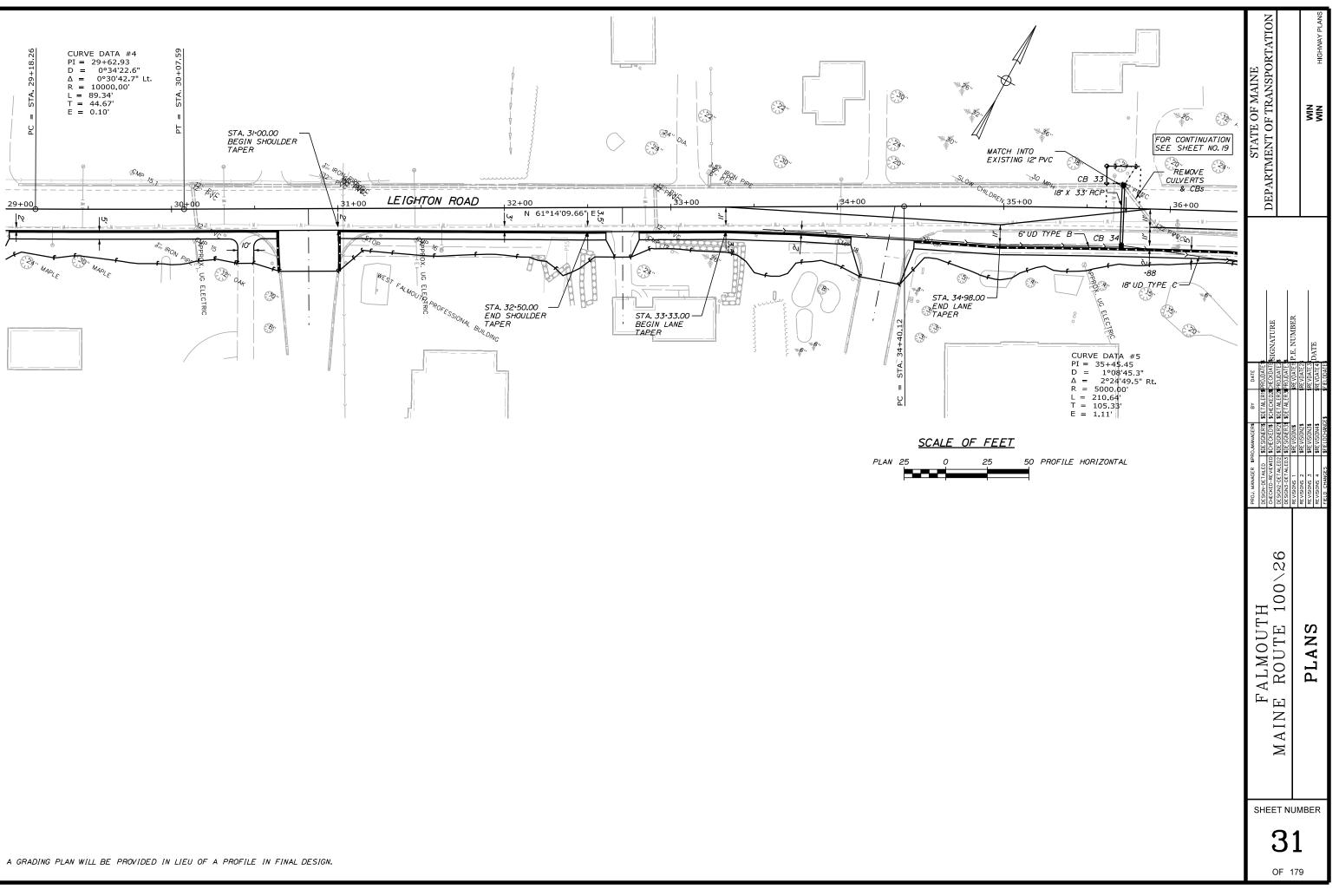
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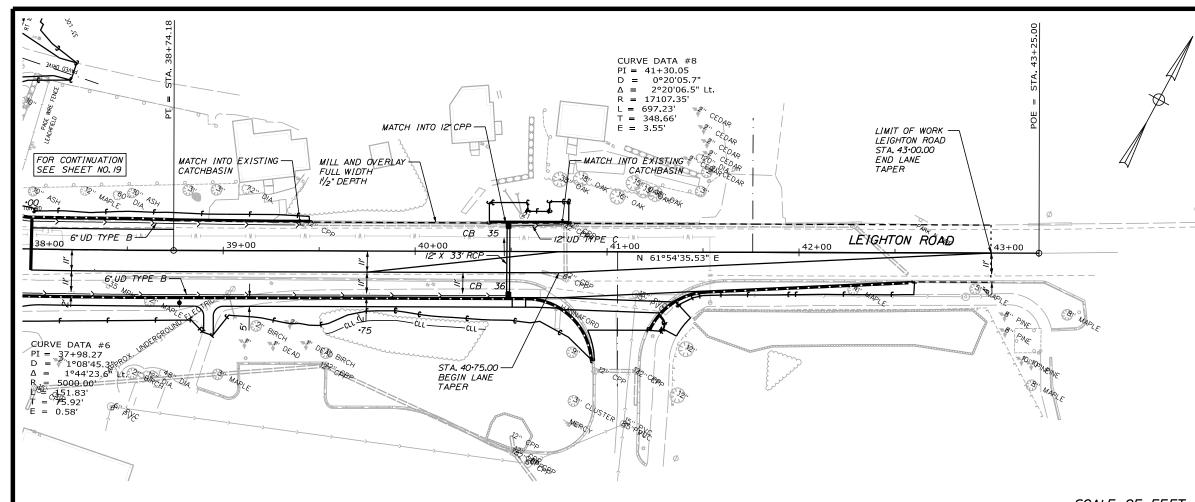
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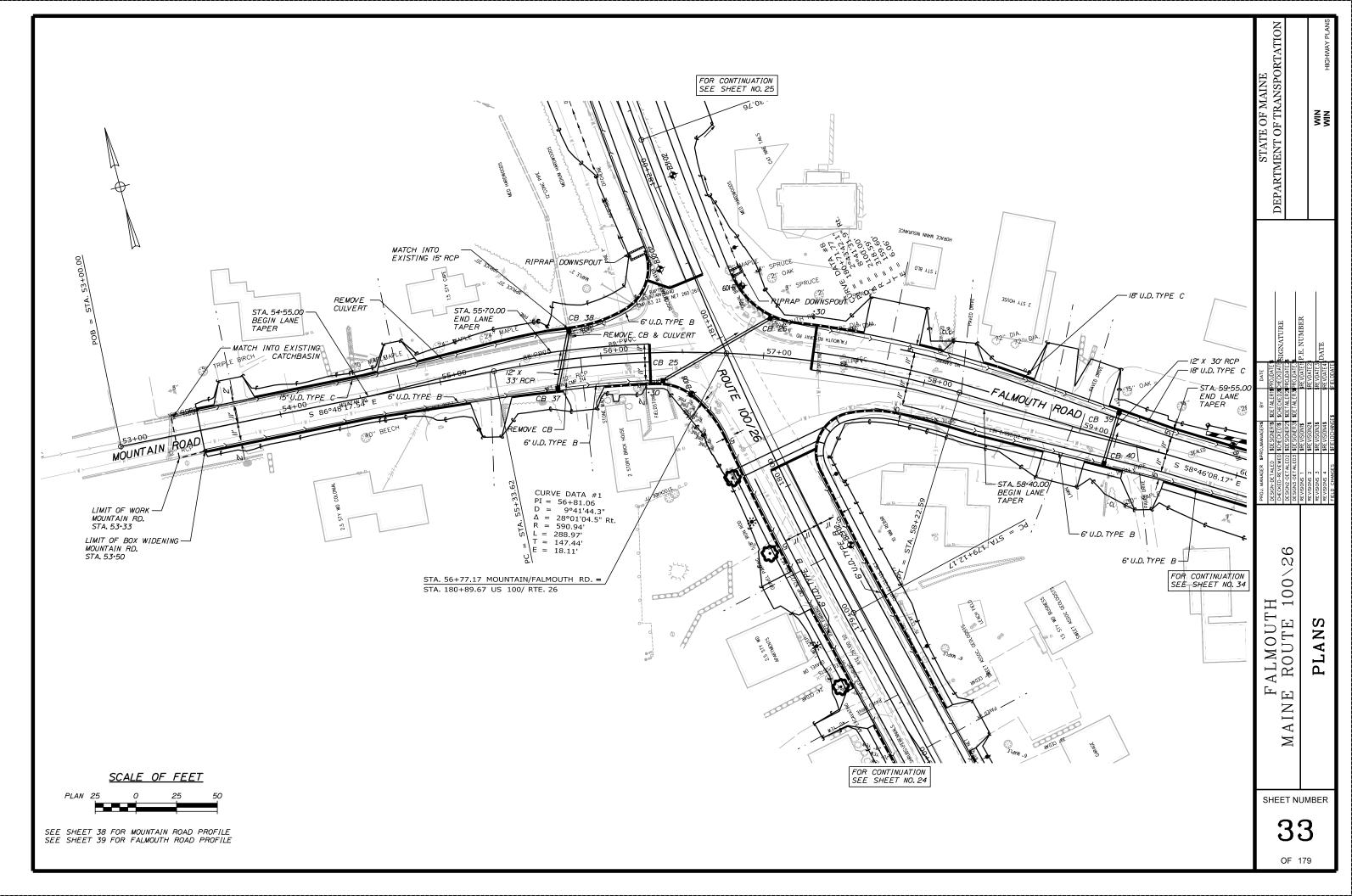
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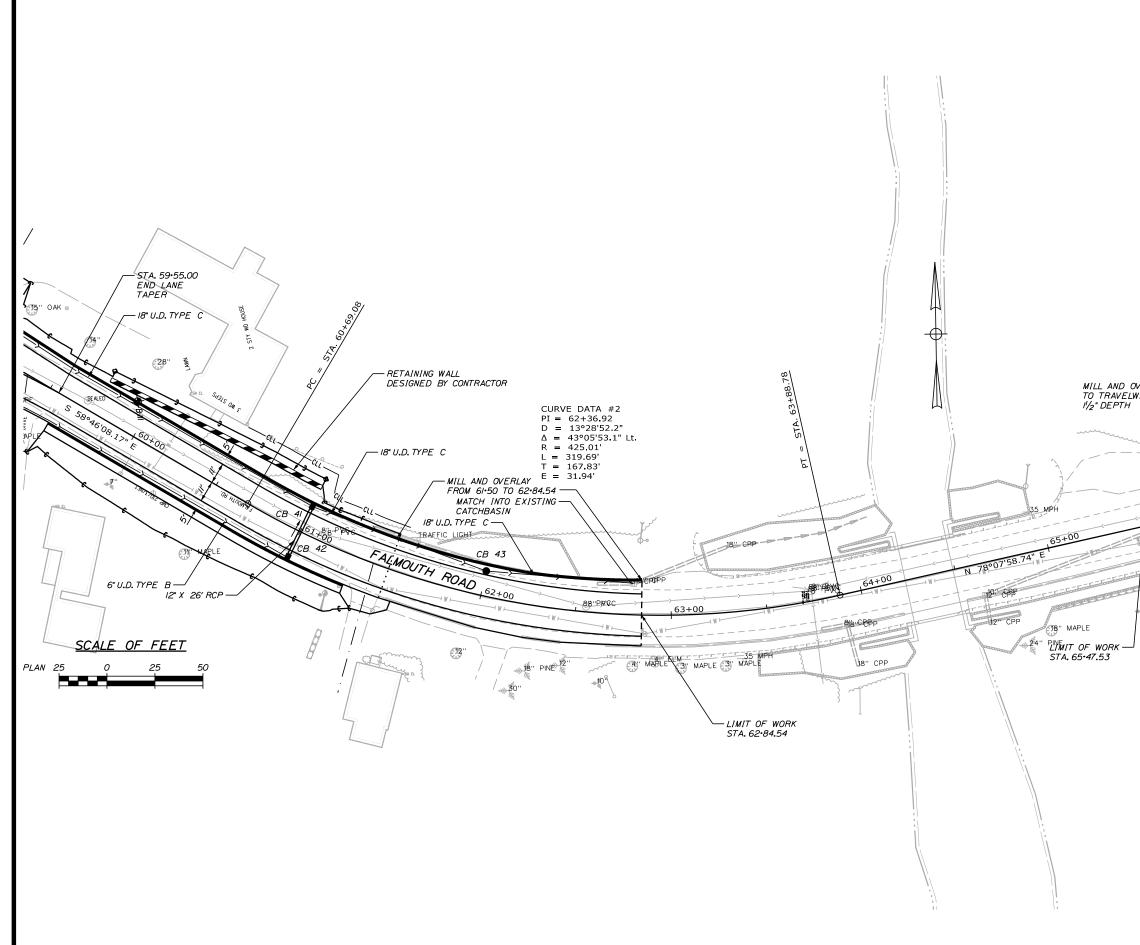
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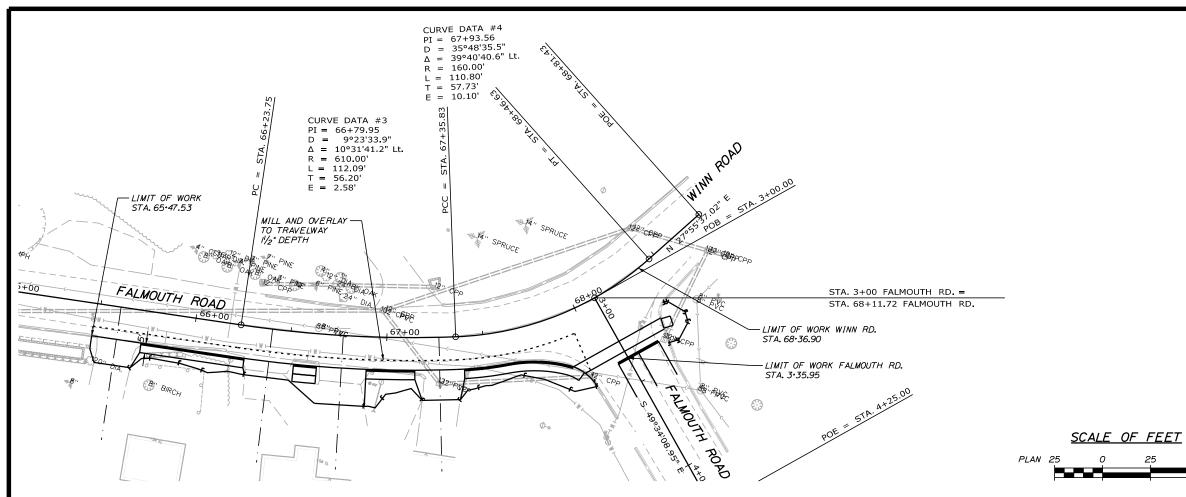
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APPENDIX A

2002 - Test boring logs

NOTE: THESE BORING LOGS ARE IN METRIC UNITS



			I/Rock Explore	-							Boring No.:		<u>l-02</u>	
			METRIC UN	IITS			ation: I le No. 2			e	PIN:	918	8.00	
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· ·	rator:		aine Test Borin	ngs, Inc.	Datum:		1	IGVD			Sampler:	Split Spoon		
	ged By:		Erickson		Rig Type	:	N	AD B53	3 Truck		Hammer Wt./Fall:	63.3 kg-/ 76.2	cm	
	Start/F		/9/02 / 10/9/02		Drilling N	letho	od: S	Spin SS	A		Core Barrel:	<u> </u>		
	ng Loca	tion: St	a. 0 + 100, 5 R		Casing I	D/OD	: -	/-			Water Level*:	3.1 m	-	
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Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Samble Information Shear (150 mm) Shear (kPa) (kPa) Cr ROD (%)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual I	Description and Remark	S	Laborat Testin Result AASH and Unifie Class	
0	_							-0.09		¬ -ASPHALT ROADW	AY-			
	D1	61.0/43.2	0.15 - 0.76	2/11/5/7		16		-0.43 -0.49		Dark brown dry medi silt and little gravel -FILL-(SP)	um dense poorly-graded S.			
1 -	D2	61.0/61.0	0.76 - 1.37	8/11/11/15		22				-FILL-(SP)	um dense gravelly SAND,	poorly-graded		
	D3	61 0/61 0	1 27 1 00							Olive-brown damp ver laminated	ry stiff lean CLAY, non-pla			
		61.0/61.0	1.37 - 1.98	4/6/8/8		14				-MARINE DEPOSIT-			·	
2										Olive-brown damp ver laminated, occasional -MARINE DEPOSIT-		istic, mottled and		
	D4	61.0/53.3	2.44 - 3.05	7/11/11/14		ethod: lethod: D/OD: Field Vane S ined Comp b Vane St int of 64 kg th of rods Vane St int of rods		-2.59		Olive-brown damp very stiff lean CLAY, non-plastic, mottled and laminated, occasional fine sand partings, moist -MARINE DEPOSIT-(CL)				
3								-3.05		Light brown damp me is stratified with freque -MARINE DEPOSIT-(dium dense, poorly graded ent silt seams and laminae (SP)	fine SAND, sand		
										Bottom of Explora	tion at 3.05 m below grou	3.05- Ind surface.		
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	ed By: Start/F		Erickson		Rig Type			4D B53			Hammer Wt./Fall:	63.3 kg/76.2	cm
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			+ T	Sample Information				1					La
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual I	Description and Remarks		F A
0						_		-0.18		-ASPHALT ROADW	AY-	0.10	
	Dl	61.0/40.6	0.30 - 0.91	21/22/12/11		34		-0.18		Brown and light brown gravel and trace silt -FILL-(SP)	n dry dense poorly- graded	0.18 SAND with little	
1	D2	61.0/33.0	0.91 - 1.52	8/4/6/6		10							
	D3	61.0/45.7	1.52 - 2.13	5/6/5/8		11		-1.28		Light brown damp me trace silt, stratified -MARINE DEPOSIT-	dium dense poorly-graded f	ine SAND with	
2 -			· · · · · · · · · · · · · · · · · · ·							Light brown damp me occasionally stratified	dium dense poorly-graded f	ine SAND,	
[D4	61.0/58.4	2.44 - 3.05	7/10/9/11		19		-2.68		-MARINE DEPOSIT-	SP) 		
3								-3.05		Tan dry medium dens stratified -MARINE DEPOSIT-	e poorly-graded fine SAND), occasionally	
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0	D1	61.0/35.6	0.15 - 0.76	13/21/10/7		31		-0.12	****	-ASPHALT ROADW	AY-	0.12	
_	D1 61.0/35.6 0.15 - 0.76 D2 61.0/61.0 0.76 - 1.37 D3 61.0/61.0 1.37 - 1.98 D3 61.0/61.0 1.37 - 1.98										th trace gravel,	WC=5.2 ส-1- ๖ ธ.บ	
1	D2	61.0/61.0	0.76 - 1.37	5/6/8/10		14		-0.73	~~~~	Brown dry dense grav -FILL-(SW)	velly SAND with trace silt		
	D3	61.0/61.0	1.37 - 1.98	5/6/8/10		14				occasionally stratified			
. 2								-1.98		Light brown damp me	dium dense poorly-graded		
ļ										Light brown damp me	dium dense poorly-graded	fine and medium	
										-MARINE DEPOSIT-	(SP)	1.98-	
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E													
					-0.12 -0.12 -0.27 -0.27 Black and dark brown dry dense silty SAND with trace gravel, poorly-graded, trace ash, no odor -0.12 -0.73 -0.73 8/10 14 -0.12 -0.73 Brown dry dense gravelly SAND with trace silt, well-graded -FILL-(SM) 0.27 Brown dry dense gravelly SAND with trace silt, well-graded -FILL-(SW) 0.73 Light brown damp dense poorly-graded fine SAND with trace silt, cccasionally stratified -MARINE DEPOSIT-(SP) Light brown damp medium dense poorly-graded fine and medium SAND with trace silt, stratified with occasional silt laminae -1.98 -1.98 Bottom of Exploration at 1.98 m below ground surface.								
Ē											PIN: 9188.00 Auger ID/OD: -/ 6.4 cm Sampler: Split Spoon Hammer Wt./Fall: 63.3 kg./ 76.2 cm Core Barrel: - Water Level*: 2.0 m Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PL = Plastic Limit PL = Plastic Limit PL = Plastic Limit PL = Consolidation Test Isual Description and Remarks La "Isual Description and Remarks La DADWAY- 0.12 brown dry dense silty SAND with trace gravel, race ash, no odor 0.27 se gravelly SAND with trace silt, well-graded 0.73 mp dense poorly-graded fine SAND with trace silt, atified 0.73 OSIT-(SP) 1.98 mp medium dense poorly-graded fine and medium te silt, stratified with occasional silt laminae 1.98 xploration at 1.98 m below ground surface. 1.98		
6													Spoon g / 76.2 cm Laboratu Testing Result AASHT and Unified Class
Ē				· · · · · · · · · · · · · · · · · · ·									
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7				002/10302 Drilling Method: Spin 85A Core Barrel: .0 m 0 - 100, 4 R Casing DOO:									
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Rema	arks:												· · · · · · · · · · · · · · · · · · ·
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H	RI												

		<u>Soi</u>	/Rock Explorati			Loca	ation: F	almouth	. Maine		PIN:	918	00
			METRIC UNIT	<u>rs</u>			e No. 2				PIN:	918	00.1
Drille			. Porter		Elevatio	n (m):					Auger ID/OD:	- / 6.4 cm	
· · ·	rator:		aine Test Boring	s, Inc.	Datum:			IGVD		······	Sampler:	Split Spoon	
	ged By:		Erickson		Rig Type			4D B53			Hammer Wt./Fall:	63.3 kg / 76.2	cm
	Start/F		/9/02 / 10/9/02		Drilling I			pin SSA			Core Barrel:	-	
Definit	ng Loca	ation: St	a. 0 + 220, 2 L		Casing II Definitions:		-	/-			Water Level*: Definitions:	Dry	
D = S MD = U = Th R = Ri V = In	plit Spoon Unsucces hin Wall T ock Core	sful Split Spoon ube Sample Sample Shear Test	Sample attempt		S_u = Insitu T_v = Pocke q_p = Uncon $S_u(lab)$ = Li WOH = wei WOR = wei	Field V t Torva ifined C ab Van ght of 6	ne Shear compressive Shear S S4 kg ham	Strength /e Streng	(kPa) th (Pa)		WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Samble Information Blows (150 mm) Shear Strength (RPa) or ROD / 26.)		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remarks	3	1
0								0.24		-ASPHALT ROADW	AY-	0.24	
ľ				·····				-0.24 -0.43		-CONCRETE ROAD	WAY-(Old Road Surface)		
	D1	61.0/33.0	0.46 - 1.07	8/10/11/9		21		-0.73		lean clay, poorly- grad			
1 -	D2	61.0/61.0	1.07 - 1.68	4/5/4/4		9		-1.01 -1.19			ense poorly-graded SAND	with some silt	
2	D3	61.0/0.0	1.68 - 2.29	3/2/2/4		4				stratified	dium dense poorly-graded		
				· · · · · · · · · · · · · · · · · · ·				-2.29			damp stiff lean CLAY with d and laminated		
3										Gray and gray-brown moderately plastic, mo	damp stiff lean CLAY with ttled and laminated	trace fine sand,	
										-MARINE DEPOSIT- Bottom of Explora	(CL) tion at 2.29 m below grou	2.29- and surface.	
4													
5													
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_	arks:	YŠz				4			4				-
	ER ER		roximate boundarie	es between soil types; tra	ansitions may	be gra	dual.			·····	Page 1 of 1		
'o tif		a copi po in app											

			y & Aldri			Pro	ject: R	oute 100	/26 Red	construction	Boring No.:	<u> </u>	5-(
		Soi	I/Rock Explorat				ation: File No. 2		·	e	PIN: 91 Auger ID/OD: - / 6.4 cm		
Drille	er:	T.	Schaefer		Elevatio	n (m):					Auger ID/OD:	- / 6.4 cm	
Oper	ator:	M	aine Test Boring	s, Inc.	Datum:		1	NGVD			Sampler:	Split Spoon	
-	jed By:		Erickson		Rig Type			AD B53	Truck		Hammer Wt./Fall:	63.3 kg / 76.2	cn
	Start/F		/10/02 / 10/10/0	2	Drilling I	Metho	d: S	Spin SSA	1		Core Barrel:	-	
Borir Definit	ng Loca	ation: Sta	a. 0 + 250, 4 R		Casing I		-	/-		·····	Water Level*:	2.1 m	
D = Sp MD = U U = Th R = Ro V = Ins	olit Spoor Unsucces hin Wall T ock Core situ Vane	ube Sample	Sample attempt		Definitions: S_u = Insitu T_v = Pocke q_p = Uncorn $S_u(lab)$ = L WOH = wei WOR = wei	Field V It Torva Ifined C ab Van ight of 6	ne Shear Compressiv e Shear S 64 kg ham	Strength ve Streng	(kPa) th (Pa)		Definitions: WC = water content, percer LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	ıt	
				Sample Information	on						6 - Consolidation rest		Г
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear (Stength (Ston 200, %2)		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remark	5	
0								-0.21		-ASPHALT ROADW	'AY-		Γ
	D1	61.0/40.6	0.30 - 0.91	10/6/6/6		12		0.21		Brown damp medium and gravel, trace aspha -FILL-(SP)	dense poorly-graded SAN alt		
1	D2	61.0/0.0	0.91 - 1.52	5/5/5/6		10		-1.10					
	D3	61.0/35.6	1.52 - 2.13	4/2/3/3		5		-1.10		coarse sand and fine g	dium dense silty fine SAN ravel, trace clay, poorly-gr ravel seams, occasionally s	D with trace aded, occasional	L
2			· · ·					-1.77 -2.13		Gray-brown damp me	dium stiff fine sandy SILT casional sand partings and	with some lean seams	
Ē											tion at 2.13 m below grou	2.13-	
-										Dottom of Explora	at 2.15 m below give	inu surface.	
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3													
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U = Thin WE R = Rock CC V = Insitu V: SSA = Solid (E) 90 0 0 0 0 0 0 0 0 0 0 0 0 0	E M By: T. t/Finish: 100 cocation: St oon Sample coessful Split Spoor III Tube Sample ore Sample ane Shear Test Stem Auger (E) Stem Auger 61.0/33.0	Schaefer (aine Test Boring Erickson)/10/02 / 10/10/02 a. 0 + 285, 3.5 F asample attempt asample attempt (a) (a) (b) (c) (c) (c) (c) (c) (c) (c) (c	02		Field Va Torvar Tined C ab Vano ght of 6	N d: S ane Shear ne Shear S ompressiv e Shear S 64 kg ham	Strength ve Streng trength (k mer	(kPa) (kPa) th (Pa) Pa)		Auger ID/OD: Sampler: Hammer Wt./Fall: Core Barrel: Water Level*: Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	- / 6.4 cm Split Spoon 63.3 kg / 76.2 r - 2.1 m	Lat To R
Logged E Date Star Definitions: D = Split Sp MD = Unsuc U = Thin Wa R = Rock Ct V = Insitu Vi SSA = Solid (E) 4 4 4 4 9 0 0 0 0 1 1 1 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	By: T. t/Finish: 10 coation: St con Sample ccessful Split Spoor II Tube Sample ane Shear Test Stem Auger (E) O O O O O O O O O O O O O	Erickson 0/10/02 / 10/10/02 a. 0 + 285, 3.5 F a Sample attempt a Sample attempt a Construction a Constru	Sample Information Strength (KPa) or ROD (%)	Rig Type Drilling M Casing ID Definitions: $S_{U} = Insitu F$ $T_{V} = Pocket$ $q_{p} = UnconfS_{U}(lab) = LaWOH = weigWOR = weig$	Field Va Torvar Torvar Torvar b Vano ght of 6 ght of r	A d: S ane Shear ompressiv e Shear S 44 kg ham ods	AD B53 Spin SSA / - r Strength ve Strength (kmer	(kPa) (kPa) th (Pa) Pa)		Hammer Wt./Fall: Core Barrel: Water Level*: Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plastic Limit PI = Plastic Limit PI = Plastic Limit C = Grain Size Analysis C = Consolidation Test	63.3 kg / 76.2	Lal T R A/
Date Star Boring Ld Definitions: D = Split Sp MD = Unsuc U = Thin Wz R = Rock Ct V = Insitu V: SSA = Solid (E) U = Thin Wz SSA = Solid U = Thin Wz SSA = Solid	t/Finish: 10 coation: St con Sample ccessful Split Spoor III Tube Sample ane Shear Test Stem Auger (E) So C C C C C C C C C C C C C	10/02 / 10/10/0 a. 0 + 285, 3.5 F a Sample attempt t a a a a a a a a a a a a a	Blows (150 mm) Shear Strength (KPa) (KPa) (KPa) (KPa) (KPa)	Drilling M Casing IC Definitions: Su = insitu F Ty = Pocket ap = Unconf Su(lab) = La WOH = weig WOR = weig	Field Va Torvar Torvar Torvar b Vano ght of 6 ght of r	d: S ane Shear ne Shear S compressiv e Shear S 14 kg ham ods	Spin SSA / - r Strength Strength ve Streng trength (k mer	(kPa) (kPa) th (Pa) Pa)		Core Barrel: Water Level*: Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	-	Lat To R
Definitions: D = Split Sp MD = Unsuc U = Thin Wz R = Rock Cr V = Insitu Vz SSA = Solid (E) U U U U U U U U U U U U U	Con Sample cocssful Split Splot III Tube Sample ane Shear Test Stem Auger CE CE CE CE CE CE CE CE CE CE	tt e b c c c c c c c c c c c c c c c c c c	Blows (150 mm) Shear Strength (KPa) or RQD (%)	Casing IE Definitions: $S_u = Insitu F$ $T_v = Pocket$ $a_p = UnconfSu(lab) = LaWOH = weigWOR = weig$	Field Va Torvar fined C b Vand ght of f ght of r	ane Shear ne Shear ompressiv e Shear S i4 kg ham ods	/ - r Strength ve Streng trength (k mer	ı (kPa) (kPa) th (Pa) Pa)	Visual I	Water Level*: Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plastictly Index G = Grain Size Analysis C = Consolidation Test		T R A4
D = Split Sp MD = Unsuc U = Thin Wa R = Rock Cd V = Insitu Vi SSA = Solid (E) 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	cessful Split Spoor ill Tube Sample ore Sample ane Shear Test Stem Auger (E) O O O O O O O O O O O O O	(Jacobian Contraction of the con	Blows (150 mm) Shear Strength (KPa) or RQD (%)	$S_u = Insitu F$ $T_v = Pocket$ $q_p = Unconf S_u(lab) = LaWOH = weigWOR = weigm$	Torvar fined C ab Vand ght of 6 ght of r	ne Shear S compressiv e Shear S 64 kg ham ods	Strength ve Streng trength (k mer	(kPa) th (Pa) Pa)	Visual I	Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		Lat Te AA
0 	61.0/33.0	0.30 - 0.91	Blows (150 mm) Shear Strength (KPa) or RQD (%)		N-value	sing ws	tion	c Log	Visual [Description and Remarks		T R A4
- 1 - D2 - 1 - D2 - D3		0.30 - 0.91			_	Bo	Elevation (m)	Graphic Log				U
- 1 - D2			8/12/7/4						-ASPHALT ROADW	AY-		
	61.0/35.6	0.91 - 1.52			19		-0.21 -0.55		Brown and dark brow SAND with some silt a -FILL-(SP)	n to damp medium dense po ind gravel		
			5/6/7/7		13		-1.10		Gray-brown damp me poorly-graded, frequen -FILL-(SM)	dium dense sandy SILT wit t silt and clay laminations		
	61.0/50.8	1.52 - 2.13	4/5/8/9		13		-1.65		poorly-graded, frequen -FILL-(SM)	dium dense sandy SILT wit t clay layers are laminated a	h some clay, and mottled	
- 2 -		· · · · · · · · · · · · · · · · · · ·					-2.13		Olive-gray damp stiff lamianted -MARINE DEPOSIT-	lean CLAY, non-plastic, m (CL)	ottled and 2.13	
									Bottom of Explora	tion at 2.13 m below groun		
• 3 •					-+							
- 4 -												
• 5 •												
. 6 -												
	-											
			· · · · · · · · · · · · · · · · · · ·									
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	_											
Remarks:	EY&	. <u></u> L		L								

