

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

GEOTECHNICAL DESIGN REPORT

For the Rehabilitation of

**ROUTE 1
FRENCHVILLE-FORT KENT, MAINE**

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Soils Report 2026-63
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Additional review of this report provided by
GZA, see stamped memo dated September 2026.

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1.0 INTRODUCTION

The purpose of this Geotechnical Design Report is to present subsurface information and make geotechnical design and construction recommendations for the rehabilitation of an approximately 4.64-mile portion of US Route 1 in Frenchville and Fort Kent, as shown on Sheet 1 – Location Map. The project is needed to improve drainage and the roadway structure. The scope includes highway reconstruction of the existing pavement with highway reconstruction of roadway shoulders for roadway geometric improvements. Geometric improvements include horizontal alignment and vertical alignment modifications, where sight distances are inadequate for posted roadway speeds. Roadside ditching, cross culverts, driveway culverts and sections of closed drainage are proposed to improve both surface and roadway subbase material drainage. Route 1 is a Highway Corridor Priority 2 road.

2.0 GEOLOGIC SETTING

According to the Reconnaissance Surficial Geology Map of the Edmundston Quadrangle, Maine, Open File No. 87-17 (1987) published by the Maine Geological Survey (MGS), the surficial soils along the project length consist of stream alluvium consists of sand, gravel, and silt, ice-contact glaciofluvial deposits consists of sand, gravel, and silt, and till consists of sand, silt, clay, and stones.

According to the MGS map titled Bedrock Geologic Map of Maine (1985) the bedrock along the project consists of interbedded pelite and sandstone of the Seboomook Formation.

3.0 SUBSURFACE INVESTIGATION

Subsurface conditions at the site included thirty-six (36) borings, fourteen (14) probes, and eight (8) test pits. The boring, probe, and test pit locations are shown on Sheets 2 through 40 - Boring Location Plans.

Borings HB-FRV-101 through HB-FRV-120 were drilled on October 28, 2015. Borings HB-FRV-201 through HB-FRV-213 and the probes were drilled from November 14 to November 15, 2017. Borings HB-FRV-301 and HB-FRV-303 were drilled on October 25, 2022. Boring HB-FRV-302 was drilled on December 6, 2022. The 100-series and 200-series explorations were drilled by the MaineDOT drill crew, and the 300-series explorations were drilled by the S.W.Cole drill crew.

The borings were drilled to depths ranging from approximately 4.5 to 65.0 feet below ground surface (bgs) using solid stem auger, cased wash boring, open hole, hydraulic push, and rock core drilling techniques. The probes were drilled to depths of approximately 8.2 to 10.0 feet bgs using solid-stem auger drilling techniques. Probe designations indicate the depth and termination condition of each probe. The designation “R” indicates refusal, “NR” indicates that no refusal was encountered, and “W” indicates that the probe was terminated due to weathered rock. Test pits were excavated using an excavator to depths of approximately 1 to 3 feet to collect near-surface subgrade soil samples for sieve analyses. The test pit locations are identified by station on the laboratory test reports. The Boring Logs and Probe Summary Sheet are presented in Appendix A.

Soil samples were obtained from eight (8) test pits, from the auger flights in twenty (20) 100-series borings, and at standard 5-foot intervals in thirteen (13) 200-series borings and three (3) 300-series borings using the Standard Penetration Test (SPT). During SPT sampling, the sampler is driven 24 inches and the hammer blows for each 6-inch interval of penetration are recorded. The sum of the blows for the second and third intervals is the N-value, or standard penetration resistance. No soil sampling was done in the probes and no soil descriptions were recorded.

The MaineDOT and S.W.Cole drill rigs are equipped with automatic hammers to drive the split spoon. The hammers were calibrated per ASTM D4633 “Standard Test Method for Energy Measurement for Dynamic Penetrometers” in May 2017 and November 2022, respectively. The N-values discussed in this report are corrected values (N₆₀) computed by applying average energy transfer factors of 0.854 for the MaineDOT drill rig and 0.92 for the S.W.Cole drill rig to the raw field N-values. These hammer efficiency factors (0.854 and 0.92) and both the raw field N-values and the corrected values, are shown on the Boring Logs in Appendix A.

Details and sampling methods used, field data obtained, and soil and groundwater conditions encountered are shown in the Boring Logs in Appendix A. The MaineDOT Geotechnical Team member selected the boring locations, drilling methods, designated type and depth of sampling, reviewed field logs for accuracy and identified field and laboratory testing requirements. A North East Transportation Training and Certification Program (NETTCP) certified subsurface inspector logged the subsurface conditions encountered. The boring and probes were located in the field by taping to site features after completion of the drilling program.

4.0 LABORATORY TESTING

A laboratory testing program was conducted on select soil samples obtained in the test borings to assist in soil classification, evaluation of engineering properties of the soils and geologic assessment of the project site. Laboratory testing consisted of seventy-one (71) standard grain size analyses and natural water content, twenty-two (22) grain size analyses with hydrometer and natural water content, and one (1) Atterberg Limits test. The results of the laboratory tests are in Appendix B – Laboratory Test Results. Laboratory test results are also summarized on the Boring Logs in Appendix A.

5.0 SUBSURFACE CONDITIONS

Subsurface conditions encountered at the test borings and probes generally consisted of pavement and fill, underlain by layers of Native Sand and Native Silt, underlain by Glacial Till, underlain by bedrock. The boring logs are presented in Appendix A – Boring Logs.

5.1 Pavement and Fill Soils

The subsurface investigations found areas of pavement and roadway fill soils along the project. Where present, the pavement thickness ranged from approximately 1.5 to 9.0 inches. The fill soils consisted of:

- Brown, dry to moist, fine to coarse sand, little to some gravel, trace to some silt, occasional cobbles.
- Brown, damp to moist, gravelly fine to coarse sand, little to some silt.
- Brown, damp, fine to coarse sandy gravel, trace to little silt, occasional cobbles.
- Light brown, damp, silt, little fine to coarse sand, trace gravel.

The thickness of the fill ranged from approximately 1.6 to 12.0 feet. The full depth of the fill was not penetrated in all of the explorations. SPT N_{60} -values obtained in the coarse-grained fill ranged from 19 to 87 blows per foot (bpf) indicating that the fill is medium dense to very dense. One (1) SPT N_{60} -value obtained in the fine-grained fill was 26 bpf indicating that the fill is very stiff in consistency.

Water contents from forty-two (42) samples obtained within the fill range from approximately 1.1% to 18.5%. Grain size analyses conducted on forty-two (42) samples of the fill resulted in the soil being classified as an A-1-a, A-1-b, A-2-4, or A-4 under the AASHTO Soil Classification System and a SM, SW-SM, GW-GM, or CL under the Unified Classification System.

5.2 Native Soils

The fill soils are underlain by layers of native soils consisting of Sand, Silt, and Glacial Till.

5.2.1 Native Sand

The native sand encountered in the borings consisted of:

- Brown, reddish brown, light grey, grey, and grey brown, damp to wet, fine to coarse sand, trace to some silt, trace to some gravel, trace clay.
- Brown, moist, silty fine to coarse sand, trace gravel.
- Brown, moist, gravelly fine to coarse sand, little silt, trace clay.

The thickness of the native sand layers ranged from approximately 1.1 to 24.0 feet. The full depth of the native sand was not penetrated in all of the explorations. SPT N_{60} -values obtained in the native sand ranged from 3 to 48 bpf, indicating the native sand is very loose to dense.

Water contents from eighteen (18) samples obtained within the native sand range from approximately 4.5% to 22.9%. Grain size analyses conducted on eighteen (18) samples of the native sand resulted in the soil being classified as an A-1-a, A-1-b, A-4, or A-2-4 under the AASHTO Soil Classification System and a SM, SC-SM, SW-SM, or SP-SM under the Unified Classification System.

5.2.2 Native silt

The native silt encountered in the borings consisted of:

- Light brown, brown, and reddish brown, moist to wet, silt, trace to some fine to coarse sand, trace gravel.
- Grey, wet, silt, trace to some clay, trace fine to coarse sand.

The thickness of the native silt layers ranged from approximately 1.1 to 31.0 feet. The full depth of the native silt was not encountered or fully penetrated in all of the explorations. SPT N-values obtained in the native silt ranged from 3 to 18 bpf indicating that the native silt is soft to very stiff in consistency.

Water contents from ten (10) samples obtained within the native silt range from approximately 9.9% to 33.0%. Grain size analyses conducted on ten (10) samples of the native silt resulted in the soil being classified as an A-4 under the AASHTO Soil Classification System and a CL or CL-ML under the Unified Classification System.

The following table summarizes the results of Atterberg Limits tests done on one (1) sample of the silt:

Boring No. and Sample No.	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index
HB-FRV-303 10D	24.3	24	18	6	1.05

Interpretation of these results indicates that the silt has low plasticity (Burmister, 1949). The natural water content is close to the liquid limit. Based on Bowles, 2016, the index tests indicate that this sample is normally consolidated.

5.2.3 Glacial Till

The native soils were underlain by Glacial Till consisting of:

- Brown, light brown, and grey, moist to wet, silt, little to some fine to coarse sand, trace to some gravel, trace to little clay.
- Brown and grey, damp to wet, fine to coarse sand, little to some silt, little to some gravel, trace clay, occasional cobbles.
- Grey, wet, gravel, some fine to coarse sand, some silt.
- Grey and grey brown, wet, gravelly fine to coarse sand, little silt.
- Grey, wet, fine to coarse sandy gravel, little silt.

The thickness of the Glacial Till ranged from approximately 2.0 to 21.6 feet. SPT N_{60} -values obtained in the fine-grained Glacial Till ranged from 16 to 51 bpf, indicating the deposit is very stiff to hard in consistency. SPT N_{60} -values in the coarse-grained Glacial Till ranged from 20 to 343 bpf, indicating the deposit is medium dense to very dense.

Water contents from fifteen (15) samples obtained within the Glacial Till range from approximately 5.3% to 16.2%. Grain size analyses conducted on fifteen (15) samples of the Glacial Till resulted in the soil being classified as an A-4, A-2-4, or A-1-b under the AASHTO Soil Classification System and a CL, SM, SC-SM, or GM under the Unified Classification System.

5.3 Surface Soil Samples

Surface samples were collected in eight (8) test pits along the project for sieve analyses of near-surface soils. The soils encountered consisted of:

- Fine to coarse sand, little to some gravel, trace to little silt.
- Gravelly fine to coarse sand, trace silt.

Water contents from eight (8) samples obtained within the test pits range from approximately 2.2% to 4.2%. Grain size analyses conducted on eight (8) test pits samples resulted in the soil being classified as an A-1-a or A-1-b under the AASHTO Soil Classification System and a SW-SM or SM under the Unified Classification System.

5.4 Bedrock and Refusal Surfaces

Refusal surfaces were encountered at varying depths along the project. Refusal of the drilling tools varied from a depth of approximately 7.3 feet to 59.5 feet bgs. The table below summarizes the refusal surfaces encountered.

Exploration Designation	Station	Offset (feet)	Approximate Depth to Top of Refusal Surface (feet)	Approximate Elevation of Top of Refusal Surface (feet)	RQD (%) ¹
P-9.5R	647+50	13.0 Left	9.5	503.0	NA
P-7.0W	648+50	15.0 Left	7.5	503.5	NA
P-7.0W	649+00	13.5 Left	7.5	501.8	NA
P-8.2R	649+50	13.5 Left	8.2	498.9	NA
P-6.5W	650+00	14.0 Left	7.3	497.8	NA
HB-FRV-301	666+00	6.0 Right	59.5	434.2	17

¹ RQD = Rock Quality Designation

A 5.5-foot bedrock core was drilled in boring HB-FRV-301 where refusal was encountered. The nature of the refusal surfaces encountered in the remaining explorations was not determined and may represent bedrock or cobbles/boulders.

The bedrock consists of interbedded pelite and sandstone of the Seboomook Formation. The Rock Quality Designation (RQD) of the bedrock was 17%, correlating to a Rock Quality of Very Poor. The approximate elevations of the top of bedrock or the refusal surface encountered at the boring and probe locations are presented in Appendix A – Boring Logs and Probe Summary Sheet.

5.5 Groundwater

Groundwater was recorded at depths ranging from approximately 20.0 feet to 23.0 feet bgs in three (3) 300-series borings. The water levels observed are indicated on the Boring logs in Appendix A. Groundwater levels can be expected to fluctuate subject to seasonal variations, local soil conditions, topography, precipitation, and construction activity.

6.0 GEOTECHNICAL RECOMMENDATIONS

The following sections discuss the geotechnical-related design features of this project. Areas of geotechnical concern include the large culvert at approximate Station 677+94, the precast concrete block gravity walls from approximate Stations 629+13 to 629+23, 630+52 to 631+23, and 633+12 to 634+18, and the proposed oversteepened slopes from approximate Stations 639+50 to 651+00, and 665+50 to 668+50.

6.1 Large Culvert at approximate Station 677+94

6.1.1 General Information

The existing structure at approximate Station 677+94 is a 48-inch diameter, approximately 60-foot long CMP culvert. The proposed replacement structure is a 72-inch diameter, 91-foot long Option III culvert on an approximately 3.6-degree skew to the roadway centerline with an inlet elevation of approximately 485.70 feet and an outlet elevation of approximately 482.27 feet. Boring HB-FRV-106 was drilled at the proposed structure to a depth of 4.5 feet with no SPT N-values collected.

6.1.2 Design

The proposed Option III culvert shall be constructed in accordance with MaineDOT Standard Specification Section 603 and the Contract Plans. To facilitate fish passage, Habitat Connectivity Design elements will be used inside the proposed Option III culvert as shown on the Special Details sheet in the Contract Plans.

The likely bearing material for the proposed culvert is loose to medium dense sand or soft to medium stiff silt. No changes to the vertical or horizontal alignment of the road are proposed, and due to the wider opening of the proposed culvert this will likely result in a net unload of the native material. Proposed Option III culvert is recommended to be bedded on a 1-foot thick layer of Granular

Borrow, Material for Underwater Backfill (MaineDOT Item 203.25, Granular Borrow). The bedding material should be placed in lifts of 6 to 8 inches loose measure and compacted to at least 95 percent of the AASHTO T-180 maximum dry density. The exposed subgrade shall be free of ponded water so that bedding material placement and compaction can be completed in the dry. Any disturbed soils at the bedding elevation resulting from excavation activities shall be removed by hand prior to placement of the bedding material. All subgrade surfaces should be protected from construction traffic in order to limit disturbance. Groundwater and surface water levels shall be depressed sufficiently to allow work in the dry.

The full nature of the culvert bearing surface will not become evident until the culvert excavation is made. The bottom elevation of the excavation shall take into account the wall thickness of the Option III culvert and the required 1-foot layer of bedding material. Any loose or soft soils in the excavations shall be removed and replaced with Granular Borrow Material for Underwater Backfill (MaineDOT 703.19) or Crushed Stone $\frac{3}{4}$ -Inch (MaineDOT 703.13). Any cobbles or boulders encountered in excess of 6 inches shall be removed and replaced with compacted Granular Borrow Material for Underwater Backfill or Crushed Stone $\frac{3}{4}$ -Inch.

The soil envelope and backfill shall consist of Granular Borrow (703.19) with a maximum particle size of 4 inches. The granular borrow backfill material shall be placed in lifts of 6 to 8 inches loose measure and compacted to the manufacturer's specifications or, in the absence of manufacturer's specifications, the bedding and backfill soil shall be compacted to at least 92 percent of the AASHTO T-180 maximum dry density.

6.1.3 Construction

Construction of the Option III culvert will require soil excavation. Earth support systems will be required if laying back slopes is not feasible. Regardless of the method of excavation, all excavations and earth support systems shall meet all applicable OSHA regulations.

If organic silt or peat is encountered in the project excavations, the materials should be over excavated to be completely removed and replaced with Granular Borrow, Material for Underwater Backfill or Crushed Stone, $\frac{3}{4}$ -Inch.

The Contractor shall control groundwater and surface water infiltration using temporary ditches, sumps, granular drainage blankets, stone ditch protection or hand-laid riprap with geotextile underlayment to divert groundwater and surface water to allow construction in the dry.

6.2 Settlement

Subsurface conditions encountered along the project generally consisted of pavement and fill underlain by native cohesionless soils and bedrock. These materials undergo elastic, immediate, compression in response to an increase of vertical overburden pressure. The proposed vertical alignment will approximately match the existing. As a result, little to no increase in vertical overburden pressure is expected and any settlement is anticipated to be small and will occur primarily during construction.

6.3 Scour and Riprap

Where required, slopes shall be armored with riprap conforming to MaineDOT Standard Specification 703.26 – Plain and Hand Laid Riprap. The riprap shall be underlain by a Class 1 erosion control geotextile conforming to MaineDOT Standard Specification 722.03 – Erosion Control Geotextile and a 1-foot layer of bedding material conforming to MaineDOT standard Specification 703.19 Granular Borrow Material for Underwater Backfill. The toe of the riprap sections shall be constructed 1-foot below the streambed elevation. The riprap slopes shall be constructed no steeper than 2H:1V extending from the edge of the roadway down to the existing ground surface.

6.4 Seismic Design Considerations

In conformance with LRFD Article 3.10.1, seismic analysis is not required for buried structures, except where they cross active faults. There are no known active faults in Maine; therefore, seismic analysis is not required.

6.5 Replacement of Three Gravity Walls between Stations 629+13 to 629+23, 630+52 to 631+23, and 633+12 to 634+18

The existing walls in this area are precast concrete block gravity walls with a maximum exposed height of approximately 6 feet. The tops of the walls appear equal to roadway elevation, and the bottoms of the walls are in residential gravel driveways. The three proposed walls are located between Stations 629+13 to 629+23, 630+52 to 631+23, and 633+12 to 634+18. Proposed grades will approximately match existing.

The proposed replacement retaining walls shall be constructed as shown on the Contract Plans and shall meet the requirements of Standard Specification 672 Precast Concrete Block Gravity Wall. The proposed wall shall be supplier designed in accordance with AASHTO LRFD Bridge Design Specifications (LRFD) 10th Edition 2024 and Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Slopes (FHWA-NHI-10-024 and FHWA-NHI-10-025, March 2012).

The proposed retaining wall shall be designed to withstand lateral earth pressures. Earth loads may be calculated using an active earth pressure coefficient, K_a , calculated using Rankine or Coulomb Theory. Refer to LRFD Article 3.11.5.3 and Equations 3.11.5.3-1 and -2 for calculating Coulomb active earth pressure coefficient. Lateral earth pressure distributions for design of MSE walls are provided in LRFD Figures 3.11.5.8.1-1, -2 and -3. Passive earth pressure in front of the wall should be neglected in the design.

Borings HB-FRV-203 to HB-FRV-206 were drilled in the vicinity of the three proposed walls and show between 5 to 10 feet of medium dense to very dense fill overlying glacial till. The bearing elevations of the three walls range from approximately elevation 510.0 to 515.0, and the likely bearing material below the walls is glacial till. The factored bearing resistances for the retaining wall bearing on a concrete leveling pad on native soils at the service and strength limit states are

presented in the table below. In no instance shall the bearing stress exceed the nominal resistance of the structural concrete which may be taken as $0.3f'_c$.

Limit State	Resistance Factor ϕ_b	AASHTO LRFD Reference	Factored Bearing Resistance (ksf)
Service	1.0	Article 10.5.5.1	4.0
Strength	0.45	Table 10.5.5.2.2-1	4.5

The following additional considerations should be addressed in the wall design:

- Free draining crushed stone shall be used to backfill behind the wall which is separated from surrounding soil with geotextile.
- Perforated pipe shall be placed within the crushed stone layer at the base of the wall with weepholes spaced at a nominal maximum spacing of 10 feet.
- A minimum embedment of 2.0 feet is required for the wall design.

6.6 Oversteepened Slopes

Existing slope inclinations within the proposed oversteepened slope limits range from approximately 1.3H:1V to 2.5H:1V along the uphill side of the roadway from approximately Station 639+50 to 651+00, and from 1.5H:1V to 2.0H:1V along the river embankment slopes from approximately Station 665+50 to 668+50. Bedrock outcrops are present along the uphill side of the roadway between approximate Stations 647+00 and 651+00 where the final geometry will be controlled by bedrock excavation conditions.

To accommodate the roadway widening, typical oversteepened slope with inclinations of 1.75H:1V are proposed at approximate Stations 639+50 to 642+35 left and 665+50 to 668+50 right. Cross sections along the proposed oversteepened slopes were analyzed to evaluate slope stability. It is anticipated that the soil slopes above the rock cuts will either not be significantly modified or will include a 1.5H:1V riprap toe or consist of a 2H:1V soil slope which will be considered as good or better than the current conditions. Therefore, global stability analyses were not conducted in this area. The remaining cross sections were chosen to represent critical slope locations along the oversteepened slopes. Geostudio Slope/W software was used to evaluate the slopes. The stability analyses were based on subsurface conditions encountered in the borings drilled in the roadway shoulder at the crest of the existing slopes. In accordance with AASHTO LRFD Bridge Design Specifications 10th Edition 2024 (LRFD) Article 11.6.3.7 evaluation of earth slopes where geotechnical parameters are well defined shall achieve a factor of safety of 1.3 (equivalent to a resistance factor of 0.75).

The results of these analyses are presented in the following table:

Station	Proposed Slope Angle	Proposed Slope Factor of Safety with 3 feet of Plain Riprap	Proposed Slope Factor of Safety with 4 feet of Heavy Riprap
640+00 Left	1.75H:1V	1.3	--

640+50 Left	1.75H:1V	1.3	--
641+00 Left	1.75H:1V	1.3	--
666+00 Right	1.75H:1V	--	1.3
667+00 Right	1.75H:1V	--	1.3
667+50 Right	1.75H:1V	--	1.3
668+00 Right	1.75H:1V	--	1.3
668+50 Right	1.75H:1V	--	1.3

An existing cross culvert is located between Station 833+00 to 834+00, and a localized swale is present where the existing slope inclination is approximately 1.5H:1V. This slope geometry cannot be significantly modified, and the 1.5H:1V slope inclination and will include a heavy riprap detail to armor the slope which will be considered as good or better than the current conditions.

Based on these analyses, all of the proposed slopes shall be armored with 3 feet or 4 feet of riprap conforming to MaineDOT Standard Specification Section 703.26 Plain Riprap and Hand Laid Riprap and 703.28 Heavy Riprap. The riprap shall be underlain by a 1-foot layer of protective aggregate cushion conforming to MaineDOT Standard Specification 703.19 Granular Borrow Material for Underwater Backfill that is underlain by a non-woven Class 1 erosion control geotextile that meets the requirements for MaineDOT Standard Specification 722.03. Appendix D – Slope Stability Analyses present the final slope configuration results.

6.7 Rock Cut Slopes between Stations 647+00 to 651+00

Permanent rock cuts will be required in the area of Station 647+00 to 651+00. The existing outcrop in that area has a bedrock structure that is near vertically oriented, and the existing rock exposure generally follows a joint set that strikes near parallel to the slope orientation. The rock texture is thinly bedded and friable, easily being removed in thin plates by hand. The slope was mostly obscured by vegetation at the time of the site visit, so observations are based on limited windows of visible exposed rock.

Based on a site visit by MaineDOT on September 15, 2026, the near-vertical existing rock slope has a relatively flat bench area with relatively sparse, recent growth vegetation extending approximately 10 feet back from the slope crest. The bench transitions into a steeper soil cut slope further left and upslope from the baseline with old growth forested vegetation. It is noted that the design cross sections do not reflect this varied existing topography, likely due to the frequency of survey measurements available for contouring on the slope. They also show a typical rock face inclination of about 1V:1.5H (approximately 55 degrees), while the actual outcrop is near vertical. During the MaineDOT site visit, the existing ditch at the toe of the slope was observed and did not contain any fallen rock, indicating a relatively stable existing rock slope configuration. This is consistent with the bedrock structure, which does not present adverse jointing from a kinematic perspective.

We conclude the most appropriate and cost-effective excavation in this location would be to construct a near-vertical slope following the joint orientation visible on the existing slope, and ideally daylighting within the current bench. We recommend that the contract documents include a design rock cut inclination of 1H:8V to meet this intent, although the actual condition is likely to be

near vertical following the bedrock plane nearly parallel to the slope. The ditch should consist of a 4H:1V foreslope extending 6 feet horizontally from the edge of pavement section, followed by a 2H:1V backslope extending 3 feet horizontally from the ditch flowline to toe of rock cut. This provides a 9-foot-wide, 2-foot-deep catchment, which is appropriate for the anticipated rock cut height up to about 15 feet.

Excavation of rock near the finish slope line will require special care to develop the desired condition. Notes should be included on the drawings that describe the desired slope condition so the contractor can carry appropriate means and methods in their bids. We recommend that an approximately 25-foot-long test section be excavated to expose the design rock cut to assess the ability to develop the desired condition, in case field design modifications are needed to provide something more constructible.

A terrace of exposed bedrock on the order of 2 feet wide should be prepared behind the top of the rock cut to limit vegetation growth and erosion over the slope. The overburden back slope above the rock cut should consist of a 1.5H:1V slope with heavy riprap surface cover or a 2H:1V slope.

Visual indication of the steeper soil cut above suggests that it is a stable glacial till slope, and the old growth vegetation likely improves stability. Therefore, clearing limits should be limited to the minimum extent necessary to develop the rock cut, terrace, and 1.5H:1V slope tying into the existing slope. Trees that have their root mass disturbed by grading activities should be cut flush with the slope surface or should have the root mass entirely removed depending on the extent of disturbance. It would be valuable to have the contractor survey the top of the design rock cut line shown on the drawings to establish whether it is on the bench before any clearing extends onto the permanent slope. This survey should be reviewed with the Resident to assess appropriate clearing limits.

6.8 Additional Bedrock Removal

Refusal of the drilling tools was encountered in borings and probes along the project (see Section 5.4). Bedrock removal is anticipated for drainage and subgrade installation near these locations. Additional shallow bedrock should be expected during construction at other locations.

Blasting shall not be conducted for bedrock removal.

7.0 CLOSURE

This report has been prepared for the use of the MaineDOT Highway Program for specific application to the proposed rehabilitation of U.S. Route 1 in Frenchville-Fort Kent, Maine in accordance with generally accepted geotechnical and foundation engineering practices. No other intended use or warranty is expressed or implied.

In the event that any changes in the nature, design, or location of the proposed project are planned, this report should be reviewed by a geotechnical engineer to assess the appropriateness of the conclusions and recommendations and to modify the recommendations as appropriate to reflect the changes in design. These analyses and recommendations are based in part upon a limited subsurface

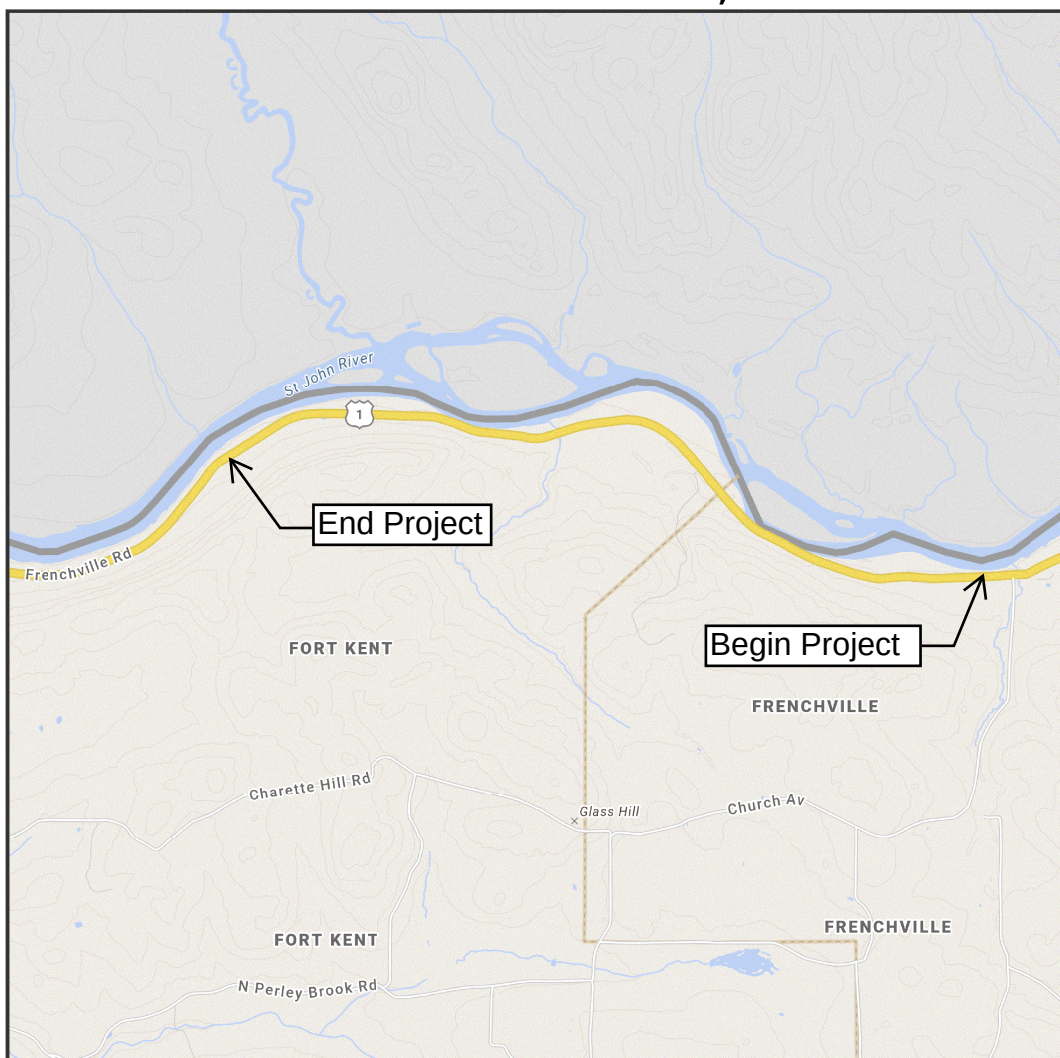
investigation at discrete exploratory locations completed at the site. If variations from the conditions encountered during the investigation appear evident during construction, it may also become necessary to re-evaluate the recommendations made in this report.

It is recommended that a geotechnical engineer be provided the opportunity for a review of the design and specifications in order that the earthwork and foundation recommendations and construction considerations presented in this report are properly interpreted and implemented in the design and specifications.

Sheets



FRENCHVILLE-FORT KENT, MAINE

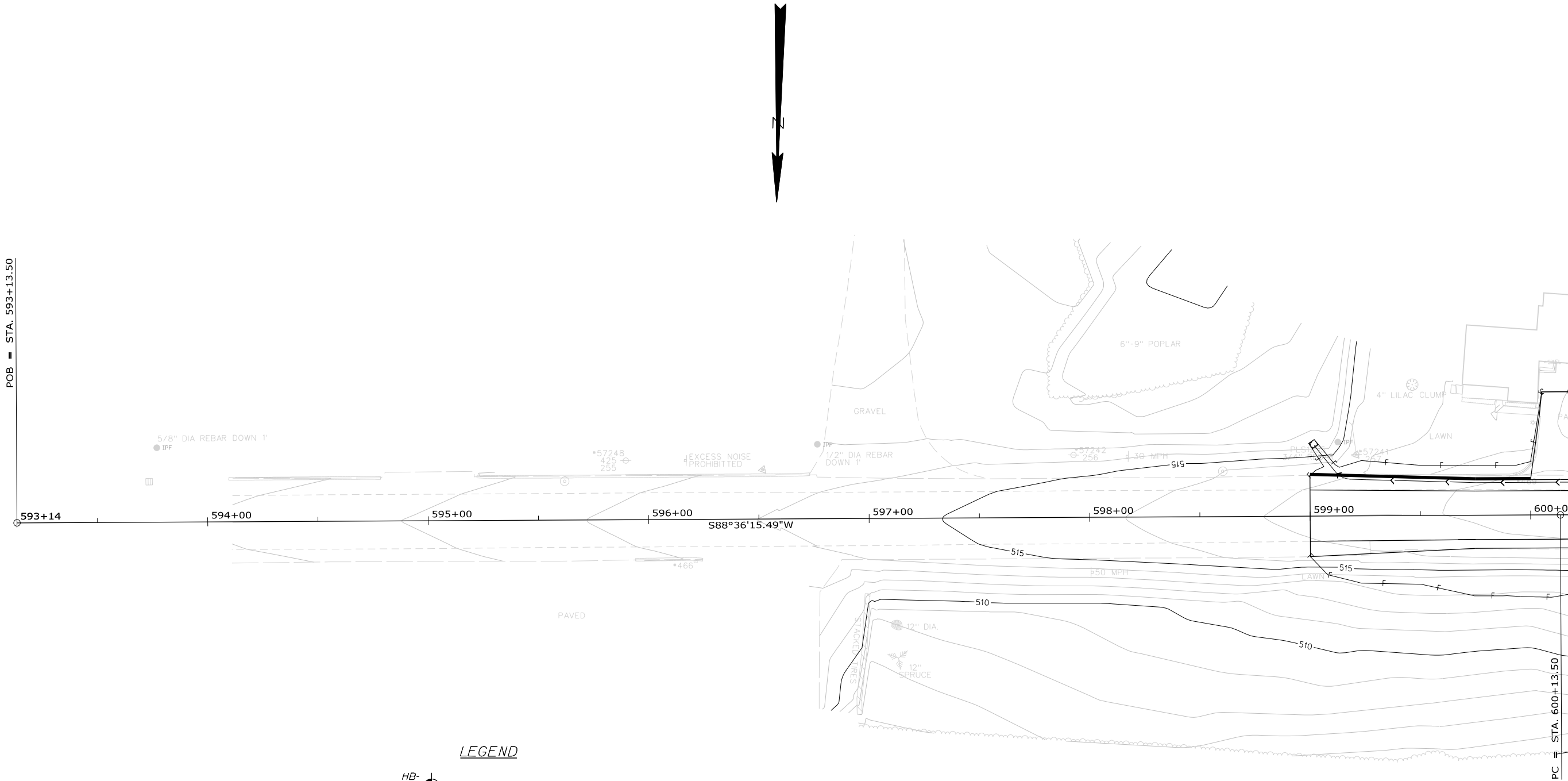


The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

1 Miles
1 inch = 1.19 miles

Date: 7/14/2026
Time: 10:30:24 AM

SHEET NUMBER 1 OF 40	FRENCHVILLE-FORT KENT US ROUTE 1 LOCATION MAP	STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2265(600) WIN 22656.00 HIGHWAY PLANS
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LEGEND

HB-

BORING

P-

PROBE

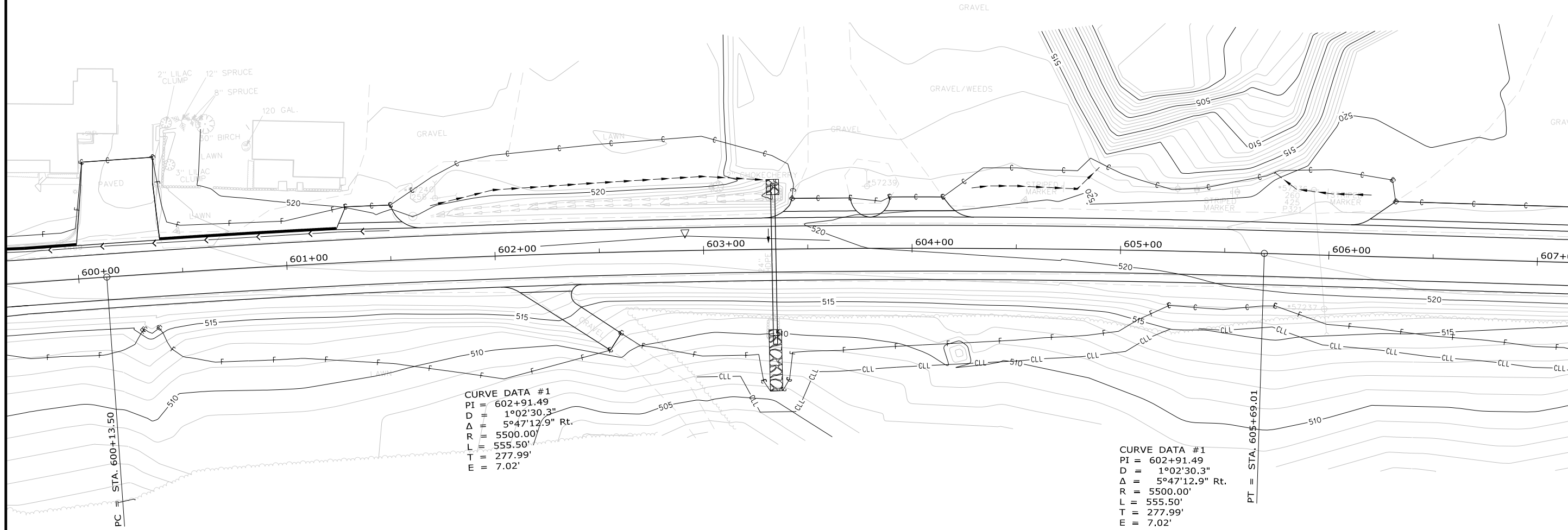
KEY

R = Refusal of augers (actual nature of refusal surface unknown)

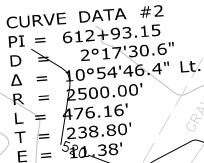
NR = No Refusal surface encountered

W = Weathered Rock, top of

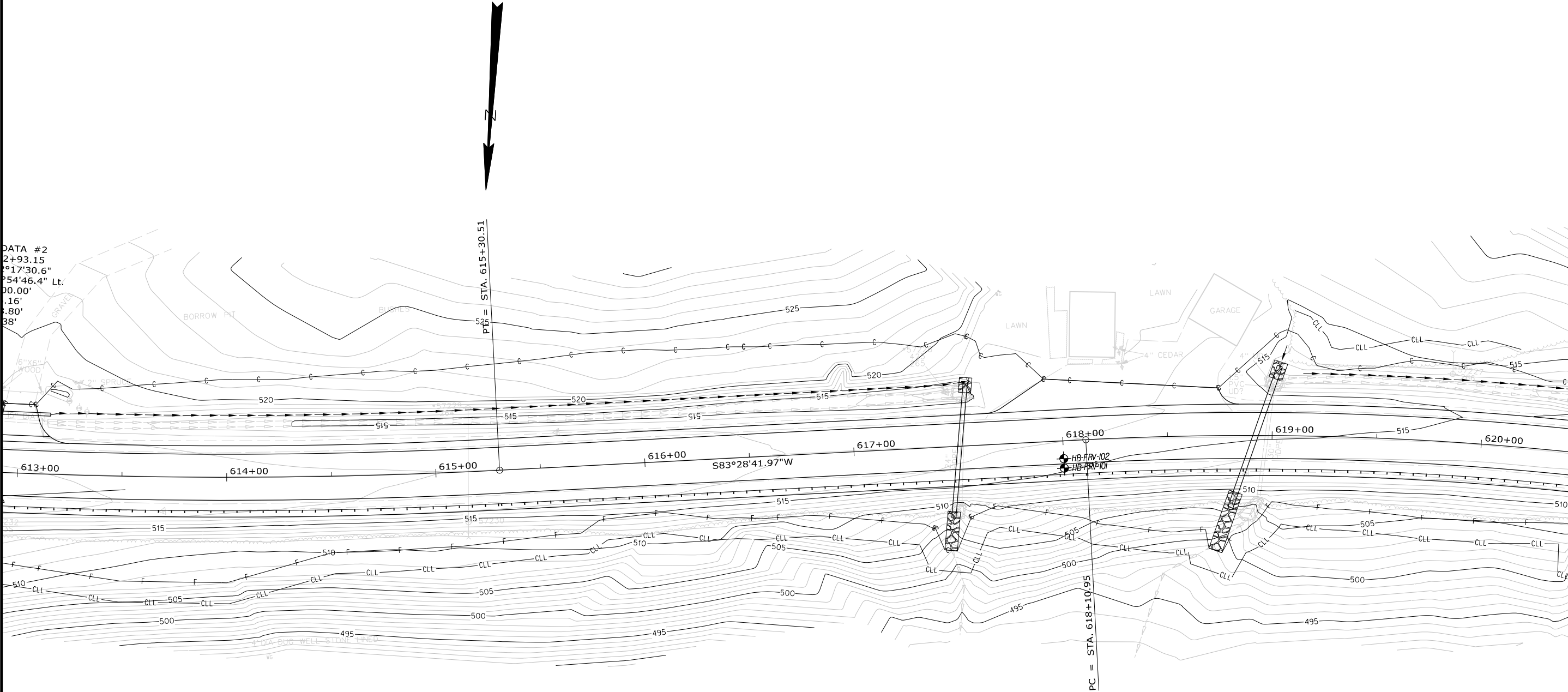
SHEET NUMBER 2 OF 40	FRENCHVILLE - FORT KENT US ROUTE 1				PROJ. MANAGER E. MARTIN	BY	DATE
					CHECKED-REVISED		
					DESIGN2-DETAILED2	YI LEE	JUL 2026
					DESIGN3-DETAILED3	T. WHITE	
					REVISIONS 1		
					REVISIONS 2		
					REVISIONS 3		
					REVISIONS 4		
					FIELD CHANGES		
	BORING LOCATION PLAN						
STATE OF MAINE DEPARTMENT OF TRANSPORTATION							
STP-2265(600)							
WIN 22656.00 HIGHWAY PLANS							



OF 40	3	SHEET NUMBER	FRENCHVILLE - FORT KENT US ROUTE 1				PROJ. MANAGER	E. MARTIN	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION				
			BORING LOCATION PLAN				DESIGN-DETAILED	SIGNATURE							
							CHECKED-REVIEWED								
							DESIGN2-DETAILED2					Y1 LEE	T.WHITE	JUL 2026	
												DESIGN3-DETAILED3	P.E. NUMBER		
				REVISIONS 1											
				REVISIONS 2											
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				REVISIONS 4											
				FIELD CHANGES	DATE										
								WIN 22656.00		HIGHWAY PLANS					

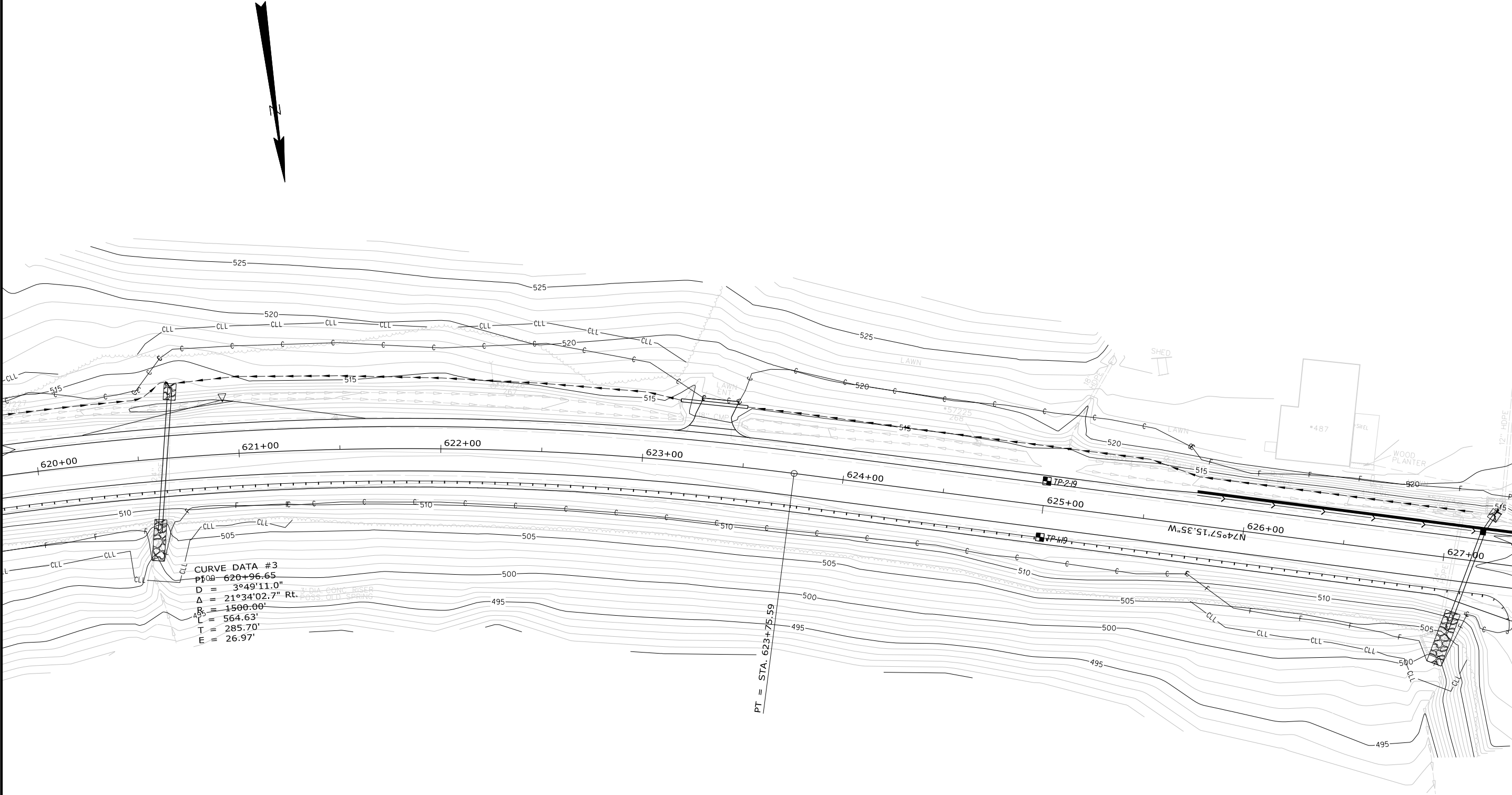


4 OF 40	SHEET NUMBER	FRENCHVILLE - FORT KENT US ROUTE 1				PROJ. MANAGER	E. MARTIN	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2265(600) WIN 22656.00 HIGHWAY PLANS	
						DESIGN-DETAILED	CHECKED-REVIEWED				SIGNATURE
					DESIGN2-DETAILED2	YI LEE	T.WHITE	JUL 2026			
					DESIGN3-DETAILED3						P.E. NUMBER
					REVISIONS 1						
					REVISIONS 2						
					REVISIONS 3						
					REVISIONS 4						
					FIELD CHANGES				DATE		

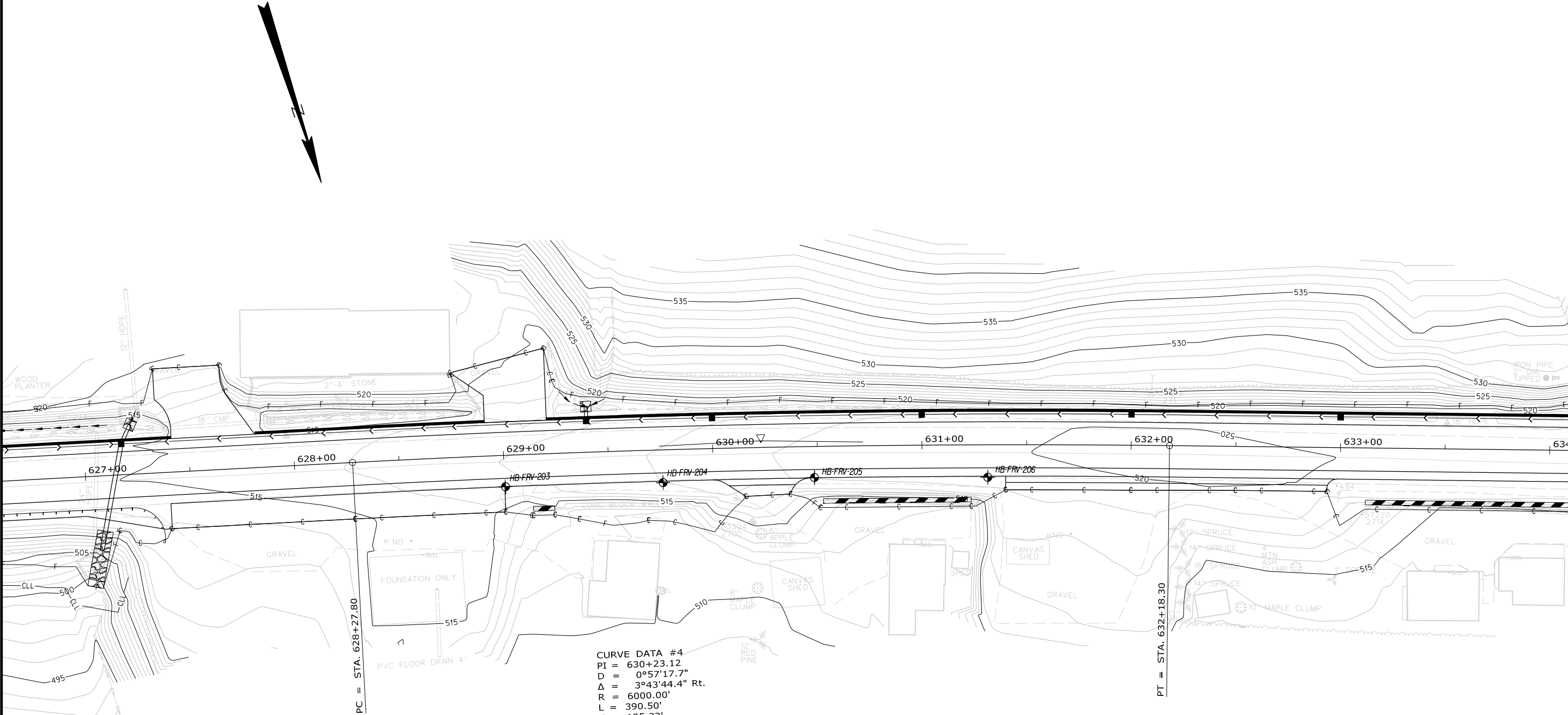


DATA #2
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 54'46.4" Lt.
 00.00'
 1.16'
 1.80'
 38'

STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2265(600)	SHEET NUMBER 5 OF 40																																										
	FRENCHVILLE - FORT KENT US ROUTE 1 BORING LOCATION PLAN																																										
	<table> <tr> <th>PROJ. MANAGER</th> <th>E. MARTIN</th> <th>BY</th> <th>DATE</th> </tr> <tr> <td>DESIGN-DETAILED</td> <td></td> <td></td> <td></td> </tr> <tr> <td>CHECKED-REVIEWED</td> <td>YT LEE</td> <td>T. WHITE</td> <td>JUL 2026</td> </tr> <tr> <td>DESIGN-DETAILED</td> <td></td> <td></td> <td></td> </tr> <tr> <td>REVISIONS 1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>REVISIONS 2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>REVISIONS 3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>REVISIONS 4</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">FIELD CHANGES</td> </tr> </table>	PROJ. MANAGER	E. MARTIN	BY	DATE	DESIGN-DETAILED				CHECKED-REVIEWED	YT LEE	T. WHITE	JUL 2026	DESIGN-DETAILED				REVISIONS 1				REVISIONS 2				REVISIONS 3				REVISIONS 4				FIELD CHANGES				<table> <tr> <th>SIGNATURE</th> <th>P.E. NUMBER</th> <th>DATE</th> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	SIGNATURE	P.E. NUMBER	DATE		
PROJ. MANAGER	E. MARTIN	BY	DATE																																								
DESIGN-DETAILED																																											
CHECKED-REVIEWED	YT LEE	T. WHITE	JUL 2026																																								
DESIGN-DETAILED																																											
REVISIONS 1																																											
REVISIONS 2																																											
REVISIONS 3																																											
REVISIONS 4																																											
FIELD CHANGES																																											
SIGNATURE	P.E. NUMBER	DATE																																									
HIGHWAY PLANS WIN 22656.00																																											



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2265(600)		WIN 22656.00	
HIGHWAY PLANS			
FRENCHVILLE - FORT KENT US ROUTE 1		BORING LOCATION PLAN	
SHEET NUMBER		6	
OF 40			
PROJ. MGR.	E. MARTIN	BY	DATE
DESIGN-DETAILED			
CHECKED-REVIEWED			
DESIGN-DETAILED	YT LEE		JUL 2026
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SIGNATURE		P.E. NUMBER	
DATE			



STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

STP-2265(600)

