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# Pre-Design Investigation Port Property Redevelopment Geotechnical Data Report

Port of Green Bay Green Bay, Wisconsin

#### Submitted to:

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- A. Soil Boring Logs, CPTu Soundings, CPT undrained strength estimations
- B. Field Vane Shear Test Results
- C. Laboratory Test Results
- D. Historical Supplemental Information
- E. Geotechnical Soil Classification Procedures

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# **Executive Summary**

The purpose of this Geotechnical Data Report (GDR) is to present the available subsurface information from the former Pulliam site for use in developing a new port facility by the Port of Green Bay. The subsurface information presented in this GDR was gathered from reports discussing the regional geology of northeast Wisconsin, geotechnical reports for various projects in and along the lower Fox River, and within Green Bay conducted by GEI. The intent of the GDR is to present the information to be used to design bulkhead walls and structures, crane pads, stockpile areas, rail lines, and other potential future developments at the site.

# 1. Introduction

# 1.1 Background

This project will develop a multi-use port facility capable of handling a range of dry cargoes. Bulk cargo such as aggregates, coal or road salt are most likely but other dry cargo such as heavy electrical equipment and containers may also be transferred at the site. Project elements include the following:

- Shoreline bulkhead
- Rip rap protection on North facing shoreline
- Vessel fendering and mooring systems
- Dredging to berth depth
- High load capacity crane pads/offload areas
- Rail connection
- Road connection
- Site filling and grading
- Stormwater management infrastructure

The proposed shoreline bulkhead will retain fill on the site and provide a berthing face to be used by large cargo ships. The bulkhead will be a steel sheet pile wall installed along the approved bulkhead line at the site. The proposed berth depth at the site is intended to be consistent with the Fox River navigation channel providing a minimum draft of 24 feet relative to LWD. Allowing for a 2-foot overdredge results in a maximum dredge depth of 26 feet relative to LWD (El. -551.5 NAVD). Proposed site grades along the new bulkhead are approximately +592 NAVD giving the new bulkhead an exposed height of 40.5 feet. A bulkhead of this height will require a tie back system to provide additional support to the top of the bulkhead resisting the lateral loads from fill placed inshore of the bulkhead.

The bulkhead is only required along the proposed berthing face of the site but the northern waterside perimeter will also require containment to retain fill and shore protection to prevent erosion and flooding on the site. A rip rap seawall will be provided along the north facing shoreline. This shoreline is directly exposed to larger waves in Green Bay and the proposed top of seawall will be El. +593 to limit overtopping impacts on the site. The rip rap seawall will be constructed in water but landward of the northern property line (approved bulkhead line) and will consist of a core rock embankment with rip rap armor on the exposed face. The rock embankment will be designed to retain fill on the landward side to an elevation of approximately +590 NAVD.

Vessel fendering and mooring systems will be added on the bulkhead mounted on a cast in place reinforced concrete cap. The vessel fenders will consist of compressible rubber units with low friction facing to provide a cushion for ships berthing at the new dock. Mooring bollards will be provided at approximately 50 feet on center for the length of the vessel berth. Additional tiebacks will be provided at each bollard to resist the vessel mooring loads.

As described above for the bulkhead, dredging is required to provide the necessary vessel berthing depth. The sediments to be removed are expected to consist of soft river silts overlying medium stiff to stiff clay. The dredging will extend for the full length of the vessel berth and from the face of the new bulkhead to the navigation channel.

High load capacity crane platforms will be constructed immediately landward of the new bulkhead. The crane platforms will allow for large cranes to be used at the water's edge for loading or unloading cargo without overloading the shoreline bulkhead. Each platform will consist of a group of steel piles driven to the required capacity with a reinforced concrete cap. Each platform is expected to be approximately 100 feet by 100 feet in plan dimensions.

Additional rail sidings and connections may also be included with the redevelopment of the site.

#### 1.2 Scope of Work

The scope of the subsurface exploration program included the following tasks:

- Reviewed available, historical subsurface exploration data for the project provided by We Energies. Identified data gaps and developed supplementary exploration and laboratory soil test program as described below.
- Observed the advancement of four (4) Standard Penetration Test (SPT) borings GEI20-1 through GEI20-4 along the dock wall, and three (3) additional offset boring locations designated GEI20-2A, 3A, and 4A to perform in-situ vane shear testing to determine field shear strength of soft organic and silty clay soils.
- Performed laboratory soil index property testing on selected soil samples, which consisted of determination of moisture content, Atterberg limits, gradation testing, and organic content of recovered soil samples to assist with soil classification.
- Developed a laboratory testing program consisting of unconfined compressive strength, triaxial UU and CIU, and one-dimensional consolidation testing on recovered sediment cores to determine soil strength.
- Prepared this GDR to support the 30% design submittal.

#### 1.3 Subcontractors

In the fall of 2022, GEI engaged Subsurface Exploration Services, LLC (SES) to perform SPT borings and in-situ vane shear testing in the river along the dock wall. Terracon Consultants, Inc. (Terracon) was subcontracted to complete the scheduled laboratory testing of the soil samples collected during the subsurface exploration.

#### 1.4 Limitations

GEI prepared this report for the exclusive use of Brown County. The subsurface conditions described herein are based on explorations performed at discrete locations and represent conditions at the location and time of the explorations. Subsurface conditions may be significantly different at other locations and times.

The services performed for this project were conducted in accordance with generally accepted engineering practices; no warranty, express or implied, is made.

# 2. Existing Information

## 2.1 Geologic Setting

In general, the upper 10 feet is characterized as fill material. Underlying the fill is an estuarine deposit of soft organic silt and high plasticity clay. The average unconfined compressive strength of the estuarine deposits was found to be 0.74 tsf (ASCE, 1983). The estuarine deposit generally extends to 50 feet below the ground surface. The estuarine deposit was shown to be slightly over-consolidated, possibly due to fluctuating groundwater levels.

Alluvial sand and gravel deposits are generally encountered underlying the estuarine organic silt and clay. Glacial clay till and lacustrine sand and silt deposits are generally encountered from 60 to 180 feet below the surface. The average unconfined compressive strength of the glacial till was found to be 2.5 tsf (ASCE, 1983).

## 2.2 Seismic Setting

Based on ASCE/SEI 7-16, Table 1.5-2. The seismic site classification is E or F, because of the loose organic silt and soft clay soils in the upper 50 feet.

Based on research completed by Wisconsin Geological and Natural History Survey, there are no seismically active bedrock faults in northeast Wisconsin.

# 2.3 Hydraulic Setting

Water levels at the site are influenced by variations in lake level and storm surges. Water level data was obtained from U.S. Department of Commerce, NOAA, National Ocean Service (NOS) Tides and Currents website. Green Bay East gauge (Station ID 9087077) data shows current water levels but historic data only extends back to 2020 and no extreme water levels are provided. Menominee gauge (Station ID 9087088) provides maximum and minimum water levels as follows:

Water Elevations NOAA STA ID 9087088 Menominee (feet NAVD 1988)				
Water Level Max	583.24			
Water Level Min	574.84			

The FEMA Flood Insurance Study (FIS) for Brown County (55009CV001B effective) shows Still Water Elevations (SWEL) at City of Green Bay as follows:

Still Water Elevations Green Bay (feet NAVD 1988)				
FEMA 1% SWEL	+585.7			
FEMA 2% SWEL	+585.2			
FEMA 10% SWEL	+584.1			

Transect 13 is located on the north shoreline adjacent to the site and the FIS gives a maximum 1% wave crest elevation of +588.7 feet NAVD.

# 2.4 Previous Subsurface Investigations

GEI has reviewed geotechnical information from the following available subsurface explorations completed at the site and within the Lower Fox River. The boring locations from previous subsurface explorations are shown on Figure 1. Relevant data from previous subsurface investigations is described further below and is included in Appendix D.

## 2.4.1 Lower Fox River OU-1 Sediment Laboratory Testing

GEI staff were involved in a geotechnical laboratory testing program of remolded sediment from the Lower Fox River OU-1. OU-1 consists of Little Lake Butte Des Morts in the Neenah-Menasha area. The work was completed from 2006 through 2008. Laboratory testing consisted of consolidation (ASTM D2435), consolidated-undrained triaxial strength (ASTM D4767), permeability (ASTM D5084), and water content (ASTM D2216).

In general, the sediments from the Lower Fox River were found to be elastic silt (OH) material, with water contents typically between 80% and 280%. Sediment lab results from the Lower Fox River OU-1 are presented in a summary table in Appendix D.1.

# 2.4.2 Technical Memorandum for Cap CA94

A technical memorandum for the proposed design of Cap CA94 was completed by Foth in 2020. Cap CA94 covers the former boat slip at the development site. The technical memorandum assumed a sediment strength of 60 psf based on observations of the material consistency. The assumed strength of the underlying clay ranged from 100 psf to 500 psf at elevation +540 feet. The design cap consists of a 3-inch minimum sand layer overlain by a 3-inch minimum filter stone layer. A filter stone buttress and armor stone layer was designed to protect the cap and 5H:1V slope at the mouth of the boat slip from prop wash. The technical memorandum is included as Appendix D.2.

# 2.4.3 Fox River PCB Dredging Final Basis of Design Reports

A two volume Final Basis of Design report was prepared by Shaw Environmental in 2006 related to the dredging of PCB impacted sediments from the Lower Fox River OU-2 through OU-5.

Volume 1 of the Final Basis of Design Report contained a six-page summary of the geotechnical conditions of the river, related to the remedial design dredging. The geotechnical data included approximately 350 grain size distribution tests, 380 Atterberg limits tests, 596 moisture content tests, 45 specific gravity tests, 160 in-situ field vane shear tests, six UU triaxial tests, three CU triaxial tests, and four consolidation tests. Averages of the test results are presented in table format with the text, organized by operable unit.

Volume 2 of the Final Basis of Design Report contained figures showing where the samples were taken, as well as figures showing the variation in percent fines and moisture content of the sediments throughout the river system.

#### 2.4.4 For River PCB Dredging 2006 Remedial Summary Report

The 2006 Remedial Action Summary Report contained the majority of the individual lab testing and field vane shear testing results that were summarized in the Final Basis of Design Report, to include samples collected from the cap areas present at the site. Samples designated "4089" were completed within the boat slip in CA-94. Samples designated "4092" were completed within the northeast cap area CB-60.

The following tables present the available geotechnical data on the sediments. Table 1 shows the index testing completed on samples recovered specifically from the cap areas CA-94 and CB-60. Table 2 presents field vane shear testing completed within cap area CA-94 and in the river adjacent to the property. Table 3 presents UU triaxial results from other areas within OU-3 and OU-4. Table 4 presents CU triaxial results from other areas within OU-3 and OU-4. Table 5 presents consolidation test results from OU-3 and OU-4.

<b>-</b>				
Table 1 - Summar	v of Geotechnical	Index Testing	within	CA-94 and CB-60

Sample	P200	Liquid	Plastic	Moisture	Bulk	Classification
ID		Limit	Limit	Content	Density	
					(pcf)	
4089-01	75.5			241.8	75.4	ОН
4089-07	70.1	171.1	65.3	173.1	79.5	ОН
4089-10	47.9	211.1	60.8	268.0	74.3	ОН
4092-05	23.3				106.0	ОН
4092-10	38.3	152.2	37.0	154.3	81.2	ОН
4092-10		149.0	26.0	132.1	83.6	ОН

4092-21	84.8	161.7	42.8	160.6	80.6	ОН

Table 2 - Summary of Field Vane Shear Test results within project area.

Sample ID	1-foot corrected	2-foot corrected	3-foot corrected
	shear strength	shear strength	shear strength
	(psf)	(psf)	(psf)
4089-03	12	24	42
4090-01	230	508	
4092-10	32	54	76

Table 3 - Summary of UU Triaxial Results

Sample ID	Undrained shear strength (psf)
3002-03, ST-1	560
3021-01, ST-1	100
3050-01, ST-3	80
4038-03, ST-1	56
4071-01, ST-1	100
4081-03, ST-1	736

Table 4 - Summary of CU Triaxial Results

Sample ID	Cohesion (psf)	Friction Angle
		(deg)
4071-01, ST-2	113	32.3
4071-01, ST-3	124	34.6
4081-03, ST-3	220	24.8

Table 5 - Summary of Consolidation Test Results

Sample ID	Preconsolidation	Compression	Recompression
	Pressure (tsf)	Index (Cc)	Index (Cr)
3021-01, 1-3	0.45	1.32	0.12
4038-03, 5-7	0.175	0.68	0.13
4038-03, 17.5- 19.5	0.225	0.635	0.080

Given the water content and compressibility data shown above, we estimate that settlement from filling the slip to grade will be between five and ten feet. Continued secondary consolidation is expected to occur for years after the site is redeveloped. The secondary consolidation settlement will not be as significant the initial settlement, but will impact utilities, roadways, or rail tracks if placed across this area.

Based on the strength data shown above, the sediments are extremely weak and likely to have mud waving or localized bearing failures when filling over. A filling plan will be developed to limit the amount of mud waving and to control the direction of mud waving during filling. Settlement plates and vibrating wire piezometers should be used to monitor the reaction of the sediments to filling and to provide data for deciding when to slow or pause filling to allow the excess pore water pressures to dissipate and the sediments to stabilize.

# 2.4.5 Pulliam Boat Slip 2008 Geotechnical Evaluation

A geotechnical evaluation related to the potential repair of the existing boat slip dockwalls was completed in 2008 by STS-AECOM. The evaluation included completion of six borings to depths ranging from 30 to 80 feet below the ground surface. The boring locations from the 2008 exploration are shown on Figure 1. The historic boring logs are presented in Appendix D. The logs were used to supplement the 2022 field investigation data presented in this report.

# 3. 2022 Exploration and Testing Procedures

A subsurface exploration program was completed in three phases from the summer of 2022 through winter of 2023 to evaluate the site. In the summer of 2023, GEI completed five soil borings in the river adjacent to the site using barge supported drilling equipment. In the late fall to winter of 2022-2023, GEI completed an additional 13 CPTu soundings and 12 soil borings on the property. The boring and CPTu locations are shown on Figure 1.

## 3.1 Boring Layout and Survey

The location of each of the soil borings was selected by GEI to supplement the historical data and to further evaluate the soil strength and compressibility characteristics across the site. The as-drilled locations of the borings were located using GPS survey equipment. Horizontal Datum is the Brown County Coordinate System, and the vertical datum is North American Vertical Datum of 1988 (NAVD88). The location of each of the soil borings are shown on Figure 1. The coordinates of each respective boring are listed on the boring logs in Appendix A.

# 3.2 Rotary Drilling and Sampling

Borings were completed by Subsurface Exploration Services, LLC (SES) using various rotary drill rigs and 4-inch casing. Representative soil samples were obtained at continuous, 2.5 feet, and 5.0 feet intervals in accordance with ASTM D1586 "Standard Test Method for Penetration Test and Split-Barrel Sampling of Soils". Thin-walled Shelby tube sample were also collected at select locations in accordance with ASTM D1587 "Standard Practice for Thin-Walled Tube Sampling of Fine-Grained Soils for Geotechnical Purposes". The Shelby tube samples were generally collected for specialized laboratory testing specimens. Bedrock cores were obtained in general accordance with ASTM D2113, "Diamond Core Drilling for Site Investigation." All borings were abandoned using bentonite-grout in accordance with Wisconsin Department of Natural Resources (WDNR) requirements.

# 3.3 CPTu Soundings

CPTu soundings were performed to aid in determination of soil stratigraphy, as a tool to estimate relative differences in shear strength, relative density, and to evaluation horizontal hydraulic conductivity (k<sub>h</sub>) of the clay soils.

CPTu soundings were performed in general accordance with ASTM D-5778, "Standard Test Method for Electronic Friction Cone and Piezocone Penetration Testing of Soils." The CPTu was advanced by hydraulically pushing a cylindrical rod into the soils from the back of the SES drill rig. The rod had an instrumented 60-degree conical tip with a maximum diameter of 1.4 inches. The tip resistance stress (q<sub>c</sub>) was measured on this tip as the probe was advanced into the

tailings at a constant rate of 2.0 centimeters per second (cm/s). Immediately behind the tip a porous polyethylene filter with a thickness of 1/8 inch and an outside diameter equal to the diameter of the cone measured the induced dynamic pore pressure (U) generated during the test. Immediately behind the pore pressure filter was an approximately 5.2-inch cylindrical sleeve which reacted against and measured the local friction (f<sub>s</sub>) of the tailings. Inside the cone an inclinometer measured the deviation of the cone tip from vertical. A standalone rotary proximity switch measured the depth of advancement as the cone is pushed into the ground.

Values of tip resistance, sleeve friction, pore pressure, inclination, and depth were recorded automatically by a field computer for every two centimeters of penetration. Thus, the CPTu test provided a nearly continuous soil profile which indicates changes in relative density and stratigraphy. The data was collected using CPTu Sound Software by Applied Research Associates, Vertek Division.

To assist in the evaluation of the soil hydraulic conductivity ( $k_h$ ) and coefficient of consolidation ( $c_v$ ), five pore water dissipation tests were performed. The pore water dissipation tests were also performed in generally accordance with ASTM D-5778. The advancement of the cone tip was stopped at a selected depth and the time required for the cone induced pore water pressure to dissipate was measured.

## 3.3 Field Vane Shear Testing

Field vane shear tests were completed in several of the borings at select depths, targeting zones of stiff to soft clay material. The purpose of the field vane shear test borings is to get an accurate and direct measurement of the undrained shear strength of the clay, and to calibrate correlations from CPTu soundings.

Field vane shear tests were performed using calibrated drive head testing equipment in accordance with ASTM D2573M-18 "Standard Test Method for Field Vane Shear Test in Saturated Fine-Grained Soils". Vane sizes were chosen based on relative soil strength. In general, a smaller vane was used for softer cohesive materials and larger vanes sizes were used for medium (firm) cohesive materials. The selected vane was placed beneath casing in undisturbed material at the bottom of the borehole. The vane was rotated using calibrated equipment in which every five rotations of hand crank is equivalent to 2.5 degrees of vane rotation. Torque (in-lbs.) on the vane was continuously recorded on contact trace paper during the tests. Maximum torque in the peak test was then converted to shear stress using testing equipment vane constants. After rotating the vane, a minimum of five 360° rotations, the same procedure was used to perform a remolded test on the material. Vane shear testing sheets and calibrated drive head vane constants are included in Appendix B.

## 3.4 Laboratory Testing

A GEI Geotechnical Engineer performed visual classifications of the recovered soil samples. The soils were classified in general accordance with the Unified Soil Classification System (USCS). Classifications were updated as lab data was made available. The estimated group symbol is included in parentheses following the soil descriptions on the final boring logs prepared by GEI. A more detailed explanation of soil classification procedures is included in Appendix E.

Based on the results of the field testing and visual classification, GEI established a laboratory testing program to assist with soil classifications and obtain various geotechnical soil properties. GEI engaged the services of Terracon to perform the laboratory testing program.

Moisture content testing was performed in general accordance with ASTM D2216, "Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass". Moisture content tests were completed on all SPT samples to aid in soil classification.

Gradation testing was performed in general accordance with ASTM D422, "Standard Test Method for Particle-Size Analysis of Soils". Atterberg limits tests were performed on cohesive samples in general accordance with ASTM D4318, "Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils". Atterberg limit test results were used to aid in soil classification.

One dimensional consolidation tests were performed on 11 samples in general accordance with ASTM D2435, "Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading." The consolidation specimens were trimmed from intact tube samples. Tube sections were cut and extruded, and the specimens were then trimmed into a 2.5-inch-diameter, 0.88-inch-tall oedometer ring. The specimens were incrementally loaded to 4 tons per square foot (tsf) using a load increment ratio (LIR =  $\Delta$ P/P) of 1, unloaded to 0.125 tsf with an LIR of 2, reloaded to 32 tsf with an LIR of 1, and finally unloaded to 0.125 tsf with an LIR of 1.

# 3.5 Boring Logs

The results reported on the field logs, the laboratory testing, and the visual classifications were collected and included on the final boring logs. Similar soils were grouped into strata shown on the boring logs. It should be noted that the strata contact lines represent approximate boundaries between soil types. The actual transition between soil types in the field may be gradual in both the horizontal and vertical directions. Subsurface conditions and water levels at other locations may differ from the conditions encountered at the actual boring locations. These variables need proper assessment when utilizing the information presented on the boring logs.

The boring logs from previous studies are included in Appendix D. The final geotechnical boring logs prepared by GEI are included in Appendix A. A more detailed explanation of the GEI boring log procedures is included in Appendix E.

# 4. Exploration and Testing Results

## 4.1 Laboratory Strength Test Results

Laboratory test results are presented in Appendix C. A summary table of all the completed laboratory testing is provided at the front of Appendix C.

#### 4.2 Field Vane Shear Test Results

Field vane shear test results are presented in Appendix B. A summary table of all the completed field vane shear tests is provided at the front of Appendix B. The individual test results are also noted on the boring logs.

# 4.3 Estimate of Peak Undrained Shear Strength from CPTu Data

Undrained shear strength correlations were made for the clay soils using the CPTu data combined with the field vane shear data. There are several published correlations of CPTu data relating measured pore water pressures, tip resistance, and estimated total stress to undrained shear strength. Field vane shear test results are then plotted with the correlation as a means to calibrate the correlations. In GEI's experience with the regional clay soils, the cone factor correlation ( $N_{kT}$ ) works well.

Cone Factor  $(N_{kT})$  relates the net tip resistance to undrained shear strength using the following formula  $[(S_{up} = (q_t - \sigma_{vo}) / N_{kT})]$ . The correlation is published in (Robertson, 2008).  $N_{kT}$  typically ranges from 10 to 20 and varies by soil type, so a representative  $N_{kT}$  value is usually calibrated to other field or lab measurements of undrained strength.

Based on Bowles (1995, Eq. 3-14) the  $N_{kT}$  for a Plasticity Index of 15 (the average of the Atterberg test results), would empirically be  $N_{kT} = 13 + 5.5$  (PI=15)/50 = 14.7. The  $N_{kT}$  was rounded to 15 for the purpose of the correlation. The resulting estimate of undrained shear strength was plotted on figures along with the actual field vane shear test results. The overall  $S_u$  trace based on  $N_{kT}$  =15 appears to correlate well to field vane shear test results. The plots of undrained shear strength for each CPTu sounding are provided in Appendix A.

# 4.4 CPTu Dissipation Test Results

The five CPTu dissipation tests were used to estimate the horizontal hydraulic conductivity and coefficient of consolidation using  $t_{50}$  (time to dissipate 50% of induced pore pressure from cone tip) from monotonic responses are presented in the table below. The table provides a summary of five dissipation tests performed. The average  $t_{50}$  was on the order of 20-40 minutes. The computed average  $k_h$  from the dissipation tests results was on the order of 1.0E-07 to 1.0E-08

cm/sec, following Parez and Fauriel (1988). The low hydraulic conductivity is expected with clay soils.

## 4.5 Laboratory Consolidation Test Results

Laboratory test results are presented in Appendix C. A summary table of all the completed laboratory testing is provided at the front of Appendix C.

## 4.6 Subsurface Conditions and Representative Soil Layers

Based on the results of the relevant historical borings and current GEI soil borings and CPTu soundings, the general soil profile for the project area consists of the following: firm to stiff clay (CL) above elevation +560 feet, soft clay (CL-CH) from elevation +560 feet to elevation +540 feet; firm to stiff clay from elevation +540 feet to +475 feet; very dense to extremely dense hardpan soils (GC) from elevation +475 feet to +465 feet; and competent dolomite bedrock near elevation +465 feet.

There was a zone of very soft clay or silt identified near the northeast corner of the property (CPT-10 and BW-2-22) from elevation +570 to +556 feet. It should be noted that subsoil conditions varies between boring locations. The soil layering described above is a generalized and simplified interpretation of the descriptions on the respective boring logs and our past knowledge of soil conditions in the site general area. There are numerous thin zones of clean sand and silt that were identified in the borings. The sand and silt zones may be lenses or continuous veins across the site.

# 4.7 Recommended Strength Parameters

The recommended design soil profile and strength parameters for the site are provided in the following table:

Name	Elevation	Total Unit	Undrained Strength		Effective Str	ess Strength
	(ft)	Weight	Parameters		Parameters	
		(pcf)	s <sub>u</sub> (psf)	Φ (deg)	c' (psf)	Φ' (deg)
Fill:	+585 to	130	2,000	0	0	30
Sand/Clay	+578					
Clay –	+578 to	130	2,000	0	0	28
very stiff	+560					
Clay – soft	+578 to	130	500	0	0	26
(NE	+556					
Corner)						
Sediment –	+579 to	80	60	0	0	24
CA-94 and	+557					
CB-60						

Clay – soft	+560 to	130	1,000	0	0	26
	+540					
Clay – stiff	+540 to	130	2,500	0	0	26
	+475					
Hardpan	+475 to	130	0	35	0	35
	+465					
Dolomite	+465					
Bedrock						
Coal		115	0	38	0	38
(future						
stockpile)						
Sand and		125	0	35	0	35
Gravel						
(sediment						
capping						
materials)						

# 4.7 Recommended Consolidation Parameters

The recommended design soil profile and consolidation parameters for the site are provided in the following table:

Name	Elevation	Total Unit		Consolidatio	n Parameters	
	(ft)	Weight	e <sub>o</sub>	P <sub>c</sub> (tsf)	Cc	Ccr
		(pcf)				
Fill:	+585 to	130	0.90	2.0	0.33	0.07
Sand/Clay	+578					
Clay –	+578 to	130	0.90	2.0	0.33	0.07
very stiff	+560					
Clay – soft	+578 to	130	1.0	2.0	0.44	0.07
(NE	+556					
Corner)						
Sediment –	+579 to	80	2.0	NC	0.68	0.13
CA-94 and	+557					
CB-60						
Clay – soft	+560 to	130	1.0	3.0	0.44	0.07
	+540					
Clay – stiff	+540 to	130	1.2	4.5	0.47	0.11
	+475					

# 5. References

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# **Figures**

# Figure 1 Geotechnical Boring Location



# Appendix A

Soil Boring Logs
CPTu Sounding Logs
CPTu Undrained Shear Strength Estimation Plots

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46	50-							1 120.0-125.2 Driller's note: 100% v	100 vater loss fi	48.3 rom 121.0 to	1-6 / ft. 130.2 feet									
	-						1111111111	Gray to tan fine grain bluish gray shale - m weathered - moderat bedded - microcrysta Run Depth Ft. 125.2-130.2	edium stror ely to slight	ng to strong - ly fractured - grained RQD	fresh to slig	d Jhtly								
- 45	50-							130.2 End of Boring Boring advanced to 1 Boring advanced fror drilling fluid Boring advanced 120 wireline.	n 10.0 to 12 0.0 to 130.2	20.0 feet with	rock bit and									
								Casing driven to 130 Boring backfilled with		chips and be	ntonite grout	t mix								
Z - 2	-																			
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570	┺										<sup></sup>	
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NORTH		76,7	34.7	05		101,434.872	RIG/FOREMAN D-50 / JW	GE		01593	PAGE I	NO. 1 OF 3

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		R				CLIENT:		LOG	OG OF BORING NUMBER BL-2-22
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Ut		Con	sult	ants		Port Property Devel	elopments	ARC	CHITECT-ENGINEER
					100	CATION:	·		OUNCONFINED COMPRESSIVE STRENGTH
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	200		TION OF MATERIAL		TONS/FT <sup>2</sup> 1 2 3 4 5  PLASTIC WATER LIQUID LIMIT (%) CONTENT (%) LIMIT (%)  X———————————————————————————————————
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	10	ST							PUSHED © 0.5
	11	SS							WOH <0.25 tsf   ■
	12	SS				50.0			WOH 0.5
	14	SS				Dark gray silty clay (	(CL-CH) - very stiff		3.25
	15	SS				Dark brown silt (ML)	) - wet - medium dense		
520	15					60.0 Brown silty clay (CL)	) - very stiff to firm		•\(\sigma^{125}\) 3.5
	16	SS							0.75
The	e sti	ratifi	cat	ion	lines	represent the appro	oximate boundary lines betwee	en soil tvr	ypes: in situ, the transition may be gradual.
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DEPTH (FT)	ELEVATION (FT)	12	딢	PE	5					F.						
$\overline{}$	$\overline{\nabla}$	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	SUE	RFACE ELEVATION (	(ft ) 584 6		UNIT DRY WT. LBS/FT <sup>3</sup>	⊗ S <sup>-</sup>			ETRATIO		
	<u> </u>	17	SS	17	Ħ		70.0	(11.) 00 110			MOH		3	_	, <u>,</u>	0 0
+							Brown silty clay (CL)	- soft to very soft		(	0.25			•		
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-	-	18	SS							(	WOH					
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-80	_	19	SS		Ш						WOH			.		
t	_									<u> </u>	0.25					
ŀ	_						81.5 End of Boring									
ŀ	_						Boring advanced to 1	15.0 feet with solid-stem auger m 15.0 to 81.5 feet with rock bit ar	nd							
+	500-						drilling fluid		IG							
+	500-						HW casing driven to Boring backfilled with	ี่ 16.0 feet า bentonite chips and bentonite gr	out mix							
+	_						Ŭ	,								
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M.	ATER	RLEV	ÆL: (	Gro	undv	water o	observed at 1.0 ft BCI	BORING STARTED	GEI	OFFICE		on Da	1871			
MIDWEST BORING LOG								11/17/2022 BORING COMPLETED	ENT	ERED I	BY	en Bay		ROVED I	BY	
NO NO	ORTH	ING				FΔ	ASTING	11/18/2022 RIG/FOREMAN		PROJE	AŁ	(L	<u> </u>	SN	0.00	
ੂ   '"	-1111		76,7	34.	705		101,434.872	D-50 / JW	JEI		)1593		'	PAGE N	O. 3 O	) <b>⊢ 3</b>

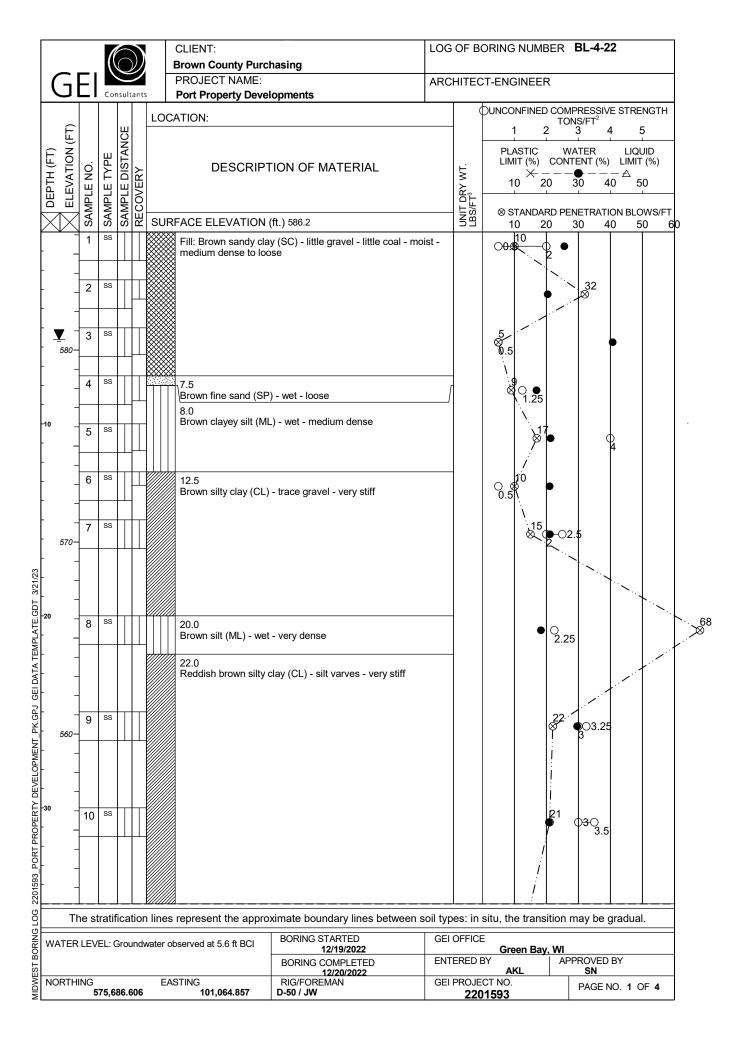
							CLIENT:		LOG	OF B	ORING	NUME	BER	BL-3-2	22	
							Brown County Purc	hasing								
	( 1	H	Cou	nsult	ante		PROJECT NAME: Port Property Deve	lonmonte	ARC	HITEC	T-ENC	SINEEF	3			
-	_	_	Col	15011	ants			iopments	<u> </u>		DUNCO	NFINED	COM	PRESSI	/E STRE	NGTH
DEBTH (ET)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	COVERY	LOC	ATION: DESCRIPT	TION OF MATERIAL		UNIT DRY WT. LBS/FT³	PL LIM	1 2 ASTIC IIT (%) × -	CON'	NS/FT <sup>2</sup> 3 /ATER TENT (%	LIQU LIMIT	JID (%)
		SAI	SAI	SAI	R	SUF	RFACE ELEVATION	(ft.) 584.1		UNI		0 2			TION BLC 40 5	
	¥ .	1	SS				Light reddish brown stiff	silty clay (CL) - trace sand - trace gr	ravel -		,	11 Ø (	2			
Ī	580-										į					
-	-	2	SS								<b>4</b> ⊗ :	O 1.5	•			
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-	-	$\vdash$		H			8.5 Dark gray silty fine s	and (SM) - moist - loose				O 1.5				
-10	-	4	SS	$\vdash$	$\prod$		10.0	and (OM) - moist - 1005c		1	! .6 ⊗					
$\mathbf{f}$	-	Ŀ						- trace gravel - very stiff to stiff			8	O 1.5	•			
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ŀ	-	5	SS								ď	10				
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┢	-	6	SS	П												
/21/23	-	- - - -									¥ : !	1.5	—●2	ź. <b>.</b>		
PLATE.GDT 3/21/23	-	_	00								١	10				
PLATE	-	7	SS									10 0 1.5	<b>—●</b> 2	2.5		
EI DATA TEM	-										, ,					
] G	560-	L			L					]						
PK.G	-	8	SS	$\prod$			25.0 Brown silty clay (CL)	- trace fine gravel - soft			<b>8</b> ⊗00. 0.25	<b>5</b>		•		
LOPMENT	-						Stomi siny day (OL)	addo into gravor - sort			0.25					
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEM		VST-	• <b>∜</b> ane					r Test with vane tip at 30.5 feet 00 psf Remolded S <sub>u</sub> = 375 psf								
20159	550-	1														
MIDWEST BORING LOG 2:	т	he s	tratif	ica	tior	lines	represent the appro	ximate boundary lines between s	soil typ	es: in	situ, th	e trans	ition	may be	gradual	L
A RING	VATEF	RLEV	EL: (	Grou	ındv	vater o	bserved at 2.0 ft BCI	BORING STARTED 11/29/2022	GEI	OFFICE		en Bay	WI			
ST BC								BORING COMPLETED	ENT	ERED E	3Y	-		PROVE	) BY	
	IORTH					EA	STING	12/1/2022 RIG/FOREMAN	GEI	PROJE	CT NO.	KL	<del>'</del>	SN PAGE	NO. <b>1</b> C	)F <b>4</b>
≣		5	76,9	63.3	346		101,533.722	D-50 / JW		220	1593					

		R		$\mathcal{I}$		CLIENT:	haaina	LOG	OF E	BORING N	UMBE	R <b>BL-</b>	3-22		
				y		Brown County Purcle PROJECT NAME:	nasing	ARC	HITE	CT-ENGIN	JFFR				
U		Cor	nsult	ants		Port Property Devel	lopments	7.1.0	,,,,,						
						ATION:				DUNCONF		OMPRES TONS/FT		STRE	NGTH
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	PLE DISTANCE	RECOVERY		DESCRIPT	ΓΙΟΝ OF MATERIAL		UNIT DRY WT. LBS/FT³	PLAS LIMIT		WATER ONTENT	4	LIQU LIMIT	IID (%)
	N N	AME	AMF	SEC(	SLID	RFACE ELEVATION	/ft \ 594 1		NIT I	1		PENETR			
	+		-	ഥ	SUR	FACE ELEVATION	(II.) 504.1			10	20	30	40	50	0 60
 	VST-	ZANE				Vane Shea Peak S <sub>u</sub> = 1,5	r Test with vane tip at 35.5 feet 25 psf Remolded S <sub>u</sub> = 400 psi	f							
-40 .	VST-	<b>-3</b> ane				Vane Sheal Peak S <sub>u</sub> = 1,0	r Test with vane tip at 40.5 feet 00 psf Remolded S <sub>u</sub> = 275 psi	f							
-	9	SS										—— ———————————————————————————————————			
540-	_			Ш		44.0			_	0.5					
•	10	SS				Brown silty clay (CL)	- trace sand - very stiff to hard					29 Ø			
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i -				Ш							<i>"</i>	<b>3</b> 3	3.5		
-	1										<i>'</i>				
	1									/					
-60										1					
	13	SS				60.0 Brown silty clay (CL)	- trace gravel - soft to stiff			0.25 7 0.25		•			
:  -	$ begin{array}{c} - \end{array}$					Brown siny sidy (SE)	trade graver sort to sun			0.25					
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520-	-														
;  -	4														
<u> </u>	V¦ST∙ ⊤	ALANE					r Test with vane tip at 65.5 feet								
}	L					Peak S <sub>u</sub> = 1,5	75 psf Remolded S <sub>u</sub> = 325 psf	ſ							
<u>}</u>  -	_ 14	ST									×				
-	1														
; 	⊥_ he s	tratif	ica	tion	lines	represent the appro	ximate boundary lines between	soil tvn	oes: in	situ. the t	ransiti	on mav h	oe ar	adual	
							BORING STARTED		OFFIC		. 2	ay 1	9"		-
VVATE	K LEV	'⊏L: (	JO1	ındw	ater o	bserved at 2.0 ft BCI	11/29/2022 BORING COMPLETED		ERED	Green	Bay, \	<b>VI</b> APPROV	ED B	Y	
NORTH	HING				FA	STING	12/1/2022 RIG/FOREMAN			AKL ECT NO.		SN	<u> </u>		
		76,9	63.3	46	_,	101,533.722	D-50 / JW			01593		PAG	∍E NO	). <b>2</b> O	r <b>4</b>

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			7				CLIENT:		LOG	OF BO	ORING	NUME	BER	BL-3-2	22	
			. [		رلا		Brown County Purch	hasing								
	U	E	Co	nsult	ants		PROJECT NAME:  Port Property Devel	lonments	ARC	HITEC	T-ENC	SINEEF	₹			
						LOC	CATION:	ориенс					TON	PRESSIV		
DEDTH (ET)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	MPLE DISTANCE	RECOVERY		DESCRIPT	TION OF MATERIAL		UNIT DRY WT. LBS/FT³	PL LIM	0 2	W/ CONT - — — 0 :	3 ATER ENT (%)	10 5	JID (%)
$\triangleright$	$\langle \rangle$	SA	SAI	SAI	RE	SUF	RFACE ELEVATION	(ft.) 584.1				1 ANDAF		NETRAT 30 4		0 6
-	<u>V</u>	VST-	1	+			Vane Shea	r Test with vane tip at 70.5 feet 50 psf Remolded S <sub>u</sub> = 400 ps	sf				<u>-</u> '			
-	510	- VST	<b>-6</b> ani	Ε			Vane Shea Peak S <sub>u</sub> = 1,9	r Test with vane tip at 75.5 feet 50 psf Remolded S <sub>u</sub> = 600 ps	ef .							
- -80 - -		15	ST									O—( 1.5	)2	•		
T 3/21/23	500	VST	- <b>∀</b> ANI	Ε			Vane Sheal I	r Test with vane tip at 85.5 feet Peak S <sub>u</sub> = >2,000 psf								
DATA TEMPLATE.GDT 3/21/23		16	ST									O 1.5	•			
	490	4														
ELOPMENT_PK.GPJ		17 -	SS								7 Ø : !	O 1.5			•	
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEIDATA TEM	0	18	ST									×	)-			
1593	480	_									!					
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	1	The s	trati	fica	tior	lines	s represent the appro	ximate boundary lines between	n soil typ	oes: in	situ, th	e trans	ition n	nay be	gradual	
N NG	/ATE	R LE\	ÆL:	Grou	ındv	vater o	observed at 2.0 ft BCI	BORING STARTED	GEI	OFFICE			\r."			
MIDWEST BORING LOG		v		ان ، د				11/29/2022 BORING COMPLETED	ENT	TERED E	3Y	een Bay		PROVED	BY	
WES-	IORTI	HING					ASTING	12/1/2022 RIG/FOREMAN		PROJE	Α	KL		SN		
	UKII		576,9	963.3	346	E#	101,533.722	D-50 / JW	GEI		1593			PAGE I	NO. 3 C	)F 4

		R		$\mathcal{O}$		CLIENT:	haaina	LOC	G OF B	ORING N	IUMBEF	R BL-3-2	22	
$\overline{C}$	ΓI	1		IJ		Brown County Purc PROJECT NAME:	nasniy	AR	CHITE	CT-ENGII	NEER			
U	<u> </u>	Cor	nsult	ants		Port Property Deve	lopments		_				<b></b>	-110-11
_					LOC	ATION:				OUNCONI 1	FINED CC T 2	OMPRESSIN ONS/FT <sup>2</sup> 3		ENGTH 5
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	Ш		DESCRIPT	ΓΙΟΝ OF MATERIAL		UNIT DRY WT. LBS/FT³	PLAS LIMIT	TIC (%) CC × 20	WATER DITENT (% 30	LIQI ) LIMIT — 🛆 40 5	UID Γ (%)
$\langle \rangle$	SA	SAI	SAI	RE	SUR	FACE ELEVATION	(ft.) 584.1		LBS	10	ANDARD F 20	PENETRAT 4		50 60
- - - 10 -	20	SS				110.0 Brownish gray clayey dense	/ silt (ML) with gravel - wet	- extremely		0.25	•		, ,	
470-	21	SS								•				
20 .	22	SS				121 5				•			(	50/0.3'
						121.5 Refusal at 121.5 feet	. Drilled 2.0 feet in to confi	rm.						
460-						Boring advanced from drilling fluid HW casing driven to	7.5 feet with solid-stem aug m 7.5 to 123.5 feet with roc 10.0 feet n bentonite chips and bento	k bit and						
450- - - -	- - -													
	<u> </u>			<u></u>					<u> </u>	<u> </u>			<u></u>	
Т	he s	tratif	tica	tior	lines	represent the appro	ximate boundary lines be				transitio	n may be	gradua	l.
NATER	R LEV	EL: (	Grou	undv	vater ob	bserved at 2.0 ft BCI	BORING STARTED 11/29/2022		TERED	Gree	n Bay, W	<b>'I</b> APPROVED	) RV	
NORTH	HING				ΕΔG	STING	BORING COMPLETED 12/1/2022 RIG/FOREMAN		I PROJE	AKL		SN		
NORTE		76,9	63.3	346	EA	101,533.722	D-50 / JW	GE		01593		PAGE	NO. 4 C	OF <b>4</b>



												G OF BORING NUMBER BL-4-22						
			- <sub>1</sub>					Brown County Purchasing PROJECT NAME:			ARCHITECT-ENGINEER							
		) E	_	Consultants				Port Property Developments				III ECT-ENGINEEK						
							100	ATION:		OUNCONFINED COMPRESSIVE STRENGT								
	É	-			Ж		100	ATION.			1	TONS/FT <sup>2</sup> 1 2 3 4 5						
	( ) ( )				AN								ASTIC	W	ATER	LIQI		
	SAMPLE NO. SAMPLE NO. SAMPLE DISTANCE SAMPLE DISTANCE SAMPLE DISTANCE SAMPLE DISTANCE ACOVERY ACOVERY ACOVERY ACOVERY ACOVERY ACOVERY ACOVERY ACOVERY ACOVERY				DESCRIPT	TION OF MATERIAL		F.	LIMIT (%) CONTENT (%) LIMIT (%)  ———————————————————————————————————									
j								≽	1	0 ^ 2	20	30 4	0 5	0				
								UNIT DRY WT. LBS/FT <sup>3</sup>	⊗ STANDARD PENETRATION BLOWS/FT									
	$\langle \rangle$	$\langle  $	SA	SA	SA	묎	SURFACE ELEVATION (ft.) 586.2				38 88						0 6	
			11	SS									8 €	<b>—</b>	O3.25	3		
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-4	0	Ť	12	ST				40.0										
ı		┪						Brown silty clay (CL)	- trace gravel - stiff to soft				1.5			•		
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t		+																
ŀ		+																
ŀ		- 1	/ST -1	VANE														
ŀ	54		-1					Vane Shea	r Test with vane tip at 45.5 feet Peak S <sub>u</sub> = >2,100 psf									
ŀ		+																
ŀ		$\exists$																
ŀ		+																
-5	0	+	13	SS	П							6			1			
ŀ		1										80	75		•			
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21/23		+										i						
)T 3/		4										i						
밁		₩:	ST-	<b>2</b> ANE								li						
530-								Vane Shear Test with vane tip at 55.5 feet										
TEM-		4							Peak S <sub>u</sub> = 1,625 psf									
ATA		4																
빵		4																
교	0	+	14	SS	Н													
삵		4	+									∞0.25 0.5	1		•			
MEN		-			ĺ							i						
하		-	15	ST				Note: No recovery										
		4																
<u></u>		-	16	ST	H													
	52		16										75					
ZT PR		+			$\sqcup$								1/5					
합		4																
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23		4																
3 220					<u></u>	L.												
The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be													may be	gradual	<u> </u>			
ZKIN Z	WATER LEVEL: Groundwater observed at 5.6 ft BCI  BORING STARTED 12/19/2022										I OFFICE  Green Bay, WI							
MIDWEST BORING LOG									BORING COMPLETED	ENTERED BY APPROVED BY								
)WE	NORT	ГНІ					EA	STING	12/20/2022 RIG/FOREMAN	GEI	GEI PROJECT NO.			PAGE NO. 2 OF 4				
Ĭ	575,686.606 101,064.857 D-50 / JW										220	1593			PAGE NO. 2 OF 4			

							CLIENT:		LOG	OF B	ORING NUMBER	BL-4-	22
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(	٦	H	Co	neul	tant		PROJECT NAME: Port Property Deve	lanmenta	ARC	HITE	CT-ENGINEER		
	_		T	11301	lant	$T^{T}$		юртень		Τ.	OUNCONFINED CO	//PRESSI	VE STRENGTH
				ļ.,,			CATION:			<u> </u>	1 2	ONS/FT <sup>2</sup>	4 5
	ELEVATION (FT)			NS N	RECOVERY								
l£	ON.	١.	<u>ا</u> يا	IAI							PLASTIC V LIMIT (%) CON	VATER ITENT (%	LIQUID  LIMIT (%)
<b>DEPTH (FT)</b>	ATI	9	\( \( \)	DIS	₹		DESCRIP	ΓΙΟΝ OF MATERIAL		WT.	×		- <b>-</b> ⊀
ᄪ	Ä	쁘	쁘	빌	)VE					کی کے	10 20	30	40 50
₫	<u> </u>	SAMPLE NO	SAMPLE TYPE	M						UNIT DRY WT. LBS/FT <sup>3</sup>	⊗ STANDARD P	ENETRAT	TION BLOWS/FT
$\times$	$\bigvee$			Ś	꼾	SUI	RFACE ELEVATION	(ft.) 586.2		59	10 20		40 50
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100	+	∤ST-	- MANE					T-4M 4 444 T			\\ \		
Ž[	-	1					vane Shear Peak S., = 1.5	Test with vane tip at 100.5 feet $625 \text{ psf}$ - Remolded $S_u = 425 \text{ psf}$			\		
	-	1											
긲	-	1											
2201593_PORI PROPERTY DEVELOPMENT PR.GPJ GELDATA TEM	-	1											
<u> </u>		<u>L_</u>	<u>L_</u>	<u></u>	L		<u> </u>			<u> </u>			
3	TI	he s	trati	fica	tio	n line	s represent the appro	ximate boundary lines between	soil typ	oes: in	situ, the transition	may be	gradual.
W/	ATER	RIEV	/FI · /	Gro	und	water	observed at 5.6 ft BCI	BORING STARTED	GEI	OFFIC			
호  '''	ALER	, LEV	LL. (	اں اب	ui iU'	vvalCI	obderved at J.U It DUI	12/19/2022	ENIT	ERED	Green Bay, WI	PPROVEI	) RV
MIDWEST BORING LOG								BORING COMPLETED 12/20/2022			AKL	SN	וט כ
≨ NC	DRTH		575,6	86.	606		ASTING <b>101,064.857</b>	RIG/FOREMAN D-50 / JW	GEI		ECT NO. <b>01593</b>	PAGE	NO. 3 OF 4
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		CLIENT: Brown County Purchasing						LOG	OF BO	ORING N	UMBER	BL-4-	22				
1					ש			PROJECT NAME:	nasnig		ARCI	HITEC	T-ENGIN	EER			
	J	Consultants Port Property Developments															
		LOCATION:							∮	OUNCONF	INED CO	MPRESSI'	VE STRE	ENGTH			
	Ē			빙									1	2 '`	ONS/FT <sup>2</sup>	4	5
F	ELEVATION (FT)		ш	AN	RECOVERY								PLAST		NATER		UID
🖺	5	ō.	ΥPI	ISI	≿			DESCRIPT	TION OF MATERIA	\L		<u>-</u>		%) COI — —	NTENT (%	b) LIMI <sup>-</sup> 	T (%)
<b>DEPTH (FT)</b>	Š	Щ	ĒΤ	田口	Æ							>	10 ^	20	30	40 - 5	50
믬	E	SAMPLE NO	SAMPLE TYPE	Æ	S S							T.P.					
$\boxtimes$	$\searrow$	SAI	SAI	SAI	RE(	SL	JRI	FACE ELEVATION	(ft.) 586.2			UNIT DRY WT. LBS/FT³	⊗STAN 10	NDARD P 20	ENETRAT		50 60
	<u> </u>	23	SS	$\mathbf{H}$	Т			105.0	. ,				Ī	21	Ţ	T	
-	480-							Brownish gray silty c	lay (CL) - trace gravel -	stiff							
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•	-							Note: Cobbles from	113.5 to 114.5 feet							/	/ I
	-	25	SS		П			115.0								43	
	470-			Ш	Ш			Brownish gray clayey	silt (ML) with gravel - v	wet - very dei	nse		71			×	
	-															`\	
	_																
	_																
120	_			<u> </u>	<u> </u>												
		26	SS			-							0.75				8
													01/5				
	_																
	-	1					S	123.0									
	-						$\otimes$	Dolomite Refusal at 123.0 feet	t. Drilled 2.0 feet in to o	onfirm.							
	-					<i>7//</i> 2	.VZ	Driller's note: 100% \	water loss at 124.8 feet								
	460-							125.0									
	-	-							10.0 feet with solid-sten								
	-							Boring advanced from drilling fluid	m 10.0 to 125.0 feet wit	h rock bit and	d						
	_							HW casing driven to									
130	_							Boring backfilled with	n bentonite chips and be	entonite grou	t mix						
	_																
	_	1															
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	450-	-															
	_	-															
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	_	_															
		<u> </u>			_	<u> </u>											
	Tł	ne st	rati	fica	tior	ı line	es	represent the appro	ximate boundary lines	s between s	oil typ	es: in	situ, the tr	ransition	may be	gradua	al.
W	TER	LEV	EL· (	Groi	undv	vater	r oh	oserved at 5.6 ft BCI	BORING STARTED		GEI	OFFICE					
	\	v	· \	اد اد			. Ji.		12/19/2022 BORING COMPLETEI	<u> </u>	ENT	ERED E		Bay, WI	PPROVE	D BY	
NC	PTLI	INC				-	= ^ c	STING	12/20/2022	-		PROJE	AKL		SN		
INC	RTH		75,6	86.6	606		_H3	STING <b>101,064.857</b>	RIG/FOREMAN D-50 / JW		GEII	220	1593		PAGE	NO. 4	OF <b>4</b>

		N				CLIENT:			OG OF I	BORING NUMBE	R <b>BL-5-2</b> 2	2
				<b>y</b>		PROJECT NAME:	hasing		DOLUTE	OT ENGINEED		
U	ᆸ	Cor	sult	ants		Port Property Devel	lopments	A	RCHITE	CT-ENGINEER		
					100	ATION:				OUNCONFINED C	OMPRESSIVE	STRENGTH
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	<b>IPLE DISTANCE</b>	RECOVERY			TION OF MATERIAL		UNIT DRY WT.	1 2 PLASTIC	30 40	D 50
XX	SA	SAN	SAI	R	SUR	FACE ELEVATION	(ft.) 584.2			⊗ STANDARD 10 20	PENETRATION 30 40	
	1 - 2	SS				<u>,                                      </u>	(CL) - some gravel - some coa	al - stiff				3 30 0
580-	_											
- <u>T</u>	3	SS				5.5 Grayish brown silty c	clay (CL) - wet - loose			6 O 1.5		
[	4	SS	Т	$\top$						\		
-	5	SS				10.0 Brown silty clay (CL)	- trace gravel - very stiff to sti	iff				
ļ .	6	SS								<sup>13</sup> •		
570-	_			Ш							O <u></u> -Ф3 2.5	
-	7	SS	Т	$\dashv$								
	- - - -									⊗ Q2 		
-20	8	SS		Т								
560		ss								8 1 75		
  -  -  -  -	9									\$ Q1	•	
-30	10	SS	П							\13 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
-	_										3	
550-	-											
Т	he s	tratif	ica	tion	lines	represent the appro	eximate boundary lines betw	een soil	types: ii	n situ, the transition	on mav be d	radual.
							BORING STARTED		GEI OFFI	CE CE		
WAIE	K LEV	EL: (	σΓΟU	ındw	vater o	bserved at 5.2 ft BCI	12/1/2022 BORING COMPLETED		ENTERED	Green Bay, V	<b>VI</b> APPROVED I	3Y
NORTH	HING				ΕA	STING	12/1/2022 RIG/FOREMAN		GEI PRO	AKL	SN	
		76,0	74.3	74	_ `	101,389.261	D-50 / JW			201593	PAGE N	O. 1 OF 3

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			1				CLIENT:		LOG	OF B	ORING NUMBER	BL-5-22	2
					اللا		Brown County Purch	hasing					
	(J	ΕI	Col	nsul	tants		PROJECT NAME: Port Property Devel	lonments	ARC	HITEC	T-ENGINEER		
	_		Col	11501	lants		CATION:	iopments			DUNCONFINED CO	MPRESSIVE	STRENGTH
DEDTH (ET)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	MPLE DISTANCE	RECOVERY			ΓΙΟΝ OF MATERIAL		UNIT DRY WT. LBS/FT³	PLASTIC LIMIT (%) CO	30 40	0 50
$\supset$		₽S	SAI	SAI	R	SUF	RFACE ELEVATION	(ft.) 584.2		T E S	<ul> <li>⊗ STANDARD F</li> <li>10 20</li> </ul>	30 40	
-	- -	11	SS				35.0	- trace gravel - stiff to soft			6 0.25 1	•	
- -40 - -	- - - - -	12	ST								O <sub>1.5</sub>	•	
-	540- - - -	13	SS							8	!   	•	
721/23	- - - -	14	SS							8	WОН 0.75	•	
PLATE.GDT 3/21/23	530- -	15	SS							6	WOH ○ 0.5	•	
OJ GEI DATA TEMP	-	-											
OPMENT_PK.GP	- -	16	ST									·	Δ
OPERTY DEVEL	520- -	17	SS								1   4   ⊗   0   1.25		
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMI	-												
		he s	tratif	ica	tior	ı line:	s represent the appro	ximate boundary lines betw	een soil tvr	oes: in	situ, the transition	n mav be a	radual.
MIDWEST BORING LOG							observed at 5.2 ft BCI	BORING STARTED		OFFICE	<u> </u>		
I BO	_,		'	-		'	<u>.</u> <u> </u>	12/1/2022 BORING COMPLETED	ENT	TERED E		APPROVED E	3Y
N K	IORTH	ING				E/	ASTING	12/1/2022 RIG/FOREMAN	GEI	PROJE	AKL CT NO.	SN	2.05.2
<u>M</u>			76,0	74.3	374		101,389.261	D-50 / JW	J.		1593	PAGE NO	O. 2 OF 3

			A		7		CLIENT:		LOG	OF B	ORING	NUMB	ER	3L-5-2	2	
١,			(		رالا	-	PROJECT NAME:	hasing	ABC	HITEC	T-ENG	INICED	<b>)</b>			
'	J	ᄓ	Co	nsult	ants	,	Port Property Devel	lopments	ARC	ппес	/I-ENG	INCEN	`			
						100	CATION:	-		(	DUNCO	NFINED	COMP	RESSIVI	STRE	NGTH
	F			핑			<i>,,</i> (11014.			-	1	2	TON	S/FT <sup>2</sup> 4	5	<b>,</b>
	Z ·		l	AN							PLA	ASTIC	WA	TER	LIQL	JID
	유	o.	YPE	ST	>		DESCRIPT	TION OF MATERIAL		<u> </u>	LIM	IT (%) — —	CONTE	ENT (%)	LIMIT — ≰	(%)
DEPTH (FT)	ELEVATION (FT)	Щ	ĒΤ	ËΒ	Æ					×   ≿	1	0 ^ 20	0 3	0 4	0 5	0
		SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY					UNIT DRY WT. LBS/FT <sup>3</sup>	0.00		ם סבגו	ETRATIO	2N DI 0	MO/ET
$\triangleright$	$\mathbb{X}$	SA	SA	SA	묎	SUF	RFACE ELEVATION (	(ft.) 584.2		EBS E	10			0 4		
	-	18	SS								7 ⊗d	)		•		
Ī	-	-		Ш							[7]	1				1
ŀ	-	1									!					1
ŀ	-	1									/					1
ŀ	510-	-									<u>i</u>					1
ŀ	-	19	SS	T							WQH					ı
ŀ	_										WOH 0.5					ı
+	-	-														
ŀ	_	-														1
+	_	1														1
-80	_	20	SS	$\vdash$							WOH 0.					1
+	_	20								(		75		•		1
ŀ	_						81.5									
-	_						End of Boring Boring advanced to 1	10.0 feet with solid-stem auger								1
-	500-						Boring advanced from drilling fluid	m 10.0 to 81.5 feet with rock bit and								1
1	500						HW casing driven to	8.0 feet								1
-							Boring backfilled with	n bentonite chips and bentonite grou	it mix							1
1	_															1
/23																1
ATE.GDT 3/21/23	_															1
GD	_															1
ATE	-															1
EMPI	_															ı
	-															1
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2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPL	-	-														
0159.	480-	-														1
	<b>-</b>	<u> </u>	L	 	4: -	. 11:		Marada Barradana Barrada	-11 4	<u> </u>	_:4	. 4	4!			
<u> </u>	11	ie si	ıratıl	ııca	uor	ı ıınes	represent the approx	ximate boundary lines between s				e transi	uon m	ay be g	radual	
w g	ATER	LEV	EL: (	Grou	ındv	vater o	observed at 5.2 ft BCI	BORING STARTED 12/1/2022		OFFICE	Gre	en Bay,				
STE								BORING COMPLETED 12/1/2022		ERED E	AŁ	(L	APP	ROVED <b>SN</b>	BY	
MIDWEST BORING LOG	ORTH		76,0	74.3	374	EA	ASTING 101,389.261	RIG/FOREMAN D-50 / JW	GEI	PROJE 220				PAGE N	O. <b>3</b> O	F 3

			П		7		CLIENT:		LOG	OF B	ORING	NUM	BER	BL-6-	22	
		<b>—</b> i	(		رريا		Brown County Purcl PROJECT NAME:	hasing	ADC	LUTEC	TENC	SINEE				
	U	ᄓ	Coi	nsult	ants		Port Property Devel	lopments	ARC	HITEC	I-ENC	JINEEI	Κ.			
								•			DUNCC	NFINE	COME	PRESŞI	VE STR	ENGTH
	F			ببر		LUC	ATION:					1 :	TON 2	IS/FT <sup>2</sup> 3	4	5
	Ē			S										Ĭ	<u>.</u>	1
ĮΨ	<u> </u>	٠.	Ⅱ	STA			DESCRIPT	TION OF MATERIAL				ASTIC IIT (%)		ATER ENT (%	b) LIMI	QUID IT (%)
ĮĘ	. ¥	2	≽	ă	Ϋ́		DESCRIP	TION OF WATERIAL		W	1	$_{0}\times_{2}$	20 :	<b>●</b>	- — <u></u>	50
DEPTH (FT)	ELEVATION (FT)	凒	凒	띩	SE					DRY T³	<u>'</u>			1	10	<del>-</del>
K	ы ш ///	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	01.15		(6.)		UNIT DRY WT. LBS/FT³	⊗s				TON BL	OWS/FT
$\angle$	$\bigvee$	S	S	S	2	SUR	FACE ELEVATION			55	1	0 2	20 ;	30	40	50 6
	-	1	SS	П			Fill: Brown silty clay (	(CL) - some gravel - some rubble					26	3		
L	-				Ш							•	./~			
L	-	2	SS	Н								1.5	1			
	_	~										ullet				
Ī	<b>V</b> 580-											:				
ŀ		3	SS				5.0						9			
ŀ							Fill: Brown silty fine s dense	sand (SP) with gravel - moist - medi	um				<b>\</b>			
+	-	1					201.00						`··	$\downarrow$		
-	-	1					Void 7.5 feet to 10.0	feet, possible abandoned utility								
-	-	1													<b>\</b>	
-10	-	<del> </del>	SS		H							_			\\\\.	50/0.3
	-	4	33	Ш								•				*
	-	-														
	_	15	∖ SS ,	上			12.5			-		•				50/0.3'
	_	٣					Fill: Concrete and rul	bble								
Ī	570-															50/0.3'
ŀ	370	۱6	\SS_	上								•			/	A 0.0.5
ŀ															./	
ŀ	-													///		
1/23	-	1					17.5						/	1		
ATE.GDT 3/21/23	-	1					Brown silty clay (CL)	- trace gravei - stiff				_	/			
	-	┶			H						7	./.				
	-	7	SS								$\otimes$	9 25	•			
EMP	-	-		Н								1.25				
⊥ Y	_	1														
<u>8</u>	_	1														
3	560-	1														
A P	-					**********	25.0								1	
卢		]					End of Boring - had to crooked to continue a	o pull and reinstall casing, hole too after casing install								
Āļ-	_						Boring advanced to 2	20.0 feet with solid-stem auger								
냚	-	1					drilling fluid	m 20.0 to 25.0 feet with rock bit and								
	-	1					HW casing driven to	23.5 feet bentonite chips and bentonite grou	ıt miv							
<u>-</u> 30	-	1					An offset boring, BL-	6A, 10 feet north of BL-6-22, was dr	illed							
씽	-	1					BL-6B was offset 10	ended in concrete due to crooked ho feet south west of BL-6 and was dril	lled							
띪	-	1					to a depth of 125.5 fe	eet, see boring log BL-6B for litholog	gies							
M M	-	1														
593	-	-														
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPL	550-															
	T	he s	tratif	ica	tior	lines	represent the appro	ximate boundary lines between s	oil typ	es: in	situ, th	e trans	ition n	nay be	gradua	al.
								BORING STARTED		OFFICE				-		
照 ,	AI ER	LEV	<b>⊏L</b> : (	ان او	ıı IQV	water of	oserved at 4.9 ft AB	11/8/2022		ERED E	Gre	en Bay		PROVE	) BY	
MIDWEST BORING LOG	05						OT!!!!	BORING COMPLETED  11/8/2022			Α	KL		SN		
Ď N	ORTH		76,3	18.9	88	EAS	STING <b>101,501.526</b>	RIG/FOREMAN D-50 / JW	GEI	PROJE 220	CT NO. 1 <b>1593</b>			PAGE	NO. 1	OF 1

			1		7		CLIENT:		LOG	OF BO	ORING	NUM	IBER	BL-	6B-2	2	
		<b>-</b> 1	(		ע		Brown County Purcl PROJECT NAME:	hasing	100		T						
	(J	ΕI	Cou	nsult	ants		Port Property Devel	lonments	ARC	HITEC	I-ENC	JINEE	:R				
-			T	T				юртена		1	DUNCO	NFINE	D COI	MPRES	SIVE	STRFN	IGTH
						LOC	ATION:			] ]		1	2 TO	ONS/FT	4	5	
	ELEVATION (FT)			Š								ı					
E	<u> </u>	١.	ᆔ	Υ			DECODID	FIONI OF MATERIAL				ASTIC IIT (%)		WATER NTENT		LIQU LIMIT	
]	) H	9	🗄	DIS	ᇫ		DESCRIPT	ΓΙΟΝ OF MATERIAL		WT.		$\times$		-•-		A	
DEDTH (ET)	- - ≧	쁘	쁘	쁘	ΛE					<u>}</u>	1	0 :	20	30	40	50	)
ع ا	<u> </u>	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY					UNIT DRY WT. LBS/FT³	⊗s	TANDA	ARD P	ENETR	OITA	N BLO\	VS/FT
$\geq$	$\langle \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \!$	δ	γ	S	R	SUR	FACE ELEVATION (	(ft.) 584.7		59			20	30	40	50	
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23		1	SS				feet due to hole being boring was drilled to	22 for lithologies. BL-6-22 ended a g too crooked to continue. An offst 8.0 feet before stopping due to crooffset 10 feet north east of boring	et		7%						
計	-	-		$\Box$	Ш						-	'.`	1				
힏	-	1									!						
1593	-	1									!						
2201	<u> 550</u> -	L		_	L.						İ	L					
	TI	he s	ratif	ica	tior	lines	represent the approx	ximate boundary lines between	soil typ	es: in s	situ, th	e tran	sition	may l	oe gra	adual.	
								BORING STARTED		OFFICE				., .	J		
<u>ال</u> الا	/ATER	LEV	EL: (	Grou	ındv	vater ob	oserved at 5.0 ft BCI	11/8/2022			Gre	en Ba					
STE								BORING COMPLETED 11/10/2022	ENT	ERED E		KL	A	.PPRO\ <b>SN</b>		Y	
MIDWEST BORING LOG	ORTH		76,3	13.9	88	EAS	STING <b>101,496.526</b>	RIG/FOREMAN D-50 / JW	GEI	PROJEC			-			. <b>1</b> O	- 4

			(		$\mathcal{O}$		CLIENT:	h a a i u u	LOG	OF B	ORING NUMBER	BL-6B	3-22	
1			-		رلا	i	Brown County Purc PROJECT NAME:	nasing	ARC	HITEC	T-ENGINEER			
'	J		Co	nsul	tant:	s	Port Property Deve	lopments		/I II I L C	71-ENOINEER			
						100	CATION:		•		DUNCONFINED CO	MPRESSI\	/E STRENG	TH
	F			삥			<i>,</i> (1101).			1	1 2	ONS/FT <sup>2</sup>	4 5	
	ELEVATION (FT)			AN							PLASTIC	WATER	LIQUID	
<u> </u>	. 음	o.	YPE	ST	>		DESCRIPT	TION OF MATERIAL		Ŀ.	LIMIT (%) CO	NTENT (%	) LIMIT (% 	b)
<b>DEPTH (FT)</b>	¥ N	ЩZ	ĒТ	Щ	Æ					×   ≿	10 ^ 20	30 4	40 50	
믬	П	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY					F   F   F	⊗ STANDARD F		ION DI OW	C/ET
$\times$	$\mathcal{X}$	SA	SA	SA	묎	SUF	RFACE ELEVATION	(ft.) 584.7		UNIT DRY WT. LBS/FT <sup>3</sup>	10 20		10N BLOWS	60
	_	3	SS				35.0				3 ≫ 01 <0.25 tsf	•		
t	_			Ш			Brown silty clay (CL)	- trace gravel - soft to very soft			<0.25 tsf			
-											!			
ŀ											į			
-	_										i			
-40	_	4	SS	Н							woh			
-	-			Ш						0	0 k0.25 tsf	-		
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	_										75			
3	_										ļ!			
3/21/2	_										i			
2	530-													
AIE.GDI 3/21/23	_	7	SS								WOH   X- +-			
4 1				Ш							0.25 sf			
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<u>}</u>	-													
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G 60	-	8	SS	Н	H						woh			
ᆉ	-	Ĭ									WOH 0.5	•		
	-										`- ,			
<u>-</u>	-	1					00.0			-				
- - -	-	1					63.0 Brown silt (ML) - wet	- dense			^.			
<u>-</u>	520-	<u> </u>		ļ.,	-									
扎	-	9	SS								•	\	<b>3</b> 9 }	
2201593_PORT PROPERTY DEVELOPMENT PK.GPJ GELDATA TEMPL	-	$\vdash$			Ħ					1				
<u> </u>	-	-					67.0 Brown silty clay (CL)	- trace gravel - stiff to very stiff						
283	-	-					2.5 Sin, Sin, (OL)	and grands out to vory out						
727	=	<u> </u>			L					<u>L</u>				
	TI	he s	trati	fica	tior	n lines	s represent the appro	ximate boundary lines betwee	en soil typ	oes: in	situ, the transition	n may be	gradual.	
W W	ATER	LEV	EL: (	Gro	und	water c	observed at 5.0 ft BCI	BORING STARTED	GEI	OFFICE				
MIDWEST BORING LOG				-		. •		11/8/2022 BORING COMPLETED	ENT	TERED E		PPROVED	) BY	-
NIC SES	DRTH	ING				FΔ	ASTING	11/10/2022 RIG/FOREMAN		PROJE	AKL	SN		
⊒[''	-1111		76,3	13.9	988		101,496.526	D-50 / JW	OL1	220	01593	PAGE	NO. 2 OF	4

	CLIENT: Brown County Purchasing					CLIENT:		LOG	OF BO	ORING NUMBE	R <b>BL-6B-22</b>	
_	<b>-</b> r	<b>–</b> ,			الا			nasing	100	==	T = 110 11 1 = 1	
+ (	٦ŀ	=1	Cor	rsul:	ants		PROJECT NAME: Port Property Devel	onments	ARC	HITEC	T-ENGINEER	
			Col	1301	anti			opinents			OUNCONFINED C	COMPRESSIVE STRENGTH
рертн (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	MPLE DISTANCE	RECOVERY		DESCRIPT	TION OF MATERIAL		UNIT DRY WT. LBS/FT	1 2 PLASTIC LIMIT (%) C X - 10 20	TONS/FT <sup>2</sup> 3
	$\times$	SA	SA	SA	RE	SUF	RFACE ELEVATION	(ft.) 584.7		LB GN	10 20	30 40 50 6
		11	ST								0_02	BO B B
- -80 - -	-	12	SS									PB
_ 50	- ioo-	13	SS									
J GEI DATA TEMPLA IE.GDT 3/21/23		14	SS								1.25) 1 1 1 1 1 1 1 1.5	
PK GP	-	15	SS				95.0 Reddish brown silty o	clay (CL) - firm to soft		-	5 ⊗01 /0.5	•
2201993_PORT PROPERTY DEVELOPMENT_PK.GPJ. GELDATA TEM. 001 001 001 001 001 001 001 001 001 00		16	SS								WOH 0.5	•
		ne st	ratif	ica	tior	line:	s represent the appro	ximate boundary lines betwe	en soil tvr	es: in s	situ, the transiti	on may be gradual.
								BORING STARTED		OFFICE		
WIDWEST BORING LOG	ER	LEV	EL: (	∂roı	undv	water (	observed at 5.0 ft BCI	11/8/2022 BORING COMPLETED		ERED E	Green Bay, \	<b>NI</b> APPROVED BY
VEST	יי ידכ	NO					ACTING	11/10/2022			AKL	SN
≦  NOR	RTHING EASTING 576,313.988 101,496.526			E/		RIG/FOREMAN D-50 / JW	GEI	PROJE( <b>220</b>	1593	PAGE NO. 3 OF 4		

					(0)		CLIENT:	h l	LUG	OF B	ORING	NUM	BEK	BL-6B	-22	
1,	<b>~</b>	<b>—</b> i			رلا		PROJECT NAME:	nasing	I A D C	UTEC	T [N/					
(	J	ᄓ	Coi	nsul	tant	,	Port Property Devel	lopments	ARC	HIIEC	:I-EN	SINEE	ĸ			
						100			-	(	DUNCO	NFINE	D COM	PRESSIV	/E STRE	NGTH
<b>DEPTH (FT)</b>	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	LOC	ATION: DESCRIPT	TION OF MATERIAL		UNIT DRY WT. LBS/FT <sup>3</sup>	PL LIN	ASTIC IIT (%) × 1	CONT	ATER ENT (%)	LIQI LIMIT — A 10 5	60 
$\times$	$\searrow$	SA	SA	SA	R	SUF	RFACE ELEVATION (	(ft.) 584.7		E E						50 6
-110	- - - - - - - - -	18	SS				113.0 Weathered rock/grav	vel (GP) - wet - medium dense			WOH <0.25 WOH <0.25	tsf	•	28		
- - - - -120	- - -	20	ss				120.0 Silty sand (SM) - wet	: - very dense		-			· &			50/0.3
PLATE.	- - 460-						123.5 Note: Practical refusa 125.5 End of Boring	al at 123.5, dolomite bedrock		-						
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEM	- - - - - - 450-						Boring advanced to 2 Boring advanced from drilling fluid Casing driven to 20.0	20.0 feet with solid-stem auger m 20.0 to 125.5 feet with rock bit an D feet n bentonite grout and bentonite chip								
	- - - - -	ne st	ratif	fica	ntion	n lines	s represent the appro	ximate boundary lines between				e trans	sition r	may be	gradua	l
EST BO			EL: (	Gro	und		bserved at 5.0 ft BCI	BORING STARTED  11/8/2022  BORING COMPLETED  11/10/2022	ENT	OFFICE ERED I	Gr BY A	een Ba		PROVED <b>SN</b>		
NO	RTH		76,3	13.9	988	EA	STING <b>101,496.526</b>	RIG/FOREMAN D-50 / JW	GEI		CT NO. <b>)1593</b>			PAGE I	NO. 4 C	OF 4

			(		9)		CLIENT:		LOG	OF BO	ORING	NUM	BER	BL-	7-22		
١,		ΓI	(		رلا		Brown County Purcl PROJECT NAME:	nasıng	ΔRC	HITEC	T-ENG	INFF	R				
Ľ	<u>U</u>		Со	nsul	ants	5	Port Property Devel	opments	AILO		/I-LIVC	)   VLL					
						LOC	ATION:				DUNCO	NFINE	O COM	IPRES	SIVE S	STRE	NGTH
	E			빙							,	1	2	NS/FT	4	5	
F	ELEVATION (FT)		ш	AN								ASTIC		/ATER		LIQU	
"	Ĭ	ġ.	٦	lSIC	≿		DESCRIPT	TION OF MATERIAL		۸T.	LIM	IT (%) ————————————————————————————————————				$\forall$	
DEPTH (FT)	, <u>)</u>	世	Щ	l E	VEF					ڳي ر	1	0 2	20	30	40	5(	)
عَ		SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY					UNIT DRY WT. LBS/FT³	⊗s	TANDA	RD PE	NETR	OITA	N BLO	WS/FT
$\geq$	$\bigvee$	S	S	δ	꼾	SUR	FACE ELEVATION	(ft.) 584.6		39			20	30	40	5(	
1	-	1					Fill: Brownish gray gr medium dense	ravel and sand (GP) - trace silt - mo	ist -								
	▼ -	1					mediam dense										
	-	1	SS	Н	Н								21 ⊗				
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L	580-											1					
	-	2	SS									1/1					
	-	-									/						
	-	3	SS	+			7.5				2						
	-							(SP) with gravel - trace organics - lo	ose		﴿				•		
Ī.,	-										· \						
10	-	4	SS				10.5										
Ī	-						10.5 Light brown silt (ML)	- wet - loose to medium dense			7						
ŀ	-	ļ_	SS	$\vdash$							١	.11					
Ī	-	5	00				13.0							25			
ŀ	570-						Brown silty clay (CL)	- trace sand - trace gravel - stiff									
ŀ	-	6	SS	H								11 8					
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빵	560-										į						
핡	_	8	SS	T			25.0				<b>∄</b> ⊗						
탈	_			$\coprod$			Brown silty clay (CL)	- trace gravel - soft to stiff			٢						
A P	_						Note: No recovery				į						
말	_										į						
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H 30	_	9	SS	$\dagger$													
핡	_			Ш	Ц						0.25						
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2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPL	550-																
		he s	trati	fice	tion	ı lines	represent the appro-	ximate boundary lines between s	oil typ	es in	situ th	e trans	sition	may l	ne ar	adual ———	
NG FC								BORING STARTED		OFFICE		o u ant	J111011	may I	JU GIA	auual.	•
MIDWEST BORING LOG	/ATER	RLEV	EL: (	Grou	ındı	water o	bserved at 2.0 ft BCI	11/14/2022			Gre	en Ba		יסססס	(CD D)	,	
EST								BORING COMPLETED 11/15/2022		ERED E	Al	KL	AF	PROV <b>SN</b>		r	
MIDN N	ORTH		76,6	12.8	315	EA	STING <b>101,614.220</b>	RIG/FOREMAN D-50 / JW	GEI	PROJE	CT NO. 1 <b>593</b>			PAG	SE NO	. 1 0	F 3

			R		$\mathcal{I}$		CLIENT: Brown County Purc	hasina	LOG	OF B	ORING	NUM	1BEF	R BL	-7-22		
(	٦	FI				_	PROJECT NAME:	<del>-</del>	ARC	HITEC	T-ENG	SINEE	R				
_	ا لـ	<u> </u>	Cor	nsult	ants		Port Property Deve	lopments		T /	LINCO	NICINIC	·D CC	MDDE	CCIV/E	CTDE	NOTU
	_					LOC	CATION:			-	DUNCO 1		1 CC T	ONS/F	551VE T <sup>2</sup> 4	51 KE	
_	F)			NC								ASTIC		WATE		LIQL	
F)	Į D	o.	YPE	ST/	_		DESCRIPT	ΓΙΟΝ OF MATERIAL		Ŀ				NTENT		LIMIT	
<b>DEPTH (FT</b> )	ELEVATION (FT)	Z Щ	ĒŢ	Щ	/ER					λ	1	0 ^	20	30	40	- <u>A</u> ) 5 <sub>1</sub>	)
吕	ᆸ	SAMPLE NO.	SAMPLE TYPE	MPI	RECOVERY					UNIT DRY WT. LBS/FT <sup>3</sup>	⊗ S	TAND	ARD F	PENET	RATIC	N BI O	WS/FT
$\times$	$\times$	SΑ	SA	S	RE	SUF	RFACE ELEVATION	(ft.) 584.6		39	1		20	30	40		
-	-	VST 1	VANE				Vane Shea	r Test with vane tip at 35.5 feet 50 psf Remolded S <sub>u</sub> = 350 psf									
-	_						r san si	or per inclination of each per									
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-40	-																
	-	10	ST									) ×–	. L .		<u>_</u>		
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- 5	40-	VCT															
-		2	VANE				Vane Shea	r Test with vane tip at 45.5 feet 175 psf Remolded S <sub>u</sub> = 250 psf									
	_						r can o <sub>u</sub> = 1,0	ro por Remolaca o <sub>u</sub> 200 por									
	_																
	_																
-50	_		VANE				Vana Shaa	r Toot with your tip at EO E fact									
	-	3					Peak S <sub>u</sub> = 1,9	r Test with vane tip at 50.5 feet $125 \text{ psf}$ Remolded $S_u = 350 \text{ psf}$									
	-																
	-																
- 5	30-	11	SS	Н			55.0						20				
							Brown silt (ML) - wet	- medium dense					\$	•			
	_																
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-60	-	12	ST				60.0 Brown silty clay (CL)	etiff									
-	_						Brown silty clay (CL)	- 5011									
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. 5	20-																
	_	VST 4	VANE				Vane Shea	r Test with vane tip at 65.5 feet									
							Peak S <sub>u</sub> - 1,7	700 psf Remolded S <sub>u</sub> = 400 psf									
	_																
	_																
	Th	ne s	tratif	ica	tion	lines	represent the appro	ximate boundary lines between	soil typ	es: in	situ, th	e tran	sitio	n may	be gi	radual	
\/\^							observed at 2.0 ft BCI	BORING STARTED		OFFICE							
•••	1\	v	<	ال ال	141			11/14/2022 BORING COMPLETED	ENT	ERED E	3Y	en Ba		APPRO		BY	
NOF	RTHI					EA	STING	11/15/2022 RIG/FOREMAN	GEI	PROJE	Al- CT NO.	<b>(L</b>		S		D. <b>2</b> O	
			76,6	12.8	15		101,614.220	D-50 / JW	1		1593			PA	OE IV	J. Z U	

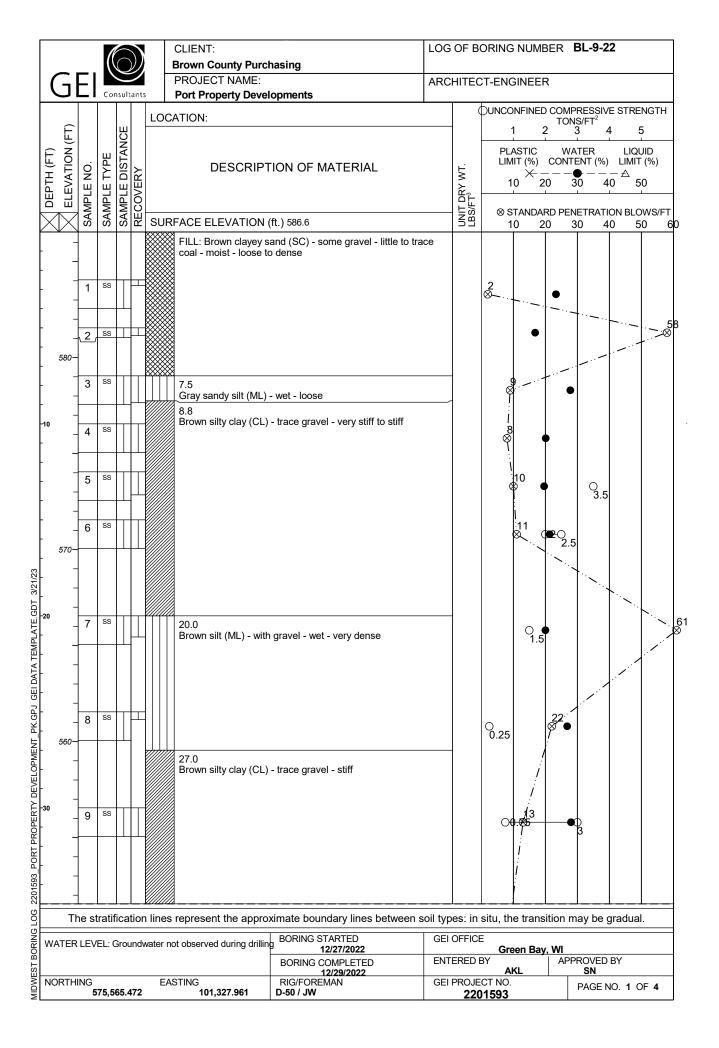
			1		(c)		CLIENT:		LOG	OF BO	JRING NU	JMBE	R B	L-/-22		
		_	. (		ررس	-	Brown County Purch	hasing								
	U	ΕI	Co	nsul	tants	<u> </u>	PROJECT NAME: Port Property Devel	onments	ARC	HIIEC	T-ENGIN	EER				
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				ļ.,,		LOC	CATION:			]	1	2	TONS/	/FT <sup>2</sup> 4	5	
	DEPTH (FT) ELEVATION (FT)			SAMPLE DISTANCE								Ĩ				
	E 8	١.	ļщ	Ι¥							PLAST		TAW ONTEN	ER NT (%)	LIQU	
	E F	9	≝	SIC	≿		DESCRIPT	TION OF MATERIAL		Ň.	>	$\leftarrow$ $-$			- 🛆	
	DEPTH (FT) ELEVATION	19	I Щ	Ш	VEF					چ چ	10	20	30	40	5(	) 
		SAMPLE NO.	SAMPLE TYPE	MP	RECOVERY					TT /	Ø STAN	וחאפר	DENE	TRATIO	N BI O	MQ/ET
	$\times \hspace{-0.1cm} \mid \hspace{-0.1cm} \times$	\{\s\}	SA S	SA	R	SUR	RFACE ELEVATION (	(ft.) 584.6		UNIT DRY WT. LBS/FT³	10	20	30			
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-8	30	1		Ш							100	۷۱. <b>۷</b>	$oxed{\bot}$			
ļ		-					80.0 End of Boring									
		+					Boring advanced to 1	15.0 feet with solid-stem auger								
ſ		-					Boring advanced from drilling fluid	m 15.0 to 80.0 feet with rock bit and								
ŀ							HW casing driven to	15.0 feet								
ŀ	500-						Boring backfilled with	n bentonite chips and bentonite grou	ut mix							
ŀ	500															
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	Т	he s	trati	fica	tior	lines	represent the approx	ximate boundary lines between s	soil tvr	es: in	situ. the tr	ansiti	on ma	v be ar	adual	
NG-F								BORING STARTED		OFFICE				, - 3.		
30RI	WATER	R LEV	/EL:	Gro	und	water o	bserved at 2.0 ft BCI	11/14/2022			Green	Bay, \				
STE								BORING COMPLETED 11/15/2022	ENT	ERED E	BY AKL			OVED B SN	Υ	
MIDWEST BORING LOG	NORTH					EA	STING	RIG/FOREMAN	GEI	PROJE	CT NO.			AGE NO	). <b>3</b> O	F 3
₹		576,612.815 EASTING 101,614.220					101,614.220	D-50 / JW		220	1593					

			(		)		CLIENT: Brown County Purc	hasina	LOG	OF B	ORING NUMB	ER <b>BL</b>	-8-22	
1		FI			ע	H	PROJECT NAME:	nasing	ARC	HITEC	T-ENGINEER			
_	<u>_</u>	ᄓ	Co	nsult T	ants		Port Property Deve	lopments			DI INICONEINIED	0014005	2011/15 0	TDENOTU
	$\overline{}$					LOC	CATION:				DUNCONFINED  1 2	TONS/F	SSIVE S	
_	ELEVATION (FT)			SAMPLE DISTANCE							i			5
F)	Ö		'n	STA			DESCRIP	ΓΙΟΝ OF MATERIAL		ا ن	PLASTIC LIMIT (%)	WATER CONTENT	≺ `(%) L	LIQUID .IMIT (%)
<b>DEPTH (FT)</b>	VAT	Ž	ĭ		ERY		DEGORII	HON OF WATERIAL		M ≻	10 × - 20	_ <b>- - - -</b> 30	40	<u>^</u> 50
삠		SAMPLE NO.	SAMPLE TYPE	<b>IPLI</b>	RECOVERY					r DR				1
$\times$	X	SAN	SAN	SAN	RE	SUF	RFACE ELEVATION	(ft.) 584.0		UNIT DRY WT. LBS/FT³	⊗STANDAR 10 20		RATION 40	BLOWS/FT
	<u>v                                     </u>						Fill: Dark brown clay	with sand/gravel/rubble (CL)						
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	580-	<u> </u>									• 🔎			
	_													
<u> </u>	<u> </u>	2	SS				5.0 Gray to black sandy	silt (ML) with gravel - trace organ	nice - wet		₩ •			
	_						- medium dense to k	silt (ML) with gravel - trace orgar pose	iics - wet					
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_	_											•		
-10	-	L												
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_	570-										<b>4</b> 0.75			
-	-	6	SS				15.0			-				
-	-						Brown silty clay (CL)	- trace fine gravel - firm to soft			5 1 0.75	•		
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WA	ATER	LEV	EL: (	Grou	ındv	vater c	observed at 5.8 ft BCI	BORING STARTED 11/28/2022	GEI	OFFICE	Green Bay,	wı		
								BORING COMPLETED	ENT	ERED E		APPRO' S		
NC	RTH		76.0	04	100	EA	ASTING	11/29/2022 RIG/FOREMAN	GEI	PROJE	CT NO.			1 OF 4
ı		5	76,9	v1.4	•OQ		101,692.036	D-50 / JW	1	220	1593	1		

							CLIENT:		LOG	OF B	ORING N	NUMB	ER E	3L-8-2	2	
		_			<b>ر</b> لا		Brown County Purcl	hasing								
	( ¬	H	Co	o cul	tants		PROJECT NAME:	onmonto	ARC	CHITEC	T-ENGI	NEER				
H			T C0	lisui	lants		Port Property Devel	opments		Τ (	DUNCON	FINED	COMP	RESSIVI	F STRFI	NGTH
	_			ļ.,,			ATION:			- □			TONS	S/FT <sup>2</sup>		
	DEP I II (F.I.) ELEVATION (FT)										1	2	3	3 4	. 5	)
lí	<u> </u>		ш	M							PLAS	TIC	NA.	TER	LIQU	JID (0/)
		Š.	}	<u> S</u>	≿		DESCRIPT	TION OF MATERIAL		<u></u>	LIMIT	(%) \ <del>X</del> -		:NI (%) 	LIMIT — ≰	
Ē	DEFIN (FI) ELEVATION	Щ	[	Щ	Æ					<u></u>	10	20	) 3	0 4	0 5	0
		틸	릴	<u>I</u>	Ó					1 P. F.						
	$\sqrt{X}$	SAMPLE NO	SAMPLE TYPE	SAI	RECOVERY	SUR	FACE ELEVATION (	(ft.) 584.0		UNIT DRY WT. LBS/FT³	⊗S17	andar 20			ON BLO 0 50	
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	_	13	ST				Brown silty clay (CL)	- trace gravel - very stiff			``.	、		\		
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PLATE.GDT 3/21/23	-	14	SS	H	H								\ 25			
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2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ_GEI DATA TEM	-	-														
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	Т	he s	trati	fica	tior	lines	represent the approx	ximate boundary lines between	soil typ	pes: in	situ, the	transit	ion m	ay be g	gradual	
MIDWEST BORING LOG								BORING STARTED		OFFICE						
MS v	VAIER	( LEV	'EL: (	roاد	undv	water ol	oserved at 5.8 ft BCI	11/28/2022			Gree	n Bay,		201/55	DV	
EST								BORING COMPLETED 11/29/2022	⊢EN	TERED I	3Y AKL		APPI	ROVED <b>SN</b>	<b>Б</b> Ү	
MO	IORTH		76 ^	Ω4	100	EA	STING	RIG/FOREMAN	GEI	PROJE	CT NO.				O. 2 O	F 4
Σ			576,9	UI.	+OŎ		101,692.036	D-50 / JW		220	)1593					

		Brown Count	CLIENT:		LOG	OF BO	ORING NUMBI	ER <b>BL-8-2</b>	22				
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1	ار	ᄓ	Cor	nsul	tants	s	Port Property Devel	lopments	ARC	HITEC	T-ENGINEER		
	_					LOC	CATION:	i pinonio			OUNCONFINED (	TONS/FT <sup>2</sup>	
ОЕРТН (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	AMPLE DISTANCE	RECOVERY			ΓΙΟΝ OF MATERIAL		UNIT DRY WT. LBS/FT³	10 × - 20	3 WATER CONTENT (%) 	0 50 ON BLOWS/FT
$\bowtie$	X			Ś	2	SUF	RFACE ELEVATION	(ft.) 584.0		59	10 20	30 4	0 50 6
	- - 510- - -	18	SS				70.0 Brown silty clay (CL)	- trace gravel firm to soft			111   111	•	
- - -80 - - -	-	19	ss								/ / WOH 0.5	•	
-	500— - - - -	20	20 ss						WOH \$\infty\$0.5 0.25	•			
GEI DATA TEMPLATE. GDT 3/21/23	- - - - 490-	21	SS								WOH 0.75	•	
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEM	-	22	SS								WOH 0.5	•	
PORT PROPERTY	-	23	SS				100.0 Reddish brown to gra	ay silty clay (CL) - firm to stiff				•	
1593	480-												
	T.	ne et	tratif	ice	tion	lines	s represent the appro	vimate houndary lines hetwo	en soil tur	nes: in (	situ the transit	ion may be	gradual
	The stratification lines represent the appr							BORING STARTED		OFFICE		ion may be	grauuai.
MIDWEST BORING LOG	TER	LEV	EL: (	Grou	und\	water o	observed at 5.8 ft BCI	11/28/2022 BORING COMPLETED		TERED E	Green Bay,	APPROVED	BY
NOI WES	RTHI	ING				F	ASTING	11/29/2022 RIG/FOREMAN	GFI	PROJE	AKL CT NO.	SN	10. 2.05 :
			76,9	01.4	488		101,692.036	D-50 / JW	55		1593	PAGE	NO. 3 OF 4

				1		CLIENT:		LOG	OF B	ORING	NUME	BER I	BL-8-2	22	
		(	$\bigcirc$			Brown County Purcl	hasing								
(¬	H		nsult	200		PROJECT NAME:	lanmanta	ARC	HITEC	T-ENG	INEEF	3			
$\vdash$		C01	isuit	ants	•	Port Property Devel	iopments			DUNCO	VEINED	COMP	RESSIV	/F STRE	NGTH
					LOC	ATION:			↓ `	1		TON	S/FT <sup>2</sup>		
DEPTH (FT) ELEVATION (FT)			SAMPLE DISTANCE							i			1	1	5
E S		씱	ITAI			DECODID	FION OF MATERIAL				STIC T (%)		NTER ENT (%)	LIQI LIMIT (	
H F	2	Σ	음	Z		DESCRIPT	ΓΙΟΝ OF MATERIAL		W		$\times$ -		<b>)</b> – –	$-\Delta$	
DEPTH (FT) ELEVATION	닏	厂	기	X					‱"	10	) 2	0 3	5U 4	10 5	0
	SAMPLE NO.	SAMPLE TYPE	₹ F	RECOVERY					UNIT DRY WT. LBS/FT³	   ⊗ S1	TANDAF	RD PEN	IETRAT	ION BLC	WS/FT
XX	<b>Y</b>		Ś	2	SUR	FACE ELEVATION (	(ft.) 584.0		59	10	) 2	0 3	30 4	10 5	0 6
	24	SS								5	2	•			
				Н							1				
	]									!					
ļ <sup>-</sup>	1									<u>i</u>					
110	25	SS	П	П						2	O4 05				
·				Ш						0.25	<b>⊖1.25</b>	1	•		
-	+									Ì	· 🔨				
-	+										Ì	`			
- 470-	-											٠.	<u>ا</u> ر		
	_		ļ.,										`.	<b>\</b> .	E0/0.0
	26	SS		Ш		115.7			-		1.5			7	50/0.3
							SM) - some gravel - wet - very o	lense			1.5				
-	1													j	
-120	27	SS	П	П							_			أيا	19
-	-			Ш							•			08	5 tsf
	+					122.5									
- 460-	-					Refusal at 122.5 feet	t. Drilled 2.0 feet in to confirm.								
					Y//XY/	124.5									
						End of Boring	12.5 feet with solid-stem auger								
						Boring advanced from	m 12.5 to 124.5 feet with rock bi	t and							
						drilling fluid HW casing driven to	15.0 feet								
							n 3/8" chipped bentonite								
[															
-130	1														
<u> </u>	1														
-	1														
-	1														
- 450-	+														
ļ	-														
-	-														
ļ.,	4														
	1														
<u>'</u>															
Т	he s	tratif	ica	tion	lines	represent the approx	ximate boundary lines betwee	en soil tyr	oes: in	situ, the	e trans	ition m	ay be	gradua	l.
						bserved at 5.8 ft BCl	BORING STARTED		OFFICE						
WAIE	\ L⊏V	LL. (	بال اد	ıı ıUV	vatei Ol	Decrete at 0.0 it DOI	11/28/2022 BORING COMPLETED		TERED E	Gre	en Bay		ROVED	BY	
NODT:	IINIO					CTING	11/29/2022			AK	(L	'"'	SN		
NORTH	ORTHING 576,901.488					STING <b>101.692.036</b>	RIG/FOREMAN D-50 / JW	GEI	PROJE	CT NO.			PAGE N	NO. 4 C	)F 4



				1		1		CLIENT:		LOG	OF B	ORING	NUM	IBER	BL-	9-22		
		_	<b>—</b> i					Brown County Purch PROJECT NAME:	hasing	450	LUTEO	T FNG						
	(	J	ᄓ	Co	nsul:	tants		Port Property Devel	lopments	ARC	HIIEC	T-ENG	SINEE	:R				
İ							100			·		DUNCO	NFINE	D CO	MPRES	SSIVE	STREN	IGTH
		F			Щ		LOC	ATION:			-	,	1	2 To	ONS/F	Γ <sup>2</sup> 4	5	
	_	ELEVATION (FT)			AN							PLA	ASTIC	<u> </u>	WATER	— ₹	LIQU	ID
	Ē	은	o.	YPE	IST,	>		DESCRIPT	ΓΙΟΝ OF MATERIAL		F.		IT (%)		NTENT		LIMIT (	
	<b>DEPTH (FT)</b>	ΞĄ	Z	ĒΤ	ED.	ÆR					\ \ \	1	0 ×	20	30	40	± 50	)
	DE		SAMPLE NO.	SAMPLE TYPE	MPL	RECOVERY					UNIT DRY WT. LBS/FT³	80	TAND/	, DD D		DATIO	I DI O	NO/ET
ı	X	X	SA	SA	SA	묎	SUR	FACE ELEVATION (	(ft.) 586.6		LBS	1		20	ENETF 30	40	50	
ı		-	10	ST								!						
ı	•	550-	-									!			β			
ı	-	_										ļ ļ						
ı	-	_	-									į						
İ	-	_	1									j						
ı	-40	_	11	SS				40.0				5		١.				
ı	•	_			Ш	_		Brown silty clay (CL)	- trace gravel - firm to soft				75	`				
l	-	_	1									į						
ı	-	_										į						
ł	-	_										i						
ł	-	\	ST-	<b>∜</b> ANE	=							i						
ŀ	-	540-						Vane Shear	r Test with vane tip at 45.5 feet 75 psf Remolded S <sub>u</sub> = 675 psf			i						
ŀ	-	540						reak S <sub>u</sub> = 1,0	75 psi Remoided 3 <sub>u</sub> - 675 psi			i						
ł	-											:						
ŀ	-	_										:						
	-50	_	12	SS	+							! WOH						
	-	-	'2	-							1 6	<0.25 t	sf			•		
	-	-										0.20						
1/23	-	-																
ATE.GDT 3/21/23	-	-	1															
GD	_	`	ST-	<b>Ω</b> ΑΝΕ														
ATE		_	101-					Vane Shear	r Test with vane tip at 55.5 feet									
EMPI	_	530-	1						75 psf Remolded S <sub>u</sub> = 625 psf									
TAT	_	-	1															
M M		-	1															
ر ا	-en	-	L															
λ. G	-60	-	13	ST	$\prod$	$\prod$												
Ξ		-	L			Н							1.	5				
PME		-																
VEL)	-	-	-															
빍	-	-																
ZERT	-	_	/ST-	<b>3</b> ANE					<b>.</b>									
780	-	520-	-						r Test with vane tip at 65.5 feet Peak S <sub>u</sub> = >2,025 psf									
SRT	-	_	-						- · ·									
33_P(	-	_	-															
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPL	-	_	-															
			he s	trati	fica	tion	lines	represent the approx	ximate boundary lines between s	oil tyn	es in	situ th	e tran	sition	mav	be ar	adual	
NGL									PODING STARTED		OFFICE		o u aii	5,6101	. may	JU GI	auuai.	
BORI	WA	TER	LEV	EL: (	Grou	undv	vater n	ot observed during drillin	9 12/27/2022			Gre	en Ba			/ED E	./	
EST									BORING COMPLETED 12/29/2022		ERED E	Al	ΚL	A	PPRO'		Y	
MIDWEST BORING LOG	NO	RTH		75,5	65.4	<b>472</b>	EA	STING <b>101,327.961</b>	RIG/FOREMAN D-50 / JW	GEI	PROJE 220	CT NO. 1593			PAG	GE NO	. <b>2</b> OF	- 4

		R				CLIENT:	haataa	LOG	OF B	ORING NUME	BER <b>BI</b>	9-22	
		(		الا		Brown County Purcl PROJECT NAME:	hasing	APC	`UITE	CT-ENGINEER	<b>)</b>		
U	ᆸ	Cor	nsult	ants		Port Property Devel	lopments	ARC	)	SI-ENGINEER	`		
					LOC	ATION:				OUNCONFINED	COMPRI		ENGTH
l E			빙							1 2	2 3	4	5
DEPTH (FT) ELEVATION (FT)		ш	SAMPLE DISTANCE							PLASTIC (%)	WATE	ER LIQ	UID
H H	<u>8</u>	ΙΥΡ	SIC	≿		DESCRIPT	TION OF MATERIAL		Ž.	×-		IT (%) LIMI 	
DEPTH (FT) ELEVATION	<u> </u>	Щ.	Щ	VEF					\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	10 2	0 30	40 5	50
	SAMPLE NO.	SAMPLE TYPE	MP	RECOVERY					UNIT DRY WT. LBS/FT <sup>3</sup>	⊗ STANDA	RD PENE	TRATION BLO	OWS/FT
$\times \!\! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! $	<del>-</del>		S)	2	SUR	FACE ELEVATION (	(ft.) 586.6		59	10 2	0 30	40 5	50 6
	14	SS				70.0 Reddish-brown silty o	clay (CH) - trace gravel - firm to s	soft		○ <del>0</del> 25 0.75	•	,	
510-	/ST-	<b>X</b> IANE				Vane Sheal I	r Test with vane tip at 75.5 feet Peak S <sub>u</sub> = >2,000 psf						
	15 //ST-	SS S				Vane Sheal	r Test with vane tip at 85.5 feet Peak S <sub>u</sub> = >2,050 psf			.6 .6 .0.25     	•		
-90 -    	16									0.5 tsf			
	17	SS				95.0 Gray clayey sand (S0	C) - trace gravel - wet - medium o	dense to		115			
490- -	H		$\vdash$			very dense					\.		
-  -	1										`	<u>,  </u>	
	1												
- -100	<u> </u>			<u> </u>								\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	50/0.4
-  -	18	SS	Ш	Ш		Note: Hard drilling fro	om 100.0 to 105.0 feet			•			\$
-  -	1												j
-  -	1												<i>i</i>
-	1												;
	L	L_		<u> </u>							<u> </u>		<u> </u>
Т	he s	tratif	ica	tior	lines	represent the approx	ximate boundary lines between	n soil typ	oes: in	situ, the trans	ition ma	y be gradua	al.
WATER	RLEV	EL: (	Grou	ındv	vater no	ot observed during drillin	BORING STARTED	GEI	OFFIC		14/1		
		`				<b>g</b>	BORING COMPLETED	ENT	ΓERED		APPR	OVED BY	
NORTH	IING				EAS	STING	<b>12/29/2022</b> RIG/FOREMAN	GEI	PROJE	AKL ECT NO.	<u> </u>	SN	OF 4
		75,5	65.4	172	"	101,327.961	D-50 / JW	521		01593	P	AGE NO. 3	∪ <b>⊦4</b>

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		$\mathcal{M}$				CLIENT:		LOC	3 OF B	BORING NUMBER BL-9-22
	<b>—</b> 1				_	Brown County Purcle PROJECT NAME:	hasing	100	NUTE C	OT ENOINEED
U	ᄓ	Cor	nsult	ants		Port Property Devel	lopments	AR(	>HIIE(	CT-ENGINEER
					100	ATION:	•		(	OUNCONFINED COMPRESSIVE STRENGTH
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY			ΓΙΟΝ OF MATERIAL		UNIT DRY WT. LBS/FT³	TONS/FT <sup>2</sup> 1 2 3 4 5  PLASTIC WATER LIQUID LIMIT (%) CONTENT (%) LIMIT (%)  ———————————————————————————————————
_ ш	AMF	AMF	AMF	ECC	OLID	EAGE ELEVATION	/ft ) 500 0		NIT I	⊗ STANDARD PENETRATION BLOWS/FT
$\bigvee$	ဟ 19	SS	S	$\vdash$	SUR	FACE ELEVATION	(ft.) 586.6		55	10 20 30 40 50 60
						106.0 Brown silty clay (CL)	- some gravel - stiff to very stif	F		00.5
_	20	SS								075 02
-						112.0 Gray clayey sand (S0	C) - with gravel - wet - very den	se		
-	21	SS		Т						• 0
470— —	-									4.25
- - 0		-		_						50/0.4
_	22	SS								• +4 5 tsf
- -						Refusal at 125.3 feel	t, dolomite bedrock			50/0.2
-	23	SS			<u> </u>	125.3	<u>,                                      </u>			
460—  -  0  -  -  0  -  -  -  -  -  -  -  -						Boring advanced from drilling fluid HW casing driven to	10.0 feet with solid-stem auger m 10.0 to 127.3 feet with rock b 8.0 feet h 3/8" chipped bentonite and be			
450— —										
	ne st	ratif	ica	tion	lines	represent the appro	ximate boundary lines betwe	en soil ty	pes: in	situ, the transition may be gradual.
						ot observed during drillin	PODING STARTED	GE	OFFICE	E Green Bay, WI
NORTH		75,5	65.4	72	EA	STING 101,327.961	12/29/2022 RIG/FOREMAN D-50 / JW	GE		ECT NO. PAGE NO. 4 OF 4

			R		)		CLIENT:		LOG	OF B	ORING NUMBE	R <b>BL</b> -	10-22	
1	_	ΓI	(		ע	-	PROJECT NAME:	nasing	ARC	HITEC	T-ENGINEER			
$\vdash$	J	<u> </u>	Cor	nsult	ants		Port Property Deve	lopments		1 2	DI INIOONIEINIED C	ONADDEO	ON /F OTF	SENIOTU
	$\overline{}$					LOC	CATION:				DUNCONFINED C	TONS/FT	.2	
	F)			S							1 2	3	4	5
<u> </u> E	<u>N</u>		'n	STA			DESCRIPT	ΓΙΟΝ OF MATERIAL		ا ن	PLASTIC LIMIT (%) C	WATER ONTENT		QUID IIT (%)
<b>DEPTH (FT</b>	VAT	ž			ER		DEGORII	HON OF WATERIAL		M ≻	10 ×	<b>●</b> -	40 ←	50
当	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY					r DR				
$\boxtimes$	X	SAN	SAI	SAI	RE(	SUF	RFACE ELEVATION	(ft.) 584.9		UNIT DRY WT. LBS/FT <sup>3</sup>	⊗ STANDARD     10 20	PENETR 30	ATION BI 40	_OWS/FT 50 60
	<u>* `</u>	1	SS					- some gravel - little coal - hard to	very		8			
	_						stiff						4	-4.5 tsf
	_	2	SS	Н	Н						15			
	_	Ĺ										2.5	<del></del>	4.5
L	580-										i_			
L	_	3	SS				5.5			1		-○2.5		
ļ	-							It (ML) - wet - medium dense to loc	se		/1.5			
-	-	4	SS	П	П						<b>6</b> ○			
-	-				H						1.5			
-10	-	_	-00	<u> </u>	H									
-	-	5	SS											
ŀ	-										1.3			
-	-	6	SS				12.5							
ŀ	-						Light reddish brown to moist - firm to stiff	to brown silty clay (CL) - trace grav	el -					
ŀ	570-	7	SS											
ŀ	-	ļ ′									$\mid  \stackrel{\P}{\P}_{\cdot \cdot}  \stackrel{\Phi}{\P}$	2.5		
ŀ	-													
ŀ	-													
-	-											\`·.	<u>.</u>	
-20	-	8	SS	П	П								1	16
ŀ	-						20.7	int down				•	>	)
ŀ	-						Brown silt (ML) - moi	st - derise						
ŀ	-											/1		
ŀ	560-										/			
Ī	_	9	SS				25.0					•		
1	_						Brown silty clay (CL)	- trace gravei - stiff						
	_													
	_													
-30	7	ST-	4VANIT											
"	-	31-	YAINE				Vane Shea	r Test with vane tip at 30.5 feet						
	_						Peak S <sub>u</sub> = 1,8	50 psf Remolded S <sub>u</sub> = 600 psf						
-	-													
<u> </u>	-													
_		L_	<u> </u>	_	L.									
	TI	ne s	ratif	ica	tior	lines	s represent the appro	ximate boundary lines between	soil typ	oes: in	situ, the transiti	on may l	oe gradu	ıal.
WA	TER	LEV	EL:					BORING STARTED 12/7/2022	GEI	OFFICE	Green Bay, V	ΛΙ		
								BORING COMPLETED	ENT	ERED E		APPROV		
NO	RTH		76.0	64 -	)F^	EA	ASTING 101 633 175	12/15/2022 RIG/FOREMAN	GEI	PROJE	CT NO.	PAG	ENO. 1	OF <b>5</b>
1		5	76,0	υI.4	೭೮১		101,633.175	D-50 / JW	1	220	1593	- 1		

		(		$\mathcal{I}$		CLIENT: Brown County Purc	hasina	LOG	OF BO	ORING	NUM	BER I	BL-10-	22	
G	FI				ŀ	PROJECT NAME:	<del>-</del>	ARC	CHITEC	T-ENC	SINEE	R			
<u> </u>		Co	nsult	ants		Port Property Deve	lopments			DUNCO	NFINE	O COMP	RESSIV	E STRE	NGTH
F.			兴		LOC	ATION:			]			TON	S/FT <sup>2</sup>		
DEPTH (FT) ELEVATION (FT)		Ш	ANG								ASTIC		TER	LIQL	
H (F ATIC	Š.	TYP	DIST	ΚY		DESCRIPT	ΓΙΟΝ OF MATERIAL		WT.		×	(	ENT (%)	$-\Delta$	
DEPTH (FT) ELEVATION	기 문	드	기	OVE					DRY T³	1	0 2	20 3	80 4	0 5	0
	SAMPLE NO.	SAM	SAMPLE DISTANCE	RECOVERY	SUF	RFACE ELEVATION	(ft ) 584.9		UNIT DRY WT. LBS/FT³				IETRATI 30 4	ON BLO	
- ·	VST.					Vane Shea	r Test with vane tip at 35.5 feet 25 psf Remolded S <sub>u</sub> = 525 p	: esf		<u>'</u>			70 1		0 0
- ·	10	ST				37.5 Brown silty clay (CL)	- trace gravel - soft								
-40 \ 	VST-	- <b>S</b> ane				Vane Shea Peak S <sub>u</sub> = 1,3	r Test with vane tip at 40.5 feet 25 psf Remolded S <sub>u</sub> = 375 p	: esf							
- 540- - 540-	111	ST				Note: No recovery									
-50 - 	12	SS				51.0 Brown silt to clayey s	silt (ML) - wet - dense					(	33 ⊗ 3 \ 1	•	
- ·						Note: Gravel while d	rilling from 53.0 to 55.0 feet						<u> </u>		
_ 530- -	13	SS				55.0 Brown silty clay (CL)	- some coarse gravel - moist - \	ery stiff				• (	; 3 ⊗ 3 .		
- -															
-60 -	14	SS										•	₿1	O +4	.5 tsf
- -											.:	/			
_ 520- _	15	SS									14 ⊗	2.5	;		
- ·	-														
т	he s	trati	fice:	tion	lines	represent the appro	ximate boundary lines betwee	en soil tw	nes in	situ th	L: e trans	L	l	l	L
							BORING STARTED		OFFICE		Jaarie		, 50 (	<sub>2</sub> . aaaa	•
WATER	₹ LE\	EL:					12/7/2022 BORING COMPLETED		TERED E	Gre 3Y	en Ba	<b>/, WI</b>   APP	ROVED	BY	
NORTH	IING				EA	STING	<b>12/15/2022</b> RIG/FOREMAN	GEI	I PROJE	CT NO.	KL	1	SN PAGE N		)F 5
ĺ		76,0	61.2	253		101,633.175	D-50 / JW			1593			, AGE I	· · · · ·	. 5

								CLIENT:		LOG	OF B	ORING	NUME	BER	BL-1	0-22	
		· _	- 1					Brown County Purcl PROJECT NAME:	hasing	ADC	·LUTE	T ENC					
	U		<u> </u>	Cor	sult	ants		Port Property Devel	opments	ARC	HIIEC	CT-ENG	INEE	Κ			
							· ·	ATION:	•		(	DUNCO	NFINED	COM	PRES	SIVE ST	RENGTH
	Æ	-			兴		LOCA	ATION.				1	1 2	TOI 2	NS/FT <sup>2</sup>	4	5
	BELLINION (ET)				AN							PLA	ASTIC	W.	ATER	L	QUID
1		2	o l	YPE	ST,	>		DESCRIPT	TON OF MATERIAL		Ŀ		IT (%)	CONT	TENT (	%) LIN	ЛТ (%)
DEPTH (FT)		۲ ۲	Z Щ	Щ	ED	ER					≽	1	$0 \times \bar{2}$	20	30	∆	50
=	7 7		SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY					류		TANDA	DD DE	VETD	NTION D	LOMOTE
$\triangleright$	$\bigcirc$	7	SAI	SAI	SAI	R	SUR	FACE ELEVATION (	(ft.) 584.9		UNIT DRY WT. LBS/FT <sup>3</sup>	1	0 2		NETR/ 30	40 40	LOWS/FT 50 6
		1	16	SS	П								0 <u>2</u>  12  8  1				
ı		7			Ш								ĩ		Ĭ		
ŀ		1															
ŀ		1															
ŀ		1															
ŀ	510		17	SS	Н	П											
ŀ		+												O 2.	5		
ŀ		+													1		
-		+															
-		+															
-80		VS	ST-	<b>\$</b> ANE													
-		4						Vane Shear	r Test with vane tip at 80.5 feet								
ļ		4						Peak S <sub>u</sub> = 1,9	25 psf Remolded S <sub>u</sub> = 550 psf								
		4															
		4															
	500	2															
ſ	000		18	SS				85.0				<b>4</b> <b>0</b> .25					
Ī		F						Brown silty clay (CL)	- trace gravel - soft to very soft			0.25					
g -		1										! !					
3/21/2		1										ļ .					
5		1										ļ!					
의 H90		7	19	SS	П							WOH ○ ○ ○ ○	75				
秥		1			Ш							0.25	1.75				
타		1															
DAT.		1															
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23		+															
- 6	490		20	SS	$\vdash$	$\vdash$						WQH	l .				
扑		-[			Ц			Note: 1.0 inch thick g	gray silty clay varves			WOH 0.5	<b>)1</b>			•	
MEN.		f										[: 					
하		+										<u>;</u>					
		+															
<u>}</u> 10	0	+.	21	ST	<del> </del>	$\vdash$											
8		4	۱ ۷	-1													
띪		+			Ш	H											
P.		+															
1593		4										!					
220		1			<u>_</u>	<u>L</u> .	<u></u> _	<u> </u>			<u></u>	<u> </u>	L	<u>L_</u>	<u></u>		_ <u></u> _
The stratification lines represent the app  WATER LEVEL:  WATER LEVEL:  PARTITION OF THE PROPERTY OF THE PROPE						tior	lines	represent the approx	ximate boundary lines between s	oil typ	es: in	situ, th	e trans	sition r	nay b	e gradı	ual.
N NG	/ATE	RI	EV	EL:					BORING STARTED	GEI	OFFICE		_	,			
[ BO									12/7/2022 BORING COMPLETED	ENT	ERED I		en Bay		PROVI	ED BY	
NES.	OPT	НІР	JG.				ΕΔG	STING	12/15/2022 RIG/FOREMAN			CT NO.	KL	1	SN		
ΔM L	NORTHING EASTING 576,061.253					253	LA.	101,633.175	D-50 / JW	GLI		)1593			PAG	E NO. 3	OF <b>5</b>

							CLIENT:		LOC	OF E	BORING	NUMBER	BL-1	0-22		
				$\bigcirc$			Brown County Purcl	hasing								
(	J	ΗI	Cov	nsult	ante		PROJECT NAME: Port Property Devel	lonmonts	ARC	CHITE	CT-ENG	INEER				
-				15010				юртень			DUNCON	NFINED CC	MPRESS	SIVE STRE	NGTH	
	Ê			ш		LOC	CATION:				1	T 2	ONS/FT <sup>2</sup>		5	
	ELEVATION (FT)			SAMPLE DISTANCE							<u> </u>	<u> </u>	WATER	LIQ	-	
<b>DEPTH (FT)</b>	. <u>É</u>	<u>.</u>	/PE	STA			DESCRIPT	TION OF MATERIAL		<u>.</u> .	1 18 41	T (%) CO		%) LIMIT		
ΙĔ	\ \	ž			ER		BEGORIII I	TOTA OF WINTERTINE		×	10	$\times$	<b>-</b> ● -		50	
一当	E	l l	PLE	PLE	Š					L'R'F					-	
$\overline{\nabla}$	$\overline{\nabla}$	SAMPLE NO.	SAMPLE TYPE	SAN	REC	SUR	RFACE ELEVATION (	(ft.) 584.9		UNIT DRY WT. LBS/FT3	⊗ ST	ANDARD F	PENETRA 30		OWS/FT 50 6	0
	<u> </u>	22	SS	Ť			105.0	()			6	, <u>20</u>		1		O
ł	-							to gray silty clay (CL) - trace grave	el -		0.25 0.25	·	•			
+	-	1					moist - mm					· †··.	<u> </u>			
+	-	1											\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
ŀ	-														ļ	
110	-	23	SS	$\vdash$	$\Box$		110.0			-					```	95
+	-	-			Ш		Gray silty clay (CL) w	vith weathered rock			•			Φ.		Ø
+	-															/
-	-	1														
-	-															
+	470-	24	SS	$\vdash$			1450			4					50/0.2	
-	-	24	00				115.0 Weathered rock (GC	;) - trace clay - wet - extremely der	nse		•	1.5				
-	-	-													į	
-	-	-													i	
1	-	-													i	
120	-														:	
	_	25	SS				120.0 Varved gray and redu	dish brown silty clay (CL) - hard				•		ф <del></del> 0+	:53 4.6⊗tsf	
	_				Ш		varved gray and red	distribition silty day (OL) - hard						4	\ \ <u>`</u> \	
23	_														`.	
3/21,	_															`\
ATE.GDT 3/21/23	460-															``.
A F	_	26	SS									<b>Ф</b> О2	2.25	<del></del>	- 4-E	`∴73/0.7 ⊗
	_						Note: Practical auger	r refusal on apparent bedrock		$\overline{A}$				+4	.5 tsf	
	_					-	126.5 Gray to tan fine grain	ned dolomite (DO) - trace interbed	hah							
<u> </u>		Run	CORE	П		//	bluish gray shale - st	rong - fresh - slightly fractured - ve	ery							
5		1		П		-	thinly bedded - micro vugs	ocrystalline to fine grained - trace f	illed							
130 2				П	П		Run Depth R	ecovery RQD Fracture <u>%                                   </u>								
-	_			П	П		1 128.0-133.0	98.1 97.8 0-1 / ft.								
ZZO1583 FOR PROPERTY DEVELOPMENT PRIGRA GELDATA LEMPT	-	1					1									
진 진	-	Run	CORE	H	H	//	Gray to tan fine grain	ned dolomite (DO) - trace interbed	ded							
	-	2				//	🚽 bluish gray shale - st	rong - fresh - slightly fractured - vecrystalline to fine grained - trace f	ery							
-	450-	1		П		//	vugs		ilicu							
	-	1		П	П		_ <u>#ft</u>	ecovery RQD Fracture <u>%</u> <u>Frequency</u>								
計	-	1				///	1 133.0-138.0	100 100 0-1 / ft.								
2 2	-	$\vdash$					138.0			+			+			
128	-	1					End of Boring	10.0 fact with call of the con-								
		<u> </u>	<u>L_</u>	<u></u>			<del>'</del>	10.0 feet with solid-stem auger		<u> </u>	<u> </u>				<u></u>	
Ŏ U	TI	he st	tratif	ica	tion	lines	represent the approx	ximate boundary lines between	soil ty	pes: in	situ, the	transitio	n may b	e gradua	ıl	
MIDWEST BORING LOG	ATER	LEV	EL:					BORING STARTED 12/7/2022	GE	OFFIC		en Bay, W	· · · · · · · · · · · · · · · · · · ·			
STBC								BORING COMPLETED	EN <sup>-</sup>	TERED	BY		PPROVE	ED BY		
NO NO	DRTH					EA	STING	12/15/2022 RIG/FOREMAN	GE		AK ECT NO.	-	PAGI	E NO. <b>4</b> (	OF 5	
Ī		5	76,0	61.2	53		101,633.175	D-50 / JW		22	01593			+ (	•	

			(		7		CLIENT:		LOG	OF B	ORING	NUME	BER	BL-	10-2	2	
	$\subset$				ע	-	PROJECT NAME:	hasing	ARC	HITEC	T-ENC	SINEER	₹				
_	<u>U</u>	L	Col	nsult	ants		Port Property Devel	opments									
	_					LO	CATION:					NFINED	CON	MPRES NS/FT 3	SIVE		
	DEPTH (FT) ELEVATION (FT)			SAMPLE DISTANCE								1 2				5	
Į	( <u>N</u>		F	STA			DESCRIPT	TION OF MATERIAL				ASTIC IIT (%)		VATER ITENT		LIQU LIMIT	
ļ	- H	N	Ţ	ä	ERY		DESCRIFT	ION OF WATERIAL		Y WI	1	$_{0}\times_{\bar{2}}$	0	- <b>●</b> -	40	- <u>≁</u> 50	0
	DEPTH (FT) ELEVATION	SAMPLE NO.	SAMPLE TYPE	<b>IPL</b>	RECOVERY					r DR'	_						
	$\langle \rangle$	SA	SAI	SAI	RE(	SUI	RFACE ELEVATION (	(ft.) 584.9		UNIT DRY WT. LBS/FT³		TANDAI	RD PE :0	ENETR 30	ATIO 40		
Y DEVELOPMENT PK.GPJ GEI DATA TEMPLATE	440-						Boring advanced fror drilling fluid HW casing driven to Boring advanced fror coring wireline	m 10.0 to 138.0 feet with rock bit an 128.0 feet m 128.0 to 138.0 feet with diamond a bentonite chips (1 bag) and benton						30		55	<u>o 6</u>
2201593	-																
F06	T	he s	l tratif	ica	tior	l line	s represent the approx	ximate boundary lines between s	soil typ	es: in	situ, th	e trans	ition	may l	pe gr	adual	=
ÿΕ	VATER	R LEV	ÆL:					BORING STARTED	GEI	OFFICE		P-	, \A"				
T BO		_•	-					12/7/2022 BORING COMPLETED	ENT	ERED E	3Y	en Bay	<u>', <b>VVI</b></u>   AF	PPROV		Y	
JWES 1	NORTH					E	ASTING	<b>12/15/2022</b> RIG/FOREMAN	GEI	PROJE	CT NO.	KL		PAG		). <b>5</b> O	F 5
≣			576,0	61.2	253		101,633.175	D-50 / JW		220	1593			. /		. • •	. •

		R				CLIENT:		LO	G OF B	ORING	NUME	BER	BL-11-	22		
			$\bigcirc$	IJ		Brown County Purc	hasing									1
G	Εl	Cor	nsulta	ants		PROJECT NAME: Port Property Devel	lonments	AR	CHITE	CT-ENC	SINEEF	3				
	T	T		П	•	-	орпень			DUNCO	NFINED	COM	PRESSIV	E STRE	NGTH	
Ē			ш	-	LOC	ATION:					1 2	TON	NS/FT <sup>2</sup>	4 5		
PTH (FT) EVATION (FT)			E DISTANCE										<u> </u>			
	l	씸	3TA			DECODID	TION OF MATERIAL				ASTIC IIT (%)		ATER ENT (%)	LIQU LIMIT		
H ¥	2	∠		집		DESCRIP	TION OF MATERIAL		W		× -		<b>●</b>	-		
	빌	빌	빌	$\mathbb{Z}$					ᇫ	<u>'</u>	0 2	U .	30 4	0 5	U 	ļ
	SAMPLE NO	SAMPLE TYPE	SAMPLE DIS						UNIT DRY WT. LBS/FT <sup>3</sup>	⊗s	TANDAI	RD PEI	NETRATI	ON BLC	WS/FT	
$\times \times$	\gamma	S	S	쮼	SUR	FACE ELEVATION	(ft.) 584.8		59	1	0 2		30 4			0
-	1	SS	$\vdash$	$\dashv$	>>>>	Fill: Sand and gravel	I (SP) with wood - moist - mediu	ım dense	;		,	9				
	] '			Щ	$\ggg$					•	8					
			Ш	$\dashv$							ارز					
	2	SS		$\perp$							<b>9</b> 14					
	-		Ш			3.8					<u>'</u>					
580-		SS	$\sqcup$	+		Fill: Light brown silty	clay (CL) - stiff				ľ					
. <u>T</u> .	3	33			>>>>					\$		•				
	$\vdash$		H	1		6.3				/						
	4	SS	H	$\dashv$		Brownish gray silty fi loose	ine sand (SM) - some organics -	- wet -		3						
	4					1005e				3 ⊗				•		
			Н	+												
10	5	SS	H	$\dashv$						3						
-	ქ ა									3 ⊗			•			
-			Н													
	6	SS	Ш	$\forall$						1  2  ⊗						
				4		13.3				$ $ $\otimes$		•				
			Ш				elay (CL) with organic seams - ve	ery soft								
570-	7	SS	Ш	$\top$						1   2						
-	<b>∀</b> ′									.2 ⊗					•	<b>8</b> 6
			H													
-																
										İ						
20	8	SS	Ш	$\top$		20.0				5   ⊗						
-							- some to trace gravel - firm to	stiff		8	1.5	)2 •				
-										i						
	-															
-	-															
560-										<u> </u> !						
	9	ST		$\top$						PUSH	ED					
									(	*	1.5	)2●				
-			Н	_						[						
-										<u> </u>						
-	-															
-	4									İ						
	1									i						
,	↓ ⊻ST-	<b>V</b> ANE								;						
	]						r Test with vane tip at 31.5 feet 600 psf Remolded S <sub>u</sub> = 550 p									
	1					1 can o <sub>u</sub> – 1,0	Tomorada o <sub>u</sub> – 000 p			!						
-	1															
<u> 550</u> -	<u>↓</u> _	<u>L</u> _				<u></u>			<u></u> _	<u>i_</u>	<u> </u>		<u></u>	<u></u> _	<u></u>	]
Т	he s	tratif	icat	ion	lines	represent the appro	ximate boundary lines between	en soil t	ypes: in	situ, th	e trans	ition n	nay be ເ	gradual		1
							BORING STARTED		EI OFFIC							1
WATER	≺LĒV	EL: (	rouخ	ndw	ater ob	oserved at 6.0 ft BCI	11/15/2022			Gre	en Bay	, WI		D) (		]
							BORING COMPLETED 11/15/2022	EN	NTERED		KL	APF	PROVED SN	BY		
NORTH		76.4	70.0	64	EAS	STING	RIG/FOREMAN	GI	EI PROJE	ECT NO.			PAGE N	10. 1 C	)F 3	
	5	76,4	1U.2	OΊ		101,791.132	D-50 / JW	1	220	11593						1

			1				CLIENT:		LOG	OF B	ORING	S NUMI	BER	BL-11	-22	
	~	_,			ركا		Brown County Purcl	hasing	l							
(	ור	ΗI	Co	neud	tants	,	PROJECT NAME: Port Property Devel	onmonte	ARC	HITEC	T-ENC	SINEE	R			
			Γ	11301	(anti			ориенс			DUNCO	NEINE	COV	//PRESSI	/F STRE	NGTH
	$\overline{}$			ļ.,,			ATION:			] `			TC	NS/FT <sup>2</sup>		
ОЕРТН (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	PLE DISTANCE	RECOVERY		DESCRIPT	TION OF MATERIAL		UNIT DRY WT. LBS/FT³	PL. LIM	ASTIC MIT (%)	2 CON	3 VATER ITENT (%) -	LIQU LIMIT	JID · (%)
	<u></u>	AM	AM	AM	EC	OUD	FACE ELEVATION	(ft ) 504.0		H SK				ENETRAT		
	$\angle$			S	8	SUR	FACE ELEVATION (	(ft.) 584.8		55	1 1	0 2	20	30 4	10 5	0 6
-40 - - - - -		/ST-	2ANE				Vane Shea Peak S <sub>u</sub> = 1,3	r Test with vane tip at 40.5 feet 00 psf Remolded S <sub>u</sub> = 400 psf		Q	PUSH ⊗ 0.5				<b>-</b> △	
T 3/21/23	- \frac{1}{2}	rST-	<b>3</b> ane				Vane Sheal Peak S <sub>u</sub> = 1,3.	r Test with vane tip at 50.5 feet 25 psf Remolded S <sub>u</sub> = 350 psf								
PLATE.	530— V - -	(ST-	<b>4</b> ANE					r Test with vane tip at 55.5 feet 00 psf Remolded S <sub>u</sub> = 375 psf								
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEM	-	/ST-	<b>5</b> ane	Ξ				r Test with vane tip at 60.5 feet Peak S <sub>u</sub> = >2,100 psf								
ÆRT7	520 <del>-</del> -	12	SS	$\dagger$	$\dagger$								19 02			
PRO	_	_		$\vdash$	$\perp$							ĭ/5	[			
ORT	_											/				
93 P											· /	·ľ				
2015											$\mid \not \mid$					
		L_	l	l_ fice	tion	linos	represent the approx	ximate boundary lines between	soil tur	nee: in	citu th	L	ition	may bo	araduc	L
ĭ 	11	10 5	uall	ııod	uUl	68	торгозопі ше аррго.					io ualis	HUUII	пау ве	grauua	
WIDWEST BORING LOG	TER	LEV	EL: (	Grou	und	water o	bserved at 6.0 ft BCI	BORING STARTED 11/15/2022	GEI	OFFICE		een Bay				
STB								BORING COMPLETED	ENT	ERED E	3Y	KL		PROVED <b>SN</b>	BY	
NOF	RTH					EA	STING	11/15/2022 RIG/FOREMAN	GEI	PROJE	CT NO.		-		NO. <b>2</b> C	)F 3
Ĭ			76,4	70.2	261		101,791.132	D-50 / JW			1593			IAGEI	<b>↓</b> ∪. ∠ (	,, J

					CLIENT:		LOG	OF B	ORING	NUME	BER	BL-11	<b>-22</b>		
					Brown County Purc	hasing									
G	Εl	Cor	nsultani	ts	PROJECT NAME: Port Property Deve	lonments	ARC	HITEC	CT-ENC	SINEEF	3				
	$\overline{\Box}$				-	Портисть			DUNCO	NFINED	CON	1PRESSI	VE STF	RENGTH	
Ê			Щ	LO	CATION:			-		1 2	TC	NS/FT <sup>2</sup>	4	5	
( Z			N						PL	ASTIC		 /ATER	1.10	QUID	
(F)	0.	YE	ST/		DESCRIPT	TION OF MATERIAL		⊢		IIT (%)			6) LIN		
DEPTH (FT) ELEVATION (FT)	Z Щ	ΕŢ	ED/	í					1	0 2	0	30	40 △	50	
DEI ELE	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE RECOVERY					T PA						0110/5	_
$\times$	₹ S	SAI	SAI	SU	IRFACE ELEVATION	(ft.) 584.8		UNIT DRY WT. LBS/FT <sup>3</sup>		TANDAF			ном ві 40	-0ws/F 50	60
	13	SS			70.0			6	₩OH 0.5						
-	$\vdash$		Ш	-////	Brown silty clay (CL)	) - very soft		`	0.5						
=															
-															
- 510-															
_ 070	14	SS							WOH . 0.5						<b>●</b> 62.
-	$oxed{oxed}$			-////				`	0.5						02.
-									\ \`·.						
-	45	SS		-////							9				
	15	33		-////	Note: Coarse sand s	seam from 78.5 to 79.2 feet				Ŭ	ĕ				
<del>-</del> 80				7///	80.0										•
-					End of Boring Boring advanced to	12.5 feet with solid-stem au	ger								
-					Boring advanced from	m 15.0 to 80.0 feet with rock	bit and								
-					HW casing driven to	15.0 feet									
- 500					Boring backfilled with	h bentonite chips and bento	nite grout mix								
_ 500-															
-															
-															
-	1														
_															
<del>-9</del> 0															
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480-	•			<u> </u>											
Т	he s	tratif	icatio	n line	es represent the appro	oximate boundary lines be	tween soil typ	oes: in	situ, th	e trans	ition	may be	gradu	ıal.	
WATER	R LEV	EL: (	Ground	lwater	observed at 6.0 ft BCI	BORING STARTED 11/15/2022	GEI	OFFICE		en Bay	Wi				
						BORING COMPLETED	ENT	ERED I	BY	-		PROVE	D BY		
NORTH					EASTING	RIG/FOREMAN	GEI		CT NO.	KL	-	SN PAGE	NO. <b>3</b>	OF 3	1
	5	76.4	70.261		101.791.132	D-50 / JW	1	220	11593					•	1

			R		)		CLIENT: Brown County Purc	haaina	LO	G OF B	ORING NU	IMBER	BL-	12-2	2	
	٦	ΕI					PROJECT NAME:		AR	CHITEC	CT-ENGINE	EER				
	וע	<u> </u>	Coi	nsult	ants		Port Property Devel	lopments		1 ,	HINCONEIN	JED CO	MDDE	SOLVE.	CTDEN	ICTLL
	_					LOC	CATION:			_ \	DUNCONFIN 1	T 2	ONS/F	55IVΕ Γ <sup>2</sup> 4	51 KEN	
	ELEVATION (FT)			NCE							PLASTI		WATER		LIQUI	
ОЕРТН (FT)	Ó	o.	/PE	STA	_		DESCRIPT	TION OF MATERIAL		⊢	LIMIT (9	6) CO	NTENT	(%)	LIMIT (	(%)
HT.	EV∃	Ž Щ	ĒΤ	ED	/ER						10	20	30	40	50	)
a l	ELE	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY					UNIT DRY WT. LBS/FT <sup>3</sup>	⊗ STAN	DARD E	PENETE	ΡΔΤΙΩ	N BL OV	NS/FT
$\bowtie$	$\times$	SA	SA	S	R	SUR	RFACE ELEVATION	(ft.) 584.8		Sä	10	20	30	40		
-	-						Brown silty fine sand	(SM) - moist - medium dense								
-	-															
-	-	1	SS									4				
-	-										/			3.5		
5	80-	2	SS				기 () 1				6					
- ▼											%	2				
-	_	3	SS								1.12					
	_	٥									  ≱ <sup>12</sup>		•			
-10	_															
-	_	4	SS				10.0 Brown silty clay (CL)	- trace gravel - firm to very stiff			🔻 🤄	1.5				
-	-						,	,								
-	-	5	SS								1	4		,		
-	-															
_ 5	70-	6	SS								/					
-				Ш								1.5				
-																
	_										\ :					
-20	_															
-	_	7	SS								0.5		•			
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_ 5	60-	8	ST								i					
-												2.	25			
-																
	_															
-30	_										<u>                                     </u>					
-	_	9	SS				30.0 Brown silty clay (CL)	- trace gravel - soft			/  WOH   0.5   0.5		•			
-	-							· ·			. 0.5					
-	-										;					
-	-															
5	<u>50-</u> Th	L_	L_	I_	tion	lings	represent the appro	ximate boundary lines betwee	n soil t	nee: in	situ the tre	neition	n may	he ar	adual	
_								BORING STARTED		opes. In		ai ioiliUl	illay	ne al	auuai.	
WAT	ER	LEV	EL: (	3rou	ındv	vater o	bserved at 6.3 ft BCI	11/10/2022		ITERED	Green E	<u>Bay, WI</u>	l NPPRO\	/FD P	Y	
NOR	7TU	INC				E^	STING	BORING COMPLETED  11/11/2022  RIG/FOREMAN		I PROJE	AKL		SI	N		
INOR	VIΠ		76,7	40.7	13	⊏A	101,893.117	D-50 / JW	GE		101 NO. 11593		PAG	GE NC	). <b>1</b> OF	- 4

Brown County Purchasing
LOCATION:   DUNCONFINED COMPRESSIVE STRENGTH   1 2 3 4 5 5
1   2   3   3   4   5
DESCRIPTION OF MATERIAL    PASTIC CWATER LIQUID   LIMIT (%) CONTENT (%) LIMIT (%)
10 ss
10 ss
10 ss
10 ss
11 SS WOH
11 SS
11 SS
11 SS
11 S
540 12 ST
12 ST
12 ST
12 ST
33.5 Coarse sand and gravel (SP) - wet - medium dense
13 SS WOH 20.25 tsf 53.5 Coarse sand and gravel (SP) - wet - medium dense
13 SS
13 SS
13 SS
53.5 Coarse sand and gravel (SP) - wet - medium dense
Coarse sand and gravel (SP) - wet - medium dense
Coarse sand and gravel (SP) - wet - medium dense
38 38 38 38 38 38 38 38 38
15 ss   60.2
$\begin{bmatrix} 15 \end{bmatrix}$ SS $\begin{bmatrix} 1 \end{bmatrix}$ 60.2
$\begin{bmatrix} 15 \end{bmatrix}$ SS $\begin{bmatrix} 1 \end{bmatrix}$ 60.2
$\begin{bmatrix} 15 \end{bmatrix}$ SS $\begin{bmatrix} 1 \end{bmatrix}$ 60.2
$\begin{bmatrix} 15 \end{bmatrix}$ SS $\begin{bmatrix} 1 \end{bmatrix}$ 60.2
520 - 16 SS
The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.
WATER LEVEL: Groundwater observed at 6.3 ft BCI BORING STARTED 11/10/2022 Green Bay, WI
BORING COMPLETED ENTERED BY AKL SN
NORTHING EASTING RIG/FOREMAN GEI PROJECT NO. PAGE NO. 2 OF 4  576,740.713 101,893.117 D-50 / JW 2201593

