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Site Address 14600 42nd Ave W

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Title page with the following information:

- Company (Author) name*
- Report date*
- Project Name*
- Company's job number*
- Site address*

Executive Summary / Introduction of the report

Table of contents

Project Location Map / Vicinity Map

Site / Exploration Plans, Boring Location Plans

Cross-sections / Subsurface profiles

Exploration Logs

Monitoring Well Logs

Cone Penetrometer Logs

Groundwater Elevation Tables / Data

Includes data from Previous Reports

No new data / data review

Missing Data / Illegible Data

Explanation _____

Comments: _____

4080

**GEOTECHNICAL ENGINEERING INVESTIGATION
42ND STREET RESIDENTIAL DEVELOPMENT
SNOHOMISH COUNTY, WASHINGTON
FOR
PACIFIC HOMES CONSTRUCTION**



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**CONSULTING GEOTECHNICAL ENGINEERS, GEOLOGISTS
AND ENVIRONMENTAL SCIENTISTS**

17311-135th Avenue NE, A-500
Woodinville, WA 98072
(425) 486-1669 • Fax 481-2510

Snohomish County (425) 337-1669

Wenatchee/Chelan (509) 784-2756

September 10, 1998

Mr. Dave Ebel
Pacific Homes Construction
20205 - 54th Place NE
Lake Forest Park, Washington 98155

Geotechnical Engineering Investigation
42nd Street Residential Development
Snohomish County, Washington
NCA File No. 241998

Dear Mr. Ebel:

INTRODUCTION

This report presents the results of our geotechnical engineering investigation at your proposed 42nd Street residential development project in Snohomish County, Washington. The site is located at approximately the 14600 block of 42nd Avenue West, along the western side of the street. We have been provided a Site Plan prepared by Jaeger Engineering, dated July 29, 1998, for our use in preparing this report.

The property is 6.32 acres in size. You plan to subdivide the site into 25 residential lots and associated pavement and utilities. From our understanding, the residential density of the project has yet to be finalized. The lots will be accessed from a loop road through the site. We were informed that a rockery may be constructed to support the corner of the proposed roadway in the northern half of the site. The final grades of the roadway and rockery have not been determined at this time. We are not aware of drainage plan at this time.

The ground surface slopes gently to moderately down to the west at a 7 to 28 percent slope into a stream area. The stream area has been identified by others as a wetland. Three residences with outbuildings exist in the northwest corner and eastern half of the site. Improvements are not planned in the northwest corner of the site or within the wetland buffer area.

SCOPE

The purpose of this study is to explore and characterize the subsurface conditions and present recommendations for site development.

Specifically, our scope of services will include the following:

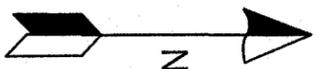
1. Review of soils and geologic maps of the area.
2. Explore the subsurface conditions by excavating backhoe test pits with a subcontracted backhoe.
3. Perform three cross sections of the slope near the wetland.
4. Provide recommendations for site grading and drainage.
5. Provide recommendations for erosion control.
6. Provide recommendations for foundation support and lateral pressures.
7. Prepare a report to document our findings and recommendations.

