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Pre-Design Investigation Port Property Redevelopment Geotechnical Data Report

Port of Green Bay
Green Bay, Wisconsin

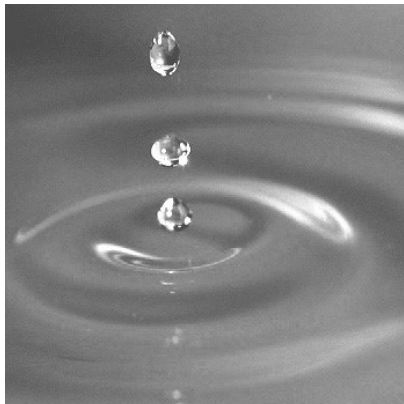
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March 2023
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Executive Summary

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.

Table 1 - Summary of Geotechnical Index Testing within CA-94 and CB-60

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

4092-21	84.8	161.7	42.8	160.6	80.6	OH
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Table 2 - Summary of Field Vane Shear Test results within project area.

Sample ID	1-foot corrected shear strength (psf)	2-foot corrected shear strength (psf)	3-foot corrected shear strength (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 Pressure (tsf)	Compression Index (Cc)	Recompression 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_h) 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_c) 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_s) 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 Perez 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 (ft)	Total Unit Weight (pcf)	Undrained Strength Parameters		Effective Stress Strength Parameters	
			s_u (psf)	Φ (deg)	c' (psf)	Φ' (deg)
Fill: Sand/Clay	+585 to +578	130	2,000	0	0	30
Clay – very stiff	+578 to +560	130	2,000	0	0	28
Clay – soft (NE Corner)	+578 to +556	130	500	0	0	26
Sediment – CA-94 and CB-60	+579 to +557	80	60	0	0	24

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

4.7 Recommended Consolidation Parameters

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

Name	Elevation (ft)	Total Unit Weight (pcf)	Consolidation Parameters			
			e _o	P _c (tsf)	C _c	C _{cr}
Fill: Sand/Clay	+585 to +578	130	0.90	2.0	0.33	0.07
Clay – very stiff	+578 to +560	130	0.90	2.0	0.33	0.07
<i>Clay – soft (NE Corner)</i>	<i>+578 to +556</i>	<i>130</i>	<i>1.0</i>	<i>2.0</i>	<i>0.44</i>	<i>0.07</i>
<i>Sediment – CA-94 and CB-60</i>	<i>+579 to +557</i>	<i>80</i>	<i>2.0</i>	<i>NC</i>	<i>0.68</i>	<i>0.13</i>
Clay – soft	+560 to +540	130	1.0	3.0	0.44	0.07
Clay – stiff	+540 to +475	130	1.2	4.5	0.47	0.11

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Geostatistics Technical Memorandum No. 1, Evaluation of Geostatistical Methods for Delineating Remediation Boundaries in OU3, Lower Fox River Remedial Design OU2-5., prepared by Anchor Environmental, dated February 28, 2006.

Figures

Figure 1 Geotechnical Boring Location




- LEGEND:**
- BW-1-22 WATER BORING LOCATION
 - BL-1-22 SOIL BORING LOCATION
 - CPT-1-22 CPT LOCATION
 - B-8 STS, 2008 BORING
 - 4089-02 WNDP, 2005 SAMPLE LOCATION

SOURCE:

1. PLAN BASED ON MAP PREPARED BY GEI CONSULTANTS FROM SURVEY DATA COLLECTED IN APRIL AND JUNE OF 2022 AND DRONE FLIGHT ON 6-14-2022.
2. PROPERTY SURVEY INFORMATION FROM ATTACHED MAP PREPARED BY MERIDIAN SURVEYING, LLC DATED 3-19-2021.
3. MAP IS IN THE BROWN COUNTY COORDIANTE SYSTEM AND THE VERTICAL IS NAVD88.

DRAFT

PORT PROPERTY DEVELOPMENTS FORMER PULLIAM POWER PLANT GREEN BAY, WI			SOIL BORING LOCATION DIAGRAM	
BROWN COUNTY GREEN BAY, WI			Project 2201593	MARCH 2023
				Fig. # 1

Appendix A

Soil Boring Logs

CPTu Sounding Logs

CPTu Undrained Shear Strength Estimation Plots

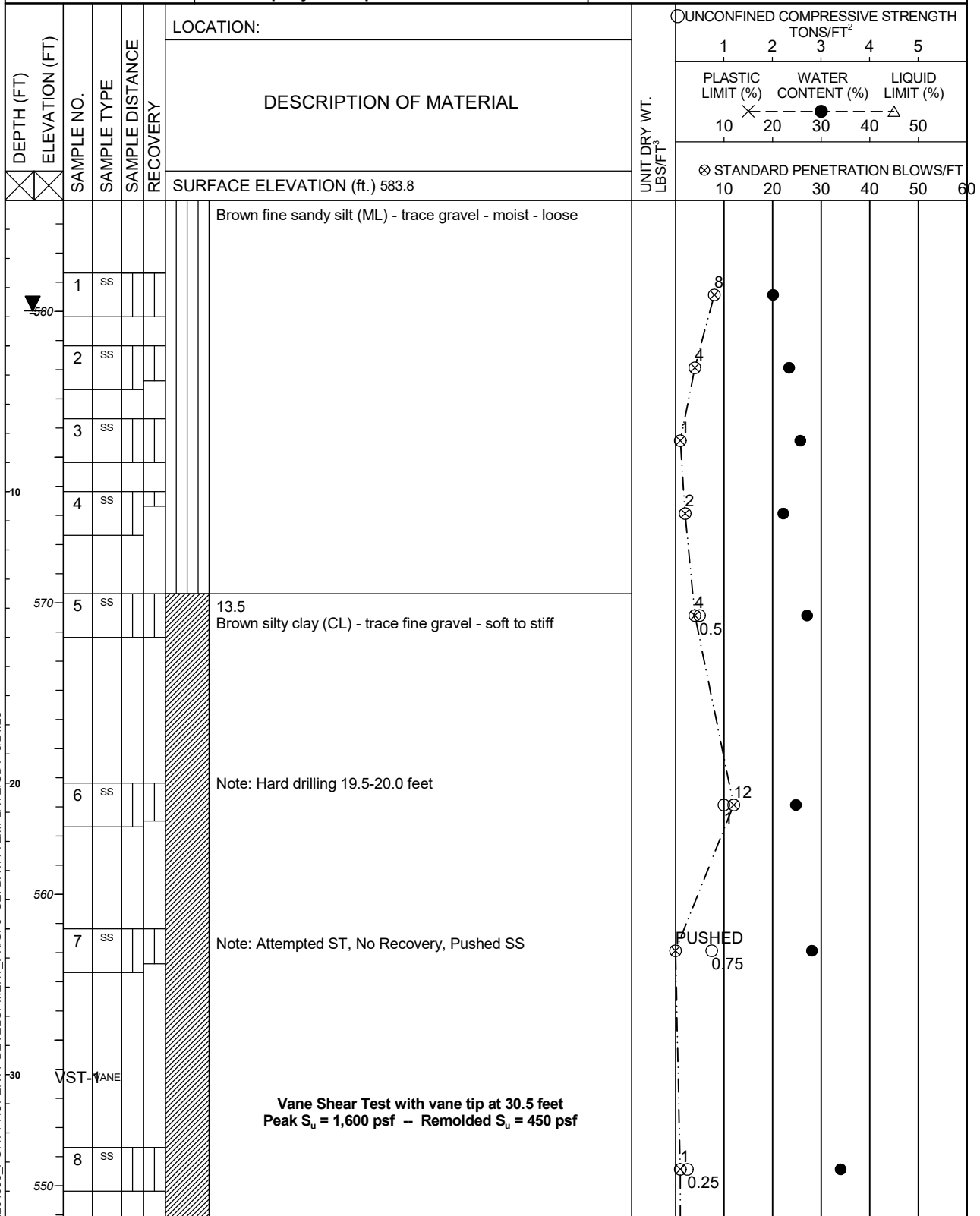


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-1-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 3.8 ft BCI

BORING STARTED
12/2/2022

GEI OFFICE

Green Bay, WI

ENTERED BY

APPROVED BY
SN

NORTHING	576.451.544
----------	-------------

EASTING 101,239.257

RIG/FOREMAN
D-50 / JW

GEI PROJECT NO.
2201593

PAGE NO. 1 OF 4

GEI

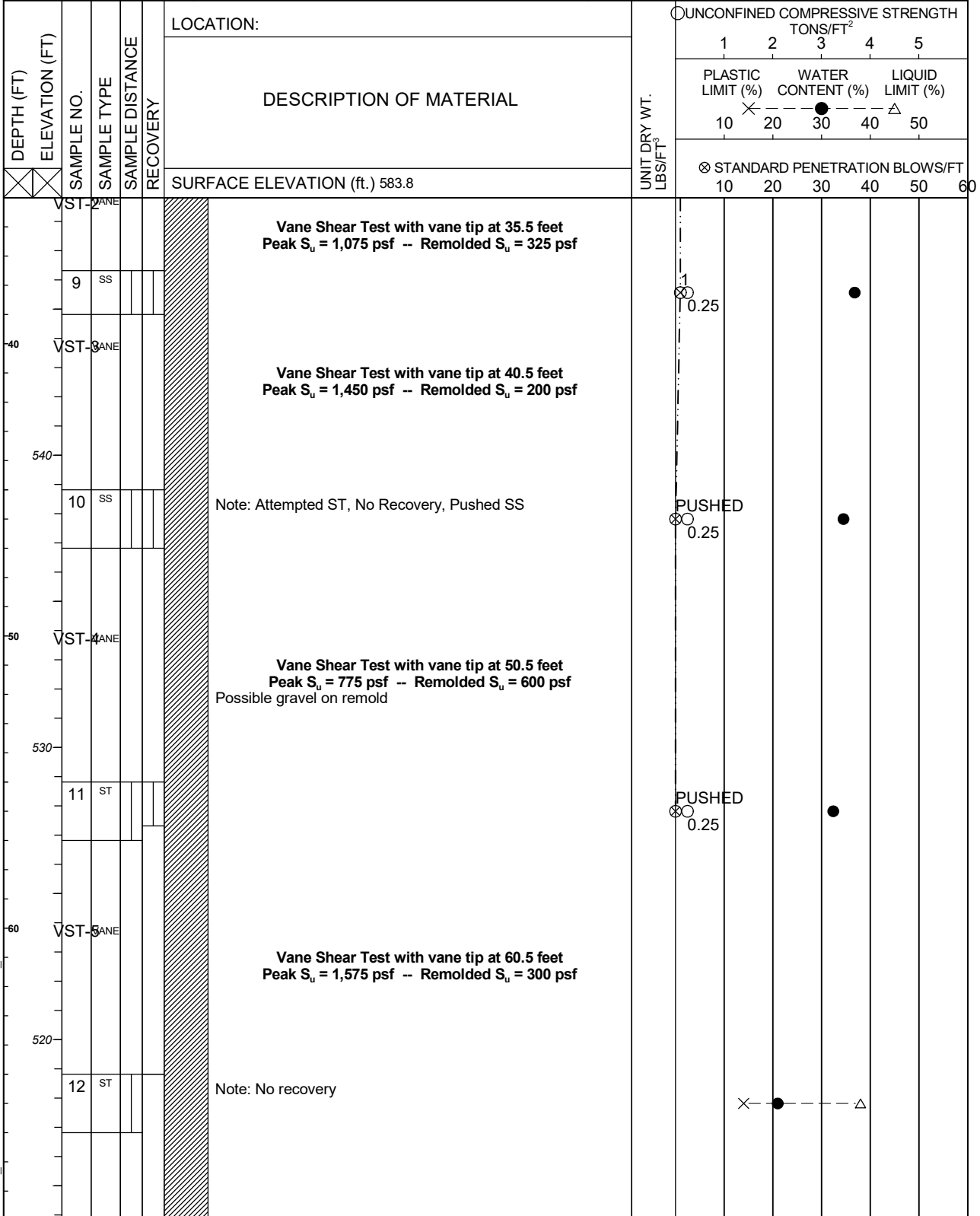


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-1-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 3.8 ft BCI		BORING STARTED 12/2/2022	GEI OFFICE Green Bay, WI	
		BORING COMPLETED 12/7/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,451.544	EASTING 101,239.257	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593	
		PAGE NO. 2 OF 4		

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

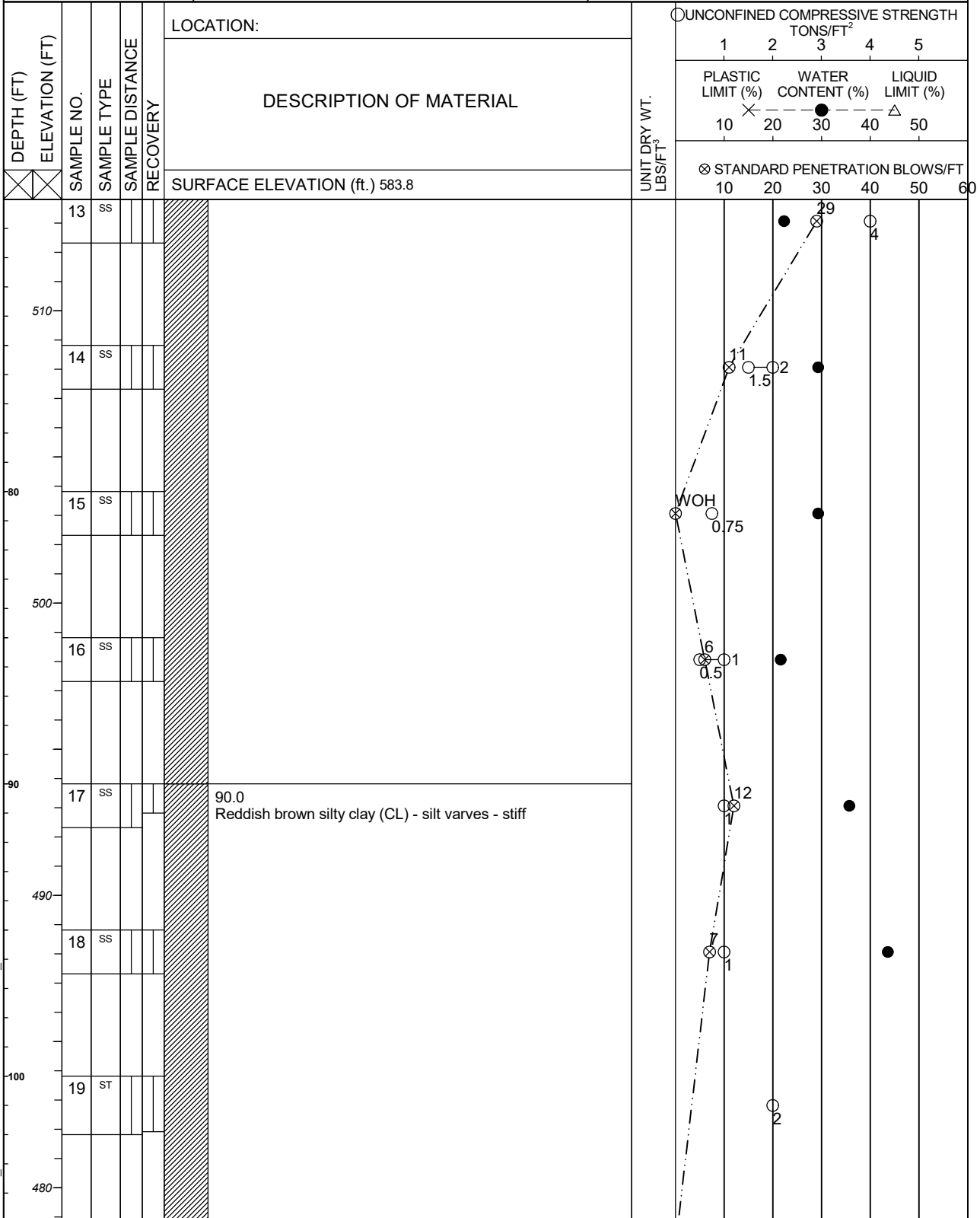
GEI



CLIENT:
Brown County Purchasing
PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-1-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 3.8 ft BCI	BORING STARTED 12/2/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/7/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,451.544	EASTING 101,239.257	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 3 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

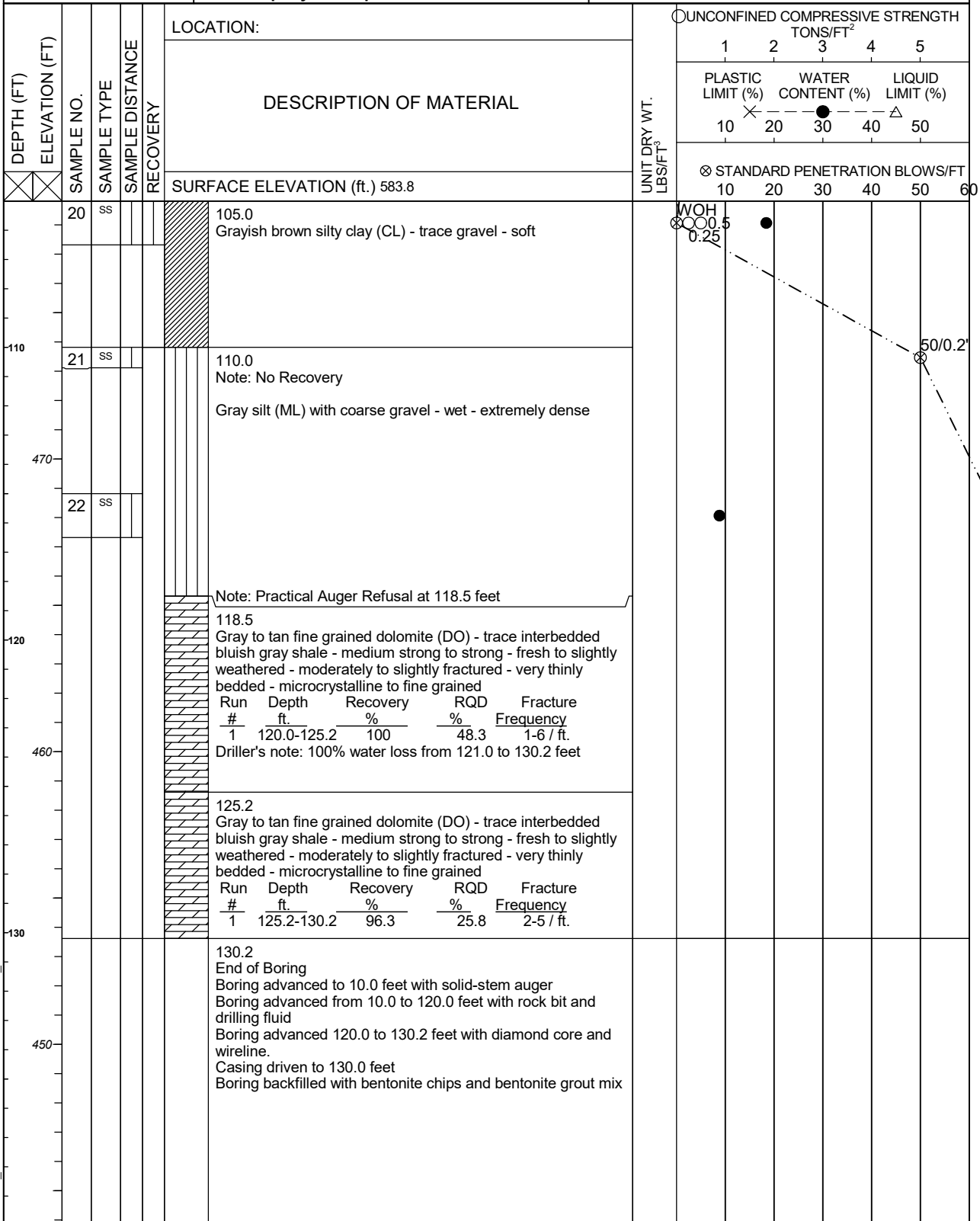


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-1-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 3.8 ft BCI		BORING STARTED 12/2/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 12/7/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 576,451.544	EASTING 101,239.257	RIG/FOREMAN D-50 / JW		GEI PROJECT NO. 2201593	PAGE NO. 4 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

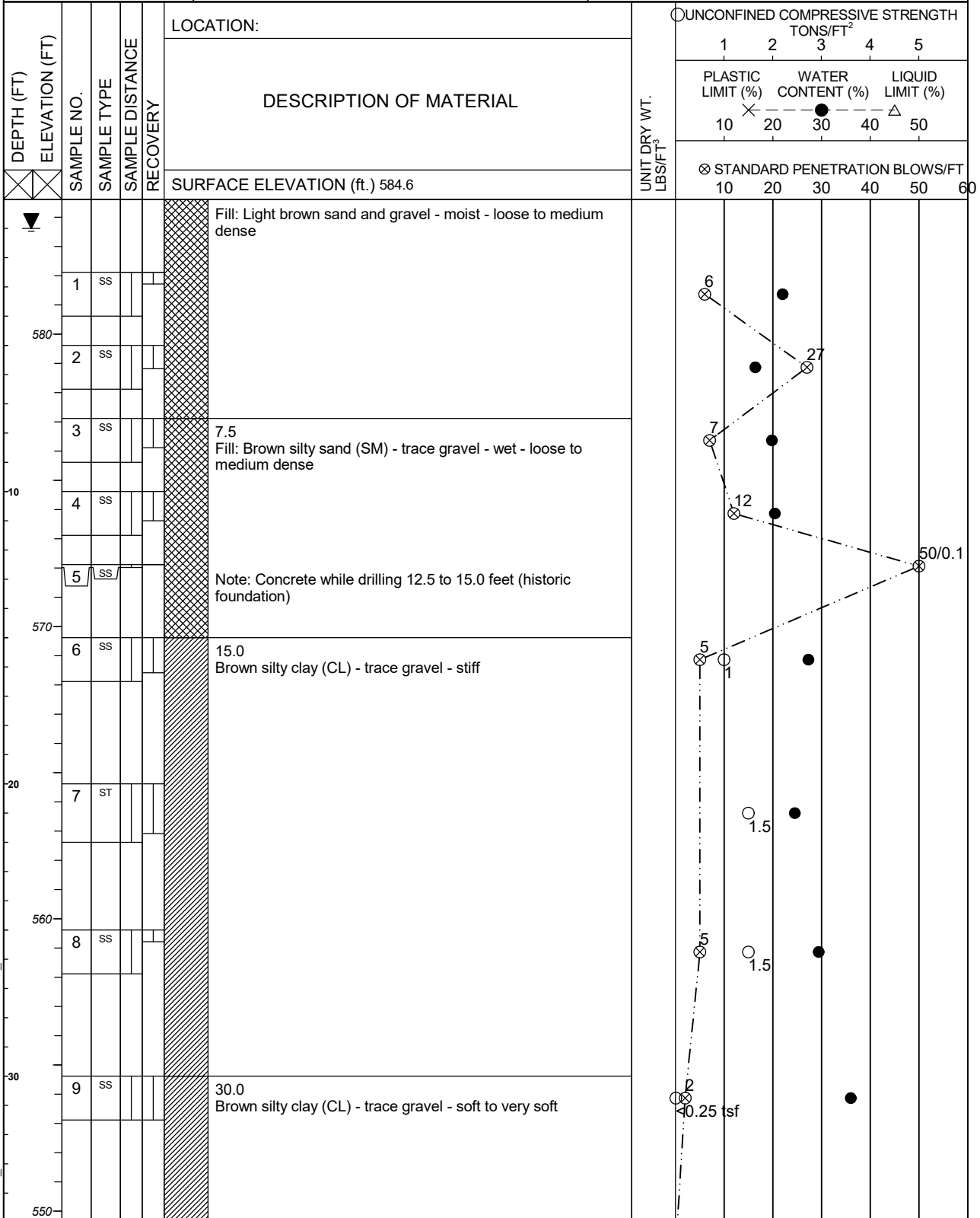


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-2-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 1.0 ft BCI	BORING STARTED 11/17/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/18/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,734.705	EASTING 101,434.872	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 1 OF 3	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

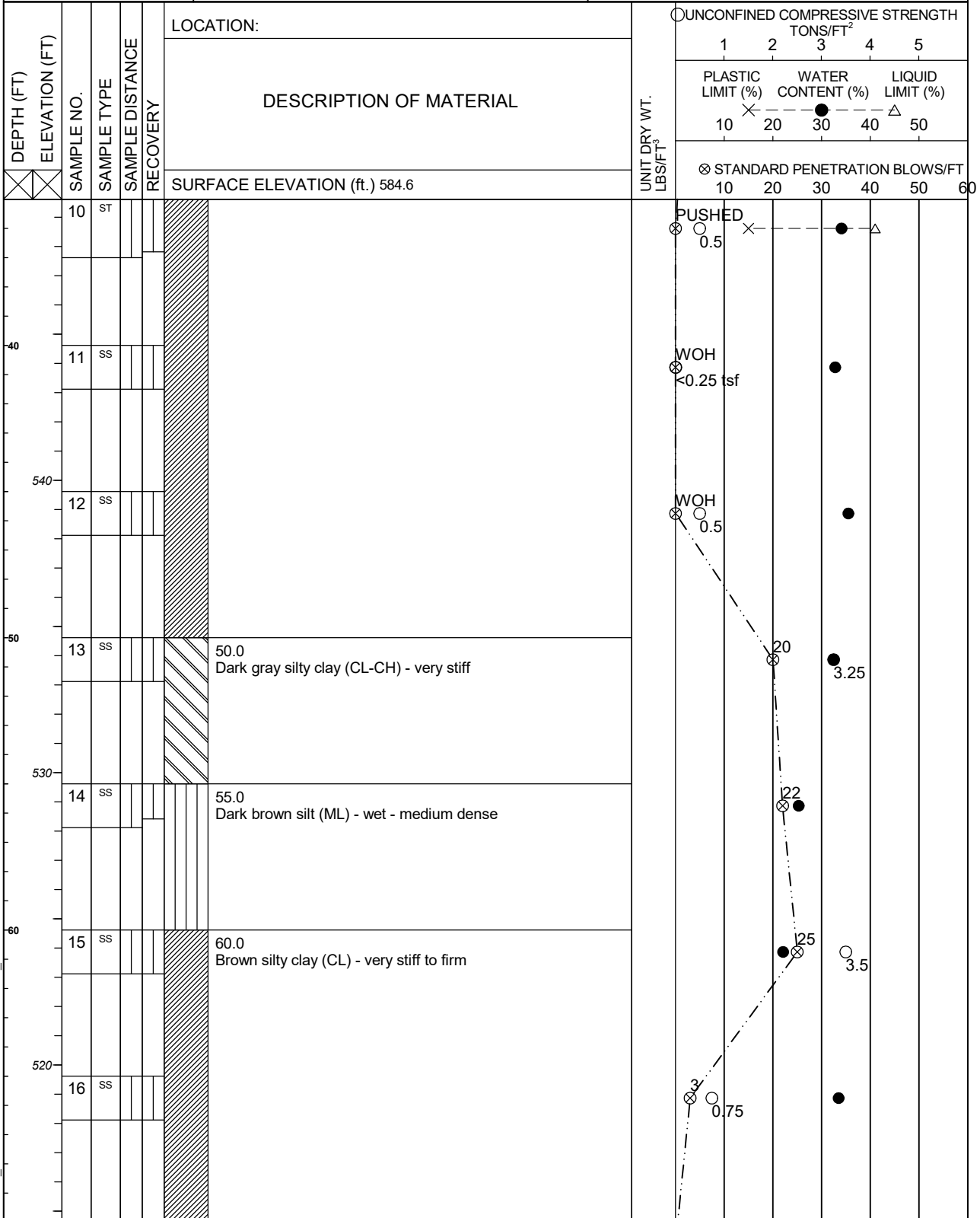


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-2-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 1.0 ft BCI		BORING STARTED 11/17/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 11/18/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 576.734.705	EASTING 101.434.872	RIG/FOREMAN D-50 / JW		GEI PROJECT NO. 2201593	PAGE NO. 2 OF 3

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-2-22**

ARCHITECT-ENGINEER

DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	LOCATION: DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT ³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT ²					STANDARD PENETRATION BLOWS/FT
							1	2	3	4	5	
							PLASTIC LIMIT (%)					
							WATER CONTENT (%)					
							LIQUID LIMIT (%)					
							10	20	30	40	50	
							STANDARD PENETRATION BLOWS/FT					
							10	20	30	40	50	60
17	SS				70.0 Brown silty clay (CL) - soft to very soft	WOH 0.25						
18	SS					WOH						
19	SS					WOH 0.25						
81.5					End of Boring Boring advanced to 15.0 feet with solid-stem auger Boring advanced from 15.0 to 81.5 feet with rock bit and drilling fluid HW casing driven to 16.0 feet Boring backfilled with bentonite chips and bentonite grout mix							

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 1.0 ft BCI

BORING STARTED
11/17/2022

GEI OFFICE
Green Bay, WI

BORING COMPLETED
11/18/2022

ENTERED BY
AKL

APPROVED BY
SN

NORTHING
576,734.705

EASTING
101,434.872

RIG/FOREMAN
D-50 / JW

GEI PROJECT NO.
2201593

PAGE NO. 3 OF 3

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

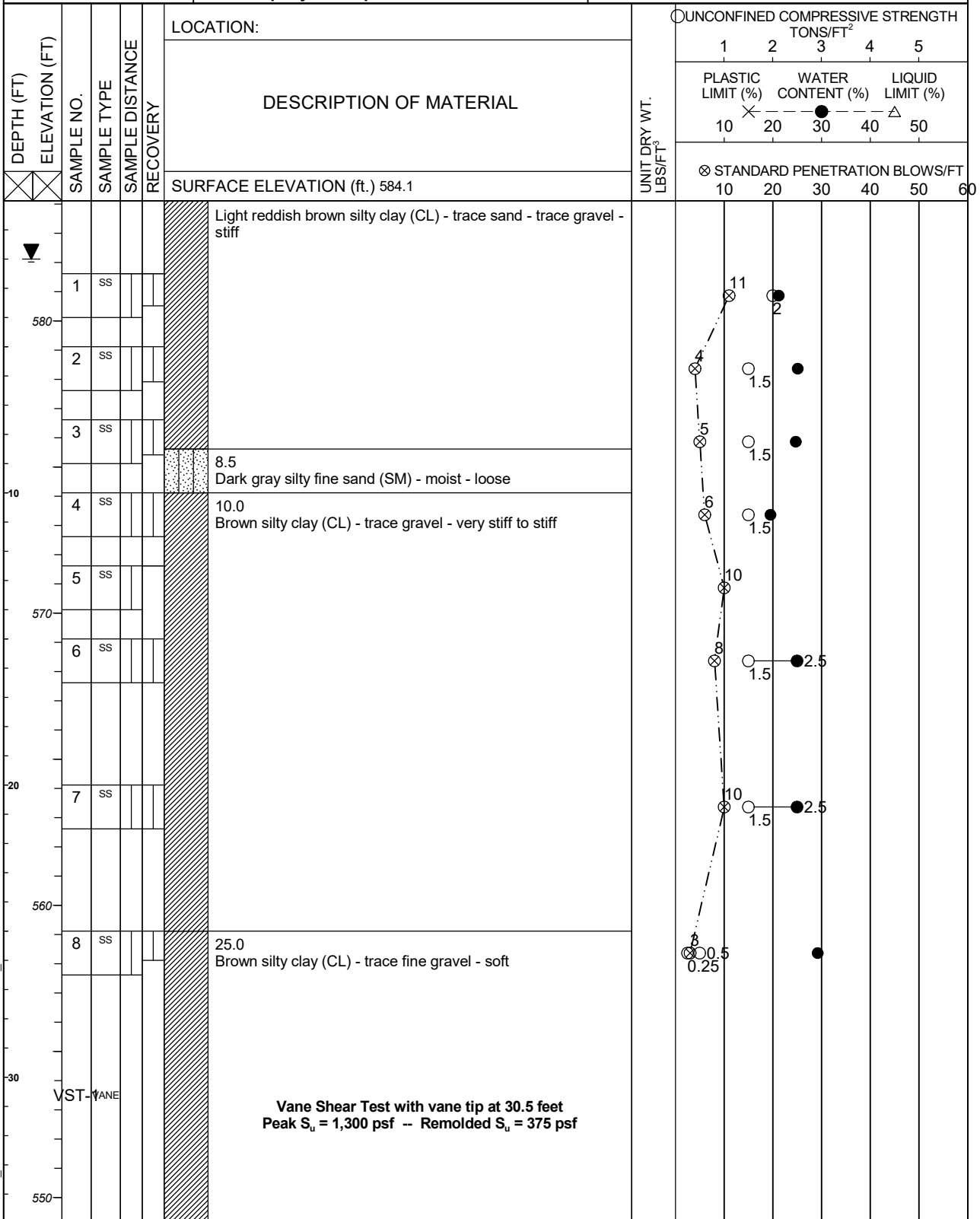
GEI



CLIENT:
Brown County Purchasing
PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-3-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 2.0 ft BCI	BORING STARTED 11/29/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/1/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,963.346	EASTING 101,533.722	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 1 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

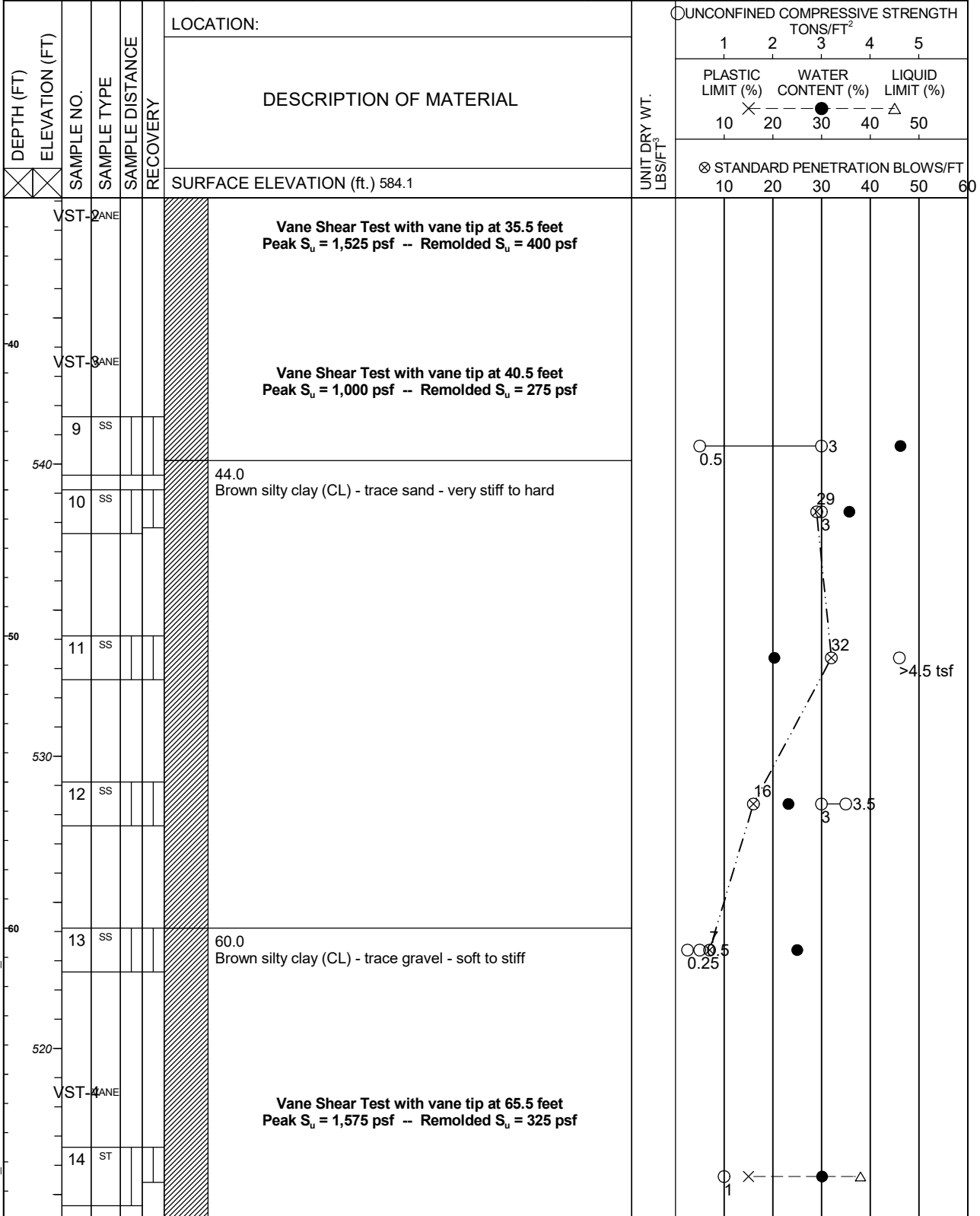


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-3-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 2.0 ft BCI	BORING STARTED 11/29/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/1/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,963.346	EASTING 101,533.722	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 2 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

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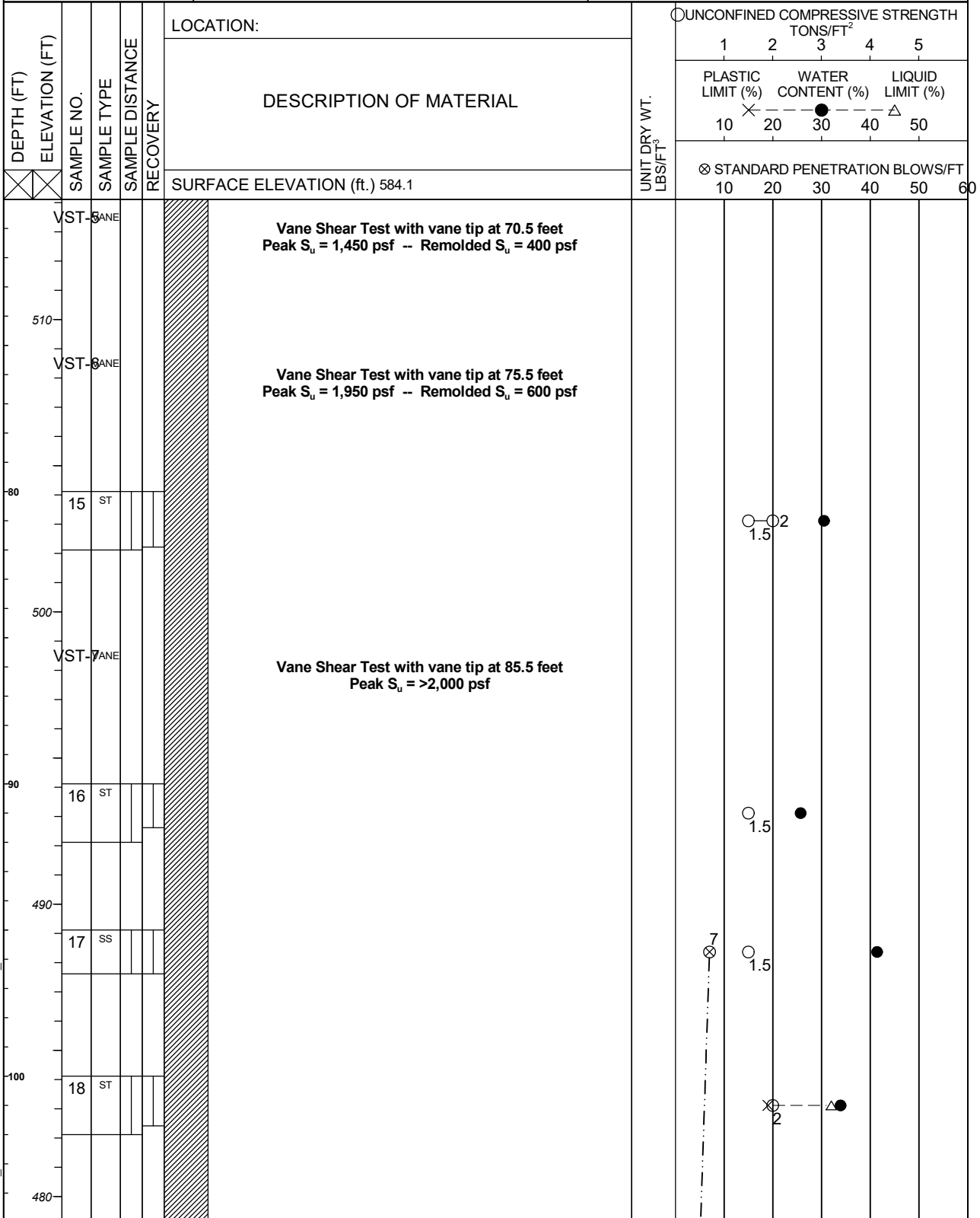


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-3-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 2.0 ft BCI	BORING STARTED 11/29/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/1/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,963.346	EASTING 101,533.722	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 3 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

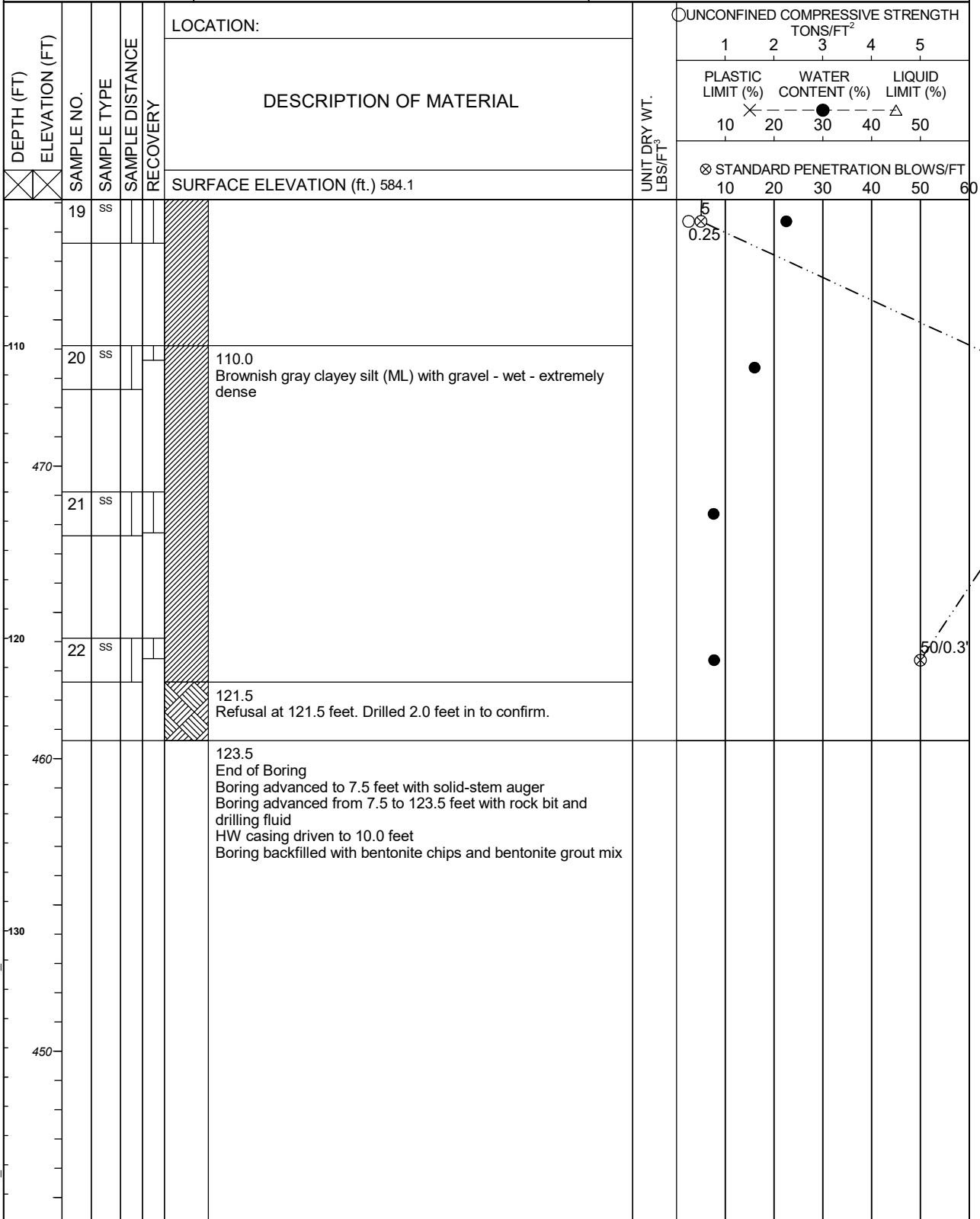
GEI



CLIENT:
Brown County Purchasing
PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-3-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 2.0 ft BCI		BORING STARTED 11/29/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 12/1/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 576,963.346	EASTING 101,533.722	RIG/FOREMAN D-50 / JW		GEI PROJECT NO. 2201593	PAGE NO. 4 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

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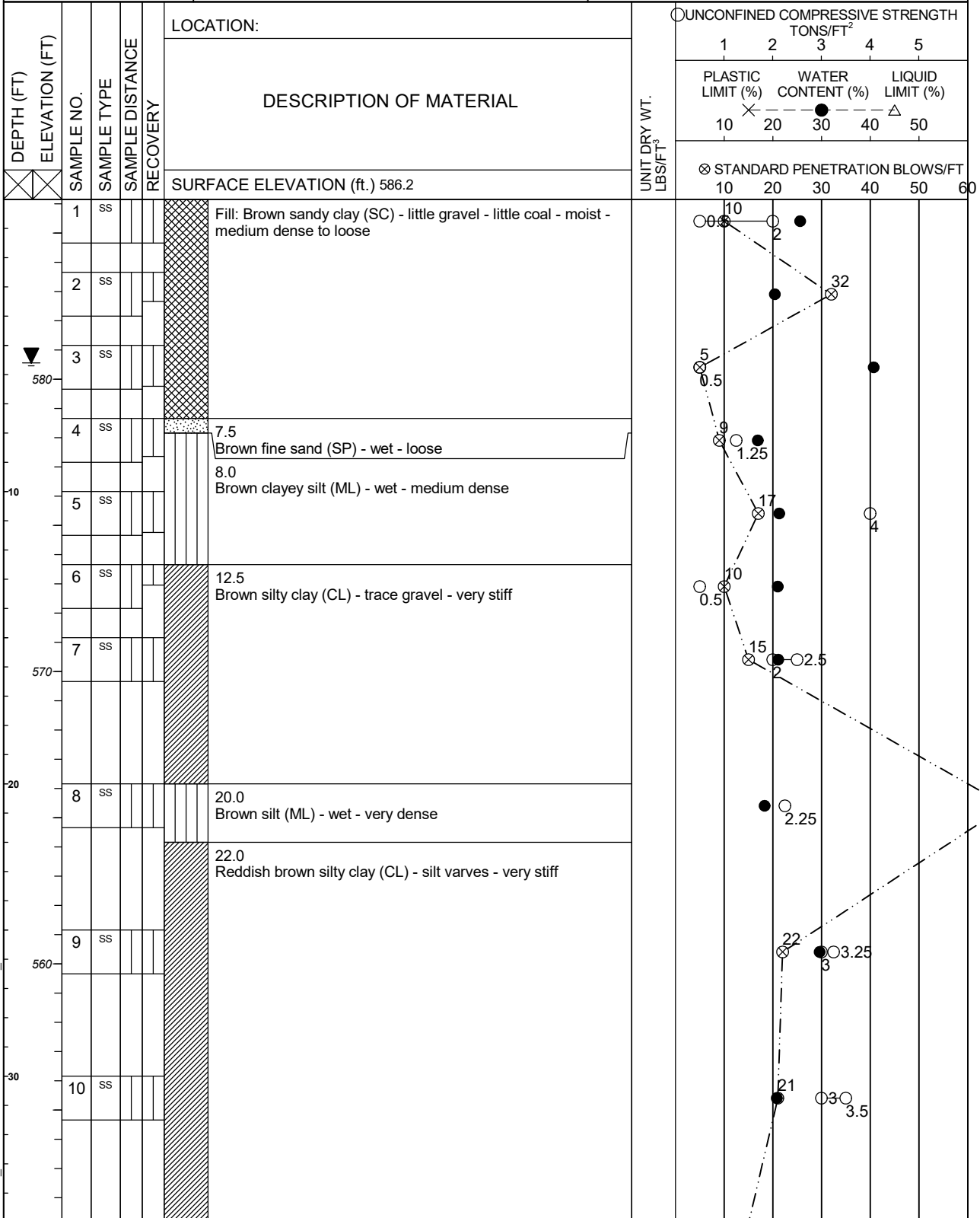


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-4-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.6 ft BCI	BORING STARTED 12/19/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/20/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 575,686.606	EASTING 101,064.857	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593

PAGE NO. 1 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

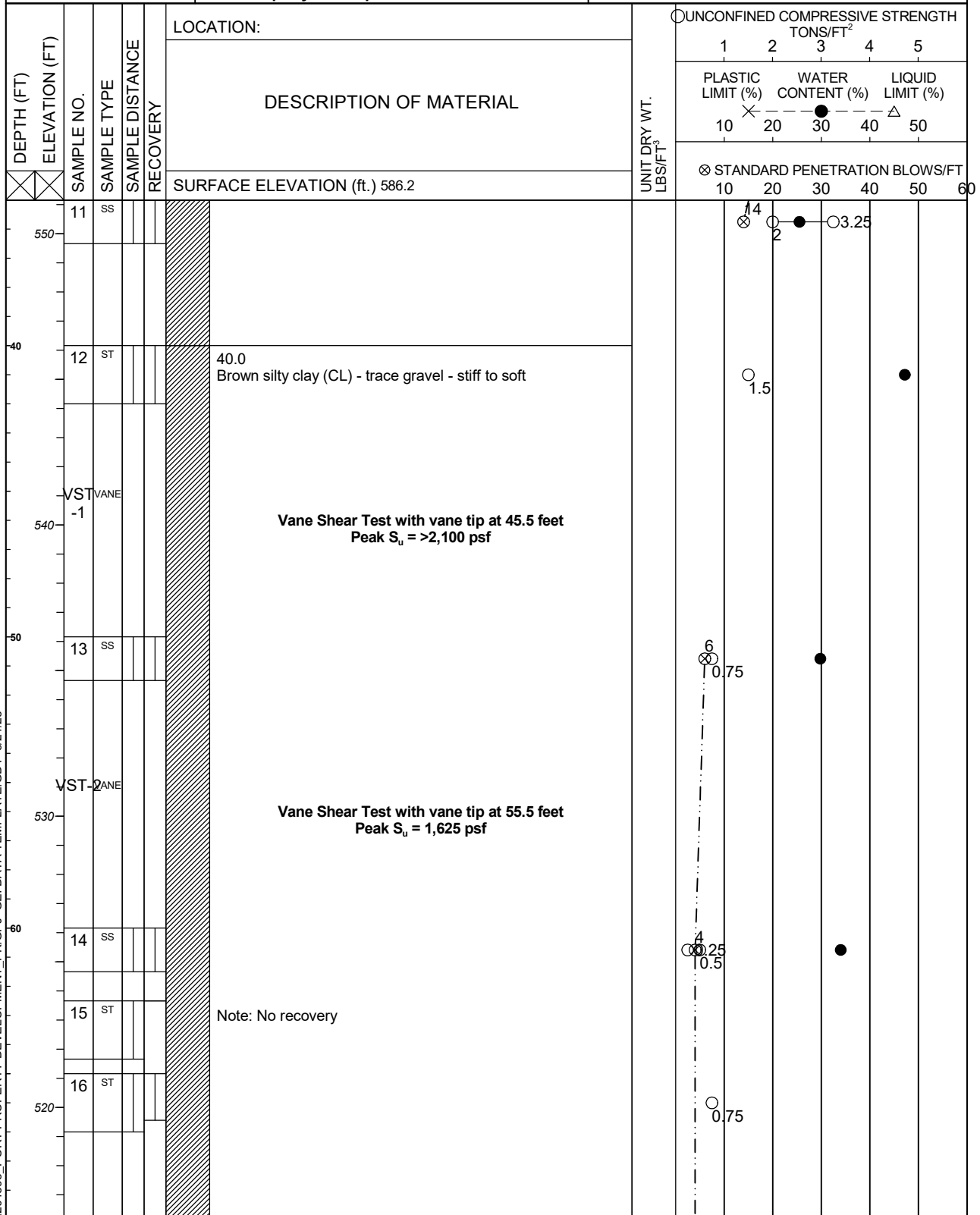


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-4-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.6 ft BCI

BORING STARTED
12/19/2022

GEI OFFICE
Green Bay, WI

ENTERED BY AKL	APPROVED BY SN
--------------------------	--------------------------

NORTHING	EASTING
575.686.606	101.064.857

RIG/FOREMAN
D-50 / JW

GEI PROJECT NO.
2201593

PAGE NO. 2 OF 4

GEI

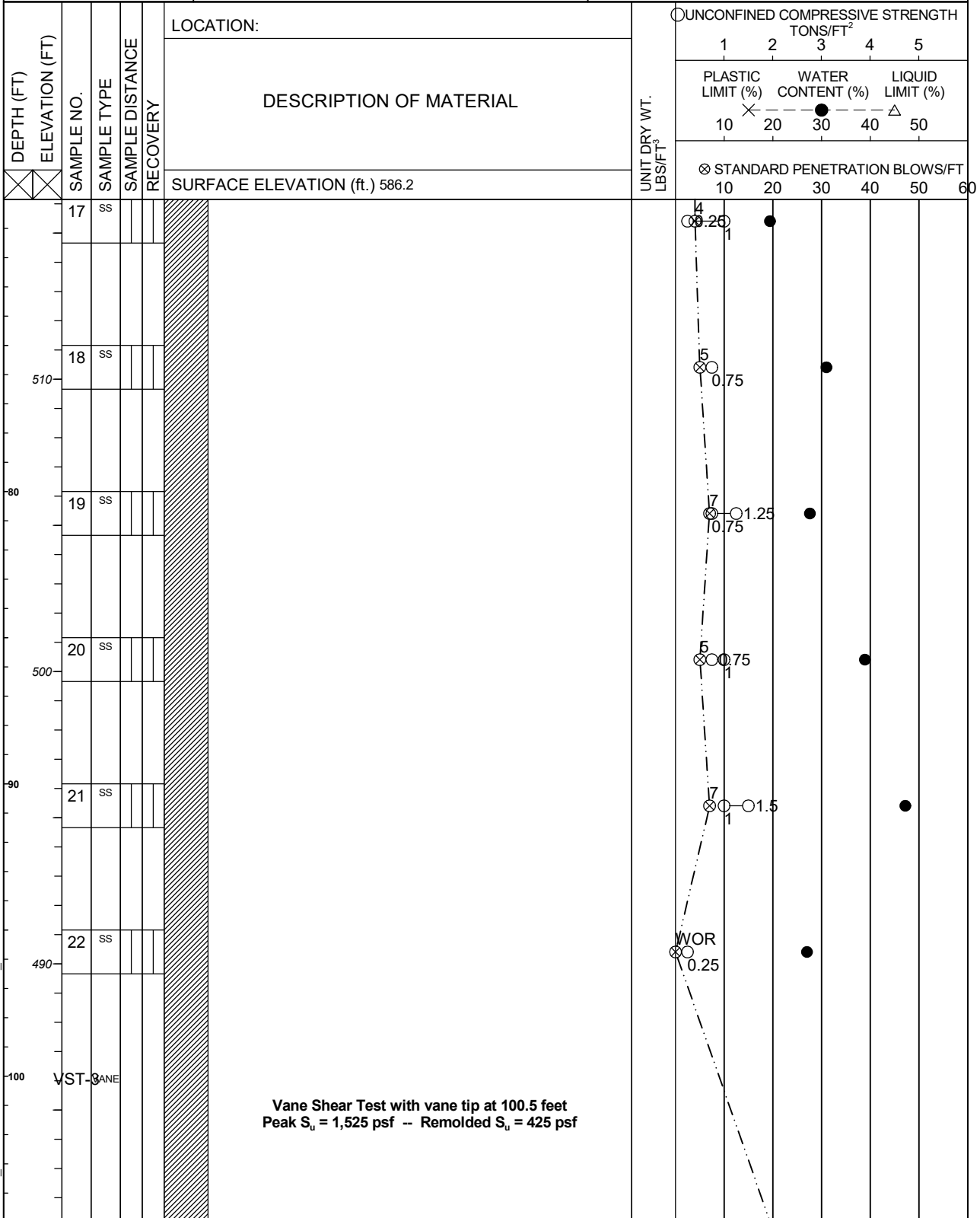


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-4-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.6 ft BCI	BORING STARTED 12/19/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/20/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 575,686.606	EASTING 101,064.857	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 3 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

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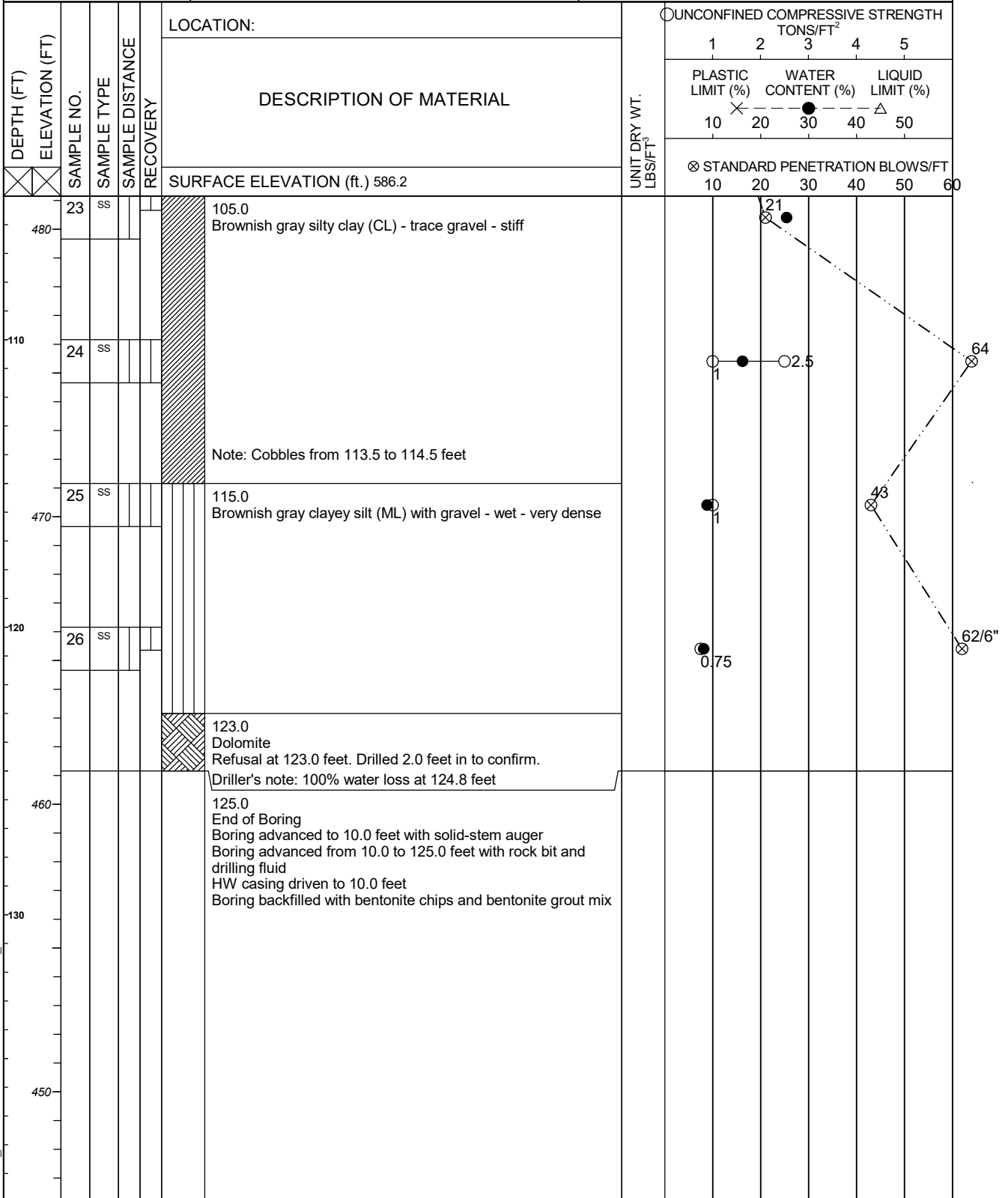


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-4-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.6 ft BCI	BORING STARTED 12/19/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/20/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 575,686.606	EASTING 101,064.857	GEI PROJECT NO. 2201593	PAGE NO. 4 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

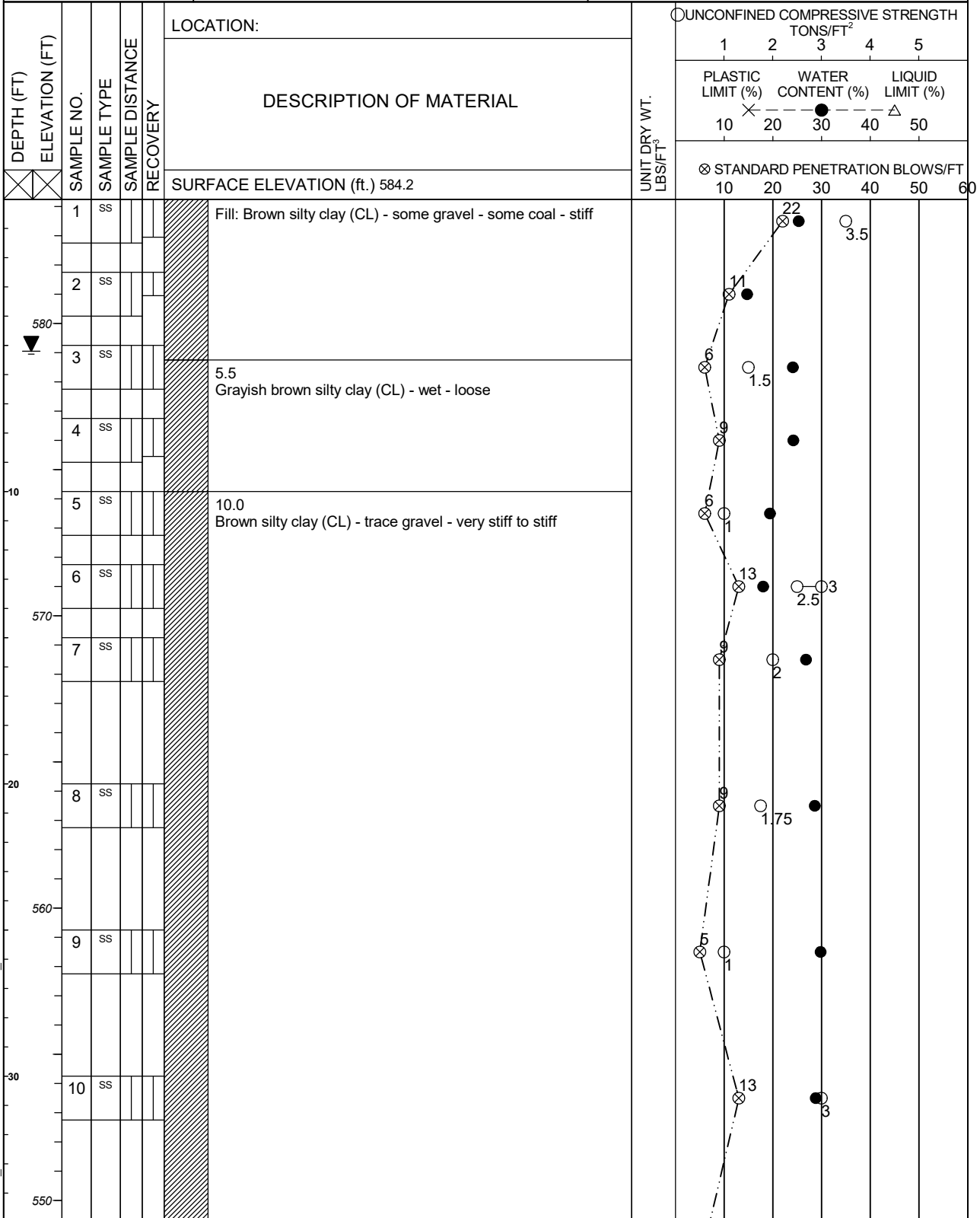
GEI



CLIENT:
Brown County Purchasing
PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-5-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.2 ft BCI	BORING STARTED 12/1/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/1/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,074.374	EASTING 101,389.261	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 1 OF 3	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

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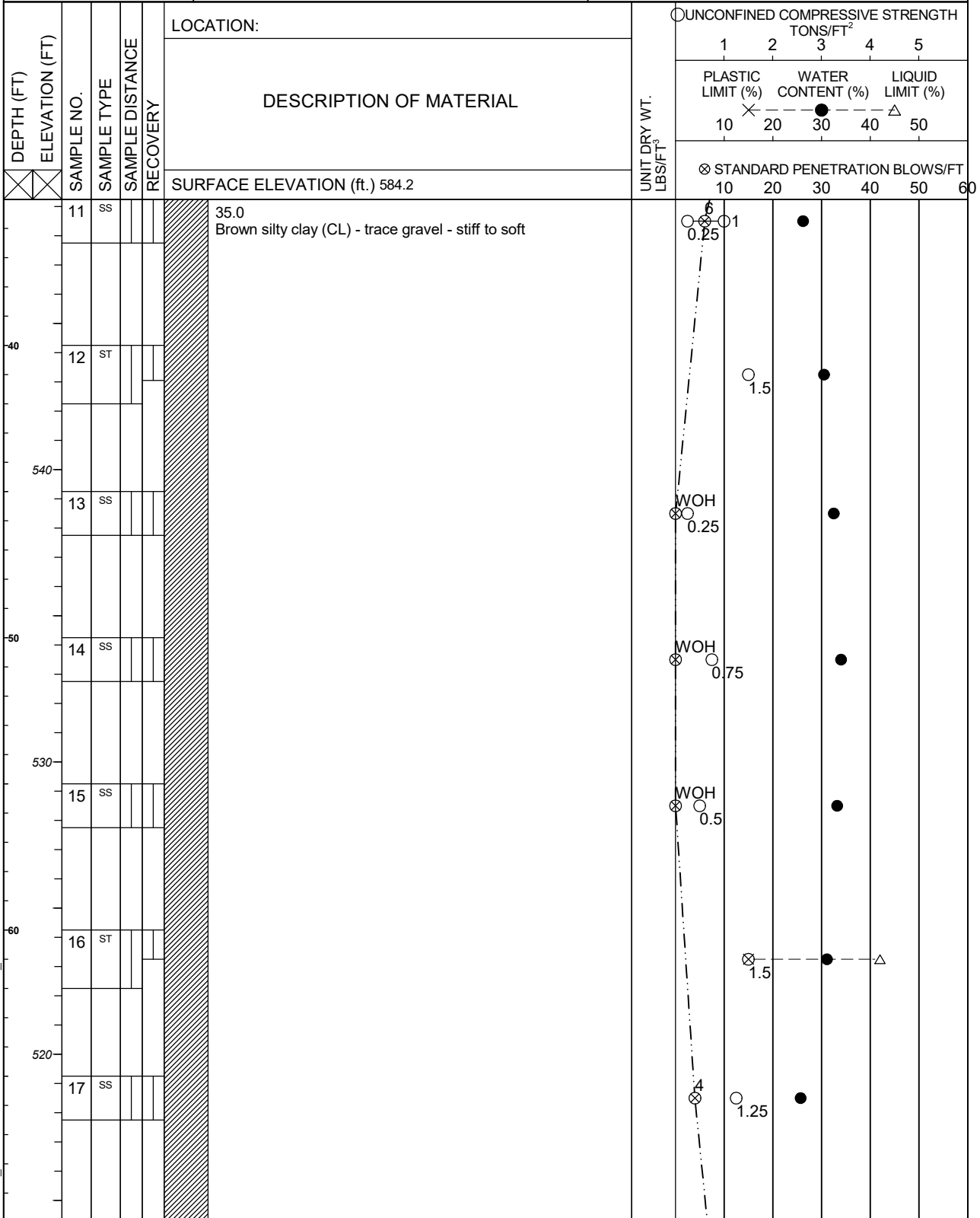


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-5-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.2 ft BCI	BORING STARTED 12/1/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/1/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,074.374	EASTING 101,389.261	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 2 OF 3	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

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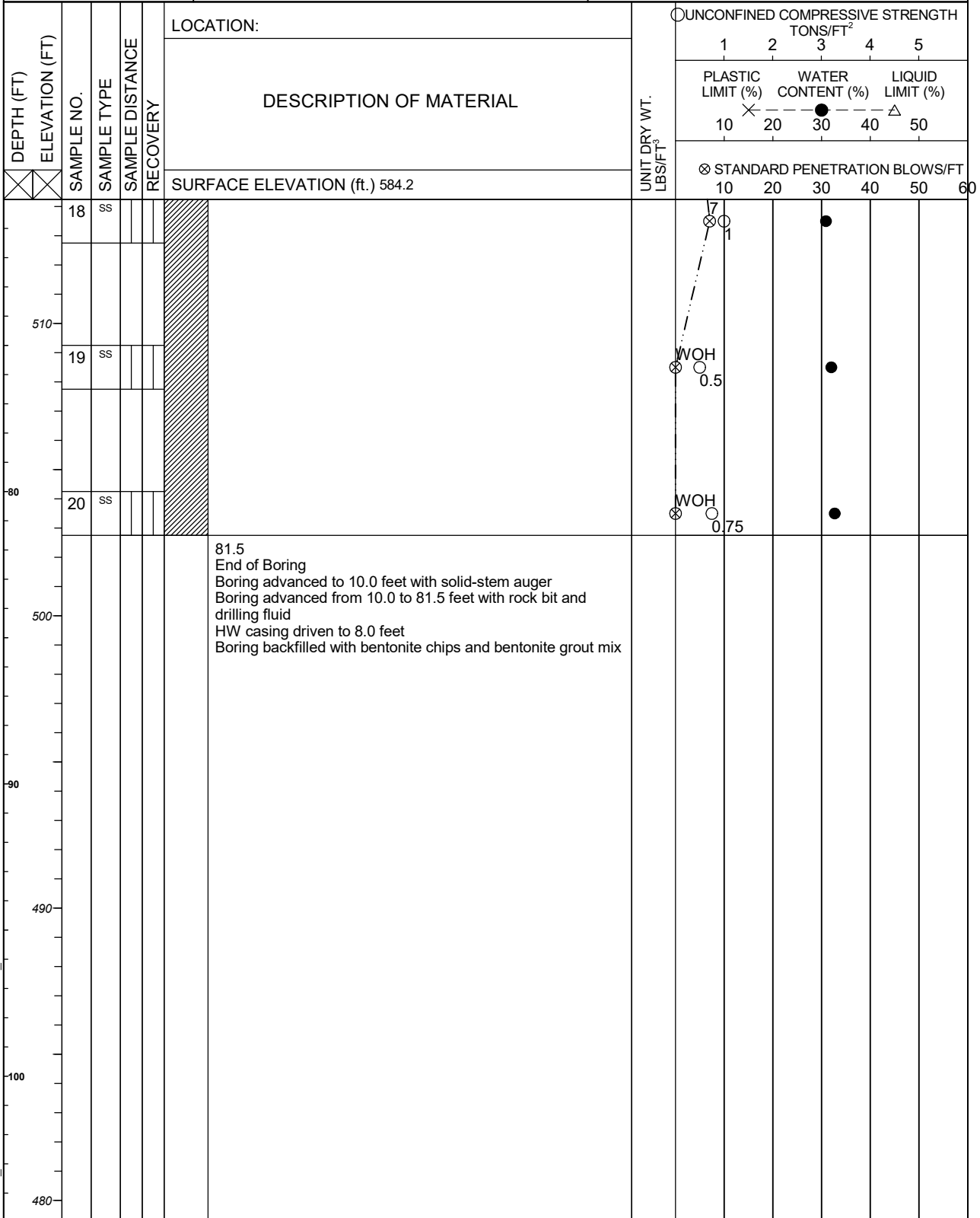


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-5-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.2 ft BCI		BORING STARTED 12/1/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 12/1/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 576,074.374	EASTING 101,389.261	RIG/FOREMAN D-50 / JW		GEI PROJECT NO. 2201593	
				PAGE NO. 3 OF 3	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

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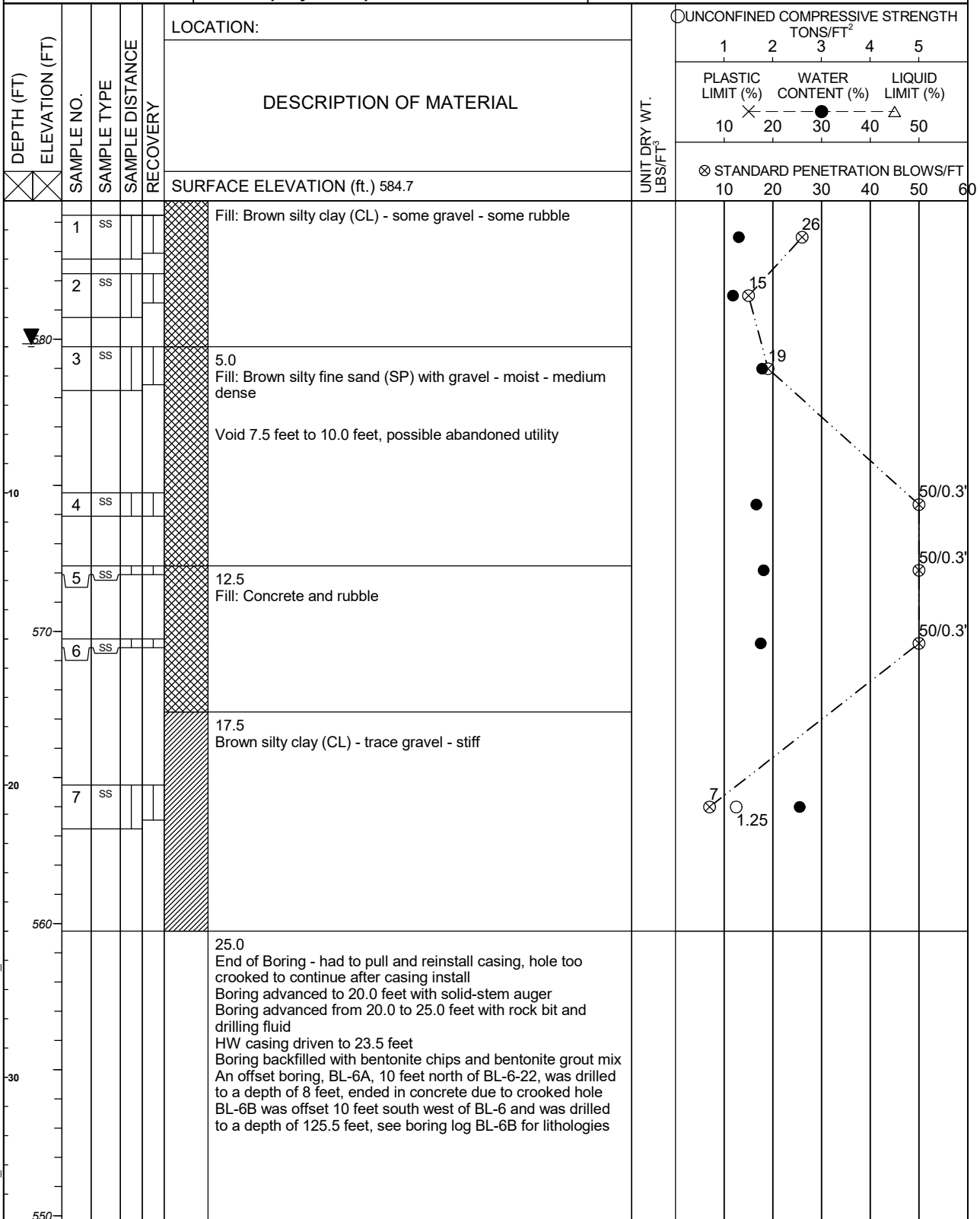


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-6-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 4.9 ft AB		BORING STARTED 11/8/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 11/8/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 576.318.988	EASTING 101.501.526	RIG/FOREMAN D-50 / JW		GEI PROJECT NO. 2201593	
				PAGE NO. 1 OF 1	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

Brown County Purchasing

LOG OF BORING NUMBER **BL-6B-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER

DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	LOCATION: DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT ³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT ²				
							1	2	3	4	5
SURFACE ELEVATION (ft.) 584.7							PLASTIC LIMIT (%) WATER CONTENT (%) LIQUID LIMIT (%) 10 20 30 40 50				
							⊗ STANDARD PENETRATION BLOWS/FT 10 20 30 40 50 60				
580					Blind drilled 0 to 25.0 feet. See boring log BL-6-22 for lithologies. BL-6-22 ended at 25 feet due to hole being too crooked to continue. An offset boring was drilled to 8.0 feet before stopping due to crooked hole. BL-6B-22 was offset 10 feet north east of boring BL-6-22.						
570											
560											
560	1	SS			25.0 Brown silty clay (CL) - trace gravel - stiff		7	1			
550	2	ST					1.5				

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.0 ft BCI	BORING STARTED 11/8/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/10/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,313.988	EASTING 101,496.526	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 1 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

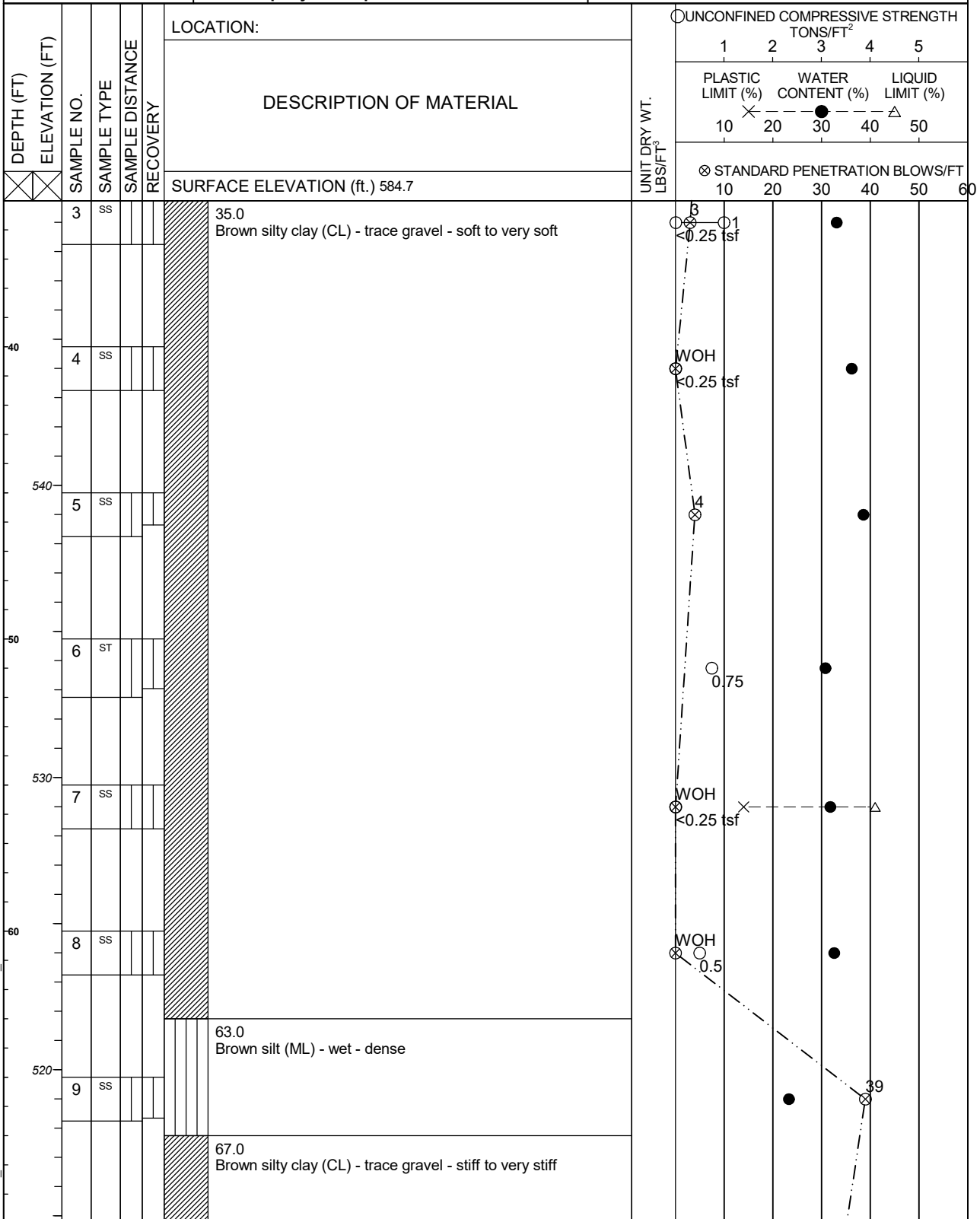
GEI



CLIENT:
Brown County Purchasing
PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-6B-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.0 ft BCI	BORING STARTED 11/8/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/10/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,313.988	EASTING 101,496.526	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 2 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

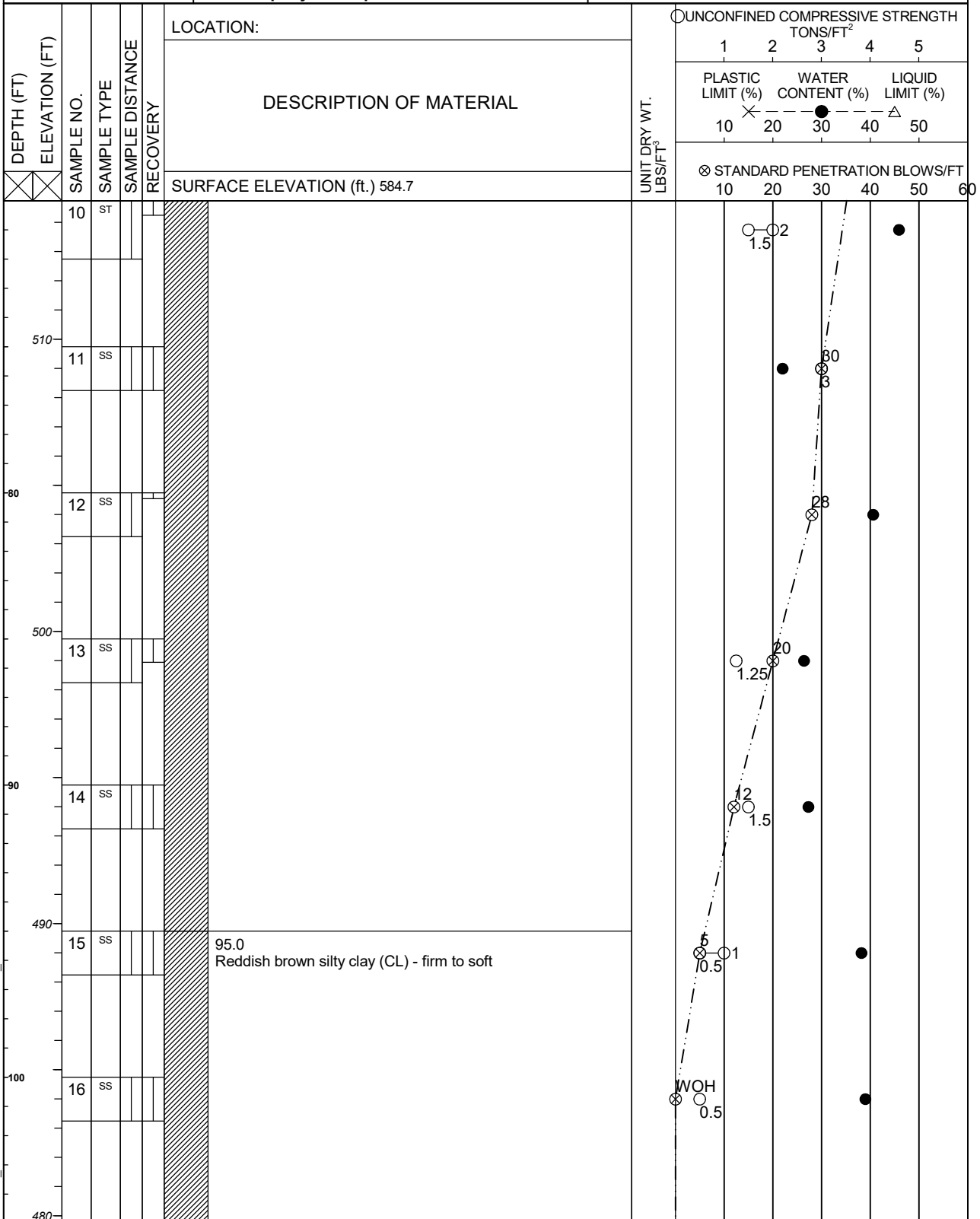
GEI



CLIENT:
Brown County Purchasing
PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-6B-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.0 ft BCI	BORING STARTED 11/8/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/10/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,313.988	EASTING 101,496.526	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 3 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23



ARCHITECT-ENGINEER

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

WATER LEVEL: Groundwater observed at 5.0 ft BCI		BORING STARTED 11/8/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 11/10/2022		ENTERED BY AKL APPROVED BY SN	
NORTHING 576.313.988	EASTING 101.496.526	RIG/FOREMAN D-50 / JW		GEI PROJECT NO. 2201593	
				PAGE NO. 4 OF 4	

GEI

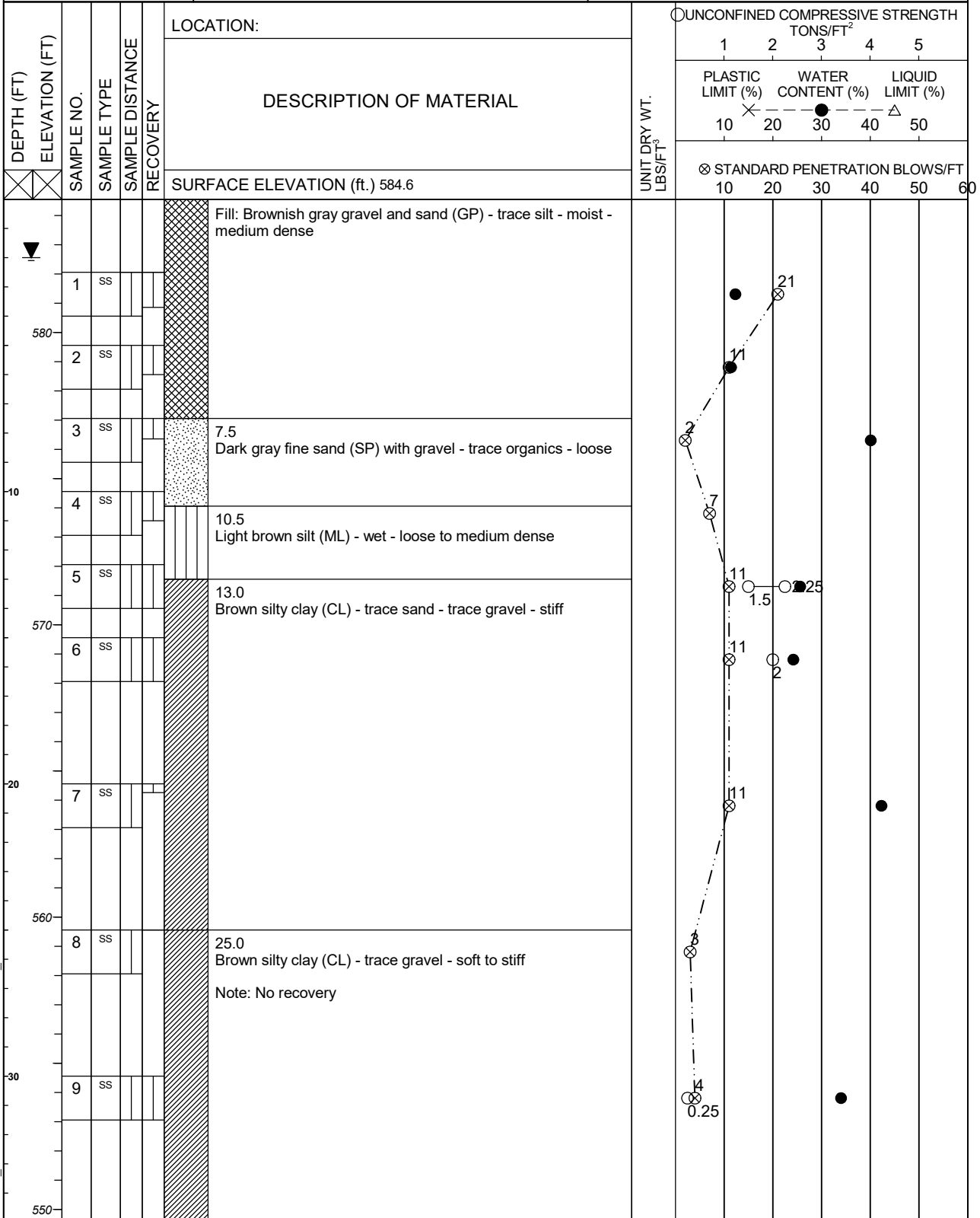


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-7-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 2.0 ft BCI	BORING STARTED 11/14/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/15/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,612.815	EASTING 101,614.220	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 1 OF 3	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-7-22**

ARCHITECT-ENGINEER

					LOCATION:	UNIT DRY WT. LBS/FT ³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT ²									
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL		PLASTIC LIMIT (%)		WATER CONTENT (%)		LIQUID LIMIT (%)					
							10		20		30		40		50	
							X		---		●		---		△	
SURFACE ELEVATION (ft.) 584.6						⊗ STANDARD PENETRATION BLOWS/FT 10 20 30 40 50 60										
	VST 1	VANE				Vane Shear Test with vane tip at 35.5 feet Peak S _u = 850 psf -- Remolded S _u = 350 psf										
40	10	ST					1	X	---	●	---	△				
540	VST 2	VANE				Vane Shear Test with vane tip at 45.5 feet Peak S _u = 1,075 psf -- Remolded S _u = 250 psf										
50	VST 3	VANE				Vane Shear Test with vane tip at 50.5 feet Peak S _u = 1,925 psf -- Remolded S _u = 350 psf										
530	11	SS				55.0 Brown silt (ML) - wet - medium dense			20	⊗	●					
60	12	ST				60.0 Brown silty clay (CL) - stiff					●					
520	VST 4	VANE				Vane Shear Test with vane tip at 65.5 feet Peak S _u = 1,700 psf -- Remolded S _u = 400 psf										

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 2.0 ft BCI

BORING STARTED
11/14/2022

GEI OFFICE
Green Bay, WI

BORING COMPLETED
11/15/2022

ENTERED BY
AKL

APPROVED BY
SN

NORTHING
576,612.815

EASTING
101,614.220

RIG/FOREMAN
D-50 / JW

GEI PROJECT NO.
2201593

PAGE NO. 2 OF 3

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

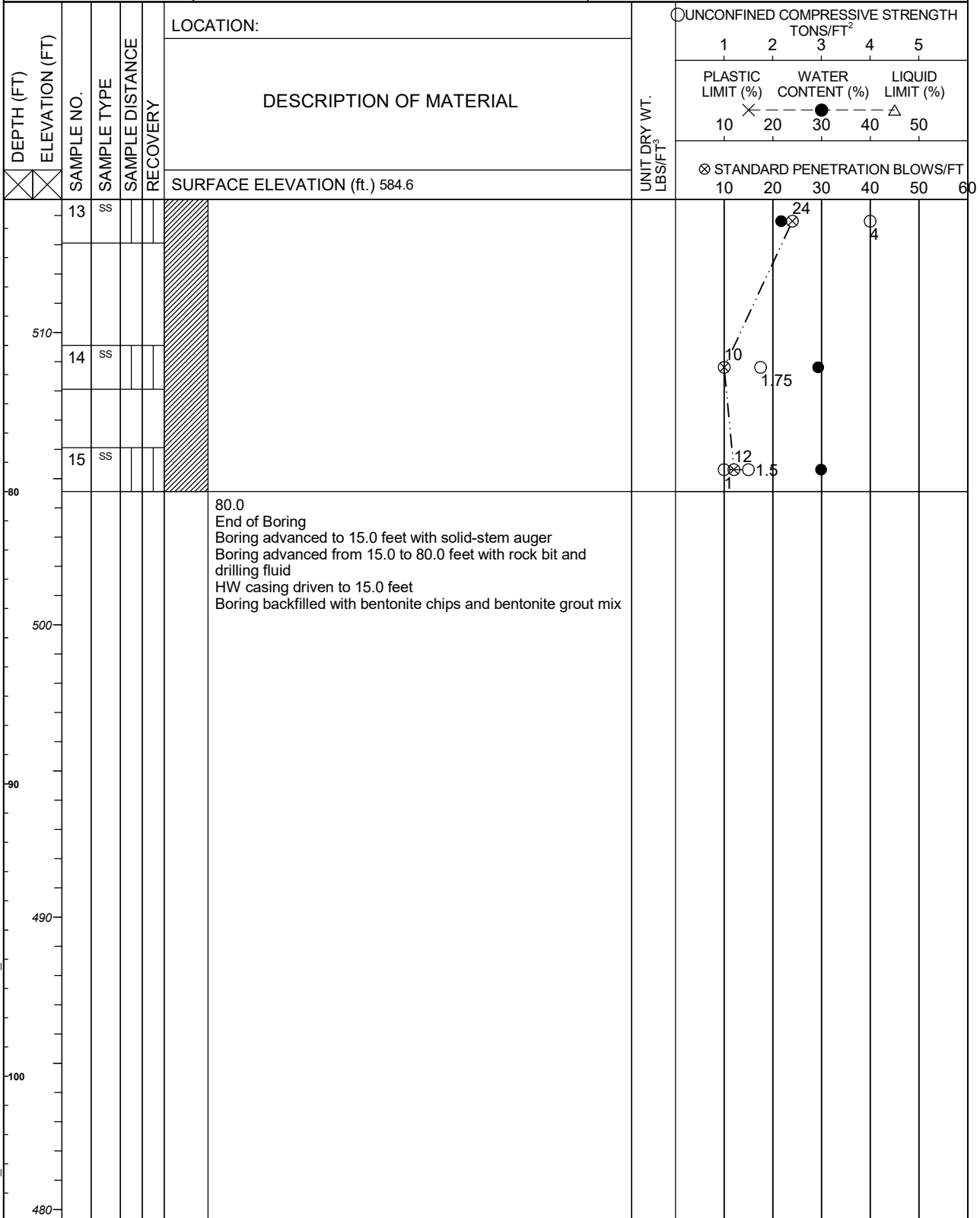


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-7-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 2.0 ft BCI	BORING STARTED 11/14/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/15/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,612.815	EASTING 101,614.220	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593