		A				IENT:		LO	G OF B	BORING NUMBER	BL-12-	22
				ركا		own County Purc	hasing					
U	Εl	Cor	nsul	ants		OJECT NAME: ort Property Deve	lopments	AR	RCHITE	CT-ENGINEER		
							iopinento	I		OUNCONFINED COM	MPRESSIVE	E STRENGTH
l F	-		핑		LOCAT	ION:				1 2	3 $4$	5
		ш	Ā							PLASTIC V	VATER	LIQUID
\frac{1}{2} \fra	ġ.	ΥPI	ST	≿		DESCRIPT	ΓΙΟΝ OF MATERIAL	_	F.	LIMIT (%) CON	ITENT (%) 	<b>-</b> ∧
DEPTH (FT) ELEVATION (FT)	SAMPLE NO	SAMPLE TYPE	삗	RECOVERY					UNIT DRY WT. LBS/FT <sup>3</sup>	10 20	30 40	50
	₽	MP	Ą	00					TT D	⊗ STANDARD PI	ENETRATIO	ON BLOWS/FT
$\times$	<u> </u>		ŝ	꼾	SURFA	CE ELEVATION	(ft.) 584.8		59	10 20	30 40	
	17	SS			70 Bi	).0 rown silty clay (CL)	- trace gravel - stiff to so	oft		7/ ⊗ ○ 1.25	•	
	$\vdash$					o o, o, (02)	a a o o g. a r o . · o a . · to o o			1.25		
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	-											
510-	_											
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490-100 TOO TOO TOO TOO TOO TOO TOO TOO TOO T	-											
		<u>L_</u>	<u></u>	<u></u>								
WATER WATER	he s	tratif	ica	tior	lines rep	oresent the appro	ximate boundary lines	between soil ty	ypes: in	situ, the transition	may be g	ıradual.
WATER	R LEV	ÆL: (	Grou	ındı	water obse	rved at 6.3 ft BCI	BORING STARTED 11/10/2022	GI	EI OFFIC	E Green Bay, WI		
<u> </u>							BORING COMPLETED	EN	NTERED		PPROVED SN	BY
NORTH			40 -	740	EASTII		RIG/FOREMAN	GI	EI PROJE	ECT NO.		O. 3 OF 4
Σ	5	76,7	40.7	13		101,893.117	D-50 / JW		22	01593		

							CLIENT:		LOG	OF B	ORING	NUMI	BER	BL-12	-22	
	- <sub>I</sub>	<b>—</b> I					PROJECT NAME:	hasing	ADC	·LUTEC	T-ENG	ואוררו	<u> </u>			
1	J١		Co	nsul	tants	,	Port Property Devel	lopments	ARC	HITEC	, I -EINC	JIINEEI				
						LOC	ATION:				DUNCO	NFINE	COMF	PRESSIN	VE STRE	NGTH
	(FT)			SCE						1		1 :	2	NS/FT <sup>2</sup>	4	5
E	ELEVATION (FT)		뭐	TAN			DECODID	TION OF MATERIAL			PL/ LIM	ASTIC IIT (%)	CONT	ATER ENT (%	LIQ ) LIMI	UID Γ (%)
H H	/ATI	8	T	DIS	Ϋ́		DESCRIPT	TION OF MATERIAL		WT.		×			- <b>-</b> ∠	50
ОЕРТН (FT)	ELE)	PLE	PLE		OVE					P. T.	'				10 0	
	$\ddot{\nabla}$	SAMPLE NO.	SAMPLE TYPE	SAN	RECOVERY	SUR	RFACE ELEVATION	(ft.) 584.8		UNIT DRY WT. LBS/FT <sup>3</sup>					TON BLO	OWS/FT
	$\stackrel{\frown}{}$	24	SS	Ħ	Ī			( )			17					
-110	-	25	SS				110.0 Gray silty clay (CL) -	trace gravel - firm		é	0.205                                     		•			
4	470 <u>—</u>	200	SS				445.0					\ \ \ \	25	:		
-	-	26	00				115.0 Red-brown silty clay	(CL) - little gravel					\. 25 ⊗	'	•	
- 120	- - - -	27	SS		-		120.0 Gray silty fine sand (	(SM) with gravel - wet - extremely d	ense	_		•				50/0.3
	460— _						124.5 Note: Practical augel Dolomite	r refusal at 124.5 feet								
ZZOTSSOS TONI PROFENI I DEVELOFMENI TRANS GEL DATA TEMPLATE, GOLT SYZIZO							Boring advanced from drilling fluid HW casing driven to	7.5 feet with solid-stem auger m 7.5 to 126.5 feet with rock bit and 6.0 feet h bentonite chips and bentonite gro								
1	- 450— - -															
2 -	-															
	_				<u></u>	<u>.</u>				<u> </u>		<u> </u>	<u></u>	<u> </u>	<u> </u>	<u> </u>
	Th	ne st	ratif	ica	tior	lines	represent the appro	oximate boundary lines between				e trans	sition n	nay be	gradua	ll.
WA	TER	LEV	EL: (	Grou	undv	vater o	bserved at 6.3 ft BCI	BORING STARTED 11/10/2022		OFFICE	Gre	en Bay				
3								BORING COMPLETED 11/11/2022		ERED E	Al	KL	API	PROVED SN	) BY	
WIDWEST BOXING FOG	RTHI		76,7	40.7	713	EA	STING <b>101,893.117</b>	RIG/FOREMAN D-50 / JW	GEI	PROJE 220	CT NO. 1593			PAGE	NO. 4	OF 4

			A		1		CLIENT:		LOG	OF B	ORING NUM	BER	BL-13-2	22
		_				¦	Brown County Purc PROJECT NAME:	hasing	100	LUTEC	T ENGINEE			
	U	ᄓ	Coi	nsult	ants	5	Port Property Devel	lopments	ARC	HIIEC	CT-ENGINEE	K		
						100	ATION:	•		(	DUNCONFINE			STRENGTH
	Æ			ļщ		LOC	ATION.				1	TON 2	IS/FT <sup>2</sup> 3 4	5
	Ę. Z			AN							PLASTIC	WA	ATER	LIQUID
ļ	닐	ō.	YPE	IST	<u>&gt;</u>		DESCRIPT	TION OF MATERIAL		F.	LIMIT (%)	CONT	ENT (%)	LIMIT (%) -
(+1)	DEFIN (FI) ELEVATION (FT)	<del> </del>	Ή	Щ	VER					≻   ≻	10 ^ 2	20 3	30 40	
2	7 1	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY					UNIT DRY WT. LBS/FT <sup>3</sup>	⊗ STANDA	RD PEN	NETRATIO	N BLOWS/FT
	$\bigvee$	\ S	SA	δ	뿞	SUR	FACE ELEVATION	(ft.) 585.3		39			30 40	
ļ	-	1	SS	П	П		Fill: Brown silty clay	(CL) - some coal - stiff to soft			8			
				Ш								•		
ļ		2	SS	П	Н						2			
ļ					'						0.25 tsf	•		
ļ	<b>▼</b> _580-													
ļ	<del>-5</del> 80-	3	SS		·		5.0 Brown sand (SP) wit	h gravel - wet - medium dense				20		
ļ	,							J			/			
		4	SS	T	T		7.5			-	/   315   8			
-				Ш	屵		Gray sandy silt (ML)	- wet - medium dense				'	3	
-10	,	<u> </u>		_			8.0 Brown silty sand (SM	1) - wet - medium dense			į,			
	-	5	SS				8.5	trace group work stiff to stiff	,		14   × 14	O <del>2.</del> ●	<b>6</b>	
							Brown silty clay (CL)	- trace gravel - very stiff to stiff						
-		6	SS		П							74		
												1.76		
-	570										į			
-	570-	7	SS								8	2		
1/23														
3/21	,													
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ_GEI DATA TEMPLATE.GDT_3/21/23		_												
LATE		8	SS				Note: No recovery							
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ATA -	•													
<u>Z</u>	560-	_	ST		H									
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빎		10	33								1 ⊗0-25 0 75			
H.														
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1593														
		<u>L_</u>		<u>L</u>	L.							<u></u>		
MIDWEST BORING LOG	Т	he s	tratit	fica	tior	lines	represent the appro	ximate boundary lines betweer	n soil typ	es: in	situ, the trans	sition n	nay be g	radual.
A NING	VATER	R LEV	EL: (	Grou	ındv	water o	bserved at 5.2 ft BCI	BORING STARTED 12/21/2022	GEI	OFFICE	Green Ba	, WI		
ST BC								BORING COMPLETED	ENT	ERED I	BY		PROVED E	3Y
NE NE	IORTH					EA	STING	12/22/2022 RIG/FOREMAN	GEI		CT NO.		SN PAGE NO	D. 1 OF 3
≝		5	75,4	58.4	100		101,477.318	D-50 / JW		220	1593		. AUL N	o. 1 oi <b>3</b>

Brown County Purchasing								CLIENT:		LOG	G OF BO	ORING	NUMB	BER	BL-13-	22	
Continue   Continue			_,		Ĺ	اللا	  -		hasing								
Companies   Comp	(	U	ᄓ	Col	nsul	tants			lonments	ARC	CHITEC	T-ENG	SINEER	₹			
DESCRIPTION OF MATERIAL   DESCRIPTION OF M			<del></del>				LOC		юршента					TON	PRESSIV		
35.0 Brown silty clay (CL) - trace gravel - soft  12 85	DEPTH (FT)	ELEVATION (FT)	AMPLE NO.	AMPLE TYPE	AMPLE DISTANCE	ECOVERY					II NIT DRY WT. SS/FT³	PLA LIM	ASTIC IT (%) ————————————————————————————————————	WA CONT - — — (0	3 4 ATER ENT (%) ● — — 80 4	LIQU LIMIT — 🛆 .0 5	O (%)
540—13 ST	$\geq$	$\bigvee$			ŝ	2	SUR	FACE ELEVATION	(ft.) 585.3		59	1	0 20				
12 SS		550-	11	SS				35.0 Brown silty clay (CL)	- trace gravel - soft		8	WOH 0.5			•		
50.0 Brown silty clay (CL-CH) - trace gravel - stiff to hard  50.0 Brown silty clay (CL-CH) - trace gravel - stiff to hard  50.0 Brown silty clay (CL-CH) - trace gravel - stiff to hard  50.0 Brown silty clay (CL-CH) - trace gravel - stiff to hard	- -40 - - -	- - -	12	SS							8	WOH \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			•		
50.0 Brown silty clay (CL-CH) - trace gravel - stiff to hard  15 ss	-	- 540- - -	13	ST													
33 PORT PROPERTY DEVELOPMENT PROPERTY PRACE DATA I FEM PROPERTY PRACE	-	- - -	14	SS				50.0 Brown silty clay (CL-	CH) - trace gravel - stiff to han	d		: \	10 \ 1.5 \	●—○.	2.75		
	GEI DATA TEMPLATE.GDT	530— - - -	15	ss										$\sim$			1.5 tsf
	T PK.GPJ	-	16	SS									<b>√</b> 3 ⊗		•		
	Y DEVELOPMEN	-	-										i !				
	NAT PROPERT	520- - -	17	SS								0.5 0.5	) 1		•		
	2201593_PC	-															
WATER LEVEL: Groundwater observed at 5.2 ft BCI  WATER LEVEL: Groundwater observed at 5.2 ft BCI  BORING STARTED  12/21/2022  BORING COMPLETED  12/22/2022  BORING COMPLETED  12/22/2022  AKL  SN  NORTHING  FASTING  575,458.400  SIGIFOREMAN  D-50 / JW  PAGE NO. 2 OF 3		TI	ne si	tratif	ica	tior	lines	represent the appro	ximate boundary lines between	een soil ty	pes: in	situ, the	e transi	ition m	nay be	gradual	l.
12/21/2022   Green Bay, W	I BU								1								
NORTHING EASTING RIG/FOREMAN GEI PROJECT NO. 2 OF 3 575,458.400 101,477.318 D-50 / JW 2201593	ST BOR	AIEK	. LEV	<b>⊏L</b> : (	ا0 اد	ariQ\	water 0	userveu at σ.∠ π BCl	12/21/2022 BORING COMPLETED			Gre		, <b>WI</b>   APF		BY	
	MIDWE	ORTH		75,4	58.4	400	EA		RIG/FOREMAN	GE		CT NO.				NO. <b>2</b> C	)F 3

					7	í I	CLIENT:		LOG	OF B	ORING	NUME	BER	BL-1	13-22	1	
١,		<b>—</b> i			<i>لا</i>	-	Brown County Purch PROJECT NAME:	nasing	100	UTE	T ENG						
(	J	ᄓ	Co	nsul	tant	·	Port Property Devel	opments	ARC	HIIEC	CT-ENG	SINEEL	₹				
						T '	ATION:		-	(	DUNCO	NFINED	CON	MPRES	SIVE S	STREN	IGTH
	Æ			ļщ		LOCA	ATION.				1	2	TC 2	ONS/FT	4	5	
	ELEVATION (FT)			AN							PLA	ASTIC	V	VATER		LIQU	ID
<u> </u>	. 음	0.	YPE	ST	_		DESCRIPT	ION OF MATERIAL		Ŀ		IT (%)			(%) L	_IMIT (	
DEPTH (FT	Ϋ́	Z	ΈŢ	Ш	Æ					≶	1	$0 \times \bar{2}$	0	30	40	<u></u> 50	)
믬		SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY					T. T.		TANDA			A TION	. DI OI	NOVET
$\times$	$\mathbb{X}$	SA S	SAI	SAI	R	SUR	FACE ELEVATION (	(ft.) 585.3		UNIT DRY WT. LBS/FT <sup>3</sup>	10	tandai 0 2		30	40	50 50	
	-	18	SS								7	75					
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ŀ	510-	19	SS	П			Note: No recovery				WOH						
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ŀ	-	1									<u>'</u>						
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-80	_	20	SS	$\frac{1}{1}$	$\frac{1}{1}$						16						
-		]20									○ <del>082</del> 5	1		•			
-	_			Г			81.5										
-							End of Boring Boring advanced to 1	0.0 feet with solid-stem auger									
	_						Boring advanced from drilling fluid	n 10.0 to 81.5 feet with rock bit an	d								
1							HW casing driven to	10.0 feet									
	500-						Boring backfilled with	bentonite chips and bentonite gro	out mix								
	-																
3	-																
90	-	1															
5[	-	1															
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	Т	he s	trati	fice	atior	n lines	represent the approx	ximate boundary lines between	soil tvr	es in	situ th	e trans	ition	mav h	e ara	dual	
W								BORING STARTED		OFFICE				, .	- 5'0		
[ W	ATEF	RLEV	EL: (	Gro	und	water ob	bserved at 5.2 ft BCI	12/21/2022			Gre	en Bay				,	
								BORING COMPLETED 12/22/2022		EREDI	AŁ	<b>KL</b>	Al	PPROV SN			
NO	DRTH		75,4	58	400	EAS	STING 101,477.318	RIG/FOREMAN D-50 / JW	GEI		CT NO.			PAG	E NO.	<b>3</b> OF	3
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			R		$C_{C}$		CLIENT:	h l	LOG	OF BC	ORING NUMBER	BL-14-2	22
	` г	- ,	1	$\bigcirc$	ررس	-	Brown County Purcle PROJECT NAME:	hasing	4001	UTEO	T ENONIEED		
+C	j t	=1	Cor	sult	ants	<u> </u>	Port Property Devel	lonments	ARCF	HITEC	T-ENGINEER		
								юртена		- (	OUNCONFINED CO	MPRESSIVE	STRENGTH
	$\neg$			ļ		LOC	ATION:			Ì	T	ONS/FT <sup>2</sup>	
DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	MPLE DISTANCE	RECOVERY		DESCRIPT	ΓΙΟΝ OF MATERIAL		UNIT DRY WT. LBS/FT³	1 1	WATER NTENT (%)	50
	$\times$	SA	SA	SA	뿞	SUR	FACE ELEVATION	(ft.) 584.0		BB	10 20	30 40	
	-	2	SS				Fill: Brown silty clay (	(CL) - some coal - little gravel - very			5 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
- 58	30-	_									Ø •○- ;	O3.25	
-		3	SS			**************************************		SM) - little organics - wet - loose			6		
-	-	4	SS				7.0 Reddish brown silty o	clay (CL) - trace gravel - very stiff to	stiff		.7 ⊗ O—⊕2.0		
-10 -	-	5	SS								10	2.5	
-	+			L	L						<i>.</i> /		
-	+	6	SS								5 0.5 0.5	•	
- 57	70-			Н							[0.5]		
-	+	7	SS	П	П						  4  ⊗ ⊕⊙1.25		
+	+	•									⊗ Φ01.25 1.0		
3/21/23	-												
PLATE.GDT 3/21/23	7	8	SS	Т	П		20.0				 		
A TEMPLA.	-							clay (CL) - trace gravel - firm to soft			<b>♦</b> 1.0		
EI DAT	50-										i   i		
<u></u>	+	9	SS	$\vdash$	$\vdash$						;        g		
-	$\dashv$	J			$\perp$						\ <b>9</b>		•
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEM	-												
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r Propi	-												
POR													
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				L	L.					l			
FOG	Th	e st	ratif	ica	tior	lines	represent the appro	ximate boundary lines between s	oil type	es: in s	situ, the transitior	n may be g	radual.
WIDWEST BORING LOG	ER	LEV	EL: (	Groi	ındı	water o	bserved at 5.0 ft BCI	BORING STARTED	GEI C	OFFICE			
180				• •				12/30/2022 BORING COMPLETED	ENTE	RED B		APPROVED E	3Y
NOR	THII	NG				FΔ	STING	1/13/2023 RIG/FOREMAN			CAH CT NO.	SN	
<u></u> ∏(			75,8	43.2	210	_, `	101,759.370	D-120 / DJM			1593	PAGE NO	O. 1 OF 3

			1		$\mathcal{O}$		CLIENT:	haalaa	LOG	OF B	ORING NUMI	BER	BL-14-	-22	
1.			1		الراو	i	PROJECT NAME:	nasing	ABC	UITEC	CT-ENGINEEI	D			
'	U	ᄓ	Co	nsult	ants	s	Port Property Deve	lopments	ARCI	ппес	JI-ENGINEEI	`			
						100	CATION:	•	•	(	DUNCONFINED	COM	PRESSIV	E STRE	NGTH
	F			삥			DATION.				1 :	10r 2	NS/FT <sup>2</sup>	4 5	5
	ELEVATION (FT)		l	AN							PLASTIC	W	ATER	LIQU	JID
E	E	0.	NE NE	IST/	_		DESCRIPT	TION OF MATERIAL		<b>⊢</b> i	LIMIT (%)	CONT	TENT (%)	LIMIT	(%)
I	× ×	Z W	Ш	ED	Ë					<u>&gt;</u>	10 × 2	20	30 4		0
DEPTH (FT)		SAMPLE NO.	SAMPLE TYPE	Æ	Š					r DR			-		
$\searrow$		SAI	SAI	SAI	RECOVERY	SUF	RFACE ELEVATION	(ft.) 584.0		UNIT DRY WT. LBS/FT³	⊗ STANDA 10 2			ON BLO	
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-50	_	14	SS				very stiff to hard	clay (CL) - silt varves - some gravel	-			23			
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		he si	trati	fica	tion	ı line	s represent the appro	ximate boundary lines between s	soil typ	es: in	situ the trans	ition r	may be	gradual	
MIDWEST BORING LOG								BORING STARTED		OFFICE			, 50	. عظظظا	-
M B W	ATER	( LEV	'EL: (	rolن	ındv	water o	observed at 5.0 ft BCI	12/30/2022		ERED I	Green Bay		PROVED	RV	
VEST	05=:						OTINO	BORING COMPLETED  1/13/2023			CAH	API	SN	וט	
MDV N	ORTH		75,8	43.2	210	E	ASTING <b>101,759.370</b>	RIG/FOREMAN D-120 / DJM	GEI		CT NO. 01593	_	PAGE N	NO. 2 C	)F 3

			R		$C_{\ell}$		CLIENT:	haataa	LOG	OF BO	ORING NUI	ЛВЕК	BL-14	-22	
	٠ г	- 1			ررا	F	PROJECT NAME:	nasing	4001	UTEO	T ENOINE				
+C	j t	_	Cor	sult	ants	,	Project Name: Port Property Devel	lonments	ARCF	HIEC	T-ENGINE	=R			
	Ī							Торинство	!	d	UNCONFINI	ED CO	MPRESSIV	Æ STREI	NGTH
ا (				111		LOC	ATION:				1	2 TO	ONS/FT <sup>2</sup>	4 5	
DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY		DESCRIPT	ΓΙΟΝ OF MATERIAL		UNIT DRY WT. LBS/FT³	PLASTIC LIMIT (% X	; V ) CON	WATER NTENT (%)  ———————————————————————————————————	LIQU LIMIT — A 10 5	JID (%)
	abla	SAN	SAN	SAI	W.	SUR	RFACE ELEVATION (	(ft.) 584.0		LBS	⊗ STAND 10	ARD P 20	ENETRATI 30 4	ION BLO IO 50	
		18	SS	Ť	Ť		70.0	(11.) 66 116			10	- 1	30 4		0 0
- 51	10-	19	SS				Reddish brown silty o	clay (CL) - trace gravel - stiff to firm			1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		•		
- - <b>80</b> - - -	-	20	SS				HW casing driven to	7.5 feet with solid stem auger 5-80.0 feet with roller bit and drilling f	- 11		/ / / 8—00.75 0.25	•			
TEMPLATE.GDT 3/21/23	-														
K.GPJ GEI DATA	90-														
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2221583_POKT PKOPEKTY DEVELOPMENT_PK.GPJ GELDATA TEM 001 01 03 04 05 05 05 05 05 05 05 05 05 05 05 05 05	-														
~ P	+														
8691. - 48	30-														
				_	<u> </u>	<u> </u>								<u> </u>	
20	The	e st	ratif	ica	tior	lines	represent the approx	ximate boundary lines between s	oil type	es: in	situ, the trai	nsition	may be	gradual	
Z WAT							bserved at 5.0 ft BCI	BORING STARTED		FFICE					
	⊏K L	_⊏VI	<u></u> (	JI OL	ıı ıQV	vater 0	waerveu at 3.0 it BCI	12/30/2022		RED E	Green B		PPROVED	RY	
EST								BORING COMPLETED 1/13/2023			CAH		SN	וט	
WIDWEST BORING LOG	THIN		75,8	43.2	210	EA	STING <b>101,759.370</b>	RIG/FOREMAN D-120 / DJM	GEI F		CT NO. 1 <b>1593</b>		PAGE I	NO. 3 O	F 3

		1				CLIENT:		LOG	OF B	ORING N	UMBE	R B	L-15-2	2	
	_	. [		אלש		Brown County Purch	hasing	ļ							
(J	H	Co	nsult	tanto		PROJECT NAME: Port Property Devel	lonmonte	ARC	HITEC	T-ENGIN	IEER				
$\vdash$	Τ	T	113011	lants			lopinents			DUNCONF	INFD C	OMPR	FSSIVE	STREN	IGTH
_ ا					LOC	ATION:			]			TONS/	'FΤ <sup>2</sup> .		•
DEPTH (FT)	-		SAMPLE DISTANCE							1	2	3	4	5	
F S	5	Щ	ΙĀ							PLAST		WAT	ER VT (%)	LIQUI	ID (%)
	9	15	S	≿		DESCRIPT	TION OF MATERIAL		ΛŢ.		×		- (70)	- ⊿	
DEPTH (FT)	֡֟֝֟֝֟֝֟֝֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	Щ	Щ	NE NE					₹.	10	20	30	40	50	)
	SAMPLE NO	SAMPLE TYPE	MPI	RECOVERY					T DI	60 CTA		DENE	TRATIO	N DI OV	NOIT
$\times$	ୗ ହ	SA	SA	R	SUR	FACE ELEVATION	(ft.) 584.8		UNIT DRY WT. LBS/FT <sup>3</sup>	10	NDARD 20	30			
	1	SS	F	F		Brown silty sandy cla	y (CL) - little to trace gravel - trace	)		40					
ŀ	7 1	33				organics - very stiff to	o firm			10 ∳	•	ф			
ŀ			L									٦			
ŀ	2	SS								8					
-	+			₽						[ [		2.5			
580		-	<u> </u>	<u> </u>						/ /					
<b>▼</b>	3	SS								3 ≪0—01 √0.5		•			
[ <del>*</del>	+			╁						10.5					
	4	SS	+	$\vdash$		7.5			-	\					
	4					7.5 Brown silty fine sand	(SM) - wet - loose			ğ		•			
			Н	Г											
-10	5	SS	$\dagger \uparrow$	T		10.0			1	7					
+						Brown silty clay (CL)	- trace gravel - stiff				<b>—</b> Ф2				
-										il					
-	6	SS									O1. <b>5</b> €				
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570	)_									i					
	¥ST	<b>-1</b> /ANI				Vana Shaa	r Toot with your tip at 15 5 fact			i					
						vane Snea I	r Test with vane tip at 15.5 feet Peak S <sub>u</sub> = >2,075 psf								
<sub>m</sub>															
21/2										!					
PLATE.GDT 3/21/23	1									!					
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ত্র ত 560	)_														
3	¥ST	<b>-2</b> ANI													
<u>-</u>  -							r Test with vane tip at 25.5 feet Peak S <sub>u</sub> = >2,050 psf								
AE-	7						u y								
하	1														
J E	1														
<u>}</u> 30	+														
HE L	¥ST	- <b>3</b> ANI	1			Vane Shea	r Test with vane tip at 30.5 feet								
M.	4						Peak S <sub>u</sub> = >2,025 psf								
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- E	վ ՝									5 ⊗ 0 <sub>1</sub>					
2201993, PORT PROPERTY DEVELOPMENT PK.GPJ. GEI DATA TEM  64 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	,		Г	Г											
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<u> </u>	ine s	เเสเ	пса	แบก	ı ıırıes	represent the appro	ximate boundary lines between	_			เลเเรียได้	JII INA	y ne gr	auual.	
WATE	RLE	/EL:	Grou	undv	vater o	bserved at 6.2 ft BCI	BORING STARTED 11/16/2022	GEI	OFFICE		Bay, V	VI			
E B							BORING COMPLETED	ENT	ERED E	3Y	,	APPR	OVED B	Υ	
WIDWEST BORING LOG	HING				EA	STING	11/17/2022 RIG/FOREMAN	GEI	PROJE	AKL CT NO.	ļ		SN AGE NO	) 1 0	= 2
₩   		576,3	72.8	321		101,967.695	D-50 / JW			1593		P.	AGE NO	). I UF	ა 

			7		$\mathcal{L}$		CLIENT:		LC	OG OF B	ORING	NUME	BER	BL-1	5-22		
		_	. (		رلا		Brown County Purc PROJECT NAME:	hasing		DOLUTE	T EN/	- INIEE					
	U	L	Co	nsul	tants		Port Property Deve	lopments	Ai	RCHITE	I-ENC	JINEEI	Κ				
						100	ATION:	•		(	DUNCO	NFINE	СОМ	PRESS	IVE S	TRENC	STH
	£	-		삥			711014.					1 2	2	NS/FT <sup>2</sup>	4	5	
l	ELEVATION (FT)		l	DISTANCE								ASTIC		ATER		LIQUIE	
4	- 2	ġ	TYPE	ISI	≿		DESCRIPT	TION OF MATERIAL		F.	LIM	IIT (%) <u> </u>	CONT	ΓΕΝΤ (9 - <b>—</b> — -		IMIT (᠀ ᠫ	6)
DEDTH (ET)					NEW YEAR					\ } `	1		20	30	40	50	
٢	<u> </u>	SAMPLE NO	MP	MP	RECOVERY					UNIT DRY WT.	0.5	TANDA	RD PF	NFTRA	TION	BI OW	S/FT
	$\bigcirc$		S	S	쮼	SUR	FACE ELEVATION	(ft.) 584.8		59	1			30	40	50	60
- - - -40		VSТ - - - - - 9	ST				Vane Shea Peak S <sub>u</sub> = 1,5	r Test with vane tip at 35.0 feet i50 psf Remolded S <sub>u</sub> = 650 p	t osf			⊗– 1.5		•			
							Vane Shea Peak S <sub>u</sub> = 2,0	r Test with vane tip at 45.5 feet 950 psf Remolded S <sub>u</sub> = 800 p	t osf								
90		VST - - -						r Test with vane tip at 55.5 feet 25 psf Remolded S <sub>u</sub> = 550 p				1.5					
) -		11	SS								\$	75					<b>•</b> 64
Į Į		+		T	T		- 61.0 Brown silt (ML) - wet	t - medium dense			,	l'					
ZZUJOSS POKI PKOPEKIT DEVELOPMENI PK.GFJ GELDALA LEMPL	520	- - VST - -	- <b>∀</b> an	E				r Test with vane tip at 65.5 feet Peak S <sub>u</sub> = >2,100 psf	t								
3=		The s	trat	ifica	ation	lines	represent the appro	eximate boundary lines between	en soil	types: in	situ. th	e trans	ition r	nav be	e grad	— <u> </u>	
<u> </u>  -								BORING STARTED		SEI OFFIC				, .,	J1.		
<u> </u>	VATE	K LE\	ÆL:	Gro	und\	vater o	bserved at 6.2 ft BCI	11/16/2022			Gr	en Bay		DD() "	יאם ח:		
<u>-</u>								BORING COMPLETED 11/17/2022		NTERED	Α	KL	AP	PROVE SN	אם ח:		
MIDWEST BORING LOG	IORTI		576,	372.	821	ΕA	STING <b>101,967.695</b>	RIG/FOREMAN D-50 / JW	9	SEI PROJE <b>22</b> 0	CT NO. <b>)1593</b>			PAGE	NO.	<b>2</b> OF	3

		7					CLIENT:		LC	OG (	OF BO	DRING	NUME	BER	BL-15-	22	
	_	. [(	$\mathbb{C}$	إرلا			Brown County Purc	hasing									
l ( j	ıH	Co	nsul	lante			PROJECT NAME: Port Property Devel	lonmonte	AF	RCH	ITEC	T-ENG	INEEF	₹			
	T	Ι	T	T				ортепа	l l		d	OUNCO	NFINED	COMF	PRESSIVI	E STREI	NGTH
F	-		بيا		L	OCA	ATION:					1			IS/FT <sup>2</sup> 3 4		
( E			NC										STIC	1	TER	LIQL	
	<u> </u>	H	ST/	_			DESCRIP1	TION OF MATERIAL			-		IT (%)	CONT	ENT (%)	LIMIT	
DEPTH (FT) EI EVATION (FT)	(   Z }   Ш	<u>—</u>	ED	Œ							≶ ≿	1	$0 \times \bar{2}$	0 3	30 4	_ <u> </u>	0
DE I	SAMPLE NO.	MPL	MPL	00							UNIT DRY WT. LBS/FT³			אם חבו	IETRATIO		M/C/ET
$\triangleright$	₹ \$	SAMPLE TYPE	SA	뿞	S	URI	FACE ELEVATION	(ft.) 584.8			<u> </u>	10			30 4		
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	_		$\perp$				Brown silty clay (CL)	- very stiff to stiff					Į į	2			
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-80	14	SS										<b>7</b>	) <del>-</del> ()1.	5			•
	_		$\perp$									-\	1				
	¥ST	<b>-8</b> ANI					Vone Chee	n Took with wome times 00 F	foot				``.				
							vane Snea	r Test with vane tip at 82.5 Peak $S_u = >2,100 \text{ psf}$	reet				•	\			
500	)_																
	_ 15	SS					85.0 Brown silt (ML) - wet	modium donco					•		33		
	+		Ш		Н	Ш	86.5	- medium dense									
	4						End of Boring	10 feet with solid-stem auger									
	-						Boring advanced from	m 10.0 to 86.5 feet with rock	bit and								
-90	4						drilling fluid HW casing driven to	10.0 feet									
_	4						Boring backfilled with mix	n bentonite chips and bentor	ite group								
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WATE	R LE	/EL:	Gro	und	vat	er ob	oserved at 6.2 ft BCI	BORING STARTED	G	GEI O	FFICE		en Bay	, ,,,,,			
								11/16/2022 BORING COMPLETED	E	NTE	RED E	SY	_		ROVED	BY	
NORT						EAS	STING	11/17/2022 RIG/FOREMAN	G	SEI PI		AP CT NO.	\L		SN PAGE N	030	F 3
ı		576.3	72 1	321			101.967.695	D-50 / JW			220	1503				J. J	. •

		(		<u></u>		CLIENT:		LC	og c	OF BO	ORING NUM	BER	BW	-1-22		
	F			y)		Brown County Purc PROJECT NAME:	nasıng	Al	RCH	ITEC	T-ENGINEE	R				
U	<u> </u>	Co	nsult	ants		Port Property Deve	lopments									
_			l		LOC	ATION:					OUNCONFINE	TC	MPRES DNS/FT 3	SIVE S		GTH
DEPTH (FT) ELEVATION (FT)			SAMPLE DISTANCE									1			5	
[E]		'n	STA			DESCRIPT	ΓΙΟΝ OF MATERIAL		1.	ا ن	PLASTIC LIMIT (%)	CON	VATER ITENT	(%)	LIQUI LIMIT (	D %)
DEPTH (FT)	Ν̈́	Ţ	ED	ERY		BLOOKII	HON OF WATERIAL			<b>∑</b>	10 ×	 20	- <b>●</b> -	40	<u>≁</u> 50	
	SAMPLE NO.	MPL!	MPLI	RECOVERY						T DR						
$\times$	8	SAI	SAI	RE	SUR	FACE ELEVATION	(ft.) 580.6			UNIT DRY WT. LBS/FT³	⊗ STANDA 10	ARD PE 20	=NETR 30	40	NBLOV 50	
580	1					Water from 0.0 to 4.0	0 feet									
	-															
	-															
_	_															
	_ 1	SS				4.0 Fine sand (SP) - wet	- loose				4 ⊗	Ι,	•			
-	┶		Ш								7					
-	2	SS	П			6.5					\					
-	<u> </u>	SS	Н			Brown silty clay (CL)	- trace sand - stiff				111	75				
-	_ 3										<b>\</b> \					
-10											li					
570	4	SS									11 ⊗	$\bullet$				
-	1											2				
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-	]					Vane Shear Test w	vith vane tip at 13.5 feet, test	disturbe	d							
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1	ne s	trati	rica	tior	Ines	represent the appro	ximate boundary lines between					sition	may l	oe gra	adual.	
WATE	R LE\	/EL:					BORING STARTED 7/19/2022			FFICE	Green Ba	y, WI				
							BORING COMPLETED 7/21/2022			RED E	BY <b>AKL</b>	AF	PPROV <b>SN</b>		<i>'</i>	
NORTI		577,0	80.9	964	ĒΑ	STING <b>101,937.738</b>	RIG/FOREMAN D-120 / JC	0	GEI PI		CT NO. <b>1593</b>		PAG	SE NO	. <b>1</b> OF	4

		1		))		CLIENT:	haaina	LLOC	o OF B	ORING	NUME	SEK	BVV-1-	22		
				עש	ŀ	PROJECT NAME:	nasing	ARO	CHITEC	T-FNG	INFFF	₹				1
U		Co	nsul	tants		Port Property Deve	lopments	/ " "	J	) LIVE	)   <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>    <b>1</b>	`				
					LO	CATION:				DUNCO	NFINED	COMI	PRESSIV	/E STRE	NGTH	
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	APLE DISTANCE	RECOVERY		DESCRIP <sup>-</sup>	TION OF MATERIAL		UNIT DRY WT. LBS/FT³	LIM 1	ASTIC IT (%) × - 0 2	CONT	ATER FENT (%)	LIQU LIMIT	(%) 0	-
$\overline{\times}$	SA S	SAN	SAN	REC	SUI	RFACE ELEVATION	(ft.) 580.6		UNIT LBS/	⊗ S			NETRAT 30 4			i0
- - - - - - - - - - - - - - - - - - -	7	SS				Vane Shea	r Test with vane tip at 38.0 fee Peak S <sub>u</sub> = >2,075 psf	ot		   ⊗	O 1.25		•			
- - - -	- - - -					Vane Shea Peak S <sub>u</sub> = 1,4	r Test with vane tip at 43.5 fee 175 psf Remolded S <sub>u</sub> = 400	et psf								
- 0 530-	ST #2	ST				Consolidation Test: $P_c = 1.1 \text{ tsf}$ $C_c = 0.299$ $C_{cr} = 0.078$	:		101.4		X}- − 1.5	•	· —			
- - - -	8	SS				53.0 Coarse sand (SP) - v	with gravel - wet - dense			•			32			
-	<u> </u>	SS	Ļ	Ļ												
<b>0</b> 520-	9					58.5 Brown silty clay (CL)	- hard				•			4.5		
- - - -	10	SS				63.0 Brown silty clay (CL)	- trace gravel - stiff to firm				0	.75 <sup>•</sup>				
- -  T	11 he s	ss trati	fica	tion	line	s represent the appro	ximate boundary lines betwe	en soil ty	pes: in	situ, the	12 11 e trans	sition r	may be	gradua	l.	:
WATER	R LEV	ÆL:					BORING STARTED	GE	I OFFICE		on Pa	, \A/I				
							7/19/2022 BORING COMPLETED	EN	TERED I	3Y	en Bay	<b>, WI</b>   API	PROVED	BY		
NORTH					E	ASTING	7/21/2022 RIG/FOREMAN	GE	I PROJE		\L	+	SN PAGE 1	NO. <b>2</b> C	)F <b>4</b>	
		577,0	80.9	964		101,937.738	D-120 / JC		220	1593			. / OL 1	2	·· •	]

						7	l l	ENT:			LOG	OF B	ORING NUMBE	R <b>BW</b>	/-1-22		
		۰,	<b>—</b> I					vn County Purch	nasing		ADC	LUTEC	T ENGINEED				
		ار		Co	nsult	ants		t Property Devel	opments		ARC	HITEC	T-ENGINEER				
T							LOCATIO		•				DUNCONFINED (	COMPRES	SSIVE S	STREN	GTH
		Œ.			兴		LOCATIC	JIN.					1 2	TONS/F	T² 4	5	
	$\subseteq$	N F			AN								PLASTIC	WATER	<u>'</u> _ ₹	LIQUI	)
	<u> </u>	TIO	Ö.	YPE	IST,	_		DESCRIPT	ION OF MATER	IAL		Ŀ.	LIMIT (%)	CONTENT	(%) I	LIMIT (	
ij	ОЕРТН (FT)	ELEVATION (FT)	Щ	E T	E D	/ER						\ \	10 × - 20	30	40	<sup>∆</sup> 50	
	DE	ELI	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY						UNIT DRY WT. LBS/FT³	⊗ STANDARI		247101	I DI OM	ICIET
	X	X	SA	SA	SA	RE	SURFAC	E ELEVATION (	ft.) 580.6			LBS	10 20		40	50	6 (5/F)
-8	80	510—	12	ss				Vane Shear Peak S <sub>u</sub> = 2,12	Test with vane tip a	at 78.5 feet S <sub>u</sub> = 650 psf			0 P5	•			
E.GDT 3/21/2		1	14	SS									6 0.5	•			
IPLATI	4	190-			Г	_							<u> </u>				
- TEN													; 				
DAT/			15	SS	Н	Т							:  √10 &○				
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23													1.25			•	
OPME		4											!				
		-	16	SS									<b>B</b>   <b>B</b>			•	
짇	00	_			$\vdash$	Н							1				
쮜,		180-															
PRC		-															
POR		4			<u> </u>												
593		-	17	SS									6 <b>0</b> .5 <b>0</b> .5				
		_			H	Ľ.							U.5				
		Th	ne st	rati	ica	tion	lines repr	esent the approx	kimate boundary lin	ies between s	oil typ	es: in	situ, the transit	ion may	be gra	idual.	
SRING N	WA٦	TER	LEV	EL:					BORING STARTED 7/19/2022		GEI	OFFICE	Green Bay,	wı			
ST BC									BORING COMPLET	ED	ENT	ERED E	BY	APPRO'		′	
MIDWEST BORING LOG	NOF	RTHI		77,0	80.9	64	EASTING	G <b>101,937.738</b>	7/21/2022 RIG/FOREMAN D-120 / JC		GEI	PROJE <b>220</b>	AKL   CT NO. 1 <b>1593</b>	PAG	N GE NO.	<b>3</b> OF	4

		1		7		CLIENT:		LOG	OF B	ORING	NUN	IBER	BW-1	-22		
						PROJECT NAME:	hasing	ARC	HITEC	T-FNC	SINEE	:R				
U		Co	nsul	tants		Port Property Deve	lopments		,,,,,,,	71-2140	SIIVEL	.1 \				
					LOC	ATION:				DUNCC	NFINE	D COM	PRESSIN	/E STRE	NGTH	
DEPTH (FT) ELEVATION (FT)			빙								1	2	NS/FT <sup>2</sup>	4	5	
E S		씸	SAMPLE DISTANCE			DECODID	TION OF MATERIAL				ASTIC		ATER FENT (%	LIQI LIMIT (		
TH (	SAMPLE NO.	: TYPE	180	ΞR		DESCRIP	TION OF MATERIAL		W		$\times$		• — ·	- <b>-</b> ∠	50	
DEPTH (FT) ELEVATION	l l	SAMPLE	PE	RECOVERY					- R. F.			1	1	1	1	-
$\overline{\mathbb{X}}$	N/S	SAN	SAN	REC	SUF	RFACE ELEVATION	(ft.) 580.6		UNIT DRY WT. LBS/FT <sup>3</sup>	1				TION BLC 40 5		SO
110 470-	18	SS				108.0 Gray silty clay (CL) -	firm		-	 		•				
	_ 19	SS				113.0 Fine sand and grave	I (SP) - wet - very dense			•					52 ⊗	
20	20	SS					(CL) - with gravel - hard				•			O >4.	5 tsf	`.
460-	1					119.8 Refusal at 119.8 feet Drilled to 122.0 feet	t									
· ·	- - - -				<i>V//</i> 32/	drilling fluid HW casing driven to	m 4.0 to 122.0 feet with rock bit ar 14.5 feet pentonite grout mix upon completi									
<b>30</b> 450-	- - - -															
· ·	- - - -															
Т	he s	trati	fica	tion	lines	represent the appro	ximate boundary lines between	soil tvr	oes: in	situ. th	ie tran	sition i	mav be	gradua	<u></u> I.	1
						,	BORING STARTED		OFFICE	<u> </u>			,	J		1
WATER	K LE\	EL:					7/19/2022 BORING COMPLETED		ERED I	Gre	een Ba		PROVED	) BY		_
NORTH	HING				FΔ	STING	7/21/2022 RIG/FOREMAN		PROJE	Α	KL	'"	SN			-
NOKIF		577,0	80.9	964	EA.	101,937.738	D-120 / JC	GEI		1593			PAGE	NO. 4 (	OF 4	

			7		7			CLIENT:			LOG	OF B	ORING	3 NUN	/BER	BW	-2-22	2		
			- 10		رلا			rown County Purch PROJECT NAME:	nasing		A D.C.		T EN	CINICI	-D					
	U	LΙ	Co	nsul	tant	s		Port Property Devel	opments		ARC	HIIE	CT-EN	GINE	=K					
								TION:	•			(	DUNC	ONFINE	D CO	MPRES	SIVE	STRE	NGTH	
	F			出			<u> </u>	11014.						1	2	ONS/F	4	5		
_	ELEVATION (FT)			SAMPLE DISTANCE										ASTIC		WATER		LIQU		
DEPTH (FT)	: P	ō.	YPE	IST	<u>&gt;</u>			DESCRIPT	ION OF MATER	IAL		Ę	LIN	\/		NTENT	(%)	LIMIT - <u></u>	(%)	
	. EV	<del> </del>	Щ		VER.							>   >   ~		10 ^	20	30	40	5(	)	
"		SAMPLE NO	SAMPLE TYPE	MPI	RECOVERY							UNIT DRY WT. LBS/FT <sup>3</sup>	A	STAND	۸۵۵ ۵	PENETF	ΑΤΙΩ	NBIO	MQ/ET	
	$\bigcirc$	SA	SA	SA	뿞	SU	RF	ACE ELEVATION (	ft.) 584.7			E S	1	10	20	30	40	50		o
L	-	-						Water from 0.0 to 5.5	feet											
-	-	-																		
ŀ	-																			
ŀ	-																			
ŀ	580-				L															
ŀ		1	SS		-			5.5 Dark gray silty fine sa	and (SP) - trace orga	nics - wet - verv	,		WoH							
t	_			$\perp$				loose	a (5. )a55 5.ga.		,									
Ĺ	_																			
10	_	2	SS					9.0 Black organic silt (OL	) trace gravel wet	very loose			WoH							117.9
ļ	-						3	black organic siit (OL	.) - trace graver - wet	- very loose			Ī							
-	-	_					=													
ŀ	-	1					3													
ŀ	-						=													
ŀ	570-	3	SS	П	П			15.0					WoH							
Ī	_							Gray fine silty sand (	SM) - trace gravel - w	et - very loose			*							
Ĺ	_																			
ļ	_												i							
20	_	<u> </u>	- 00	<u> </u>	<u> </u>		Ä.						i.							
1	-	4	SS					20.0 Black clayey silt (ML)	- wet - very loose				:1 ⊗							75.3
<u>}</u>	-			₽	Н	$\  \ $		,	•				!							
-  -	-	5	SS	$\mathbf{H}$	Н	1							l WoH							
<u> </u>	560-												\$						•	99.7
1	_			Т		111														
	_																			
3	-																			
? !-	-	-						Vane Shear	Test with vane tip a 00 psf Remolded	at 28.0 feet										
-30	_							Feak 3 <sub>u</sub> - 200	o psi Remolded	o <sub>u</sub> – 425 psi										
-	-	1																		
<u> </u>	-																			
}	-	ST	ST	$\mathbf{H}$				33.0												
<u> </u>	550-	#1						Brown silty clay (CL)	- very stiff to stiff	cific Gravity = 2	222	100.5		X-	•	- †Ģ	∆ .25			
<u> </u>	-							Consolidation Test:	Орес	one Gravity – 2	2.732									
	_							P <sub>c</sub> = 3.3 tsf C <sub>c</sub> = 0.251												
5	-			<u> </u>	Ļ			C <sub>cr</sub> = 0.064						12						
-	-	6	SS											12 8	ф	•				
E	=	<u> </u>	L.	1_	Ľ							<u></u>	L	Ŀ	_ <u>_</u>					
Ĺ	Tł	ne s	trati	fica	tior	n line	es r	epresent the approx	kimate boundary lin	es between so	oil typ	es: in	situ, th	ne trar	sitior	n may	be gr	adual		
l v	/ATER	LEV	EL:						BORING STARTED		GEI	OFFICI		oor D	N/ \A/I					
									8/1/2022 BORING COMPLET	ED	ENT	ERED	BY	een Ba		PPRO		Υ		
N	ORTH	ING				Е	AS	TING	8/4/2022 RIG/FOREMAN		GEI	PROJE	CT NO	KL		SI PAC		). <b>1</b> O	F /	
il.			76.8	377.0	670			102.285.623	D-120 / DM				11593			PA	JE INC	,. I U	. 4	Ì

				C		CLIENT:		LOG	OF B	ORING NUMBER	BVV-2-22	
			٧	رلا		Brown County Purch	nasing					
$\bot$ $\Box$	ıEl	Co	nsuli	ants		PROJECT NAME: Port Property Devel	onments	ARCI	HITEC	T-ENGINEER		
							оринениз		(	DUNCONFINED CO	MPRESSIVE S	STRENGTH
	_				LOC	ATION:			,		ONS/FT <sup>2</sup> 3 4	5
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	MPLE DISTANCE	RECOVERY		DESCRIPT	TION OF MATERIAL		UNIT DRY WT. LBS/FT³	PLASTIC LIMIT (%) CO X 10 20	WATER NTENT (%) L ————————————————————————————————————	LIQUID LIMIT (%)
	\{\{\s\}\}	SAI	SAI	RE(	SUR	FACE ELEVATION (	(ft.) 584.7		UNI	⊗ STANDARD F 10 20		
PK.GPJ GEI DATA TEMPLATE GDT 3/21/23	- 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7	SS SS			30K	Vane Shear Peak S <sub>u</sub> = 117	Test with vane tip at 48.0 feet 75 psf Remolded S <sub>u</sub> = 450 psf Test with vane tip at 58.0 feet 75 psf Remolded S <sub>u</sub> = 550 psf Remolded S <sub>u</sub> = 550 psf	2.738	92.5	10 20 1	30 40 • • • • • • • • • • • • • • • • • • •	50 (
220/593 PORT PROPERTY DEVELOPMENT PK.GPJ. GEI DATA TEM  22	_ 10	SS								8 0 1.25	•	
93 P(		3 ST	$\mathbf{h}$			78.0				\ ;		
2015	Ĭ'"					Reddish brown clay (	CH) - thin silt and sand seams note	:d -	76.6	\( \sigma_{-\frac{1}{2}} - \)	•	-△
			<u>1</u>	4: -		very stiff	vimata harradam dinas tratus			oitu tha tara :: - 141		
O FC	ı ne s	ıratıl	ıca	uor	ıınes	represent the approx	ximate boundary lines between s				ı may be gra	uual.
WATE	R LEV	ÆL:					BORING STARTED 8/1/2022	GEI	OFFICE	Green Bay, WI		
WIDWEST BORING LOG							BORING COMPLETED	ENT	ERED E	BY A	PPROVED BY	,
NORT	HING				FA	STING	8/4/2022 RIG/FOREMAN	GFI	PRO.IF	AKL CT NO.	SN	0.05 :
		576,8	77.6	670		102,285.623	D-120 / DM	)		1593	PAGE NO.	2 OF 4

			R				CLIENT:		LOG	OF BO	ORING NUMBER	BW-2-22	!	
					ررس		Brown County Purc PROJECT NAME:	hasing	ADC	N UTEC	T ENOINEED			
	U	ᄓ	Cor	sult	ants		Port Property Devel	opments	ARC	HITEC	T-ENGINEER			
						_ ·	ATION:		 		DUNCONFINED CO	MPRESSIVE S	STRENGTH	
DEPTH (ET)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY			TION OF MATERIAL		UNIT DRY WT. LBS/FT³	1 1	ONS/FT <sup>2</sup> 3 4  WATER NTENT (%)	5 LIQUID LIMIT (%) △ 50	
5		SAN	SAN	SAN	R	SUR	FACE ELEVATION	(ft.) 584.7		UNIT LBS/	⊗ STANDARD P 10 20	ENETRATION 30 40	NBLOWS/FT 50 6	n
-	- - -	-			_		Consolidation Test: P <sub>c</sub> = 6.7 tsf C <sub>c</sub> = 0.800 C <sub>cr</sub> = 0.760	· ·			10 20	30 40		O
	500- -	11	SS				83.0 Brown sandy silt (ML	) - wet - medium dense				4		
- - - -90 -	- - - -	12	SS				88.0 Brown fine silty sand	(SM) - wet - dense			•	34		
-	- 490- -	13	SS				93.0 Gray coarse gravel ( dense	GP) with sand - wet - dense	to very		•		44 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
DT 3/21/23	- D - -	14	\ss]										80001	
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/2/1/23	480- -	15	SS				103.0 Gray clayey gravel (0	GC) - wet - very dense			•			<i>&gt;</i>
PK.GPJ G	-	16	SS								•	38.		
TAELOPMENT	- -	_											\	
PROPERTY DE	470- -	17	SS									2.5	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
201593_PORT	-	18	SS									2.5	52	
		he s	ratif	ica	tion	ines	represent the appro	ximate boundary lines bet	ween soil tvi	oes in	situ. the transition	mav be gra	adual	
MIDWEST BORING LOG	/ATEF			.54				BORING STARTED 8/1/2022	GEI	OFFICE	Green Bay, WI			
ESTE								BORING COMPLETED 8/4/2022		TERED E	AKL	PPROVED BY	Y	
MIDW	ORTH		76,8	77.6	70	EAS	STING <b>102,285.623</b>	RIG/FOREMAN D-120 / DM	GEI	PROJE <b>220</b>	CT NO. 1 <b>1593</b>	PAGE NO	. 3 OF 4	

			R		7		CLIENT:				LOG	OF BO	ORING	NUM	IBER	BW-	2-22		
_	~ ,	_,			رك		Brown County Purcl	nasing											
(	٦l	$\vdash$ $I$	Cor	nsult	anto		PROJECT NAME:	onmonto			ARC	HITEC	T-ENC	SINEE	R				
	_		Coi	Isuit	ants	<u> </u>	Port Property Devel	opments					JUNICO	NIEINIE	D CO	MPRES	SIVE 9	STDEN	CTH
	_			l		LOCA	ATION:					1	-		T	ONS/FT	2		GIII
	ELEVATION (FT)			링									•	1	2	3	4	5	
l <del>.</del>	Z		ш	Z										ASTIC		NATER		LIQUI	
ОЕРТН (FT)	Ĕ	ġ	Ϋ́Р	S	≿		DESCRIPT	TON OF N	/ATER	IAL		È.	LIIV	(%)   <del> </del>		NTENT		LIMIT ( Æ	%)
ΙĖ	Σ	山	ĒΤ	Ē	Æ							>	1	0 ( )	20	30	40	50	
믭	Ш	<u>F</u>	₩.	Æ	Ó														
	$\nabla$	SAMPLE NO	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	SURI	FACE ELEVATION (	(ft.) 584.7				UNIT DRY WT. LBS/FT³			ARD P 20	ENETR 30	40 40	BLOV 50	
								· ,						Ī	Ť	T	Ť	ij	
+	_																	li	
+	_																	ľ	
-	-	19	SS	Н	П													5	0/4
+	-	13		Н														Ĭ	
} '	460—						124.5	/==:											
-	-	Run	CORE	П	П		Gray fine grained dol gray shale - medium	omite (DO) - strong to str	- trace int ong - fre	terbedded blui: sh to sliahtly	sh								
}	-	1					weathered - moderat	ely fractured	I - very th	inly bedded -									
+	-						microcrystalline to fir Refusal at 125.5 feet	ie grained . drilled one	feet into	rock									
-	-						Run Depth R	ecovery	RQD	Fracture									
-130	-						# ft. 1 126.0-131.0	94	<del>_%</del>	Frequency 3-7 / ft.									
-	-		CORE	Н															
-	-	Run 2	OOKL				Run Depth Ro	ecovery %	RQD %	Fracture Frequency									
-	-	_					2 131.0-136.0	99.6	36	3-5 / ft.									
-	-						Trace open vugs at 1	32.6 feet											
4	450-																		
-	-			Ш	Ш														
-	-						136.0 End of Boring												
	-						Boring advanced from	m 5.5 to 126	.0 feet wi	th rock bit and									
L	_						drilling fluid HW casing to 13.0 fe	net .											
140	_						Boring advanced from	n 126.0 to 1	36.0 feet	with diamond	bit								
	_						Boring grouted with b	entonite gro	out mix up	on completion	ı								
5	_																		
5	_																		
-	_																		
<u> </u>	440-																		
	_																		
	_																		
3																			
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á†	_																		
<u>.</u>	- 430-																		
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	_			<u></u>	<u></u>	<u></u>								<u> </u>	<u> </u>				
		ne si	ratif	ıca	tior	lines	represent the approx	xımate bouı	ndary lin	es between s	oil typ	es: in s	situ, th	e tran	sition	may b	e gra	idual.	
WA.	TER	LEV	EL:					BORING S			GEI	OFFICE		on Pa	., LA/I				
3								BORING C	3/1/2022 COMPLET	ED	ENT	ERED E	3Y	een Ba		PPROV	ED BY	,	
3 NO	RTHI	INC				<b>□</b> Λ <b>C</b>	STING		8/4/2022			PROJE	Α	KL		SN			
WIDWEST BORING LOG	VIΠI		76,8	77.6	70	EAS	102,285.623	D-120 / DM	.ivi/¬iN		GEI		1593			PAG	E NO	4 OF	4

			R		$\overline{)}$		CLIENT:		LO	G OF B	ORING	NUM	BER	BW	-3-22	2		
	$\subset$						PROJECT NAME:	idaliig	AR	CHITE	CT-ENG	SINEE	R					
	<u>U</u>		Cor	nsult	ants		Port Property Devel	opments										
	_						ATION:				DUNCO		TC	MPRES DNS/F	SSIVE S			
	DEP I'R (F1) ELEVATION (FT)			SAMPLE DISTANCE								1	2	3	4	5		
Ę	L O	ļ	H	STAI			DECODIDA	TON OF MATERIAL				ASTIC IIT (%)		VATEF VTENT		LIQU LIMIT		
	Ę ¥	2	Τ.		꽃		DESCRIPT	TION OF MATERIAL		W		~	 20	- <b>-</b> -	-` 40	<b>≜</b> 50		
	DEFIN (FI) ELEVATION	12	PLE		Š					18.F								
\ <u></u>		SAMPLE NO.	SAMPLE TYPE	SAN	REC	SUR	RFACE ELEVATION (	ft.) 580.6		UNIT DRY WT. LBS/FT³		TANDA	RD PI 20	ENETF 30	RATION 40	N BLO\ 50		1
ŕ	580-						Water from 0.0 to 11					<u> </u>	<u> </u>		Ť			
ŀ	_																	
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ŀ	-																	
-	-																	
10	-	1																
-	570-	╁	SS	<u> </u>														
-	-	1	33				11.0 Black organic silt (Ol	_) - wet - very loose			WoH						•	268.3
-	-	<u> </u>	00		_		ì	,			\  \							
-	-	2	SS								\8		•					
-	-			H		,,,,,,,,	14.0 Coarse sand and gra	vel (SP) - some organics - v	vet - loose	7	'							
-	-	_2a	SS				15.0				\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	•	•					
ļ	-						Brown silty clay (CL)	- very stiff to stiff										
/23	-	-										1						
3/21	-											) :						
G 20	-	3	SS									\111 ⊗						
ATE	560-											Ţ		3				
EWE	-	-										!						
TAT	-											!						
	-	4	SS								ل ا							
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PME	-										ļį							
]EL	-	ST #1	ST	$\prod$														
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FR	550-																	
PRO	-																	
ORT	-																	
93_P	-	5	SS											•				
2201593 PORT PROPERTY DEVELOPMENT PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23	-	-		$\perp$	Ш							1.5	5					
		he s	ratif	ica	tion	lines	represent the approx	ximate boundary lines bet	ween soil tw	pes in	situ th	e tran	sition	mav	be ar	adual		
Je L				.Ju		103		BORING STARTED		I OFFIC		. J a arr		ay	20 gir	uul.		
BORII	VATER	R LEV	EL:					7/27/2022			Gr	en Ba		DDD 2:	/ED =-	,		
ESTE								BORING COMPLETED 7/28/2022		TERED	Α	KL	Al	PPRO\ SI	VED B\	Y		
MIDWEST BORING LOG	IORTH		76,2	04.7	775	EA	STING <b>102,016.225</b>	RIG/FOREMAN D-120 / DM	GE	I PROJE <b>22</b> 0	CT NO. 01593			PAG	GE NO	. <b>1</b> OI	- 4	

					$\overline{)}$		CLIENT:	hasina	LOC	G OF B	ORING	NUMB	ER	BW-	-3-22	?	
10		FI	2				PROJECT NAME:	nasing	ARC	CHITEC	T-ENGI	NEER					
<b> </b>	J		Co	nsult T	ants	<u> </u>	Port Property Deve	lopments		T .	- INGON	ENED	001	10050	01) /5	OTDEA	IOTU
	_					LOC	CATION:				DUNCON 1	1FINED 2		NS/FT		STREN 5	
DEPTH (FT)	ELEVATION (FT)	o.	YPE	SAMPLE DISTANCE	>		DESCRIP1	ΓΙΟΝ OF MATERIAL		Ļ.	PLAS	STIC	V	/ATER		LIQU LIMIT	ID
PT.	EVA	Z   Щ	1	H	VER					Υ V	10	× -	)	30	40	± 50	)
		SAMPLE NO	SAMPLE TYPE	AMP	RECOVER			(E.)		UNIT DRY WT. LBS/FT³	⊗ ST.	ANDAR		NETR	OITA	N BLO\	NS/FT
X	$\bigvee$	Ŋ	Ś	Ŝ	ĸ	SUF	RFACE ELEVATION	(ft.) 580.6		55	10	20	)	30	40	50	) 6
- - -40 -	   540	-					Vane Shea Peak S <sub>u</sub> = 1,3	r Test with vane tip at 38.0 fee 25 psf Remolded S <sub>u</sub> = 525 p	t psf								
-	-	ST #2	ST									Φ2	2	•			
- - -50 -	- - - 530-	-					Vane Shea Peak S <sub>u</sub> = 1,8	r Test with vane tip at 48.0 fee 75 psf Remolded S <sub>u</sub> = 575	t psf								
	- - -	6	SS								8						
60	- - 520-	-					Vane Shea Peak S <sub>u</sub> = 1,5	r Test with vane tip at 58.0 fee 75 psf Remolded S <sub>u</sub> = 450	t psf		:    -  -  -						
	- - -	7	SS									14	O 2.	.5	,		
2	_	8	SS	$\dagger$	Т		68.0			+		:	20				ļ
2103	_	_					Brown silt (ML) - wet	- medium dense		-		¥ i					
	Th	he s	trati	fica	tior			ximate boundary lines betwe	en soil ty	pes: in	situ, the	transit	tion	may b	oe gra	adual.	
W	ATER	LEV	ÆL:				<u> </u>	BORING STARTED	GE	OFFICE			\e.c.				
W		•						7/27/2022 BORING COMPLETED	EN <sup>-</sup>	TERED E	3Y	n Bay,		PROV		Y	
NC	DRTH		70.0	04-	,,,	EA	ASTING	7/28/2022 RIG/FOREMAN	GE	I PROJE		<b>L</b>		PAG		. <b>2</b> OI	= 4
<u> </u>		5	76,2	04.7	15		102,016.225	D-120 / DM	1	220	1593					٠.	

		(		$\mathcal{I}$		CLIENT: Brown County Purcl	haaina	LOG	OF BO	ORING NUMBE	R <b>BW</b>	-3-22	
G	FI					PROJECT NAME:		ARC	CHITEC	T-ENGINEER			
<u> </u>	닏	Co	nsult T	ants		Port Property Devel	opments			DI INICONIFINIED O	OMPDE	) (II (I	TOENOTU
					LOC	ATION:				DUNCONFINED C	TONS/F	SSIVE S	
<u>E</u>			NGE										5
[E \( \bullet \)		'n	STA			DESCRIPT	TION OF MATERIAL		ے ا	PLASTIC LIMIT (%) C	WATEF TNETNC	≺ `(%) L	LIQUID .IMIT (%)
DEPTH (FT) ELEVATION	ΙŽ	<u> </u>		ERY		DEGOI(II I	ION OF WATERIAL		LW Y	10 ×	<b>●</b> - 30	40	<u>^</u> 50
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY					r DR /FT³				'
XX	SAI	SAI	SAI	RE(	SUR	FACE ELEVATION (	(ft.) 580.6		UNIT DRY WT. LBS/FT³	⊗ STANDARD 10 20	PENETF 30	RATION 40	BLOWS/FT 50 6
510-						69.5	wn silty clay (CL) - trace gravel - r	maiat		!			
	-					very stiff	wit sity clay (OL) - trace graver - i	HOIST -					
	9	SS									• þ		
	+										ß		
-													
-	10	SS	<u> </u>										
-	10									18 	ullet		
-80													
500-													
-													
-	11	SS	+	Т									
-										\&\ \p_2.(	•		
-													
-													
· .	ST		T	Т		Consolidation Test:							
	#3					P <sub>c</sub> = 4.5 tsf C <sub>c</sub> = 0.465			80.1	X- -			
<b>90</b> 490-			<u> </u>			C <sub>cr</sub> = 0.106				i			
										i	<u>.</u>		
											į		
	12	SS									§26 ⊗	,	
[ .	-		₽							2	!		
	-										<i>!</i>		
<u> </u> .													
	_		Ļ							!			
	13	SS									•		
-100	$\dagger$		††	٢									
480-	1												
-	1												
	14	SS	$\vdash$			103.0			-	16			
}							e sand - trace gravel - stiff to soft			○&   1. <b>2</b> 5	•		
ļ .	<u></u>	<u> </u>			<u>////////</u>	1			<u> </u>			<u></u>	
Т	he s	trati	tica	tion	lines	represent the approx	ximate boundary lines between				n may	be gra	dual.
WATER	RLEV	ÆL:					BORING STARTED 7/27/2022		OFFICE	Green Bay, V	VI		
L							BORING COMPLETED 7/28/2022	EN	TERED E	AKL	APPRO\ SI		
NORTH		576,2	04.7	75	EA	STING 102,016.225	RIG/FOREMAN D-120 / DM	GEI	PROJE	CT NO. 11593			3 OF 4

				1		CLIENT:		LC	OG O	F BC	ORING	NUM	BER	BW-3	3-22		
			$\mathcal{Q}$	اللا		Brown County Purc	hasing										
	ΕI	Co	nsult	ants		PROJECT NAME: Port Property Deve	lonments	AF	RCHI	TEC	T-ENC	SINEE	R				
	<u> </u>		Π							4	DUNCO	NFINE		1PRESS		TREN	IGTH
F			ېب		LOC	ATION:						1	тс 2	NS/FT <sup>2</sup>	4	5	
DEPTH (FT) ELEVATION (FT)			NO								PI A	ASTIC	1	/ATER		LIQU	
[년 [	0.	Æ	ST/	_		DESCRIP	ΓΙΟΝ OF MATERIAL		١,	<u>.</u>		IIT (%)	CON	TENT (		IMIT	
DEPTH (FT) ELEVATION	ŽШ	ΕŢ	ED	ÉR					1	<b>}</b>	1	0 × 2	20	30	40	±∆ 50	)
	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY						7.F							
XX	SA	SAI	SAI	RE	SUR	FACE ELEVATION	(ft.) 580.6			UNII DRY WI.			RD PE 20	NETRA 30	40	BLO\ 50	
												1					-
Γ.	1											ļ					
	-											į					
	15	SS									$\circ$		18				
	_			-							0.25		)·				
110 470-						110.0								1			
	-					Clayey gravel (GC) -	wet - very dense							``	$\cdot \downarrow$		
															'.	<b>\</b> .,	
	16	SS	П	Т								L				1	· , 55 ⊗
ļ.	_										Ì		02	.5			Ĭ
ļ .						Note: Large gravel/c	obbles while drilling										ļ
ļ.																	į
ļ.																Ę	50/0.1
ļ .	17	ss	Ι.			Note: Misc. gravel/co	obbles/hard drilling									\$	1
<u> </u>							-										
-120 -460-																	
						122.9											
<u>.</u>						Refusal at 122.9 fee Drilled 2' into refusal											
ļ .					¥222X¥2	124.9											
						End of Boring Boring advanced fro	m 11.0 to 124.9 feet with rock t	oit and									
ļ.						drilling fluid HW casing to 17.5 fe	eet										
-	1					Boring grouted with I	bentonite grout mix upon comp	letion	_								
-130 450-	1																
ļ .																	
	1																
	4																
	-																
	4																
ļ .	4																
	1																
Т	he s	trati	fica	tior	lines	represent the appro	ximate boundary lines betwe	en soil t	types	s: in s	situ. th	e trans	sition	mav be	e gra	dual.	
						,	BORING STARTED		SEI OF			10		, 20	J. S		
WATER	≺LEV	EL:					7/27/2022				Gre	en Ba	y, WI	DDO\ /5	יט טי	,	
							BORING COMPLETED 7/28/2022		NTEF		Α	KL	AF	PROVE SN	ה RA		
NORTH		76,2	04.7	775	EA	STING <b>102,016.225</b>	RIG/FOREMAN D-120 / DM	G			CT NO. <b>1593</b>			PAGE	NO.	<b>4</b> OI	<b>-</b> 4

			(C		)		CLIENT: Brown County Purc	hasing	LOG	OF B	ORING	NUME	BER	BW	-4-22	1	
$\overline{}$	۱,	ΕI					PROJECT NAME:		ARC	HITEC	T-ENG	SINEE	₹				
_	<u>ا ر</u>	<u> </u>	Cor	nsult T	ants		Port Property Devel	opments			<u>-</u>						
				ļ		LOC	ATION:				DUNCO	NFINEL	TC	MPRES MS/F1	SSIVE S	STRE	NGTH
Į	ELEVATION (FT)			SAMPLE DISTANCE								1	-				
(F)			PE	STA			DESCRIPT	ION OF MATERIAL			PL/ LIM	ASTIC IT (%)	CON	VATEF ITENT	₹ (%)	LIQU LIMIT	ID (%)
Ĕ !	\ ∀	NC:	: TY		ΞRY		DESCRIP	ION OF MATERIAL		W.		<b>X</b> -	 !0	- <b>-</b> -		<i>≙</i> 50	
DEPTH (FT)		IPLE	IPLE	PE	NO:					DR) FT							
		SAMPLE NO.	SAMPLE TYPE	SAN	REC	SUF	RFACE ELEVATION	(ft.) 580.2		UNIT DRY WT. LBS/FT <sup>3</sup>		TANDAI	RD PE :0	ENETF 30	RATION 40	N BLO' 50	
58	30-						Water from 0 to 27.5										
	4																
	4																
	$\exists$																
	4																
	4																
	$\dashv$																
	4																
	4																
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57	70-																
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	1																
	+																
	+																
	-																
	4																
	+	4	SS	H			J 0			1	2						
	+	1	00			,,,,,,,	27.5 Dark brown organic	silt (OL) - wet - very loose			<b>2</b> ⊗						•
	+						28.0										
55	50-						28.5	vith gravel - wet - very loose									
	$\exists$							- trace gravel - wet - stiff									
	4										\ :_						
	4	2	SS								\(\sigma \) \(\sigma \) \(\sigma \)	2			•		
	4											1					
	Th	ne et	ratif	I_	tion	lines	represent the appro-	ximate boundary lines betwee	en soil tur	es in	situ th	e trans	ition	may.	he ara	adual	
				ıud	uUI	111168	тергезептине аррго	BORING STARTED		OFFICE		e uans	ntiOH	шау	De gra	auudl.	
۷AT	⊏K	LEV	EL:					7/25/2022			Gre	en Bay		DDD()	/ED B\	/	
								BORING COMPLETED 7/26/2022		ERED E	Al	KL	AF	SI		ı	
NOR	ΤHI		75,5	46 3	165	EA	STING <b>101,809.521</b>	RIG/FOREMAN D-120 / DM	GEI	PROJE	CT NO. 1 <b>593</b>			PAG	GE NO	. 1 0	F 4

					$\overline{)}$		CLIENT:	h a a i a a	LOG	OF BO	ORING	NUME	BER	BW-4	-22	
14					צי	H	PROJECT NAME:	nasing	ARC	HITEC	T-ENG	SINEEF	₹			
<u> </u>	<u>U</u>		Co	nsult	ants		Port Property Devel	lopments								
						LOC	CATION:				DUNCO			IPRESSI NS/FT <sup>2</sup>	VE STR	ENGTH
	ELEVATION (FT)			SAMPLE DISTANCE										NS/FT <sup>2</sup>		5
Œ	NO.		밆	STAI			DESCRIPT	TION OF MATERIAL		l		ASTIC IT (%)		/ATER TENT (%		UID T (%)
DEPTH (FT)	VAT	N	⊒ٰ		ERY		DESCRIPT	TION OF WATERIAL		Y WT	1	$_0 \times_{\bar{2}}$	0	30	△ 40 :	50
岜		SAMPLE NO	SAMPLE TYPE	MPLI	RECOVERY					UNIT DRY WT. LBS/FT³						2140/57
$\triangleright$	$\bigvee$	SAI	SAI	SAI	RE	SUF	RFACE ELEVATION (	(ft.) 580.2		LBS	⊗S   1			NETRAT		50 60
MPLATE.GDT 3/27/23	- - - 540- - - - - - - - - - - - - - - - - - -	ST #1	ST				Vane Shear Peak S <sub>u</sub> = 1,10	r Test with vane tip at 43.0 feet 00 psf Remolded $S_u$ = 300 psf r Test with vane tip at 53.0 feet Peak $S_u$ = >2,525 psf	of			5 01.5 18 1.5	\\\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\	3.0		
2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/27/23	520- -	4	SS				58.0 Fine sand (SP) - som	ne gravel - wet - very dense		_		•				56     
ORI PROPERTY DEVELO	- - - -	ST #2 \5	ST SS									<b>)</b>		•		<b>5</b> 0/2" <b>8</b>
93 P	-	6	SS	T			68.0			1		)/·´	0	•		
22015		L		$\coprod$	H.		Brown silty clay (CL)	- very Sun to Sun						.5		
5 [	TI	he s	trati	fica	tior	lines	represent the approx	ximate boundary lines betwee	n soil typ	pes: in	situ, th	e trans	ition	may be	gradua	al.
W KING	ATER	LEV	EL:					BORING STARTED	GEI	OFFICE		P-	, \A <i>r</i>			
MIDWEST BORING LOG			-					7/25/2022 BORING COMPLETED	ENT	TERED E	3Y	en Bay		PROVE	D BY	
N	ORTH			46 -		EA	STING	7/26/2022 RIG/FOREMAN	GEI	PROJE		\L		SN PAGE	NO. 2	OF <b>4</b>
≅L		5	75,5	46.3	105		101,809.521	D-120 / DM		220	1593					

		R		1		CLIENT:		LOG	OF BO	ORING NUME	BER <b>BV</b>	<i>I-</i> 4-22	2
	r i					Brown County Purc PROJECT NAME:	hasing	ABC	LITEC	T-ENGINEER	<u> </u>		
U	ᄓ	Cor	nsult	ants		Port Property Deve	lopments	ARC	HITEC	I-ENGINEER	`		
					LOC	ATION:				OUNCONFINED	COMPRE	SSIVE	STRENGTH
E			빙							1 2	TONS/F	4	5
(F. NO		ш	IAN							PLASTIC LIMIT (%)	WATE	R	LIQUID
H. A	N S	T	DIS	ΚY		DESCRIPT	ΓΙΟΝ OF MATERIAL		WT.			40	- Elivii 1 (70)
DEPTH (FT) ELEVATION (FT)	౼	무	닐	JVE					DRY T³	10 2	0 30	40	50
	SAMPLE NO.	SAMPLE TYPE	NY:	RECOVERY	SI ID	FACE ELEVATION	/ft \ 580.2		UNIT DRY WT. LBS/FT³	⊗ STANDAI			
510-	V	0)	0)	ш.	30K	FACE ELEVATION	(11.) 300.2			10 2	0 30	40	50
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· .	1									:			
	10	SS	Н			93.0			-	! 8			
; }-						Dark brown to gray s	silty clay (CL) - firm			<b>₩</b> '			
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WATER	R LEV	EL:					BORING STARTED	GEI	OFFICE				
] <b>_</b> .							7/25/2022 BORING COMPLETED	ENT	ERED E		APPRO		Y
NORTH	IING				EA	STING	7/26/2022 RIG/FOREMAN	GEI	PROJE	AKL CT NO.		N GE NC	. 3 OF 4
		75,5	46.3	365		101,809.521	D-120 / DM			1593	PA	GE NC	. <b>3</b> UF <b>4</b>

				$\mathcal{O}$		1	CLIENT: Brown County Purc	hasing	LLO	G OF B	ORING	NUMBE	R <b>BW-4</b>	-22	
G	F						PROJECT NAME:	<del>-</del>	AR	CHITE	CT-ENG	SINEER			
<u> </u>	╄	I C	onsul	tants			Port Property Devel	opments			DUNCO	NEINED C	OMPRESSI	VF STRE	NGTH
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	LE TYPE	SAMPLE DISTANCE	RECOVERY	LC	)C/	ATION: DESCRIPT	ION OF MATERIAL		UNIT DRY WT. LBS/FT³	1 PLA	2 ASTIC IT (%) CO ×	TONS/FT <sup>2</sup> 3 WATER ONTENT (%	LIQI	5 UID
	J A	SAMPLE.	\MP	000						AT D	⊗ S	TANDARD	PENETRAT	TION BLC	OWS/FT
<u> </u>	3	S	S	2	SU	JRE	FACE ELEVATION (	(ft.) 580.2		59	1	0 20	30	40 5	50 60
<sup>10</sup> 470	13	ss ss									WoH		•		
470								illing 111.5 to 113.0 feet				[··			
	14	SS					Fine gray sandy silt ( 114.0	ML) - wet - very dense							
	-														
<sup>20</sup> 460	-\ <u>15</u> - - -	S SS					Note: Very dense dri Practical refusal at 1.	lling from 119.0-122.3 fee 24.3 feet	ıt .		•				
	- - -						drilling fluid HW casing driven to	m 27.5 to 124.3 feet with r 37.5 feet pentonite grout mix upon o							
30 450	- - )- -														
	-														
	-														
7	The s	strat	ifica	atior	ı lin	es	represent the appro	ximate boundary lines b	etween soil t	ypes: in	situ, th	e transitio	on may be	gradua	ıl.
WATE	RLE	VEL:						BORING STARTED 7/25/2022  BORING COMPLETED 7/26/2022		EI OFFIC	Gre		VI Approvei Sn	D BY	
NORTI		575,	546.	365	-	EAS	STING <b>101,809.521</b>	RIG/FOREMAN D-120 / DM	GI	EI PROJE		-		NO. <b>4</b> (	OF <b>4</b>

Brown County Purchasing PROJECT NAME: Port Property Developments    CLUNDIAN   CONTENT
Consultants
LOCATION:   DESCRIPTION OF MATERIAL   DESC
1
STANDARD PENETRATION BLOWN   STANDARD PENET
S STANDARD PENETRATION BLOWN   S STANDARD PENETRATION BLOWN
S STANDARD PENETRATION BLOWN   S STANDARD PENETRATION BLOWN
S STANDARD PENETRATION BLOWN   S STANDARD PENETRATION BLOWN
Water from 0.0 to 15.0 feet    10
Water from 0.0 to 15.0 feet    10
1570 - 1
570 - 1
570 - 1
570- 1
570-  1 SS
15.0 Black organic silt (ML) - wet - very loose  17.0 Brown silty clay (CL) - stiff to very stiff  1.5 S S S S S S S S S S S S S S S S S S S
15.0 Black organic silt (ML) - wet - very loose  17.0 Brown silty clay (CL) - stiff to very stiff  1.5 S S S S S S S S S S S S S S S S S S S
15.0 Black organic silt (ML) - wet - very loose  17.0 Brown silty clay (CL) - stiff to very stiff  1.5 S S S S S S S S S S S S S S S S S S S
15.0 Black organic silt (ML) - wet - very loose  17.0 Brown silty clay (CL) - stiff to very stiff  1.5 S S S S S S S S S S S S S S S S S S S
15.0 Black organic silt (ML) - wet - very loose  17.0 Brown silty clay (CL) - stiff to very stiff  1.5 S S S S S S S S S S S S S S S S S S S
17.0 Brown silty clay (CL) - stiff to very stiff  18  2 SS  17.0 Brown silty clay (CL) - stiff to very stiff  2.5  3 SS  4 SS  10  10  18
17.0 Brown silty clay (CL) - stiff to very stiff  3 SS
3 SS
- 3 SS
2.5 - 4 ss - 5 ss - 5 ss - 4 ss - 4 ss - 5 ss
5 58 118
560-
560-
300
End of Boring Boring advanced from 15.0 to 25 feet with rock bit and drilling
fluid
Boring grouted with bentonite grout mix upon completion
The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual
<u> </u>
WATER LEVEL:  BORING STARTED  7/29/2022  Groop Ray WI
BORING STARTED   GEI OFFICE   T/29/2022   Green Bay, WI



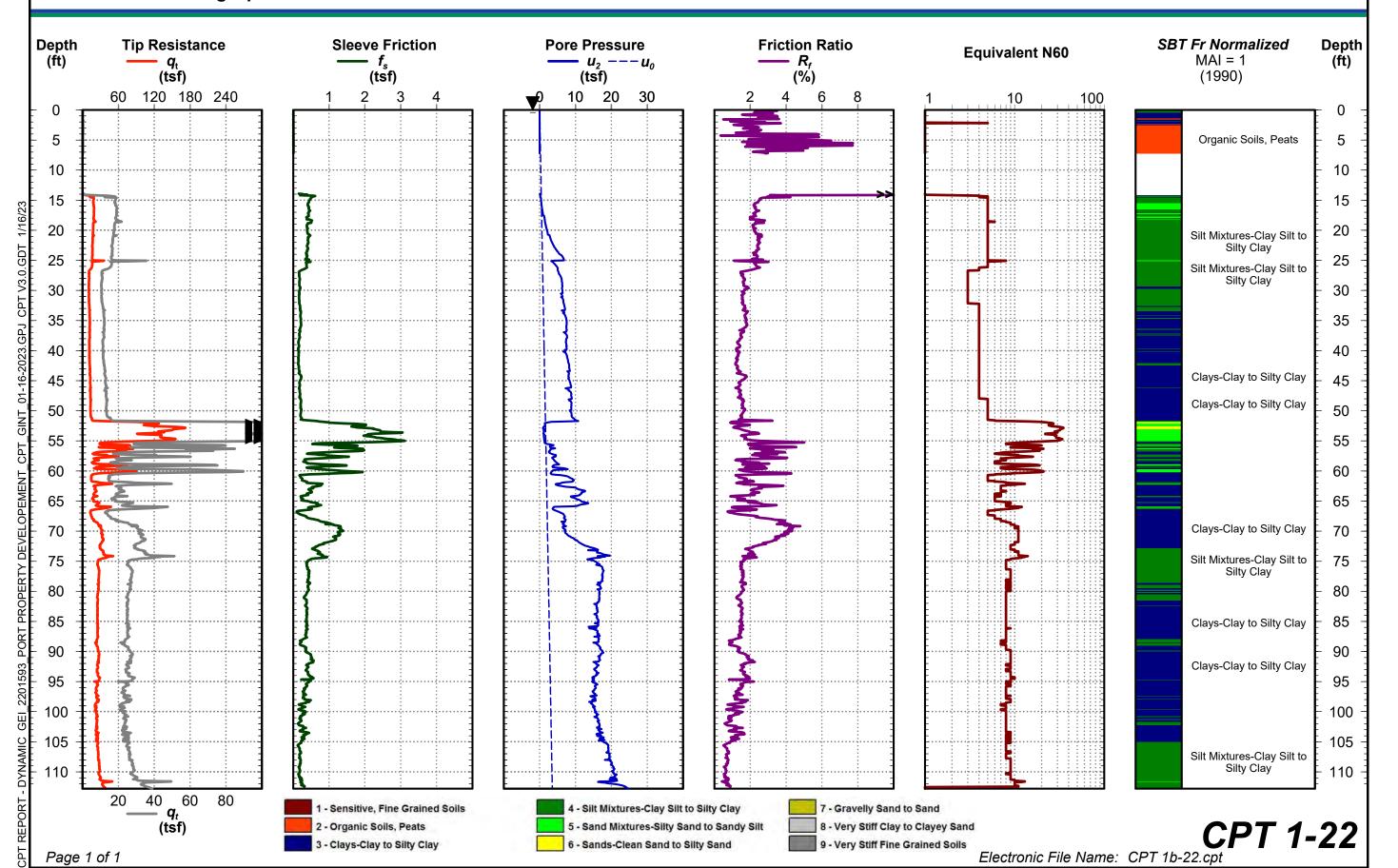
# **Cone Penetration Test**

**CPT 1-22** 

**Date:** Jan. 12, 2023

Estimated Water Depth: 0 ft Rig/Operator: CAP Northing: 263792.5 Easting: 2487534.7

**Total Depth:** 112.8 ft **Termination Criteria:** Target



# **Cone Penetration Test**

**CPT 2-22** 

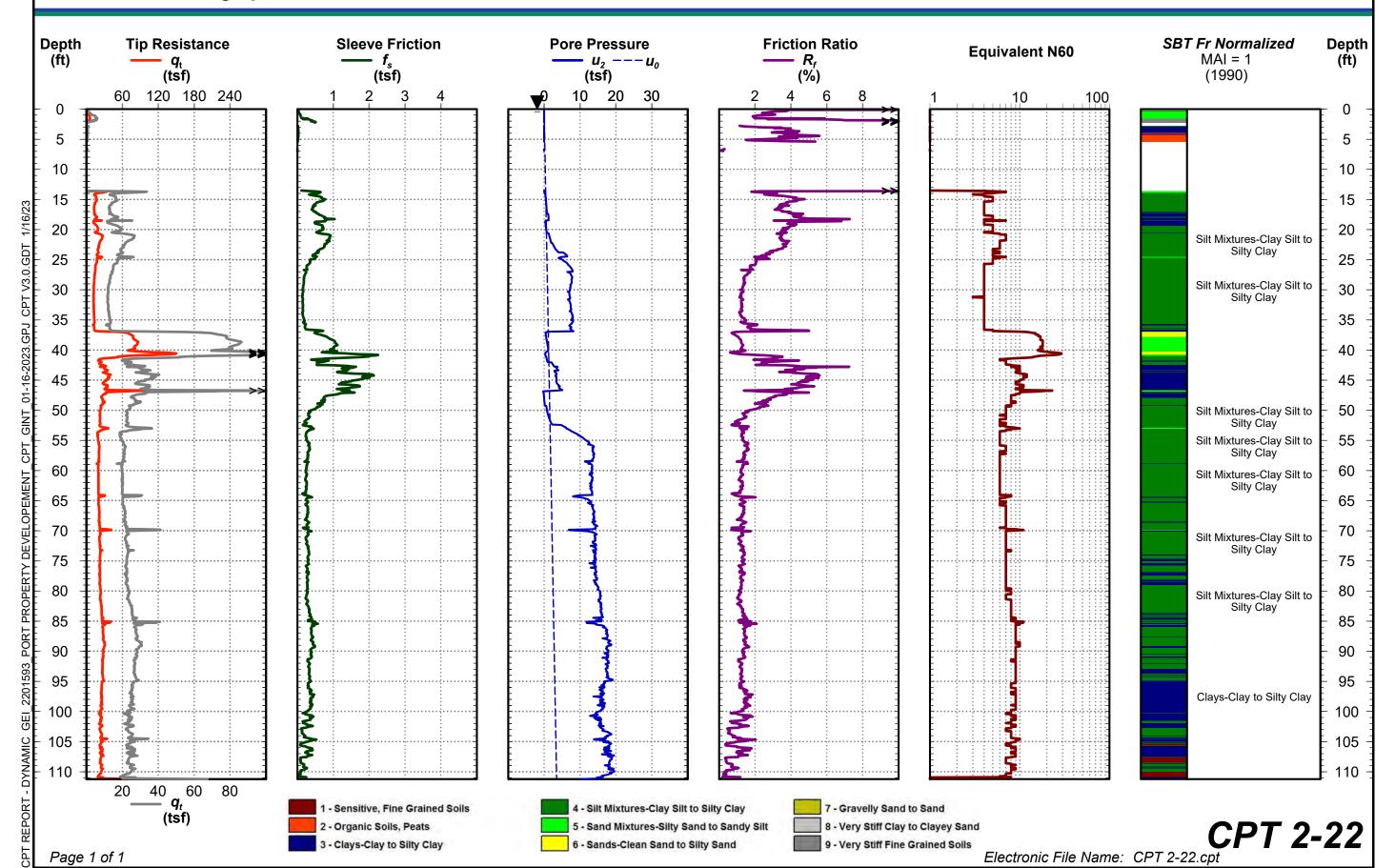
**Date:** Jan. 9, 2023

Estimated Water Depth: 0 ft Rig/Operator: CAP

Northing: 264048.5 Easting: 2487682.7

Elevation:

Total Depth: 111.2 ft
Termination Criteria: Target





# **Cone Penetration Test**

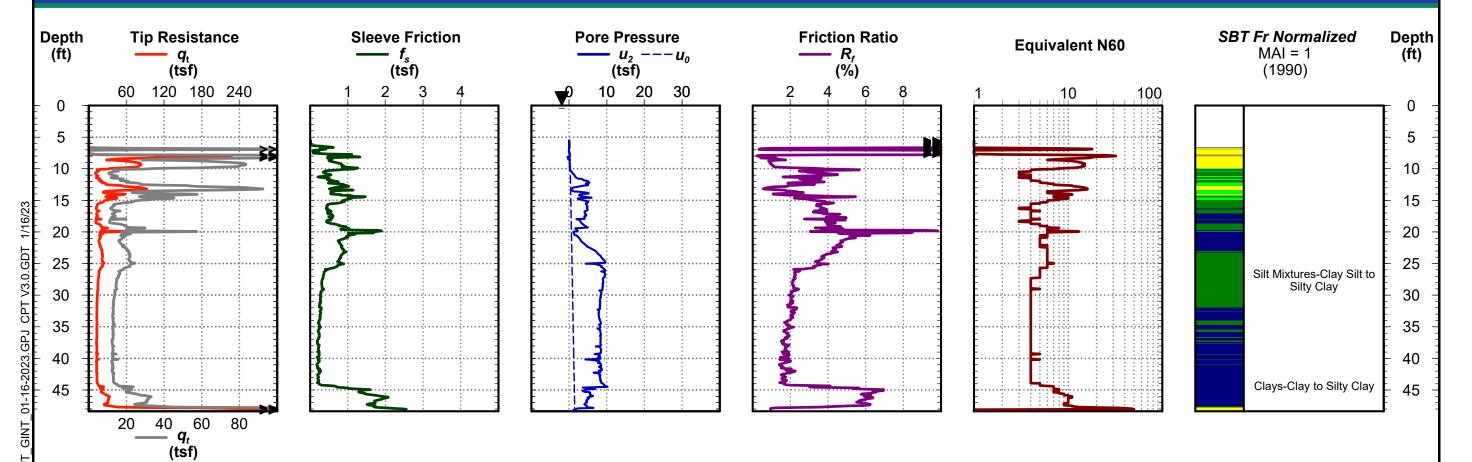
**CPT 3-22** 

Date: Jan. 3, 2023

Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 264310.7 Easting: 2487834.2

Total Depth: 48.4 ft Termination Criteria: Target









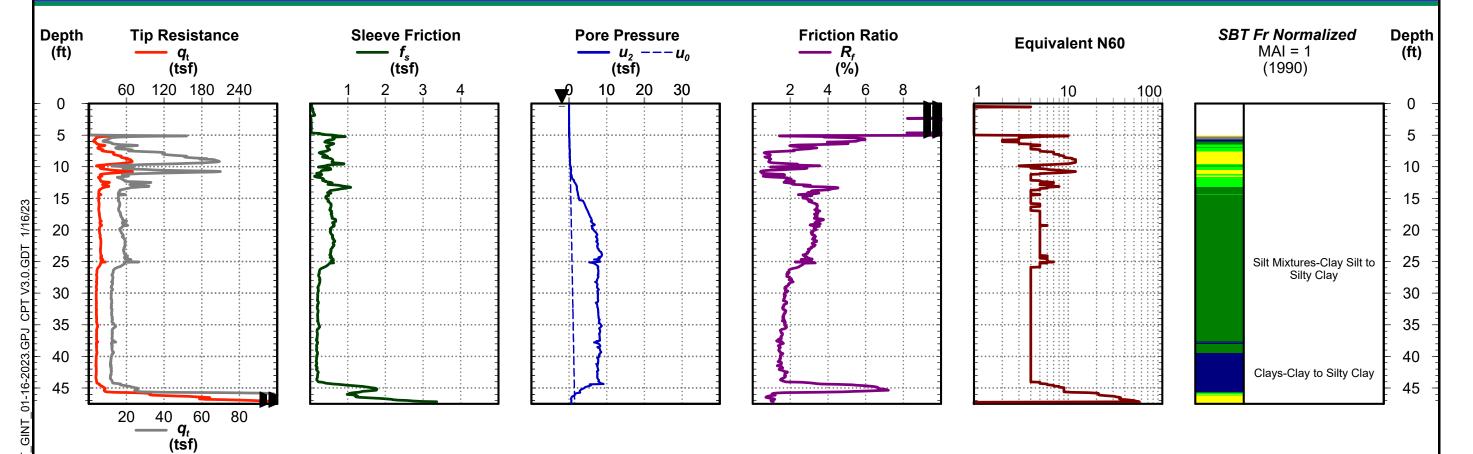
# **Cone Penetration Test**

**CPT 4-22** 

**Date:** Jan. 5, 2023

Estimated Water Depth: 0 ft Rig/Operator: CAP Northing: 264533.7 Easting: 2487776.1

Total Depth: 47.5 ft
Termination Criteria: Target





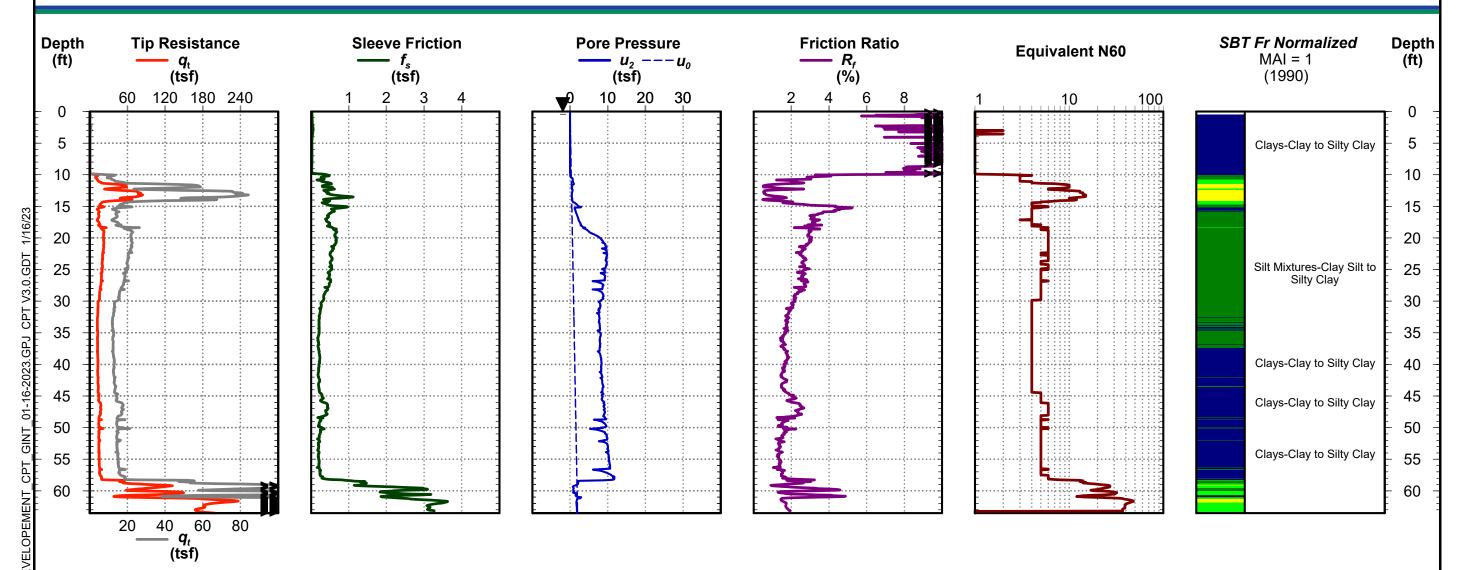
# **Cone Penetration Test**

**CPT 5-22** 

**Date:** Jan. 6, 2023

Estimated Water Depth: 0 ft Rig/Operator: CAP Northing: 263955.7 Easting: 2487867.5

Total Depth: 63.5 ft Termination Criteria: Target









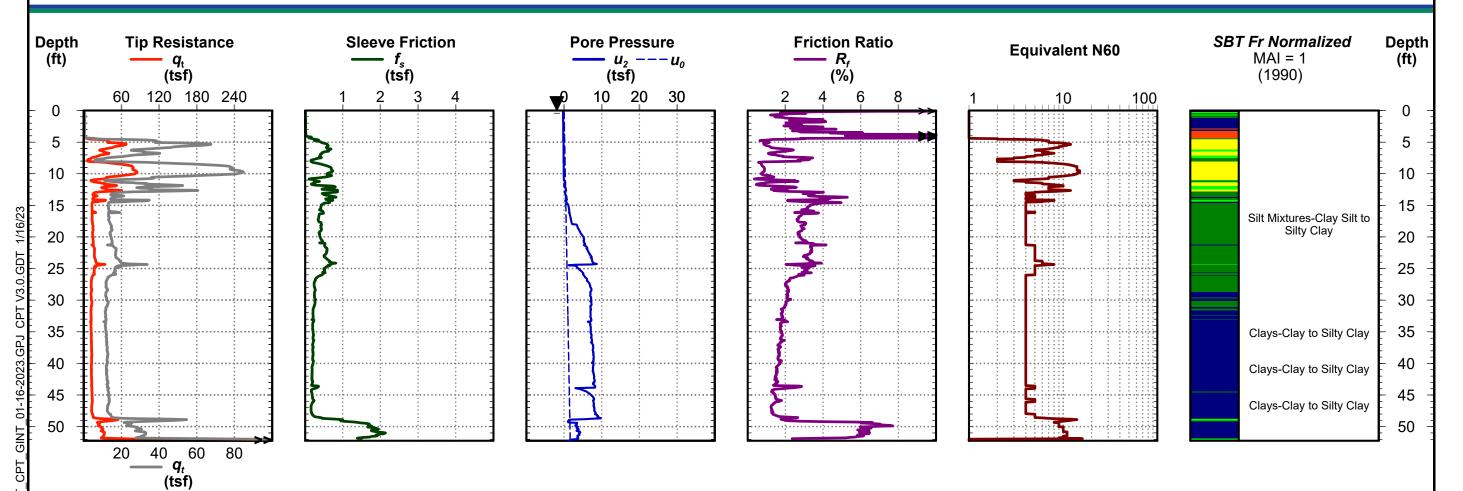
# **Cone Penetration Test**

**CPT 6-22** 

**Date:** Jan. 4, 2023

Estimated Water Depth: 0 ft Rig/Operator: CAP Northing: 264193.0 Easting: 2488042.6

Total Depth: 52.2 ft Termination Criteria: Target







# **Cone Penetration Test**

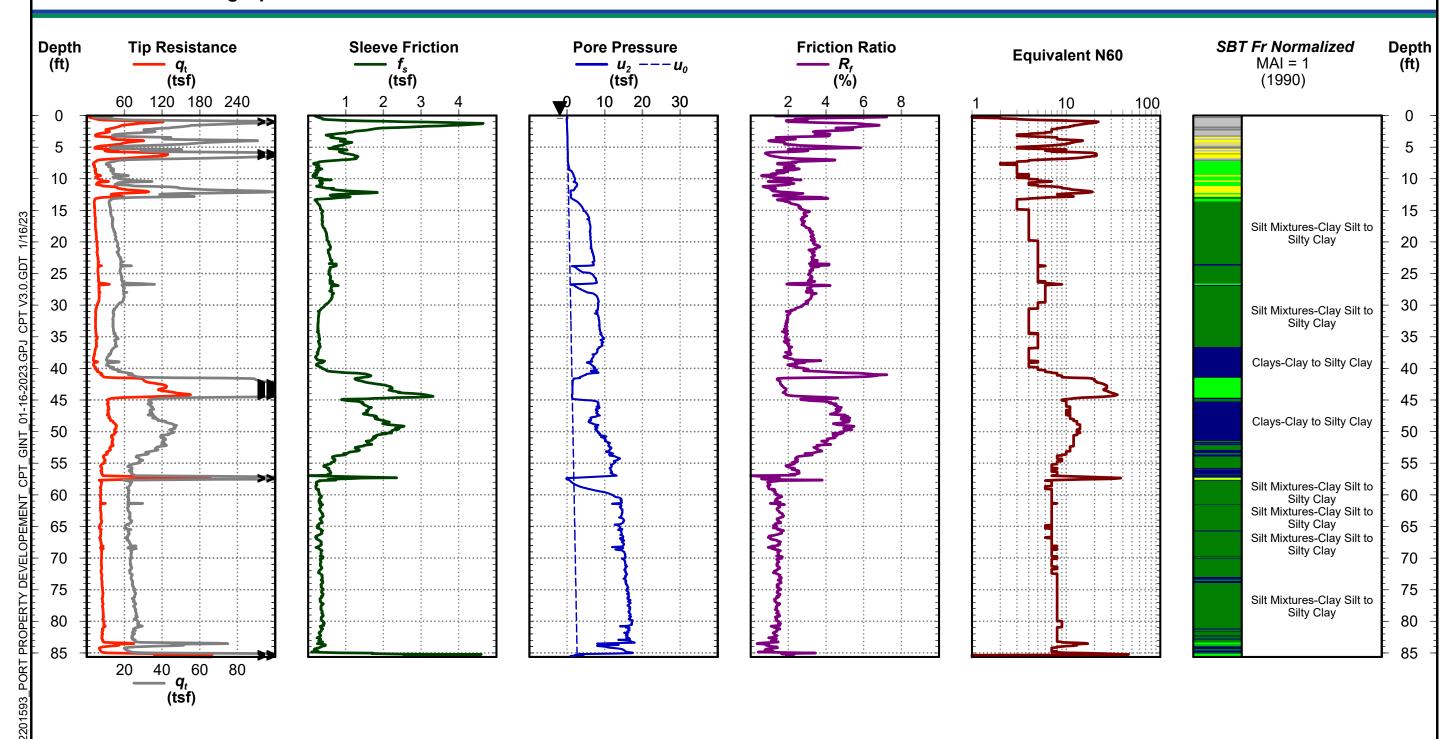
**CPT 7-22** 

**Date:** Jan. 10, 2023

Estimated Water Depth: 0 ft Rig/Operator: CAP Northing: 263392.3 **Easting:** 2487713.6

**Elevation:** 

Total Depth: 85.6 ft **Termination Criteria:** Target







# **Cone Penetration Test**

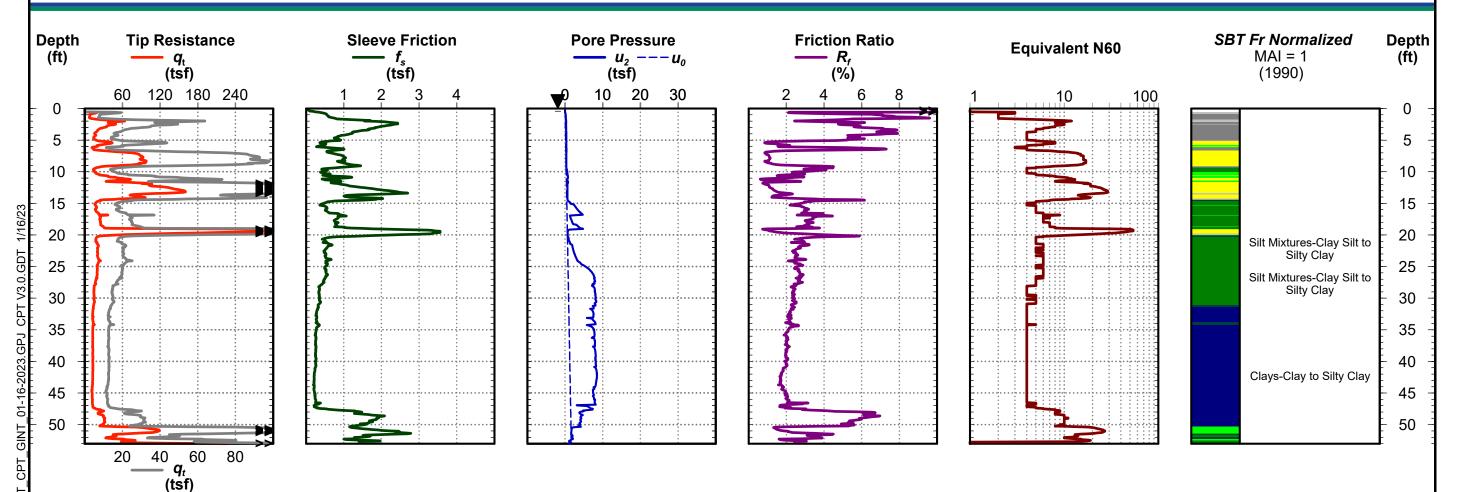
**CPT 8-22** 

**Date:** Jan. 9, 2023

Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 263595.0 Easting: 2487892.8

Total Depth: 53.0 ft Termination Criteria: Target







# **Cone Penetration Test**

**CPT 9-22** 

1 10,000 11011

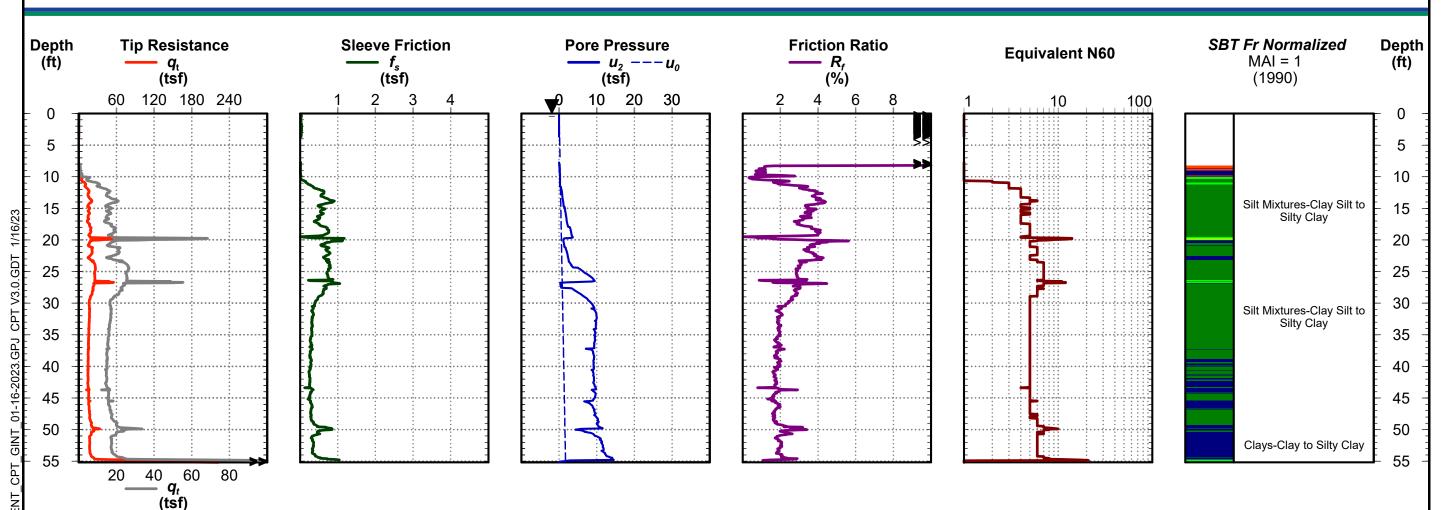
Estimated Water Depth: 0 ft
Rig/Operator: CAP

 Date:
 Jan. 11, 2023
 Northing:
 263792.1

 Depth:
 0 ft
 Easting:
 2487992.3

Elevation:

**Total Depth:** 55.2 ft **Termination Criteria:** Target









# **Cone Penetration Test**

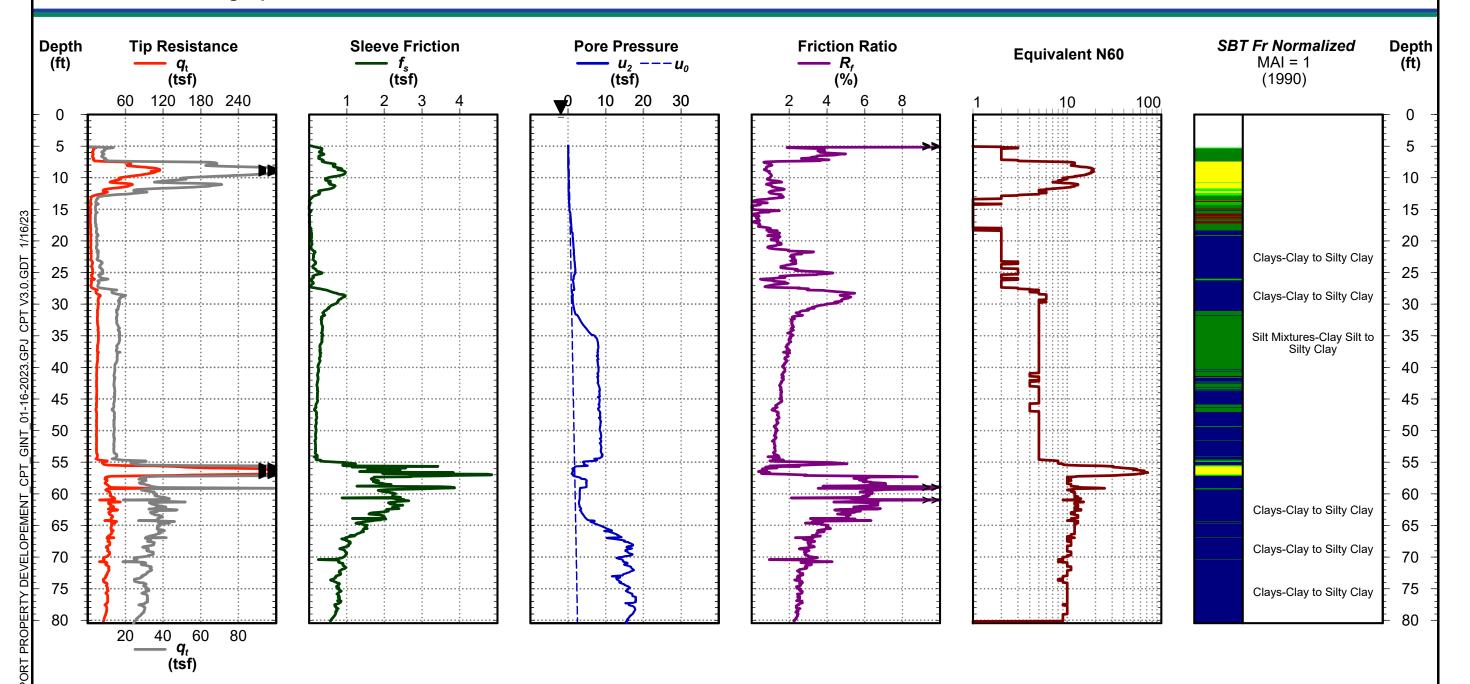
**CPT 10-22** 

**Date:** Jan. 5, 2023

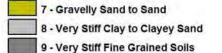
Estimated Water Depth: 0 ft Rig/Operator: CAP Northing: 264100.7 Easting: 2488197.8

Total Depth: 80.5 ft Termination Criteria: Target

**Elevation:** 







CPT 10-22
Electronic File Name: CPT 10-22.cpt



# **Cone Penetration Test**

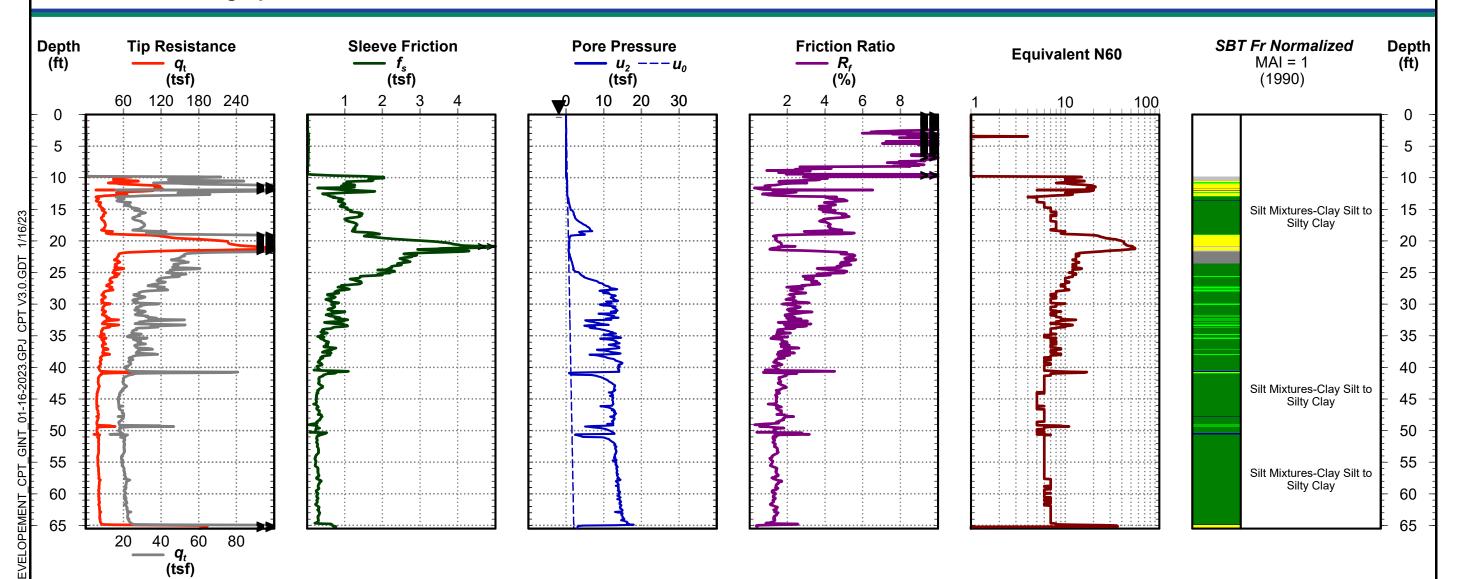
**CPT 11-22** 

**Date:** Jan. 11, 2023

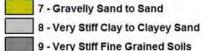
Estimated Water Depth: 0 ft Rig/Operator: CAP Northing: 263063.8 Easting: 2487587.1

Elevation:

Total Depth: 65.5 ft Termination Criteria: Target









# **Cone Penetration Test**

**CPT 12-22** 

**Date:** Jan. 10, 2023

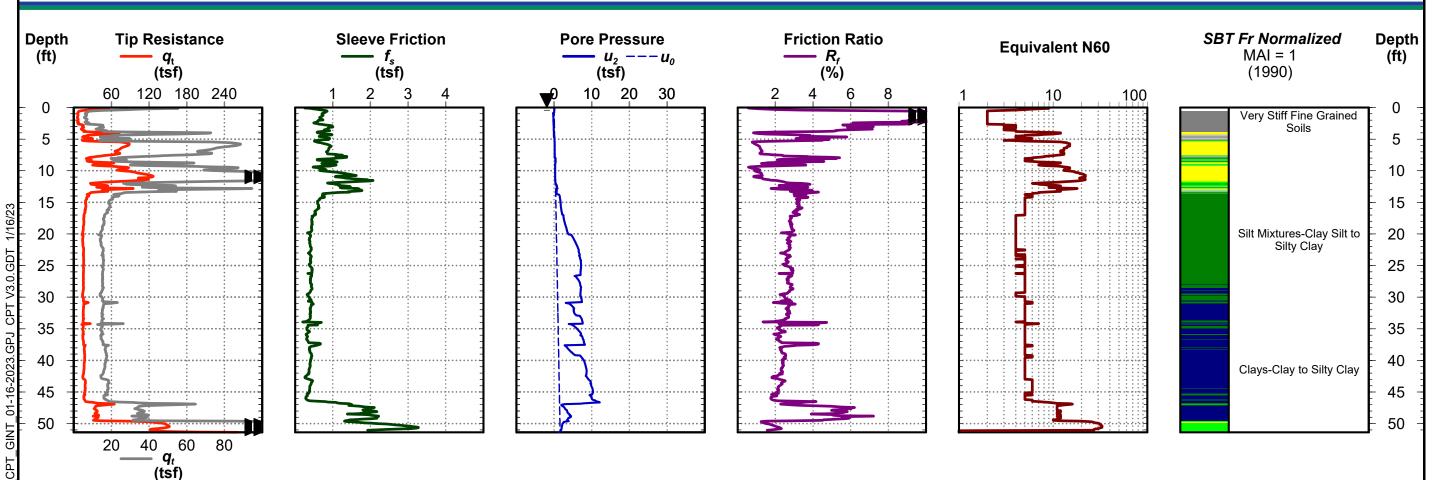
Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 263578.7 Easting: 2488155.8

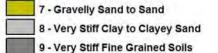
**Elevation:** 

Total Depth: 51.4 ft
Termination Criteria: Target

g/Operator: CAP









# **Cone Penetration Test**

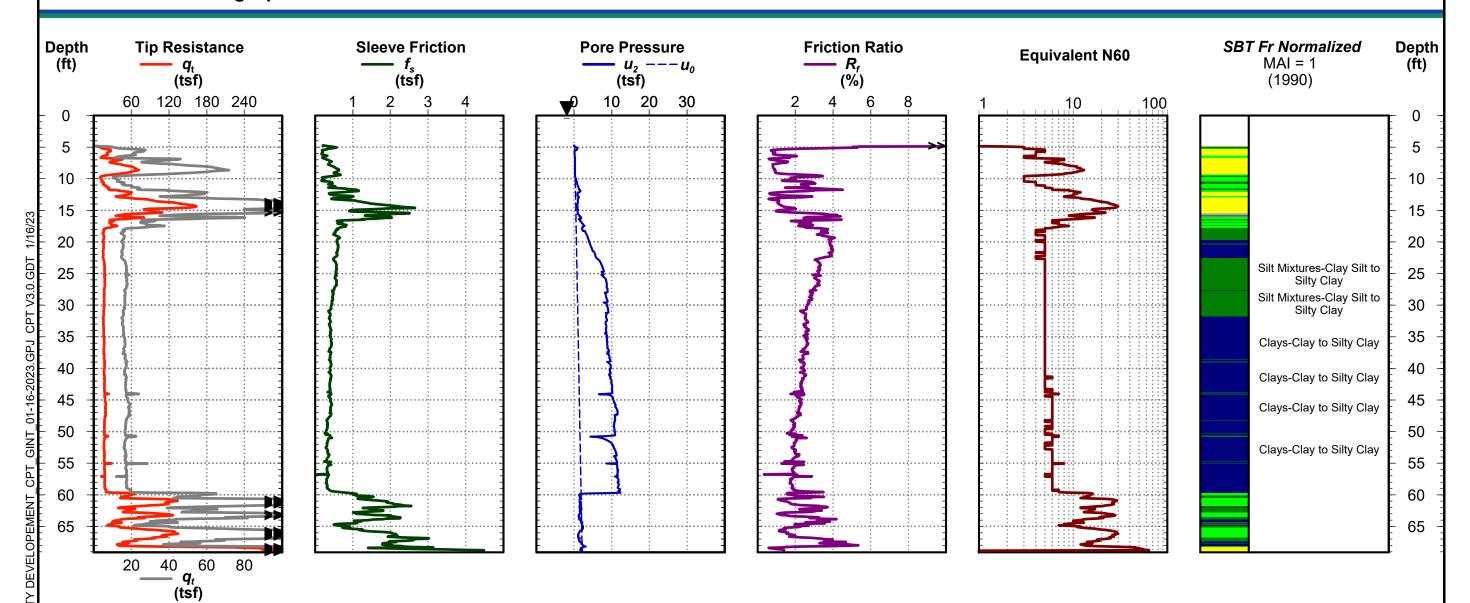
**CPT 13-22** 

**Date:** Jan. 4, 2023

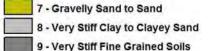
Estimated Water Depth: 0 ft Rig/Operator: CAP Northing: 263915.0 Easting: 2488216.7

Elevation:

**Total Depth:** 69.1 ft **Termination Criteria:** Target

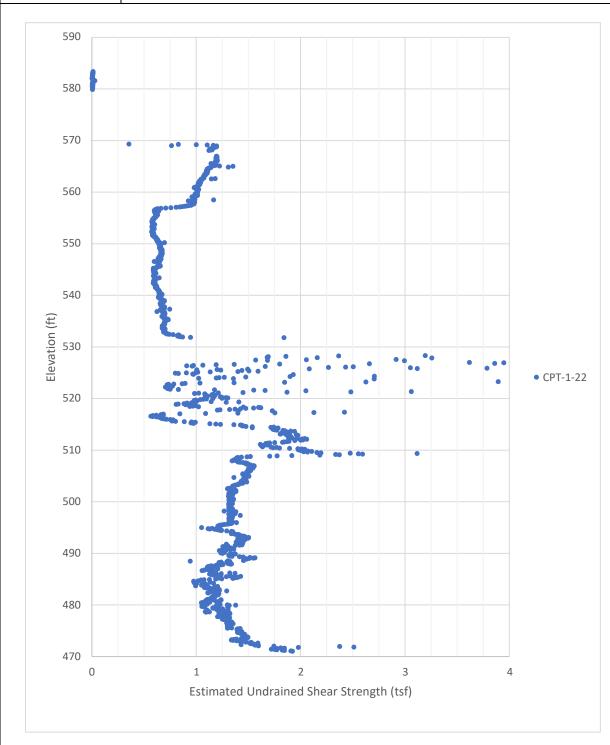






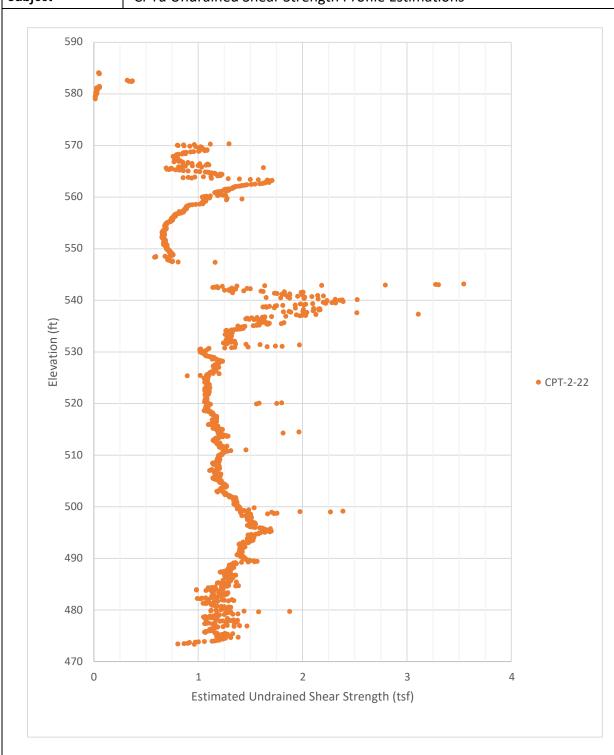


Client	Brown County			Page	1 of 16
Project	Port Property	Port Property Redevelopment F			
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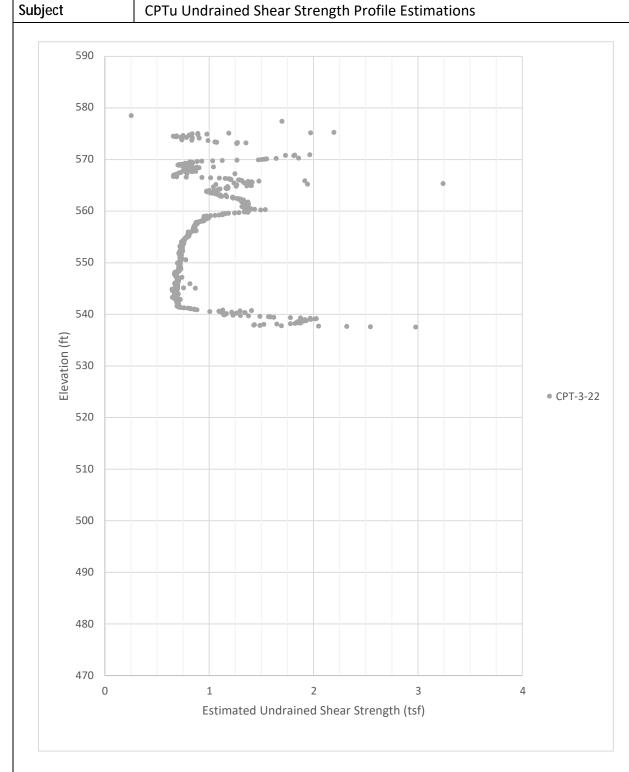


7	Client	Brown County	Brown County			2 of 16
	Project	Port Property Redevelopment			Pg. Rev.	
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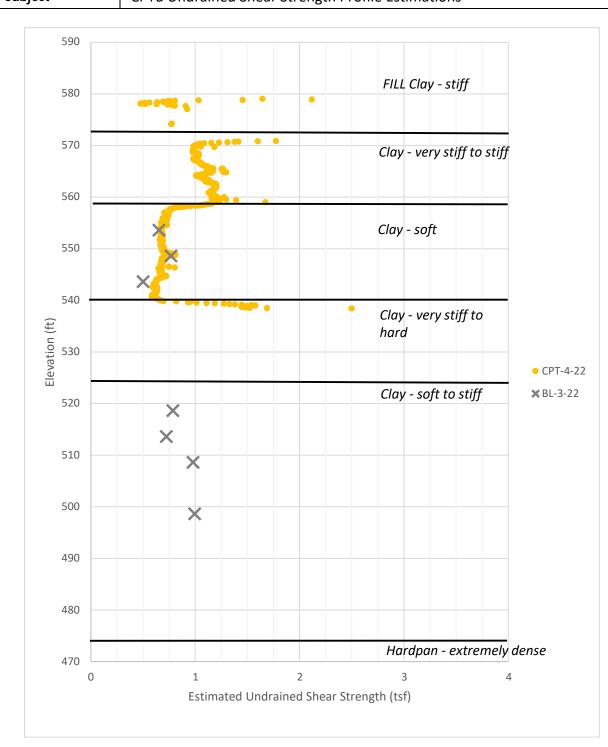


Client	Brown County			Page	3 of 16
Project	Port Property I	Port Property Redevelopment			
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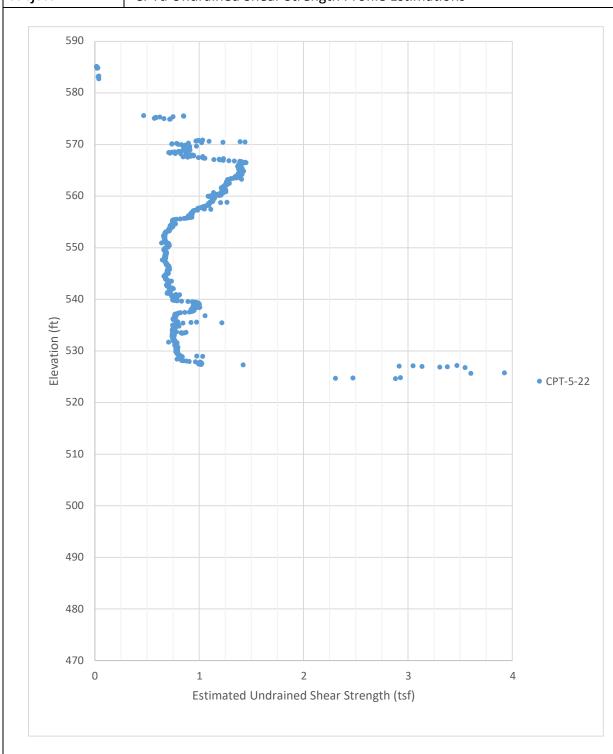


	Client	Brown County	Brown County			4 of 16
	Project	Port Property Redevelopment			Pg. Rev.	
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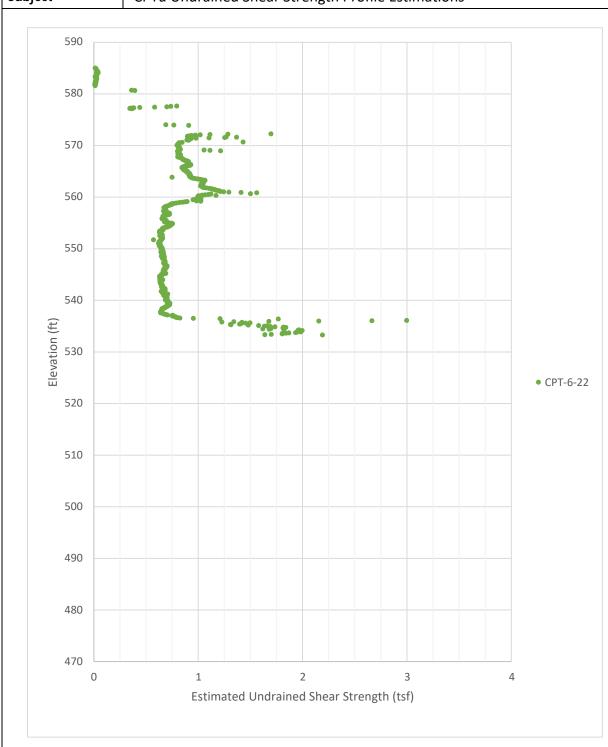


	Client	Brown County	Brown County			5 of 16
	Project	Port Property Redevelopment			Pg. Rev.	
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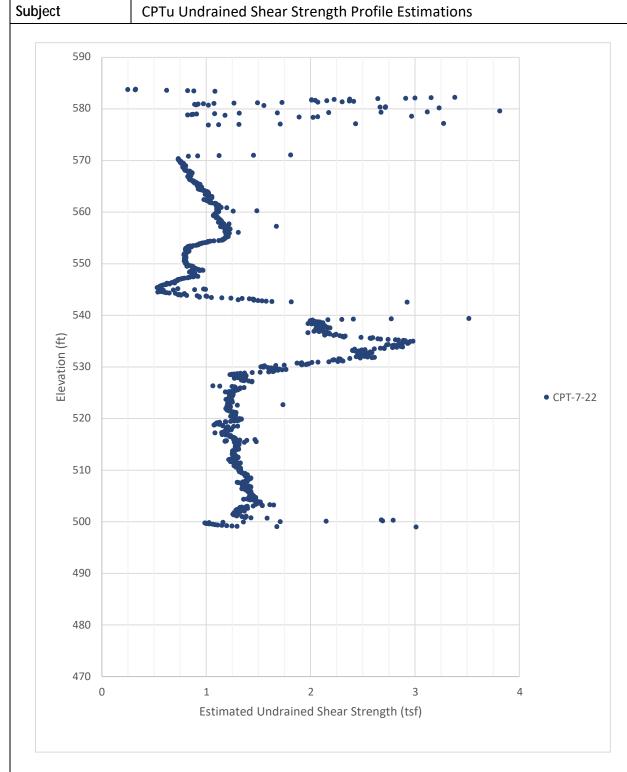


7	Client	Brown County	Brown County			6 of 16
	Project	Port Property Redevelopment			Pg. Rev.	
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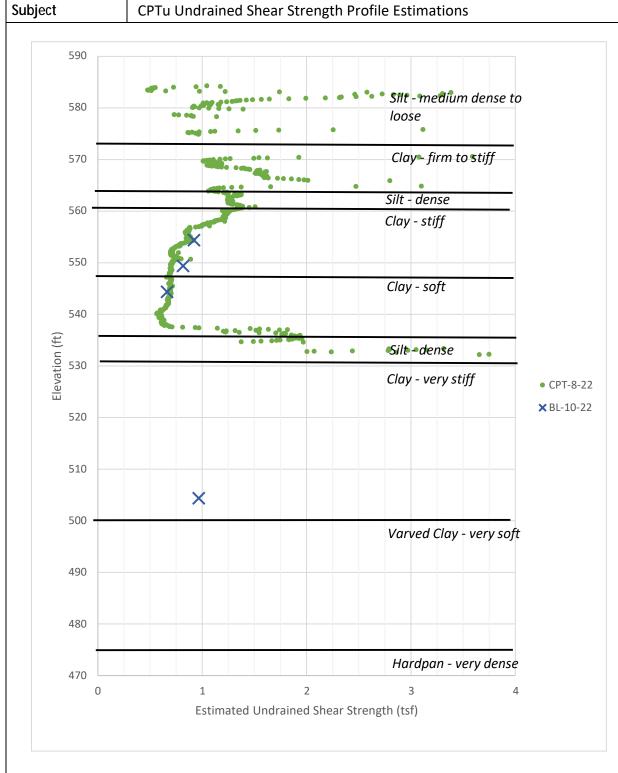


Client	Brown County	Brown County			7 of 16
Project	Port Property	Port Property Redevelopment			
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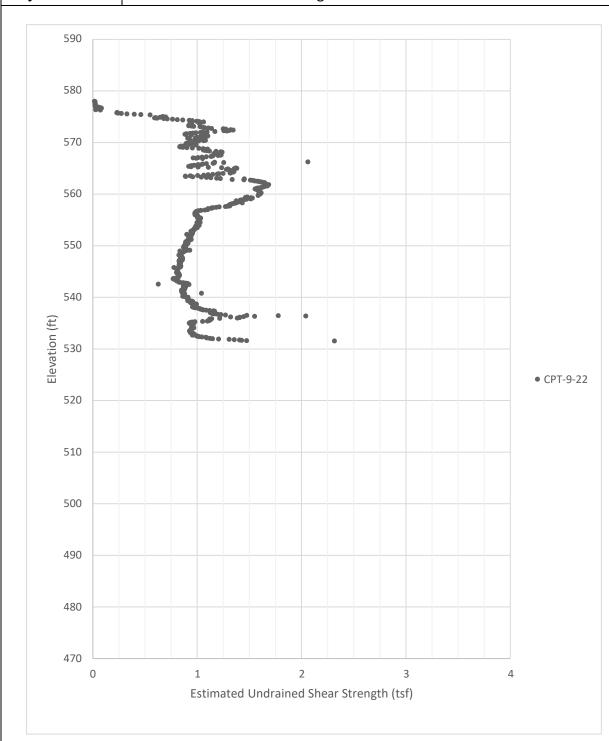


Client	Brown County			Page	8 of 16
Project	Port Property I	Port Property Redevelopment			
Ву		Chk.		Арр.	
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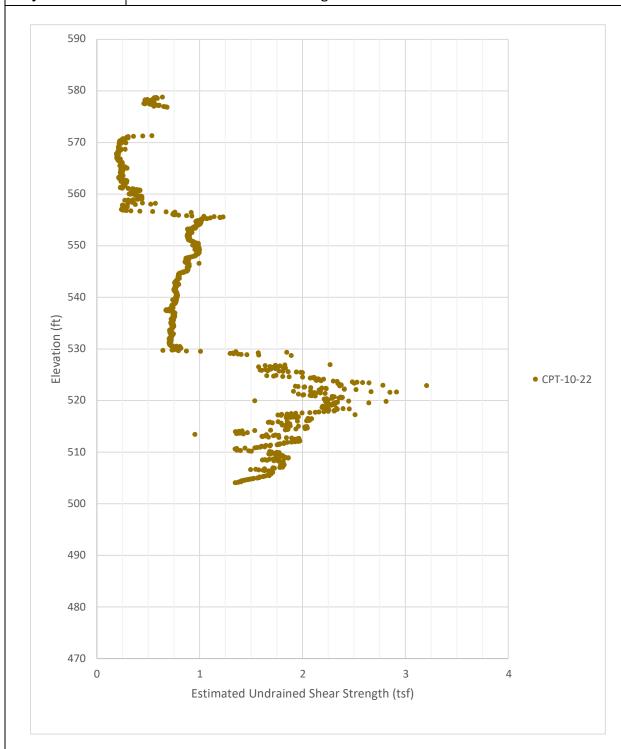


Client	Brown County			Page	9 of 16
Project	Port Property I	Port Property Redevelopment			
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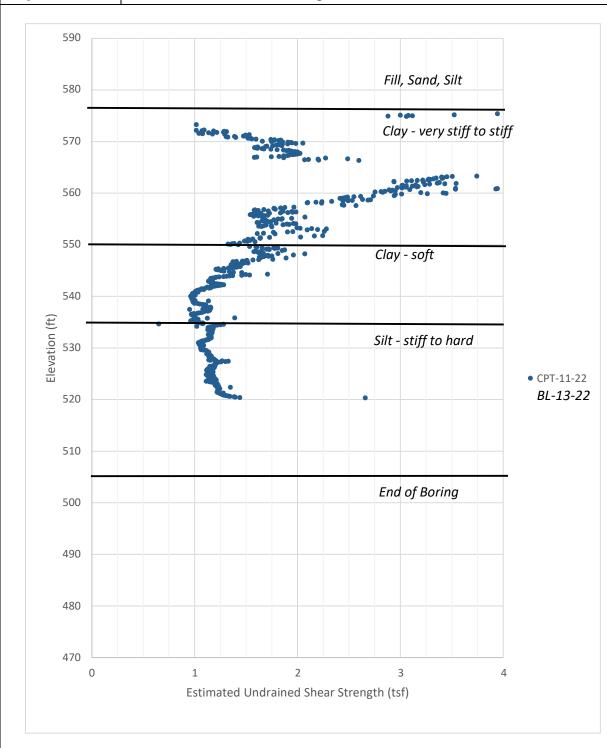


Client	Brown County			Page	10 of 16
Project	Port Property I	Port Property Redevelopment			
Ву		Chk.		Арр.	
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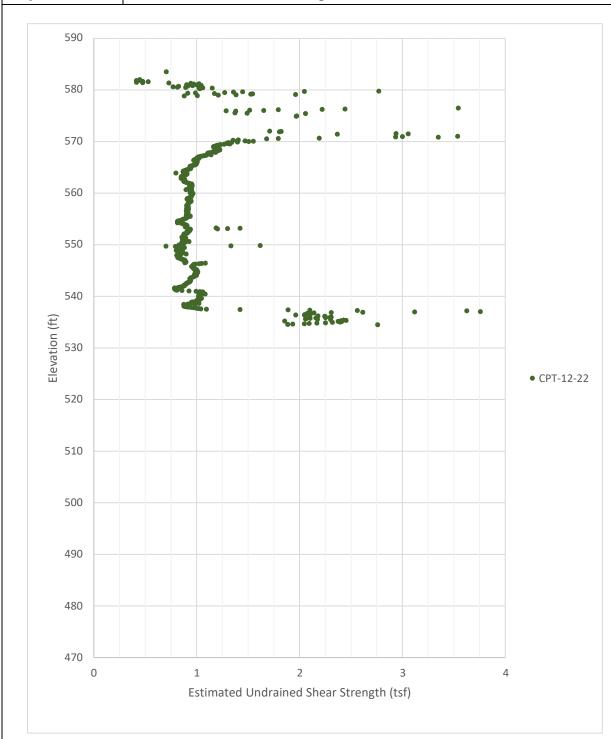


Client	Brown County			Page	11 of 16
Project	Port Property I	Port Property Redevelopment			
Ву		Chk.		Арр.	
Date		Date		Date	
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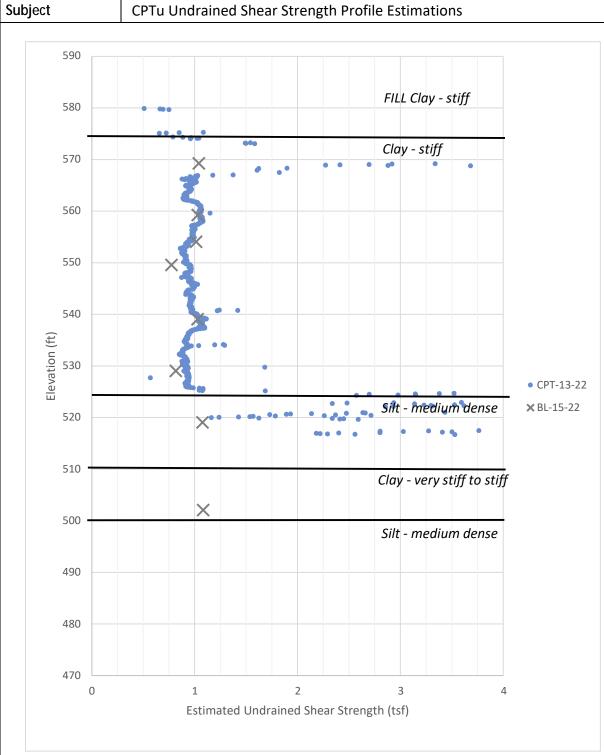


Client	Brown County			Page	12 of 16
Project	Port Property I	Port Property Redevelopment			
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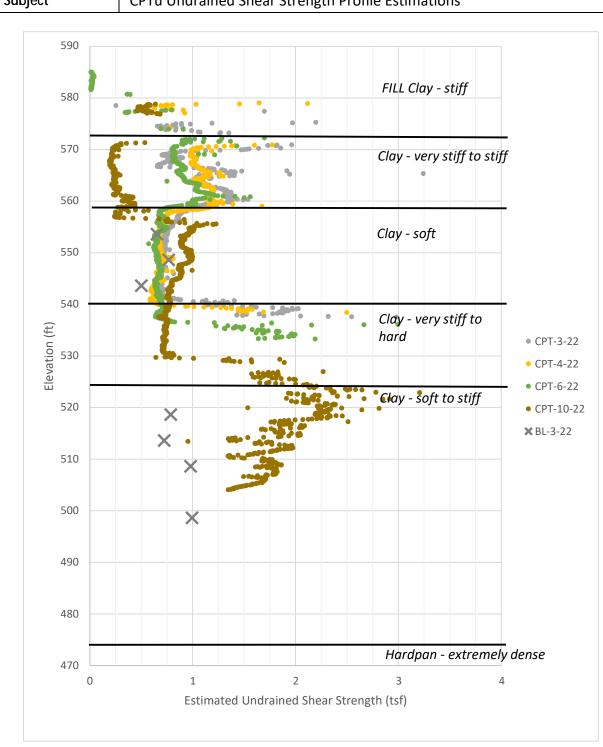


Client	Brown County			Page	13 of 16	
Project	Port Property I	Redevelop	ment	Pg. Rev.		
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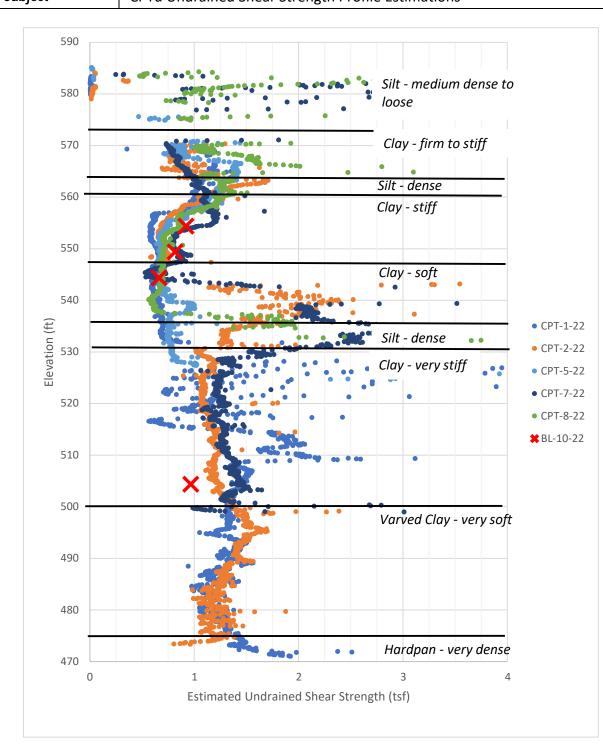


•	7	Client	Brown County			Page	14 of 16
		Project	Port Property I	Redevelop	Pg. Rev.		
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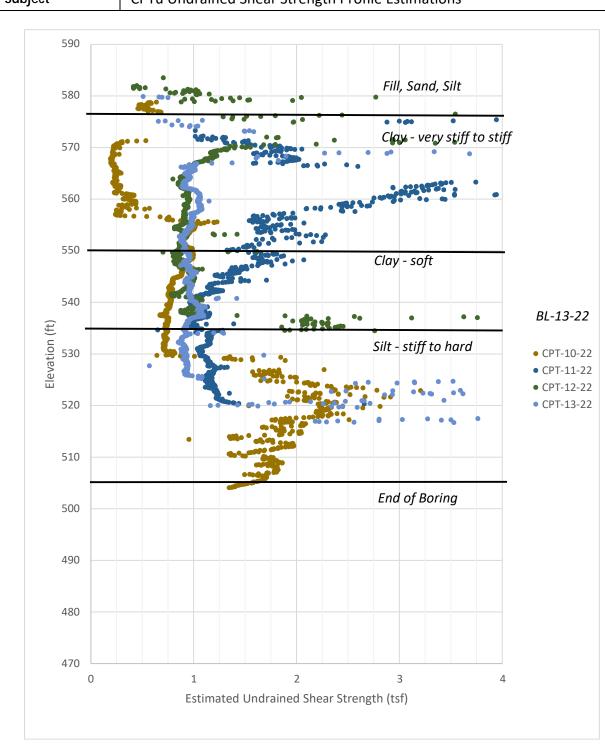


Client	Brown County			Page	15 of 16	
Project	Port Property	Redevelop	oment	Pg. Rev.		
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	Client	Brown County			Page	16 of 16
	Project	Port Property I	Redevelop	Pg. Rev.		
	Ву		Chk.		Арр.	
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Pre-Design Investigation Port Property Redevelopment Geotechnical Data Report Green Bay, Wisconsin March 2023

### Appendix B

**Field Vane Shear Strength Test Results** 

#### **Vane Shear Test Results**



 Project:
 Port Property Redevelopment

 Location:
 Green Bay, WI

 Operator / Driller:
 Subsurface Exploration Services, LLC, Green Bay, WI (John C)

GEI Project No.