WIN 22656.00

HIGHWAY PLANS

PROJ. MANAGER

E. MARTIN

BY

DATE

DESIGN-DETAILED

CHECKED-REVIEWED

YT LEE

DESIGN-DETAILED

JUL 2026

SIGNATURE

P.E. NUMBER

DATE

FRENCHVILLE - FORT KENT

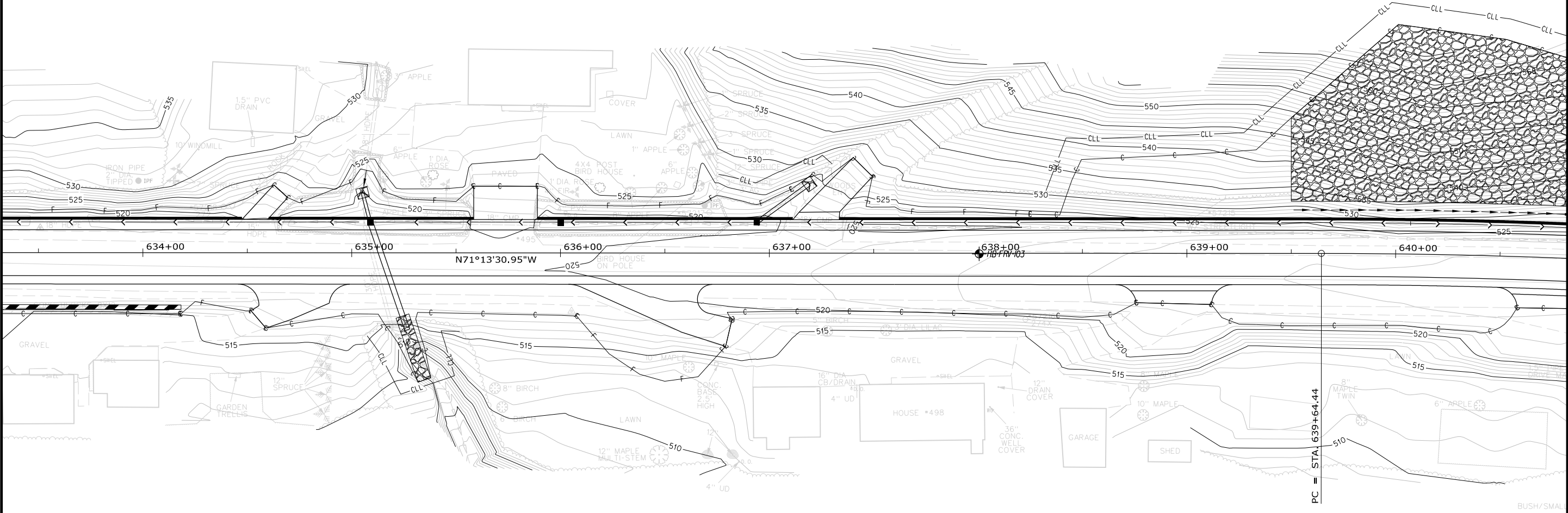
US ROUTE 1

BORING LOCATION PLAN

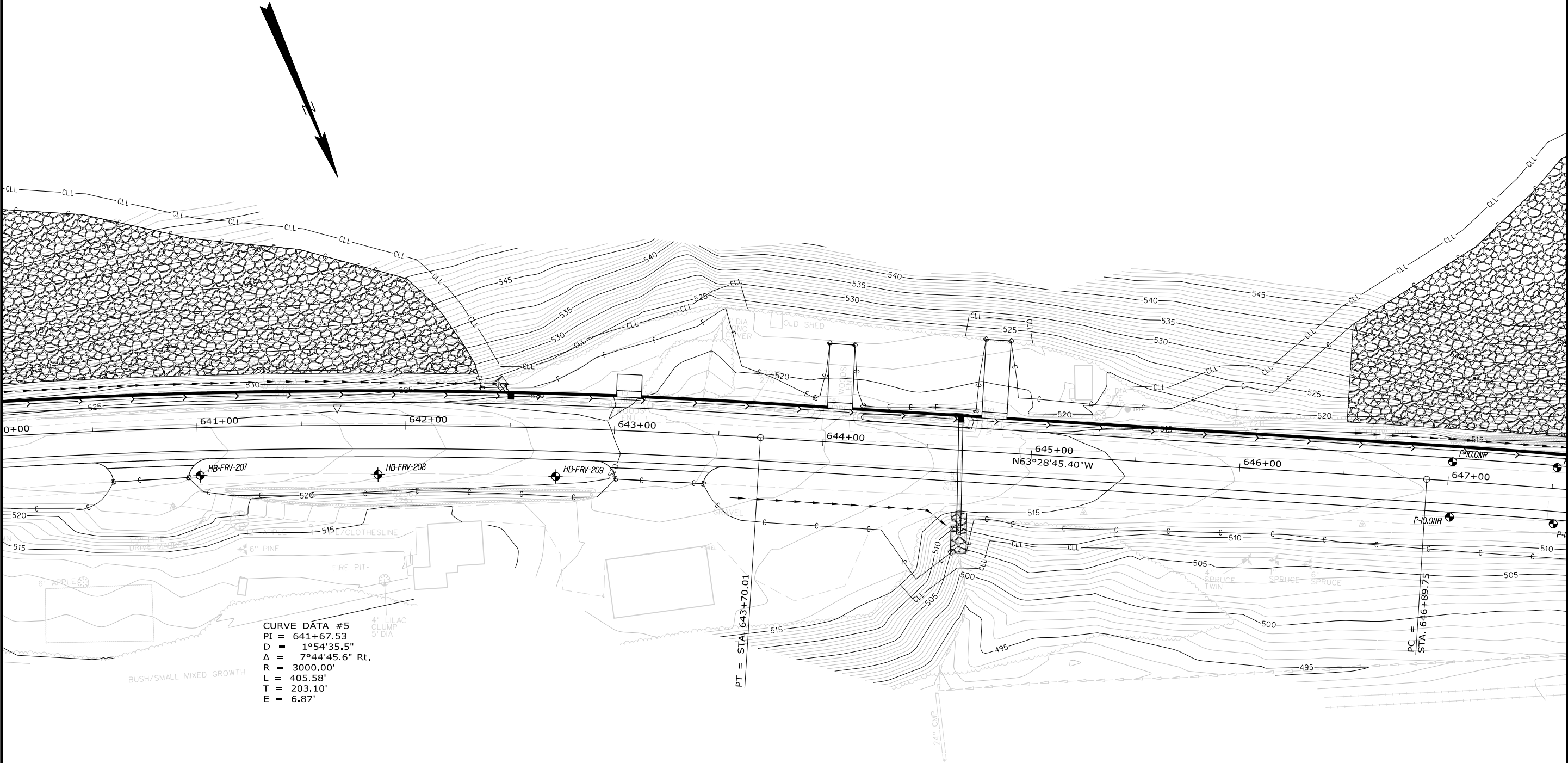
SHEET NUMBER

7

OF 40



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2265(600)		WIN	
22656.00		HIGHWAY PLANS	
FRENCHVILLE - FORT KENT US ROUTE 1		SIGNATURE	
BORING LOCATION PLAN		P.E. NUMBER	
SHEET NUMBER		DATE	
8		JUL 2026	
OF 40		T. WHITE	
		Y.T. LEE	
		DESIGN DETAILED	
		REVISIONS 1	
		REVISIONS 2	
		REVISIONS 3	
		REVISIONS 4	
		FIELD CHANGES	
		E. MARTIN	
		BY	
		DATE	
		DESIGN DETAILED	
		CHECKED-REVIEWED	
		PROJ. MANAGER	
		PC = STA. 639+64.44	

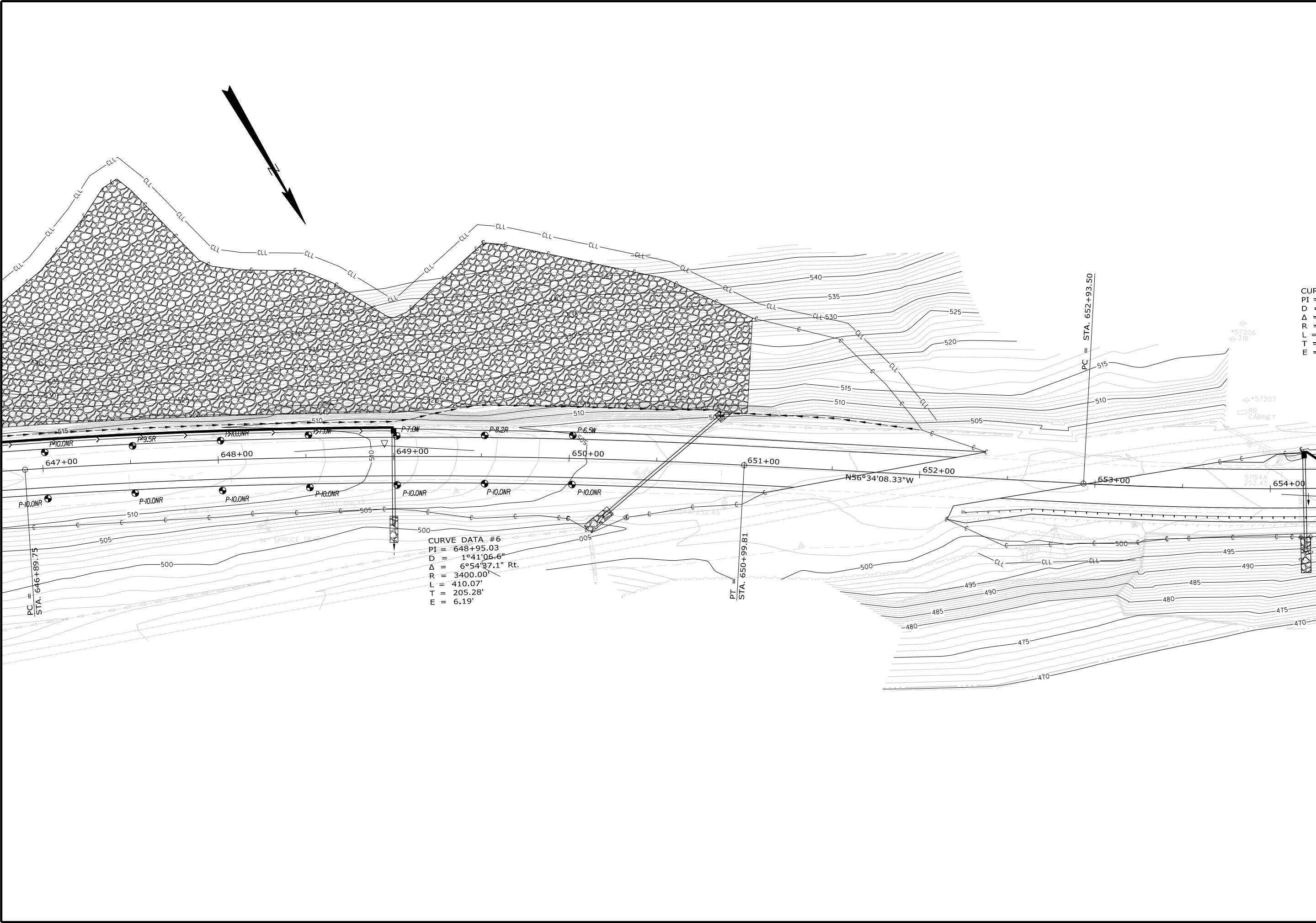


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L = 405.58'
T = 203.10'
E = 6.87'

PT = STA 643+70.01

PC = STA 646+89.75

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2265(600)		SIGNATURE	
WIN 22656.00		P.E. NUMBER	
HIGHWAY PLANS		DATE	
FRENCHVILLE - FORT KENT US ROUTE 1		PROJ. MANAGER E. MARTIN	
BORING LOCATION PLAN		BY T. WHITE	
SHEET NUMBER		DESIGN-DETAILED CHECKED-REVIEWED DESIGN-DETAILED DESIGN-DETAILED REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES	
9		JUL 2026 Y.T. LEE	
OF 40			



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2265(600)

WIN
22656.00

HIGHWAY PLANS

FRENCHVILLE - FORT KENT
US ROUTE 1

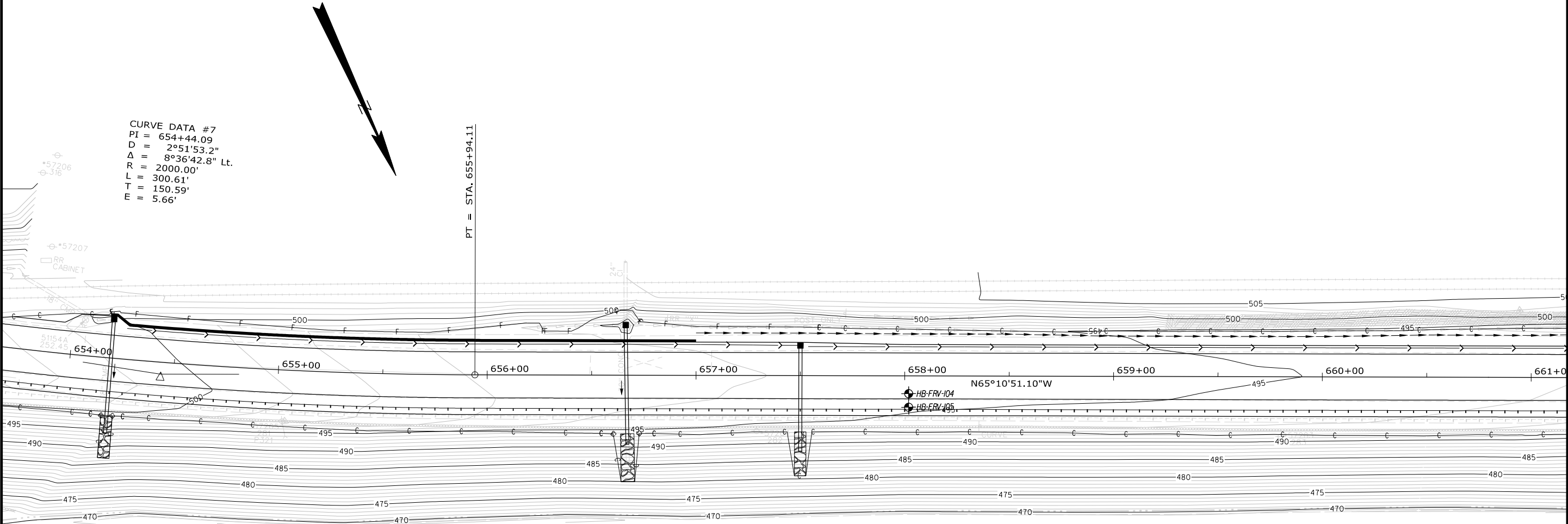
BORING LOCATION PLAN

PROJ. MANAGER	E. MARTIN	BY	DATE
DESIGN-DETAILED			
CHECKED-REVIEWED			
DESIGN-DETAILED	YT LEE	T. WHITE	JUL 2026
SIGNATURE			
P.E. NUMBER			
DATE			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SHEET NUMBER

10

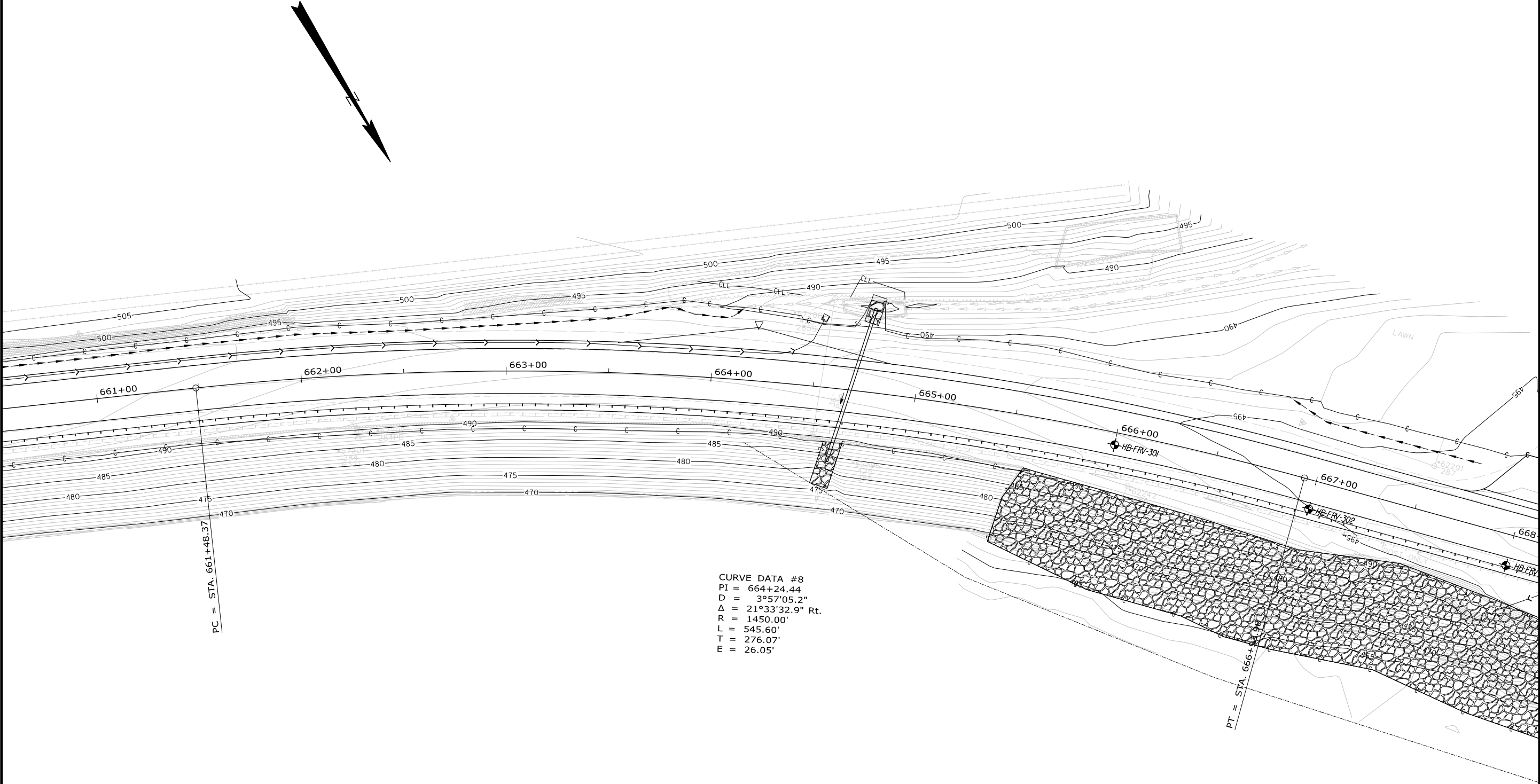
OF 40



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SIGNATURE				P.E. NUMBER				DATE			
STP-2265(600)													
WIN 22656.00													
HIGHWAY PLANS													

FRENCHVILLE - FORT KENT US ROUTE 1		PROJ. MANAGER		E. MARTIN	BY	DATE
		DESIGN-DETAILED	CHECKED-REVIEWED			
BORING LOCATION PLAN		DESIGN2-DETAILED2		YI LEE	T. WHITE	JUL 2026
		DESIGN3-DETAILED3				
		REVISIONS 1				
		REVISIONS 2				
		REVISIONS 3				
		REVISIONS 4				
		FIELD CHANGES				

SHEET NUMBER		11	
		OF 40	

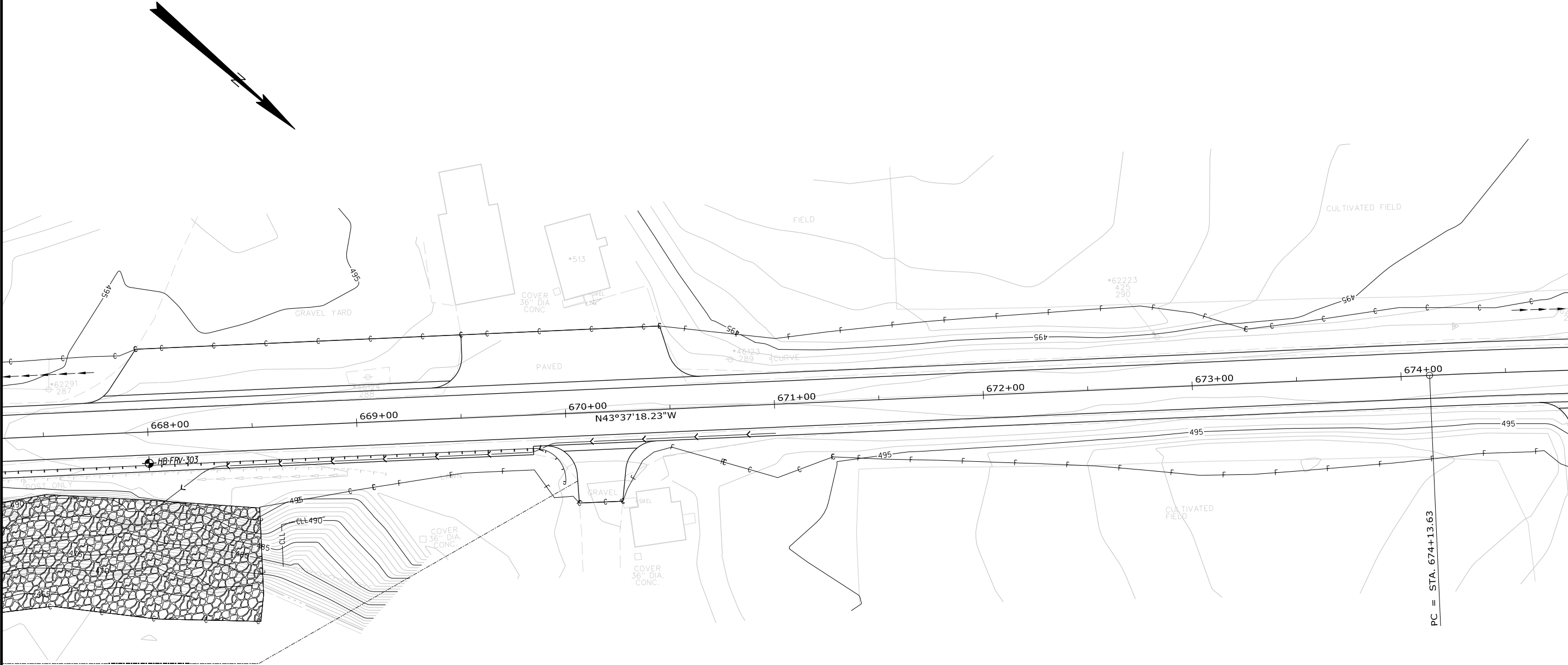


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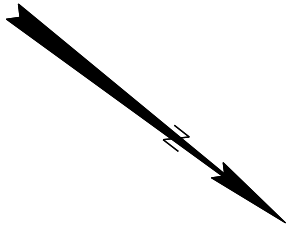
STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE		DATE
	P.E. NUMBER		DATE
	WIN 22656.00		HIGHWAY PLANS

FRENCHVILLE - FORT KENT US ROUTE 1 BORING LOCATION PLAN	PROJ. MANAGER	E. MARTIN	BY	DATE
	CHECKED-REVIEWED	Y.T. LEE	T. WHITE	JUL 2026
	DESIGN-DETAILED	Y.T. LEE	T. WHITE	JUL 2026
	REVISIONS 1			
	REVISIONS 2			
	REVISIONS 3			
	REVISIONS 4			
	FIELD CHANGES			

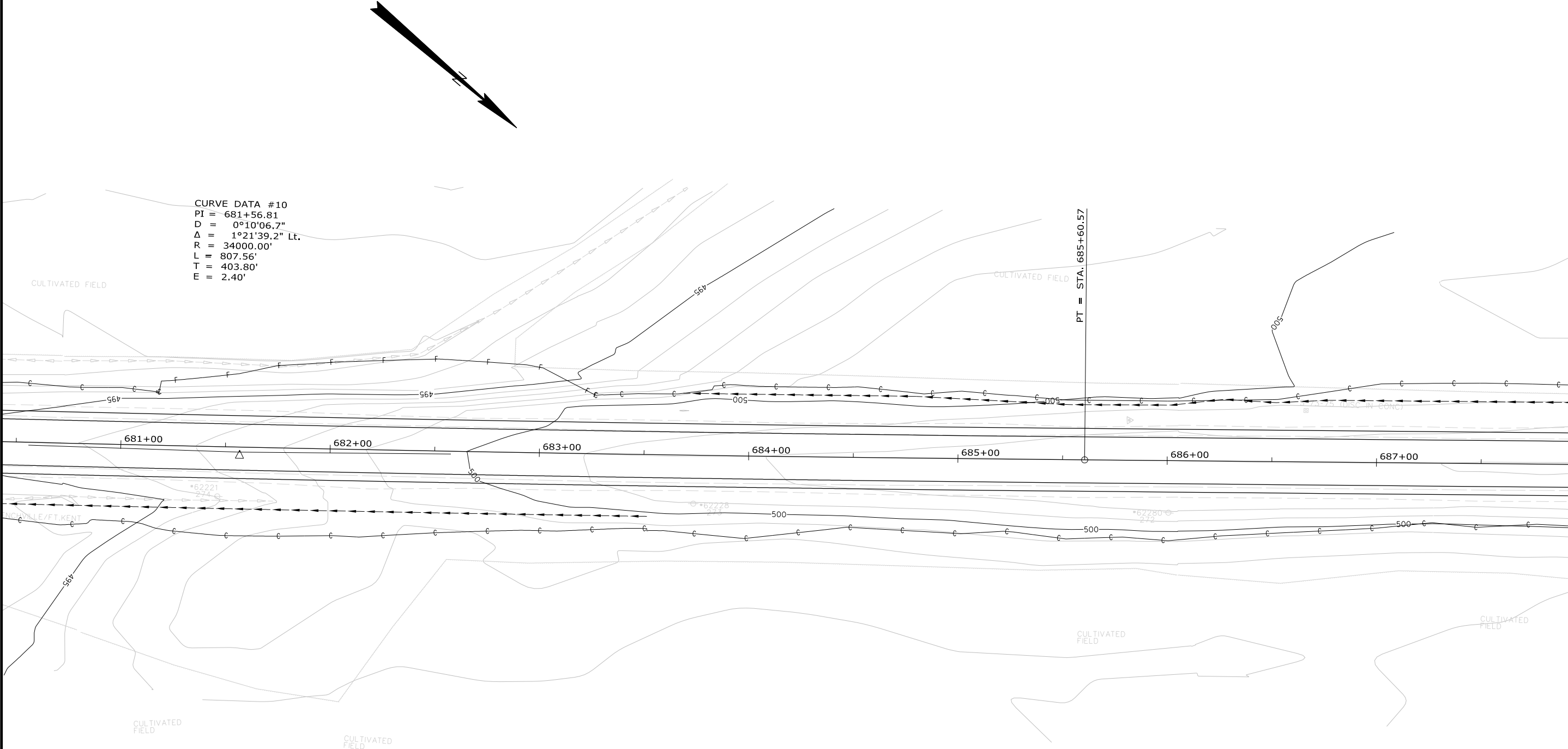
SHEET NUMBER
12
OF 40



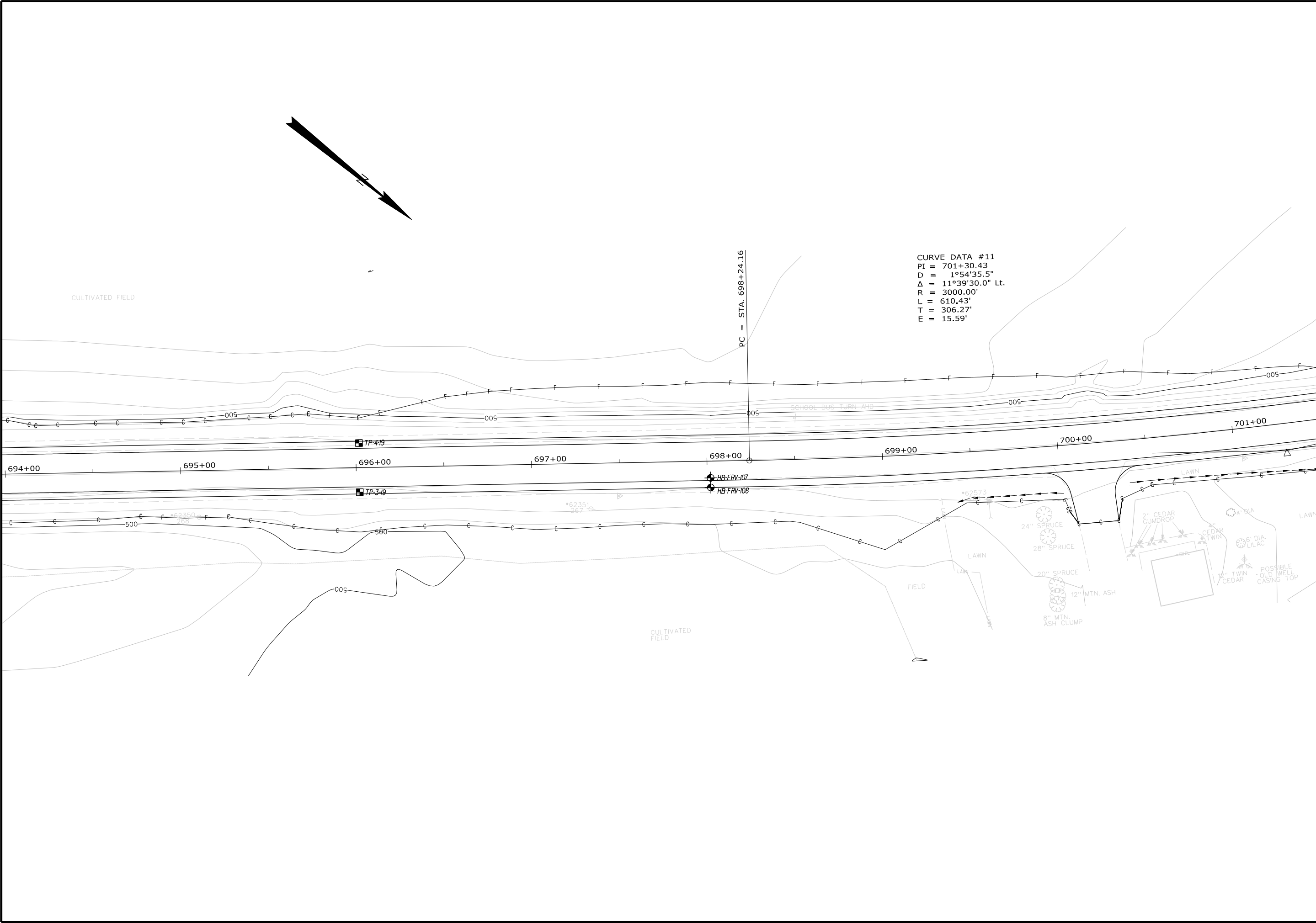
STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2265(600) WIN 22656.00 HIGHWAY PLANS		PROJ. MANAGER E. MARTIN BY T. WHITE DATE JUL 2026 SIGNATURE P.E. NUMBER DATE			
		DESIGN-DETAILED CHECKED-REVIEWED DESIGN-DETAILED YT LEE REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES			
		DATE JUL 2026 SIGNATURE P.E. NUMBER DATE			
FRENCHVILLE - FORT KENT US ROUTE 1		BORING LOCATION PLAN			
SHEET NUMBER 13 OF 40		PC = STA. 674+13.63			



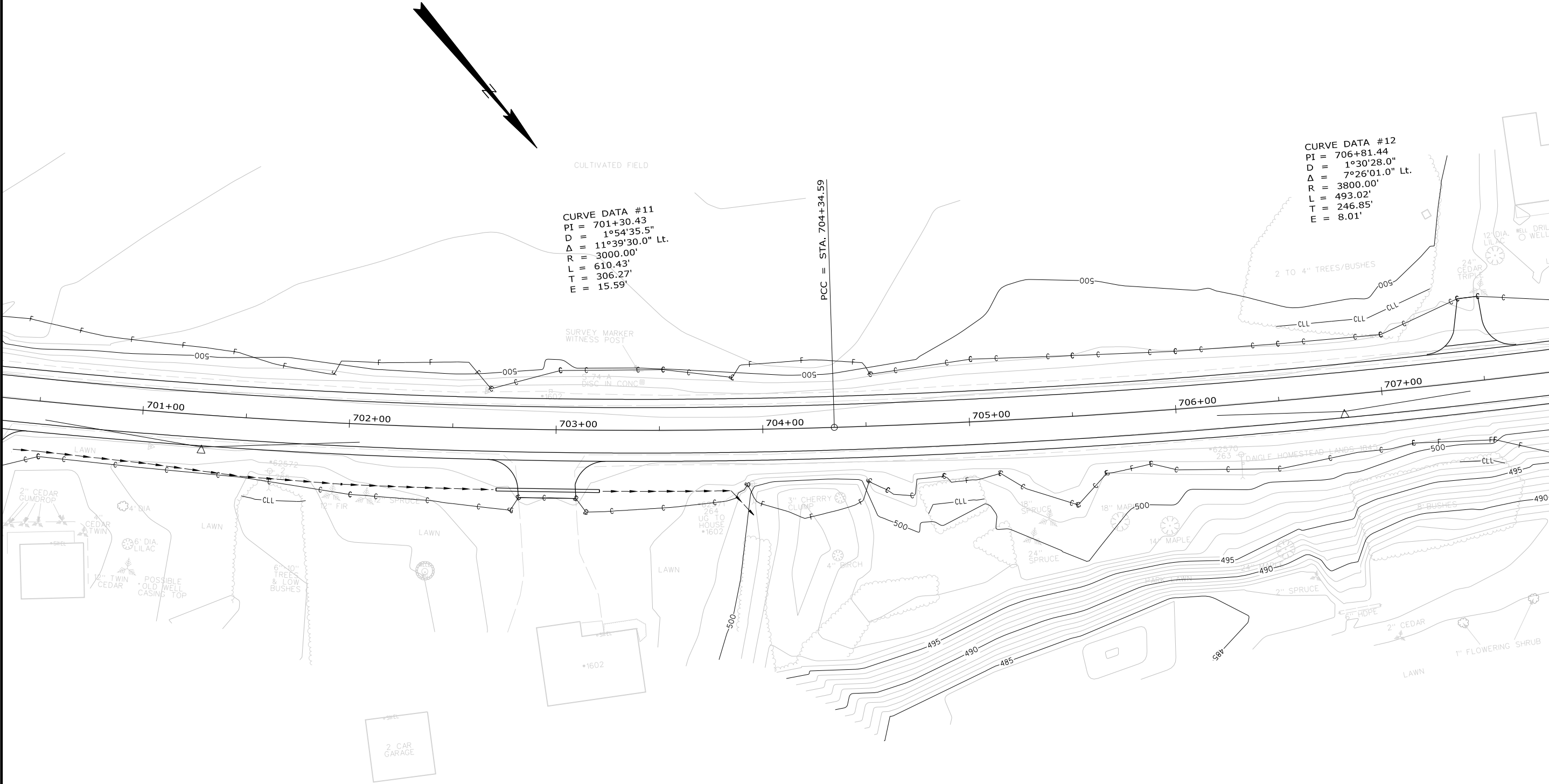
SHEET NUMBER 14 OF 40	FRENCHVILLE - FORT KENT US ROUTE 1 BORING LOCATION PLAN	PROJ. MANAGER	E. MARTIN	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2265(600) WIN 22656.00 HIGHWAY PLANS
		DESIGN-DETAILED				
		CHECKED-REVIEWED			SIGNATURE	
		DESIGN2-DETAILED2	YI LEE	JUL. 2026		
		DESIGN3-DETAILED3			P.E. NUMBER	
		REVISIONS 1				
		REVISIONS 2				
		REVISIONS 3				
		REVISIONS 4			DATE	
		FIELD CHANGES				



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE		DATE
	P.E. NUMBER		DATE
	WIN		DATE
	22656.00		DATE
STP-2265(600)		HIGHWAY PLANS	
FRENCHVILLE - FORT KENT US ROUTE 1		BORING LOCATION PLAN	
SHEET NUMBER		15	
		OF 40	



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		SIGNATURE		P.E. NUMBER		DATE	
STP-2265(600)		WIN		22656.00		HIGHWAY PLANS	
FRENCHVILLE - FORT KENT US ROUTE 1		PROJ. MANAGER		E. MARTIN		BY	
		DESIGN-DETAILED		CHECKED-REVIEWED		DESIGN-DETAILED	
		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED	
		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED	
		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED	
BORING LOCATION PLAN		REVISIONS 1		REVISIONS 2		REVISIONS 3	
		REVISIONS 1		REVISIONS 2		REVISIONS 3	
		REVISIONS 1		REVISIONS 2		REVISIONS 3	
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SHEET NUMBER		17		OF 40			

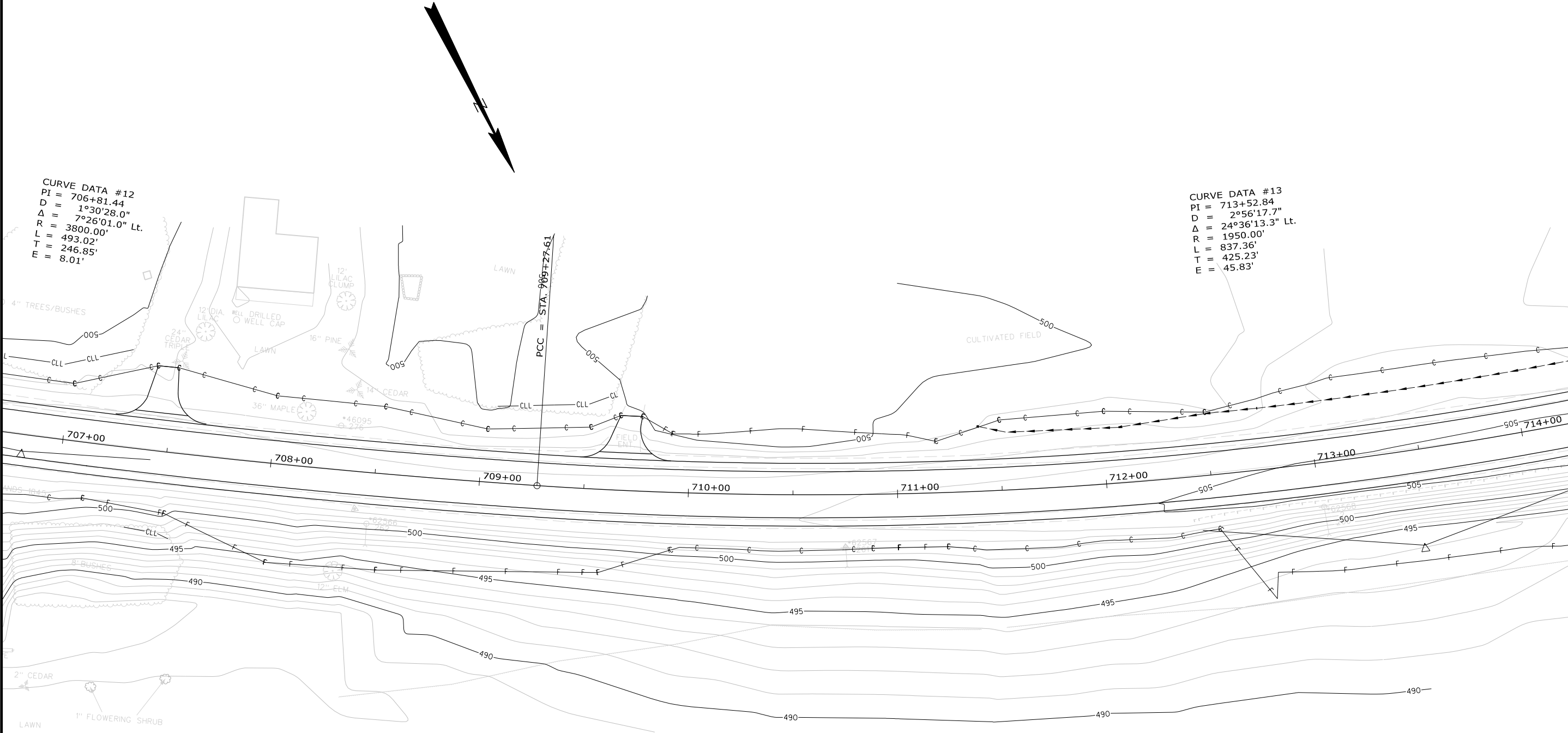


STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION	
STP-2265(600)	
WIN	HIGHWAY PLANS
22656.00	

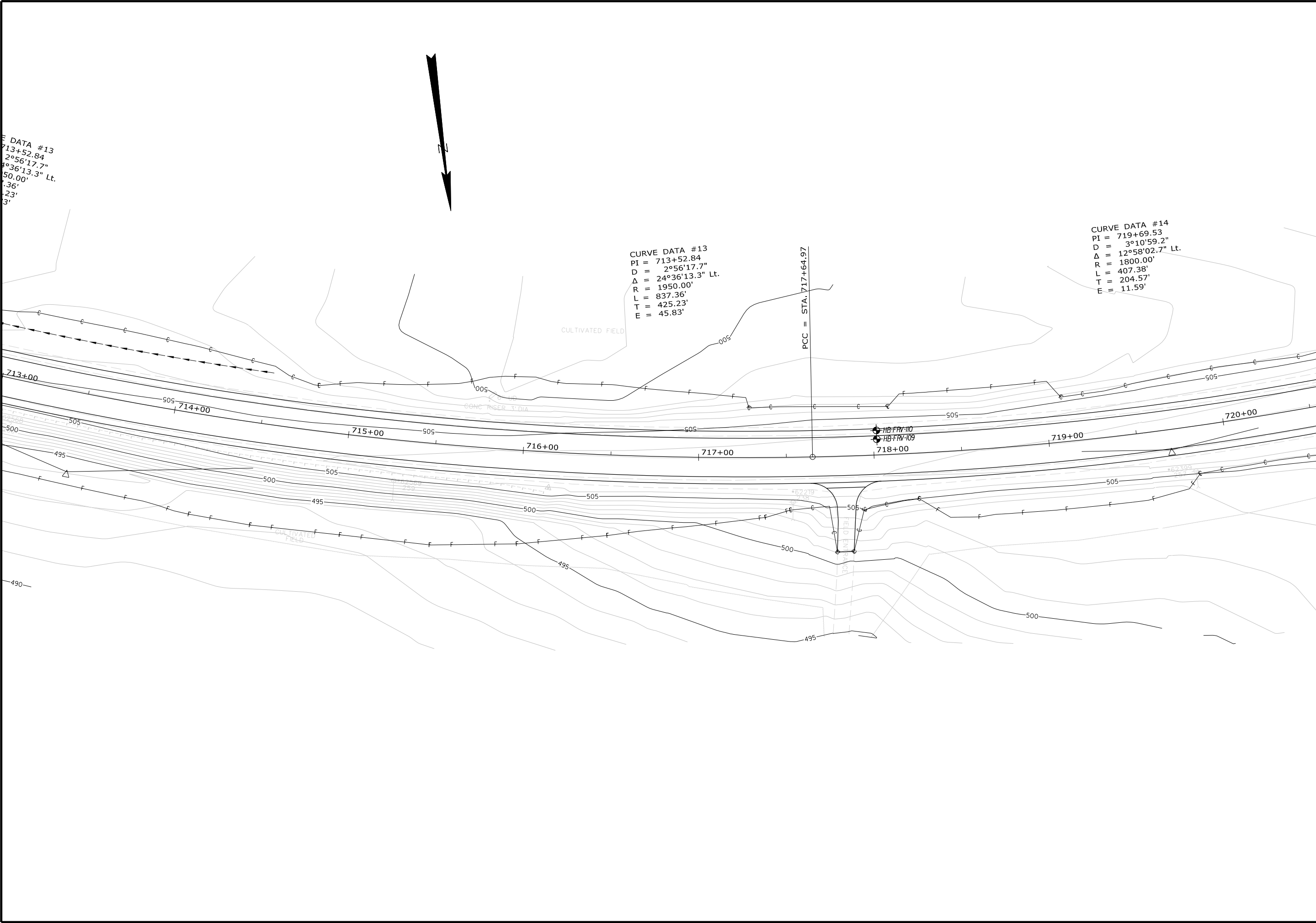
PROJ. MANAGER	E. MARTIN	BY	DATE
CHECKED-DETAILED			
DESIGNED-REVIEWED			
DESIGNS DETAILLED	YT LEE	T. WHITE	JUL 2026
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SIGNATURE		P.E. NUMBER	
DATE			

FRENCHVILLE - FORT KENT	
US ROUTE 1	
BORING LOCATION PLAN	

SHEET NUMBER
18
OF 40



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2265(600)		WIN 22656.00	
HIGHWAY PLANS			
FRENCHVILLE - FORT KENT US ROUTE 1	PROJ. MANAGER	E. MARTIN	BY
	DESIGN-DETAILED		DATE
	CHECKED-REVIEWED		SIGNATURE
	DESIGNS DET AILED	YT LEE	P.E. NUMBER
	REVISIONS 1		DATE
BORING LOCATION PLAN	REVISIONS 2		
	REVISIONS 3		
	REVISIONS 4		
	FIELD CHANGES		
SHEET NUMBER			
19			
OF 40			



STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

STP-2265(600)

WIN 22656.00

HIGHWAY PLANS

FRENCHVILLE - FORT KENT

US ROUTE 1

BORING LOCATION PLAN

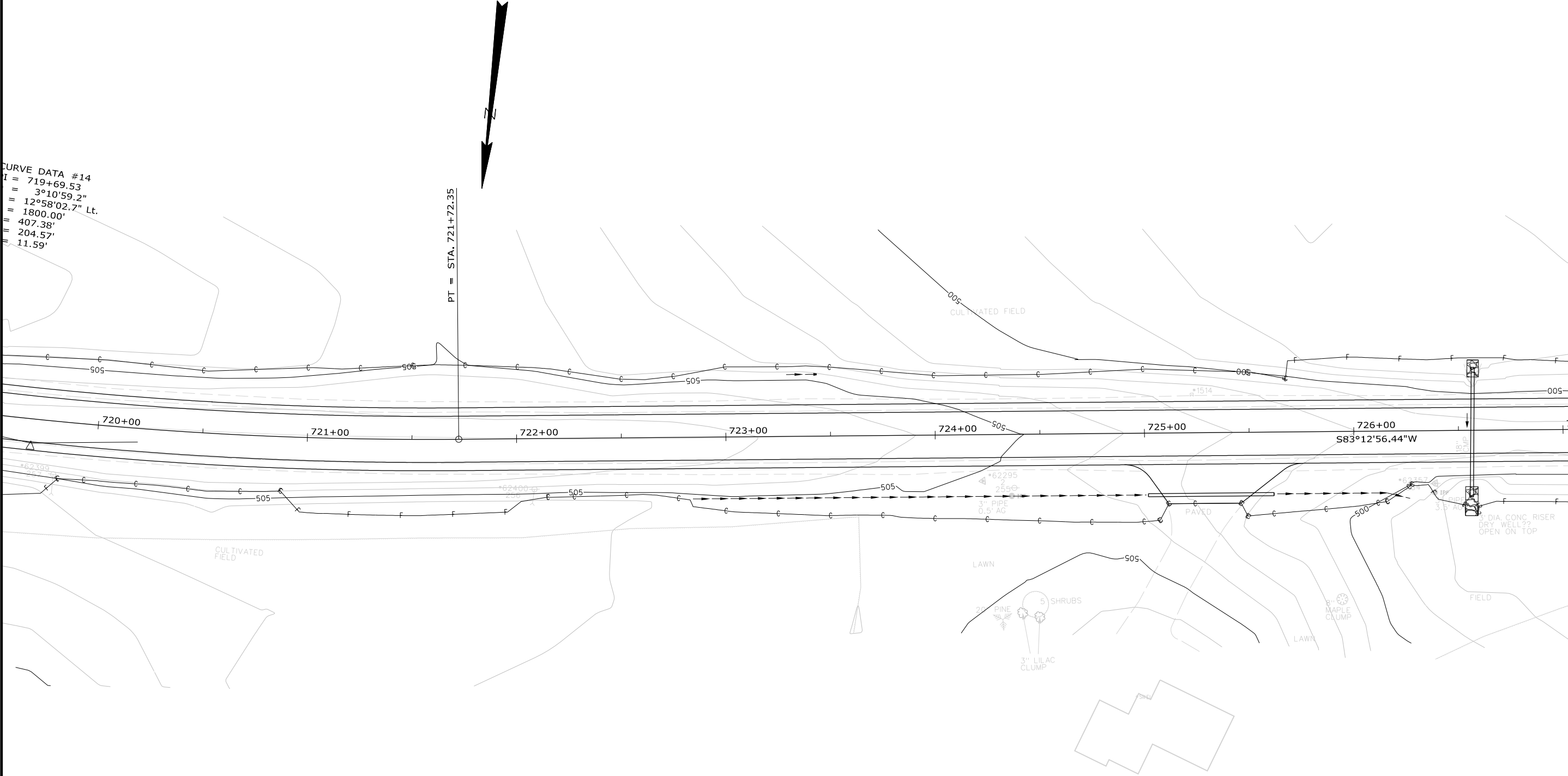
SHEET NUMBER

20

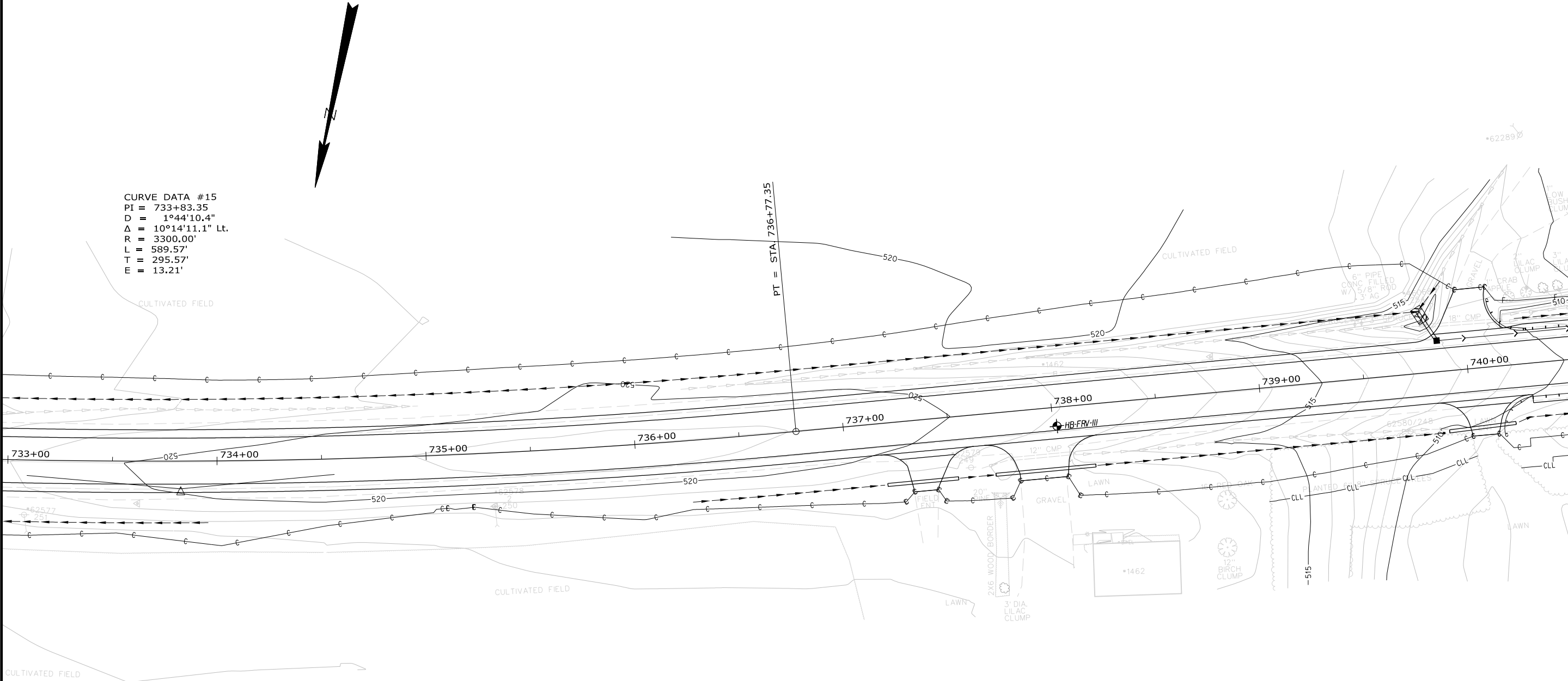
OF 40

PROJ. MANAGER	E. MARTIN	BY	DATE	SIGNATURE
DESIGN-DETAILED				
CHECKED-REVIEWED			JUL 2026	
DESIGN-DETAILED	YT LEE			
DESIGN-DETAILED				
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

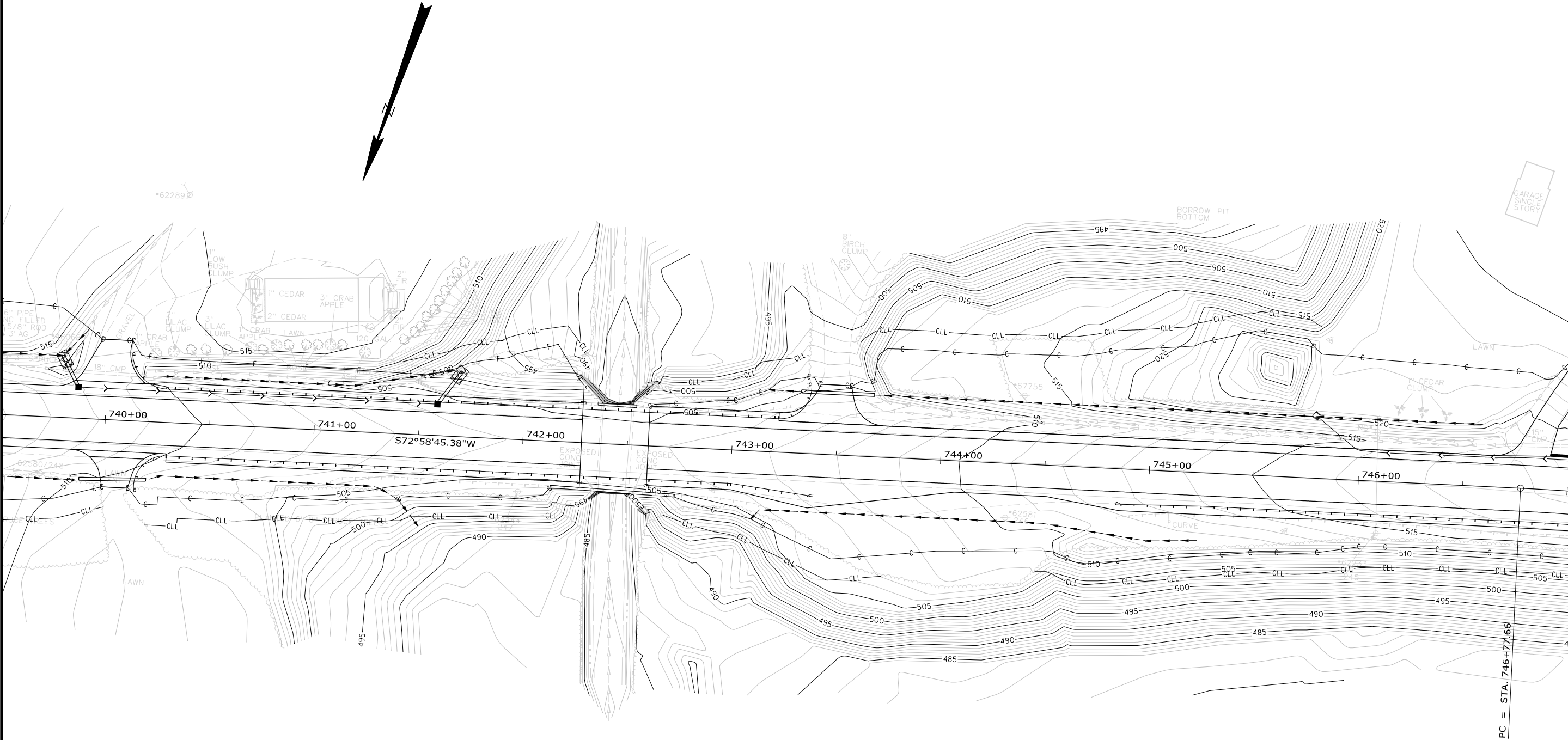
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= 12°58'02.7" Lt.
= 1800.00'
= 407.38'
= 204.57'
= 11.59'



STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2265(600) WIN 22656.00 HIGHWAY PLANS	PROJ. MANAGER		E. MARTIN	BY	DATE
	DESIGN-DETAILED	CHECKED-REVISED			
	DESIGN2-DETAILED2	Y1 LEE	T. WHITE		JUL 2026
	DESIGN3-DETAILED3				
	REVISIONS 1				
	REVISIONS 2				
	REVISIONS 3				
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	FRENCHVILLE - FORT KENT US ROUTE 1				
BORING LOCATION PLAN					
SHEET NUMBER		21			
OF 40					



