



April 18, 2023

Knoxville's Community & Development Corporation  
Redevelopment Department  
901 North Broadway Street  
Knoxville, Tennessee

ATTENTION: Mr. James Hatfield  
[jhatfield@kcdc.org](mailto:jhatfield@kcdc.org)

Subject: **REPORT OF GEOTECHNICAL EXPLORATION ADDENDUM**  
**Vermont Avenue Multi-Family Development**  
1800 & 1900 Vermont Avenue  
Knoxville, Tennessee  
GEOservices Project No. 21-23276

Dear Mr. Hatfield:

We are submitting this Addendum to our Report of *Geotechnical Exploration*, dated March 28, 2023, for the proposed development to be located off Vermont Avenue in Knoxville, Tennessee. This addendum report provides the results of the observation pits, and the laboratory test results from the previous exploration. This work was performed, as authorized by you, in accordance with our Proposal No. 11-23173, dated February 1, 2023.

## PROJECT INFORMATION

GEOservices previously completed a geotechnical exploration consisting of twenty-eight (28) soil test borings along the proposed development. Since the issuance of the report, we understand design plans have progressed. We were provided a cut/fill titled *Preliminary Site Grading*, as prepared by Civil & Environmental consultants, and dated January 2023; and were requested to further investigate the fill materials encountered in our soil test borings.

## FIELD EXPLORATION

The site subsurface conditions were explored by excavating fifteen (15) observation across the proposed development. The observation pits were marked in the field by GEOservices personnel using a hand-held GPS unit. The approximate locations of the observation pits are shown in Figure 2 in the attachments of this

report. The depths in this report reference the ground surface that existed at the time of this exploration. Detailed logs for observation pits can also be found in the attachments.

The field work was performed on April 10, 2023. The excavations were performed by a subcontractor using a mini excavator with a 24-inch-wide tooth bucket. The excavations were observed by a geotechnical professional to document the materials encountered and visually classify the soil samples in general accordance with the Unified Soil Classification System (USCS – ASTM D2487). Details regarding the subsurface conditions at each location are provided as an attachment to this report. Upon completion of excavations, the pits were backfilled and tamped.

## **INITIAL EXPLORATION LABORATORY TEST RESULTS**

Laboratory testing of selected fill and residual samples indicated in-situ moisture content values ranging from 10.9 to 46.7 percent, which varied with depth. In addition, Atterberg limit testing was performed on select samples from three borings (B-15, B-20, and B-23) between approximately 3.5 to 5 feet below existing grade. The laboratory test results are attached to this addendum.

## **SOIL STRATIGRAPHY**

### Surficial Materials

Initially, each observation pit encountered a surficial layer, consisting of approximately 2 to 5 inches of surficial topsoil and roots. Although the depth of the surficial layer is similar between the observation pits, we anticipate the actual depth of the surficial layer to vary across the site.

### Fill Materials

Underlying the surficial layer, each of the observation pits, apart from pits OP-2 and OP-15, encountered apparent fill materials. The fill materials consisted of brown, dark brown, tan, reddish brown, orangish brown, dark gray, light gray, and black lean (low plasticity) clayey soils with varying amounts of brick fragments, rock, boulders, asphalt, gravel, concrete, glass, silt, cobbles, and abandoned utility lines. The fill materials extended to depths ranging from approximately 1.8 to 5.5 feet below existing grade. The consistencies of the fill material were generally estimated to be soft to hard.

### Residual Materials

Each of the observation pit locations encountered residual materials, generally consisting of reddish brown, tan, and white fat (high plasticity) and lean (low plasticity) clayey soils with varying amounts of silt, chert fragments, and weathered rock. The consistencies of the residual materials were generally estimated to be firm to hard, generally increasing with depth.

### Excavation Refusal

Excavation refusal was not encountered in any of the test pits. The observation pits were extended to termination depths ranging from approximately 2.5 to 9.5 feet below existing grade. Termination was determined based on location, equipment capabilities, and materials encountered. Excavation refusal is a designation applied to any material that cannot be penetrated by the power auger and typically indicates very hard or dense materials, such as the upper surface of bedrock.

### Groundwater

Groundwater was not encountered during or upon completion of the field activities. We note that stabilized water levels can sometimes be challenging to obtain as the encountered soils are known to be relatively impermeable. In addition, the locations were backfilled upon completion in consideration of safety, so delayed water levels were not recorded. Groundwater can exist within the depths explored during other times of the year, depending upon climatic and rainfall conditions. Additionally, discontinuous zones of perched water may exist within the overburden materials. The groundwater information presented in this report is the information collected at the time of our field activities.