Dates: 7/19/2022 to 8/1/2022
Checked By: KMK

 Boring No.
 EL \* Water Surface elevation
 Units

 Surface Elevation:
 BL-7-22
 584.557
 \*(NAVD 88)

 BL-11-22
 584.772
 ...

 BL-15-22
 584.779
 ...
 ...

 BL-1-22
 583.811
 ...
 ...

 BL-10-22
 584.116
 ...
 ...

 BL-4-22
 586.16
 ...
 ...

 BL-9-22
 586.552
 ...
 ...

 BW-2-22
 586.746
 580.25
 ...

 BW-2-22
 586.746
 584.75
 ...

 BW-3-22
 582.643
 580.64
 ...

 BW-1-22
 582.602
 580.60
 ...

2.0 = SMALL (11CM X 5CM) VANE 1.0 = MEDIUM (13CM X 6.5 CM) VANE 0.5 = LARGE (17.2CM X 8CM) VANE

VANE SIZE

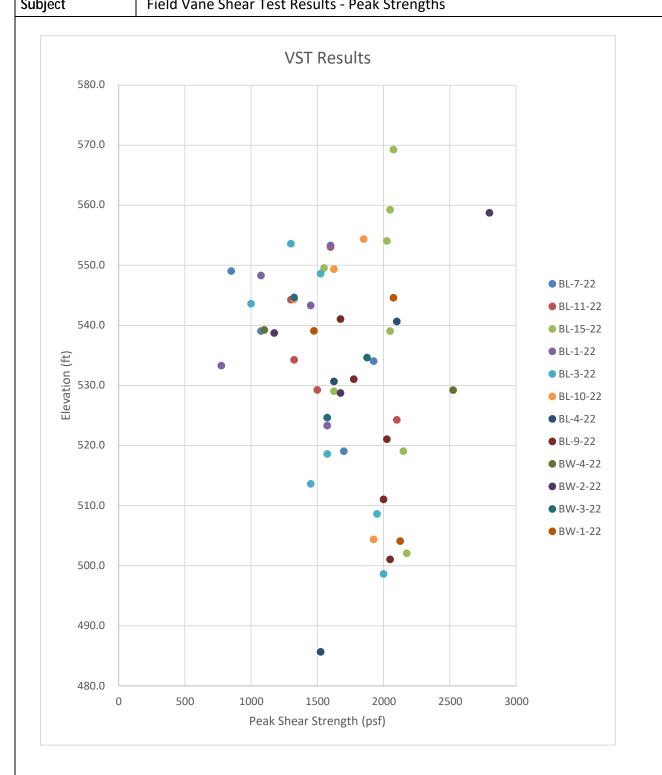
Vane Constant,K: \_\_\_1.0038\_\_ (Subsurface Exploration Services)

Data Reduction: \_\_\_\_CEF\_\_\_

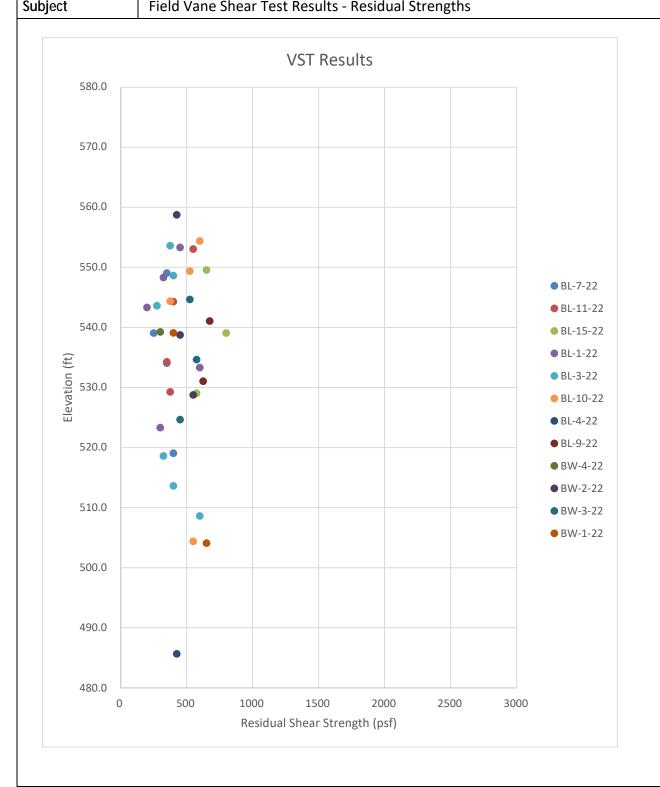
BORING NO.	Vane Shear Test#	VANE TIP DEPTH	VANE SIZE	VANE	а	a'	a"	PE	AK S <sub>u</sub>	b	REMO	OLDED S <sub>u</sub>	SENSITIVIT Y	APPROX. VANE TIP ELEV.	Notes
	1621#	(ft)			(in)	(in)	(in)	(tsf)	(psf)	(in)	(tsf)	(psf)	Peak/Rem.		
BL-1-22	1	30.5	medium	1	3.075	3.109	0.034	0.800	1600	0.855	0.222	450	3.6	553.3	
BL-1-22	2	35.5	medium	1	2.074	2.138		0.540	1075	0.628	0.163	325	3.3	548.3	
BL-1-22	3	40.5	medium	1	2.807	2.876		0.730	1450	0.382	0.099	200	7.3	543.3	
BL-1-22 BL-1-22	4	50.5	medium	1	1.478	1.539		0.385	775	1.145 0.561	0.298	600 300	1.3	533.3 523.3	
BL-3-22	5 1	60.5 30.5	medium	1 1	3.028 2.512	3.103 2.570		0.788	1575 1300	0.716	0.146 0.186	375	5.3 3.5	553.6	
BL-3-22	2	35.5	medium	1	2.950	3.019		0.768	1525	0.716	0.199	400	3.8	548.6	
BL-3-22	3	40.5	medium	i	1.926	1.953		0.501	1000	0.506	0.132	275	3.6	543.6	
BL-3-22	4	65.5	medium	1	3.024	3.130		0.787	1575	0.632	0.164	325	4.8	518.6	
BL-3-22	5	70.5	medium	1	2.781	2.823	0.042	0.724	1450	0.773	0.201	400	3.6	513.6	
BL-3-22	6	75.5	medium	1	3.764	3.830	0.066	0.979	1950	1.154	0.300	600	3.3	508.6	
BL-3-22	7	85.5	medium	1	3.821	3.821		0.994	2000					498.6	vane maxed out, no remold
BL-4-22	1	45.5	medium	1	4.023	4.064		1.047	2100					540.7	Vane maxed out, no remold
BL-4-22	2	55.5	medium	1	3.100	3.192		0.807	1625	0.700	0.000	405		530.7	Remold test disturbed, possibly due to gravel
BL-4-22	3	100.5	medium	1	2.948	3.021		0.767	1525	0.799	0.208	425	3.6	485.7	start of remold test was not captured on vane paper
BL-7-22	1	35.5	medium	1	1.644	1.699		0.428	850	0.689	0.179	350	2.4	549.1	
BL-7-22	2	45.5	medium	1	2.062	2.146		0.537	1075	0.470	0.122	250	4.3	539.1	
BL-7-22	3	50.5	medium	1	3.721	3.875		0.968	1925	0.694	0.181	350	5.5	534.1	
BL-7-22	4	65.5	medium	1	3.266	3.452		0.850	1700	0.771	0.201	400	4.3	519.1	
BL-9-22	1	45.5	medium	1	3.197	3.236		0.832	1675	1.286	0.335	675	2.5	541.1	possibly disturbed remold
BL-9-22	2	55.5	medium	1	3.406	3.482		0.886	1775	1.197	0.311	625	2.8	531.1	Start of remold test was not caputred on vane paper
BL-9-22	3	65.5	medium	1	3.875	3.963		1.008	2025					521.1	vane maxed out, no remold
BL-9-22	4	75.5	medium	1	3.859	3.966		1.004	2000					511.1	vane maxed out, no remold
BL-9-22	5	85.5	medium	1	3.963	4.035		1.031	2050					501.1	vane maxed out, no remold
BL-10-22	1	30.5	medium	1	3.540	3.583		0.921	1850	1.140	0.297	600	3.1	554.4	
BL-10-22	2	35.5	medium	1	3.142	3.191		0.818	1625	1.025	0.267	525	3.1	549.4	
BL-10-22	3	40.5	medium	1	2.553	2.636		0.664	1325	0.739	0.192	375	3.5	544.4	
BL-10-22	4	80.5	medium	1	3.718	3.826		0.967	1925	1.064	0.277	550	3.5	504.4	
BL-11-22	1	31.5	medium	1	3.082	3.212		0.802	1600	1.065	0.277	550	2.9	553.1	
BL-11-22	2	40.5	medium	1	2.507	2.576		0.652	1300	0.776	0.202	400	3.3	544.3	
BL-11-22	3	50.5	medium	1	2.560	2.584		0.666	1325	0.692	0.180	350	3.8	534.3	
BL-11-22	4	55.5	medium	1	2.880	2.942	0.062	0.749	1500	0.740	0.193	375	4.0	529.3	
BL-11-22	5	60.5	medium	1	4.013	4.075	0.062	1.044	2100					524.3	vane maxed out, no remold
BL-15-22	1	15.5	medium	1	4.001	4.086	0.085	1.041	2075					569.3	vane maxed out, no remold
BL-15-22	2	25.5	medium	1	3.957	4.104	0.147	1.030	2050					559.3	vane maxed out, no remold
BL-15-22	3	30.5	medium	1	3.897	3.986	0.089	1.014	2025					554.1	vane maxed out, no remold
BL-15-22	4	35.0	medium	1	2.978	3.083	0.105	0.775	1550	1.246	0.324	650	2.4	549.6	
BL-15-22	5	45.5	medium	1	3.951	4.036	0.085	1.028	2050	1.541	0.401	800	2.6	539.1	
BL-15-22	6	55.5	medium	1	3.141	3.245	0.104	0.817	1625	1.120	0.291	575	2.8	529.1	
BL-15-22	7	65.5	medium	1	4.140	4.140	0.000	1.077	2150					519.1	vane maxed out, no remold
BL-15-22	8	82.5	medium	1	4.161	4.161	0.000	1.083	2175					502.1	vane maxed out, no remold
BW-1-22	1	13.5	small	2											test disturbed, do not use
BW-1-22	2	38	medium	1	3.86	3.92	0.06	1.038	2075					544.6	vane maxed out, no remold
BW-1-22	3	43.5	small	2	1.37	1.46	0.08	0.739	1475	0.37	0.20	400	3.7	539.1	
BW-1-22	4	78.5	small	2	1.96	2.13	0.17	1.056	2125	0.6	0.32	650	3.3	504.1	
BW-2-22	1	28	small	2	2.61	2.67	0.05	1.406	2800	0.41	0.22	425	6.6	558.7	
BW-2-22	2	48	small	2	1.09	1.15	0.06	0.585	1175	0.42	0.22	450	2.6	538.7	
BW-2-22	3	58	small	2	1.56	1.61	0.05	0.837	1675	0.5	0.27	550	3.0	528.7	
BW-3-22	1	38	small	2	1.24	1.28	0.04	0.667	1325	0.49	0.26	525	2.5	544.6	
BW-3-22	2	48	small	2	1.74	1.78	0.04	0.936	1875	0.53	0.28	575	3.3	534.6	
BW-3-22	3	58	small	2	1.46	1.50	0.04	0.783	1575	0.41	0.22	450	3.5	524.6	
BW-4-22	1	33	large	0.5										549.2	large vane, couldn't penetrate into clay
BW-4-22	2	43	small	2	1.03	1.10	0.06	0.555	1100	0.28	0.15	300	3.7	539.2	g, _outdirt portottato into otay
BW-4-22	3	53	small	2	2.34	2.43	0.09	1.260	2525				-	529.2	vane maxed out, no remold
J. 1 - 7-22		55	Jilian		2.04	2.70	3.00	1.200	2020					020.2	

Notes: Calculations performed in general accordance with ASTM D2573 -08 standards

	Client	Brown County	/		Page			
	Project	Port Property Redevelopment			Pg. Rev.			
CFI	Ву		Chk.		App.			
Consulta	nts Date		Date		Date			
GEI Project No.		Document No.	Geotechnical Data Report - Appendix B.1					
Subject	Field Vane	Shear Test Result	ts - Doak S	Strongths				



	Client	Brown County	/		Page		
	Project	Port Property Redevelopment			Pg. Rev.		
GFI	Ву		Chk.		Арр.		
Consultar	nts Date		Date		Date		
GEI Project No.		Document No.	Geotechnical Data Report - Appendix B.1				
Subject	Field Vano	Shoor Toct Docul	to Bocida	ial Strongths			

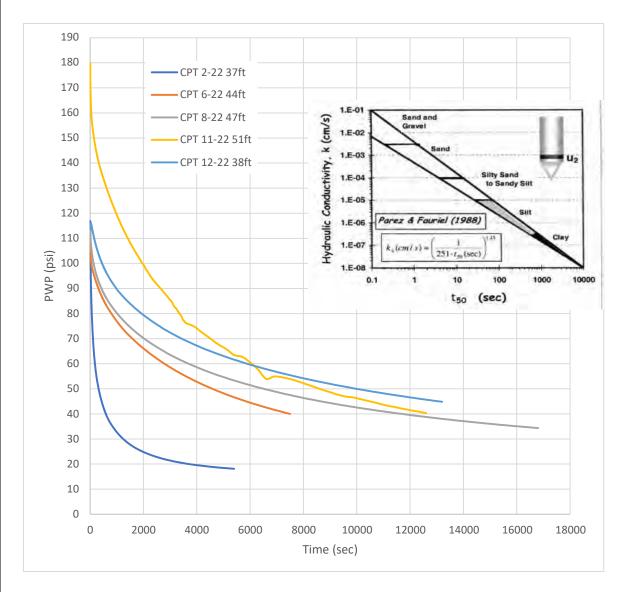




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	Project	Port Property	Redevelo	Pg. Rev.		
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an <sup>-</sup>	Date		Date		Date	
2201593		Document No.	Geotech	nical Data Repor	t - Appen	dix B.2

Subject CPTu Dissipation Test Summary

Test	Depth (ft)	El. (ft)	U <sub>i</sub> (psi)	U <sub>o</sub> (psi)	U <sub>50</sub> (psi)	t <sub>50</sub> (min)	k <sub>h</sub> (cm/s)	k <sub>h</sub> (ft/s)
CPT 2-22	36.88	547.34	117	17	66.9	2.08	2.4E-06	7.9E-08
CPT 12-22	37.53	546.49	115	40	77.7	37.00	6.6E-08	2.2E-09
CPT 6-22	43.83	541.29	114	30	72.1	23.00	1.2E-07	3.9E-09
CPT 8-22	46.85	538.02	113	30	71.6	30.50	8.4E-08	2.7E-09
CPT 11-22	50.52	534.70	180	30	104.9	28.00	9.3E-08	3.1E-09



Pre-Design Investigation Port Property Redevelopment Geotechnical Data Report Green Bay, Wisconsin March 2023

## **Appendix C**

**Laboratory Test Results** 

#### LABORATORY TESTING SUMMARY



CLIENT: GEI Consultants, Inc.

PROJECT NAME: Pulliam Property Redevelopment Project

PROJECT NUMBER: 11225052

												Co	on	
Boring Number	Sample Number	Depth (ft)	Description (ASTM D2487)	USCS	MC %	Qp (tsf)	LL	PL	PI	Specific Gravity	Dry Density (pcf)	Pc (tsf)	Сс	Ccr
BL-2	ST-7	20.0'-22.0'	REDDISH BROWN LEAN CLAY TRACE SAND AND GRAVEL	CL	24.5	2.25								
BL-2	ST-10	35.0'-37.0'	REDDISH BROWN LEAN CLAY	CL	34.1	0.75	41	15	26					
BL-3	ST-14	67.5'-69.5'	REDDISH BROWN LEAN CLAY	CL	30.1	0.75	38	15	23		94.2	2.8	0.372	0.010
BL-3	ST-15	80.0'-82.0'	REDDISH BROWN LEAN CLAY TRACE SAND AND GRAVEL	CL	30.5	1.50								
BL-3	ST-16	90.0'-92.0'	REDDISH BROWN LEAN CLAY TRACE SAND AND GRAVEL	CL	25.7	2.25								
BL-3	ST-18	100.0'-102.0'	PINKISH BROWN LEAN LCAY TRACE SILT	CL	33.9	1.50	32	19	13					
BL-5	ST-12	40.0'-42.0'	BROWN LEAN CLAY		30.5	1.00								
BL-5	ST-16	60.0'-62.0'	REDDISH BROWN LEAN CLAY	CL	31.1	1.00	42	15	27	2.759	90.6	3.2	0.439	0.071
BL-6B	ST-2	30.0'-32.0'	REDDISH BROWN LEAN CLAY TRACE SAND AND GRAVEL	CL	26.2	1.50								
BL-6B	ST-6	50.0'-52.0'	REDDISH BROWN LEAN CLAY	CL	30.8	1.00	41	14	27		90.7	2.0	0.322	0.064
BL-6B	ST-10	70.0'-71.5'	REDDISH BROWN LEAN CLAY	CL	45.9	1.00								
BL-7	ST-10	40.0'-42.0'	REDDISH BROWN LEAN CLAY	CL	32.6		40	15	25		86.6	1.2	0.342	0.097
BL-7	ST-12	60.0'-62.0'	REDDISH BROWN LEAN CLAY	CL	34.2	2.50								
BL-8	ST-9	30.0'-32.0'	REDDISH BROWN LEAN CLAY	CL	31.7	0.75	41	14	27		94.8	1.7	0.332	0.074
BL-8	ST-13	50.0'-52.0'	REDDISH BROWN LEAN CLAY TRACE SAND	CL	22.8	4.00								
BL-11	ST-9	25.0'-27.0'	REDDISH BROWN LEAN CLAY	CL	24.9	2.25								
BL-11	ST-11	45.0'-47.0'	REDDISH BROWN LEAN CLAY	CL	31.8	0.75	42	14	28	2.716	89.5	2.1	0.359	0.093
BL-12	ST-8	25.0'-27.0'	REDDISH BROWN LEAN CLAY TRACE GRAVEL		24.0	2.50								
BL-12	ST-12	45.0'-47.0'	REDDISH BROWN LEAN CLAY TRACE GRAVEL	CL	31.8	1.00	40	14	26					
BL-12	ST-19	80.0'-82.0'	REDDISH BROWN LEAN CLAY TRACE GRAVEL	CL	31.0	1.75	42	16	26					
BL-15	ST-9	40.0'-42.0'	REDDISH BROWN LEAN CLAY TRACE GRAVEL	CL	28.0	1.75	41	15	26					
BL-15	ST-10	50.0'-52.0'	REDDISH BROWN LEAN CLAY TRACE GRAVEL	CL	28.7	1.50								

#### LABORATORY TESTING SUMMARY



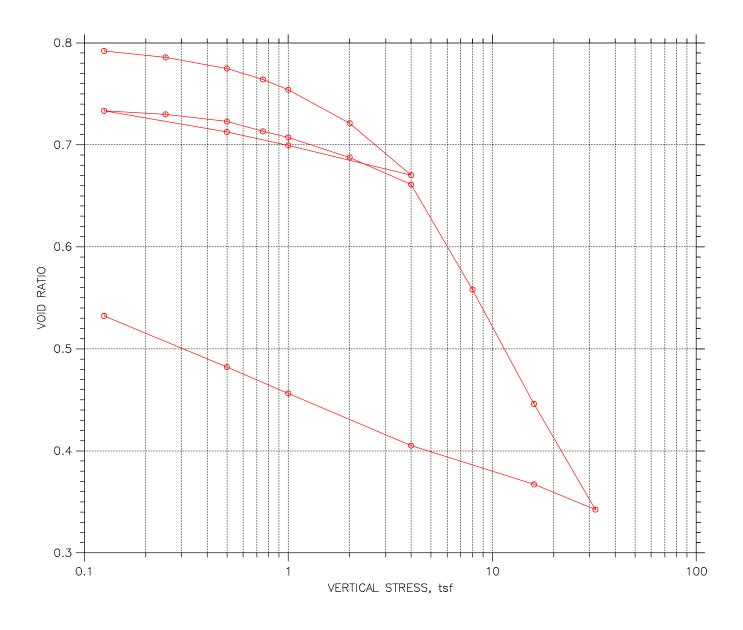
PROJECT NAME: Pulliam Property Redevelopment Project PROJECT NUMBER: 11225052 CLIENT: GEI Consultants, Inc.

												Co	onsolidati	on
Boring Number	Sample Number	Depth (ft)	Description (ASTM D2487)	USCS	MC %	Qp (tsf)	LL	PL	PI	Specific Gravity	Dry Density (pcf)	Pc (tsf)	Сс	Ccr
BW1-22	ST-1	20.0'-22.0'	REDDISH BROWN LEAN CLAY	CL	32.4									
BW1-22	ST-2	50.0'-52.0'	REDDISH BROWN LEAN CLAY	CL	21.0		38	14	24		101.4	1.1	0.299	0.078
BW2-22	ST-1	35.0'-37.0'	REDDISH BROWN LEAN CLAY	CL	20.6		35	13	22	2.732	100.5	3.3	0.251	0.064
BW2-22	ST-2	65.0'-67.0'	REDDISH BROWN LEAN CLAY	CL	29.4		41	15	26	2.738	92.5	4.1	0.409	0.090
BW2-22	ST-3	80.0'-81.5'	REDDISH BROWN LEAN CLAY - SILT AND SAND SEAMS NOTED	CL	28.2		45	15	30		76.6	6.7	0.800	0.760
BW3-22	ST-1	30.0'-32.0'	DARK REDDISH BROWN LEAN CLAY	CL	27.2									
BW3-22	ST-2	45.0'-47.0'	REDDISH BROWN LEAN CLAY	CL	30.3									
BW3-22	ST-3	90.0'-92.0'	REDDISH BROWN LEAN CLAY	CL	42.1		41	18	23		80.1	4.5	0.465	0.106
BW4-22	ST-1	40.0'-42.0'	REDDISH BROWN LEAN CLAY	CL	31.8									
BW4-22	ST-3	90.0'-92.0'	REDDISH BROWN LEAN CLAY - SILT SEAMS NOTED	CL	33.3					2.759				



# One Dimensional Consolidation Properties of Soils Using Incremental Loading ASTM D2435

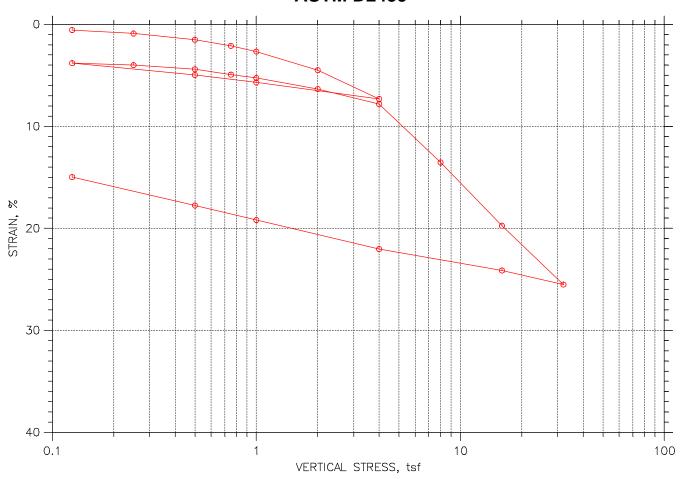
# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435

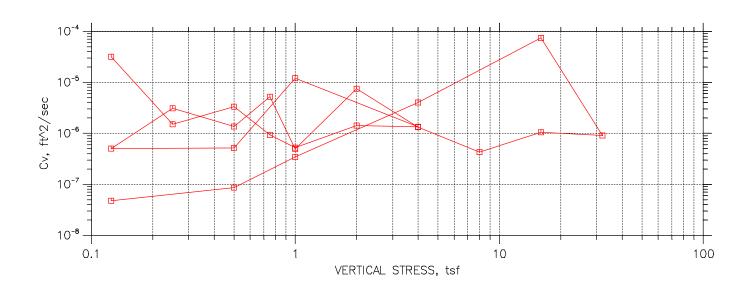


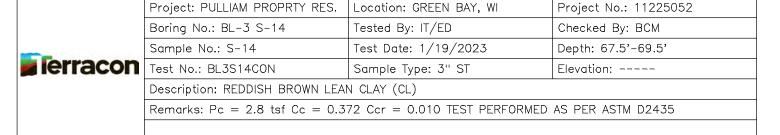
					Before Test	After Test	
				Water Content, %	29.85	20.16	
Preconsolidati	on Pressure: 2.8	3 tsf		Dry Unit Weight, pcf 94.23 11			
Compression	Index: 0.372			Saturation, %	101.23	103.02	
Diameter: 2.501 in Height: 0.7484		in	Void Ratio	0.80	0.53		
LL: 38	PL: 15	PI: 23	GS: 2.72				

Fierracon	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

## ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



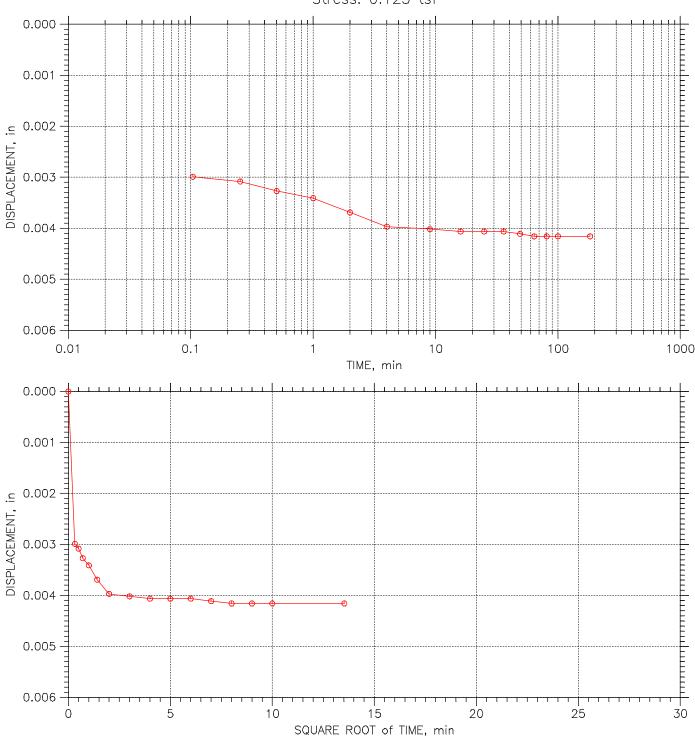




TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf

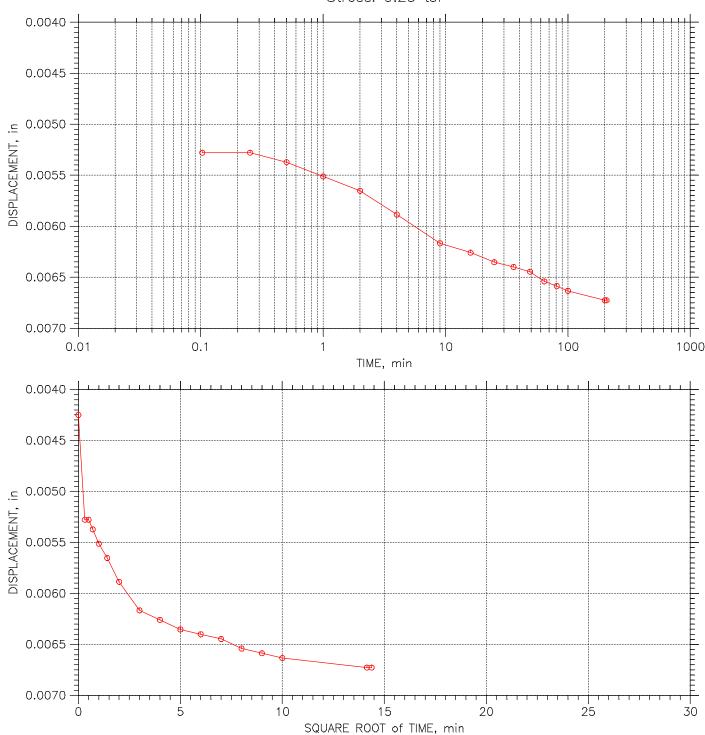


	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
Fierracon	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf

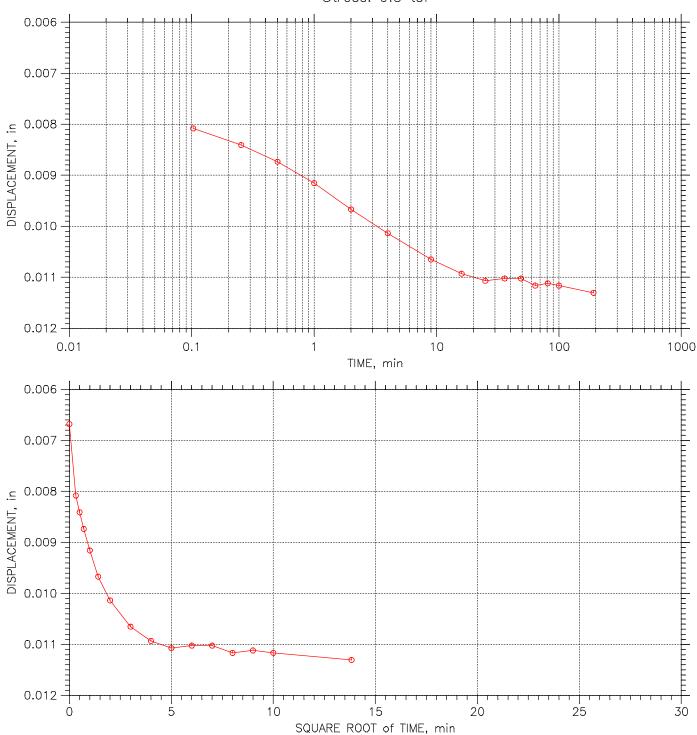


	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
Fierracon	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf

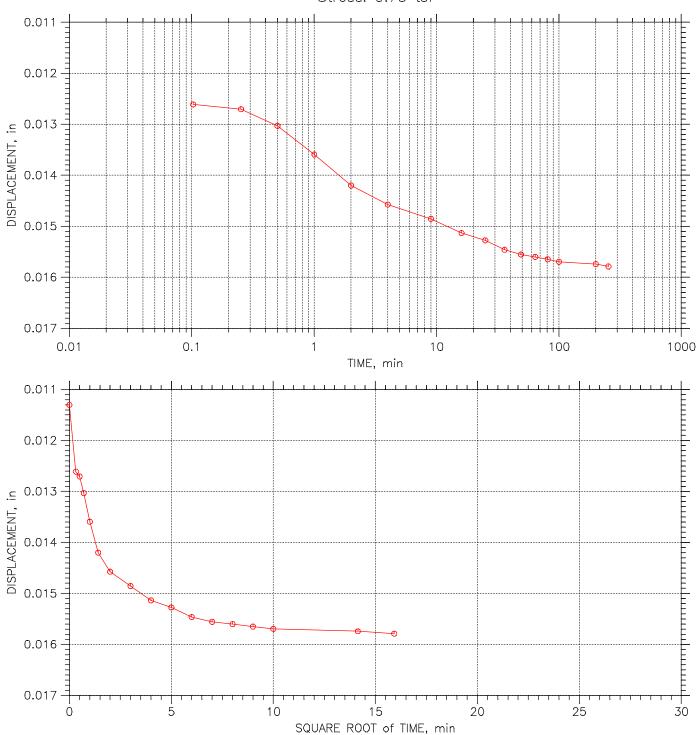


	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
erracon	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf

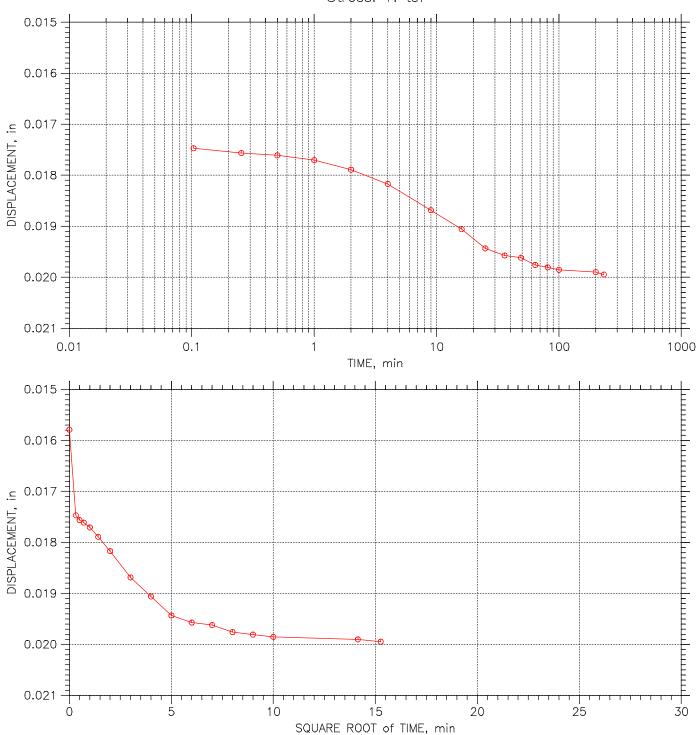


	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
erracon	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf

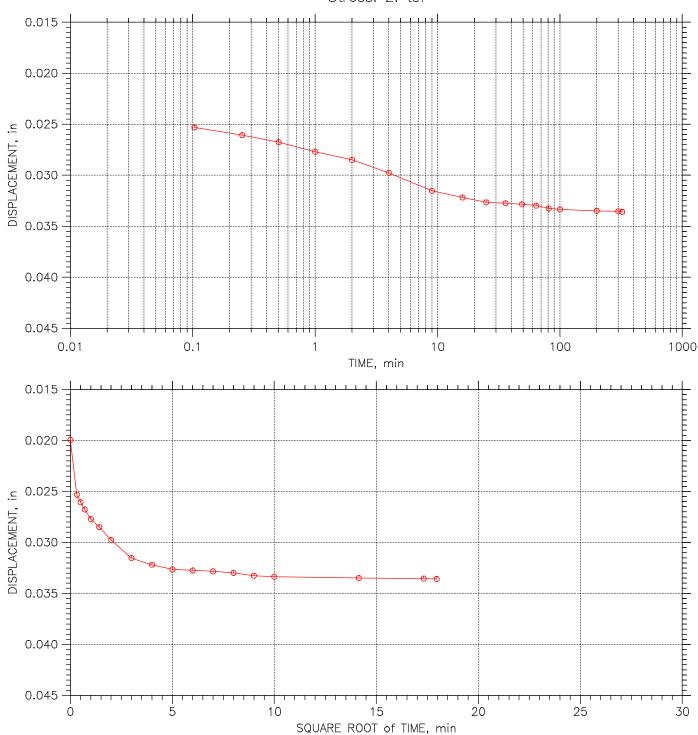


	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
erracon	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf

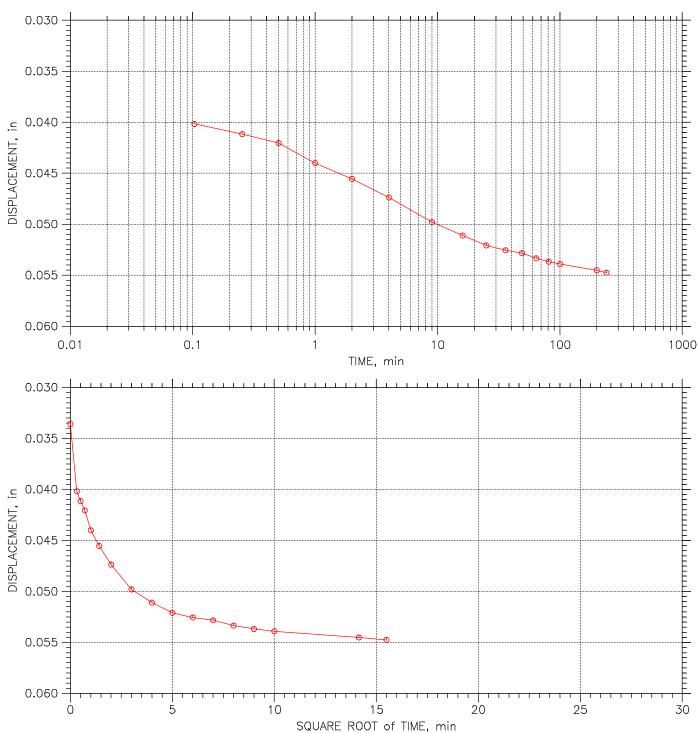


		Project: Pulliam PROPRIT RESTU	PLOCOTION: GREEN BAT, WI	Project No.: 11223032
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM	
		Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	<b>ierracon</b>	Prracon Test No.: BL3S14C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)			
		Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		
				_

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf

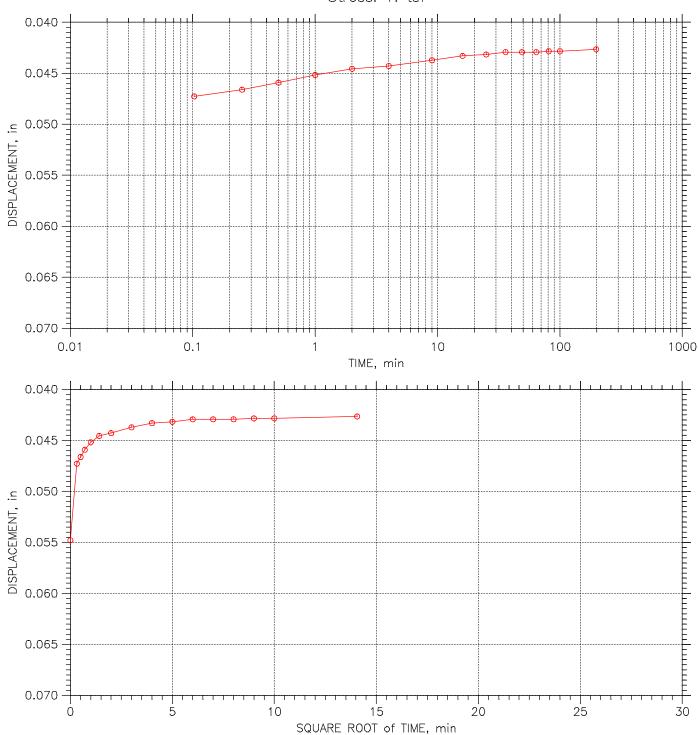


		Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
		Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
		Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	<b>ierracon</b>	Test No.: BL3S14C0N	Sample Type: 3" ST	Elevation:
		Description: REDDISH BROWN LEAN CLAY (CL)		
		Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf

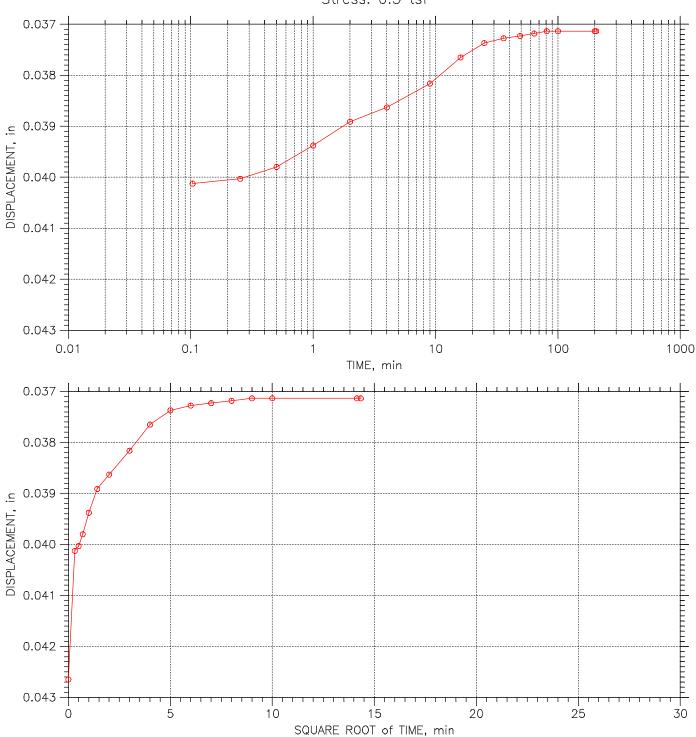


Fierracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf

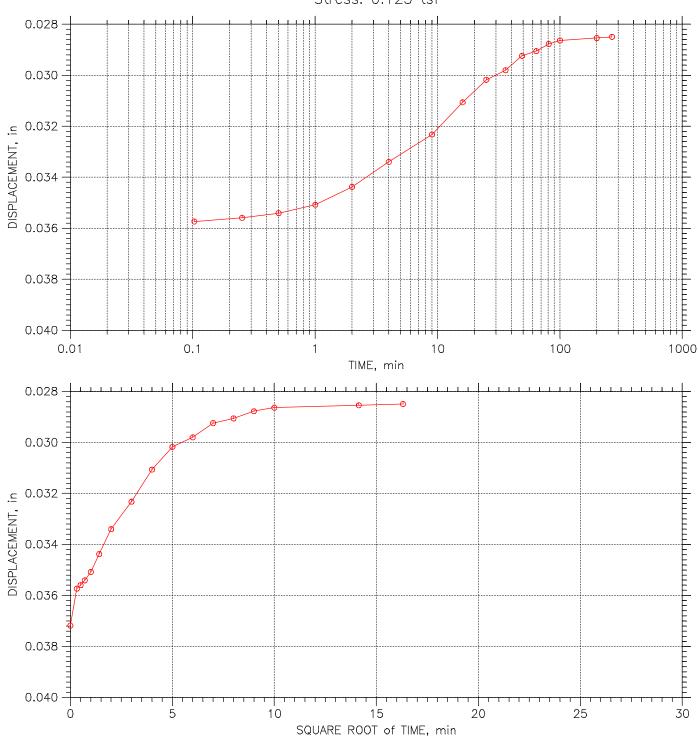


	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
erracon	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf

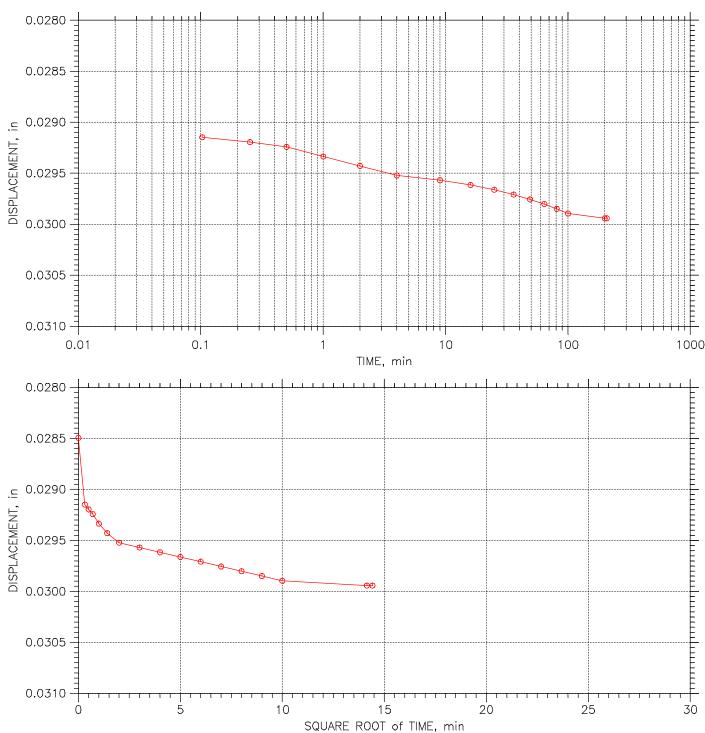


Fierracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf

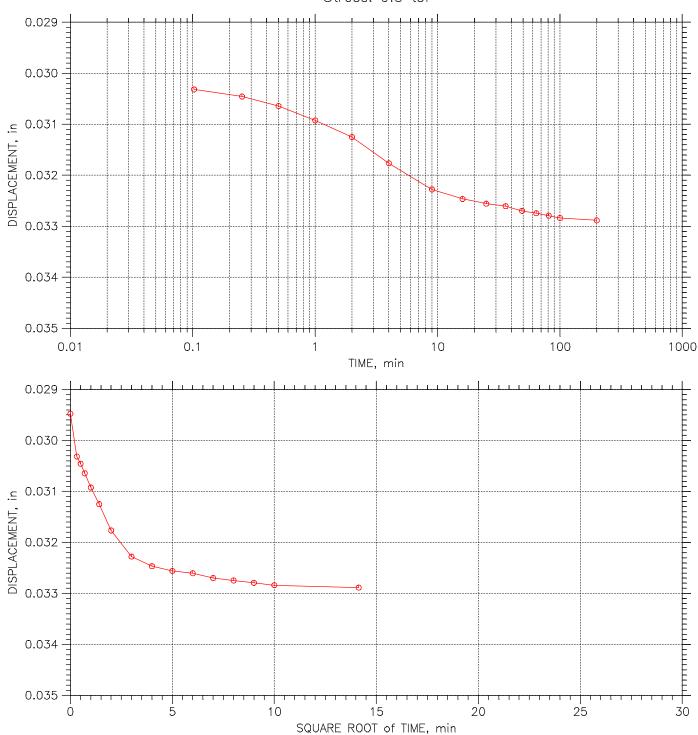


Ferracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf

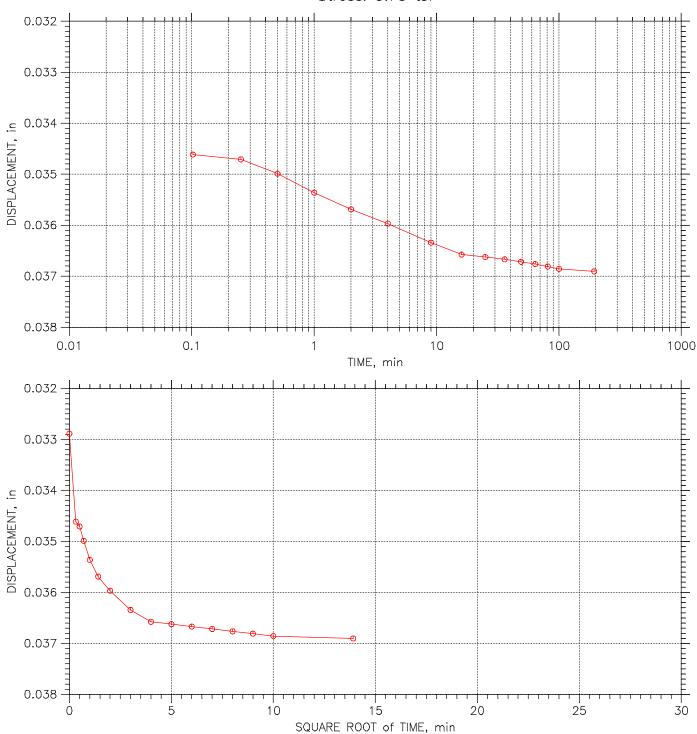


	Project: PULLIAM PROPRIY RESIO	RLocation: GREEN BAY, WI	Project No.: 11225052
Ferracon	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		
	Remarks: $PC = 2.8$ tst $CC = 0.572$ $CCr = 0.010$ [EST PERFORMED AS PER ASIM D2435		

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf

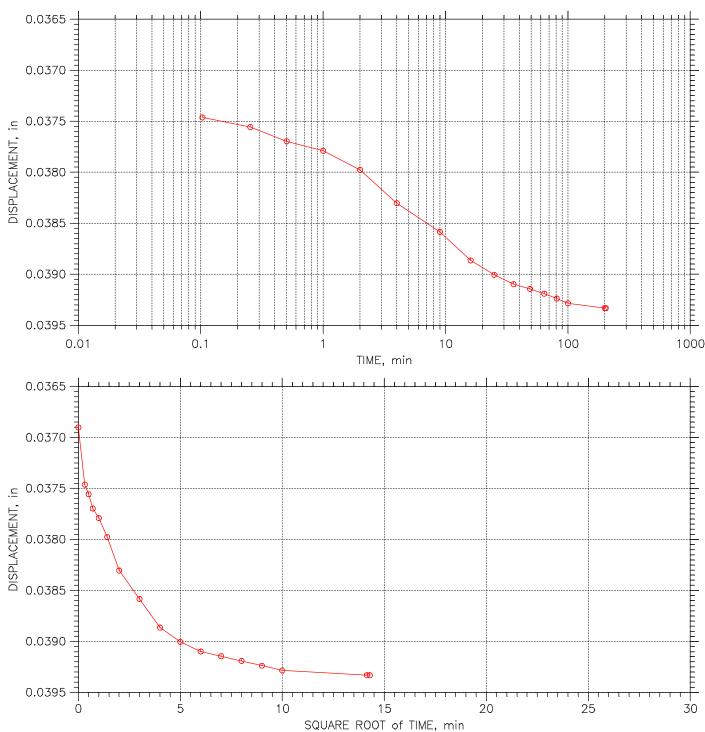


Ferracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf

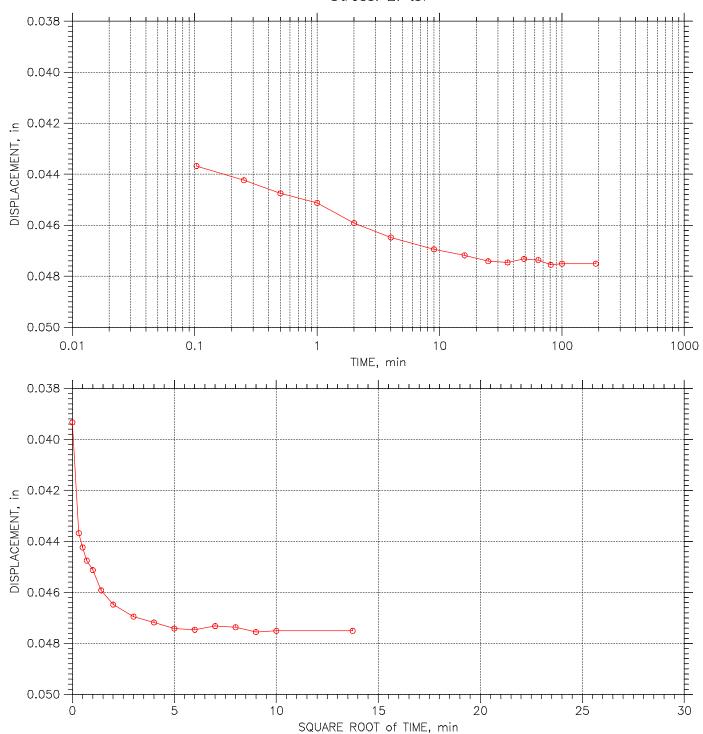


Fierracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf

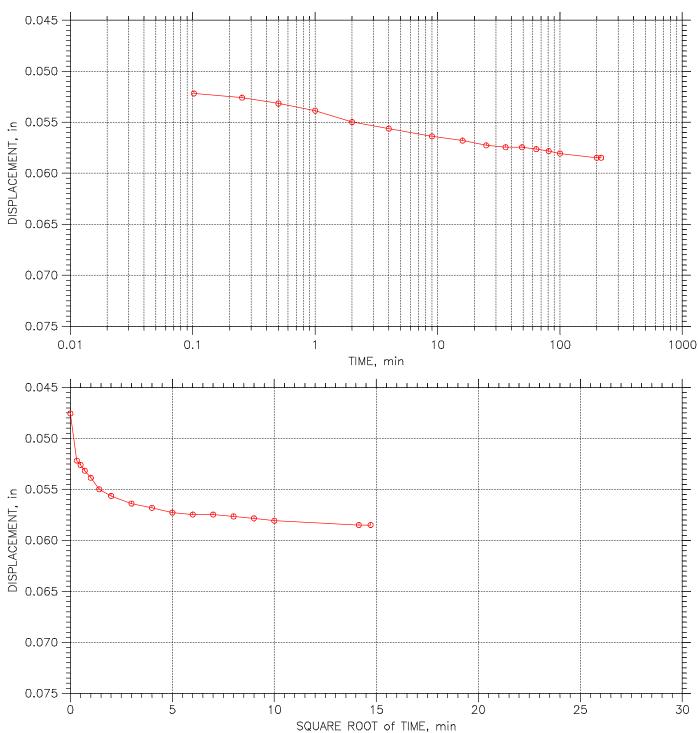


Fierracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf

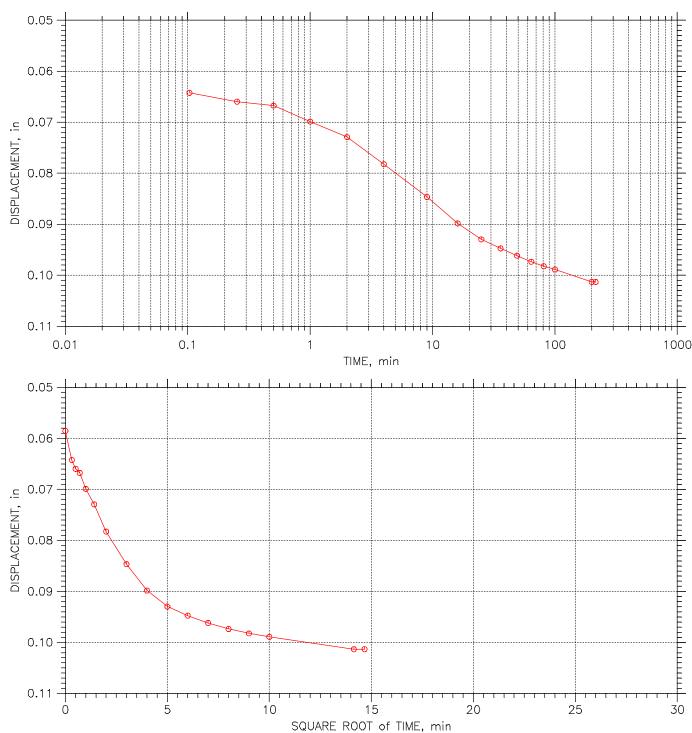


Ferracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf

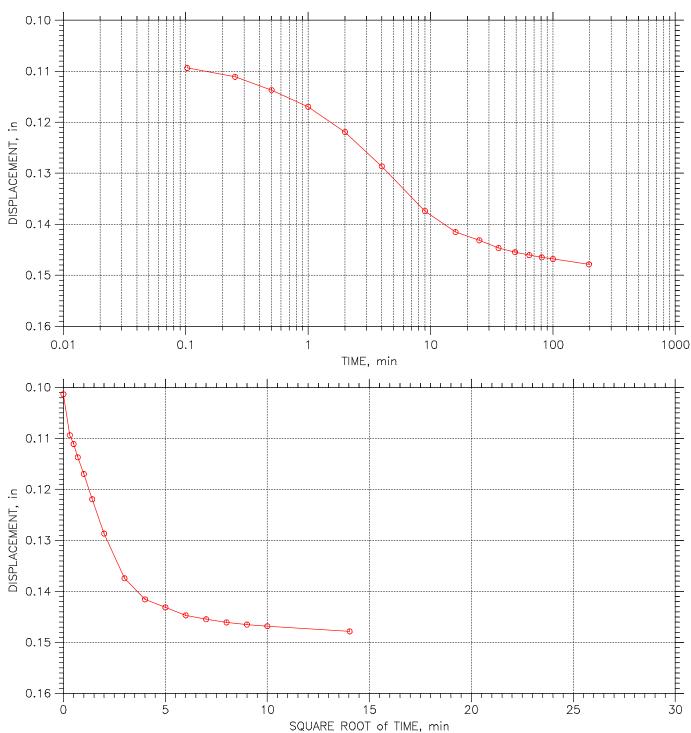


Ferracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf

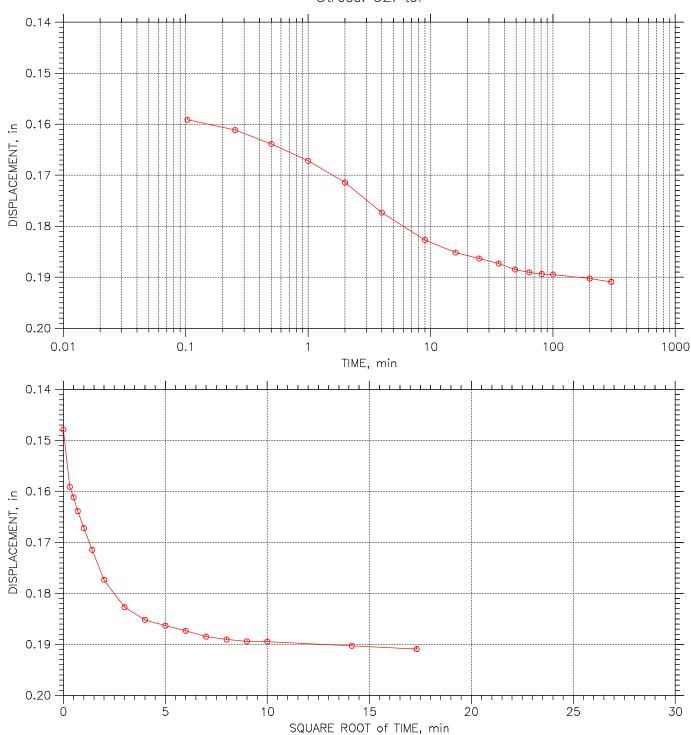


Ferracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf

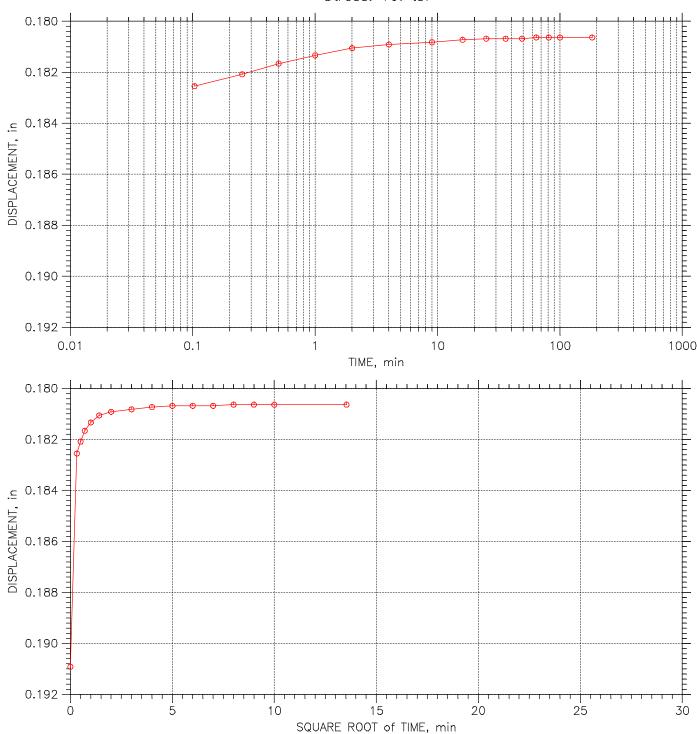


erracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf

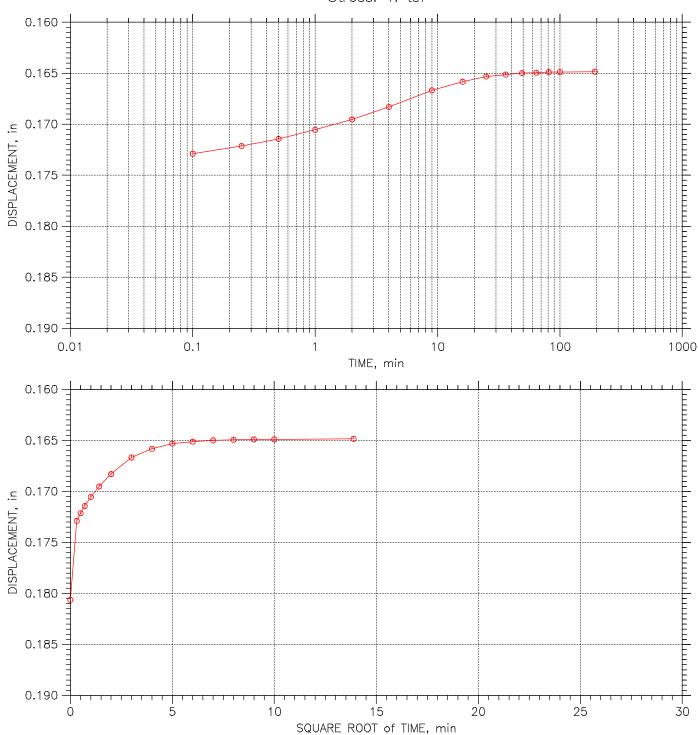


Ferracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf

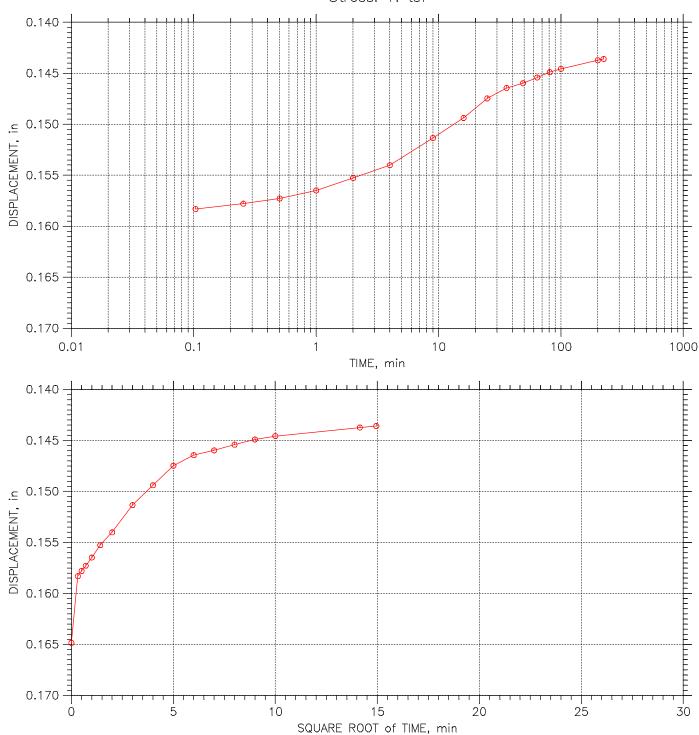


Fierracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf

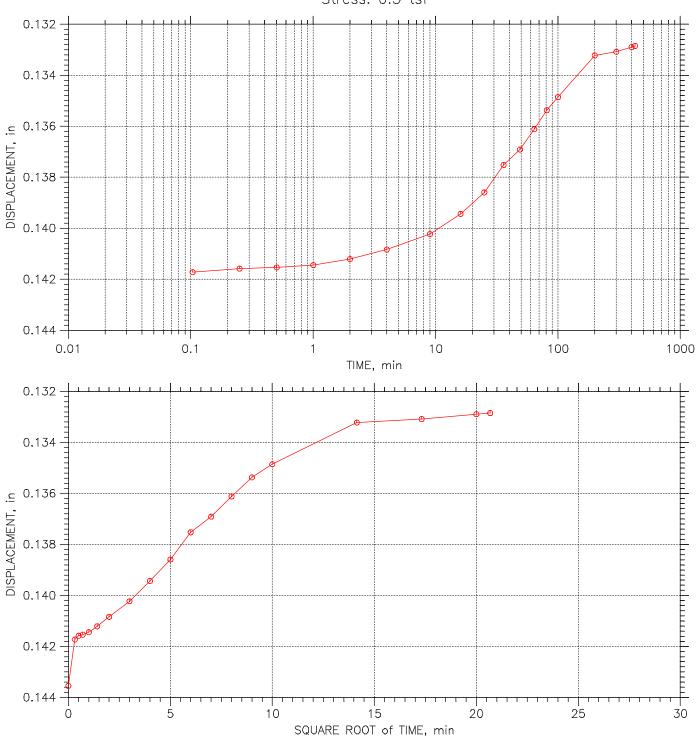


	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052	
Fierracon	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM	
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'	
	Test No.: BL3S14C0N	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435			
			1	

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf

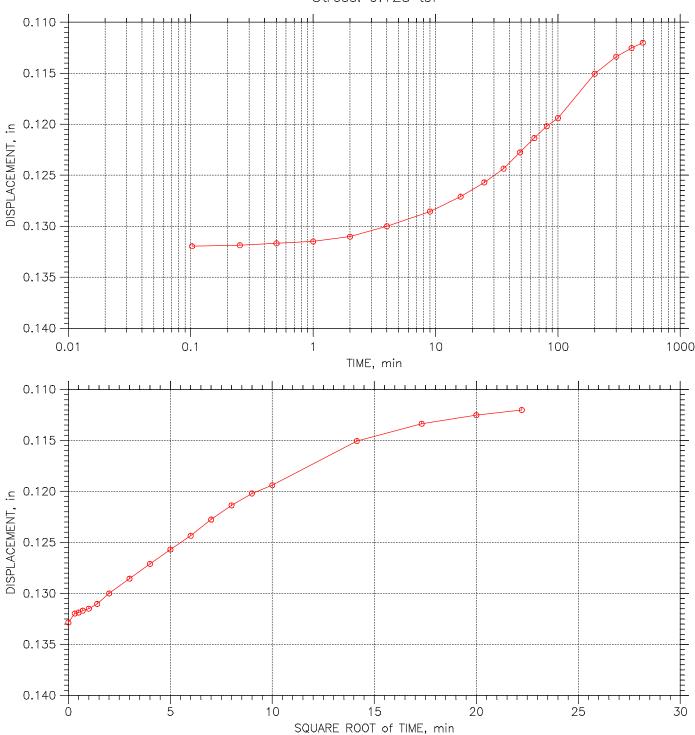


	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM	
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'	
<b>lerracon</b>	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 24 of 24

Stress: 0.125 tsf



erracon	Project: PULLIAM PROPRTY RESTO	RLocation: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM		
		Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'	
	Test No.: BL3S14C0N	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: Pc = 2.8 tsf Cc = 0.37	72 Ccr = 0.010 TEST PERFORMED	AS PER ASTM D2435		

Project: PULLIAM PROPRTY RES. Location: GREEN BAY, WI Project No.: 11225052
Boring No.: BL-3 S-14 Tested By: IT/ED Checked By: BCM
Sample No.: S-14 Test Date: 1/19/2023 Depth: 67.5'-69.5'
Test No.: BL3S14CON Sample Type: 3" ST Elevation: -----



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435

Estimated Specific Gravity: 2.72 Liquid Limit: 38
Initial Void Ratio: 0.80 Plastic Limit: 15
Final Void Ratio: 0.53 Plasticity Index: 23

Initial Height: 0.75 in Specimen Diameter: 2.50 in

	Before Co	onsolidation	After Consol	idation
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	C-18	RING	RING	A-64
Wt. Container + Wet Soil, gm	131.34	197.92	189.11	132.33
Wt. Container + Dry Soil, gm	107.97	170.78	170.78	115.47
Wt. Container, gm	30.39	79.85	79.85	31.85
Wt. Dry Soil, gm	77.58	90.927	90.927	83.62
Water Content, %	30.12	29.85	20.16	20.16
Void Ratio		0.80	0.53	
Degree of Saturation, %		98.23	100.02	
Dry Unit Weight, pcf		94.228	110.81	

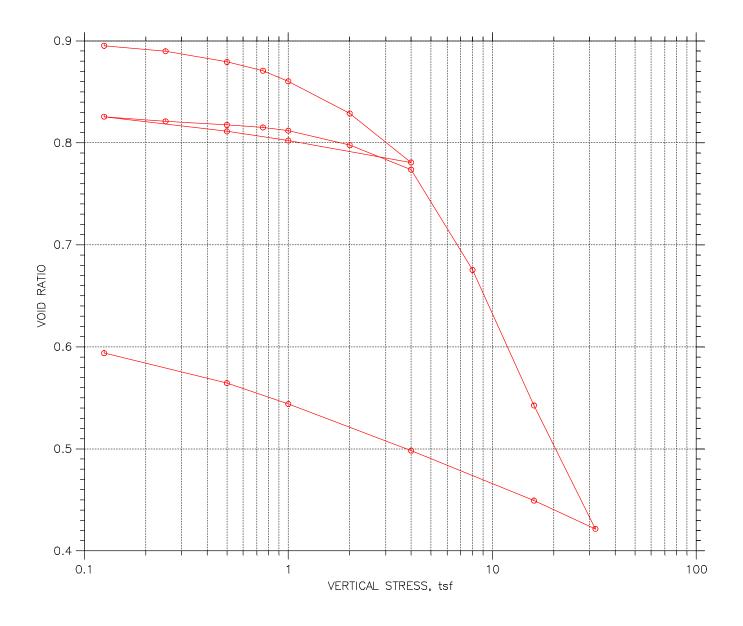
Project: PULLIAM PROPRTY RES. Location: GREEN BAY, WI Project No.: 11225052
Boring No.: BL-3 S-14 Tested By: IT/ED Checked By: BCM
Sample No.: S-14 Test Date: 1/19/2023 Depth: 67.5'-69.5'
Test No.: BL3S14CON Sample Type: 3" ST Elevation: -----Sample Type: 3" ST



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435

	Applied	Final	Void	Strain	T50	Fitting	Coeffi	cient of Con	solidation
	Stress	Displacement	Ratio	at End	Sq.Rt.	Log	Sq.Rt.	Log	Ave.
	tsf	in		%	min	min	ft^2/sec	ft^2/sec	ft^2/sec
1	0.125	0.004157	0.792	0.56	0.1	0.0	3.17e-005	0.00e+000	3.17e-005
2	0.25	0.006727	0.786	0.90	2.1	0.0	1.50e-006	0.00e+000	1.50e-006
3	0.5	0.0113	0.775	1.51	0.9	0.0	3.31e-006	0.00e+000	3.31e-006
4	0.75	0.01579	0.764	2.11	5.8	0.8	5.28e-007	4.03e-006	9.35e-007
5	1	0.01995	0.754	2.67	5.8	0.0	5.22e-007	0.00e+000	5.22e-007
6	2	0.03359	0.721	4.49	2.1	0.0	1.42e-006	0.00e+000	1.42e-006
7	4	0.05475	0.670	7.31	2.1	0.0	1.35e-006	0.00e+000	1.35e-006
8	1	0.04265	0.699	5.70	0.2	0.0	1.20e-005	0.00e+000	1.20e-005
9	0.5	0.03714	0.713	4.96	5.6	0.0	5.16e-007	0.00e+000	5.16e-007
10	0.125	0.02849	0.733	3.81	5.4	6.2	5.46e-007	4.69e-007	5.05e-007
11	0.25	0.02994	0.730	4.00	1.0	0.0	3.10e-006	0.00e+000	3.10e-006
12	0.5	0.03289	0.723	4.39	2.8	1.5	1.04e-006	1.97e-006	1.36e-006
13	0.75	0.0369	0.713	4.93	1.0	0.2	3.03e-006	1.93e-005	5.24e-006
14	1	0.03933	0.707	5.26	5.8	0.0	4.94e-007	0.00e+000	4.94e-007
15	2	0.04751	0.688	6.35	0.4	0.0	7.51e-006	0.00e+000	7.51e-006
16	4	0.05848	0.661	7.81	2.1	0.0	1.31e-006	0.00e+000	1.31e-006
17	8	0.1013	0.558	13.54	6.4	5.6	4.00e-007	4.56e-007	4.26e-007
18	16	0.1478	0.446	19.75	2.1	0.0	1.06e-006	0.00e+000	1.06e-006
19	32	0.1909	0.342	25.51	2.9	1.3	6.58e-007	1.45e-006	9.04e-007
20	16	0.1806	0.367	24.14	0.0	0.0	7.48e-005	0.00e+000	7.48e-005
21	4	0.1648	0.405	22.03	0.5	0.0	4.05e-006	0.00e+000	4.05e-006
22	1	0.1436	0.456	19.19	5.8	0.0	3.45e-007	0.00e+000	3.45e-007
23	0.5	0.1328	0.482	17.75	24.5	0.0	8.67e-008	0.00e+000	8.67e-008
24	0.125	0.112	0.532	14.97	46.9	0.0	4.77e-008	0.00e+000	4.77e-008

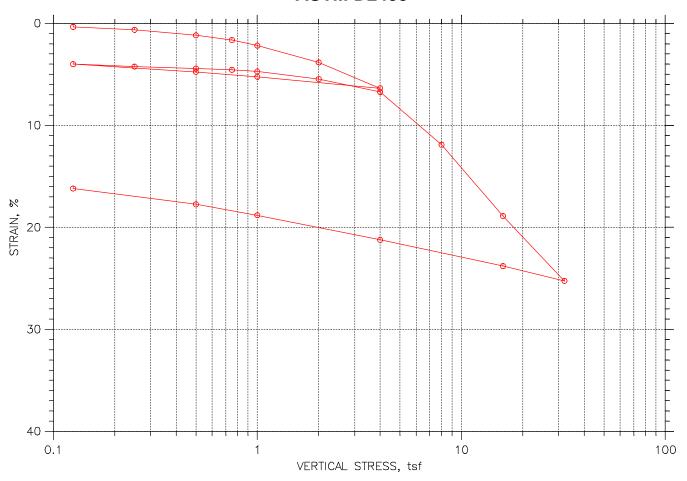
# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435

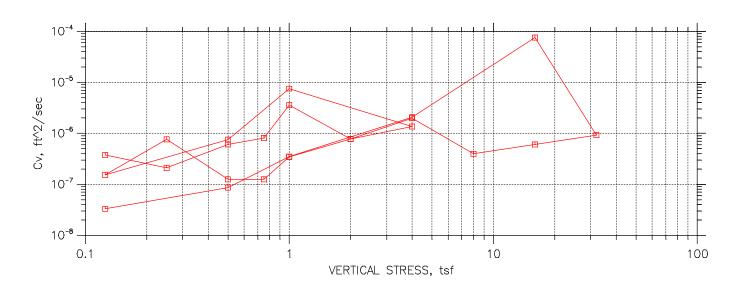


					Before Test	After Test
			Water Content, %	29.75	21.36	
Preconsolidation Pressure: 3.2 tsf		Dry Unit Weight, pcf	90.57	108.1		
Compression Index: 0.439		Saturation, %	91.01	99.24		
Diameter: 2.502 in Height: 0.7476 in		Void Ratio	0.90	0.59		
LL: 42	PL: 15	PI: 27	GS: 2.76			

	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM		
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'		
<b>lerracon</b>	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: Pc = 3.2 tsf Cc = 0.43	39 Ccr = 0.071 TEST PERFORMED	AS PER ASTM D24350		

# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435







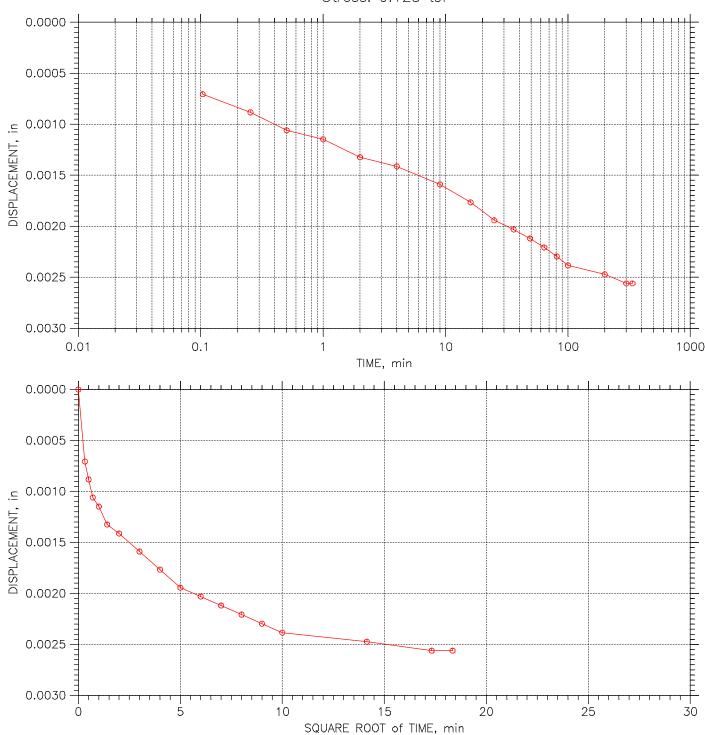
Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM		
Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'		
Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:		
Description: REDDISH BROWN LEAN CLAY (CL)				

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf



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Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM		
Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'		
Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:		
Description: REDDISH BROWN LEAN CLAY (CL)				

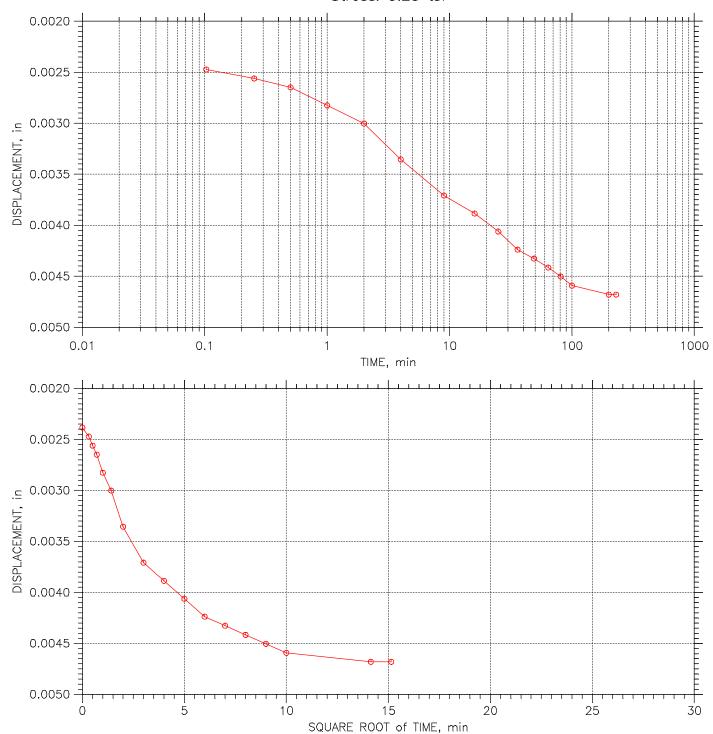
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf

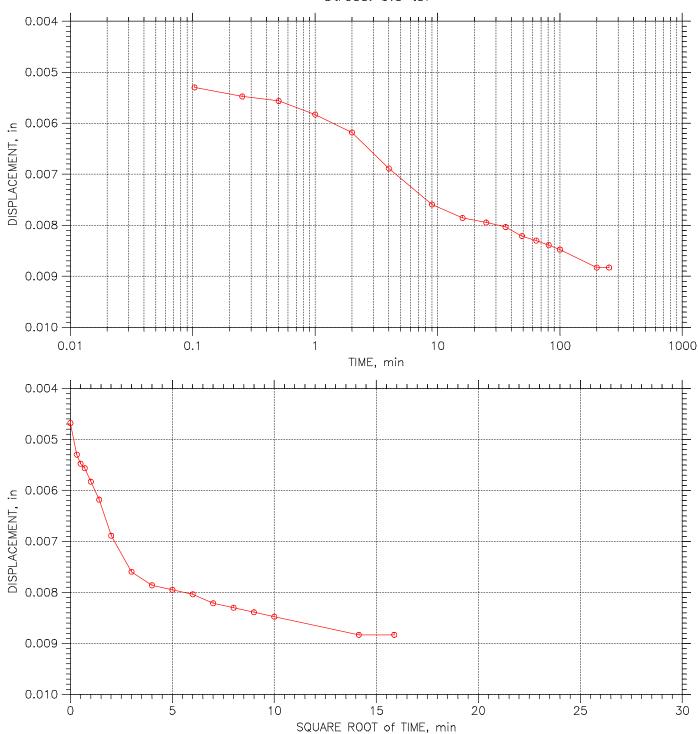


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM		
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'		
ierracon	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350				

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf

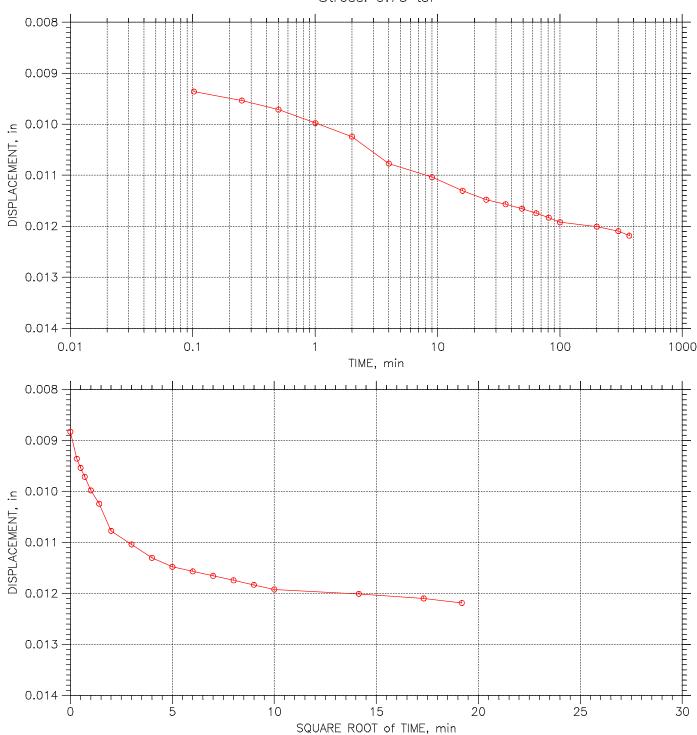


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM		
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'		
erracon	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	AS PER ASTM D24350				

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf

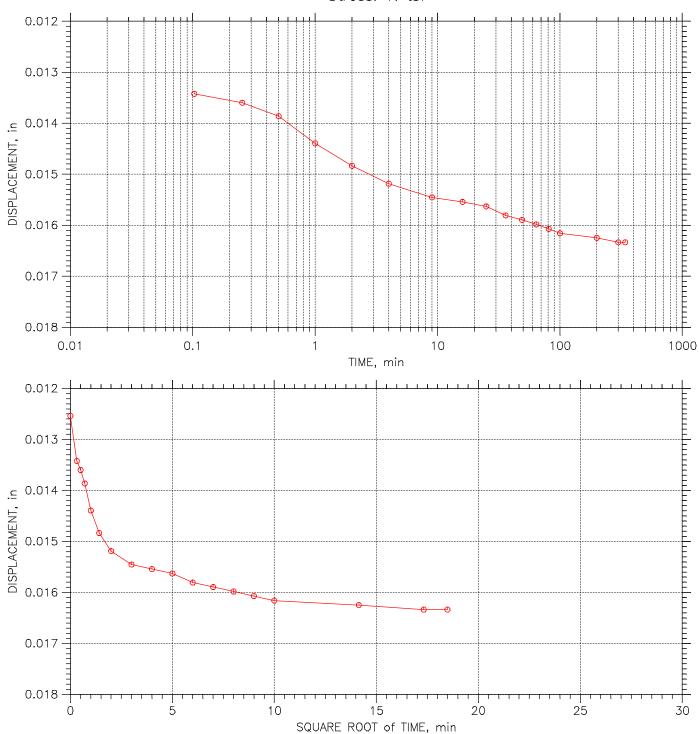


		Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	erracon	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
		Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
		Test No.: BL5S16C0N	Sample Type: 3" ST	Elevation:
		Description: REDDISH BROWN LEAN CLAY (CL)		
		Remarks: Pc = 3.2 tsf Cc = 0.43	39 Ccr = 0.071 TEST PERFORMED	AS PER ASTM D24350

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf



Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:
Description: REDDISH BROWN LEA	N CLAY (CL)	

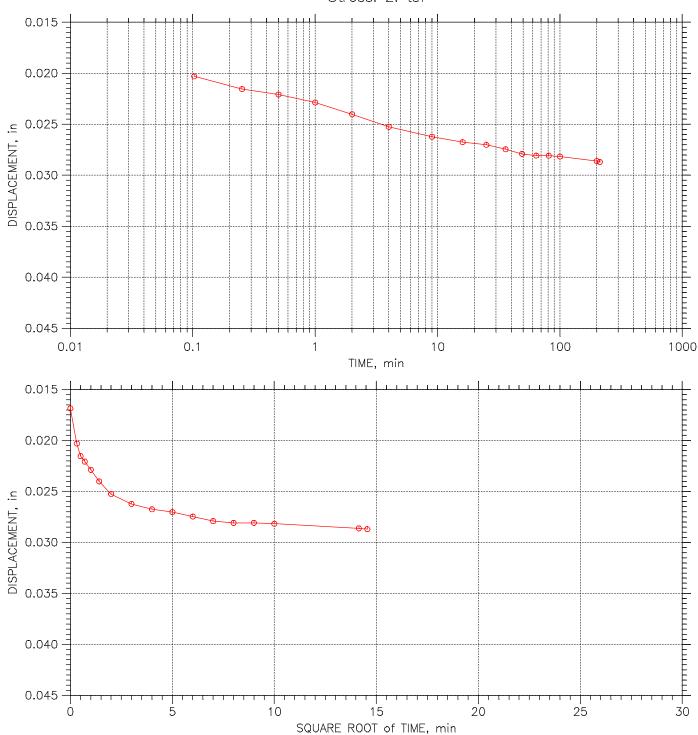
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf



	Boring No.: BL-5 S-16	Tested By: BCM
	Sample No.: S-16	Test Date: 1/19/2023
erracon	Test No.: BL5S16C0N	Sample Type: 3" ST
	Description: REDDISH BROWN LEAN CLAY (CL)	
	Description: REDDISH BROWN LEAN CLAY (CL)	

Project: PULLIAM PROPRTY RES.

Project No.: 11225052

Checked By: BCM

Depth: 60.0'-62.0'

Elevation: ----

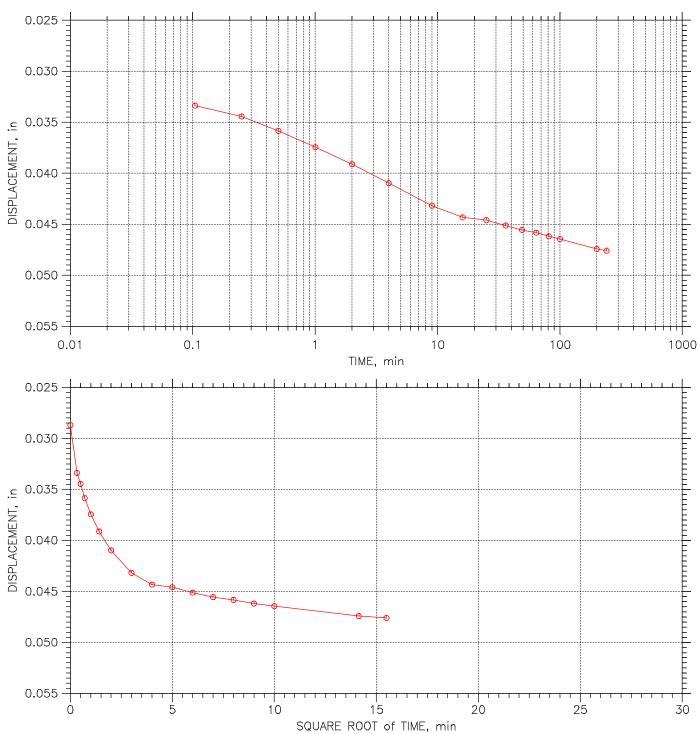
Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

Location: GREEN BAY, WI

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf

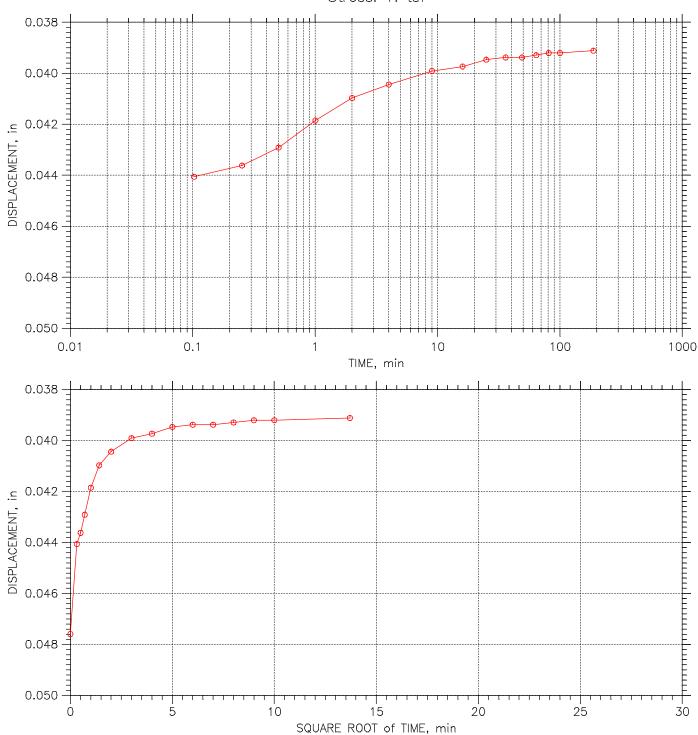


	<b>Terracon</b>	Project: PULLIAM PROPRIY RES.	Location: GREEN BAY, WI	Project No.: 11225052
		Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
		Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
		Test No.: BL5S16C0N	Sample Type: 3" ST	Elevation:
		Description: REDDISH BROWN LEAN CLAY (CL)		
		Remarks: Pc = 3.2 tsf Cc = 0.43	39 Ccr = 0.071 TEST PERFORMED	AS PER ASTM D24350

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf

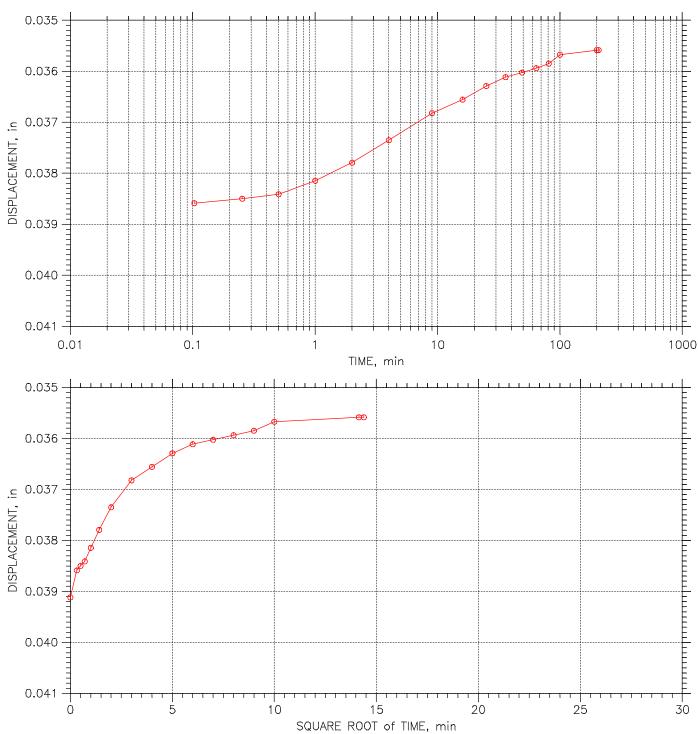


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
<b>ierracon</b>	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350		

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf

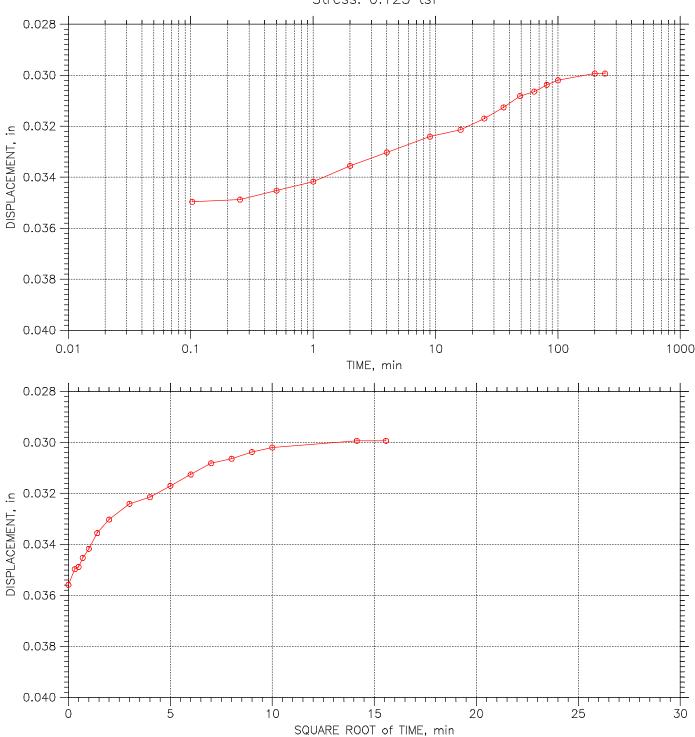


	Project: PULLIAM PROPRIT RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
<b>erracon</b>	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 3.2 \text{ tsf } Cc = 0.4$	39  Ccr = 0.071  TEST PERFORMED	AS PER ASTM D24350

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



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	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON Sample Type: 3" ST Elevation:		Elevation:
Description: REDDISH BROWN LEAN CLAY (CL)			

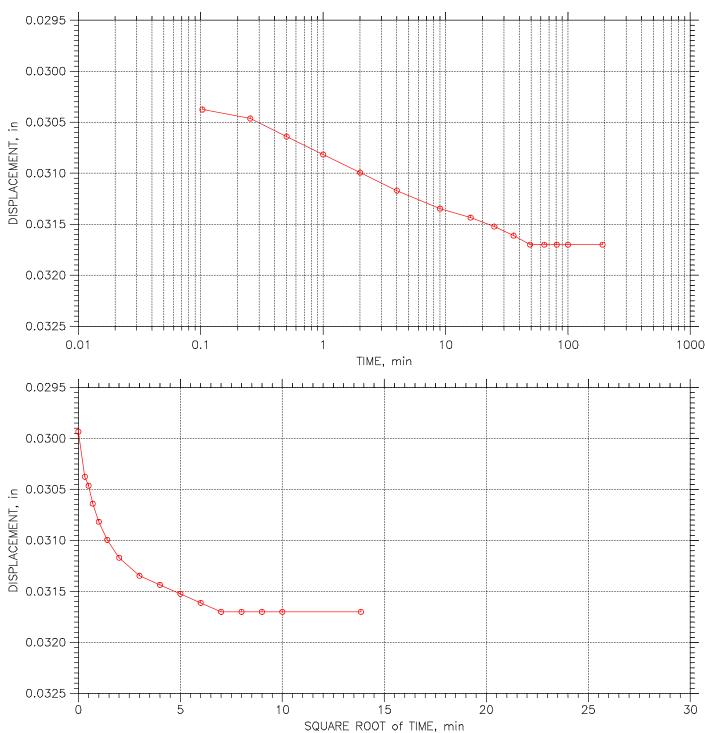
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf

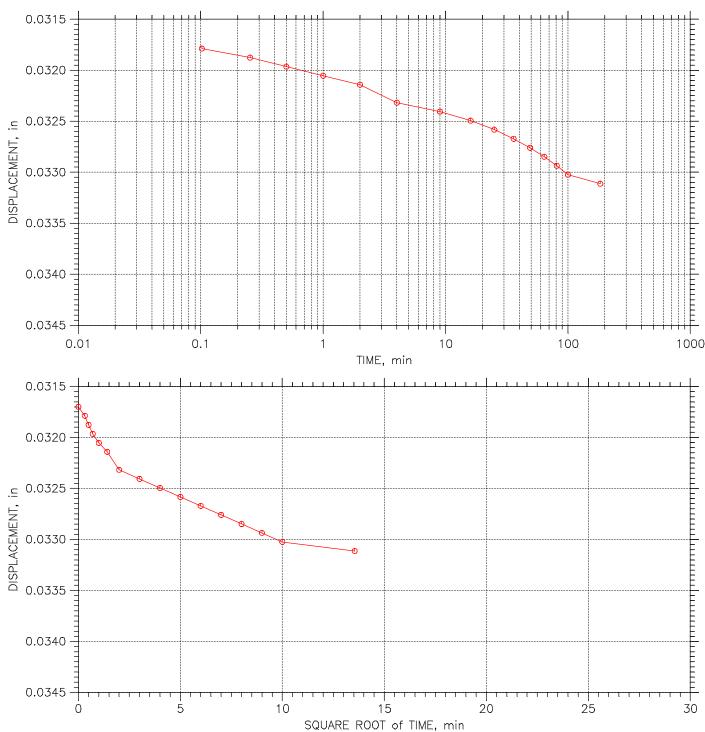


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
erracon	Test No.: BL5S16C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 3.2 \text{ tof } Cc = 0.4$	39 Car — 0.071 TEST PERFORMED	AS PER ASTM D24350

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf



Ferracon

	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON Sample Type: 3" ST Elevation:		Elevation:
Description: REDDISH BROWN LEAN CLAY (CL)			

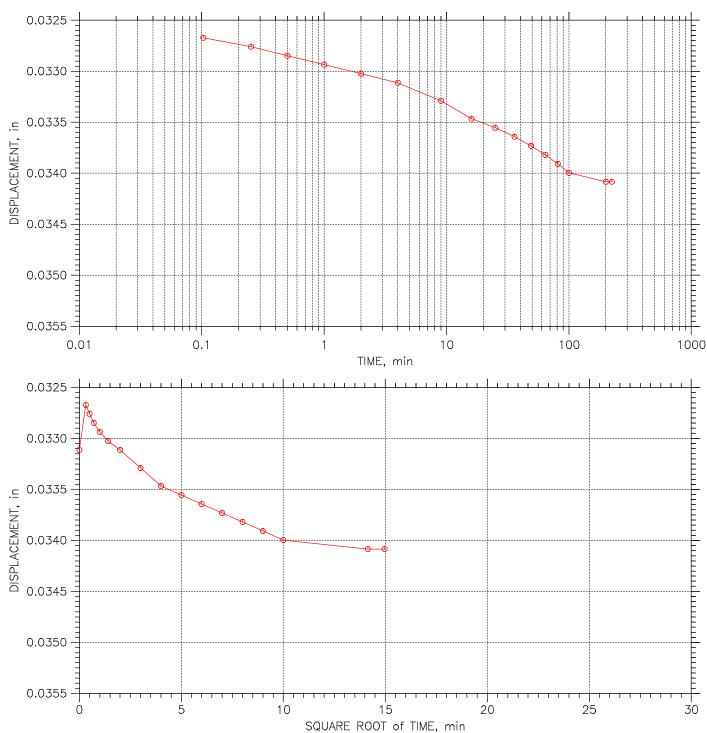
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf

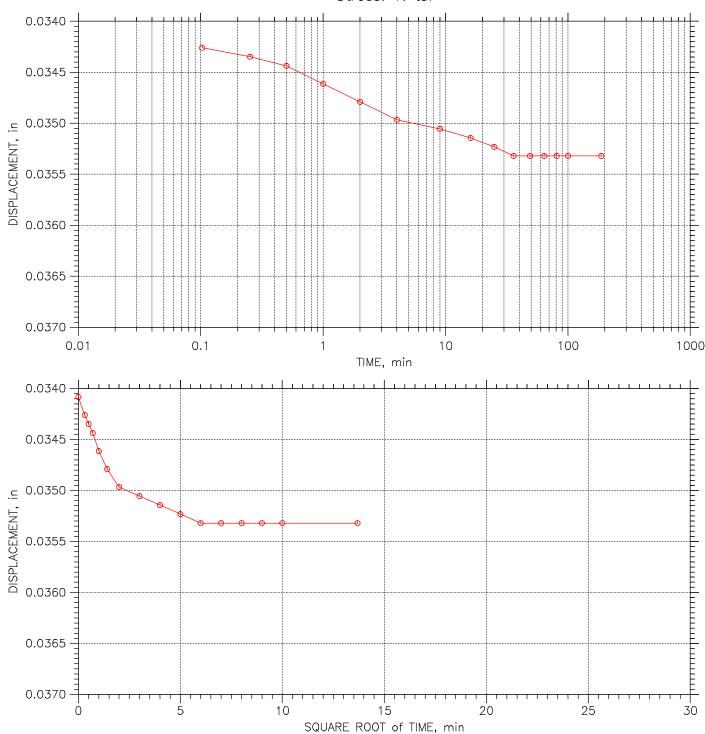


		Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
Fierracon		Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	35-770-401	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	rracon	Test No.: BL5S16C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350			

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf



Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM		
Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'		
Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:		
Description: REDDISH RROWN LEAN CLAY (CL)				

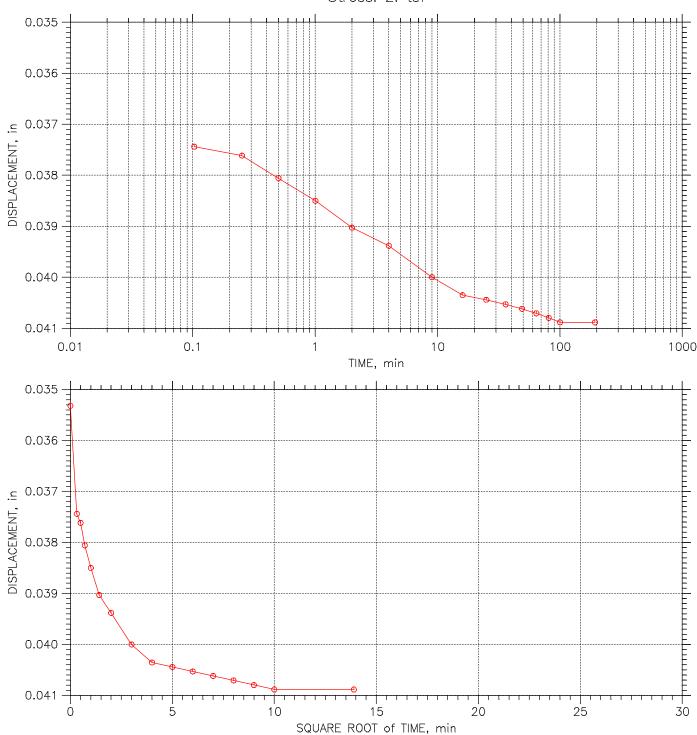
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf

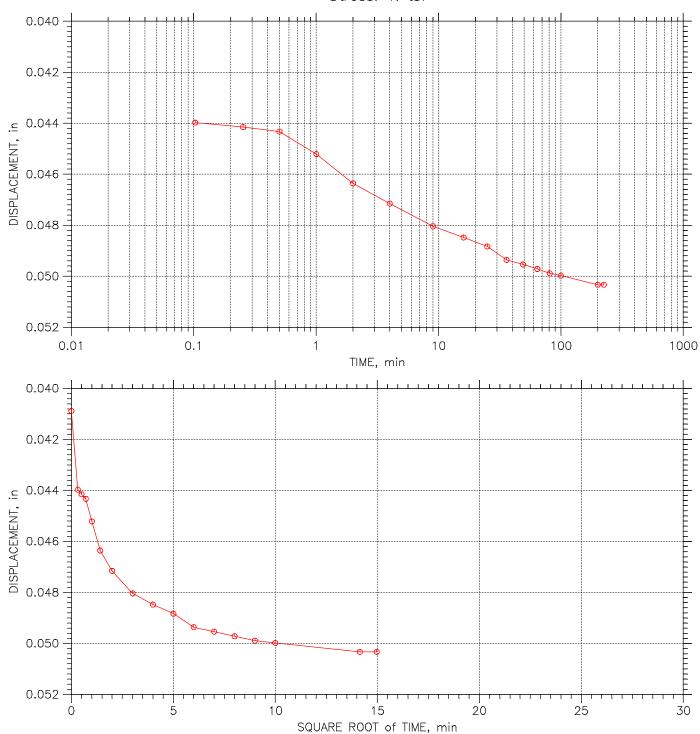


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM	
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'	
<b>lerracon</b>	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350			

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf

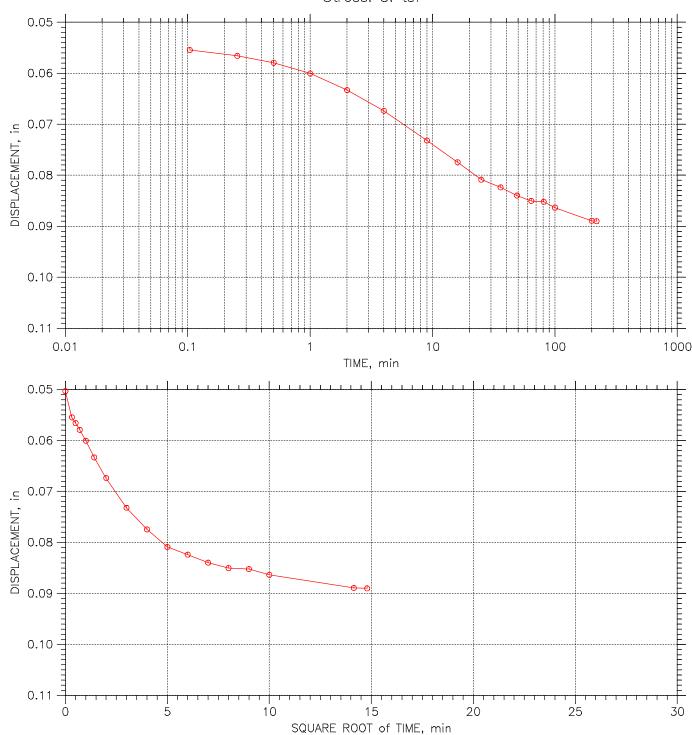


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM	
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'	
<b>ierracon</b>	Test No.: BL5S16C0N	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350			

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf





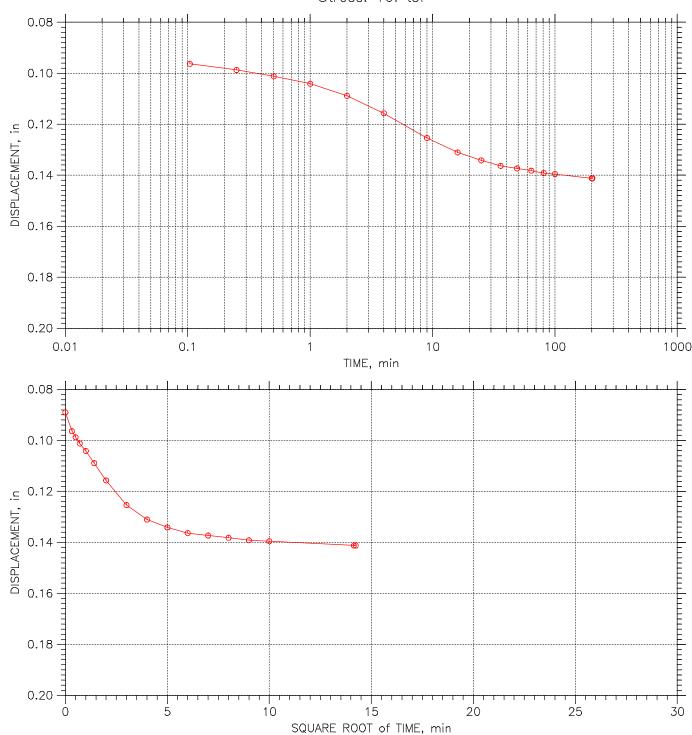
Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM		
Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'		
Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:		
Description: REDDISH BROWN LEAN CLAY (CL)				

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf



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	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
Boring No.: BL-5 S-16		Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAD	N CLAY (CL)	

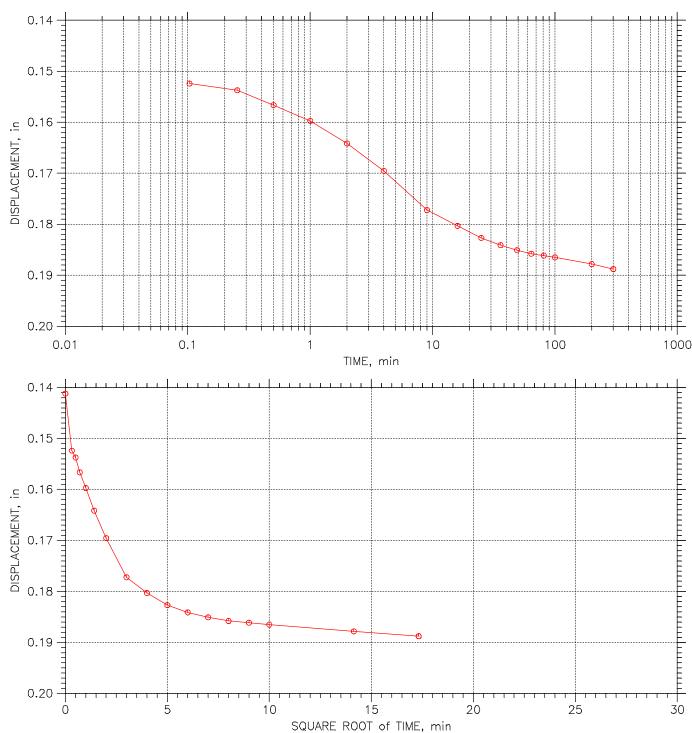
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



<b>Fierracon</b>

Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
Boring No.: BL-5 S-16	S-16 Tested By: BCM Checked By: BCM			
Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'		
Test No.: BL5S16CON Sample Type: 3" ST Elevation:				
Description: REDDISH BROWN LEAN CLAY (CL)				

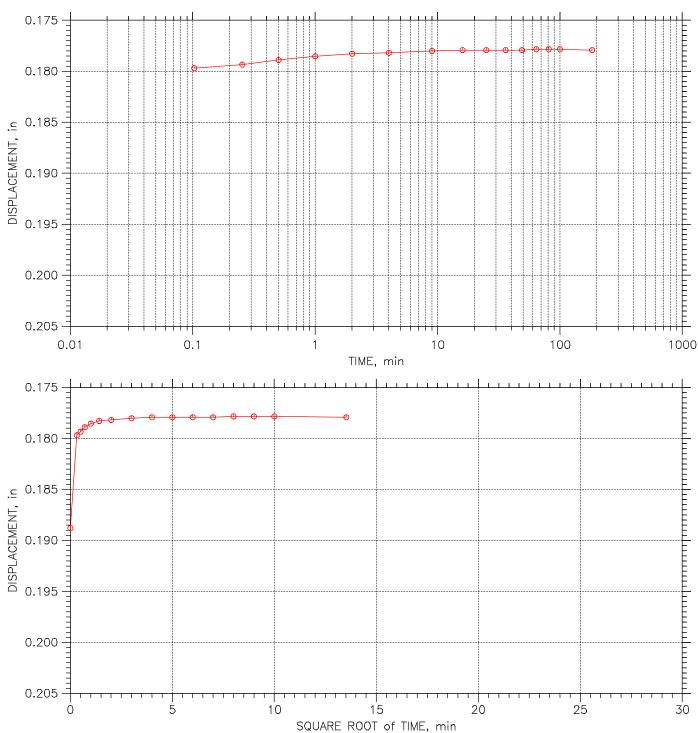
Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

Fri, 17-FEB-2023 13:38:13

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM	
Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'	
Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:	
Description: REDDISH BROWN LEAD	V CLAY (CL)		

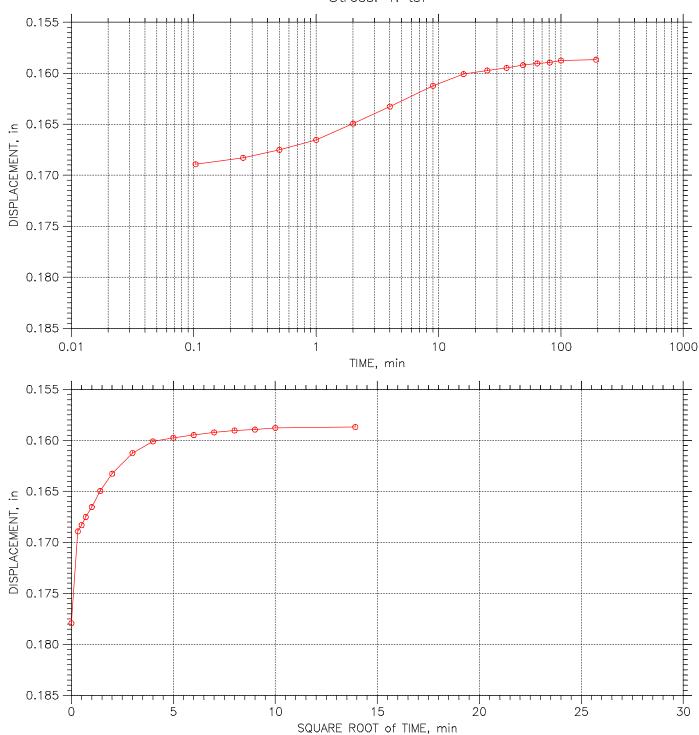
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf

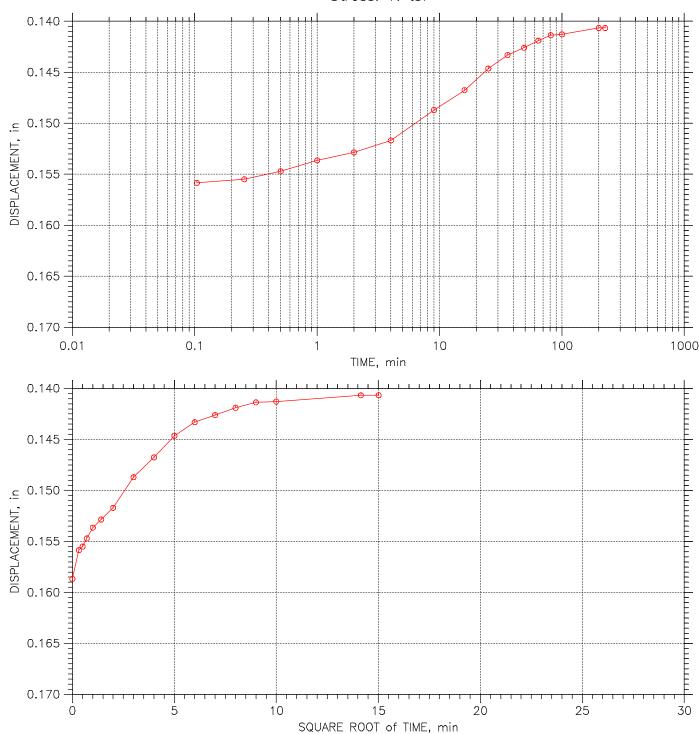


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM		
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'		
<b>ierracon</b>	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350				

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf





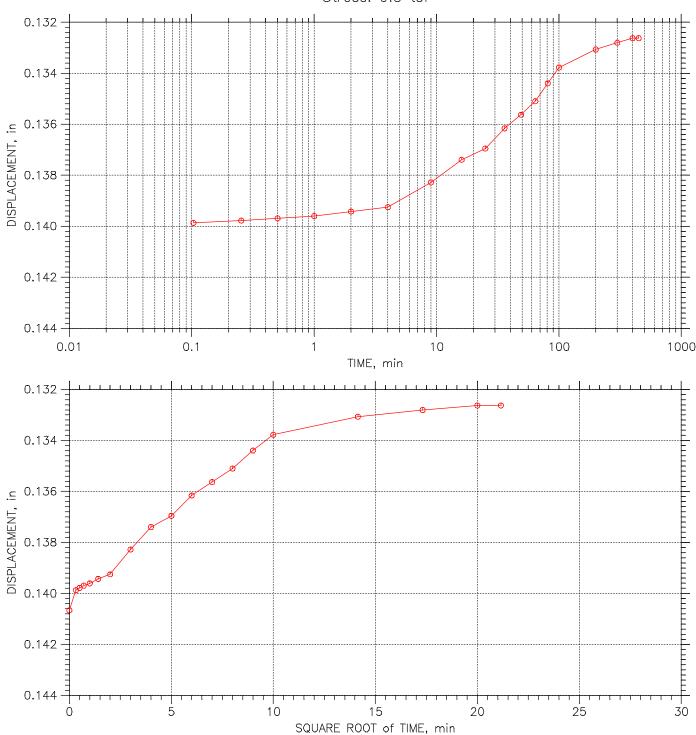
Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM		
Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'		
Test No.: BL5S16CON Sample Type: 3" ST Elevation:				
Description: REDDISH BROWN LEAR	N CLAY (CL)			

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf



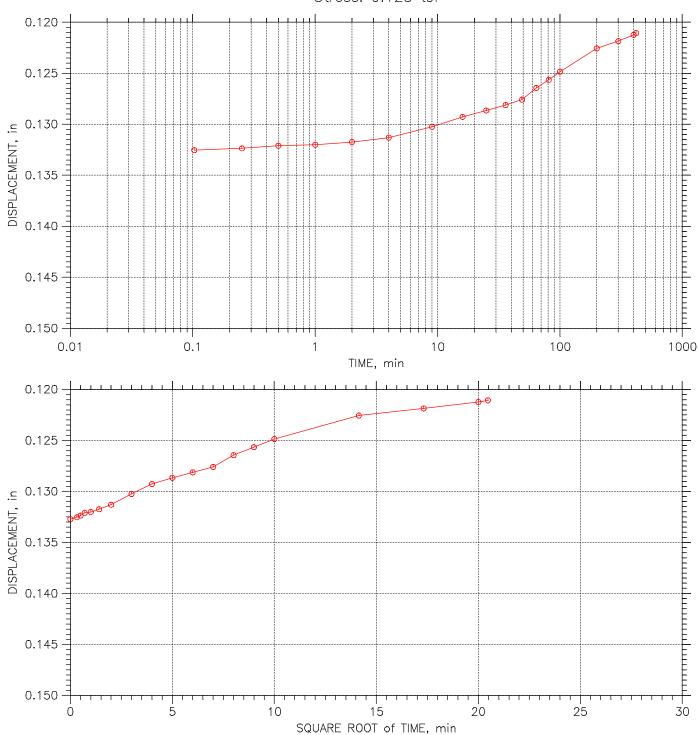
		Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
		Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM	
	Ferracon	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'	
		Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:	
		Description: REDDISH BROWN LEAN CLAY (CL)			

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

TIME CURVES

Constant Load Step: 24 of 24

Stress: 0.125 tsf





Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM	
Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'	
Test No.: BL5S16CON	Sample Type: 3" ST	Elevation:	
Description: REDDISH BROWN LEAD	Λ CL ΔΥ (CL )		

Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

Project: PULLIAM PROPRTY RES. Location: GREEN BAY, WI
Boring No.: BL-5 S-16 Tested By: BCM
Sample No.: S-16 Test Date: 1/19/2023
Test No.: BL5S16CON Sample Type: 3" ST Test No.: BL5S16CON

Location: GREEN BAY, WI Project No.: 11225052
Tested By: BCM Checked By: BCM
Test Date: 1/19/2023 Depth: 60.0'-62.0'
Sample Type: 3" ST Elevation: -----Sample Type: 3" ST



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

Measured Specific Gravity: 2.76
Initial Void Ratio: 0.90 Final Void Ratio: 0.59

Liquid Limit: 42 Plastic Limit: 15 Plasticity Index: 27

Initial Height: 0.75 in Specimen Diameter: 2.50 in

	Before Consolidation		After Co	nsolidation
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	A7	RING	RING	A-7
Wt. Container + Wet Soil, gm	90.87	189.53	182.2	138.6
Wt. Container + Dry Soil, gm	76.77	163.53	163.53	119.72
Wt. Container, gm	31.37	76.15	76.15	31.33
Wt. Dry Soil, gm	45.4	87.385	87.385	88.39
Water Content, %	31.06	29.75	21.36	21.36
Void Ratio		0.90	0.59	
Degree of Saturation, %		91.01	99.24	
Dry Unit Weight, pcf		90.567	108.06	

Project: PULLIAM PROPRTY RES. Location: GREEN BAY, WI
Boring No.: BL-5 S-16 Tested By: BCM
Sample No.: S-16 Test Date: 1/19/2023
Test No.: BL5S16CON Sample Type: 3" ST

Test No.: BL5S16CON

Sample Type: 3" ST

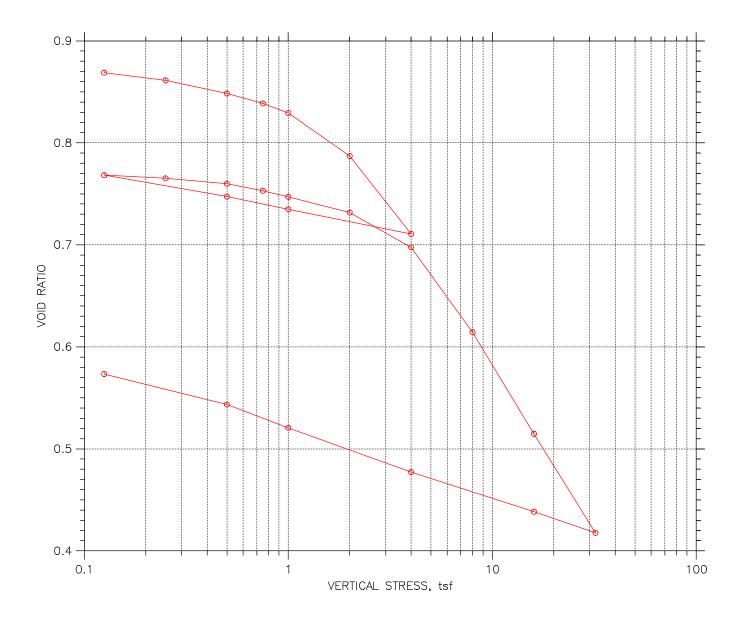
Project No.: 11225052 Checked By: BCM Depth: 60.0'-62.0' Elevation: ----



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 3.2 tsf Cc = 0.439 Ccr = 0.071 TEST PERFORMED AS PER ASTM D24350

	Applied	Final	Void	Strain	T50 F	itting	Coeffic	cient of Cons	solidation
	Stress	Displacement	Ratio	at End	Sq.Rt.	Log	Sq.Rt.	Log	Ave.
	tsf	in		8	min	min	ft^2/sec	ft^2/sec	ft^2/sec
1	0.125	0.002561	0.895	0.34	8.4	0.0	3.79e-007	0.00e+000	3.79e-007
2	0.25	0.00468	0.890	0.63	14.9	0.0	2.12e-007	0.00e+000	2.12e-007
3	0.5	0.00883	0.879	1.18	6.8	3.5	4.63e-007	8.86e-007	6.09e-007
4	0.75	0.01219	0.871	1.63	5.8	1.9	5.32e-007	1.66e-006	8.05e-007
5	1	0.01634	0.860	2.18	1.0	0.8	3.19e-006	4.05e-006	3.57e-006
6	2	0.0287	0.829	3.84	3.9	0.0	7.74e-007	0.00e+000	7.74e-007
7	4	0.04759	0.781	6.37	2.1	0.0	1.37e-006	0.00e+000	1.37e-006
8	1	0.03912	0.802	5.23	0.5	0.3	6.08e-006	9.91e-006	7.54e-006
9	0.5	0.03559	0.811	4.76	3.8	0.0	7.55e-007	0.00e+000	7.55e-007
10	0.125	0.02993	0.826	4.00	18.9	0.0	1.54e-007	0.00e+000	1.54e-007
11	0.25	0.0317	0.821	4.24	3.8	0.0	7.63e-007	0.00e+000	7.63e-007
12	0.5	0.03311	0.818	4.43	23.3	0.0	1.25e-007	0.00e+000	1.25e-007
13	0.75	0.03408	0.815	4.56	23.3	0.0	1.25e-007	0.00e+000	1.25e-007
14	1	0.03532	0.812	4.72	8.4	0.0	3.45e-007	0.00e+000	3.45e-007
15	2	0.04088	0.798	5.47	3.7	0.0	7.71e-007	0.00e+000	7.71e-007
16	4	0.05033	0.774	6.73	2.1	0.7	1.34e-006	3.89e-006	1.99e-006
17	8	0.08901	0.675	11.91	6.6	0.0	3.96e-007	0.00e+000	3.96e-007
18	16	0.1412	0.543	18.89	3.8	3.7	6.05e-007	6.12e-007	6.08e-007
19	32	0.1888	0.422	25.25	2.1	0.0	9.15e-007	0.00e+000	9.15e-007
20	16	0.1779	0.449	23.80	0.0	0.0	7.58e-005	0.00e+000	7.58e-005
21	4	0.1587	0.498	21.22	0.9	0.0	2.07e-006	0.00e+000	2.07e-006
22	1	0.1407	0.544	18.81	5.8	0.0	3.50e-007	0.00e+000	3.50e-007
23	0.5	0.1326	0.564	17.74	24.6	0.0	8.65e-008	0.00e+000	8.65e-008
24	0.125	0.1211	0.594	16.19	78.5	54.9	2.80e-008	4.00e-008	3.30e-008

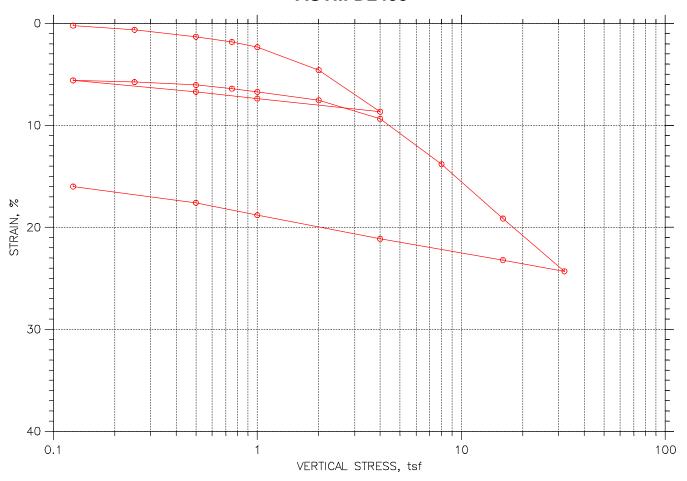
# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435

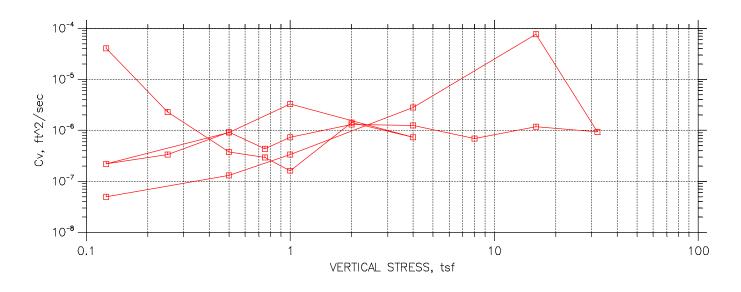


					Before Test	After Test
				Water Content, %	30.80	21.08
Preconsolidation Pressure: 2 tsf			Dry Unit Weight, pcf	90.66	107.9	
Compression Index: 0.322		Saturation, %	95.97	100.01		
Diameter: 2.502 in Height: 0.7469 in		Void Ratio	0.87	0.57		
LL: 41	PL: 14	PI: 27	GS: 2.72			

	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
<b>lerracon</b>	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.32	22 Ccr = 0.064 TEST PERFORMED	AS PER ASTM D2435

# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435







Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM	
Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'	
Test No.: BL6BS6CON Sample Type: 3" ST		Elevation:	
Description: REDDISH BROWN LEAN CLAY (CL)			

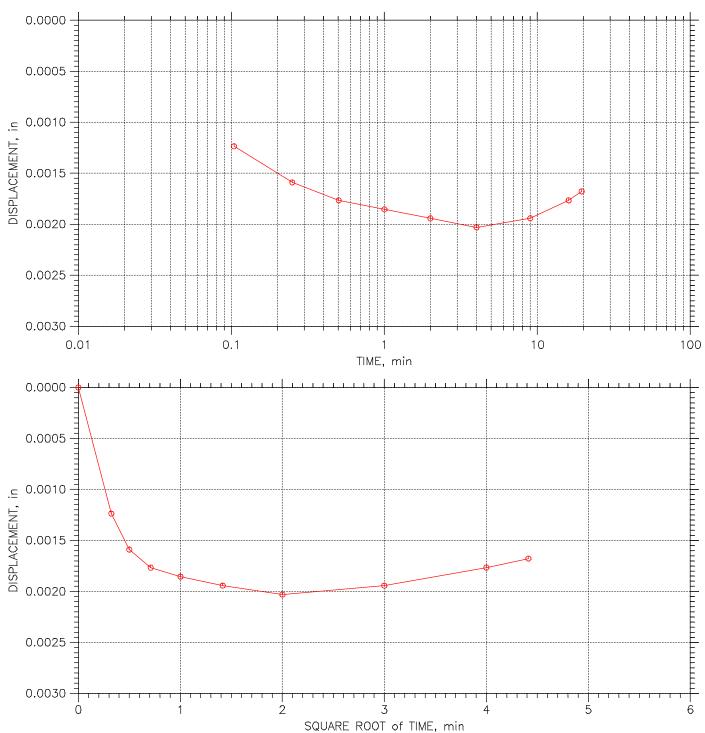
Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

Fri, 17-FEB-2023 13:46:00

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf

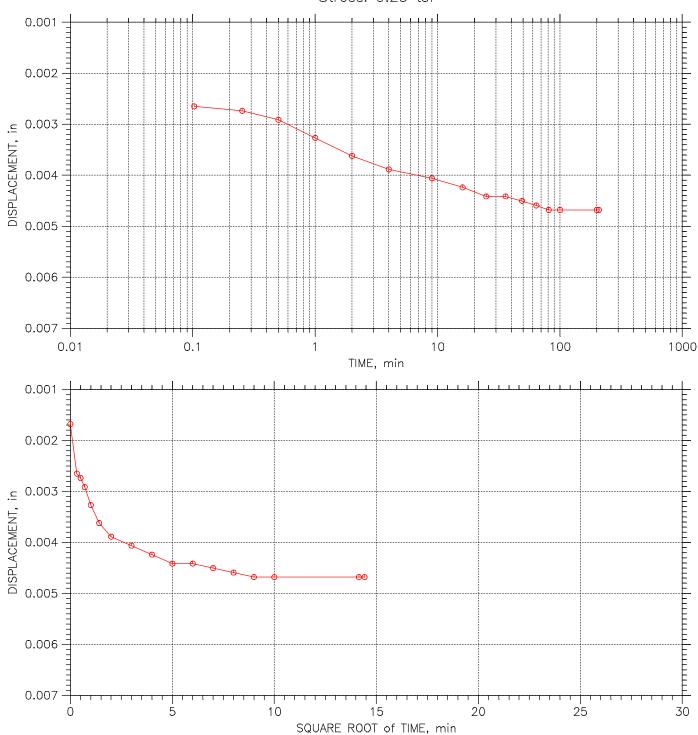


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
<b>ierracon</b>	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf





Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
Description: REDDISH BROWN LEAN CLAY (CL)		

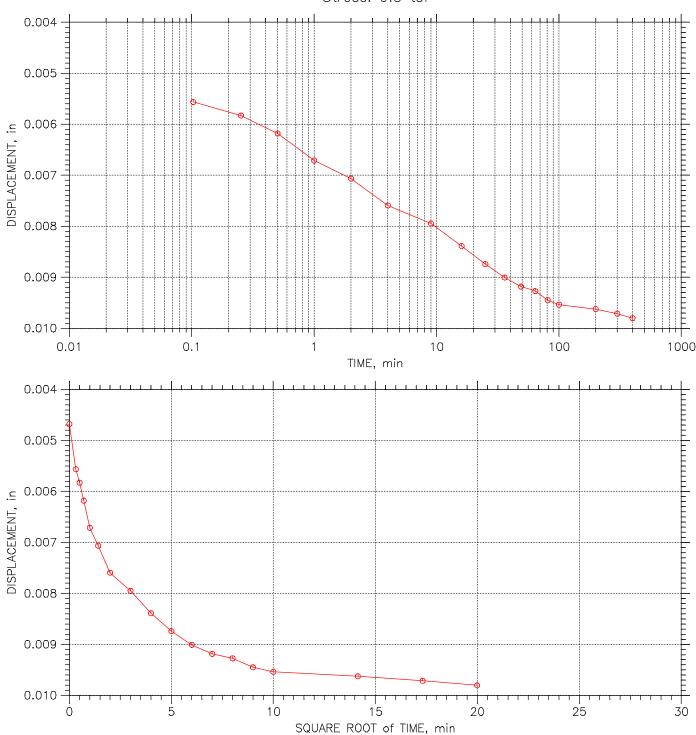
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf

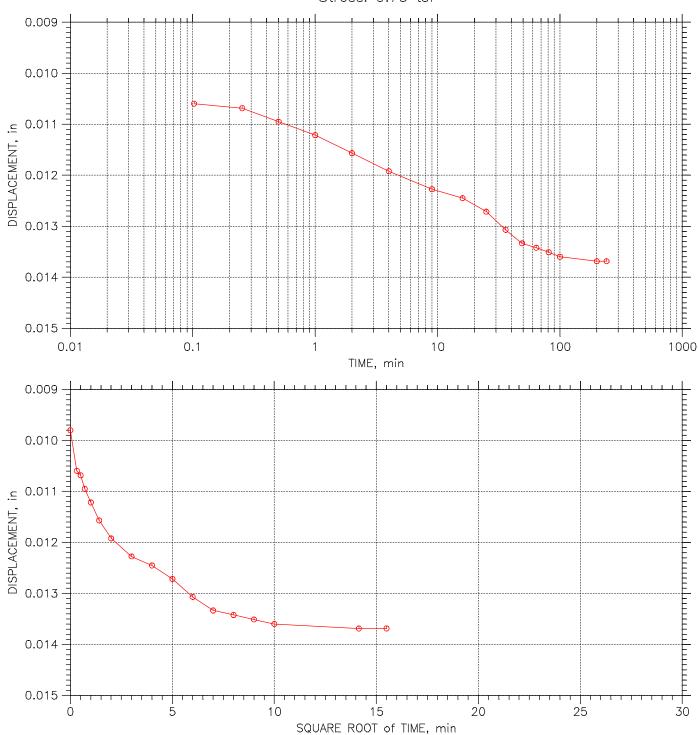


Fierracon	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM	
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'	
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf



Fierracon	

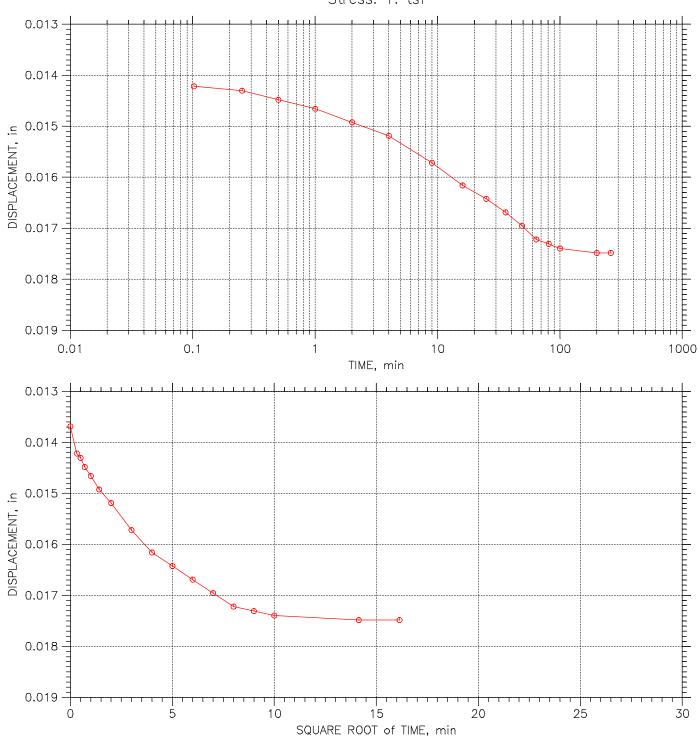
Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM	
Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'	
Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:	
Description: REDDISH BROWN LEAN CLAY (CL)			

Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf

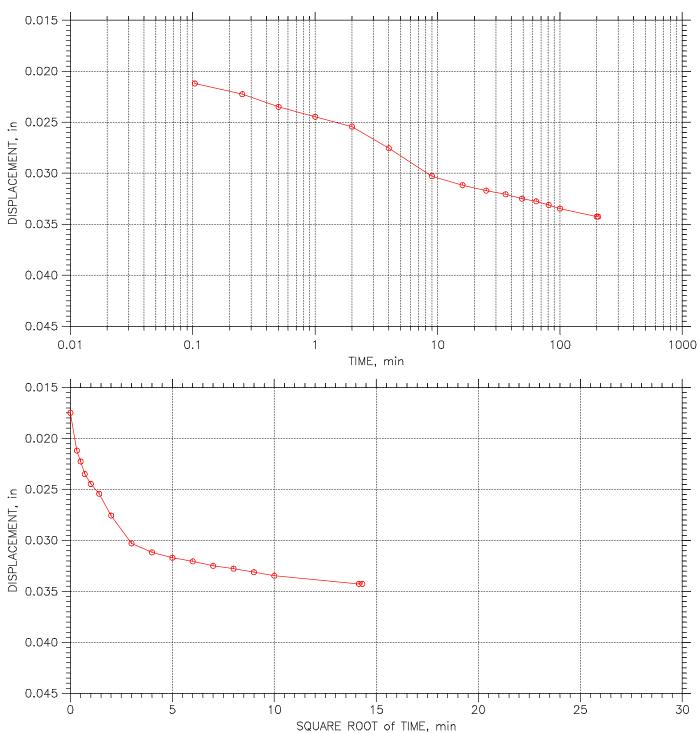


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
<b>ierracon</b>	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf

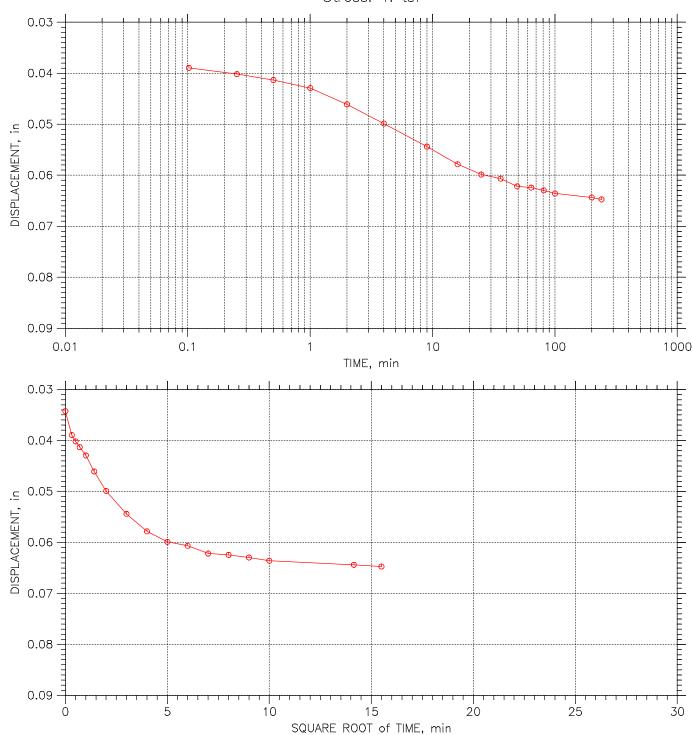


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
<b>ierracon</b>	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf





Projec	ct: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
Boring	g No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
Samp	le No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
Test N	No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
Descr	Description: REDDISH BROWN LEAN CLAY (CL)		

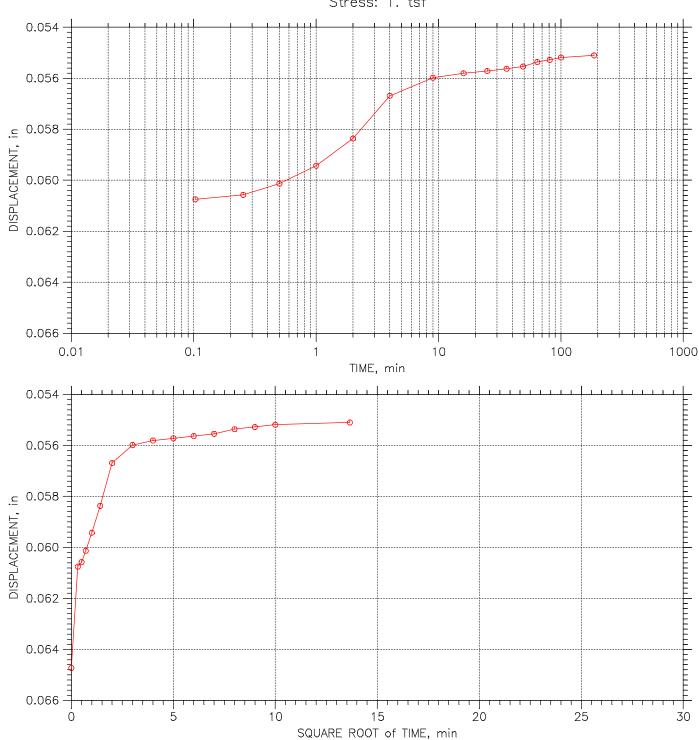
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf

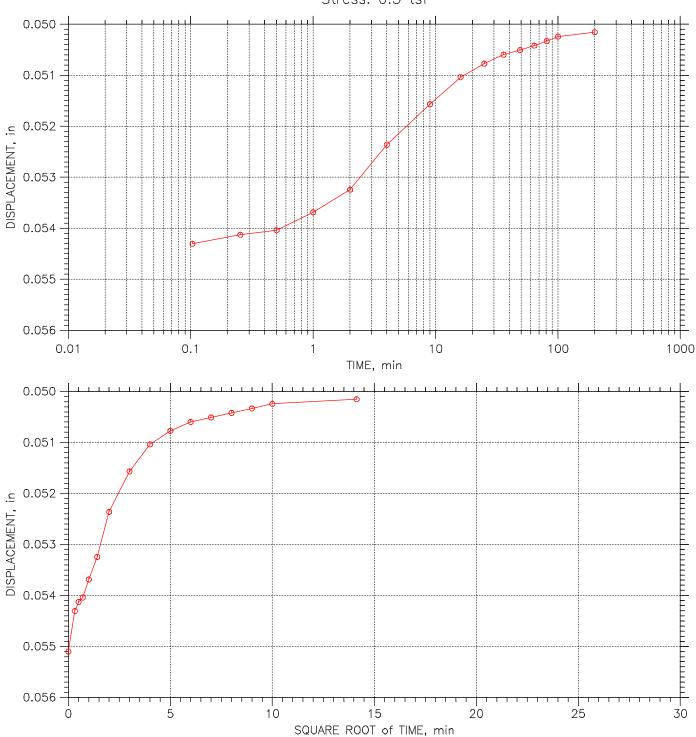


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
<b>ierracon</b>	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf

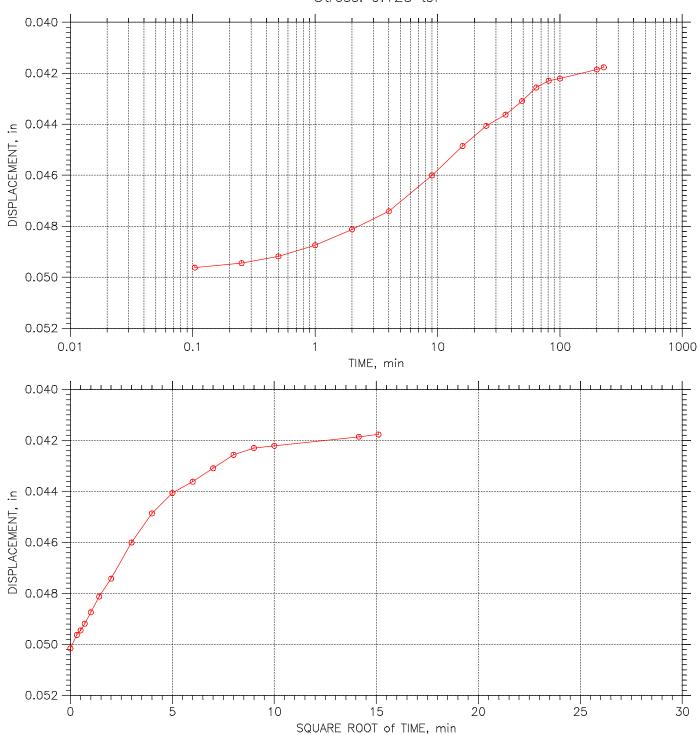


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
erracon	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf





Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
Description: REDDISH BROWN LEAN CLAY (CL)		

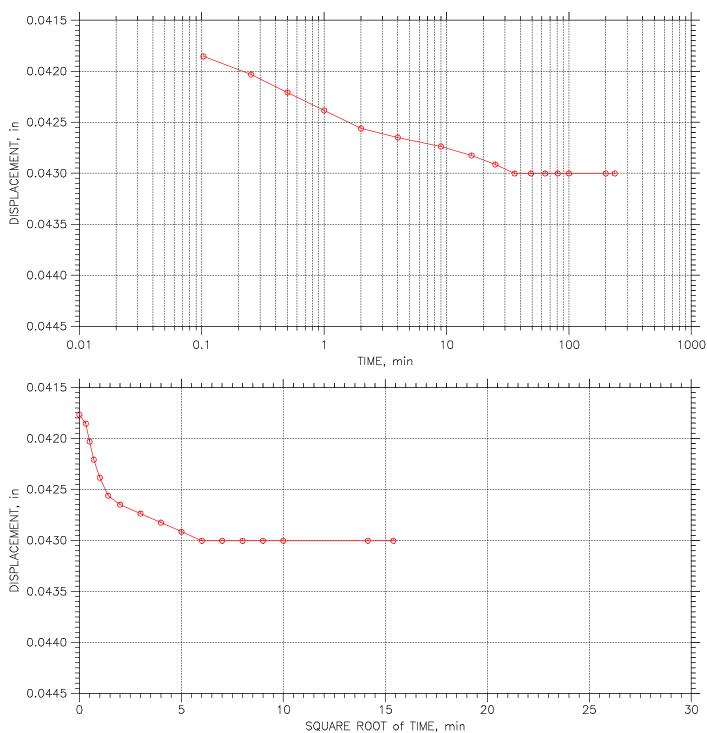
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf

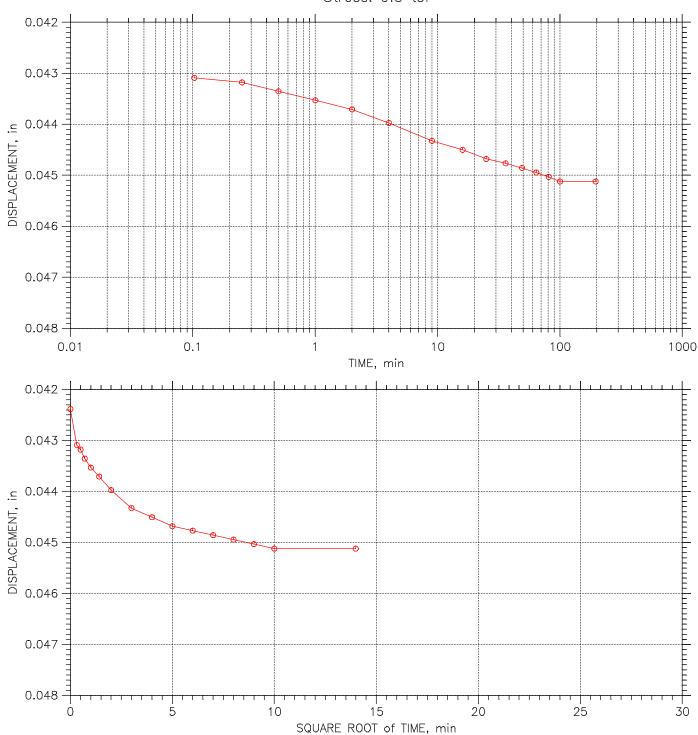


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
erracon	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf





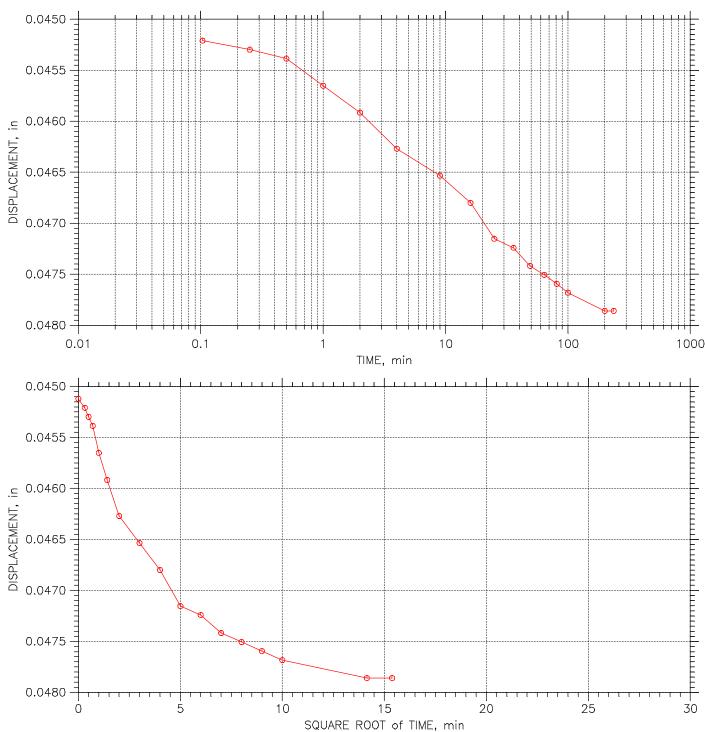
Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
Test No.: BL6BS6CON Sample Type: 3" ST		Elevation:
Description: REDDISH BROWN LEAN CLAY (CL)		

Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf

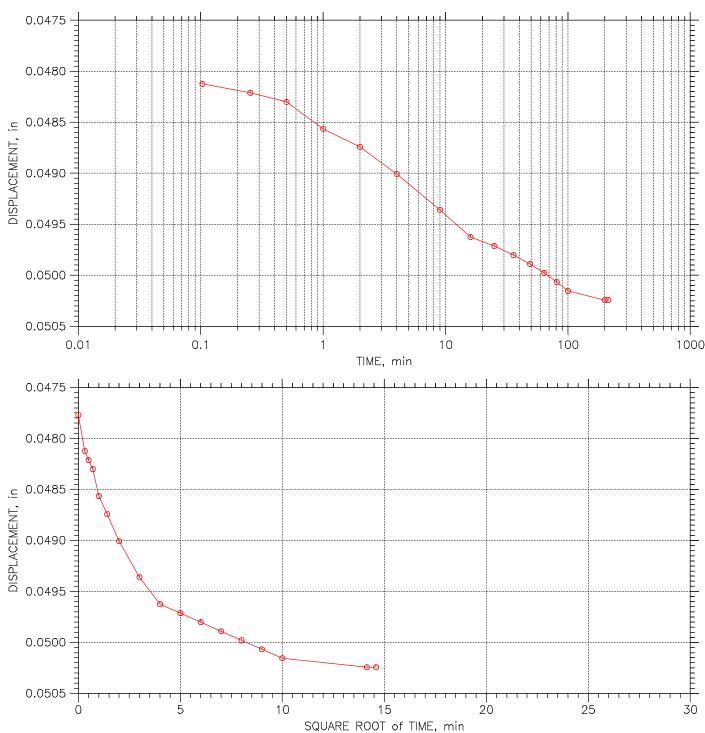


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
erracon	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf

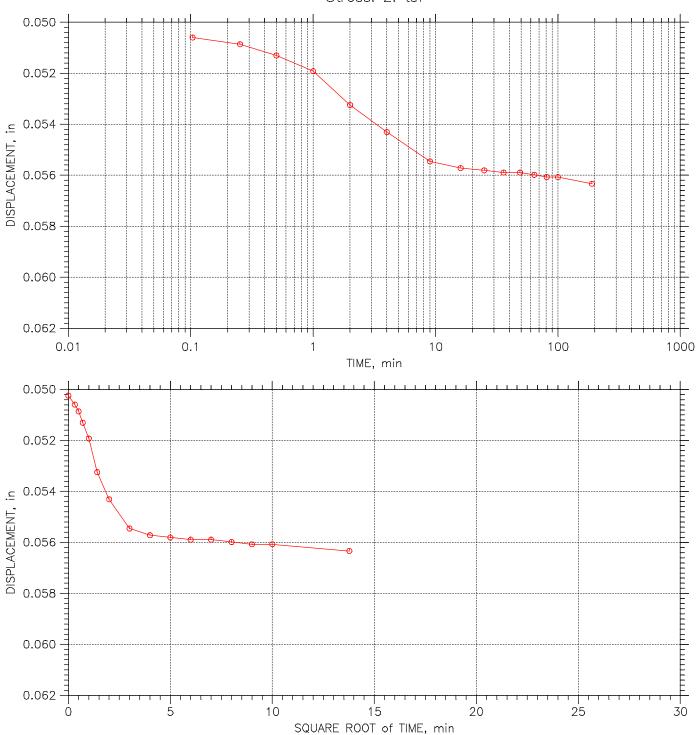


		Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM	
		Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	<b>ierracon</b>	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
		Description: REDDISH BROWN LEAN	N CLAY (CL)	
		Remarks: $Pc = 2.0 \text{ tsf } Cc = 0.32$	22 Ccr = 0.064 TEST PERFORMED	AS PER ASTM D2435
П				

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf

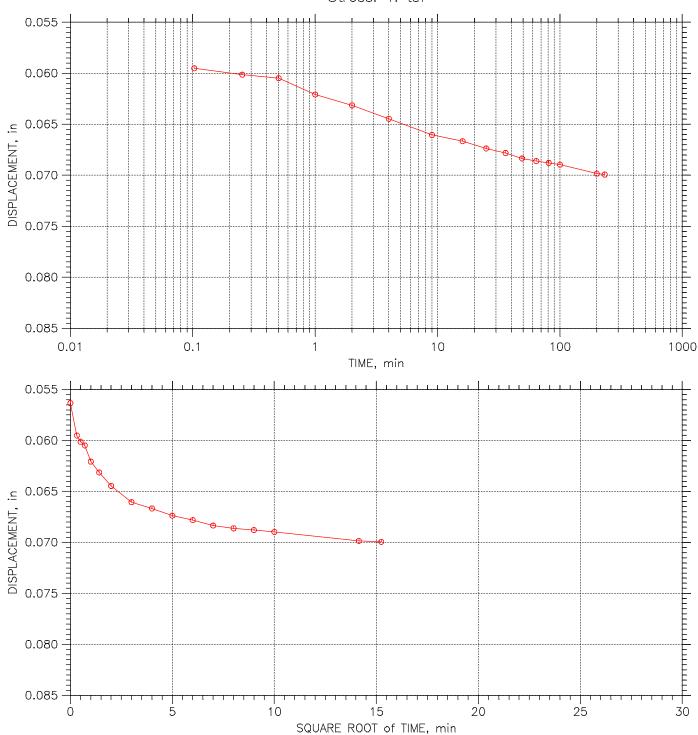


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
Ferracon	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf

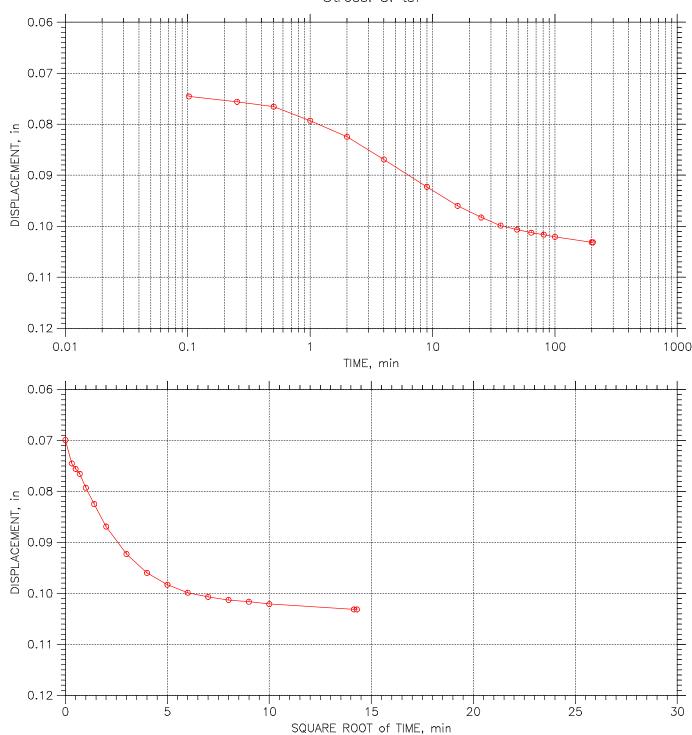


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
erracon	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf

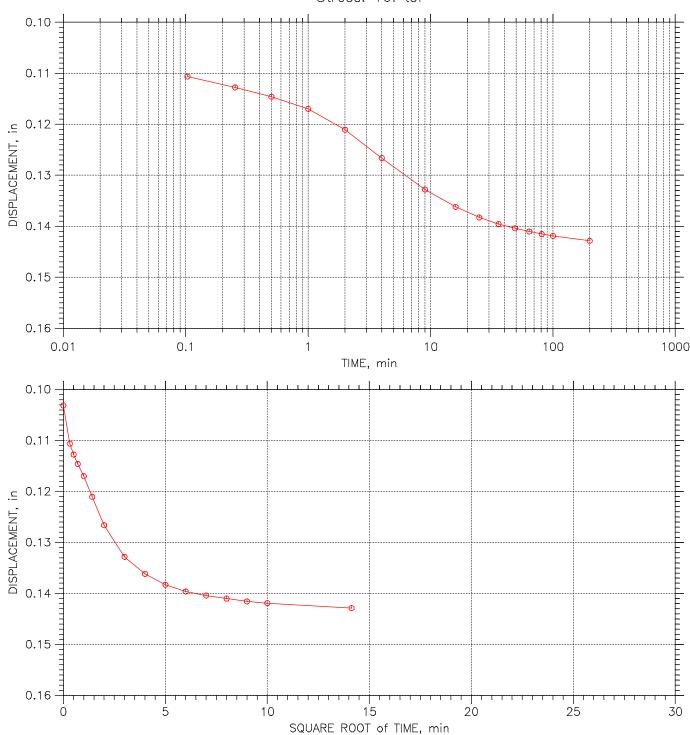


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
erracon	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf





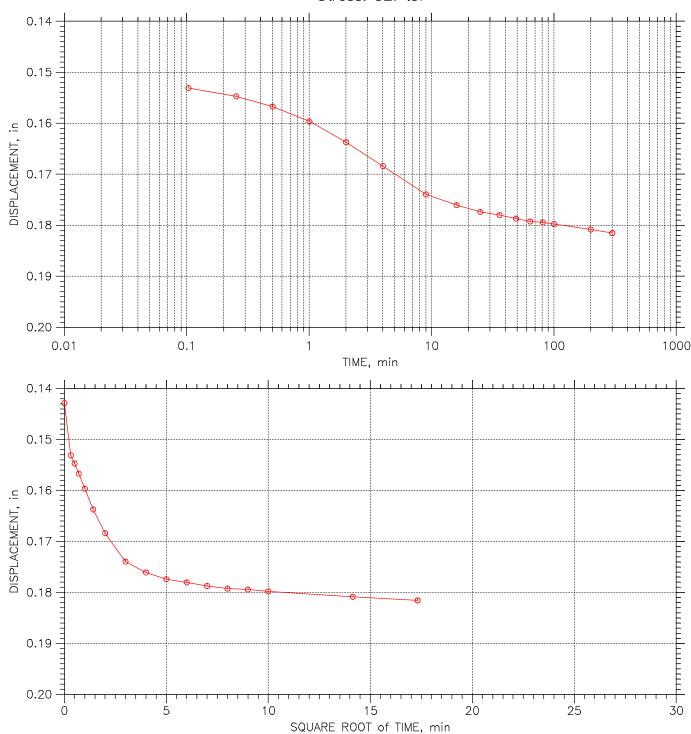
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
Boring No.: BL-6B S-6		Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
1	Test No.: BL6BS6CON Sample Type: 3" ST		Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		

Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM	
Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'	
Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:	
Description: REDDISH BROWN LEAN CLAY (CL)			

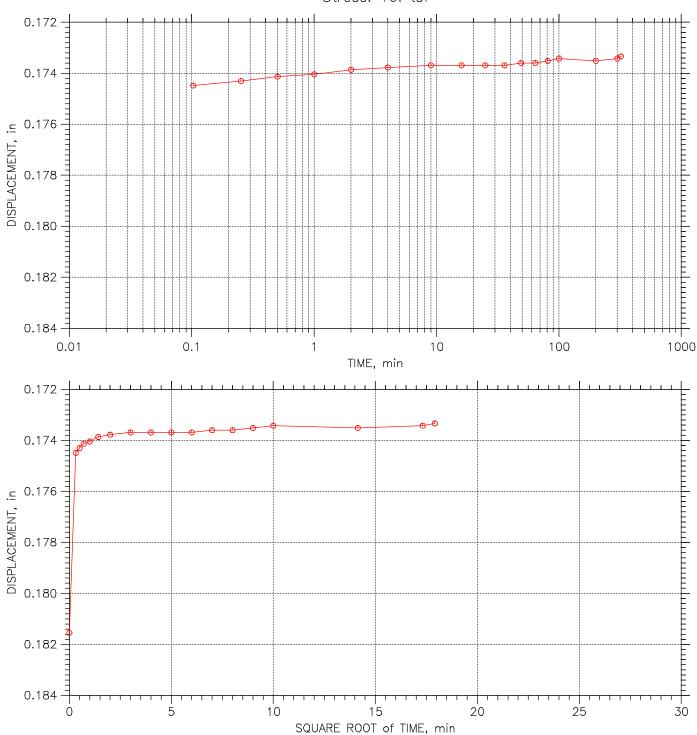
Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

Fri, 17-FEB-2023 13:46:37

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf

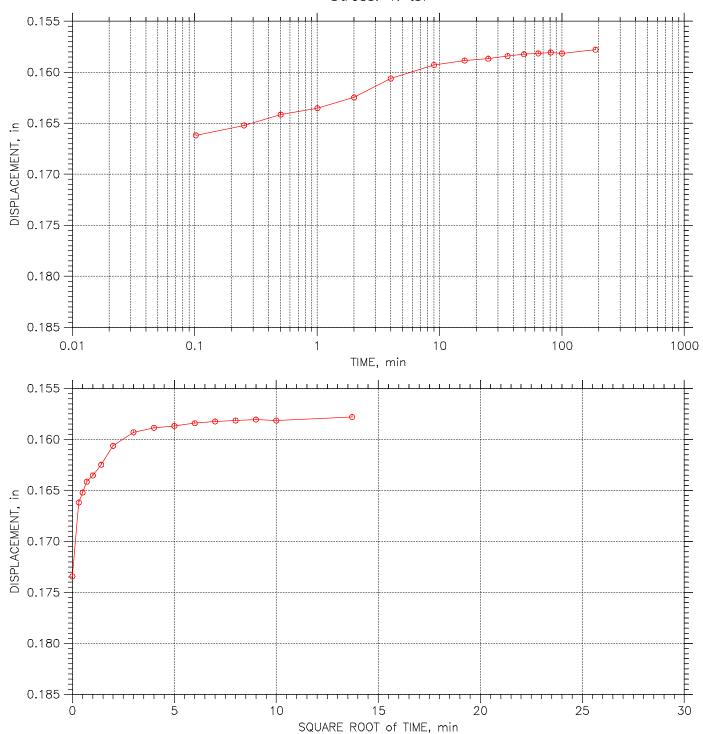


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM	
	Sample No.: S-6 Test Date: 1/19/2023 De		Depth: 50.0'-52.0'	
erracon	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf

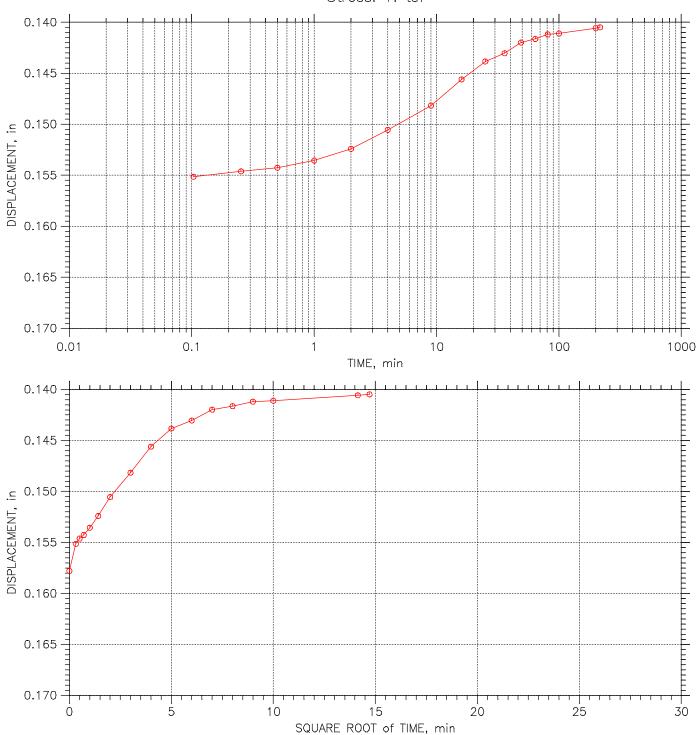


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6 Test Date: 1/19/2023		Depth: 50.0'-52.0'
erracon	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf

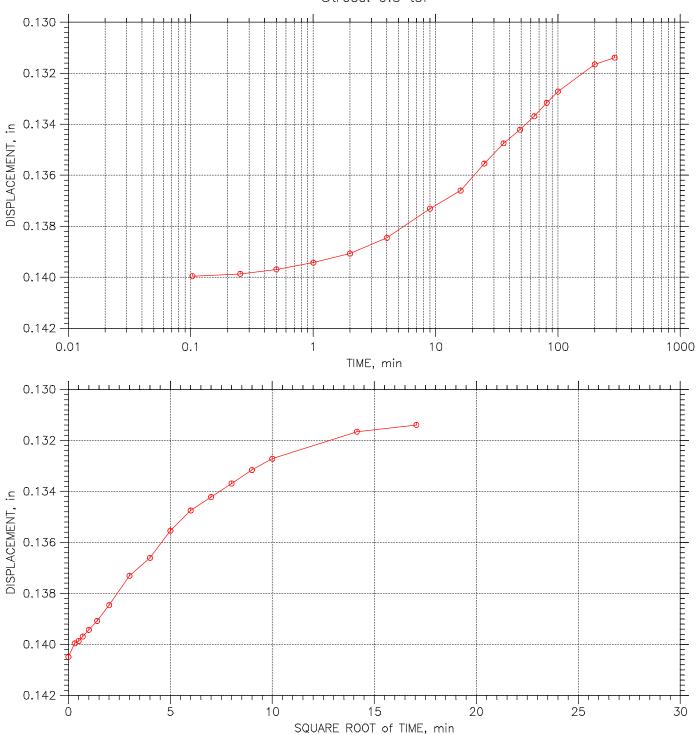


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
Fierracon	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM	
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'	
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf

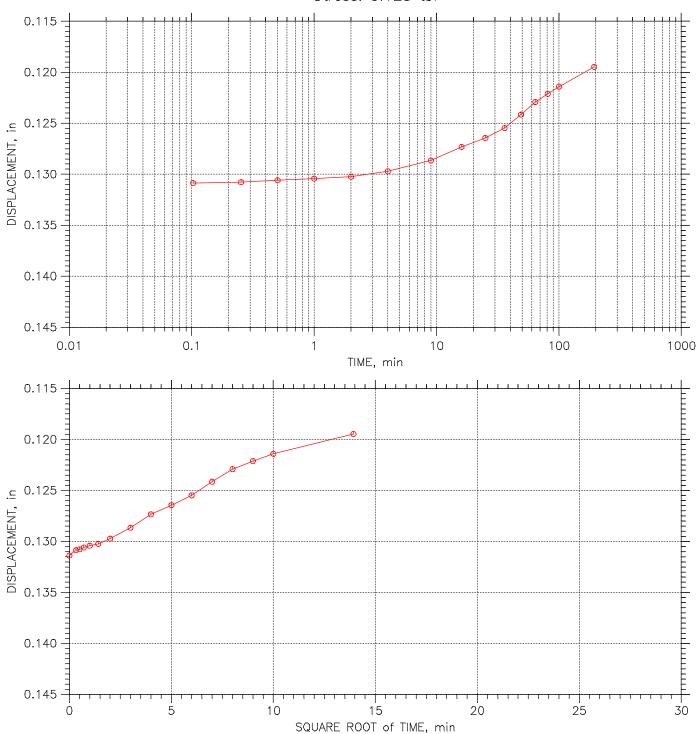


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
Fierracon	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM	
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'	
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 24 of 24

Stress: 0.125 tsf



	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM	
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'	
erracon	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435			

Project: PULLIAM PROPRTY RES. Location: GREEN BAY, WI
Boring No.: BL-6B S-6 Tested By: BCM
Sample No.: S-6 Test Date: 1/19/2023
Test No.: BL6BS6CON Sample Type: 3" ST Test No.: BL6BS6CON

Location: GREEN BAY, WI Project No.: 11225052
Tested By: BCM Checked By: BCM
Test Date: 1/19/2023 Depth: 50.0'-52.0'
Sample Type: 3" ST Elevation: -----Sample Type: 3" ST



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

Estimated Specific Gravity: 2.72 Liquid Limit: 41
Initial Void Ratio: 0.87 Plastic Limit: 14
Final Void Ratio: 0.57 Plasticity Index: 27

Initial Height: 0.75 in Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	н11	RING	RING	B-9
Wt. Container + Wet Soil, gm	146.13	190.99	182.5	154.08
Wt. Container + Dry Soil, gm	118.79	164.08	164.08	135.68
Wt. Container, gm	30.09	76.73	76.73	48.41
Wt. Dry Soil, gm	88.7	87.353	87.353	87.27
Water Content, %	30.82	30.80	21.08	21.08
Void Ratio		0.87	0.57	
Degree of Saturation, %		95.97	100.01	
Dry Unit Weight, pcf		90.657	107.92	

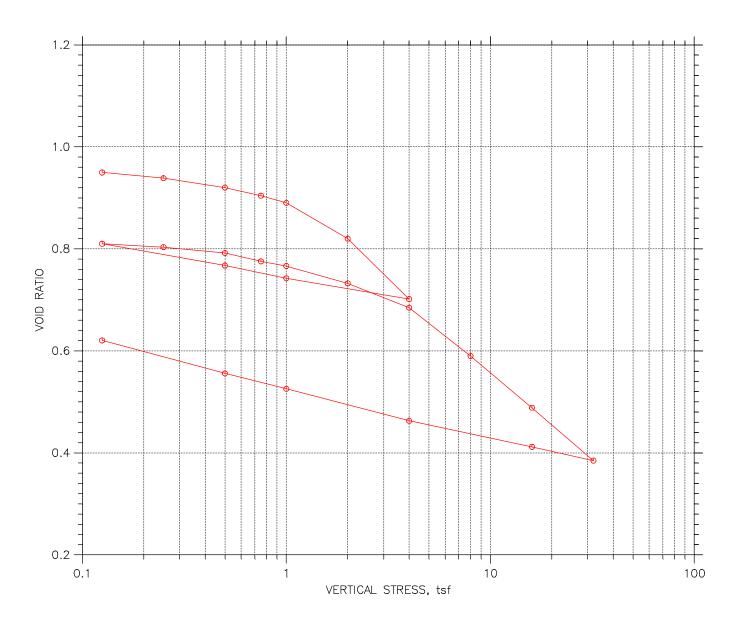
Project: PULLIAM PROPRTY RES. Location: GREEN BAY, WI Project No.: 11225052
Boring No.: BL-6B S-6 Tested By: BCM Checked By: BCM
Sample No.: S-6 Test Date: 1/19/2023 Depth: 50.0'-52.0'
Test No.: BL6BS6CON Sample Type: 3" ST Elevation: -----



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

	Applied	Final	Void	Strain	T50	Fitting	Coeffi	icient of Cor	solidation
	Stress	Displacement	Ratio	at End	Sq.Rt.	Log	Sq.Rt.	Log	Ave.
	tsf	in		%	min	min	ft^2/sec	ft^2/sec	ft^2/sec
1	0.125	0.001678	0.869	0.22	0.1	0.0	4.03e-005	0.00e+000	4.03e-005
2	0.25	0.00468	0.861	0.63	1.4	0.0	2.28e-006	0.00e+000	2.28e-006
3	0.5	0.009801	0.848	1.31	8.3	0.0	3.78e-007	0.00e+000	3.78e-007
4	0.75	0.01369	0.839	1.83	10.4	0.0	2.96e-007	0.00e+000	2.96e-007
5	1	0.01748	0.829	2.34	18.9	0.0	1.62e-007	0.00e+000	1.62e-007
6	2	0.03426	0.787	4.59	2.1	0.0	1.41e-006	0.00e+000	1.41e-006
7	4	0.06472	0.711	8.67	3.8	0.0	7.28e-007	0.00e+000	7.28e-007
8	1	0.0551	0.735	7.38	0.8	0.0	3.28e-006	0.00e+000	3.28e-006
9	0.5	0.05015	0.747	6.72	3.9	2.2	7.13e-007	1.27e-006	9.13e-007
10	0.125	0.04177	0.768	5.59	12.8	0.0	2.20e-007	0.00e+000	2.20e-007
11	0.25	0.043	0.765	5.76	8.4	0.0	3.37e-007	0.00e+000	3.37e-007
12	0.5	0.04512	0.760	6.04	3.8	2.4	7.43e-007	1.19e-006	9.16e-007
13	0.75	0.04786	0.753	6.41	6.4	0.0	4.37e-007	0.00e+000	4.37e-007
14	1	0.05024	0.747	6.73	3.8	0.0	7.33e-007	0.00e+000	7.33e-007
15	2	0.05634	0.732	7.54	2.1	0.0	1.31e-006	0.00e+000	1.31e-006
16	4	0.06993	0.698	9.36	2.1	2.2	1.27e-006	1.24e-006	1.25e-006
17	8	0.1031	0.614	13.81	3.8	3.4	6.53e-007	7.27e-007	6.88e-007
18	16	0.1429	0.515	19.13	2.1	1.6	1.06e-006	1.35e-006	1.19e-006
19	32	0.1815	0.418	24.31	2.1	0.0	9.29e-007	0.00e+000	9.29e-007
20	16	0.1733	0.438	23.21	0.0	0.0	7.70e-005	0.00e+000	7.70e-005
21	4	0.1578	0.477	21.13	0.7	0.0	2.81e-006	0.00e+000	2.81e-006
22	1	0.1405	0.521	18.81	5.6	6.6	3.63e-007	3.10e-007	3.34e-007
23	0.5	0.1314	0.544	17.59	20.3	12.0	1.05e-007	1.78e-007	1.32e-007
24	0.125	0.1195	0.573	16.00	51.7	37.2	4.27e-008	5.93e-008	4.96e-008

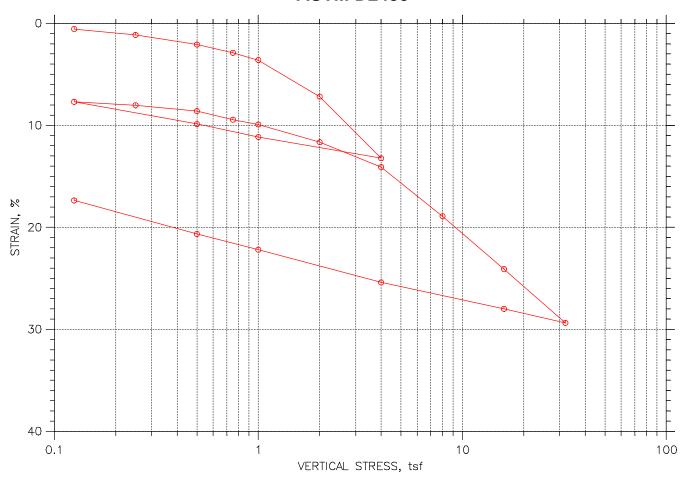
# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435

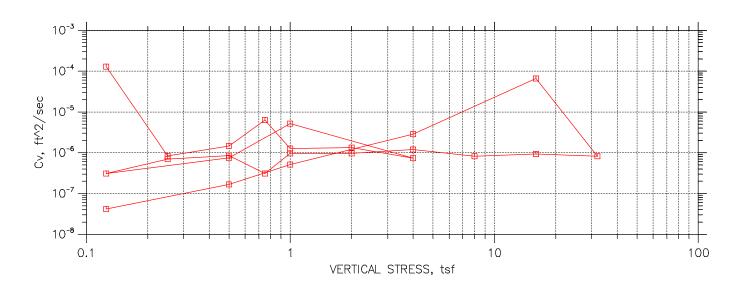


					Before Test	After Test
				Water Content, %	33.00	22.56
Preconsolidation Pressure: 1.2 tsf			Dry Unit Weight, pcf	86.6	104.8	
Compression Index: 0.342			Saturation, %	93.42	98.87	
Diameter: 2.5 in Height: 0.7429 in		Void Ratio	0.96	0.62		
LL: 40	PL: 15	PI: 25	GS: 2.72			

	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052			
Fierracon	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM			
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'			
	Test No.: BL7S10CON Sample Type: 3" ST Elevation:					
	Description: REDDISH BROWN LEAN CLAY (CL)					
	Remarks: Pc = 1.2 tsf Cc = 0.34	42 Ccr = 0.097 TEST PERFORMED	AS PER ASTM D2435			

# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435







Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM		
Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'		
Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:		
D I. DEDDICH BROWN LEAN OLAY (OL)				

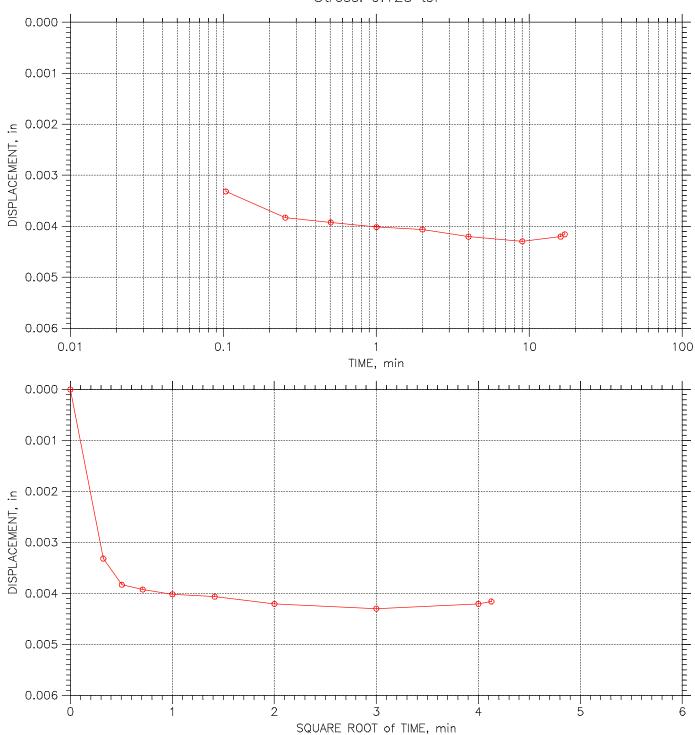
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf

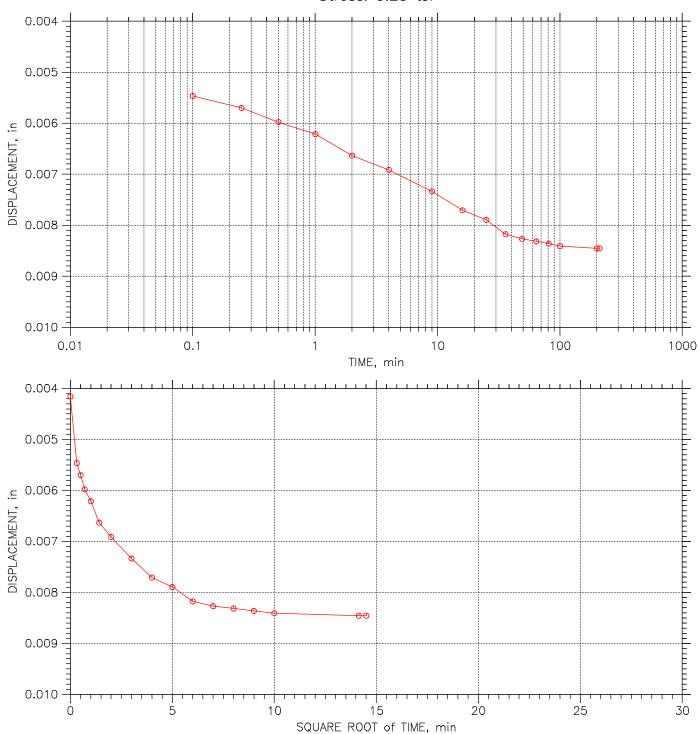


<b>Fierracon</b>	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM	
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'	
	Test No.: BL7S10C0N Sample Type: 3" ST Elevation:			
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 1.2 tsf Cc = 0.34	42 Ccr = 0.097 TEST PERFORMED	AS PER ASTM D2435	

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf

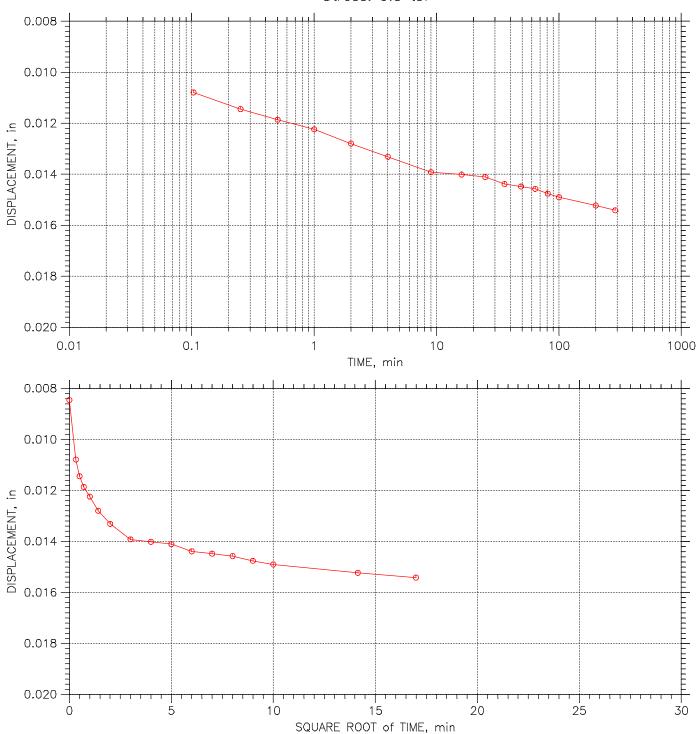


<b>Fierracon</b>	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM	
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'	
	Test No.: BL7S10C0N Sample Type: 3" ST Elevation:			
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 1.2 tsf Cc = 0.34	42 Ccr = 0.097 TEST PERFORMED	AS PER ASTM D2435	

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf

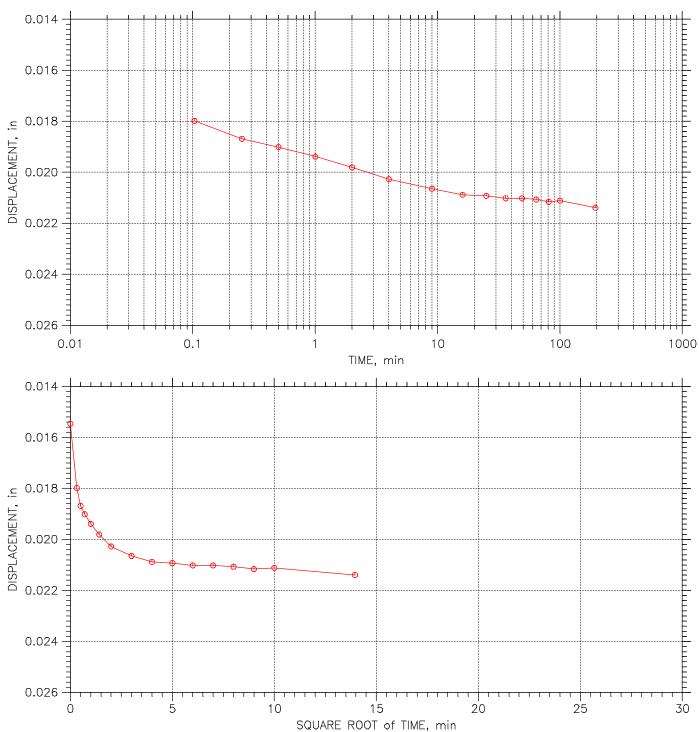


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052			
Fierracon	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM			
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'			
	Test No.: BL7S10CON Sample Type: 3" ST Elevation:					
	Description: REDDISH BROWN LEAN CLAY (CL)					
	Remarks: Pc = 1.2 tsf Cc = 0.34	42 Ccr = 0.097 TEST PERFORMED	AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf

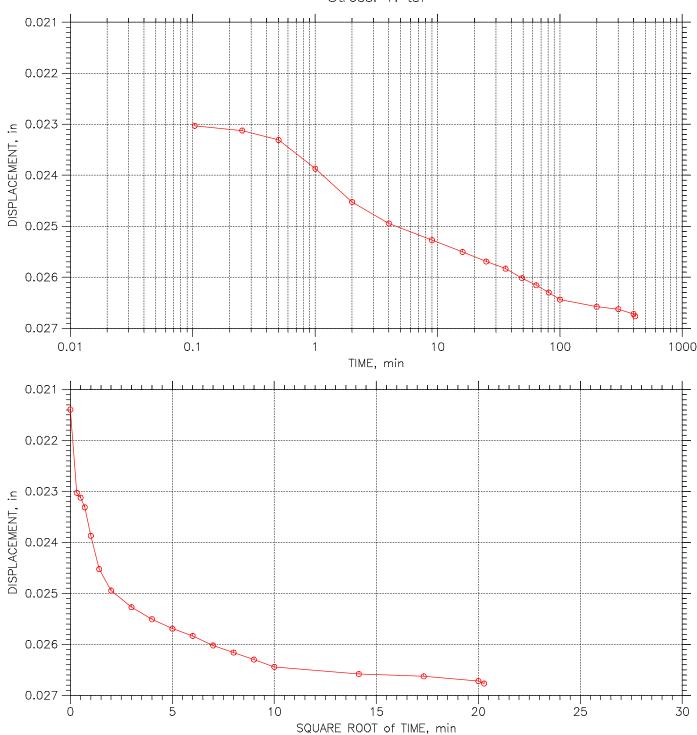


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052			
Fierracon	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM			
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'			
	Test No.: BL7S10CON Sample Type: 3" ST Elevation:					
	Description: REDDISH BROWN LEAN CLAY (CL)					
	Remarks: Pc = 1.2 tsf Cc = 0.34	42 Ccr = 0.097 TEST PERFORMED	AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf

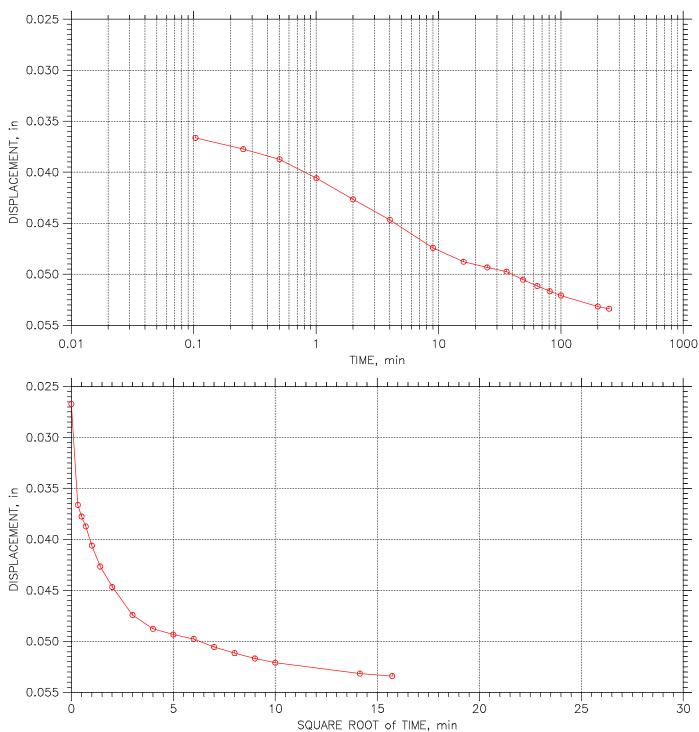


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM		
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'		
ierracon	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: $Pc = 1.2 \text{ tsf } Cc = 0.34$	42 Ccr = 0.097 TEST PERFORMED	AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf

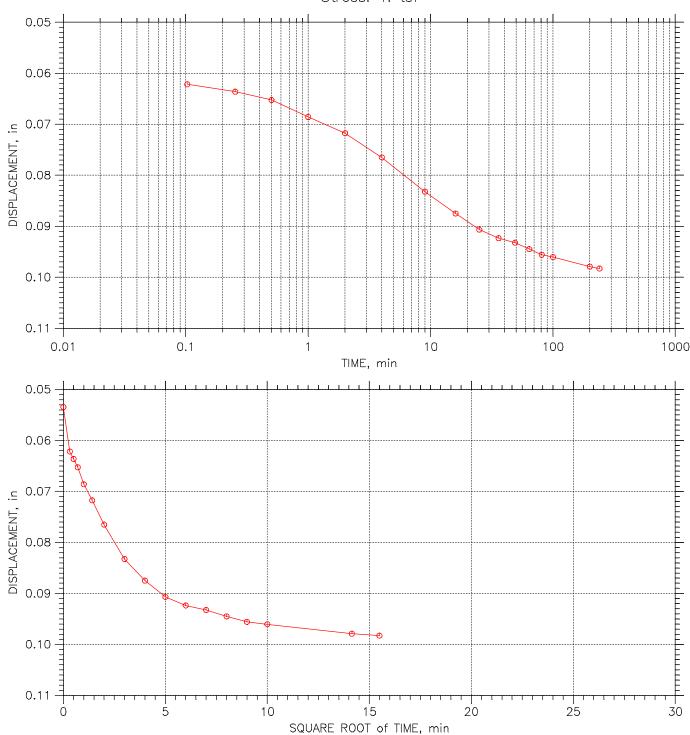


Fierracon	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM	
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'	
	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 1.2 tsf Cc = 0.34	42 Ccr = 0.097 TEST PERFORMED	AS PER ASTM D2435	

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf

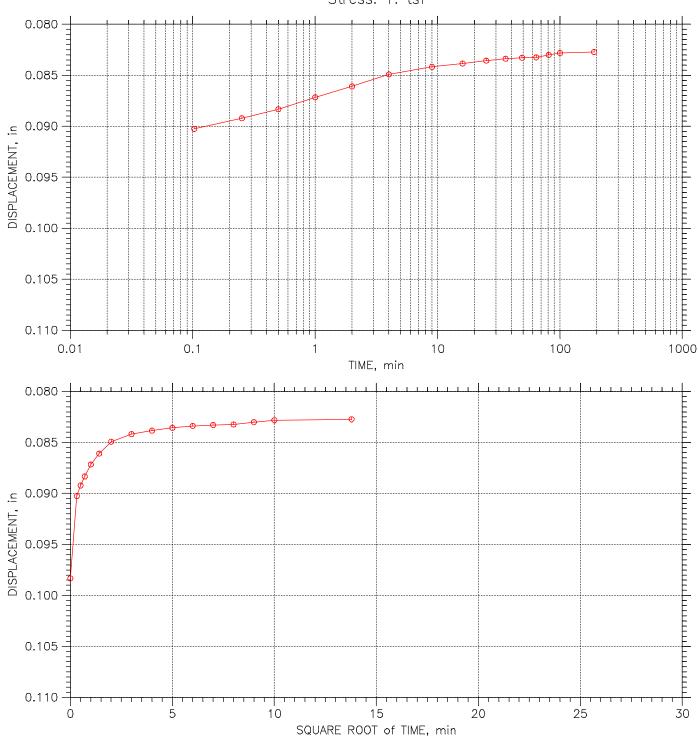


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
Ferracon	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM		
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'		
	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435				

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf

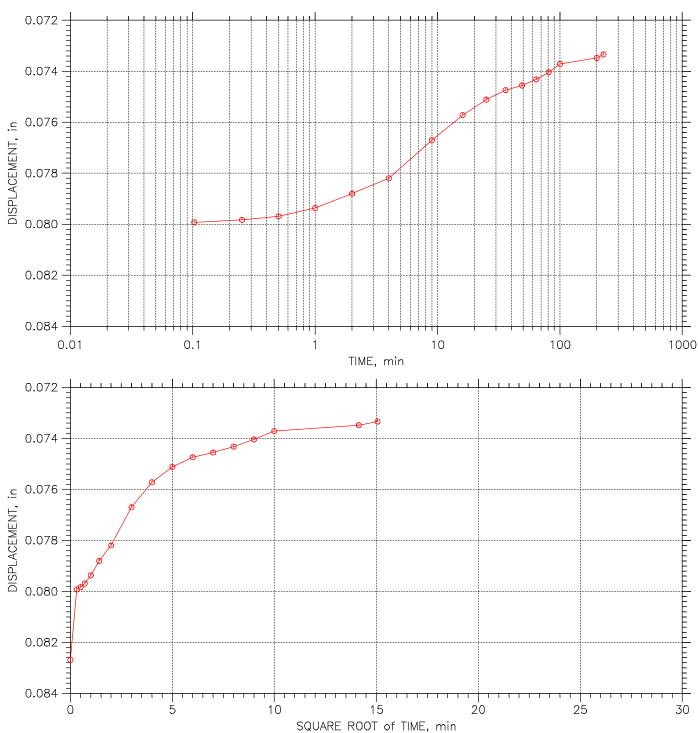


erracon	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM		
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'		
	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435				

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf

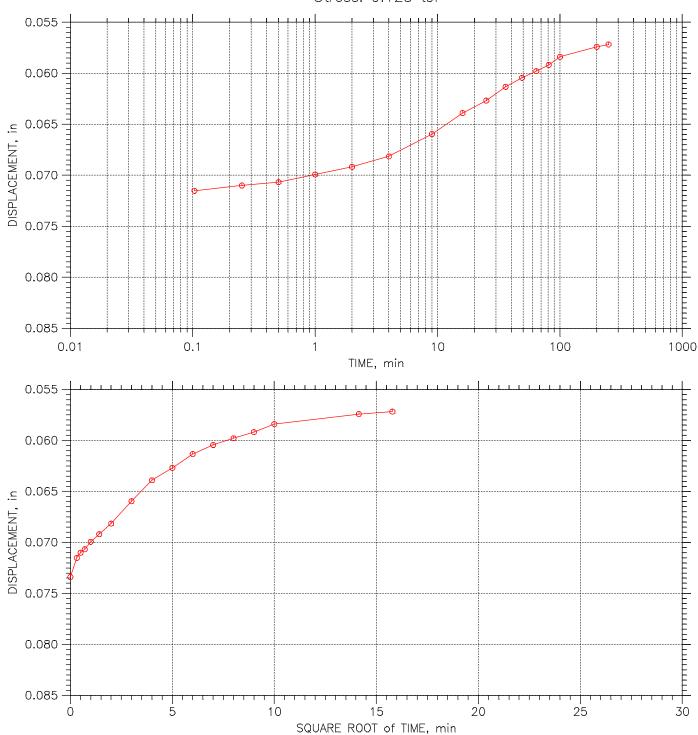


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
<b>ierracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf





Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
Test No.: BL7S10C0N Sample Type: 3" ST Elevation:		
Description: REDDISH BROWN LEA		

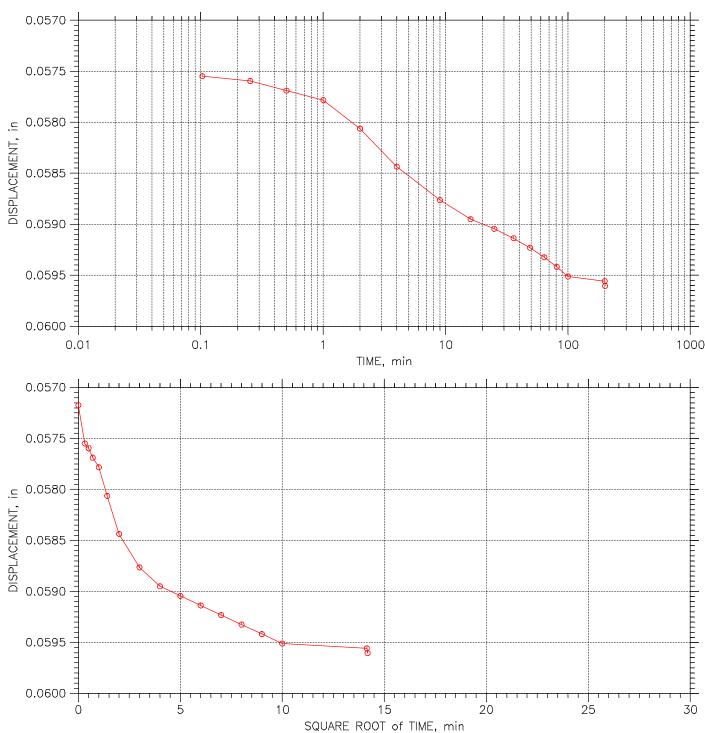
Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435

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TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf

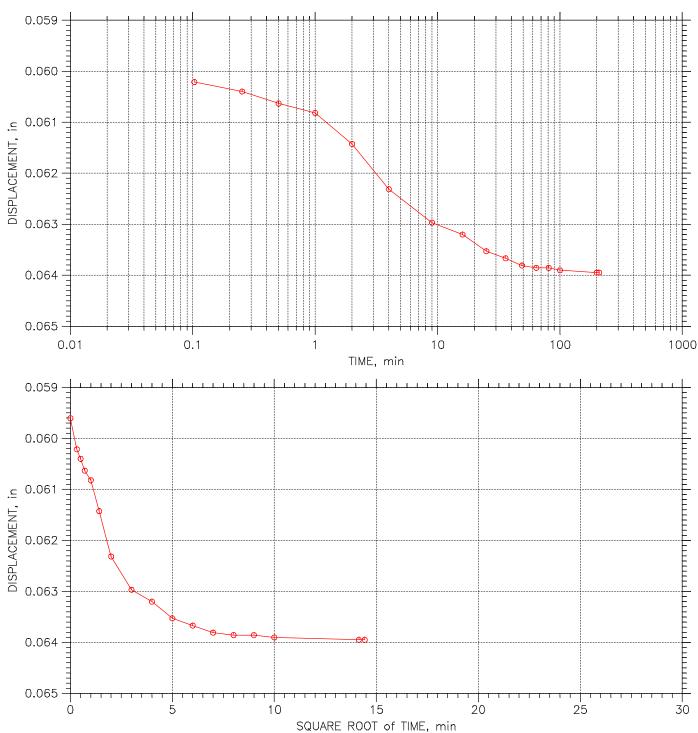


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
<b>erracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN	N CLAY (CL)	
	Remarks: $Pc = 1.2 \text{ tsf } Cc = 0.34$	42  Ccr = 0.097  TEST PERFORMED	AS PER ASTM D2435

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf

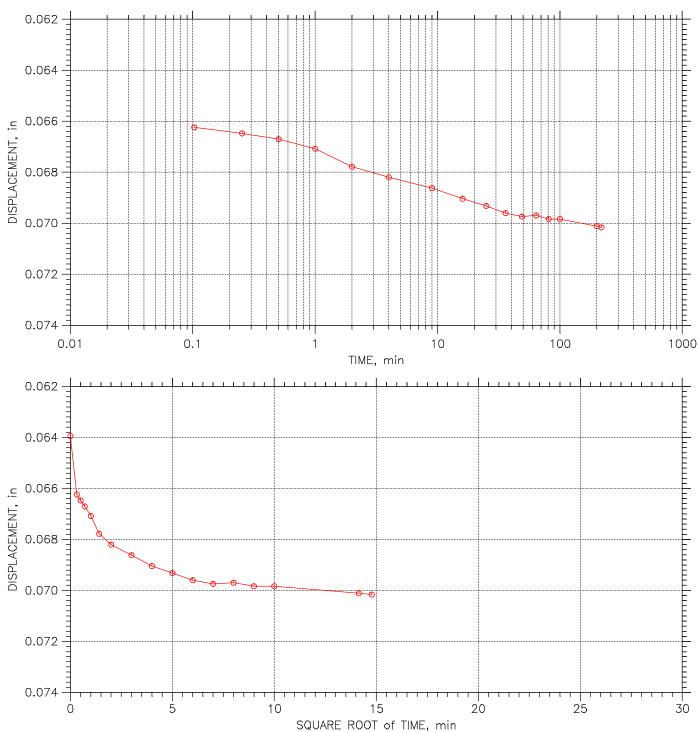


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
<b>ierracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf

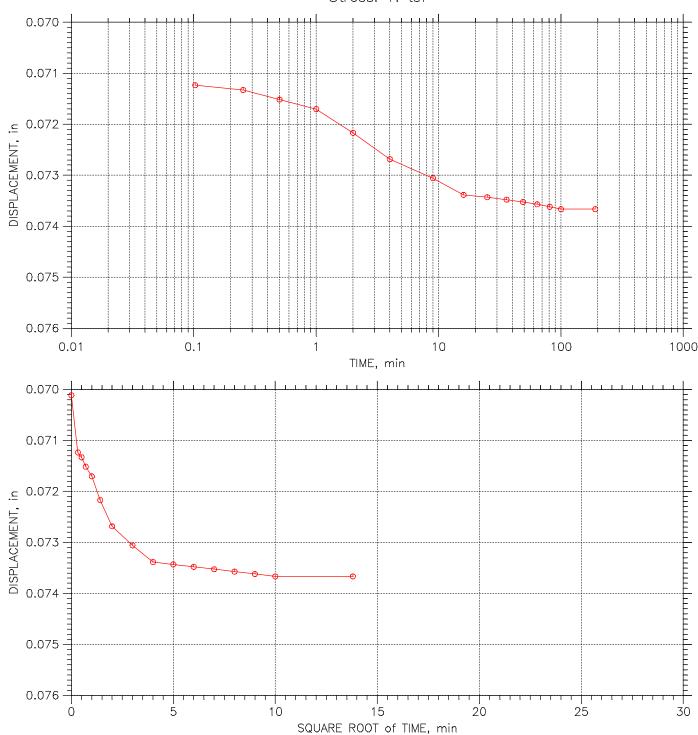


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
<b>ierracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf

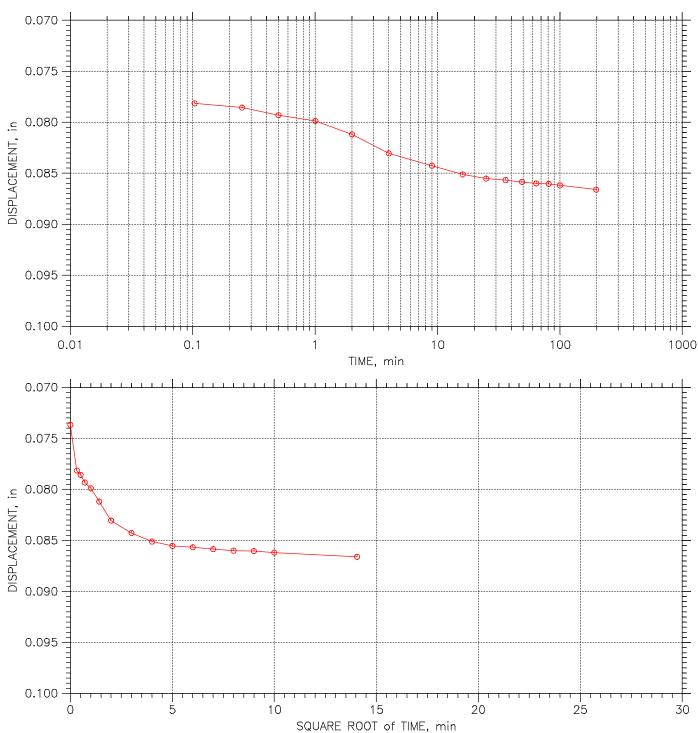


		Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
		Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
		Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	erracon	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
		Description: REDDISH BROWN LEAN CLAY (CL)		
		Remarks: Pc = 1.2 tsf Cc = 0.34	42 Ccr = 0.097 TEST PERFORMED	AS PER ASTM D2435

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf

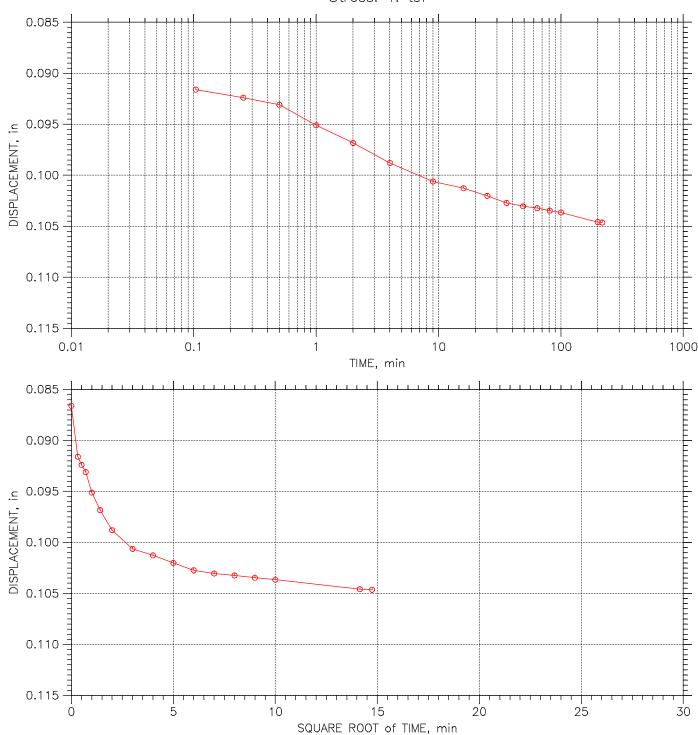


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
<b>ierracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf



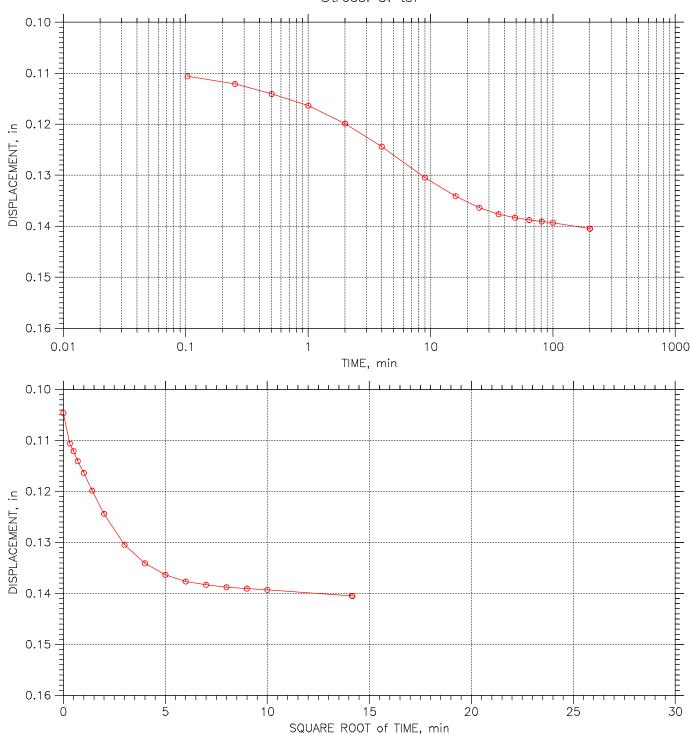
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		Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
		Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
		Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
		Description: REDDISH BROWN LEAR	N CLAY (CL)	
		Remarks: Pc = 1.2 tsf Cc = 0.34	42 Ccr = 0.097 TEST PERFORMED	AS PER ASTM D2435

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TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf

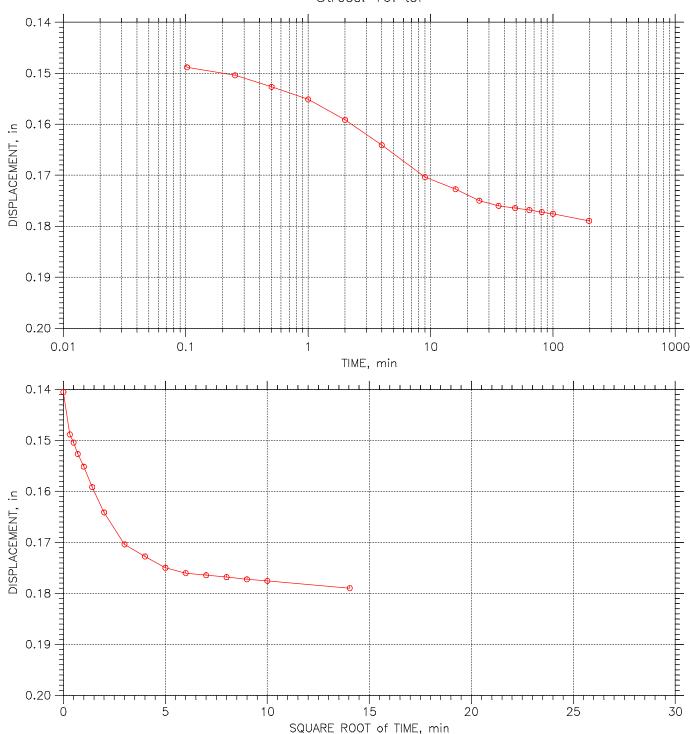


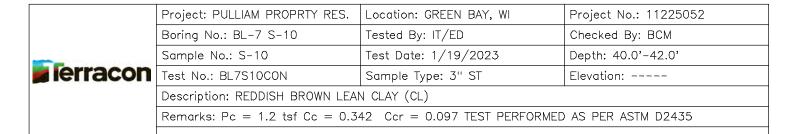
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
<b>ierracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf

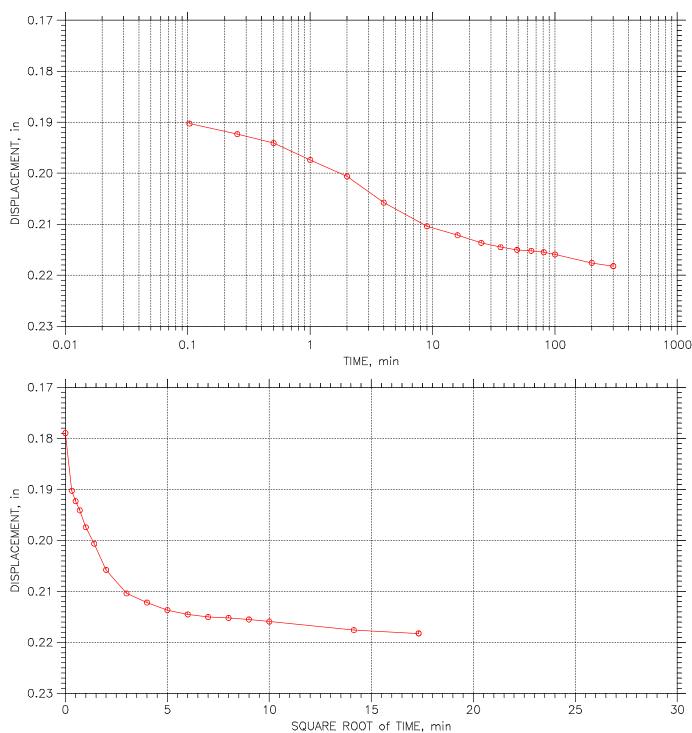




TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf

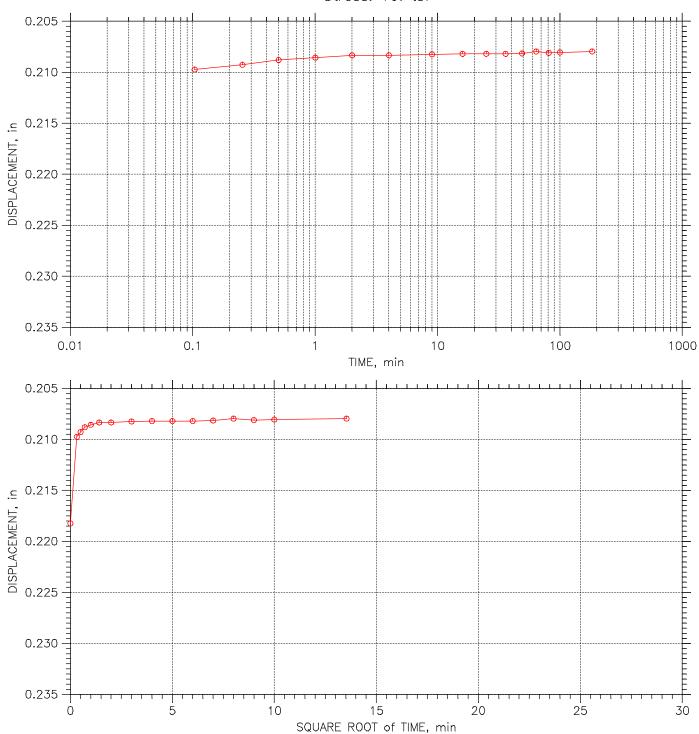


		Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
		Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
		Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
errace	<b>ierracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
		Description: REDDISH BROWN LEAN CLAY (CL)		
		Remarks: $Pc = 1.2 \text{ tsf } Cc = 0.36$	42 $Ccr = 0.097 TEST PERFORMED$	AS PER ASTM D2435

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf

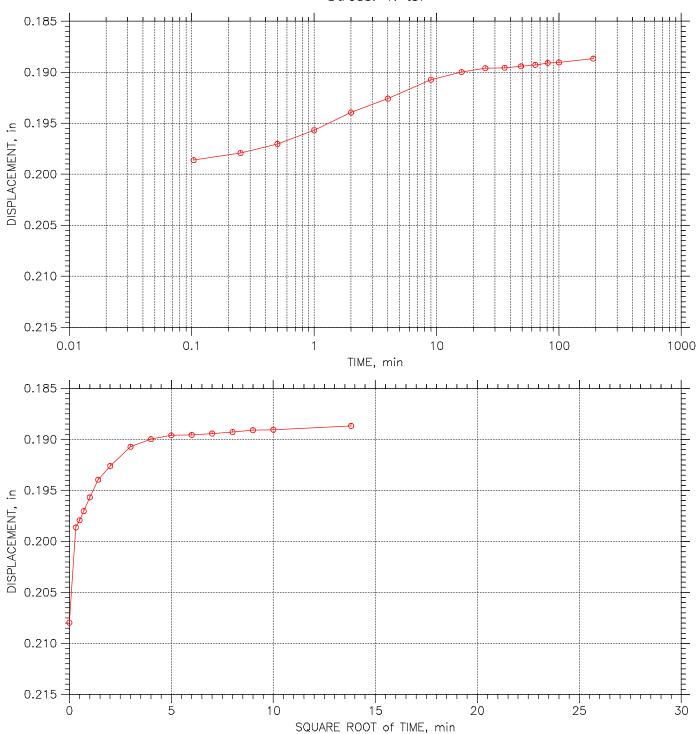


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
- 15 CS CS CS CS CS CS CS CS CS CS CS CS CS	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
<b>ierracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf

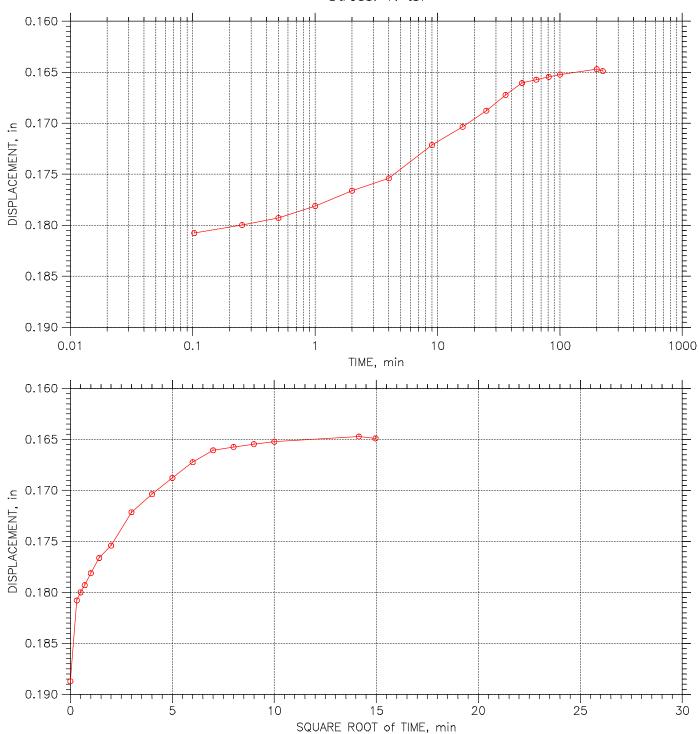


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
<b>ierracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 1.2 \text{ tsf } Cc = 0.34$	42 Ccr = 0.097 TEST PERFORME	O AS PER ASTM D2435

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf

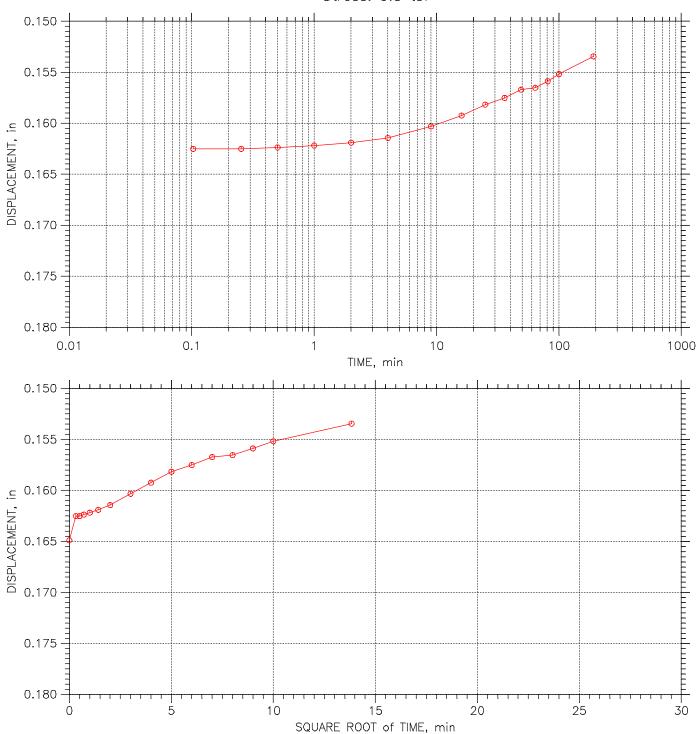


	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM		
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'		
<b>ierracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: Pc = 1.2 tsf Cc = 0.34	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf



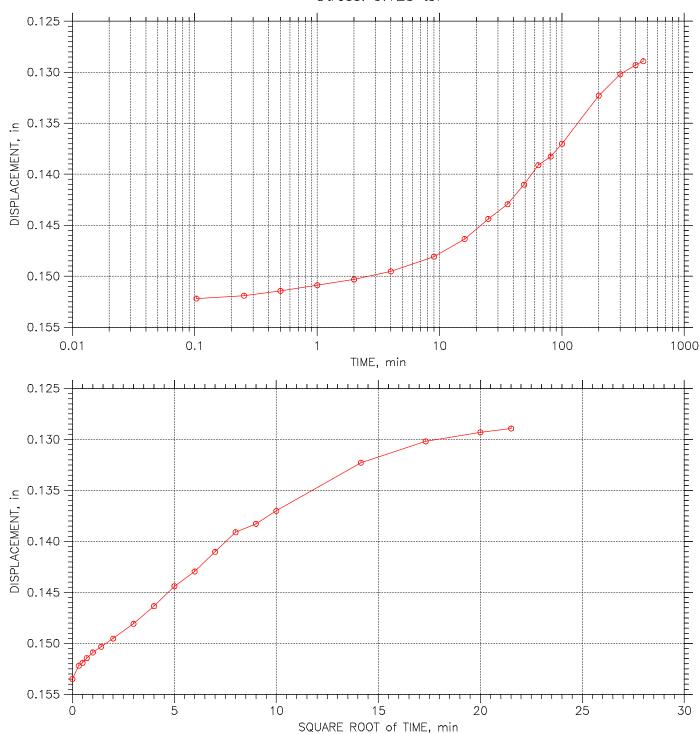
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
<b>ierracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN	N CLAY (CL)	
	Remarks: $Pc = 1.2 \text{ tef } Cc = 0.3$	42  Cor = 0.097  TEST PERFORMED	AS PER ASTM D2435

Fri, 17-FEB-2023 14:30:45

TIME CURVES

Constant Load Step: 24 of 24

Stress: 0.125 tsf



	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
<b>lerracon</b>	Test No.: BL7S10C0N	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAR	N CLAY (CL)	
	Remarks: Pc = 1.2 tsf Cc = 0.34	42 Ccr = 0.097 TEST PERFORMED	AS PER ASTM D2435

Project: PULLIAM PROPRTY RES. Location: GREEN BAY, WI Project No.: 11225052
Boring No.: BL-7 S-10 Tested By: IT/ED Checked By: BCM
Sample No.: S-10 Test Date: 1/19/2023 Depth: 40.0'-42.0'
Test No.: BL7S10CON Sample Type: 3" ST Elevation: -----



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 1.2 tsf Cc = 0.342  $\,$  Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435

Estimated Specific Gravity: 2.72 Liquid Limit: 40
Initial Void Ratio: 0.96 Plastic Limit: 15
Final Void Ratio: 0.62 Plasticity Index: 25

Initial Height: 0.74 in Specimen Diameter: 2.50 in

	Before Co	onsolidation	After Consol	idation
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	H-5	RING	RING	B-10
Wt. Container + Wet Soil, gm	140.99	186.01	177.35	150.97
Wt. Container + Dry Soil, gm	113.9	158.65	158.65	132.15
Wt. Container, gm	30.82	75.72	75.72	48.71
Wt. Dry Soil, gm	83.08	82.926	82.926	83.44
Water Content, %	32.61	33.00	22.56	22.56
Void Ratio		0.96	0.62	
Degree of Saturation, %		93.42	98.87	
Dry Unit Weight, pcf		86.601	104.79	

Project: PULLIAM PROPRTY RES. Location: GREEN BAY, WI
Boring No.: BL-7 S-10 Tested By: IT/ED
Sample No.: S-10 Test Date: 1/19/2023
Test No.: BL7S10CON Sample Type: 3" ST

Project No.: 11225052 Checked By: BCM Depth: 40.0'-42.0' Elevation: ----Sample Type: 3" ST

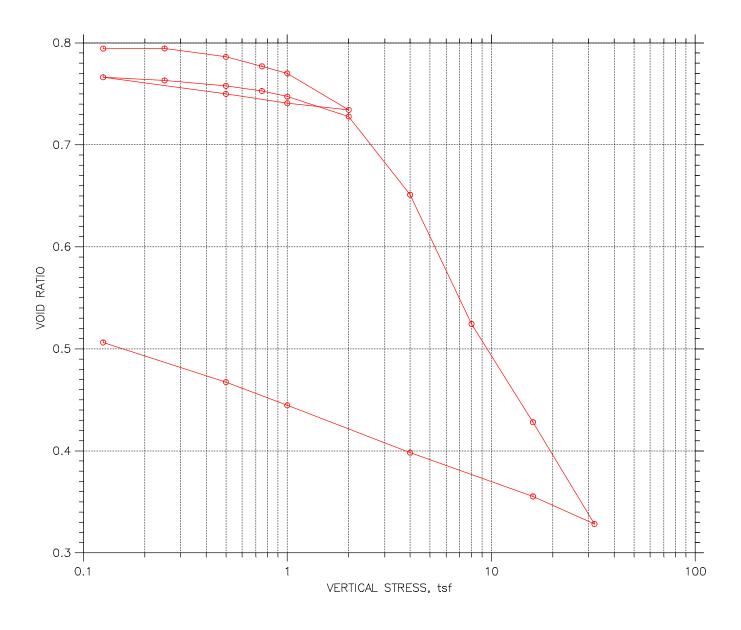


Test No.: BL7S10CON

Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435

	Applied	Final	Void	Strain	T50 Fi	tting	Coeffic	cient of Cons	solidation
	Stress	Displacement	Ratio	at End	Sq.Rt.	Log	Sq.Rt.	Log	Ave.
	tsf	in		왕	min	min	ft^2/sec	ft^2/sec	ft^2/sec
1	0.125	0.004157	0.950	0.56	0.0	0.0	1.29e-004	0.00e+000	1.29e-004
2	0.25	0.008455	0.938	1.14	3.7	0.0	8.29e-007	0.00e+000	8.29e-007
3	0.5	0.01541	0.920	2.07	2.1	0.0	1.45e-006	0.00e+000	1.45e-006
4	0.75	0.02139	0.904	2.88	0.5	0.0	6.32e-006	0.00e+000	6.32e-006
5	1	0.02677	0.890	3.60	3.9	0.7	7.60e-007	3.95e-006	1.28e-006
6	2	0.05339	0.820	7.19	2.1	0.0	1.34e-006	0.00e+000	1.34e-006
7	4	0.09828	0.701	13.23	3.8	3.1	6.72e-007	8.23e-007	7.40e-007
8	1	0.08273	0.742	11.14	0.5	0.0	5.17e-006	0.00e+000	5.17e-006
9	0.5	0.07334	0.767	9.87	3.6	3.1	6.97e-007	8.04e-007	7.47e-007
10	0.125	0.05718	0.810	7.70	8.4	0.0	3.11e-007	0.00e+000	3.11e-007
11	0.25	0.0596	0.803	8.02	3.9	0.0	6.92e-007	0.00e+000	6.92e-007
12	0.5	0.06395	0.792	8.61	3.1	0.0	8.52e-007	0.00e+000	8.52e-007
13	0.75	0.07016	0.776	9.44	8.4	0.0	3.10e-007	0.00e+000	3.10e-007
14	1	0.07366	0.766	9.92	3.9	1.4	6.61e-007	1.78e-006	9.64e-007
15	2	0.0866	0.732	11.66	3.9	1.3	6.43e-007	1.92e-006	9.64e-007
16	4	0.1046	0.685	14.08	2.9	1.1	8.26e-007	2.20e-006	1.20e-006
17	8	0.1405	0.590	18.91	2.1	3.3	1.04e-006	6.70e-007	8.16e-007
18	16	0.179	0.488	24.09	2.1	0.0	9.24e-007	0.00e+000	9.24e-007
19	32	0.2182	0.385	29.37	2.9	1.2	5.78e-007	1.45e-006	8.27e-007
20	16	0.208	0.412	27.99	0.0	0.0	6.62e-005	0.00e+000	6.62e-005
21	4	0.1887	0.463	25.40	0.9	0.2	1.80e-006	7.05e-006	2.87e-006
22	1	0.1649	0.526	22.20	3.6	0.0	5.10e-007	0.00e+000	5.10e-007
23	0.5	0.1534	0.556	20.65	11.5	0.0	1.68e-007	0.00e+000	1.68e-007
24	0.125	0.1289	0.620	17.35	64.8	33.5	3.19e-008	6.16e-008	4.20e-008

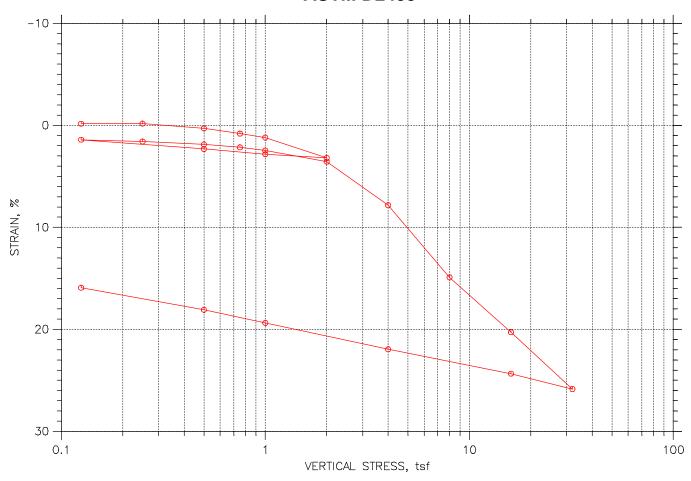
# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435

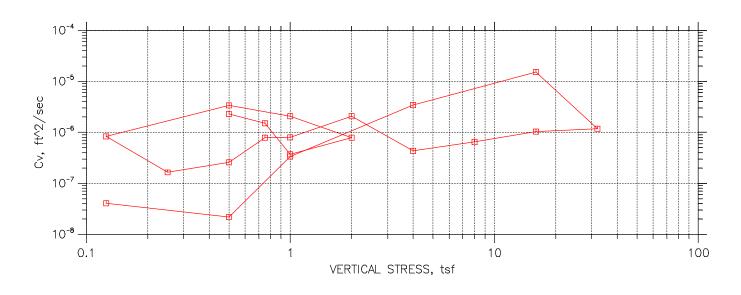


					Before Test	After Test
				Water Content, %	28.89	19.10
Preconsolidation	n Pressure: 1.7	tsf		Dry Unit Weight, pcf	94.78	112.7
Compression Ir	ndex: 0.332			Saturation, %	99.27	102.61
Diameter: 2.50	1 in	Height: 0.748	in	Void Ratio	0.79	0.51
LL: 41	PL: 14	PI: 27	GS: 2.72			

	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM	
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'	
<b>ierracon</b>	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN LEAR	N CLAY (CL)		
	Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435			

# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435





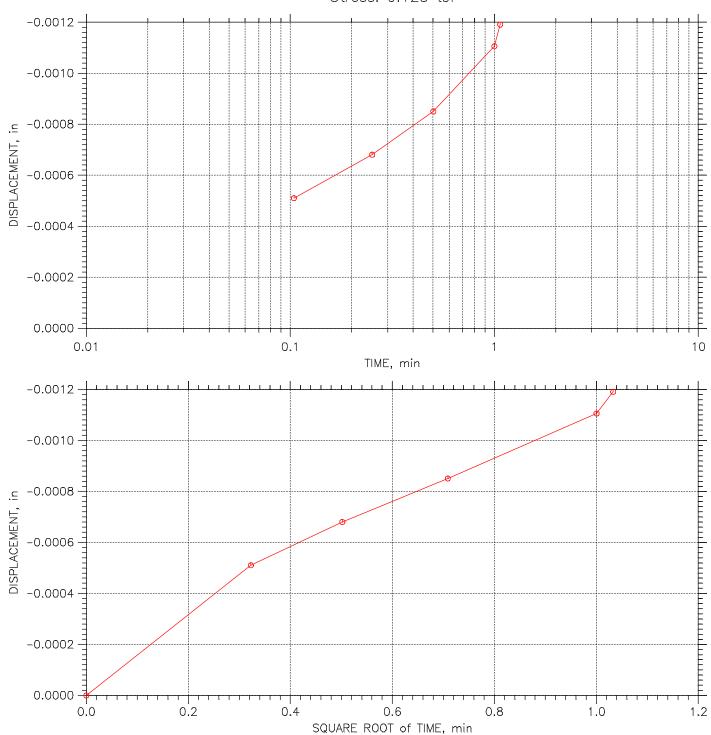


Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052		
Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM		
Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'		
Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:		
Description: REDDISH BROWN LEAN CLAY (CL)				
Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435				

TIME CURVES

Constant Load Step: 1 of 23

Stress: 0.125 tsf

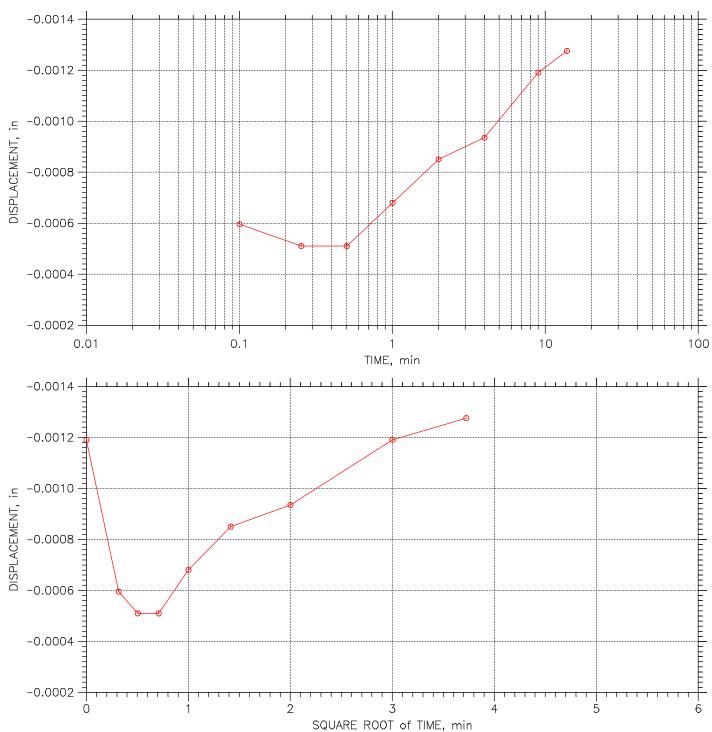


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM	
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'	
<b>erracon</b>	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 2 of 23

Stress: 0.25 tsf

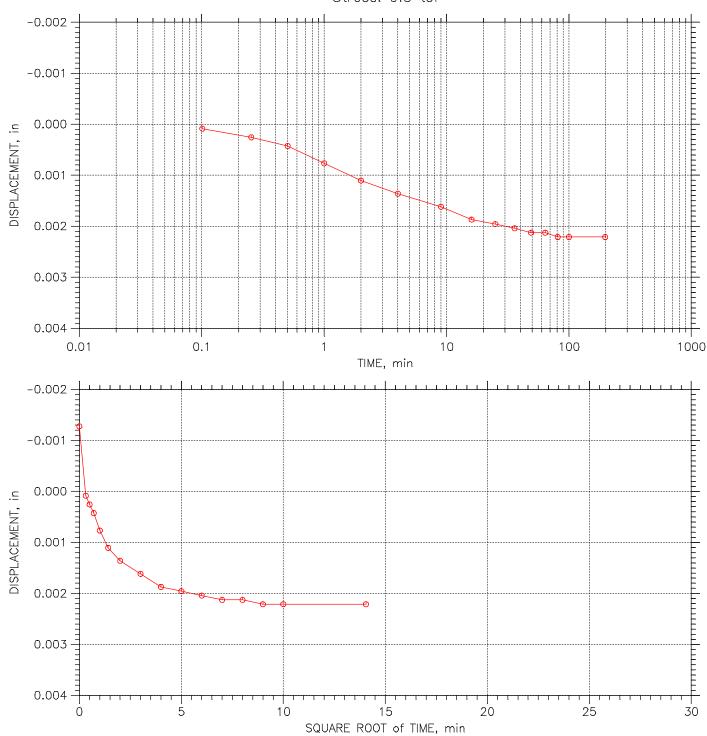


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM	
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'	
<b>ierracon</b>	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 3 of 23

Stress: 0.5 tsf

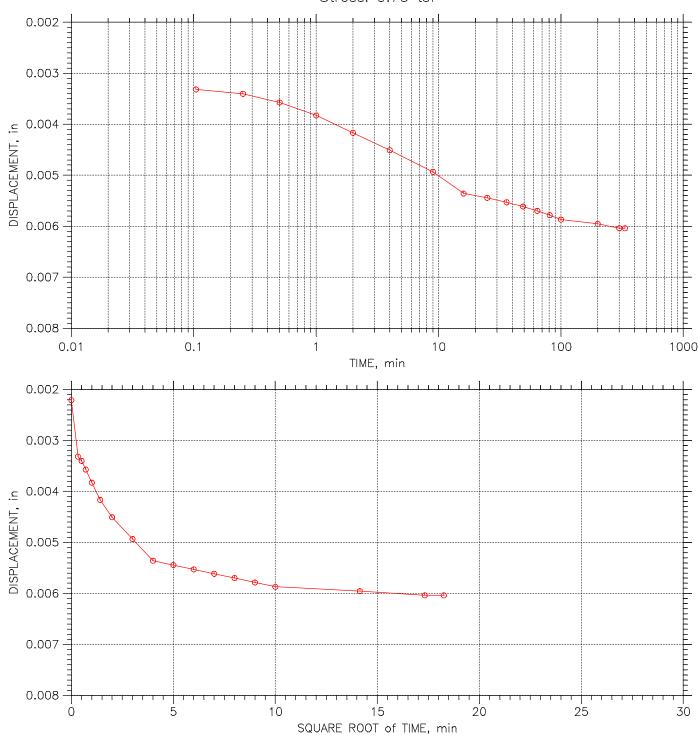


	Project: PULLIAM PROPRIY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
<b>ierracon</b>	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAR	N CLAY (CL)	
	Remarks: Pc = 1.7 tsf Cc = 0.3	332 Ccr = 0.074 TEST PERFORME	D AS PER ASTM D2435

TIME CURVES

Constant Load Step: 4 of 23

Stress: 0.75 tsf





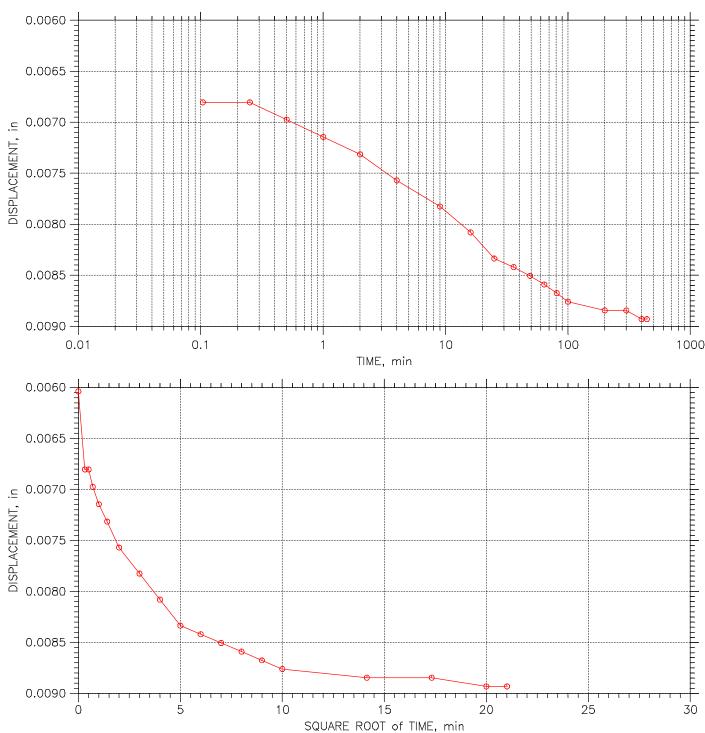
Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052		
Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM		
Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'		
Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:		
Description: REDDISH BROWN LEAN CLAY (CL)				

Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 5 of 23

Stress: 1. tsf

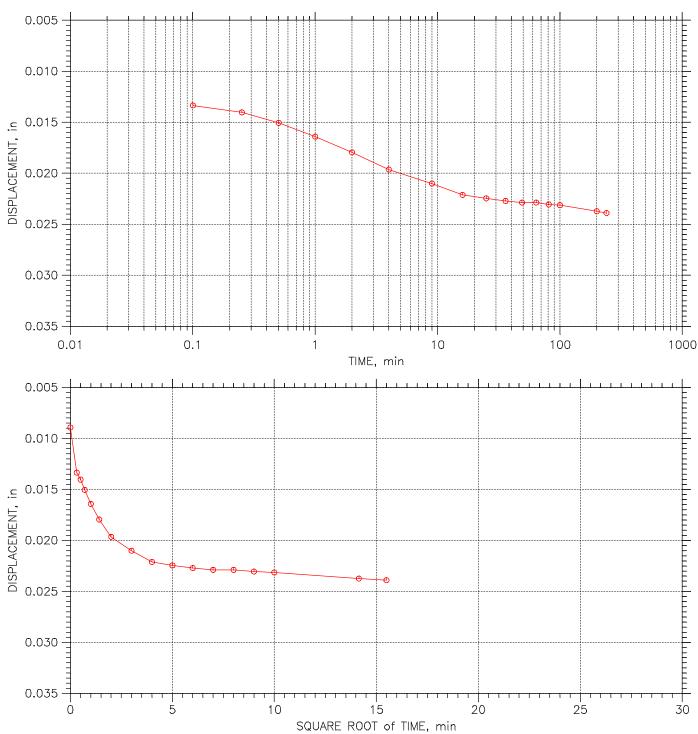


Ferracon	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 6 of 23

Stress: 2. tsf

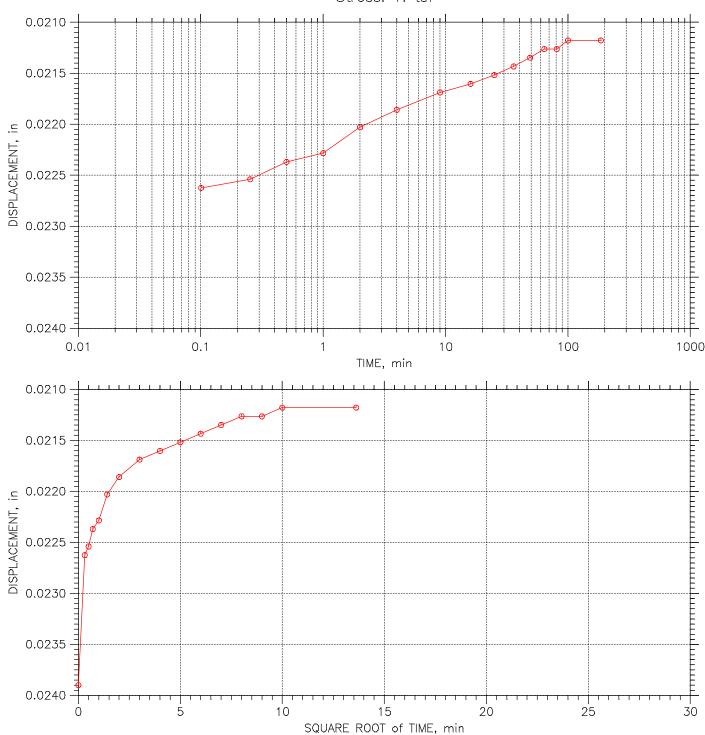


	Project: PULLIAM PROPRIY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
<b>ierracon</b>	Test No.: BL8S9CON	Sample Type: 3.0'' ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 1.7$ tsf $Cc = 0.3$	332 Ccr = 0.074 TEST PERFORME	D AS PER ASTM D2435

TIME CURVES

Constant Load Step: 7 of 23

Stress: 1. tsf

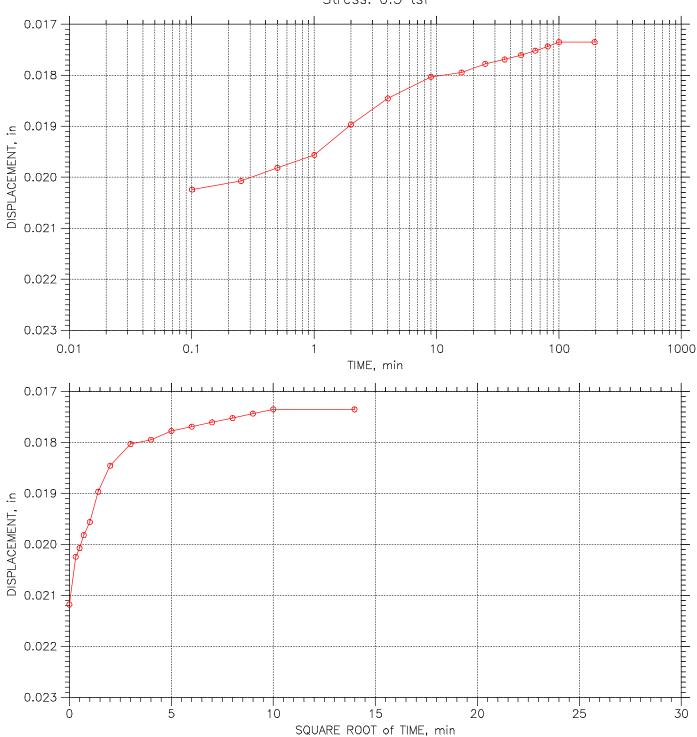


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
- rs.compa.com	· ·	Test Date: 1/19/2023	Depth: 30.0'-32.0'
<b>ierracon</b>	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 8 of 23

Stress: 0.5 tsf

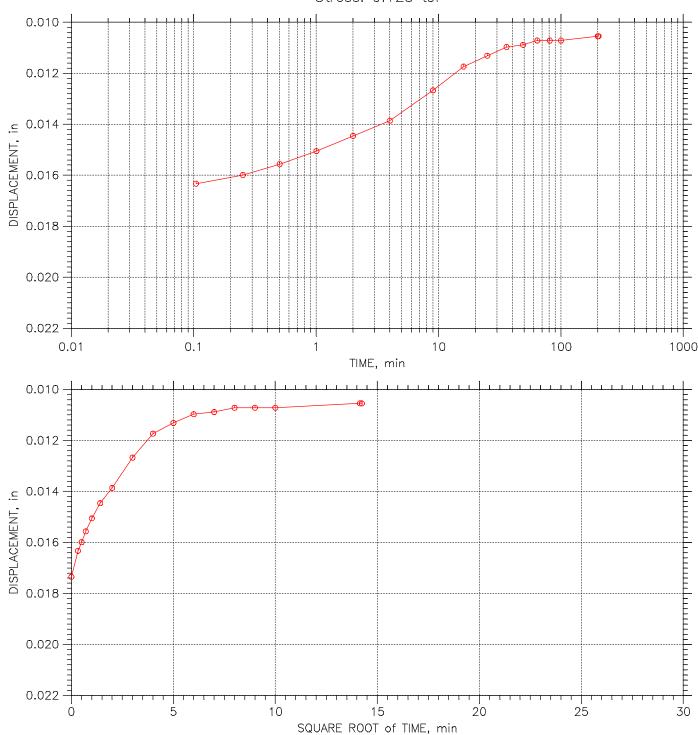


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
Fierracon	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 9 of 23

Stress: 0.125 tsf





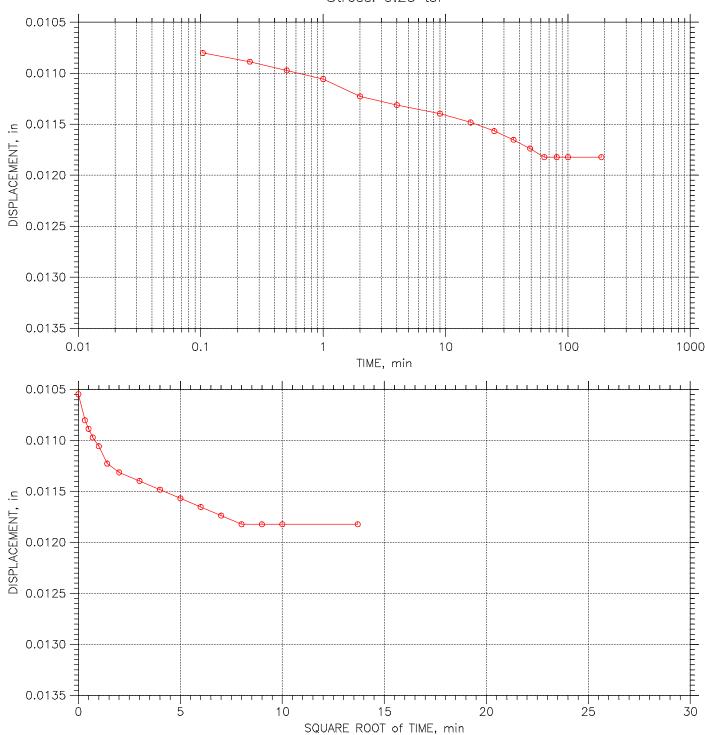
Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052	
Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM	
Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'	
Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:	
Description: REDDISH BROWN LEAN CLAY (CL)			

Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 10 of 23

Stress: 0.25 tsf



Ferracon

Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:
Description: REDDISH BROWN LEAN CLAY (CL)		

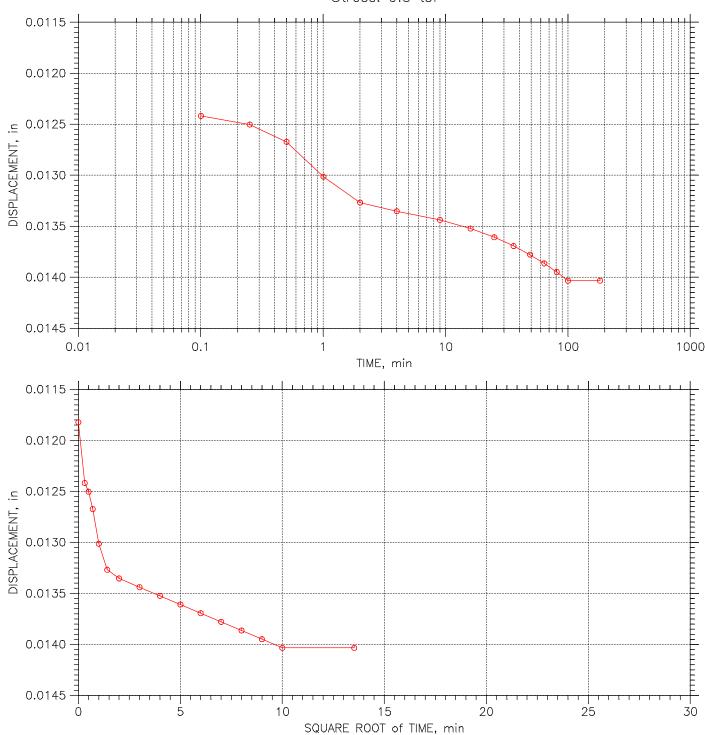
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 11 of 23

Stress: 0.5 tsf



Ferracon
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Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:
Description: REDDISH BROWN LEAN CLAY (CL)		

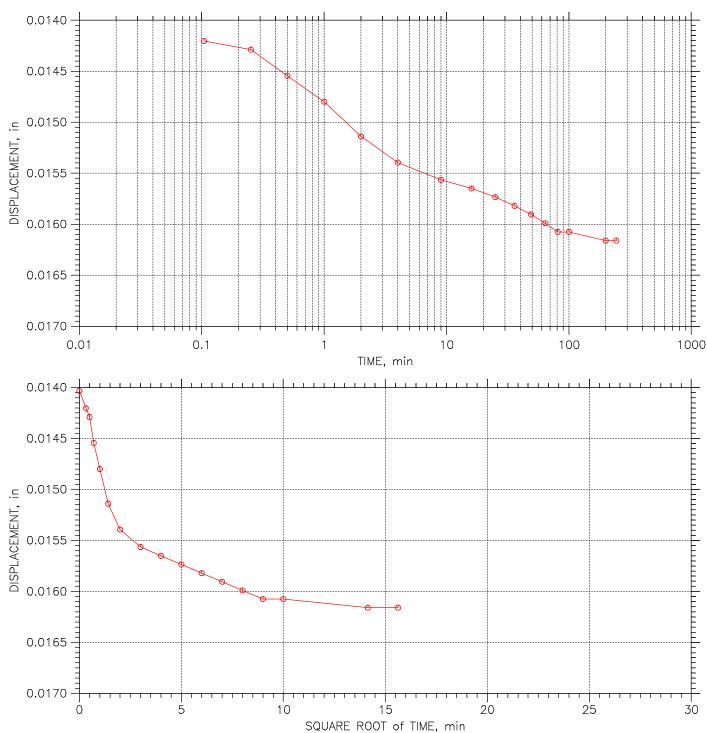
Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435

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TIME CURVES

Constant Load Step: 12 of 23

Stress: 0.75 tsf

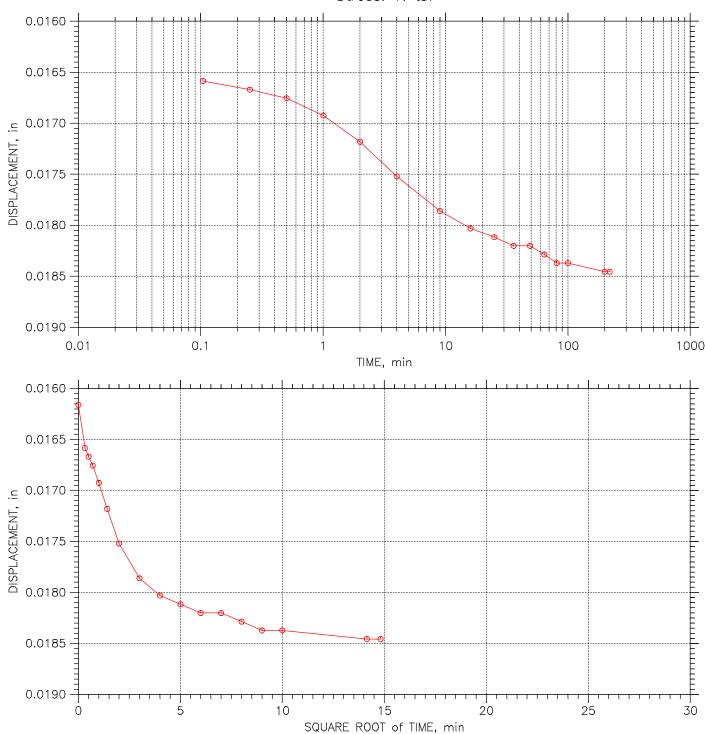


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
<b>ierracon</b>	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 13 of 23

Stress: 1. tsf

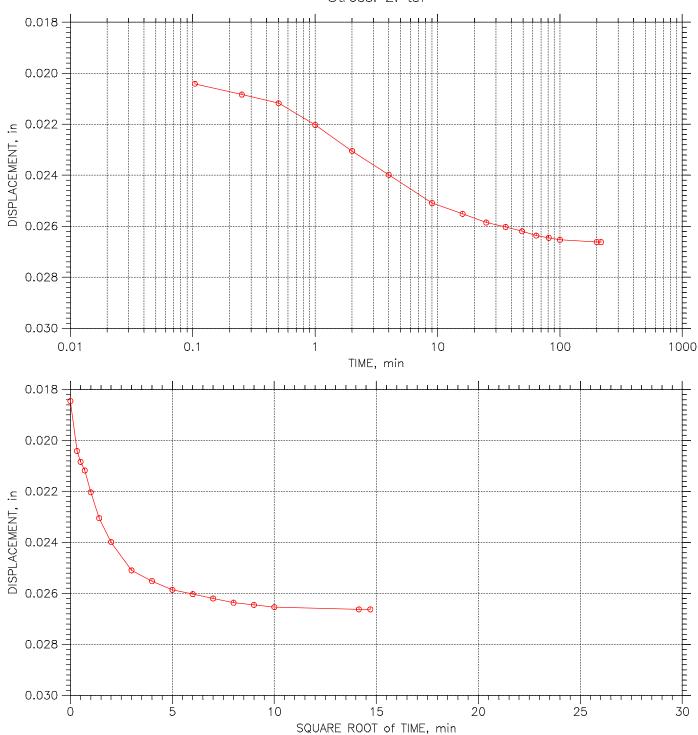


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
<b>ierracon</b>	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 1.7$ tsf $Cc = 0.3$	332 Ccr = 0.074 TEST PERFORME	D AS PER ASTM D2435

TIME CURVES

Constant Load Step: 14 of 23

Stress: 2. tsf

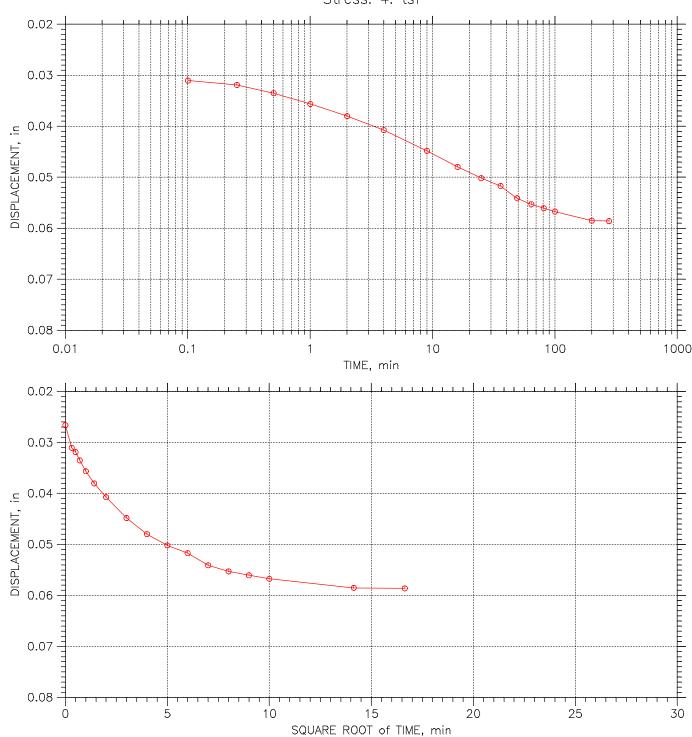


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
erracon	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 1.7$ tsf $Cc = 0.3$	332 Ccr = 0.074 TEST PERFORME	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 15 of 23

Stress: 4. tsf



Boring No.: B	L-8 S-9	Tested By: IT/ED
Sample No.:		Test Date: 1/19/2023
Test No.: BL8	S9CON	Sample Type: 3.0" ST
Description: F	Description: REDDISH BROWN LEAN CLAY (CL)	

Project: PULLIAM PROPRTY RES.

Project No.: 11225052
Checked By: BCM
Depth: 30.0'-32.0'
Elevation: ----

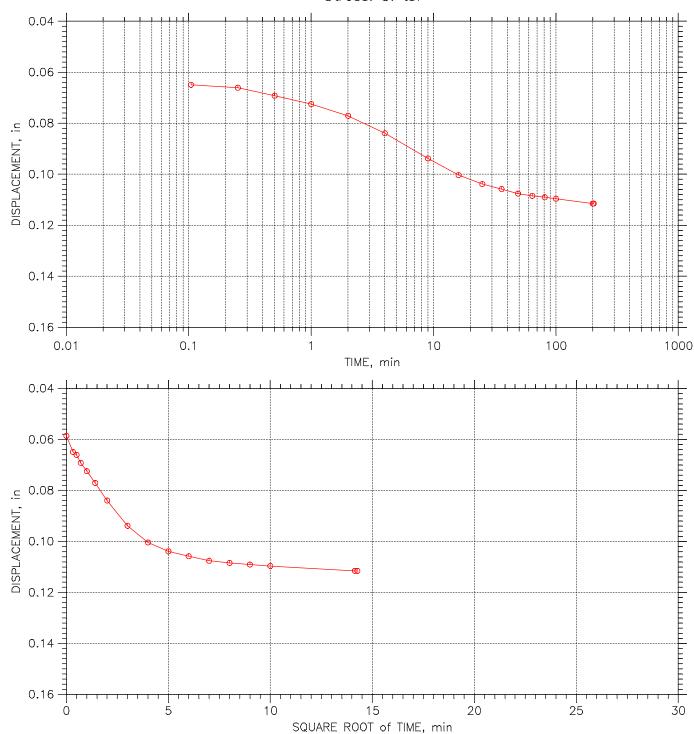
Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435

Location: MILWAUKEE,WI

TIME CURVES

Constant Load Step: 16 of 23

Stress: 8. tsf

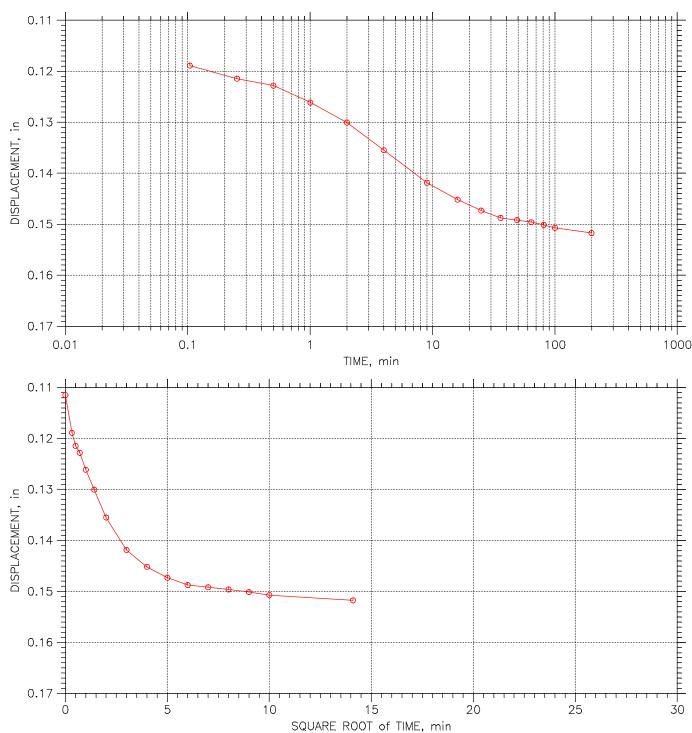


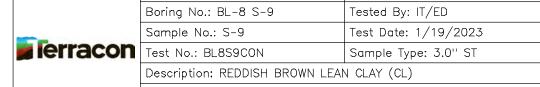
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052		
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM		
	Sample No.: S-9 Test Date: 1/19/2023		Depth: 30.0'-32.0'		
erracon	Test No.: BL8S9CON	Elevation:			
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: $Pc = 1.7$ tsf $Cc = 0.3$	332 Ccr = 0.074 TEST PERFORME	ED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 17 of 23

Stress: 16. tsf





Project: PULLIAM PROPRTY RES.