Surface Conditions

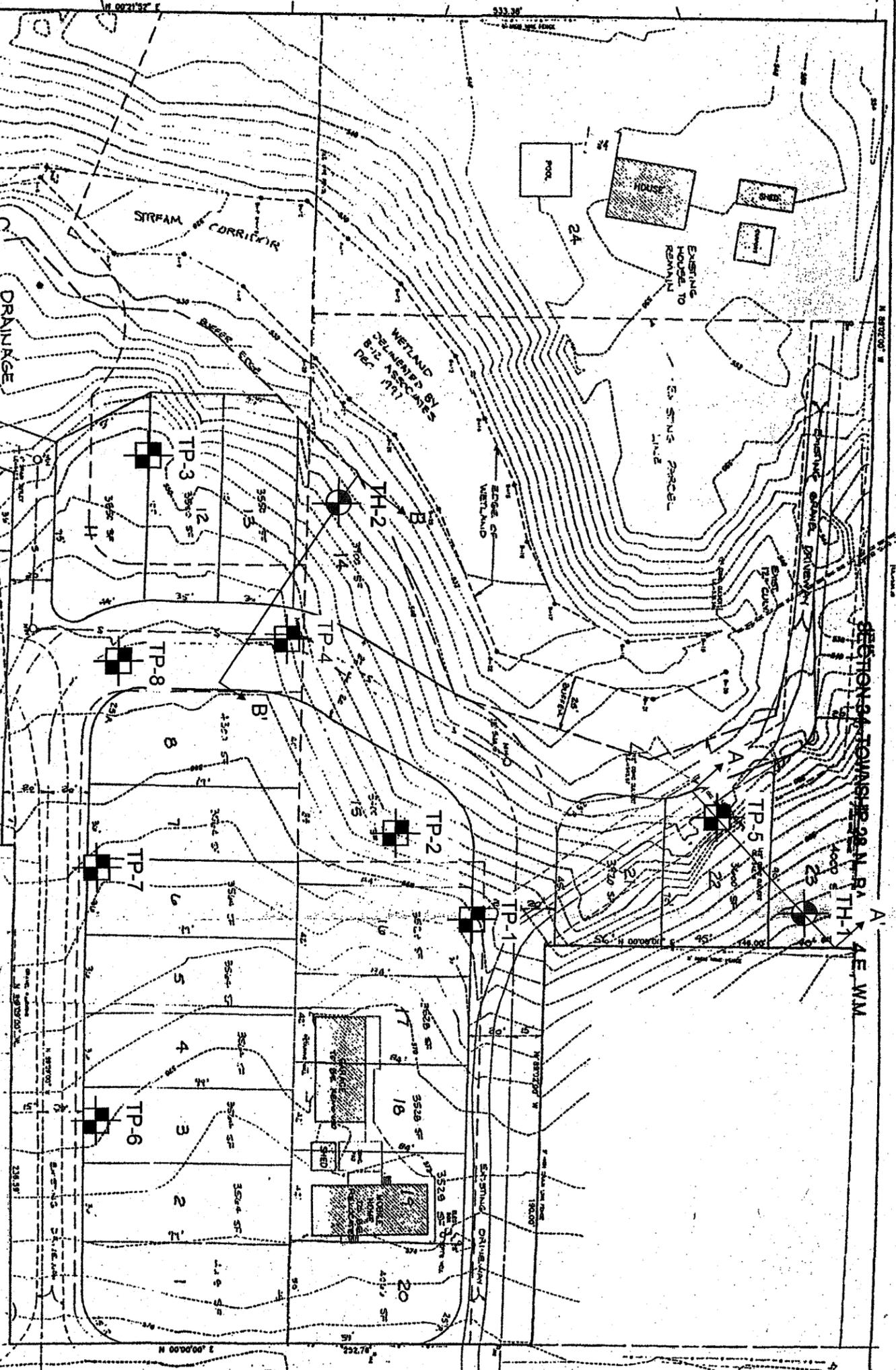
The site is bordered on the east by 42nd Avenue West and by other residences on all other sides. The site slopes downward gently to moderately to the west into a stream area. The small stream divides the entire site from the north to the south. Water was not observed in the stream area. The stream corridor has been designated by others as a wetland, and a 25-foot buffer has been established. The site grades are approximately 7 to 28 percent through most of the site, with some localized steeper areas.

