Foundation Engineering, Inc.
Professional Geotechnical Services

Memorandum

Date: July 31, 2019

To: Patrick Mucker, Project Manager
Eugene School District 4J

From: Matthew Mason, P.E.
James Maitland, P.E., G.E.

Subject: Preliminary Information

Project: North Eugene High School
Project 2191102

This memorandum briefly summarizes the work completed to date and provides preliminary information about the subsurface conditions. In addition, we have listed some input we need to proceed with the report.

WORK COMPLETED TO DATE AND ADDITIONAL TASKS

We recently completed seven borings (BH-1 through BH-7) at the site. Figure 1 (attached) shows the approximate boring locations. A one-inch (I.D.) standpipe piezometer was installed in BH-5 to monitor the ground water level after drilling. In addition, we have completed index laboratory tests (water contents, percent fines and Atterberg limits tests) on selected samples. The results are summarized in Table 1 (attached). A consolidation tests is currently underway and should be completed next week.

We plan to return to the site to obtain an additional piezometer reading and to run resistivity tests.

PRELIMINARY INFORMATION

The field exploration indicates the site is underlain by ±5 to 14 feet of fine-grained alluvium and silty sand, followed by dense grading to very dense sandy gravel extending to at least 50 feet. Available water well logs indicate the gravels extend to depths greater than ±100 feet. More detailed soil descriptions are provided in the attached boring logs and will be discussed in greater detail in the geotechnical report.

Ground water was recorded in BH-5 at ±14 feet below the existing ground surface. We will periodically monitor this piezometer to record seasonal fluctuations. This water level is consistent with observed water levels in the other borings during drilling.

REQUESTED INFORMATION

Once we have the consolidation test data, we can proceed with foundation analysis. Moving forward, we request the following information from the design team:

- Estimated foundation loads (preferably broken down into estimate dead loads and live loads). An approximate range of typical column and wall loads and anticipated maximum loads would be helpful.
- Topographic information and surveyed boring locations/elevations.
- Estimated finish floor elevation.
- Site plan showing the approximate new building location and other proposed improvements.
- Plans to rehabilitate existing pavements or for new pavements. Estimated vehicular traffic for bus lanes, driveways, and parking lots.

OPTIONS FOR COMPLETION OF THE INVESTIGATION

We understand the design is still at the conceptual stage. If the above information is not readily available, we can proceed with our foundation analysis based on assumed loads. Alternatively, we can delay our analysis until that information becomes available.

Infiltration testing has been delayed pending additional ground water data. It is possible the water table may rise significantly during wet weather. If so, that rise may adversely impact the design of on-site disposal systems. If practical, we recommend delaying those tests until we have some additional piezometer readings later this year, after the rainy season begins. Ground water levels may also impact our seismic (liquefaction) analysis.

We recommend the design team review the enclosed information and provide some guidance about the timing of moving forward with our analysis, infiltration testing and completion of the report.

We hope this discussion meets your current needs and look forward to assisting you further. Please do not hesitate to contact us with any questions.