		Hale	y & Aldı	rich, Inc.		Pro	oject: R	oute 100)/26 Re	construction	Boring No.:	B-7	7-02
			II/Rock Explor	ation Log		Loc	ation: I	almout	h, Main		PIN:	918	8.00
Dril	er:	т	. Schaefer		Elevatio		ile No. 2	8404-00	01		Auger ID/OD:	- / 6.4 cm	
L	rator:		laine Test Borir	lgs, Inc.	Datum:	<u>, (iii)</u>		IGVD		· · · · · · · · · · · · · · · · · · ·	Sampler:	Split Spoon	
<u> </u>	ged By:		. Erickson	- /	Rig Type	e:		AD B53	Truck		Hammer Wt./Fall:	63.3 kg / 76.2 d	cm
Dat	Start/F	inish: 10	0/10/02 / 10/10/	02	Drilling			Spin SSA			Core Barrel:	-	
Bor	ng Loca	ation: Si	ta. 0 + 316, 3.8	R	Casing I			/-			Water Level*:		
	itions: plit Spoon	Sample			Definitions: S ₁₁ = Insitu		/ang Shoa	r Strongt	h (kBa)		Definitions:		-
MD = U = 1 R = F V = 1	Unsucces hin Wall T tock Core	ssful Split Spoor ube Sample Sample Shear Test	n Sample attempt		T _V = Pocke q _p = Uncor S _u (lab) = L WOH = we WOR = we	et Torva nfined (.ab Var eight of	ane Shear Compressi ne Shear S 64 kg ham	Strength ve Streng	(kPa) th (Pa)		WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		
		T	1	Sample Informatio			1	r	I				Laboratory
 Depth (m) 	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (KPn) //2/)		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remarks		Testing Results/ AASHTO and Unified Class.
0								-0.24		-ASPHALT ROADW	AY-	0.24	
	D1	61.0/35.6	0.30 - 0.91	6/4/3/4		7				Black and brown dry t gravel, little sand and a -FILL-(Cohesive) (CL)			
• 1 •	D2	61.0/33.0	0.91 - 1.52	4/4/4/3		8		-0.91		Olive-gray damp medi fine sand, non-plastic, -FILL-(Cohesive) (CL)		0.91- trace gravel and	
	D3	61.0/43.2	1.52 - 2.13	1/1/2/2		3		1		Note: clay fill is the ma	in constituent in sample D	from 0.52-0.91	
- 2 -								-1.80		m Gray moist soft silty C laminated with occasio -FILL-(CL)	LAY with some fine sand nal sand partings	1.80- , slightly plastic,	
- 3 -													
	D4	61.0/40.6	3.05 - 3.66	1/3/4/4		7				Gray wet medium stiff non-plastic, occasiona -FILL-(CL)	CLAY with some silt and fine sand partings	trace fine sand,	
- 4 -													
- 5 -	D5	61.0/55.9	4.57 - 5.18	3/5/4/7		9		6.16		Gray moist stiff CLAY plastic, frequent fine sa -FILL-(CL)	with some fine sand and t nd partings	race silt, non-	
								-5.15 -5.18		Gray-brown moist loos stratified -MARINE DEPOSIT-(e poorly-graded fine SANE SP)		
- 6 -										Bottom of Explora	tion at 5.18 m below grou	nd surface.	
- 7 -													
·													
HLA	arks:			ries between soil types; tra		-			I		Page 1 of 1	I	
* Wat than	er level rea those pre	adings have bee sent at the time	n made at times a measurements w	and under conditions state ere made.	d. Groundwa	ater flu	ctuations n	ау осси	r due to o	conditions other	Boring No.:	B-7-02	

			y & Aldr			Pro	oject: Ro	oute 100)/26 Re	construction	Boring No.:	B-8	8-02
		Soi	I/Rock Explora METRIC UN	-			ation: F		·	e	PIN:	918	8.00
Drill	er:	 T.	Schaefer		Elevatio		<u>le No.</u> 2 :	28404-0	01		Auger ID/OD:	- / 6.4 cm	
Оре	rator:	М	aine Test Borin	gs, Inc.	Datum:		١	VGVD			Sampler:	Split Spoon	
Log	ged By:	T.	Erickson		Rig Type	e:	Ν	MD B53	Truck		Hammer Wt./Fall:	63.3 kg / 76.2 d	cm
Date	Start/F	inish: 10	0/10/02 / 10/10/0	02	Drilling	Metho	od: S	Spin SS/	4		Core Barrel:	-	
_	ng Loca	ation: St	a. 0 + 340, 3 L		Casing I		- :	/-			Water Level*:	Dry	
MD = U = TI R = R V = In	plit Spoon Unsucces hin Wall T ock Core situ Vane	ssful Split Spoor ube Sample	n Sample attempt		Definitions: S_{U} = Insitu T_{V} = Pocke q_{p} = Uncon $S_{U}(lab)$ = L WOH = we WOR = we	Field V et Torva nfined (.ab Var eight of	ane Shear Compressiv ne Shear S 64 kg ham	Strength ve Streng Strength ((kPa) oth (Pa)		Definitions: WC = water content, perce LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	nt	
		1	1	Sample Information			r	1	1				Laborator
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (KPD) //2/)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remark	S	Testing Results/ AASHTC and Unified Class.
0								-		-ASPHALT ROADV	VAY-		
								-0.30		-CONCRETE ROAD	WAY-(Old Road)	0.30-	
	Dl	33.0/15.2	0.61 - 0.94	3/3/50 (2.5 cm	<u>)</u>	6		-0.52		~	p loose gravelly SAND wi	0.52- th some lean clay	
								1		and silt, poorly-grade		ican only	
1								1		-FILL-(SP)			
	D2	61.0/33.0	1.37 - 1.98	2/3/2/4		F		-1.31		Note: auger used thro	ugh boulder from 0. 94-1.3	1 m 	
	D2	01.0/33.0	1.57 - 1.98	2/3/2/4		5				Gray-brown damp m	edium stiff lean CLAY with ic, occasionally mottled with the state of	th trace sand and	
										partings, appears dist	urbed	ui inic sanu	
2										-FILL-(CL) (Reworke	ed Natural)		
]					
3								-2.90		Brown damp dense s	ilty SAND with some grav	- $$ $$ $$ 2.90	
	D3	61.0/7.6	3.05 - 3.66	29/27/17/16		44				clay, poorly-graded, n		er and mule lean	
								1		-FILL-(SM)			
-								-3.66		Note: drill action ind	icates occasional cobbles f	rom 3.66-4.57 m 3.66-	
								1				5.00	
4								4					
ļ								1		Light brown moist me	edium dense well-graded S	AND with little	
	D4	61.0/53.3	4.57 - 5.18	17/18/10/11		28		{		gravel, trace silt	-	AND with fittle	
								1		-GLACIO FLUVIAL	DEPOSIT-		
5								1					
-	D5	61.0/61.0	5.18 - 5.79	14/13/11/14		24		1	0.00	Light brown moist m	edium dense well-graded S	SAND with little	
-t								1	0205 60000	gravel, trace silt -GLACIO FLUVIAL	DEPOSIT-		
-								-5.79				5.79	
6								1		Bottom of Explor	ation at 5.79 m below gro	und surface.	
╞								{					
_[······································				1					
┢								1					
7								1					
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								1					
ŀ								ł					
	arks: y difficu LE DR	Y&		n the fill and the natur		v he ar	aduai				Page 1 of 4		
											Page 1 of 1		
Moto	er level rea	adings have bee	en made at times a	nd under conditions state ere made.	ed. Groundw	ater flu	ctuations r	nay occu	r due to	conditions other	Boring No.	· B-8-02	

		Hale	y & Aldı	rich, Inc.		Pro	oject: R	oute 100)/26 Re	construction	Boring No.:	B-9	9-02
			I/Rock Explor	ation Log			ation: I			e	PIN:	918	8.00
Drill	er:	T.	Schaefer		Elevatio		le No. 2	8404-0	01		Auger ID/OD:	- / 6.4 cm	
	rator:		aine Test Borin	ngs, Inc.	Datum:	,		IGVD			Sampler:	Split Spoon	
Log	ged By:		Erickson		Rig Type	ə:		AD B53	Truck		Hammer Wt./Fall:	63.3 kg / 76.2	cm
Date	Start/F	inish: 10	/10/02 / 10/10/	/02	Drilling I			pin SSA			Core Barrel:	-	
Bori	ng Loca	ation: St	a. 0 + 370, 3.2	R	Casing I			/-			Water Level*:	0.5 m	
	itions: plit Spoon	Samola			Definitions: S _{II} = Insitu		(O)				Definitions:		
MD = U = T R = R V = Ir	Unsucces hin Wall T lock Core	sful Split Spoon ube Sample Sample Shear Test	Sample attempt		$T_v = Pocke$ $q_p = Uncor$ $S_u(lab) = L$ WOH = wei WOR = wei	et Torva ofined (ab Var ight of	ane Shear Compressi ne Shear S 64 kg ham	Strength /e Streng trength ((kPa) ath (Pa)		WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		
		1		Sample Informatio			1						Laboratory
o Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength Strength or ROD /%)		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remarks		Testing Results/ AASHTO and Unified Class.
Ů								-0.27		-ASPHALT ROADW	AY-	0.07	
	D1	61.0/38.1	0.30 - 0.91	9/11/11/11		22		-0.27		Light brown wet medi gravel -FILL-(SW)	um dense well-graded SAN	0.27- ND with little	
	D ²	(10//07	0.01 1.77			6		1					
- 1 -	D2	61.0/40.6	0.91 - 1.52	11/4/4/5		8							
								-1.34	}			1.34	
	D3	61.0/38.1	1.52 - 2.13	4/6/8/10		14				-MARINE DEPOSIT-(
- 2 -										Gray wet stiff lean CL. laminated	AY, moderately plastic, mo	ottled and	
								-2.13		-MARINE DEPOSIT-(CL)	2.12	
										Bottom of Explora	tion at 2.13 m below grou	nd surface.	
- 3 -													
- 4 -													
- 5 -													
, ,													
										. · ·			
6													
- 7 -													
Barr	arks:												
Wat	ter level t	Y&	hours without	augers ries between soil types; tra	nsitions may	begra	idual.				Page 1 of 1		
* Wate	er level rea	dings have bee	n made at times a	and under conditions state		0		ау осси	r due to a	conditions other		D.C.AG	
than	those pre	sent at the time	measurements w	vere made.				., 0000			Boring No.:	B-9-02	espect -

				rich, Inc.		Pro	oject: Ro	oute 100	0/26 Red	construction	Boring No.:	B-1	0-02
		<u>Soi</u>	I/Rock Explore METRIC UN	-			ation: File No. 2			e	PIN:	918	8.00
Drill	er:	Т.	Schaefer		Elevatio			0404-0			Auger ID/OD:	- / 6.4 cm	
	rator:		aine Test Borin	igs. Inc.	Datum:	,		IGVD			Sampler:	Split Spoon	
	ged By:		Erickson		Rig Type	.			Truck		Hammer Wt./Fall:	63.3 kg / 76.2	
	Start/F		/10/02 / 10/10/	02									
					Drilling I			pin SS.	A		Core Barrel:	-	
Defin	ng Loca	uon: su	a. 0 + 400, 6 L		Casing I Definitions:			/ -		· · · · · · · · · · · · · · · · · · ·	Water Level*: Definitions:	1.8 m	
D = S MD = U = T R = R V = Ir	plit Spoon Unsucces hin Wall T ock Core	sful Split Spoon ube Sample Sample Shear Test	Sample attempt		$S_u = Insitu$ $T_v = Pocke$ $q_p = Uncor$ $S_u(lab) = L$ WOH = we WOR = we	Field V t Torva fined (.ab Var ight of	ane Shear : Compressiv ne Shear S 64 kg ham	Strength	(kPa) gth (Pa)		WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	-
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Sample Information		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remarks	5	Laboratory Testing Results/ AASHTO and Unified
		[5	ź	ы В С В						Class.
0	D1	61.0/27.9	0.00 - 0.61	3/6/6/4		12		-0.06		-TOPSOIL-		0.06	
	D2	61.0/38.1	0.61 - 1.22	3/4/8/8		12				Brown damp medium and little gravel -FILL-(SP)	dense poorly-graded SAN	D with some silt	
				0141010				-0.88				0.88-	
1 -	D3	61.0/35.6	1.22 - 1.83	9/9/9/10		18		0.00		Gray-brown damp sti sand, mottled and lam -MARINE DEPOSIT-		t and trace fine	
								1.02		Gray-brown damp ver slightly plastic, mottle	y stiff lean CLAY with trac d and laminated	e silt, very	
2 -								-1.83		-MARINE DEPOSIT- Bottom of Explora	(CL) ation at 1.83 m below grou	1.83- Ind surface.	
3 -													
4 -												•	
5 -										. •	 		
6 -													
7 -													
Į/	DD	Y&											
re ii		epri sent app	proximate bounda	ries between soil types; tra	ansitions may	/ be ar	adual.				Page 1 of 1		
Wat	er level rea	adings have bee		and under conditions state				ау осси	ir due to	conditions other	Boring No.:	B-10-02	

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		Hale	y & Aldı	rich, Inc.		Pro	ject: Re	oute 100)/26 Re	construction	Boring No.:	B-1	1-02
			I/Rock Explor	ation Log		Loca	ation: F	almout	h, Main		PIN:	<u>91</u> 8	8.00
Drill	er:	T.	Schaefer		Elevatio		le No. 2	8404-0	01		Auger ID/OD:	- / 6.4 cm	
<u> </u>	rator:		aine Test Borir	ngs, Inc.	Datum:			VGVD			Sampler:	Split Spoon	
<u> </u>	ged By:		Erickson		Rig Type	e:		4D B53	Truck		Hammer Wt./Fall:	63.3 kg / 76.2	
_	Start/F)/10/02 / 10/10/	02	Drilling			Spin SS			Core Barrel:	-	
Bori	ing Loca	ation: St	a. 0 + 450, 3 L		Casing I			/-			Water Level*:	Dry	
D = S MD =			n Sample attempt		Definitions: S _U = Insitu T _V = Pocke q _p = Uncor	Field V et Torva	ne Shear	Strength	(kPa)		Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit		-
R=F V=Ir	lock Core	Sample Shear Test		Ormala h fa 14	S _{u(lab)} = L WOH = we WOR = we	ab Van. ight of 6	ie Shear S 64 kg ham	trength (mer	kPa)		PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Sample Information Blows (150 mm) Shear (kPa) (kPa) Cr ROD (%)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual I	Description and Remarks		Laboratory Testing Results/ AASHTO and Unified Class.
0								-0.21		-ASPHALT ROADW	AY-	0.21	
								-0.21		Note: auger used thro	ugh a cobble from 0.30-0.43	0.21- 3 m	
	Dl		0.61 - 1.22	2/3/3/4		6		-0.70		Brown dry loose poorl \-FILL-(SP)	y-graded gravelly SAND w		
- 1 -	D2	61.0/33.0	1.22 - 1.83	5/7/7/8		14				Olive-brown damp me mottled and laminated -MARINE DEPOSIT-	edium stiff lean CLAY with , non-plastic (CL)	trace silt,	
								-1.83		Olive-gray damp stiff laminated	ean CLAY, slightly plastic	, mottled and	
- 2 -			· ·					-1.03		-MARINE DEPOSIT-	(CL)		
										Bottom of Explora	tion at 1.83 m below grou	nd surface.	
- 3 -													
- 4 -													
				· · · · · · · · · · · · · · · · · · ·									
- 5 -				······································									
- 6 -													
- 7 -				· ····································									
						-+							
		adings have bee	n made at times a	ries between soil types; tra and under conditions state				пау осси	r due to	conditions other	Page 1 of 1		
* Wate	er level rea	adings have bee		and under conditions state				nay occu	r due to	conditions other	Page 1 of 1 Boring No.:	B-11-0	2

		-	y & Aldri				-			onstruction	Boring No.:	<u> </u>	
			METRIC UNI	TS			ation: F le No. 2				PIN:	918	88.0
Drille	er:	T.	Schaefer		Elevation	n (m):					Auger ID/OD:	- / 6.4 cm	
Opera			aine Test Boring	s, Inc.	Datum:		Ν	IGVD			Sampler:	Split Spoon	
	ed By:		Erickson		Rig Type			4D B53			Hammer Wt./Fall:	63.3 kg / 76.2	cm
	Start/F		0/10/02 / 10/10/0		Drilling N			pin SSA	۱ 		Core Barrel:	-	
Borin Definitio	ng Loca	tion: St	a. 0 + 490, 1.5 R		Casing II Definitions:		-	/-			Water Level*: Definitions:	1.8 m	
D = Spl MD = U U = Thi R = Ro V = Insi	olit Spoon Jnsucces in Wall Tu ock Core S	sful Split Spoon ube Sample Sample Shear Test	Sample attempt		S_u = Insitu T_v = Pocke q_p = Uncon $S_u(lab)$ = Li WOH = wei WOR = wei	Field V t Torva fined C ab Van ght of 6	ne Shear Compressiv e Shear S 54 kg ham	Strength	(kPa) th (Pa)		WC = water content, percei LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	nt	-
-			1	Sample Information									La
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remark	s	ר F A נ
°F								-0.21		-ASPHALT ROADV	VAY-	0.21	
E	D1	61.0/33.0	0.30 - 0.91	15/30/12/11		42		-0.30	****	CONCRETE ROAL	OWAY-(Old Road)	0.30	
-											dry dense gravelly SAND	with little silt,	
F		(1.0/0.0.0						-0.79		poorly-graded -FILL-(SP)			
	D2	61.0/27.9	0.91 - 1.52	2/6/6/8		12				and laminated	CLAY with trace silt, non	-plastic, mottled	l v
—	D3	30.5/15.2	1.52 - 1.83	2/5		7				-MARINE DEPOSIT	-(CL)		
. 2		50.5715.2	1.52 - 1.65	213				-1.83		Olive damp stiff lean and laminated -MARINE DEPOSIT	CLAY with trace silt, non	plastic, mottled	
-													l v
E										plastic, mottled and la -MARINE DEPOSIT		h trace silt, non-	
F											ation at 1.83 m below gro	und surface.	'
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F													
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7													
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TT	DDI	Y &===	proximate boundari	es between soil types; tra	ansitions may	be gra	dual.				Page 1 of 1		

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Operator: Maine Test Borings, Inc. Datum: NGVD Sampler: Split				4-001	No. 28		1			METRIC UN			
Logged By: T. Encidem Rig Type: MD B33 Truck. Hammer WLFail: 6331 Date Start/Finish: 101002/101002 Drilling Method: Spin SSA Gore Barol: 2.0m Definition: Sin 0 + 520.4 1. Casing LOCOD: -/- Water Level: 2.0m Definition: Sin 0 + 520.4 1. Definition: Definition: Sy = Nail Field Vise Shard Strength (Sn) Water Level: 2.0m Definition: Sy = Nail Field Vise Shard Strength (Pr) Sy = Nail Field Vise Shard Strength (Pr) Water Level: 2.0m Water Level: 2.0m U = Nin Will Tab Sample Sample Information Sign Sign Vise Shard Treit Sign Sign Vise Shard Treit -/							1						
Date Start/Finish: 10/10/02 / 10/10/02 Drilling Method: Spin SSA Core Barret: - Boring Location: Su 0+ 520, 4.1 Casing ID/OD: -/- Water Lovel1: 2.0 m Definition: Su 0+ 520, 4.1 Casing ID/OD: -/- Water Lovel1: 2.0 m Definition: Subscription: Definition: Subscription: Definition: Subscription: Definition: Subscription: Definition: Subscription: Definition: Subscription: Subscription: Definition: Subscription: Definition: Subscription: Subs							-		ngs, Inc.				-
Barring Location: Sa. 0 + 520, 4 L Casing ID/OD: // Water Level *: 2.0 m Outgoins D * Bit Spons Sample attempt D * Sample at	Ŭ								/02				
Definition: Definition: Definition: 0 = Sett Spoot Same MD = Uncorrectable Setting MP (Pa) TV = Read Correct Strength (Pa) TV = Read Corect Strength (Pa) TV = Re				SSA									_
0 - SpM Stoop Sample D ₁ - Book Stappe Stappe Stoop Stappe					- /				-	a. 0 + 520, 4 L	ation: Sta	-	
Image: Second	WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis	WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis		igth (kPa)	Shear S npressive Shear Str kg hamm	itu Field Va ket Torvar confined C Lab Vane weight of 6	S _u = Insi T _v = Poo q _p = Uno S _{u(lab)} = WOH = v		1	sample attempt	ssful Split Spoon ube Sample Sample Shear Test	Unsucces hin Wall T ock Core isitu Vane	MD = U = T R = R V = In
0	scription and Remarks	Visual Description and Remarks	Visua	c Log		υ				e Depth	ec (cm)	e No.	(m)
0				m) Graphi	Slows	N-valu	222	Shear Streng (kPa)	Blows	Sampl (m)	Pen/R	Samp	Depth
	¥-	ROADWAY-	-ASPHALT ROAD	~ ~		-							
1 - <td></td> <td></td> <td></td> <td></td> <td></td> <td> </td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>													
D1 61.0/40.6 0.76 - 1.37 2/3/2/4 5 1 - - - D2 61.0/40.2 1.37 - 1.98 7/9/9/9 2 - - - 2 - - - 3 - - - 3 - - - 4 - - - 5 - - - 6 - - - 6 - - -		· · · · · · · · · · · · · · · · · · ·	L	.46									
1	rom 0.46-0.76 m, auger used to get	t cobbles from 0.46-0.76 m, auger	Note: frequent cobb	.76		5		2/3/2/4		0.76 - 1 37	61.0/40.6	D1	
D2 61.0/43.2 1.37 - 1.98 7/9/9/9 18 2		F											1 -
D2 01.043.2 1.37-1.36 119/919 18 2													
2					{	18		7/9/9/9		1.37 - 1.98	61.0/43.2	D2	
- -													
				.70									-
	n at 1.98 m below ground surface.	Exploration at 1.98 m below grou	Bottom of Explo										
								1.4 M					
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Boring Definition D = Split MD = Un U = Thin V = Insit SSA = S (L) 0	ed By: Start/Fil g Locat it Spoon S nsuccess n Wall Tul ck Core Si	Ma T. nish: 10, tion: Sta Sample ful Split Spoon be Sample ample shear Test	Schaefer aine Test Boring Erickson /10/02 / 10/10/0 a. 0 + 562, 2.7 L Sample attempt)2		Field V t Torva fined C ab Van ght of 6	Pod: S 	NGVD MD B53 Spin SSA / - r Strength Strength ve Strengt	Truck		Auger ID/OD: Sampler: Hammer Wt./Fall: Core Barrel: Water Level*:	- / 6.4 cm Split Spoon 63.3 kg / 76.2
Logge Date S Boring Definition D = Split MD = Un U = Thin R = Roct V = Insitu SSA = S () () () () () () () () () () () () ()	ed By: Start/Fin g Locat ons: it Spoon S: it Spoon S: it Spoon S: k Core S: tu Vane S: Solid Sten o Z a d E E g o U Z	T. nish: 10. tion: Sta Sample ful Split Spoon be Sample ample shear Test n Auger	Erickson /10/02 / 10/10/0 a. 0 + 562, 2.7 L Sample attempt	Sample Informatic	$\begin{array}{c} \textbf{Rig Type} \\ \textbf{Drilling N} \\ \textbf{Casing II} \\ \textbf{Definitions:} \\ \textbf{S}_{U} = \textbf{Institu} \\ \textbf{T}_{V} = \textbf{Pocket} \\ \textbf{q}_{p} = \textbf{Uncon} \\ \textbf{S}_{U(lab)} = \textbf{Lz} \\ \textbf{WOH} = weige \\ \textbf{WOR} = weige \\ \textbf{ON} \end{array}$	Field V Torva fined C ab Van ght of 6	And: S 	AD B53 Spin SSA / - r Strength Strength ve Streng			Hammer Wt./Fall: Core Barrel:	63.3 kg / 76.2
Date S Boring Definition D = Split MD = Un U = Thin R = Rock V = Insiti SSA = S (E) tdag 0 1	Start/Fil g Locat ons: it Spoon 5 nsuccess n Wall Tul X Core S tu Vane S Solid Sten Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	nish: 10, tion: Sta Sample ful Split Spoon be Sample ample shear Test n Auger	/10/02 / 10/10/0 a. 0 + 562, 2.7 L Sample attempt	Sample Informatic	$\begin{array}{c} \textbf{Drilling N}\\ \textbf{Casing III}\\ Definitions:\\ S_{u} = Insitu I\\ T_{v} = Pocket\\ q_{p} = Uncon\\ Su(lab) = Lz\\ WOH = weither $	Field V Torva fined C ab Van ght of 6	ane Shea ne Shear Compressi e Shear S 64 kg ham	Spin SSA / - r Strength Strength ve Streng			Core Barrel:	-
Boring Definition D = Split MD = Un U = Thin V = Insit SSA = S (L) 0	g Locat ns: it Spoon S nsuccess nsuccess n Wall Tul ck Core S tu Vane S Solid Sten O N a o N a C N a C N a C N a C A A A A A A A A A A A A A	tion: Sta Sample ful Split Spoon be Sample ample shear Test n Auger	a. 0 + 562, 2.7 L Sample attempt	Sample Informatic	Casing II Definitions: S_{u} = Insitu I T_{v} = Pocket q_{p} = Uncon $S_{u}(lab)$ = La WOH = weig WOR = weig	Field V t Torva fined C ab Van ght of 6	ane Shea ne Shear compressi e Shear S 64 kg ham	/ - r Strength Strength ve Streng				-
Definition D = Split MD = Un U = Thin R = Rock V = Insit SSA = S (L) (L) (L) (L) (L) (L) (L) (L) (L) (L)	ons: it Spoon S nsuccess nsuccess n Wall Tul k Core S tu Vane S Solid Sten O Z a C E B S S S S S S S S S S S S S S S S S S	Sample ful Split Spoon be Sample ample Shear Test n Auger	Sample attempt	Sample Informatic	Definitions: S_{U} = Insitu I T_{V} = Pocket a_{p} = Uncon $S_{U}(lab)$ = La WOH = weig WOR = weig	Field V t Torva fined C ab Van ght of 6	ane Shea ne Shear Compressi e Shear S 64 kg ham	r Strength Strength ve Streng	(kPa)		Water Level*:	
D = Split MD = Un U = Thin V = Insitu SSA = S (m) thdeg 0 0	it Spoon S nsuccess nsuccess n Wall Tuluck Core S: tu Vane S Solid Sten O Solid Sten O Solid Sten O Solid Sten	ful Split Spoon be Sample ample Shear Test n Auger			S _u = Insitu T _V = Pocket q _p = Uncon S _u (lab) = La WOH = weig WOR = weig	t Torva fined C ab Van ght of 6	ne Shear Compressi e Shear S 64 kg ham	Strength ve Streng	(kPa)			1.8 m
0		Pen/Rec (cm)	ample Depth ກ)					trength (k mer	th (Pa)		Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	
0				Slows (1 Shear Strength KPa)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual [Description and Remarks	
	D1				,	~	0 8		0	-ASPHALT ROADW	AY-	
	D1							-0.30				0.30
	D1							-0.46 -0.61	****	-CONCRETE ROAD		0 46
		61.0/43.2	0.61 - 1.22	3/3/5/5		8		-0.01		Note: probable -FILL-	with cobbles from 0.46-0.6	51 m 0.61
	D2	61.0/35.6	1.22 - 1.83	8/8/9/10		17					np medium stiff lean CLAY ed with occasional fine sand CL)	with some silt,
2			· .					-1.83			np very stiff lean CLAY witted with occasional fine san	
-										L	tion at 1.83 m below group	1.83-
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		-	y & Aldr	ation Log			ation: F			construction e	Boring No.:	<u>B-1</u>	
			METRIC UN	ITS		Fi	le No. 2				PIN:	918	38.0
Drille			Schaefer		Elevatio	n (m):					Auger ID/OD:	- / 6.4 cm	
	rator:		aine Test Borin	gs, Inc.	Datum:			IGVD			Sampler:	Split Spoon	
	ged By:		Erickson		Rig Type			AD B53			Hammer Wt./Fall:	63.3 kg / 76.2	cm
	Start/F		0/10/02 / 10/10/0	02	Drilling I			pin SS/	4		Core Barrel:	-	
Bori: Definit	ng Loca	tion: St	a. 0 + 640, 3 L		Casing I Definitions:			/-			Water Level*: Definitions:	Dry	
D = Sp MD = 1 U = Th R = Ro V = Ins	plit Spoon Unsucces hin Wall Tu ock Core S	sful Split Spoor ube Sample Sample Shear Test	n Sample attempt		$S_u = Insitu$ $T_v = Pocke$ $q_p = Uncon$ $S_u(lab) = Li$ WOH = wei WOR = wei	Field V t Torva fined C ab Van ight of (ine Shear Compressiv le Shear S 64 kg ham	Strength	(kPa) (th (Pa)		WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	
				Sample Information					-				L
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (Stan or ROD 1%)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remarks	i	4
0										-ASPHALT ROAD	WAY-		
								-0.30		-CONCRETE ROAL	OWAY-(Old Road)	0.30	
ŀ								-0.61		Note: auger used thr	ough several cobbles from 0		
1 4	D1	61.0/40.6	0.91 - 1.52	4/3/5/7		8		-0.94		Olive-gray damp me plastic, mottled and 1 -MARINE DEPOSIT		0.94 race silt, non-	
2 -	D2	61.0/38.1	1.52 - 2.13	12/11/10/11		21				Olive-gray damp ver plastic, mottled and l -MARINE DEPOSIT		e silt, slightly	
								-2.13			ration at 2.13 m below grou	2.13- and surface.	
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Rema	arks:		1		ł			L	L				
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AT	DD	Î OTT	proximate hounder	ies between soil types; tra	neitione me	be cr	dual				Page 4 of 4		
		A REPUGBER 300	noninate poundar	ica Derween Soli types; tra	manuons mav	ue dra	uual.				Page 1 of 1		