## **RECOMMENDATIONS**

During this current exploration, each of the observation pits, apart from pits OP-2 and OP-15, encountered apparent fill materials. The fill materials were variable of consistency and composition, comprising mostly of clayey soils with varying amounts of brick fragments, rock, boulders, asphalt, gravel, concrete, glass, silt, cobbles, and abandoned utility lines. The fill materials extended to depths ranging from approximately 1.8 to 5.5 feet below existing grade. However, we note in our previous exploration, the fill materials extended to a termination depth of 20 feet in boring B-20. Based on our explorations, it is possible that deeper zones or pockets of fill materials may be encountered between our widely spaced borings, as the site has been previously developed.

There is an inherent risk of excessive total or differential settlement of foundations constructed on uncontrolled fill materials. Given that the fill contained deleterious materials, it is not likely the fill was placed in a controlled (engineered) manner. We do not recommend the encountered fill materials be reused as structural fill. However, fill materials that are free of large deleterious materials may be used in non-structural areas, such as landscape areas and the proposed detention pond. In addition, we do not recommend the uncontrolled fill be relied upon for direct shallow foundation support of the structures given these risks. Should debris laden fill, deleterious, or soft materials be encountered during grading or construction and/or between our locations, we recommend these materials be completely undercut and disposed off-site.

Where encountered in the building area, the debris laden fill should be completely undercut to the underlying stiff or better residual material within the area extending at least 5 feet beyond the proposed footprint of the structure. The undercut excavation may be brought back to grade using structural soil fill or compacted dense graded aggregate.

During our exploration, we encountered building remnants and foundation elements from previous construction in at least one location. Based on our on site observations and given the historical use of the site, we expect that more foundation elements will be encountered during construction. Our previous report recommended the use of rammed aggregate piers. While still an option, the presence of large buried impenetrable materials, such as the foundation elements at this site, could present some difficulties during rammed aggregate pier installation and need to be removed prior to the construction of the piers.

The additional information and testing provided herein is supplementary. The contractor and design team should review recommendations from the previously issued Report of *Geotechnical Exploration*, dated March 28, 2023, for general site grading and preparation and foundation recommendations as they remain applicable.

## CLOSURE

We appreciate the opportunity to provide these services. If you have any questions, please feel free to contact us at your convenience.

Sincerely,  
GEOServices, LLC



Michael D. Kelso, P.E.  
Geotechnical Project Manager  
TN 122,867

A handwritten signature in black ink, appearing to read "Ibrahim Aklouk".

Ibrahim Aklouk, E.I.  
Geotechnical Staff Professional

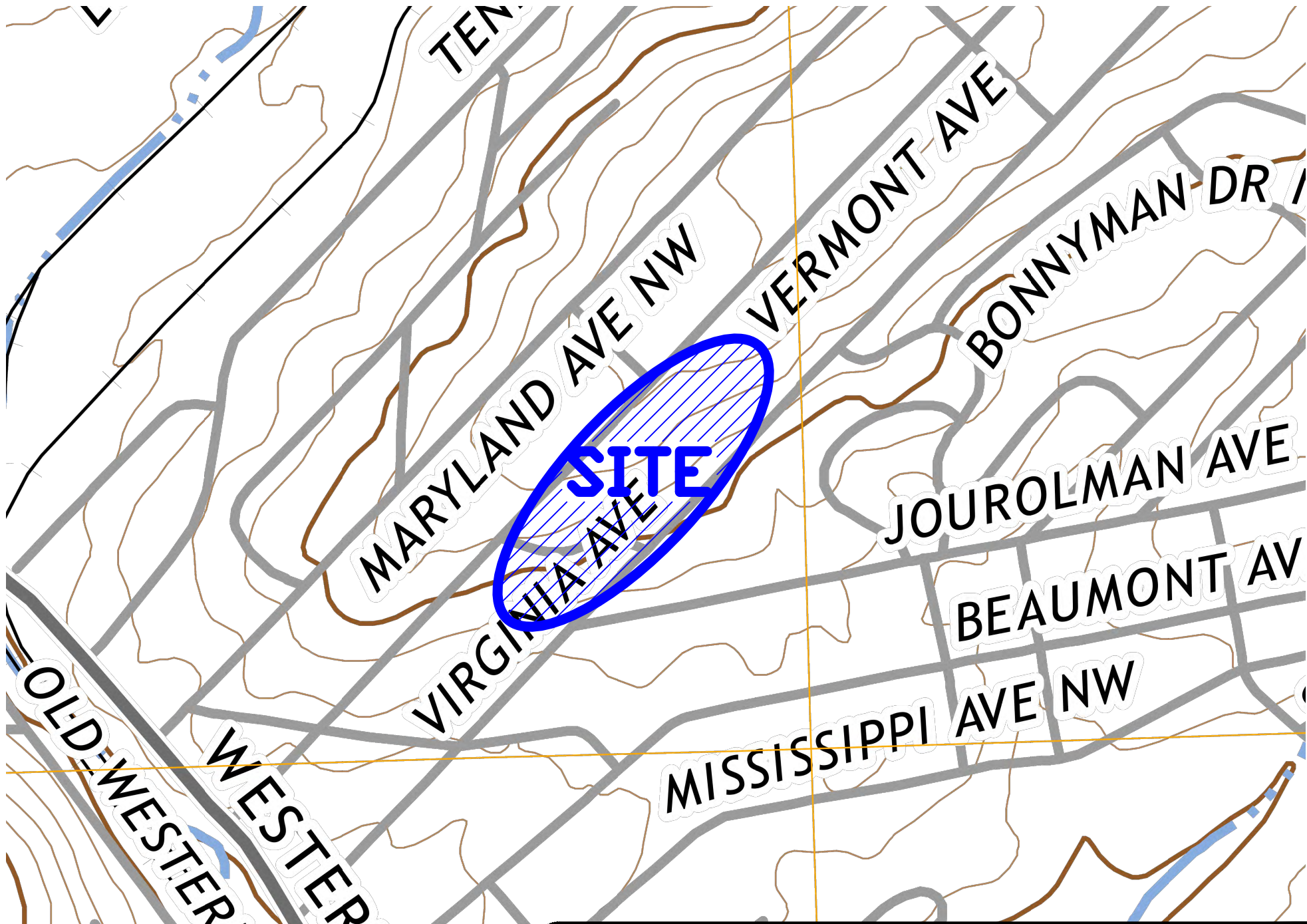
**Attachments:** Site Vicinity Map, Soil Test Boring and Observation Pit Location Plan, and Laboratory Test Results