Attachments

North Eugene High School
4J School District
Eugene, OR
6/17/19

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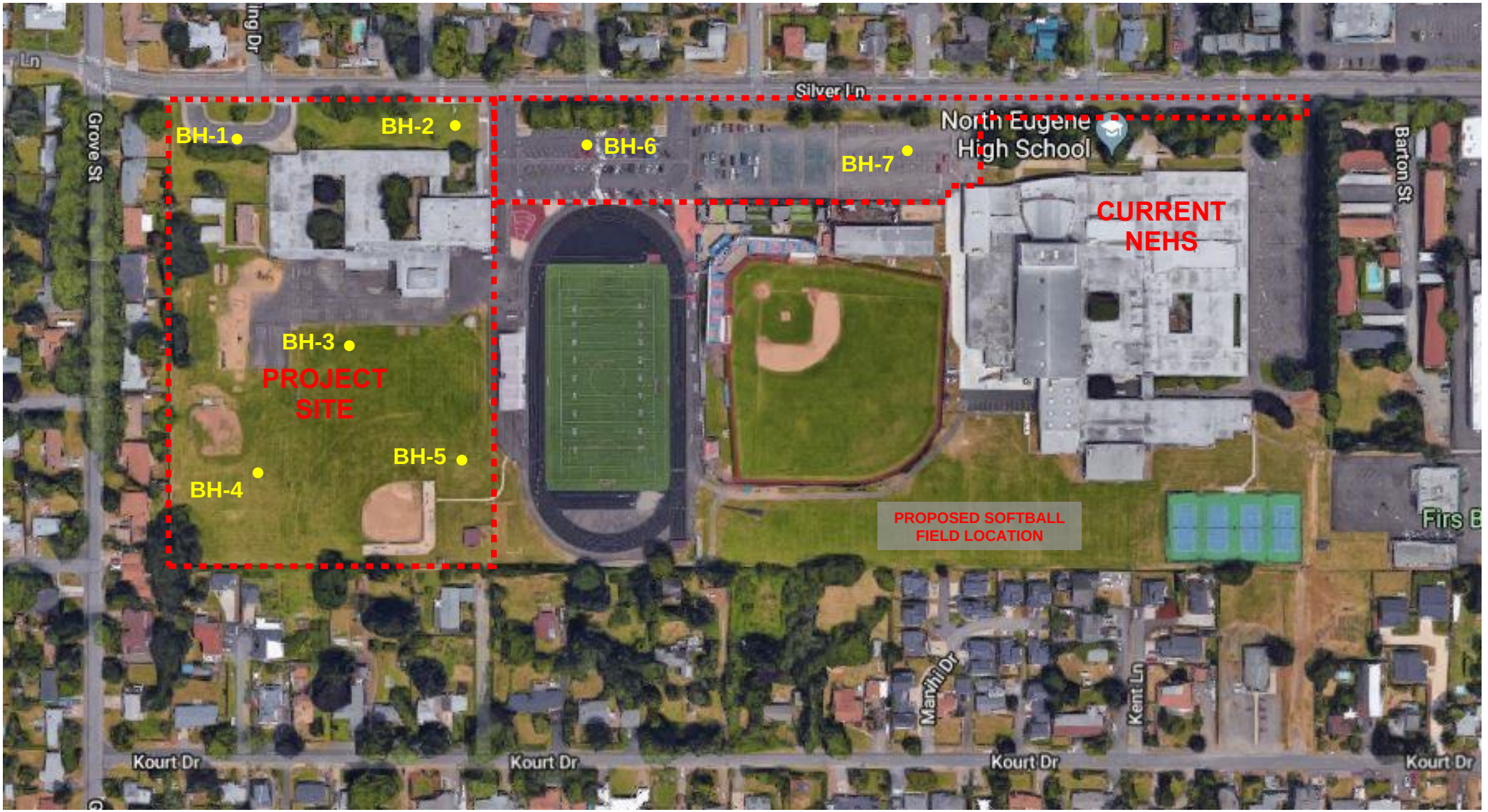
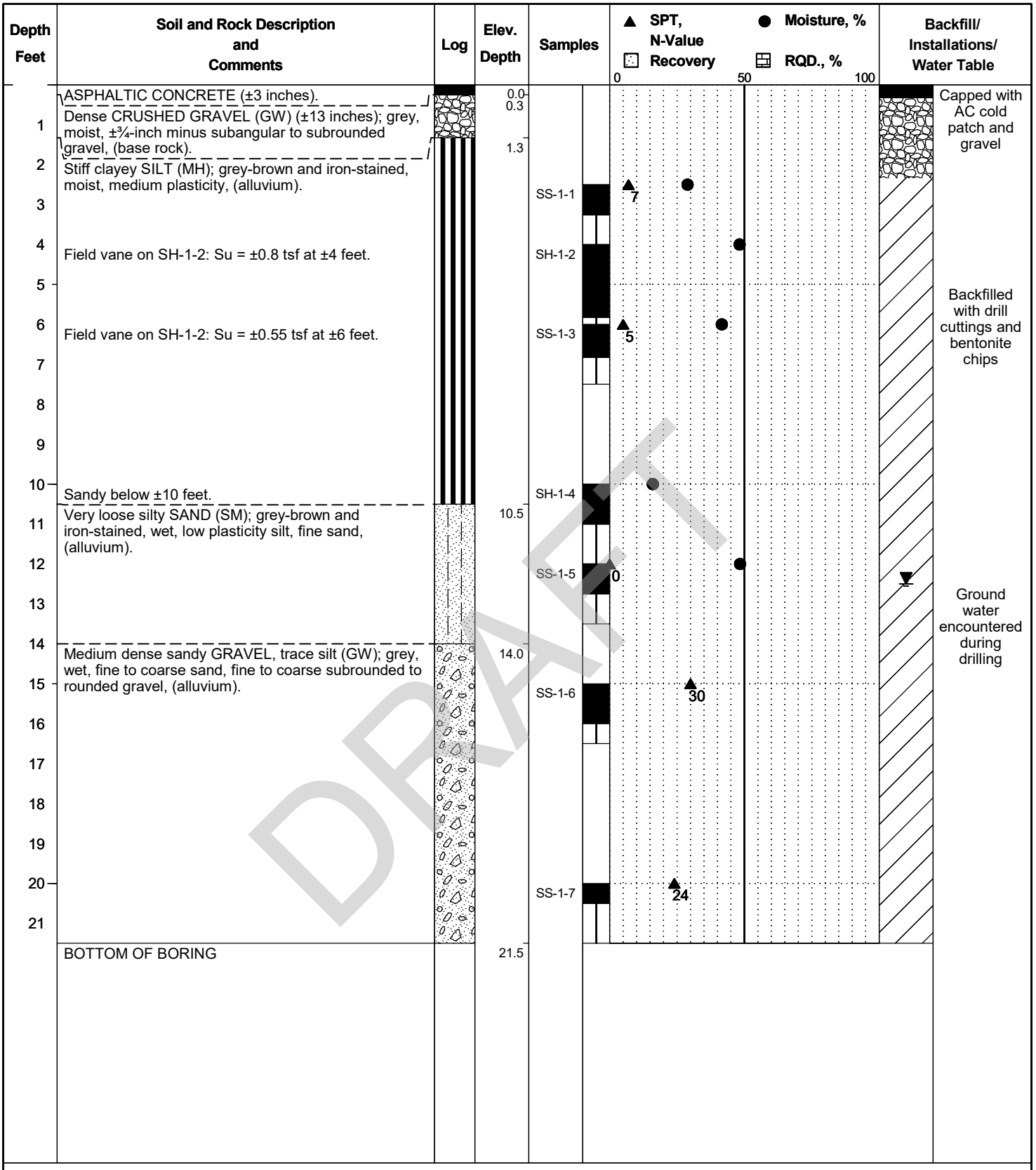


