

WELTI GEOTECHNICAL, P.C.

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January 7, 2021

Mr. Guy A. Hesketh, P.E.
F. A. Hesketh & Associates, Inc.
6 Creamery Brook
East Granby, CT 06026

Re: Geotechnical Study for Proposed Trailer Parking Lot 40 Wisconsin Avenue, Norwich, CT

Dear Guy:

1.0 Herewith are the data from the test borings taken at the above referenced site. Nineteen borings were drilled to a maximum depth of 18 feet below the existing grades. The borings were taken at the at the deep cut in the north part of the site, at the south side of the site where there is a proposed retaining wall and in an area where underground storm water storage is proposed. The boring locations were staked in the field by F. A. Hesketh & Associates and are shown on the attached site plan prepared by your office. *The borings were drilled by this firm solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed by Welti Geotechnical, P.C. to evaluate subsurface environmental conditions.*

1.1 Laboratory grain size gradation tests were performed on eight soil samples taken from the borings. The results of those tests are included in Appendix 1.

2.0 The **Subject Project** will include the construction of a 194 space trailer parking lot to be located in the undeveloped area on the west side of the existing building. The pavement loading is presumed to include the wheels of the tractor and trailer and potentially the weight of stacked trailers. It is not clear if the tractor trailer travel on the pavement is under loaded or unloaded conditions. Most of the parking lot will be graded southward at a rate of 6.66%. The underground storm water storage system will be located beneath the paved lot about 30 feet off the building. There is about 54 feet of existing topographic relief across the proposed grading limits, sloping northward from Elev. 312 up to Elev. 366. The project area is largely tree covered. The earthwork will generally require fills in the south half of the lot to cuts in the north areas. The fills will be up to 6 feet deep and require a retaining wall along the extreme south limits. The cuts to the subgrade levels will be up to 20± feet deep at the extreme north end of the site. The grading limits along the west and south sides will be sloped or retained to avoid the narrow strip of wetlands in those areas.

3.0 The Geologic Origin of the natural inorganic soils are from glacial moraine deposits atop the bedrock. These deposits consist generally of dense to very dense fine to coarse sand with some silt gravel, cobbles and boulders. The bedrock from the rock cores and from geologic mapping is in a massive formation of Canterbury Gneiss.

3.1 The Soil/Rock Cross Sections from the borings are generally as follows:

Parking Lot Cut Area (see borings B-1 thru B-9):

Topsoil to 3" to 9"

Subsoil; fine SAND and SILT, trace Roots to 1 to 3.5 feet, loose frost disturbed soil to 2.5 feet, medium compact below that depth

Glacial Moraine; fine to coarse SAND, some Silt, Gravel, Cobbles and Boulders to the top of bedrock at 4 to 16+ feet, dense to very dense

Note: At 4 of the 9 borings boulders had to be cored to advance the boring to the top of the bedrock. The cores taken thru the soil with boulders were as follows:

- At boring B-3; cored thru soil with boulders from 7' to 11' with recovery of 15"
- At boring B-4; cored thru soil with boulders from 5' to 11.5' with recovery of 14"
- At boring B-8; cored thru soil with boulders from 8' to 11' with recovery of 7"
- At boring B-8; cored thru soil with boulders from 11' to 16' with recovery of 18"
- At boring B-9; cored thru soil with boulders from 9' to 14' with recovery of 15"

Bedrock; Gneiss

The bedrock was cored as follows:

Boring No.	Existing Ground	Depth to Bedrock (ft)	Estimated Top of Rock	Rock Core Depth (ft)	Recovery (inches)	RQD (%)	Estimated Cut in Rock (ft)
B-1	Elev. 348	6.5	Elev. 341.5	6.5' to 11.5'	60	67	4
B-2	Elev. 355	13.0	Elev. 342	13' to 18'	52	70	1
B-3	Elev. 364	11.0	Elev. 353	11' to 16'	43	38	9
B-4	Elev. 357	11.5	Elev. 345.5	11.5' to 15'	42	52	5
B-5	Elev. 361	8.5	Elev. 352.5	8.5' to 13.5'	60	9	9
B-6	Elev. 352	4.0	Elev. 348	4' to 9'	60	92	9
B-7	Elev. 353	7.0	Elev. 346	7' to 12'	60	42	3

Retaining Wall at South End of Site (see borings B-10 thru B-15):

Topsoil to 1" to 5"

Subsoil; fine SAND and SILT, trace Gravel and Roots to 1 to 3.5 feet, loose frost disturbed soil to 2.5 feet, medium compact below that depth

Glacial Moraine; fine to medium to fine to coarse SAND, some Silt, Gravel, Cobbles and Boulders to auger refusal on boulders or bedrock at 5 to 15 feet, dense to very dense

Storm Water Storage System (see borings B-16 thru B-19):

Topsoil to 4" to 6"

Locally Subsoil; fine SAND and SILT, trace Gravel and Roots, few Cobbles to 1.5 to 3.5 feet, loose frost disturbed soil to about 2.5 feet, medium compact below that depth

Glacial Moraine; fine to medium to fine to coarse SAND, some Silt and Gravel, few Cobbles to auger refusal on boulders or bedrock at 1.5 to 12 feet, dense to very dense

3.2 The Water Table was evident at 7 to 8 feet below the existing in the lowest part of the site at the completion of the borings (see borings B-12 and B-13). The water table was not evident in the remainder of the borings at the completion of the borings. The natural soils are well graded and dense and have low permeabilities and voids ratio. With moderate slopes storm water recharge in the dense soils is limited, which in turn limits the ground water levels. In areas where there is less than about 10 feet of overburden, the normal water table will be in the bedrock. During seasonal wet periods, it is possible that the water table could be locally within 6 feet of existing grades in areas above topographic Elev. 320 and within 3 feet of grade in lower areas of the site. The capillary water in the natural soils can be to 2 feet above the static water table. *The subsoils are sensitive to remodeling beneath equipment when wet and may have to be stripped where on subgrades beneath the fills.*

4.0 The Criteria for Pavement Design are generally as follows:

1. The natural soils are frost susceptible. The depth of frost free material beneath the pavements should be at least equal to 66 % of the frost depth in 90% of the years.
2. The long term water table should be maintained at least 20" below the pavement grade.
3. The pavement sections for heavy truck and trailer access should be designed for wheel load and load frequency in accordance with AASHTO procedures.

4.1 Regarding item 1, the pavement section will require at least 20" of free draining material beneath the bituminous concrete to address the frost (4.5" bituminous concrete, 8" processed stone + 8" gravel subbase). This section should also address the AASHTO structural requirements of item 3.

4.2 The recommended minimum pavement section for 18 kip axle loadings (loaded condition) should include at least 4.5" of bituminous concrete (placed in two lifts) on 8" of processed stone base atop 8" of subbase. The subbase should conform to section 6.0 below or CT Specification 817, Section M.02.06 Grading A.

4.3 Subsurface drains and edge drains are recommended in pavement cut areas to lengthen pavement life and lessen potential cracking. The drains can be 4" diameter perforated ADC piping about 12" below the subbase layer in a geotextile wrapped trench backfilled with 3/8" crushed stone. Large (> 10,000 sf) areas with subbase or base in place may require subsurface drains on 30 foot centers to address storm water recharge into the gravels.