PAGE NO. 3 OF 3

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

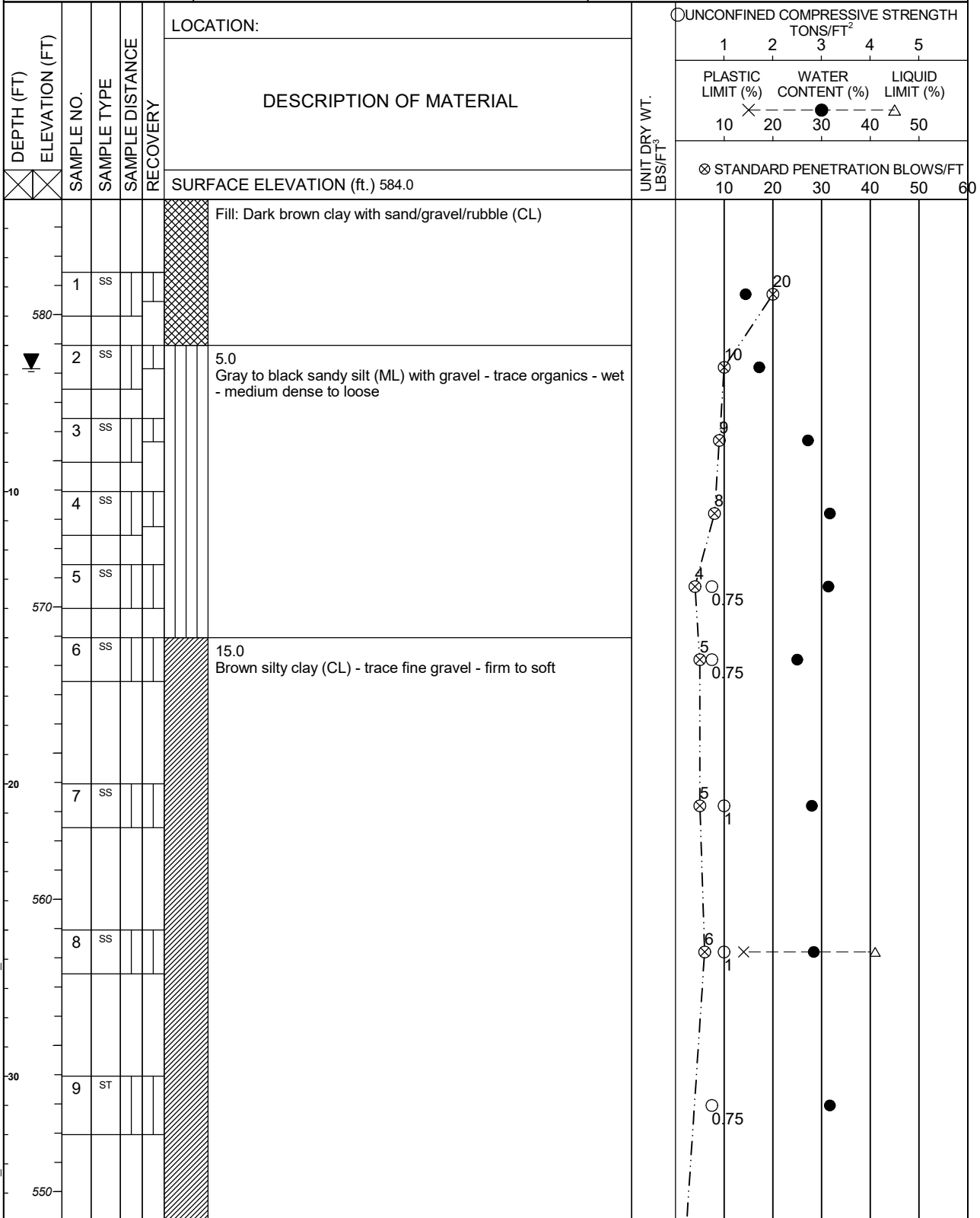


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-8-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.8 ft BCI	BORING STARTED 11/28/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/29/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,901.488	EASTING 101,692.036	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 1 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

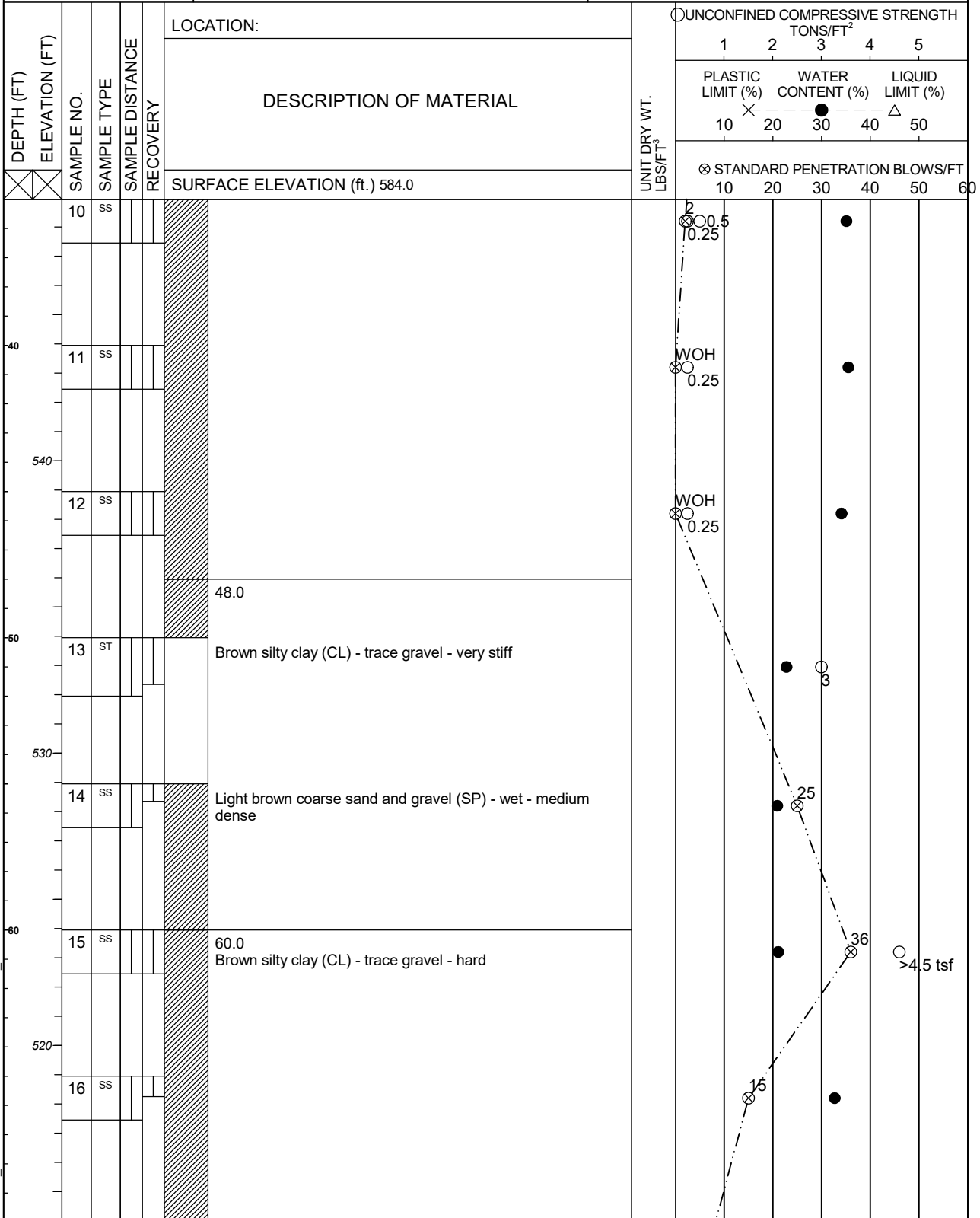


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-8-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.8 ft BCI	BORING STARTED 11/28/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/29/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,901.488	EASTING 101,692.036	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 2 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

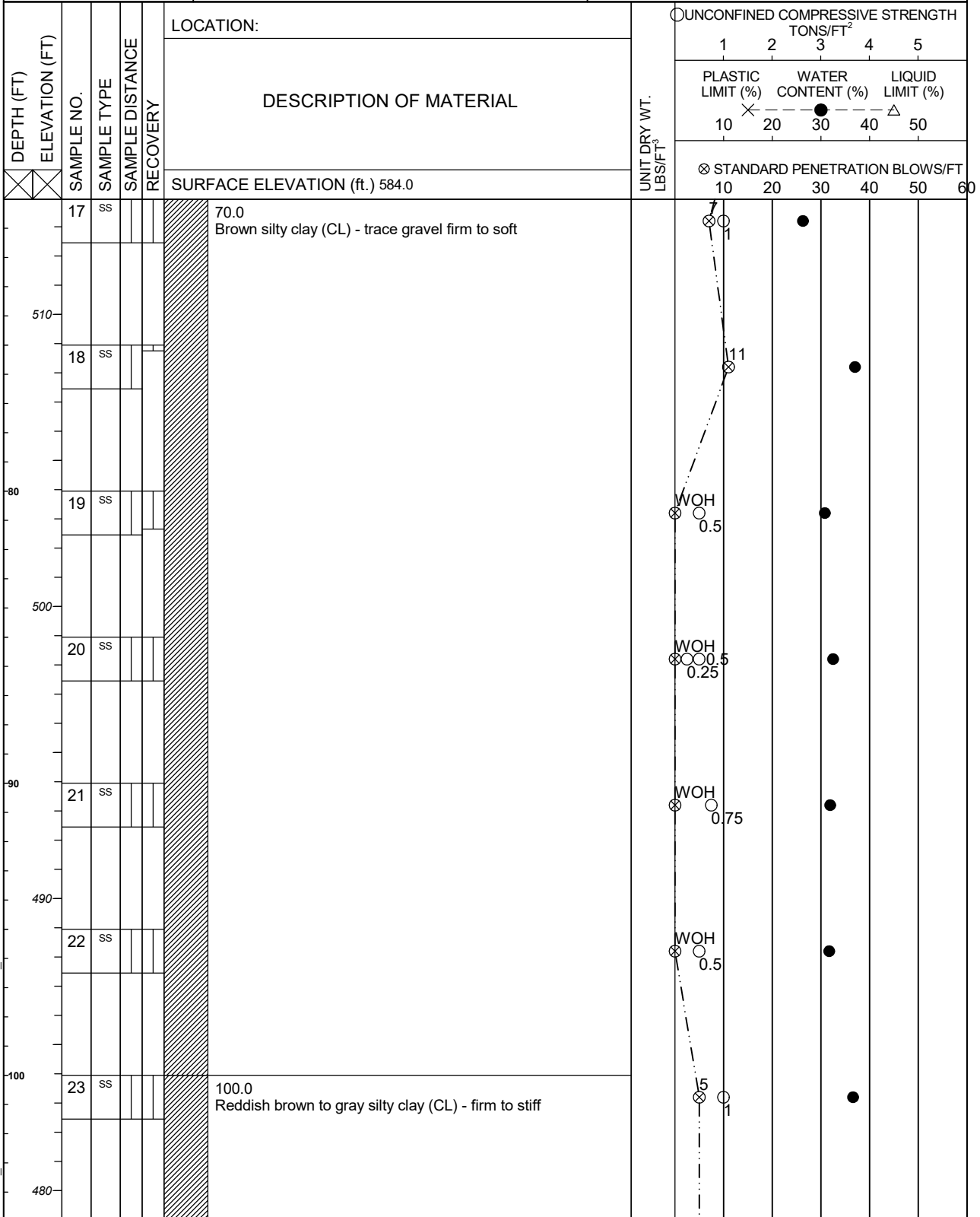
Brown County Purchasing

LOG OF BORING NUMBER **BL-8-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.8 ft BCI

BORING STARTED
11/28/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED
11/29/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

576,901.488

EASTING

101,692.036

RIG/FOREMAN
D-50 / JWGEI PROJECT NO.
2201593

PAGE NO. 3 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

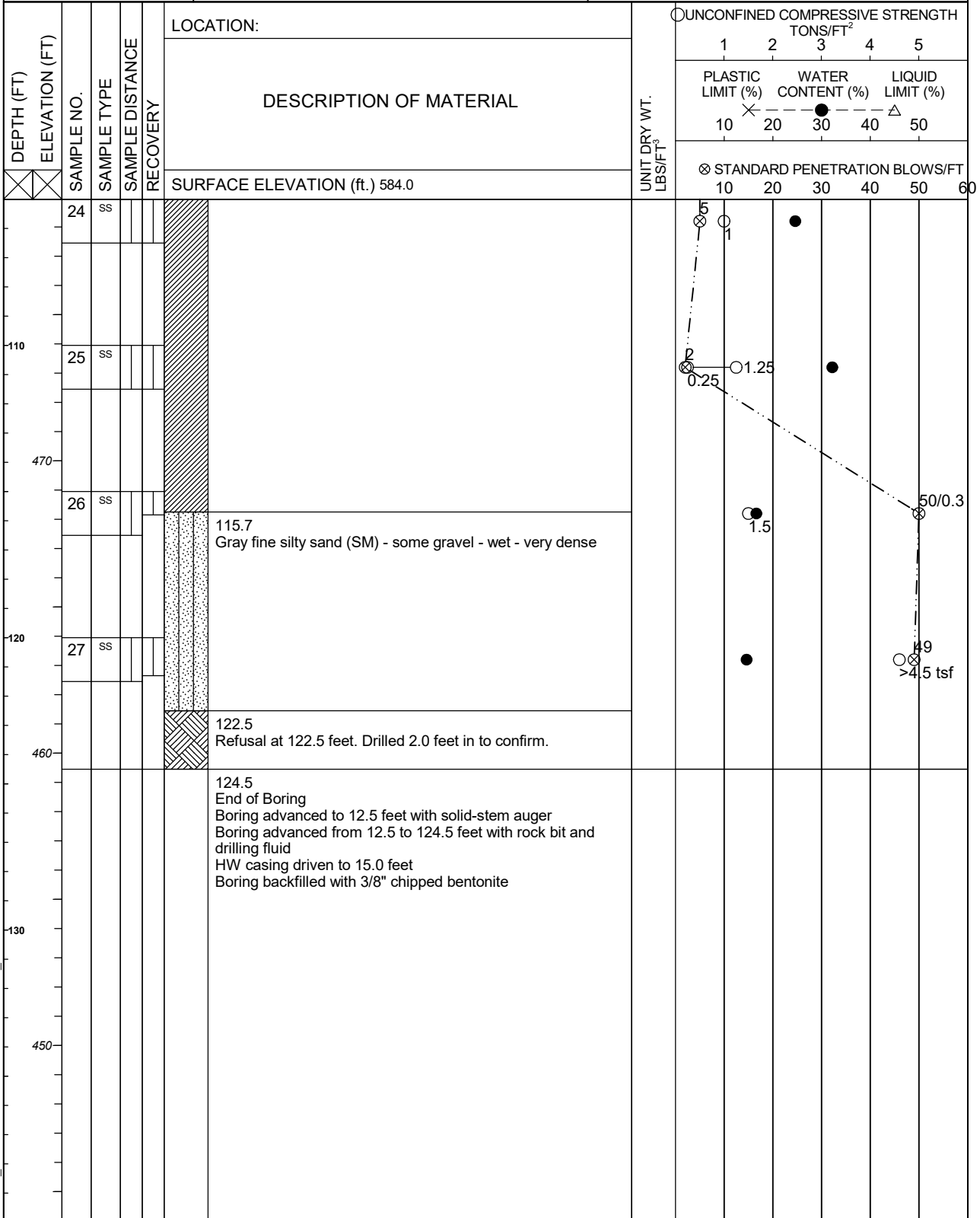


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-8-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.8 ft BCI	BORING STARTED 11/28/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/29/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,901.488	EASTING 101,692.036	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 4 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

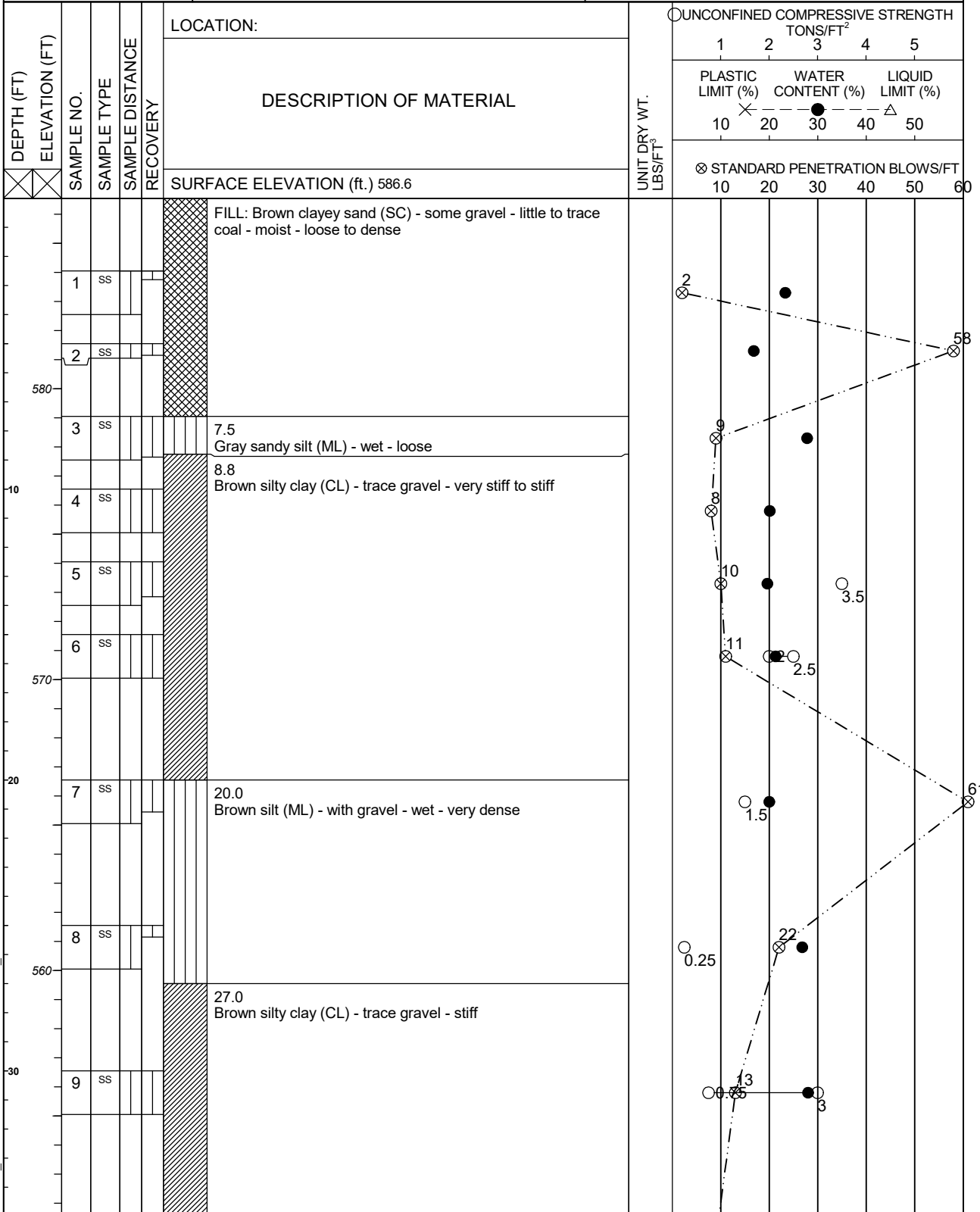


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-9-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater not observed during drilling		BORING STARTED 12/27/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 12/29/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 575,565.472		EASTING 101,327.961		RIG/FOREMAN D-50 / JW	
				GEI PROJECT NO. 2201593	
				PAGE NO. 1 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

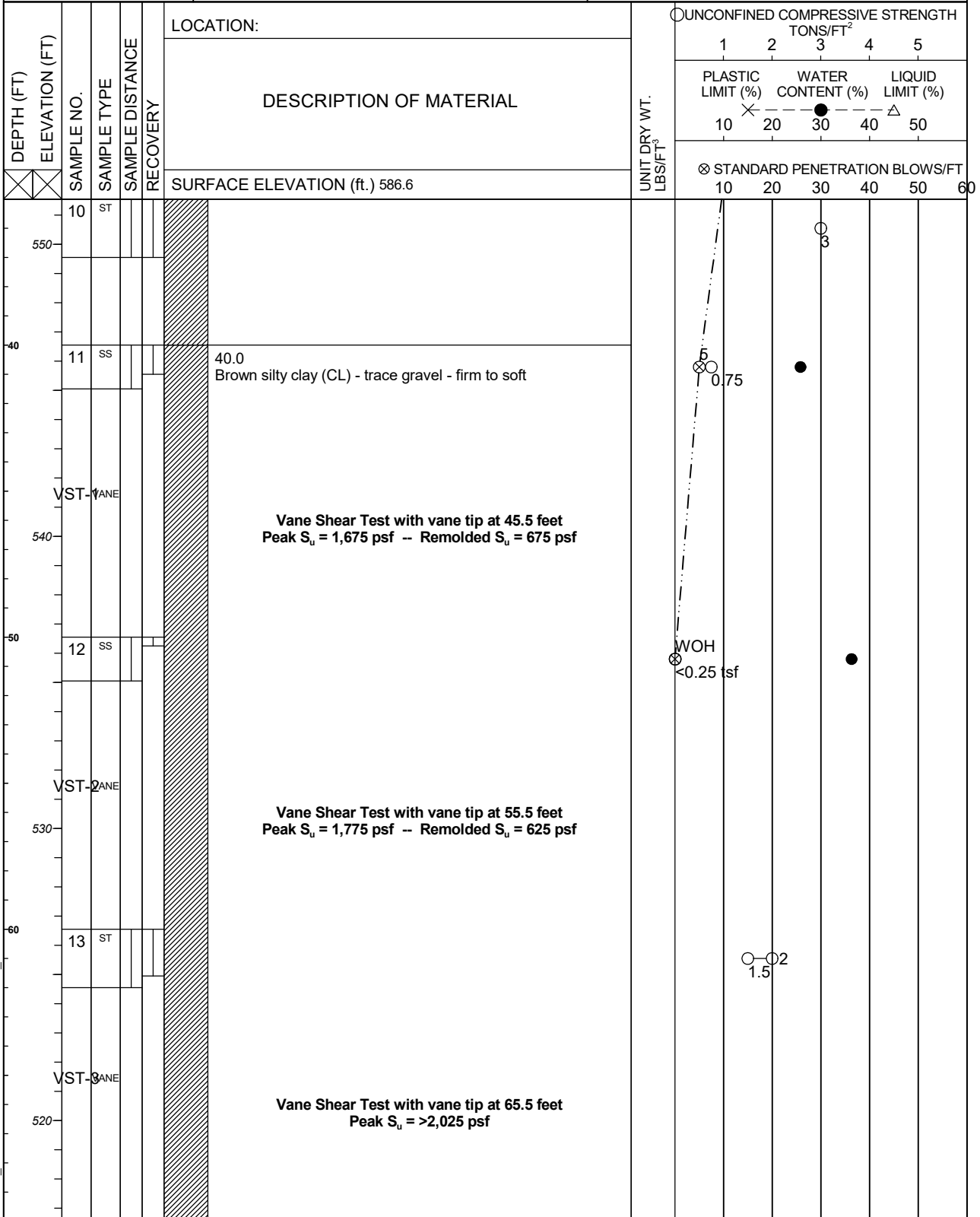
Brown County Purchasing

LOG OF BORING NUMBER **BL-9-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater not observed during drilling

BORING STARTED
12/27/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED
12/29/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

575,565.472

EASTING

101,327.961

RIG/FOREMAN
D-50 / JW

GEI PROJECT NO.

2201593

PAGE NO. 2 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

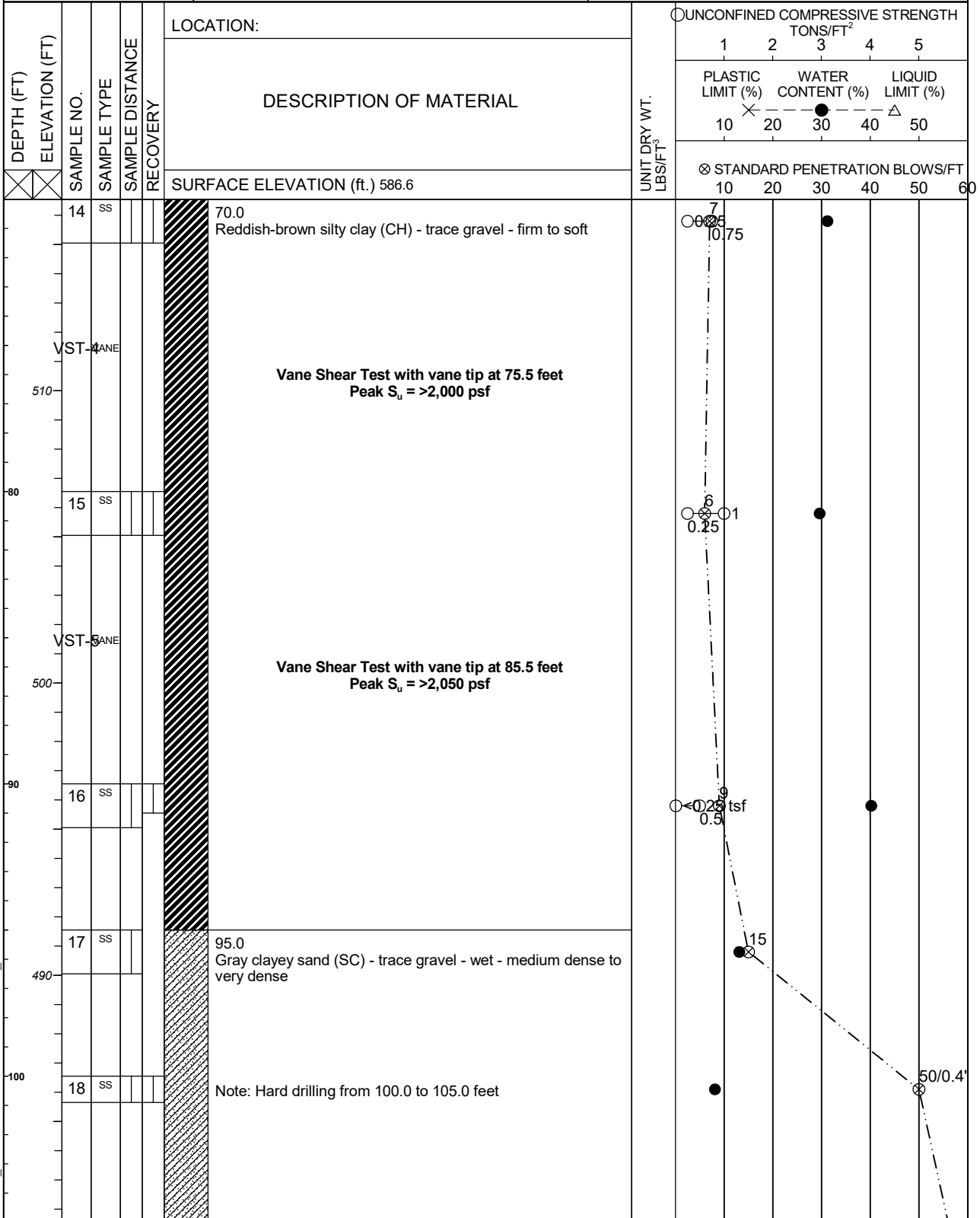


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-9-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater not observed during drilling	BORING STARTED 12/27/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/29/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 575,565.472	EASTING 101,327.961	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 3 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

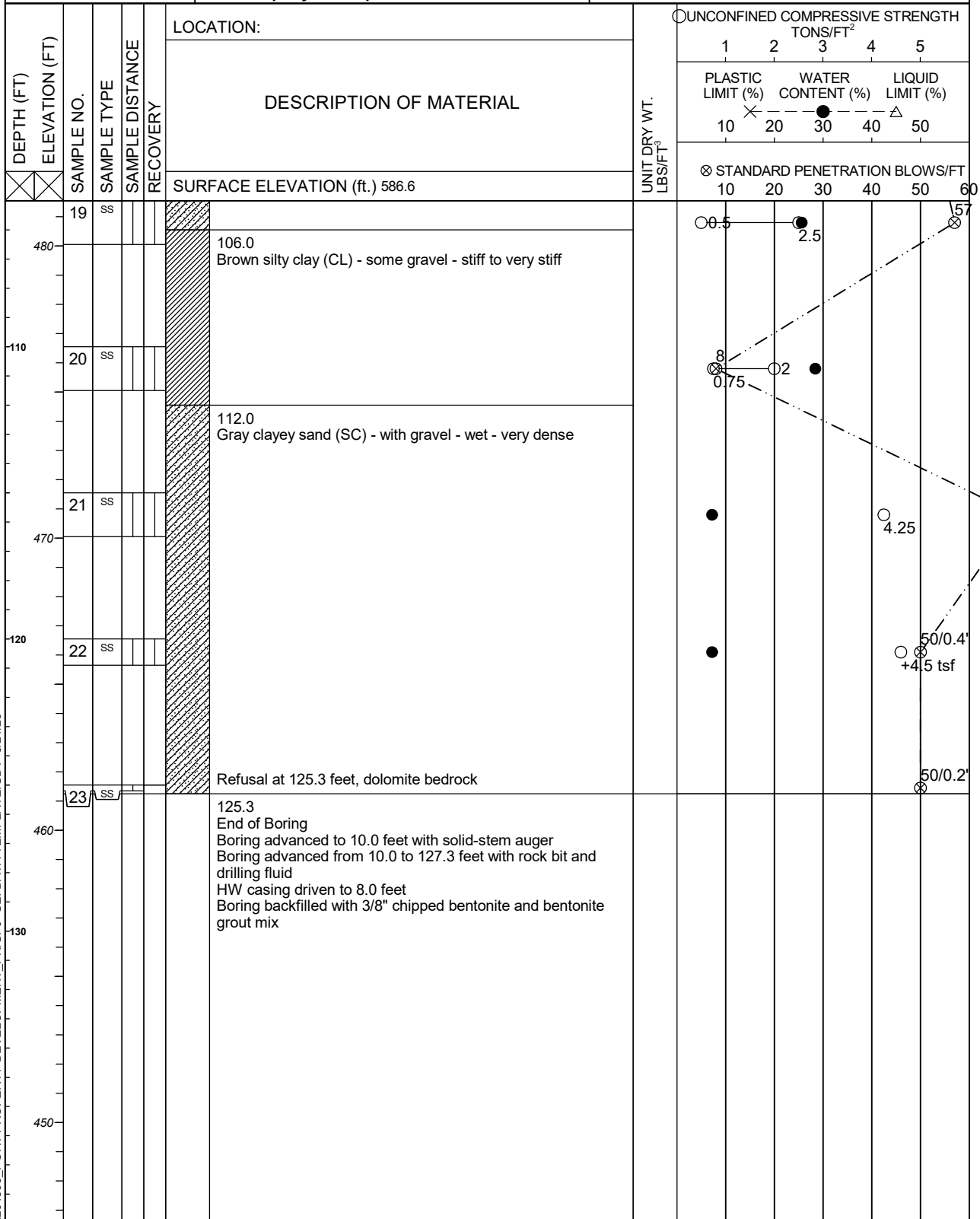
Brown County Purchasing

LOG OF BORING NUMBER **BL-9-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater not observed during drilling

BORING STARTED
12/27/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED
12/29/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

575,565.472

EASTING

101,327.961

RIG/FOREMAN
D-50 / JW

GEI PROJECT NO.

2201593

PAGE NO. 4 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

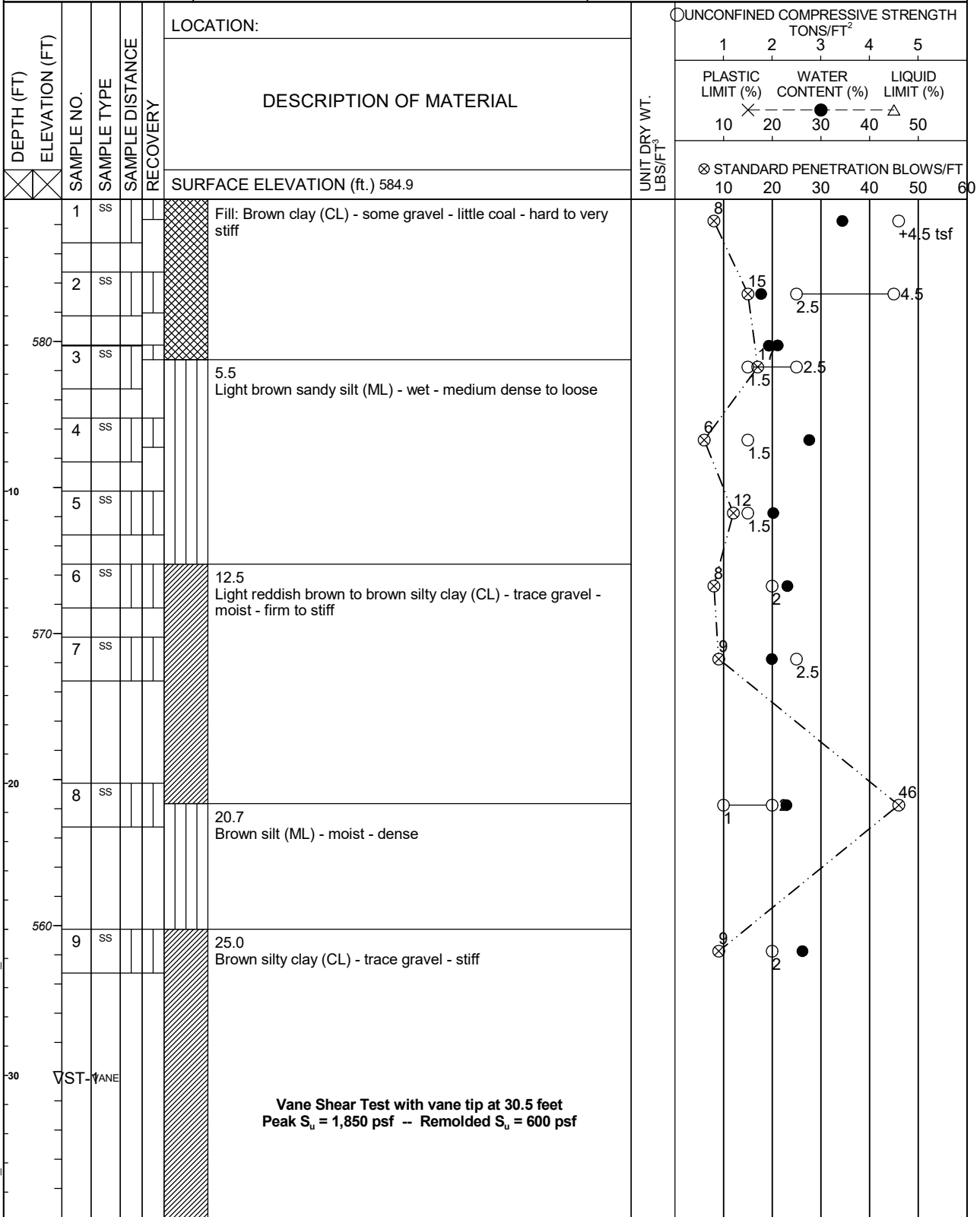
Brown County Purchasing

LOG OF BORING NUMBER **BL-10-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



WATER LEVEL:

BORING STARTED

12/7/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED

12/15/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

576,061.253

EASTING

101,633.175

RIG/FOREMAN

D-50 / JW

GEI PROJECT NO.

2201593

PAGE NO. 1 OF 5

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

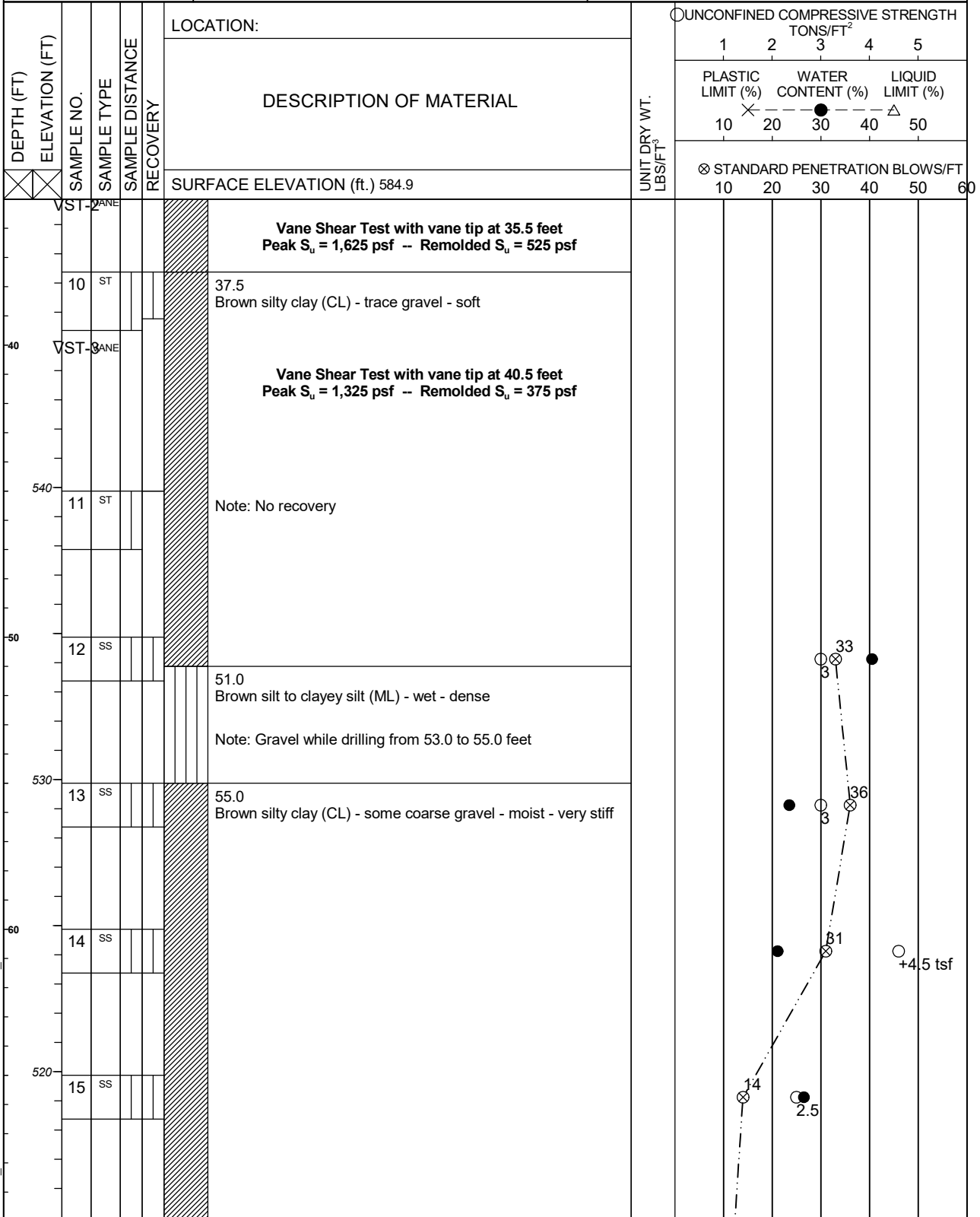
Brown County Purchasing

LOG OF BORING NUMBER **BL-10-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:	BORING STARTED 12/7/2022		GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/15/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 576,061.253	EASTING 101,633.175		GEI PROJECT NO. 2201593	PAGE NO. 2 OF 5

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

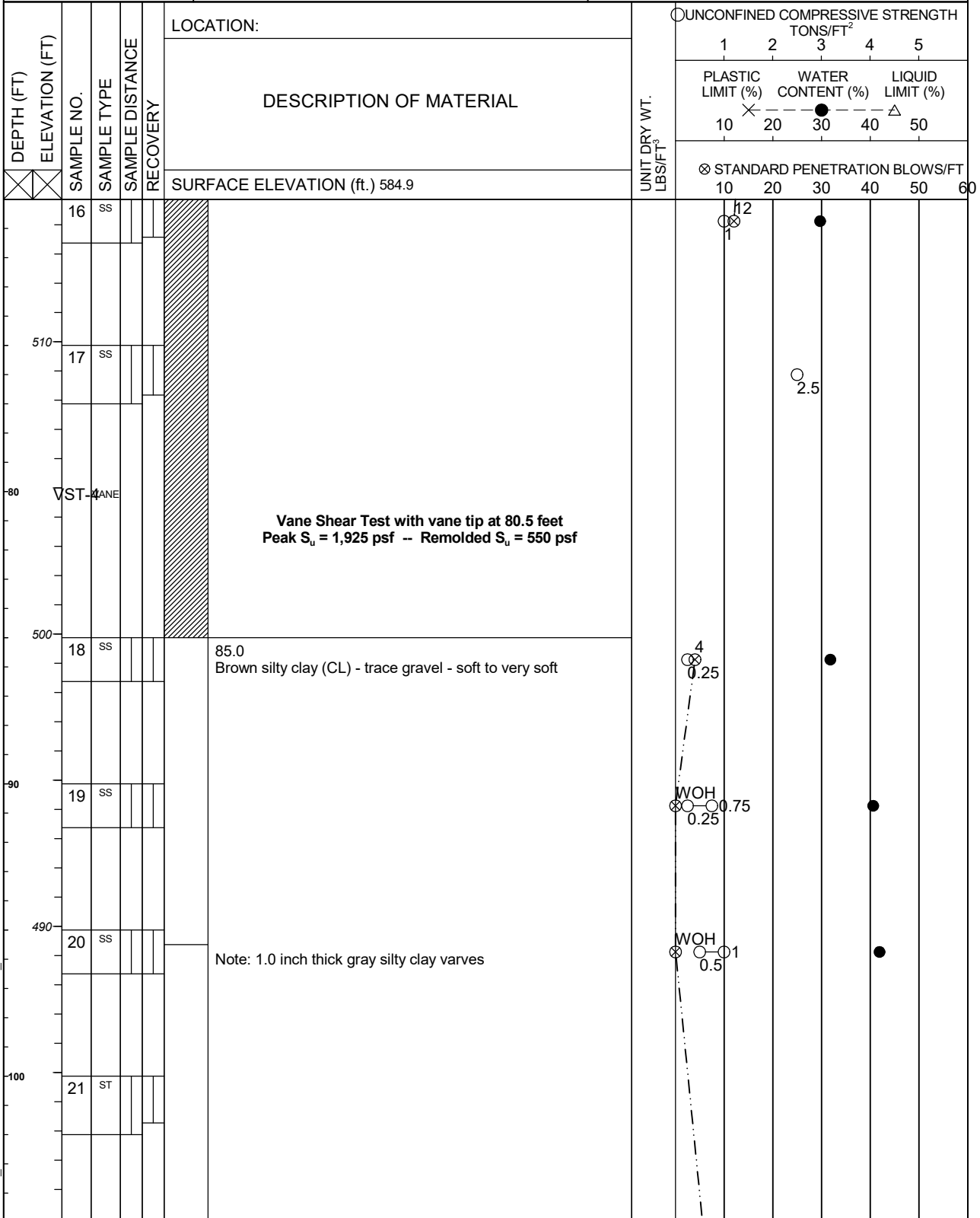


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-10-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:

BORING STARTED
12/7/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED
12/15/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

576,061.253

EASTING

101,633.175

RIG/FOREMAN
D-50 / JW

GEI PROJECT NO.

2201593

PAGE NO. 3 OF 5

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



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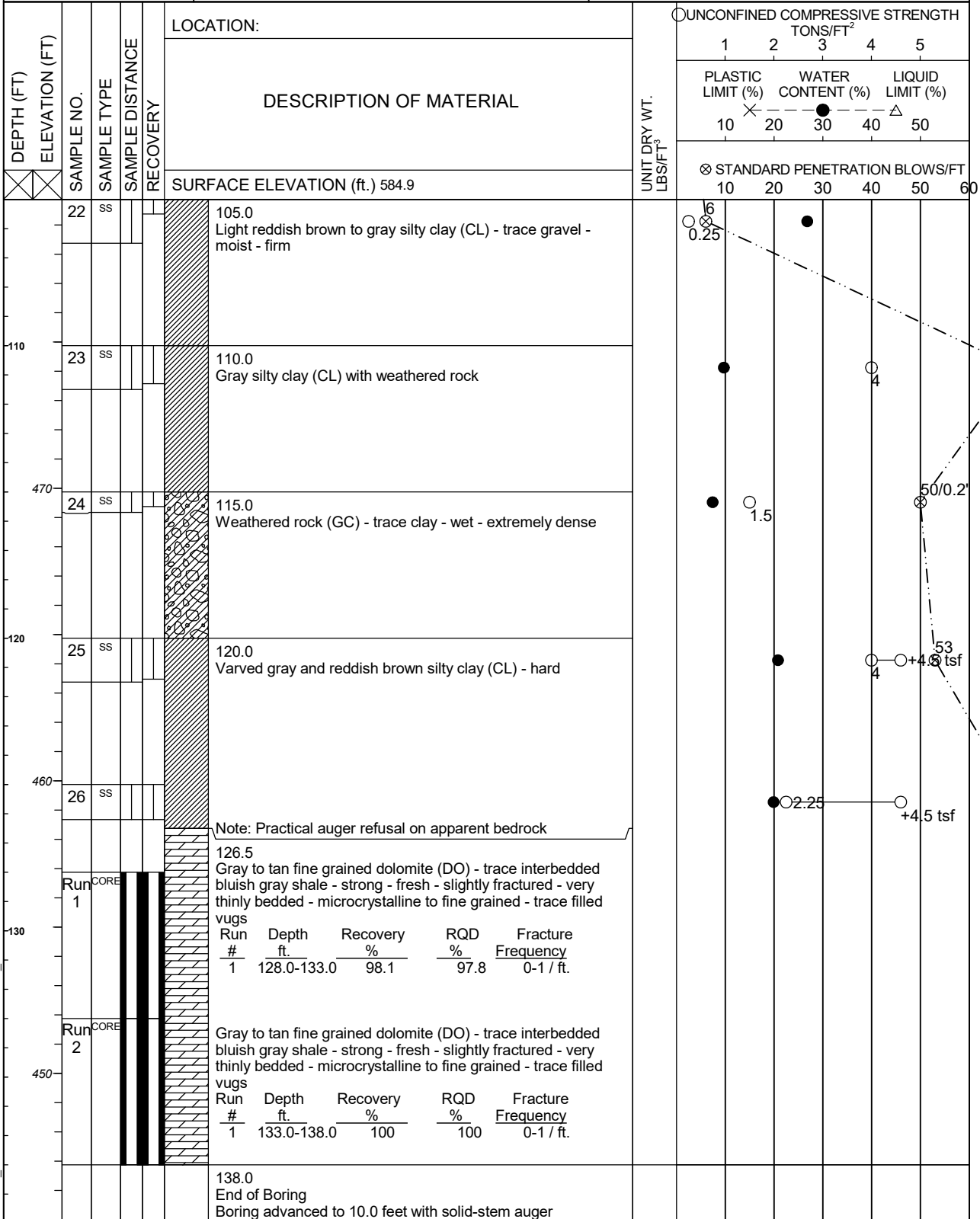
Brown County Purchasing

LOG OF BORING NUMBER **BL-10-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:

BORING STARTED

12/7/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED

12/15/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

576,061.253

EASTING

101,633.175

RIG/FOREMAN

D-50 / JW

GEI PROJECT NO.

2201593

PAGE NO. 4 OF 5

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-10-22**

ARCHITECT-ENGINEER

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	LOCATION:	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT ³	○ UNCONFINED COMPRESSIVE STRENGTH TONS/FT ²						
						1			2	3	4	5			
										PLASTIC LIMIT (%)	WATER CONTENT (%)		LIQUID LIMIT (%)		
										10	20	30	40	50	
										⊗ STANDARD PENETRATION BLOWS/FT					
										10	20	30	40	50	60
							Boring advanced from 10.0 to 138.0 feet with rock bit and drilling fluid HW casing driven to 128.0 feet Boring advanced from 128.0 to 138.0 feet with diamond coring wireline Boring backfilled with bentonite chips (1 bag) and bentonite grout mix (160 gallons)								
440															
150															
430															
160															
420															
170															

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:		BORING STARTED 12/7/2022	GEI OFFICE Green Bay, WI	
		BORING COMPLETED 12/15/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,061.253	EASTING 101,633.175	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593	
		PAGE NO. 5 OF 5		

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23



ARCHITECT-ENGINEER

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI OFFICE		Green Bay, WI	
ENTERED BY AKL		APPROVED BY SN	
GEI PROJECT NO. 2201593		PAGE NO. 1 OF 3	

GEI

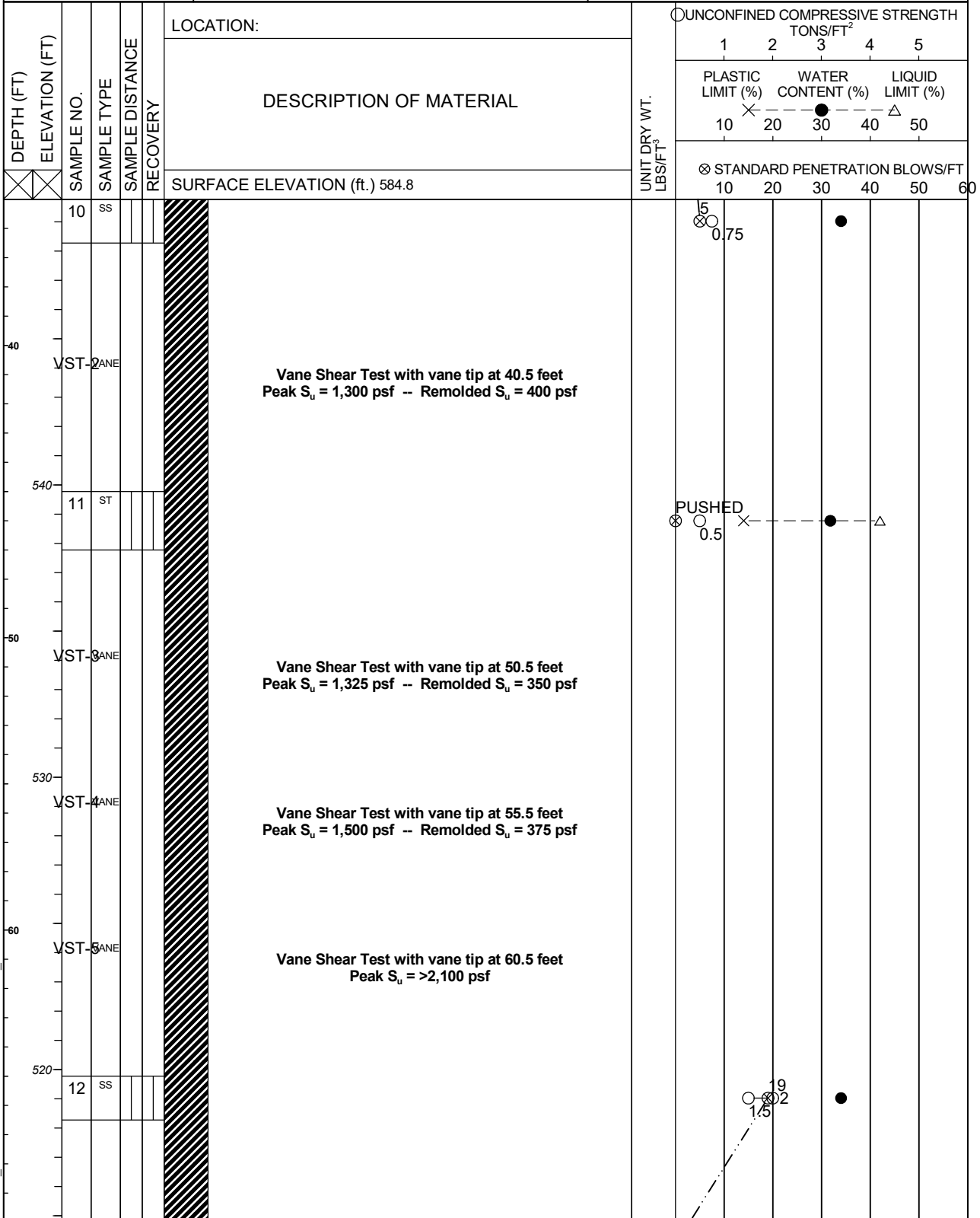


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-11-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 6.0 ft BCI	BORING STARTED 11/15/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/15/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,470.261	EASTING 101,791.132	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 2 OF 3	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

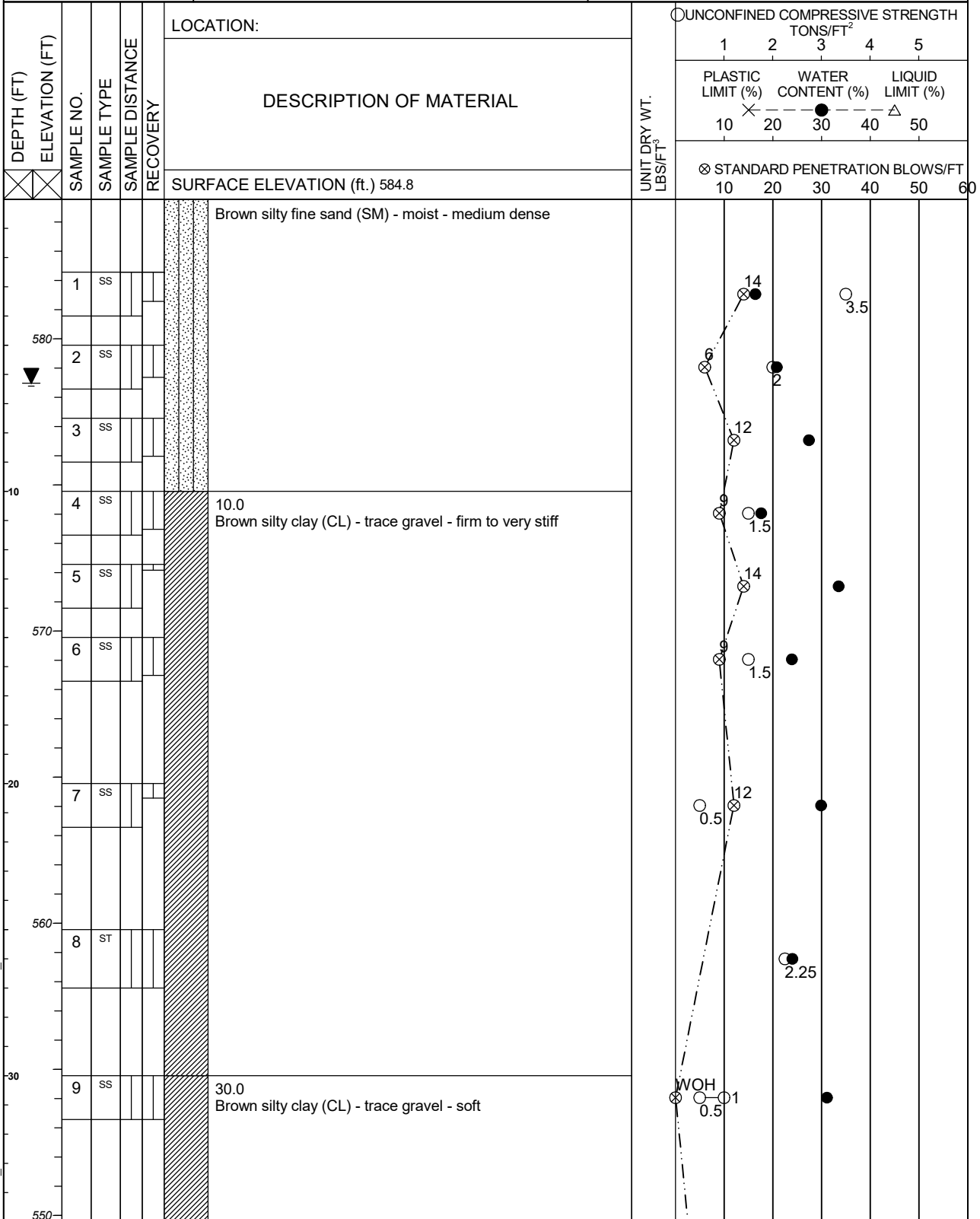


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-12-22**

ARCHITECT-ENGINEER



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	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/11/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,740.713	EASTING 101,893.117	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 1 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

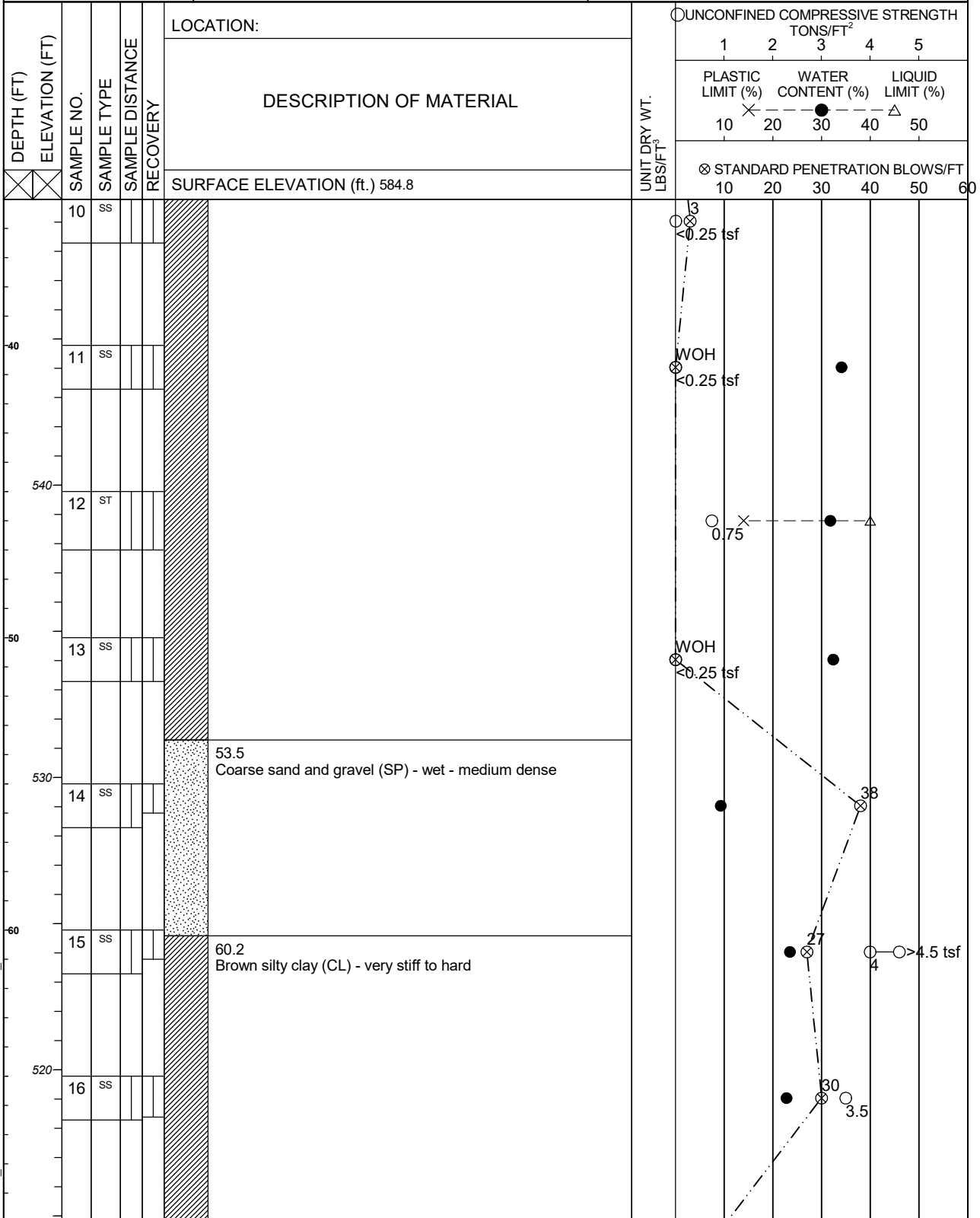
GEI



CLIENT:
Brown County Purchasing
PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-12-22**

ARCHITECT-ENGINEER



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		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 11/11/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 576,740.713	EASTING 101,893.117	RIG/FOREMAN D-50 / JW		GEI PROJECT NO. 2201593	
				PAGE NO. 2 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

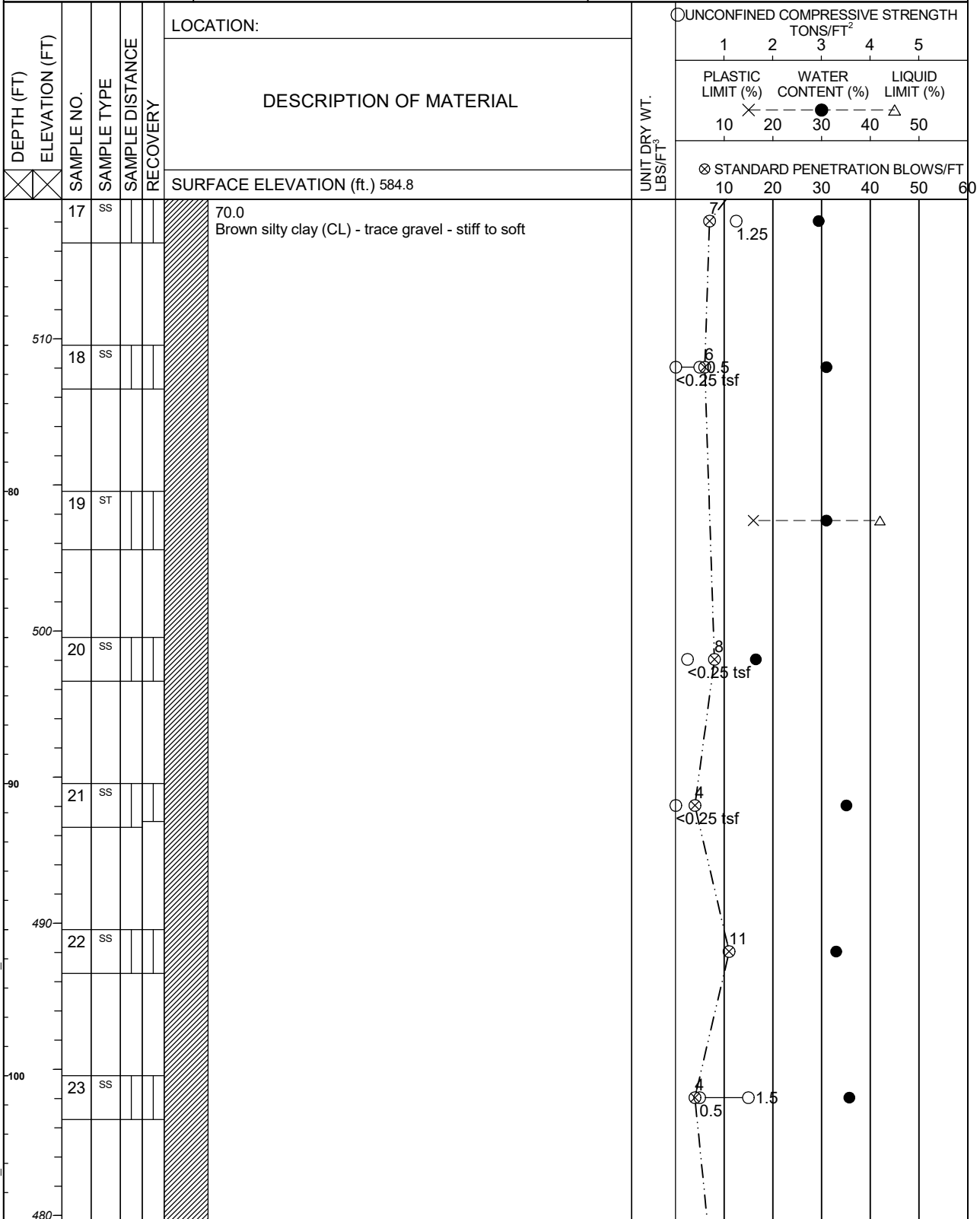


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-12-22**

ARCHITECT-ENGINEER



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	GEI OFFICE Green Bay, WI		
		BORING COMPLETED 11/11/2022	ENTERED BY AKL	APPROVED BY SN	
NORTHING 576.740.713	EASTING 101.893.117	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593		PAGE NO. 3 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

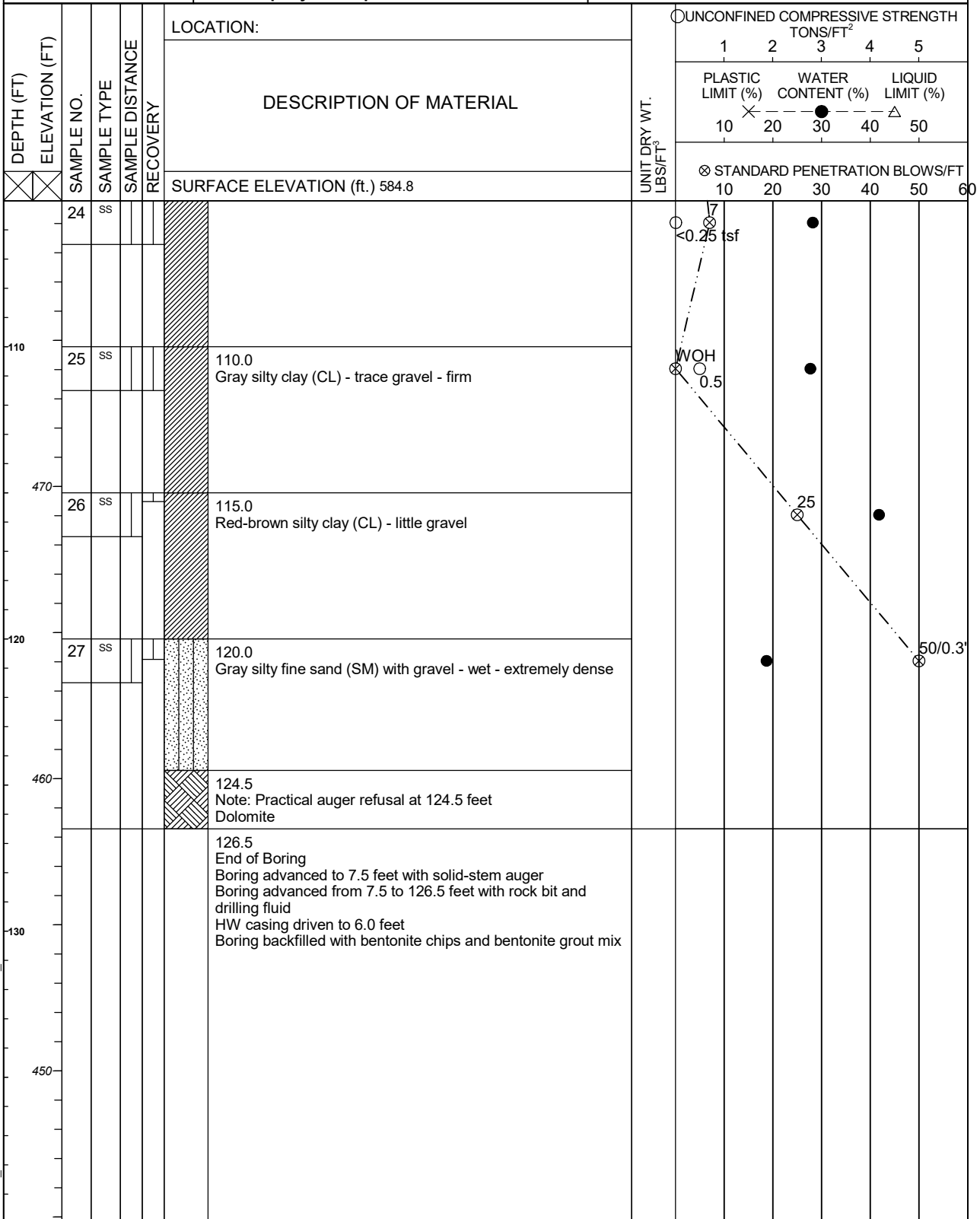


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-12-22**

ARCHITECT-ENGINEER



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		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 11/11/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 576.740.713	EASTING 101.893.117	RIG/FOREMAN D-50 / JW		GEI PROJECT NO. 2201593	
				PAGE NO. 4 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

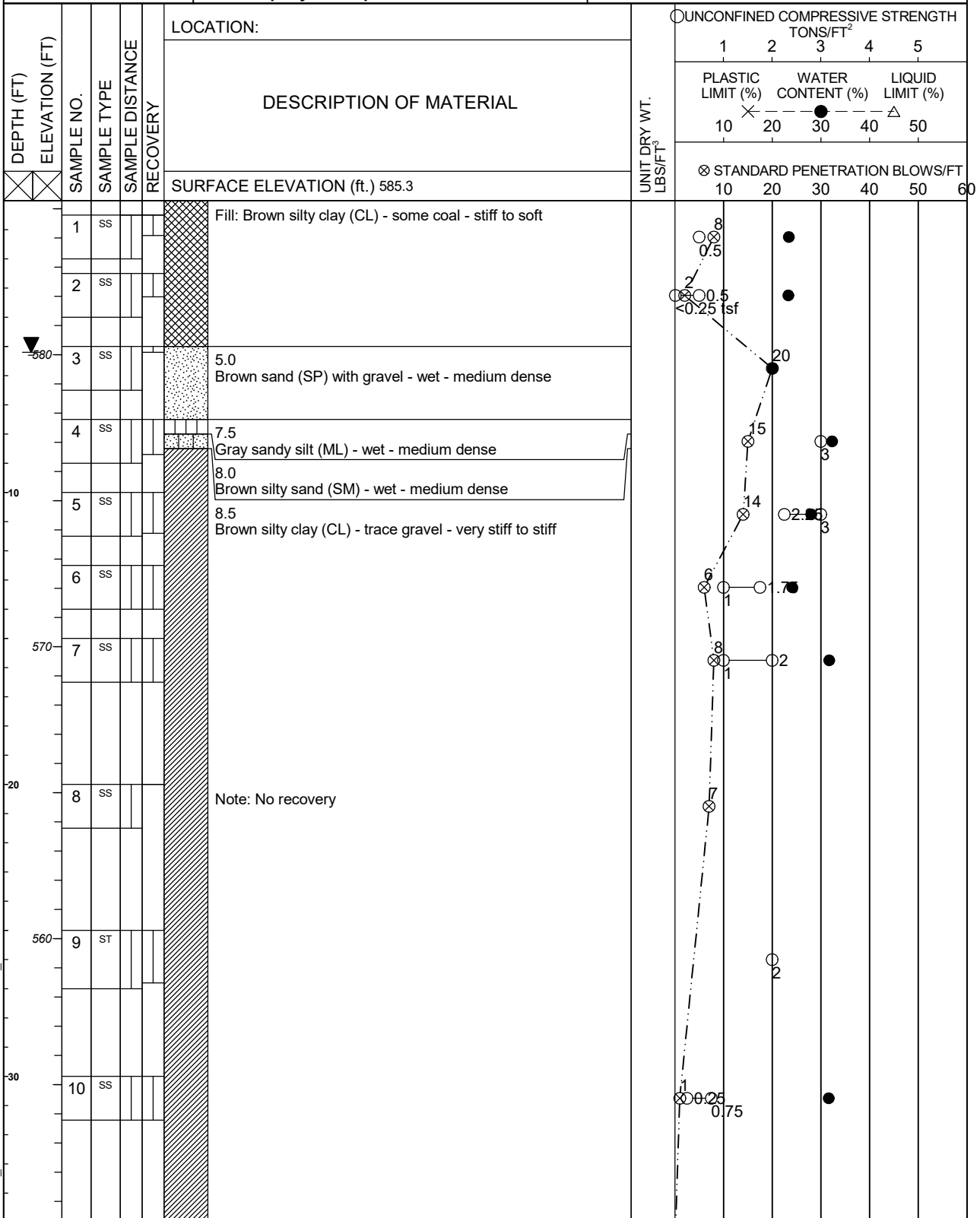
Brown County Purchasing

LOG OF BORING NUMBER **BL-13-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.2 ft BCI

BORING STARTED

12/21/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED

12/22/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

575,458.400

EASTING

101,477.318

RIG/FOREMAN

D-50 / JW

GEI PROJECT NO.

2201593

PAGE NO. 1 OF 3

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

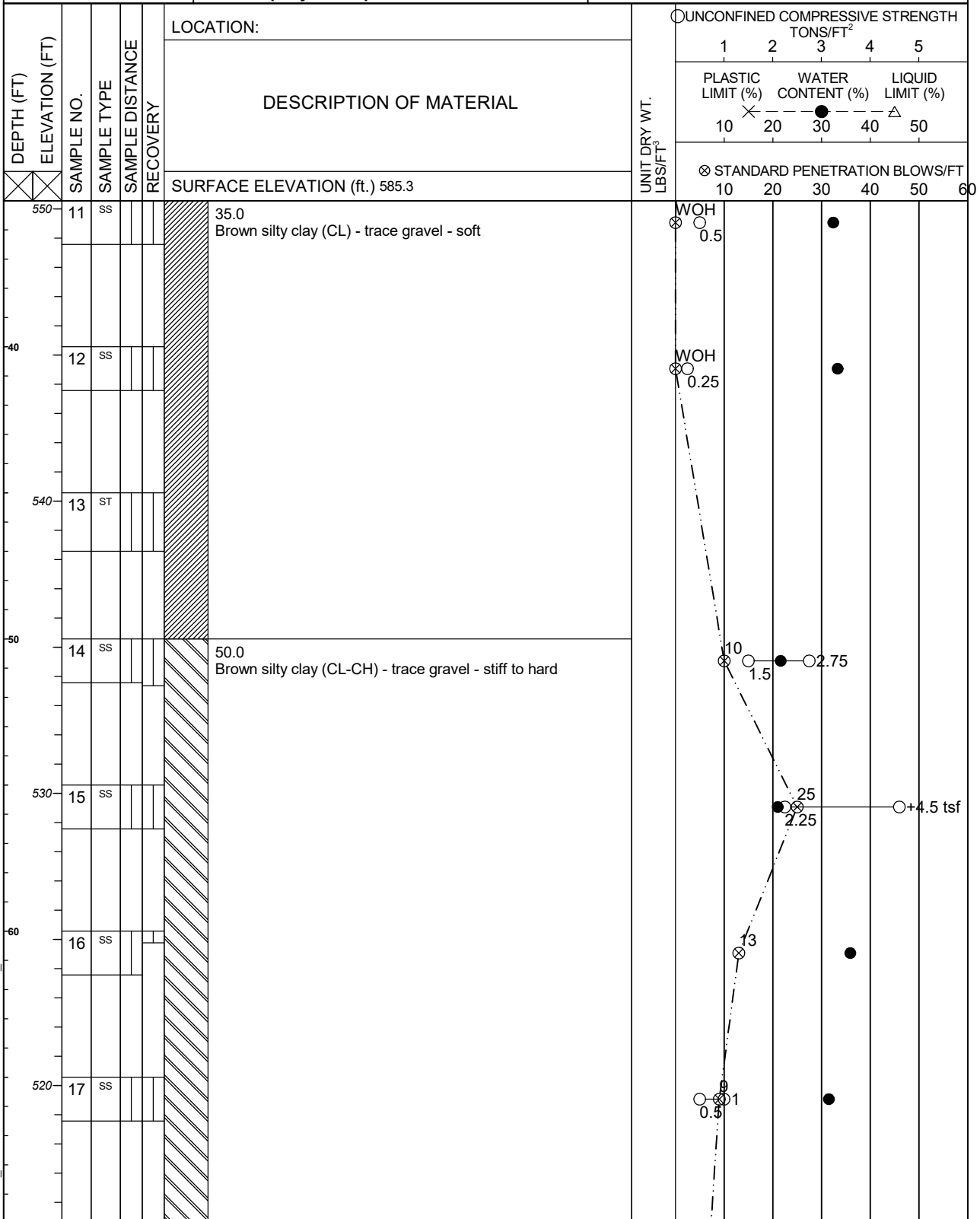


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-13-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.2 ft BCI

BORING STARTED
12/21/2022

GEI OFFICE
Green Bay, WI

BORING COMPLETED
12/22/2022

ENTERED BY
AKL

APPROVED BY
SN

NORTHING
575,458.400

EASTING
101,477.318

RIG/FOREMAN
D-50 / JW

GEI PROJECT NO.
2201593

PAGE NO. 2 OF 3

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

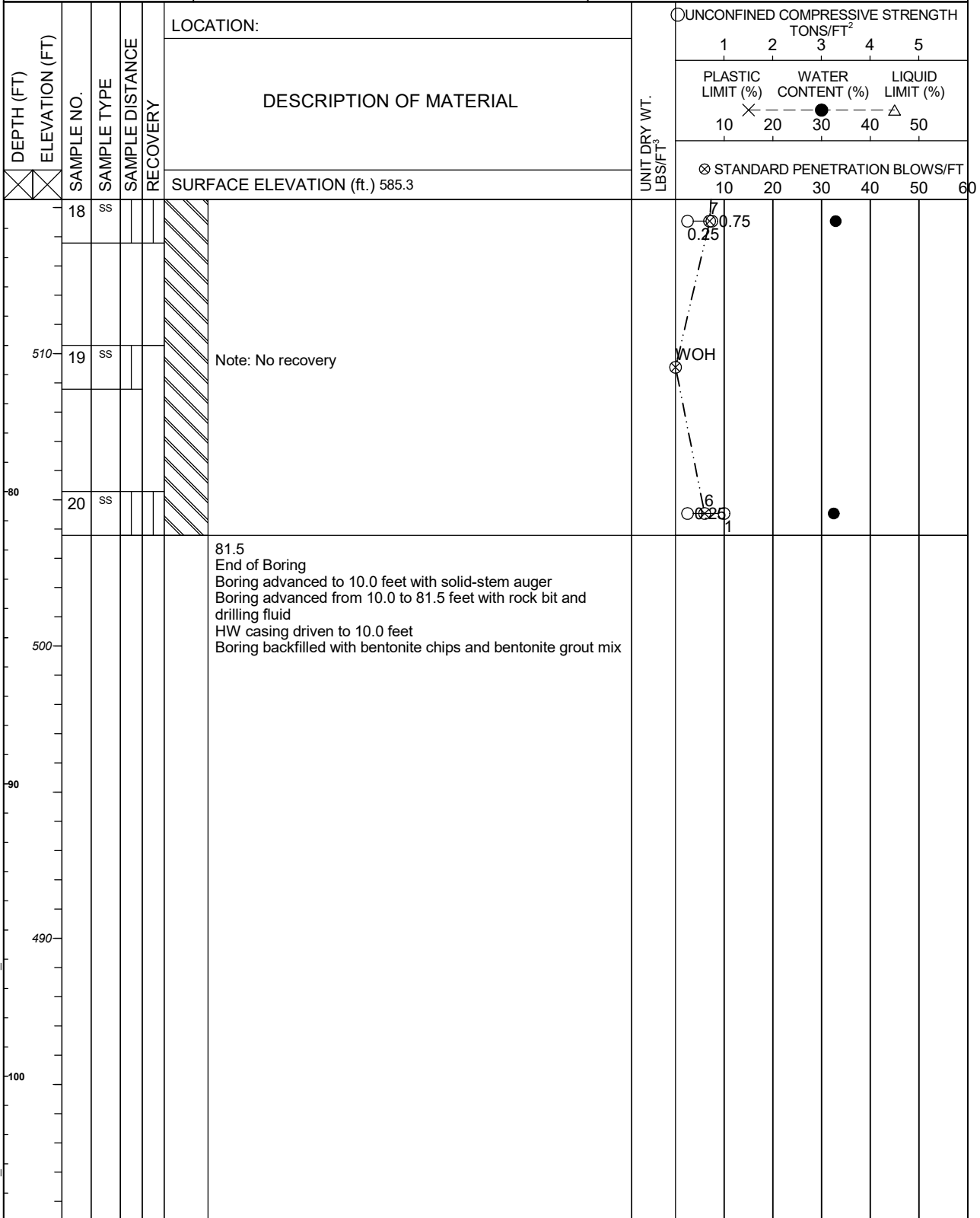


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-13-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.2 ft BCI	BORING STARTED 12/21/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 12/22/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 575,458.400	EASTING 101,477.318	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 3 OF 3	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

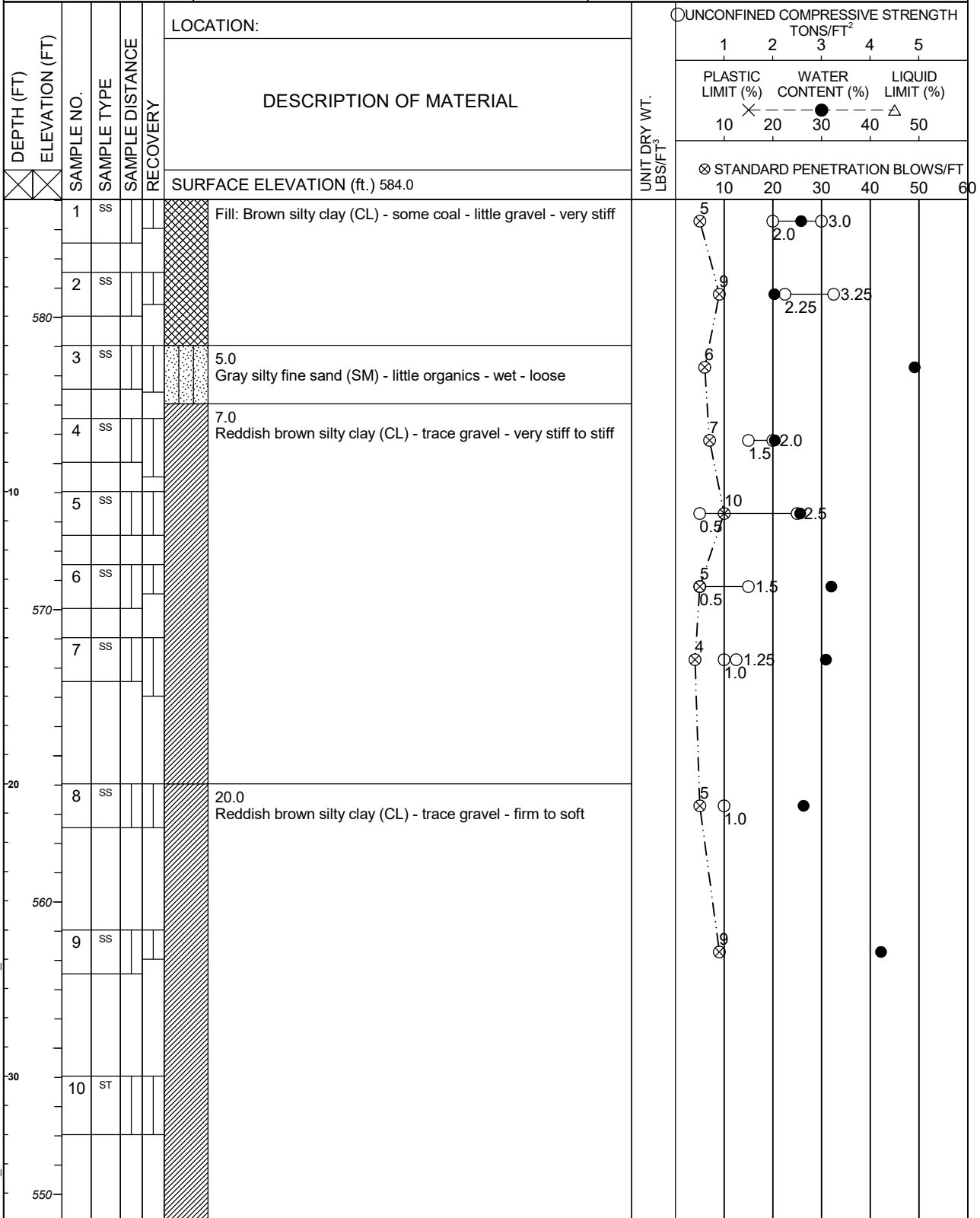


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-14-22**

ARCHITECT-ENGINEER

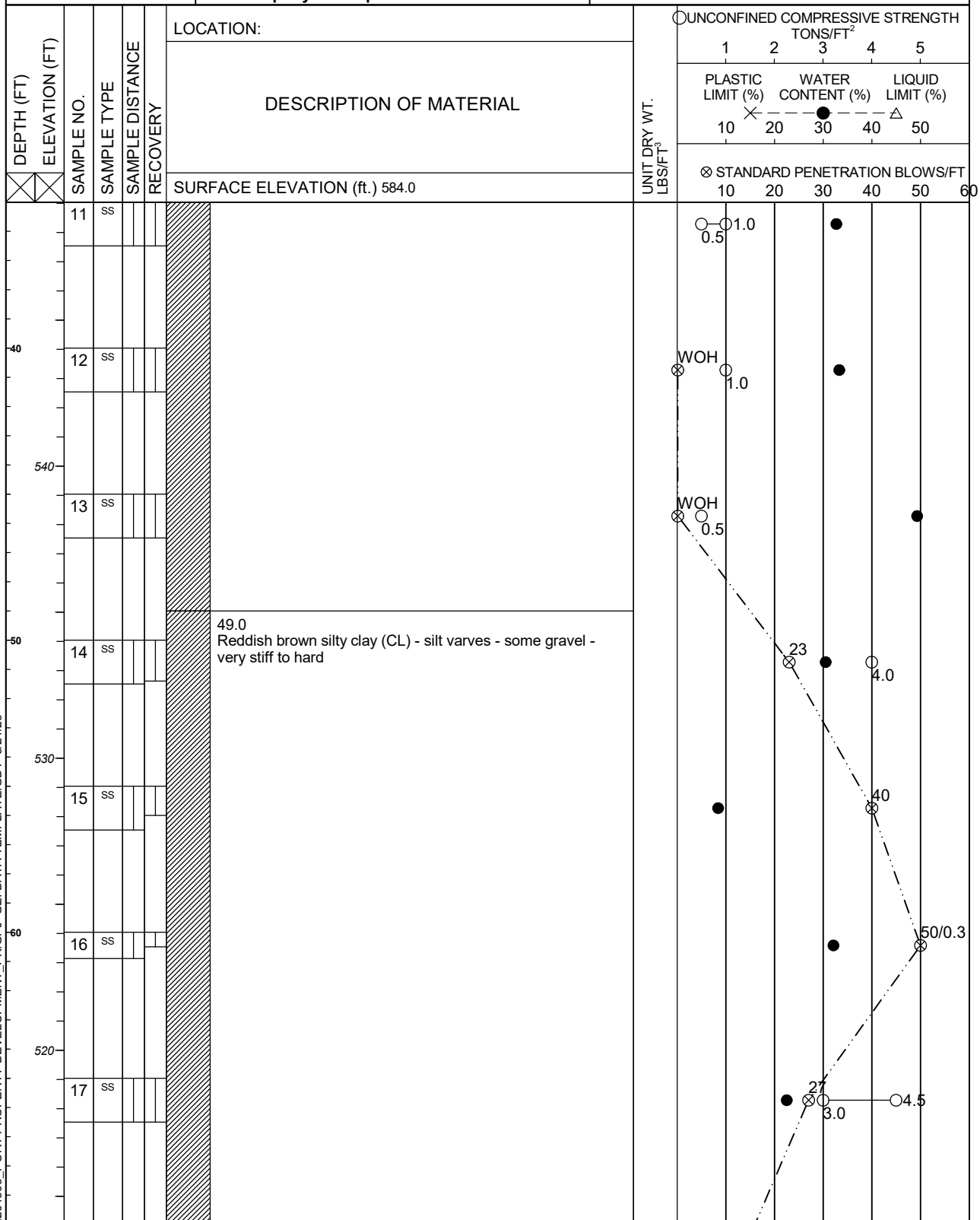


The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.0 ft BCI		BORING STARTED 12/30/2022	GEI OFFICE Green Bay, WI	
		BORING COMPLETED 1/13/2023	ENTERED BY CAH	APPROVED BY SN
NORTHING 575,843.210	EASTING 101,759.370	RIG/FOREMAN D-120 / DJM	GEI PROJECT NO. 2201593	PAGE NO. 1 OF 3

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

CLIENT: Brown County Purchasing	LOG OF BORING NUMBER BL-14-22
PROJECT NAME: Port Property Developments	ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.0 ft BCI		BORING STARTED 12/30/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 1/13/2023		ENTERED BY CAH APPROVED BY SN	
NORTHING 575.843.210	EASTING 101.759.370	RIG/FOREMAN D-120 / DJM		GEI PROJECT NO. 2201593 PAGE NO. 2 OF 3	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

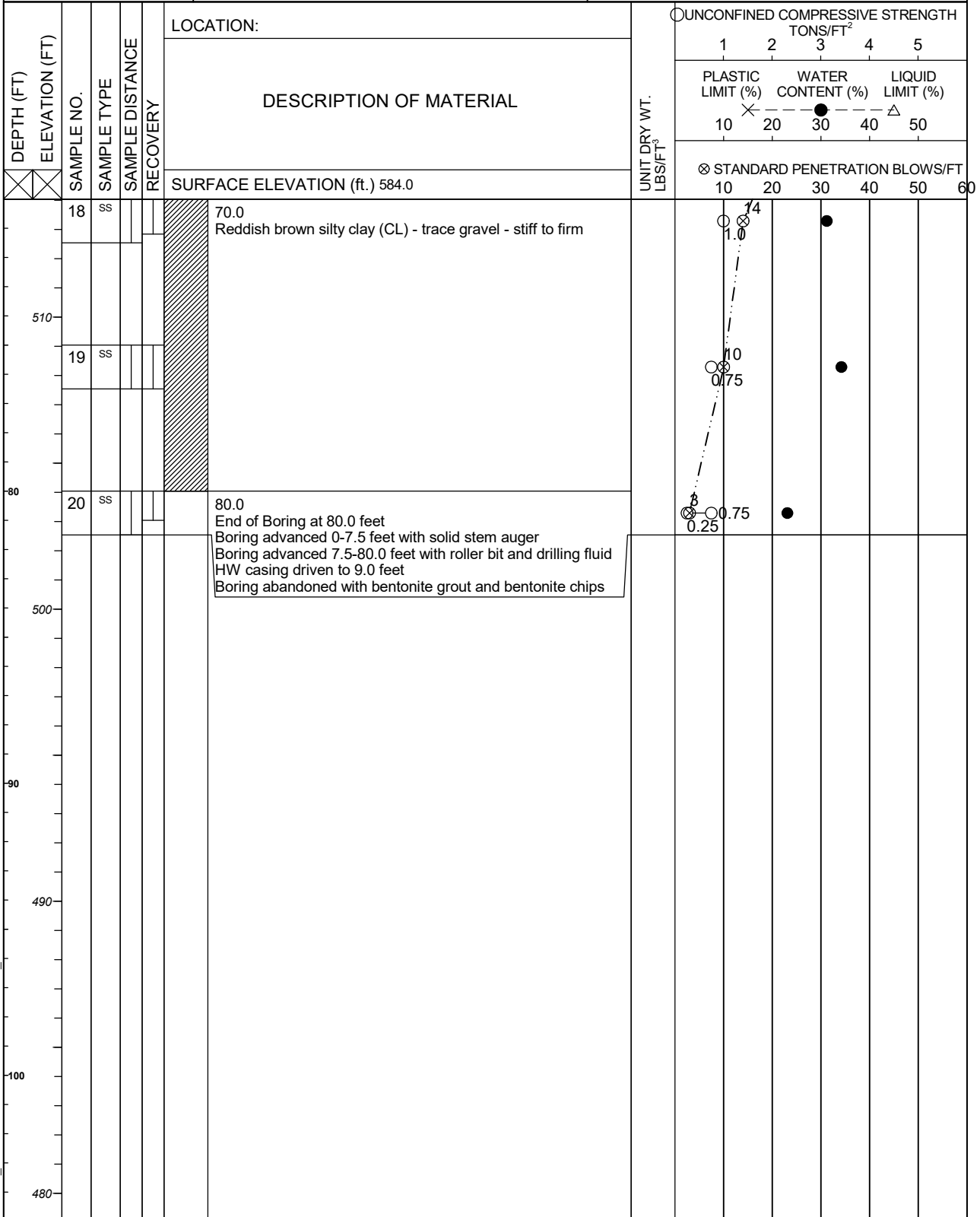
Brown County Purchasing

LOG OF BORING NUMBER **BL-14-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 5.0 ft BCI		BORING STARTED 12/30/2022	GEI OFFICE Green Bay, WI	
		BORING COMPLETED 1/13/2023	ENTERED BY CAH	APPROVED BY SN
NORTHING 575,843.210	EASTING 101,759.370	RIG/FOREMAN D-120 / DJM	GEI PROJECT NO. 2201593	PAGE NO. 3 OF 3