Figure 1. Approximate Borehole Locations

Table 1. Moisture Content, Percent Fines & Atterberg Limits

Sample Number	Sample Depth (ft)	Moisture Content (percent)	% Fines	LL	PL	PI	USCS Classification
SS-1-1	2.5 – 4.0	28.9					
SH-1-2	4.0 – 6.0	48.2		55	34	21	MH
SS-1-3	6.0 – 7.5	41.6					
SH-1-4	10.0 – 12.0	16.0	17.0				SM
SS-1-5	12.0 – 13.5	48.4					
S-2-1	1.5 – 2.5	17.1		49	22	26	CL
SH-2-2	2.5 – 4.5	13.7	25.6				SM
SS-2-3	4.5 – 6.0	16.4					
SH-3-1	2.5 – 4.0	29.1	51.9				ML
SS-3-2	4.5 – 6.0	29.0	35.1				SM
SS-3-3	7.5 – 9.0	27.1					
SS-3-4	10.0 – 11.5	39.8	37.7				SM
S-4-1	1.0 – 2.0	11.4					
SH-4-2	2.5 – 4.5	28.6	49.5				SM
SS-4-3	4.5 – 6.0	24.9	61.1				ML
SH-5-1	2.5 – 4.5	22.8	26.3				SM
SS-5-2	4.5 – 6.0	32.1	49.4				SM



Project No.: 2191102

Surface Elevation: N/A

Date of Boring: July 23, 2019

Boring Log: BH-1

North Eugene High School

Eugene, Oregon

Foundation Engineering, Inc.

