

**GEOTECHNICAL SITE CHARACTERIZATION  
PORT OF ROCHESTER HARBOR IMPROVEMENT  
AND HARBOR FERRY TERMINAL  
ROCHESTER, NEW YORK**

**Draft**

**by**

**Haley & Aldrich of New York  
Rochester, New York**

**for**

**LaBella Associates, P.C.  
Rochester, New York**

**File No. 70819-000  
September 2000**

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(Draft 5 September 2000)  
— September 2000  
File No. 70819-000

LaBella Associates, P.C.  
300 State Street  
Rochester, New York 14614

Attention: Sergio Esteban, P.E.

Subject: Port of Rochester Harbor Improvement and Harbor Ferry Terminal  
Rochester, New York

Ladies and Gentlemen:

We are pleased to submit herewith our report entitled, *Geotechnical Site Characterization, Port of Rochester Harbor Improvement and Harbor Ferry Terminal, Rochester, New York*. The work was undertaken at your request, as outlined in our proposal dated 4 June 1999 and authorized under our Subconsultant Agreement, dated 16 December 1999.

This report presents a compilation of the results of historic and new subsurface explorations, field testing, laboratory testing, groundwater observations, and site geotechnical engineering interpretations pertinent to the planning and preliminary design of the proposed ferry terminal and related infrastructure.

If additional information regarding the data or conclusions presented in this report is required, please do not hesitate to contact us. It has been a pleasure working with you and the other project team members on this exciting project, and we look forward to our continued association during subsequent phases of the project.

Sincerely yours,

HALEY & ALDRICH OF NEW YORK

Maureen S. Valentine, P.E.  
Senior Engineer

Stanley E. Walker, P.E.  
Vice President

Enclosures

c: Bourne Consulting Engineers, Attn: Ronald Bourne, P.E.

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## EXECUTIVE SUMMARY

This report presents a summary of research, exploration, and characterization of the subsurface conditions at the site of the proposed Port of Rochester Harbor Improvement and Harbor Ferry Terminal, City of Rochester Project ID # 99021, conducted by Haley & Aldrich of New York. It has been prepared in accordance with our Subconsultant Agreement with LaBella Associates, P.C. dated 16 December 1999.

The purpose of this study was to characterize the site's subsurface conditions in sufficient detail to support the planning and preliminary design of the proposed site improvements.

This report contains reproductions of historic (Sanborn) maps (1892 to 1967) depicting the various facilities that have occupied the site and records of several earlier subsurface explorations made on or near the site. It also contains detailed records of the 25 test borings, 27 test pits, and 3 groundwater observation wells installed as part of the current study of the site by Haley & Aldrich, LaBella Associates, and Bourne Consulting Engineers.

The project area has undergone significant geologic and man-made alteration. An approximately 85-foot-deep, steep-sided gorge in the bedrock formed by post-glacial erosion, encroaches beneath the former transit sheds (the North and South Warehouses) along the eastern edge of the site. From the gorge's edge the bedrock surface rises more gently from about Elev. 200 (City Datum) to Elev. 215 to 235 near the western edge and southern end of the site, ranging from about 60 to 20 feet below the present ground surface. The much of the site is underlain by man-placed fill consisting of uncontrolled deposits of soil and iron-manufacturing slag and demolition rubble ranging from as much as 20 feet to as little as 1 foot in thickness. The fill varies quite randomly from loose to dense. In most areas loose alluvial (river-deposited) fine sand and silt underlie the fills which extend to depths of a few to more than 100 feet. Groundwater levels appear to be about 2 to 5 feet above river level.

These conditions, while providing generally fair support for at-grade roadways and parking areas, provide variably fair to poor support for buildings and additional earthfills. The loose fills and alluvial deposits could yield detrimental differential settlements under thick regrading fills and moderately to heavily loaded structures.

Careful consideration should be given to the existing data presented in this report and the need for additional exploration, testing, and evaluation of the subsurface conditions in the planning and design of any proposed site and structural improvements.

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## I. INTRODUCTION

### 1.01 Purpose

This geotechnical report has been prepared to assist planning and preliminary engineering efforts for the proposed Port of Rochester Harbor Improvements and Harbor Ferry Terminal, in Rochester, New York.

Haley & Aldrich of New York (H&A) was retained by LaBella Associates, P.C. and the City of Rochester to collect and assimilate existing and new geotechnical and geologic information pertinent to the project to provide a general characterization of subsurface conditions at the project location. This document represents a collection of data, some developed by H&A in the past and some by others, that establish the general regional conditions. Site-specific subsurface explorations and field and laboratory testing were performed as part of the site characterization study.

This report is preliminary in nature, given the state of development for the project. The scope of the investigations has been to collect, assemble and interpret site and subsurface information in order to develop an understanding of the regional subsurface conditions, sufficient to complete initial planning efforts and preliminary engineering design. Additional detailed design phase geotechnical investigations will likely be required to more fully evaluate the significance of the subsurface conditions to the design and long-term performance of the project elements.

### 1.02 Project Description

The proposed Port of Rochester Harbor Improvements site is located as shown on Figure 1 - Project Locus, and is bounded to the east by the Genesee River, to the north by Beach Avenue, to the west by Lake Avenue and to the south by the Stutson Street Bridge. Currently, the site is occupied by parking facilities and two existing warehouses, a boat ramp, an excursion ferry dock, several privately operated marinas and commercial establishments. A CSX railroad crosses the central portion of the project area with a branch to the south along the western bank of the river. Approximate locations of existing structures are shown on Figure 2 - Exploration Location Plan.

This project consists of the preliminary design of proposed transportation access, building facilities and waterside improvements associated with the Port of Rochester Harbor Improvement. The proposed improvements are intended to expand and enhance public access to the waterfront as well as provide the necessary infrastructure to support public recreation, transportation and economic development opportunities. According the contract documents, the project scope includes, but it not limited to the following:

➤ Access/Transportation

- Reconstruction of existing street pavement and sidewalks;
- Construction of new streets and sidewalks;
- Improvement of existing and construction of new parking facilities;
- Riverfront pedestrian promenade;
- Streetscape and site landscape features;
- Street and site lighting;
- Signage and graphics;
- Public and private utility improvements.

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- Building Facilities
  - New building for a ferry terminal and border crossing operation;
  - Kiosks and marina support structures;
  - Rehabilitation of the north warehouse;
  - Signage and graphics;
  - Public and private utility services.
- Waterside Improvements
  - Transient marina and related facilities;
  - Ferry boat and excursion vessel berthing facilities;
  - River wall rehabilitation and/or reconstruction;
  - Navigation improvements;
  - Marina extension along River Street to Petten Street;
  - Public and private utility services and fueling facilities.

At the time of this writing, the proposed improvements are in the conceptual stage. Several alternate configurations are being considered for design.

### 1.03 Elevation datum

Elevations used herein are referenced to the City of Rochester Datum. Historical elevations are shown in the Appendices as referenced by the original project, but have been adjusted to the City of Rochester Datum within the tables and text.



## II. FIELD AND LABORATORY INVESTIGATIONS

### 2.01 Background Information

Several earlier investigations in the general area of the project have been conducted by H&A and others, as listed below. The locations of the explorations associated with these earlier investigations are shown on Figure 2, Exploration Location Plan. A summary of the conditions encountered by these explorations is presented in Table II - Conditions Encountered in Earlier Subsurface Investigations:

- Stutson Street Water Main - Genesee River Crossing: Rochester Drilling Company between 13 and 21 September 1989 performed explorations, under the observation of H&A of New York. The work was performed for Joseph C. Lu, P.E for the design of a force main crossing the Genesee River.
- Stutson Street Bridge: Explorations were performed between 2 November 1994 and 11 December 1997, under the observation of NYSDOT personnel, for the design of a replacement for the Stutson Street Bridge.
- Army Corps of Engineers Dredge Probes: the Army Corps of Engineers performed Probe explorations between February 1959 and April 1961 for a Rochester Harbor Deepening project.
- Wave Surge Protection Project: the Army Corps of Engineers performed drive sample explorations in December 1960 for a Wave Surge Protection Project in the Rochester Harbor.
- Rehabilitation of East Pier: Explorations were performed by Empire Soils Investigation Inc. between April 1973 and August 1985 under the observation of Army Corps of Engineers personnel for a design analysis of the East Pier Repair in the Rochester Harbor.
- Lake Avenue Improvements: Explorations were performed by Vanderhorst between 16 and 17 March 1999 for Bergmann Associates, P.C. and the City of Rochester for the planning and preliminary engineering of the Lake Avenue Improvement Project.

Copies of the logs of the explorations made during these investigations are presented in Appendix C.

### 2.02 Recent Investigations

Three sets of objective-specific explorations were made as a part of this site characterization study. A summary of the conditions encountered in each of the explorations is presented in Table I - Conditions Encountered in Recent (2000) Subsurface Investigations.

In mid-January, 2000, four backhoe-dug test pits were made under the direction of Bourne Consulting Engineers, to explore the configuration and condition of the existing quay wall and its tieback anchorage system. These test pits were observed and logged by Haley & Aldrich. The locations of these test pits, designated BCE-TP # 1 through #4, are shown on Figure 2. Field logs of these explorations are presented in Appendix A-1.

In late-February, 2000, twenty-two backhoe-dug test pits were made under the direction of LaBella Associates, to explore the physical and chemical character of the near-surface subgrade materials and the groundwater levels at the site. LaBella Associates observed, logged, and sampled the test pits. A Haley & Aldrich representative observed and viewed samples from

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several of these test pits. The locations of these test pits, designated LBA-TP #1 through #22, as surveyed by LaBella Associates, are shown on Figure 2. The logs of these test pits are presented in Appendix A-2.

Between 23 May and 13 June 2000, twenty-four test borings, HA-101 through HA-107, and HA-109 through HA-125, were drilled by Geologic Enterprises, Inc., of Cortland, New York, at locations selected by Haley & Aldrich to aid in characterizing the soil and bedrock conditions at the site. Tests boring locations and ground surface elevations, as shown on Figure 2, were determined by LaBella Associates.

The borings were drilled using hollow-stem augers to depths below ground surface ranging from 10 to 116 ft. Soil samples were recovered continuously within the fill and at 5-ft intervals thereafter by driving a 1 $\frac{3}{8}$ -in. I.D. split-spoon sampler with a 140-lb. hammer consistent with ASTM Method D1586. The "N" value was determined at each sample interval by counting the number of blows required to drive the split-spoon sampler a distance of 24 in. below the bottom of the hollow stem auger and into the soil under the impact of the hammer free-falling 30 inches. The "N" value is taken as the number of blows required to advance the sampler from 6 to 18 inches within the 24-inch sample range. A Haley & Aldrich geologist monitored the drilling and logged the recovered soil samples.

Bedrock was cored in five of the borings, HA-102, -107, -111, -121, and -122, using an NX-size (1-7/8 in. I.D.) corebarrel. Bedrock was cored to depths ranging from 2.0 to 10.0 ft.

Test Boring and Core Boring Reports prepared by Haley & Aldrich are presented in Appendix A-3. It should be noted that boring reports and related information depict subsurface conditions and water levels at the specific locations at the time of drilling. Soil conditions at other locations may differ from conditions encountered in the explorations. Groundwater conditions at any of the exploration locations may also change with time.

### **2.03 Groundwater Observation Wells**

Groundwater observation wells were installed in completed boreholes HA-111 (MW-1, HA-114a (MW-3), and HA-117 (MW-2). The wells consisted of 2-inch-diameter, perforated PVC screen placed at or below groundwater level, and a solid PVC riser extending to approximately 2 ft. above ground surface. The annulus between the PVC pipe and the borehole was backfilled with filter sand, and bentonite seals were placed above the PVC screen.

Observation Well Installation Reports prepared by Haley & Aldrich for each of these wells are included Appendix A-4.

### **2.04 Laboratory Soil Testing**

Ray M. Teeter, P.E. of Fairport, New York, performed laboratory tests on six soil samples from the test borings. The soil testing consisted of sieve analyses and hydrometer tests to quantify the grain-size distribution of the soils, and Atterberg limits and moisture content determinations to assess the plasticity of the fine-grained soils. The results of these tests have been incorporated into the soil descriptions shown on the Test Boring Reports, and are presented in Appendix B, Table B-1. Soil testing data from earlier investigations are presented in Table B-2

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### III. SITE AND SUBSURFACE CONDITIONS

#### 3.01 Site conditions

The project site is located on the western side of the Genesee River, at its discharge to Lake Ontario. The project site has been part of extensive planning over the years, and includes the area bounded by Beach Avenue to the north, Lake Avenue to the west, and the Genesee River to the east. The south end of the project extends beyond the Stutson Street Bridge.

The area north of the CSX railroad is currently occupied by parking facilities for Charlotte Beach, a boat ramp and two existing warehouse structures along the river walk. The foundation from a third warehouse structure remains visible. A group of municipal buildings occupies the southwest corner, near Lake Avenue. This portion of the project slopes downward to the northeast from Lake Avenue toward the Genesee River. The ground surface elevations range from approximately El. 290 near the Lake Avenue crossing of the railroad, to El. 250 in the northeast corner, beyond the existing warehouse structures. Historically, this portion of the project area has housed an iron works which changed hands several times and became a steel company, associated rail lines, a rail loop turnaround, a ball park and yacht club, a steam boat wharf, later boat ramps, three warehouses, and various configurations of roads and parking facilities.

The project area south of the CSX railroad, between River Street and the river, is currently occupied by residential structures, boat docks, boat storage yards, and a small water treatment facility. This portion of the site is relatively level, with elevation ranging from El. 252 to 254 between River Street and the Genesee River. The ground surface slopes up relatively steeply at the railroad embankment, to an elevation of El. 260. West of River Road, the ground surface also slopes up relatively steeply to a crest at approximately El. 283 at the lighthouse. Historically, this portion of the project has housed a planing mill, which later became a veneer works and boat manufacturing facility, various boat-docking facilities and associated structures.

Historic (Sanborn) maps depicting on-site structures and facilities in 1892, 1912, 1924, 1950, And 1967 superimposed on the current site mapping are presented in Appendix D.

#### 3.02 Subsurface soil and rock conditions

##### A. Geologic History

Rochester lies within the relatively low and flat-lying physiographic province known as the Erie-Ontario Lowland, which begins at Lake Ontario and extends southward to the Appalachian Plateau. The Genesee River runs north-south through the Erie-Ontario Lowland.

Bedrock underlying the northern portion of Rochester is part of the Queenston Formation, which is exposed in outcrops of the Genesee River gorge from Lake Ontario to the Driving Park Avenue Bridge at the Lower Falls. The Queenston Formation is an approximately 1000-foot thick sequence of alternating, nearly level shale and sandstone beds of Ordovician age, formed in deep seawater.

As a result of land movements associated with the building of the Appalachian Mountains to the south and east, the land surface of western New York was raised above the inland seas.



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Subsequently, the exposed rocks were tilted southward and a southerly drainage system developed along the shallow dipping beds.

A long period (about 350 million years) of erosion ensued until glaciation occurred during the Pleistocene Epoch. It is estimated that over 2000 feet of rock was stripped from the region during this time.

Major streams, which formed during this erosional period, were the ancient Ontarian River and the Genesee River, which flowed into the Ontarian River at what is now Irondequoit Bay.

Approximately 3.0 to 1.5 million years ago, glacial scouring deepened the Ontarian River Valley, which, upon retreat of the glaciers, became present-day Lake Ontario. Glacial scouring also deepened the pre-glacial Genesee River Valley. As the ice retreated during the past 20,000 years, differential post-glacial uplift resulted in flooding of the pre-glacial Genesee River Valley, forming present day Irondequoit Bay. The Genesee River then established its present course by eroding a new deep channel in the exposed bedrock some 4 to 5 miles west of the pre-glacial Genesee Valley.

Fairchild (1918) concluded in his paper, "The Rochester Canyon and the Genesee River Base-Levels", that the present river valley was formed by post-glacial erosion, the depth of which was regulated by the varying water levels in what is now Lake Ontario. His studies indicated the "canyon" bottom at the lakeshore to be about Elev. 100, about 145 feet below the present lake level.

#### **B. On-site Conditions**

Site stratigraphy was evaluated on the basis of the findings of the test borings, test pits and readily available public information regarding the local geology and hydrology. The borings encountered three principal soil units at the site; fill, alluvial sediments and glacial till. Generalized descriptions of the soil units and encountered thicknesses are presented below.

FILL – Man-placed fill materials, ranging from silty sand and gravel to varying combinations of iron-manufacturing waste slag, demolition rubble (bricks, concrete, and railroad ties), remnant concrete slabs and foundations, and some organic matter, in thicknesses ranging from 1 to 20 feet, were encountered in essentially all of the on-site explorations. Standard Penetration Test values (blows to advance the sampler 1 foot) varied erratically from 4 to refusal on impenetrable objects, reflecting the varying and uncontrolled nature of the fill deposits. The estimated bottom-of-fill surface, as inferred by Haley & Aldrich, is depicted on Figure 3 – Bottom-of-Fill Contour Map.

ALLUVIUM – Alluvium (stream-deposited soil) was encountered beneath the topsoil or fill in most all of the on-site borings, extending to depths of a few feet toward the western side of the site to as much as 114 feet below the ground surface in the deep borings (HA- 101 and HA-123) at the river's edge. The alluvial soils consist of silty medium to fine sand with varying amounts of gravel with occasional zones of plastic, slightly organic clayey silt with some fine sand. In some test pits remnants of former surface vegetation were observed directly beneath overlying fill material. The samples ranged from dry to wet, generally increasing in moisture content with depth. Results of grain-size analyses and Atterberg limit and moisture content determinations on samples of the alluvial deposits are presented in Appendix B. Standard Penetration Test values ranged from 0 to more than 50 blows per foot and averaged from 3 to more than 20 in

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individual borings, indicating the generally loose to very loose condition of these river-deposited sediments.

GLACIO-LACUSTRINE DEPOSITS – Deposits of late-glacial lakebed sediments consisting of stratified fine sands with occasional clay and coarser sand layers were encountered in thicknesses of up to 10 feet overlying glacial till in several explorations in the higher ground toward Lake Avenue.

GLACIAL TILL - Glacial till was encountered directly below the fill or alluvial or lacustrine sediments and extended to the top of the bedrock in most of the borings. In a few borings, HA-101, -109, -110, and -123, the glacial till was missing and the alluvium extended directly to bedrock. The till materials encountered ranged from soft to hard sandy, silty clay with trace gravel or clayey silt with sand and fine gravel. However, in general the undisturbed till was found to be very compact. The samples ranged from dry to moist. The estimated top-of-till surface, as inferred by Haley & Aldrich, is depicted on Figure 4 – Top-of-Till Contour Map.

A mixture of rock fragments and soil, identified as weathered bedrock, was encountered in a few of the borings. Visual descriptions ranged from “very dense red brown silty fine to coarse SAND, trace clay” to “disintegrated red sandstone”. Borings HA-102, -109, -110, -122, and -123 penetrated weathered bedrock, encountering thicknesses of 1.0 to 5.0 ft.