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

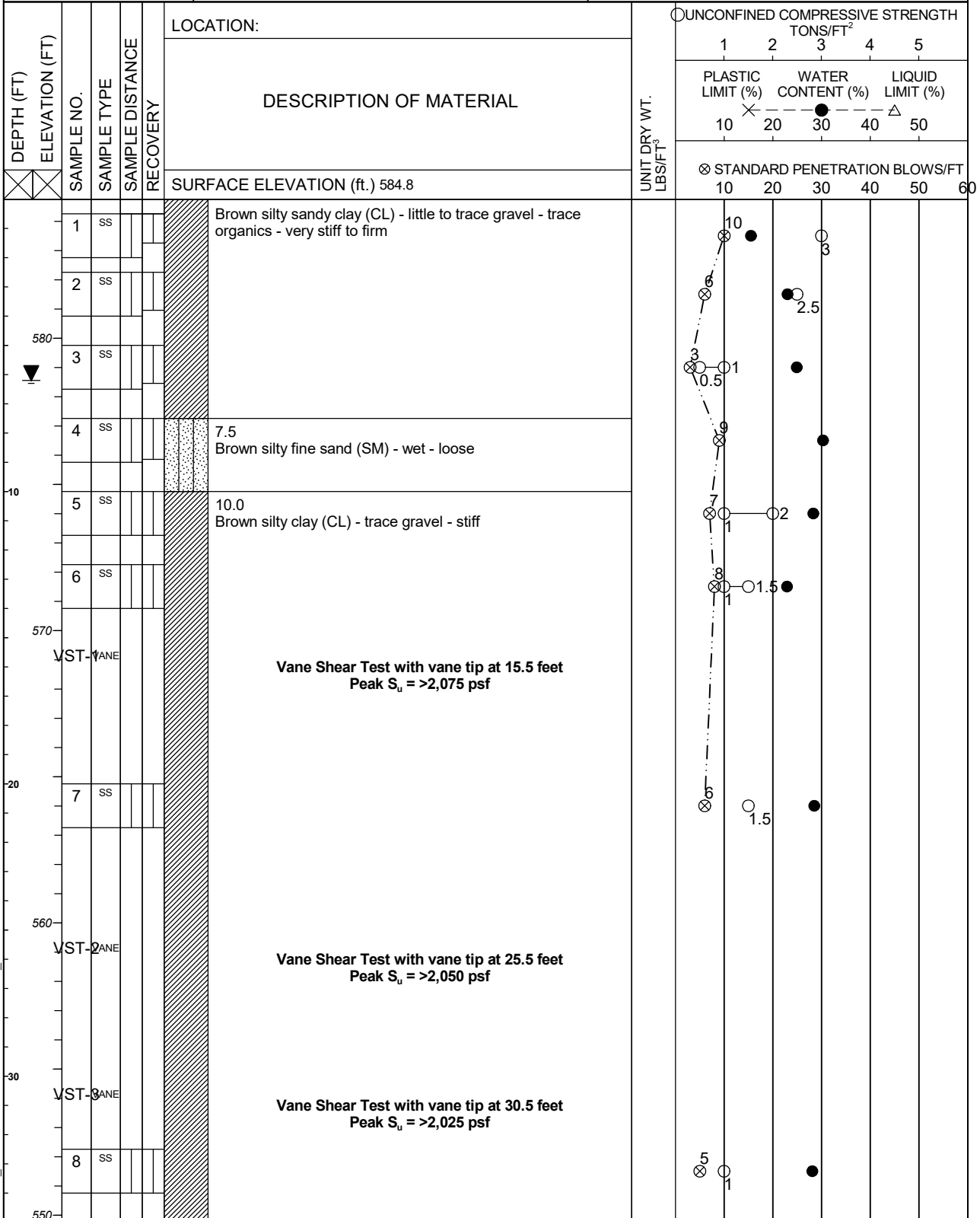


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-15-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 6.2 ft BCI	BORING STARTED 11/16/2022	GEI OFFICE Green Bay, WI	
	BORING COMPLETED 11/17/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,372.821	EASTING 101,967.695	RIG/FOREMAN D-50 / JW	GEI PROJECT NO. 2201593
		PAGE NO. 1 OF 3	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

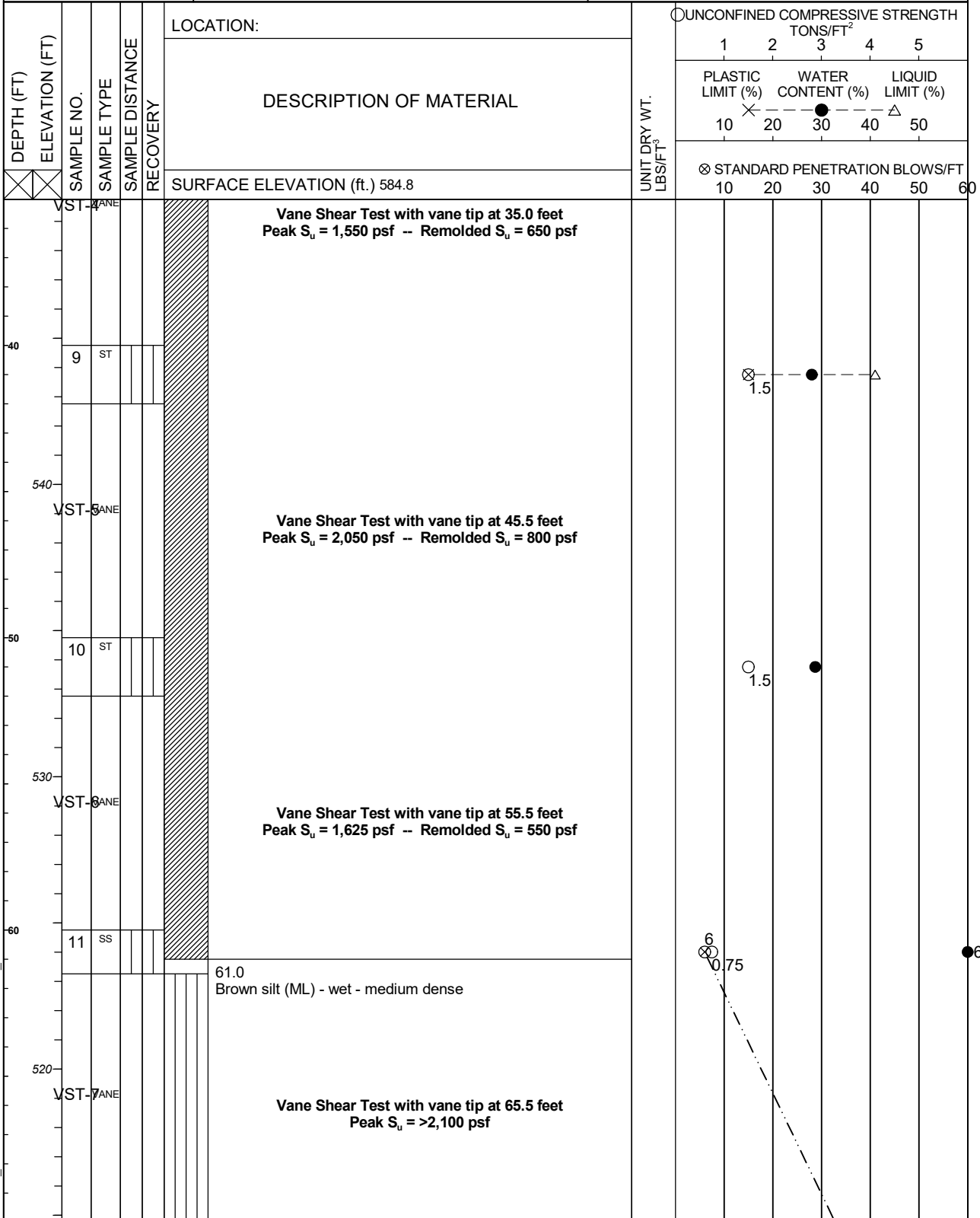


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BL-15-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 6.2 ft BCI

BORING STARTED
11/16/2022

GEI OFFICE
Green Bay, WI

BORING COMPLETED
11/17/2022

ENTERED BY
AKL

APPROVED BY
SN

NORTHING
576,372.821

EASTING
101,967.695

RIG/FOREMAN
D-50 / JW

GEI PROJECT NO.
2201593

PAGE NO. 2 OF 3

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

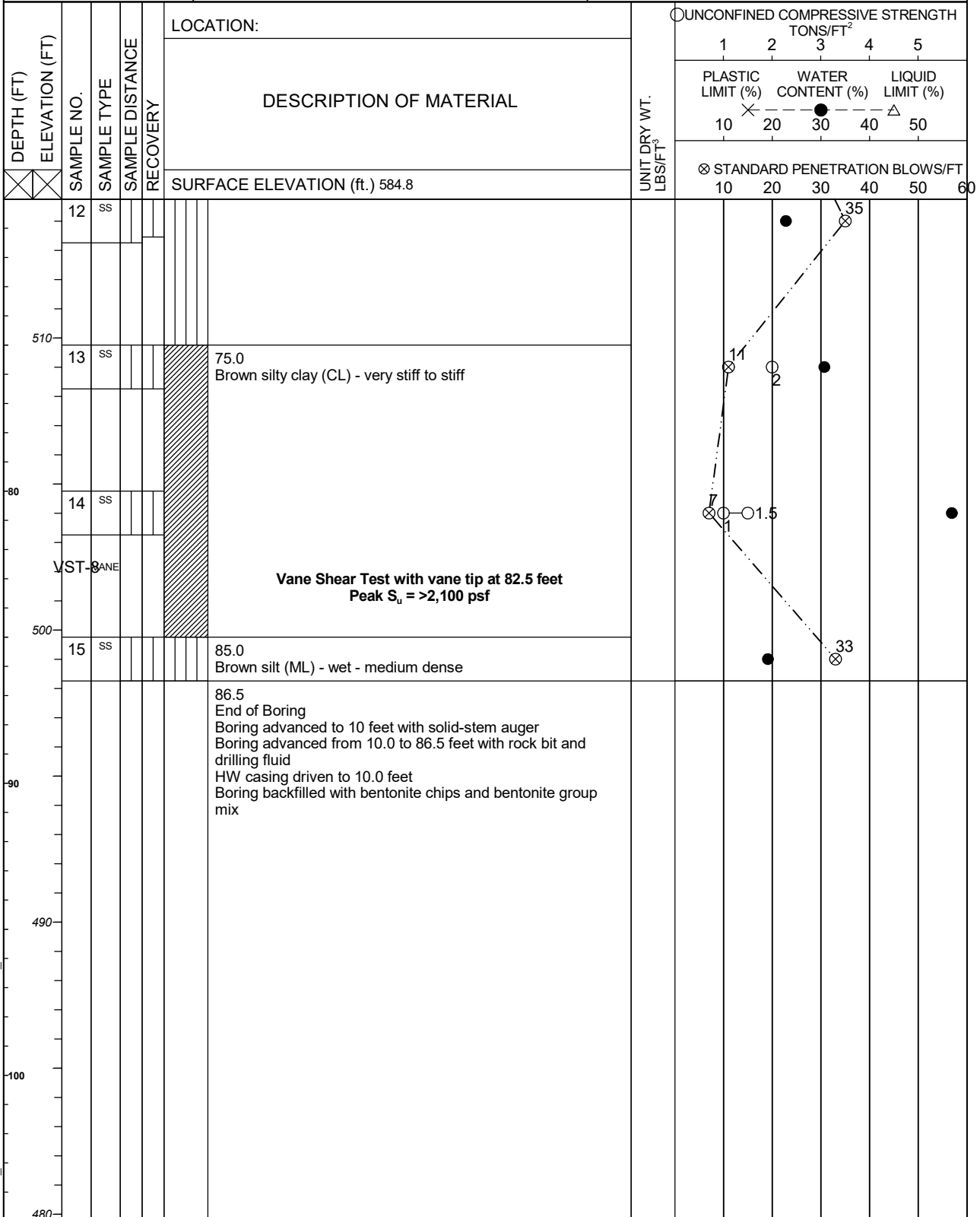
Brown County Purchasing

LOG OF BORING NUMBER **BL-15-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL: Groundwater observed at 6.2 ft BCI

BORING STARTED
11/16/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED
11/17/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING
576,372.821EASTING
101,967.695RIG/FOREMAN
D-50 / JWGEI PROJECT NO.
2201593

PAGE NO. 3 OF 3

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

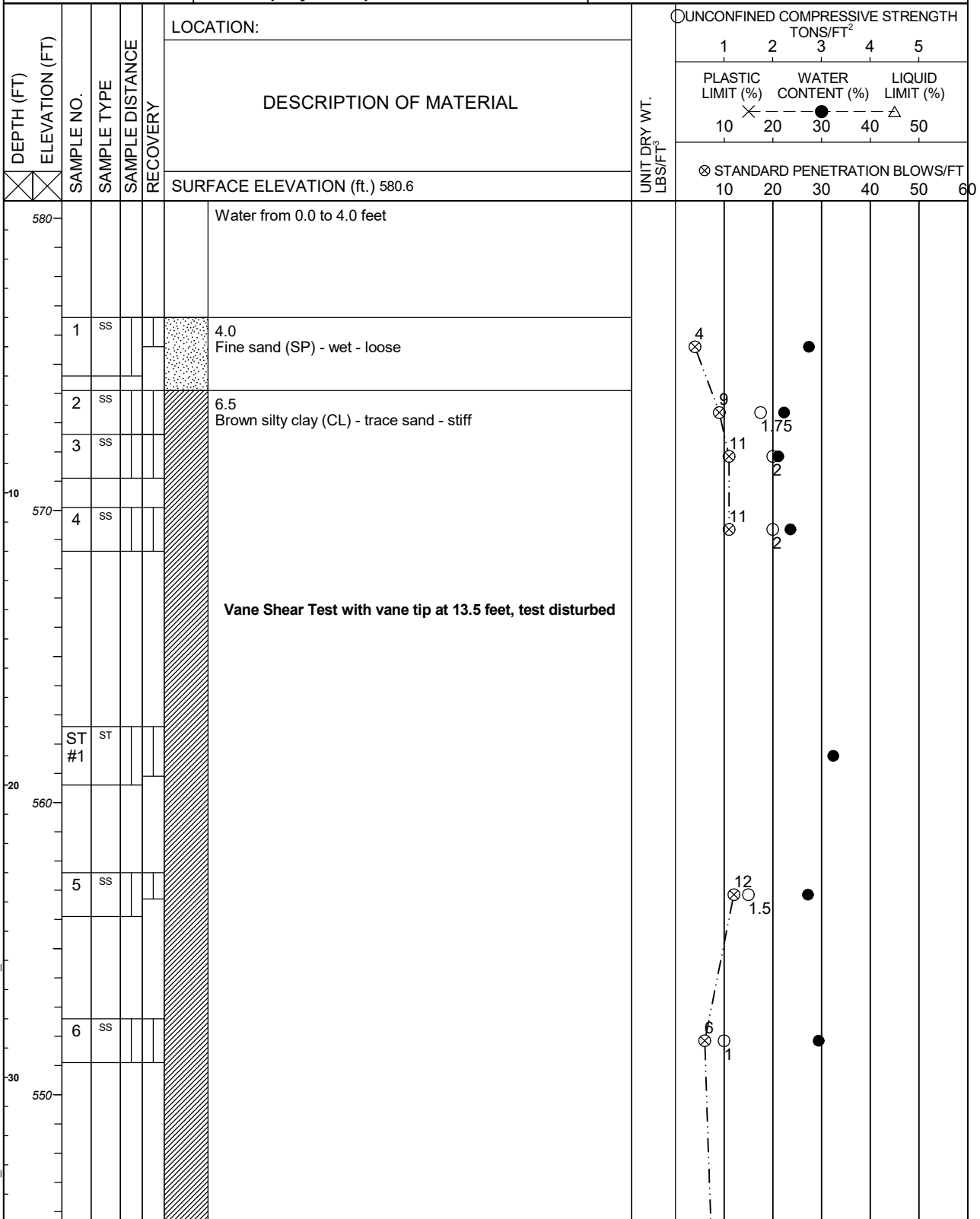


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BW-1-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:

BORING STARTED
7/19/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED
7/21/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

577,080.964

EASTING

101,937.738

RIG/FOREMAN
D-120 / JC

GEI PROJECT NO.

2201593

PAGE NO. 1 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23



Consultants

CLIENT:

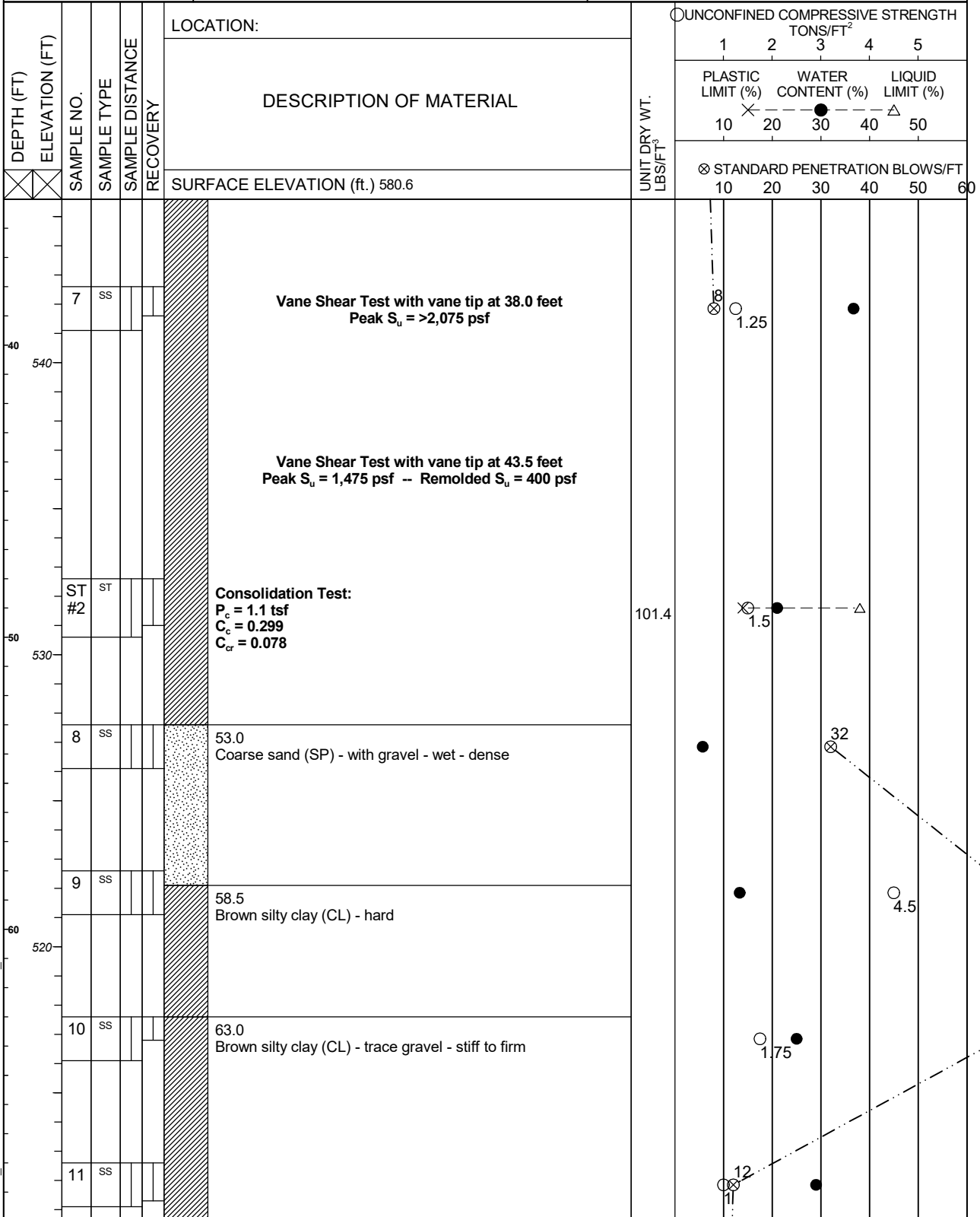
Brown County Purchasing

PROJECT NAME:

Port Property Developments

LOG OF BORING NUMBER **BW-1-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:

BORING STARTED

7/19/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED

7/21/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

577,080.964

EASTING

101,937.738

RIG/FOREMAN

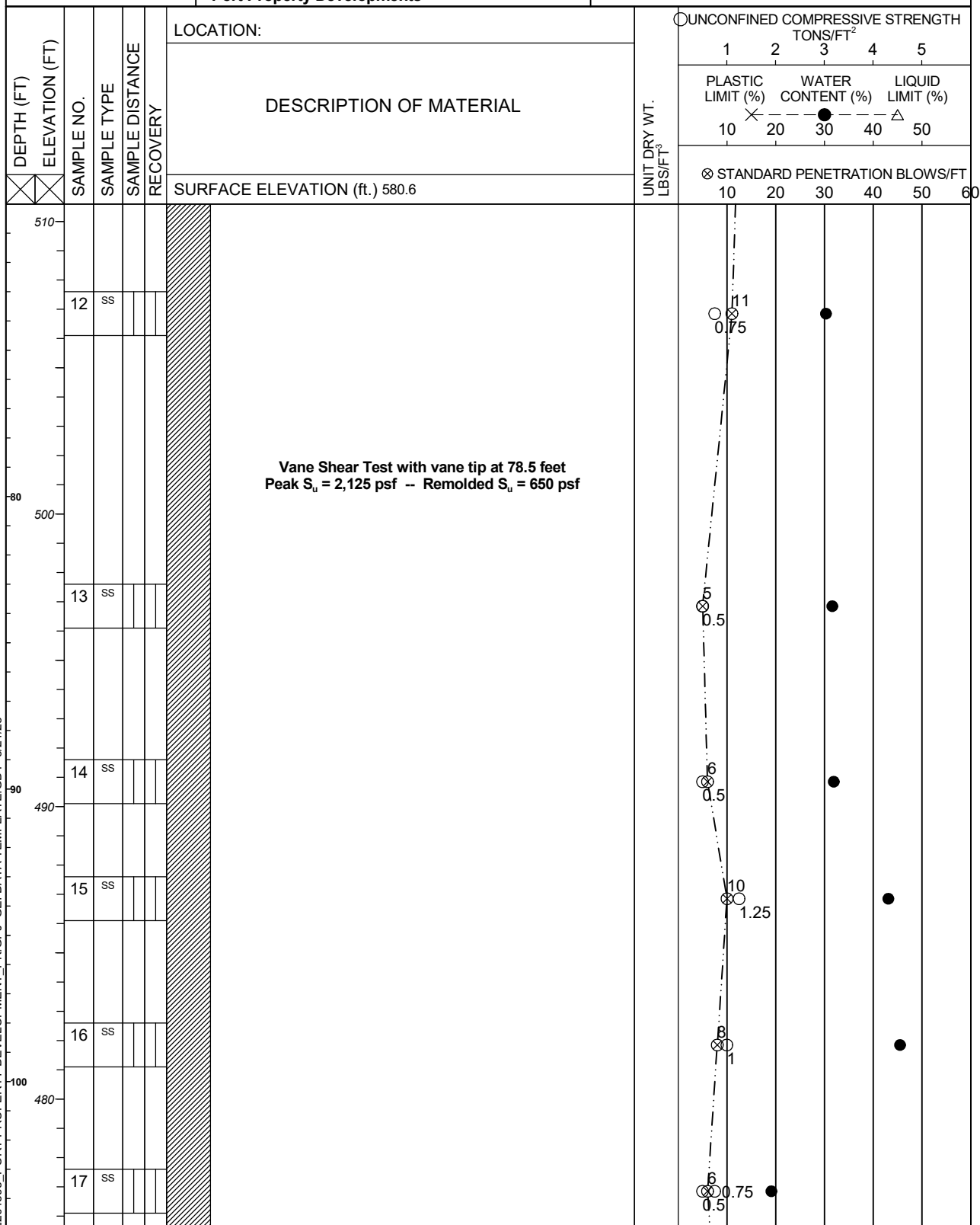
D-120 / JC

GEI PROJECT NO.

2201593

PAGE NO. 2 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:		BORING STARTED 7/19/2022	GEI OFFICE Green Bay, WI	
		BORING COMPLETED 7/21/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 577,080.964	EASTING 101,937.738	RIG/FOREMAN D-120 / JC	GEI PROJECT NO. 2201593	PAGE NO. 3 OF 4

GEI



CLIENT:

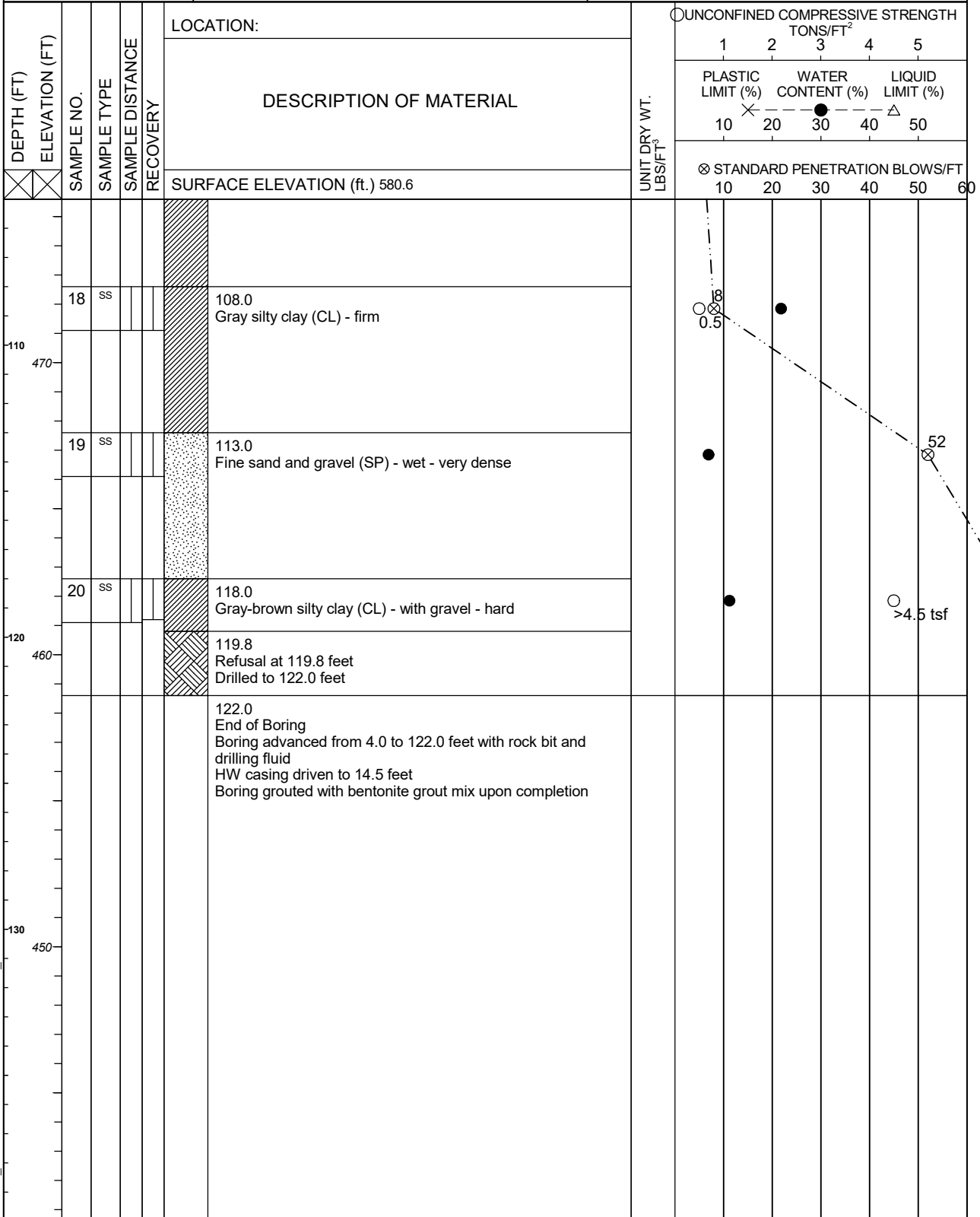
Brown County Purchasing

LOG OF BORING NUMBER **BW-1-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:

BORING STARTED

7/19/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED

7/21/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

577,080.964

EASTING

101,937.738

RIG/FOREMAN

D-120 / JC

GEI PROJECT NO.

2201593

PAGE NO. 4 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23



CLIENT:

Brown County Purchasing

PROJECT NAME:

Port Property Developments

LOG OF BORING NUMBER **BW-2-22**

ARCHITECT-ENGINEER

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	LOCATION:	UNIT DRY WT. LBS/FT ³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT ²							
						DESCRIPTION OF MATERIAL		PLASTIC LIMIT (%)	WATER CONTENT (%)	LIQUID LIMIT (%)	STANDARD PENETRATION BLOWS/FT				
SURFACE ELEVATION (ft.) 584.7						10 20 30 40 50 60									
						Water from 0.0 to 5.5 feet									
		1	SS			5.5 Dark gray silty fine sand (SP) - trace organics - wet - very loose		⊗	WoH						
		2	SS			9.0 Black organic silt (OL) - trace gravel - wet - very loose		⊗	WoH						● 117.9
		3	SS			15.0 Gray fine silty sand (SM) - trace gravel - wet - very loose		⊗	WoH						
		4	SS			20.0 Black clayey silt (ML) - wet - very loose		⊗	1						● 75.3
		5	SS					⊗	WoH						● 99.7
						Vane Shear Test with vane tip at 28.0 feet Peak S _u = 2800 psf -- Remolded S _u = 425 psf									
		ST #1	ST			33.0 Brown silty clay (CL) - very stiff to stiff Specific Gravity = 2.732 Consolidation Test: P _c = 3.3 tsf C _c = 0.251 C _{cr} = 0.064	100.5	⊗		●	⊖△ 3.25				
		6	SS					⊗	12	○	●				

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:

BORING STARTED

8/1/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED

8/4/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

576,877.670

EASTING

102,285.623

RIG/FOREMAN

D-120 / DM

GEI PROJECT NO.

2201593

PAGE NO. 1 OF 4

PAGE NO. 1 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

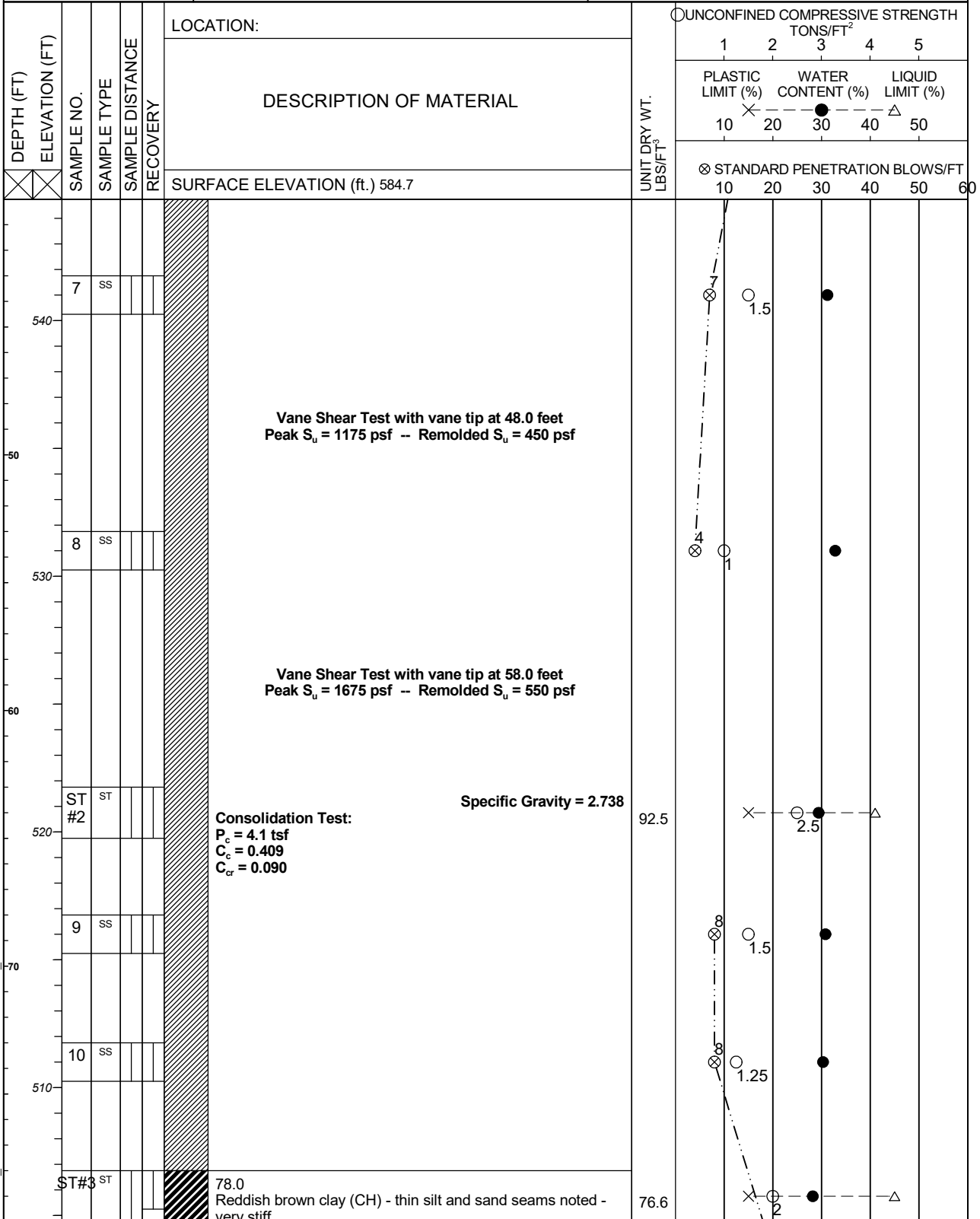


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BW-2-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:		BORING STARTED 8/1/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 8/4/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 576.877.670	EASTING 102.285.623	RIG/FOREMAN D-120 / DM		GEI PROJECT NO. 2201593	
				PAGE NO. 2 OF 4	

MIDWEST BORING LOG 2201593 - PORT PROPERTY DEVELOPMENT - PK GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

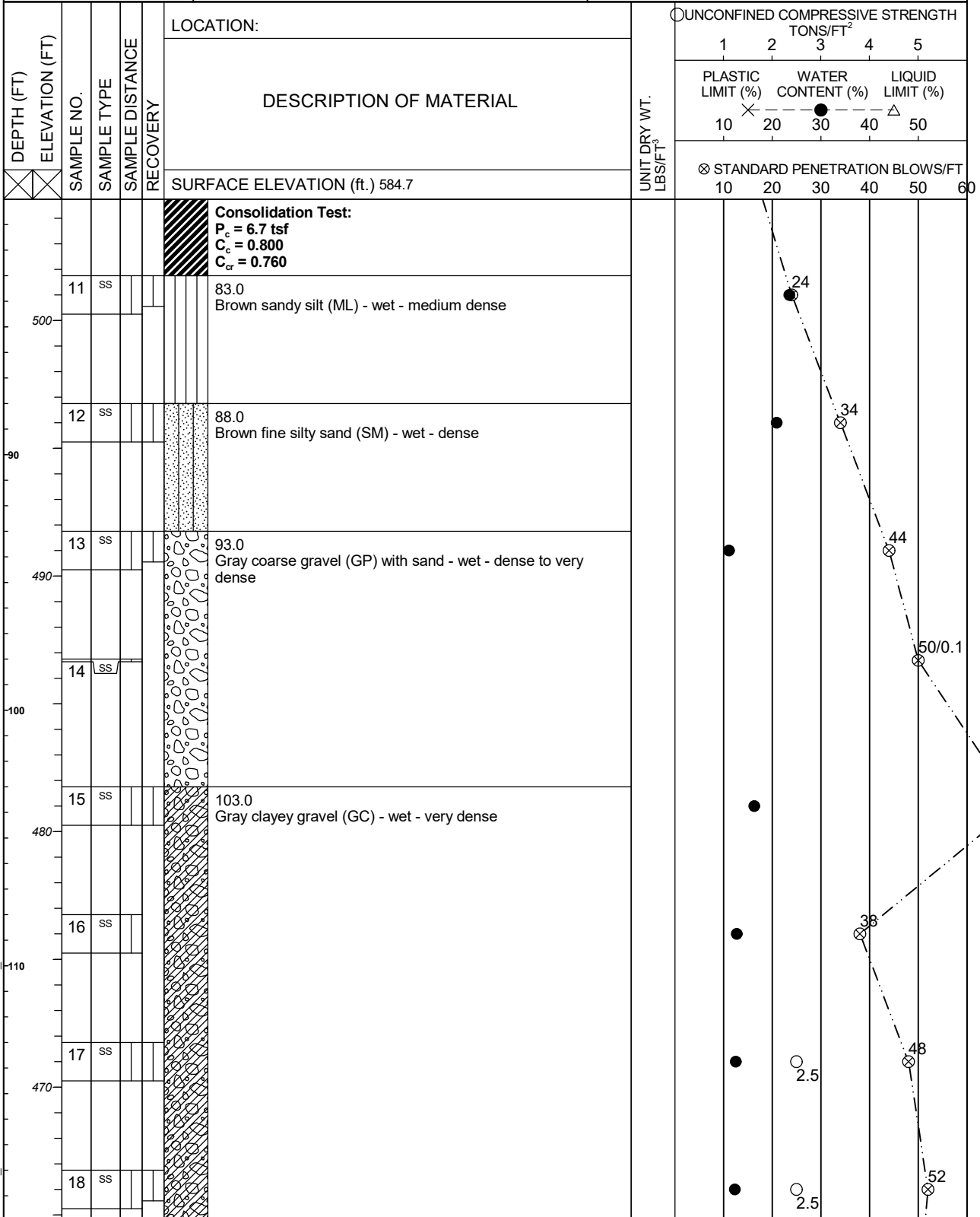
Brown County Purchasing

LOG OF BORING NUMBER **BW-2-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:

BORING STARTED

8/1/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED

8/4/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

576,877.670

EASTING

102,285.623

RIG/FOREMAN

D-120 / DM

GEI PROJECT NO.

2201593

PAGE NO. 3 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

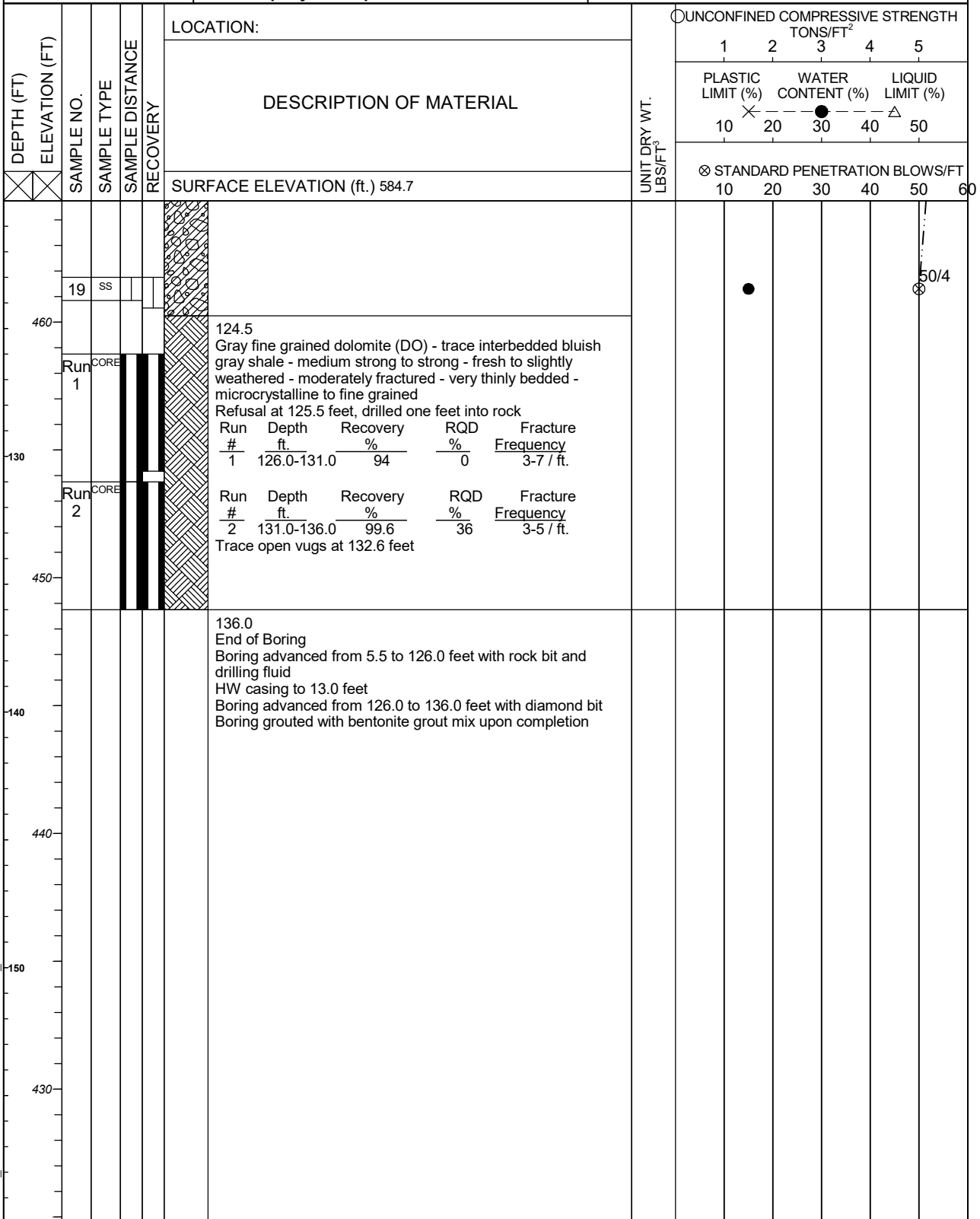


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BW-2-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:		BORING STARTED 8/1/2022	GEI OFFICE Green Bay, WI	
		BORING COMPLETED 8/4/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576.877.670	EASTING 102.285.623	RIG/FOREMAN D-120 / DM	GEI PROJECT NO. 2201593	
		PAGE NO. 4 OF 4		

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

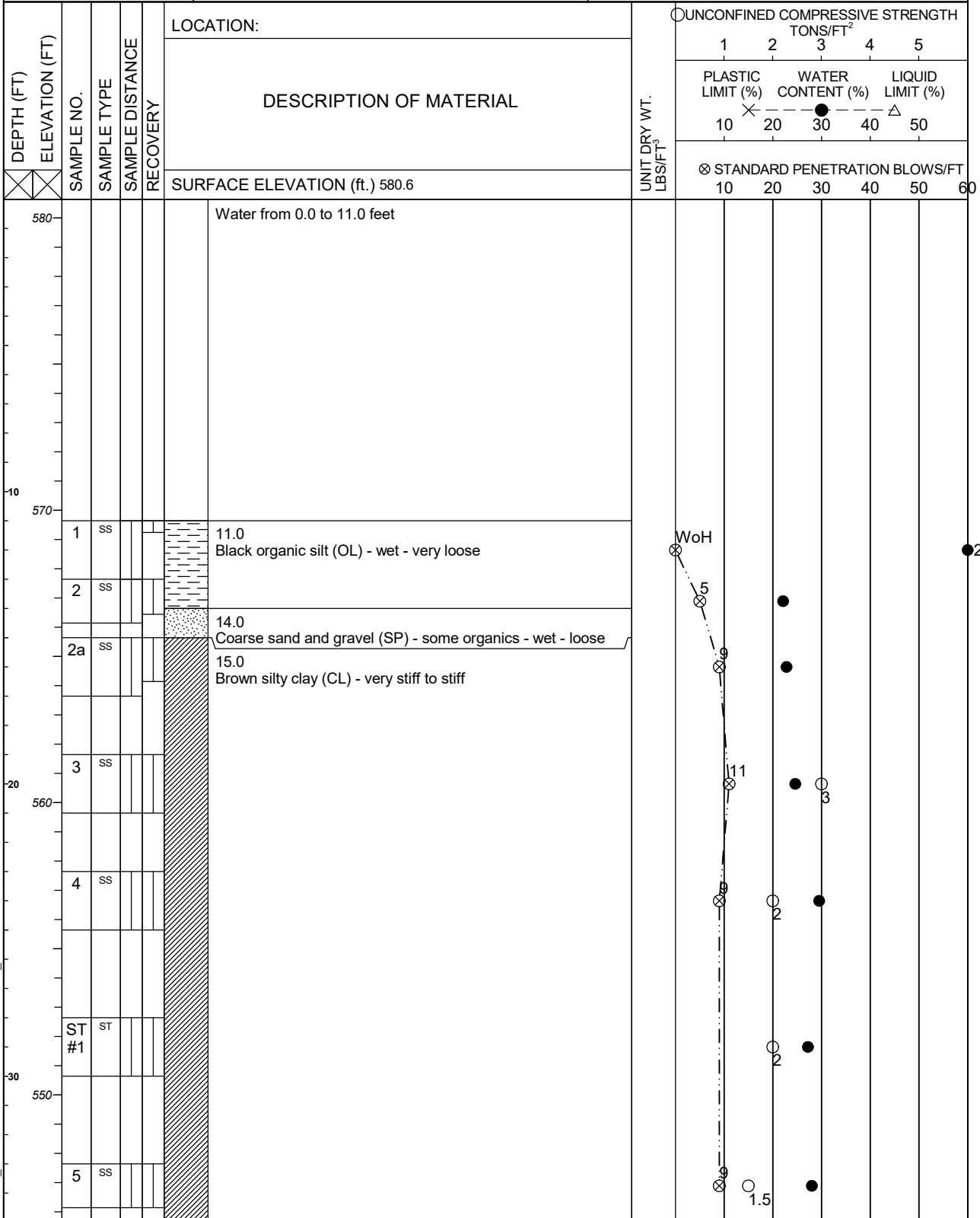
GEI



CLIENT:
Brown County Purchasing
PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BW-3-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:		BORING STARTED 7/27/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 7/28/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 576,204.775	EASTING 102,016.225	RIG/FOREMAN D-120 / DM		GEI PROJECT NO. 2201593	
		PAGE NO. 1 OF 4			

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

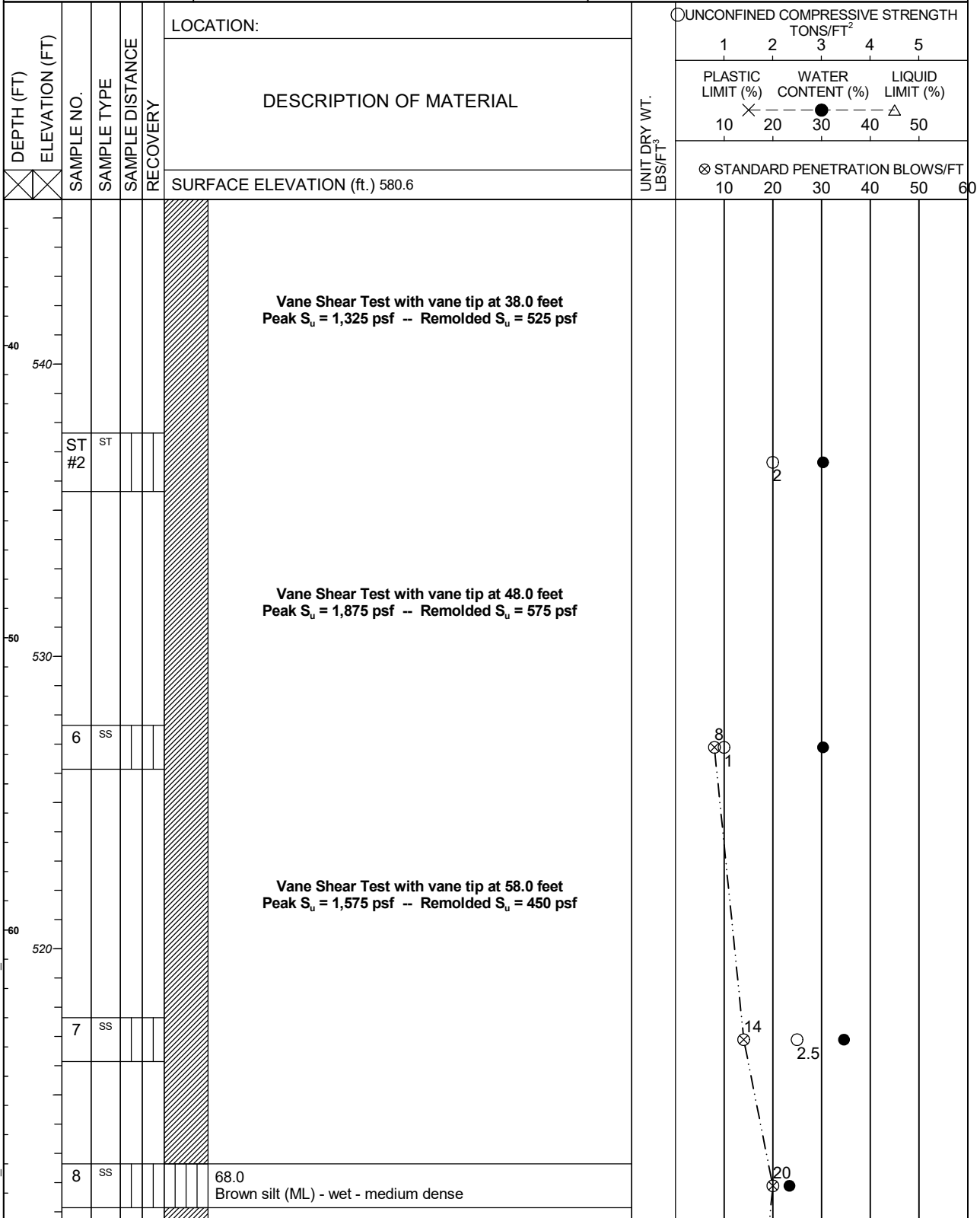


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BW-3-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:		BORING STARTED 7/27/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 7/28/2022		ENTERED BY AKL	APPROVED BY SN
NORTHING 576,204.775	EASTING 102,016.225	RIG/FOREMAN D-120 / DM		GEI PROJECT NO. 2201593	
				PAGE NO. 2 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI

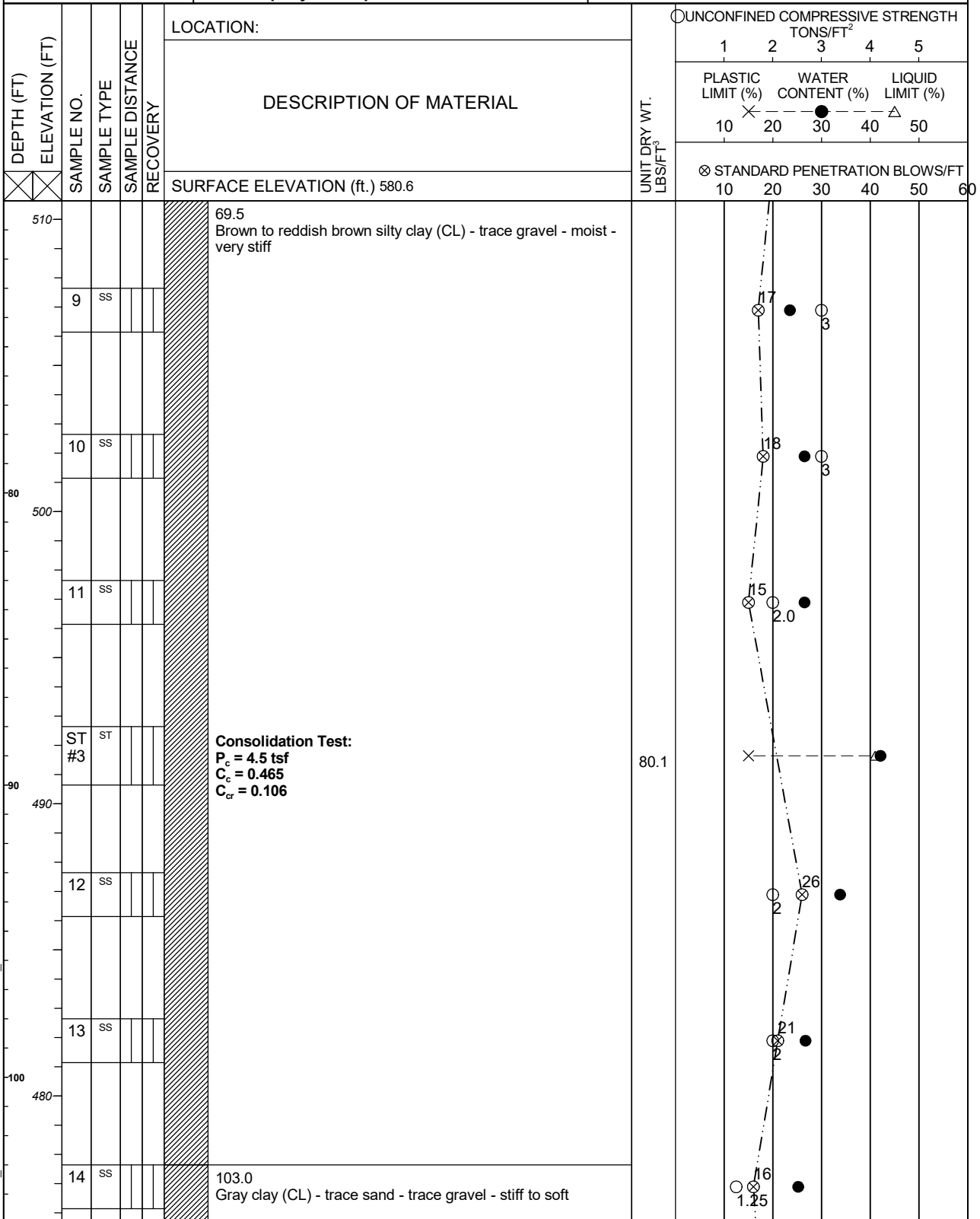


CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BW-3-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:		BORING STARTED 7/27/2022	GEI OFFICE Green Bay, WI	
		BORING COMPLETED 7/28/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 576,204.775	EASTING 102,016.225	RIG/FOREMAN D-120 / DM	GEI PROJECT NO. 2201593	
		PAGE NO. 3 OF 4		

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



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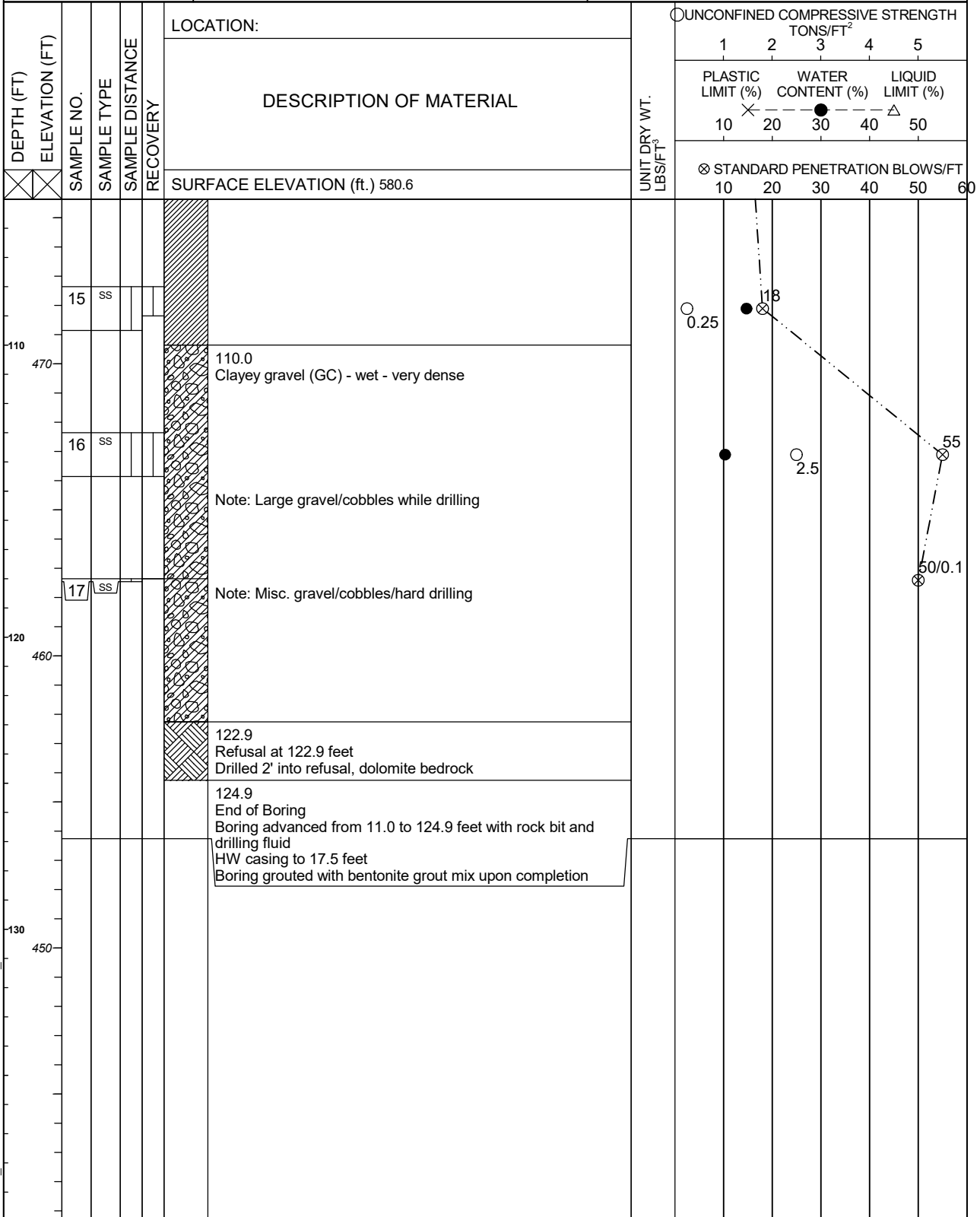
Brown County Purchasing

LOG OF BORING NUMBER **BW-3-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:

BORING STARTED

7/27/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED

7/28/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

576,204.775

EASTING

102,016.225

RIG/FOREMAN

D-120 / DM

GEI PROJECT NO.

2201593

PAGE NO. 4 OF 4

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:
Brown County Purchasing

PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BW-4-22**

ARCHITECT-ENGINEER

DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	LOCATION: DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS/FT ³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT ²					STANDARD PENETRATION BLOWS/FT
							1	2	3	4	5	
					SURFACE ELEVATION (ft.) 580.2							
580					Water from 0 to 27.5 feet							
570												
560												
550	1	SS			27.5 Dark brown organic silt (OL) - wet - very loose							
					28.0 Coarse sand (SP) - with gravel - wet - very loose							
					28.5 Brown silty clay (CL) - trace gravel - wet - stiff							
	2	SS										

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:		BORING STARTED 7/25/2022		GEI OFFICE Green Bay, WI	
		BORING COMPLETED 7/26/2022		ENTERED BY AKL APPROVED BY SN	
NORTHING 575,546.365	EASTING 101,809.521	RIG/FOREMAN D-120 / DM		GEI PROJECT NO. 2201593 PAGE NO. 1 OF 4	

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

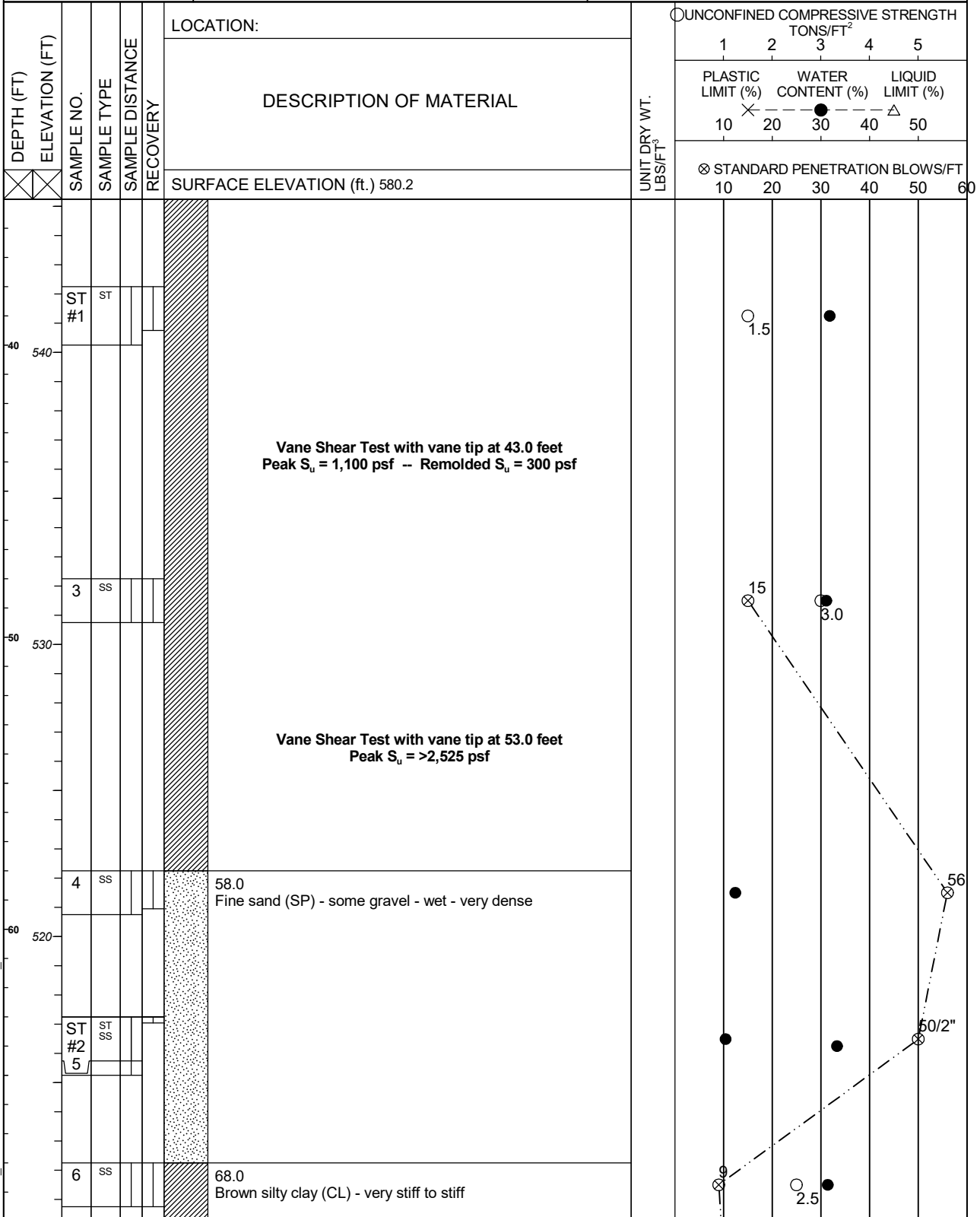
Brown County Purchasing

LOG OF BORING NUMBER **BW-4-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:		BORING STARTED 7/25/2022	GEI OFFICE Green Bay, WI	
		BORING COMPLETED 7/26/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 575,546.365	EASTING 101,809.521	RIG/FOREMAN D-120 / DM	GEI PROJECT NO. 2201593	
		PAGE NO. 2 OF 4		

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

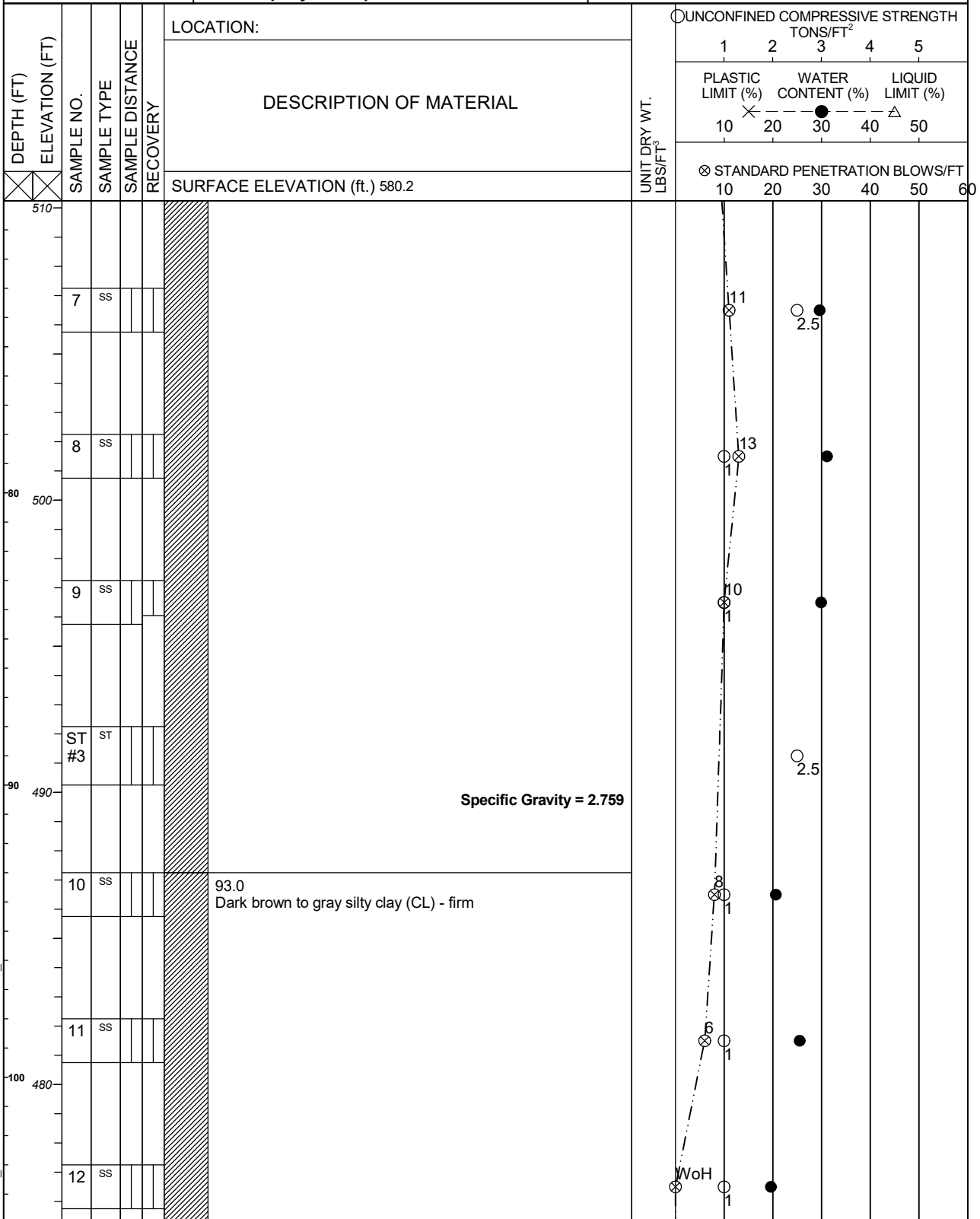
GEI



CLIENT:
Brown County Purchasing
PROJECT NAME:
Port Property Developments

LOG OF BORING NUMBER **BW-4-22**

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:		BORING STARTED 7/25/2022	GEI OFFICE Green Bay, WI	
		BORING COMPLETED 7/26/2022	ENTERED BY AKL	APPROVED BY SN
NORTHING 575,546.365	EASTING 101,809.521	RIG/FOREMAN D-120 / DM	GEI PROJECT NO. 2201593	
		PAGE NO. 3 OF 4		

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

GEI



CLIENT:

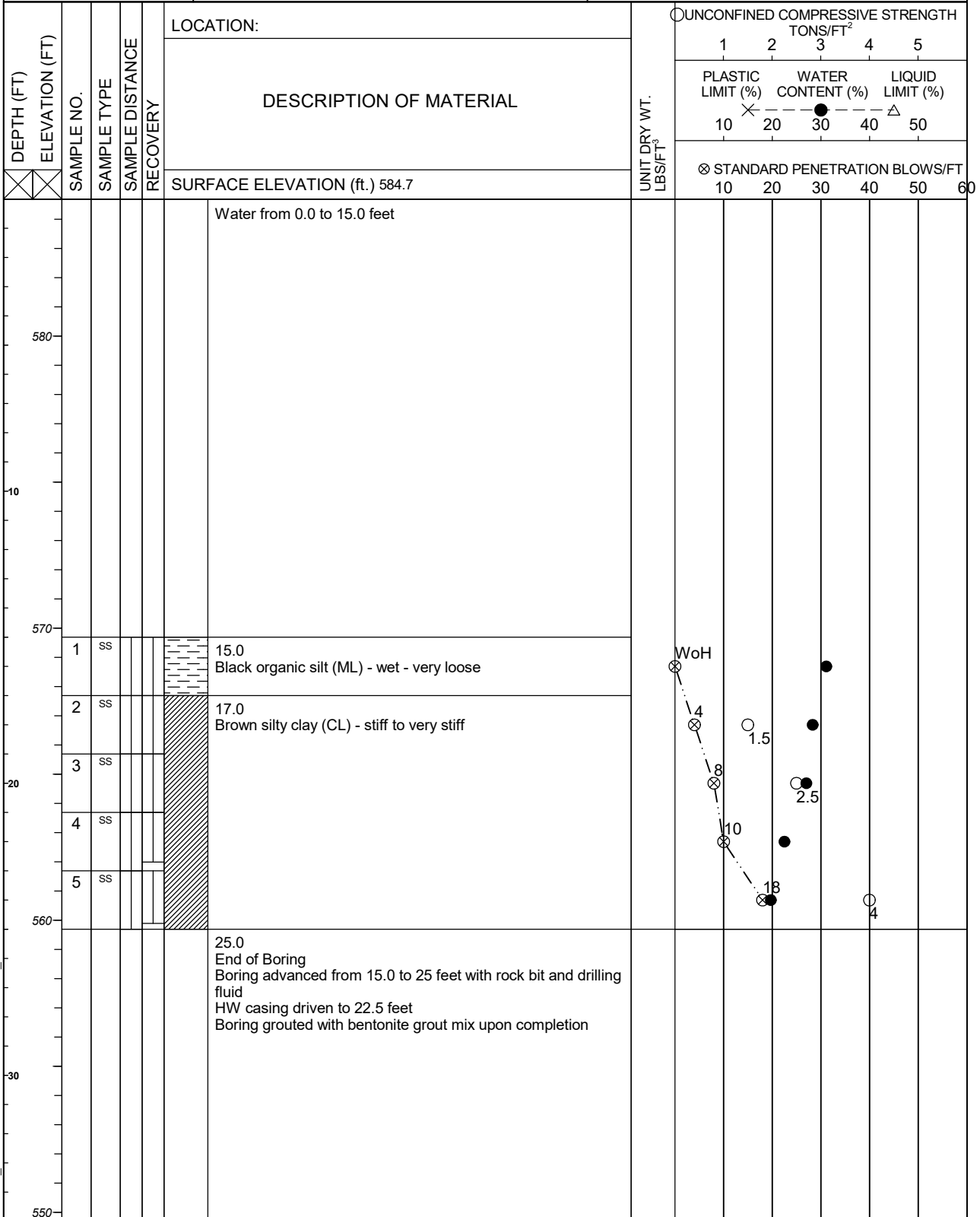
Brown County Purchasing

LOG OF BORING NUMBER **BW-5-22**

PROJECT NAME:

Port Property Developments

ARCHITECT-ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WATER LEVEL:

BORING STARTED

7/29/2022

GEI OFFICE

Green Bay, WI

BORING COMPLETED

7/29/2022

ENTERED BY

AKL

APPROVED BY

SN

NORTHING

576,345.745

EASTING

102,237.710

RIG/FOREMAN

D-120 / DM

GEI PROJECT NO.

2201593

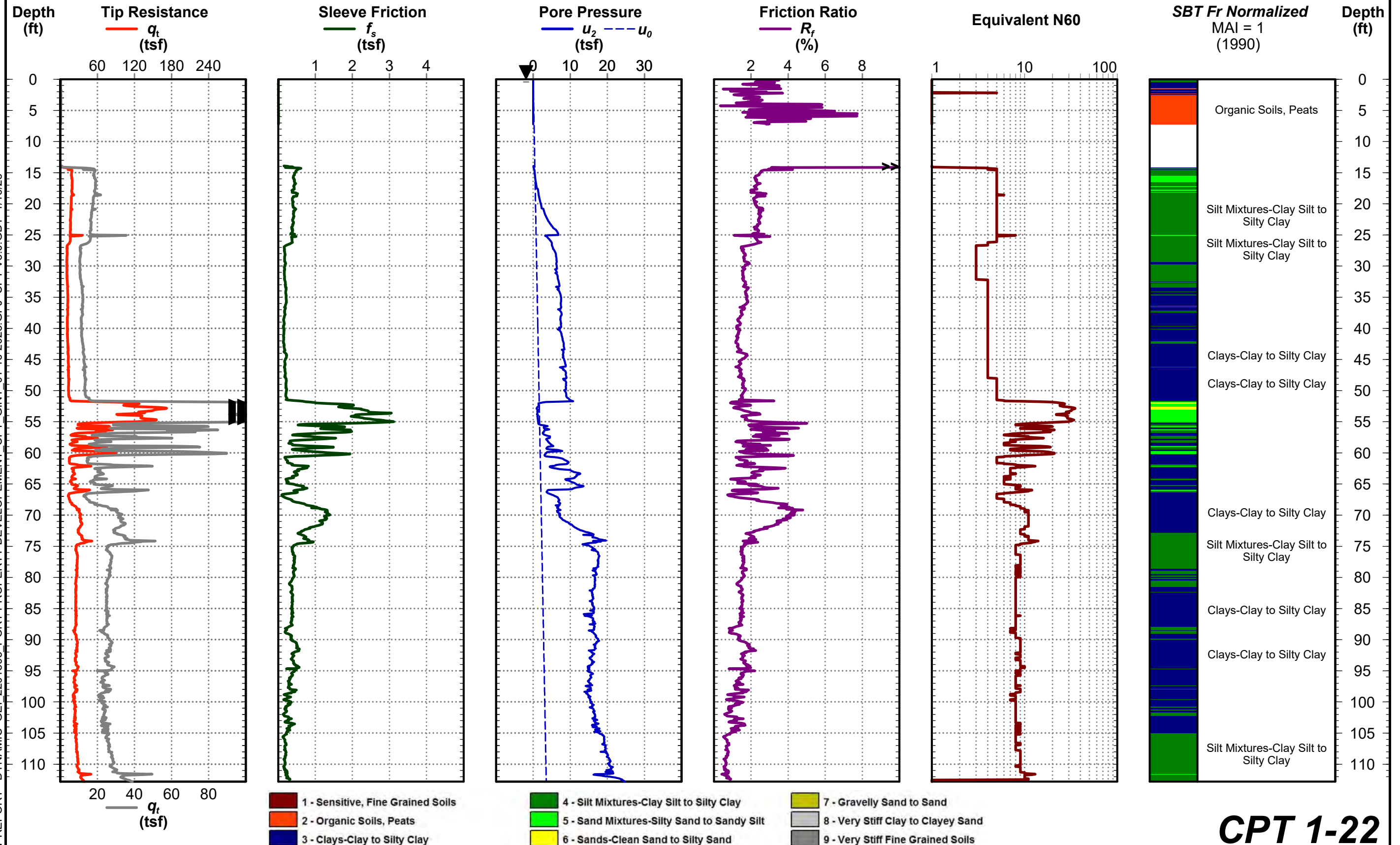
PAGE NO. 1 OF 1

MIDWEST BORING LOG 2201593_PORT PROPERTY DEVELOPMENT_PK.GPJ GEI DATA TEMPLATE.GDT 3/21/23

Date: Jan. 12, 2023
Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 263792.5
Easting: 2487534.7
Elevation:

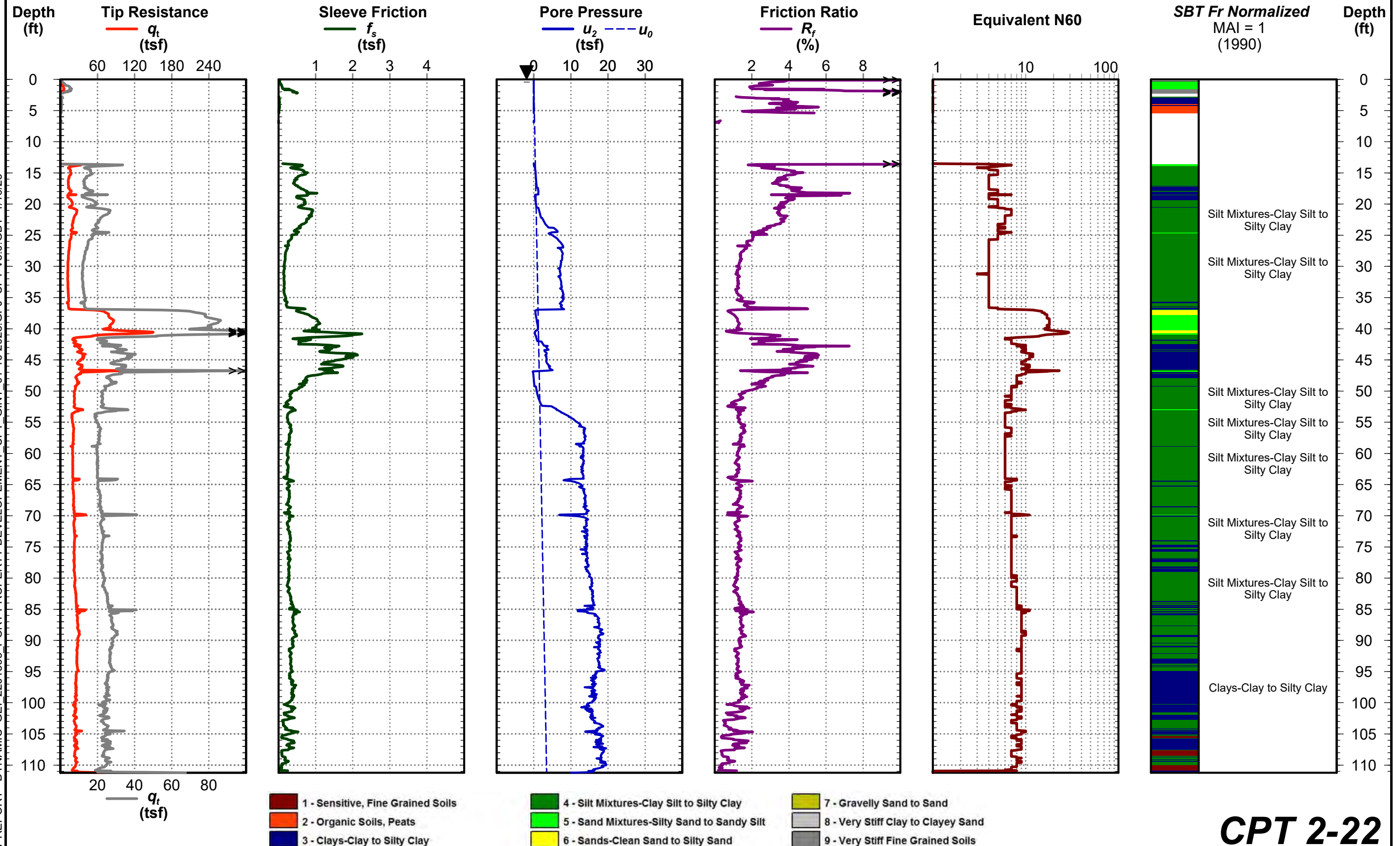
Total Depth: 112.8 ft
Termination Criteria: Target



Date: Jan. 9, 2023
Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 264048.5
Easting: 2487682.7
Elevation:

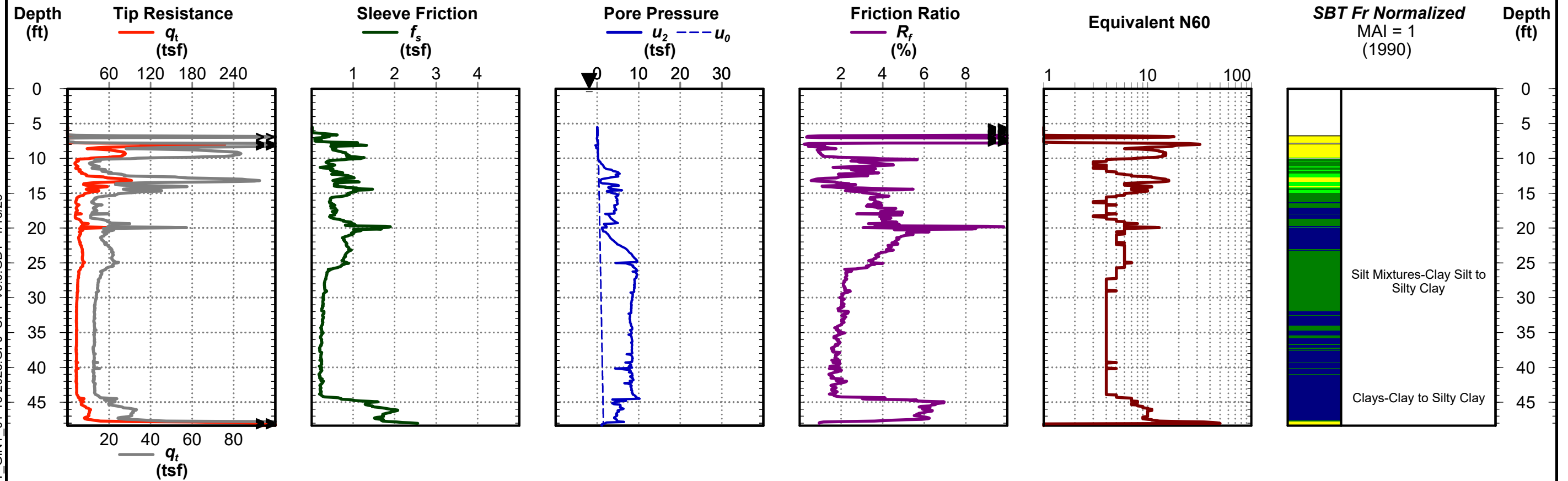
Total Depth: 111.2 ft
Termination Criteria: Target



Date: Jan. 3, 2023
Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 264310.7
Easting: 2487834.2
Elevation:

Total Depth: 48.4 ft
Termination Criteria: Target



- 1 - Sensitive, Fine Grained Soils
- 2 - Organic Soils, Peats
- 3 - Clays-Clay to Silty Clay

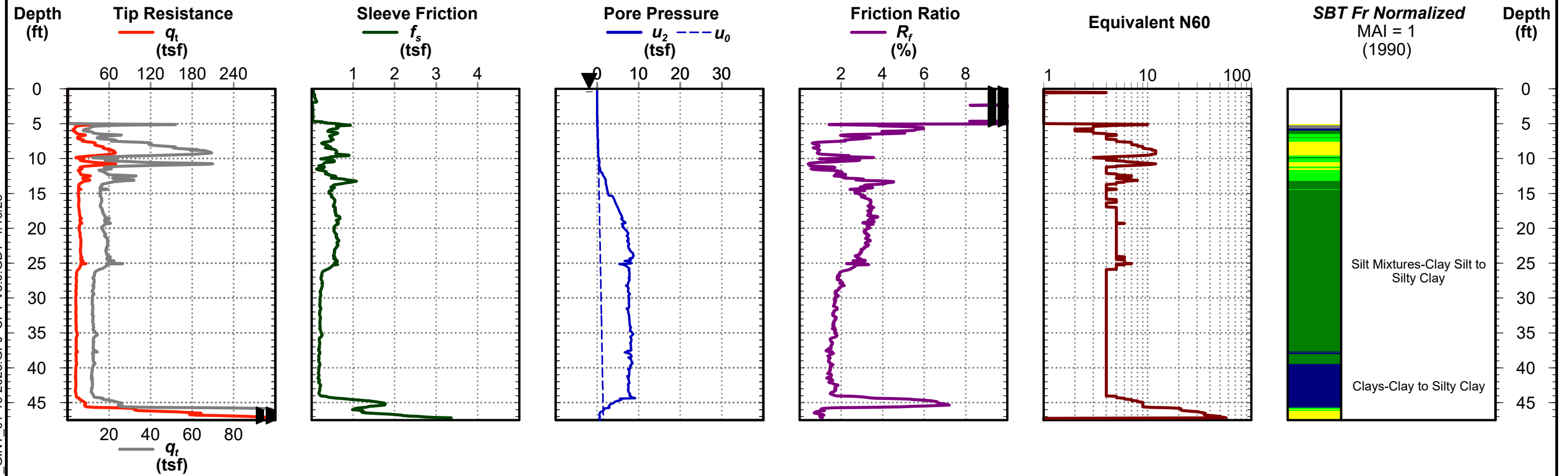
- 4 - Silt Mixtures-Clay Silt to Silty Clay
- 5 - Sand Mixtures-Silty Sand to Sandy Silt
- 6 - Sands-Clean Sand to Silty Sand

- 7 - Gravely Sand to Sand
- 8 - Very Stiff Clay to Clayey Sand
- 9 - Very Stiff Fine Grained Soils

Date: Jan. 5, 2023
Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 264533.7
Easting: 2487776.1
Elevation:

Total Depth: 47.5 ft
Termination Criteria: Target

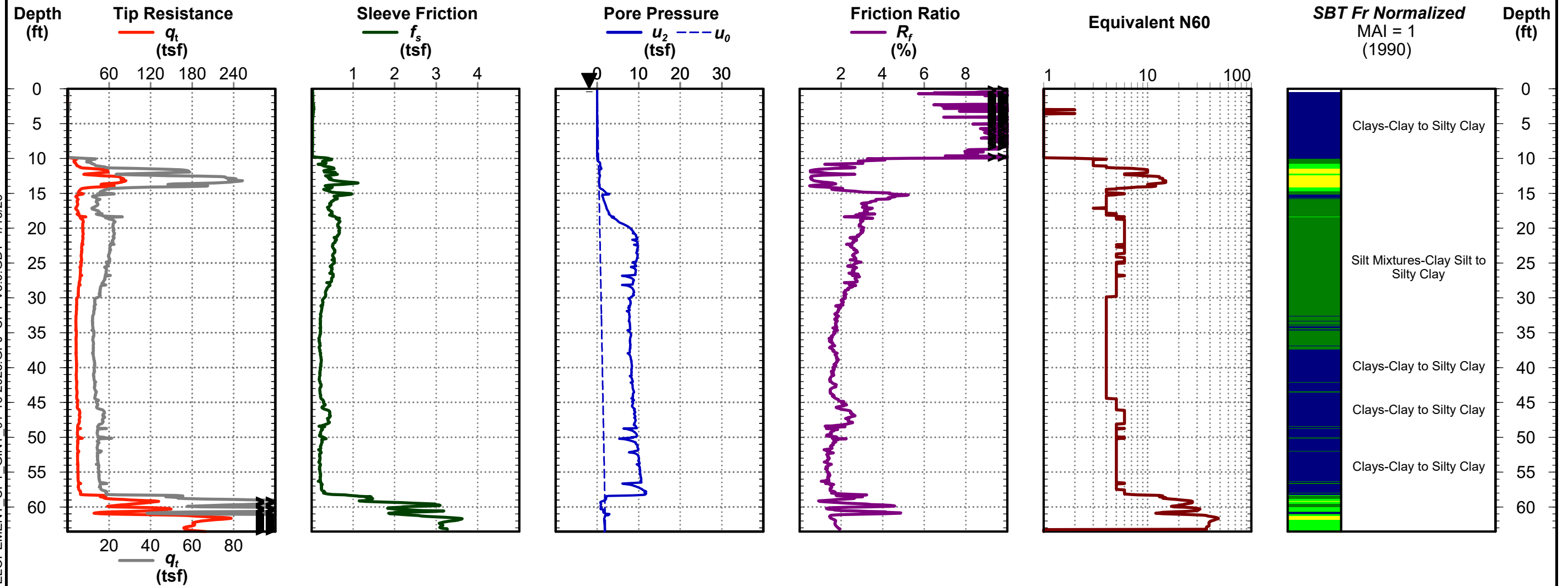


- 1 - Sensitive, Fine Grained Soils
- 2 - Organic Soils, Peats
- 3 - Clays-Clay to Silty Clay
- 4 - Silt Mixtures-Clay Silt to Silty Clay
- 5 - Sand Mixtures-Silty Sand to Sandy Silt
- 6 - Sands-Clean Sand to Silty Sand
- 7 - Gravely Sand to Sand
- 8 - Very Stiff Clay to Clayey Sand
- 9 - Very Stiff Fine Grained Soils

Date: Jan. 6, 2023
Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 263955.7
Easting: 2487867.5
Elevation:

Total Depth: 63.5 ft
Termination Criteria: Target



1 - Sensitive, Fine Grained Soils
2 - Organic Soils, Peats
3 - Clays-Clay to Silty Clay

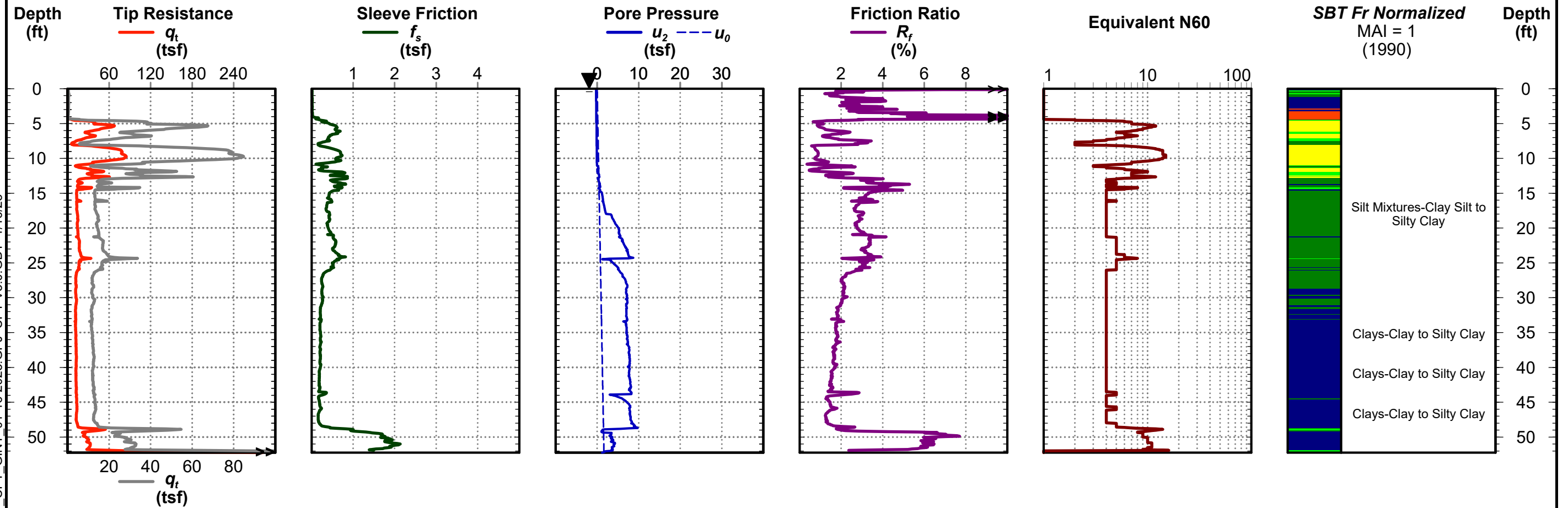
4 - Silt Mixtures-Clay Silt to Silty Clay
5 - Sand Mixtures-Silty Sand to Sandy Silt
6 - Sands-Clean Sand to Silty Sand

7 - Gravely Sand to Sand
8 - Very Stiff Clay to Clayey Sand
9 - Very Stiff Fine Grained Soils

Date: Jan. 4, 2023
Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 264193.0
Easting: 2488042.6
Elevation:

Total Depth: 52.2 ft
Termination Criteria: Target



- 1 - Sensitive, Fine Grained Soils
- 2 - Organic Soils, Peats
- 3 - Clays-Clay to Silty Clay

