Area: Bellevue

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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: _____

Arcview LT Layers LT GW LT

✓ — ✓ KL ✓ /

Cornerstone
Geotechnical, Inc.

17625-130th Ave. NE, C102, Woodinville, WA 98072
Phone: 425-844-1977
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15654

March 5, 2002

Ms. Aileen Zavales
Chaffey Corporation
PO Box 560
Kirkland, Washington 98033

Summary of Test Pit Information
The Summit, Division 5; Tract E
Bellevue, Washington
CG File No. 1237

Dear Ms. Zavales:

INTRODUCTION

This letter presents a summary of our findings from test pits recently excavated at Tract E of The Summit, Division 5, in Bellevue, Washington. A single-family residence is planned at the site and you requested us to verify that the pre-development slopes were less than 40 percent. For our use in preparing this letter, we have been provided a copy of a drawing by Triad Associates titled *Slope Analysis Tract E Summit Division 5*. The drawing is dated August 17, 2000.

EXPLORATIONS

Subsurface conditions were explored at the site on February 20, 2002, by excavating four test pits with a backhoe. The test pits were excavated to depths of 7.0 to 11.0 feet below the ground surface. The explorations were located in the field by an engineer from this firm who also examined the soils and geologic conditions encountered, and maintained logs of the test pits. The approximate locations of the test pits are shown on the Site Plan in Figure 1. The soils were visually classified in general accordance with the Unified Soil Classification System, a copy of which is presented as Figure 2. The logs of the test pits are presented in Figure 3.

The test pits were all located along the top of the slope within an area overgrown with young trees that appear to be roughly 10 to 20 years old. All of the explorations encountered fill soils. The fill thickness was between 5.2 feet and 9.8 feet thick. In each exploration we identified a topsoil or root layer that appeared to be the elevation of the ground surface prior to development of the roadway to the east.

PRELIMINARY RESULTS

The fill was placed at the top of the current slope in Tract E as part of the development of the roadway. We made several field measurements of the existing slope below the test pits and also measured the slope from the topographic plan by provided. As indicated on the Triad plan, much of the upper portions of the slope on Tract E are currently over 40 percent in slope. By subtracting the depth of the fill from the existing elevation, we determined an estimated slope angle prior to development of the roadway. In the vicinity of Test Pit 1, the original ground surface is estimated to have been about 37 percent. At Test Pit 2, the original ground surface slope appears to have been about 34 percent. At Test Pits 3 and 4, the original slope appears to have been about 30 percent or less. These estimates correlate very well to the lower half of the existing slopes in Tract E where we expect that there was no fill placed due to road construction.

In our opinion, the pre-existing slope conditions from Test Pit 2 to the sanitary sewer easement at the south property line, was below 40 percent. It appears very unlikely that any portion of Tract E from Test Pit 2 to the south could have meet the criteria for regulation by the City of Bellevue as a steep slope critical area (40% slope over 8 feet in height and greater than 500 square feet). The area north-northwest of Test Pit 2 also did not appear to have an original overall slope angle of 40 percent, however; we cannot say with nearly the same certainty that no portion north-northwest of Test Pit 2 could have met the steep slope critical area designation prior to road development. The estimated slope angle of 37 percent is close enough to 40 percent that it is possible some portion was over 40 percent. The old survey plan by Triad shows a small N.G.P.E. area, which indicates greater than 40 percent.

We placed stakes at each test hole and set survey hubs where we measured the depth to the original soils (one hub at Test Pits 2, 3, and 4, and two hubs at Test Pit 1). The hubs were set so that they could be surveyed at a later date, if needed, to confirm our findings.

CLOSURE

We will keep our records available to complete a more detailed report at a later date. We appreciate the opportunity to be of service to you. Please call us if there are any questions concerning this letter or if we can provide additional services at this time.

Sincerely,

Cornerstone Geotechnical, Inc.