Bedrock cored in the explorations consisted of relatively flat-lying sedimentary rocks of the Queenston Formation. This unit is described individually below:

SANDSTONE – A relatively massive layer of sandstone of the Queenston formation was encountered beneath the alluvium and glacial till at depths ranging from 27 to 114 ft. below the ground surface. The core samples recovered from the test borings are described as moderately weathered to competent red, fine-grained sandstone with interbedded or mottled gray sandstone. RQD values ranged from 38 to 69 percent, indicating that the quality is pore to fair.

The bedrock surface was encountered at elevations ranging from El. 138 (auger refusal in HA-101) and El. 139 (HA-123) to El. 232 (in HA-110).

However, earlier borings (DN-B-51 and -B-52) made in the river south of the present Stutson Street Bridge’s east abutment, did not encounter bedrock or refusal before reaching elevations at or below 118. These depths are consistent with Fairchild’s (1918) findings and together with the present exploration findings support the inference that there is a deep curvilinear trough in the bedrock passing beneath and to the east of the project site on its course to the deeper water off shore.

The estimated top-of-bedrock surface, including a speculated configuration of this deep “canyon”, as inferred by Haley & Aldrich, is depicted on Figure 5 – Top-of-Bedrock Contour Map.

### 3.03 Groundwater Conditions

The depth to water was recorded at completion of the explorations in borings HA 102, 107, 111, and 118 at depths ranging from 3.0 to 18 ft. below the existing ground surface. Water levels were also measured in each of the three piezometers at depths ranging from 3.60 to 10.74 ft.



below the existing ground surface. In general, the water table in late-May to early-June 2000 appears to have been between El. 248 and 251, sloping downward from west to east and being 2 to 5 feet above normal river level.

Corps of Engineers' river-level data reviewed and summarized by Bourne Consulting Engineering (5-10-00) indicates a maximum-recorded water level at El. 250.39. The Flood Insurance Rate Map for Rochester shows the project site as "Zone C" - subject to minimal flooding.

Water levels at the site should be expected to vary with precipitation, season, temperature and construction activity in the area. Therefore, groundwater levels during and following construction may differ from those observed in the test borings.

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#### **IV. GEOTECHNICAL ENGINEERING CONSIDERATIONS**

The site's geologic and use history have produced subsurface conditions which warrant careful consideration in planning its redevelopment. These conditions include markedly varying bedrock surface elevations; deep, loose, and potentially compressible natural soil deposits; remnant foundations of earlier facilities; extensive areas of filled land containing iron-manufacturing slag and other wastes and demolition rubble; and relatively shallow groundwater levels. Detailed subsurface exploration and testing programs will be needed to establish appropriate design criteria and support construction planning for significant site improvements.

##### **4.01 Design Considerations for Site Infrastructure Improvements**

The uncontrolled fills and shallow groundwater that underlie most of the site present variable and potentially settlement-yielding support for streets and parking lots and a possibly corrosive environment for underground utilities. The chemical character and potential corrosivity (to concrete and metals) of the groundwater should be assessed in conjunction with the design of such facilities. The addition of more than 1 or 2 feet of fill to the present grade could cause noticeable, long-term settlements in areas of poorer subgrade conditions. To minimize the impact of post-construction differential settlements, site regrading, preceded by removal of existing topsoil and pavement and thorough proof-rolling of the exposed subgrade with a heavy, smooth-drum, vibratory compactor, should be completed prior to the construction of infrastructure improvements. Subgrade and surface drainage should be carefully developed to assure the long-term performance of trafficked areas. The presence of the loose fills and shallow groundwater should be carefully considered in the planning and execution of all utility trenching and installation.

##### **4.02 Design Considerations for Foundations**

The existing uncontrolled fills present widely varying support for foundations and could yield significant general or differential settlements under moderately to heavily loaded foundations. The buried slag and other waste and affected groundwater could pose threats to the long-term integrity of concrete or steel foundations. Removal and replacement or partial removal and insitu densifications of the existing fill materials and replacement with controlled fill may be appropriate for moderately loaded structures. Heavily loaded or settlement-intolerant structures would most likely require deep foundations (piles or caissons) seated on or in the glacial till or bedrock.

##### **4.03 Design Considerations for Below-grade Walls**

The shallow groundwater and loose fill and alluvial sediments will exert considerable horizontal loadings on temporary and permanent earth-retaining structures. Chemically aggressive groundwater could pose a threat to the long-term integrity of earth-retaining walls, particularly those constructed of steel. Care must be taken to assure sufficient lateral support both at the top and at or below the bottom of the excavation or below-grade floor.

##### **4.04 Design Groundwater Levels**

In view of the levels observed in the recently installed observation wells, the presence of the confining sheet-pile quay wall, and the potential (minimal) for site flooding, design groundwater levels should be taken as the finished ground surface throughout the site.

#### 4.05 Seismic Design Considerations

The site is located within Seismic Zone A of the proposed (1999) Seismic Zoning Map for New York State Seismic Building Code. Zone A has a seismic zone factor,  $Z = 0.09$ , which numerically corresponds to effective peak acceleration in g on rock /stiff soil S1 conditions. In view of the indicated subsurface stratigraphy, all the soil profile beneath and eastward of the westerly line of the existing warehouses should be considered Type  $S_4$ , and that westward of the warehouses should be considered Type  $S_3$ . Seismic design loadings for new structures should be considered in accordance with the latest BOCA Building Code.

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## V. CONCLUDING COMMENTS

This report has been prepared for specific application to the preliminary planning of the Port of Rochester Harbor Improvements and Harbor Ferry Terminal development, in accordance with generally accepted geotechnical engineering practices. It presents a general characterization of the subsurface conditions as Haley & Aldrich has inferred them from the cited data and literature. The actual subsurface conditions between and beyond the points of exploration are expected to vary somewhat from those described and depicted in this report.

The characterizations and geotechnical engineering considerations presented in this report are based, in part, upon the data obtained from the referenced subsurface explorations. The historic construction and uses of the site, together with the geotechnical information presented herein, should be carefully considered in establishing the need for additional exploration, testing, and evaluation to support the design and construction of the anticipated structures and site improvements.

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## REFERENCES

1. Herman L. Fairchild (1918), The Rochester Canyon and the Genesee River Base-Levels, Proceedings of the Rochester Academy of Science, October, 1918.

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TABLE II - CONDITIONS ENCOUNTERED IN EARLIER SURFACE INVESTIGATIONS

INVESTIGATION TITLE	EXPLORATION IDENTIFICATION	NOTHING	EASTING	ELEVATION	FILL		ALLUVIUM		LACUSTRINE		GLACIAL TILL		BEDROCK/HERSAL	ROCK DESCRIPTION
					DEPTH (ft)	TOP ELEV (ft)	DEPTH (ft)	TOP ELEV (ft)	DEPTH (ft)	TOP ELEV (ft)	DEPTH (ft)	TOP ELEV (ft)		
Greenwood Blvd H&A P1017 December-89	B-1	1185750	1407382.1	231.38	-	-	0.00	231.38	5.15	-	-	-	-	-
	B-2	1185776	1408024.1	227.46	-	-	0.00	227.46	5.27	-	-	-	-	-
	B-3	1185755	1408121.1	224.78	-	-	0.00	224.78	5.15	-	-	-	-	-
	B-4	1185726	1408049.1	240.38	-	-	0.00	240.38	5.15	-	-	-	-	-
	B-5	1185741	1408381.1	239.58	-	-	0.00	239.58	5.15	-	-	-	-	-
	B-6	1185728	1408351.1	250.58	-	-	0.00	250.58	5.15	-	-	-	-	-
	B-7	1185728	1408351.1	250.58	-	-	0.00	250.58	5.15	-	-	-	-	-
Greenwood Street H&A P1017 December-97	B-1	1185201.1	1407182.2	218.37	-	-	0.00	218.37	5.30	-	-	-	-	-
	B-2	1185181	1407182.2	218.37	-	-	0.00	218.37	5.30	-	-	-	-	-
	B-3	1185164	1407094.0	219.10	-	-	0.00	219.10	5.30	-	-	-	-	-
	B-4	1185256.6	1407354.8	228.91	-	-	0.00	228.91	5.30	-	-	-	-	-
	B-5	1185182.6	1407262.2	221.30	-	-	0.00	221.30	5.30	-	-	-	-	-
	B-6	1185200.8	1407290.2	222.88	-	-	0.00	222.88	5.30	-	-	-	-	-
	B-7	1185200.8	1407290.2	222.88	-	-	0.00	222.88	5.30	-	-	-	-	-
	B-8	1185200.8	1407290.2	222.88	-	-	0.00	222.88	5.30	-	-	-	-	-
	B-9	1185200.8	1407290.2	222.88	-	-	0.00	222.88	5.30	-	-	-	-	-
	B-10	1185200.8	1407290.2	222.88	-	-	0.00	222.88	5.30	-	-	-	-	-
	B-11	1185200.8	1407290.2	222.88	-	-	0.00	222.88	5.30	-	-	-	-	-
	B-12	1185200.8	1407290.2	222.88	-	-	0.00	222.88	5.30	-	-	-	-	-
	B-13	1185200.8	1407290.2	222.88	-	-	0.00	222.88	5.30	-	-	-	-	-
	B-14	1185200.8	1407290.2	222.88	-	-	0.00	222.88	5.30	-	-	-	-	-
Drexler Plaza Army Corp June-89	B-1	1185214	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-2	1185753.4	1407441.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-3	1185594.2	1407338.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-4	1185883.5	1407462.3	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-5	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-6	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-7	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-8	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-9	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-10	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-11	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-12	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-13	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-14	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-15	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-16	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-17	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-18	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-19	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-20	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-21	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-22	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-23	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-
	B-24	1185200.8	1407321.6	216.37	-	-	0.00	216.37	5.30	-	-	-	-	-



TABLE II - CONDITIONS ENCOUNTERED IN EARLIER SUBSURFACE INVESTIGATIONS

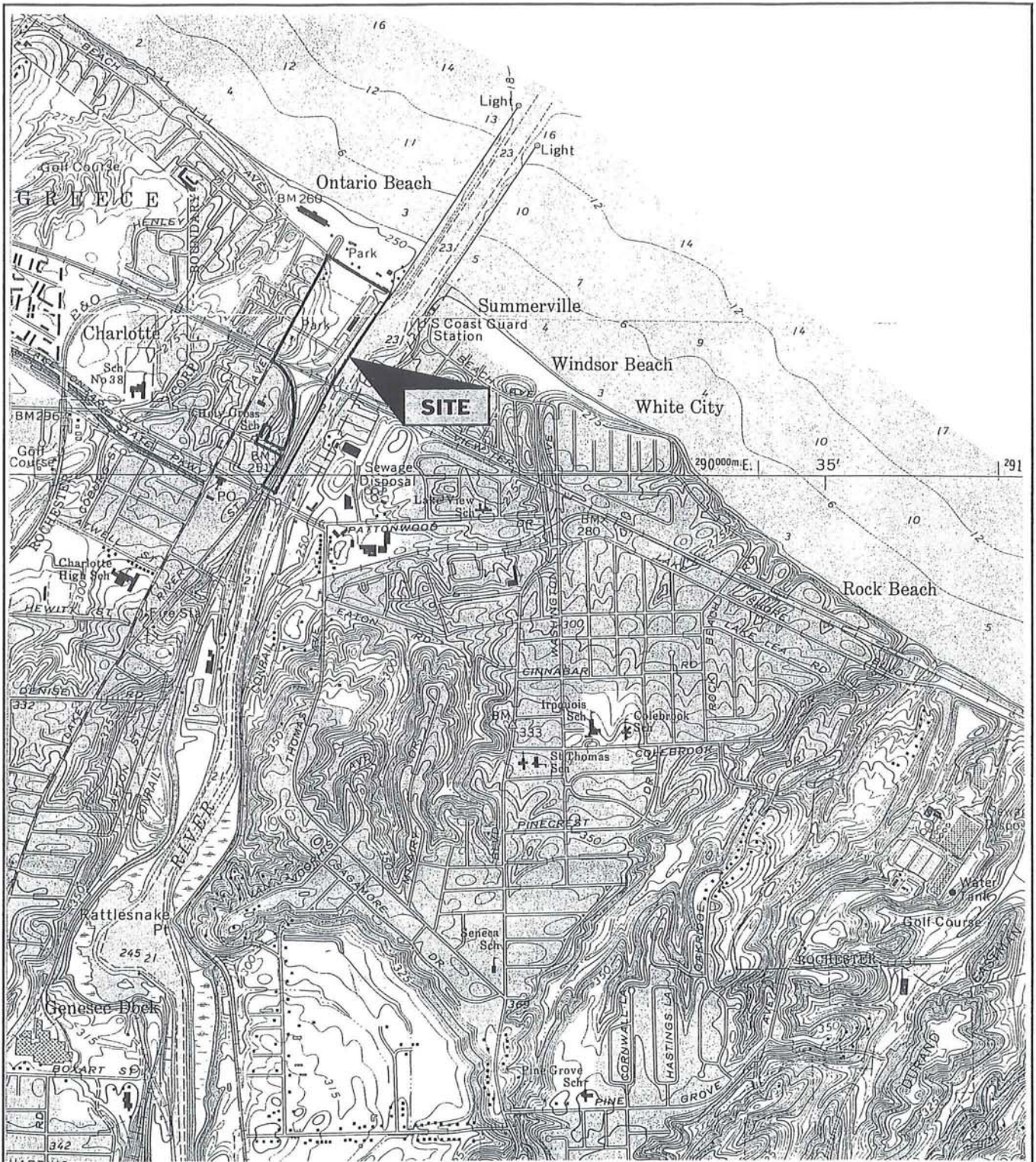
INVESTIGATION TITLE	EXPLANATION IDENTIFICATION	NORTHING	EASTING	SURFACE ELEVATION (ft)	FILL		ALLUVIUM		LAKESHORE		GLACIAL TILL		BEDROCK/RETICULAR	ROCK DESCRIPTION	
					DEPTH (ft)	ELEV. (ft)	DEPTH (ft)	ELEV. (ft)	DEPTH (ft)	ELEV. (ft)	DEPTH (ft)	ELEV. (ft)			DEPTH (ft)
Bridge Bearings Army Corp June 08	P-4	1165026.3	1407241.6	235.53	-	-	-	0.00	234.53	-	-	-	-	-	
	P-6	1167540.1	1407019.4	235.33	-	-	-	0.00	234.33	-	-	-	-	-	
	P-8	1150520.2	1411001.4	235.33	-	-	-	0.00	229.33	-	-	-	-	-	
Waste Storage Protection Project Army Corp Apr 02	D73-1	1169395.8	1405557.7	238.53	1.70	232.83	1.70	232.83	-23.5	219.33	17.50	219.33	-24	-	
	D79-2	1169192.4	1410130.3	238.63	0.00	238.63	7.50	229.13	17.50	219.33	-	-	-	-	
	D79-3	1169172.3	1409801.2	241.03	0.00	241.03	7.50	233.53	-2.50	231.03	-	-	-	-	
	D79-4	1169180.7	1409888.6	250.03	0.00	250.03	7.00	243.03	15.50	235.53	-	-	-	-	
	DMS-2	1168599.9	1409437.4	239.83	0.00	239.83	4.90	234.93	13.70	236.13	-	-	-	-	
	DMS-1	1169179.1	1409551.4	234.33	-	-	-	0.00	234.33	-33	-	-	-	-	
	D79-5	1168983	1409713.4	232.33	-	-	-	0.00	232.33	-39	-	-	-	-	
	D79-6	1169259	1409721.1	238.33	-	-	-	0.00	238.33	-25	-	-	-	-	
		D79-7	1169522.8	1409857.2	238.83	0.00	238.83	12.00	222.83	-22.8	222.83	-22.8	-	-	-
		D79-8	1169578.5	1409924.2	238.83	-	-	-	0.00	238.83	-27	-	-	-	-
Rehabilitation of East Army Corp June 08	DMS-1	1169407.7	1409965.3	237.73	0.00	237.73	3.00	235.73	7.50	232.23	15.70	232.23	15.70	21.8 - weathered rock	
	P73-2	1169557.4	1409957.4	238.83	-	-	-	0.00	238.83	-27	-	-	-	-	
	P73-7	1169508.4	1409841.1	238.53	-	-	-	0.00	238.53	-27	-	-	-	-	
	P73-10	1169508.4	1409841.1	238.53	-	-	-	0.00	238.53	-27	-	-	-	-	
	P73-11	1169508.4	1409841.1	238.53	-	-	-	0.00	238.53	-27	-	-	-	-	
	P73-12	1169508.4	1409841.1	238.53	-	-	-	0.00	238.53	-27	-	-	-	-	
	P73-13	1169508.4	1409841.1	238.53	-	-	-	0.00	238.53	-27	-	-	-	-	
	P73-14	1169518.4	1409947.8	237.03	-	-	-	0.00	237.03	-27	-	-	-	-	
	P73-15	1169418.2	1409891.8	235.53	-	-	-	0.00	235.53	-27	-	-	-	-	
	P73-16	1169251	1409472	237.33	-	-	-	0.00	237.33	-27	-	-	-	-	
P73-18	1169167.5	1409417	237.33	-	-	-	0.00	237.33	-27	-	-	-	-		
P73-19	1169072.1	1400842	234.33	-	-	-	0.00	234.33	-27	-	-	-	-		
P73-20	1169990.3	1409895.6	238.93	-	-	-	0.00	238.93	-27	-	-	-	-		
P73-21	1169883	1409912.2	238.23	-	-	-	0.00	238.23	-27	-	-	-	-		
P73-23	1169739.7	1409820.9	238.53	-	-	-	0.00	238.53	-27	-	-	-	-		
P73-24	1169855.9	1409768.4	238.53	-	-	-	0.00	238.53	-27	-	-	-	-		
P73-25	1169827.2	1409780.9	238.23	-	-	-	0.00	238.23	-27	-	-	-	-		
P73-27	1169865.1	1409901.7	237.23	-	-	-	0.00	237.23	-27	-	-	-	-		
P73-28	1169261.7	1409546.6	238.73	-	-	-	0.00	238.73	-27	-	-	-	-		
P73-29	1169237.8	1409462.1	240.43	-	-	-	0.00	240.43	-27	-	-	-	-		
P73-30	1169154.4	1409437	241.33	-	-	-	0.00	241.33	-27	-	-	-	-		
P73-31	1169727	1409160.4	239.23	-	-	-	0.00	239.23	-27	-	-	-	-		
P73-32	1169680	1409105.7	240.33	-	-	-	0.00	240.33	-27	-	-	-	-		
P73-34	1169656.6	1409052.1	240.83	-	-	-	0.00	240.83	-27	-	-	-	-		
P73-35	1169821.5	1409898	241.73	-	-	-	0.00	241.73	-27	-	-	-	-		
P73-36	1169833.6	1409888.9	242.63	-	-	-	0.00	242.63	-27	-	-	-	-		
P73-37	1169834.6	1409888.9	242.63	-	-	-	0.00	242.63	-27	-	-	-	-		
P73-38	1169803.3	1409829.5	238.03	-	-	-	0.00	238.03	-27	-	-	-	-		
P73-39	1169446.7	1409884.4	239.03	-	-	-	0.00	239.03	-27	-	-	-	-		
P73-40	1169830.2	1409829.5	238.03	-	-	-	0.00	238.03	-27	-	-	-	-		
P73-41	1169827.2	1409794.3	238.43	-	-	-	0.00	238.43	-27	-	-	-	-		
P73-42	1169807.2	1409734.3	238.43	-	-	-	0.00	238.43	-27	-	-	-	-		
P73-43	1169781	1409649.1	238.83	-	-	-	0.00	238.83	-27	-	-	-	-		
P73-44	1169864.2	1409903.8	238.43	-	-	-	0.00	238.43	-27	-	-	-	-		
P73-45	1169808.2	1409825.8	237.23	-	-	-	0.00	237.23	-27	-	-	-	-		
P73-46	1169813	1410011.6	235.13	-	-	-	0.00	235.13	-27	-	-	-	-		
P73-47	1169806.2	1410005.6	235.93	-	-	-	0.00	235.93	-27	-	-	-	-		
P73-48	1169807.4	1410011.6	233.33	-	-	-	0.00	233.33	-27	-	-	-	-		
P73-49	1169003.9	1410013.6	233.83	-	-	-	0.00	233.83	-27	-	-	-	-		
P73-50	1169814	1409829.5	233.83	-	-	-	0.00	233.83	-27	-	-	-	-		
P73-51	1169814	1409829.5	233.83	-	-	-	0.00	233.83	-27	-	-	-	-		
P73-52	1169794.2	1409850	238.53	-	-	-	0.00	238.53	-27	-	-	-	-		
P73-53	1169744.1	1409774.1	235.63	-	-	-	0.00	235.63	-27	-	-	-	-		
P73-54	1169710.6	1409791.9	235.03	-	-	-	0.00	235.03	-27	-	-	-	-		
P73-55	1169827.2	1409919	235.13	-	-	-	0.00	235.13	-27	-	-	-	-		
P73-56	1169843.5	1409964.2	234.33	-	-	-	0.00	234.33	-27	-	-	-	-		
P73-57	1169843.5	1409964.2	234.33	-	-	-	0.00	234.33	-27	-	-	-	-		
P73-58	1169843.5	1409964.2	234.33	-	-	-	0.00	234.33	-27	-	-	-	-		
P73-59	1169843.5	1409964.2	234.33	-	-	-	0.00	234.33	-27	-	-	-	-		
P73-7	1169087.1	1410020.6	233.33	-	-	-	0.00	233.33	-27	-	-	-	-		