Depth Feet	Soil and Rock Description and Comments	Log	Elev. Depth	Samples	SPT, N-Value / Recovery / Moisture, % / RQD., % (0 – 50 – 100)	Backfill/ Installations/ Water Table
1	Medium stiff SILT, scattered organics and cobbles (ML); brown, damp, low plasticity silt, ±6-inch diameter rounded cobbles, organics consist of fine roots, (topsoil).		0.0			Capped with sod
2	Medium stiff silty CLAY (CL); brown, damp, low plasticity, (alluvium).		1.0	S-2-1		
3	Loose silty SAND (SM); brown, damp, low plasticity silt, fine sand, (alluvium).		2.5	SH-2-2		
4						
5				SS-2-3	21	
6	Dense sandy GRAVEL, trace silt (GW); grey-brown, damp, fine to coarse sand, fine to coarse subrounded to rounded gravel, (alluvium).		5.3			Backfilled with drill cuttings
7						
8				SS-2-4	34	
9						
10				SS-2-5	44	
11						
12						
13						Bentonite chips
14						
15	Medium dense at ±15 feet.			SS-2-6	26	Ground water encountered during drilling
16						
	BOTTOM OF BORING		16.5			

Project No.: 2191102

Surface Elevation: N/A

Date of Boring: July 23, 2019

Boring Log: BH-2

North Eugene High School

Eugene, Oregon

Foundation Engineering, Inc.

Depth Feet	Soil and Rock Description and Comments	Log	Elev. Depth	Samples	SPT, N-Value / Recovery / Moisture, % / RQD., % (0 – 50 – 100)	Backfill/ Installations/ Water Table
1	Medium stiff SILT, scattered organics (ML); brown, damp, low plasticity, organics consist of fine roots, (topsoil).		0.0			Capped with sod
2	Medium stiff sandy SILT (ML); brown, damp, low plasticity silt, fine sand, (alluvium).		1.0			
3				SH-3-1		
4						
5	Loose silty SAND (SM); brown, damp, low plasticity silt, fine sand, (alluvium).		4.5	SS-3-2	5	Backfilled with bentonite chips
6						
7						
8	Very loose and moist below ±7.5 feet.			SS-3-3	3	
9						
10	Dense sandy GRAVEL, trace to some silt (GW); grey-brown, wet, fine to coarse sand, fine to coarse subrounded to rounded gravel, (alluvium).		10.0	SS-3-4	13	
11						
12						
13				SS-3-5	39	
14	Iron-stained at ±14 feet.					
15				SS-3-6	36	
16						
17						
18						
19						
20	Very dense at ±20 feet.			SS-3-7	53	
21						
22						
23						
24						
25				SS-3-7	32	
26						

Project No.: 2191102

Surface Elevation: N/A

Date of Boring: July 23, 2019

Boring Log: BH-3

North Eugene High School

Eugene, Oregon

Foundation Engineering, Inc.

Depth Feet	Soil and Rock Description and Comments	Log	Elev. Depth	Samples	SPT, N-Value / Recovery / Moisture, % / RQD., % (0 — 50 — 100)	Backfill/ Installations/ Water Table
28						
29						
30	Very dense below ±30 feet.			SS-3-8	50/5"	
31						
32						
33						
34						
35				SS-3-9	50/4"	
36						
37						
38						
39						
40				SS-3-10	50/5"	
41						
42						
43						
44						
45				SS-3-11	50/5.5"	
46						
47						
48						
49						
50				SS-3-12	50/4"	
	BOTTOM OF BORING		50.8			

Project No.: 2191102

Surface Elevation: N/A

Date of Boring: July 23, 2019

Boring Log: BH-3

North Eugene High School

Eugene, Oregon

Foundation Engineering, Inc.