Three cross sections were measured in the field using a 100-foot measuring tape and a clinometer. The location of each cross section is shown on the Site Plan in Figure 2. The cross sections were planned in the steeper areas of the site to identify existing geometry. The Cross Sections A-A',

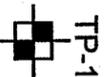
Site Plan

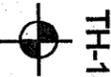


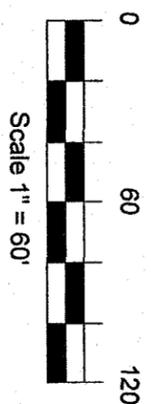
42nd Street



LEGEND

 TP-1
 NUMBER AND APPROXIMATE
 LOCATION OF TEST PIT

 TH-1
 NUMBER AND APPROXIMATE
 LOCATION OF TEST HOLE



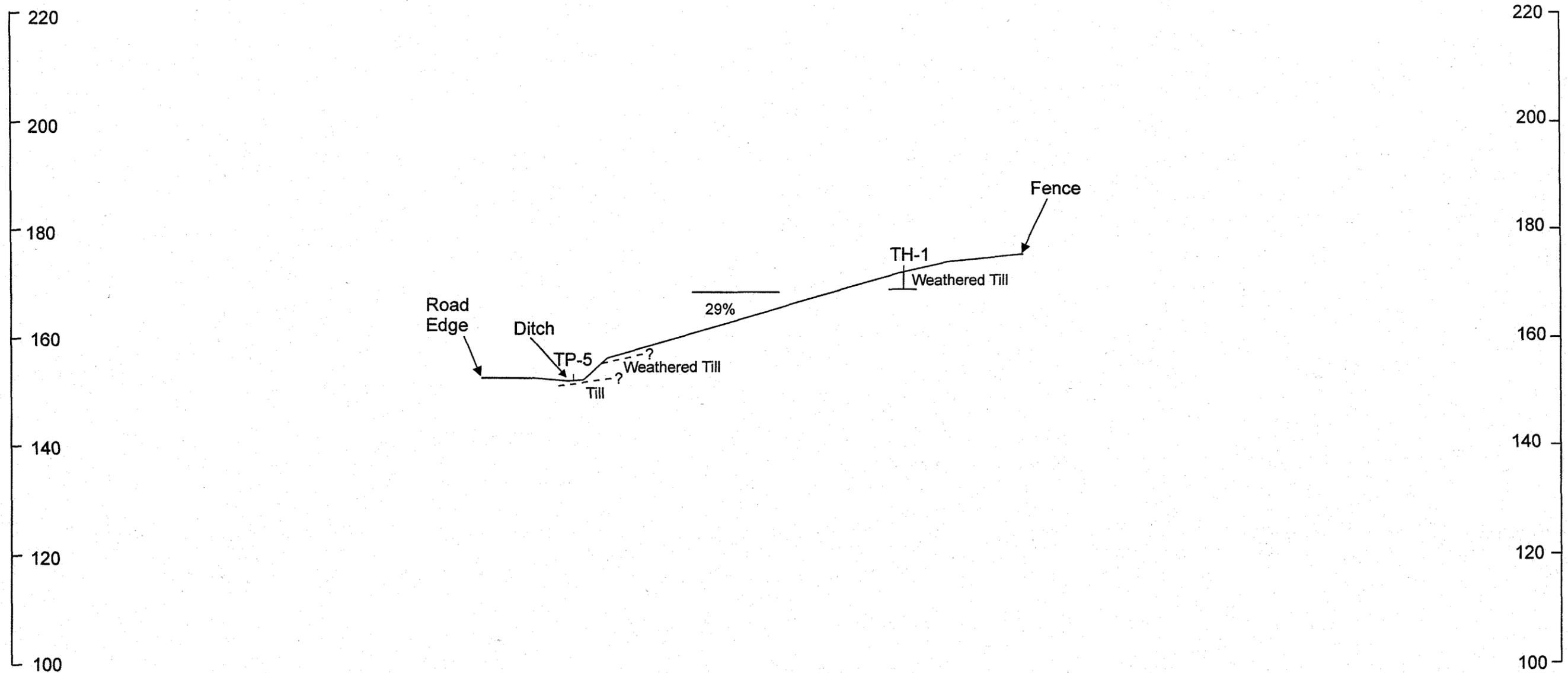

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42nd St. Residential Development	FIGURE 2
FILE NO. 241997	DATE September 1998

Reference: Site Plan prepared by Jaeger Engineering, dated July 29, 1998

Cross-Section A-A'

Scale 1" = 20' (Horizontal and Vertical)