4.4 The **Earthwork** will generally include (1) Clearing, Grubbing + Stripping Topsoil, (2) Removal of Subsoils, (3) Mass Excavations in earth and in bedrock, (4) Mass Fills. The natural inorganic soils generally have silt contents in the range of 20% and 48% and will be sensitive to remolding under construction equipment when wet. The soil subgrades may require placement of a minimum 10" layer of crushed stone to avoid the remolding for construction equipment access. ***The on-site excavated soils should not be used for backfill of walls, or beneath the pavement areas within 2 feet of finished grades.*** In pavement fills it may be possible to use some of the on site soils at 2+ feet below the pavement grades, however use of such material will be highly weather dependant. If the subgrade is wet the initial layer of fill in such areas would have to be crushed stone (possibly on site) or off site sand and gravel. The use of on site excavation material in controlled fills, may require temporary stockpiling, if work is done during wet periods.

4.4.1 Regarding the **Subsoils**, this material may need to be initially stripped to provide a stable base for controlled fills. The excavated material should not be used in areas supporting pavements and structures.

4.5 Mass Excavations will be required in the north area of the site and will include combined subgrades in soil and in rock. The cuts at the underground storm water system will similarly include soil and rock. There should be a minimum 6" layer of 3/8" crushed stone atop wet soil subgrades to avoid soil remolding. Regarding bedrock cuts, the borings indicate rock cuts up to 10± feet deep to subgrade elevations. The bedrock is a massive, hard gneiss formation. It should be assumed that the rock excavations will require blasting. The recommendations for preparation of rock cut areas for the pavement sections are generally as follows:

1. Perform blasting to 2.5 feet below the finished pavement grades, the underground storm water system and utility trenches. The over-blast should minimize requirements for secondary blasting.
2. At parking lots and paved drives, excavate blasted rock with a heavy excavator to remove loose, blasted rock pieces to at least 24" below the finished grades. Large, loose rock pieces at the sub grades should be removed. Place an initial 6+" layer of 3/8" crushed stone atop the approved blasted rock surface.

3. The 3/8" crushed stone layer should be compacted with at least five passes of a vibratory drum compactor having a static weight of at least 10 Tons to fill the fractures and voids in the blasted bedrock surface and to provide a uniformly stiff surface to receive the controlled fills and pavement sections. The fill above the compacted 3/8" crushed stone should conforming to section 6.0 below.

4.5.1 The contract documents should include blasting specifications outlining the recommended requirements for pre-blast surveys, blasting plans, materials, monitoring methods and blast parameters to limit dynamic effects on adjacent structures and utilities. A sample blasting specification can be provided by Welti Geotechnical, P.C..

4.6 Regarding the **Underground Storm Water Storage System**, the finished pavement grades will range from Elev. 322 to Elev. 328, which are within a few feet of the existing grades. The subgrades for similar storage systems usually extend to 8 to 12 feet below finished grades. Thus, it appears that the entire subgrade for the system will fall in a cut into the very dense soils and potentially in bedrock. The preparation of the subgrades in soil and in rock should be as cited in section 4.3 above to receive the system materials and the pavement section above. The system should be designed for a retention based on the low permeability soils and rock conditions. The mitigation of potential water mounding should be addressed by maintaining at least 2 feet of controlled fill beneath the pavement section (bituminous concrete plus processed base). The controlled fill should conform to section 6.0 below.

4.7 The probable swell from rock cuts to fills will be about 15%. The shrinkage from cuts to fills in the natural soils should be less than about 5%.

5.0 The **Foundation Type** for retaining walls can be with spread footings. The footing subgrades should be on the natural soils, or on a controlled fill after the removal of any topsoil and subsoil layers. From the test borings, the footing subgrades should fall on the compact natural soils. It should be assumed that the soil subgrades may be wet from groundwater or capillary water. There should be a minimum 6" layer of 3/8" crushed stone beneath the footings on the natural soils and as an initial layer beneath controlled fill where placed over a wet soil subgrade. Controlled fill should conform to section 6.0 below and should extend to a horizontal distance beyond the footings equal to at least the depth of fill beneath the footings.

5.1 The **Allowable Bearing Pressure** for the retaining footings can be 1) 6,000 psf for footings on crushed stone layer atop the natural soils, and 2) 4,000 psf for footings on controlled fill. At retaining walls the maximum pressure on the toe can be 50% higher than the average pressures, cited above.

5.2 The **Static Lateral Soil Loading on the retaining walls** can be based on normal active earth pressure using the active coefficient $K_A = 0.28$ for level backfill condition. The allowable stress design should include a lateral pressure to represent live load surcharge equal to at least 2 feet of backfill. The backfill material should conform to the material specifications of section 6.0 above and should extend horizontally behind the walls to a distance equal to at least the height of the

wall, measured from the bottom of footing to the elevation of the backfill. The ultimate sliding factor for precast concrete or cast-in-place concrete atop the crushed stone is **0.60**.

5.3 The Frost Protection Depth in the CT IBC is 3.5 feet below finished grade. The manufacturers of mechanical stabilized earth and precast gravity walls might specify other frost depth requirements.

5.4 Summary of the Allowable Foundation Design Parameters:

Parameter	Value
Allowable Bearing Pressure for Footings on crushed stone atop the natural moraine soil (below subsoil)	6,000 psf
Allowable Bearing Pressure for Footings on controlled fill	4,000 psf
Backfill Unit Weight *	125 pcf
Internal Friction Angle , Backfill *	34°
At-Rest Coefficient	0.45
Active Pressure Coefficient (with level backfill *)	0.28
Ultimate Sliding Coefficient	0.60
Frost Protection Depth	3.5 feet

* For backfill in accordance with section 6.0 below.

6.0 The pavement subbase, backfill for retaining walls and for utility trenches located beneath the paved areas should conform to the CTDOT Form 818 section M.02.06, Grading B, or to the alternate gradation below, or be 3/8" crushed stone:

Percent Passing	Sieve Size
100	3.5"
50 - 100	3/4"
25 - 75	No.4

The fraction, passing the No.4 sieve should have less than 15%, passing the No. 200 sieve.

The on site excavated soils will not conform to the above gradation.

All subbase and backfill must be compacted to at least 95% of modified optimum density in accordance with ASTM D-1557.

6.1 The **Processed Stone Base** should conform to the CTDOT Form 818, section M.05.01.

7.0 Regarding **Earthwork**, the on site soils are defined as OSHA Type B, which will require sloping of unshored excavations exceeding 5 feet in height to slopes less than 45° from the horizontal (1H : 1V).

7.1 For **Long Term Slopes** the general recommendations are as follows:

Earth slopes in cuts and fills; 2H:1V (slopes in cuts may require stone cladding depending on groundwater conditions). Cut slopes in excess of 4 feet high should have an under drain and crushed stone wedge at the toe. A slope schematic is included in Appendix 2.

Cuts in Weathered Rock; 1:1

Cuts in Hard, intact rock; 1H:3V and up to 1H : 6V. The steep cut faces may need to be pre-split.

7.1.1 Regarding the design of combined earth/rock cut slopes, the overburden should be cut to maximum 2H:1V slope. In designing the combined slope, the top of slope should be determined by extending a line at 2H:1V from the toe of rock cut. The proximity of rock will provide the bench for the earth slope. A foundation drain should be installed at the base of the rock cut. A recommended cross section is included in Appendix 2.

7.2 Embankment formation with substantial quantities of blasted rock should be in accordance with CTDOT Specification 817; Section 2.02.03, section 5 (Placement of Excavated Material). This section is particularly applicable as relates to the avoidance of nesting rock fragments.