TABLE II - CONDITIONS ENCOUNTERED IN EARLIER SUBSURFACE INVESTIGATIONS

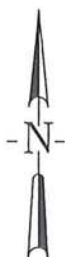
INVESTIGATION TITLE	IDENTIFICATION	NORTHING	EASTING	SURFACE ELEVATION (FO)	FILL		ALLUVIUM		LACONSTRINE		GLACIAL FILL		BEDROCK/HERSICAL		ROCK DESCRIPTION	
					DEPTH (FO)	ELEV. (FO)	DEPTH (FO)	ELEV. (FO)	DEPTH (FO)	ELEV. (FO)	DEPTH (FO)	ELEV. (FO)	DEPTH (FO)	ELEV. (FO)		DEPTH (FO)
Latham Associates Investigation Project Manhole 79	LA-B-1	1188293.4	1405624.4	285	0.00	280.73	7.50	241.73	7.50	241.73	277	281	31.00	218.23	218.23	NO DISCUSSION
	LA-B-2	1188293.1	1405624.7	283	0.00	277	3.50	280	3.50	280	277	281	31.00	218.23	218.23	NO DISCUSSION
	LA-B-3	1188292.7	1405624.4	285	0.00	280.73	7.50	241.73	7.50	241.73	277	281	31.00	218.23	218.23	NO DISCUSSION
	LA-B-4	1188183.6	1407068	272	0.00	272	5.00	268	5.00	268	272	281	31.00	218.23	218.23	NO DISCUSSION
	LA-B-5	1188762	1407827	233	0.00	235	2.60	245	2.60	245	235	281	31.00	218.23	218.23	NO DISCUSSION
	LA-B-6	1188998.2	1407875.7	254	0.00	254	3.40	256	3.40	256	254	281	31.00	218.23	218.23	NO DISCUSSION
	LA-B-7	1189772	1407388.3	280	0.00	277	3.30	277	3.30	277	277	281	31.00	218.23	218.23	NO DISCUSSION
	LA-B-8	1187027.5	1407104.6	282	0.00	282	2.12	278	2.12	278	282	281	31.00	218.23	218.23	NO DISCUSSION
	LA-A-1	1187460.9	1407288.6	287	0.00	287	1.10	284	1.10	284	284	281	31.00	218.23	218.23	NO DISCUSSION
	LA-A-2	1187842.2	1407504.5	277	0.00	277	1.10	276	1.10	276	276	281	31.00	218.23	218.23	NO DISCUSSION
LA-A-3	1188529	1407893.1	229	0.00	229	1.20	228	1.20	228	228	281	31.00	218.23	218.23	NO DISCUSSION	
LA-A-4	1188529	1407893.1	229	0.00	229	1.20	228	1.20	228	228	281	31.00	218.23	218.23	NO DISCUSSION	
LA-A-5	1188808.1	1407733.9	207	0.00	207	>3.0	204	>3.0	204	207	281	31.00	218.23	218.23	NO DISCUSSION	
LA-A-6	1188808.1	1407733.9	207	0.00	207	>3.0	204	>3.0	204	207	281	31.00	218.23	218.23	NO DISCUSSION	
LA-A-7	1188806.7	1408742.2	282	0.00	282	2.10	280	2.10	280	282	281	31.00	218.23	218.23	NO DISCUSSION	
LA-A-8	1188806.7	1408742.2	282	0.00	282	2.10	280	2.10	280	282	281	31.00	218.23	218.23	NO DISCUSSION	
LA-A-9	1188806.7	1408742.2	282	0.00	282	2.10	280	2.10	280	282	281	31.00	218.23	218.23	NO DISCUSSION	
LA-A-10	1188775.1	1408253.5	284	0.00	284	5.30	281	5.30	281	281	281	31.00	218.23	218.23	NO DISCUSSION	

NOTES: 1. ALL ELEVATIONS HAVE BEEN CONVERTED TO CITY OF ROCHESTER DATUM.  
 2. PROBE RETURN IS NOT A GUARANTEE OF BEDROCK DEPTH.  
 3. NORTHINGS AND EASTINGS ARE BASED ON NAD 83 GRID





70819-000



QUADRANGLE LOCATION: ROCHESTER EAST, N.Y.

**HALEY & ALDRICH**

ENGINEERING  
PROFESSIONAL  
ENVIRONMENTAL  
SOLUTIONS

PORT OF ROCHESTER IMPROVEMENTS  
AND HARBOR FERRY TERMINAL  
ROCHESTER, NY

GEOTECHNICAL CHARACTERIZATION

**PROJECT LOCUS**

SCALE: AS SHOWN

MARCH 2000

**FIGURE 1**



See Electronic Copy for Plans

**Draft**

**APPENDIX A**

**Records of Recent (2000) Subsurface Explorations**

- A-1 Logs of Test Pits by Bourne Consulting Engineers**
- A-2 Logs of Test Pits by LaBella Associates**
- A-3 Logs of Test Borings by Haley & Aldrich**
- A-4 Observation Well Installation Reports by Haley & Aldrich**

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists			TEST PIT REPORT		TEST PIT NO. <u>TP#1</u>
PROJECT: <u>Part of Rochester - Charlotte Beach, New York</u>					LOCATION: <u>Adjacent to Boat launch</u>
LOCATION: <u>Old General Cargo Terminal</u>					ELEVATION: <u>Not Surveyed</u>
CLIENT: <u>Labella Associates (City of Rochester)</u>					EXPLORATION DATE: <u>11 Jan 2000</u>
CONTRACTOR: <u>Hickory Hill Construction</u>					H&A REP.: <u>R. Dedrick</u>
EQUIPMENT USED: <u>John Deere 410D</u>					
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			<u>0.5ft</u>	<u>Asphalt</u>	
				<u>Grey medium to coarse sandy GRAVEL. Little silt. Dry</u>	① Cobbles composition unknown. Iridescent blue & sulfur smell. Possible Foundry byproduct.
<u>2</u>			<u>2.0ft</u>	<u>- Crushed Stone -</u>	
	<u>obtained by Labella Associates</u>			<u>Brown red fine to coarse SAND. Some cobbles. Some coarse gravel. Moist</u>	② More dense composition of cobbles located adjacent to river-wall
<u>4</u>					③ Tie-rods located adjacent to triangular concrete forms.
<u>6</u>					
<u>8</u>					
<u>10</u>			<u>9.5ft</u>	<u>Top of Pile cap - Concrete structure</u> <u>BOE = 9.5ft</u>	
<u>12</u>				<u>* exploration ended due to influx of water</u>	
WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE		SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH	DEPTH:
<u>11 Jan 00</u>	<u>30min</u>	<u>9.5ft</u>	<u>25</u> feet	<u>20</u> feet	<u>9.5 ft</u>
			BOULDERS		JAR SAMPLES: -
			8" to 18" DIAMETER: No. <u>50+</u> = Vol.	cu ft	BAG SAMPLES: -
			Over 18" DIAMETER: No. <u>10+</u> = Vol.	cu ft	WATER LEVEL: <u>Not Present</u>
* Hrs after completed					TEST PIT NO. <u>TP # 1</u>



H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP# 2 FILE NO. 70819-000
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PROJECT: LOCATION: CLIENT: CONTRACTOR: EQUIPMENT USED:	LOCATION: Between Buildings ELEVATION: Not Surveyed EXPLORATION DATE: 12 Jan 2000 H&A REP.: R. Dedrick
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SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
		0.3ft		Asphalt	① Located between building above deadman anchor  ② 30 ft swing tie from corner of both buildings to tie rod  ③ Completed in 2 sections. Similar cross sections. However, 2 pit (closest to river) encountered railroad ties & steel @ ~ 0.5ft
		1.0ft		Crushed Stone	
-2	Obtained by Labella Associates			Brown silty fine to coarse SAND. Little coarse gravel. Trace cobbles Trace clay. Moist. Pockets of grey/green discolored soil. Pocket of crushed brick.	
-4					
-6					
-8		7.0ft		Located Tie-line & Anchor BOE = 7.0ft	
-10					
-12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE		SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH	
12 Jan 00	15 min	6.75ft	50 feet	10 feet	DEPTH: 7.0ft
			BOULDERS		JAR SAMPLES: -
			8" to 18" DIAMETER: No. 15+ = Vol.	cu ft	BAG SAMPLES: -
			Over 18" DIAMETER: No. 0 = Vol.	cu ft	WATER LEVEL: 6.75ft
* Hrs after completed					TEST PIT NO. TP# 2

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. <u>TP# 3a</u> FILE NO.
--	-----------------	--

PROJECT: LOCATION: CLIENT: CONTRACTOR: EQUIPMENT USED:	LOCATION: <u>South of Paddle boat House</u> ELEVATION: <u>Not Surveyed</u> EXPLORATION DATE: <u>12 Jun 2000</u> H&A REP.: <u>R. Dedrick</u>
--	--

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			0.3ft	<u>Asphalt</u>	① Encountered railroad tracks approximately 0.5ft below ground surface 7.0ft inland of river wall. ② 2nd set of railroad track similar to first set located approximately 20ft in from river wall
			1.0ft	<u>Crushed Stone</u>	
2	Obtained by Labella Associates			Light brown fine to coarse SAND. Some silt. Moist.	
4					
6					
8					
			9.5ft	<u>Located top of pile cap.</u> BOE = 9.5	
10				* exploration ended due to influx of water	
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE			SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH		DEPTH:
12 Jan 00	30 min	9.5ft	20 feet	15 feet		9.5 ft
			BOULDERS			JAR SAMPLES: -
			8" to 18" DIAMETER: No. $\emptyset$ = Vol.		cu ft	BAG SAMPLES: -
			Over 18" DIAMETER: No. $\emptyset$ = Vol.		cu ft	WATER LEVEL: 9.5ft
* Hrs after completed						TEST PIT NO. <u>TP# 3a</u>

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP#3b FILE NO.
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PROJECT: LOCATION: CLIENT: CONTRACTOR: EQUIPMENT USED:	LOCATION: Southwest of Paddleboat House ELEVATION: Not Surveyed EXPLORATION DATE: 13 Jan 2000 H&A REP.: R. Dedrick
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SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			0.25ft	Concrete Foundation	① Strata change @ 5.0ft is even with top of Sheetpile on deadman anchor
			0.75ft	Crushed Stone / Asphalt Mixture	
2	No Samples Taken			Brown fine to coarse SAND. Some silt. Trace coarse gravel. Moist.	
4					
6			5.0ft	Dark brown grey silty fine to coarse SAND. Some coarse gravel. Little cobbles. Concrete debris.	
8					
10			10.0ft	Located Tie-rod / Bottom of anchor BOE = 10.0ft	
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE		SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	WIDTH	
12 Jan 00	30min	9.5 ft	20 feet	15 feet	DEPTH: 10.0 ft JAR SAMPLES: - BAG SAMPLES: - WATER LEVEL: 9.5 ft TEST PIT NO. TP#3b
			BOULDERS		
			8" to 18" DIAMETER: No. 20+ = Vol.	cu ft	
			Over 18" DIAMETER: No. $\emptyset$ = Vol.	cu ft	
* Hrs after completed					



H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP#4  FILE NO. 70819-000
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PROJECT: LOCATION: CLIENT: CONTRACTOR: EQUIPMENT USED:	LOCATION: North of paddleboat house ELEVATION: Not Surveyed EXPLORATION DATE: 13 Jan 99 H&A REP.: R. Dedrick
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SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
0.8ft				Organic	① Located north of paddleboat house at intersection of 2-deadmen anchors.
-2				Brown silty fine to coarse SAND. Little gravel. Little cobbles. Brick debris.	
-4		4.0		Top of Sheet Pile	
-6				< Left site to return to office >	
-8					
-10					
-12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE				SUMMARY
DATE	TIME*	DEPTH FT	LENGTH	feet	WIDTH	feet	DEPTH: Left before Completion JAR SAMPLES: -  BAG SAMPLES: -  WATER LEVEL: -  TEST PIT NO. TP#4
			BOULDERS				
			8" to 18" DIAMETER:	No.	= Vol.	cu ft	
			Over 18" DIAMETER:	No.	= Vol.	cu ft	

\* Hrs after completed




TEST PIT REPORT

BELLA ASSOCIATES, P.C. 300 STATE STREET			TEST PIT # / PROJECT # 99150 DATE: 05		
PROJECT: Part LOCATION: Drilling lot @ R.R. TWIN TABLE CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: BACK-HOE			ELEVATION:  LABELLA REP: DEP		
SCALE	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS	
IN FEET					
1			Clayey Red/Black CINDERS MISC. FILL	MP 000	0
2			MED/COURSE BROWN SAND		0
3			← Railroad TIES		0
4			↓		0
5			WATER INFILTRATION (RECOVER ?/ACTUAL?)	↓	0
6			↓ RUNNING SAND/GW @ 6'		0
7					
8					
9					
10					
11					
12					
13					
WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE		
DATE	TIME*	DEPTH	WIDTH X LENGTH =		
Hrs. after completion			TEST PIT #1		



TEST PIT REPORT

BELLA ASSOCIATES, P.C. 300 STATE STREET	TEST PIT # 2 PROJECT # 99150 DATE: 2/23/00
SUBJECT: LOCATION: EVENT: CONTRACTOR:	ELEVATION:  LABELLA REP: DE

EQUIPMENT:		BACK-HOE	DESCRIPTION OF MATERIALS	REMARKS
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE		
1			BLACKTOP RED SILT/SAND with gravel	NO LOG 
2			GRAY MED/COURSE SAND	
3			↓ MED GRAVEL	
4			↓ RECOVERED? / ACTUAL GW	
5			↓ STANDING GW - FORM	
6			↓	
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE	
DATE	TIME*	DEPTH	WIDTH X LENGTH =	
* Hrs. after completion			TEST PIT #1	

TEST PIT REPORT

BELLA ASSOCIATES, P.C. 300 STATE STREET				TEST PIT # 3 PROJECT # 99150 DATE: 2/29/00	
PROJECT: LOCATION: CLIENT: CONTRACTOR:				ELEVATION:  LABELLA REP:	
EQUIPMENT:		BACK-HOE			
SCALE	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS	
IN FEET					
1			Blacktop 2B silt/sand w/ Gravel Brown/gray sand	0	
2				0	
3				0	
4				0	
5				0	
6			some gravel ↓ running sand / GW	0	
7				0	
8				0	
9				0	
10				0	
11				0	
12				0	
13				0	
WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE		
DATE	TIME*	DEPTH	WIDTH X LENGTH =		
Hrs. after completion			TEST PIT #1		

TEST PIT REPORT

ABELLA ASSOCIATES, P.C. 300 STATE STREET				TEST PIT # 4 PROJECT # 99150 DATE: 2/28/00
PROJECT: LOCATION: CLIENT: CONTRACTOR:				ELEVATION:  LABELLA REP: DEF
EQUIPMENT:		BACK-HOE		
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Blacktop White conc? misc. fill	No odor
2			SOME BLUE SLAG (Sulfur odor)	
3			silt/sand	↓
4			Brown red sand <u>///</u> LAYER OF SLAG (dense) <u>///</u>	
5			↓ spraying H <sub>2</sub> O -	No odor
6			↓	
7				
8				
9				
10				
11				
12				
13				
WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE	
DATE	TIME*	DEPTH	WIDTH X LENGTH =	
* Hrs. after completion			TEST PIT #1	



TEST PIT REPORT

BELLA ASSOCIATES, P.C.

300 STATE STREET

TEST PIT # 3

PROJECT # 99150

DATE 2/28/00

PROJECT:

ELEVATION:

LOCATION:

AGENT:

LABELLA REP:

CONTRACTOR:

EQUIPMENT: BACK-HOE

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Grass silt/sand some gravel	No odor
2			Brown sand	
3			↓	
4			silt sand some clay	
5			↓	
6			↓	
7			clay	
8			↓	
9			fine sand some gravel	
10			↓	
11			SOME SANDSTONE	
12			↓	
13				

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE WIDTH X LENGTH =
DATE	TIME*	DEPTH	
Hrs. after completion			TEST PIT #1-

TEST PIT REPORT

BELLA ASSOCIATES, P.C. 300 STATE STREET	TEST PIT # 6 PROJECT # 99150 DATE: 2/28/06
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PROJECT: LOCATION: CLIENT: CONTRACTOR: EQUIPMENT:	ELEVATION:  LABELLA REP:
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SCALE	SAMPLE	SAMPLE	DESCRIPTION OF MATERIALS	REMARKS
IN	NUMBER	DEPTH		
FEET		RANGE		
1			Grass bed with gravel misc. fill	
2			Blue "sulfur rocks" misc fill	
3				
4			↓ Termin @ 4' DUE TO SLAG	
5				
6				
7				
8				
9				
10				
11				
12				
13				

3<sup>rd</sup> LOCATION

misc. white "slag" (sample)

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE	
DATE	TIME*	DEPTH	WIDTH X LENGTH =	
* Hrs. after completion			TEST PIT #1	

TEST PIT REPORT

ABELLA ASSOCIATES, P.C.