Depth Feet	Soil and Rock Description and Comments	Log	Elev. Depth	Samples	SPT, N-Value / Recovery / Moisture, % / RQD., % (0 – 50 – 100)	Backfill/ Installations/ Water Table
1	Medium stiff SILT, scattered organics (ML); brown, dry, low plasticity, organics consist of fine roots, (topsoil).		0.0			Capped with sod
2	Medium stiff silty CLAY (CL); brown, damp, medium plasticity, (alluvium).		0.5	S-4-1		
3	Medium stiff sandy SILT (ML); brown, damp, non-plastic, fine sand, (alluvium).		2.5	SH-4-2		
4	Moist below ±4.5 feet.					
5				SS-4-3	3	Backfilled with drill cuttings
6						
7	Dense sandy GRAVEL, trace silt (GW); grey-brown, moist, fine to coarse sand, fine to coarse subrounded to rounded gravel, (alluvium).		6.5			
8				SS-4-4	46	
9						
10				SS-4-5	40	
11						
12						
13						Bentonite chips
14						
15				SS-4-6	30	Ground water encountered during drilling
16						
	BOTTOM OF BORING		16.5			

Project No.: 2191102

Surface Elevation: N/A

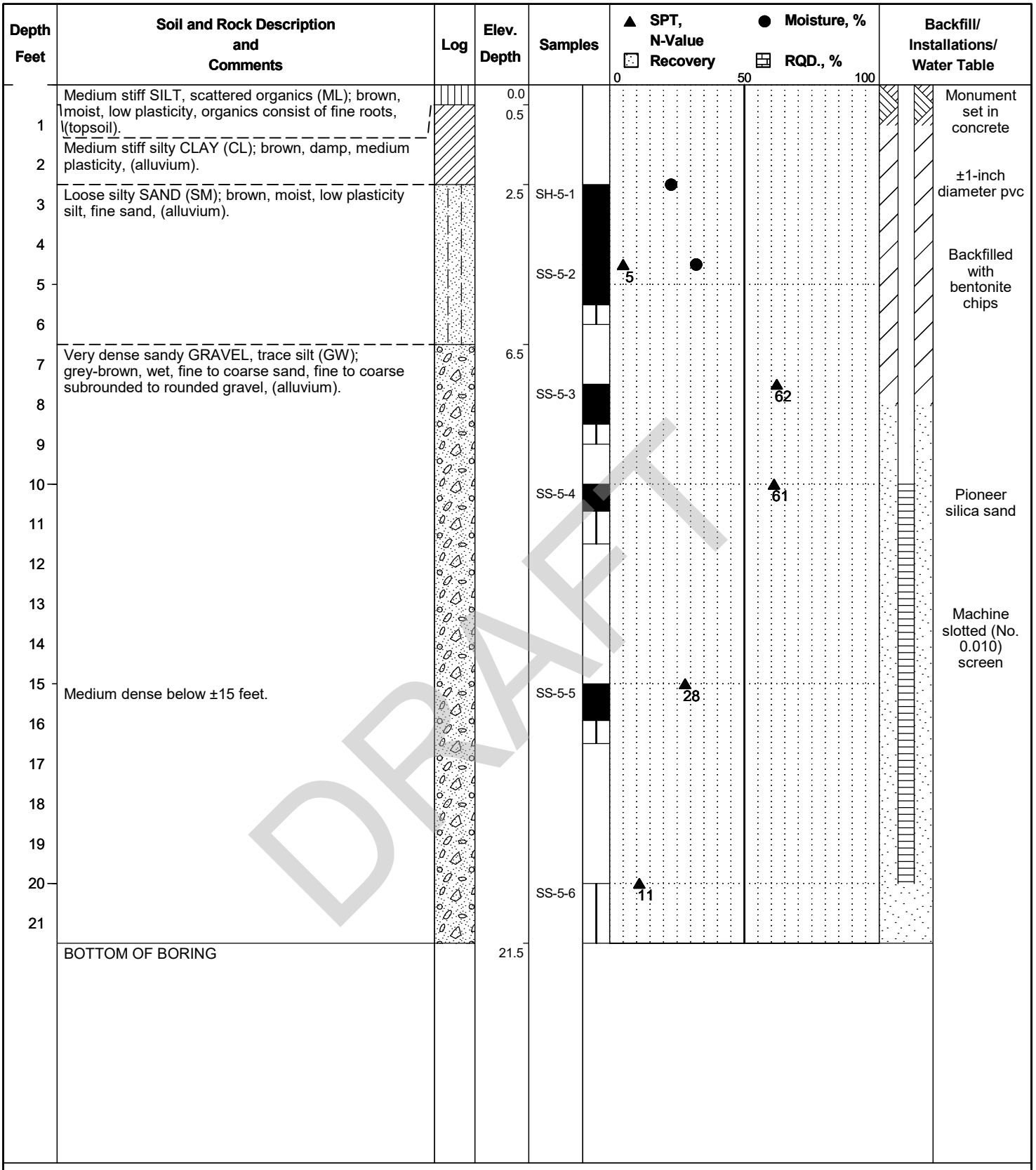
Date of Boring: July 23, 2019

Boring Log: BH-4

North Eugene High School

Eugene, Oregon

Foundation Engineering, Inc.



Project No.: 2191102

Surface Elevation: N/A

Date of Boring: July 23, 2019

Boring Log: BH-5

North Eugene High School

Eugene, Oregon

Foundation Engineering, Inc.

Depth Feet	Soil and Rock Description and Comments	Log	Elev. Depth	Samples	SPT, N-Value / Moisture, % / Recovery / RQD., % (0 – 50 – 100)	Backfill/ Installations/ Water Table
	ASPHALTIC CONCRETE (±3 inches).		0.0			Capped with AC cold patch and gravel
1	Dense CRUSHED GRAVEL (GM) (±9 inches); grey, damp, ±¾-inch minus subangular to subrounded gravel, (base rock).		0.3			
2	Medium dense silty GRAVEL, some sand (GM); grey-brown, damp, low plasticity silt, fine to coarse sand, fine to coarse subrounded to rounded gravel, (alluvium).		1.0	S-6-1		Backfilled with drill cuttings
3			2.5	SS-6-2	▲ 39	
4	Dense sandy GRAVEL, some silt (GW-GM); grey-brown, damp, low plasticity silt, fine to coarse sand, fine to coarse subrounded to rounded gravel, (alluvium).		4.0			
	BOTTOM OF EXPLORATION					

Project No.: 2191102

Surface Elevation: N/A

Date of Boring: July 23, 2019

Boring Log: BH-6

North Eugene High School

Eugene, Oregon

Foundation Engineering, Inc.

Depth Feet	Soil and Rock Description and Comments	Log	Elev. Depth	Samples	SPT, N-Value / Moisture, % / Recovery / RQD., % (0 – 50 – 100)	Backfill/ Installations/ Water Table
	ASPHALTIC CONCRETE (±4 inches).		0.0			Capped with AC cold patch and gravel
1	Medium dense CRUSHED GRAVEL (GW) (±10 inches); grey, damp, ±¾-inch minus subangular to subrounded gravel, (base rock).		0.3			
2	Medium dense silty GRAVEL, trace sand (GM); dark brown, damp, low plasticity silt, fine to coarse sand, fine to coarse gravel, (possible alluvium).		1.2	S-7-1		Backfilled with drill cuttings
3			2.5	SS-7-2	▲ 15	
4	Medium dense sandy GRAVEL, some silt (GW-GM); grey-brown, damp, low plasticity silt, fine to coarse sand, fine to coarse subrounded to rounded gravel, (alluvium).		4.0			
	BOTTOM OF EXPLORATION					

Project No.: 2191102

Surface Elevation: N/A

Date of Boring: July 23, 2019

Boring Log: BH-7

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