**GEOServices, LLC, Geotechnical and Materials Engineers**

**ATTACHMENTS**





**NOTES:**

1.) BASE MAP: USGS QUADRANGLE (KNOXVILLE, TENNESSEE)



2561 Willow Point Way  
Knoxville, Tennessee 37931

Office: 865-539-8242  
Fax: 865-539-8252

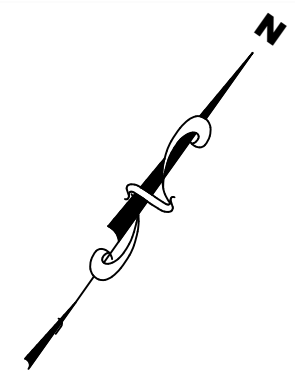
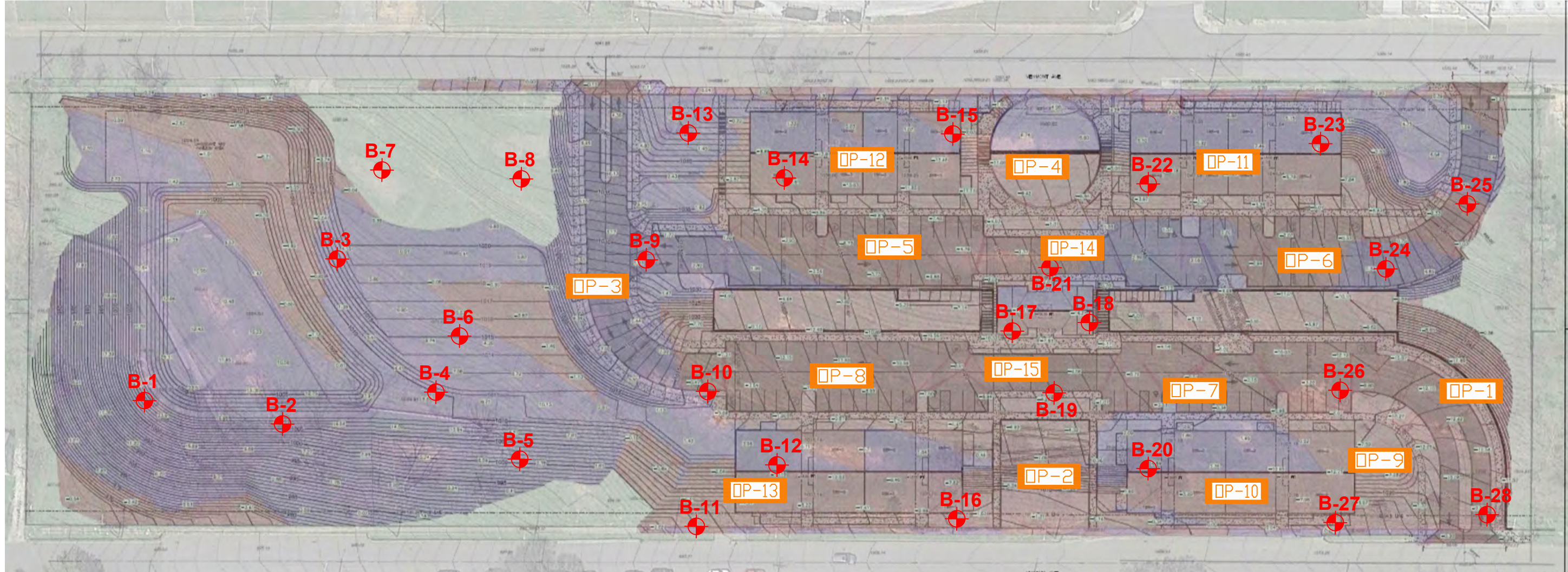
**SITE VICINITY MAP**