Project No.: 11225052
Checked By: BCM
Depth: 30.0'-32.0'
Elevation:

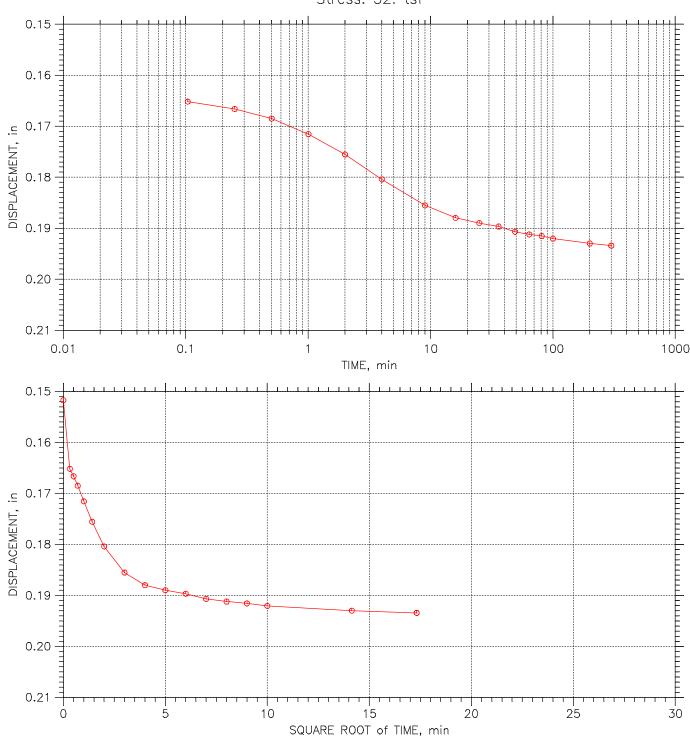
Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435

Location: MILWAUKEE,WI

TIME CURVES

Constant Load Step: 18 of 23

Stress: 32. tsf



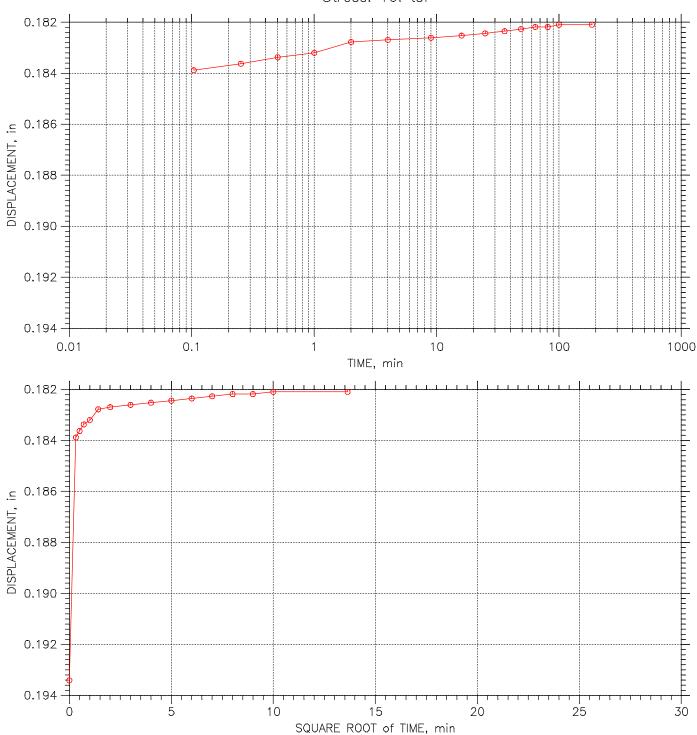
		Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052	
		Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM	
		Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'	
	<b>ierracon</b>	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)				

Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 19 of 23

Stress: 16. tsf

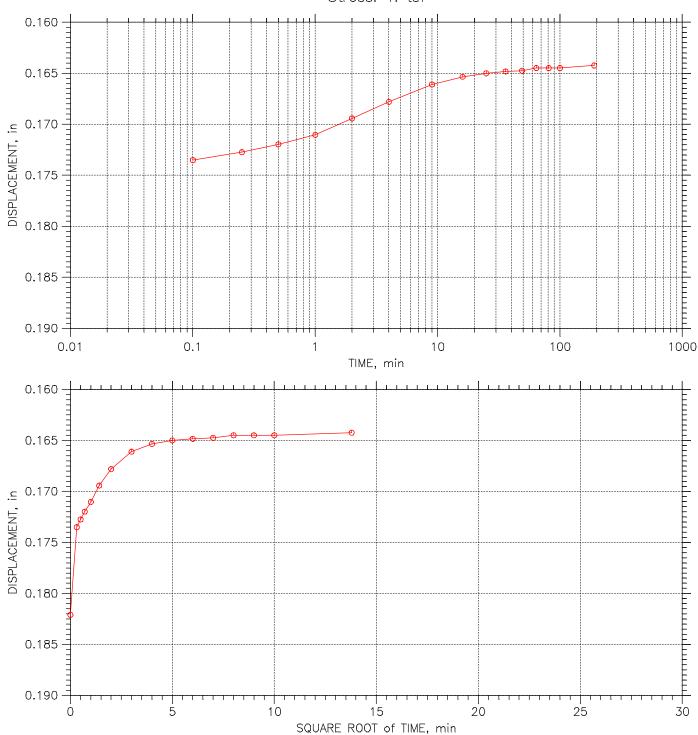


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052		
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM		
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'		
<b>lerracon</b>	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435				

TIME CURVES

Constant Load Step: 20 of 23

Stress: 4. tsf

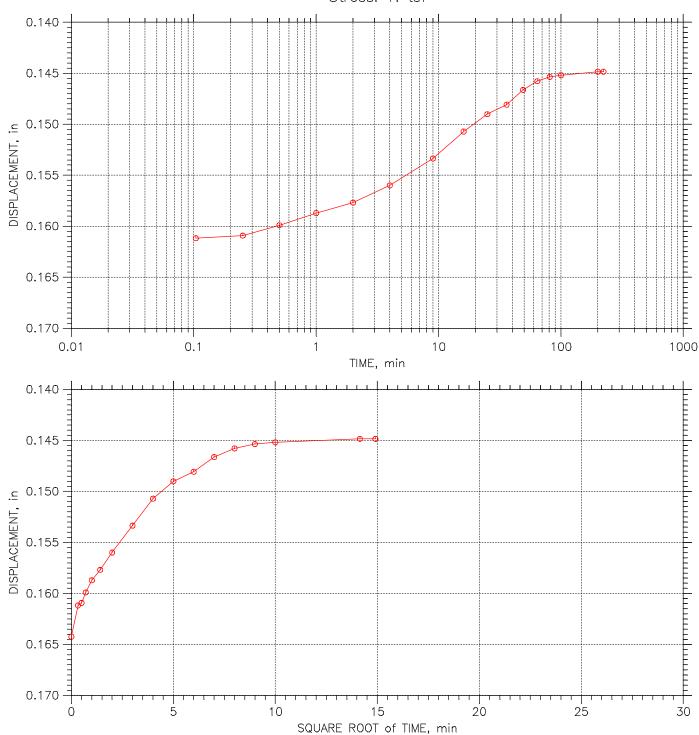


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052		
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM		
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'		
erracon	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	D AS PER ASTM D2435				

TIME CURVES

Constant Load Step: 21 of 23

Stress: 1. tsf

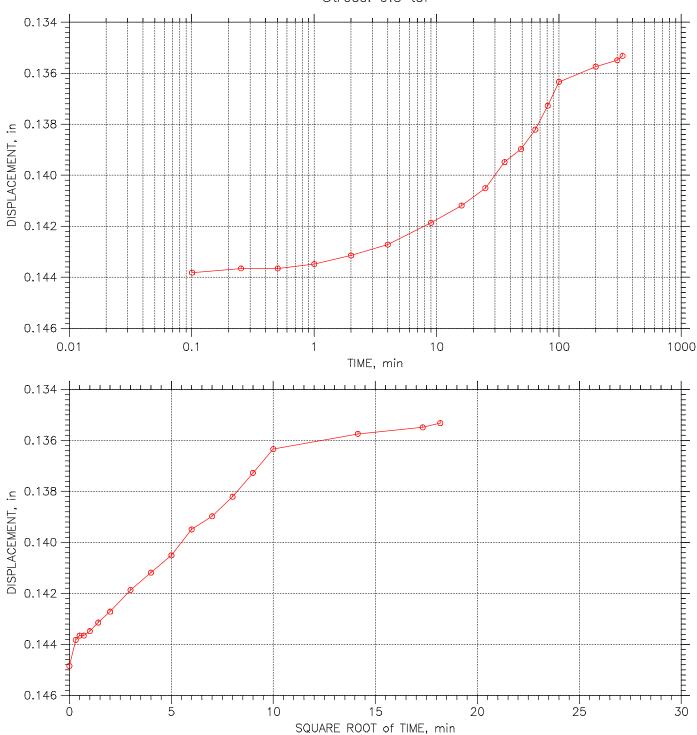


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052		
Ferracon	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM		
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'		
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435				

TIME CURVES

Constant Load Step: 22 of 23

Stress: 0.5 tsf

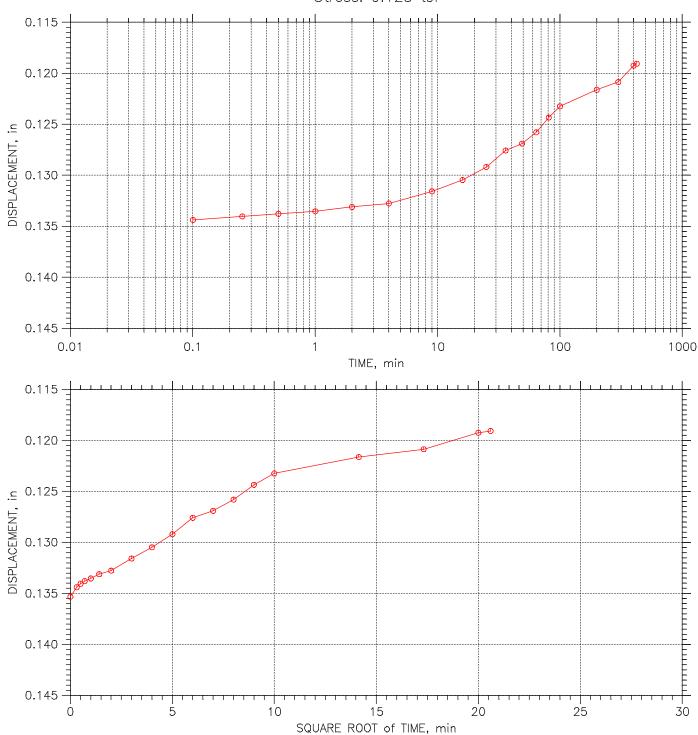


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052			
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM			
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'			
erracon	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation:			
	Description: REDDISH BROWN LEAR	escription: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: $Pc = 1.7$ tsf $Cc = 0.3$	332 Ccr = 0.074 TEST PERFORME	ED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 23 of 23

Stress: 0.125 tsf





Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052			
Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM			
Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'			
Test No.: BL8S9CON	Elevation:				
Description: REDDISH BROWN LEAN CLAY (CL)					

Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435

Project: PULLIAM PROPRTY RES. Location: MILWAUKEE,WI Project No.: 11225052
Boring No.: BL-8 S-9 Tested By: IT/ED Checked By: BCM
Sample No.: S-9 Test Date: 1/19/2023 Depth: 30.0'-32.0'
Test No.: BL8S9CON Sample Type: 3.0" ST Elevation: ----



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 1.7  $\,$  tsf Cc = 0.332 Ccr = 0.074  $\,$  TEST PERFORMED AS PER ASTM D2435

Estimated Specific Gravity: 2.72 Liquid Limit: 41
Initial Void Ratio: 0.79 Plastic Limit: 14
Final Void Ratio: 0.51 Plasticity Index: 27

Initial Height: 0.75 in Specimen Diameter: 2.50 in

	Before Consolidation		After Consol	idation
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	C-78	RING	RING	B-8
Wt. Container + Wet Soil, gm	154.21	192.19	183.24	154.21
Wt. Container + Dry Soil, gm	124.5	165.77	165.77	137.26
Wt. Container, gm	30.76	74.33	74.33	48.52
Wt. Dry Soil, gm	93.74	91.444	91.444	88.74
Water Content, %	31.69	28.89	19.10	19.10
Void Ratio		0.79	0.51	
Degree of Saturation, %		99.27	100.61	
Dry Unit Weight, pcf		94.783	112.73	

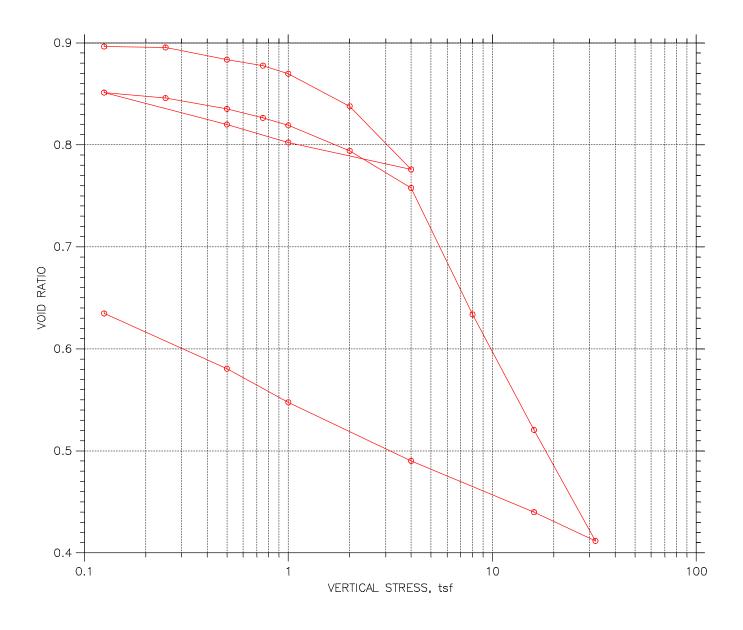
Project: PULLIAM PROPRTY RES. Location: MILWAUKEE,WI Project No.: 11225052
Boring No.: BL-8 S-9 Tested By: IT/ED Checked By: BCM
Sample No.: S-9 Test Date: 1/19/2023 Depth: 30.0'-32.0'
Test No.: BL8S9CON Sample Type: 3.0" ST Elevation: ----



Soil Description: REDDISH BROWN LEAN CLAY (CL)
Remarks: Pc = 1.7 tsf Cc = 0.332 Ccr = 0.074 TEST PERFORMED AS PER ASTM D2435

	Applied	Final	Void	Strain	T50 Fi	tting	Coeffic	cient of Cons	solidation
	Stress	Displacement	Ratio	at End	Sq.Rt.	Log	Sq.Rt.	Log	Ave.
	tsf	in		8	min	min	ft^2/sec	ft^2/sec	ft^2/sec
1	0.125	-0.001191	0.794	-0.16	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
2	0.25	-0.001276	0.795	-0.17	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
3	0.5	0.001270	0.786	0.30	1.4	0.0	2.30e-006	0.00e+000	2.30e-006
4	0.75	0.002211	0.777	0.81	2.1	0.0	1.50e-006	0.00e+000	1.50e-006
5	1	0.00893	0.770	1.19	8.4	0.0	3.73e-007	0.00e+000	3.73e-007
6	2	0.0239	0.734	3.20	3.9	0.0	7.88e-007	0.00e+000	7.88e-007
7	1	0.02118	0.741	2.83	1.4	0.0	2.08e-006	0.00e+000	2.08e-006
8	0.5	0.01735	0.750	2.32	0.9	0.9	3.41e-006	3.34e-006	3.37e-006
9	0.125	0.01055	0.766	1.41	3.7	0.0	8.34e-007	0.00e+000	8.34e-007
10	0.25	0.01182	0.763	1.58	18.9	0.0	1.64e-007	0.00e+000	1.64e-007
11	0.5	0.01403	0.758	1.88	23.3	0.5	1.32e-007	6.14e-006	2.59e-007
12	0.75	0.01616	0.753	2.16	3.9	0.0	7.87e-007	0.00e+000	7.87e-007
13	1	0.01846	0.747	2.47	3.8	0.0	7.93e-007	0.00e+000	7.93e-007
14	2	0.02662	0.728	3.56	2.1	0.8	1.43e-006	3.80e-006	2.08e-006
15	4	0.0586	0.651	7.83	6.5	0.0	4.37e-007	0.00e+000	4.37e-007
16	8	0.1115	0.524	14.91	3.8	3.9	6.64e-007	6.39e-007	6.52e-007
17	16	0.1517	0.428	20.28	2.1	0.0	1.03e-006	0.00e+000	1.03e-006
18	32	0.1934	0.328	25.86	2.1	1.1	9.00e-007	1.68e-006	1.17e-006
19	16	0.1821	0.355	24.34	0.1	0.0	1.52e-005	0.00e+000	1.52e-005
20	4	0.1642	0.398	21.96	0.9	0.0	2.05e-006	1.08e-005	3.45e-006
21	1	0.1448	0.445	19.36	6.0	0.0	3.33e-007	0.00e+000	3.33e-007
22	0.5	0.1353	0.467	18.09	96.3	0.0	2.19e-008	0.00e+000	2.19e-008
23	0.125	0.1191	0.506	15.92	70.3	37.6	3.13e-008	5.85e-008	4.08e-008
∠3	0.125	0.1191	0.506	15.92	/0.3	3/.6	3.136-008	5.856-008	4.086-008

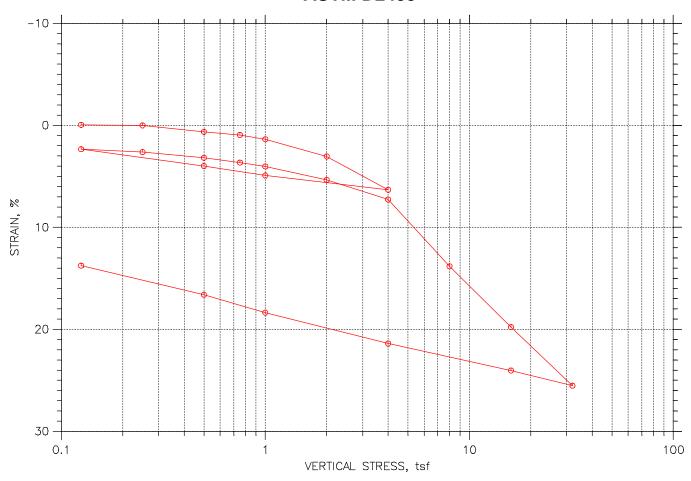
# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435

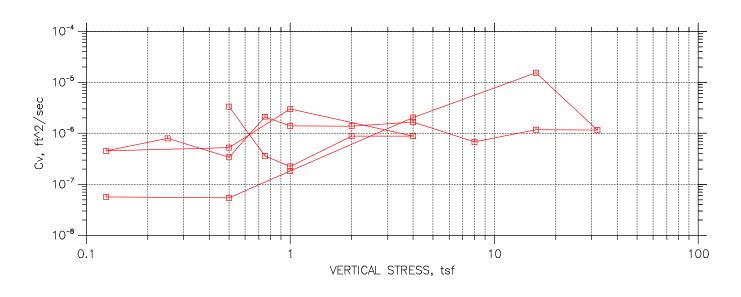


					Before Test	After Test
				Water Content, %	32.72	25.01
Preconsolidation Pressure: 2.1 tsf		Dry Unit Weight, pcf	89.45	103.7		
Compression Index: 0.359		Saturation, %	99.23	107.02		
Diameter: 2.5 in Height: 0.7488 in		Void Ratio	0.90	0.63		
LL: 42	PL: 14	PI: 28 GS: 2.72				

	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052		
Fierracon	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM		
	1	Test Date: 1/19/2023	Depth: 45.0'-47.0'		
	Test No.: BL11S11CON Sample Type: 3.0" ST Elevation:				
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435				

# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435







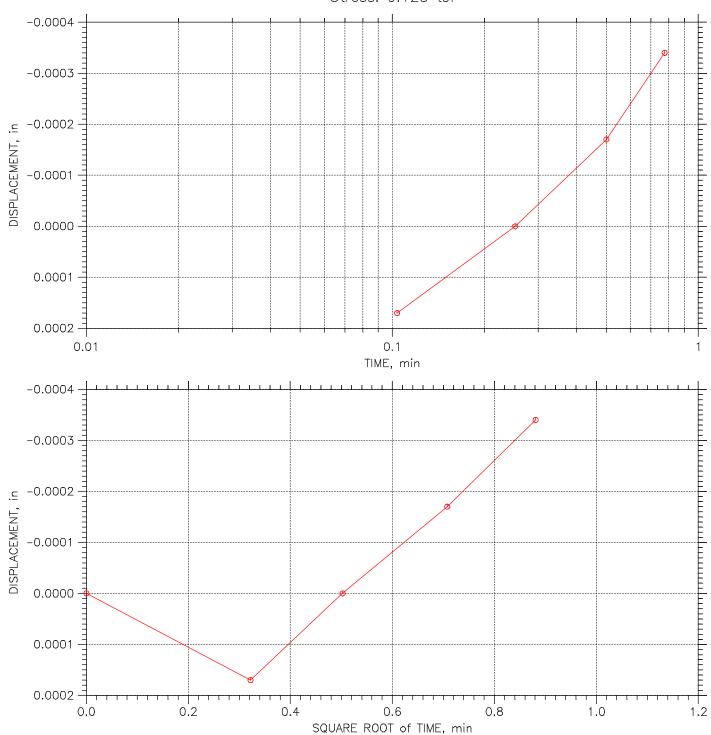
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM	
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'	
1	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:	
Description: REDDISH BROWN LEAN CLAY (CL)				
- 1				

Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf

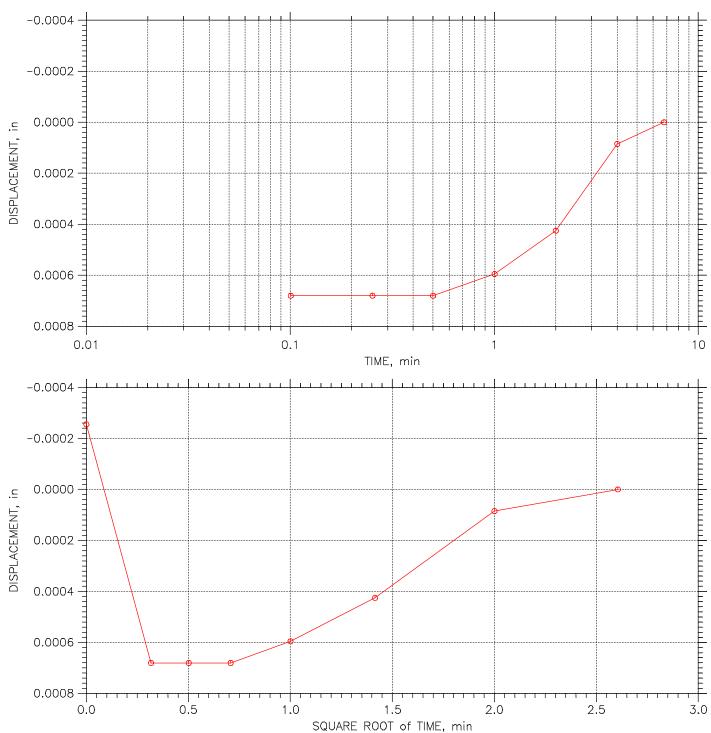


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
<b>erracon</b>	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf

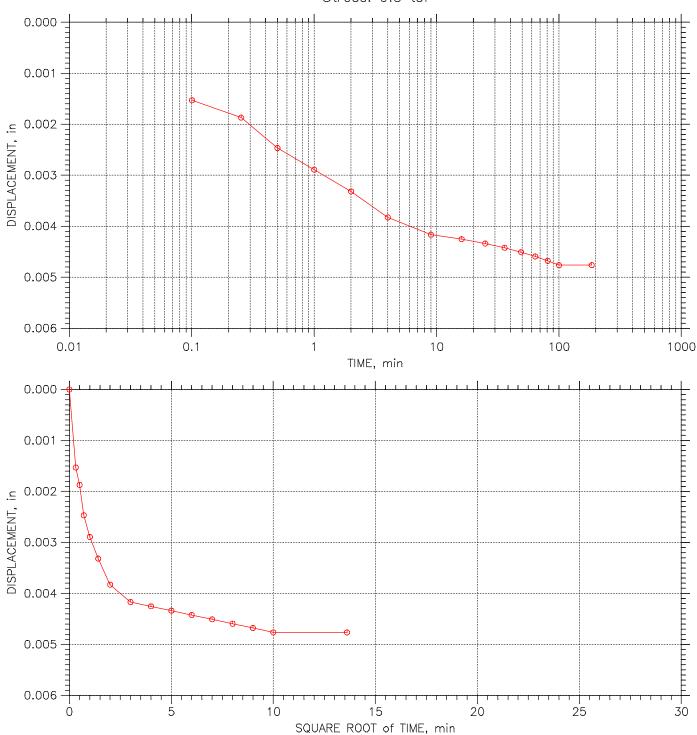


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
erracon	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf

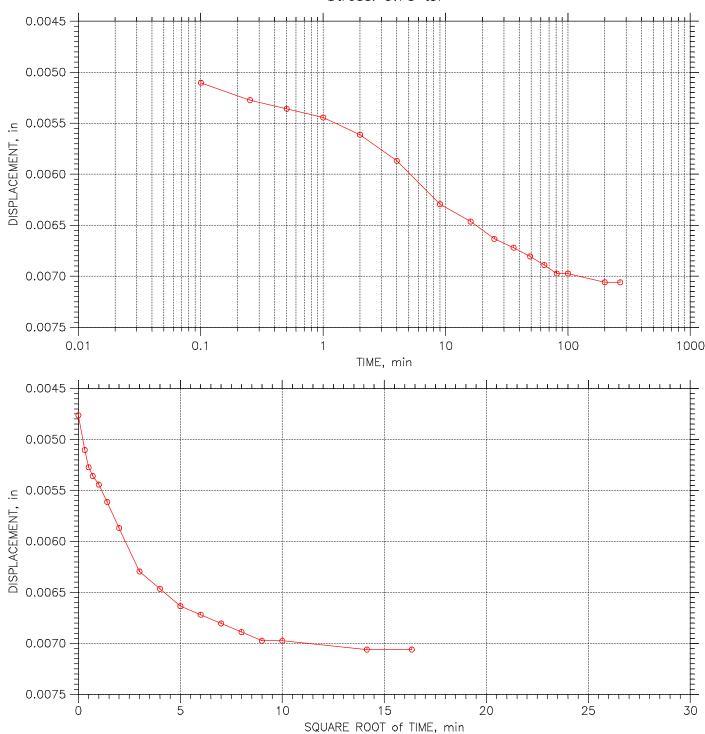


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
- 100 mon co	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
<b>ierracon</b>	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 2.1 \text{ tsf } Cc = 0.35$	59 Ccr = 0.093 TEST PERFORMED	AS PER ASTM D2435

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf



	Fierracon	Boring
		Sample
		Test N
		Descri

Project: F	PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
Boring No	o.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
Sample N	lo.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
Test No.:	BL11S11CON	Sample Type: 3.0" ST	Elevation:
Description: REDDISH BROWN LEAN CLAY (CL)			

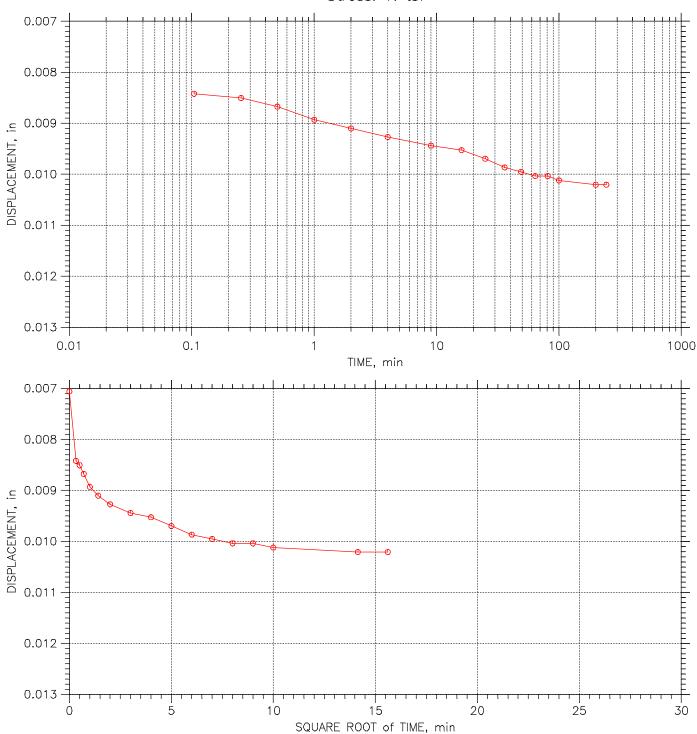
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf

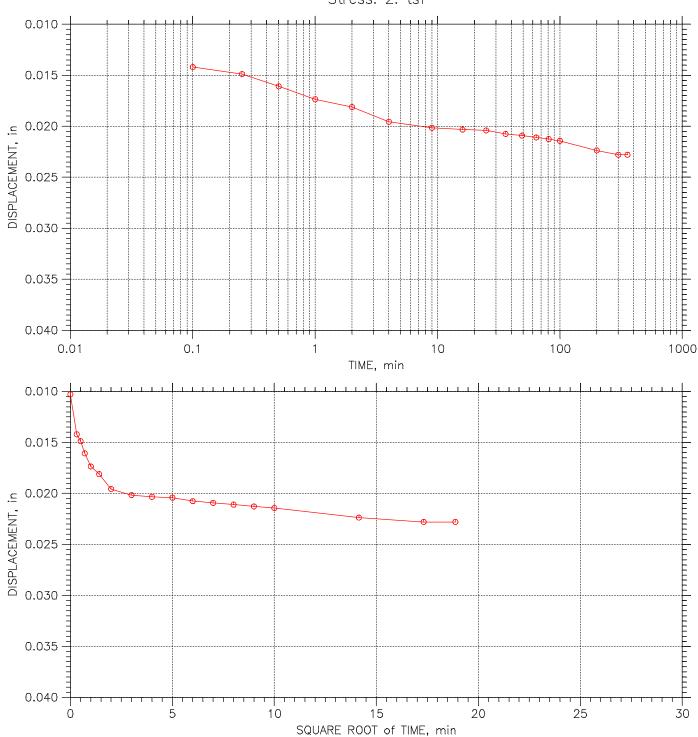


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
erracon	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435		AS PER ASTM D2435

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf



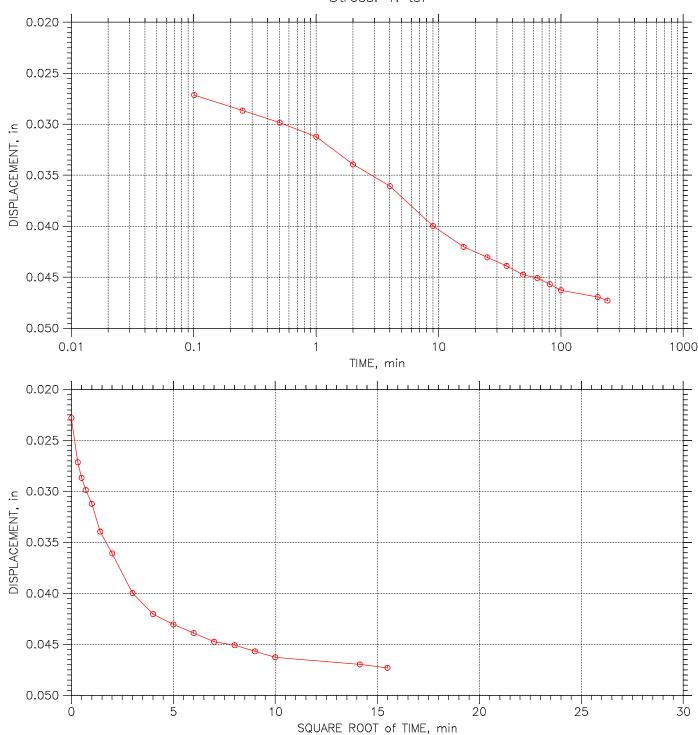
		Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
		Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
		Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	<b>ierracon</b>	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
		Description: REDDISH BROWN LEAN CLAY (CL)		

Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf



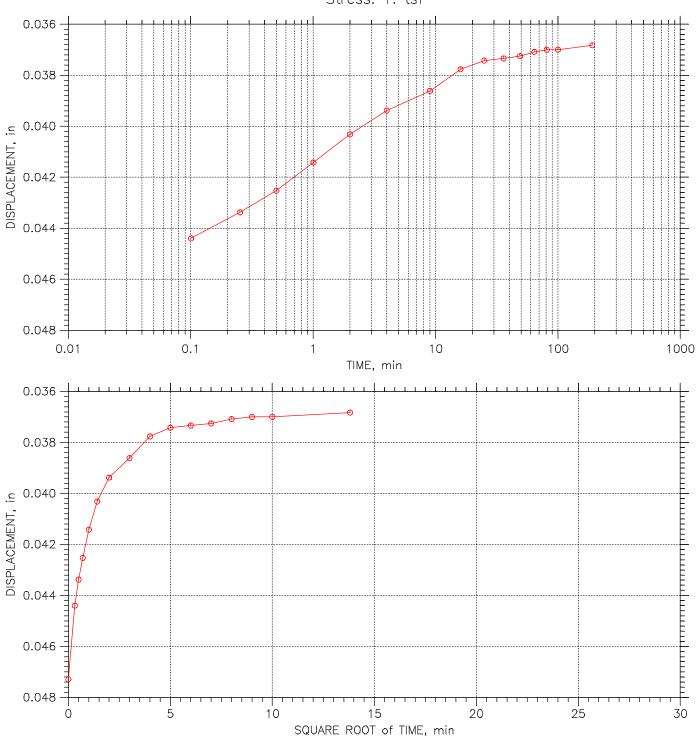
		Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
		Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
		Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	<b>ierracon</b>	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
		Description: REDDISH BROWN LEAN	N CLAY (CL)	
- 1				

Depth: 45.0'-47.0' Ilevation: ----Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf

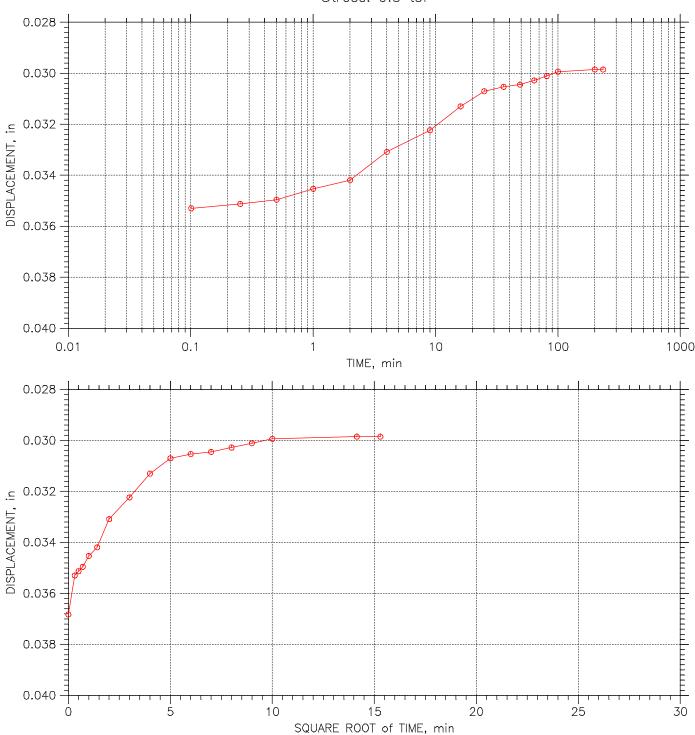


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
<b>Ferracon</b>	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf

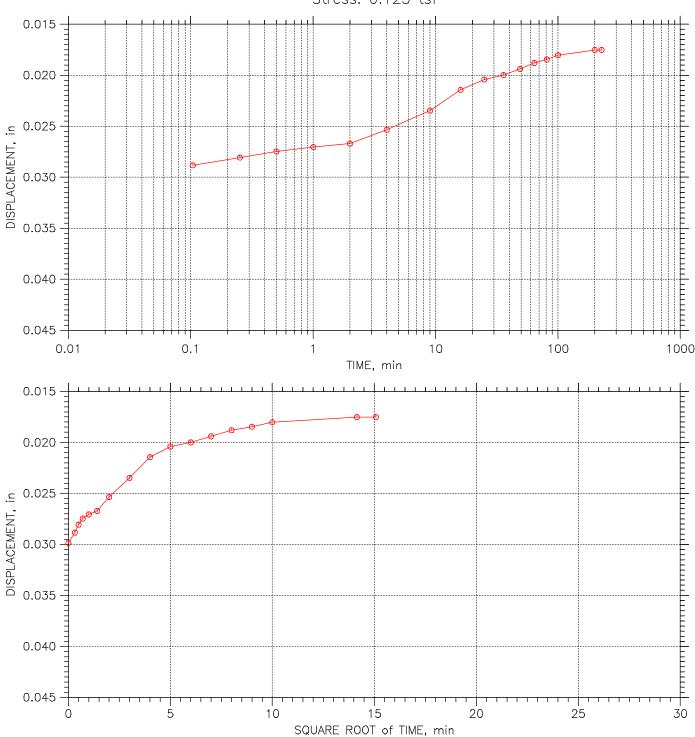


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
erracon	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.35	59 Ccr = 0.093 TEST PERFORMED	AS PER ASTM D2435

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



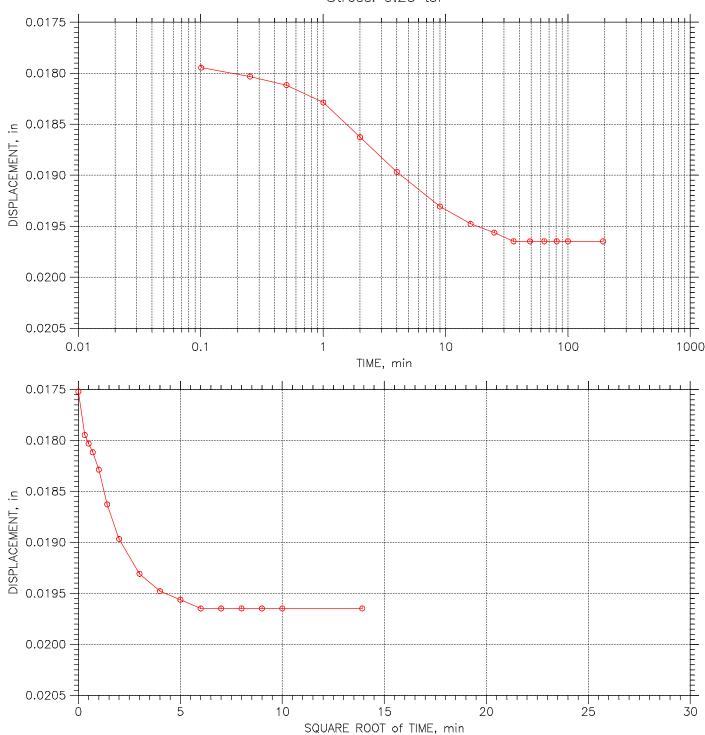
Fierracon

F	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
E	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
,	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
1	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
Ī	Description: REDDISH BROWN LEAN CLAY (CL)		
Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM			AS PER ASTM D2435

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf



	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
ı	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN   FAI	N CLAY (CL)	

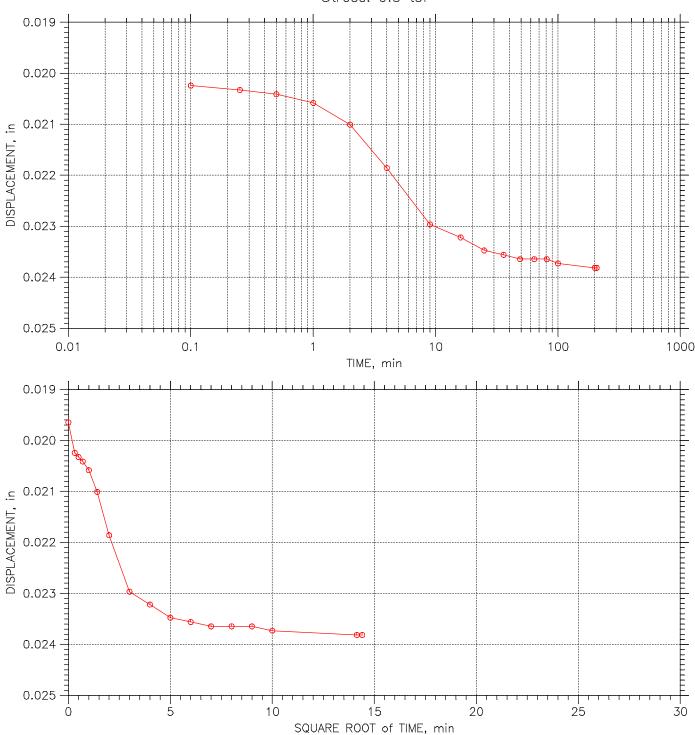
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf



	Boring No.: BL-11 S
	Sample No.: S-11
	Test No.: BL11S11C
	Description: REDDISH

	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	escription: REDDISH BROWN LEAN CLAY (CL)		

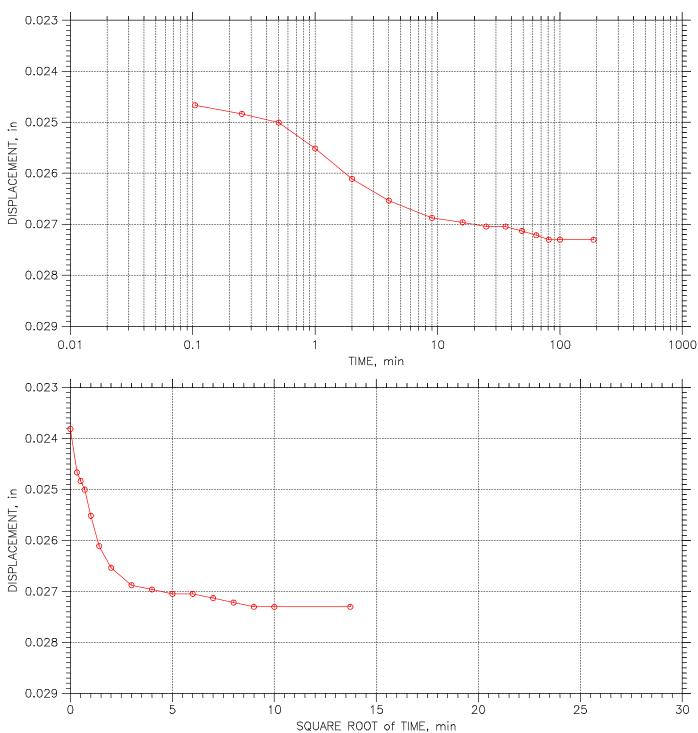
Description: REDDISH BROWN LEAN CLAY (CL)

Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf



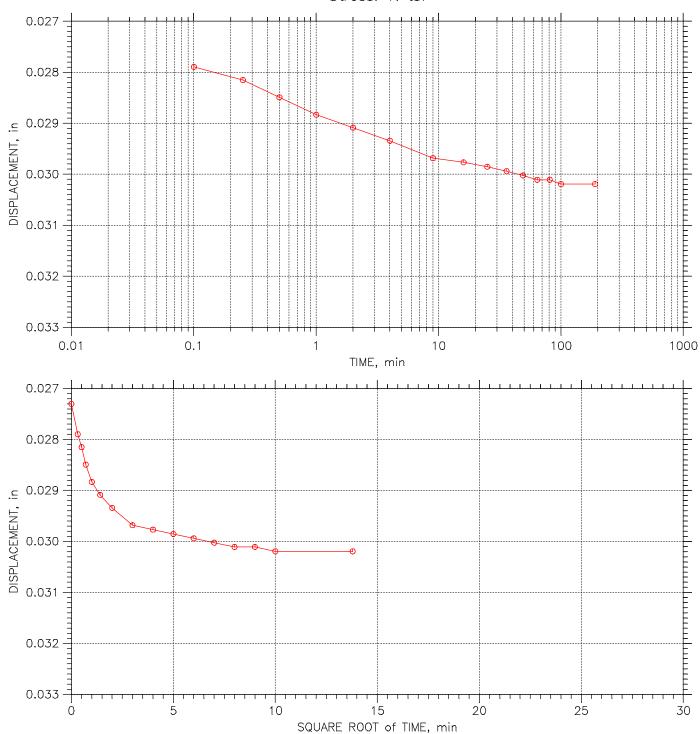
		Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	erracon	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
		Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
		Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
		Description: REDDISH BROWN LEAN CLAY (CL)		
				10 DED 10711 D0175

on: ----Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf

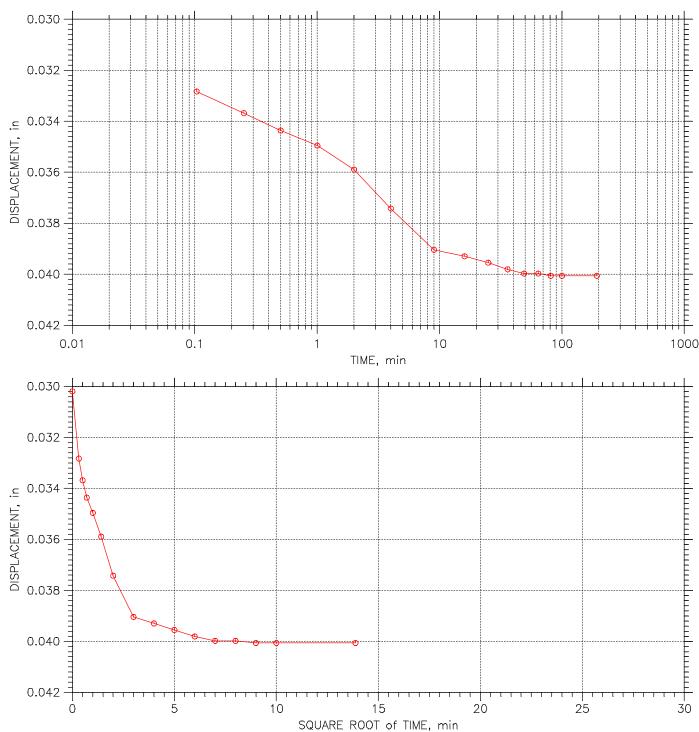


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
ierracon .	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf

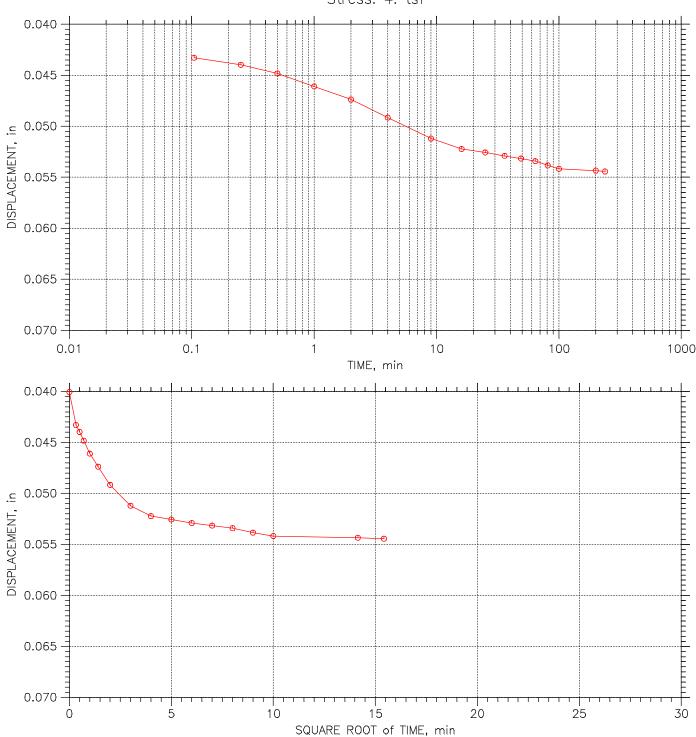


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
Terracon	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.35	59 Ccr = 0.093 TEST PERFORMED	AS PER ASTM D2435

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf

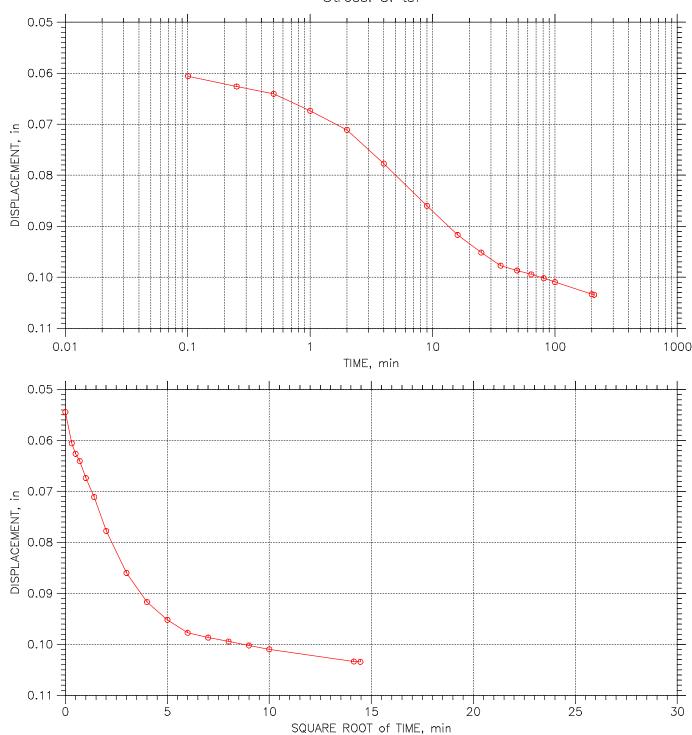


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM	
- 15 S. S. 100 S. C. 1	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'	
<b>ierracon</b>	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN LEAN	N CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.35	.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf





Į.	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON Sample Type: 3.0" ST Elevation:		Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		

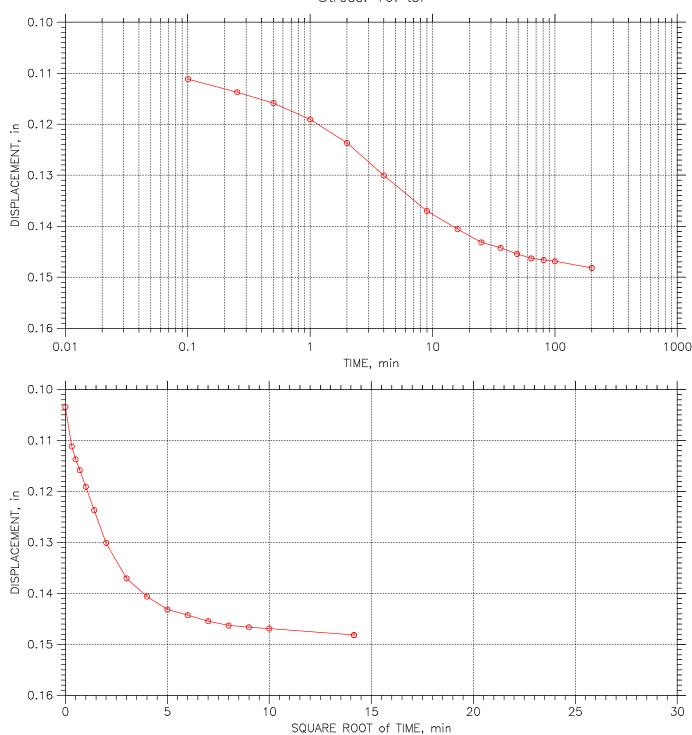
Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

Fri, 17-FEB-2023 14:17:46

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf





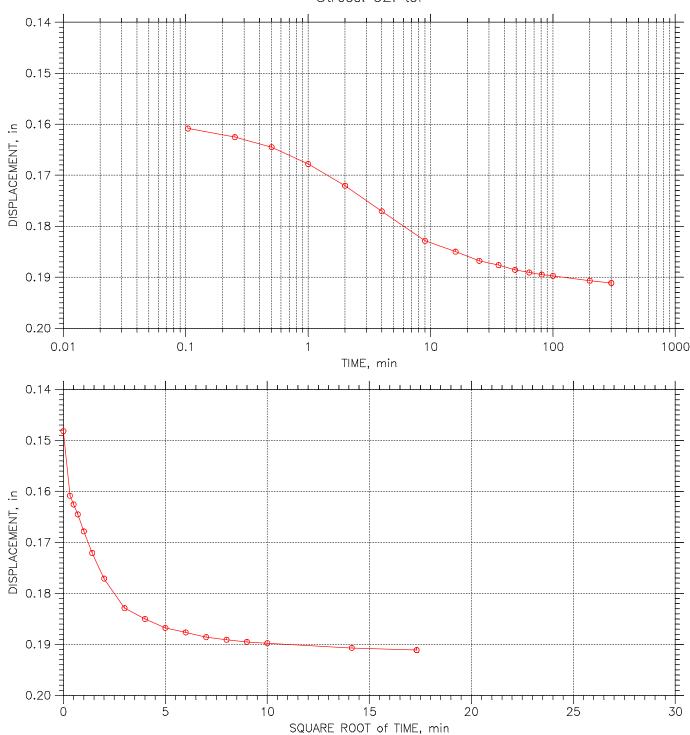
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		

Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



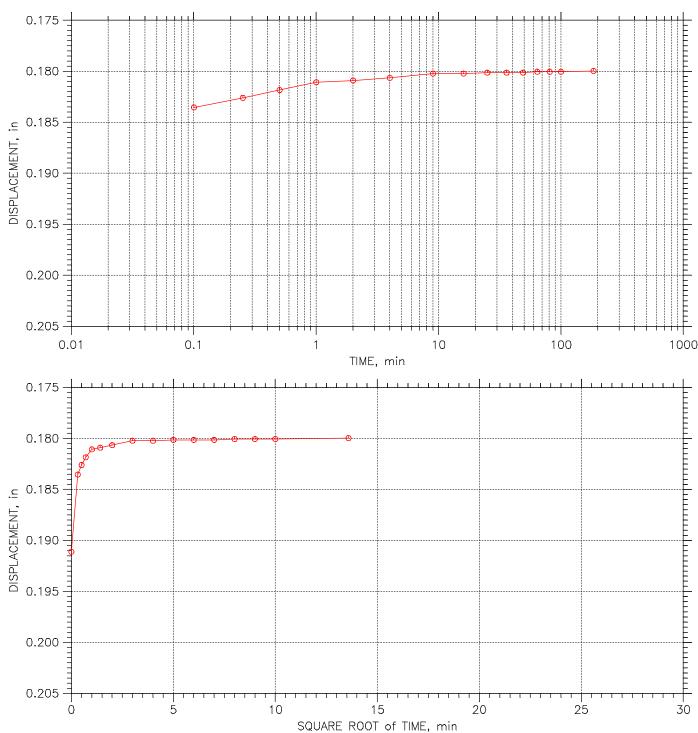


Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
Description: REDDISH BROWN LEAN CLAY (CL)		
Remarks: $Pc = 2.1 \text{ tsf } Cc = 0.39$	59 Ccr = 0.093 TEST PERFORMED	AS PER ASTM D2435

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



<b>Fierracon</b>

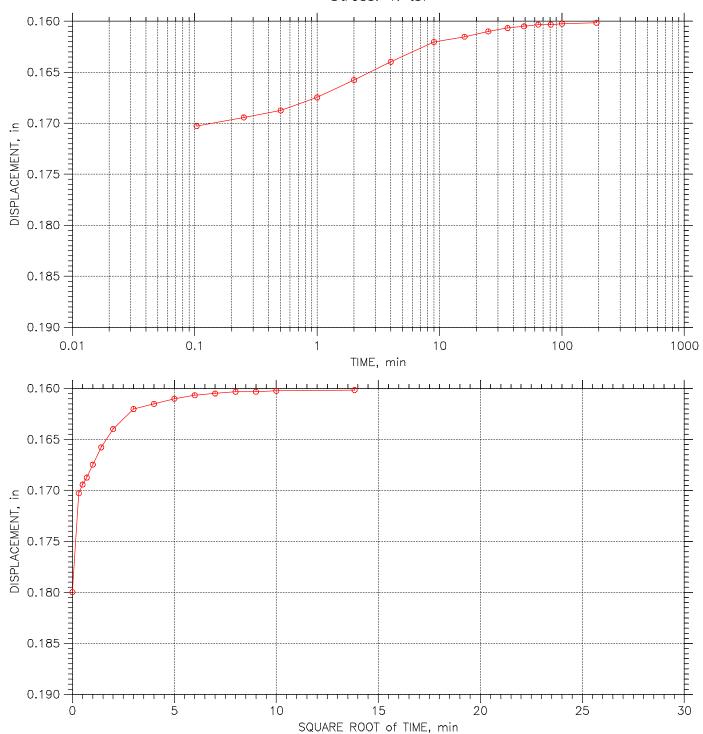
Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
Description: REDDISH BROWN LEAR	N CLAY (CL)	

Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf

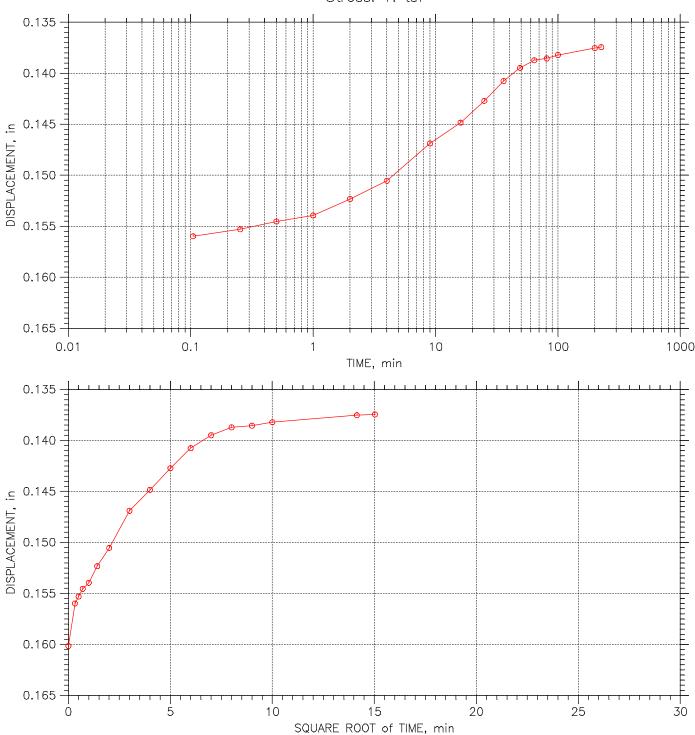


	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
- 10 (0 to 1	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
<b>ierracon</b>	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN	N CLAY (CL)	
	Remarks: Pc = 2.1 tsf Cc = 0.35	59 Ccr = 0.093 TEST PERFORMED	AS PER ASTM D2435

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf



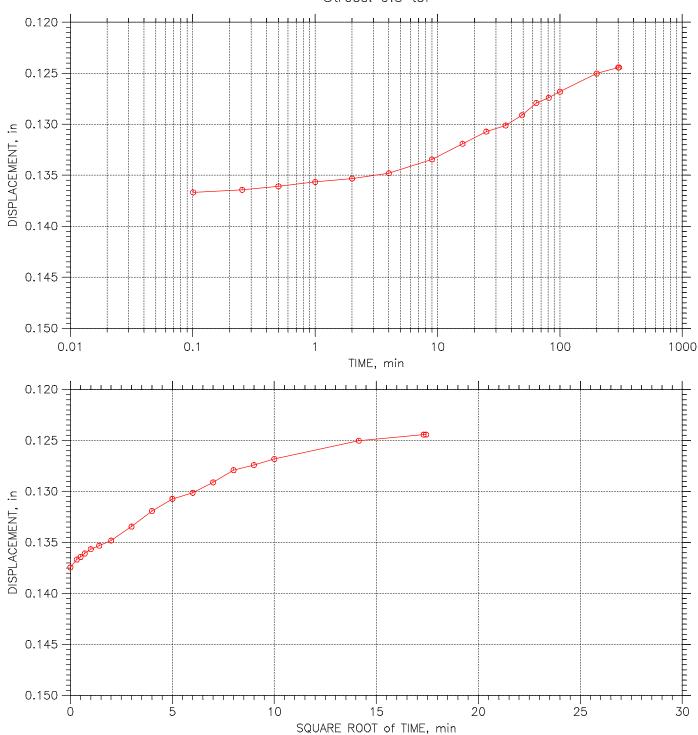
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM	
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'	
<b>ierraco</b>	n Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN LEA	Description: REDDISH BROWN LEAN CLAY (CL)		

	•	, ,	,		
۱	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:		
	Description: REDDISH BROWN LEAR	N CLAY (CL)			
Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435					

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf





	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
į	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAD	N CLAY (CL)	

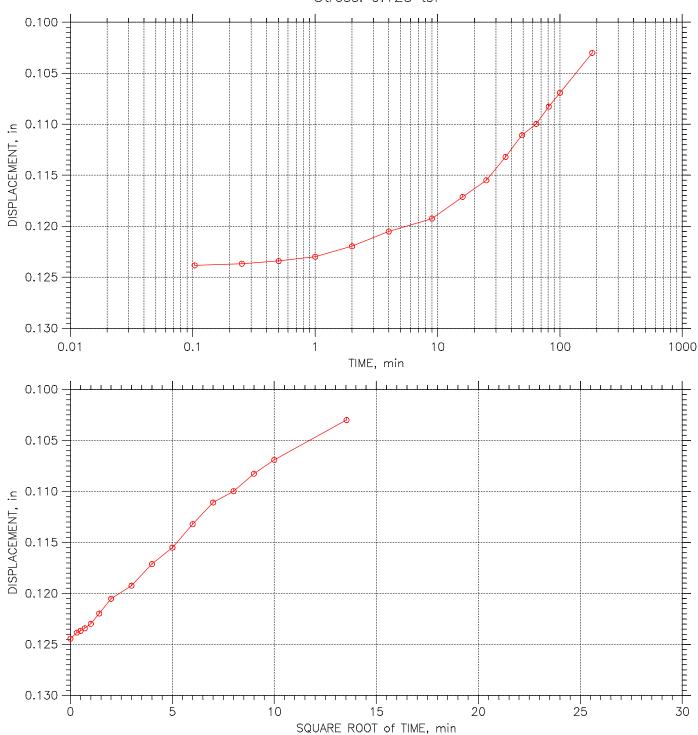
Description: REDUISH BROWN LEAN CLAY (CL)

Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 24 of 24

Stress: 0.125 tsf



	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
<b>ierracon</b>	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.35	59 Ccr = 0.093 TEST PERFORMED	AS PER ASTM D2435

Project: PULLIAM PROPRTY RES. Location: MILWAUKEE,WI Project No.: 11225052
Boring No.: BL-11 S-11 Tested By: IT/ED Checked By: BCM
Sample No.: S-11 Test Date: 1/19/2023 Depth: 45.0'-47.0'
Test No.: BL11S11CON Sample Type: 3.0" ST Elevation: ----



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

Measured Specific Gravity: 2.72 Initial Void Ratio: 0.90 Liquid Limit: 42 Plastic Limit: 14 Plasticity Index: 28 Final Void Ratio: 0.63

Initial Height: 0.75 in Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	K-47	RING	RING	C-150
Wt. Container + Wet Soil, gm	185.91	191.74	185.09	130.97
Wt. Container + Dry Soil, gm	148.3	163.49	163.49	109.63
Wt. Container, gm	30.09	77.16	77.16	24.32
Wt. Dry Soil, gm	118.21	86.334	86.334	85.31
Water Content, %	31.82	32.72	25.01	25.01
Void Ratio		0.90	0.63	
Degree of Saturation, %		99.23	100.02	
Dry Unit Weight, pcf		89.449	103.71	

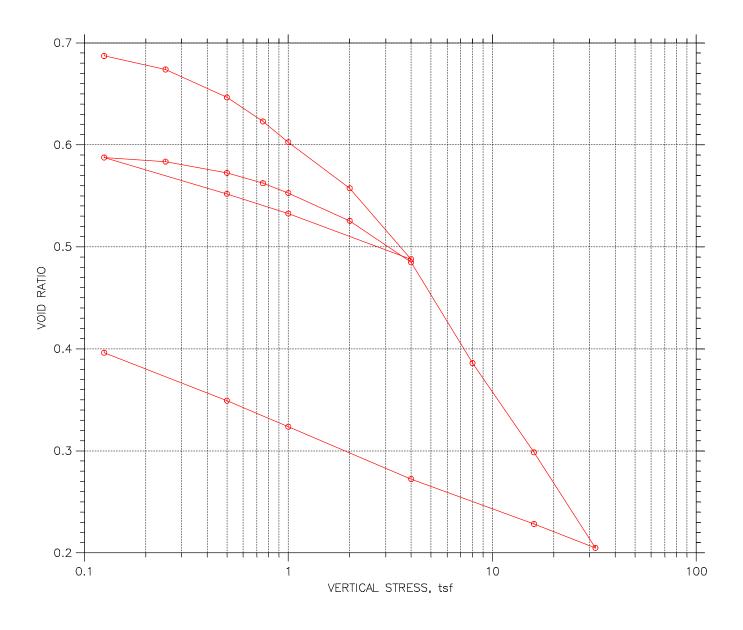
Project: PULLIAM PROPRTY RES. Location: MILWAUKEE,WI Project No.: 11225052
Boring No.: BL-11 S-11 Tested By: IT/ED Checked By: BCM
Sample No.: S-11 Test Date: 1/19/2023 Depth: 45.0'-47.0'
Test No.: BL11S11CON Sample Type: 3.0" ST Elevation: ----Sample Type: 3.0" ST



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 2.1 tsf Cc = 0.359 Ccr = 0.093 TEST PERFORMED AS PER ASTM D2435

	Applied	Final	Void	Strain	T50	Fitting	Coeffi	icient of Cor	solidation
	Stress	Displacement	Ratio	at End	Sq.Rt.	Log	Sq.Rt.	Log	Ave.
	tsf	in		8	min	min	ft^2/sec	ft^2/sec	ft^2/sec
1	0.125	-0.0003402	0.896	-0.05	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
2	0.25	0.0003402	0.896	0.00	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
3	0.5	0.004763	0.883	0.64	1.0	0.0	3.33e-006	0.00e+000	3.33e-006
4	0.75	0.004703	0.878	0.94	8.8	0.0	3.60e-007	0.00e+000	3.60e-007
5	0.75	0.01021	0.870	1.36	13.9	0.0	2.25e-007	0.00e+000	2.25e-007
6	2	0.01021	0.838	3.04	3.5	0.0	8.78e-007	0.00e+000	8.78e-007
7	4	0.04729	0.776	6.32	3.7	2.9	7.83e-007	1.01e-006	8.80e-007
8	1	0.04729	0.802	4.92	1.0	0.0	2.99e-006	0.00e+000	2.99e-006
9	0.5	0.03083	0.820	3.99	5.6	0.0	5.26e-007	0.00e+000	5.26e-007
10	0.125	0.02983	0.851	2.34	5.6	7.7	5.38e-007	3.90e-007	4.53e-007
11		0.01752	0.846		3.8	0.0	7.92e-007	0.00e+000	7.92e-007
	0.25			2.62					
12	0.5	0.02381	0.835	3.18	8.9	0.0	3.41e-007	0.00e+000	3.41e-007
13	0.75	0.0273	0.826	3.65	1.4	0.0	2.11e-006	0.00e+000	2.11e-006
14	1	0.03019	0.819	4.03	2.1	0.0	1.41e-006	0.00e+000	1.41e-006
15	2	0.04006	0.794	5.35	2.1	0.0	1.38e-006	0.00e+000	1.38e-006
16	4	0.05443	0.758	7.27	2.1	1.3	1.34e-006	2.18e-006	1.66e-006
17	8	0.1034	0.634	13.81	3.8	3.7	6.73e-007	6.93e-007	6.83e-007
18	16	0.1482	0.520	19.79	2.1	1.7	1.05e-006	1.33e-006	1.18e-006
19	32	0.1911	0.412	25.52	2.1	1.2	9.12e-007	1.62e-006	1.17e-006
20	16	0.18	0.440	24.03	0.1	0.0	1.54e-005	0.00e+000	1.54e-005
21	4	0.1602	0.490	21.39	0.9	0.0	2.05e-006	0.00e+000	2.05e-006
22	1	0.1374	0.548	18.35	11.3	0.0	1.82e-007	0.00e+000	1.82e-007
23	0.5	0.1244	0.581	16.62	53.9	26.3	4.04e-008	8.27e-008	5.43e-008
24	0.125	0.103	0.635	13.75	40.7	0.0	5.66e-008	0.00e+000	5.66e-008

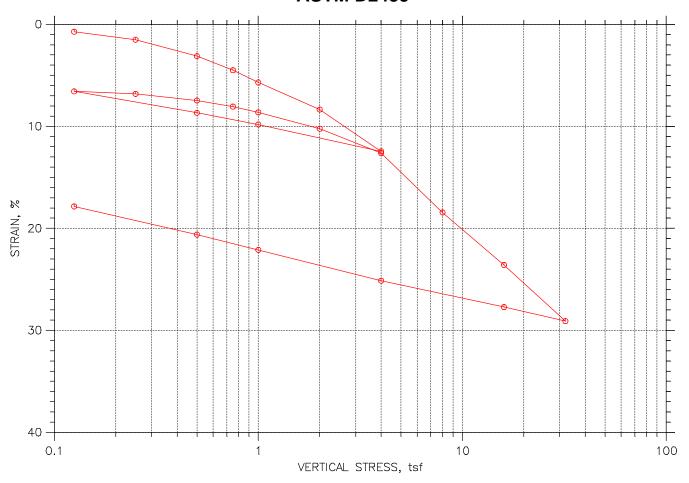
# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435

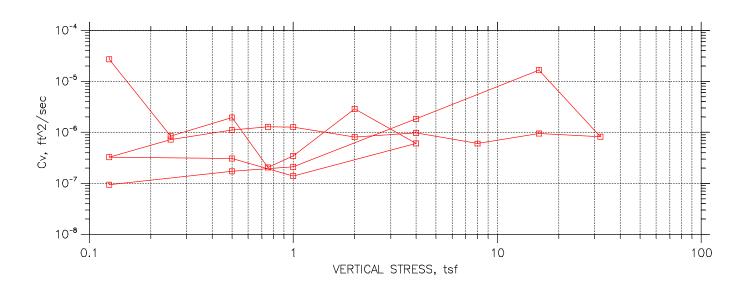


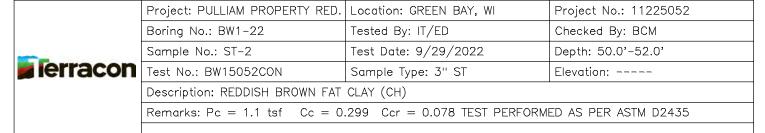
					Before Test	After Test
				Water Content, %	21.19	14.21
Preconsolidation Pressure: 1.1 tsf			Dry Unit Weight, pcf	101.4	123.4	
Compression Index: 0.299		Saturation, %	83.63	99.04		
Diameter: 2.501 in Height: 0.7465 in		Void Ratio	0.70	0.40		
LL: 38	PL: 14	PI: 24	GS: 2.76			

	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
Ferracon	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'	
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH)			
	Remarks: Pc = 1.1 tsf Cc = 0.299 Ccr = 0.078 TEST PERFORMED AS PER ASTM D2435			

# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



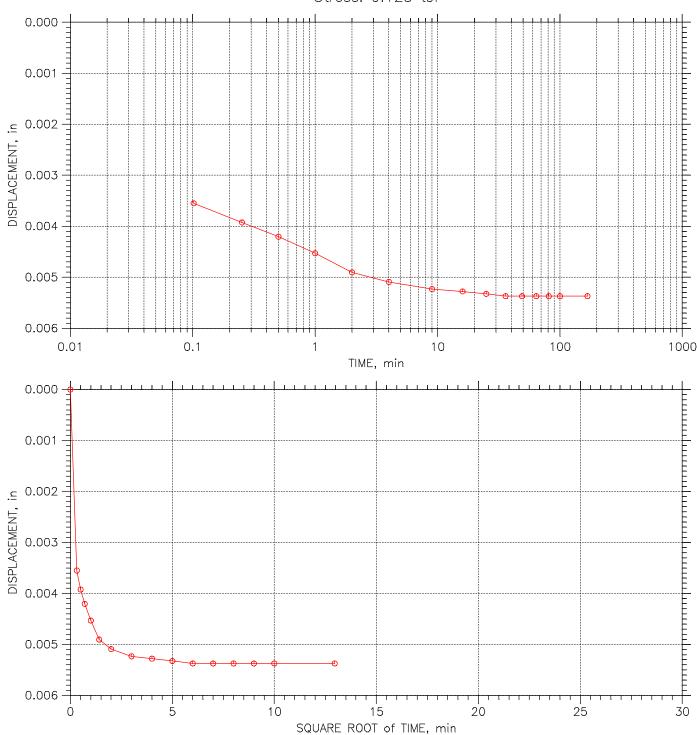




TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf

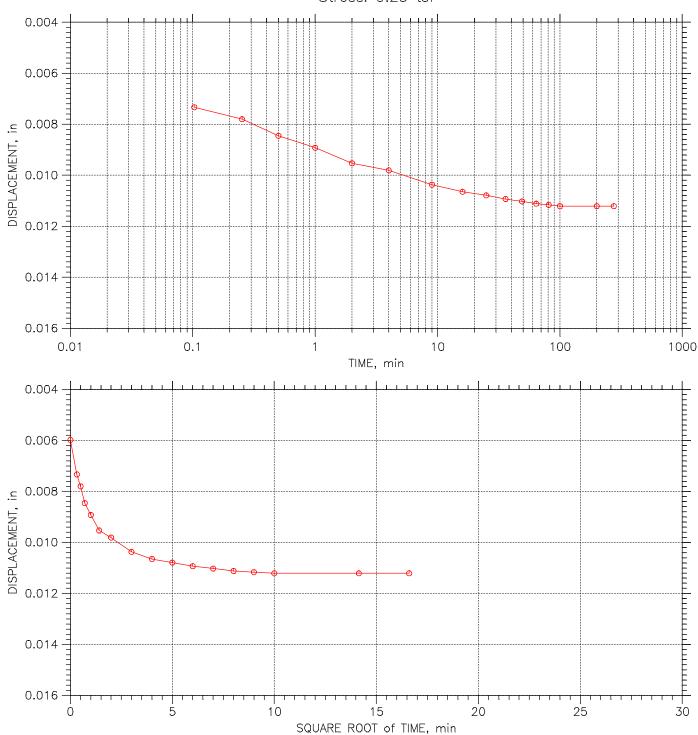


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'	
<b>erracon</b>	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH)			
	ED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf

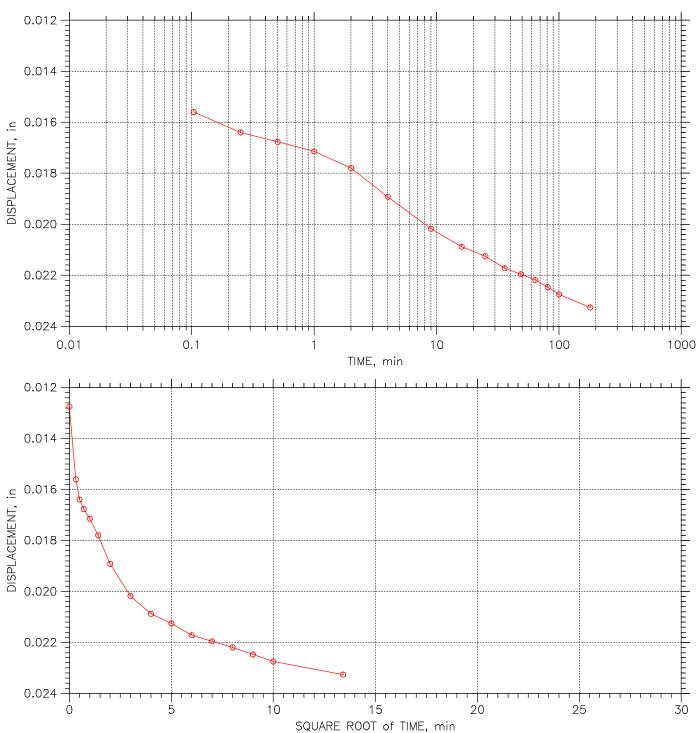


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM	
		Test Date: 9/29/2022	Depth: 50.0'-52.0'	
<b>ierracon</b>	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH)			
	Remarks: $Pc = 1.1 \text{ tsf}$ $Cc = 0.$	ED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf

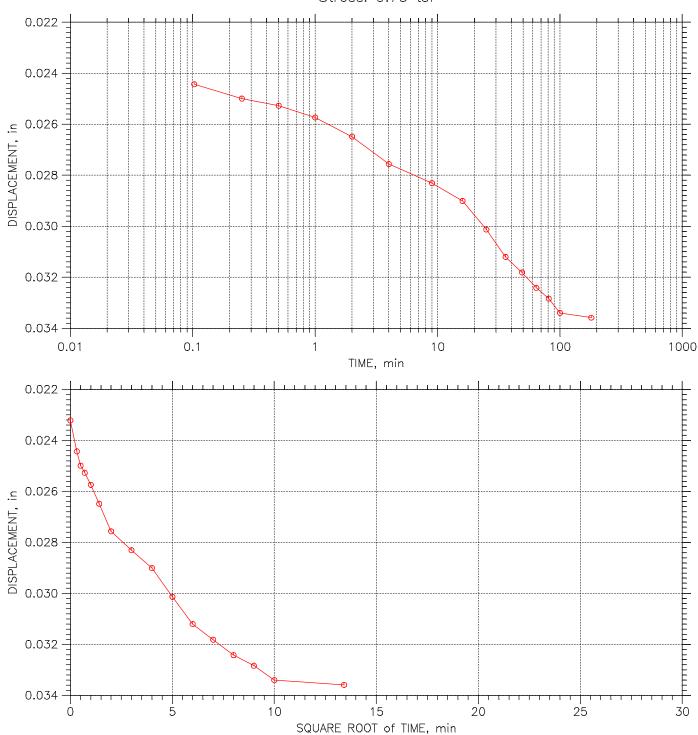


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'	
<b>lerracon</b>	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH)			
	Remarks: $Pc = 1.1 \text{ tsf}$ $Cc = 0.$	299 Ccr = 0.078 TEST PERFORM	ED AS PER ASTM D2435	

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf

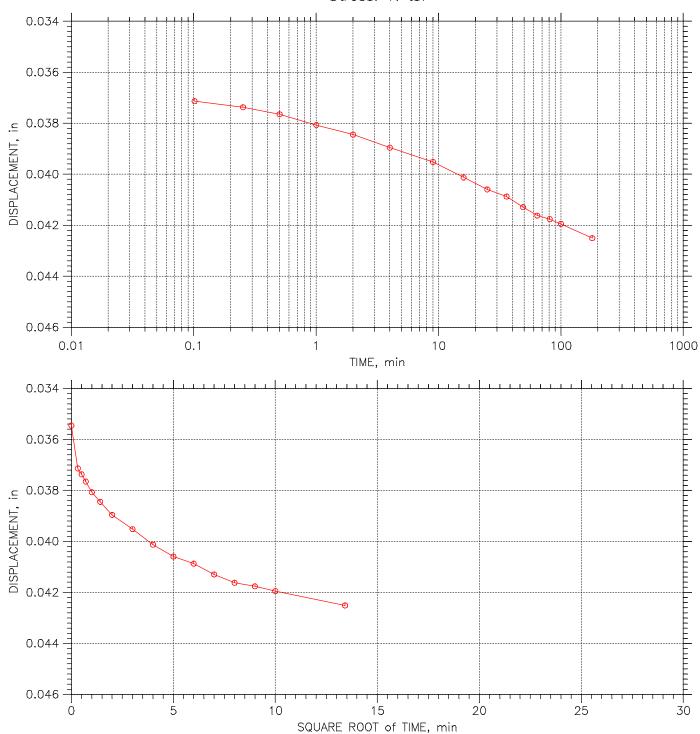


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'	
<b>erracon</b>	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH)			
	ED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf

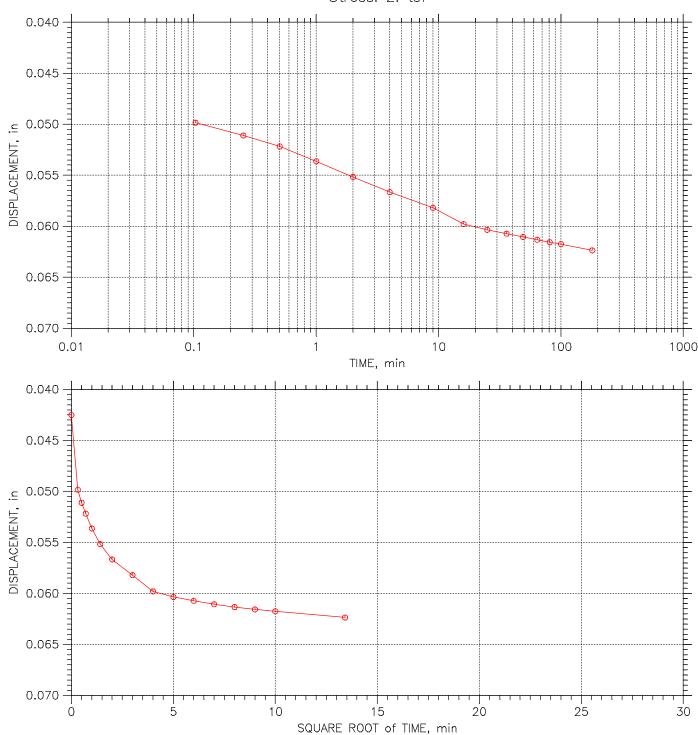


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'	
<b>erracon</b>	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH)			
	ED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf

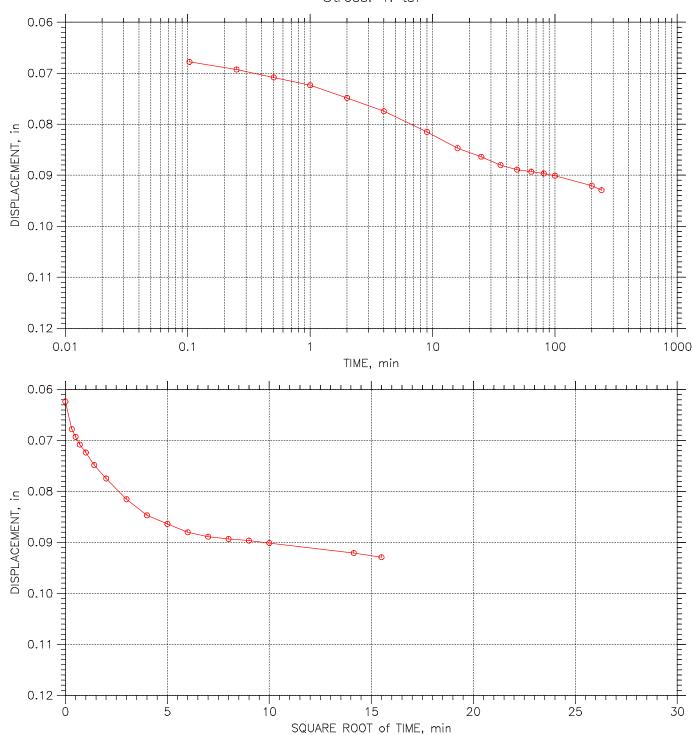


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
Fierracon	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: $Pc = 1.1 \text{ tsf}$ $Cc = 0.$	299 Ccr = 0.078 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf

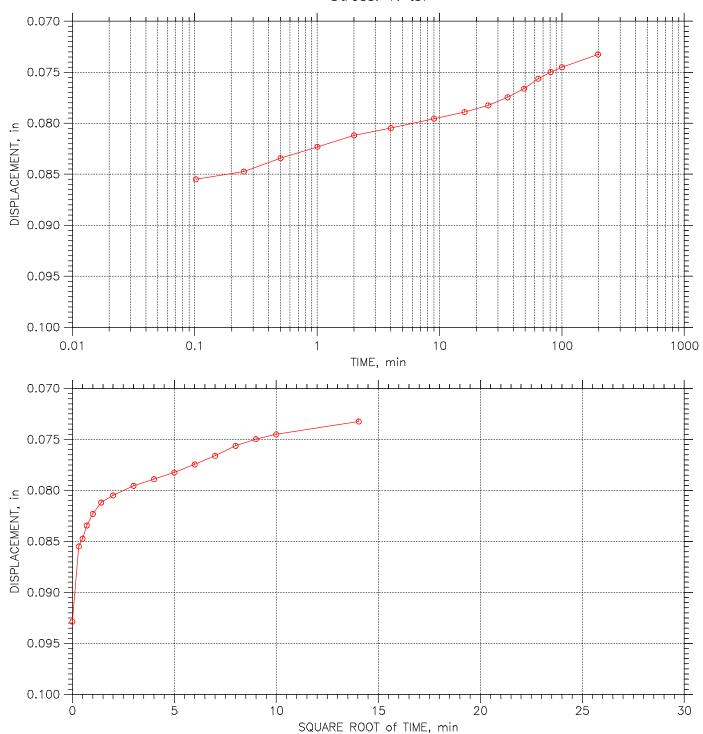


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'	
<b>ierracon</b>	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH)			
	ED AS PER ASTM D2435			

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf

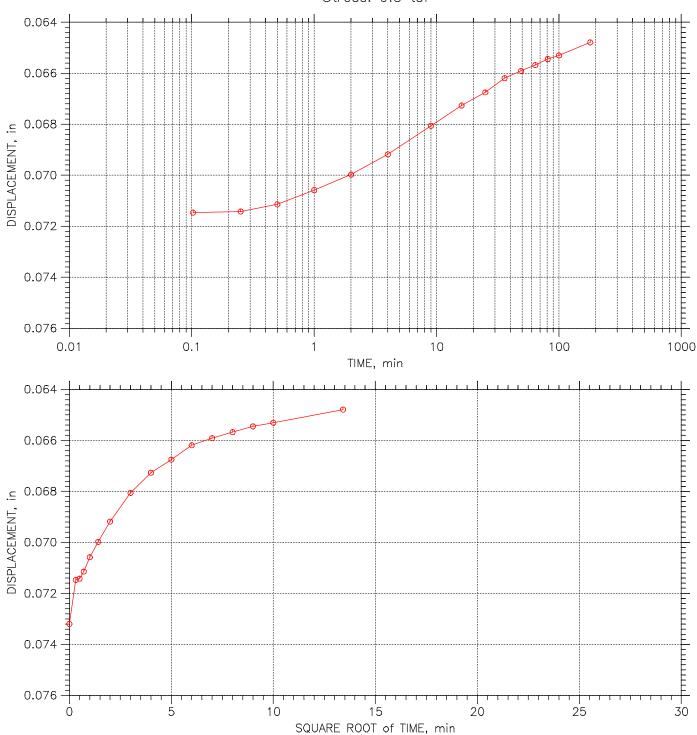


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'	
<b>erracon</b>	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH)			
	Remarks: $Pc = 1.1 \text{ tsf}$ $Cc = 0.$	.299 Ccr = 0.078 TEST PERFORM	ED AS PER ASTM D2435	

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf

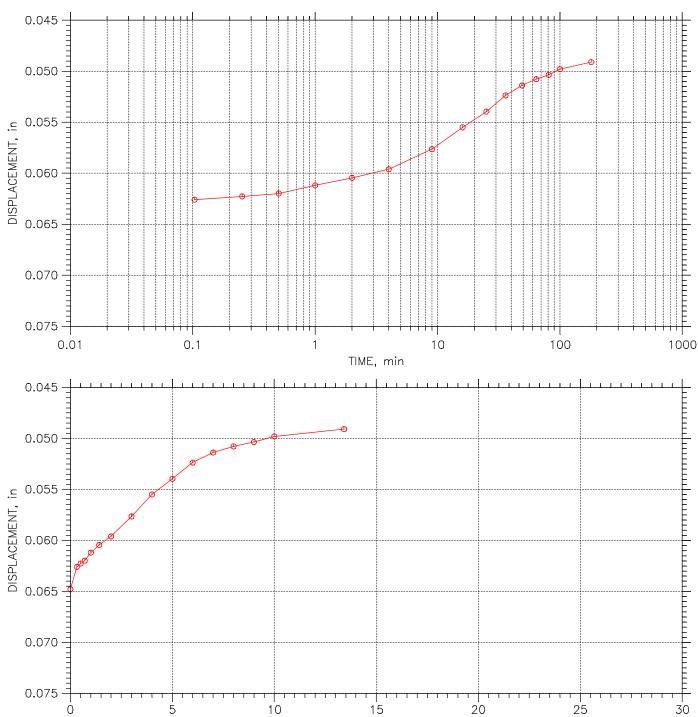


erracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: $Pc = 1.1 \text{ tsf}$ $Cc = 0.$	.299 Ccr = 0.078 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



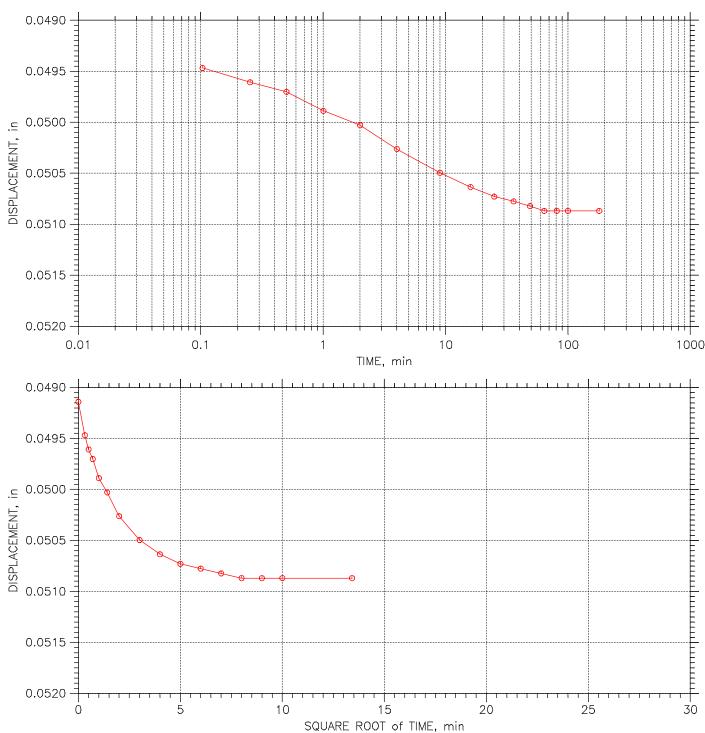
Fierracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: $Pc = 1.1 \text{ tsf}$ $Cc = 0.0$	.299 Ccr = 0.078 TEST PERFORM	ED AS PER ASTM D2435

SQUARE ROOT of TIME, min

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf

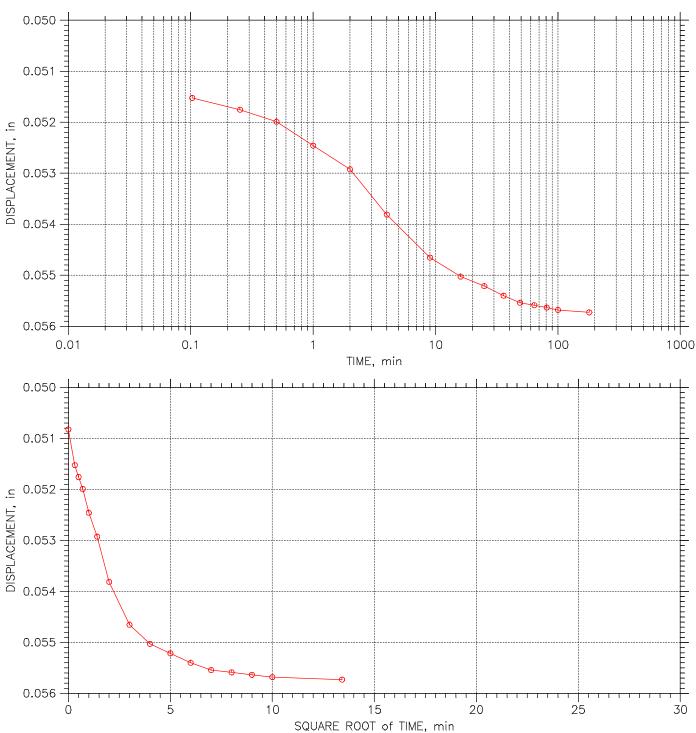


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
erracon	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc = 1.1 tsf Cc = 0.	.299 Ccr = 0.078 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf

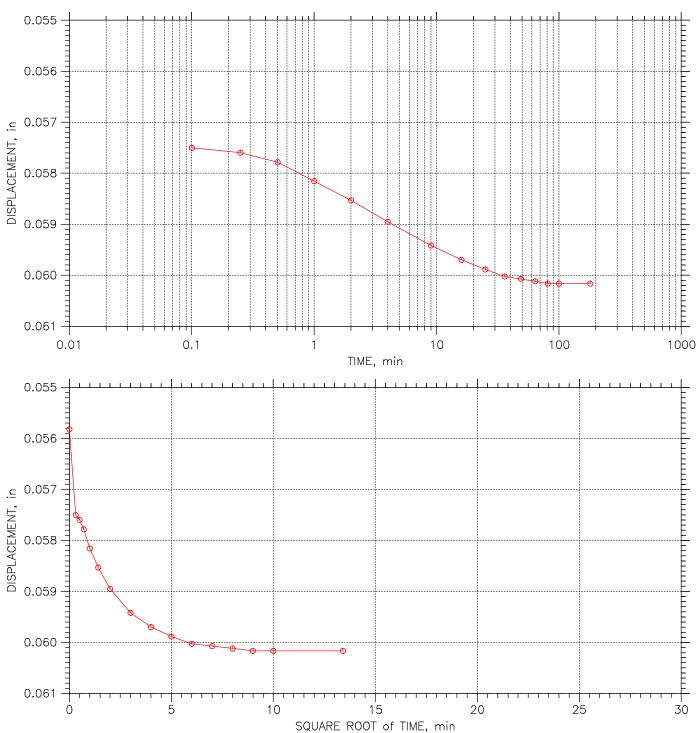


Fierracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc = 1.1 tsf		

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf

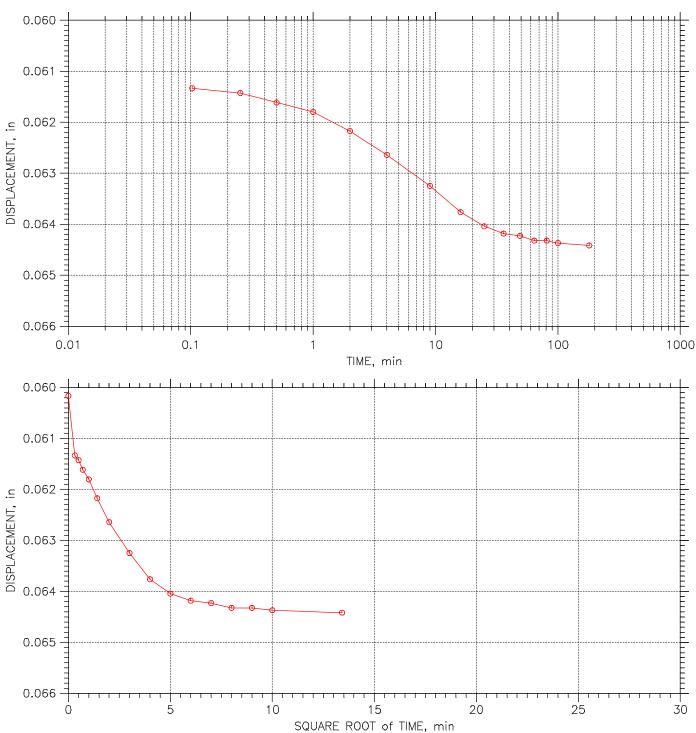


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
<b>erracon</b>	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc = 1.1 tsf Cc = 0.299 Ccr = 0.078 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf

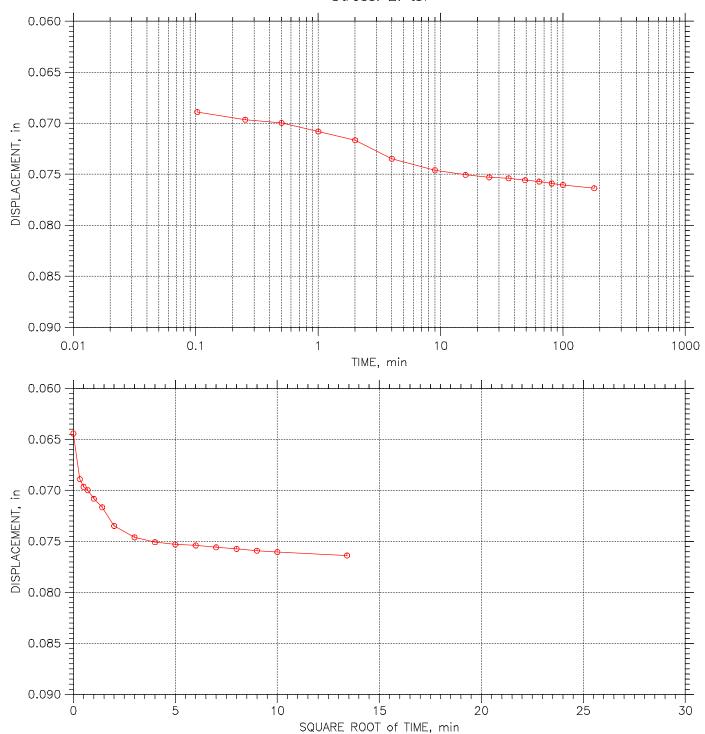


Fierracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: $Pc = 1.1 \text{ tsf}$ $Cc = 0.$	.299 Ccr = 0.078 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf

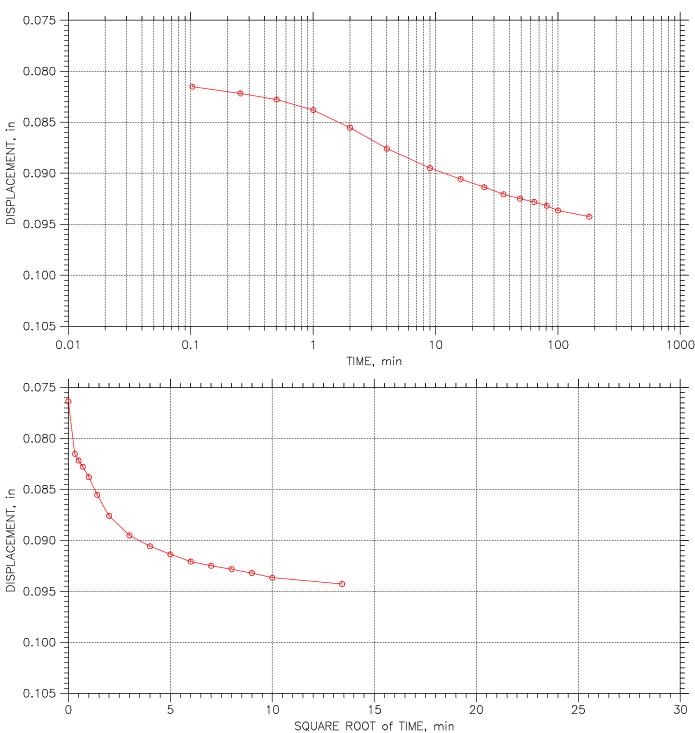


erracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc = 1.1 tsf Cc = 0.	.299 Ccr = 0.078 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf

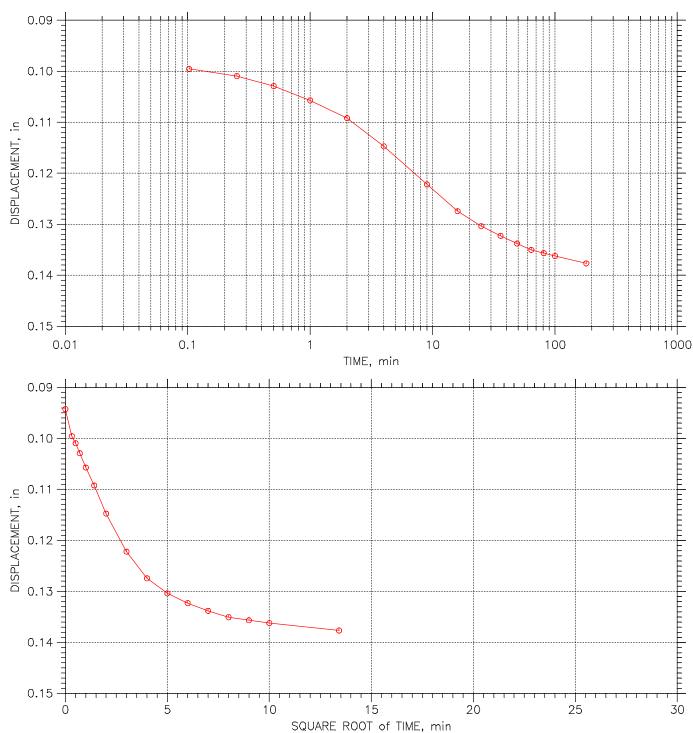


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
- 15 CO 100 A CO	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
<b>lerracon</b>	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc = 1.1 tsf		

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf

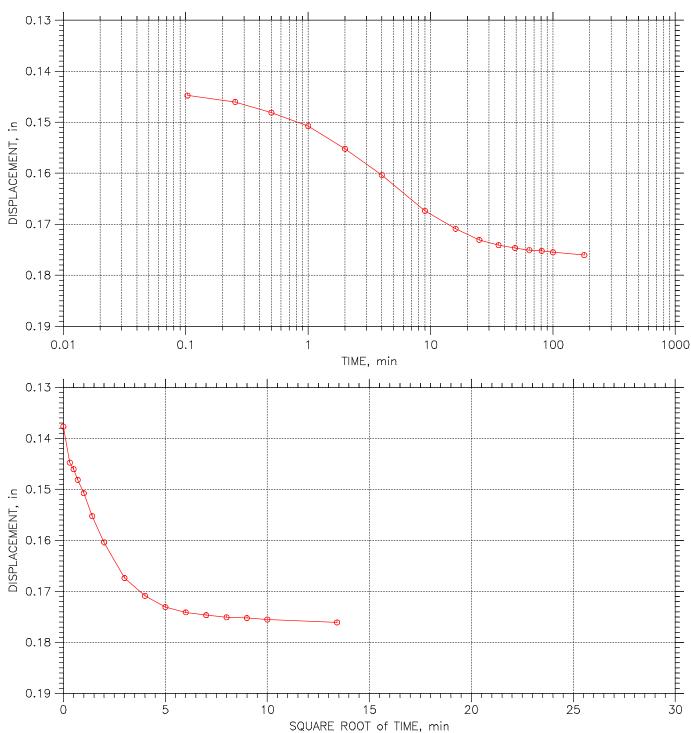


erracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
		Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc = 1.1 tsf Cc = 0.299 Ccr = 0.078 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf

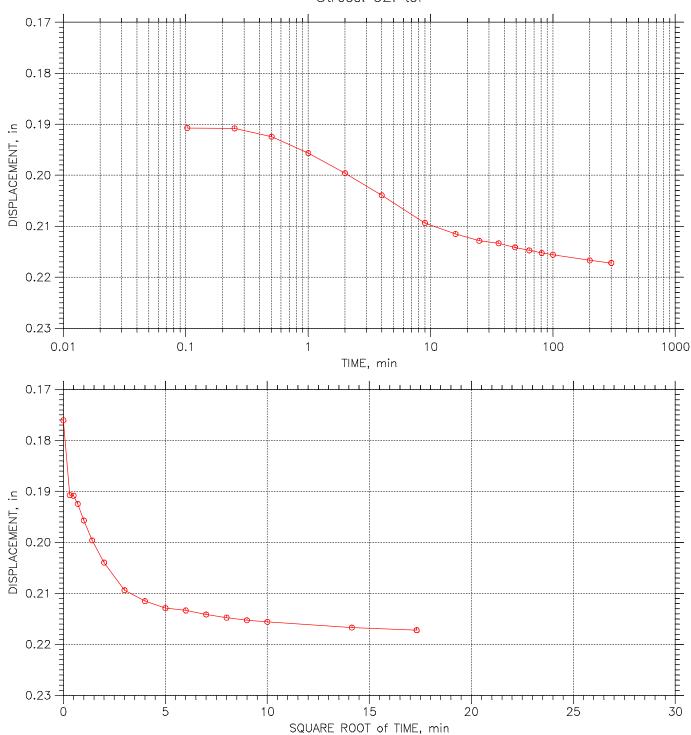


erracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: $Pc = 1.1 \text{ tsf}$ $Cc = 0.$	.299 Ccr = 0.078 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf

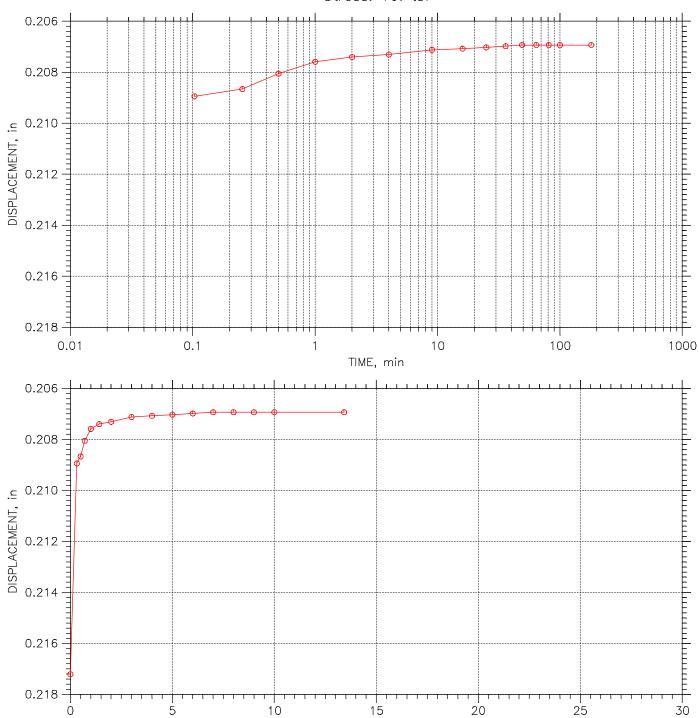


<b>Terracon</b>	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc = 1.1 tsf		ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



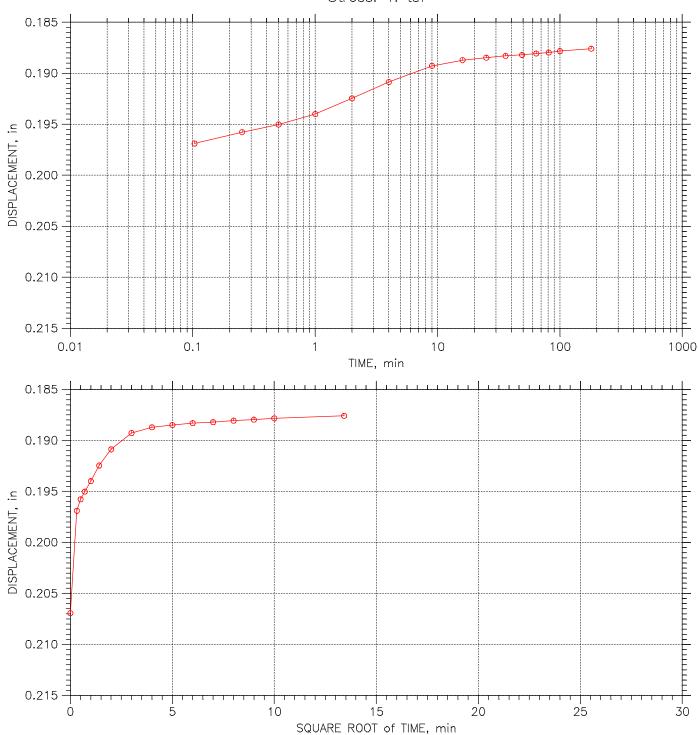
erracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc = 1.1 tsf		

SQUARE ROOT of TIME, min

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf

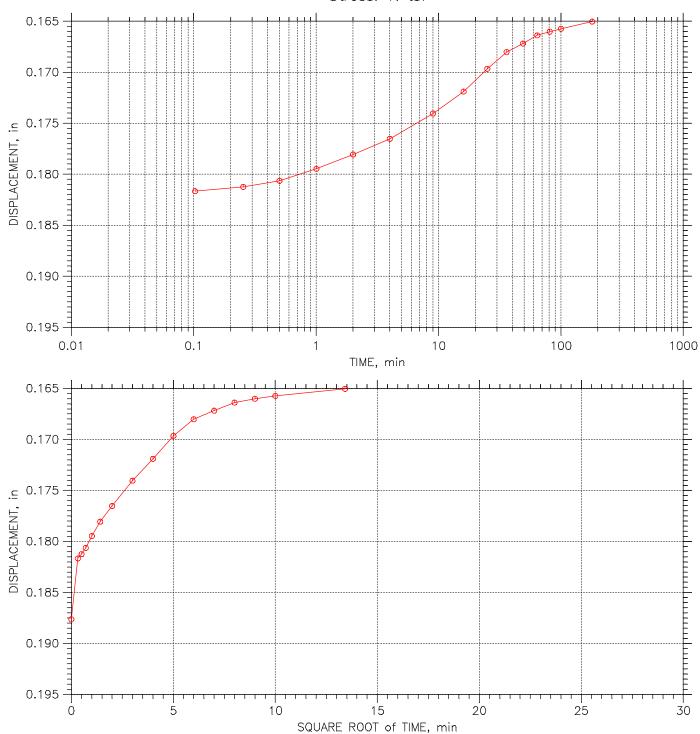


<b>i</b> erracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc = 1.1 tsf		

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf

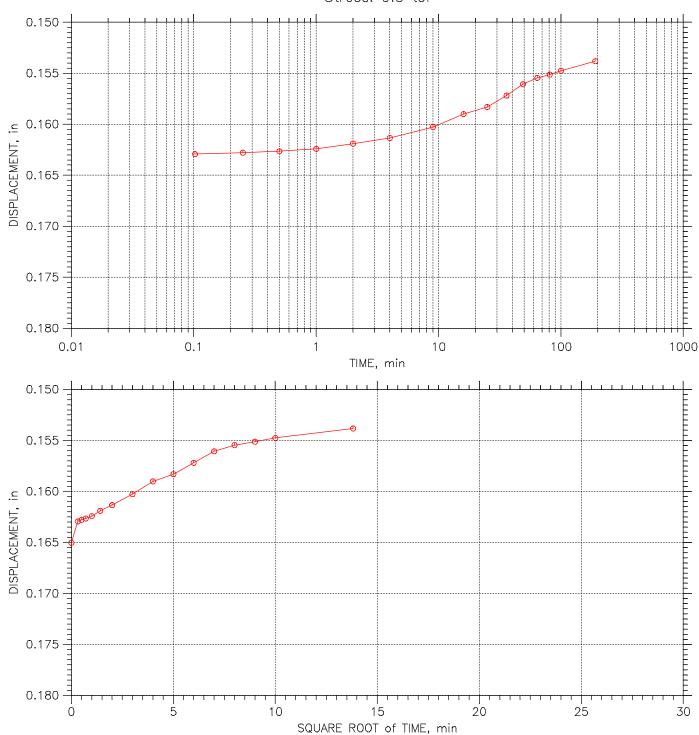


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc = 1.1 tsf		

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf

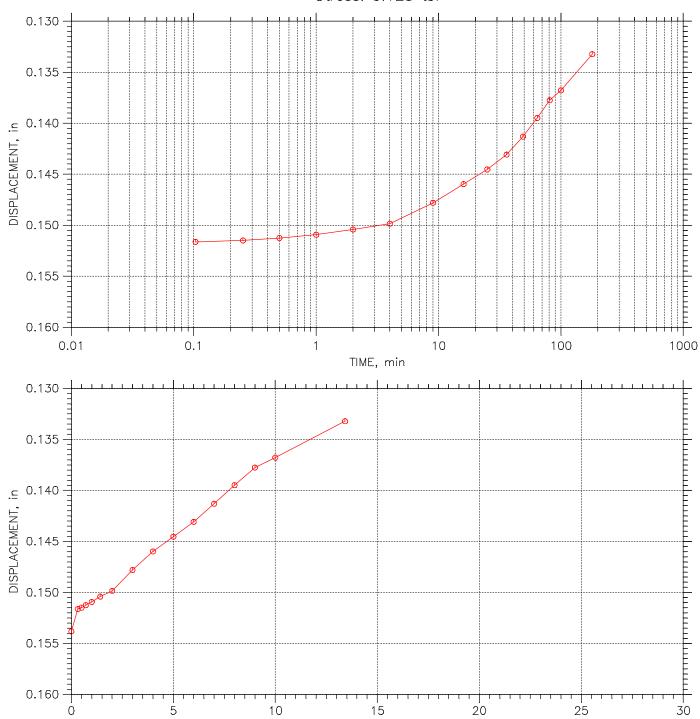


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM	
		Test Date: 9/29/2022	Depth: 50.0'-52.0'	
<b>ierracon</b>	Test No.: BW15052CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH)			
	Remarks: Pc = 1.1 tsf Cc = 0.299 Ccr = 0.078 TEST PERFORMED AS PER ASTM D2435			
erracon	Description: REDDISH BROWN FAT	CLAY (CH)		

TIME CURVES

Constant Load Step: 24 of 24

Stress: 0.125 tsf



	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'	
<b>ierracon</b>	Test No.: BW15052CON Sample Type: 3" ST		Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH)			
	Remarks: Pc = 1.1 tsf Cc = 0.	.299 Ccr = 0.078 TEST PERFORM	ED AS PER ASTM D2435	

SQUARE ROOT of TIME, min

Project: PULLIAM PROPERTY RED. Location: GREEN BAY, WI Project No.: 11225052
Boring No.: BW1-22 Tested By: IT/ED Checked By: BCM
Sample No.: ST-2 Test Date: 9/29/2022 Depth: 50.0'-52.0'
Test No.: BW15052CON Sample Type: 3" ST Elevation: -----



Soil Description: REDDISH BROWN FAT CLAY (CH) Remarks: Pc = 1.1 tsf  $\,$  Cc = 0.299  $\,$  Ccr = 0.078 TEST PERFORMED AS PER ASTM D2435

Estimated Specific Gravity: 2.76 Liquid Limit: 38
Initial Void Ratio: 0.70 Plastic Limit: 14
Final Void Ratio: 0.40 Plasticity Index: 24

Initial Height: 0.75 in Specimen Diameter: 2.50 in

	Before (	Consolidation	After Consol	idation
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	44	RING	RING	B-26
Wt. Container + Wet Soil, gm	163.77	188.18	181.37	158.48
Wt. Container + Dry Soil, gm	142.1	167.5	167.5	145.05
Wt. Container, gm	38.94	69.92	69.92	50.57
Wt. Dry Soil, gm	103.16	97.579	97.579	94.48
Water Content, %	21.01	21.19	14.21	14.21
Void Ratio		0.70	0.40	
Degree of Saturation, %		83.63	99.04	
Dry Unit Weight, pcf		101.39	123.41	

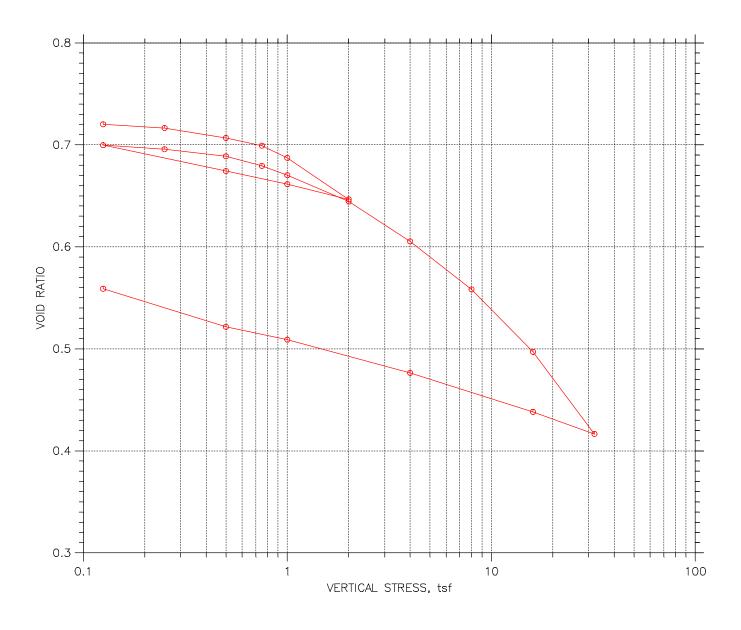
Project No.: 11225052 Checked By: BCM Depth: 50.0'-52.0' Elevation: ----Project: PULLIAM PROPERTY RED. Location: GREEN BAY, WI
Boring No.: BW1-22 Tested By: IT/ED
Sample No.: ST-2 Test Date: 9/29/2022 Boring No.: BW1-22 Sample No.: ST-2 Test No.: BW15052CON Sample Type: 3" ST



Soil Description: REDDISH BROWN FAT CLAY (CH) Remarks: Pc = 1.1 tsf  $\,$  Cc = 0.299  $\,$  Ccr = 0.078 TEST PERFORMED AS PER ASTM D2435

	Applied	Final	Void	Strain	T50 Fi	tting	Coeffic	cient of Cons	solidation
	Stress	Displacement	Ratio	at End	Sq.Rt.	Log	Sq.Rt.	Log	Ave.
	tsf	in		%	min	min	ft^2/sec	ft^2/sec	ft^2/sec
1	0.125	0.005372	0.687	0.72	0.1	0.0	2.70e-005	0.00e+000	2.70e-005
2	0.25	0.01121	0.674	1.50	3.7	0.0	8.43e-007	0.00e+000	8.43e-007
3	0.5	0.02326	0.646	3.12	2.1	1.0	1.45e-006	2.99e-006	1.95e-006
4	0.75	0.03359	0.623	4.50	14.3	0.0	2.06e-007	0.00e+000	2.06e-007
5	1	0.04251	0.603	5.69	8.4	0.0	3.43e-007	0.00e+000	3.43e-007
6	2	0.06236	0.557	8.35	1.0	0.0	2.89e-006	0.00e+000	2.89e-006
7	4	0.09291	0.488	12.45	3.7	4.8	6.84e-007	5.37e-007	6.02e-007
8	1	0.07324	0.533	9.81	18.0	0.0	1.39e-007	0.00e+000	1.39e-007
9	0.5	0.06479	0.552	8.68	8.6	0.0	3.06e-007	0.00e+000	3.06e-007
10	0.125	0.04909	0.588	6.58	8.3	0.0	3.25e-007	0.00e+000	3.25e-007
11	0.25	0.05087	0.584	6.81	3.8	0.0	7.20e-007	0.00e+000	7.20e-007
12	0.5	0.05573	0.573	7.47	2.9	2.1	9.55e-007	1.34e-006	1.11e-006
13	0.75	0.06016	0.562	8.06	2.1	0.0	1.29e-006	0.00e+000	1.29e-006
14	1	0.06442	0.553	8.63	2.1	0.0	1.27e-006	0.00e+000	1.27e-006
15	2	0.07637	0.526	10.23	3.2	0.0	8.03e-007	0.00e+000	8.03e-007
16	4	0.09426	0.485	12.63	3.9	1.3	6.47e-007	1.97e-006	9.75e-007
17	8	0.1377	0.386	18.44	3.8	3.8	5.99e-007	6.04e-007	6.02e-007
18	16	0.1761	0.299	23.59	2.1	0.0	9.45e-007	0.00e+000	9.45e-007
19	32	0.2172	0.205	29.10	2.1	0.0	8.22e-007	0.00e+000	8.22e-007
20	16	0.2069	0.228	27.72	0.1	0.0	1.66e-005	0.00e+000	1.66e-005
21	4	0.1876	0.272	25.13	0.9	0.0	1.85e-006	0.00e+000	1.85e-006
22	1	0.165	0.324	22.11	8.7	0.0	2.12e-007	0.00e+000	2.12e-007
23	0.5	0.1538	0.349	20.61	11.4	0.0	1.72e-007	0.00e+000	1.72e-007
24	0.125	0.1332	0.396	17.85	22.1	0.0	9.39e-008	0.00e+000	9.39e-008

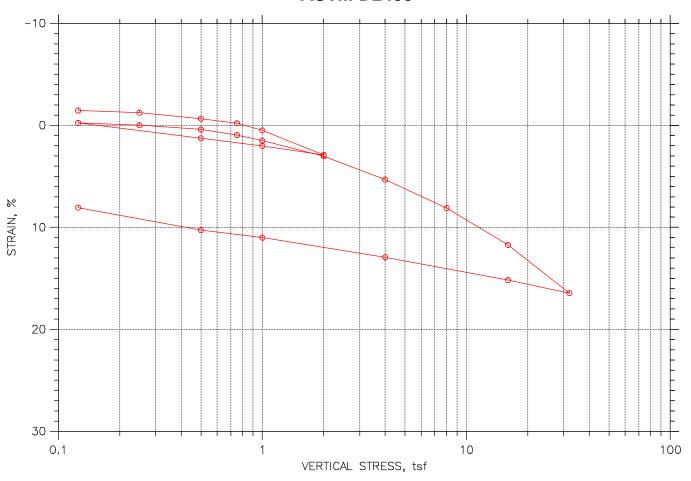
# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435

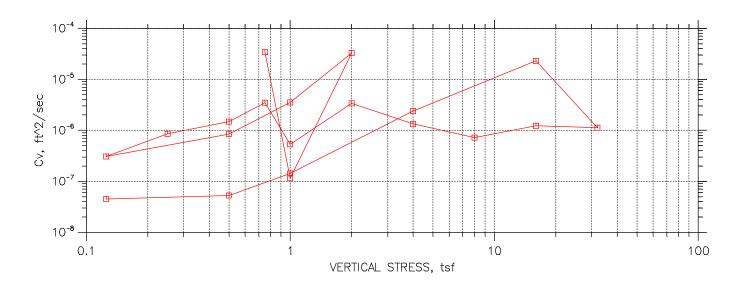


					Before Test	After Test
				Water Content, %	20.59	20.27
Preconsolidation Pressure: 1.1 tsf			Dry Unit Weight, pcf	100.5	109.3	
Compression Index: 0.299			Saturation, %	80.80	99.00	
Diameter: 2.5 in Height: 0.7484 in		Void Ratio	0.70	0.56		
LL: 35	PL: 13	PI: 22	GS: 2.73			

	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1		Depth: 35.0'-37.0'
<b>ierracon</b>	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.0$	.251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435

# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435





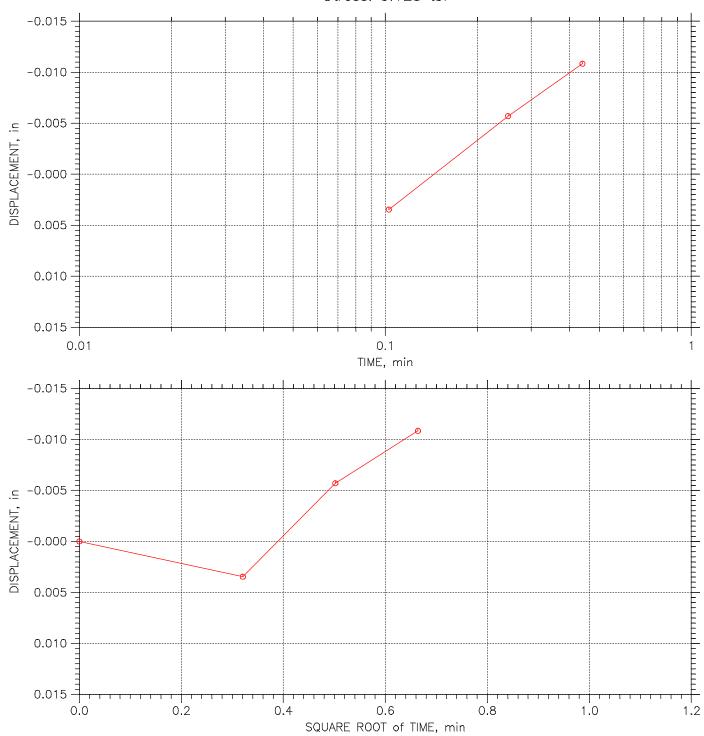


Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052		
Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM		
Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'		
Test No.: BW23537CON	Sample Type: 3" ST	Elevation:		
Description: REDDISH BROWN LEAN CLAY (CL)				
Remarks: Pc = 3.3 tsf				

TIME CURVES

Constant Load Step: 1 of 23

Stress: 0.125 tsf

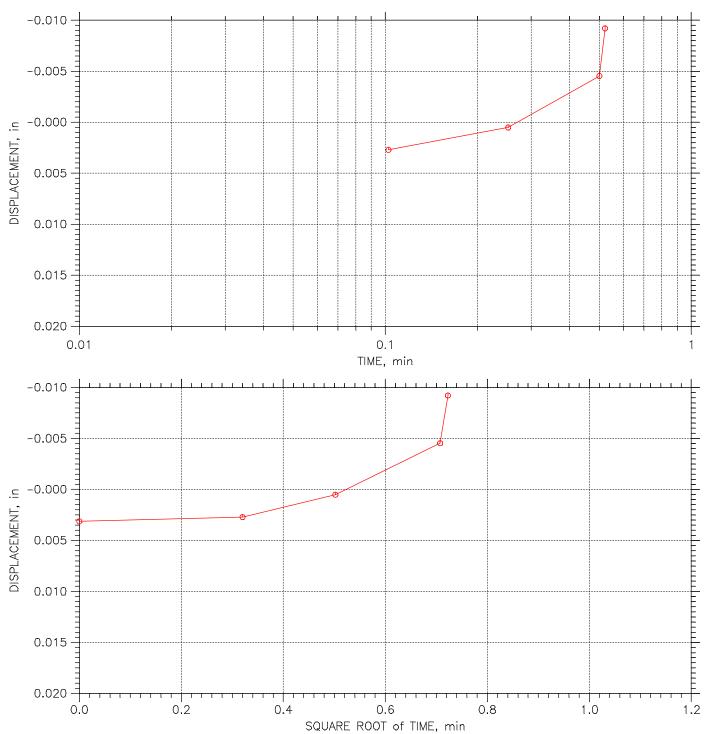


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'	
<b>ierracon</b>	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.0$	0.251 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 2 of 23

Stress: 0.25 tsf

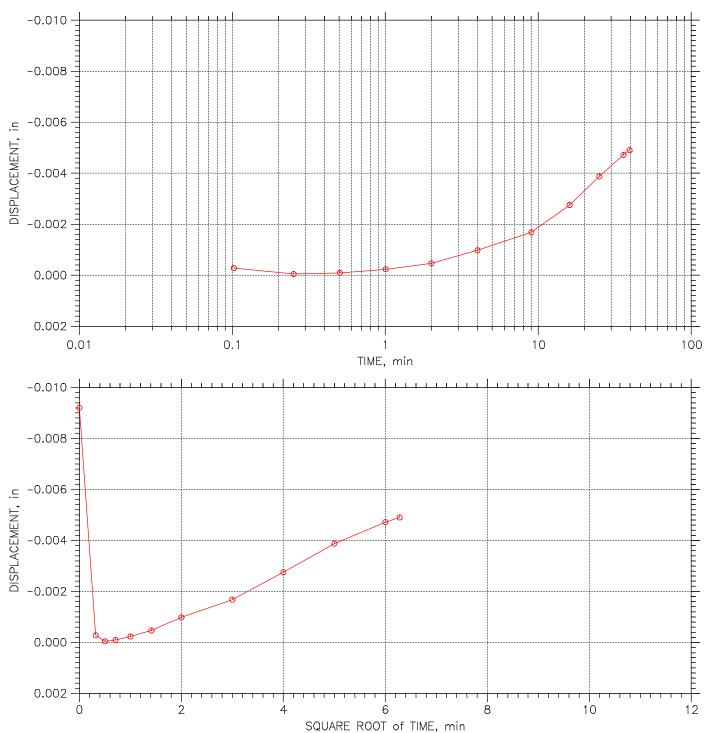


		Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
		Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM	
		,	Test Date: 9/29/2022	Depth: 35.0'-37.0'	
	<b>ierracon</b>	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:	
		Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: Pc = 3.3 tsf Cc = 0.251 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435				
- 1					

TIME CURVES

Constant Load Step: 3 of 23

Stress: 0.5 tsf

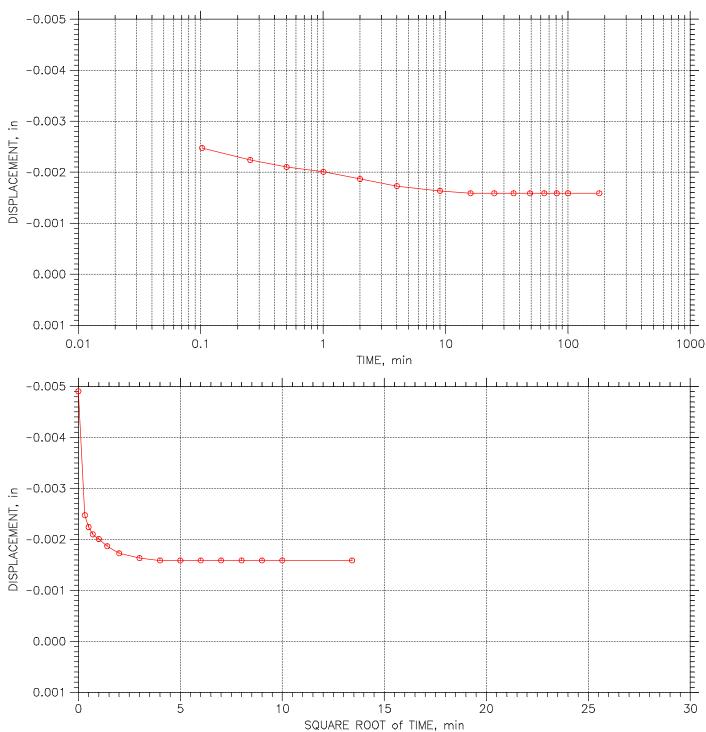


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'	
<b>ierracon</b>	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.$	.251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435	

TIME CURVES

Constant Load Step: 4 of 23

Stress: 0.75 tsf

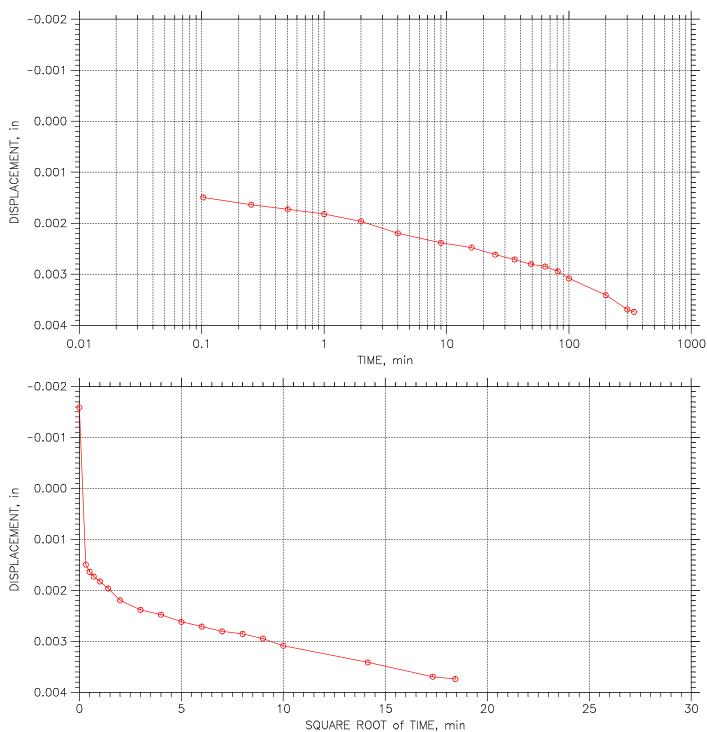


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM		
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'		
<b>ierracon</b>	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.$	251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 5 of 23

Stress: 1. tsf

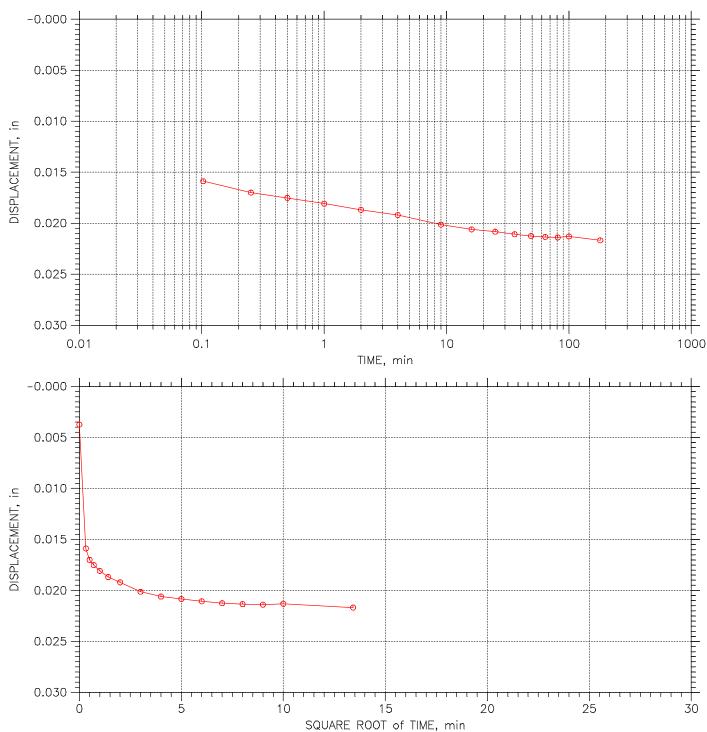


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM		
		Test Date: 9/29/2022	Depth: 35.0'-37.0'		
<b>ierracon</b>	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.$	.251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 6 of 23

Stress: 2. tsf

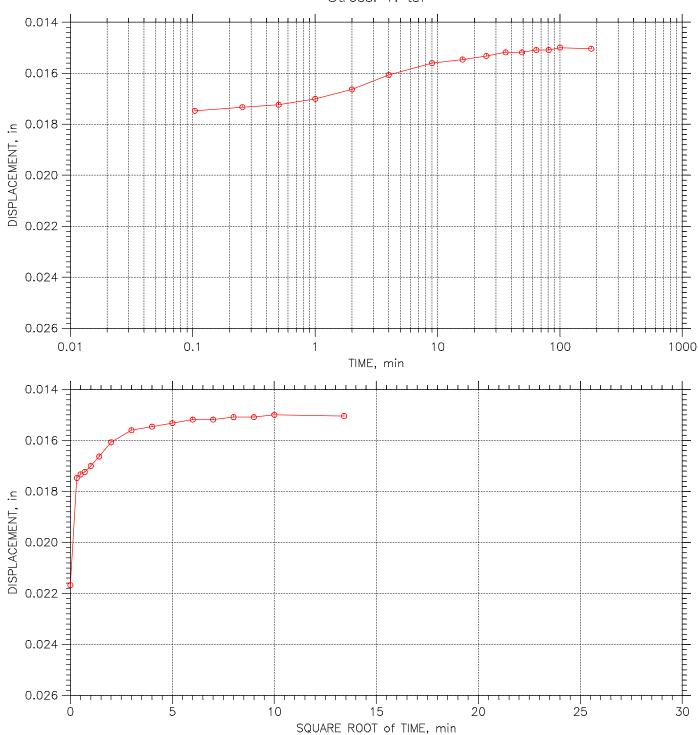


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
		Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 3.3 tsf		

TIME CURVES

Constant Load Step: 7 of 23

Stress: 1. tsf

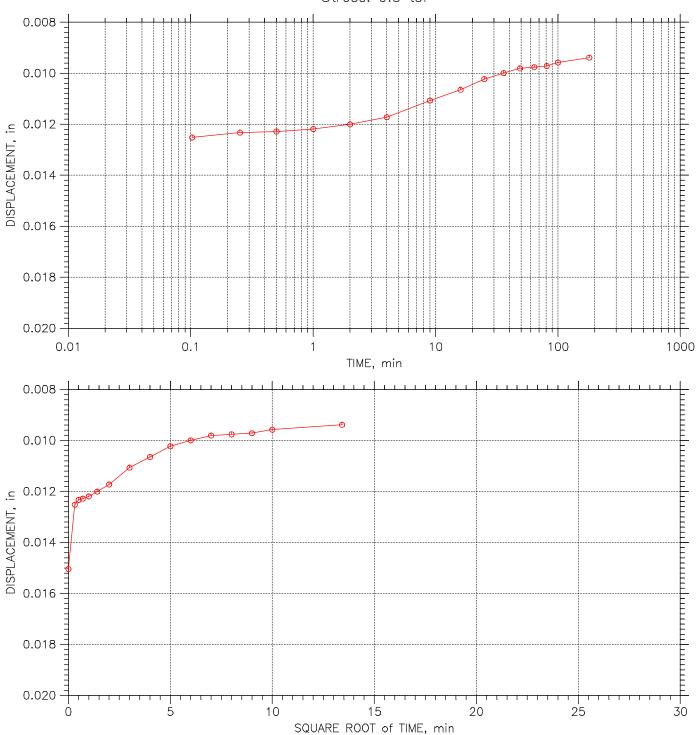


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.$	.251 $Ccr = 0.064$ TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 8 of 23

Stress: 0.5 tsf

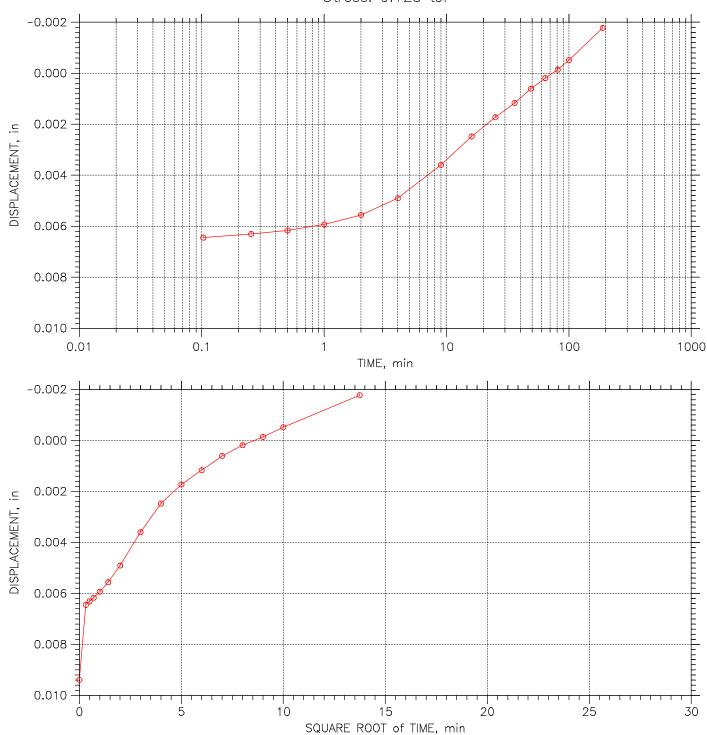


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.0 \text{ cs}$	.251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 9 of 23

Stress: 0.125 tsf

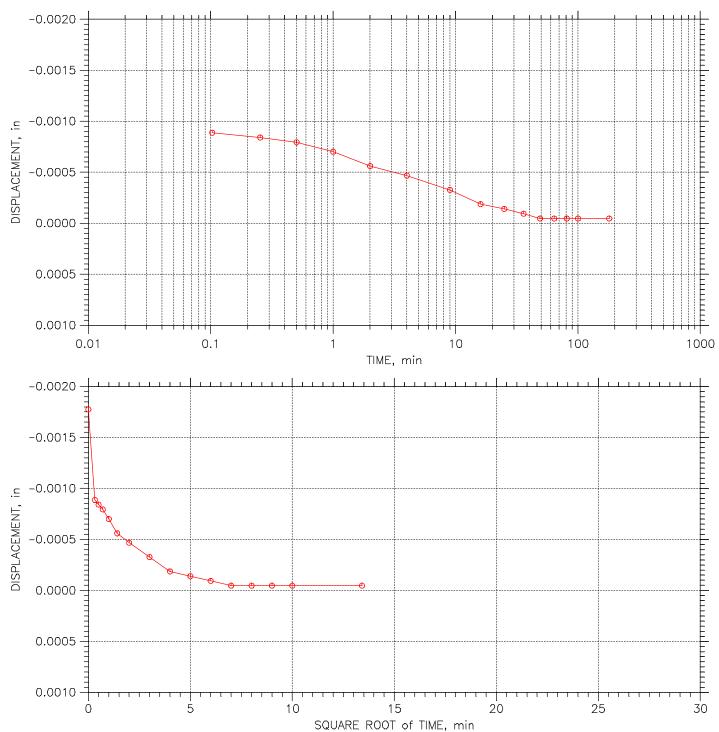


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
erracon	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.0$	.251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 10 of 23

Stress: 0.25 tsf

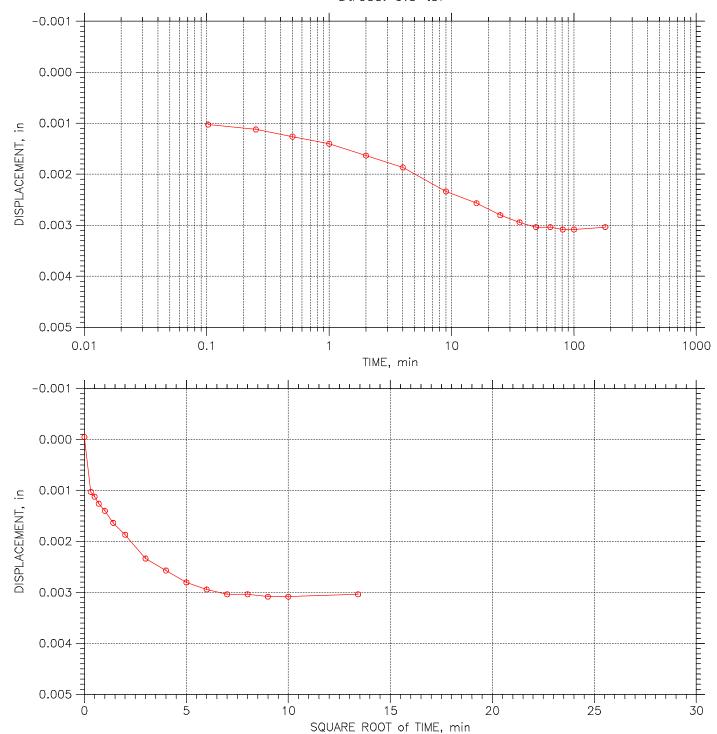


Fierracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.251$ $Ccr = 0.064 \text{ TEST PERFORMED AS PER ASTM D2435}$		

TIME CURVES

Constant Load Step: 11 of 23

Stress: 0.5 tsf

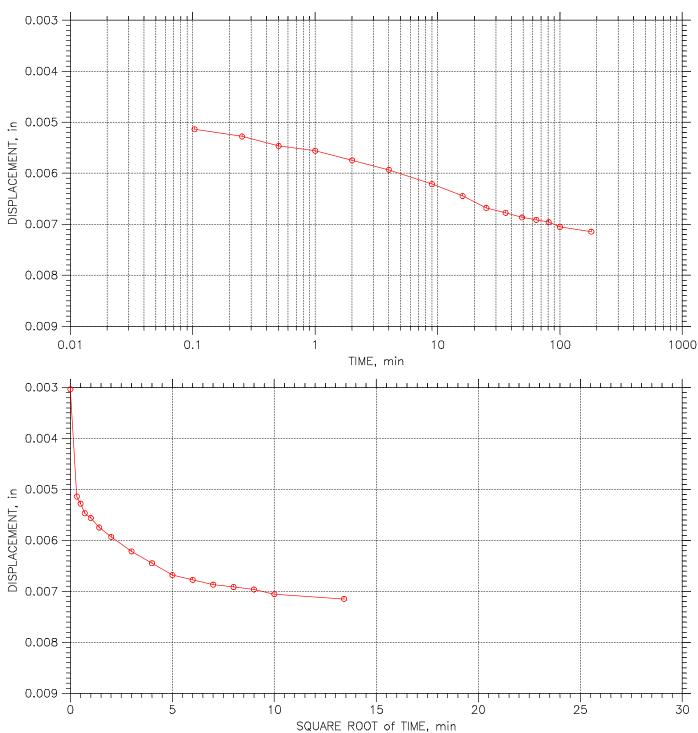


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
erracon	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.0$	.251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 12 of 23

