MAINE DEPARTMENT OF TRANSPORTATION PIN 10014.00 FINAL GEOTECHNICAL ENGINEERING REPORT ROUTE 26 RECONSTRUCTION POLAND, MAINE

PREPARED FOR:
Maine Department of Transportation
Urban and Arterial Program
Augusta, Maine

PREPARED BY:
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Portland, Maine

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GZA
GeoEnvironmental, Inc.

Engineers and Scientists

May 18, 2005
File No. 25440.01

Ms. Karen Gross
Maine Department of Transportation
16 State House Station
Augusta, Maine 04333-0016

Re: Final Geotechnical Engineering Report
Route 26 - Poland, Maine
PIN 10014.00

Dear Karen:

GZA GeoEnvironmental is pleased to provide the Maine Department of Transportation with this Final Geotechnical Engineering Report for the proposed Reconstruction of State Route 26 in Poland, Maine. The report describes Falling Weight Deflectometer Evaluations, subsurface explorations, and engineering evaluations; and provides recommendations for geotechnical aspects of the proposed roadway reconstruction. The report includes the May 13, 2005 project General Plans prepared by CLD Consulting Engineers, that provide exploration locations.

It has been a pleasure working with you on this phase of the project. We look forward to supporting the efforts of CLD and the Department as the project proceeds to construction.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

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1.0 INTRODUCTION

This report presents the final results of geotechnical investigations for the Maine Department of Transportation (MDOT) by GZA GeoEnvironmental, Inc. (GZA) for the reconstruction of State Route 26 (PIN 10014.00) in Poland, Maine. Our work was completed in accordance with the GZA work plans included in the GZA-MDOT agreement executed June 2, 2003; the supplemental agreement executed November 1, 2004; and the limitations included in **Appendix A**.

1.1 PROPOSED CONSTRUCTION

The project includes full depth reconstruction or pavement rehabilitation, limited vertical and horizontal realignment, drainage improvements, and addition of climbing lanes along a 6.83-kilometer segment of Route 26 between the Route 122 intersection at the southern end (Sta. 20+150), and the Brown Road intersection (Sta. 27+000) in Poland Village at the northern end. The overall roadway alignment is shown in the attached **Figure 1 - Project Locus,** and in 180-meter segments on **sheets 1 of 44 through 44 of 44 - General Plans**. The existing two-lane road is considered a minor arterial and is generally situated in a rural area, except for the Poland Village urban area at the northern end.

Reconstruction of the Route 122 intersection will involve northerly relocation of a 340-meter segment of Carpenter Road on the western side of Route 26, and improvements to a 140-meter segment of Route 122 on the eastern side of Route 26.

The purpose of GZA's geotechnical investigation is to develop subsurface and laboratory testing data for use in design and construction of the proposed reconstruction. MDOT's design team includes CLD Consulting Engineers (CLD) of Manchester, New Hampshire who will be responsible for the highway design.

MDOT completed preliminary subsurface investigations for the project including Falling Weight Deflectometer (FWD) tests and preliminary test borings over the roadway alignment, and test borings at the Range Pond bridge structure. That structure is not part of this investigation.

CLD provided project drawings including plan, profile, and 20-meter cross sections. MDOT provided circa 1932 Maine Highway Commission as-built drawings of the existing roadway construction.

2.0 SCOPE OF WORK

GZA developed and executed a Scope of Work to meet the MDOT project objectives. Our work included geotechnical interpretation of the subsurface exploration and highway geometric data, preliminary and final design subsurface explorations, laboratory soils testing, and formulation of recommendations for design and construction of the proposed Route 26 Reconstruction project. Specific work scope items included:

- GZA personnel reviewed the test boring logs and FWD test results prepared by MDOT personnel, the CLD drawings, the circa 1932 Maine Highway Commission as-built drawings, and the mapped surficial and bedrock geology of the area;

- GZA visited the site to observe topographic features; soil, bedrock, and groundwater conditions exposed at the ground surface along the alignment; and developed a work scope responsive to the project needs;
- GZA coordinated and logged 40 test borings in 2003; plus 21 borings, 18 hand auger probes, and three test pits in 2004 to supplement the preliminary explorations by MDOT;
- GZA selected samples, coordinated laboratory testing by MDOT on the samples from the 2003 borings, and performed laboratory testing at GZA's laboratory on the samples from the 2004 explorations;
- GZA completed geotechnical engineering evaluations and developed recommendations for the Route 26 reconstruction, including evaluation of liquefaction susceptibility of subgrade soils; frost, drainage, and subgrade conditions for use in pavement design; and roadway reconstruction considerations. MDOT is responsible for proposed bridge foundation design; and
- GZA prepared a preliminary report dated October 15, 2003 and this final report summarizing the results of our work.

3.0 FIELD EXPLORATIONS

3.1 MDOT FALLING WEIGHT DEFLECTOMETER TESTING

MDOT completed a program of 69 FWD tests using truck-mounted testing equipment. The tests were performed at 100-meter typical intervals in the westbound travel lane along the alignment. GZA made an approximate conversion of the FWD test locations based on the assumption that FWD Station 0+000 equals Route 26 Poland Reconstruction (PIN 10014.00) Station 20+150. Results of the FWD testing, including plots of the FWD deflection data, and calculated Overlay Structural Number (SN) and Subgrade Resilient Modulus (M_R), are included in **Appendix B**.

3.2 MDOT TEST BORINGS

MDOT completed a program of 11 roadway borings in the fall of 2001 to accompany their FWD analysis. The borings included seven hollow-stem auger borings with standard penetration testing and four, solid-stem-auger probe borings. In Fall 2002, MDOT had two deep borings drilled to assess conditions at the Range Pond Bridge. The deep borings were drilled by driving and spinning casing. The probes and borings were logged in the field by MDOT personnel. GZA prepared formal logs of the MDOT roadway explorations using the data as provided on the MDOT logs. GZA did not modify the data, except to add laboratory testing results provided by MDOT.

MDOT provided roadway boring locations in tabular format relative to the FWD investigation station, and offset measured from the existing roadway centerline. GZA made an approximate conversion of the location data based on the assumption that FWD Station 0+000 equals Route 26 Poland Reconstruction (PIN 10014.00) Station 20+150. The logs of the MDOT explorations are included in **Appendix C**, MDOT roadway exploration logs and were provided in electronic format to CLD. Results of the MDOT explorations are also provided in **Table 1 - Summary of Subsurface Explorations**.

3.3 GZA 2003 TEST BORINGS

GZA coordinated and monitored a 2003 subsurface exploration program that consisted of 40 test borings (GZ1-03 through GZ40-03), drilled to depths of approximately 1.8 to 4.3 meters using hollow-stem and solid-stem auger drilling equipment. Great Works Pump and Test Boring, Inc. provided drilling services for the project between June 18 and June 27, 2003. GZA established the approximate boring locations in the field by pacing from features shown on the January 23, 2003 progress plans prepared by CLD. The borings were generally located near the center of the westbound travel lane and at approximately 150-meter spacing.

Standard penetration testing was performed at selected intervals in the borings to recover soil samples for laboratory testing, and to assess soil density. The sampling interval was typically continuous to a depth of 1.8 meters, and approximately 1.5 meters thereafter. A GZA engineer marked the boring locations in the field, coordinated DigSafe utility clearance, observed the exploration drilling, and prepared individual logs for each exploration. The test boring logs prepared by GZA are included in **Appendix D** and were provided in electronic format to CLD.

In December 2004, CLD provided data for the Carpenter Road / Route 122 intersection, as well as revised vertical and horizontal alignments between approximately Station 20+880 and 22+580. All the exploration locations referenced on the logs and in this report are based on the December 2, 2004 CLD plans. Test boring results and exploration locations are also summarized in **Table 1 - Summary of Subsurface Exploration Results**. Locations are shown on the attached **sheets 1 of 44 through 44 of 44 - General Plans**.

3.4 GZA 2004 EXPLORATIONS

3.4.1 Borings and Probes

In 2004, GZA coordinated and monitored final design explorations for the project, including 21 borings, 18 hand auger probes, and three test pits. The borings (GZ-B1-04 through GZ-B12-04, and GZ-P1-04 through GZ-P9-04) were drilled to depths of approximately 1.7 to 5.2 meters using hollow-stem and solid-stem auger drilling equipment. Geologic Earth Exploration provided drilling services for the project between November 22 and November 24, 2004. GZA established the approximate boring locations in the field by pacing from features shown on the July 30, 2003 PDR Submission plans prepared by CLD. The borings were generally located near the center of the westbound travel lane.

Standard Penetration Testing was performed at selected intervals in the borings to recover soil samples for laboratory testing and to assess soil density. An oversize 75-millimeter (mm) diameter split-spoon was used at selected locations to sample existing pavement base and subbase material. The sampling interval was typically continuous to a depth of 1.8 meters, and approximately 1.5 meters thereafter. At selected boring and probe locations, a 75-mm diameter, thin-wall coring machine was used to collect pavement samples for evaluation by MDOT. Probes were advanced without sampling to assess the depth to auger refusal. A GZA engineer marked the boring locations in the field, coordinated DigSafe utility clearance, observed the exploration drilling, and prepared individual logs for each exploration. The test boring logs prepared by GZA show the boring locations, are included in **Appendix D,** and were provided in electronic format to CLD.

3.4.2 Hand Augers

The hand auger probes (GZ-HA1-04 through GZ-HA18-04) were advanced to depths of approximately 0.6 to 2.3 meters between December 9 and December 10, 2004. The hand auger explorations were conducted by GZA personnel and were generally located adjacent to the toe of the existing embankment slope. The hand auger logs prepared by GZA are included in **Appendix D** and were provided in electronic format to CLD.

3.4.3 Test Pits

The test pits (GZ-TP1-04 through GZ-TP3-04) were completed to depths of approximately 1.7 to 2.4 meters on November 17, 2004. MDOT provided excavation services. The test pits were generally located near the center of the westbound travel lane. A GZA engineer marked the test pit locations in the field, coordinated DigSafe utility clearance, and observed and prepared individual logs for each exploration. The test pit logs and photographs prepared by GZA are included in **Appendix D** and were provided in electronic format to CLD.

Exploration results and exploration locations are also summarized **in Table 1 - Summary of Subsurface Exploration Results**.

4.0 LABORATORY TESTING PROGRAM

Laboratory testing was used as a basis for classification of the predominant soil units encountered along the alignment. Selected samples from the 2003 explorations were transported to MDOT's geotechnical laboratory in Bangor, Maine where gradation analyses were performed. The test samples included 34 samples from the GZA test borings, and 17 samples from the MDOT explorations. MDOT's laboratory also determined the American Association of State Highway and Transportation Officials (AASHTO), USCS, and Frost Classifications of the samples.

A total of 12 samples were selected from the 2004 explorations for laboratory testing. The samples were tested at GZA's soils laboratory, where AASHTO, USCS, and Frost Classifications were also determined.

The AASHTO and USCS designations are reported on the exploration logs. Laboratory testing results are summarized in **Tables 2** and **3 - Laboratory Testing Summary Sheet**. More detailed results are presented in **Appendix E - Laboratory Testing Results**.

5.0 SUBSURFACE CONDITIONS

This section provides generalized information regarding subsurface conditions encountered in the explorations along the proposed alignment. For additional information regarding subsurface conditions at specific locations, please refer to the test boring logs and **Table 1 - Summary of Subsurface Explorations**.

5.1 SUBSURFACE SOILS

Three primary soil units were encountered below pavement and above bedrock in the test borings along the alignment: Fill, Ice Contact Deposits, and Glacial Till. At most locations, one or more of the units were absent. The presence of Peat was noted in a few of the hand auger explorations. The encountered thickness and generalized descriptions of the soil units are summarized in the table that follows.

GENERALIZED SUBSURFACE CONDITIONS – ROUTE 26 RECONSTRUCTION, POLAND		
Strata Designation	**Approximate Encountered Thickness (meters)**	**Generalized Description**
Pavement	60 to 600 mm	Asphalt Pavement with multiple overlays apparent at some locations. Pavement was present in all the borings, probes and test pits except GZ21-03, GZ22-03, GZ26-03, and GZ28-03, where either fill or topsoil was encountered at the ground surface. MacAdam was recovered in the bottom 50mm of pavement cores taken in GZ-B6-04, GZ-P2-04, GZ-B10-04, and GZ-B12-04, and is probably present at other locations.
Peat	0.15 to 2.0	Dark brown fibrous PEAT. Occasionally stratified with fine SAND layers. Encountered only in isolated pockets outside the existing shoulder between approximately Stations 21+610 and 21+700 on the left and Stations 24+00 and 24+065 on the right and left.
Fill	0.1 to 1.8	Variable, ranging from: very dense, brown, fine to medium SAND and GRAVEL, trace Silt, few cobbles; to: medium dense, fine to medium SAND, little Silt, trace Gravel. A 0.03- to 0.06-meter thick layer of asphalt pavement was encountered within the fill at several locations. Fill was present in all the borings except GZ-B9-04 where ice contact deposits were encountered below the asphalt pavement.
Stone Base / Stone Fill	0.58 to 1.24	Brown COBBLES and BOULDERS, little to some fine to coarse Sand and Gravel. Encountered in test pits GZ-TP1-04 through GZ-TP3-04.
Ice Contact Deposits	0.5 to 3.4	Medium dense, brown, fine to medium SAND, trace to little Gravel, trace to little Silt. Occasionally stratified with fine to coarse SAND and GRAVEL, trace Silt. Encountered along the alignment north of Station 23+250.
Glacial Till	0.1 to 6.9	Medium dense to very dense, light brown to gray, fine to medium SAND, some to little Silt, little to trace Gravel, with Cobbles and Boulders. Encountered along the alignment south of Station 23+302. May be present below the exploration depths north of Station 23+302.
Refusal Depth	0.6 to 3.3	For this report, split spoon refusal is defined as a resistance of at least 25 blows with no penetration of a standard split spoon sampler, and auger refusal indicates that the hollow-stem auger equipment used for this project could not be advanced beyond the noted depth. Encountered in approximately 25 percent of the borings, primarily south of Station 23+803.

5.2 GROUNDWATER

Water was encountered in approximately 30 percent of the test borings at depths of between 0.8 to 2.7 meters below ground surface at the time of drilling. Water was not encountered within the depth of drilling from Station 23+302 to 27+000. At these points, the groundwater levels at the time of drilling were typically greater than 3 meters below ground surface. Please refer to **Table 1** and the boring logs for more specific groundwater information.

Water levels were estimated based on the level at which wet soil samples were observed in the test borings. Groundwater levels at the site vary seasonally, and in response to temperature, precipitation, and construction activity in the area. Perched groundwater will probably be present at or near the ground surface seasonally in areas of shallow bedrock and fine-grained soils.

6.0 ENGINEERING EVALUATIONS

The following engineering issues were considered for the proposed alignment for use in pavement design and evaluation of roadway reconstruction alternatives.

6.1 LIQUEFACTION POTENTIAL

The principal soil units encountered in the explorations are Fill, Glacial Till, and Ice Contact Deposits. GZA evaluated each of these deposits to assess their susceptibility to liquefaction under earthquake loading. The result of the evaluations is that none of the encountered deposits are considered liquefaction-susceptible. Evaluation criteria for each deposit are as follows:

- The medium dense to dense Fill, Stone Fill, and Stone Base are not considered liquefaction susceptible due to their density;
- The medium dense to very dense Glacial Till is not considered liquefaction susceptible due the density of the deposit. The silt content, trace to some, also enhances the material's resistance to liquefaction; and
- The medium dense Ice Contact Deposits are not considered liquefaction susceptible because of their density. The typical depth to groundwater of greater than 3 meters also tends to reduce liquefaction susceptibility.

6.2 SLOPE PROTECTION

Earth fill embankment slopes and cut slopes will generally have MDOT typical slope angles, and be provided with loam and seed for permanent erosion protection. At locations such as the Range Pond causeway, where soil slopes steeper than approximately 2 Horizontal to 1 Vertical (2H:1V) are anticipated, bio-degradable erosion control mat should be provided in addition to the loam and seed to protect the slopes from surface erosion until a root mass has developed.

6.3 SETTLEMENT OF EMBANKMENT FILLS

Embankment fill heights of 4 meters or less are anticipated for the project. The embankment fills generally consist of widened roadway over existing shoulder or undeveloped land. With the exception of a few localized peat pockets and an unexplored area along the Range Pond causeway, the subgrade soils are granular. For granular subgrades, settlement is expected to occur as the fill is placed. Assuming that embankment fills are properly compacted as they are placed, we anticipate typical post-construction embankment settlements of 1 inch or less. Global stability is judged to be adequate for the proposed embankment fills bearing on granular soils.

Peat was encountered in isolated pockets (within the depths noted) at the following locations:

- Sta. 21+610, 14.3 Lt (0.55 – 1.01 m);
- Sta. 24+024, 12 Rt (0.30 – 0.85 m);
- Sta. 24+028, 10.5 Lt (1.22 – 2.29 m);
- Sta. 24+042, 11.5 Lt (0.3 –1.9 m); and
- Sta. 24+052, 11.5 Lt (0.73 – 1.22 m).

Since the peat deposits have limited thickness and are generally located beneath or outside of the proposed shoulders, global stability is judged to be acceptable. In addition, most of the settlement is expected to occur during construction. We estimate that about 1 to 2 inches of settlement may occur after construction is completed, and that this amount of settlement will be acceptable for performance of the new shoulder. Therefore we recommend that the peat be left in place and filled over at these locations.

Explorations in the Wetland F and G areas adjacent to the Range Pond causeway were not included in the scope of GZA's work. Widening of the Range Pond causeway will include filling of existing wetlands from about Sta. 22+880 to 23+200 on the right side (Wetland G), and limited work on the left side (Wetland F). The GZA explorations beneath the causeway encountered granular fill overlying glacial till deposits. However, since the adjacent area is a wetland connected with Range Pond, it is possible that some organic soils are present. Given the lack of information, GZA cannot estimate potential for embankment settlement or assess global stability associated with placing fill in Wetland G.

We anticipate that if organic material is present, it will need to be excavated and replaced, or if thin enough, it could possibly be built over using a woven geotextile for reinforcement and separation. Additional hand-auger peat probes should be considered to reduce the uncertainty in this area.

6.4 DRAINAGE, FROST AND SUBGRADE CONDITIONS

Drainage of the pavement section will be accomplished using the MDOT Standard details for two-lane rural highways. These include a free-draining subbase gravel material that feeds into ditches or falling embankment slopes at the roadway shoulders, or pavement underdrains in curbed sections or where ditches are not feasible. Drainage structures and culverts should be provided as deemed necessary by the highway designer to remove the water from the ditches.

Asphalt pavement was encountered at depth below surficial pavement in the Fill deposits at a number of test boring locations. Due to its low relative permeability, this asphalt pavement material will limit vertical drainage of the roadway fill and pavement section. One way to enhance the drainage characteristics of the fill is to require that the asphalt material be either removed or broken into gravel-size particles and mixed with granular material.

The Maine Design Freezing index for this site is approximately 1,375. For snow free pavement, the anticipated depth of frost penetration in a granular subgrade is about 1.8 meters (72 inches).

Where possible, materials not susceptible to frost heaving should be provided in the upper 1.8 meters beneath the paved surface in new embankments. Where this is impractical, the frost-susceptibility of the upper fill should be considered in design of the new pavement section.

Where roadways will be constructed in cut, or at grade locations, the frost-susceptibility of the local subgrade material should be considered in design of the new pavement section. The Maine Frost Classification results indicate that, in general, the fill and ice contact deposits fall into frost categories 0 to 2 (non-frost-susceptible to moderately frost-susceptible) and the glacial till falls into categories 2 to 4 (moderately to highly frost-susceptible).

Non-frost-susceptible materials generally fall in to Maine Frost Classification categories 0 and 1. Frost Classification data for individual samples are provided in **Tables 2** and **3**. The alignment is characterized from a subgrade frost-susceptibility perspective in the table that follows.

Station	Material Present in Upper 1.8 Meters	Typical AASHTO Classification	Typical MDOT Frost Classification
20+150 to 21+000	Fill	A-1	0 to 2
	Silty Glacial Till	A-4	2 to 4
21+000 to 21+950	Fill / Stone Fill	A-1	0
	Glacial Till	A-1	2
21+950 to 22+300	Fill / Stone Fill	A-1, A-2	0 to 2
	Silty Glacial Till	A-2, A-4	2 to 4
22+300 to 23+800	Fill	A-1	0
	Glacial Till / Ice Contact Deposits	A-1, A-2	0 to 2
23+800 to 27+000	Fill	A-1, A-2	0 to 1
	Ice Contact Deposits	A-1, A-3	0 to 1

Based on the FWD testing results, MDOT calculated Overlay Structural Number (SN) and Subgrade Resilient Modulus (M_R) at approximately 100-meter intervals over the alignment. These results are shown on the plots in **Appendix B**.

GZA reviewed the Maine Highway Commission as-built plans of the original construction, circa 1932. The plans show that the entire Poland Project was constructed with a typical section consisting of variable-thickness gravel subbase, 125 mm crushed stone base, and a 75-mm MacAdam surface. Stone base and or stone fill was indicated in place of the gravel base between approximately Station 21+060 and 22+780. Test pits excavated through the existing roadway at Station 21+820, 22+600, and 22+740 confirmed the presence of stones ranging from about 150 to over 900 mm in least lateral dimension. The majority of encountered stone fill material was in the range of 150 to slightly over 460 mm.

Presence of stone fill will impact the excavations for roadway reconstruction. If the proposed bottom of excavation falls within the stone fill layer, it will probably be necessary to excavate some oversize stones below the desired bottom of excavation. This is likely to result in the excavation quantity exceeding that calculated from the plans. The particle size of the material will also result in limitations on how and where it may be used to construct embankments, as discussed in the following section.

7.0 DESIGN RECOMMENDATIONS AND CONSTRUCTION CONSIDERATIONS

This section contains recommendations for design and construction of the proposed Poland Route 26 Reconstruction project and addresses issues including: rock cuts, soil cuts, fill embankments, slope protection, drainage, frost and subgrade conditions for pavement design, and roadway reconstruction. Overall, we recommend that the project be designed and constructed in general accordance with the MDOT Highway Design Guide and the MDOT Standard Specifications for Highways and Bridges, except as noted in this section.

7.1 ROCK EXCAVATION

Based on the refusals encountered in the test borings and the CLD cross-sections, we anticipate that the proposed construction could require limited local rock excavation over partial width, along the ditch and underdrain lines, and/or for proposed drainage structures within the following approximate station limits:

- 23+720 to 23+820; and
- 23+900 to 23+960.

Based on the exploration data, significant and continuous areas of bedrock excavation are not anticipated over the remainder of the alignment.

Drilling and blasting techniques may be required to excavate bedrock for this project. The work should be completed in accordance with MDOT standard specifications.

7.2 STONE FILL AND STONE BASE

Based on the circa 1932 Maine Highway Commission as-built plans for the roadway, we anticipate that the proposed construction will encounter stone fill and stone base and may require removal of those materials in the course of full depth reconstruction and underdrain installation within the following approximate station limits:

Station		Thickness (mm)	Treatment
From	To		
21+055	21+131	203	Stone Base
21+131	21+177		Stone Fill
21+177	21+482	305	Stone Base
21+482	22+075		Stone Fill
22+075	22+640	305	Stone Base
22+640	22+732	381	Stone Base
22+732	22+777	305	Stone Base

Excavated stone fill should be reused to construct embankments in accordance with the Standard Specifications. We anticipate that stones less than about 600 mm may be blended with granular material and used as embankment fill. This material can provide adequate performance as embankment fill, if (1) sufficient granular material is blended to prevent formation of voids between nested stones; and (2) that heavy compaction equipment is used to penetrate the lifts that will, by necessity, be thicker lifts than usual. The Standard Specifications allow for placement of this material in lifts as thick as 600 mm.

7.3 SOIL CUTS

Soil types along the alignment within the depth of the proposed cuts are anticipated to consist of sand and gravel (fill), cobbles and boulders (stone fill), stratified sand (ice contact deposits), and silty sand with gravel, cobbles, and boulders (glacial till). In the absence of groundwater seepage conditions, these soils are considered stable for the MDOT standard 2H:1V earth cut slopes.

At locations where earth cuts expose groundwater seepage, we recommend installation of an erosion control blanket to protect the cut slope. The erosion control blanket should consist of a compacted, 200-mm (8-inch) thick layer of MDOT 703.24 Stone for French Drains, with a layer of non-woven separation geotextile placed between the subgrade and the stone.

The Contractor should be encouraged to use the frost-susceptible excavated materials designated A-4 (primarily glacial till) in higher embankment fill areas so that frost-susceptible borrow materials are not placed at depths of less than 1.8 meters below the roadway grade. Based on the

laboratory testing results, these materials may be encountered in ditch, underdrain, and drainage structure excavations between approximately Sta. 20+000 and 21+000, and Sta. 21+950 and 22+220.

Where embankments will be constructed on sloping ground or existing embankment slopes, the existing soil surface should be benched in accordance with Section 203.09 of the Standard Specifications.

7.4 SLOPE PROTECTION

Earth fill embankment slopes designed with MDOT typical slope angles should be provided with loam and seed for permanent erosion protection. Where soil slopes steeper than approximately 2H:1V are anticipated, bio-degradable erosion control mat should be provided in addition to the loam and seed to protect the slopes from surface erosion until a root mass has developed.

7.5 DRAINAGE

We recommend that drainage of the pavement section be accomplished using the MDOT Standard details for two-lane rural highways. These include a free-draining subbase gravel material that feeds into ditches or falling embankment slopes at the roadway shoulders. In curbed sections or where ditches are not feasible, pavement underdrains should be provided. Drainage structures and culverts should be provided as deemed necessary by the highway designer to remove the water from the ditches.

Asphalt pavement was encountered in the fill deposits at a number of test boring locations. Due to its low relative permeability, this asphalt pavement material could prevent proper drainage of the roadway fill and pavement section. To provide proper drainage of the new pavement section, we recommend that the buried pavement be removed or broken into gravel-size particles and mixed with granular material to produce a suitable, free-draining embankment fill and pavement base.

Where the existing pavement grade is less than approximately 0.3 meters below the proposed bottom of the pavement section, the existing pavement should be pulverized and mixed with subgrade material or with sand and gravel borrow. Where proposed grades will result in existing pavement being 0.3 meters or more below the proposed bottom of the pavement section, the pavement may be left in place.

7.6 FROST AND SUBGRADE CONDITIONS FOR USE IN PAVEMENT DESIGN

The anticipated depth of frost penetration in a granular subgrade soils is about 1.8 meters (72 inches) for this project.

Where possible, materials not susceptible to frost-heaving; such as the ice contact deposits, existing fill, or clean glacial till; should be used as embankment fill in the upper 1.8 meters beneath the paved surface in new embankments. Where this is not possible, the pavement design should allow for the presence of frost-susceptible material within the potential depth of freezing.

Where roadways will be constructed in cut, or at grade locations, the frost-susceptibility of the local subgrade material should be considered in design of the new pavement section. The MDOT soils laboratory results indicate that the Maine Frost Classification of the fill and ice contact deposits is 0 to 2 (non-frost susceptible to moderately frost-susceptible) and that of the glacial till is 2 to 4 (moderately to highly frost-susceptible).

Pavement design should be based on the subgrade resilient modulus determined by the MDOT Falling Weight Deflectometer evaluation. The following table provides Subgrade Resilient Modulus as interpreted by GZA, for use in pavement design.

Station	Range of Calculated Resilient Modulus (kPa)	Recommended Resilient Modulus (kPa)
20+150 to 21+050	27,500 to 53,600	30,000
21+050 to 22+750	35,800 to 56,000	40,000*
22+750 to 27+000	25,300 to 64,700	30,000

* The elevated Resilient Modulus in this area is believed to be the result of existing Stone Base and Stone Fill. If these materials are to be removed during reconstruction, a Resilient Modulus of 30,000 kPa should be used.

7.7 ROADWAY RECONSTRUCTION

Where the existing pavement grade is less than approximately 0.3 meters below the proposed bottom of the pavement section, the existing pavement should be pulverized and mixed with subgrade material or with sand and gravel borrow.

Where proposed grades will result in existing pavement being 0.3 meters or more below the proposed bottom of the pavement section, the pavement may be left in place. Reconstruction alternatives should take into consideration the frost-susceptibility and strength characteristics of the subgrade materials as described in the previous section.

We recommend that drainage of the pavement section be provided by ditches along the reconstructed segments. In curbed sections or where ditches are not feasible, pavement underdrains should be provided.

7.8 REVIEW OF PLANS AND SPECIFICATIONS

We recommend GZA be engaged to review near-final plans and earthwork specifications prior to bidding to assess whether our design assumptions were appropriate and our recommendations have been correctly interpreted.

7.9 CONSTRUCTION SERVICES

We also recommend that GZA be retained to provide geotechnical engineering observation and consultation services during construction to observe compliance with design and construction recommendations and specifications. Specifically, these services should include on-call observation/consultation for geotechnical-related issues as needed by MDOT.

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TABLE 1 - SUMMARY OF SUBSURFACE EXPLORATIONS
Route 26 Reconstruction
Poland, Maine
PIN 10014.00

Boring	Station, Offset	Approximate Encountered Thickness (m)					Approximate Depth Below Ground Surface (m)		Remarks
		Pavement	Topsoil / Peat	Fill	Ice Contact Deposits	Glacial Till	Boring(2)	Water(3)	
GZ-HA1-04	5+040, CL	---	0.09	---	---	0.52	0.61 HAR	NE	Carpenter Road Baseline
GZ-HA2-04	5+180, CL	---	0.61	---	---	0.30	0.91	0.61	Carpenter Road Baseline
GZ-B1-04	5+320, 1.2 Lt	0.08	---	1.29	---	2.29	3.66	0.9	Carpenter Road Baseline
GZ-B2-04	10+140, 1.2 Rt	0.15	---	3.36	---	0.15	3.66	NE	Route 122 Baseline
GZ15-01	20+200, 1.5 Lt	0.15	---	1.37	---	2.14	3.66	2.7	By GZA in 2001
HB-POLA-201	20+300, 3.2 Rt	0.19	---	0.57	---	0.76	1.52	NE	By MDOT
HB-POLA-202	20+450, 2.5 Rt	0.14	---	0.56	---	0.67	1.37	NE	By MDOT
GZ-B3-04	20+460, 2.9 Rt	0.10		1.73	---	1.83	3.66	NE	75mm Pavement Core
GZ1-03	20+570, 2.3 Rt	0.15	---	0.98	---	2.16	3.29 SSR	2.7	
GZ2-03	20+709, 2.3 Rt	0.15	---	1.07	1.52	0.61	3.35	1.5	
HB-POLA-203	20+850, 2.8 Rt	0.13	---	0.66	---	0.67	1.46	NE	By MDOT
GZ3-03	21+005, 2.3Rt	0.15	---	1.22	---	1.98	3.35	2.7	
GZ4-03	21+130, 1.5 Rt	0.18	---	0.89	---	1.52	2.59 SSR/AR	2.1	
GZ5-03	21+200, 1.5 Rt	0.09	---	0.91	---	1.13	2.13 SSR/AR	2.1	
GZ-B4-04	21+320, 3.2 Rt	0.10	---	0.73	---	2.83	3.66 SSR	1.5	
HB-POLA-204	21+450, 3.1 Rt	0.14	---	0.71	---	0.67	1.52	NE	By MDOT
GZ6-03	21+460, 3.5 Rt	0.24	---	0.76	---	2.05	3.05	NE	
GZ-HA3-04	21+480, 7.5 Lt	---	0.58	---	---	0.18	0.76	NE	
GZ-B5-04	21+520, 2.1 Lt	0.10	---	0.97	---	---	1.07 AR	NE	
GZ7-03	21+560, 2 Rt	0.21	---	0.86	---	1.43	2.50 SSR/AR	1.1	
GZ-HA4-04	21+610, 14.3 Lt	---	0.46	0.55	---	0.21	1.22	NE	
GZ8-03	21+655, 1.5 Rt*	0.15	---	1.37	---	---	1.52 SSR/AR	NE	
GZ-HA5-04	21+701, 12 Lt	---	0.46/0.15	---	---	0.30	0.91	NE	
GZ9-03	21+780, 3.5 Rt*	0.21	---	0.40	---	---	0.61 SSR/AR	NE	
GZ-HA6-04	21+800, 14Lt	---	0.30	---	---	0.31	0.61 HAR	NE	
GZ-TP1-04	21+820, 0.5 to	0.20	---	1.53	---	---	1.83		

TABLE 1 - SUMMARY OF SUBSURFACE EXPLORATIONS
Route 26 Reconstruction
Poland, Maine
PIN 10014.00

Boring	Station, Offset	Approximate Encountered Thickness (m)					Approximate Depth Below Ground Surface (m)		Remarks
		Pavement	Topsoil / Peat	Fill	Ice Contact Deposits	Glacial Till	Boring(2)	Water(3)	
	3.5 Rt								
GZ-HA7-04	21+922, 10 Lt	---	0.15	---	---	0.46	0.61 HAR	0.15	
GZ10-03	21+950, 5.5 Rt*	0.21	---	0.98	---	2.32	3.51	2.3	
GZ-HA8-04	22+036, 10 Lt	---	0.43	---	---	0.33	0.76	NE	
HB-POLA-205	22+050, 6 Rt*	0.14	---	0.99	---	0.70	1.83	NE	By MDOT
GZ11-03	22+055, 6 Rt*	0.18	---	1.04 (1)	---	1.98	3.20	2.7	
GZ12-03	22+140, 6.8 Rt*	0.15	---	1.07 (1)	---	1.52	2.74	2.1	
GZ-HA9-04	22+170, 9.5 Lt	---	0.24	---	---	0.43	0.67	NE	
GZ13-03	22+220, 6.8 Rt*	0.15	---	1.07 (1)	---	1.52	2.74	2.1	
GZ14-03	22+290, 6.0 Rt*	0.27	---	1.41 (1)	---	1.52	3.20	2.1	
GZ-B6-04	22+420, 4.6 Rt	0.18 #	---	0.73	---	2.75	3.66	NE	75mm Pavement Core
GZ15-03	22+510, 6.8 Rt*	0.30	---	0.77	---	2.26	3.33 SSR	2.1	
HB-POLA-206	22+550, 4.1 Rt	0.17	---	0.29	---	1.06	1.52	NE	By MDOT
GZ-TP2-04	22+600, 0.5 to 3.5 Rt	0.23	---	0.68	---	0.8 to 1.53	1.71 to 2.44 (refusal)		
GZ-P1-04	22+640, 2.7 Rt	0.23	NS	NS	NS	NS	4.57	NS	
GZ16-03	22+660, 1.8 Rt	0.23	---	0.41	---	---	0.64 SSR	NE	
GZ-TP3-04	22+740, 0.5 to 3.2 Rt	0.18	---	1.34 (1)	---	0.61	2.13		
GZ17-03	22+770, 1 Rt	0.21	---	1.31 (1)	---	0.79	2.31 SSR/AR	NE	
GZ-B7-04	22+990, 1.2 Lt	0.30	---	3.28 (1)	---	---	3.66	1.43	
GZ18-03	23+102, 2 Lt	0.24	---	0.83	---	2.28	3.35	2.1	
HB-POLA-207	23+150, 2 Rt	0.17	---	0.50	---	0.85	1.52	NE	By MDOT
GZ19-03	23+250, 2 Rt	0.18	---	1.04	1.88	---	3.10 SSR	0.8	
GZ-P2-04	23+280, 1.4 Rt	0.11 #	NS	NS	NS	NS	3.96	NS	75mm Pavement Core
GZ20-03	23+302, 2 Rt	0.15	---	1.07	---	1.40	2.62 SSR/AR	NE	
GZ21-03	23+460, 3 Lt	---	0.91	---	2.14	---	3.05	NE	
GZ22-03	23+532, 5 Lt	---	---	1.83	1.22	---	3.05	NE	
GZ-P3-04	23+625, 7.5 Rt	0.09	NS	NS	NS	NS	4.27	NS	
GZ23-03	23+670, CL	0.27	---	0.64	2.44	---	3.35	NE	

TABLE 1 - SUMMARY OF SUBSURFACE EXPLORATIONS
Route 26 Reconstruction
Poland, Maine
PIN 10014.00

Boring	Station, Offset	Approximate Encountered Thickness (m)					Approximate Depth Below Ground Surface (m)		Remarks
		Pavement	Topsoil / Peat	Fill	Ice Contact Deposits	Glacial Till	Boring(2)	Water(3)	
GZ24-03	23+803, 5 Rt	0.12	---	0.86 (1)	1.37	---	2.35 SSR/AR	NE	
GZ-P4-04	23+860, 4.2 Rt	0.09	NS	NS	NS	NS	3.96	NS	
GZ-HA10-04	23+904, 9.2 Lt	---	0.40	---	0.67	---	1.07	NE	
GZ-P5-04	23+904, 5 Rt	0.15	NS	NS	NS	NS	2.23	NS	
GZ-HA12-04	24+004, 15 Rt	---	0.30	0.61	0.25	---	1.16	NE	
GZ-HA11-04	24+004, 14Lt	---	0.30	---	1.83	---	2.13 HAR	NE	
GZ-HA13-04	24+024, 12 Rt	---	0.30/0.55	---	---	---	0.85 HAR	NE	
GZ-HA14-04	24+028, 10.5 Lt	---	0.30/1.99	---	---	---	2.29 HAR	NE	
GZ-HA15-04	24+042, 11.5 Lt	---	0.30/1.60	---	---	---	1.90 HAR	NE	
GZ-HA16-04	24+052, 11.5 Lt	---	0.30/0.92	---	---	---	1.22 HAR	NE	
GZ-HA17-04	24+065, 11 Rt	---	0.30	0.43	0.64	---	1.37	NE	
GZ-HA18-04	24+072, 9 Lt	---	0.30	---	0.68	---	0.98 HAR	NE	
GZ-P6-04	24+110, 3 Rt	0.09	NS	NS	NS	NS	4.57	NE	
GZ25-03	24+133, 2 Lt	0.21	---	0.83	2.31	---	3.35	NE	
HB-POLA-208	24+150, 2.4 Rt	0.16	---	0.30	1.06	---	1.52	NE	By MDOT
GZ-P7-04	24+194, 3.2 Rt	0.09	NS	NS	NS	NS	4.57	NE	
GZ26-03	24+268, 2 Lt	---	---	0.30	3.05	---	3.35	NE	
GZ27-03	24+422, 2 Rt	0.09	---	0.67	2.90	---	3.66	NE	
GZ28-03	24+570, 9 Rt	---	---	1.37	1.68	---	3.05	NE	
GZ29-03	24+722, 2.3 Rt	0.27	---	1.25 (1)	1.83	---	3.35	NE	
GZ30-03	24+872, 2.3 Lt	0.24	---	1.13	1.98	---	3.35	NE	
GZ31-03	25+020, 3.5 Lt	0.08	---	1.49	2.11	---	3.66	NE	
GZ-B8-04	25+100, 1.2 Lt	0.30	---	1.53	1.83	---	3.66	NE	
GZ32-03	25+168, 3 Lt	0.08	---	0.98	3.23	---	4.27	NE	
GZ-B9-04	25+260, 1.8 Lt	0.27	---	0.19	1.22	---	1.68	NE	
GZ33-03	25+321, 3 Lt	0.08	---	0.85	3.36	---	4.27	NE	
GZ-B10-04	25+370, 1.8 Lt	0.11 #	---	1.26	1.37	---	2.74	NE	75mm Pavement Core

TABLE 1 - SUMMARY OF SUBSURFACE EXPLORATIONS
Route 26 Reconstruction
Poland, Maine
PIN 10014.00

Boring	Station, Offset	Approximate Encountered Thickness (m)					Approximate Depth Below Ground Surface (m)		Remarks
		Pavement	Topsoil / Peat	Fill	Ice Contact Deposits	Glacial Till	Boring(2)	Water(3)	
GZ-B11-04	25+530, 1.8 Lt	0.30	---	0.61	1.22	---	2.13	NE	
GZ34-03	25+615, 3 Lt	0.21	---	0.92	2.22	---	3.35	NE	
HB-POLA-209	25+650, 2.6 Rt	0.17	---	0.96	0.70	---	1.83	NE	By MDOT
GZ35-03	25+771, 2.3 Lt	0.24	---	0.86 (1)	2.25	---	3.35	NE	
GZ36-03	25+918, 3 Lt	0.18	---	0.89	2.28	---	3.35	NE	
GZ-P8-04	26+000, 1.7 Rt	0.15	NS	NS	NS	NS	5.18	NS	
GZ-P9-04	26+095, 12.5 Rt	---	NS	NS	NS	NS	4.27	NS	
GZ37-03	26+217, 1 Rt	0.09	---	1.28	1.98	---	3.35	NE	
HB-POLA-210	26+250, 1.2 Rt	0.13	---	0.85	0.54	---	1.52	NE	By MDOT
GZ38-03	26+420, 3 Rt	0.12	---	0.95	2.28	---	3.35	NE	
GZ-B12-04	26+570, 2.7 Rt	0.13 #	---	0.78	2.90	---	3.81	NE	75mm Pavement Core
GZ39-03	26+720, 2.8 Rt	0.18	---	0.12	3.05	---	3.35	NE	
HB-POLA-211	26+750, 2.8 Rt	0.16	---	0.57	0.79	---	1.52	NE	By MDOT
GZ40-03	26+923, 2.3 Rt	0.18	---	0.92	2.25	---	3.35	NE	

TABLE 1 - SUMMARY OF SUBSURFACE EXPLORATIONS
Route 26 Reconstruction
Poland, Maine
PIN 10014.00

Notes:

*	2003 Boring offset was revised in this table to reflect the relocated centerline.
#	Pavement thickness includes 50-millimeter thickness of MacAdam beneath asphalt pavement.
1.	A 0.03- to 0.06-meter thick layer of asphalt pavement was encountered within the fill layer at this location – refer to boring log for details.
2.	Unless noted otherwise, the boring was completed without refusal.
3.	SSR – Indicates split spoon refusal, defined as penetration resistance of at least 25 blows for no penetration of a standard split spoon.
4.	AR – Indicates auger refusal, defined as the inability to advance the hollow stem augers below the noted depth.
5.	HAR – Indicates hand auger refusal, defined as the inability to advance the hand auger below the noted depth.
6.	Depth to water was estimated based on observation of wet split spoon soil samples. The depth to water varies with season, precipitation, and construction activity in the area. The depth to water during and after construction may vary from that observed in the test borings.
7.	NE – Indicates that water was not encountered in the test boring.
8.	Refer to logs of test borings for additional information regarding subsurface conditions.
9.	NS – Indicates that no sample was obtained (probe exploration). Refer to nearby boring logs for subsurface conditions.

TABLE 2

State of Maine - Department of Transportation

Laboratory Testing Summary Sheet

Town(s): POLAND Project Number: 10014.00

Boring & Sample Identification Number	Station (Meter)	Offset (Meter)	Depth (Meter)	Reference Number	G.S.D.C. Sheet	W.C.	L.L.	P.I.	Classification		
									Unified	AASHTO	Frost
HB-POLA-202, 1D	20+450	2.5RT.	0.15-0.76	98617	1	3.6			GW-GM	A-1-b	I
HB-POLA-202, 2D	20+450	2.5RT.	0.76-1.37	98618	1	19.7			SM	A-4	IV
HB-POLA-203, 1D/A	20+850	2.8RT.	0.24-0.40	98624	1	2.3			GW-GM	A-1-a	0
HB-POLA-203, 1D/B	20+850	2.8RT.	0.40-0.79	98620	1	15.9			SM	A-2-4	II
HB-POLA-203, 2D	20+850	2.8RT.	0.85-1.46	98621	1	9.4			SM	A-4	IV
HB-POLA-205, 1D	22+050	2 RT.	0.30-0.62	98622	1	2.1			SW-SM	A-1-b	0
HB-POLA-205, 2D	22+050	2 RT.	1.22-1.83	98623	1	10.5			SM	A-2-4	II
HB-POLA-207, 1D/A	23+150	2 RT.	0.30-0.67	98625	2	1.7			GW	A-1-a	0
HB-POLA-207, 1D/B	23+150	2 RT.	0.67-0.91	97476	2	12.3			SM	A-2-4	II
HB-POLA-207, 2D	23+150	2 RT.	0.91-1.52	97477	2	11.1			SM	A-1-b	I
HB-POLA-208, 1D/A	24+150	2.4RT.	0.30-0.46	97478	2	3.0			SW-SM	A-1-b	0
HB-POLA-208, 2D/A	24+150	2.4RT.	0.91-1.22	97479	2	8.4			SM	A-1-b	I
HB-POLA-208, 2D/B	24+150	2.4RT.	1.22-1.52	97480	2	3.5			SP-SM	A-3	0
HB-POLA-209, 1D	25+650	2.6RT.	0.30-0.38	97481	3	1.5			SM	A-1-b	I
HB-POLA-209, 2D	25+650	2.6RT.	1.22-1.83	97482	3	7.5			SP-SM	A-3	0
HB-POLA-211, 1D	26+750	2.8RT.	0.30-0.43	97483	3	1.4			SM	A-1-b	I
HB-POLA-211, 2D	26+750	2.8RT.	0.91-1.52	97484	3	4.6			SP-SM	A-3	0

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 MDOT 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

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

TABLE 3

State of Maine - Department of Transportation

Laboratory Testing Summary Sheet

Town(s): Poland Project Number: 10014.00

Boring & Sample Identification Number	Station (Meter)	Offset (Meter)	Depth (Meter)	Reference Number	G.S.D.C. Sheet	W.C.	L.L.	P.I.	Classification		
									Unified	AASHTO	Frost
GZ4-03/S-1	21+130	1.5 RT	0.18-0.79	98038	1	2.9			SW-SM	A-1-b	0
GZ4-03/S-3	21+130	1.5 RT	1.52-2.13	98039	1	9.7			SM	A-1-b	II
GZ4-03/S-4	21+130	1.5 RT	2.13-2.6	98040	1	9.1			SM	A-1-b	II
GZ7-03/S-1	21+560	2 RT	0.21-0.61	98041	1	2.3			SW-SM	A-1-a	0
GZ7-03/S-3	21+560	2 RT	1.52-2.13	98042	1	10.6			SM	A-1-b	II
GZ7-03/S-4	21+560	2 RT	2.13-2.5	98043	1	9.9			SM	A-1-a	II
GZ11-03/S-1	22+055	2 RT	0.18-0.37	98044	2	2.3			GW-GM	A-1-a	0
GZ11-03/S-2A	22+055	2 RT	0.91-1.07	98045	2	20.3			SM	A-2-4	II
GZ11-03/S-2B	22+055	2 RT	1.22-1.52	98046	2	16.1			SM	A-2-4	II
GZ11-03/S-3	22+055	2 RT	1.52-2.13	98047	2	11.3			SM	A-4	IV
GZ13-03/S-1	22+220	2.3 RT	0.15-0.30	98048	2	1.1			GW-GM	A-1-a	0
GZ13-03/S-2	22+220	2.3 RT	0.91-1.52	98049	2	10.2			SM	A-2-4	II
GZ20-03/S-1	23+302	2 RT	0.15-0.76	98050	3	3.7			SP-SM	A-1-b	0
GZ20-03/S-3	23+302	2 RT	1.52-1.62	99001	3	9.3			SM	A-2-4	II
GZ20-03/S-4	23+302	2 RT	2.44-2.62	99002	3	5.8			SM	A-1-b	II
GZ24-03/S-1	23+803	5 RT	0.12-0.73	99003	3	3.2			SW-SM	A-1-b	0
GZ24-03/S-2	23+803	5 RT	0.91-1.52	99004	3	3.2			SM	A-1-b	II
GZ24-03/S-3	23+803	5 RT	1.52-2.13	99005	3	5.3			SM	A-1-b	II
GZ29-03/S-1	24+722	2.3 RT	0.30-0.76	99006	4	1.9			SW-SM	A-1-b	0
GZ29-03/S-2	24+722	2.3 RT	0.91-1.52	99007	4	1.5			SW-SM	A-1-a	0
GZ29-03/S-3	24+722	2.3 RT	1.52-2.13	99008	4	5.6			SW-SM	A-1-b	0
GZ31-03/S-1	25+020	3.5 LT	0.06-0.67	99009	4	2.9			SP-SM	A-1-b	0
GZ31-03/S-2	25+020	3.5 LT	0.91-1.52	99010	4	1.3			GW	A-1-a	0
GZ31-03/S-3	25+020	3.5 LT	1.83-2.44	99011	4	3.3			SP-SM	A-1-b	0
GZ31-03/S-4	25+020	3.5 LT	2.13-2.74	99012	5	8.3			SM	A-2-4	II
GZ35-03/S-1	25+771	2.3 LT	0.24-0.85	99013	5	3.8			SW-SM	A-1-b	0
GZ35-03/S-3	25+771	2.3 LT	1.52-2.13	99014	5	6.4			SP	A-3	0
GZ35-03/S-5	25+771	2.3 LT	2.74-3.35	99015	5	9.1			SP	A-3	0
GZ37-03/S-1	26+217	1 RT	0.09-0.70	99016	6	6.9			SM	A-2-4	II
GZ37-03/S-3	26+217	1 RT	1.52-2.13	99017	6	4.4			SP-SM	A-3	0
GZ37-03/S-5	26+217	1 RT	2.74-3.35	99018	6	6.1			SP-SM	A-3	0
GZ40-03/S-1	26+923	2.3 RT	0.18-0.79	99019	6	3.4			SW-SM	A-1-b	0
GZ40-03/S-3	26+923	2.3 RT	1.52-2.13	99020	6	4.1			SP	A-1-b	0
GZ40-03/S-5	26+923	2.3 RT	2.74-3.35	99021	6	6.0			SP	A-3	0

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 MDOT 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

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

GZA GeoEnvironmental,

TABLE 4
State of Maine - Department of Transportation
Laboratory Testing Summary Sheet

Rt. 26 Reconstruction
Town(s): Poland

MDOT Project Number: 10014.00
GZA Project Number: 09.0025440.01

Boring & Sample Identification Number	Station (Meter)	Offset (Meter)	Depth (Meter)	Reference Number	G.S.D.C. Sheet	W.C.	L.L.	P.I.	Classification		
									Unified	AASHTO	Frost
GZ-B8-04/S1	25+100	1.2 Lt	0.3-0.48		Sheet 1	2.9			SW-SM	A-1-b	0
GZ-B9-04/S1A	25+260	1.8 Lt	0.46-0.56		Sheet 1	12.6			SM	A-1-b	I
GZ-B9-04/S1B	25+260	1.8 Lt	0.56-1.07		Sheet 1	4.1			GP	A-1-a	0
GZ-B10-04/S1A	25+370	1.8 Lt	0.15-0.29		Sheet 2	3.9			GW	A-1-a	0
GZ-B10-04/S1B	25+370	1.8 Lt	0.29-0.76		Sheet 2	2.9			SW-SM	A-1-b	0
GZ-B11-04/S1A	25-530	1.8 Lt	0.30-0.45		Sheet 2	3.2			SM	A-1-b	I
GZ-B11-04/S1B	25-530	1.8 Lt	0.45-0.91		Sheet 3	4.7			SW-SM	A-1-b	0
GZ-B12-04/S1A	26+570	2.7 Rt	0.15-0.30		Sheet 3	1.6			GP	A-1-a	0
GZ-B12-04/S1B	26+570	2.7 Rt	0.30-0.76		Sheet 3	2.9			SW-SM	A-1-b	0
GZ-TP1-04/S1	21+820	2 Rt	0.3-1.3		Sheet 4	8.7			GM	A-1-a	0
GZ-TP2-04/S1	22+600	2 Rt	0.2-1.7		Sheet 4	9.0			GP-GM	A-1-a	0
GZ-TP3-04/S1	22+740	2 Rt	0.84-1.52		Sheet 4	8.3			GP-GM	A-1-a	0

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 MDOT 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

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

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P:\25440-MDOT\CAD\LOCUS.DWG
FILE INFO:

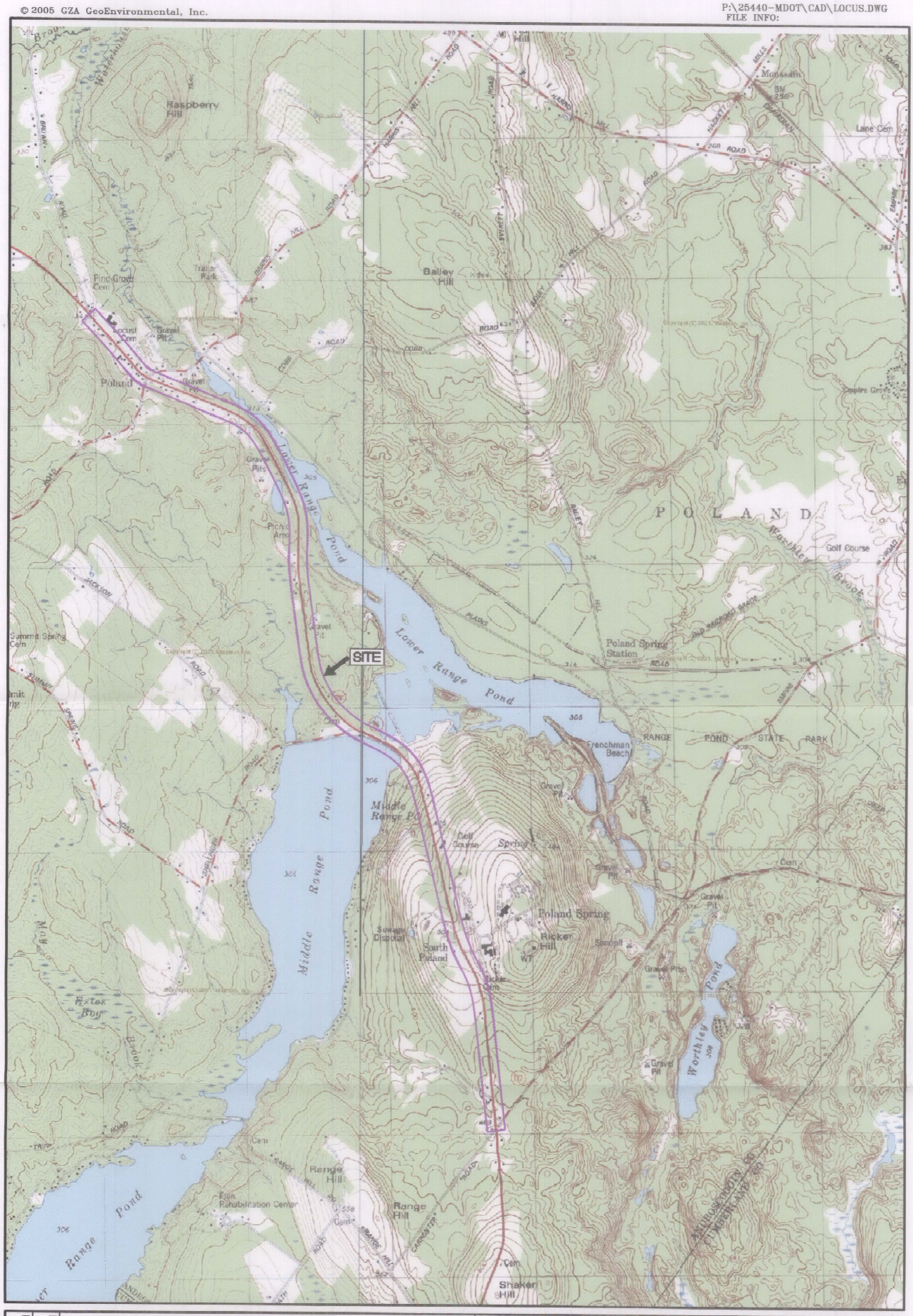
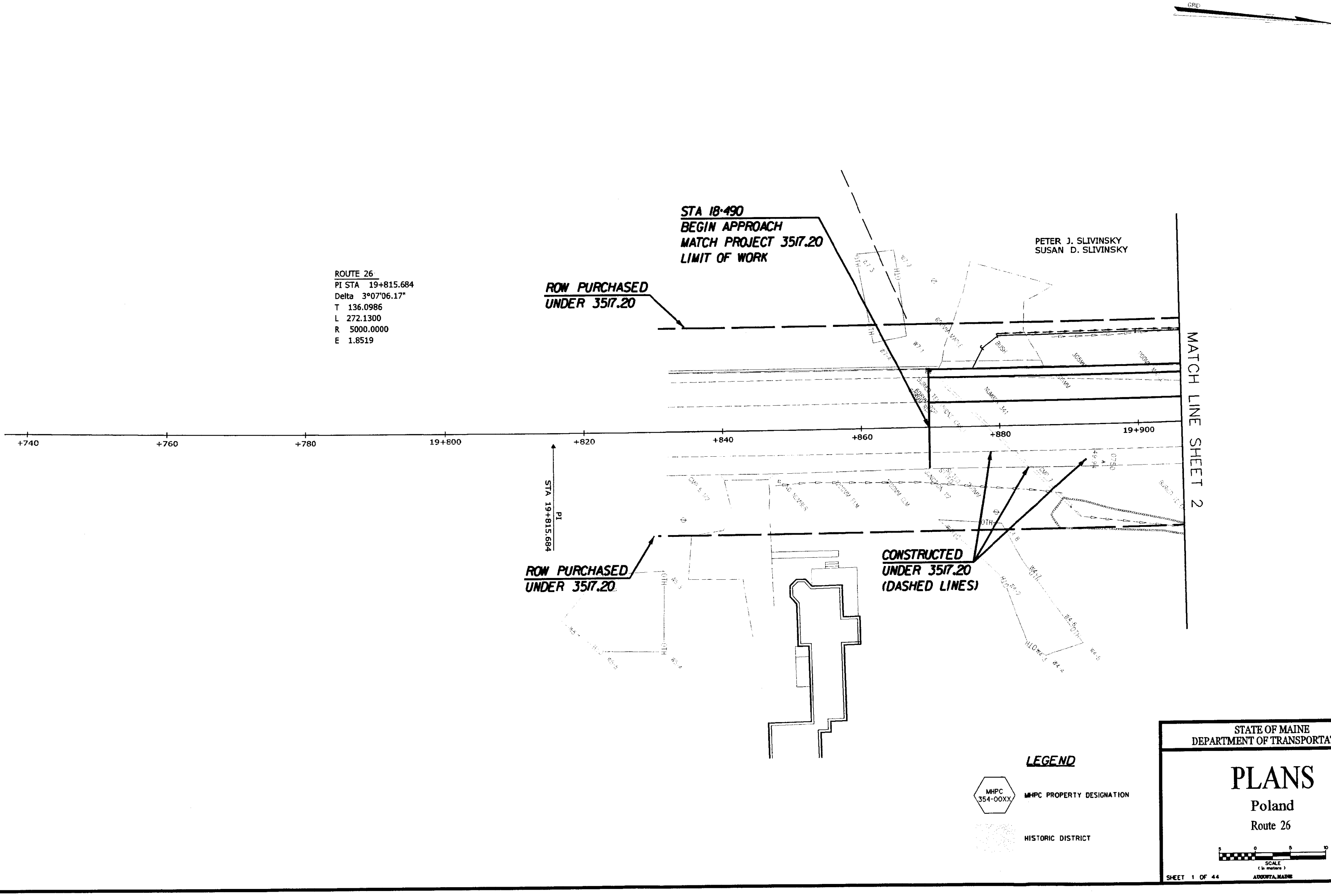