PROPOSED MULTI-FAMILY DEVELOPMENT



1800 & 1900 VERMONT AVENUE

KNOXVILLE, TENNESSEE 37921

DRAWN BY:	KSR	FIGURE
APPROVED BY:	MDK	1
SCALE:	N.T.S.	
JOB NO.:	21-23276	
DATE:	4/14/23	



**NOTES:**  
 1.) BORING LOCATIONS AND OBSERVATION PIT LOCATIONS ARE SHOWN IN GENERAL ARRANGEMENT ONLY.  
 2.) DO NOT USE BORING LOCATIONS OR OBSERVATION PIT LOCATIONS FOR DETERMINATIONS OF DISTANCES OR QUANTITIES.  
 3.) BASE MAP PROVIDED BY: Civil & Environmental Consultants

 LOCATION OF SOIL TEST BORINGS  
 LOCATION OF SOIL OBSERVATION PIT

**SOIL TEST BORING AND OBSERVATION  
 TEST PIT LOCATION PLAN**  
 PROPOSED MULTI-FAMILY DEVELOPMENT  
 1800 & 1900 VERMONT AVENUE  
 KNOXVILLE, TENNESSEE 37921

DRAWN BY:	IMA
APPROVED BY:	MDK
SCALE:	N.T.S.
JOB NO.:	21-23276
DATE:	4/14/23

**GES**  
 A **UES COMPANY**

2561 Willow Point Way  
 Knoxville, Tennessee 37931

Office: 865-539-8242  
 Fax: 865-539-8252

Figure 2



# GENERAL NOTES

## FINE AND COARSE GRAINED SOIL PROPERTIES

### PARTICLE SIZE

BOULDERS:	GREATER THAN 300 mm
COBBLES:	75 mm to 300 mm
GRAVEL:	4.74 mm to 75 mm
COARSE SAND:	2 mm to 4.74 mm
MEDIUM SAND:	0.425 mm to 2 mm
FINE SAND:	0.075 mm to 0.425 mm
SILTS & CLAYS:	LESS THAN 0.075 mm

### COARSE GRAINED SOILS (SANDS & GRAVELS)

N-VALUE	RELATIVE DENSITY
0 - 4	VERY LOOSE
5 - 10	LOOSE
11 - 30	MEDIUM DENSE
31 - 50	DENSE
OVER 50	VERY DENSE

### FINE GRAINED SOILS (SILTS & CLAYS)

N-VALUE	CONSISTENCY	Qu, PSF
0 - 2	VERY SOFT	0-500
3 - 4	SOFT	500 -1000
5 - 8	FIRM	1000 - 2000
9 - 15	STIFF	2000 - 4000
16 - 30	VERY STIFF	4000 - 8000
OVER 31	HARD	8000 +

## STANDARD PENETRATION TEST (ASTM D1586)

THE STANDARD PENETRATION TEST AS DEFINED BY ASTM D1586 IS A METHOD TO OBTAIN A DISTURBED SOIL SAMPLE FOR EXAMINATION AND TESTING AND TO OBTAIN RELATIVE DENSITY AND CONSISTENCY INFORMATION. THE 1.4 INCH I.D./2.0 INCH O.D. SAMPLER IS DRIVEN 3-SIX INCH INCREMENTS WITH A 140-LB. HAMMER FALLING 30 INCHES. THE BLOW COUNTS REQUIRED TO DRIVE THE SAMPLER THE FINAL 2 INCREMENTS ARE ADDED TOGETHER AND DESIGNATED THE N-VALUE. AT TIMES, THE SAMPLER CAN NOT BE DRIVEN THE FULL 18 INCHES. THE FOLLOWING REPRESENTS OUR INTERPRETATION OF THE STANDARD PENETRATION TEST WITH VARIATIONS.