300 STATE STREET

TEST PIT # 7

PROJECT # 99150

DATE: 2/29/01

PROJECT:  
LOCATION:  
CLIENT:  
CONTRACTOR:

ELEVATION:  
ABELLA REP:

EQUIPMENT: BACK-HOE

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			COARSE misc silt/gravel	
2			Blue slag	golf ball down
3			misc fill - brick / slag / concrete	
4			↓ - Shell layer sample	
5			↓ H <sub>2</sub> O	
6			↓	
7			misc. fill	
8				
9				
10				
11				
12				
13				

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE WIDTH X LENGTH =
DATE	TIME*	DEPTH	

\* Hrs. after completion

TEST PIT #1



TEST PIT REPORT

ABELLA ASSOCIATES, P.C.

TEST PIT # 8  
PROJECT # 99150  
DATE: 2/28/00

300 STATE STREET

OBJECT:  
LOCATION:  
CONTENT:  
CONTRACTOR:

ELEVATION:  
ABELLA REP:

EQUIPMENT: BACK-HOE

DEPTH IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			GENSS MISC. FILL - SLAG / BRICK	surface odor 
2			black FINE ASH / SIF?	
3			slag. misc. FILL	
4				
5			GW @	
6				
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE WIDTH X LENGTH =
DATE	TIME	DEPTH	

Time after completion

TEST PIT #1

TEST PIT REPORT

BELLA ASSOCIATES, P.C.

TEST PIT # 9  
PROJECT # 99150  
DATE: 2/28/00

300 STATE STREET

PROJECT:  
LOCATION:  
PERMIT:  
CONTRACTOR:

ELEVATION:  
LABELLA REP:

EQUIPMENT: BACK-HOE

DEPTH SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			60/65 SAND	0
2			↓ sample RED SLAG - Fill / misc. + BLUE SLAG	0
3				Sulfur Oxide
4				
5			ASH (sample)	0
6				Sulfur
7				0
8				
9				
10				0
11			STANDING WATER (No stream)	
12				
13				

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE WIDTH X LENGTH =
DATE	TIME*	DEPTH	

Hrs. after completion

TEST PIT #1

TEST PIT REPORT

BELLA ASSOCIATES, P.C.

TEST PIT # 10

300 STATE STREET

PROJECT # 99158

DATE: 2/28/00

PROJECT:

ELEVATION:

LOCATION:

AGENT:

LABELLA REP:

CONTRACTOR:

EQUIPMENT: BACK-HOE

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS				REMARKS
			1	2	3	4	
1			Grass sand/silt	Grass sand/silt	Grass Gravel	Grass silt/fill	Sulfur ↓ NO OCS ↓ (NO STAINING GW) HARD SAND/TILLAYER
2				slag-red/blue	CONC.	Red silt? fill	
3			CONC. SLAB	Large log 3'		Black crushed fill	
4							
5			CONC.			Brown sand	
6						Gray f. sand - fine	
7							
8						Brown sand	
9							
10							
11							
12							
13							

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE ← N
DATE	TIME*	DEPTH	

hrs. after completion

TEST PIT #1



TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET	TEST PIT # 11 PROJECT # 99150 DATE: 2/28/00
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PROJECT: LOCATION: CLIENT: CONTRACTOR:	ELEVATION:  LABELLA REP:
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EQUIPMENT:		BACK-HOE			
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS	
1			Grays silt/sand Brown (some debris/conc. chips)	np odor	
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13				Gray silt (brown) / clay	

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE WIDTH X LENGTH =
DATE	TIME*	DEPTH	
* Hrs. after completion			TEST PIT #1

TEST PIT REPORT

BELLA ASSOCIATES, P.C.

TEST PIT # 12  
PROJECT # 9915  
DATE: 2/20/05

300 STATE STREET

OBJECT:  
LOCATION:  
IDENT:  
CONTRACTOR:

ELEVATION:  
LABELLA REP:

EQUIPMENT: BACK-HOE

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Grass Brick/rock frag.	
2			Misc. Fill	
3			Blue/Brk slag	
4				
5			Brick Brick/ceax. PZZZZ	
6				
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE WIDTH X LENGTH =
DATE	TIME*	DEPTH	

\* Hrs. after completion

TEST PIT #1

TEST PIT REPORT

ABELLA ASSOCIATES, P.C. 300 STATE STREET	TEST PIT # 13 PROJECT # 99153 DATE: 2/29/00
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PROJECT: LOCATION: CLIENT: CONTRACTOR:	ELEVATION:  LABELLA REP:
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EQUIPMENT:	BACK-HOE		
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SCALE	SAMPLE	SAMPLE	DESCRIPTION OF MATERIALS	REMARKS
IN	NUMBER	DEPTH		
FEET		RANGE		
1			Gravel/sub-base	
2			silt/sand w/ gravel	
3			FIRM/DENSE HARD FINE SAND	
4			↓ Brick/Conc.	
5			Brown sand	
6			↓	
7			Brick/Conc.	
8			↓	
9			Brick/Conc.	
10			↓ Conc. slab.	
11				
12				
13				

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE	
DATE	TIME*	DEPTH	WIDTH X LENGTH =	

Hrs. after completion	TEST PIT #1
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TEST PIT REPORT

BELLA ASSOCIATES, P.C. 300 STATE STREET	TEST PIT # 14 PROJECT # 99150 DATE: 2/29/10
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PROJECT: LOCATION: ELEMENT: CONTRACTOR:	ELEVATION:  LABELLA REP:
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EQUIPMENT:		BACK-HOE		
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Gravel - sub-base	no odor
2			Misc. fill (slag, <sup>blue</sup> gravel, bricks, brick)	5ulfur odor
3				
4				
5				
6				
7			STANDING WATER	
8				
9				
10				
11				
12				
13				

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE WIDTH X LENGTH =
DATE	TIME*	DEPTH	
* Hrs. after completion			TEST PIT #1

TEST PIT REPORT

BELLA ASSOCIATES, P.C. 300 STATE STREET				TEST PIT # 15 PROJECT # 99150 DATE: 2/29/00	
PROJECT: LOCATION: CLIENT: CONTRACTOR:				ELEVATION:  LABELLA REP:	
EQUIPMENT: BACK-HOE					
SCALE	SAMPLE	SAMPLE	DESCRIPTION OF MATERIALS	REMARKS	
IN	NUMBER	DEPTH	Gravel/sub-base silt/sand gravel (gill)  III. conc. slab  misc. slag. (white - sample) (iron - sample)  ↓ H <sub>2</sub> O		
FEET	RANGE	RANGE			
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE		
DATE	TIME*	DEPTH.	WIDTH X LENGTH =		
Hrs. after completion			TEST PIT #1		

TEST PIT REPORT

BELLA ASSOCIATES, P.C.  
300 STATE STREET

TEST PIT # 16  
PROJECT # 99150  
DATE: 2/27/00

OBJECT:  
LOCATION:  
EVENT:  
CONTRACTOR:

ELEVATION:  
LABELLA REP:

EQUIPMENT: BACK-HOE

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Coars silt/sand	
2			↓ misc. slag	
3				
4				
5				
6				
7				
8			silty clay (native)	
9				
10				
11				
12				
13				

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE WIDTH X LENGTH =
DATE	TIME	DEPTH	

hrs. after completion

TEST PIT #1





TEST PIT REPORT

BELLA ASSOCIATES, P.C. 300 STATE STREET			TEST PIT # 18 PROJECT # 99150 DATE: 2/29/00	
PROJECT: LOCATION: AGENT: CONTRACTOR:			ELEVATION:  LABELLA REP:	
EQUIPMENT:			BACK-HOE	
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Gravel silt/sand - gravel	0
2			Misc. slag white, blue, green	Sulfur odor
3				
4			↓	0
5				
6			↓	0
7				
8			STAND. WATER	
9				
10				
11				
12				
13				
WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE	
DATE	TIME*	DEPTH	WIDTH X LENGTH =	
* Hrs. after completion			TEST PIT #1	

TEST PIT REPORT

BELLA ASSOCIATES, P.C. 300 STATE STREET				TEST PIT # 19 PROJECT # 9958 DATE: 2/25/02
PROJECT: LOCATION: AGENT: CONTRACTOR:				ELEVATION:  LABELLA REP:
EQUIPMENT: BACK-HOE				
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Grass silt sand	
2			↓	
3				
4			dense slag - white/blue	
5			ground water - some steam	
6				
7				
8				
9				
10				
11				
12				
13				
WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE	
DATE	TIME*	DEPTH	WIDTH X LENGTH =	
* Hrs. after completion			TEST PIT #1	

TEST PIT REPORT

BELLA ASSOCIATES, P.C. 300 STATE STREET	TEST PIT # 20 PROJECT # 99150 DATE: 2/2/00
OBJECT: LOCATION: IDENT: CONTRACTOR:	ELEVATION: LABELLA REP:

EQUIPMENT:		BACK-HOE		
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			GRASS silt/sand/rock RED COARSE SAND - WASTE FIL	NP 0cm
2			↓	
3				0
4				
5			BROWN silt / FINE SAND	
6			↓	0
7				
8				0
9				
10				
11				
12				
13				

NO  
SLAG (Rocks)

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE	
DATE	TIME*	DEPTH	WIDTH X LENGTH =	
Hrs. after completion			TEST PIT #1	



TEST PIT REPORT

BELLA ASSOCIATES, P.C. 300 STATE STREET			TEST PIT # 21 PROJECT # 99150 DATE: 2/29/00	
OBJECT: LOCATION: CLIENT: CONTRACTOR:			ELEVATION:  LABELLA REP:	
EQUIPMENT: BACK-HOE				
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Black top 2" Gravel (not sub-base) Gray med/fine sand	us adv
2			sample → create adv	create adv
3			↓	
4			↓	
5			TIES	
6			sample SLAB	
7				
8				
9				
10				
11				
12				
13				
WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE WIDTH X LENGTH =	
DATE	TIME*	DEPTH		
			TEST PIT #1	
Hrs. after completion				

TEST PIT REPORT

BELLA ASSOCIATES, P.C. 300 STATE STREET	TEST PIT # 22 PROJECT # 9950 DATE: 2/29/00
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PROJECT: LOCATION: ELEMENT: CONTRACTOR:	ELEVATION:  LABELLA REP:
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EQUIPMENT:		BACK-HOE		
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Coarse silt/sand soil	no acc 0
2			↓ misc. slag layer - blue/white	Subtle acc 0
3			↓	
4			↓	
5			↓	
6			conc. / slag layer - Hoel Riser	
			~ STANDING WATER - SCREEN	0
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL			APPROXIMATE TEST PIT DIMENSIONS AT SURFACE	
DATE	TIME*	DEPTH	WIDTH X LENGTH =	
* Hrs. after completion			TEST PIT #1	



# TEST BORING REPORT

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	23-May-00
DRILLER	L. TODD	DATE FINISHED	23-May-00

Elevation	251.8	ft	Datum	City	Boring Location	See Boring Location Plan
Item	Casing	Sampler	Core Barrel	Rig Make & Model	CME 55 - Truck Mount	
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head
						Hammer Type
						<input checked="" type="checkbox"/> Safety
						<input type="checkbox"/> Doughnut
						Casing
						<input type="checkbox"/> Driven
						<input type="checkbox"/> Spun
						Drill Mud
						<input type="checkbox"/> Bentonite
						<input type="checkbox"/> Polymer
						<input checked="" type="checkbox"/> None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						CONCRETE
		26	S1	1.0		Very dense black brown gray silty fine to coarse SAND, some rock fragments, dry.
		26	10"/12"	2.0		
		9	S2	2.0		Medium dense black brown silty fine to coarse SAND, some rock fragments, moist.
		10				
		18				
		15	12"/24"	4.0		Medium dense black brown yellow, silty fine to coarse SAND, some rock fragments, wet.
		4	S3	4.0		
5		8				
		5	7"/24"	6.0		Same.
		7	S4	6.0		
		17				FILL
		18				
		17	10"/24"	8.0		Very dense black brown silty fine to coarse SAND, some rock fragments. Obstruction at 8.0 ft.
		100/2	S5	8.0	8.2	
10						See Boring HA-101a (HA-101a offset 30' West of Original Location)
15						
20						
25						
30						

Water Level Data						Sample ID		Summary	
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	U	S
						Open End Rod	Thin Wall Tube	Undisturbed Sample	Split Spoon Sample
						Geoprobe			
								Overburden (Linear ft)	115
								Rock Cored (Linear ft)	---
								Number of Samples	18S
								BORING NO.	HA-101



# TEST BORING REPORT

**BORING NO.**  
**HA-101a**  
Page 2 of 5

<b>PROJECT</b>	PORT OF ROCHESTER	<b>H&amp;A FILE NO.</b>	70819-000
<b>LOCATION</b>	ROCHESTER, NEW YORK	<b>PROJECT MGR.</b>	M. VALENTINE
<b>CLIENT</b>	LABELLA ASSOCIATES	<b>FIELD REP.</b>	R. DEDRICK
<b>CONTRACTOR</b>	GEOLOGIC ENTERPRISES	<b>DATE STARTED</b>	7-Jun-00
<b>DRILLER</b>	L. TODD	<b>DATE FINISHED</b>	7-Jun-00

<b>Elevation</b>	251.8	<b>ft</b>	<b>Datum</b>	City	<b>Boring Location</b>	See Boring Location Plan			
<b>Item</b>	<b>Casing</b>	<b>Sampler</b>	<b>Core Barrel</b>	<b>Rig Make &amp; Model</b>			<b>Drill Mud</b>		
<b>Type</b>	HSA	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	<b>Hammer Type</b>		<input type="checkbox"/> Bentonite
<b>Inside Diameter (in)</b>	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Polymer	
<b>Hammer Weight (lb)</b>	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut	<input checked="" type="checkbox"/> None	
<b>Hammer Fall (in)</b>	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head	<b>Casing</b>	<input type="checkbox"/> Driven	<input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						Augered to 5.0 ft.
5	5		S6	5.0		Loose gray brown fine to medium SAND, trace silt, organics, moist.
	3					ALLUVIUM
	5		14"/24"	7.0		Augered to 10.0 ft.
10	4		S7	10.0		Same, except wet.
	4					
	3					
	2		16"/24"	12.0		
15	1		S8	15.0		Medium dense gray brown fine to coarse SAND, some coarse gravel, wet.
	9					
	7					
	7		23"/24"	17.0		
20	11		S9	20.0		Same.
	10					
	11					
	14		20"/24"	22.0		
25	12		S10	25.0		Same, except loose.
	3					
	4					
	3		20"/24"	27.0		
30						

Water Level Data						Sample ID		Summary	
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	U	S
						Open End Rod	Thin Wall Tube	Undisturbed Sample	Split Spoon Sample
						Geoprobe			
								Overburden (Linear ft)	115
								Rock Cored (Linear ft)	---
								Number of Samples	18S
								<b>BORING NO.</b>	<b>HA-101a</b>

# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		9	S11	30.0		Loose gray brown silty fine to coarse SAND, trace gravel, wet.
		4				
		4				ALLUVIUM
		3	22"/24"	32.0		
35		2	S12	35.0		Same, except very loose.
		1				
		2				
		2	23"/24"	37.0		
40		1	S13	40.0		Very loose gray brown fine sandy SILT, little clay, organics, wet.
		1				
		2				
		3	22"/24"	42.0		
45		1	S14	45.0		Same, except no organics.
		2				
		2				
		3	18"/24"	47.0		
50		1	S15	50.0		Same.
		2				
		2				
		2	20"/24"	52.0		
55		1	S16	55.0		Same.
		2				
		3				
		5	20"/24"	57.0		
60		1	S17	60.0		Loose gray brown SILT, little clay, trace sand, wet.
		3				
		4				
		4	20"/24"	62.0		
65		1	S18	65.0		Same.
		2				
		2				
		4	23"/24"	67.0		
						(Augered to bedrock)
70						



# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						(Augered to bedrock - No samples recovered)
75						
80						
85						
90						
95						
100						
105						
110						
					FILE NO.	70819-000
					BORING NO.	HA-101a

# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks				
						(Encounter Change in drilling conditions)				
						? WEATHERED ROCK				
115						(Auger refusal) Bottom of Exploration of 115.0 ft.				
120										
125										
130										
135										
140										
145										
150										
						<table border="1"> <tr> <td>FILE NO.</td> <td>70819-000</td> <td>BORING NO.</td> <td>HA-101a</td> </tr> </table>	FILE NO.	70819-000	BORING NO.	HA-101a
FILE NO.	70819-000	BORING NO.	HA-101a							





# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		10	S10	30.0		Very dense gray brown silty fine to coarse SAND, little rock fragments, wet. GLACIAL TILL
		100/3	7"/10"	30.8		
35		19	S11	35.0		Very dense silty fine to coarse SAND, some gravel, trace clay, wet.
		60 100/3	16"/16"	36.3		
40		15	S12	40.0		Same.
		100/4	10"/11"	40.9		
45		20	S13	45.0	45.0	Very dense red brown silty fine to coarse SAND, trace clay, moist. WEATHERED ROCK
		100/1	6"/8"	45.6		
50		100/3	S14	50.0	50.5	Same, with little clay. Began rock coring at 50.5 ft.
				50.3		
55						Competent, red sandstone with interbedded gray sandstone. QUEENSTONE FORMATION
60						Highly fractured 58.8 ft. to 60.5 ft. Bottom of Exploration at 60.5 ft.
65						
70						
					FILE NO.	70819-000
					BORING NO.	HA-102



# CORE BORING REPORT

BORING NO.

**HA-102**

Page 1 of 1

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	30-May-00
DRILLER	L. TODD	DATE FINISHED	30-May-00

Elevation		ft Datum		Boring Location			
Item	Casing	Sampler	Core Barrel	Rig Make & Model		Drill Mud	
Type	HAS	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head	Casing
							<input type="checkbox"/> Driven <input type="checkbox"/> Spun

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery RQD		Weathering	Stratum Change (ft)	Visual Classification and Remarks
			(in)	(%)			
		50.5					
			3.4/5.0	68			Competent red sandstone with interbedded gray sandstone.  QUEENSTONE FORMATION
5	Avg. 3-4 minutes per foot						
			3.45/5.0	69			Highly fractured 8.0 ft. to 10.0 ft.
10		60.5					
15							
20							
25							
30							

Water Level Data						Sample ID		Summary	
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	Overburden (Linear ft)	50.5
								Rock Cored (linear ft)	10
								Samples	14S
								BORING NO.	HA-102

# TEST BORING REPORT

BORING NO.