7.3 The recommendations for **Compactor Size** versus lift thickness are as follows:

Static Weight	Dynamic Force	Lift Thickness
15 Tons	30 Tons	15" **
10 Tons	20 Tons	12"
7.5 Tons	15 Tons	10"
5 Tons	10 Tons	8"
2 Tons	4 Tons	7"
1 Ton	2 Tons	6"
< 1 Ton	< 2 Tons	< 5"

** Embankment layers with blasted rock must be sufficiently thick to allow compaction of

the soil portion of the layer. Layer thickness with mixed soil and rock should be limited to 2.5 feet. Layers with substantial rock fractions should have intermittent compacted soil layers. Rock particles larger than 24" should be initially spread out with soil between the rock fragments.

8.0 Dependent on the amount of rock excavation, rock crushing of the hard rock could provide pavement aggregates. Crushing of the rock to 2.5" minus material could provide base and subbase material beneath the bituminous concrete.

9.0 This report has been prepared for specific a application to the subject project in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made. In the event that any changes in the nature, design and location of structures are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

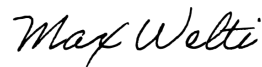
The analyses and recommendations submitted in this report are based in part upon data obtained from referenced explorations. The extent of variations between explorations may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

Wolti Geotechnical, P.C., should perform a general review of the final design and specifications in order that geotechnical design recommendations may be properly interpreted and implemented as they were intended.

Very truly yours,



John J. Bear, P.E.



Max Wolti, P.E.
President, Wolti Geotechnical, P.C.

APPENDIX 1

TEST BORING LOCATION PLAN

+

TEST BORING LOGS

+

GRAIN SIZE GRADATION TEST REPORTS



PROPOSED
TRAILER PARKING SPACES
11' X 55'

TOTAL = 245 SPACES

PROPOSED
PASSENGER VEHICLE
PARKING SPACES
9' X 20' AND ACCESSIBLE

TOTAL = 65 SPACES

PROPOSED TEST BORING LOCATIONS
CLARENCE WELTI ASSOCIATES, INC.
11/4/20

CONCEPT PLAN - 11' X 55' TRAILER SPACES
PREPARED FOR
THE GROSSMAN COMPANIES
WISCONSIN AVENUE
NORWICH / FRANKLIN, CONNECTICUT
Date: 09-28-2020 Drawn by: KLL Job no: 20154
Scale: 1" = 60' Checked by: GAH Sheet no: 1 OF 1
© \2020\20154-Wisconsin Ave Norwich\client\2020 Preliminary Design\WSP203.dwg, CP-2, Oct. 09, 2020 - 2:55:07 PM

No.	Date	Description
1	10-09-2020	Add Grading, drainage

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FAH

Civil & Traffic Engineers - Surveyors - Planners - Landscape Architects

CP-2

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 348		HOLE NO. B-1	
TYPE	HSA		SS	NQ	LINE & STA.	GROUND WATER OBSERVATIONS		START DATE 12/11/20	
SIZE I.D.	3.75"		1.375"	2.0"	N. COORDINATE	AT none FT. AFTER 0 HOURS		FINISH DATE 12/11/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS			
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	2-2-2-4	0.0'-2.0'		TOPSOIL	0.75			
					BR.SILT AND FINE SAND	1.5			
	2	4-11-14-16	2.0'-4.0'		GREY/BR.FINE-CRS.SAND, SOME SILT & GRAVEL, FEW COBBLES	345			
5	3	19-20-60	5.0'-6.5'		CORED BEDROCK - GNEISS	6.5			
					RUN #1 6.5' - 11.5' RECOVERED 60" RQD=67%	340			
10					BOTTOM OF BORING @ 11.5'	11.5			
						335			
15						330			
						325			
20						320			
						315			
25									
30									
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER			
						INSPECTOR:			
						SHEET 1 OF 1	HOLE NO. B-1		

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.		PROJECT NAME PROPOSED PARKING LOT LOCATION 217 WISCONSIN AVENUE, NORWICH, CT	
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 355	HOLE NO. B-2
TYPE	HSA		SS	NQ	LINE & STA.	GROUND WATER OBSERVATIONS	
SIZE I.D.	3.75"		1.375"	2.0"	N. COORDINATE	AT none FT. AFTER 0 HOURS	START DATE 12/11/20
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS	FINISH DATE 12/11/20
HAMMER FALL			30"				
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.	
	NO.	BLOWS/6"	DEPTH				
0	1	3-3-2-2	0.0'-2.0'		TOPSOIL BR.SILT AND FINE SAND	355	
						0.75	
	2	2-2-22-23	2.0'-4.0'				
					GREY/BR.FINE-CRS.SAND AND SILT, LITTLE GRAVEL, FEW COBBLES & BOULDERS	3.0	
5	3	15-24-26-46	5.0'-7.0'			350	
10	4	60	10.0'-10.5'			345	
					CORED BEDROCK - GNEISS	13.0	
15					RUN #1 13.0' - 18.0' RECOVERED 52" RQD=70%	340	
					BOTTOM OF BORING @ 18.0'	18.0	
20						335	
25						330	
30						325	
35						320	
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:	
						SHEET 1 OF 1	HOLE NO. B-2

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV.		HOLE NO.	
	HSA		SS	NQ		364		B-3	
TYPE					LINE & STA.	GROUND WATER OBSERVATIONS		START DATE	
SIZE I.D.	3.75"		1.375"	2.0"	N. COORDINATE	AT none FT. AFTER 0 HOURS		12/16/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS		FINISH DATE	
HAMMER FALL			30"					12/16/20	
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	2-3-2-2	0.0'-2.0'	A	TOPSOIL	0.30			
					BR.FINE SAND AND SILT, TRACE GRAVEL	1.0			
					GREY/BR.FINE SAND AND SILT				
	2	2-5-7-24	2.0'-4.0'						
					GREY/BR.FINE-CRS.SAND, SOME SILT & GRAVEL, FEW COBBLES	3.5			
5	3	60	4.0'-4.4'			360			
					CORED BOULDERS	7.0			
					RUN #1 7.0' - 11.0' RECOVERED 15"				
10					CORED BEDROCK - GNEISS	11.0			
					RUN #2 11.0' - 16.0' RECOVERED 43" RQD=38%				
15						350			
					BOTTOM OF BORING @ 16.0'	16.0			
						345			
20						340			
						335			
25						330			
30									
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-3	

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV.		HOLE NO.	
	HSA		SS	NQ		357		B-4	
TYPE					LINE & STA.	GROUND WATER OBSERVATIONS		START DATE	
SIZE I.D.	3.75"		1.375"	2.0"	N. COORDINATE	AT none FT. AFTER 0 HOURS		12/11/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS		FINISH DATE	
HAMMER FALL			30"					12/11/20	
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS				ELEV.
	NO.	BLOWS/6"	DEPTH						
0	1	1-1-2-2	0.0'-2.0'		TOPSOIL			0.75	
					BR.SILT AND FINE SAND			1.5	
	2	2-3-4-7	2.0'-4.0'		GREY/BR.FINE-MED.SAND, SOME SILT & GRAVEL, FEW COBBLES & BOULDERS				
					CORED BOULDERS FROM 5.0' TO 11.5'				
5	3	14-60	4.0'-5.0'		RUN #1 5.0' - 10.0' RECOVERED 18"				
									350
10									
					CORED BEDROCK - GNEISS			11.5	345
					RUN #2 10.0' - 15.0' RECOVERED 42" RQD=52%				
15					BOTTOM OF BORING @ 15.0'			15.0	340
									335
20									
									330
25									
									325
30									
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-4	