### BLOWS/FOOT (N-VALUE)

### DESCRIPTION

25 .....	25 BLOWS DROVE SAMPLER 12" AFTER INITIAL 6" SEATING
75/10" .....	75 BLOWS DROVE SAMPLER 10" AFTER INITIAL 6" SEATING
50/PR .....	PENETRATION REFUSAL OF SAMPLER AFTER INITIAL 6" SEATING

## SAMPLING SYMBOLS

ST:	UNDISTURBED SAMPLE
SS:	SPLIT SPOON SAMPLE
CORE:	ROCK CORE SAMPLE
AU:	AUGER OR BAG SAMPLE

## SOIL PROPERTY SYMBOLS

N:	STANDARD PENETRATION, BPF
M:	MOISTURE CONTENT %
LL:	LIQUID LIMIT %
PI:	PLASTICITY INDEX %
Qp:	POCKET PENETROMETER VALUE, TSF
Qu:	UNCONFINED COMPRESSIVE STRENGTH, TSF
DUW:	DRY UNIT WEIGHT, PCF

## ROCK PROPERTIES

### ROCK HARDNESS

### ROCK QUALITY DESIGNATION (RQD)

PERCENT	QUALITY
90 TO 100	EXCELLENT
75 TO 90	GOOD
50 TO 75	FAIR
25 TO 50	POOR
0 TO 25	VERY POOR

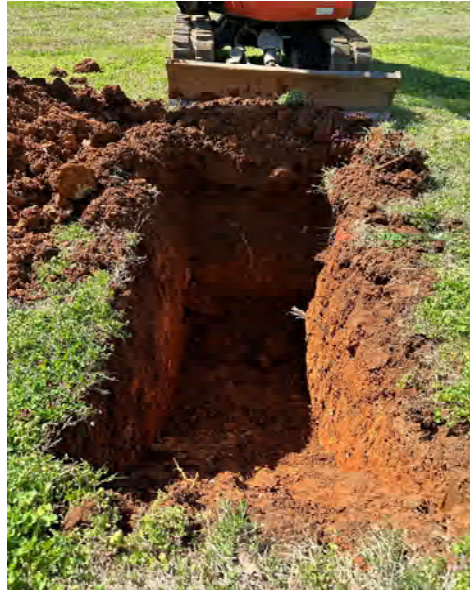
VERY SOFT:	ROCK DISINTEGRATES OR EASILY COMPRESSES TO TOUCH: CAN BE HARD TO VERY HARD SOIL.
SOFT:	ROCK IS COHERANT BUT BREAKS EASILY TO THUMB PRESSURE AT SHARP EDGES AND IT CRUMBLES WITH FIRM HAND PRESSURE.
MODERATELY HARD:	SMALL PIECES CAN BE BROKEN OFF ALONG SHARP EDGES BY CONSIDERABLE HARD THUMB PRESSURE: CAN BE BROKEN BY LIGHT HAMMER BLOWS.
HARD:	ROCK CAN NOT BE BROKEN BY THUMB PRESSURE, BUT CAN BE BROKEN BY MODERATE HAMMER BLOWS.
VERY HARD:	ROCK CAN BE BROKEN BY HEAVY HAMMER BLOWS.



## Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN    Date:    April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-1	0.0	0.2	Surficial	Topsoil with roots (2 inches)	
	0.2	4.0	Fill	Lean Clay (CL) - with bricks, rock fragments, and abandoned water and cable lines - Brown, reddish brown, and dark gray - Moist	Firm
	4.0	5.0	Residual	Fat Clay (CH) - with silt and chert fragments - Reddish brown, tan, and white - Moist	Stiff, terminated at 5.0 feet





### Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN Date: April 10, 2023  
GEOS Project No. 21-23276  
Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-2	0.0	0.3	Surficial	Topsoil with roots (4 inches)	
	0.3	4.0	Residual	Fat Clay (CH) - with silt and chert fragments - Reddish brown and tan - Moist	Stiff, terminated at 4.0 feet





## Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN    Date:    April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-3	0.0	0.2	Surficial	Topsoil (2 inches)	
	0.2	5.5	Fill	Lean Clay (CL) - with boulders, asphalt fragments, cables, glass, concrete fragments, pipes, and abandoned water, sewer, and phone lines - Brown, dark brown, and reddish brown - Moist	Firm
	5.5	9.5	Residual	Fat Clay (CH) - with silt, chert fragments, and weathered rock at depth - Reddish brown and tan - Moist	Firm to stiff, terminated at 9.5 feet

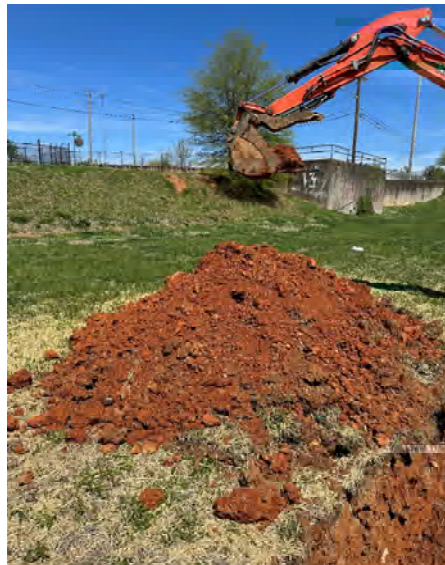




### Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN Date: April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-4	0.0	0.2	Surficial	Topsoil (2 inches)	
	0.2	2.0	Fill	Lean Clay (CL) - with gravel, bricks, and concrete fragments - Brown, dark brown, and dark gray - Moist	Firm
	2.0	4.5	Residual	Lean Clay (CL) - with silt, chert fragments, and weathered rock - Reddish brown and white - Moist	Very stiff to hard, terminated at 4.5 feet