			y & Aldrid	on Log			ation: F			construction e	Boring No.: PIN:	<u>B-1</u>	
			METRIC UNIT	<u>S</u>			le No. 2				PIN:	918	8.0
Drill			Schaefer		Elevatio	n (m):	:				Auger ID/OD:	- / 6.4 cm	
	rator:		aine Test Borings	, Inc.	Datum:			IGVD			Sampler:	Split Spoon	
	ged By:		Erickson		Rig Type			AD B53			Hammer Wt./Fall:	63.3 kg/76.2	cm
	e Start/F		0/10/02 / 10/10/02		Drilling I			pin SSA	<u> </u>		Core Barrel:	-	
Defini	ng Loca	auon: St	a. 0 + 670, 3 R		Casing I Definitions:		-	/-			Water Level*: Definitions:	Dry	
MD = U = Ti R = R V = In	hin Wall T lock Core	sful Split Spoor ube Sample Sample Shear Test	n Sample attempt		$S_u = Insitu$ $T_v = Pocke$ $q_p = Uncon$ $S_u(lab) = Label{eq:stable}$ WOH = wei <u>WOR = wei</u>	t Torva fined C ab Van ight of 6	ine Shear S Compressiv le Shear S 64 kg hami	Strength /e Streng	(kPa) th (Pa)		WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	-
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Sample Information Blows (150 mm) Shear Strength (kPa) or ROD 1%)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual [Description and Remarks		La T R A
0										-ASPHALT ROADW	AY-		
								-0.30	****	Note: frequent cobble	s from 0.30-0.61 m, probab	0.30-	
	D1	61.0/33.0	0.61 - 1.22	5/3/2/4		5				-FILL-	-		
		01.0/33.0	0.01 - 1.22	5151214		ر				Brown dry loose grave -FILL-(SP)	lly SAND with little silt, p	oorly-graded	
1 -								-0.94		· · ·	um stiff lean CLAY with t	0.94- race fine sand	
	D2	61.0/61.0	1.22 - 1.83	6/5/5/5		10				and silt, non-plastic, m -MARINE DEPOSIT-			
						_				Olive-gray damp stiff I	ean CLAY with trace silt, s	slightly plastic,	
								-1.83		mottled and laminated -MARINE DEPOSIT-(CL)		
2										L	tion at 1.83 m below grou	nd surface	
											and at 100 in below grou	nu sur nece.	
3													
4 -													
ļ													
5 -													
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t										-			
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6 -													
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7													
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Rema	arks:		1							······			
HA	LE	Y&=											
νŵ	DR	s represent app	roximate boundaries	between soil types; tra	nsitions may	be grad	dual.				Page 1 of 1		
					,					conditions other			

		-	y & Aldri			Pro	ject: Ro	oute 100	/26 Rec	construction	Boring No.:	B-1	7-02
		<u>Soi</u>	I/Rock Explorat				ation: F le No. 2			e	PIN:	918	38.00
Drille		T.	Schaefer		Elevatio	n (m):	:				Auger ID/OD:	- / 6.4 cm	
Oper			aine Test Boring	s, Inc.	Datum:			IGVD			Sampler:	Split Spoon	
	ed By:		Erickson		Rig Type			1D B53			Hammer Wt./Fall:	63.3 kg / 76.2	cm
	Start/F)/10/02 / 10/10/02		Drilling I			pin SSA			Core Barrel:	-	
Definiti	ng Loca		a. 0 + 710, 2.5 L		Casing I Definitions:		: -	/ -			Water Level*: Definitions:	3.4 m	
MD = U U = Th R = Ro V = Ins	nin Wall Ti ock Core :	sful Split Spoon ube Sample Sample Shear Test	a Sample attempt		$S_u = Insitu$ $T_v = Pocke$ $q_p = Uncon$ $S_u(lab) = Li$ WOH = wei WOR = wei	t Torva fined C ab Van ight of (ine Shear S Compressiv le Shear Si 64 kg hami	Strength ve Streng	(kPa) th (Pa)		WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Samble Information Shear Strength (RPa) or ROD / %)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual [Description and Remarks		La T F A
0					,	2		<u> </u>	0	-ASPHALT ROADW	AY-		\vdash
F								-0.30				0.30	
								-0.46	*	-CONCRETE ROAD	WAY-(Old Road)	0.46	
-	D1	61.0/0.0	0.61 - 1.22	4/3/4/2		7		-0.64		Note: cutting head use	ed through cobble from 0.4		1
· 1 -										NO RECOVERY, dro	ove a piece of gravel		li
	D2	61.0/22.9	1.22 - 1.83	5/6/6/7		12					mp stiff lean CLAY with tr ially dessicated, mottled ar (CL)		
2 -													
3 -	D3	61.0/61.0	3.05 - 3.66	1/2/2/3		4				sand, slightly to moder	to medium stiff lean CLAY rately plastic, laminated wi		
4 -										partings and seams -MARINE DEPOSIT-((CL)		
Ē	D4	61.0/33.0	4.57 - 5.18	1/1/7/10		8							
5 -								-4.91 -5.18		-MARINE DEPOSIT-	se poorly-graded fine SAN	D with trace clay	
6 -										Bottom of Explora	tion at 5.18 m below grou	nd surface.	
—-F													
Ŀ													
7													
†													
⊦													
_	er level (hours with out a	ugers						L			L
		Y&											
		represent app	rovimate boundari	es between soil types; tra	anaitiona may	ho am	advard.				Dema 4 of 4		_
5 e ilî;		s opt se it app	Noximale boundant	es between soli types; th	answons may	be gra	aduai.				Page 1 of 1		

			METRIC UNI	<u>ITS</u>			ation: F e No. 2		·	-	PIN:	918	8.00
Drille		T	. Schaefer		Elevatio	n (m):					Auger ID/OD:	- / 6.4 cm	
	ator:	-	laine Test Boring	gs, Inc.	Datum:		Ν	NGVD			Sampler:	Split Spoon	
	ed By:		. Erickson		Rig Type			4D B53	Truck		Hammer Wt./Fall:	63.3 kg / 76.2	cm
	Start/F		0/10/02 / 10/10/0	02	Drilling I			Spin SSA			Core Barrel:	•	
Borii Definit	ng Loca	ation: Si	ta. 0 + 730, 3 R		Casing I	_	-	/-			Water Level*:	3.7 m	
D = Sp MD = 1 U = Th R = Ro V = Ins	olit Spoon Unsucces hin Wall T ock Core situ Vane	sful Split Spoor ube Sample	n Sample attempt		Definitions: $S_u = Insitu$ $T_v = Pocke$ $q_p = Uncon$ $S_u(lab) = Li$ WOH = wei WOR = wei	Field Va t Torva fined C ab Van ght of 6	ne Shear compressive Shear S 64 kg ham	Strength ve Streng trength (k	(kPa) th (Pa)		Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		-'
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Samble Information Blows (150 mm) Shear Strength (RPa) C(RPa) C(RPa)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual [Description and Remarks		Labor Test Res AASi an Unif Cla
0										-ASPHALT ROADW	AY-		
⊦								-0.30				0.30	
[DI	(10/12.2						-0.49	****	-CONCRETE ROAD		0.49	
1	D1	61.0/17.8	0.61 - 1.22	3/3/4/4		7				Gray damp loose poor silt, slight petroleum of -FILL-(SP)	ly-graded SAND with little dor	gravel and trace	
Ē	D2	61.0/35.6	1.22 - 1.83	6/7/7/9		14		1					
-+			<u> </u>					-1.46		Olive damp stiff lean of	CLAY with trace fine sand	1.46- and silt. non-	1
ļ										plastic, mottled and lar	ninated, mild petroleum od		
2										-MARINE DEPOSIT-(CL)		
ļ								1					
ŀ								1					
F													
3				······				2.00					
	D3	61.0/53.3	3.05 - 3.66	1/WOH/1/WOI	H	1		-3.05		Gray moist very loose	clayey SAND with little sil g root matter, organic odor SC)	3.05- t, poorly-graded,	
ŀ													
4													
` -													
F													
	D4	61.0/43.2	4.57 - 5.18	1/2/3/2		5		-4.57		Grav and brown wet 1			
F										and lean clay, poorly-g	oose poorly-graded SAND raded, occasional fine sand	layers, frequent	
5										clay laminae, brown fir odor	ne silty sand layer from 5.0	6-5.15 m, no	
F								-5.18		-MARINE DEPOSIT-(SP)		
										Bottom of Explora	tion at 5.18 m below grou		
F													
6				· · · · · · · · · · · · · · · · · · ·									
F			T										
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7													
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Γ													
	arks												
	er level (hours without a	ugers									
Wate	er level (taken after 0.2	hours without a	ugers									
Wate	er level (Y&z		ugers ies between soil types; tra	ansitions may	be grad	dual.				Page 1 of 1		

			y & Aldr			Pro	ject: R	oute 100	/26 Red	construction	Boring No.:	B-1	9-(
		Soil	I/Rock Explora				ation: H le No. 2			e	PIN:	918	<u>}8.(</u>
Drill	er:	Т.	Schaefer		Elevatio						Auger ID/OD:	- / 6.4 cm	
Ope	rator:	М	aine Test Borin	gs, Inc.	Datum:		1	NGVD			Sampler:	Split Spoon	
Logg	ged By:	Т.	Erickson		Rig Type	:	ľ	AD B53	Truck		Hammer Wt./Fall:	140 lb. / 76.2	cm
Date	Start/F	inish: 10	/11/02 / 10/11/0	02	Drilling I	Metho	od: S	Spin SSA	۸		Core Barrel:	-	
	ng Loca	ation: Sta	a. 0 + 760, 3 L		Casing I	D/OD	: -	/ -			Water Level*:	3.8 m	
MD = U = TI R = R V = In	plit Spoor Unsucces hin Wall T ock Core situ Vane	ssful Split Spoon ube Sample	Sample attempt		Definitions: S _U = Insitu T _V = Pocke q _p = Uncon S _U (lab) = L WOH = wei WOR = wei	Field V t Torva fined C ab Van ght of (ine Shear Compressi le Shear S 64 kg ham	Strength ve Streng	(kPa) th (Pa)		Definitions: WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	
		Т	1	Sample Information				1	1				l
o Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength Strength (KPa)		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remarks	5	
Ů										-ASPHALT ROADW	'AY-		
	D1	61.0/5.1	0.61 - 1.22	3/3/4/5		7		-0.30		Note: in 1st attempt a S 0.30 m	t boring, hit re-bar at 0.37 r	n, moved boring	
1										Dark brown dry to da poorly-graded	mp loose silty SAND with	some gravel,	
	D2	61.0/35.6	1.22 - 1.83	6/6/3/3		9				-FILL-(SM)			
								-1.77		Gray-brown damp to poorly-graded -FILL-(SL)	moist stiff clayey SAND w	ith little gravel,	
- 2 -										fine sand, slightly plas	moist stiff lean CLAY with tic, mottled and laminated		1
										organics -MARINE DEPOSIT-	(CL)		
- 3 -								-3.20				3.20	
	D3	7.6/7.6	3.35 - 3.43	50 (7.62 cm)		50		-3.66		Gray wet very dense g plastic, moderately bo -GLACIAL TILL DEF	gravelly lean CLAY with so nded POSIT-(CL)		
- 4 -											3.44-3.66 m into boulder a	3.66	
										Bottom of Explora	ition at 3.66 m below grou	nd surface.	
. 5 .													
- 6 -													
						_							
				·····									
- 7 -													
- F												:	

			y & Aldri			Pro	ject: Ro	oute 100	/26 Re	construction	Boring No.:	<u> </u>	0-02
		<u></u>	METRIC UNI	-			ation: F le No. 2			e	PIN:	918	8.00
Drill	er:	T.	. Schaefer		Elevatio	n (m):	:				Auger ID/OD:	- / 6.4 cm	
Oper	rator:	М	laine Test Boring	s, Inc.	Datum:		١	IGVD			Sampler:	Split Spoon	
Logo	ged By	: T.	. Erickson		Rig Type	:	Ν	4D B53	Truck		Hammer Wt./Fall:	63.3 kg./ 76.2	cm
Date	Start/I	Finish: 10	0/10/02 / 10/10/02	2	Drilling I	Netho	od: S	pin SSA	1		Core Barrel:	-	
	ng Loc	ation: St	ta. 0 + 797, 3 R		Casing I	D/OD	: -	/ -			Water Level*:	3.0 m	-
MD = U = Th R = Ri V = In	plit Spoor Unsucce nin Wall 1 ock Core situ Vane	Tube Sample	n Sample attempt		Definitions: $S_{U} = Insitu$ $T_{V} = Pocke$ $q_{p} = Uncon$ $S_{U}(lab) = Li$ WOH = wei WOR = wei	t Torva fined C ab Van ght of 6	ine Shear Compressiv le Shear S 64 kg ham	Strength /e Streng trength ()	(kPa) th (Pa)		Definitions: WC = water content, percer LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	it	
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Samble Information Shear Strength (RPa) C(RPa) Strength		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual I	Description and Remark	5	Laborate Testing Resulte AASHT and Unified Class
0				200000		-				-ASPHALT ROADW	AY-		
ŀ								-0.30	~~~~			0.30	
										Note: numerous cobbl	es from 0.30-0.61 m		
ŀ	D1	61.0/40.6	0.61 - 1.22	4/5/4/6		9					loose gravelly well-grade	d SAND with	
1 -		1		-				-0.88		little silt, no strucutre			
	D2	61.0/45.7	1.22 - 1.83	6/7/7/8		14		-1.22		gravel, occasional sand		trace silt and	
										Gray moist stiff claye frequent clay layers, or	y SAND with trace silt, po		
2								-2.13	7777	-MARINE DEPOSIT-			
	D3	61.0/33.0	2.44 - 3.05	1/1/3/3		4					oft lean CLAY with trace fi eum odor, trace organics (CL)	ne sand and silt,	
3								-3.05				3.05-	
										Bottom of Explora	tion at 3.05 m below grou		
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Rema	arks:	t	i -										
Wat	er level		hours without au	gers									
		Y&z											
	tic It	e epresent app	proximate boundarie	s between soil types; tra	ansitions may	be gra	dual.				Page 1 of 1		
s a n						-					-		

				rich, Inc.		Pro	ject: R	oute 100)/26 Re	construction	Boring No.:	B-2	1-02
		<u>Soi</u>	I/Rock Explore				ation: I le No. 2			e	PIN:	918	8.00
Dril	ler:	T.	Schaefer		Elevatio			28404-0	01		Auger ID/OD:	- / 6.4 cm	
	rator:		aine Test Borir	igs. Inc.	Datum:	. (,		NGVD			Sampler:	Split Spoon	
	ged By:		Erickson		Rig Type	<u>.</u>		MD B53	Truck		Hammer Wt./Fall:	63.3 kg / 76.2	
	e Start/F		0/10/02 / 10/10/	02	Drilling			Spin SS			Core Barrel:	-	
	ing Loca		a. 0 + 850, 2.5		Casing I			/ -			Water Level*:	Dry	
Defin	itions:				Definitions:						Definitions:	Diy	
MD = U = 1 R = F V = II	hin Wall T Rock Core	ssful Split Spoon ube Sample Sample Shear Test	n Sample attempt		S _U = Insitu T _v = Pocke q _p = Uncon S _U (lab) = L WOH = wei WOR = wei	t Torva fined C ab Van ight of (ane Shear Compressi ne Shear S 64 kg ham	Strength ve Streng strength ((kPa) ath (Pa)		WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	-
		1	1	Sample Informatio			r		.				Laboratory
 Depth (m) 	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or ROD (%)		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remarks		Testing Results/ AASHTO and Unified Class.
Ŭ										-ASPHALT ROADW	AY-		
								-0.30 -0.49		-CONCRETE ROAD	WAY-(Old Road)	0.30	
								-0,49		\	les from 0.49-0.76 m, proba		
	D1	61.0/35.6	0.76 - 1.37	2/4/6/7		10		1					
- 1 -								-1.01		mottled and laminated		t, non-plastic,	
	D2	61.0/38.1	1.37 - 1.98	7/7/8/10		15			V///	-MARINE DEPOSIT-	(CL)		
- 2 -								-1.98		laminated, very mild		stic, mottled and	
2								-1.50		-MARINE DEPOSIT-		1.98	
								1		Bottom of Explora	tion at 1.98 m below grou	nd surface.	
								1					
- 3 -								1					
								1					
						-							
- 4 -													
- 5 -													
5								1					
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6 -													
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- 7 -													
Rom	arks:								L				
		Y &===	proximate bounda	ries between soil types; tra	ansitions may	be gra	adual.				Page 1 of 1		
* Wat	er level rea	adings have bee	n made at times a	and under conditions state /ere made.	d. Groundwa	ater fluo	ctuations n	nay occu	r due to	conditions other	Boring No.:	B_21_02	

			y & Aldri	on Log			ation: F			construction	Boring No.:	<u> </u>	
			METRIC UNIT	<u>s</u>			e No. 2			~	PIN:	918	58.0
Drill			Rudnicki		Elevatio	n (m):					Auger ID/OD:	- / 6.4 cm	
	rator:		aine Test Boring	s, Inc.	Datum:			IGVD			Sampler:	Split Spoon	
	ged By:		Erickson		Rig Type			4D B53			Hammer Wt./Fall:	63.3 kg / 76.2	cm
	Start/F		/14/02 / 10/14/02		Drilling I			pin SSA	1		Core Barrel:	-	
Defini	ng Loca	ition: St	a. 0 + 880, 3 L		Casing I Definitions:		-	/-			Water Level*: Definitions:	1.46 m	
D = Si MD = U = Ti R = Ri V = In	plit Spoon Unsucces hin Wall Ti ock Core S	sful Split Spoon ube Sample Sample Shear Test	Sample attempt		S_u = Insitu T_v = Pocke q_p = Uncon $S_u(lab)$ = Li WOH = wei WOR = wei	Field Va t Torva fined C ab Van ght of 6	ne Shear S Compressiv e Shear S 64 kg ham	Strength	(kPa) th (Pa)		WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticitly Index G = Grain Size Analysis C = Consolidation Test		
				Sample Informatio									L
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or ROD /%)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual I	Description and Remarks		⊥ _ 4
0										-ASPHALT ROADW	AY-		
	D1	45.7/27.9	0.46 - 0.91	2/1/4		4		-0.30		Gray-brown damp sof sand, trace asphalt, no -FILL-(CL)	t lean CLAY with little fine n-plastic	0.30- sand and coarse	
1 -	D2	61.0/20.3	0.91 - 1.52	4/5/6/4		11				Gray-brown damp stif gravel, trace asphalt, n -FILL-(CL)	f lean CLAY with little sand on-plastic	l and trace	
2	D3	30.5/7.6	1.52 - 1.83	3/3		6		-1.52 -1.83		Gray-brown wet loose clay, poorly-graded -FILL-(SM)	silty SAND with some gra	1.52- vel and little	
										Bottom of Explora	tion at 1.83 m below grou	nd surface.	1
3													
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4								•					-
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5													
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ŀ						\neg							
t													
-	er level t	aken after 0.2 Y &===	hours without au	gers									
	DR		roximate boundarie	s between soil types; tra	ansitions may	be ara	dual.				Page 1 of 1		
				d under conditions state e made.		-			due to r		Boring No.:		

		Haley	y & Aldı	rich, Inc.		Pro	ject: Ro	oute 100	/26 Red	construction	Boring No.:	B-2	3-02
		-	I/Rock Explore	ation Log			ation: F		·	e	PIN:	918	8.00
Drill	or:	T	Rudnicki		Elevation		e No. 2	8404-00)1		A	16.4	••••••
				T	Elevation	i (m):					Auger ID/OD:	- / 6.4 cm	
	rator:		aine Test Borir	igs, Inc.	Datum:			IGVD			Sampler:	Split Spoon	
_	ged By:		Erickson		Rig Type			4D B53			Hammer Wt./Fall:	63.3 kg / 76.2	cm
	e Start/F		/14/02 / 10/14/	02	Drilling N			pin SSA	1		Core Barrel:	-	
	ng Loca	ation: St	a. 0 + 910, 4 R		Casing I	D/OD	: -	/-			Water Level*:	Dry	
D = S MD = U = T R = R V = Ir	hin Wall T lock Core	sful Split Spoon ube Sample Sample Shear Test	Sample attempt		Definitions: $S_u = Insitu I$ $T_v = Pocket$ $q_p = Uncont$ $S_u(lab) = La$ WOH = weig WOR = weig	Torva fined C b Van ght of 6	ne Shear Compressiv e Shear S 64 kg ham	Strength /e Streng trength (F	(kPa) th (Pa)		Definitions: WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	_^
				Sample Information									Laborato
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPann / 2000 / 2000 / 2000 / 2000 / 2000 / 2000 / 2000 / 2000 / 2000 / 2000 / 2000 / 2000 / 2000 / 2000 / 2000		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remarks	5	Testing Results AASHTC and Unified Class.
0		(10/00 0						-0.15		-ASPHALT ROADV	VAY-	0.16	
	1	61.0/30.5	0.15 - 0.76	4/4/6/6		10		-0.55		Black and dark brow gravel, poorly-graded \-FILL-(SM)	n damp medium dense silty		
1 -	D2	61.0/50.8	0.76 - 1.37	3/7/10/13		17				Olive-brown damp so non-plastic, mottled a -MARINE DEPOSIT		0.55- ne sand and silt,	
	D3	45.7/38.1	1.37 - 1.83	10/10/11		20					f lean CLAY with trace silt, 1 with occasional silt lamina -(CL)		
2 -								-1.83		Olive damp very stift mottled and laminated	f lean CLAY with trace silt, I with occasional silt lamina		
_										-MARINE DEPOSIT Bottom of Explor	ation at 1.83 m below grou	ind surface.	
3 -													
4 -													
5 -													
5										. •			
6 -													
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ł													

		Hale	y & Aldr	ich, Inc.		Pro	ject: R	oute 10	0/26 Re	construction	Boring No.:	B-2	4-02
		<u>Soi</u>	I/Rock Explora METRIC UN				ation: I le No. 2			e	PIN:	918	8.00
Drill	er:	J.	Rudnicki		Elevatio			28404-0	01		Auger ID/OD:	6.4 cm / 11.4 c	m
Эре	rator:	М	aine Test Borin	igs, Inc.	Datum:	. ,		NGVD			Sampler:	Split Spoon	
Log	ged By:	T.	Erickson		Rig Typ	e:	1	MD B53	Truck		Hammer Wt./Fall:	63.3 kg/76.2 d	m
Date	e Start/F	inish: 10	/14/02 / 10/14/	02	Drilling	Metho	od: S	Spin HS	A		Core Barrel:	-	
Bori	ng Loca	ation: St	a. 0 + 940, 3.5	L	Casing	ID/OD		./-			Water Level*:	3.5 m	
D ≃ S MD = J = T R = F V = Ir	hin Wall T lock Core	sful Split Spoor ube Sample Sample Shear Test	i Sample attempt		Definitions $S_u = Insitu$ $T_v = Pocka$ $q_p = Unco$ $S_u(Iab) = I$ WOH = we WOR = we	Field V et Torva nfined (_ab Var eight of	ane Shear Compressi ne Shear S 64 kg harr	Strength ve Streng	(kPa) oth (Pa)		Definitions: WC = water content, percer LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		
		1	1	Sample Information				T					Laborator
 Depth (m) 	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (KPD) /2/)		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remark	S	Testing Results/ AASHTO and Unified Class.
U										-ASPHALT ROADW	/AY-		
	D1	61.0/30.5	0.30 - 0.91	9/8/2/1		10		-0.27		Brown damp medium gravel and little silt \-FILL-(SP)	n dense poorly-graded SAN		
1 -	D2	61.0/33.0	0.91 - 1.52	3/2/3/4		5					stiff lean CLAY with trace s nd laminated with occasior -(CL)		
	D3	20 5/20 2	1.52 1.02	2//		,		1	¥///	Olive moist medium s	tiff lean CLAY with trace s	ilt and fine sand.	
	D3	30.5/20.3	1.52 - 1.83	2/4		6			V///	non-plastic, mottled a	nd laminated with occasion		
2 -			*							-MARINE DEPOSIT-	-(CL)		
								-					
								1	V///				
3 -	D4	61.0/58.4	3.05 - 3.66	2/3/4/6		7		-					
								1	V///				
								1	V///		stiff, lean CLAY with trace and laminated with occas		
								1	V///	partings			
4 -				, , , , , , , , , , , , , , , , ,				1	V///	-MARINE DEPOSIT-	•		
								1	V///				
								4					
	D5	61.0/61.0	4.57 - 5.18	2/1/2/2		3		-4.57		Olive (changes to gra	y at 4.8 m) moist soft lean (4.57-	
				·····				1			ninated with one silt seam i		
5 -								{		-MARINE DEPOSIT-	(CL)		
								-5.18		Bottom of Explora	ation at 5.18 m below grou	5.18-	
								-			9		
								1					
6 -													
-								1					
								1					
								1					
7 -								1					
								1					
]					ł					
								1					
Wa		taken without \mathbf{Y}	augers										
			roximate boundar	ries between soil types; tra	ansitions may	v be ara	adual.				Page 1 of 1		
									e du 1 -	anditions -th			
	those pre	sent at the time	measurements w	and under conditions state ere made.	.a. Grounuw	a.er 1100	organous (nay uccu	1 006 10	conditions other	Boring No.	B-24-02	