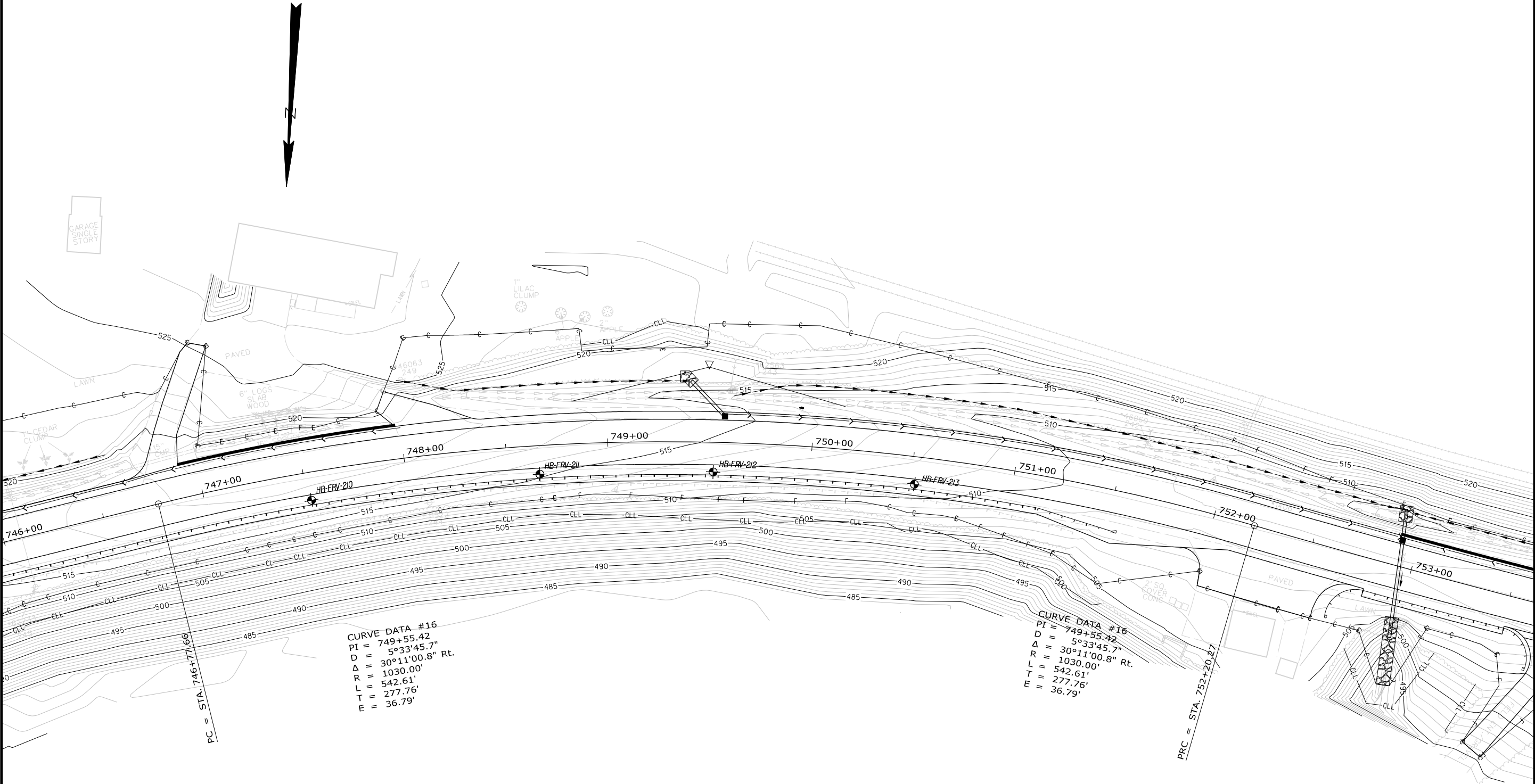
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2265(600)		WIN 22656.00	
HIGHWAY PLANS			
FRENCHVILLE - FORT KENT US ROUTE 1		SHEET NUMBER	
BORING LOCATION PLAN		23	
OF 40			
PROJ. MANAGER	E. MARTIN	BY	DATE
DESIGN-DETAILED			
CHECKED-REVIEWED			
DESIGN-DETAILED	YT LEE		JUL 2026
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SIGNATURE		P.E. NUMBER	
DATE			



STATE OF MAINE DEPARTMENT OF TRANSPORTATION					SIGNATURE		
P.E. NUMBER				DATE			

FRENCHVILLE - FORT KENT
US ROUTE 1

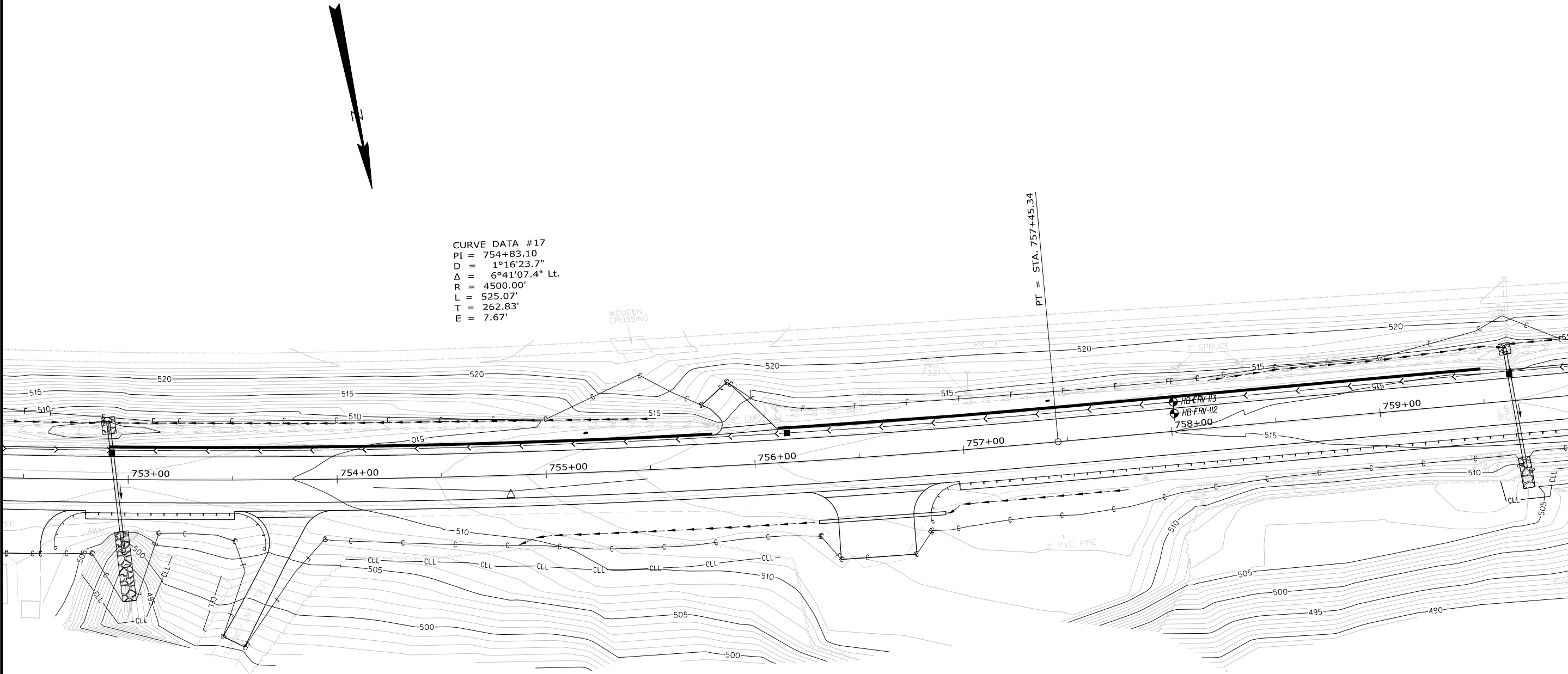
BORING LOCATION PLAN



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE				DATE
	P.E. NUMBER				DATE
	WIN 22656.00				HIGHWAY PLANS

FRENCHVILLE - FORT KENT US ROUTE 1 BORING LOCATION PLAN	PROJ. MANAGER	E. MARTIN	BY	DATE
	DESIGN-DETAILED			
	CHECKED-REVIEWED	YT LEE	T. WHITE	JUL 2026
	DESIGN-DETAILED			
	REVISIONS 1			
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

SHEET NUMBER
25
OF 40



STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

STP-2265(600)

WIN 22656.00

HIGHWAY PLANS

PROJ. MANAGER

E. MARTIN

BY

T. WHITE

DATE

JUL 2026

DESIGN-DETAILED

CHECKED-REVIEWED

DESIGN-DETAILED

YT LEE

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

FIELD CHANGES

SIGNATURE

P.E. NUMBER

DATE

FRENCHVILLE - FORT KENT

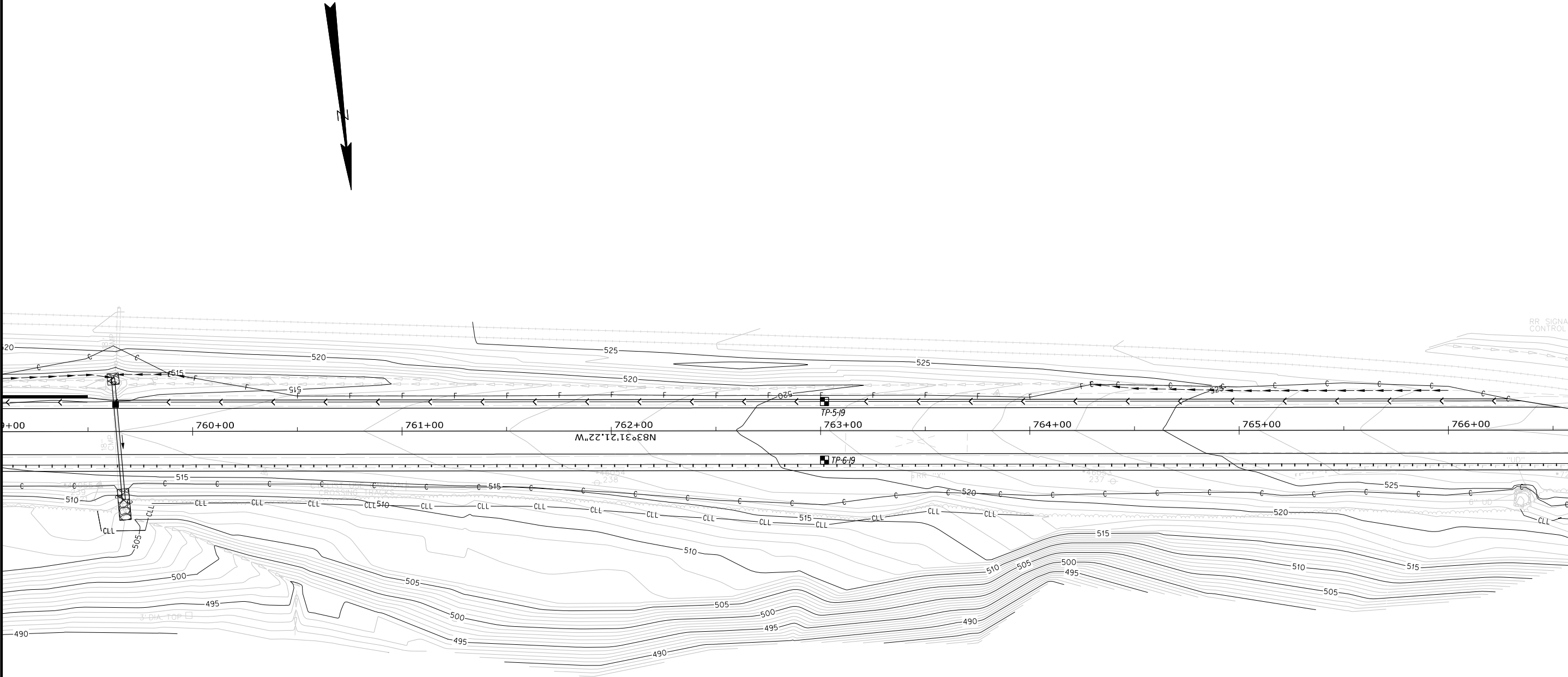
US ROUTE 1

BORING LOCATION PLAN

SHEET NUMBER

26

OF 40

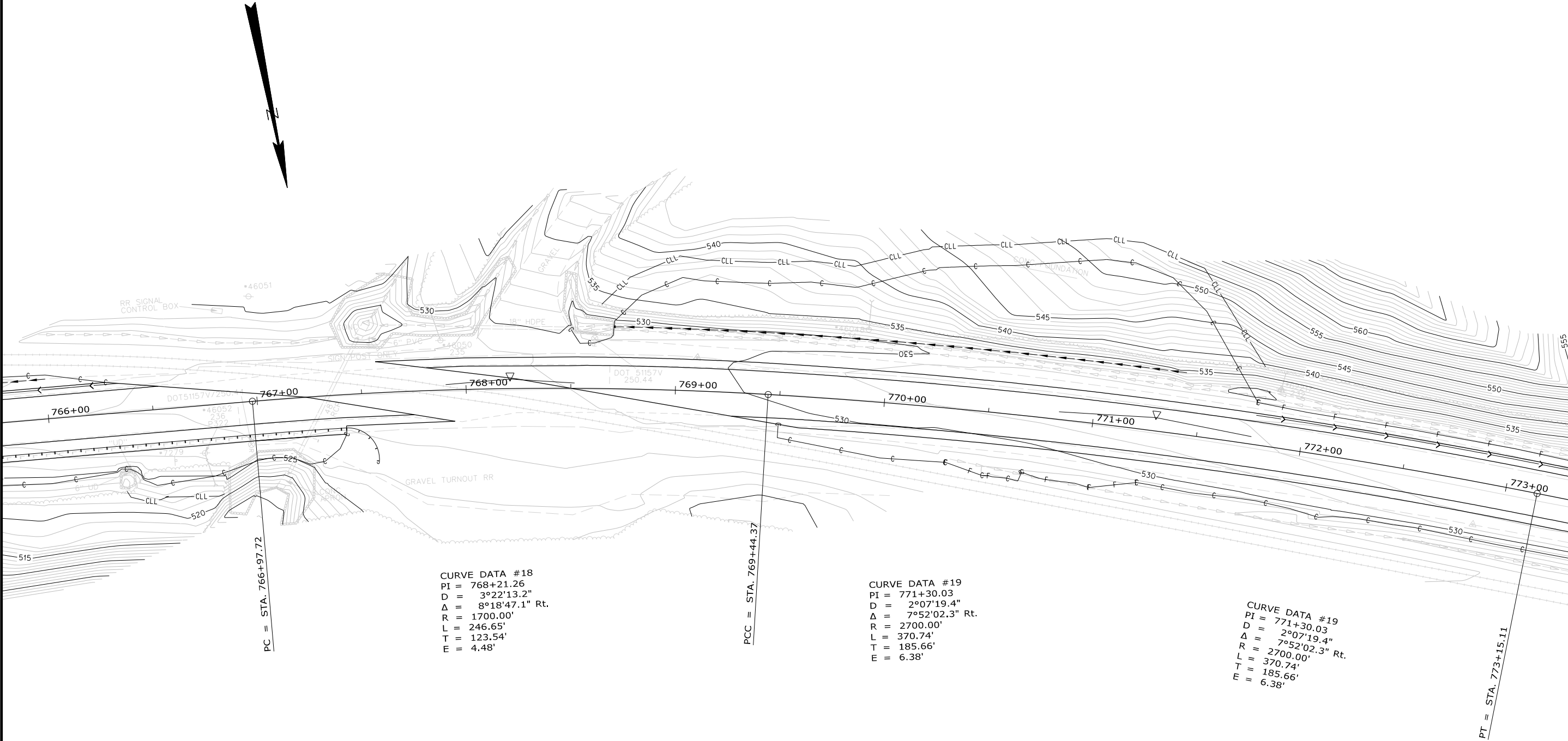


STATE OF MAINE DEPARTMENT OF TRANSPORTATION	<table><tr><td>PROJ. MANAGER</td><td>E. MARTIN</td><td>BY</td><td>DATE</td></tr><tr><td>DESIGN-DETAILED</td><td></td><td></td><td></td></tr><tr><td>CHECKED-REVIEWED</td><td>YT LEE</td><td>T. WHITE</td><td>JUL 2026</td></tr><tr><td>DESIGN-DETAILED</td><td></td><td></td><td></td></tr><tr><td>REVISIONS 1</td><td></td><td></td><td></td></tr><tr><td>REVISIONS 2</td><td></td><td></td><td></td></tr><tr><td>REVISIONS 3</td><td></td><td></td><td></td></tr><tr><td>REVISIONS 4</td><td></td><td></td><td></td></tr><tr><td>FIELD CHANGES</td><td></td><td></td><td></td></tr></table>				PROJ. MANAGER	E. MARTIN	BY	DATE	DESIGN-DETAILED				CHECKED-REVIEWED	YT LEE	T. WHITE	JUL 2026	DESIGN-DETAILED				REVISIONS 1				REVISIONS 2				REVISIONS 3				REVISIONS 4				FIELD CHANGES			
					PROJ. MANAGER	E. MARTIN	BY	DATE																																
					DESIGN-DETAILED																																			
CHECKED-REVIEWED	YT LEE	T. WHITE	JUL 2026																																					
DESIGN-DETAILED																																								
REVISIONS 1																																								
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FIELD CHANGES																																								
SHEET NUMBER																																								
27																																								
OF 40																																								

FRENCHVILLE - FORT KENT US ROUTE 1	
BORING LOCATION PLAN	

STP-2265(600)	
WIN	22656.00
HIGHWAY PLANS	

SIGNATURE	P.E. NUMBER	DATE

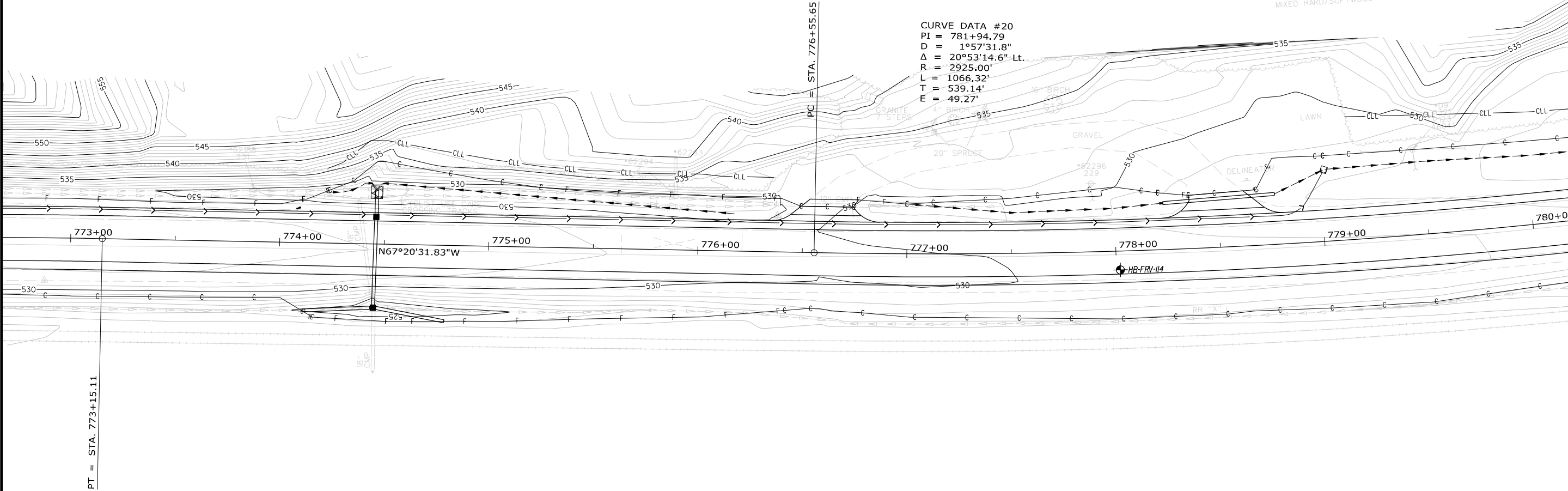


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PI = 768+21.26
D = 3°22'13.2"
Δ = 8°18'47.1" Rt.
R = 1700.00'
L = 246.65'
T = 123.54'
E = 4.48'

CURVE DATA #19
PI = 771+30.03
D = 2°07'19.4"
Δ = 7°52'02.3" Rt.
R = 2700.00'
L = 370.74'
T = 185.66'
E = 6.38'

CURVE DATA #19
PI = 771+30.03
D = 2°07'19.4"
Δ = 7°52'02.3" Rt.
R = 2700.00'
L = 370.74'
T = 185.66'
E = 6.38'

STATE OF MAINE DEPARTMENT OF TRANSPORTATION					SIGNATURE
STP-2265(600)					
WIN 22656.00					
HIGHWAY PLANS					
FRENCHVILLE - FORT KENT US ROUTE 1	PROJ. MANAGER	E. MARTIN	BY	DATE	BORING LOCATION PLAN
	DESIGN-DETAILED				
	CHECKED-REVIEWED				
	DESIGN2-DETAILED2	YI LEE	T. WHITE	JUL 2026	
	DESIGN3-DETAILED3				
	REVISIONS 1				
	REVISIONS 2				
	REVISIONS 3				
	REVISIONS 4				
	FIELD CHANGES				
SHEET NUMBER	28				
OF 40					

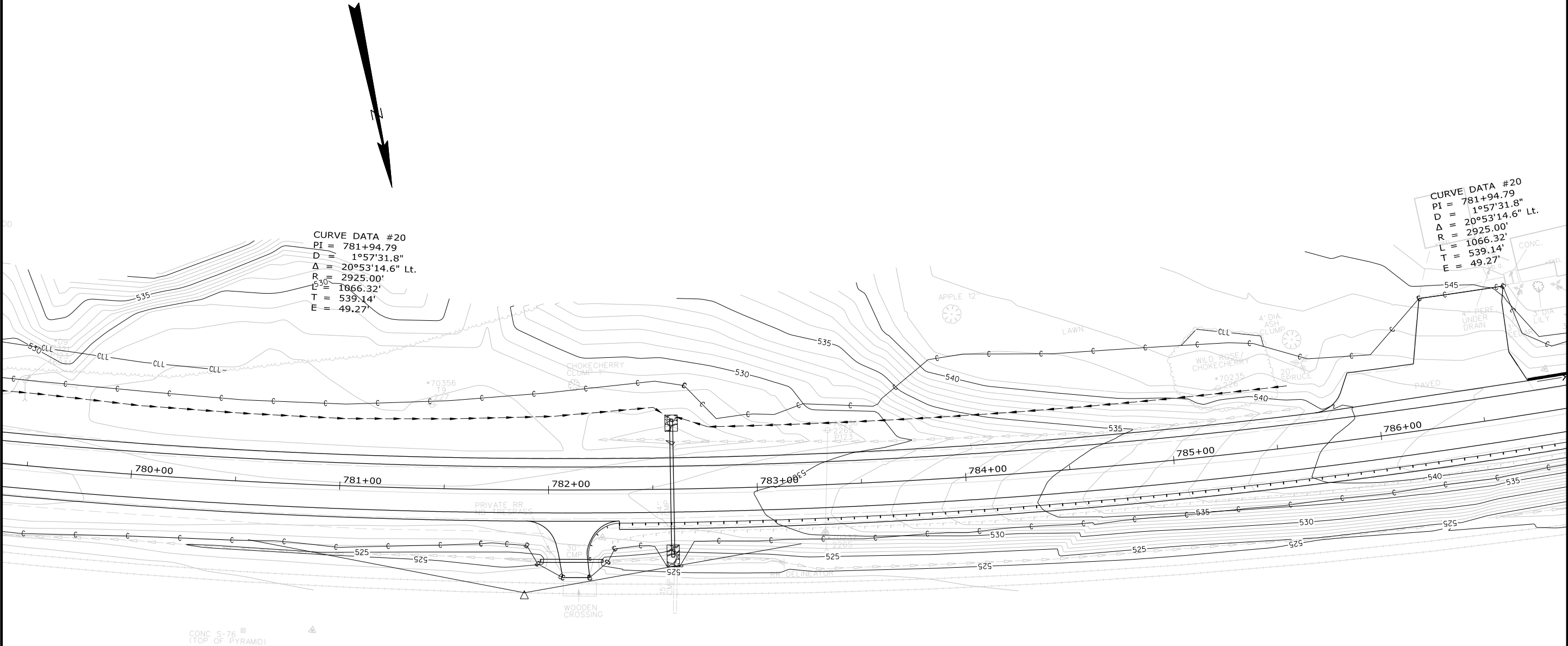


STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE		DATE
	STP-2265(600)		P.E. NUMBER
	WIN 22656.00		DATE
HIGHWAY PLANS			

FRENCHVILLE - FORT KENT
US ROUTE 1

BORING LOCATION PLAN

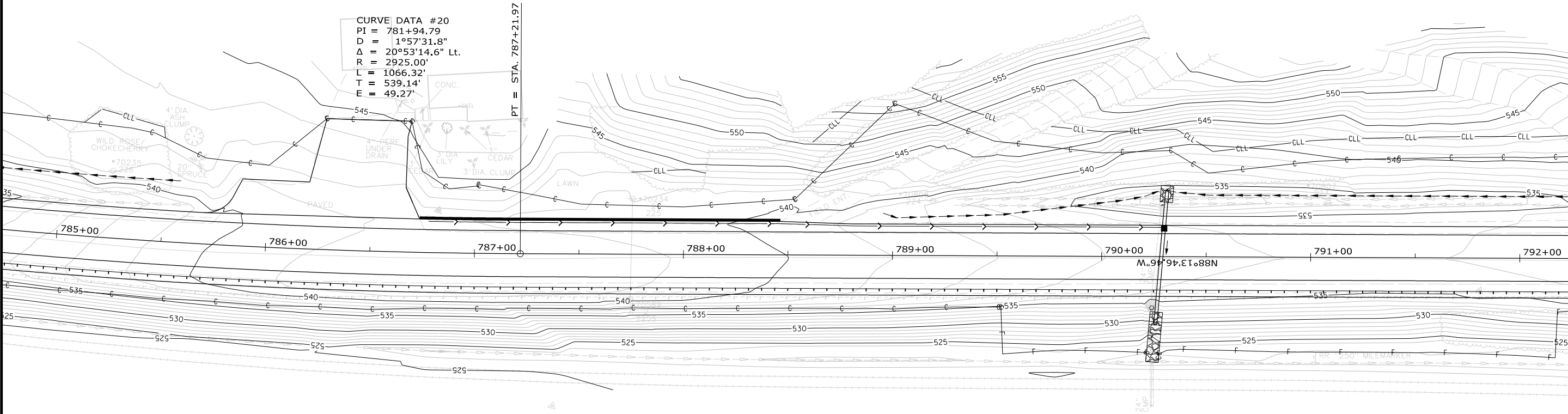
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29
OF 40



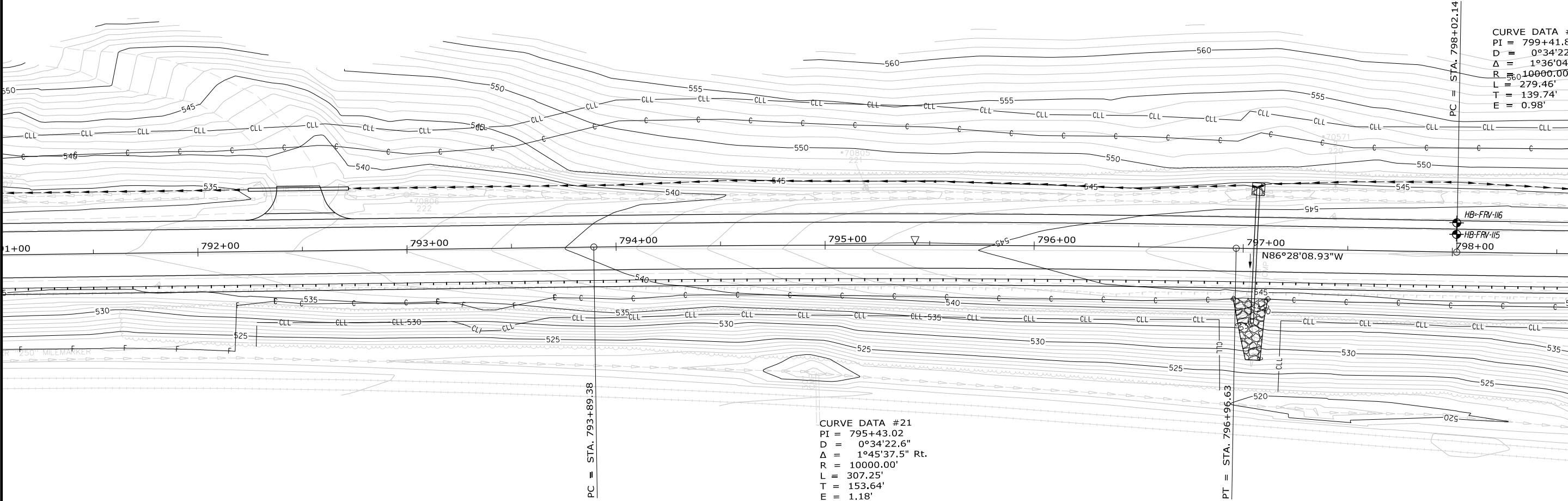
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PI = 781+94.79
D = 1°57'31.8"
Δ = 20°53'14.6" Lt.
R = 2925.00'
L = 1066.32'
T = 539.14'
E = 49.27'

CURVE DATA #20
PI = 781+94.79
D = 1°57'31.8"
Δ = 20°53'14.6" Lt.
R = 2925.00'
L = 1066.32'
T = 539.14'
E = 49.27'

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE		DATE
	P.E. NUMBER		DATE
SHEET NUMBER		FIELD CHANGES	
30			
OF 40			
FRENCHVILLE - FORT KENT US ROUTE 1		BORING LOCATION PLAN	
STP-2265(600)		WIN 22656.00 HIGHWAY PLANS	



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE JUL 2026 T. WHITE				P.E. NUMBER				DATE			
STP-2265(600)		WIN		22656.00		HIGHWAY PLANS						
FRENCHVILLE - FORT KENT US ROUTE 1		BORING LOCATION PLAN										
SHEET NUMBER		31										
OF 40												

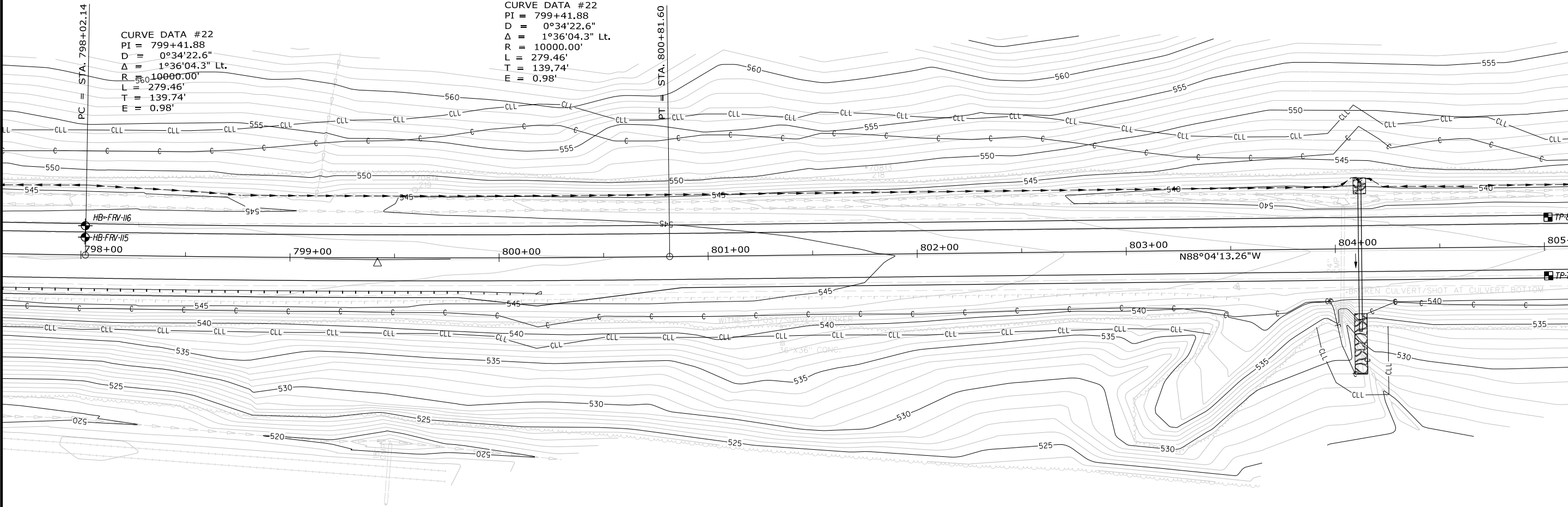


STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
STP-2265(600)		WIN 22656.00	
HIGHWAY PLANS			
FRENCHVILLE - FORT KENT US ROUTE 1		SIGNATURE	
BORING LOCATION PLAN		P.E. NUMBER	
SHEET NUMBER		DATE	
32		JUL 2026	
OF 40		T. WHITE	
		E. MARTIN	
		BY	
		DATE	
		DESIGN-DETAILED	
		CHECKED-REVIEWED	
		DESIGN-DETAILED	
		DESIGN-DETAILED	
		REVISIONS 1	
		REVISIONS 2	
		REVISIONS 3	
		REVISIONS 4	
		FIELD CHANGES	

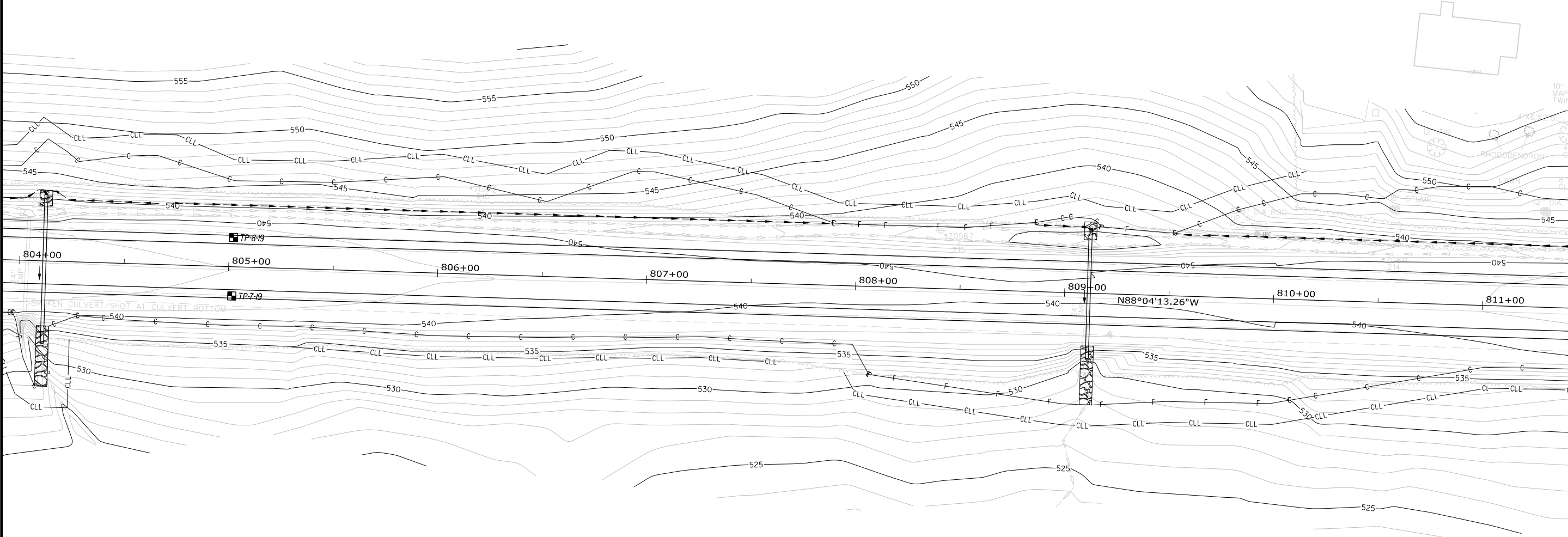
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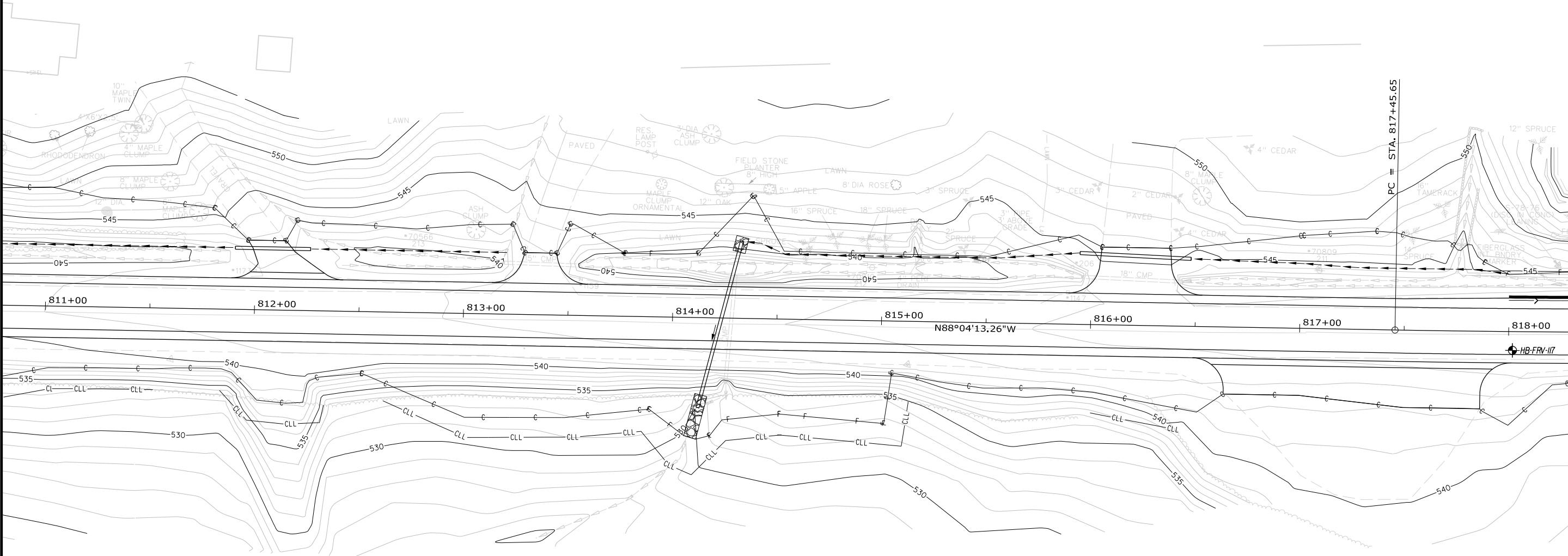
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STATE OF MAINE DEPARTMENT OF TRANSPORTATION				
	STP-2265(600)			
	WIN 22656.00			
	HIGHWAY PLANS			
FRENCHVILLE - FORT KENT US ROUTE 1 BORING LOCATION PLAN	PROJ. MANAGER	E. MARTIN	BY	DATE
	DESIGN-DETAILED			
	CHECKED-REVIEWED			
	DESIGN2-DETAILED2	YI LEE	T. WHITE	JUL 2026
	DESIGN3-DETAILED3			
	REVISIONS 1			
	REVISIONS 2			
	REVISIONS 3			
	REVISIONS 4			
	FIELD CHANGES			
SHEET NUMBER	33			
OF 40				



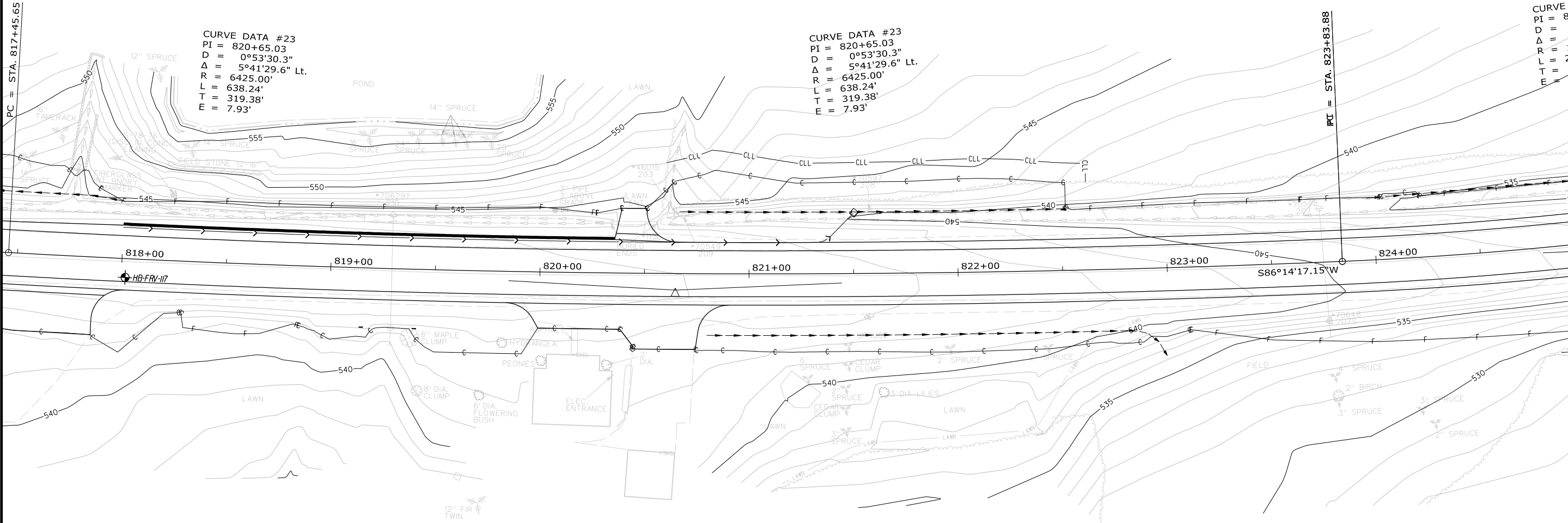
STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE		DATE
	P.E. NUMBER		DATE
SHEET NUMBER		FIELD CHANGES	
34			
OF 40			
STP-2265(600)		WIN 22656.00 HIGHWAY PLANS	
FRENCHVILLE - FORT KENT US ROUTE 1		BORING LOCATION PLAN	



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE		DATE
	STP-2265(600)		P.E. NUMBER
	WIN 22656.00		DATE
HIGHWAY PLANS			

FRENCHVILLE - FORT KENT US ROUTE 1	PROJ. MANAGER	E. MARTIN	BY	DATE
	DESIGN-DETAILED			
	CHECKED-REVIEWED			
	DESIGN-DETAILED	YT LEE	T. WHITE	JUL 2026
	REVISIONS 1			
	REVISIONS 2			
BORING LOCATION PLAN	REVISIONS 3			
	REVISIONS 4			
	FIELD CHANGES			

SHEET NUMBER
35
OF 40

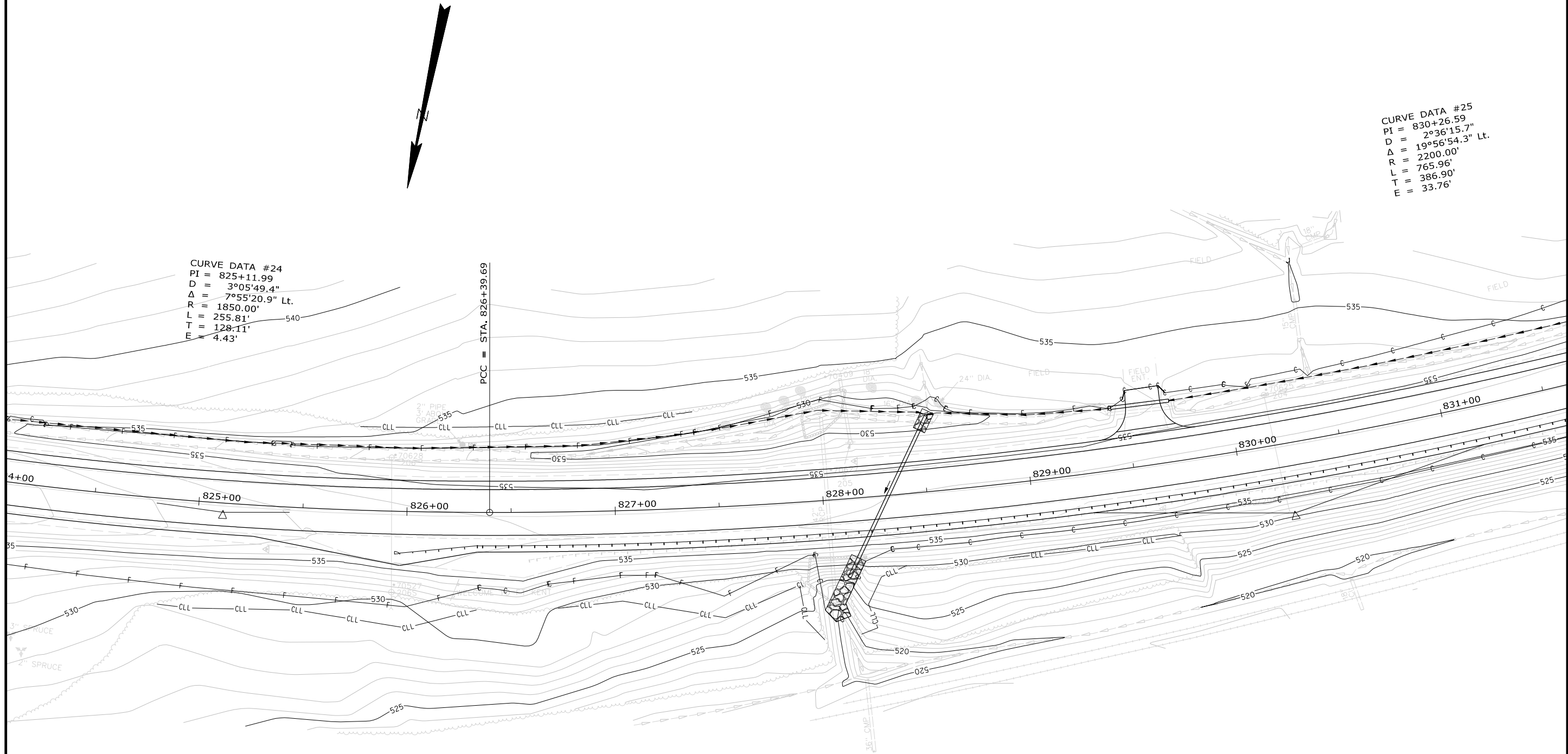


CURVE DATA #23
PI = 820+65.03
D = 0°53'30.3"
Δ = 5°41'29.6" Lt.
R = 6425.00'
L = 638.24'
T = 319.38'
E = 7.93'

CURVE DATA #23
PI = 820+65.03
D = 0°53'30.3"
Δ = 5°41'29.6" Lt.
R = 6425.00'
L = 638.24'
T = 319.38'
E = 7.93'

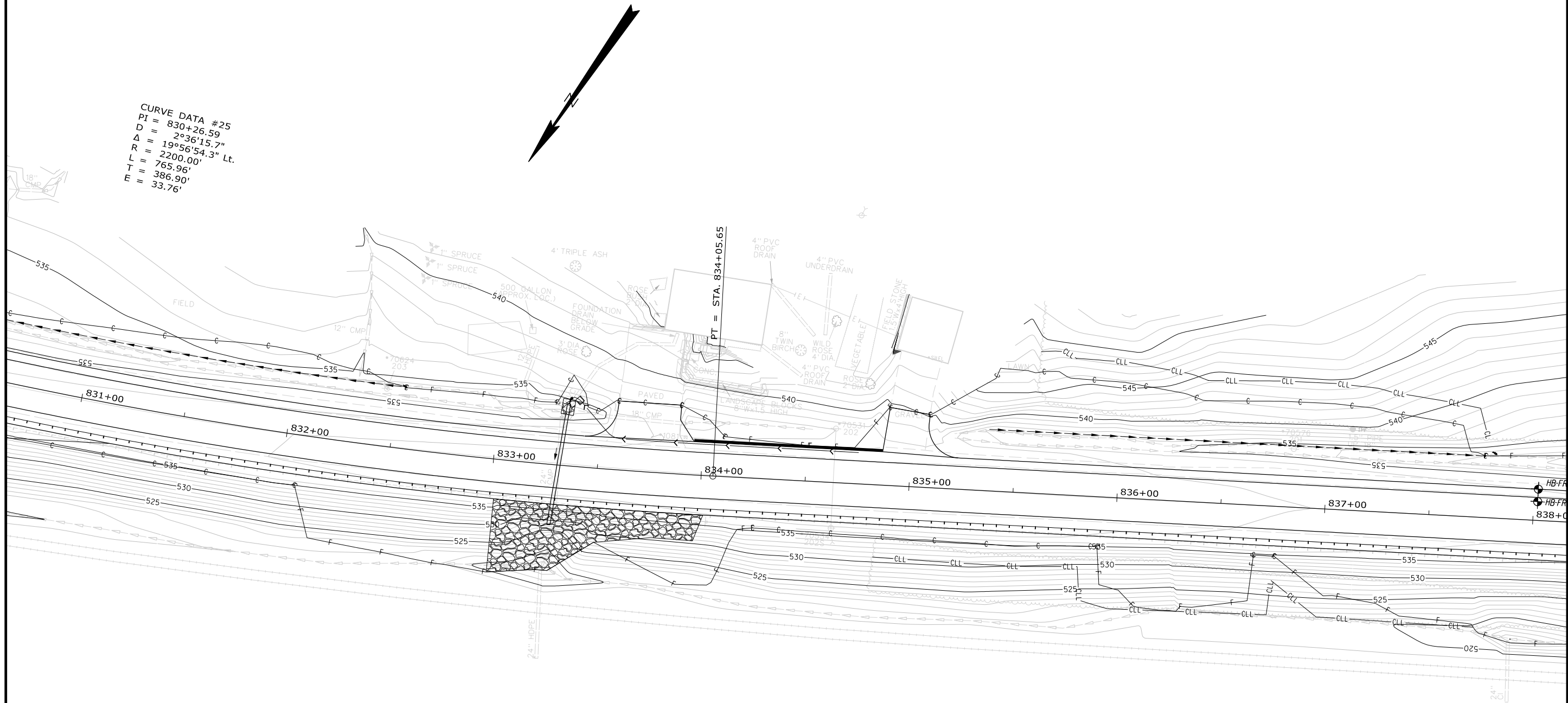
CURVE
PI = 820+65.03
D = 0°53'30.3"
Δ = 5°41'29.6" Lt.
R = 6425.00'
L = 638.24'
T = 319.38'
E = 7.93'

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE		DATE
	P.E. NUMBER		DATE
SHEET NUMBER		FIELD CHANGES	
36		REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4	
OF 40		BORING LOCATION PLAN	
STP-2265(600)		WIN 22656.00 HIGHWAY PLANS	



37 OF 40	SHEET NUMBER	FRENCHVILLE - FORT KENT US ROUTE 1		PROJ. MANAGER	E. MARTIN	BY	DATE	STATE OF MAINE DEPARTMENT OF TRANSPORTATION
				CHECKED-REVIEWED				
			DESIGN2-DETAILED2	YI LEE	T. WHITE	JUL 2026		
			DESIGN3-DETAILED3				P.E. NUMBER	
			REVISIONS 1					
			REVISIONS 2					
			REVISIONS 3					
			REVISIONS 4					
			FIELD CHANGES				DATE	
			BORING LOCATION PLAN					
		WIN 22656.00 HIGHWAY PLANS						

CURVE DATA #25
 PI = 830+26.59
 D = 2°36'15.7"
 Δ = 19°56'54.3" Lt.
 R = 2200.00'
 L = 765.96'
 T = 386.90'
 E = 33.76'



FRENCHVILLE - FORT KENT
US ROUTE 1

BORING LOCATION PLAN

SHEET NUMBER

38

OF 40

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

STP-2265(600)

WIN
22656.00

HIGHWAY PLANS

PROJ. MANAGER	E. MARTIN	BY	DATE
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DESIGN-DETAILED	-----	-----
CHECKED-REVIEWED		

CHECKED-REVIEWED	-----	-----
DESIGN2-DETAIL FD2	YT 1 FF	T WHITE
		III 2026

DESIGN2-DETAILED2	YT LEE	T.WHITE	JUL 2026
DESIGN3-DETAILED3			

REVISIONS 2		
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REVISIONS 4	-----
FIELD CHANGES	-----

SIGNATURE

P F NUMBER

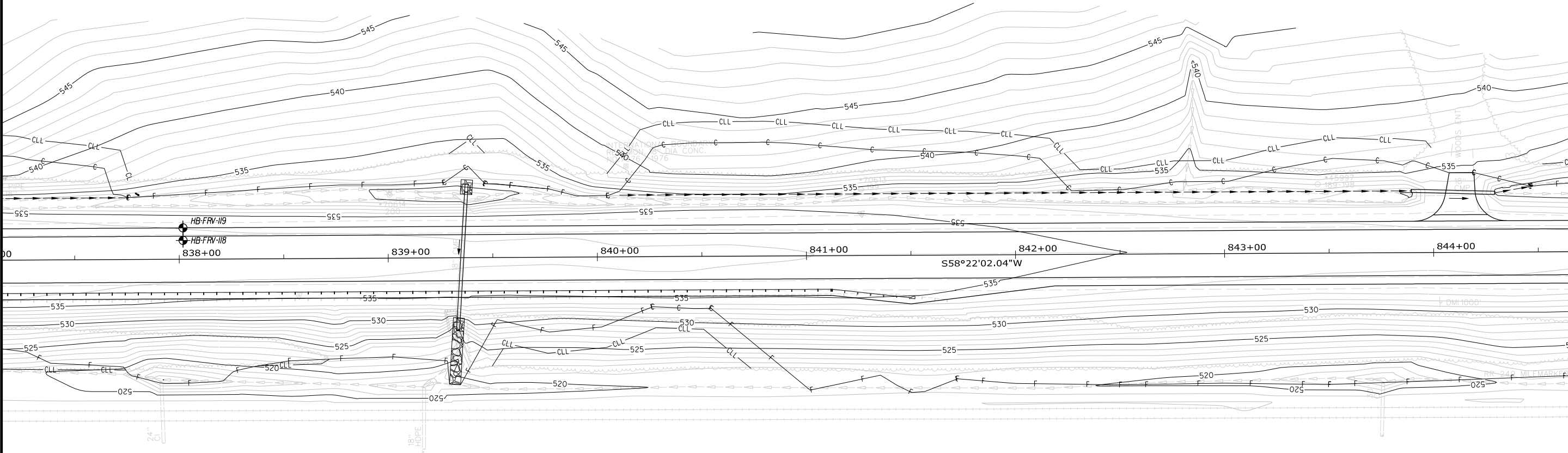
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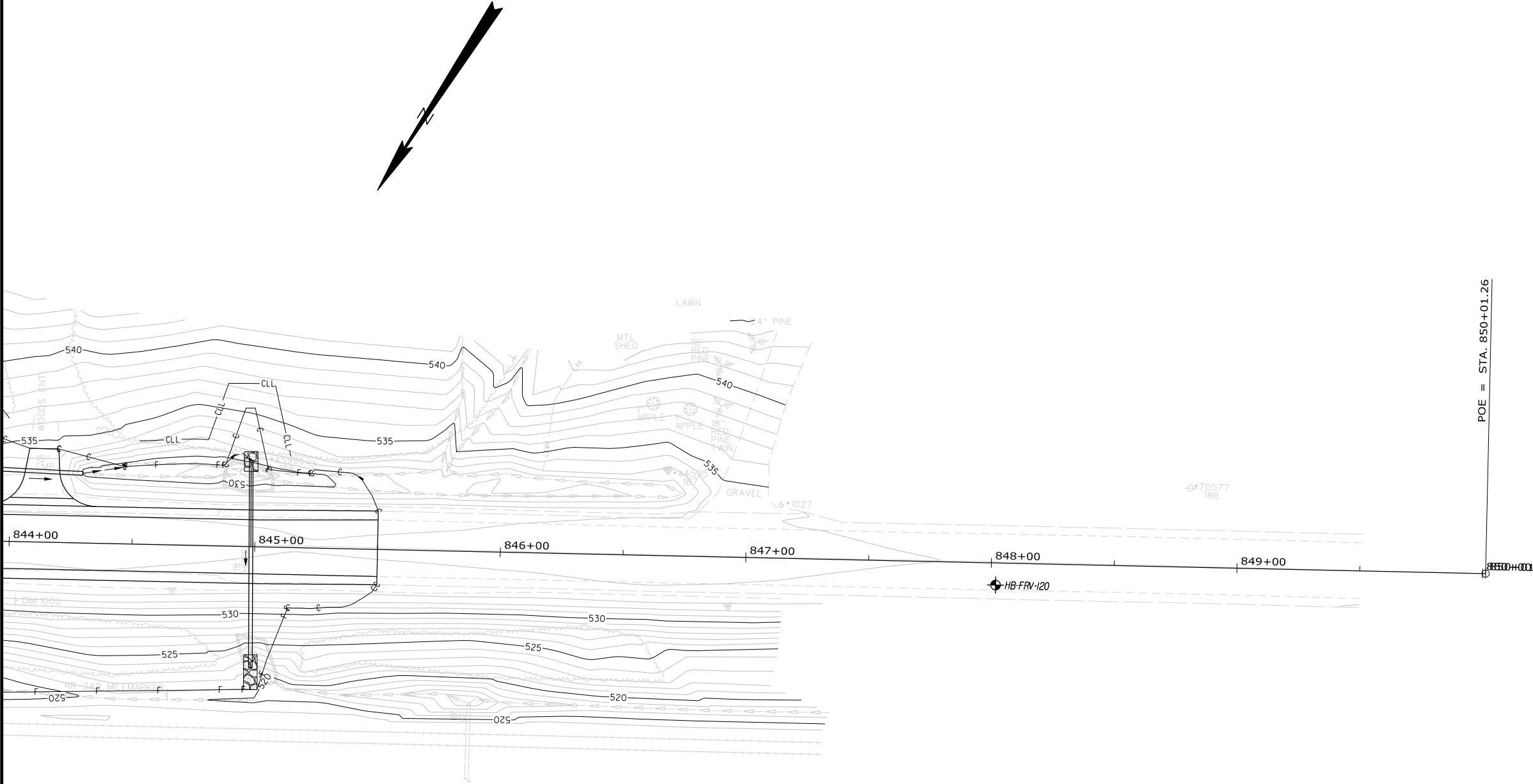


STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE JUL 2026 T. WHITE				P.E. NUMBER DATE			
SHEET NUMBER		BORING LOCATION PLAN						
39								
OF 40								

STP-2265(600)

WIN
22656.00

HIGHWAY PLANS



STATE OF MAINE DEPARTMENT OF TRANSPORTATION					
		STP-2265(600)			
		WIN 22656.00			
		HIGHWAY PLANS			
FRENCHVILLE - FORT KENT US ROUTE 1		PROJ. MANAGER	E. MARTIN	BY	DATE
		CHECKED-REVIEWED			
		DESIGN2-DETAILED2	YT 2026	T.WHITE	JUL 2026
		DESIGN3-DETAILED3			
		REVISIONS 1			
BORING LOCATION PLAN		REVISIONS 2			
		REVISIONS 3			
		REVISIONS 4			
		FIELD CHANGES			
SHEET NUMBER					
40					
OF 40					

Appendix A

Boring Logs and Probe Summary Sheet

UNIFIED SOIL CLASSIFICATION SYSTEM					MODIFIED BURMISTER SYSTEM															
MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES																
COARSE-GRAINED SOILS (more than half of material is larger than No. 200 sieve size)	GRAVELS (more than half of coarse fraction is larger than No. 4 sieve size)	CLEAN GRAVELS	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.	<u>Descriptive Term</u>		<u>Portion of Total (%)</u>													
		(little or no fines)	GP	Poorly-graded gravels, gravel sand mixtures, little or no fines.	trace	0 - 10														
					little	11 - 20														
	SANDS (more than half of coarse fraction is smaller than No. 4 sieve size)	GRAVEL WITH FINES (Appreciable amount of fines)	GM	Silty gravels, gravel-sand-silt mixtures.	some	21 - 35														
			GC	Clayey gravels, gravel-sand-clay mixtures.	adjective (e.g. Sandy, Clayey)	36 - 50														
FINE-GRAINED SOILS (more than half of material is smaller than No. 200 sieve size)	SILTS AND CLAYS (liquid limit less than 50)		ML	Inorganic silts and very fine sands, rock flour, Silty or Clayey fine sands, or Clayey silts with slight plasticity.	TERMS DESCRIBING DENSITY/CONSISTENCY															
			CL	Inorganic clays of low to medium plasticity, Gravelly clays, Sandy clays, Silty clays, lean clays.																
			OL	Organic silts and organic Silty clays of low plasticity.	Coarse-grained soils (more than half of material is larger than No. 200 sieve): Includes (1) clean gravels; (2) Silty or Clayey gravels; and (3) Silty, Clayey or Gravelly sands. Density is rated according to standard penetration resistance (N-value).															
	SILTS AND CLAYS (liquid limit greater than 50)		MH	Inorganic silts, micaceous or diatomaceous fine Sandy or Silty soils, elastic silts.	<u>Density of Cohesionless Soils</u>		<u>Standard Penetration Resistance</u> N ₆₀ -Value (blows per foot)													
			CH	Inorganic clays of high plasticity, fat clays.	Very loose	0 - 4														
			OH	Organic clays of medium to high plasticity, organic silts.	Loose	5 - 10														
	HIGHLY ORGANIC SOILS		Pt	Peat and other highly organic soils.	Medium Dense	11 - 30														
					Dense	31 - 50														
					Very Dense	> 50														
Desired Soil Observations (in this order, if applicable): Color (Munsell color chart) Moisture (dry, damp, moist, wet) Density/Consistency (from above right hand side) Texture (fine, medium, coarse, etc.) Name (Sand, Silty Sand, Clay, etc., including portions - trace, little, etc.) Gradation (well-graded, poorly-graded, uniform, etc.) Plasticity (non-plastic, slightly plastic, moderately plastic, highly plastic) Structure (layering, fractures, cracks, etc.) Bonding (well, moderately, loosely, etc.,) Cementation (weak, moderate, or strong) Geologic Origin (till, marine clay, alluvium, etc.) Groundwater level					Rock Quality Designation (RQD): RQD (%) = <u>sum of the lengths of intact pieces of core* > 4 inches</u> length of core advance *Minimum NQ rock core (1.88 in. OD of core) Rock Quality Based on RQD <table><tr><th>Rock Quality</th><th>RQD (%)</th></tr><tr><td>Very Poor</td><td>≤25</td></tr><tr><td>Poor</td><td>26 - 50</td></tr><tr><td>Fair</td><td>51 - 75</td></tr><tr><td>Good</td><td>76 - 90</td></tr><tr><td>Excellent</td><td>91 - 100</td></tr></table> Desired Rock Observations (in this order, if applicable): Color (Munsell color chart) Texture (aphanitic, fine-grained, etc.) Rock Type (granite, schist, sandstone, etc.) Hardness (very hard, hard, mod. hard, etc.) Weathering (fresh, very slight, slight, moderate, mod. severe, severe, etc.) Geologic discontinuities/jointing: -dip (horiz - 0-5 deg., low angle - 5-35 deg., mod. dipping - 35-55 deg., steep - 55-85 deg., vertical - 85-90 deg.) -spacing (very close - <2 inch, close - 2-12 inch, mod. close - 1-3 feet, wide - 3-10 feet, very wide >10 feet) -tightness (tight, open, or healed) -infilling (grain size, color, etc.) Formation (Waterville, Ellsworth, Cape Elizabeth, etc.) RQD and correlation to rock quality (very poor, poor, etc.) ref: ASTM D6032 and FHWA NHI-16-072 GEC 5 - Geotechnical Site Characterization, Table 4-12 Recovery (inch/inch and percentage) Rock Core Rate (X.X ft - Y.Y ft (min:sec))				Rock Quality	RQD (%)	Very Poor	≤25	Poor	26 - 50	Fair	51 - 75	Good	76 - 90	Excellent	91 - 100
Rock Quality	RQD (%)																			
Very Poor	≤25																			
Poor	26 - 50																			
Fair	51 - 75																			
Good	76 - 90																			
Excellent	91 - 100																			
Maine Department of Transportation Geotechnical Section Key to Soil and Rock Descriptions and Terms Field Identification Information					Sample Container Labeling Requirements: WIN Bridge Name / Town Boring Number Sample Number Sample Depth Blow Counts Sample Recovery Date Personnel Initials															

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Maine Department of Transportation Soil/Rock Exploration Log <u>US CUSTOMARY UNITS</u>						Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine								Boring No.: HB-FRV-102 WIN: 22656.00										
Drilling Contractor: MainesDOT									Elevation (ft.) 515.5									Auger ID/OD: 10" Dia.						
Operator: Daggett									Datum: NAVD88									Sampler: Off Flights						
Logged By: B. Wilder									Rig Type: CME 45C									Hammer Wt./Fall: N/A						
Date Start/Finish: 10/28/2015-10/28/2015									Drilling Method: Solid Stem Auger									Core Barrel: N/A						
Boring Location: 618+00, 8.5 ft Rt.									Casing ID/OD: N/A									Water Level*: None Observed						
Definitions: D = Spilt Spoon Sample MU = Unsuccessful Thin Wall Tube Sample Attempt WOIP = Weight of 1 Person S = Sample off Auger Flights R = Rock Core Sample S_p = Peak/Remolded Field Vane Undrained Shear Strength (psf) B = Bucket Sample off Auger Flights SSA = Solid Stem Auger S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) LL = Liquid Limit MD = Unsuccessful Split Spoon Sample Attempt HSA = Hollow Stem Auger q_p = Unconfined Compressive Strength (ksf) PL = Plastic Limit U = Thin Wall Tube Sample RC = Roller Cone N-value = Raw Field SPT N-value PI = Plasticity Index MV = Unsuccessful Field Vane Shear Test Attempt WOH = Weight of 140lb. Hammer T_v = Pocket Torvane Shear Strength (psf) G = Grain Size Analysis V = Field Vane Shear Test, PP= Pocket Penetrometer WOR/C = Weight of Rods or Casing WC = Water Content, percent ≈ Similar or Equal too C = Consolidation Test																								
Sample Information												Visual Description and Remarks							Laboratory Testing Results/ AASHTO and Unified Class.					
Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)	Graphic Log																
0	B2		0.50 - 2.40			SSA	515.0	[Pattern]	6" PAVEMENT							G#302068 A-1-b, SM WC=1.3%								
	S2		2.40 - 4.50				513.1	[Pattern]	Brown, damp, fine to coarse SAND, some gravel, little silt, (Fill).															
								[Pattern]	Light grey, wet, fine to coarse SAND, some silt, little gravel, (Sand).							G#302069 A-2-4, SM WC=15.4%								
							511.0	[Pattern]																
5									Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL															
25																								
Remarks:																								
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.																								
Page 1 of 1																								
Boring No.: HB-FRV-102																								

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-103 WIN: 22656.00				
Drilling Contractor: MaineDOT				Elevation (ft.): 521.9		Auger ID/OD: 10" Dia.				
Operator: Daggett				Datum: NAVD88		Sampler: Off Flights				
Logged By: B. Wilder				Rig Type: CME 45C		Hammer Wt./Fall: N/A				
Date Start/Finish: 10/28/2015-10/28/2015				Drilling Method: Solid Stem Auger		Core Barrel: N/A				
Boring Location: 638+00, 8.0 ft Lt.				Casing ID/OD: N/A		Water Level*: None Observed				
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of 1 Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≡ = Similar or Equal too LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test										
Depth (ft.)	Sample Information							Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.	
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)			Graphic Log
0	B3		0.54 - 4.50			SSA	521.4		6½" PAVEMENT Brown, damp, Gravelly fine to coarse SAND, little silt, (Fill).	G#302061 A-1-a, SW-SM WC=2.9%
5							517.4		Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										
Remarks:										
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.									Page 1 of 1 Boring No.: HB-FRV-103	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS						Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-104 WIN: 22656.00					
Drilling Contractor: MaineDOT						Elevation (ft.): 495.4				Auger ID/OD: 10" Dia.					
Operator: Daggett						Datum: NAVD88				Sampler: Off Flights					
Logged By: B. Wilder						Rig Type: CME 45C				Hammer Wt./Fall: N/A					
Date Start/Finish: 10/28/2015-10/28/2015						Drilling Method: Solid Stem Auger				Core Barrel: N/A					
Boring Location: 658+00, 8.5 ft Rt.						Casing ID/OD: N/A				Water Level*: None Observed					
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer						MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing				WO1P = Weight of 1 Person Su = Peak/Remolded Field Vane Undrained Shear Strength (psf) Su(lab) = Lab Vane Undrained Shear Strength (psf) qp = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value Tv = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≈ = Similar or Equal too					
						LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test									
Sample Information										Visual Description and Remarks				Laboratory Testing Results/ AASHTO and Unified Class.	
Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)	Graphic Log							
0	B4		0.67 - 4.50			SSA	494.7		8" PAVEMENT				G#302063 A-1-a, SW-SM WC=1.4%		
									Brown, damp, fine to coarse SAND, some gravel, little silt, (Fill).						
5							490.9		Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL						
10															
15															
20															
25															
Remarks:															
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.															
Page 1 of 1															
Boring No.: HB-FRV-104															

[illegible]

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS						Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-106 WIN: 22656.00			
Drilling Contractor: MaineDOT						Elevation (ft.): 495.7				Auger ID/OD: 10" Dia.			
Operator: Daggett						Datum: NAVD88				Sampler: Off Flights			
Logged By: B. Wilder						Rig Type: CME 45C				Hammer Wt./Fall: N/A			
Date Start/Finish: 10/28/2015-10/28/2015						Drilling Method: Solid Stem Auger				Core Barrel: N/A			
Boring Location: 678+00, 8.5 ft Rt.						Casing ID/OD: N/A				Water Level*: None Observed			
Definitions: D = Spilt Spoon Sample MU = Unsuccessful Thin Wall Tube Sample Attempt WO1P = Weight of 1 Person S = Sample off Auger Flights R = Rock Core Sample S _U = Peak/Remolded Field Vane Undrained Shear Strength (psf) B = Bucket Sample off Auger Flights SSA = Solid Stem Auger S _{U(lab)} = Lab Vane Undrained Shear Strength (psf) LL = Liquid Limit MD = Unsuccessful Split Spoon Sample Attempt HSA = Hollow Stem Auger q _p = Unconfined Compressive Strength (ksf) PL = Plastic Limit U = Thin Wall Tube Sample RC = Roller Cone N-value = Raw Field SPT N-value PI = Plasticity Index MV = Unsuccessful Field Vane Shear Test Attempt WOH = Weight of 140lb. Hammer T _V = Pocket Torvane Shear Strength (psf) G = Grain Size Analysis V = Field Vane Shear Test PP= Pocket Penetrometer WOR/C = Weight of Rods or Casing WC = Water Content, percent ≈ = Similar or Equal too C = Consolidation Test													
Sample Information													
Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks				Laboratory Testing Results/ AASHTO and Unified Class.
0	B6		0.75 - 3.00			SSA	495.0		9" PAVEMENT				G3302055 A-1-b, SW-SM WC=1.6% G#302075 A-4, CL WC=23.1%
							492.7		Brown, damp, fine to coarse SAND, some gravel, little silt, (Fill).				
	S3		3.00 - 4.50				491.2		Light brown, wet, SILT, some fine to coarse sand, trace gravel, (Silt).				
5									Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL				
10													
15													
20													
25													
Remarks:													
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.										Page 1 of 1			
* 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.: HB-FRV-106			

Maine Department of Transportation Soil/Rock Exploration Log <u>US CUSTOMARY UNITS</u>						Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-107 WIN: 22656.00		
Drilling Contractor: MaineDOT						Elevation (ft.): 503.4				Auger ID/OD: 10" Dia.		
Operator: Daggett						Datum: NAVD88				Sampler: Off Flights		
Logged By: B. Wilder						Rig Type: CME 45C				Hammer Wt./Fall: N/A		
Date Start/Finish: 10/28/2015-10/28/2015						Drilling Method: Solid Stem Auger				Core Barrel: N/A		
Boring Location: 698+00, 9.5 ft Rt.						Casing ID/OD: N/A				Water Level*: None Observed		
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of 1 Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≡ = Similar or Equal too LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test												
Depth (ft.)	Sample Information								Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.		
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)	Graphic Log				
0	B7		0.67 - 3.30			SSA	502.7					
							500.1		0.7' - 3.3'	G#302059 A-1-a, SW-SM WC=1.4%		
	S4		3.30 - 4.50				498.9		3.3' - 4.5'	G#302072 A-4, CL WC=33.0%		
5												
10												
15												
20												
25												
Remarks: Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.												
									Page 1 of 1			
									Boring No.: HB-FRV-107			

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-108 WIN: 22656.00				
Drilling Contractor: MaineDOT			Elevation (ft.): 503.0		Auger ID/OD: 10" Dia.					
Operator: Daggett			Datum: NAVD88		Sampler: Off Flights					
Logged By: B. Wilder			Rig Type: CME 45C		Hammer Wt./Fall: N/A					
Date Start/Finish: 10/28/2015-10/28/2015			Drilling Method: Solid Stem Auger		Core Barrel: N/A					
Boring Location: 698+00, 15.0 ft Rt. Shoulder			Casing ID/OD: N/A		Water Level*: None Observed					
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of 1 Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≡ = Similar or Equal too LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test										
Depth (ft.)	Sample Information							Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.	
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)			Graphic Log
0	B8		0.00 - 3.40						Brown, damp, fine to coarse SAND, some gravel, little silt, (Fill).	G#302054 A-1-a, SM WC=1.7%
								Light brown, wet, SILT, little fine to coarse sand, trace gravel, (Silt).		
5									Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										
Remarks:										
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.									Page 1 of 1 Boring No.: HB-FRV-108	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-109 WIN: 22656.00				
Drilling Contractor: MaineDOT				Elevation (ft.): 506.2		Auger ID/OD: 10" Dia.				
Operator: Daggett				Datum: NAVD88		Sampler: Off Flights				
Logged By: B. Wilder				Rig Type: CME 45C		Hammer Wt./Fall: N/A				
Date Start/Finish: 10/28/2015-10/28/2015				Drilling Method: Solid Stem Auger		Core Barrel: N/A				
Boring Location: 718+00, 9.0 ft Lt.				Casing ID/OD: N/A		Water Level*: None Observed				
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of 1 Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≡ = Similar or Equal too LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test										
Depth (ft.)	Sample Information							Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.	
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)			Graphic Log
0	B9		0.67 - 4.50			SSA	505.5		8" PAVEMENT Brown, damp, Gravelly fine to coarse SAND, little silt, (Fill).	G#302053 A-1-a, SW-SM WC=0.7%
5							501.7		Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										
Remarks:										
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.									Page 1 of 1 Boring No.: HB-FRV-109	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-110 WIN: 22656.00				
Drilling Contractor: MaineDOT				Elevation (ft.): 505.8		Auger ID/OD: 10" Dia.				
Operator: Daggett				Datum: NAVD88		Sampler: Off Flights				
Logged By: B. Wilder				Rig Type: CME 45C		Hammer Wt./Fall: N/A				
Date Start/Finish: 10/28/2015-10/28/2015				Drilling Method: Solid Stem Auger		Core Barrel: N/A				
Boring Location: 718+00, 14.0 ft Lt.				Casing ID/OD: N/A		Water Level*: None Observed				
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of 1 Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≡ = Similar or Equal too LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test										
Depth (ft.)	Sample Information							Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.	
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)			Graphic Log
0						SSA			Brown, damp, Gravelly fine to coarse SAND, little silt, (Fill).	
5						↓	501.3		Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL	4.5
10										
15										
20										
25										
Remarks:										
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.									Page 1 of 1 Boring No.: HB-FRV-110	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-111 WIN: 22656.00			
Drilling Contractor: MaineDOT			Elevation (ft.): 518.8		Auger ID/OD: 10" Dia.				
Operator: Daggett			Datum: NAVD88		Sampler: Off Flights				
Logged By: B. Wilder			Rig Type: CME 45C		Hammer Wt./Fall: N/A				
Date Start/Finish: 10/28/2015-10/28/2015			Drilling Method: Solid Stem Auger		Core Barrel: N/A				
Boring Location: 738+00, 9.0 ft Rt.			Casing ID/OD: N/A		Water Level*: None Observed				
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of 1 Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≡ = Similar or Equal too LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test									
Depth (ft.)	Sample Information							Laboratory Testing Results/ AASHTO and Unified Class.	
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)		Graphic Log
0	B10		0.58 - 2.90			SSA	518.2		G#302066 A-1-b, SM WC=1.7% G#302070 A-2-4, SM WC=12.4%
	S5		2.90 - 4.50				515.9		
							514.3		
5	Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL								
10									
15									
20									
25									
Remarks:									
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.								Page 1 of 1 Boring No.: HB-FRV-111	

[illegible]

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-113 WIN: 22656.00				
Drilling Contractor: MaineDOT				Elevation (ft.): 514.5		Auger ID/OD: 10" Dia.				
Operator: Daggett				Datum: NAVD88		Sampler: Off Flights				
Logged By: B. Wilder				Rig Type: CME 45C		Hammer Wt./Fall: N/A				
Date Start/Finish: 10/28/2015-10/28/2015				Drilling Method: Solid Stem Auger		Core Barrel: N/A				
Boring Location: 758+00, 14.0 ft Lt. Shoulder				Casing ID/OD: N/A		Water Level*: None Observed				
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of 1 Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≡ = Similar or Equal too LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test										
Depth (ft.)	Sample Information							Laboratory Testing Results/ AASHTO and Unified Class.		
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)		Graphic Log	
0	B12		0.00 - 4.50			SSA	510.0		Brown, damp, Gravelly fine to coarse SAND, little silt, (Fill).	G#302060 A-1-a, SW-SM WC=1.1%
5								Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL	4.5	
10										
15										
20										
25										
Remarks:										
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.									Page 1 of 1 Boring No.: HB-FRV-113	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-114 WIN: 22656.00				
Drilling Contractor: MaineDOT			Elevation (ft.): 529.6		Auger ID/OD: 10" Dia.					
Operator: Daggett			Datum: NAVD88		Sampler: Off Flights					
Logged By: B. Wilder			Rig Type: CME 45C		Hammer Wt./Fall: N/A					
Date Start/Finish: 10/28/2015-10/28/2015			Drilling Method: Solid Stem Auger		Core Barrel: N/A					
Boring Location: 778+00, 9.0 ft Rt.			Casing ID/OD: N/A		Water Level*: None Observed					
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of 1 Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≡ = Similar or Equal too LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test										
Depth (ft.)	Sample Information							Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.	
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)			Graphic Log
0	B13		0.63 - 4.50			SSA	529.0		7½" PAVEMENT Brown, damp, Gravelly fine to coarse SAND, little silt, (Fill).	0.6 4.5
5							525.1		Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										
Remarks: 										
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.									Page 1 of 1 Boring No.: HB-FRV-114	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-116 WIN: 22656.00				
Drilling Contractor: MaineDOT				Elevation (ft.): 546.1		Auger ID/OD: 10" Dia.				
Operator: Daggett				Datum: NAVD88		Sampler: Off Flights				
Logged By: B. Wilder				Rig Type: CME 45C		Hammer Wt./Fall: N/A				
Date Start/Finish: 10/28/2015-10/28/2015				Drilling Method: Solid Stem Auger		Core Barrel: N/A				
Boring Location: 798+00, 14.0 ft Lt.				Casing ID/OD: N/A		Water Level*: None Observed				
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of 1 Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≡ = Similar or Equal too LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test										
Depth (ft.)	Sample Information							Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.	
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)			Graphic Log
0	B15		0.00 - 2.80				543.3		Brown, moist, fine to coarse SAND, some gravel, little silt, (Fill).	G#302058 A-1-b, SM WC=1.2%
							541.6		Grey, wet, fine to coarse SAND, some silt, some gravel, (Sand).	
5									Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL	
10										
15										
20										
25										
Remarks:										
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.									Page 1 of 1 Boring No.: HB-FRV-116	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-117 WIN: 22656.00				
Drilling Contractor: MaineDOT				Elevation (ft.): 544.8		Auger ID/OD: 10" Dia.				
Operator: Daggett				Datum: NAVD88		Sampler: Off Flights				
Logged By: B. Wilder				Rig Type: CME 45C		Hammer Wt./Fall: N/A				
Date Start/Finish: 10/28/2015-10/28/2015				Drilling Method: Solid Stem Auger		Core Barrel: N/A				
Boring Location: 818+00, 9.0 ft Rt.				Casing ID/OD: N/A		Water Level*: None Observed				
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of 1 Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≡ = Similar or Equal too LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test										
Depth (ft.)	Sample Information							Laboratory Testing Results/ AASHTO and Unified Class.		
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)		Graphic Log	Visual Description and Remarks
0	B16		0.67 - 3.40			SSA	544.1		8" PAVEMENT	G#302052 A-1-a, SM WC=1.7% G#302073 A-2-4, SM WC=21.9%
							541.4		Brown, moist, Gravelly fine to coarse SAND, little silt, (Fill).	
	S7		3.40 - 4.50				540.3		Grey, wet, fine to coarse SAND, some silt, trace gravel, (Sand).	
5								Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL		
10										
15										
20										
25										
Remarks: 										
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.										Page 1 of 1 Boring No.: HB-FRV-117

[illegible]

Maine Department of Transportation Soil/Rock Exploration Log <u>US CUSTOMARY UNITS</u>						Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine							Boring No.: HB-FRV-119 WIN: 22656.00							
Drilling Contractor: MaineDOT						Elevation (ft.) : 535.9							Auger ID/OD: 10" Dia.							
Operator: Daggett						Datum: NAVD88							Sampler: Off Flights							
Logged By: B. Wilder						Rig Type: CME 45C							Hammer Wt./Fall: N/A							
Date Start/Finish: 10/28/2015-10/28/2015						Drilling Method: Solid Stem Auger							Core Barrel: N/A							
Boring Location: 838+00, 15.0 ft Lt. Shoulder						Casing ID/OD: N/A							Water Level* : None Observed							
Definitions: D = Spilt Spoon Sample MU = Unsuccessful Thin Wall Tube Sample Attempt WOIP = Weight of 1 Person S = Sample off Auger Flights R = Rock Core Sample S _U = Peak/Remolded Field Vane Undrained Shear Strength (psf) B = Bucket Sample off Auger Flights SSA = Solid Stem Auger S _{U(lab)} = Lab Vane Undrained Shear Strength (psf) LL = Liquid Limit MD = Unsuccessful Split Spoon Sample Attempt HSA = Hollow Stem Auger q _p = Unconfined Compressive Strength (ksf) PL = Plastic Limit U = Thin Wall Tube Sample RC = Roller Cone N-value = Raw Field SPT N-value PI = Plasticity Index MV = Unsuccessful Field Vane Shear Test Attempt WOH = Weight of 140lb. Hammer T _v = Pocket Torvane Shear Strength (psf) G = Grain Size Analysis V = Field Vane Shear Test PP= Pocket Penetrometer WOR/C = Weight of Rods or Casing WC = Water Content, percent ≈ = Similar or Equal too C = Consolidation Test																				
Sample Information																				Laboratory Testing Results/ AASHTO and Unified Class.
Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks											
0						SSA			Brown, damp, fine to coarse SAND, some gravel, little silt, (Fill).											
5						↓	531.4		Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL										-4.5'	
10																				
15																				
20																				
25																				
Remarks:																				
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.										Page 1 of 1										
* 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.: HB-FRV-119										

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-120 WIN: 22656.00					
Drilling Contractor: MaineDOT				Elevation (ft.): 533.7		Auger ID/OD: 10" Dia.					
Operator: Daggett				Datum: NAVD88		Sampler: Off Flights					
Logged By: B. Wilder				Rig Type: CME 45C		Hammer Wt./Fall: N/A					
Date Start/Finish: 10/28/2015-10/28/2015				Drilling Method: Solid Stem Auger		Core Barrel: N/A					
Boring Location: 848+00, 9.0 ft Rt.				Casing ID/OD: N/A		Water Level*: None Observed					
Definitions: D = Split Spoon Sample S = Sample off Auger Flights B = Bucket Sample off Auger Flights MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MV = Unsuccessful Field Vane Shear Test Attempt V = Field Vane Shear Test, PP= Pocket Penetrometer MU = Unsuccessful Thin Wall Tube Sample Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of 1 Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-value = Raw Field SPT N-value T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent ≡ = Similar or Equal too LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test											
Depth (ft.)	Sample Information							Laboratory Testing Results/ AASHTO and Unified Class.			
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)		Graphic Log		
0	B18		0.58 - 4.50			SSA	533.1		7" PAVEMENT Brown, damp, fine to coarse SAND, some gravel, little silt, (Fill).	-0.6	G#302064 A-1-a, SM WC=1.2%
5							529.2		Bottom of Exploration at 4.5 feet below ground surface. NO REFUSAL	-4.5	
10											
15											
20											
25											
Remarks:											
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.										Page 1 of 1 Boring No.: HB-FRV-120	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-201 WIN: 22656.00				
Driller: MaineDOT			Elevation (ft.): 520.5			Auger ID/OD: 5" Dia.						
Operator: Daggett/Archer			Datum: NAVD88			Sampler: Standard Split Spoon						
Logged By: C. Russell			Rig Type: CME 45C			Hammer Wt./Fall: 140#/30"						
Date Start/Finish: 11/14/2017; 08:35-09:15			Drilling Method: Solid Stem Auger			Core Barrel: N/A						
Boring Location: 611+00, 13.5 ft Rt.			Casing ID/OD: N/A			Water Level*: None Observed						
Hammer Efficiency Factor: 0.854			Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐									
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S _u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S _{u(lab)} = Lab Vane Undrained Shear Strength (psf) q _p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N ₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N ₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T _v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test												
Depth (ft.)	Sample Information								Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows					
0	1D	24/12	0.00 - 2.00	35/30/14/10	44	63	SSA				Brown, dry, very dense, fine to coarse SAND, some silt, little gravel, (Fill).	G#300781 A-2-4, SM WC=5.0%
5	2D	24/12	5.00 - 7.00	5/7/8/10	15	21					Brown, damp, medium dense, fine to coarse SAND, little gravel, trace silt, (Fill).	G#300782 A-1-b, SW-SM WC=5.2%
10	3D	24/24	10.00 - 12.00	4/4/4/7	8	11			510.0		3D (10.5-12.0 ft bgs) Light brown, wet, stiff, SILT, little clay, trace fine to medium sand, (Silt).	G#300783 A-4, CL WC=24.6%
15									508.5		Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL	
20												
25												
Remarks:												
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.											Page 1 of 1	
* 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.: HB-FRV-201	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-202 WIN: 22656.00							
Driller: MaineDOT			Elevation (ft.): 520.1		Auger ID/OD: 5" Dia.								
Operator: Daggett/Archer			Datum: NAVD88		Sampler: Standard Split Spoon								
Logged By: C. Russell			Rig Type: CME 45C		Hammer Wt./Fall: 140#/30"								
Date Start/Finish: 11/14/2017; 09:20-09:40			Drilling Method: Solid Stem Auger		Core Barrel: N/A								
Boring Location: 611+78, 13.5 ft Rt.			Casing ID/OD: N/A		Water Level*: None Observed								
Hammer Efficiency Factor: 0.854			Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐										
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test													
Depth (ft.)	Sample Information							Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.		
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows						
0	1D	24/18	0.00 - 2.00	26/21/12/7	33	47	SSA	508.1		Brown, damp, dense, fine to coarse SAND, some gravel, little silt, (Fill).	G#300784 A-1-b, SM WC=4.7%		
5	2D	24/12	5.00 - 7.00	6/6/7/5	13	19						Brown, damp, medium dense, fine to coarse SAND, little gravel, little silt, (Fill).	G#300785 A-1-b, SM WC=5.2%
10	3D	24/20	10.00 - 12.00	10/11/12/15	23	33						Brown, damp, dense, fine to coarse SAND, some gravel, little silt, (Fill).	G#300786 A-1-b, SM WC=5.0%
15										12.0	Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL		
20													
25													
Remarks:													
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.										Page 1 of 1 Boring No.: HB-FRV-202			

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-203 WIN: 22656.00				
Driller: MaineDOT				Elevation (ft.): 516.8				Auger ID/OD: 5" Dia.				
Operator: Daggett/Archer				Datum: NAVD88				Sampler: Standard Split Spoon				
Logged By: C. Russell				Rig Type: CME 45C				Hammer Wt./Fall: 140#/30"				
Date Start/Finish: 11/14/2017; 09:45-10:15				Drilling Method: Solid Stem Auger				Core Barrel: N/A				
Boring Location: 629+00, 13.5 ft Rt.				Casing ID/OD: N/A				Water Level*: None Observed				
Hammer Efficiency Factor: 0.854				Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐								
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S _u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S _{u(lab)} = Lab Vane Undrained Shear Strength (psf) q _p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N ₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N ₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T _v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test												
Depth (ft.)	Sample Information								Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows					
0	1D	24/20	0.00 - 2.00	31/29/15/14	44	63	SSA			Brown, damp, very dense, fine to coarse SAND, some gravel, little silt, (Fill).	G#300787 A-1-b, SM WC=4.5%	
5	2D	24/20	5.00 - 7.00	4/9/10/12	19	27				Brown, moist, medium dense, fine to coarse SAND, some gravel, some silt, (Fill).	G#300788 A-1-b, SM WC=7.9%	
10	3D	24/10	10.00 - 12.00	2/2/2/2	4	6				Brown, moist, loose, fine to coarse SAND, some gravel, little silt, trace clay, (Sand).	G#300789 A-1-b, SC-SM WC=9.5%	
15										Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL		
20												
25												
Remarks:												
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.										Page 1 of 1		
* 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.: HB-FRV-203		

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-204 WIN: 22656.00				
Driller: MaineDOT			Elevation (ft.): 518.0			Auger ID/OD: 5" Dia.						
Operator: Daggett/Archer			Datum: NAVD88			Sampler: Standard Split Spoon						
Logged By: C. Russell			Rig Type: CME 45C			Hammer Wt./Fall: 140#/30"						
Date Start/Finish: 11/14/2017; 10:20-10:35			Drilling Method: Solid Stem Auger			Core Barrel: N/A						
Boring Location: 629+75.5, 14.0 ft Rt.			Casing ID/OD: N/A			Water Level*: None Observed						
Hammer Efficiency Factor: 0.854			Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐									
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S _u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S _{u(lab)} = Lab Vane Undrained Shear Strength (psf) q _p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N ₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N ₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T _v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test												
Depth (ft.)	Sample Information								Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows					
0	1D	24/15	0.00 - 2.00	31/24/12/9	36	51	SSA				Brown, damp, very dense, fine to coarse SAND, some gravel, little silt, (Fill).	G#300790 A-1-b, SM WC=4.6%
5	2D	24/24	5.00 - 7.00	7/13/14/19	27	38					Brown, damp, dense, fine to coarse SAND, some gravel, little silt, (Fill).	G#300791 A-1-b, SM WC=6.4%
10	3D	24/24	10.00 - 12.00	7/9/8/17	17	24					Brown, moist, very stiff, SILT, some fine to coarse sand, some gravel, little clay, (Glacial Till). Weathered Rock in tip of spoon.	G#300792 A-4, CL WC=10.3%
15												
20												
25												
Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL												
Remarks:												
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.											Page 1 of 1	
* 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.: HB-FRV-204	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-205 WIN: 22656.00				
Driller: MaineDOT			Elevation (ft.): 519.1			Auger ID/OD: 5" Dia.						
Operator: Daggett/Archer			Datum: NAVD88			Sampler: Standard Split Spoon						
Logged By: C. Russell			Rig Type: CME 45C			Hammer Wt./Fall: 140#/30"						
Date Start/Finish: 11/14/2017; 10:40-11:00			Drilling Method: Solid Stem Auger			Core Barrel: N/A						
Boring Location: 630+48, 13.0 ft Rt.			Casing ID/OD: N/A			Water Level*: None Observed						
Hammer Efficiency Factor: 0.854			Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐									
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) $S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency N_{60} = (Hammer Efficiency Factor/60%)*N-uncorrected T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test												
Depth (ft.)	Sample Information								Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows					
0	1D	24/20	0.00 - 2.00	26/24/13/11	37	53	SSA				Brown, damp, very dense, fine to coarse SAND, some gravel, little silt, (Fill).	G#300793 A-1-b, SM WC=3.8%
											Cobbles from 2.0-2.5 ft bgs.	
5	2D	24/20	5.00 - 7.00	21/25/28/27	53	75					Brown, damp, very dense, fine to coarse SAND, some gravel, little silt, (Fill).	G#300794 A-1-b, SM WC=5.3%
10	3D	24/24	10.00 - 12.00	14/12/10/12	22	31			509.1		Brown, moist, dense, fine to coarse SAND, some silt, some gravel, (Glacial Till).	G#300795 A-2-4, SM WC=8.5%
									507.1		Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL	
15												
20												
25												
Remarks:												
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.											Page 1 of 1	
* 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.: HB-FRV-205	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-206 WIN: 22656.00				
Driller: MaineDOT			Elevation (ft.): 519.6			Auger ID/OD: 5" Dia.						
Operator: Daggett/Archer			Datum: NAVD88			Sampler: Standard Split Spoon						
Logged By: C. Russell			Rig Type: CME 45C			Hammer Wt./Fall: 140#/30"						
Date Start/Finish: 11/14/2017; 11:05-11:30			Drilling Method: Solid Stem Auger			Core Barrel: N/A						
Boring Location: 631+31, 13.5 ft Rt.			Casing ID/OD: N/A			Water Level*: None Observed						
Hammer Efficiency Factor: 0.854			Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐									
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S _u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S _{u(lab)} = Lab Vane Undrained Shear Strength (psf) q _p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N ₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N ₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T _v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test												
Depth (ft.)	Sample Information								Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows					
0	1D	24/20	0.00 - 2.00	22/17/9/7	26	37	SSA				Brown, damp, dense, fine to coarse SAND, little gravel, little silt, (Fill).	G#300796 A-1-b, SM WC=5.0%
5	2D	24/18	5.00 - 7.00	12/8/14/17	22	31					Grey and brown, damp, dense, fine to coarse SAND, some silt, some gravel, trace clay, (Glacial Till).	G#300797 A-1-b, SC-SM WC=7.0%
10	3D	24/22	10.00 - 12.00	21/19/23/24	42	60					Brown, damp, very dense, fine to coarse SAND, some silt, some gravel, trace clay, (Glacial Till). Boulder from 10.8-11.3 ft bgs.	G#300798 A-1-b, SC-SM WC=7.6%
15												
20												
25												
Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL												
Remarks:												
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.											Page 1 of 1	
* 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.: HB-FRV-206	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-207 WIN: 22656.00																																																																																																																																																																																																																																								
Driller: MaineDOT				Elevation (ft.): 524.0				Auger ID/OD: 5" Dia.																																																																																																																																																																																																																																								
Operator: Daggett/Archer				Datum: NAVD88				Sampler: Standard Split Spoon																																																																																																																																																																																																																																								
Logged By: C. Russell				Rig Type: CME 45C				Hammer Wt./Fall: 140#/30"																																																																																																																																																																																																																																								
Date Start/Finish: 11/14/2017; 12:35-13:05				Drilling Method: Solid Stem Auger				Core Barrel: N/A																																																																																																																																																																																																																																								
Boring Location: 641+00, 13.0 ft Rt.				Casing ID/OD: N/A				Water Level*: None Observed																																																																																																																																																																																																																																								
Hammer Efficiency Factor: 0.854				Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐																																																																																																																																																																																																																																												
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Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-208 WIN: 22656.00						
Driller: MaineDOT		Elevation (ft.): 522.3		Auger ID/OD: 5" Dia.								
Operator: Daggett/Archer		Datum: NAVD88		Sampler: Standard Split Spoon								
Logged By: C. Russell		Rig Type: CME 45C		Hammer Wt./Fall: 140#/30"								
Date Start/Finish: 11/14/2017; 13:00-13:20		Drilling Method: Solid Stem Auger		Core Barrel: N/A								
Boring Location: 641+85.5, 14.0 ft Rt.		Casing ID/OD: N/A		Water Level*: None Observed								
Hammer Efficiency Factor: 0.854		Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐										
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test												
Depth (ft.)	Sample Information							Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.	
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows					
0	1D	24/17	0.00 - 2.00	23/19/8/9	17	24	SSA	517.3		Brown, damp, medium dense, fine to coarse SAND, some gravel, little silt, (Fill).	G#303002 A-1-b, SM WC=5.5%	
5	2D	24/20	5.00 - 7.00	3/3/4/4	7	10		517.3			Brown, damp, loose, fine to coarse SAND, some gravel, little silt, trace clay, (Sand).	G#303003 A-1-b, SC-SM WC=11.0%
10	3D	24/20	10.00 - 12.00	12/19/25/19	44	63		512.3				Brown, moist, very dense, fine to coarse SAND, some silt, little gravel, trace clay, (Glacial Till). Cobbles from 10.3-10.8 ft bgs.
15								510.3	Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL			
20												
25												
Remarks:												
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.										Page 1 of 1 Boring No.: HB-FRV-208		

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-209 WIN: 22656.00					
Driller: MaineDOT		Elevation (ft.): 520.5		Auger ID/OD: 5" Dia.							
Operator: Daggett/Archer		Datum: NAVD88		Sampler: Standard Split Spoon							
Logged By: C. Russell		Rig Type: CME 45C		Hammer Wt./Fall: 140#/30"							
Date Start/Finish: 11/14/2017; 13:25-14:00		Drilling Method: Solid Stem Auger		Core Barrel: N/A							
Boring Location: 642+71, 14.0 ft Rt.		Casing ID/OD: N/A		Water Level*: None Observed							
Hammer Efficiency Factor: 0.854		Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐									
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test											
Depth (ft.)	Sample Information							Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows				
0	1D	24/18	0.00 - 2.00	25/27/9/7	36	51	SSA	515.5		Brown, damp, very dense, fine to coarse SAND, some gravel, little silt, (Fill).	G#303005 A-1-b, SM WC=4.7%
5	2D	24/8	5.00 - 7.00	2/2/4/10	6	9		515.5		Reddish-brown, damp, loose, fine to coarse SAND, some silt, little gravel, trace clay, (Sand).	G#303006 A-4, SC-SM WC=21.3%
10	3D	24/24	10.00 - 12.00	11/12/10/11	22	31		510.5		Brown, damp, dense, fine to coarse SAND, some gravel, little silt, trace clay, (Glacial Till). Cobbles from 10.5-10.6 ft bgs. Cobbles from 11.0-11.3 ft bgs.	G#303007 A-1-b, SC-SM WC=7.0%
								508.5	Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL		
15									Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL		
20									Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL		
25									Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL		

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

 * 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.

Page 1 of 1

Boring No.: HB-FRV-209

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS					Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine					Boring No.: HB-FRV-210 WIN: 22656.00																																																																																																																										
Driller: MaineDOT				Elevation (ft.): 517.4				Auger ID/OD: 5" Dia.																																																																																																																												
Operator: Daggett/Archer				Datum: NAVD88				Sampler: Standard Split Spoon																																																																																																																												
Logged By: C. Russell				Rig Type: CME 45C				Hammer Wt./Fall: 140#/30"																																																																																																																												
Date Start/Finish: 11/15/2017; 13:40-14:00				Drilling Method: Solid Stem Auger				Core Barrel: N/A																																																																																																																												
Boring Location: 747+50, 13.7 ft Rt.				Casing ID/OD: N/A				Water Level*: None Observed																																																																																																																												
Hammer Efficiency Factor: 0.854				Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐																																																																																																																																
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Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-211 WIN: 22656.00																																																																																																																																																																																																																												
Driller: MaineDOT				Elevation (ft.) 515.2				Auger ID/OD: 5" Dia.																																																																																																																																																																																																																												
Operator: Daggett/Archer				Datum: NAVD88				Sampler: Standard Split Spoon																																																																																																																																																																																																																												
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Date Start/Finish: 11/15/2017; 14:00-14:20				Drilling Method: Solid Stem Auger				Core Barrel: N/A																																																																																																																																																																																																																												
Boring Location: 748+64, 14.0 ft Rt.				Casing ID/OD: N/A				Water Level*: None Observed																																																																																																																																																																																																																												
Hammer Efficiency Factor: 0.854				Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐																																																																																																																																																																																																																																
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt				R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person				S _u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S _u (lab) = Lab Vane Undrained Shear Strength (psf) q ₀ = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N ₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N ₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected				T _v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test																																																																																																																																																																																																																								
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Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-212 WIN: 22656.00				
Driller: MaineDOT				Elevation (ft.): 513.1				Auger ID/OD: 5" Dia.				
Operator: Daggett/Archer				Datum: NAVD88				Sampler: Standard Split Spoon				
Logged By: C. Russell				Rig Type: CME 45C				Hammer Wt./Fall: 140#/30"				
Date Start/Finish: 11/15/2017; 14:20-14:35				Drilling Method: Solid Stem Auger				Core Barrel: N/A				
Boring Location: 749+50, 14.5 ft Rt.				Casing ID/OD: N/A				Water Level*: None Observed				
Hammer Efficiency Factor: 0.854				Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐								
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S _u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S _{u(lab)} = Lab Vane Undrained Shear Strength (psf) q _p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N ₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N ₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T _v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test												
Depth (ft.)	Sample Information								Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows					
0	1D	24/24	0.00 - 2.00	19/15/8/8	23	33	SSA			Brown, damp, dense, fine to coarse SAND, some gravel, little silt, (Fill).	G#303014 A-1-b, SM WC=5.7%	
5	2D	24/6	5.00 - 7.00	3/3/2/2	5	7				Brown, moist, loose, fine to coarse SAND, some gravel, little silt, trace clay, (Sand).	G#303015 A-1-b, SC-SM WC=6.6%	
10	3D		10.00 - 12.00	4/3/3/4	6	9				Brown, moist, loose, Gravelly fine to coarse SAND, little silt, trace clay, (Sand).	G#303016 A-1-b, SC-SM WC=8.0%	
15										Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL		
20												
25												
Remarks:												
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.										Page 1 of 1		
* 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.: HB-FRV-212		

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-213 WIN: 22656.00					
Driller: MaineDOT		Elevation (ft.): 510.9		Auger ID/OD: 5" Dia.							
Operator: Daggett/Archer		Datum: NAVD88		Sampler: Standard Split Spoon							
Logged By: C. Russell		Rig Type: CME 45C		Hammer Wt./Fall: 140#/30"							
Date Start/Finish: 11/15/2017; 14:35-15:00		Drilling Method: Solid Stem Auger		Core Barrel: N/A							
Boring Location: 750+50, 13.5 ft Rt.		Casing ID/OD: N/A		Water Level*: None Observed							
Hammer Efficiency Factor: 0.854		Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐									
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_{u(lab)} = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plasticity Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test											
Depth (ft.)	Sample Information							Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows				
0	1D	24/18	0.00 - 2.00	28/20/14/9	34	48	SSA	510.9		Brown, damp, dense, fine to coarse SAND, some gravel, little silt, (Fill).	G#303017 A-1-b, SM WC=5.0%
5	2D	24/14	5.00 - 7.00	2/2/3/18	5	7		505.4		2D (5.5-7.0 ft bgs) Light brown to reddish brown, medium stiff, SILT, some fine to coarse sand, trace clay, trace gravel, (Silt).	G#303018 A-4, CL WC=19.8%
10	3D	24/24	10.00 - 12.00	4/6/5/5	11	16		500.9		Light brown, moist, very stiff, SILT, little fine sand, trace clay, (Glacial Till).	G#303019 A-4, CL WC=16.2%
								498.9		Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL	
15											
20											
25											
Remarks:											
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.										Page 1 of 1 Boring No.: HB-FRV-213	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-301 WIN: 22656.00			
Driller: S.W. Cole				Elevation (ft.): 493.7				Auger ID/OD: 5" Solid Stem			
Operator: Kevin/Ryan				Datum: NAVD88				Sampler: Standard Split Spoon			
Logged By: B. Wilder/Daggett				Rig Type: Diedrich D-50				Hammer Wt./Fall: 140#/30"			
Date Start/Finish: 10/25/2022; 07:00-16:00				Drilling Method: Cased Wash Boring				Core Barrel: N/A			
Boring Location: 666+00, 6.0 ft Rt.				Casing ID/OD: HW-4" & NW-3"				Water Level*: 22.0 ft bgs.			
Hammer Efficiency Factor: 0.92				Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐							
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S _u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S _{u(lab)} = Lab Vane Undrained Shear Strength (psf) q _p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N ₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N ₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T _v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test											
Depth (ft.)	Sample Information							Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows				
0							SSA	493.1		7" HMA.	
	1D	24/20	1.00 - 3.00	18/25/26/25	51	78				Brown, damp, very dense, fine to coarse SAND, some gravel, little silt, occasional small cobbles, (Fill).	G#380775 A-1-b, SM WC=3.9%
5	2D	24/18	5.00 - 7.00	9/9/8/8	17	26				Light brown, damp, very stiff, SILT, little fine to coarse sand, trace gravel, (Fill).	G#380851 A-4, CL WC=18.5%
10	3D	24/14	10.00 - 12.00	WOR/1/1/1	2	3	21	485.2		Grey, wet, very loose, fine to coarse SAND, some silt, trace gravel, (Sand).	G#380852 A-2-4, SM WC=22.9%
							24				
							28				
							27				
							23				
15	4D	24/12	15.00 - 17.00	2/4/4/5	8	12	HP			Grey brown, wet, medium dense, fine to coarse SAND, some silt, (Sand). Roller Coned ahead to 20.0 ft bgs. HP = Hydraulic Push	
							HP				
							HP				
							HP				
							HP				
20	5D	24/16	20.00 - 22.00	13/13/18/11	31	48	34			Brown, wet, dense, fine to coarse SAND, some gravel, little silt, (Sand).	G#380853 A-1-a, SM WC=11.1%
							47				
							29				
							36				
25							35	469.7			
Remarks: Hammer #367 New 2022 Calibration 92.0											
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.										Page 1 of 3	
* 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.: HB-FRV-301	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-301 WIN: 22656.00							
Driller: S.W. Cole				Elevation (ft.): 493.7				Auger ID/OD: 5" Solid Stem							
Operator: Kevin/Ryan				Datum: NAVD88				Sampler: Standard Split Spoon							
Logged By: B. Wilder/Daggett				Rig Type: Diedrich D-50				Hammer Wt./Fall: 140#/30"							
Date Start/Finish: 10/25/2022; 07:00-16:00				Drilling Method: Cased Wash Boring				Core Barrel: N/A							
Boring Location: 666+00, 6.0 ft Rt.				Casing ID/OD: HW-4" & NW-3"				Water Level*: 22.0 ft bgs.							
Hammer Efficiency Factor: 0.92				Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐											
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt				R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140 lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person				S _u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S _{u(lab)} = Lab Vane Undrained Shear Strength (psf) q _p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N ₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N ₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected				T _v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test			
Depth (ft.)	Sample Information								Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.			
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows								
25	6D	24/17	25.00 - 27.00	3/3/9/8	12	18	37	463.7		Grey, wet, very stiff, SILT, little fine to coarse sand, little gravel, trace clay, (Silt).	G#380854 A-4, CL WC=11.7%				
							51								
							126								
							142								
							143								
30	7D	24/17	30.00 - 32.00	13/19/19/19	38	58	SPUN NW-3		459.7		7D (30.5-32.0 ft bgs.) Grey brown, wet, very dense, Gravelly fine to coarse SAND, little silt, (Glacial Till).	G#380855 A-1-b, SM WC=10.5%			
35	8D	24/16	35.00 - 37.00	21/22/6/22	28	43					Grey, wet, dense, fine to coarse SAND, some silt, some gravel, (Glacial Till).	G#380856 A-2-4, SM WC=10.0%			
40	9D	12/12	40.00 - 41.00	27/60	---						Grey, wet, fine to coarse SAND, some silt, some gravel, (Glacial Till).				
45	10D	4.8/4.8	45.00 - 45.40	60(4.8")	---						Grey, wet, fine to coarse SAND, some silt, some gravel, (Glacial Till).				
50															
Remarks: Hammer #367 New 2022 Calibration 92.0															
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.										Page 2 of 3 Boring No.: HB-FRV-301					

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-301 WIN: 22656.00					
Driller: S.W. Cole		Elevation (ft.): 493.7		Auger ID/OD: 5" Solid Stem							
Operator: Kevin/Ryan		Datum: NAVD88		Sampler: Standard Split Spoon							
Logged By: B. Wilder/Daggett		Rig Type: Diedrich D-50		Hammer Wt./Fall: 140#/30"							
Date Start/Finish: 10/25/2022; 07:00-16:00		Drilling Method: Cased Wash Boring		Core Barrel: N/A							
Boring Location: 666+00, 6.0 ft Rt.		Casing ID/OD: HW-4" & NW-3"		Water Level*: 22.0 ft bgs.							
Hammer Efficiency Factor: 0.92		Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐									
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140 lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S_u(lab) = Lab Vane Undrained Shear Strength (psf) q_p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T_v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test											
Depth (ft.)	Sample Information										
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
50	11D	16.8/13	50.00 - 51.40	25/35/50(4.8")	---			442.1			
	R1	60/14	51.60 - 56.60				NQ-2	442.1		Grey, wet, fine to coarse SAND, some silt, some gravel, (Glacial Till). R1: COBBLES. R1: Core Times (min:sec) 51.6-52.6 ft (1:54) 52.6-53.6 ft (2:04) 53.6-54.6 ft (3:00) 54.6-55.6 ft (1:50) 55.6-56.6 ft (1:53)	
55								437.1			
								434.2		Top of Bedrock at Elev. 434.2 ft. R2: Bedrock: Interbedded PELITE and SANDSTONE, [Seboomook Formation]. Rock Quality = Very Poor R2: Core Times (min:sec) 60.0-61.0 ft (?) 61.0-62.0 ft (?) 62.0-63.0 ft (?) 63.0-64.0 ft (?) 64.0-65.0 ft (?) 92% Recovery	
60	R2	60/55	60.00 - 65.00	RQD = 17%			NQ-2	428.7		Bottom of Exploration at 65.0 feet below ground surface.	
65											
70											
75											
Remarks: Hammer #367 New 2022 Calibration 92.0											
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.										Page 3 of 3 Boring No.: HB-FRV-301	
* 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.											