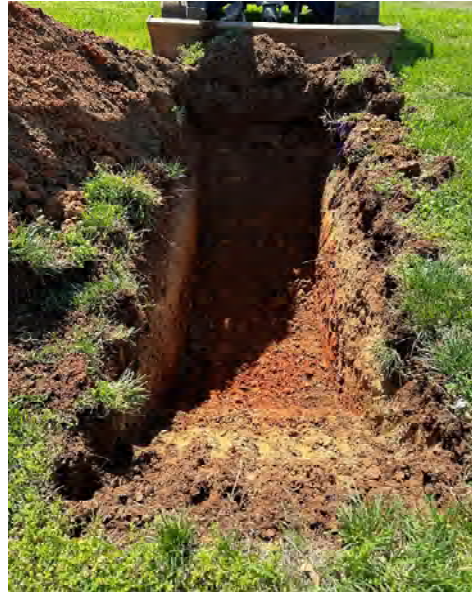




### Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN Date: April 10, 2023  
GEOS Project No. 21-23276  
Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-5	0.0	0.2	Surficial	Topsoil (2 inches)	
	0.2	2.5	Fill	Lean Clay (CL) - with silt, bricks, and gravel - Brown and light brown - Moist	Firm
	2.5	4.5	Residual	Fat Clay (CH) - with silt and chert fragments - Reddish brown, tan, and white - Moist	Stiff, terminated at 4.5 feet





### Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN Date: April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-6	0.0	0.4	Surficial	Topsoil (5 inches)	
	0.4	3.5	Fill	Lean Clay (CL) - with bricks, gravel, debris, and rock fragments - Brown, dark gray, and reddish brown - Moist	Stiff
	3.5	5.0	Residual	Fat Clay (CH) - with silt and chert fragments - Reddish brown and tan - Moist	Very stiff to hard, terminated at 5.0 feet





### Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN Date: April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-7	0.0	0.2	Surficial	Topsoil (2 inches)	
	0.2	1.0	Fill	Lean Clay (CL) - with bricks and gravel - Brown and dark gray - Moist	Firm
	1.0	1.8	Fill	Reinforced concrete slab with attached sewer pipes (9 inches)	Hard
	1.8	2.5	Residual	Fat Clay (CH) - with silt and chert fragments - Reddish brown and tan - Moist	Stiff, terminated at 2.5 feet







### Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN Date: April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-8	0.0	0.2	Surficial	Topsoil (2 inches)	
	0.2	3.5	Fill	Lean Clay (CL) - with silt, bricks, and concrete fragments - Light brown, tan, reddish brown, and brown - Moist	Firm
	3.5	6.0	Residual	Fat Clay (CH) - with silt and chert fragments - Reddish brown and tan - Moist	Stiff, terminated at 6.0 feet

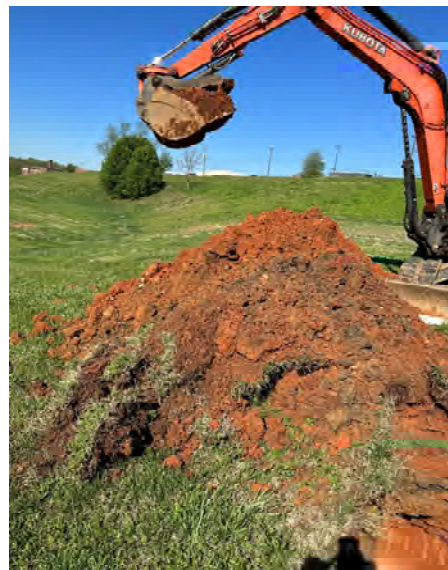
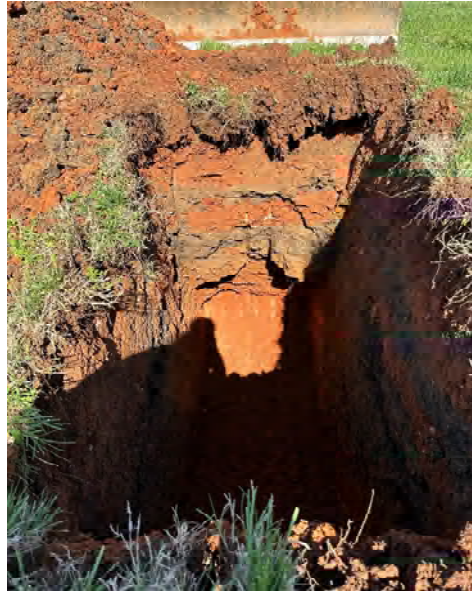




## Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN    Date:    April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-9	0.0	0.3	Surficial	Topsoil (4 inches)	
	0.3	5.5	Fill	Lean Clay (CL) - with glass, pipes, and rock fragments - Brown, reddish brown, dark gray and black - Moist	Firm
	5.5	8.0	Residual	Lean Clay (CL) - with silt and chert fragments - Reddish brown - Moist	Firm to stiff, terminated at 8.0 feet

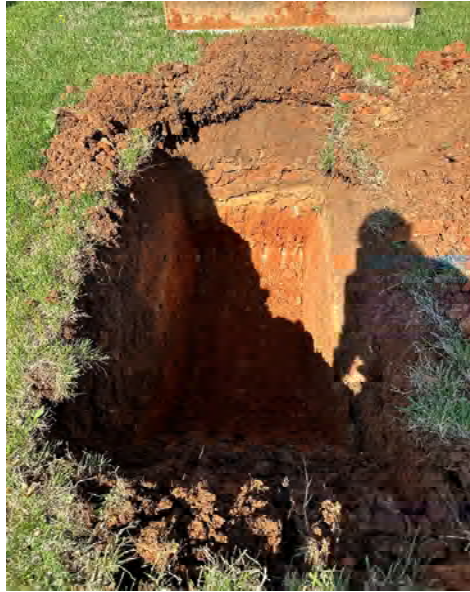




## Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN    Date:    April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-10	0.0	0.2	Surficial	Topsoil (3 inches)	
	0.2	3.0	Fill	Lean Clay (CL) - with silt, silt fence fabric, and brick fragments - Dark gray, brown, tan, and reddish brown - Moist	Firm
	3.0	6.0	Residual	Fat Clay (CH) - with silt, significant chert fragments, and weathered rock at depth - Reddish brown, tan, and white - Moist	Stiff to very stiff, terminated at 6.0 feet

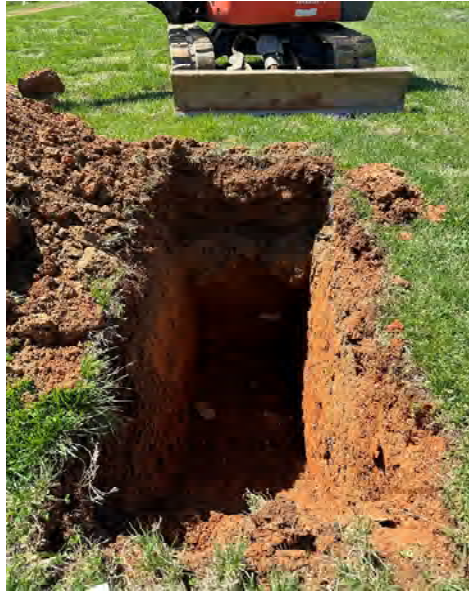




## Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN    Date:    April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-11	0.0	0.3	Surficial	Topsoil (4 inches)	
	0.3	3.5	Fill	Lean Clay (CL) - with gravel, bricks, concrete fragments, and abandoned sewer line - Brown, light brown, and reddish brown - Moist	Stiff
	3.5	7.5	Residual	Lean Clay (CL) - with silt, chert fragments, and weathered rock - Reddish brown and white - Moist	Very stiff to hard, terminated at 7.5 feet





### Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN Date: April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-12	0.0	0.2	Surficial	Topsoil (2 inches)	
	0.2	2.0	Fill	Lean Clay (CL) - with bricks, concrete fragments, and rock fragments - Brown, orangish brown, and gray - Moist	Stiff to very stiff
	2.0	4.5	Residual	Fat Clay (CH) - with silt, significant chert fragments, and weathered rock at depth - Reddish brown, tan, white, and red - Moist	Very stiff to hard, terminated at 4.5 feet





### Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN Date: April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-13	0.0	0.3	Surficial	Topsoil (3 inches)	
	0.3	5.0	Fill	Lean Clay (CL) - with silt, bricks, glass, and rock fragments - Brown, tan, and orangish brown - Moist	Firm
	5.0	7.0	Residual	Fat Clay (CH) - with silt and chert fragments - Reddish brown and tan - Moist	Firm to stiff, terminated at 7.0 feet





### Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN Date: April 10, 2023  
 GEOS Project No. 21-23276  
 Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-14	0.0	0.3	Surficial	Topsoil (2 inches)	
	0.3	2.0	Fill	Lean Clay (CL) - with bricks, gravel, cobbles, and abandoned cable line - Brown and dark gray - Moist	Firm
	2.0	5.0	Residual	Fat Clay (CH) - with silt and chert fragments - Reddish brown, tan, and white - Moist	Stiff to very stiff, terminated at 5.0 feet