**HA-103**

Page 1 of 3

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	D. NOSTRANT
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	31-May-00
DRILLER	L. TODD	DATE FINISHED	31-May-00

Elevation	253.86	ft	Datum	City	Boring Location	See Bring Location Plan
Item	Casing	Sampler	Core Barrel	Rig Make & Model	CME-55 Truck Mount	
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head
Inside Diameter (in)	3-1/4	1-3/8	1-7/8	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head
					Hammer Type	Drill Mud
					<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Bentonite
					<input type="checkbox"/> Doughnut	<input type="checkbox"/> Polymer
					Casing	<input checked="" type="checkbox"/> None
					<input type="checkbox"/> Driven	<input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0	8		S1	0.0		Medium dense gravelly coarse to fine sand, little silt, dry.
	11					FILL
	15	15"/24"		2.0	2.0	Medium dense dark brown coarse to fine SAND, some gravel, little silt, dry.
	18		S2	2.0		
	11					FILL
	7	10"/24"		4.0		
	9		S3	4.0		Same.
	8					Moist to wet beginning at 5.5 ft.
5	4					FILL
	6			6.0		
	3		S4	6.0		Same, wet.
	5					FILL
	8					Noted refusal and suspected cobble at 7.5 ft.
	50/0	4"/18"		7.5		
	5		S5	8.0		Same, except black.
	7					FILL
	9					
	4	6"/24"		10.0		
10	7		S6	10.0		Medium dense black coarse to fine sandy GRAVEL, little silt, wet.
	9					FILL
	10					
	15			12.0		
	62		S7	12.0		Same, except very dense, gray-black.
	26					FILL
	29					Driller noted sulphur-like odor in sample.
	9	12"/24"		14.0		See Note on Page 2 of 3.
						Auger Refusal at 14.0 ft.
						Boring moved 18.0 ft. west of original location.

Water Level Data					Sample ID		Summary	
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)			
						O Open End Rod	Overburden (Linear ft)	14
						T Thin Wall Tube	Rock Cored (Linear ft)	--
						U Undisturbed Sample	Number of Samples	75
						S Split Spoon Sample	BORING NO. HA-103	
						G Geoprobe		





# TEST BORING REPORT

BORING NO.  
**HA-103a**  
Page 2 of 3

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	31-May-00
DRILLER	L. TODD	DATE FINISHED	1-Jun-00

Elevation	253.86	ft	Datum	City	Boring Location	See Boring Location Plan		
Item	Casing	Sampler	Core Barrel	Rig Make & Model	CME 55 - Truck Mount			Drill Mud
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type	<input type="checkbox"/> Bentonite
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Polymer
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut	<input checked="" type="checkbox"/> None
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head	Casing	<input type="checkbox"/> Driven <input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		A				(Offset 18 west of original location)
		U				
		G	See Samples for 0-14 ft. in Boring HA-103			
		E				
		R				
5		11			5.0	
		14				
		7				FILL
		4		7.0		
		A				
		U				
		G				
		E				
		R				
10		9		10.0		Dense black brown fine to coarse SAND, little silt, slag fragments, wet.
		19				
		22				
		20		12.0		
		7				
		11	S8	14.0		Same, except medium dense.
15		15				
		12	14"724"	16.0		
		8				
		3	No Recovery			
		6		18.0		
		8	S9	18.0		Medium dense black brown silty fine to coarse SAND, wet.
		10				
		8				ALLUVIUM
20		6	6"724"	20.0		
		5				
		3	S10	24.0		Loose gray brown fine sand SILT, wet.
25		3				
		4	2"724"	26.0		
		2				
		3	S11	29.0		Loose gray fine sand SILT, some clay, organics, moist.
30		3				
		3	12"18"	30.5		

Water Level Data						Sample ID		Summary	
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	Open End Rod	Overburden (Linear ft)	7
						T	Thin Wall Tube	Rock Cored (Linear ft)	--
						U	Undisturbed Sample	Number of Samples	19S
						S	Split Spoon Sample	BORING NO. HA-103a	
						G	Geoprobe		



# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
35		1	S12	34.0		Loose gray fine sand SILT, some clay, organics, moist.
		3				ALLUVIUM
40		3	12"/24"	36.0		
		4				
45		2	S13	39.0		Loose gray silty fine to coarse SAND, trace organics, moist.
		2				
50		4	23"/24"	40.0		
		4				
55		2	S14	44.0		Loose gray brown fine to medium sandy SILT, little clay, organics, moist.
		4				
60		5	22"/24"	46.0		
		4				
65		2	S15	49.0		Same.
		2				
70		3	22"/24"	51.0		
		3				
75		2	S16	54.0		Same.
		2				
80		3	23"/24"	56.0		
		3				
85		2	S17	59.0		Same.
		2				
90		3	22"/24"	61.0		
		3				
95		4	S18	64.0		Medium dense gray brown fine to medium sandy SILT, little clay, organics, moist.
		4				
100		7	22"/24"	66.0		
		7				
105		7	S19	69.0		Bottom of Exploration at 71.0 ft.
		10				
110		10	17"/24"	71.0		

# TEST BORING REPORT

**BORING NO.**  
**HA-104**

Page 1 of 2

<b>PROJECT</b>	PORT OF ROCHESTER	<b>H&amp;A FILE NO.</b>	70819-000
<b>LOCATION</b>	ROCHESTER, NEW YORK	<b>PROJECT MGR.</b>	M. VALENTINE
<b>CLIENT</b>	LABELLA ASSOCIATES	<b>FIELD REP.</b>	R. DEDRICK
<b>CONTRACTOR</b>	GEOLOGIC ENTERPRISES	<b>DATE STARTED</b>	13-Jun-00
<b>DRILLER</b>	L. TODD	<b>DATE FINISHED</b>	13-Jun-00

<b>Elevation</b>	254.25	<b>ft</b>	<b>Datum</b>	City	<b>Boring Location</b>	See Boring Location Plan		
<b>Item</b>	<b>Casing</b>	<b>Sampler</b>	<b>Core Barrel</b>	<b>Rig Make &amp; Model</b>			<b>Drill Mud</b>	
<b>Type</b>	HSA	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	<b>Hammer Type</b>	
<b>Inside Diameter (in)</b>	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Bentonite
<b>Hammer Weight (lb)</b>	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut	<input type="checkbox"/> Polymer
<b>Hammer Fall (in)</b>	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head	<input type="checkbox"/>	<input checked="" type="checkbox"/> None
							<b>Casing</b>	<input type="checkbox"/> Driven <input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						Mudline 19.0 ft below top of seawall.
						Sunk augers 4.0 ft below mudline.
5			WOR S1	4.0		Very loose gray brown silty coarse to fine SAND.
			WOR			
			WOR			
			I 11"/24"	6.0		ALLUVIUM
10			WOR S2	9.0		Same as above.
			WOR			
			WOR			
			WOR 20"/24"	11.0		
15			1 S3	14.0		Loose gray brown sandy fine to medium SILT, organics, wet.
			3			
			3			
			5 24"/24"	16.0		
20			3 S4	19.0		Same as above.
			5			
			9 20"/24"	21.0		
25			2 S5	24.0		Same as above.
			2			
			4			
			6 24"/24"	26.0		
30						

Water Level Data						Sample ID		Summary					
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	U	S	G	Overburden (Linear ft)	Rock Cored (Linear ft)	Number of Samples
											31	--	6S
											<b>BORING NO.</b>	<b>HA-104</b>	



# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks		
		2	S6	29.0		Loose gray fine to medium sandy SILT, organics, wet. ALLUVIUM Bottom of Exploration at 31.0 ft.		
		2	24"/24"	31.0				
		4						
		5						
35								
40								
45								
50								
55								
60								
65								
70								
					FILE NO.	70819-000	BORING NO.	HA-104





# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		1	S7	30.0		Loose gray brown sandy SILT, organics.
		3				
		3				ALLUVIUM
		6		32.0		Bottom of Exploration at 32.0 ft.
35						
40						
45						
50						
55						
60						
65						
70						
					FILE NO.	70819-000
					BORING NO.	HA-105



# TEST BORING REPORT

**BORING NO.**  
**HA-106**

Page 1 of 2

**PROJECT** PORT OF ROCHESTER  
**LOCATION** ROCHESTER, NEW YORK  
**CLIENT** LABELLA ASSOCIATES  
**CONTRACTOR** GEOLOGIC ENTERPRISES  
**DRILLER** L. TODD

**H&A FILE NO.** 70819-000  
**PROJECT MGR.** M. VALENTINE  
**FIELD REP.** R. DEDRICK  
**DATE STARTED** 1-Jun-00  
**DATE FINISHED** 1-Jun-00

Elevation	250.79	ft	Datum	City	Boring Location	See Boring Location Plan			
Item	Casing	Sampler	Core Barrel	Rig Make & Model			CME 55 - Truck Mount		Drill Mud
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type		<input type="checkbox"/> Bentonite
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Polymer	<input type="checkbox"/> None
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut	<input checked="" type="checkbox"/> None	
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head	Casing	<input type="checkbox"/> Driven	<input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						
		Augered				
		3	S1	0.5		Medium dense brown silty fine to coarse SAND, some rock fragments, dry.
		4				FILL
		7	11"/18"	2.0		
		8	S2	2.0		Medium dense red brown silty fine to coarse SAND, trace rock fragments, moist.
		5				
		5				
		7	12"/24"	4.0		
		4	S3	4.0		Medium dense black brown fine to coarse SAND, little silt, wet.
		12				ALLUVIUM
5		17				
		15	16"/24"	6.0		
		20	S4	6.0		Same, except very dense.
		37				
		31				
		36	12"/24"	8.0		Same.
		28	S5	8.0		
		24				
10		12	6"/24"	10.0		Loose gray brown fine to coarse SAND, little silt, wet.
		5	S6	10.0		
		3				
		5				
		6	8"/24"	12.0		
		3	S7	12.0		Same, except trace rock fragments.
		3				
		6				
		5	12"/24"	14.0		
		6	S8	14.0		Medium dense gray brown fine to coarse SAND, little silt, wet.
15		12				
		14				
		14	11"/24"	16.0		
		4				
		3	S9	19.0		Loose gray fine sand SILT, little clay, moist.
20		4				
		2	3"/24"	21.0		
		2				
		2	S10	24.0		Same, except very loose.
25		2				
		4	15"/24"	26.0		
		1				
		2	S11	29.0		Loose gray brown fine to medium sand SILT, little clay, organics, moist.
30		3	17"/24"	31.0		

Water Level Data						Sample ID		Summary					
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	U	S	G	Overburden (Linear ft)	Rock Cored (Linear ft)	Number of Samples
											41	--	13S
											<b>BORING NO.</b>	<b>HA-106</b>	





# TEST BORING REPORT

BORING NO.

**HA-107**

Page 1 of 2

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	26-May-00
DRILLER	L. TODD	DATE FINISHED	26-May-00

Elevation	266.08	ft	Datum	City	Boring Location	See Boring Location Plan		
Item	Casing	Sampler	Core Barrel	Rig Make & Model	CME 55 - Truck Mount			Drill Mud
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type	<input type="checkbox"/> Bentonite
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Polymer
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut	<input checked="" type="checkbox"/> None
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head	Casing	<input type="checkbox"/> Driven <input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						ASPHALT
	5		S1	0.5	0.5	Medium dense black brown fine to coarse SAND, some gravel, dry.
	11					FILL
	21		7"/18"	2.0		
	13		S2	2.0		Medium dense brown fine to coarse SAND, damp.
	18					
	14					
	11		16"/24"	4.0		
	5		S3	4.0		Dense brown black fine to coarse SAND, little silt, brick, damp.
	22					
5	22					
	30		17"/24"	6.0		
	14		S4	6.0		Same, except medium dense.
	11					
	14					
	12		20"/24"	8.0		
	4		S5	8.0		Medium dense brown orange fine to coarse SAND, moist.
	6					
	6					
	7		18"/24"	10.0		
10						
	1		S6	13.0	13.0	Loose brown gray fine sand SILT, trace to little clay, trace organics, moist.
	2					
	3					
15	3		21"/24"	15.0		ALLUVIUM
	2		S7	18.0		Same.
	3					
	4					
	5		24"/24"	20.0		
20						
	7		S8	23.0	23.0	Very dense gray brown silty SAND, some gravel. Pockets of brown fine to coarse SAND, wet.
	35					
	37					
	21		22"/24"	25.0		GLACIAL TILL
25						
	22		S9	28.0		Same.
	24					
	26					
	26		20"/24"	30.0		
30						

Water Level Data						Sample ID		Summary					
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	U	S	G	Overburden (Linear ft)	Rock Cored (Linear ft)	Number of Samples
26-May		0.5			18						49.0	5.0	13S
											BORING NO. HA-107		





# CORE BORING REPORT

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	26-May-00
DRILLER	L. TODD	DATE FINISHED	26-May-00

Elevation		ft Datum		Boring Location			
Item	Casing	Sampler	Core Barrel	Rig Make & Model			Drill Mud
Type	HAS	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input type="checkbox"/> Bentonite
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Polymer
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Roller Bit	<input checked="" type="checkbox"/> None
						<input type="checkbox"/> Cutting Head	Casing <input type="checkbox"/> Driven <input type="checkbox"/> Spun

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery RQD		Weathering	Stratum Change (ft)	Visual Classification and Remarks
			(in)	(%)			
		49.5					0-2 ft. Highly fractured.
	Avg. 4 ft. per minute		1.9/5.0	38			Competent red sandstone with interbedded gray sandstone.  QUEENSTONE FORMATION
5		54.5					
10							
15							
20							
25							
30							

Water Level Data						Sample ID		Summary	
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	U	S
						Open End Rod <td>Thin Wall Tube <td>Undisturbed Sample <td>Split Spoon Sample </td></td></td>	Thin Wall Tube <td>Undisturbed Sample <td>Split Spoon Sample </td></td>	Undisturbed Sample <td>Split Spoon Sample </td>	Split Spoon Sample
						Geoprobe			
								Overburden (Linear ft)	
								Rock Cored (linear ft)	
								Samples	
								BORING NO.	HA-107



# TEST BORING REPORT

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	12-Jun-00
DRILLER	L. TODD	DATE FINISHED	12-Jun-00

Elevation	251.78	ft	Datum	City	Boring Location	See Boring Location Plan
Item	Casing	Sampler	Core Barrel	Rig Make & Model	CME 55 - Truck Mount	
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head
						Hammer Type
						<input checked="" type="checkbox"/> Safety
						<input type="checkbox"/> Doughnut
						Casing
						<input type="checkbox"/> Driven
						<input type="checkbox"/> Spun
						<input type="checkbox"/> Bentonite
						<input type="checkbox"/> Polymer
						<input checked="" type="checkbox"/> None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		7	S1	0.0		Medium dense brown black gray silty coarse to fine SAND, some gravel, ash, dry.
		10				FILL
		7	17"/24"	2.0	2.5	Same.
		7	S2	2.0		Medium dense brown silty coarse to fine SAND, dry.
		8				
		11	14"/24"	4.0		Medium dense brown black silty coarse to fine SAND, moist.
		9	S3	4.0		
5		10				ALLOVIUM
		10	17"/24"	6.0		
		2	S4	9.0		Very loose gray brown fine sandy SILT, little clay, organics, moist.
10		1				
		2	15"/24"	11.0		
		1	S5	14.0		Very loose, gray brown silty medium to fine SAND, organics, moist.
15		2				
		2	16"/24"	16.0		
		1	S6	19.0		Same.
20		1				
		2	20"/24"	21.0		
		2	S7	24.0	25.0	Same.
25		1				
		30	16"/24"	26.0		Very dense red silty fine to coarse SAND, dry.
		46				DISINTEGRATED RED SANDSTONE
		100/3	S8	27.5		Same, except some rock fragment.
			4"/4"	27.8		Bottom of Exploration at 27.9 ft.
						Auger Refusal.
30						

Water Level Data						Sample ID		Summary					
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	U	S	G	Overburden (Linear ft)	Rock Cored (Linear ft)	Number of Samples
						O	T	U	S	G	27.8	--	8S
											BORING NO.	HA-109	









# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		1	S10	30.0		Very loose gray brown fine sand SILT, little clay, root structures, wood, moist.
		2				
		2				
		3	24"/24"	32.0		
						ALLUVIUM
35		2	S11	35.0		Same, except some clay.
		2				
		2				
		2	24"/24"	37.0		
40		2	S12	40.0		Very loose gray-green fine sand SILT, root structures, red fine to coarse sand in shoe, moist.
		2				
		6	24"/24"	42.0	42.0	
						GLACIAL TILL
45		70	S13	45.0		Dense red brown SILT, little clay, gray green fractured sandstone.
		33				
		8			46.0	
		12	16"/24"	47.0		
50		100/2				No Recovery.
55		100/2	S14	55.0	55.0	Very dense red, brown fractured sandstone, red brown silt, wet.
			2"/3"	55.3		
						WEATHERED BEDROCK
						Auger Refusal at 58.5 ft.; began rock coring.
60						
65						
70						
					FILE NO.	70819-000
					BORING NO.	HA-111



# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						Competent red sandstone with interbedded gray sandstone.
						QUEENSTON FORMATION
						Bottom of Exploration at 63.5 ft.
65						Monitoring well installed in adjacent borehole. See Installation Report for LBA-MWI
70						
75						
80						
85						
90						
95						
##						
					FILE NO.	70819-000
					BORING NO.	HA-111

# CORE BORING REPORT

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	23-May-00
DRILLER	L. TODD	DATE FINISHED	23-May-00

Elevation		ft		Datum		Boring Location					
Item	Casing	Sampler	Core Barrel	Rig Make & Model						Drill Mud	
Type	HAS	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type		<input type="checkbox"/> Bentonite		
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Polymer			
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut	<input checked="" type="checkbox"/> None			
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head	Casing		<input type="checkbox"/> Driven <input type="checkbox"/> Spun		

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery RQD		Weathering	Stratum Change (ft)	Visual Classification and Remarks
			(in)	(%)			
		58.5					
5							Competent red sandstone with interbedded gray sandstone.
5							QUEENSTONE FORMATION
3							
4							
5		63.5					
10							
15							
20							
25							
30							

Water Level Data						Sample ID		Summary	
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	Overburden (Linear ft)	
								Rock Cored (linear ft)	
								Samples	
								BORING NO. HA-111	



# TEST BORING REPORT

BORING NO.