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.		PROJECT NAME PROPOSED PARKING LOT LOCATION 217 WISCONSIN AVENUE, NORWICH, CT	
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 361	HOLE NO. B-5
TYPE	HSA		SS	NQ	LINE & STA.	GROUND WATER OBSERVATIONS	
SIZE I.D.	3.75"		1.375"	2.0"	N. COORDINATE	AT none FT. AFTER 0 HOURS	START DATE 12/16/20
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS	FINISH DATE 12/16/20
HAMMER FALL			30"				
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.	
	NO.	BLOWS/6"	DEPTH				
0	1	1-3-3-3	0.0'-2.0'		TOPSOIL BR.FINE SAND AND SILT, TRACE ROOTS & GRAVEL	0.30 360	
	2	11-21-23-43	2.0'-4.0'		GREY/BR.FINE-CRS.SAND, SOME SILT & GRAVEL, FEW COBBLES	2.5	
5	3	33-60	5.0'-5.7'				
					WEATHERED ROCK CORED BEDROCK - GNEISS	8.0 8.5	
10					RUN #1 8.5' - 13.5' RECOVERED 60" RQD=92%		
					BOTTOM OF BORING @ 13.5'	13.5	
15							
20							
25							
30							
35							
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:	
						SHEET 1 OF 1	HOLE NO. B-5

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV.		HOLE NO.	
TYPE	HSA		SS	NQ	LINE & STA.	352		B-6	
SIZE I.D.	3.75"		1.375"	2.0"	N. COORDINATE	GROUND WATER OBSERVATIONS AT none FT. AFTER 0 HOURS		START DATE 12/11/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS		FINISH DATE 12/11/20	
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	2-1-6-2	0.0'-2.0'		TOPSOIL	0.25			
					BR.FINE SAND AND SILT, TRACE ROOTS	1.0			
	2	5-6-13-60	2.0'-3.8'		GREY/BR.FINE-MED.SAND AND SILT, TRACE GRAVEL	350			
					CORED BEDROCK - GNEISS	4.0			
5					RUN #1 4.0' - 9.0' RECOVERED 60" RQD=92%	345			
					BOTTOM OF BORING @ 9.0'	9.0			
10						340			
						335			
15						330			
						325			
20						320			
						315			
25						310			
						305			
30						300			
						295			
35						290			
						285			
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-6	

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV.		HOLE NO.	
TYPE	HSA		SS	NQ	LINE & STA.	353		B-7	
SIZE I.D.	3.75"		1.375"	2.0"	N. COORDINATE	GROUND WATER OBSERVATIONS AT none FT. AFTER 0 HOURS		START DATE 12/16/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS		FINISH DATE 12/16/20	
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	1-2-2-2	0.0'-2.0'	A	TOPSOIL	0.30			
					GREY/BR.SILT AND FINE SAND, TRACE ROOTS				
	2	4-4-8-21	2.0'-4.0'		GREY/BR.FINE-MED.SAND, SOME SILT & GRAVEL, FEW COBBLES	3.5			
5	3	21-16-60	5.0'-6.4'		CORED BEDROCK - GNEISS	7.0			
					RUN #1 7.0' - 12.0' RECOVERED 60" RQD=42%	345			
10					BOTTOM OF BORING @ 12.0'	12.0			
						340			
15						335			
20						330			
25						325			
30						320			
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-7	

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.		PROJECT NAME PROPOSED PARKING LOT LOCATION 217 WISCONSIN AVENUE, NORWICH, CT	
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 346	HOLE NO. B-8
TYPE	HSA		SS	NQ	LINE & STA.	GROUND WATER OBSERVATIONS	
SIZE I.D.	3.75"		1.375"	2.0"	N. COORDINATE	AT none FT. AFTER 0 HOURS	START DATE 12/10/20
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS	FINISH DATE 12/10/20
HAMMER FALL			30"				
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.	
	NO.	BLOWS/6"	DEPTH				
0	1	1-4-4-4	0.0'-2.0'	[Dotted Pattern]	TOPSOIL	345	
					BR.SILT AND FINE SAND		0.75
	2	4-7-14-17	2.0'-4.0'				340
5	3	21-21-30-40	4.0'-6.0'			GREY/BR.FINE-MED.SAND, SOME SILT & GRAVEL, FEW COBBLES & BOULDERS	
					CORED BOULDERS FROM 8.0' TO 16.0'		
					RUN #1 8.0' - 11.0' RECOVERED 7"		
					RUN #2 11.0' - 16.0' RECOVERED 18"		
10	4	18-60	10.0'-10.9'			335	
15							
					BOTTOM OF BORING @ 16.0'	16.0	
20						325	
25						320	
30						315	
35							
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:	
						SHEET 1 OF 1	HOLE NO. B-8

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV.		HOLE NO.	
TYPE	HSA		SS	NQ	LINE & STA.	349		B-9	
SIZE I.D.	3.75"		1.375"	2.0"	N. COORDINATE	GROUND WATER OBSERVATIONS AT none FT. AFTER 0 HOURS		START DATE 12/10/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS		FINISH DATE 12/10/20	
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	2-1-2-3	0.0'-2.0'		TOPSOIL BR.FINE SAND AND SILT	0.50			
	2	3-5-7-17	2.0'-4.0'						
	3	20-21-23-23	4.0'-6.0'			GREY/BR.FINE-MED.SAND, SOME SILT & GRAVEL, FEW COBBLES & BOULDERS	3.5		
5						CORED BOULDERS FROM 9.0' TO 14.0' RUN #1 9.0' - 14.0' RECOVERED 15"			
						345			
10						340			
	4	21-26-30	14.0'-15.5'			335			
15					BOTTOM OF BORING @ 15.5'	15.5			
						330			
20						325			
						320			
25						315			
30									
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-9	

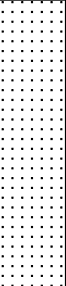
CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 312		HOLE NO. B-10	
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE 12/9/20	
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT none FT. AFTER 0 HOURS		FINISH DATE 12/9/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS			
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	1-1-2-4	0.0'-2.0'	A	TOPSOIL	0.1			
					BR.SILT AND FINE SAND, TRACE ROOTS	1.5			
	2	5-4-3-21	2.0'-4.0'		BR.FINE SAND AND SILT, LITTLE GRAVEL	3.5			
5	3	60	5.0'-5.1'		GREY/BR.FINE-MED.SAND, SOME SILT & GRAVEL, FEW COBBLES	6.5			
					BOTTOM OF BORING @ 6.5' (AUGER REFUSAL)	305			
10						300			
15						295			
20						290			
25						285			
30						280			
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-10	

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 316		HOLE NO. B-11	
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE 12/21/20	
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT none FT. AFTER 0 HOURS		FINISH DATE 12/21/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS			
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	1-1-2-3	0.0'-2.0'		TOPSOIL BR.FINE SAND AND SILT, LITTLE GRAVEL	0.25 315			
	2	3-5-16-60	2.0'-3.8'		GREY/BR. FINE-MED.SAND, SOME SILT & GRAVEL, FEW COBBLES & BOULDERS	3.0			
5	3	13-24-60	5.0'-6.3'			310			
					BOTTOM OF BORING @ 8.0' (AUGER REFUSAL)	8.0			
10						305			
15						300			
20						295			
25						290			
30						285			
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-11	

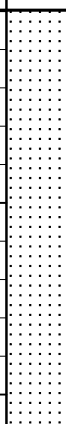
CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 312		HOLE NO. B-12	
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS AT 7.0 FT. AFTER 0 HOURS		START DATE 12/21/20	
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT FT. AFTER HOURS		FINISH DATE 12/21/20	
HAMMER WT.			140lbs		E. COORDINATE				
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	3-3-2-3	0.0'-2.0'		TOPSOIL BR.SILT AND FINE SAND, TRACE ROOTS	0.25			
	2	4-6-9-15	2.0'-4.0'			310			
	3	16-24-36-42	4.0'-6.0'		GREY/BR. FINE-MED.SAND, SOME SILT & GRAVEL, FEW COBBLES & BOULDERS	3.0			
5						305			
10	4	60	10.0'-10.3'		BOTTOM OF BORING @ 10.5' (AUGER REFUSAL)	10.5			
						300			
15						295			
20						290			
25						285			
30						280			
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-12	