		•	y & Aldri				-			construction	Boring No.:	B-2	
			METRIC UNIT			Fil	ation: F e No. 2		·	•	PIN:	918	38.(
Drill		J	Rudnicki		Elevatio	n (m):					Auger ID/OD:	- / 6.4 cm	
<u> </u>	rator:		aine Test Boring	s, Inc.	Datum:		N	IGVD			Sampler:	Split Spoon	
	ged By:		Erickson		Rig Type			4D B53	Truck	·····	Hammer Wt./Fall:	63.3 kg / 76.2	cm
Date	Start/F	inish: 10	/14/02 / 10/14/02	2	Drilling I	Metho	d: S	pin SSA			Core Barrel:	-	
	ng Loca	ation: Sta	a. 0 + 970, 2 R		Casing I		-	/-			Water Level*:	Dry	
MD = U = T R = R V = In	plit Spoon Unsucces hin Wall T lock Core	ssful Split Spoon ube Sample Sample Shear Test	Sample attempt		Definitions: S_{u} = Insitu T_{v} = Pocke q_{p} = Uncon $S_{u}(lab)$ = Li WOH = wei WOR = wei	Field Va t Torva fined C ab Van ght of 6	ne Shear S Compressiv e Shear S 64 kg ham	Strength /e Streng	(kPa) th (Pa)		Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Samble Information Shear Strength (RPa) or (RPa) Strength		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remarks		L
0										-ASPHALT ROADW	AY-		Γ
								-0.30		-CONCRETE ROAD	WAY-(Old Road)	0.30	
1	Dl	61.0/43.2	0.76 - 1.37	3/6/8/12		14		-0.64 -0.91			e from 0.64-0.73 m probab	0.91	
1 -				· · · · · · · · · · · · · · · · · · ·						Olive-brown dry to da and laminated -MARINE DEPOSIT-	mp stiff lean CLAY, non-p (CL)	lastic, mottled	
	D2	45.7/30.5	1.37 - 1.83	11/12/13		24				Olive damp very stiff	ean CLAY with trace silt, 1	ion-plastic,	
2 -								-1.83		mottled and laminated -MARINE DEPOSIT-	(CL)		
										Bottom of Explora	tion at 1.83 m below grou	nd surface.	
3 -													
4 -													
5 -													
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6		· · · ·	┝										
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						-							
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Rom	arks:												
		\mathbf{v}											
A -	DD	Y&	roximate boundarie	es between soil types; tra	ansitions may	be gra	dual.				Page 1 of 1		
0.01													

		-	y & Ald	rich, Inc.			-			construction	Boring No.:	B-2	6-02
			METRIC UN				ation: I le No. 2			e	PIN:	918	8.00
Drill	er:	J.	Rudnicki		Elevatio						Auger ID/OD:	- / 6.4 cm	
Оре	rator:	М	aine Test Borin	ngs, Inc.	Datum:		1	NGVD			Sampler:	Split Spoon	
Log	ged By:	T.	Erickson		Rig Type	e:	1	MD B53	Truck		Hammer Wt./Fall:	63.3 kg / 76.2	cm
Date	Start/F	inish: 10)/14/02 / 10/14/	/02	Drilling	Metho	od: S	Spin SS	Ą		Core Barrel:	-	
Bor	ing Loca	ation: St	a. 1 + 046, 3.5	L	Casing I	D/OD	: -	./-			Water Level*:	Dry	
D = S MD = U = T R = F V = II	hin Wall T	sful Split Spoon ube Sample Sample Shear Test) Sample attempt		Definitions: S_u = Insitu T_v = Pocke q_p = Uncor $S_u(lab)$ = L WOH = we WOR = we	Field V et Torva nfined C ab Van ight of 6	/ane Shea ine Shear Compressi ie Shear S 64 kg ham	Strength ve Streng	(kPa) ath (Pa)		Definitions: WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		-
		(Lu:	pth	Sample Informatio									Laboratory Testing Results/
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength Strength Strength Strength Strength	5	N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remarks	5	AASHTO and Unified Class.
Ŭ								-0.27		-ASPHALT ROADV	VAY-	0.27	
	D1	61.0/40.6	0.46 - 1.07	4/7/4/7		11		-0.61		Gray damp medium of graded, very mild pet -FILL-(SM)	dense silty SAND with little roleum odor	gravel, poorly- 0.61-	
1 -	D2	61.0/48.3	1.07 - 1.68	7/11/13/15		24					ff lean CLAY with trace sil l, very mild petroleum odor -	t, non-plastic,	
2 -	D3	15.2/15.2	1.68 - 1.83	19		19		-1.83			y stiff lean CLAY with trac l, very mild petroleum odor		
										Olive dry to damp ve plastic, mottled and la -MARINE DEPOSIT	ry stiff lean CLAY with tra minated, very mild petroleu	ce silt, non- un odor	
3 -										Bottom of Explor	ation at 1.83 m below grou	I.83- Ind surface.	
4 -													
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				rich, Inc.		Pro	ject: Ro	oute 100	0/26 Re	construction	Boring No.:	B-2	7-02
		<u>50</u>	I/Rock Explora METRIC UN	-			ation: F le No. 2			e	PIN:	918	8.00
Drill	er:	J.	Rudnicki		Elevatio	n (m)	:				Auger ID/OD:	- / 6.4 cm	
Ope	rator:	М	aine Test Borin	igs, Inc.	Datum:			IGVD			Sampler:	Split Spoon	
Log	ged By:		Erickson	0.,	Rig Type				3 Truck	Pig	Hammer Wt./Fall:	63.3 kg / 76.2	
	Start/F			02						rug			m
			0/14/02 / 10/14/	02	Drilling			pin SS/	A		Core Barrel:	-	
	ng Loca	ation: St	a. 1 + 065, 3 L		Casing I		: -	/ -			Water Level*:	Dry	
D = S MD = U = T R = R V = Ir	hin Wall T tock Core	sful Split Spoor ube Sample Sample Shear Test	Sample attempt		Definitions: S_u = Insitu T_v = Pocket q_p = Uncor $S_u(lab)$ = L WOH = we WOR = we	Field V et Torva ofined (ab Van ight of	ane Shear Compressiv ne Shear S 64 kg ham	Strength	(kPa) gth (Pa)		Definitions: WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	-
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Samble Information Shear Strength (RPa) Cr Part (RPa) Cr Part Strength Stre		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remarks	5	Laboratory Testing Results/ AASHTO and Unified Class.
0										-ASPHALT ROADW	/AY-		
								-0.30				0.30	
										Note: numerous cobb	les from 0.30-0.61 m	0.50	
	Dl	61.0/33.0	0.61 - 1.22	7/7/9/13		16		1		Light brown dry mad	ium dense, gravelly SAND,	noorly moded	
										-FILL-(SP)	ium uchoc, glavelly SAIND,	poorty-graded	
1 -								-1.04	۱ <i>P</i>				
	D2	61.0/27.9	1.22 - 1.83	13/14/14/15		28			V///	Olive dry to damp ve plastic, mottled and la	ry stiff lean CLAY with tra minated	ce silt, non-	
									V///	-MARINE DEPOSIT-			
2 -			s					-1.83	,		lean CLAY with little fine s with frequent sand parting		
2										-MARINE DEPOSIT-	(CL)	1.83-	
										Bottom of Explora	ation at 1.83 m below grou		
3 -													
	-												
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Rem	arks:								1				
HA	TE	Y&											
tratif		rep es int app	proximate bounda	ries between soil types; tra	ansitions may	/ be gra	adual.				Page 1 of 1		
* Wate than	er level rea those pre	adings have bee sent at the time	n made at times a measurements w	and under conditions state ere made.	d. Groundwa	ater flu	ctuations n	nay occu	ir due to	conditions other	Boring No.:	B-27-02	

Soil/Rock Expl METRIC I Driller: J. Rudnicki Operator: Maine Test Bo Logged By: T. Erickson Date Start/Finish: 10/14/02 / 10/1 Boring Location: Sta. 1 + 140, 5 Definitions: Date Start/Finish: 10/14/02 / 10/1 Boring Location: Sta. 1 + 140, 5 Definitions: Date Start/Finish: 10/14/02 / 10/1 D = Spill Spon Sample Maine Test Sample Read U = Thin Wall Tube Sample Read Read Read V = Insitu Vane Shear Test SSSA = Solid Stem Auger Read Read Read Q	JNITS E rings, Inc. C 4/02 C 5 L C opt Sample Information (mu 031) (mu 032) small (mu 032) 5 10/10/5/4 02	Elevation Datum: Rig Type: Drilling M Casing ID Definitions: Su = Insitu Fi Ty = Pocket qp = Unconfit WOH = weigi WOR = weigi YOH = weigi YOH = weigi Y	(m): ethod: //OD: Torvane S ned Comp b Vane Sh ht of 64 kg ht of rods	No. 28 No. 28 No. M. Sp - / Shear S Shear S Shear Str g hamm	GVD D B53 oin SSA '- Strength (kner	I Truck F (kPa) kPa) h (Pa)		Hammer Wt./Fall: Core Barrel:	9188 -/ 6.4 cm Split Spoon - Dry
Operator: Maine Test Bo Logged By: T. Erickson Date Start/Finish: 10/14/02 / 10/1 Boring Location: Sta. 1 + 140, 5 Definitions: Date Start/Finish: 10/14/02 / 10/1 Boring Location: Sta. 1 + 140, 5 Definitions: Date Start/Finish: 10/14/02 / 10/1 Definitions: Date Start/Finish: 10/14/02 / 10/1 Definitions: Date Start/Finish: Sta. 1 + 140, 5 Definitions: Date Start/Finish: Sta. 1 + 140, 5 Date Start/Finish: Date Start/Finish: Sta. 1 + 140, 5 Wather Start Van Shear Test Start Van Shear Test Start Van Shear Test SSA = Solid Stem Auger Date Start Van Shear Test Start Van Shear Test Start Van Shear Test Start Van Shear Test Start Van Shear Test Date Start Van Shear Test Date Start Van Shear Test Start Van Shear Test Date Start Van Shear Test Date Start Van Shear Test Start Van Shear Test Date Start Van Shear Test Date Start Van Shear Test Start Van Shear Test Dat Start Van Shear Test Date Start V	rings, Inc. C 4/02 F 5 L C spt Sample Information (%) 00 Y Sample Sample S (%) 00 Y (%) 0	Datum: Rig Type: Drilling M. Casing ID Definitions: Su = Insitu Fi Tv = Pocket qp = Unconfit Su(ab) = Lat WOH = weigt WOR = weigt	ethod: //OD: Torvane S ined Comp b Vane Sh ht of 64 kg ht of rods	M Sp - / Shear S Shear S pressive hear Str g hamm	D B53 bin SSA 	(kPa) kPa) h (Pa)		Sampler: Hammer Wt./Fall: Core Barrel: Water Level*: Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit Pl = Plastic Limit Pl = Plastic Jindex G = Grain Size Analysis	Split Spoon 63.3 kg / 76.2 cr
Logged By: T. Erickson Date Start/Finish: 10/14/02 / 10/1 Boring Location: Sta. 1 + 140, 5 Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample atten U = Thin Wall Tube Sample Reack Core Sample Y = Insitu Vane Shear Test SSA = Solid Stem Auger (E) Q Q Q Q Q Q Q Q Q Q Q Q Q	4/02 C	Rig Type: Drilling M Casing ID Definitions: Su = Insitu Fi Ty = Pocket qp = Unconfii WOH = weigi WOR = weigi YOH = weigi	ethod: //OD: ield Vane Torvane S ined Comp b Vane Sh ht of 64 kg ht of rods	M Sp - / Shear S Shear S pressive hear Str g hamm	D B53 bin SSA 	(kPa) kPa) h (Pa)	Rig	Hammer Wt./Fall: Core Barrel: Water Level*: Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit Pl = Plastic Limit Pl = Plastic Jindex G = Grain Size Analysis	63.3 kg / 76.2 cr
Date Start/Finish: $10/14/02 / 10/1$ Boring Location: Sta. 1 + 140, 5 Definitions: D = Spilt Spoon Sample MD = Unsuccessful Spilt Spoon Sample Where Start Persons Sample attent U = Thin Wall Tube Sample R Rock Core Sample V = Insitu Vane Shear Test SSA = Solid Stem Auger (E)	4/02 C	Drilling M Casing ID Definitions: $S_U = Insitu FiT_V = Pocket 1q_p = UnconfiiWOH = weigiWOR = weigiWOR = weigi$	ethod: //OD: ield Vane Torvane S ined Comp b Vane Sh ht of 64 kg ht of rods	Sp - / Shear S Shear S oressive near Str g hamm	bin SSA /- Strength trength (k ner	(kPa) kPa) h (Pa)	λig	Core Barrel: Water Level*: Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plastic Limit PI = Plastici y Index G = Grain Size Analysis	
Boring Location: Sta. 1 + 140, 5 Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample atten U = Thin Wall Tube Sample R = Rock Core Sample V = Insitu Vane Shear Test SSA = Solid Stem Auger (E, g) g g g g g g g g g g g g g g g g g g	5 L C S ppt Sample Information (tbal) Sample Sample (tbal)	Casing ID Definitions: $S_u = Insitu FIT_V = Pocket Tq_p = UnconfiniteWOH = weigiWOR = weigiWOR = weigi$	VOD: ield Vane Torvane S ined Compt b Vane Sh b Vane Sh ht of 64 kg ht of rods	- / Shear S Shear Sive near Str g hamm	/ - Strength trength (e Strengt rength (k ner	(kPa) kPa) h (Pa)		Water Level*: Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis	Dry
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample atten U = Thin Wall Tube Sample R = Rock Core Sample Y = Insitu Vane Shear Test SSA = Solid Stem Auger (E) (Q) $($	Sample Information Sample Information ((%) Subset Strength (%) Sample Information (%) Sample Information (%) (%) Sample Information (%) Sample Information (%) (%) (%) (%) (%) (%) (%) (%)	Definitions: Su = Insitu Fi Tv = Pocket gp = Unconfi Su(lab) = Lat WOH = weigi WOR = weigi N	ield Vane Torvane S ined Comp b Vane Sh ht of 64 kg <u>ht of rods</u>	Shear S Shear S poressive near Stro g hamm	Strength (e Strengt rength (k ner	kPa) h (Pa)		Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis	Dry
D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample atten U = Thin Wall Tube Sample R = Rock Core Sample Y = Insitu Vane Shear Test SSA = Solid Stem Auger (E) U = 0 U =	Sample Information Sample Subsection ((US) Subsection ((Sample Information ((Sample Information (Sample In	$S_{u} = \text{Insitu Fi}$ $T_{v} = \text{Pocket}$ $q_{p} = \text{Unconfi}$ $S_{u(lab)} = \text{Lat}$ $WOH = \text{weig}$ $WOR = \text{weig}$ 1	Torvane S ined Comp b Vane Sh ht of 64 kg ht of rods	Shear Storessive near Strong hamm	itrength (e Strengt rength (k ner	kPa) h (Pa)		WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis	
0 D1 61.0/22.9 0.15 - 0.70 0.15 - 0.70	Blows (150 mm) Shear Strength ((Pa) or ROD (%)		N-value Casing						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	5 10/10/5/4			Blows	Elevation (m)	Graphic Log	Visual D	escription and Remarks	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$								dry medium dense poorly-	graded SAND
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	5/6/6/8		15			***	with some silt and grave -FILL-(SP)	1	
1	5/6/6/8						. /		
		1	12		-0.70		Olive-brown dry stiff le -FILL-(Reworked Natur	ean CLAY with little brick, ral) (CL)	— — —0.70- non-plastic
	1						Olive-brown dry stiff le	an CLAY, non-plastic	
	8 8/8/10	1	18		-1.34	////	↓-FILL-(Reworked Nature)		1.34-
								tiff lean CLAY, non-plastic	
					-1.83		laminated -MARINE DEPOSIT-(0	ר זי <i>ר</i>	
									1.83
							Bottom of Explorat	ion at 1.83 m below groun	d surface.
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Driller: J. Rudnicki Elevation (m): Auger ID/OD: - / 6.4 cm Operator: Main Test Borings, Inc. Datum: NGVD Sampler: Split Spoon Logged By: T. Erickson Rig Type: MD B53 Truck Rig Hammer WL/Fall: 6.3.3 kg / 76.2 Date Start/Finish: 10/14/02 / 10/14/02 Drilling Method: Spin SSA Core Barrel: - Boring Location: Sta. 1 + 203, 4 R Casing ID/OD: - / - Water Level*: Dry Definition: Definition: Spin SSA Core Barrel: - Dry Definition: Definition: Spin Spon Sample Spin Spin Span Sample Spin Spin Spin Spin Spin Sample Dry D = distic Limit Field Viao Shear Strength (Pa) U = Thaistic Limit PL = Plastic Limit PL = Plastic Limit V = inskli Viao Shear Strength (Pa) U = Weight of 6 kg hammer C = Consolidation Test C = Consolidation Test SSA = Solid Stem Auger Sign E = Got Core Sample C = Consolidation Test C = Consolidation Test				y & Aldr			Pro	oject: Ro	oute 100	/26 Red	construction	Boring No.:	<u> </u>	29-0
Operator: Main Test Borings, Inc. Datum: NOVD Sampler: Split Spoon Logged By: T. Exickon Rig Type: MB 53 Truck Rig Hammer WL/Fail: 0.1 8/2/02 Boring Location: Sun 1/2 104 40/2 Drilling Method: Spin SSA Core Barel: - Boring Location: Sun 1/2 104 40/2 Drilling Method: Spin SSA Core Barel: - Boring Location: Sun 1/2 104 40/2 Drilling Method: Spin SSA Drilling Method: Spin SSA D0 = Uncontextual Spin Sunge attempt Drilling Method: Spin SSA Drilling Method: Spin SSA D1 = Uncontextual Spin Sunge attempt Drilling Method: Spin SSA Drilling Method: Spin SSA D2 = Montextual Spin Spin Spin Spin Spin Spin Spin Spin			Soi		-		Fi	le No. 2			e	PIN:	918	38.0
Logged By: T. Exickion Rig Type: MD B53 Truck Rig Hammer WL/Fail: 6.33 kg / 76. Date Start/Finith: 1014 002 / 1014 02 Drilling Method: Spin SSA. Core Starter: - Definition: 0.014 002 Drilling Method: Spin SSA. Core Starter: - Definition: 0.014 002 Drilling Method: Spin SSA. Core Starter: - Definition: Spin Plant Article Starter: Definition: Definition: Water Level? Dry Definition: Spin Plant Information Definition: Water Level? Dry Water Level? Dry Distribution: Sample Information Distribution: Water Level? Distribution: Water Level? Distribution: Concession: Concession: <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>n (m):</td><td></td><td></td><td></td><td></td><td>Auger ID/OD:</td><td>- / 6.4 cm</td><td></td></t<>							n (m):					Auger ID/OD:	- / 6.4 cm	
Date Start@inish: 10/14/02 / 10/14/02 Drilling Method: Spin SSA Core Barrel: Boring Location: Sain 14:30; 4 R Casing D/OD: -/- Water Level?: Dry Definition: Definitio	· ·				gs, Inc.								Split Spoon	
Boring Location: Sta. 1 + 203, 4 R Casing DOD: -/- Wett result; Day Definition: Definition: See Stopping Participation States and the set of											Rig		63.3 kg / 76.2	cm
Definitions: Definitions: Definitions: Definitions: 00 - Fold Spon State Definitions: 3 "Initial Feed Vine Sheet Strength (RPa) TV = Neuconsense Strength (RPa) TV = Neuconsense Strength (Neuroscience Strength (RPa) TV = Neuroscience)2		-		-	1			-	
0 - Spit Spon Sample Super Float Super Float Super Float Use cases Use cases Super Float Use cases Use cases <td></td> <td></td> <td>ation: St</td> <td>a. 1 + 203, 4 R</td> <td></td> <td>-</td> <td></td> <td></td> <td>/-</td> <td></td> <td></td> <td></td> <td>Dry</td> <td>-</td>			ation: St	a. 1 + 203, 4 R		-			/-				Dry	-
Sample Information 0 <th< th=""><th>D = 3 MD = U = 7 R = 1 V = 1</th><th>Split Spoor = Unsucces Thin Wall T Rock Core nsitu Vane</th><th>ssful Split Spoon ube Sample Sample Shear Test</th><th>n Sample attempt</th><th></th><th>$S_u = Insitu$ $T_v = Pocke$ $q_p = Uncor$ $S_u(lab) = L$ WOH = wei</th><th>Field V t Torva fined C ab Van ight of (</th><th>ane Shear S Compressiv ne Shear S 64 kg ham</th><th>Strength</th><th>(kPa) th (Pa)</th><th></th><th>WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis</th><th>I</th><th></th></th<>	D = 3 MD = U = 7 R = 1 V = 1	Split Spoor = Unsucces Thin Wall T Rock Core nsitu Vane	ssful Split Spoon ube Sample Sample Shear Test	n Sample attempt		$S_u = Insitu$ $T_v = Pocke$ $q_p = Uncor$ $S_u(lab) = L$ WOH = wei	Field V t Torva fined C ab Van ight of (ane Shear S Compressiv ne Shear S 64 kg ham	Strength	(kPa) th (Pa)		WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis	I	
0			1			on								1
0		Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) (kPa)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual I	Description and Remarks		
1 Image: Construct in the second struct in the second	0	D1	61 0/45 7	0 15 - 0 76			12		-0.15		-ASPHALT ROADW	AY-		Γ
1			01.0/45.7	0.13 - 0.76	13/7/0/4						no structure, appears d	isturbed, marine odor	rel, non-plastic,	
1 Image: Classic stand of the stand o	1	D2	61.0/40.6	0.76 - 1.37	5/6/7/10		13		-0.94	×			0.94	
2	1		A5 7/A5 7	1 37 - 1 83	0/8/0		17				plastic, mottled, trace			
- -			45.1145.1		71617		17		-1.83		sand, non-plastic, mot	led, trace organics	ith trace fine	
	2 ·										L		nd surface.	
- -	3 ·													
- -														
- -														
- -														
	4 ·													
	5 ·													
												÷ ••		
	6 •													
	7.													
												•		
	D-													
Remarks:		harks:												

		Hale	y & Aldı	rich, Inc.		Pro	oject: Ro	oute 100	/26 Re	construction	Boring No.:	B-3	0-02
		Soi	I/Rock Explora	-			ation: Fa			e	PIN:	918	8.00
)rill	ler:	J.	Rudnicki		Elevatio			010100			Auger ID/OD:	- / 6.4 cm	
)pe	rator:	М	aine Test Borir	ngs, Inc.	Datum:		N	IGVD			Sampler:	Split Spoon	
.og	ged By:	T.	Erickson		Rig Type	e:	M	1D B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg/ 76.2 d	cm
Date	e Start/F	inish: 10	/14/02 / 10/14/	02	Drilling	Metho	od: Sj	pin SSA	۱		Core Barrel:	•	
	ing Loca	ation: St	a. 1 + 265, 5.5	L	Casing I		: -,	/ -			Water Level*:	0.9 m	
D = S MD = U = T R = F V = Ir	Split Spoor Unsucces Thin Wall T Rock Core	ssful Split Spoon ube Sample Sample Shear Test	Sample attempt		T _v = Pocke q _o = Uncor	Field V t Torva fined C ab Van ight of (/ane Shear ane Shear S Compressiv ne Shear St 64 kg hamr rods	Strength e Streng	(kPa) th (Pa)		Definitions: WC = water content, percer LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		-
			1	Sample Information					I				Laboratory
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (KPD) /42)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual [Description and Remark	5	Testing Results/ AASHTO and Unified Class.
0	D1	61.0/40.6	0.15 - 0.76	2/7/5/2		12				Dark brown moist mer poorly-graded, trace br	lium dense silty SAND w	ith little gravel,	
		01.0/40.0	0.13 - 0.70	2111312		12				-FILL-(SM)	ICK		
	D2	61.0/50.8	0.76 - 1.37	3/3/22/7		25		-0.73	ŇŇŇĬ	Gray wet very stiff sar	dy SILT with trace clay a	nd gravel,	
1 -										laminated, non-plastic -MARINE DEPOSIT-(
								-1.31					
	D3	45.7/45.7	1.37 - 1.83	3/3/3		6				Gray wet medium stift plastic, laminated with	entries for the second se	e sand, slightly	
								-1.83		-MARINE DEPOSIT-(
2 -								1.00		Bottom of Explora	tion at 1.83 m below gro	and surface.	
3 -													
-													
													ж. С
4 1													
5 -													
										, -	- ···		
6 -													
]						
7 -													
Wa		taken after 0.1 \mathbf{Y}	hours without	augers									
ir tif			roximate bounda	ries between soil types; tra	ansitions may	/ be gra	adual.				Page 1 of 1		
Wate	er level rea	adings have bee	n made at times a	and under conditions state				ay occu	r due to	conditions other	-	D 20 02	
than	those pre	sent at the time	measurements w	vere made.				,			Boring No.	В-30-02	papar

		y & Aldr			Proj	ect: Ro	oute 100)/26 Rec	construction	Boring No.:	B-3
	<u>Soi</u>	il/Rock Explora METRIC UN	-		1	tion: F No. 2		-	e	PIN:	918
Driller:	J.	Rudnicki		Elevation	n (m):					Auger ID/OD:	6.4 cm / 11.4 c
Operator:		laine Test Borin	gs, Inc.	Datum:			IGVD			Sampler:	Split Spoon
Logged B		Erickson		Rig Type				Truck	Rig	Hammer Wt./Fall:	63.3 kg / 76.2
Date Start		0/14/02 / 10/14/0	02	Drilling N			pin SSA	4		Core Barrel:	-
Boring Lo Definitions:	cation: St	ta. 1 + 280, 4 R		Casing II Definitions:	D/OD:	-	/ -			Water Level*: Definitions:	5.6 m
D = Split Spo MD = Unsuco U = Thin Wal R = Rock Co	cessful Split Spoon I Tube Sample re Sample ne Shear Test	n Sample attempt		$S_{U} = Insitu f$ $T_{v} = Pocket$ $q_{p} = Uncont$ $S_{U}(lab) = La$ $WOH = weig$ $WOR = weig$	t Torvan fined Co ab Vane ght of 64	e Shear S ompressiv Shear Si 4 kg hami	Strength	(kPa) th (Pa)		WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t
Depth (m) Sample No.	Pen/Rec (cm)	Sample Depth (m)	Samble Intervention Shear Strength (KPa) Cor Do (K2)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual [Description and Remarks	5
N D	e	S E	間の必ず	5	ź	Big	ΞĒ	Ü			
°			and the second se						-ASPHALT ROADW	AY-	
							-0.37	****	Note: numerous cobbl	es from 0.37-0.61 m	0.37-
D1	30.5/10.2	0.61 - 0.91	3/4/50 (0)		54						·a 1
1									Black and gray damp wand trace clay, non-pla -FILL-(ML)	very dense gravelly SILT w stic	ith some sand
D2	61.0/22.9	1.22 - 1.83	3/4/7/6		11		-1.28		Note: boulder obstruct	ion from 0.91-1.22 m	
2							-1.98		Π	truction at 1.83-1.98 m pro	bable boulder,
									mottled and laminated	CLAY with trace silt, very	slightly plastic
3	61.0/48.3	3.05 - 3.66	3/5/7/6		12				-MARINE DEPOSIT-		
4 -											
D4	61.0/61.0	4.57 - 5.18	1/2/2/4		4					t lean CLAY with some fir	
5 -									-MARINE DEPOSIT-(ted with frequent sand part (CL)	ings and layers
								$\langle / / \rangle$			
6 - 	61.0/61.0	6.10 - 6.71	1/3/4/3		7		-6.10		fine sand interwoven w	se silty and clayey SAND, ; with clay and silt with occas	6.10- poorly-graded, ional clay layers
,									-MANINE DEPUBIT-	(JC)	
	61 0/35 6	762-822	5/0/12/12		21						
	01.0/33.0	1.02 - 0.23	5/0/15/13		21		-7.86				7.86
7	61.0/35.6	7.62 - 8.23	5/8/13/13		21		-7.86		fine sand interwoven w -MARINE DEPOSIT-	ith clay	and silt with occas