**HA-112**

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PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	9-Jun-00
DRILLER	L. TODD	DATE FINISHED	9-Jun-00

Elevation	260.89	ft	Datum	City	Boring Location	See Boring Location Plan			
Item	Casing	Sampler	Core Barrel	Rig Make & Model			CME 55 - Truck Mount		Drill Mud
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type		<input type="checkbox"/> Bentonite
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Polymer	<input type="checkbox"/> None
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Spun
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head	Casing	<input type="checkbox"/> Driven	<input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0	3		S1	0.0		CRUSHED STONE
	4				1.0	FILL
	4					Loose brown silty fine to coarse SAND, dry.
	3	3	14"/24"	2.0		Loose brown silty fine to coarse SAND, trace clay, trace organics, moist.
	3		S2	2.0		ALLUVIUM
	3	3				
	3	3	18"/24"	4.0		Same, except very loose.
	3	1	S3	4.0		
5	2					
	3	3	18"/24"	6.0		
	5		S4	9.0		Medium dense brown fine sandy SILT, some clay pockets, moist.
10	5					
	6	6	17"/24"	11.0		
	2		S5	14.0		Loose gray brown fine sandy SILT, some clay pockets, moist.
15	2					
	3	3				
	5	5	20"/24"	16.0		
	2		S6	19.0	19.0	Loose gray brown silty coarse to fine SAND, some gravel, moist.
20	4					GLACIAL TILL
	5	5				
	6	6	12"/24"	21.0		
	3		S7	24.0		Loose gray brown silty fine to coarse SAND, some gravel, little clay, wet.
25	5					
	4	4				
	5	5	24"/24"	26.0		
30						

Water Level Data						Sample ID		Summary					
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	U	S	G	Overburden (Linear ft)	Rock Cored (Linear ft)	Number of Samples
											41	--	10S
										BORING NO.	HA-112		



# TEST BORING REPORT

BORING NO.  
**HA-112**

Page 2 of 2

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		5	S8	30.0		Medium dense gray brown silty fine to coarse SAND, some gravel, little clay, wet.
		16				
		19				
		21	23"/24"	32.0		
35		35	S9	35.0		Same, except very dense
		46				
		46				
		62	24"/24"	37.0		
40		44	S10	39.0		Same.
		46				
		66				
		100/3	24"/24"	41.0		Bottom of Exploration at 41.0 ft.
45						
50						
55						
60						
65						
70						

FILE NO. 70819-000

BORING NO. HA-112





# TEST BORING REPORT

BORING NO.

**HA-113a**

Page 2 of 2

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	7-Jun-00
DRILLER	L. TODD	DATE FINISHED	8-Jun-00

Elevation	270.8	ft	Datum	City	Boring Location	See Boring Location Plan
Item	Casing	Sampler	Core Barrel	Rig Make & Model	CME 55 - Truck Mount	
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head
						Hammer Type
						<input checked="" type="checkbox"/> Safety
						<input type="checkbox"/> Doughnut
						Casing
						<input type="checkbox"/> Driven
						<input type="checkbox"/> Spun
						Drill Mud
						<input type="checkbox"/> Bentonite
						<input type="checkbox"/> Polymer
						<input checked="" type="checkbox"/> None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						(Blind augered to 10.0 ft.) See Boring HA-113
5						
10		1	S5	10.0		Loose brown red silty fine to coarse SAND, little rock fragments, slag, moist.
		2				
		3				
		3	3"7/24"	12.0		FILL
15		7	S6	15.0		(Slag obstruction in spoon)
		11				
		11				
		14	1"7/24"	17.0		
20		3	S7	20.0	20.0	Very dense gray brown silty fine to coarse SAND, some gravel, pockets of clayey silt, moist.
		14				
		36				
		50	22"7/24"	22.0		GLACIAL TILL
25		30	S8	25.0		Same as above.
		76				
		98				
		100/3	22"7/24"	27.0		Bottom of Exploration at 27.0 ft.
30						

Water Level Data						Sample ID	Summary
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)		
						O Open End Rod	Overburden (Linear ft) 27.0 ft.
						T Thin Wall Tube	Rock Cored (Linear ft) --
						U Undisturbed Sample	Number of Samples 8S
						S Split Spoon Sample	
						G Geoprobe	
						BORING NO.	HA-113a



















# TEST BORING REPORT

BORING NO.

**HA-118**

Page 1 of 2

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	8-Jun-00
DRILLER	L. TODD	DATE FINISHED	8-Jun-00

Elevation	242.78	ft	Datum	City	Boring Location	See Boring Location Plan
Item	Casing	Sampler	Core Barrel	Rig Make & Model	CME 55 - Truck Mount	
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head
						Drill Mud
						<input type="checkbox"/> Bentonite
						<input type="checkbox"/> Polymer
						<input checked="" type="checkbox"/> None
						Casing <input type="checkbox"/> Driven <input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						ASPHALT
	9		S1	0.5		Medium dense black brown red silty fine to coarse SAND, brick, some rock fragments, dry.
	18				2.0	FILL
	7	9	13"/18"	2.0	2.0	Medium dense brown silty fine to coarse SAND, moist.
	12		S2			ALLOVIUM
	9					
	8		12"/24"	4.0		
	4		S3	4.0		Loose gray brown silty fine to medium SAND, organics, moist.
5	4					
	3					
	3		12"/24"	6.0		
10						
	6		S4	10.0		Medium dense gray fine to coarse SAND, little silt, little gravel, wet.
	14					
	12		16"/24"	12.0		
15						
	3		S5	15.0		Very loose brown organic SILT, moist.
	1					
	1					
	4		16"/24"	17.0		
20					20.0	
	4		S6	20.0		Medium dense gray brown silty fine to coarse SAND, some gravel, moist.
	16					
	19					
	22		20"/24"	22.0		GLACIAL TILL
25						
	28		S7	25.0		Very dense brown silty fine to coarse SAND, some gravel, moist.
	100/4		10"/10"	25.9		
30						

Water Level Data						Sample ID	Summary
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)		
5/8/2000		0.5			9.1	O Open End Rod	Overburden (Linear ft) 51
						T Thin Wall Tube	Rock Cored (Linear ft) --
						U Undisturbed Sample	Number of Samples 12S
						S Split Spoon Sample	
						G Geoprobe	
						BORING NO.	HA-118



# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		100/4	S8 3"/5"	30.0 30.4		Very dense brown silty fine to coarse SAND, some gravel, moist.
35		18 77 100/5	S9 12"/18"	35.0 36.5		Same, except gray brown.
40		36 66 98 87	S10 12"/24"	40.0 42.0		Same.
45		100/5	S11 3"/6"	45.0 45.5		Same, except trace rock fragments.
50		100/4	S12 4"/5"	50.0 50.5		Very dense red silty sandstone rock fragments. Bottom of Exploration at 51.0 ft.
55						
60						
65						
70						

# TEST BORING REPORT

<b>PROJECT</b>	PORT OF ROCHESTER	<b>H&amp;A FILE NO.</b>	70819-000
<b>LOCATION</b>	ROCHESTER, NEW YORK	<b>PROJECT MGR.</b>	M. VALENTINE
<b>CLIENT</b>	LABELLA ASSOCIATES	<b>FIELD REP.</b>	R. DEDRICK
<b>CONTRACTOR</b>	GEOLOGIC ENTERPRISES	<b>DATE STARTED</b>	2-Jun-00
<b>DRILLER</b>	L. TODD	<b>DATE FINISHED</b>	2-Jun-00

<b>Elevation</b>	250.52	<b>ft</b>	<b>Datum</b>	<b>City</b>	<b>Boring Location</b>	See Boring Location Plan		
<b>Item</b>	<b>Casing</b>	<b>Sampler</b>	<b>Core Barrel</b>	<b>Rig Make &amp; Model</b>			<b>Drill Mud</b>	
<b>Type</b>	HSA	SS	NX	CME 55 - Truck Mount				
<b>Inside Diameter (in)</b>	3-1/4	1-3/8	2	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	<b>Hammer Type</b>	
<b>Hammer Weight (lb)</b>	--	140		<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety	
<b>Hammer Fall (in)</b>	--	30		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut	
				<input type="checkbox"/> Skid		<input type="checkbox"/> Cutting Head	<input type="checkbox"/> Driven <input type="checkbox"/> Spun	

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						ASPHALT
		44	S1	1.0		Very dense brown gravelly fine to coarse SAND, dry.
		66	3"/12"	2.0		FILL
		10	S2	2.0		Medium dense brown silty fine to medium SAND, little silt, wet.
		10				ALLOVIUM
		6	14"/24"	4.0		Medium dense brown gray, fine to coarse SAND, little silt, wet.
		7	S3	4.0		
5		7				
		7	16"/24"	6.0		Medium dense gray brown fine to coarse SAND, some silt, little rock fragments, wet.
		8	S4	6.0		
		12				
		20	10"/24"	8.0		Medium dense gray brown gravelly fine to coarse SAND, trace silt, wet.
		25	S5	8.0		
		5				
		14				
		25	20"/24"	10.0		
10						
		14	S6	14.0		Loose gray brown sandy SILT, wet.
15		3				
		3	18"/24"	16.0		
		3	S7	19.0		Loose gray brown silty fine to coarse SAND, trace gravel, wet.
20		3				
		3	20"/24"	21.0		
		6	S8	24.0		Loose gray brown fine to medium sandy SILT, trace clay, organics, moist.
25		2				
		3	15"/24"	26.0		
		1	S9	29.0		Same.
30		1				
		3	14"/24"	31.0		

Water Level Data						Sample ID	Summary
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)		
						O Open End Rod	Overburden (Linear ft) 51
						T Thin Wall Tube	Rock Cored (Linear ft) --
						U Undisturbed Sample	Number of Samples 13S
						S Split Spoon Sample	
						G Geoprobe	
							<b>BORING NO. HA-119</b>



# TEST BORING REPORT

BORING NO.  
**HA-119**

Page 2 of 2

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
				31.0		
35		1 2 3	S10 17"/24"	34.0 36.0		Loose gray brown fine sand SILT, trace clay, organics, moist.
40		1 2 3	S11 22"/24"	39.0 41.0		Same.
45		1 2 3	S12 24"/24"	44.0 46.0		Loose, gray fine sand SILT, trace clay, organics.
50		1 2 4	S13 18"/24"	49.0 51.0		Same.
						Bottom of Exploration at 51.0 ft.
55						
60						
65						
70						





# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		1	S11	30.0		Very loose gray brown fine to medium sandy SILT, trace clay, organics, moist.
		2				
		2	18"/24"	32.0		ALLUVIUM
35		1	S12	35.0		Same.
		2				
		2	24"/24"	37.0		
40		1	S13	40.0		Same.
		3				
		3	24"/24"	42.0		
45		1	S14	45.0		Same.
		2				
		4				
		3	22"/24"	47.0		
50		H	S15	50.0		Same.
		2				
		2				
		2	24"/24"	52.0		Bottom of Exploration at 52.0 ft.
55						
60						
65						
70						



# TEST BORING REPORT

BORING NO.

**HA-121**

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PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	30-May-00
DRILLER	L. TODD	DATE FINISHED	30-May-00

Elevation	276 +/-	ft	Datum	City	Boring Location	See Boring Location Plan
Item	Casing	Sampler	Core Barrel	Rig Make & Model	CME 55 - Truck Mount	
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck <input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV <input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track <input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid <input type="checkbox"/>	<input type="checkbox"/> Cutting Head	Casing <input type="checkbox"/> Driven <input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0	5		S1	0.0		Medium dense gray brown fine sand SILT, little clay, dry.
	8					FILL
	14		16"/24"	2.0		Dense gray red fine sand SILT, little clay, dry.
	20		S2	2.0		
	22		16"/24"	4.0	4.0	Dense brown silty fine to medium SAND, little clay, moist.
	14		S3	4.0		
5	20					ALLOVIUM
	24		18"/24"	6.0	6.0	Dense brown silty fine SAND, some clay, moist.
	14		S4	6.0		
	21		23"/24"	8.0		Dense brown silty fine to medium SAND, little clay, moist.
	24		S5	8.0		
	26		20"/24"	10.0		Medium dense brown silty fine to coarse SAND, pockets of clay, moist.
10	14		S6	10.0		
	8					
	12		19"/24"	12.0		
	17					
15	7		S7	15.0		Medium dense brown silty fine to coarse SAND, little clay, moist.
	9					
	9		16"/24"	17.0		
	10					
20	4		S8	20.0		Same.
	5					
	5		18"/24"	22.0		
	6					
25	3		S9	25.0		Loose gray brown sandy SILT, some clay, moist.
	3					
	4		20"/24"	27.0		
	4					
30						

Water Level Data						Sample ID		Summary					
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	U	S	G	Overburden (Linear ft)	Rock Cored (Linear ft)	Number of Samples
											61	10	16S
										BORING NO.	HA-121		



# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		2	S10	30.0		
		6				Medium dense brown gray silty fine to coarse SAND, little gravel, wet.
		8				
		10	20"/24"	32.0		GLACIAL TILL
35		2	S11	35.0		Same.
		16				
		18				
		20	14"/24"	37.0		
40		5	S12	40.0		Very dense brown gray silty fine to coarse SAND, some gravel, wet.
		64				
		37				
		67	17"/24"	42.0		
45		14	S13	45.0		Same, except little gravel.
		44				
		100/4	17"/18"	46.5		
50		6	S14	50.0		Same.
		100/2	6"/8"	50.7		
55		30	S15	55.0		Same.
		100/3	3"/9"	55.8		
60		100/4	S16	60.0	60.4	Same.
			2"/5"	60.4		Began Rock Coring at 61.0 ft.
						Moderately fractured red SANDSTONE with interbedded gray sandstone, clay pockets.
65						BEDROCK
70						Bottom of Exploration at 71.0 ft.
						FILE NO. 70819-000 BORING NO. HA-121

# CORE BORING REPORT

**BORING NO.**

**HA-121**

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<b>PROJECT</b>	PORT OF ROCHESTER	<b>H&amp;A FILE NO.</b>	70819-000
<b>LOCATION</b>	ROCHESTER, NEW YORK	<b>PROJECT MGR.</b>	M. VALENTINE
<b>CLIENT</b>	LABELLA ASSOCIATES	<b>FIELD REP.</b>	R. DEDRICK
<b>CONTRACTOR</b>	GEOLOGIC ENTERPRISE	<b>DATE STARTED</b>	31-May-00
<b>DRILLER</b>	L. TODD	<b>DATE FINISHED</b>	31-May-00

Elevation	ft	Datum	Boring Location											
Item	Casing	Sampler	Core Barrel	Rig Make & Model					Hammer Type			Drill Mud		
Type	HAS	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type			<input type="checkbox"/> Bentonite				
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety			<input type="checkbox"/> Polymer				
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut			<input checked="" type="checkbox"/> None				
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head	Casing			<input type="checkbox"/> Driven <input type="checkbox"/> Spun				

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery RQD		Weathering	Stratum Change (ft)	Visual Classification and Remarks
			(in)	(%)			
		61.0					
	6 to 7 minutes per foot		4.8/2.1				Moderately fracture red SANDSTONE with interbedded gray sandstone, clay pockets.  QUEENSTONE FORMATION
5		66.0					
	5 to 5 minutes per foot		4.5/3.9				
10		71.0					Bottom of Exploration at 71.0 ft.
15							
20							
25							
30							

Water Level Data						Sample ID		Summary	
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	T	U	S
						Open End Rod	Thin Wall Tube	Undisturbed Sample	Split Spoon Sample
						Geoprobe			
								Overburden (Linear ft)	61
								Rock Cored (linear ft)	10
								Samples	16S
								<b>BORING NO.</b>	<b>HA-121</b>



# TEST BORING REPORT

BORING NO.

**HA-122**

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PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	D. NOSTRANT
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	31-May-00
DRILLER	L. TODD	DATE FINISHED	31-May-00

Elevation	252.8	ft	Datum	City	Boring Location	See Boring Location Plan
Item	Casing	Sampler	Core Barrel	Rig Make & Model	CME-55 Truck Mount	Drill Mud
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Track <input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	<input type="checkbox"/> Bentonite
Inside Diameter (in)	3-1/4	1-3/8	1-7/8	<input type="checkbox"/> ATV <input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input type="checkbox"/> Polymer
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track <input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input checked="" type="checkbox"/> None
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid <input type="checkbox"/>	<input checked="" type="checkbox"/> Cutting Head	Casing <input type="checkbox"/> Driven <input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0					0.3	TOPSOIL Medium dense dark brown, coarse to fine sand, little cinders, little gravel.
						FILL
						Same.
						No Recovery.
5						Loose dark brown coarse to fine sand, some gravel, trace silt, wet.
						Same.
10						Same.
						Dense blue-gray gravel, little coarse to fine sand, wet.
						Very loose brown ORGANICS, trace sand, trace silt, wet.
15						Very loose gray-brown fine clayey SILT, some sand, little organics, moist.
						ALLUVIUM
20						Same, except little fine sand.
						Same.
25						Same.
						Same.
30						

Water Level Data						Sample ID	Summary
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)		
						O Open End Rod	Overburden (Linear ft) 37
						T Thin Wall Tube	Rock Cored (Linear ft) 5
						U Undisturbed Sample	Number of Samples 12S
						S Split Spoon Sample	
						G Geoprobe	
							BORING NO. HA-122





# CORE BORING REPORT

**BORING NO.**  
**HA-122**

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PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	30-May-00
DRILLER	L. TODD	DATE FINISHED	30-May-00

Elevation		ft		Datum		Boring Location		
Item	Casing	Sampler	Core Barrel	Rig Make & Model				Drill Mud
Type	HAS	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type	<input type="checkbox"/> Bentonite
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Polymer
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut	<input checked="" type="checkbox"/> None
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid		<input type="checkbox"/> Cutting Head	Casing	<input type="checkbox"/> Driven <input type="checkbox"/> Spun

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery RQD		Weathering	Stratum Change (ft)	Visual Classification and Remarks
			(in)	(%)			
		37.0				37.0	Begin Coring at 37.0 ft.
			48	80			Moderately soft, moderately weathered red-brown-green mottled fine grained, very thin to thin bedded SANDSTONE with close to very close weathered shaley partings.
40		R1	35	58	MOD		QUEENSTON FORMATION
		42.0				42.0	Bottom of Boring at 42.0 ft.
45							
50							
55							
60							
65							

Water Level Data						Sample ID		Summary	
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	Open End Rod	Overburden (Linear ft)	37
						T	Thin Wall Tube	Rock Cored (linear ft)	5
						U	Undisturbed Sample	Samples	T2S
						S	Split Spoon Sample	<b>BORING NO. HA-122</b>	
						G	Geoprobe		



# TEST BORING REPORT

BORING NO.