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 313		HOLE NO. B-13	
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE 12/21/20	
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT 8.0 FT. AFTER 0 HOURS		FINISH DATE 12/21/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS			
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	1-1-4-4	0.0'-2.0'		TOPSOIL BR.SILT AND FINE SAND, TRACE ROOTS	0.20			
	2	15-8-4-8	2.0'-4.0'		GREY/BR. FINE-MED.SAND, SOME SILT, LITTLE GRAVEL, FEW COBBLES & BOULDERS	2.0			
5	3	14-20-28-27	5.0'-7.0'						
10	4	26-34-50	10.0'-11.5'						
15					BOTTOM OF BORING @ 15.0' (AUGER REFUSAL)	15.0			
20									
25									
30									
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-13	

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 319		HOLE NO. B-14	
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE 12/21/20	
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT none FT. AFTER 0 HOURS		FINISH DATE 12/21/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS			
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	1-1-8-60	0.0'-1.7'		TOPSOIL	0.25			
					BR.SILT AND FINE SAND, TRACE ROOTS & GRAVEL	1.0			
					GREY/BR.FINE-MED.SAND, SOME SILT & GRAVEL, FEW COBBLES & BOULDERS		315		
5					BOTTOM OF BORING @ 5.0' (AUGER REFUSAL)	5.0			
							310		
10									
							305		
15									
							300		
20									
							295		
25									
							290		
30									
							285		
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-14	

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.				PROJECT NAME PROPOSED PARKING LOT			
								LOCATION 217 WISCONSIN AVENUE, NORWICH, CT			
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 318		HOLE NO. B-15			
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE	12/21/20		
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT none FT. AFTER 0 HOURS		FINISH DATE	12/21/20		
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS					
HAMMER FALL			30"								
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.					
	NO.	BLOWS/6"	DEPTH								
0	1	1-0-1-5	0.0'-2.0'		TOPSOIL BR.FINE SAND AND SILT, TRACE GRAVEL	0.40					
	2	3-13-13-15	2.0'-4.0'		GREY/BR.FINE-CRS.SAND, SOME SILT & GRAVEL, FEW COBBLES	2.5					
5	3	13-19-15-24	4.0'-6.0'								
					BOTTOM OF BORING @ 7.5' (AUGER REFUSAL)	7.5					
10											
						315					
						310					
						305					
						300					
						295					
						290					
						285					
35											
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:					
						SHEET 1 OF 1		HOLE NO. B-15			

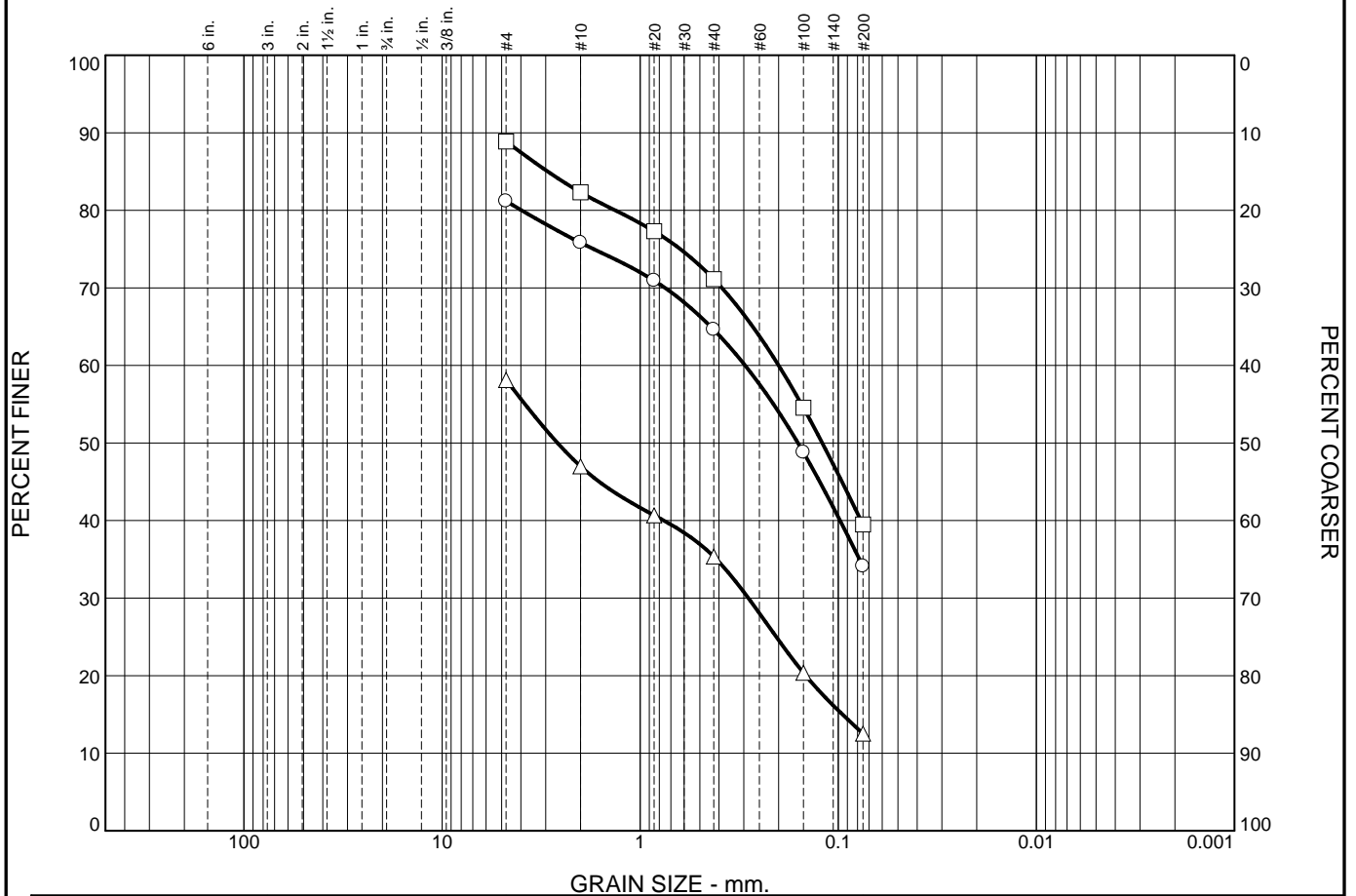
CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 323		HOLE NO. B-16	
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE 12/9/20	
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT none FT. AFTER 0 HOURS		FINISH DATE 12/9/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS			
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	1-1-2-60	0.0'-2.0'		TOPSOIL	0.30			
					BR.FINE SAND AND SILT, FEW COBBLES	1.5			
					GREY FINE-CRS.SAND, SOME GRAVEL, LITTLE SILT	2.5			
					BOTTOM OF BORING @ 2.5' (AUGER REFUSAL)		320		
5							315		
10							310		
15							305		
20							300		
25							295		
30							290		
35									
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-16	