		_	Rock Explore				ation: F le No. 2			e	PIN:	918	38.0
Drille	er:	J.	Rudnicki		Elevatio			0404-00	1		Auger ID/OD:	6.4 cm / 11.4 c	cm
Oper	ator:	M	aine Test Borin	gs, Inc.	Datum:	. ,		IGVD			Sampler:	Split Spoon	
Logg	ed By:	T.	Erickson		Rig Type	;	Ν	4D B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg / 76.2	cm
Date	Start/Finis	h: 10	/14/02 / 10/14/0	02	Drilling I	Vetho	d: S	pin SSA			Core Barrel:	-	
	g Location	: Sta	a. 1 + 280, 4 R		Casing I		-	/-			Water Level*:	5.6 m	
MD = U U = Th R = Rc V = Ins	lit Spoon Sam	Split Spoon Sample Ile Ir Test	Sample attempt		Definitions: S_{U} = Insitu T_{V} = Pocke q_{p} = Uncor $S_{U}(lab)$ = L WOH = we WOR = we	Field V t Torva fined C ab Van ight of 6	ne Shear S Compressiv e Shear S 64 kg ham	Strength /e Streng	kPa) th (Pa)		Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		-
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Samble Information Blows (150 mm) Shear Strength (RPa) Cr ROD (%)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remarks		La T R A
8										Light brown wet me	dium dense well-graded SAN	D with little	\vdash
								-8.23	111111111	gravel and trace silt -GLACIO FLUVIAI	DEPOSIT-(SW)		1
╞──┟										l	ration at 8.23 m below grou	nd surface.	
9													
									-				
- 10 -												*	
				····									
12													
-						_							
- 13 -													
t													
- 14 -													
├┣													
- 15 -													
-													
Rema	irks:		L).		I			L		L,			L
	er level taken		augers										
A	LEY			ies between soil types; tra	neilione me	(ba am	dual				Page 2 of 2		

			y & Aldr				-			construction	Boring No.:		2-02
			METRIC UN	-		1	ation: F			e ·	PIN:	918	8.00
Drill	er:	J.	Rudnicki		Elevatio	n (m)	:				Auger ID/OD:	6.4 cm / 11.4 c	m
<u> </u>	rator:		faine Test Borin	ngs, Inc.	Datum:		1	NGVD			Sampler:	Split Spoon	
	ged By:		. Erickson		Rig Type			4D B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg / 76.2	cm
Date	e Start/F	inish: 10	0/15/02 / 10/15/	02	Drilling	Meth	od: S	Spin HS.	A		Core Barrel:	-	
	ng Loca	ation: Si	ta. 1 + 330, 5.5	L	Casing I); -	/-			Water Level*:	2.9 m	
D = S MD = U = T R = R V = Ir	hin Wall T lock Core	sful Split Spoor ube Sample Sample Shear Test	n Sample attempt		Definitions: S_{U} = Insitu T_{V} = Pocke q_{p} = Uncor $S_{U}(lab)$ = L WOH = we WOR = we	Field Net Torva fined (ab Var ight of	ane Shear Compressi ⁿ ne Shear S 64 kg ham	Strength ve Streng trength ((kPa) gth (Pa)		Definitions: WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plastic Limit G = Grain Size Analysis C = Consolidation Test	t	-
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Sample Information Blows (150 mm) Strength (rPa) (rPa) (rPa) (rPa)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual I	Description and Remarks	3	Laboratory Testing Results/ AASHTO and Unified Class.
0	D1	61.0/17.8	0.00 - 0.61	1/3/5/3		8		-0.03		∖-TOPSOIL-			
										Brown damp loose po -FILL-(SP)	orly-graded SAND with lit	-	
	D2	61.0/48.3	0.61 - 1.22	4/3/4/4		7		-0.61		Brown moist loose po	orly-graded SAND with tra	0.61- ce gravel and silt	
1 -			+					1		-FILL-(SP)			
-	D3	61.0/38.1	1.22 - 1.83	8/7/6/7		13		1					
								-1.55					
								1.55			iff lean CLAY with trace fi		
2 -								1	V///	plastic, mottled and la -MARINE DEPOSIT-			
2								-			(02)		
								1					
									<i>\///</i>				
								ł	V///				
3 -								-3.05				3 05-	
		61.0/50.8	3.05 - 3.66	2/2/1/1		3				Gray-brown moist ver sand, poorly-graded, o sand layers	y loose silty fine SAND wi occasional silt laminae, freq	th some medium	
								1		-MARINE DEPOSIT-	(314)		
4 -				· · · · · · · · · · · · · · · · · · ·				-					
	D5	61.0/33.0	4.57 - 5.18	3/1/1/1		2		-4.57			ay at 4.88 m), wet, sandy S		
								1		trace organics, very so		ulli, non-plastic,	
5 -								1		-MARINE DEPOSIT-	(ML)		
								-5.18	Humme		ation at 5.18 m below grou	5.18-	
								1		2000 OF EAPIOL	at ette in Melow glot		
								1					
6 -]					
័								1					
								1					
-								4					
								1					
7 -]					
								1					
								1					
								-					
								1					
Wa		taken after 0.2 Y Sz	2 hours without	augers									
	DR	CLL	proximate bounda	ries between soil types; tr	ansitions may	y be gr	adual.				Page 1 of 1		
* Wat than	er level rea			ries between soil types; tr and under conditions state vere made.				пау осси	ir due to	conditions other	Page 1 of 1 Boring No.	B-32-02	jaipati

			y & Aldr			Pro	oject: Ro	oute 100	/26 Re	construction	Boring No.:	B-3	3-02
		So	il/Rock Explora METRIC UNI				ation: File No. 2		·	e	PIN:	918	8.00
Drill	er:	J.	Rudnicki		Elevatio	-		.8404-00	<u></u>		Auger ID/OD:	6.4 cm / 11.4 c	m
	rator:		aine Test Boring	gs, Inc.	Datum:			IGVD			Sampler:	Split Spoon	
ogg	ged By:	T	. Erickson		Rig Type):	Ν	/D B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg / 76.2	cm
Date	Start/F	inish: 10	0/15/02 / 10/15/0	2	Drilling I	Netho	od: S	pin HS	Ą		Core Barrel:	-	
Bori	ng Loca	ation: Si	a. 1 + 360, 4 R		Casing I	D/OD): -	/-			Water Level*:	4.8 m	
D = S MD = J = T R = R / = In	hin Wall T ock Core	sful Split Spoor ube Sample Sample Shear Test	n Sample attempt		Definitions: S_{U} = Insitu T_{V} = Pocke q_{p} = Uncor $S_{U}(lab)$ = L WOH = wei WOR = wei	Field \ t Torva fined (ab Var ght of	ane Shear Compressiv ne Shear S 64 kg ham	Strength ve Streng trength (I	(kPa) th (Pa)		Definitions: WC = water content, perce LL = Liquid Limit PL = Plastic Limit PI = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	nt	
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (RPa) Cr RDD (%)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remark	s	Laborator Testing Results/ AASHTC and Unified Class.
0	0)	<u> </u>	0.5	 	<u>}</u>	2				-ASPHALT ROADW	JAV-		
	D1	61.0/27.9	0.15 - 0.76	4/13/7/7		20		-0.15			np medium dense well- gra	0.15-	
1 -	D2	61.0/35.6	0.76 - 1.37	2/4/5/4		9		-0.76		some gravel and little 0.70-0.76 m ¬FILL-(SW)	asphalt, asphalt from 0.15	-0.21 m and from	wc=4.5 A-1-a SP
	D3	61.0/33.0	1.37 - 1.98	3/3/4/6		7				. ,			
								-1.58			ose silty SAND with little		
2								-1.95		clay, poorly-graded		-	
-										\-FILL-(SM)		1.95	
										Olive-brown moist m non-plastic, mottled a	edium stiff lean CLAY with	h trace fine sand,	
-									///	-MARINE DEPOSIT			
				·········					V///				
3 -									V///				
	D4	61.0/53.3	3.05 - 3.66	1/2/2/3		4			V///				
								-3.29			silty lean CLAY with littl		
										slightly plastic, freque	ent fine sand layers		
	÷			· · · · · · · · · · · · · · · · · · ·						-MARINE DEPOSIT	-(CL)		
4													
									V///				
	D5	61.0/61.0	4.57 - 5.18	1/WOH/1/WO	Н	1		-4.57		Gray-brown (all gray	from 5.06-5.18 m), wet,	— — — — —4.57 very soft, fine	
5 -											clay, non-plastic, frequent		
ŀ										Constant in the second			
-											very stiff sandy SILT with no structure, possible stra		
			T							m, but hard to tell from	m recovery	U	
6										-MARINE DEPOSIT-	(ML)		
	D6	61.0/33.0	6.10 - 6.71	3/8/12/10		20							
ļ								-6.71	ШШ			6.71-	
-			<u>├</u>					-0.71		Bottom of Explor	ation at 6.71 m below gro		
7													
- [•
_			<u> </u>										
ļ													
Rem		Y&z	<u>I</u>	ies between soil types; tr	k		<u> </u>	L	<u> </u>	L	Page 1 of 1		

			y & Aldr	-						construction	Boring No.:	<u> </u>	
			METRIC UN			Fil	ation: F e No. 2			e	PIN:	918	8.0
Drille	er:	J.	Rudnicki		Elevatio	n (m):					Auger ID/OD:	- / 6.4 cm	
Oper	ator:	M	aine Test Borin	gs, Inc.	Datum:		Ν	IGVD			Sampler:	Split Spoon	
Logg	ed By:	T.	Erickson		Rig Type	:	Ν	1D B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg-/ 76.2	cm
Date	Start/F	inish: 10)/15/02 / 10/15/0	02	Drilling I	Netho	d: S	pin SSA			Core Barrel:	-	
Borir	ng Loca	tion: St	a. 1 + 380, 2 L		Casing I	D/OD:	-	/-			Water Level*:	Dry	
MD = 1 U = Th R = Ro V = Ins	olit Spoon Unsucces hin Wall Tu bock Core S	sful Split Spoon ube Sample Sample Shear Test	n Sample attempt		Definitions: S_{U} = Insitu T_{v} = Pocke q_{p} = Uncon $S_{U}(lab)$ = Li WOH = wei WOR = wei	Field Va t Torva fined C ab Van ight of 6	ne Shear compressive Shear S S4 kg ham	Strength	(kPa) th (Pa)		Definitions: WC = water content, perce LL = Liquid Limit PL = Plastic Limit PI = Plastict / Index G = Grain Size Analysis C = Consolidation Test	nt	_
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Samble Intervention Blows (150 mm) Shear Strength (rPa) Cr Pan Cr Pan Strength Stren		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remark	S	Lal Ti R A/ U
0										-ASPHALT ROAD	WAY-		
ŀ								-0.24		-CONCRETE ROA	DWAY-(Old Road)	0.24	1
—t								-0.43		\	bles from 0.43-0.55 m	0.43	1
H	Dl	61.0/10.2	0.61 - 1.22	11/7/5/5		12		1					
1	D2	61.0/17.8	1.22 - 1.83			_		-0.94		Brown damp medium graded -FILL-(SP)	a dense gravelly SAND with		A s
		01.0/17.8	1.22 - 1.65	4/4/4/3		8		-1.62		Olive-brown damp r plastic, mottled and l -MARINE DEPOSIT		th trace silt, non-	W L
2								-1.83		h \	stiff lean CLAY, highly pla		'
ŀ										Bottom of Explor	ration at 1.83 m below gro	und surface.	
4 -													
5 -													
6 -													
[
F													
7													
Ĺ													
f]										
Ē													
Rema	arks:	V 2							·	L			·
	DR	l Seprement app	proximate bounda	ries between soil types; tr	ansitions may	/ be gra	dual.				Page 1 of 1		

Drill	er:	T	METRIC UN Rudnicki		Flourette		<u>le No. 2</u>	28404-0	01		PIN:	918	
	rator:		laine Test Boring		Elevation Datum:	u (m)		ICUD			Auger ID/OD:	- / 6.4 cm	
· · ·	ged By:		. Erickson	, IIIC.				NGVD	T 1	Dia	Sampler:	Split Spoon	
	Start/F	<u> </u>	D/15/02 / 10/15/0	2	Rig Type Drilling I			MD B53		nıg	Hammer Wt./Fall:	63.3 kg·/ 76.2	cm
	ng Loca		ta. $1 + 440, 3.5$ I					Spin SS	4		Core Barrel:	-	_
Defin		ation. 5	a. 1 + 440, 5.5 I		Casing II Definitions:			/ -			Water Level*: Definitions:	Dry	
MD = U = T R = F V = Ir	hin Wall T lock Core	ssful Split Spoor ube Sample Sample Shear Test	n Sample attempt		S_u = Insitu T_v = Pocke q_p = Uncon $S_u(lab)$ = L WOH = wei WOR = wei	Field V t Torva fined C ab Van ght of (ine Shear Compressi le Shear S 64 kg ham	Strength ve Streng	(kPa) th (Pa)		WC = water content, percer LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	it	
		1	т <u> </u>	Sample Information									T
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remark	5	
0										-ASPHALT ROADW	YAY-		T
								-0.27		Note: numerous cobb	les from 0.27-0.85 m proba	0.27 able -FILL-	
• 1 -	D1	61.0/55.9	0.91 - 1.52	4/8/7/11		15		-0.94		Olive-brown dry stiff dessicated -MARINE DEPOSIT-	lean CLAY, non-plastic, la	minated,	
	D2	30.5/27.9	1.52 - 1.83	10/11		21		ł	V///		~~)		
2 -								-1.83		Olive dry to damp very plastic, mottled and lat -MARINE DEPOSIT-	v stiff lean CLAY with trac minated with occasional fin (CL)	e sand partings	
										Bottom of Explora	tion at 1.83 m below grou	nd surface.	
• 3 •													
						_							
4 -													
										- -			
- 5 -													
-											~		
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• 6 •													
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			T										
- 7 -													
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						-+							
Rem	arks:												
H/	ALE	Y&											

		Hale	y & Aldı	rich, Inc.		Pro	oject: R	oute 100)/26 Re	construction	Boring No.:	B-3	6-02
		Soi	II/Rock Explor METRIC UN				ation: H			e	PIN:	918	8.00
Drill	er:	J.	Rudnicki		Elevatio		<u>le No. 2</u> :	8404-0	01		Auger ID/OD:	- / 6.4 cm	
Ope	rator:	М	laine Test Borin	ngs, Inc.	Datum:			IGVD			Sampler:	Split Spoon	
<u> </u>	ged By:		Erickson	0.,	Rig Typ			4D B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg / 76.2	em
	Start/F		0/15/02 / 10/15/	/02	Drilling			Spin SS			Core Barrel:	03.3 Kg / 70.2 V	
Bori	ng Loca	ation: St	a. 1 + 500, 2.7	L	Casing			/-			Water Level*:	3.1 m	
Defin					Definitions	:					Definitions:		
MD = U = T R = F V = Ir	hin Wall T tock Core	sful Split Spoor ube Sample Sample Shear Test	n Sample attempt		$S_u = Insitu$ $T_v = Pocks$ $q_p = Unco$ $S_u(lab) = I$ WOH = we WOR = we	et Torva nfined (_ab Var eight of	ane Shear Compressi ne Shear S 64 kg ham	Strength ve Streng	(kPa) gth (Pa)		WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	
			1	Sample Informatio					•1				Laboratory
o Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (KPD) /%)		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remarks	5	Testing Results/ AASHTO and Unified Class.
Ŭ								4		-ASPHALT ROADW	AY-		
								-0.30		Note: numerous cobb	les from 0.30-0.67 m	0.30	
- 1 -	D1	61.0/25.4	0.76 - 1.37	6/4/6/3		10				gravel and little clay	lium dense poorly-graded S	AND with trace	
	D2	45.7/30.5	1.37 - 1.83	2/2/2		4				-FILL-(SP)			
								-1.62		Grou brown moist ast	leen CLAV with some sit		
- 2 -									V///	sand, slightly plastic, f		t and trace fine	
									V///	-MARINE DEPOSIT-	(CL)		
									V///				
			•										·
- 3 -								1					
	D3	61.0/61.0	3.35 - 3.96	1/WOH/1/1		1		-3.35		Gray-brown moist ver plastic, frequent fine sa -MARINE DEPOSIT-(
- 4 -								-3.96	μιμι				
										Bottom of Explora	tion at 3.96 m below grou	nd surface.	
				·									
- 5 -													
5													
										1 .			
- 6 -													
7 -				· · · · · · · · · · · · · · · · · · ·									
		dings have bee	n made at times	ries between soil types; tra and under conditions state					r due to	conditions other	Page 1 of 1		
than	those pre	sent at the time	measurements w	vere made.		ator nu	Suations I	ay occu			Boring No.:	B-36-02	page 1

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		-	y & Aldr	-		Pro	ject: Ro	oute 100/	/26 Re	construction	Boring No.:	B-3	7-0
		Soi	I/Rock Explore				ation: F le No. 2			e	PIN:	918	8.0
Drill	er:	J.	Rudnicki		Elevation	n (m):	:				Auger ID/OD:	6.4 cm / 11.4 c	m
Ope	rator:	M	aine Test Borin	gs, Inc.	Datum:		Ν	IGVD			Sampler:	Split Spoon	
Log	ged By:	T.	Erickson		Rig Type):	N	4D B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg-/ 76.2 c	m
Date	Start/F	inish: 10	/15/02 / 10/15/0)2	Drilling I	Netho	od: S	pin HSA	1		Core Barrel:	-	
	ng Loca	ation: St	a. 1 + 530, 4 R		Casing I		: -	/-			Water Level*:	3.4 m	
MD = U = TI R = R V = In	plit Spoor Unsucces hin Wall T tock Core	ssful Split Spoon ube Sample Sample Shear Test	Sample attempt		Definitions: S _U = Insitu T _V = Pocke q _p = Uncon S _U (lab) = L WOH = wei WOR = wei	Field V t Torva ifined C ab Van ight of 6	ne Shear Compressiv e Shear S 64 kg ham	Strength (/e Strength trength (k	kPa) th (Pa)		Definitions: WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	ł	-
(m	No.	c (cm)	Sample Depth (m)	Samble Information Blows (150 mm) Shear Strength (rPa) (rPa) (rPa)				r.	: Log	Visual	Description and Remarks		La T R A/
Depth (m)	Sample No	Pen/Rec (cm)	Sample (m)	Blows (Shear Strengt (kPa)		N-value	Casing Blows	Elevation (m)	Graphic Log				L (
0								0.00		-ASPHALT ROADW	/AY-		
								-0.27		-CONCRETE ROAD	WAY-(Old Road)	0.27-	
	D1	61.0/48.3	0.61 - 1.22	4/3/3/3		6	L	-0.55	****	Light brown dry loose	e well-graded SAND with s	ome gravel	
			1.22	<u>כונונוד</u>		<u> </u>		-0.91		-FILL-(SW)	Braden Dritt Will S	0.91-	
1 -	D2	61.0/10.2	1.22 - 1.83	3/2/2/1		4		0.71		Gray moist medium st very slightly plastic, fi -MARINE DEPOSIT-			
2 -										some organics, very sl	t SILT, little fine sand with ightly plastic, frequent sand	trace clay and l partings	
3 -	D3	61.0/33.0	3.05 - 3.66	2/2/1/1		3					(ML) little fine sand with some c equent fine sand partings	lay, slightly to	
4 -										-MARINĚ DEPOSIT-			
5 -	D4	61.0/61.0	4.57 - 5.18	2/3/4/2		7		-4.57		Light gray saturated lo and gravel, stratified o -MARINE DEPOSIT-		4.57- with trace silt	
6 -		(1.0/02.6	610 (21)	1// 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/ 1/		12		-6.10					
	D5	61.0/35.6	6.10 - 6.71	1/6/7/10		13				Tan and light brown s SAND, stratified -MARINE DEPOSIT-	aturated medium dense poo		
7 •	D4	61 0/55 0	7.62 0.22	1/2/4/4		6							
ŀ	D6	61.0/55.9	7.62 - 8.23	1/2/4/4		6				Tan and light brown sa	aturated medium dense loos	e poorly-graded	
Rem	arks: LEN	r&e	I		_			L		L		I	
H	DRI	Creptesent app	roximate boundar	ies between soil types; tra	ansitions may	be gra	dual.				Page 1 of 2		
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		Hal	ey & Aldr	rich, Inc.		Pro	ject: Ro	oute 100	/26 Red	onstruction	Boring No.:	B-3	7-02
			oil/Rock Exploration	ation Log			ation: F						
			METRIC UN	<u>11TS</u>			le No. 2			2	PIN:	918	8.00
Drill	er:		J. Rudnicki		Elevatio	n (m)	:				Auger ID/OD:	6.4 cm / 11.4 c	m
Ope	rator:		Maine Test Borin	ngs, Inc.	Datum:		N	IGVD			Sampler:	Split Spoon	
Log	ged By:		T. Erickson		Rig Type			4D B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg / 76.2	em
	Start/F		10/15/02 / 10/15/	02	Drilling			pin HSA	4	-	Core Barrel:	-	
	ng Loca	tion:	Sta. 1 + 530, 4 R		Casing I		: -	/ -			Water Level*:	3.4 m	
D = S MD = U = T R = R V = In	hin Wall Tu lock Core S	sful Split Spo ube Sample Sample Shear Test	oon Sample attempt		Definitions: $S_u = Insitu$ $T_v = Pocketer q_p = UncorterS_u(lab) = Ltorer WOH = weter WOR = weter$	Field V et Torva nfined (.ab Var ight of	ane Shear S Compressiv ne Shear S 64 kg ham	Strength /e Streng	(kPa) th (Pa)		Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		-*
				Sample Informatio									Laboratory
∞ Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (Ston 90, %)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remarks		Testing Results/ AASHTO and Unified Class.
°								-8.23		-MARINE DEPOSIT-			
				<u> </u>				0.20		Bottom of Explora	ation at 8.23 m below grou	nd surface.	
								1					
- 9 -								1					
				<u> </u>				1					
- 10 -													
								1					
- 11 -								1					
			-										
- 12 -													
- 13 -													
- 14 -								1					
								1					
								1					
								1					
								1					
- 15 -													
			_					1					
								1					
								1					
Rem	harks:			· · · · · · · · · · · · · · · · · · ·			-						Lerie,
A		Y&z	approvimate have 4	aries between soil types; tr	moilien	v.h	ndusi				Dara 2 of 2		
											Page 2 of 2		
Wat	er level rea n those pre	adings have l esent at the ti	been made at times me measurements v	and under conditions state were made.	ed. Groundw	/ater flu	ictuations r	nay occu	r due to	conditions other	Boring No.:	B-37-02	

		Haley	y & Aldr	rich, Inc.		Pro	ject: Ro	ute 100	/26 Red	construction	Boring No.:	<u>B-3</u>	8-02
		<u>Soi</u>	I/Rock Explora			Loc	ation: F	almouth	ı, Main	e	PIN:	918	8.00
			METRIC UN	<u>IIIS</u>			le No. 2	8404-00)1				
Drill	er: rator:		Rudnicki		Elevatio	n (m):					Auger ID/OD:	6.4 cm / 11.4 c	m
· · · ·	ged By:		aine Test Borin Erickson	igs, inc.	Datum: Rig Type			GVD	Transla	Dia .	Sampler: Hammer Wt./Fall:	Split Spoon	
	Start/Fi		/15/02 / 10/15/	02	Drilling			ID B53 pin HS/		Kig	Core Barrel:	63.3 kg / 76.2 d	
	ng Loca		a. 1 + 560, 3 L	02	Casing I			/ -	1		Water Level*:	2.3 m	
Defin	tions:		a. 1 · 500, 5 E		Definitions						Definitions:		
MD = U = T R = R V = Ir	hin Wall Tu ock Core S	sful Split Spoon ube Sample Sample Shear Test	Sample attempt		$S_u = Insitu$ $T_v = Pocket$ $q_p = Uncorton S_u(lab) = LWOH = weWOR = we$	et Torva nfined (.ab Van ight of (ine Shear S Compressiv le Shear Si 64 kg hami	Strength e Streng	(kPa) th (Pa)		WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	
				Sample Information	on								Laboratory
o Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength Cr POD /2/		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remarks		Testing Results/ AASHTO and Unified Class.
Ŭ								-0.30		-ASPHALT ROADW	AY-	0.30-	
- 1 -	D1	61.0/43.2	0.61 - 1.22	6/12/13/13		23		-0.50		Gray and brown dry to gravel, non-plastic -FILL-(ML)	o damp medium dense sand		
	D2	61.0/43.2	1.22 - 1.83	5/10/13/13		23							
		01.0115.2		5/10/15/15				-1.34		Light brown wet med silt, occasional silt lan -MARINE DEPOSIT-		ne SAND, little	
- 2 -			د 										
	D3	61.0/33.0	2.44 - 3.05	1/1/1/1		2		-2.74		Grav wet verv loose n		2.74- ittle silt and	
- 3 -								-3.05		wood, wood is natural -MARINE DEPOSIT-		3.05-	
										Bottom of Explora	nion at 5.05 m below grou	niu surface.	
- 4 -													
- 5 -													
											·		
- 6 -													
- 7 -													
	arks:	aken without	augers							<u> </u>			
ĦĮ∕		Y&	_										
* Wat	er level rea	dings have bee		ries between soil types; tr and under conditions state vere made.				nay occu	r due to	conditions other	Page 1 of 1 Boring No.	B-38-02	

Boring Lo Definitions: D = Split Spo MD = Unsucc U = Thin Wal R = Rock Co V = Insitu Va		METRIC UNI Rudnicki	<u>TS</u>			tion: F e No. 2				PIN:	918	8.00
Operator: Logged B Date Starl Boring Lo Definitions: D = Split Spc U = Thin Wal R = Rock Co U = Insitu Va SSA = Solid (E) 9 0 0 0 0 0 0 0 0 0 0 0 0 0		Rudnicki				C 110. 2	0404-00	1				
Logged B Date Start Boring Lo Definitions: D = Split Spc MD = Unsucc U = Thin Wal R = Rock V V = Insitu Va SSA = Solid (E) 9 4 4 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				Elevatior	า (m):					Auger ID/OD:	- / 6.4 cm	
Date Star Boring Lo Definitions: D = Spilt Spc MD = Unsucc U = Thin Wal SSA = Solid (E)	or: M	aine Test Boring	s, Inc.	Datum:		N	IGVD			Sampler:	Split Spoon	
Boring Lo Definitions: D = Split Spc MD = Unsucc U = Thin Wall R = Rock Co V = Insitu Va SSA = Solid (E) ftad Bar 0 0 D1 D2 D1 D2	Ву: Т.	Erickson		Rig Type	:	Ν	1D B53	Truck I	Rig	Hammer Wt./Fall:	63.3 kg / 76.2	cm
Definitions: D = Split Spc MD = Unsucc U = Thin Wal R = Rock Co V = Insitu Va SSA = Solid (E) 90 0 0 D1 D2 D2	art/Finish: 10	0/15/02 / 10/15/0	2	Drilling N	Aetho	d: S	pin SSA			Core Barrel:	-	
D = Split Spc MD = Unsuc U = Thin Wa F = Rock Co V = Insitu Va SSA = Solid (E) U = O De De De D1 D2		a. 1 + 590, 2 R		Casing II		-	/ -			Water Level*:	Dry	
0 Depth (m)	s: Spoon Sample successful Split Spoon Wall Tube Sample Core Sample Vane Shear Test vlid Stem Auger	i Sample attempt		Definitions: S_{U} = Insitu T_{V} = Pocket q_{p} = Uncon $S_{U}(lab)$ = La WOH = weig WOR = weig	Field Va t Torvar fined Co ab Vane ght of 6	ne Shear S ompressiv e Shear Si 4 kg hami	Strength (/e Strength (trength (k	kPa) h (Pa)		Definitions: WC = water content, percen LL = Liquid Limit PL = Plasticit Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	-
0 D1 - 1 -			Sample Information	n								La
D1	Sample No. Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remarks	5	T R A
- 1									-ASPHALT ROADW	'AY-		
- 1							-0.30		-CONCRETE ROAD		0.30	
- 1							-0.55	*****			0.55	
D2	D1 61.0/45.7	0.61 - 1.22	11/13/7/7		20				Light brown dry med gravel	um dense well-graded SAN	ND with some	1
							-1.07		-FILL-(SW)			'
	D2 61.0/20.3	1.22 - 1.83	5161616		12		-1.07		Gray damp very stiff	andy SILT with little clay,	non-plastic, trace	W I
- 2 -	52 61.0/20.3	1.22 - 1.65	5/6/6/6		12		-1.43		root matter	(MIL)		Ĩ
- 2 -									\		— — <u>1.43</u>	H
							-1.83	/////	laminated	lean CLAY with some silt	, singhuy plasuc,	
									-MARINE DEPOSIT-	(CL)		I
									Bottom of Explora	ntion at 1.83 m below grou		
							1					
• 3 •												
• 4 •												
• 5 •												
					[
							1					
- 6 -			·									
							ł					
7												
							1					
							1					
Remarks:												
HALI												