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine		Boring No.: HB-FRV-302 WIN: 22656.00																																																																																																																																																																																																																			
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Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-302 WIN: 22656.00							
Driller: S.W. Cole				Elevation (ft.): 494.9				Auger ID/OD: 5" Solid Stem							
Operator: Kevin/Ryan				Datum: NAVD88				Sampler: Standard Split Spoon							
Logged By: B. Wilder				Rig Type: Diedrich D-50				Hammer Wt./Fall: 140#/30"							
Date Start/Finish: 12/6/2022; 09:00-13:30				Drilling Method: Cased Wash Boring				Core Barrel: N/A							
Boring Location: 667+00, 14.0 ft Rt.				Casing ID/OD: HW-4"				Water Level*: 20.0 ft bgs.							
Hammer Efficiency Factor: 0.92				Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐											
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25	6D	24/18	25.00 - 27.00	2/3/3/3	6	9	16		G#380860 A-4, CL WC=24.9%						
							26								
							33								
							42								
							50								
30	7D	24/24	30.00 - 32.00	4/4/4/5	8	12	OPEN HOLE			Grey, wet, stiff, SILT, little clay, trace fine to coarse sand, (Silt).	G#380861 A-4, CL WC=25.1%				
35	8D	24/24	35.00 - 37.00	3/3/3/3	6	9						Grey, wet, stiff, SILT, some clay, trace fine to medium sand, (Silt).	G#380862 A-2-4, GM WC=11.6%		
40	9D	24/24	40.00 - 42.00	3/3/4/4	7	11		Grey, wet, medium dense, GRAVEL, some fine to coarse sand, some silt, (Glacial Till).	G#380862 A-2-4, GM WC=11.6%						
45	10D	24/15	45.00 - 47.00	5/6/7/9	13	20				Grey, wet, medium dense, GRAVEL, some fine to coarse sand, some silt, (Glacial Till).	G#380862 A-2-4, GM WC=11.6%				
50								Grey, wet, medium dense, GRAVEL, some fine to coarse sand, some silt, (Glacial Till).	G#380862 A-2-4, GM WC=11.6%						

Remarks:

Hammer #367 New 2022 Calibration 92.0

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

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55	12D	24/11	55.00 - 57.00	21/9/17/30	26	40	OPEN HOLE	432.9		Grey brown, wet, dense, Gravelly fine to coarse SAND, little silt, (Glacial Till).	G#380864 A-1-b, GM WC=7.3%																																																																																																																																																																								
60	13D	24/13	60.00 - 62.00	29/50/174/170	224	343		62.0		Bottom of Exploration at 62.0 feet below ground surface. NO REFUSAL, very dense.																																																																																																																																																																									
65																																																																																																																																																																																			
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* 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.: HB-FRV-302																																																																																																																																																																								

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-303 WIN: 22656.00				
Driller: S.W. Cole				Elevation (ft.): 496.6				Auger ID/OD: 5" Solid Stem				
Operator: Kevin/Ryan				Datum: NAVD88				Sampler: Standard Split Spoon				
Logged By: B. Wilder/Daggett				Rig Type: Diedrich D-50				Hammer Wt./Fall: 140#/30"				
Date Start/Finish: 10/26/2022; 07:30-13:00				Drilling Method: Cased Wash Boring				Core Barrel: N/A				
Boring Location: 668+00, 15.0 ft Rt.				Casing ID/OD: HW-4"				Water Level*: 23.0 ft bgs.				
Hammer Efficiency Factor: 0.92				Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐								
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person S _u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S _{u(lab)} = Lab Vane Undrained Shear Strength (psf) q _p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N ₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N ₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected T _v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test												
Depth (ft.)	Sample Information								Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows					
0	1D	24/19	0.00 - 2.00	6/8/7/5	15	23	SSA			Brown, damp, medium dense, Gravelly fine to coarse SAND, some silt, (Fill).		
5	2D	24/18	5.00 - 7.00	1/1/2/2	3	5				Brown, moist, loose, Silty fine to coarse SAND, trace gravel, (Sand).	G#380865 A-4, SM WC=19.2%	
10	3D	24/15	10.00 - 12.00	2/2/3/2	5	8				Grey brown, damp, loose, fine to coarse SAND, trace silt, trace gravel, (Sand).	G#380866 A-1-b, SP-SM WC=9.5%	
15	4D	24/14	15.00 - 17.00	3/4/4/3	8	12	30			Brown, damp, medium dense, fine to coarse SAND, some gravel, little silt, (Sand).		
20	5D	24/14	20.00 - 22.00	5/7/6/5	13	20	6			Grey, moist, medium dense, fine to coarse SAND, little gravel, little silt, (Sand).	G#380867 A-1-b, SM WC=10.6%	
25							11					
							24					
							29					
							39					
Remarks: Hammer #367 New 2022 Calibration 92.0												
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.										Page 1 of 3		
* 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.: HB-FRV-303		

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS				Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine				Boring No.: HB-FRV-303 WIN: 22656.00							
Driller: S.W. Cole				Elevation (ft.): 496.6				Auger ID/OD: 5" Solid Stem							
Operator: Kevin/Ryan				Datum: NAVD88				Sampler: Standard Split Spoon							
Logged By: B. Wilder/Daggett				Rig Type: Diedrich D-50				Hammer Wt./Fall: 140#/30"							
Date Start/Finish: 10/26/2022; 07:30-13:00				Drilling Method: Cased Wash Boring				Core Barrel: N/A							
Boring Location: 668+00, 15.0 ft Rt.				Casing ID/OD: HW-4"				Water Level*: 23.0 ft bgs.							
Hammer Efficiency Factor: 0.92				Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐											
Definitions: D = Split Spoon Sample MD = Unsuccessful Split Spoon Sample Attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample Attempt V = Field Vane Shear Test, PP = Pocket Penetrometer MV = Unsuccessful Field Vane Shear Test Attempt				R = Rock Core Sample SSA = Solid Stem Auger HSA = Hollow Stem Auger RC = Roller Cone WOH = Weight of 140 lb. Hammer WOR/C = Weight of Rods or Casing WO1P = Weight of One Person				S _u = Peak/Remolded Field Vane Undrained Shear Strength (psf) S _u (lab) = Lab Vane Undrained Shear Strength (psf) q _p = Unconfined Compressive Strength (ksf) N-uncorrected = Raw Field SPT N-value Hammer Efficiency Factor = Rig Specific Annual Calibration Value N ₆₀ = SPT N-uncorrected Corrected for Hammer Efficiency N ₆₀ = (Hammer Efficiency Factor/60%)*N-uncorrected				T _v = Pocket Torvane Shear Strength (psf) WC = Water Content, percent LL = Liquid Limit PL = Plastic Limit PI = Plasticity Index G = Grain Size Analysis C = Consolidation Test			
Depth (ft.)	Sample Information								Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.			
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows								
25	6D	24/13	25.00 - 27.00	5/5/7/12	12	18	22	468.6		Grey, moist, medium dense, fine to coarse SAND, little gravel, little silt, (Sand).	G#380868 A-4, CL WC=25.6%				
							51								
							43								
							43								
							52								
30	7D	24/21	30.00 - 32.00	3/3/3/3	6	9	46						Grey, wet, stiff, SILT, trace clay, trace fine to medium sand, (Silt).		
							54								
							58								
							55								
							58								
35	8D	24/24	35.00 - 37.00	WOR/1/1/1	2	3	35						Grey, wet, soft, SILT, trace clay, trace fine to medium sand, (Silt).		
							31								
							52								
							55								
							55								
40	9D	24/17	40.00 - 42.00	3/4/4/4	8	12	OPEN HOLE						Grey, wet, stiff, SILT, trace clay, trace fine to medium sand, (Silt).		
45	10D	24/24	45.00 - 47.00	2/2/2/3	4	6				Grey, wet, medium stiff, SILT, some clay, trace fine to medium sand, (Silt).	G#380869 A-4, CL-ML WC=24.3% LL=24 PL=18 PI=6				
50															
Remarks: Hammer #367 New 2022 Calibration 92.0															
Stratification lines represent approximate boundaries between soil types; transitions may be gradual. * 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.										Page 2 of 3 Boring No.: HB-FRV-303					

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS						Project: Route 1 Reconstruction Location: Frenchville - Fort Kent, Maine						Boring No.: HB-FRV-303 WIN: 22656.00																																																																																																																																													
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Logged By: B. Wilder/Daggett						Rig Type: Diedrich D-50						Hammer Wt./Fall: 140#/30"																																																																																																																																													
Date Start/Finish: 10/26/2022; 07:30-13:00						Drilling Method: Cased Wash Boring						Core Barrel: N/A																																																																																																																																													
Boring Location: 668+00, 15.0 ft Rt.						Casing ID/OD: HW-4"						Water Level*: 23.0 ft bgs.																																																																																																																																													
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<table><thead><tr><th rowspan="2">Depth (ft.)</th><th colspan="10">Sample Information</th><th rowspan="2">Graphic Log</th><th rowspan="2">Visual Description and Remarks</th><th rowspan="2">Laboratory Testing Results/ AASHTO and Unified Class.</th></tr><tr><th>Sample No.</th><th>Pen./Rec. (in.)</th><th>Sample Depth (ft.)</th><th>Blows (/6 in.) Shear Strength (psf) or RQD (%)</th><th>N-uncorrected</th><th>N₆₀</th><th>Casing Blows</th><th>Elevation (ft.)</th></tr></thead><tbody><tr><td>50</td><td>11D</td><td>24/24</td><td>50.00 - 52.00</td><td>2/2/2/2</td><td>4</td><td>6</td><td></td><td></td><td rowspan="10"></td><td>Grey, wet, medium stiff, SILT, some clay, trace fine to medium sand, (Silt).</td><td rowspan="10">G#380870 A-4, SM WC=10.6%</td></tr><tr><td>55</td><td>12D</td><td>24/24</td><td>55.00 - 57.00</td><td>1/1/2/3</td><td>3</td><td>5</td><td></td><td></td><td>Grey, wet, medium stiff, SILT, some clay, trace fine to medium sand, (Silt).</td></tr><tr><td>60</td><td>13D</td><td>24/20</td><td>60.00 - 62.00</td><td>6/13/20/19</td><td>33</td><td>51</td><td></td><td></td><td>Grey, wet, hard, SILT, some gravel, some fine to coarse sand, (Glacial Till).</td></tr><tr><td>65</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td rowspan="5">Bottom of Exploration at 62.0 feet below ground surface. NO REFUSAL</td></tr><tr><td>70</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>75</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>																		Depth (ft.)	Sample Information										Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows (/6 in.) Shear Strength (psf) or RQD (%)	N-uncorrected	N ₆₀	Casing Blows	Elevation (ft.)	50	11D	24/24	50.00 - 52.00	2/2/2/2	4	6				Grey, wet, medium stiff, SILT, some clay, trace fine to medium sand, (Silt).	G#380870 A-4, SM WC=10.6%	55	12D	24/24	55.00 - 57.00	1/1/2/3	3	5			Grey, wet, medium stiff, SILT, some clay, trace fine to medium sand, (Silt).	60	13D	24/20	60.00 - 62.00	6/13/20/19	33	51			Grey, wet, hard, SILT, some gravel, some fine to coarse sand, (Glacial Till).	65									Bottom of Exploration at 62.0 feet below ground surface. NO REFUSAL	70									75																																																														
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60	13D	24/20	60.00 - 62.00	6/13/20/19	33	51				Grey, wet, hard, SILT, some gravel, some fine to coarse sand, (Glacial Till).																																																																																																																																															
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Probe Summary Sheet

Work Number: 22656.00

MaineDOT Drill Crew
Logged By: C. Russell
Drill Rig: CME 45C

Appendix B

Laboratory Test Results

State of Maine - Department of Transportation
Laboratory Testing Summary Sheet

Town(s): Frenchville-Fort Kent Work Number: 22656.00

Boring & Sample Identification Number	Station (Feet)	Offset (Feet)	Depth (Feet)	Reference Number	G.S.D.C. Sheet	W.C. %	L.L.	P.I.	Classification		
									Unified	AASHTO	Frost
HB-FRV-101, B1	618+00	13.0 Rt.	0.0-1.6	302067	1	1.3			SM	A-1-b	II
HB-FRV-101, S1	618+00	13.0 Rt.	1.6-4.5	302074	1	19.6			SM	A-2-4	II
HB-FRV-102, B2	618+00	8.5 Rt.	0.5-2.4	302068	1	1.3			SM	A-1-b	II
HB-FRV-102, S2	618+00	8.5 Rt.	2.4-4.5	302069	1	15.4			SM	A-2-4	II
HB-FRV-103, B3	638+00	8.0 Lt.	0.54-4.5	302061	2	2.9			SW-SM	A-1-a	0
HB-FRV-104, B4	658+00	8.5 Rt.	0.67-4.5	302063	2	1.4			SW-SM	A-1-a	0
HB-FRV-105, B5	658+00	15.0 Rt.	0.13-4.5	302057	2	1.4			GW-GM	A-1-a	0
HB-FRV-106, B6	678+00	8.5 Rt.	0.75-3.0	302055	2	1.6			SW-SM	A-1-b	0
HB-FRV-106, S3	678+00	8.5 Rt.	3.0-4.5	302075	2	23.1			CL	A-4	IV
HB-FRV-107, B7	698+00	9.5 Rt.	0.67-3.3	302059	3	1.4			SW-SM	A-1-a	0
HB-FRV-107, S4	698+00	9.5 Rt.	3.3-4.5	302072	3	33.0			CL	A-4	IV
HB-FRV-108, B8	698+00	15.0 Rt.	0.0-3.4	302054	3	1.7			SM	A-1-a	II
HB-FRV-109, B9	718+00	9.0 Lt.	0.67-4.5	302053	3	0.7			SW-SM	A-1-a	0
HB-FRV-111, B10	738+00	9.0 Rt.	0.58-2.9	302066	3	1.7			SM	A-1-b	II
HB-FRV-111, S5	738+00	9.0 Rt.	2.9-4.5	302070	3	12.4			SM	A-2-4	II
HB-FRV-112, B11	758+00	8.5 Lt.	0.75-4.5	302065	4	2.0			SM	A-1-a	II
HB-FRV-113, B12	758+00	14.0 Lt.	0.0-4.5	302060	4	1.1			SW-SM	A-1-a	0
HB-FRV-114, B13	778+00	9.0 Rt.	0.63-4.5	302062	4	1.7			SM	A-1-a	II
HB-FRV-115, B14	798+00	8.5 Lt.	0.75-3.3	302056	4	1.6			SW-SM	A-1-b	0
HB-FRV-115, S6	798+00	8.5 Lt.	3.3-4.5	302071	4	20.0			SM	A-2-4	II
HB-FRV-116, B15	798+00	14.0 Lt.	0.0-2.8	302058	5	1.2			SM	A-1-b	II
HB-FRV-117, B16	818+00	9.0 Rt.	0.67-3.4	302052	5	1.7			SM	A-1-a	II
HB-FRV-117, S7	818+00	9.0 Rt.	3.4-4.5	302073	5	21.9			SM	A-2-4	II
HB-FRV-118, B17	838+00	9.0 Lt.	0.63-4.5	302051	5	1.5			SM	A-1-b	II
HB-FRV-120, B18	848+00	9.0 Rt.	0.58-4.5	302064	5	1.2			SM	A-1-a	II
HB-FRV-201, 1D	611+00	13.5 Rt.	0.0-2.0	300781	6	5.0			SM	A-2-4	II
HB-FRV-201, 2D	611+00	13.5 Rt.	5.0-7.0	300782	6	5.2			SW-SM	A-1-b	0
HB-FRV-201, 3D	611+00	13.5 Rt.	10.0-12.0	300783	6	24.6			CL	A-4	IV
HB-FRV-202, 1D	611+78	13.5 Rt.	0.0-2.0	300784	6	4.7			SM	A-1-b	II
HB-FRV-202, 2D	611+78	13.5 Rt.	5.0-7.0	300785	6	5.2			SM	A-1-b	II
HB-FRV-202, 3D	611+78	13.5 Rt.	10.0-12.0	300786	6	5.0			SM	A-1-b	II
HB-FRV-203, 1D	629+00	13.5 Rt.	0.0-2.0	300787	7	4.5			SM	A-1-b	II
HB-FRV-203, 2D	629+00	13.5 Rt.	5.0-7.0	300788	7	7.9			SM	A-1-b	II
HB-FRV-203, 3D	629+00	13.5 Rt.	10.0-12.0	300789	7	9.5			SC-SM	A-1-b	III
HB-FRV-204, 1D	629+75.5	14.0 Rt.	0.0-2.0	300790	7	4.6			SM	A-1-b	II
HB-FRV-204, 2D	629+75.5	14.0 Rt.	5.0-7.0	300791	7	6.4			SM	A-1-b	II
HB-FRV-204, 3D	629+75.5	14.0 Rt.	10.0-12.0	300792	7	10.3			CL	A-4	IV
HB-FRV-205, 1D	630+48	13.0 Rt.	0.0-2.0	300793	8	3.8			SM	A-1-b	II
HB-FRV-205, 2D	630+48	13.0 Rt.	5.0-7.0	300794	8	5.3			SM	A-1-b	II
HB-FRV-205, 3D	630+48	13.0 Rt.	10.0-12.0	300795	8	8.5			SM	A-2-4	II
HB-FRV-206, 1D	631+31	13.5 Rt.	0.0-2.0	300796	8	5.0			SM	A-1-b	II

Classification of these soil samples is in accordance with AASHTO Classification System M-145-40. This classification is followed by the "Frost Susceptibility Rating" from zero (non-frost susceptible) to Class IV (highly frost susceptible).

The "Frost Susceptibility Rating" is based upon the MaineDOT and Corps of Engineers Classification Systems.

GSDC = Grain Size Distribution Curve as determined by AASHTO T 88-93 (1996) and/or ASTM D 422-63 (Reapproved 1998)

WC = water content as determined by AASHTO T 265-93 and/or ASTM D 2216-98

LL = Liquid limit as determined by AASHTO T 89-96 and/or ASTM D 4318-98 NP = Non Plastic

PI = Plasticity Index as determined by AASHTO 90-96 and/or ASTM D4318-98

State of Maine - Department of Transportation
Laboratory Testing Summary Sheet

Town(s): Frenchville-Fort Kent Work Number: 22656.00

Boring & Sample Identification Number	Station (Feet)	Offset (Feet)	Depth (Feet)	Reference Number	G.S.D.C. Sheet	W.C. %	L.L.	P.I.	Classification		
									Unified	AASHTO	Frost
HB-FRV-206, 2D	631+31	13.5 Rt.	5.0-7.0	300797	8	7.0			SC-SM	A-1-b	III
HB-FRV-206, 3D	631+31	13.5 Rt.	10.0-12.0	300798	8	7.6			SC-SM	A-1-b	III
HB-FRV-207, 1D	641+00	13.0 Rt.	0.0-2.0	300799	9	5.6			SM	A-1-b	II
HB-FRV-207, 2D	641+00	13.0 Rt.	5.0-7.0	300800	9	7.8			SM	A-2-4	II
HB-FRV-207, 3D	641+00	13.0 Rt.	10.0-12.0	303001	9	5.3			SC-SM	A-2-4	II
HB-FRV-208, 1D	641+85.5	14.0 Rt.	0.0-2.0	303002	9	5.5			SM	A-1-b	II
HB-FRV-208, 2D	641+85.5	14.0 Rt.	5.0-7.0	303003	9	11.0			SC-SM	A-1-b	II
HB-FRV-208, 3D	641+85.5	14.0 Rt.	10.0-12.0	303004	9	7.6			SC-SM	A-2-4	III
HB-FRV-209, 1D	642+71	14.0 Rt.	0.0-2.0	303005	10	4.7			SM	A-1-b	II
HB-FRV-209, 2D	642+71	14.0 Rt.	5.0-7.0	303006	10	21.3			SC-SM	A-4	III
HB-FRV-209, 3D	642+71	14.0 Rt.	10.0-12.0	303007	10	7.0			SC-SM	A-1-b	III
HB-FRV-210, 1D	747+50	13.7 Rt.	0.0-2.0	303008	10	5.5			SM	A-1-b	II
HB-FRV-210, 2D	747+50	13.7 Rt.	5.0-7.0	303009	10	3.2			SW-SM	A-1-a	0
HB-FRV-210, 3D	747+50	13.7 Rt.	10.0-12.0	303010	10	13.8			CL	A-4	IV
HB-FRV-211, 1D	748+64	14.0 Rt.	0.0-2.0	303011	11	7.0			SM	A-1-b	II
HB-FRV-211, 2D	748+64	14.0 Rt.	5.0-7.0	303012	11	4.5			SC-SM	A-1-b	II
HB-FRV-211, 3D	748+64	14.0 Rt.	10.0-12.0	303013	11	9.9			CL-ML	A-4	II
HB-FRV-212, 1D	749+50	14.5 Rt.	0.0-2.0	303014	11	5.7			SM	A-1-b	II
HB-FRV-212, 2D	749+50	14.5 Rt.	5.0-7.0	303015	11	6.6			SC-SM	A-1-b	II
HB-FRV-212, 3D	749+50	14.5 Rt.	10.0-12.0	303016	11	8.0			SC-SM	A-1-b	II
HB-FRV-213, 1D	750+50	13.5 Rt.	0.0-2.0	303017	12	5.0			SM	A-1-b	II
HB-FRV-213, 2D	750+50	13.5 Rt.	5.0-7.0	303018	12	19.8			CL	A-4	IV
HB-FRV-213, 3D	750+50	13.5 Rt.	10.0-12.0	303019	12	16.2			CL	A-4	IV
TP-1-19, B1	625+00	14.0 Rt.	1.0-3.0	302752	13	4.2			SW-SM	A-1-a	0
TP-2-19, B2	625+00	14.0 Lt.	1.0-3.0	302753	13	3.8			SW-SM	A-1-a	0
TP-3-19, B3	696+00	14.0 Rt.	1.0-3.0	302754	13	2.6			SW-SM	A-1-a	0
TP-4-19, B4	696+00	14.0 Lt.	1.0-3.0	302755	13	3.7			SW-SM	A-1-a	0
TP-5-19, B5	763+00	14.0 Lt.	1.0-3.0	302756	14	2.2			SW-SM	A-1-a	0
TP-6-19, B6	763+00	14.0 Rt.	1.0-3.0	302757	14	3.3			SW-SM	A-1-a	0
TP-7-19, B7	805+00	14.0 Rt.	1.0-3.0	302758	14	3.1			SM	A-1-b	II
TP-8-19, B8	805+00	14.0 Lt.	1.0-3.0	302759	14	3.4			SM	A-1-b	II
HB-FRV-301, 1D	666+00	6.0 Rt.	1.0-3.0	380775	15	3.9			SM	A-1-b	II
HB-FRV-301, 2D	666+00	6.0 Rt.	5.0-7.0	380851	15	18.5			CL	A-4	IV
HB-FRV-301, 3D	666+00	6.0 Rt.	10.0-12.0	380852	15	22.9			SM	A-2-4	II
HB-FRV-301, 5D	666+00	6.0 Rt.	20.0-22.0	380853	15	11.1			SM	A-1-a	II
HB-FRV-301, 6D	666+00	6.0 Rt.	25.0-27.0	380854	16	11.7			CL	A-4	IV
HB-FRV-301, 7D	666+00	6.0 Rt.	30.5-32.0	380855	16	10.5			SM	A-1-b	II
HB-FRV-301, 8D	666+00	6.0 Rt.	35.0-37.0	380856	16	10.0			SM	A-2-4	II
HB-FRV-302, 1D	667+00	14.0 Rt.	1.0-3.0	380857	17	4.3			SM	A-2-4	II
HB-FRV-302, 3D	667+00	14.0 Rt.	10.0-12.0	380858	17	6.4			SW-SM	A-1-b	0
HB-FRV-302, 5D	667+00	14.0 Rt.	20.0-22.0	380859	17	8.4			SM	A-2-4	II

Classification of these soil samples is in accordance with AASHTO Classification System M-145-40. This classification is followed by the "Frost Susceptibility Rating" from zero (non-frost susceptible) to Class IV (highly frost susceptible).

The "Frost Susceptibility Rating" is based upon the MaineDOT and Corps of Engineers Classification Systems.

GSDC = Grain Size Distribution Curve as determined by AASHTO T 88-93 (1996) and/or ASTM D 422-63 (Reapproved 1998)

WC = water content as determined by AASHTO T 265-93 and/or ASTM D 2216-98

LL = Liquid limit as determined by AASHTO T 89-96 and/or ASTM D 4318-98 NP = Non Plastic

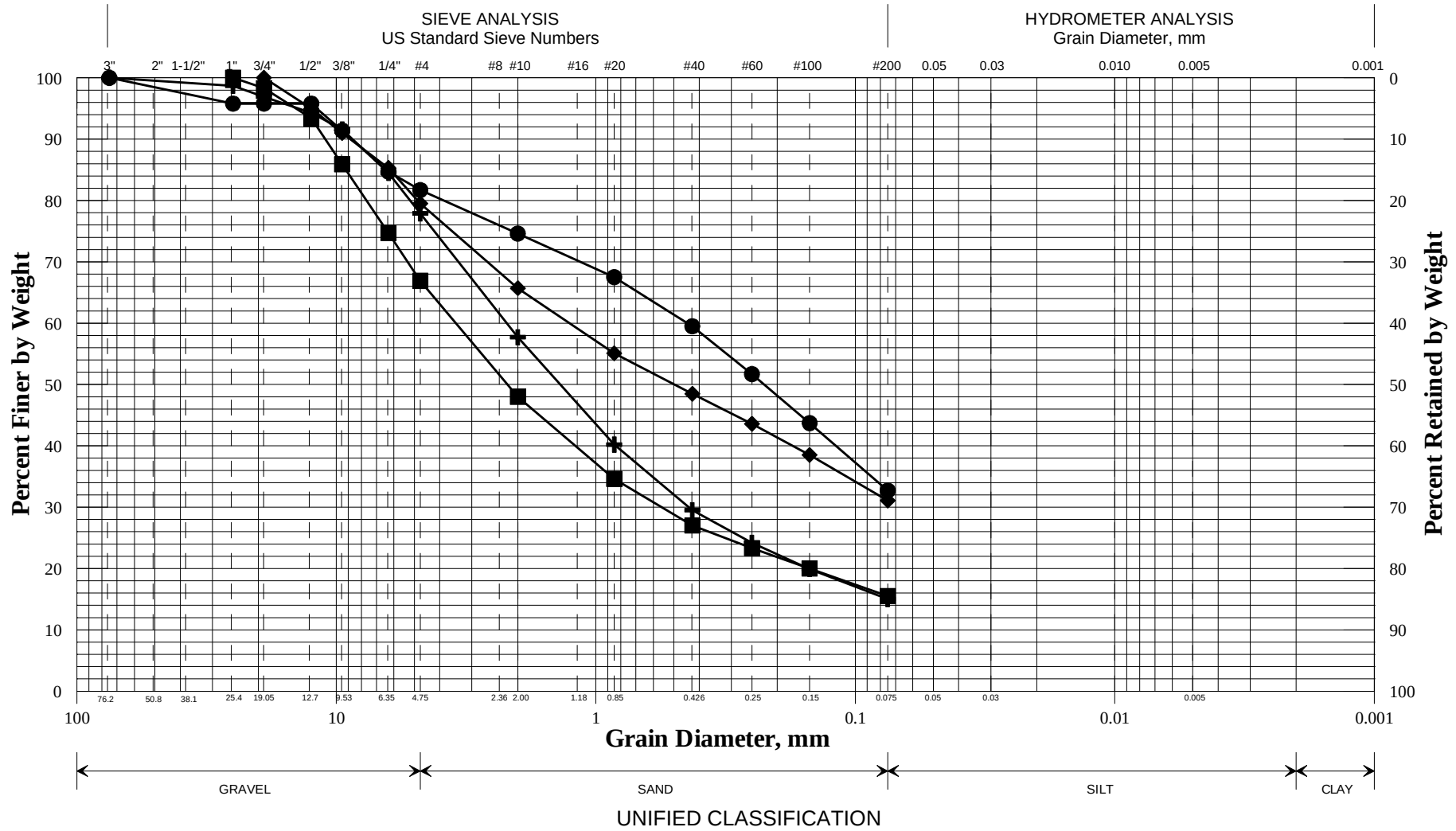
PI = Plasticity Index as determined by AASHTO 90-96 and/or ASTM D4318-98

Town(s): Frenchville-Fort Kent Work Number: 22656.00

Classification of these soil samples is in accordance with AASHTO Classification System M-145-40. This classification is followed by the "Frost Susceptibility Rating" from zero (non-frost susceptible) to Class IV (highly frost susceptible). The "Frost Susceptibility Rating" is based upon the MaineDOT and Corps of Engineers Classification Systems.

PI = Plasticity Index as determined by AASHTO 90-96 and/or ASTM D4318-98

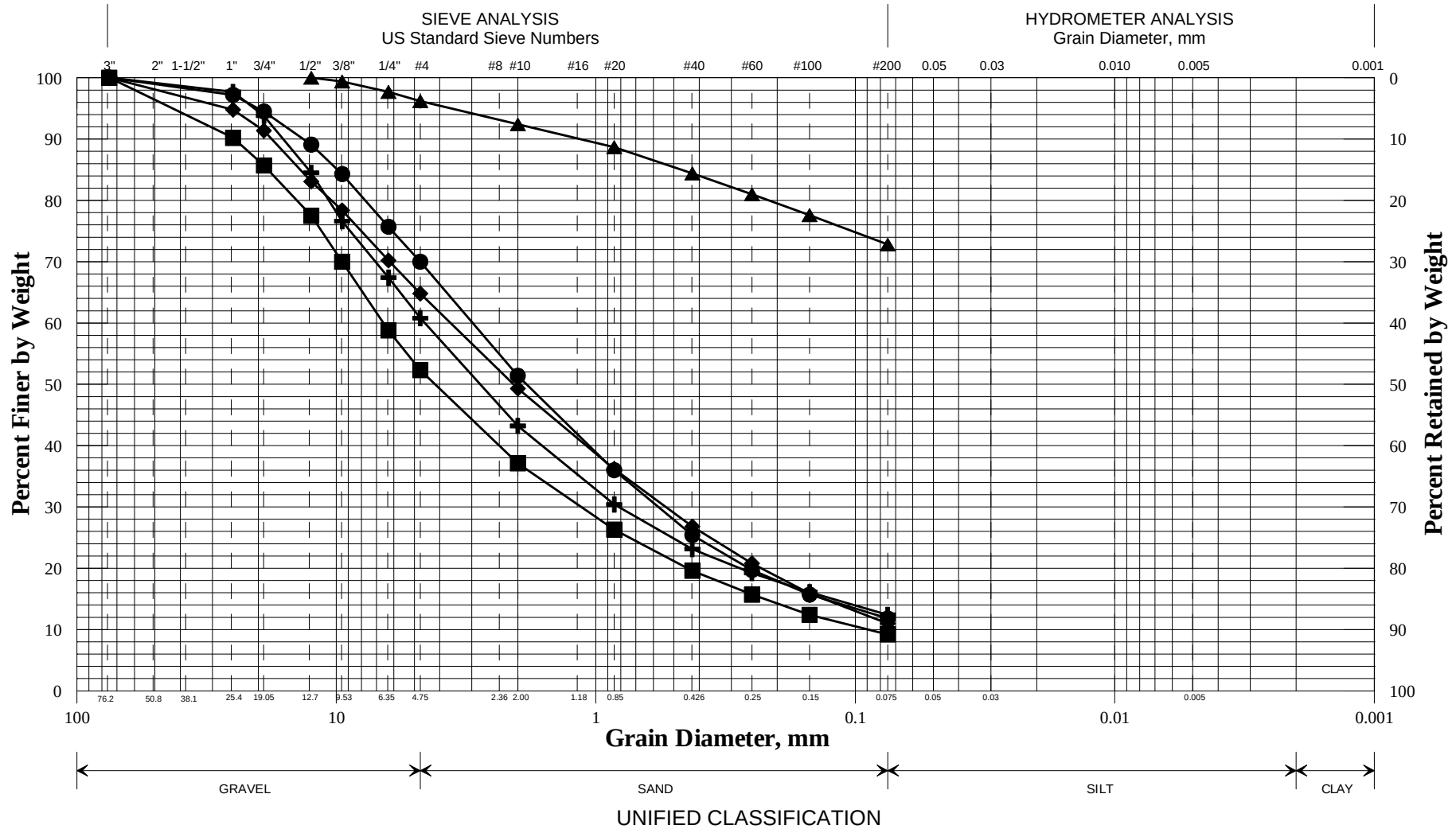
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB-FRV-101/B1	618+00	13.0 RT	0.0-1.6	SAND, some gravel, little silt.	1.3			
◆	HB-FRV-101/S1	618+00	13.0 RT	1.6-4.5	SAND, some silt, some gravel.	19.6			
■	HB-FRV-102/B2	618+00	8.5 RT	0.5-2.4	SAND, some gravel, little silt.	1.3			
●	HB-FRV-102/S2	618+00	8.5 RT	2.4-4.5	SAND, some silt, little gravel.	15.4			
▲									
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WIN
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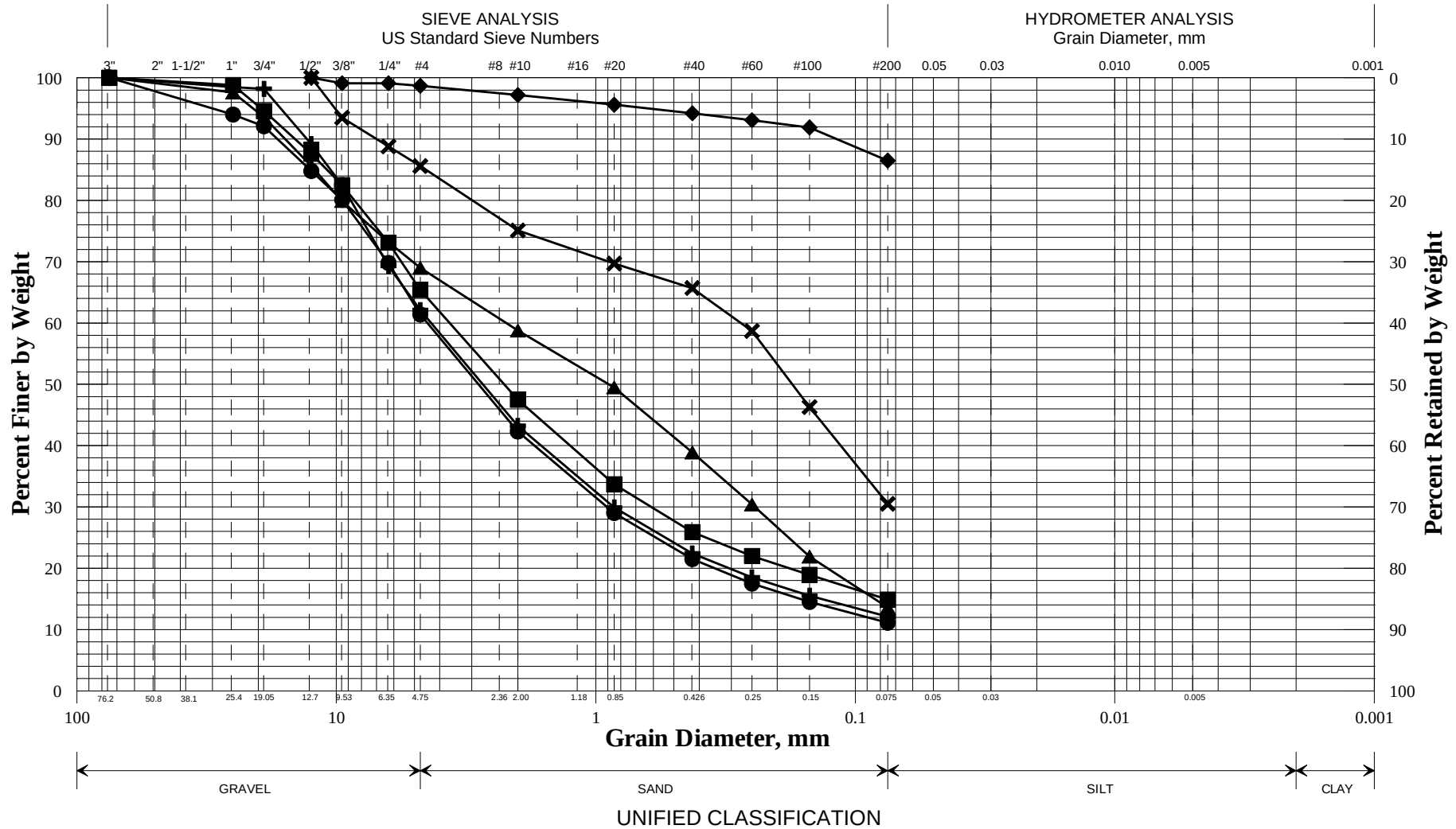
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft		W, %	LL	PL	PI
+	HB-FRV-103/B3	638+00	8.0 LT	0.54-4.5	Gravelly SAND, little silt.	2.9			
◆	HB-FRV-104/B4	658+00	8.5 RT	0.67-4.5	SAND, some gravel, little silt.	1.4			
■	HB-FRV-105/B5	658+00	15.0 RT	0.13-4.5	Sandy GRAVEL, trace silt.	1.4			
●	HB-FRV-106/B6	678+00	8.5 RT	0.75-3.0	SAND, some gravel, little silt.	1.6			
▲	HB-FRV-106/S3	678+00	8.5 RT	3.0-4.5	SILT, some sand, trace gravel.	23.1			
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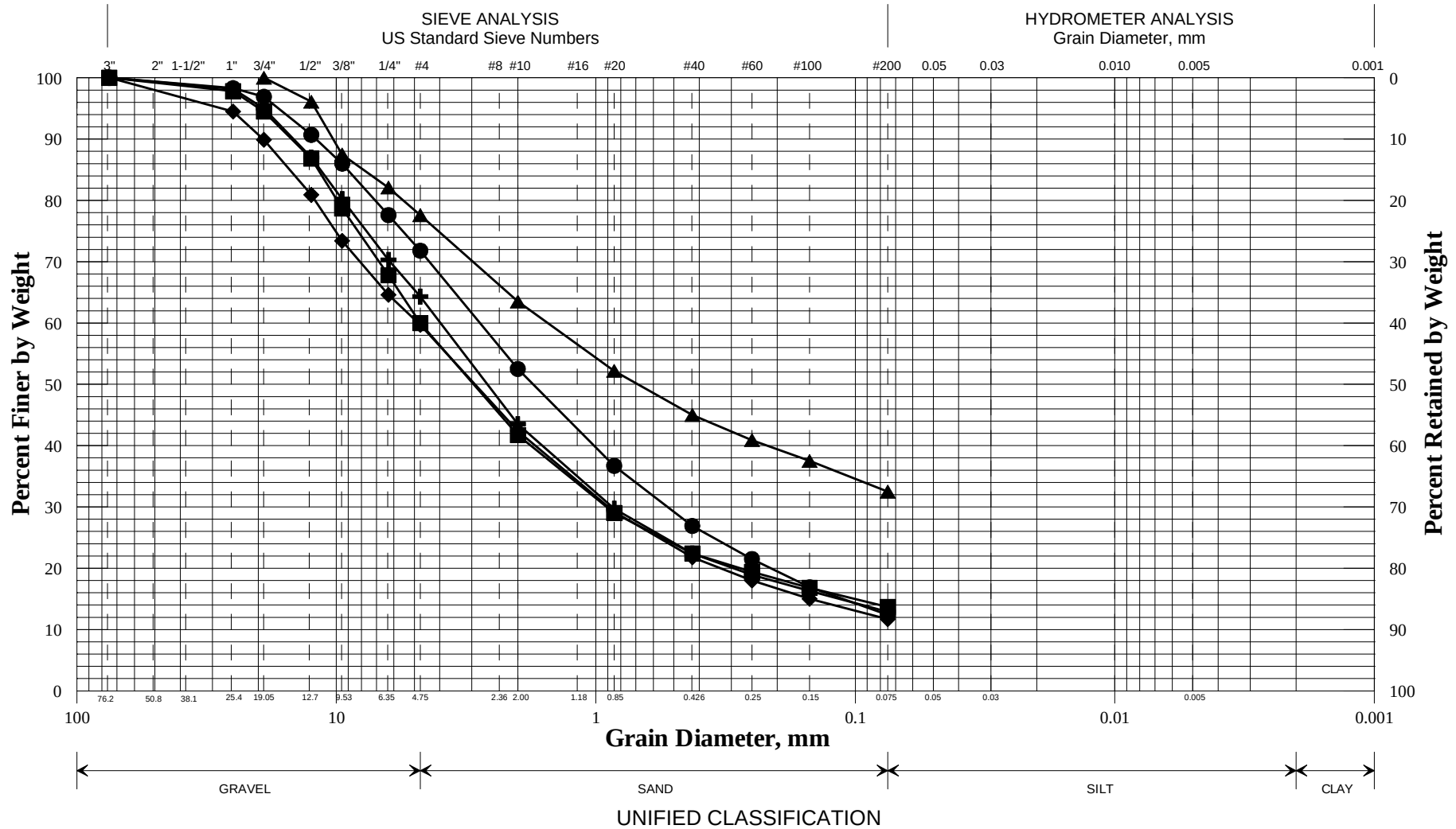
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB-FRV-107/B7	698+00	9.5 RT	0.67-3.3	Gravelly SAND, little silt.	1.4			
◆	HB-FRV-107/S4	698+00	9.5 RT	3.3-4.5	SILT, little sand, trace gravel.	33.0			
■	HB-FRV-108/B8	698+00	15.0 RT	0.0-3.4	SAND, some gravel, little silt.	1.7			
●	HB-FRV-109/B9	718+00	9.0 LT	0.67-4.50	Gravelly SAND, little silt.	0.7			
▲	HB-FRV-111/B10	738+00	9.0 RT	0.58-2.9	SAND, some gravel, little silt.	1.7			
×	HB-FRV-111/S5	738+00	9.0 RT	2.9-4.5	SAND, some silt, little gravel.	12.4			

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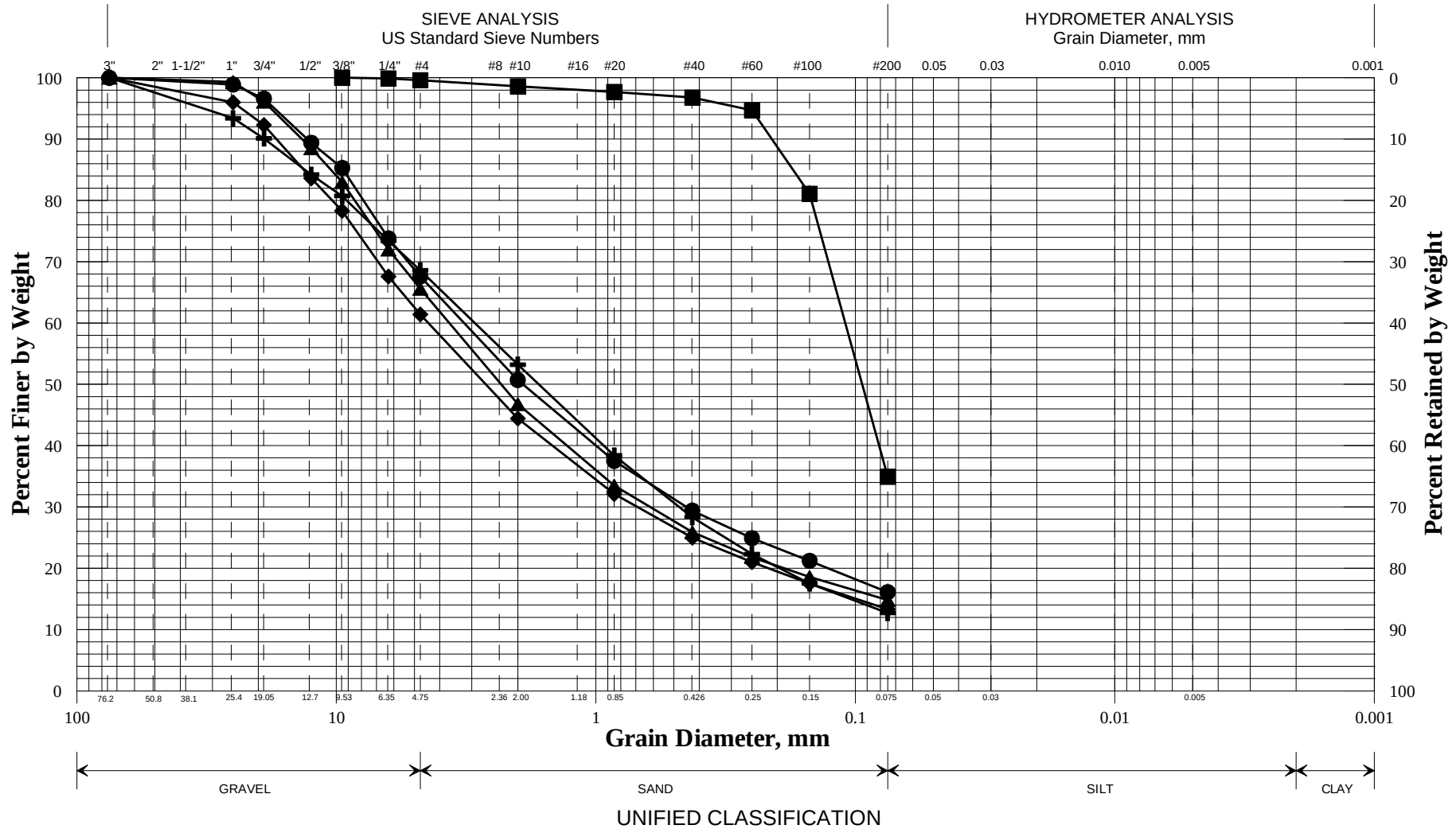
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB-FRV-112/B11	758+00	8.5 LT	0.75-4.5	SAND, some gravel, little silt.	2.0			
◆	HB-FRV-113/B12	758+00	14.0 LT	0.0-4.5	Gravelly SAND, little silt.	1.1			
■	HB-FRV-114/B13	778+00	9.0 RT	0.63-4.5	Gravelly SAND, little silt.	1.7			
●	HB-FRV-115/B14	798+00	8.5 LT	0.75-3.3	SAND, some gravel, little silt.	1.6			
▲	HB-FRV-115/S6	798+00	8.5 LT	3.3-4.5	SAND, some silt, some gravel.	20.0			
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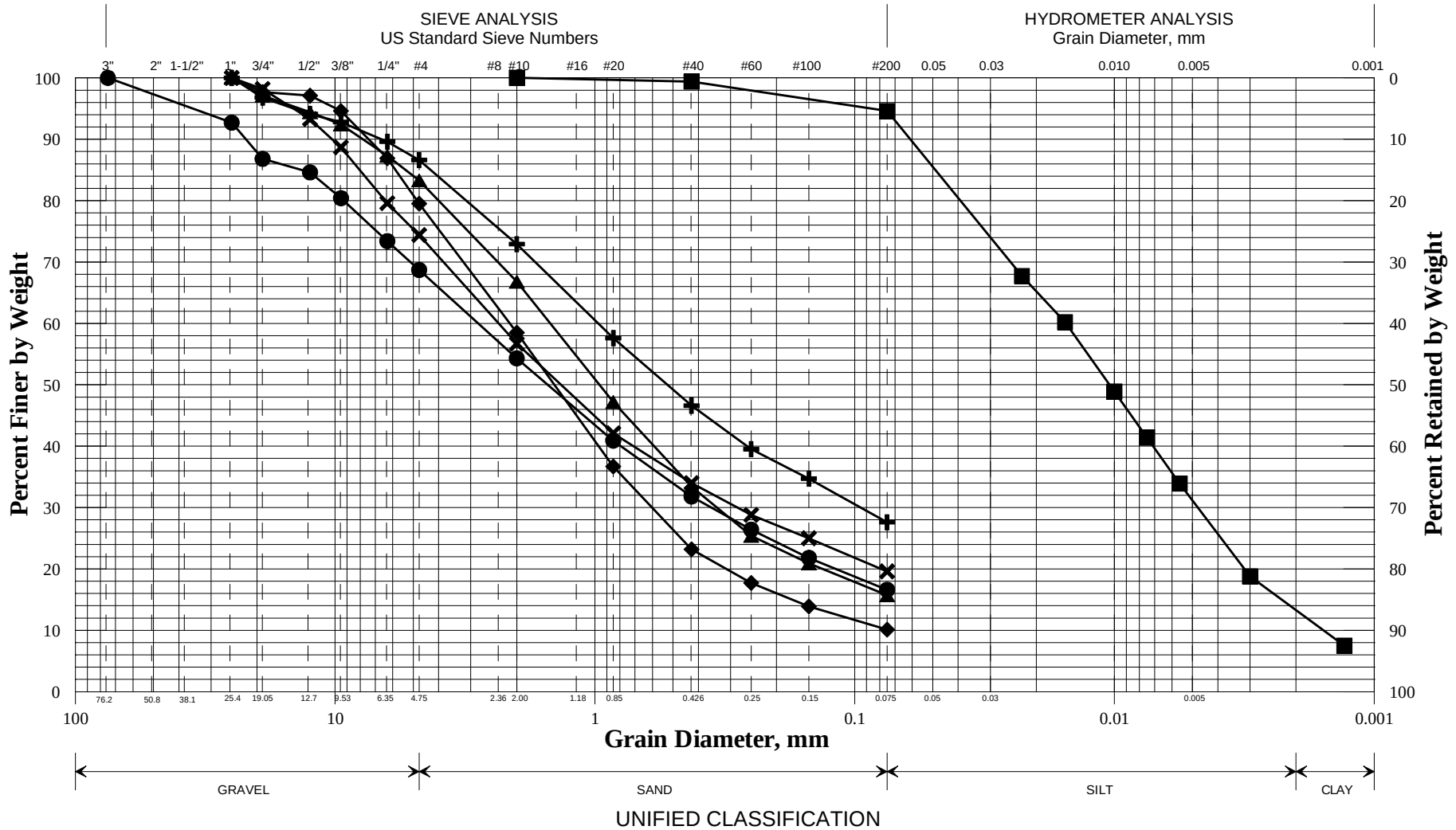
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB-FRV-116/B15	798+00	14.0 LT	0.0-2.8	SAND, some gravel, little silt.	1.2			
◆	HB-FRV-117/B16	818+00	9.0 RT	0.67-3.4	Gravelly SAND, little silt.	1.7			
■	HB-FRV-117/S7	818+00	9.0 RT	3.4-4.5	SAND, some silt, trace gravel.	21.9			
●	HB-FRV-118/B17	838+00	9.0 LT	0.63-4.5	SAND, some gravel, little silt.	1.5			
▲	HB-FRV-120/B18	848+00	9.0 RT	0.58-4.5	SAND, some gravel, little silt.	1.2			
×									

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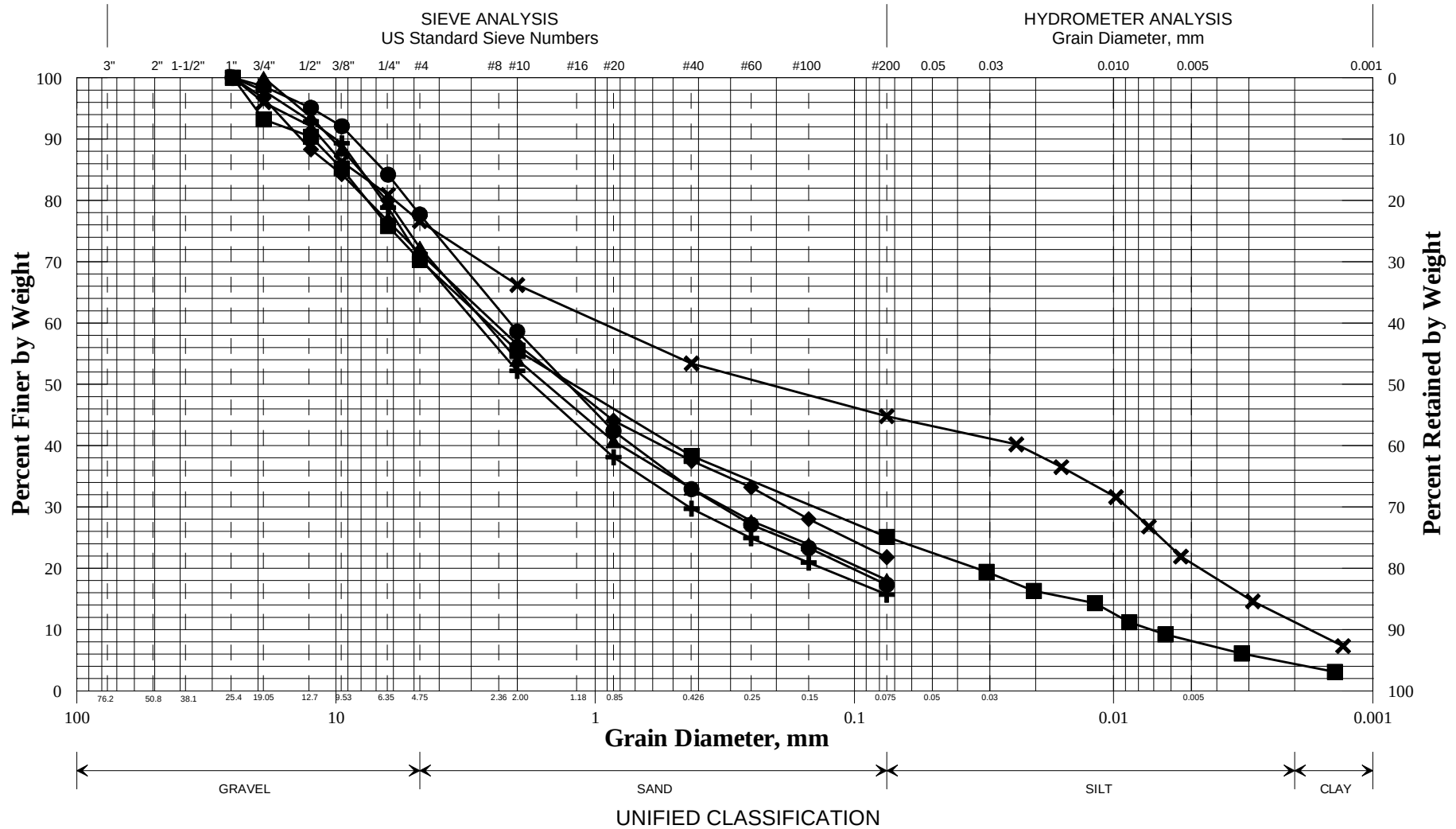
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB-FRV-201/1D	611+00	13.5 RT	0.0-2.0	SAND, some silt, little gravel.	5.0			
◆	HB-FRV-201/2D	611+00	13.5 RT	5.0-7.0	SAND, little gravel, trace silt.	5.2			
■	HB-FRV-201/3D	611+00	13.5 RT	10.0-12.0	SILT, little clay, trace sand.	24.6			
●	HB-FRV-202/1D	611+78	13.5 RT	0.0-2.0	SAND, some gravel, little silt.	4.7			
▲	HB-FRV-202/2D	611+78	13.5 RT	5.0-7.0	SAND, little gravel, little silt.	5.2			
×	HB-FRV-202/3D	611+78	13.5 RT	10.0-12.0	SAND, some gravel, little silt.	5.0			

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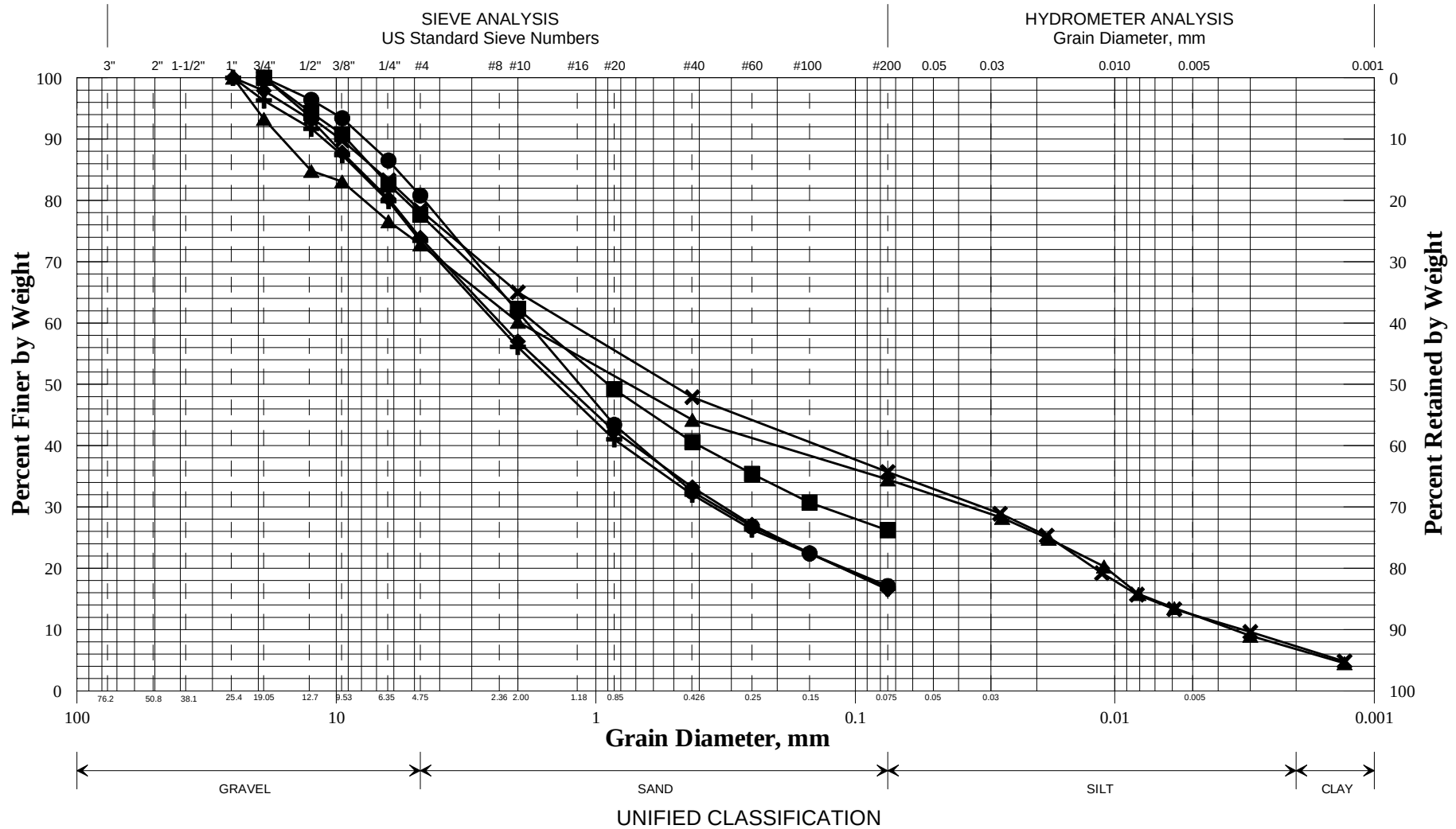
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB-FRV-203/1D	629+00	13.5 RT	0.0-2.0	SAND, some gravel, little silt.	4.5			
◆	HB-FRV-203/2D	629+00	13.5 RT	5.0-7.0	SAND, some gravel, some silt.	7.9			
■	HB-FRV-203/3D	629+00	13.5 RT	10.0-12.0	SAND, some gravel, little silt, trace clay.	9.5			
●	HB-FRV-204/1D	629+75.5	14.0 RT	0.0-2.0	SAND, some gravel, little silt.	4.6			
▲	HB-FRV-204/2D	629+75.5	14.0 RT	5.0-7.0	SAND, some gravel, little silt.	5.4			
×	HB-FRV-204/3D	629+75.5	14.0 RT	10.0-12.0	SILT, some sand, some gravel, little clay.	10.3			