FIGURE No.: 1	PROJECT No.: 25440	ROUTE 26 RECONSTRUCTION PIN 10014.00 POLAND, MAINE	DES'D BY : C.L.S. CHK'D BY : C.L.S. APP'D BY : J.V.E. DRAWN BY : A.P.W. SCALE : 1" = 2000' DATE : MAY 2005
		LOCUS PLAN	

GRAPHIC SCALE 2000' 0' 2000' 4000'

GZA GeoEnvironmental, Inc.
Engineers and Scientists
4 FREE STREET
(207) 879-9190 PORTLAND, MAINE 04101



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

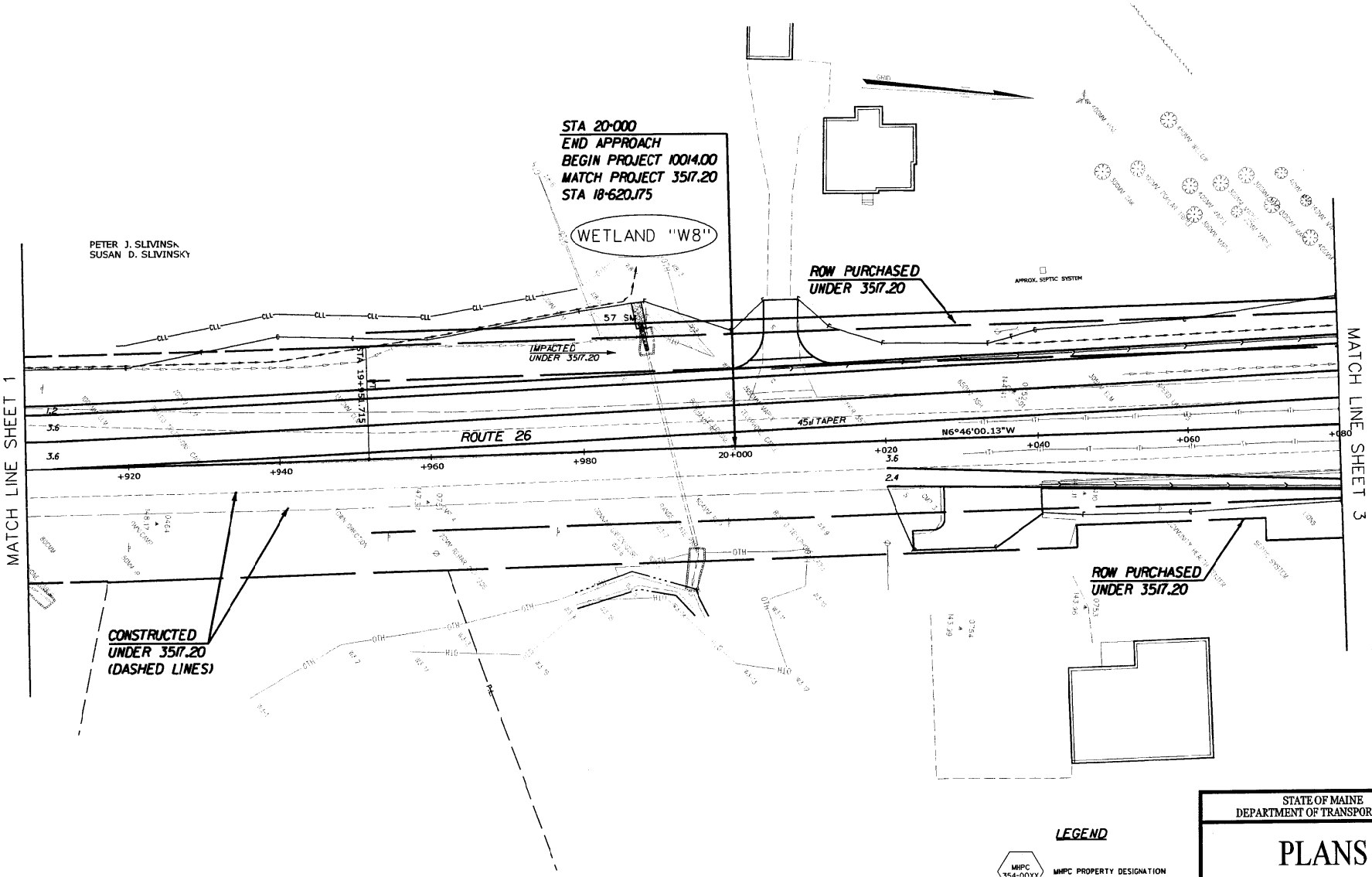
Poland

Route 26

SCALE (in meters)

SHEET 1 OF 44

AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

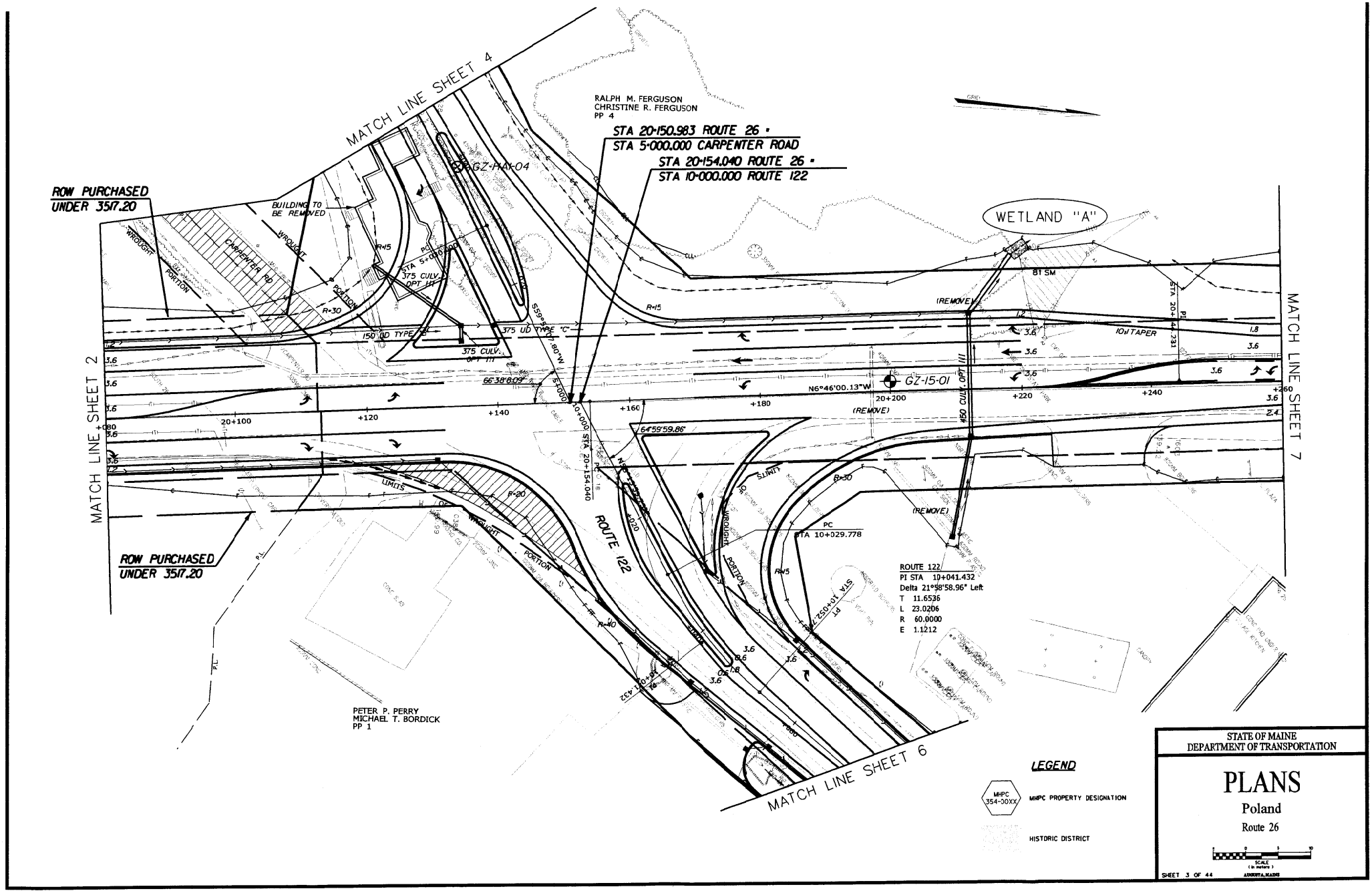
Poland

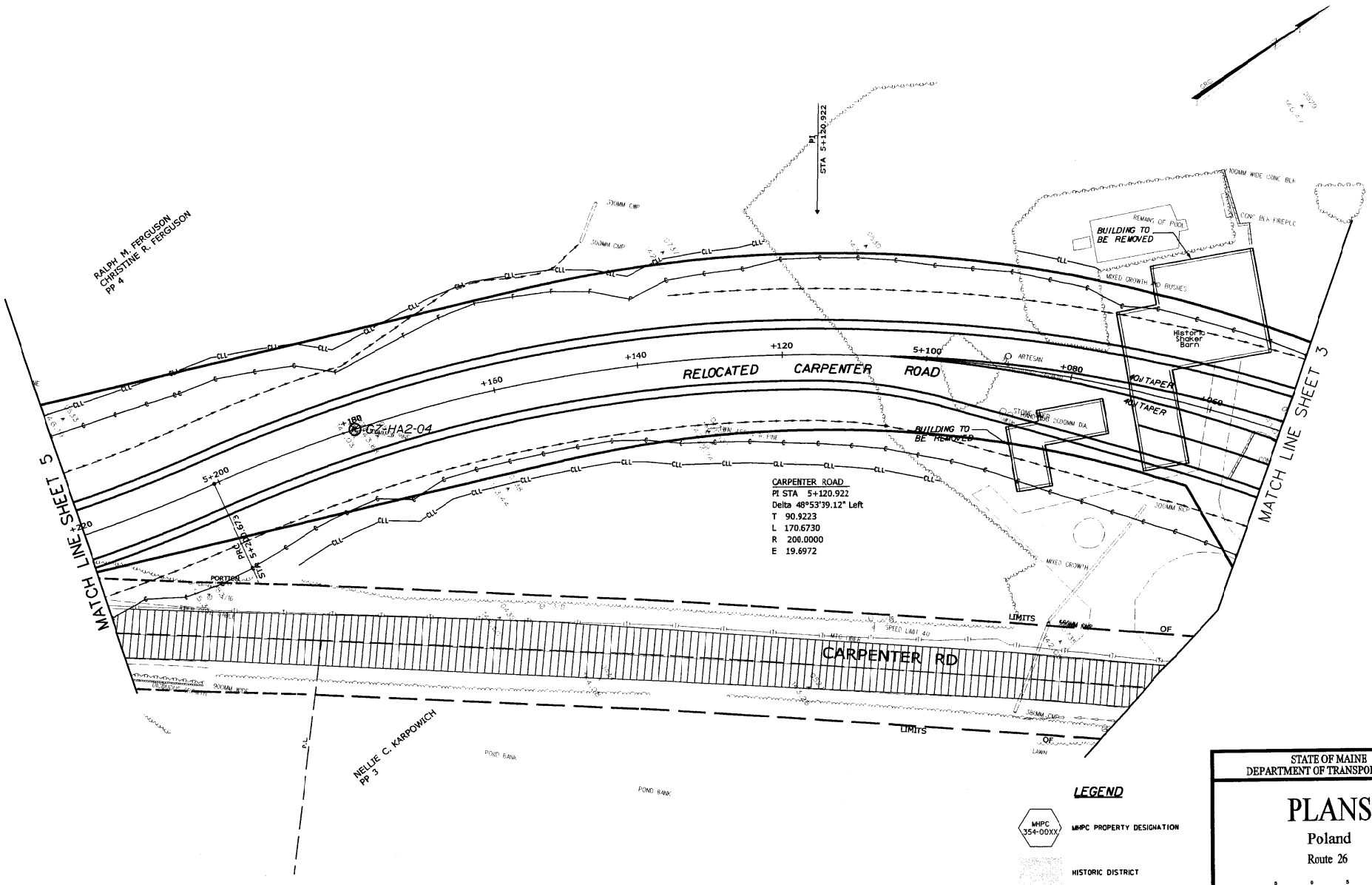
Route 26

SCALE (in meters) 5 0 5 10

SHEET 2 OF 44

AUGUSTA, MAINE


MATCH LINE SHEET 4
MATCH LINE SHEET 2
MATCH LINE SHEET 7
MATCH LINE SHEET 6
ROW PURCHASED UNDER 3517.20
ROW PURCHASED UNDER 3517.20
RALPH M. FERGUSON
CHRISTINE R. FERGUSON
PP 4
STA 20+150.983 ROUTE 26 =
STA 5+000.000 CARPENTER ROAD
STA 20+154.040 ROUTE 26 =
STA 10+000.000 ROUTE 122
WETLAND "A"
GZ-HAY-04
GZ-15-01
BUILDING TO BE REMOVED
CARPENTER RD
WROUGHT PORTION
375 CULV. OPT III
150 UD TYPE "B"
375 UD TYPE "C"
66°38'8.09"
64°59'59.86"
N6°46'00.13"W
450 CULV. OPT III
10:1 TAPER
81 SM
(REMOVE)
ROUTE 122
PC
STA 10+029.778
ROUTE 122
PI STA 10+041.432
Delta 21°58'58.96" Left
T 11.6536
L 23.0206
R 60.0000
E 1.1212
PETER P. PERRY
MICHAEL T. BORDICK
PP 1
LEGEND
MHPC 354-00XX
MHPC PROPERTY DESIGNATION
HISTORIC DISTRICT
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PLANS
Poland
Route 26
SCALE (in meters)
SHEET 3 OF 44
AUGUSTA, MAINE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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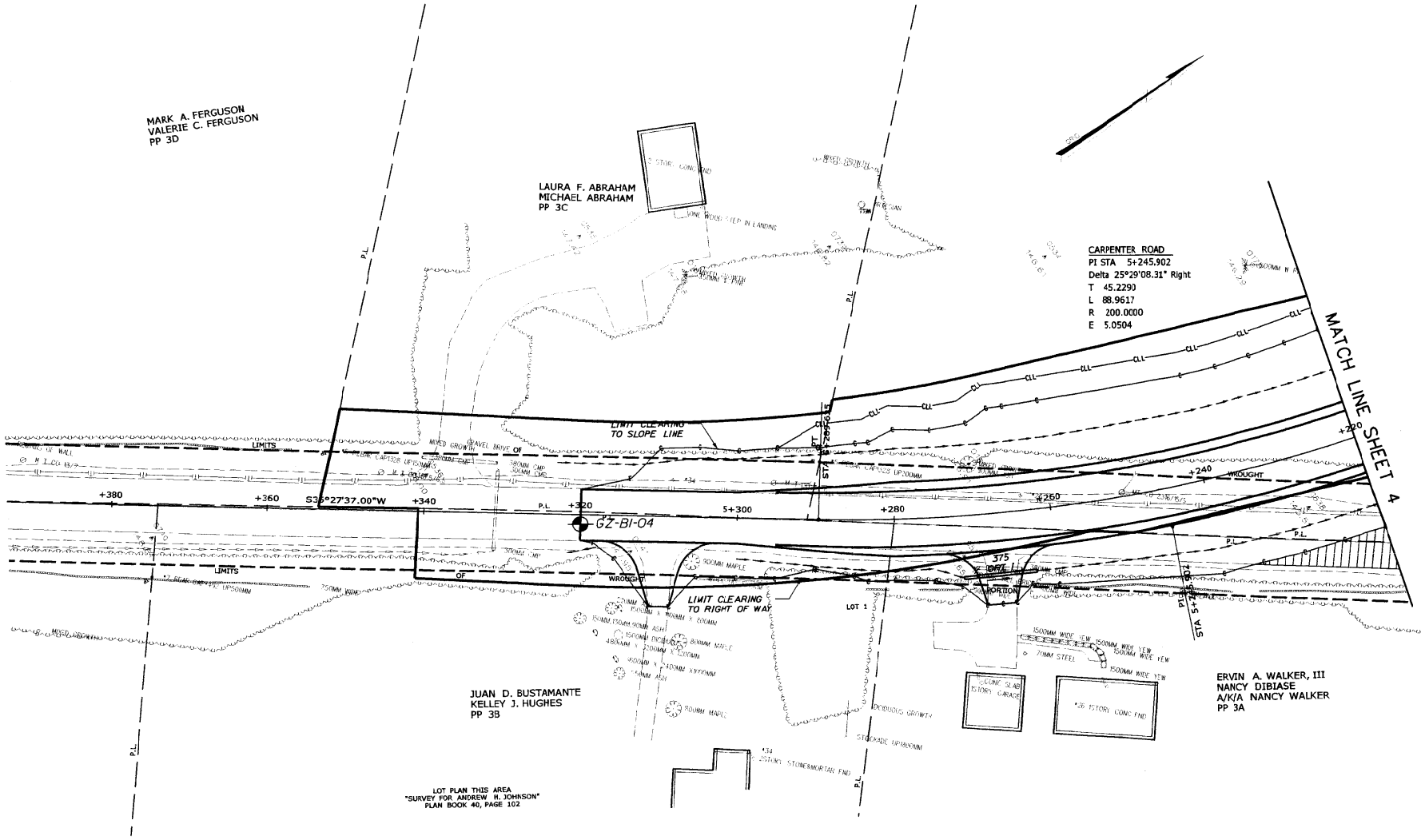
SCALE (in meters)

SHEET 4 OF 44

AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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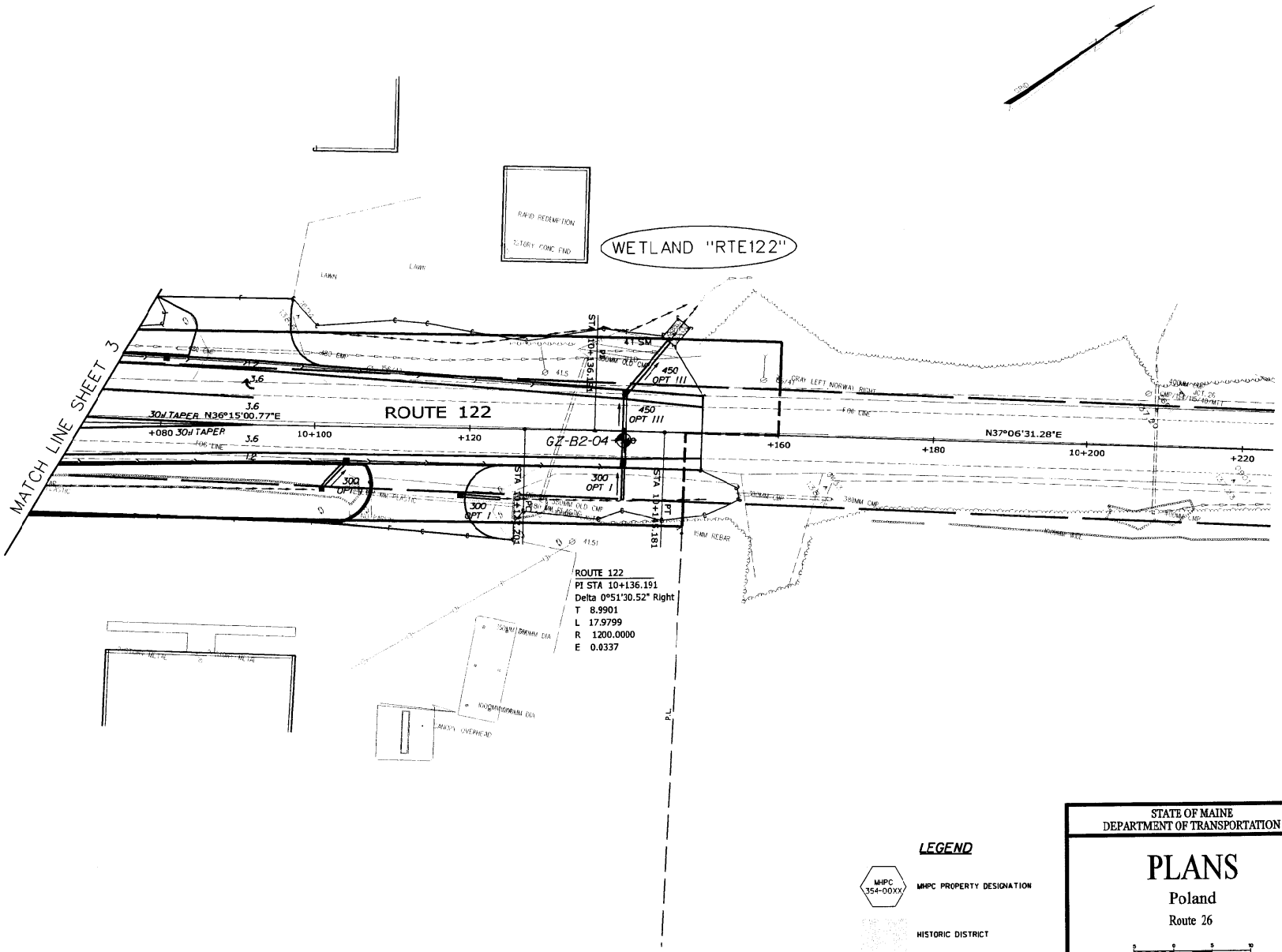
Route 26

SCALE (in meters)

SHEET 5 OF 44

AUGUSTA, MAINE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

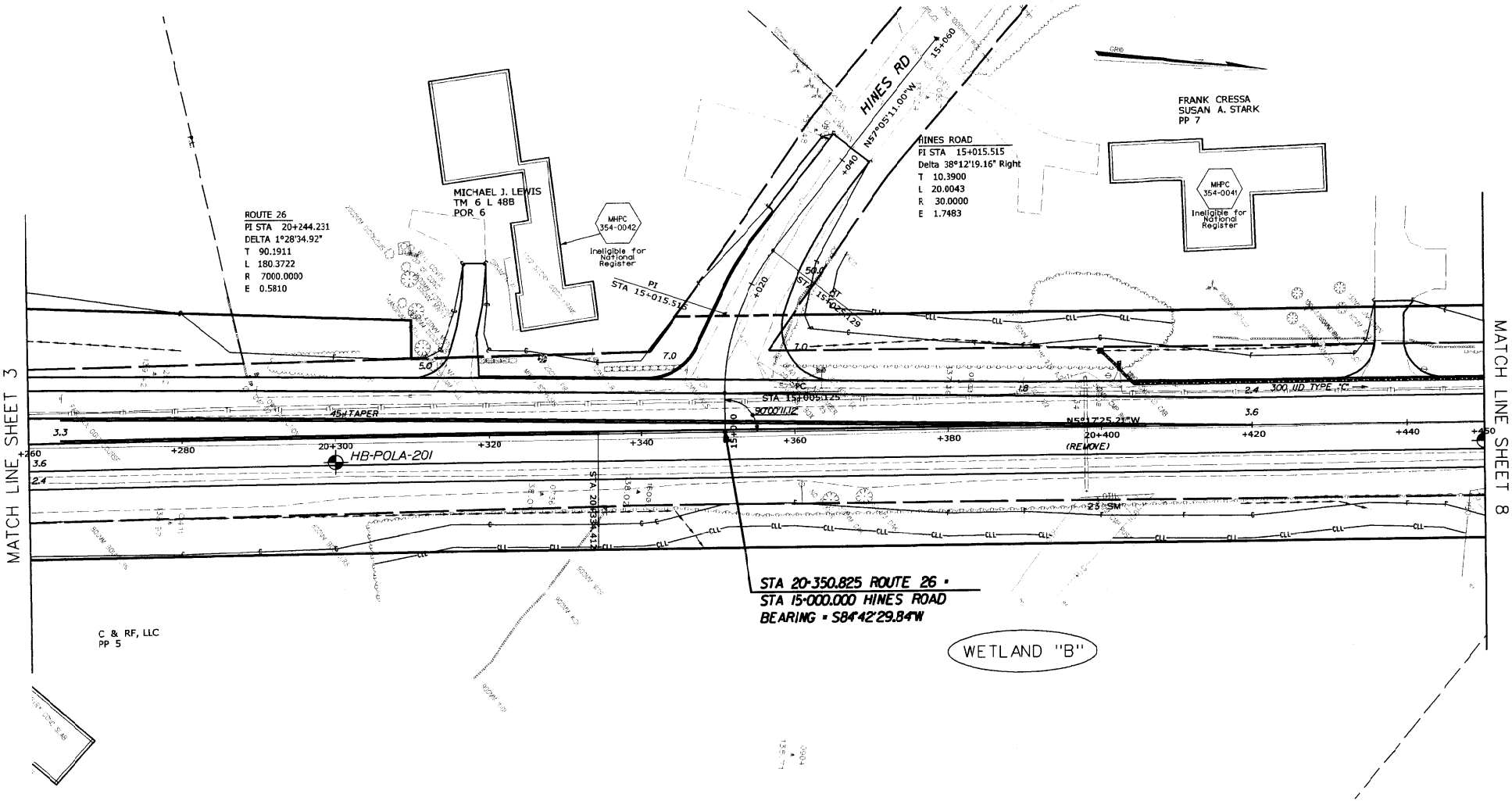
Poland

Route 26

SCALE (in meters)

SHEET 8 OF 44

AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

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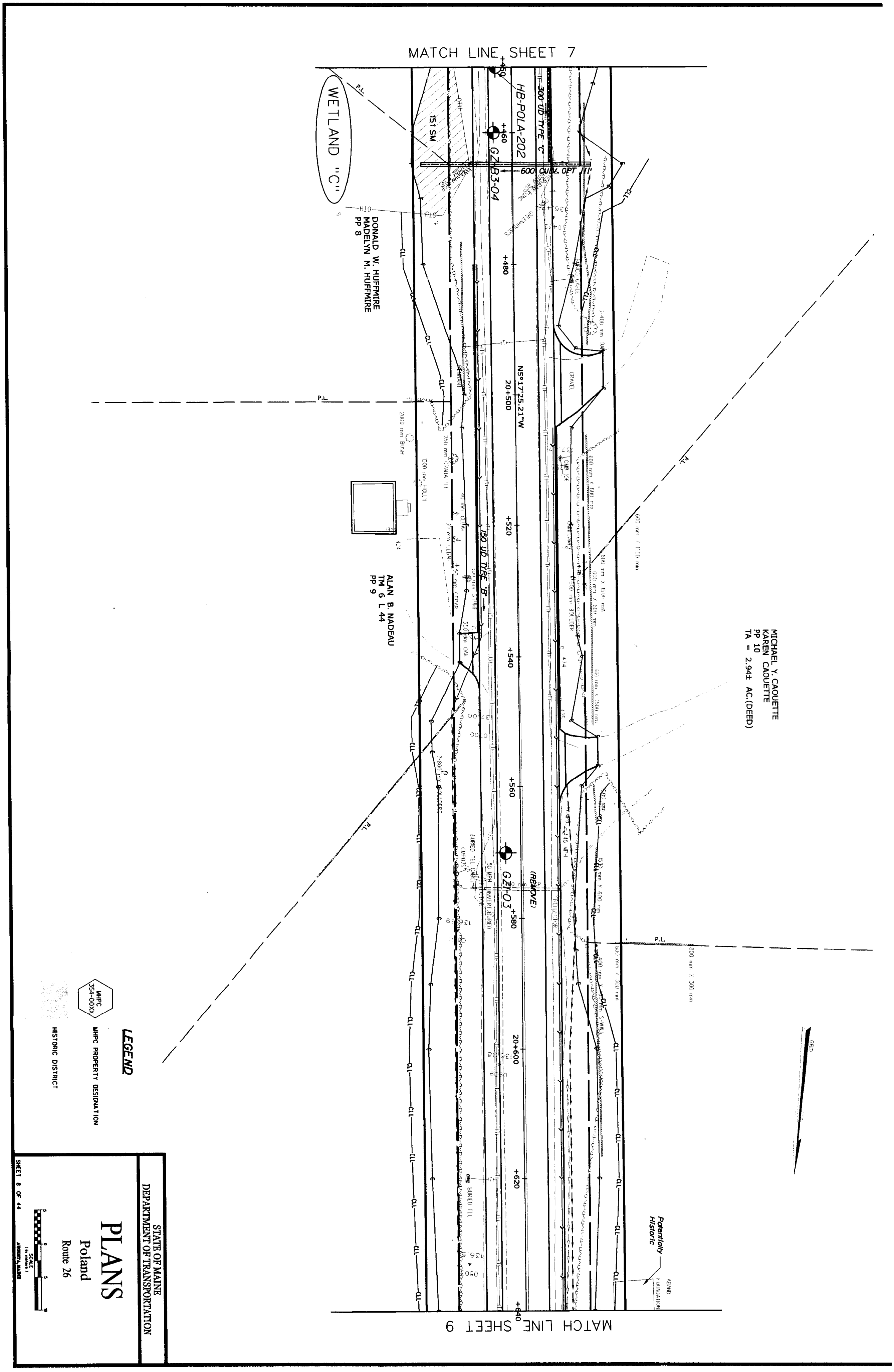
Route 26

SCALE (in meters)

SHEET 7 OF 44

AUGUSTA, MAINE



MATCH LINE SHEET 7
WETLAND "C"
HB-POLA-202
300 UD TYPE "C"
600 CULV. OPT "II"
GZ-B3-04
DONALD W. HUFFMIRE
MADELYN M. HUFFMIRE
PP 8
N5°17'25.21"W
20+500
+480
+520
+540
+560
+580
20+600
+620
+640
150 UD TYPE "B"
ALAN B. NADEAU
TM 6 L 44
PP 9
MICHAEL Y. CAOUETTE
KAREN CAOUETTE
PP 10
TA = 2.94± AC.(DEED)
GZ-I-03
(REMOVE)
BURIED TEL
P.L.
Potentially Historic
LEGEND
MHPC 354-00XX
MHPC PROPERTY DESIGNATION
HISTORIC DISTRICT
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PLANS
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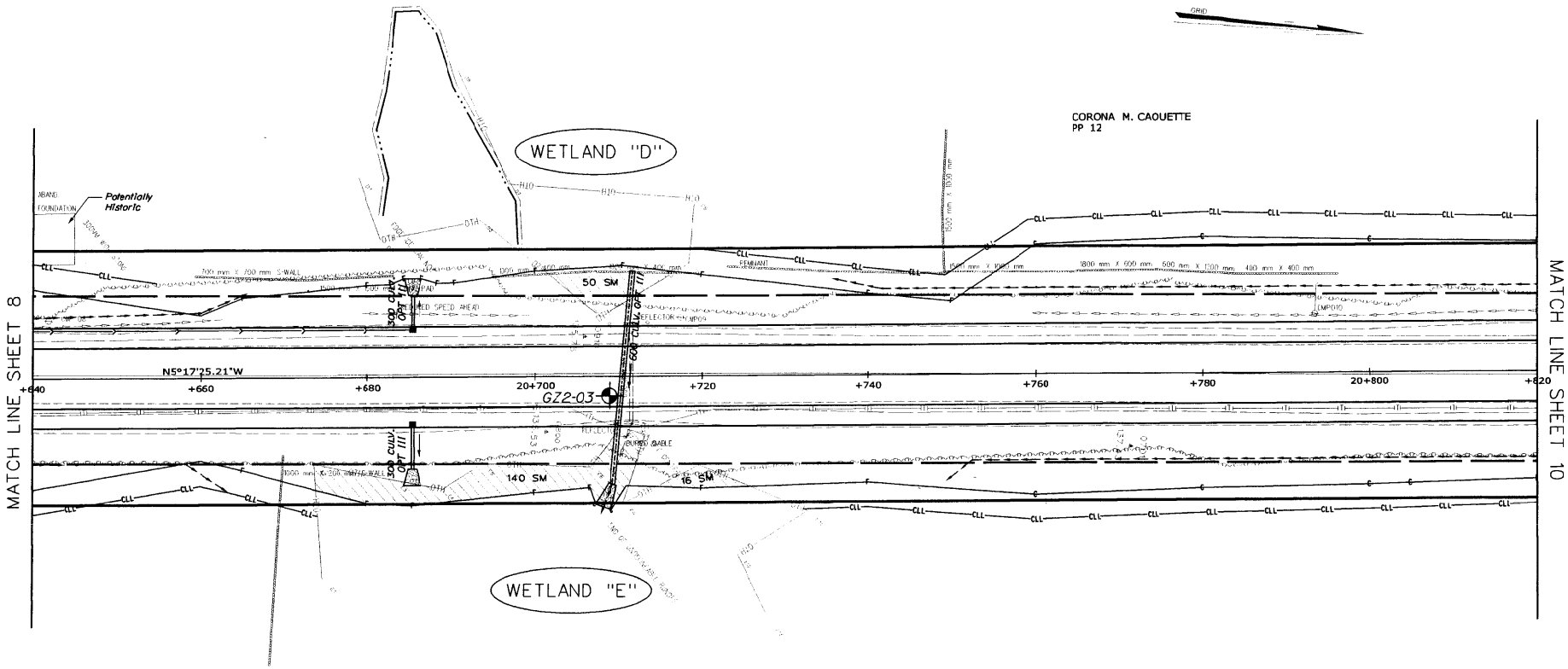
SHEET 8 OF 44
MATCH LINE SHEET 9



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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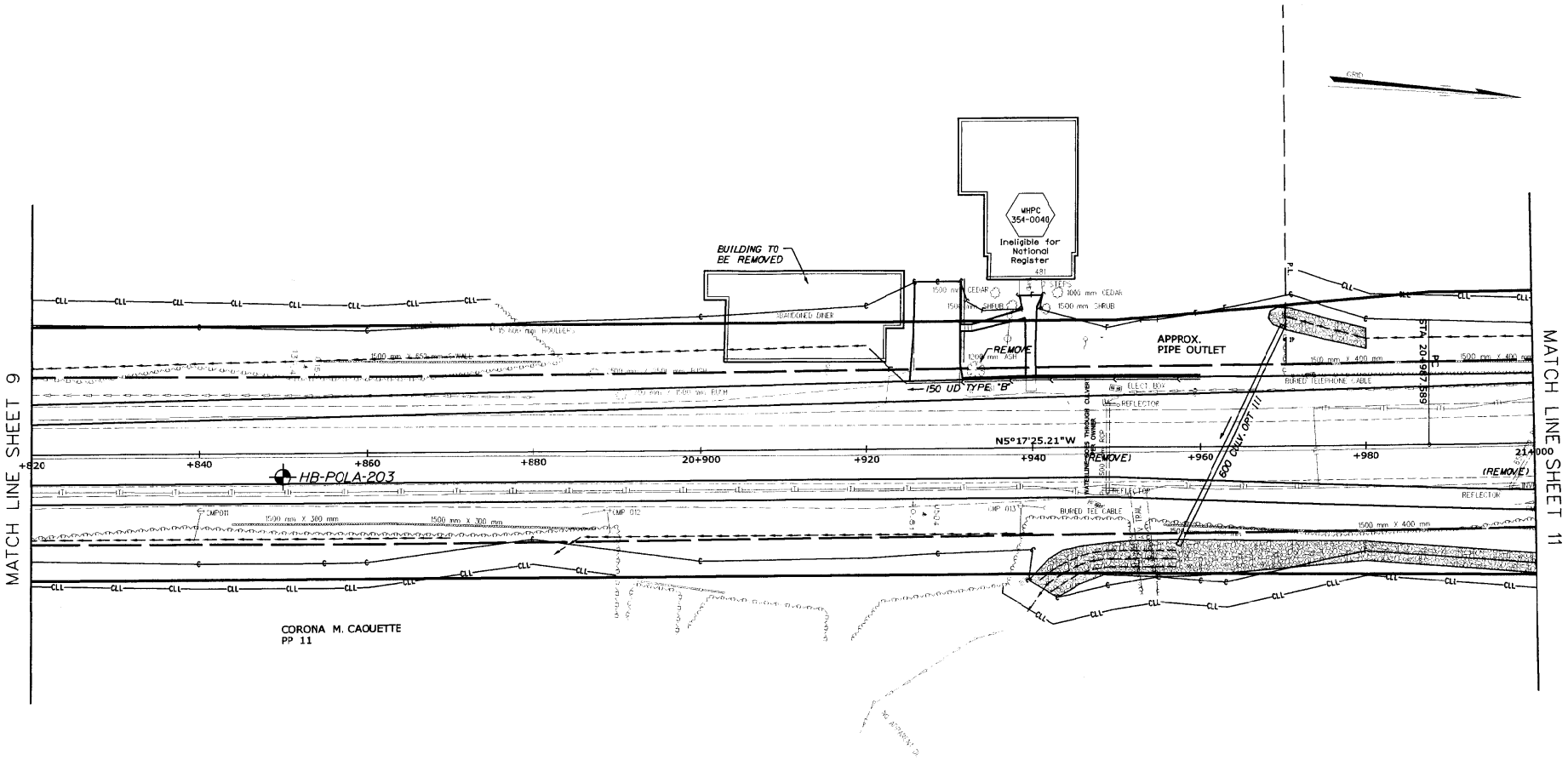
Poland

Route 26

SCALE (in meters) 0 5 10

SHEET 9 OF 44

AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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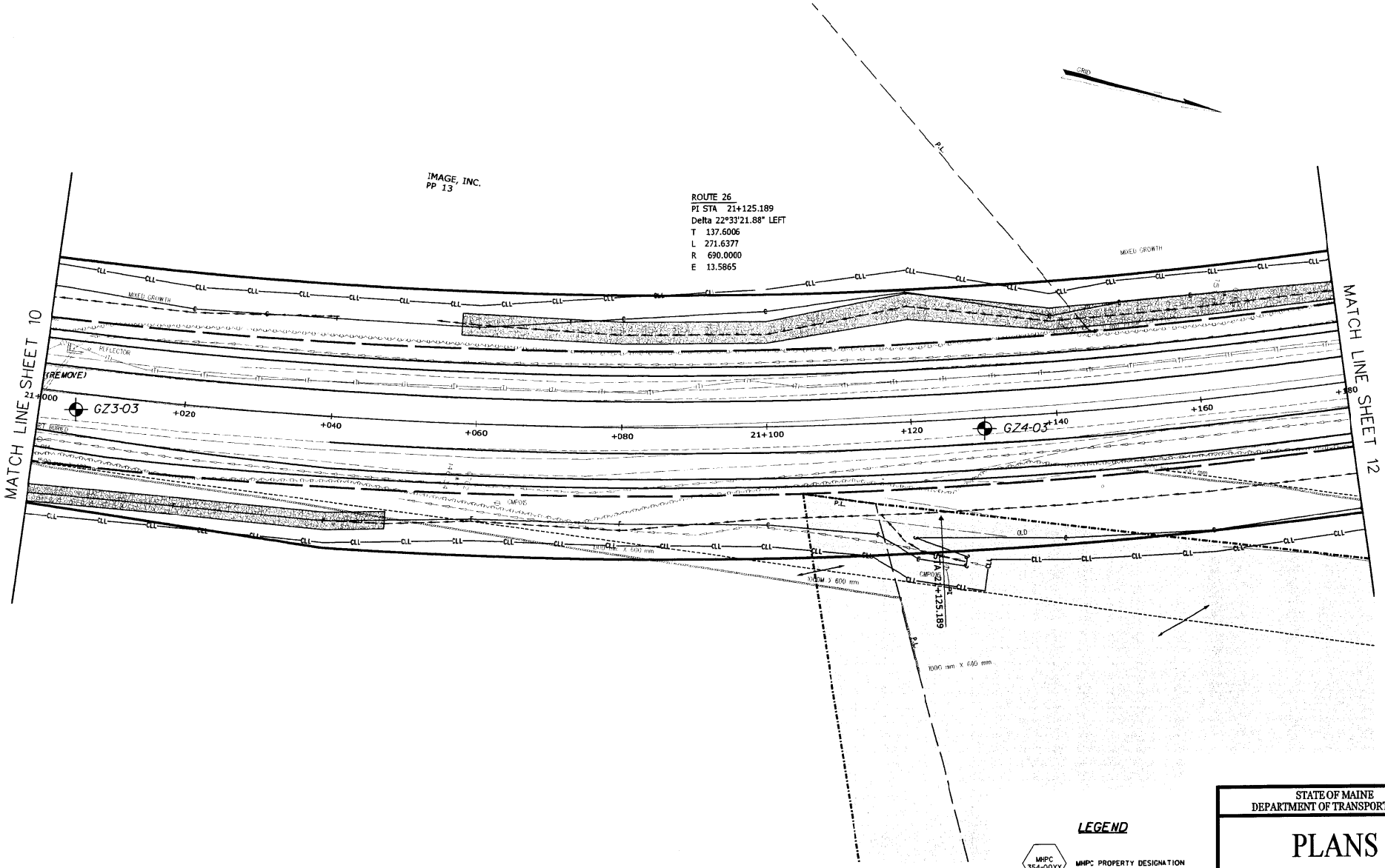
SCALE (in meters)

SHEET 10 OF 44

AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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Poland

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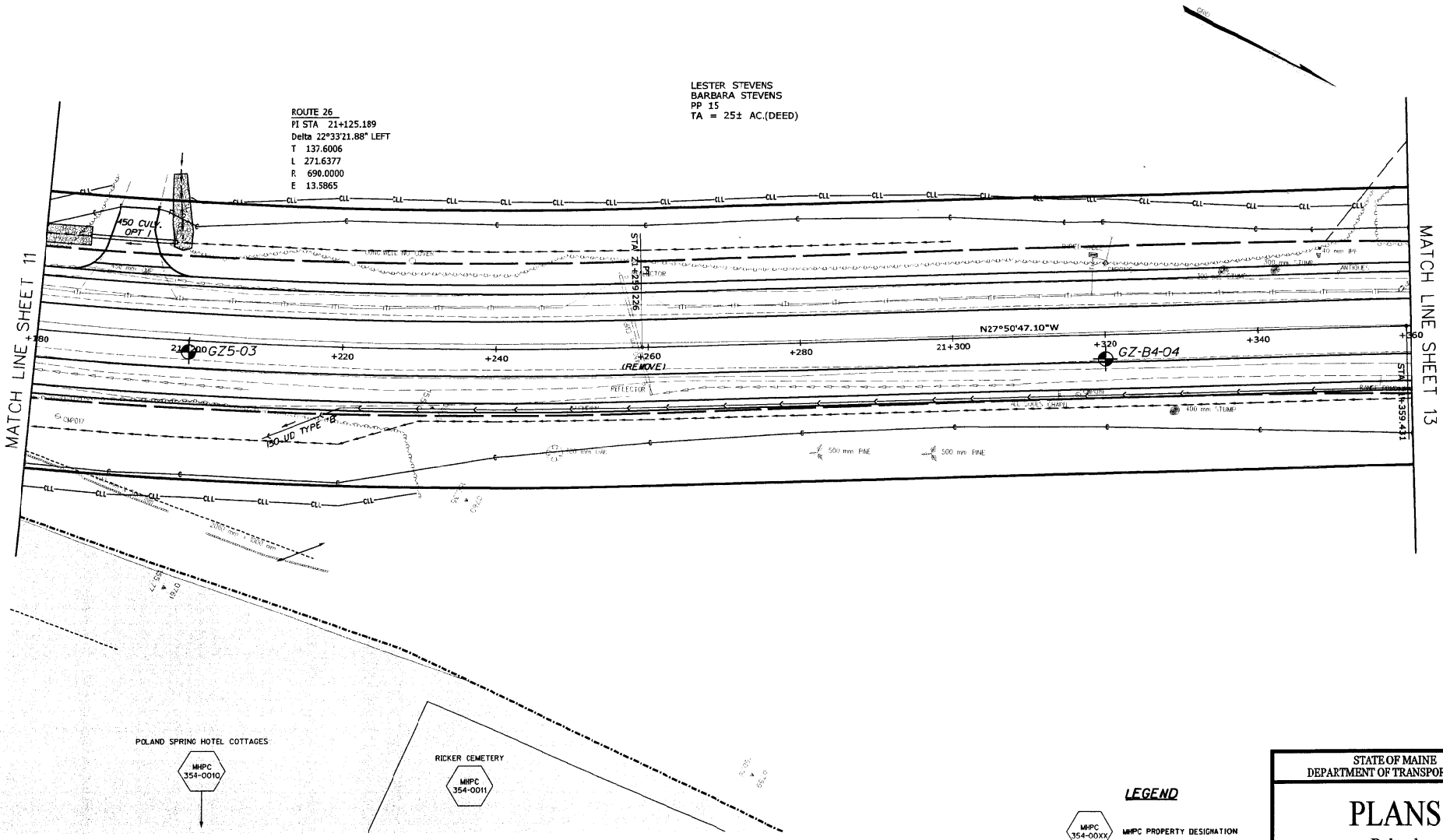
SCALE (in meters)

SHEET 11 OF 44

AUGUSTA, MAINE

PLANS



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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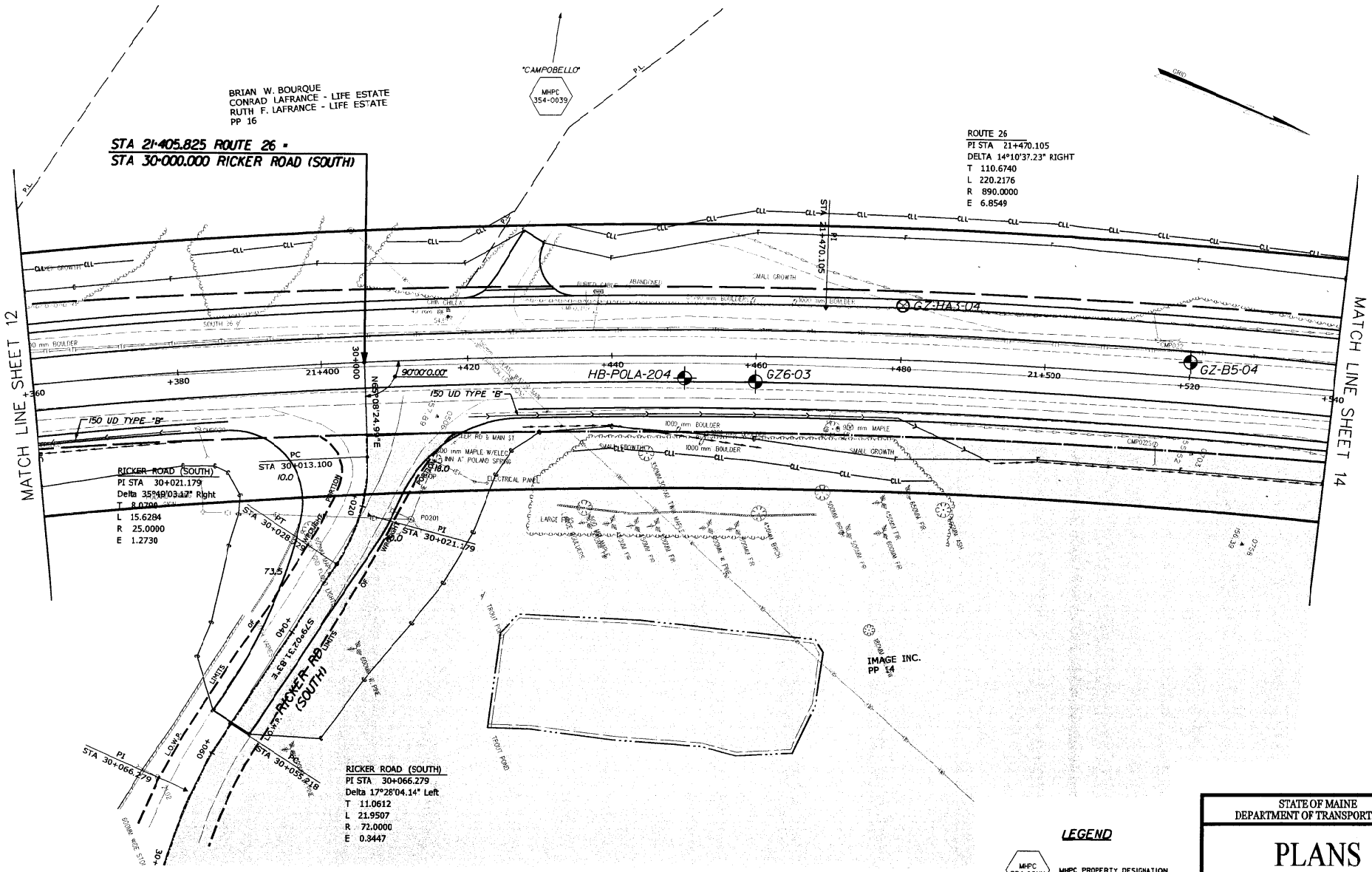
SCALE (in meters) 5 0 5 10

SHEET 12 OF 44 AUGUSTA, MAINE

PLANS



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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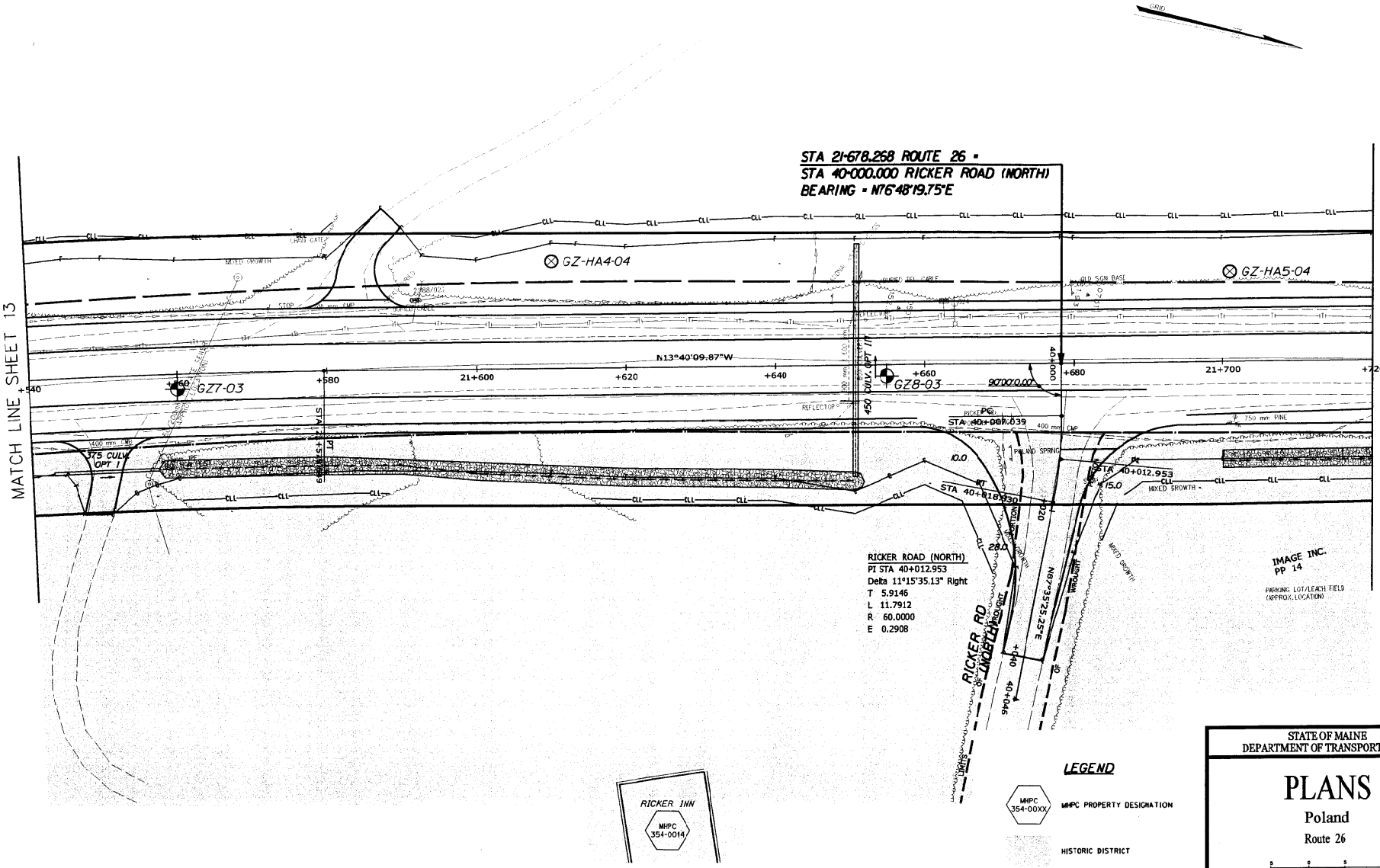
Route 26