		Hale	y & Aldr	ich, Inc.		Pro	oject: R	oute 100	0/26 Re	construction	Boring No.:	B-4	0-02
		-	I/Rock Explora	ation Log		Loc	ation: File No. 2	almout	h, Mai		PIN:	918	8.00
Drill	er:	т	Rudnicki		Elevatio			0404-0	01			- / 6.4 cm	
	rator:		aine Test Borin	uge Inc		n (m)		ICUD			Auger ID/OD:		
				igo, 1110.	Datum:			IGVD		D .	Sampler:	Split Spoon	
	ged By:		Erickson		Rig Type			1D B53		кıg	Hammer Wt./Fall:	63.3 kg / 76.2	cm
	Start/F		/15/02 / 10/15/		Drilling I			pin SS/	A		Core Barrel:	-	
Bori Defini	ing Loca	ation: St	a. 1 + 690, 3.5	L	Casing I Definitions:		-	/ -			Water Level*:	Dry	
D = S MD = U = T R = R V = In	plit Spoon Unsucces hin Wall T lock Core	sful Split Spoon ube Sample Sample Shear Test	Sample attempt		Su = Insitu T _v = Pocke q _p = Uncon S _u (lab) = L WOH = wei	Field V t Torva fined C ab Van ight of f	ane Shear Compressiv ne Shear S 64 kg ham	Strength /e Streng trength ((kPa) gth (Pa)		Definitions: WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	it	-
				Sample Information									Laboratory
Oepth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or ROD (%)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remarks	5	Testing Results/ AASHTO and Unified Class.
										-ABITIALI KOADI			
	D1	61.0/48.3	0.46 - 1.07	10/12/7/7		19		-0.34 -0.91		Brown dry medium of and trace silt, (Chang -FILL-(SP)	lense poorly-graded SAND es to gray-brown at 0.79 m)	0.34 with some gravel	
• 1 -	D2	61.0/61.0	1.22 - 1.83	6/7/7/8		14		-1.22		laminated	fine sandy SILT with trace		
										-MARINE DEPOSIT			
										Light brown damp m some silt, stratified	edium dense poorly-graded	fine SAND with	
			,					-1.83		-MARINE DEPOSIT	-(SP)		
· 2 ·										Bottom of Explor	ation at 1.83 m below grou	and surface.	
											Service Brow		
				·····									
3 -													
-													
4 -													
									1				
7													
5 -													
											· ···		
ł													
6 -									1				
1						_			1				
									1				
7													
Rem	arks:		· · · · · · · · · · · · · · · · · · ·						1				
	LE DR	Y &	roximate boundar	ries between soil types; tra	ansitions may	be gra	adual.				Page 1 of 1		
* Wate than	er level rea those pre	adings have bee sent at the time	n made at times a measurements w	and under conditions state ere made.	d. Groundwa	ater fluo	ctuations n	nay occu	ir due to	conditions other	Boring No.:	B-40-02	

				rich, Inc.		Pro	ject: Ro	oute 100	/26 Red	construction	Boring No.:	B-4	1-02
		Soil	Rock Explora				ation: F le No. 2			e	PIN:	918	8.00
Driller	r:	J. 1	Rudnicki		Elevatio	n (m):	:				Auger ID/OD:	- / 6.4 cm	
Opera	ator:	Ma	aine Test Borin	gs, Inc.	Datum:		١	IGVD		,	Sampler:	Split Spoon	
Logge	ed By:	Τ.	Erickson		Rig Type	:	N	AD B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg√76.2	cm
Date S			/15/02 / 10/15/	02	Drilling I	letho	od: S	pin SSA	1		Core Barrel:	-	
Boring		tion: Sta	a. 1 + 745, 3 L		Casing I	D/OD	: -	/-			Water Level*:	Dry	
D = Spli MD = U U = Thir R = Roc V = Insi	lit Spoon Insucces n Wall T ck Core itu Vane	ube Sample	Sample attempt		Definitions: S _u = Insitu T _v = Pocke q _p = Uncon S _u (lab) = Li WOH = wei WOR = wei	t Torva fined C ab Van ght of 6	ne Shear Compressive Shear S 64 kg ham	Strength ve Streng trength (I	(kPa) th (Pa)		Definitions: WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	
		(fir	spth	Sample Informatio									La T R
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (KPa		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual I	Description and Remarks	i	A L
										-ASPHALT ROADW	'AY-		
	D1	61.0/35.6	0.61 - 1.22	6/5/2/2		7		-0.30		Note: numerous cobb	les from 0.30-0.55 m proba	0.30- ble -FILL-	
	D2	61.0/43.2	1.22 - 1.83	4/4/4/12		8		-0.94 -1.22		Gray-brown damp me trace clay, non-plastic, -MARINE DEPOSIT-			
- 2 -			, ,					-1.83		Brown damp loose sile occasional silt laminae -MARINE DEPOSIT-			
										Bottom of Explora	ition at 1.83 m below grou		
- 3 -													
4													
- 5 -													
- 6 -												•	

r: M By: T. art/Finish: 10	METRIC UN Rudnicki faine Test Borin Erickson 0/15/02 / 10/15/0	ıgs, Inc.	Elevation Datum: Rig Type	n (m):		8404-00)1		Auger ID/OD:	6.4 cm / 11.4 c	8.00 m
r: M By: T. nrt/Finish: 10 Location: St	faine Test Borin . Erickson 0/15/02 / 10/15/		Datum:			IGVD				0.4 cm / 11.4 c	
By: T. art/Finish: 10 Location: St	. Erickson 0/15/02 / 10/15/				-				Sampler:	Split Spoon	
nrt/Finish: 10	0/15/02 / 10/15/	02	1.3.1764	9:	N	4D B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg / 76.2 d	
.ocation: St			Drilling I			pin HS.			Core Barrel:		
	ta. 1 + 795, 4 R		Casing I			/ -			Water Level*:	5.1 m	
poon Sample uccessful Split Spoor /all Tube Sample Core Sample /ane Shear Test id Stem Auger			Definitions: S_{u} = Insitu T_{v} = Pocke q_{p} = Uncor $S_{u}(lab)$ = L WOH = wei	Field V It Torva Ifined C ab Van ight of 6	ane Shear ne Shear compressiv e Shear S 64 kg ham	r Strengtl Strength /e Streng	(kPa) th (Pa)		Definitions: WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		-
		and the second					1				Laborato
Deu/Kec (cm) oauline voi Beu/Kec (cm) oauline	(m) (m) (m)	(KF20 mm) Blows (150 mm) Strength (KP30 %)		A N-value	Casing Blows	Elevation (m)	Graphic Log				Testing Results AASHT and Unified Class
								some gravel, trace aspl			
								-FILL-(SP)			
61.0/43.2	0.61 - 1.22	2/2/3/4		5		-0.76				0.76	
										cs, frequent silt	
03 61.0/55.9	1.22 - 1.83	3/3/4/5									
- 01.0/35.3	1.00	5151715		,		-1.52					
						-1.52		Dark brown damp me	dium stiff fine sandy SILT	with trace	
	<u> </u>										
61.0/38.1	3.05 - 3.66	3/2/5/9		7		-3.05		Light brown wet loose	silty fine SAND with little		
								graded, stratified with	occasional silt laminae	, wood, poorry-	
								-MARINE DEPOSIT-(SM)		
				_							
								Gray wet very loose sil	ty SAND with little organic	matter, poorly-	
5 61 0/55 0	1 57 5 18	1/2/2/6		4				graded, occasional coa			
5 01.0/55.9	4.57 = 5.18	1/2/2/0		4					SM)		
								1			
	┨┦										
	ļ										
						-5.94	7777	1		5.74	
6 61.0/58.4	6.10 - 6.71	WOR/WOR/WOR/	WOH V	VOR			¥////	plastic, laminated with	occasional silt laminae	sing mguny	
							¥///	-MARINE DEPOSIT-(CL)		
							¥///				
							V///				
	+						V///				
							V///				
	7.62 - 8.23	WOR/WOR/WOH/	WOH T	VOR			V///				
61.0/61.0							V///	1			
	Stem Auger j (E) j (E) j	1 Stem Auger 1 Stem Auger 1 Gine 2 Gine 2 Gine 3 Gine 61.0/33.0 0.00 - 0.61 1 Gine 1 Gine 2 Gine 3 Gine 61.0/55.9 1.22 - 1.83 1 Gine 1 Gine <th>Sample Information (1) <</th> <th>WOR = we Sample Information (E) (E)</th> <th>WOR = weight of <i>I</i> Sample Information (E) (E) (G) (G)</th> <th>Item Auger WOR = weight of rods Sample Information Image: space space</th> <th>Sample Information Bit Product Image: Section Auger Sample Information Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Imag</th> <th>WOR = weight of rods Sample Information 0 1</th> <th>Stem Autor Sample Information Visual C Sample Information 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 61.0/33.0 0 0 1 61.0/33.0 0 0 1 1.122.13 1 1.122.13 1 1.122.13 1 0.01.122 1.122.13 3/3/4/5 1 0.015.9 1.122.1.83 3/3/4/5 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1</th> <th>Sample information Sample information Sample information Sample information i <t< th=""><th>Usern were Sample Information C = Consolitation Test 2 G</th></t<></th>	Sample Information (1) <	WOR = we Sample Information (E)	WOR = weight of <i>I</i> Sample Information (E) (E) (G)	Item Auger WOR = weight of rods Sample Information Image: space	Sample Information Bit Product Image: Section Auger Sample Information Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Image: Section Auger Imag	WOR = weight of rods Sample Information 0 1	Stem Autor Sample Information Visual C Sample Information 0 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 61.0/33.0 0 0 1 61.0/33.0 0 0 1 1.122.13 1 1.122.13 1 1.122.13 1 0.01.122 1.122.13 3/3/4/5 1 0.015.9 1.122.1.83 3/3/4/5 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	Sample information Sample information Sample information Sample information i <t< th=""><th>Usern were Sample Information C = Consolitation Test 2 G</th></t<>	Usern were Sample Information C = Consolitation Test 2 G

		Hal	ey & Aldr	·ich, Inc.		Pro	ject: Ro	oute 100	/26 Re	construction	Boring No.:	B-4	2-02
			oil/Rock Explora	ation Log			ation: F le No. 2			2	PIN:	918	8.00
Drill	er:		J. Rudnicki		Elevatio			0404-00	/1		Auger ID/OD:	6.4 cm / 11.4 c	m
Ope	rator:		Maine Test Borin	igs, Inc.	Datum:	. ,		IGVD			Sampler:	Split Spoon	
.ogg	ged By:		T. Erickson		Rig Type	ə:		1D B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg / 76.2 d	cm
	Start/Fin	ish:	10/15/02 / 10/15/	02	Drilling			pin HS/			Core Barrel:	-	
Bori	ng Locatio	on:	Sta. 1 + 795, 4 R		Casing I			/-			Water Level*:	5.1 m	
Defini D = S VID = J = TI R = R V = In	tions: plit Spoon Sa	ample ul Split Spo e Sample mple near Test	ion Sample attempt		Definitions: S_{U} = Insitu T_{V} = Pocke q_{p} = Uncor $S_{U}(lab)$ = L WOH = we WOR = we	Field V et Torva nfined (ab Var ight of	/ane Shear ane Shear Compressiv ne Shear S 64 kg ham	Strength Strength	(kPa) th (Pa)		Definitions: WC = water content, perce LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Samble Internation Shear Strength (RPa) or ROD (%)		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remark		Laborator Testing Results/ AASHTC and Unified Class.
8								-8.23			dium stiff lean CLAY, trac h occasional silt laminae -(CL)	e silt, highly	
										L	ation at 8.23 m below gro	and surface.	
9 -													
10 -													
11 -													
12 -													
13 -											· ··		
_													
14 -													
15 -													
2000	arks:								L				
Wa	ter level tak		ut augers										
·			approximate bounda	ries between soil types; tra	ansitions may	y be gra	adual.			·	Page 2 of 2		
Wate	er level readi	ngs have b	een made at times :	and under conditions state vere made.	ed. Groundw	ater flu	ctuations n	av occu	r due to	conditions other	Boring No.	.	

			ey & Aldr				-			construction	Boring No.:		A-02
			METRIC UN			Fi	ation: F le No. 2			e	PIN:	918	8.00
Drill	er:		M. Coffin		Elevatio	n (m)					Auger ID/OD:	- / 6.4 cm	
	rator:		Maine Test Borin	igs, Inc.	Datum:		N	IGVD			Sampler:	None	
Log	ged By:		T. Erickson		Rig Type	:	N	1D B53	Truck	Rig	Hammer Wt./Fall:	135.7 kg / 76.2	cm
Date	Start/Fir	nish:	10/30/02 / 10/30/	02	Drilling N	Netho	od: S	pin SSA	A / Rod	Probe	Core Barrel:	-	
	ng Locati	ion:	Sta. 1 + 795, 4 R		Casing II	D/OD	: -	/-			Water Level*:	-	
D = S MD = U = T R = R V = In	tions: plit Spoon S Unsuccessf hin Wall Tub ock Core Sa isitu Vane S = Solid Stem	ful Split Sp be Sample ample thear Test	oon Sample attempt		Definitions: S_{U} = Insitu T_{V} = Pocke q_{p} = Uncon $S_{U}(lab)$ = La WOH = wei WOR = wei	Field V t Torva fined (ab Var ght of	ine Shear S Compressiv le Shear Si 64 kg hami	Strength	(kPa) th (Pa)		Definitions: WC = water content, percen LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	_*
				Sample Information									Laborator
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (KPD 1%)		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remarks		Testing Results/ AASHTC and Unified Class.
0										-	for subsurface descriptions	from 0.00-8.23	
1 -										m Note: no split spoon s exploration, rod probe	amples taken from 8.23 m t e only	o bottom of	
2 -			· · · · · · · · · · · · · · · · · · ·										
3 -													
_													
4 -													
													-
5													
										. •			2
										1			
			-										
6													
									·				
7													
										,			
Rem	arks:				I				I	1			
_	e: rod prob		boring										
			approximate bounds	ries between soil types; tr	ansitione me	/ ho	adual				Page 1 of 3		
ц <u>ш</u>											Fage 1013		
vvate	those prese	ent at the t	ime measurements v	and under conditions state vere made.	a. Groundwa	ater flu	ctuations n	nay occu	i que to	conditions other	Boring No.	: B-42A-02	

		Haley	y & Aldı	rich, Inc.		Pro	ject: Ro	ute 100	/26 Rec	onstruction	Boring No.:	B-42	A-02
		<u>Soi</u>	I/Rock Explore				ation: F le No. 2			•	PIN:	918	8.00
Drill	er:	М	. Coffin		Elevatio			0404-00	/1		Auger ID/OD:	- / 6.4 cm	
Ope	rator:		aine Test Borir	igs. Inc.	Datum:	(1)		GVD			Sampler:	None	
	ged By:		Erickson	-6-,	Rig Type	e:			Truck F	Rig	Hammer Wt./Fall:	135.7 kg / 76.2	cm
	Start/Fi		/30/02 / 10/30/	02	Drilling				A / Rod I		Core Barrel:	-	
	ng Loca		a. 1 + 795, 4 R		Casing I			/ -			Water Level*:		
Defini	tions:				Definitions	:					Definitions:		
MD = U = T R = R V = In	hin Wall Tu lock Core S	sful Split Spoon ube Sample Sample Shear Test	Sample attempt		T _v = Pocke q _o = Uncor	et Torva nfined (.ab Var light of	/ane Shear ane Shear Compressiv ne Shear S 64 kg ham rods	Strength e Streng	(kPa) th (Pa)	• .	WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		
				Sample Informatio			r						Laboratory
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (KPD) /2/3		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual I	Description and Remarks		Testing Results/ AASHTO and Unified Class.
8								0 77				0.00	
							1	-8.23				8.23	
							1		V///				
									V///				
9 -							1		V///				
							1		V///				
									V///				
							1						
							WOH						
• 10 •							1						
							1						
							1			-MARINE DEPOSIT	-(CL)		
							1						
• 11 -													
. 11							1						
							2	-11.28		Note: probable sand la	yers starting at 11.43 m	— — —11.28	
										rote. probable saile la	yers starting at 11.45 m		
							4						
- 12 -							5						
							5						
							2				oved 1.37 m N after r AW n rod probe blows after 13.72		
							3			2nd location	Tou probe blows alter 15.72	in are nom une	
- 13 -													
							1		V///	-MARINE DEPOSIT-	(CL) • •		
							2		V///				
							4		V///				
- 14 -									V///				
11							6		V///				
							7		<i>V///</i>				
									V///				
							12		V///				
• 15 -							19	-14.94	Ser se	Note: probable strata o	change to possible GLACIA	14.94 [.] L TILL	
							12			DEPOSIT at 14.94 m			
							12		567-62	-Probable GLACIAL	TILL DEPOSIT-(SP)		
							19		S.F				
	<u> </u>								1567F42				
	te: rod pro	obe used in bo	oring										
* Wat	er level rea			aries between soil types; tr and under conditions state were made.				nay occu	r due to o	conditions other	Page 2 of 3	B-42A-02	puper
											I •		

2

Printe Boring No.: 5: B-42A-02, Paper

	I.		Kock Explore	tich, Inc.		Pro	oject: Ro	oute 100	/26 Rec	construction	Boring No.:	<u> </u>	ZA
			METRIC UN	-		Fi	ation: F			2	PIN:	918	38.(
Drille			Coffin		Elevatio	n (m)					Auger ID/OD:	- / 6.4 cm	
	rator:		ine Test Borin	gs, Inc.	Datum:			IGVD			Sampler:	None	
	ged By:		Erickson		Rig Type			1D B53			Hammer Wt./Fall:	135.7 kg / 76.2	2 cn
	Start/Finish:		30/02 / 10/30/	02	Drilling I			pin SSA	/ Rod	Probe	Core Barrel:	-	
Definit	ng Location: tions:	Sta	. 1 + 795, 4 R		Casing I Definitions:): -	/-			Water Level*: Definitions:	-	
D = Sp MD = 1 U = Th R = Ro V = In:	plit Spoon Sample Unsuccessful Spl hin Wall Tube Sar ock Core Sample situ Vane Shear	it Spoon S nple Test	Sample attempt		$S_u = Insitu$ $T_v = Pocke$ $q_p = Uncor$ $S_u(lab) = L$ WOH = we WOR = we	Field \ t Torva fined (ab Var ight of	ane Shear S Compressiv ne Shear S 64 kg ham	Strength	(kPa) th (Pa)		WC = water content, percent LL = Liquid Limit PL = Plastic Limit Pl = Plasticity Index G = Grain Size Analysis C = Consolidation Test	t	
Depth (m)	Sample No.	Pen/Kec (cm)	Sample Depth (m)	Samble Information Shear Strength (KPa) Cor DOD 762,		N-value	ing vs	Elevation (m)	Graphic Log	Visual	Description and Remarks	;	Ļ
Der	San	- Per	(m)	Blov She Stre (KPa	5	N ²	Casing Blows	Ê ⊞	Gra				
16							15						Γ
ŀ							14						
							14						
ł							24						
17 -							23						
							21						
							17						
- 18 -							100(3 cm)	-18.01	iacoccoa	Note: probe refusal a	t 18.01 m on either glacial t	ill or bedrock 18.01	
										Bottom of Explora	tion at 18.01 m below gro		1
[
ł													
- 19 -													
20				······································									
ļ													
• 21 •													
22													
- 23 -													
ŀ													
Not	arks: te: rod probe us LEY&		ring										

		-	I/Rock Explore				ation: F			PIN: 918	2 00
			METRIC UN			Fil	e No. 2			FIN9100	5.00
Drille	er:	J.	Rudnicki		Elevati	on (m):				Auger ID/OD: 6.4 cm / 11.4 cm	n
	ator:		aine Test Borin	gs, Inc.	Datum:			IGVD		Sampler: Split Spoon	
	jed By:		Erickson		Rig Typ			4D B53			m
	Start/F		/15/02 / 10/15/0	02	Drilling			pin HSA	4	Core Barrel: -	
	ng Loca	ition: St	a. 1 + 815, 4 L		Casing Definition		-	/-		Water Level*: 4.6 m Definitions:	
) = Sj /ID = J = Th R = R(/ = In:	olit Spoon Unsucces hin Wall Tr ock Core :	sful Split Spoon ube Sample Sample Shear Test	Sample attempt		S _U = Insit T _V = Pocl q _p = Unco S _U (lab) = WOH = w WOR = w	tu Field V ket Torva onfined C Lab Van veight of 6	ane Shear ne Shear Compressiv e Shear S 54 kg ham rods	Strength /e Streng trength (k	(kPa) th (Pa)	WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	-
				Sample Information							Laborato
⊂ Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (KPD / 201		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Testing Results AASHTO and Unified Class.
										-ASPHALT ROADWAY-	
								-0.30		Note: numerous cobbles from 0.30-0.55 m	
1	D1	61.0/27.9	0.61 - 1.22	6/4/3/4		7	HSA			Light brown damp loose well-graded SAND with some gravel -FILL-(SW)	
· ·	D2	61.0/15.2	1.22 - 1.83	5/7/7/4		14		-1.10		Gray-brown damp medium stiff lean CLAY with some silt, non- plastic, laminated -FILL-(Reworked Natural) (CL)	
2										Brown moist stiff sandy lean CLAY with some gravel, non-plastic -FILL-(Reworked Natural) (CL)	
3 -	D3	61.0/40.6	3.05 - 3.66	WOR/WOR/2	/3	2		-3.26		3.26	
4 -										Gray damp to moist very soft fine sandy SILT with some lean CLAY, non-plastic, occasional sand layers and clay layers, laminated, trace organics -MARINE DEPOSIT-(ML)	
	D4	61.0/61.0	4.57 - 5.18	1/WOH/WOH/W	/OH	WOH		-4.57		Gray moist soft to medium stiff lean CLAY, highly plastic,	
5 -										laminated -MARINE DEPOSIT-(CL)	
6 -	D5	61.0/35.6	6.10 - 6.71	WOR/WOR/WOH	/WOH	WOR				Gray moist soft to medium stiff lean CLAY, highly plastic, trace	
										-MARINE DEPOSIT-(CL)	
	D6	61.0/43.2	7.62 - 8.23	WOR/1/WOR/W	/OR	1					

HALEY& Page 1 of 2 Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made. Boring No.: B-43-02

		Soi	I/Rock Explora METRIC UN			Loc	ation: F	almouth	, Main	e	PIN:	Q1 9	8.00
				115		Fi	le No. 2						0.00
Drille			Rudnicki		Elevatio	n (m)	:				Auger ID/OD:	6.4 cm / 11.4 c	cm
Oper			aine Test Borin	igs, Inc.	Datum:		N	IGVD			Sampler:	Split Spoon	
	jed By:		Erickson		Rig Type			4D B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg / 76.2	cm
	Start/Finis		/15/02 / 10/15/	02	Drilling			pin HSA	1		Core Barrel:	-	
	ng Location	: Sta	a. 1 + 815, 4 L		Casing I		-	/-			Water Level*:	4.6 m	
MD = 0 U = Th R = Ro V = Ins	olit Spoon Sam	plit Spoon ample le r Test	Sample attempt		Definitions: $S_u = Insitu$ $T_v = Pocketer q_p = Uncorrestor S_u(lab) = L WOH = weter WOR = weter W$	Field V t Torva fined 0 ab Van ight of 0	ine Shear S Compressiv le Shear S 64 kg ham	Strength (kPa) h (Pa)		Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		-
				Sample Information	on								Labor
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (KPa)		N-value	Casing Blows	Elevation (m)	Graphic Log		Description and Remarks		Test Resu AASI an Unifi
8										Gray moist soft to me silt, laminated	dium stiff lean CLAY, highly	/ plastic, trace	
Ē								-8.23	(////	-MARINE DEPOSIT	-(CL)		
										Bottom of Explor	ation at 8.23 m below grou		1
t													
9 -													
		······				-							
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	er level taken		augers										
НΑ	LEY	SZ -											

			I/Rock Exploration				ation: F			construction	DIN	010	
			METRIC UN	<u>IITS</u>		Fil	e No. 2				PIN:	918	8.00
Drille			. Coffin		Elevatio	n (m):					Auger ID/OD:	6.4 cm / 11.4 c	cm
Oper			aine Test Borir	igs, Inc.	Datum:			IGVD			Sampler:	Split Spoon	
	ed By:		Erickson		Rig Type			1D B53			Hammer Wt./Fall:	63.3 kg/135.	7 kg
	Start/Fin		/30/02 / 10/30/	02	Drilling I			pin HSA	/ Rod	Probe	Core Barrel:	-	
Borir Definiti	ng Locati	on: Sta	a. 1 + 815, 4 L		Casing I Definitions:		-	/ -			Water Level*:	7.83 m	
D = Sp MD = U U = Th R = Ro V = Ins	olit Spoon Sa	ul Split Spoon e Sample Imple near Test	Sample attempt		Definitions: $S_{U} = Insitu$ $T_{V} = Pocke$ $q_{p} = Uncon$ $S_{U}(lab) = L$ WOH = wei WOR = wei	Field V It Torva Ifined C ab Van ight of 6	ne Shear S compressiv e Shear Si 64 kg hami	Strength (/e Strengt	kPa) h (Pa)		Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test		-
				Sample Information	on								Lat
Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (KPD) /42)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remarks		
0											2-02 for overburden soil des	criptions from	
										0.00 8.23 m			
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2													
- F													
ŀ													
F													
3													
Ē													
ŀ													
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H													
4													
E													ĺ
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	LEY DRK		roximate bounda	ries between soil types; tr	ansitions may	/ be gra	dual.				Page 1 of 3		

		Hale	y & Aldr	ich, Inc.		Proj	ect: R	oute 100)/26 Re	construction	Boring No.:	B-43	A-02
		Soi	I/Rock Explora				ition: I e No. 2			e	PIN:	918	8.00
Drille	r:	М	. Coffin		Elevatio						Auger ID/OD:	6.4 cm / 11.4 c	m
Opera			aine Test Borin	gs, Inc.	Datum:		1	NGVD			Sampler:	Split Spoon	
	ed By:		Erickson		Rig Type			MD B53	Truck	Rig	Hammer Wt./Fall:	63.3 kg / 135.7	kg
	Start/F		0/30/02 / 10/30/0)2	Drilling I			Spin HS	A / Rod	Probe	Core Barrel:	-	
Definitio	g Loca	ation: St	a. 1 + 815, 4 L		Casing I Definitions:		-	. / -			Water Level*: Definitions:	7.83 m	
MD = U U = Thii R = Roo V = Insi	n Wall Tu ck Core S itu Vane	sful Split Spoor ube Sample	Sample attempt		$S_U = Insitu$ $T_V = Pocke$ $q_p = Uncon$ $S_U(lab) = Li$ WOH = wei WOR = wei	t Torvar ifined Co ab Vane ight of 6	ne Shear ompressi Shear S 4 kg ham	Strength ve Streng Strength ((kPa) th (Pa)	· .	WC = water content, percer LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test	nt	-
┝		1	1	Sample Information				T	T				Laboratory
∞ Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength ((Pa)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual [Description and Remark	s	Testing Results/ AASHTO and Unified Class.
°F								1					
								-					
E													
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F								1					
10													
┝						-+		-					
—F								1					
E	D1	61.0/61.0	10.67 - 11.28	1/1/1/2		2		-10.67	7//	Gray wet soft to media	um stiff lean CLAY, highly	10.67 v plastic.	
11 -									V///	laminated		, Linnero'	
F								1	V///	-MARINE DEPOSIT-(
E									V///				
\vdash									V///				
12								1	V///				
	D2	61.0/61.0	12.19 - 12.80	2/2/2/1		4					medium stiff lean CLAY w minated, with frequent sar		
F				······································				1		-MARINE DEPOSIT-((CL)		
13 -									V///				
F									V///				
_L								1					
F	D3	61.0/61.0	13.72 - 14.33	8/6/30/25		36			<i>\///</i>		ndy lean CLAY with trace	organics,	
14 -								-14.05		moderately plastic, lar			
F								1		L	s indicated by the higher s	14.05- plit spoon counts	
<u> </u>											vas not seen in the sample		
F]					
15 -								1					
\vdash	D4	61.0/30.5	15.24 - 15.85	47/43/17/14		60		{		Gray saturated very de	ense gravelly SAND with	some clay,	
								1		moderately bonded, po -GLACIAL TILL DEP	orly-graded		
								1					
								1	IP SPEAP	1			