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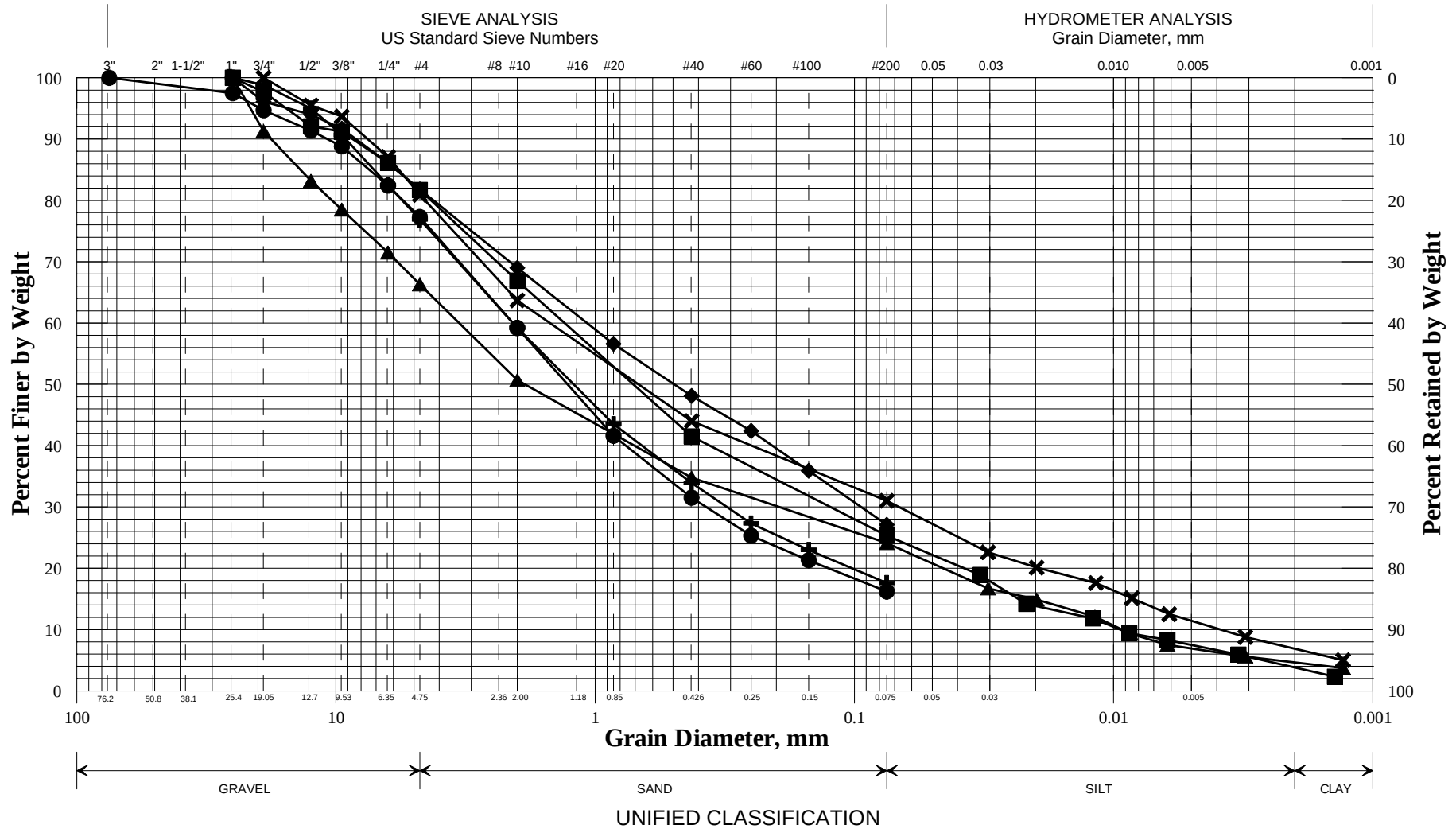
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GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB-FRV-205/1D	630+48	13.0 RT	0.0-2.0	SAND, some gravel, little silt.	3.8			
◆	HB-FRV-205/2D	630+48	13.0 RT	5.0-7.0	SAND, some gravel, little silt.	5.3			
■	HB-FRV-205/3D	630+48	13.0 RT	10.0-12.0	SAND, some silt, some gravel.	8.5			
●	HB-FRV-206/1D	631+31	13.5 RT	0.0-2.0	SAND, little gravel, little silt.	5.0			
▲	HB-FRV-206/2D	631+31	13.5 RT	5.0-7.0	SAND, some silt, some gravel, trace clay.	7.0			
×	HB-FRV-206/3D	631+31	13.5 RT	10.0-12.0	SAND, some silt, some gravel, trace clay.	7.6			

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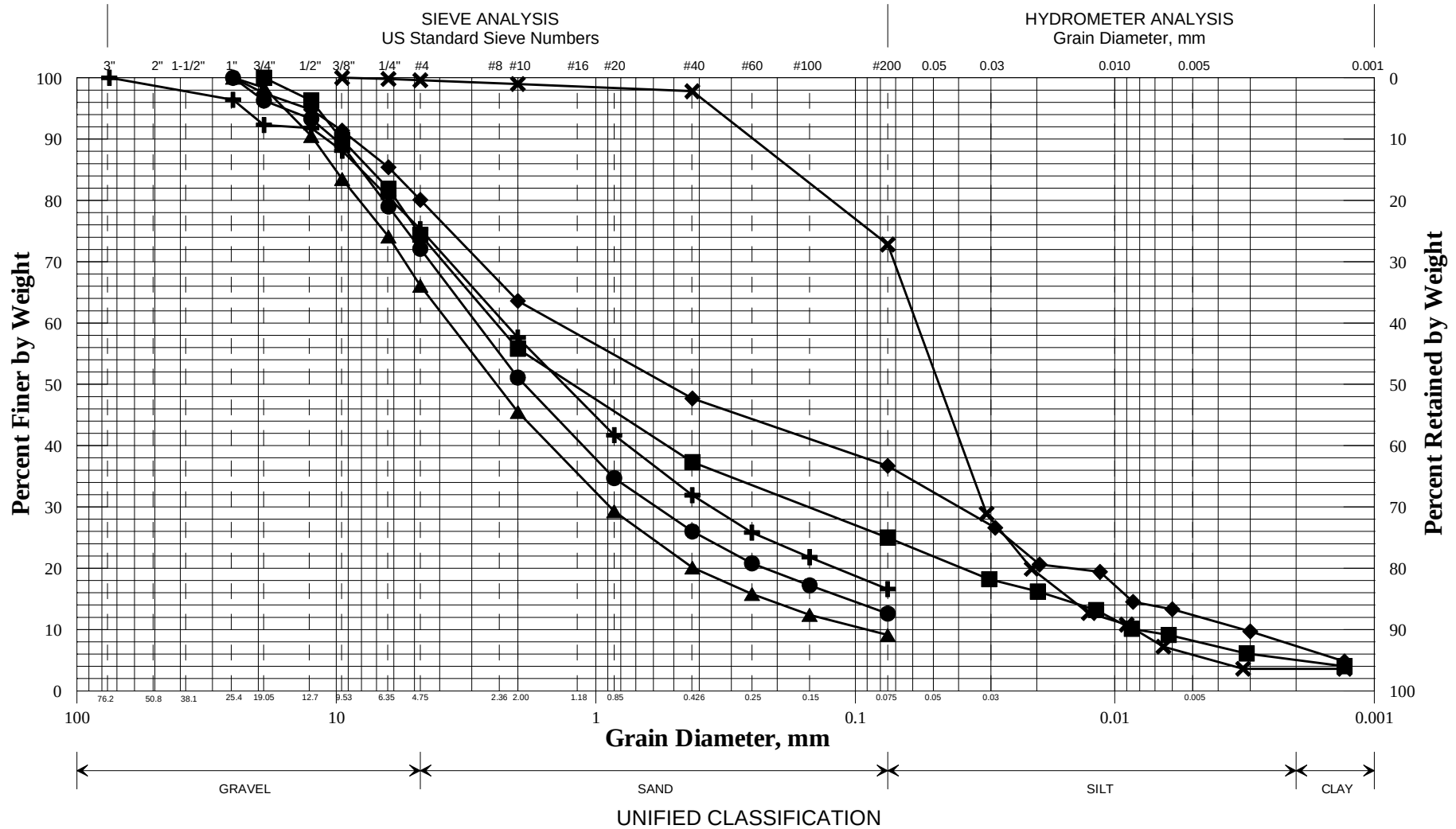
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB-FRV-207/1D	641+00	13.0 RT	0.0-2.0	SAND, some gravel, little silt.	5.6			
♦	HB-FRV-207/2D	641+00	13.0 RT	5.0-7.0	SAND, some silt, little gravel.	7.8			
■	HB-FRV-207/3D	641+00	13.0 RT	10.0-12.0	SAND, some silt, little gravel, trace clay.	5.3			
●	HB-FRV-208/1D	641+85.5	14.0 RT	0.0-2.0	SAND, some gravel, little silt.	5.5			
▲	HB-FRV-208/2D	641+85.5	14.0 RT	5.0-7.0	SAND, some gravel, little silt, trace clay.	11.0			
×	HB-FRV-208/3D	641+85.5	14.0 RT	10.0-12.0	SAND, some silt, little gravel, trace clay.	7.6			

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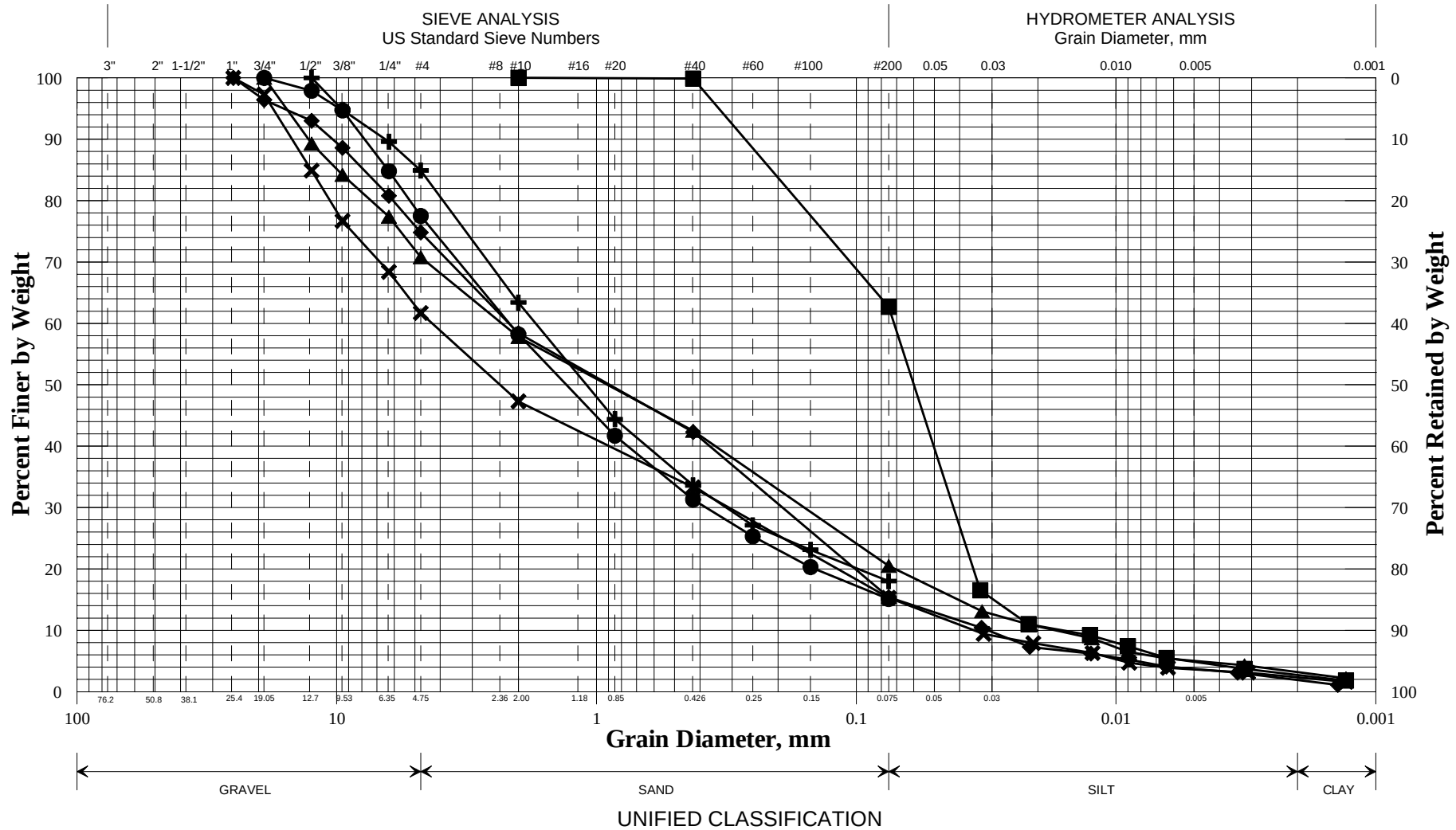
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GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB-FRV-209/1D	642+71	14.0 RT	0.0-2.0	SAND, some gravel, little silt.	4.7			
◆	HB-FRV-209/2D	642+71	14.0 RT	5.0-7.0	SAND, some silt, little gravel, trace clay.	21.3			
■	HB-FRV-209/3D	642+71	14.0 RT	10.0-12.0	SAND, some gravel, little silt, trace clay.	7.0			
●	HB-FRV-210/1D	747+50	13.7 RT	0.0-2.0	SAND, some gravel, little silt.	5.5			
▲	HB-FRV-210/2D	747+50	13.7 RT	5.0-7.0	SAND, some gravel, trace silt.	3.2			
×	HB-FRV-210/3D	747+50	13.7 RT	10.0-12.0	SILT, some sand, trace clay, trace gravel.	13.8			

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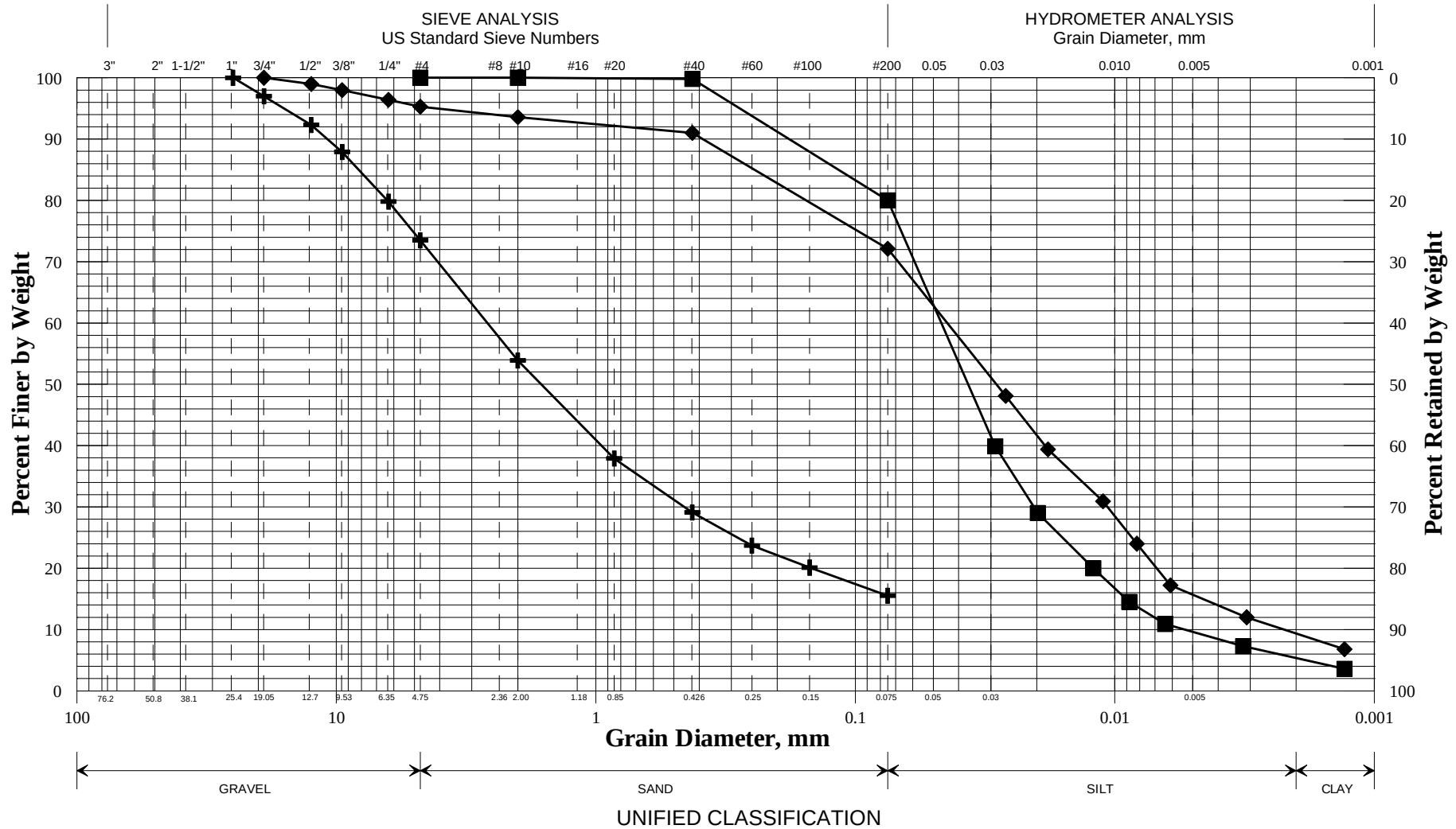
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB-FRV-211/1D	748+64	14.0 RT	0.0-2.0	SAND, little silt, little gravel.	7.0			
◆	HB-FRV-211/2D	748+64	14.0 RT	5.0-7.0	SAND, some gravel, little silt, trace clay.	4.5			
■	HB-FRV-211/3D	748+64	14.0 RT	10.0-12.0	SILT, some sand, trace clay.	9.9			
●	HB-FRV-212/1D	749+50	14.5 RT	0.0-2.0	SAND, some gravel, little silt.	5.7			
▲	HB-FRV-212/2D	749+50	14.5 RT	5.0-7.0	SAND, some gravel, little silt, trace clay.	6.6			
×	HB-FRV-212/3D	749+50	14.5 RT	10.0-12.0	Gravelly SAND, little silt, trace clay.	8.0			

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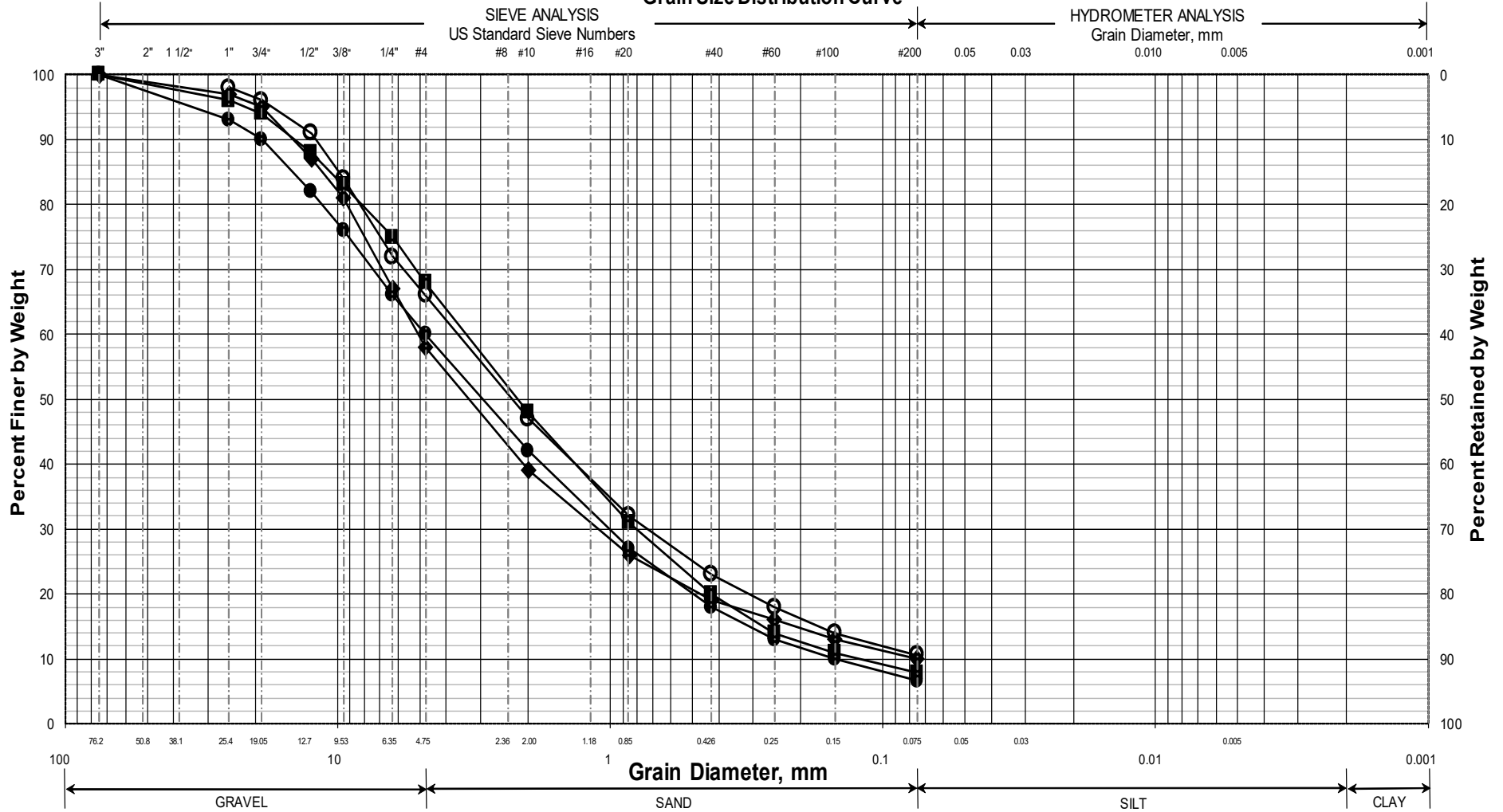
State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	W, %	LL	PL	PI
+	HB-FRV-213/1D	750+50	13.5 RT	0.0-2.0	SAND, some gravel, little silt.	5.0			
◆	HB-FRV-213/2D	750+50	13.5 RT	5.0-7.0	SILT, some sand, trace clay, trace gravel.	19.8			
■	HB-FRV-213/3D	750+50	13.5 RT	10.0-12.0	SILT, little sand, trace clay.	16.2			
●									
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Maine Department of Transportation Grain Size Distribution Curve

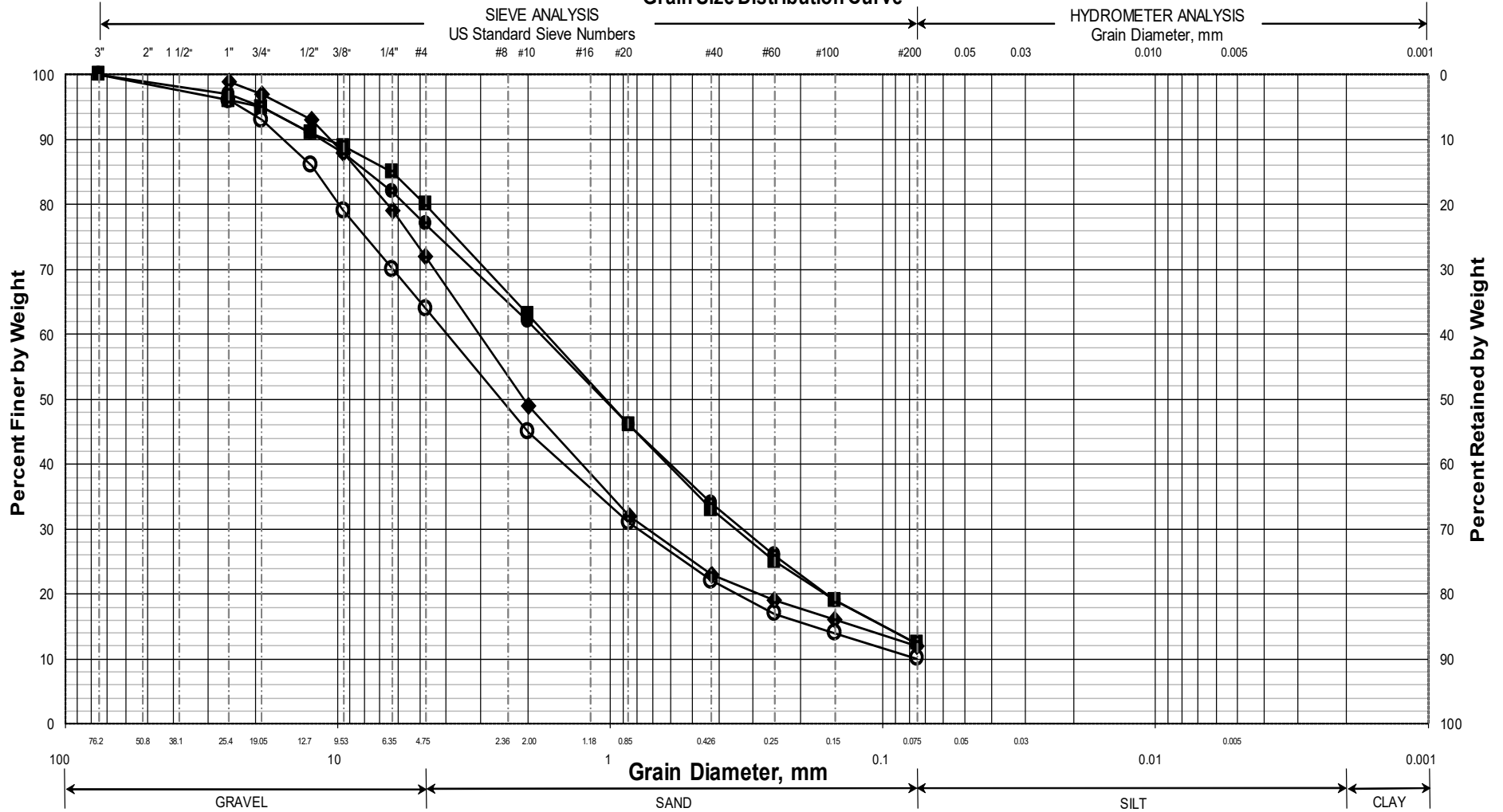


UNIFIED CLASSIFICATION

	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	WC, %	LL	PL	PI
○	TP-1-19/B1	625+00	14.0 RT	1.0-3.0	SAND, some gravel, little silt.	4.2			
◆	TP-2-19/B2	625+00	14.0 LT	1.0-3.0	Gravelly SAND, trace silt.	3.8			
■	TP-3-19/B3	696+00	14.0 RT	1.0-3.0	SAND, some gravel, trace silt.	2.6			
●	TP-4-19/B4	696+00	14.0 LT	1.0-3.0	Gravelly SAND, trace silt.	2.7			
▲									
X									

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Maine Department of Transportation Grain Size Distribution Curve

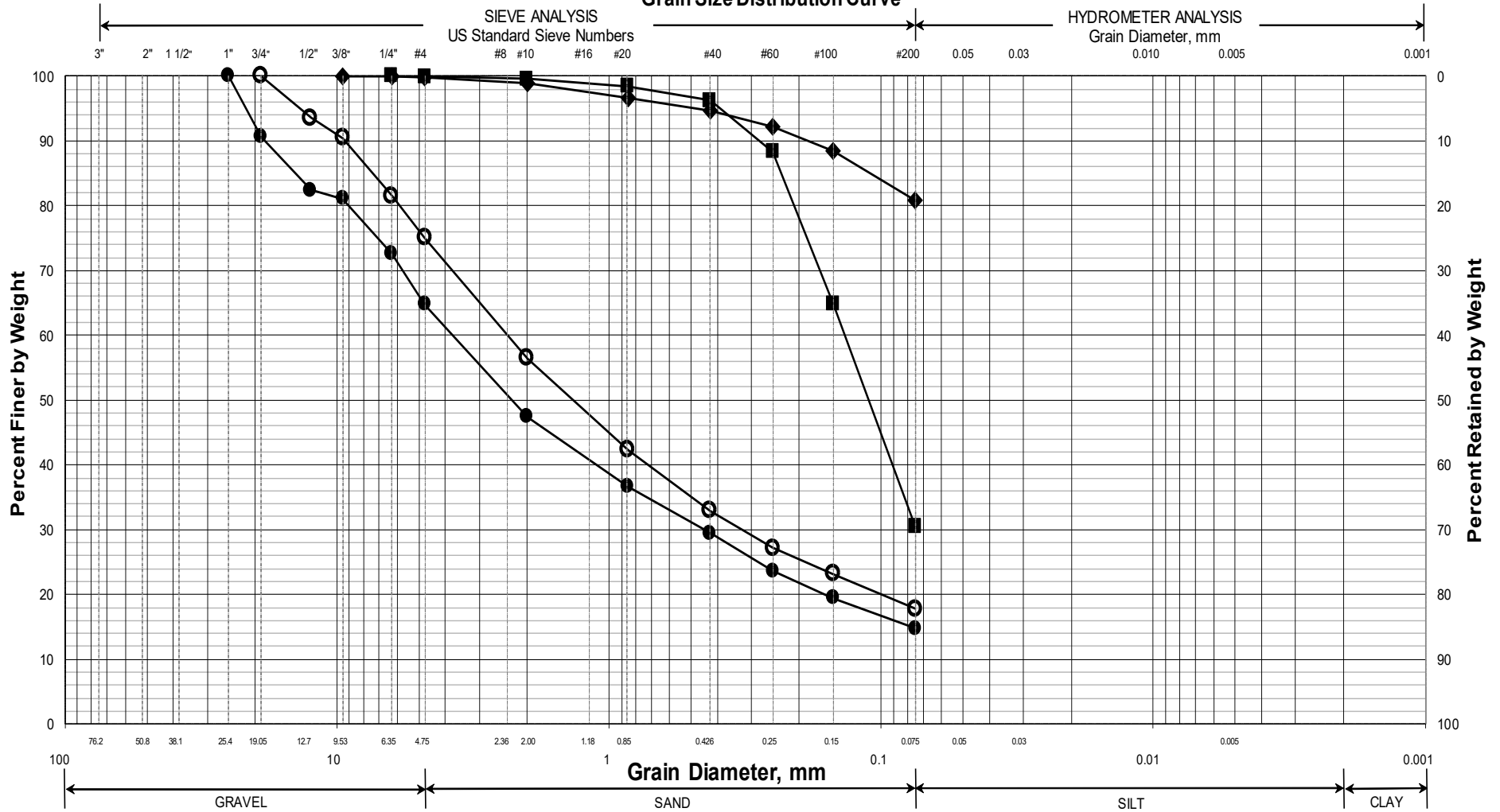


UNIFIED CLASSIFICATION

	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	WC, %	LL	PL	PI
○	TP-5-19/B5	763+00	14.0 LT	1.0-3.0	Gravelly SAND, trace silt.	2.2			
◆	TP-6-19/B6	763+00	14.0 RT	1.0-3.0	SAND, some gravel, little silt.	3.3			
■	TP-7-19/B7	805+00	14.0 RT	1.0-3.0	SAND, little gravel, little silt.	3.1			
●	TP-8-19/B8	805+00	14.0 LT	1.0-3.0	SAND, some gravel, little silt.	3.4			
▲									
X									

WIN
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Town
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WHITE, TERRY A 8/19/2019

Maine Department of Transportation Grain Size Distribution Curve

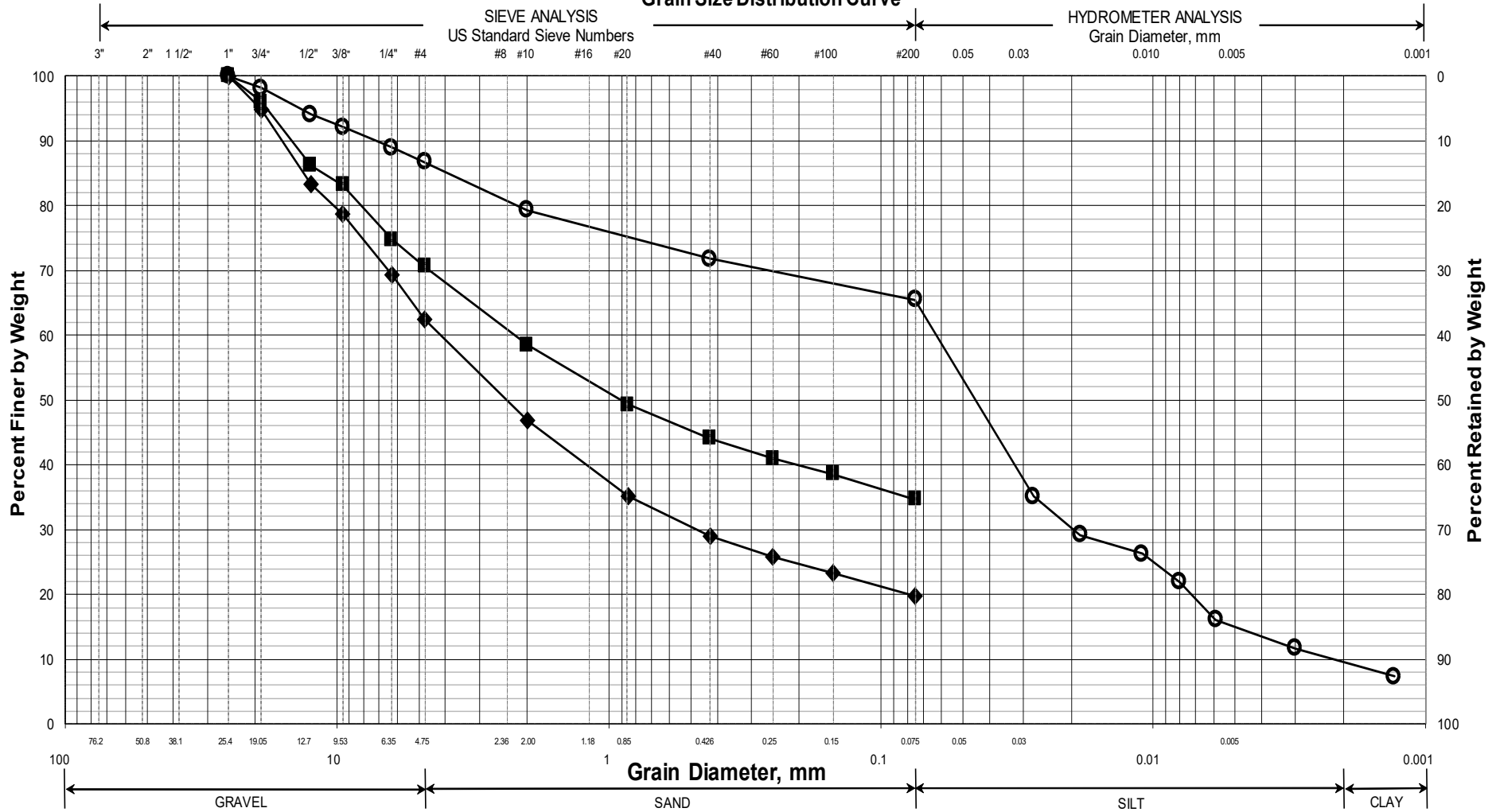


UNIFIED CLASSIFICATION

	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	WC, %	LL	PL	PI
O	HB-FRV-301/1D	666+00	6.0 RT	1.0-3.0	SAND, some gravel, little silt.	3.9			
◆	HB-FRV-301/2D	666+00	6.0 RT	5.0-7.0	SILT, little sand, trace gravel.	18.5			
■	HB-FRV-301/3D	666+00	6.0 RT	10.0-12.0	SAND, some silt, trace gravel.	22.9			
●	HB-FRV-301/5D	666+00	6.0 RT	20.0-22.0	SAND, some gravel, little silt.	11.1			
▲									
X									

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Maine Department of Transportation Grain Size Distribution Curve

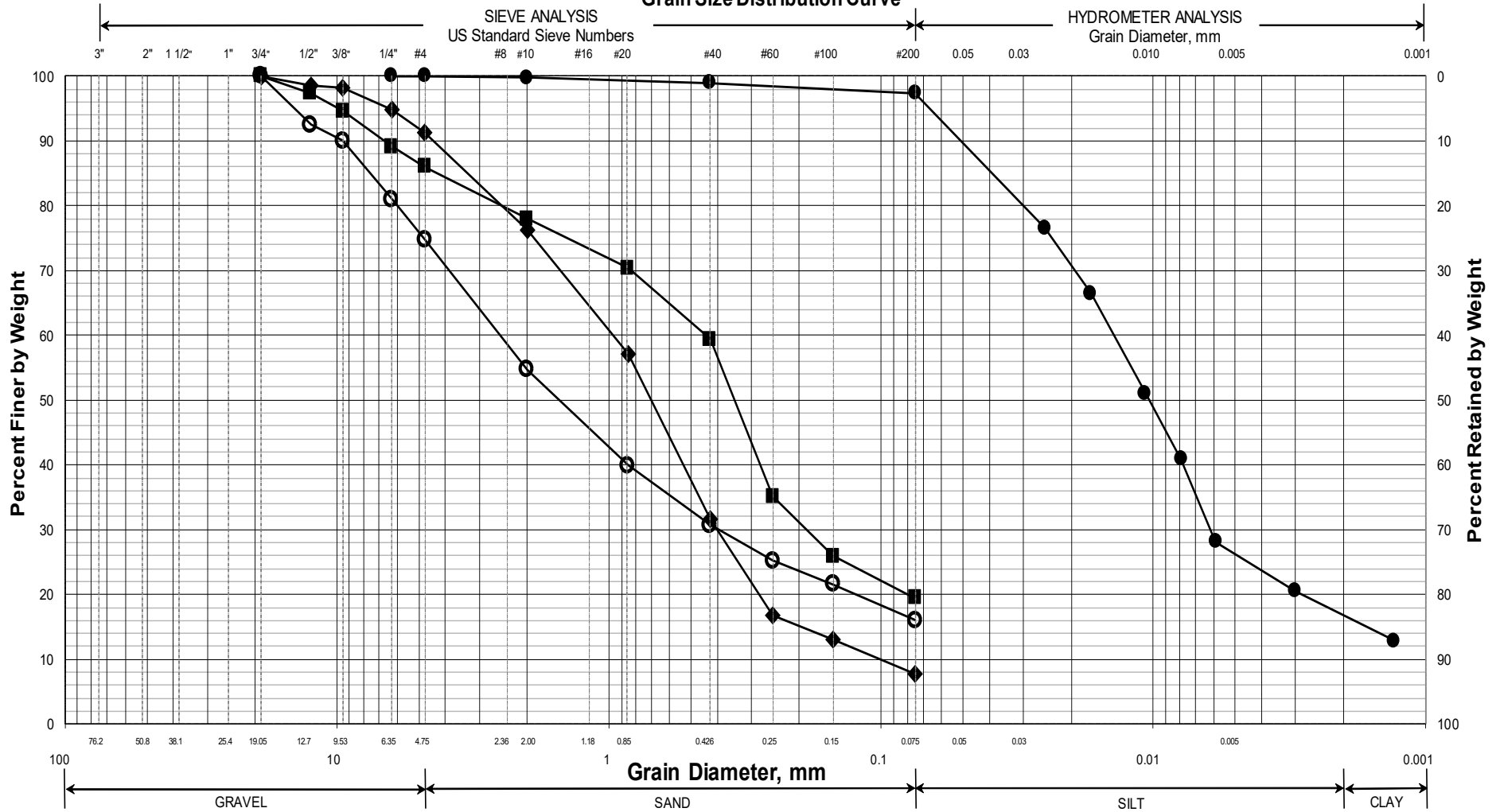


UNIFIED CLASSIFICATION

	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	WC, %	LL	PL	PI
○	HB-FRV-301/6D	666+00	6.0 RT	25.0-27.0	SILT, little sand, little gravel, trace clay.	11.7			
◆	HB-FRV-301/7D	666+00	6.0 RT	30.5-32.0	Gravelly SAND, little silt.	10.5			
■	HB-FRV-301/8D	666+00	6.0 RT	35.0-37.0	SAND, some silt, some gravel.	10.0			
●									
▲									
×									

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Maine Department of Transportation Grain Size Distribution Curve



UNIFIED CLASSIFICATION

	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	WC, %	LL	PL	PI
○	HB-FRV-302/1D	667+00	14.0 RT	1.0-3.0	Sandy GRAVEL, little silt.	4.3			
◆	HB-FRV-302/3D	667+00	14.0 RT	10.0-12.0	SAND, some gravel, trace silt.	6.4			
■	HB-FRV-302/5D	667+00	14.0 RT	20.0-22.0	SAND, some gravel, little silt.	8.4			
●	HB-FRV-302/6D	667+00	14.0 RT	25.0-27.0	SILT, little clay, trace sand.	24.9			
▲									
X									

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WHITE, TERRY A 1/11/2023

Grain Size Distribution Curve

SIEVE ANALYSIS
US Standard Sieve Numbers

HYDROMETER ANALYSIS
Grain Diameter, mm

Percent Finer by Weight

Grain Diameter, mm

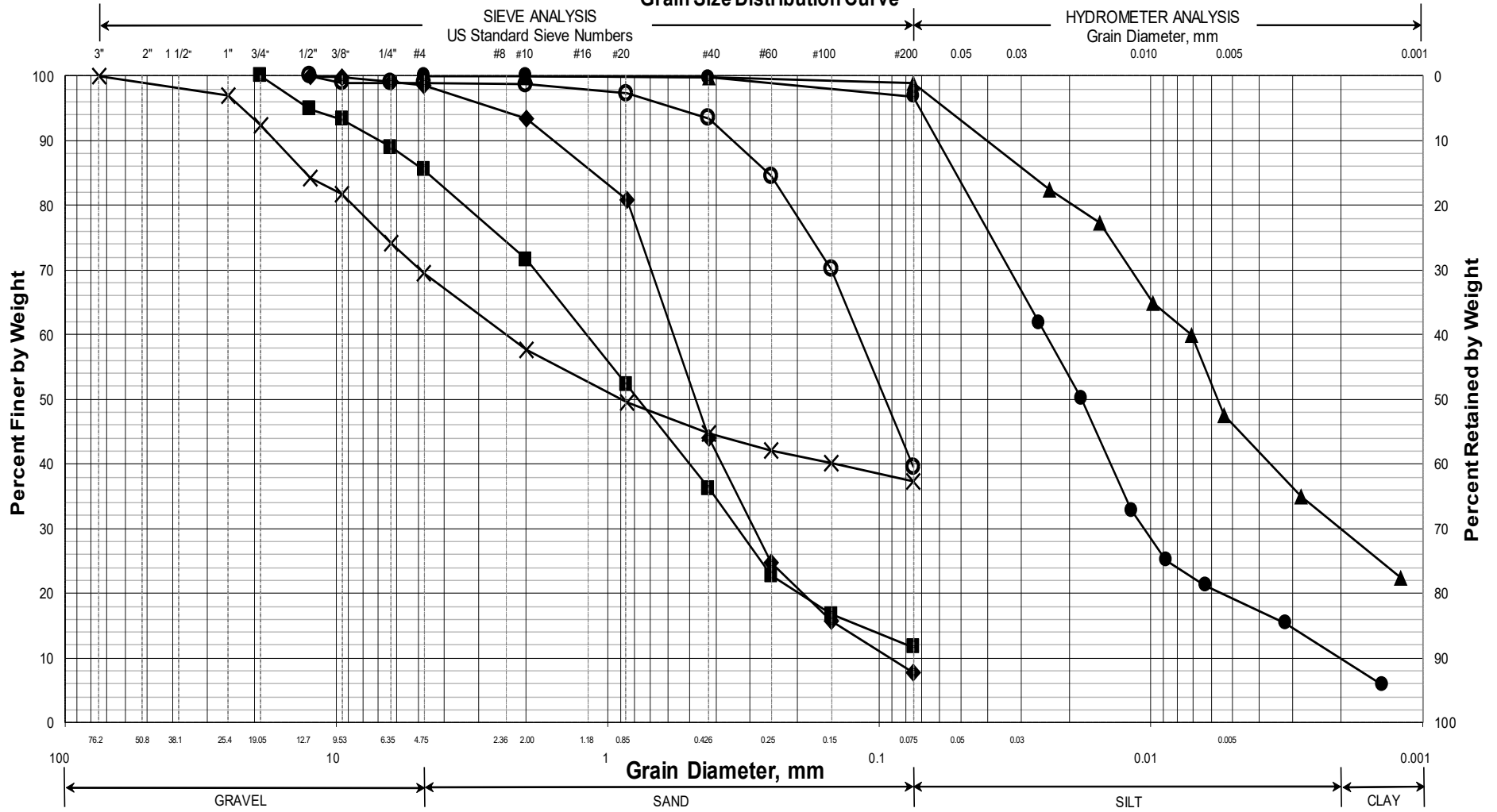
Gravel **Sand** **Silt** **Clay**

Grain Diameter, mm	Percent Finer by Weight (%)
76.2	100
50.8	100
38.1	100
25.4	100
19.05	100
12.7	100
9.53	100
6.35	100
4.75	100
2.36	100
2.00	100
1.18	100
0.85	100
0.426	100
0.25	100
0.15	100
0.075	100
0.05	100
0.03	100
0.01	100
0.005	100
0.0025	100
0.001	100

[illegible]

SHEET 18

Maine Department of Transportation Grain Size Distribution Curve



UNIFIED CLASSIFICATION

	Boring/Sample No.	Station	Offset, ft	Depth, ft	Description	WC, %	LL	PL	PI
○	HB-FRV-303/2D	668+00	15.0 RT	5.0-7.0	Silty SAND, trace gravel.	19.2			
◆	HB-FRV-303/3D	668+00	15.0 RT	10.0-12.0	SAND, trace silt, trace gravel.	9.5			
■	HB-FRV-303/5D	668+00	15.0 RT	20.0-22.0	SAND, little gravel, little silt.	10.6			
●	HB-FRV-303/7D	668+00	15.0 RT	30.0-32.0	SILT, trace clay, trace sand.	25.6			
▲	HB-FRV-303/10D	668+00	15.0 RT	45.0-47.0	SILT, some clay, trace sand.	24.3	24	18	6
×	HB-FRV-303/13D	668+00	15.0 RT	60.0-62.0	SILT, some gravel, some sand.	10.6			

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022656.00	
Town	
Fort Kent, Frenchville	
Reported by/Date	
WHITE, TERRY A	1/20/2023



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302067** Boring No./Sample No. **HB-FRV-101/B1** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **618+00** Offset, ft: **13.0** RT Dbfg, ft: **0.0-1.6**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	98.7
¾ in. [19.0 mm]	96.9
½ in. [12.5 mm]	94.3
⅜ in. [9.5 mm]	91.6
¼ in. [6.3 mm]	84.5
No. 4 [4.75 mm]	77.9
No. 10 [2.00 mm]	57.7
No. 20 [0.850 mm]	40.2
No. 40 [0.425 mm]	29.5
No. 60 [0.250 mm]	24.2
No. 100 [0.150 mm]	19.9
No. 200 [0.075 mm]	15.0

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.3

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/19/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302074** Boring No./Sample No. **HB-FRV-101/S1** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/16/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **618+00** Offset, ft: **13.0** RT Dbfg, ft: **1.6-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	95.0
⅜ in. [9.5 mm]	91.0
¼ in. [6.3 mm]	85.3
No. 4 [4.75 mm]	79.5
No. 10 [2.00 mm]	65.7
No. 20 [0.850 mm]	55.1
No. 40 [0.425 mm]	48.5
No. 60 [0.250 mm]	43.6
No. 100 [0.150 mm]	38.5
No. 200 [0.075 mm]	31.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	19.6

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **11/19/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302068** Boring No./Sample No. **HB-FRV-102/B2** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **618+00** Offset, ft: **8.5** RT Dbfg, ft: **0.5-2.4**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	98.3
½ in. [12.5 mm]	93.4
⅜ in. [9.5 mm]	85.9
¼ in. [6.3 mm]	74.7
No. 4 [4.75 mm]	66.9
No. 10 [2.00 mm]	48.0
No. 20 [0.850 mm]	34.6
No. 40 [0.425 mm]	27.0
No. 60 [0.250 mm]	23.3
No. 100 [0.150 mm]	20.0
No. 200 [0.075 mm]	15.5

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.3

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/19/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302069** Boring No./Sample No. **HB-FRV-102/S2** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/16/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **618+00** Offset, ft: **8.5** RT Dbfg, ft: **2.4-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	95.8
¾ in. [19.0 mm]	95.8
½ in. [12.5 mm]	95.8
⅜ in. [9.5 mm]	91.4
¼ in. [6.3 mm]	84.7
No. 4 [4.75 mm]	81.7
No. 10 [2.00 mm]	74.6
No. 20 [0.850 mm]	67.5
No. 40 [0.425 mm]	59.5
No. 60 [0.250 mm]	51.7
No. 100 [0.150 mm]	43.7
No. 200 [0.075 mm]	32.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	15.4

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/19/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302061** Boring No./Sample No. **HB-FRV-103/B3** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **638+00** Offset, ft: **8.0** LT Dbfg, ft: **0.54-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	97.7
¾ in. [19.0 mm]	93.8
½ in. [12.5 mm]	84.5
⅜ in. [9.5 mm]	76.6
¼ in. [6.3 mm]	67.4
No. 4 [4.75 mm]	60.8
No. 10 [2.00 mm]	43.2
No. 20 [0.850 mm]	30.4
No. 40 [0.425 mm]	23.1
No. 60 [0.250 mm]	19.2
No. 100 [0.150 mm]	16.1
No. 200 [0.075 mm]	12.4

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	2.9

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **11/24/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302063** Boring No./Sample No. **HB-FRV-104/B4** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **658+00** Offset, ft: **8.5** RT Dbfg, ft: **0.67-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	94.8
¾ in. [19.0 mm]	91.4
½ in. [12.5 mm]	83.1
⅜ in. [9.5 mm]	78.4
¼ in. [6.3 mm]	70.2
No. 4 [4.75 mm]	64.8
No. 10 [2.00 mm]	49.3
No. 20 [0.850 mm]	36.2
No. 40 [0.425 mm]	26.8
No. 60 [0.250 mm]	20.8
No. 100 [0.150 mm]	15.9
No. 200 [0.075 mm]	11.0

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.4

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **11/18/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302057** Boring No./Sample No. **HB-FRV-105/B5** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **658+00** Offset, ft: **15.0** RT Dbfg, ft: **0.13-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	90.2
¾ in. [19.0 mm]	85.7
½ in. [12.5 mm]	77.5
⅜ in. [9.5 mm]	70.0
¼ in. [6.3 mm]	58.8
No. 4 [4.75 mm]	52.3
No. 10 [2.00 mm]	37.1
No. 20 [0.850 mm]	26.3
No. 40 [0.425 mm]	19.6
No. 60 [0.250 mm]	15.7
No. 100 [0.150 mm]	12.4
No. 200 [0.075 mm]	9.2

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.4

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/24/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302055** Boring No./Sample No. **HB-FRV-106/B6** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **678+00** Offset, ft: **8.5** RT Dbfg, ft: **0.75-3.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	97.2
¾ in. [19.0 mm]	94.5
½ in. [12.5 mm]	89.1
⅜ in. [9.5 mm]	84.3
¼ in. [6.3 mm]	75.7
No. 4 [4.75 mm]	70.0
No. 10 [2.00 mm]	51.4
No. 20 [0.850 mm]	36.0
No. 40 [0.425 mm]	25.4
No. 60 [0.250 mm]	19.7
No. 100 [0.150 mm]	15.7
No. 200 [0.075 mm]	11.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.6

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/19/2015**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No.

Boring No./Sample No.