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.		PROJECT NAME PROPOSED PARKING LOT LOCATION 217 WISCONSIN AVENUE, NORWICH, CT	
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 325	HOLE NO. B-17
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS	
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT none FT. AFTER 0 HOURS	START DATE 12/9/20
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS	FINISH DATE 12/9/20
HAMMER FALL			30"				
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.	
	NO.	BLOWS/6"	DEPTH				
0	1	1-1-1-2	0.0'-2.0'		TOPSOIL BR.SILT AND FINE-MED.SAND, TRACE ROOTS	325	
	2	2-2-4-12	2.0'-4.0'				
	3	22-21-29-35	4.0'-6.0'		GREY/BR.SILT AND FINE-MED.SAND, SOME GRAVEL	320	
5							
					9.0		
10	4	60	10.0'-10.3'		GREY FINE-CRS.SAND, SOME GRAVEL, LITTLE SILT	315	
					BOTTOM OF BORING @ 11.0' (AUGER REFUSAL)	310	
15							
20							
25							
30							
35						290	
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:	
						SHEET 1 OF 1	HOLE NO. B-17

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV. 320		HOLE NO. B-18	
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE 12/9/20	
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT none FT. AFTER 0 HOURS		FINISH DATE 12/9/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS			
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.			
	NO.	BLOWS/6"	DEPTH						
0	1	2-4-7-60	0.0'-2.0'	A	TOPSOIL (SURFACE BOULDERS) BR.SILT AND FINE-MED.SAND, LITTLE GRAVEL	320			
	2	7-22-20-30	2.0'-4.0'						
5	3	32-60	5.0'-5.8'		GREY/BR.FINE-CRS.SAND, SOME SILT & GRAVEL, FEW COBBLES	315			
10	4	60	10.0'-10.5'			310			
15					BOTTOM OF BORING @ 12.0' (AUGER REFUSAL)	305			
20						300			
25						295			
30						290			
35						285			
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1			
						HOLE NO. B-18			

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033				CLIENT F.A.HESKETH ASSOCIATES, INC.			PROJECT NAME PROPOSED PARKING LOT		
							LOCATION 217 WISCONSIN AVENUE, NORWICH, CT		
	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV.		HOLE NO.	
TYPE	HSA		SS		LINE & STA.	320		B-19	
SIZE I.D.	3.75"		1.375"		N. COORDINATE	GROUND WATER OBSERVATIONS AT none FT. AFTER 0 HOURS		START DATE 12/9/20	
HAMMER WT.			140lbs		E. COORDINATE	AT FT. AFTER HOURS		FINISH DATE 12/9/20	
HAMMER FALL			30"						
DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS			ELEV.	
	NO.	BLOWS/6"	DEPTH						
0	1	60	0.0'-0.5'		TOPSOIL BR.FINE-MED.SAND, SOME SILT & GRAVEL, FEW COBBLES BOTTOM OF BORING @ 1.5' (AUGER REFUSAL)	0.50	1.5	320	
5								315	
10								310	
15								305	
20								300	
25								295	
30								290	
35								285	
LEGEND: COL. A: SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%						DRILLER: J. BREWER INSPECTOR:			
						SHEET 1 OF 1		HOLE NO. B-19	

Particle Size Distribution Report



% +3"		% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○				5.4	11.2	30.5	34.1	
□				6.6	11.2	31.6	39.5	
△				11.1	11.6	22.9	12.5	

LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
○			0.2952	0.1598					
□		2.9247	0.2001	0.1205					
△				2.6114	0.2843	0.0953			

Material Description							USCS	AASHTO	
○									
□									
△									

Project No. _____ **Client:** F.A.HESKETH ASSOCIATES, INC.
Project: PROPOSED PARKING LOT

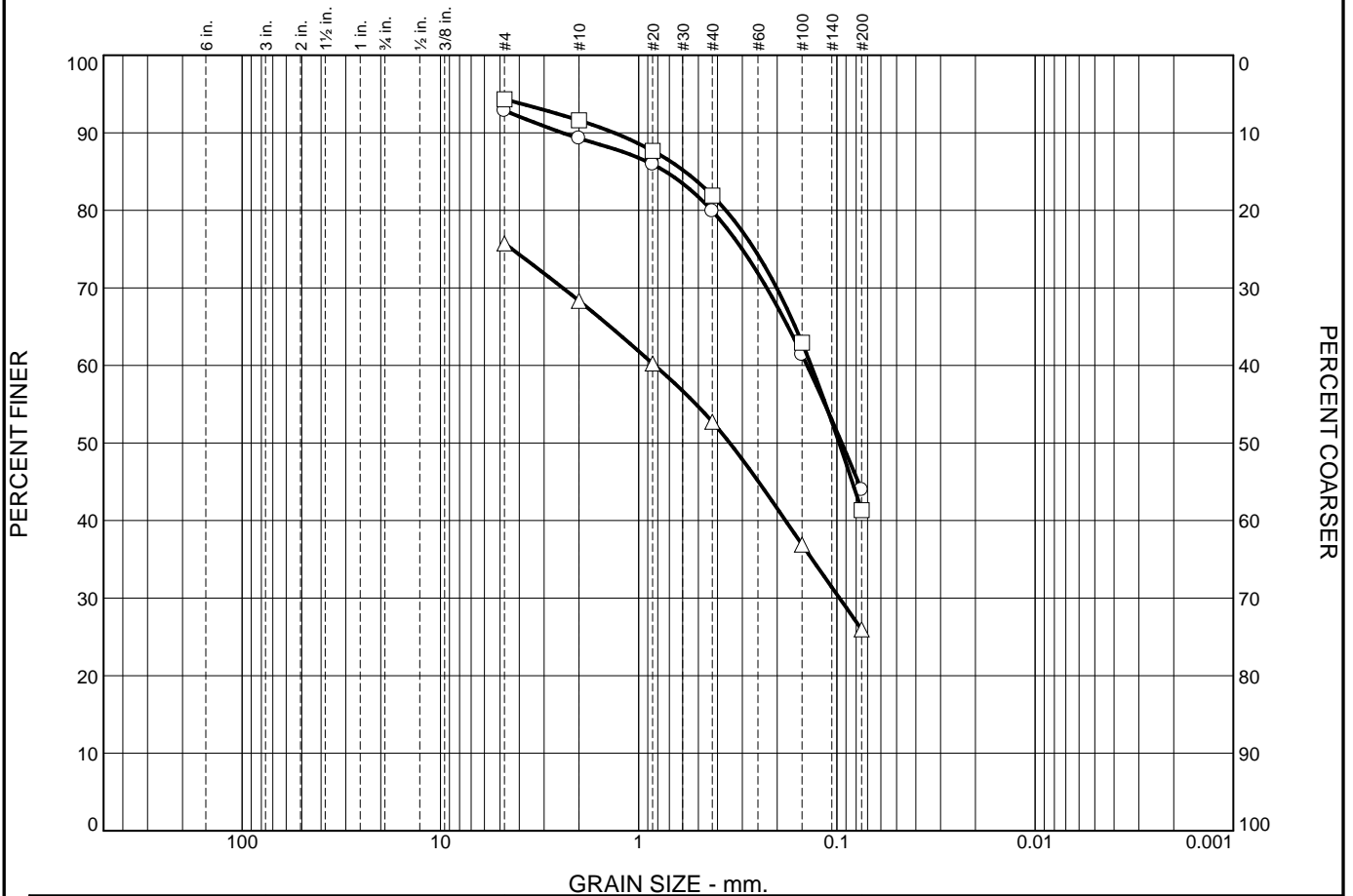
○ **Source of Sample:** B-1 **Depth:** 2.0 **Sample Number:** 2
 □ **Source of Sample:** B-2 **Depth:** 5.0 **Sample Number:** 3
 △ **Source of Sample:** B-5 **Depth:** 2.0 **Sample Number:** 2

Remarks:
 ○ water content = 15.1%
 □ water content = 10.4%
 △ water content = 3.7%

CLARENCE WELTI ASSOCIATES, INC.