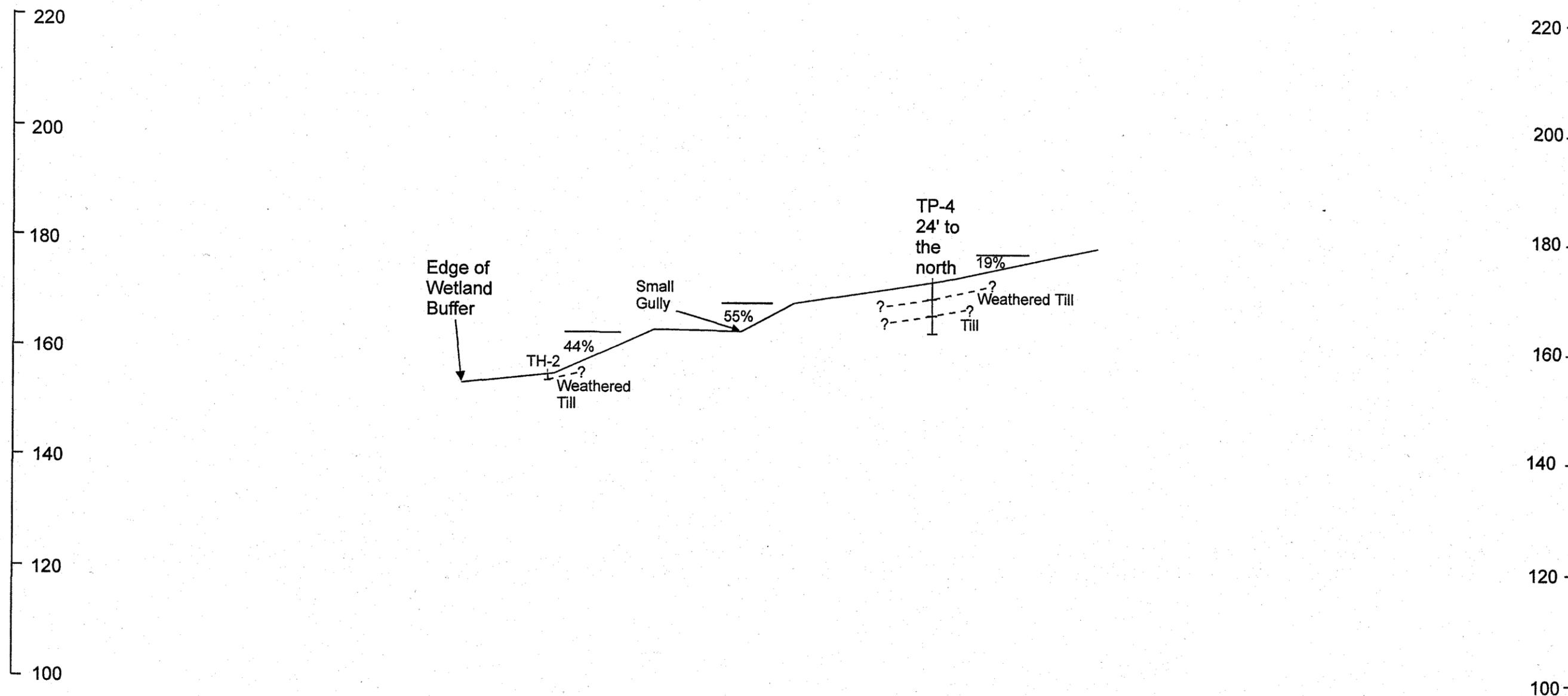


Note: The vertical scale does not reflect actual elevations, the elevation datum is arbitrary.