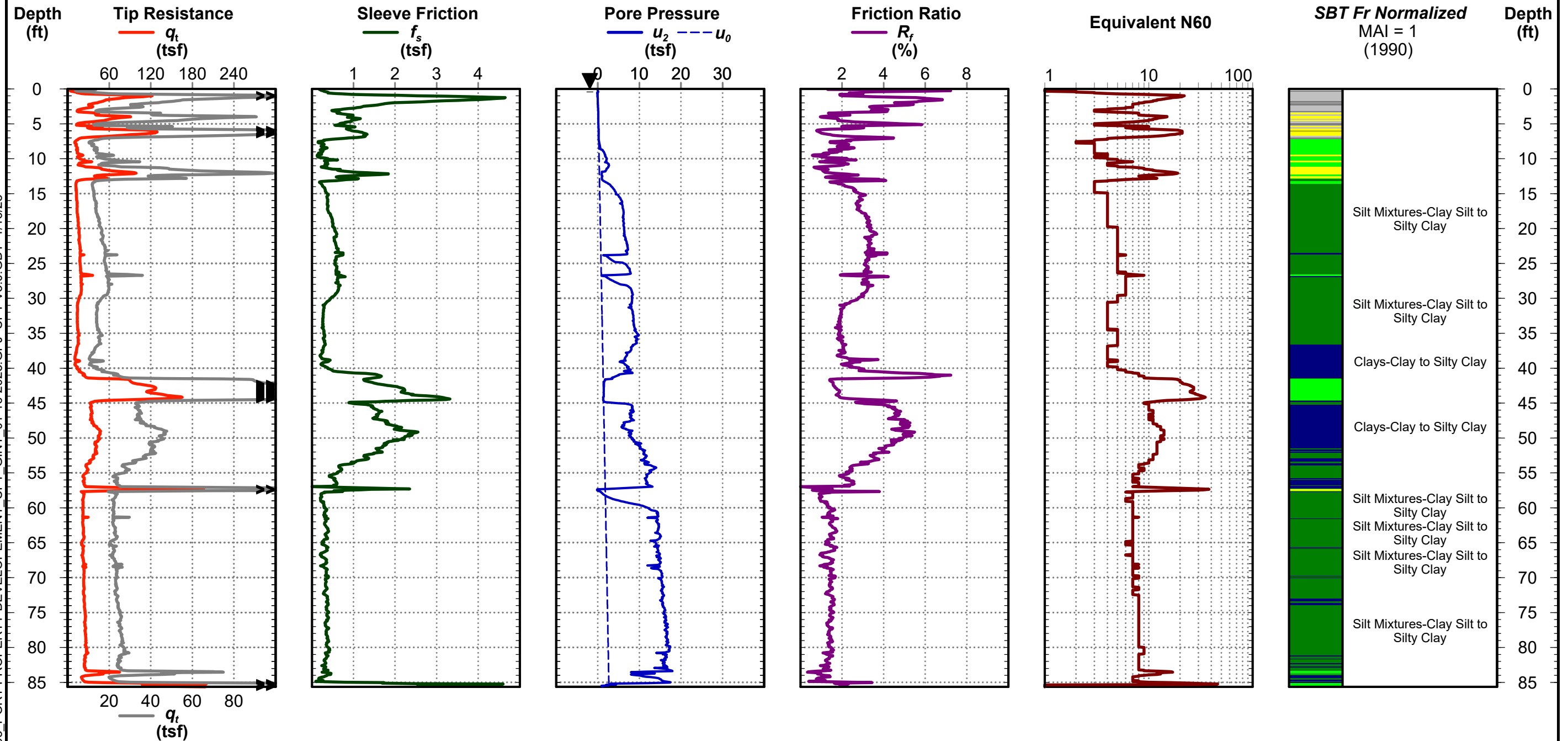
- 4 - Silt Mixtures-Clay Silt to Silty Clay
- 5 - Sand Mixtures-Silty Sand to Sandy Silt
- 6 - Sands-Clean Sand to Silty Sand

- 7 - Gravely Sand to Sand
- 8 - Very Stiff Clay to Clayey Sand
- 9 - Very Stiff Fine Grained Soils

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

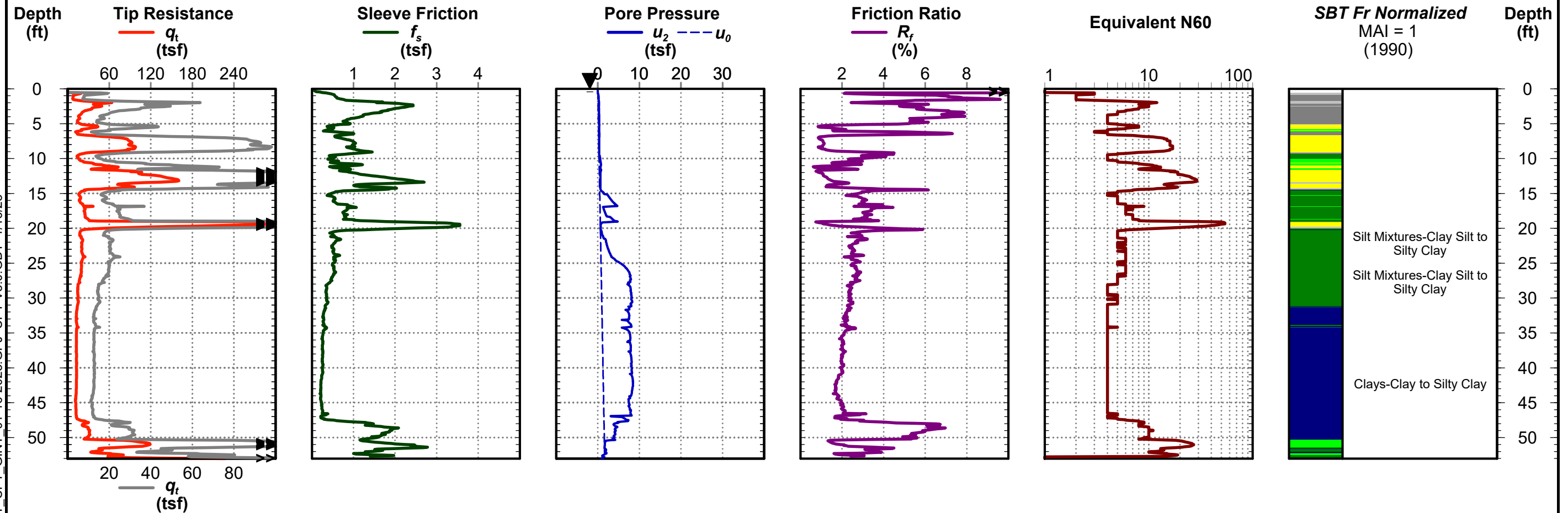


- | | | |
|-----------------------------------|--|------------------------------------|
| 1 - Sensitive, Fine Grained Soils | 4 - Silt Mixtures-Clay Silt to Silty Clay | 7 - Gravely Sand to Sand |
| 2 - Organic Soils, Peats | 5 - Sand Mixtures-Silty Sand to Sandy Silt | 8 - Very Stiff Clay to Clayey Sand |
| 3 - Clays-Clay to Silty Clay | 6 - Sands-Clean Sand to Silty Sand | 9 - Very Stiff Fine Grained Soils |

Date: Jan. 9, 2023
Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 263595.0
Easting: 2487892.8
Elevation:

Total Depth: 53.0 ft
Termination Criteria: Target

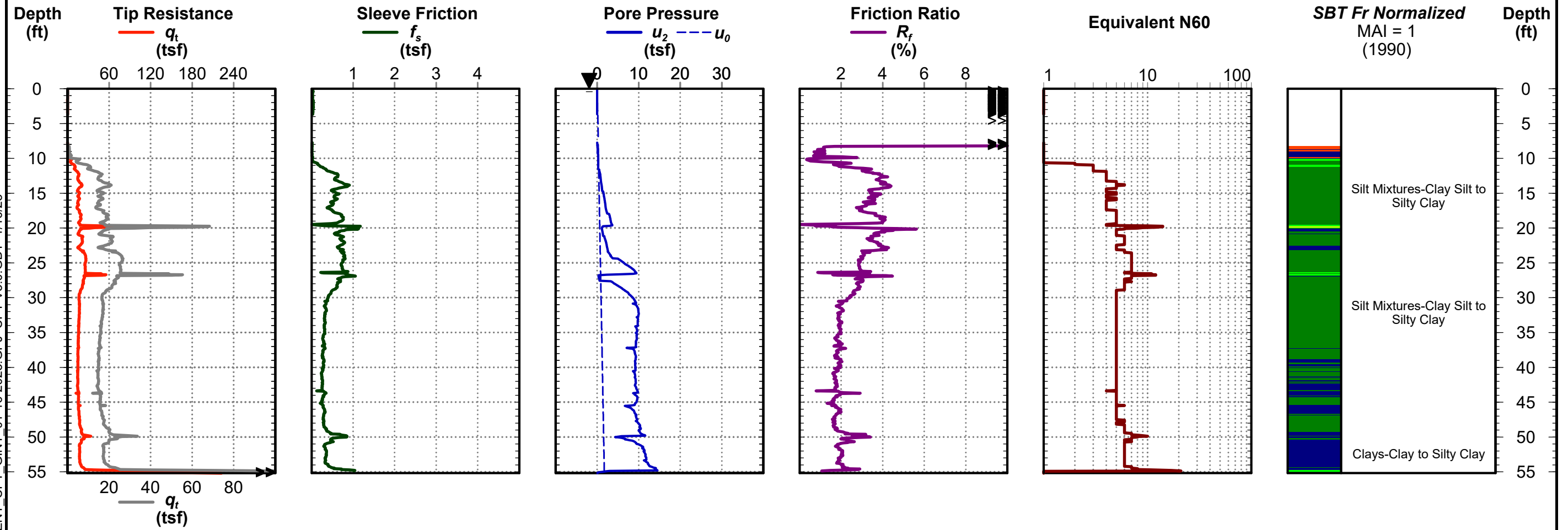


CPT REPORT - DYNAMIC GEI 2201593 PORT PROPERTY DEVELOPEMENT_CPT_GINT_01-16-2023.GPJ CPT V3.0.GDT 1/16/23

Date: Jan. 11, 2023
Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 263792.1
Easting: 2487992.3
Elevation:

Total Depth: 55.2 ft
Termination Criteria: Target



- 1 - Sensitive, Fine Grained Soils
- 2 - Organic Soils, Peats
- 3 - Clays-Clay to Silty Clay

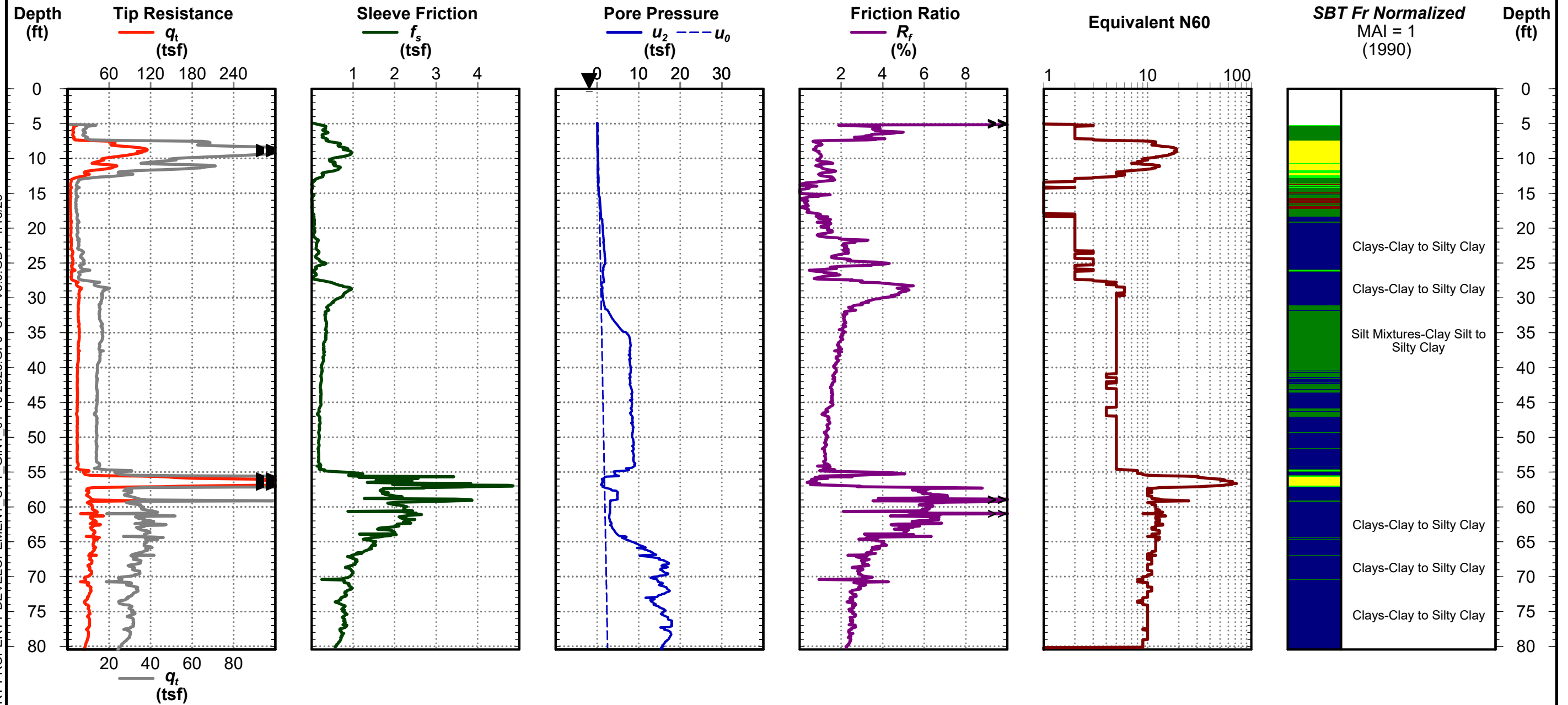
- 4 - Silt Mixtures-Clay Silt to Silty Clay
- 5 - Sand Mixtures-Silty Sand to Sandy Silt
- 6 - Sands-Clean Sand to Silty Sand

- 7 - Gravelly Sand to Sand
- 8 - Very Stiff Clay to Clayey Sand
- 9 - Very Stiff Fine Grained Soils

Date: Jan. 5, 2023
Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 264100.7
Easting: 2488197.8
Elevation:

Total Depth: 80.5 ft
Termination Criteria: Target

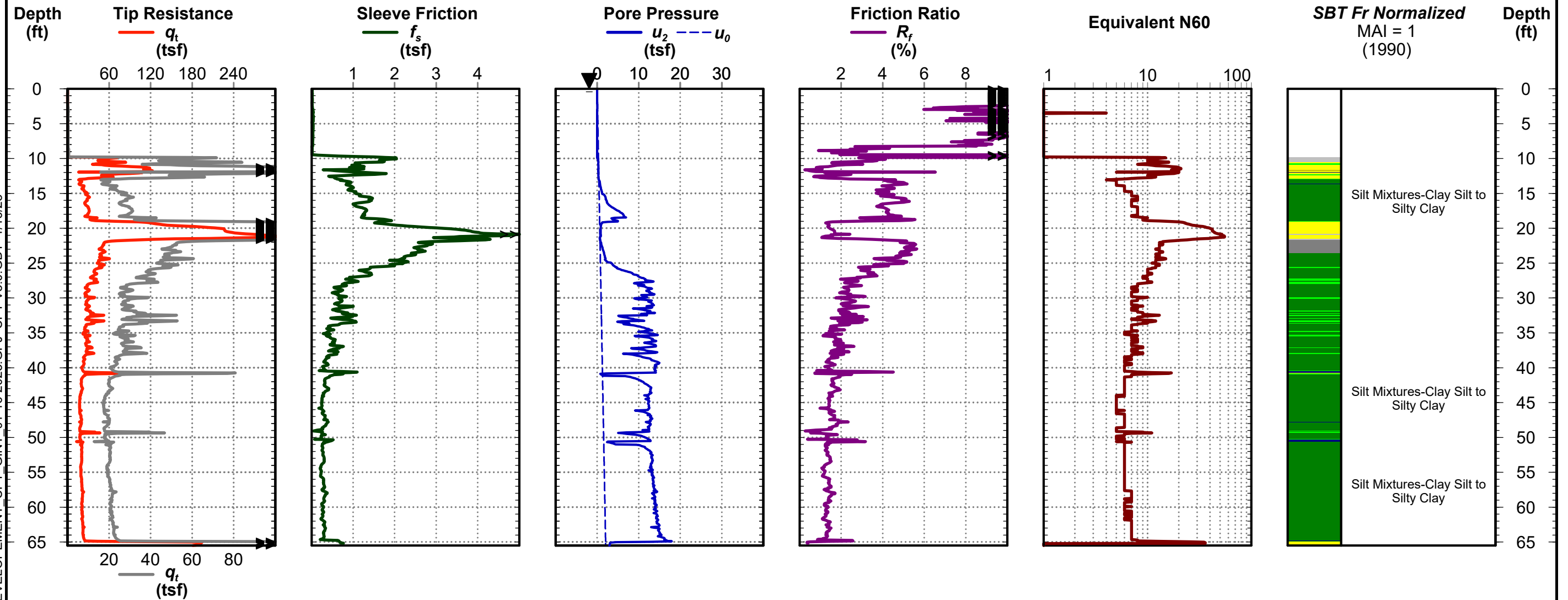


CPT REPORT - DYNAMIC GEI 2201593 PORT PROPERTY DEVELOPEMENT_CPT_GINT_01-16-2023.GPJ CPT V3.0.GDT 1/16/23

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

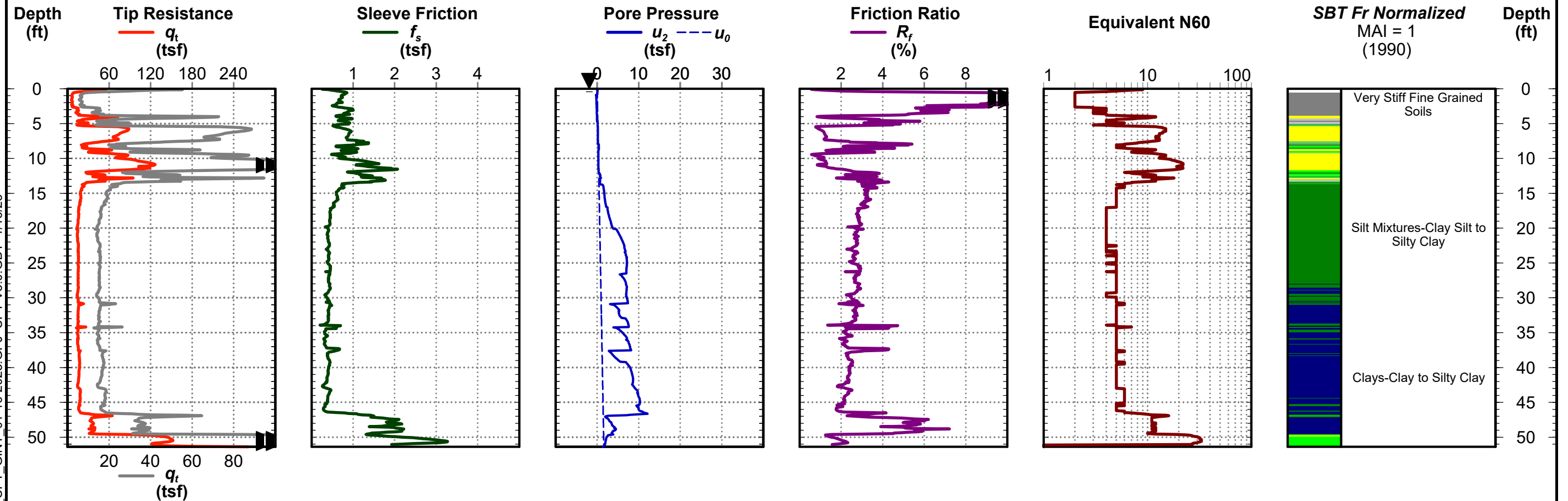


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|-----------------------------------|--|------------------------------------|
| 1 - Sensitive, Fine Grained Soils | 4 - Silt Mixtures-Clay Silt to Silty Clay | 7 - Gravely Sand to Sand |
| 2 - Organic Soils, Peats | 5 - Sand Mixtures-Silty Sand to Sandy Silt | 8 - Very Stiff Clay to Clayey Sand |
| 3 - Clays-Clay to Silty Clay | 6 - Sands-Clean Sand to Silty Sand | 9 - Very Stiff Fine Grained Soils |

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



- 1 - Sensitive, Fine Grained Soils
- 2 - Organic Soils, Peats
- 3 - Clays-Clay to Silty Clay

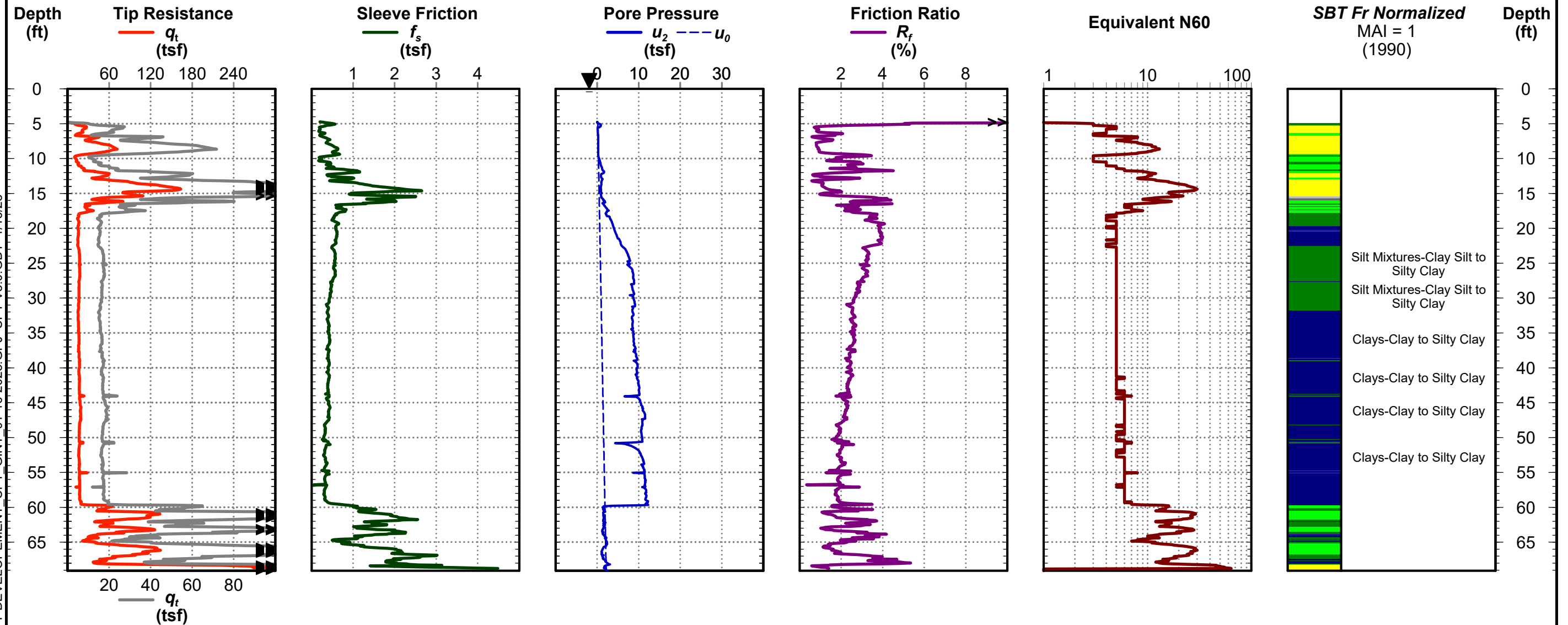
- 4 - Silt Mixtures-Clay Silt to Silty Clay
- 5 - Sand Mixtures-Silty Sand to Sandy Silt
- 6 - Sands-Clean Sand to Silty Sand

- 7 - Gravely Sand to Sand
- 8 - Very Stiff Clay to Clayey Sand
- 9 - Very Stiff Fine Grained Soils

Date: Jan. 4, 2023
Estimated Water Depth: 0 ft
Rig/Operator: CAP

Northing: 263915.0
Easting: 2488216.7
Elevation:

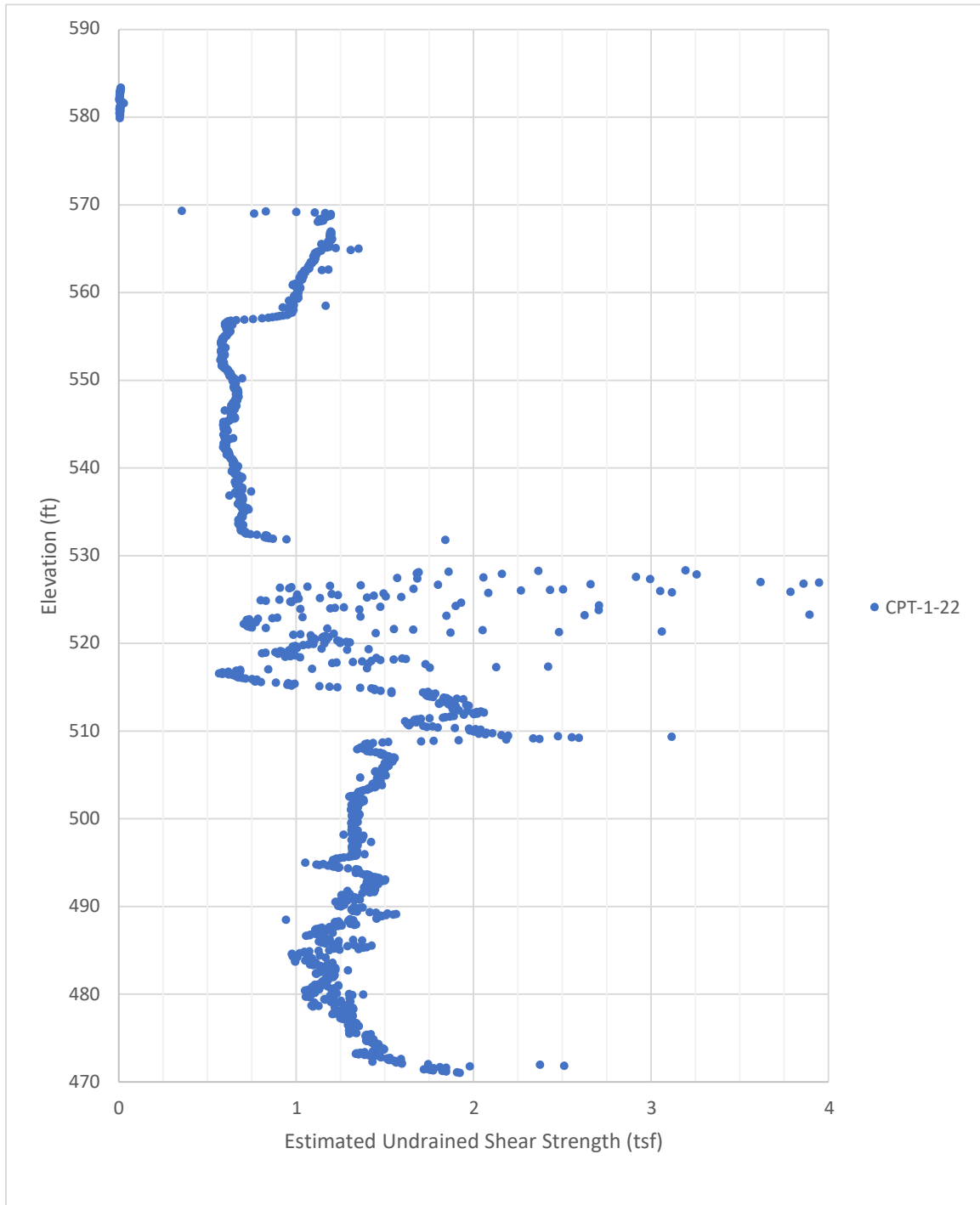
Total Depth: 69.1 ft
Termination Criteria: Target



CPT REPORT - DYNAMIC GEI 2201593 PORT PROPERTY DEVELOPEMENT_CPT_GINT_01-16-2023.GPJ CPT V3.0.GDT 1/16/23

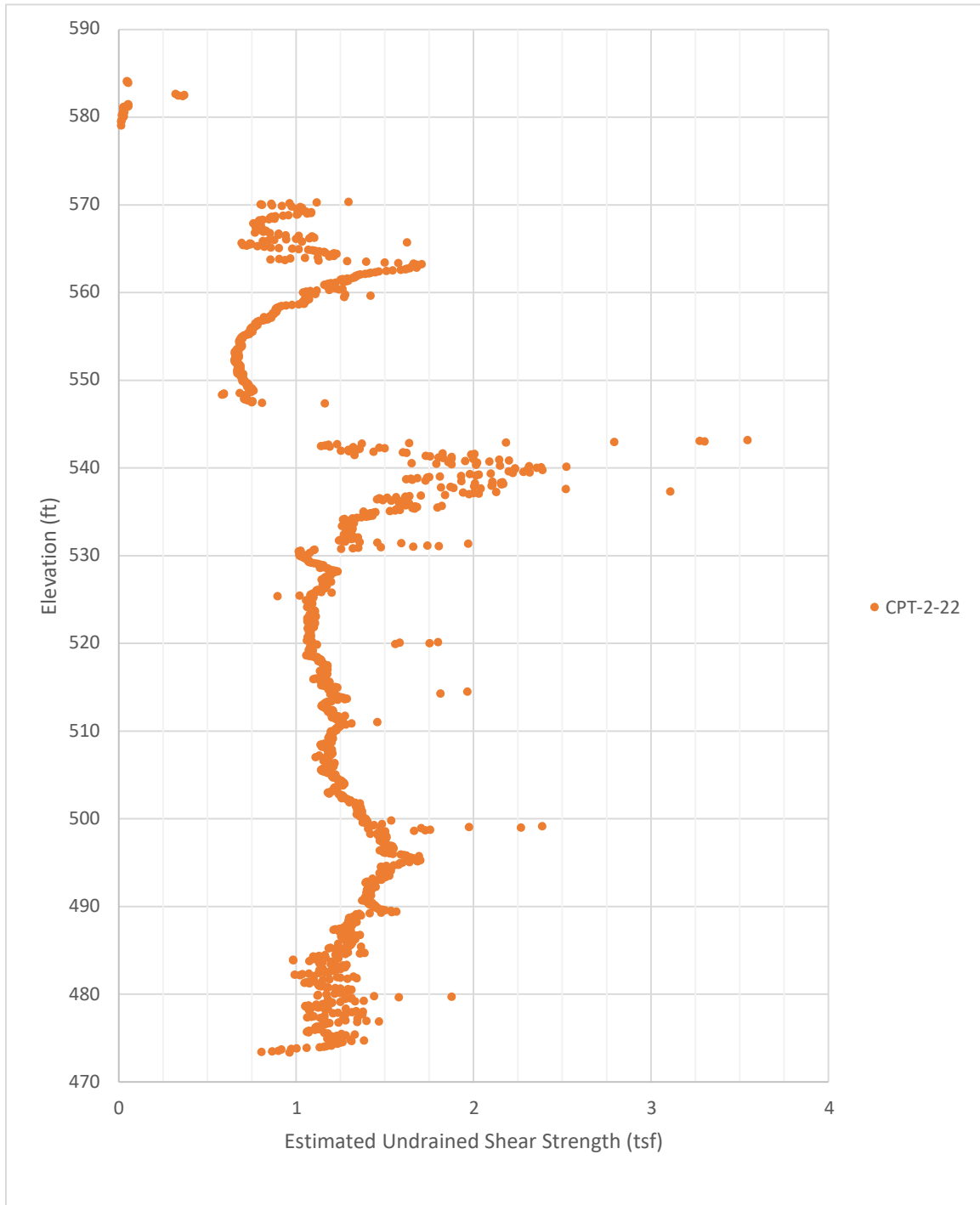


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PTu Undrained Shear Strength Profile Estimations					




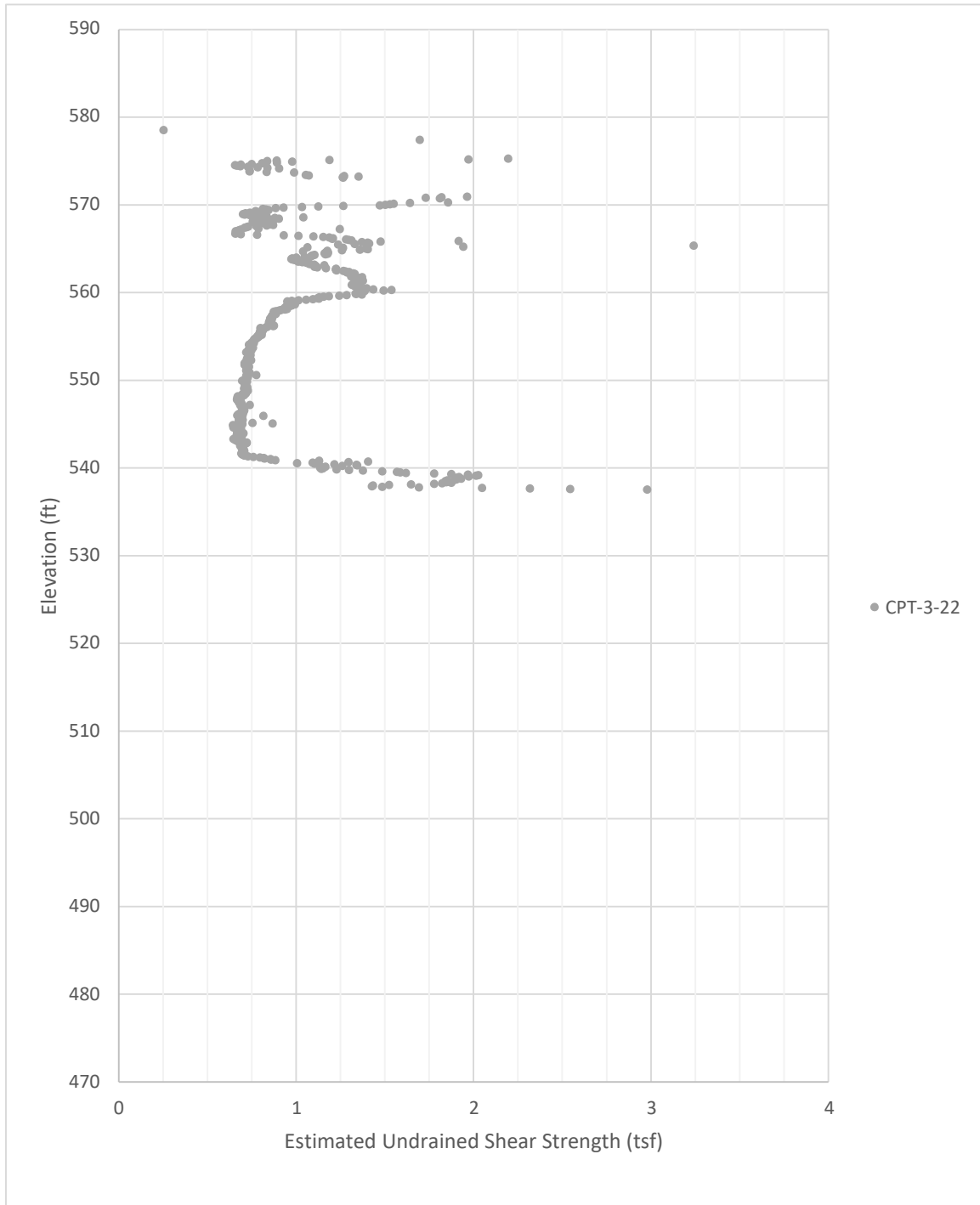


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PTu Undrained Shear Strength Profile Estimations					



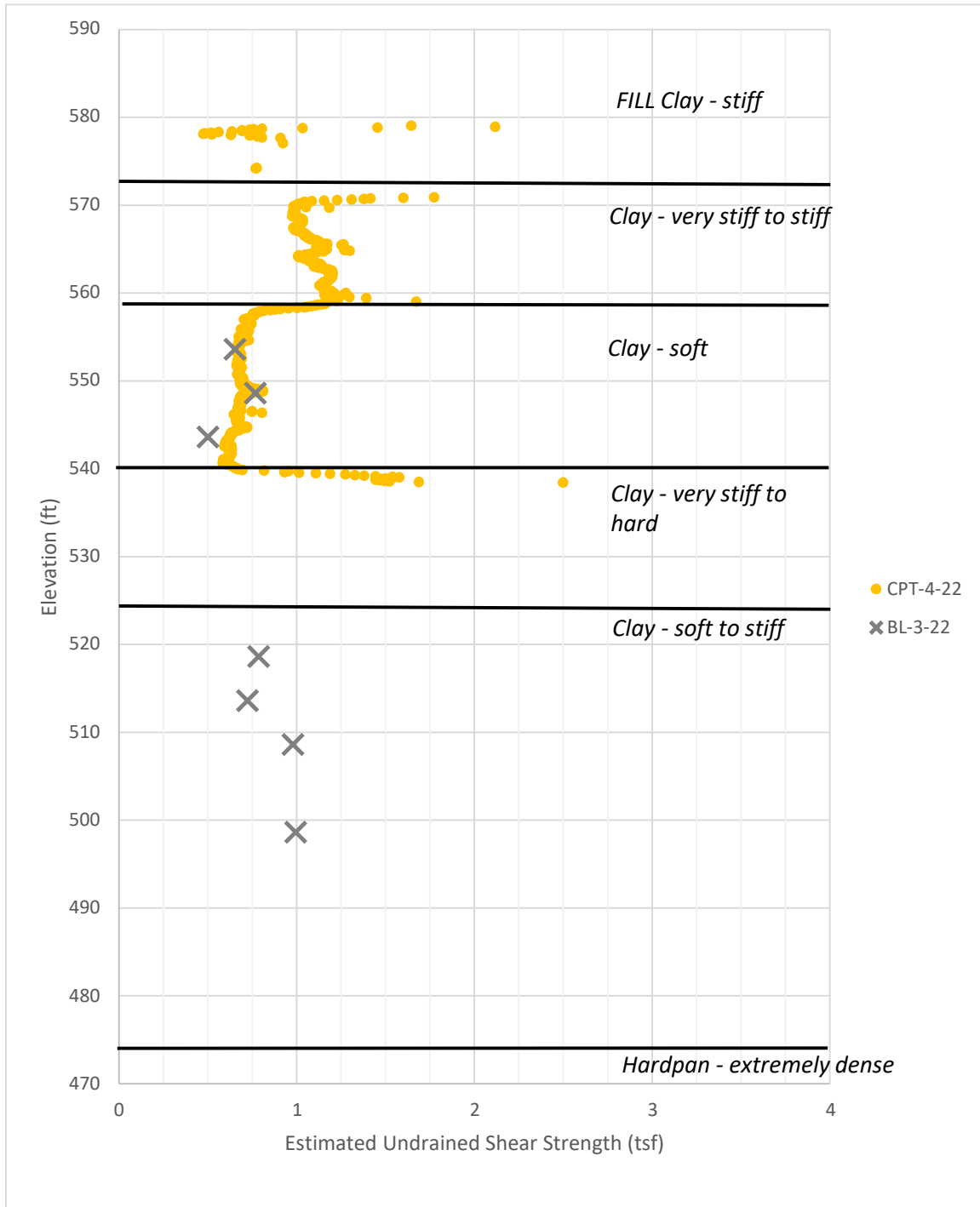


<div><div>GEI</div><div><div>Consultants</div></div></div>	Client	Brown County			Page	3 of 16
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Subject	CPTu Undrained Shear Strength Profile Estimations					




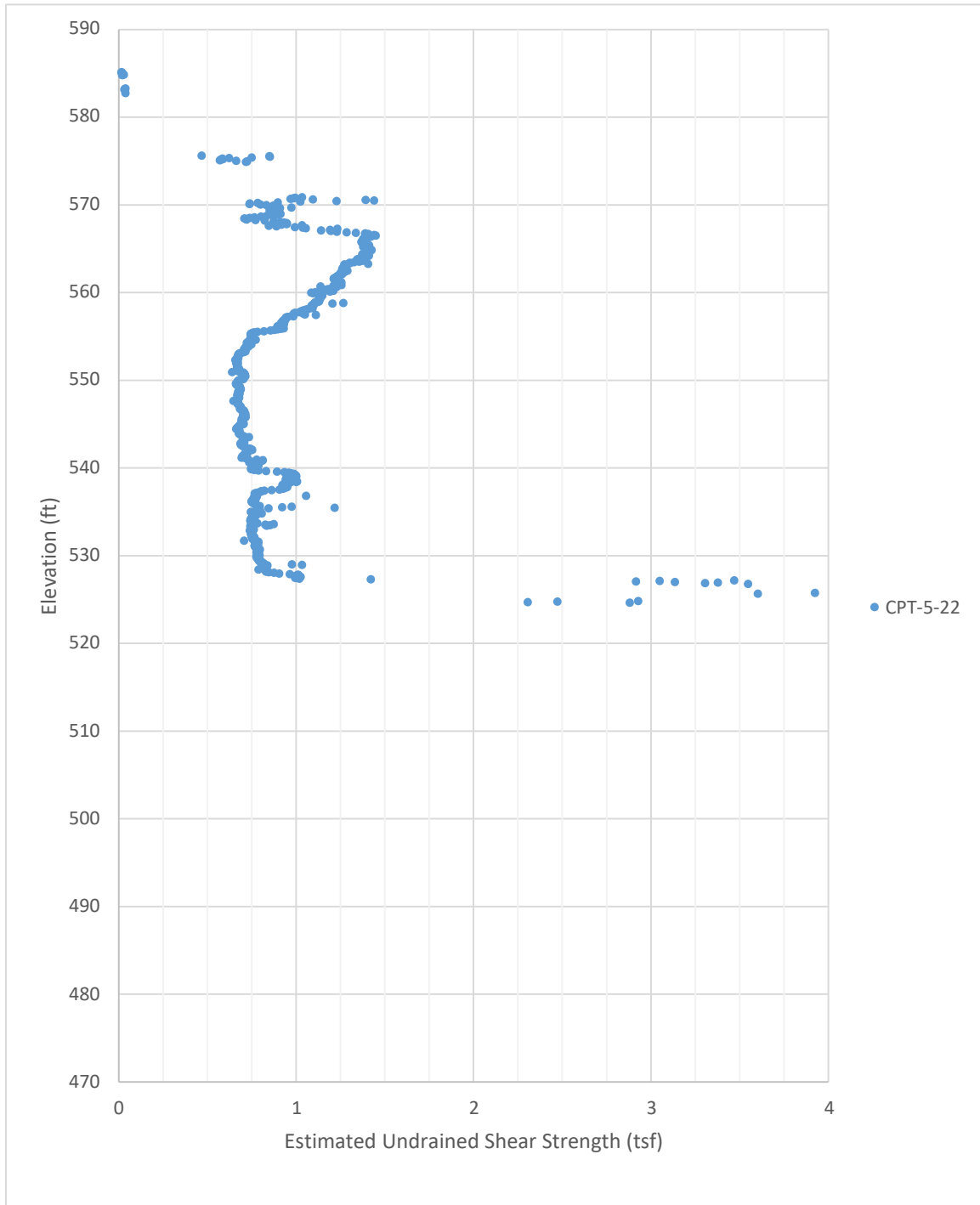


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PTu Undrained Shear Strength Profile Estimations					



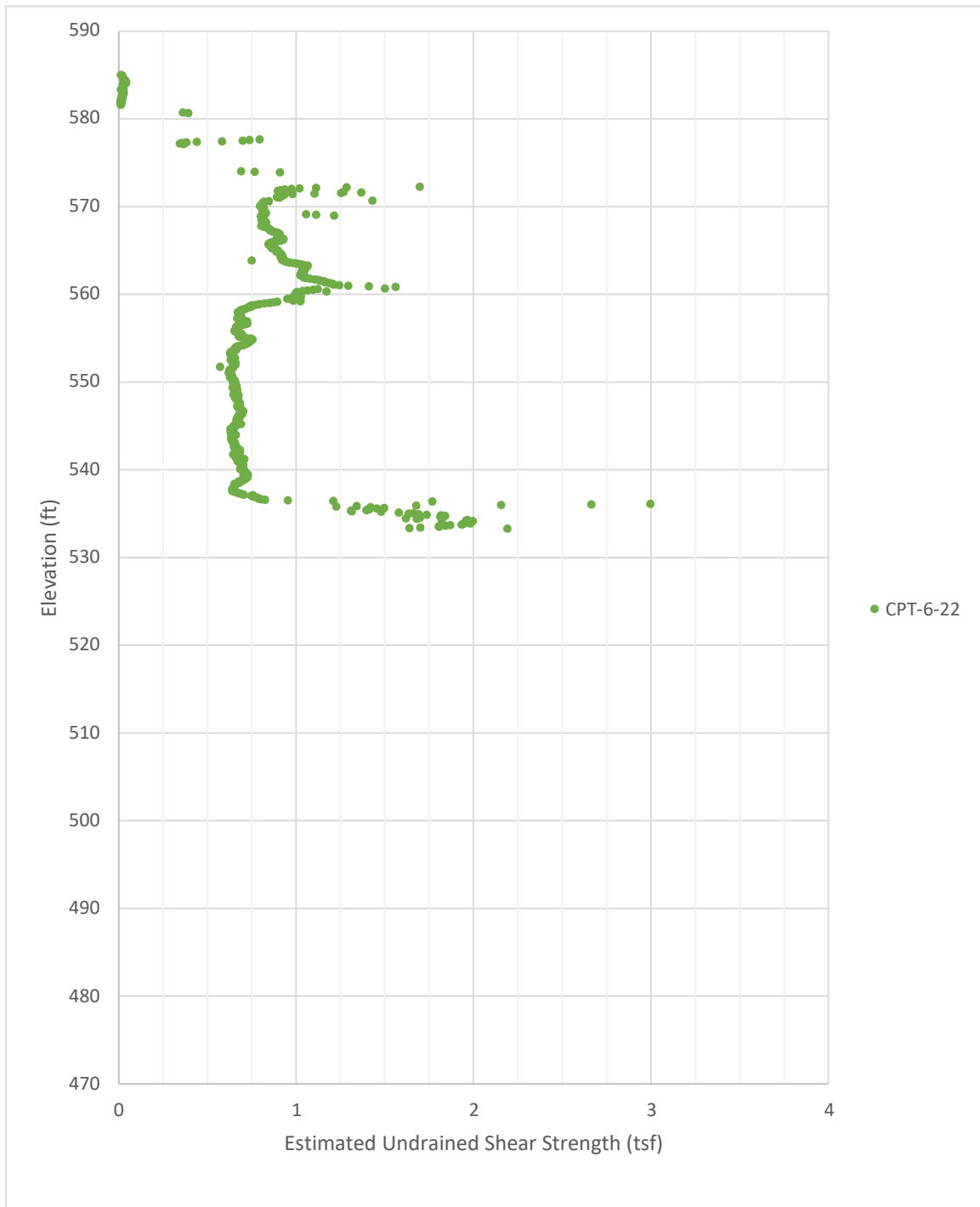


<div><div>GEI</div><div><div>Consultants</div></div></div>	Client	Brown County			Page	5 of 16
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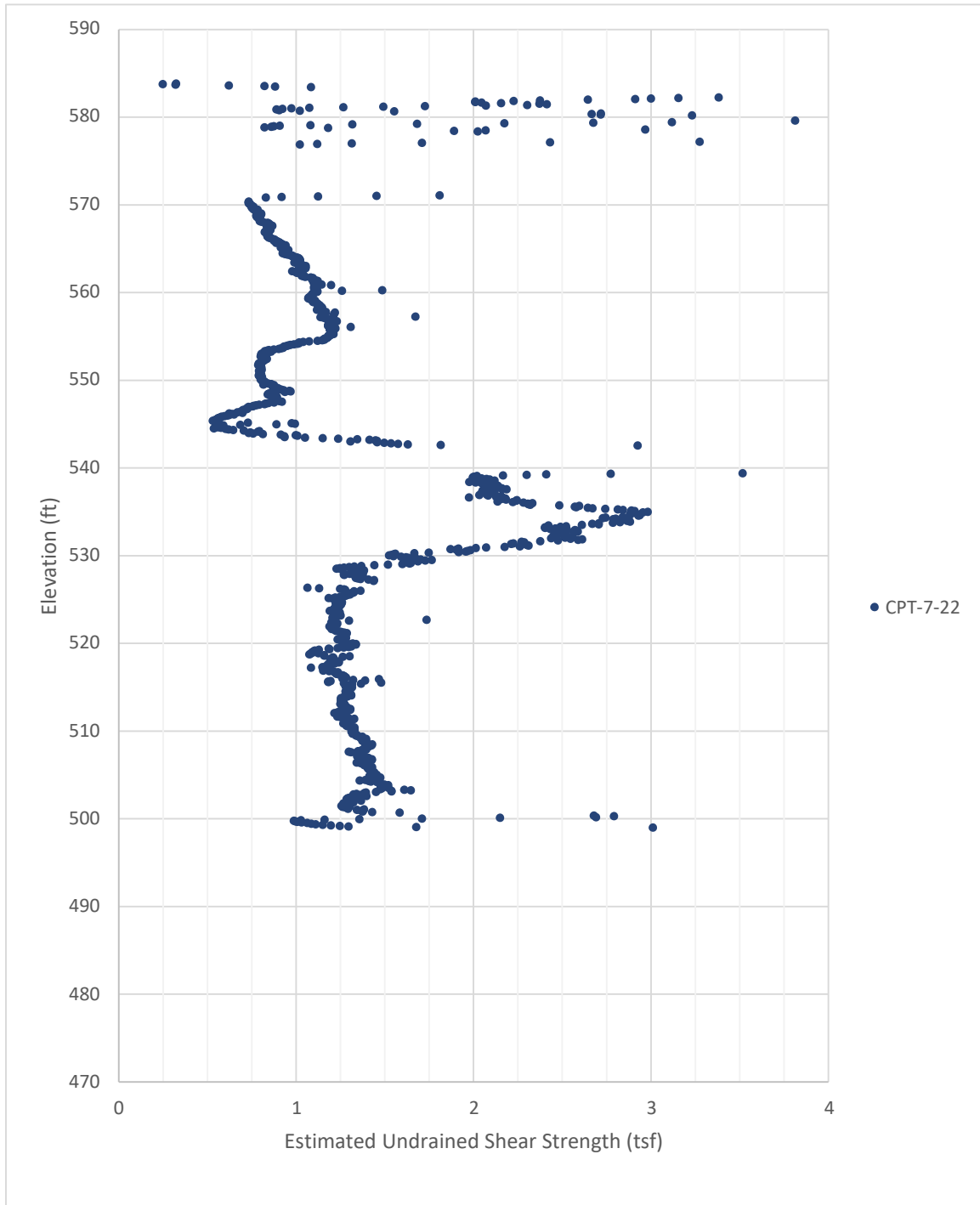


<div>GEI Consultants</div>	Client	Brown County			Page	6 of 16
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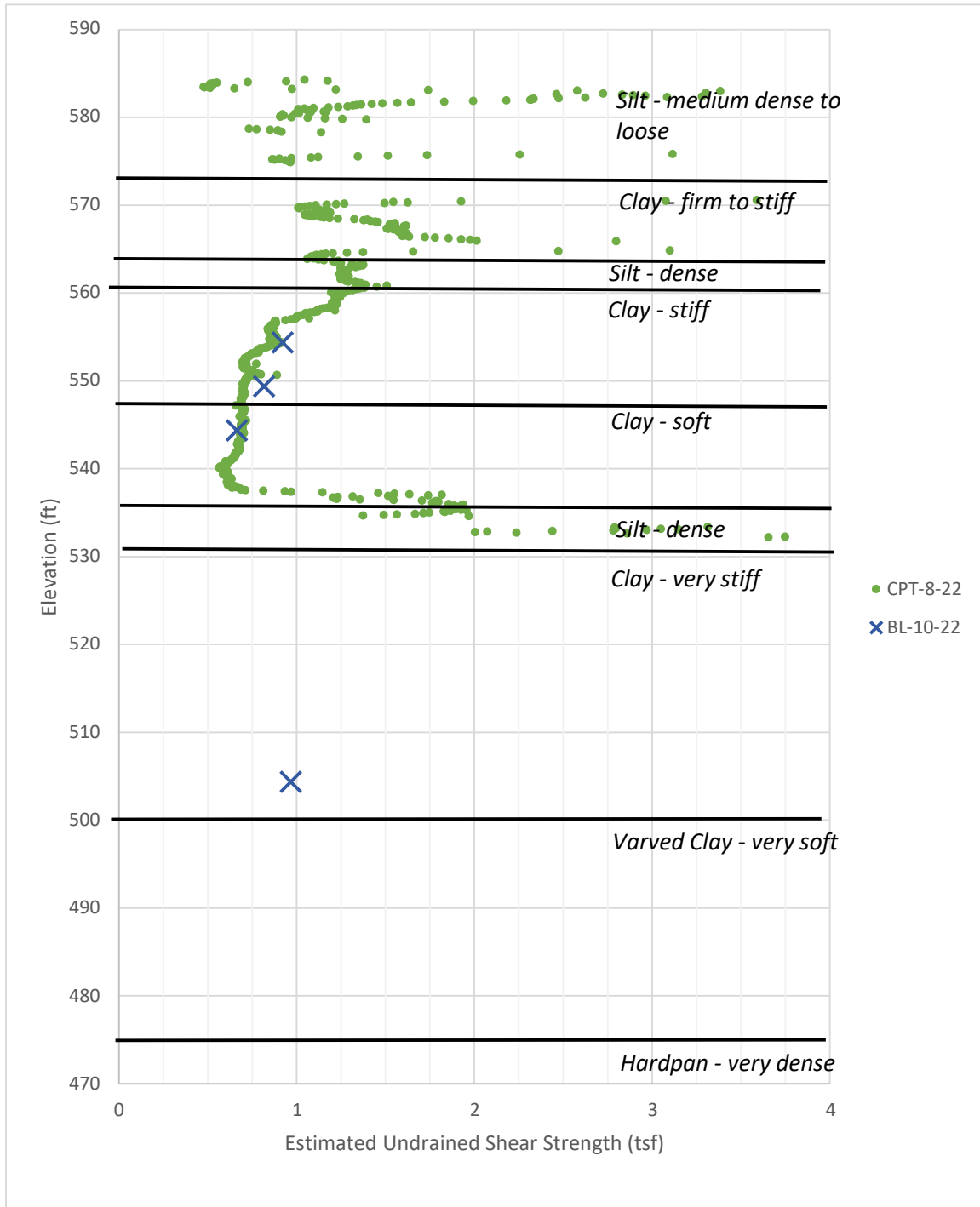
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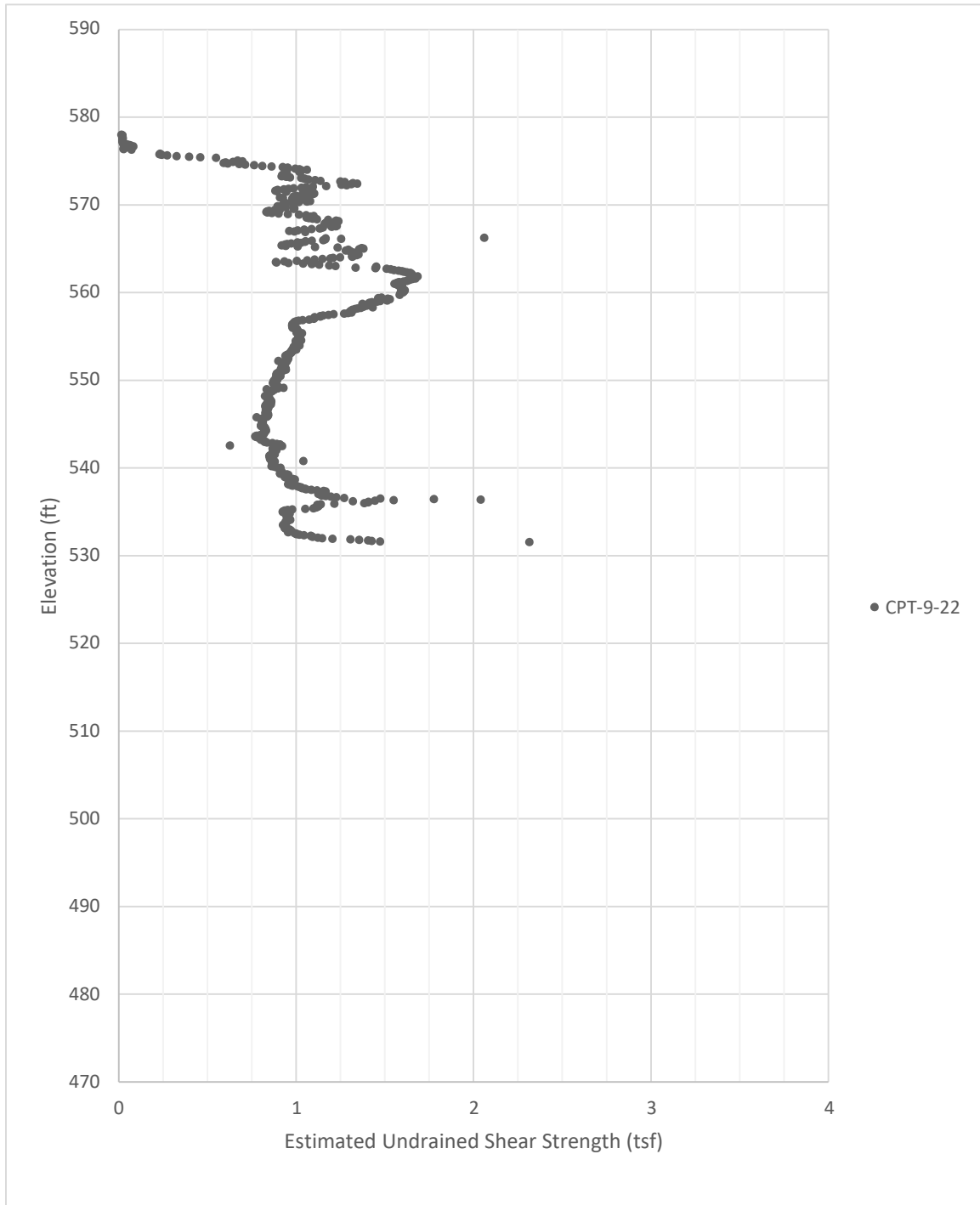
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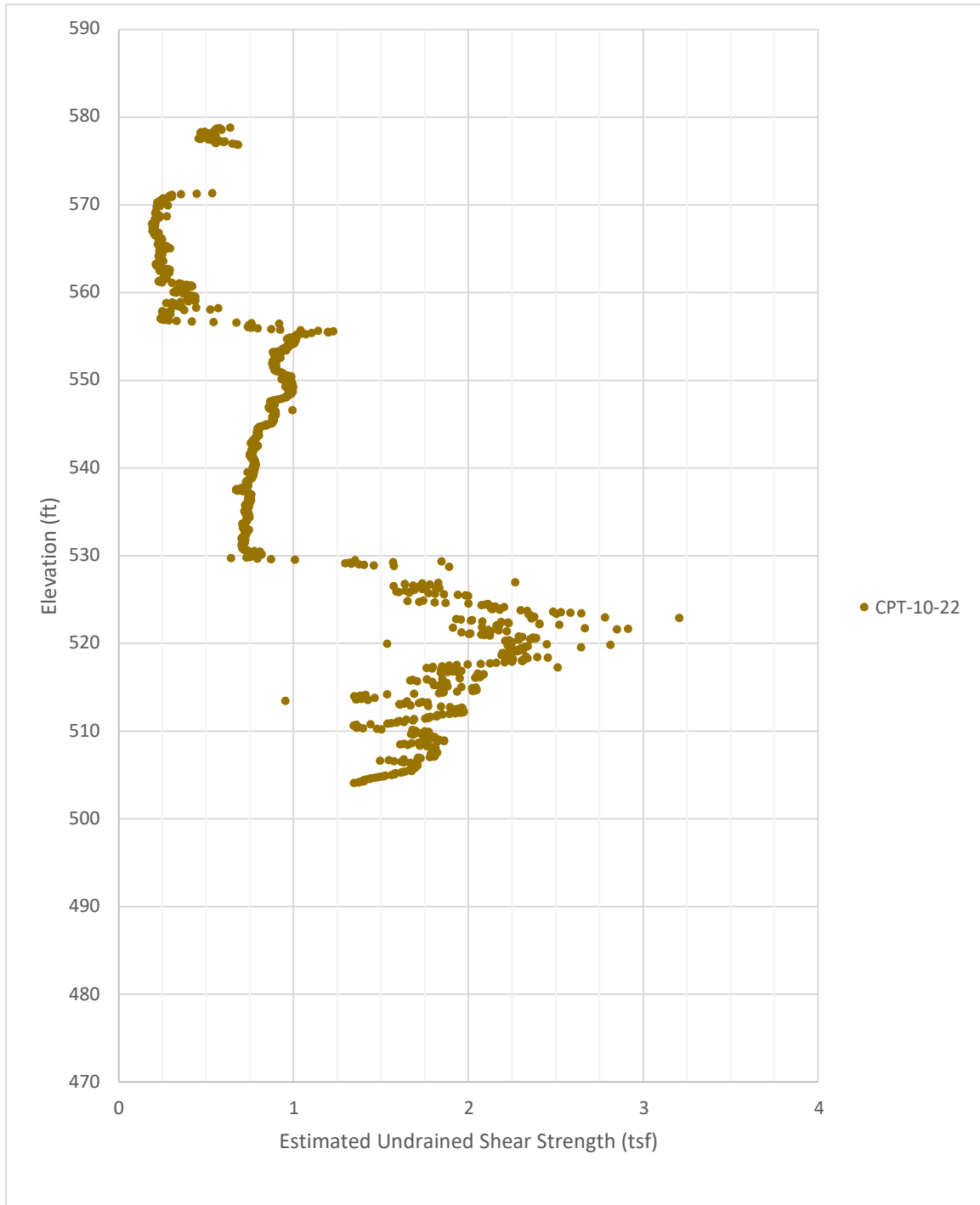


<div><div>GEI</div><div><div>Consultants</div></div></div>	Client	Brown County			Page	9 of 16
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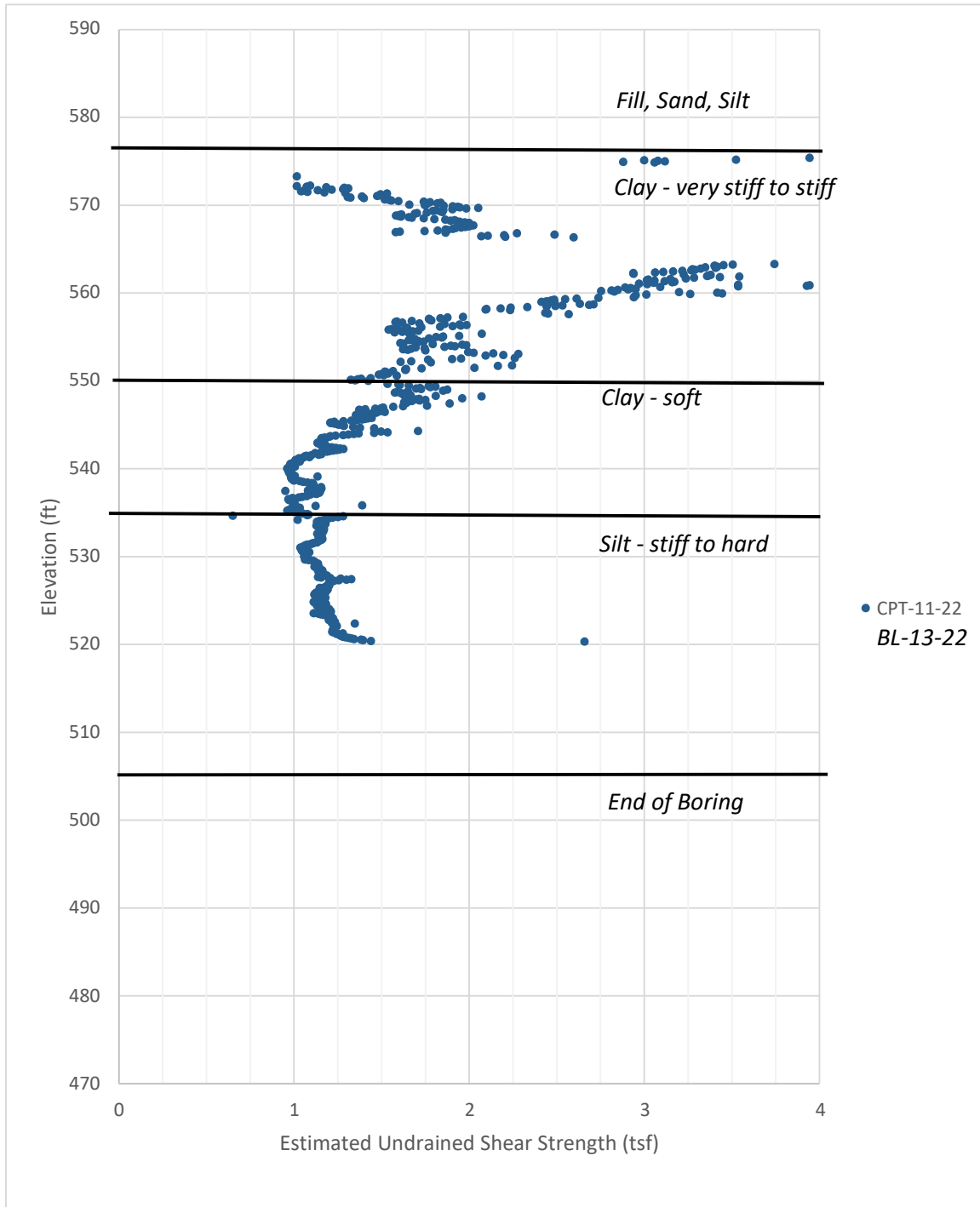


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PTu Undrained Shear Strength Profile Estimations					



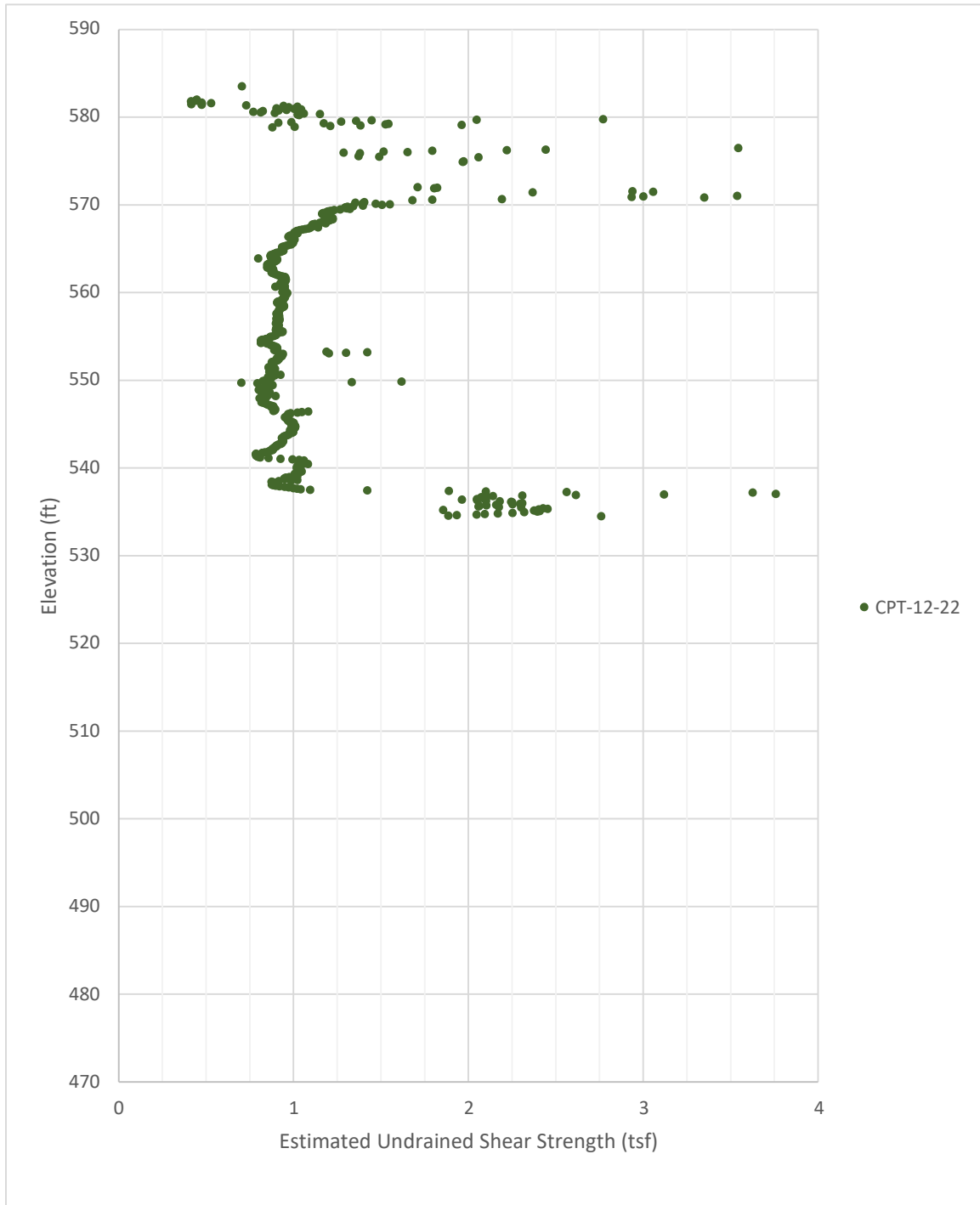


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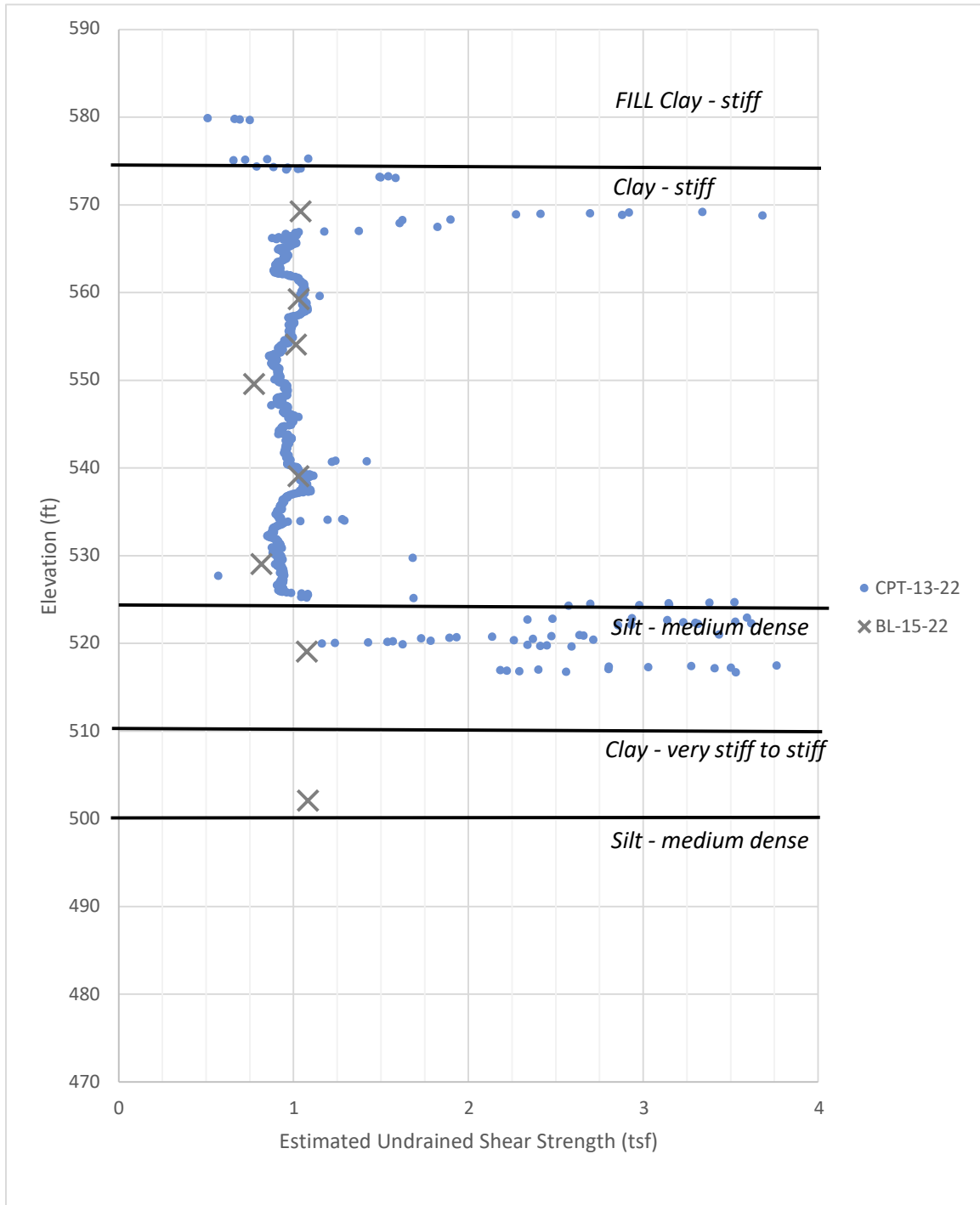


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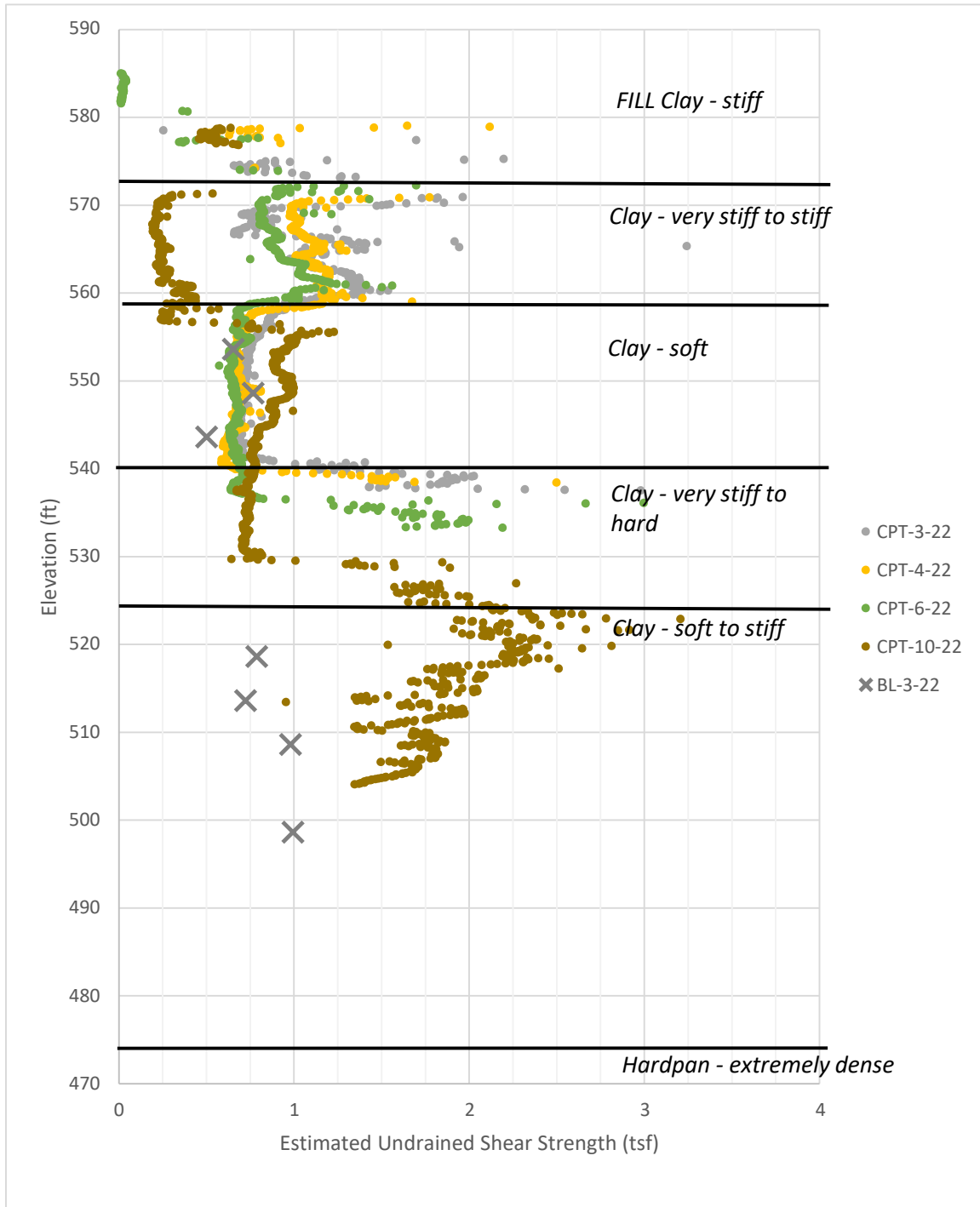


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01593	Document No.	Geotechnical Data Report - Appendix A.3			
PTu Undrained Shear Strength Profile Estimations					





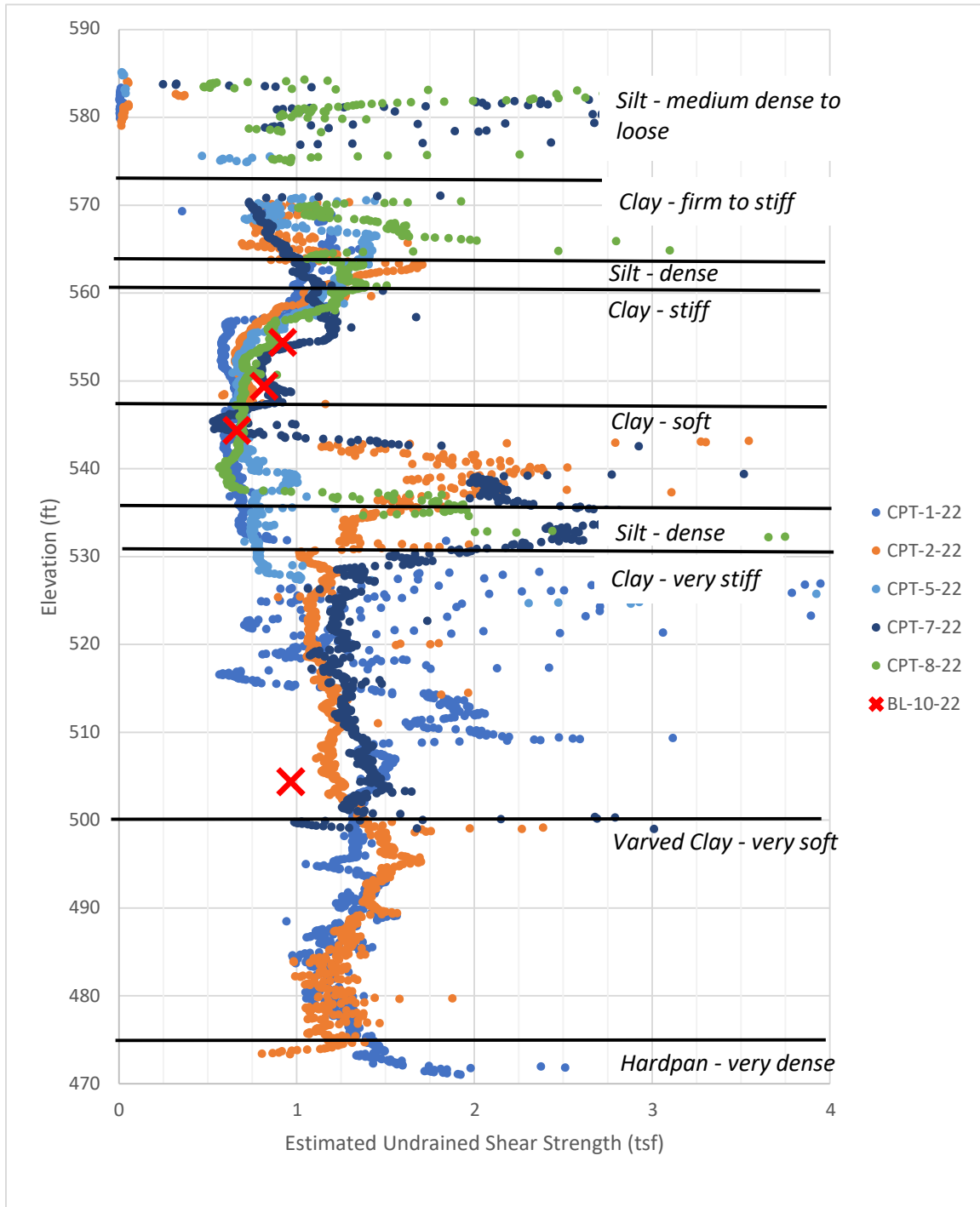
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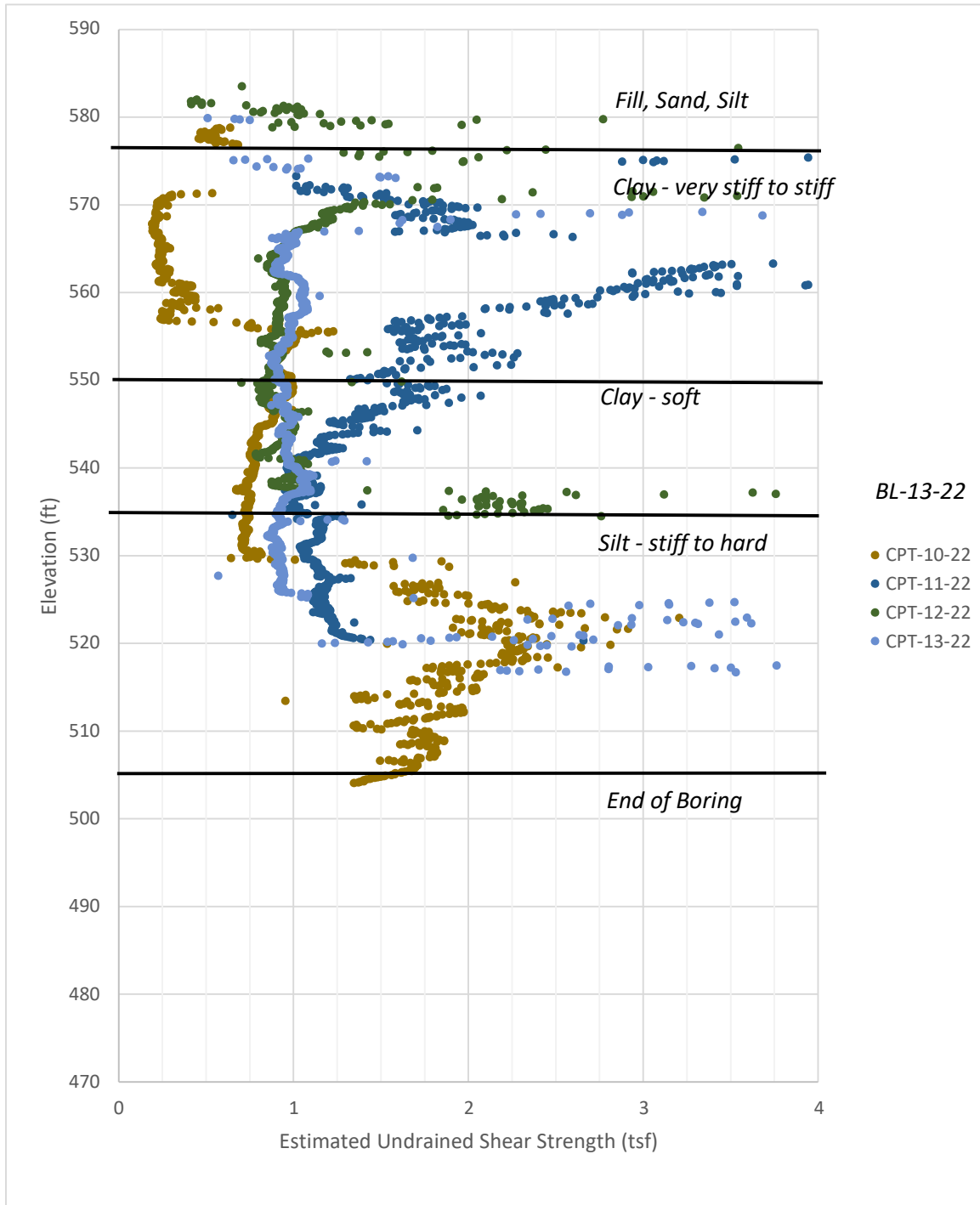
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Appendix B

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. 2201593
 Dates: 7/19/2022 to 8/1/2022
 Calculated By: AKL
 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	584.759	
	BL-1-22	583.811	
	BL-3-22	584.116	
	BL-10-22	584.87	
	BL-4-22	586.16	
	BL-9-22	586.552	
	BW-4-22	582.246	580.25
	BW-2-22	586.746	584.75
	BW-3-22	582.643	580.64
	BW-1-22	582.602	580.60

VANE SIZE
 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 Constant, K: 1.0038 (Subsurface Exploration Services)

Data Reduction: CEF

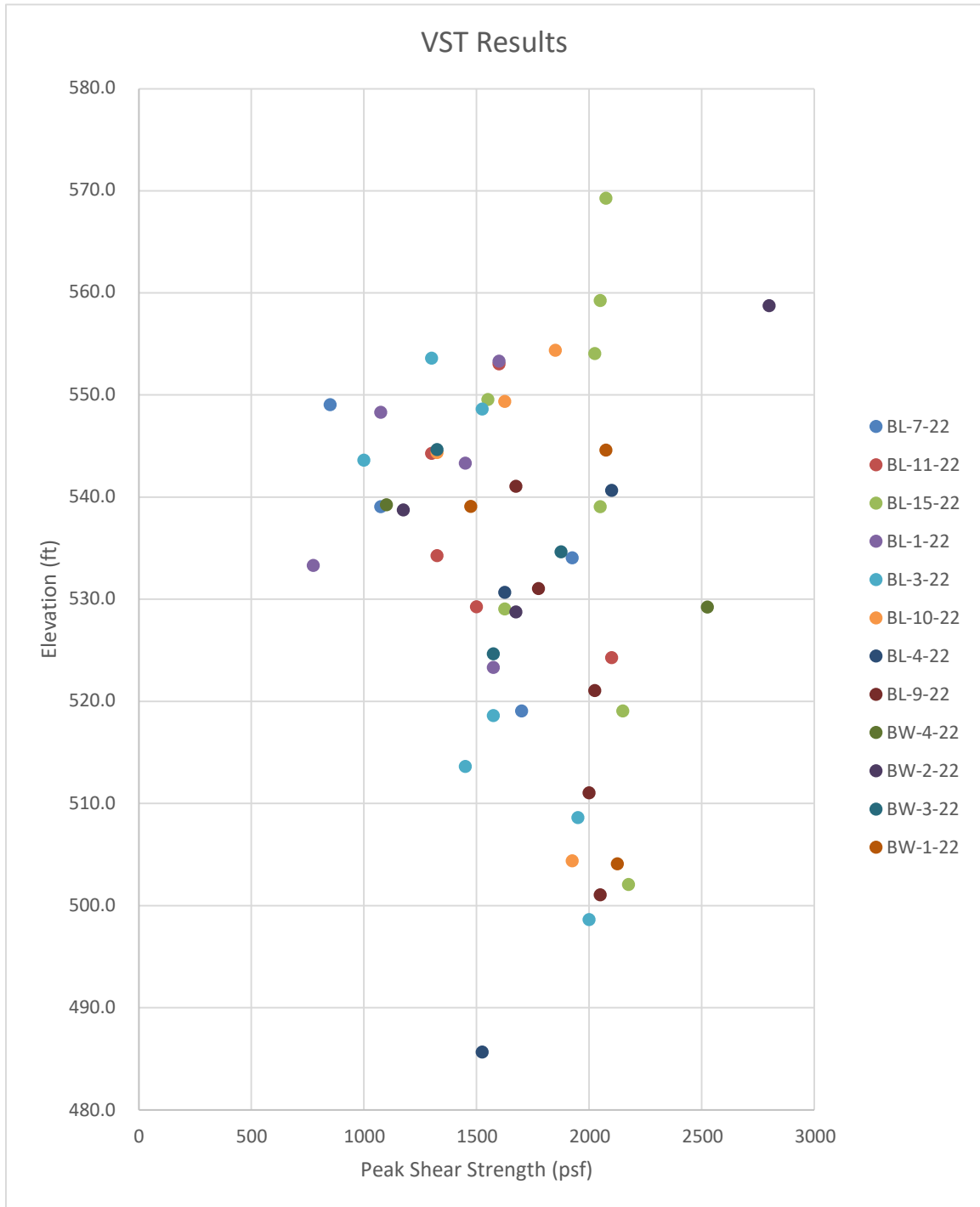
BORING NO.	Vane Shear Test #	VANE TIP DEPTH	VANE SIZE	VANE	a	a'	a''	PEAK S _p	b	REMOLED S _p	SENSITIVIT Y	APPROX. VANE TIP ELEV.	Notes	
		(ft)			(in)	(in)	(in)	(tsf)	(psf)	(in)	(tsf)	(psf)	Peak/Rem.	
BL-1-22	1	30.5	medium	1	3.075	3.109	0.034	0.800	1600	0.855	0.222	450	3.6	553.3
BL-1-22	2	35.5	medium	1	2.074	2.138	0.064	0.540	1075	0.628	0.163	325	3.3	548.3
BL-1-22	3	40.5	medium	1	2.807	2.876	0.069	0.730	1450	0.382	0.099	200	7.3	543.3
BL-1-22	4	50.5	medium	1	1.478	1.539	0.061	0.385	775	1.145	0.298	600	1.3	533.3
BL-1-22	5	60.5	medium	1	3.028	3.103	0.075	0.788	1575	0.561	0.146	300	5.3	523.3
BL-3-22	1	30.5	medium	1	2.512	2.570	0.058	0.654	1300	0.716	0.186	375	3.5	553.6
BL-3-22	2	35.5	medium	1	2.950	3.019	0.069	0.768	1525	0.766	0.199	400	3.8	548.6
BL-3-22	3	40.5	medium	1	1.926	1.953	0.027	0.501	1000	0.506	0.132	275	3.6	543.6
BL-3-22	4	65.5	medium	1	3.024	3.130	0.106	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	0.000	0.994	2000					498.6
BL-4-22	1	45.5	medium	1	4.023	4.064	0.041	1.047	2100					540.7
BL-4-22	2	55.5	medium	1	3.100	3.192	0.092	0.807	1625					530.7
BL-4-22	3	100.5	medium	1	2.948	3.021	0.073	0.767	1525	0.799	0.208	425	3.6	485.7
BL-7-22	1	35.5	medium	1	1.644	1.699	0.055	0.428	850	0.689	0.179	350	2.4	549.1
BL-7-22	2	45.5	medium	1	2.062	2.146	0.084	0.537	1075	0.470	0.122	250	4.3	539.1
BL-7-22	3	50.5	medium	1	3.721	3.875	0.154	0.968	1925	0.694	0.181	350	5.5	534.1
BL-7-22	4	65.5	medium	1	3.266	3.452	0.186	0.850	1700	0.771	0.201	400	4.3	519.1
BL-9-22	1	45.5	medium	1	3.197	3.236	0.039	0.832	1675	1.286	0.335	675	2.5	541.1
BL-9-22	2	55.5	medium	1	3.406	3.482	0.076	0.886	1775	1.197	0.311	625	2.8	531.1
BL-9-22	3	65.5	medium	1	3.875	3.963	0.088	1.008	2025					521.1
BL-9-22	4	75.5	medium	1	3.859	3.966	0.107	1.004	2000					511.1
BL-9-22	5	85.5	medium	1	3.963	4.035	0.072	1.031	2050					501.1
BL-10-22	1	30.5	medium	1	3.540	3.583	0.043	0.921	1850	1.140	0.297	600	3.1	554.4
BL-10-22	2	35.5	medium	1	3.142	3.191	0.049	0.818	1625	1.025	0.267	525	3.1	549.4
BL-10-22	3	40.5	medium	1	2.553	2.636	0.083	0.664	1325	0.739	0.192	375	3.5	544.4
BL-10-22	4	80.5	medium	1	3.718	3.826	0.108	0.967	1925	1.064	0.277	550	3.5	504.4
BL-11-22	1	31.5	medium	1	3.082	3.212	0.130	0.802	1600	1.065	0.277	550	2.9	553.1
BL-11-22	2	40.5	medium	1	2.507	2.576	0.069	0.652	1300	0.776	0.202	400	3.3	544.3
BL-11-22	3	50.5	medium	1	2.560	2.584	0.024	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
BL-15-22	1	15.5	medium	1	4.001	4.086	0.085	1.041	2075					569.3
BL-15-22	2	25.5	medium	1	3.957	4.104	0.147	1.030	2050					559.3
BL-15-22	3	30.5	medium	1	3.897	3.986	0.089	1.014	2025					554.1
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
BL-15-22	8	82.5	medium	1	4.161	4.161	0.000	1.083	2175					502.1
BW-1-22	1	13.5	small	2										
BW-1-22	2	38	medium	1	3.86	3.92	0.06	1.038	2075					544.6
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
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
BW-4-22	3	53	small	2	2.34	2.43	0.09	1.260	2525					529.2

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



Client	Brown County			Page	
Project	Port Property Redevelopment			Pg. Rev.	
By		Chk.		App.	
Date		Date		Date	

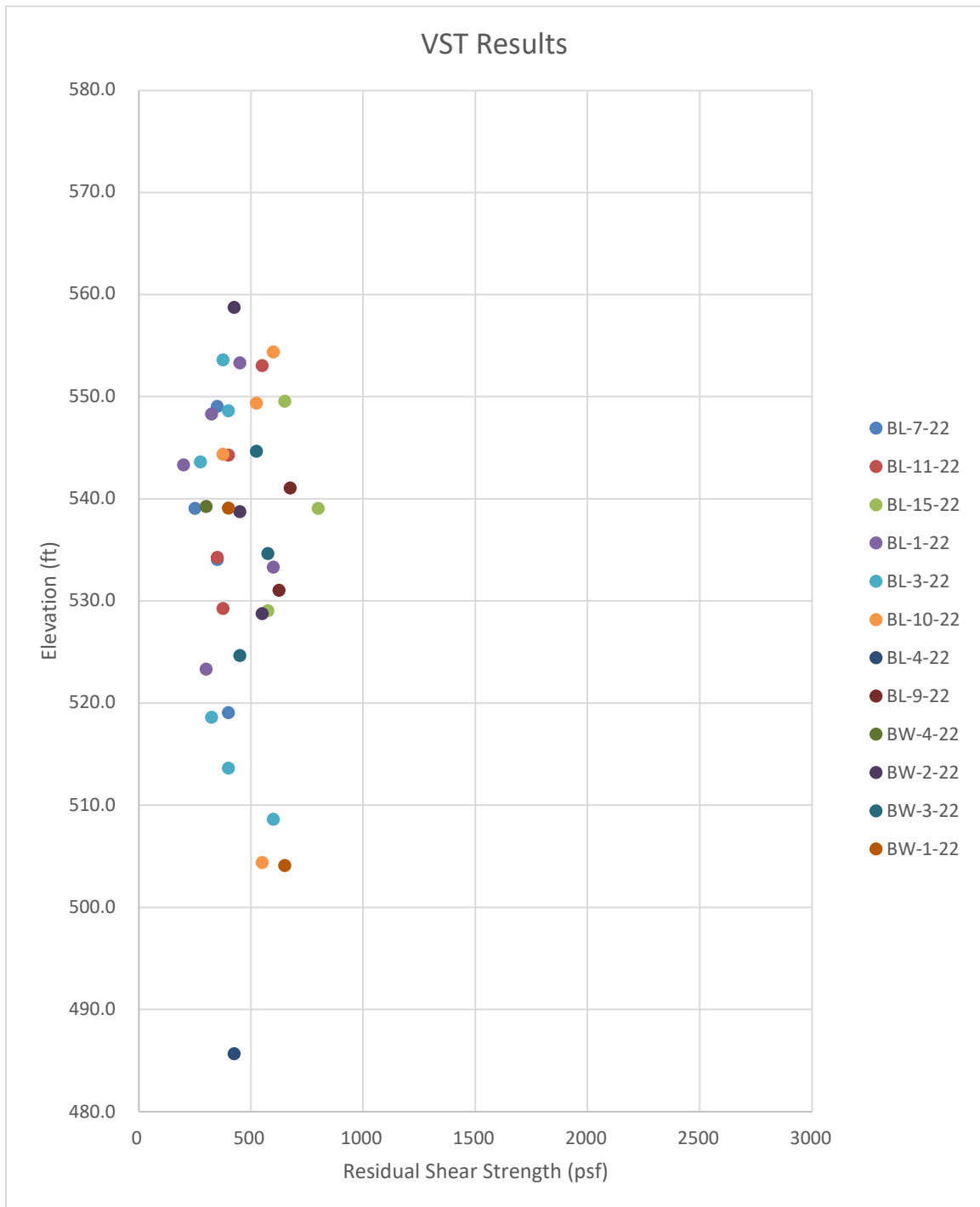
GEI Project No.		Document No.	Geotechnical Data Report - Appendix B.1
Subject	Field Vane Shear Test Results - Peak Strengths		





Client	Brown County			Page	
Project	Port Property Redevelopment			Pg. Rev.	
By		Chk.		App.	
Date		Date		Date	

GEI Project No.		Document No.	Geotechnical Data Report - Appendix B.1		
Subject	Field Vane Shear Test Results - Residual Strengths				

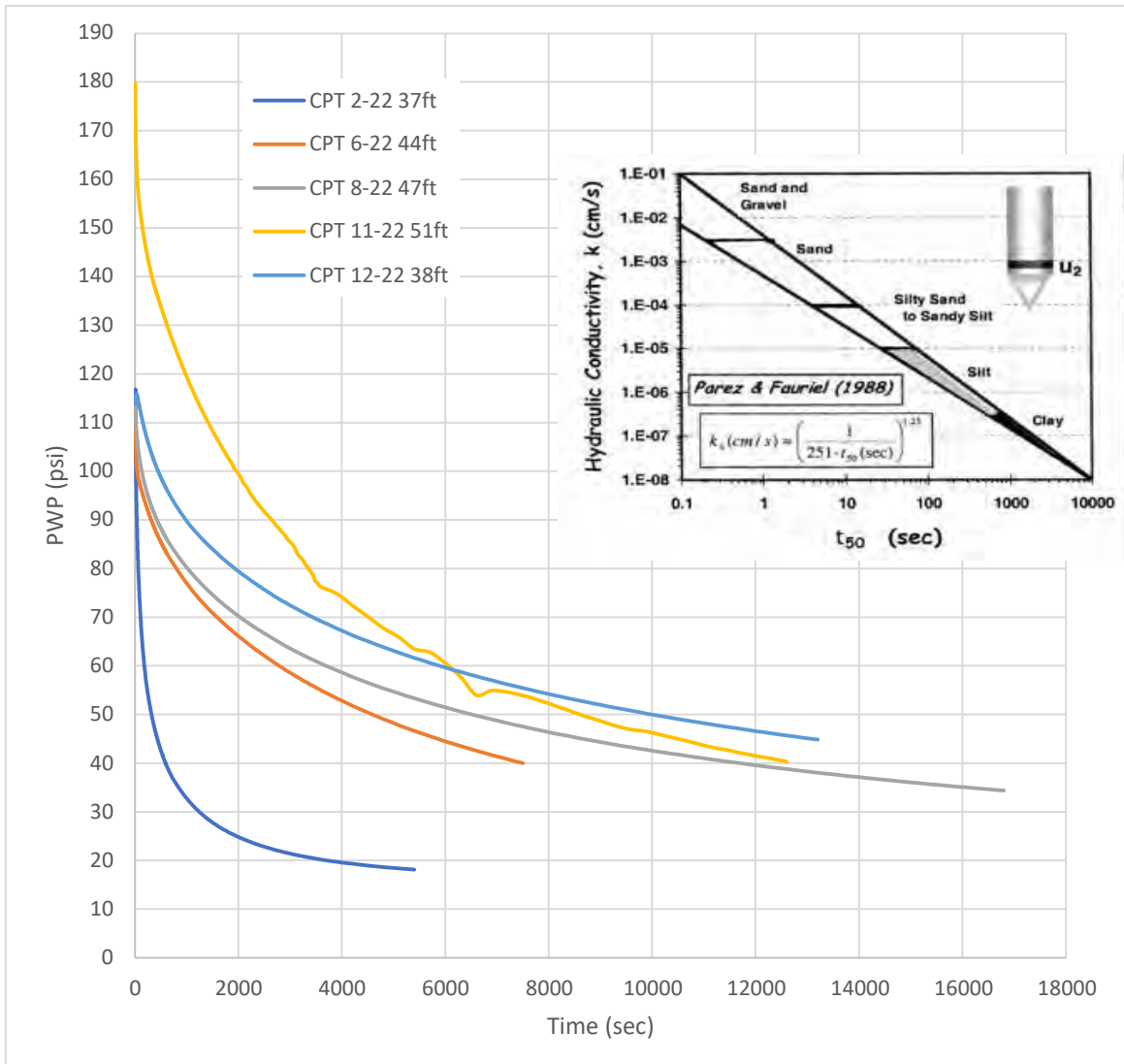




Client	Brown County			Page	
Project	Port Property Redevelopment			Pg. Rev.	
By		Chk.		App.	
Date		Date		Date	

GEI Project No.	2201593	Document No.	Geotechnical Data Report - Appendix B.2
Subject	CPTu Dissipation Test Summary		

Test	Depth (ft)	El. (ft)	U _i (psi)	U _o (psi)	U ₅₀ (psi)	t ₅₀ (min)	k _h (cm/s)	k _h (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



Appendix C

Laboratory Test Results

LABORATORY TESTING SUMMARY



PROJECT NAME: Pulliam Property Redevelopment Project

PROJECT NUMBER: 11225052

CLIENT: GEI Consultants, Inc.