SCALE (in meters)

SHEET 13 OF 44

AUGUSTA, MAINE

PI ANS



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

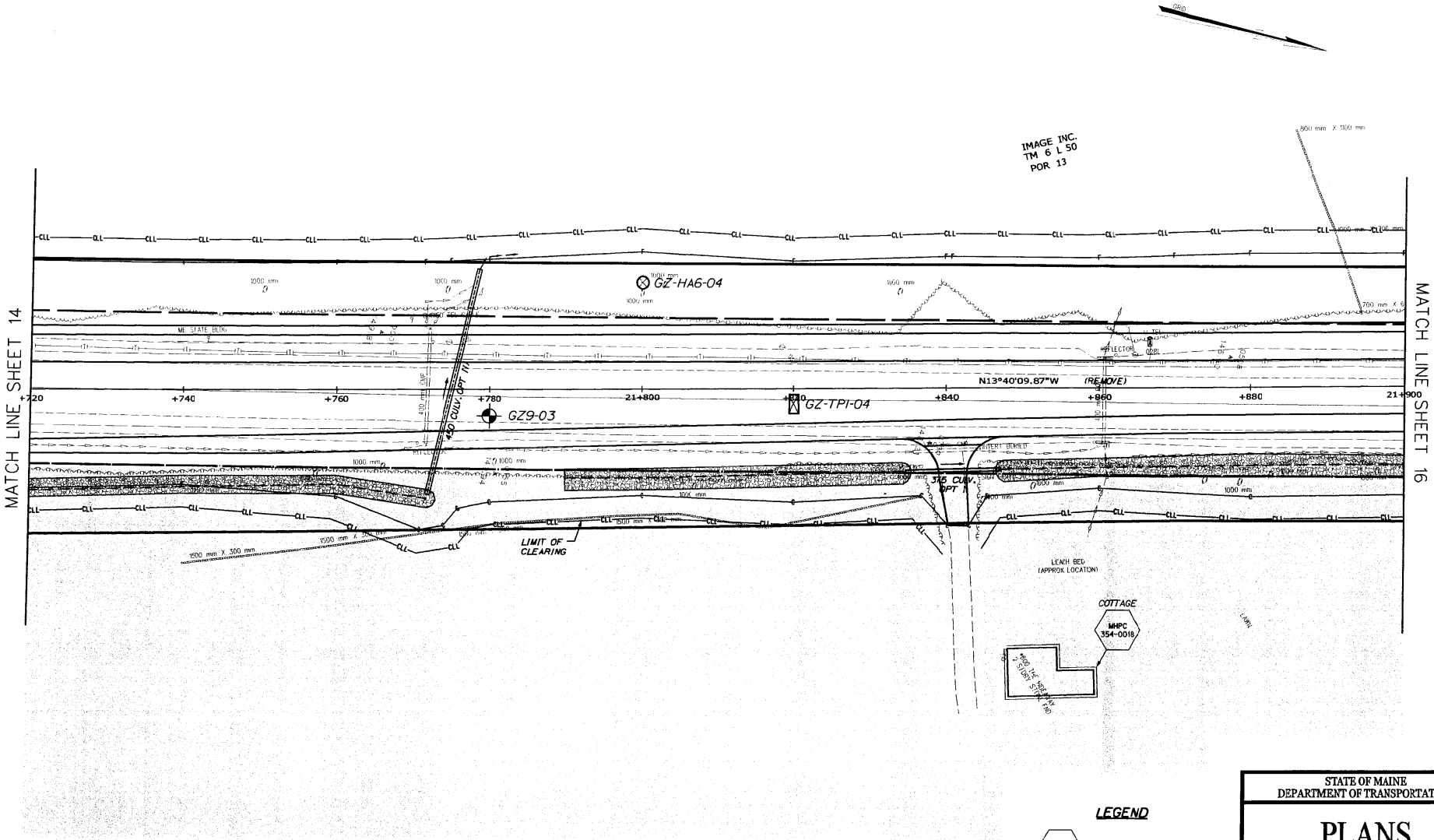
Poland

Route 26

SCALE
(in meters)

SHEET 14 OF 44

AUGUSTA, MAINE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

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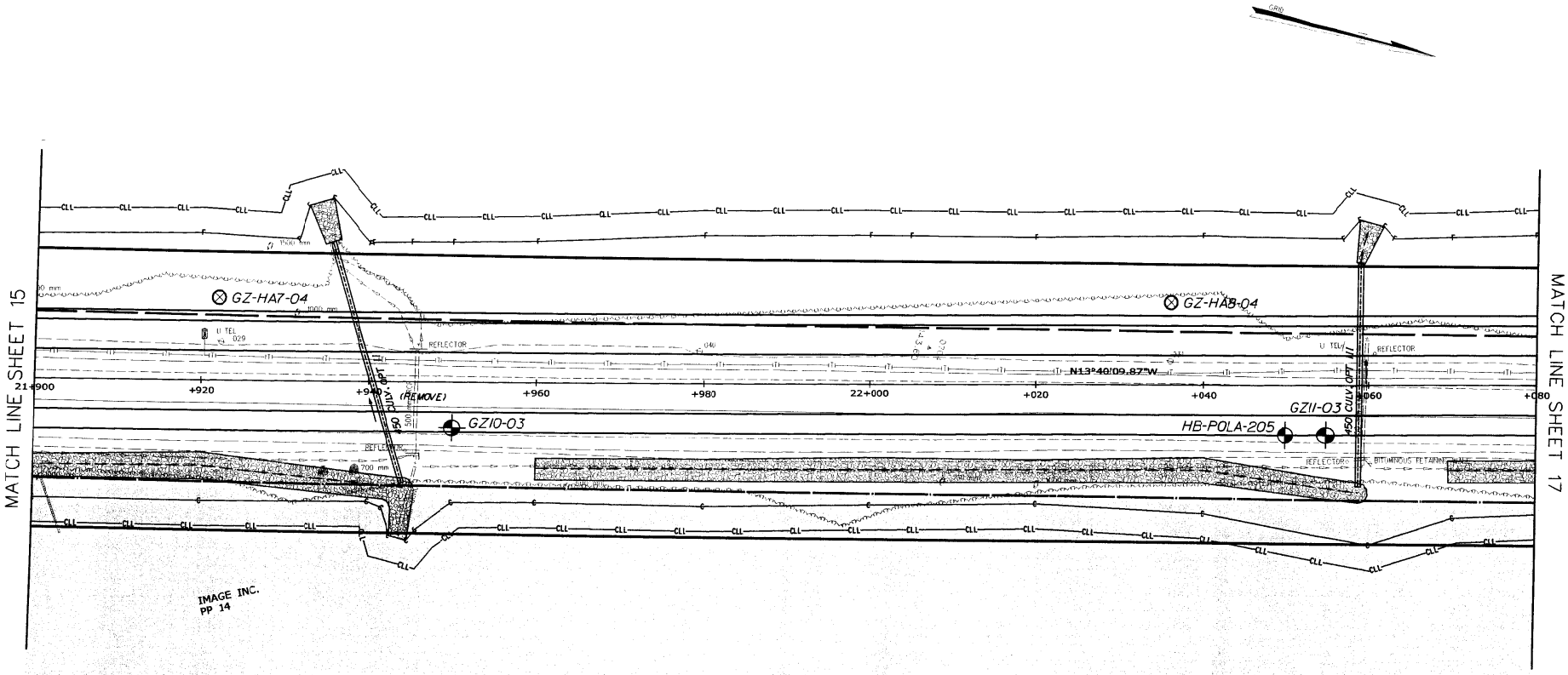
Route 26

SCALE
(in meters)

SHEET 15 OF 44

AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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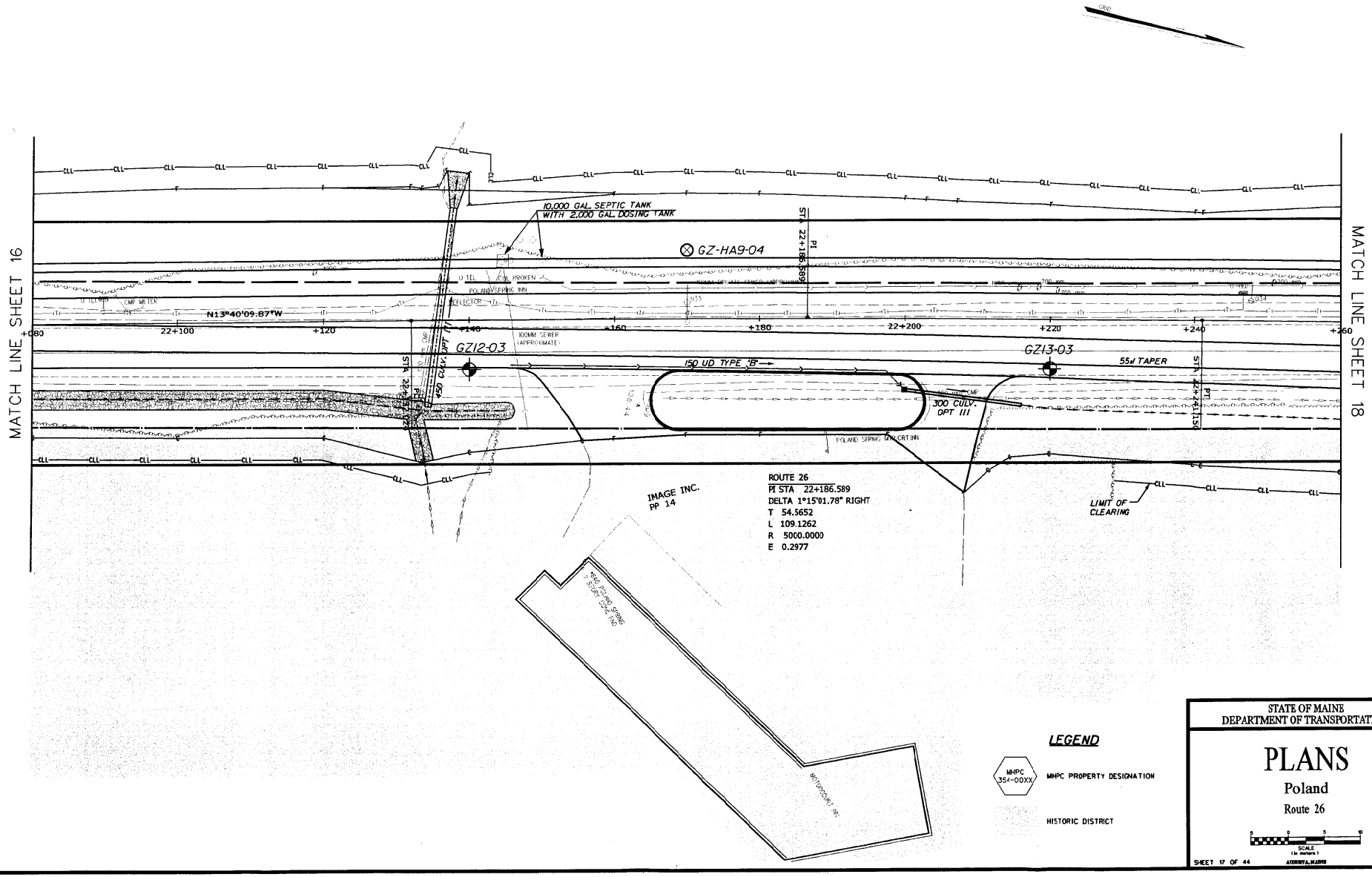
Poland

Route 26

SCALE (in meters)

SHEET 16 OF 44

AUGUSTA, MAINE


MATCH LINE SHEET 16
MATCH LINE SHEET 18
10,000 GAL. SEPTIC TANK
WITH 2,000 GAL. DOSING TANK
GZ-HA9-04
PI
STA 22+186.589
N13°40'09.87"W
22+100
+120
+140
+160
+180
22+200
+220
+240
+260
GZ12-03
GZ13-03
150 UD TYPE 'B'
55ø TAPER
300 CULV.
OPT III
450 CULV. OPT III
POLAND SPRING MAP CRT INN
IMAGE INC.
PP 14
ROUTE 26
PI STA 22+186.589
DELTA 1°15'01.78" RIGHT
T 54.5652
L 109.1262
R 5000.0000
E 0.2977
LIMIT OF
CLEARING
LEGEND
MHPC
354-00XX
MHPC PROPERTY DESIGNATION
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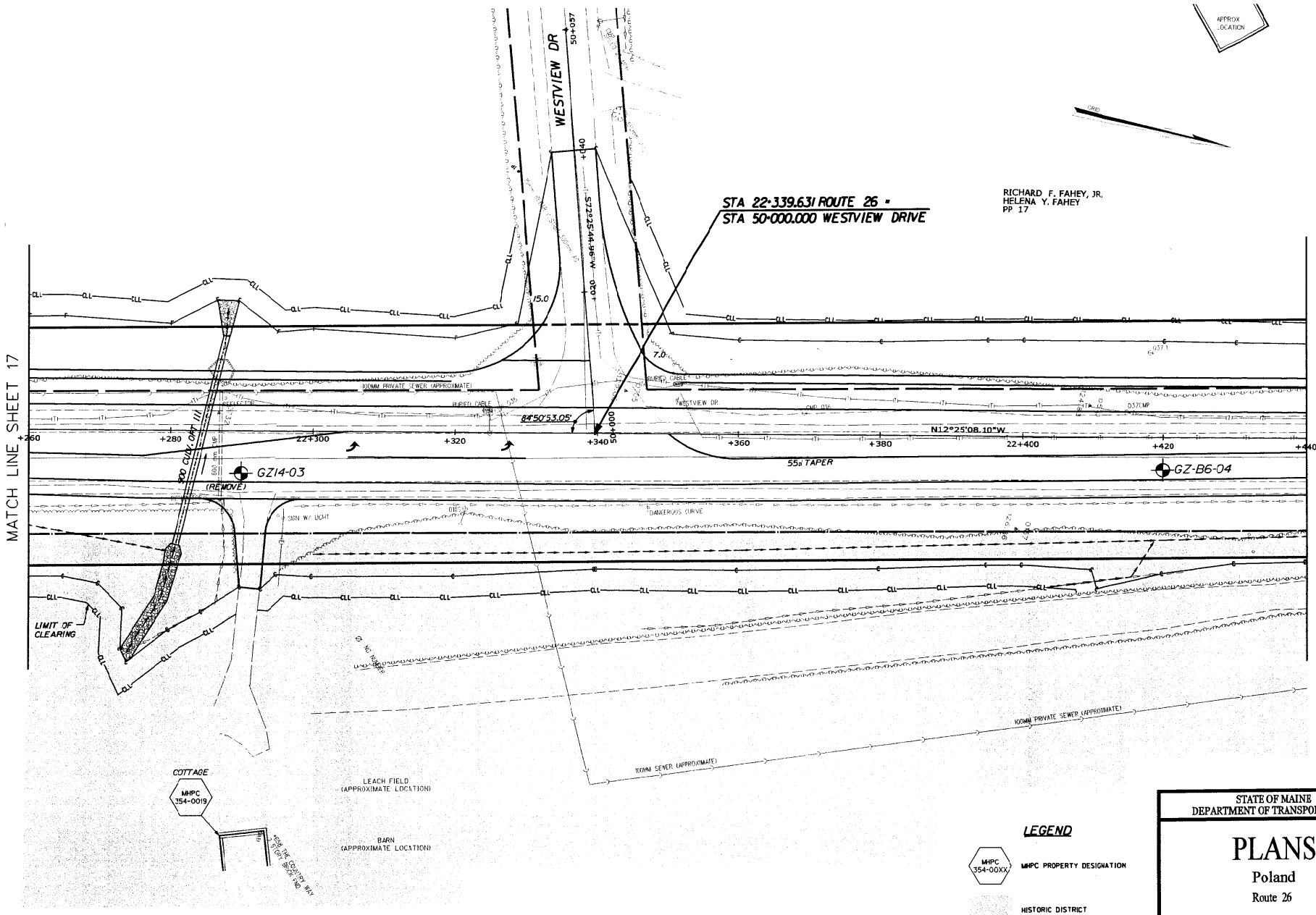
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PLANS
Poland
Route 26
SCALE
(in meters)
SHEET 17 OF 44
AUGUSTA, MAINE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

Poland

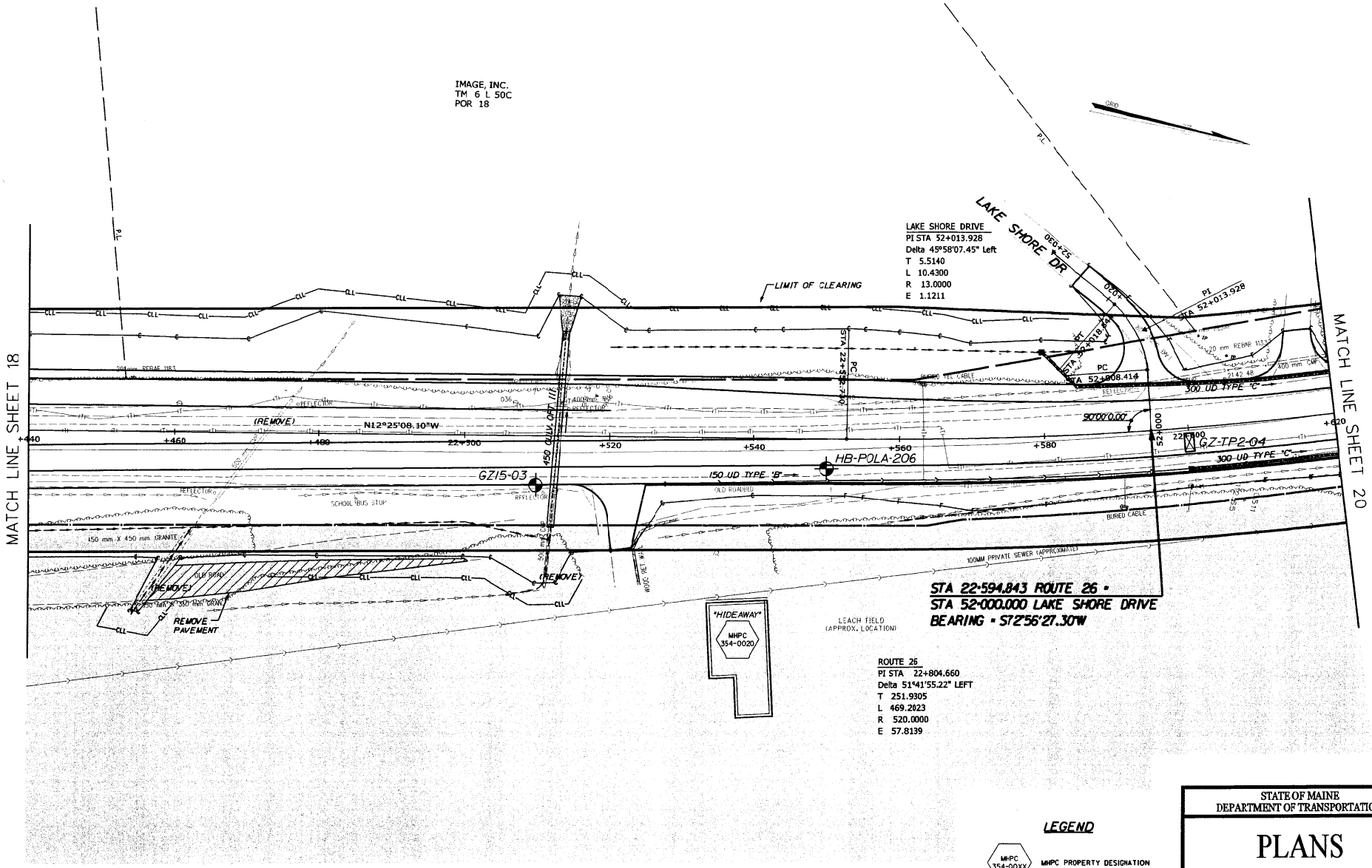
Route 26

SCALE (in meters)

SHEET 18 OF 44

AUGUSTA, MAINE

PIN 10019.00



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

Poland

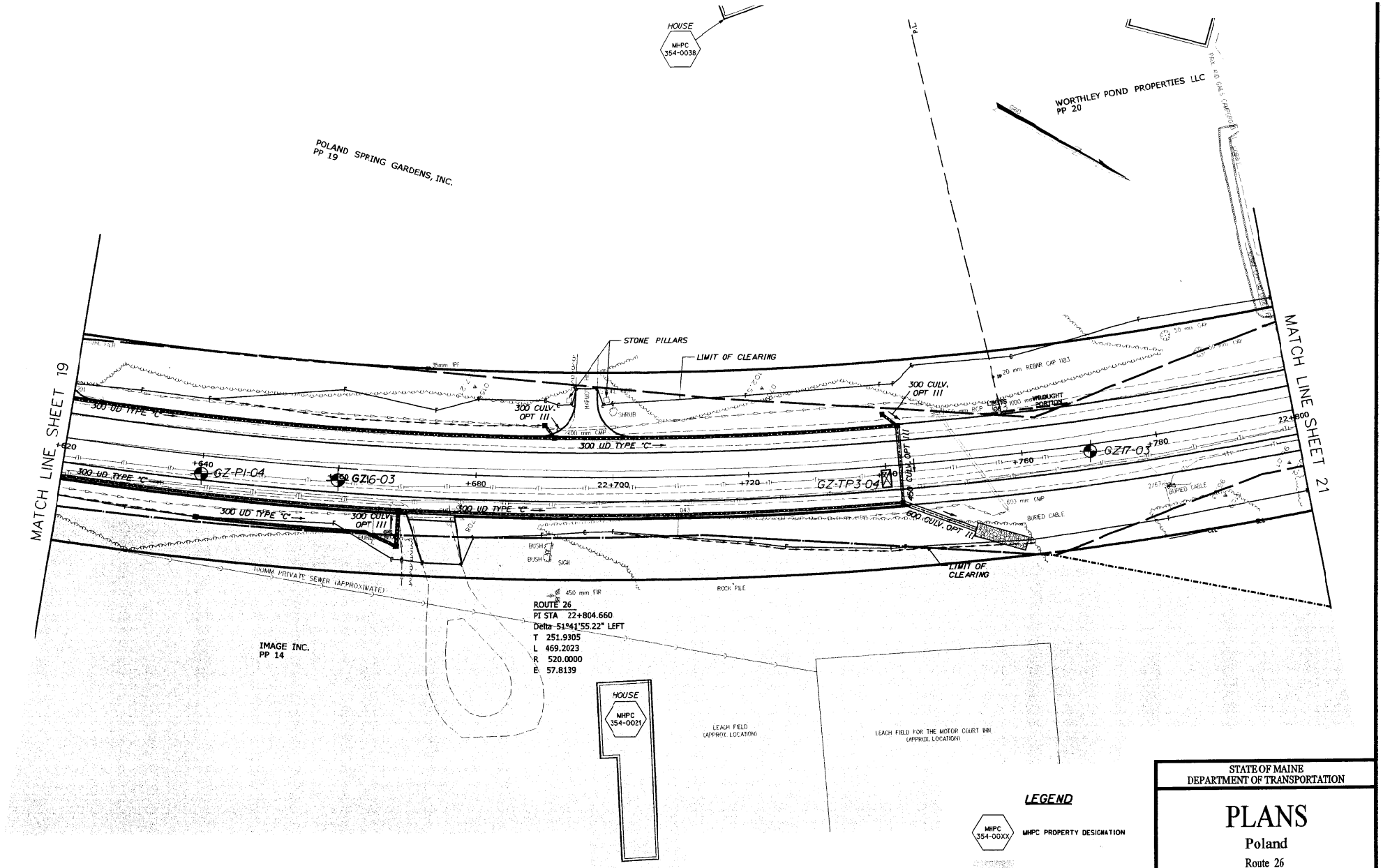
Route 26

SCALE (in meters)

SHEET 19 OF 44

AUGUSTA, MAINE

PLANS REVISED FIELD



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

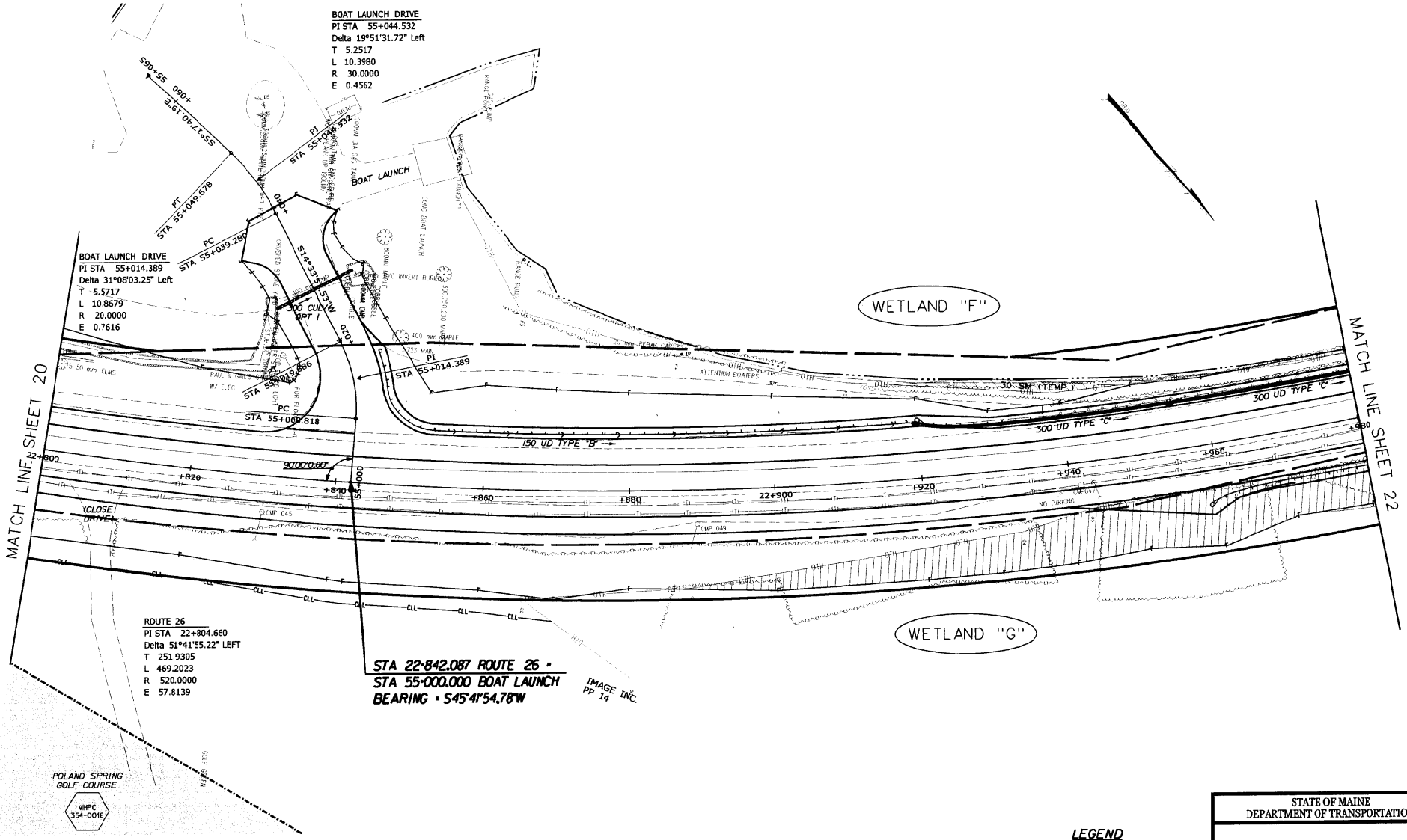
Poland

Route 26

SCALE (in meters)

SHEET 20 OF 44

AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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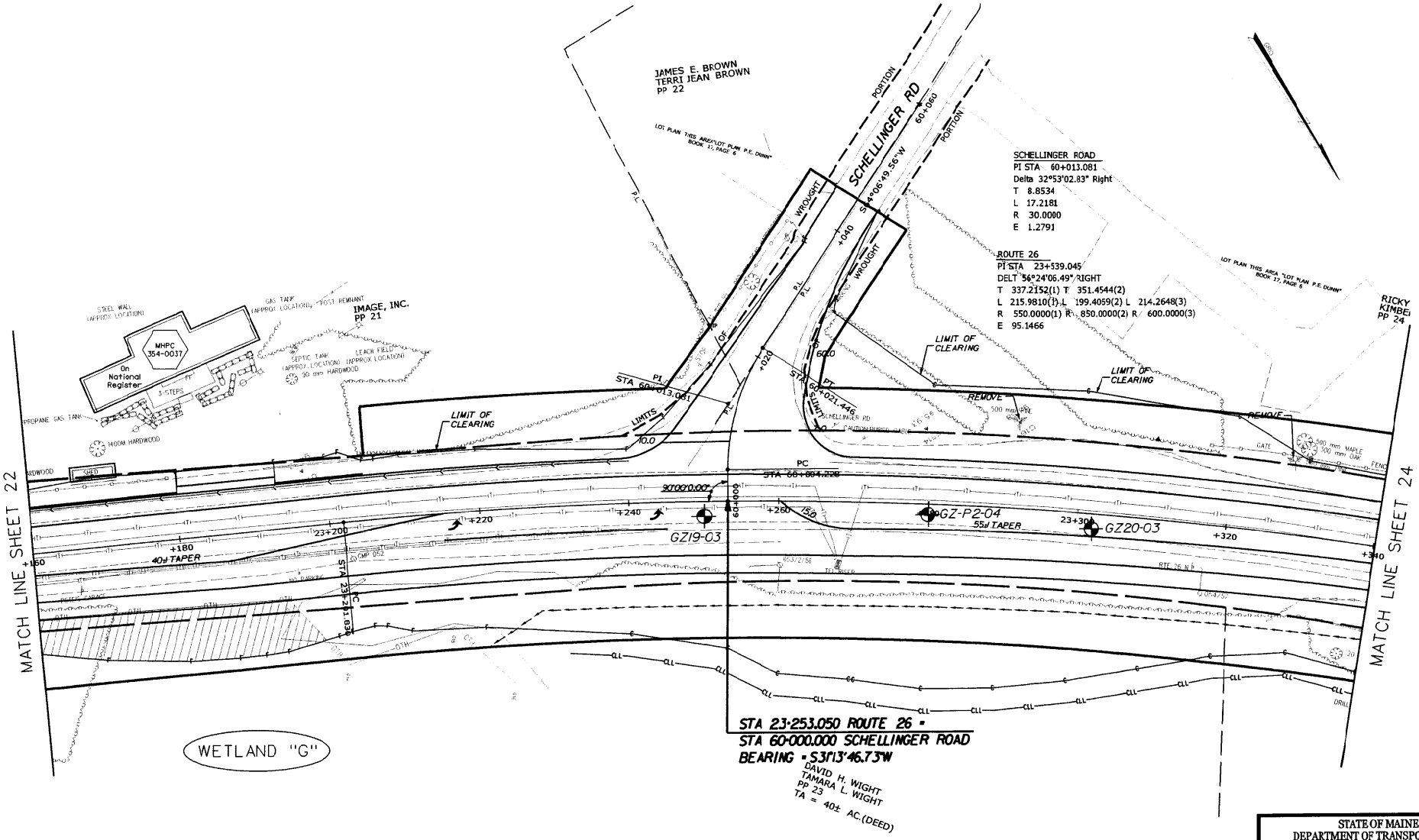
Poland

Route 26

SCALE (in meters)

SHEET 21 OF 44

AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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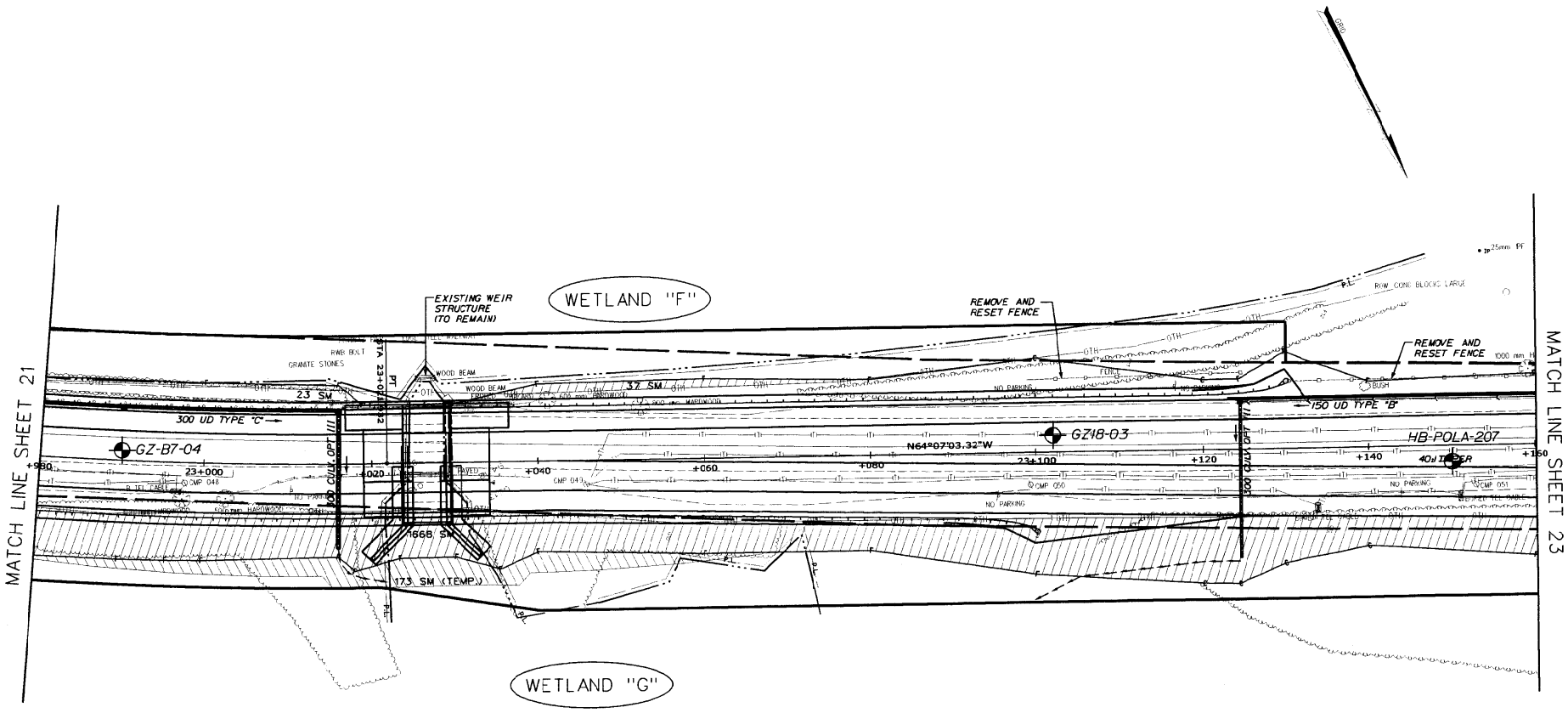
Route 26

SCALE (in meters) 5 0 5 10

SHEET 23 OF 44

AUGUSTA, MAINE

PLANS



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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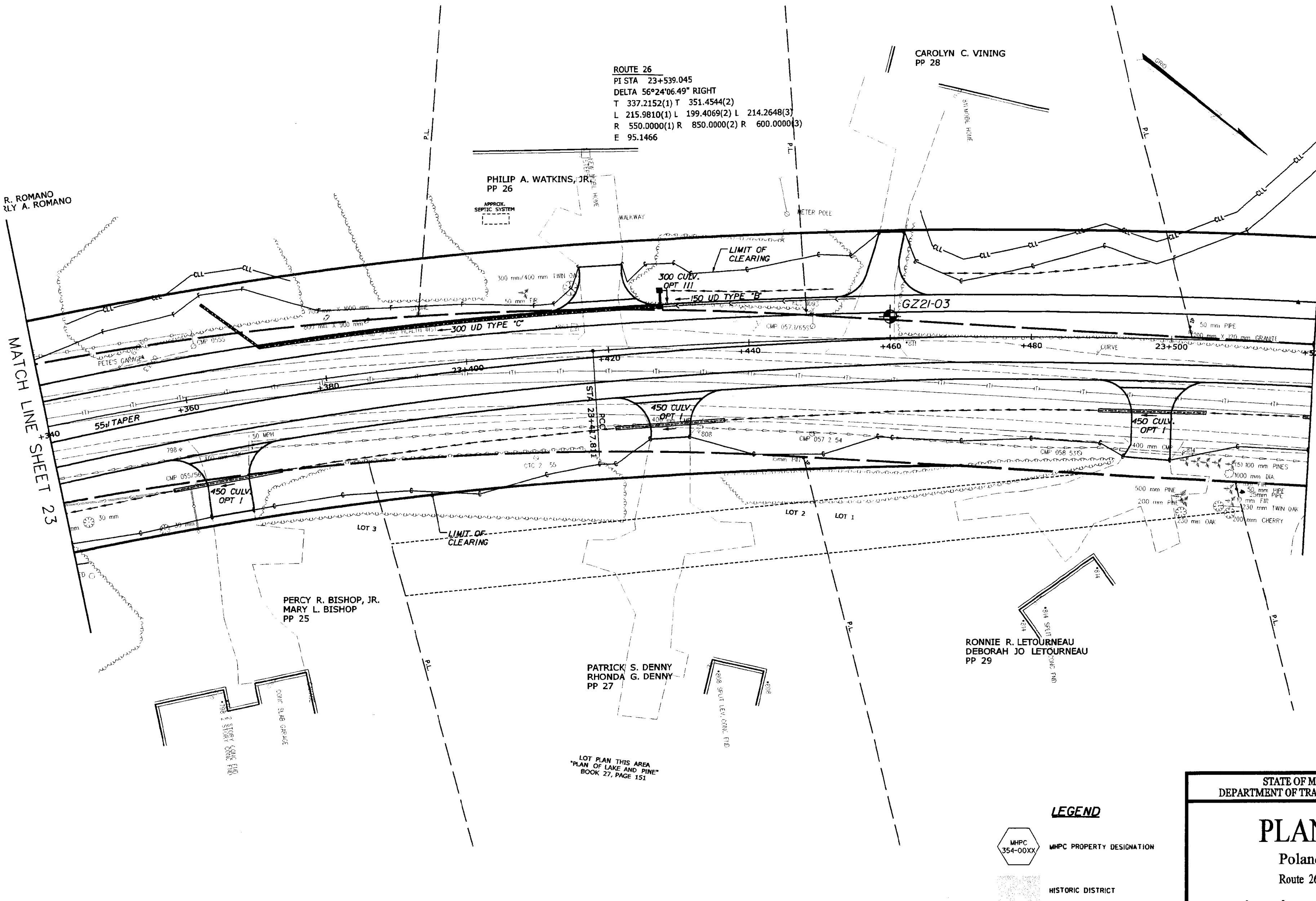
Poland

Route 26

SCALE (in meters)

SHEET 22 OF 44

AUGUSTA, MAINE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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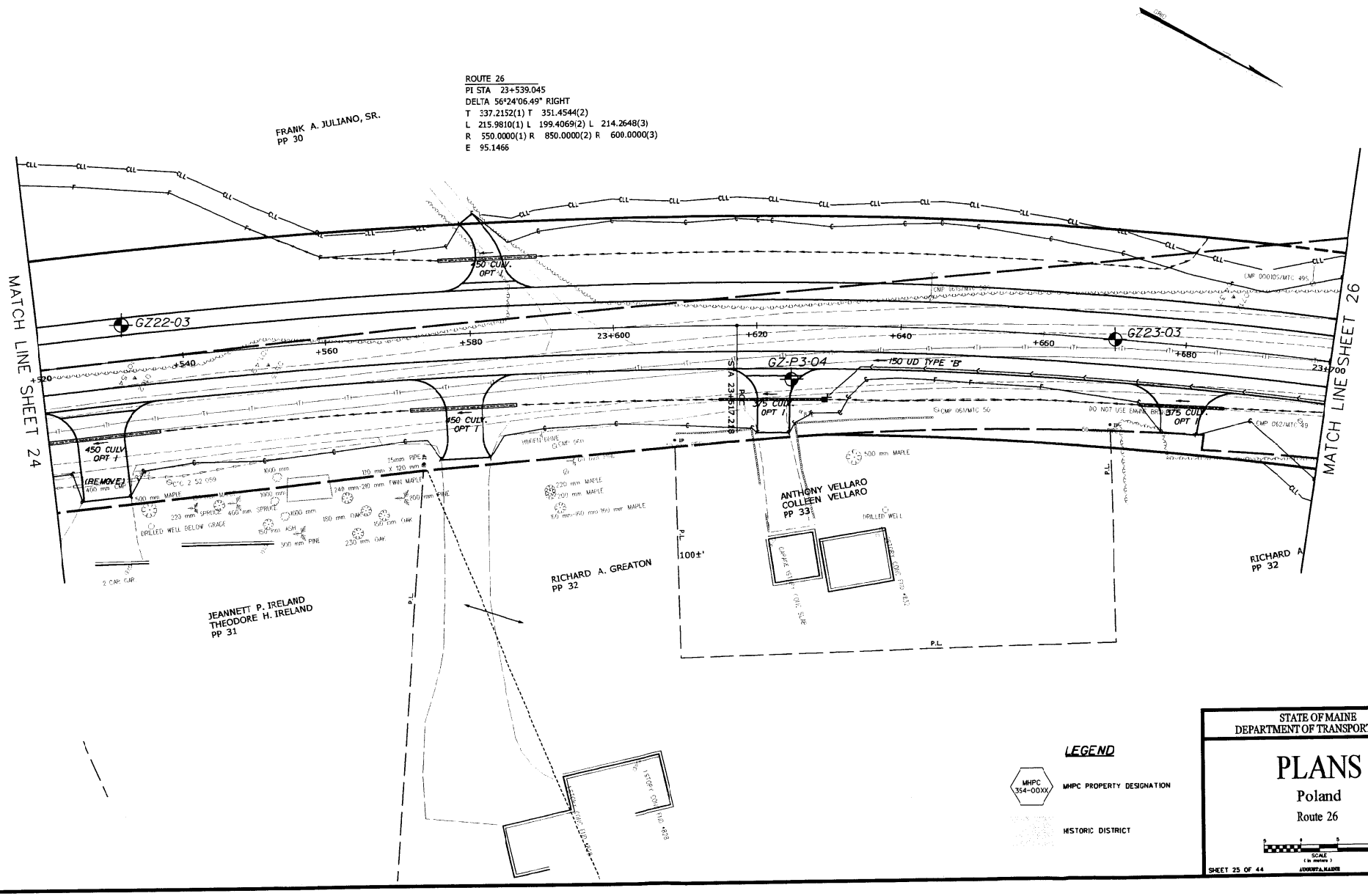
Route 26

SCALE (In meters)

SHEET 24 OF 44

AUGUSTA, MAINE


ROUTE 26
PI STA 23+539.045
DELTA 56°24'06.49" RIGHT
T 337.2152(1) T 351.4544(2)
L 215.9810(1) L 199.4069(2) L 214.2648(3)
R 550.0000(1) R 850.0000(2) R 600.0000(3)
E 95.1466
FRANK A. JULIANO, SR.
PP 30
MATCH LINE SHEET 24
MATCH LINE SHEET 26
GZ22-03
GZ23-03
GZ-P3-04
450 CULV. OPT 1
375 CULV. OPT 1
150 UD TYPE "B"
+520
+540
+560
+580
23+600
+620
+640
+660
+680
23+700
(REMOVE)
DRILLED WELL BELOW GRADE
ANTHONY VELLARO
COLLEEN VELLARO
PP 33
RICHARD A. GREATON
PP 32
RICHARD A
PP 32
JEANNETT P. IRELAND
THEODORE H. IRELAND
PP 31
100±'
P.L.
LEGEND
MHPC 354-00XX
MHPC PROPERTY DESIGNATION
HISTORIC DISTRICT
STATE OF MAINE
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PLANS
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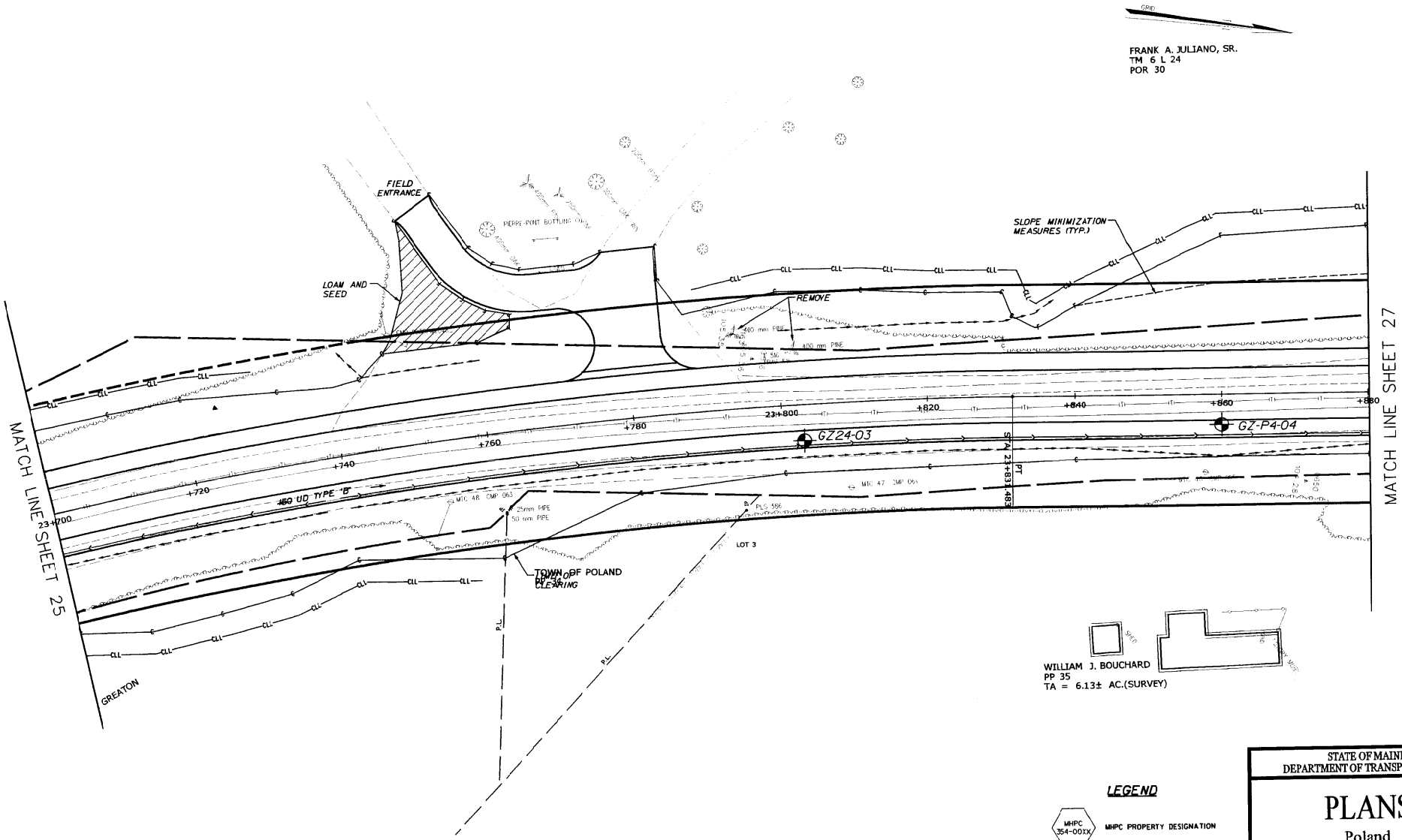
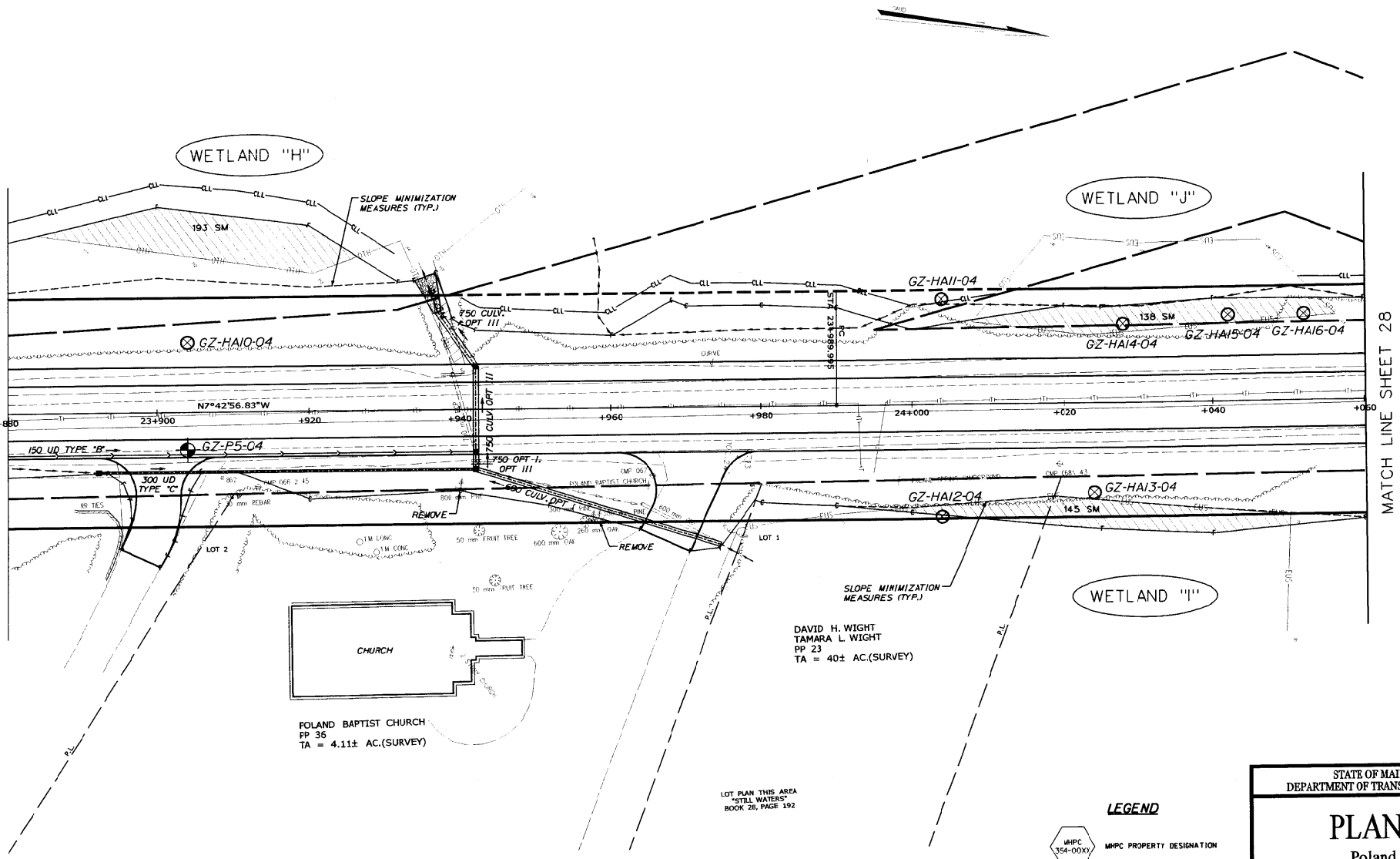
SCALE
SHEET 25 OF 44
AUGUSTA, MAINE


GRID
FRANK A. JULIANO, SR.
TM 6 L 24
POR 30
FIELD ENTRANCE
PIERRE-PONT BOTTLING CO.
LOAM AND SEED
REMOVE
SLOPE MINIMIZATION MEASURES (TYP.)
CLL
MATCH LINE SHEET 25
MATCH LINE SHEET 27
GREATON
23+700
+720
+740
+760
+780
23+800
+820
+840
+860
+880
GZ24-03
GZ-P4-04
STA. 23+831.483
PT
450 UD TYPE "B"
MTC 48 CMP 063
MTC 47 CMP 064
25mm PIPE
50 mm PIPE
PLS 586
LOT 3
TOWN OF POLAND
LIMIT OF CLEARING
P.L.
WILLIAM J. BOUCHARD
PP 35
TA = 6.13± AC.(SURVEY)
LEGEND
MHPC 354-00XX
MHPC PROPERTY DESIGNATION
HISTORIC DISTRICT
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PLANS
Poland
Route 26
SCALE
SHEET 26 OF 44
AUGUSTA, MAINE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

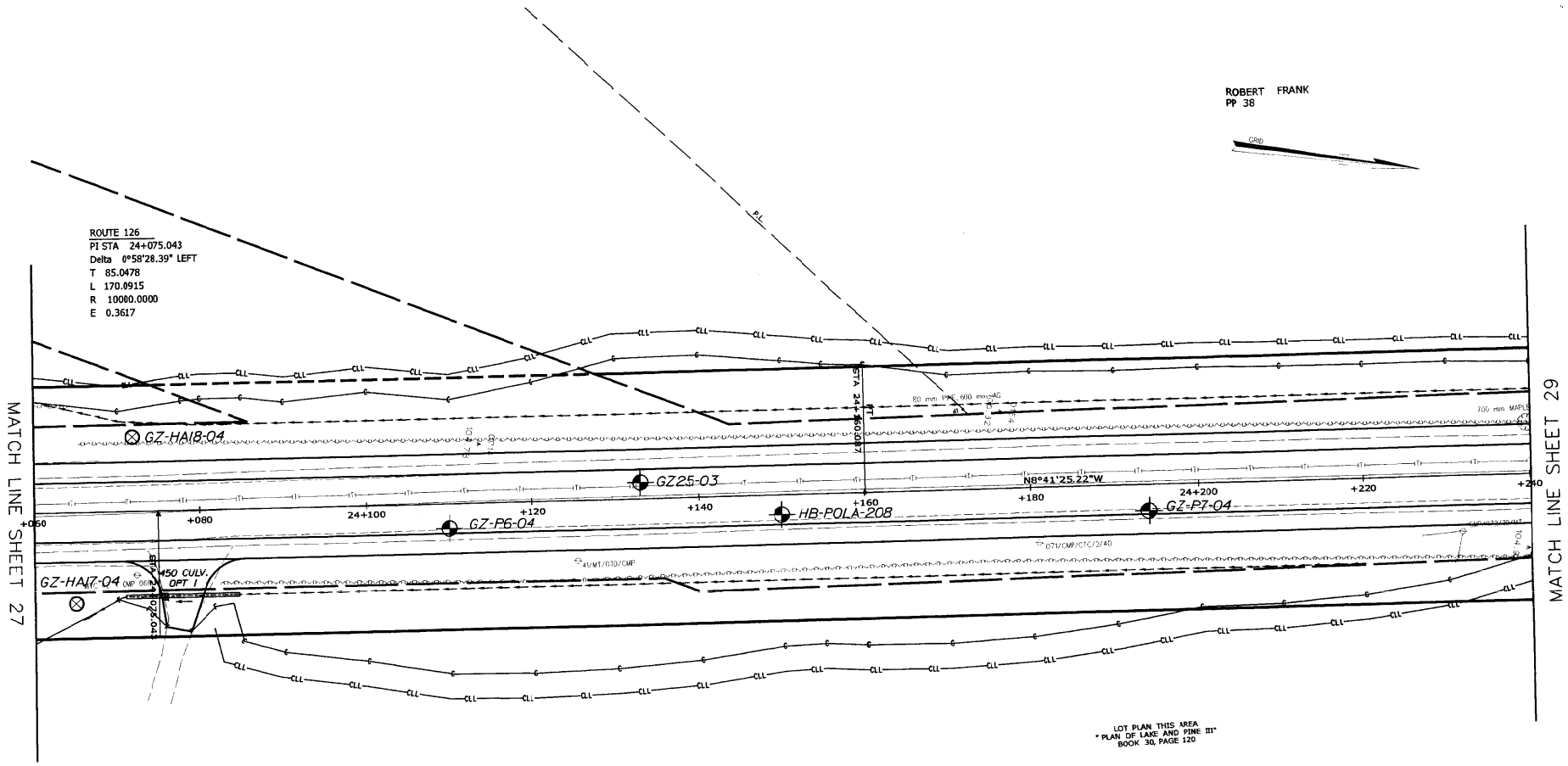
Poland

Route 26

SCALE (in meters)