<p>NELSON-COUVRETTE & ASSOCIATES, INC. CONSULTING GEOTECHNICAL ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS</p>	42nd Street Residential Development		FIGURE 3
	FILE NO. 241997	DATE September 1998	

Cross-Section B-B'

Scale 1" = 20' (Horizontal and Vertical)

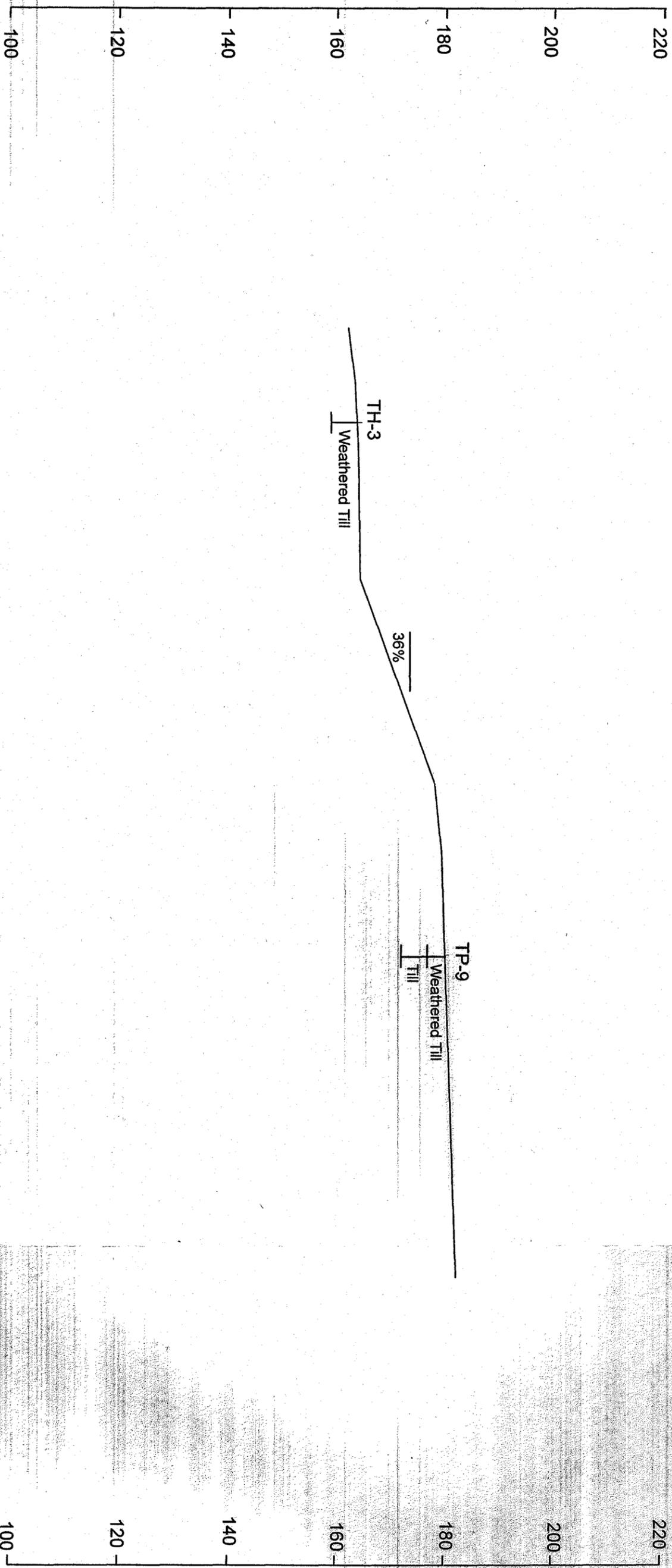


Note: The vertical scale does not reflect actual elevations, the elevation datum is arbitrary.

 <p>NELSON-COUVRETTE & ASSOCIATES, INC. CONSULTING GEOTECHNICAL ENGINEERS, GEOLOGISTS AND ENVIRONMENTAL SCIENTISTS</p>	42nd Street Residential Development		FIGURE 4
	FILE NO. 241997	DATE September 1998	

Cross-Section C-C'

Scale 1" = 20' (Horizontal and Vertical)



Note: The vertical scale does not reflect actual elevations, the elevation datum is arbitrary.