		rich, Inc.		Pro	ject: Ro	ute 100	/26 Red	construction	Boring No.:	B-43	A-02
	Soil/Rock Explore	-			ation: F le No. 2			e	PIN:	918	8.00
	M. Coffin		Elevation			0704-00	/1		Auger ID/OD:	6.4 cm / 11.4 c	m
or:	Maine Test Borin	igs, Inc.	Datum:	,.		IGVD			Sampler:	Split Spoon	
By:	T. Erickson		Rig Type	:			Truck	Rig	Hammer Wt./Fall:		kg
art/Finish:		02				_				-	0
Location:	Sta. 1 + 815, 4 L				_						
s: Spoon Sample successful Split S Wall Tube Samp Core Sample Vane Shear Te:	ipoon Sample attempt e		Definitions: $S_u = Insitu F$ $T_v = Pocket$ $q_p = Uncont$ $S_u(lab) = La$ WOH = weig	Field V Torva îned C b Van aht of 6	ane Shear ne Shear S Compressiv e Shear S 64 kg ham	Strengti Strength	(kPa) th (Pa)		Definitions: WC = water content, percent LL = Liquid Limit PL = Plastic Limit PI = Plastictly Index G = Grain Size Analysis	7.05 III	
			on				•				Laboratory Testing
Sample No. Pen/Rec (cm)	Sample Depth (m)	Blows (150 mn Shear Strength (KPa)		N-value	Casing Blows	Elevation (m)	Graphic Log	Visual	Description and Remarks		AASHTO and Unified Class.
					16		P67652*	Note: HSA used from to BOE	0.00-15.24 m, rod probe use	d from 15.84 m	
					45						
					37						
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					100(18	-17.56	1281-9-14-8 1262-1265				
					cm)	1.50		Bottom of Explora	tion at 17.56 m below grou		
								Rou probe refusal-pos	SIDIE DEGIOCK		
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	By: rt/Finish: .ocation: poon Sample (ccessful Split S fall Tube Sample /ane Shear Tess d Stem Auger F	By: T. Erickson rt/Finish: 10/30/02 / 10/30/ .ocation: Sta. 1 + 815, 4 L poon Sample ccessful Split Spoon Sample attempt fall Tube Sample Sore Sample Ane Shear Test d Stem Auger	By: T. Erickson rt/Finish: 10/30/02 / 10/30/02 .ocation: Sta. 1 + 815, 4 L poon Sample ccessful Split Spoon Sample attempt fall Tube Sample Sample Test d Stem Auger Sample Information	By: T. Erickson Rig Type rt/Finish: 10/30/02 / 10/30/02 Drilling N .ocation: Sta. 1 + 815, 4 L Casing IE poon Sample Su = Insitu F Tv = Pocket ccessful Split Spon Sample attempt Tv = Pocket qp = Uncont Jore Sample Su(lab) = Le WOH = weig VOR = weig Sample Information Sample Information	By: T. Erickson Rig Type: rt/Finish: 10/30/02 / 10/30/02 Drilling Method .ocation: Sta. 1 + 815, 4 L Casing ID/OD poon Sample Su = Insitu Field V Definitions: cccessful Split Spon Sample attempt Tup = Pocket Torxa Application Jane Shear Test WOH = weight of the WOR = weight o	By: T. Erickson Rig Type: M nrt/Finish: 10/30/02 / 10/30/02 Drilling Method: S scation: Sta. 1 + 815, 4 L Casing ID/OD: - poon Sample Sul = Insitu Field Vane Shear S Su = Insitu Field Vane Shear S rccessful Split Spoon Sample attempt Sulfable Lab Vane Shear S fail Tube Sample Sulfable Lab Vane Shear S vane Shear Test Sample Information Suffable Sulfable Sulfable full fail and set of the se	By: T. Erickson Rig Type: MD B53 rt/Finish: 10/30/02 / 10/30/02 Drilling Method: Spin HS/ cocation: Sta. 1 + 815, 4 L Casing ID/OD: -/- poon Sample Su = Insitu Field Vane Shear Strength Su = Insitu Field Vane Shear Strength cccessful Split Spoon Sample attempt Su = Insitu Field Vane Shear Strength Su = Insitu Field Vane Shear Strength core Sample Surgap Unconfined Compressive Strength Surgap Surgap<	By: T. Erickson Rig Type: MD B53 Truck is rt/Finish: 10/30/02 / 10/30/02 Drilling Method: Spin HSA / Rod cocation: Sta. 1 + 815, 4 L Casing ID/OD: -/- poon Sample Su = Insitu Field Vane Shear Strength (kPa) cccessful Split Spoon Sample attempt Su = Insitu Field Vane Shear Strength (kPa) ruce sample Su = Insitu Field Vane Shear Strength (kPa) /ane Shear Test Sullab) = Lab Vane Shear Strength (kPa) /ane Shear Test Sumple Information Sample Information Image: Sullab) = Lab Vane Shear Strength (kPa) /ane Shear Test Sullab) = Lab Vane Shear Strength (kPa) /ane Shear Test Sullab) = Lab Vane Shear Strength (kPa) /ane Shear Test Sullab) = Lab Vane Shear Strength (kPa) /ane Shear Test Sullab) = Lab Vane Shear Strength (kPa) /and Strength (kPa) Sullab) = Lab Vane Shear Strength (kPa) /ane Shear Test Sullab) = Lab Vane Shear Strength (kPa) /and Strength (kPa) Sullab) = Lab Vane Shear Strength (kPa) /and Strength (kPa) Sullab) = Lab Vane Shear Strength (kPa) /and Strength (kPa) Sullab) = Lab Vane Shear Strength (kPa) /and Strength (kPa) </th <th>By: T. Erickson Rig Type: MD B53 Truck Rig International content of the state of the state</th> <th>By: T. Erickson Rig Type: MD B53 Truck Rig Harmer WL/Fall: rt/Finish: 103/002 / 103/002 Drilling Method: Spin HSA / Rod Probe Core Barrel: occation: Sta. 1 + 815, 4 L Casing ID/OD: -/- Water Level': Definitions: 0.002 / 103/002 Definitions: 0.0015 -/- Water Level': Definitions: 0.0015 0.0015 -/- Water Level': Definitions: 0.0015 Or Barrele 0.0015 0.00015 0.00015 0.00015<th>By: T. Erickson Rig Type: MD B33 Truck Rig Harmer WLFall: 6.3 kg/135.7 ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m or Sample constance Sample attempt of the same Stread Strength (Pa) Stread Toxane Stread Strength (Pa) Stread Strength (Pa) Stread Toxane Stread Strength (Pa) Stread Strength (Pa) Stread Strength (Pa) Stread Strength (Pa) Stread Stre</th></th>	By: T. Erickson Rig Type: MD B53 Truck Rig International content of the state	By: T. Erickson Rig Type: MD B53 Truck Rig Harmer WL/Fall: rt/Finish: 103/002 / 103/002 Drilling Method: Spin HSA / Rod Probe Core Barrel: occation: Sta. 1 + 815, 4 L Casing ID/OD: -/- Water Level': Definitions: 0.002 / 103/002 Definitions: 0.0015 -/- Water Level': Definitions: 0.0015 0.0015 -/- Water Level': Definitions: 0.0015 Or Barrele 0.0015 0.00015 0.00015 0.00015 <th>By: T. Erickson Rig Type: MD B33 Truck Rig Harmer WLFall: 6.3 kg/135.7 ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m or Sample constance Sample attempt of the same Stread Strength (Pa) Stread Toxane Stread Strength (Pa) Stread Strength (Pa) Stread Toxane Stread Strength (Pa) Stread Strength (Pa) Stread Strength (Pa) Stread Strength (Pa) Stread Stre</th>	By: T. Erickson Rig Type: MD B33 Truck Rig Harmer WLFall: 6.3 kg/135.7 ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m ocelation: Sa. 1 + 315, 4 L Casing ID/O: -// Water Level : 7.83 m or Sample constance Sample attempt of the same Stread Strength (Pa) Stread Toxane Stread Strength (Pa) Stread Strength (Pa) Stread Toxane Stread Strength (Pa) Stread Strength (Pa) Stread Strength (Pa) Stread Strength (Pa) Stread Stre

APPENDIX B

2016 - Test boring logs



) St	cantec BOF	REH	10	LE		_0	G]	B-	10)1	
CL	JENT	Town of Falmouth													T No			350	
	CATION		W/A	TEL	R LEVF	71	19'						EXP DA1		ATIO	ON 1	No.	<u>B-1</u>	.01
							MPL	ES							ear Sti	ength	n - tsf		
	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY	SPT blows / 6"	SPT N-Value	PID Reading (PPM)	Dy	ater C namic	Pene	etratio	2 tterbei on Tes	g Lim	iits ws/foo	t −	4 ⊣ ⊖— ★
	81.9						in.								40 5				30
-	81.6 80.7	Medium dense, brown fine/medium SAND, and Silt, and organics, moist -TOPSOIL- Very stiff, olive CLAY, and silt, moist			SS	1	16	5 7 9	16			•							
	79.9	-						7											
		Very stiff, olive/grey SILT, and Clay, dry Torvane vane= 0.7 tsf			SS	2	20	10 13 17 18	30					•					
	77.9	Hard, olive/grey SILT, and Clay, dry Torvane vane=1.13 tsf			SS	3	24	7 11 15	26				•						
	75.9	Hard, olive/grey SILT, and Clay, dry Torvane vane=1.38 tsf						19 18											
	73.9				SS	4	20	26 22 27	48										
	72.9	-MARINE SILT/CLAY- Very stiff, olive/grey SILT, and Clay, dry			SS	5	24	4 9 10	19										
	<u>71.9</u>	Torvane vane=1.19 tsf Stiff, olive CLAY, and Silt, moist Torvane vane=1.25 tsf			SS	6	24	14 2 5	13			•							
	69.9	Very stiff, olive CLAY, and Silt, with fine sand						8 10 10											
	67.9	seams, moist Torvane vane= 0.75 tsf			SS	7	24	11 7 7	18										
		Medium stiff, olive CLAY, and Silt, with fine sand seams, moist Torvane vane= 0.45 tsf			SS	8	24	3 2 4	6		•								
	65.9							4											
	62.9																		
		Loose, fine SAND, and Silt, seams with clay and silt, wet Torvane vane= 0.25 tsf			SS	9	9	2 4 4	8		•								
	60.9	-GLACIAL FLUVIAL- End of boring at 21'. No refusal.						5											
ĺ		er: Ken Smith; Supervisor: Jason Ward ⁷ ype: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Safe	ty Ha	mme	er with	cat he	ead, 2	" Split	Spoor	1		Fiel	d Van	ie Tes	ompre: st omete		Rem	olded	

C	St	antec BOF	REH	10	LE		_0	G]	B-	10	2	
CI	LIENT	Town of Falmouth												JEC		• –		3500	
	OCATION						10.71	201								DN N	ю.	<u>B-1(</u>)2
EZ		ON DATE	WA	TEF	R LEVI									FUM		enath	_ tsf		
DEPTH (ft)	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY [¶]	SPT blows / 6"	SPT N-Value	PID Reading (PPM)	Dy	ater C	1 Conter c Pen	nt & At etratic	2 	g Lim t, blov	3 V		
- 0 -	82.8						in.				1	0	20	30 4	10 5	0 6	0 70	0 80	0 90
	82.5 81.9	Loose, brown ORGANIC, and firm to medium silty sand, moist -TOPSOIL- Loose, brown medium/coarse SAND, trace silt, trace			SS	1	11	1 3 4	7		•						· · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·		
	80.8 80.6	gravel, moist						2								· · · · · · · · · · · · · · · · · · ·			· · · · · ·
	79.4 78.8	-FILL- Loose, brown medium/coarse SAND, trace silt, trace gravel, moist			SS	2	17	4 5 12	9		•								
- 5 -		Loose, grey/brown CLAY, and Silt, dry Torvane vane= 0.7 tsf Very stiff, olive/grey/brown CLAY, and Silt, dry			SS	3	19	5 8 10	18										
	76.8	Torvane vane= 0.55 tsf Very stiff, olive/grey/brown CLAY, and Silt, dry Torvane vane= 0.55 tsf			SS		10	16 17 19	26								· · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·		
	74.8	Very stiff, olive/grey/brown CLAY, and Silt, moist				4	18	17 19 4	36								· · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·		
	72.8	Torvane vane= 0.90 tsf -MARINE SILT/CLAY-			SS	5	23	8 10 11	18								· · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·		
- 10 - - 		Stiff, olive/grey/brown CLAY, and Silt, moist Torvane vane= 1.5 tsf			SS	6	20	2 6 6 8	12			•						I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	
	70.8	Very stiff, olive/grey/brown CLAY, and Silt, moist Torvane vane= 1.375 tsf			SS	7	24	8 13 11 11 12	22				•						
 - - 15 -	68.8	Medium stiff, olive/grey CLAY, and Silt, moist Torvane vane= 0.6 tsf			SS	8	24	3 4 4	8		•								
	66.8							5									· · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · · ·		
 - 20 -	63.8	Medium stiff, olive/grey CLAY, and Silt, with fine sand seams, wet			SS		24	2 3	6		•								
	61.8	Torvane vane= 0.45 tsf						3 5											
		End of boring at 21'. No refusal.						_											
	Drille	r: Ken Smith; Supervisor: Jason Ward											Confin	ed Co	more	ision ⁻		<u></u>	
		ype: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Safe	ty Ha	mme	er with	cat he	ead, 2	" Split S	Spoor	1		Fie	ld Var	eu Co ne Tes enetro	t		Remo	lded	

CLI	ENT												PRO			-	195		
	CATION	Route 100, Falmouth, Maine ON DATE 11/15/2016 to 11/15/2016	W 7A	TED		<u>а</u> т	9.5'-1	10'								ON 1			03
					LEVE		MPL									rength			
	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY	SPT blows / 6"	SPT N-Value	PID Reading (PPM)	Dyr	ter C namio	Pene	t & Al etratic	on Tes	rg Lim st, blov st, blo	nits ws/foc	i⊢ ⊳t	4 ⊣ ❤ ↔
	83.5						in.									50 6			30
-	81.5	Medium dense, brown medium/coarse SAND, and gravel, trace silt, dry -FILL-			SS	1	10	11 12 9 8	21				•						
-	81.1 80.3	Loose, brown medium/coarse SAND, trace silt ,moist Stiff, blue/grey SILT, and Clay Torvane vane= 0.5 tsf			SS	2	15	5 3 6	9			· · · · · · · · · · · · · · · · · · ·							
	<u> </u>	Very stiff, olive/grey CLAY, and Silt, dry Torvane vane= 1.56 tsf			SS	3	24	10 7 6 9	15			•							
	77.5	Hard, olive/grey CLAY, and Silt, dry Torvane vane= 1.25 tsf -MARINE SILT/CLAY-			SS	4	20	13 14 18 15	33					•					
-	75.5	Stiff, olive/grey CLAY, and Silt, moist Torvane vane= 1.25 tsf sand seam at 9.5ft			SS	5	24	14 6 6 7	13			•							
-	73.5	Stiff, olive/grey CLAY, and Silt, moist Torvane vane= 0.63 tsf			SS	6	21	8 3 3 5	8		•								
-	71.5	Stiff, olive/grey CLAY, and Silt, with fine sand seams, moist Torvane vane= 0.63 tsf			SS	7	18	5 6 5	11										
-	69.5	Medium stiff, olive/grey CLAY, and Silt, with fine sand seams, moist Torvane vane= .5 tsf			SS	8	24	6 2 2 2 2	4		•								
-	67.5							4											
_																			
	64.5	Medium dense, light tan fine SAND, trace silt, with clay and silt seams, dry -GLACIAL FLUVIAL-	Y / /		SS	9	14	5 7 10	17			•							
-	62.5	End of boring at 21'. No refusal.				<u> </u>		13											
-																			

) St	tantec BOF	REF	10	LE	I	LO	G								B-	10	4	
JENT														CT No		1953		
CATION																No.		104
PLORAT	ION DATE	WA	TEF	R LEVE		14'-1				_								
ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY N	SPT blows / 6"	SPT N-Value	PID Reading (PPM)	Wa		1		ear St 2 +		3 		4 ⊣ ₩
		STR	WAT	F	NUN		SPT bl	SPT N	A OIA (P	Dyı	namio	Pene	etrati	on Tes	st, blov	ws/foot ws/foo		* •
83.2	8" Pavement					in.				1	0 2	20 3	30	40	50 6	50 7 (8 0	30
82.5 82.2 81.7	Loose, black medium/coarse SAND, and gravel,						9 4											
81.0 80.2	Medium stiff, olive/grey/brown SILT, and clay Torvane vane=1.13 tsf Very stiff, olive/grey SILT, and clay			SS	1	15	3 6 8	7										
78.2	Torvane vane=1.38 tsf			SS	2	14	13 14 14	27										
	Stiff, olive/grey SILT, and clay Torvane vane= 0.65 tsf			SS	3	24	4 5 9	14			•							
76.2	Very stiff, olive/grey SILT, and clay, with fine sand seams, moist Torvane vane= 0.65 tsf			SS	4	20	11 16 12 11	23				•						
74.2	-MARINE SILT/CLAY- Stiff, olive/grey SILT, and clay, moist Torvane vane= 0.60 tsf			SS	5	24	11 5 6	12			•							
72.2	Very stiff, olive/grey SILT, and clay, with fine sand seams, moist						6 6 8 9											
70.2	Torvane vane= 0.45 tsf Medium stiff, olive/grey CLAY, and silt, and sand,			SS	6	24	8 7 3	17										
68.2	with sand seams, moist Torvane vane= .2 tsf			SS	7	20	3 4 9	7		•								
64.2	Medium dense, light tan fine SAND, trace silt, with						10											
62.2	silty sand seams, dry -GLACIAL FLUVIAL-			SS	8	15	14 12 13	26				•						
	End of boring at 21'. No refusal.																	
	 er: Ken Smith; Supervisor: Jason Ward Fype: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Safe	ty Ha	mme	er with	cat he	 ead, 2	" Split	 Spoor	n			confine d Van		ompre		Test Remo	olded	

-		Town of Falmouth	`	.0		-	-00						ספט				- 1(195		
	ENT CATION														CT NO RATIO	••••••			
		ON DATE11/16/2016 to 11/16/2016	WA	TER	LEVE	EL.	20.5'				_				1				
	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY	SPT blows / 6"	SPT N-Value	PID Reading (PPM)		iter Co	1 	nt & A	ear St 2 	erg Lin	3 	W _P	
	ш		S	5		z	R	SPT	ß	IId	· ·				ion Tes ion Te				
	72.2						in.				1	0 2	20	30	40	50	30	70	<u>ہ</u>
	71.7	6" Pavement	_											· · · · · · · · · · · · · · · · · · ·					
	70.5	Medium dense, coarse SAND, and gravel, trace silt \neg -FILL-	/ 🎇		SS	1	14	30 14 9	23				•						· · · · · · · · · · · · · · · · · · ·
		Very stiff, CLAY, and Silt						5											· · · · · · · · · · · · · · · · · · ·
	67.2	Very stiff, olive/grey/brown SILT, and Clay, moist Torvane vane= 1.5 tsf			00		24	5 8	20										
	65.2				SS	2	24	12 13	20										
																			· · · · · · · · · · · · · · · · · · ·
_	<u>62.2</u>	Stiff, olive/grey/brown CLAY, and Silt, moist Torvane vane= 0.81 tsf						4	10										
	60.2				SS	3	24	6 6	10										
		-MARINE SILT/CLAY-																	· · · · · · · · · · · · · · · · · · ·
	57.2	Medium stiff, olive/grey CLAY, and Silt, with fine sand seams, moist						2 3											
	55.2	Torvane vane= 0.45 tsf			SS	4	24	2 3	5										· · · · · · · · · · · · · · · · · · ·
																			· · · · · · · · · · · · · · · · · · ·
_	<u> </u>	Soft, blue/grey CLAY, and Silt, sand seam at 20.5',						1											1
	50.2	wet Torvane vane= 0.01 tsf			SS	5	24	2 1 2	3		•								· · · · · · · · · · · · · · · · · · ·
	50.2	End of boring at 22'. No refusal.						_											· · · · · · · · · · · · · · · · · · ·
		r: Ken Smith; Supervisor: Jason Ward ype: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Safe		· 1			. 1					Unc	onfin	ed C	ompre	ssion	Test		

J) St	antec BO	RE	10	LE	I	-0	G]	B-	10	6	
CLI	ENT	Town of Falmouth													T No		195		
	CATION														RATIO				.06
XI	PLORATI	ON DATE	– WA	TER	LEVE														
	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY N	SPT blows / 6"	SPT N-Value	PID Reading (PPM)	Dy	ater Co namic	1 onten	nt & At etratic	ear Str 2 tterber on Tes on Tes	rg Lin it, blov	3 nits ws/foc	t t	4 ⊣ ⊖—
	51.5						in.					0 2				50 6			30
	50.5	1' Asphalt																	
	<u>49.9</u> 49.6	Medium dense, coarse SAND, and gravel, trace silt ¬-FILL-			00	1	1.1	34 11	1.5										
	19.0	Stiff, olive/grey SILT and Clay Torvane vane= 1.13 tsf			SS	1	11	4 11	15										
	46.5																		
	<u>46.5</u>	No Sample. CLAY and gravel at the tip			SS	2	0	5 4	7										
	44.5	CLAY in cuttings -MARINE SILT/CLAY-						3 4											
		-MARINE SIL1/CLA1-																	
	41.5	Very soft, olive/grey CLAY and SIlt						2											
	39.5	Torvane vane= 0.25 tsf			SS	3	18	1 1 2	2		•								
	36.5																		
	36.3 35.6	Very soft, olive/grey CLAY and SIlt Loose, grey fine SAND, trace silt			SS	4	11	1 2 5	7		•								
								5											
	<u>31.5</u>	Medium dense, light brown fine SAND, and Silt,	-					2											
		with fine/medium sand seams, wet			SS	5	17	3 4 9 12	13			•							
	29.5	-GLACIAL FLUVIAL						12											
		r: Ken Smith; Supervisor: Jason Ward ype: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Saf	ety Ha	mme	r with	cat he	ead, 2	" Split	Spoor	1		Field	d Van	ne Tes	ompres st omete		Rem	olded	

$\left(\right)$	St	antec во	REł	10	DLE	I		G]	B-	10	6	
C	LIENT	Town of Falmouth												JECI		. –		3500	
	DCATION						20'											<u>B-1</u>	<u>)6</u>
E		ON DATE			R LEVI			FS						UM d She					
H (ff)	ELEVATION (ft)		STRATA PLOT	WATER LEVEL					e	бL					2		3	4	,
DEPTH (ft)	EVATI	MATERIAL DESCRIPTION	RATA	TERL	ТҮРЕ	NUMBER	RECOVERY	SPT blows / 6"	SPT N-Value	PID Reading (PPM)	Wa	iter Co	ontent	t & Att	erber	g Lim		W _P v I ← €	v w _L ⊖—1
	ELE		STF	MA	 	NN	REC	SPT b	SPT	H DIA H DIA	· ·	namic Indard							r
							in.					0 2				0 6			0 90
-																			_
	26.5																		
- 25 -	20.3	Medium dense, brown fine/medium SAND, and		-				5					· · · · ·			· · · · ·	· · · · ·		
		gravel, trace silt, wet			SS	6	12	5 7	12			•							
	24.5							16											
- 30 -	21.5	Very dense, brown fine/medium SAND and gravel,						1.4											
		trace silt, wet			SS	7	8	14 17	57							•			
	19.5							40 42											-
-	18.5																		-
		End of boring. Roller refusal at 33ft																	-
																			-
- 35 -													· · · · ·	· · · · ·					<u></u>
- - 40 -																			
- 																			
																			· · · · · [
-																			
																			-
- 45 - -																			
		r: Ken Smith; Supervisor: Jason Ward										Unco	onfine	ed Co	mpres	sion	Test		<u></u>
	Rig T Sampler	ype: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Safe	ety Ha	mme	er with	cat h	ead, 2	" Split	Spoor	1		Field Pock						olded	
													-	-					

	tantec BOI	ا صف ۲					-								B-			
IENT _	Town of Falmouth Route 100, Falmouth, Maine													Γ Νο	• –	<u>195</u>		
CATION		WA	TER	IEVE	T	16'							plor fum	ATIC)N N	10.	<u>D-</u>	1
						MPL	FS							ear Stre	ength	- tsf		-
ELEVATION (ff)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY	SPT blows / 6"	SPT N-Value	PID Reading (PPM)	Dy	ater C mami	1 Conter	nt & At etratic	2 	g Limi t, blow	3 its vs/foc	W _P I−−−− ot	
48.7						in.								40 5				8
48.2	6" Asphalt																	+
47.7 47.5 47.0	Loose, medium/coarse SAND, and gravel, trace silt	₩ 		SS	1	9	6 4	9										
	Stiff, olive/grey SILT, and Clay Torvane vane= 0.63 tsf -MARINE SILT/CLAY-						5 6											* * * * * * * * * * * *
43.7	Soft, olive/grey SILT, and Clay, and organics (peat)	\square					1											
41.7	Torvane vane= 0.35 tsf			SS	2	10	2 2 3	4		•								
41.7	Organics. Sand and gravel at 9.5'																	
38.7																		
	Medium dense, medium/coarse SAND, and gravel, and organics, trace silt			SS	3	5	5 7 8	15			•							
36.7	Clay and wood in cuttings at 14ft						3											* * * * * * * * * * *
<u>33.7</u> 33.1	Loose, light tan SAND, and Silt, with silty clay seams			SS		17	3	8									· · · · · · · · · · · · · · · · · · ·	
32.3	Loose, light tan fine SAND, and Silt			55		1,	5 6											
28.7																		
<u>20.7</u>	Medium dense, light tan fine/medium SAND, trace silt, wet			SS	5	15	7 7 6	13			•							- 4
26.7	-GLACIAL FLUVIAL-						7											
	⊥ ler: Ken Smith; Supervisor: Jason Ward Type: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Safe	ety Har	nmer	with	cat he	ead, 2	" Split	Spoor	1				ed Co ne Tes	mpres		Test Rem	I::::	ċ

(St	antec BOF	REF	10	LE		_0	G]	B-	10	7	
Cl	LIENT	Town of Falmouth											PRO				1953		
	OCATION		WA	TER	R LEVI	EL.	16'						EXP DAT)N N	No.	<u>B-1</u>	<u>07</u>
							MPL	ES				Und	Iraine	d She	ar Str	ength			
DEPTH (ft)	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY	SPT blows / 6"	SPT N-Value	PID Reading (PPM)	Dyr	ter Co namic	Pene	t & Ati etratio	n Tes	g Limi t, blov			→
							in.				1	0 2	20 3	80 4	0 5	06	0 7	0 8	0 90
	22.7																		
- 25 - - 	<u>23.7</u> 21.7	Loose, light tan fine/medium SAND, trace coarse sand, trace silt, wet			SS	6	17	2 3 3 4	6										
	21.7			-															
 - 30 -	<u> </u>																		
	17.7	Medium dense, light tan medium/coarse SAND, trace silt, wet Medium dense, light brown fine SAND, and Silt, wet		-	SS	7	24	3 6 5	11			•							
	16.7	Casing driving hard. Sand and gravel cuttings at 33ft		-				12											
- 35 -	13.7	Very dense, brown fine SAND, and gravel, trace silt, wet		-	SS	8		50/1"										· · · · · · · · · · · · · · · · · · ·	
	12.2	End of boring. Refusal at 36.5ft																· · · · · · · · · · · · · · · · · · ·	
		Roller cone bouncing.																	
 - - 40 -																			
																		· · · · · · · · · · · · · · · · · · ·	
- 45 -																			
		r: Ken Smith; Supervisor: Jason Ward Yype: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Safe	ty Ha	mme	er with	cat he	ead, 2	" Split :	Spoor	l		Field	d Van	e Tes	t	sion ⁻	Remo	olded	

$\left(\right)$	St St	antec BOF	REF	10	LE		_0	G]	B-	10	8	
C	LIENT	Town of Falmouth											PRO.	JEC	Г No		195	3500)19
L	OCATION												EXP	LOR	ATIC	DN N	lo.	B-1	08
E	XPLORATI	ION DATE	WA	TEF	R LEVE														
ť)	(#) Z		OT	VEL		SA	MPL		1				Iraineo 1		ear Stro 2		- tsf 3	4	ł
DEPTH (ft)	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ш	ER	RECOVERY	SPT blows / 6"	SPT N-Value	PID Reading (PPM)					+		<u>ا</u>	N _P V	v w _L
DEF	ILEV		TRA	VATE	ТҮРЕ	NUMBER		T blov	N-V	D Rea					terberg on Test) ≁
	ш		0	>		2	R	SP	R	Ē	· ·				on Tes				Þ
- 0 -	92.5	11 Council and drive	1912				in.				1	0 2	20 3	60 4	40 5	0 6	0 7	08	0 90
-	91.5	1' Gravel parking														· · · · ·			E
-		Medium dense, brown medium/coarse SAND and gravel, some silt, moist						6 5											-
		-FILL-			SS	1	3	7	12			•						· · · · · · · · · · · · · · · · · · ·	
	89.5	Very stiff, olive/brown SILT, and clay						10 9											
		Torvane vane= 1.13 tsf			SS	2	20	12 14	26										
- 5 -	87.5							24										· · · · ·	_
-		Very stiff, olive/brown SILT, and clay, dry Torvane vane= 1.63 tsf						7 9								· · · · · · · · · · · · · · · · · · ·			
					SS	3	21	10 19	19										-
	85.5	Very stiff, olive/brown SILT, and clay, dry	\square					19											
		Torvane vane= 1.38 tsf -MARINE SILT/CLAY-			SS	4	20	16 12	28										
	<u>83.5</u>							12											
-		Stiff, olive/brown CLAY, and Silt, 8"- wet silty fine/med sand						4 5											
– 10 – -		Torvane vane= 1.25 tsf			SS	5	24	6 10	11										
	81.5	Very stiff, olive/brown CLAY, and Silt, with fine	\square					8							· · · · · · · · · · · · · · · · · · ·			· · · · · ·	
		sand seams, moist Torvane vane= 0.75 tsf			SS	6	24	9 10	19										
	79.5							9											
-		Medium stiff, olive/brown CLAY, anD Silt, with sand seams, wet				_		3 3											
	77.5	Torvane vane= 0.25 tsf			SS	7	24	3 4	6										
- 15 -	77.5							•											
-																			
-	73.5														· · · · · · · · · · · · · · · · · · ·			· · · · ·	-
	13.5	Medium stiff, olive/brown CLAY, and Silt, with fine						4											
- 20 -		sand seams, wet Torvane vane= 0.25 tsf			SS	8	22	3 4	7		•							· · · · ·	
	71.5	End of boring at 21'. No refusal.						9											
		End of boring at 21. 100 fotusal.																	
-																			
		r: Ken Smith; Supervisor: Jason Ward		I		aa.t 1		II C1'4	с						mpres				
	Rig T Sampler	ype: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Safe	ty Ha	mme	er with	cat h	ead, 2	" Split	Spoor	1			d Van ket Pe		st ometer		Remo vane	olded	