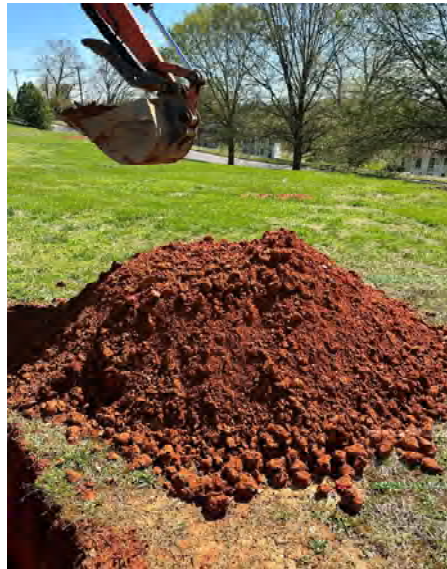
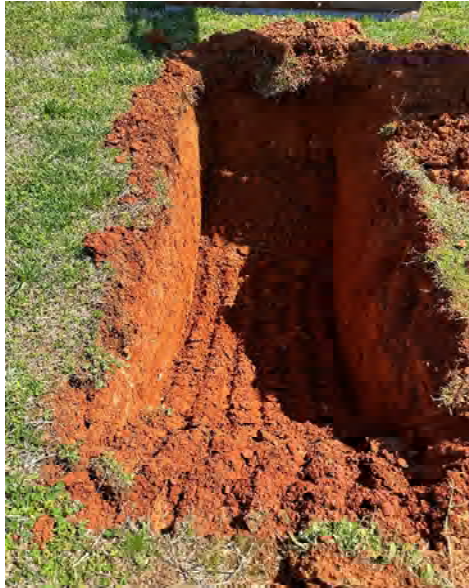




### Observation Pit Logs

Vermont Avenue Multi-Family Development - Knoxville, TN Date: April 10, 2023  
GEOS Project No. 21-23276  
Personnel: Saul Moslehy

Location	Depth (ft.)		Material Type	Description	Comments
	from	to			
OP-15	0.0	0.2	Surficial	Topsoil (2 inches)	
	0.2	4.0	Residual	Fat Clay (CH) - with silt and chert fragments - Reddish brown and tan - Moist	Stiff to hard, terminated at 4.0 feet







# Vermont Avenue Multi Family Dev.

GEOservices Project No. 21-23276

March 31, 2023

## SOIL DATA SUMMARY

Boring Number	Sample Number	Depth (feet)	Natural Moisture Content	Atterberg Limits			Soil Type	Percent Organic Content
				LL	PL	PI		
B-6	1	1.0-2.5'	24.7%					
	2	3.5-5.0'	37.4%					
	3	6.0-7.5'	38.2%					
	4	8.5-10.0'	43.9%					
B-8	1	1.0-2.5'	16.9%					
	2	3.5-5.0'	17.3%					
	3	6.0-7.5'	20.8%					
	4	8.5-10.0'	31.4%					
	5	13.5-15.0'	22.2%					
	6	18.5-20.0'	24.3%					
B-11	1	1.0-2.5'	10.9%					
	2	3.5-5.0'	20.9%					
	3	6.0-7.5'	30.8%					
	4	8.5-10.0'	33.1%					
	5	13.5-15.0'	39.0%					
	6	18.5-20.0'	44.2%					
	7	23.5-25.0'	46.7%					
	8	28.5-30.0'	36.4%					
B-15	1	1.0-2.5'	22.7%					
	2	3.5-5.0'	35.3%	69	31	38	CH	
	3	6.0-7.5'	41.9%					
	4	8.5-10.0'	33.8%					
	5	13.5-15.0'	35.0%					
	6	18.5-20.0'	38.3%					



# Vermont Avenue Multi Family Dev.

GEOservices Project No. 21-23276

March 31, 2023

## SOIL DATA SUMMARY

Boring Number	Sample Number	Depth (feet)	Natural Moisture Content	Atterberg Limits			Soil Type	Percent Organic Content
				LL	PL	PI		
B-20	1	1.0-2.5'	24.1%					
	2	3.5-5.0'	19.5%	48	16	32	CL	
	3	6.0-7.5'	19.3%					
	5	13.5-15.0'	24.0%					
	6	18.5-20.0'	16.6%					
B-21	1	1.0-2.5'	18.2%					
	2	3.5-5.0'	24.0%					
	3	6.0-7.5'	16.7%					
	4	8.5-10.0'	33.7%					
	5	13.5-15.0'	26.4%					
	6	18.5-20.0'	42.4%					
B-23	1	1.0-2.5'	17.6%					
	2	3.5-5.0'	18.6%	41	17	24	CL	
	3	6.0-7.5'	19.3%					
	4	8.5-10.0'	20.5%					
	5	13.5-15.0'	25.9%					
	6	18.5-20.0'	32.4%					
B-26	1	1.0-2.5'	16.1%					
	2	3.5-5.0'	26.3%					
	3	6.0-7.5'	30.1%					
	4	8.5-10.0'	34.3%					