42nd Street Residential Development	FIGURE 5
FILE NO. 24-1997	DATE September 1998

LOG OF EXPLORATION

DEPTH	USC	SOIL DESCRIPTION
0.0 - 0.2		FOREST DUFF
0.2 - 0.7	SM	GRAY SILTY FINE SAND WITH GRAVEL AND ROOTS (DENSE, MOIST) (TILL)
0.7 - 5.0	SM	GRAY SILTY FINE SAND WITH GRAVEL AND OCCASIONAL COBBLES (VERY DENSE, MOIST) (TILL)
		SAMPLES WERE COLLECTED AT 0.5 AND 3.0 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 5.0 FEET ON 8/27/98
0.0 - 0.4		FOREST DUFF
0.4 - 5.5	SM	BROWN SILTY FINE SAND WITH ROOTS (LOOSE, DRY) (FILL)
5.5 - 7.0	SM	GRAY RUST STAINED SILTY FINE SAND WITH GRAVEL (MEDIUM DENSE TO DENSE, MOIST) (WEATHERED TILL)
7.0 - 8.4	SM	GRAY SILTY FINE SAND WITH SLIGHT RUST STAINING AND GRAVEL (DENSE, MOIST) (WEATHERED TILL)
8.4 - 10.0	SM	GRAY SILTY FINE SAND WITH GRAVEL AND OCCASIONAL COBBLES (VERY DENSE, MOIST) (TILL)
		SAMPLES WERE COLLECTED AT 2.5, 5.8, 7.5 AND 9.0 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS ENCOUNTERED AT 3.0 FEET TEST PIT WAS COMPLETED AT 10.0 FEET ON 8/27/98
0.0 - 0.3		FOREST DUFF
0.3 - 1.8	SM	LIGHT GRAY SILTY FINE SAND WITH GRAVEL, ROOTS AND TRACE ORGANICS (MEDIUM DENSE, DRY) (FILL)
1.8 - 2.5	SM	BROWN SILTY FINE SAND WITH ROOTS AND ORGANICS (LOOSE, MOIST) (BURIED TOPSOIL)
2.5 - 4.5	SM	DARK GRAY SILTY FINE SAND WITH GRAVEL AND VERY FINE SAND LENSES (VERY DENSE, MOIST) (TILL)
		SAMPLES WERE COLLECTED AT 0.8, 2.0 AND 4.5 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 4.5 FEET ON 8/27/98

LOG OF EXPLORATION

DEPTH	USC	SOIL DESCRIPTION
0.0 - 1.8	SM	GRAY BROWN SILTY FINE SAND WITH ROOTS, GRAVEL (LOOSE, DRY) (FILL)
1.8 - 3.0	SM	BROWN SILTY FINE SAND WITH GRAVEL, ROOTS, ORGANICS AND CHARCOAL (LOOSE, MOIST) (BURIED TPOIL)
3.0 - 4.1	SM	ORANGE-BROWN SILTY FINE SAND (LOOSE TO MEDIUM DENSE, DRY)
4.1 - 5.5	SM	GRAY RUST STAINED SILTY FINE SAND WITH GRAVEL (DENSE, MOIST) (WEATHERED TILL)
5.5 - 7.0	SM	GRAY SILTY FINE SAND WITH GRAVEL (VERY DENSE, MOIST) (TILL)
		SAMPLES WERE COLLECTED AT 1.0, 3.5, 4.5 AND 7.0 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS ENCOUNTERED AT 3.0 FEET TEST PIT WAS COMPLETED AT 7.0 FEET ON 8/27/98
TEST PIT FIVE		
0.0 - 0.3		TOPSOIL
0.3 - 1.5	SM	GRAY SILTY FINE SAND WITH GRAVEL (DENSE, TO VERY DENSE, MOIST)
		SAMPLES WERE NOT COLLECTED GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 1.5 FEET ON 8/27/98 TEST PIT WAS AT THE BASE OF A 4.0 FOOT CUT INTO WEATHERED TILL
0.0 - 0.3		FOREST DUFF
0.3 - 0.8	SM	BROWN SILTY FINE SAND WITH ROOTS AND ORGANICS (LOOSE, MOIST) TOPSOIL
0.8 - 2.0	SM	GRAY-BROWN SILTY FINE SAND WITH GRAVEL, ROOTS AND ORGANICS (MEDIUM DENSE, MOIST) (FILL)
2.0 - 4.2	SM	GRAY RUST STAINED SILTY FINE SAND WITH GRAVEL (DENSE, MOIST) (WEATHERED TILL)
4.2 - 6.0	SM	DARK GRAY SILTY FINE SAND WITH GRAVEL (VERY DENSE, MOIST) (TILL)
		SAMPLES WERE COLLECTED AT 1.7, 3.0 AND 4.8 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 6.0 FEET ON 8/27/98
0.0 - 0.7		TOPSOIL
0.7 - 1.9	SM	GRAY RUST STAINED SILTY FINE SAND WITH GRAVEL (DENSE TO VERY DENSE, MOIST) (WEATHERED TILL)
1.9 - 5.0	SM	GRAY SILTY FINE SAND WITH GRAVEL AND TRACE COBBLES (VERY DENSE, MOIST) (TILL)
		SAMPLES WERE COLLECTED AT 1.5 AND 2.1 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 5.0 FEET ON 8/27/98