Sample Description

Sampled

Received

302075

HB-FRV-106/S3

GEOTECHNICAL (DISTURBED)

10/28/2015

11/16/2015

Sample Type: **GEOTECHNICAL**

Location:

Station: **678+00**Offset, ft: **8.5**

RT Dbfg, ft: 3.0-4.5

WIN/Town 022656.00 - FRENCHVILLE, FORT KE

Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	100.0
⅜ in. [9.5 mm]	99.4
¼ in. [6.3 mm]	97.7
No. 4 [4.75 mm]	96.2
No. 10 [2.00 mm]	92.4
No. 20 [0.850 mm]	88.7
No. 40 [0.425 mm]	84.4
No. 60 [0.250 mm]	81.0
No. 100 [0.150 mm]	77.6
No. 200 [0.075 mm]	72.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	23.1

Consolidation (T 216)

Trimmings, Water Content, %			
	Initial	Final	
Water Content, %			Pmin
Dry Density, lbs/ft³			Pp
Void Ratio			Pmax
Saturation, %			Cc/C'c

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft ²	tons/ft ²	tons/ft ²	tons/ft ²		
0-1	1.0	0.8	1.2	1.0	15	Soft clay
1-2	1.2	1.0	1.4	1.2	18	Soft clay
2-3	1.5	1.2	1.8	1.5	20	Soft clay
3-4	1.8	1.5	2.2	1.8	22	Soft clay
4-5	2.0	1.7	2.5	2.0	25	Soft clay
5-6	2.2	1.9	2.8	2.2	28	Soft clay
6-7	2.5	2.2	3.2	2.5	30	Soft clay
7-8	2.8	2.5	3.5	2.8	32	Soft clay
8-9	3.0	2.7	3.8	3.0	35	Soft clay
9-10	3.2	2.9	4.0	3.2	38	Soft clay
10-11	3.5	3.2	4.5	3.5	40	Soft clay
11-12	3.8	3.5	5.0	3.8	42	Soft clay
12-13	4.0	3.7	5.5	4.0	45	Soft clay
13-14	4.2	3.9	6.0	4.2	48	Soft clay
14-15	4.5	4.2	6.5	4.5	50	Soft clay
15-16	4.8	4.5	7.0	4.8	52	Soft clay
16-17	5.0	4.7	7.5	5.0	55	Soft clay
17-18	5.2	4.9	8.0	5.2	58	Soft clay
18-19	5.5	5.2	8.5	5.5	60	Soft clay
19-20	5.8	5.5	9.0	5.8	62	Soft clay
20-21	6.0	5.7	9.5	6.0	65	Soft clay
21-22	6.2	5.9	10.0	6.2	68	Soft clay
22-23	6.5	6.2	10.5	6.5	70	Soft clay
23-24	6.8	6.5	11.0	6.8	72	Soft clay
24-25	7.0	6.7	11.5	7.0	75	Soft clay
25-26	7.2	6.9	12.0	7.2	78	Soft clay
26-27	7.5	7.2	12.5	7.5	80	Soft clay
27-28	7.8	7.5	13.0	7.8	82	Soft clay
28-29	8.0	7.7	13.5	8.0	85	Soft clay
29-30	8.2	7.9	14.0	8.2	88	Soft clay
30-31	8.5	8.2	14.5	8.5	90	Soft clay
31-32	8.8	8.5	15.0	8.8	92	Soft clay
32-33	9.0	8.7	15.5	9.0	95	Soft clay
33-34	9.2	8.9	16.0	9.2	98	Soft clay
34-35	9.5	9.2	16.5	9.5	100	Soft clay

Comments:

AUTHORIZATION AND DISTRIBUTION

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Date Reported: **11/24/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302059** Boring No./Sample No. **HB-FRV-107/B7** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **698+00** Offset, ft: **9.5** RT Dbfg, ft: **0.67-3.3**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	98.5
¾ in. [19.0 mm]	98.2
½ in. [12.5 mm]	89.2
⅜ in. [9.5 mm]	82.5
¼ in. [6.3 mm]	69.3
No. 4 [4.75 mm]	62.1
No. 10 [2.00 mm]	43.2
No. 20 [0.850 mm]	29.9
No. 40 [0.425 mm]	22.4
No. 60 [0.250 mm]	18.5
No. 100 [0.150 mm]	15.5
No. 200 [0.075 mm]	12.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.4

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/19/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302072** Boring No./Sample No. **HB-FRV-107/S4** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/16/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **698+00** Offset, ft: **9.5** RT Dbfg, ft: **3.3-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	100.0
⅜ in. [9.5 mm]	99.1
¼ in. [6.3 mm]	99.1
No. 4 [4.75 mm]	98.7
No. 10 [2.00 mm]	97.2
No. 20 [0.850 mm]	95.6
No. 40 [0.425 mm]	94.2
No. 60 [0.250 mm]	93.1
No. 100 [0.150 mm]	91.9
No. 200 [0.075 mm]	86.5

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	33.0

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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Date Reported: **11/24/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302054** Boring No./Sample No. **HB-FRV-108/B8** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **698+00** Offset, ft: **15.0** RT Dbfg, ft: **0.0-3.4**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	98.8
¾ in. [19.0 mm]	94.6
½ in. [12.5 mm]	87.6
⅜ in. [9.5 mm]	82.5
¼ in. [6.3 mm]	73.1
No. 4 [4.75 mm]	65.4
No. 10 [2.00 mm]	47.5
No. 20 [0.850 mm]	33.7
No. 40 [0.425 mm]	25.9
No. 60 [0.250 mm]	22.0
No. 100 [0.150 mm]	18.9
No. 200 [0.075 mm]	14.9

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.7

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/19/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302053** Boring No./Sample No. **HB-FRV-109/B9** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **718+00** Offset, ft: **9.0** LT Dbfg, ft: **0.67-4.50**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	94.0
¾ in. [19.0 mm]	92.1
½ in. [12.5 mm]	84.8
⅜ in. [9.5 mm]	80.1
¼ in. [6.3 mm]	69.8
No. 4 [4.75 mm]	61.4
No. 10 [2.00 mm]	42.3
No. 20 [0.850 mm]	29.0
No. 40 [0.425 mm]	21.5
No. 60 [0.250 mm]	17.5
No. 100 [0.150 mm]	14.5
No. 200 [0.075 mm]	11.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	0.7

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

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Date Reported: **11/24/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302066** Boring No./Sample No. **HB-FRV-111/B10** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **738+00** Offset, ft: **9.0** RT Dbfg, ft: **0.58-2.9**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	97.6
¾ in. [19.0 mm]	93.6
½ in. [12.5 mm]	85.6
⅜ in. [9.5 mm]	79.9
¼ in. [6.3 mm]	73.2
No. 4 [4.75 mm]	69.0
No. 10 [2.00 mm]	58.8
No. 20 [0.850 mm]	49.5
No. 40 [0.425 mm]	38.9
No. 60 [0.250 mm]	30.4
No. 100 [0.150 mm]	21.9
No. 200 [0.075 mm]	13.6

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.7

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302070** Boring No./Sample No. **HB-FRV-111/S5** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/16/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **738+00** Offset, ft: **9.0** RT Dbfg, ft: **2.9-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	100.0
⅜ in. [9.5 mm]	93.5
¼ in. [6.3 mm]	88.8
No. 4 [4.75 mm]	85.6
No. 10 [2.00 mm]	75.1
No. 20 [0.850 mm]	69.7
No. 40 [0.425 mm]	65.7
No. 60 [0.250 mm]	58.7
No. 100 [0.150 mm]	46.3
No. 200 [0.075 mm]	30.5

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	12.4

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302065** Boring No./Sample No. **HB-FRV-112/B11** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **758+00** Offset, ft: **8.5** LT Dbfg, ft: **0.75-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	98.2
¾ in. [19.0 mm]	95.0
½ in. [12.5 mm]	87.0
⅜ in. [9.5 mm]	80.2
¼ in. [6.3 mm]	70.3
No. 4 [4.75 mm]	64.3
No. 10 [2.00 mm]	43.5
No. 20 [0.850 mm]	29.7
No. 40 [0.425 mm]	22.4
No. 60 [0.250 mm]	18.9
No. 100 [0.150 mm]	16.3
No. 200 [0.075 mm]	12.9

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	2.0

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/19/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302060** Boring No./Sample No. **HB-FRV-113/B12** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **758+00** Offset, ft: **14.0** LT Dbfg, ft: **0.0-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	94.5
¾ in. [19.0 mm]	89.9
½ in. [12.5 mm]	80.9
⅜ in. [9.5 mm]	73.4
¼ in. [6.3 mm]	64.6
No. 4 [4.75 mm]	59.7
No. 10 [2.00 mm]	42.4
No. 20 [0.850 mm]	29.2
No. 40 [0.425 mm]	21.8
No. 60 [0.250 mm]	18.0
No. 100 [0.150 mm]	15.0
No. 200 [0.075 mm]	11.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.1

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/19/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302062** Boring No./Sample No. **HB-FRV-114/B13** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **778+00** Offset, ft: **9.0** RT Dbfg, ft: **0.63-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	97.8
¾ in. [19.0 mm]	94.5
½ in. [12.5 mm]	86.8
⅜ in. [9.5 mm]	78.7
¼ in. [6.3 mm]	67.8
No. 4 [4.75 mm]	60.0
No. 10 [2.00 mm]	41.7
No. 20 [0.850 mm]	29.0
No. 40 [0.425 mm]	22.4
No. 60 [0.250 mm]	19.4
No. 100 [0.150 mm]	16.8
No. 200 [0.075 mm]	13.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.7

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **11/24/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302056** Boring No./Sample No. **HB-FRV-115/B14** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **798+00** Offset, ft: **8.5** LT Dbfg, ft: **0.75-3.3**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	98.3
¾ in. [19.0 mm]	96.9
½ in. [12.5 mm]	90.7
⅜ in. [9.5 mm]	86.0
¼ in. [6.3 mm]	77.6
No. 4 [4.75 mm]	71.8
No. 10 [2.00 mm]	52.5
No. 20 [0.850 mm]	36.7
No. 40 [0.425 mm]	26.9
No. 60 [0.250 mm]	21.5
No. 100 [0.150 mm]	16.9
No. 200 [0.075 mm]	12.4

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.6

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/24/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302071** Boring No./Sample No. **HB-FRV-115/S6** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/16/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **798+00** Offset, ft: **8.5** LT Dbfg, ft: **3.3-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	96.1
⅜ in. [9.5 mm]	87.5
¼ in. [6.3 mm]	82.1
No. 4 [4.75 mm]	77.6
No. 10 [2.00 mm]	63.5
No. 20 [0.850 mm]	52.2
No. 40 [0.425 mm]	45.0
No. 60 [0.250 mm]	40.9
No. 100 [0.150 mm]	37.5
No. 200 [0.075 mm]	32.5

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	20.0

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **11/24/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302058** Boring No./Sample No. **HB-FRV-116/B15** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **798+00** Offset, ft: **14.0** LT Dbfg, ft: **0.0-2.8**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	93.4
¾ in. [19.0 mm]	90.1
½ in. [12.5 mm]	84.2
⅜ in. [9.5 mm]	80.7
¼ in. [6.3 mm]	73.4
No. 4 [4.75 mm]	68.6
No. 10 [2.00 mm]	53.2
No. 20 [0.850 mm]	38.4
No. 40 [0.425 mm]	28.3
No. 60 [0.250 mm]	22.3
No. 100 [0.150 mm]	17.5
No. 200 [0.075 mm]	12.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.2

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/24/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302052** Boring No./Sample No. **HB-FRV-117/B16** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **818+00** Offset, ft: **9.0** RT Dbfg, ft: **0.67-3.4**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	96.0
¾ in. [19.0 mm]	92.3
½ in. [12.5 mm]	83.6
⅜ in. [9.5 mm]	78.3
¼ in. [6.3 mm]	67.6
No. 4 [4.75 mm]	61.4
No. 10 [2.00 mm]	44.4
No. 20 [0.850 mm]	32.1
No. 40 [0.425 mm]	25.0
No. 60 [0.250 mm]	21.0
No. 100 [0.150 mm]	17.5
No. 200 [0.075 mm]	13.3

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.7

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **11/24/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302073** Boring No./Sample No. **HB-FRV-117/S7** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/16/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **818+00** Offset, ft: **9.0** RT Dbfg, ft: **3.4-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	
⅜ in. [9.5 mm]	100.0
¼ in. [6.3 mm]	99.9
No. 4 [4.75 mm]	99.6
No. 10 [2.00 mm]	98.6
No. 20 [0.850 mm]	97.7
No. 40 [0.425 mm]	96.8
No. 60 [0.250 mm]	94.7
No. 100 [0.150 mm]	81.1
No. 200 [0.075 mm]	34.9

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	21.9

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **11/19/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302051** Boring No./Sample No. **HB-FRV-118/B17** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **838+00** Offset, ft: **9.0** LT Dbfg, ft: **0.63-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	98.9
¾ in. [19.0 mm]	96.6
½ in. [12.5 mm]	89.4
⅜ in. [9.5 mm]	85.3
¼ in. [6.3 mm]	73.8
No. 4 [4.75 mm]	67.6
No. 10 [2.00 mm]	50.7
No. 20 [0.850 mm]	37.5
No. 40 [0.425 mm]	29.4
No. 60 [0.250 mm]	24.9
No. 100 [0.150 mm]	21.2
No. 200 [0.075 mm]	16.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.5

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **11/24/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **302064** Boring No./Sample No. **HB-FRV-120/B18** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/28/2015** Received **11/10/2015**

Sample Type: **GEOTECHNICAL** Location: Station: **848+00** Offset, ft: **9.0** RT Dbfg, ft: **0.58-4.5**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	99.3
¾ in. [19.0 mm]	96.1
½ in. [12.5 mm]	88.5
⅜ in. [9.5 mm]	83.0
¼ in. [6.3 mm]	72.0
No. 4 [4.75 mm]	65.6
No. 10 [2.00 mm]	46.8
No. 20 [0.850 mm]	33.5
No. 40 [0.425 mm]	25.9
No. 60 [0.250 mm]	21.8
No. 100 [0.150 mm]	18.6
No. 200 [0.075 mm]	14.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	1.2

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **11/19/2015**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300781** Boring No./Sample No. **HB-FRV-201/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **611+00** Offset, ft: **13.5** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	96.8
½ in. [12.5 mm]	94.1
⅜ in. [9.5 mm]	92.8
¼ in. [6.3 mm]	89.6
No. 4 [4.75 mm]	86.6
No. 10 [2.00 mm]	72.9
No. 20 [0.850 mm]	57.6
No. 40 [0.425 mm]	46.6
No. 60 [0.250 mm]	39.5
No. 100 [0.150 mm]	34.7
No. 200 [0.075 mm]	27.6

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.0

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/15/2018**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300782** Boring No./Sample No. **HB-FRV-201/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **611+00** Offset, ft: **13.5** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	97.7
½ in. [12.5 mm]	97.1
⅜ in. [9.5 mm]	94.6
¼ in. [6.3 mm]	86.9
No. 4 [4.75 mm]	79.5
No. 10 [2.00 mm]	58.5
No. 20 [0.850 mm]	36.7
No. 40 [0.425 mm]	23.2
No. 60 [0.250 mm]	17.7
No. 100 [0.150 mm]	13.9
No. 200 [0.075 mm]	10.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.2

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/16/2018**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300783** Boring No./Sample No. **HB-FRV-201/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **611+00** Offset, ft: **13.5** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	
⅜ in. [9.5 mm]	
¼ in. [6.3 mm]	
No. 4 [4.75 mm]	
No. 10 [2.00 mm]	100.0
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	99.4
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	94.6
[0.0227 mm]	67.7
[0.0155 mm]	60.2
[0.0100 mm]	48.9
[0.0075 mm]	41.4
[0.0056 mm]	33.9
[0.0030 mm]	18.8
[0.0013 mm]	7.5

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.64
Loss on Ignition, % (T 267)	
Water Content (T 265), %	24.6

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **3/1/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300784** Boring No./Sample No. **HB-FRV-202/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **611+78** Offset, ft: **13.5** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	92.7
¾ in. [19.0 mm]	86.8
½ in. [12.5 mm]	84.6
⅜ in. [9.5 mm]	80.4
¼ in. [6.3 mm]	73.4
No. 4 [4.75 mm]	68.7
No. 10 [2.00 mm]	54.3
No. 20 [0.850 mm]	40.9
No. 40 [0.425 mm]	31.8
No. 60 [0.250 mm]	26.4
No. 100 [0.150 mm]	21.8
No. 200 [0.075 mm]	16.6

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	4.7

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/16/2018**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300785** Boring No./Sample No. **HB-FRV-202/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **611+78** Offset, ft: **13.5** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	97.1
½ in. [12.5 mm]	94.4
⅜ in. [9.5 mm]	92.4
¼ in. [6.3 mm]	87.3
No. 4 [4.75 mm]	83.3
No. 10 [2.00 mm]	66.8
No. 20 [0.850 mm]	47.2
No. 40 [0.425 mm]	33.4
No. 60 [0.250 mm]	25.4
No. 100 [0.150 mm]	20.9
No. 200 [0.075 mm]	15.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.2

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **2/16/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300786** Boring No./Sample No. **HB-FRV-202/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **611+78** Offset, ft: **13.5** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	98.2
½ in. [12.5 mm]	93.3
⅜ in. [9.5 mm]	88.7
¼ in. [6.3 mm]	79.6
No. 4 [4.75 mm]	74.4
No. 10 [2.00 mm]	56.7
No. 20 [0.850 mm]	42.1
No. 40 [0.425 mm]	34.0
No. 60 [0.250 mm]	28.8
No. 100 [0.150 mm]	25.0
No. 200 [0.075 mm]	19.6

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.0

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300787** Boring No./Sample No. **HB-FRV-203/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **629+00** Offset, ft: **13.5** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	97.9
½ in. [12.5 mm]	92.9
⅜ in. [9.5 mm]	89.3
¼ in. [6.3 mm]	78.8
No. 4 [4.75 mm]	70.6
No. 10 [2.00 mm]	52.2
No. 20 [0.850 mm]	38.1
No. 40 [0.425 mm]	29.7
No. 60 [0.250 mm]	24.9
No. 100 [0.150 mm]	20.9
No. 200 [0.075 mm]	15.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	4.5

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300788** Boring No./Sample No. **HB-FRV-203/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **629+00** Offset, ft: **13.5** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	96.7
½ in. [12.5 mm]	88.3
⅜ in. [9.5 mm]	84.3
¼ in. [6.3 mm]	76.6
No. 4 [4.75 mm]	71.4
No. 10 [2.00 mm]	56.5
No. 20 [0.850 mm]	44.1
No. 40 [0.425 mm]	37.5
No. 60 [0.250 mm]	33.2
No. 100 [0.150 mm]	28.0
No. 200 [0.075 mm]	21.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	7.9

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300789** Boring No./Sample No. **HB-FRV-203/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/7/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **629+00** Offset, ft: **13.5** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	93.2
½ in. [12.5 mm]	90.4
⅜ in. [9.5 mm]	85.2
¼ in. [6.3 mm]	75.8
No. 4 [4.75 mm]	70.3
No. 10 [2.00 mm]	55.5
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	38.3
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	25.1
[0.0309 mm]	19.4
[0.0203 mm]	16.3
[0.0118 mm]	14.3
[0.0087 mm]	11.2
[0.0063 mm]	9.2
[0.0032 mm]	6.1
[0.0014 mm]	3.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.63
Loss on Ignition, % (T 267)	
Water Content (T 265), %	9.5

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300790** Boring No./Sample No. **HB-FRV-204/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **629+75.5** Offset, ft: **14.0** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	98.6
½ in. [12.5 mm]	95.1
⅜ in. [9.5 mm]	92.1
¼ in. [6.3 mm]	84.2
No. 4 [4.75 mm]	77.7
No. 10 [2.00 mm]	58.6
No. 20 [0.850 mm]	42.4
No. 40 [0.425 mm]	32.9
No. 60 [0.250 mm]	27.1
No. 100 [0.150 mm]	23.3
No. 200 [0.075 mm]	17.3

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	4.6

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No.

Boring No./Sample No.

Sample Description

Sampled

Received

300791

HB-FRV-204/2D

GEOTECHNICAL (DISTURBED)

11/14/2017

1/31/2018

Sample Type: **GEOTECHNICAL** Location:

Station: **629+75.5** Offset, ft: **14.0** RT Dbfg, ft: **5.0-7.0**

WIN/Town 022656.00 - FRENCHVILLE, FORT KE

Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	93.6
⅜ in. [9.5 mm]	88.3
¼ in. [6.3 mm]	79.8
No. 4 [4.75 mm]	72.3
No. 10 [2.00 mm]	54.0
No. 20 [0.850 mm]	40.7
No. 40 [0.425 mm]	33.0
No. 60 [0.250 mm]	27.7
No. 100 [0.150 mm]	23.9
No. 200 [0.075 mm]	18.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.4

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300792** Boring No./Sample No. **HB-FRV-204/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **629+75.5** Offset, ft: **14.0** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	96.0
½ in. [12.5 mm]	92.1
⅜ in. [9.5 mm]	86.3
¼ in. [6.3 mm]	80.9
No. 4 [4.75 mm]	76.6
No. 10 [2.00 mm]	66.2
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	53.4
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	44.8
[0.0237 mm]	40.2
[0.0159 mm]	36.5
[0.0098 mm]	31.6
[0.0073 mm]	26.8
[0.0055 mm]	21.9
[0.0029 mm]	14.6
[0.0013 mm]	7.3

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.71
Loss on Ignition, % (T 267)	
Water Content (T 265), %	10.3

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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Reported by: **GREGORY LIDSTONE**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300793** Boring No./Sample No. **HB-FRV-205/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **630+48** Offset, ft: **13.0** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	96.3
½ in. [12.5 mm]	91.7
⅜ in. [9.5 mm]	87.4
¼ in. [6.3 mm]	79.9
No. 4 [4.75 mm]	73.4
No. 10 [2.00 mm]	56.1
No. 20 [0.850 mm]	41.0
No. 40 [0.425 mm]	32.0
No. 60 [0.250 mm]	26.3
No. 100 [0.150 mm]	22.4
No. 200 [0.075 mm]	16.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	3.8

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300794** Boring No./Sample No. **HB-FRV-205/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **630+48** Offset, ft: **13.0** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	97.9
½ in. [12.5 mm]	93.1
⅜ in. [9.5 mm]	87.8
¼ in. [6.3 mm]	80.3
No. 4 [4.75 mm]	73.9
No. 10 [2.00 mm]	57.0
No. 20 [0.850 mm]	42.4
No. 40 [0.425 mm]	33.2
No. 60 [0.250 mm]	27.1
No. 100 [0.150 mm]	22.5
No. 200 [0.075 mm]	16.5

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.3

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300795** Boring No./Sample No. **HB-FRV-205/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **630+48** Offset, ft: **13.0** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	94.3
⅜ in. [9.5 mm]	90.8
¼ in. [6.3 mm]	82.6
No. 4 [4.75 mm]	77.7
No. 10 [2.00 mm]	62.3
No. 20 [0.850 mm]	49.2
No. 40 [0.425 mm]	40.6
No. 60 [0.250 mm]	35.4
No. 100 [0.150 mm]	30.7
No. 200 [0.075 mm]	26.2

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	8.5

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300796** Boring No./Sample No. **HB-FRV-206/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **631+31** Offset, ft: **13.5** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	96.4
⅜ in. [9.5 mm]	93.4
¼ in. [6.3 mm]	86.5
No. 4 [4.75 mm]	80.8
No. 10 [2.00 mm]	61.8
No. 20 [0.850 mm]	43.4
No. 40 [0.425 mm]	32.5
No. 60 [0.250 mm]	26.8
No. 100 [0.150 mm]	22.4
No. 200 [0.075 mm]	17.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.0

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300797** Boring No./Sample No. **HB-FRV-206/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **631+31** Offset, ft: **13.5** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	93.3
½ in. [12.5 mm]	84.8
⅜ in. [9.5 mm]	83.1
¼ in. [6.3 mm]	76.6
No. 4 [4.75 mm]	72.8
No. 10 [2.00 mm]	60.2
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	44.2
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	34.5
[0.0272 mm]	28.2
[0.0180 mm]	24.8
[0.0110 mm]	20.3
[0.0081 mm]	15.8
[0.0059 mm]	13.5
[0.0030 mm]	9.0
[0.0013 mm]	4.5
[mm]	

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.72
Loss on Ignition, % (T 267)	
Water Content (T 265), %	7.0

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/22/2018**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300798** Boring No./Sample No. **HB-FRV-206/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **631+31** Offset, ft: **13.5** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	93.5
⅜ in. [9.5 mm]	89.8
¼ in. [6.3 mm]	83.3
No. 4 [4.75 mm]	78.4
No. 10 [2.00 mm]	65.0
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	47.9
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	35.7
[0.0277 mm]	28.9
[0.0183 mm]	25.3
[0.0112 mm]	19.2
[0.0082 mm]	15.7
[0.0059 mm]	13.3
[0.0030 mm]	9.6
[0.0013 mm]	4.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.71
Loss on Ignition, % (T 267)	
Water Content (T 265), %	7.6

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/23/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **300799** Boring No./Sample No. **HB-FRV-207/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **641+00** Offset, ft: **13.0** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	98.8
½ in. [12.5 mm]	95.0
⅜ in. [9.5 mm]	90.7
¼ in. [6.3 mm]	82.5
No. 4 [4.75 mm]	76.9
No. 10 [2.00 mm]	59.2
No. 20 [0.850 mm]	43.5
No. 40 [0.425 mm]	33.9
No. 60 [0.250 mm]	27.3
No. 100 [0.150 mm]	23.0
No. 200 [0.075 mm]	17.6

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.6

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **2/16/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No.

Boring No./Sample No.

Sample Description

Sampled

Received

300800

HB-FRV-207/2D

GEOTECHNICAL (DISTURBED)

11/14/2017

1/31/2018

Sample Type: **GEOTECHNICAL** Location:Station: **641+00** Offset, ft: **13.0** RT Dbfg, ft: **5.0-7.0**

WIN/Town 022656.00 - FRENCHVILLE, FORT KE

Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	96.1
½ in. [12.5 mm]	94.0
⅜ in. [9.5 mm]	91.7
¼ in. [6.3 mm]	86.1
No. 4 [4.75 mm]	81.8
No. 10 [2.00 mm]	69.0
No. 20 [0.850 mm]	56.6
No. 40 [0.425 mm]	48.1
No. 60 [0.250 mm]	42.4
No. 100 [0.150 mm]	35.9
No. 200 [0.075 mm]	27.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	7.8

Consolidation (T 216)

Trimmings, Water Content, %			
	Initial	Final	
Water Content, %			Pmin
Dry Density, lbs/ft³			Pp
Void Ratio			Pmax
Saturation, %			Cc/C'c

Vane Shear Test on Shelby Tubes (Maine DOT)

[illegible]

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/16/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303001** Boring No./Sample No. **HB-FRV-207/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **641+00** Offset, ft: **13.0** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	97.7
½ in. [12.5 mm]	92.1
⅜ in. [9.5 mm]	91.2
¼ in. [6.3 mm]	86.1
No. 4 [4.75 mm]	81.7
No. 10 [2.00 mm]	66.9
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	41.5
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	25.3
[0.0328 mm]	18.9
[0.0217 mm]	14.2
[0.0120 mm]	11.8
[0.0087 mm]	9.4
[0.0062 mm]	8.3
[0.0033 mm]	5.9
[0.0014 mm]	2.3

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.68
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.3

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **3/1/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303002** Boring No./Sample No. **HB-FRV-208/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **641+85.5** Offset, ft: **14.0** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	97.5
¾ in. [19.0 mm]	94.7
½ in. [12.5 mm]	91.4
⅜ in. [9.5 mm]	88.8
¼ in. [6.3 mm]	82.4
No. 4 [4.75 mm]	77.3
No. 10 [2.00 mm]	59.2
No. 20 [0.850 mm]	41.6
No. 40 [0.425 mm]	31.5
No. 60 [0.250 mm]	25.3
No. 100 [0.150 mm]	21.3
No. 200 [0.075 mm]	16.2

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.5

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/16/2018**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303003** Boring No./Sample No. **HB-FRV-208/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **641+85.5** Offset, ft: **14.0** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	91.3
½ in. [12.5 mm]	83.2
⅜ in. [9.5 mm]	78.5
¼ in. [6.3 mm]	71.5
No. 4 [4.75 mm]	66.3
No. 10 [2.00 mm]	50.7
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	34.8
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	24.1
[0.0305 mm]	16.7
[0.0198 mm]	14.9
[0.0118 mm]	12.1
[0.0086 mm]	9.3
[0.0062 mm]	7.5
[0.0031 mm]	5.6
[0.0013 mm]	3.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.67
Loss on Ignition, % (T 267)	
Water Content (T 265), %	11.0

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/23/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303004** Boring No./Sample No. **HB-FRV-208/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **641+85.5** Offset, ft: **14.0** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	95.5
⅜ in. [9.5 mm]	93.7
¼ in. [6.3 mm]	87.1
No. 4 [4.75 mm]	80.9
No. 10 [2.00 mm]	63.7
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	44.0
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	31.0
[0.0305 mm]	22.6
[0.0198 mm]	20.1
[0.0117 mm]	17.6
[0.0085 mm]	15.1
[0.0061 mm]	12.5
[0.0031 mm]	8.8
[0.0013 mm]	5.0

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.66
Loss on Ignition, % (T 267)	
Water Content (T 265), %	7.6

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/26/2018**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303005** Boring No./Sample No. **HB-FRV-209/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **642+71** Offset, ft: **14.0** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	96.4
¾ in. [19.0 mm]	92.3
½ in. [12.5 mm]	91.8
⅜ in. [9.5 mm]	88.1
¼ in. [6.3 mm]	80.5
No. 4 [4.75 mm]	75.3
No. 10 [2.00 mm]	57.6
No. 20 [0.850 mm]	41.7
No. 40 [0.425 mm]	31.9
No. 60 [0.250 mm]	25.8
No. 100 [0.150 mm]	21.8
No. 200 [0.075 mm]	16.6

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	4.7

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **2/14/2018**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303006** Boring No./Sample No. **HB-FRV-209/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **642+71** Offset, ft: **14.0** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	97.5
½ in. [12.5 mm]	94.8
⅜ in. [9.5 mm]	91.4
¼ in. [6.3 mm]	85.4
No. 4 [4.75 mm]	80.1
No. 10 [2.00 mm]	63.6
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	47.7
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	36.7
[0.0289 mm]	26.6
[0.0195 mm]	20.6
[0.0114 mm]	19.4
[0.0085 mm]	14.5
[0.0060 mm]	13.3
[0.0030 mm]	9.7
[0.0013 mm]	4.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.67
Loss on Ignition, % (T 267)	
Water Content (T 265), %	21.3

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/26/2018**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303007** Boring No./Sample No. **HB-FRV-209/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **642+71** Offset, ft: **14.0** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	96.3
⅜ in. [9.5 mm]	89.9
¼ in. [6.3 mm]	81.9
No. 4 [4.75 mm]	74.4
No. 10 [2.00 mm]	55.8
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	37.3
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	25.0
[0.0305 mm]	18.2
[0.0198 mm]	16.2
[0.0118 mm]	13.2
[0.0086 mm]	10.1
[0.0062 mm]	9.1
[0.0031 mm]	6.1
[0.0013 mm]	4.0

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.65
Loss on Ignition, % (T 267)	
Water Content (T 265), %	7.0

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/22/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303008** Boring No./Sample No. **HB-FRV-210/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/14/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **747+50** Offset, ft: **13.7** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	96.3
½ in. [12.5 mm]	93.3
⅜ in. [9.5 mm]	89.0
¼ in. [6.3 mm]	79.0
No. 4 [4.75 mm]	72.1
No. 10 [2.00 mm]	51.1
No. 20 [0.850 mm]	34.7
No. 40 [0.425 mm]	26.0
No. 60 [0.250 mm]	20.8
No. 100 [0.150 mm]	17.2
No. 200 [0.075 mm]	12.6

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.5

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/15/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303009** Boring No./Sample No. **HB-FRV-210/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **747+50** Offset, ft: **13.7** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	98.4
½ in. [12.5 mm]	90.5
⅜ in. [9.5 mm]	83.5
¼ in. [6.3 mm]	74.1
No. 4 [4.75 mm]	66.1
No. 10 [2.00 mm]	45.5
No. 20 [0.850 mm]	29.3
No. 40 [0.425 mm]	20.1
No. 60 [0.250 mm]	15.8
No. 100 [0.150 mm]	12.4
No. 200 [0.075 mm]	9.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	3.2

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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Date Reported: **2/16/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303010** Boring No./Sample No. **HB-FRV-210/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **747+50** Offset, ft: **13.7** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	
⅜ in. [9.5 mm]	100.0
¼ in. [6.3 mm]	99.8
No. 4 [4.75 mm]	99.6
No. 10 [2.00 mm]	99.0
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	97.8
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	72.8
[0.0312 mm]	28.9
[0.0209 mm]	19.9
[0.0126 mm]	12.7
[0.0090 mm]	10.8
[0.0065 mm]	7.2
[0.0032 mm]	3.6
[0.0013 mm]	3.6

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.63
Loss on Ignition, % (T 267)	
Water Content (T 265), %	13.8

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303011** Boring No./Sample No. **HB-FRV-211/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **748+64** Offset, ft: **14.0** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	100.0
⅜ in. [9.5 mm]	94.8
¼ in. [6.3 mm]	89.6
No. 4 [4.75 mm]	84.9
No. 10 [2.00 mm]	63.4
No. 20 [0.850 mm]	44.4
No. 40 [0.425 mm]	33.6
No. 60 [0.250 mm]	27.1
No. 100 [0.150 mm]	23.1
No. 200 [0.075 mm]	18.0

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	7.0

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

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SAMPLE INFORMATION

Reference No. **303012** Boring No./Sample No. **HB-FRV-211/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **748+64** Offset, ft: **14.0** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	96.4
½ in. [12.5 mm]	93.0
⅜ in. [9.5 mm]	88.6
¼ in. [6.3 mm]	80.8
No. 4 [4.75 mm]	74.8
No. 10 [2.00 mm]	58.4
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	42.3
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	15.4
[0.0329 mm]	10.4
[0.0215 mm]	7.3
[0.0125 mm]	6.2
[0.0089 mm]	5.2
[0.0064 mm]	4.1
[0.0034 mm]	3.1
[0.0014 mm]	1.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.69
Loss on Ignition, % (T 267)	
Water Content (T 265), %	4.5

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **3/1/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303013** Boring No./Sample No. **HB-FRV-211/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **748+64** Offset, ft: **14.0** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	
⅜ in. [9.5 mm]	
¼ in. [6.3 mm]	
No. 4 [4.75 mm]	
No. 10 [2.00 mm]	100.0
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	99.9
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	62.7
[0.0333 mm]	16.5
[0.0217 mm]	11.0
[0.0126 mm]	9.2
[0.0090 mm]	7.4
[0.0064 mm]	5.5
[0.0032 mm]	3.7
[0.0013 mm]	1.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.68
Loss on Ignition, % (T 267)	
Water Content (T 265), %	9.9

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303014** Boring No./Sample No. **HB-FRV-212/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **749+50** Offset, ft: **14.5** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	97.9
⅜ in. [9.5 mm]	94.7
¼ in. [6.3 mm]	84.8
No. 4 [4.75 mm]	77.5
No. 10 [2.00 mm]	58.2
No. 20 [0.850 mm]	41.7
No. 40 [0.425 mm]	31.3
No. 60 [0.250 mm]	25.3
No. 100 [0.150 mm]	20.3
No. 200 [0.075 mm]	15.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.7

Consolidation (T 216)

Trimmings, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/16/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303015** Boring No./Sample No. **HB-FRV-212/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **749+50** Offset, ft: **14.5** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	89.3
⅜ in. [9.5 mm]	84.2
¼ in. [6.3 mm]	77.4
No. 4 [4.75 mm]	70.8
No. 10 [2.00 mm]	57.8
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	42.5
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	20.5
[0.0328 mm]	13.1
[0.0214 mm]	10.9
[0.0124 mm]	8.7
[0.0090 mm]	6.5
[0.0064 mm]	5.4
[0.0032 mm]	4.3
[0.0013 mm]	2.2

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.64
Loss on Ignition, % (T 267)	
Water Content (T 265), %	6.6

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/22/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303016** Boring No./Sample No. **HB-FRV-212/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **749+50** Offset, ft: **14.5** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	97.3
½ in. [12.5 mm]	84.9
⅜ in. [9.5 mm]	76.7
¼ in. [6.3 mm]	68.4
No. 4 [4.75 mm]	61.7
No. 10 [2.00 mm]	47.3
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	33.3
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	15.3
[0.0323 mm]	9.4
[0.0208 mm]	7.9
[0.0123 mm]	6.3
[0.0089 mm]	4.7
[0.0063 mm]	3.9
[0.0031 mm]	3.1
[0.0013 mm]	1.6

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.71
Loss on Ignition, % (T 267)	
Water Content (T 265), %	8.0

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

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Date Reported: **2/23/2018**

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GEOTECHNICAL TEST REPORT

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SAMPLE INFORMATION

Reference No. **303017** Boring No./Sample No. **HB-FRV-213/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **750+50** Offset, ft: **13.5** RT Dbfg, ft: **0.0-2.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	97.0
½ in. [12.5 mm]	92.3
⅜ in. [9.5 mm]	87.9
¼ in. [6.3 mm]	79.8
No. 4 [4.75 mm]	73.5
No. 10 [2.00 mm]	53.9
No. 20 [0.850 mm]	37.9
No. 40 [0.425 mm]	29.1
No. 60 [0.250 mm]	23.7
No. 100 [0.150 mm]	20.1
No. 200 [0.075 mm]	15.5

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	5.0

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **2/16/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303018** Boring No./Sample No. **HB-FRV-213/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **750+50** Offset, ft: **13.5** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	99.0
⅜ in. [9.5 mm]	98.0
¼ in. [6.3 mm]	96.4
No. 4 [4.75 mm]	95.3
No. 10 [2.00 mm]	93.6
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	91.0
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	72.1
[0.0263 mm]	48.1
[0.0181 mm]	39.4
[0.0111 mm]	30.9
[0.0082 mm]	24.0
[0.0061 mm]	17.2
[0.0031 mm]	12.0
[0.0013 mm]	6.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.67
Loss on Ignition, % (T 267)	
Water Content (T 265), %	19.8

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **3/1/2018**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **303019** Boring No./Sample No. **HB-FRV-213/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **11/15/2017** Received **1/31/2018**

Sample Type: **GEOTECHNICAL** Location: Station: **750+50** Offset, ft: **13.5** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FRENCHVILLE, FORT KE** Sampler: **CODY RUSSELL**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	
⅜ in. [9.5 mm]	
¼ in. [6.3 mm]	
No. 4 [4.75 mm]	100.0
No. 10 [2.00 mm]	100.0
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	99.8
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	80.0
[0.0289 mm]	39.9
[0.0198 mm]	29.0
[0.0121 mm]	20.0
[0.0088 mm]	14.5
[0.0064 mm]	10.9
[0.0032 mm]	7.3
[0.0013 mm]	3.6

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.67
Loss on Ignition, % (T 267)	
Water Content (T 265), %	16.2

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **2/26/2018**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380775** Boring No./Sample No. **HB-FRV-301/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/25/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **666+00** Offset, ft: **6.0** RT Dbfg, ft: **1.0-3.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	93.6
⅜ in. [9.5 mm]	90.5
¼ in. [6.3 mm]	81.5
No. 4 [4.75 mm]	75.1
No. 10 [2.00 mm]	56.5
No. 20 [0.850 mm]	42.3
No. 40 [0.425 mm]	32.9
No. 60 [0.250 mm]	27.2
No. 100 [0.150 mm]	23.2
No. 200 [0.075 mm]	17.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	3.9

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **12/20/2022**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380851** Boring No./Sample No. **HB-FRV-301/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/25/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **666+00** Offset, ft: **6.0** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	
⅜ in. [9.5 mm]	100.0
¼ in. [6.3 mm]	99.9
No. 4 [4.75 mm]	99.8
No. 10 [2.00 mm]	98.9
No. 20 [0.850 mm]	96.6
No. 40 [0.425 mm]	94.7
No. 60 [0.250 mm]	92.2
No. 100 [0.150 mm]	88.4
No. 200 [0.075 mm]	80.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	18.5

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **12/20/2022**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380852** Boring No./Sample No. **HB-FRV-301/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/25/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **666+00** Offset, ft: **6.0** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	
⅜ in. [9.5 mm]	
¼ in. [6.3 mm]	100.0
No. 4 [4.75 mm]	99.9
No. 10 [2.00 mm]	99.6
No. 20 [0.850 mm]	98.4
No. 40 [0.425 mm]	96.2
No. 60 [0.250 mm]	88.3
No. 100 [0.150 mm]	64.9
No. 200 [0.075 mm]	30.5

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	22.9

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **12/20/2022**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380853** Boring No./Sample No. **HB-FRV-301/5D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/25/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **666+00** Offset, ft: **6.0** RT Dbfg, ft: **20.0-22.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	90.6
½ in. [12.5 mm]	82.4
⅜ in. [9.5 mm]	81.1
¼ in. [6.3 mm]	72.6
No. 4 [4.75 mm]	64.8
No. 10 [2.00 mm]	47.4
No. 20 [0.850 mm]	36.6
No. 40 [0.425 mm]	29.5
No. 60 [0.250 mm]	23.6
No. 100 [0.150 mm]	19.5
No. 200 [0.075 mm]	14.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	11.1

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **12/20/2022**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380854** Boring No./Sample No. **HB-FRV-301/6D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/25/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **666+00** Offset, ft: **6.0** RT Dbfg, ft: **25.0-27.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	98.2
½ in. [12.5 mm]	94.1
⅜ in. [9.5 mm]	92.1
¼ in. [6.3 mm]	89.0
No. 4 [4.75 mm]	86.7
No. 10 [2.00 mm]	79.3
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	71.8
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	65.5
[0.0276 mm]	35.1
[0.0185 mm]	29.2
[0.0110 mm]	26.3
[0.0080 mm]	21.9
[0.0059 mm]	16.1
[0.0030 mm]	11.7
[0.0013 mm]	7.3

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.74
Loss on Ignition, % (T 267)	
Water Content (T 265), %	11.7

Consolidation (T 216)

Trimming, Water Content, %					
	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **1/6/2023**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380855** Boring No./Sample No. **HB-FRV-301/7D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/25/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **666+00** Offset, ft: **6.0** RT Dbfg, ft: **30.5-32.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	94.8
½ in. [12.5 mm]	83.3
⅜ in. [9.5 mm]	78.7
¼ in. [6.3 mm]	69.3
No. 4 [4.75 mm]	62.5
No. 10 [2.00 mm]	46.9
No. 20 [0.850 mm]	35.2
No. 40 [0.425 mm]	29.0
No. 60 [0.250 mm]	25.8
No. 100 [0.150 mm]	23.4
No. 200 [0.075 mm]	19.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	10.5

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **12/20/2022**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380856** Boring No./Sample No. **HB-FRV-301/8D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/25/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **666+00** Offset, ft: **6.0** RT Dbfg, ft: **35.0-37.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	96.0
½ in. [12.5 mm]	86.2
⅜ in. [9.5 mm]	83.2
¼ in. [6.3 mm]	74.8
No. 4 [4.75 mm]	70.6
No. 10 [2.00 mm]	58.5
No. 20 [0.850 mm]	49.3
No. 40 [0.425 mm]	44.1
No. 60 [0.250 mm]	41.0
No. 100 [0.150 mm]	38.6
No. 200 [0.075 mm]	34.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	10.0

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **12/20/2022**

Paper Copy: Lab File; Project File; Geotech File



GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380857** Boring No./Sample No. **HB-FRV-302/1D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **12/6/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **667+00** Offset, ft: **14.0** RT Dbfg, ft: **1.0-3.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	92.5
⅜ in. [9.5 mm]	90.0
¼ in. [6.3 mm]	81.0
No. 4 [4.75 mm]	74.8
No. 10 [2.00 mm]	54.7
No. 20 [0.850 mm]	39.9
No. 40 [0.425 mm]	30.7
No. 60 [0.250 mm]	25.2
No. 100 [0.150 mm]	21.6
No. 200 [0.075 mm]	16.0

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	4.3

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **12/20/2022**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380858** Boring No./Sample No. **HB-FRV-302/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **12/6/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **667+00** Offset, ft: **14.0** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	98.5
⅜ in. [9.5 mm]	98.2
¼ in. [6.3 mm]	94.8
No. 4 [4.75 mm]	91.3
No. 10 [2.00 mm]	76.3
No. 20 [0.850 mm]	57.1
No. 40 [0.425 mm]	31.7
No. 60 [0.250 mm]	16.8
No. 100 [0.150 mm]	13.1
No. 200 [0.075 mm]	7.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	6.4

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **12/20/2022**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380859** Boring No./Sample No. **HB-FRV-302/5D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **12/6/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **667+00** Offset, ft: **14.0** RT Dbfg, ft: **20.0-22.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	97.4
⅜ in. [9.5 mm]	94.6
¼ in. [6.3 mm]	89.1
No. 4 [4.75 mm]	86.0
No. 10 [2.00 mm]	78.0
No. 20 [0.850 mm]	70.4
No. 40 [0.425 mm]	59.4
No. 60 [0.250 mm]	35.1
No. 100 [0.150 mm]	25.9
No. 200 [0.075 mm]	19.5

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	8.4

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **12/20/2022**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380860** Boring No./Sample No. **HB-FRV-302/6D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **12/6/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **667+00** Offset, ft: **14.0** RT Dbfg, ft: **25.0-27.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	
⅜ in. [9.5 mm]	
¼ in. [6.3 mm]	100.0
No. 4 [4.75 mm]	100.0
No. 10 [2.00 mm]	99.8
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	99.0
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	97.4
[0.0250 mm]	76.6
[0.0170 mm]	66.5
[0.0107 mm]	51.1
[0.0079 mm]	40.9
[0.0059 mm]	28.1
[0.0030 mm]	20.5
[0.0013 mm]	12.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.75
Loss on Ignition, % (T 267)	
Water Content (T 265), %	24.9

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

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Date Reported: **1/6/2023**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380861** Boring No./Sample No. **HB-FRV-302/8D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **12/6/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **667+00** Offset, ft: **14.0** RT Dbfg, ft: **35.0-37.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	
⅜ in. [9.5 mm]	
¼ in. [6.3 mm]	
No. 4 [4.75 mm]	100.0
No. 10 [2.00 mm]	100.0
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	99.8
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	99.1
[0.0258 mm]	85.5
[0.0168 mm]	79.8
[0.0106 mm]	65.6
[0.0078 mm]	57.0
[0.0058 mm]	45.6
[0.0030 mm]	34.2
[0.0013 mm]	25.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.65
Loss on Ignition, % (T 267)	
Water Content (T 265), %	25.1

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**

Date Reported: **1/6/2023**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380862** Boring No./Sample No. **HB-FRV-302/10D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **12/6/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **667+00** Offset, ft: **14.0** RT Dbfg, ft: **45.0-47.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	100.0
¾ in. [19.0 mm]	90.4
½ in. [12.5 mm]	78.6
⅜ in. [9.5 mm]	75.8
¼ in. [6.3 mm]	69.2
No. 4 [4.75 mm]	64.1
No. 10 [2.00 mm]	51.9
No. 20 [0.850 mm]	43.4
No. 40 [0.425 mm]	38.5
No. 60 [0.250 mm]	36.0
No. 100 [0.150 mm]	34.1
No. 200 [0.075 mm]	31.2

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	11.6

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380863** Boring No./Sample No. **HB-FRV-302/12D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **12/6/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **667+00** Offset, ft: **14.0** RT Dbfg, ft: **55.0-57.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	93.8
¾ in. [19.0 mm]	89.4
½ in. [12.5 mm]	81.9
⅜ in. [9.5 mm]	79.4
¼ in. [6.3 mm]	69.7
No. 4 [4.75 mm]	63.3
No. 10 [2.00 mm]	46.7
No. 20 [0.850 mm]	34.0
No. 40 [0.425 mm]	27.1
No. 60 [0.250 mm]	23.5
No. 100 [0.150 mm]	21.1
No. 200 [0.075 mm]	17.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	9.3

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380864** Boring No./Sample No. **HB-FRV-302/13D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **12/6/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **667+00** Offset, ft: **14.0** RT Dbfg, ft: **60.0-62.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	93.4
¾ in. [19.0 mm]	87.7
½ in. [12.5 mm]	74.5
⅜ in. [9.5 mm]	71.0
¼ in. [6.3 mm]	63.4
No. 4 [4.75 mm]	58.8
No. 10 [2.00 mm]	46.3
No. 20 [0.850 mm]	36.4
No. 40 [0.425 mm]	30.3
No. 60 [0.250 mm]	26.3
No. 100 [0.150 mm]	23.0
No. 200 [0.075 mm]	18.4

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	7.3

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380865** Boring No./Sample No. **HB-FRV-303/2D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/26/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **668+00** Offset, ft: **15.0** RT Dbfg, ft: **5.0-7.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	100.0
⅜ in. [9.5 mm]	99.0
¼ in. [6.3 mm]	99.0
No. 4 [4.75 mm]	99.0
No. 10 [2.00 mm]	98.7
No. 20 [0.850 mm]	97.3
No. 40 [0.425 mm]	93.5
No. 60 [0.250 mm]	84.5
No. 100 [0.150 mm]	70.1
No. 200 [0.075 mm]	39.6

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	19.2

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **12/20/2022**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380866** Boring No./Sample No. **HB-FRV-303/3D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/26/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **668+00** Offset, ft: **15.0** RT Dbfg, ft: **10.0-12.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	100.0
⅜ in. [9.5 mm]	99.8
¼ in. [6.3 mm]	99.1
No. 4 [4.75 mm]	98.6
No. 10 [2.00 mm]	93.5
No. 20 [0.850 mm]	80.9
No. 40 [0.425 mm]	44.1
No. 60 [0.250 mm]	24.7
No. 100 [0.150 mm]	15.7
No. 200 [0.075 mm]	7.8

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	9.5

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **12/20/2022**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380867** Boring No./Sample No. **HB-FRV-303/5D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/26/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **668+00** Offset, ft: **15.0** RT Dbfg, ft: **20.0-22.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	100.0
½ in. [12.5 mm]	94.9
⅜ in. [9.5 mm]	93.3
¼ in. [6.3 mm]	89.0
No. 4 [4.75 mm]	85.5
No. 10 [2.00 mm]	71.6
No. 20 [0.850 mm]	52.2
No. 40 [0.425 mm]	36.2
No. 60 [0.250 mm]	22.7
No. 100 [0.150 mm]	16.7
No. 200 [0.075 mm]	11.7

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	10.6

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **12/20/2022**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380868** Boring No./Sample No. **HB-FRV-303/7D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/26/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **668+00** Offset, ft: **15.0** RT Dbfg, ft: **30.0-32.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	
⅜ in. [9.5 mm]	
¼ in. [6.3 mm]	
No. 4 [4.75 mm]	100.0
No. 10 [2.00 mm]	100.0
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	99.8
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	96.6
[0.0295 mm]	62.7
[0.0195 mm]	54.9
[0.0126 mm]	31.4
[0.0091 mm]	26.1
[0.0066 mm]	18.3
[0.0033 mm]	10.5
[0.0013 mm]	13.1

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	2.69
Loss on Ignition, % (T 267)	
Water Content (T 265), %	25.6

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

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Date Reported: **1/6/2023**

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GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380869** Boring No./Sample No. **HB-FRV-303/10D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/26/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **668+00** Offset, ft: **15.0** RT Dbfg, ft: **45.0-47.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 88)

Wash Method

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	
1 in. [25.0 mm]	
¾ in. [19.0 mm]	
½ in. [12.5 mm]	
⅜ in. [9.5 mm]	
¼ in. [6.3 mm]	
No. 4 [4.75 mm]	
No. 10 [2.00 mm]	100.0
No. 20 [0.850 mm]	
No. 40 [0.425 mm]	99.8
No. 60 [0.250 mm]	
No. 100 [0.150 mm]	
No. 200 [0.075 mm]	99.0
[0.0236 mm]	82.4
[0.0155 mm]	77.4
[0.0098 mm]	64.9
[0.0071 mm]	59.9
[0.0054 mm]	47.5
[0.0028 mm]	35.0
[0.0012 mm]	22.5

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	24
Plastic Limit (T 90), %	18
Plasticity Index (T 90), %	6
Specific Gravity, Corrected to 20°C (T 100)	2.75
Loss on Ignition, % (T 267)	
Water Content (T 265), %	24.3

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear tons/ft²	Remold tons/ft²	U. Shear tons/ft²	Remold tons/ft²		

Comments:

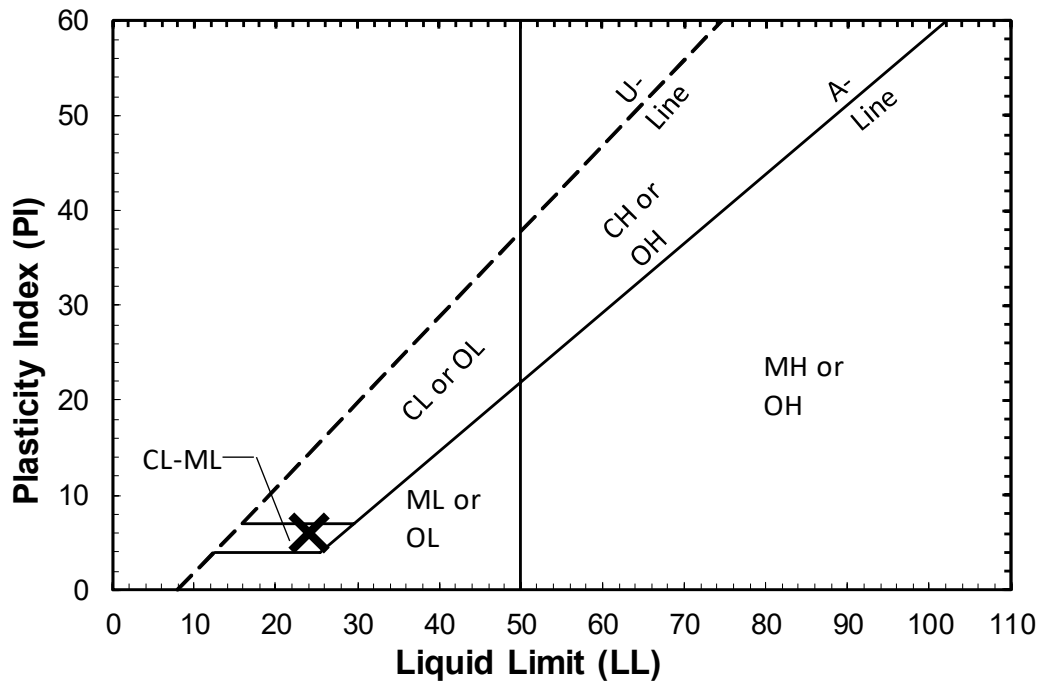
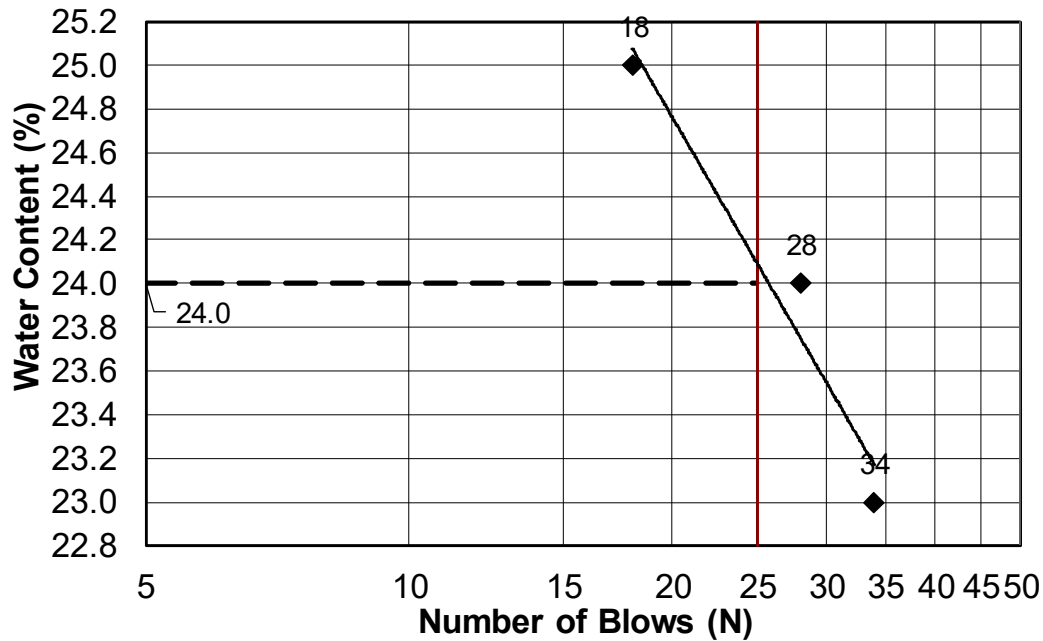
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Date Reported: **1/10/2023**

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TOWN	Fort Kent, Frenchville	Reference No.	380869
WIN	022656.00	Water Content, %	24.3
Sampled	10/26/2022	Liquid Limit @ 25 blows (T 89), %	24
Boring No./Sample No.	HB-FRV-303/10D	Plastic Limit (T 90), %	18
Station	668+00	Plasticity Index (T 90), %	6
Depth	45.0-47.0	Tested By	BBURR





GEOTECHNICAL TEST REPORT

Central Laboratory

SAMPLE INFORMATION

Reference No. **380870** Boring No./Sample No. **HB-FRV-303/13D** Sample Description **GEOTECHNICAL (DISTURBED)** Sampled **10/26/2022** Received **12/14/2022**

Sample Type: **GEOTECHNICAL** Location: Station: **668+00** Offset, ft: **15.0** RT Dbfg, ft: **60.0-62.0**

WIN/Town **022656.00 - FORT KENT, FRENCHVIL** Sampler: **BRUCE WILDER**

TEST RESULTS

Sieve Analysis (T 27, T 11)

Wash Method

Procedure A

SIEVE SIZE U.S. [SI]	% Passing
3 in. [75.0 mm]	100.0
1 in. [25.0 mm]	96.9
¾ in. [19.0 mm]	92.3
½ in. [12.5 mm]	84.2
⅜ in. [9.5 mm]	81.8
¼ in. [6.3 mm]	74.2
No. 4 [4.75 mm]	69.5
No. 10 [2.00 mm]	57.7
No. 20 [0.850 mm]	49.5
No. 40 [0.425 mm]	44.7
No. 60 [0.250 mm]	42.1
No. 100 [0.150 mm]	40.2
No. 200 [0.075 mm]	37.3

Miscellaneous Tests

Liquid Limit @ 25 blows (T 89), %	
Plastic Limit (T 90), %	
Plasticity Index (T 90), %	
Specific Gravity, Corrected to 20°C (T 100)	
Loss on Ignition, % (T 267)	
Water Content (T 265), %	10.6

Consolidation (T 216)

Trimming, Water Content, %

	Initial	Final		Void Ratio	% Strain
Water Content, %			Pmin		
Dry Density, lbs/ft³			Pp		
Void Ratio			Pmax		
Saturation, %			Cc/C'c		

Vane Shear Test on Shelby Tubes (Maine DOT)

Depth taken in tube, ft	3 In.		6 In.		Water Content, %	Description of Material Sampled at the Various Tube Depths
	U. Shear	Remold	U. Shear	Remold		
	tons/ft²	tons/ft²	tons/ft²	tons/ft²		

Comments:

AUTHORIZATION AND DISTRIBUTION

Reported by: **GREGORY LIDSTONE**Date Reported: **12/20/2022**

Paper Copy: Lab File; Project File; Geotech File

Appendix C

Calculations

Liquidity Index

Liquidity Index

$$LI := \frac{WC - PL}{LL - PL}$$

Das, Principles of Engineering, 7th Edition,
Equation 4.16

HB-FRV-303, 10D

$$WC := 24.3$$

$$LL := 24$$

$$PL := 18$$

$$LI := \frac{WC - PL}{LL - PL} = 1.05$$

Bowles, Foundation Design and Analysis, 5th Ed.

ratio is smaller than in the soil remolded for the Atterberg limit tests. If the soil is located below the groundwater table (GWT) where it is saturated, one would therefore expect that smaller void ratios would have less water space and the w_N value would be smaller. From this we might deduce the following:

If w_N is close to w_L ,	soil is normally consolidated.
If w_N is close to w_P ,	soil is some- to heavily overconsolidated.
If w_N is intermediate,	soil is somewhat overconsolidated.
If w_N is greater than w_L ,	soil is on verge of being a viscous liquid.