**HA-123**

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PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	5-Jun-00
DRILLER	L. TODD	DATE FINISHED	6-Jun-00

Elevation	253.64	ft	Datum	City	Boring Location	See Boring Location Plan
Item	Casing	Sampler	Core Barrel	Rig Make & Model	CME 55 - Truck Mount	
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck <input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV <input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track <input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid <input type="checkbox"/>	<input type="checkbox"/> Cutting Head	Casing <input type="checkbox"/> Driven <input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						(0.3 ft. TOPSOIL)
	4		S1	0.0		Medium dense brown gray sandy SILT, little coarse gravel, dry.
	8					FILL
	8	8	8"/24"	2.0		
	8	7	S2	2.0		Medium dense brown red silty fine to coarse SAND, trace fine gravel, dry.
	8	8	13"/24"	4.0		
	5	4	S3	4.0		Same, except moist.
5		3	16"/24"	6.0		
	2	2	S4	6.0		Loose brown red silty fine to coarse SAND, trace fine gravel, wet.
	2	2	20"/24"	8.0		
	1	4	S5	8.0		Medium dense black brown silty fine to coarse SAND, wood, wet.
	8	9	16"/24"	10.0		
10		5	S6	10.0		No Recovery.
	5	2	0"/24"	12.0		
	5	5	S7	12.0		No Recovery.
	5	5	0"/24"	14.0		
	5	4	S8	14.0		Loose gray brown silty fine to coarse SAND, some organics, moist.
15		1	19"/24"	16.0		ALLUVIUM
	2	2	S9	19.0		Loose gray brown clayey SILT, little sand, moist.
20		2	10"/24"	21.0		
	1	2	S10	24.0		Same, except little clay.
25		2	14"/24"	26.0		
	2	2	S11	29.0		Same.
30		4	15"/24"	31.0		

Water Level Data						Sample ID	Summary
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)		
						O Open End Rod	Overburden (Linear ft) 114
						T Thin Wall Tube	Rock Cored (Linear ft) 2
						U Undisturbed Sample	Number of Samples 24S
						S Split Spoon Sample	
						G Geoprobe	
							BORING NO. HA-123



# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
				31.0		
35	2	2	S11	34.0		Very loose gray brown fine to medium sand SILT, trace clay, organics, moist.
		4	20"/24"	36.0		
						ALLUVIUM
40	1	2	S12	39.0		Same.
		3	14"/24"	41.0		
45	1	2	S13	44.0		Very loose gray silty fine to medium SAND, moist.
		3	19"/24"	46.0		
50	1	2	S14	49.0		Loose gray fine sand SILT, trace clay, organics, moist.
		3				
		4	20"/24"	51.0		
55	1	1	S15	54.0		Same.
		3				
		3	20"/24"	56.0		
60	1	2	S16	59.0		Same.
		5				
		4	20"/24"	61.0		
65	3	1	S17	64.0		Loose gray fine sand SILT, trace clay organics, moist.
		4				
		5	24"/24"	66.0		
70	WOH	5	S18	69.0		Same, except medium dense.
		7				
		8	22"/24"	71.0		

# TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
75		4	S19	74.0		Medium dense gray fine sandy SILT, trace clay, organics moist.
		5				ALLUVIUM
80		8	22"/24"	76.0		
		9				
85		2	S20	79.0		Same.
		5				
90		7	23"/24"	81.0		
		9				
85		5	S21	84.0		Same.
		5				
90		8	20"/24"	86.0		
		9				
95		5	S22	89.0		Medium dense gray brown silty medium to fine SAND, trace clay, moist.
		5				
95		8	21"/24"	91.0		
		9				
100		WOR	S23	94.0		Very loose gray brown silty medium to fine SAND, trace clay, moist.
		WOR				
100		WOR	22"/24"	96.0		
		5				
105		5	S24	99.0		Same, except medium dense.
		7				
105		8	22"/24"	101.0		
		9				
110		WOR	S25	104.0		Same, except very loose.
		WOR				
110		WOR	24"/24"	106.0		
		WOR				
110		3	S26	109.0		Medium dense gray brown silty fine to medium SAND, trace clay, pockets of rock fragments, moist.
		5				
110		5	23"/24"	111.0		
		12				



# TEST BORING REPORT

BORING NO.  
**HA-123**

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Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						ALLOUVIUM
					114.0	
115		100/2	S27 2 2/3"	114.0 114.2		Very dense sandy ROCK FRAGMENTS. WEATHERED BEDROCK Began rock coring 114.0 ft.  Bottom of Exploration at 116.0 ft.
120						
125						
130						
135						
140						
145						
150						
					FILE NO.	70819-000
					BORING NO.	HA-123



# CORE BORING REPORT

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	5-Jun-00
DRILLER	L. TODD	DATE FINISHED	6-Jun-00

Elevation	253.6	ft	Datum	City	Boring Location	See Boring Location Plan			
Item	Casing	Sampler	Core Barrel	Rig Make & Model			CNE 55 - Truck Mount		
Type	HAS	SS	NX	<input checked="" type="checkbox"/> Truck	<input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	Hammer Type		
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV	<input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input checked="" type="checkbox"/> Safety	<input type="checkbox"/> Polymer	
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track	<input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input type="checkbox"/> Doughnut	<input checked="" type="checkbox"/> None	
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid	<input type="checkbox"/>	<input type="checkbox"/> Cutting Head	Casing	<input type="checkbox"/> Driven <input type="checkbox"/> Spun	

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery RQD		Weathering	Stratum Change (ft)	Visual Classification and Remarks
			(in)	(%)			
						114.0	Begin coring at 114.0 ft.
115		114.0 R1	21 15	88 63	MOD		Moderately soft, moderately weathered red-brown-gray mottled fine-grained SANDSTONE.  QUEENSTON FORMATION
		116.0				116.0	Bottom of Boring at 116.0 ft.
120							
125							
130							
135							
140							

Water Level Data						Sample ID		Summary	
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O	Open End Rod	Overburden (Linear ft)	114
						T	Thin Wall Tube	Rock Cored (linear ft)	2
						U	Undisturbed Sample	Samples	27S
						S	Split Spoon Sample		
						G	Geoprobe		
								BORING NO.	HA-123

# TEST BORING REPORT

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	12-Jun-00
DRILLER	L. TODD	DATE FINISHED	12-Jun-00

Elevation	267.92	ft	Datum	City	Boring Location	See Boring Location Plan
Item	Casing	Sampler	Core Barrel	Rig Make & Model	CME 55 Truck Mount	Drill Mud
Type	HSA	SS	NX	<input checked="" type="checkbox"/> Truck <input type="checkbox"/> Tripod	<input checked="" type="checkbox"/> Cat-Head	<input type="checkbox"/> Bentonite
Inside Diameter (in)	3-1/4	1-3/8	2	<input type="checkbox"/> ATV <input type="checkbox"/> Geoprobe	<input type="checkbox"/> Winch	<input type="checkbox"/> Polymer
Hammer Weight (lb)	--	140		<input type="checkbox"/> Track <input type="checkbox"/> Air Track	<input type="checkbox"/> Roller Bit	<input checked="" type="checkbox"/> None
Hammer Fall (in)	--	30		<input type="checkbox"/> Skid <input type="checkbox"/>	<input type="checkbox"/> Cutting Head	Casing <input type="checkbox"/> Driven <input type="checkbox"/> Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						ASPHALT CRUSHED STONE
	6	4	S1 12"/12"	1.0		Medium dense brown black silty fine to medium SAND, little gravel, ash, brick, dry.
	3	7	S2	2.0		Loose brown silty fine to coarse SAND, moist.
	2	4	18"/24"			FILL
	7	7	S3	4.0		(Black rock obstruction in spoon.)
5	4	4	1"/24"	6.0		
	2	3	S4	6.0		Loose brown silty SAND, organics, wet.
	3	2	17"/24"	8.0		
	2	5	S5	8.0		Same.
	4	3	24"/24"	10.0		
10						Bottom of Exploration at 10.0 ft.
15						
20						
25						
30						

Water Level Data						Sample ID	Summary
Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)	O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon Sample G Geoprobe	Overburden (Linear ft) 10 Rock Cored (Linear ft) -- Number of Samples 5S
							BORING NO. HA-124







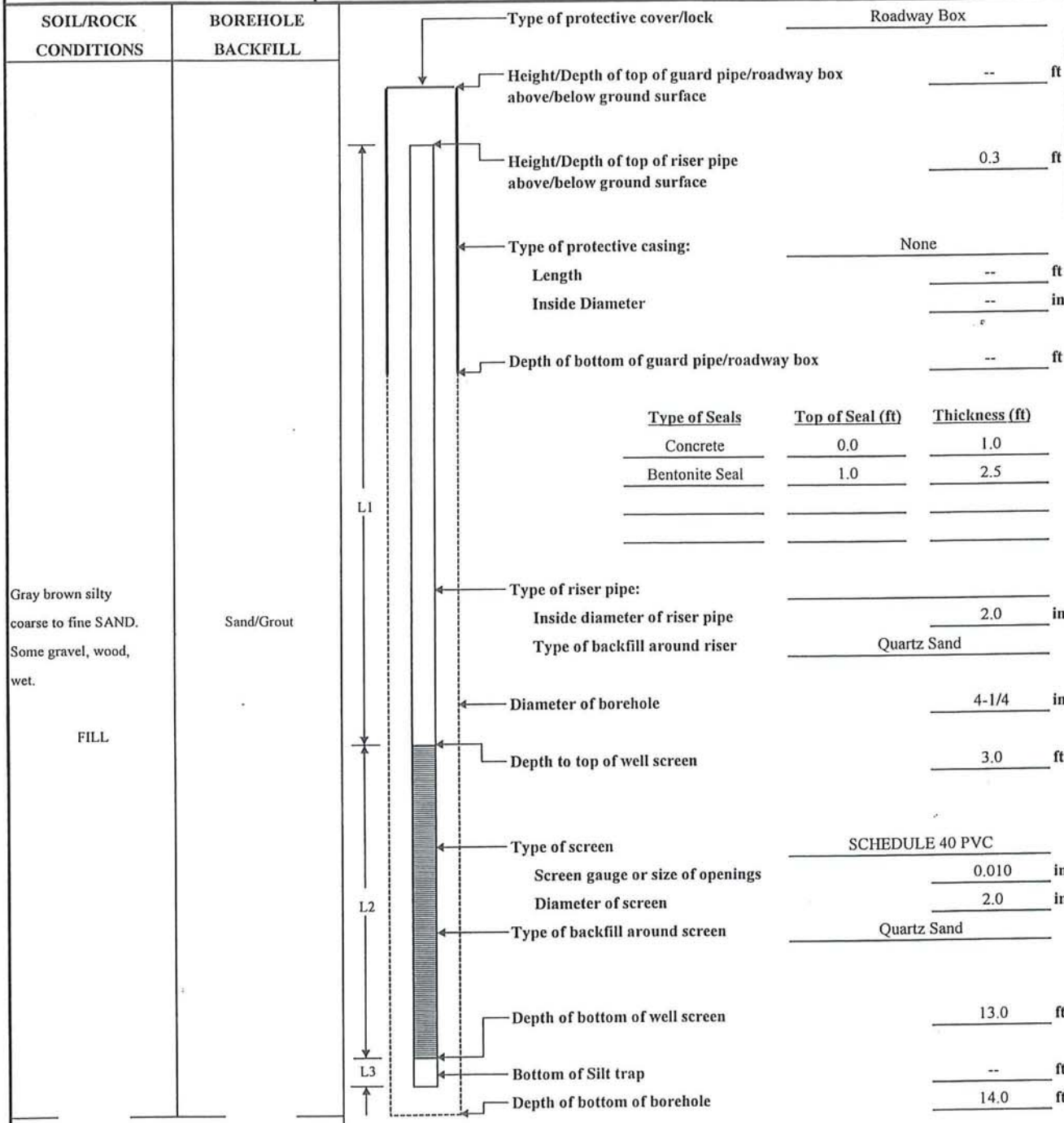


# OBSERVATION WELL INSTALLATION REPORT

Well No.  
**LBA-MW1**  
Boring No.  
**HA-111\***

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE INSTALLED	5/24/2000
DRILLER	L. TODD	WATER LEVEL	

Ground El. <u>251.83</u> ft	Location <u>N: 1188376.32</u>	<input type="checkbox"/> Guard Pipe	
El. Datum <u>City</u>	<u>E: 1408 396.58</u>	<input checked="" type="checkbox"/> Roadway Box	



(Bottom of Exploration)  
(Numbers refer to depth from ground surface in feet)

(Not to Scale)

<u>3</u> ft	+	<u>10</u> ft	+	<u>0</u> ft	=	<u>13</u> ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

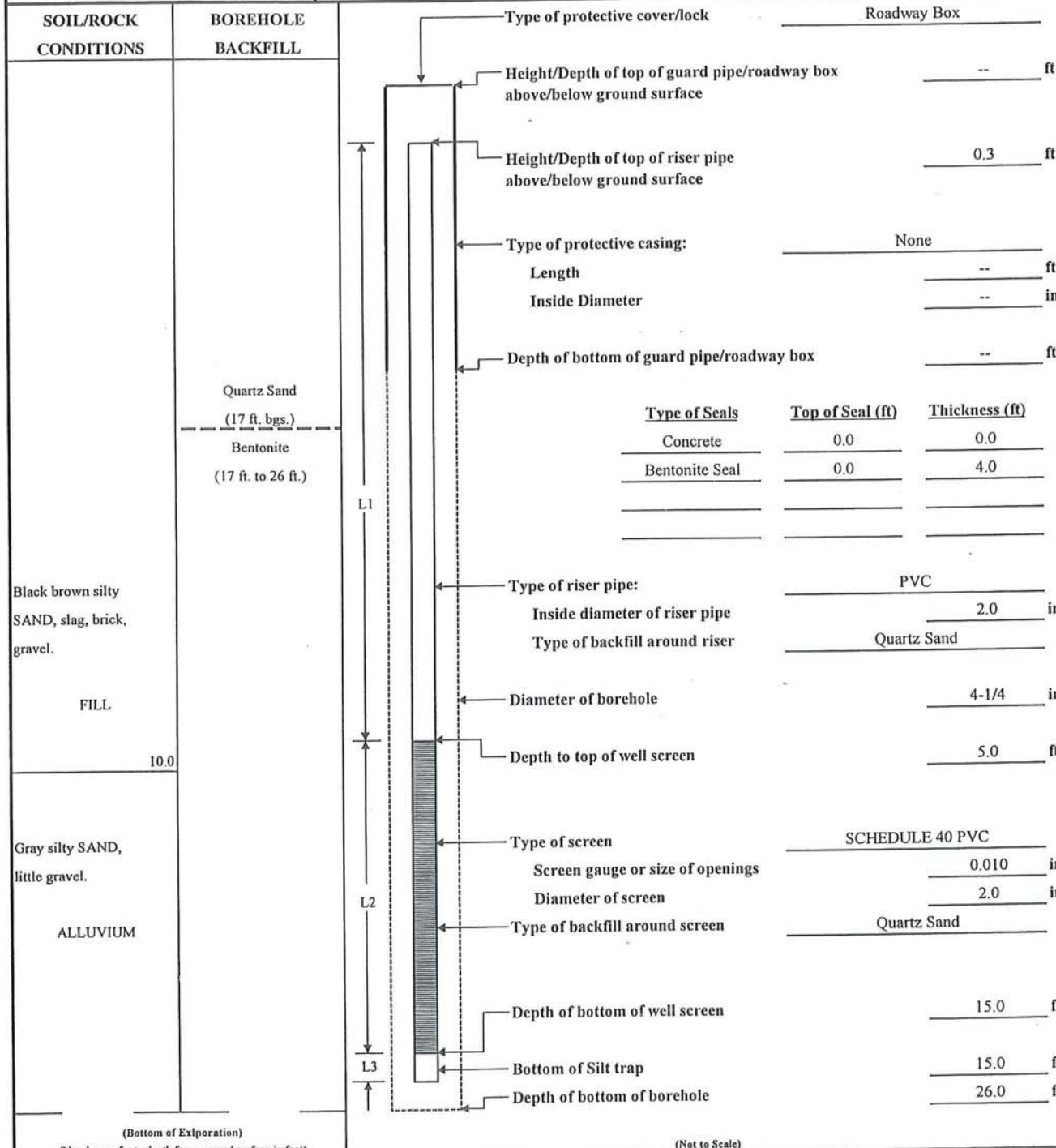
**COMMENTS:** Well installed 4 ft. west of Boring HA-111. Hole was blind augered to 14.0 ft. per Greg Senegal of Labella Associates

# OBSERVATION WELL INSTALLATION REPORT

Well No.  
**LBA-MW2**  
Boring No.  
**HA-117**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE INSTALLED	5/24/2000
DRILLER	L. TODD	WATER LEVEL	

Ground El.	253.7	ft	Location	N: 1188222.94	<input type="checkbox"/> Guard Pipe
El. Datum	City		E: 1408074.34		<input checked="" type="checkbox"/> Roadway Box



(Bottom of Exploration) (Numbers refer to depth from ground surface in feet) (Not to Scale)

$$\begin{array}{r}
 \underline{5} \text{ ft} + \underline{10} \text{ ft} + \underline{0} \text{ ft} = \underline{15} \text{ ft} \\
 \text{Riser Pay Length (L1)} \quad \text{Length of screen (L2)} \quad \text{Length of silt trap (L3)} \quad \text{Pay length}
 \end{array}$$

**COMMENTS:** Bottom of borehole seal from 26.0 ft. to 17.0 ft. b.g.s. using Bentonite Chips.

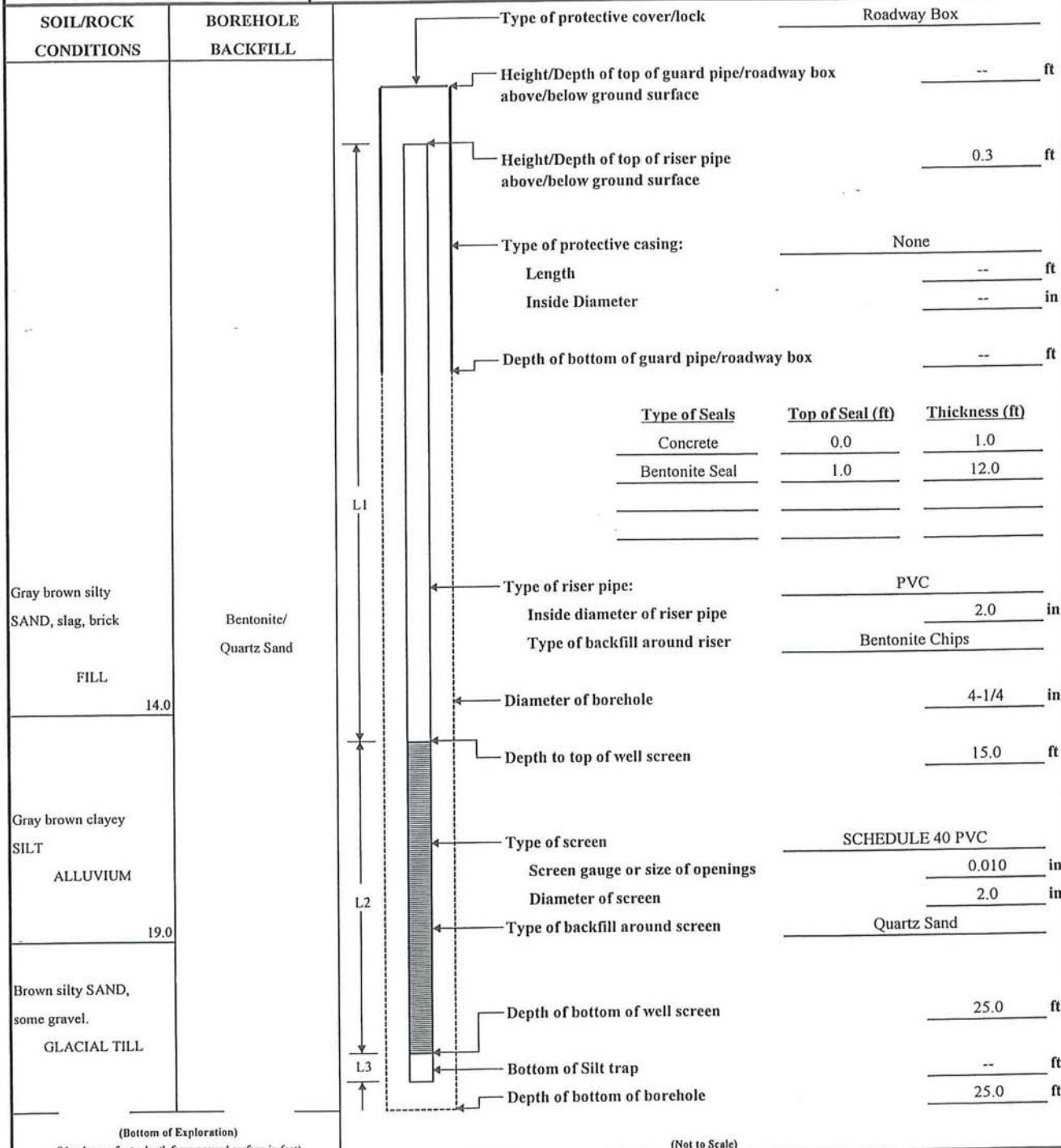


# OBSERVATION WELL INSTALLATION REPORT

Well No.  
**LBA-MW3**  
Boring No.  
**HA-114a**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE INSTALLED	5/25/2000
DRILLER	L. TODD	WATER LEVEL	