Doug Bath, PE
Project Engineer

RICK B. POWELL
STATE OF WASHINGTON
30530
REGISTERED
PROFESSIONAL ENGINEER

3/5/02

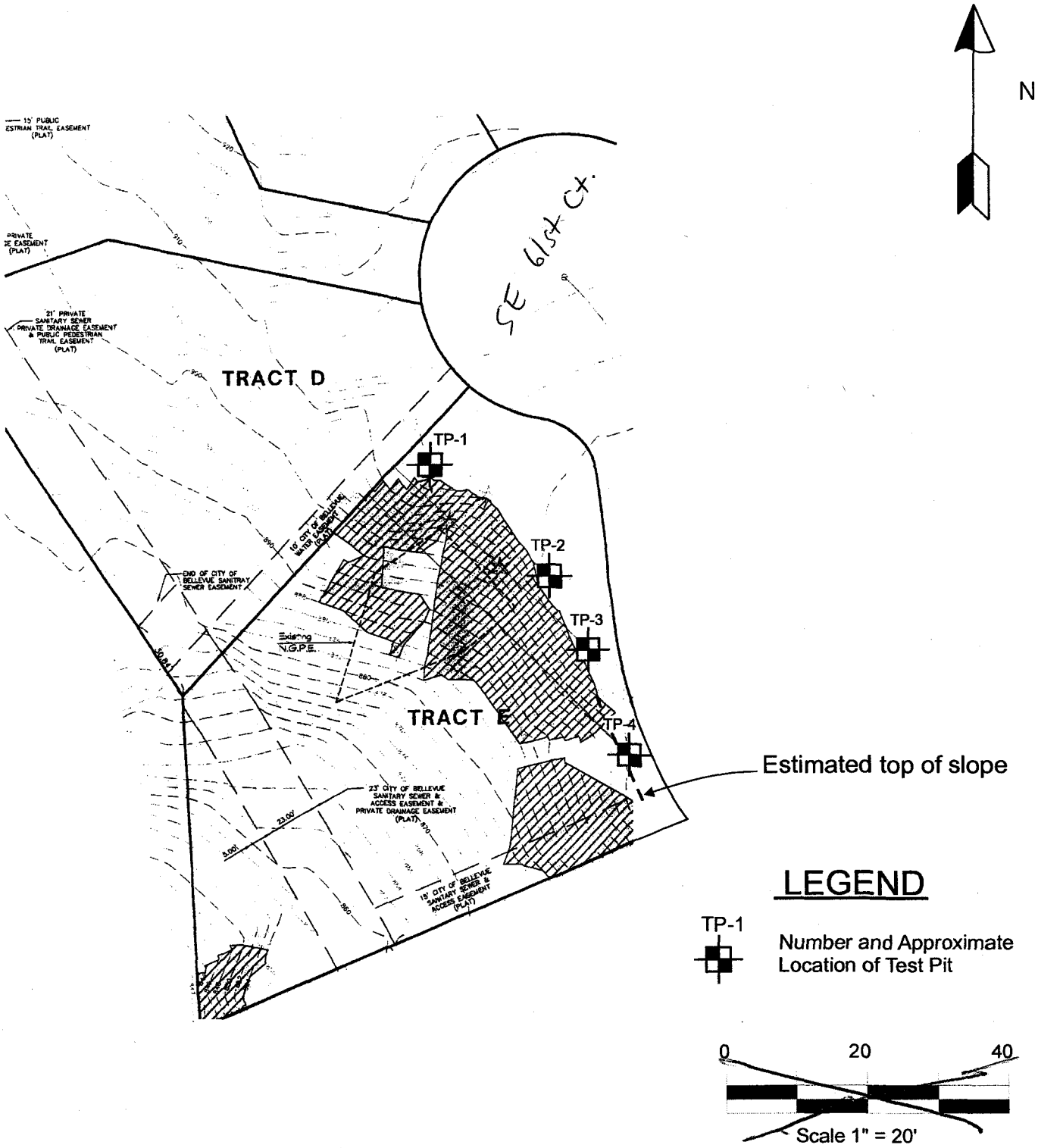
EXPIRES 08/16/02

Rick B. Powell, PE
Senior Engineer

RBP:DJB:nt

Three Copies Submitted
Three Figures

SITE PLAN



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The Summitt - Division 5

File Number	Figure
1237	1

Unified Soil Classification System

MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE - GRAINED SOILS MORE THAN 50% RETAINED ON NO. 200 SIEVE	GRAVEL MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVEL	GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND MORE THAN 50% OF COARSE FRACTION PASSES NO. 4 SIEVE	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY-GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE - GRAINED SOILS MORE THAN 50% PASSES NO. 200 SIEVE	SILT AND CLAY LIQUID LIMIT LESS THAN 50%	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY LIQUID LIMIT 50% OR MORE	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
HIGHLY ORGANIC SOILS			PT	PEAT

NOTES:

1) Field classification is based on visual examination of soil in general accordance with ASTM D 2488-83.
2) Soil classification using laboratory tests is based on ASTM D 2487-83.
3) Descriptions of soil density or consistency are based on interpretation of blowcount data, visual appearance of soils, and/or test data.

SOIL MOISTURE MODIFIERS

Dry- Absence of moisture, dusty, dry to the touch

Moist- Damp, but no visible water

Wet- Visible free water or saturated, usually soil is obtained from below water table