Stress: 0.75 tsf

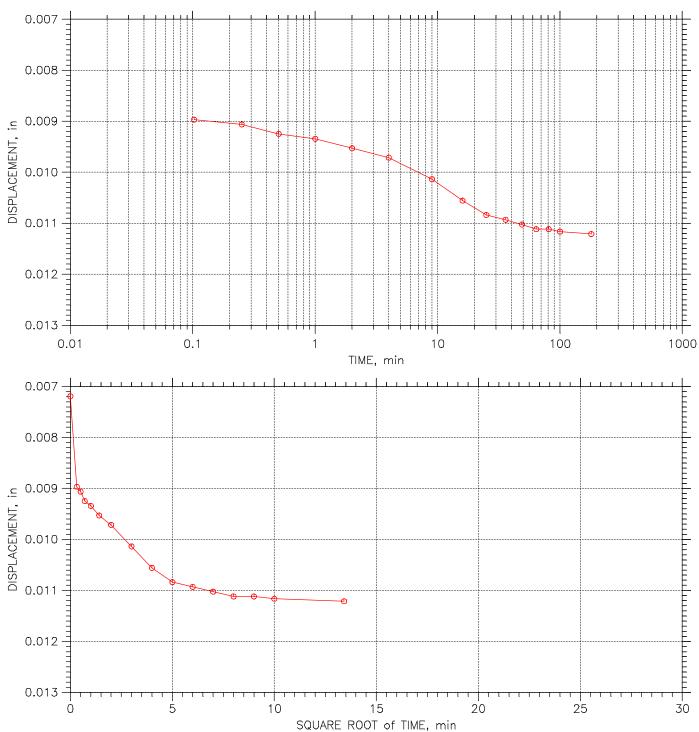


erracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 3.3 tsf		

TIME CURVES

Constant Load Step: 13 of 23

Stress: 1. tsf

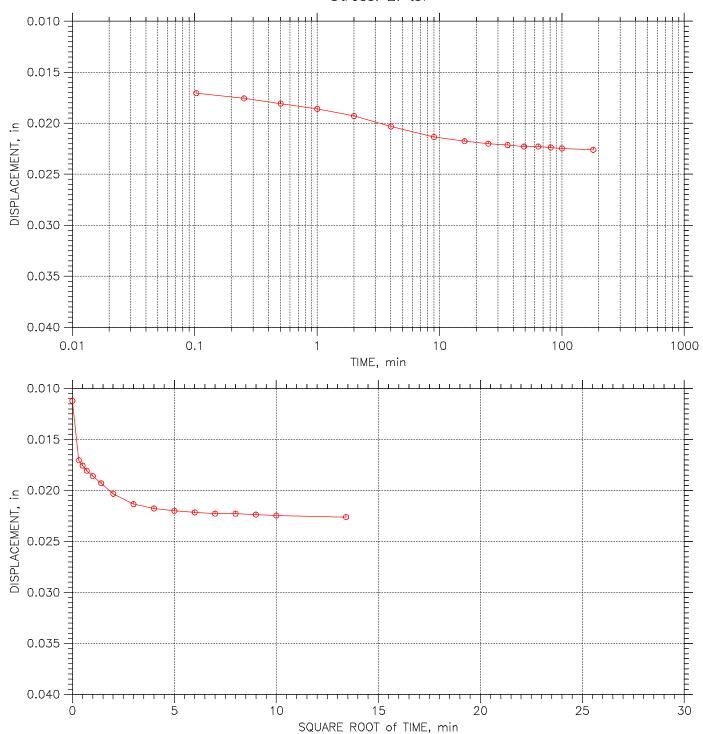


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.$	.251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 14 of 23

Stress: 2. tsf

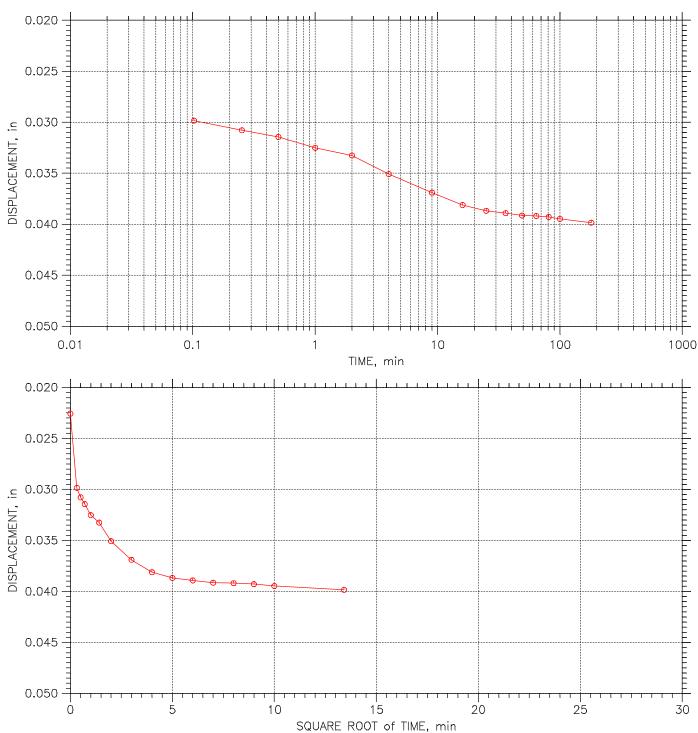


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
erracon	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.0$	.251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 15 of 23

Stress: 4. tsf

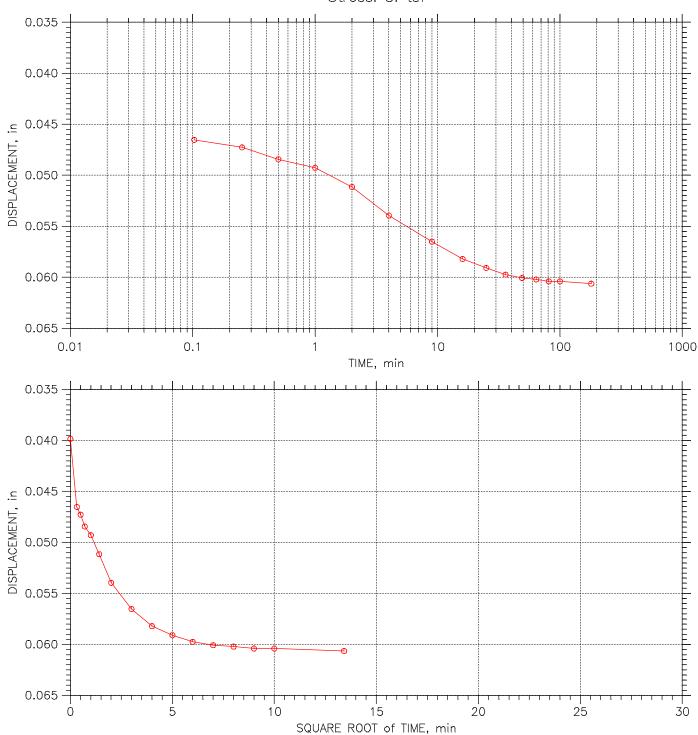


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 3.3 tsf		

TIME CURVES

Constant Load Step: 16 of 23

Stress: 8. tsf

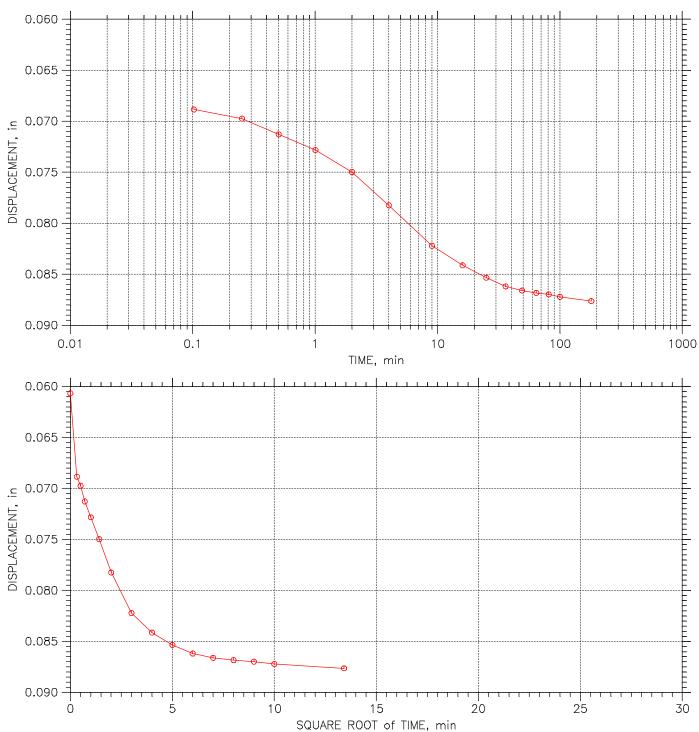


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 3.3 tsf		

TIME CURVES

Constant Load Step: 17 of 23

Stress: 16. tsf

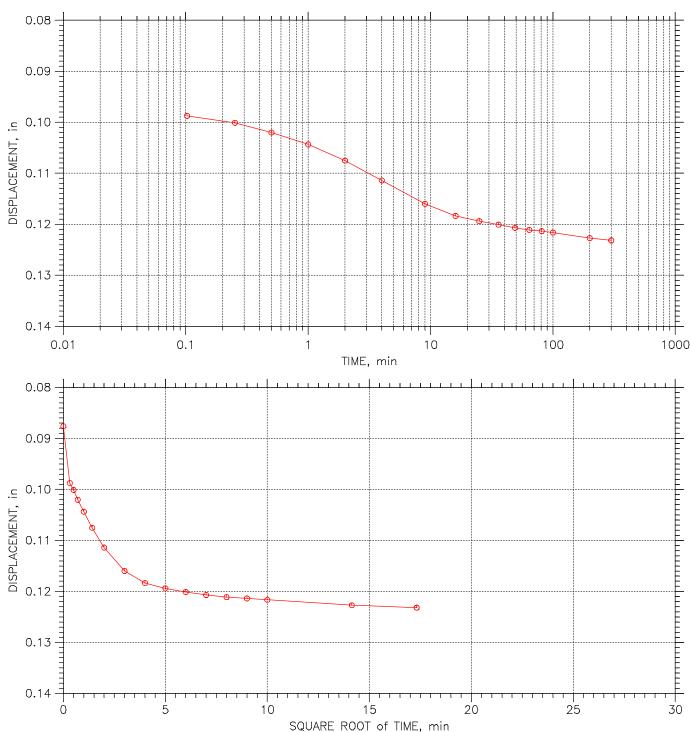


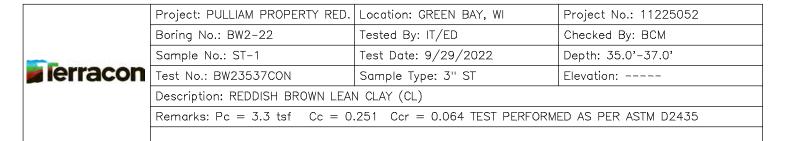
Fierracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 3.3 tsf		

TIME CURVES

Constant Load Step: 18 of 23

Stress: 32. tsf

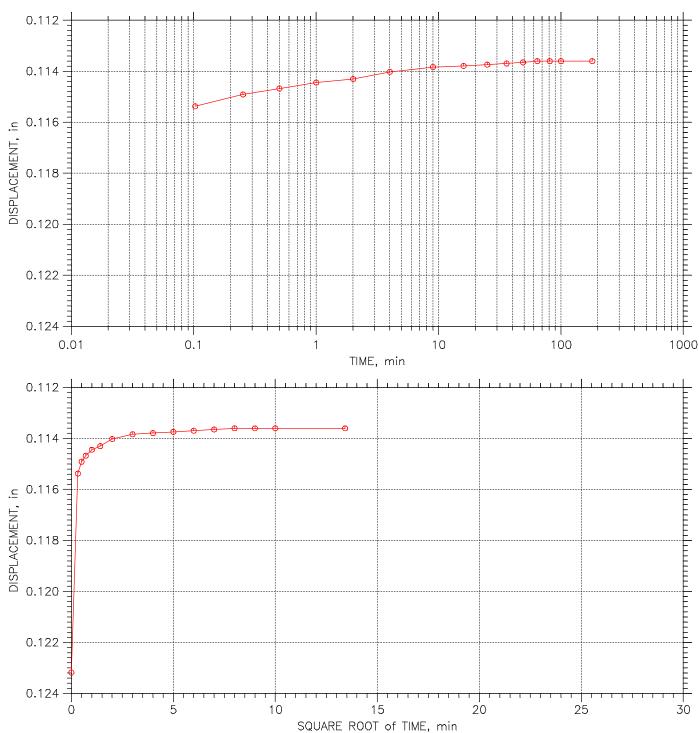




TIME CURVES

Constant Load Step: 19 of 23

Stress: 16. tsf

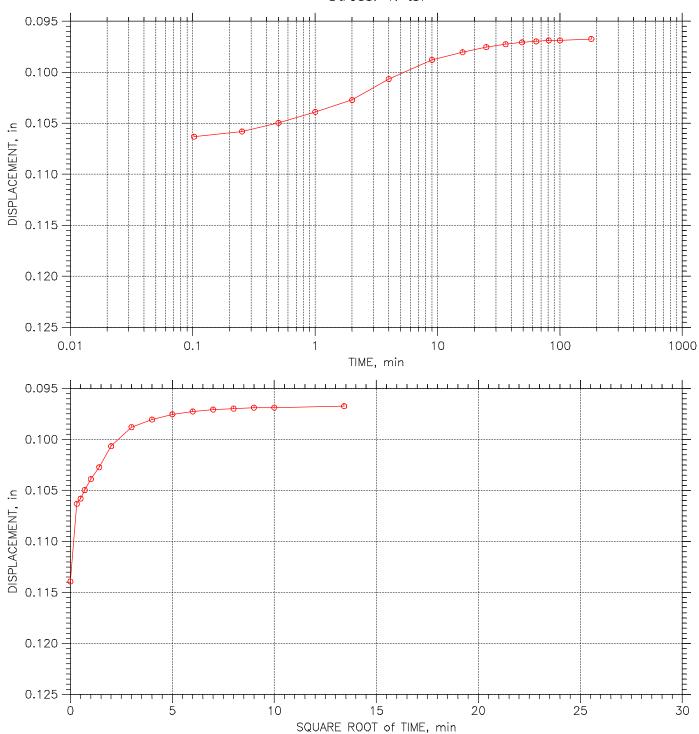


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
<b>ierracon</b>	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.0$	.251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 20 of 23

Stress: 4. tsf

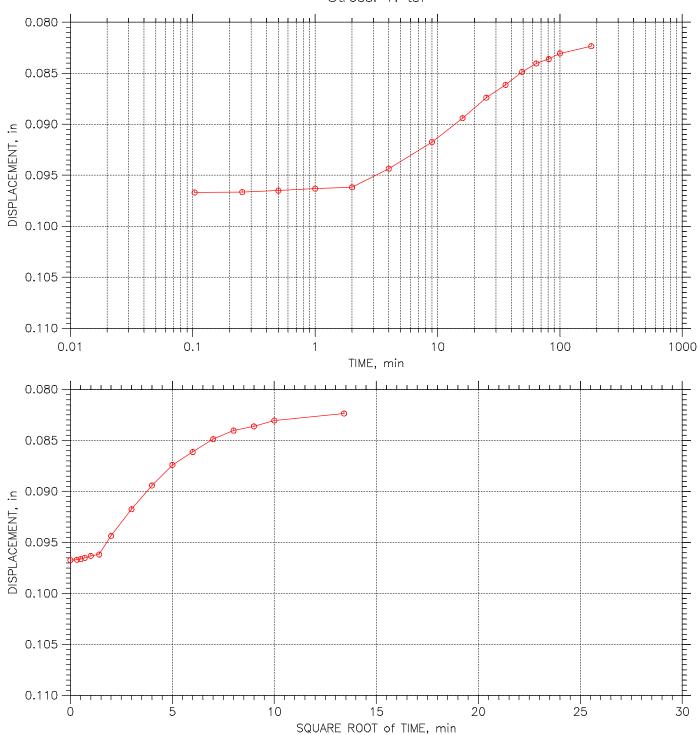


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052		
Fierracon	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM		
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'		
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY (CL)				
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.0$	.251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 21 of 23

Stress: 1. tsf

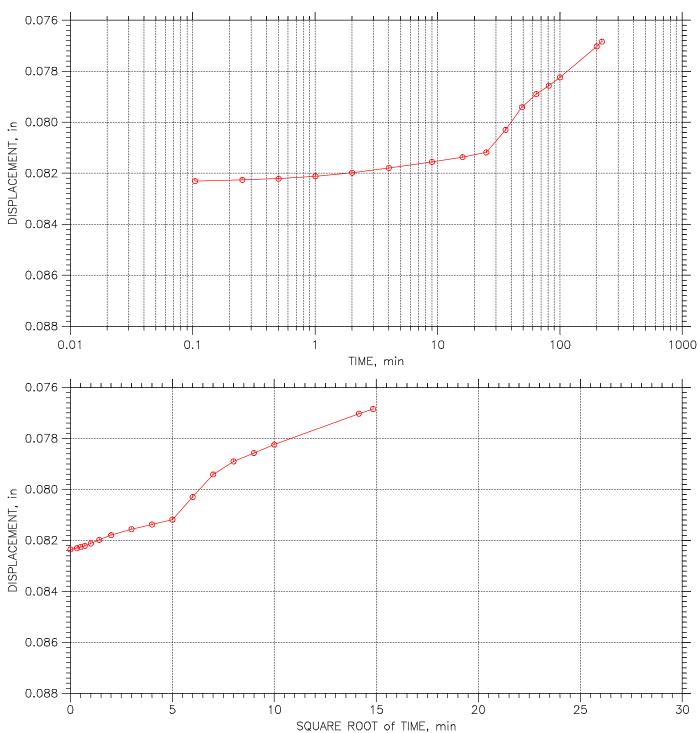


erracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 3.3 tsf Cc = 0.251 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

TIME CURVES

Constant Load Step: 22 of 23

Stress: 0.5 tsf

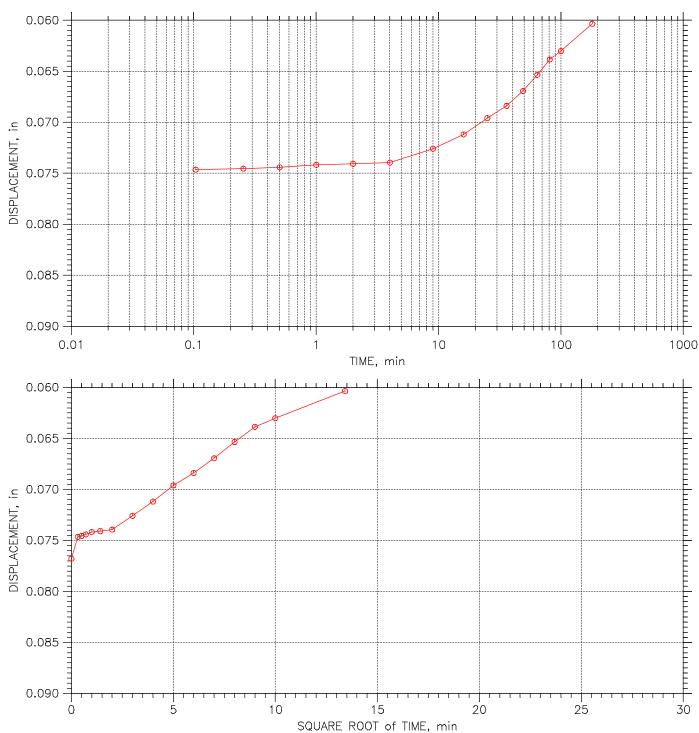


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
<b>Ferracon</b>	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'	
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: $Pc = 3.3 \text{ tsf}$ $Cc = 0.$	.251 Ccr = 0.064 TEST PERFORM	ED AS PER ASTM D2435	

TIME CURVES

Constant Load Step: 23 of 23

Stress: 0.125 tsf



Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 3.3 tsf Cc = 0.251 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435		

Project: PULLIAM PROPERTY REDEVEL Location: GREEN BAY, WI
Boring No.: BW2-22 Tested By: IT/ED
Sample No.: ST-1 Test Date: 9/29/2022
Test No.: BW23537CON Sample Type: 3" ST

Project No.: 11225052 Checked By: BCM Depth: 35.0'-37.0' Elevation: ----



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 3.3 tsf Cc = 0.251 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

Estimated Specific Gravity: 2.73 Liquid Limit: 35
Initial Void Ratio: 0.70 Plastic Limit: 13
Final Void Ratio: 0.56 Plasticity Index: 22

Initial Height: 0.75 in Specimen Diameter: 2.50 in

	Before Consolidation		After Consol	idation
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	C-178	RING	RING	E-2
Wt. Container + Wet Soil, gm	141.94	194.08	193.77	152.05
Wt. Container + Dry Soil, gm	121.87	174.12	174.12	131.81
Wt. Container, gm	24.37	77.16	77.16	31.95
Wt. Dry Soil, gm	97.5	96.958	96.958	99.86
Water Content, %	20.58	20.59	20.27	20.27
Void Ratio		0.70	0.56	
Degree of Saturation, %		80.80	99.00	
Dry Unit Weight, pcf		100.51	109.33	

Project: PULLIAM PROPERTY REDEVEL
Boring No.: BW2-22
Sample No.: ST-1
Test No.: BW23537CON

Location: GREEN BAY, WI
Tested By: IT/ED
Test Date: 9/29/2022
Sample Type: 3" ST

Checked By: BCM
Depth: 35.0'-37.0'
Elevation: ----

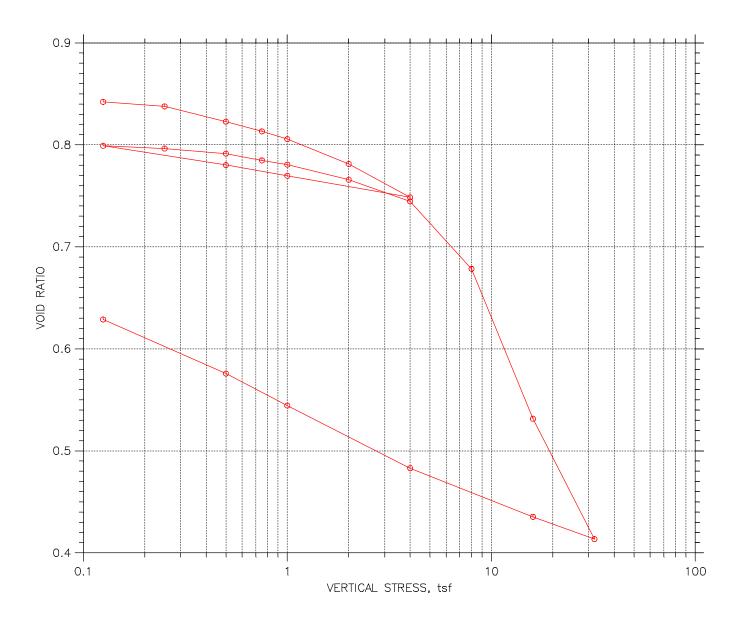
Project No.: 11225052



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 3.3 tsf Cc = 0.251 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

	Applied	Final	Void	Strain	т50	Fitting	Coeffi	cient of Con	solidation
	Stress	Displacement	Ratio	at End	Sq.Rt.	Log	Sq.Rt.	Log	Ave.
	tsf	in		8	min	min	ft^2/sec	ft^2/sec	ft^2/sec
1	0.125	-0.01084	0.720	-1.45	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
2	0.25	-0.009202	0.716	-1.23	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
3	0.5	-0.003202	0.710	-0.66	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
4	0.75	-0.001588	0.699	-0.21	0.1	0.0	3.42e-005	0.00e+000	3.42e-005
5	1	0.001300	0.687	0.50	27.5	0.0	1.16e-007	0.00e+000	1.16e-007
6	2	0.003737	0.647	2.90	0.1	0.0	3.26e-005	0.00e+000	3.26e-005
7	1	0.02107	0.662	2.01	0.9	0.0	3.51e-006	0.00e+000	3.51e-006
8	0.5	0.009389	0.674	1.25	3.6	0.0	8.50e-007	0.00e+000	8.50e-007
9	0.125	-0.001775	0.700	-0.24	15.3	5.3	2.07e-007	5.97e-007	3.07e-007
10	0.25	-4.671e-005	0.696	-0.01	3.7	0.0	8.58e-007	0.00e+000	8.58e-007
11	0.23	0.003036	0.689	0.41	2.1	0.0	1.49e-006	0.00e+000	1.49e-006
12	0.75	0.003036	0.679	0.41	0.9	0.0	3.47e-006	0.00e+000	3.47e-006
13		0.007147					5.35e-007	0.00e+000	5.35e-007
	1		0.670	1.50	5.8	0.0	3.36e-007	0.00e+000	
14	2	0.02261	0.644	3.02	0.9	0.0			3.36e-006
15	4	0.03985	0.605	5.32	3.8	0.5	7.64e-007	5.62e-006	1.35e-006
16	8	0.06063	0.558	8.10	3.9	0.0	7.21e-007	0.00e+000	7.21e-007
17	16	0.08763	0.497	11.71	2.1	0.0	1.24e-006	0.00e+000	1.24e-006
18	32	0.1232	0.417	16.46	2.1	0.0	1.12e-006	0.00e+000	1.12e-006
19	16	0.1136	0.438	15.18	0.1	0.0	2.32e-005	0.00e+000	2.32e-005
20	4	0.09674	0.476	12.93	1.0	0.0	2.38e-006	0.00e+000	2.38e-006
21	1	0.08235	0.509	11.00	21.1	13.6	1.18e-007	1.82e-007	1.43e-007
22	0.5	0.07684	0.522	10.27	56.2	41.6	4.54e-008	6.14e-008	5.22e-008
23	0.125	0.06035	0.559	8.06	58.8	0.0	4.49e-008	0.00e+000	4.49e-008

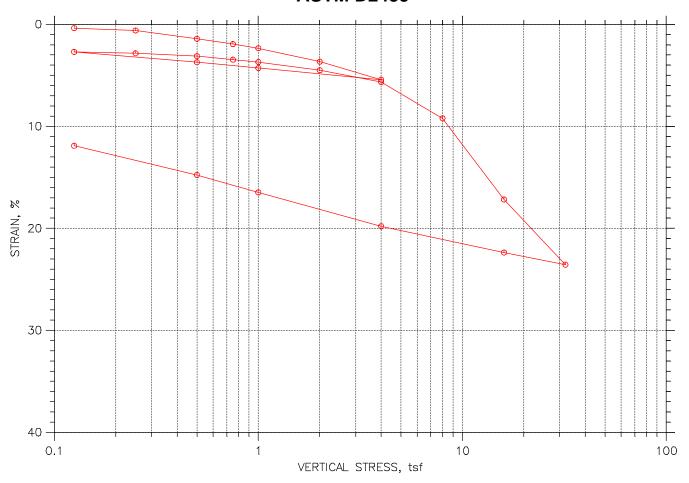
# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435

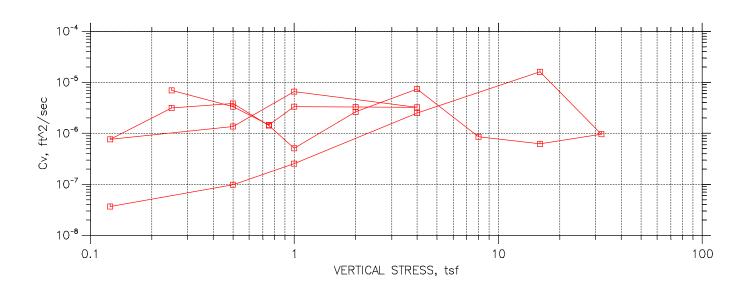


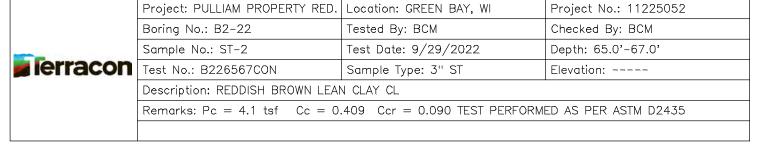
					Before Test	After Test
				Water Content, %	30.14	23.14
Preconsolido	ıtion Pressure: 4.1	l tsf		Dry Unit Weight, pcf	92.51	105.
Compression Index: 0.409		Saturation, %	97.29	100.82		
Diameter: 2.502 in Height: 0.7461 in		Void Ratio	0.85	0.63		
LL: 41	PL: 15	PI: 26	GS: 2.74			

	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM	
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'	
<b>ierracon</b>	Test No.: B226567CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY CL			
	Remarks: Pc = 4.1 tsf			

## ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



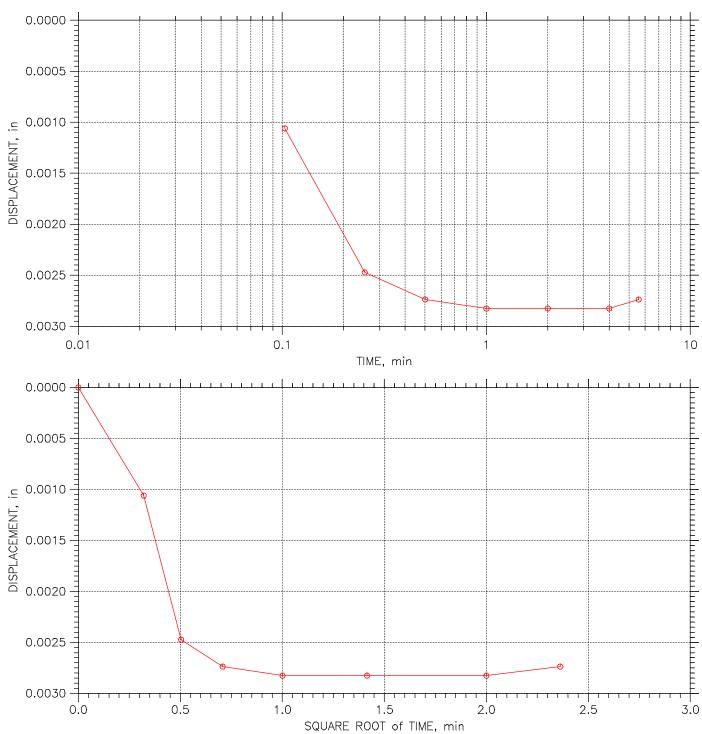




TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf

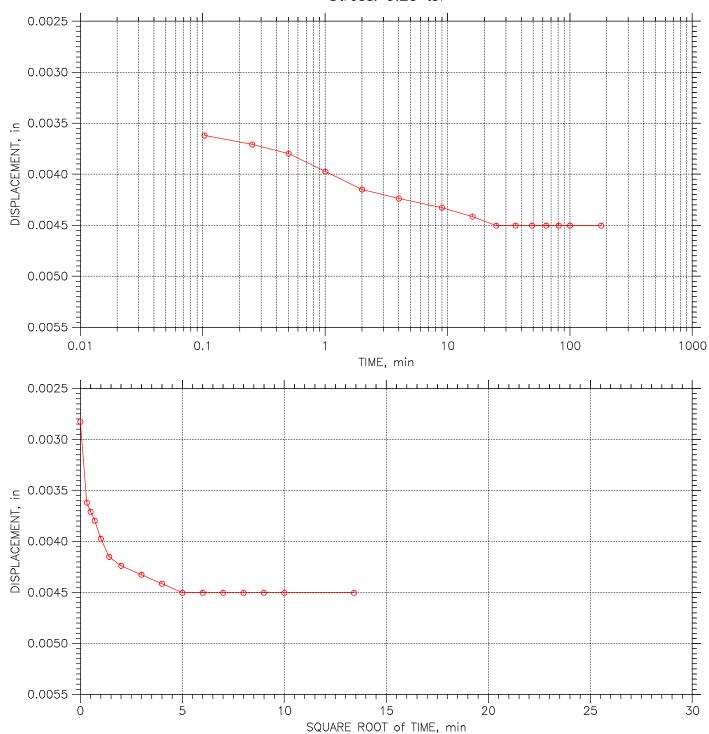


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM	
Ferracon	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'	
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY CL			
	Remarks: $Pc = 4.1 \text{ tsf}$ $Cc = 0.$	.409 Ccr = 0.090 TEST PERFORM	ED AS PER ASTM D2435	

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf

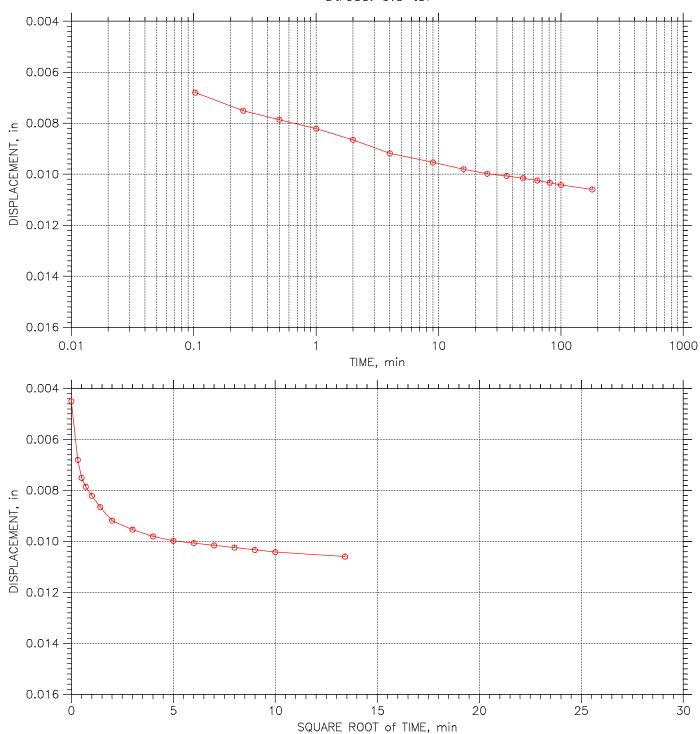


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052		
<b>Fierracon</b>	Boring No.: B2-22	Tested By: BCM	Checked By: BCM		
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'		
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEA	Description: REDDISH BROWN LEAN CLAY CL			
	Remarks: Pc = 4.1 tsf Cc = 0	Remarks: Pc = 4.1 tsf			

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf

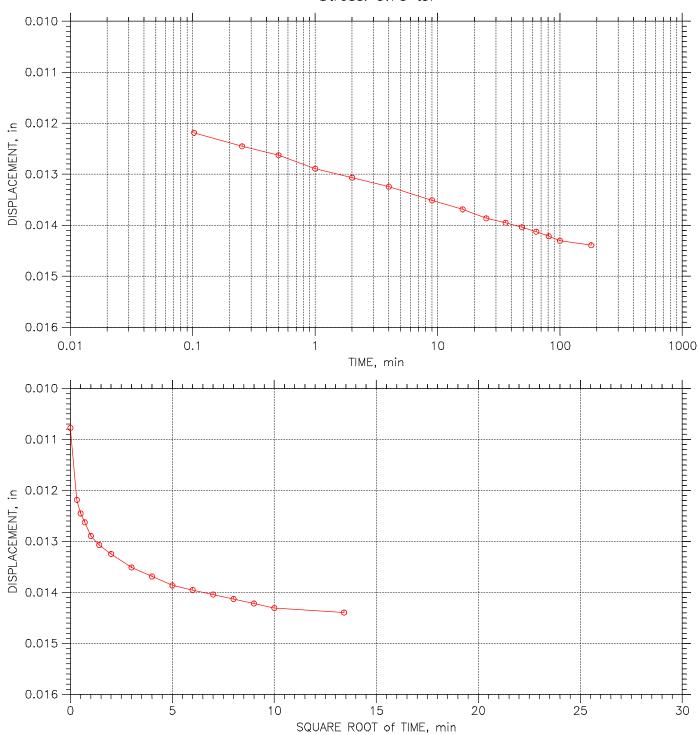


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM	
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'	
<b>ierracon</b>	Test No.: B226567CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY CL			
	Remarks: Pc = 4.1 tsf			

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf

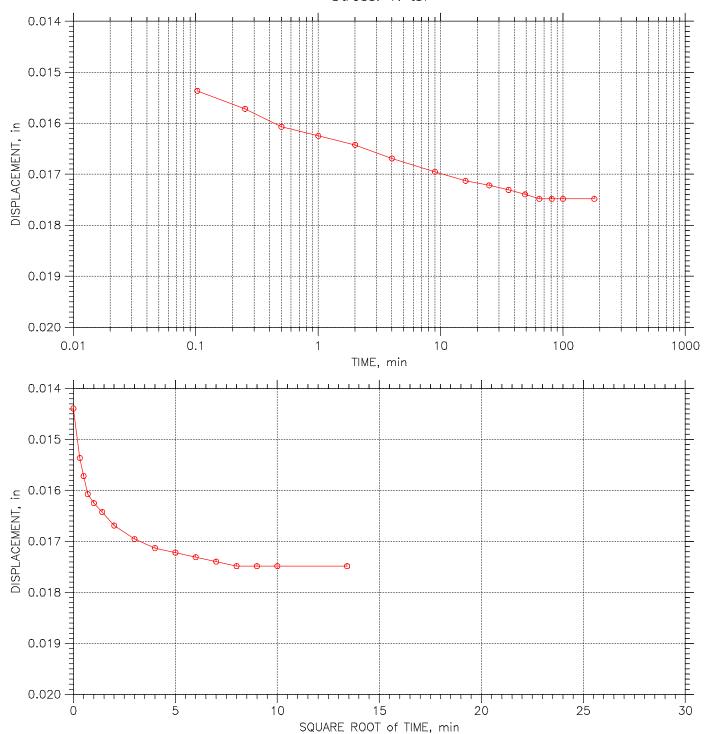


Fierracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: $Pc = 4.1 \text{ tsf}$ $Cc = 0.$	409 Ccr = 0.090 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf

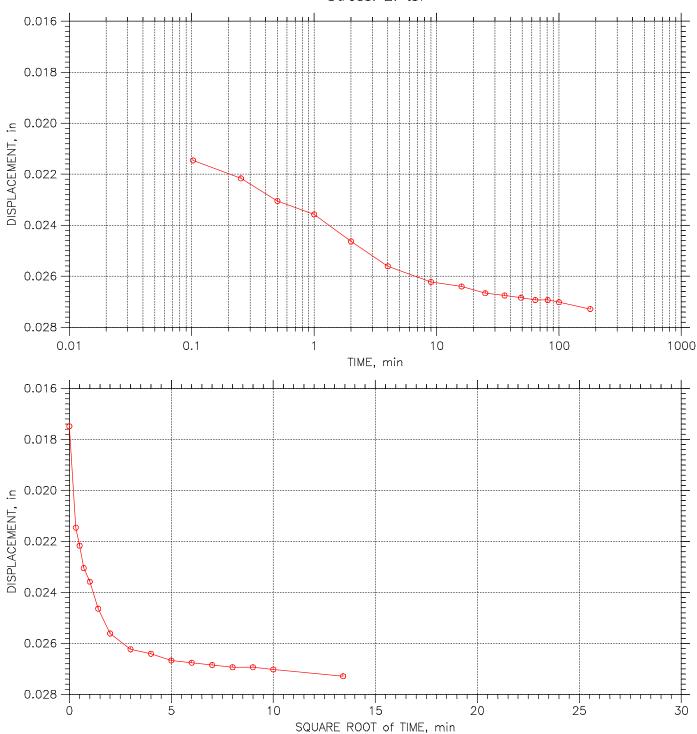


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.	.409 Ccr = 0.090 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf

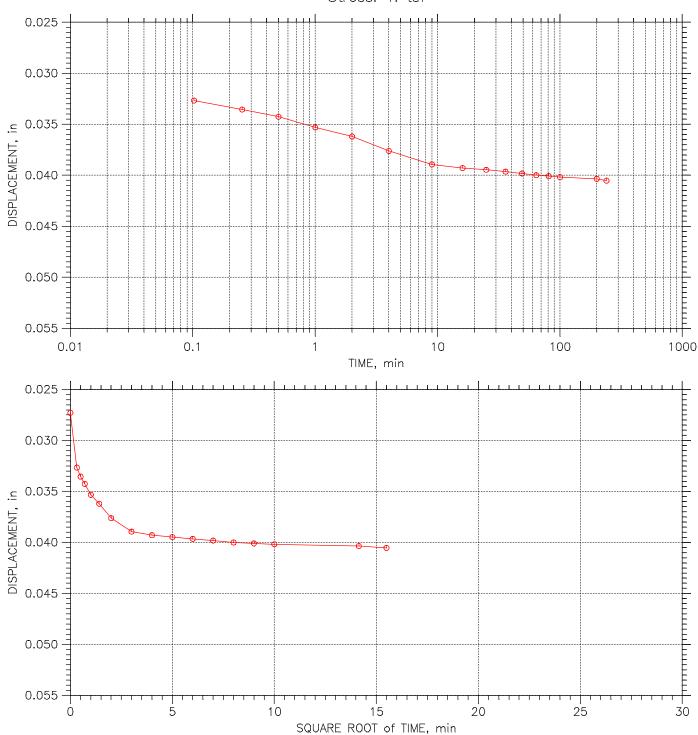


Fierracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf		

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf

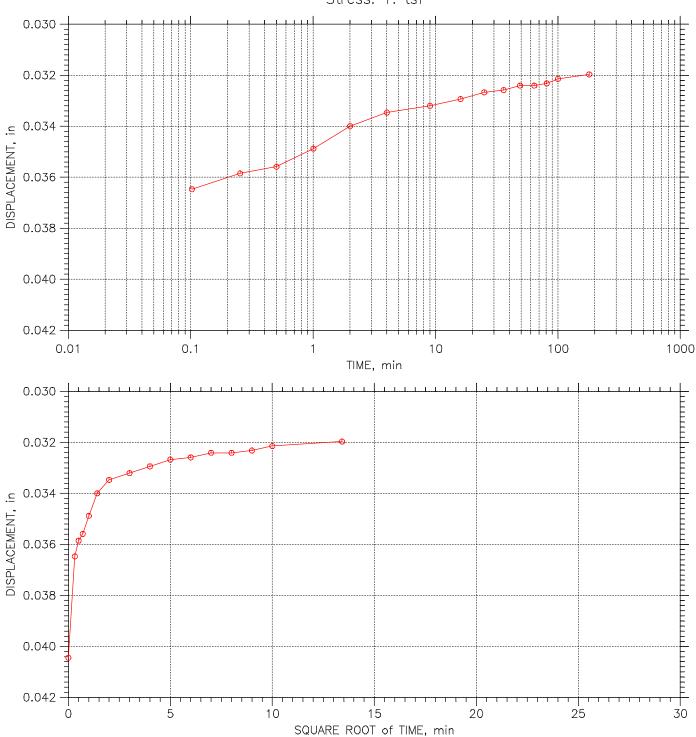


Fierracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: $Pc = 4.1 \text{ tsf}$ $Cc = 0$	.409 Ccr = 0.090 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf

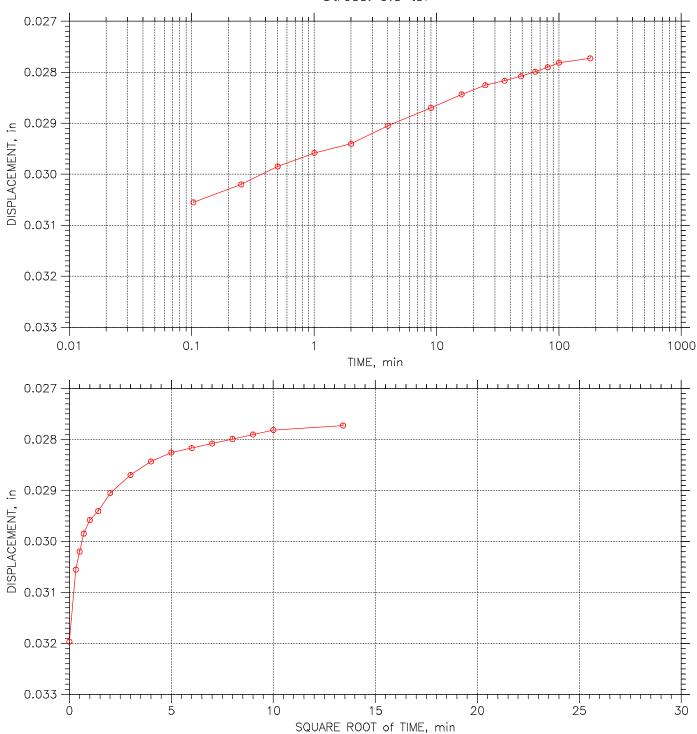


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: $Pc = 4.1 \text{ tsf}$ $Cc = 0.1 \text{ cs}$	.409 Ccr = 0.090 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf

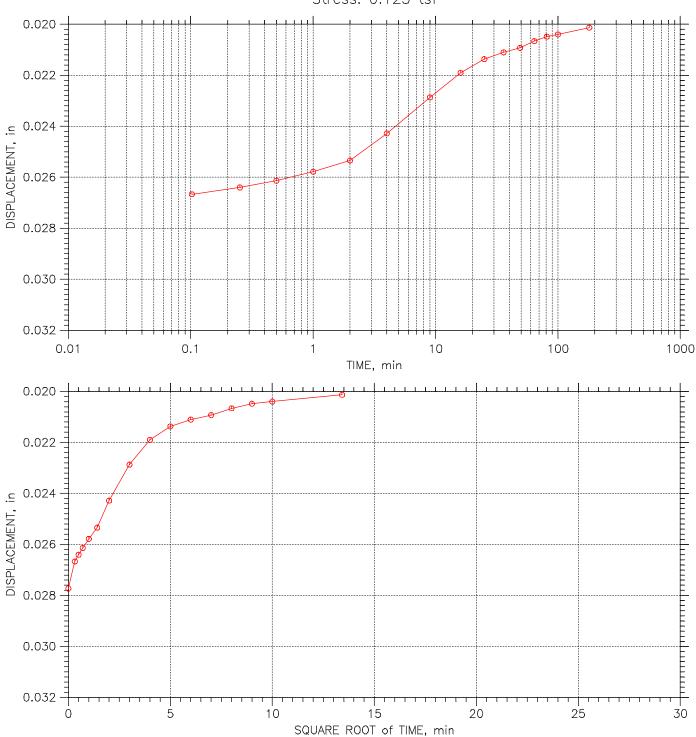


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.	.409 Ccr = 0.090 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf

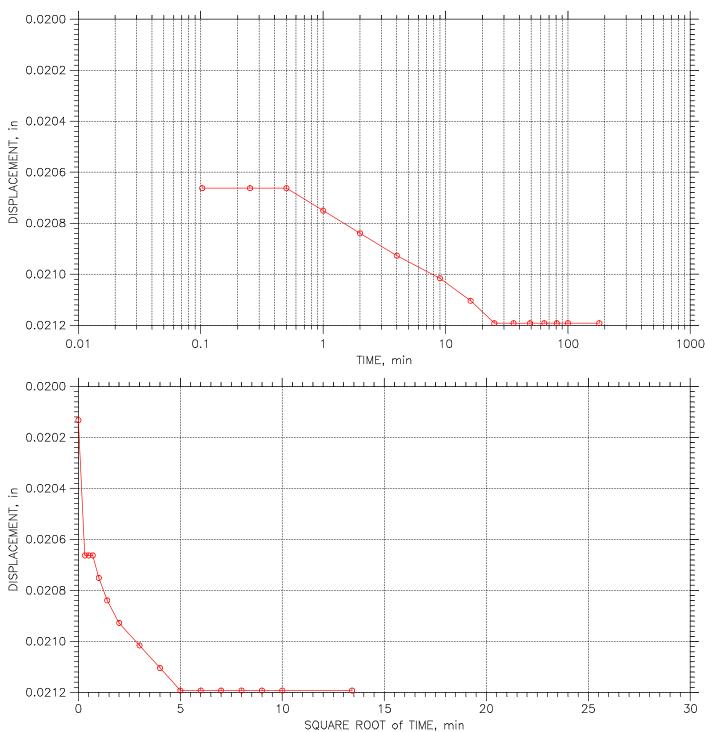


<b>ierracon</b>	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf		

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf

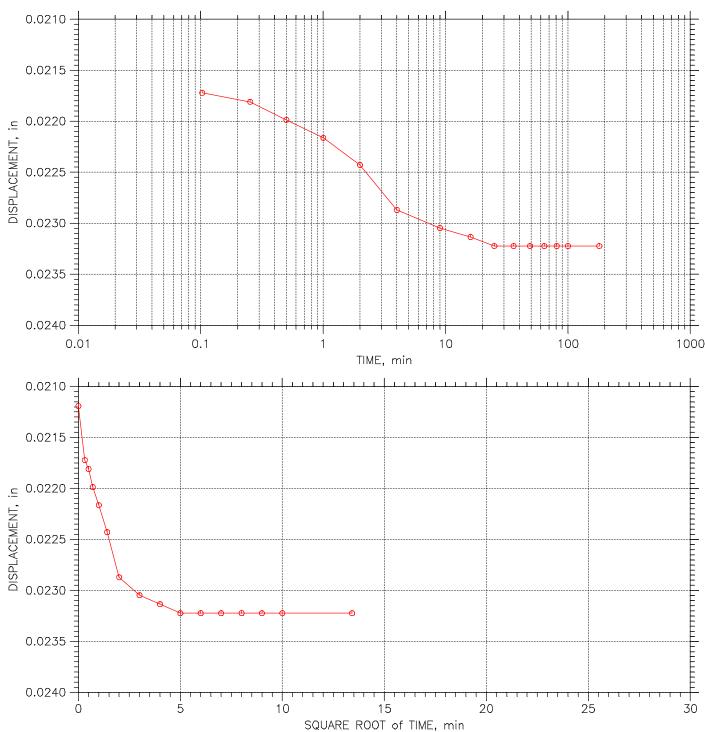


Fierracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: $Pc = 4.1 \text{ tsf}$ $Cc = 0.$	409 Ccr = 0.090 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf

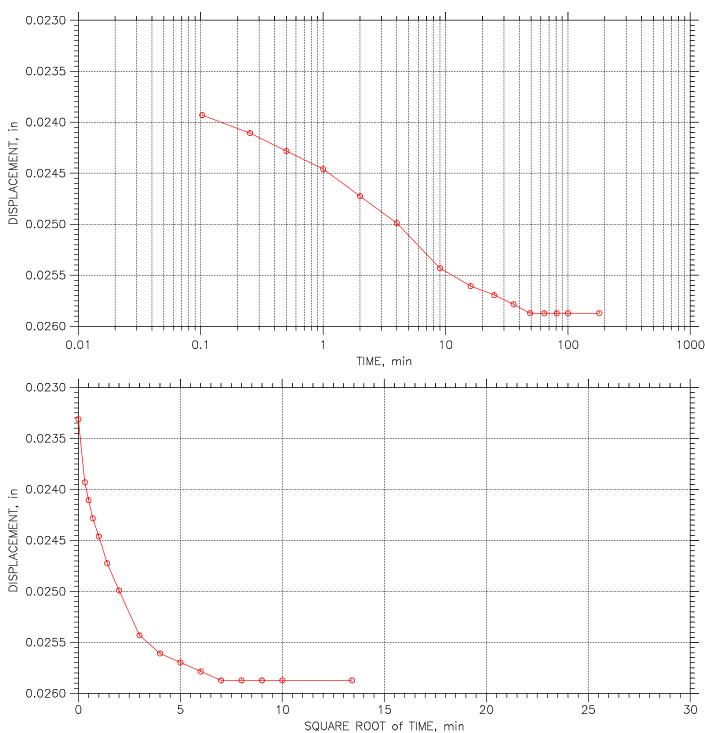


Fierracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: $Pc = 4.1 \text{ tsf}$ $Cc = 0$	.409 Ccr = 0.090 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf

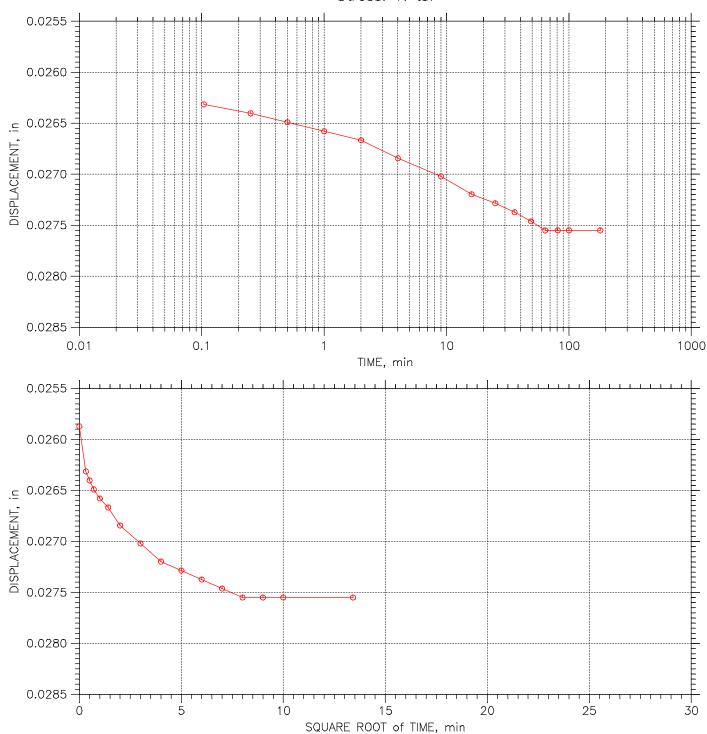


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: $Pc = 4.1 \text{ tsf}$ $Cc = 0.1 \text{ cs}$	.409 Ccr = 0.090 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf

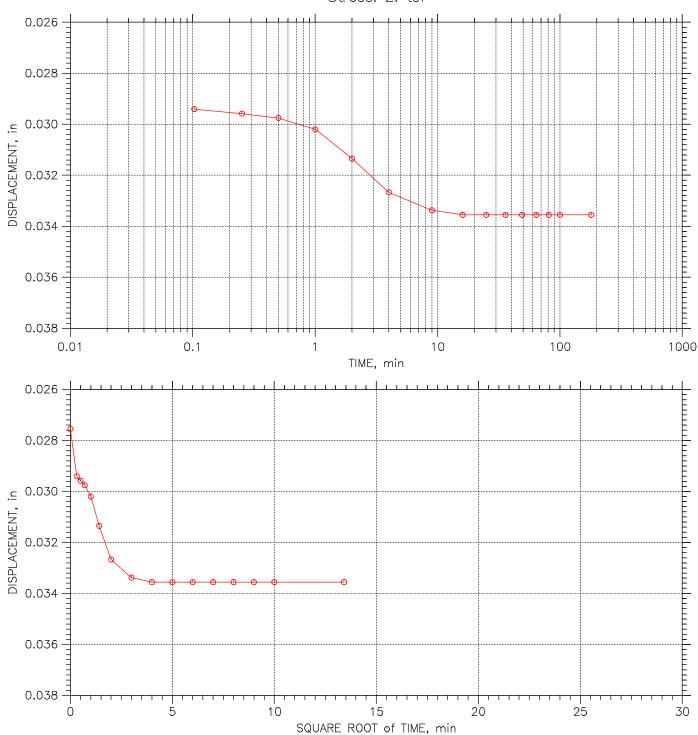


erracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: $Pc = 4.1 \text{ tsf}$ $Cc = 0.0$	.409 Ccr = 0.090 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf

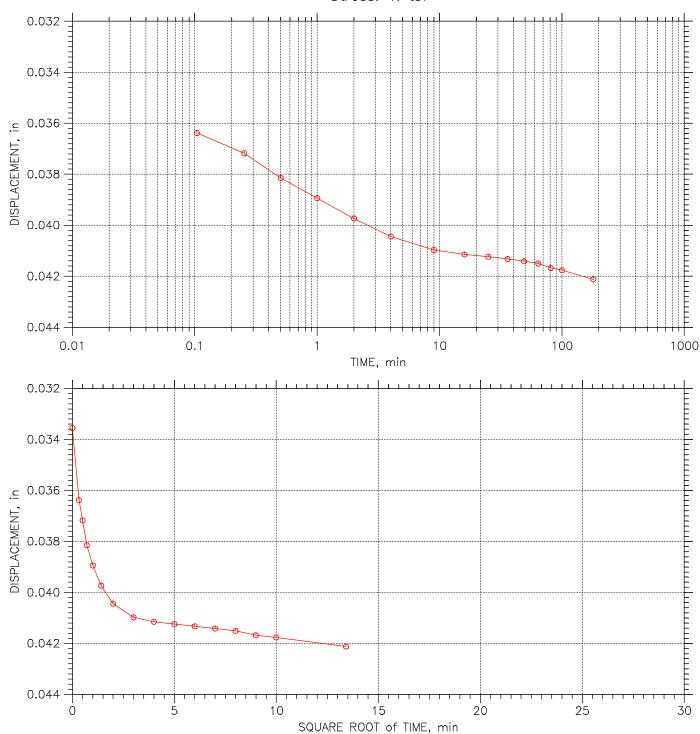


Ferracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.	.409 Ccr = 0.090 TEST PERFORM	ED AS PER ASTM D2435

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf

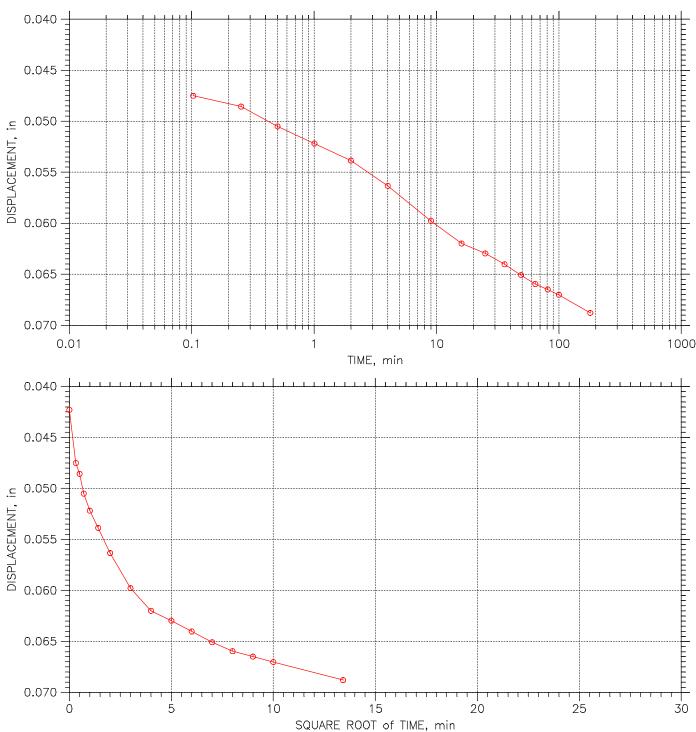


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM		
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'		
erracon	Test No.: B226567CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY CL				
	Remarks: Pc = 4.1 tsf				

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf

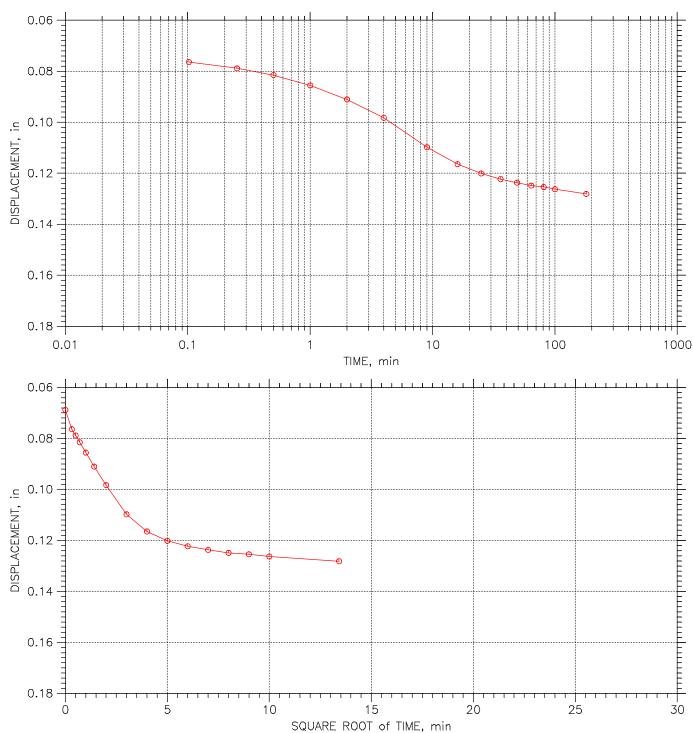


<b>Fierracon</b>	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052	
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM	
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'	
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY CL			
	Remarks: Pc = 4.1 tsf			

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf

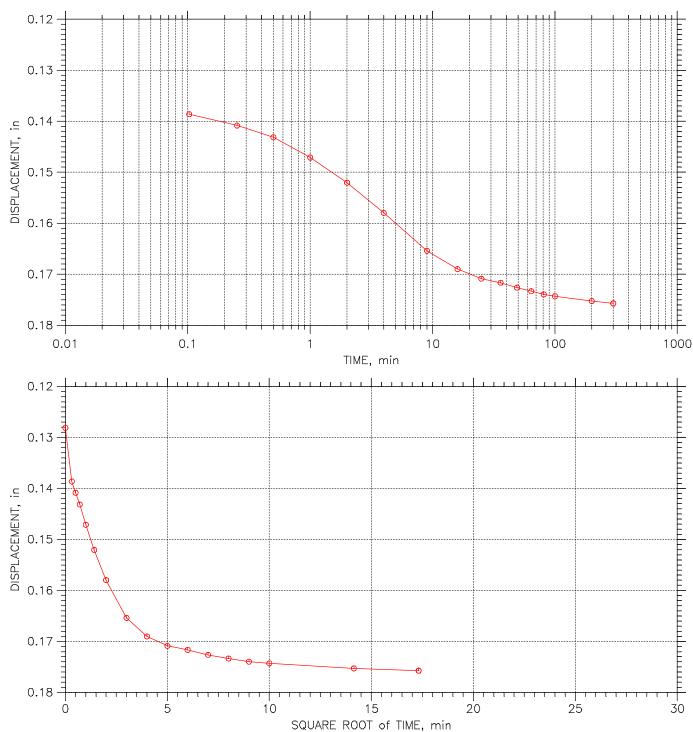


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM		
Fierracon		Test Date: 9/29/2022	Depth: 65.0'-67.0'		
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAD	Description: REDDISH BROWN LEAN CLAY CL			
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435				

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf

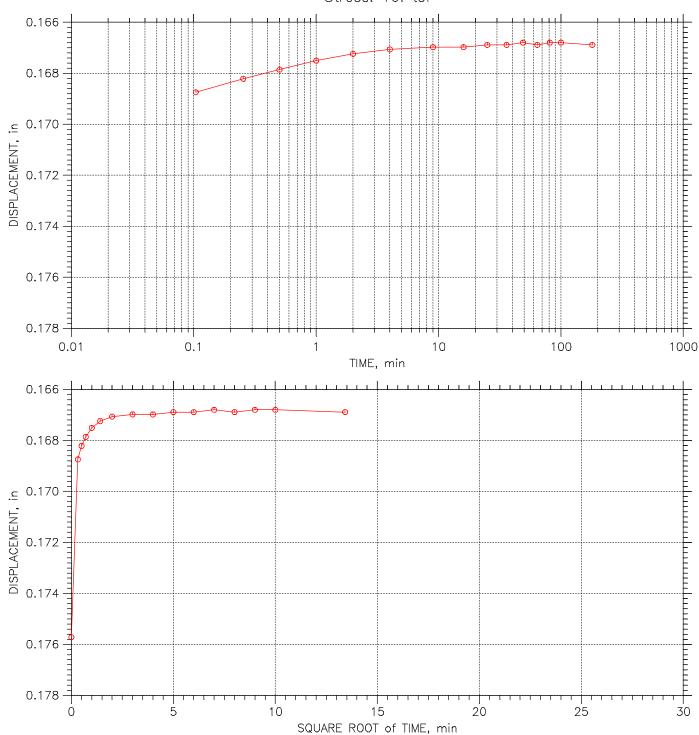


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052			
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM			
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'			
erracon	Test No.: B226567CON	Sample Type: 3" ST	Elevation:			
	Description: REDDISH BROWN LEAD	Description: REDDISH BROWN LEAN CLAY CL				
	Remarks: Pc = 4.1 tsf					

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf

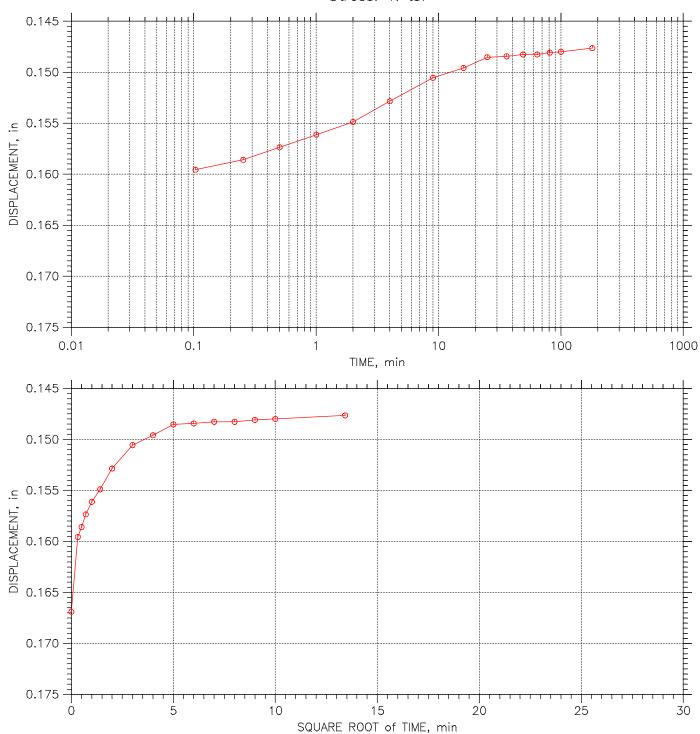


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052		
Ferracon	Boring No.: B2-22	Tested By: BCM	Checked By: BCM		
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'		
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY CL				
	Remarks: Pc = 4.1 tsf				

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf

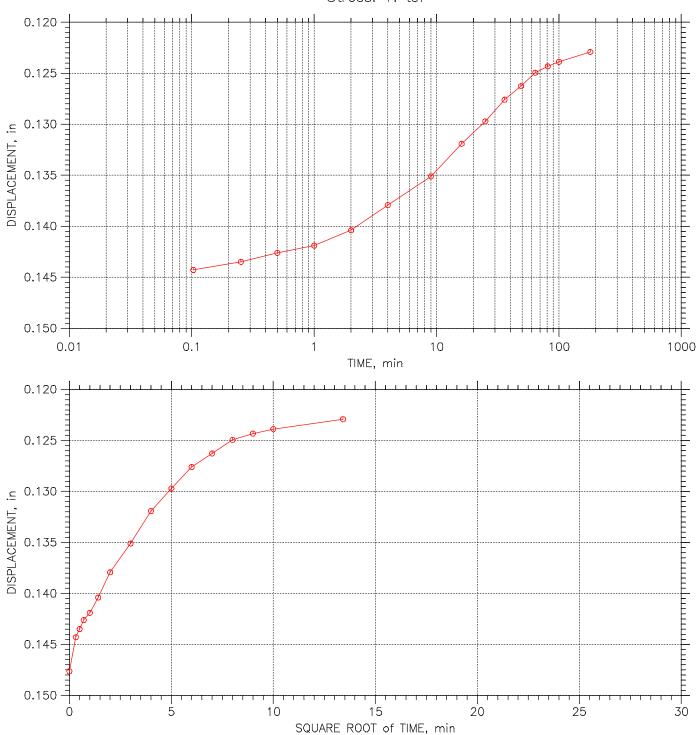


erracon	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM		
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'		
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY CL				
	Remarks: Pc = 4.1 tsf				

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf

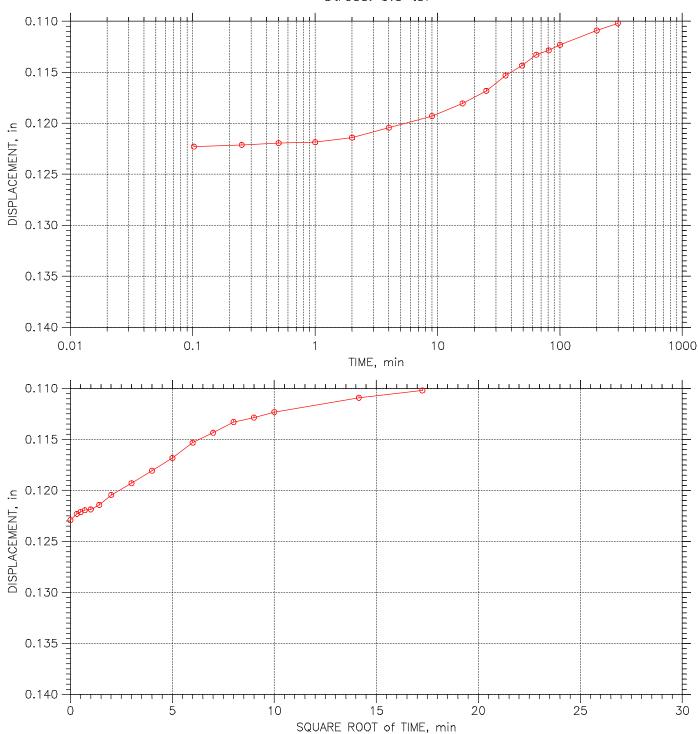


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052		
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM		
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'		
erracon	Test No.: B226567CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY CL				
	Remarks: Pc = 4.1 tsf				

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf

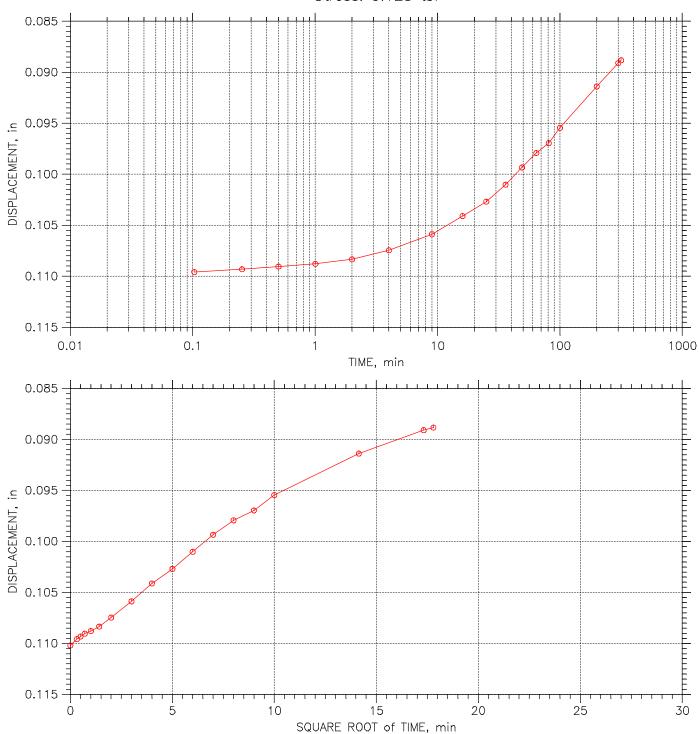


	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052		
Fierracon	Boring No.: B2-22	Tested By: BCM	Checked By: BCM		
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'		
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:		
	Description: REDDISH BROWN LEAN CLAY CL				
	Remarks: Pc = 4.1 tsf				

TIME CURVES

Constant Load Step: 24 of 24

Stress: 0.125 tsf



	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052			
Ferracon	Boring No.: B2-22	Tested By: BCM	Checked By: BCM			
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'			
	Test No.: B226567CON	Sample Type: 3" ST	Elevation:			
	Description: REDDISH BROWN LEAN CLAY CL					
	Remarks: $Pc = 4.1 \text{ tsf}$ $Cc = 0$	Remarks: Pc = 4.1 tsf				

Project: PULLIAM PROPERTY RED. Location: GREEN BAY, WI Boring No.: B2-22 Tested By: BCM Boring No.: B2-22 Sample No.: ST-2 Test No.: B226567CON

Test Date: 9/29/2022 Sample Type: 3" ST

Project No.: 11225052 Checked By: BCM Depth: 65.0'-67.0' Elevation: ----



Soil Description: REDDISH BROWN LEAN CLAY CL Remarks: Pc = 4.1 tsf  $\,$  Cc = 0.409  $\,$  Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435

Estimated Specific Gravity: 2.74 Liquid Limit: 41
Initial Void Ratio: 0.85 Plastic Limit: 15
Final Void Ratio: 0.63 Plasticity Index: 26

Initial Height: 0.75 in Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation		
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings	
Container ID	4	RING	RING	38	
Wt. Container + Wet Soil, gm	158.2	192.22	185.98	140.78	
Wt. Container + Dry Soil, gm	127.13	165.38	165.38	120.15	
Wt. Container, gm	21.35	76.33	76.33	30.98	
Wt. Dry Soil, gm	105.78	89.048	89.048	89.17	
Water Content, %	29.37	30.14	23.14	23.14	
Void Ratio		0.85	0.63		
Degree of Saturation, %		97.29	100.82		
Dry Unit Weight, pcf		92.515	105.02		

Project: PULLIAM PROPERTY RED. Location: GREEN BAY, WI
Boring No.: B2-22 Tested By: BCM
Sample No.: ST-2 Test Date: 9/29/2022
Test No.: B226567CON Sample Type: 3" ST

Sample Type: 3" ST

Project No.: 11225052 Checked By: BCM Depth: 65.0'-67.0' Elevation: ----

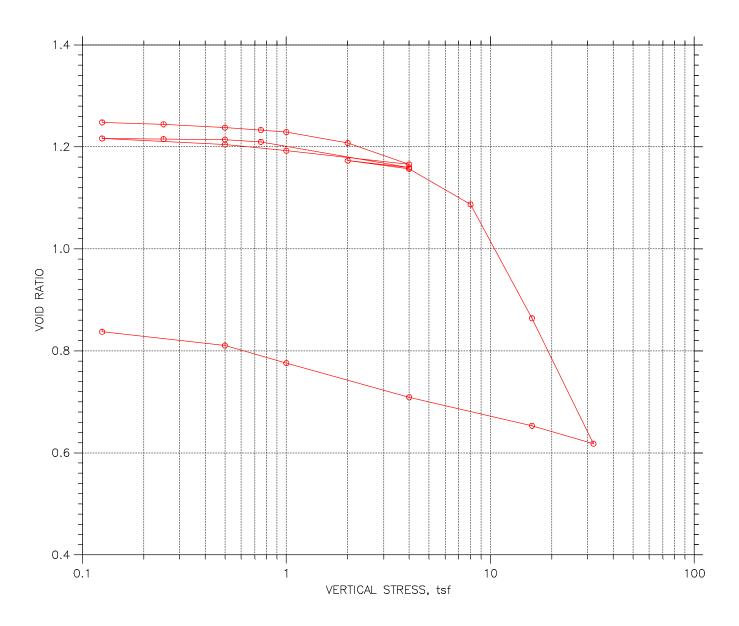


Test No.: B226567CON

Soil Description: REDDISH BROWN LEAN CLAY CL Remarks: Pc = 4.1 tsf  $\,$  Cc = 0.409  $\,$  Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435

	Applied	Final	Void	Strain	T50	Fitting	Coeffi	cient of Con	solidation
	Stress	Displacement	Ratio	at End	Sq.Rt.	Log	Sq.Rt.	Log	Ave.
	tsf	in		ક	min	min	ft^2/sec	ft^2/sec	ft^2/sec
1	0.125	0.002737	0.040	0.37	0.0	0 0	0.00e+000	0.00e+000	0.00e+000
1			0.842	0.37	0.0	0.0			
2	0.25	0.004503	0.838	0.60	0.5	0.0	6.93e-006	0.00e+000	6.93e-006
3	0.5	0.0106	0.823	1.42	0.9	0.0	3.33e-006	0.00e+000	3.33e-006
4	0.75	0.01439	0.813	1.93	2.1	0.0	1.46e-006	0.00e+000	1.46e-006
5	1	0.01748	0.806	2.34	0.9	0.0	3.32e-006	0.00e+000	3.32e-006
6	2	0.02728	0.781	3.66	0.9	0.0	3.30e-006	0.00e+000	3.30e-006
7	4	0.04053	0.748	5.43	0.9	0.0	3.23e-006	0.00e+000	3.23e-006
8	1	0.03196	0.770	4.28	0.4	0.0	6.55e-006	0.00e+000	6.55e-006
9	0.5	0.02773	0.780	3.72	3.8	0.5	7.62e-007	6.26e-006	1.36e-006
10	0.125	0.02013	0.799	2.70	3.8	4.1	7.85e-007	7.33e-007	7.58e-007
11	0.25	0.02119	0.796	2.84	1.0	0.0	3.15e-006	0.00e+000	3.15e-006
12	0.5	0.02322	0.791	3.11	0.8	0.0	3.85e-006	0.00e+000	3.85e-006
13	0.75	0.02587	0.785	3.47	2.1	0.0	1.41e-006	0.00e+000	1.41e-006
14	1	0.02755	0.781	3.69	5.8	0.0	5.06e-007	0.00e+000	5.06e-007
15	2	0.03355	0.766	4.50	1.1	0.0	2.65e-006	0.00e+000	2.65e-006
16	4	0.04212	0.745	5.65	0.5	0.3	5.93e-006	9.61e-006	7.34e-006
17	8	0.06879	0.678	9.22	3.8	2.6	7.20e-007	1.05e-006	8.55e-007
18	16	0.1281	0.531	17.17	3.8	3.9	6.38e-007	6.11e-007	6.24e-007
19	32	0.1757	0.413	23.55	2.1	0.0	9.59e-007	0.00e+000	9.59e-007
20	16	0.1669	0.435	22.37	0.1	0.0	1.61e-005	0.00e+000	1.61e-005
21	4	0.1476	0.483	19.79	0.9	0.7	2.12e-006	2.99e-006	2.48e-006
22	1	0.1229	0.544	16.48	8.3	0.0	2.56e-007	0.00e+000	2.56e-007
23	0.5	0.1102	0.576	14.77	26.2	19.6	8.64e-008	1.15e-007	9.88e-008
24	0.125	0.08883	0.629	11.91	83.8	46.1	2.85e-008	5.17e-008	3.67e-008
27	3.123	0.00003	3.025	11.71	03.0	10.1	2.030 000	3.1,6 000	3.076 000

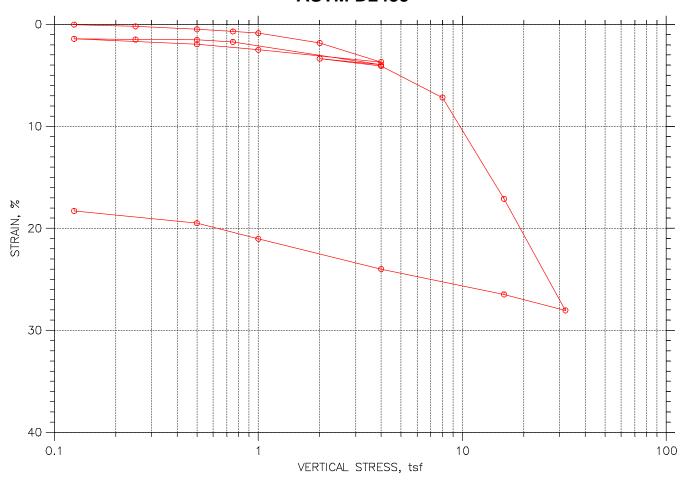
# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435

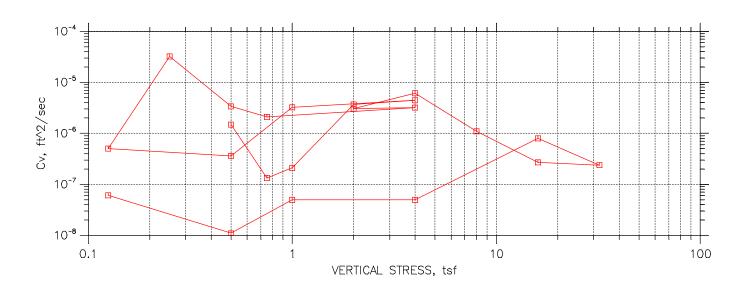


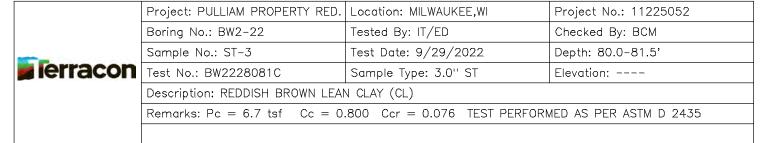
					Before Test	After Test
				Water Content, %	26.26	30.62
Preconsolidation Pressure: 6.7 tsf			Dry Unit Weight, pcf	76.63	93.78	
Compression Index: 0.8		Saturation, %	58.04	100.92		
Diameter: 2.5 in Height: 0.7433 in		Void Ratio	1.25	0.84		
LL: 45	PL: 15	PI: 30	GS: 2.76			

Fierracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.0 \text{ cs}$	800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

## ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



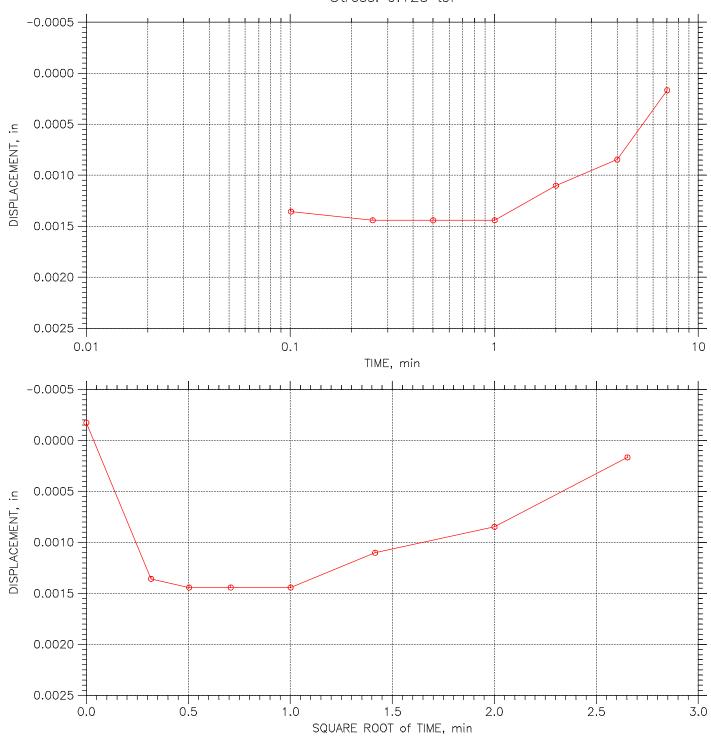




TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf

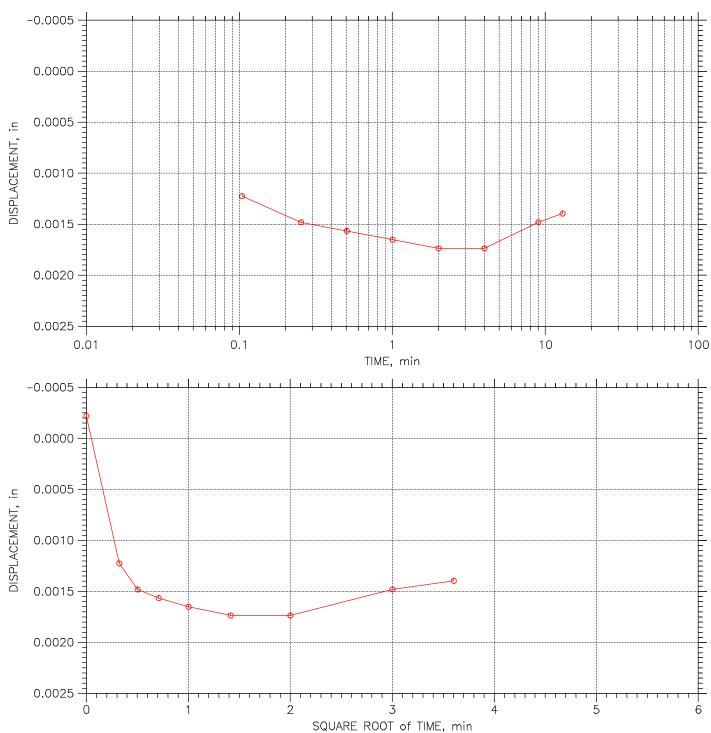


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
<b>ierracon</b>	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.$	800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf

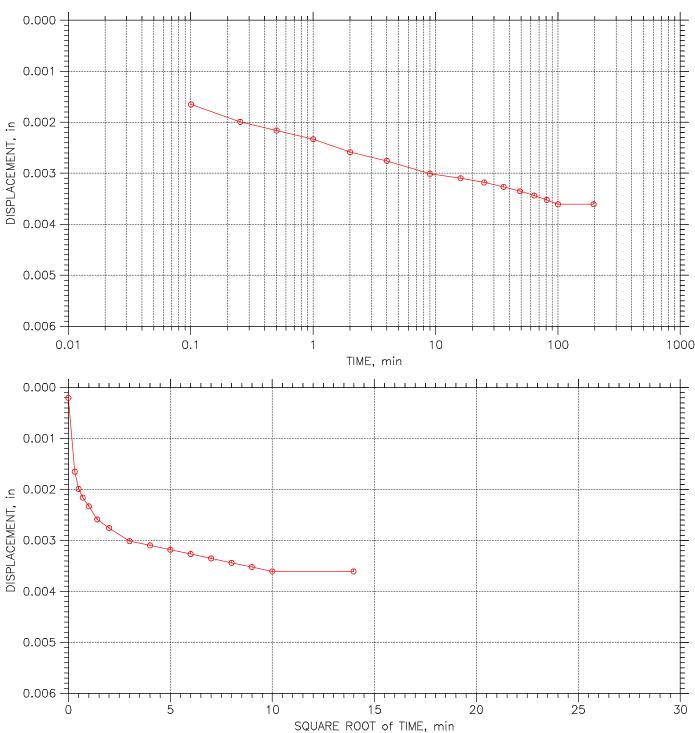


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
erracon	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.	800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf

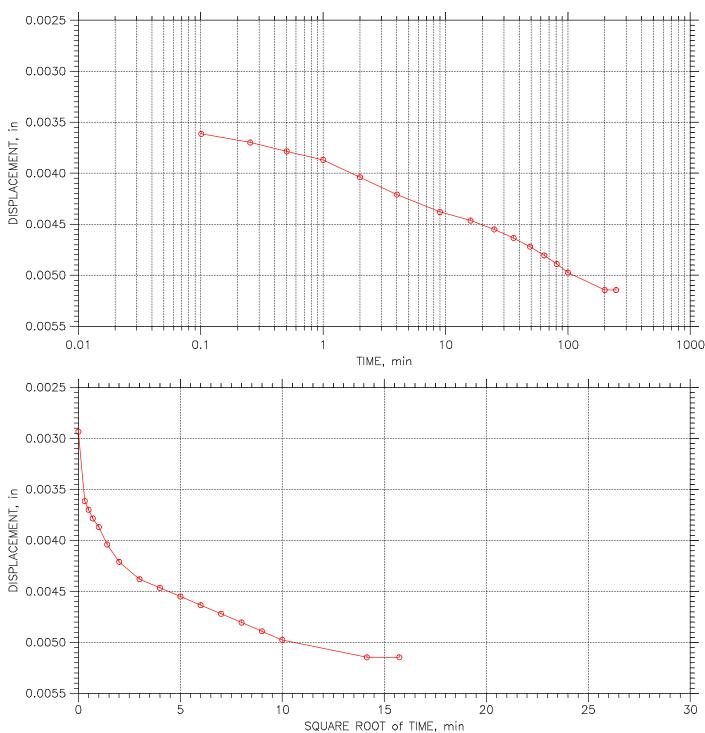


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
- 15 CO 100 A CO	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
<b>lerracon</b>	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0	.800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf

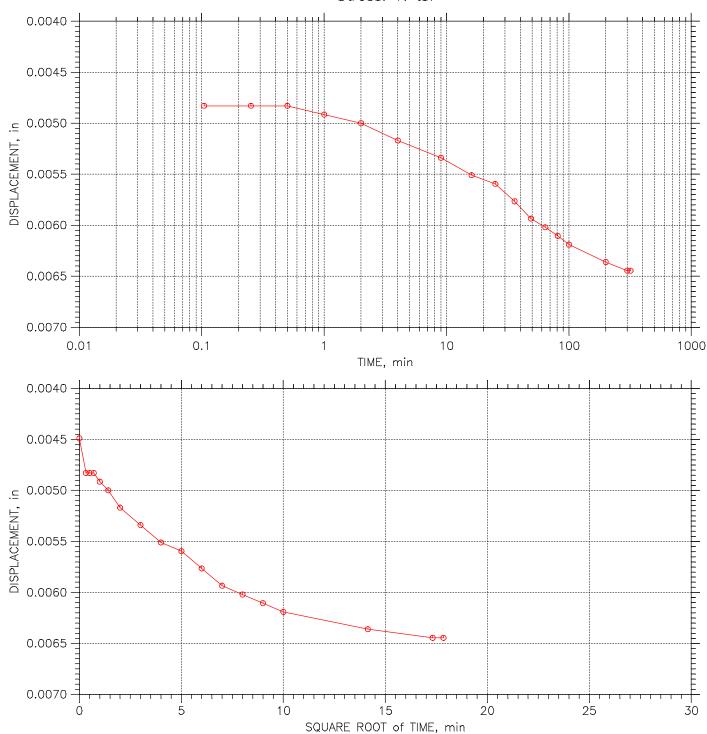


Ferracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
		Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf		

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf

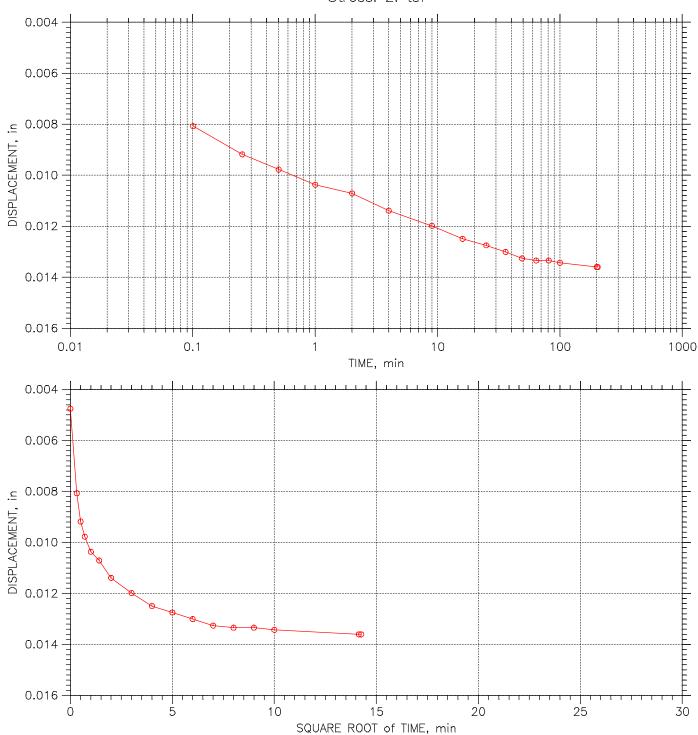


Fierracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.0 \text{ cs}$	.800 Ccr = 0.076 TEST PERFORI	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf

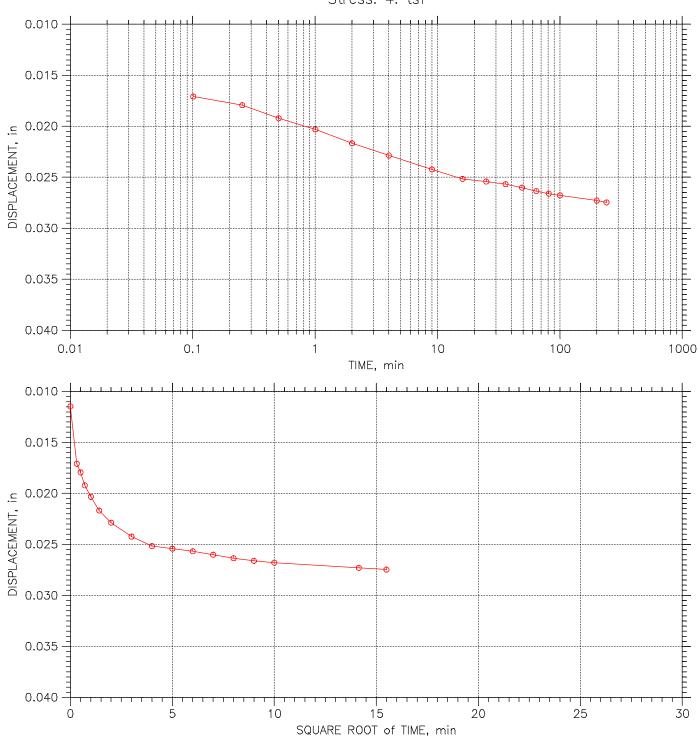


Fierracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.	.800 Ccr = 0.076 TEST PERFORI	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf

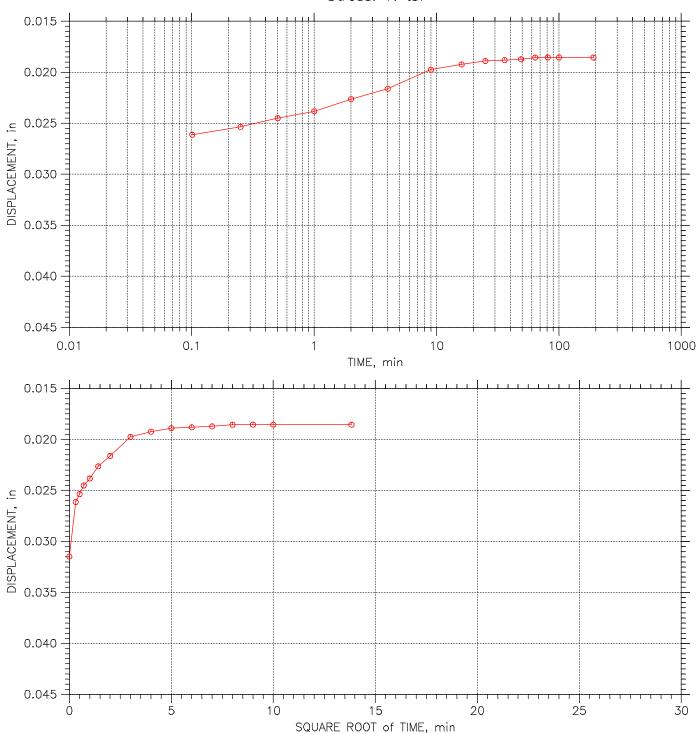


Ferracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
		Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.$	.800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf

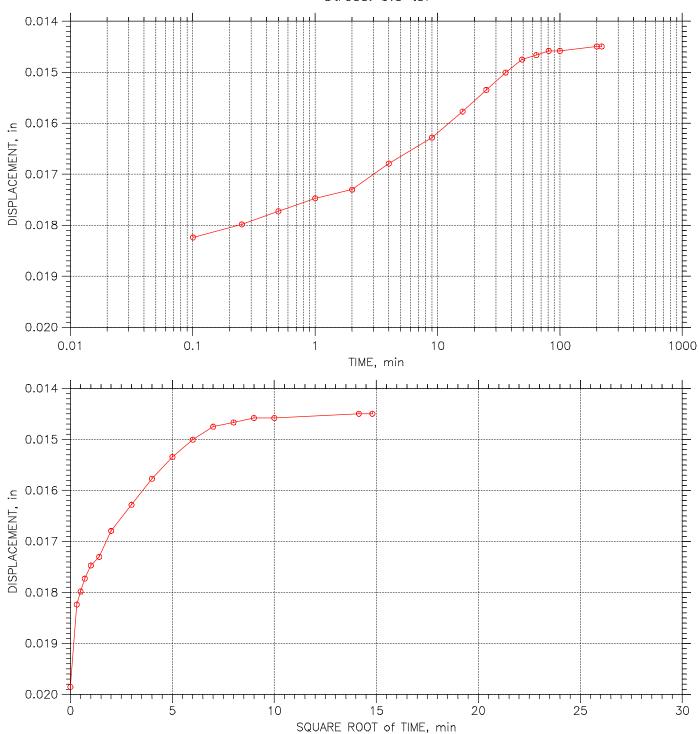


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
<b>ierracon</b>	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.$	800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf

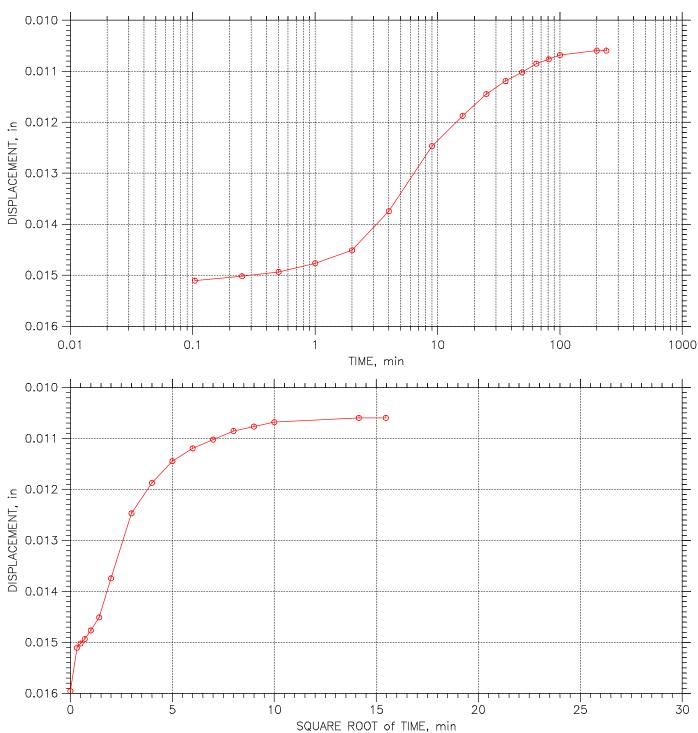


Fierracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0'' ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.0 \text{ cs}$	.800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf

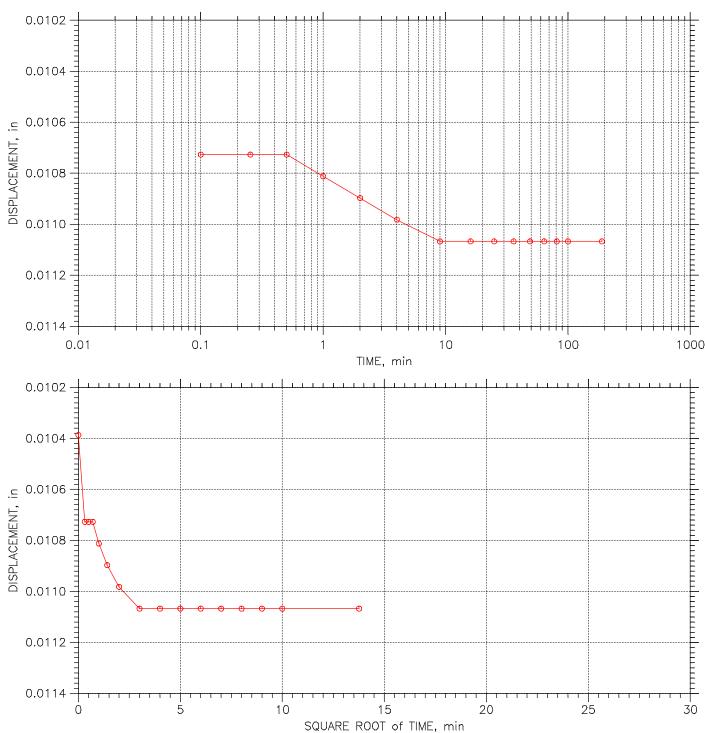


Fierracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0'' ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.	.800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf

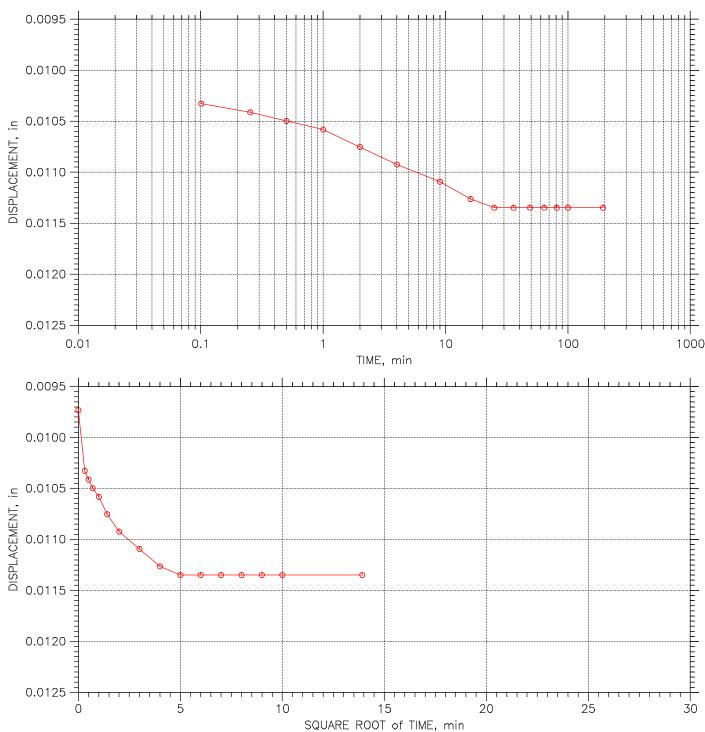


Fierracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
		Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.$	.800 $Ccr = 0.076$ TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf

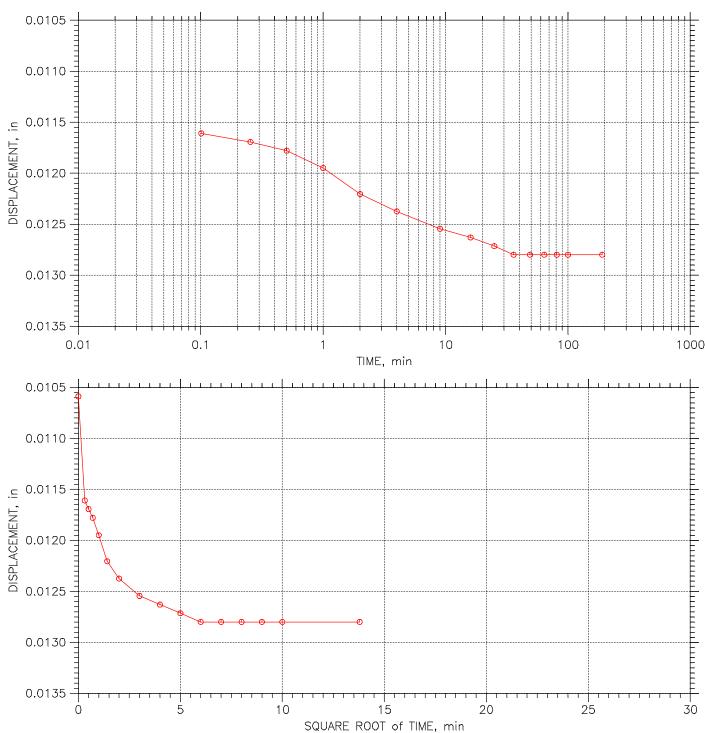


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
erracon	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0$	.800 Ccr = 0.076 TEST PERFOR	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf

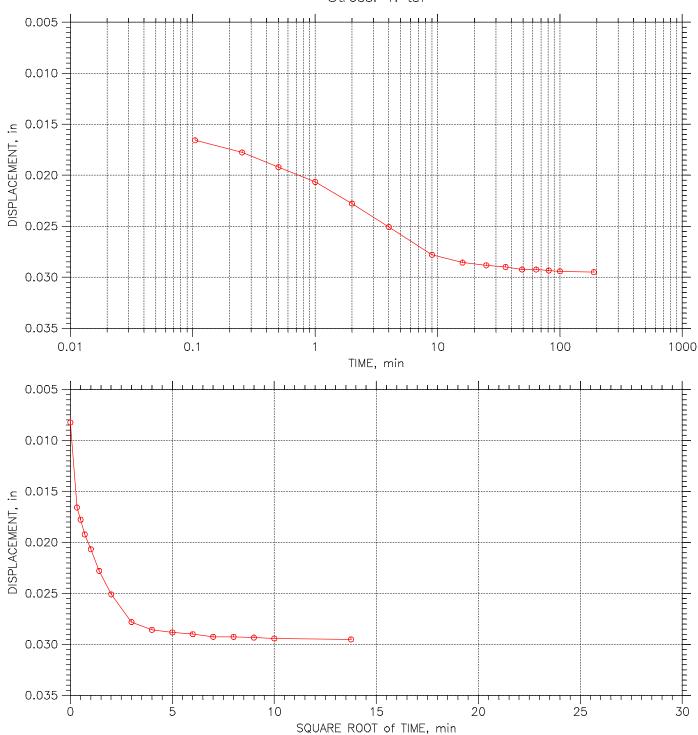


Fierracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.$	.800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 14 of 24

Stress: 4. tsf

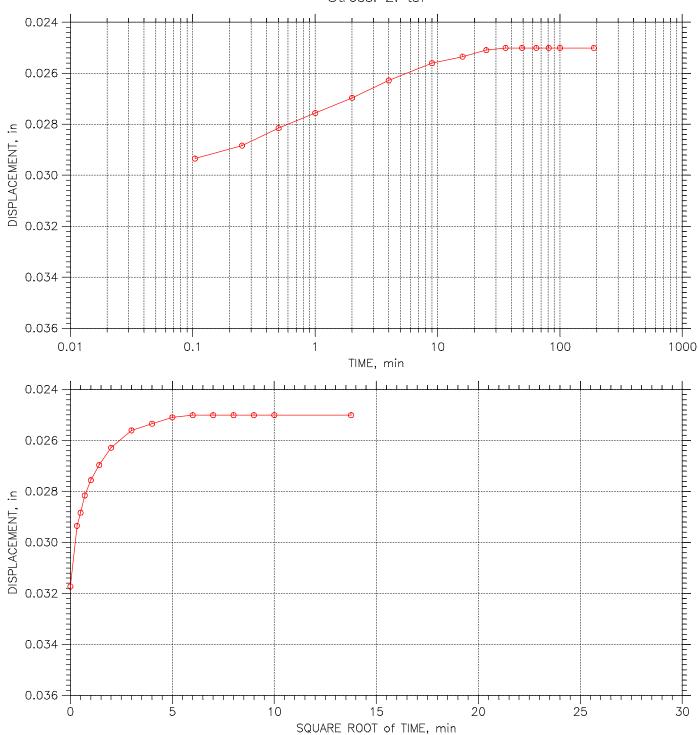


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
erracon	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.0 \text{ cs}$	.800 Ccr = 0.076 TEST PERFOR	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf

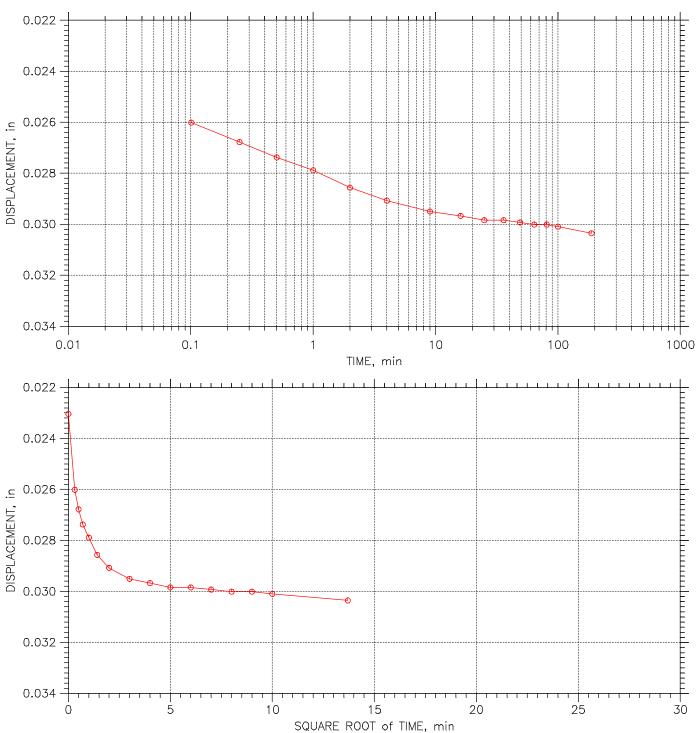


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
erracon	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.0 \text{ cs}$	.800 Ccr = 0.076 TEST PERFOR	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf

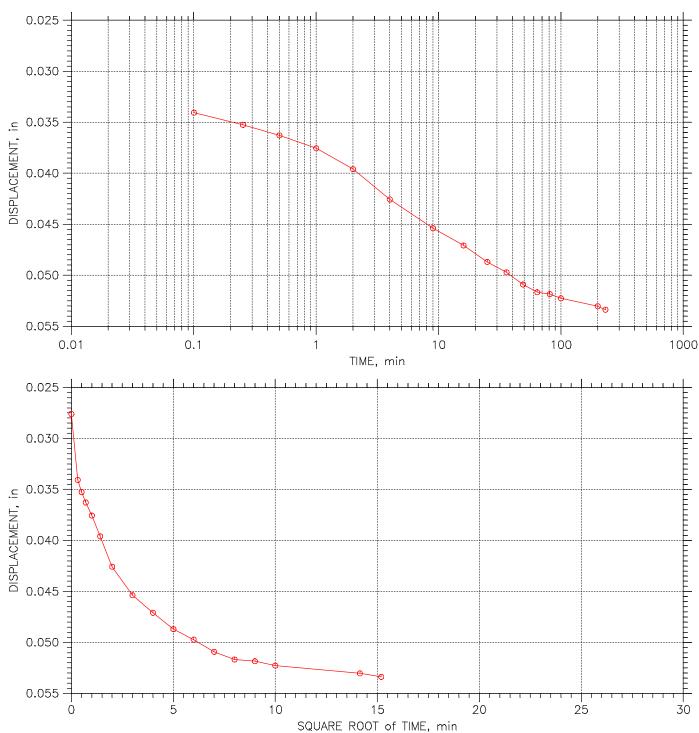


Fierracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.$	.800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf

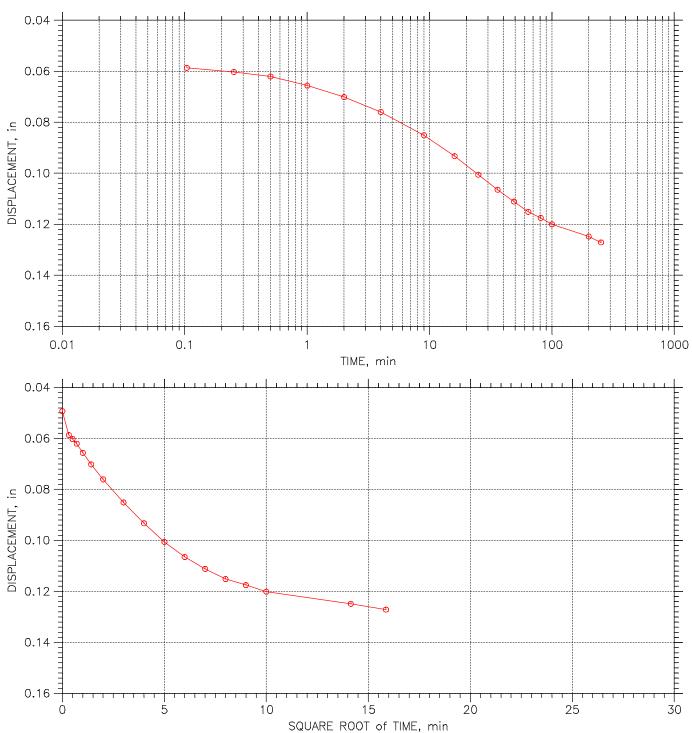


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
<b>ierracon</b>	Test No.: BW2228081C	Sample Type: 3.0'' ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.	.800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf

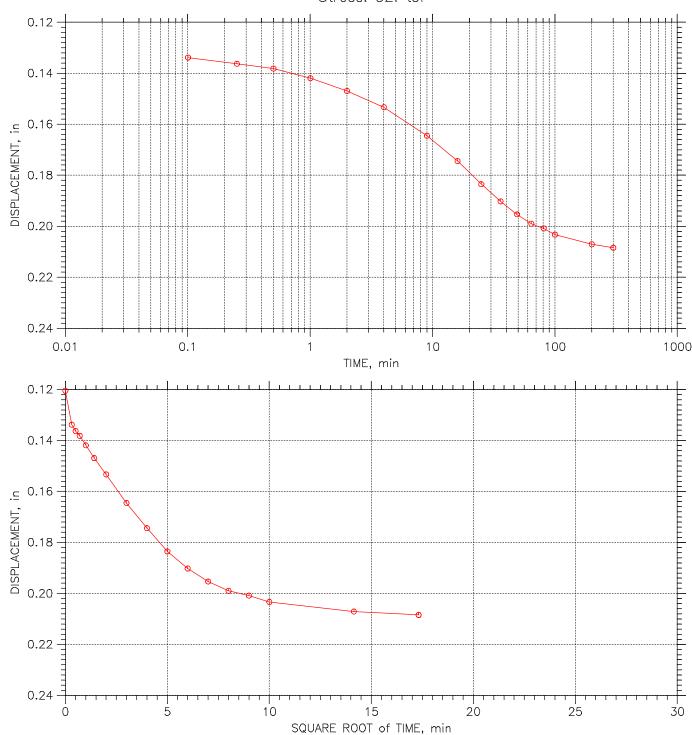


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
erracon	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.$	.800 Ccr = 0.076 TEST PERFOR	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf





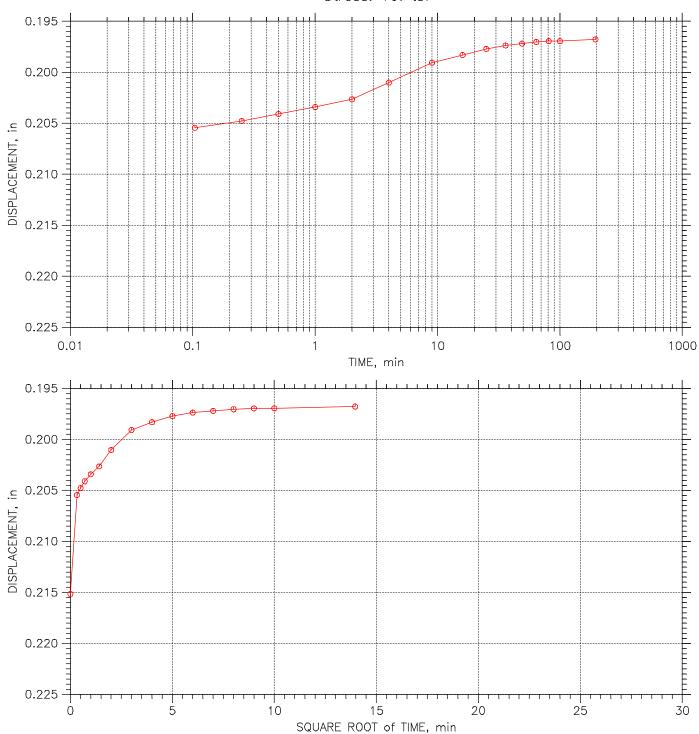
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
1	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
Description: REDDISH BROWN LEAN CLAY (CL)			

Remarks: Pc = 6.7 tsfCc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf

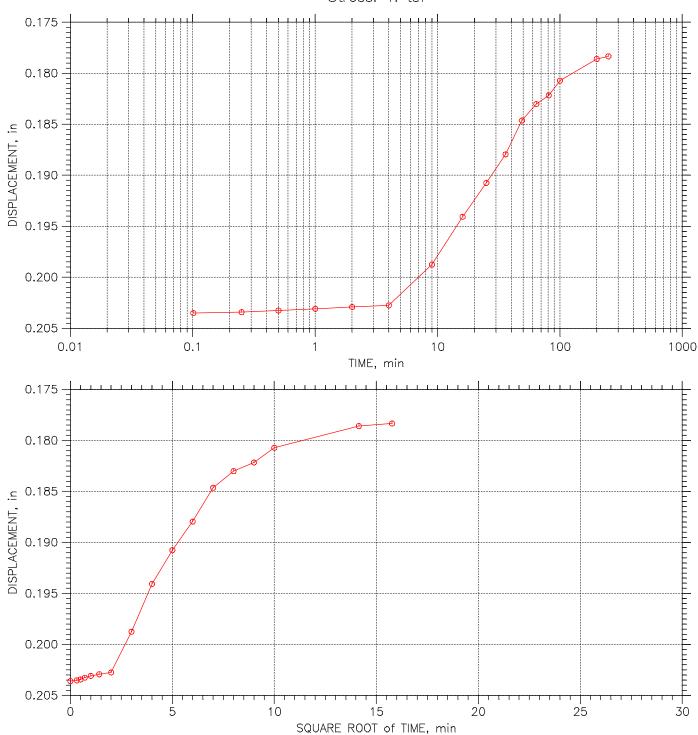


		Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
Fierracon		Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'	
	erracon	Test No.: BW2228081C	Sample Type: 3.0'' ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.$	.800 $Ccr = 0.076$ TEST PERFORM	MED AS PER ASTM D 2435	

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf

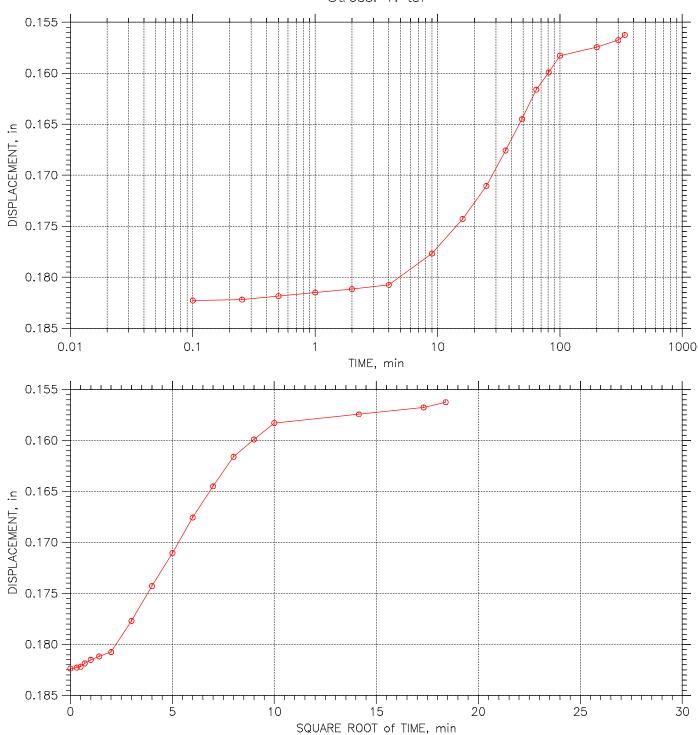


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
<b>ierracon</b>	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.0 \text{ cs}$	800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf

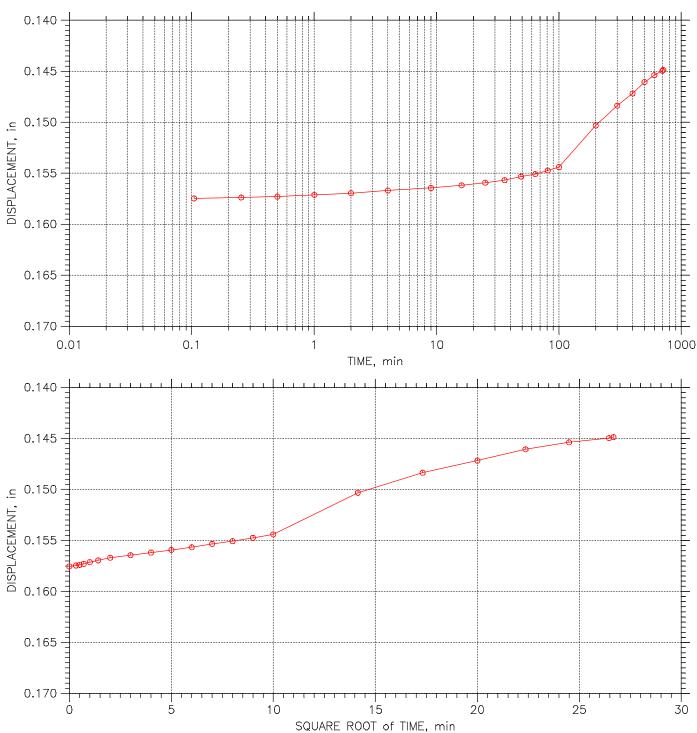


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
<b>ierracon</b>	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.0 \text{ cs}$	800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf

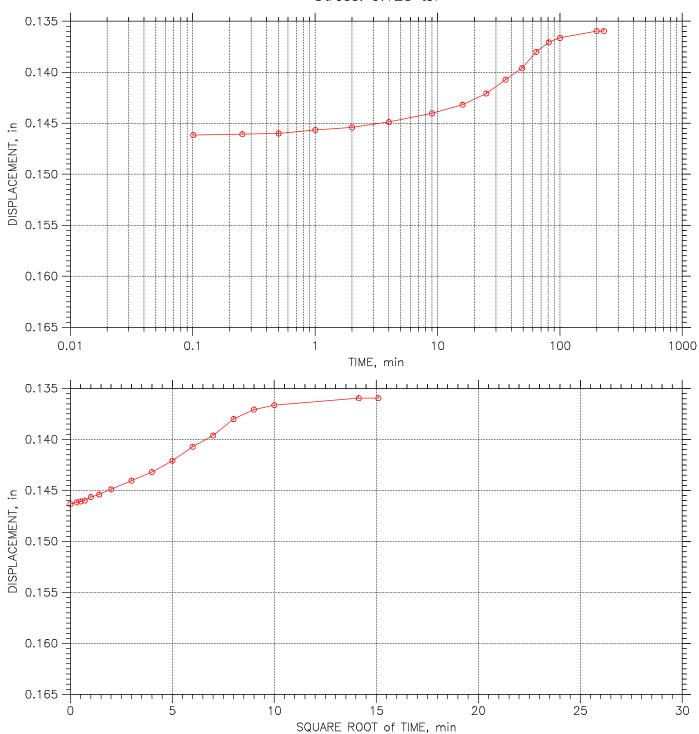


Ferracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.	.800 Ccr = 0.076 TEST PERFORI	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 24 of 24

Stress: 0.125 tsf



	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'	
<b>erracon</b>	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN LEAN CLAY (CL)			
	Remarks: $Pc = 6.7 \text{ tsf}$ $Cc = 0.$	800 Ccr = 0.076 TEST PERFORM	MED AS PER ASTM D 2435	

Project: PULLIAM PROPERTY RED. Location: MILWAUKEE,WI
Boring No.: BW2-22 Tested By: IT/ED
Samole No.: ST-3 Test Date: 9/29/2022 Boring No.: BW2-22 Sample No.: ST-3 Test No.: BW2228081C

Sample Type: 3.0" ST

Project No.: 11225052 Checked By: BCM Depth: 80.0-81.5' Elevation: ----Elevation: ----



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 6.7 tsf  $\,$  Cc = 0.800  $\,$  Ccr = 0.076  $\,$  TEST PERFORMED AS PER ASTM D 2435

Estimated Specific Gravity: 2.76 Liquid Limit: 45
Initial Void Ratio: 1.25 Plastic Limit: 15
Final Void Ratio: 0.84 Plasticity Index: 30

Initial Height: 0.74 in Specimen Diameter: 2.50 in

	Before Co	nsolidation	After Consol	idation
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	JL100	RING	RING	B-36
Wt. Container + Wet Soil, gm	130.38	169.79	172.99	149.43
Wt. Container + Dry Soil, gm	108.29	150.51	150.51	126.15
Wt. Container, gm	29.95	77.1	77.1	50.11
Wt. Dry Soil, gm	78.34	73.414	73.414	76.04
Water Content, %	28.20	26.26	30.62	30.62
Void Ratio		1.25	0.84	
Degree of Saturation, %		58.04	100.92	
Dry Unit Weight, pcf		76.627	93.78	

Project No.: 11225052 Checked By: BCM Depth: 80.0-81.5' Elevation: ----Project: PULLIAM PROPERTY RED. Location: MILWAUKEE,WI
Boring No.: BW2-22 Tested By: IT/ED
Sample No.: ST-3 Test Date: 9/29/2022 Project Fullian 1302 2...