Figure

Particle Size Distribution Report



GRAIN SIZE - mm.									
% +3"	% Gravel		% Sand			% Fines			
	Coarse	Fine	Coarse	Medium	Fine	Silt		Clay	
○			3.6	9.4	35.9	44.0			
□			2.7	9.7	40.6	41.3			
△			7.4	15.6	26.7	26.0			
LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
○		0.7316	0.1413	0.0945					
□		0.5840	0.1349	0.0974					
△			0.8286	0.3469	0.0971				

Material Description	USCS	AASHTO
○		
□		
△		

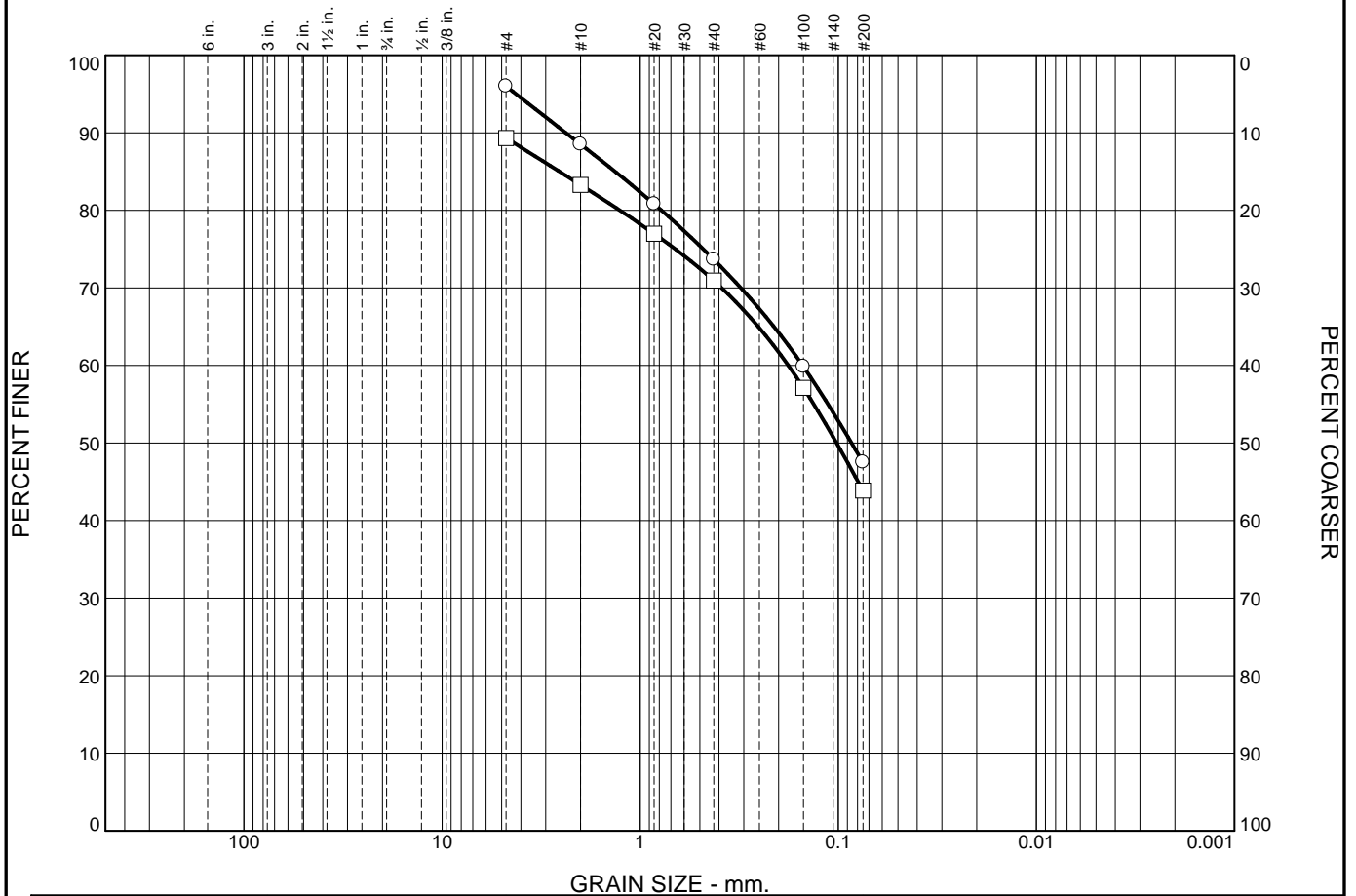
Project No. _____ **Client:** F.A.HESKETH ASSOCIATES, INC.
Project: PROPOSED PARKING LOT
 ○ **Source of Sample:** B-6 **Depth:** 0.50
 □ **Source of Sample:** B-13 **Depth:** 2.0 **Sample Number:** 2
 △ **Source of Sample:** B-15 **Depth:** 1.0

Remarks:
 ○ water content = 26.2%
 □ water content = 19.0%
 △ water content = 23.0%

CLARENCE WELTI ASSOCIATES, INC.

Figure

Particle Size Distribution Report



GRAIN SIZE - mm.									
% +3"	% Gravel		% Sand			% Fines			
	Coarse	Fine	Coarse	Medium	Fine	Silt		Clay	
<input type="radio"/>			7.5	14.8	26.2	47.5			
<input type="checkbox"/>			6.0	12.4	27.0	43.9			

LL	PL	D85	D60	D50	D30	D15	D10	Cc	Cu
<input type="radio"/>		1.3387	0.1514	0.0857					
<input type="checkbox"/>		2.5545	0.1788	0.1020					

Material Description	USCS	AASHTO
<input type="radio"/>		
<input type="checkbox"/>		

Project No. Project: PROPOSED PARKING LOT	Client: F.A.HESKETH ASSOCIATES, INC. Source of Sample: B-17 Depth: 1.0 Source of Sample: B-17 Depth: 4.0 Sample Number: 3	Remarks: <input type="radio"/> water content = 24.2% <input type="checkbox"/> water content = 12.0%
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CLARENCE WELTI ASSOCIATES, INC.