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Unified Soil Classification System

Figure 2

LOG OF EXPLORATION

DEPTH	USC	SOIL DESCRIPTION
TEST PIT ONE		
0.0 – 5.2	SM	DARK BROWN SILTY SAND WITH ROOTS AND STICKS (LOOSE, MOIST TO WET) **(FILL)**
5.2 – 5.5	OH/OL	TOPSOIL AND ROOT LAYER (LOOSE, MOIST TO WET)
5.5 – 7.0	SM	GRAY-BROWN SILTY SAND WITH TRACE GRAVEL (MEDIUM DENSE, MOIST TO WET)
		SAMPLE WAS COLLECTED AT 6.5 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 7.0 FEET ON 2/20/02
TEST PIT TWO		
0.0 – 7.0	SM	DARK BROWN SILTY SAND WITH TRACE ROOTS AND STICKS (LOOSE, MOIST TO WET) **(FILL)**
7.0 – 7.5	OH/OL	ORGANIC LAYER WITH ROOTS (LOOSE, MOIST TO WET)
7.5 – 9.0	SM	ORANGE-BROWN SILTY SAND WITH TRACE GRAVEL (LOOSE TO MEDIUM DENSE, MOIST)
		SAMPLES WERE NOT COLLECTED GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 9.0 FEET ON 2/20/02
TEST PIT THREE		
0.0 – 7.5	SM	DARK BROWN SILTY SAND WITH TRACE GRAVEL (LOOSE, MOIST TO WET) **(FILL)**
7.5 – 8.2	OH/OL	TOPSOIL LAYER (LOOSE, MOIST TO WET)
8.2 – 9.5	SP-SM	GRAY FINE TO MEDIUM SAND WITH SILT (LOOSE TO MEDIUM DENSE, MOIST)
		SAMPLES WERE COLLECTED AT 2.5 AND 9.0 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 9.5 FEET ON 2/20/02
TEST PIT FOUR		
0.0 – 9.8	SM	DARK BROWN SILTY SAND WITH TRACE GRAVEL (LOOSE, MOIST TO WET) **(FILL)**
9.8 – 10.5	OH/OL	TOPSOIL AND ROOTS (LOOSE, MOIST TO WET)
10.5 – 11.0	SP	RUST MOTTLED GRAY-BROWN SAND WITH TRACE GRAVEL (LOOSE TO MEDIUM DENSE, MOIST TO WET)
		SAMPLE WAS COLLECTED AT 11.0 FEET GROUND WATER SEEPAGE WAS NOT ENCOUNTERED TEST PIT CAVING WAS NOT ENCOUNTERED TEST PIT WAS COMPLETED AT 11.0 FEET ON 2/20/02