J	St	antec BOF	RE	10	DLE	I	_0	G]	B-	10	19	
0	ENT CATION PLORATI	Town of Falmouth Route 100, Falmouth, Maine ON DATE 11/17/2016 to 11/17/2016			R LEVI		9'						EXP		T No RATIO	·· -	195 No.	<u>350</u> <u>B-1</u>	
T							MPL	.ES							ear Str	rength	ı - tsf		
	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY	SPT blows / 6"	SPT N-Value	PID Reading (PPM)	Dy	iter Co namic	Pene	nt & Ai etratic	2 tterber on Tes	rg Lim st, blov	nits ws/foo	i– ot →	4 ⊣ ⊖— ★
	91.0						in.								40 5				30
_	90.4	7" Asphalt	****	5															
	90.0 89.3 89.1	Medium dense, medium/coarse SAND, and gravel, _trace silt -FILL-			SS	1	11	12 10 4	14			•							
-	88.0	Stiff, olive/grey SILT, and Clay _Torvane vane= 0.2 tsf						4											
		Stiff, olive/grey CLAY, and Silt Torvane vane= 1.13 tsf -MARINE SILT/CLAY-			SS	2	15	4 6 6 9	12			•							
	86.0	Stiff, olive/grey CLAY, and Silt, sand seams at 6.5ft Torvane vane= 1.0 tsf			SS	3	18	3 6 9	15			•							
	<u> </u>							9											
-		Very stiff, olive/grey/brown SILT, and Clay, with sand seams, moist Torvane vane= 1.13 tsf			SS	4	20	10 10 10 10	20										
	82.0	Medium desne, fine SAND, trace silt, with olive/brown silty clay seams, moist			SS	5	15	5 7 10	17			•							
	80.0	Medium desne, fine SAND, trace silt, with olive/brown silty clay seams, moist		-	SS	6	20	10 13 11 11	22				•						
	78.0	Desne, fine/coarse SAND, and gravel, trace silt, dry		-	SS	7	16	13 15 27 22	49										
	76.0	-GLACIAL FLUVIAL-		-				22											
	72.0																		
	12.0	Dense, fine/coarse SAND, and gravel, trace silt, moist			SS	8	14	18 18 31	49							•			
	70.0	End of boring at 21'. No refusal.						38											
		r: Ken Smith; Supervisor: Jason Ward ype: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Safe	ty Ha	mme	er with	cat h	ead, 2	" Split	Spooi	1		Field	d Van	ne Tes	ompres st omete		Rem		

C	St	antec воя	REF	HC	DLE		_0	G								B-	11	0		
CL	IENT	Town of Falmouth											PRO	DJEC	ΤN	0	195	350	019)
LO	CATION	Route 100, Falmouth, Maine											EXI	PLOF	RATI	ON	No.	B- 1	110	_
EX	PLORATI	ON DATE	WA	TEI	R LEVI	EL .	13.5'			1	_		DA	TUM	[_
	(#)		OT	Ē		SA	MPL	ES		-		Und	draine 1	ed Sh	ear S 2	rengt	n - tsf 3		4	
DEPTH (ff)	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY	SPT blows / 6"	SPT N-Value	PID Reading (PPM)	Dyı	namio	: Per		+ tterbe	st, blo	+	i⊢ ⊳t	₩ ↔ ★	w H
_	77.5						in.							30			60 7		80	90
0 -	77.3 76.7	Loose, brown fine SAND, and Silt, and organics -TOPSOIL-			SS	1	10	3 3 3	6		•									
-	75.5	Loose, light tan fine/medium SAND, trace silt	1					3 9												-
-	75.4 74.7	-FILL- Loose, light tan fine/medium SAND, trace silt, trace gravel			SS	2	10	7 5 4	9											
_	73.5	Stiff, olive/brown SILT, and Clay, moist Torvane vane= 0.38 tsf						8												
5 -	71.5	Very stiff, olive/grey SILT, and Clay, dry Torvane vane= 1.13 tsf -MARINE SILT/CLAY-			SS	3	16	10 16 17	26											
-	70.8	Very stiff, olive/grey SILT, and Clay, dry \Torvane vane= 0.75 tsf			SS	4	17	11 12	27											
-	70.1 69.5	Medium dense, brown fine SAND, and silt						15 12												-
_	68.9	Medium dense, brown fine/medium SAND, and silt						4												
-	68.3 67.5	Medium dense, brown medium/coarse SAND, and Silt, moist		· ·	SS	5	14	6 13 9	19											
10 – - -		Medium dense, brown fine SAND, and Silt			SS	6	17	4 7 6	13			•								
-	65.5 64.7	Medium dense, brown fine SAND, and Silt		• • •		_		8												
_	64.2 63.5	Dense, orange medium/coarse SAND, and gravel, trace silt		- - - -	SS	7	16	11 27 17	38											
- 15 -		-GLACIAL FLUVIAL- Medium dense, brown fine/coarse SAND, and			SS	8	12	9 16 9	25				•							
_	61.5	gravel, trace silt, wet Medium dense, brown fine/coarse SAND, and		• • • •				9 8						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
_	59.5	gravel, trace silt, with silty seams, moist			SS	9	17	8 13 13	21				•							
-		Medium dense, brown fine/coarse SAND, and gravel, trace silt, moist		-	SS	10	14	13 17 13 10	30					•						
- 0 - -	57.5	Medium dense, brown fine/coarse SAND, and gravel, trace silt, wet			SS	11	10	8 11 16 34	27											- I
-	55.5 54.5																			
	Drille	r: Ken Smith; Supervisor: Jason Ward Ype: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Safe	ty Ha	mm	er with	cat h	ead, 2	" Split	Spoor	n		Fiel	d Va	ned Co ne Te Penetro	st	■ er / To	Test Rem rvane nued l			+

$\left(\right)$	St St	cantec BC	RE	10	LE			G]	B-	11	0	
	LIENT														Г No	. –		3500	
	OCATION XPLORAT	Route 100, Falmouth, Maine ION DATE 11/18/2016 to 11/18/2016	WA	TEF	R LEVI	EL .	13.5'				_				ATIC			<u>B-1</u>	10
							MPL					Und	Iraine	d She	ar Str	ength	- tsf		
DEPTH (ft)	TION	MATERIAL DESCRIPTION	A PLO	S LEVI		R	ERY	s / 6"	alue	ding (-		1 		2		3	4 	v w _L
DEP.	ELEVATION (ft)		STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY	SPT blows / 6"	SPT N-Value	PID Reading (PPM)		ater Co namic					its	Ė	→ -
	ш		0	>		2		SP.	R S	Ē	Sta	andaro	l Pen	etratic	on Tes	t, blo	ws/foo	ot 🗨	•
		Medium dense, brown fine/coarse SAND, and					in.	16				10 2	20 3	80 4	0 5	06	0 7	0 80	0 90
		gravel, trace silt, wet			SS	12	4	10 10	20									· · · · · · · · · · · · · · · · · · ·	
- 25 -	52.5	End of boring at 25'. No refusal.						14											
- 30 -																			
- 35 -																			
																		· · · · · · · · · · · · · · · · · · ·	-
																		· · · · · · · · · · · · · · · · · · ·	
- - 40 -																			
																			-
																			-
-																			
- - 45 -																			
-																			
	Rig T	er: Ken Smith; Supervisor: Jason Ward Fype: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Sa	ıfety Ha	mme	er with	cat he	ead, 2	" Split	Spoor	n		Unc Field					Test Remo	olded	
	Sampler										×	Poc	ket Pe	enetro	meter	/ Tor	vane		

J	y 51	tantec BO	RE	10	LE		-00	G							-	В-	11		
CLIE	ENT _														T No	·· -	195		
	ATION						10 51								ATI				11
XP.		TION DATE <u>11/18/2016 to 11/18/2016</u>	- WA	TER	LEVE										ear St				
	N (ft)		LOT	NEL		SA	MPL		0	σ			1		2	•	3		4
	ELEVATION (ft)	MATERIAL DESCRIPTION	STRATA PLOT	WATER LEVEL	ТҮРЕ	NUMBER	RECOVERY	SPT blows / 6"	SPT N-Value	PID Reading (PPM)	Dy	namio	Pen	etratio	tterbe on Tes	st, blo	nits ws/foo	i⊢ ot	⊣ ₩ ← ★
							in.								40 5				80
		6" Asphalt																	:
		Medium dense, brown medium/coarse SAND, and gravel, trace silt, dry -FILL-			SS		15	8 8	12										
-		Stiff, dark grey SILT, and Clay, moist Torvane vane= 0.38 tsf			55		15	4 6	12										
_		Very stiff, olive/grey/brown CLAY, and Silt Torvane vane= 1.38 tsf			~~~			6 9											
		MADDIE OU T/OLAN			SS	2	24	13 16	22										
		-MARINE SILT/CLAY-																	
		Medium stiff, olive/grey CLAY, and Silt Torvane vane= 0.5 tsf			SS	3	24	33	7										
					55	5	24	4											
		Medium stiff, olive/grey CLAY, and Silt, with fine						WH											
		sand seams, wet Torvane vane= 0.15 tsf			SS	4	24	3 2 4	5		•								
		End of boring at 15'. No refusal.						•											
s		ler: Ken Smith; Supervisor: Jason Ward Type: Mobil Drill B-59 2 1/4 HSA; Hammer: 140lb Safe	ety Ha	imme	er with	cat he	ead, 2	" Split	Spoor	1		Fiel	d Var	ne Te	ompre st omete		Rem		

APPENDIX C

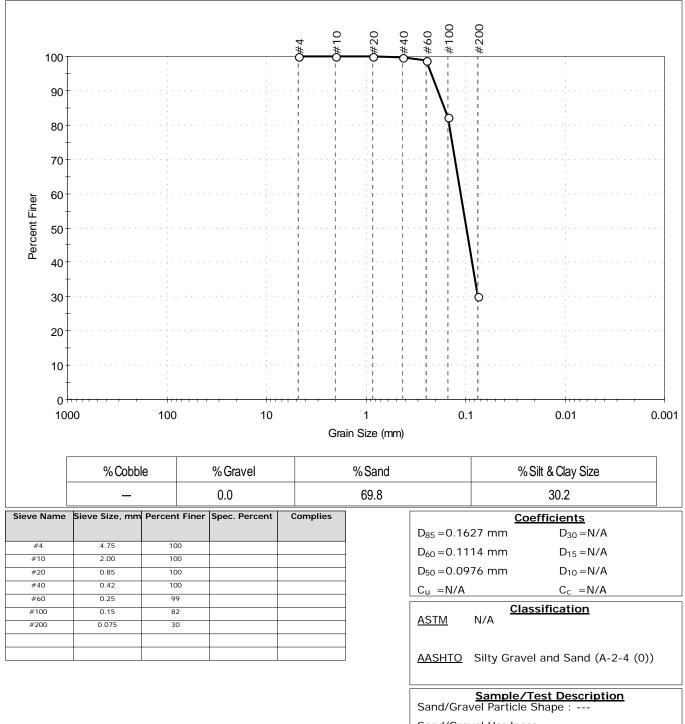
Laboratory Test Results





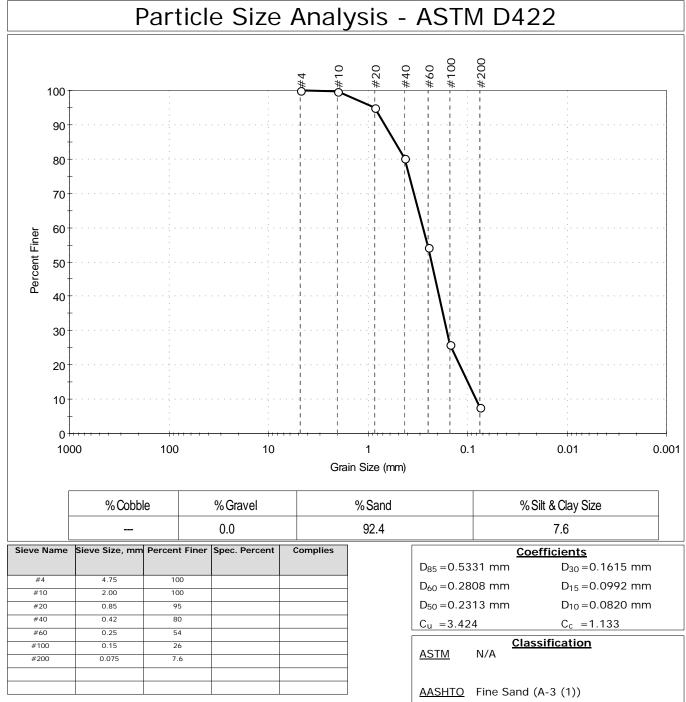
Client:	Stantec Co	onsulting Servio	ces			
Project:	Route 100	1				
Location:	Falmouth,	ME			Project No:	GTX-305689
Boring ID:	B-107		Sample Type:	jar	Tested By:	jbr
Sample ID:	: S-4		Test Date:	12/02/16	Checked By:	emm
Depth :	15-17 ft		Test Id:	399329		
Test Comm	nent:					
Visual Desc	cription:	Moist, brown	silty sand			
Sample Co	mment:					

Particle Size Analysis - ASTM D422





Client:	Stantec Co	onsulting Servi	ces			
Project:	Route 100					
Location:	Falmouth,	ME			Project No:	GTX-305689
Boring ID:	B-107		Sample Type:	jar	Tested By:	jbr
Sample ID:	S-6		Test Date:	12/02/16	Checked By:	emm
Depth :	25-27 ft		Test Id:	399330		
Test Comm	nent:					
Visual Desc	cription:	Moist, light br	rown sand with	silt		
Sample Co	mment:					

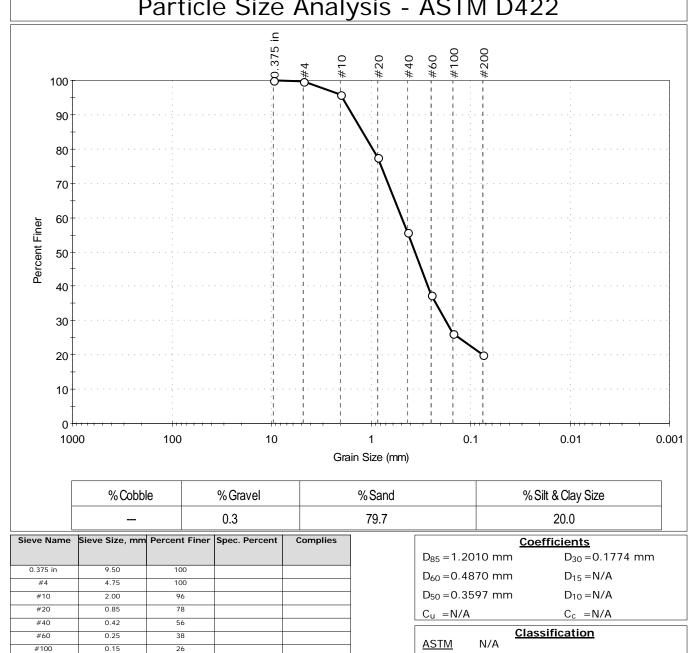


Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---



	Client:	Stantec Co	nsulting Servio	ces			
	Project:	Route 100					
	Location:	Falmouth,	ME			Project No:	GTX-305689
9	Boring ID:	B-110		Sample Type:	jar	Tested By:	jbr
	Sample ID:	S-5		Test Date:	12/02/16	Checked By:	emm
	Depth :	8-10 ft		Test Id:	399331		
	Test Comm	ient:					
	Visual Desc	ription:	Moist, olive si	lty sand			
	Sample Co	mment:					
		<u> </u>					
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AASHTO Silty Gr

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

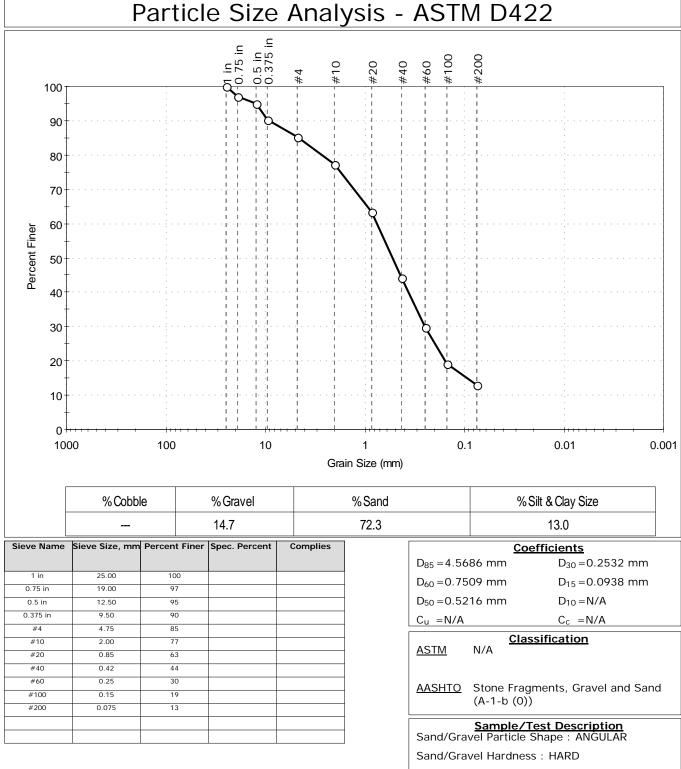
0.075

20

#200

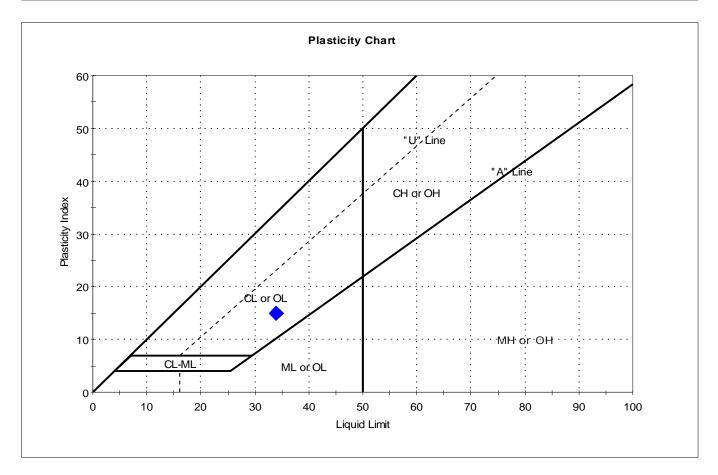


	Client:	Stantec Co	onsulting Servio	ces			
	Project:	Route 100					
	Location:	Falmouth,	ME			Project No:	GTX-305689
	Boring ID:	B-110		Sample Type:	jar	Tested By:	jbr
	Sample ID:	S-8		Test Date:	12/02/16	Checked By:	emm
	Depth :	14-16 ft		Test Id:	399332		
	Test Comm	ient:					
	Visual Desc	ription:	Moist, brown	silty sand			
	Sample Co	mment:					
_		01	Amaly			2400	





ſ	Client:	Stantec Co	onsulting Servic	es			
	Project:	Route 100					
	Location:	Falmouth,	ME			Project No:	GTX-305689
	Boring ID:	B-101		Sample Type:	jar	Tested By:	cam
	Sample ID:	S-5		Test Date:	12/02/16	Checked By:	emm
	Depth :	8-10 ft		Test Id:	399322		
	Test Comm	ent:					
	Visual Desc	ription:	Moist, olive cla	ау			
	Sample Cor	mment:					

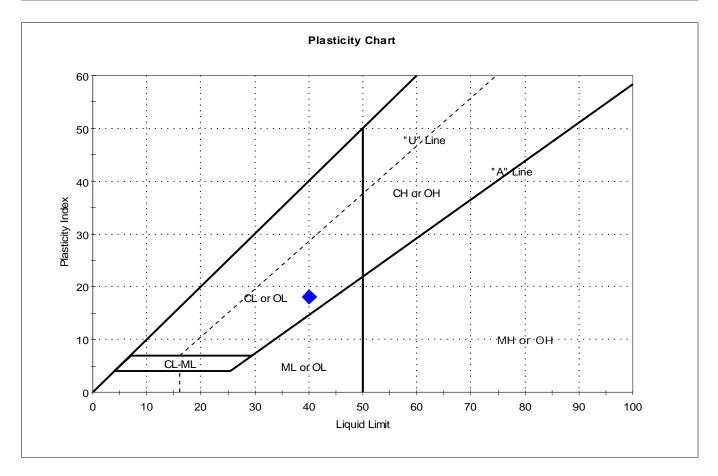


Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	S-5	B-101	8-10 ft	23	34	19	15	0.3	

Sample Prepared using the WET method



Client:	Stantec Co	onsulting Servio	ces			
Project:	Route 100	1				
Location:	Falmouth,	ME			Project No:	GTX-305689
Boring ID:	B-103		Sample Type:	jar	Tested By:	cam
Sample ID	: S-4		Test Date:	12/01/16	Checked By:	emm
Depth :	6-8 ft		Test Id:	399323		
Test Comm	nent:					
Visual Desc	cription:	Moist, olive gr	ray clay			
Sample Co	mment:					

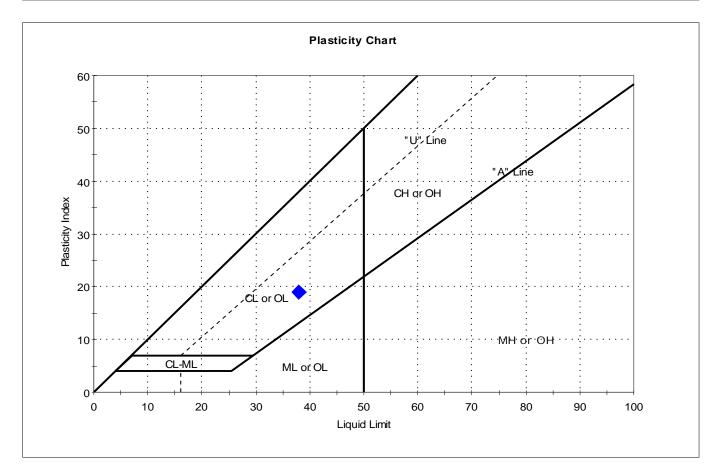


Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	S-4	B-103	6-8 ft	30	40	22	18	0.4	

Sample Prepared using the WET method



Client:	Stantec Co	onsulting Servio	ces			
Project:	Route 100	1				
Location:	Falmouth,	ME			Project No:	GTX-305689
Boring ID:	B-105		Sample Type:	jar	Tested By:	cam
Sample ID:	: S-4		Test Date:	12/02/16	Checked By:	emm
Depth :	15-17 ft		Test Id:	399324		
Test Comm	nent:					
Visual Desc	cription:	Moist, olive gr	ay clay			
Sample Co	mment:					

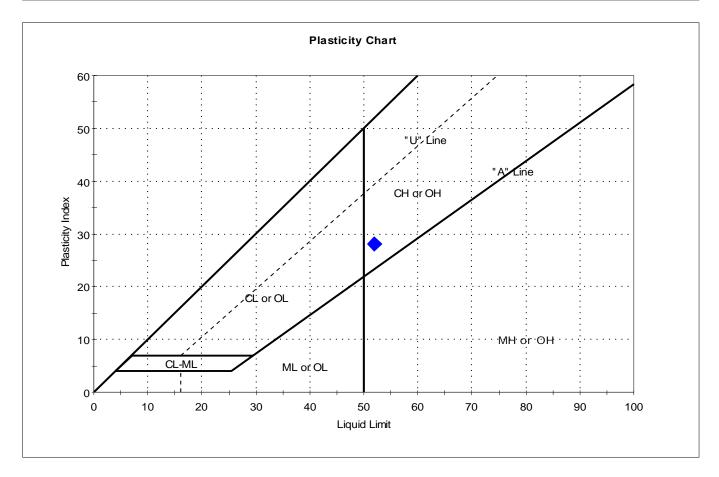


Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	S-4	B-105	15-17 ft	30	38	19	19	0.6	

Sample Prepared using the WET method



Client:	Stantec Co	onsulting Servio	ces			
Project:	Route 100	1				
Location:	Falmouth,	ME			Project No:	GTX-305689
Boring ID:	B-107		Sample Type:	jar	Tested By:	cam
Sample ID:	S-2		Test Date:	12/01/16	Checked By:	emm
Depth :	5-7 ft		Test Id:	399325		
Test Comm	nent:					
Visual Desc	cription:	Moist, dark ol	ive gray clay			
Sample Co	mment:					

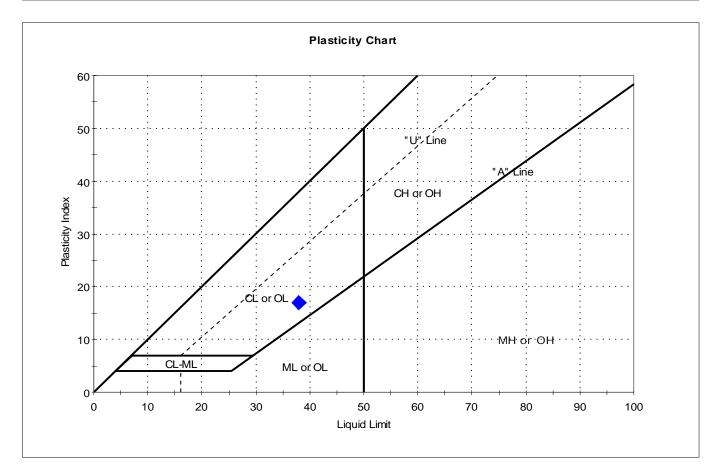


Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	S-2	B-107	5-7 ft	47	52	24	28	0.8	

Sample Prepared using the WET method



Client:	Stantec Co	onsulting Servio	ces			
Project:	Route 100	1				
Location:	Falmouth,	ME			Project No:	GTX-305689
Boring ID:	B-108		Sample Type:	jar	Tested By:	cam
Sample ID:	: S-3		Test Date:	12/01/16	Checked By:	emm
Depth :	5-7 ft		Test Id:	399326		
Test Comm	nent:					
Visual Description: Moist, olive g			ray clay			
Sample Co	mment:					

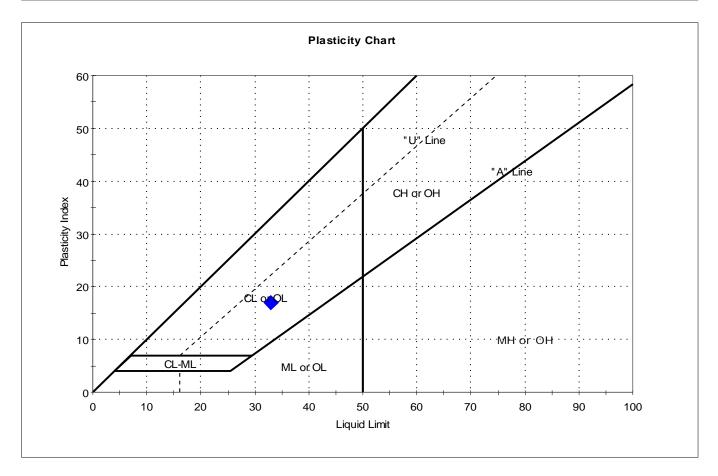


Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	S-3	B-108	5-7 ft	24	38	21	17	0.2	

Sample Prepared using the WET method



Client:	Stantec Co	onsulting Servio	ces			
Project:	Route 100) –				
Location:	Falmouth,	ME			Project No:	GTX-305689
Boring ID:	B-110		Sample Type:	jar	Tested By:	cam
Sample ID	: S-3		Test Date:	12/01/16	Checked By:	emm
Depth :	4-6 ft		Test Id:	399327		
Test Comm	nent:					
Visual Desc	cription:	Moist, olive cla	ау			
Sample Co	mment:					

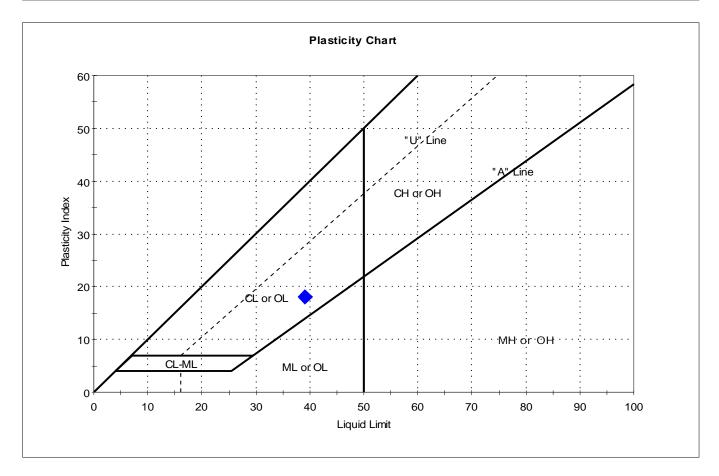


Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	S-3	B-110	4-6 ft	19	33	16	17	0.2	

Sample Prepared using the WET method



[Client:	Stantec Co	onsulting Servio	ces			
	Project:	Route 100					
	Location:	Falmouth,	ME			Project No:	GTX-305689
	Boring ID:	B-111		Sample Type:	jar	Tested By:	cam
	Sample ID:	S-2		Test Date:	12/01/16	Checked By:	emm
	Depth :	5-7 ft		Test Id:	399328		
[Test Comm	ient:					
	Visual Desc	ription:	Moist, olive cla	ау			
	Sample Cor	mment:					



Symbol	Sample ID	Boring	Depth	Natural Moisture Content,%	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
•	S-2	B-111	5-7 ft	27	39	21	18	0.3	

Sample Prepared using the WET method