SHEET 27 OF 44

AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

Poland

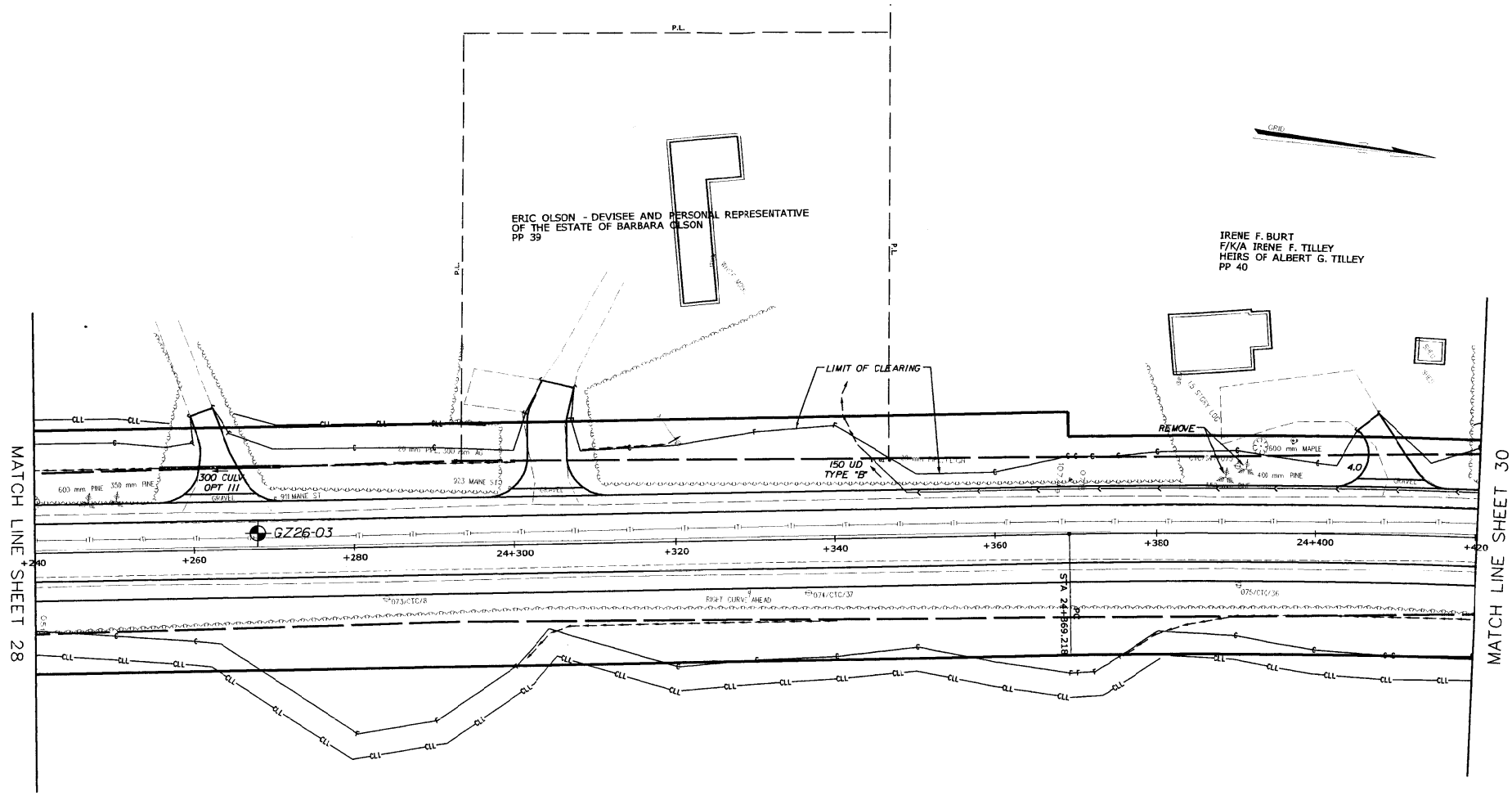
Route 26

SCALE (in meters)

SHEET 28 OF 44

AUGUSTA, MAINE

PLANS



M AND V TRUST
PP 37 & 43
20± AC.(SURVEY)

LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

Poland

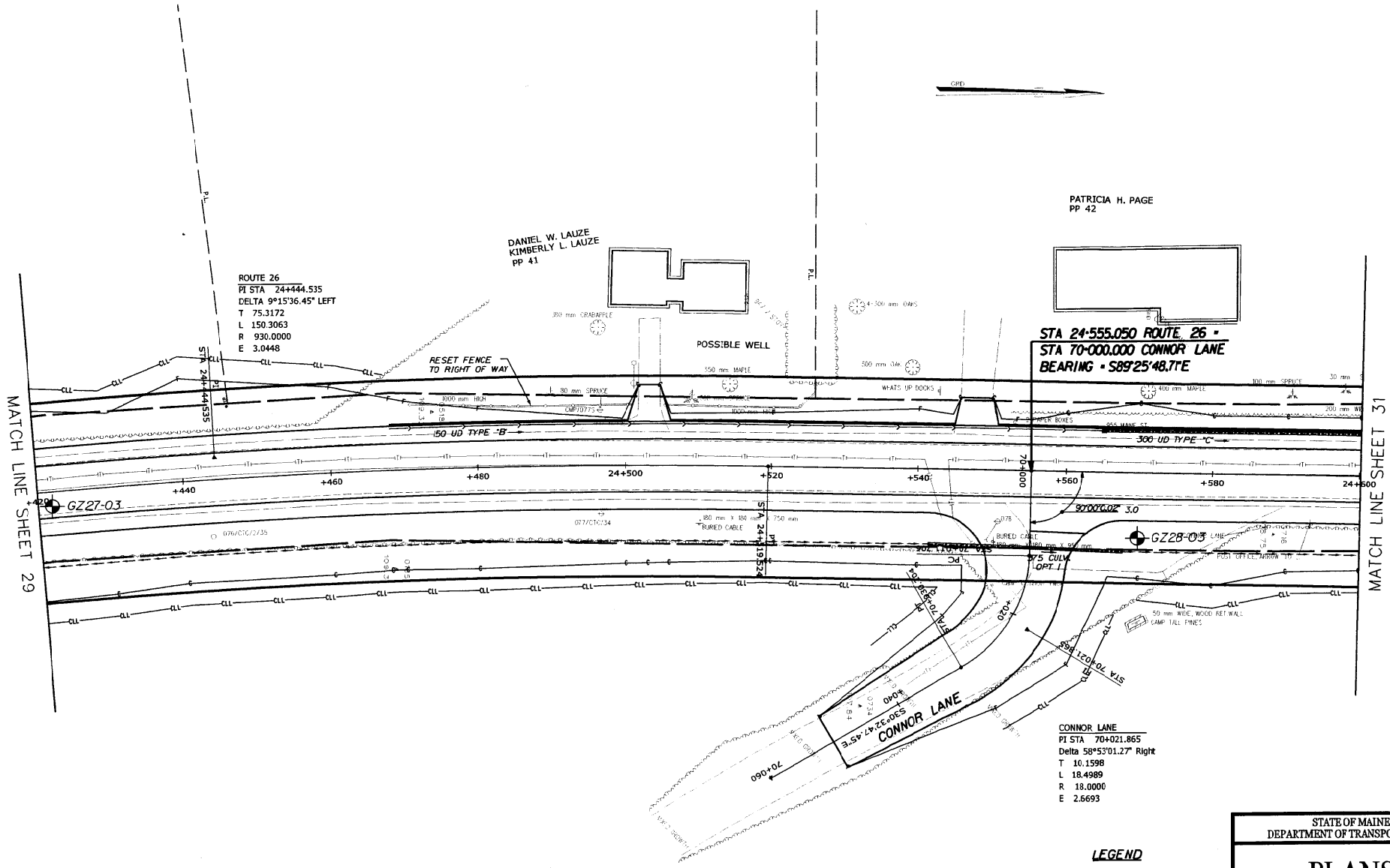
Route 26

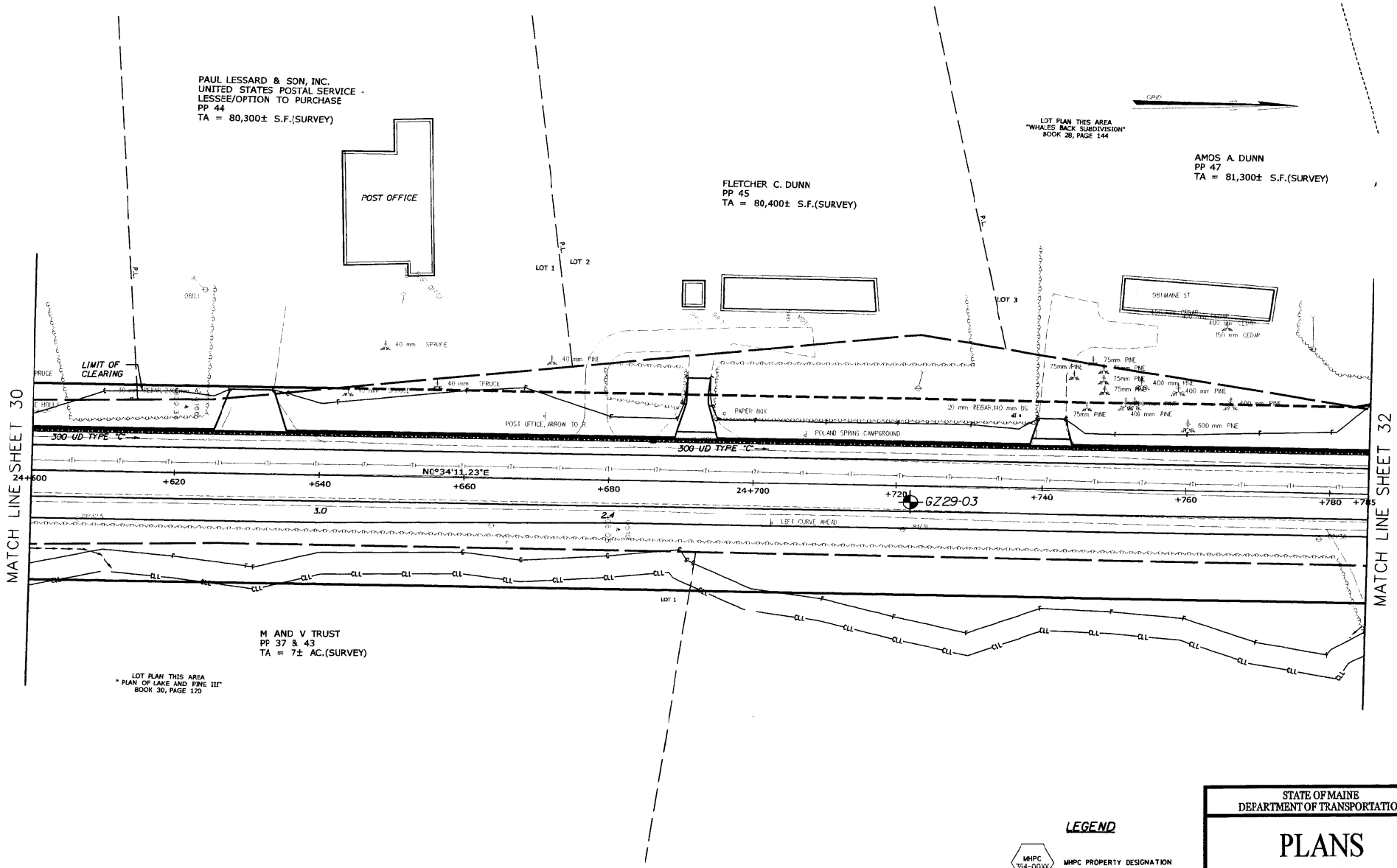
SCALE (in meters)

SHEET 29 OF 44

AUGUSTA, MAINE

CHECKED KDL
REDI KDL
FIELD CHANGES


MATCH LINE SHEET 29
MATCH LINE SHEET 31
ROUTE 26
PI STA 24+444.535
DELTA 9°15'36.45" LEFT
T 75.3172
L 150.3063
R 930.0000
E 3.0448
DANIEL W. LAUZE
KIMBERLY L. LAUZE
PP 41
PATRICIA H. PAGE
PP 42
POSSIBLE WELL
RESET FENCE
TO RIGHT OF WAY
STA 24+555.050 ROUTE 26 =
STA 70+000.000 CONNOR LANE
BEARING = S89°25'48.7"E
150 UD TYPE "B"
300 UD TYPE "C"
GZ27-03
GZ28-03
CONNOR LANE
S30°32'47.4"E
CONNOR LANE
PI STA 70+021.865
Delta 58°53'01.27" Right
T 10.1598
L 18.4989
R 18.0000
E 2.6693
LEGEND
MHPC 354-00XX
MHPC PROPERTY DESIGNATION
HISTORIC DISTRICT
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PLANS
Poland
Route 26
SCALE
SHEET 30 OF 44
AUGUSTA, MAINE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

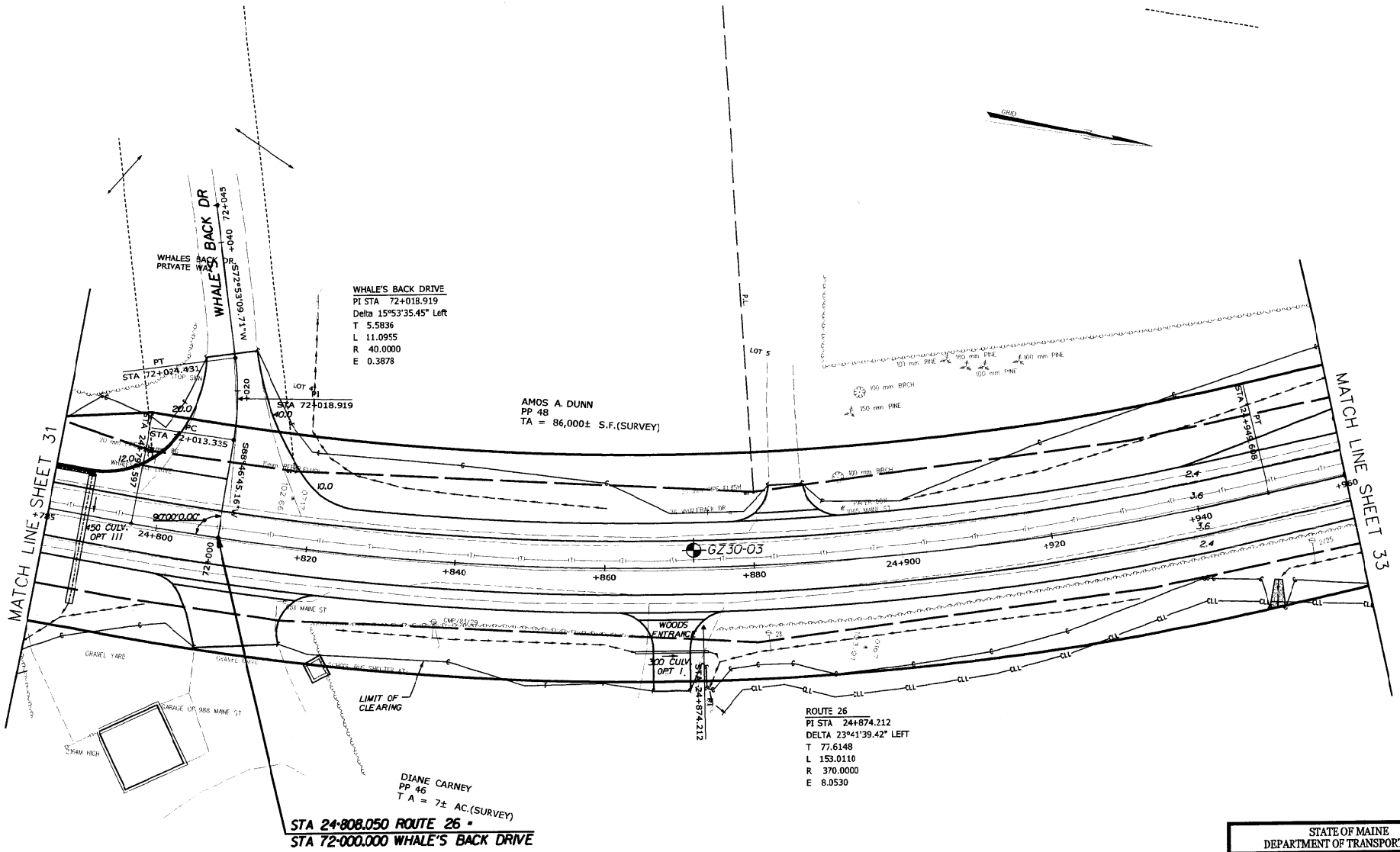
Poland

Route 26

SCALE (in meters)

SHEET 31 OF 44

AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

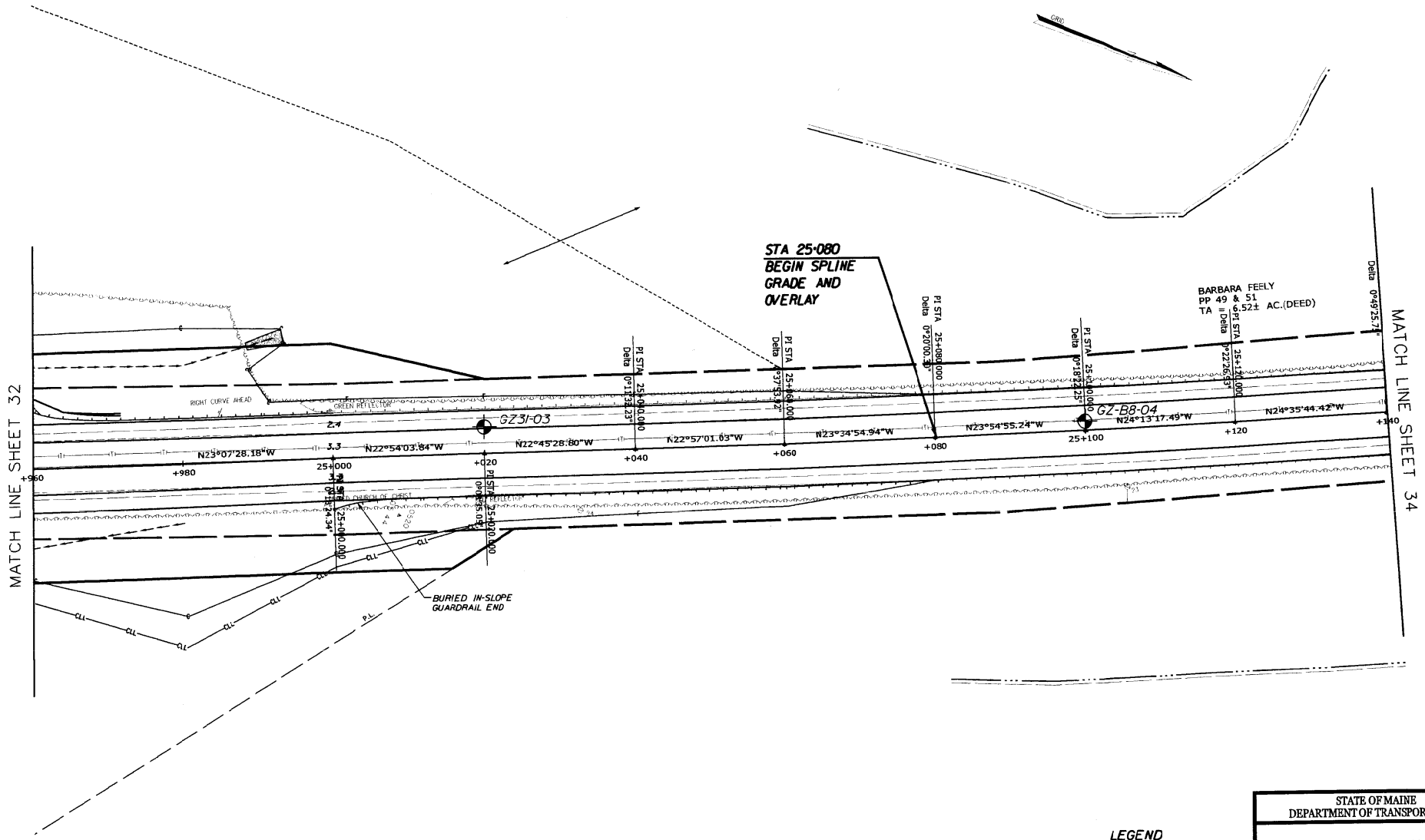
PLANS

Poland

Route 26

SCALE (in meters)

SHEET 32 OF 44 AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

Poland

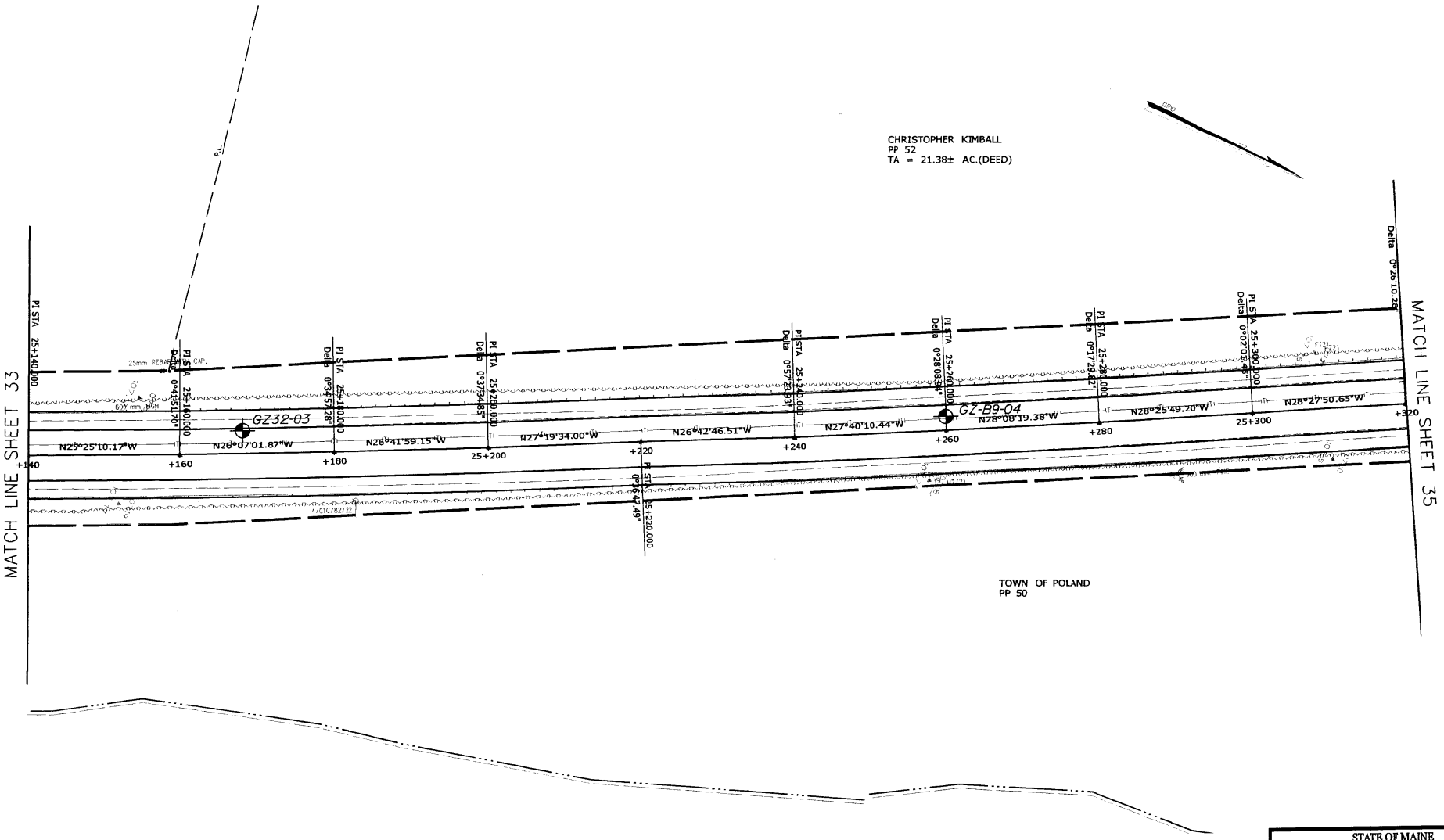
Route 26

SCALE (in meters)

SHEET 33 OF 44

AUGUSTA, MAINE

CHECKED | REV | FIELD CHANGES



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

Poland

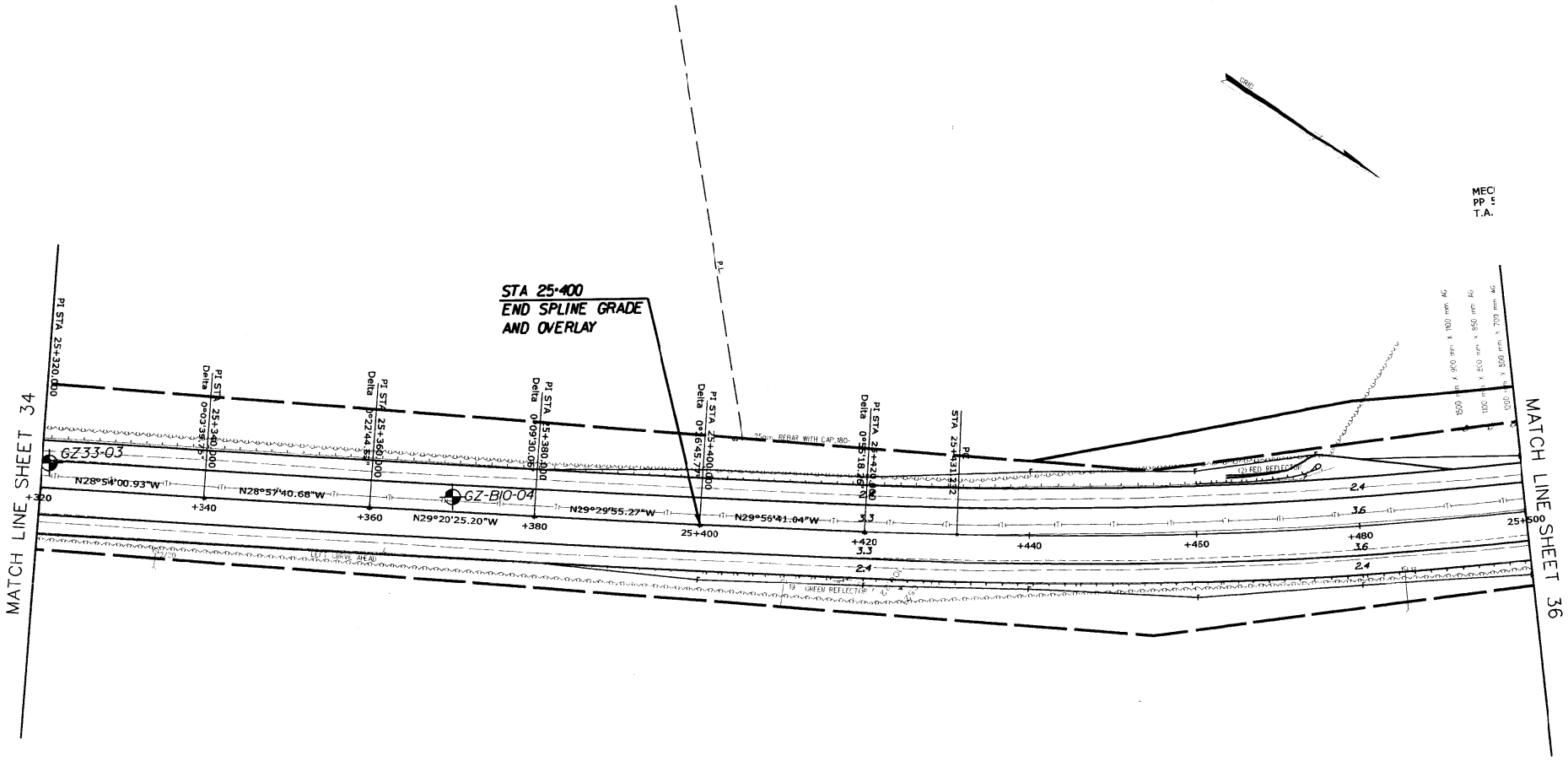
Route 26

SCALE (in meters)

SHEET 34 OF 44

AUGUSTA, MAINE

CHECKED | DRN | DRN
REV
FIELD CHANGES



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

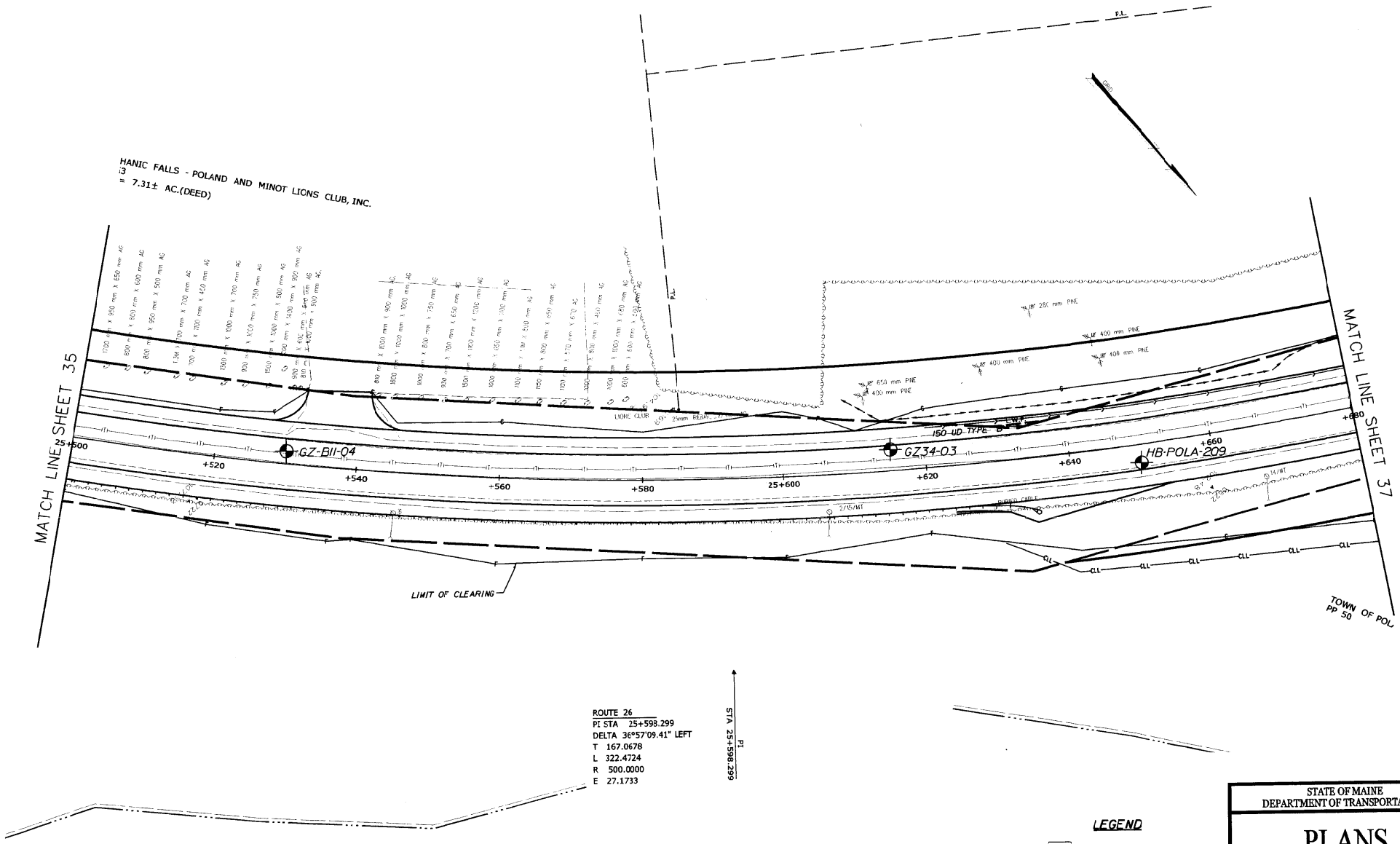
Poland

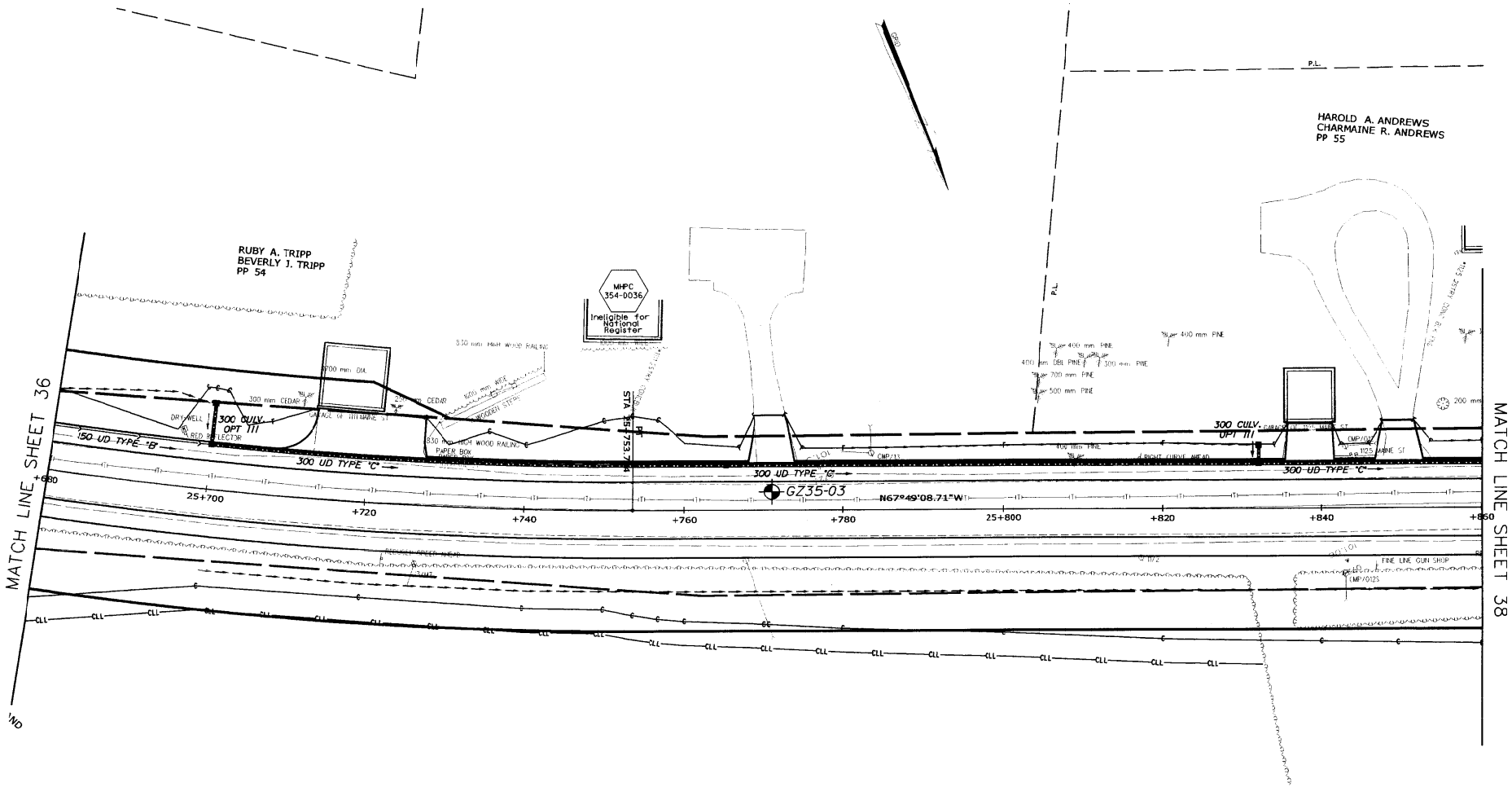
Route 26

SCALE (in meters)

SHEET 35 OF 44

AUGUSTA, MAINE


HANIC FALLS - POLAND AND MINOT LIONS CLUB, INC.
= 7.31± AC.(DEED)
MATCH LINE SHEET 35
MATCH LINE SHEET 37
P.L.
GZ-B11-04
GZ34-03
HB-POLA-209
150 UD TYPE
25+500
+520
+540
+560
+580
25+600
+620
+640
+660
+680
LIMIT OF CLEARING
TOWN OF POL
PP 50
ROUTE 26
PI STA 25+598.299
DELTA 36°57'09.41" LEFT
T 167.0678
L 322.4724
R 500.0000
E 27.1733
PI
STA 25+598.299
LEGEND
MHPC 354-00XX
MHPC PROPERTY DESIGNATION
HISTORIC DISTRICT
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PLANS
Poland
Route 26
SCALE
SHEET 36 OF 44
AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

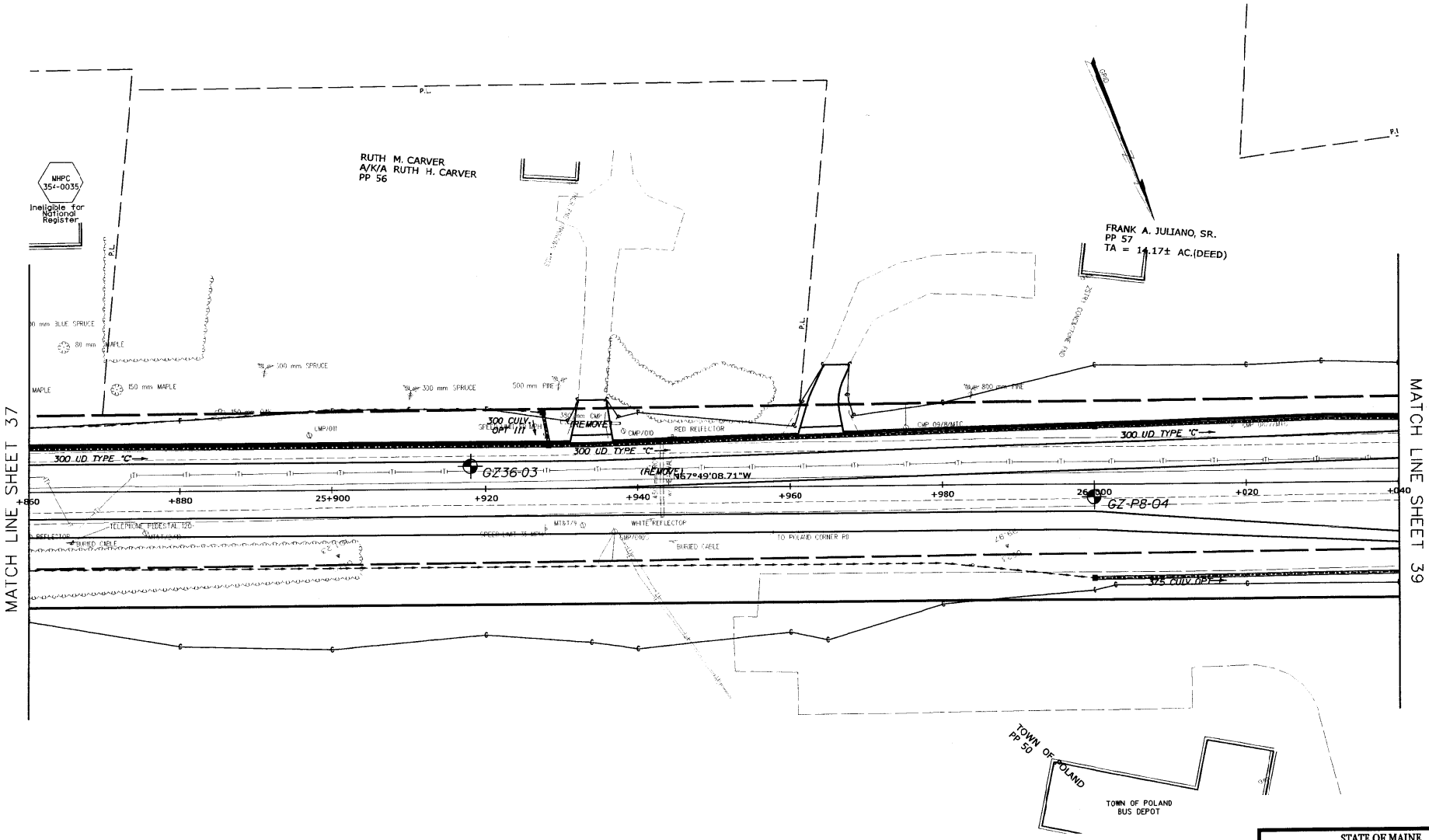
Poland

Route 26

SCALE (in meters)

SHEET 37 OF 44

AUGUSTA, MAINE



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

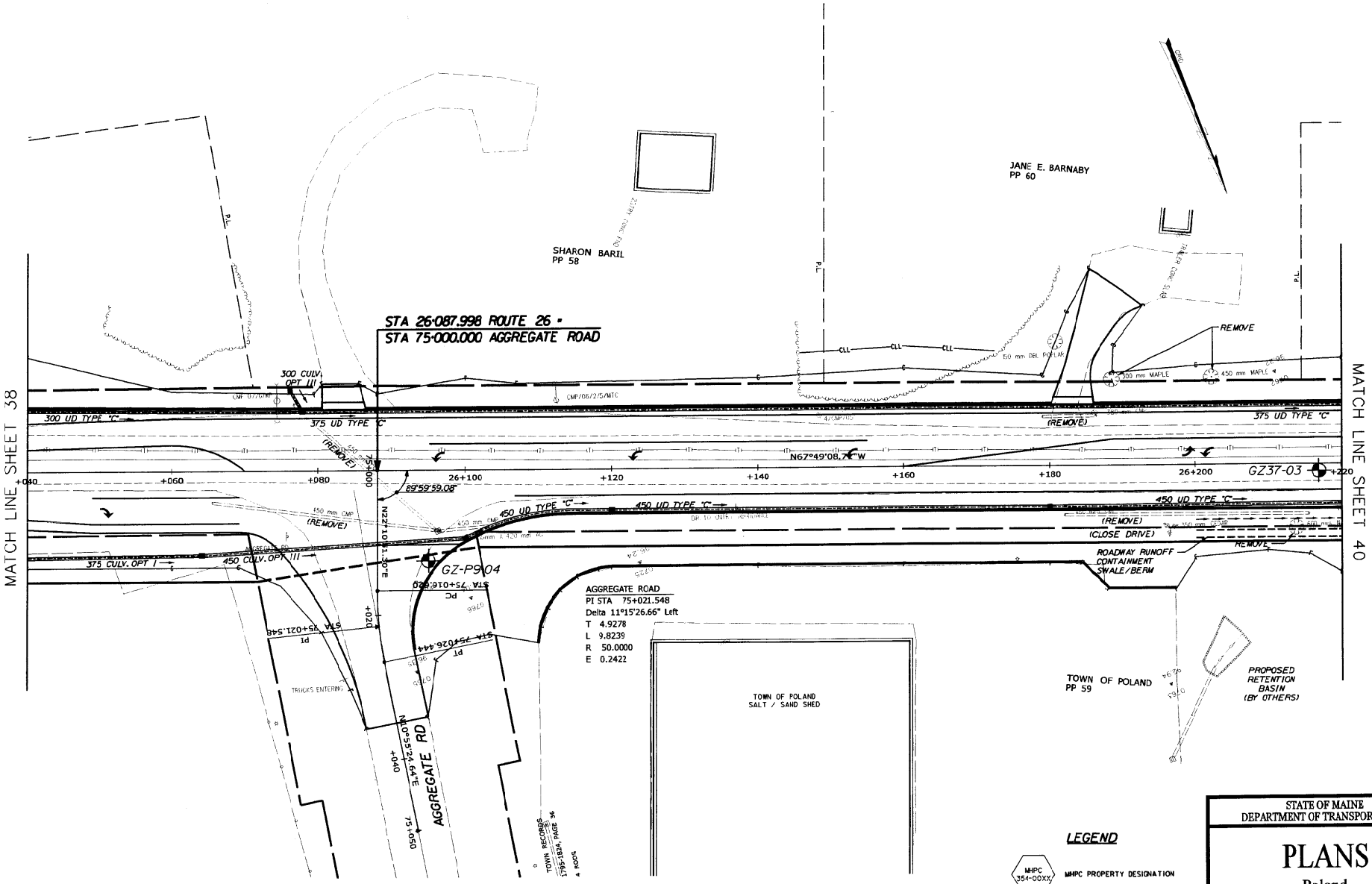
Poland

Route 26

SCALE (in meters)

SHEET 38 OF 44

AUGUSTA, MAINE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

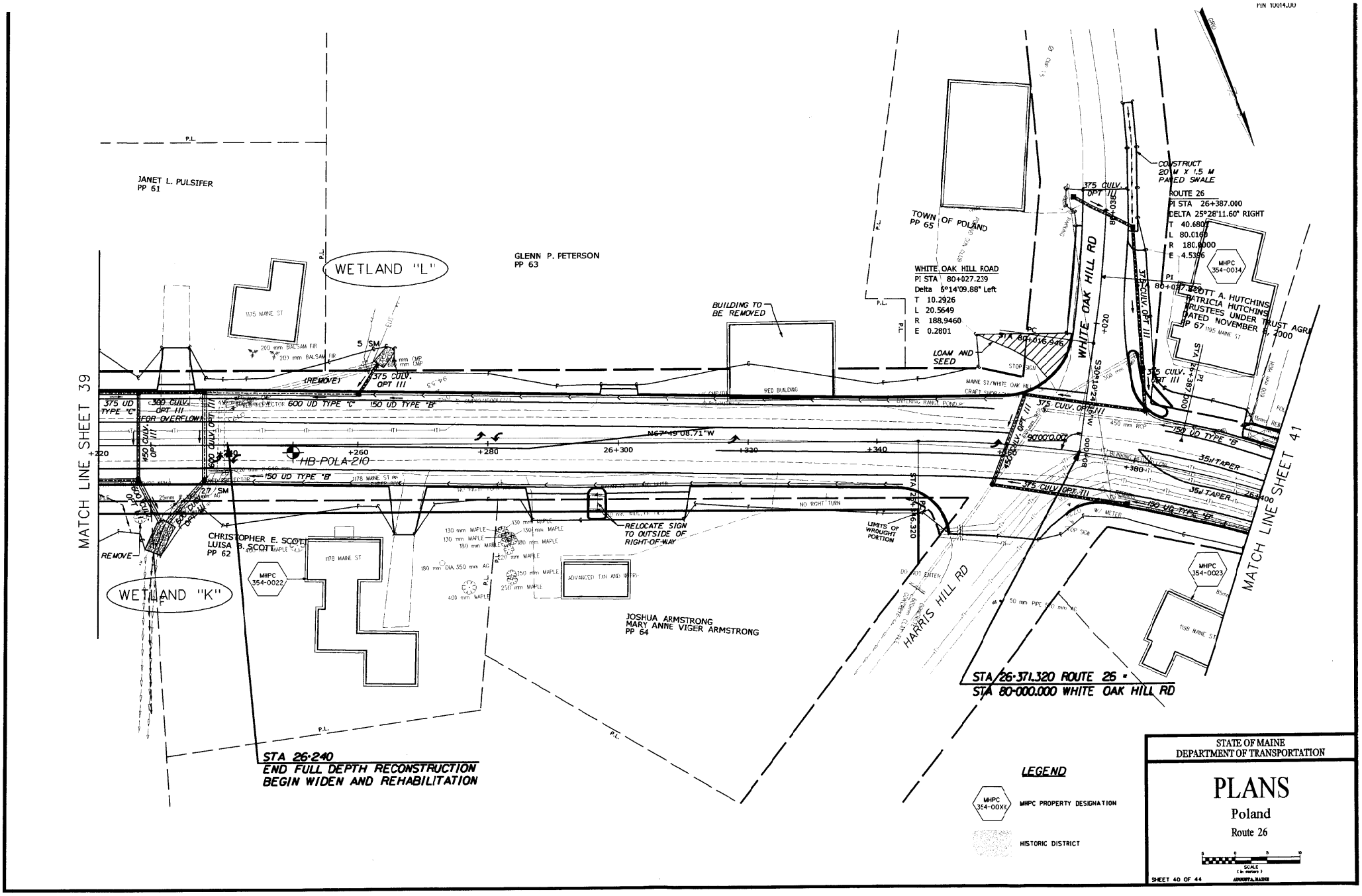
Poland

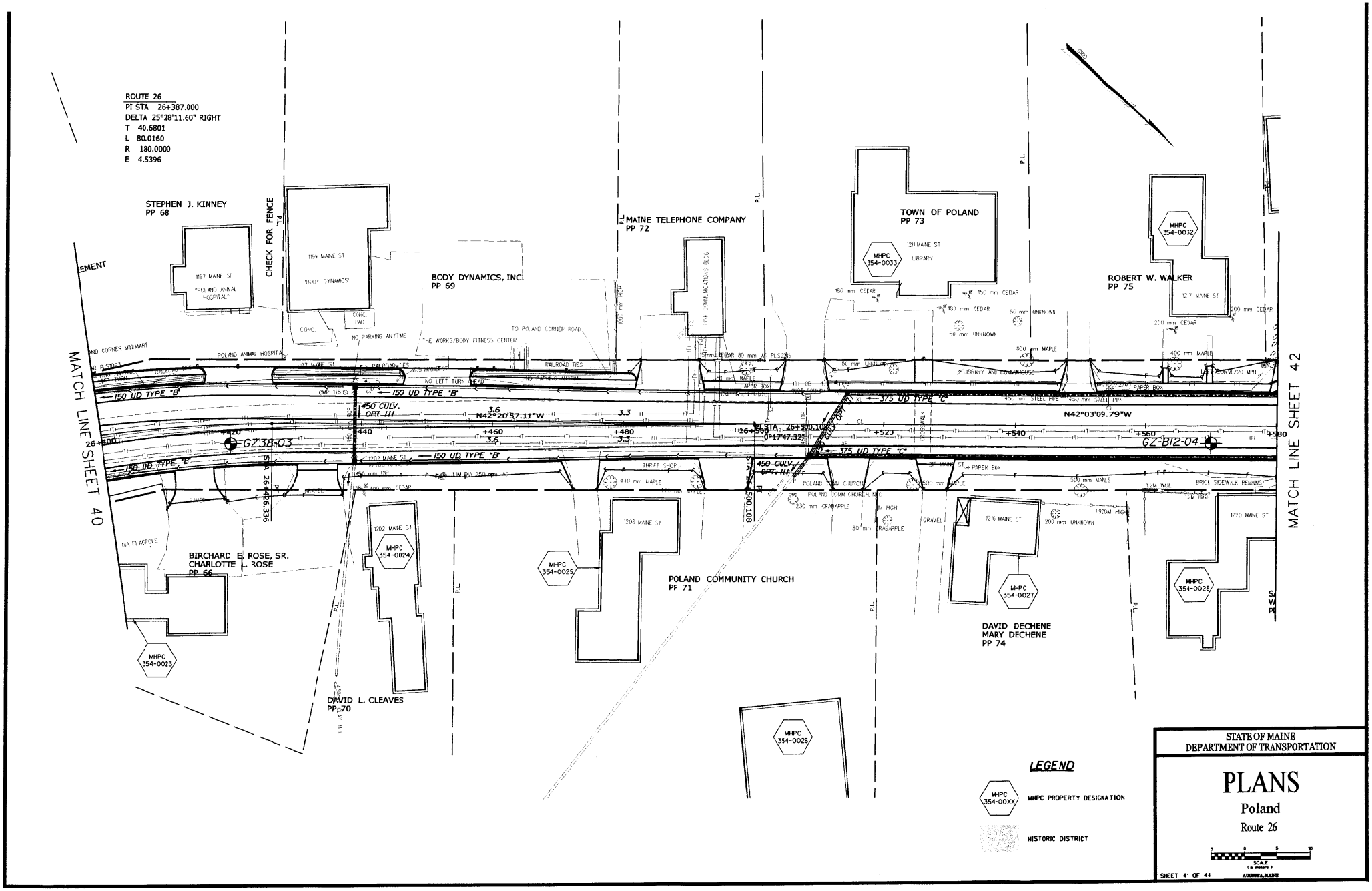
Route 26

SCALE (in meters)

SHEET 39 OF 44

AUGUSTA, MAINE


PIN 10014.00
JANET L. PULSIFER
PP 61
GLENN P. PETERSON
PP 63
WETLAND "L"
WETLAND "K"
TOWN OF POLAND
PP 65
BUILDING TO BE REMOVED
WHITE OAK HILL ROAD
PI STA 80+027.239
Delta 6°14'09.88" Left
T 10.2926
L 20.5649
R 188.9460
E 0.2801
LOAM AND SEED
CONSTRUCT 20 M X 1.5 M PAVED SWALE
ROUTE 26
PI STA 26+387.000
DELTA 25°28'11.60" RIGHT
T 40.6801
L 80.0160
R 180.0000
E 4.5396
SCOTT A. HUTCHINS
PATRICIA HUTCHINS
TRUSTEES UNDER TRUST AGRE
DATED NOVEMBER 8, 2000
PP 67
MHPC 354-0034
MHPC 354-0022
MHPC 354-0023
CHRISTOPHER E. SCOTT
LUISA B. SCOTT
PP 62
JOSHUA ARMSTRONG
MARY ANNE VIGER ARMSTRONG
PP 64
HB-POLA-210
RELOCATE SIGN TO OUTSIDE OF RIGHT-OF-WAY
LIMITS OF WROUGHT PORTION
WHITE OAK HILL RD
HARRIS HILL RD
MATCH LINE SHEET 39
MATCH LINE SHEET 41
STA 26+240
END FULL DEPTH RECONSTRUCTION
BEGIN WIDEN AND REHABILITATION
STA 26+371.320 ROUTE 26 =
STA 80+000.000 WHITE OAK HILL RD
LEGEND
MHPC PROPERTY DESIGNATION
HISTORIC DISTRICT
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PLANS
Poland
Route 26
SCALE
SHEET 40 OF 44
AUGUSTA, MAINE