Ground El.	261.92	ft	Location	N: 1187851.82	<input type="checkbox"/> Guard Pipe
El. Datum	City		E: 1407798.33		<input checked="" type="checkbox"/> Roadway Box



(Bottom of Exploration) (Numbers refer to depth from ground surface in feet) (Not to Scale)

$$\frac{14.7 \text{ ft}}{\text{Riser Pay Length (L1)}} + \frac{10 \text{ ft}}{\text{Length of screen (L2)}} + \frac{0 \text{ ft}}{\text{Length of silt trap (L3)}} = \frac{24.7 \text{ ft}}{\text{Pay length}}$$

COMMENTS: \_\_\_\_\_

*Draft*

**APPENDIX B**

**Results of Laboratory Soil Testing**





Haley & Aldrich of New York  
 Project: Port of Rochester  
 Project #: 70819-000  
 Client: Labella Associates, P.C.  
 Subject: Data Table of Existing Explorations

TABLE B-2 - TEST DATA - EARLIER SURFACE INVESTIGATIONS

Date: 31-Jan-00  
 Created By: BEBa  
 Checked By: SEW

PROJECT IDENTIFICATION	EXPLORATION IDENTIFICATION	SURFACE ELEVATION (FT)	LOCATION		DEPTH (FT)	NATURAL WATER CONTENT (%)	LABORATORY TESTS			TOTAL UNIT WEIGHT (PCF)	INDEX STRENGTH (TSF)			OTHERS			
			NORTHING (FT)	EASTING (FT)			W/L	W/P	IP		TV	SV	PP2				
Stinson Street Water Main H&A #7616 December-87	B101	249	1185395	759165	16.7	49.2				103	0.1	0.21	0.16				
					16.8	41.4											
					16.9	34.1								0.14	0.04	0.2	
					17.2	34.2	34.4	27.3	7.1								
					17.4	34.7											
					11.2	44.1				92.6	0.2	0.08	0.02				LOI = 3.5%
					11.3	51.6					0.09	0.08	0.02				UU = 0.26 TSF
					11.5	45.1					0.06	0.09	0.01				
					11.8	41.7	39.4	29.6	9.8								
					11.8	42.5											
					6	39.5				97.3							
					6.2	35.7											
					6.3	43.5											
					6.6	37.7											
					6.8	30				97.8	0.1	0.21	0.06				UU = 0.07 TSF
7.2	38.8																
7.3	40.7																
7.5	41.9																
7	40	37.6	28.8	8.8													
7	32.9																
10	44.8				96.9	0.07	0.06	0.03									
10.2	41				99.4	0.09	0.01	0.03				LOI = 4.8%					
10.4	38.4																
10.7	39.7																
11	39.7																
11.2	38.4	33.9	29	4.9													
11.2	29.4																
11.5	28.1																
11.7	34.6																

Haley & Aldrich of New York  
 Project: Port of Rochester  
 Project #: 70819-000  
 Client: Labella Associates, P.C.  
 Subject: Data Table of Existing Explorations

TABLE B-2 - TEST DATA - EARLIER SUBSURFACE INVESTIGATIONS

Date: 31-Jan-00  
 Created By: BEBa  
 Checked By: SEW

PROJECT IDENTIFICATION	EXPLORATION IDENTIFICATION	SURFACE ELEVATION (FT)	LOCATION		DEPTH (FT)	NATURAL WATER CONTENT (%)	LABORATORY TESTS			INDEX STRENGTH (TSF)			OTHERS																																						
			NORTHING (FT)	EASTING (FT)			W.L.	W.P.	I.P.	TOTAL UNIT WEIGHT (PCF)	TV	SV		PP2																																					
Genesee River Crossing H&A #70037 December-89	B-1	222.7	1186728	759540	4.5	39.7	105.3	0.17	0.1	0.13	G = 2.66																																								
					4.7	37.3							0.18	0.07	0.16																																				
					5	21.1										0.18	0.16	0.5																																	
					5.2	30													0.13	0.26	0.28																														
						34.1																0.17	0.3	0.53																											
						35.5																			0.18	0.22	0.16																								
						5.7																						0.17	0.3	0.53																					
						6																									0.18	0.07	0.16																		
						34.4																												0.18	0.16	0.5															
						41.6																															0.13	0.15	0.13												
						38.6																																		0.15	0.15	0.13									
						35.7																																					0.15	0.15	0.13						
						11.1																																								103.7	0.15	0.15			
						6.2																																											103.7	0.15	0.15
						226.4																																													
	1186735	103.7	0.15	0.15																																															
	759667				103.7	0.15	0.15																																												
	39.3							105.2	0.2	0.29																																									
	38.3										105.2	0.2	0.38																																						
	37.4													105.2	0.2	0.38																																			
	39.6																105.2	0.2	0.38																																
	10																			105.2	0.2	0.38																													
	43.9																						105.2	0.2	0.38																										
	10.2																									105.2	0.2	0.38																							
	1186714																												105.2	0.2	0.38																				
	759764																															105.2	0.2	0.38																	
	223.7																																		105.2	0.2	0.38														
	10.5																																					105.2	0.2	0.38											
	50.2																																								105.2	0.2	0.38								
	10.7																																											105.2	0.2	0.38					
	40	105.2	0.2	0.38																																															
	10.9				105.2	0.2	0.38																																												
	32.1							105.2	0.2	0.38																																									
	49.5										105.2	0.2	0.38																																						
	43.5													105.2	0.2	0.38																																			
	11.2																105.2	0.2	0.38																																
	45.3																			105.2	0.2	0.38																													
	34.8																						105.2	0.2	0.38																										
	35.2																									105.2	0.2	0.38																							
	11.5																												105.2	0.2	0.38																				
	26.9																															105.2	0.2	0.38																	
	18.4																																		105.2	0.2	0.38														
	34.5																																					105.2	0.2	0.38											
	29.8																																								105.2	0.2	0.38								
	11.7																																											105.2	0.2	0.38					
	239.2	105.2	0.2	0.38																																															
	1186695				105.2	0.2	0.38																																												
	759892							105.2	0.2	0.38																																									
	B-4										105.2	0.2	0.38																																						

Haley & Aldrich of New York

Project: Port of Rochester  
 Project #: 70819-000  
 Client: Labella Associates, P.C.  
 Subject: Data Table of Existing Explorations

TABLE B-2 - TEST DATA - EARLIER SUBSURFACE INVESTIGATIONS

Date: 31-Jan-00  
 Created By: BBba  
 Checked By: SEW

PROJECT IDENTIFICATION	EXPLORATION IDENTIFICATION	SURFACE ELEVATION (FT)	LOCATION (FT)		DEPTH (FT)	NATURAL WATER CONTENT (%)	LABORATORY TESTS			OTHERS										
			NORTHING (FT)	EASTING (FT)			WIL	WP	IP		TOTAL UNIT WEIGHT (PCF)	INDEX STRENGTH (TSP)								
Stutson Street Bridge NYSDOT December-97	DA-B-101	275.00	1186450	756550.001																
	DN-B-102	273.13	1186450	756550.001																
	DN-B-103	272.44	1186450	756550.001																
	DN-B-3	216.17	1185260.09	758819.15																
	DN-B-4	216.22	1185182.4	758779.05																
	DN-B-5	225.60	1185115.4	758779.05																
	DN-B-51	219.10	1185214.8	758998.2																
	DN-B-52	220.91	1185179.6	758998.2																
	DN-B-53	221.30	1185141.6	758998.2																
	DN-B-54	222.88	1185069.9	758947.22																
	DN-B-55	226.88	1185019.8	758933.4																
	DN-B-9	231.67	1184912.1	759236.98																
	DN-B-1	289.79	1185295.5	758569.1																
	DN-B-10	256.98	1185181.6	759587.83																
	DN-B-11	256.89	1184939.6	759545.62																
	DN-B-12	254.69	1185137.1	759762.03																
	DN-B-13	253.18	1185162.5	759927.78																
DN-B-14	251.97	1185098.5	760109.9																	
DN-B-201	289.76	1185247.36	758604.89																	
DN-B-202	288.08	1185316.02	758630.65																	
DN-B-203	291.08	1185224.7	758591.8																	
DN-B-305	253.05	1184888.39	759408.73																	
DN-B-306	253.97	1184816.52	759408.82																	
DN-B-307	251.77	1184906.29	759381.4																	
DN-B-308	251.77	1184838	759294.24																	
DN-B-309	251.60	1184917.01	759230.91																	
DN-B-310	251.51	1184910.43	759225.38																	
DN-B-311	251.44	1184925.8	759440.53																	
DN-B-312	251.37	1184977.85	759281.94																	
DN-B-6	250.49	1185243.1	759210.41																	
DN-B-7	251.47	1184991.6	759088.96																	
DN-B-8	250.78	1185053.7	759323.52																	
Wave Surge Protection Project Army Corp April-95	DN4-1	224.33	1189750	761500	0.0-2.0 6.0-8.0															
	DN4-2	222.33	1188762	761336	20.0-22.0 0.0-2.0															
	DN4-3	238.33	1187239	760364	3.0-7.0 10.0-12.0															
Rehabilitation of East Pier Army Corp June-85	DN9-6	238.43	1188337.56	760567.11	12.0-12.7 16.3-17.8 31.3-32.8															
						69.9														
							40													
								23												
									17											

NOTES: 1. SPT and probe blow counts are recorded on the subsurface exploration logs included in Appendix ???



**Draft**

**APPENDIX C**

**Records of Earlier Subsurface Explorations**

- C-1 Stutson Street Water Main**
- C-2 Genesee River Crossing**
- C-3 Stutson Street Bridge**
- C-4 Dredge Probes – Army Corp of Engineers**
- C-5 Wave Surge Protection Project**
- C-6 Rehabilitation of East Pier**
- C-7 Lake Avenue Improvements**





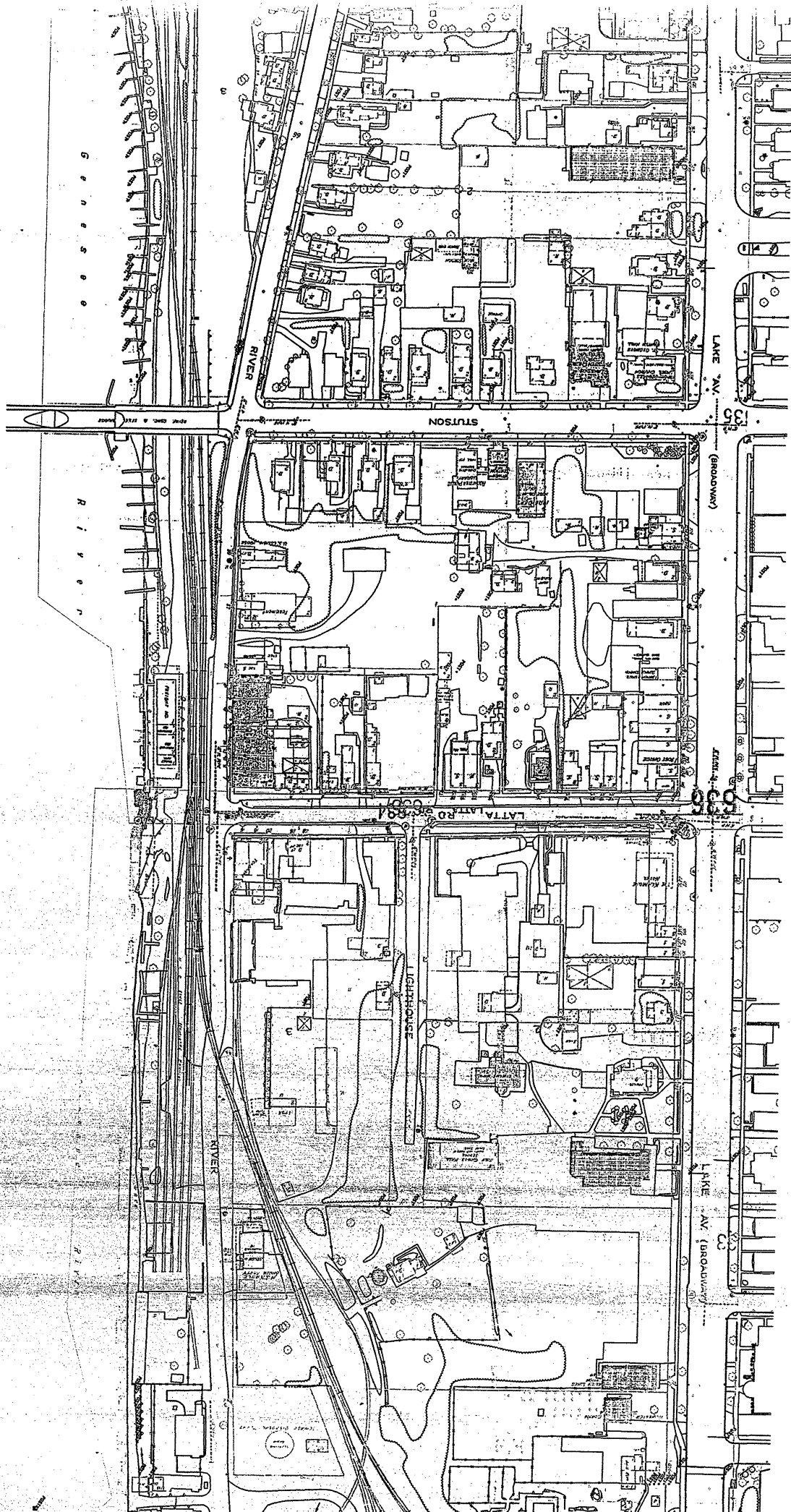


**Draft**

**APPENDIX D**

**Historic (Sanborn) Maps**

- D-1 Site Map with 1892 Sanborn Overlay**
- D-2 Site Map with 1912 Sanborn Overlay**
- D-3 Site Map with 1924 Sanborn Overlay**
- D-4 Site Map with 1950 Sanborn Overlay**
- D-5 Site Map with 1967 Sanborn Overlay**



STURGEON RIVER

STURGEON ST.

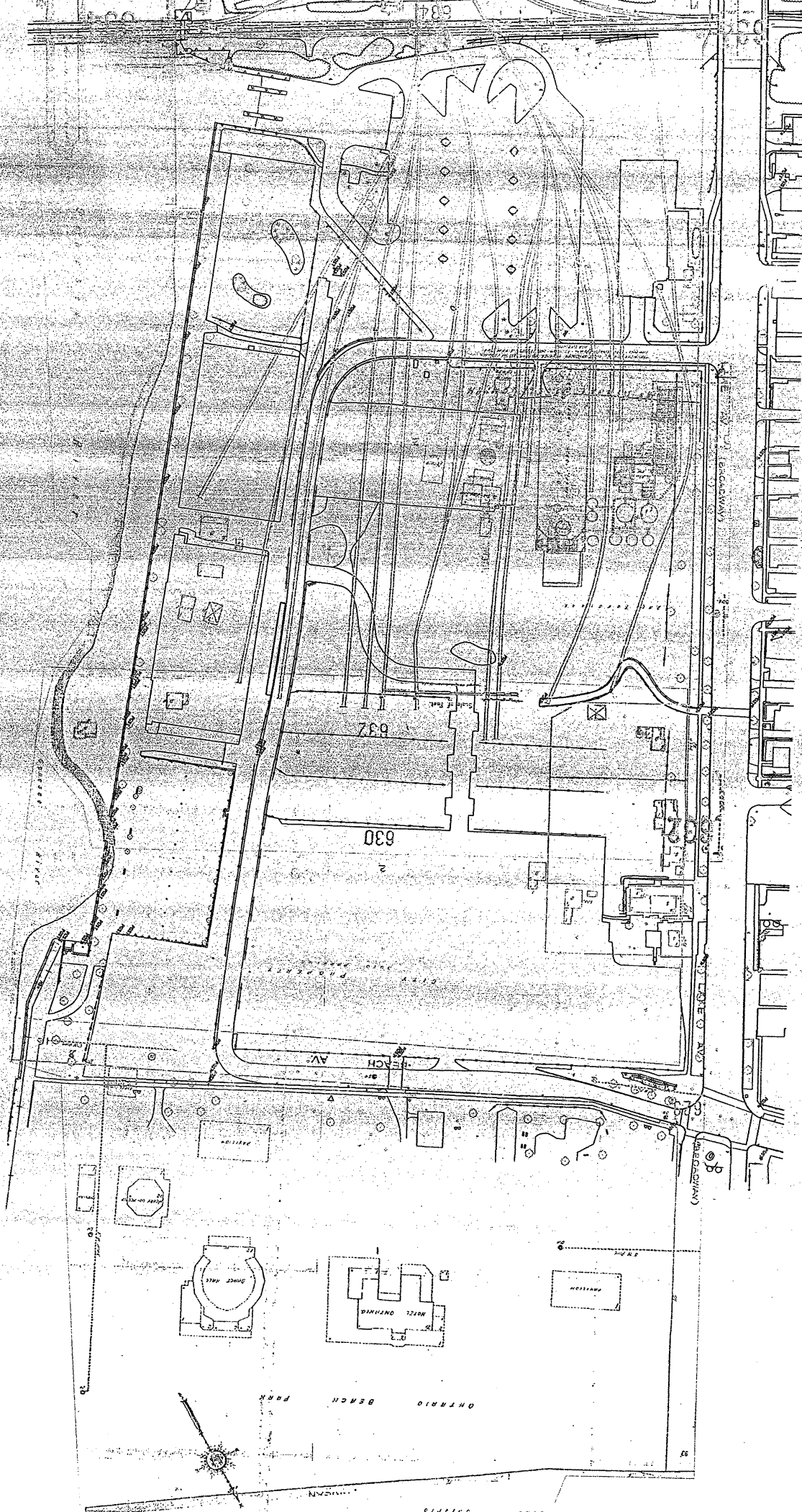
LATONA RD.

LAKE AV. (BROADWAY)

STURGEON RIVER

LAKE AV. (BROADWAY)

STURGEON ST.



784

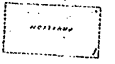
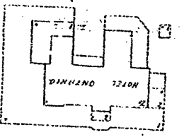
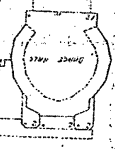
737

630

BEACH AV.

BROADWAY

BROADWAY



CHERRY RIVER