Although the foregoing gives a qualitative indication of overconsolidation, other methods must be used if a quantitative value of OCR is required.

We note that w_N can be larger than w_L , which simply indicates the in situ water content is above the liquid limit. Since the soil is existing in this state, it would seem that overburden pressure and interparticle cementation are providing stability (unless visual inspection indicates a liquid mass). It should be evident, however, that the slightest remolding disturbance has the potential to convert this type of deposit into a viscous fluid. Conversion may be localized, as for pile driving, or involve a large area. The larger w_N is with respect to w_L , the greater the potential for problems. The *liquidity index* has been proposed as a means of quantifying this problem and is defined as

$$I_L = \frac{w_N - w_P}{w_L - w_P} = \frac{w_N - w_P}{I_P} \quad (2-14)$$

where, by inspection, values of $I_L \geq 1$ are indicative of a liquefaction or “quick” potential. Another computed index that is sometimes used is the *relative consistency*,² defined as

$$I_C = \frac{w_L - w_N}{I_P} \quad (2-14a)$$

Here it is evident that if the natural water content $w_N \leq w_L$, the relative consistency is $I_C \geq 0$; and if $w_N > w_L$, the relative consistency or consistency index $I_C < 0$.

Where site evidence indicates that the soil may be stable even where $w_N \geq w_L$, other testing may be necessary. For example (and typical of highly conflicting site results reported in geotechnical literature) Ladd and Foott (1974) and Koutsoftas (1980) both noted near-surface marine deposits underlying marsh areas that exhibited large OCRs in the upper zones with w_N near or even exceeding w_L . This is, of course, contradictory to the previously given general statements that if w_N is close to w_L the soil is “normally consolidated” or is about to become a “viscous liquid.”

Grain Size

The grain size distribution test is used for soil classification and has value in designing soil filters. A soil filter is used to allow drainage of pore water under a hydraulic gradient with

²This is the definition given by ASTM D 653, but it is more commonly termed the *consistency index*, particularly outside the United States.

Precast Concrete Block Gravity Wall

Earth Pressure:

Soil Type 4 Properties from MaineDOT Bridge Design Guide (BDG)

Unit weight: $\gamma_{\text{type4}} := 125 \cdot \text{pcf}$

Internal Friction Angle: $\phi_{\text{type4}} := 32 \cdot \text{deg}$

Cohesion: $c_{\text{sand}} := 0 \cdot \text{psf}$

At-Rest Earth Pressure, K_o :

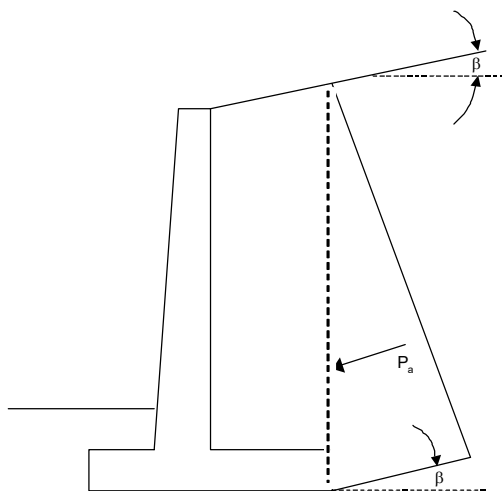
$\phi := 32 \cdot \text{deg}$

$K_o := 1 - \sin(\phi)$ LRFD Equation 3.11.5.2-1

$$K_o = 0.4701$$

Active Earth Pressure - Rankine Theory

from MaineDOT Bridge Design Guide Section 3.6.5.2 pg 3-7



Generally use Rankine for long heeled cantilever walls where the failure surface is un interrupted by the top of the wall system. The earth pressure is applied to a plane extending vertically up from the heel of the wall base and the weight of the soil on the inside of the vertical plane is considered as part of the wall weight. The failure sliding surface is not restricted by the top of the wall or the backface of the wall.

For cantilever walls with sloped backfill surface:

β = Angle of fill slope to the horizontal

$\beta := 0 \cdot \text{deg}$ assume horizontal backfill surface

$$K_{a_rankine_slope} := \frac{\cos(\beta) - \sqrt{\cos(\beta)^2 - \cos(\phi_{\text{type4}})^2}}{\cos(\beta) + \sqrt{\cos(\beta)^2 - \cos(\phi_{\text{type4}})^2}}$$

$$K_{a_rankine_slope} = 0.31$$

P_a is oriented at an angle of β to the vertical plane.

Bearing Resistance - Native Granular Soils:

Part 1 - Service Limit State

Nominal and factored Bearing Resistance - block wall on sand

Presumptive Bearing Resistance for Service Limit State ONLY

Reference: AASHTO LRFD Bridge Design Specifications 10th Edition 2024
Table C10.6.2.6.1-1 Presumptive Bearing Resistances for Spread Footings at the Service Limit State Modified after US Department of Navy (1982)

Type of Bearing Material: Sand (SM)

Density In Place: medium dense to dense

Bearing Resistance: Ordinary Range (ksf) 4 to 8

Recommended Value of Use:

$$q_{nom} := 4 \cdot \text{ksf}$$

Resistance factor at the **service limit state** = 1.0 (LRFD Article 10.5.5.1)

$$\phi_{service_bc} := 1.0$$

$$q_{factored_service_bc} := q_{nom} \cdot \phi_{service_bc}$$

$$q_{factored_service_bc} = 4 \cdot \text{ksf}$$

Part 2 - Strength Limit State

Nominal and factored Bearing Resistance - block wall on sand

Reference: Foundation Engineering and Design by JE Bowles Fifth Edition

Assumptions:

1. The walls will be founded between ~ Elev 510 feet to 515 feet
Bottom of Construction will be 2 feet below grade for. $D_{footing} := 2.0 \cdot \text{ft}$
2. Assumed parameters for fill soils: (Ref: Bowles 5th Ed Table 3-4)
Saturated unit weight: $\gamma_s := 125 \cdot \text{pcf}$
Dry unit weight: $\gamma_d := 120 \cdot \text{pcf}$
Internal friction angle: $\phi_{ns} := 32 \cdot \text{deg}$
Undrained shear strength: $c_{ns} := 0 \cdot \text{psf}$
3. Use Terzaghi strip equations as $L > B$
4. Effective stress analysis footing on ϕ -c soil (Bowles 5th Ed. Example 4-1 pg 231)

Depth to the water table: $D_w := 15 \cdot \text{ft}$ assumed Unit Weight of water: $\gamma_w := 62.4 \cdot \text{pcf}$

Effective stress at bearing level:

$$q_{eff} := (D_{footing}) \cdot (\gamma_s) \quad q_{eff} = 0.25 \cdot \text{ksf}$$

Maximum block width is 43.5 inches

$$B := 43.5 \cdot \text{in}$$

Terzaghi Shape factors - Bowles 5th Ed. table 4-1 pg 220

For a strip footing: $s_c := 1.0$ $s_\gamma := 1.0$

Meyerhof Bearing Capacity Factors - Bowles 5th Ed. table 4-4 pg 223

$$\text{For } \phi=32 \text{ deg} \quad N_c := 35.47 \quad N_q := 23.2 \quad N_\gamma := 22$$

Nominal Bearing Resistance per Terzaghi equation - Bowles 5th Ed. Table 4-1 pg 220

$$q_{\text{nominal}} := c_{\text{ns}} \cdot N_c \cdot s_c + q_{\text{eff}} \cdot N_q + 0.5(\gamma_s)B \cdot N_\gamma \cdot s_\gamma \quad q_{\text{nominal}} = 10.8 \cdot \text{ksf}$$

Factored Bearing Resistance for Strength Limit State

Resistance Factor: $\phi_b := 0.45$ AASHTO LRFD Table 10.5.5.2.2-1

$$q_{\text{factored}} := q_{\text{nominal}} \cdot \phi_b$$

$$q_{\text{factored}} = 4.9 \cdot \text{ksf}$$

$$B = 43.5 \cdot \text{in}$$

Recommend a limiting factored bearing resistance of 4.5 ksf for the Strength Limit State.

3.4 Construction Loads

The construction live load to be used for constructibility checks is 50 psf applied over the entire deck area. Consideration should be given to slab placement sequence for calculation of maximum force effects.

3.5 Railroad Loads

Railroad bridges should be designed according to the latest American Railroad Engineering and Maintenance-of-Way Association specifications (AREMA, 2002), with the Cooper live loading as determined by the railroad company.

3.6 Earth Loads

3.6.1 General

Earth pressures considered for wall and substructure design must use the appropriate soil weight shown in Table 3-3.

Table 3-3 Material Classification

Soil Type	Soil Description	Internal Angle of Friction of Soil, ϕ	Soil Total Unit Weight (pcf)	Coeff. of Friction, $\tan \delta$, Concrete to Soil	Interface Friction, Angle, Concrete to Soil δ
1	Very loose to loose silty sand and gravel Very loose to loose sand Very loose to medium density sandy silt Stiff to very stiff clay or clayey silt	29°*	100	0.35	19°
2	Medium density silty sand and gravel Medium density to dense sand Dense to very dense sandy silt	33°	120	0.40	22°
3	Dense to very dense silty sand and gravel Very dense sand	36°	130	0.45	24°
4	Granular underwater backfill Granular borrow	32°	125	0.45	24°
5	Gravel Borrow	36°	135	0.50	27°

* The value given for the internal angle of friction (ϕ) for stiff to very stiff silty clay or clayey silt should be used with caution due to the large possible variation with different moisture contents.

Table C10.6.2.5.1-1—Presumptive Bearing Resistance for Spread Footing Foundations at the Service Limit State Modified after U.S. Department of the Navy (1982)

Type of Bearing Material	Consistency in Place	Bearing Resistance (ksf)	
		Ordinary Range	Recommended Value of Use
Massive crystalline igneous and metamorphic rock: granite, diorite, basalt, gneiss, thoroughly cemented conglomerate (sound condition allows minor cracks)	Very hard, sound rock	120–200	160
Foliated metamorphic rock: slate, schist (sound condition allows minor cracks)	Hard sound rock	60–80	70
Sedimentary rock: hard cemented shales, siltstone, sandstone, limestone without cavities	Hard sound rock	30–50	40
Weathered or broken bedrock of any kind, except highly argillaceous rock (shale)	Medium hard rock	16–24	20
Compaction shale or other highly argillaceous rock in sound condition	Medium hard rock	16–24	20
Well-graded mixture of fine- and coarse-grained soil: glacial till, hardpan, boulder clay (GW-GC, GC, SC)	Very dense	16–24	20
Gravel, gravel-sand mixture, boulder-gravel mixtures (GW, GP, SW, SP)	Very dense	12–20	14
	Medium dense to dense	8–14	10
	Loose	4–12	6
Coarse to medium sand, and with little gravel (SW, SP)	Very dense	8–12	8
	Medium dense to dense	4–8	6
	Loose	2–6	3
Fine to medium sand, silty or clayey medium to coarse sand (SW, SM, SC)	Very dense	6–10	6
	Medium dense to dense	4–8	5
	Loose	2–4	3
Fine sand, silty or clayey medium to fine sand (SP, SM, SC)	Very dense	6–10	6
	Medium dense to dense	4–8	5
	Loose	2–4	3
Homogeneous inorganic clay, sandy or silty clay (CL, CH)	Very dense	6–12	8
	Medium dense to dense	2–6	4
	Loose	1–2	1
Inorganic silt, sandy or clayey silt, varved silt-clay-fine sand (ML, MH)	Very stiff to hard	4–8	6
	Medium stiff to stiff	2–6	3
	Soft	1–2	1

10.6.2.5.2—Semiempirical Procedures for Bearing Resistance

Bearing resistance on rock shall be determined using empirical correlation to the RMR. Local experience should be considered in the use of these semi-empirical procedures.

If the recommended value of presumptive bearing resistance exceeds either the unconfined compressive strength of the rock or the nominal resistance of the concrete, the presumptive bearing resistance shall be taken as the lesser of the unconfined compressive strength of the rock or the nominal resistance of the concrete. The nominal resistance of concrete shall be taken as $0.3f'_c$.

The Terzaghi Bearing-Capacity Equation

One of the early sets of bearing-capacity equations was proposed by Terzaghi (1943) as shown in Table 4-1. These equations are similar to Eq. (k) derived in the previous section, but Terzaghi used shape factors noted when the limitations of the equation were discussed. Terzaghi's equations were produced from a slightly modified bearing-capacity theory devel-

TABLE 4-1

Bearing-capacity equations by the several authors indicated

Terzaghi (1943). See Table 4-2 for typical values and for K_{py} values.

$$q_{ult} = cN_c s_c + \bar{q}N_q + 0.5\gamma B N_\gamma s_\gamma$$

$$N_q = \frac{a^2}{a \cos^2(45 + \phi/2)}$$

$$a = e^{(0.75\pi - \phi/2) \tan \phi}$$

$$N_c = (N_q - 1) \cot \phi$$

$$N_\gamma = \frac{\tan \phi}{2} \left(\frac{K_{py}}{\cos^2 \phi} - 1 \right)$$

For: strip	round	square
$s_c = 1.0$	1.3	1.3
$s_\gamma = 1.0$	0.6	0.8

Meyerhof (1963).* See Table 4-3 for shape, depth, and inclination factors.

Vertical load: $q_{ult} = cN_c s_c d_c + \bar{q}N_q s_q d_q + 0.5\gamma B' N_\gamma s_\gamma d_\gamma$

Inclined load: $q_{ult} = cN_c d_c i_c + \bar{q}N_q d_q i_q + 0.5\gamma B' N_\gamma d_\gamma i_\gamma$

$$N_q = e^{\pi \tan \phi} \tan^2 \left(45 + \frac{\phi}{2} \right)$$

$$N_c = (N_q - 1) \cot \phi$$

$$N_\gamma = (N_q - 1) \tan (1.4\phi)$$

Hansen (1970).* See Table 4-5 for shape, depth, and other factors.

General:† $q_{ult} = cN_c s_c d_c i_c g_c b_c + \bar{q}N_q s_q d_q i_q g_q b_q + 0.5\gamma B' N_\gamma s_\gamma d_\gamma i_\gamma g_\gamma b_\gamma$

when $\phi = 0$

use $q_{ult} = 5.14s_u(1 + s'_c + d'_c - i'_c - b'_c - g'_c) + \bar{q}$

$$N_q = \text{same as Meyerhof above}$$

$$N_c = \text{same as Meyerhof above}$$

$$N_\gamma = 1.5(N_q - 1) \tan \phi$$

Vesic (1973, 1975).* See Table 4-5 for shape, depth, and other factors.

Use Hansen's equations above.

$$N_q = \text{same as Meyerhof above}$$

$$N_c = \text{same as Meyerhof above}$$

$$N_\gamma = 2(N_q + 1) \tan \phi$$

*These methods require a trial process to obtain design base dimensions since width B and length L are needed to compute shape, depth, and influence factors.

†See Sec. 4-6 when $i_i < 1$.

N_γ values shows the following:

ϕ	Terzaghi* (1943)	Bolton and Lau (1993)	Kumbhojkar (1993)	Table 4-2 (this text)
34°	36	43.5	32	36
48	780	638	650.7	780.1

*See Terzaghi (1943), Fig. 38 and page 128.

Fortunately the N_γ term does not make a significant contribution to the computed bearing capacity, so any of the values from Tables 4-2 or 4-4 can be used (or perhaps an average).

Bolton and Lau (1993) produced new N_q and N_γ values for strip and circular footings for both smooth and rough ground interfacings. Their N_q values for either smooth or rough strips are little different from the Hansen values for rough strips. The N_q values for circular footings range to more than two times the strip values. The N_γ values for rough footings compare well with the Vesić values in Table 4-4. Since the Table 4-4 values have shape s_i and depth d_i factors to be applied, it appears that these “new” values offer little advantage and are certainly more difficult to compute (see comparison with Terzaghi values in preceding table).

Meyerhof's Bearing-Capacity Equation

Meyerhof (1951, 1963) proposed a bearing-capacity equation similar to that of Terzaghi but included a shape factor s_q with the depth term N_q . He also included depth factors d_i and

TABLE 4-4

Bearing-capacity factors for the Meyerhof, Hansen, and Vesić bearing-capacity equations

Note that N_c and N_q are the same for all three methods; subscripts identify author for N_γ

ϕ	N_c	N_q	$N_{\gamma(H)}$	$N_{\gamma(M)}$	$N_{\gamma(V)}$	N_q/N_c	$2 \tan \phi (1 - \sin \phi)^2$
0	5.14*	1.0	0.0	0.0	0.0	0.195	0.000
5	6.49	1.6	0.1	0.1	0.4	0.242	0.146
10	8.34	2.5	0.4	0.4	1.2	0.296	0.241
15	10.97	3.9	1.2	1.1	2.6	0.359	0.294
20	14.83	6.4	2.9	2.9	5.4	0.431	0.315
25	20.71	10.7	6.8	6.8	10.9	0.514	0.311
26	22.25	11.8	7.9	8.0	12.5	0.533	0.308
28	25.79	14.7	10.9	11.2	16.7	0.570	0.299
30	30.13	18.4	15.1	15.7	22.4	0.610	0.289
32	35.47	23.2	20.8	22.0	30.2	0.653	0.276
34	42.14	29.4	28.7	31.1	41.0	0.698	0.262
36	50.55	37.7	40.0	44.4	56.2	0.746	0.247
38	61.31	48.9	56.1	64.0	77.9	0.797	0.231
40	75.25	64.1	79.4	93.6	109.3	0.852	0.214
45	133.73	134.7	200.5	262.3	271.3	1.007	0.172
50	266.50	318.5	567.4	871.7	761.3	1.195	0.131

* = $\pi + 2$ as limit when $\phi \rightarrow 0^\circ$.

Slight differences in above table can be obtained using program BEARING.EXE on diskette depending on computer used and whether or not it has floating point.

Table 10.5.5.2.2-1—Resistance Factors for Geotechnical Resistance of Shallow Foundations at the Strength Limit State

Method/Soil/Condition		Resistance Factor
Bearing Resistance	ϕ_b	Theoretical method (Munfakh et al., 2001), in clay
		Theoretical method (Munfakh et al., 2001), in sand, using CPT
		Theoretical method (Munfakh et al., 2001), in sand, using SPT
		Semi-empirical methods (Meyerhof, 1957), all soils
		Footings on rock
		Plate Load Test
Sliding	ϕ_τ	Precast concrete placed on sand
		Cast-in-place concrete on sand
		Cast-in-place or precast concrete on clay
		Soil on soil
	ϕ_{ep}	Passive earth pressure component of sliding resistance

The resistance factors in Table 10.5.5.2.2-1 were developed using both reliability theory and calibration by fitting to Allowable Stress Design (ASD). In general, ASD safety factors for footing bearing capacity range from 2.5 to 3.0, corresponding to a resistance factor of approximately 0.55 to 0.45, respectively, and for sliding, an ASD safety factor of 1.5, corresponding to a resistance factor of approximately 0.9. Calibration by fitting to ASD controlled the selection of the resistance factor in cases where statistical data were limited in quality or quantity.

The resistance factor for sliding of cast-in-place concrete on sand is slightly lower than the other sliding resistance factors based on reliability theory analysis (Barker et al., 1991). The higher interface friction coefficient used for sliding of cast-in-place concrete on sand relative to that used for precast concrete on sand causes the cast-in-place concrete sliding analysis to be less conservative, resulting in the need for the lower resistance factor. A more detailed explanation of the development of the resistance factors provided in Table 10.5.5.2.2-1 is provided in Allen (2005).

The resistance factors for plate load tests and passive resistance were based on engineering judgment and past ASD practice.

10.5.5.2.3—Driven Piles

Resistance factors shall be selected from Table 10.5.5.2.3-1 based on the method used for determining the driving criterion necessary to achieve the required nominal pile bearing resistance.

Regarding load tests, and dynamic tests with signal matching, the number of tests to be conducted to justify the design resistance factors selected should be based on the variability in the properties and geologic stratification of the site to which the test results are to be applied. A site shall be defined as a project site, or a portion of it, where the subsurface conditions can be characterized as geologically similar in terms of subsurface stratification, i.e., sequence, thickness, and geologic history of strata, the engineering properties of the strata, and groundwater conditions.

C10.5.5.2.3

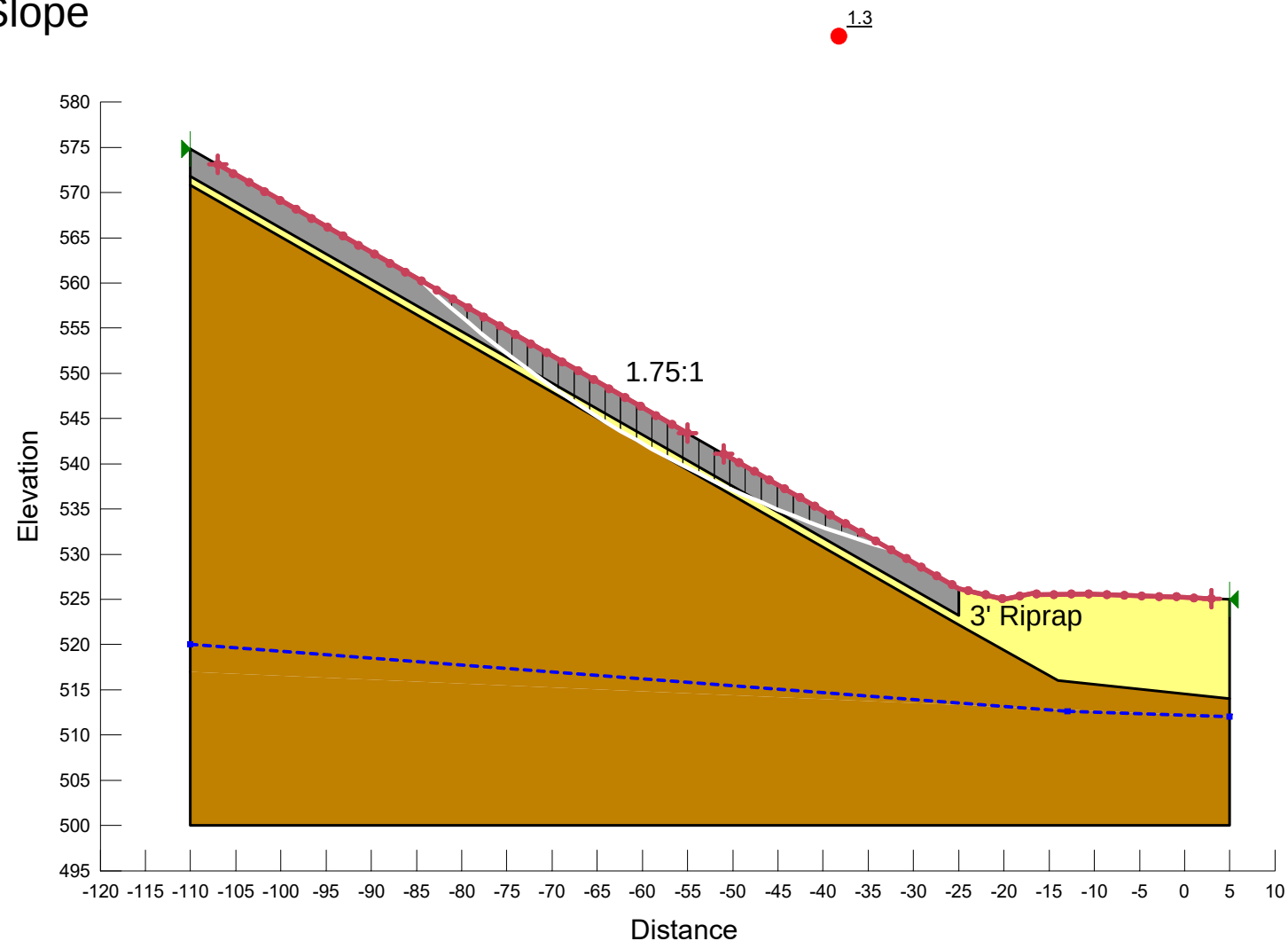
Where nominal pile bearing resistance is determined by static load test, dynamic testing, wave equation, or dynamic formulas, the uncertainty in the nominal resistance is strictly due to the reliability of the resistance determination method used in the field during pile installation.

In most cases, the nominal bearing resistance of each production pile is field-verified based on compliance with a driving criterion developed using a dynamic method (see Articles 10.7.3.8.2, 10.7.3.8.3, 10.7.3.8.4, or 10.7.3.8.5). The actual penetration depth where the pile is stopped using the driving criterion (e.g., a blow count measured during pile driving) will likely not be the same as the estimated depth from the static analysis. Hence, the reliability of the nominal pile bearing resistance is dependent on the reliability of the method used to verify the nominal resistance during pile installation (see Allen,

Appendix D

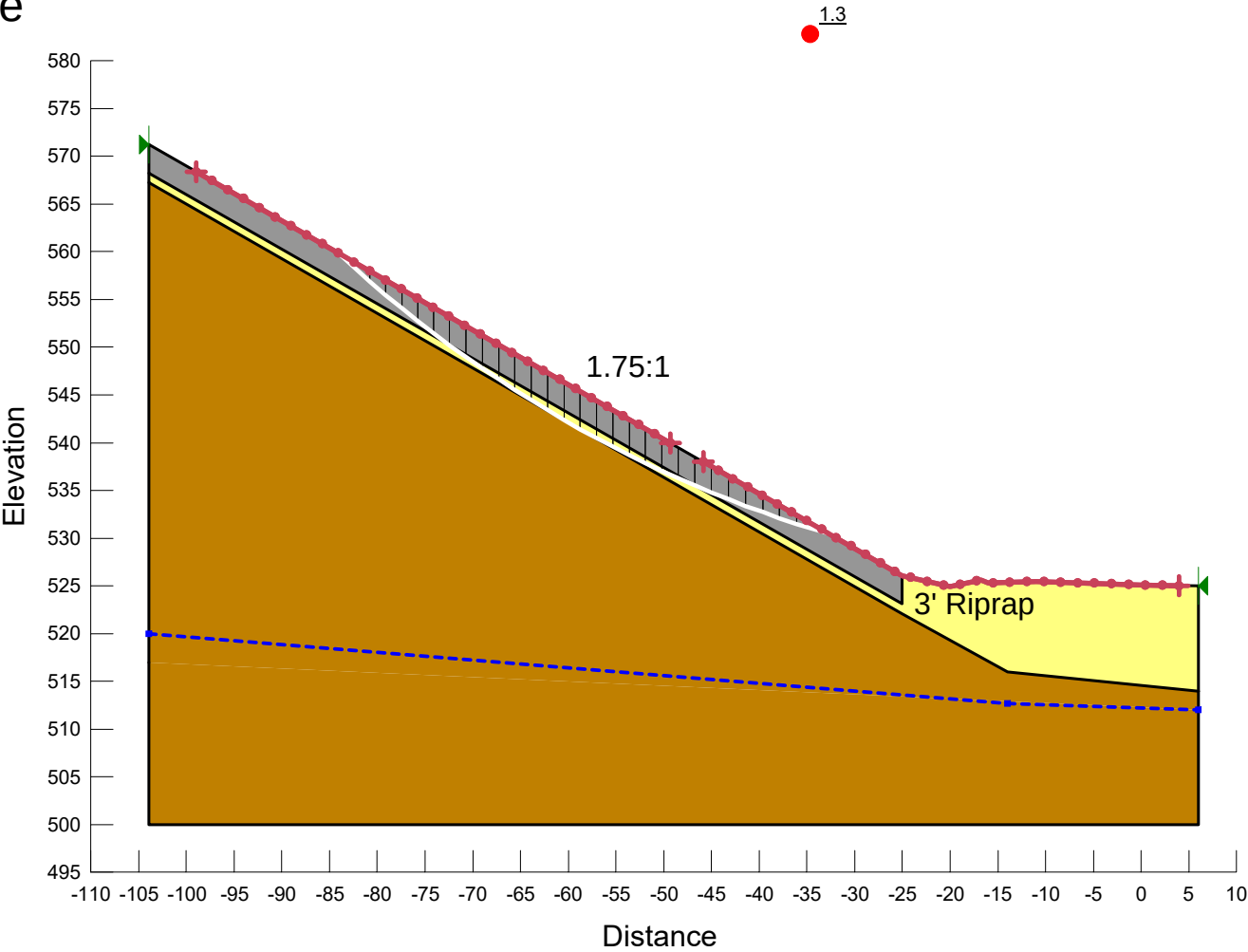
Slope Stability Analyses

640+00 Slope



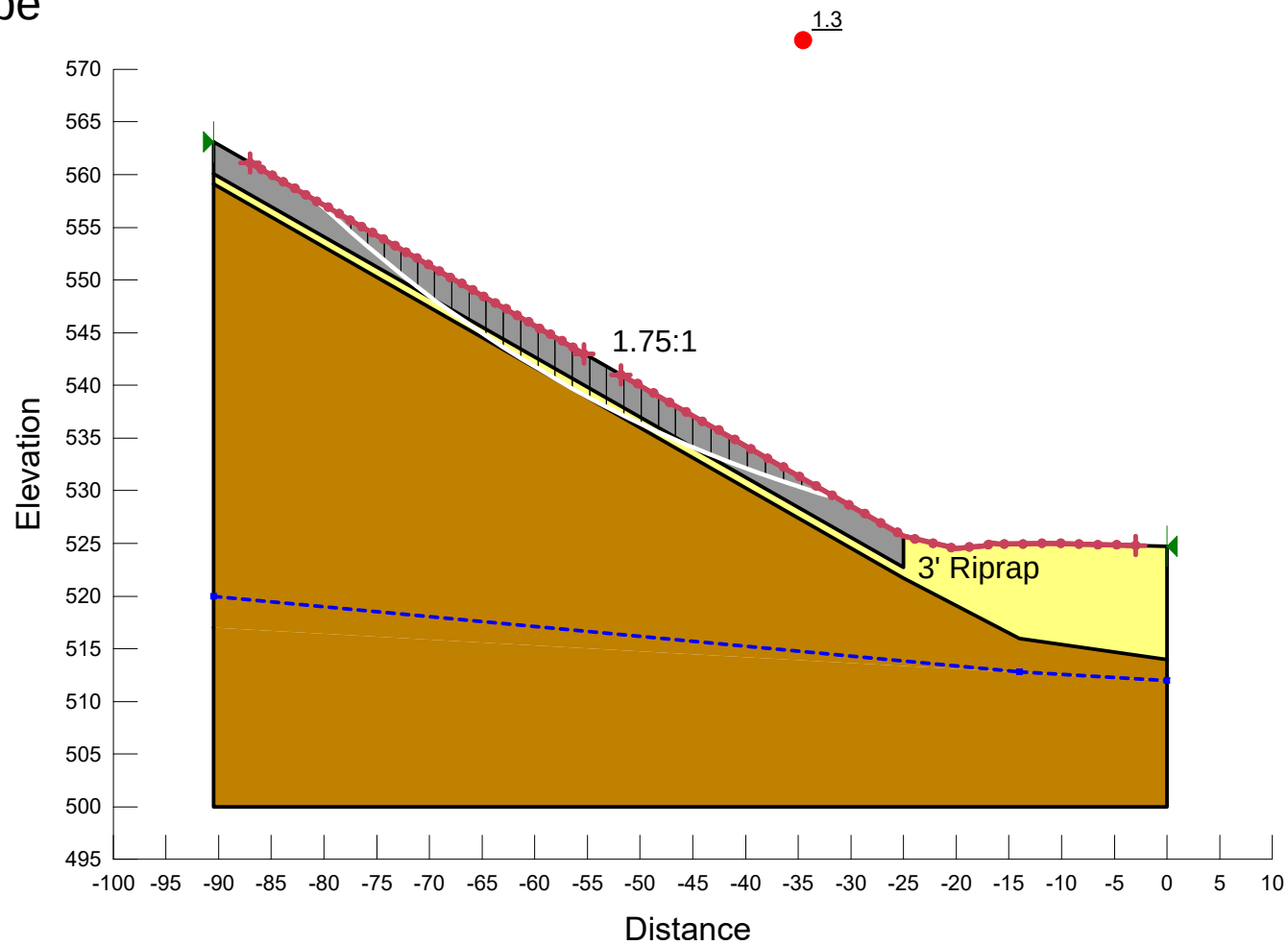
Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)
	Fill	Mohr-Coulomb	125	0	32
	Glacial Till	Mohr-Coulomb	130	0	36
	Riprap	Mohr-Coulomb	145	0	42

640+50 Slope



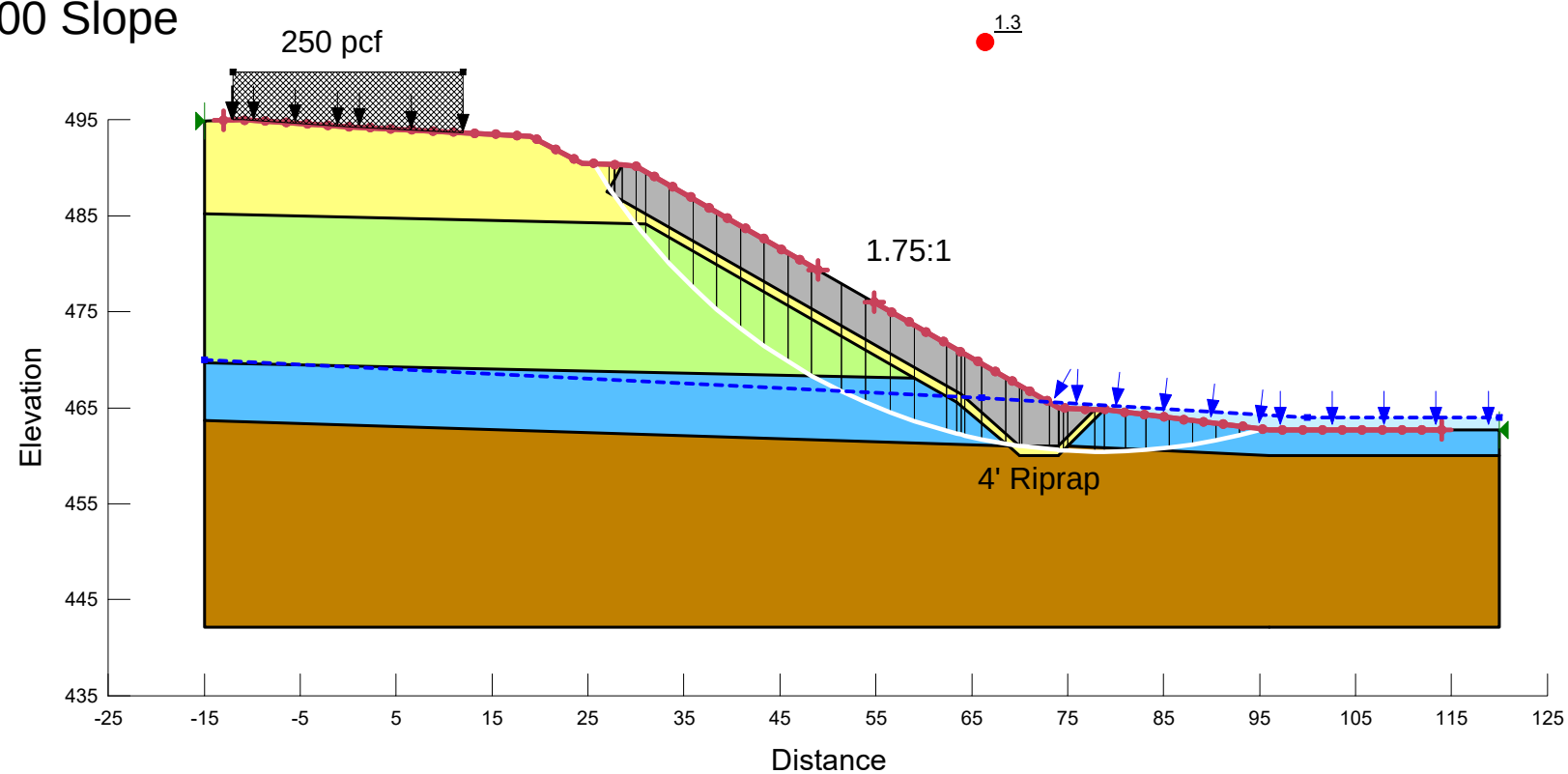
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	Glacial Till	Mohr-Coulomb	130	0	36
	Riprap	Mohr-Coulomb	145	0	42

641+00 Slope



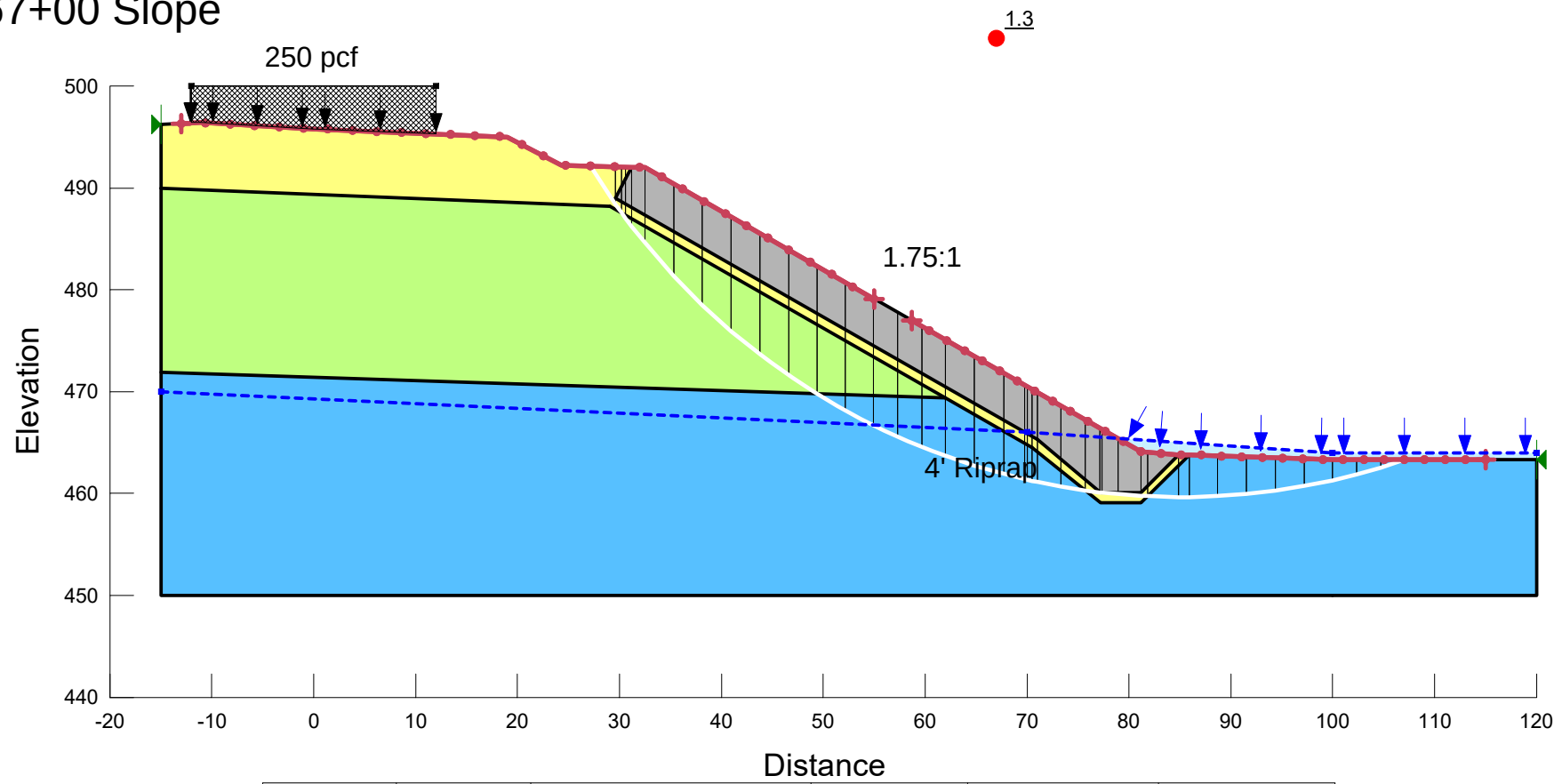
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	Glacial Till	Mohr-Coulomb	130	0	36
	Riprap	Mohr-Coulomb	145	0	42

666+00 Slope



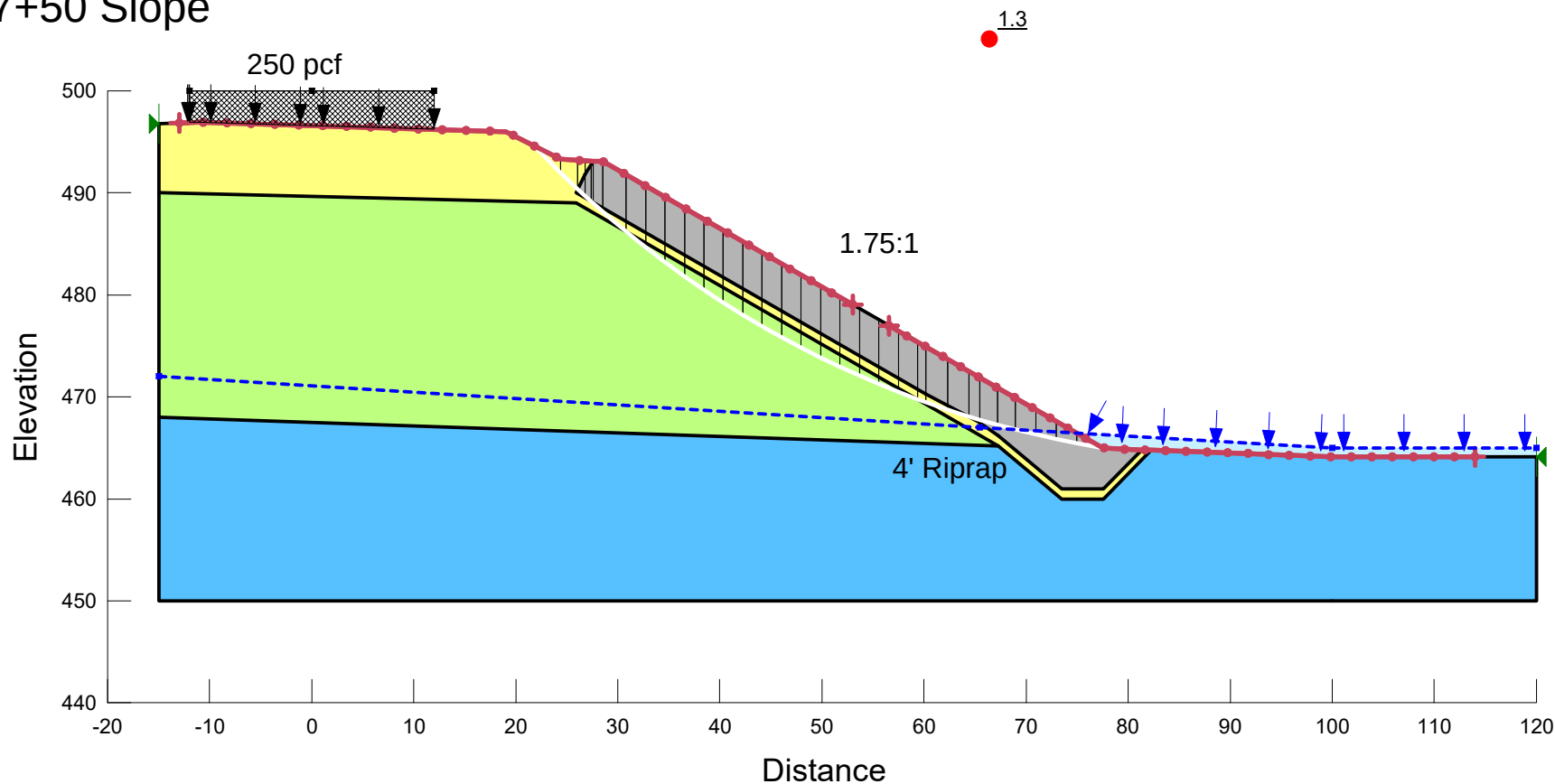
Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)
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	Glacial Till	Mohr-Coulomb	130	0	36
	Riprap	Mohr-Coulomb	145	0	42
	Sand	Mohr-Coulomb	120	0	32
	Silt	Mohr-Coulomb	115	30	29

667+00 Slope



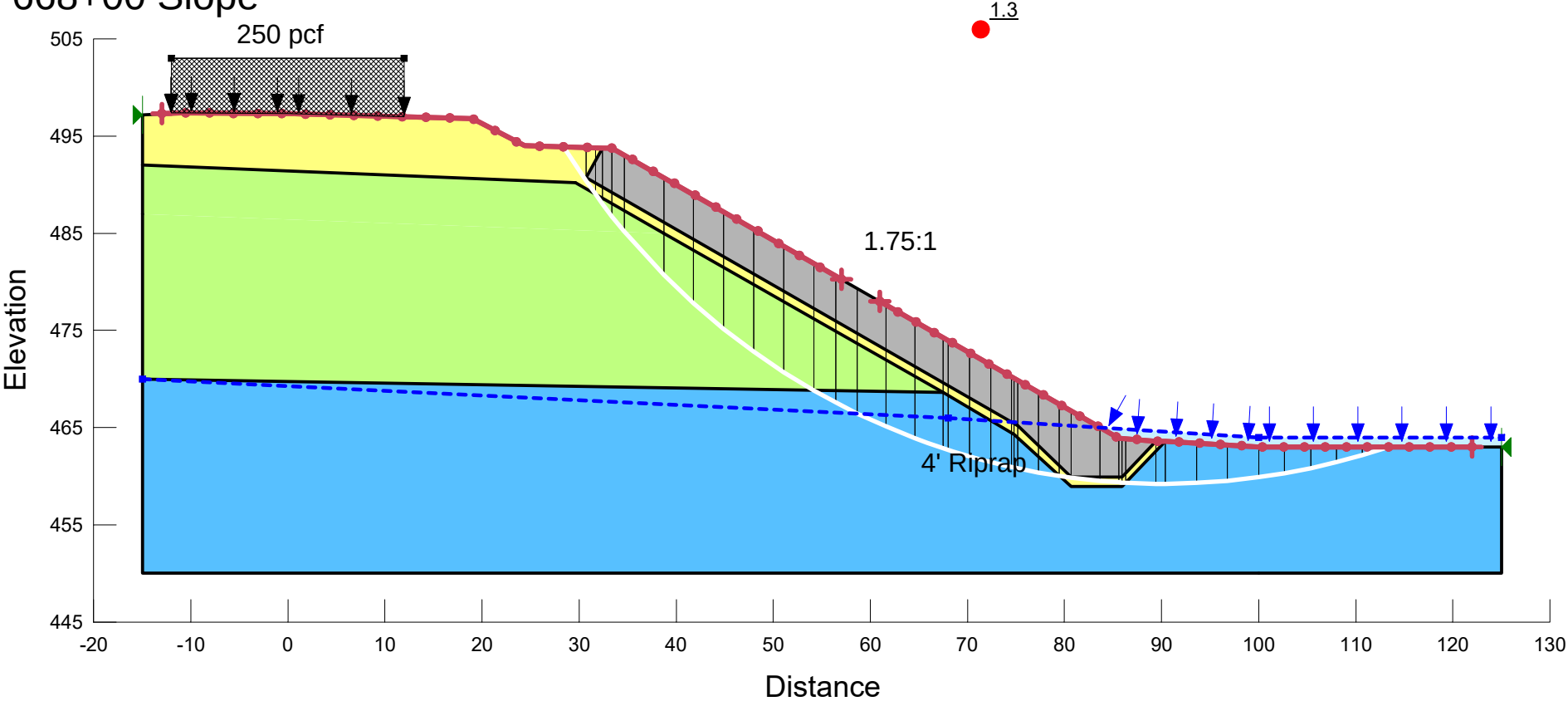
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	Riprap	Mohr-Coulomb	145	0	42
	Sand	Mohr-Coulomb	120	0	32
	Silt	Mohr-Coulomb	115	30	29

667+50 Slope



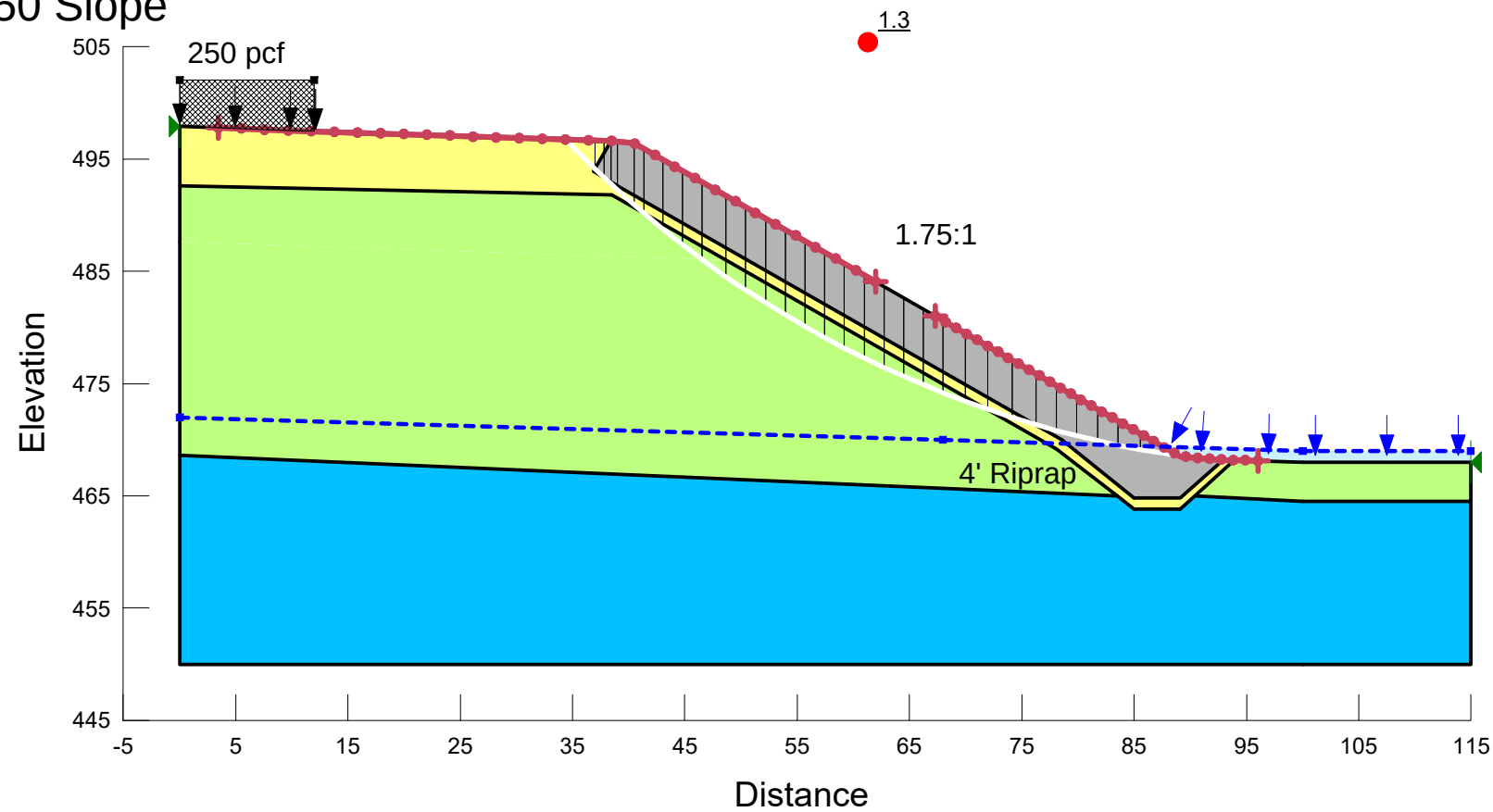
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	Riprap	Mohr-Coulomb	145	0	42
	Sand	Mohr-Coulomb	120	0	32
	Silt	Mohr-Coulomb	115	30	29

668+00 Slope



Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)
	Fill	Mohr-Coulomb	125	0	32
	Riprap	Mohr-Coulomb	145	0	42
	Sand	Mohr-Coulomb	120	0	32
	Silt	Mohr-Coulomb	115	30	29

668+50 Slope



Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)
	Fill	Mohr-Coulomb	125	0	32
	Riprap	Mohr-Coulomb	145	0	42
	Sand	Mohr-Coulomb	120	0	32
	Silt	Mohr-Coulomb	115	30	29