ROUTE 26
PI STA 26+387.000
DELTA 25°28'11.60" RIGHT
T 40.6801
L 80.0160
R 180.0000
E 4.5396
STEPHEN J. KINNEY
PP 68
CHECK FOR FENCE
BODY DYNAMICS, INC.
PP 69
MAINE TELEPHONE COMPANY
PP 72
TOWN OF POLAND
PP 73
ROBERT W. WALKER
PP 75
BIRCHARD E. ROSE, SR.
CHARLOTTE L. ROSE
PP 66
DAVID L. CLEAVES
PP 70
POLAND COMMUNITY CHURCH
PP 71
DAVID DECHENE
MARY DECHENE
PP 74
MATCH LINE SHEET 40
MATCH LINE SHEET 42
150 UD TYPE "B"
375 UD TYPE "C"
450 CULV. OPT. III
N42°20'57.11"W
N42°03'09.79"W
GZ38-03
GZ-B12-04
MHPC 354-0023
MHPC 354-0024
MHPC 354-0025
MHPC 354-0026
MHPC 354-0027
MHPC 354-0028
MHPC 354-0032
MHPC 354-0033
LEGEND
MHPC 354-00XX
MHPC PROPERTY DESIGNATION
HISTORIC DISTRICT
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PLANS
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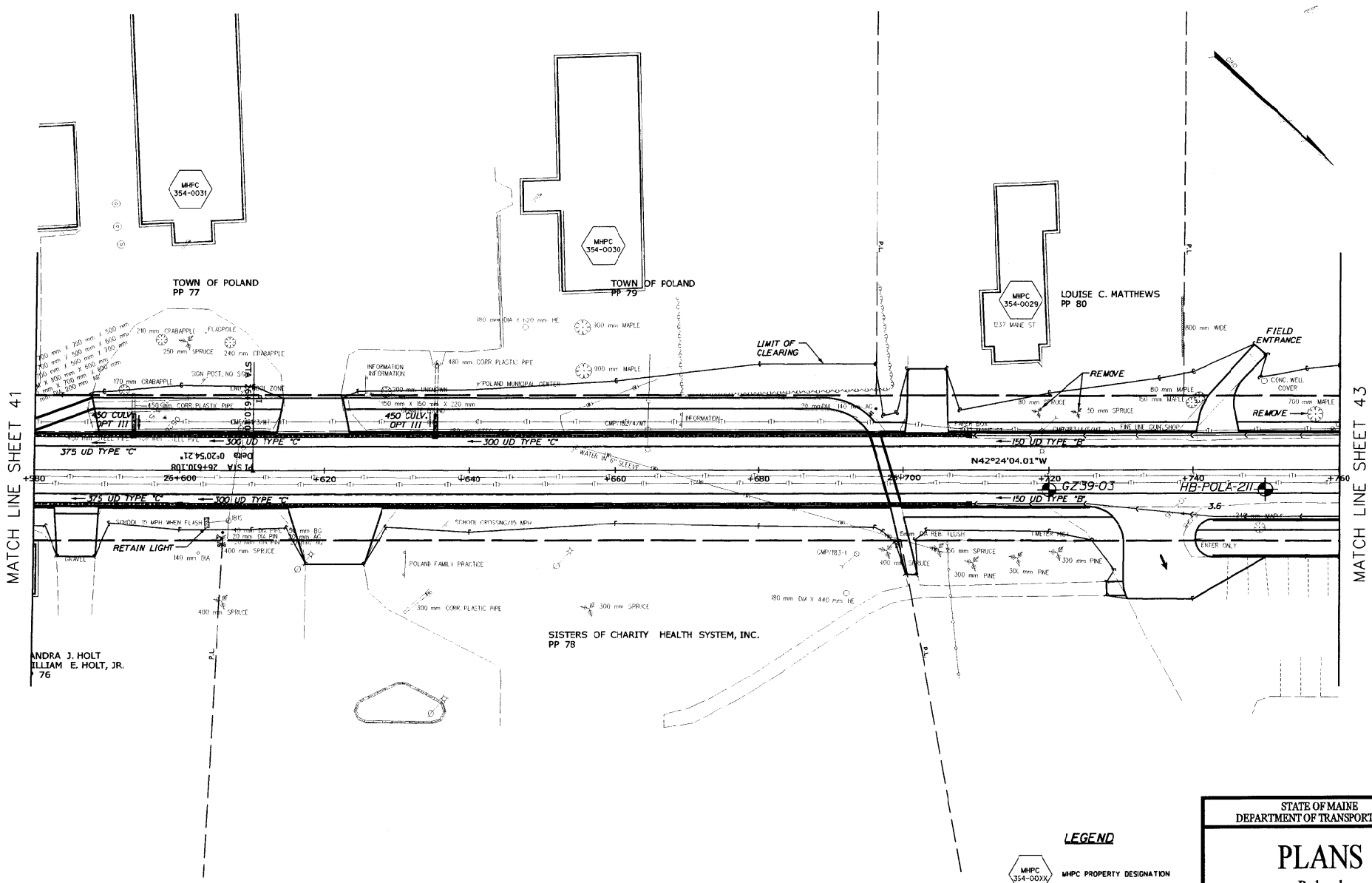
Route 26
SCALE
SHEET 41 OF 44
AUGUSTA, MAINE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

Poland

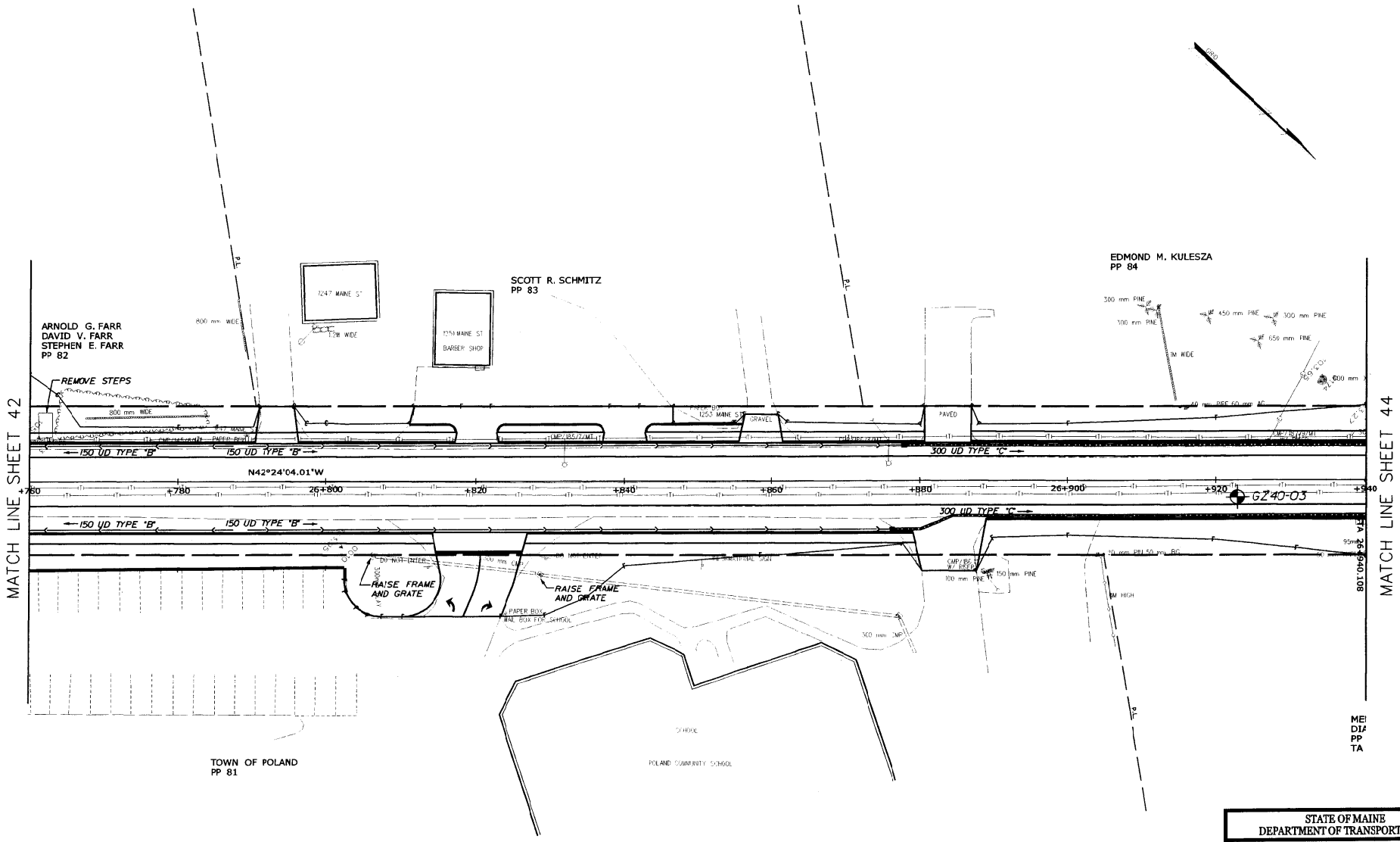
Route 26

SCALE (in meters)

SHEET 42 OF 44

AUGUSTA, MAINE

PIN 10014.00



LEGEND

MHPC 354-00XX — MHPC PROPERTY DESIGNATION

HISTORIC DISTRICT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

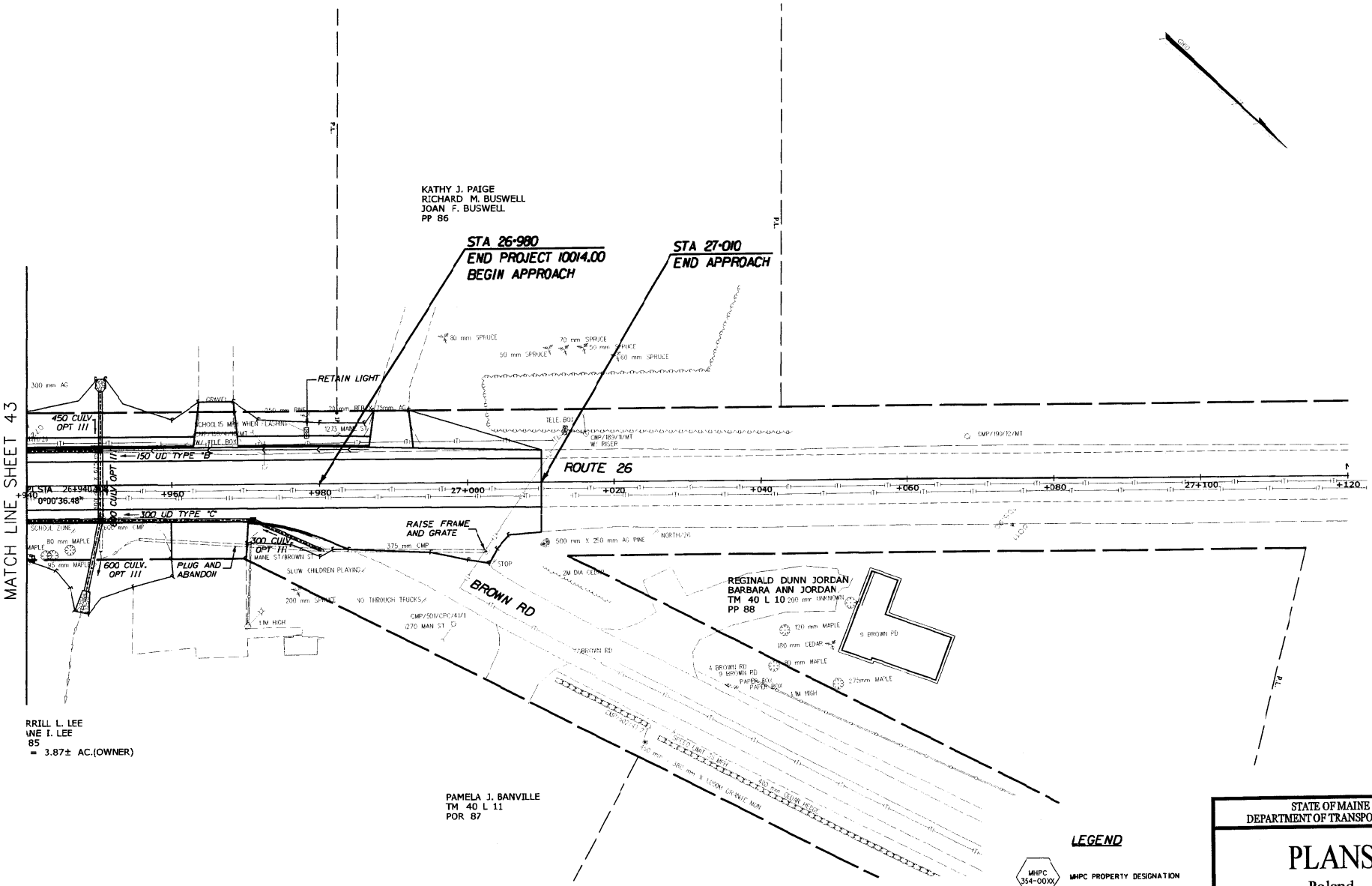
Poland

Route 26

SCALE (in meters)

SHEET 43 OF 44

AUGUSTA, MAINE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

Poland

Route 26

SCALE (in meters)

SHEET 44 OF 44

AUGUSTA, MAINE

LIMITATIONS

EXPLORATIONS

1. The analyses and recommendations submitted in this report are based in part upon the data obtained from subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

2. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the boring logs.

3. Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, and other factors occurring since the time measurements were made.

REVIEW

4. In the event that any changes in the nature, design, or location of the proposed improvements are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by GZA GeoEnvironmental, Inc. It is recommended that this firm be provided the opportunity for a general review of final design and specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

CONSTRUCTION

5. It is recommended that this firm be retained to provide pile testing, consultation, and field observation services during construction of the excavation and foundation phases of the work. This is to observe compliance with the design concepts, specifications, and recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

USE OF REPORT

6. This soil and foundation engineering report has been prepared for this project by GZA GeoEnvironmental, Inc. This report is for design purposes only and is not sufficient to prepare an accurate bid. Contractors wishing a copy of the report may secure it with the understanding that its scope is limited to design considerations only.

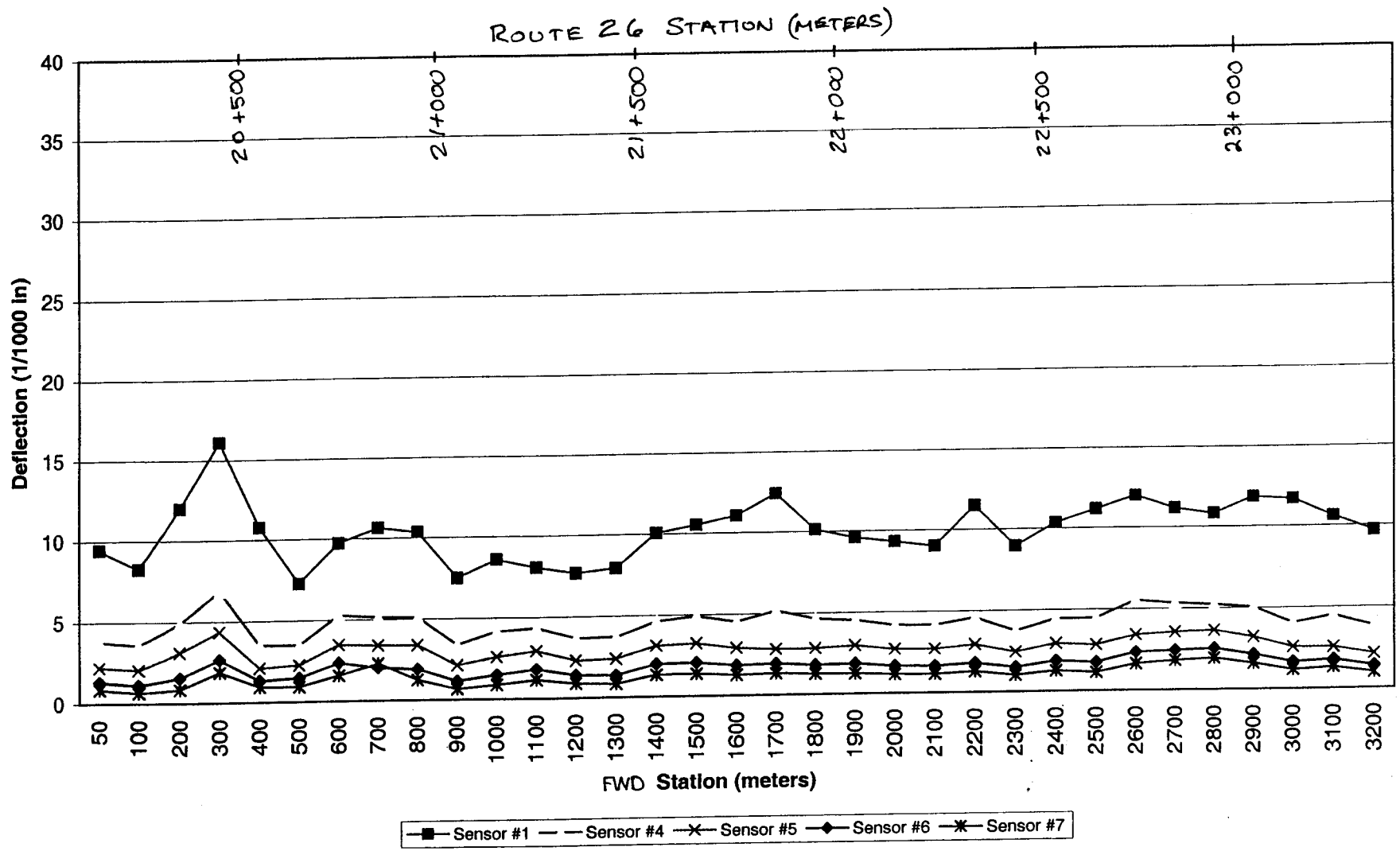
7. This report has been prepared for this project by GZA GeoEnvironmental, Inc. for the exclusive use of the Maine Department of Transportation and their consultants and for specific application to the Route 26 Reconstruction project in Poland, Maine, in accordance with generally accepted soil and foundation engineering practices. No Warranty, express or implied, is made.

I:\04Jobs\Portland\09.0025440.00\25440-01finlREP.DOC

PIN 10014.00

Poland: Route 26

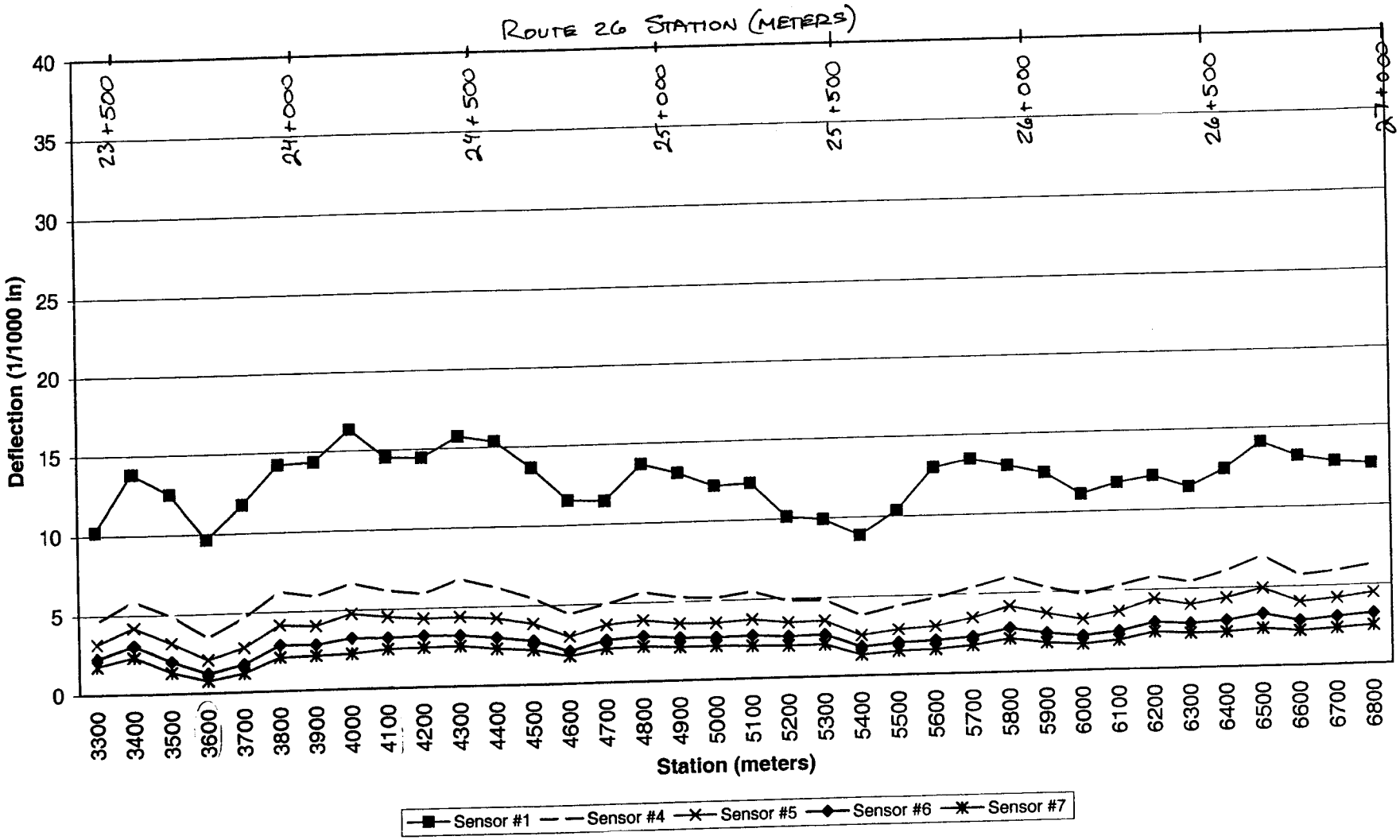
FWD Field Test Data



PIN 10014.00

Poland: Route 26

FWD Field Data

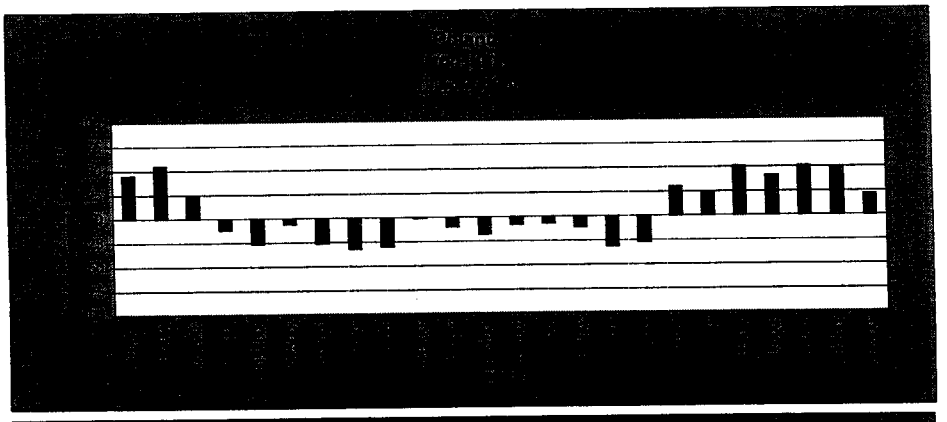


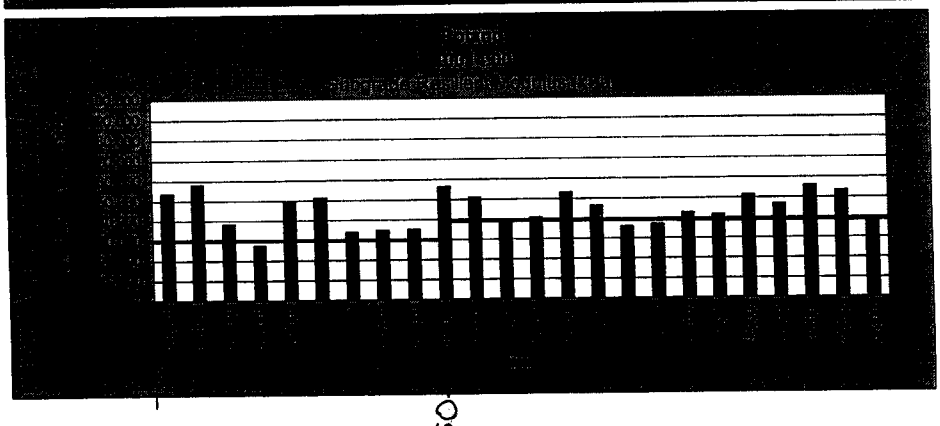
January 15, 2002

[redacted]

FWD Station (Meters)	Existing Structural Number (mm)	Future Traffic Structural Number (mm)	Overlay Structural Number (Existing - Future)	Recommended Pavement Thickness (mm)	Existing Pavement Modulus (kPa)	Subgrade Resilient Modulus (kPa)	Pavement Depth (mm)	* Combined Pavement/Gravel Depth Used for Calculation (mm)
0+050	148	103	45	-	530,399	53,609	190	760
0+100	155	100	55	-	613,658	58,124	190	760
0+200	138	115	23	-	430,834	38,435	190	760
0+300	117	129	[redacted]	[redacted]	338,565	27,499	140	700
0+400	80	106	[redacted]	[redacted]	575,482	49,629	130	400
0+500	99	105	[redacted]	[redacted]	1,097,327	51,295	130	400
0+600	94	120	[redacted]	[redacted]	925,577	34,014	130	400
0+700	87	119	[redacted]	[redacted]	756,439	34,924	130	400
0+800	89	119	[redacted]	[redacted]	786,835	35,333	130	400
0+900	101	102	[redacted]	[redacted]	1,165,226	56,319	140	400
1+000	95	105	[redacted]	[redacted]	957,056	51,099	140	400
1+100	96	114	[redacted]	[redacted]	988,384	40,049	140	400
1+200	105	113	[redacted]	[redacted]	1,318,454	40,712	140	400
1+300	97	104	[redacted]	[redacted]	1,016,766	53,057	140	400
1+400	98	109	[redacted]	[redacted]	1,062,749	46,256	140	400
1+500	87	118	[redacted]	[redacted]	744,128	35,966	140	400
1+600	90	117	[redacted]	[redacted]	823,278	37,070	140	400
1+700	142	112	30	-	469,197	42,671	140	760
1+800	135	112	23	-	407,940	41,741	140	760
1+900	156	105	51	-	625,704	51,319	140	760
2+000	149	108	41	-	546,806	46,994	140	760
2+100	153	102	51	-	592,614	55,956	140	760
2+200	153	103	50	-	595,301	53,398	140	760
2+300	137	115	22	-	424,583	38,700	140	760

*** For actual Gravel Depths, see attached logdraft forms**





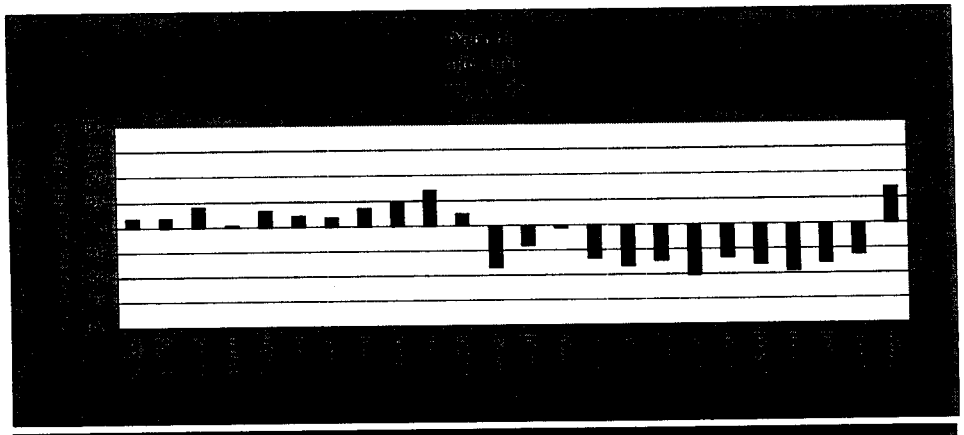
20+150 21+050

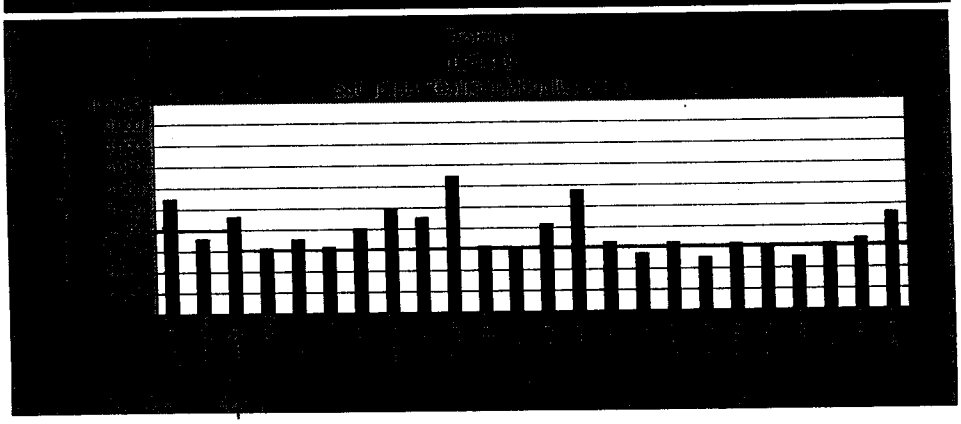
ROUTE 26 STATION (METERS)

January 15, 2002

FWD Station (Meters)	Existing Structural Number (mm)	Future Traffic Structural Number (mm)	Overlay Structural Number (Existing - Future)	Recommended Pavement Thickness (mm)	Existing Pavement Modulus (kPa)	Subgrade Resilient Modulus (kPa)	Pavement Depth (mm)	* Combined Pavement/Gravel Depth Used for Calculation (mm)
2+400	111	102	9	-	1,021,690	54,864	170	460
2+500	127	118	9	-	488,439	35,799	170	670
2+600	129	109	20	-	511,574	46,247	170	670
2+700	126	124	2	-	478,574	31,189	170	670
2+800	135	119	16	-	590,196	35,290	170	670
2+900	134	123	11	-	575,840	31,690	170	670
3+000	123	114	9	-	452,645	40,376	170	670
3+100	124	106	18	-	461,457	49,471	170	670
3+200	132	109	23	-	548,223	45,281	170	670
3+300	132	97	35	-	549,988	64,737	170	670
3+400	136	124	12	-	606,956	31,145	170	670
3+500	84	126	[redacted]	[redacted]	444,911	29,366	160	460
3+600	92	112	[redacted]	[redacted]	584,586	41,695	160	460
3+700	98	101	[redacted]	[redacted]	697,231	57,693	160	460
3+800	89	122	[redacted]	[redacted]	515,908	32,735	160	460
3+900	88	129	[redacted]	[redacted]	506,291	27,212	160	460
4+000	86	122	[redacted]	[redacted]	467,371	32,343	160	460
4+100	81	132	[redacted]	[redacted]	402,182	25,141	160	460
4+200	90	123	[redacted]	[redacted]	538,169	31,662	160	460
4+300	85	125	[redacted]	[redacted]	451,240	29,981	160	460
4+400	85	132	[redacted]	[redacted]	449,397	25,291	160	460
4+500	84	123	[redacted]	[redacted]	438,932	31,489	160	460
4+600	89	120	[redacted]	[redacted]	527,665	33,956	160	460
4+700	144	109	35	-	488,442	46,240	170	760

* For actual Gravel Depths, see attached logdraft forms





22+750

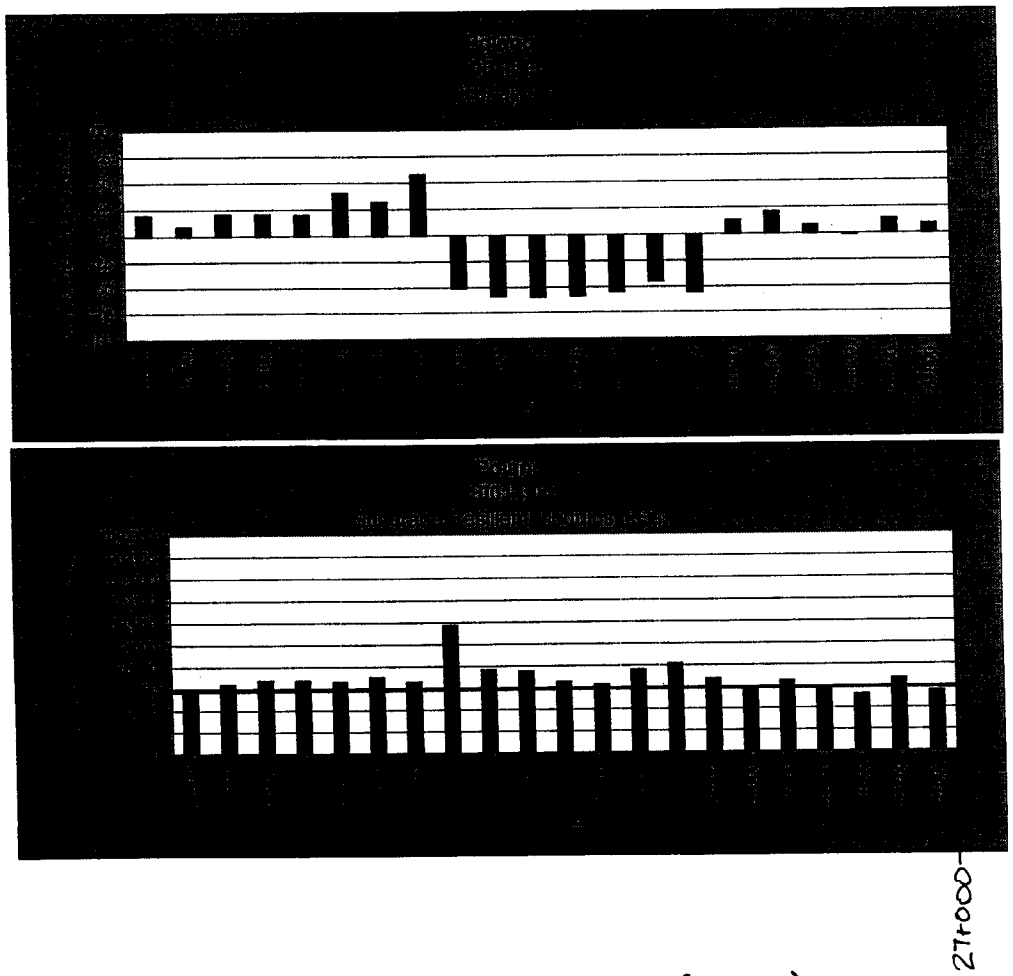
ROUTE 26 STATION (METERS)

January 15, 2002

[redacted]

FWD Station (Meters)	Existing Structural Number (mm)	Future Traffic Structural Number (mm)	Overlay Structural Number (Existing - Future)	Recommended Pavement Thickness (mm)	Existing Pavement Modulus (kPa)	Subgrade Resilient Modulus (kPa)	Pavement Depth (mm)	* Combined Pavement/Gravel Depth Used for Calculation (mm)
4+800	147	127	20	-	520,444	28,565	170	760
4+900	131	122	9	-	371,996	32,111	170	760
5+000	141	120	21	-	460,471	33,812	170	760
5+100	142	121	21	-	468,792	33,668	170	760
5+200	141	121	20	-	460,096	33,120	170	760
5+300	160	119	41	-	677,132	35,191	170	760
5+400	153	121	32	-	590,901	33,033	170	760
5+500	158	100	58	-	647,704	58,728	170	760
5+600	64	115	[redacted]	[redacted]	981,741	38,482	130	**270**
5+700	57	116	[redacted]	[redacted]	674,456	37,629	130	**270**
5+800	62	122	[redacted]	[redacted]	859,309	32,635	130	**270**
5+900	64	123	[redacted]	[redacted]	981,571	31,568	130	**270**
6+000	61	116	[redacted]	[redacted]	831,966	38,073	130	**270**
6+100	68	113	[redacted]	[redacted]	1,133,910	40,842	130	**270**
6+200	64	120	[redacted]	[redacted]	955,296	33,782	130	**270**
6+300	140	127	13	-	513,501	28,556	160	730
6+400	143	122	21	-	545,336	32,632	160	730
6+500	134	126	8	-	449,157	29,193	160	730
6+600	130	131	[redacted]	[redacted]	408,024	26,235	160	730
6+700	135	121	14	-	456,475	33,509	160	730
6+800	137	128	9	-	476,781	27,874	160	730

*** For actual Gravel Depths, see attached logdraft forms**



Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project:	Rt 26-Poland			**Boring No.:**	HB-POLA-201
Location:	Poland			**PIN:**	10014.00
Driller:	Northeast Diamond Drilling	**Elevation (m):**		**Auger ID/OD:**	100 mm
Operator:	R. Leonard	**Datum:**		**Sampler:**	SSA
Logged By:	G. Lidstone	**Rig Type:**	Mobil B-50	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	1/2/02-1/2/02	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	20+300, 3.2 Rt	**Casing ID/OD:**	N/A	**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.19		Asphalt Pavement. 0.19	
									Light brown, sandy GRAVEL, trace Silt dry. (Fill)	
0.75							-0.76		0.76	
							-0.94		COBBLE 0.94	
									Brown, fine to medium SAND, little Gravel, trace Silt, dry.	
1.5							-1.52		1.52	
2.25									**Bottom of Exploration at 1.52 m below ground surface.** No Refusal.	
3									Note: Soil descriptions are based on grab samples taken off the auger flights.	
3.75										
4.5										
5.25										

Remarks:

1. Borings were logged in the field by MDOT personnel. GZA prepared the boring logs using descriptions, data and remarks by MDOT.

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.

Boring No.: HB-POLA-201

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project:	Rt 26-Poland	**Boring No.:**	HB-POLA-202
Location:	Poland	**PIN:**	10014.00

Driller:	Northeast Diamond Drilling	**Elevation (m):**		**Auger ID/OD:**	63 mm / 150 mm
Operator:	R. Leonard	**Datum:**		**Sampler:**	Split Spoon
Logged By:	G. Lidstone	**Rig Type:**	Mobil B-50	**Hammer Wt./Fall:**	62.5 kg / 760 mm
Date Start/Finish:	1/2/02-1/2/02	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	N/A
Boring Location:	20+450, 2.5 Rt	**Casing ID/OD:**	N/A	**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	1D	61.0/40.6	0.14 - 0.75	52/87/63/68	150		-0.14		Asphalt Pavement. 0.14	
									Brown, very dense sandy GRAVEL, trace Silt, dry. (Fill)	G #98617 A-1-b GW-GM
0.75	2D	61.0/33.0	0.70 - 1.31	26/18/12/7	30		-0.70		0.70 Medium dense, brown, fine to medium SAND, little coarse Sand, little Gravel, trace Slit.	G #98618 A-4 SM
1.5							-1.37		1.37 **Bottom of Exploration at 1.37 m below ground surface.** No Refusal.	
2.25										
3										
3.75										
4.5										
5.25										

Remarks:

1. Borings were logged in the field by MDOT personnel. GZA prepared the boring logs using descriptions, data and remarks by MDOT.

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.

Boring No.: HB-POLA-202

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt 26-Poland		**Boring No.:**	HB-POLA-203
Location: Poland		**PIN:**	10014.00
Driller:	Northeast Diamond Drilling	**Elevation (m):**	
Auger ID/OD:	63 mm / 150 mm	**Operator:**	R. Leonard
Datum:		**Sampler:**	Split Spoon
Logged By:	G. Lidstone	**Rig Type:**	Mobil B-50
Hammer Wt./Fall:	62.5 kg / 760 mm	**Date Start/Finish:**	1/2/02-1/2/02
Drilling Method:	Hollow Stem Auger	**Core Barrel:**	N/A
Boring Location:	20+850, 2.5 Rt	**Casing ID/OD:**	N/A
Water Level*:	Not Encountered		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	MD	3.8/0.0	0.15 - 0.19	50					Asphalt Pavement.	
	1D/AB	61.0/38.1	0.24 - 0.85	48/23/18/23	41		-0.15		Brown, dense sandy GRAVEL, trace Silt, dry. (Fill) (A) 0.24m - 0.4m (B) 0.4m - 0.79m	G #98624 A-1-a GW-GM
0.75	2D	61.0/43.2	0.85 - 1.46	23/24/30/27	54		-0.40		Brown, dense fine to medium SAND, little coarse Sand, little Gravel, trace Slit, damp.	G #98620 A-2-4 SM
1.5							-0.85		Gray, very dense fine to medium SAND, some Gravel, trace coarse Sand, trace Silt. (Till)	G #98621 A-4 SM
2.25							-1.46		**Bottom of Exploration at 1.46 m below ground surface.** No Refusal.	
3										
3.75										
4.5										
5.25										

Remarks:

1. Borings were logged in the field by MDOT personnel. GZA prepared the boring logs using descriptions, data and remarks by MDOT.

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.

Boring No.: HB-POLA-203

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt 26-Poland
Location: Poland

Boring No.: HB-POLA-204
PIN: 10014.00

Driller:	Northeast Diamond Drilling	**Elevation (m):**		**Auger ID/OD:**	100 mm
Operator:	R. Leonard	**Datum:**		**Sampler:**	SSA
Logged By:	G. Lidstone	**Rig Type:**	Mobil B-50	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	1/2/02-1/2/02	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	21+450, 3.1 Rt	**Casing ID/OD:**	N/A	**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.14		Asphalt Pavement. 0.14	
									Brown, sandy GRAVEL, trace Silt, dry. (Fill)	
							-0.40		0.40	
									Brown, fine to medium SAND, Cobbles, little coarse Sand, little Gravel, trace Silt, dry.	
0.75							-0.85		0.85	
									Brown, fine to medium SAND, little coarse Sand, trace Gravel, damp.	
1.5							-1.52		1.52	
									Bottom of Exploration at 1.52 m below ground surface. No Refusal.	
									Note: Soil descriptions are based on grab samples taken off the auger flights.	
2.25										
3										
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by MDOT personnel. GZA prepared the boring logs using descriptions, data and remarks by MDOT.

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.

Boring No.: HB-POLA-204

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt 26-Poland
Location: Poland

Boring No.: HB-POLA-205
PIN: 10014.00

Driller:	Northeast Diamond Drilling	**Elevation (m):**		**Auger ID/OD:**	63 mm / 150 mm
Operator:	R. Leonard	**Datum:**		**Sampler:**	Split Spoon
Logged By:	G. Lidstone	**Rig Type:**	Mobil B-50	**Hammer Wt./Fall:**	62.5 kg / 760 mm
Date Start/Finish:	1/2/02-1/2/02	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	N/A
Boring Location:	22+050, 2 Rt	**Casing ID/OD:**	N/A	**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.14		Asphalt Pavement. 0.14	
	1D	31.8/20.3	0.30 - 0.62	88/65/50-0.3mm	+50				Brown, very dense sandy Gravel, frequent Cobbles, trace Silt, dry. (Fill)	G #98622 A-1-b SW-SM
0.75							-1.13		1.13 Brown, mottled, very dense silty fine to medium SAND, some Gravel, trace coarse Sand, damp. (Till)	G #98623 A-2-4 SM
	2D	61.0/33.0	1.22 - 1.83	15/31/23/33	54					
1.5							-1.83		1.83 **Bottom of Exploration at 1.83 m below ground surface.** No Refusal.	
2.25										
3										
3.75										
4.5										
5.25										

Remarks:

1. Borings were logged in the field by MDOT personnel. GZA prepared the boring logs using descriptions, data and remarks by MDOT.

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.

Boring No.: HB-POLA-205

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt 26-Poland
Location: Poland

Boring No.: HB-POLA-206
PIN: 10014.00

Driller:	Northeast Diamond Drilling	**Elevation (m):**		**Auger ID/OD:**	100 mm
Operator:	R. Leonard	**Datum:**		**Sampler:**	SSA
Logged By:	G. Lidstone	**Rig Type:**	Mobil B-50	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	1/2/02-1/2/02	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	22+550, 4.1 Rt	**Casing ID/OD:**	N/A	**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.17		Asphalt Pavement. 0.17	
							-0.46		Brown, sandy GRAVEL, trace Silt, dry. (Fill) 0.46	
0.75									Brown, silty fine to medium SAND, occasional Cobbles, some Gravel, trace coarse Sand, damp.	
1.5							-1.52		1.52 **Bottom of Exploration at 1.52 m below ground surface.** No Refusal. Note: Soil descriptions are based on grab samples taken off the auger flights.	
2.25										
3										
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by MDOT personnel. GZA prepared the boring logs using descriptions, data and remarks by MDOT.

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.

Boring No.: HB-POLA-206

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt 26-Poland		**Boring No.:**	HB-POLA-207
Location: Poland		**PIN:**	10014.00
Driller:	Northeast Diamond Drilling	**Elevation (m):**	
Operator:	R. Leonard	**Datum:**	
Logged By:	G. Lidstone	**Rig Type:**	Mobil B-50
Date Start/Finish:	1/2/02-1/2/02	**Drilling Method:**	Hollow Stem Auger
Boring Location:	23+150, 2 Rt	**Casing ID/OD:**	N/A
Auger ID/OD:	63 mm / 150 mm		
Sampler:	Split Spoon		
Hammer Wt./Fall:	62.5 kg / 760 mm		
Core Barrel:	N/A		
Water Level*:	Not Encountered		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement.	
	1D/AB	61.0/35.6	0.30 - 0.91	53/33/18/16	51		-0.17		Brown, dense sandy GRAVEL, trace Silt, dry. (Fill) (A) 0.30m - 0.67m	G #98625 A-1-a GW
0.75	2D	61.0/22.9	0.91 - 1.52	28/37/40/33	77		-0.67		Brown, very dense fine to coarse SAND, some Gravel, trace Silt, dry. (B) 0.67m - 0.91m	G #97476 A-2-4 SM G #97477 A-1-b SM
1.5							-1.52		**Bottom of Exploration at 1.52 m below ground surface.** No Refusal.	
2.25										
3										
3.75										
4.5										
5.25										

Remarks:

1. Borings were logged in the field by MDOT personnel. GZA prepared the boring logs using descriptions, data and remarks by MDOT.

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.

Boring No.: HB-POLA-207

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt 26-Poland
Location: Poland

Boring No.: HB-POLA-208
PIN: 10014.00

Driller:	Northeast Diamond Drilling	**Elevation (m):**		**Auger ID/OD:**	63 mm / 150 mm
Operator:	R. Leonard	**Datum:**		**Sampler:**	Split Spoon
Logged By:	G. Lidstone	**Rig Type:**	Mobil B-50	**Hammer Wt./Fall:**	62.5 kg / 760 mm
Date Start/Finish:	1/2/02-1/2/02	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	N/A
Boring Location:	24+150, 2.4 Rt	**Casing ID/OD:**	N/A	**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement.	
	1D/AB	61.0/40.6	0.30 - 0.91	62/28/42/28	+50		-0.16		Brown, very dense sandy GRAVEL, trace Silt, dry. (Fill) (A) 0.30m - 0.46m — 0.16	G #97478 A-1-b SW-SM
0.75	2D	61.0/20.3	0.91 - 1.52	17/14/12/19	26		-0.46		Brown, very dense fine to coarse SAND, trace Silt, dry. (B) 0.46m - 0.91m (A) 0.91m - 1.22m — 0.46	G #97479 A-1-b SM
1.5							-1.22		Medium dense, brown, fine to medium SAND, dry. (B) 1.22m - 1.52m — 1.22	G #97480 A-3 SP-SM
							-1.52		**Bottom of Exploration at 1.52 m below ground surface.** No Refusal. — 1.52	
2.25										
3										
3.75										
4.5										
5.25										

Remarks:

1. Borings were logged in the field by MDOT personnel. GZA prepared the boring logs using descriptions, data and remarks by MDOT.

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.

Boring No.: HB-POLA-208

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt 26-Poland
Location: Poland

Boring No.: HB-POLA-209
PIN: 10014.00

Driller:	Northeast Diamond Drilling	**Elevation (m):**		**Auger ID/OD:**	63 mm / 150 mm
Operator:	R. Leonard	**Datum:**		**Sampler:**	Split Spoon
Logged By:	G. Lidstone	**Rig Type:**	Mobil B-50	**Hammer Wt./Fall:**	62.5 kg / 760 mm
Date Start/Finish:	1/2/02-1/2/02	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	N/A
Boring Location:	25+650, 2.6 Rt	**Casing ID/OD:**	N/A	**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.17		Asphalt Pavement. 0.17	
	1D	7.6/5.1	0.30 - 0.38	100-0.08mm	+50				Brown, very dense sandy GRAVEL, frequent Cobbles, trace Silt, dry. (Fill)	G #97481 A-1-b SM
0.75	MD	2.5/0.0	0.91 - 0.93	50-0mm	+50		-1.13		1.13	
	2D	61.0/38.1	1.22 - 1.83	13/13/14/14	27				Light brown, medium dense fine SAND, dry.	G #97482 A-3 SP-SM
1.5							-1.83		1.83	
2.25									**Bottom of Exploration at 1.83 m below ground surface.** No Refusal.	
3										
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by MDOT personnel. GZA prepared the boring logs using descriptions, data and remarks by MDOT.

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.

Boring No.: HB-POLA-209

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt 26-Poland
Location: Poland

Boring No.: HB-POLA-210
PIN: 10014.00

Driller:	Northeast Diamond Drilling	**Elevation (m):**		**Auger ID/OD:**	100 mm
Operator:	R. Leonard	**Datum:**		**Sampler:**	SSA
Logged By:	G. Lidstone	**Rig Type:**	Mobil B-50	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	1/2/02-1/2/02	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	26+250, 1.2 Rt	**Casing ID/OD:**	N/A	**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.13		Asphalt Pavement. 0.13	
							-0.27		Brown, sandy GRAVEL, trace Silt, dry. (Fill) 0.27	
									Brown, fine to medium SAND, some Gravel, dry.	
0.75							-0.98		0.98	
									Dark brown, fine to medium SAND, trace Silt, damp.	
1.5							-1.52		1.52	
									Bottom of Exploration at 1.52 m below ground surface. No Refusal.	
									Note: Soil descriptions are based on grab samples taken off the auger flights.	
2.25										
3										
3.75										
4.5										
5.25										

Remarks:

1. Borings were logged in the field by MDOT personnel. GZA prepared the boring logs using descriptions, data and remarks by MDOT.

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.

Boring No.: HB-POLA-210

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project:	Rt 26-Poland	**Boring No.:**	HB-POLA-211
Location:	Poland	**PIN:**	10014.00

Driller:	Northeast Diamond Drilling	**Elevation (m):**		**Auger ID/OD:**	63 mm / 150 mm
Operator:	R. Leonard	**Datum:**		**Sampler:**	Split Spoon
Logged By:	G. Lidstone	**Rig Type:**	Mobil B-50	**Hammer Wt./Fall:**	62.5 kg / 760 mm
Date Start/Finish:	1/2/02-1/2/02	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	N/A
Boring Location:	26+750, 2.8 Rt	**Casing ID/OD:**	N/A	**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement.	
	1D	12.7/7.6	0.30 - 0.43	100-.013mm	+50		-0.16		0.16 Brown, very dense sandy GRAVEL, Cobbles, dry. (Fill)	G #97483 A-1-b SM
0.75	2D	61.0/50.8	0.91 - 1.52	11/24/21/20	45		-0.73		0.73 Medium dense, brown, fine to medium SAND, dry.	G #97484 A-3 SP-SM
1.5							-1.52		1.52 **Bottom of Exploration at 1.52 m below ground surface.** No Refusal.	
2.25										
3										
3.75										
4.5										
5.25										

Remarks:

1. Borings were logged in the field by MDOT personnel. GZA prepared the boring logs using descriptions, data and remarks by MDOT.

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.

Boring No.: HB-POLA-211

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Middle Range Pond Bridge Over Pond Outlet
Location: US Route 26 Poland, Maine

Boring No.: BB-PMR-101
PIN: 10014.00

Driller:	Northeast Diamond Drilling, Inc.	**Elevation (m):**	94.40	**Auger ID/OD:**	N/A
Operator:	Rich/Brian	**Datum:**	NGVD	**Sampler:**	Standard Split Spoon
Logged By:	K.Maguire	**Rig Type:**	Mobil B50	**Hammer Wt./Fall:**	63.5 kg/760 mm
Date Start/Finish:	10/21/02-10/22/02	**Drilling Method:**	Spun Cased Wash Boring	**Core Barrel:**	N/A
Boring Location:	23+030.2, 0.27 RT.	**Casing ID/OD:**	HW-100/113 mm	**Water Level*:**	~2.44 m bgs

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						Roller Cone	94.21		190 mm Pavement — 0.19	
	1D	33.0/30.5	0.30 - 0.64	70/21/50(25)	---				Brown, damp, medium dense, fine to coarse SAND, trace silt with broken rock fragments, (Fill). Obstruction at 0.64 m bgs - cobble, roller cone through.	
1.2	2D	61.0/30.5	1.22 - 1.83	35/70/77/54	+50	Spun H Casing			Brown, wet, dense, fine to coarse SAND, little silt with angular rock fragments, (Fill).	
2.4										
	MD	0.0/0.0	3.05 - 3.05	50(0)	---				Obstruction from 2.59-3.05 m bgs, spun casing through.	
3.6							90.74		3.66	
	3D	61.0/35.6	4.27 - 4.88	7/21/19/19	40				Grey, wet, dense, fine to coarse SAND, trace fine gravel and silt, dilatant.	G #97875 A-3, SP-SM wc=20.6%
4.8										
	4D	61.0/45.7	5.79 - 6.40	7/12/14/12	26		88.61		5.79	
6									Grey, wet, medium dense, layered, fine sandy SILT, and fine SAND, slightly plastic.	
7.2	5D	61.0/61.0	7.32 - 7.92	7/7/7/10	14				Grey, wet, medium dense, fine silty SAND, trace gravel and clay, slightly plastic.	G #97376 A-4, SM wc=10.0%
8.4	6D	61.0/45.7	8.84 - 9.45	8/7/18/14	25				Grey, wet, medium dense, layers of fine silty SAND and sandy SILT, slightly plastic.	

Remarks:

Spoon driven with donut hammer

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.

Boring No.: BB-PMR-101

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Middle Range Pond Bridge Over Pond Outlet
Location: US Route 26 Poland, Maine

Boring No.: BB-PMR-101
PIN: 10014.00

Driller:	Northeast Diamond Drilling, Inc.	**Elevation (m):**	94.40	**Auger ID/OD:**	N/A
Operator:	Rich/Brian	**Datum:**	NGVD	**Sampler:**	Standard Split Spoon
Logged By:	K.Maguire	**Rig Type:**	Mobil B50	**Hammer Wt./Fall:**	63.5 kg/760 mm
Date Start/Finish:	10/21/02-10/22/02	**Drilling Method:**	Spun Cased Wash Boring	**Core Barrel:**	N/A
Boring Location:	23+030.2, 0.27 RT.	**Casing ID/OD:**	HW-100/113 mm	**Water Level*:**	~2.44 m bgs

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
9.6						Spun Casing				
							84.25		10.15	
	7D	61.0/38.1	10.36 - 10.97	4/3/4/6	7				Grey, wet, loose, fine SAND, trace silt, dilatant.	
10.8										
							82.82		11.58	
12	MD	0.0/0.0	11.89 - 11.89	50(0)	---				Boulder from 11.58-12.28 m bgs. Spoon refusal, roller coned ahead to 12.19 m bgs.	
	R1	10.2/10.2	12.19 - 12.29						Cored through boulder, GRANITE.	
13.2										
	8D	15.2/5.1	13.41 - 13.56	100(150)	---				Grey, wet, fine to coarse SAND, rock in end of spoon.	
14.4										
	9D	61.0/38.1	14.94 - 15.54	16/40/62/51	+50		79.46		14.94	
									Brown, wet, fine to medium SAND with 25 mm stones.	
15.6										
	10D	61.0/25.4	16.46 - 17.07	54/30/28/35	+50				Brown, wet, dense, fine to coarse SAND, trace silt, broken rock in nose of spoon.	
16.8							77.33		Cannot spin casing further. When casing was pulled, spinning shoe was entirely worn away. No refusal Encountered.	
									17.07	
									Bottom of Exploration at 17.07 m below ground surface.	
18										

Remarks:

Spoon driven with donut hammer

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.