Boring No.: BW2-22

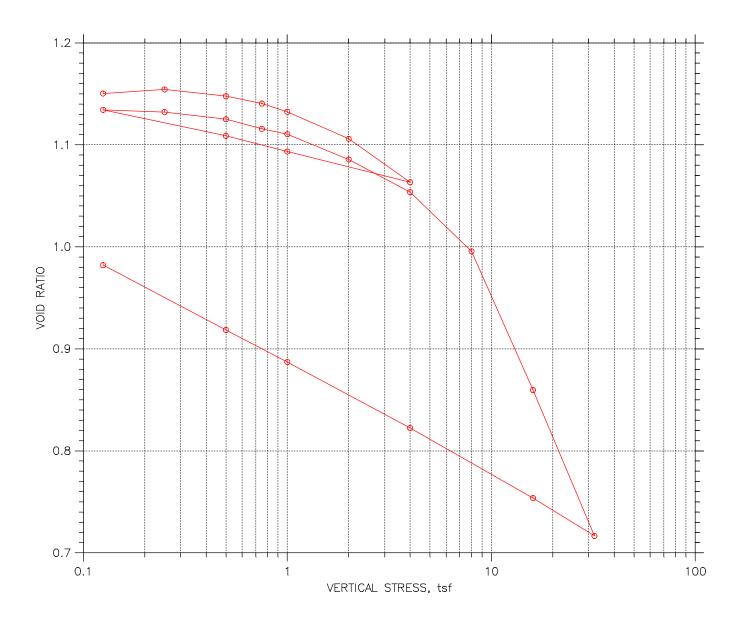
Sample No.: ST-3 Test No.: BW2228081C Sample Type: 3.0" ST



Soil Description: REDDISH BROWN LEAN CLAY (CL) Remarks: Pc = 6.7 tsf  $\,$  Cc = 0.800  $\,$  Ccr = 0.076  $\,$  TEST PERFORMED AS PER ASTM D 2435

	Applied	Final	Void	Strain	T50	Fitting	Coeffi	cient of Con	solidation
	Stress	Displacement	Ratio	at End	Sq.Rt.	Log	Sq.Rt.	Log	Ave.
	tsf	in		8	min	min	ft^2/sec	ft^2/sec	ft^2/sec
1	0.125	0.0001661	1.248	0.02	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
2	0.25	0.001395	1.244	0.19	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
3	0.5	0.003607	1.238	0.49	2.1	0.0	1.49e-006	0.00e+000	1.49e-006
4	0.75	0.005145	1.233	0.69	23.3	0.0	1.34e-007	0.00e+000	1.34e-007
5	1	0.006445	1.229	0.87	14.8	0.0	2.10e-007	0.00e+000	2.10e-007
6	2	0.0136	1.207	1.83	0.8	0.0	3.69e-006	0.00e+000	3.69e-006
7	4	0.02746	1.166	3.69	0.9	0.4	3.16e-006	7.55e-006	4.46e-006
8	1	0.01855	1.192	2.50	0.9	0.0	3.22e-006	0.00e+000	3.22e-006
9	0.5	0.0145	1.205	1.95	8.4	0.0	3.59e-007	0.00e+000	3.59e-007
10	0.125	0.0106	1.217	1.43	7.4	4.8	4.10e-007	6.38e-007	4.99e-007
11	0.25	0.01107	1.215	1.49	0.1	0.0	3.20e-005	0.00e+000	3.20e-005
12	0.5	0.01135	1.214	1.53	0.9	0.0	3.38e-006	0.00e+000	3.38e-006
13	0.75	0.0128	1.210	1.72	1.4	0.0	2.11e-006	0.00e+000	2.11e-006
14	4	0.0295	1.159	3.97	0.9	0.0	3.20e-006	0.00e+000	3.20e-006
15	2	0.02501	1.173	3.36	1.0	0.0	3.07e-006	0.00e+000	3.07e-006
16	4	0.03035	1.157	4.08	0.5	0.0	6.08e-006	0.00e+000	6.08e-006
17	8	0.05337	1.087	7.18	3.9	1.3	7.29e-007	2.18e-006	1.09e-006
18	16	0.1271	0.864	17.10	8.4	9.5	2.90e-007	2.55e-007	2.71e-007
19	32	0.2084	0.618	28.04	6.3	9.5	2.98e-007	1.99e-007	2.39e-007
20	16	0.1968	0.653	26.47	2.1	0.0	7.94e-007	0.00e+000	7.94e-007
21	4	0.1783	0.709	23.99	35.2	0.0	5.01e-008	0.00e+000	5.01e-008
22	1	0.1562	0.776	21.02	38.2	0.0	4.95e-008	0.00e+000	4.95e-008
23	0.5	0.1449	0.810	19.49	186.2	178.5	1.08e-008	1.12e-008	1.10e-008
24	0.125	0.136	0.837	18.29	33.9	0.0	6.12e-008	0.00e+000	6.12e-008

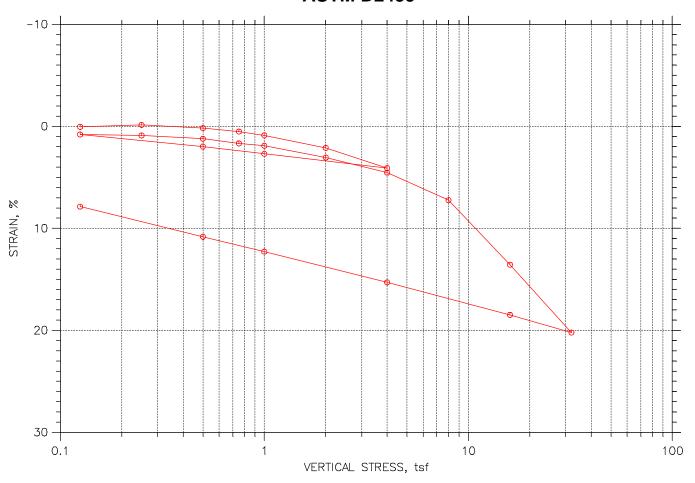
# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435

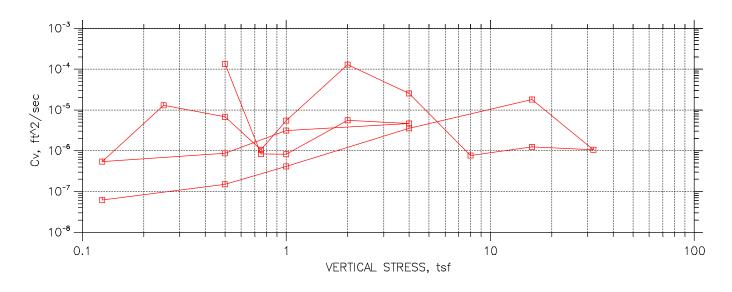


					Before Test	After Test
				Water Content, %	41.88	36.77
Preconsolido	ation Pressure: 4.	5 tsf		Dry Unit Weight, pcf	80.09	86.93
Compression Index: 0.465		Saturation, %	100.40	103.35		
Diameter: 2.501 in Height: 0.752 in		Void Ratio	1.15	0.98		
LL: 41	PL: 18	PI: 23	GS: 2.76			

	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
erracon	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.0$	.465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435

# ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435







	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052		
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM		
Ī	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'		
I	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:		
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED				

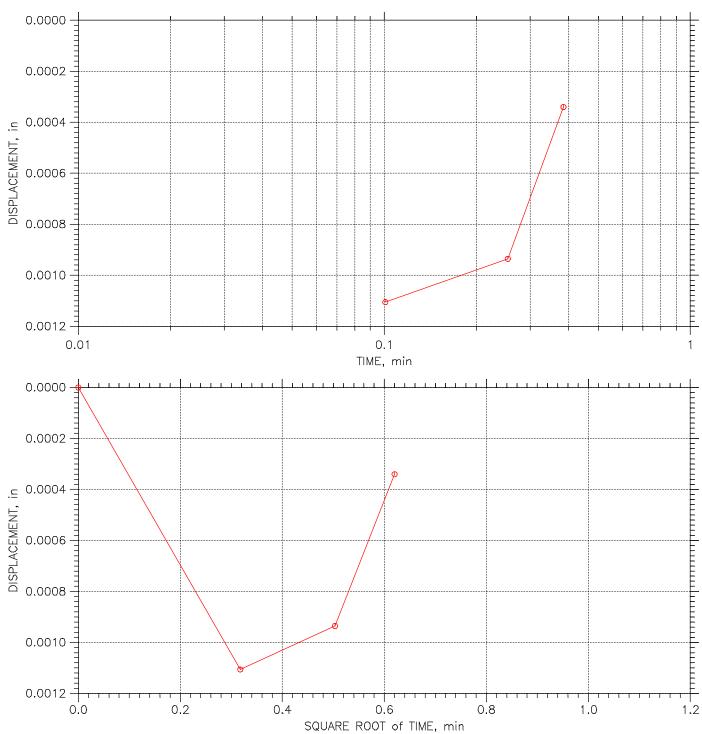
Remarks: Pc = 4.5 tsf Cc = 0.465 Ccr = 0.106 TEST PERFORMED AS PER ASTM D 2435

Tue, 11-OCT-2022 16:02:09

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf

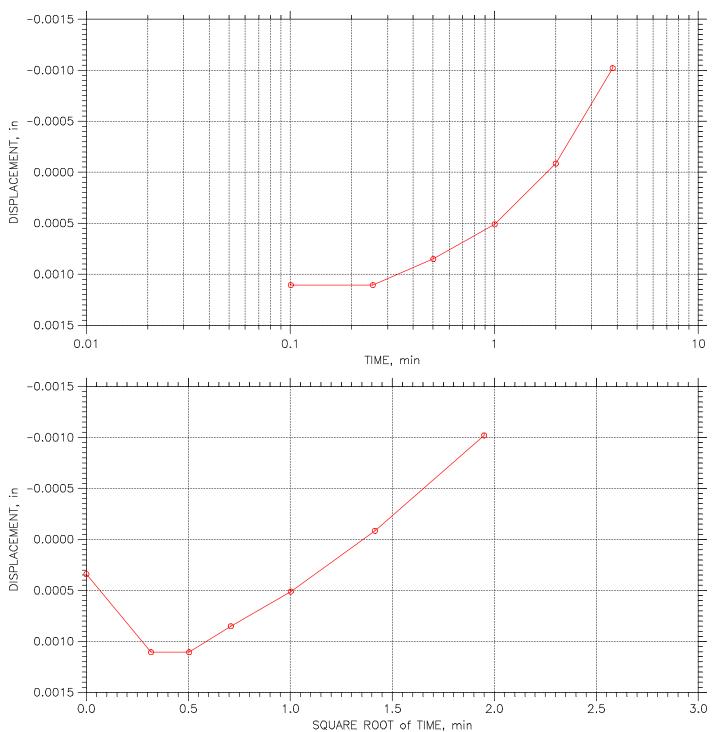


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052			
		Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM		
		Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'		
	erracon	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:		
		Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED				
		Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.0$	Remarks: Pc = 4.5 tsf			

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf

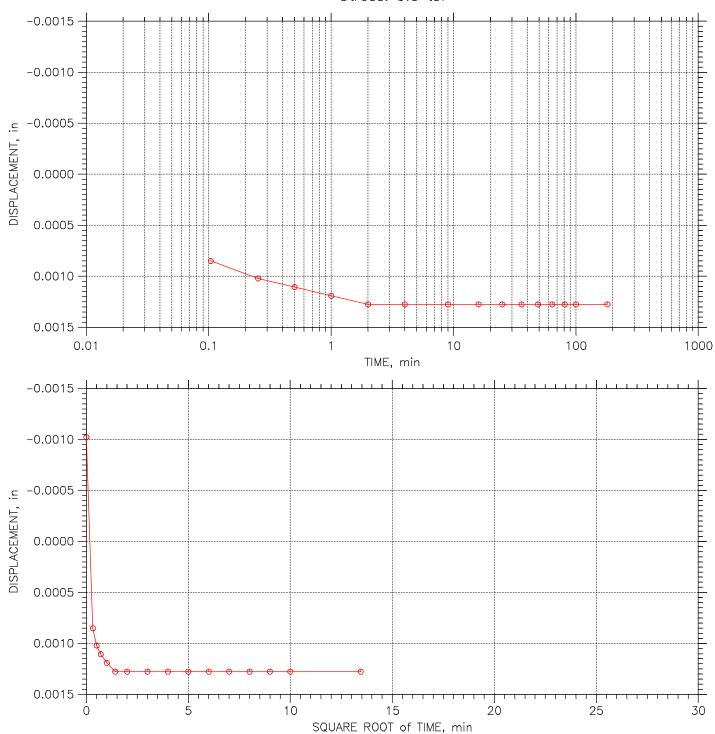


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM	
- 100 mon co	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'	
<b>lerracon</b>	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED			
	Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.0$	.465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435	

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf

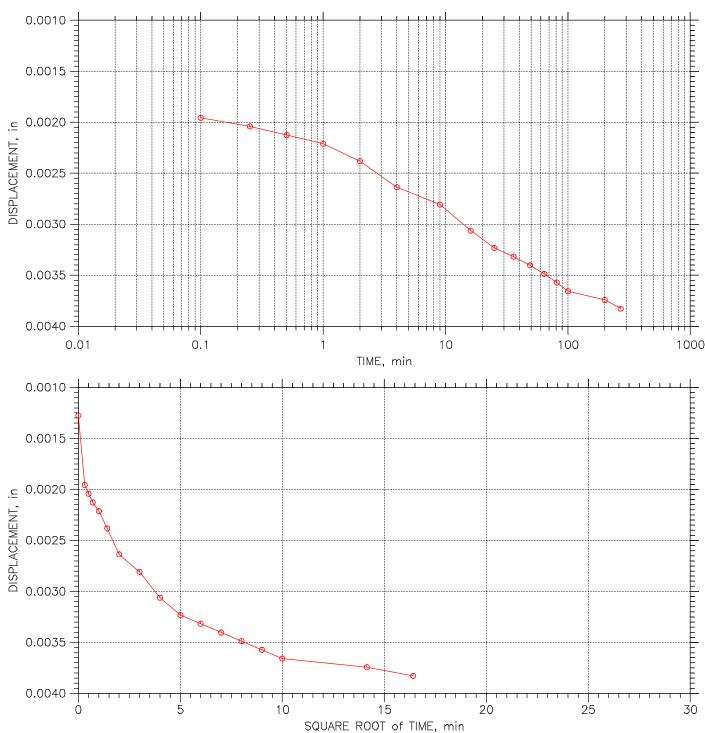


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'	
<b>ierracon</b>	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED			
	Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.$	465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435	

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf

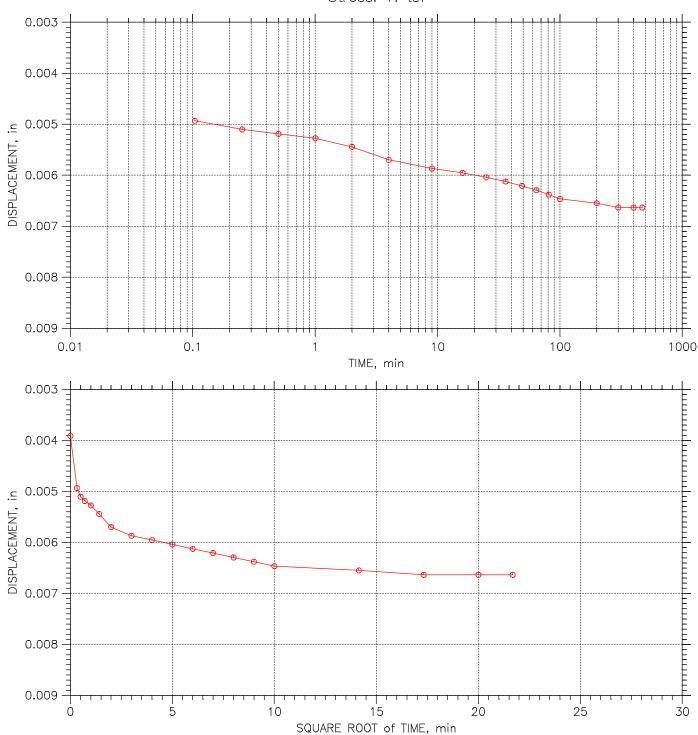


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'	
erracon	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED			
	Remarks: Pc = 4.5 tsf Cc = 0.	465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435	

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf

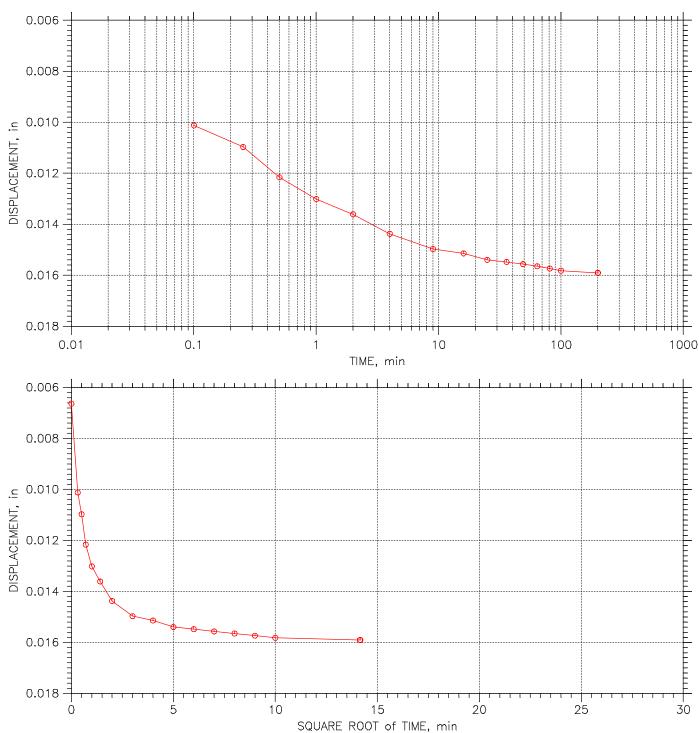


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
Ferracon	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: Pc = 4.5 tsf Cc = 0.	.465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf

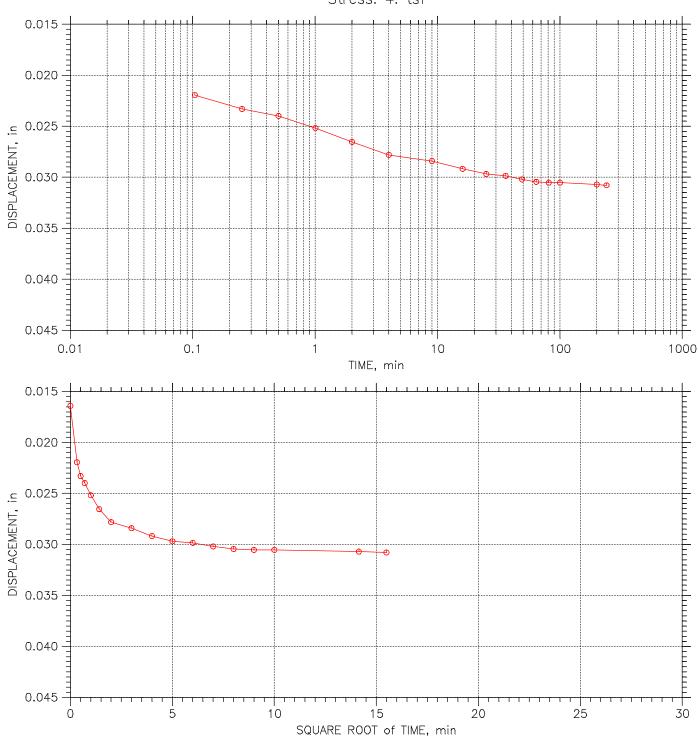


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'	
<b>ierracon</b>	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED			
	Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.000$	.465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435	

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf

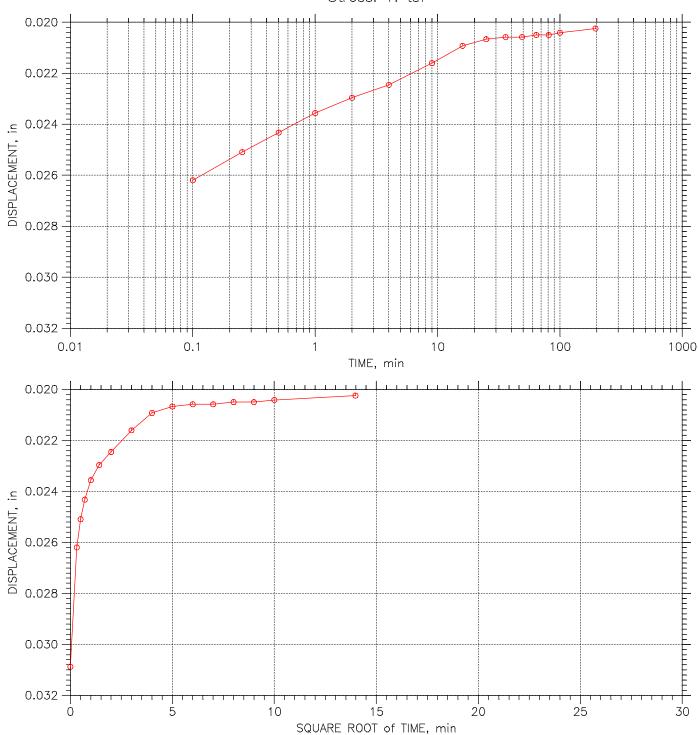


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
erracon	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: Pc = 4.5 tsf Cc = 0.	.465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf

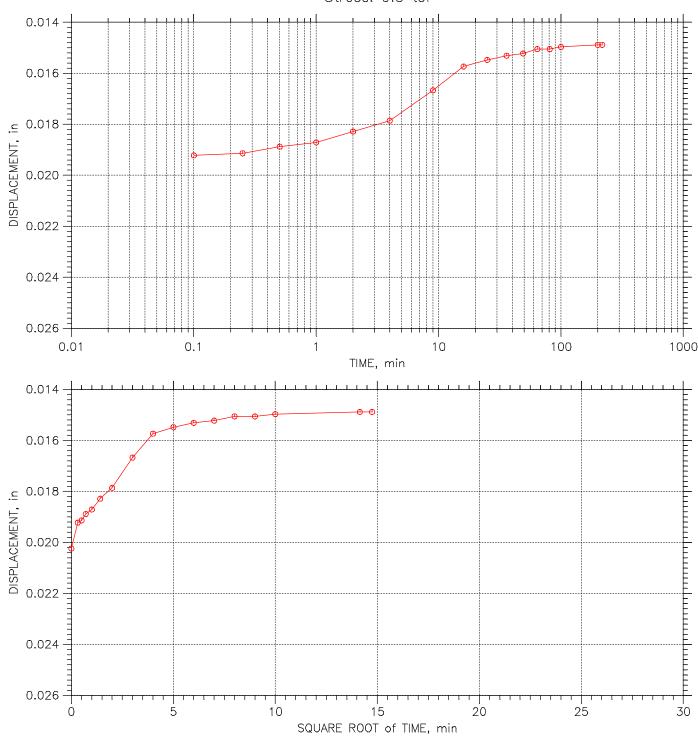


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
<b>erracon</b>	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.0$	465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf

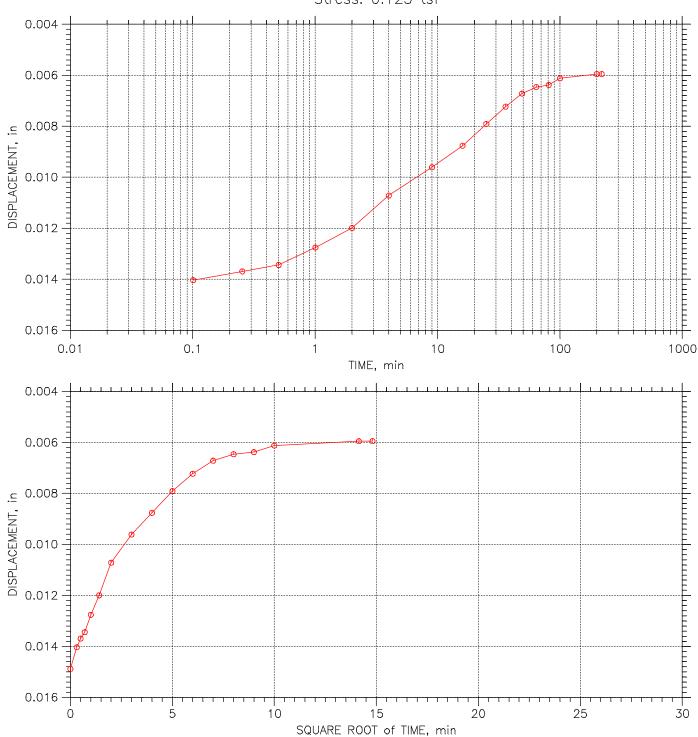


<b>Ferracon</b>	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052	
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM	
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'	
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:	
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED			
		Remarks: Pc = 4.5 tsf		MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf

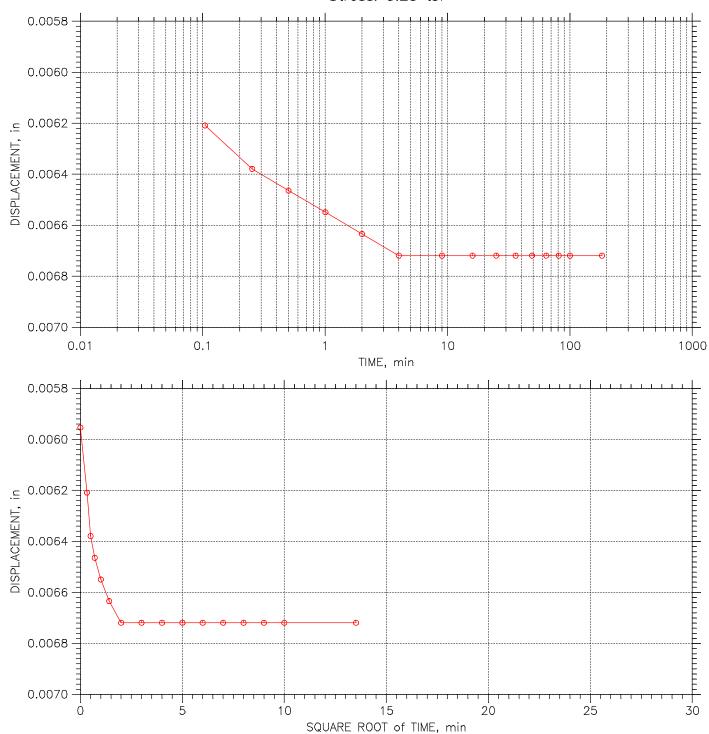


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: Pc = 4.5 tsf		MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf

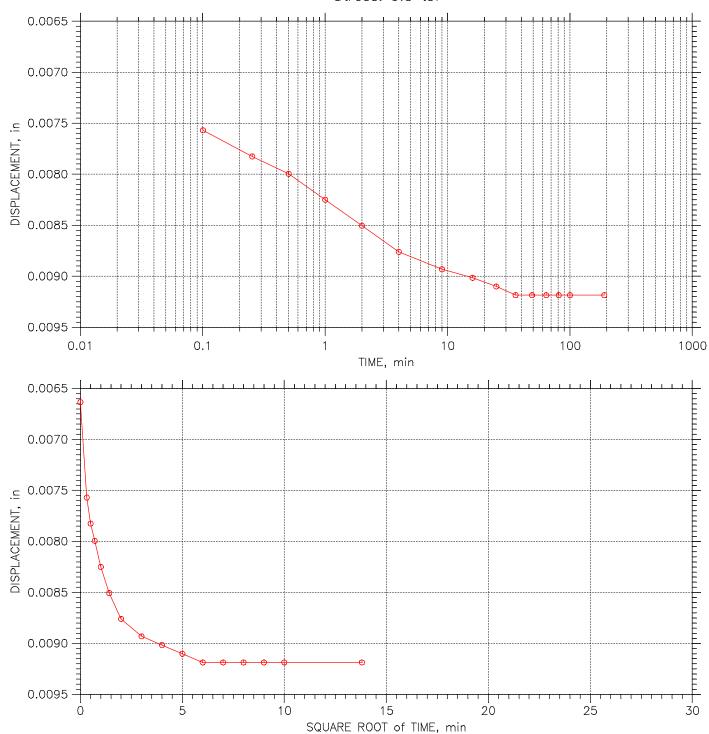


Fierracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: Pc = 4.5 tsf Cc = 0.	.465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf

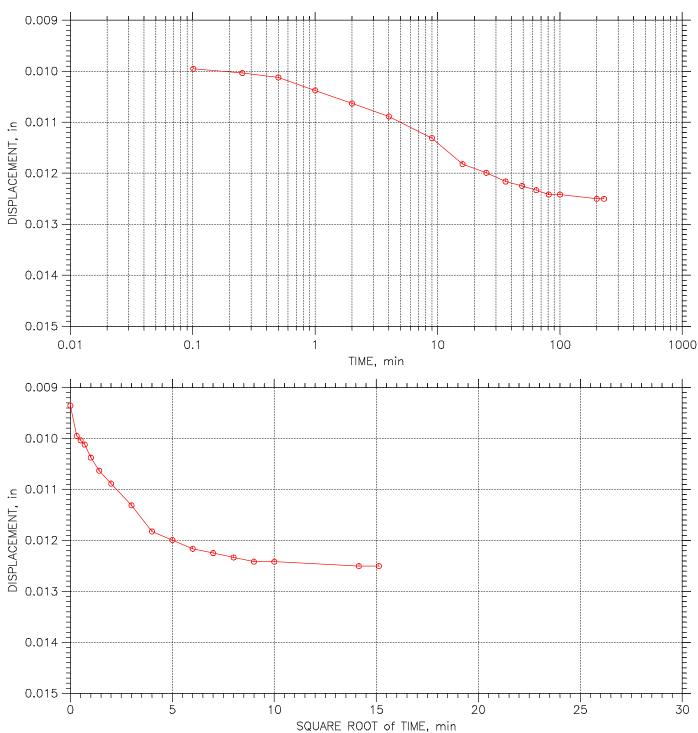


Fierracon	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0'' ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.000$	.465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf

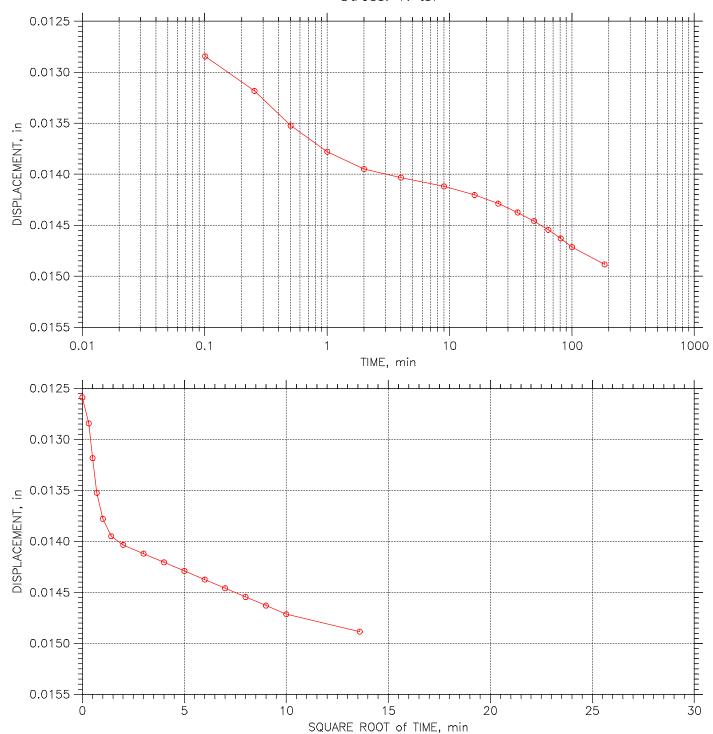


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
erracon	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: Pc = 4.5 tsf		MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf

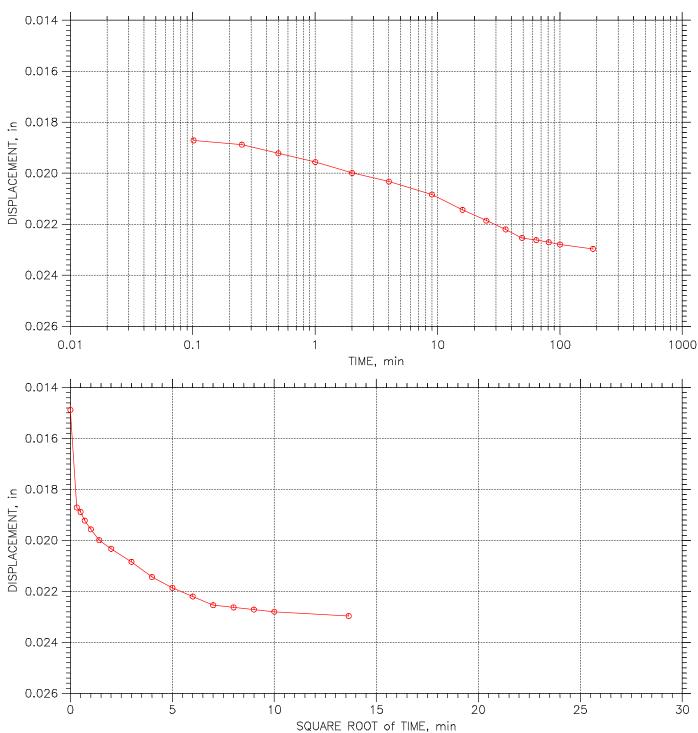


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	1 '	Test Date: 9/29/2022	Depth: 90.0'-92.0'
erracon	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.$	.465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf

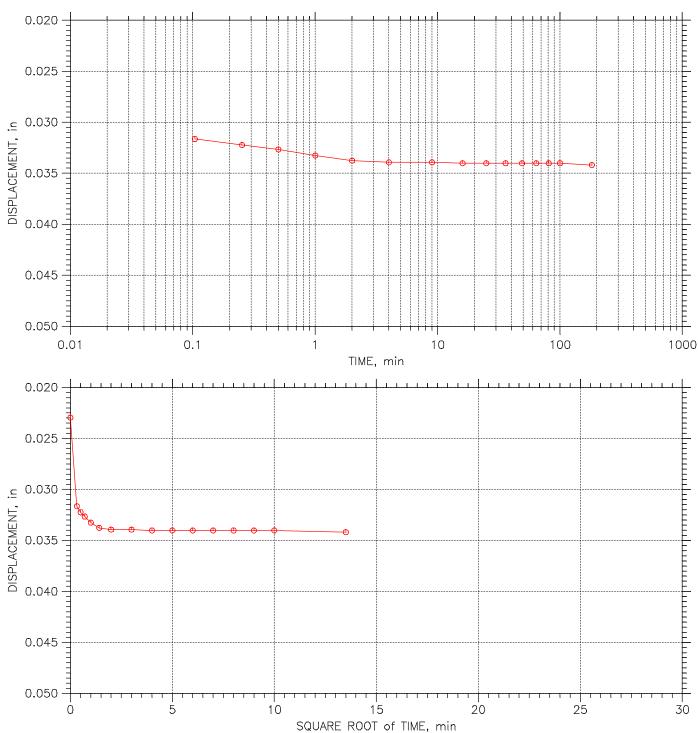


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
erracon	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: Pc = 4.5 tsf		MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf

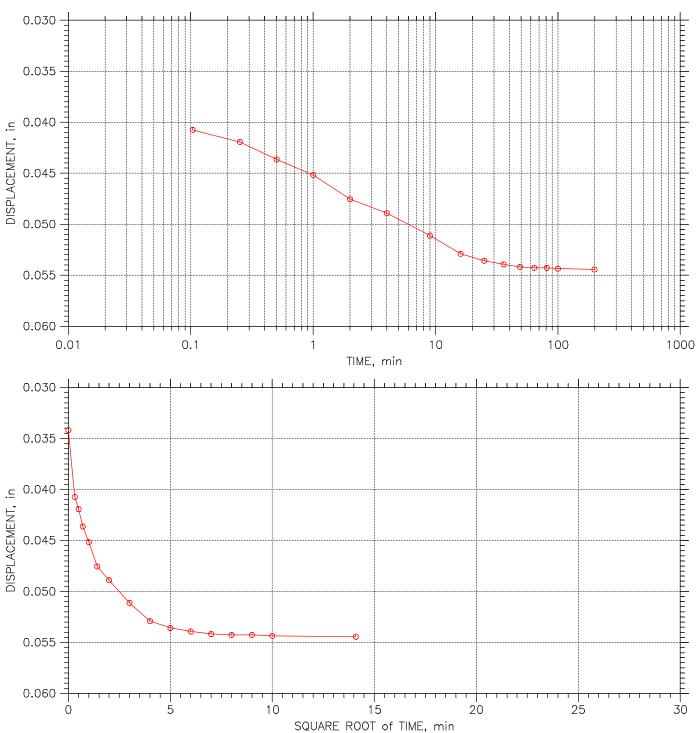


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
<b>erracon</b>	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.0$	465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf

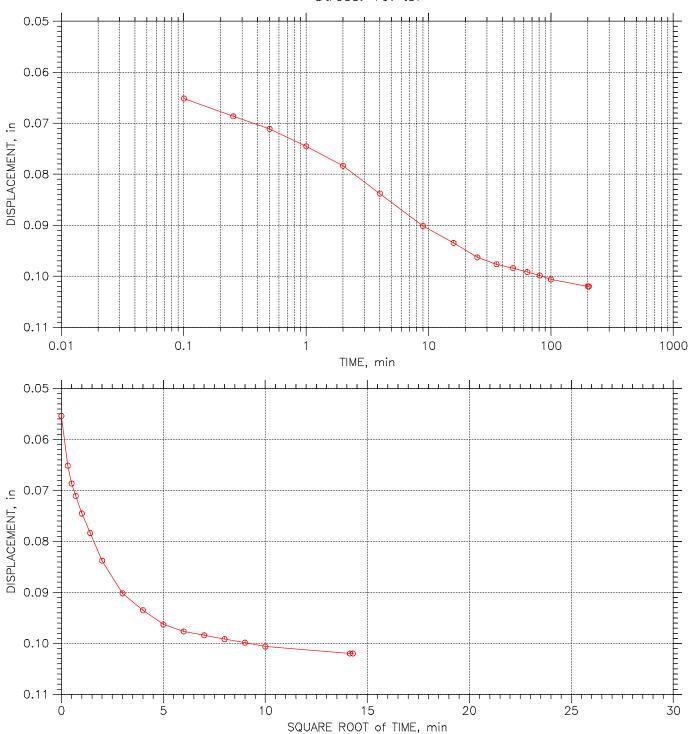


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
erracon	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.000$	.465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf

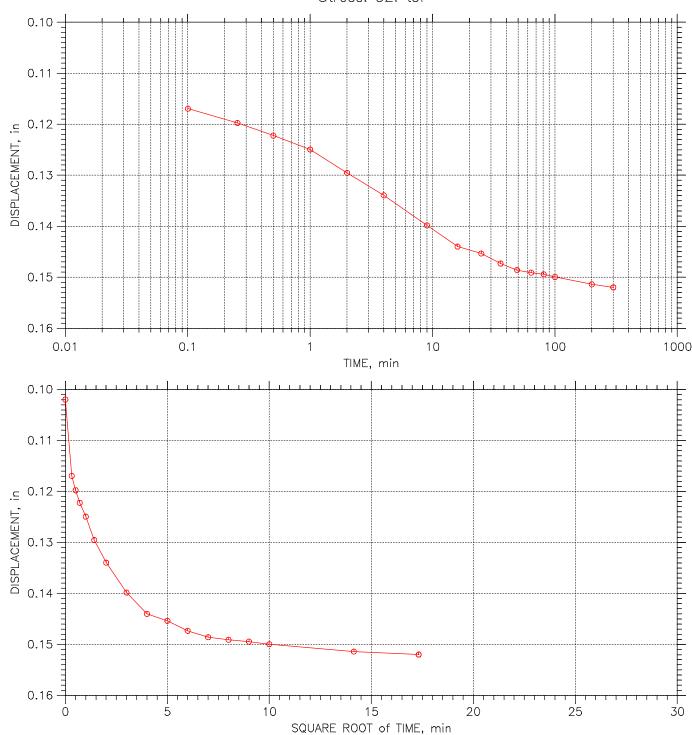


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
erracon	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: Pc = 4.5 tsf Cc = 0.	.465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf

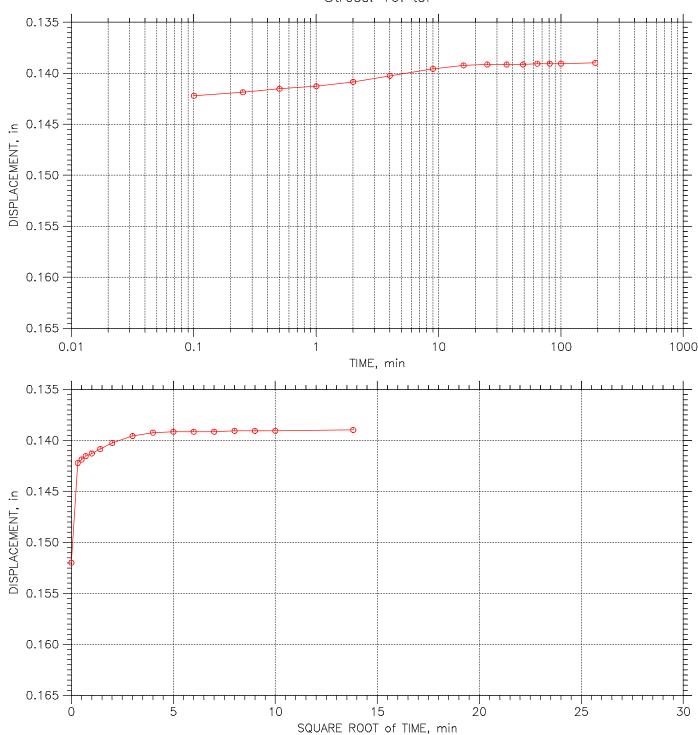


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: Pc = 4.5 tsf		

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf

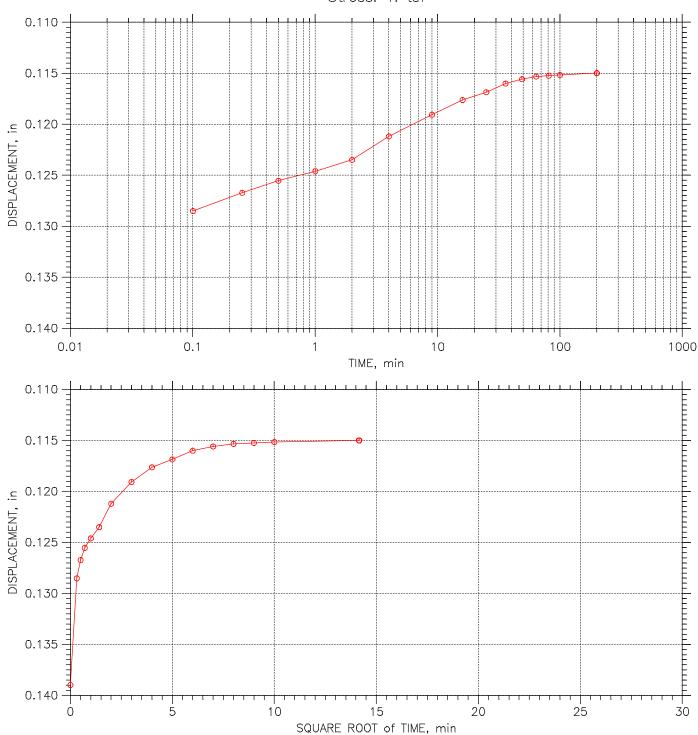


Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052		
Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM		
Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'		
Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:		
Description: REDDISH BROWN FAT	CLAY (CH) SILT AND SAND SEAMS	NOTED		
Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.0$	.465	MED AS PER ASTM D 2435		

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf

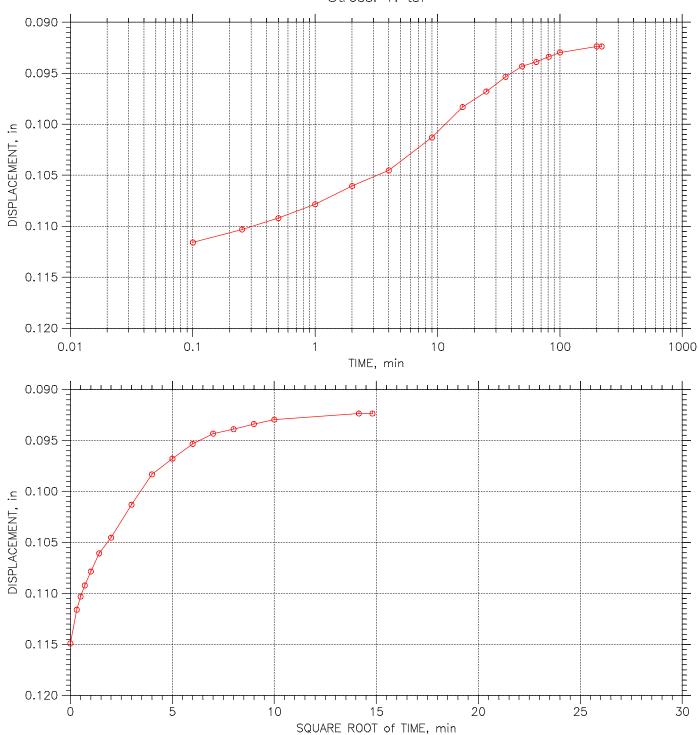


	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052		
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM		
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'		
<b>erracon</b>	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:		
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED				
	Remarks: Pc = 4.5 tsf Cc = 0.	465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435		

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf

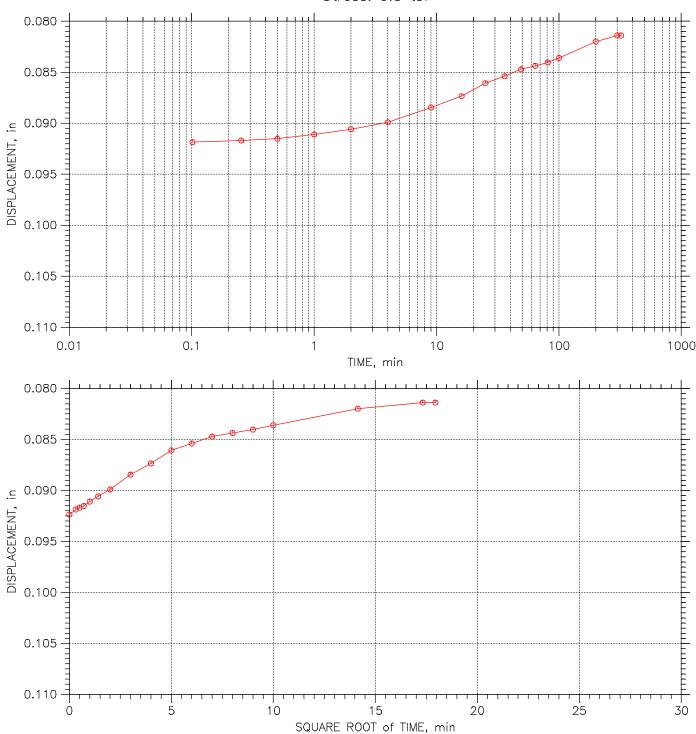


		Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052		
		Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM		
	ra-s-rus-acti	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'		
erracon		Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:		
		Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED				
		Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.5 \text{ cs}$	.465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435		

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf

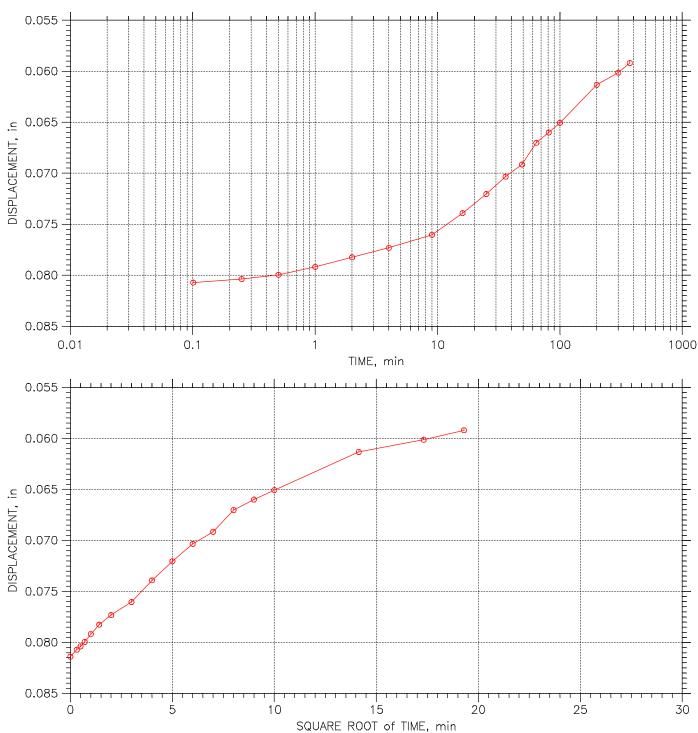


		Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
		Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
		Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
<b>ierracon</b>	<b>ierracon</b>	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED			
		Remarks: $Pc = 4.5 \text{ tsf}$ $Cc = 0.$	465 Ccr = 0.106 TEST PERFORM	MED AS PER ASTM D 2435

TIME CURVES

Constant Load Step: 24 of 24

Stress: 0.125 tsf



	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052		
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM		
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'		
<b>ierracon</b>	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation:		
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED				
	Remarks: Pc = 4.5 tsf Cc = 0.465 Ccr = 0.106 TEST PERFORMED AS PER ASTM D 2435				

Project: PULLIAM PROPERTY RED. Location: MILWAUKEE, WI Boring No.: BW3-22 Sample No.: ST-3 Test No.: BW39092C

Tested By: IT/ED
Test Date: 9/29/2022 Sample Type: 3.0" ST Project No.: 11225052 Checked By: BCM Depth: 90.0'-92.0' Elevation: ----



Soil Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED Remarks: Pc = 4.5 tsf  $\,$  Cc = 0.465  $\,$  Ccr = 0.106  $\,$  TEST PERFORMED AS PER ASTM D 2435

Estimated Specific Gravity: 2.76 Initial Void Ratio: 1.15 Final Void Ratio: 0.98

Liquid Limit: 41 Plastic Limit: 18
Plasticity Index: 23

Initial Height: 0.75 in Specimen Diameter: 2.50 in

	Before Co	onsolidation	After Consol	idation
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	A-64	RING	RING	H-11
Wt. Container + Wet Soil, gm	119.73	186.73	182.76	130.14
Wt. Container + Dry Soil, gm	93.55	154.2	154.2	103.23
Wt. Container, gm	31.4	76.54	76.54	30.05
Wt. Dry Soil, gm	62.15	77.662	77.662	73.18
Water Content, %	42.12	41.88	36.77	36.77
Void Ratio		1.15	0.98	
Degree of Saturation, %		100.40	103.35	
Dry Unit Weight, pcf		80.088	86.932	

Project: PULLIAM PROPERTY RED. Location: MILWAUKEE,WI Project No.: 11225052
Boring No.: BW3-22 Tested By: IT/ED Checked By: BCM
Sample No.: ST-3 Test Date: 9/29/2022 Depth: 90.0'-92.0'
Test No.: BW39092C Sample Type: 3.0" ST Elevation: ----

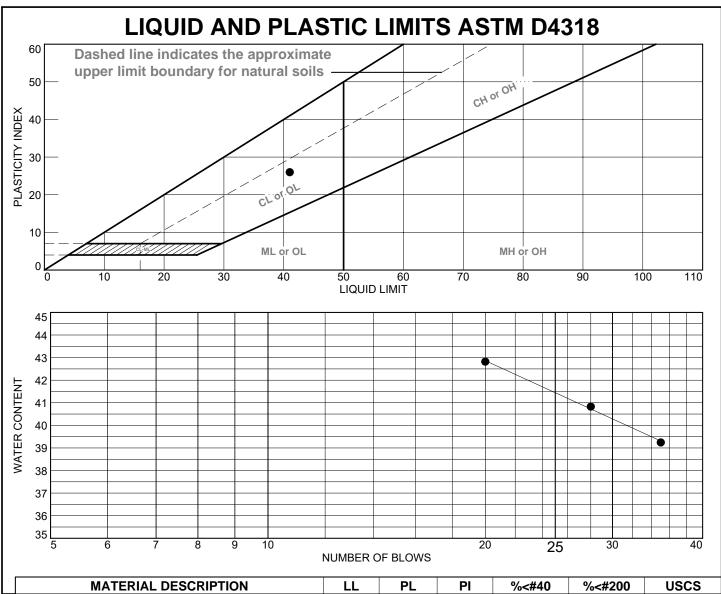
**ierracon** 

Soil Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED Remarks: Pc = 4.5 tsf  $\,$  Cc = 0.465  $\,$  Ccr = 0.106  $\,$  TEST PERFORMED AS PER ASTM D 2435

Applied	Final	Void	Strain	T50	Fitting	Coeffi	icient of Con	solidation
Stress	Displacement	Ratio	at End	Sq.Rt.	Log	Sq.Rt.	Log	Ave.
tsf	in		%	min	min	ft^2/sec	ft^2/sec	ft^2/sec
0.125	0.0003402	1.150	0.05	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
0.25	-0.001021	1.154	-0.14	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
0.5	0.001276	1.148	0.17	0.0	0.0	1.33e-004	0.00e+000	1.33e-004
0.75	0.003827	1.140	0.51	4.5	3.2	7.11e-007	1.01e-006	8.34e-007
1	0.006634	1.132	0.88	3.9	0.0	8.17e-007	0.00e+000	8.17e-007
2	0.0159	1.106	2.12	1.0	0.2	3.23e-006	1.89e-005	5.52e-006
4	0.03079	1.063	4.09	0.9	0.4	3.20e-006	8.51e-006	4.65e-006
1	0.02024	1.093	2.69	1.0	0.0	3.12e-006	0.00e+000	3.12e-006
0.5	0.01488	1.109	1.98	3.6	0.0	8.62e-007	0.00e+000	8.62e-007
0.125	0.005954	1.134	0.79	5.8	0.0	5.38e-007	0.00e+000	5.38e-007
0.25	0.006719	1.132	0.89	0.2	0.0	1.30e-005	0.00e+000	1.30e-005
0.5	0.009186	1.125	1.22	0.5	0.0	6.80e-006	0.00e+000	6.80e-006
0.75	0.0125	1.116	1.66	3.0	0.0	1.05e-006	0.00e+000	1.05e-006
1	0.01488	1.109	1.98	43.1	0.0	7.23e-008	0.00e+000	7.23e-008
2	0.02296	1.086	3.05	8.3	0.0	3.69e-007	0.00e+000	3.69e-007
4	0.03419	1.054	4.55	0.1	0.0	2.55e-005	0.00e+000	2.55e-005
8	0.05443	0.996	7.24	3.7	0.0	7.66e-007	0.00e+000	7.66e-007
16	0.102	0.860	13.56	2.1	0.0	1.23e-006	0.00e+000	1.23e-006
32	0.152	0.717	20.21	2.1	0.0	1.06e-006	0.00e+000	1.06e-006
16	0.139	0.754	18.48	0.1	0.0	1.79e-005	0.00e+000	1.79e-005
4	0.115	0.822	15.29	0.6	0.0	3.52e-006	0.00e+000	3.52e-006
1	0.09237	0.887	12.28	5.8	5.8	4.11e-007	4.15e-007	4.13e-007
0.5	0.0814	0.919	10.82	21.6	12.2	1.17e-007	2.07e-007	1.49e-007
0.125	0.0592	0.982	7.87	55.3	30.4	4.79e-008	8.73e-008	6.19e-008
	Stress tsf  0.125 0.25 0.5 0.75 1 2 4 1 0.5 0.125 0.25 0.5 1 2 4 8 16 32 16 4 1 0.5	Stress Displacement tsf in  0.125	Stress Displacement in  0.125	Stress         Displacement in         Ratio         at End           0.125         0.0003402         1.150         0.05           0.25         -0.001021         1.154         -0.14           0.5         0.001276         1.148         0.17           0.75         0.003827         1.140         0.51           1         0.006634         1.132         0.88           2         0.0159         1.106         2.12           4         0.03079         1.063         4.09           1         0.02024         1.093         2.69           0.5         0.01488         1.109         1.98           0.125         0.005954         1.134         0.79           0.25         0.006719         1.132         0.89           0.5         0.00125         1.116         1.66           1         0.01488         1.109         1.98           2         0.02296         1.086         3.05           4         0.03419         1.054         4.55           8         0.05443         0.996         7.24           16         0.102         0.860         13.56           32         0.152	Stress         Displacement tsf         Ratio         at End %         Sq.Rt. min           0.125         0.0003402         1.150         0.05         0.0           0.25         -0.001021         1.154         -0.14         0.0           0.5         0.001276         1.148         0.17         0.0           0.75         0.003827         1.140         0.51         4.5           1         0.006634         1.132         0.88         3.9           2         0.0159         1.106         2.12         1.0           4         0.03079         1.063         4.09         0.9           1         0.02024         1.093         2.69         1.0           0.5         0.01488         1.109         1.98         3.6           0.125         0.005954         1.134         0.79         5.8           0.5         0.009186         1.125         1.22         0.5           0.75         0.0125         1.116         1.66         3.0           1         0.01488         1.109         1.98         43.1           2         0.02296         1.086         3.05         8.3           4         0.03419	Stress         Displacement tsf         Ratio         at End %         Sq.Rt. min         Log min           0.125         0.0003402         1.150         0.05         0.0         0.0           0.25         -0.001021         1.154         -0.14         0.0         0.0           0.5         0.001276         1.148         0.17         0.0         0.0           0.75         0.003827         1.140         0.51         4.5         3.2           1         0.006634         1.132         0.88         3.9         0.0           2         0.0159         1.106         2.12         1.0         0.2           4         0.03079         1.063         4.09         0.9         0.4           1         0.02024         1.093         2.69         1.0         0.0           0.5         0.01488         1.109         1.98         3.6         0.0           0.125         0.005954         1.134         0.79         5.8         0.0           0.25         0.006719         1.132         0.89         0.2         0.0           0.5         0.009186         1.125         1.22         0.5         0.0           0.75	Stress         Displacement tsf         Ratio         at End         \$q.Rt.         Log min         \$q.Rt.           0.125         0.0003402         1.150         0.05         0.0         0.0         0.00e+000           0.25         -0.001021         1.154         -0.14         0.0         0.0         0.00e+000           0.5         0.001276         1.148         0.17         0.0         0.0         1.33e-004           0.75         0.003827         1.140         0.51         4.5         3.2         7.11e-007           1         0.006634         1.132         0.88         3.9         0.0         8.17e-007           2         0.0159         1.106         2.12         1.0         0.2         3.23e-006           4         0.03079         1.063         4.09         0.9         0.4         3.20e-006           1         0.02024         1.093         2.69         1.0         0.0         3.12e-006           0.5         0.01488         1.109         1.98         3.6         0.0         8.62e-007           0.125         0.005954         1.134         0.79         5.8         0.0         5.38e-005           0.5         0.006719<	Stress         Displacement tsf         Ratio         at End         \$q.Rt.         Log min         \$q.Rt.         Log ft^2/sec         \$q.Rt.         Log min         \$q.Rt.         Log ft^2/sec           0.125         0.0003402         1.150         0.05         0.0         0.0         0.00e+000         0.00e+000           0.25         -0.001021         1.148         0.17         0.0         0.0         1.33e-004         0.00e+000           0.75         0.03827         1.140         0.51         4.5         3.2         7.11e-007         1.01e-006           1         0.006634         1.132         0.88         3.9         0.0         8.17e-007         0.00e+000           2         0.0159         1.106         2.12         1.0         0.2         3.23e-006         1.89e-005           4         0.03079         1.063         4.09         0.9         0.4         3.20e-006         8.51e-006           1         0.02024         1.093         2.69         1.0         0.0         3.12e-006         0.00e+000           0.5         0.01488         1.109         1.98         3.6         0.0         8.62e-007         0.00e+000           0.125         0.005954



# Liquid Limit, Plastic Limit and Plasticity Index of Soils ASTM D4318



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
•	REDDISH BROWN LEAN CLAY	41	15	26			CL

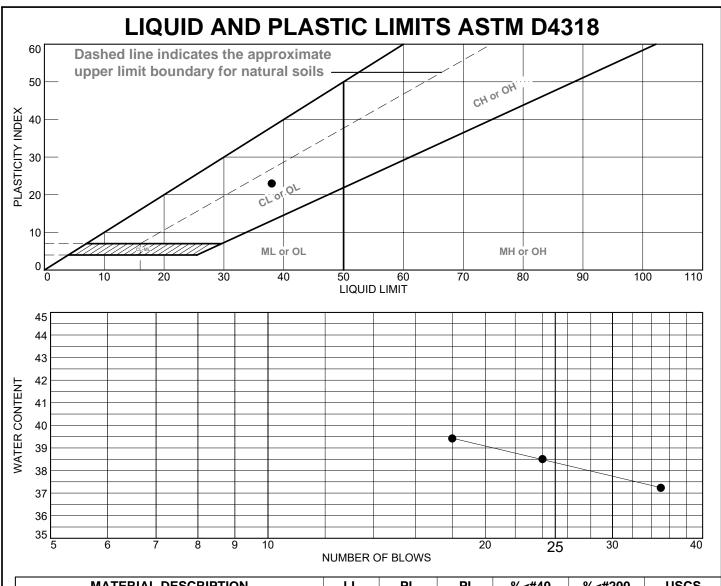
Project No. 11225052 Client: GEI CONSULTANTS INC. Remarks:

● Source of Sample: BL-2 Depth: 35.0'-37.0' Sample Number: ST-10

**Project:** PULLIUM PROPERTY REDEVELOPMENT PROJECT



**Figure** 



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
•	REDDISH BROWN LEAN CLAY	38	15	23			CL

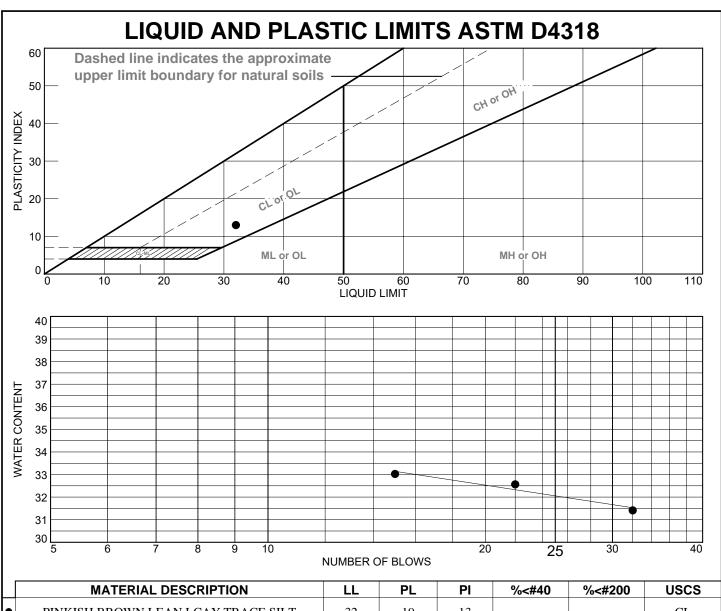
Project No. 11225052 Client: GEI CONSULTANTS INC. Remarks:

● Source of Sample: BL-3 Depth: 67.5'-69.5' Sample Number: ST-14

**Project:** PULLIUM PROPERTY REDEVELOPMENT PROJECT



**Figure** 

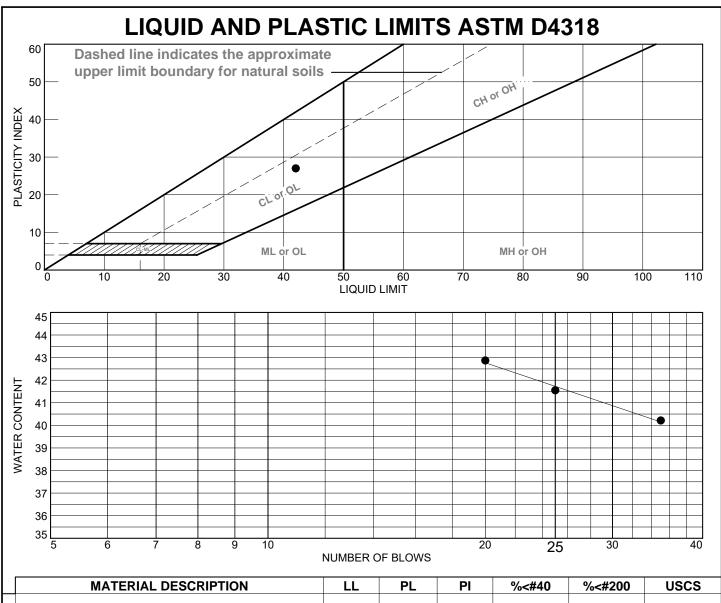


L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
ľ	PINKISH BROWN LEAN LCAY TRACE SILT	32	19	13			CL
ľ							

● Source of Sample: BL-3 Depth: 100.0'-102.0' Sample Number: ST-18



Figure



L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
ŀ	REDDISH BROWN LEAN CLAY	42	15	27			CL
l							

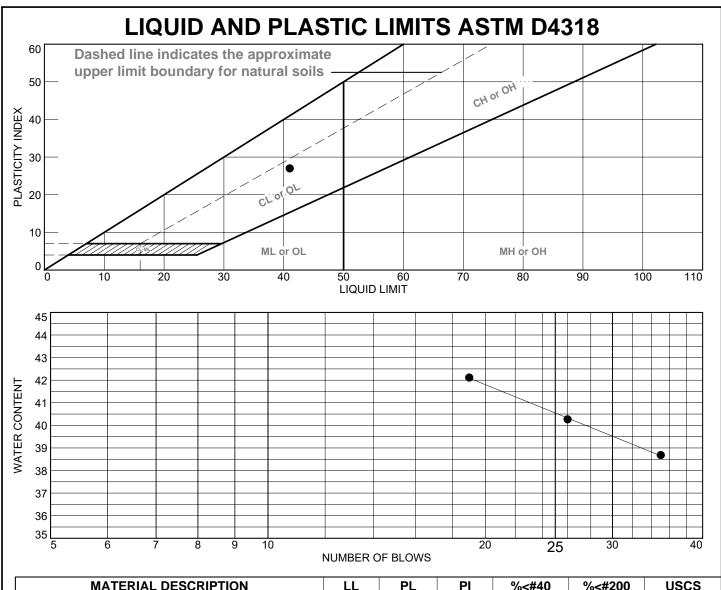
Project No. 11225052 Client: GEI CONSULTANTS INC. Remarks:

● Source of Sample: BL-5 Depth: 60.0'-62.0' Sample Number: ST-16

**Project:** PULLIUM PROPERTY REDEVELOPMENT PROJECT



**Figure** 



L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
	REDDISH BROWN LEAN CLAY	41	14	27			CL
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ľ							
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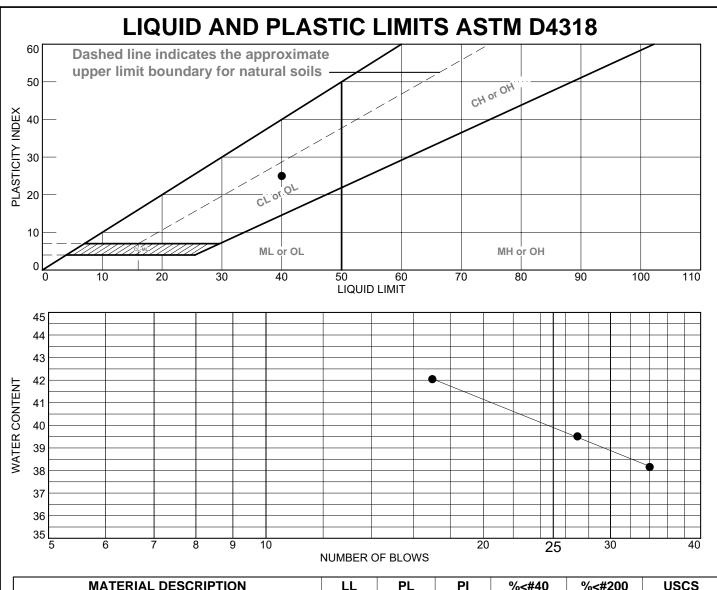
Project No. 11225052 Client: GEI CONSULTANTS INC. Remarks:

● Source of Sample: BL-6B Depth: 50.0'-52.0' Sample Number: ST-16

**Project:** PULLIUM PROPERTY REDEVELOPMENT PROJECT



**Figure** 

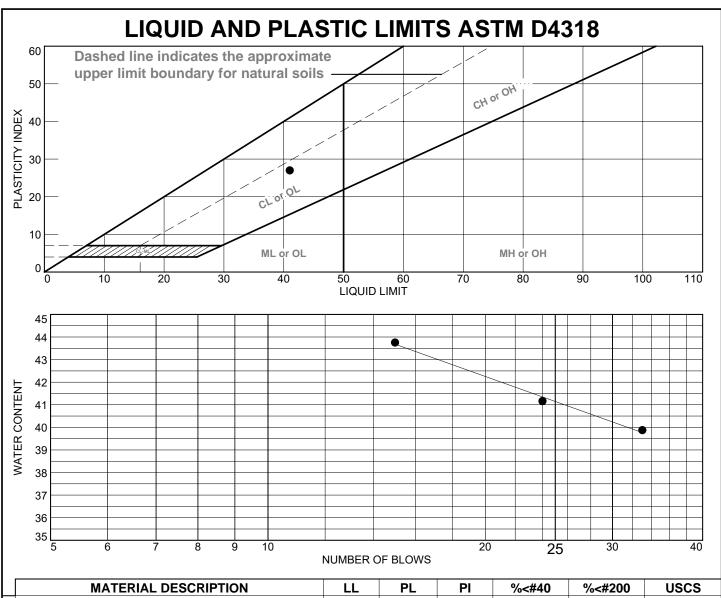


L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
	REDDISH BROWN LEAN CLAY	40	15	25			CL
Ī							
Ī							
İ							

● Source of Sample: BL-7 Depth: 40.0'-42.0' Sample Number: ST-10



**Figure** 

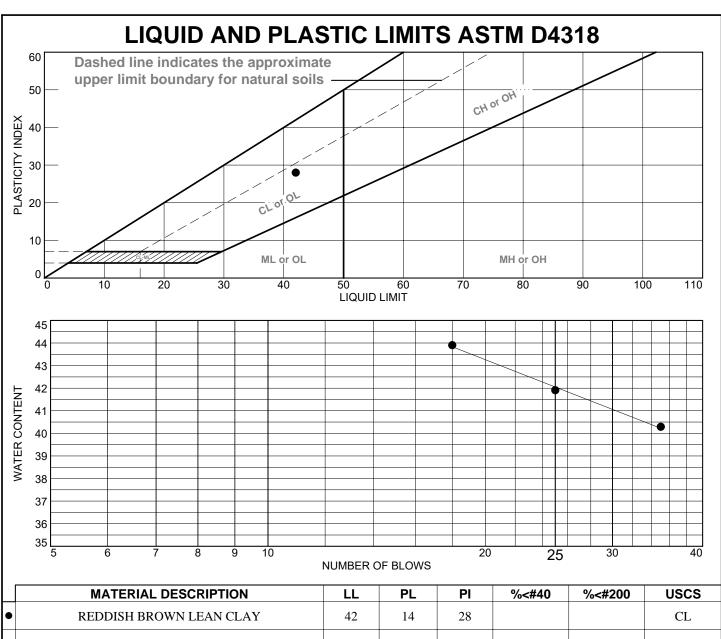


L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
ŀ	REDDISH BROWN LEAN CLAY	41	14	27			CL

● Source of Sample: BL-8 Depth: 30.0'-32.0' Sample Number: ST-9



**Figure** 

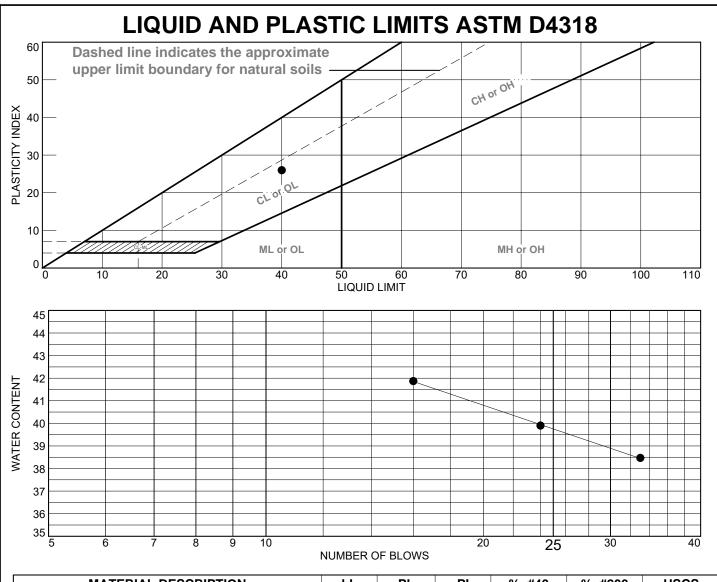


L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
	REDDISH BROWN LEAN CLAY	42	14	28			CL
ľ							
l							

● Source of Sample: BL-11 Depth: 45.0'-47.0' Sample Number: ST-11



**Figure** 

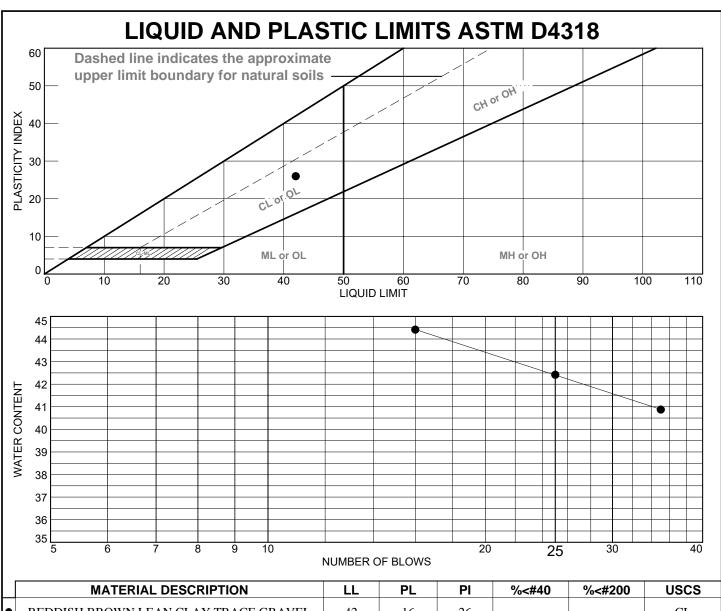


l	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
l	REDDISH BROWN LEAN CLAY TRACE GRAV	VEL 40	14	26			CL
I							
ľ							
İ							
l							

● Source of Sample: BL-12 Depth: 45.0'-47.0' Sample Number: ST-12



**Figure** 



L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
l	REDDISH BROWN LEAN CLAY TRACE GRAVEL	42	16	26			CL
l							
ĺ							
l							

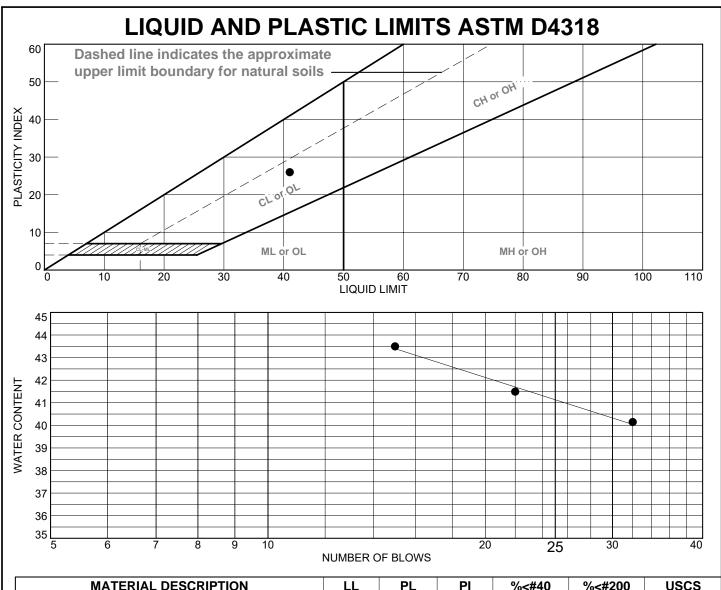
Project No. 11225052 Client: GEI CONSULTANTS INC. Remarks:

● Source of Sample: BL-12 Depth: 80.0'-82.0' Sample Number: ST-19

**Project:** PULLIUM PROPERTY REDEVELOPMENT PROJECT



**Figure** 

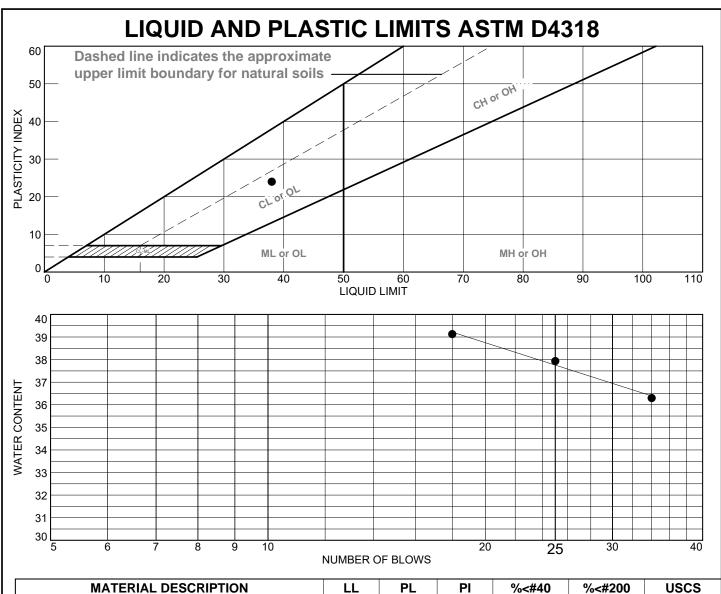


L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
l	REDDISH BROWN LEAN CLAY TRACE GRAVEL	41	15	26			CL
l							
İ							
l							

● Source of Sample: BL-15 Depth: 40.0'-42.0' Sample Number: ST-9



**Figure** 



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
•	REDDISH BROWN LEAN CLAY	38	14	24			CL

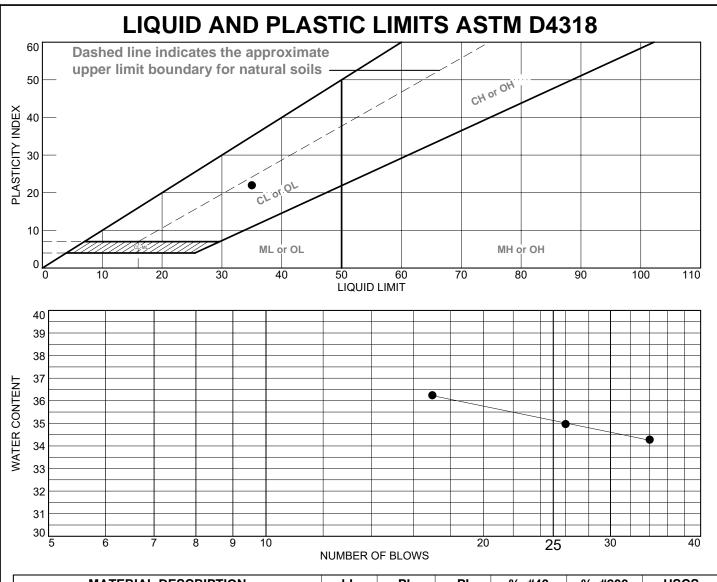
Project No. 11225052 Client: GEI CONSULTANTS INC. Remarks:

● Source of Sample: BW1-22 Depth: 50.0'-52.0' Sample Number: ST-2

**Project:** PULLIUM PROPERTY REDEVELOPMENT PROJECT



**Figure** 

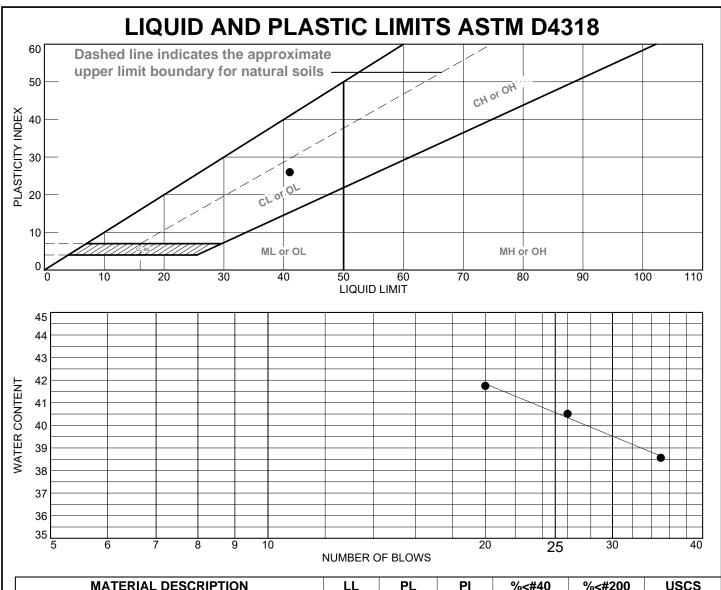


L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
	REDDISH BROWN LEAN CLAY	35	13	22			CL
ĺ							
ľ							
l							

● Source of Sample: BW2-22 Depth: 35.0'-37.0' Sample Number: ST-1



**Figure** 

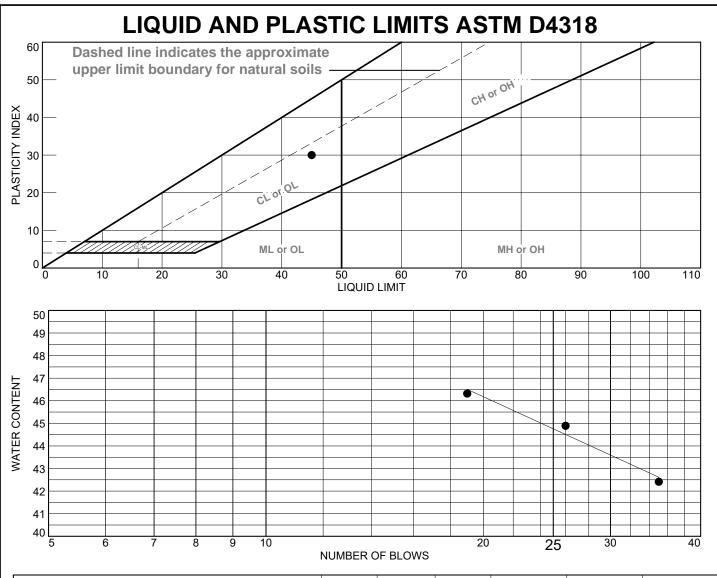


L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
ŀ	REDDISH BROWN LEAN CLAY	41	15	26			CL

● Source of Sample: BW2-22 Depth: 65.0'-67.0' Sample Number: ST-2



**Figure** 

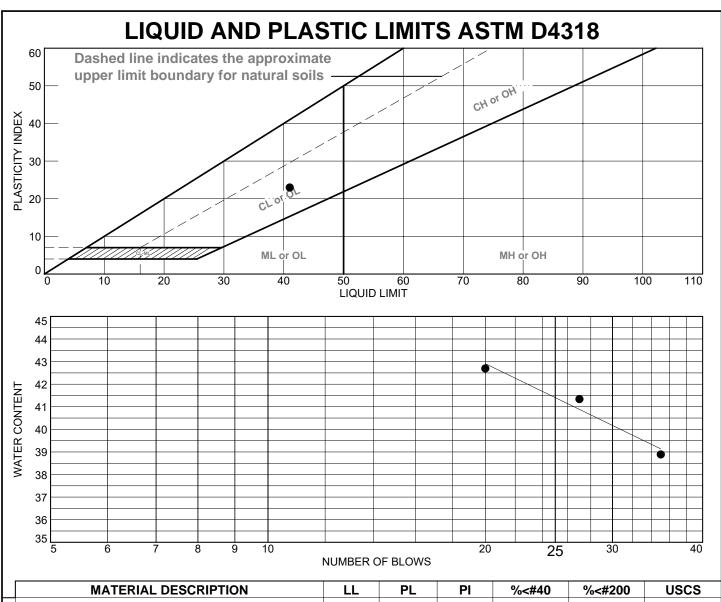


L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
	REDDISH BROWN LEAN CLAY - SILT AND SAND SEAMS NOTED	45	15	30			
ľ							

● Source of Sample: BW2-22 Depth: 80.0'-81.5' Sample Number: ST-3



**Figure** 



L	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
ŀ	REDDISH BROWN LEAN CLAY	41	18	23			CL
ľ							
ľ							

● Source of Sample: BW3-22 Depth: 90.0'-92.0' Sample Number: ST-3



**Figure** 

## **Terracon**

## **Specific Gravity of Soils ASTM D854**



## **SPECIFIC GRAVITY OF SOIL SOLIDS ASTM D-854**

**Project Number:** 11225052 **Project Name:** Pulliam Pro

Pulliam Properties

Test Date: 1/30/2023

## **Results Summary**

Boring / Sample	Sample Number	Depth (ft)	Specific Gravity (Gs)
BL-5	S-16	60.0'-62.0'	2.759
BL-11	S-11	45.5'-47.0'	2.716
BW2-22	ST-1	35.0'-37.0'	2.732
BW2-22	ST-2	65.0'-67.0'	2.738
BW3-22	ST-3	90.0'-92.0'	2.759

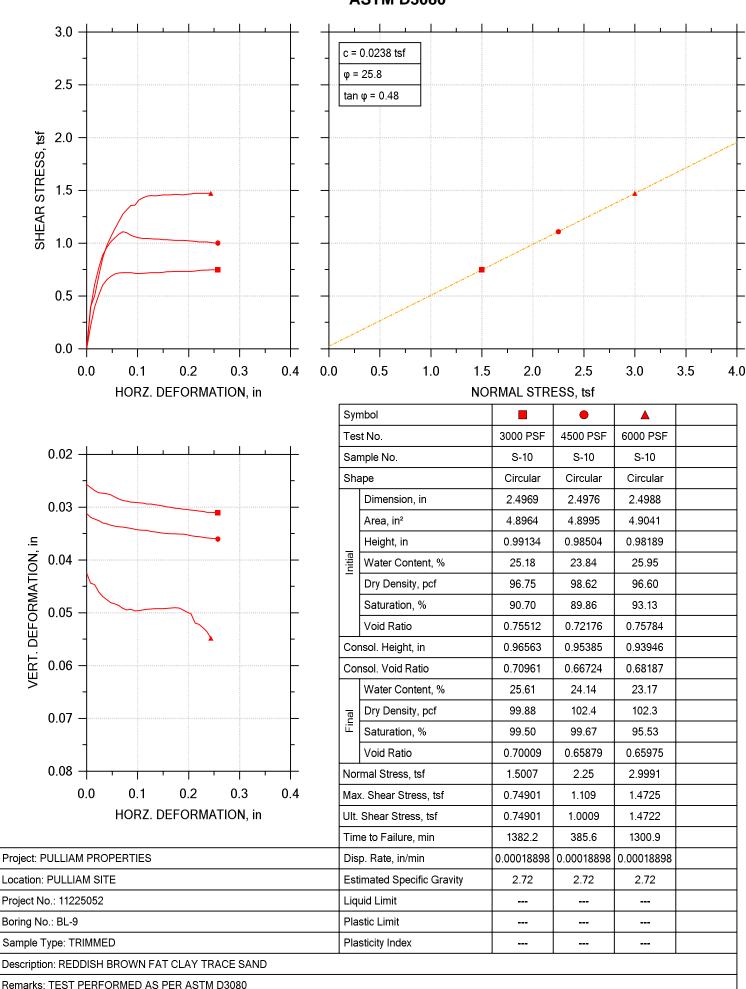
	Tested By:	SJH	Checked By:	BCM	
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## Direct Shear Test of Soils Under Consolidated Drained Conditions ASTM D3080



## DIRECT SHEAR STRENGTH UNDER CONSOLIDATED DRAINED CONDITIONS ASTM D3080



Project: PULLIAM PROPERTIES Location: PULLIAM SITE Boring No.: BL-9 Sample No.: S-10 Test No.: 3000 PSF

Tested By: EEB
Test Date: 9/29/2023 Sample Type: TRIMMED Project No.: 11225052 Checked By: WPQ Depth: 35'-37' Elevation: ----



Soil Description: REDDISH BROWN FAT CLAY TRACE SAND Remarks: TEST PERFORMED AS PER ASTM D3080

	Elapsed	Vertical	Vertical	Horizontal	Horizontal	Cumulative
	Time	Stress	Displacement	Stress	Displacement	Displacement
	min	tsf	in	tsf	in	in
1	0.00	1.50	0.02571	0.000	0.0000	0.0000
2	55.94	1.50	0.02631	0.226	0.007903	0.007903
3	100.95	1.50	0.02686	0.397	0.01576	0.01576
4	144.68	1.50	0.02725	0.512	0.02366	0.02366
5	188.95	1.50	0.02736	0.602	0.03151	0.03151
6	229.25	1.50	0.02744	0.653	0.03942	0.03942
7	269.63	1.50	0.02762	0.684	0.04727	0.04727
8	313.91	1.50	0.02804	0.709	0.05513	0.05513
9	353.96	1.50	0.02843	0.720	0.06303	0.06303
10	391.67	1.50	0.02874	0.720	0.07088	0.07088
11	436.60	1.50	0.02888	0.721	0.07879	0.07879
12	479.93	1.50	0.02904	0.720	0.08664	0.08664
13	520.80	1.50	0.02908	0.714	0.09450	0.09450
14	560.81	1.50	0.02915	0.713	0.1024	0.1024
15	603.57	1.50	0.02922	0.717	0.1103	0.1103
16	646.80	1.50	0.02939	0.717	0.1182	0.1182
17	688.18	1.50	0.02942	0.721	0.1260	0.1260
18	730.11	1.50	0.02952	0.721	0.1339	0.1339
19	772.97	1.50	0.02964	0.723	0.1418	0.1418
20	814.16	1.50	0.02977	0.724	0.1496	0.1496
21	856.41	1.50	0.02994	0.729	0.1575	0.1575
22	897.11	1.50	0.03002	0.731	0.1654	0.1654
23	937.51	1.50	0.03019	0.733	0.1732	0.1732
24	980.49	1.50	0.03025	0.732	0.1811	0.1811
25	1023.01	1.50	0.03035	0.732	0.1890	0.1890
26	1064.08	1.50	0.03042	0.732	0.1969	0.1969
27	1104.60	1.50	0.03052	0.733	0.2047	0.2047
28	1147.30	1.50	0.03061	0.737	0.2126	0.2126
29	1188.46	1.50	0.03072	0.743	0.2205	0.2205
30	1227.96	1.50	0.03081	0.745	0.2284	0.2284
31	1276.04	1.50	0.03095	0.747	0.2363	0.2363
32	1313.39	1.50	0.03097	0.748	0.2441	0.2441
33	1355.54	1.50	0.03104	0.748	0.2520	0.2520
34	1382.17	1.50	0.03109	0.749	0.2574	0.2574



Project: PULLIAM PROPERTIES Location: PULLIAM SITE
Boring No.: BL-9 Tested By: EEB
Sample No.: S-10 Test Date: 10/2/2023
Test No.: 4500 PSF Sample Type: TRIMMED

Location: PULLIAM SITE Project No.: 11225052
Tested By: EEB Checked By: WPQ
Test Date: 10/2/2023 Depth: 35'-37'
Sample Type: TRIMMED Elevation: ----



Soil Description: REDDISH BROWN FAT CLAY TRACE SAND Remarks: TEST PERFORMED AS PER ASTM D3080

	Elapsed	Vertical	Vertical	Horizontal	Horizontal	Cumulative
	Time	Stress	Displacement	Stress	Displacement	Displacement
	min	tsf	in	tsf	in	in
1	0.00	2.25	0.03119	0.000	0.0000	0.0000
2	41.44	2.25	0.03196	0.399	0.007903	0.007903
3	80.94	2.25	0.03225	0.608	0.01576	0.01576
4	126.32	2.25	0.03256	0.769	0.02366	0.02366
5	169.94	2.25	0.03296	0.887	0.03151	0.03151
6	210.53	2.25	0.03318	0.960	0.03942	0.03942
7	252.97	2.25	0.03339	1.01	0.04727	0.04727
8	296.81	2.25	0.03360	1.05	0.05513	0.05513
9	340.95	2.25	0.03369	1.08	0.06303	0.06303
10	385.60	2.25	0.03376	1.11	0.07088	0.07088
11	426.50	2.25	0.03387	1.10	0.07879	0.07879
12	468.98	2.25	0.03403	1.07	0.08664	0.08664
13	508.55	2.25	0.03416	1.06	0.09450	0.09450
14	552.21	2.25	0.03428	1.05	0.1024	0.1024
15	592.46	2.25	0.03434	1.05	0.1103	0.1103
16	633.38	2.25	0.03438	1.05	0.1182	0.1182
17	675.13	2.25	0.03458	1.04	0.1260	0.1260
18	716.60	2.25	0.03468	1.04	0.1339	0.1339
19	761.09	2.25	0.03476	1.04	0.1418	0.1418
20	806.47	2.25	0.03489	1.03	0.1496	0.1496
21	845.62	2.25	0.03498	1.03	0.1575	0.1575
22	887.64	2.25	0.03503	1.03	0.1654	0.1654
23	926.88	2.25	0.03505	1.03	0.1732	0.1732
24	970.79	2.25	0.03507	1.03	0.1811	0.1811
25	1014.20	2.25	0.03511	1.03	0.1890	0.1890
26	1054.43	2.25	0.03522	1.02	0.1969	0.1969
27	1092.16	2.25	0.03538	1.02	0.2047	0.2047
28	1131.97	2.25	0.03549	1.02	0.2126	0.2126
29	1172.21	2.25	0.03557	1.01	0.2205	0.2205
30	1212.35	2.25	0.03569	1.01	0.2284	0.2284
31	1250.26	2.25	0.03579	1.01	0.2363	0.2363
32	1292.37	2.25	0.03590	1.01	0.2441	0.2441
33	1337.33	2.25	0.03597	1.00	0.2520	0.2520
34	1362.13	2.25	0.03603	1.00	0.2573	0.2573



Project: PULLIAM SITE

Boring No.: BL-9

Sample No.: S-10

Test No.: 6000 PSF

Location: PULLIAM SITE

Tested By: EEB

Test Date: 10/2/2023

Sample Type: TRIMMED

Project No.: 11225052 Checked By: WPQ Depth: 35'-37' Elevation: ----



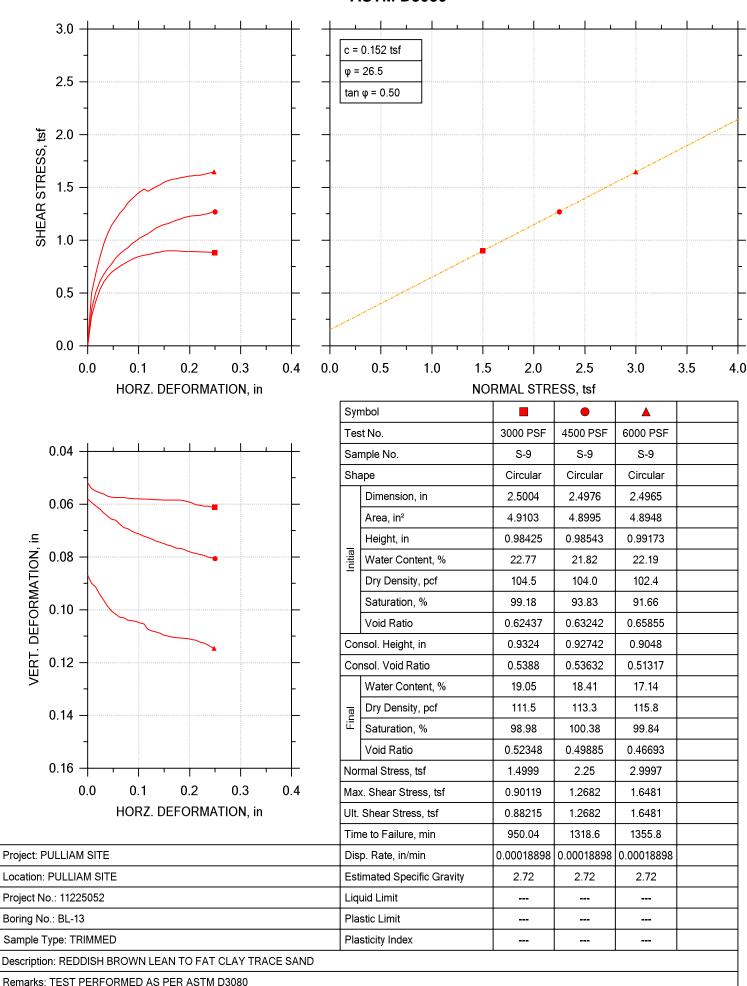
Soil Description: REDDISH BROWN FAT CLAY TRACE SAND Remarks: TEST PERFORMED AS PER ASTM D3080

-						
	Elapsed	Vertical	Vertical	Horizontal	Horizontal	Cumulative
	Time	Stress	Displacement	Stress	Displacement	Displacement
	min	tsf	in	tsf	in	in
1	0.00	3.00	0.04243	0.000	0.0000	0.0000
2	88.25	3.00	0.04438	0.398	0.007902	0.007902
3	130.01	3.00	0.04465	0.502	0.01577	0.01577
4	174.27	3.00	0.04605	0.694	0.02364	0.02364
5	220.98	3.00	0.04690	0.856	0.03150	0.03150
6	263.16	3.00	0.04750	0.977	0.03940	0.03940
7	301.14	3.00	0.04803	1.06	0.04727	0.04727
8	340.43	3.00	0.04833	1.14	0.05514	0.05514
9	381.43	3.00	0.04859	1.20	0.06300	0.06300
10	429.05	3.00	0.04913	1.27	0.07087	0.07087
11	470.38	3.00	0.04945	1.31	0.07877	0.07877
12	512.32	3.00	0.04933	1.36	0.08664	0.08664
13	552.86	3.00	0.04962	1.36	0.09451	0.09451
14	595.79	3.00	0.04958	1.41	0.1024	0.1024
15	635.48	3.00	0.04945	1.43	0.1102	0.1102
16	672.14	3.00	0.04935	1.44	0.1181	0.1181
17	715.97	3.00	0.04929	1.45	0.1260	0.1260
18	759.39	3.00	0.04923	1.45	0.1339	0.1339
19	802.08	3.00	0.04923	1.45	0.1417	0.1417
20	846.15	3.00	0.04922	1.46	0.1496	0.1496
21	885.00	3.00	0.04918	1.46	0.1575	0.1575
22	926.54	3.00	0.04908	1.46	0.1654	0.1654
23	966.38	3.00	0.04900	1.46	0.1732	0.1732
24	1011.23	3.00	0.04908	1.46	0.1811	0.1811
25	1050.46	3.00	0.04945	1.46	0.1890	0.1890
26	1092.43	3.00	0.04988	1.47	0.1969	0.1969
27	1136.20	3.00	0.05019	1.47	0.2047	0.2047
28	1177.99	3.00	0.05195	1.47	0.2126	0.2126
29	1215.03	3.00	0.05220	1.47	0.2205	0.2205
30	1255.11	3.00	0.05285	1.47	0.2283	0.2283
31	1300.93	3.00	0.05358	1.47	0.2362	0.2362
32	1336.27	3.00	0.05479	1.47	0.2437	0.2437





## DIRECT SHEAR STRENGTH UNDER CONSOLIDATED DRAINED CONDITIONS ASTM D3080



Project: PULLIAM SITE Location: PULLIAM SITE Boring No.: BL-13 Sample No.: S-9 Test No.: 3000 PSF

Tested By: EEB
Test Date: 9/26/2023 Sample Type: TRIMMED

Project No.: 11225052

Checked By: KP Depth: 25'-27'

Elevation: ----



Soil Description: REDDISH BROWN LEAN TO FAT CLAY TRACE SAND Remarks: TEST PERFORMED AS PER ASTM D3080

	Elapsed	Vertical	Vertical	Horizontal	Horizontal	Cumulative
	Time	Stress	Displacement	Stress	Displacement	Displacement
	min	tsf	in	tsf	in	in
1	0.00	1.50	0.05185	0.000	0.0000	0.0000
2	78.11	1.50	0.05404	0.280	0.007902	0.007902
3	116.22	1.50	0.05498	0.419	0.01577	0.01577
4	162.30	1.50	0.05565	0.531	0.02364	0.02364
5	202.79	1.50	0.05615	0.603	0.03150	0.03150
6	243.42	1.50	0.05701	0.657	0.03940	0.03940
7	285.57	1.50	0.05739	0.697	0.04727	0.04727
8	330.81	1.50	0.05740	0.728	0.05514	0.05514
9	369.52	1.50	0.05745	0.753	0.06300	0.06300
10	409.54	1.50	0.05749	0.776	0.07087	0.07087
11	447.88	1.50	0.05767	0.796	0.07877	0.07877
12	491.23	1.50	0.05786	0.819	0.08664	0.08664
13	534.56	1.50	0.05790	0.837	0.09451	0.09451
14	575.30	1.50	0.05794	0.849	0.1024	0.1024
15	617.18	1.50	0.05805	0.857	0.1102	0.1102
16	658.40	1.50	0.05809	0.863	0.1181	0.1181
17	700.46	1.50	0.05818	0.874	0.1260	0.1260
18	740.64	1.50	0.05825	0.881	0.1339	0.1339
19	778.46	1.50	0.05836	0.889	0.1417	0.1417
20	821.36	1.50	0.05840	0.896	0.1496	0.1496
21	863.82	1.50	0.05846	0.899	0.1575	0.1575
22	906.71	1.50	0.05849	0.900	0.1654	0.1654
23	950.04	1.50	0.05849	0.901	0.1732	0.1732
24	988.84	1.50	0.05846	0.897	0.1811	0.1811
25	1031.77	1.50	0.05863	0.893	0.1890	0.1890
26	1073.21	1.50	0.05899	0.892	0.1969	0.1969
27	1119.43	1.50	0.05957	0.894	0.2047	0.2047
28	1156.63	1.50	0.06022	0.890	0.2126	0.2126
29	1200.15	1.50	0.06032	0.891	0.2205	0.2205
30	1243.08	1.50	0.06075	0.888	0.2283	0.2283
31	1285.70	1.50	0.06070	0.886	0.2362	0.2362
32	1325.22	1.50	0.06115	0.885	0.2441	0.2441
33	1348.04	1.50	0.06113	0.882	0.2492	0.2492



Project: PULLIAM PROPERTIES Location: PULLIAM SITE Boring No.: BL-13 Sample No.: S-9 Test No.: 4500 PSF

Tested By: EEB
Test Date: 9/26/2023 Sample Type: TRIMMED

Soil Description: REDDISH BROWN LEAN TO FAT CLAY TRACE SAND Remarks: TEST PERFORMED AS PER ASTM D3080

Step: 1 of 1

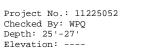
	Elapsed	Vertical	Vertical	Horizontal	Horizontal	Cumulative
	Time	Stress	Displacement	Stress	Displacement	Displacement
	min	tsf	in	tsf	in	in
1	0.00	2.25	0.05801	0.000	0.0000	0.0000
2	47.85	2.25	0.05945	0.359	0.007903	0.007903
3	88.43	2.25	0.06056	0.504	0.01576	0.01576
4	131.81	2.25	0.06188	0.610	0.02366	0.02366
5	172.81	2.25	0.06322	0.675	0.03151	0.03151
6	212.27	2.25	0.06466	0.734	0.03942	0.03942
7	258.65	2.25	0.06574	0.776	0.04727	0.04727
8	300.74	2.25	0.06607	0.833	0.05513	0.05513
9	341.31	2.25	0.06746	0.869	0.06303	0.06303
10	381.75	2.25	0.06880	0.902	0.07088	0.07088
11	421.04	2.25	0.06928	0.929	0.07879	0.07879
12	465.60	2.25	0.07015	0.965	0.08664	0.08664
13	506.50	2.25	0.07090	0.995	0.09450	0.09450
14	548.12	2.25	0.07137	1.02	0.1024	0.1024
15	591.09	2.25	0.07208	1.04	0.1103	0.1103
16	630.69	2.25	0.07260	1.06	0.1182	0.1182
17	673.24	2.25	0.07326	1.09	0.1260	0.1260
18	713.36	2.25	0.07394	1.11	0.1339	0.1339
19	758.11	2.25	0.07446	1.13	0.1418	0.1418
20	801.18	2.25	0.07495	1.15	0.1496	0.1496
21	840.79	2.25	0.07550	1.16	0.1575	0.1575
22	883.30	2.25	0.07590	1.17	0.1654	0.1654
23	925.64	2.25	0.07656	1.19	0.1732	0.1732
24	965.38	2.25	0.07674	1.20	0.1811	0.1811
25	1009.40	2.25	0.07712	1.21	0.1890	0.1890
26	1047.23	2.25	0.07788	1.22	0.1969	0.1969
27	1083.60	2.25	0.07832	1.23	0.2047	0.2047
28	1126.66	2.25	0.07865	1.23	0.2126	0.2126
29	1168.83	2.25	0.07905	1.24	0.2205	0.2205
30	1207.42	2.25	0.07941	1.25	0.2284	0.2284
31	1246.24	2.25	0.07997	1.25	0.2363	0.2363
32	1288.71	2.25	0.08033	1.27	0.2441	0.2441
33	1318.64	2.25	0.08063	1.27	0.2500	0.2500



Project No.: 11225052 Checked By: WPQ Depth: 25'-27' Elevation: ----

Project: PULLIAM SITE Location: PULLIAM SITE Boring No.: BL-13 Sample No.: S-9 Test No.: 6000 PSF

Tested By: EEB
Test Date: 9/27/2023 Sample Type: TRIMMED





Soil Description: REDDISH BROWN LEAN TO FAT CLAY TRACE SAND Remarks: TEST PERFORMED AS PER ASTM D3080

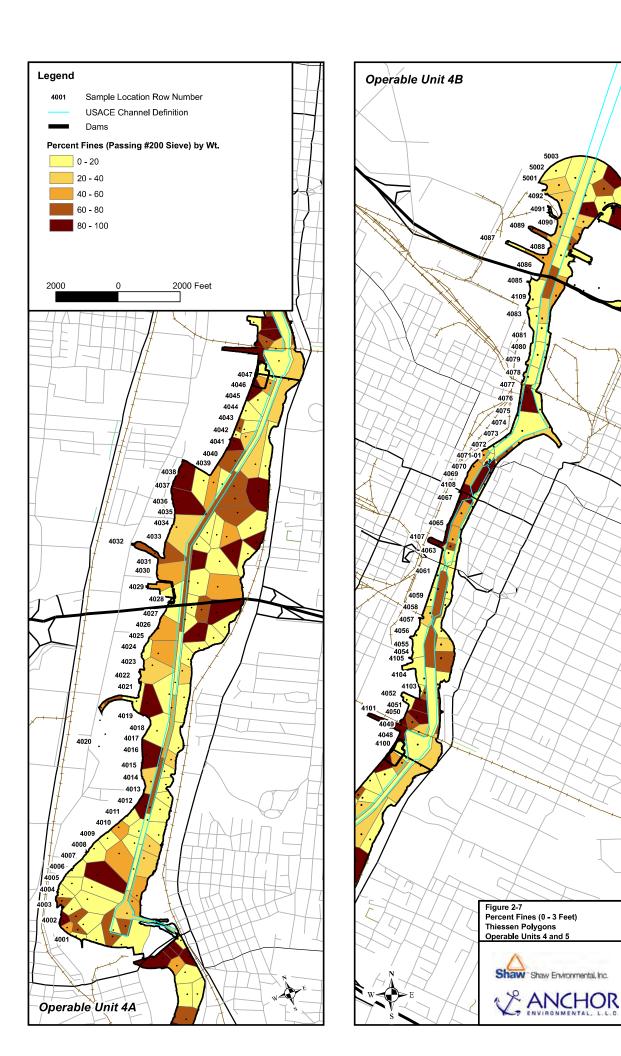
	Elapsed	Vertical	Vertical	Horizontal	Horizontal	Cumulative
	Time	Stress	Displacement	Stress	Displacement	Displacement
	min	tsf	in	tsf	in	in
1	0.00	3.00	0.08693	0.000	0.0000	0.0000
2	78.60	3.00	0.08999	0.498	0.007902	0.007902
3	123.99	3.00	0.09134	0.680	0.01577	0.01577
4	164.66	3.00	0.09422	0.836	0.02364	0.02364
5	211.73	3.00	0.09637	0.964	0.03150	0.03150
6	254.27	3.00	0.09881	1.07	0.03940	0.03940
7	298.43	3.00	0.1005	1.14	0.04727	0.04727
8	337.74	3.00	0.1017	1.20	0.05514	0.05514
9	379.02	3.00	0.1028	1.26	0.06300	0.06300
10	417.65	3.00	0.1031	1.30	0.07087	0.07087
11	461.46	3.00	0.1038	1.35	0.07877	0.07877
12	503.70	3.00	0.1041	1.39	0.08664	0.08664
13	546.82	3.00	0.1044	1.43	0.09451	0.09451
14	585.01	3.00	0.1050	1.46	0.1024	0.1024
15	629.36	3.00	0.1053	1.48	0.1102	0.1102
16	673.30	3.00	0.1074	1.46	0.1181	0.1181
17	712.69	3.00	0.1080	1.48	0.1260	0.1260
18	753.12	3.00	0.1084	1.51	0.1339	0.1339
19	789.76	3.00	0.1089	1.52	0.1417	0.1417
20	838.97	3.00	0.1095	1.55	0.1496	0.1496
21	881.24	3.00	0.1100	1.56	0.1575	0.1575
22	926.17	3.00	0.1103	1.58	0.1654	0.1654
23	964.87	3.00	0.1106	1.58	0.1732	0.1732
24	1006.49	3.00	0.1106	1.59	0.1811	0.1811
25	1047.18	3.00	0.1108	1.60	0.1890	0.1890
26	1087.75	3.00	0.1110	1.61	0.1969	0.1969
27	1131.02	3.00	0.1113	1.61	0.2047	0.2047
28	1170.43	3.00	0.1115	1.61	0.2126	0.2126
29	1211.75	3.00	0.1123	1.62	0.2205	0.2205
30	1252.37	3.00	0.1126	1.63	0.2283	0.2283
31	1288.94	3.00	0.1133	1.63	0.2362	0.2362
32	1333.81	3.00	0.1143	1.64	0.2441	0.2441
33	1355.79	3.00	0.1146	1.65	0.2481	0.2481



Pre-Design Investigation Port Property Redevelopment Geotechnical Data Report Green Bay, Wisconsin March 2023

### **Appendix D**

**Historic Supplemental Data** 





M-3 Calibration Factor **2.781** 2/17/2005

				Shear Strength													
							1-foo	t Depth			<u> </u>			2-	foot Depth		
0	Data Manager	Diagnicity by days	Correction Factor, μ	Vane		M-3 Scale		Measured	I		Vane		M-3 Scale		Measured	I I	
Sample ID	Date Measured	Plasticity Index	(after Bjerrum, 1972)	Length	Vane	Reading	Measured Shear	Shear Strength	Measured Shear	Corrected Shear	Length	Vane	Reading	Measured Shear	Shear Strength	Measured Shear	Corrected Shear
				(mm)	Constant	(kPa)	Strength (kPa)	(tsf)	Strength (psf)	Strength (psf) <sup>(1)</sup>	(mm)	Constant	(kPa)	Strength (kPa)	(tsf)	Strength (psf)	Strength (psf) <sup>(1)</sup>
2001-01		126.00	0.55		#N/A							#N/A					
2002-02		#N/A	0.64		#N/A							#N/A					
2003-02		#N/A	0.64		#N/A							#N/A					
2004-04		#N/A	0.64		#N/A							#N/A					
2005-02		#N/A	0.64		#N/A							#N/A					
3006-09	10/12/04	34.90	0.89	64.0	0.244	26	5.88	0.06	123	109	64.0	0.244	sand				
3007-07	10/12/04		0.64	64.0	0.244	32	7.24	0.08	151	97	64.0	0.244	48	10.86	0.11	227	145
3008-06	10/12/04	84.10	0.66	64.0	0.244	14	3.17	0.03	66	43	64.0	0.244	24	5.43	0.06	113	74
3017-04	10/12/04	110.00	0.58	64.0	0.244	12	2.71	0.03	57	33	64.0	0.244	20	4.52	0.05	94	55
3018-02	10/12/04	107.40	0.59	64.0	0.244	13	2.94	0.03	61	36	64.0	0.244	21	4.75	0.05	99	59
3019-02	10/12/04	123.30	0.56	64.0	0.244	17	3.85	0.04	80	45	64.0	0.244	23	5.20	0.05	109	61
3019-03	10/12/04	117.20	0.57	64.0	0.244	10	2.26	0.02	47	27	64.0	0.244	15	3.39	0.04	71	40
3019-05	10/12/04	120.60	0.56	64.0	0.244	10	2.26	0.02	47	27	64.0	0.244	13	2.94	0.03	61	35
3023-03	10/12/04	127.10	0.55	64.0	0.244	12	2.71	0.03	57	31	64.0	0.244	20	4.52	0.05	94	52
3023-05	10/12/04	53.10	0.78	64.0	0.244	8	1.81	0.02	38	30	64.0	0.244	18	4.07	0.04	85	67
3026-01	10/12/04	152.40	0.78	64.0	0.244	6	1.36	0.02	28	15	64.0	0.244	20	4.52	0.04	94	48
3026-01	10/12/04	143.40	0.51	64.0	0.244	17	3.85	0.01	80	42	64.0	0.244	22	4.98	0.05	104	48 55
								<u> </u>									
3028-02	10/12/04	134.00	0.54	64.0	0.244	10	2.26	0.02	47	25	64.0	0.244	13	2.94	0.03	61	33
3034-02	10/12/04	89.90	0.64	64.0	0.244	8	1.81	0.02	38	24	64.0	0.244	14	3.17	0.03	66	42
3043-01	10/12/04	15.40	1.03	64.0	0.244	24	5.43	0.06	113	117	64.0	0.244	60	13.57	0.14	283	292
3044-02	10/12/04	156.30	0.51	64.0	0.244	8	1.81	0.02	38	19	64.0	0.244	18	4.07	0.04	85	43
3045-01	10/12/04	125.40	0.55	64.0	0.244	13	2.94	0.03	61	34	64.0	0.244	21	4.75	0.05	99	55
3046-02	10/12/04	177.40	0.48	64.0	0.244	9	2.04	0.02	43	20	64.0	0.244	15	3.39	0.04	71	34
3047-01	10/12/04	133.00	0.54	64.0	0.244	6	1.36	0.01	28	15	64.0	0.244	18	4.07	0.04	85	46
3047-03	10/12/04	#N/A	0.64	64.0	0.244						64.0	0.244					
3048-01	10/12/04	145.20	0.52	64.0	0.244	10	2.26	0.02	47	25	64.0	0.244	15	3.39	0.04	71	37
3049-01	10/12/04	104.00	0.60	64.0	0.244	8	1.81	0.02	38	23	64.0	0.244	11	2.49	0.03	52	31
3050-01	10/12/04	102.90	0.60	64.0	0.244	10	2.26	0.02	47	28	64.0	0.244	11	2.49	0.03	52	31
3053-02	10/12/04	100.40	0.61	64.0	0.244	12	2.71	0.03	57	34	64.0	0.244	17	3.85	0.04	80	49
3054-01	10/12/04	120.70	0.56	64.0	0.244	9	2.04	0.02	43	24	64.0	0.244	13	2.94	0.03	61	35
3056-02	10/12/04	87.80	0.64	64.0	0.244	8	1.81	0.02	38	24	64.0	0.244	15	3.39	0.04	71	46
3056-03	10/12/04		0.64	64.0	0.244	sand					64.0	0.244					
3058-02	10/12/04	117.10	0.57	64.0	0.244	8	1.81	0.02	38	22	64.0	0.244	11	2.49	0.03	52	30
3058-03	10/12/04	31.90	0.91	64.0	0.244	sand					64.0	0.244					
3060-01	10/12/04	99.50	0.61	64.0	0.244	5	1.13	0.01	24	14	64.0	0.244	12	2.71	0.03	57	35
3060-02	10/12/04		0.64	64.0	0.244	14	3.17	0.03	66	42		#N/A		#N/A			
3061-03	10/12/04	153.80	0.51	64.0	0.244	10	2.26	0.02	47	24	64.0	0.244	10	2.26	0.02	47	24
3062-03	10/12/04	95.90	0.62	64.0	0.244	10	2.26	0.02	47	29	64.0	0.244	10	2.26	0.02	47	29
3063-01	10/12/04	#N/A	0.64		#N/A	sand						#N/A	sand	#N/A			
3063-03	10/12/04	38.90	0.86	64.0	0.244	20	4.52	0.05	94	82	64.0	0.244	sand				
3064-02	10/12/04		0.64	64.0	0.244	6	1.36	0.01	28	18	64.0	0.244	sand				
3064-03	10/12/04	160.90	0.50	64.0	0.244	10	2.26	0.02	47	24	64.0	0.244	15	3.39	0.04	71	36
3065-01	10/12/04	#N/A	0.64	64.0	0.244	sand					64.0	0.244	sand				
3065-04	10/12/04	#N/A	0.64		#N/A		#N/A				1	#N/A		#N/A			
3066-03	10/12/04		0.64	64.0	0.244						64.0	0.244					
3067-02	10/12/04	126.70	0.55	64.0	0.244	18	4.07	0.04	85	47	64.0	0.244	sand				
3067-05	10/12/04	103.60	0.60	64.0	0.244	17	3.85	0.04	80	48	64.0	0.244	27	6.11	0.06	128	76
3068-02	10/12/04	#N/A	0.64	64.0	0.244	10	2.26	0.02	47	30	64.0	0.244	10	2.26	0.02	47	30
3068-03	10/12/04	#N/A	0.64	64.0	0.244	sand	2.25	0.02		- 55	64.0	0.244	sand	2.20	0.02	77	
3068-04	10/12/04	#N/A #N/A	0.64	64.0	0.244	18	4.07	0.04	85	54	64.0	0.244	40	9.05	0.09	189	121
4002-10	10/12/04	#N/A #N/A	0.64	04.0	#N/A	10	7.01	0.04	1 33	J	04.0	#N/A	1 70	5.00	0.09	109	141
4003-06	+	116.10	0.57		#N/A #N/A			+	<del> </del>		<del>                                     </del>	#N/A #N/A				<del>                                     </del>	
4003-08	+	182.50	0.57		#N/A #N/A			+	+		-	#N/A #N/A				+	
									-		-					+	
4004-06	-	44.10	0.83		#N/A				-			#N/A					
4004-12	-	150.20	0.52		#N/A				-			#N/A					
4005-08	-	-	0.64		#N/A				-			#N/A					
4005-12		400.00	0.64		#N/A				-			#N/A					
4006-05		162.60	0.50		#N/A							#N/A					
4006-10			0.64		#N/A						<u> </u>	#N/A					
4007-03	1	119.20	0.57		#N/A							#N/A					
4007-11			0.64		#N/A							#N/A					

								Shear Stren	ıgth						
								3-foot Dep	th			_		W-4 B4- (6)	
Sample ID	Date Measured	Vane Length	Vane Constant	M-3 Scale Reading	Measured Shear Strength (kPa)	Measured Shear Strength (tsf)	Measured Shear Strength (psf)	Corrected Shear Strength (psf) <sup>(1)</sup>	Remolded M-3 Scale Reading	Measured Remolded Shear	Measured Remolded Shear	Measured Remolded Shear	Corrected Remolded Shear	Water Depth (ft)	
2004.04		(mm)		Ittodumg	January (iii u)	outerigan (ter)	Carongan (por)	Otterigui (psi)	l could reducing	Strength (kPa)	Strength (tsf)	Strength (psf)	Strength (psf) <sup>(1)</sup>		Description Description
2001-01 2002-02			#N/A #N/A												No Access No Access
2002-02		-	#N/A #N/A											<b>+</b>	No Access
2003-02			#N/A #N/A												No Access
2005-02			#N/A												No Access
3006-09	10/12/04	64.0	0.244	sand					sand					13.3	sandy silt over sand at 1.7'
3007-07	10/12/04	64.0	0.244	rock										10.0	sand (?) over rock
3008-06	10/12/04	64.0	0.244	54	12.21	0.13	255	167	27	6.11	0.06	128	84	10.6	very sandy silt
3017-04	10/12/04	64.0	0.244	26	5.88	0.06	123	72	10	2.26	0.02	47	28	7.3	slightly fine sandy silt
3018-02	10/12/04	64.0	0.244	28	6.33	0.07	132	78	15	3.39	0.04	71	42	7.8	slightly fine sandy silt, sand at 3.1ft
3019-02	10/12/04	64.0	0.244	45	10.18	0.11	213	118	25	5.65	0.06	118	66	10.3	Fine sandy silt
3019-03	10/12/04	64.0	0.244	25	5.65	0.06	118	67	10	2.26	0.02	47	27	7.0	sandy silt w/ organics
3019-05	10/12/04	64.0	0.244	28	6.33	0.07	132	74	10	2.26	0.02	47	27	7.8	Slightly fine sandy silt/clay
3023-03	10/12/04	64.0	0.244	50	11.31	0.12	236	130	20	4.52	0.05	94	52	7.8	slightly sandy silt
3023-05	10/12/04	64.0	0.244	35	7.92	0.08	165	130	14	3.17	0.03	66	52	6.1	sandy silt
3026-01	10/12/04	64.0	0.244	21	4.75	0.05	99	51	10	2.26	0.02	47	24	8.2	silt/clay
3027-03	10/12/04	64.0	0.244	sand										10.4	Sandy silt over sand @ 2.2'
3028-02	10/12/04	64.0	0.244	24	5.43	0.06	113	61	10	2.26	0.02	47	25	7.5	silt
3034-02	10/12/04	64.0	0.244	19	4.30	0.04	90	57	10	2.26	0.02	47	30	6.8	Fine sandy silt
3043-01	10/12/04	64.0	0.244	68	15.38 4.52	0.16	321	331	24	5.43	0.06	113	117	5.4 14.7	sand/gravel 0-0.5', clayey sand below
3044-02 3045-01	10/12/04 10/12/04	64.0 64.0	0.244 0.244	20 30	6.79	0.05 0.07	94 142	48 78	9	2.04 2.04	0.02 0.02	43 43	22 24	4.2	slightly sandy silt silt/clay
3046-02	10/12/04	64.0	0.244	18	4.07	0.07	85	41	7	1.58	0.02	33	16	10.8	slightly fine sandy silt w/ organics
3047-01	10/12/04	64.0	0.244	22	4.98	0.05	104	56	10	2.26	0.02	47	26	7.6	silt/clay
3047-01	10/12/04	64.0	0.244	22	4.90	0.03	104	30	10	2.20	0.02	47	20	17.2	sand @ 0.2'
3048-01	10/12/04	64.0	0.244	20	4.52	0.05	94	49	10	2.26	0.02	47	25	6.9	Fine sandy silt
3049-01	10/12/04	64.0	0.244	16	3.62	0.04	76	45	8	1.81	0.02	38	23	7.5	silt/clay
3050-01	10/12/04	64.0	0.244	12	2.71	0.03	57	34	8	1.81	0.02	38	23	9.0	slightly fine sandy silt
3053-02	10/12/04	64.0	0.244	24	5.43	0.06	113	69	12	2.71	0.03	57	34	16.8	sandy clay
3054-01	10/12/04	64.0	0.244	20	4.52	0.05	94	53	14	3.17	0.03	66	37	10.6	clay
3056-02	10/12/04	64.0	0.244	22	4.98	0.05	104	67	12	2.71	0.03	57	36	12.2	silt
3056-03	10/12/04	64.0	0.244											15.5	sand and gravel
3058-02	10/12/04	64.0	0.244	20	4.52	0.05	94	54	10	2.26	0.02	47	27	14.9	silt
3058-03	10/12/04	64.0	0.244											10.8	sand
3060-01	10/12/04	64.0	0.244	14	3.17	0.03	66	40	9	2.04	0.02	43	26	16.0	silt
3060-02	10/12/04		#N/A		#N/A					#N/A				14.5	silt over sand at 1.8ft.
3061-03	10/12/04	64.0	0.244	18	4.07	0.04	85	43	10	2.26	0.02	47	24	17.6	sandy silt
3062-03	10/12/04	64.0	0.244	12	2.71	0.03	57	35						16.8	silt
3063-01	10/12/04	24.0	#N/A	sand .	#N/A					#N/A					sand
3063-03	10/12/04	64.0	0.244	sand										9.5	sandy silt over sand
3064-02 3064-03	10/12/04 10/12/04	64.0 64.0	0.244 0.244	sand	4.07	0.04	85	43	40	2.26	0.02	47	24	18.1 10.9	Dense sand at 0.8, 1' reading at 0/.5'
3064-03 3065-01	10/12/04	64.0	0.244	18 sand	4.07	0.04	85	43	10	2.20	U.UZ	41	24	10.9 14.5	hard sand and gravel
3065-04	10/12/04	04.0	#N/A	sand	#N/A			<del> </del>		#N/A				16.3	bedrock
3066-03	10/12/04	64.0	0.244		#IN/A			1		#11//				17.1	hard sand and gravel
3067-02	10/12/04	64.0	0.244	sand										16.9	silt over sand
3067-05	10/12/04	64.0	0.244	sand										11.8	Six O'S. Sairu
3068-02	10/12/04	64.0	0.244	11	2.49	0.03	52	33	9	2.04	0.02	43	27	6.2	SILT w/ organics
3068-03	10/12/04	64.0	0.244	sand	1			1	Ĭ				<del>-</del> -	17.1	SAND
3068-04	10/12/04	64.0	0.244	hard	1			1	hard					17.7	Slightly Fine sandy silt
4002-10			#N/A							#N/A					<u> </u>
4003-06			#N/A							#N/A					
4003-08			#N/A							#N/A					
4004-06			#N/A							#N/A					
4004-12			#N/A							#N/A					
4005-08			#N/A							#N/A					
4005-12			#N/A							#N/A					
4006-05			#N/A							#N/A				ļ	
4006-10		ļ	#N/A		ļ			ļ		#N/A					
4007-03			#N/A	ļ						#N/A					
4007-11		J	#N/A					<u> </u>		#N/A				<u> </u>	<u>l</u>

										She	ar Streng	th					
							1-foot	Depth						2-	foot Depth		
Sample ID	Date Measured	Plasticity Index	Correction Factor, μ (after Bjerrum, 1972)	Vane Length (mm)	Vane Constant	M-3 Scale Reading (kPa)	Measured Shear Strength (kPa)	Measured Shear Strength (tsf)	Measured Shear Strength (psf)	Corrected Shear Strength (psf) <sup>(1)</sup>	Vane Length (mm)	Vane Constant	M-3 Scale Reading (kPa)	Measured Shear Strength (kPa)	Measured Shear Strength (tsf)	Measured Shear Strength (psf)	Corrected Shear Strength (psf) <sup>(1)</sup>
4008-06		159.10	0.50		#N/A			,				#N/A	, ,			İ	
4008-11		65.00	0.73		#N/A							#N/A					
4009-03		125.00	0.55		#N/A							#N/A					
4009-05		146.00	0.52		#N/A							#N/A					
4011-04		179.30	0.48		#N/A							#N/A					
4012-02 4014-02		183.80	0.47		#N/A #N/A							#N/A #N/A				+	
4015-01		84.30	0.65		#N/A							#N/A					
4016-05	10/12/04		0.64	64.0	0.244	48	10.86	0.11	227	145	64.0	0.244	48	10.86	0.11	227	145
4017-02	10/12/04	46.80	0.82	64.0	0.244	10	2.26	0.02	47	39	64.0	0.244	26	5.88	0.06	123	101
4018-05	10/12/04	53.80	0.78	64.0	0.244	8	1.81	0.02	38	30	64.0	0.244	sand				
4020-10	10/12/04	23.40	0.97	64.0	0.244	31	7.01	0.07	146	142	64.0	0.244	71	16.06	0.17	335	325
4020-12	10/12/04	138.80	0.53	64.0	0.244	15	3.39	0.04	71	38	64.0	0.244	22	4.98	0.05	104	55
4021-01 4022-03	10/12/04 10/12/04	90.00 26.60	0.64	64.0 64.0	0.244 0.244	16 20	3.62 4.52	0.04	76 94	48 89	64.0	0.244 0.244	24 31	5.43 7.01	0.06 0.07	113 146	72 139
4022-03	10/12/04	152.60	0.95	64.0	0.244	10	2.26	0.03	47	24	64.0 64.0	0.244	15	3.39	0.07	71	36
4024-06	10/12/04	165.50	0.50	64.0	0.244	14	3.17	0.03	66	33	64.0	0.244	14	3.17	0.03	66	33
4025-03	10/13/04	150.70	0.51	64.0	0.244	11	2.49	0.03	52	27	64.0	0.244	14	3.17	0.03	66	34
4026-03	10/13/04	173.30	0.49	64.0	0.244	6	1.36	0.01	28	14	64.0	0.244	11	2.49	0.03	52	25
4026-06	10/13/04	53.70	0.78	64.0	0.244	52	11.76	0.12	246	192	64.0	0.244	66	14.93	0.16	312	244
4027-02	10/13/04	143.70	0.52	64.0	0.244	14	3.17	0.03	66	35	64.0	0.244	16	3.62	0.04	76	40
4027-05	10/13/04	59.40	0.75	64.0	0.244	62	14.02	0.15	293	221	64.0	0.244	78	17.64	0.18	368	278
4028-01 4028-03	10/13/04 10/13/04	68.60	0.64	64.0 64.0	0.244 0.244	32 26	7.24 5.88	0.08	151 123	97 88	64.0 64.0	0.244 0.244	48	10.86 9.05	0.11	227 189	145 135
4028-04	10/13/04	67.10	0.71	64.0	0.244	18	4.07	0.06	85	61	64.0	0.244	40	9.05	0.09	189	136
4029-03	10/13/04	#N/A	0.64	64.0	0.244	14	3.17	0.03	66	42	64.0	0.244	26	5.88	0.06	123	79
4030-04	10/11/04	82.30	0.66	64.0	0.244	10	2.26	0.02	47	31	64.0	0.244	15	3.39	0.04	71	47
4030-05	10/11/04		0.64	64.0	0.244	40	9.05	0.09	189	121	64.0	0.244	sand				
4031-02	10/11/04		0.64	64.0	0.244	sand					64.0	0.244	sand				
4031-06	10/11/04		0.64	64.0	0.244	28	6.33	0.07	132	85	64.0	0.244	34	7.69	0.08	161	103
4032-07	10/11/04	128.80	0.55	64.0	0.244	12	2.71	0.03	57	31	64.0	0.244	18	4.07	0.04	85	47
4032-10 4033-03	10/11/04 10/11/04	163.60 152.50	0.50 0.51	64.0 64.0	0.244	10 10	2.26 2.26	0.02	47 47	24 24	64.0 64.0	0.244 0.244	16 13	3.62 2.94	0.04	76 61	38 31
4033-06	10/11/04	160.80	0.50	64.0	0.244	9	2.04	0.02	43	21	64.0	0.244	15	3.39	0.03	71	36
4034-06	10/11/04	111.50	0.58	64.0	0.244	14	3.17	0.03	66	38	64.0	0.244	85	19.23	0.20	402	233
4034-08	10/11/04	130.80	0.54	64.0	0.244	9	2.04	0.02	43	23	64.0	0.244	15	3.39	0.04	71	39
4035-03	10/11/04	68.30	0.71	64.0	0.244	8	1.81	0.02	38	27	64.0	0.244	15	3.39	0.04	71	51
4035-06	10/11/04	79.80	0.67	64.0	0.244	24	5.43	0.06	113	76	64.0	0.244	40	9.05	0.09	189	127
4036-04	10/11/04	07.40	0.64	64.0	0.244	10	2.26	0.02	47	30	64.0	0.244	15	3.39	0.04	71	45
4036-07 4036-09	10/11/04 10/11/04	97.40 143.90	0.62 0.52	64.0 64.0	0.244	15 11	3.39 2.49	0.04	71 52	44 27	64.0 64.0	0.244 0.244	22 13	4.98 2.94	0.05 0.03	104 61	64 32
4036-10	10/11/04	54.20	0.78	64.0	0.244	2	0.45	0.00	9	7	64.0	0.244	23	5.20	0.05	109	85
4037-03	10/11/04		0.64	64.0	0.244	8	1.81	0.02	38	24	64.0	0.244	13	2.94	0.03	61	39
4038-05	10/11/04	146.70	0.52	64.0	0.244	8	1.81	0.02	38	20	64.0	0.244	12	2.71	0.03	57	29
4038-06	10/11/04	158.40	0.50	64.0	0.244	20	4.52	0.05	94	48	64.0	0.244	27	6.11	0.06	128	64
4040-02	10/11/04	112.10	0.58	64.0	0.244	18	4.07	0.04	85	49	64.0	0.244	25	5.65	0.06	118	68
4040-03	10/11/04	125.10	0.55	64.0	0.244	9	2.04	0.02	43	24	64.0	0.244	15	3.39	0.04	71	39
4040-04 4042-02	10/11/04 10/11/04	53.30	0.64	64.0 64.0	0.244 0.244	24 10	5.43 2.26	0.06 0.02	113 47	73 37	64.0 64.0	0.244 0.244	34 32	7.69 7.24	0.08	161 151	103 118
4042-02	10/11/04	151.30	0.78	64.0	0.244	4	0.90	0.02	19	10	64.0	0.244	10	2.26	0.08	47	24
4044-01	10/11/04	113.00	0.58	64.0	0.244	8	1.81	0.02	38	22	64.0	0.244	11	2.49	0.03	52	30
4045-03	10/11/04	152.80	0.51	64.0	0.244	10	2.26	0.02	47	24	64.0	0.244	16	3.62	0.04	76	39
4045-06	10/11/04	79.60	0.67	64.0	0.244	6	1.36	0.01	28	19	64.0	0.244	10	2.26	0.02	47	32
4046-02	10/11/04	133.70	0.54	64.0	0.244	8	1.81	0.02	38	20	64.0	0.244	11	2.49	0.03	52	28
4046-06	10/11/04		0.64	64.0	0.244	17	3.85	0.04	80	51	64.0	0.244	44	9.95	0.10	208	133
4047-01	10/11/04	108.50	0.59	64.0	0.244	3	0.68	0.01	14	8	64.0	0.244	12	2.71	0.03	57	33
4047-04 4048-02	10/11/04 10/11/04	157.10 148.70	0.51 0.52	64.0 64.0	0.244	12	2.71	0.03	57	29	64.0 64.0	0.244 0.244	5 12	1.13 2.71	0.01	24 57	12 29
4048-02	10/11/04	140.70	0.52	64.0	0.244	80	18.10	0.03	378	242	64.0	0.244	85	19.23	0.03	402	257
4049-05	10/11/04		0.64	40.0	1.000	32	29.66	0.31	620	397	40.0	1.000	48	44.50	0.46	929	595
4049-08	10/11/04	148.30	0.52		#N/A		#N/A					#N/A		#N/A	<u> </u>	1	
4050-03	10/11/04	100.10	0.61	64.0	0.244	5	1.13	0.01	24	14	64.0	0.244	10	2.26	0.02	47	29

Part   Part									Shear Stren							
Process   Proc			Vone		1 1		1		3-foot Dep	th	Management	Management	Management	Corrected	Water Depth (ft)	
1972   1972	Sample ID	Date Measured							40				Remolded Shear		Water Beptin (it)	
Color   Colo	4000.00		(mm)		rtouding	Ottorigen (in a)	Caronigan (tor)	Carongan (por)	Strength (psi)	Coale Heading		Strength (tsf)	Strength (psf)	Strength (psf) <sup>(1)</sup>		Description 1
April															<u> </u>	
Miles   Mile	-														<u> </u>	
Property   Property	-															
1965   1965																
Color   Colo																
Color   Colo	4014-02			#N/A							#N/A					
Georgia   Geor	4015-01			#N/A							#N/A					
March   1992   March	4016-05	10/12/04	64.0	0.244	130	29.40	0.31	614	393							Sandy silt/clay
March   Marc						9.27	0.10	194	158						+	<u>, , , , , , , , , , , , , , , , , , , </u>
	-					40.00										
																· · · · · · · · · · · · · · · · · · ·
	-															
													* * *		<del></del>	
March   Marc																<u> </u>
															<del></del>	· · · · · · · · · · · · · · · · · · ·
Marcia   M	-								44	7	1.58	0.02	33	16	4	,
March   Marc	4026-06	10/13/04	64.0	0.244	80	18.10	0.19	378	295	18	4.07	0.04	85	66	5.0	sandy silt
Second   Portional   Park   County   Park   County   Park   County   Park   County   Park	4027-02	10/13/04		0.244	24		0.06			8		0.02	38	20		
1975/30   1975/30   51,0   2,241   4.2   2,36   5,10   2,70   2,70   198   197   198   197   198   198   197   198   1																
March   Marc															+	· · · · · · · · · · · · · · · · · · ·
4000-27   1511/34   16.0   2.044   5.0   1.28   0.02   2.0																<u> </u>
Manual   M																· · · · · · · · · · · · · · · · · · ·
Manual Control   Manu	-														+	· · · · · · · · · · · · · · · · · · ·
4931-02   100-1194   648   0244   477   700.58   0.11   222   1462   155   3.03   0.04   71   45   6.05	-					4.52	0.05	94	62	12	2.71	0.03	57	31	4	· · · · · · · · · · · · · · · · · · ·
405-66   1911-94   640   0,244   47   10.85   0.11   222   14.9   15   3.39   0.94   71   4.9   6.5   very sunfly silf   405-66   405-67   1911-94   6.5   4.5																
Mode						10.63	0.11	222	142	15	3.39	0.04	71	45		
4493-10 1011104 6-0 0.244 22 4.89 0.09 104 52 10 2.28 10 2.28 10 2.28 10 2.28 10 3 52 27 9.4 Sit 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-														<del></del>	<u> </u>
403-90   101104   640   0,244   150   3,33   0,35   709   417   141   3,17   0,03   66   33   7,1   3   1,1   4,	4032-10	10/11/04		0.244	22	4.98	0.05	104	52	10	2.26	0.02	47	24		<u> </u>
4034-08	4033-03	10/11/04	64.0	0.244	19	4.30	0.04	90	46	11	2.49	0.03	52	27	9.4	silt
493-89   10/1104   64.0   0.244   24   5.4.8   0.06   118   62   10   2.28   0.02   47   28   5.8   Early sill W organics	4033-06	10/11/04	64.0	0.244	20	4.52	0.05	94	47	14	3.17	0.03	66	33	7.1	silt
4035-03 1011104 54.0 0.244 25 5.85 0.66 118 84 nm	4034-06	10/11/04		0.244	150	33.93										· · · · · · · · · · · · · · · · · · ·
403-06   1011104										10	2.26	0.02	47	26		, ,
409-04   1011-04   640   0.244   28   5.65   0.06   118   76   13   2.94   0.03   61   39   8.3   silt   39   409-05   39   39   309-05   39   39   39   39   39   39   39   3																· · · · · · · · · · · · · · · · · · ·
4038-07   101104   640   0.244   24   5.43   0.06   113   70   18   4.07   0.04   85   52   7.6   F sandy slit w organics	-															† · · · · · · · · · · · · · · · · ·
4038-09																
4038-05   1091104   640   0.244   23   5.20   0.05   109   86   12   2.71   0.03   57   44   7.2   SL. F sandy slit     4038-05   1091104   640   0.244   18   4.07   0.04   85   44   10   2.26   0.02   47   28   9.7   Slit     4038-05   1091104   640   0.244   31   7.01   0.07   146   74   16   3.82   0.04   76   39   9.7   F sandy slit     4038-05   1091104   640   0.244   44   9.95   0.10   0.07   146   74   16   3.82   0.04   76   39   9.7   F sandy slit     4040-03   1091104   640   0.244   18   4.07   0.04   85   47   12   2.71   0.03   66   38   118   F sandy slit     4040-04   1091104   640   0.244   45   10.18   0.11   2.13   167   22   4.98   0.05   104   81   12.1   F sandy slit     404-03   1091104   640   0.244   18   4.07   0.04   85   44   12   2.71   0.03   57   29   15.9   F sandy slit     404-04   1091104   640   0.244   45   10.18   0.11   2.13   167   22   4.98   0.05   104   81   12.1   F sandy slit     404-05   1091104   640   0.244   18   4.07   0.04   85   44   12   2.71   0.03   57   29   15.9   F sandy slit     404-06   1091104   640   0.244   18   4.07   0.04   85   44   12   2.71   0.03   57   29   15.9   F sandy slit     404-07   1091104   640   0.244   18   4.07   0.04   85   44   12   2.71   0.03   57   29   15.9   F sandy slit     404-08   1091104   640   0.244   18   4.07   0.04   85   44   12   2.71   0.03   57   29   15.9   F sandy slit     404-09   1091104   640   0.244   18   4.07   0.04   85   44   12   2.71   0.03   57   29   15.9   F sandy slit     404-09   1091104   640   0.244   18   4.07   0.04   85   44   12   2.71   0.03   57   29   15.9   F sandy slit     404-09   1091104   640   0.244   18   3.82   0.04   76   51   9   2.04   0.02   43   29   15.0   Sl. F sandy slit     404-09   1091104   640   0.244   16   3.62   0.04   76   51   9   2.04   0.02   43   29   15.0   Sl. F sandy slit     404-09   1091104   640   0.244   16   3.62   0.04   76   51   9   2.04   0.02   47   25   10.0   F sandy slit     404-09   1091104   640   0.244   16   3.62   0.04   76   51   9   2										18 o						
4037-03 101104 64.0 0.244 18 4.07 0.04 86 44 10 2.26 0.02 47 30 5.8 silt 438-06 101104 64.0 0.244 18 4.07 0.04 86 44 10 2.26 0.02 47 25 9.7 silt 438-06 101104 64.0 0.244 18 4.07 0.04 86 44 10 2.26 0.02 47 25 9.7 silt 4404-02 101104 64.0 0.244 18 4.07 0.04 86 47 12 2.71 0.03 66 38 11.6 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 85 47 12 2.71 0.03 66 38 11.6 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 85 47 12 2.71 0.03 66 38 11.6 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 85 47 12 2.71 0.03 66 38 11.6 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 66 38 11.6 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 67 39 10.2 FsANDY SILT 4042-03 101104 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 57 29 15.9 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 57 29 15.9 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 57 29 15.9 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 57 29 15.9 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 57 29 15.9 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 57 29 15.9 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 57 29 15.9 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 18 4.07 0.04 86 80 43 10 2.28 0.02 47 25 10.0 Fsandy silt w/ organics 4040-04 101104 64.0 0.244 17 3.85 0.04 86 43 10 2.28 0.02 47 25 10.0 Fsandy silt 4040-04 101104 64.0 0.244 17 3.85 0.04 86 43 10 2.28 0.02 47 25 10.0 Fsandy silt 4040-04 101104 64.0 0.244 16 3.82 0.04 76 51 9 2.04 0.02 47 25 10.0 Fsandy silt 4040-04 101104 64.0 0.244 16 3.82 0.04 76 51 9 2.04 0.02 47 25 10.0 Fsandy silt 4040-04 101104 64.0 0.244 16 3.82 0.04 76 51 9 2.04 0.02 47 25 10.0 Fsandy silt 4040-04 101104 64.0 0.244 16 3.82 0.04 76 51 9 4 56 11 2.49 0.03 52 31 13.9 Fsandy silt 4040-04 11.0 101104 64.0 0.244 16 3.82 0.04 76										12						
4038-65   1011104   64.0   0.244   18																
408-06   101104   640   0.244   31   7.01   0.07   146   74   16   3.62   0.04   76   38   9.7   F sandy silt w/ organics															+	
4040-02															+	
4040-04 10/11/04 64.0 0.244 38 8.60 0.09 180 115 13 2.94 0.03 61 39 10.2 F SANDY SILT 4042-02 10/11/04 64.0 0.244 45 10.18 0.11 213 167 22 4.98 0.05 104 81 12.1 F. sandy silt 4042-03 10/11/04 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 57 29 15.9 F sandy silt 4044-01 10/11/04 64.0 0.244 18 4.07 0.04 85 67 327 F Sandy silt 4044-01 10/11/04 64.0 0.244 18 33 7.46 0.08 156 80 15 3.39 0.04 71 36 12.2 F sandy silt 4045-06 10/11/04 64.0 0.244 16 3.62 0.04 76 51 9 2.04 0.02 43 29 15.0 SI.F sandy silt 4046-06 10/11/04 64.0 0.244 17 3.85 0.04 80 43 10 2.26 0.02 47 25 10.0 F sandy silt 4046-06 10/11/04 64.0 0.244 60 13.57 0.14 283 181 38 8.60 0.09 180 115 14.4 silty F sand 4047-01 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt 4047-01 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt 4047-01 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt 4047-01 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt 4047-01 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt 4047-04 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt 4047-04 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt 4047-04 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt 4047-04 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt 4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt 4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt 4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt 4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt 4049-05 10/11/04 64.0 0.44 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt 4049-05 10/11/04 64.0 0.44 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt 4049-05 10/11/04 64.0 0.44 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt 4049-05 10/11/04 64.0 0.44 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt 4049-05 10/11/04 64.0 0.44 16 0.44 16 0.44																
4042-02 10/11/04 64.0 0.244 45 10.18 0.11 213 167 22 4.98 0.05 104 81 12.1 F. sandy silt 4042-03 10/11/04 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 57 29 15.9 F. sandy silt 4044-01 10/11/04 64.0 0.244 13 7.46 0.08 156 80 15 3.39 0.04 71 36 12.2 F. sandy silt 4045-03 10/11/04 64.0 0.244 16 3.62 0.04 76 51 9 2.04 0.02 43 29 15.0 F. sandy silt 4046-06 10/11/04 64.0 0.244 17 3.85 0.04 80 43 10 2.26 0.02 47 25 10.0 F. sandy silt 4046-06 10/11/04 64.0 0.244 60 13.57 0.14 283 181 38 8.60 0.09 180 115 14.4 Silty F. sand 4047-01 10/11/04 64.0 0.244 15 3.39 0.04 71 36 12.2 F. sandy silt 4046-06 10/11/04 64.0 0.244 16 3.62 0.04 76 51 12.26 0.02 47 25 10.0 F. sandy silt 4046-06 10/11/04 64.0 0.244 16 3.62 0.04 76 51 10 2.26 0.02 47 25 10.0 F. sandy silt 4046-06 10/11/04 64.0 0.244 17 3.85 0.04 80 43 10 2.26 0.02 47 25 10.0 F. sandy silt 4046-06 10/11/04 64.0 0.244 16 3.62 0.04 76 56 11 2.49 0.03 52 31 13.9 F. sandy silt 4047-01 10/11/04 64.0 0.244 15 3.39 0.04 71 36 11 2.49 0.03 52 31 13.9 F. sandy silt 4048-02 10/11/04 64.0 0.244 15 3.39 0.04 71 36 11 2.49 0.03 52 31 13.9 F. sandy silt 4048-02 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 13.6	4040-03	10/11/04		0.244	18	4.07	0.04	85	47	12		0.03	57	31	10.3	
4042-03 10/11/04 64.0 0.244 18 4.07 0.04 85 44 12 2.71 0.03 57 29 15.9 F sandy silt  4044-01 10/11/04 64.0 0.244 33 7.46 0.08 156 80 15 3.39 0.04 71 36 12.2 F sandy silt  4045-06 10/11/04 64.0 0.244 17 3.85 0.04 80 43 10 2.26 0.02 47 25 10.0 F sandy silt  4046-06 10/11/04 64.0 0.244 17 3.85 0.04 80 43 10 2.26 0.02 47 25 10.0 F sandy silt  4046-06 10/11/04 64.0 0.244 20 4.52 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt  4047-04 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.09 180 115 14.4 Silty F sandy silt  4048-02 10/11/04 64.0 0.244 15 3.39 0.04 71 36 1 2.49 0.03 52 31 13.9 F sandy silt  4047-04 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt  4048-02 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt  4048-02 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt  4048-02 10/11/04 64.0 0.244 16 3.62 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt  4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-05 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-08 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-08 10/11/04 64.0 0.04 18 18 18 18 18 18 18 18 18 18 18 18 18																
4044-01 10/11/04 64.0 0.244 120 27.14 0.28 567 327																
4045-03 10/11/04 64.0 0.244 33 7.46 0.08 156 80 15 3.39 0.04 71 36 12.2 Fsandy silt 4045-06 10/11/04 64.0 0.244 16 3.62 0.04 80 15 9 2.04 0.02 43 29 15.0 sl. Fsandy silt 4046-06 10/11/04 64.0 0.244 17 3.85 0.04 80 43 10 2.26 0.02 47 25 11.0 Fsandy silt 4046-06 10/11/04 64.0 0.244 60 13.57 0.14 283 181 38 8.60 0.09 180 115 14.4 silty Fsand 4047-01 10/11/04 64.0 0.244 20 4.52 0.05 94 56 11 2.49 0.03 52 31 13.9 Fsandy silt 4046-02 10/11/04 64.0 0.244 15 3.39 0.04 71 36 11 2.49 0.03 52 31 13.9 Fsandy silt 4047-04 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt 4048-02 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt 4049-05 10/11/04 FM/A FM/A FM/A FM/A FM/A FM/A FM/A FM/A	4042-03	10/11/04	64.0	0.244	18	4.07	0.04	85	44	12	2.71	0.03	57	29	15.9	
4045-06 10/11/04 64.0 0.244 16 3.62 0.04 76 51 9 2.04 0.02 43 29 15.0 sl. F sandy silt  4046-02 10/11/04 64.0 0.244 17 3.85 0.04 80 43 10 2.26 0.02 47 25 10.0 F sandy silt  4046-06 10/11/04 64.0 0.244 60 13.57 0.14 283 181 38 8.60 0.09 180 115 114 silty F sand  4047-01 10/11/04 64.0 0.244 20 4.52 0.05 94 56 11 2.49 0.03 52 31 13.9 F sandy silt  4047-04 10/11/04 64.0 0.244 15 3.39 0.04 71 36 11.36 0.01 28 15.6 clay  4048-02 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silt  4049-05 10/11/04 1 #N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A																with 40mm vane (rdg=12)
4046-02         10/11/04         64.0         0.244         17         3.85         0.04         80         43         10         2.26         0.02         47         25         10.0         F sandy silt           4046-06         10/11/04         64.0         0.244         60         13.57         0.14         283         181         38         8.60         0.09         180         115         14.4         silty F sandy           4047-01         10/11/04         64.0         0.244         20         4.52         0.05         94         56         11         2.49         0.03         52         31         13.9         F sandy silt           4047-04         10/11/04         64.0         0.244         15         3.39         0.04         71         36																
4046-06         10/11/04         64.0         0.244         60         13.57         0.14         283         181         38         8.60         0.09         180         115         14.4         silty F sand           4047-01         10/11/04         64.0         0.244         20         4.52         0.05         94         56         11         2.49         0.03         52         31         13.9         F sandy silt           4047-04         10/11/04         64.0         0.244         15         3.39         0.04         71         36																·
4047-01         10/11/04         64.0         0.244         20         4.52         0.05         94         56         11         2.49         0.03         52         31         13.9         F sandy silt           4047-04         10/11/04         64.0         0.244         15         3.39         0.04         71         36	-														<del></del>	,
4047-04 10/11/04 64.0 0.244 15 3.39 0.04 71 36																·
4048-02 10/11/04 64.0 0.244 16 3.62 0.04 76 39 6 1.36 0.01 28 15 5.8 silf 4049-05 10/11/04 #N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A										11	2.49	0.03	52	31		
4049-05         10/11/04         #N/A         #N/A         #N/A         20.3         F Sandy Silt           4049-05         10/11/04         #N/A         #N/A         #N/A         #N/A         Example 10/11/04         #N/A         #N/A         #N/A         #N/A         #N/A         15.0         Rock										6	1 36	0.01	28	15		
4049-05 10/11/04 #N/A #N/A #N/A #N/A #N/A #N/A #N/A #N/A			57.0		10		0.07	, , ,	35	, , , , , , , , , , , , , , , , , , ,		0.01	20	10		
4049-08 10/11/04 #N/A #N/A #N/A 15.0 Rock															1	· · · · · · · · · · · · · · · · · · ·
															15.0	Rock
	4050-03		64.0	0.244	18		0.04	85	52	8		0.02	38	23		sandy silt

Shear Strength 1-foot Depth 2-foot Depth Correction Factor, u M-3 Scale M-3 Scale Sample ID **Date Measured** Plasticity Index Measured Shear | Corrected Shea **Corrected Shear** Vane Measured Shear Vane Measured Shear Measured Shear (after Bjerrum, 1972) Shear Strength Length Reading Reading Shear Strengt Length Constan Strength (kPa) Strength (psf) Strength (psf)<sup>(1</sup> Constant Strength (kPa) Strength (psf) Strength (psf)<sup>(1)</sup> (kPa) (kPa) (tsf) (tsf) 10/11/04 129.00 64.0 0.244 0.45 0.00 0.244 0.02 4051-05 0.55 64.0 1.58 2 5 33 18 108.30 0.59 1.13 0.01 0.244 22 4052-02 10/11/04 64.0 0.244 24 14 64.0 8 1.81 0.02 38 5 4052-04 10/11/04 11.30 1.07 #N/A sand #N/A #N/A #N/A 0.64 0.02 38 24 10 0.02 47 4053-03 10/11/04 64.0 0.244 1.81 64.0 0.244 2.26 30 80 4053-05 10/11/04 0.64 64.0 0.244 50 11.31 0.12 236 151 64.0 0.244 18.10 0.19 378 242 4055-02 10/11/04 114.10 0.58 64.0 0.244 2 0.45 0.00 5 64.0 0.244 10 2.26 0.02 47 27 9 4055-06 10/11/04 167.00 0.49 64.0 0.244 8 1.81 0.02 38 19 64.0 0.244 10 2.26 0.02 47 23 4056-01 10/11/04 111.40 0.58 64.0 1.36 0.01 28 16 64.0 0.244 18 4.07 0.04 85 49 0.244 4056-06 10/11/04 55.20 0.77 64.0 0.244 15 3.39 0.04 71 55 64.0 0.244 25 5.65 0.06 118 91 0.01 4057-02 10/11/04 0.64 64.0 1.13 64.0 0.244 3.39 0.04 71 45 0.244 5 24 15 15 4057-05 10/11/04 0.64 #N/A #N/A #N/A #N/A sand sand 4059-04 10/11/04 97.80 0.61 64.0 0.244 1.36 0.01 28 17 #N/A sand #N/A 6 4061-01 10/11/04 88.20 0.64 #N/A #N/A #N/A #N/A 0.04 30 142 4063-01 10/11/04 0.64 64.0 0.244 4.07 85 54 64.0 0.244 6.79 0.07 91 23.20 0.97 4067-01 10/11/04 #N/A #N/A #N/A #N/A 4069-04 10/11/04 0.64 64.0 21 4.75 0.05 99 63 30 #N/A 0.244 #N/A 4073-01 10/11/04 0.64 #N/A #N/A #N/A #N/A 124.20 0.04 42 0.07 132 4074-05 10/11/04 0.56 64.0 0.244 16 3.62 76 64.0 0.244 28 6.33 74 4075-07 10/11/04 46.90 0.82 64.0 0.244 19 4.30 0.04 90 73 64.0 0.244 32 7.24 0.08 151 124 4076-01 10/11/04 57.60 0.76 #N/A #N/A 50.8 0.488 10/11/04 #N/A 0.64 64.0 0.244 64.0 0.244 4083-03 sand 4086-01 10/11/04 #N/A 0.64 #N/A #N/A #N/A #N/A 4088-04 10/11/04 92.40 0.63 64.0 0.244 64.0 0.244 1.81 0.02 38 24 8 0.01 10/11/04 64.0 19 12 1.81 38 24 0.244 0.90 64.0 0.244 0.02 10/11/04 105.80 0.59 #N/A #N/A #N/A 17.19 0.18 359 230 84 38.00 0.40 794 508 10/11/04 0.64 50.8 0.488 38 50.8 0.488 NP 4091-05 10/11/04 64.0 #VALUE! 64.0 0.244 sand 0.244 4092-10 10/11/04 115.20 0.57 64.0 0.244 12 2.71 0.03 57 32 64.0 0.244 20 4.52 0.05 94 54 32.0 3026-01 5/19/05 0.64 32.0 0.244 9 2.04 0.02 43 27 0.244 19 4.30 0.04 90 57 3046-21 5/19/05 0.64 32.0 2.49 52 33 32.0 0.244 22 4.98 104 67 0.244 11 0.03 0.05 3048-21 5/19/05 0.64 32.0 0.244 9 2.04 0.02 43 27 32.0 0.244 15 3.39 0.04 71 45 5/19/05 0.64 0.02 3.17 3056-21 32.0 0.244 10 2.26 47 30 32.0 0.244 14 0.03 66 42 4002-22 5/18/05 0.64 1.81 0.02 24 2.71 0.03 0.244 38 32.0 0.244 12 57 36 32.0 8 4032-10 5/18/05 0.64 32.0 0.244 12 2.71 0.03 57 36 32.0 0.244 16 3.62 0.04 76 48 4034-08 5/18/05 0.64 32.0 0.244 11 2.49 0.03 52 33 32.0 0.244 18 4.07 0.04 85 54 4036-10 5/18/05 0.64 32.0 0.244 18 4.07 0.04 85 54 32.0 0.244 22 4.98 0.05 104 67 0.64 2.71 0.03 57 29 6.56 137 4050-EAST 5/18/05 32.0 0.244 12 36 32.0 0.244 0.07 88 0.64 1.36 0.01 28 7 3.17 0.03 66 42 4051-04 5/18/05 25.4 0.488 3 18 25.4 0.488 4051-04 5/18/05 0.64 65.0 0.029 60 1.61 0.02 34 22 65.0 0.029 97 2.61 0.03 54 35 4051-EAST 5/18/05 0.64 25.4 0.488 42 19.00 0.20 397 254 25.4 0.488 20 9.05 0.09 189 121 4052-04 5/18/05 0.64 25.4 0.488 95 42.98 0.45 898 574 4053-05 5/18/05 0.64 25.4 0.488 25 11.31 0.12 236 151 25.4 0.488 90 40.71 0.43 850 544 25.4 0.488 50 4058-EAST 0.64 35 15.83 0.17 331 212 25.4 22.62 472 302 5/18/05 0.488 0.24 4060-EAST 5/18/05 0.64 25.4 38.90 0.41 813 520 0.488 86 4061-EAST 0.64 7.69 0.08 103 0.488 26 11.76 0.12 246 157 5/18/05 25.4 0.488 17 161 25.4 4064-WEST 5/18/05 0.64 25.4 0.488 50 22.62 0.24 472 302 4065-WEST 5/18/05 0.64 16.0 1.953 98 177.42 1.85 3,706 2,372 4068-WEST 0.64 14.48 302 193 5/18/05 25.4 0.488 32 0.15 4069-WEST 0.64 25.4 3.17 0.03 42 25.4 0.488 10 4.52 0.05 94 60 5/18/05 0.488 7 66 4070-WEST 5/18/05 0.64 25.4 0.488 84 37.77 0.39 789 505 25.4 0.488 62 28.05 0.29 586 375 4071-WEST 5/18/05 0.64 25.4 0.488 4.52 0.05 94 25.4 0.488 18 0.09 170 109 10 60 8.14 4083-03 5/18/05 0.64 25.4 0.488 14 6.33 0.07 132 85 25.4 0.488 20 9.05 0.09 189 121 4084-33 5/18/05 0.64 25.4 0.488 40 18.10 0.19 378 242 25.4 0.488 66 29.86 0.31 624 399 4085-EAST 5/18/05 0.64 12.67 0.13 265 169 40.26 841 538 25.4 0.488 28 25.4 0.488 89 0.42 0.64 4202-07 5/18/05 32.0 0.244 1.81 0.02 38 24 32.0 0.244 10 2.26 0.02 47 30 8 4231-01 5/18/05 0.64 32.0 0.244 15 3.39 0.04 71 45 32.0 0.244 19 4.30 0.04 90 57 4246-01 5/18/05 0.64 32.0 0.244 10 2.26 0.02 47 30 32.0 0.244 15 3.39 0.04 71 45 5001-MID 5/18/05 0.64 5002-MID 5/18/05 0.64 5003-MID 5/18/05 0.64 25.4 0.488 10 4.52 0.05 94 60 65.0 0.029 30 0.81 0.01 17 40 22 5100-01 5/18/05 0.64 11 65.0 0.029 1.08 0.01 14

4089 samples from boat slip. 4090-4091 samples from river channel adjacent to site. 4092 samples from NE cap area

									Shear Stren							
- 1	Sample ID	Date Measured	Vane	Vane	M-3 Scale	Measured Shear	Measured Shear	Measured Shear	Corrected Shear	Remolded M-3	Measured Remolded Shear	Measured Remolded Shear	Measured Remolded Shear	Corrected Remolded Shear	Water Depth (ft)	
			Length (mm)	Constant	Reading	Strength (kPa)	Strength (tsf)	Strength (psf)	Strength (psf) <sup>(1)</sup>	Scale Reading	Strength (kPa)	Strength (tsf)	Strength (psf)	Strength (psf) <sup>(1)</sup>		Description
	4051-05	10/11/04	64.0	0.244	12	2.71	0.03	57	31						7.4	silt/clay
_	4052-02	10/11/04	64.0	0.244	15	3.39	0.04	71	42	10	2.26	0.02	47	28	13.8	silt
F	4052-04 4053-03	10/11/04 10/11/04	64.0	#N/A 0.244	12	#N/A 2.71	0.03	57	36		#N/A				15.1 7.4	stiff silt and sand silt
H	4053-05	10/11/04	64.0	0.244	85	19.23	0.20	402	257						12.9	sand?
	4055-02	10/11/04	64.0	0.244	16	3.62	0.04	76	43						2.0	Sana
	4055-06	10/11/04	64.0	0.244	18	4.07	0.04	85	42						14.3	silty clay
	4056-01	10/11/04	64.0	0.244	27	6.11	0.06	128	74	8	1.81	0.02	38	22	2.8	
L	4056-06	10/11/04	64.0	0.244	45	10.18	0.11	213	165	12	2.71	0.03	57	44	13.2	sl sandy silt
H	4057-02 4057-05	10/11/04 10/11/04	64.0	0.244 #N/A	21 sand	4.75 #N/A	0.05	99	63	10	2.26 #N/A	0.02	47	30	11.0 3.5	Hard Sand
-	4059-04	10/11/04		#N/A	sand	#N/A					#N/A				18.5	Traid Galid
	4061-01	10/11/04		#N/A		#N/A					#N/A					Too Deep
	4063-01	10/11/04	64.0	0.244	62	14.02	0.15	293	187	52	11.76	0.12	246	157	17.5	gravelly silt
L	4067-01	10/11/04		#N/A		#N/A					#N/A					Too Deep
<u> </u>	4069-04	10/11/04		#N/A	30	#N/A					#N/A				19.1	Too Door
⊢	4073-01 4074-05	10/11/04 10/11/04	64.0	#N/A 0.244	38	#N/A 8.60	0.09	180	100	12	#N/A 2.71	0.03	57	32	12.3	Too Deep
H	4075-07	10/11/04	64.0	0.244	50	11.31	0.12	236	193	12	2.71	0.03	51	32	8.1	
	4076-01	10/11/04		#N/A		#N/A				16	#N/A				25+	Too Deep
	4083-03	10/11/04	64.0	0.244											13.5	·
	4086-01	10/11/04		#N/A		#N/A					#N/A				25.0	Too Deep
L	4088-04	10/11/04	64.0	0.244	11	2.49	0.03	52	33						18.7	
⊢	4089-03 4089-07	10/11/04 10/11/04	64.0	0.244 #N/A	14	3.17 #N/A	0.03	66	42		#N/A				16.2 21.3	Too Deep
_  -	4089-07	10/11/04	Large	#N/A #N/A		#N/A #N/A					#N/A #N/A				2.6	100 Беер
e. <sub>–</sub>	4091-05	10/11/04	64.0	0.244		#IVI/A					πIN/A				15.2	
	4092-10	10/11/04	64.0	0.244	28	6.33	0.07	132	76						14.4	
rea.	3026-01	5/19/05	32.0	0.244	27	6.11	0.06	128	82	12	2.71	0.03	57	36	6.5	brown and gray sandy silt
L	3046-21	5/19/05	32.0	0.244	24	5.43	0.06	113	73	17	3.85	0.04	80	51	5.5	
⊢	3048-21	5/19/05	32.0	0.244	18	4.07	0.04	85	54	16	3.62	0.04	76	48	10.3	In any or any description
-	3056-21 4002-22	5/19/05 5/18/05	32.0 32.0	0.244 0.244	20 16	4.52 3.62	0.05 0.04	94 76	60 48	10 9	2.26 2.04	0.02 0.02	47 43	30 27	5.7 3.6	brown sandy silt brown sandy silt
H	4032-10	5/18/05	32.0	0.244	26	5.88	0.04	123	79	13	2.94	0.02	61	39	5.5	brown saridy slit
	4034-08	5/18/05	32.0	0.244	24	5.43	0.06	113	73	11	2.49	0.03	52	33	4.6	
	4036-10	5/18/05	32.0	0.244	26	5.88	0.06	123	79	11	2.49	0.03	52	33	7.1	brown sandy silt
	4050-EAST	5/18/05	32.0	0.244	68	15.38	0.16	321	206	34	7.69	0.08	161	103	17.1	interbedded gravelly and shelly layers
<u> </u>	4051-04	5/18/05	25.4	0.488	10	4.52	0.05	94	60						9.9	check large vane
-	4051-04	5/18/05	65.0	0.029	108	2.90	0.03	61	39	32	0.86	0.01	18	11	9.9	in marine; gravelly surface; refusel at 2.2 ft
⊢	4051-EAST 4052-04	5/18/05 5/18/05								33 34						in marina; gravelly surface; refusal at 2.3 ft refusal at 1.5 feet
-	4053-05	5/18/05								35						gravelly; refusal at 2.0 feet
	4058-EAST	5/18/05	25.4	0.488	64	28.95	0.30	605	387	36	16.29	0.17	340	218	17.2	sandy/shelly; cable debris wound around vane @ 2.5 ft test depth
	4060-EAST	5/18/05								37						gravelly; penetration refusal at 0.8 feet
	4061-EAST	5/18/05	25.4	0.488	30	13.57	0.14	283	181	38	17.19	0.18	359	230	16.8	gravelly surface
L	4064-WEST	5/18/05														refusal on sand and gravel at 1.0 feet
_	4065-WEST	5/18/05														refusal at 0.5 feet; stiff brown clay
⊢	4068-WEST 4069-WEST	5/18/05 5/18/05	25.4	0.488	14	6.33	0.07	132	85	7	3.17	0.03	66	42	10.5 15.4	refusal on sand and gravel at 0.3 feet
H	4070-WEST	5/18/05	25.4	0.488	68	30.76	0.07	642	411	42	19.00	0.03	397	254	15.4	brown clay on vane; refusal at 1-ft depth
-	4071-WEST	5/18/05	25.4	0.488	17	7.69	0.08	161	103	17	7.69	0.08	161	103	10.1	or vario, rolabal at 1 it dopti
	4083-03	5/18/05	25.4	0.488	24	10.86	0.11	227	145	15	6.79	0.07	142	91	9.5	
	4084-33	5/18/05	25.4	0.488	68	30.76	0.32	642	411	32	14.48	0.15	302	193		rods bend when attempting push to 3.0 ft.
	4085-EAST	5/18/05	25.4	0.488	121	54.74	0.57	1143	732	32	14.48	0.15	302	193		stiff penetration; feels sandy
<u> </u>	4202-07	5/18/05	32.0	0.244	14	3.17	0.03	66	42	11	2.49	0.03	52	33		brown sandy silt; vane wants to sink under WOR
_	4231-01 4246-01	5/18/05 5/18/05	32.0 32.0	0.244 0.244	26 22	5.88 4.98	0.06 0.05	123 104	79 67	13 20	2.94 4.52	0.03 0.05	61 94	39 60		brown sandy silt brown sandy silt
-	5001-MID	5/18/05	32.0 25.4	0.244	16	7.24	0.05	151	97	20	4.02	0.00	34	00	16.5	vane sinks to 4-ft under W.O.R.
	5002-MID	5/18/05	25.4	0.488	15	6.79	0.07	142	91	17	7.69	0.08	161	103		vane sinks to 2.8-ft under W.O.R.
	5003-MID	5/18/05	25.4	0.488	20	9.05	0.09	189	121	16	7.24	0.08	151	97	9.7	vane sinks to 1.8 ft under W.O.R.
	5100-01	5/18/05	65.0	0.029	55	1.48	0.02	31	20	50	1.34	0.01	28	18	18.6	
_																

39 samples m boat slip. 90-4091 nples from er channel acent to site. 92 samples m NE cap area





### **Technical Memorandum**

**To:** George Berken, Jay Grosskopf, and Larry DeBruin (Boldt Oversight Team); Gary Kincaid and Beth Olson (WDNR); and Pablo Valentin (USEPA)

From: Terri Blackmar (Tetra Tech); Paul LaRosa, and Dan Binkney (Anchor QEA)

**CC:** Jeff Lawson, Sue O'Connell (Project Control Companies for the LLC); Bryan Heath (NCR); Paul Montney (Georgia Pacific); Bill Hartman (P.H. Glatfelter); Bill Coleman, Richard Feeney, Morey Tabatabai (Tetra Tech)

**Date:** February 19, 2020

**Re:** Proposed Design for Cap CA94 in the WPSC Slip

**Document Control Number:** LFRR-17-0004A-R5

### 1. PURPOSE AND SCOPE

This technical memorandum (tech memo) describes the proposed design for cap CA94 in the Wisconsin Public Service Corporation's (WPSC) Pulliam Plant slip, and the analyses performed in support of the design. This slip is located near the mouth of the Lower Fox River, along the western shoreline. The far western end of the slip contains an intake structure, which provided water flow to the Pulliam Plant for cooling operations while the currently decommissioned power plant was in operation.