LOG OF EXPLORATION

DEPTH	USC	SOIL DESCRIPTION
[REDACTED]		
0.0 - 1.3		SOD / TOPSOIL
1.3 - 2.3	SM	GRAY RUST STAINED SILTY FINE SAND WITH GRAVEL (DENSE TO VERY DENSE, MOIST) (WEATHERED TILL)
2.3 - 4.0	SM	GRAY SILTY FINE SAND WITH GRAVEL AND TRACE COBBLES (VERY DENSE, MOIST) (TILL) SAMPLES WERE COLLECTED AT 1.8 AND 2.8 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 4.0 FEET ON 8/27/98
[REDACTED]		
0.0 - 0.6		TOPSOIL
0.6 - 2.6	SM	GRAY RUST STAINED SILTY FINE SAND WITH GRAVEL (DENSE TO VERY DENSE, MOIST) (WEATHERED TILL)
2.6 - 4.5	SM	GRAY SILTY FINE SAND WITH GRAVEL AND TRACE COBBLES (VERY DENSE, MOIST) (TILL) SAMPLES WERE COLLECTED AT 2.0 AND 3.0 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 4.5 FEET ON 8/27/98
[REDACTED]		
0.0 - 0.3		FOREST DUFF
0.3 - 1.5	SM	GRAY RUST STAINED SILTY SAND WITH GRAVEL (DENSE, DRY) (WEATHERED TILL) ONE SAMPLE WAS COLLECTED AT 1.0 FOOT GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST HOLE CAVING WAS NOT ENCOUNTERED TEST HOLE WAS COMPLETED AT 1.5 FEET ON 8/27/98
[REDACTED]		
0.0 - 0.5		FOREST DUFF
0.5 - 2.0	SM	LIGHT BROWN SILTY FINE SAND WITH GRAVEL (DENSE, MOIST) (WEATHERED HORIZON)
2.0 - 2.5	SM	LIGHT BROWN RUST STAINED SILTY FINE SAND WITH GRAVEL (DENSE, MOIST) (WEATHERED TILL) SAMPLES WERE COLLECTED AT 1.0 AND 2.5 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST HOLE CAVING WAS NOT ENCOUNTERED TEST HOLE WAS COMPLETED AT 2.5 FEET ON 8/27/98
[REDACTED]		
0.0 - 0.4		FOREST DUFF
0.4 - 2.1	SM	GRAY SLIGHTLY RUST STAINED SILTY FINE SAND WITH GRAVEL (MEDIUM DENSE TO DENSE, DRY) (WEATHERED TILL) ONE SAMPLE WAS COLLECTED AT 1.5 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST HOLE CAVING WAS NOT ENCOUNTERED TEST HOLE WAS COMPLETED AT 2.1 FEET ON 8/27/98