Boring No.: BB-PMR-101

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Middle Range Pond Bridge Over Pond Outlet
Location: US Route 26 Poland, Maine

Boring No.: BB-PMR-102A
PIN: 10014.00

Driller:	MDOT	**Elevation (m):**	94.40	**Auger ID/OD:**	100 mm
Operator:	C.Mann/G.Lidstone/B.Hyland	**Datum:**	NGVD	**Sampler:**	Standard Split Spoon
Logged By:	K.Maguire	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	63.5 kg/760 mm
Date Start/Finish:	10/21/02-10/21/02	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	23+023.1, 0.2 LT.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	94.22		178 mm Pavement (0.18)	
	1D	38.1/30.5	0.30 - 0.69	32/28/50(75)					Brown, dry, medium dense, fine to coarse SAND, little silt and gravel, with broken rock fragments, (Fill).	
1.2										
	2D	2.5/2.5	1.52 - 1.55	50(25)			92.85		Brown, dry, fine to coarse SAND, little silt with broken rock fragments, (Fill). Spoon refusal, spoon bouncing on hard obstruction. (1.55)	
2.4										
3.6										
4.8										
6										
7.2										
8.4										

Bottom of Exploration at 1.55 m below ground surface.

Remarks:

Spoon driven with safety hammer

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.

Boring No.: BB-PMR-102A

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Middle Range Pond Bridge Over Pond Outlet
Location: US Route 26 Poland, Maine

Boring No.: BB-PMR-102B
PIN: 10014.00

Driller:	MDOT	**Elevation (m):**	94.40	**Auger ID/OD:**	100 mm
Operator:	C.Mann/G.Lidstone/B.Hyland	**Datum:**	NGVD	**Sampler:**	N/A
Logged By:	K.Maguire	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	10/21/02-10/21/02	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	23+022.4, 0.43 LT.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	94.22		178 mm Pavement — 0.18	
									Brown, dry, fine to coarse SAND, little silt with broken rock fragments. (Fill).	
1.2										
							92.27		Auger refusal on obstruction. — 2.13	
2.4									**Bottom of Exploration at 2.13 m below ground surface.**	
3.6										
4.8										
6										
7.2										
8.4										

Remarks:

Soil description from auger cuttings. No soil samples were taken from this boring.

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.

Boring No.: BB-PMR-102B

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Middle Range Pond Bridge Over Pond Outlet
Location: US Route 26 Poland, Maine

Boring No.: BB-PMR-102C
PIN: 10014.00

Driller:	MDOT	**Elevation (m):**	94.40	**Auger ID/OD:**	100 mm
Operator:	C.Mann/G.Lidstone/B.Hyland	**Datum:**	NGVD	**Sampler:**	N/A
Logged By:	K.Maguire	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	N/A
Date Start/Finish:	10/21/02-10/21/02	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	N/A
Boring Location:	23+021.7, 0.11 RT.	**Casing ID/OD:**	N/A	**Water Level*:**	None Observed

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						SSA	94.22		178 mm Pavement — 0.18	
							93.76		Auger refusal on obstruction. — 0.64	
									Bottom of Exploration at 0.64 m below ground surface.	
1.2										
2.4										
3.6										
4.8										
6										
7.2										
8.4										

Remarks:

Soil description from auger cuttings. No soil samples were taken from this boring.

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.

Boring No.: BB-PMR-102C

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Middle Range Pond Bridge Over Pond Outlet
Location: US Route 26 Poland, Maine

Boring No.: BB-PMR-102D
PIN: 10014.00

Driller:	MDOT	**Elevation (m):**	94.40	**Auger ID/OD:**	N/A
Operator:	C.Mann/G.Lidstone/B.Hyland	**Datum:**	NGVD	**Sampler:**	Standard Split Spoon
Logged By:	K.Maguire	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	63.5 kg/760 mm
Date Start/Finish:	10/21/02-10/22/02	**Drilling Method:**	Spun Cased Wash Boring	**Core Barrel:**	N/A
Boring Location:	23+025.5, CL	**Casing ID/OD:**	HW-100/113 mm	**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0						Core	94.31	90 mm Pavement — 0.09	
								0.76 m Bridge Deck — 0.76	
							93.64	2.8 m from Bridge Deck to Lake Bottom	
1.2									
2.4									
	1D	2.5/2.5	2.80 - 2.83	50(25)		Spun Casing	91.47	Broken concrete in nose of spoon, roller cone through. No soil recovered. — 2.93	
							91.20	Wood layer from 2.93-3.2 m bgs. — 3.20	
3.6									
	2D	61.0/2.5	4.57 - 5.18	15/11/5/9	16			Brown, wet, medium dense, fine to coarse SAND, trace silt and organics.	
4.8							89.07	— 5.33	
6	3D	61.0/40.6	6.10 - 6.71	9/5/3/3	8			Grey, wet, layered, stiff, SILT, trace sand, and loose, silty fine SAND, slightly plastic.	G #97377 A-4, CL-ML wc=28.8%
7.2									
	4D	61.0/38.1	7.62 - 8.23	4/5/2/2	7			Grey, wet, soft, SILT, little sand, with fine to medium sand layers, slightly plastic.	
8.4									
	5D	61.0/35.6	9.14 - 9.75	3/5/5/1	10		85.26	— 9.14 Grey, wet, loose, fine SAND, some silt, dilatant.	G #97378 A-4,ML wc=14.3%

Remarks:

1. Spoon driven with safety hammer.
2. Elevation is from Bridge Deck, not from Lake Bottom.

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.

Boring No.: BB-PMR-102D

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Middle Range Pond Bridge Over Pond Outlet
Location: US Route 26 Poland, Maine

Boring No.: BB-PMR-102D
PIN: 10014.00

Driller:	MDOT	**Elevation (m):**	94.40	**Auger ID/OD:**	N/A
Operator:	C.Mann/G.Lidstone/B.Hyland	**Datum:**	NGVD	**Sampler:**	Standard Split Spoon
Logged By:	K.Maguire	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	63.5 kg/760 mm
Date Start/Finish:	10/21/02-10/22/02	**Drilling Method:**	Spun Cased Wash Boring	**Core Barrel:**	N/A
Boring Location:	23+025.5, CL	**Casing ID/OD:**	HW-100/113 mm	**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
9.6						Spun H Casing				
10.8	6D	61.0/30.5	10.67 - 11.28	2/2/2/3	4				Grey, wet, loose, fine silty SAND, uniform, dilatant.	
12	7D	61.0/20.3	12.19 - 12.80	2/6/4/11	10				Grey, wet, loose, fine to coarse, silty SAND with mica chips, rock in nose of spoon.	
							81.60		12.80	
13.2	8D	61.0/35.6	13.72 - 14.33	21/21/27/28	48				Grey-brown, wet, very dense, fine to coarse silty SAND.	
14.4							79.92		14.48	
15.6	MD	61.0/0.0	15.24 - 15.85	3/12/21/33	33				Empty spoon, brown sand in wash.	
16.8	9D	61.0/15.2	16.76 - 17.37	18/27/25/31	+50				Brown, wet, very dense, fine to coarse SAND, little silt, with broken rock.	
18						Roller Cone			Roller cone in boulder from 17.98-18.35 m bgs.	
	R1	152.4/25.4	18.35 - 19.87	RQD = N/A%		NQ Rock Core	76.05		18.35	
									Cored through boulders to 19.87 m bgs. R1: Core Times (min:sec) 18.35-18.65 (10:11) 18.65-18.96 (2:50)	

Remarks:

1. Spoon driven with safety hammer.
2. Elevation is from Bridge Deck, not from Lake Bottom.

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.

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Middle Range Pond Bridge Over Pond Outlet

Location: US Route 26 Poland, Maine

Boring No.: BB-PMR-102D

PIN: 10014.00

Driller:	MDOT	**Elevation (m):**	94.40	**Auger ID/OD:**	N/A
Operator:	C.Mann/G.Lidstone/B.Hyland	**Datum:**	NGVD	**Sampler:**	Standard Split Spoon
Logged By:	K.Maguire	**Rig Type:**	CME 45C	**Hammer Wt./Fall:**	63.5 kg/760 mm
Date Start/Finish:	10/21/02-10/22/02	**Drilling Method:**	Spun Cased Wash Boring	**Core Barrel:**	N/A
Boring Location:	23+025.5, CL	**Casing ID/OD:**	HW-100/113 mm	**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_V = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
19.2							74.53		18.96-19.26 (1:44) 19.26-19.57 (3:12) 19.57-19.87 (4:05) When casing was pulled, spinning shoe was entirely worn away. No refusal encountered. 19.87 **Bottom of Exploration at 19.87 m below ground surface.**	
20.4										
21.6										
22.8										
24										
25.2										
26.4										
27.6										

Remarks:

1. Spoon driven with safety hammer.
2. Elevation is from Bridge Deck, not from Lake Bottom.

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

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Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ1-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/18/03	**Drilling Method:**	Hollow Stem Augers	**Core Barrel:**	
Boring Location:	20+570, 2.3 Rt	**Casing ID/OD:**		**Water Level*:**	2.7 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.15	Asphalt Pavement 0.15	
	S-1	61.0/40.6	0.15 - 0.76	41/40/41/19	81			Very dense, brown, fine to medium SAND, little Gravel, trace Silt, scattered cobbles, dry. (Fill)	
0.75									
	S-2	61.0/40.6	0.91 - 1.52	9/5/3/3	8			Top 203mm, brown to dark brown, fine to medium SAND, little Gravel, trace Silt, scattered cobbles, dry. (Fill)	
							-1.13	Bottom 203mm, loose, fine to medium SAND, little Silt, trace Gravel (Glacial Till) 1.13	
1.5	S-3	61.0/48.3	1.52 - 2.13	5/11/16/23	27			Medium dense, tan, fine to medium SAND, little Silt, trace Gravel, moist to very moist	
2.25	S-4	61.0/50.8	2.13 - 2.74	20/32/32/20	64			Very dense, brown to light brown, fine to medium SAND, little Gravel, trace Silt, very moist to wet. (Glacial Till)	
	S-5	55.9/50.8	2.74 - 3.30	19/36/42/ 50-102mm	78			Same as S-4	
3							-3.29	3.29	
								Bottom of Exploration at 3.29 m below ground surface. Split Spoon Refusal	
3.75									
4.5									
5.25									

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ1-03

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project:	Rt. 26-Poland	**Boring No.:**	GZ2-03
Location:	Poland	**PIN:**	10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/18/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	20+709, 2.3 Rt	**Casing ID/OD:**		**Water Level*:**	1.5 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.15		Asphalt Pavement (0.15)	
	S-1	45.7/30.5	0.15 - 0.61	59/55/60	115				Very dense, brown, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded, dry. (Fill)	
0.75	S-2	25.4/10.2	0.91 - 1.17	4/34-102mm	13				Same as S-1, except Asphalt fragments, rock fragments. (Possible boulder) (1.22)	
1.5	S-3	61.0/45.7	1.52 - 2.13	1/6/6/7	12		-1.22		Medium dense, light brown, tan, fine to medium SAND, little Silt, trace Gravel, very moist to wet	
2.25	S-4	61.0/50.8	2.13 - 2.74	4/4/4/14	8				Loose, dark brown, black, grayish-black, fine SAND and SILT, trace organics, wet. (2.74)	
3	S-5	61.0/61.0	2.74 - 3.35	10/20/27/33	47		-2.74		Very dense, brown, fine to medium SAND and GRAVEL, little Silt, Gravel subrounded to subangular, wet. (Glacial Till) (3.35)	
3.75							-3.35		**Bottom of Exploration at 3.35 m below ground surface.** No Refusal	
4.5										
5.25										

Remarks:

1. Borings were logged in the field by GZA personnel.

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Boring No.: GZ2-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ3-03
Location: Poland		**PIN:**	10014.00
Driller:	Great Works Test Boring	**Elevation (m):**	
Operator:	Don	**Datum:**	
Logged By:	J. Moulton	**Rig Type:**	Truck
Date Start/Finish:	6/18/03	**Drilling Method:**	Hollow Stem Augers
Boring Location:	21+005, 2.3 Rt	**Casing ID/OD:**	
Auger ID/OD:	57 mm		
Sampler:	Split Spoon		
Hammer Wt./Fall:	65 kg / 0.76 m		
Core Barrel:			
Water Level*:	2.7 m		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.15		Asphalt Pavement — 0.15	
	S-1	61.0/61.0	0.15 - 0.76	22/20/11/8	31				Top 305mm, light brown, tan, fine to medium SAND, little Silt, moist. (Fill) Bottom 305mm, dense, drak brown, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded, moist. (Fill)	
0.75										
	S-2	61.0/15.2	0.91 - 1.52	6/5/8/8	13				Top 76mm, dark brown, fine to medium SAND, little Gravel, trace Silt, Asphalt fragments. (Fill) Bottom 76mm, light brown, fine to medium SAND, little Silt, trace Gravel, moist.	
							-1.37		1.37	
1.5	S-3	61.0/61.0	1.52 - 2.13	10/21/28/29	49				Bottom 76mm, light brown, fine to medium SAND, little Silt, trace Gravel, moist. Dense, light brown, fine to medium SAND, little Silt, (two) 76mm fine to coarse SAND and GRAVEL layers approximately 203mm apart. (Glacial Till)	
2.25	S-4	61.0/30.5	2.13 - 2.74	38/35/23/28	58				Same as S-3, except very dense	
3	S-5	61.0/15.2	2.74 - 3.35	24/34/34/34	68				Same as S-3, except very dense and wet	
							-3.35		3.35	
3.75									**Bottom of Exploration at 3.35 m below ground surface.** No Refusal	
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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

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Boring No.: GZ3-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project:	Rt. 26-Poland	**Boring No.:**	GZ4-03
Location:	Poland	**PIN:**	10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/18/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	21+130, 1.5 Rt	**Casing ID/OD:**		**Water Level*:**	2.1 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	61.0/45.7	0.18 - 0.79	28/24/28/23	52		-0.18		0.18 Very dense, brown, fine to medium SAND, litle Gravel, trace Silt, Gravel subrounded and subangular, dry. (Fill)	A-1-b SW-SM
0.75										
	S-2	61.0/30.5	0.91 - 1.52	5/6/13/25	19		-1.07		Top 152mm, same as S-1. 1.07 Bottom 152mm, Light brown, tan, fine to medium SAND, little Silt, trace Gravel, very moist. (Glacial Till)	
1.5	S-3	61.0/45.7	1.52 - 2.13	14/24/36/19	60				Very dense, light brown, tan, fine to medium SAND, little Silt, trace Gravel, very moist.	A-1-b SM
2.25	S-4	45.7/45.7	2.13 - 2.59	19/22/60/25-0mm	82				Very dense, light brown, fine to coarse SAND, little Silt, trace Gravel, wet.	A-1-b SM
							-2.59		2.59 **Bottom of Exploration at 2.59 m below ground surface.** Split Spoon and Auger Refusal.	
3										
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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Boring No.: GZ4-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project:	Rt. 26-Poland	Boring No.:	GZ5-03
Location:	Poland	PIN:	10014.00

Driller:	Great Works Test Boring	Elevation (m):		Auger ID/OD:	57 mm
Operator:	Don	Datum:		Sampler:	Split Spoon
Logged By:	J. Moulton	Rig Type:	Truck	Hammer Wt./Fall:	65 kg / 0.76 m
Date Start/Finish:	6/18/03	Drilling Method:	Hollow Stem Auger	Core Barrel:	
Boring Location:	21+200, 1.5 Rt	Casing ID/OD:		Water Level*:	2.1 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S-1	61.0/50.8	0.09 - 0.70	16/11/8/8	19		-0.09		Asphalt Pavement 0.09	
									Top 305mm, brown, fine to medium SAND, little Gravel, trace Silt, dry. (Fill) Bottom 203mm, medium dense, gray, fine to medium SAND, little Silt, moist. (Fill)	
0.75										
	S-2	61.0/61.0	0.91 - 1.52	10/14/15/16	29		-1.00		Top 102mm, gray, fine to medium SAND, little Silt, moist. (Fill) 1.00	
									Bottom 508mm , medium dense, tan, fine to medium SAND, little Silt, trace Gravel, Gravel subangular, moist. (Glacial Till)	
1.5	S-3	61.0/45.7	1.52 - 2.13	11/14/17/20	31				Dense, tan, fine to medium SAND, little Silt, trace Gravel, Gravel subangular, very moist.	
2.25							-2.13		2.13	
									Bottom of Exploration at 2.13 m below ground surface. Split Spoon and Auger Refusal	
3										
3.75										
4.5										
5.25										

Remarks:

1. Borings were logged in the field by GZA personnel.

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Boring No.: GZ5-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ6-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/18/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	21+460, 3.5 Rt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	61.0/61.0	0.24 - 0.85	75/47/50/48	97		-0.24		0.24	
									Top 102mm, black, fine to medium SAND and GRAVEL, trace Silt, Gravel subangular, dry. (Fill) Bottom 508mm, very dense, brown, fine to medium Sand and GRAVEL, trace Silt, Gravel subrounded, dry. (Fill)	
0.75										
	S-2	0.0/0.0	0.91 - 0.91	50-0mm	50+		-1.00		No recovery 1.00	
1.5										
	S-3	20.3/20.3	1.83 - 2.03	26/50-51mm/ 25-0mm	50+				Very dense, gray to brownish-gray, fine to medium SAND and Silt, very moist.	
2.25										
	S-4	61.0/61.0	2.44 - 3.05	13/18/20/30	38				Dense, tan, fine to medium SAND, little Gravel, trace Silt, Gravel subangular, moist to very moist. (Glacial Till)	
3							-3.05		3.05	
									Bottom of Exploration at 3.05 m below ground surface. No Refusal	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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

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Boring No.: GZ6-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project:	Rt. 26-Poland	**Boring No.:**	GZ7-03
Location:	Poland	**PIN:**	10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/19/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	21+560, 2 Rt	**Casing ID/OD:**		**Water Level*:**	1.1 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
							-0.21		0.21	
	S-1	40.6/30.5	0.21 - 0.62	21/28/18-102mm					Top 152mm, black and brown, fine to medium SAND and Gravel, trace Silt, Gravel subangular, dry. (Fill) Bottom 152mm, brown, fine to coarse SAND, little Gravel, trace Silt, Gravel subrounded, dry. (Fill)	A-1-a SW-SM
				/25-0mm						
0.75										
	S-2	61.0/45.7	0.91 - 1.52	3/5/10/16	15		-1.07		Top 152mm, brown, fine to coarse SAND, little Gravel, trace Silt, gravel subrounded, moist.	
									1.07	
1.5									Bottom 305mm, medium dense, light brown, fine to medium SAND, little Silt, trace gravel, wet. (Glacial Till)	
	S-3	61.0/35.6	1.52 - 2.13	10/28/32/32	60				Top 305mm, very dense, light brown to brown, fine to medium SAND, little Silt, trace Gravel, wet. Bottom 51mm, light brown to tan, fine to medium SAND and Gravel, little Silt, Gravel subangular, wet.	A-1-b SM
2.25	S-4	35.6/30.5	2.13 - 2.49	31/36/50-51mm/					Very dense, light brown to tan, fine to medium SAND and GRAVEL, little Silt, Gravel subangular, wet.	A-1-a SM
				25-0mm			-2.50		2.50	
3									**Bottom of Exploration at 2.50 m below ground surface.** Split Spoon and Auger Refusal	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ7-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ8-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/19/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	21+655, 1 Rt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.15		Asphalt Pavement 0.15	
	S-1	0.0/0.0	0.15 - 0.15	50-0mm					No recovery	
	S-2	61.0/35.6	0.30 - 0.91	19/38/37/57	75				Top 51mm, dark brown to black, fine to medium SAND and GRAVEL, trace Silt, asphalt fragments, dry. (Fill) Bottom 305mm, very dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry. (Fill)	
0.75										
	S-3	40.6/30.5	0.91 - 1.32	34/64/50-102mm /25-0mm					Very dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry. (Fill)	
1.5							-1.52		1.52	
	S-4	0.0/0.0	1.52 - 1.52	50-0mm					**Bottom of Exploration at 1.52 m below ground surface.** Split Spoon and Auger Refusal	
2.25										
3										
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ8-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ9-03
Location: Poland		**PIN:**	10014.00
Driller:	Great Works Test Boring	**Elevation (m):**	
Operator:	Don	**Datum:**	
Logged By:	J. Moulton	**Rig Type:**	Truck
Date Start/Finish:	6/19/03	**Drilling Method:**	Hollow Stem Auger
Boring Location:	21+780, 2 Rt	**Casing ID/OD:**	
Auger ID/OD:	57 mm		
Sampler:	Split Spoon		
Hammer Wt./Fall:	65 kg / 0.76 m		
Core Barrel:			
Water Level*:	Not Encountered		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	38.1/30.5	0.21 - 0.59	50/37/50-76mm/			-0.21		0.21	
				25-0mm					Very dense brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry. (Fill)	
	S-2	0.0/0.0	0.59 - 0.59	50-0mm			-0.61		0.61	
0.75									**Bottom of Exploration at 0.61 m below ground surface.** Split Spoon and Auger Refusal	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

Remarks:

1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ9-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ10-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/19/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	21+950, 2.3 Rt	**Casing ID/OD:**		**Water Level*:**	2.3 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	45.7/30.5	0.21 - 0.67	22/15/18/ 25-0mm	33		-0.21		0.21 Top 51mm, dark brown to black, fine to medium SAND and GRAVEL, trace Silt, Gravel subangular, dry. (Fill) Bottom 254mm, medium dense, brown, fine to medium SAND and GRAVEL, trace Silt, dry. (Fill)	
0.75										
	S-2	61.0/45.7	1.07 - 1.68	19/8/15/14	23		-1.19		Top 102mm, brown, fine to medium SAND and GRAVEL, trace Silt, moist. 1.19 Bottom 356mm, medium dense, light brown to tan, fine to medium SAND, little Silt, trace Gravel, Gravel subangular, very moist. (Glacial Till)	
1.5										
	S-3	61.0/50.8	1.68 - 2.29	12/15/15/19	30				Medium dense, light brown to tan, fine to medium SAND, little Silt, trace Gravel, Gravel subangular, very moist to wet. (Glacial Till)	
2.25	S-4	61.0/61.0	2.29 - 2.90	25/22/18/22	40				Same as S-3, except dense and with some Iron staining at approximately 2.74m.	
3	S-5	61.0/61.0	2.90 - 3.51	29/34/36/53	70				Same as S-3, except very dense.	
							-3.51		3.51 **Bottom of Exploration at 3.51 m below ground surface.** No Refusal	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ10-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ11-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/19/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	22+055, 2 Rt	**Casing ID/OD:**		**Water Level*:**	2.7 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0								Asphalt Pavement	
							-0.18	0.18	
	S-1	20.3/15.2	0.18 - 0.39	62/50-51mm/ 25-0mm			-0.34	Top 51mm, dark brown to black, fine to medium SAND and Gravel, trace Silt, asphalt fragments, dry. (Base Coarse) Bottom 102mm, very dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry. (Fill) Increased resistance on augers - probable cobbles 0.4 to 0.9m.	A-1-a GW-GM
0.75								0.34	
	S-2	61.0/45.7	0.91 - 1.52	4/4/6/18	10		-0.98 -1.04	Top 152mm, brown and black, fine to medium SAND and GRAVEL, some Silt, Gravel subangular, dry. Observed 51mm of asphalt from .98m to 1.04m.	A-2-4 SM
							-1.22	0.98 1.04	A-2-4 SM
1.5								1.22	
	S-3	61.0/61.0	1.52 - 2.13	7/15/15/18	30			Bottom 304.8mm, medium dense, light brown to brown, fine to medium SAND, some Silt, trace Gravel, Gravel subangular, very moist. (Glacial Till)	A-4 SM
								Medium dense, light brown to tan, fine to medium SAND, little Silt, trace Gravel, Gravel subangular, very moist. (Glacial Till)	
2.25	s-4	61.0/61.0	2.13 - 2.74	20/28/25/26	53			Same as S-3, except very dense.	
3	S-5	45.7/45.7	2.74 - 3.20	32/61/85	146			Same as S-4, except wet.	
							-3.20	3.20	
3.75								**Bottom of Exploration at 3.20 m below ground surface.** No Refusal	
4.5									
5.25									

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ11-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ12-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/19/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	22+140, 2 Rt	**Casing ID/OD:**		**Water Level*:**	2.1 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.15		Asphalt Pavement 0.15	
	S-1	61.0/30.5	0.15 - 0.76	45/42/13/6	55				Very dense, brown, fine to medium SAND and GRAVEL, trace silt, Gravel subrounded to subangular, dry. (Fill)	
0.75							-0.92		Top 51mm, Asphalt. Middle 51mm, same as S-1. 0.92	
	S-2	61.0/35.6	0.91 - 1.52	11/12/26/20	38		-0.98		0.98	
							-1.22		1.22 Bottom 254mm, light brown to brown, fine to medium SAND, little Silt, trace Gravel, Gravel subangular, very moist. (Glacial Till)	
1.5	S-3	61.0/61.0	1.52 - 2.13	6/20/21/27	41				Dense, light brown to brown, fine to medium SAND, little Silt, trace Gravel, Gravel subangular, very moist.	
2.25	S-4	61.0/61.0	2.13 - 2.74	48/44/48/60	92				Same as S-3, except very dense, very moist to wet.	
							-2.74		2.74 **Bottom of Exploration at 2.74 m below ground surface.** No Refusal	
3										
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ12-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ13-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/19/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	22+220, 2.3 Rt	**Casing ID/OD:**		**Water Level*:**	2.1 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.15	Asphalt Pavement 0.15	
	S-1	15.2/15.2	0.15 - 0.30	46/50-0mm				Brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subangular, dry. (Base Course Fill) Increased resistance on augers - probable cobbles.	A-1-a GW-GM
0.75							-0.92	Top 51mm, Asphalt. Middle 51mm, same as S-1. 0.92	
	S-2	61.0/20.3	0.91 - 1.52	8/5/13/19	18		-0.98	0.98	
							-1.22	1.22	A-2-4 SM
1.5	S-3	61.0/61.0	1.52 - 2.13	13/16/24/30	40			Bottom 102mm, light brown to brown, fine to medium SAND, little Silt, trace Gravel, Gravel subangular, moist. (Glacial Till) Dense, brown to grayish-brown, fine to medium SAND, little Silt, trace Gravel, Gravel subangular, very moist. (Glacial Till)	
2.25	S-4	61.0/61.0	2.13 - 2.74	30/32/33/61	65			Same as S-3, except very moist to wet.	
							-2.74	2.74	
3								**Bottom of Exploration at 2.74 m below ground surface.** No Refusal	
3.75									
4.5									
5.25									

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ13-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ14-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/19/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	22+290, 2.3 Rt	**Casing ID/OD:**		**Water Level*:**	2.1 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	45.7/45.7	0.27 - 0.73	77/79/51	130		-0.27		0.27	
0.75									Top 152mm, dark brown to black, fine to medium SAND and GRAVEL, trace Silt, Gravel subangular, dry. (Base Coarse Fill) Bottom 305mm, very dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry. (Fill)	
	S-2	61.0/15.2	0.91 - 1.52	22/10/12/16	22		-0.92 -0.98		Medium dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry. (Fill) Asphalt observed from approximately .91m to . 98m. 0.92 0.98	
1.5	S-3	61.0/61.0	1.52 - 2.13	8/24/25/28	49		-1.68		Top 152mm, same as S-2. 1.68 Bottom 457mm, dense, light brown to tan, fine to medium SAND, little Silt, trace Gravel, Gravel subangular, very moist. (Glacial Till)	
2.25	S-4	61.0/61.0	2.13 - 2.74	35/36/32/21	68				Same as S-3, wet.	
3	S-5	45.7/45.7	2.74 - 3.20	42/37/32	69		-3.20		Same as S-4. 3.20 **Bottom of Exploration at 3.20 m below ground surface.** No Refusal	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ14-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ15-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	22+510, 6 Rt	**Casing ID/OD:**		**Water Level*:**	2.1 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
							-0.30		0.30	
	S-1	61.0/30.5	0.30 - 0.91	26/26/9/5	35				Top 152mm, dark brown to black, fine to medium SAND and GRAVEL, trace Silt, asphalt fragments, Gravel subangular, dry. (Base Course Fill) Bottom 152mm, brown, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded to subangular, moist. (Fill)	
0.75										
	S-2	61.0/45.7	0.91 - 1.52	7/15/25/27	40				Top 61mm, Asphalt. Middle 51mm, brown to dark brown, fine to medium SAND and GRAVEL, trace Silt. (Fill)	
							-1.07		1.07	
1.5									Bottom 356mm, dense, fine to medium SAND, little Silt, trace Gravel, Gravel subangular, moist to very moist. (Glacial Till)	
	S-3	61.0/45.7	1.52 - 2.13	5/10/19/15	29				Medium dense, fine to medium SAND, little Silt , trace Gravel, Gravel subangular, very moist. (Glacial Till)	
2.25	S-4	61.0/55.9	2.13 - 2.74	22/16/24/22	40				Same as S-3, except dense, very moist to wet.	
	S-5	58.4/58.4	2.74 - 3.33	17/19/34/	53				Same as S-3, except very dense, wet.	
3				50-127mm/						
				25-0mm						
							-3.33		3.33	
									Bottom of Exploration at 3.33 m below ground surface. Split Spoon Refusal	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ15-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ16-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	22+660, 1.8 Rt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	40.6/25.4	0.23 - 0.64	42/43/65-102mm			-0.23		0.23	
									Very dense, light brown to brown, fine to medium SAND, some coarse Sand, little Gravel, dry. (Fill)	
0.75	S-2	0.0/0.0	0.64 - 0.64	50-0mm			-0.64		0.64	
									Bottom of Exploration at 0.64 m below ground surface. Split Spoon Refusal.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ16-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ17-03
Location: Poland		**PIN:**	10014.00
Driller:	Great Works Test Boring	**Elevation (m):**	
Operator:	Don	**Datum:**	
Logged By:	J. Moulton	**Rig Type:**	Truck
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger
Boring Location:	22+770, 1 Rt	**Casing ID/OD:**	
Auger ID/OD:	57 mm		
Sampler:	Split Spoon		
Hammer Wt./Fall:	65 kg / 0.76 m		
Core Barrel:			
Water Level*:			

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	61.0/30.5	0.21 - 0.82	10/14/15/24	29		-0.21		0.21 Medium dense, light brown, fine to medium SAND, some coarse Sand, trace Gravel. (Fill)	
0.75										
	S-2	61.0/38.1	0.91 - 1.52	25/25/18/13	43		-1.09		Top 178mm, dense, light brown, fine to medium SAND, little Silt, trace coarse Sand. Middle 76mm, Asphalt. Bottom 127mm, brown and gray, fine to medium SAND, little coarse Sand, trace Gravel, trace Silt, moist.	
							-1.17		1.09 1.17	
1.5							-1.52		1.52 Very dense, brown and dark gray, fine to medium SAND and Silt, little coarse Sand, trace Gravel. Gravel and Rock fragments at bottom. (Glacial Till)	
	S-3	61.0/27.9	1.52 - 2.13	5/18/40/44	58					
2.25	S-4	17.8/7.6	2.13 - 2.31	44/50-25mm	50+		-2.31		Very dense, brown, fine to coarse SAND, some Gravel, trace Silt. 2.31 **Bottom of Exploration at 2.31 m below ground surface.** Refusal with Auger	
3										
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ17-03

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ18-03
Location: Poland		**PIN:**	10014.00
Driller:	Great Works Test Boring	**Elevation (m):**	
Operator:	Don	**Datum:**	
Logged By:	J. Moulton	**Rig Type:**	Truck
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger
Boring Location:	23+102, 2 Lt	**Casing ID/OD:**	
Auger ID/OD:	57 mm		
Sampler:	Split Spoon		
Hammer Wt./Fall:	65 kg / 0.76 m		
Core Barrel:			
Water Level*:	2.1 m		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	61.0/40.6	0.24 - 0.85	25/18/18/14	36		-0.24		0.24 Dense, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded, dry (Fill)	
0.75										
	S-2	61.0/45.7	0.91 - 1.52	33/13/10/7	23		-1.07		Top 152mm, same as S-1. 1.07 Bottom 305mm, medium dense, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded to subangular, moist. (Glacial Till)	
1.5	S-3	61.0/30.5	1.52 - 2.13	11/8/12/7	20				Medium dense, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded, very moist.	
2.25	S-4	61.0/30.5	2.13 - 2.74	15/8/8/6	16				Same as S-3, except very moist to wet.	
3	S-5	61.0/45.7	2.74 - 3.35	9/3/5/5	8				Same as S-3, except loose, wet.	
							-3.35		3.35 **Bottom of Exploration at 3.35 m below ground surface.** No Refusal	
3.75										
4.5										
5.25										

Remarks:

1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ18-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ19-03
Location: Poland		**PIN:**	10014.00
Driller:	Great Works Test Boring	**Elevation (m):**	
Operator:	Don	**Datum:**	
Logged By:	J. Moulton	**Rig Type:**	Truck
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger
Boring Location:	23+250, 2 Rt	**Casing ID/OD:**	
Auger ID/OD:	57 mm		
Sampler:	Split Spoon		
Hammer Wt./Fall:	65 kg / 0.76 m		
Core Barrel:			
Water Level*:	0.8 m		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	61.0/38.1	0.18 - 0.79	16/24/22/25	46		-0.18		0.18 Top 127mm, dense, light brown to brown, fine to coarse SAND, trace Silt. Bottom 254mm, light brown to tan, fine to medium SAND and GRAVEL, some coarse Sand, little Silt, moist.	
0.75	S-2	40.6/30.5	0.79 - 1.20	45/37/50-102mm					Very dense, light brown, fine to medium SAND and GRAVEL, trace Silt, wet.	
							-1.22		1.22	
1.5	S-3	61.0/30.5	1.40 - 2.01	13/18/24/22	42				Dense, fine to coarse SAND and GRAVEL, trace Silt, saturated. (Ice Contact Deposit)	
2.25	S-4	61.0/61.0	2.01 - 2.62	24/37/37/25	74				Very dense, light brown to tan, fine to medium SAND and GRAVEL, some coarse Sand, trace Silt, saturated.	
	S-5	48.3/35.6	2.62 - 3.10	14/30/53/ 50-25mm	83				Top 203mm, very dense, fine to medium SAND, little Gravel, trace coarse Sand, trace Silt.	
3									Bottom 152mm, gray, SILT laminated, trace Gravel, saturated.	
							-3.10		3.10 **Bottom of Exploration at 3.10 m below ground surface.** Split Spoon Refusal	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ19-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ20-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	23+302, 2 Rt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.15	Asphalt Pavement — 0.15	
	S-1	61.0/45.7	0.15 - 0.76	20/23/20/25	43			Medium dense, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded, dry. (Fill) Increased resistance on augers - probable cobbles.	A-1-b SP-SM
0.75	S-2	0.0/0.0	0.91 - 0.91	50-0mm				No recovery.	
							-1.22	— 1.22	
1.5	S-3	10.2/10.2	1.52 - 1.63	50-102mm/ 25-0mm				Dense to very dense, fine to medium SAND, some Silt, trace Gravel, Gravel subrounded to subangular, moist. (Glacial Till) Increased resistance on augers - probable cobbles.	A-2-4 SM
2.25	S-4	17.8/17.8	2.44 - 2.62	62/50-25mm/ 25-0mm			-2.62	Very dense, fine to medium SAND, some Silt, trace Gravel, Gravel subrounded to subangular, moist. (Glacial Till) — 2.62	A-1-b SM
3								**Bottom of Exploration at 2.62 m below ground surface.** Split Spoon and Auger Refusal.	
3.75									
4.5									
5.25									

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ20-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ21-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	23+460, 3 Lt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S-1	61.0/15.2	0.00 - 0.61	1/1/3/5	4				Loose, dark brown, fine to medium SAND, Organics, Root fibers, moist. (topsoil)	
0.75	S-2	61.0/61.0	0.61 - 1.22	5/5/6/4	11				Top 305mm, same as S-1.	
							-0.91		0.91 Bottom 305mm, medium dense, brown, fine to medium SAND, trace Gravel, trace Silt, dry.	
1.5	S-3	61.0/61.0	1.22 - 1.83	12/9/5/6	14				Medium dense, brown, fine to medium SAND, trace Gravel, trace Silt, dry. (Ice Contact Deposits)	
2.25	S-4	61.0/61.0	1.83 - 2.44	5/5/5/6	10				Same as S-3.	
3	S-5	61.0/61.0	2.44 - 3.05	6/5/5/5	10				Same as S-3.	
							-3.05		3.05 **Bottom of Exploration at 3.05 m below ground surface.** No Refusal	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ21-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ22-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Auger
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	23+532, 5 Lt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0										
0.75										
1.5	S-1								Grab sample 1.5m to 2m: brown, fine to medium SAND, little Gravel, trace Silt, dry. (Possible Fill)	
							-1.83		1.83	
2.25										
3	S-2						-3.05		Grab sample 2.4m to 3m: light brown to tan, fine to medium SAND, little Silt, dry. 3.05	
									Bottom of Exploration at 3.05 m below ground surface. No Refusal	
3.75									Note: Soil descriptions are based on grab samples taken off the auger flights.	
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ22-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ23-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	23+670, CL	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	61.0/61.0	0.27 - 0.88	25/40/23/22	63		-0.27		0.27 Very dense, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry. (Fill) Asphalt observed from .88m to .91m.	
0.75							-0.88		0.88	
	S-2	61.0/61.0	0.91 - 1.52	25/20/18/11	38		-0.91		0.91 Dense, brown, fine to medium SAND, little Gravel, trace Silt, dry. (Ice Contact Deposits)	
1.5	S-3	61.0/45.7	1.52 - 2.13	2/4/8/8	12				Same as S-2, except medium dense.	
2.25	S-4	61.0/61.0	2.13 - 2.74	9/7/6/8	13				Medium dense, light brown to tan, fine to medium SAND, little Gravel, trace Silt, moist.	
3	S-5	61.0/61.0	2.74 - 3.35	9/7/7/7	14				Medium dense, fine to coarse SAND, trace Gravel, trace Silt, moist.	
							-3.35		3.35 **Bottom of Exploration at 3.35 m below ground surface.** No Refusal	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ23-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ24-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	23+803, 5 Rt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S-1	61.0/45.7	0.12 - 0.73	46/35/39/29	74		-0.12		Asphalt Pavement — 0.12	
									Very dense, brown, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded and subangular, dry. (Fill)	A-1-b SW-SM
0.75							-0.92		0.92	
	S-2	61.0/48.3	0.91 - 1.52	18/28/26/21	54		-0.98		Asphalt encountered from 0.92m to 0.98m. — 0.98	A-1-b SM
									Very dense, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded, dry. (Ice Contact Deposits)	
1.5	S-3	61.0/61.0	1.52 - 2.13	35/41/30/47	71				Same as S-2, except moist.	A-1-b SM
2.25	S-4	20.3/15.2	2.13 - 2.34	60/50-51mm/ 25-0mm			-2.35		Same as S-3. — 2.35	
									Bottom of Exploration at 2.35 m below ground surface. Split Spoon and Auger Refusal.	
3										
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ24-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ25-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	24+133, 2 Lt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	30.5/20.3	0.21 - 0.52	33/27/25-0mm	50+		-0.21		0.21 Brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded and subangular, dry. (Fill) Augers advance through cobbles to .91m.	
0.75									Top 127mm, same as S-1.	
	S-2	61.0/61.0	0.91 - 1.52	9/13/22/23	35		-1.04		1.04 Bottom 483mm, dense, fine to medium SAND, trace Silt, dry. (Ice Contact Deposits)	
1.5	S-3	61.0/61.0	1.52 - 2.13	4/4/4/3	8				Loose, light brown to tan, fine to medium SAND, trace Silt, dry.	
2.25	S-4	61.0/45.7	2.13 - 2.74	2/2/2/3	4				Same as S-3, except very loose, moist.	
3	S-5	61.0/61.0	2.74 - 3.35	2/3/2/2	5				Same as S-3, moist.	
							-3.35		3.35 **Bottom of Exploration at 3.35 m below ground surface.** No Refusal	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ25-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ26-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	24+268, 2 Lt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Crushed Gravel	
							-0.30		0.30	
	S-1	61.0/30.5	0.30 - 0.91	10/8/7/7	15				Medium dense, reddish-brown, fine to medium SAND, little Gravel, trace Silt, dry. (Ice Contact Deposits)	
0.75										
	S-2	61.0/61.0	0.91 - 1.52	6/7/8/6	15				Medium dense, brown, fine to coarse SAND, little Gravel, trace Silt, Gravel subrounded, dry.	
1.5	S-3	61.0/61.0	1.52 - 2.13	6/9/5/4	14				Same as S-2.	
2.25	S-4	61.0/35.6	2.13 - 2.74	5/5/4/4	9				Same as S-2, except loose, moist.	
	S-5	61.0/61.0	2.74 - 3.35	6/4/5/4	9				Loose, light brown, fine to medium SAND, trace Silt, moist. Iron staining observed at 2.9m.	
3							-3.35		3.35	
									Bottom of Exploration at 3.35 m below ground surface. No Refusal	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ26-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ27-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	24+422, 2 Rt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S-1	12.7/0.0	0.09 - 0.22	70-127mm/25-0mm			-0.09	Asphalt Pavement (0.09)	
								No recovery. Augers advanced through probable cobbles.	
0.75	S-2	61.0/45.7	0.61 - 1.22	16/19/16/17	35		-0.76	Top 152mm, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded to subangular, dry. (Fill) (0.76)	
								Bottom 305mm, light brown to brown, fine to medium SAND, little Gravel, trace Silt, dry. (Ice Contact Deposits)	
1.5	S-3	61.0/61.0	1.22 - 1.83	18/17/15/11	32			Dense, brown, fine to medium SAND, little Gravel, trace Silt, dry.	
2.25	S-4	61.0/61.0	1.83 - 2.44	11/5/4/6	9			Loose, fine to medium SAND, trace Gravel, trace Silt, dry.	
	S-5	61.0/61.0	2.44 - 3.05	6/5/5/5	10			Loose to medium dense, fine to coarse SAND, little Gravel, trace Silt, dry.	
3	S-6	61.0/61.0	3.05 - 3.66	5/5/5/3	10			Loose to medium dense, fine to medium SAND, trace Gravel, trace Silt, dry.	
3.75							-3.66	(3.66)	
								Bottom of Exploration at 3.66 m below ground surface. No Refusal.	
4.5									
5.25									

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ27-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ28-03
Location: Poland		**PIN:**	10014.00
Driller:	Great Works Test Boring	**Elevation (m):**	
Auger ID/OD:	57 mm	**Operator:**	Don
Datum:		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck
Hammer Wt./Fall:	65 kg / 0.76 m	**Date Start/Finish:**	6/20/03
Drilling Method:	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	24+570, 9 Rt	**Casing ID/OD:**	
Water Level*:	Not Encountered		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S-1	61.0/45.7	0.00 - 0.61	5/5/12/13	17			Medium dense, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded to subangular, dry. (Fill)	
0.75	S-2	61.0/35.6	0.61 - 1.22	15/20/23/26	43			Dense, brown, fine to coarse SAND, little Gravel, trace Silt, dry.	
1.5	S-3	61.0/45.7	1.22 - 1.83	14/16/11/8	27		-1.37	Top 152mm, same as S-2. 1.37 Bottom 305mm, medium dense, brown, fine to medium SAND, trace Gravel, trace Silt, dry. (Ice Contact Deposits)	
2.25	S-4	61.0/61.0	1.83 - 2.44	8/8/7/7	15			Medium dense, brown, fine to medium SAND, trace Gravel, trace Silt, dry.	
3	S-5	61.0/61.0	2.44 - 3.05	6/5/6/6	11		-3.05	Same as S-4, except moist. 3.05 **Bottom of Exploration at 3.05 m below ground surface.** No Refusal.	
3.75									
4.5									
5.25									

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ28-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ29-03
Location: Poland		**PIN:**	10014.00
Driller:	Great Works Test Boring	**Elevation (m):**	
Operator:	Don	**Datum:**	
Logged By:	J. Moulton	**Rig Type:**	Truck
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger
Boring Location:	24+722, 2.3 Rt	**Casing ID/OD:**	
Auger ID/OD:	57 mm		
Sampler:	Split Spoon		
Hammer Wt./Fall:	65 kg / 0.76 m		
Core Barrel:			
Water Level*:	Not Encountered		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0								Asphalt Pavement	
	S-1	45.7/40.6	0.27 - 0.73	54/45/45/25-0mm	90		-0.27	0.27 Very dense, brown, fine to medium SAND, little Gravel, trace Silt, dry. (Fill)	A-1-b SW-SM
0.75							-0.92	0.92	
	S-2	61.0/15.2	0.92 - 1.53	22/20/31/38	51		-0.95	Dense to very dense, fine to medium SAND, little Gravel, trace Silt, dry. (Fill) Asphalt observed from .91m to .95m. 0.95	A-1a SW-SM
1.5	S-3	61.0/30.5	1.52 - 2.13	19/6/4/3	10		-1.52	1.52 Medium dense, brown, fine to medium SAND, trace Gravel, trace Silt, dry. (Ice Contact Deposits)	A-1-b SW-SM
2.25	S-4	61.0/30.5	2.13 - 2.74	4/5/6/7	11			Medium dense, brown, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded, dry.	
3	S-5	61.0/30.5	2.74 - 3.35	10/11/10/10	21		-3.35	Same as S-4. 3.35 **Bottom of Exploration at 3.35 m below ground surface.** No Refusal.	
3.75									
4.5									
5.25									

Remarks:

1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ29-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ30-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	24+872, 2.3 Lt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	45.7/45.7	0.27 - 0.73	30/37/37/25-0mm	74		-0.27		0.27 Very dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry. (Fill) Augers were advanced to 1.52m without sampling - probable cobbles.	
0.75										
1.5	S-2	61.0/48.3	1.52 - 2.13	7/4/3/4	7		-1.37		1.37 Loose, brown, fine to coarse SAND, little Gravel, trace Silt, Gravel subrounded, dry. (Ice Contact Deposits)	
2.25	S-3	61.0/61.0	2.13 - 2.74	4/4/6/5	10				Same as S-2.	
3	S-4	61.0/61.0	2.74 - 3.35	8/6/8/7	14				Same as S-2, except medium dense, moist.	
							-3.35		3.35 **Bottom of Exploration at 3.35 m below ground surface.** No Refusal.	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ30-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ31-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	25+020, 3.5 Lt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S-1	61.0/50.8	0.08 - 0.69	7/12/15/16	27		-0.08	Asphalt Pavement (0.08)	A-1-b SP-SM
								Medium dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel, subrounded to subangular, dry. (Fill)	
0.75	S-2	61.0/15.2	0.91 - 1.52	18/16/12/17	28			Same as S-1.	A-1-a GW
1.5							-1.55	(1.55)	
	S-3							Grab sample 1.8m to 2.4m: brown, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded, moist. (Ice Contact Deposits)	A-1-a SP-SM
2.25							-2.74	(2.74)	
3	S-4	61.0/61.0	3.05 - 3.66	69/17/12/9	29			Medium dense, brown, fine to coarse SAND, little Gravel, some Silt, Gravel subrounded, moist.	A-2-4 SM
3.75							-3.66	(3.66) **Bottom of Exploration at 3.66 m below ground surface.** No Refusal.	
4.5									
5.25									

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ31-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ32-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	25+168, 3 Lt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S-1	61.0/48.3	0.08 - 0.69	14/8/7/8	15		-0.08		Asphalt Pavement — 0.08	
									Medium dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry.	
0.75										
	S-2	61.0/35.6	0.91 - 1.52	12/38/30/25	68		-1.04		Top 127mm, same as S-1. — 1.04	
									Bottom 229mm, brown fine to medium SAND, little Gravel, trace Silt, Gravel subrounded, dry. (Ice Contact Deposits)	
1.5	S-3								Grab sample 1.5m to 2.1m: brown, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded, dry.	
2.25										
3	S-4	61.0/61.0	3.05 - 3.66	12/4/5/5	9				Loose, light brown, fine to medium SAND, trace to little Gravel, trace Silt, Gravel subrounded, moist.	
3.75	S-5	61.0/20.3	3.66 - 4.27	8/6/7/7	13				Same as S-4, except medium dense.	
							-4.27		4.27	
4.5									**Bottom of Exploration at 4.27 m below ground surface.** No Refusal.	
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ32-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ33-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	25+321, 3 Lt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S-1	61.0/45.7	0.08 - 0.69	17/17/14/16	31		-0.08		Asphalt Pavement — 0.08	
									Dense, brown, fine to coarse SAND, little Gravel, trace Silt, Gravel subrounded to subangular, dry. (Fill)	
0.75							-0.91		0.91	
	S-2	61.0/61.0	0.91 - 1.52	21/25/28/17	53				Very dense, brown, fine to medium SAND, little Gravel, trace Silt, dry. (Ice Contact Deposits)	
1.5							-1.83		1.83	
	S-3								Grab sample. Brown, fine to coarse SAND and Gravel, trace Silt, Gravel subrounded, dry.	
2.25										
3	S-4	61.0/20.3	3.05 - 3.66	8/5/6/5	11				Same as S-3, medium dense.	
3.75	S-5	61.0/30.5	3.66 - 4.27	6/5/5/8	10				Same as S-3, except medium dense, moist.	
							-4.27		4.27	
4.5									**Bottom of Exploration at 4.27 m below ground surface.** No Refusal.	
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ33-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ34-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	25+615, 3 Lt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	61.0/61.0	0.24 - 0.85	100/30/25/25	55		-0.24		0.24 Very dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry. (Fill)	
0.75	S-2	61.0/40.6	0.91 - 1.52	15/15/16/14	31				Top 203mm, Same as S-1.	
							-1.13		1.13 Bottom 203mm, reddish-brown, fine to medium SAND, trace Gravel, trace Silt, dry.	
1.5	S-3	61.0/61.0	1.52 - 2.13	4/8/10/8	18				Medium dense, light brown to tan, fine to medium SAND, trace Gravel, trace Silt, moist.	
2.25	S-4	61.0/61.0	2.13 - 2.74	10/9/14/27	23				Medium dense, light brown to brown, fine to medium SAND, little Silt, trace Gravel, moist.	
							-2.74		2.74	
3	S-5	61.0/61.0	2.74 - 3.35	44/29/27/22	56				Very dense, brown, fine to coarse SAND, little Gravel, trace Silt, Gravel subrounded to subangular, moist.	
							-3.35		3.35 **Bottom of Exploration at 3.35 m below ground surface.** No Refusal.	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ34-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ35-03
Location: Poland		**PIN:**	10014.00
Driller:	Great Works Test Boring	**Elevation (m):**	
Operator:	Don	**Datum:**	
Logged By:	J. Moulton	**Rig Type:**	Truck
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger
Boring Location:	25+771, 2.3 Lt	**Casing ID/OD:**	
Auger ID/OD:	57 mm		
Sampler:	Split Spoon		
Hammer Wt./Fall:	65 kg / 0.76 m		
Core Barrel:			
Water Level*:	Not Encountered		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0								Asphalt Pavement	
	S-1	61.0/40.6	0.30 - 0.91	31/26/17/7	43		-0.30	0.30 Dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel Subrounded to subangular, dry. (Fill) Asphalt from .79m to .85m.	A-1-b SW-SM
0.75	S-2	61.0/43.2	0.85 - 1.46	10/7/7/6	14		-0.79 -0.85	0.79 0.85 Top 178mm, same as S-1, except no Asphalt.	
							-1.10	1.10 Bottom 254mm, medium dense, brown to reddish- brown, fine to medium SAND, trace Gravel, trace Silt, dry. (Ice Contact Deposits)	
1.5	S-3	61.0/30.5	1.52 - 2.13	32/9/7/9	16			Medium dense, light brown to tan, fine to medium SAND, trace Gravel, trace Silt, moist.	A-3 SP
2.25	S-4	61.0/61.0	2.13 - 2.74	11/12/13/10	25			Same as S-3.	
3	S-5	61.0/61.0	2.74 - 3.35	11/10/9/12	19			Same as S-3.	A-3 SP
							-3.35	3.35 **Bottom of Exploration at 3.35 m below ground surface.** No Refusal.	
3.75									
4.5									
5.25									

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ35-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project:	Rt. 26-Poland	**Boring No.:**	GZ36-03
Location:	Poland	**PIN:**	10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	25+918, 3 Lt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
							-0.21		0.21	
	S-1	61.0/45.7	0.21 - 0.82	30/27/27/30	54				Very dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry. (Fill)	
0.75									Top 152mm, same as S-1.	
	S-2	61.0/45.7	0.91 - 1.52	25/16/21/11	37		-1.07		1.07	
									Bottom 305mm, medium dense, brown, fine to medium SAND, little Gravel, trace Silt, dry. (Ice Contact Deposits)	
1.5	S-3	61.0/50.8	1.52 - 2.13	29/10/6/17	16				Medium dense, light brown to tan, fine to medium SAND, trace Gravel, trace Silt, dry.	
2.25	S-4	61.0/61.0	2.13 - 2.74	7/10/10/10	20				Same as S-3.	
	S-5	61.0/61.0	2.74 - 3.35	9/11/10/9	21				Same as S-3, except moist.	
3							-3.35		3.35	
									Bottom of Exploration at 3.35 m below ground surface. No Refusal.	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ36-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ37-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	26+217, 1 Rt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S-1	61.0/30.5	0.09 - 0.70	4/7/11/12	18		-0.09	Asphalt Pavement — 0.09	A-2-4 SM
								Top 152mm, dark brown to black, fine to medium SAND, little Gravel, trace Silt, dry. (Base Coarse Fill) Bottom 152mm, Brown, fine to medium SAND, trace Gravel, trace Silt, dry. (Fill)	
0.75	S-2	22.9/0.0	0.91 - 1.14	50/50-76mm/ 25-0mm	50+			No recovery.	
							-1.37	1.37	
1.5	S-3	61.0/50.8	1.52 - 2.13	52/11/14/14	25			Medium dense, fine to medium SAND, little Silt, trace Gravel, dry. (Ice Contact Deposits)	A-3 SP-SM
2.25	S-4	61.0/61.0	2.13 - 2.74	14/12/12/12	24			Same as S-3, except moist.	
3	S-5	61.0/61.0	2.74 - 3.35	10/10/10/12	20			Same as S-4.	A-3 SP-SM
							-3.35	3.35	
3.75								**Bottom of Exploration at 3.35 m below ground surface.** No Refusal.	
4.5									
5.25									

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ37-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project:	Rt. 26-Poland	**Boring No.:**	GZ38-03
Location:	Poland	**PIN:**	10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	26+420, 3 Rt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S-1	10.2/10.2	0.12 - 0.22	65-102mm/25-0mm			-0.12		Asphalt Pavement (0.12)	
									Brown, fine to medium SAND, trace Gravel, trace Silt, dry. (Fill) Augers advanced past probable cobbles.	
0.75										
	S-2	61.0/45.7	0.91 - 1.52	10/17/16/19	33		-1.07		Top 152mm, brown, fine to medium SAND, trace Gravel, trace Silt, dry. (Fill) (1.07)	
1.5							-1.52		Bottom 305mm, medium dense to dense, light brown to brown, fine to medium SAND, little Gravel, trace Silt, Gravel subrounded to subangular, dry. (1.52)	
	S-3	61.0/61.0	1.52 - 2.13	9/10/11/11	21				Medium dense, brown, fine to coarse SAND, trace Gravel, trace, Silt, dry.	
2.25	S-4	61.0/45.7	2.13 - 2.74	6/6/8/6	14				Same as S-3.	
3	S-5	61.0/50.8	2.74 - 3.35	4/5/6/8	11				Same as S-3, except moist.	
							-3.35		(3.35) **Bottom of Exploration at 3.35 m below ground surface.** No Refusal.	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ38-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ39-03
Location: Poland		**PIN:**	10014.00
Driller:	Great Works Test Boring	**Elevation (m):**	
Operator:	Don	**Datum:**	
Logged By:	J. Moulton	**Rig Type:**	Truck
Date Start/Finish:	6/20/03	**Drilling Method:**	Hollow Stem Auger
Boring Location:	26+720, 2.8 Rt	**Casing ID/OD:**	
Auger ID/OD:	57 mm		
Sampler:	Split Spoon		
Hammer Wt./Fall:	65 kg / 0.76 m		
Core Barrel:			
Water Level*:	Not Encountered		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement	
	S-1	61.0/45.7	0.21 - 0.82	30/25/18/21	43		-0.21		0.21	
							-0.30		Top 152mm, brown to dark brown, fine to medium SAND, little Gravel, trace Silt, dry. (Fill) 0.30	
0.75									Bottom 305mm, dense, reddish-brown to brown, fine to medium SAND, trace Gravel, trace Silt, dry. (Ice Contact Deposits)	
	S-2	61.0/50.8	0.91 - 1.52	9/14/11/8	25				Medium dense, brown, fine to medium SAND, trace Gravel, trace Silt, dry.	
1.5	S-3	61.0/61.0	1.52 - 2.13	5/7/9/7	16				Same as S-2.	
2.25	S-4	61.0/61.0	2.13 - 2.74	7/7/5/7	12				Medium dense, fine to medium SAND, little Silt, trace Gravel, dry.	
	S-5	61.0/45.7	2.74 - 3.35	9/24/29/41	53				Dense to very dense, fine to coarse SAND, little Gravel, trace Silt, dry.	
3							-3.35		3.35	
									Bottom of Exploration at 3.35 m below ground surface. No Refusal.	
3.75										
4.5										
5.25										

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ39-03

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ40-03
PIN: 10014.00

Driller:	Great Works Test Boring	**Elevation (m):**		**Auger ID/OD:**	57 mm
Operator:	Don	**Datum:**		**Sampler:**	Split Spoon
Logged By:	J. Moulton	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	6/27/03	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	26+923, 2.3 Rt	**Casing ID/OD:**		**Water Level*:**	Not Encountered

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0								Asphalt Pavement	
							-0.18	0.18	
	S-1	61.0/55.9	0.18 - 0.79	25/45/25/12	70			Very dense, brown, fine to medium SAND and GRAVEL, trace Silt, Gravel subrounded to subangular, dry. (Fill)	A-1-b SW-SM
0.75									
	S-2	61.0/61.0	0.91 - 1.52	23/17/16/16	33			Top 178mm, Same as S-1.	
							-1.10	1.10	
								Bottom 432mm, dense, brown, fine to medium SAND, trace Gravel, trace Silt, dry. (Ice Contact Deposits)	A-1-b SP
1.5	S-3	61.0/50.8	1.52 - 2.13	51/9/8/7	17			Medium dense, brown, fine to medium SAND, trace Gravel, trace Silt, dry.	
2.25	S-4	61.0/61.0	2.13 - 2.74	9/7/6/5	13			Same as S-3.	
3	S-5	61.0/61.0	2.74 - 3.35	5/4/6/6	10			Same as S-3, except moist.	A-3 SP
							-3.35	3.35	
3.75								**Bottom of Exploration at 3.35 m below ground surface.** No Refusal.	
4.5									
5.25									

Remarks:
1. Borings were logged in the field by GZA personnel.