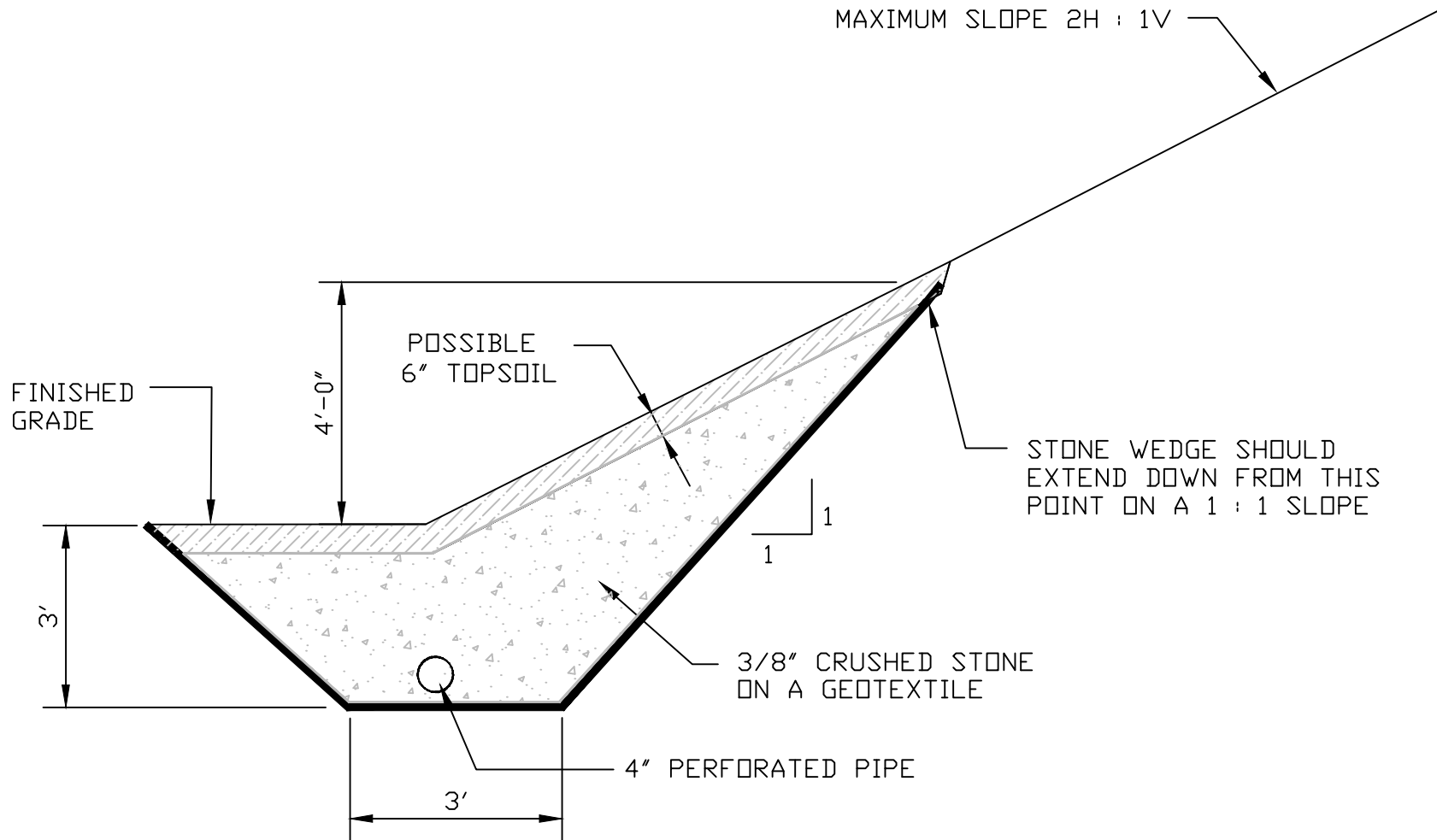
Figure

APPENDIX 2

**CROSS SECTION WITH STONE WEDGE AND DRAIN
AT EARTH CUT SLOPE**

+

**CROSS SECTION OF COMBINED ROCK AND SOIL
CUT SLOPE AND DRAIN**

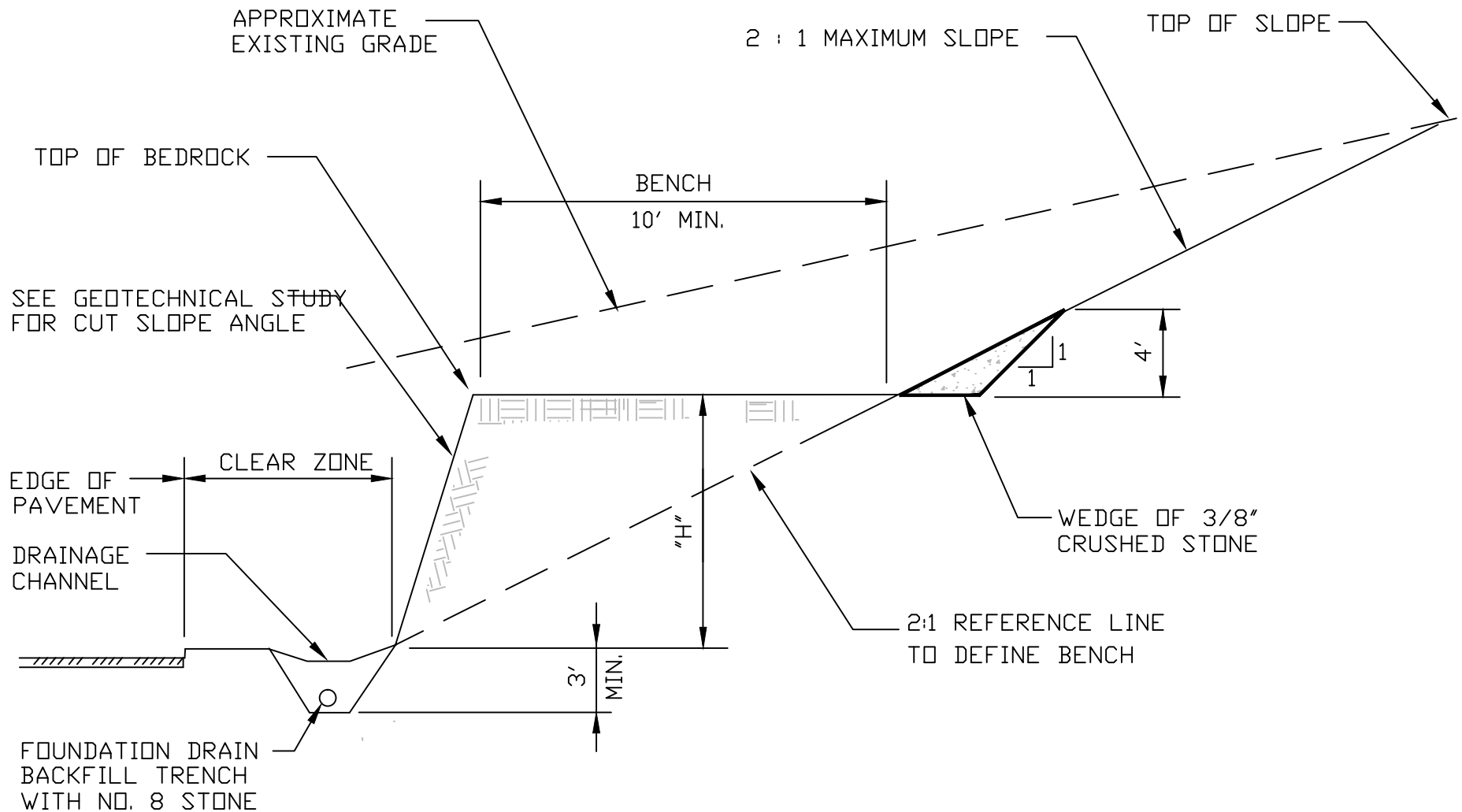


THE GROSSMAN COMPANIES, NORWICH, CT
 PROPOSED TRAILER & PASSENGER CAR PARKING LOT

STONE WEDGE AND DRAIN AT EARTH CUT SLOPE

SHEET NO. :	2
SCALE:	NONE
DATE PREPARED:	DECEMBER, 2020
REVISION DATE:	NONE

WELTI GEOTECHNICAL, P.C.
 227 WILLIAMS STREET, P.O. BOX 397
 GLASTONBURY, CONNECTICUT 06033



THE GROSSMAN COMPANIES, NORWICH, CT
 PROPOSED TRAILER & PASSENGER CAR PARKING LOT

COMBINED ROCK AND SOIL CUT WITH DRAIN

SHEET NO. :	2
SCALE:	NONE
DATE PREPARED:	DECEMBER, 2020
REVISION DATE	NONE

WELTI GEOTECHNICAL, P.C.
 227 WILLIAMS STREET, P.O. BOX 397
 GLASTONBURY, CONNECTICUT 06033