The proposed cap design is based on many factors, including:

- Current and anticipated future use of the slip;
- Polychlorinated biphenyl (PCB) concentrations in sediment below the proposed cap;
- Analyses to determine the armoring needed for the cap to resist scour from propeller wash (propwash) from vessels that use the navigation channel in the Lower Fox River adjacent to the WPSC slip.
- Correspondence from Ms. Elizabeth Stueck-Mullane of WEC Energy Group Business Services, that provides the documentation requested in the contingent comments received June 21, 2017 from the Agencies/Oversight Team (A/OT). These comments are discussed in the section that follows.
- Stability of the long slope that extends from the entrance to the slip toward the navigation channel.

These factors are described in detail herein, along with additional information pertaining to the proposed capping remedy in this slip.

### 2. BACKGROUND

In its A/OT Approved as Modified Comments to Final Phase 2B Work Plan for 2016 RA (RAWP) for OUs 2-5, dated March 3, 2016, the A/OT eliminated this cap area from the Amended Final 2016 RAWP and

Technical Memorandum - Proposed Design for Cap CA94 in the WPSC Slip

Document Control Number: LFRR-17-0004A-R5

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converted the planned remedy for the area to dredging, pending acceptance of the capping remedy by WPSC. Subsequently, a draft remedial design concept depicting dredging and capping was provided to WPSC on January 23, 2017 for review. In correspondence dated February 6, 2017, from Mr. Bruce Ramme, Vice President Environmental, WPSC, to Mr. Bryan Heath, Manager, EHS, NCR Corporation, Mr. Ramme indicated that the remedial design concept was, "acceptable when considering the entire project scope that includes remediating sediments related to the former WPSC Green Bay manufactured gas plant (MGP)." Mr. Ramme further indicated capping that maintains the overall mudline elevation of 568 feet North American Vertical Datum of 1988 (NAVD88) within the intake channel was satisfactory to WPSC. A copy of this correspondence was presented in previous versions of this tech memo.

The final 100 Percent Design Report Volume 2, dated October 23, 2012 included propwash calculations for vessels operating in the navigation channel, and also stated that more detailed analyses would be performed for all caps proposed in or near the Operable Unit (OU) 4B navigation channel, and from the Fort Howard Turning Basin (FHTB) to the mouth of the river. This tech memo was initially submitted on April 24, 2017, and included the detailed analyses that were performed for proposed cap CA94 in the WPSC Pulliam Plant slip.

On June 21, 2017, the LLC received the Agencies' acceptance of the tech memo, with the following contingent comments:

- 1. "WPS must agree in writing to the final dredge and cap remedy.
- 2. There must be at least a two foot dredging buffer between the lowest future dredge elevation (set by WPS) and the top of the cap.
- 3. The armor stone size, for inside the slip (other than the proposed D50 of 6.0-inches at the entrance), must be equal to or greater than a D50 of 3.0-inches.
- 4. On an exception basis, given this cap's location in the slip and considering that the PCB concentrations are low (averaging less than 1.0 to 2.0 ppm), a dredge marker layer is not required.
- 5. It is the A/OT's opinion that the LLC's DT is being overly conservative in their conclusion that additional dredging below 566' is not possible in most sections of the Slip without fear of short-term or long-term failure of the structural walls or riprap slope. The A/OT's opinion is based on the Slip having been historically dredged deeper to approximately 557' and the structural walls and rip rap slope were apparently stable at that time. It is also the A/OT's opinion that it is possible to remove sediment to elevation 564' prior to capping everywhere other than the area of the PDA27 steel sheets in the northwest corner of the Slip. There appears to be no reason the structural walls and riprap slope would not remain stable for a nominal amount of dredging in the Slip."

The tech memo was revised to address these comments, with the exception of providing a response to comment 1, and resubmitted to the Agencies, on June 28, 2017. Discussions with WPSC continued in an effort to obtain this documentation. In November 2018, WPSC announced plans to retire the

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Pulliam Plant by the end of 2018, which meant designing the remedy to accommodate continued use of the intake was no longer a requirement. This announcement is shown in Attachment A-1. This notice changed the anticipated future use of the slip, as described in the sections that follow.

The outer slope of cap CA94 was recently revised to a 5 horizontal to 1 vertical (5H:1V) slope to enhance the stability of the slope prior to capping. This was done after another long slope on which cap CB60 was placed in 2019 showed evidence of slight movement shortly after cap installation began.

### 3. CURRENT AND ANTICIPATED FUTURE USE OF THE SLIP

Units 1-2 of the Pulliam Plan were retired in 1980. Units 3 and 4 in 2007 and units 5 and 6 were retired in 2015. Units 7 and 8, the power station's final units, were retired at the end of 2018. Plant owner WEC Energy Group cited lower prices for energy alternatives, including wind power, as the basis for the recent decision to retire the last two operating units. The slip is also not currently used or planned for use for vessel docking or unloading.

On April 11, 2019, the LLC received a letter from Ms. Elizabeth Stueck-Mullane, Vice President - Environmental, WEC Energy Group Business Services, stating that there were no objections to simply capping the sediments with no dredging. This email is presented in Attachment A-2.

### 4. PCB CONCENTRATIONS BELOW THE CAP

PCB concentrations in sediment are very low throughout the Pulliam Plant slip. A core summary table is presented in Attachment B, which shows the PCB concentrations directly below the proposed type A cap. The range of average PCB concentrations that will be under the cap is shown on Table 1. As shown in the table, the range of average PCB concentrations is less than 1.8 ppm, and some cores average less than 1.0 ppm PCB. The averages are shown for the top 0.5 feet, 1.0 feet and 2.0 feet of sediment below the cap, and account for the varying elevations under each scenario.

Table 1. Range of Average PCB Concentrations below the Proposed Cap

Core Locations	Upper 0.5 Foot	Upper 1.0 Foot	Upper 2.0 Feet
Revisit Cores (left side of table)	0.9 - 1.7	0.9 – 1.7	0.0 – 1.8
Other Cores (right side of table)	0.7 – 1.4	0.86 – 1.34	0.7 – 1.5

Notes: 1) All concentrations are in parts per million (ppm).

- 2) Concentrations in revisit cores are averaged with the initial core to yield one average for the core.
- 3) Concentrations in 2004/2005 cores are factored into averages even though there appears to be attenuation of the PCB concentrations at these locations, based on data from cores obtained later.

These concentrations confirm that an A cap is appropriate. In addition to the PCB concentrations being very low, the slip is depositional in nature so the risk of PCB release to the aquatic environment from the slip at concentrations that would be of concern is extremely low.

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### 5. STABILITY OF BULKHEADS ALONG THE NORTH AND SOUTH SIDES OF THE SLIP

Detailed bulkhead stability and global stability analyses were previously performed by AECOM for the initial tech memo submittal that included some dredging before capping. Since dredging is no longer planned, bulkhead stability is not expected to be impacted by the remedy, so these analyses are no longer pertinent. However, stability of the long slope extending out toward the channel at the end of the slip has been analyzed, and is discussed in Section 7.

### 6. CAP ARMOR PROPWASH ANALYSES

As a vessel moves through the water, the propeller produces an underwater jet of water, known as propwash. If this jet reaches the bottom, it can contribute to resuspension or erosion of bottom sediment. To properly evaluate the potential erosive impacts of propwash on proposed cap areas, site-specific information regarding the types of vessels and operational procedures should be considered.

Information on the vessels currently operating in the Fox River navigation channel, or likely to operate there in the future, was obtained from the Director of the Port of Green Bay, the Lake Carriers Association, and individual vessel operators. These vessels include those servicing commercial/industrial facilities located as far south as the Fort Howard Turning Basin (FHTB) and along the entire reach of river that extends to Green Bay. A summary of the vessel dimensions and operating data obtained for these vessels is presented in Table 1 in Attachment C.

In 2015, the Design Team contacted vessel operators, boat captains, and other fleet representatives and requested detailed information regarding the vessel characteristics and their operational procedures within the navigation channel. The information obtained included the engine power applied under various operating conditions, as well as proximity to the side slopes while navigating through the channel. Table 2 in Attachment C includes a summary of the information obtained for vessels operating in the navigation channel downstream of the Canadian National Railroad (CNRR) Bridge, Denmark Spur, which were used in the analyses. Based on the information provided by the boat captains and other vessel operators, as a vessel travels along the centerline of the navigation channel (parallel to the side slopes rather than perpendicular to them), the distance between the bow or stern thruster propeller and the side slope is typically at least 100 feet. However, the vessel operators also indicated that a vessel traveling in the navigation channel could stray beyond the limits of the navigation channel boundary under extreme conditions.

In 2016, the LLC held a WebEx meeting on June 28, 2016, with Captain Joseph Hooker, Captain of the *Great Republic*, and Mr. Ken Gerasimos, Manager of the Great Lakes Fleet. Captain Hooker and Mr. Gerasimos are employees of Key Lakes, a company that operates large vessels such as the *Great Republic* on the Lower Fox River. Prior to the meeting, a list of questions for the vessel operators was provided to Captain Hooker and Mr. Gerasimos. Captain Hooker has maneuvered the *Great Republic* in the navigation channel on many occasions, and agreed to provide insight into vessel straying that could result from extreme conditions. These conditions could be weather-related, such as a strong wind and/or seiche; or caused by the opening of upstream dam gates that could result in strong

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currents. In summary, Captain Hooker and Mr. Gerasimos stated that vessels could stray beyond the navigation channel limits, but this occurs very infrequently. Captain Hooker noted that contact with the river bottom occasionally happened in the past, but is now avoided. The vessel captains use depth charts from the U.S. Army Corps of Engineers (USACE) and maintain at least 18 inches of under-keel clearance for the vessel in the shallowest portion of the channel in which they will operate for that voyage.

A second meeting was held with Captain Paul Joaquin of Grand River Navigation, who has served as Captain of the Manistee and the Calumet when deliveries were made by those vessels to the Georgia-Pacific (GP) Broadway Street Mill. Captain Joaquin had received the list of questions sent in advance of the meeting and had reviewed the information. He stated that the vessel operators make all reasonable attempts to keep the vessels within the navigation channel limits. However, he also stated that under extreme wind or current conditions the vessels may stray slightly off course. He stated that vessel positions are charted electronically, and they never make contact with the bottom of the river. They typically maintain an under-keel clearance of 18 to 24 inches in areas of hard bottom and as little as 6 inches in areas of soft bottom.

Meeting notes for these meetings were previously submitted to the Agencies.

### 6.1 Propwash Evaluation Methodology

The propwash analyses for vessels known to operate in the navigation channel near cap CA94 were performed using methods presented in the U.S. Environmental Protection Agency's (USEPA's) Armor Layer Design appendix to the *Guidance for In-Situ Subaqueous Capping of Contaminated Sediment* (Maynord 1998). These methods are based on the relationships developed by Blaauw and van de Kaa (1978) and Verhey (1983). The USEPA method considers physical vessel characteristics (e.g., propeller diameter, depth of propeller shaft, and total engine horsepower) and operating and site conditions (e.g., applied horsepower and water depth) to estimate propeller-induced bottom velocities at various distances behind the propeller of a maneuvering vessel. The model can be used to predict the particle size that would be stable when subjected to the steady-state (i.e., maneuvering vessel where the speed of the vessel is essentially zero) propwash from the modeled vessel. A steady-state result is considered conservative when evaluating moving vessels within the navigation channel, because the actual propwash effects would only impact localized areas for short durations as the vessel moves.

The vessels operate with various loads and may sit higher in the water when unloaded (if ballast is not used), so a range of under keel clearances above the navigation channel depth was evaluated to assess the changes in potential proposals impacts to the proposed cap CA94. The highest authorized bottom elevation in the navigation channel for vessels traveling near these caps is 553.6 feet NAVD88. While deeper water may exist in some locations, the shallowest authorized depth will limit vessel draft throughout the river. Therefore, an evaluation was performed using a vessel keel elevation of 554.6 feet NAVD88 and a Low Water Datum (LWD) elevation of 577.6 feet NAVD88 to represent 1 foot of under keel clearance above the authorized channel elevation of 553.6 feet NAVD88. Additionally, an evaluation was performed with the maximum under keel clearance with the tip of the main engine

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propeller at the high water conditions elevation of 580.0 feet NAVD88, which results in a keel elevation of approximately 562.75 feet NAVD88. Table 2 presented in the subsequent section summarizes the propwash case evaluated.

The operators of the *Great Republic* indicated that up to 100 percent of the available bow thruster engine power may be used if a vessel starts to stray from the navigation channel. Based on preliminary analyses performed, it was determined that the *Great Republic* had the potential to cause the most significant proposah-induced bottom velocities that could potentially impact proposed caps. Given the significantly higher applied power for this vessel compared to the others, the *Great Republic* vessel was considered to represent a conservative design condition for the assessment of these caps based on the vessel and operational parameters evaluated. As seen on Table 1 in Attachment C, this vessel has a 4.8-foot, 1,000-horsepower bow thruster.

Based on available water depths in the area, it appears that a straying vessel under extreme conditions could get no closer to proposed cap CA94 than approximately 65 feet, in the position shown on Figure 1 in Attachment D. While in this position, the vessel's bow thruster propeller would be located approximately 148 feet outside the navigation channel, but the vessel would need to be oriented slightly askew to the navigation channel in an atypical orientation for a vessel traveling in this area since continuing in that direction would result in grounding. This is the maximum straying distance possible based the Design Team's evaluation of post-dredge bathymetry. This vessel location is considered to be very conservative when compared to typical operations in the navigation channel. As shown in Table 2 in Attachment C, some vessels are expected to use up to 100 percent of the bow thruster power in conditions such as strong currents or high winds, although the use of these power levels is expected to be for a very short duration. Based on the position of proposed cap CA94 relative to the navigation channel, it is not feasible for the main engine propwash to have a direct impact in close proximity to the proposed CA94 cap area; therefore, a main engine propwash condition was not evaluated.

Figure 1 in Attachment D shows the proposed cap designed for the slip, and the location of the cross section evaluated for propwash for a vessel straying a maximum distance of 148 feet beyond the limits of the navigation channel near proposed cap CA94. The cross section is based on a cap placed along a 5H:1V slope extending from the current bathymetry in the slip to the toe of the dredged slope at approximately elevation 548 feet NAVD88, as shown on Figure 2. The prop wash results are shown on the cross sections on Figures 3 and 4. The capping of sediment in the slip was designed to begin at the toe of the 5H:1V slope dredged near the entrance to the slip, and continue along the top of sediment surface up to the top of sediment in the slip, at approximately elevation 563.0 feet NAVD88, and then extend into the slip where the top of sediment surface rises to approximately elevation 568 feet NAVD88.

With the change in design based on discontinued use of the water intake in the slip, and capping only instead of dredging and capping for the water intake, the proposed cap will be at a slightly higher elevation in the slip. The modified Cap CA94 slope will also be extended slightly higher in elevation.

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These revisions result in a slightly higher elevation for the cap, so the prop wash calculations were revised based on this revised configuration.

For the propwash case evaluated, the vessels do not travel directly over the areas of interest. However, the propwash velocities from the bow thruster could extend into the area and could potentially have an impact on the stability of the bottom sediment or cap. The analyses presented herein were preformed to estimate propwash velocities and stable particle sizes on the riverbed during low and high water. The propwash velocity was computed spatially in the x (horizontal distance from the propeller) and z (vertical distance from the propeller axis) directions. The result is a velocity "field" that depicts the propwash jet and the intersection of the velocity jet with the bed elevations.

### 6.2 Stable Particle Size for Cap Armoring

The results of the analyses performed for determining stable stone sizes to resist proposal from the *Great Republic's* bow thrusters are shown graphically on Figures 3 and 4 in Attachment C. The analyses were performed for the worst-case scenario of a vessel straying 65 feet from the western limit of the navigation channel (Figures 4 and 5 in Attachment C). The results are also summarized below in Table 2.

Table 2
Summary of Propwash Cases Evaluated

Straying Distance Outside Navigation Channel [feet]	Water Conditions [feet NAVD88]	On-Slope Modified Cap A Armor Stone Stable D <sub>50</sub> Range [inches]	In-Slip Cap A Armor Stone Stable D <sub>50</sub> Range [inches]	Distance From Crest Into Slip Where Armor Stone Stable D <sub>50</sub> ≤ 3 Inches [feet]
65	Low (577.6 ft)	10 to 14 in.	< 0.25 to 4	0
65	High (580.0 ft)	3 to 6 in.	< 0.25 to 3	0

Figures 3 and 4 present the graphical results for the scenario of a vessel straying 65 feet from the western limit of the navigation channel, the top of cap at elevation from 563 to 568 feet NAVD88, 100 percent power for *Great Republic* bow thruster, and vessel keel elevations of 554.6 feet NAVD88 and 562.75 feet NAVD88, respectively. Armor stone with a  $D_{50}$  of 14.1 inches will be used for the cap on the slope area. For the cap installed starting at the crest of slope and extending back into the slip, armor stone with a minimum  $D_{50}$  of 3 inches will be used for the cap.

### 7. STABILITY OF THE SLOPE EXTENDING FROM THE SLIP

The design originally presented in this tech memo was accepted by the Agencies on July 18, 2019. Prior to installation of cap CA94, a similar cap (CB60) with a long 3H:1V slope experienced some movement during installation of stone over the sand layer. Tetra Tech therefore redesigned the slope to avoid a more pronounced slope failure. Although the slope of cap CA94 is not as long as the cap CB60 slope,

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the sediment underlying the cap appears to have very low strength, similar to the sediment underlying cap CB60.

A dredge slope of 3H:1V is typically stable in soft sediment, provided the slope length is limited and the sediment has sufficient strength. Generally, the longer (i.e., higher) the slope the stronger the sediment, which underlies the placed aggregate of the cap, must be to remain stable. This is shown in the parametric analyses presented in Attachment E-1. The maximum slope height for cap CA94 is approximately 19 feet. Based on the parametric analyses for dredge slopes, sediment with a slope of this height requires a cohesive strength of approximately 60 pounds per square foot (psf) for a factor of safety of 1.3.

Strength data were not available for the sediments underlying the CA94 slope, so Tetra Tech observed archived intervals of sediment from cores obtained in the area. The very soft sediment could not be remolded because it had very little strength. Testing with a pocket penetrometer indicated a strength of "0", but it's likely this sediment has some minimal strength in the range of 40 to 100 psf so was assumed to have a strength of 60 psf. According to *Foundation Analysis and Design* (Bowles 1988), saturated cohesive soil that "squishes between fingers when squeezed" has a very soft consistency, which correlates to strengths < 250 psf. Although this till was previously consolidated during glacial times, the loss of overburden pressure would cause negative pore pressure that leads to a loss in strength. The intervals observed and strength noted are presented in Attachment E-2.

As illustrated on Figure 2, a modified cap CA94 will be constructed at the eastern end of the WPS slip. The current mudline will be first covered with a minimum 3-inch thick sand layer; followed by variable thickness of  $D_{50}$  = 3- to 6-inch stone as a buttress over the approximately lower three-quarters of the slope; followed by a 3-inch minimum thickness of  $D_{50}$  = 3 to 6 inch stone as a filter layer; and a top armor layer with a minimum 20-inch thickness of  $D_{50}$  = 14 inch stone.

A slope stability profile was developed to model the placement of this cap on the soft silty sediment and underlying clay, with estimated properties assigned based on the core observations. The slope is assumed to be underlain by clay till, from approximately elevation 545 feet NAVD88 to depths beyond the potential failure zone, based on its observed presence at some core locations in this part of the river.

The slope was first modeled to estimate the FS for the approved slope design (3H:1V), assuming it is underlain by very soft sediment. The assumed sediment strength was approximately 60 psf. The strength of the underlying clay till was increased slightly to account for some consolidation from loading as the cap is placed. The strength assumed was 100 psf at elevation 551 feet NAVD88; 150 psf at elevation 544 feet NAVD88; and 500 psf at elevation 540 feet NAVD88. The strength profile is shown on the slope stability figure presented in Attachment E-3, as well as the results obtained for these analyses. These results indicated the slope as designed had a FS of 0.9, so a revision to the slope was recommended.

To increase the FS for this slope, the Design Team evaluated various revised slope configurations for the cap described above that would add resistance to failure at the toe of slope, while also reducing the

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load from the cap. The selected slope configuration included revising the slope to a 5H:1V slope from the top of slope to the dredged surface at approximately elevation 551 to 552 feet NAVD88. This slope revision includes stone buttress added to provide further resistance to slope failure. The buttress includes  $D_{50} = 3$  to 3- to 6-inch gravel, which also serves as filter stone, overlain by  $D_{50} = 14$  inch stone. In addition to the placement of added buttress, the thickness of the large armor stone layer on the slope was reduced to a target of 20 inches, with anticipated final thickness of approximately 28 inches. This was done to reduce the driving force for instability due to the weight of the rock on the top portion of the slope.

The revised slope configuration described above was analyzed for slope stability and had a FS of 1.4, which meets the target FS of 1.3 for short-term slope stability. It is anticipated that this will increase with consolidation of the soft sediment and underlying clay till from the cap load, and from accretion that will take place in this area.

### 8. RECOMMENDATIONS

The Design Team recommends a Type A1 cap in the WPSC Pulliam Plant Slip and a modified Type A cap on the outer slope, given the recent decision by WPSC to retire the remaining units at the Plant. This capping remedy is consistent with the ROD Amendment and acceptable to the landowner. It's also very unlikely the cap would be damaged because there are no plans to dredge the slip. Furthermore, the risk of PCB release from the slip is insignificant because PCB concentrations underlying the cap are generally less than 2.2 ppm and the slip is depositional in nature.

The vessel straying distance is quite extreme and likely to never occur since the vessel would be askew to the navigation channel with its bow heading toward contact with the western bank of the river. The recommendations summarized below are based on this extremely low-probability occurrence.

Based on the results shown on Figures 3 and 4 for the 65-foot vessel straying scenario, placement of armor stone over the cap surface could begin on the slope near the slip entrance, and proceed as follows:

- Install minimum D<sub>50</sub> of 14.1-inch stone for the entire cap slope area located at the entrance to the slip (Modified Cap A, based on sediment surface concentration);
- Install D<sub>50</sub> of 3 inches (A1 cap) for the remaining cap area.

The revised design will have the same stone size, and will have improved stability with the flatter slope.

#### 9. REFERENCES

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### **ATTACHMENT A-1**

### 2017 ANNOUNCEMENT THAT THE PULLIAM PLANT IS PLANNED TO BE RETIRED

### WPS shutting down coal-powered Pulliam Plant

By Jeff Alexander | Posted: Thu 3:50 PM, Nov 30, 2017 | Updated: Thu 5:35 PM, Nov 30, 2017

GREEN BAY, Wis. (WBAY) - After 90 years in operation, the coal-fired Pulliam power plant in Green Bay is set to be retired.



Pulliam Power Plant in Green Bay (WBAY file photo)

"Really, this is part of our parent company WEC Energy Group's overall efforts to reshape its generation fleet for a clean, reliable energy future," WPS spokesman Matt Cullen said.

Cullen says a number of factors played into the decision to retire the plant late next year or in early 2019

"Natural gas prices have been sustainably low. We've also had reduced costs, a dramatic reduction in cost, for renewable generation such as utility scale solar and wind energy, and also customer demand, there's been limited to no growth in electricity demand by customers."

The plant was built in 1927 at the mouth of the Fox River.

At its peak, the power plant was home to eight coal-fueled electric generating units.

Today only two remain in operation, producing more than 200 megawatts of electricity.

As for what options will be available for the 46 employees who work at the plant – or the property that borders the Fox River and Bay of Green Bay- - Cullen says those have yet to be determined.

"I's early on in the process of retiring those two units at the Pulliam Power Plant, and we're still working on a final disposition of the site."

Since 1998, the Pulliam plant has also been home to nesting peregrine falcons. WPS says after this coming spring it will work with a falcon expert to make sure other nesting boxes are located nearby.

### **ATTACHMENT A-2**

2019 CORRESPONDENCE FROM WPSC TO NCR REGARDING THE PROPOSED CAPPING REMEDY FOR THE WPSC SLIP



Wisconsin Public Service Corporation

700 North Adams Street P.O. Box 19001 Green Bay, WI 54307-9001 www.wisconsinpublicservice.com

April 10, 2019

Lower Fox River Remediation LLC c/o Bryan Heath Senior Environmental Engineer NCR Corporation 864 Spring Street. NW

Dear Mr. Heath,

Atlanta, GA 30308-1007

Wisconsin Public Service Corporation (WPSC) has reviewed the design proposed for Cap CA94 in the WPSC Slip, described in the draft technical memorandum shared with WPS on April 8, 2019. The design includes capping and no dredging for the slip. WPSC supports the proposed design and provides "riparian acceptance" for this design.

Sincerely,

Elizabeth Stueck-Mullane Vice President - Environmental WEC Energy Group Business Services

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## ATTACHMENT B PCB CONCENTRATIONS BELOW THE PROPOSED CAP

### **PCB Concentrations Below Proposed Cap**

Core ID		4089R-0	01	4	089R-0	)2	4	1089R-	-03		4089-0	4	408	9-21	408	88.5-07	4089-20	4088.5-06	4089-210	4089-38	4089-39	4089-40	4089-41	4089-42	4089-46	4089-47	4089-48
		2012								2004	2012			2015			2012	2012	2014	2015	2015	2015	2015	2015	2016	2016	2016
Elevation																											
570.0																								TOC			
569.5			TOC																					0.975		TOC	
569.0		TOC	1.15																					0.992		0.716	
568.5		0.934	1.04			ТОС																		1.17		0.684	TOC
568.0	тос	1.04	1.38		TOC									TOC				TOC				TOC		1.08		0.945	100
567.5		1.04				1.14							TOC								TOC					0.896	
	1.4		1.21		1.34	1.6					TOC	TOC	<u>TOC</u>	0.911			TOC	1.1			<u>TOC</u>	1.1		1.12			
567.0	1.4	0.943	1.26		1.27	1.44					TOC	TOC	1.2	1.02			<u>TOC</u>	1.09			1.05	1.07		1.05		0.0253	
566.5		0.804	1.16		1.02	1.6					0.858		1.16	1.13			1.17	1.11			1.14	1.14		0.874		0.0254	
566.0		0.781			1.03	1.43					0.992	1.13	1.09	1.08			1.14	1.1			1.18	1.32	TOC	0.877			
565.5		0.886			0.801					TOC	1.03	1.2	0.95	1.1			1.05	0.76			0.99	0.906	1.08				
565.0		0.605			0.962					1.7	0.859	1.25	0.891	0.643			0.845	1.01	TOC		1.14	0.959	1.28				
564.5	1.7	0.548			1.04	1.2					0.962		0.862				0.856	1.1	1.36		0.929	1.12	0.959				
564.0	2.1	1.04			1.03	1.13						0.969	0.945				0.971	1.45	1.45		1.03	1.18	0.923				
563.5	2	1.21	0.926		0.829	1.05			<u>TOC</u>	1.55	0.838	1.1					0.835		1.22		1.01		0.788				
563.0	2.4	1.16	0.852		0.912	1.18		TOC	1.07	1.45	0.829	1.17					0.886	1.41/0.78	0.96				0.88		<u>TOC</u>		
562.5	2.3	1.2			1	1.25		NA	1.21	1.6	0.986	1.21					0.887		1.06				0.966				
562.0	2.1	0.84		TOC	0.915	1.22		NA	1.22	1.55	0.921	1.32							1.39				0.877				1.31
561.5	2.1	1.29		1.6	1.12	1.39	TOC	NA	1.12	1.5	0.727	1.17							1.43								1.26
561.0	1.5	1.61		1.7	1.32		1.3	NA	1.07	1.6	0.746	1.03							1.62								0.504
560.5		1.28		1.5	1.27		1.3	NA	1.05	1.5	0.694	0.914							1.83	TOC							0.0253
560.0		1.35		1.6	1.25		1.2	NA	0.923		1.07						1.54	1.02	1.41	1.01							0.0253
559.5		1.4		1.6	0.91		1.6	NA	0.961		1.18						1.68	0.76	1.19	1.4							
559.0				1.5			1.7	NA	1.11		1.11						1.96		1.19	1.24							
558.5				1.5			1.7	NA	1.31		1.52						1.82		1.18	1.59	1.33	1.35					
558.0		1.71		1.6			1.9	NA	1.07		1.35				тос	TOC	1.41		1.01	1.45	1.00	1.67					
557.5		1.71		1.8			2.1	NA	1.39		1.76				1.08		1.78		0.301	1.22	1.54	2.24					
557.0				1.6			1.9	NA	1.5		1.93				1.08		1.36		1.39	1.22	0.144	1.32					
556.5				2.1				NA	1.5		1.32					1.11	1.30		1.42	1.49	0.144	1.32					
				1.7				1.27			1.52					0.509				1.45		1		1.60			
556.0																			1.11			1		1.68			
555.5				2				1.32					-		1.21							0.055	0.005	1.52	2.27		
555.0	<b></b>			2.2			1.7	1.5								0.809						0.955	0.865	1.57	3.37		
554.5				2.1			2.2	1.2		-						0.702						4.10	0.844	0.981	1.17		
554.0							2.3	1.43								0.0252						1.13	1.04	0.979	0.0251		
553.5	<b>.</b>			1.3			ļ	1.49					<b>.</b>										0.999		0.0251		
553.0				1.8				2.05	-											1.82		1.53	1.45	1.24			
552.5								2.16												1.81							
552.0																				1.58		1.69		1.28			
551.5								2.23												2.18			1.24	1.18			
551.0																						1.4					
550.5											3.49									2.23			2.09				
550.0																	2.31					1.43					
549.5																				2.48		1.26	3.45				
549.0																											
548.5																				2.89			7				
-			ماميرمام			_		-	-	-	1			1					1	-				·	1		

# ATTACHMENT C SUMMARY OF SUPPORTING DATA AND RESULTS FROM PROPWASH ANALYSES

Table 1. Summary of Vessel Dimensions and Operating Data

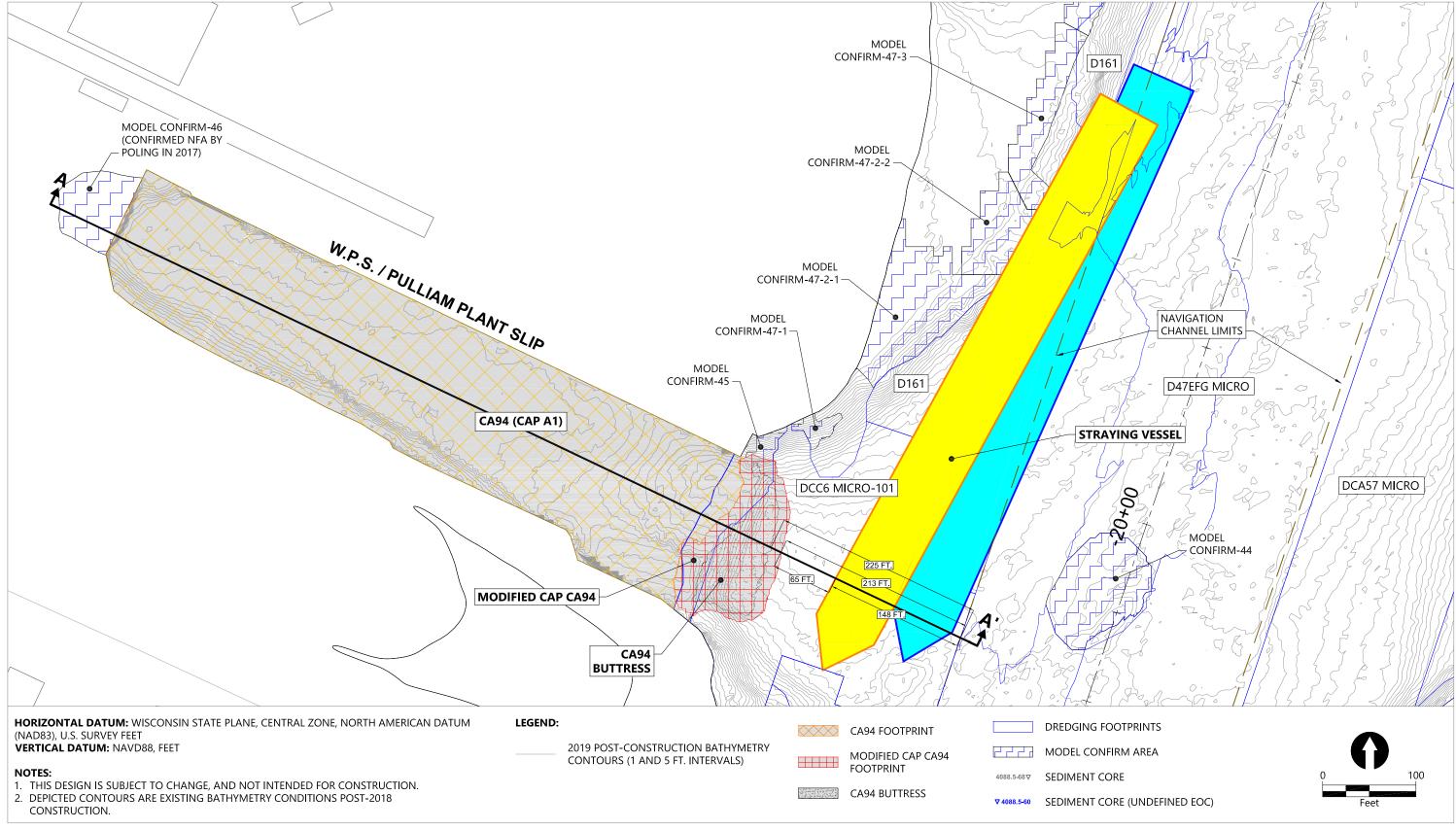
Vessel	Main Engine HP	Ducted/Non- Ducted	Number of Engines	Number of Propellers	Bow Thruster HP	Stern Thruster HP	Length	Beam	MidSummer Draft (ft)	Vessel Draft	Distance Between Main Engine Prop Shaft and Keel (ft)	Main Engine Prop Diameter (ft)	Distance Between Bow/Stern Thruster Shaft and Keel (ft)	Bow/Stern Thruster Diameter (ft)
Great Republic	7200	Ducted	2	2	1000	1000	635	68		40	10.25	14	5.9	4.8
Buffalo	7200	Non-Ducted	2	1	1000	600	635	68	27.99	40	10.25	17.5	5.9	4.8
Sam Laud	7200	Non-Ducted	2	1	1000	600	634.83	68	27.99	40	10.25	17.5	5.9	4.8
Manistee	2950	Non-Ducted	2	1	600	NA	620	60	24.50	35	9	16	5	5
Manitowoc	5600	Non-Ducted	2	1	1000	NA	630	68	26.00	37	10	17	6	5
Mississagi	3650	Non-Ducted	1	1	600	NA	620.5	60	25.46	35	9	16	5	5
Calumet GL Ostrander	5600	Non-Ducted	2	1	1000	NA	630	68	26.00	32	10	17	6	5
Integrity	7200	Non-Ducted	2	1	800	NA	544	70			6.8	11.7	5.5	5.0
Alpena	4000	Non-Ducted	1	1	800	NA	503	67	26.42	26.4	10.0	17.5	6.0	5.2

Table 2. Summary of Information Provided by Vessel Operators and Recommended Conditions for Evaluation

				Na	vigation Channel N	orth of CNRR Bridg	ge
		Operator/Cont					Conditions for
Vessel	Vessel Owner	act Who	Notes	Normal/Extrer			ation
	or Operator	Provided Information		Percentage of Applied Power (Main Engine)	Percentage of Applied Power (Bow Thruster)	Percentage of Applied Power (Main Engine)	Percentage of Applied Power (Bow Thruster)
		Capt. James Fisher, Great Lakes Fleet	webcast	25%	50%	75%	100%
Great Republic	Key Lakes IV	Ken Gerasimos, Port Captain, Great Lakes Fleet	response to questionnaire; vessels "very frequently (get) within 36 to 48 feet" of the east or west limits of the Nav Channel when traveling north of CNRR	50%	80%	50%	80%
Manistee	Grand River	Mike Farrell,					
Manitowoc	Navigation	Safety and		. =			
Calumet	(affiliate of Lower Lakes)	Compliance Supervisor	webcast	15%	50%	15%	50%
Mississagi	Lower Lakes	Supervisor					
Sam Laud	American	Pierre					
Buffalo	Steamship	Pelletreau, VP - Engineering	webcast	15%	30%	15%	30%
barges and tug	Pere Marquette Shipping Company (PMSCO)	Mark Mather, Ops Manager/Relief Captain	webcast and response to questionnaire; vessels get "quite close to FHTB boundaries"	50%	100%	50%	100%
Alpena			webcast and email	30%	30%	30%	30%
Ostrander/Integrity			reply; Andrie	30%	30%	30%	30%
Champlain/Innovation			vessels only go as far south as the	30%	30%	30%	30%
Michigan/Great Lakes			Lafarge/CRM	30%	30%	30%	30%
Karen Andrie/Endeavor	Andrie Transportation	Steve Stanek, Port Captain	dock; vessels "hug the East side of	30%	30%	30%	30%
Sarah Andrie/A-390			the channel just	30%	30%	30%	30%
Mary Hannah/A-410			before turning into the Lafarge/CRM slip"	30%	30%	30%	30%

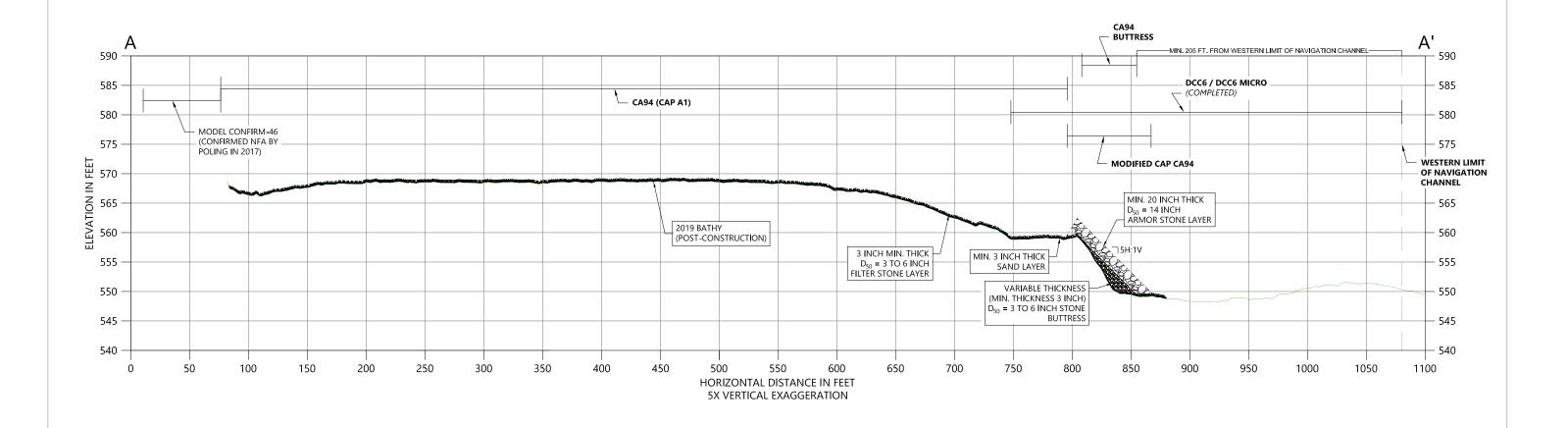
# ATTACHMENT D PROPWASH FIGURES





Publish Date: 2020/02/13 9:52 AM | User: dbinkney Filepath: \amesbury1\Greenleaf\CAD - Boston\PROJECTS\080295-03 - FOX RIVER\2020\DESIGN\CA94\Propwash\ANC-2020-OU4-WPS Slip-Cap-Propwash\_02132020.dwg FIGURE 1





HORIZONTAL DATUM: WISCONSIN STATE PLANE, CENTRAL ZONE, NORTH AMERICAN DATUM (NAD83), U.S. SURVEY FEET **VERTICAL DATUM:** NAVD88, FEET

1. THIS DESIGN IS SUBJECT TO CHANGE, AND NOT INTENDED FOR CONSTRUCTION.

### LEGEND:

2019 POST-CONSTRUCTION BATHYMETRY

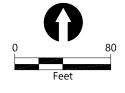
3 INCH MIN. THICK SAND LAYER

3 INCH MIN. THICK  $D_{50} = 3$  TO 6 INCH FILTER STONE LAYER

VARIABLE THICKNESS (MIN. THICKNESS 3 INCH)  $D_{50} = 3 \text{ TO } 6 \text{ INCH STONE BUTTRESS}$ 

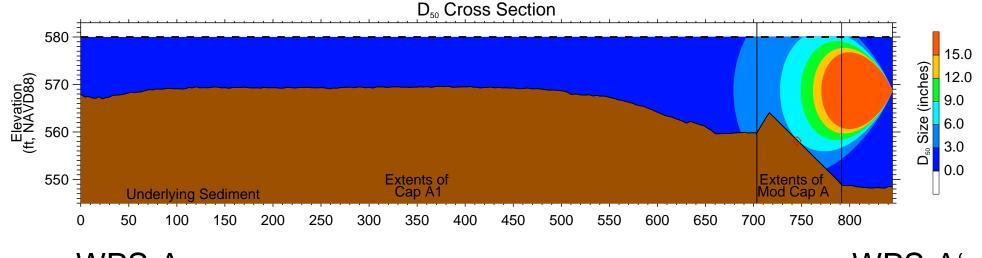


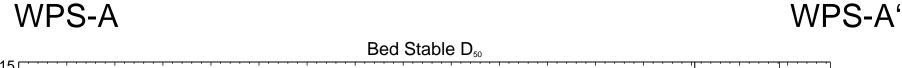
MIN. 20 INCH THICK  $D_{50} = 14$  INCH ARMOR STONE LAYER

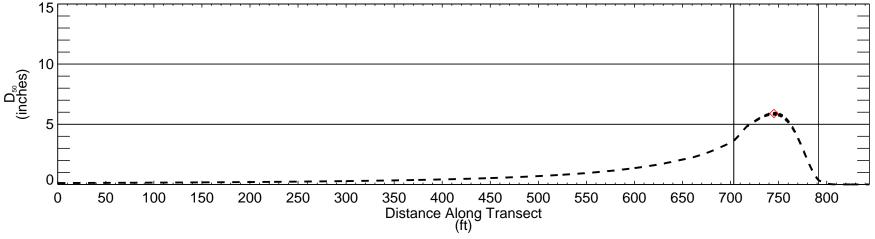


Publish Date: 2020/02/19 9:16 AM | User: dbinkney Filepath: \amesbury1\Greenleaf\CAD - Boston\PROJECTS\080295-03 - FOX RIVER\2020\DESIGN\CA94\Propwash\ANC-2020-OU4-WPS Slip-Cap-Propwash\_02132020.dwg FIGURE 2







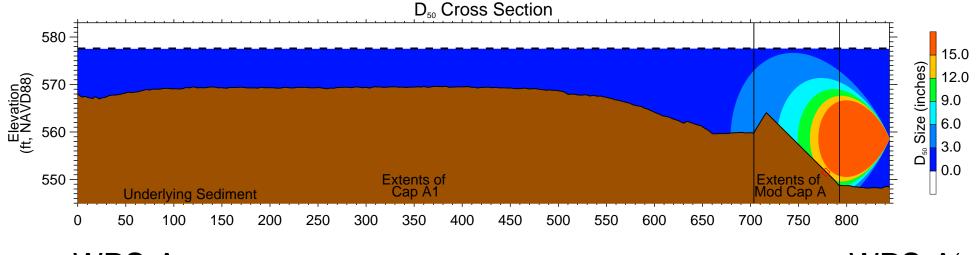




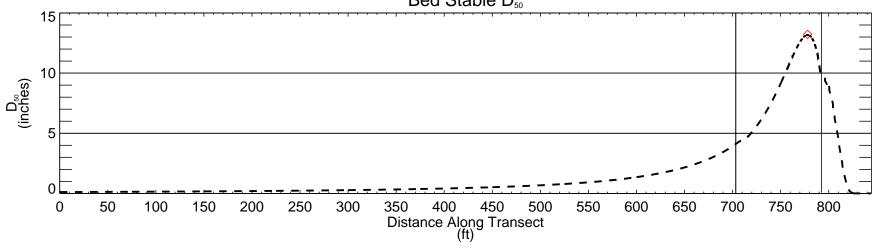
- - High Water Conditions = 580.0 ft, NAVD88

Propeller Wash D₅ Field - Great Republic Bow Thruster Cap Armor Layer Propeller Wash Assessment Lower Fox River Remediation











- - Low Water Conditions = 577.6 ft, NAVD88

Propeller Wash D₅ Field - Great Republic Bow Thruster Cap Armor Layer Propeller Wash Assessment Lower Fox River Remediation



### **ATTACHMENT E**

### E-1: PARAMETRIC ANALYSES FOR SEDIMENT SLOPE STABILITY

E-2: TABLE OF CORE INTERVAL OBSERVATIONS REGARDING SEDIMENT STRENGTH

E-3: SLOPE STABILITY INITIAL ANALYSES AND REVISED SLOPE ANALYSES

### Attachment E-1 Parametric Analysis

### Parametric Dredge Slope Stability Analysis - Sediments with Friction Angle of 0

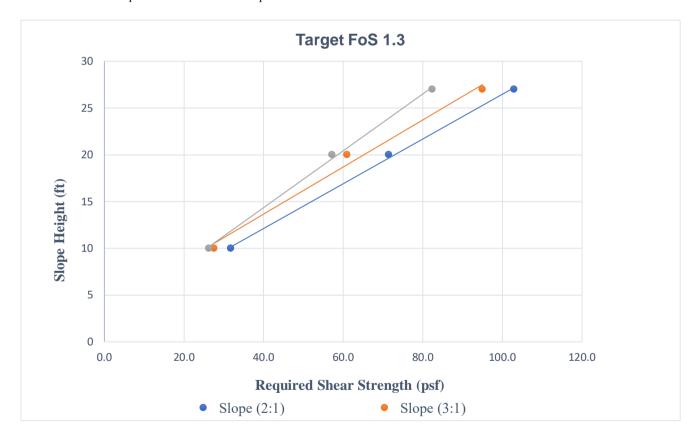
Saturated Unit Weight,  $\Upsilon$  (pcf) = 80 Unit Weight of water,  $\Upsilon_w$  (pcf) = 62.4

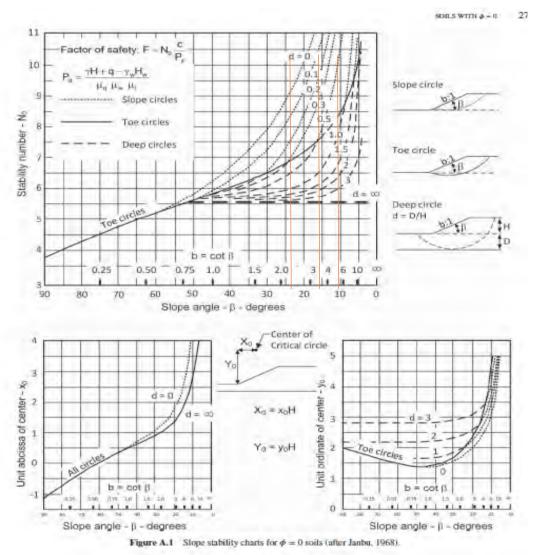
Submerged Unit Weight of water, Y (pcf) = 17.6

Factor of Safety, F	Slope (H:1)	Angle, β (degree)	Slope Height, H (ft)	Depth to Competent Stratum D (ft)	d=D/H	P <sub>d</sub> (psf)	Stability Number, N <sub>o</sub> (Slope circle)	Stability Number, N <sub>o</sub> (Toe circle)	Stability Number, N <sub>o</sub> (Deep circle)	Cohesion, C (psf)
1.3			10	30	0.33	176	7.2	6.7	7.2	31.8
1.3	2	26.57	20	30	0.67	352	6.4	6.7	6.4	71.5
1.3			27	30	0.90	475.2	6	6.7	6	103.0
1.3			10	30	0.33	176	8.3	7.3	8.3	27.6
1.3	3	18.43	20	30	0.67	352	7.5	7.3	7.5	61.0
1.3			27	30	0.90	475.2	6.5	7.3	6.5	95.0
1.3			10	30	0.33	176	8.7	7.8	8.7	26.3
1.3	4	14.04	20	30	0.67	352	8	7.8	8	57.2
1.3			27	30	0.90	475.2	7.5	7.8	7.5	82.4

Notes:

No surcharge is assumed at the top of the slopes Water surface is equal at both sides of the slopes



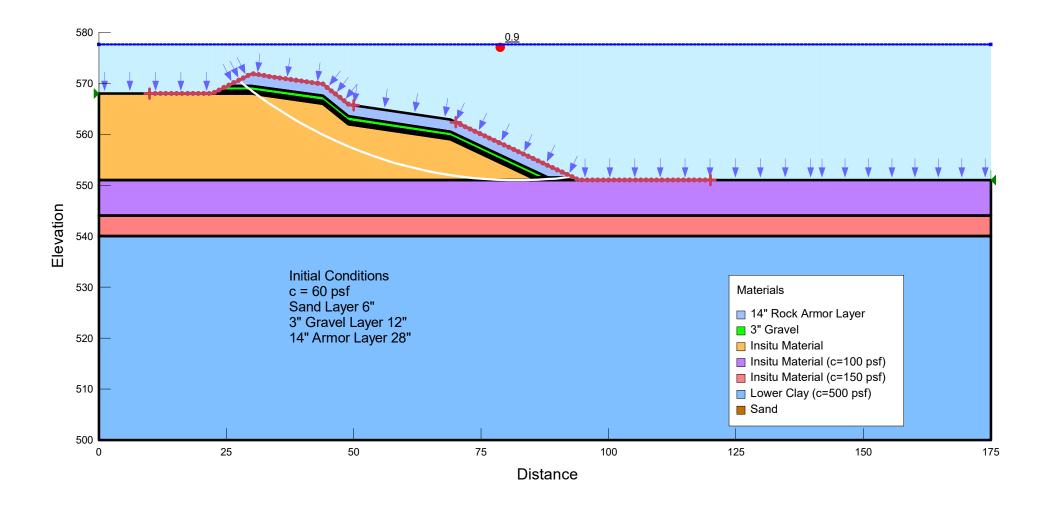


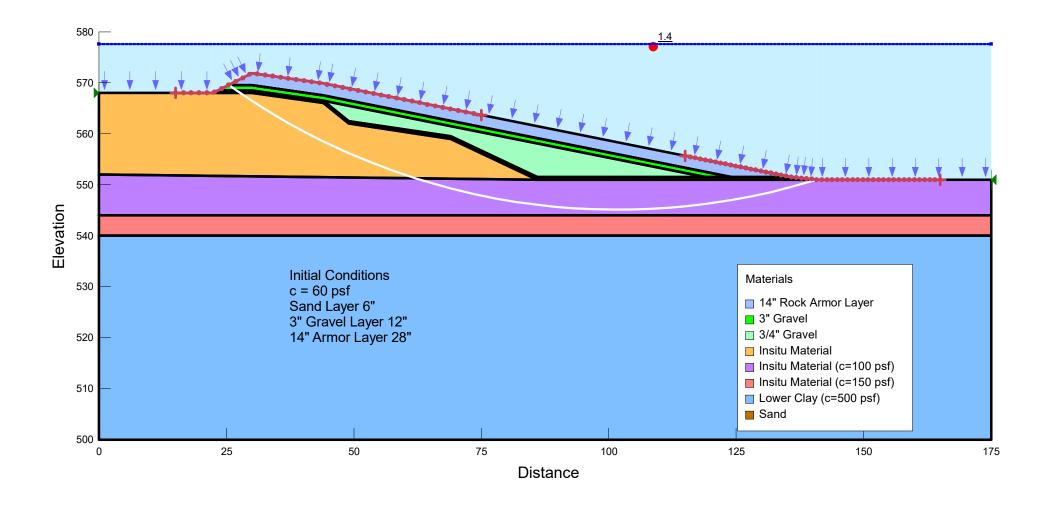
Janbu, N. 1968. Slope Stability Computations. Soil Mechanics and Foundation Engineering Report. Technical University of Norway, Trondheim. Duncan, M.J., Wright, S.G., and Brandon T.L. (2014) Soil Strength and Slope Stability. 2nd Edition. John Wiley and Sons., Inc., New York.

Attachment E-2
CA94 Core Interval Review 11-Oct-19

Core ID	Interval	Elevation	Sediment Type	Pocket pen (kg)	Strength (psf) <sup>+</sup>
4088.5-65	F	563.5	CL/ML	0	0
4088.5-66	Α	560	CL/ML	0	0
	В	559.5	CL/ML	0	0
	С	559	CL/ML	0	0
	D	558.5	CL/ML	0	0
	E	558	CL/ML	0	0
	G	557	CL/ML	0	0
	J	556	CL/ML	0	0
4088.5-60	Α	556	CL/ML	0	0
	В	555.5	CL/ML	0	0
	С	555	ML	0	0
	D	554.5	CL/ML	0	0
	F	553.5	CL/ML	0	0
	Н	552.5	CL/ML	0	0
4089-50RVT	Α	554.5	CL/ML	oversaturated-not tested	-
	В	554	CL	0	0
	С	553.5	CL/ML	0	0
	D	553	CL/ML	0	0
	E	552.5	CL/ML	0	0
4089-38	J	556	CL/ML	0	0
	К	555.5	CL	0	0
	L	555	CL/ML	0	0
	М	554.5	CL/ML	0	0
	N	554	CL/ML	0	0
	Р	553.5	CL/ML	0	0
	DS-U	551	CL/ML	0	0
	DS-W	550	CL/ML	0	0
	DS-Y	549	CL/ML	0	0
4089r-03	W	552.5	CL/ML	0	0
4089r-03	RVT-V	553	CL/ML	0	0
	RVT-X	552	CL/ML	0	0

<sup>1.</sup> Multiply kg reading by 1,000 for psf.





STS	AE	ECC	M			CONS	in Public Services	LOG OF BOR			1				
			, . (	11			ME am Plant Dockwall Feasibility Study	ARCHITECT/E	ENGINE	ER					
SITE LO 1501			y /	١٧	enue	e, Gre	een Bay, Wisconsin			0	JNCONF TONS/F1	INED CO	MPRESS	SIVE ST	R
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY			DESCRIPTION OF MATERIAL		UNIT DRY WT. LBS. / Ft.³	Lin	ASTIC AIT % X	20 20	+	LI LII 40	
ŽĮ.	SAMI	SAM	SAMI	REC	SUR	FACE	ELEVATION: +589.0 feet (WPS Plant Datum)		LBS		⊗ F	TANDAR PENETRA 20	ATION BL	OW6/F1	T.
2.0	1	SS	1	1			Miscellaneous Fill: Topsoil, silty clay, silty sa gravel, coal - moist - loose	nd and		⊗4		VF.			
4.0	2 2A 2D 2C	\$5 55 55 55	H	Ŧ	***		<b>3</b>						1		
6.0	3	SS	I	I	₩	6.0	And the same of the same of				1. (				
8.0	3/	33	Ļ	_		8.0	Reddish brown silty clay (CL) - trace sand segravel - moist - very stiff	ams - trace							
10.0	4	ss		#		0.0	Grayish brown silty sand (SM) - moist - wet - dense	medium			⊗ <sub>11</sub> (				
40.0	5	ST	H			11.0					<b>_</b> _	-	R.C.		
12.0				1			Reddish brown silty clay (CL) - trace gravel - moist - stiff to soft	trace sand -							
	6	SS	T	7		15.5				1					
16.0	6A	SS		I			Grayish brown silty sand (SM) - trace clay - tr	ace gravel -		⊗.	1				•
18.0							wet - loose				,	1			
20.0	7	SS	T	T		20.0	Poddich brown city slow (CL) Assess to 1999	manual .		0	j	100			,
22.0			1	t			Reddish brown silty clay (CL) - trace to a little trace sand - moist - very stiff	gravei -		J	1	19		M	
24.0						25.0					1				
26.0	8	SS					Reddish brown silty clay (CL) - trace to a little trace sand - moist - soft	gravel -		<b>⊗</b> <sub>6</sub>	1- 1		J. T.		
28.0	P.						Note: Gravel obtained in split-spoon sample			1					
30.0			-				Make Birt And			1					
32.0	9	SS	1	1			Note: Disturbed sample			84					
34.0				STATE OF THE PARTY							A				
36.0	10	ST	T	T						œ					
38.0			1	Thurs						T					
40.0													350	100	
				T			continued		100						
									STS J						

STS	F &IL	CO	IAI	Ι.	ROJECT NAME	ARCHITECT/	ENGINE	ER	
				J	P. Pulliam Plant Dockwall Feasibility Stud	dy			
1501			v A	ve	nue, Green Bay, Wisconsin			O-UNCONFINED COMPRESSIVE	ST
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.		SAMPLE DISTANCE		DESCRIPTION OF MATERIAL		UNIT DRY WT LBS. / Ft.³	PLASTIC WATER LIMIT % CONTENT %	L
$\times$	8	₩.	SAN	REC	SURFACE ELEVATION: +589.0 feet (WPS Plant Datu	m) (Continued)	I BS	8 PENETRATION BLOWS 10 20 30 40	S/F
42.0	11	ST			Reddish brown silty clay (CL) - trace to a trace sand - molst - soft	ı little gravel -			
44.0				-	45.0				
46.0	12	ST			Reddish brown silty clay (CL) - trace to a trace sand - moist - stiff to very stiff	little gravel -		φ	i
48.0					Maria and the same of the same				
50.0			1	T				1.2 Qu	
52.0	13	3"ST	Ш	1			71.1	0	
54.0	11/								
56.0	14	ST	П	I					
58.0									
60.0			1	T					
62.0	15	SS	1	L				\$27 €	P
64.0									
66.0	16	ss	I	I					
68.0									
70.0			1	T				3.6 Qu	
72.0	17	3"ST	1	1			100.0	1 9	
74.0									
76.0	18	"ST	T				95.0	2.2 Qu	
78.0			1	THE REAL PROPERTY.					
80.0			1		,,,.conti				-
3 [			1						

						LOG OF BORI	NG NUN	MBER 1
STS	AE	CO	M		Wisconsin Public Services PROJECT NAME	ARCHITECT/E	MOINE	-
				11	J. P. Pulliam Plant Dockwall Feasibility Study	ARCHITECT/E	NGINEE	=K
SITE LO							7-7	UNCONFINED COMPRESSIVE STRENG
1501	Ву	isb	y A	VE	enue, Green Bay, Wisconsin			1 2 3 4 5
DEPTH (FT) ELEVATION (FT)			SAMPLE DISTANCE					PLASTIC WATER LIQUID LIMIT % CONTENT % LIMIT %
H (F)	ġ	78	IST	≿	DESCRIPTION OF MATERIAL		¥.	×
DEPTH (FT) ELEVATION	SAMPLE NO.	SAMPLE TYPE	Ш	OVER!			DRY /FL³	10 20 30 40 50 STANDARD
X	SAM	SAM	SAM	REC	SURFACE ELEVATION: +589.0 feet (WPS Plant Datum)	(Continued)	UNIT DRY WT. LBS. / FL <sup>3</sup>	
	19	ST	П	T				
82.0 82.0			Щ	1	82.0 End of Boring			
					Boring advanced to 10.0 feet with solid-stem a Boring advanced from 10.0 to 82.0 feet with rol drilling fluid HW casing driven to 10.0 feet Boring backfilled with 3/8" chipped bentonite	uger ller bit and		* Calibrated Penetrometer
	Γhe s	strati	fica	tio	on lines represent the approximate boundary lines between	soil types: ii	n situ, t	the transition may be gradual.
L 10.0	ft. V	VS			BORING STARTED 9/15/08	STS	OFFICE	1035 Kepler Drive
/L	4				BORING COMPLETED 9/15/08	ENTE	RED BY	Green Bay, Wisconsin 54311 SHEET NO. OF
/L				-	RIG/FOREMAN	APP'[	_	
					CME 850/JD		BKB	STS JOB NO. 200803665

			Т	- 1	CLIENT				LOG OF	BORII	NG NUI	/BER	2		
STS	A	ECC	MA				in Public	Services	1						
	"	- 15		11.	PROJE			Dockwall Feasibility Study	ARCHITE	CT/EI	NGINE	R			
SITE LO	CATI	ON	-	1,	V. F.	- un	um Flant l	Journali Feasibility Study	1		-	~u	NCONFI	NED COMPR	ESSIVE STRE
			y /	V	enue	, Gr	een Bay, V	Visconsin				U T	ONS/FT.	NED COMPRI 2 3	4 5
E												PLA	STIC	WATER	LIQI
DEPTH (FT) ELEVATION (FT)		1	SAMPLE DISTANCE				DE	CODIDITION OF MATERIAL		- 11		LIM	IT% ← — –	CONTENT	% LIMI
DEPTH (FT) ELEVATION	Š	14P	DIST	RY			DE	SCRIPTION OF MATERIAL			W			20 30	40 50
PE 5	SAMPLE NO.	SAMPLE TYPE	틸	RECOVERY							UNIT DRY WT.		-	TANDARD	
$\times$	\ S	S. S.	S	Ä	SUR	FACE		: +585.0 feet (WPS Plant Datum)		_	LBS CE	1		ENETRATION 20 30	BLOWS/FT. 40 50
	1	SS	11	1	₩	8	Fill: Grayls	sh brown silly sand (SM) - little to t to wet - loose	some			<b>⊗</b> <sub>5</sub>			
2.0			1		₩	2.5			some			10			
4.0	2	ss	IT	T		1	Fill: Grayis	sh brown silt (ML) - little to some			7	ø		0-30	
4.0			1	1		5.0	wet - loose					84			
6.0	3	ss	T	T		5.0	Reddish br	own silty clay (CL) - trace sand -	moist			8			
	)	133	1	1		1	- very stiff				1	W.	B	0	
8.0	-	00	1	T	111	7.5	Grayish bro	own sandy silt (ML) - trace to a lit	le :	-			-		-
	4	SS	Ц	Т		B	clay - wet -	medium dense					9	20	
10.0	-	-	+	Т	m	10.0				***************************************			1		
12.0	5	SS	Ш				Reddish br	own silty clay (CL) - trace sand -	moist		64		8 11	P	
12.0			1				- very stiff t	o stiff						//	
14.0			Ш						133			) l			
											1 W	8 8	,		
16.0	6	ST											do		4 1
			1	+									7	T	1136
18.0												l. 18			1 1
20.0											JW	1			1 1
20.0	-	-	T	T									1		
22.0	7	ST		Ц							9.11		φ	*	
		-							13			ИN		1	
24.0				-										1	
	H		H	T										i	
26.0	8	ST		1								1.14	Φ	•	
28.0			+	1											
30.0	4			-											1
	9	3"ST		1			Installed In-	clinometer to 32.0 feet			102.1	1.2 Qu	5	1	
32.0 32.0			4	1		32.0	End of Boris		1:-	1:		* (	librat	d Penetron	otor
							Boring adva bit and Reve HW casing	nced to 7.5 feet with solid-stem a enced from 7.5 to 32.0 feet with ro ert drilling mud driven to 10.0 feet driven to 32.0 feet	auger liler						
	The	strati	ifica	atio	on line	s rep	resent the a	pproximate boundary lines betwe			situ, 1			may be gr	adual.
2.5	ft. W	S	_	_				9/11/08					een Ba	y, Wiscon	
								BORING COMPLETED 9/11/08		ENTE	RED BY BJV		SHEE	T NO. 1	OF <b>1</b>
L								RIG/FOREMAN  CME 850/BZ		APP'D	BKB		STS	JOB NO. <b>2008</b> (	3665

				CLIE				LOG OF BOR	ING NUI	MBER 3		
STS	A	ECC					ic Services	ARCHIE				
	1	es Alik gel	4 7 8	1	JECT N		nt Dockwall Feasibility Study	ARCHITECT/	ENGINE	ER		
SITE LC	CAT	ION	÷	J. F	. Pull	liam Flan	it Dockwaii reasibility Study			O UNCC	ONFINED COMPRESSIVE	STRE
			y A	venu	ıe, Gı	reen Bay	, Wisconsin			TONS	S/FT. <sup>2</sup> 2 3 4	5
				(i)					7	-	1	
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY			DESCRIPTION OF MATERIAL		UNIT DRY WT. LBS. / Ft.³	PLASTIC LIMIT %		LIQI LIMI
X	SAM	SAM	SAM	E SU	RFAC	E ELEVATI	ON: +585.0 feet (WPS Plant Datum	1)	ES E	8	PENETRATION BLOWS	
	1A	SS		188	X	Miscella	neous Fill: Silty clay, silty sand, o	3-11-11	:	10	20 30 40	50
2.0	1B	SS	Щ	$\pm$	<b></b> 2.0	and coa	I - moist to wet	gravel				5
	24	90	T	$\top \otimes$	<b></b> 3.0	Fill: Red	ddish brown silty clay (CL) with sai	nd -				
4.0	28	88	Н	XXX	×	moist - s	ayish brown silty sand (SM) - wet -	loose		\$5		
	-			_888	<b>⊗</b> 5.0		yen storm only sund (only not			1		
6.0	3	ss				Brown e	andy silt (ML) - little to some clay -	loose		<b>Ø</b> <sub>5</sub>	1 3 7 4 7 17	1
			1	111		loose	and formal manage and animo old .		3	5		
8.0		C-	П	III				E3 E				
40.5	4	ST						[3] E	:	•		
10.0	5	ST	F	T	14.0			E E	:			
12.0	5A	ST	H	100	11.0			- B		00		
12.0			1			Reddish	brown silty clay (CL) - trace sand moist - stiff to soft	- trace	:	7		
14.0	1			111		graver - I	moiat * Still to Soft	E3 E3		/		
										/	1	
16.0	6	ST	П		8					4		
	L	31	Щ	_////	8			10 10		9		
18.0	7				8			13 6			141 1	
			П		9			E3 E3		11		
20.0	-		+	т////	8			超級	1		131 1	
22.0	7	ST	Ш		8				98.88	Ф		- 1
22.0			1	<del>-</del> ////				13 B		V		ы
24.0					8					Λ		-1
				1111								
26.0	8	3"ST	T			Note: CI	IU Test performed on Sample 8		90.0	17		
	,	, 51		L////			Perionina on Gampio G		55.5	17	Δ	
28.0	2-1			1111						/		
								E E		X		
30.0		-	+					自自				
22.0	9	ST			32.0		Installed Inclinometer to 3	2.0 feet		9		
32.0 32.0	=	-	+	1111	/32.0	End of Be	oring	To the		* Calibr	rated Penetrometer	+
						Boring ac bit and di HW casir	dvanced to 5.0 feet with solid-stem dvanced from 5.0 to 32.0 feet with rilling fluid ng driven to 8.0 feet inclinometer to 32.0 feet	ı auger roller				
	The	strati	ifica	ntion lir	nes re <sub>l</sub>	present the	e approximate boundary lines betw	- 4				1
4.0	ft. VV	S					BORING STARTED 9/11/08	STS	OFFICE		Kepler Drive Bay, Wisconsin 54	311
L							BORING COMPLETED 9/12/08	ENT	ERED BY		HEET NO. OF	311
rL				-			RIG/FOREMAN	APP	D BY	8	1 1 TS JOB NO. 200803665	_
							CME 850/BZ		BKB	1	200803665	

0.00			_	1	. P. Pulliam Plant Dockwall Feasibility	Study				
150			y /	Ave	nue, Green Bay, Wisconsin			O TO	NCONFINED C DNS/FT. <sup>2</sup> 2	OMPRESSIVE 3 4
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATER	KIAL	UNIT DRY WT. LBS. / Ft.³	PLAS LIMI >	T % CON	VATER NTENT % 30 40
X				REC	SURFACE ELEVATION: +585.0 feet (WPS Plant	Datum)	LBS	8	PENETR	ATION BLOWS 30 40
	1A 1B	SS		世	Miscellaneous Fill: Loose brown si	ty sand (SM)		84		7-1
2.0					and stiff silty clay (CL) - trace coal -	ty sand (SM) moist to wet		4		140
4.0	2	SS	1					∞,		4 1
6.0	3	ss						⊗ <sub>5</sub>		1.1
8.0	4	ss	T	1	7.5			1		-
10.0	H	33	1	Щ	Possible Fill: Dark brown to brown trace to a little clay - trace sand - tra	silt (ML) - ce roots -	9	WYO	Hammer	
10.0	5	ss	T	T	trace coal - wet - very loose		ó	2	,	
12.0		-	+	H				Wt. Ø	Hammer	
14.0	6	ss				silt (ML) - ce roots -	Q	Wt. O	Rod	
16.0	7	ss	I				Q	Wt. O	Hammer	
18.0	8	SS	Т	T		8 8				
20.0		00	П				ď	Wt. O	Hammer	1.1
	9	ss		18		自自		(Q)		7 1
22.0								1		
24.0	10A 10B	SS		掛		8 8		8		
			-	-		8 8	-4		,	1 1
26.0	11	SS	1	_8		88	- 4	8	)	1
28.0	12	ss	I	1	27.5	L vonces to	=	ø_	0	10-1
30.0			1	1	Reddlsh brown silty clay (CL) - mois firm	t - very soft to		, 5		
	13	ss		1	31.5	自自	q	100 Q	Hammer	
32.0	29				Reddish brown silty clay (CL) - mois			VVI. CO.	nammer	-
34.0					stiff	- stiff to very				
36.0	14	ST	I	I		E-3 E-3			<b>\( \)</b>	
38.0	17									
40.0			1	-	<b>//</b>	continued	-			
77.				1					* 4	

STS	AF	ECO	M	PROJECT	nsin Public Services  NAME  ulliam Plant Dockwall Feasibility Study	ARCHITECT/E			
SITE LO			y A		Green Bay, Wisconsin			O UNCONFINED COMPRETONS/FT. <sup>2</sup> 1 2 3	SSIVE S
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	STANCE	COVERY	DESCRIPTION OF MATERIAL		UNIT DRY WT LBS. / Ft.³	PLASTIC WATER LIMIT % CONTENT	% t
$\times$	SA	8	8	SURFA	CE ELEVATION: +585.0 feet (WPS Plant Datum)	(Continued)	LB SE		BLOWS/I
42.0	15	ST	Щ		Reddish brown silty clay (CL) - moist - stiff to stiff	very			
44.0									1
46.0	16	ST	T					/	
48.0			1						
50.0									
52.0	17	ST	H					9.	
54.0									
56.0	18	ST							
58.0			Т						
60.0								1,1 Qu	
62.0	19	ST	Щ				93.0	P	
64.0									
66.0	20	3"ST				E+3 E+3	99.0	.0 Qu	
68.0									
70.0			1						
72.0	21	ST	Ш					Φ	
74.0									
76.0	22	ST						•	
78.0					Installed Inclinometer to 78.5	feet			
80.0	23	ST	Ш	80	0	- K		0 •	
1					continued				

				CLIENT		LOG OF BOR	NG NUM	IBER 5
STS	AF	CO	B.A	Wisconsin Pul	blic Services			
313	2 % C.	ا لله المحال	142	PROJECT NAME	ant Dealessell Franch Wt. Ob. de.	ARCHITECT/E	NGINEE	R
SITE LO	CATI	NC.		J. P. Pulliam Pi	ant Dockwall Feasibility Study	1		-O-UNCONFINED COMPRESSIVE STRENG
			y A	enue, Green B	ay, Wisconsin			TONS/FT.2 3 4 5
100							1	
DEPTH (FT)			SAMPLE DISTANCE	N. Control				PLASTIC WATER LIQUID LIMIT % CONTENT % LIMIT %
ELEVATION	<u>o</u>	YE	ξĮ,	_	DESCRIPTION OF MATERIAL		¥.	×
ie,	Ä	Ē		S S			유명	10 20 30 40 50
ব	SAMPLE NO.	SAMPLE TYPE	SAME	SURFACE ELEVA	TION: +585.0 feet (WPS Plant Datum)	(Continued)	UNIT DRY WT. LBS. / Ft. <sup>3</sup>	STANDARD  ⊗ PENETRATION BLOWS/FT.  10 20 30 40 50
	-	-		End o	f Boring	(00111111111111111111111111111111111111		* Calibrated Penetrometer
				auger Boring bit and	g advanced to 15.0 feet with solid-stem g advanced from 15.0 to 80.0 feet with d drilling fluid asing driven to 20.0 feet preter installed to 78.5 feet	roller		
	М	П	1			111		
	The	alret	Sec	lian lines research	the engage of the second secon			
	ı ne	strat	mical	ion lines represent	the approximate boundary lines between			
7.5	ft. W	S			BORING STARTED 9/10/08	STS	OFFICE	1035 Kepler Drive Green Bay, Wisconsin 54311
					BORING COMPLETED	ENT	RED BY	
					RIG/FOREMAN	APP'	D BY	STS JOB NO
L L					9/11/08			STS JOB NO.

				- 1	CLIEN			LOG OF BOR	RING NUI	MBER (	6			_
STS	A.		M	4 1			in Public Services							
	2 9,3	>#12 P - 1	, g e j	1	PROJE			ARCHITECT/	ENGINE	ER				
SITE LO	CAT	ION	_	1	J. P.	ruil	iam Plant Dockwall Feasibility Study			→ UNC	ONFINED CO	OMPRESS	SIVE STRE	FN
			y /	٩v	enue	, Gr	een Bay, Wisconsin		1 1	TON	S/FT. <sup>2</sup>	3		5
_				Ī	8 =					-		-		٠
DEPTH (FT) ELEVATION (FT)	и	1	빓	l	Ž.				100	PLASTI LIMIT		ATER ITENT %	LIQ: LIMI	
H (F	ĝ	7	ST	2	17		DESCRIPTION OF MATERIAL		Ŋ.	×		<b></b>		_
DEPTH (FT) ELEVATION	Ē	<u>=</u>	삘						PRY Fr.3	10	20	-	40 5	0
ŽĪ.	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	SUR	FACE	ELEVATION: +589.0 feet (WPS Plant Datum)		UNIT DRY WT. LBS. / Ft <sup>3</sup>	⊗ 10	PENETRA 20	ATION BL		
	1	ss	T	T	<b>***</b>	8			1	10	1			O
2.0	$\vdash$	H	μ	μ	₩	8	Fill: Coal - with some sand and gravel - mois	t - dense			11/2	8	38	l
	2	SS	T	T	₩						11/11	1		
4.0	2	55	Щ	μ	₩							/ S	6	
	-	-	-	1	₩						11.	1		
6.0	3	SS	Ц	П	₩						1	30		
8.0			-	-		7.5	Fill: Grayish brown silty sand (SM) and coal -	trans star	1		-1			
	4	SS				-	wet - loose	trace clay -		86				
10.0						9.5			+	6-G-5-E	-	-		-
	5	SS					Brown silty clay (CL) - with silt seams - satura - soft	ted to moist		ø <sub>3</sub> Φ				
12.0			i	ì		100	- GOIL			3				
14.0			T	T		13.0			-		-	-	-	
14.0	6	ST			Ш		Brown to reddish brown silt (ML) - trace clay - moist - soft	trace sand			•			
16.0				Ť	1111		- moist - soit							
				A	Ш					1	- 1		1	
18.0			-	T	Ш								1	
	7	SS			Ш					830				
20.0		=	9		11111	20.0		_	-	1		-	-	-
22.0	a						Reddish brown silty clay (CL) - trace sand - or silt seams - trace gravel - moist - stiff to very s	casional		1				
							Sile Souris - trace graver - most - stir to very s	PUII				1 1		
24.0	8	3"ST				84			103.2	2.0	Qu	1		
			Ц	T					1		TI		1	
26.0				1							11/			
28.0									1 1	1.4	111	R 0		
200	9	2"ST	T	T					101.7	1.6 Qu	11			
30.0		- 01	1	1					""		de	1	V. 1	
											1			
32.0											1	1		
34.0			T	T						YY		1		
2.00	10	3"ST	1	4								8	P	
36.0		7									1		\	
79/11				-									1	
38.0		1. 77 7. ft.	+									1		
40.0	11	3"ST											p	
40.0			+	+	MILA		continued			4-				
		И					continued							
			1											
								3						
		_	_	_	sent the				_	OB NO 2008			. OF	F

	CLIENT		LOG OF BORII	NG NUM	BER 6
STS AECOM	Wisconsin Public Se	ervices	ADOLUTEOT	1011-	n
	FROSEOTIVANE	ckwall Feasibility Study	ARCHITECT/E	NGINEE	ĸ
SITE LOCATION			-		-O-UNCONFINED COMPRESSIVE STRENG TONS/FT.2 3 4 5
1501 Bylsby A	venue, Green Bay, Wi	sconsin			1 2 3 4 5
ELEVATION (FT) SAMPLE NO. SAMPLE TYPE SAMPLE DISTANCE	DESC	CRIPTION OF MATERIAL +589.0 feet (WPS Plant Datum)		UNIT DRY WT. LBS. / Ft.³	PLASTIC WATER LIQUI LIMIT % CONTENT % LIMIT  10 20 30 40 50  STANDARD  PENETRATION BLOWS/FT.
S 8 8	뿐 SURFACE ELEVATION:	+589.0 feet (WPS Plant Datum)	(Continued)	₹ B	10 20 30 40 50
42.0	Reddish brow silt seams - ti	n silty clay (CL) - trace sand - o ace gravel - moist - stiff to very	ccasional stiff		
44.0 12 3"ST	Note: CIU Te	est performed on Sample 12			×
46.0 48.0					
13 ST	50.0			99.0	060
	drilling fluid HW casing dr	ced from 10.0 to 50.0 feet with r	Ones Dit MING		
The stratifica		FOXIMATE boundary lines between BORING STARTED 9/8/08 BORING COMPLETED 9/8/08	STS	n situ, tl	he transition may be gradual.  1035 Kepler Drive Green Bay, Wisconsin 54311  SHEET NO. OF 2
		RIG/FOREMAN CME 850/BZ	APP'C		STS JOB NO. 200803665

STS	AL		N		consin Public Services ECT NAME	ARCHITE	CT/EN	GINEE	R				
1					<b>Pulliam Plant Dockwall Feasibility S</b>								
SITE LO							1		-O-U	INCONF	INED COMPRI	ESSIVE S	TF
1501	Ву	Isb	y A	venu	e, Green Bay, Wisconsin					UNS/FT	2 3	4	
E				1					DI A	STIC	MATER		Ĩ
DEPTH (FT) ELEVATION (FT)			SAMPLE DISTANCE	3					LIM	IIT %	WATER CONTENT		LI(
DEPTH (FT) ELEVATION	o	YPE	STA	_	DESCRIPTION OF MATERIA	L		¥		<b>*</b> -			-
EV.	Ž	mi T	밃	Ä				. ° 5 ×		10	20 30	40	
<u> </u>	SAMPLE NO.	SAMPLE TYPE	MP					UNIT DRY WT.			TANDARD ENETRATION	BI OWER	
X _	δ	1	ŝ	₹ SU	RFACE ELEVATION: +585.0 feet (WPS Plant D			5 9	-	10	20 30	40	_
	1	SS		1888	Miscellaneous Fill: Coal, concrete ch sand, clay - moist - loose	inks, silty			6	9			
2.0					2.5					3			
224	2A	SS	П	TXX	33.3 Fill: Brown silty sand (SM) - trace ora	vel - trace					V 1		
4.0	2B	SS	1	Ц	roots - moist - loose 5.0 Fill: Brown silty clay (CL) - trace grav	n maint			⊗.				
	3A	SS	-	T	5.6 stiff	a - moist -							_
6.0	3B	SS	П		Fill: Grayish brown silty sand (SM) - v	vet - very			<b>⊗</b> ;3	Q			
-					loose	/::			13				
8.0	4	SS			Reddish brown silty clay (CL) with silt	vel - trace el - moist - vet - very seams -			8	0			
40.0			1	1///	trace sand - moist - stiff to very stiff	133			4	T			
10.0	1-5		1	T						/			
12.0	5	ST		\///		[3]			(	R	•		
12.0	7.19		+	- ////		[:]							
14.0	II. Y	8.1				(3)						1	
14.0										\	I i I		
16.0			T	T		13			1	9 Qu)			
10.0	6	3"ST					1	00.7	1	0	9 +		
18.0			1			13					\		
1.0.0	-					E:3					X		
20.0				1111							1		
	7	2"ST					1	03.5			3.0100		
22.0		2 31					13	55.5			7 8		
				VIII							X		
24.0													
			-	1111						/	1 1		
26.0	8	3"ST						95.8	1.4 C	ud			
			1	4///		1:							
28.0						[:]					M 1		
						£:							
30.0			1	144	30.0		1						4
00.5	9	ST			Grayish brown silt (ML) - moist - medi	ım dense				1			
32.0			4	4111		1::							
24.0				1111		[::]		8		0			
34.0					25.0	[3]							
26.0			1		35.0	- 12	-			2.6	Qu	-	
36.0	10	3"ST			Reddish brown silty clay (CL) - trace s	and - moist	1	08.0		- 4	0		
38.0			+	1///	- very stiff to stiff	1::	::				/		
00.0						F::			1 1		N I		
40.0					Marian Company	£:3			1				
-14.4			1	Tul	·	ontinued	- [*]-	77		100			-
					111.0								
										779			
										4 (	-		
		_		de -	TALL					08036			

1 0					CLIENT		LOG OF BOR	NG NUM	* Calibrated Penetrometer  * Calibrated Penetrometer  * Calibrated Penetrometer  * Calibrated Penetrometer  * Calibrated Penetrometer  * Calibrated Penetrometer		
STS	AZ	CO	i A		Wisconsin Public S	ervices					
313	1 85	V <u></u>	- 2 V j	П	PROJECT NAME	solovell Esselbility Start	ARCHITECT/E	NGINEE	R		
SITE LO	CATI	ON	-	1	J. P. Pulliam Plant D	ockwall Feasibility Study			UNCONFINE	COMPRESSIV	E STRE
			y A	۱v	enue, Green Bay, W	isconsin			TONS/FT.2	3 4	5
6									DIACTIC	VA/ATED	
F 8			IS						LIMIT %		LIQU
DEPTH (FT) ELEVATION (FT)	ğ	7.	UST.	≿	DES	SCRIPTION OF MATERIAL		¥.		30 40	50
OEP ELE	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	Š				UNIT DRY WT. LBS. / Ft. <sup>3</sup>			-
$\times$	S	8	S.	Ä	SURFACE ELEVATION:	+585.0 feet (WPS Plant Datum)	(Continued)	LB S			
7	11	ST		1	Reddish bro	wn silty clay (CL) - trace sand - m	noist				-
42.0	-	-	μ	-	- very stiff to	stiff	noist				
44.0											
77,0											
46.0	12	ST		$\ $					0		
40.0			1	-					T		
48.0											
50.0										3 1	
	13	ST							6		
52.0			1	F					T		
54.0	jΝ										
	9-1			_							
56.0	14	2"ST						95.2	2.1 Qu		
58.0		500	1	1					1		
30.0	Pal	11									
60.0	20	0	-								
	15	ST							06	4	
62.0			1	П							
64.0	14			ľ							
			_	_		Installed Inclinometer to 65.0	) feet				
66.0	16	ST		1	67.0			1		•	
67.0			1		67.0 End of Borin	9	[55556		* Calibrated	Penetrometer	
					Boring adva	nced to 7.5 feet with solid-stem a nced from 7.5 to 67.0 feet with ro	uger ller	1 4		1111	
				8	bit and Reve	ort drilling mud driven to 15.0 feet					
					Installed Inc	linometer to 65.0 feet				1	
- //											
											1 8
				1				1 3			
			П								
- 1											
	The	stra	tific	at	ion lines represent the a	pproximate boundary lines between	en soil types	in situ	the transition m	nav be gradu	al.
VL.						BORING STARTED		OFFICE	1035 Keple	r Drive	
5.0 VL	ft. W	/S		_		9/9/08 BORING COMPLETED 9/9/08	ENT	ERED BY	SHEET	NO. OF	
ML.	_	-		_		9/9/08 RIG/FOREMAN		BJ\		2	2
**						CME 850/BZ	API	BKE	3	2008036	65

STS	AECOM CLIENT Wisconsin Public Services PROJECT NAME J. P. Pulliam Plant Dockwall Feasibility Study				LOG OF BORING NUMBER 9  ARCHITECT/ENGINEER					
SITE LO								-O-UNCONF	INED COMPRESS	
	Р	ISDY		venue	e, Green Bay, Wisconsin				1 - 1	4 5
DEPTH (FT) ELEVATION (FT)	NO.	SAMPLE TYPE	SAMPLE DISTANCE	EKY	DESCRIPTION OF MATERIAL		W	PLASTIC LIMIT % X	WATER CONTENT %	LIQU LIMIT — — —
	SAMPLE NO.	AMPLE	AMPLE	SUF	FIG. 5. 5. WINDS		UNIT DRY WI.	⊗ S	TANDARD ENETRATION BL	OWS/FT
	1	SS	S	Z SUF	FACE ELEVATION: +585.0 feet (WPS Plant Datum)	F2 F	-	10		40 50
2.0		00	4	-₩	Fill: Sand and gravel (SM) - trace coal - mo wet - loose	st to		6		1 1
4.0	2	ss	T	□		st to		8		
7.0			#					i 6		
6.0	3	ss						- 8		
8.0			-		7.5			- 1-1-		
46.5	4	SS	4		Reddish brown silty clay (CL) - with silt sean trace sand - trace gravel - moist - soft to firm	ns -		⊗ <sub>5</sub> Ø		
10.0	5	ST	T							
12.0	5	01	1		12.0			φ		
14.0					Reddish brown silty clay (CL) - with silt sean trace sand and gravel - moist - stiff to very s	is - iff				
16.0	6	3"ST	T				99.5	1.5 Qu	<b> </b>	
18.0	П									
20.0										
	7	ST	T					1		
22.0			4	-				1		
24.0										
26.0	8	3"ST	1					1.3 Qu		
28.0			1					1		
-										
30.0	9	ST	$\dagger$					1		
32.0	۰	31	뿌		K			4		
34.0										
26.0	10	3"ST	$\mathbf{h}$				96.8	1.28 Qu		
38.0			Щ				3.0	d		
								KI.N	X	
40.0			+		,,,continue	ELE			>	
					,,, continue					
								OB NO 2008036		

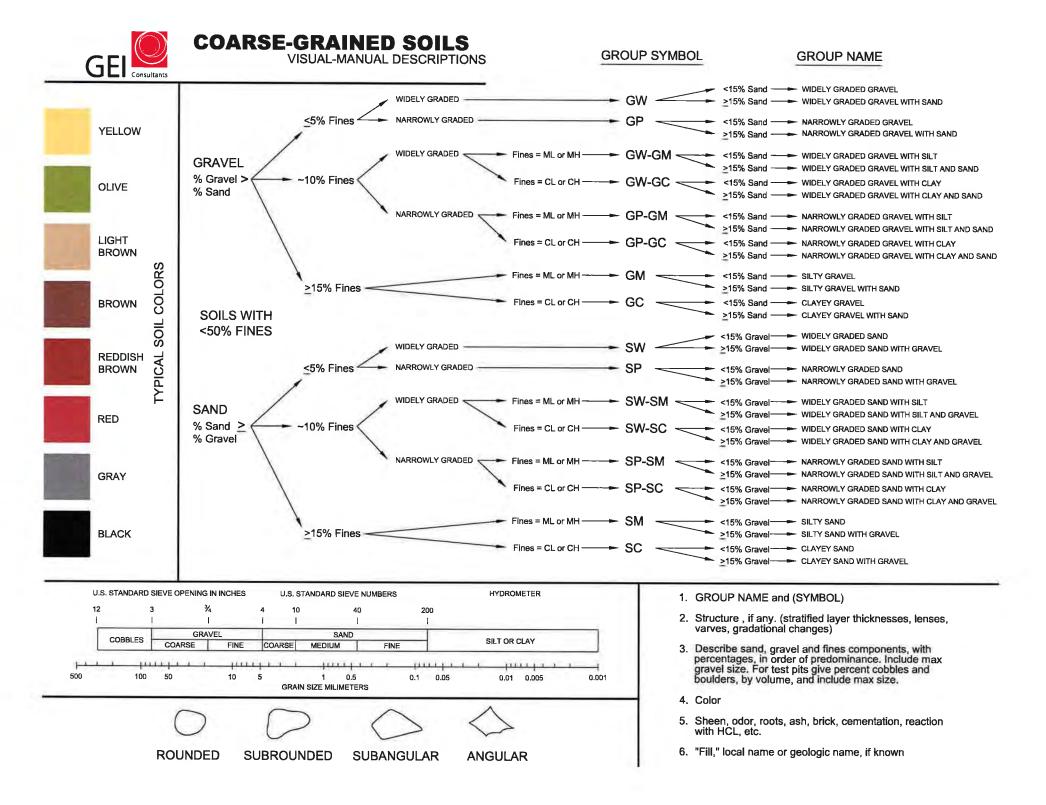
					LIENT		LOG OF BORI	NG NU	MBER 9
STS	AF	CO	M		Wisconsin Public S	ervices	400		
	s 4-i-	cour half	a - W		ROJECT NAME	ockwall Feasibility Study	ARCHITECT/E	NGINE	EK
SITE LO			-						UNCONFINED COMPRESSIVE ST
1501	Ву	lsby	y A	ve	enue, Green Bay, W	isconsin			TONS/FT. <sup>3</sup> 2 3 4
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	OVERY	DES	SCRIPTION OF MATERIAL		UNIT DRY WT. LBS. / Ft. <sup>3</sup>	PLASTIC WATER L LIMIT % CONTENT % L
X	SAM	SAM	SAM		SURFACE ELEVATION:	+585.0 feet (WPS Plant Datum)	(Continued)	LBS.	PENETRATION BLOWS/F 10 20 30 40
42.0	11	ST			Reddish bro trace sand a	wn silty clay (CL) - with silt seams nd gravel - moist - stiff to very sti	s - ff		
44.0				The state of					
46.0	12	3"ST	Щ						1.3 Qu
48.0					49.0				
50.0			+	Г	TITI	vn silt (ML) - moist - medium den	se		/
52.0	13	ST	1	1	53.0		se		
54.0				- Contract		wn silty clay (CL) - trace sand - m	F. F.		
56.0	14	ST	1	1					
58.0	ī								
60.0			+	T					
62.0	15	ST	ľ	THE					
64.0				The state of		Installed Inclinometer to 65.0	feet E		
66.0	16	ST	P		67.0		(· .= ·		σ( <b>)</b>
67.0					Boring advar bit and Reve HW casing d	g need to 7.5 feet with solid-stem at need from 7.5 to 67.0 feet with rol rt drilling mud riven to 10.0 feet Inometer to 65.0 feet	uger ller		* Calibrated Penetrometer
	The	strat	ifica	ltic	on lines represent the ap	proximate boundary lines betwee	en soil types:	in situ,	
	to 6.	0 ft. 1	ws			BORING STARTED 9/9/08		OFFICE	Green Bay, Wisconsin 543
WL						BORING COMPLETED 9/10/08		ERED BY	
WL.						RIG/FOREMAN CME 850/BZ	APP	D BY	STS JOB NO. 200803665

					LIENT		LOG OF B	ORING NUN	BER 6	A .		
STS	AT	CO			Wisconsin Public Serv	rices		Offset 3	ft. East	of Bor	ing 6	
3.3	1.09"	· Vlar-Ticill		11.	ROJECT NAME I. P. Pulliam Plant Dock	quall Eageibility Study	ARCHITEC	T/ENGINEE	:R			
SITE LO	CATI	)N		1	. P. Pulliam Plant Dock	wall reasibility Study		1	UNCON	FINED CO	MPRESSIV	E STRENGTH
			y A	\ve	enue, Green Bay, Wisc	onsin			TONS	-T.²	3 4	5
			T		-				DI ACTIC		TER	LIGHT
DEPTH (FT) ELEVATION (FT)		S						PLASTIC LIMIT %	CON	TER TENT %	LIQUID LIMIT %	
H (F)	o		TSTA .		DESCR	IPTION OF MATERIAL		M			<b></b>	<u>-</u> A
DEPTH (FT)	SAMPLE NO.	DESCRIPTION OF MATERIAL  SURFACE ELEVATION: +589.0 feet (WPS Plant Datum)					DRY Ft.3	10	20 STANDAR	30 40	50	
ŽĪ.	SAME	SAME	SAM	REC	SURFACE ELEVATION: +5	89.0 feet (WPS Plant Datum)		UNIT DRY WT.	⊗ 10	PENETRA	TION BLOV	
2.0					Note: For Soil Classif	cations see Log of Boring Nu	mber 6				1 1	
								1				
4.0												
6.0										1	1 1	
9.0												
8.0												
46.5				1								
10.0			l									
12.0	74										1	
											1 1	
14.0			18								1 1	
40.0				П							1 1	
16.0		VST	L			near test at 16.0 to 16.5 feet						
18.0		VSI			Peak Su = 3525	psf - Remolded Su = 12	75 psf				1 1	
J - 17.			П	П								
20.0		VST			Peak Su = 2250	near test at 19.3 to 19.8 feet psf - Remolded Su = 85	60 psf	4			1 1	
22.0								1			1. 1	
22.0	ΥЦ					near test at 22.6 to 23.1 feet					1 1	
24.0		VST	F		Peak Su = 3625	psf - Remolded Su = 21	25 pst	401 8			1 1	
- 20					Vene ek	near test at 25.9 to 26.4 feet		1/		160	1 1	
26.0		C//53	L			1275 psf - Remolded Su =	•	11 1				
28.0	- 6	VST		-								
20.0		Je			Book Ou = 4	near test at 29.2 to 29.7 feet						1
29.7		VST	F	F	29.7 Peak Su = 4	375 psf - Remolded Su =				100	1	-
	77				*Topt Pasched m	aximum capacity; Remoided	tost not					
1.0					Test Reacited III	completed	roat nor					
1												
1												17102
	The	stra	tific	ati	on lines represent the appro	eximate boundary lines betwee	n soil type	s: in situ.	the transit	ion mav	be gradu	ıal.
WL .						BORING STARTED		STS OFFICE	1035	Kepler D	rive	Jan 1
//L	_	-	_	_		9/8/08 BORING COMPLETED		ENTERED BY		Bay, Wi	sconsin	54311
						9/8/08		APP'D BY	/		1	1
ML .						RIG/FOREMAN CME 850/BZ		BKI BKI	3	12 JOB NO	). 2008036	65

Pre-Design Investigation Port Property Redevelopment Geotechnical Data Report Green Bay, Wisconsin March 2023

## Appendix E

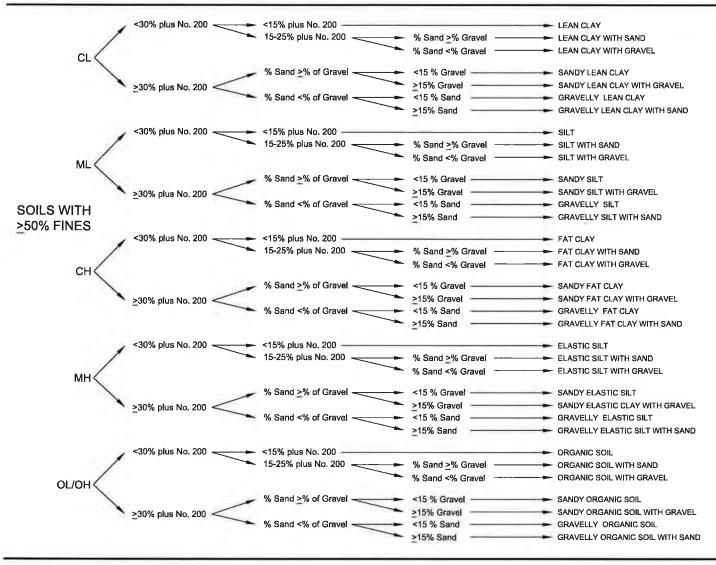
**Geotechnical Soil Classification Procedures** 





## **FINE-GRAINED SOILS**

VISUAL-MANUAL DESCRIPTIONS



PEAT

Peat refers to a sample composed primarily of vegetable matter in varying stages of decomposition. The description should begin:

PEAT (PT) and need not include percentages of sand, gravel or

#### ID OF INORGANIC FINE SOILS FROM MANUAL TESTS

Symbol	Name	Dry Strength	Dilatancy	Toughness*
ML	Silt	None to low	Slow to rapid	Low or thread cannot be formed
CL	Lean Clay	Medium to high	None to slow	Medium
МН	Elastic Silt	Low to medium	None to slow	Low to medium
СН	Fat Clay	High to very high	None	High

#### 1. GROUP NAME and (SYMBOL)

- Describe fines, sand, and gravel components, in order of predominance. Include plasticity of fines. Include percentages of sand and gravel.
- 3. Color
- Sheen, odor, roots, ash, brick, cementation, torvane and penetrometer results, etc.
- 5. "Fill," local name or geologic name, if known

#### CRITERIA FOR DESCRIBING PLASTICITY

Description	Criteria
Nonplastic ML	A 1/8-in. (3 -mm) thread cannot be rolled at any water content
Low Plasticity ML, MH	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit *
Medium Plasticity MH, CL	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High Plasticity CH	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times afte reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit

\* Toughness refers to the strength of the thread near plastic limit. The lump refers to a lump of soil drier than the plastic, similar to dry strength.

#### **GENERAL NOTES**

#### **Drilling and Sampling Symbols:**

SS: Split-Spoon, 1 3/8-inch ID, 2-inch OD OS: Osterburg Sampler Hollow Stem Auger Unless otherwise noted HSA: Shelby Tube ST: WS: Wash Sample PA: Power Auger FT: Fish Tail DB: Diamond Bit Rock Bit RB: AS: Auger Sample BS: Bulk Sample Jar Sample PMT: Pressuremeter Test JS: VS: Vane Shear GS: Giddings Sampler

Standard Penetration Test (STP) Value: Blows per foot of a 140-point hammer falling 30 inches on a 2-inch OD split-spoon sampler, except where otherwise noted.

#### Water Level Measurement Symbols:

WL: Water Level WCI: Wet Cave-in WD: While Sampling DCI: Dry Cave-in

WD: While Drilling

AB: After Boring

BCR: Before Casing Removal

ACR: After Casing Removal

Water levels indicated on the boring logs are the levels measured in the boring at the time indicated. In permeable soils, the indicated elevations can be considered a reliable groundwater level. In impervious soils, the accurate determination of groundwater elevations may not be possible, even after several days of observations. In these cases, groundwater monitoring wells may need to be constructed and monitored for an extended period of time to determine the actual groundwater level.

#### **Gradation Description and Terminology:**

Coarse-grained or granular soils are defined as having more than 50% of their dry weight retained on the No. 200 sieve. Coarse grained soils include boulders, cobbles, gravel, and/or sand. Fine-grained soils are defined as having less than 50% of their dry weight retained on the No. 200 sieve. Fine grained soils include clay or clayey silt (cohesive), and silt (non-cohesive). In addition to gradation, granular soils are further defined based on their relative in-place density. Fine-grained soils are further defined based of their strength or consistency and plasticity. Additional information is provided below.

Major Component of Sample	Size Range	Other Components Present in Sample	Dry Weight, %
Boulders	Over 8 inches (200 mm)	Trace	1 to 5
Cobbles	8 inches to 3 inches (200 mm to 75 mm)	Trace to Some	5 to 12
Gravel	3 inches to No. 4 sieve	Some	12 to 34
Sand	Nos. 4 to 200 sieves (4.76 mm to 0.074 mm)	And	34 to 50
Silt	Passing No. 200 sieve (0.074 mm to 0.005 mm)		
Clay	Smaller than 0.005 mm		

Consistency of Consis	ohesive Soils	Relative Density of Granular Soils			
Unconfined Compressive Strength, Qu, tsf	Consistency	N, blows per foot	Relative Density		
<0.25	Very Soft	0 to 3	Very Loose		
0.25 to 0.49	Soft	4 to 9	Loose		
0.50 to 0.99	Medium (firm)	10 to 29	Medium Dense		
1.0 to 1.99	Stiff	30 to 49	Dense		
2.00 to 3.99	Very Stiff	50 – 80	Very Dense		
4.00 to 8.00	Hard	>80	Extremely Dense		
>8.00	Very Hard				

### Field Sampling Procedures

#### Auger Sampling (AS)

In this procedure, soil samples are collected from cuttings off the auger flights as they are removed from the ground. Such samples provide a general indication of subsurface conditions; however, they do not provide undisturbed samples, nor do they provide samples from discrete depths.

#### Split-Barrel Sampling (SS) – (ASTM Standard D-1586-99)

In the split-barrel sampling procedures, a 2-inch O.D. split-barrel sampler is driven into the soil a distance of 18 inches by means of a 140-pound hammer falling 30 inches. The value of the Standard Penetration Resistance is obtained by counting the number of blows of the hammer over the final 12 inches of driving. The value provides a qualitative indication of the in-place relative density of cohesionless soils. The indication is only qualitative, however, since many factors can significantly affect the Standard Penetration Resistance Value, and direct correlation of results obtained by drill crews using different rigs, frilling procedures, and hammer-rod-spoon assemblies should not be made. A portion of the recovered sample is place in a sample jar and returned to the laboratory for further analysis and testing.

#### Shelby Tube Sampling Procedure (ST) - (ASTM D-1587-94)

In the Shelby tube sampling procedure, a thin-walled steel seamless tube with a sharp cutting edge is pushed hydraulically into the soil and a relatively undisturbed sample is obtained. This procedure is generally employed in cohesive soils. The tubes are identified, sealed, and carefully handled in the field to avoid excessive disturbance and are returned to the laboratory for extrusion and further analysis and testing.

#### Giddings Sampler (GS)

This type of sampling device consists of 5-foot sections of thin-wall tubing, which are capable of retrieving continuous columns of soil in 5-foot maximum increments. Because of a continuous slot in the sampling tubes, the sampler allows field determination of stratification boundaries and containerization of soil samples from any sampling depth within the 5-foot interval.

#### **Subsurface Exploration Field Procedures**

#### **Hand-Auger Drilling (HA)**

In this procedure, a sampling device is driven into the soil by repeated blows of a sledge hammer or a drop hammer. When the sampler is driven to the desired depth, the soil sample is retrieved. The hole is then advanced by manually turning the hand auger until the next sampling depth increment is reached. The hand auger drilling between sampling intervals also helps to clean and enlarge the borehole in preparation for obtaining the next sample.

#### Power Auger Drilling (PA)

In this type of drilling procedures, continuous flight augers are used to advance the boreholes. They are turned and hydraulically advanced by a truck, trainer, or track-mounted unit as site accessibility dictates. In auger drilling, casing and drilling mud are not required to maintain open boreholes.

#### Hollow-Stem Auger Drilling (HS)

In this drilling procedure, continuous flight augers (with open stems) are used to advance the boreholes. The open stem allows the sampling tool to be used without removing the augers from the borehole. Hollow-stem augers thus provide support to the sides of the borehole during the sampling operations.

#### **Rotary Drilling (RD)**

In employing rotary drilling methods, various cutting bits are used to advance the boreholes. In this process, surface casing and/or drilling fluids are used to maintain open boreholes.

#### **Diamond Core Drilling (DB)**

Diamond core drilling is used to sample cemented formations. In this procedure, a double tube (or triple tube) core barrel with a diamond bit cuts an annular space around a cylindrical prism of the material sampled. The sample is retrieved by a catcher just above the bit. Samples recovered by this procedure are placed in study containers in sequential order.

#### **Laboratory Procedures**

#### Water Content (Wc)

The water content of a soil is the ratio of the weight of water in a given soil mass to the weight of the dry soil. Water content is generally expressed as a percentage.

#### **Hand Penetrometer (Qp)**

In the hand penetrometer gtest, the unconfined compressive strength of a soil is determined to a maximum value of 4.5 tons per square foot (tsf) or 7.0 tsf, depending on the testing device utilized, by measuring the resistance of the soil sample to penetration by a small spring-calibrated cylinder. The hand penetrometer test has been carefully correlated with unconfined compressive strength tests and thereby provides a useful and a relative simple testing procedure in which soil strength can be quickly and easily estimated.

#### **Unconfined Compression Tests (Qu)**

In the unconfined compression strength test, an undisturbed prism of soil is loaded axially until failure or until 20% strain has been reached, whichever comes first.

#### Dry Density (γd)

The dry density is a measure of the amount of solids in a unit volume of soil. Use of this value is often made when measuring the degree of compaction of a soil.

#### Classification of Samples

In conjunction with the sample testing program, all soil samples are examined in our laboratory and visually classified on the basis of their texture and plasticity in general accordance with the Unified Soil Classification System. The soil descriptions on the boring logs are derived from this system, as well as the component gradation terminology, consistency of cohesive soils, and relative density of granular soils, as described on a separate sheet entitled General Notes. The estimated groups symbols, included in parentheses following the soil descriptions on the boring logs, are in general conformance with the Unified Soil Classification System (USCS).

#### **Standard Boring Log Procedures**

In the process of obtaining and testing samples and preparing this report, standard procedures are followed regarding field logs, laboratory data sheets, and samples.

Field logs are prepared during performance of the drilling and sampling operations and are intended to essentially portray field occurrences, sampling locations, and procedures.

Samples obtained in the field are frequently subjected to additional testing an re-classification in the laboratory by experienced Geotechnical Engineers; and therefore, differences between the field logs and the final logs may exist. The engineer preparing the report reviews the field logs, laboratory test data, and classifications and then, using judgement and experience in interpreting this data, may make further changes. It is common practice in the geotechnical engineering profession not to include field logs and laboratory data sheets in engineering reports, because they do not represent the engineer's final opinions as to appropriate descriptions for conditions encountered in the exploration and testing work. Results of laboratory tests are generally shown on the boring logs or are described in the text of the report, as appropriate.

Samples taken in the field, some of which are later subjected to laboratory tests, are retained in our laboratory for 60 days and then discarded, unless special disposition is requested by our client. Samples retained over a long period of time, even though in sealed jars, are subject to moisture loss, which changes the apparent strength of cohesive soil, generally increasing the strength from what was originally encountered in the field. Since they are then no longer representative of the moisture conditions initially encountered, observers of these samples need to recognize this factor.

## **CPT Correlations**

References are in parenthesis next to the appropriate equation.

#### General

p<sub>a</sub>=atmospheric pressure (for unit normalization)

q<sub>t</sub>=corrected cone tip resistance (tsf)

f<sub>s</sub>=friction sleeve resistance (tsf)

 $R_f = 100\% \cdot (f_s/q_t)$ 

u<sub>2</sub>=pore pressure behind cone tip (tsf)

u₀=hydrostatic pressure

$$\begin{split} \mathsf{B}_{\mathsf{q}} &= (\mathsf{u}_2\text{-}\mathsf{u}_0) / (\mathsf{q}_t\text{-}\sigma_{\mathsf{vo}}) \\ \mathsf{Q}_{\mathsf{t}} &= (\mathsf{q}_t\text{-}\sigma_{\mathsf{vo}}) / \sigma_{\mathsf{vo}}' \\ \mathsf{F}_r &= 100\% \cdot \mathsf{f}_s / (\mathsf{q}_t\text{-}\sigma_{\mathsf{vo}}) \\ \mathsf{I}_{\mathsf{c}} &= ((3.47\text{-}\log\mathsf{Q}_t)^2 + (\log\mathsf{F}_r + 1.22)^2)^{0.5} \\ \mathsf{I}_{\mathsf{SBT}} &= ((3.47\text{-}\log(\mathsf{q}_c/\mathsf{p}_a))^2 + (\log\mathsf{F}_r + 1.22)^2)^{0.5} \\ \mathsf{I}_{\mathsf{c}} &= \sqrt{\left\{3 - \log\left(Q_t \cdot (1 - B_q)\right\}^2 + \left[1.5 + 1.3 \cdot \log\left(F_r\right)\right]^2} \\ \mathsf{I}_{\mathsf{c}} &= \sqrt{\left\{3 - \log\left(Q_t \cdot (1 - B_q) + 1\right\}^2 + \left[1.5 + 1.3 \cdot \log\left(F_r\right)\right]^2} \\ \end{split}$$

$$I_{cJ\&B} = \sqrt{\left\{3 - \log\left(Q_t \cdot \left(1 - B_q\right) + 1\right\}^2 + \left[1.5 + 1.3 \cdot \log\left(F_r\right)\right]^2}$$
 28

$$\overline{K_0}$$
 (1)  $K_o = (1-\sin\phi)OCR^{\sin\phi}$ 

$$K_0(2)$$
  $K_0 = 0.1(Q_t)$ 

#### Stress History

$$OCR = \sigma_p'/\sigma'_{vo}$$

$$\begin{array}{lll} \text{OCR (1)} & \sigma_{p}{'} = 0.33(q_{t} - \sigma_{vo}) \text{ - clays} & 8 \\ \text{OCR (2)} & \sigma_{p}{'} = 0.53(u_{2} - u_{o}) \text{ - clays} & 9 \\ \text{OCR (3)} & \sigma_{p}{'} = 0.60(q_{t} - u_{2}) \text{ - clays} & 9 \\ \text{OCR (4)} & \text{OCR = 0.25 } Q_{t}^{1.25} \text{ - clays} & 37 \\ \end{array}$$

OCR (5) OCR = 
$$\left[ \frac{0.192*(q_t/p_a)^{0.22}}{(1-\sin(\phi')\cdot(\sigma'_{v_0}/p_a^{0.31})]} \right]^{\frac{1}{\sin(\phi'-0.27)}} - \text{ sands}$$
 35  
OCR (6) 
$$\sigma_{p'} = .101 \cdot p_a^{0.102} \cdot G_{max}^{0.478} \cdot \sigma'_{v_0}^{0.420} - \text{ all soils}$$
 36

OCR (6) 
$$\sigma_{p}' = .101 \cdot p_{q}^{0.102} \cdot G_{max}^{0.478} \cdot \sigma_{v0}'^{0.420} - \text{all soils}$$
 36

#### N-Value

$$\overline{N_{60}} = (q_t/p_a)/[8.5(1-I_c/4.6)]$$

#### **Undrained Shear Strength**

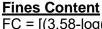
S <sub>u</sub> (1)	$S_u = (u_2 - u_o)/N_u$	where $7 \le N_u \le 9$	10
S <sub>u</sub> (2)	$S_u = (q_t - \sigma_{vo})/N_{kT}$	where $15 \le N_{kT} \le 20$	11
S <sub>u</sub> (3)	$S_u = 0.091 * ((\sigma'_{vo}^{0.2}) * (q_t - \sigma_{vo})^{0.8}$		21
S <sub>u</sub> (4)	$S_u = (q_c - \sigma_{vo})/N_k$	where $15 \le N_k \le 20$	11
S <sub>u</sub> (5)	$S_u = q_t/N_c$	where $XXX \le N_c \le YYY$	
S <sub>u</sub> (6)	$S_u = q_c/N_c$	where $XXX \le N_c \le YYY$	

#### **Effective Cohesion**



```
c' = 0.02 * \sigma_{p}
                                                                                                             38
Drained Friction Angle
                      \varphi' = 17.6 + 11.0 \text{Log}[q_t/(\sigma_{vo}')^{0.5}]
\varphi'(1)
                                                                                                              1
                      \phi' = \arctan[0.1 + 0.38 \text{Log}(q_t/\sigma_{vo}')]
φ´(2)
                                                                                                             13
                      \begin{array}{l} \phi' = 30.8 Log[(f_s/\sigma_{vo}') + 1.26] \quad \text{(for clays or sands)} \\ \phi' = 29.5 \; B_q^{\;0.121} \; (0.256 + 0.33 \; B_q + Log(Q_t)) \end{array}
\varphi'(3)
                                                                                                            14
\varphi'(4)
                                                                                                            24
Unit Weight
\rho = \gamma/\gamma_w
\rho = 0.8 \text{Log}(V_s)
                                 V<sub>s</sub> in m/sec
                                                                                                            17
Relative Density and Void Ratio
                                                                           where, q_{c1} = q_c / (\sigma_{vo}')^{1/2}
                      D_R = 100(q_{c1}/305)^{1/2}
D_R(1)
                      D_R = -1.292 + 0.268 \ln(q_c \cdot (\sigma_{vo}'^{-0.5}))
D_{R}(2)
                      D_R = (1/2.41) \cdot \ln(q_{c1}/15.7)
                                                                                                              3
D_{R}(3)
                      D_R = 1/2.91 * ln((q_c/(61* \sigma'_{vo}^{0.71}))*100
                                                                                                             20
D_R(4)
                      D_R = 100*(0.268*ln((q_t/p_a)/(\sigma'_{vo}/p_a)^0.5) - 0.675)
                                                                                                            34
D_R(5)
e_0 = 1.099 - 0.204 \log(q_{c1})
                                                                                                              1
E_D = 5 q_t I_D = 2.0 - 0.14(R_f) K_D = E_D/(34.7 \cdot I_D \cdot \sigma_{vo})
Compressibility
M (1) = R_m E_D where R_m= function(I_D, K_D) see the following table
                                                                                                                22
                                    R_M = 0.14 + 2.36 \log K_D
        I_D <= 0.6
                                    R_{\rm M} = 0.5 + 2 \log K_{\rm D}
        I_{D} >= 3
                                    R_{M} = R_{M.D} + (2.5 - R_{M.D}) \log K_{D}
   0.6 < I_D < 3
                                    R_{M.D} = 0.14 + 0.15(I_D - 0.6)
        K_D > 10
                                    R_{\rm M} = 0.32 + 2.18 \log K_{\rm D}
                                    R_{\rm M} = 0.85
        R_M <
        0.85
                      M = q_c \cdot 10^{(1.09-0.0075D} R^{\circ} sands
M (2)
                                                                                                                1
                      M = 8.25 (q_t - \sigma_{vo})
M(3)
                                                        clays
                      M = \alpha \cdot G_{max} where 0.02 < \alpha < 2 and G_{max} is from Vs
                                                                                                                33
M (4)
Rigidity Index
I_R = exp\left[\left(\frac{1.5}{M} + 2.925\right) \cdot \left(\frac{q_t - \sigma_{vo}}{q_t - u_o}\right) - 2.925\right] where M = 6 \sin \phi' / (3 - \sin \phi') 39
<u>Sensitivity</u>
                                                                                                              2
S_{t}(1)
                      S_t = 7.5/R_f
                      S_t = (q_t - \sigma_{vo})/(15 \cdot f_s)
S_{t}(2)
                                                                                                              2
```

1



$$\overline{FC} = [(3.58 - \log(q_t))^2 + (1.43 + \log(R_f))^2]^{1.8}$$

$$FC = [5.31(I_{cfs})^{2.31}] + 9.61, \text{ where } I_{cfs} = [(1.95 - \log Q_t)^2 + (\log F_r + 1.78)^2]^{0.5}$$



## **Shear Wave Velocity**

$$V_s(1) = 277 \cdot q_t^{0.13} \cdot \sigma_{vo}'^{0.27}$$
 (sands) - m/s and MPa 29 
$$V_s(2) = 1.75 \cdot q_t^{0.627}$$
 (clays) - m/s and kPa 30

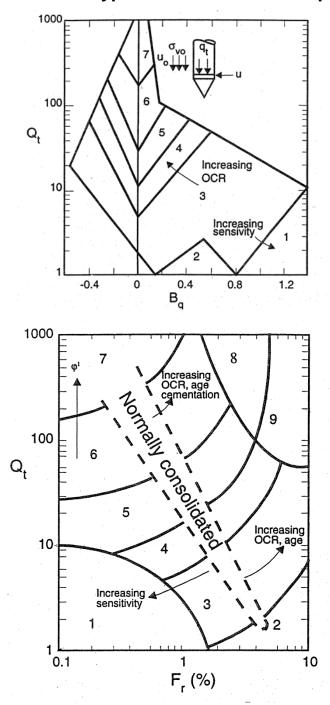
$$V_{s}(3) = (10.1 \cdot \log q_{t} - 11.4)^{1.67} \cdot (\frac{f_{s}}{q_{t}} \cdot 100)^{0.3} \qquad \text{(all soils)} - \text{m/s and kPa} \qquad 31$$
 
$$V_{s}(4) = 118.8 \cdot \log f_{s} + 18.5 \qquad \qquad \text{(all soils)} - \text{m/s and kPa} \qquad 32$$
 
$$G_{max} = \rho V_{s}^{2}$$

## **Hydraulic Conductivity**

Lookup based on SBT and SBTn (1986 and 1990) 40

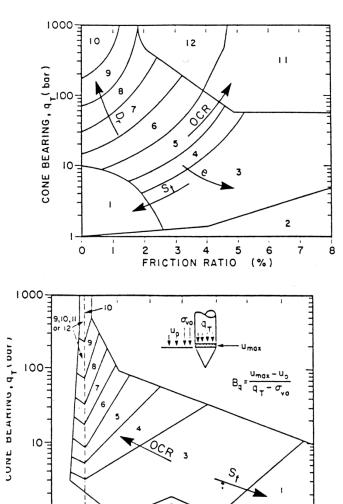


## Normalized Soil Behavior Types - Robertson & Campanella (1990)





# Non-Normalized Soil Behavior Types – Robertson & Campanella (1986)





-0.2

0.2

0.4 0.6

PORE PRESSURE RATIO, Bq

0.8

1.0

1.2

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