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.

Boring No.: GZ40-03

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland

Location: Poland

Boring No.: GZ-B1-04

PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/22/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	5+320, 1.2 Lt	**Casing ID/OD:**		**Water Level*:**	0.9 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.08	Asphalt Pavement. 0.08	
	S-1	61.0/24.1	0.15 - 0.76	53/23/17/14	40			Dense, brown, fine to coarse SAND and GRAVEL. (Moist Tip) (Fill)	
0.75	S-2	61.0/14.0	0.76 - 1.37	22/18/26/37	44			Dense, grayish to brown, GRAVEL, some fine to coarse Sand.	
1.5	S-3	61.0/36.8	1.37 - 1.98	42/26/23/28	49		-1.37	1.37 Dense, grayish to brown, fine to medium SAND, trace Gravel. (Glacial Till)	
2.25									
3	S-4	61.0/0.0	3.05 - 3.66	47/67/95/121	162			Very dense, grayish to brown, fine to medium SAND, some Gravel, little Silt.	
3.75							-3.66	3.66 **Bottom of Exploration at 3.66 m below ground surface.** No Refusal.	
4.5									
5.25									

Remarks:

1. Relocated Carpenter Road Baseline.

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.

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland

Location: Poland

Boring No.: GZ-B2-04

PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/22/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	10+140, 1.2 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement.	
	S-1						-0.15		0.15 Brown, medium SAND and GRAVEL. (Sampled from auger cutting)	
0.75	S-2	61.0/38.1	0.61 - 1.22	94/63/47/59	272				Brown, very dense, fine to coarse SAND and GRAVEL with Asphalt pieces.	
1.5	S-3	61.0/50.8	1.22 - 1.83	73/130/56/63	186				Brown to black, very dense, fine to coarse SAND and GRAVEL, layered fill material with Asphalt pieces. (Fill)	
2.25										
3	S-4	61.0/61.0	3.05 - 3.66	22/30/36/40	66				Top 150mm: Brown, fine to coarse SAND.	
							-3.51		3.51 Middle 250mm: Gray fine SAND and SILT.	
3.75							-3.66		Bottom 200mm: Gray to brown, fine to coarse SAND, some Silt, trace Gravel. (Glacial Till) 3.66	
									Bottom of Exploration at 3.66 m below ground surface. No Refusal.	
4.5										
5.25										

Remarks:

1. Route 122 Baseline.

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.

Boring No.: GZ-B2-04

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland

Location: Poland

Boring No.: GZ-B3-04

PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/22/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	20+460, 2.9 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.10		102mm Asphalt Pavement.	
	S-1	61.0/30.5	0.15 - 0.76	78/37/28/23	65		-0.15		50 mm Portland Cement Concrete with wire mesh reinforcement (abandoned pipe?). 0.10	
									Very dense, brown, GRAVEL, some fine to coarse Sand. 0.15	
0.75	S-2	61.0/22.9	0.76 - 1.37	13/13/5/4	18				Medium dense, brown, fine to medium SAND and SILT, trace Organics. (Roots)	
							-1.07		1.07	
1.5	S-3	61.0/24.1	1.37 - 1.98	7/4/3/12	7				Loose, brown, fine to medium SAND and SILT, little Organics, trace Gravel. (Moist, spongy)	
							-1.83		1.83	
2.25										
3	S-4	61.0/0.0	3.05 - 3.66	6/15/25/38	40				Dense, gray, fine to coarse SAND and SILT, little Gravel. (Glacial Till)	
3.75							-3.66		3.66	
									Bottom of Exploration at 3.66 m below ground surface. No Refusal.	
4.5										
5.25										

Remarks:

1. A thin-wall coring machine was used to take a 150mm diameter pavement sample. The pavement sample consisted of 102mm Asphalt Pavement over 50mm of Portland Cement Concrete with wire mesh reinforcement.
2. Drill performance indicates probable cobbles and boulders at 2.1 to 2.4 meters.

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.

Boring No.: GZ-B3-04

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland

Location: Poland

Boring No.: GZ-B4-04

PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/22/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	21+320, 3.2 Rt	**Casing ID/OD:**		**Water Level*:**	1.5 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.10	Asphalt Pavement. 0.10	
								Possible concrete, cobbles or crushed stone.	
0.75	S-1	61.0/50.8	0.61 - 1.22	22/13/14/16	27		-0.61	0.61	
							-0.83	Top 200mm: Medium dense, brown, fine to medium SAND and GRAVEL, little Silt. (Fill) 0.83	
								Bottom 300mm: Gray fine to coarse SAND and SILT, little Gravel. (Glacial Till)	
1.5	S-2	61.0/38.1	1.22 - 1.83	17/21/25/30	46			Dense, gray to brown, fine to coarse SAND and GRAVEL, trace Silt. (Moist)	
2.25									
3	S-3	61.0/38.1	3.05 - 3.66	74/58/96/100-.5	154			Very dense, grayish to brown, GRAVEL, some fine to coarse Sand, bed of fine to medium Sand at the top of the spoon, little Silt. (Wet)	
3.75							-3.66	3.66	
								Bottom of Exploration at 3.66 m below ground surface. Split Spoon Refusal.	
4.5									
5.25									

Remarks:

1. Significant auger resistance 0.1 to 0.61 m - possible concrete, cobbles or crushed stone.

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.

Boring No.: GZ-B4-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-B5-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/22/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	21+520, 2.1 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.10		100mm Asphalt Pavement.	
									0.10 — Possible concrete, cobbles or crushed stone.	
0.75	S-1	17.8/12.7	0.61 - 0.79	111/50-1			-0.61		0.61 — Very dense, brown, GRAVEL, and fine to coarse Sand	
							-1.07		1.07 — **Bottom of Exploration at 1.07 m below ground surface.** Auger Refusal at 1.07 m.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

Remarks:

1. Significant auger resistance 0.1 to 0.61 m - possible concrete, cobbles or crushed stone.
2. Drill performance indicates probable cobbles and boulders from 0.76 to 1.07 m.

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.

Boring No.: GZ-B5-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-B6-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/22/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	22+420, 4.6 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									130mm Asphalt Pavement, over 50mm Macadam.	
	S-1	61.0/27.9	0.18 - 0.79	62/42/62/17	104		-0.18		0.18 Very dense, brown, coarse GRAVEL, and fine to coarse Sand. (75mm Minus Crushed Stone Base)	
0.75	S-2	61.0/48.3	0.79 - 1.40	3/7/14/20	21		-0.91		Top 250mm: medium dense, light brown to brown, fine to medium SAND and SILT, little Gravel. 0.91 Bottom 230mm: medium dense, fine to coarse SAND, some Gravel, little Silt. (Glacial Till)	
1.5	S-3	61.0/34.3	1.40 - 2.01	18/20/20/28	40				Very dense, light brown, fine to coarse SAND and SILT, little Gravel.	
3	S-4	61.0/50.8	3.05 - 3.66	29/45/123/76	168				Very dense, light brown to gray, fine to coarse SAND and GRAVEL, little Silt.	
3.75							-3.66		3.66 **Bottom of Exploration at 3.66 m below ground surface.** No Refusal.	
4.5										
5.25										

Remarks:

1. A thin-wall coring machine was used to take a 150mm diameter pavement sample. Pavement sample consisted of 130mm of Asphalt Pavement, over 50mm Macadam, placed on 75mm-Minus Stone Base.

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.

Boring No.: GZ-B6-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-B7-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/23/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	22+990, 1.2 Lt	**Casing ID/OD:**		**Water Level*:**	1.43 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement.	
							-0.30		0.30	
	S-1	61.0/35.6	0.30 - 0.91	2/13/5/11	18				Medium dense, brown, fine to coarse SAND, some Gravel.	
0.75										
							-0.83		0.83	
	S-2	61.0/15.2	0.91 - 1.52	38/45/74/46	129		-0.91		Asphalt Pavement. 0.91	
									Very dense, gray, GRAVEL, some fine to coarse Sand, trace Silt.	
1.5	S-3	61.0/22.9	1.52 - 2.13	26/24/20/20	44				Dense, brown, fine to coarse SAND, little Gravel, trace Silt, wet. (Fill)	
2.25										
3	S-4	61.0/35.6	3.05 - 3.66	1/5/5/8	10				Loose, brown, fine to coarse SAND, little Silt, with a 25mm thick layer of fine grained Peat, and Wood Chips. (Wet)	
3.75							-3.66		3.66	
									Bottom of Exploration at 3.66 m below ground surface. No Refusal.	
4.5										
5.25										

Remarks:
1. 75mm thick layer of Asphalt Pavement at 0.9 m.

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.

Boring No.: GZ-B7-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-B8-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/24/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	25+100, 1.2 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement.	
							-0.30		0.30	
	S-1	17.8/17.8	0.30 - 0.48	36/100-1					Dense, brown, fine to coarse SAND, some Gravel. (Fill)	A-1-b SW-SM
0.75										
	S-2	61.0/35.6	1.22 - 1.83	29/29/22/23	51				Dense, tan to brown, GRAVEL, some fine to coarse Sand.	
1.5										
							-1.83		1.83	
	S-3	61.0/33.0	1.83 - 2.44	34/15/14/14	29				Medium dense, tan to brown, fine to coarse SAND and GRAVEL.	
2.25										
	S-4	61.0/35.6	2.44 - 3.05	14/10/11/9					Medium dense, tan, fine to coarse SAND, trace Gravel.	
3										
	S-5	61.0/20.3	3.05 - 3.66	10/8/6/6					Medium dense, tan to light brown, fine to coarse SAND, little Gravel.	
							-3.66		3.66	
3.75									**Bottom of Exploration at 3.66 m below ground surface.**	
4.5										
5.25										

Remarks:
1. Resistance from 0.5 to 1.2 m, probable cobbles and boulders.
2. Sampled S-4 and S-5 with 75mm oversize Split Spoon Sampler.

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.

Boring No.: GZ-B8-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-B9-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/24/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	25+260, 1.8 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement.	
							-0.27		0.27	
							-0.46		Possible concrete, cobbles or crushed stone. 0.46	
	S-1	61.0/38.1	0.46 - 1.07	37/43/47/69					Top 100mm: Very dense, brown to black, fine to coarse SAND, some Gravel, trace Organics. (Ice Contact Deposits) Bottom 280mm: Very dense, brown, fine to coarse SAND and GRAVEL.	S-1A: A-1-b SM S-1B: A-1-a GP
0.75										
	S-2	61.0/30.5	1.07 - 1.68	18/27/30/33	57				Very dense, light brown, fine to coarse SAND and GRAVEL.	
1.5										
							-1.68		1.68	
									Bottom of Exploration at 1.68 m below ground surface. No Refusal.	
2.25										
3										
3.75										
4.5										
5.25										

Remarks:
1. Sampled S-1 with 75mm oversize Split Spoon Sampler.
2. Significant auger resistance 0.27 to 0.46 m - possible concrete, cobbles or crushed stone.

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.

Boring No.: GZ-B9-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-B10-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/24/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	25+370, 1.8 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.11		64mm Asphalt Pavement, over 50mm Macadam.	
	S-1	61.0/43.2	0.15 - 0.76	100/39/47/57					0.11 Top 140mm: Very dense, GRAVEL, little fine to coarse Sand. (50mm Minus Crushed Stone Base) Bottom 12mm: Very dense, brown, fine to coarse SAND and GRAVEL. (Asphalt in tip of spoon)	S-1A: A-1-a GW S-1B: A-1-b SW-SM
0.75	S-2	61.0/30.5	0.76 - 1.37	54/77/78/60	155				Very dense, brown to tan, fine to coarse SAND, little Gravel, trace Silt. (Fill)	
							-1.37		1.37	
1.5	S-3	61.0/25.4	1.52 - 2.13	29/30/18/18	48				Very dense, light brown, fine to coarse SAND and GRAVEL. (Ice Contact Deposits)	
2.25	S-4	61.0/33.0	2.13 - 2.74	18/21/13/21	34					
							-2.74		2.74	
3									**Bottom of Exploration at 2.74 m below ground surface.** No Refusal.	
3.75										
4.5										
5.25										

Remarks:

1. A thin-wall coring machine was used to take a 150mm diameter pavement sample. Sample consisted of 64mm Asphalt Pavement, over 50mm Macadam, placed on a 50mm Minus Crushed Stone Base.
2. Sampled with 140kg hammer and the 75mm oversize Split Spoon Sampler for (S-1) down to 150mm, then used the 65kg hammer.
3. Sampled with the standard 35mm Split Spoon Sampler with the 65kg hammer for S-2 through S-4.
4. Noted increased drilling resistance at 1.5 m, probable cobble or boulder.

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.

Boring No.: GZ-B10-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-B11-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/24/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	25+530, 1.8 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement.	
							-0.30		0.30	
	S-1	61.0/61.0	0.30 - 0.91	23/20/18/12					Top 150mm: Dense, gray, fine to medium SAND, some Gravel, little Silt. Bottom 460mm: Dense, brown, fine to coarse SAND and GRAVEL.	S-1A: A-1-b SM S-1B: A-1-b SW-SM
0.75										
							-0.91		0.91	
	S-2	61.0/30.5	0.91 - 1.52	18/12/13/15	25				Medium dense, light brown, fine to coarse SAND, trace Gravel. (Ice Contact Deposits)	
1.5										
	S-3	61.0/11.4	1.52 - 2.13	12/28/21/16	49				Dense, brown, fine to coarse SAND, trace Gravel. (Ice Contact Deposits)	
							-2.13		2.13	
2.25									**Bottom of Exploration at 2.13 m below ground surface.** No Refusal.	
3										
3.75										
4.5										
5.25										

Remarks:
1. Sampled S-1 with the 75mm oversize Split Spoon Sampler.

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.

Boring No.: GZ-B11-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-B12-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	100mm ID
Operator:	John Galvin	**Datum:**		**Sampler:**	35mm Split Spoon
Logged By:	Keith Rudman	**Rig Type:**	Truck	**Hammer Wt./Fall:**	65 kg / 0.76 m
Date Start/Finish:	11/24/04	**Drilling Method:**	Hollow Stem Auger	**Core Barrel:**	
Boring Location:	26+570, 2.7 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.13		77mm Asphalt Pavement, over 50mm Macadam. 0.13	
	S-1	61.0/48.3	0.15 - 0.76	53/39/28/21			-0.30		Top 150mm: 50mm minus Crushed Stone Base. 0.30	S-1A: A-1-a GP S-1B: A-1-b SW-SM
0.75	S-2	61.0/45.7	0.76 - 1.37	20/20/19/12	39		-0.91		Bottom 150mm: Dense, light brown to tan, fine to coarse SAND and GRAVEL. (Fill) Top 150mm: Dense, brown, fine to medium SAND and GRAVEL, little Silt. 0.91	
1.5	S-3	61.0/20.3	1.37 - 1.98	18/29/23/37	52				Bottom 300mm: Dense, light brown to tan, fine to coarse SAND. (Ice Contact Deposits) Very dense, light brown to tan, fine to coarse SAND, little Gravel.	
2.25	S-4	61.0/31.8	1.98 - 2.59	41/39/13/17	52				Similar to S-3.	
3	S-5	61.0/40.6	2.59 - 3.20	25/17/15/18	32				Similar to S-3.	
	S-6	61.0/40.6	3.20 - 3.81	20/23/16/19	39				Similar to S-3.	
3.75							-3.81		3.81 **Bottom of Exploration at 3.81 m below ground surface.** No Refusal.	
4.5										
5.25										

Remarks:

1. A thin-wall coring machine was used to take a 150mm diameter pavement sample. Pavement sample consisted of 77mm Asphalt Pavement, over 50mm Macadam, placed on a 50mm Minus Crushed Stone Base.
2. Sampled S-1 with the 75mm oversize Split Spoon Sampler.

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.

Boring No.: GZ-B12-04

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland

Location: Poland

Boring No.: GZ-P1-04

PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	
Operator:	John Galvin	**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	11/22/04	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	
Boring Location:	22+640, 2.7 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement.	
							-0.23		0.23	
									Possible concrete, cobbles or crushed stone.	
							-0.61		0.61	
0.75									Brown, fine to coarse SAND, some SILT. (Probable Glacial Till - Logged From Auger Cuttings)	
1.5										
2.25										
3										
3.75										
4.5							-4.57		4.57	
									Bottom of Exploration at 4.57 m below ground surface. No Refusal.	
5.25										

Remarks:

1. Solid Stem Augers advanced with moderate effort. No samples taken.
2. Significant auger resistance from 0.23 to 0.61 m - possible concrete, cobbles or crushed stone.

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.

Boring No.: GZ-P1-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-P2-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	
Operator:	John Galvin	**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	11/23/04	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	
Boring Location:	23+280, 1.4 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Sample Information

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S1		0.11 - 2.12				-0.11		64mm Asphalt Pavement, over 50 mm Macadam.	
									0.11 Brown, fine to medium SAND and GRAVEL. (Fill)	
0.75										
1.5										
	S2		2.10 - 3.01				-2.10		2.10 Gray, fine to medium SAND and GRAVEL. (Glacial Till)	
2.25										
3										
3.75										
							-3.96		3.96 **Bottom of Exploration at 3.96 m below ground surface.** No Refusal.	
4.5										
5.25										

Remarks:

1. Soil descriptions logged from Auger Cuttings.
2. A thin-wall coring machine was used to take a 150mm diameter pavement sample. Pavement sample consisted of 64mm Asphalt Pavement, over 50 mm macadam, placed on a 75mm minus Crushed Stone Base.

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.

Boring No.: GZ-P2-04

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland

Location: Poland

Boring No.: GZ-P3-04

PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	
Operator:	John Galvin	**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	11/23/04	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	
Boring Location:	23+625, 7.5 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.09		Asphalt Pavement. 0.09	
									Brown, SAND and GRAVEL.	
0.75										
1.5										
2.25										
3										
3.75										
4.5							-4.27		4.27 **Bottom of Exploration at 4.27 m below ground surface.** No Refusal.	
5.25										

Remarks:

1. Moderate drilling effort down to 4.26 m. No samples were collected.

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.

Boring No.: GZ-P3-04

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland

Location: Poland

Boring No.: GZ-P4-04

PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	
Operator:	John Galvin	**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	11/23/04	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	
Boring Location:	23+860, 4.2 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.09		Asphalt Pavement. 0.09	
									Brown, SAND and GRAVEL. No samples were collected. (Probable Fill and Ice Contact Deposits)	
0.75										
1.5										
2.25										
3										
3.75							-3.96		3.96	
									Bottom of Exploration at 3.96 m below ground surface. No Refusal.	
4.5										
5.25										

Remarks:

1. Moderate drilling effort down to 3.96 m.

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.

Boring No.: GZ-P4-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-P5-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	
Operator:	John Galvin	**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	11/23/04	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	
Boring Location:	23+904, 5 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement.	
	S1		0.15 - 1.52				-0.15		0.15 Brown, fine to coarse SAND and GRAVEL. (Probable Fill and Ice Contact Deposits)	
0.75										
1.5										
2.25							-2.23		2.23 **Bottom of Exploration at 2.23 m below ground surface.** Auger Refusal at 2.23 m.	
3										
3.75										
4.5										
5.25										

Remarks:
1. Soils described from Auger Cuttings.

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.

Boring No.: GZ-P5-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-P6-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	
Operator:	John Galvin	**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	11/23/04	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	
Boring Location:	24+110, 3 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0	S-1		0.09 - 1.51				-0.09		Asphalt Pavement. 0.09	
									Brown, fine to medium SAND and GRAVEL. (Probable Fill and Ice Contact Deposits)	
0.75										
1.5										
2.25										
3	S-2		3.05 - 4.57				-3.05		3.05 Light brown to tan, fine to medium SAND . (Probable Ice Contact Deposits)	
3.75										
4.5							-4.57		4.57 **Bottom of Exploration at 4.57 m below ground surface.** No Refusal.	
5.25										

Remarks:
1. Soils described from Auger Cuttings.

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.

Boring No.: GZ-P6-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-P7-04
PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	
Operator:	John Galvin	**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	11/23/04	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	
Boring Location:	24+194, 3.2 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0			0.09 - 1.52				-0.09		Asphalt Pavement. 0.09	
									Brown, fine to medium SAND and GRAVEL. (Probable Fill and Ice Contact Deposits)	
0.75										
1.5			1.52 - 3.05				-1.52		1.52 Tan, fine to medium SAND, trace Silt. (Probable Ice Contact Deposits)	
2.25										
3			3.05 - 4.57						Tan, fine to medium SAND, trace Silt.	
3.75										
4.5							-4.57		4.57 **Bottom of Exploration at 4.57 m below ground surface.** No Refusal.	
5.25										

Remarks:
1. Soils described from Auger Cuttings.

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.

Boring No.: GZ-P7-04

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland

Location: Poland

Boring No.: GZ-P8-04

PIN: 10014.00

Driller:	Geologic Earth Exploration	**Elevation (m):**		**Auger ID/OD:**	
Operator:	John Galvin	**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	11/24/04	**Drilling Method:**	Solid Stem Auger	**Core Barrel:**	
Boring Location:	26+000, 1.7 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Asphalt Pavement.	
							-0.15		0.15 Brown, SAND and GRAVEL. (Probable Fill and Ice Contact Deposits)	
0.75										
1.5										
2.25										
3										
3.75										
4.5										
5.25							-5.18		5.18 **Bottom of Exploration at 5.18 m below ground surface.** No Refusal.	

Remarks:

1. Soils described from Auger Cuttings; no samples taken.

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.

Boring No.: GZ-P8-04

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ-P9-04
Location: Poland		**PIN:**	10014.00
Driller:	Geologic Earth Exploration	**Elevation (m):**	**Auger ID/OD:**
Operator:	John Galvin	**Datum:**	**Sampler:**
Logged By:	Keith Rudman	**Rig Type:**	**Hammer Wt./Fall:**
Date Start/Finish:	11/24/04	**Drilling Method:** Solid Stem Auger	**Core Barrel:**
Boring Location:	26+095, 12.5 Rt	**Casing ID/OD:**	**Water Level*:**

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Brown, SAND and GRAVEL. (Probable Fill and Ice Contact Deposits)	
0.75										
1.5										
2.25										
3										
3.75										
4.5							-4.27		4.27 **Bottom of Exploration at 4.27 m below ground surface.** No Refusal.	
5.25										

Remarks:

1. Soils described from Auger Cuttings; no samples taken.

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.

Boring No.: GZ-P9-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA1-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/09/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	5+040, CL	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.09		TOPSOIL. 0.09	
									Brown, fine to medium SAND and Gravel, some Silt. (Glacial Till)	
0.75							-0.61		0.61 **Bottom of Exploration at 0.61 m below ground surface.** Hand Auger Refusal at 0.61 m.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

Remarks:
1. Relocated Carpenter Road Baseline.

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.

Boring No.: GZ-HA1-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA2-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/09/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	5+180, CL	**Casing ID/OD:**		**Water Level*:**	0.61 m

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Brown to gray, fine SAND, some Silt and Organics. (Spongy) (Topsoil)	
							-0.61		0.61	
0.75									Light brown to tan, fine to coarse SAND, some Silt, little Gravel. (Glacial Till)	
							-0.91		0.91	
									Bottom of Exploration at 0.91 m below ground surface. No Refusal.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

Remarks:
1. Relocated Carpenter Road Baseline.

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.

Boring No.: GZ-HA2-04

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland

Location: Poland

Boring No.: GZ-HA3-04

PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/09/04 - 12/10/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	21+480, 7.5 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.15		TOPSOIL. 0.15	
									Gray, fine SAND and SILT. (Spongy, Roots) (Topsoil)	
							-0.58		0.58	
0.75							-0.76		Light brown, fine to coarse SAND, trace Gravel. (Glacial Till) 0.76	
									Bottom of Exploration at 0.76 m below ground surface. No Refusal.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

Remarks:

1. Original location 2+430, 13 Lt was in area of ponded water so the location was changed.

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.

Boring No.: GZ-HA3-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA4-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/09/04 - 12/10/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	21+610, 14.3 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									Light brown, fine to medium SAND, with orange mottling at 0.55 m.	
							-0.55		0.55	
0.75							-0.73		Brown, fine to medium SAND, some Peat. 0.73	
							-1.01		Gray to dark gray, fine grained PEAT, with fine Sand layers. 1.01	
							-1.22		Gray, SILT, some fine Sand. (Glacial Till) 1.22	
1.5									**Bottom of Exploration at 1.22 m below ground surface.** No Refusal.	
2.25										
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA4-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA5-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/09/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	21+701, 12 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL, Organic material.	
							-0.46		0.46	
							-0.61		Layered, gray, SILT, and fine grained Peat. 0.61	
0.75									Gray to brown, fine to medium SAND. (Glacial Till)	
							-0.91		0.91	
									Bottom of Exploration at 0.91 m below ground surface. No Refusal.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA5-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA6-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/09/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	21+800, 14 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL, Grass, Roots.	
							-0.30		0.30	
									Gray to brown, fine to medium SAND and SILT. (Glacial Till)	
							-0.61		0.61	
0.75									**Bottom of Exploration at 0.61 m below ground surface.** Hand Auger Refusal at 0.61 m.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA6-04

Maine Department of Transportation

Soil/Rock Exploration Log

METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ-HA7-04
Location: Poland		**PIN:**	10014.00
Driller:	N/A	**Elevation (m):**	
Auger ID/OD:		**Operator:**	
Datum:		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**	
Hammer Wt./Fall:		**Date Start/Finish:**	12/09/04
Drilling Method:	Hand Auger	**Core Barrel:**	
Boring Location:	21+922, 10 Lt	**Casing ID/OD:**	
Water Level*:	0.15 m		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_V = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0							-0.15		TOPSOIL. 0.15	
									Gray to light brown, fine to medium SAND, some Silt, wet. (Glacial Till)	
0.75							-0.61		0.61 **Bottom of Exploration at 0.61 m below ground surface.** Hand Auger Refusal at 0.61 m.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

Remarks:

1. Hand Auger Refusal on probable gravel or cobbles.

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.

Boring No.: GZ-HA7-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland		**Boring No.:**	GZ-HA8-04
Location: Poland		**PIN:**	10014.00
Driller:	N/A	**Elevation (m):**	
Auger ID/OD:		**Operator:**	
Datum:		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**	
Hammer Wt./Fall:		**Date Start/Finish:**	12/09/04
Drilling Method:	Hand Auger	**Core Barrel:**	
Boring Location:	22+036, 10 Lt	**Casing ID/OD:**	
Water Level*:			

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL, some fine Sand, little Silt and Organics. (Spongy)	
							-0.43		0.43	
									Gray to light brown, fine to medium SAND, little Gravel. (Glacial Till)	
0.75							-0.76		0.76	
									Bottom of Exploration at 0.76 m below ground surface. No Refusal.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA8-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA9-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/09/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	22+170, 9.5 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL, fine Sand, trace Gravel.	
							-0.24		0.24	
							-0.30		Light brown, fine SAND and SILT. 0.30	
									Gray to brown, fine to medium SAND, little Gravel. (Glacial Till)	
0.75							-0.67		0.67	
									Bottom of Exploration at 0.67 m below ground surface. No Refusal.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA9-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA10-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/09/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	23+904, 9.3 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL.	
							-0.40		0.40	
									Dark brown, fine to medium SAND. (Ice Contact Deposits)	
0.75							-0.82		0.82	
									Light brown, fine to coarse SAND.	
							-1.07		1.07	
									Bottom of Exploration at 1.07 m below ground surface. No Refusal.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA10-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA11-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/10/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	24+004, 14 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL.	
							-0.30		0.30	
									Brown, fine to medium SAND, and trace Organic material. (Ice Contact Deposits)	
0.75										
1.5							-1.52		1.52	
									Brown, fine to coarse SAND.	
2.25							-2.13		2.13	
									Bottom of Exploration at 2.13 m below ground surface. Hand Auger Refusal on possible root.	
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA11-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA12-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/10/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	24+004, 15 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL.	
							-0.30		0.30	
									Brown, fine to medium SAND, and little Organic material.	
0.75										
							-0.91		0.91	
									Brown, fine to coarse SAND. (Ice Contact Deposits)	
							-1.16		1.16	
									Bottom of Exploration at 1.16 m below ground surface. No Refusal.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA12-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA13-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/10/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	24+024, 12 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL.	
							-0.30		0.30	
									Fiberous PEAT.	
0.75							-0.85		0.85	
									Bottom of Exploration at 0.85 m below ground surface. Hand Auger Refusal on roots.	
1.5										
2.25										
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA13-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA14-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/10/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	24+028, 10.5 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL.	
							-0.30		0.30	
0.75									Fine to Medium SAND and fine grained Peat.	
							-1.22		1.22	
1.5									Fiberous Peat.	
2.25							-2.29		2.29	
									Bottom of Exploration at 2.29 m below ground surface. Hand Auger Refusal at 2.29 m.	
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA14-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA15-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/10/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	24+042, 11.5 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL, fine to medium Sand layers.	
							-0.30		0.30	
									Dark brown, fiberous PEAT.	
0.75										
1.5										
							-1.90		1.90	
									Bottom of Exploration at 1.90 m below ground surface. Hand Auger Refusal at 1.9 m.	
2.25										
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA15-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA16-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/09/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	24+052, 11.5 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_v = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL, fine Sand, Organics.	
							-0.30		0.30	
									Fine SAND and fine grained Peat.	
0.75							-0.73		0.73	
									Brown, fiberous PEAT.	
							-1.22		1.22	
1.5									**Bottom of Exploration at 1.22 m below ground surface.** Hand Auger Refusal at 1.22 m.	
2.25										
3										
3.75										
4.5										
5.25										

Remarks:
1. Location is at the toe of the road fill.

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.

Boring No.: GZ-HA16-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA17-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/10/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	24+065, 11 Rt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_V = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL.	
							-0.30		0.30	
									Light brown, fine to medium SAND.	
0.75							-0.73		0.73	
							-0.91		Brown, fine to medium SAND, little Organics. 0.91	
									Dark brown to reddish, fine to coarse SAND, trace Gravel. (Ice Contact Deposits)	
1.5							-1.37		1.37	
									Bottom of Exploration at 1.37 m below ground surface. No Refusal.	
2.25										
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA17-04

Maine Department of Transportation

Soil/Rock Exploration Log
METRIC UNITS

Project: Rt. 26-Poland
Location: Poland

Boring No.: GZ-HA18-04
PIN: 10014.00

Driller:	N/A	**Elevation (m):**		**Auger ID/OD:**	
Operator:		**Datum:**		**Sampler:**	
Logged By:	Keith Rudman	**Rig Type:**		**Hammer Wt./Fall:**	
Date Start/Finish:	12/10/04	**Drilling Method:**	Hand Auger	**Core Barrel:**	
Boring Location:	24+072, 9 Lt	**Casing ID/OD:**		**Water Level*:**	

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample attempt
U = Thin Wall Tube Sample
R = Rock Core Sample
V = Insitu Vane Shear Test
SSA = Solid Stem Auger

Definitions:
S_u = Insitu Field Vane Shear Strength (kPa)
T_V = Pocket Torvane Shear Strength (kPa)
q_p = Unconfined Compressive Strength (Pa)
$S_{u(lab)}$ = Lab Vane Shear Strength (kPa)
WOH = weight of 64 kg hammer
WOR = weight of rods

Definitions:
WC = water content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (m)	Sample No.	Pen/Rec (cm)	Sample Depth (m)	Blows (150 mm) Shear Strength (kPa) or RQD (%)	N-value	Casing Blows	Elevation (m)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class.
0									TOPSOIL, fine to medium Sand.	
							-0.30		0.30	
0.75									Light brown to tan, fine to coarse SAND, some Gravel. (Ice Contact Deposits)	
							-0.98		0.98	
1.5									**Bottom of Exploration at 0.98 m below ground surface.** Hand Auger Refusal at 0.98 m on gravel or cobbles.	
2.25										
3										
3.75										
4.5										
5.25										

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.

Boring No.: GZ-HA18-04

GZA
GeoEnvironmental, Inc.

Engineers and Scientists

December 16, 2004
File No. 25440.01

Ms. Karen Gross, P.E.
Maine Department of Transportation
16 State House Station
Augusta, Maine 04333-0016

Four Free Street
Portland
Maine
04101
207-879-9190
FAX 207-879-0099
http://www.gza.net

Re: Test Pit Results
Route 26 - Poland, Maine
PIN 10014.00

Dear Karen:

In response to your request, we are forwarding you the results of three test pits excavated for the Route 26 Reconstruction project in Poland, Maine. The test pits were excavated on November 17, 2004 by an MDOT crew and logged by a GZA engineer. Photographs of the encountered materials are also included.

The test pits were excavated to evaluate the nature of the stone fill material reportedly used to construct the roadway base. The test pit locations were selected based on the limits of stone base shown on the circa-1930s as-built plans titled "State Highway S, Poland, Androscoggin County, Federal Highway Project No. 80-E" (approx. Sta. 12+055 to Sta. 22+777 of the current project).

We trust this information meets current project needs. Please call if you have any questions regarding this data.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Christopher L. Snow, P.E.
Senior Project Manager

James V. Errico, P.E.
Principal

Attachments: Logs of Test Pits GZ-TP1-04, GZ-TP2-04 and GZ-TP3-04
Photos of Test Pits

P:\25440.01\tpmemo12-04\Rt26TPLtr.DOC

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GZA GeoEnvironmental, Inc. Engineers/Scientists	Route 26 Reconstruction Poland, Maine 21+820, 0.5 to 3.5 Rt	Test Pit No.	GZ-TP1-04
		Page No.	1 of 1
		File No.	09.0025440.01
4 Free Street Portland, Maine 04101		Checked By:	CLS

GZA Rep.	Keith Rudman	Excavation Equipment Contractor	Maine Department of Transportation			Date	11/17/2004
		Operator	Dave Knights			Ground Elev.	148 +-
Weather	Sunny, 40s	Make	Case	Model	580 Super L	Time Started	
		Capacity	0.5 cu. yd.	Reach		Time Completed	

Depth (meters)	Soil Description		Sample No.	PID Reading (ppm)	Excav. Effort	Boulders: Count/ Class	Note No.
0	Asphalt Pavement.						
0.2	Brown, coarse GRAVEL and Cobbles, some fine to coarse Sand.	0.21 m			M		
0.4	Brown, fine to coarse SAND and Gravel, few Cobbles and Boulders.	0.40 m			M	A	
0.6					M	A	
0.8			S1				
	COBBLES and BOULDERS, little brown, fine to coarse Sand.	0.91 m			D	A/B	
1.0	(Fill)				D/M		
1.2					D/M		
1.4	Gray, fine to medium SAND and Silt with Wood and Roots. (probable old ground surface)	1.37 m			M		1, 2
1.6					M		
1.8							
2.0	Bottom of excavation at 1.83 meters. No refusal encountered.						
2.2							
2.4							
2.6							

Notes:

1. Maine DOT used a Husqvarna 375 pavement saw to cut through the Asphalt pavement.
2. At 1.37 meters, groundwater was encountered.
3. A composite fill sample was collected, excluding large boulders, from 0.3 to 1.3 meters.

Test Pit Plan	Boulder Class	Proportions Used	Abbreviations	GROUNDWATER
3 m 0.76 m NORTH Volume = 3.6 cu. meters	Letter Designation / Size Range Classification A 150 - 460 mm B 460 - 900 mm C 900 mm and Larger Excavation Effort E ----Easy M ----Moderate D ----Difficult	TRACE (TR.) 0 - 10% LITTLE (LI. 10 - 20% SOME (SO.) 20 - 35% AND 35 - 50%	F = Fine M = Medium C = Coarse V = Very F/M = Fine to medium F/C = Fine to coarse GR = Gray BN = Brown YEL = Yellow	(X) Encountered ( ) Not Encountered Elapsed Time to Reading (Hours) / Depth to Groundwater 1.37 meters

GZA GeoEnvironmental, Inc.

i:\04jobs\portland\[25440 tp logs.xls]tp1

GZA GeoEnvironmental, Inc. Engineers/Scientists	Route 26 Reconstruction Poland, Maine 22+600, 0.5 to 3.5 m Rt	Test Pit No.	GZ-TP2-04
		Page No.	1 of 1
		File No.	09.0025440.01
4 Free Street Portland, Maine 04101		Checked By:	CLS

		Excavation Equipment					
GZA Rep.	Keith Rudman	Contractor	Maine Department of Transportation			Date	11/17/2004
		Operator	Dave Knights			Ground Elev.	115 +-
Weather	Sunny, 30s	Make	Case	Model	580 Super L	Time Started	
		Capacity	0.5 cu. yd.	Reach		Time Completed	

Depth (meters)	Soil Description	Sample No.	PID Reading (ppm)	Excav. Effort	Boulders: Count/ Class	Note No.
0	Asphalt Pavement.					
0.2	3-inch Minus Crushed Stone Base — 0.23 m			M		
	0.33 m					
0.4	Brown, fine to medium SAND, and Boulders and Cobbles.			M	A	
0.6	0.61 m			M	A	
0.8	Brown, fine to coarse SAND and Gravel, few Boulders. (Fill)			M		
	0.91m	S1				
1.0	Gray, fine to coarse SAND and Gravel, trace Silt.			M		
1.2	(Glacial Till)			M		
1.4				M		
1.6				M		1, 2 3
1.8				M		
2.0				M		
2.2				M		
2.4						
2.6	Bottom of excavation at 2.44 meters. Refusal on large Boulder or Bedrock encountered at 1.71 m (0.5 MRt) to 2.44 m (3 Rt).					

Notes:

1. Maine DOT used a Husqvarna 375 pavement saw to cut through the Asphalt pavement.
2. Water started filtering into the hole at 1.68 meters.
3. A composite fill sample was collected from 0.23 to 1.68 meters.
4. Driller encountered a large object that would not move. The object tapered towards the right side of the road.

Test Pit Plan

3 m × 0.76 m

NORTH

Volume = 4.7 cu. meters

Boulder Class

Letter Designation	Size Range Classification
A	150 - 460 mm
B	460 - 900 mm
C	900 mm and Larger

Excavation Effort
E ----Easy
M ----Moderate
D ----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations

F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER

(X) Encountered
( ) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Groundwater
0.1	1.68 meters

GZA GeoEnvironmental, Inc.

i:\04jobs\portland\[25440 tp logs.xls]tp1

GZA GeoEnvironmental, Inc.	Route 26 Reconstruction	Test Pit No.	GZ-TP3-04
Engineers/Scientists	Poland, Maine	Page No.	1 of 1
	22+740, 0.5 to 3.2 m Rt	File No.	09.0025440.01
4 Free Street		Checked By:	CLS
Portland, Maine 04101			

		Excavation Equipment					
GZA Rep.	Keith Rudman	Contractor	Maine Department of Transportation			Date	11/17/2004
		Operator	Dave Knights			Ground Elev.	101 +-
Weather	Sunny, 30s	Make	Case	Model	580 Super L	Time Started	
		Capacity	0.5 cu. yd.	Reach		Time Completed	

Depth (meters)	Soil Description		Sample No.	PID Reading (ppm)	Excav. Effort	Boulders: Count/ Class	Note No.
0	Asphalt Pavement.				M		1
0.2	3-inch Minus Crushed Stone Base	0.18 m			M		
	BOULDERS and COBBLES, little brown, fine to coarse Sand and Gravel. (Fill)	0.28 m			M	+A/B-	
0.4					D	+A/B-	
0.6							
0.8	Asphalt Pavement.	0.76 m			D	+A/B-	2
	BOULDERS and COBBLES with brown, coarse Sand and Gravel.	0.84 m			D	+A/B-	
1.0	Large Boulders (B/C-sized) with little fine to coarse Sand and Gravel. Some nested boulders. (Fill)		S1		D	+A/B-	
1.2					D	B/C	2
1.4		1.52 m			E		
1.6	Gray, fine to medium SAND and GRAVEL, trace Silt. (Glacial Till)		S2		E		
1.8							3
2.0	Bottom of excavation at 2.13 meters. No refusal encountered.						
2.2							
2.4							
2.6							

Notes:

1. Maine DOT used a Husqvarna 375 pavement saw to cut through the Asphalt pavement.
2. Collected samples of granular material fill (excluding cobles and boulders) from 0.84 to 1.5 meters and of Glacial Till from 1.5 to 2.1 meters.
3. Groundwater was not encountered.

Test Pit Plan

2.7 m × 0.76 m

NORTH

Volume = 3.6 cu. meters

Boulder Class

Letter Designation	Size Range Classificatior
A	150 - 460 mm
B	460 - 900 mm
C	900 mm and Larger

Excavation Effort
E -----Easy
M ----Moderate
D -----Difficult

Proportions Used

TRACE (TR.)	0 - 10%
LITTLE (LI.)	10 - 20%
SOME (SO.)	20 - 35%
AND	35 - 50%

Abbreviations

F = Fine
M = Medium
C = Coarse
V = Very
F/M = Fine to medium
F/C = Fine to coarse
GR = Gray
BN = Brown
YEL = Yellow

GROUNDWATER

( ) Encountered
(X) Not Encountered

Elapsed Time to Reading (Hours)	Depth to Groundwater

GZA GeoEnvironmental, Inc.

i:\04jobs\portland\[25440 tp logs.xls]tp1

Test Pit GZ-TP1-04, Sta. 21+820, 0.5 to 3.5m Rt. 11-17-04

Test Pit GZ-TP1-04, Sta. 21+820, 0.5 to 3.5m Rt. 11-17-04

Test Pit GZ-TP2-04, Sta. 22+600, 0.5 to 3.5m Rt. 11-17-04

Test Pit GZ-TP2-04, Sta. 22+600, 0.5 to 3.5m Rt. 11-17-04

Test Pit GZ-TP3-04, Sta. 22+740, 0.5 to 3.2m Rt. 11-17-04

Test Pit GZ-TP3-04, Sta. 22+740, 0.5 to 3.2m Rt. 11-17-04

TABLE 2

State of Maine - Department of Transportation

Laboratory Testing Summary Sheet

Town(s): POLAND Project Number: 10014.00

Boring & Sample Identification Number	Station (Meter)	Offset (Meter)	Depth (Meter)	Reference Number	G.S.D.C. Sheet	W.C.	L.L.	P.I.	Classification		
									Unified	AASHTO	Frost
HB-POLA-202, 1D	20+450	2.5RT.	0.15-0.76	98617	1	3.6			GW-GM	A-1-b	I
HB-POLA-202, 2D	20+450	2.5RT.	0.76-1.37	98618	1	19.7			SM	A-4	IV
HB-POLA-203, 1D/A	20+850	2.8RT.	0.24-0.40	98624	1	2.3			GW-GM	A-1-a	0
HB-POLA-203, 1D/B	20+850	2.8RT.	0.40-0.79	98620	1	15.9			SM	A-2-4	II
HB-POLA-203, 2D	20+850	2.8RT.	0.85-1.46	98621	1	9.4			SM	A-4	IV
HB-POLA-205, 1D	22+050	2 RT.	0.30-0.62	98622	1	2.1			SW-SM	A-1-b	0
HB-POLA-205, 2D	22+050	2 RT.	1.22-1.83	98623	1	10.5			SM	A-2-4	II
HB-POLA-207, 1D/A	23+150	2 RT.	0.30-0.67	98625	2	1.7			GW	A-1-a	0
HB-POLA-207, 1D/B	23+150	2 RT.	0.67-0.91	97476	2	12.3			SM	A-2-4	II
HB-POLA-207, 2D	23+150	2 RT.	0.91-1.52	97477	2	11.1			SM	A-1-b	I
HB-POLA-208, 1D/A	24+150	2.4RT.	0.30-0.46	97478	2	3.0			SW-SM	A-1-b	0
HB-POLA-208, 2D/A	24+150	2.4RT.	0.91-1.22	97479	2	8.4			SM	A-1-b	I
HB-POLA-208, 2D/B	24+150	2.4RT.	1.22-1.52	97480	2	3.5			SP-SM	A-3	0
HB-POLA-209, 1D	25+650	2.6RT.	0.30-0.38	97481	3	1.5			SM	A-1-b	I
HB-POLA-209, 2D	25+650	2.6RT.	1.22-1.83	97482	3	7.5			SP-SM	A-3	0
HB-POLA-211, 1D	26+750	2.8RT.	0.30-0.43	97483	3	1.4			SM	A-1-b	I
HB-POLA-211, 2D	26+750	2.8RT.	0.91-1.52	97484	3	4.6			SP-SM	A-3	0

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 MDOT 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)

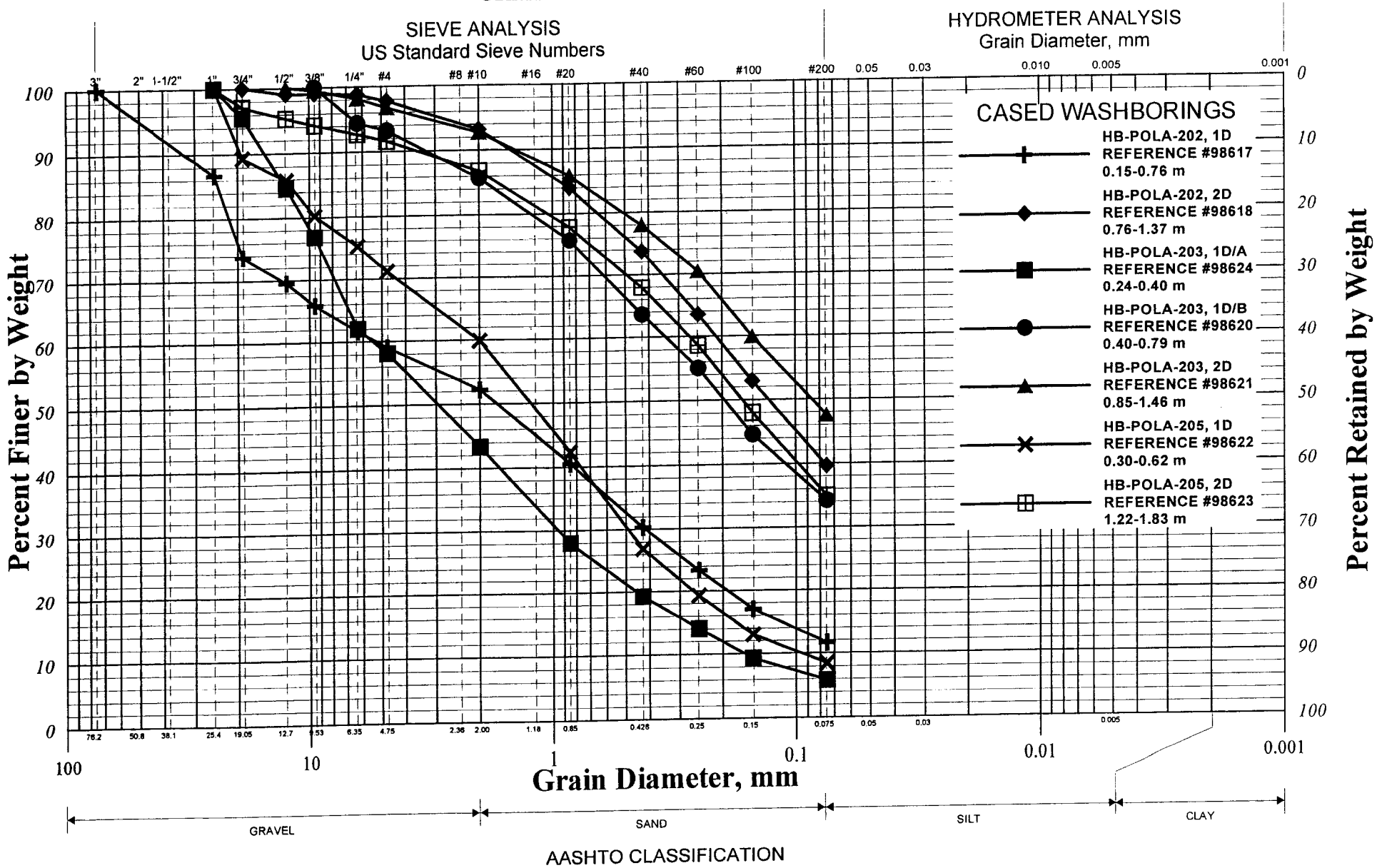
WC = water content as determined by AASHTO T 265-93 and/or ASTM D 2216-98

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

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

State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE



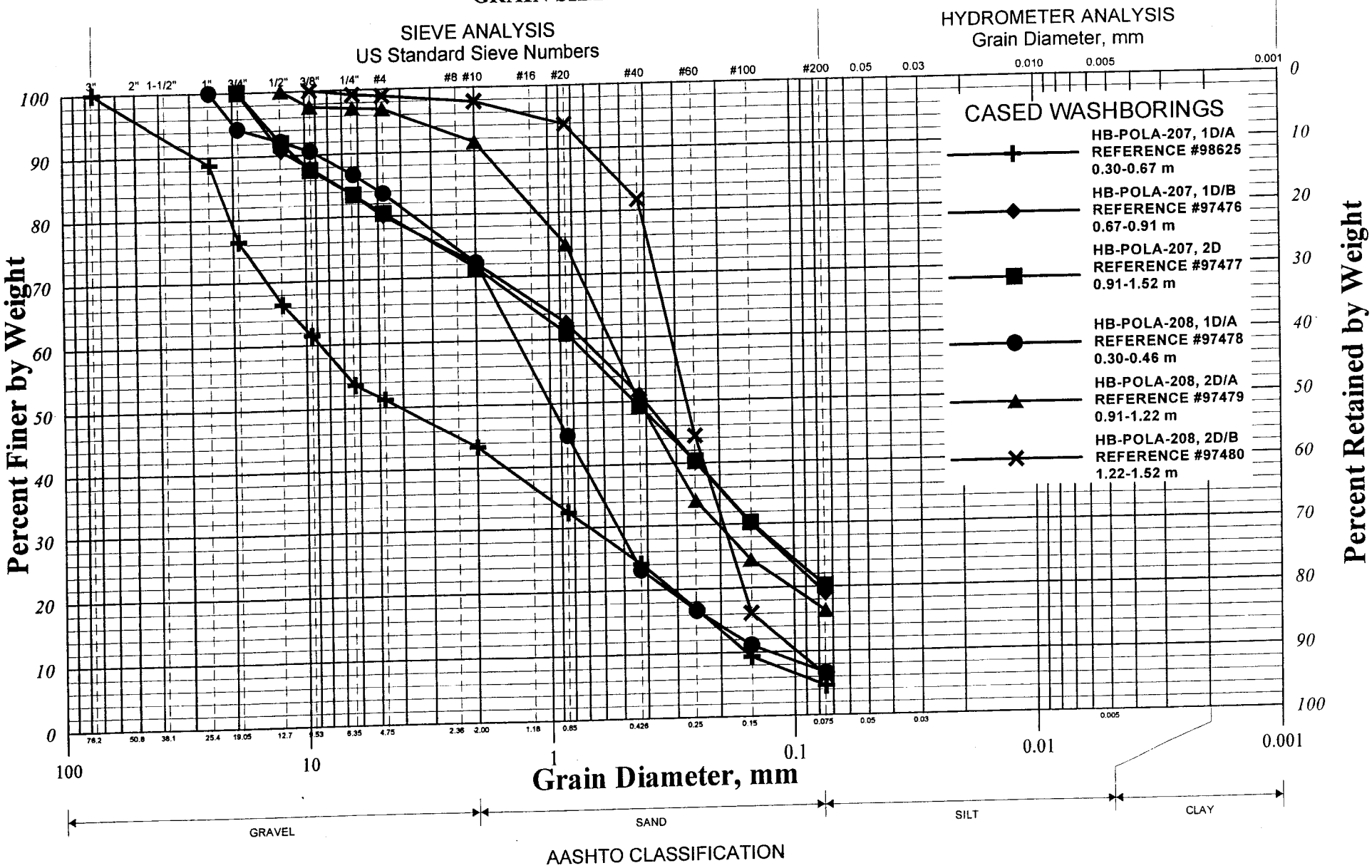
PIN: 10014.00
Town: Poland

Reported by: T.White
Date: 1/29/02

SHEET NO. 1

State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE



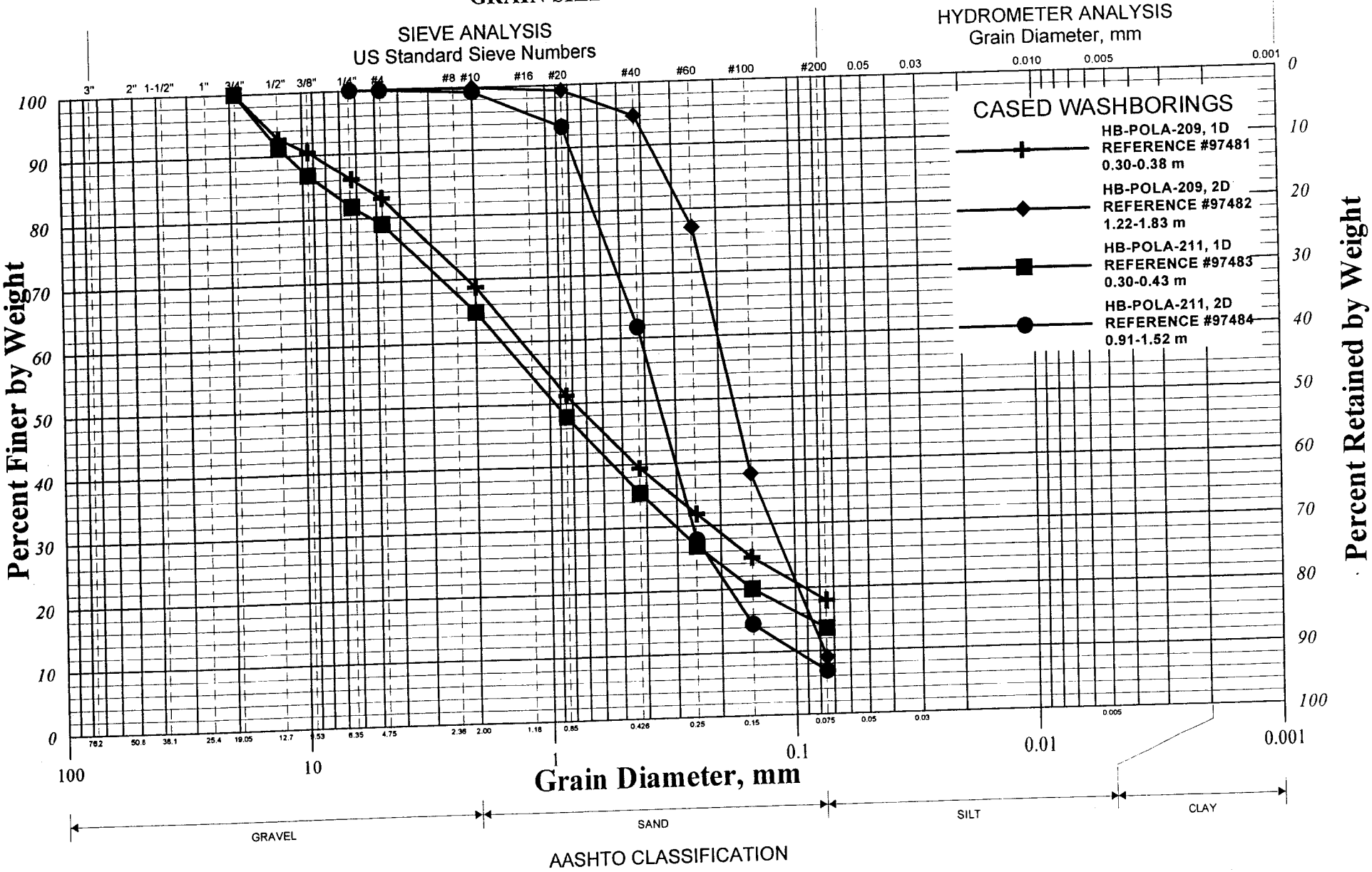
PIN: 10014.00
Town: Poland

Reported by: T.White
Date: 1/29/02

SHEET NO. 2

State of Maine Department of Transportation

GRAIN SIZE DISTRIBUTION CURVE



PIN: 10014.00
Town: Poland

Reported by: T.White
Date: 1/29/02

SHEET NO. 3

TABLE 3

State of Maine - Department of Transportation

Laboratory Testing Summary Sheet

Town(s): Poland Project Number: 10014.00

Boring & Sample Identification Number	Station (Meter)	Offset (Meter)	Depth (Meter)	Reference Number	G.S.D.C. Sheet	W.C.	L.L.	P.I.	Classification		
									Unified	AASHTO	Frost
GZ4-03/S-1	21+130	1.5 RT	0.18-0.79	98038	1	2.9			SW-SM	A-1-b	0
GZ4-03/S-3	21+130	1.5 RT	1.52-2.13	98039	1	9.7			SM	A-1-b	II
GZ4-03/S-4	21+130	1.5 RT	2.13-2.6	98040	1	9.1			SM	A-1-b	II
GZ7-03/S-1	21+560	2 RT	0.21-0.61	98041	1	2.3			SW-SM	A-1-a	0
GZ7-03/S-3	21+560	2 RT	1.52-2.13	98042	1	10.6			SM	A-1-b	II
GZ7-03/S-4	21+560	2 RT	2.13-2.5	98043	1	9.9			SM	A-1-a	II
GZ11-03/S-1	22+055	2 RT	0.18-0.37	98044	2	2.3			GW-GM	A-1-a	0
GZ11-03/S-2A	22+055	2 RT	0.91-1.07	98045	2	20.3			SM	A-2-4	II
GZ11-03/S-2B	22+055	2 RT	1.22-1.52	98046	2	16.1			SM	A-2-4	II
GZ11-03/S-3	22+055	2 RT	1.52-2.13	98047	2	11.3			SM	A-4	IV
GZ13-03/S-1	22+220	2.3 RT	0.15-0.30	98048	2	1.1			GW-GM	A-1-a	0
GZ13-03/S-2	22+220	2.3 RT	0.91-1.52	98049	2	10.2			SM	A-2-4	II
GZ20-03/S-1	23+302	2 RT	0.15-0.76	98050	3	3.7			SP-SM	A-1-b	0
GZ20-03/S-3	23+302	2 RT	1.52-1.62	99001	3	9.3			SM	A-2-4	II
GZ20-03/S-4	23+302	2 RT	2.44-2.62	99002	3	5.8			SM	A-1-b	II
GZ24-03/S-1	23+803	5 RT	0.12-0.73	99003	3	3.2			SW-SM	A-1-b	0
GZ24-03/S-2	23+803	5 RT	0.91-1.52	99004	3	3.2			SM	A-1-b	II
GZ24-03/S-3	23+803	5 RT	1.52-2.13	99005	3	5.3			SM	A-1-b	II
GZ29-03/S-1	24+722	2.3 RT	0.30-0.76	99006	4	1.9			SW-SM	A-1-b	0
GZ29-03/S-2	24+722	2.3 RT	0.91-1.52	99007	4	1.5			SW-SM	A-1-a	0
GZ29-03/S-3	24+722	2.3 RT	1.52-2.13	99008	4	5.6			SW-SM	A-1-b	0
GZ31-03/S-1	25+020	3.5 LT	0.06-0.67	99009	4	2.9			SP-SM	A-1-b	0
GZ31-03/S-2	25+020	3.5 LT	0.91-1.52	99010	4	1.3			GW	A-1-a	0
GZ31-03/S-3	25+020	3.5 LT	1.83-2.44	99011	4	3.3			SP-SM	A-1-b	0
GZ31-03/S-4	25+020	3.5 LT	2.13-2.74	99012	5	8.3			SM	A-2-4	II
GZ35-03/S-1	25+771	2.3 LT	0.24-0.85	99013	5	3.8			SW-SM	A-1-b	0
GZ35-03/S-3	25+771	2.3 LT	1.52-2.13	99014	5	6.4			SP	A-3	0
GZ35-03/S-5	25+771	2.3 LT	2.74-3.35	99015	5	9.1			SP	A-3	0
GZ37-03/S-1	26+217	1 RT	0.09-0.70	99016	6	6.9			SM	A-2-4	II
GZ37-03/S-3	26+217	1 RT	1.52-2.13	99017	6	4.4			SP-SM	A-3	0
GZ37-03/S-5	26+217	1 RT	2.74-3.35	99018	6	6.1			SP-SM	A-3	0
GZ40-03/S-1	26+923	2.3 RT	0.18-0.79	99019	6	3.4			SW-SM	A-1-b	0
GZ40-03/S-3	26+923	2.3 RT	1.52-2.13	99020	6	4.1			SP	A-1-b	0
GZ40-03/S-5	26+923	2.3 RT	2.74-3.35	99021	6	6.0			SP	A-3	0

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 MDOT and Corps of Engineers Classification Systems.

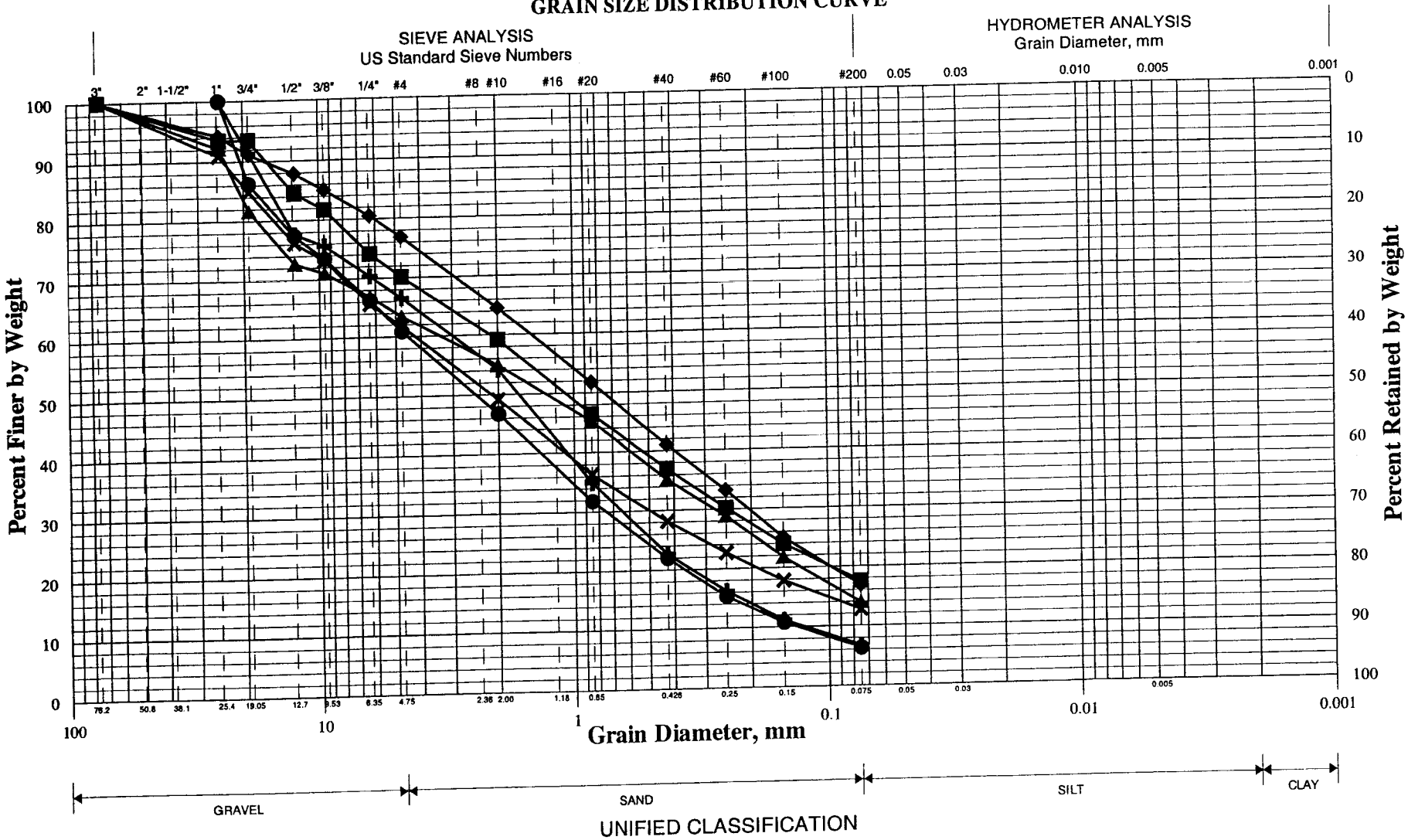
GSDC = Grain Size Distribution Curve as determined by AASHTO T 88-93 (1996) and/or ASTM D 422-63 (Reapproved 1998)

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

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

State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



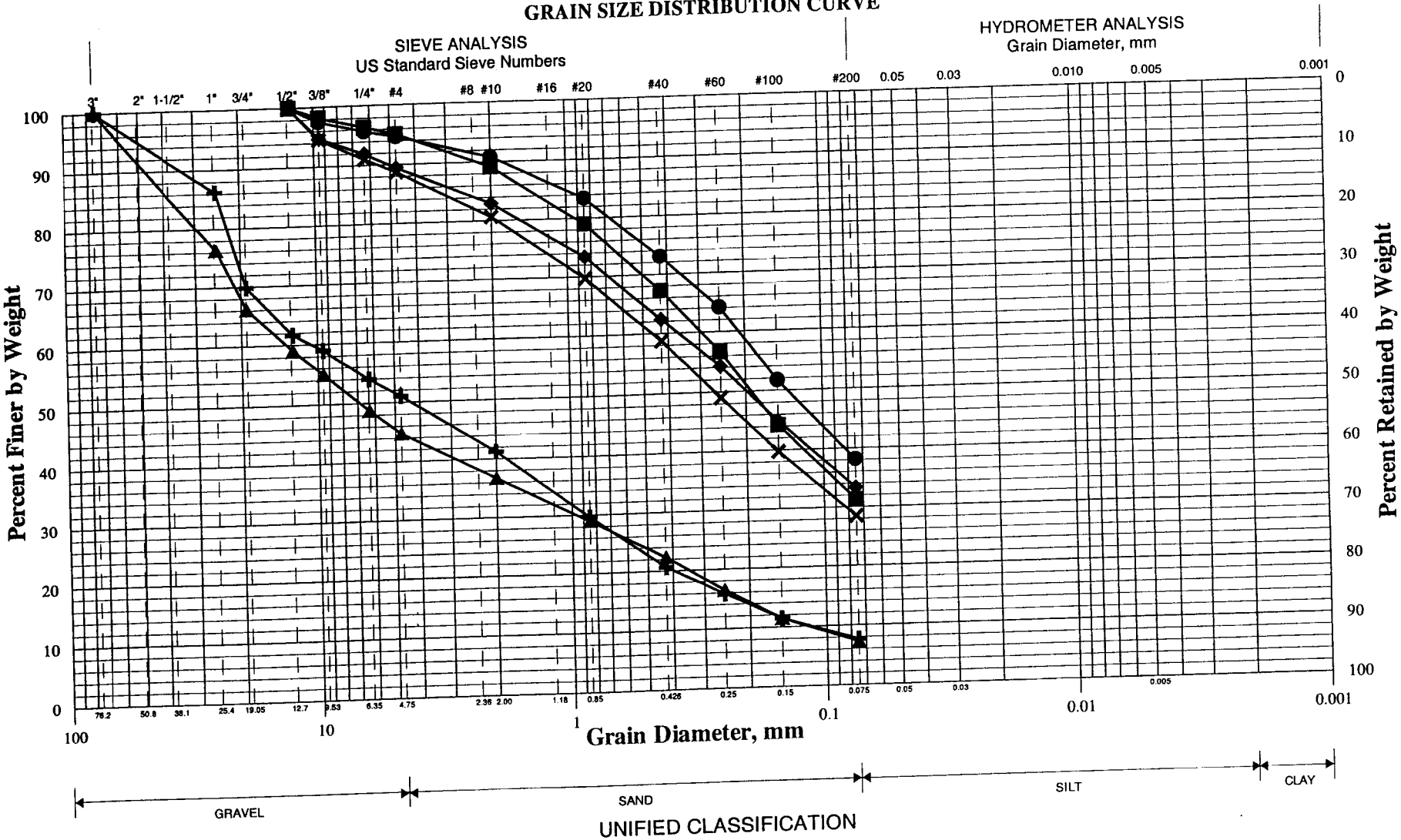
UNIFIED CLASSIFICATION

	Boring No.	Sample No.	Depth (m)	Description	w%	LL	PL	PI
+	GZ4-03	S-1	0.18-0.79	SAND, some gravel, trace silt.	2.9			
◆	GZ4-03	S-3	1.52-2.13	SAND, some gravel, little silt.	9.7			
■	GZ4-03	S-4	2.13-2.6	SAND, some gravel, little silt.	9.1			
●	GZ7-03	S-1	0.21-0.61	Gravelly SAND, trace silt.	2.3			
▲	GZ7-03	S-3	1.52-2.13	Gravelly SAND, little silt.	10.6			
×	GZ7-03	S-4	2.13-2.5	Gravelly SAND, little silt.	9.9			

PIN: 10014.00
Town: Poland
Reported by: T. White
Date: 8/18/03

SHEET NO. 1

State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE

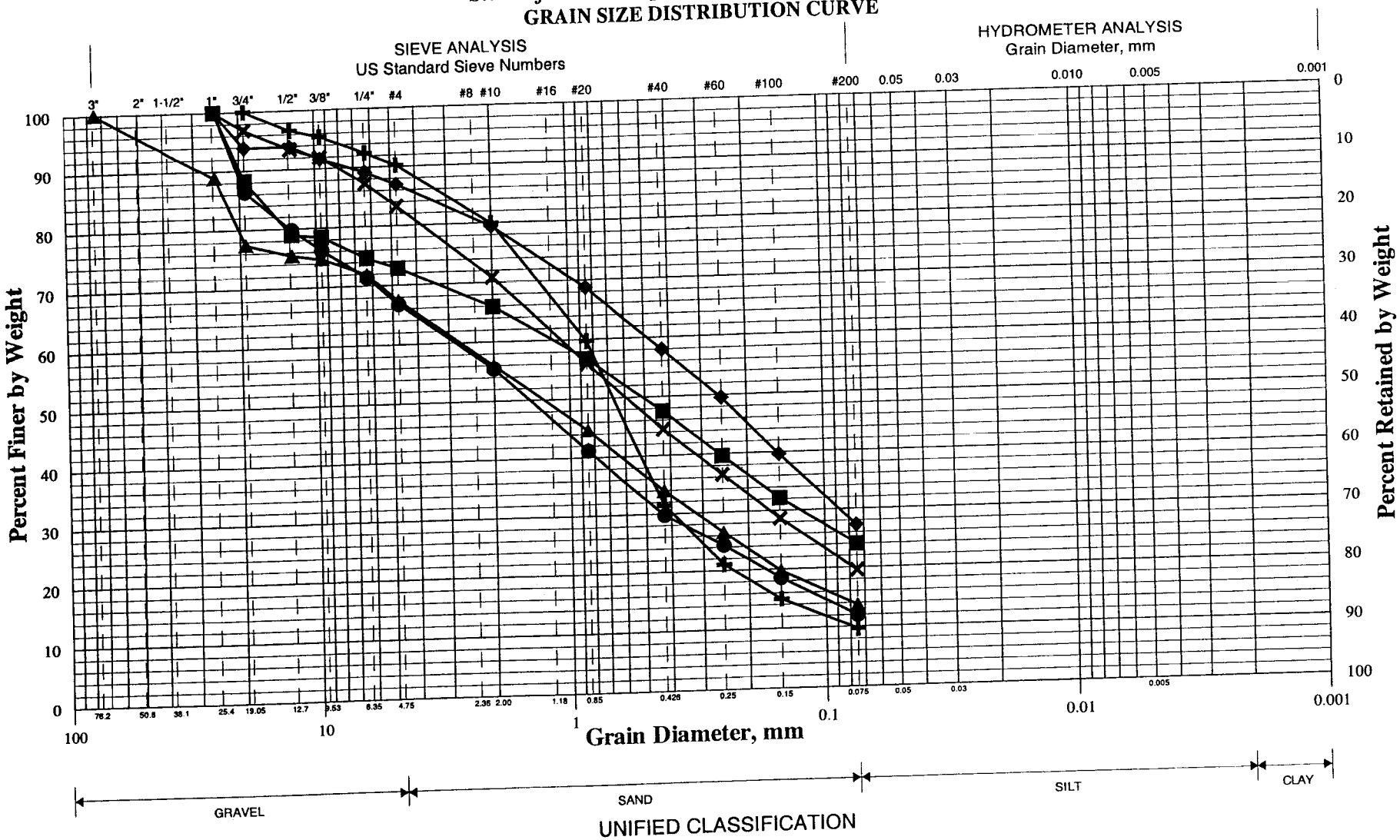


	Boring No.	Sample No.	Depth (m)	Description	w%	LL	PL	PI
+	GZ11-03	S-1	0.18-0.37	Sandy GRAVEL, trace silt.	2.3			
◆	GZ11-03	S-2A	0.91-1.07	SAND, some silt, trace gravel.	20.3			
■	GZ11-03	S-2B	1.22-1.52	SAND, some silt, trace gravel.	16.1			
●	GZ11-03	S-3	1.52-2.13	Silty SAND, trace gravel.	11.3			
▲	GZ13-03	S-1	0.15-0.30	Sandy GRAVEL, trace silt.	1.1			
×	GZ13-03	S-2	0.91-1.52	SAND, some silt, little gravel.	10.2			

PIN: 10014.00
Town: Poland
Reported by: T. White
Date: 8/18/03

SHEET NO. 2

State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE

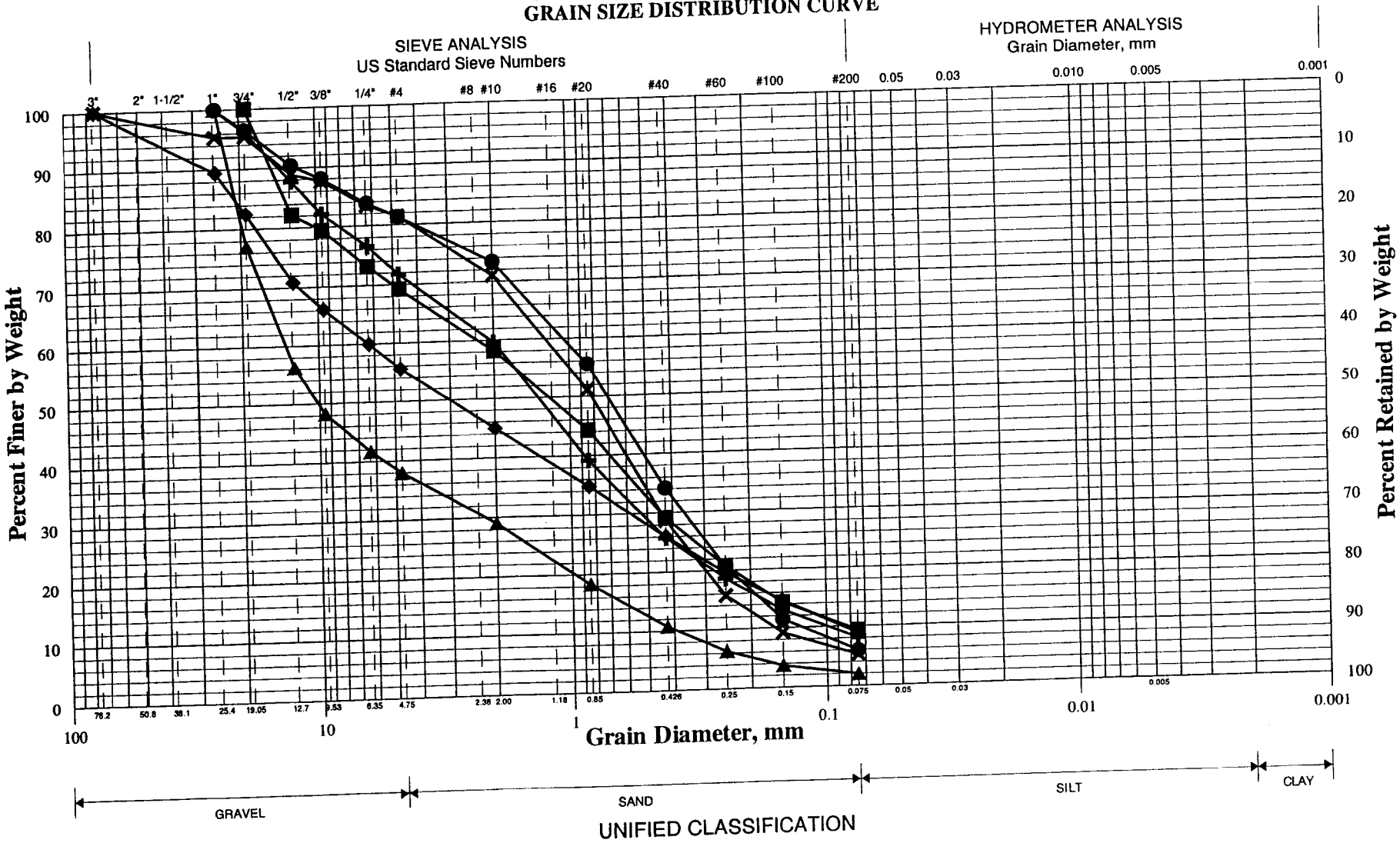


	Boring No.	Sample No.	Depth (m)	Description	w%	LL	PL	PI
✚	GZ20-03	S-1	0.15-0.76	SAND, trace gravel, trace silt.	3.7			
◆	GZ20-03	S-3	1.52-1.62	SAND, some silt, little gravel.	9.3			
■	GZ20-03	S-4	2.44-2.62	SAND, some gravel, some silt.	5.8			
●	GZ24-03	S-1	0.12-0.73	SAND, some gravel, little silt.	3.2			
▲	GZ24-03	S-2	0.91-1.52	SAND, some gravel, little silt.	3.2			
✕	GZ24-03	S-3	1.52-2.13	SAND, little silt, little gravel.	5.3			

PIN: 10014.00
Town: Poland
Reported by: T. White
Date: 8/18/03

SHEET NO. 3

State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE

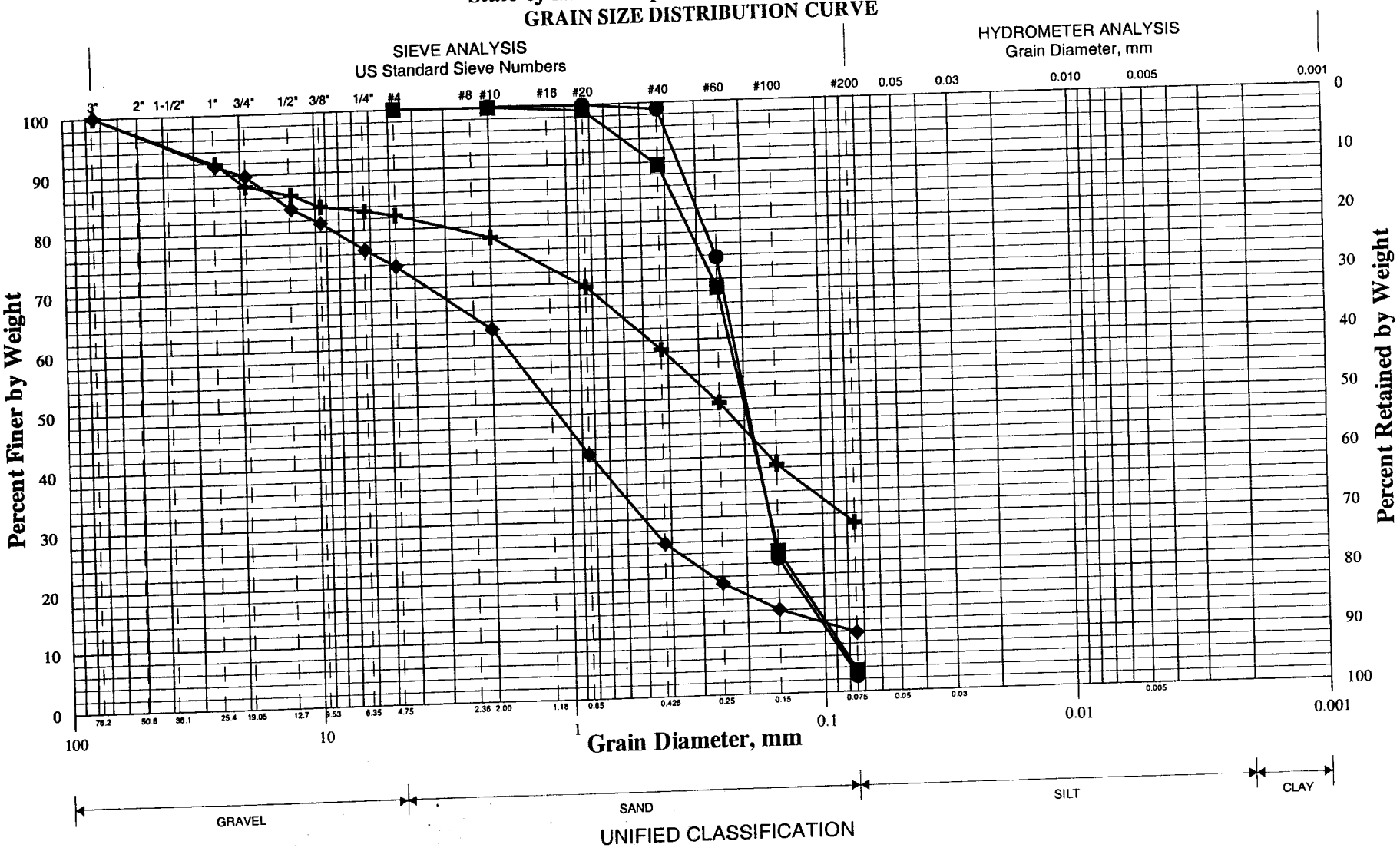


	Boring No.	Sample No.	Depth (m)	Description	w%	LL	PL	PI
+	GZ29-03	S-1	0.30-0.76	SAND, some gravel, trace silt.	1.9			
◆	GZ29-03	S-2	0.91-1.52	Gravelly SAND, trace silt.	1.5			
■	GZ29-03	S-3	1.52-2.13	SAND, some gravel, trace silt.	5.6			
●	GZ31-03	S-1	0.06-0.67	SAND, little gravel, trace silt.	2.9			
▲	GZ31-03	S-2	0.91-1.52	Sandy GRAVEL, trace silt.	1.3			
×	GZ31-03	S-3	1.83-2.44	SAND, little gravel, trace silt.	3.3			

PIN: 10014.00
Town: Poland
Reported by: T. White
Date: 8/18/03

SHEET NO. 4

State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE

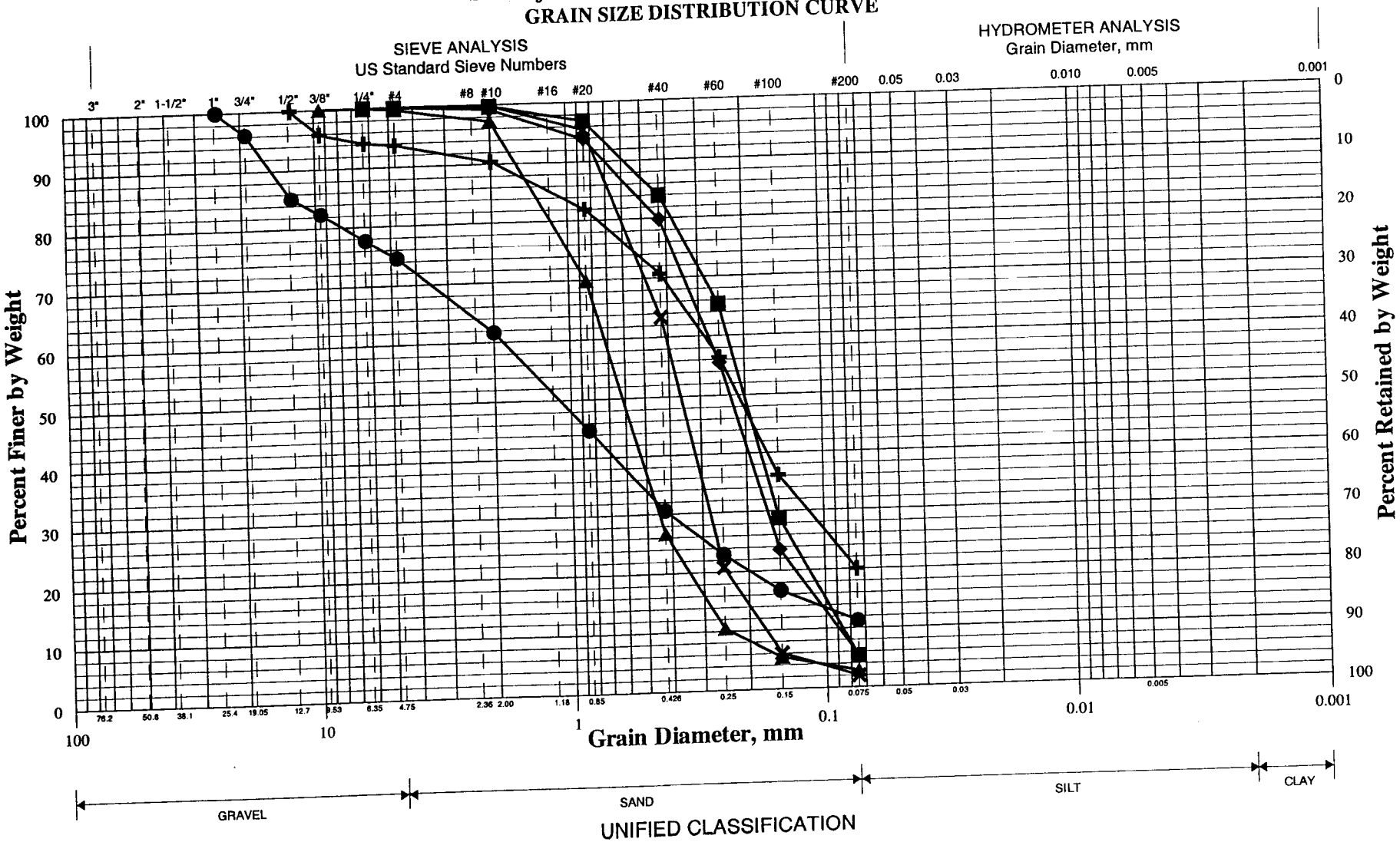


	Boring No.	Sample No.	Depth (m)	Description	w%	LL	PL	PI
+	GZ31-03	S-4	2.13-2.74	SAND, some silt, little gravel.	8.3			
◆	GZ35-03	S-1	0.24-0.85	SAND, some gravel, trace silt.	3.8			
■	GZ35-03	S-3	1.52-2.13	SAND, trace silt.	6.4			
●	GZ35-03	S-5	2.74-3.35	SAND, trace silt.	9.1			
▲	---							
×								

PIN: 10014.00
Town: Poland
Reported by: T. White
Date: 8/18/03

SHEET NO. 5

State of Maine Department of Transportation
GRAIN SIZE DISTRIBUTION CURVE



	Boring No.	Sample No.	Depth (m)	Description	w%	LL	PL	PI
+	GZ37-03	S-1	0.09-0.70	SAND, little silt, trace gravel.	6.9			
◆	GZ37-03	S-3	1.52-2.13	SAND, trace silt, trace gravel.	4.4			
■	GZ37-03	S-5	2.74-3.35	SAND, trace silt, trace gravel.	6.1			
●	GZ40-03	S-1	0.18-0.79	SAND, some gravel, little silt.	3.4			
▲	GZ40-03	S-3	1.52-2.13	SAND, trace silt, trace gravel.	4.1			
×	GZ40-03	S-5	2.74-3.35	SAND, trace silt.	6.0			

PIN: 10014.00
Town: Poland
Reported by: T. White
Date: 8/18/03

SHEET NO. 6

GZA GeoEnvironmental,

TABLE 4
State of Maine - Department of Transportation
Laboratory Testing Summary Sheet

Rt. 26 Reconstruction

Town(s): Poland

MDOT Project Number: 10014.00

GZA Project Number: 09.0025440.01

Boring & Sample Identification Number	Station (Meter)	Offset (Meter)	Depth (Meter)	Reference Number	G.S.D.C. Sheet	W.C.	L.L.	P.I.	Classification		
									Unified	AASHTO	Frost
GZ-B8-04/S1	25+100	1.2 Lt	0.3-0.48		Sheet 1	2.9			SW-SM	A-1-b	0
GZ-B9-04/S1A	25+260	1.8 Lt	0.46-0.56		Sheet 1	12.6			SM	A-1-b	I
GZ-B9-04/S1B	25+260	1.8 Lt	0.56-1.07		Sheet 1	4.1			GP	A-1-a	0
GZ-B10-04/S1A	25+370	1.8 Lt	0.15-0.29		Sheet 2	3.9			GW	A-1-a	0
GZ-B10-04/S1B	25+370	1.8 Lt	0.29-0.76		Sheet 2	2.9			SW-SM	A-1-b	0
GZ-B11-04/S1A	25-530	1.8 Lt	0.30-0.45		Sheet 2	3.2			SM	A-1-b	I
GZ-B11-04/S1B	25-530	1.8 Lt	0.45-0.91		Sheet 3	4.7			SW-SM	A-1-b	0
GZ-B12-04/S1A	26+570	2.7 Rt	0.15-0.30		Sheet 3	1.6			GP	A-1-a	0
GZ-B12-04/S1B	26+570	2.7 Rt	0.30-0.76		Sheet 3	2.9			SW-SM	A-1-b	0
GZ-TP1-04/S1	21+820	2 Rt	0.3-1.3		Sheet 4	8.7			GM	A-1-a	0
GZ-TP2-04/S1	22+600	2 Rt	0.2-1.7		Sheet 4	9.0			GP-GM	A-1-a	0
GZ-TP3-04/S1	22+740	2 Rt	0.84-1.52		Sheet 4	8.3			GP-GM	A-1-a	0

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 MDOT and Corps of Engineers Classification Systems.

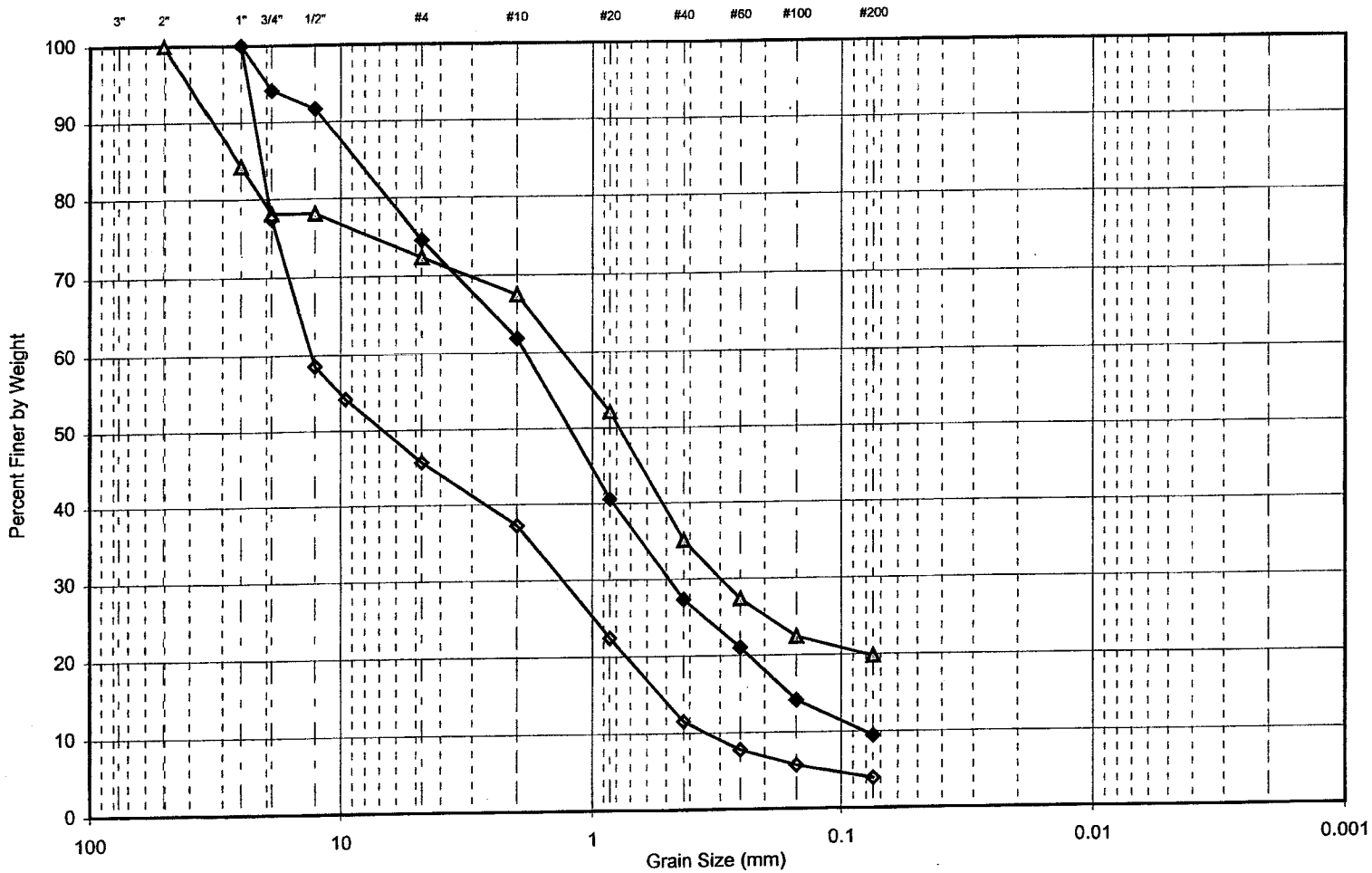
GSDC = Grain Size Distribution Curve as determined by AASHTO T 88-93 (1996) and/or ASTM D 422-63 (Reapproved 1998)

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

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

U.S. STANDARD SIEVE AND HYDROMETER



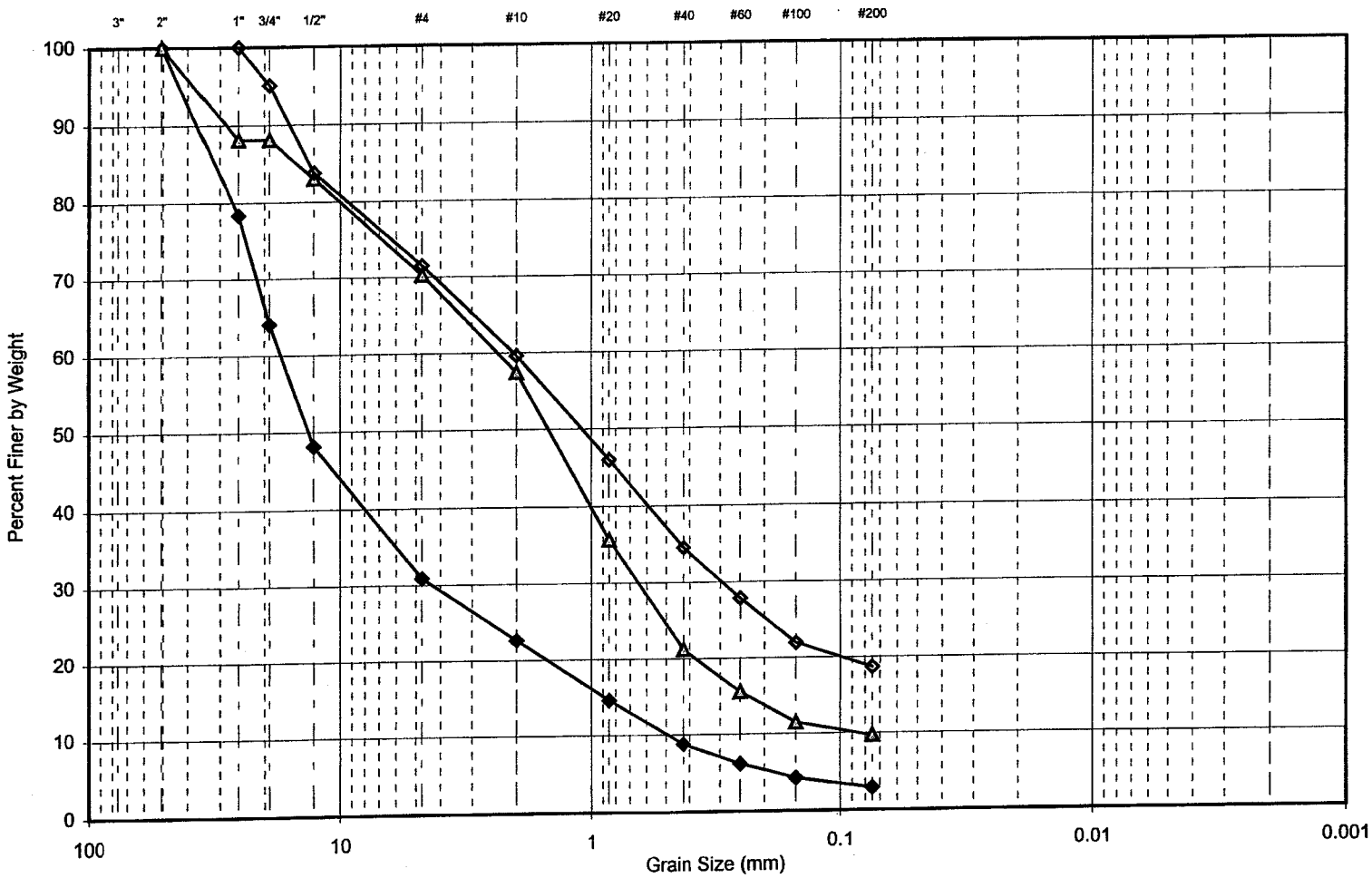
GRAVEL		SAND			SILT	CLAY
Coarse	Fine	Coarse	Medium	Fine		

	Borehole	Sample	Depth (m)	Description	Atterberg Limits/ Moisture Content
◆	GZ-B8-04	S1	0.3-0.48	Brown Well-graded SAND with Silt and Gravel (SW-SM)	WC=2.9%
△	GZ-B9-04	S1A	0.46-0.56	Brown Silty SAND with Gravel (SM)	WC=12.6%
◇	GZ-B9-04	S1B	0.56-1.07	Brown Poorly-graded GRAVEL with Sand (GP)	WC=4.1%

Rte 26 Reconstruction - Poland, ME
GZA file # 25440.01

GZA GeoEnvironmental, Inc

U.S. STANDARD SIEVE AND HYDROMETER



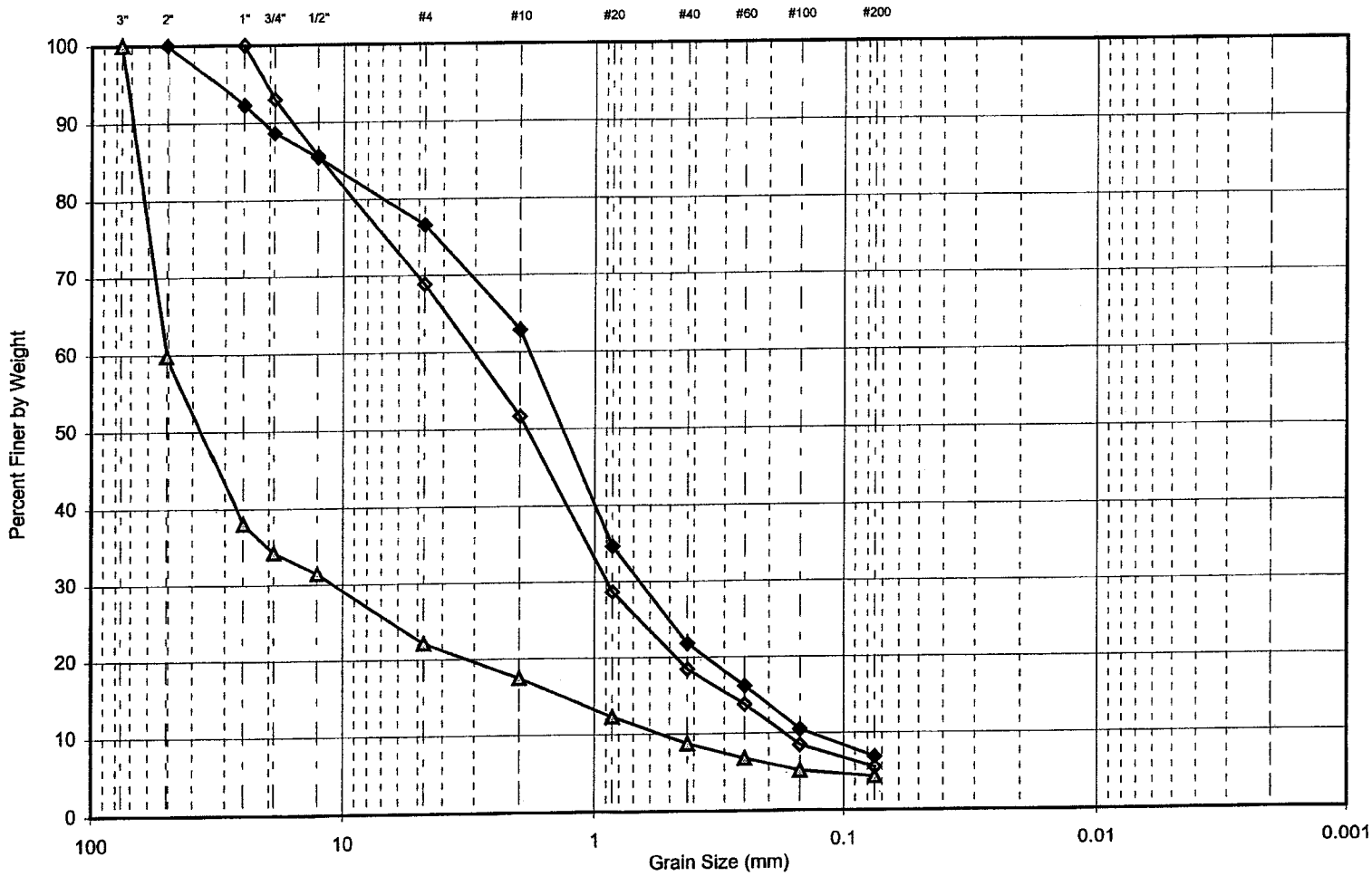
GRAVEL		SAND			SILT	CLAY
Coarse	Fine	Coarse	Medium	Fine		

	Borehole	Sample	Depth (m)	Description	Atterberg Limits/ Moisture Content
◆	GZ-B10-04	S1A	0.15-0.29	Brown Well-graded GRAVEL with Sand (GW)	WC=3.9.%
△	GZ-B10-04	S1B	0.29-0.76	Brown Poorly-graded SAND with Silt and Gravel (SW-SM)	WC=2.9%
◇	GZ-B11-04	S1A	0.30-0.45	Brown Silty SAND with Gravel (SM)	WC=3.2%

Rte 26 Reconstruction - Poland, ME
GZA File # 25440.01

GZA GeoEnvironmental, Inc

U.S. STANDARD SIEVE AND HYDROMETER



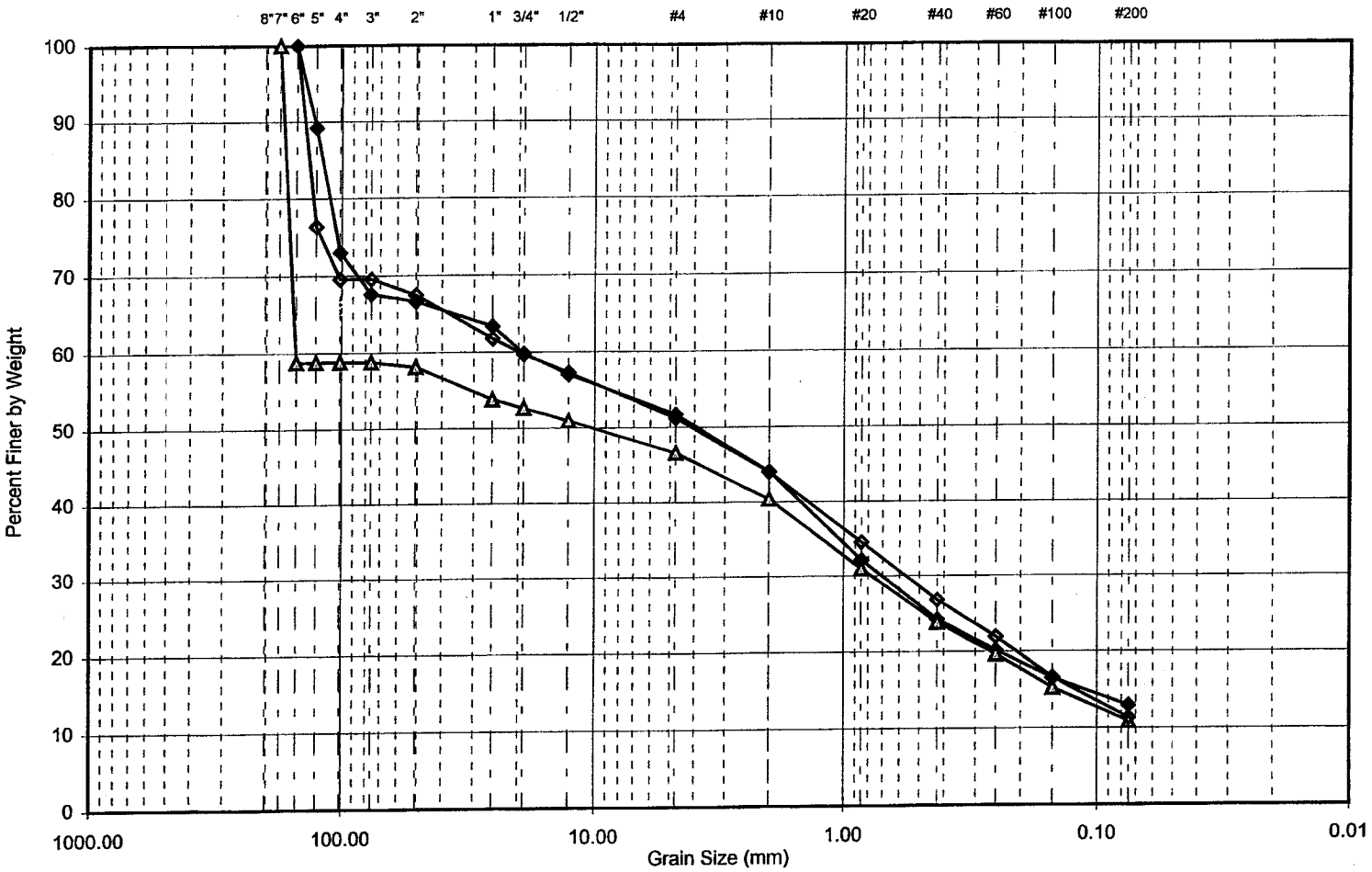
GRAVEL		SAND			SILT	CLAY
Coarse	Fine	Coarse	Medium	Fine		

	Borehole	Sample	Depth (m)	Description	Atterberg Limits/ Moisture Content
◆	GZ-B11-04	S1B	0.45-0.91	Brown Well-graded SAND with Silt and Gravel (SW-SM)	WC=4.7%
△	GZ-B12-04	S1A	0.15-0.30	Brown Poorly-graded GRAVEL with Sand (GP)	WC=1.6%
◇	GZ-B12-04	S1B	0.30-0.76	Brown Well-graded SAND with Silt and Gravel (SW-SM)	WC=2.9%

Rte 26 Reconstruction - Poland, ME
GZA File # 25440.01

GZA GeoEnvironmental, Inc

U.S. STANDARD SIEVE AND HYDROMETER



	Borehole	Sample	Depth (m)	Description	Atterberg Limits/ Moisture Content
◆	GZ-TP1-04	S1	0.3-1.3	Brown Silty GRAVEL with Sand (GM)	WC=8.7%
△	GZ-TP2-04	S1	0.2-1.7	Brown Poorly-graded GRAVEL with Silt and Sand (GP-GM)	WC=9.0%
◇	GZ-TP3-04	S1	0.84-1.52	Brown Poorly-graded GRAVEL with Silt and Sand (GP-GM)	WC=8.3%

Rte 26 Reconstruction - Poland, ME
GZA File # 25440.01

GZA GeoEnvironmental, Inc