Boring Number	Sample Number	Depth (ft)	Description (ASTM D2487)	USCS	MC %	Qp (tsf)	LL	PL	PI	Specific Gravity	Dry Density (pcf)	Consolidation		
												Pc (tsf)	Cc	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

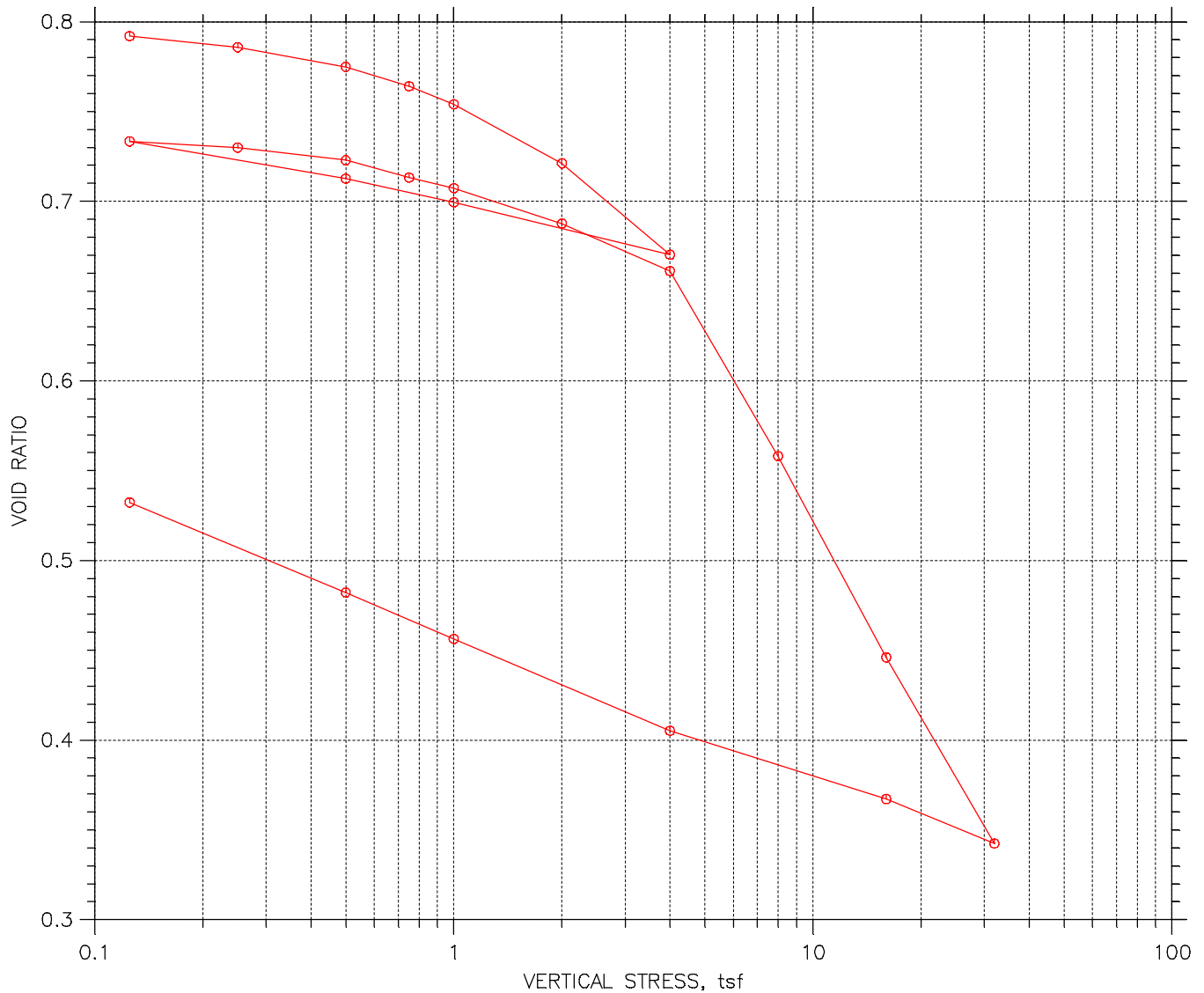
CLIENT: GEI Consultants, Inc.

Boring Number	Sample Number	Depth (ft)	Description (ASTM D2487)	USCS	MC %	Qp (tsf)	LL	PL	PI	Specific Gravity	Dry Density (pcf)	Consolidation		
												Pc (tsf)	Cc	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

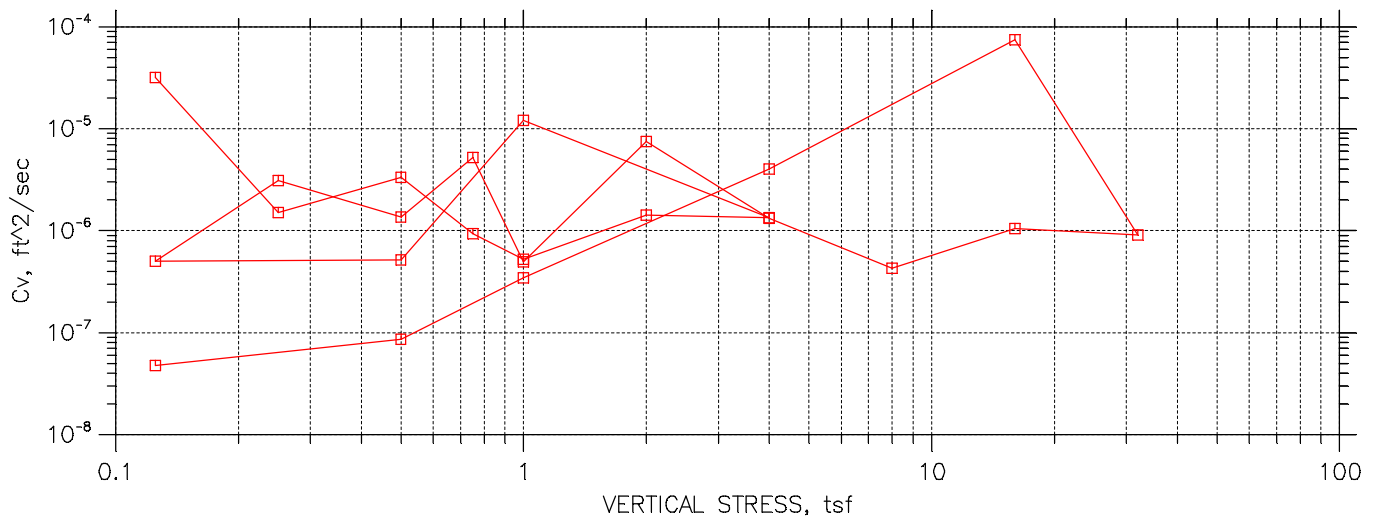
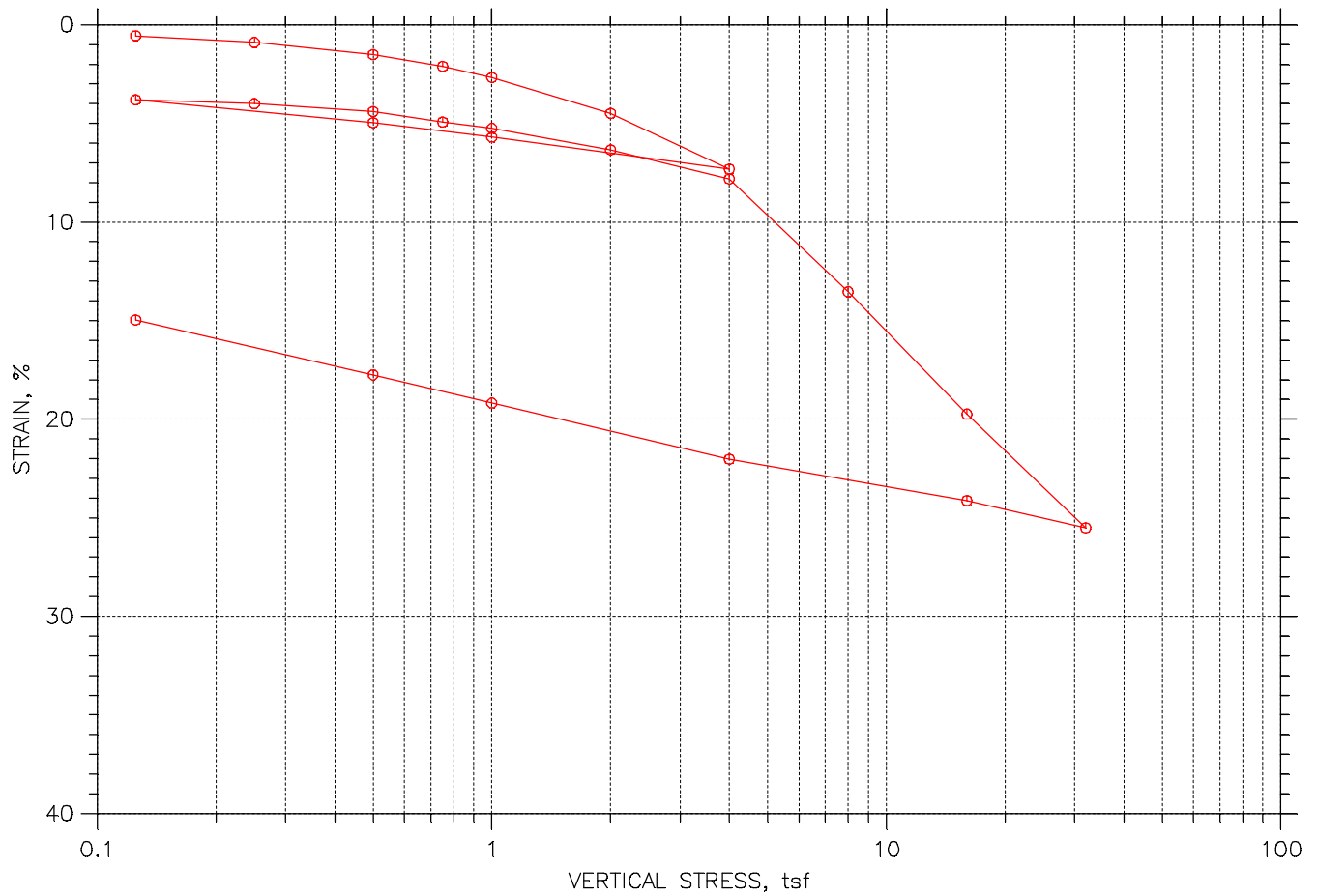
ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435




				Before Test	After Test	
				Water Content, %	29.85	20.16
Preconsolidation Pressure: 2.8 tsf				Dry Unit Weight, pcf	94.23	110.8
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			

	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: -----
	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



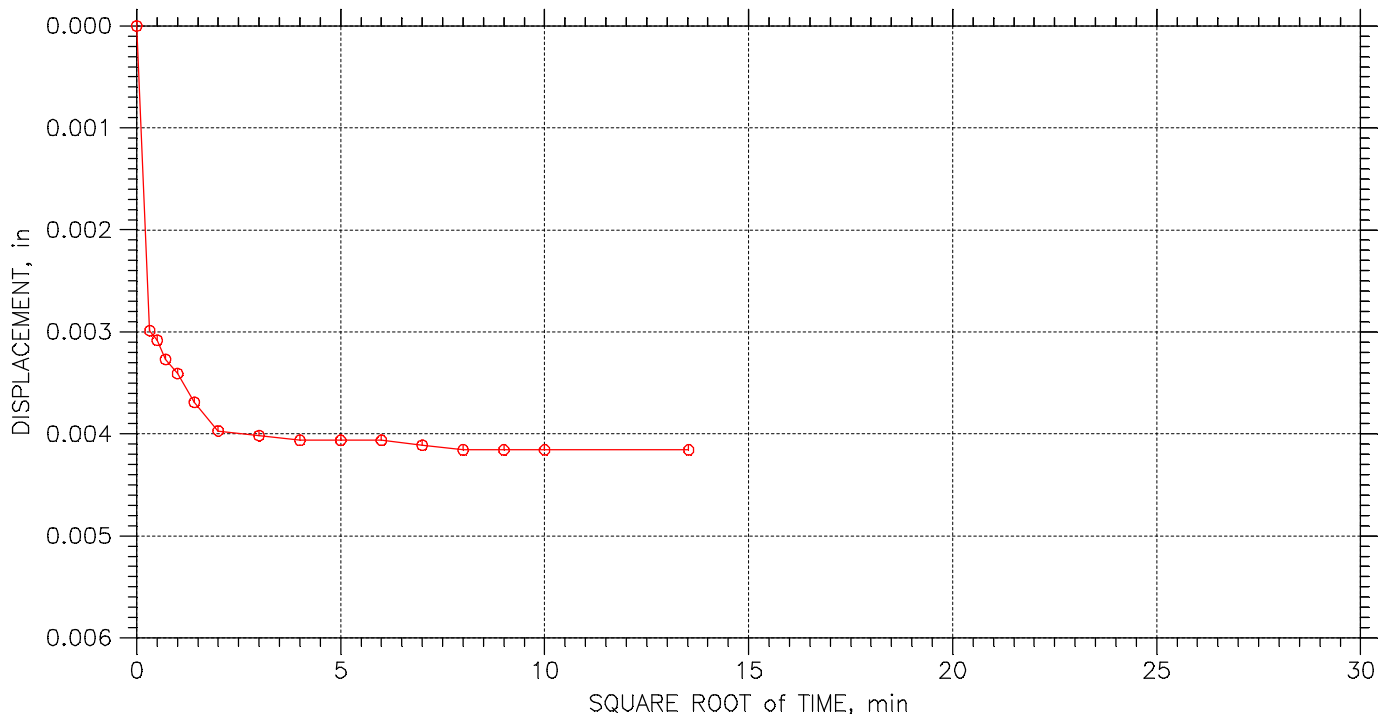
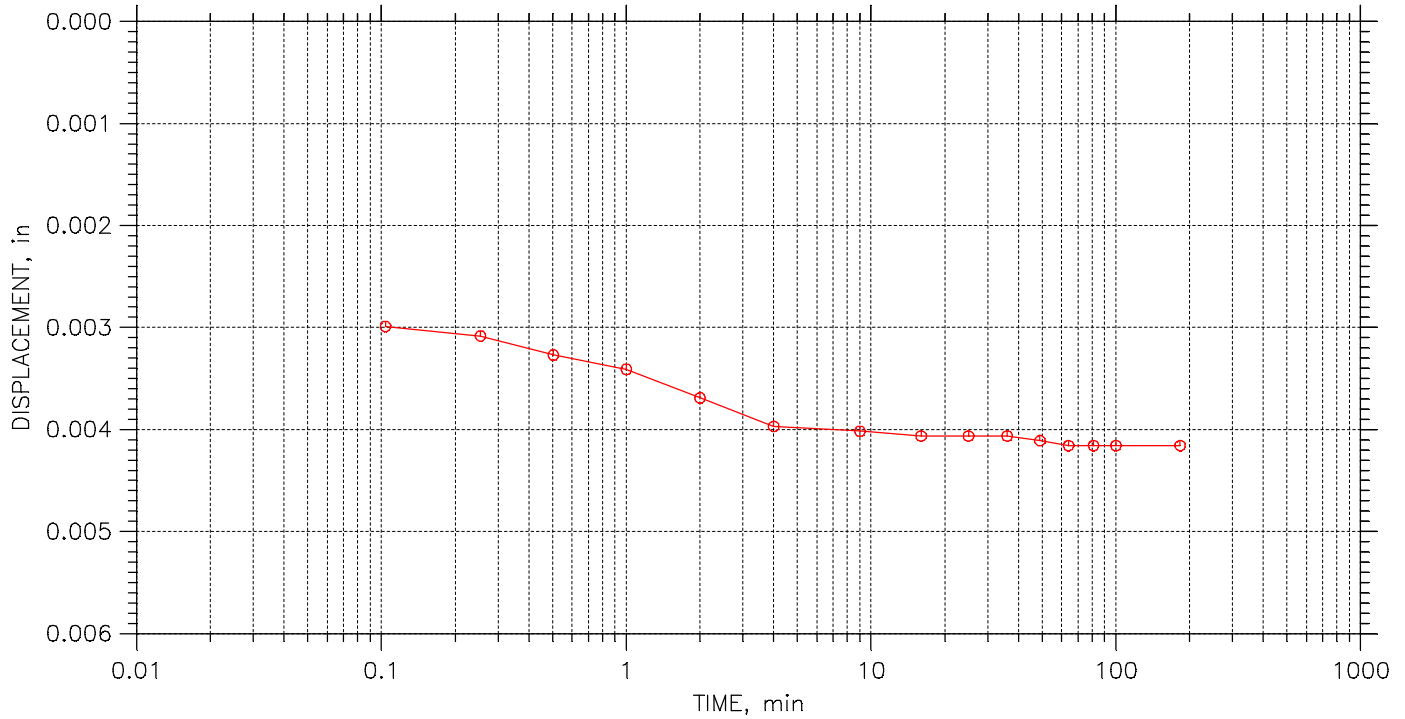
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	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $P_c = 2.8$ tsf $C_c = 0.372$ $C_{cr} = 0.010$ TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf



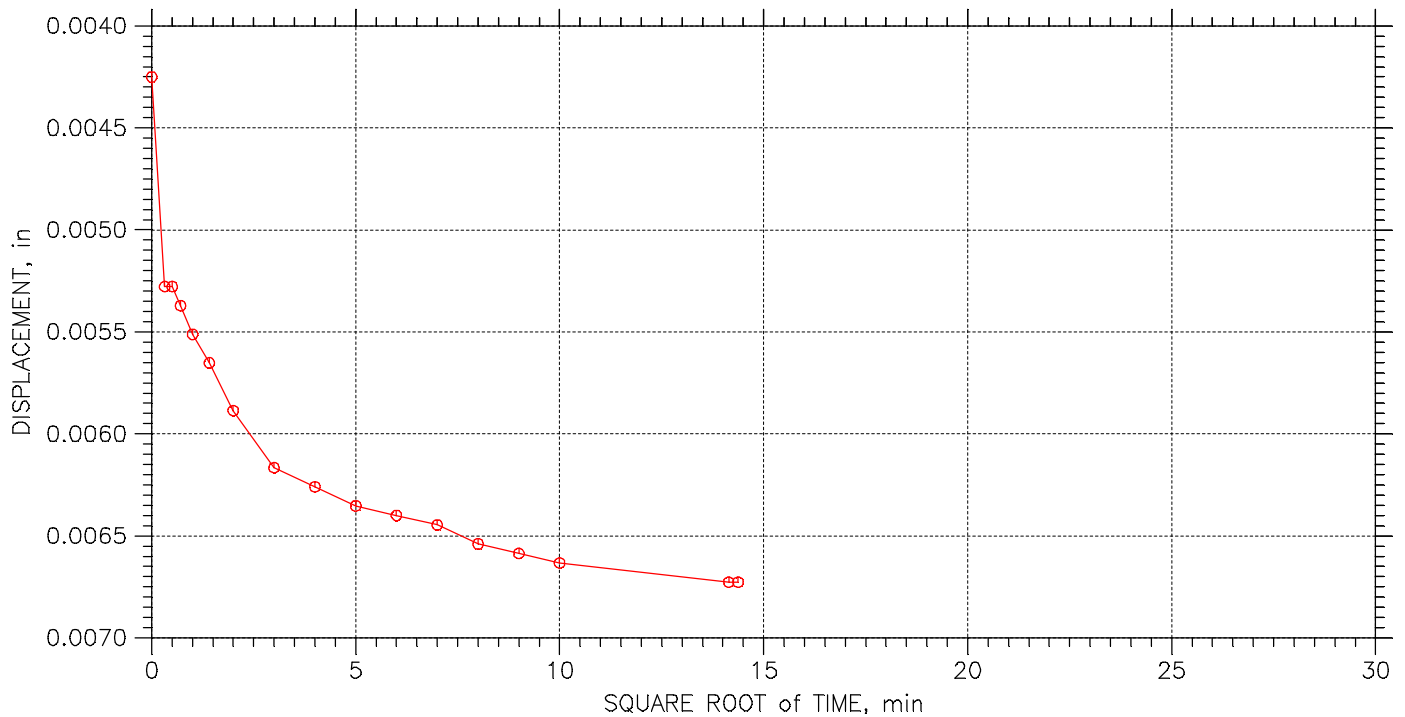
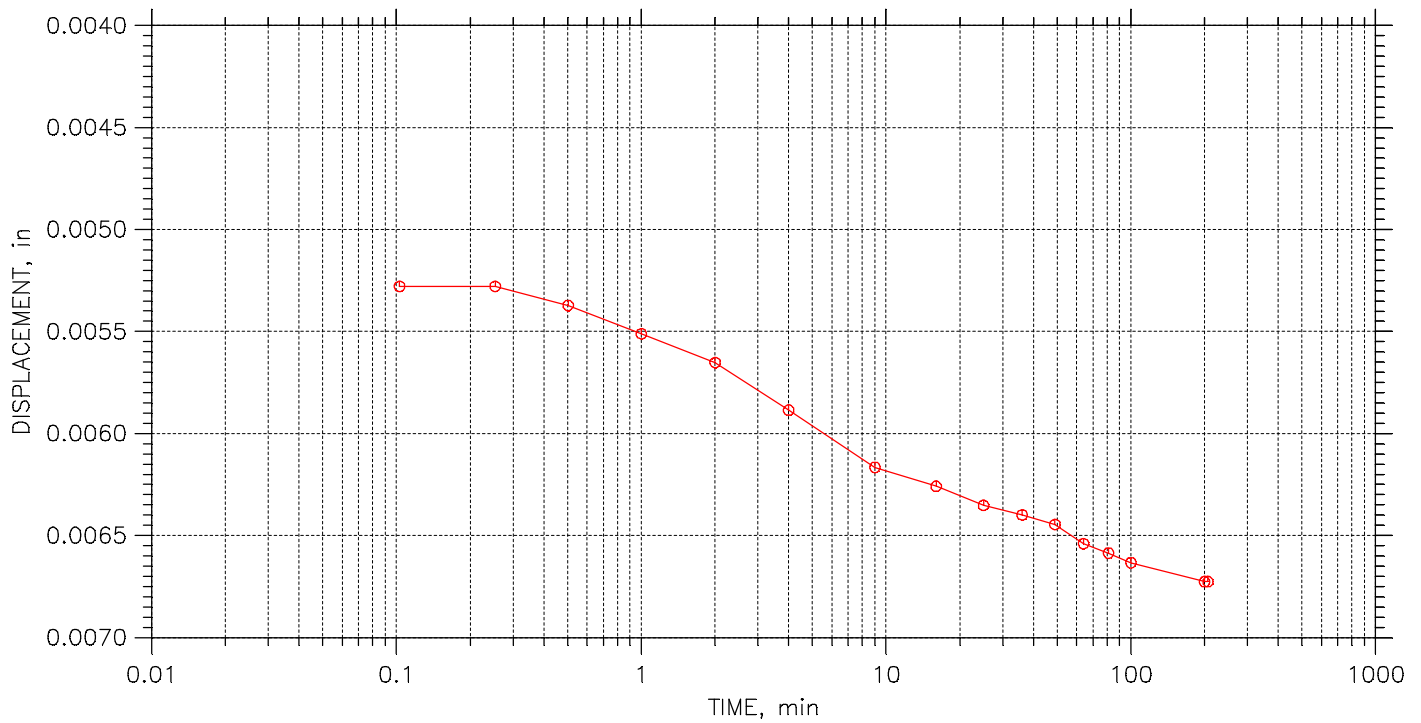
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	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf



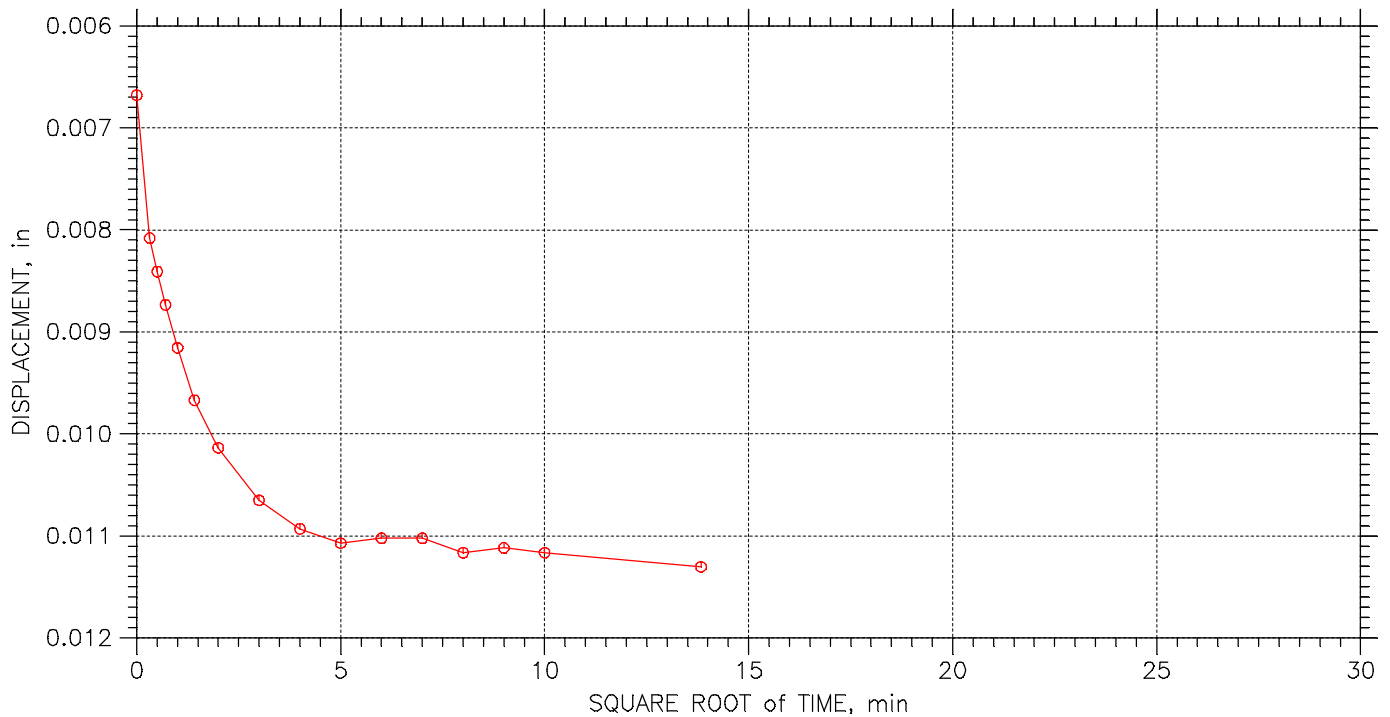
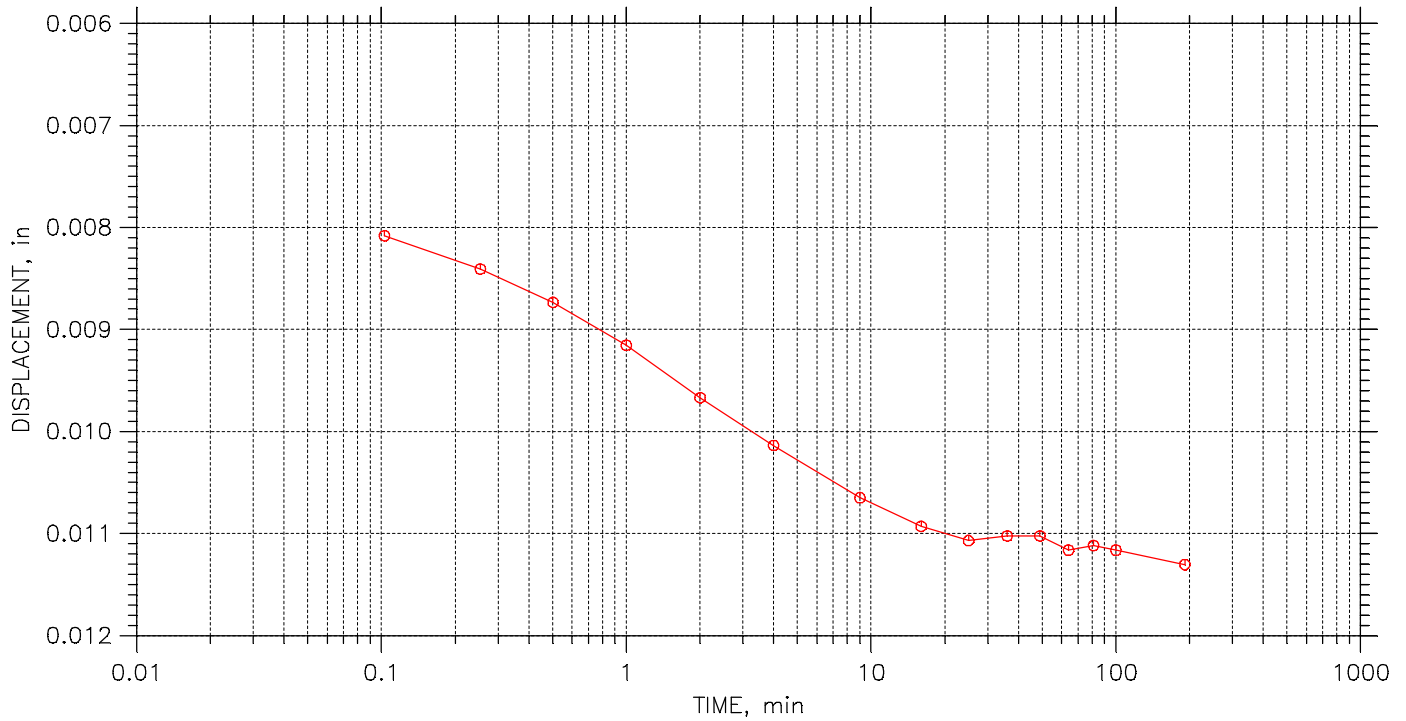
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	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf



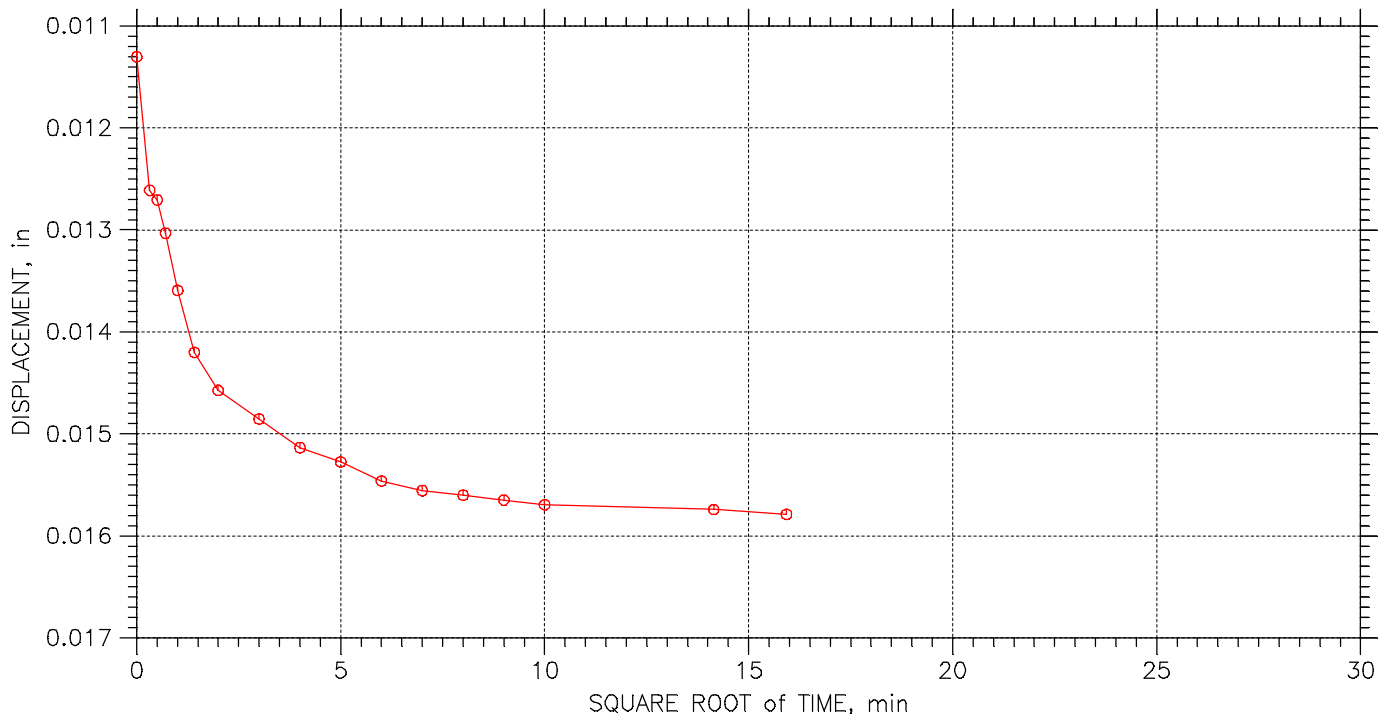
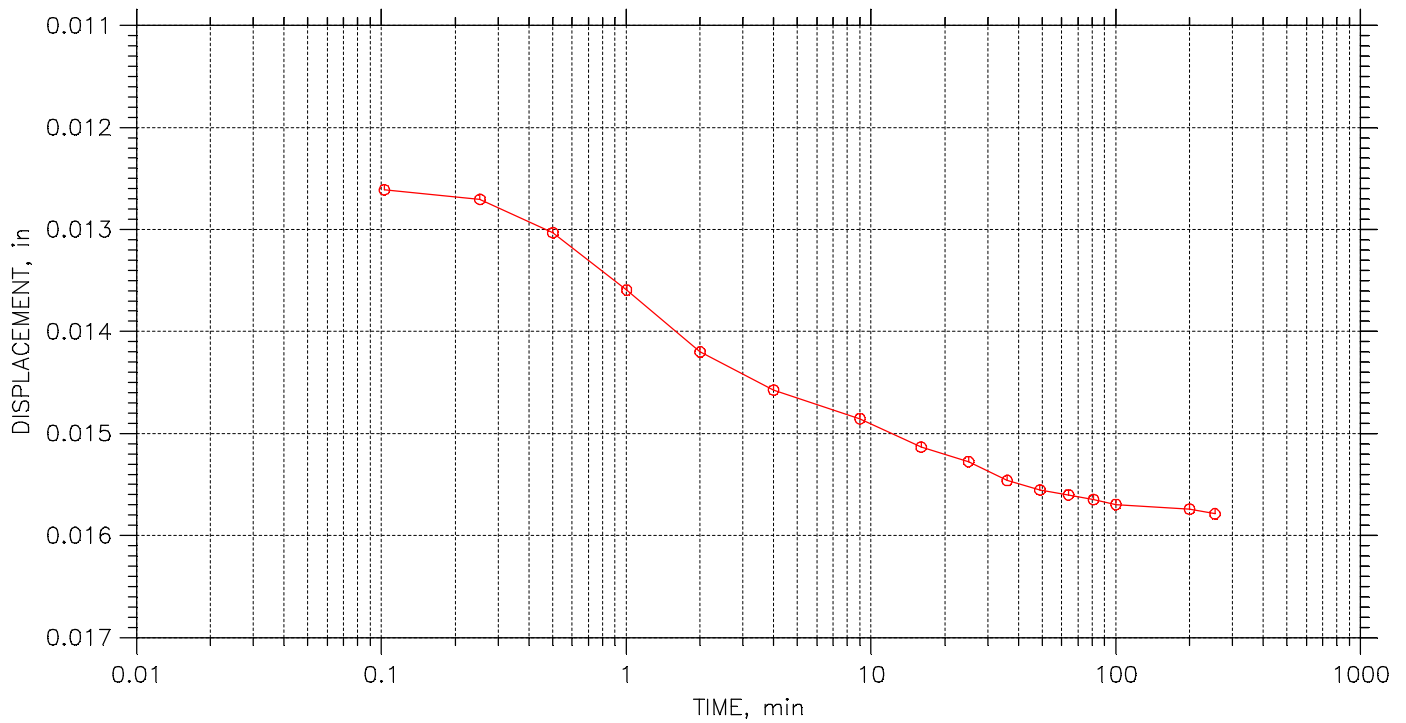
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	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf



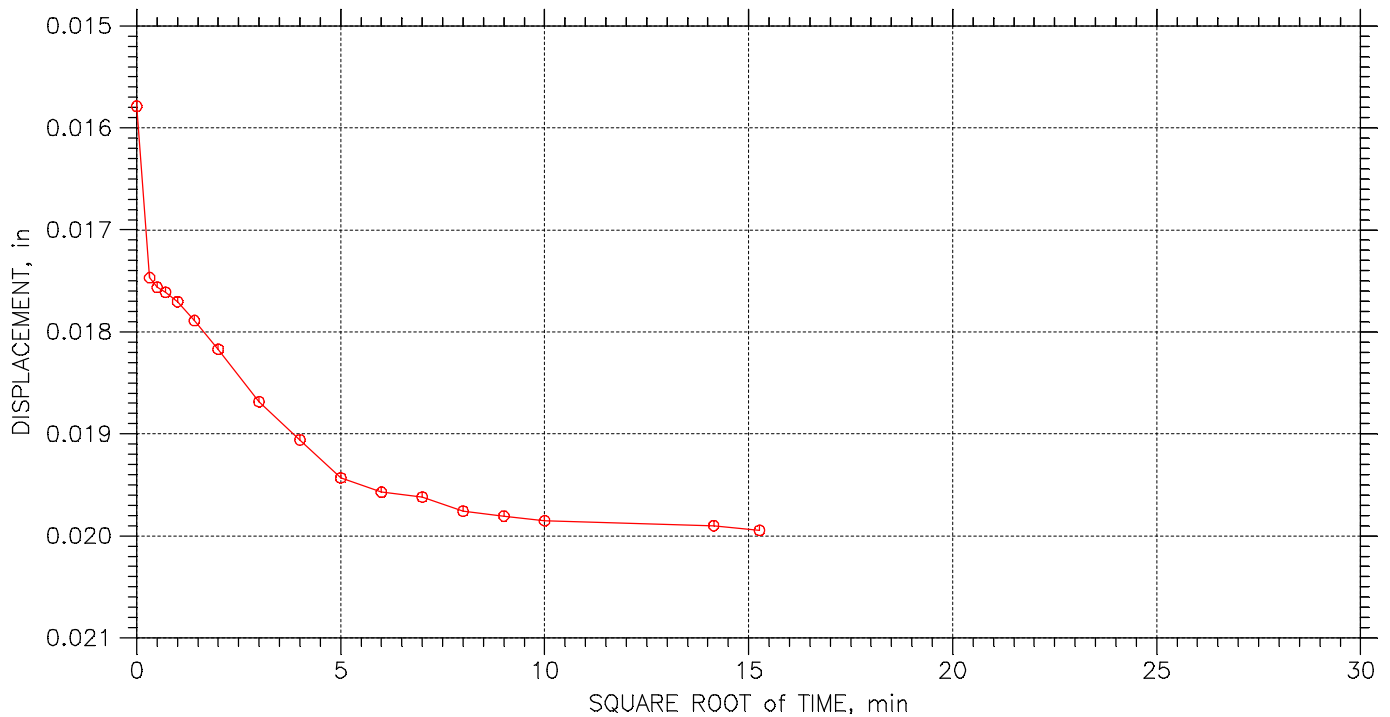
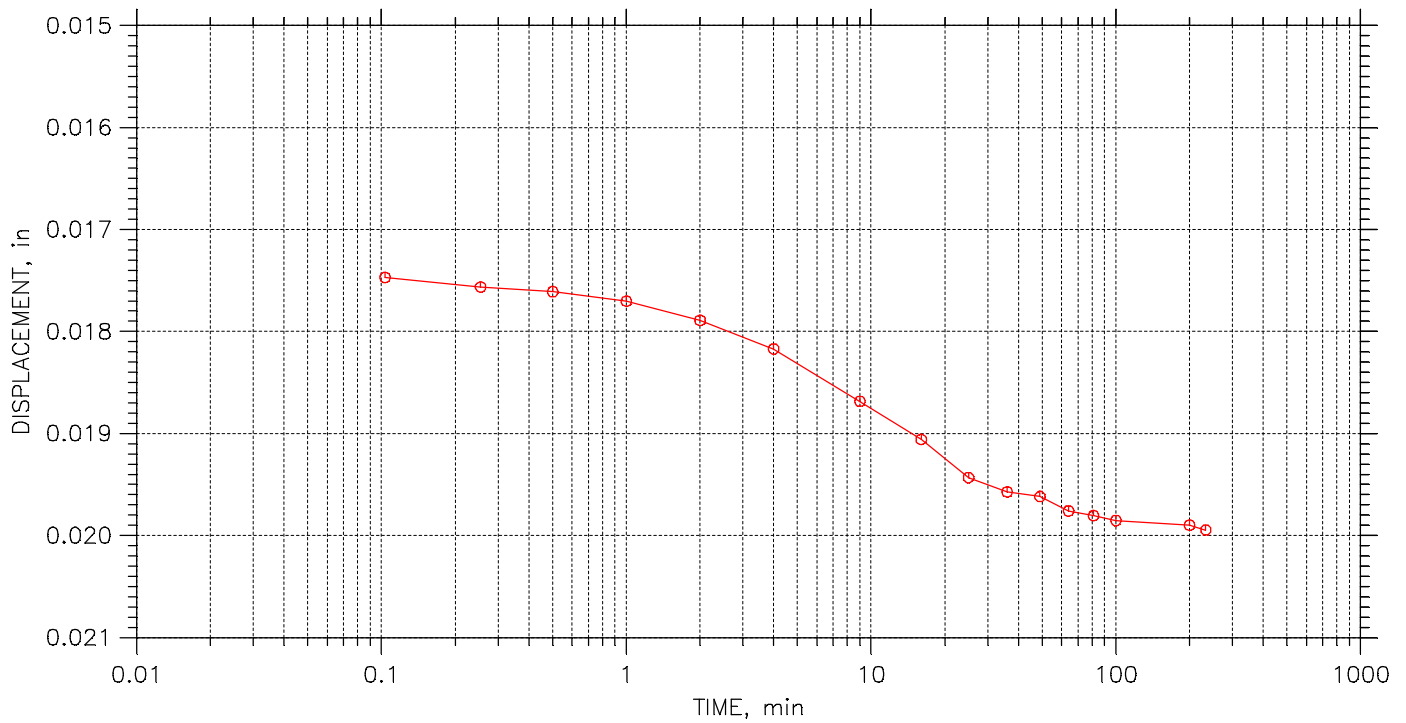
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	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf



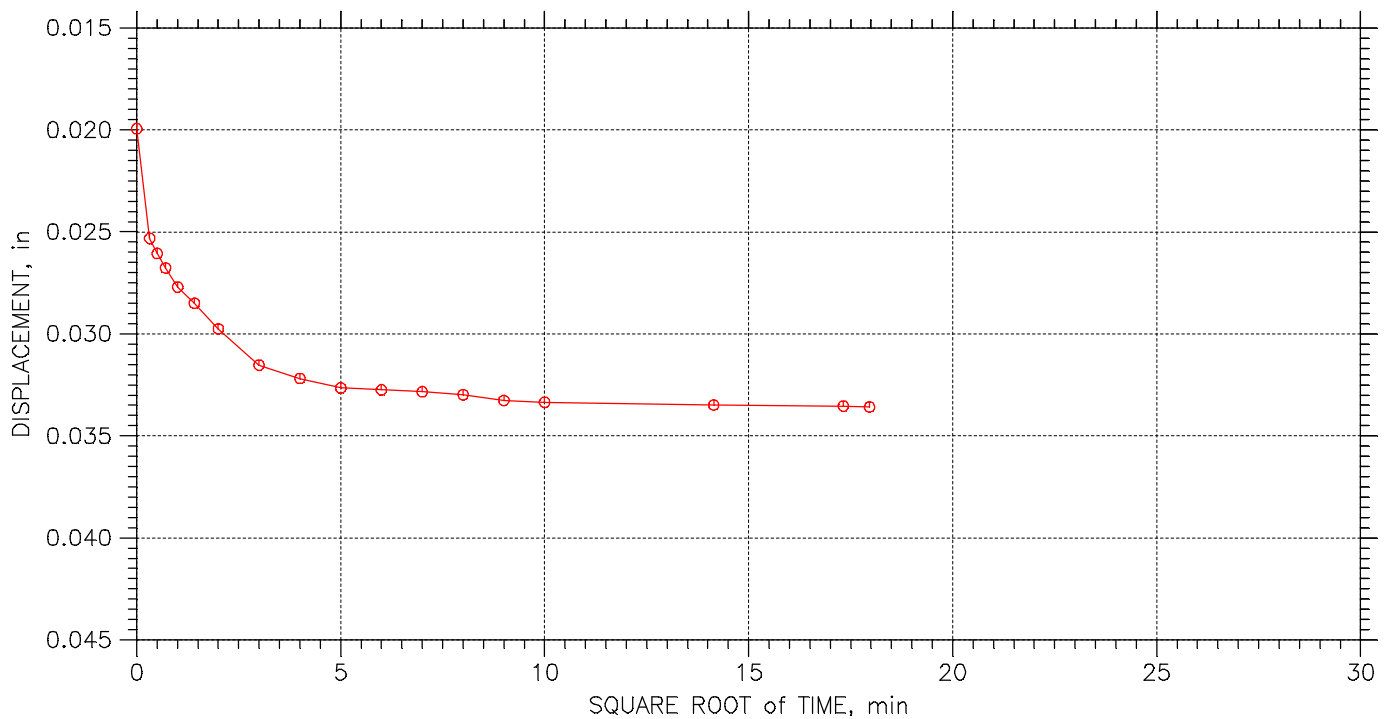
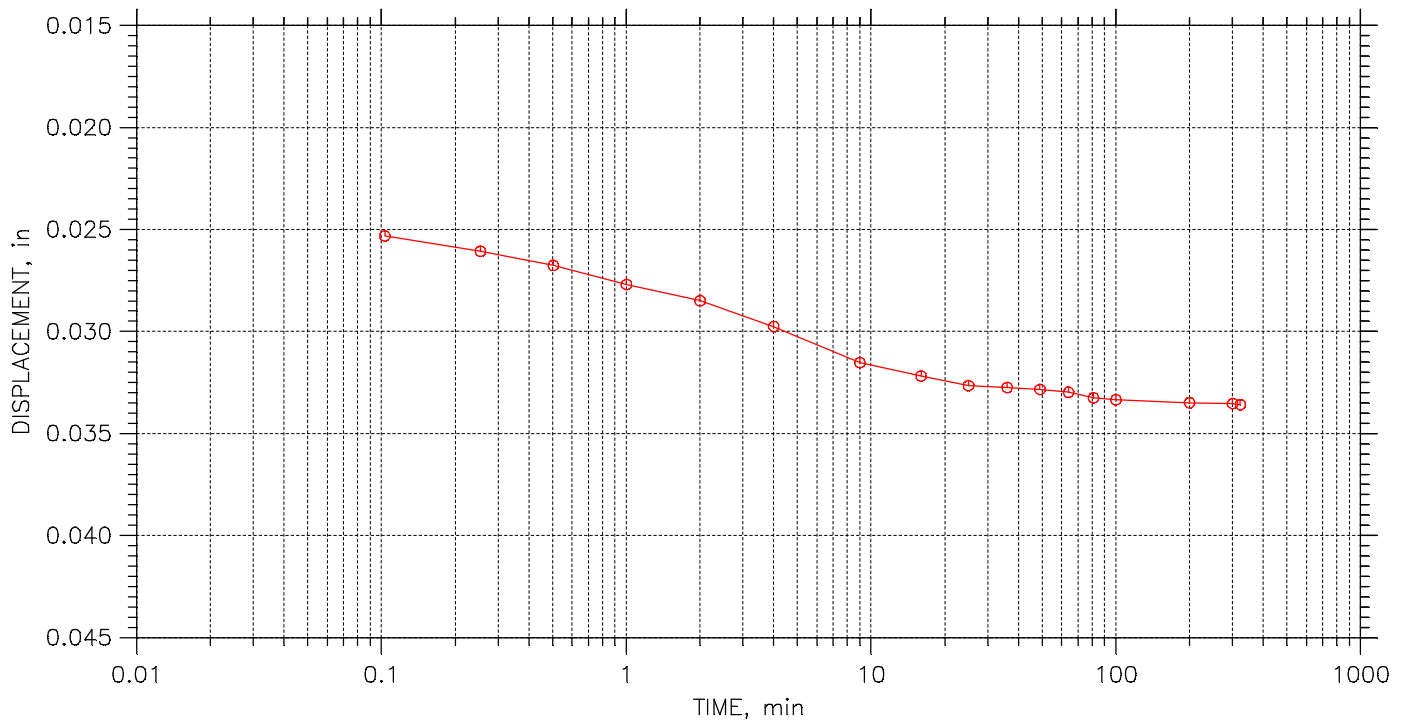
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	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf



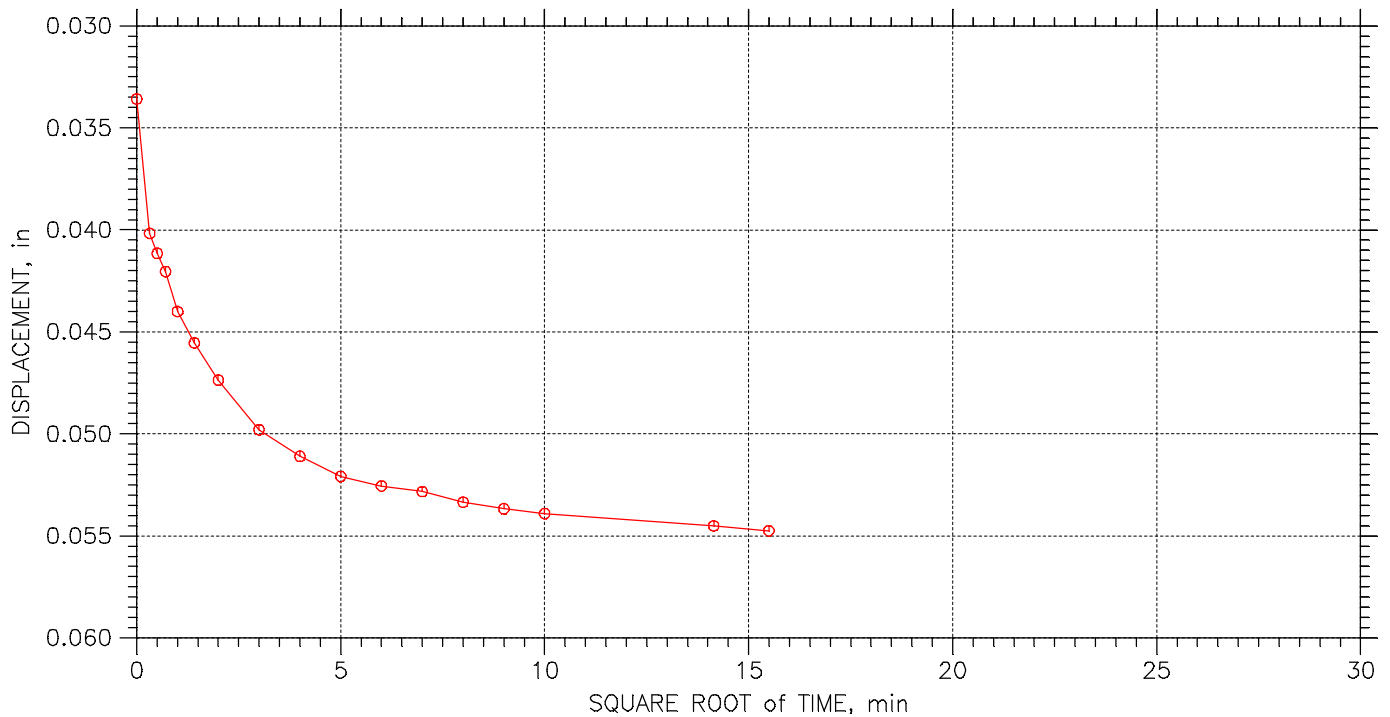
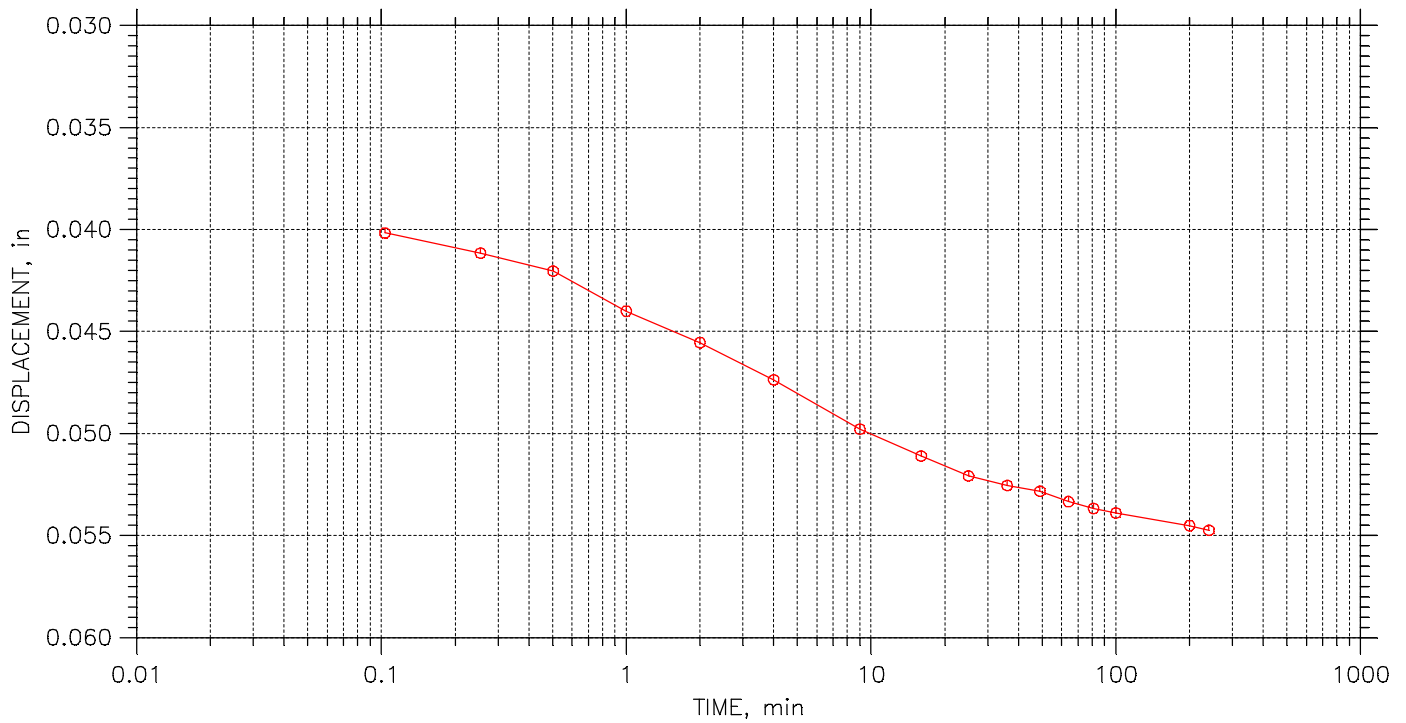
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	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf



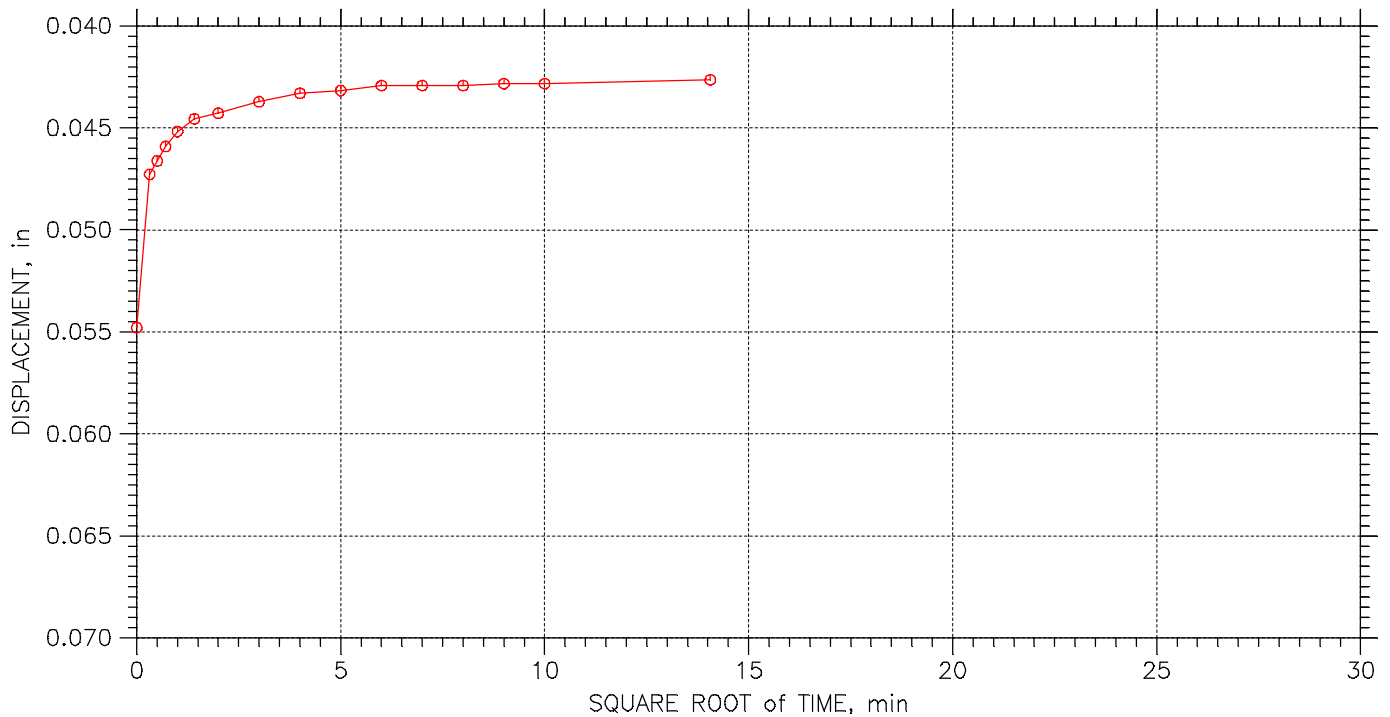
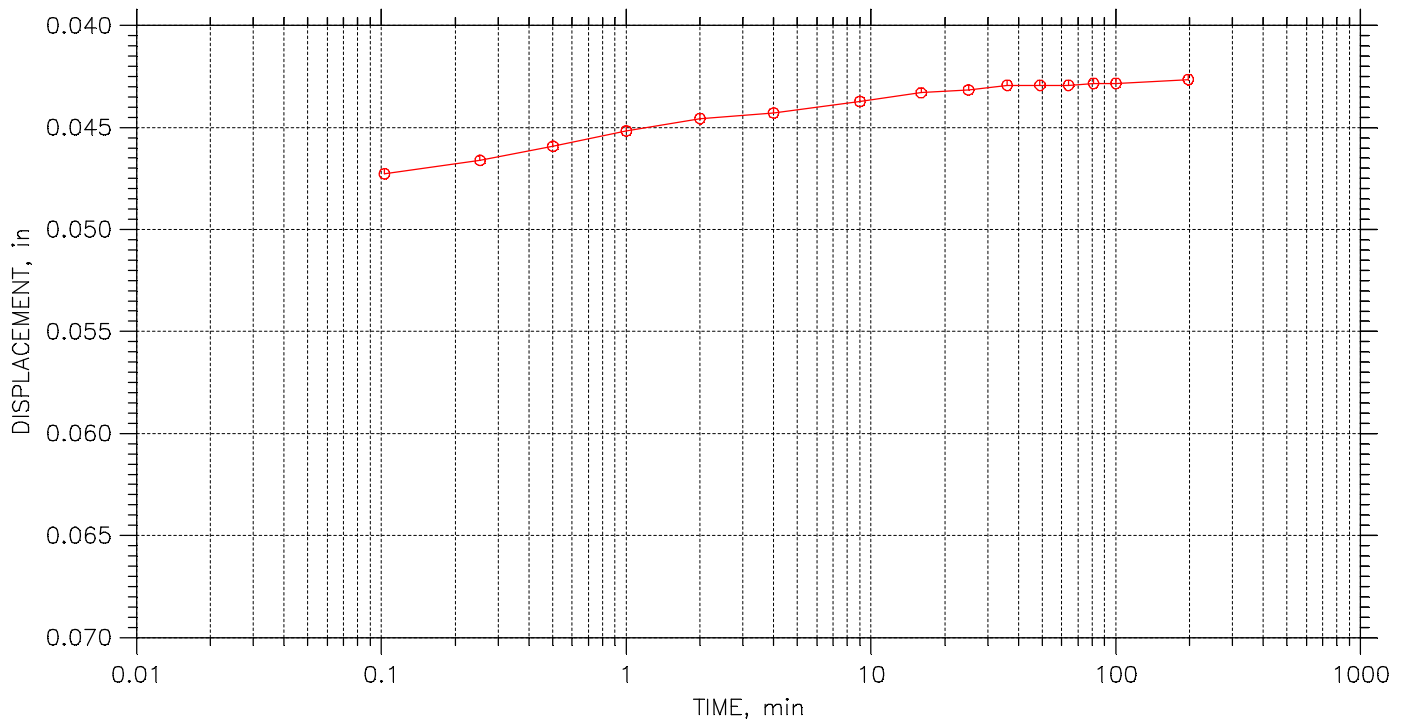
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	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf



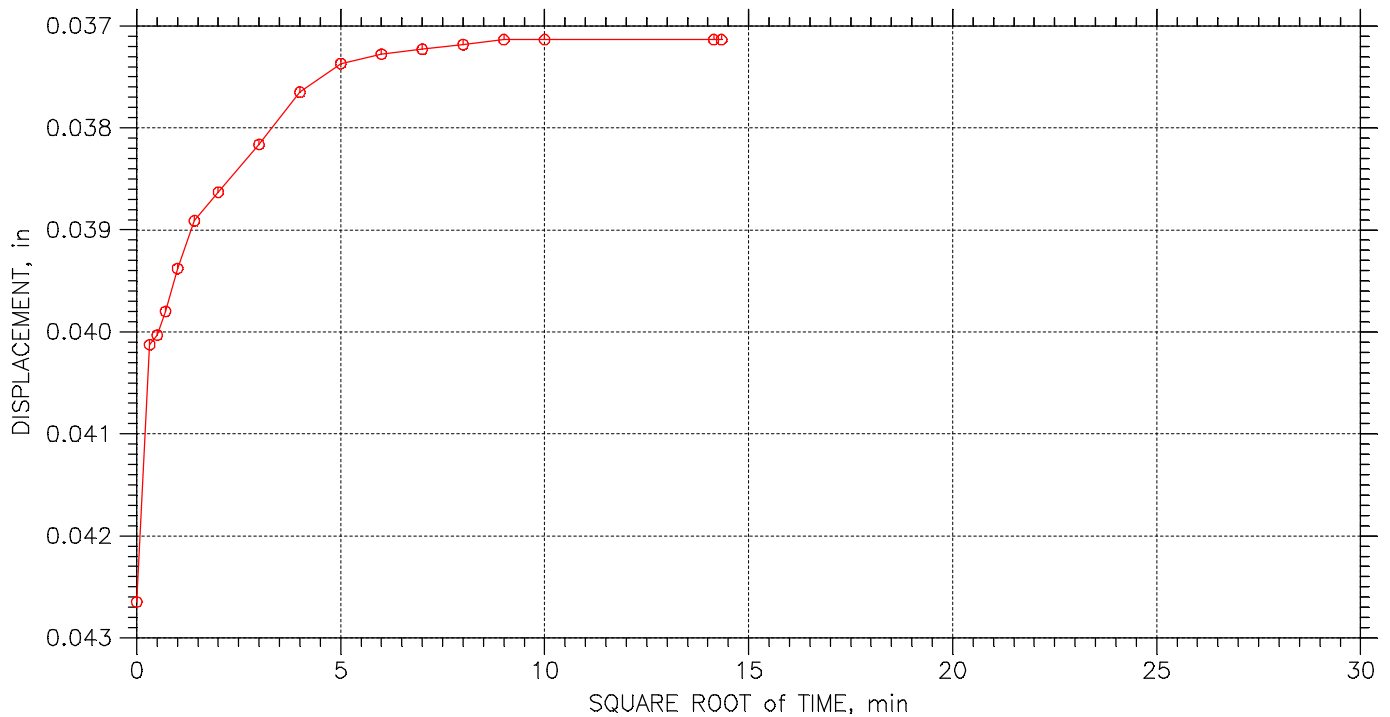
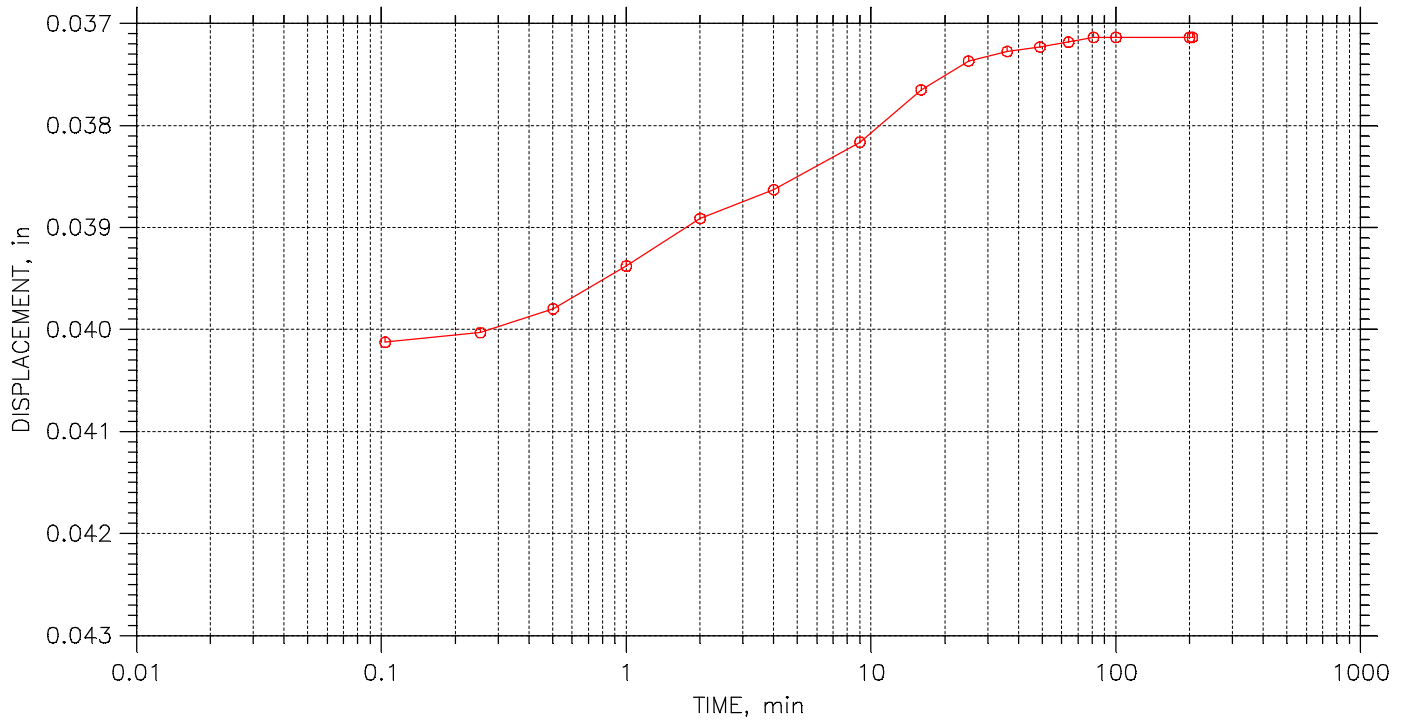
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	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf



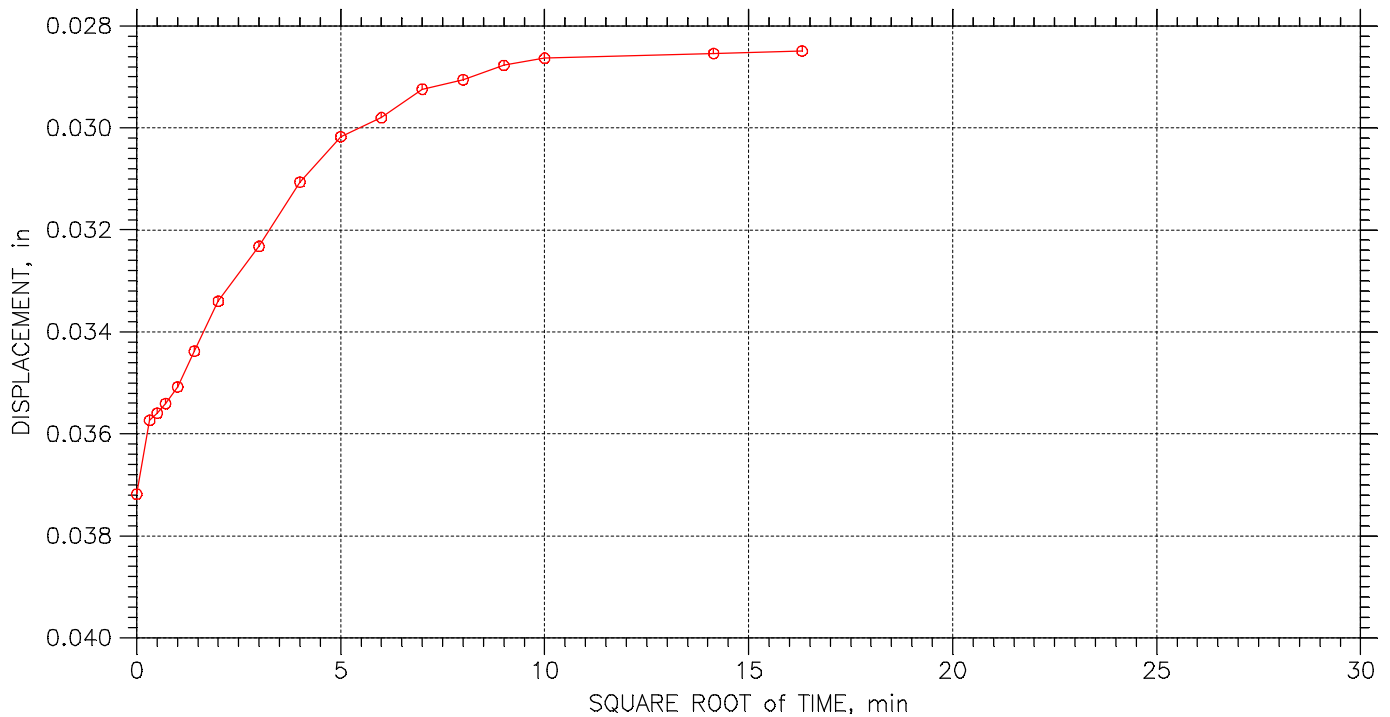
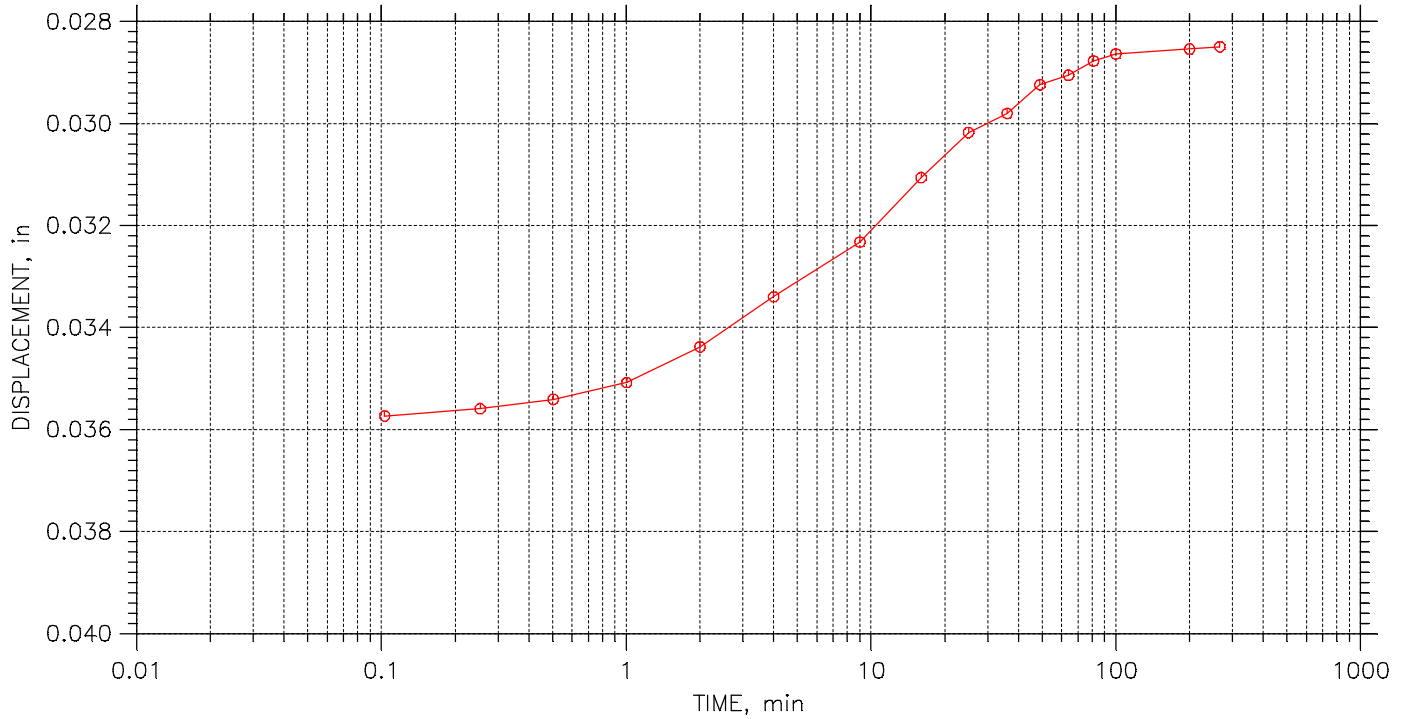
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	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



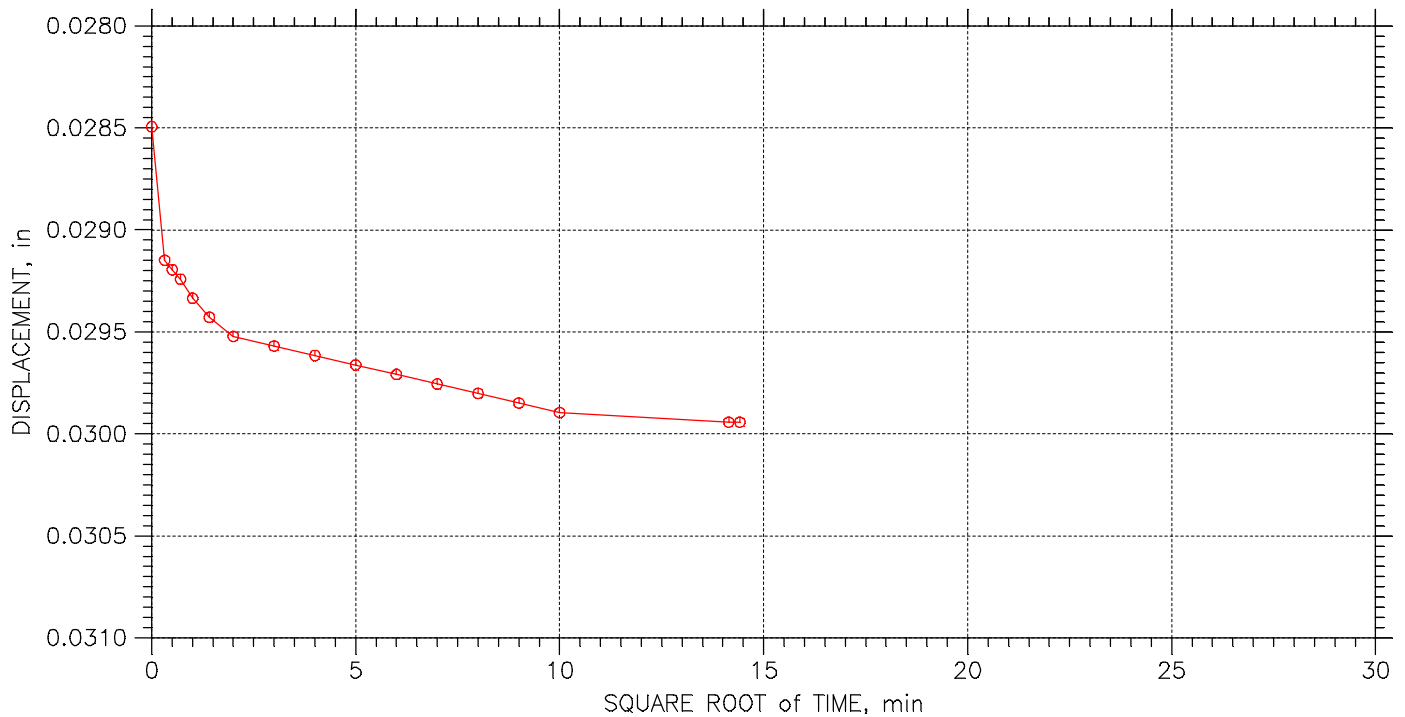
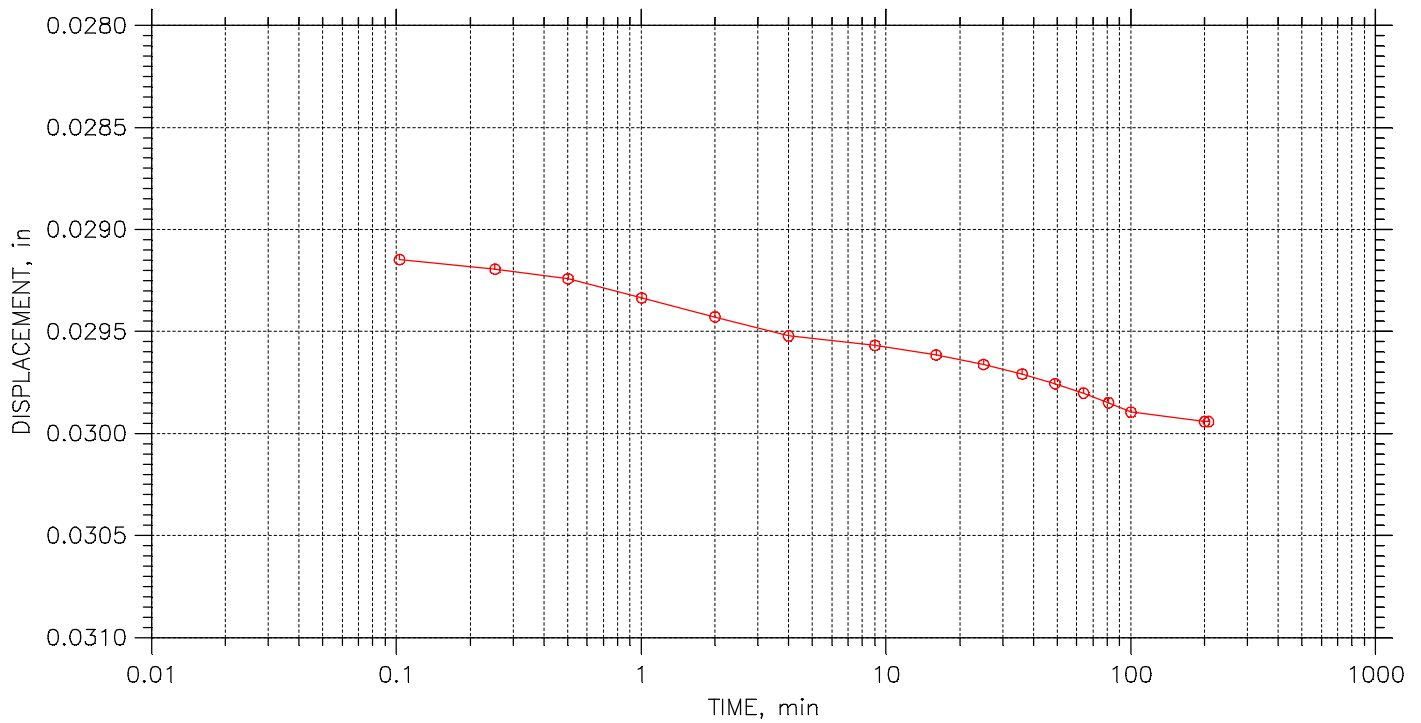
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	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf



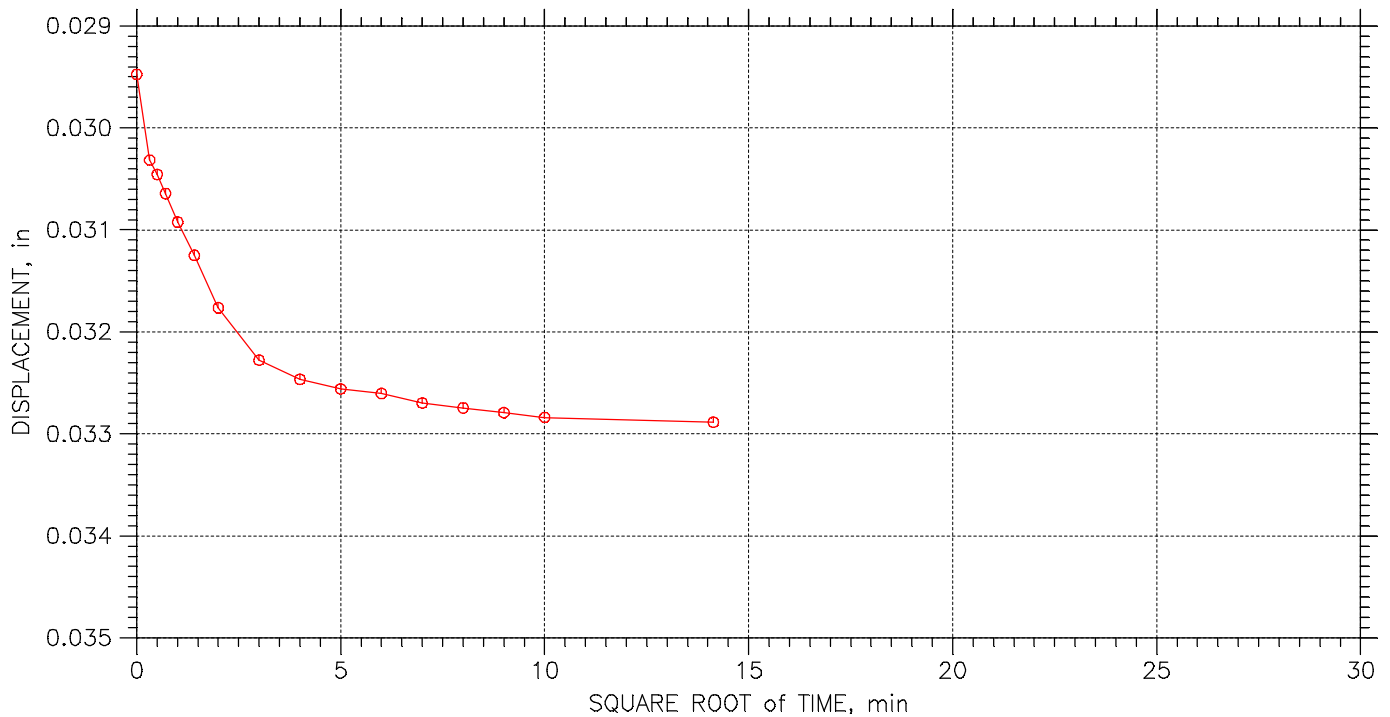
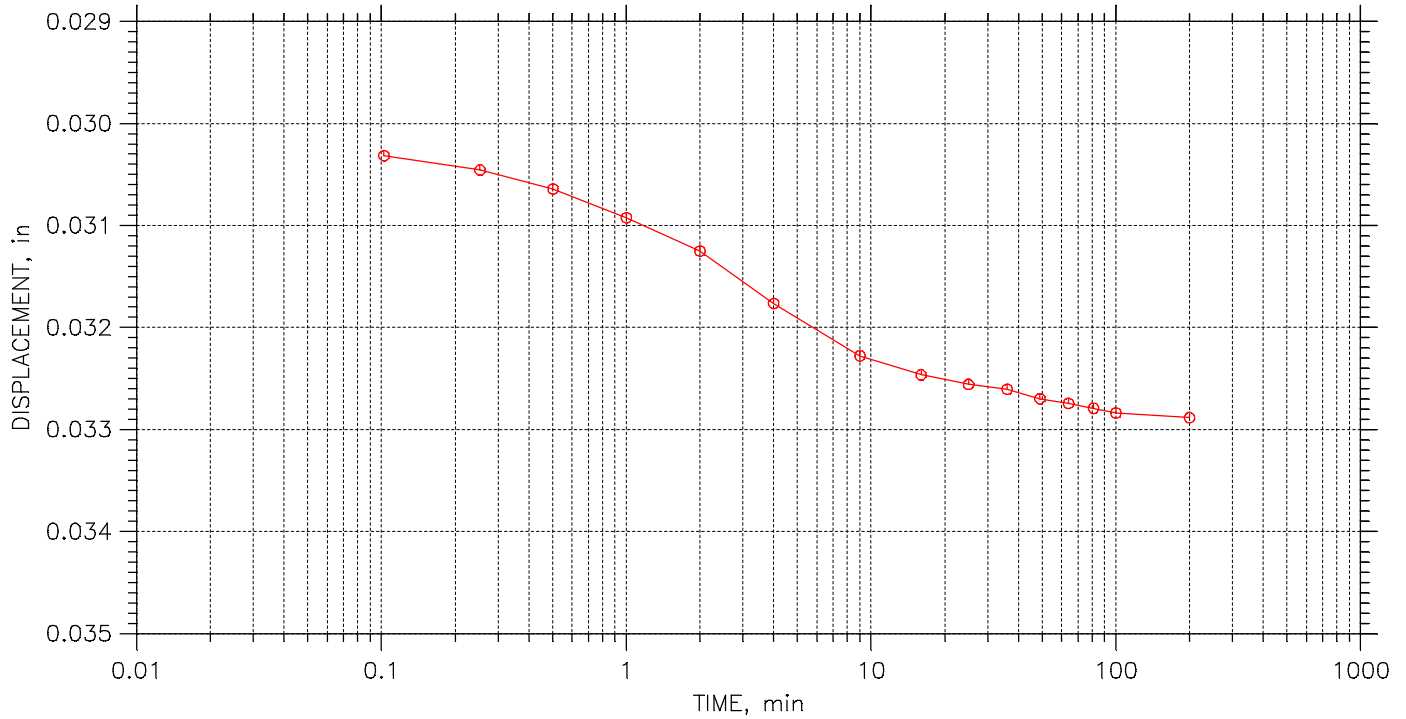
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	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf



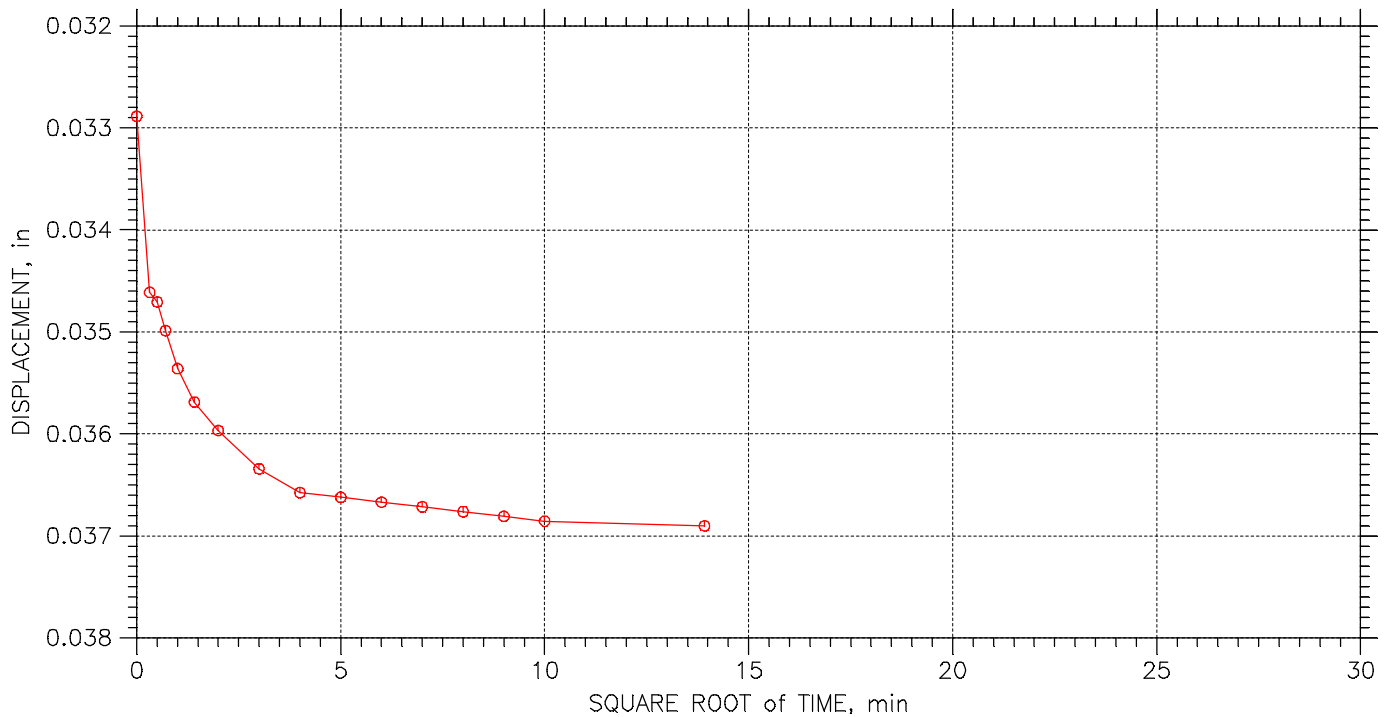
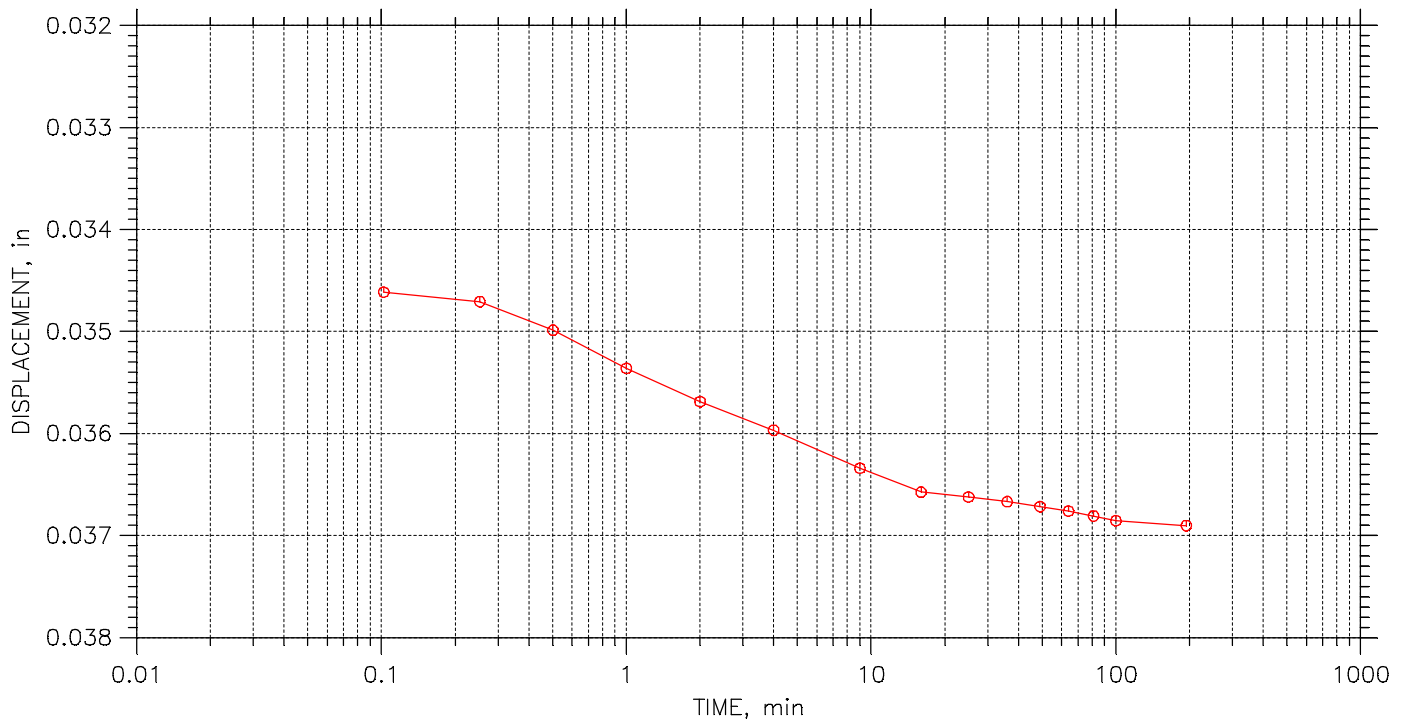
	Project: PULLIAM PROPRTY RESTOR	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf



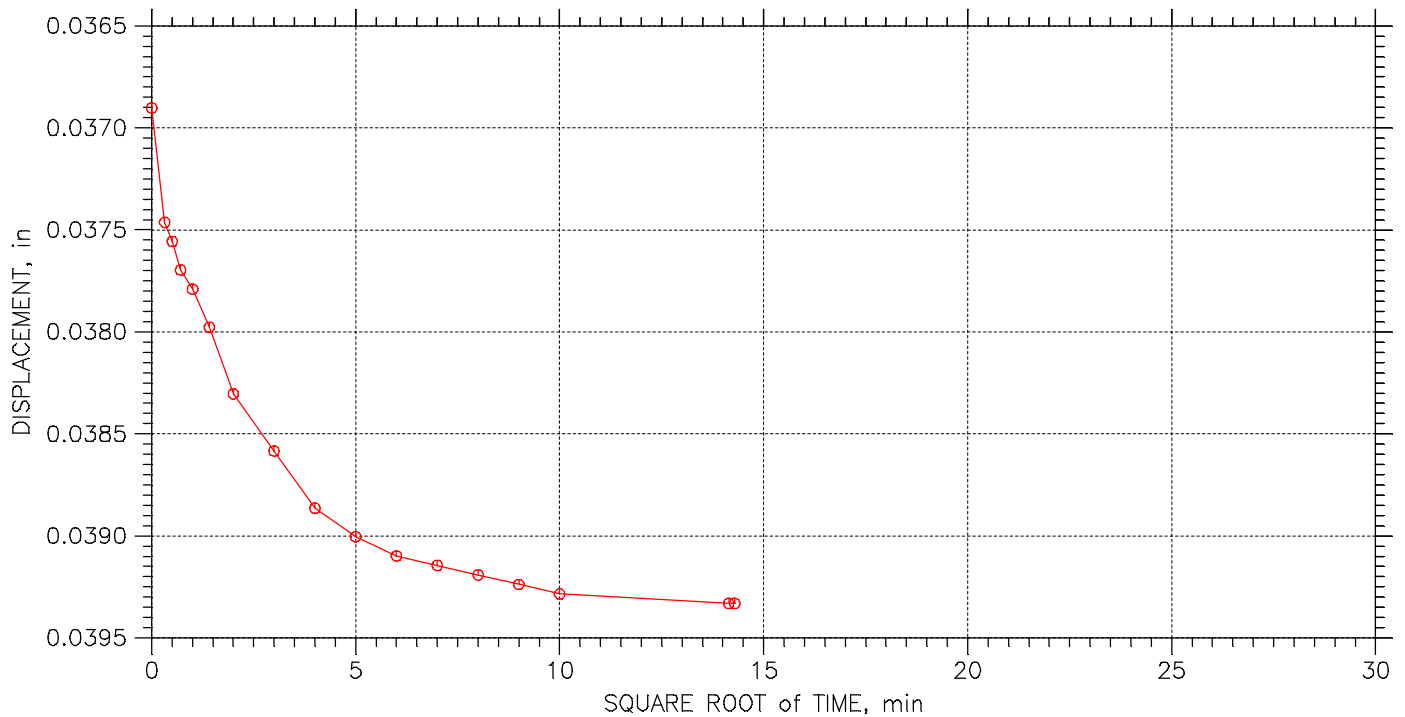
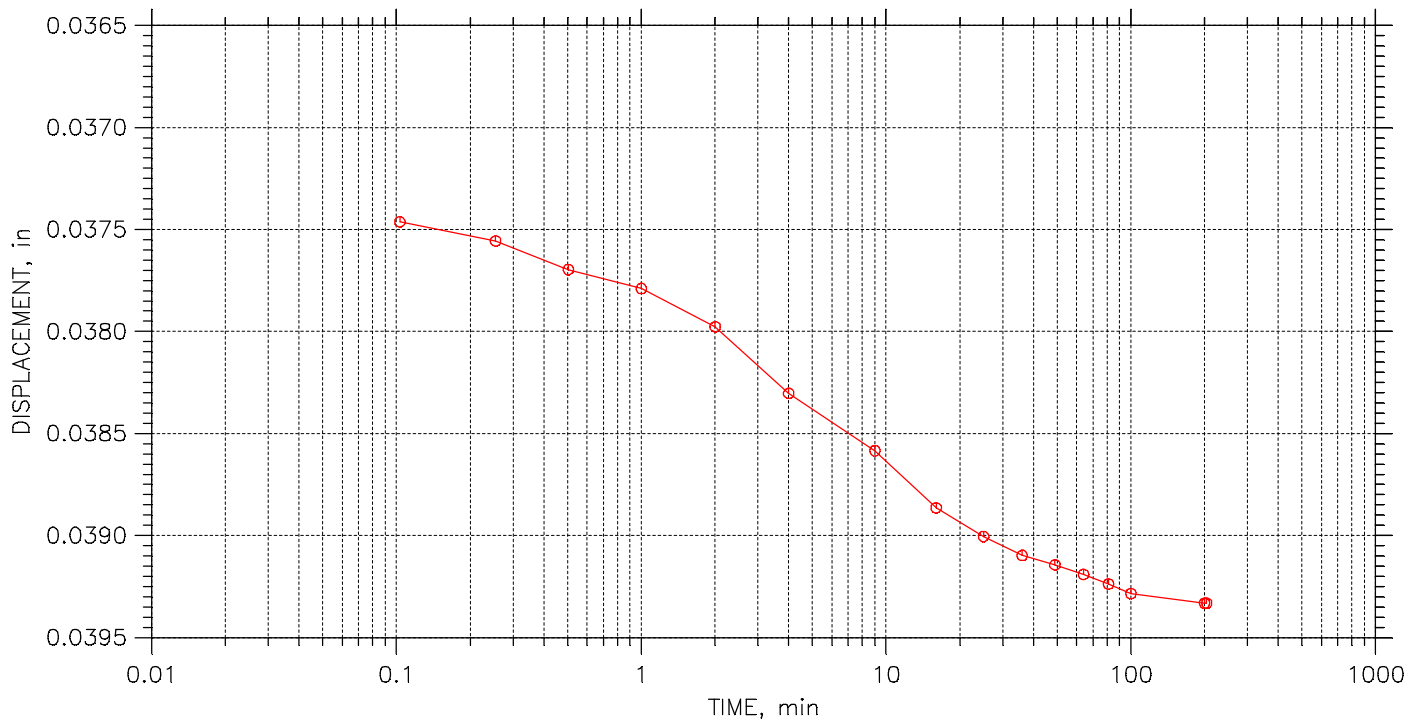
	Project: PULLIAM PROPERTY RESTOR	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf



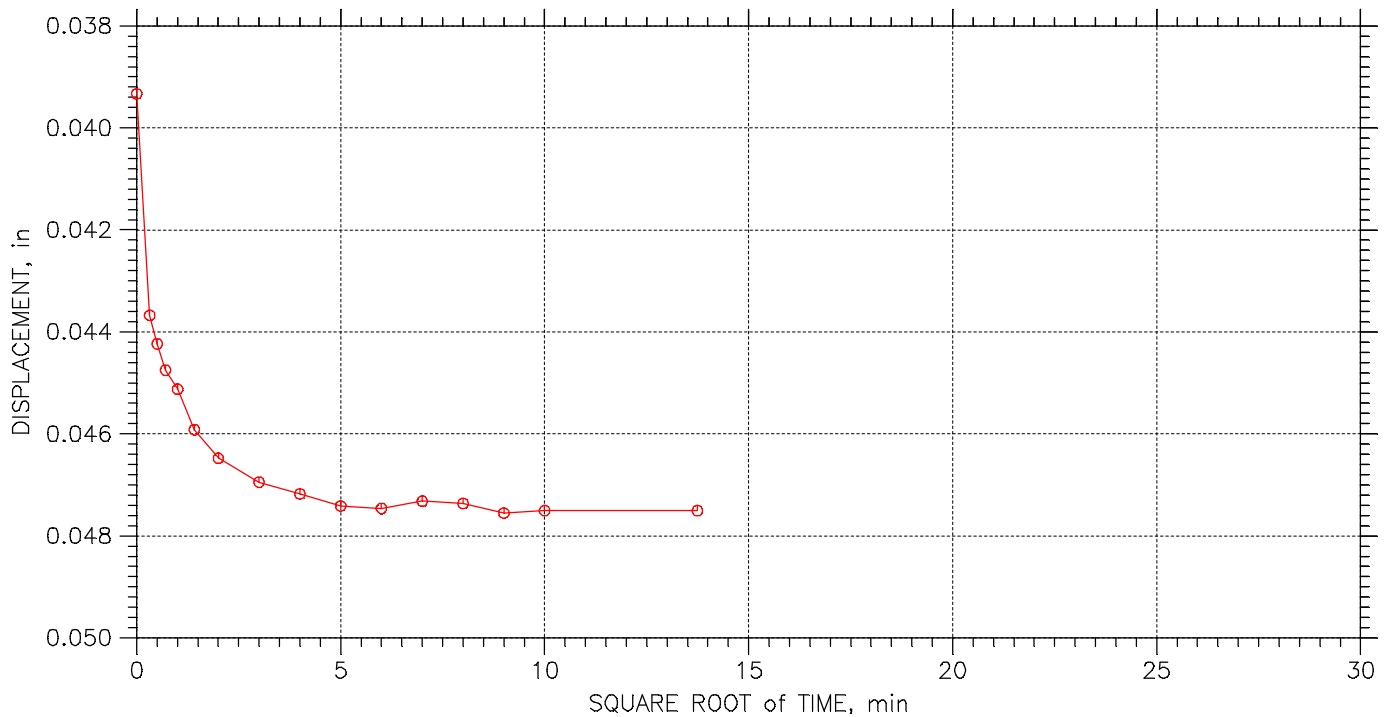
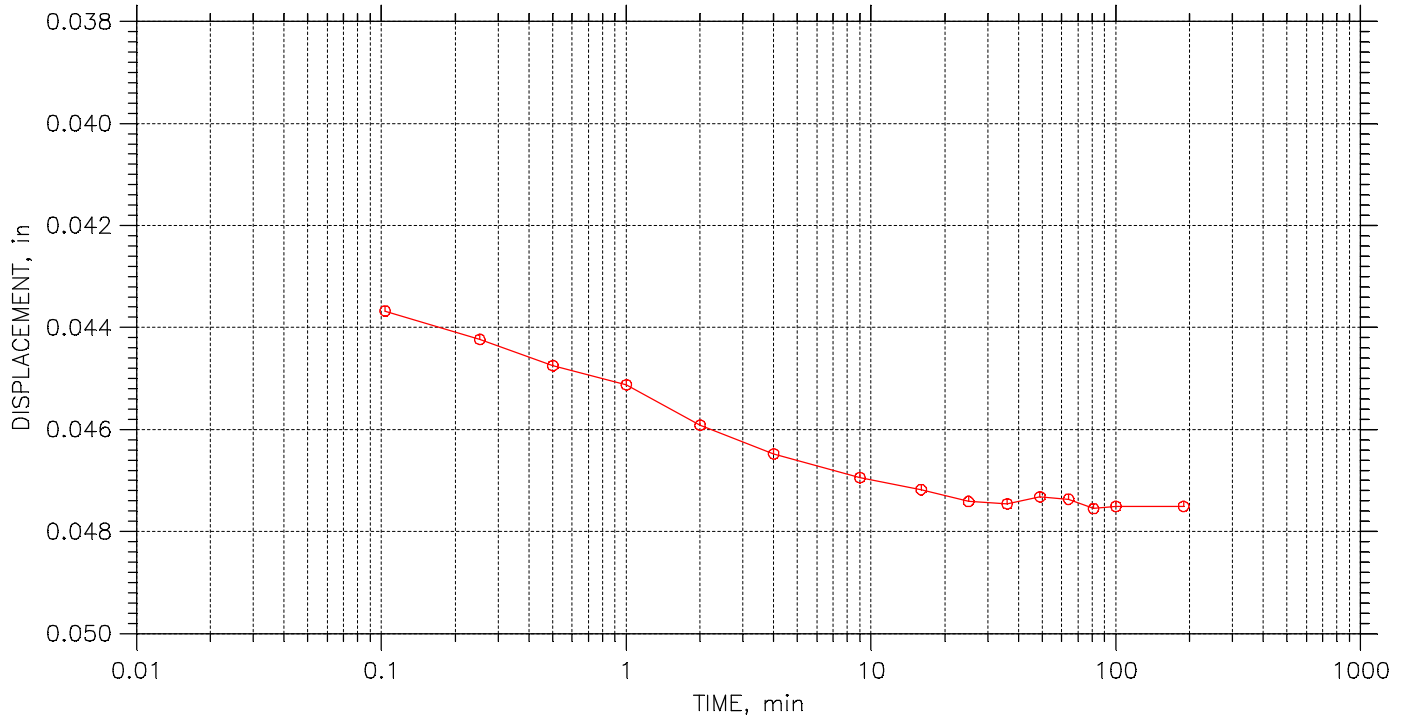
	Project: PULLIAM PROPRTY RESTOR	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf



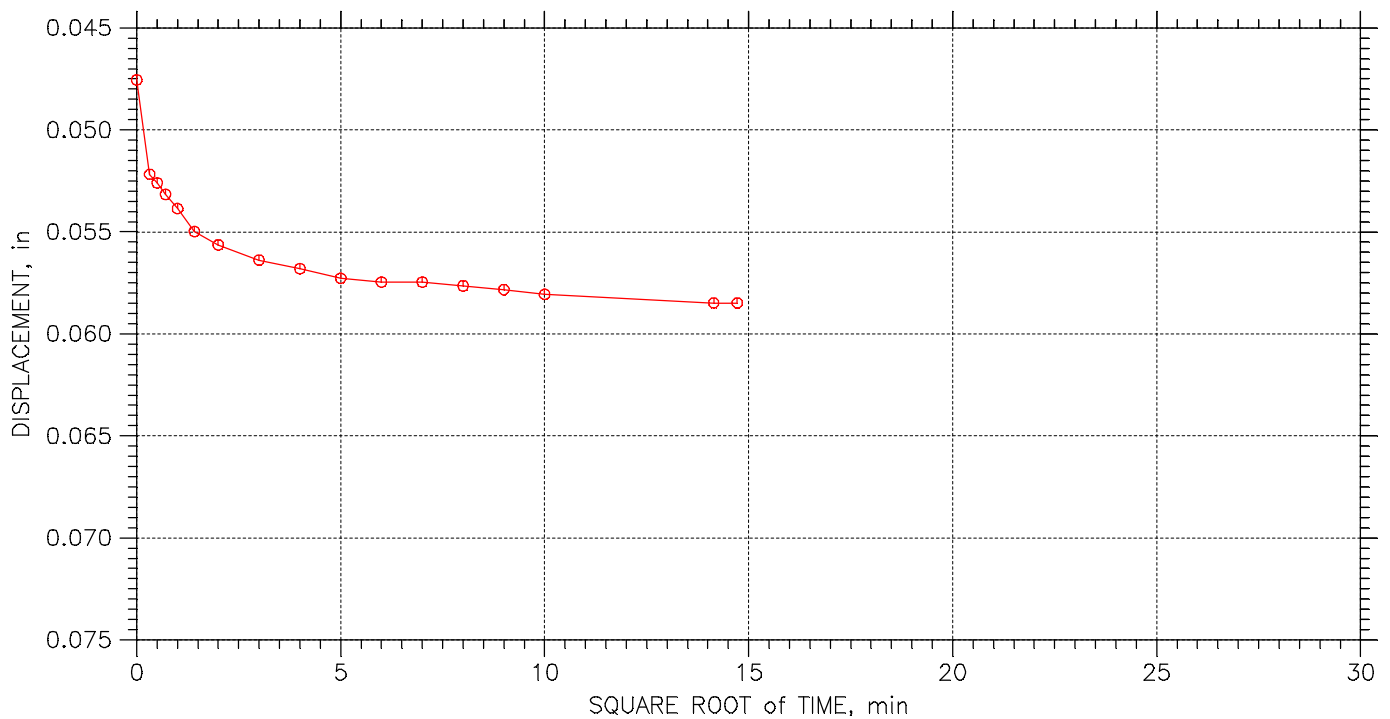
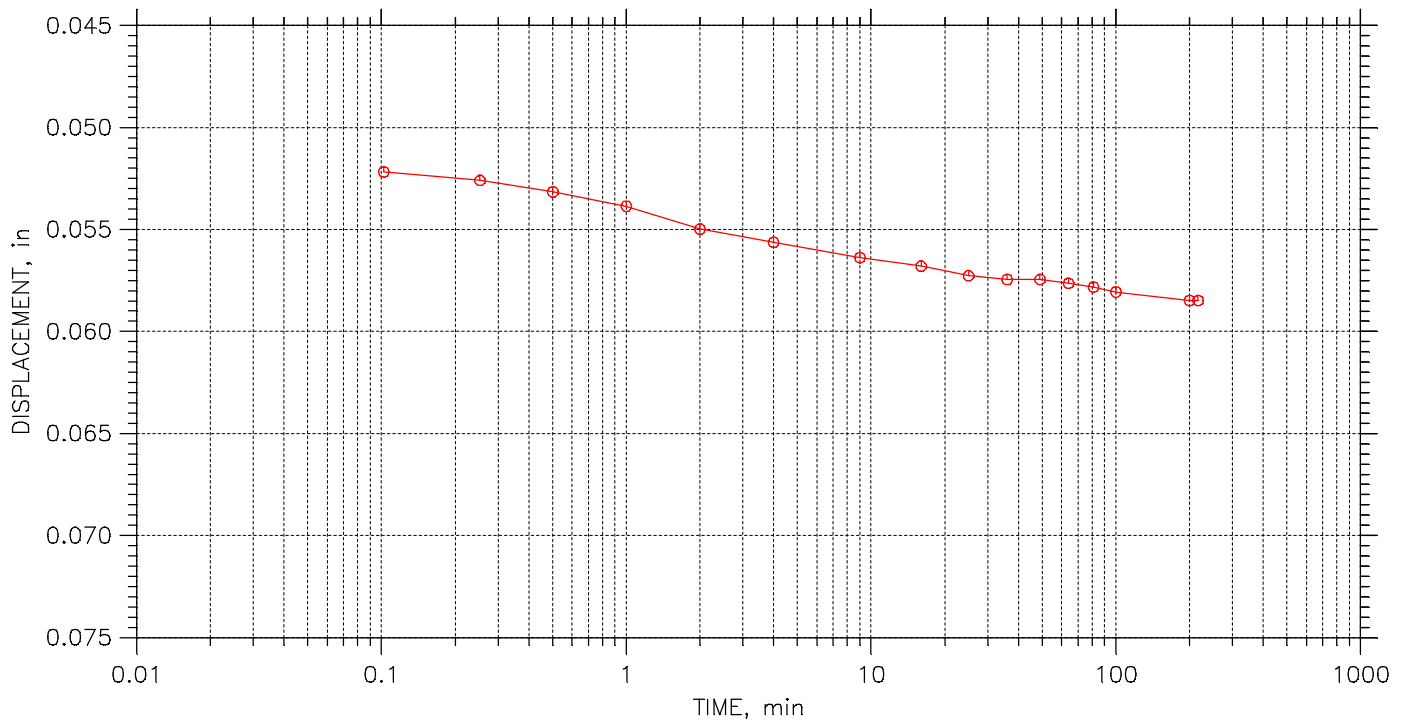
	Project: PULLIAM PROPRTY RESTOR	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf



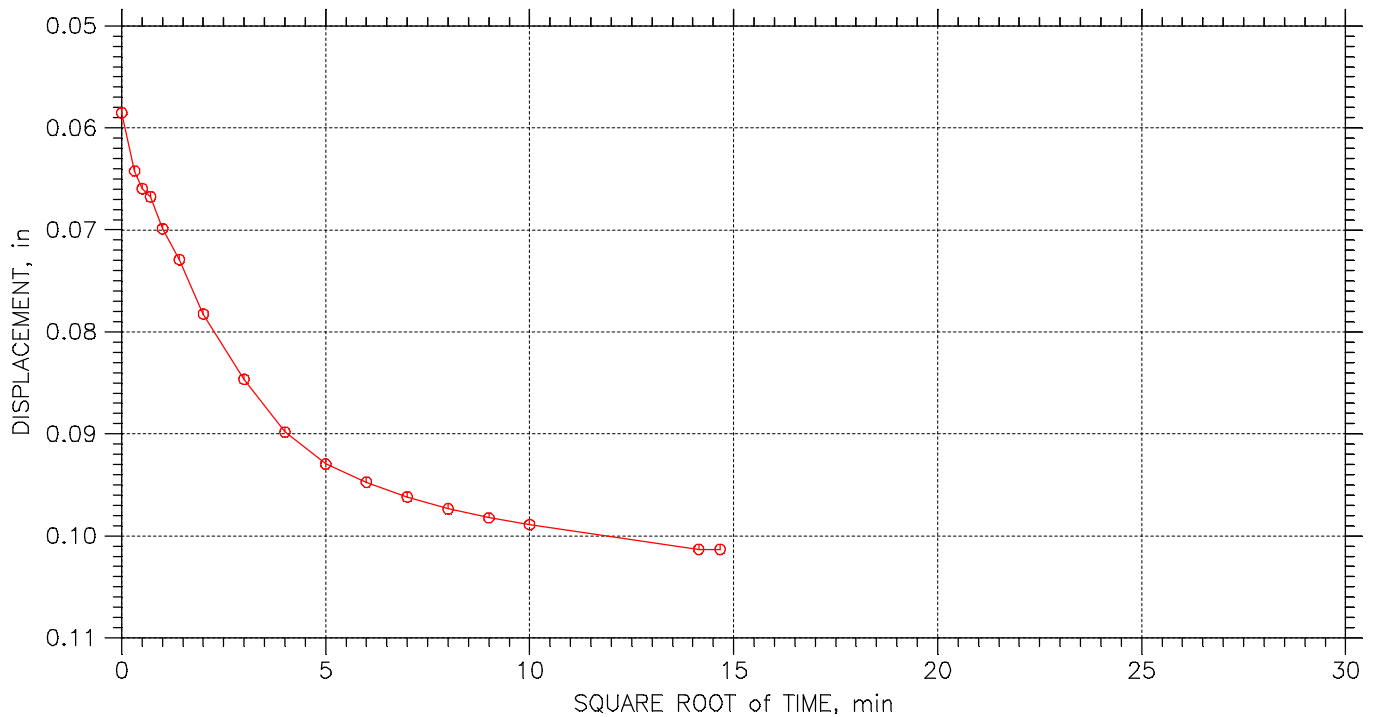
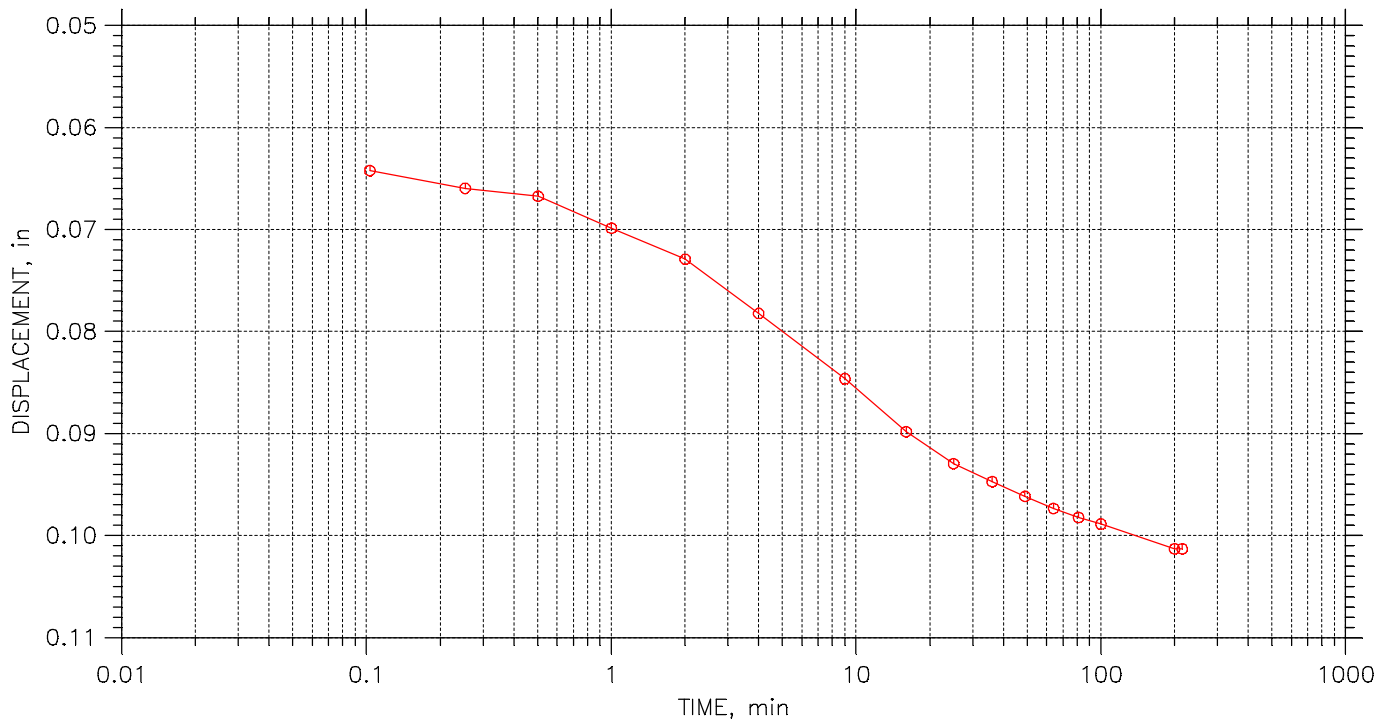
	Project: PULLIAM PROPRTY RESTOR	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf



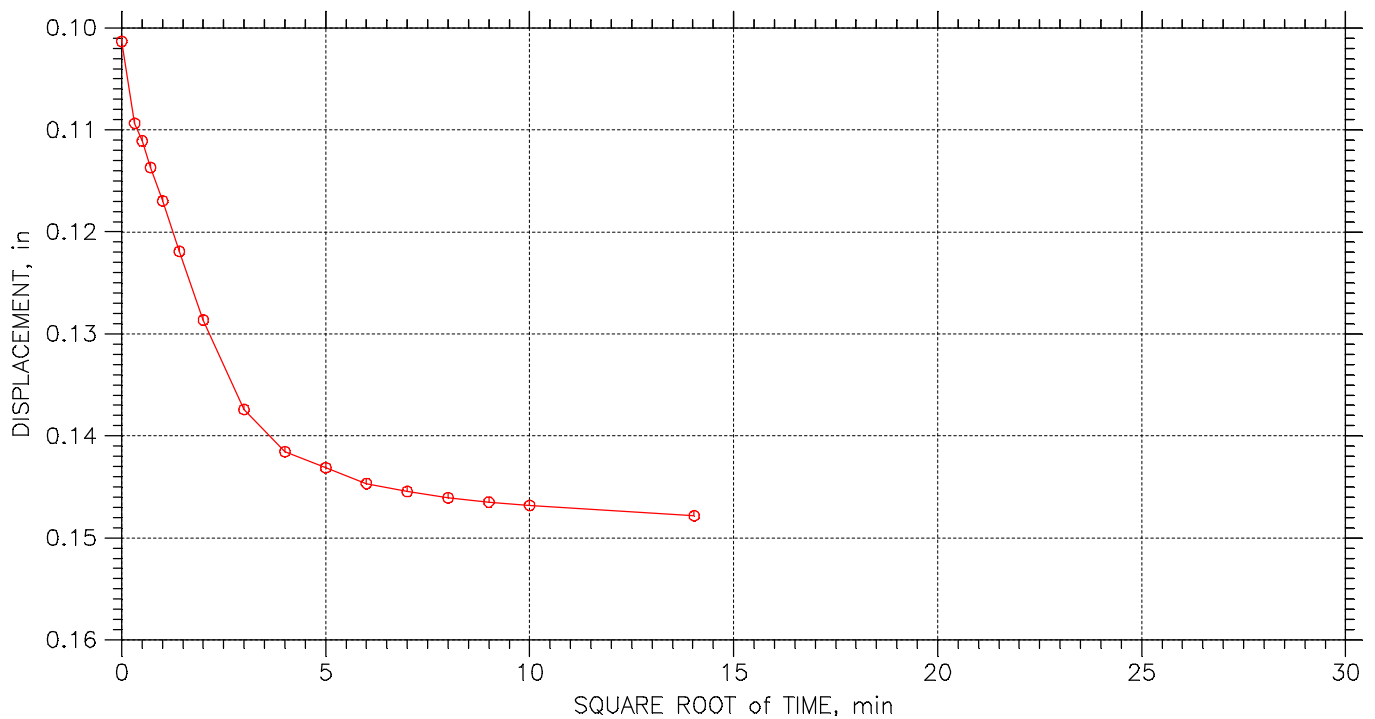
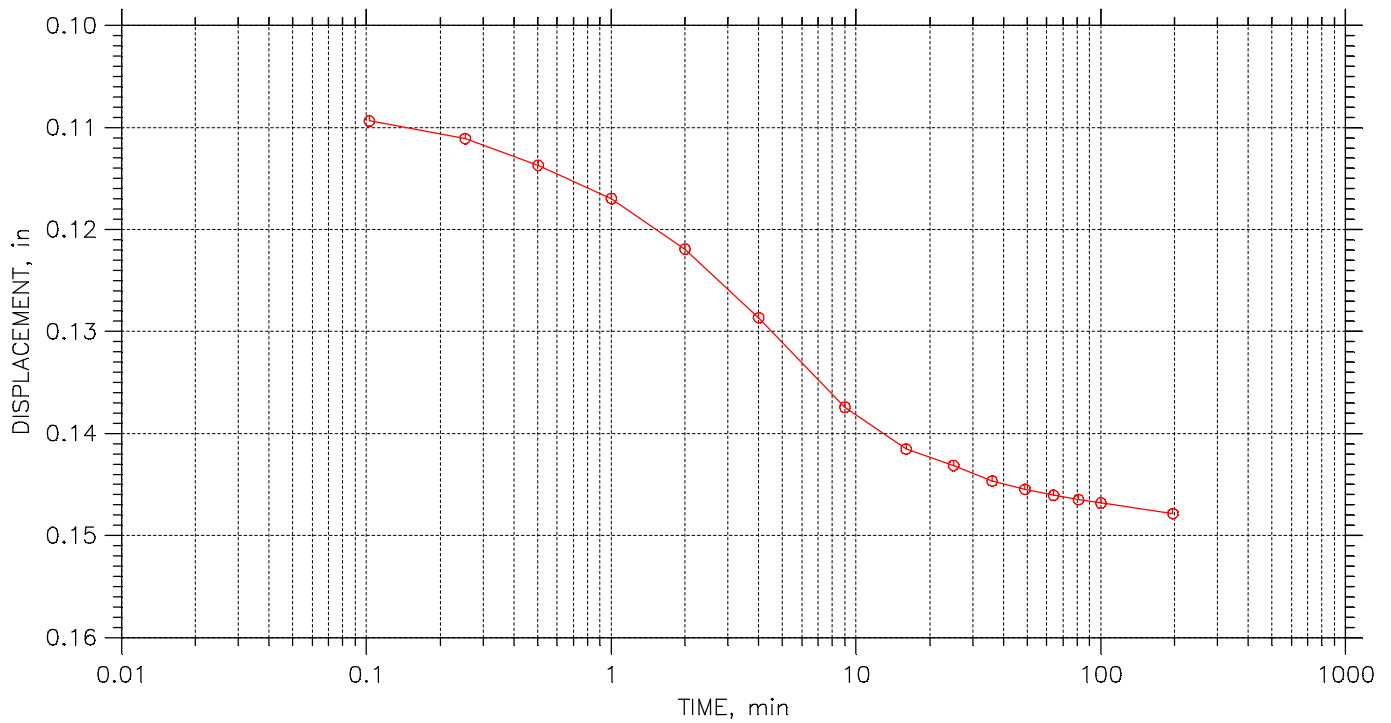
	Project: PULLIAM PROPRTY RESTOR	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf



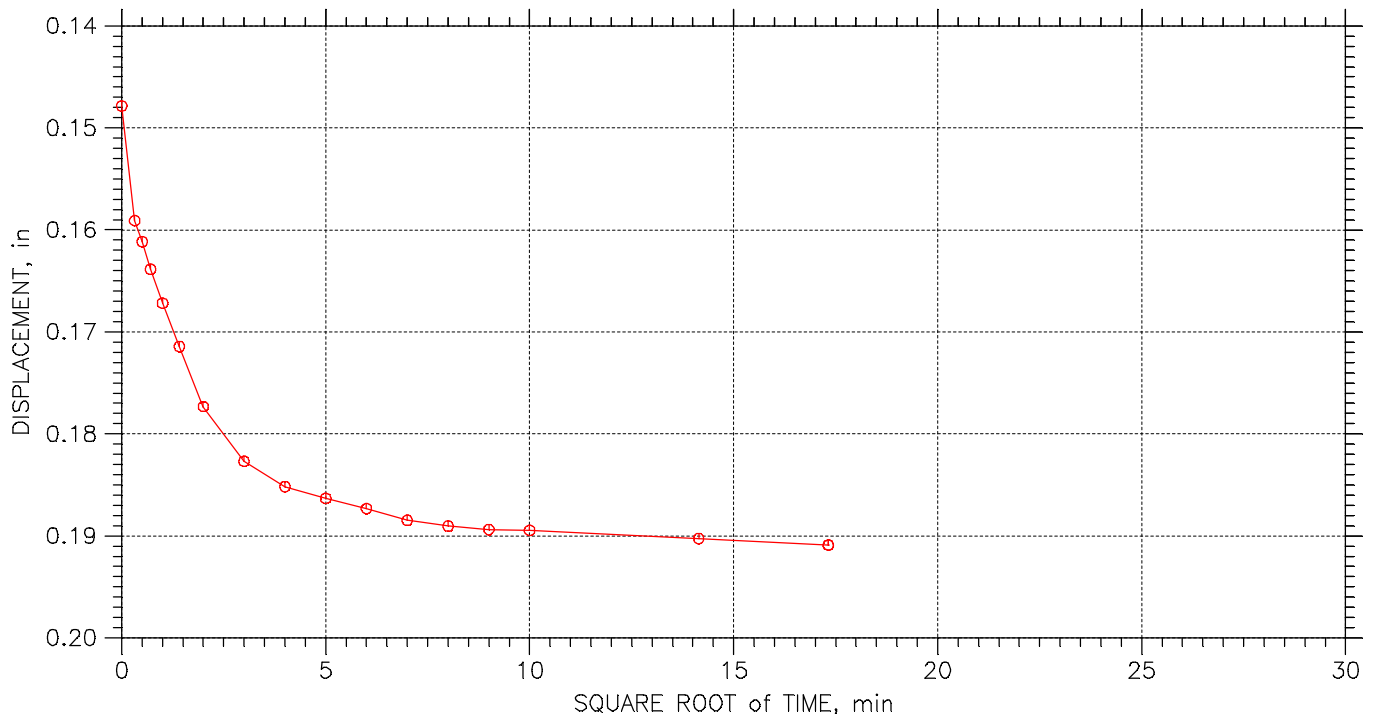
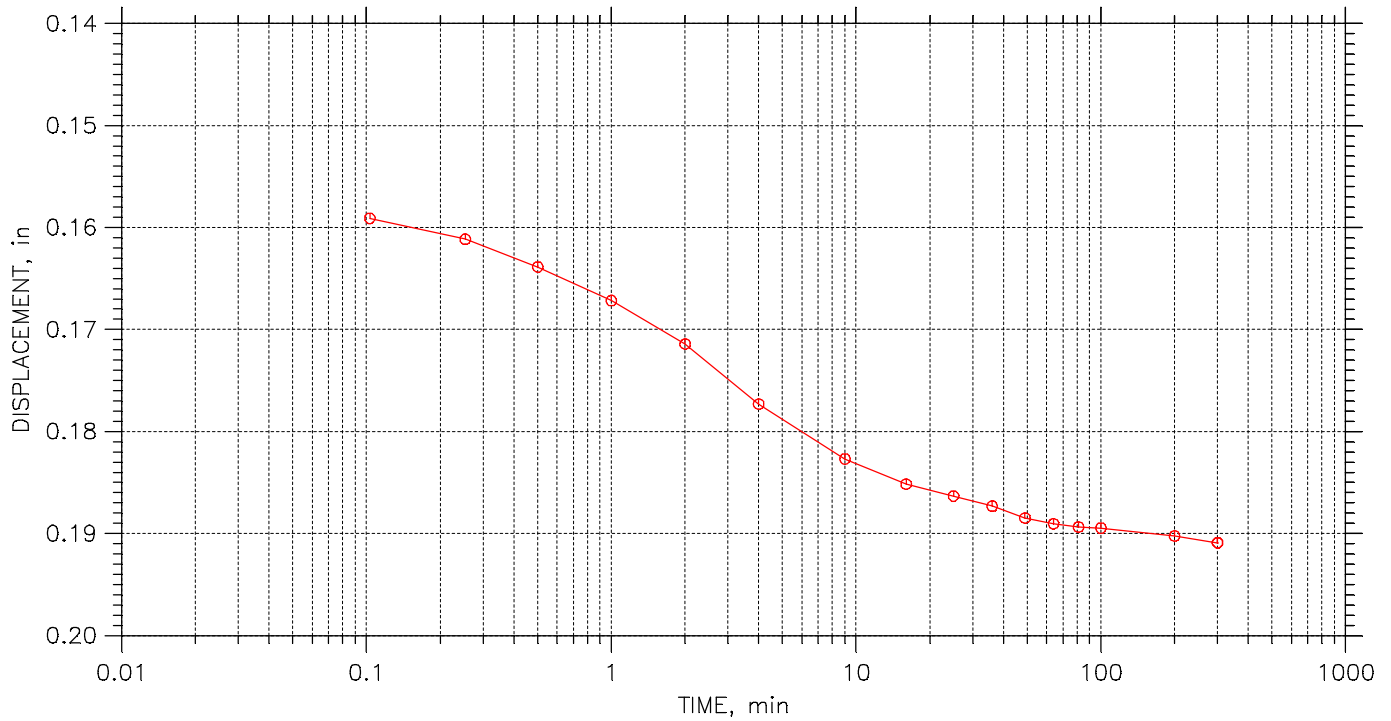
	Project: PULLIAM PROPERTY RESTOR	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



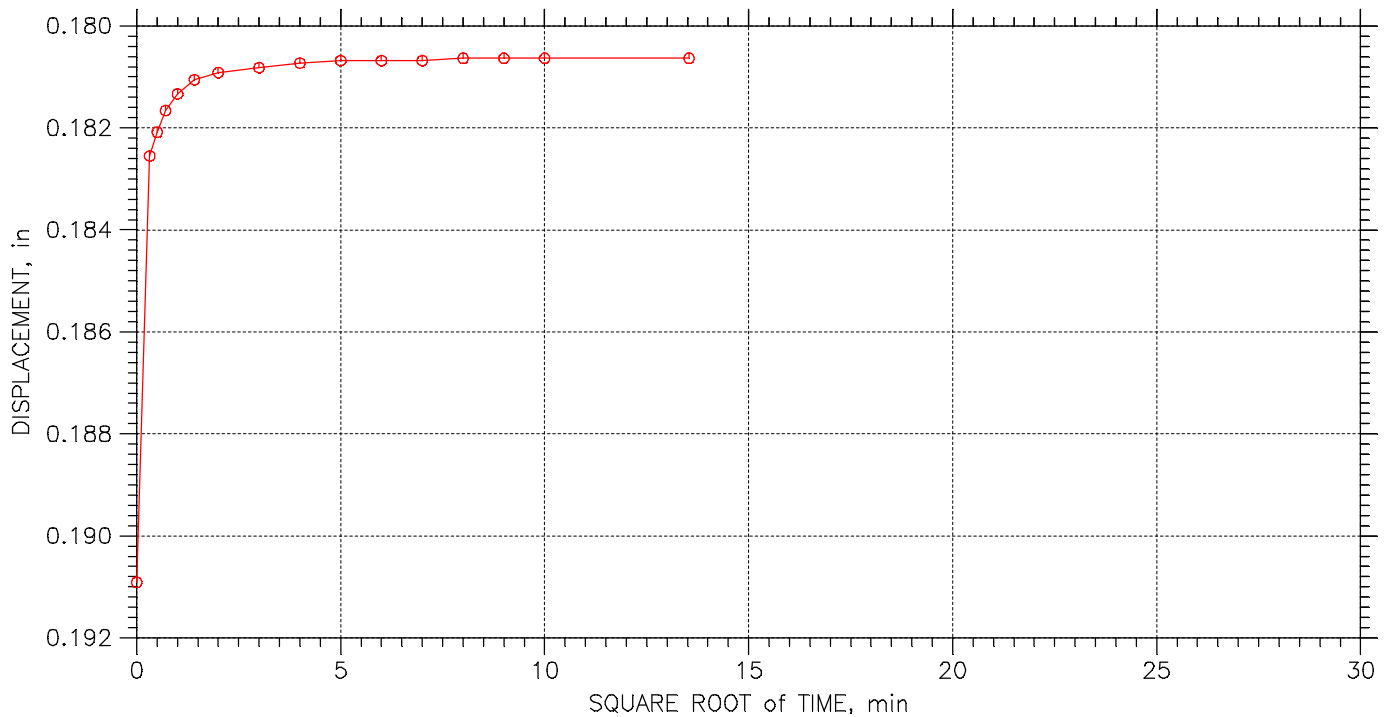
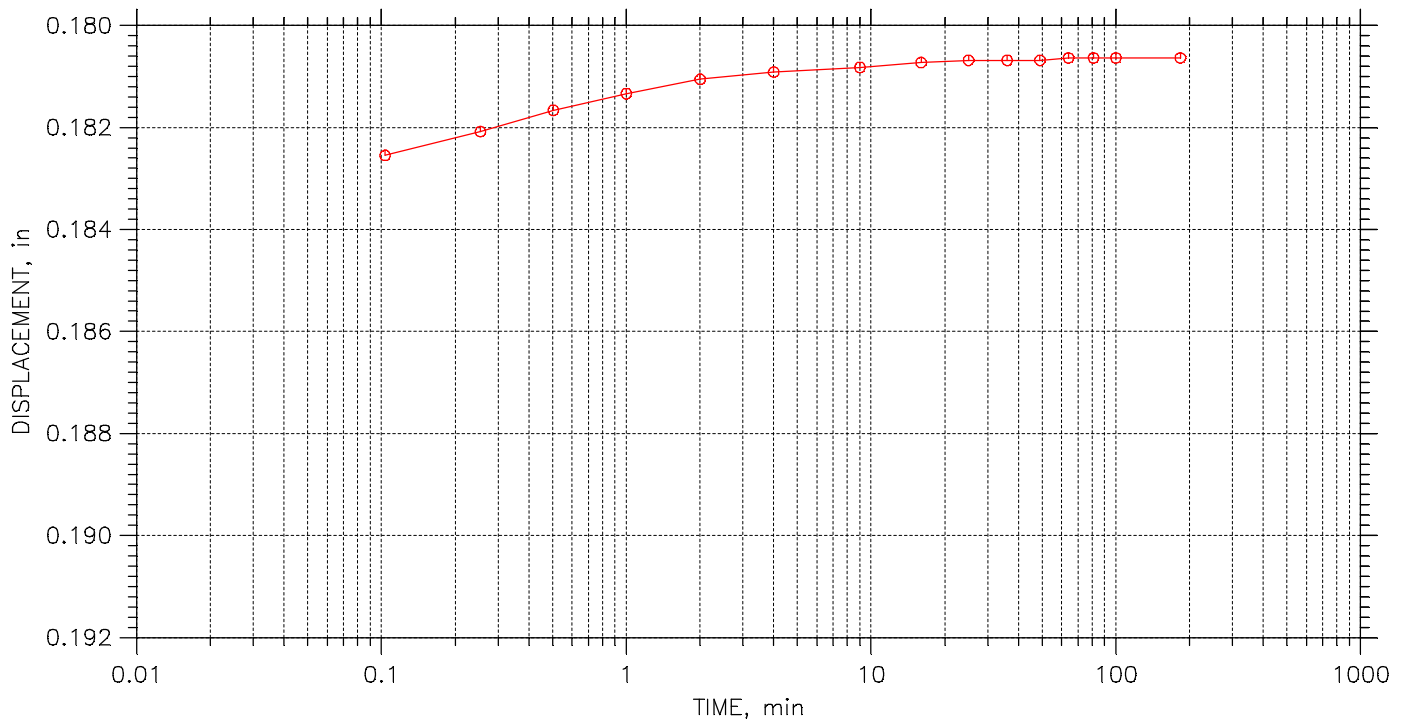
	Project: PULLIAM PROPERTY RESTOR	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



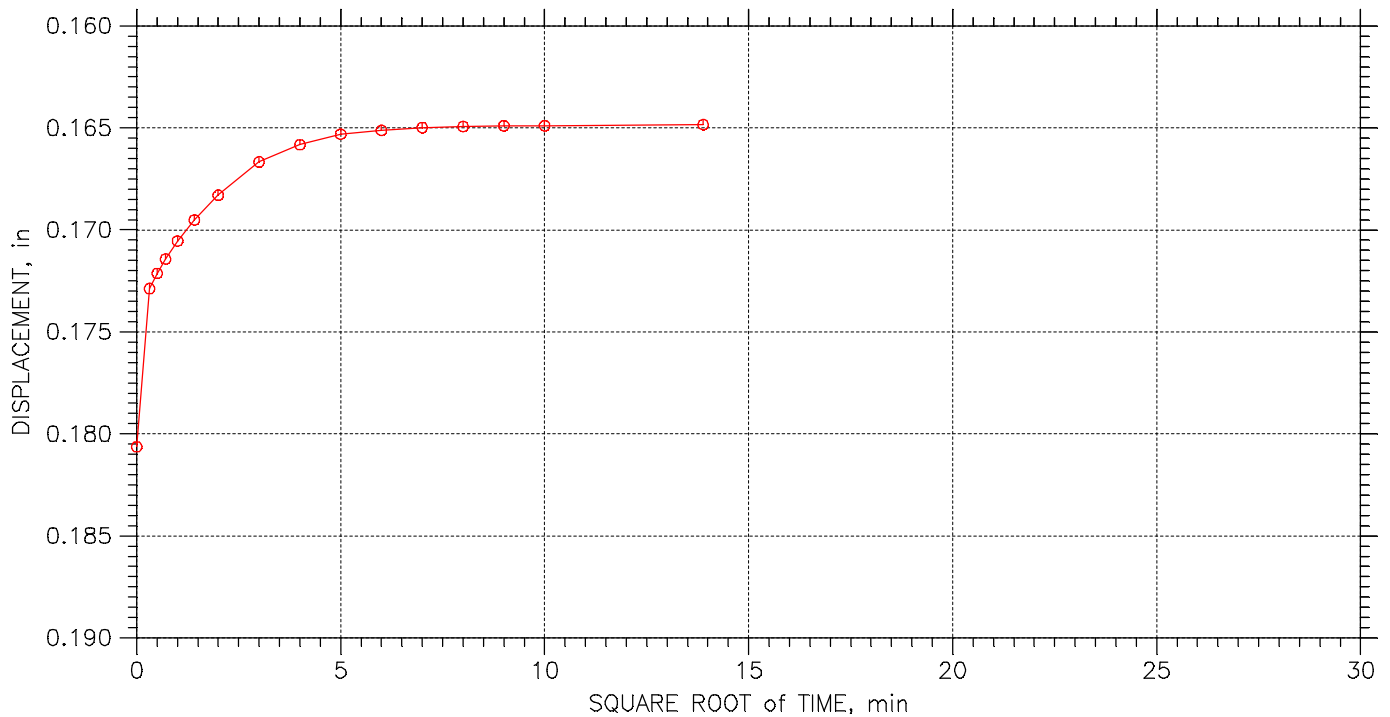
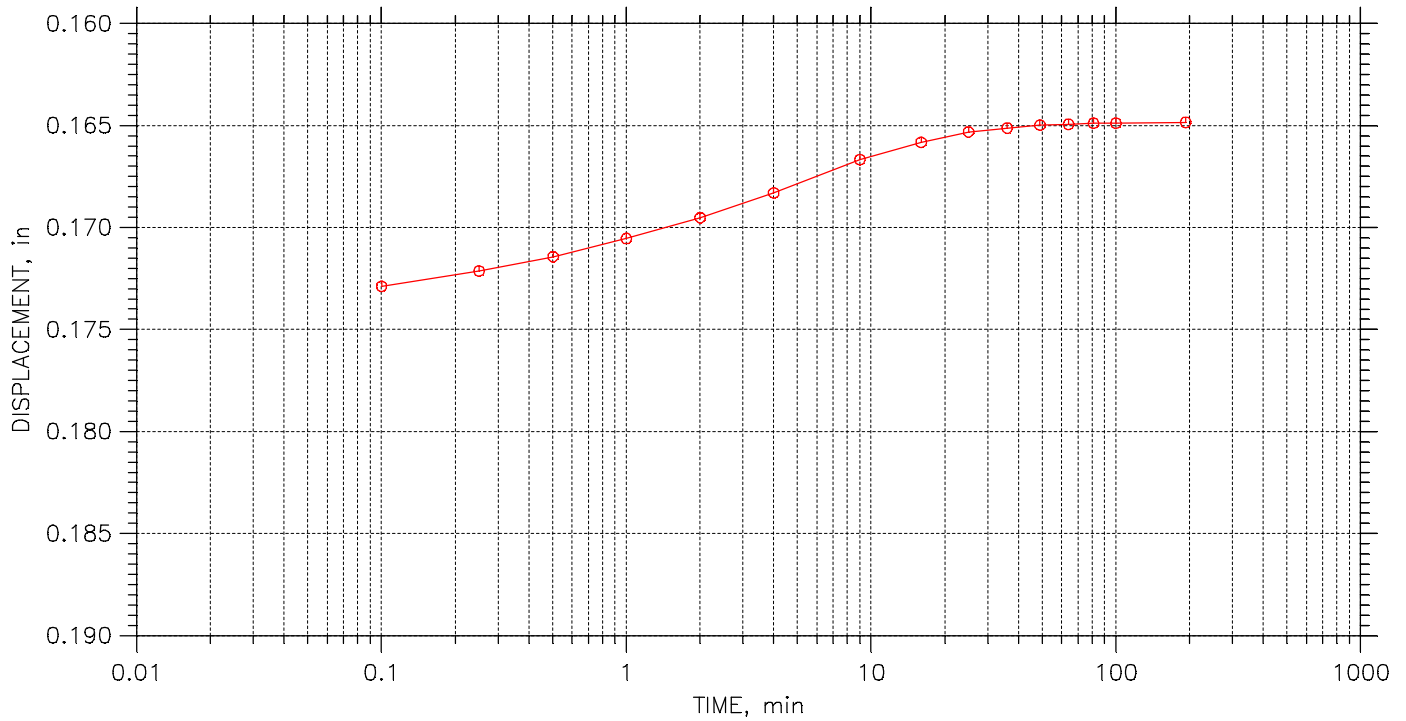
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	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.8 tsf Cc = 0.372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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf



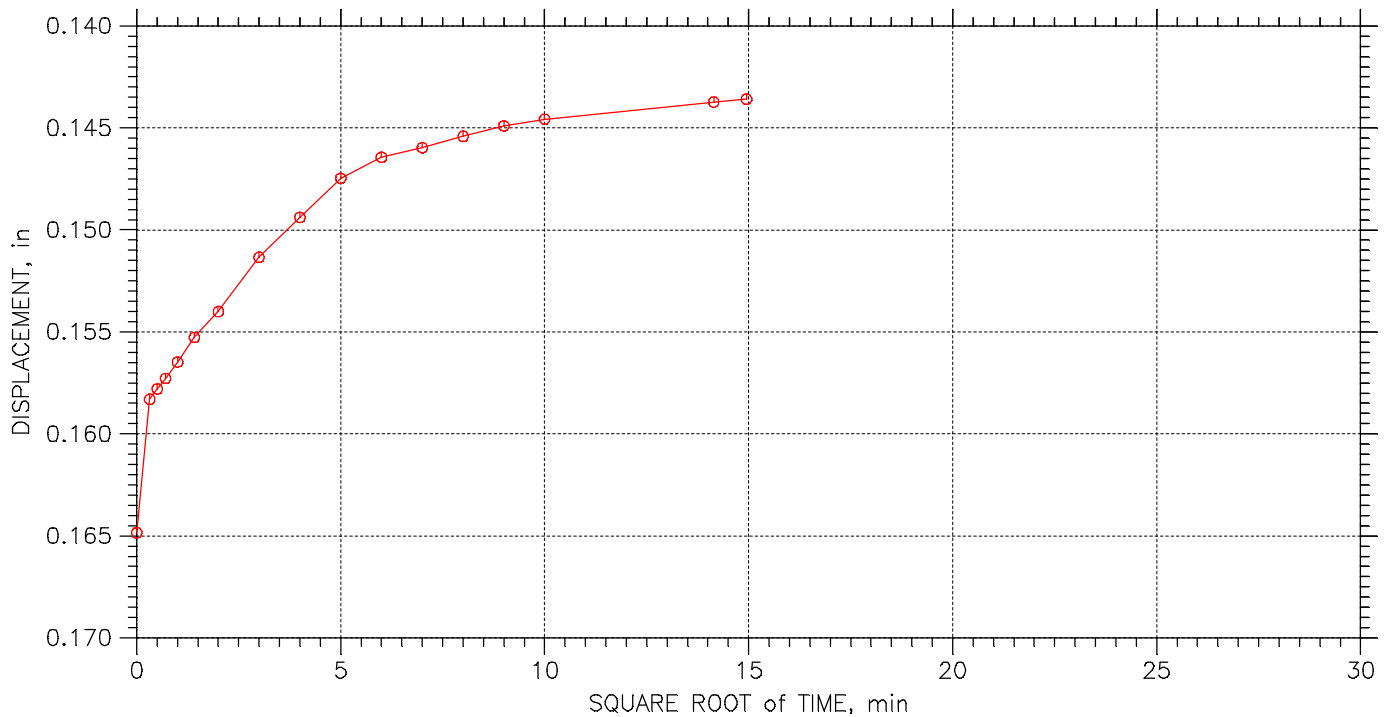
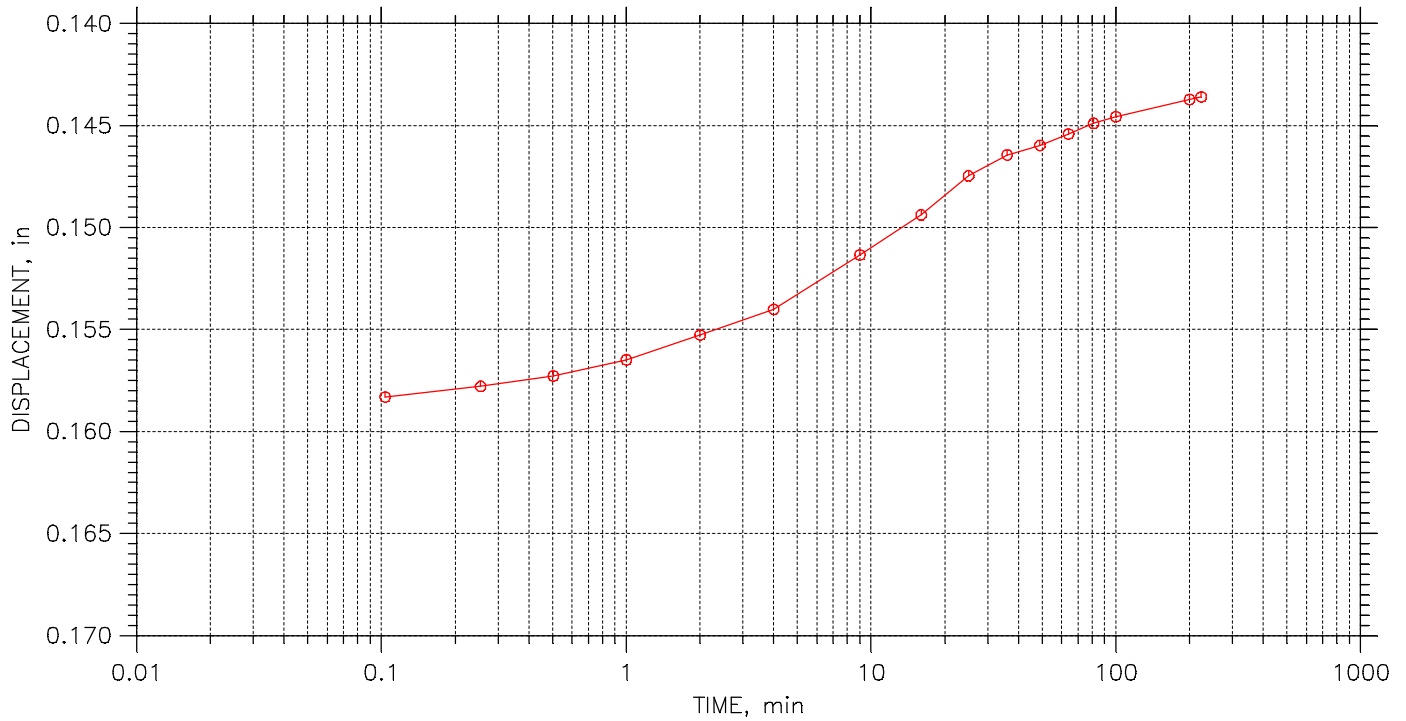
	Project: PULLIAM PROPRTY RESTOR	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf



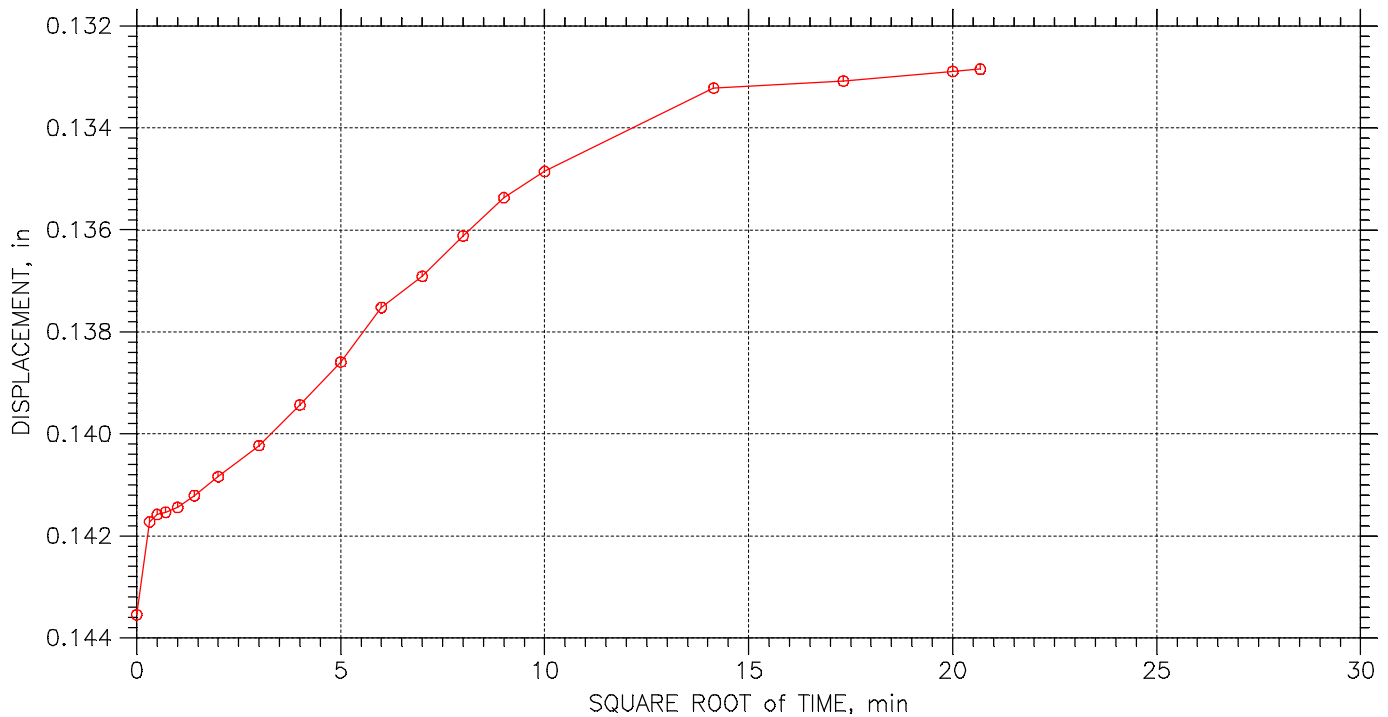
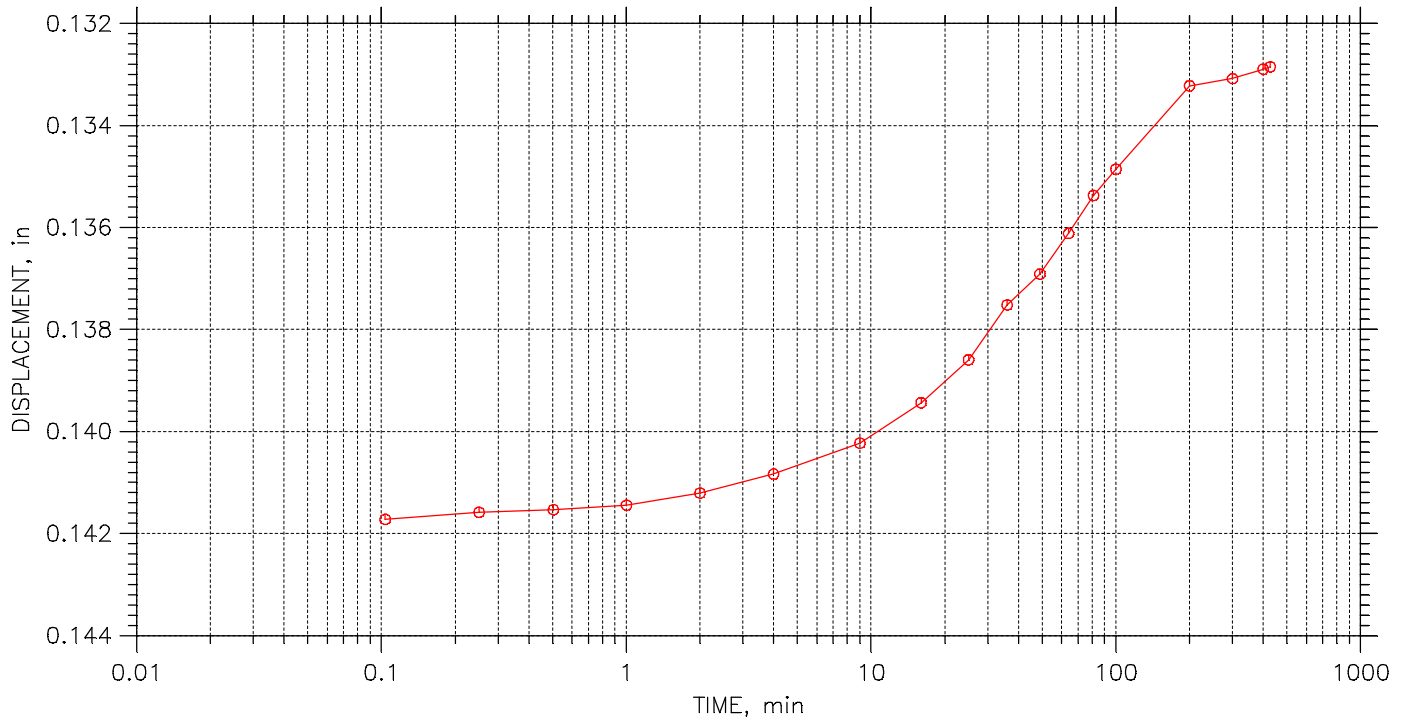
	Project: PULLIAM PROPRTY RESTOR	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf



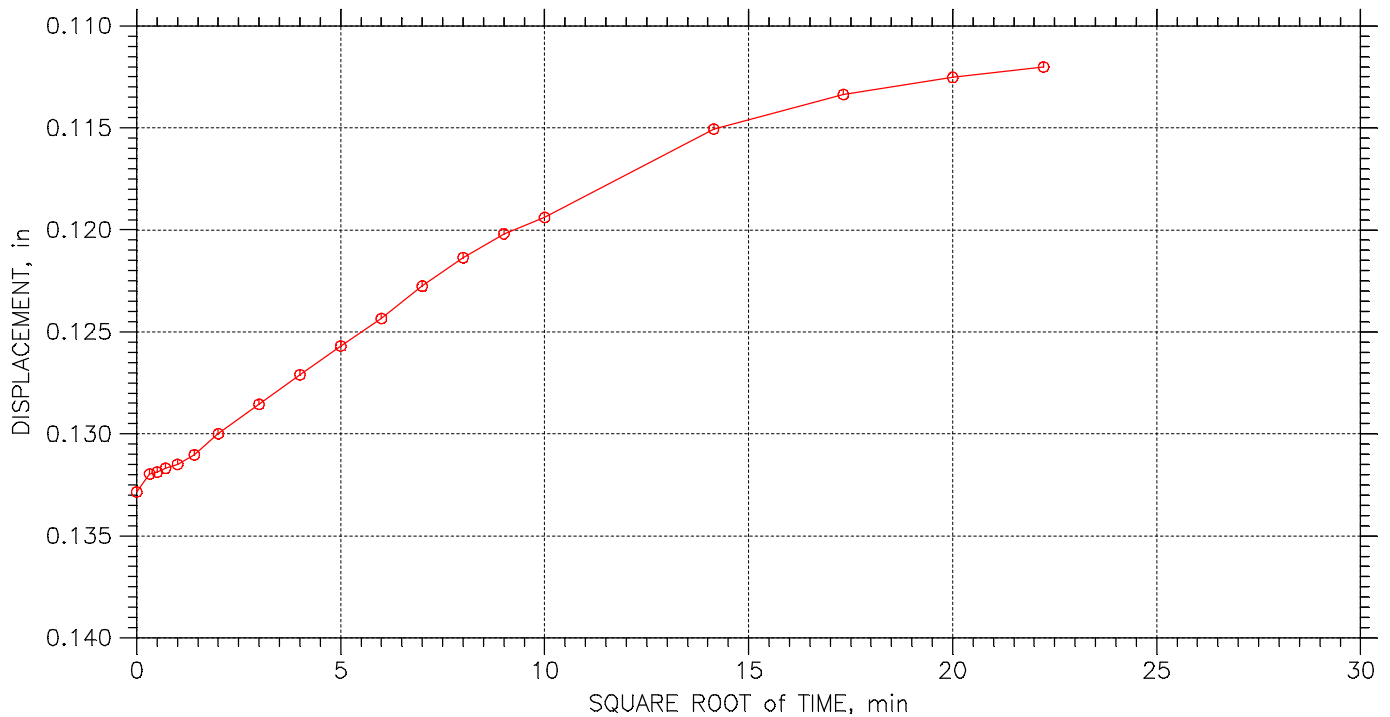
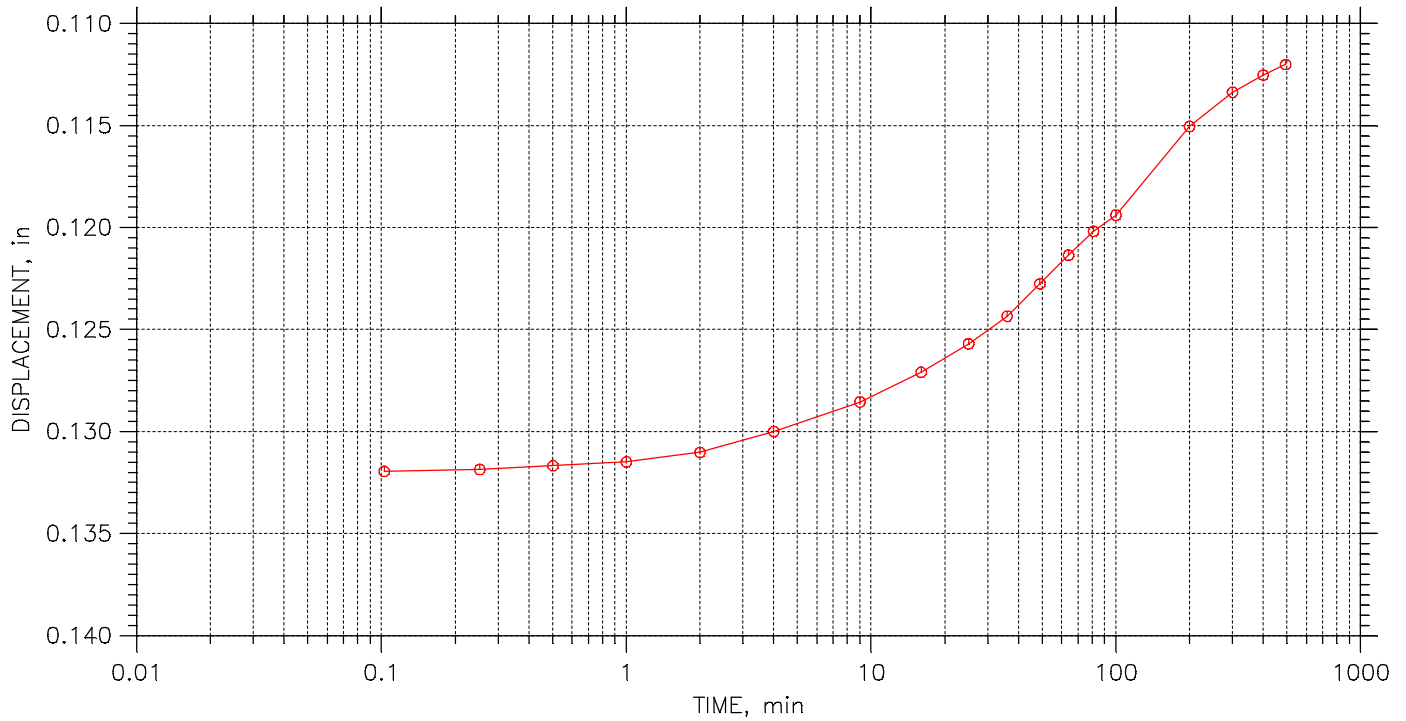
	Project: PULLIAM PROPERTY RESTOR	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-3 S-14	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-14	Test Date: 1/19/2023	Depth: 67.5'-69.5'
	Test No.: BL3S14CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 24 of 24

Stress: 0.125 tsf



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

CONSOLIDATION TEST DATA

Project: PULLIAM PROPERTY RES.
Boring No.: BL-3 S-14
Sample No.: S-14
Test No.: BL3S14CON

Location: GREEN BAY, WI
Tested By: IT/ED
Test Date: 1/19/2023
Sample Type: 3" ST

Project No.: 11225052
Checked By: BCM
Depth: 67.5'-69.5'
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
Initial Void Ratio: 0.80
Final Void Ratio: 0.53

Liquid Limit: 38
Plastic Limit: 15
Plasticity Index: 23

Initial Height: 0.75 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	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	--

CONSOLIDATION TEST DATA

Project: PULLIAM PROPRTY RES.
Boring No.: BL-3 S-14
Sample No.: S-14
Test No.: BL3S14CON

Location: GREEN BAY, WI
Tested By: IT/ED
Test Date: 1/19/2023
Sample Type: 3" ST

Project No.: 11225052
Checked By: BCM
Depth: 67.5'-69.5'
Elevation: -----

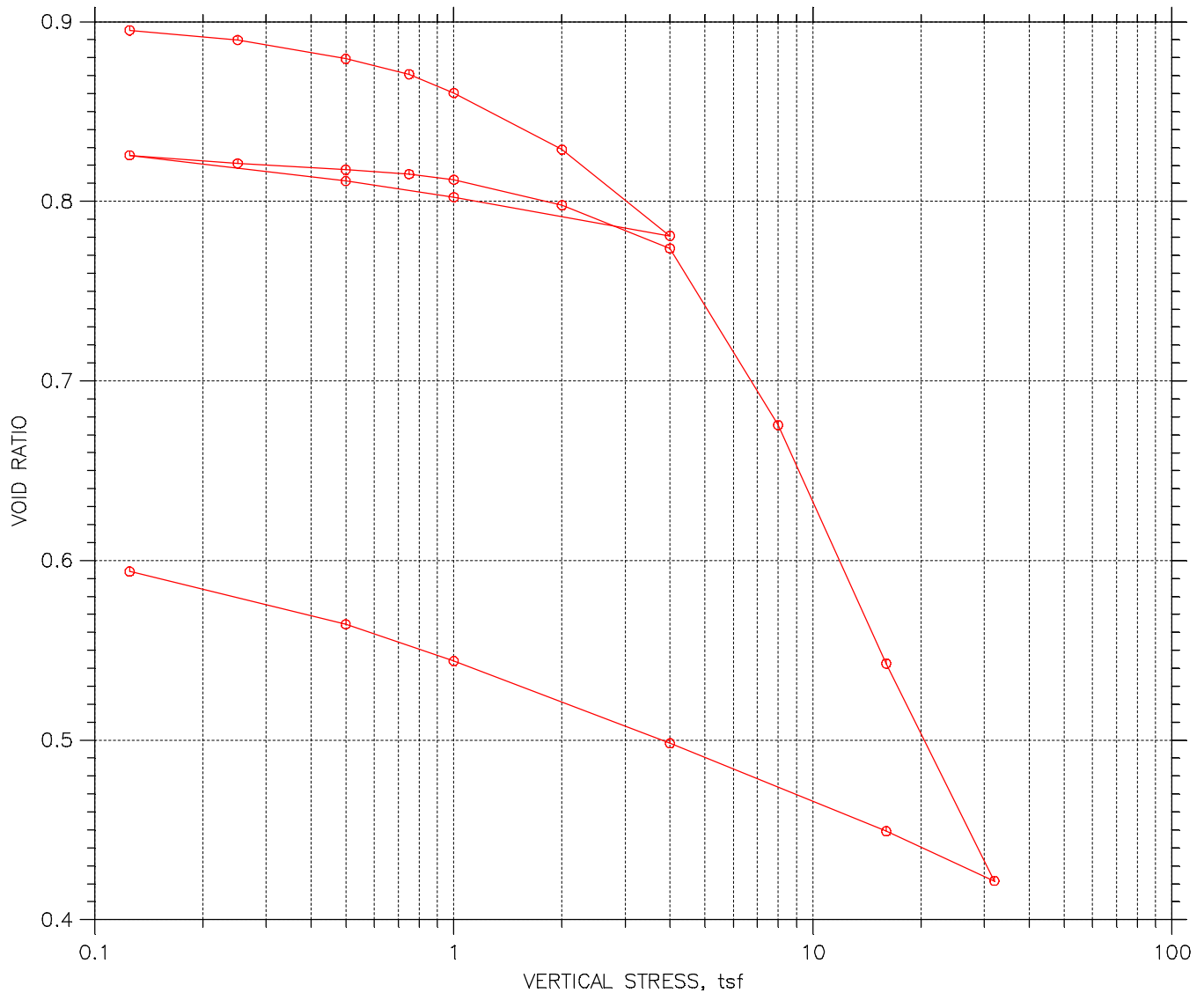


Soil Description: REDDISH BROWN LEAN CLAY (CL)


Remarks: Pc = 2.8 tsf Cc = 0.372 Ccr = 0.010 TEST PERFORMED AS PER ASTM D2435

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. ft^2/sec	Log ft^2/sec	Ave. 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

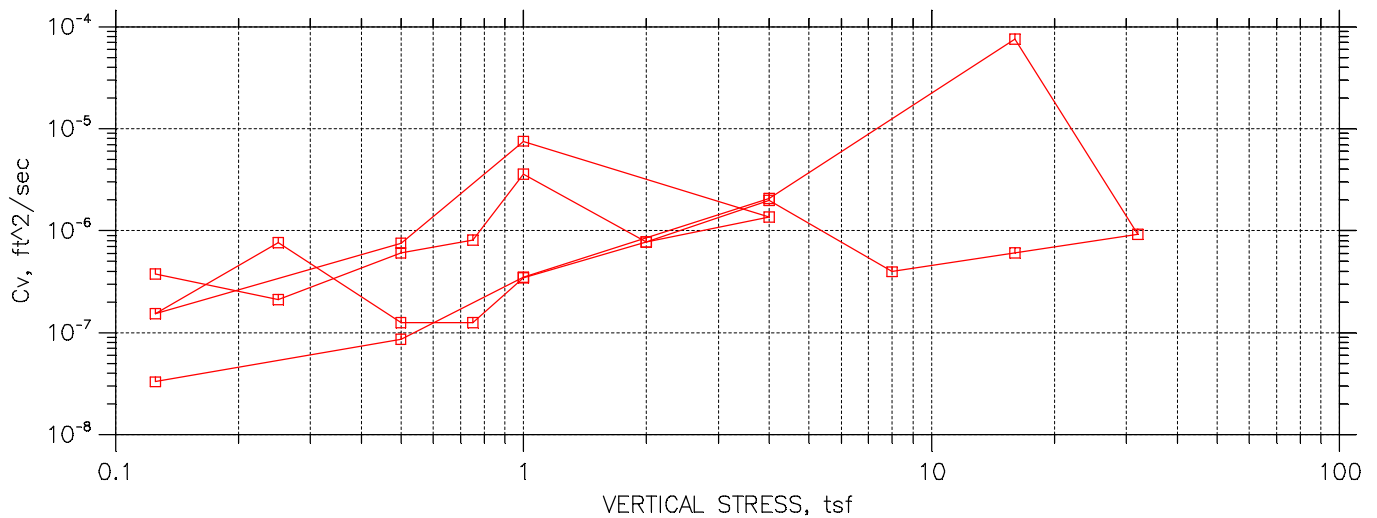
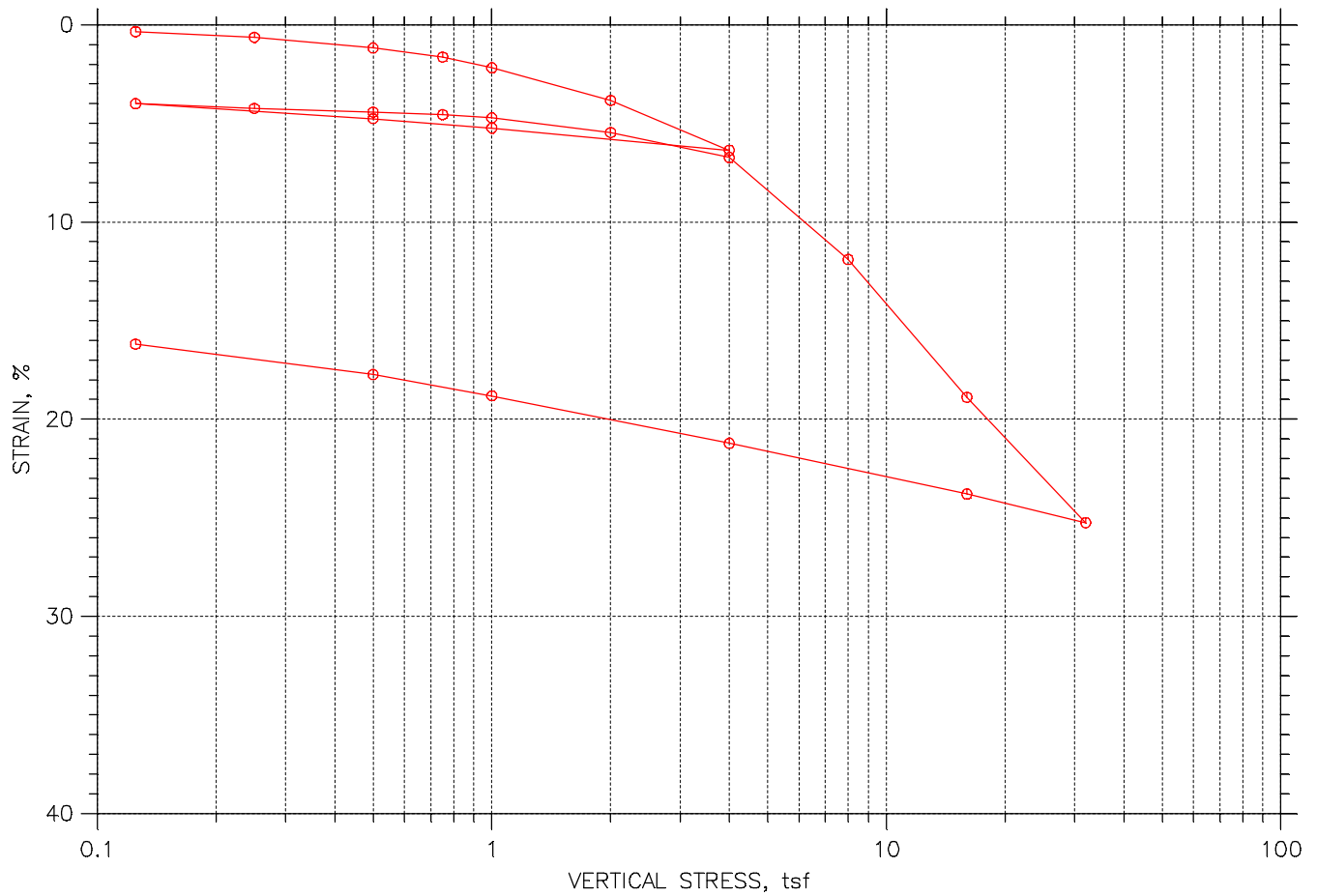
ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435




				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'
	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		

ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



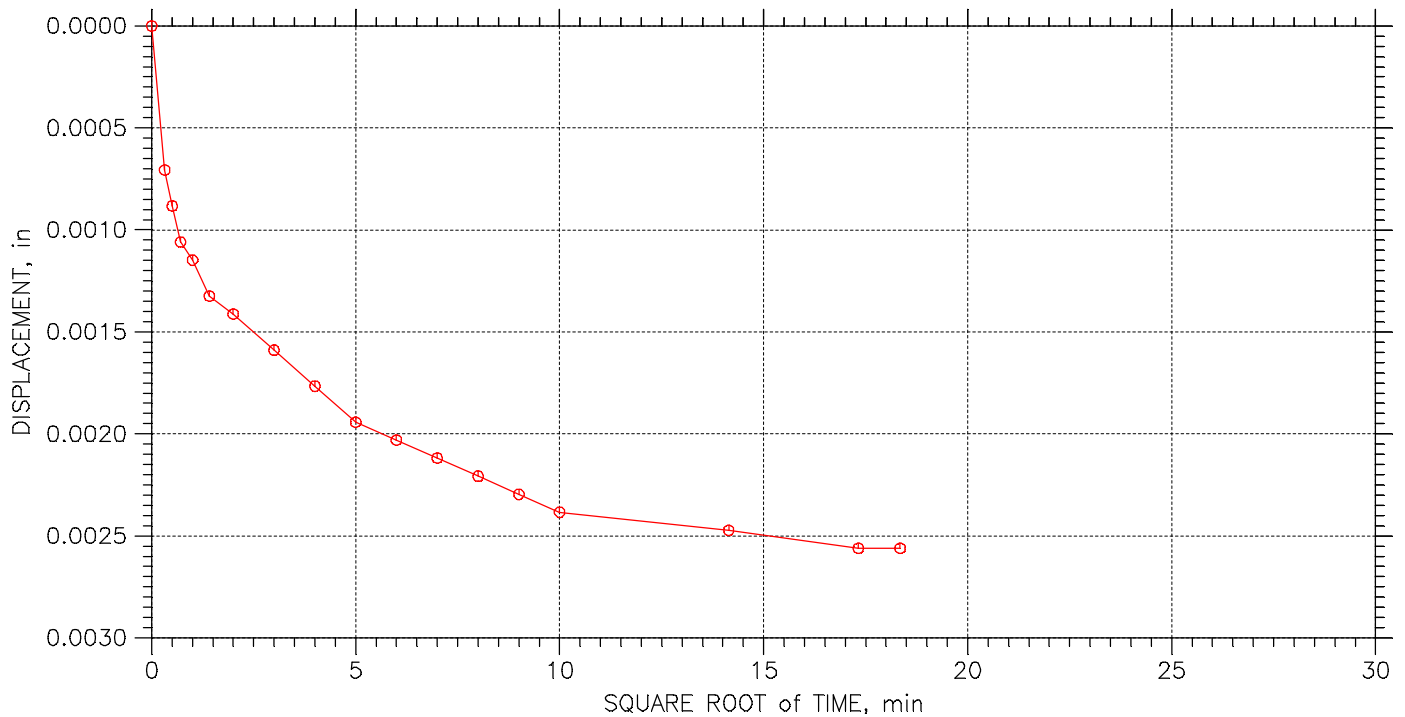
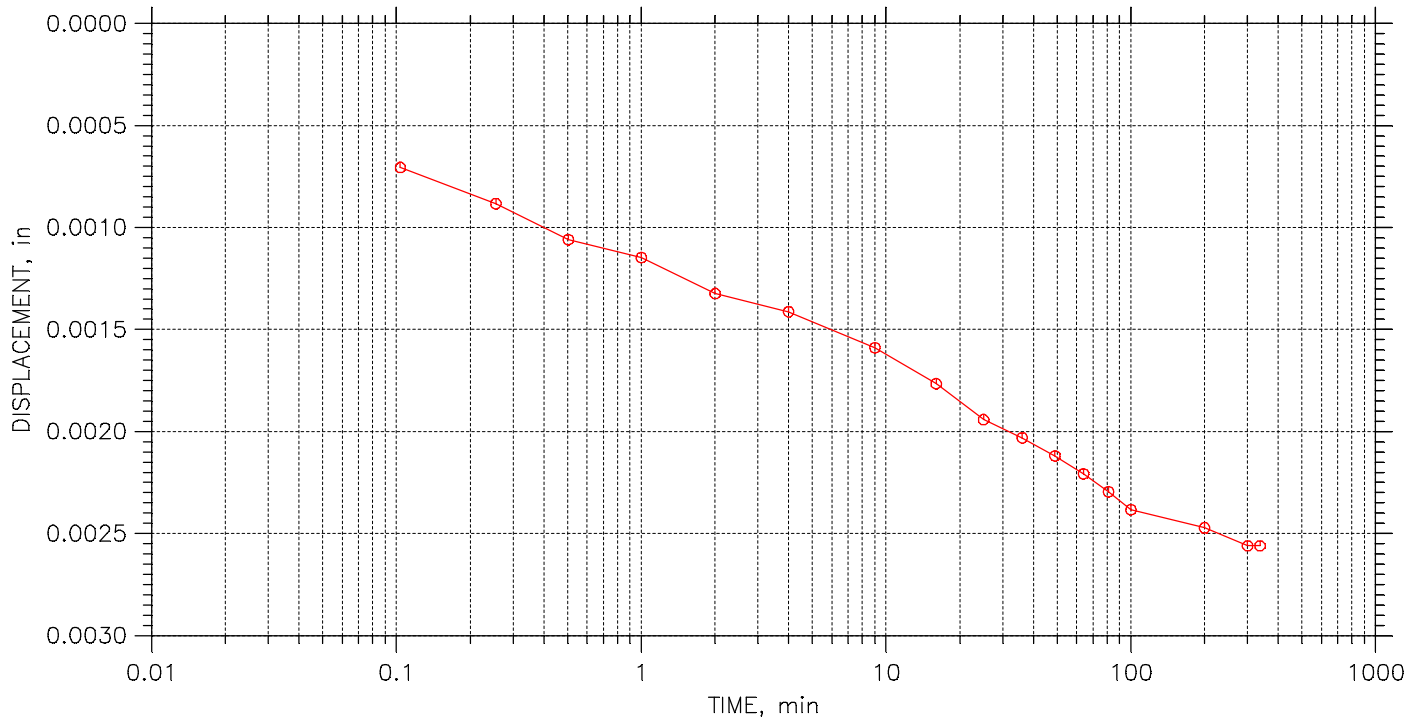
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $P_c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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf



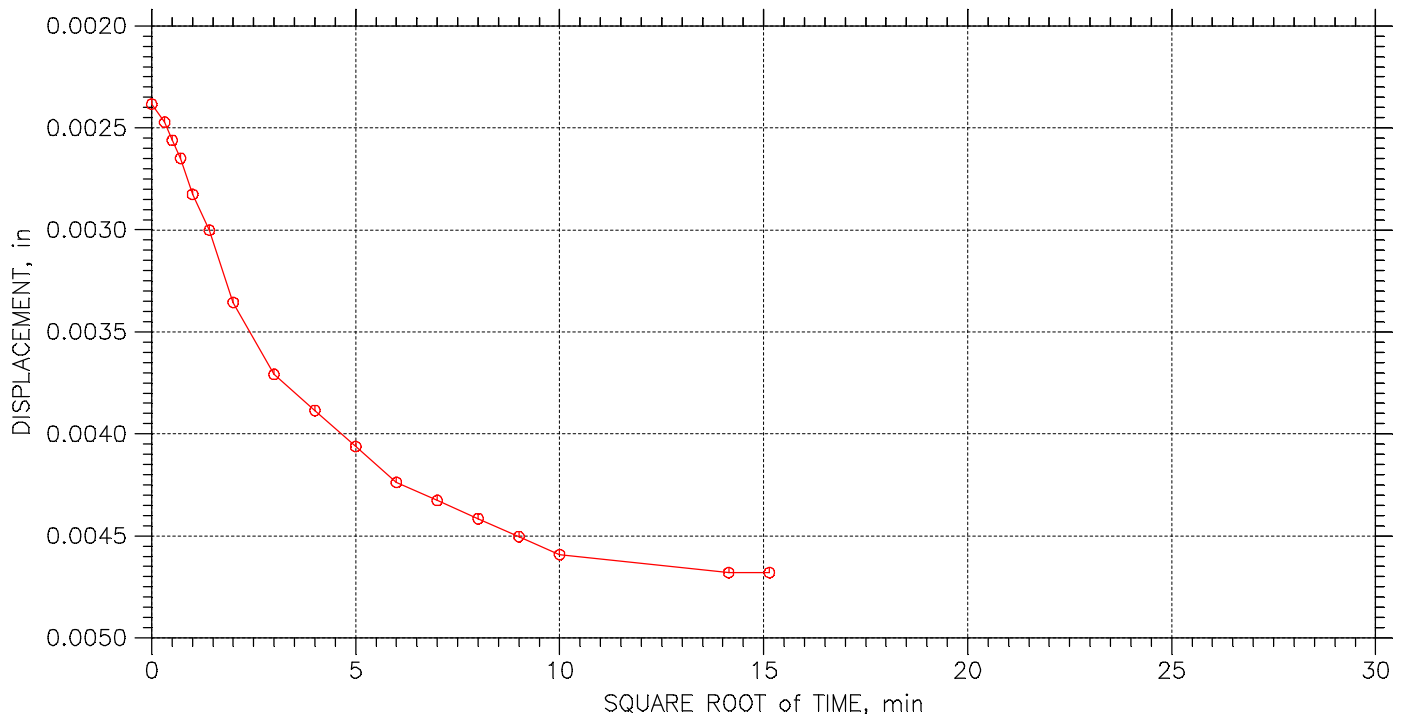
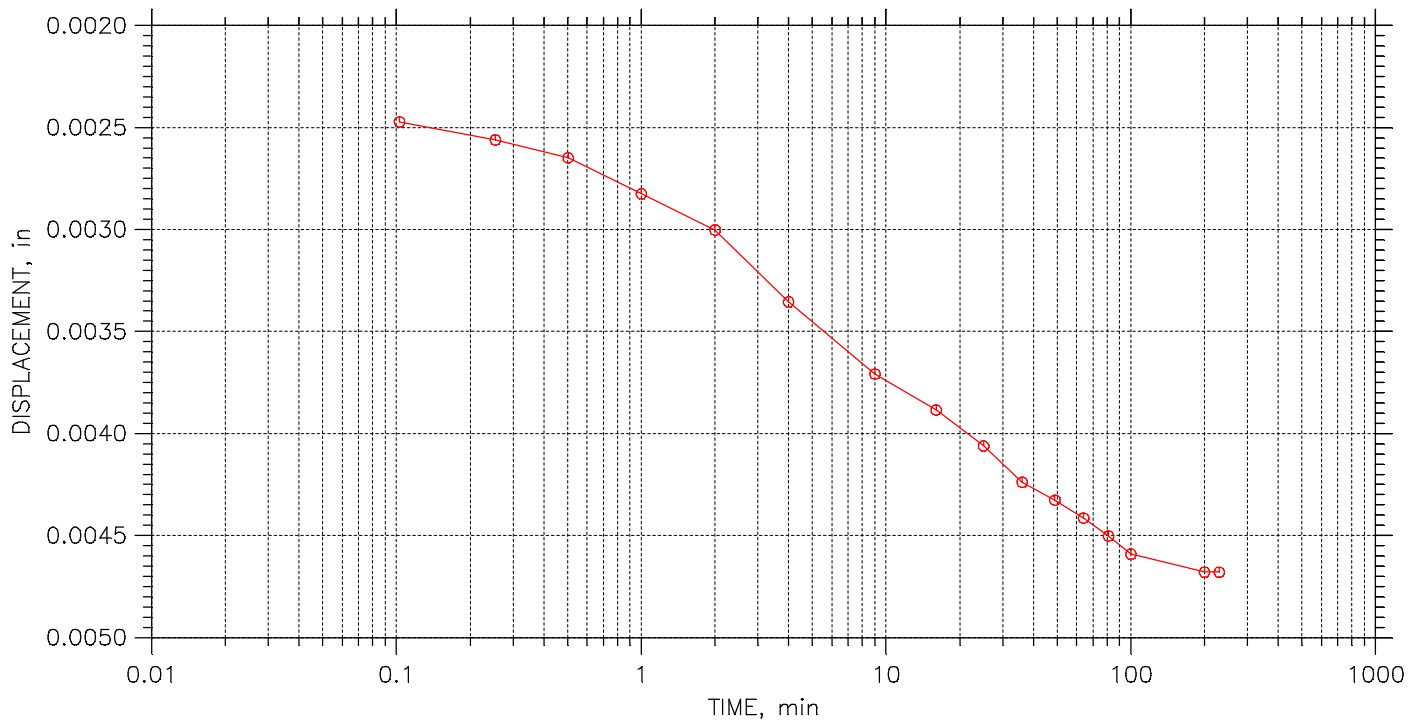
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf



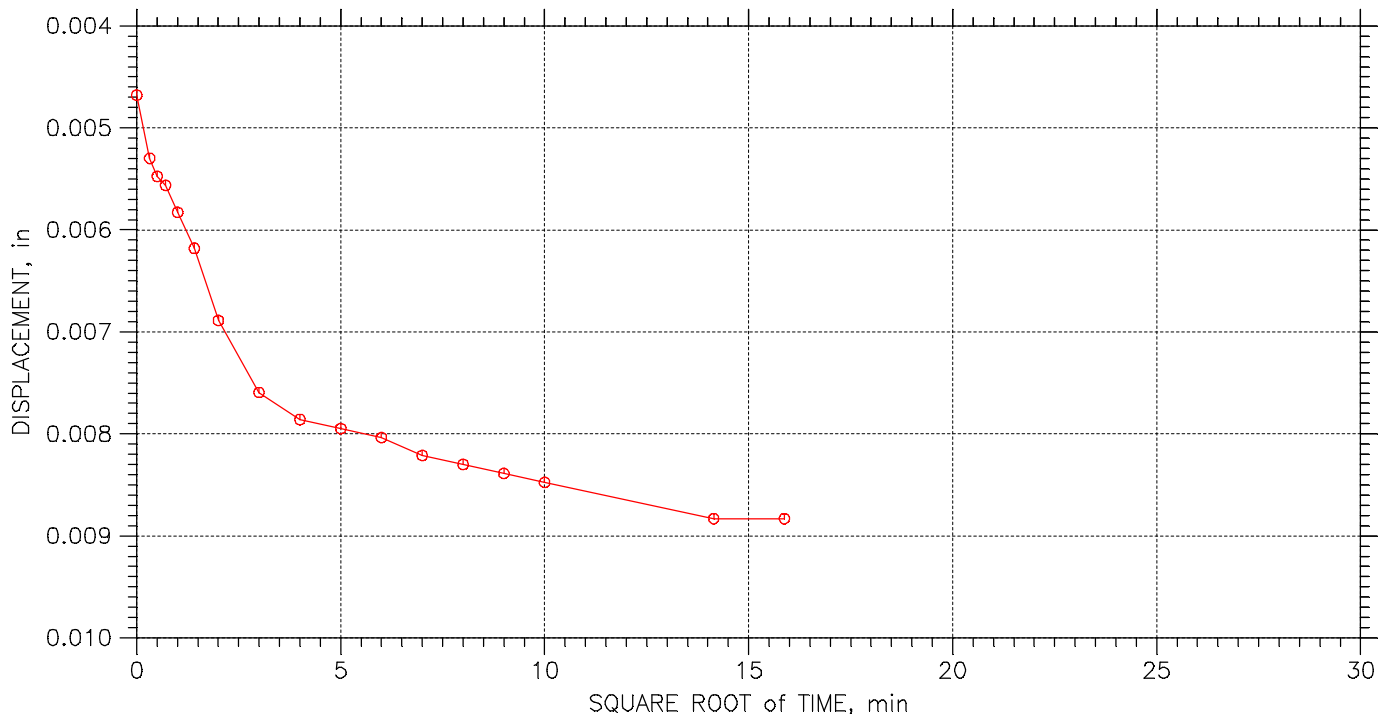
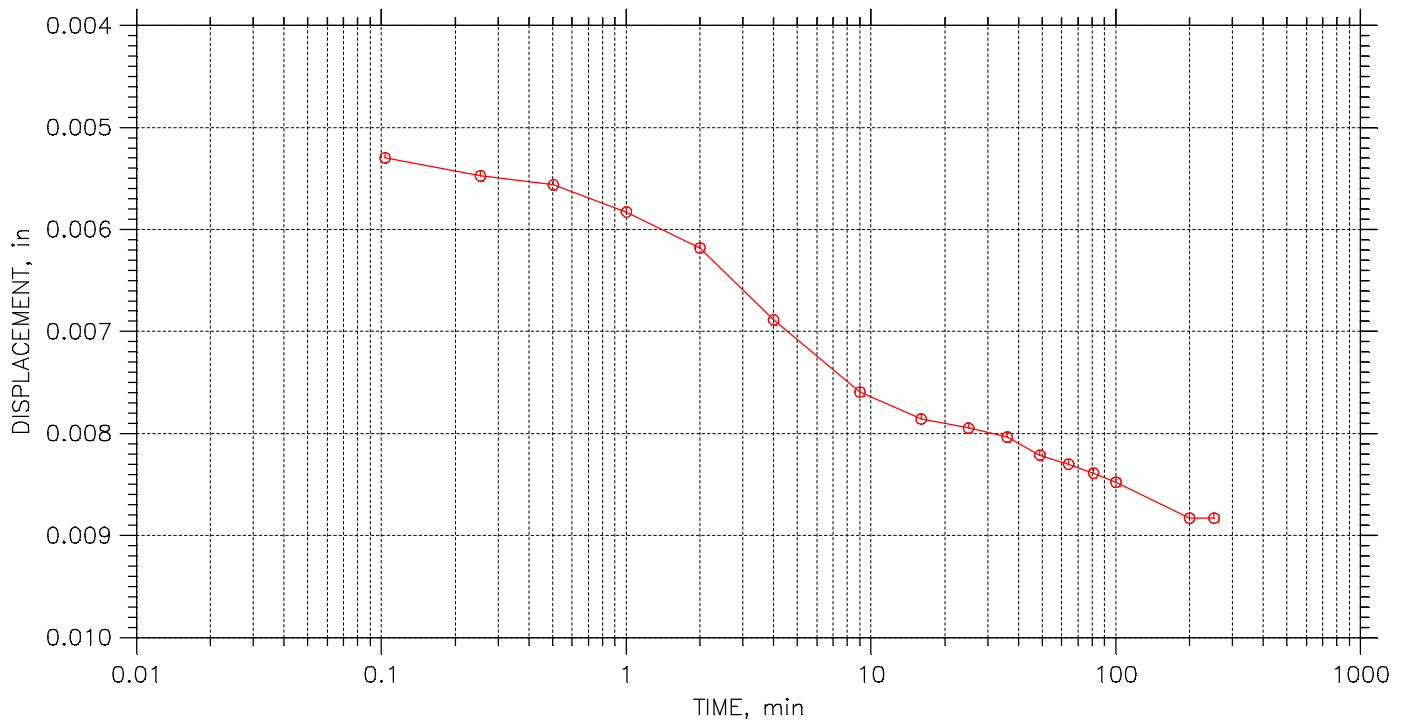
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf



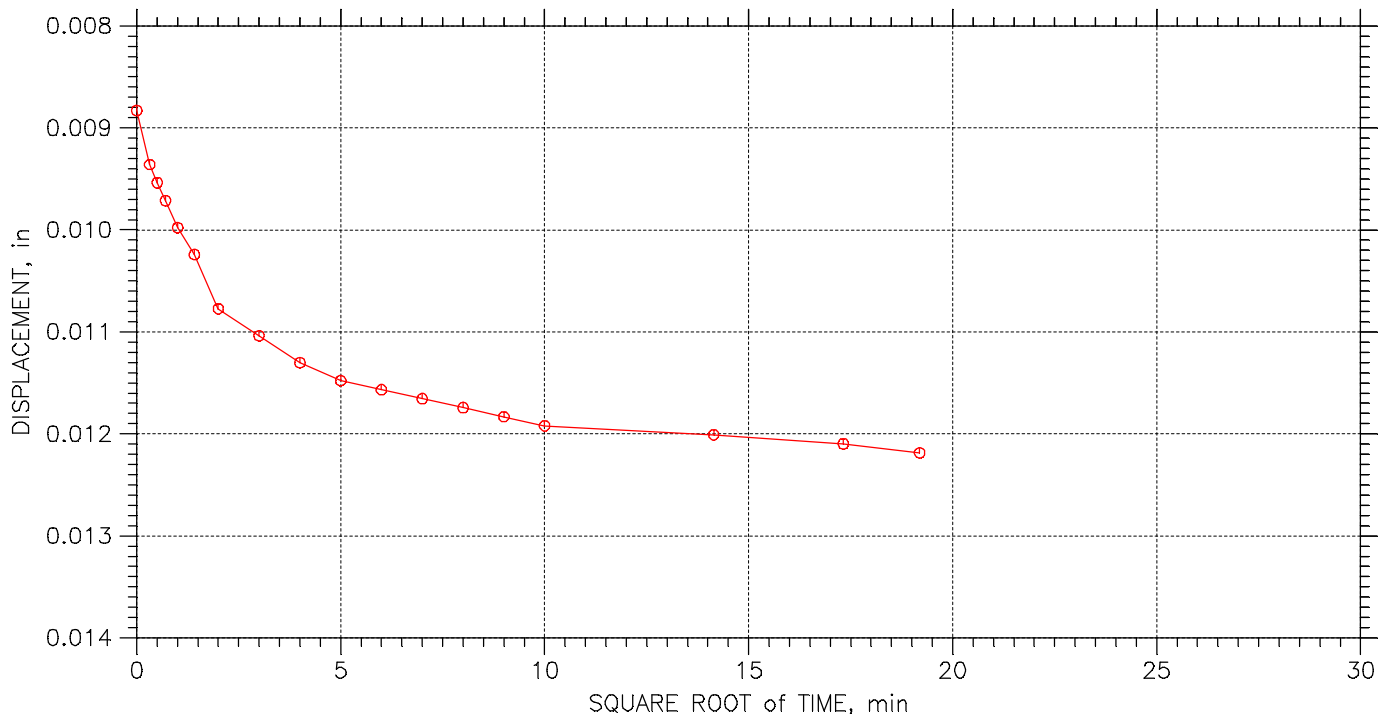
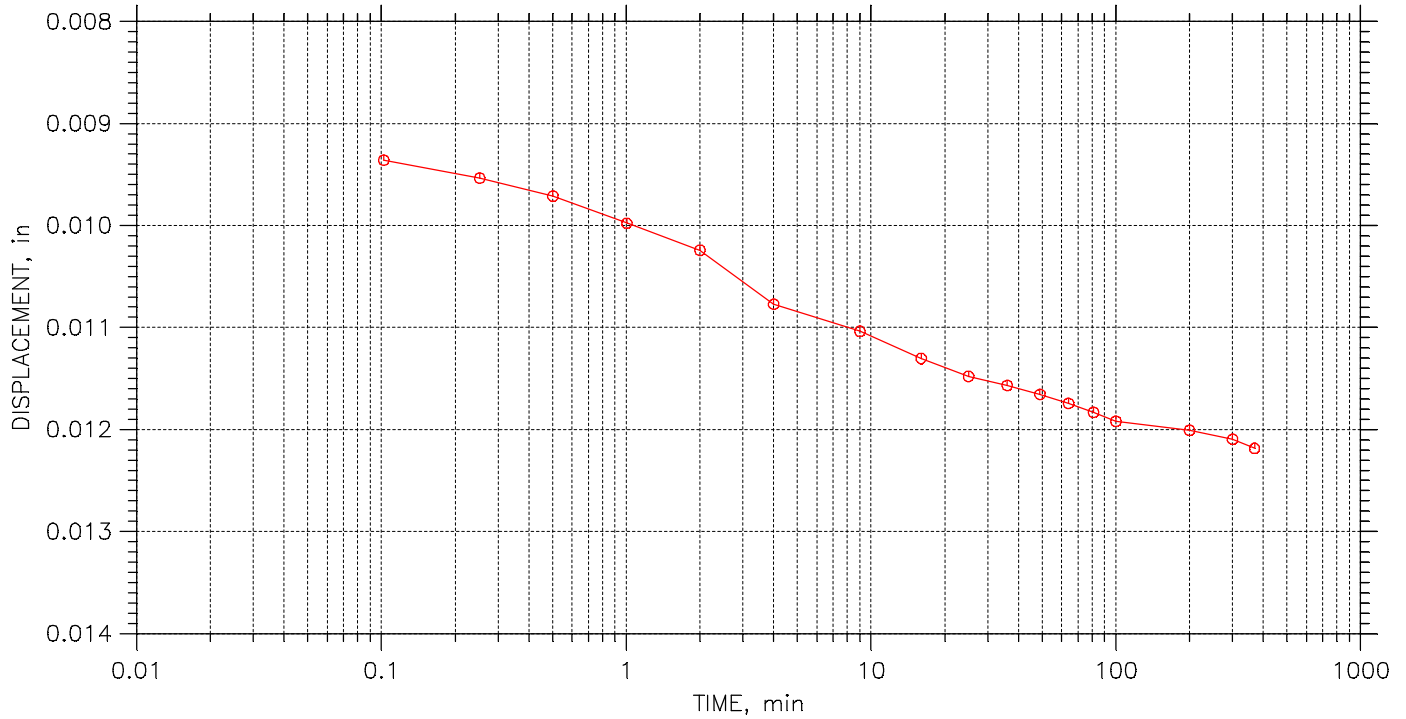
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf



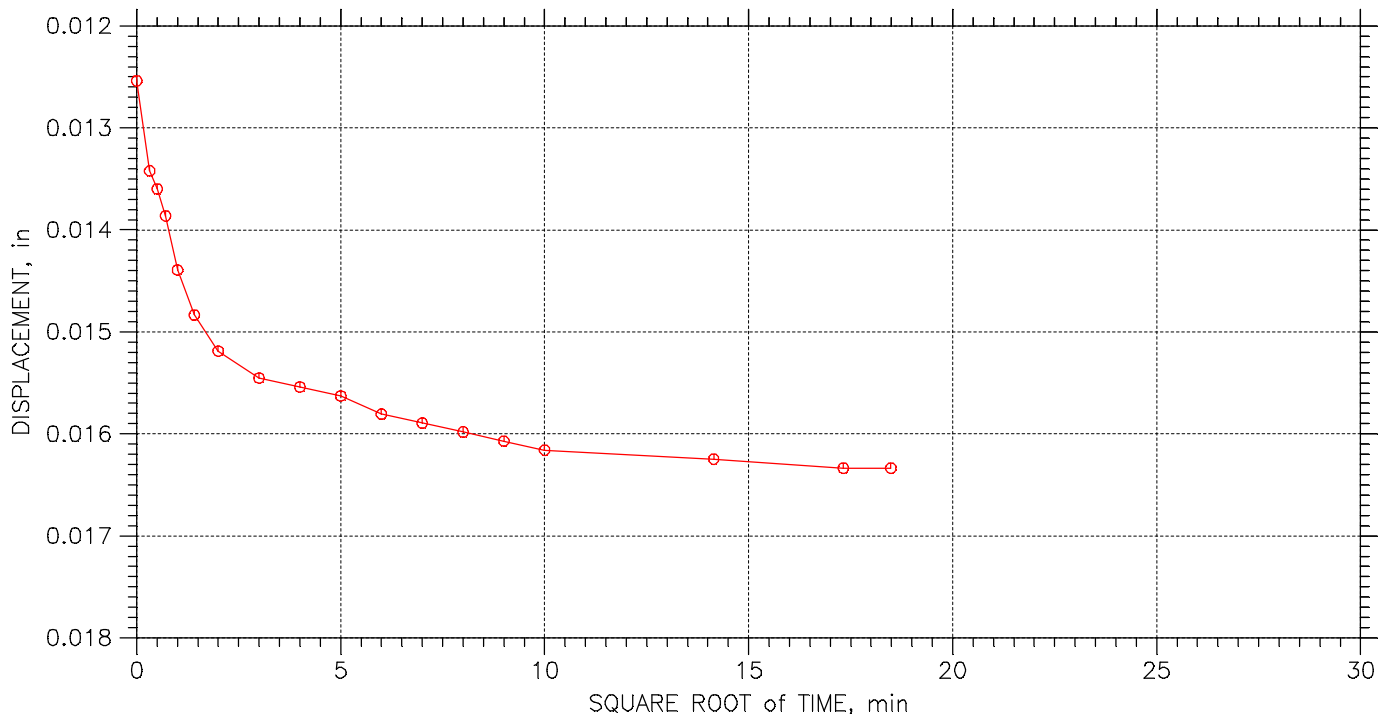
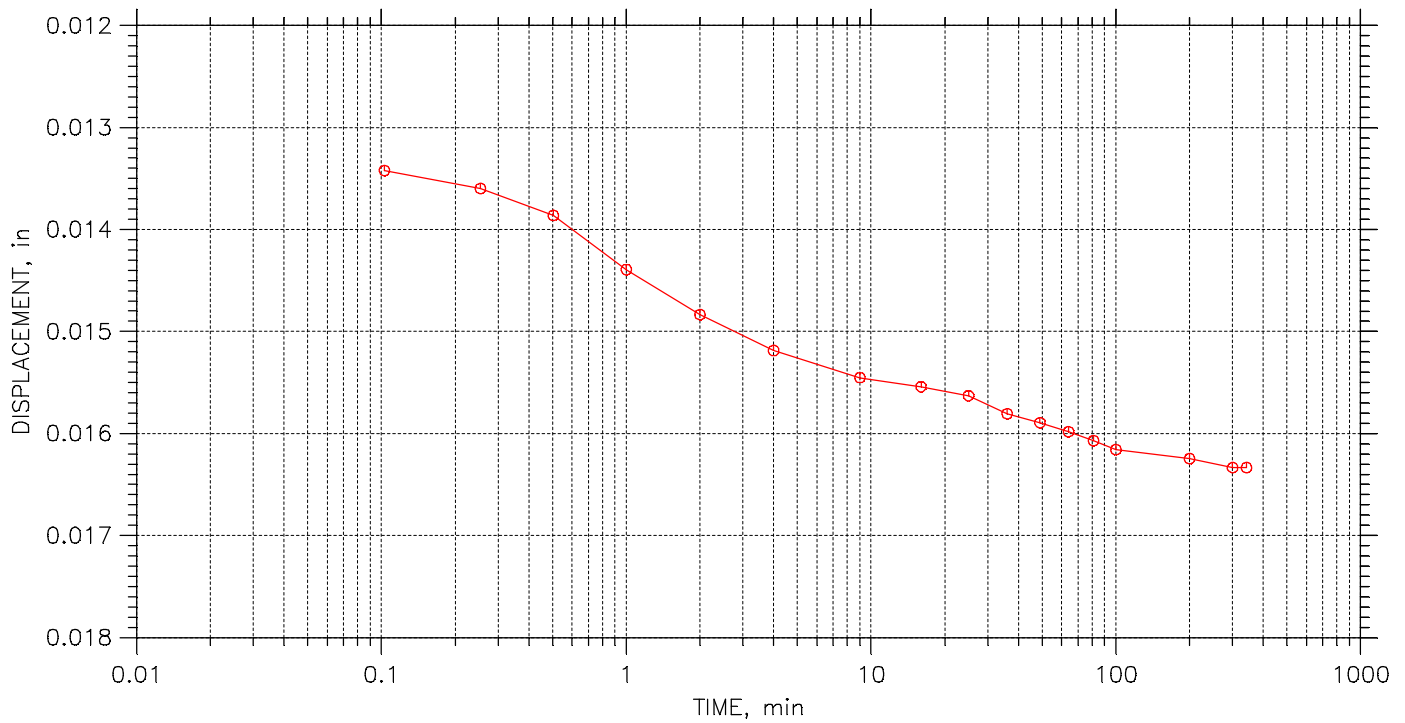
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf



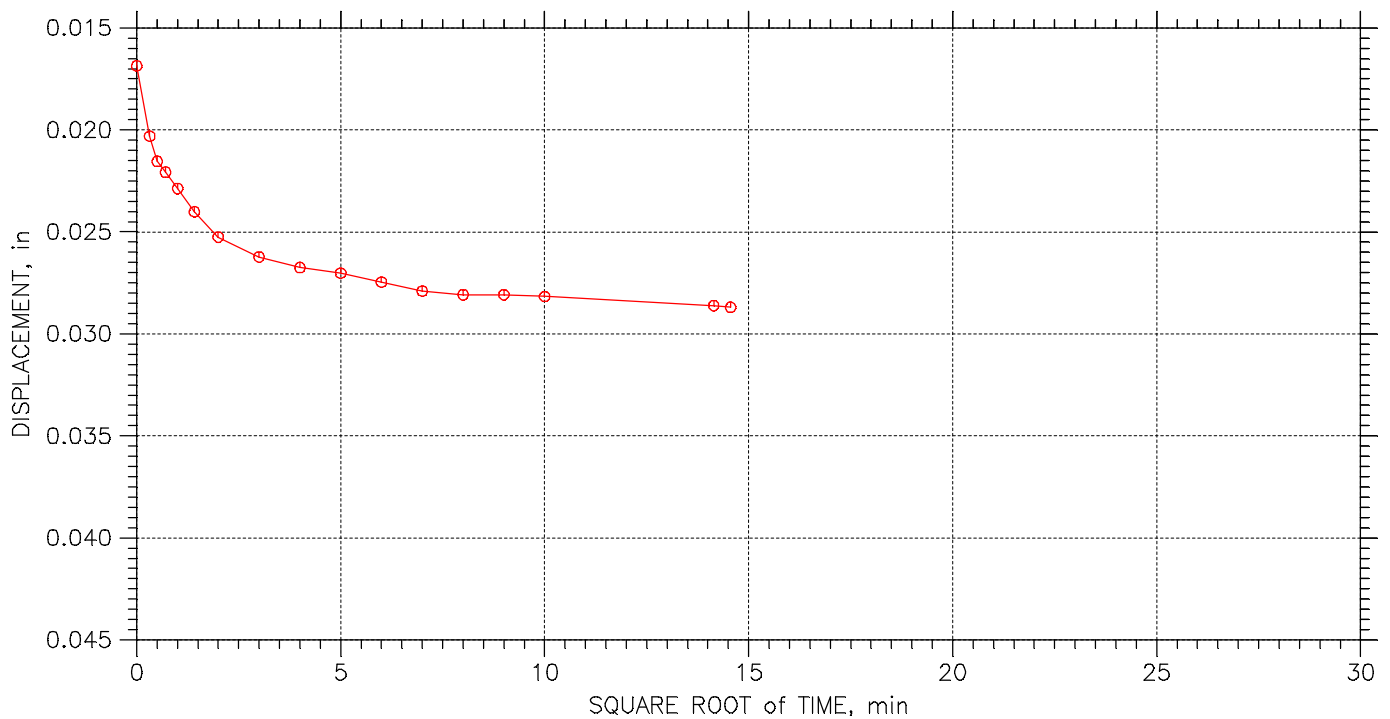
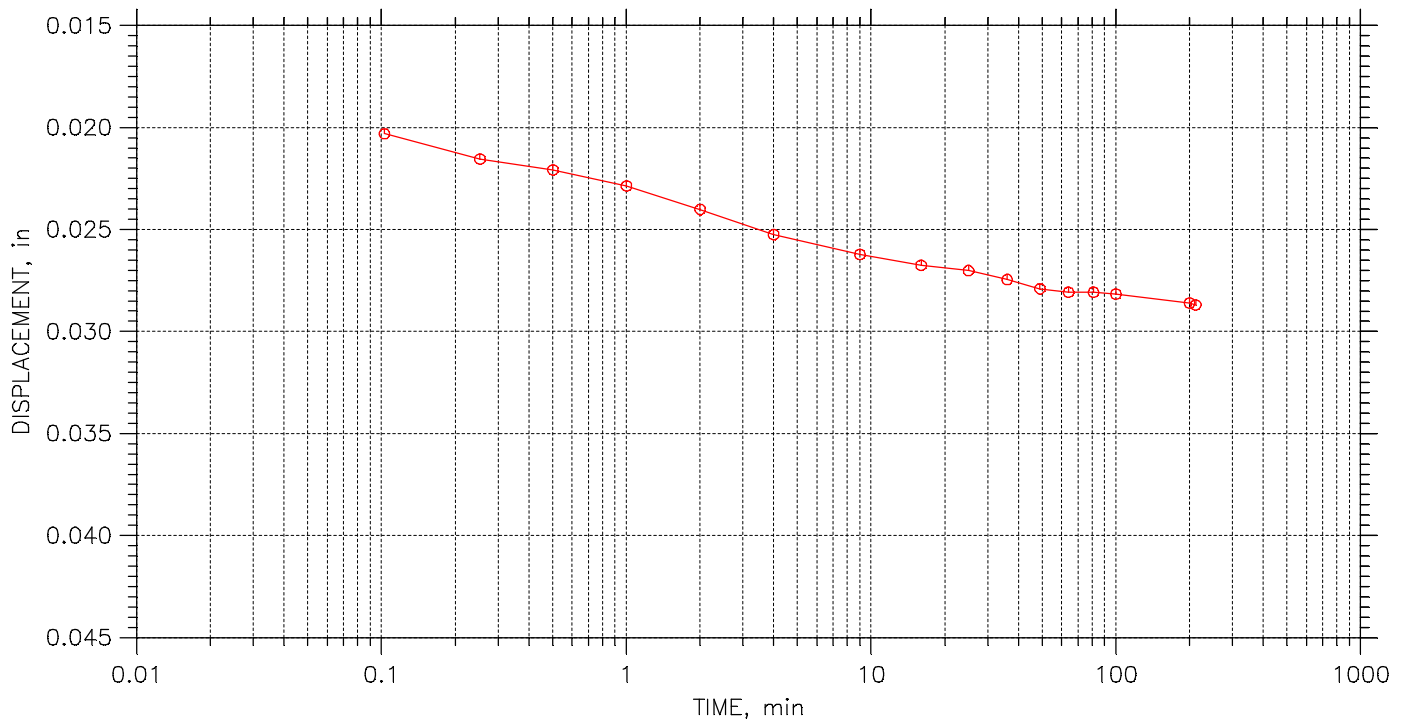
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf



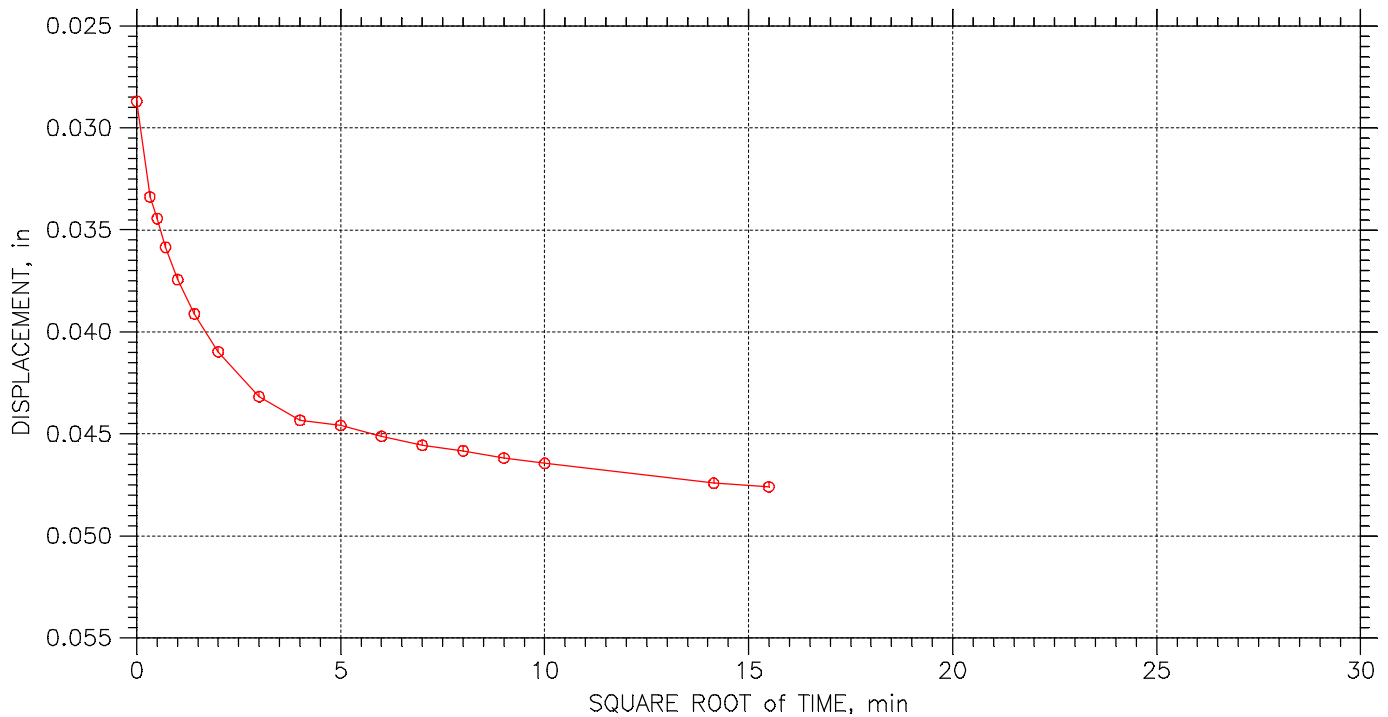
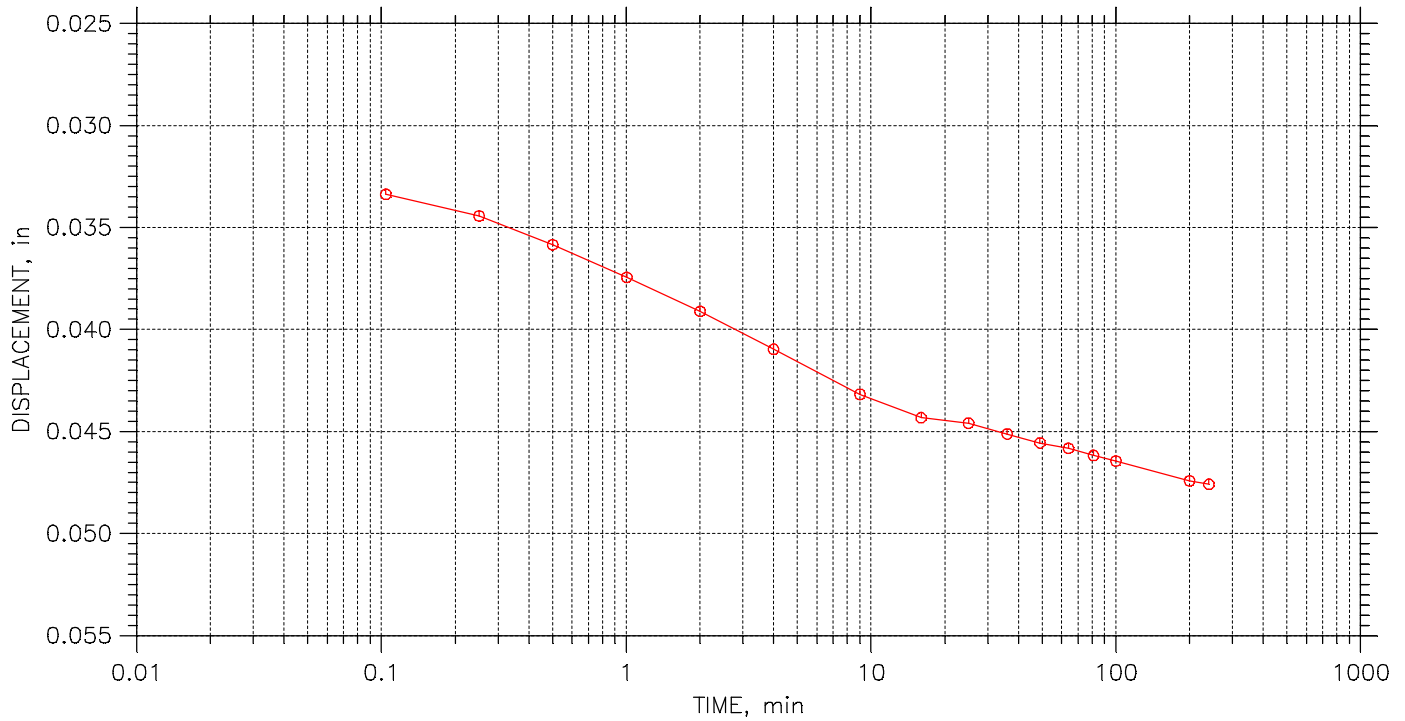
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf



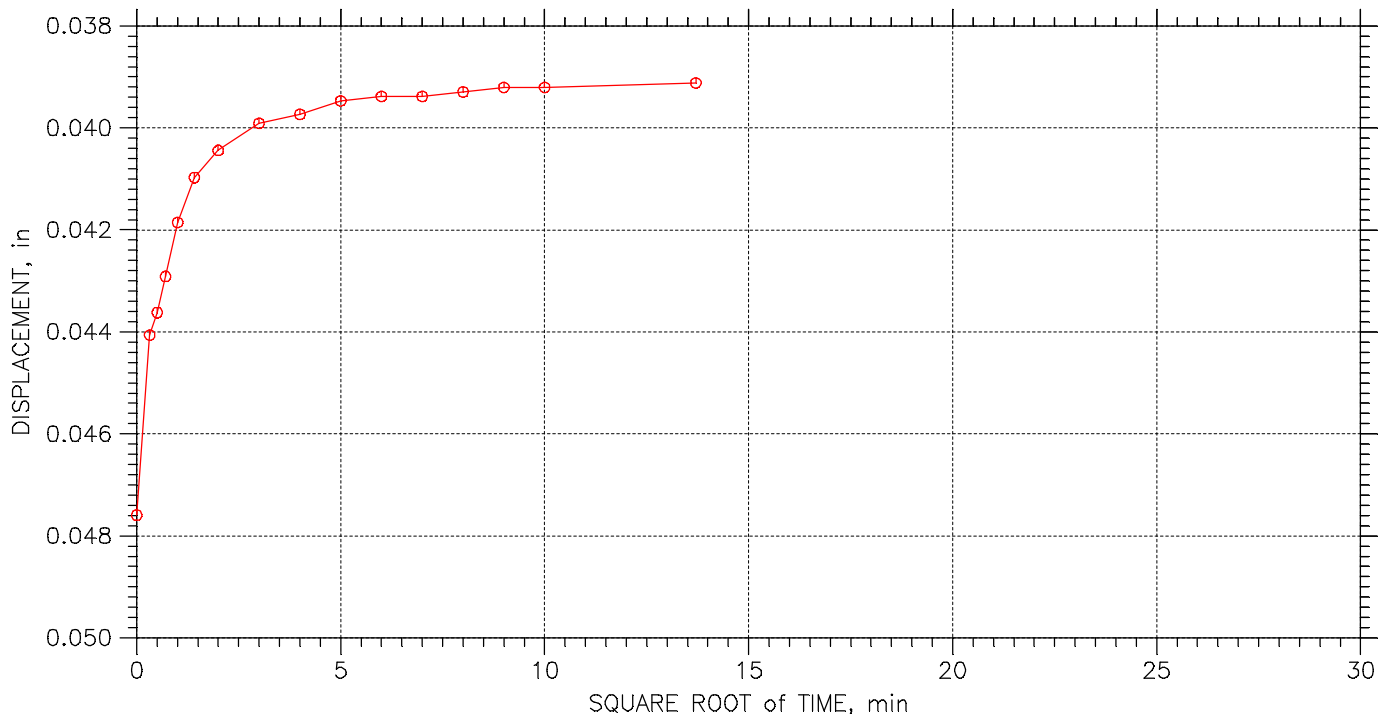
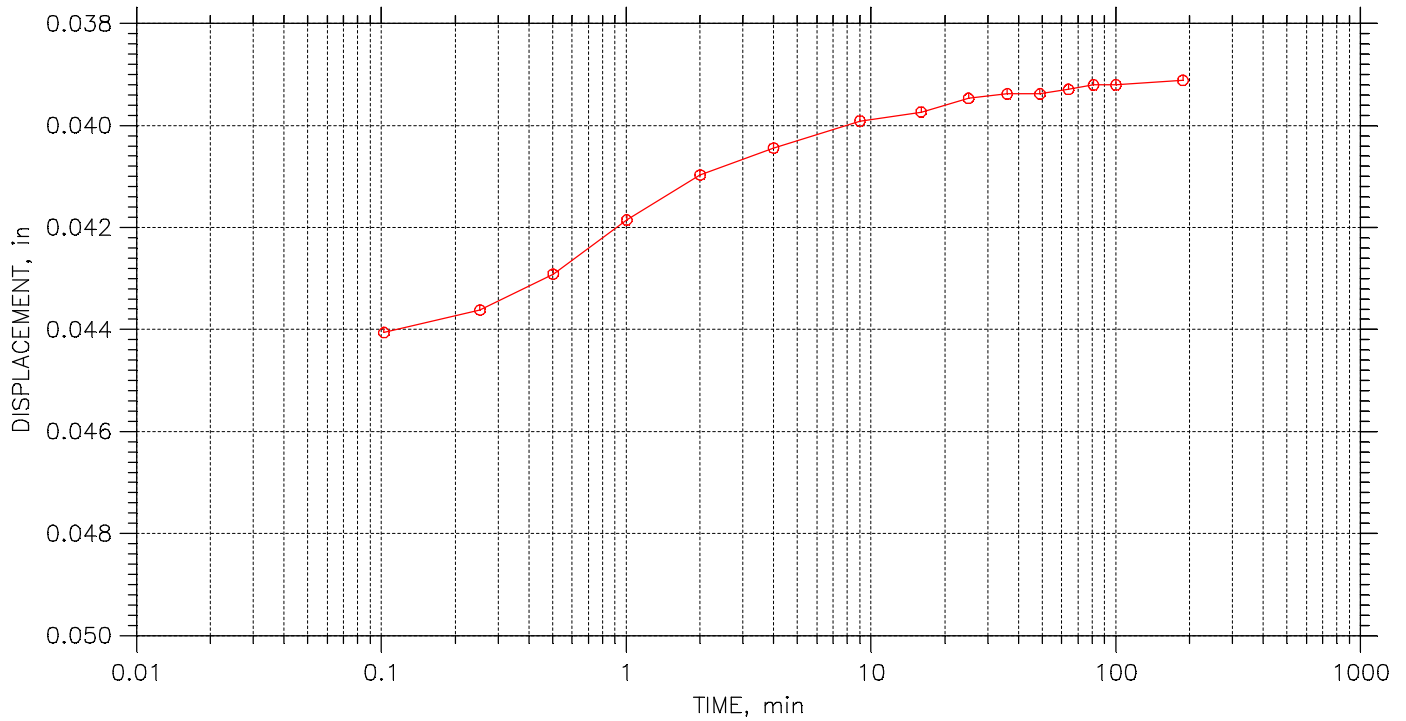
	Project: PULLIAM PROPRY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf



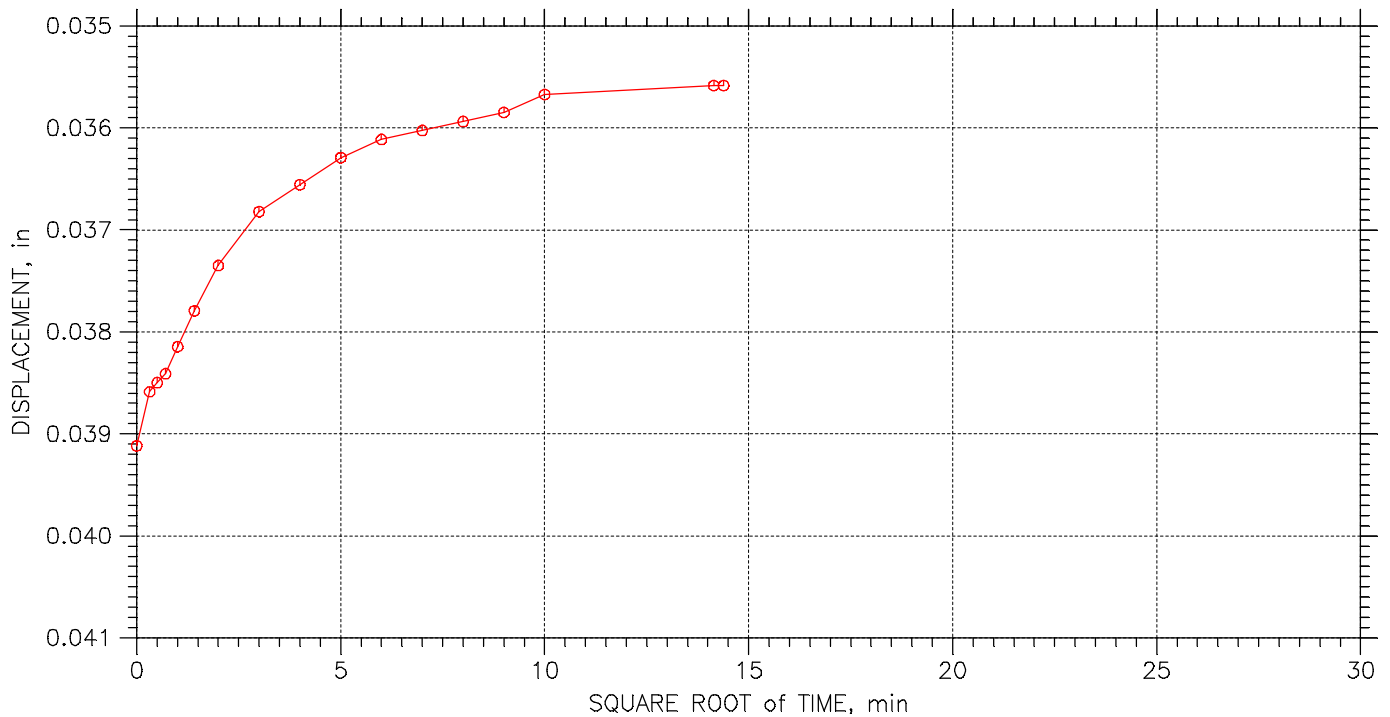
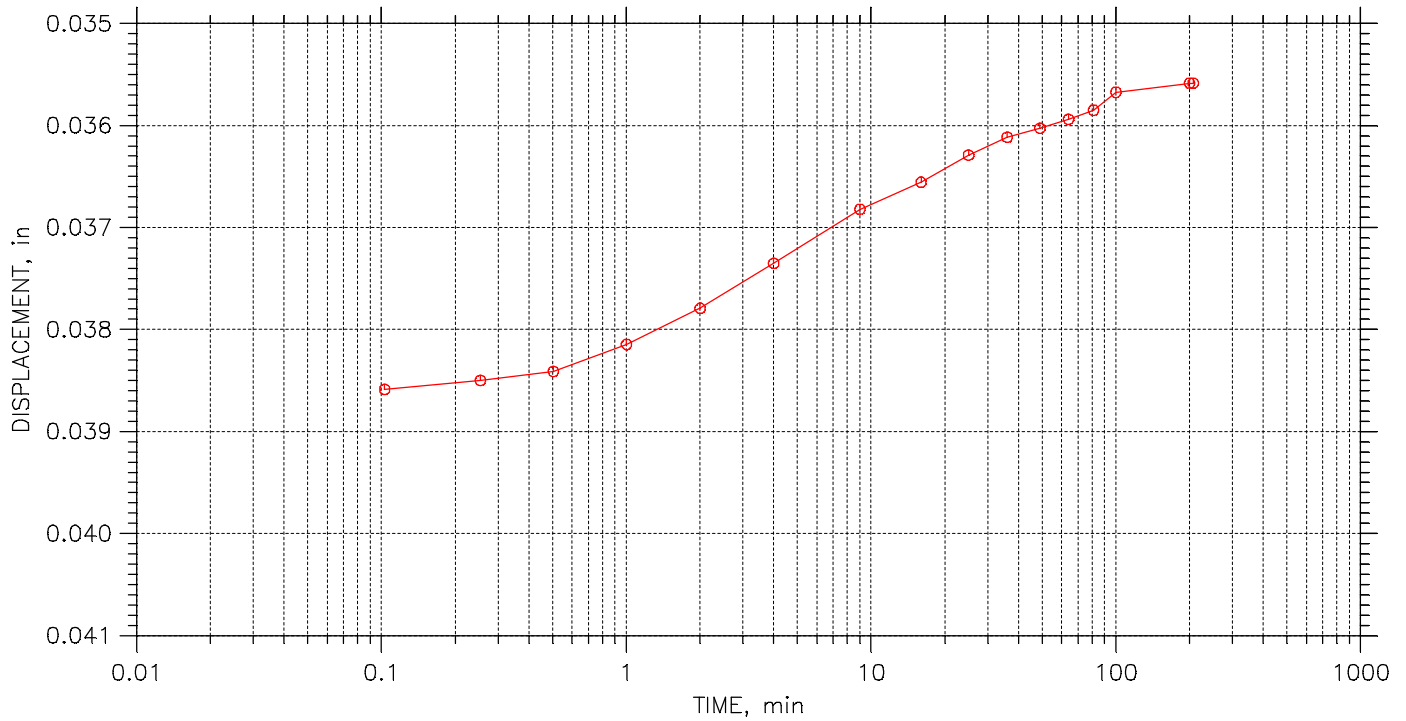
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf



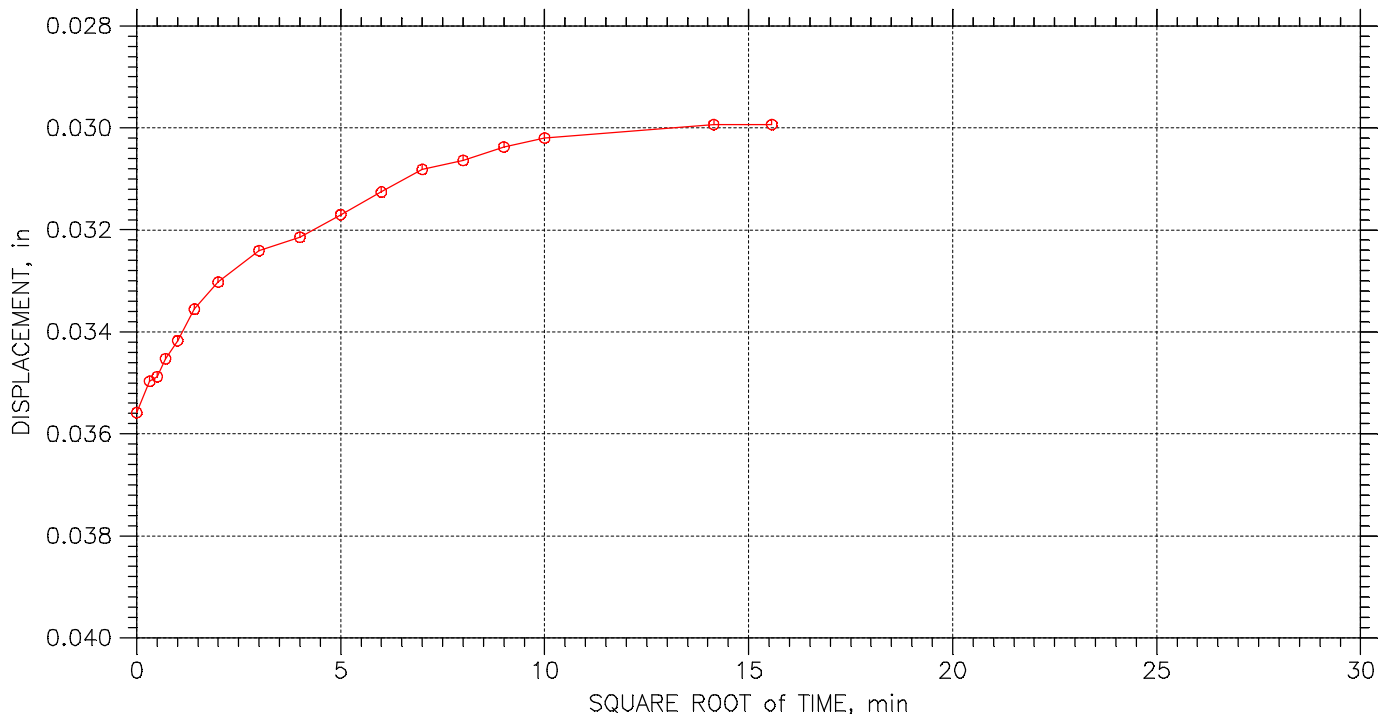
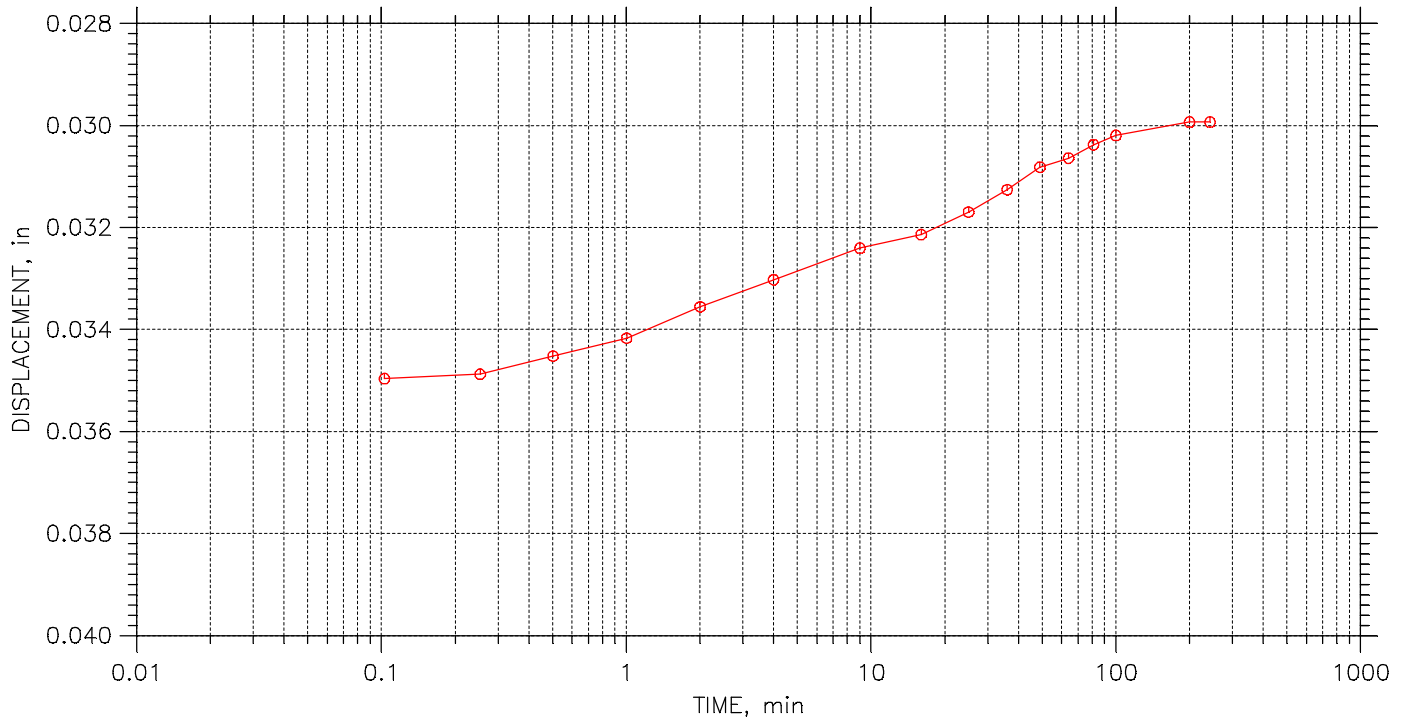
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



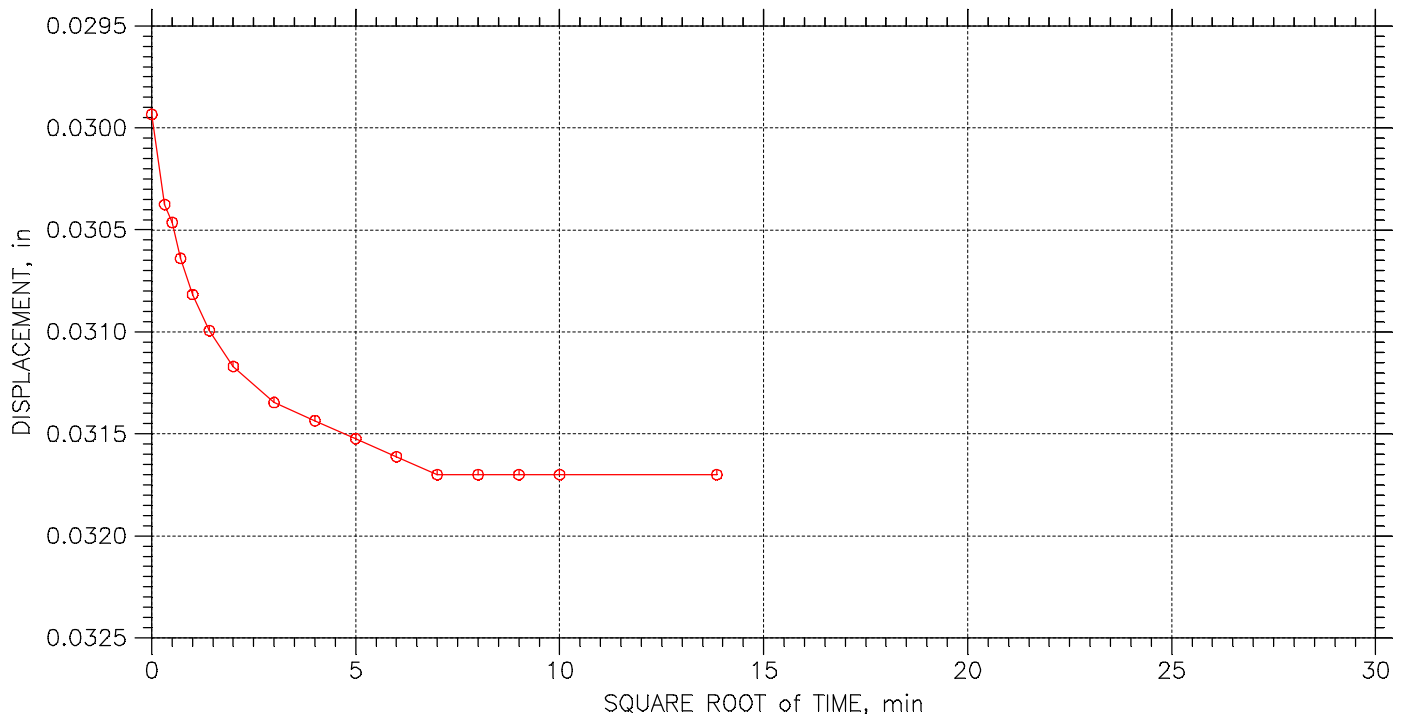
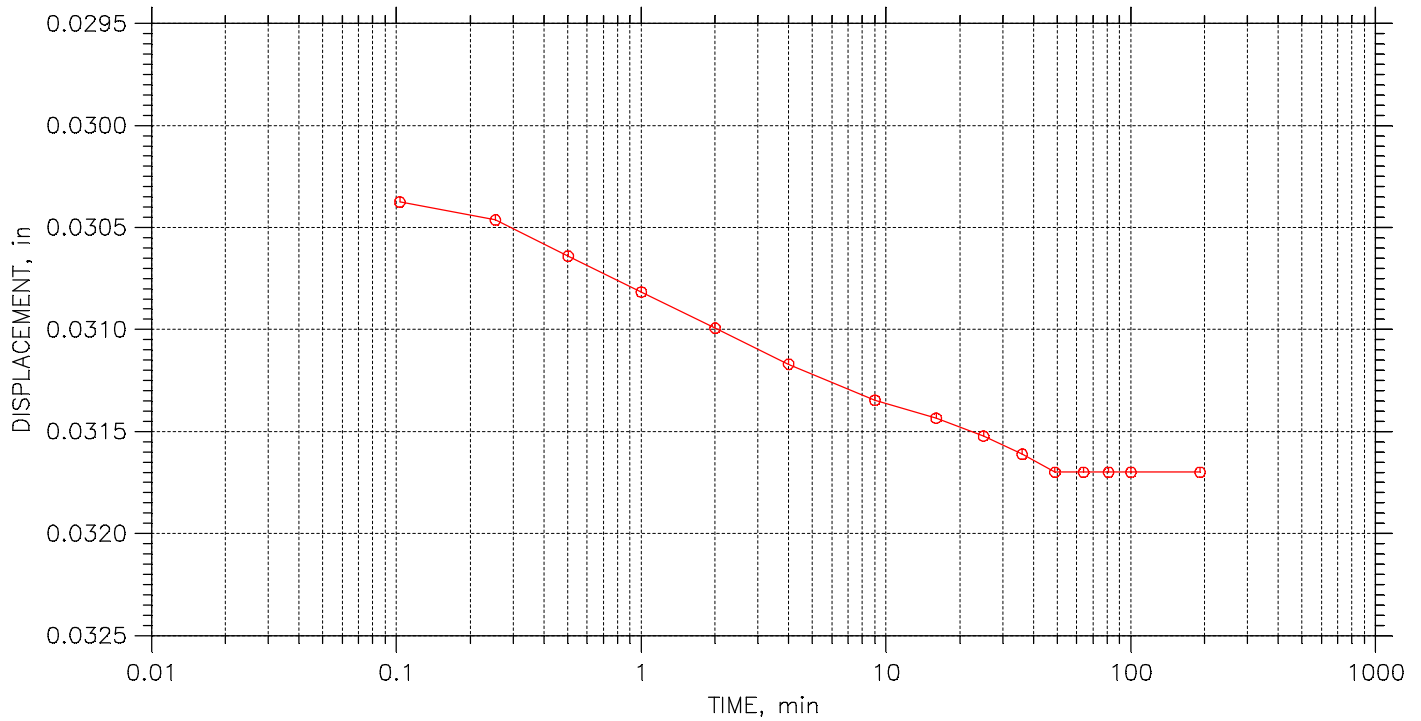
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf



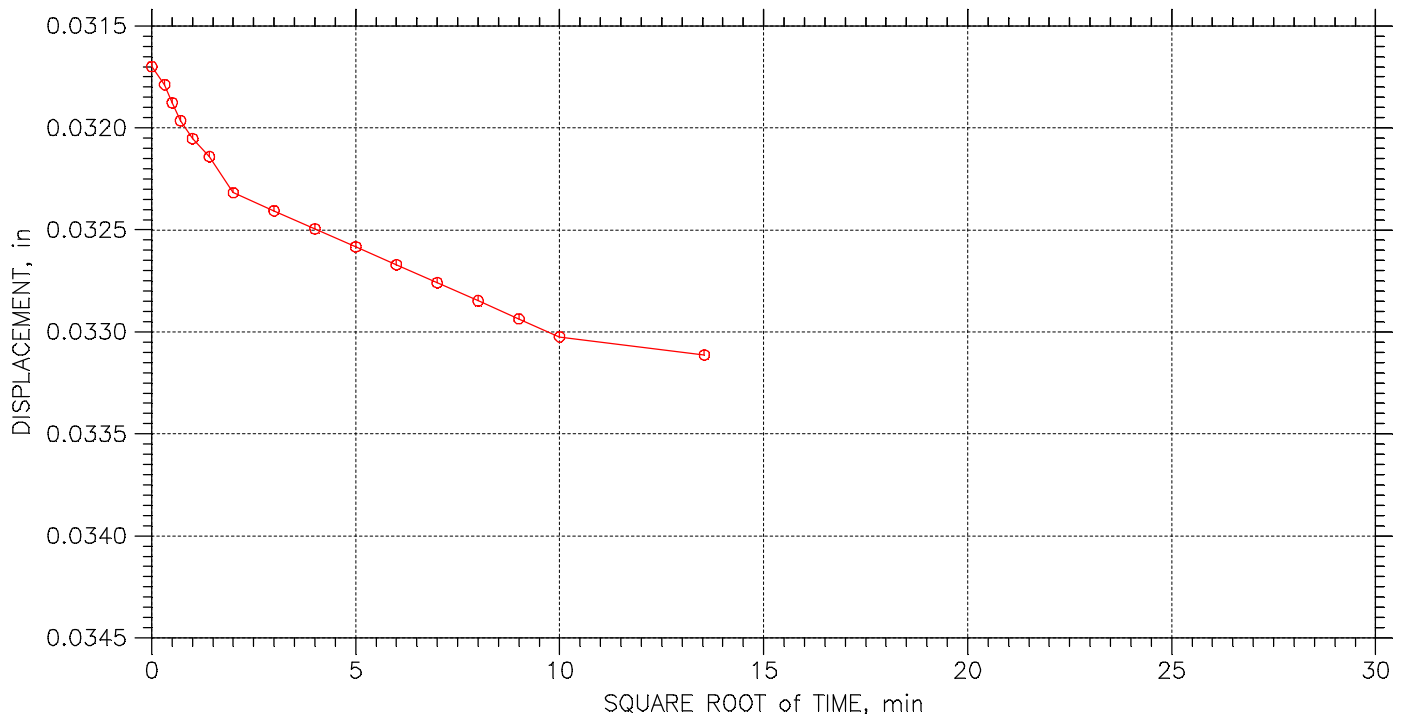
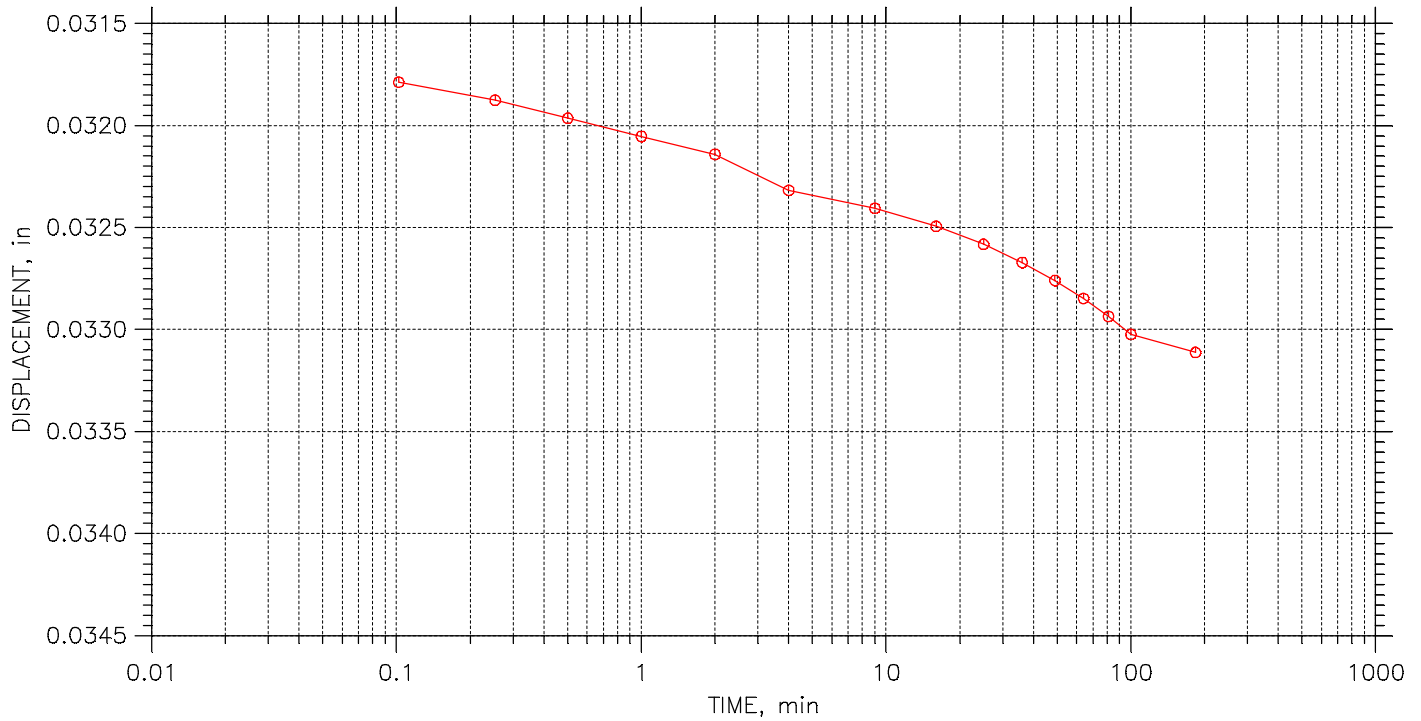
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf



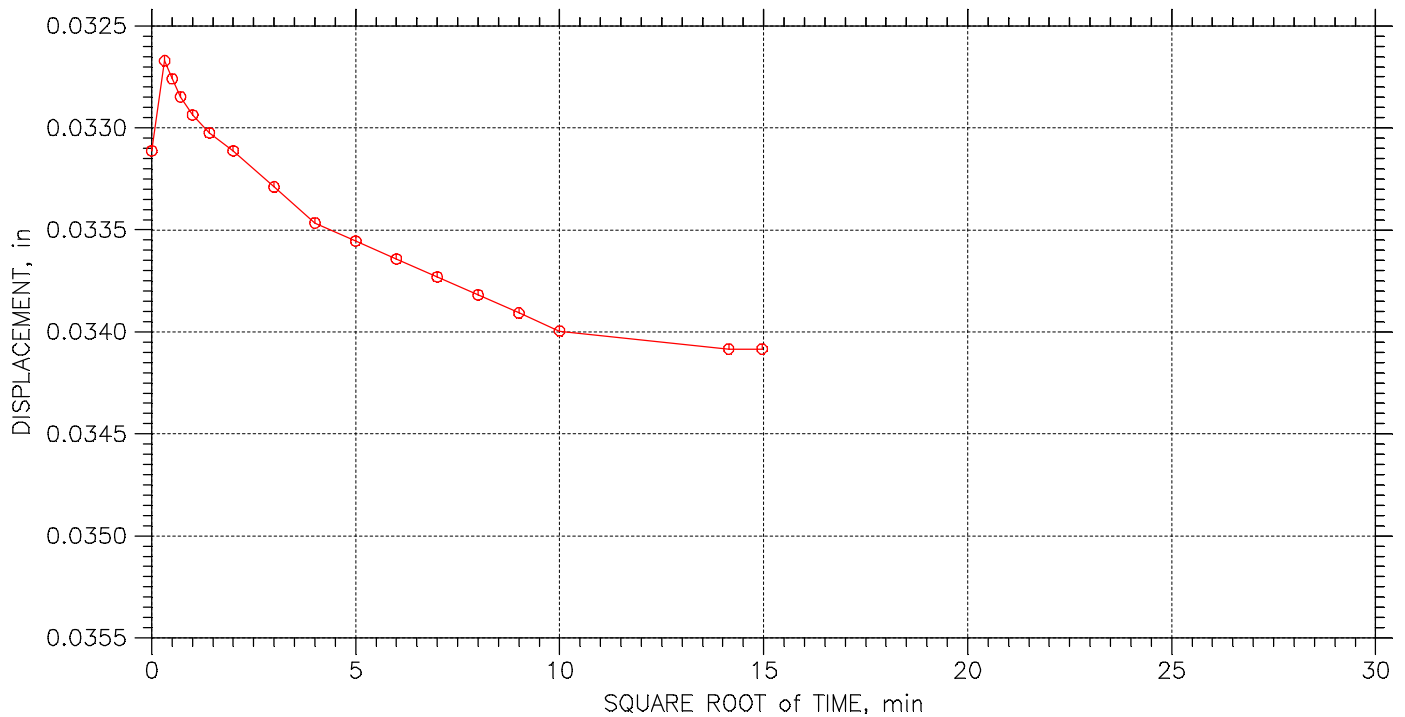
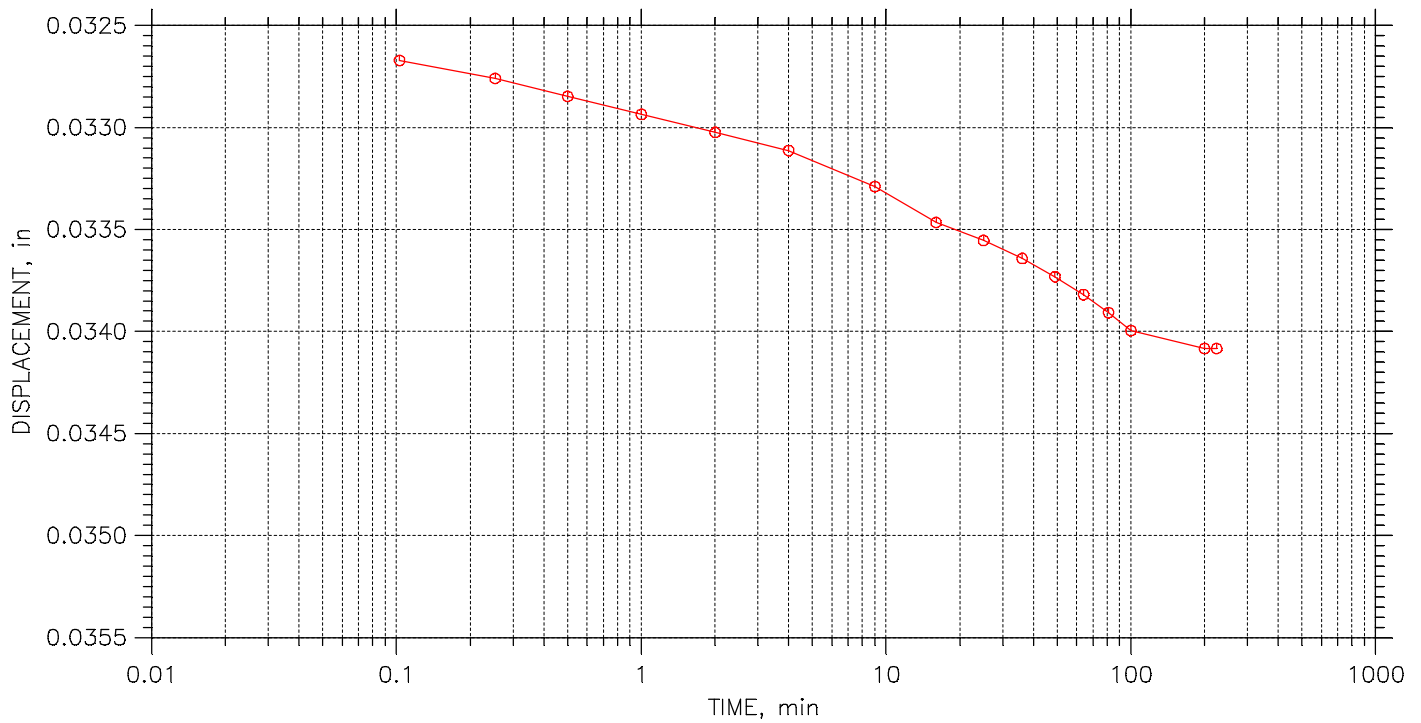
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf



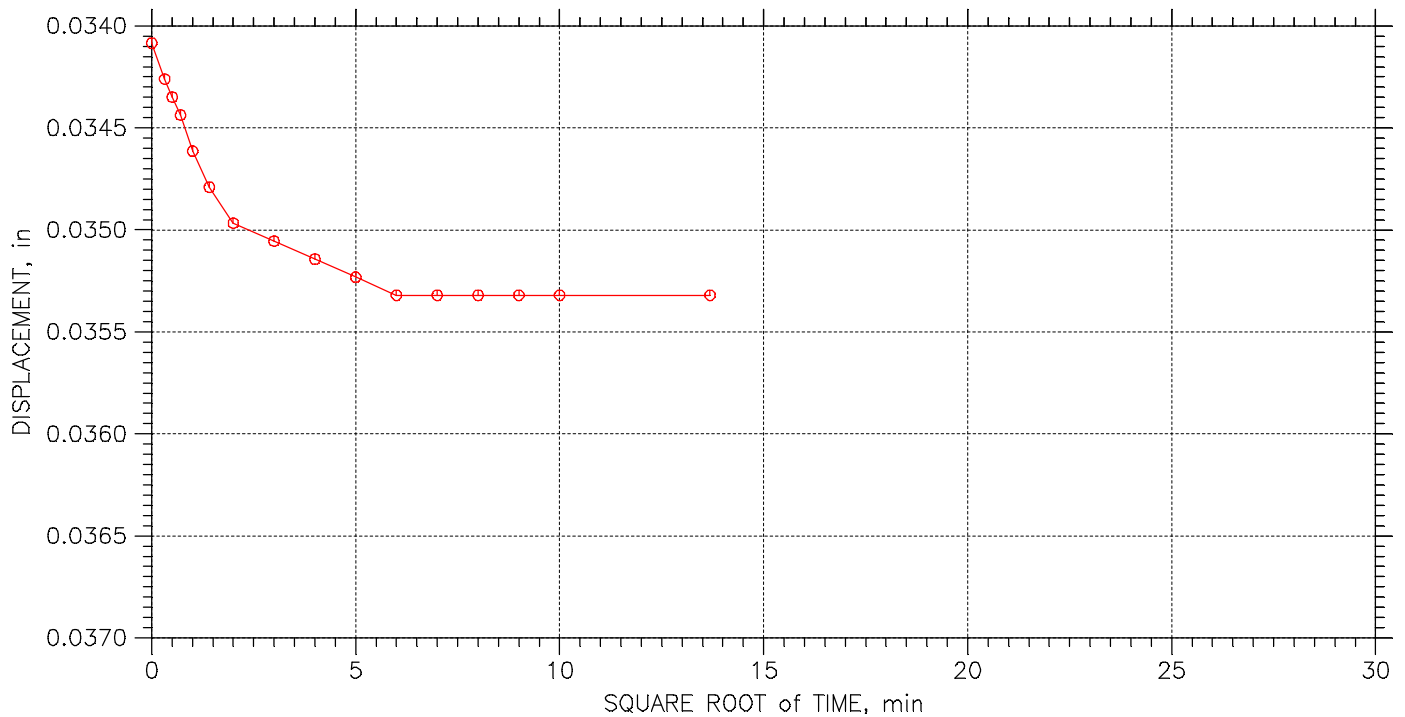
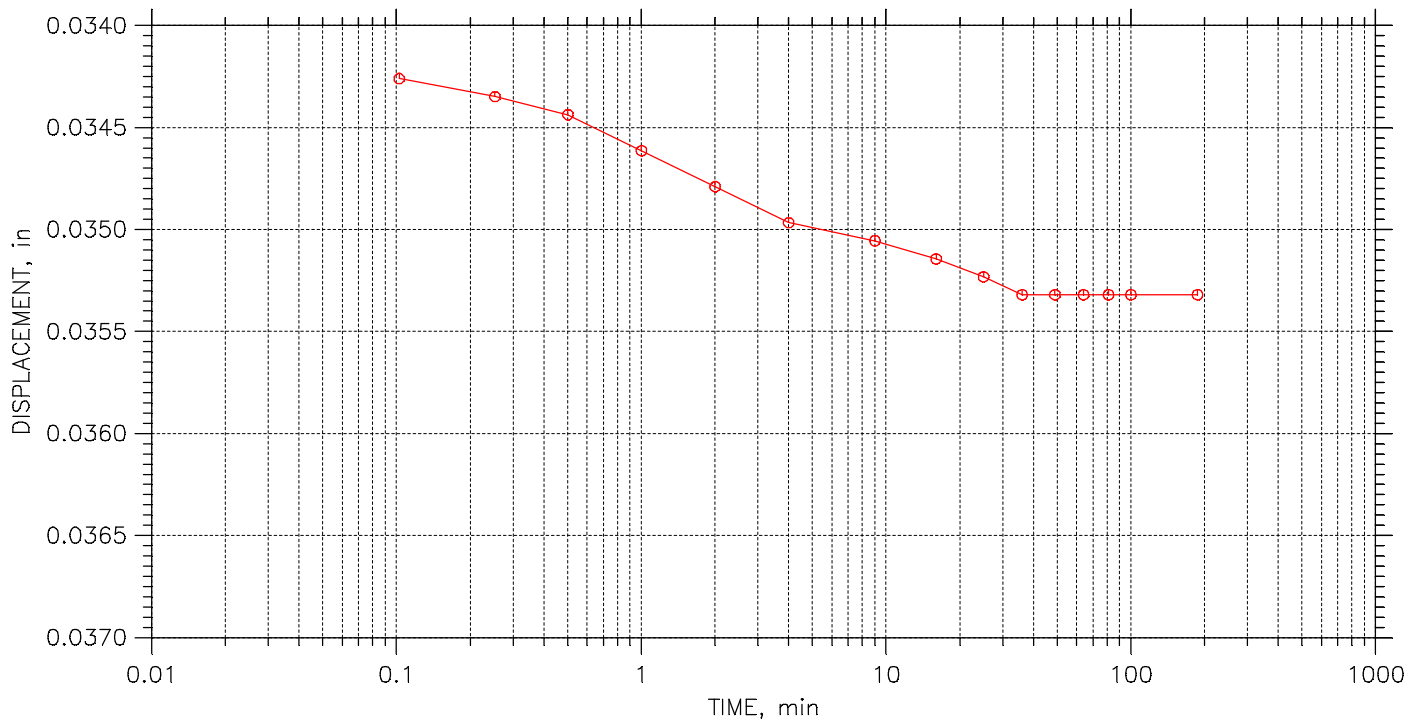
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf



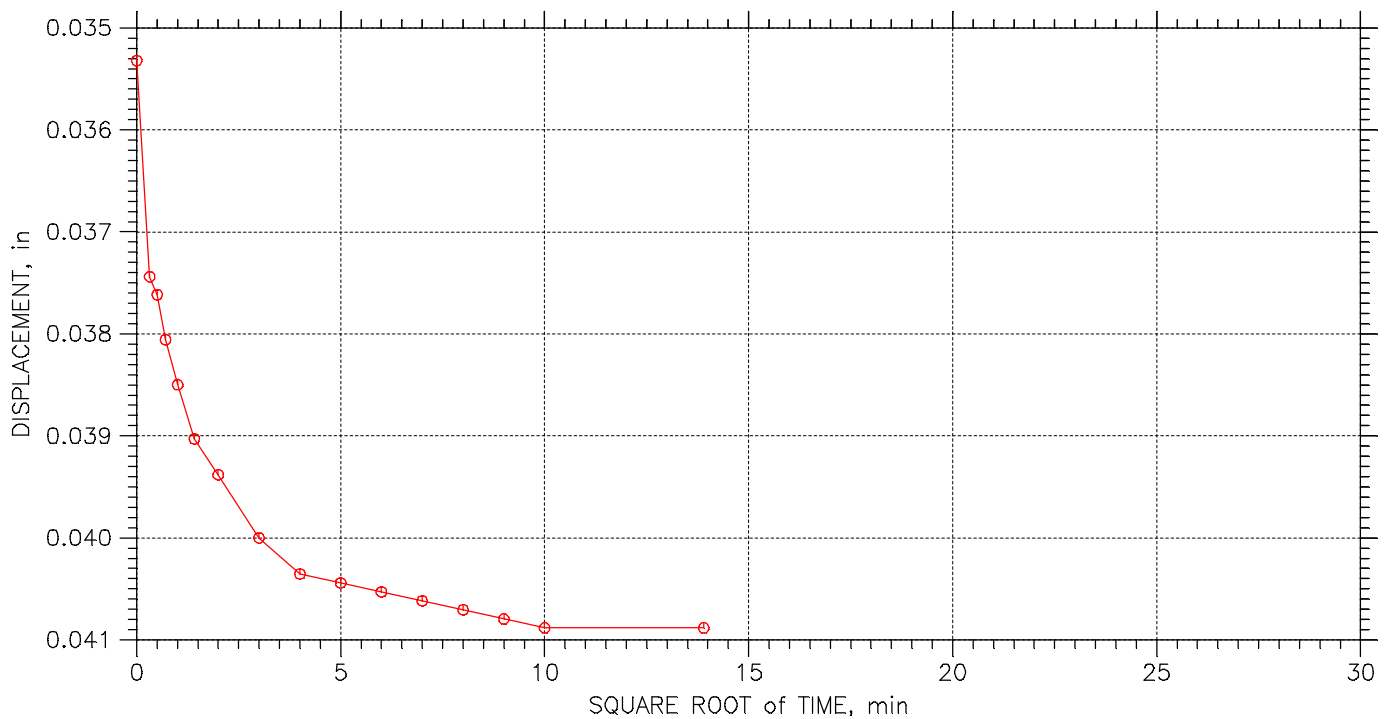
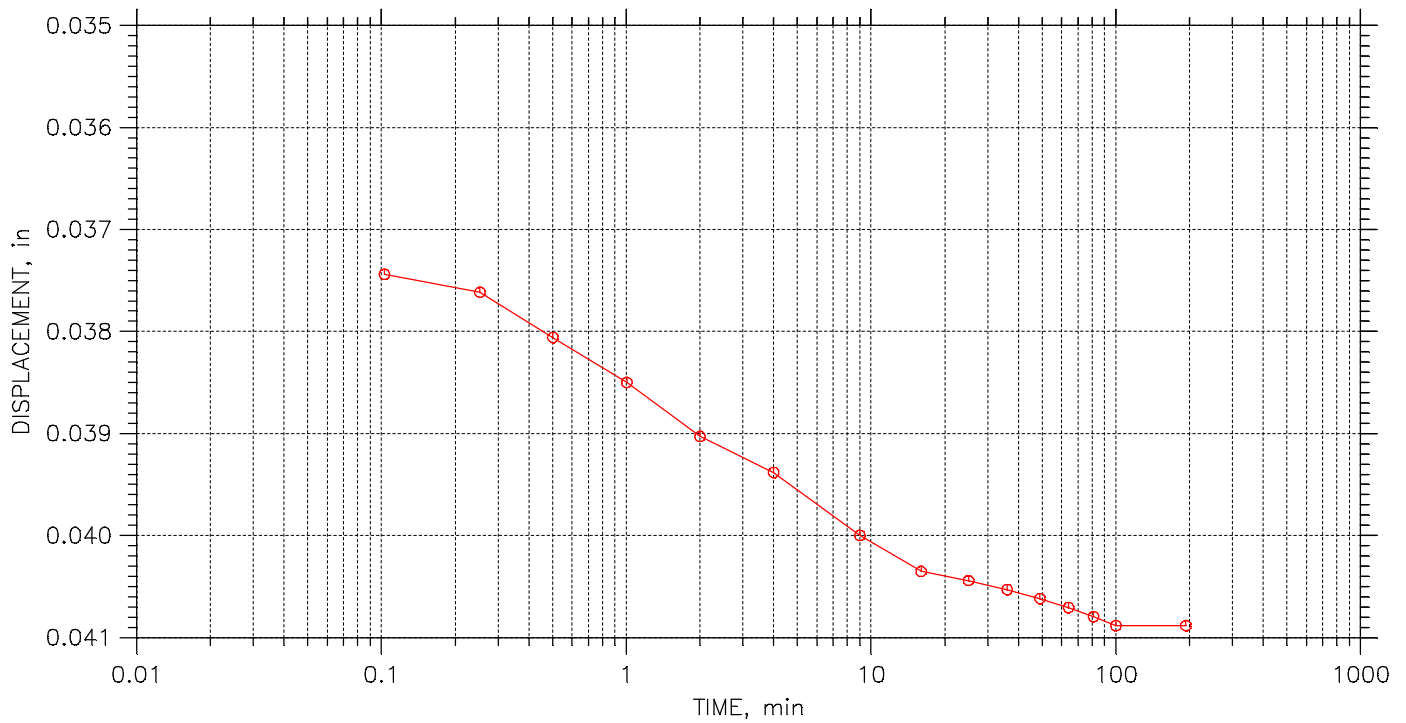
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf



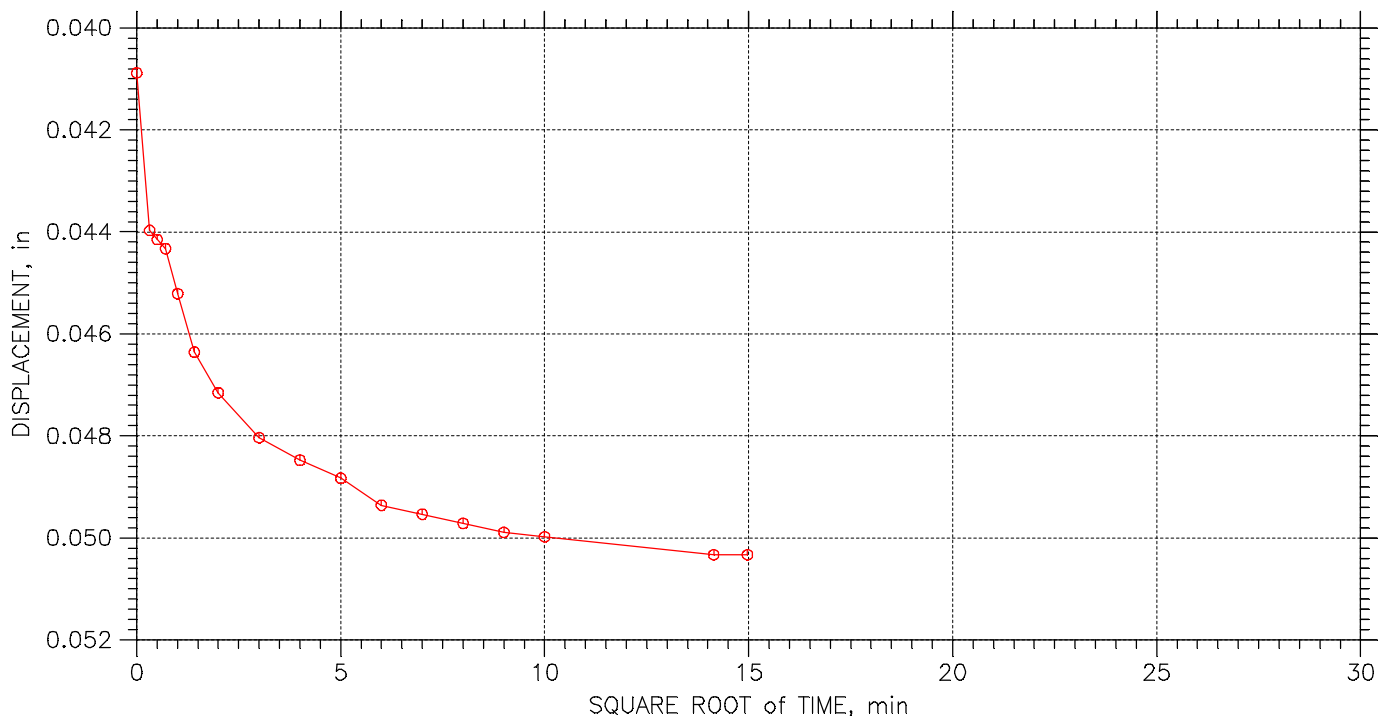
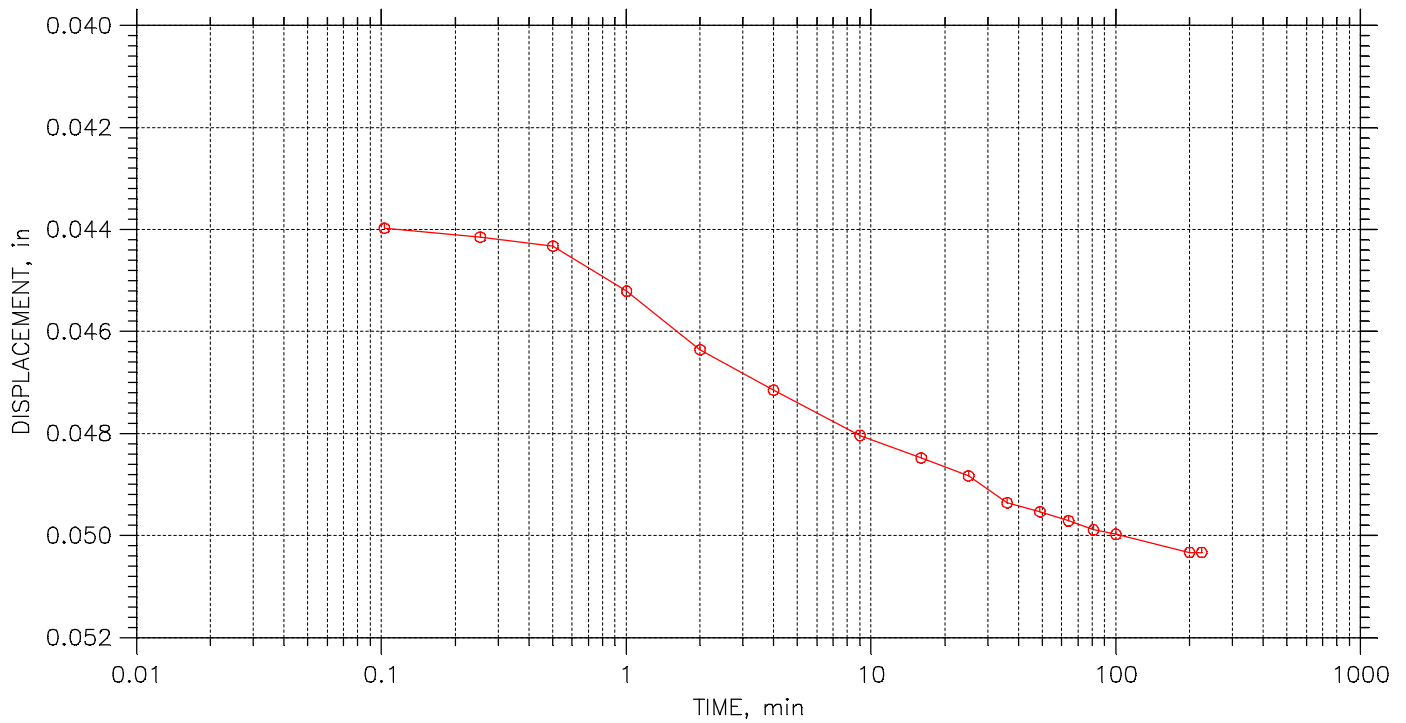
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf



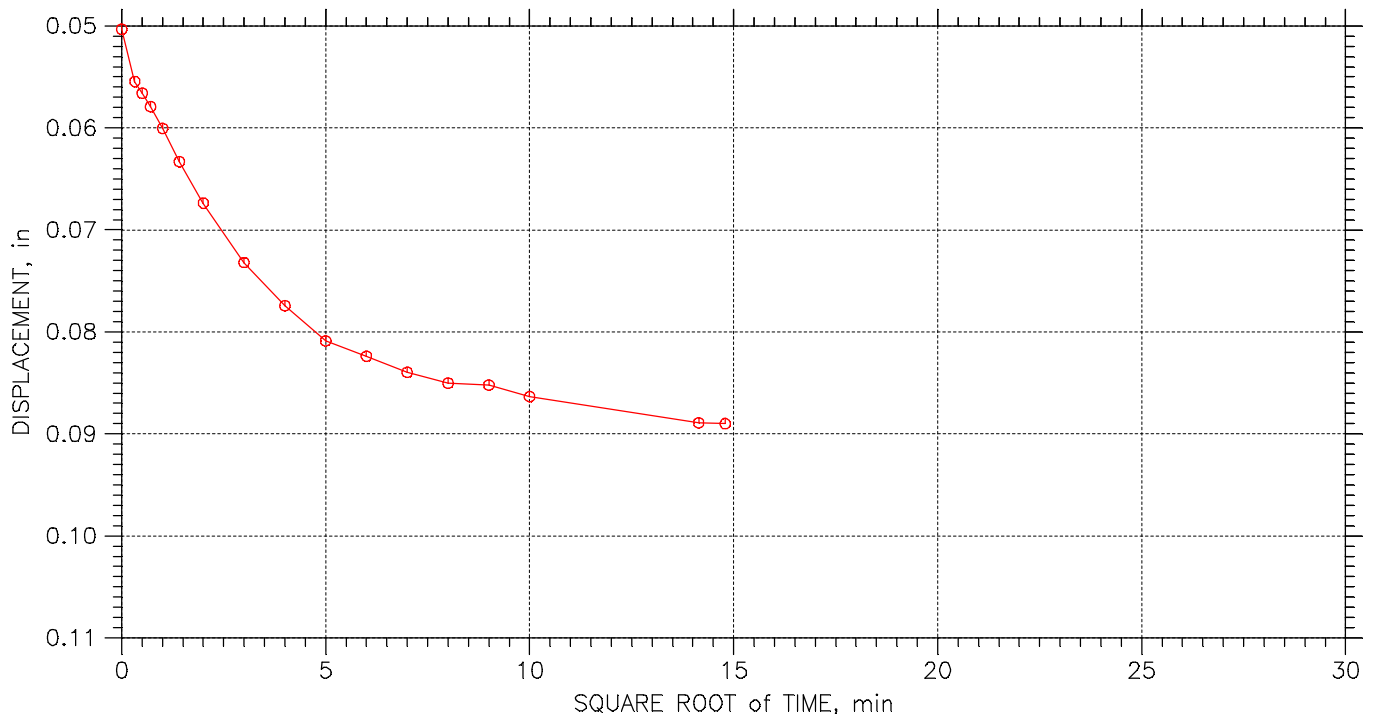
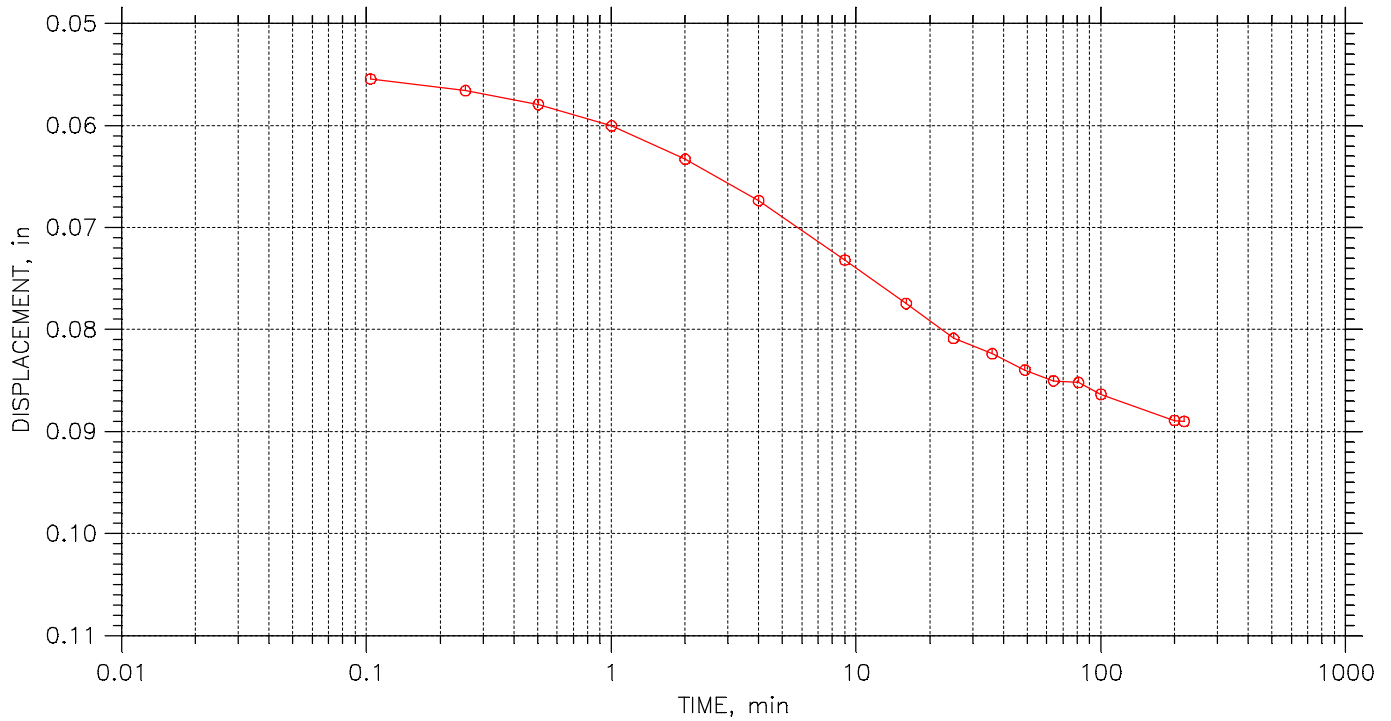
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf



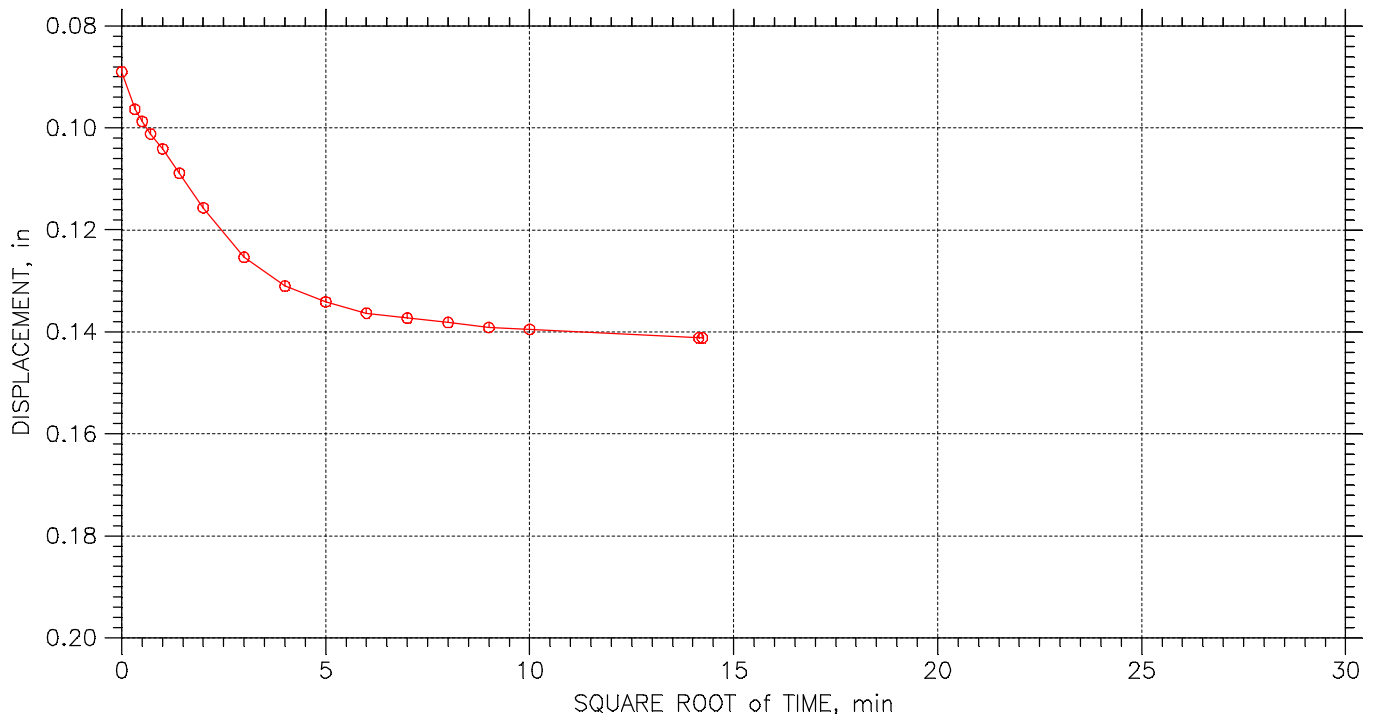
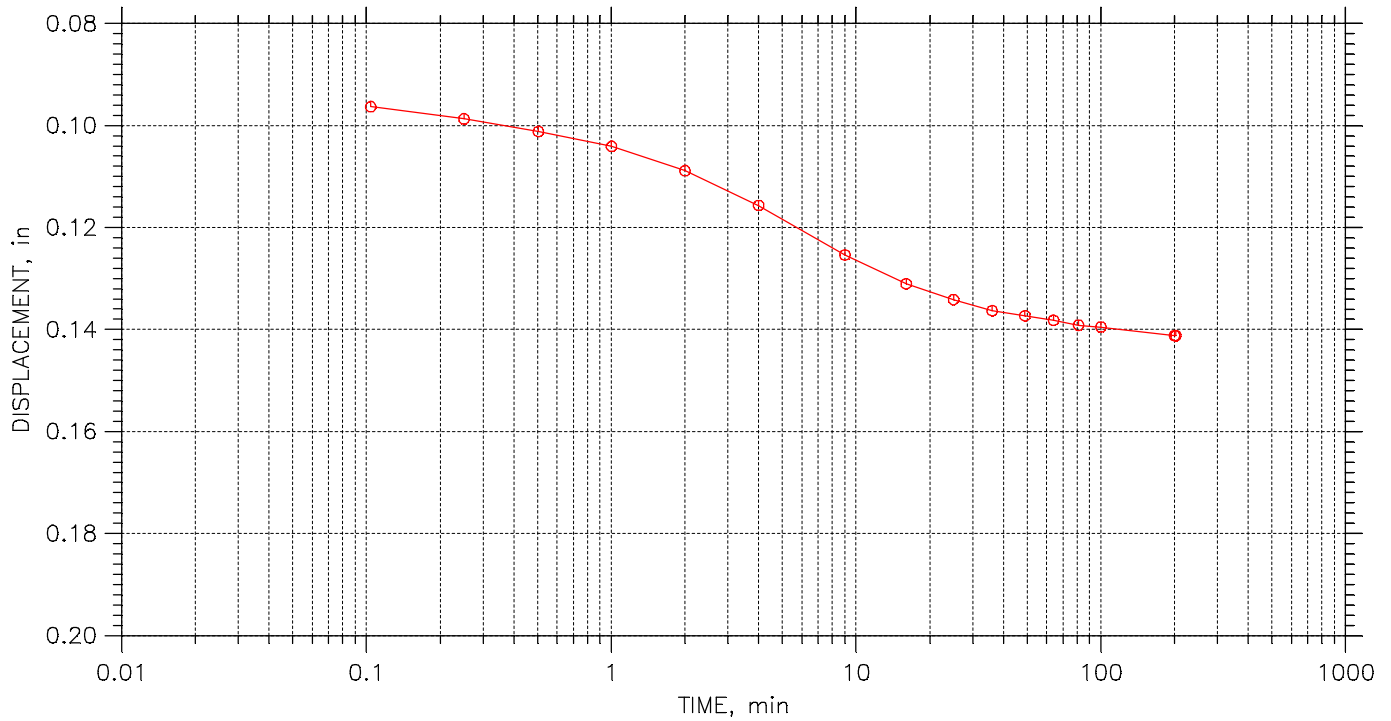
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf



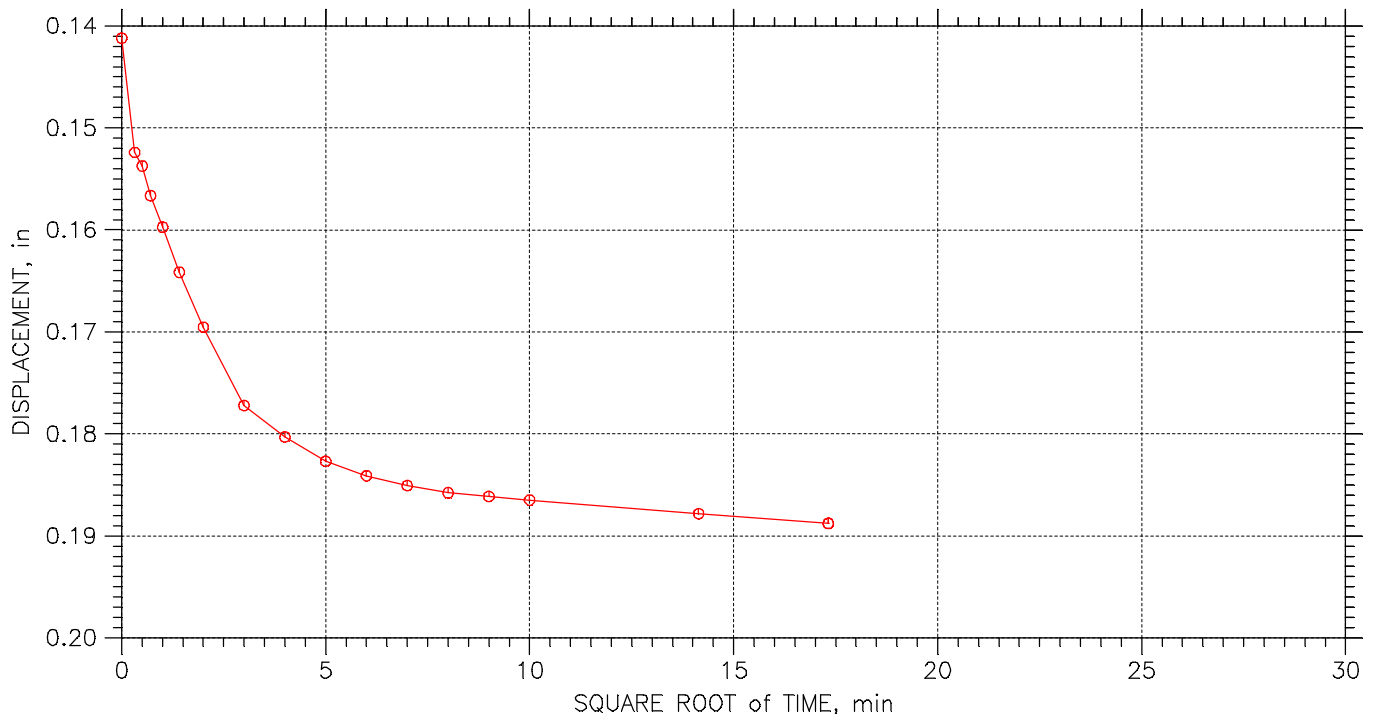
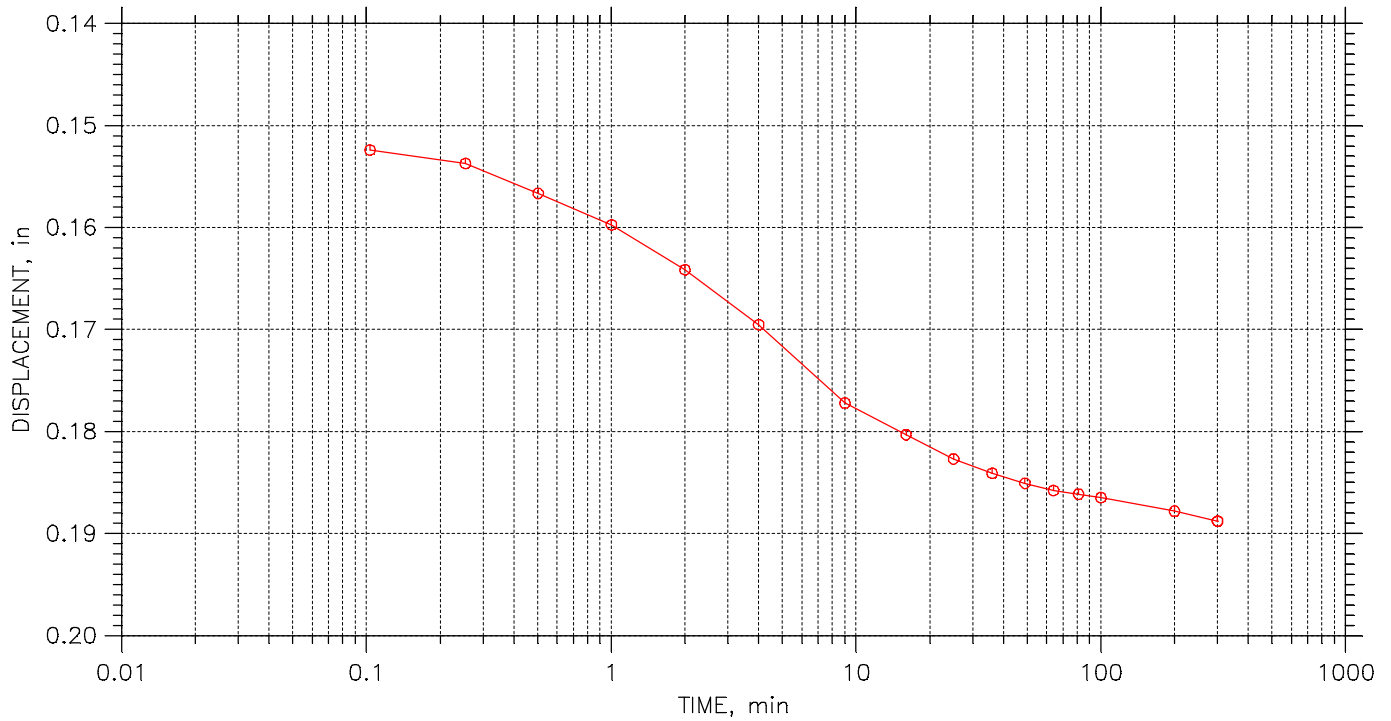
	Project: PULLIAM PROPRY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



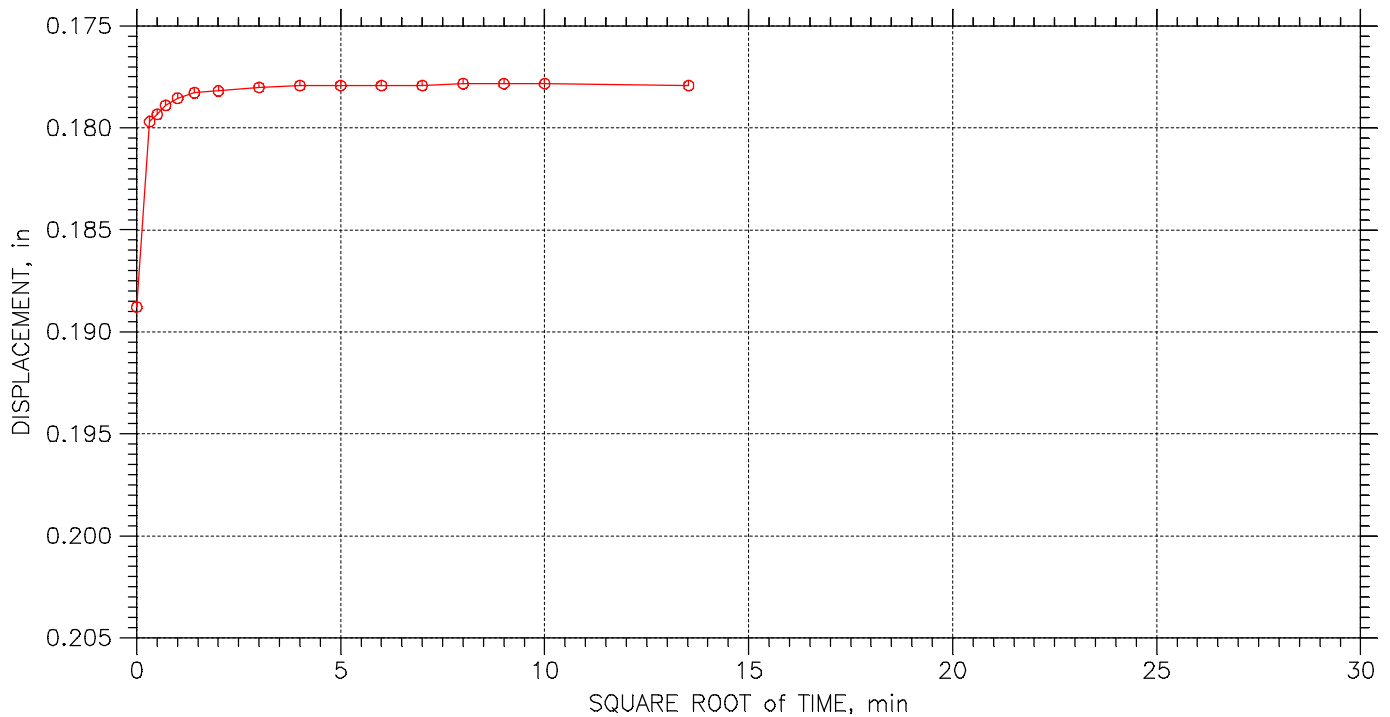
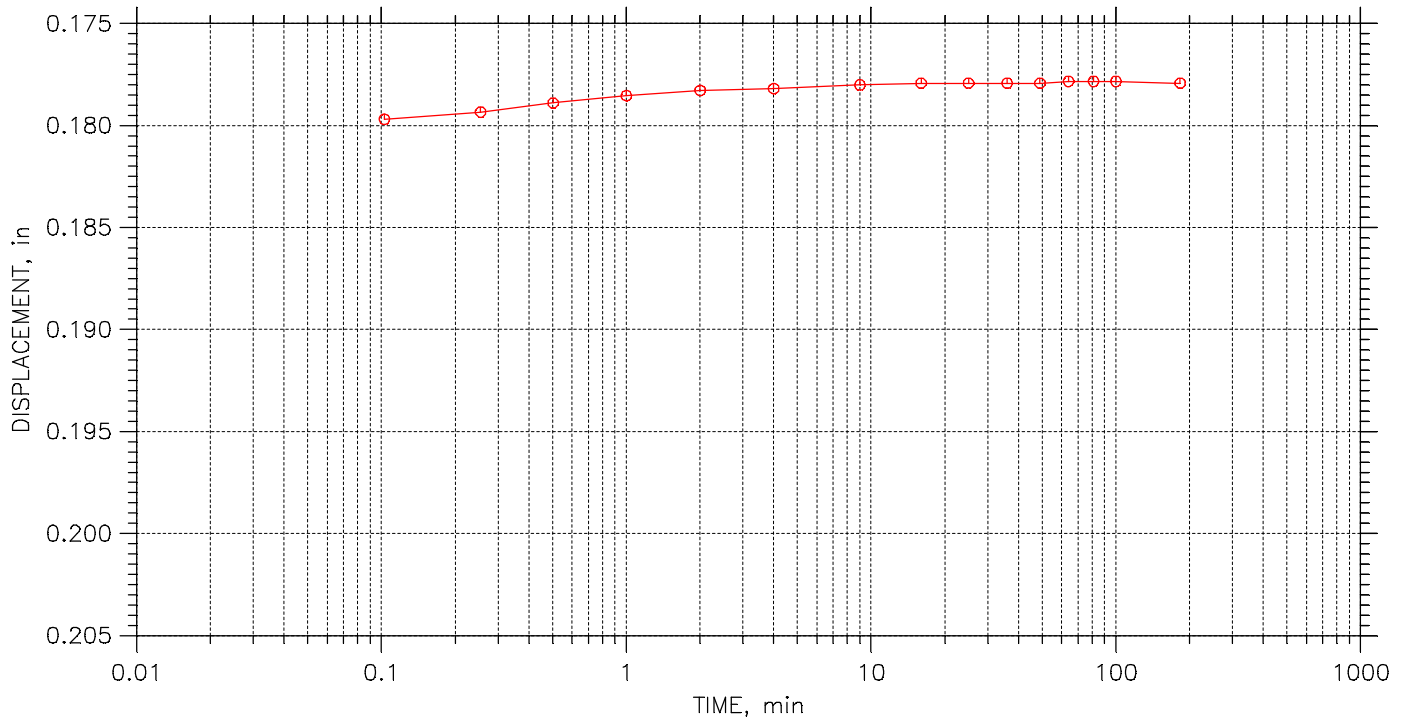
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



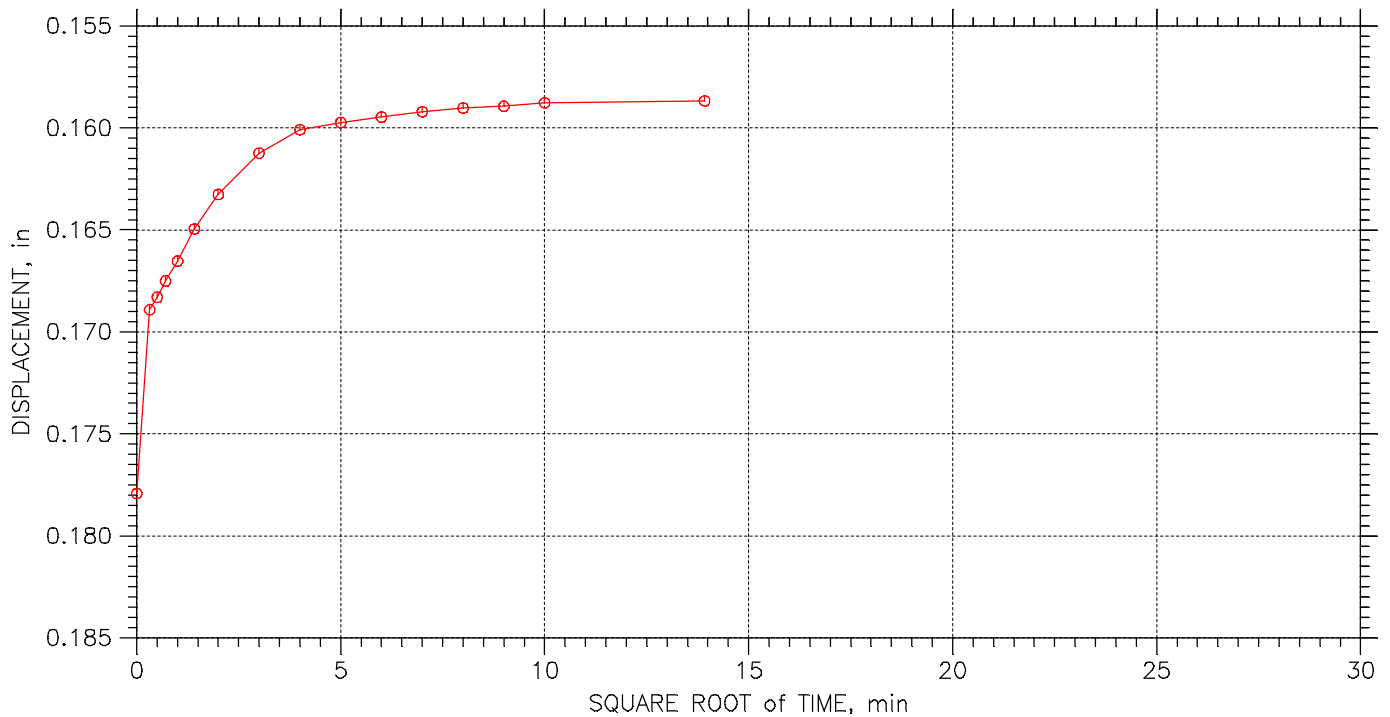
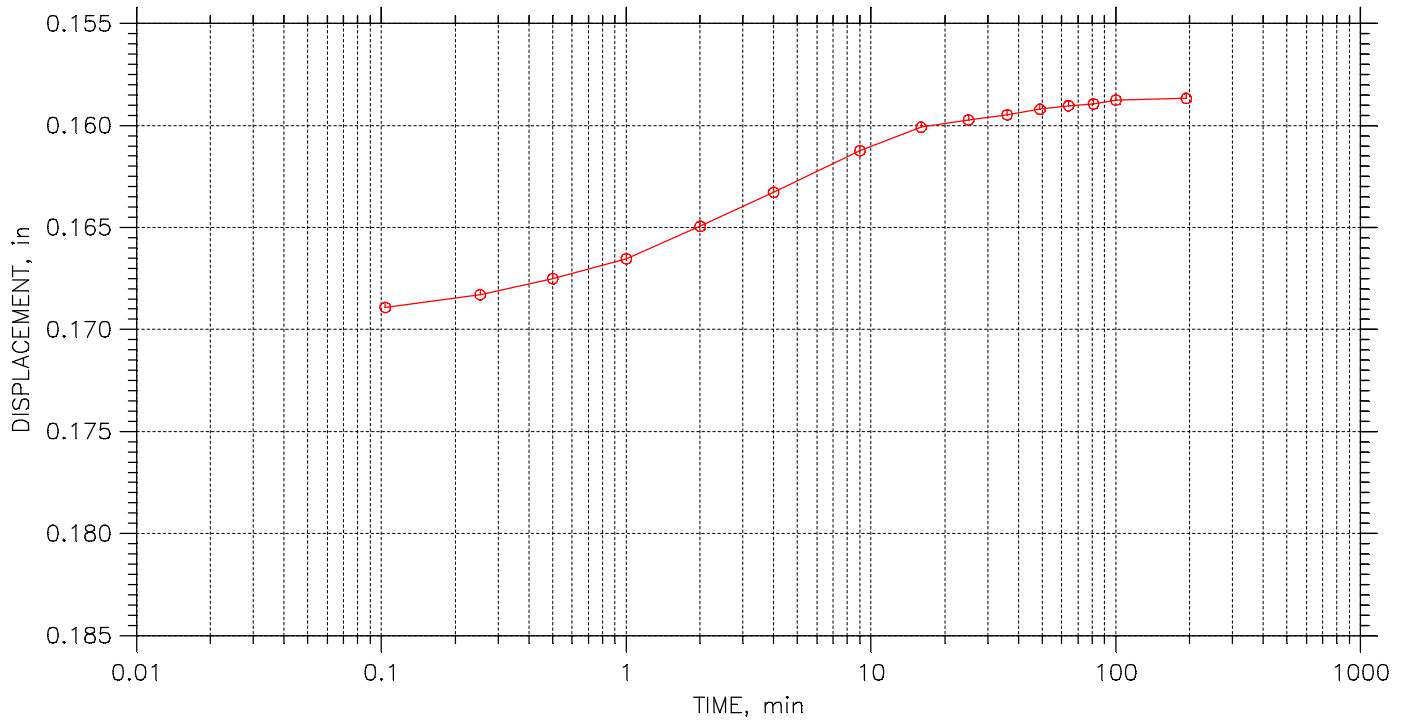
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf



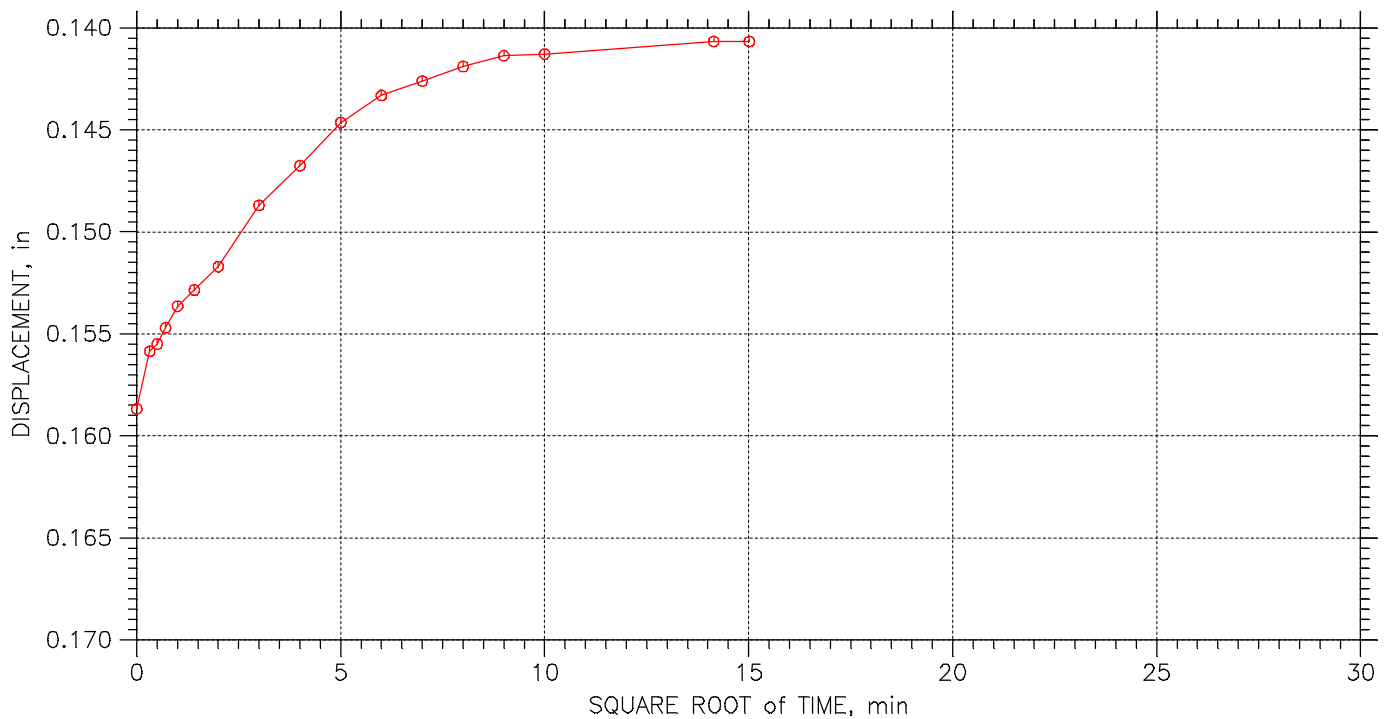
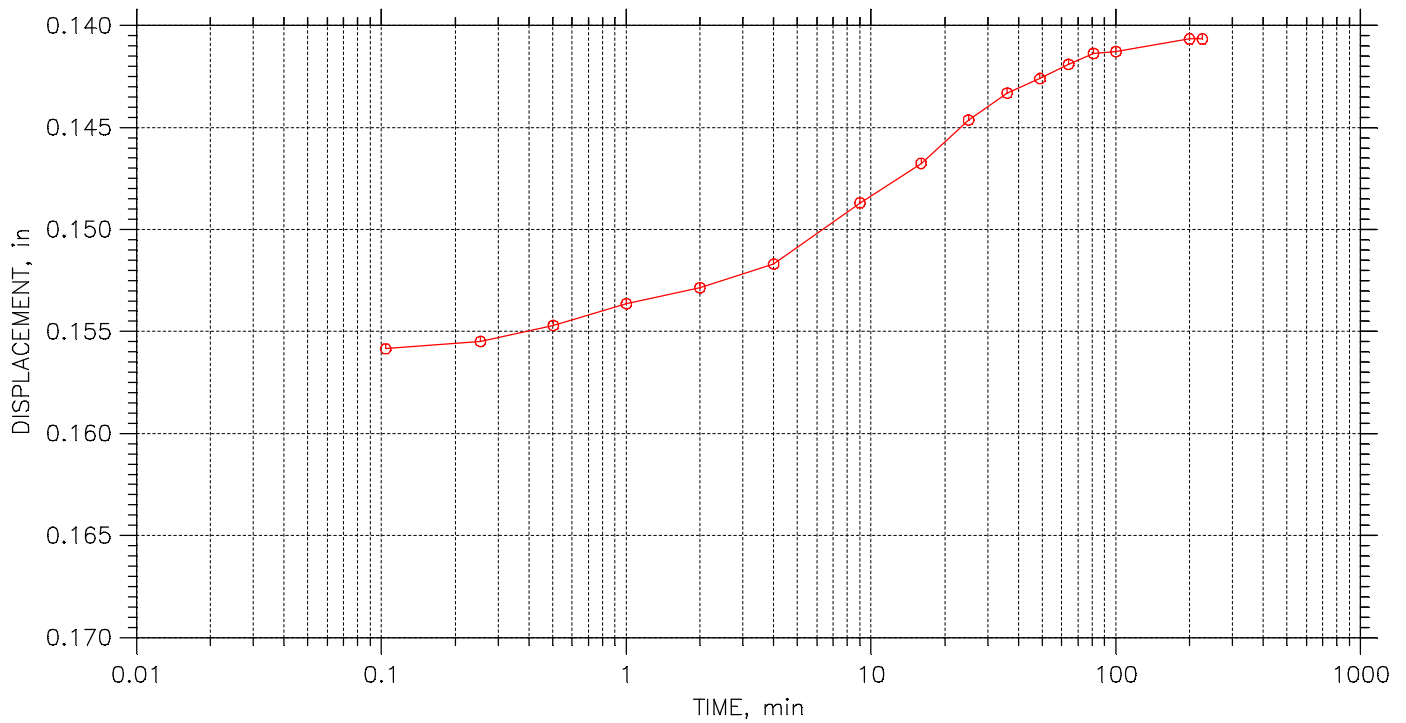
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf



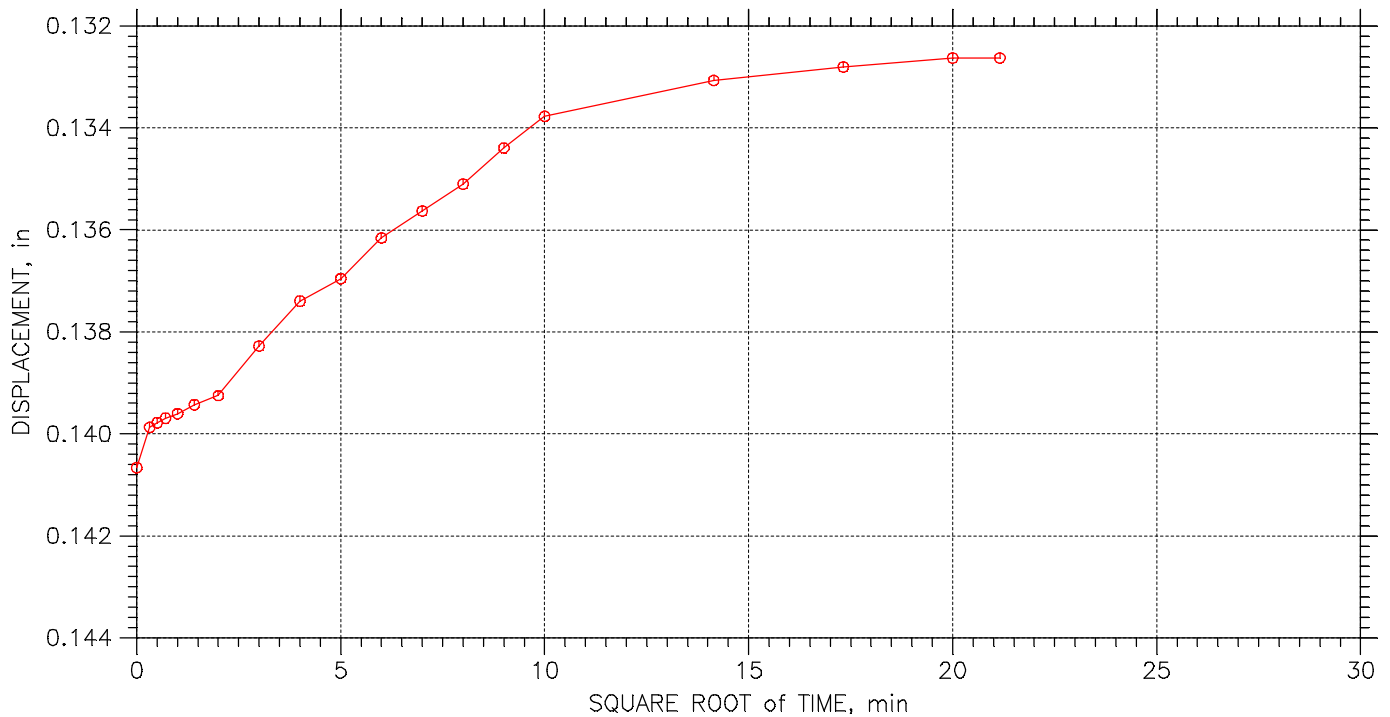
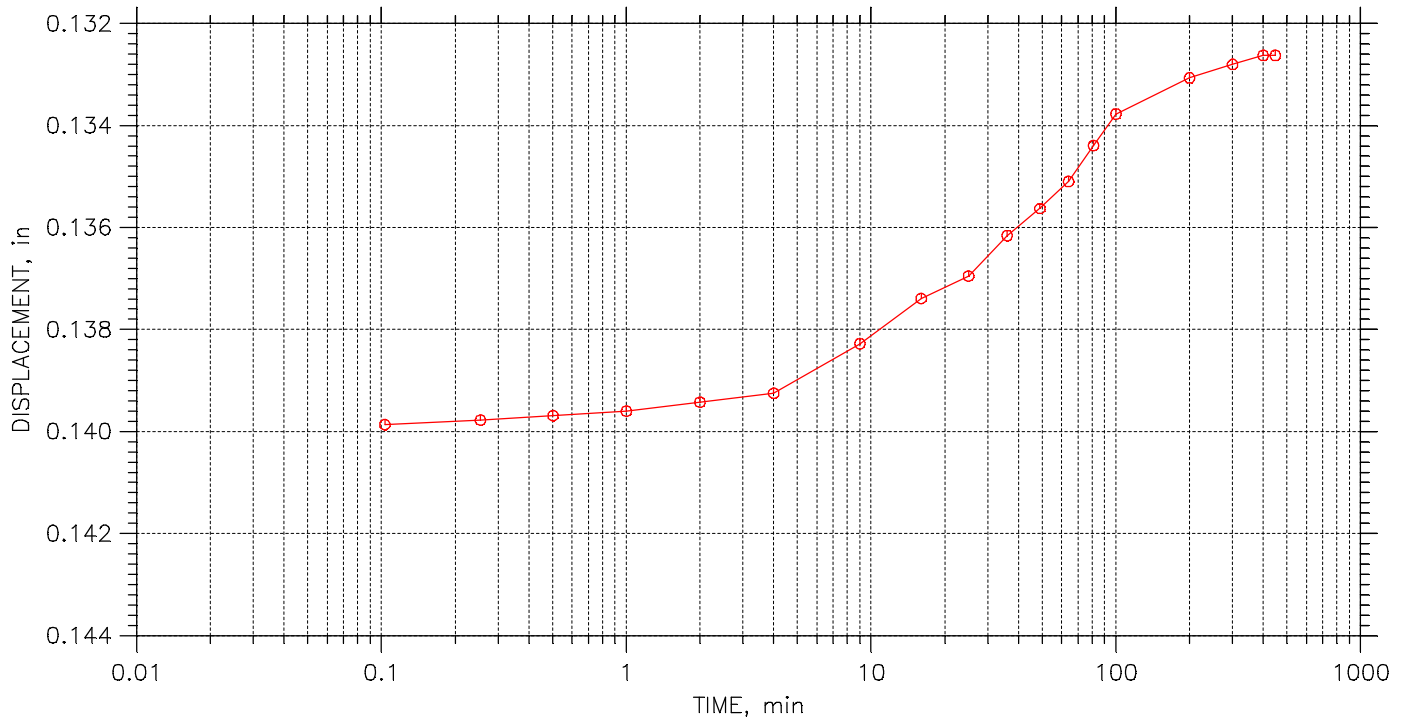
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf



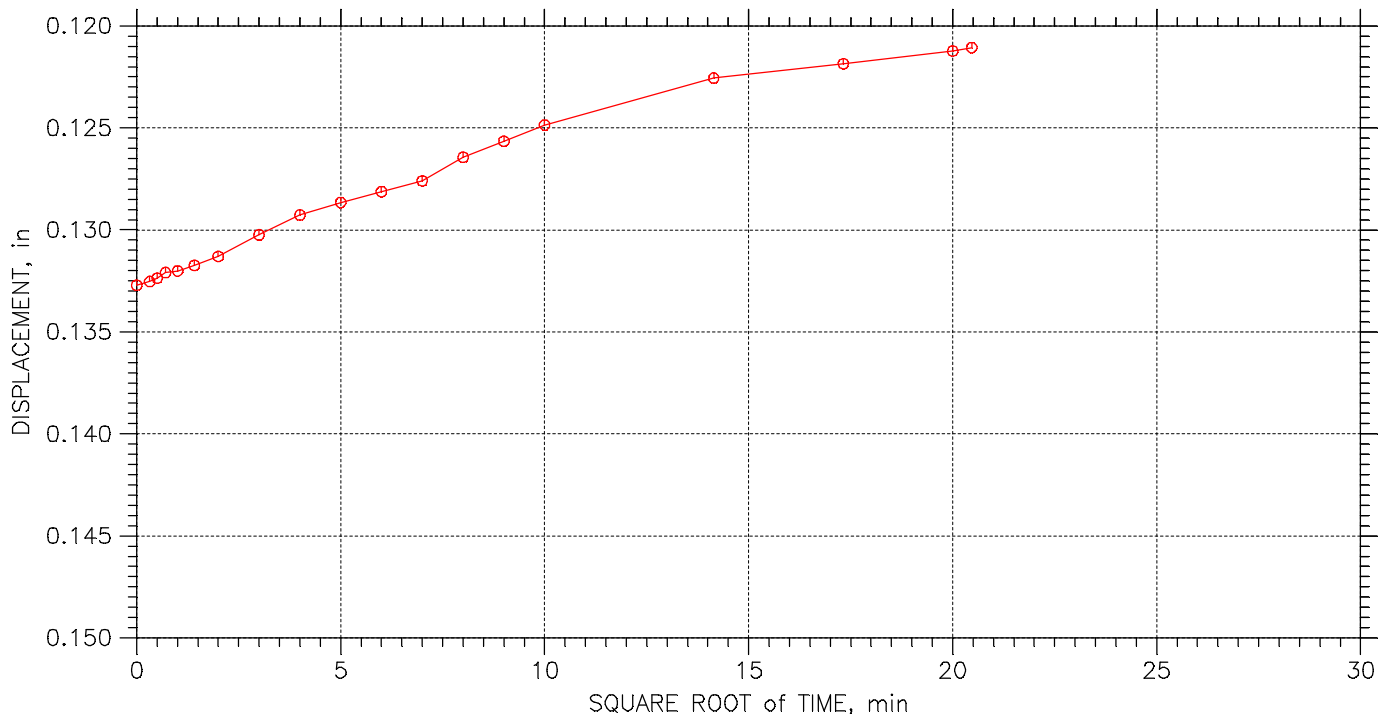
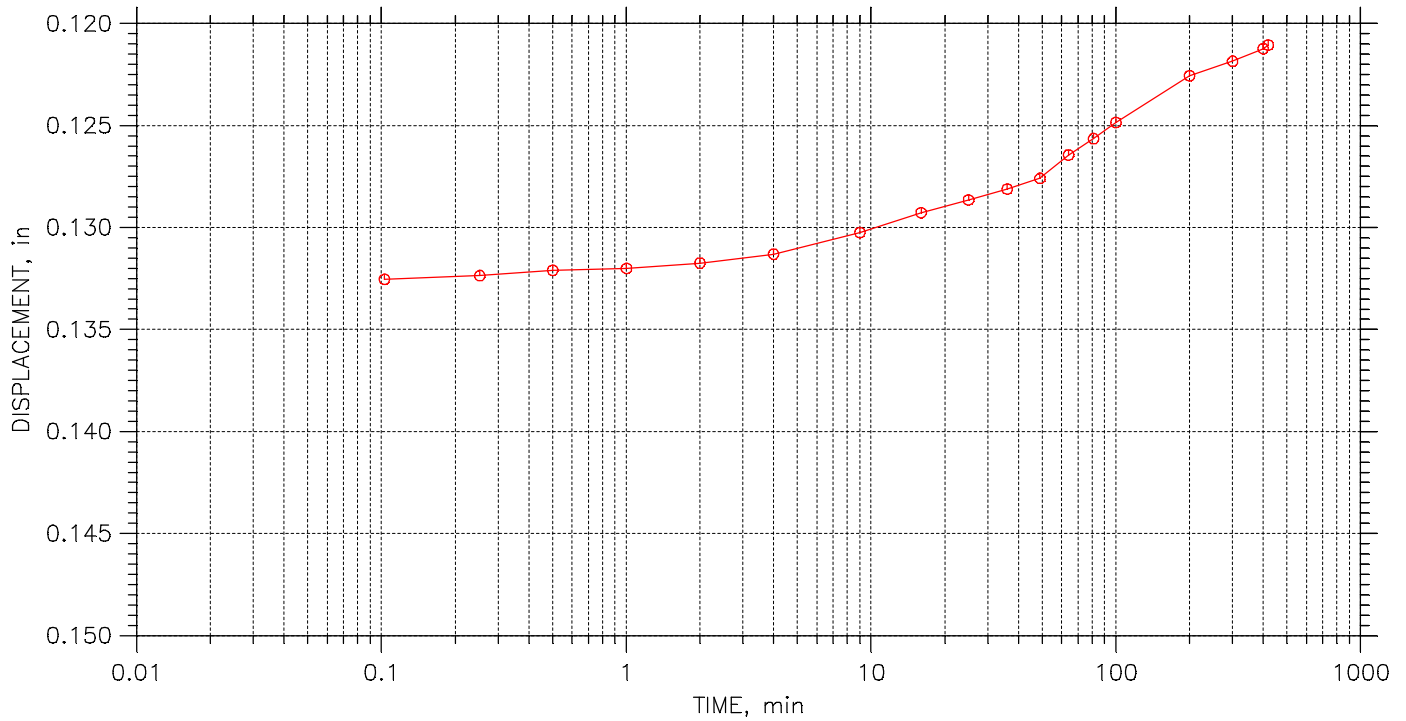
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-5 S-16	Tested By: BCM	Checked By: BCM
	Sample No.: S-16	Test Date: 1/19/2023	Depth: 60.0'-62.0'
	Test No.: BL5S16CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

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

CONSOLIDATION TEST DATA

Project: PULLIAM PROPRTY RES.
Boring No.: BL-5 S-16
Sample No.: S-16
Test No.: BL5S16CON

Location: GREEN BAY, WI
Tested By: BCM
Test Date: 1/19/2023
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

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

Container ID	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
	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	---

CONSOLIDATION TEST DATA

Project: PULLIAM PROPRTY RES.
Boring No.: BL-5 S-16
Sample No.: S-16
Test No.: BL5S16CON

Location: GREEN BAY, WI
Tested By: BCM
Test Date: 1/19/2023
Sample Type: 3" ST

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

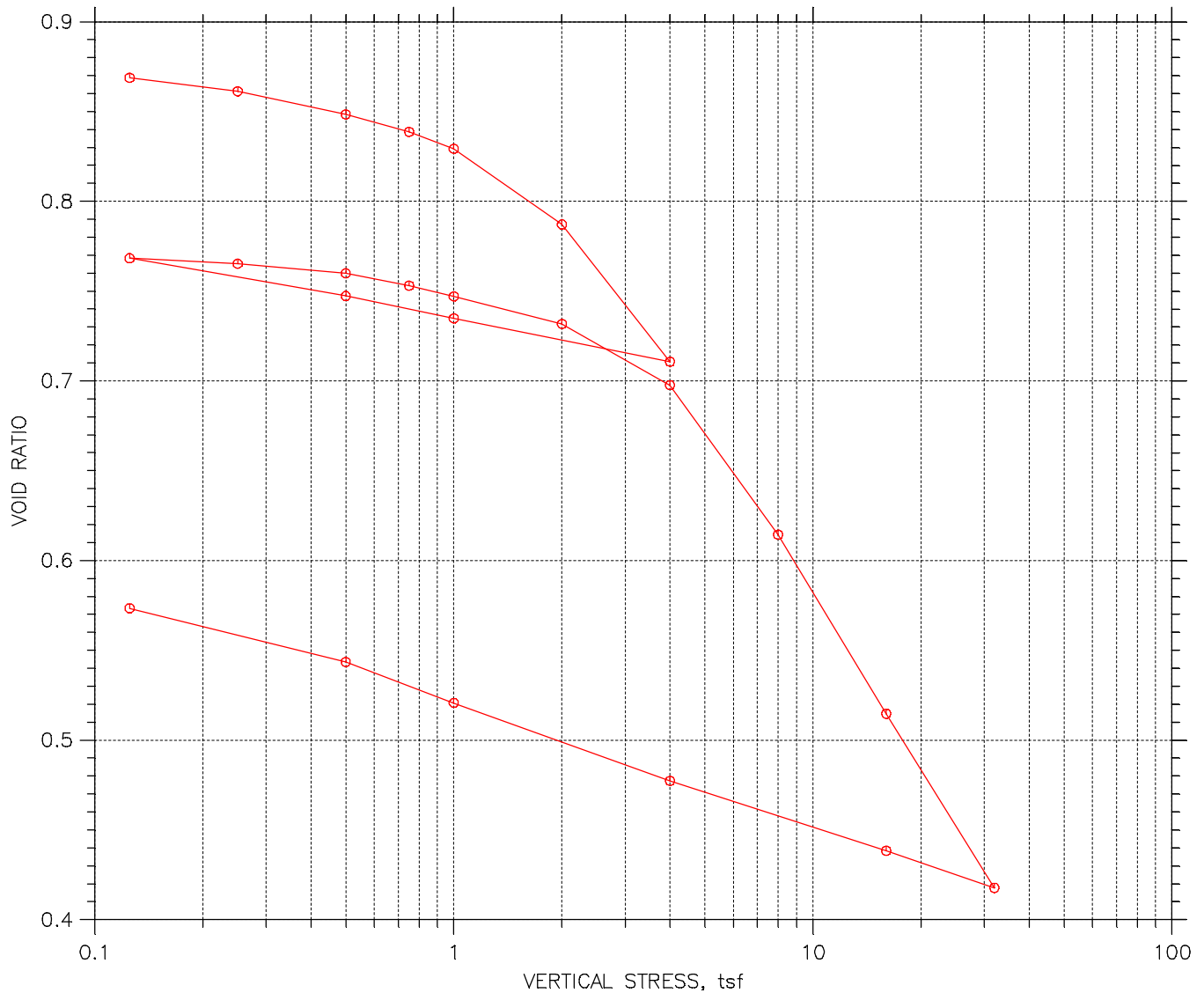


Soil Description: REDDISH BROWN LEAN CLAY (CL)


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

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. ft^2/sec	Log ft^2/sec	Ave. 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

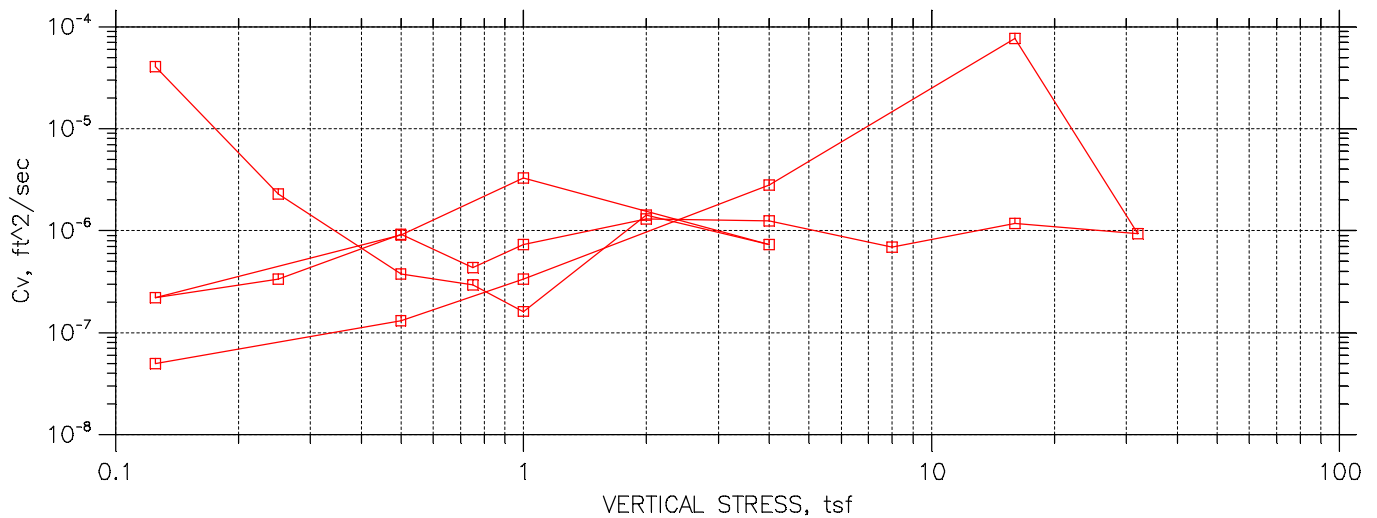
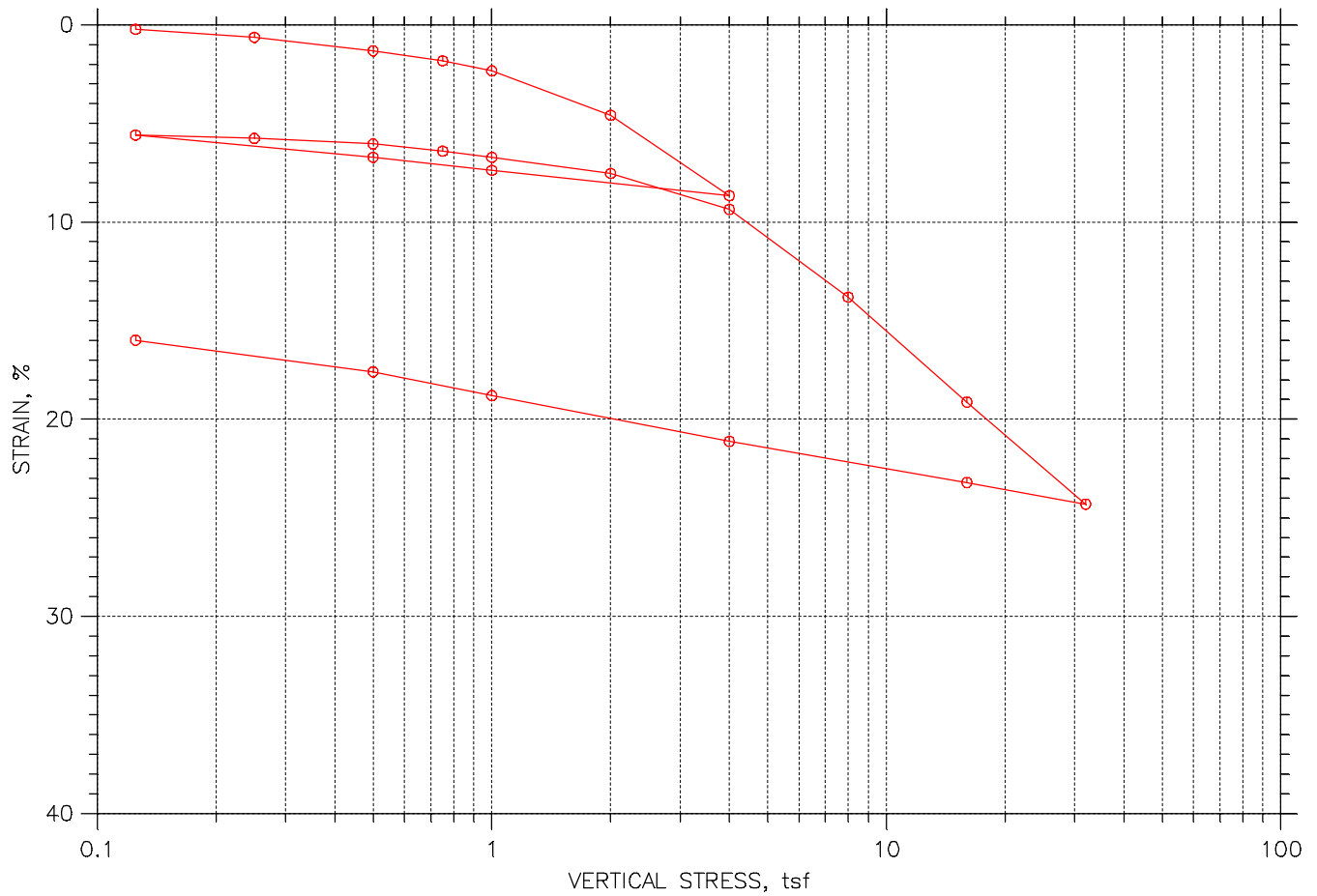
ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435




				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'
	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		

ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



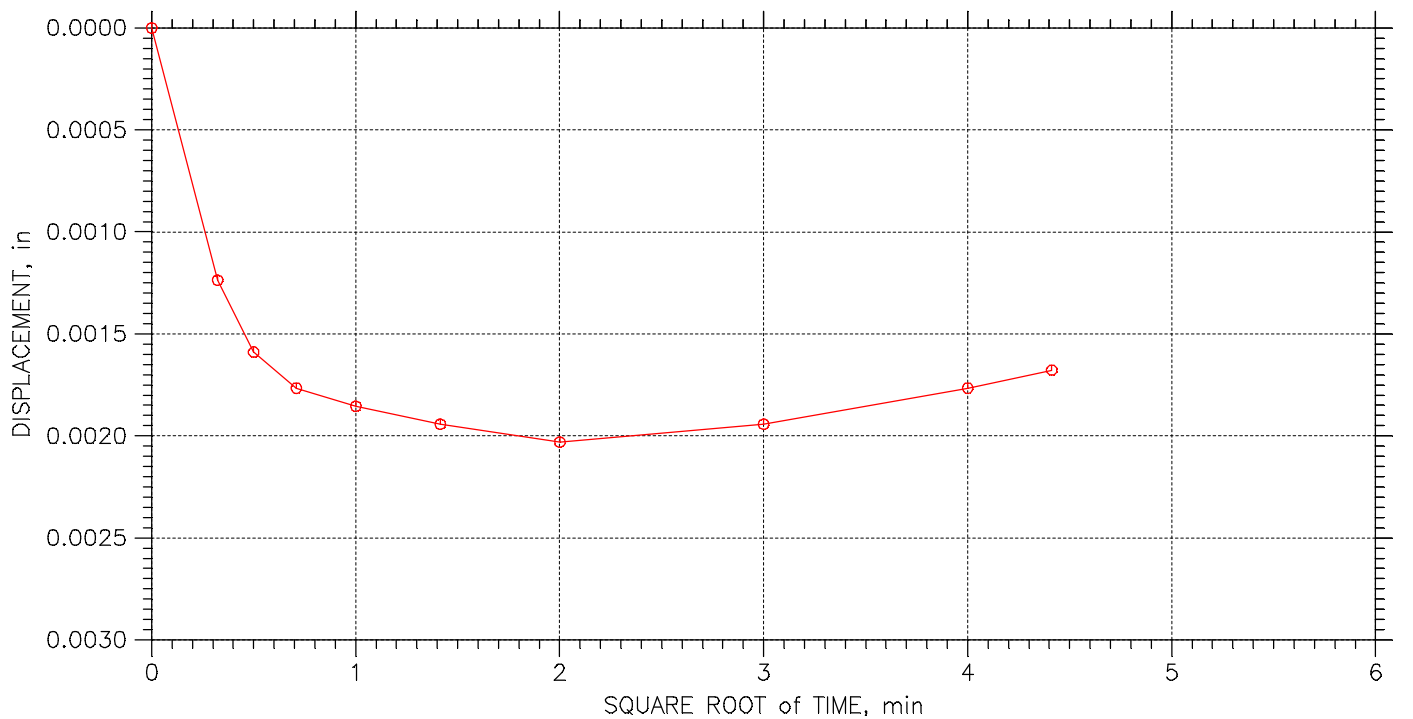
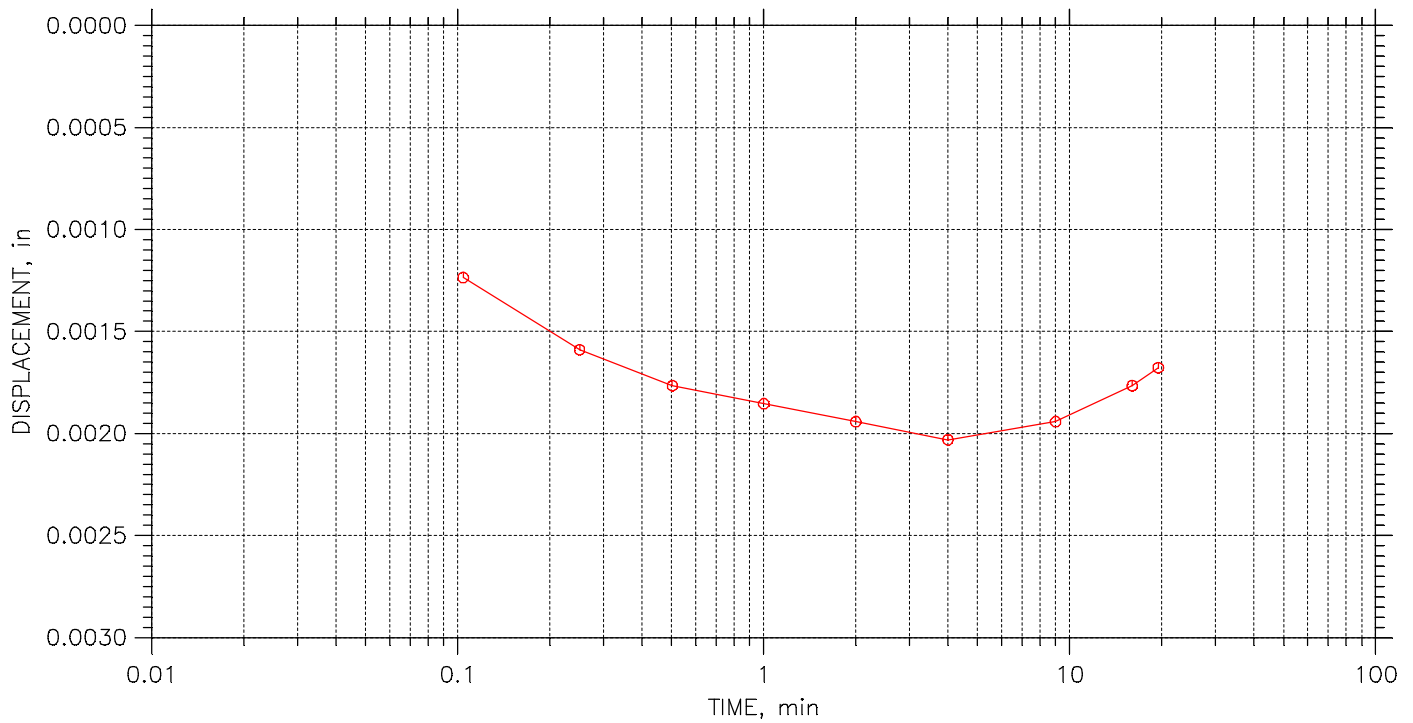
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $P_c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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf



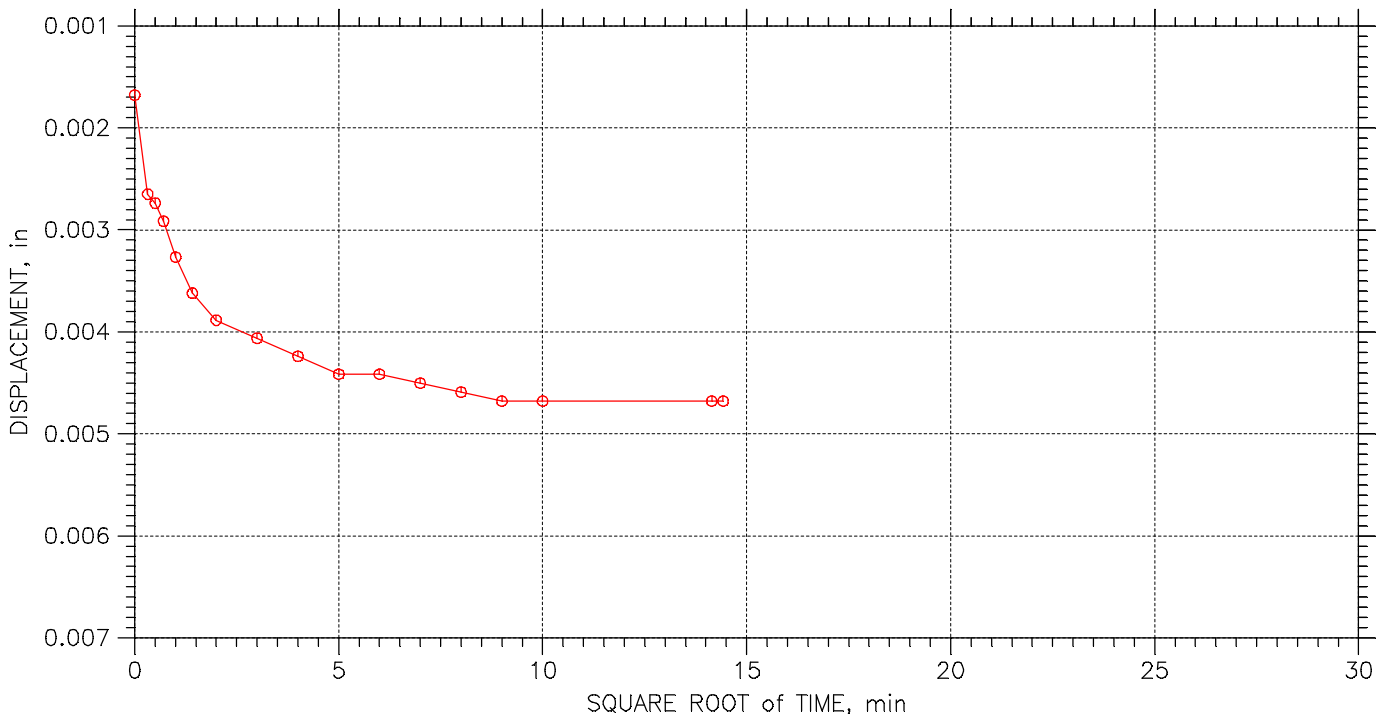
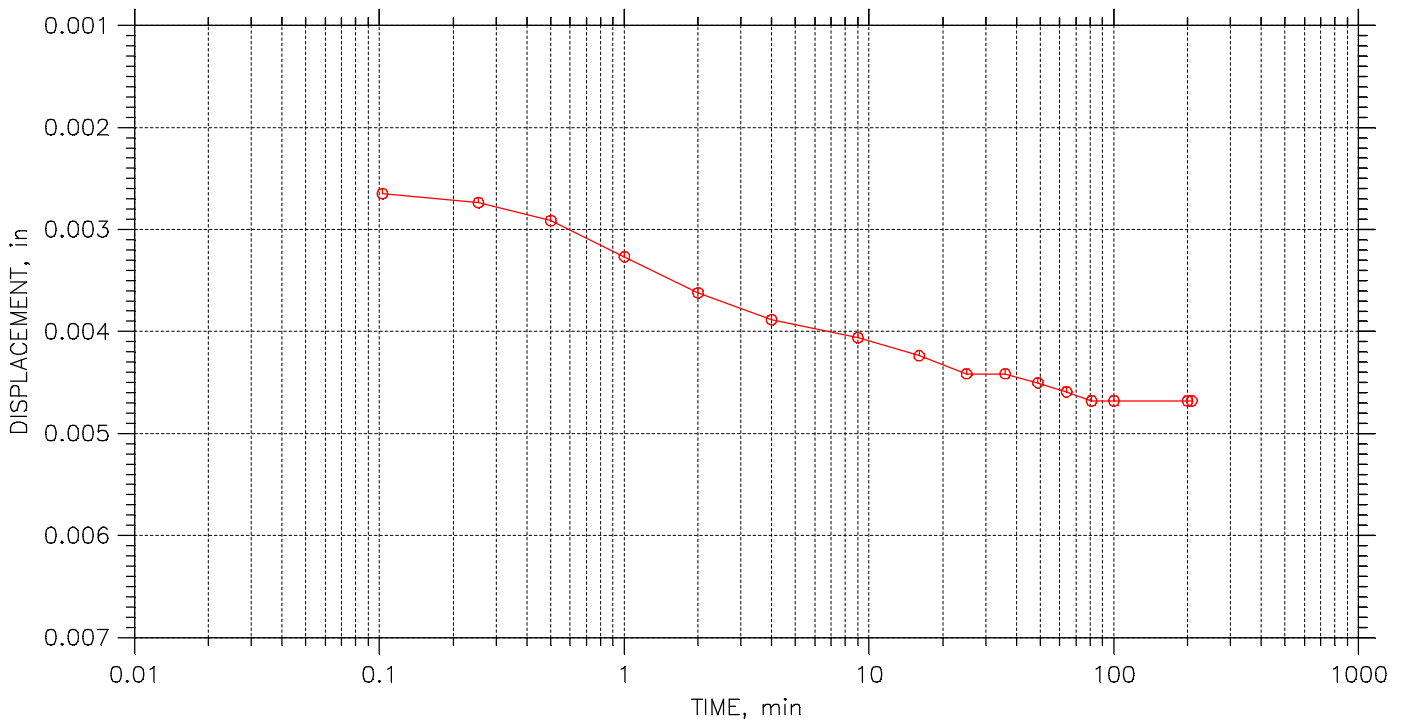
	Project: PULLIAM PROPRY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf



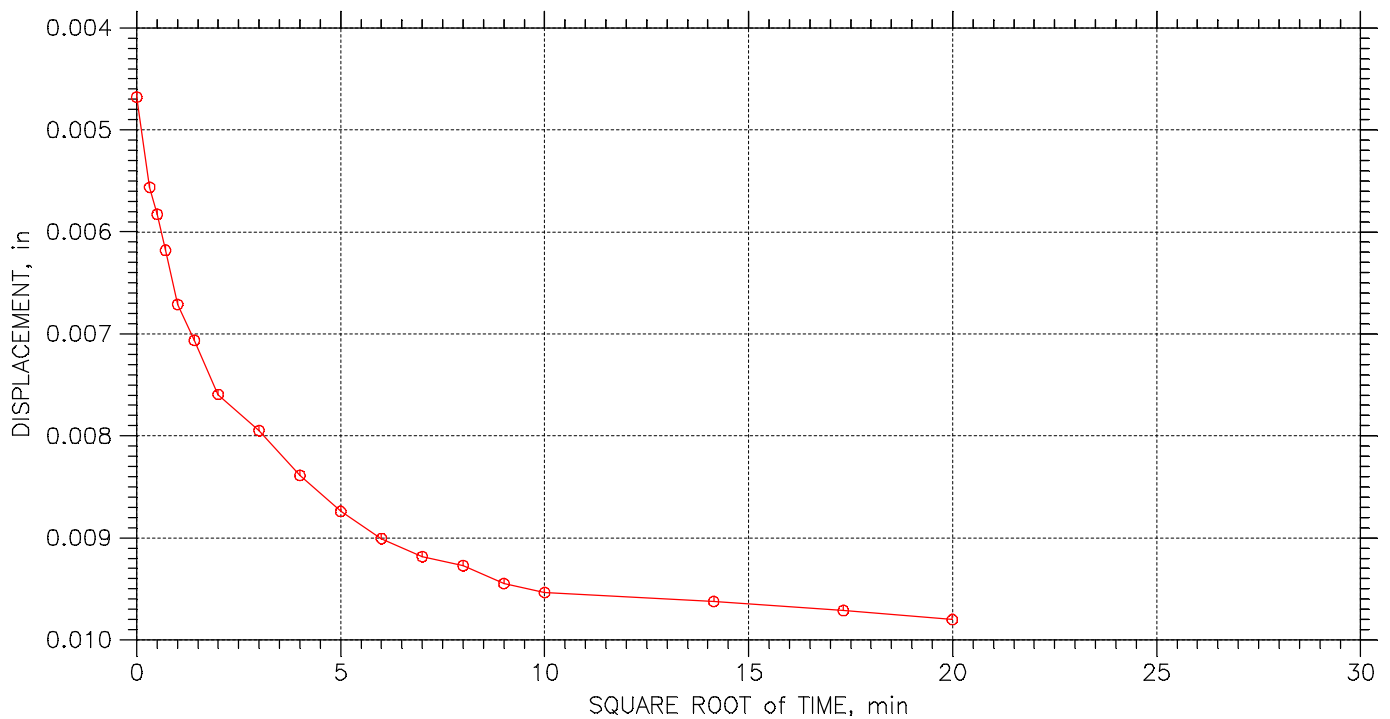
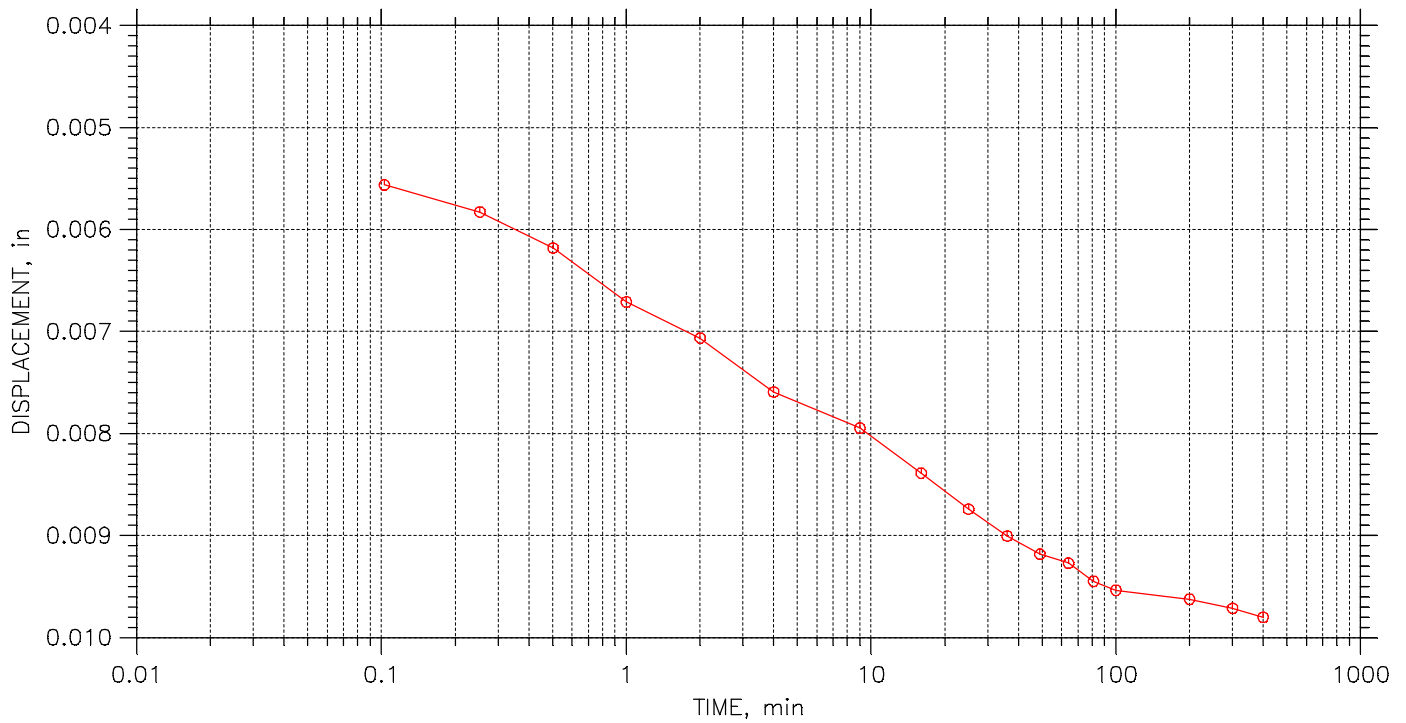
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf



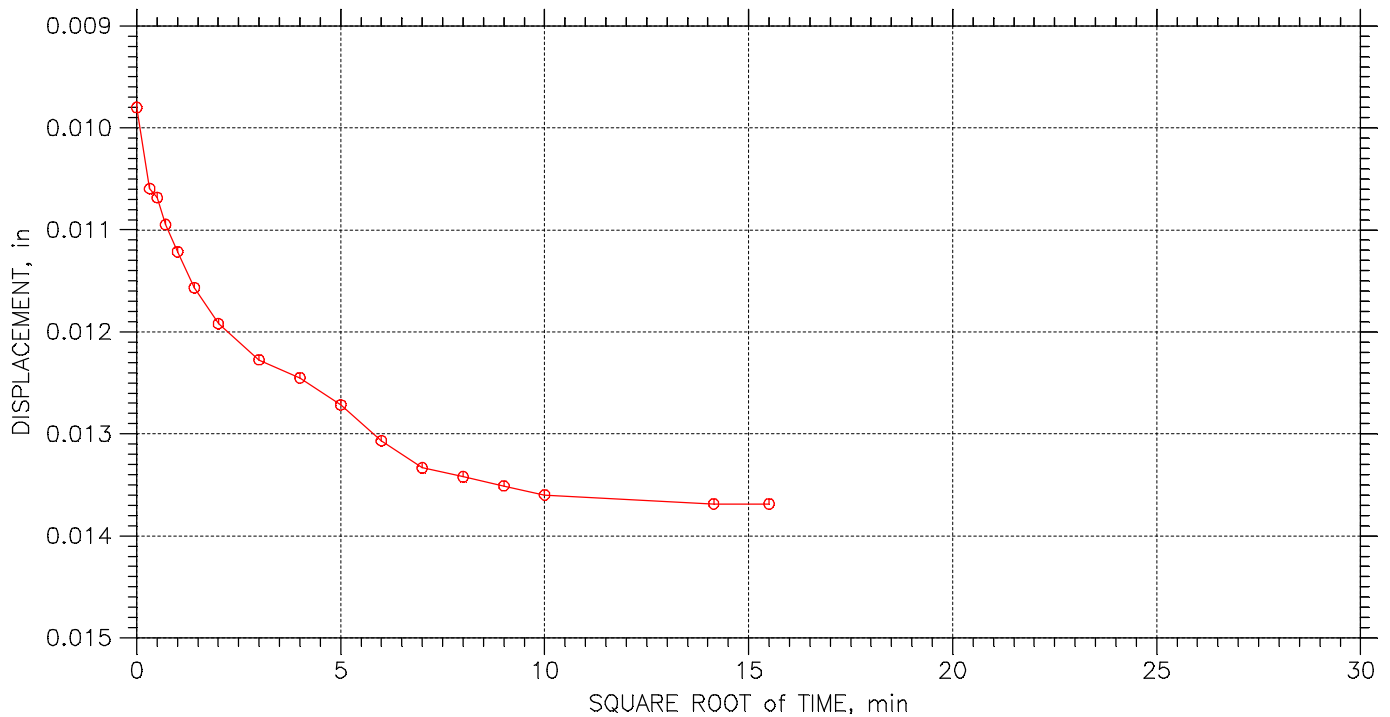
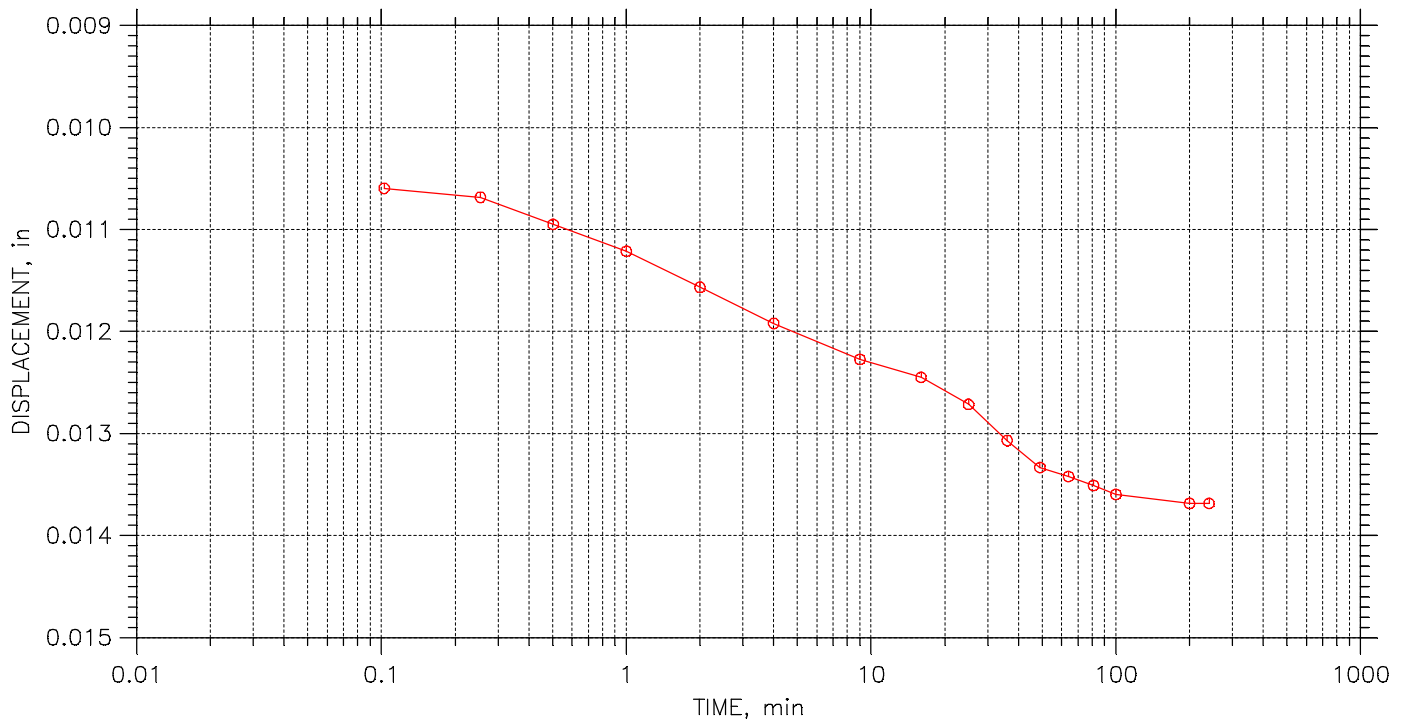
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf



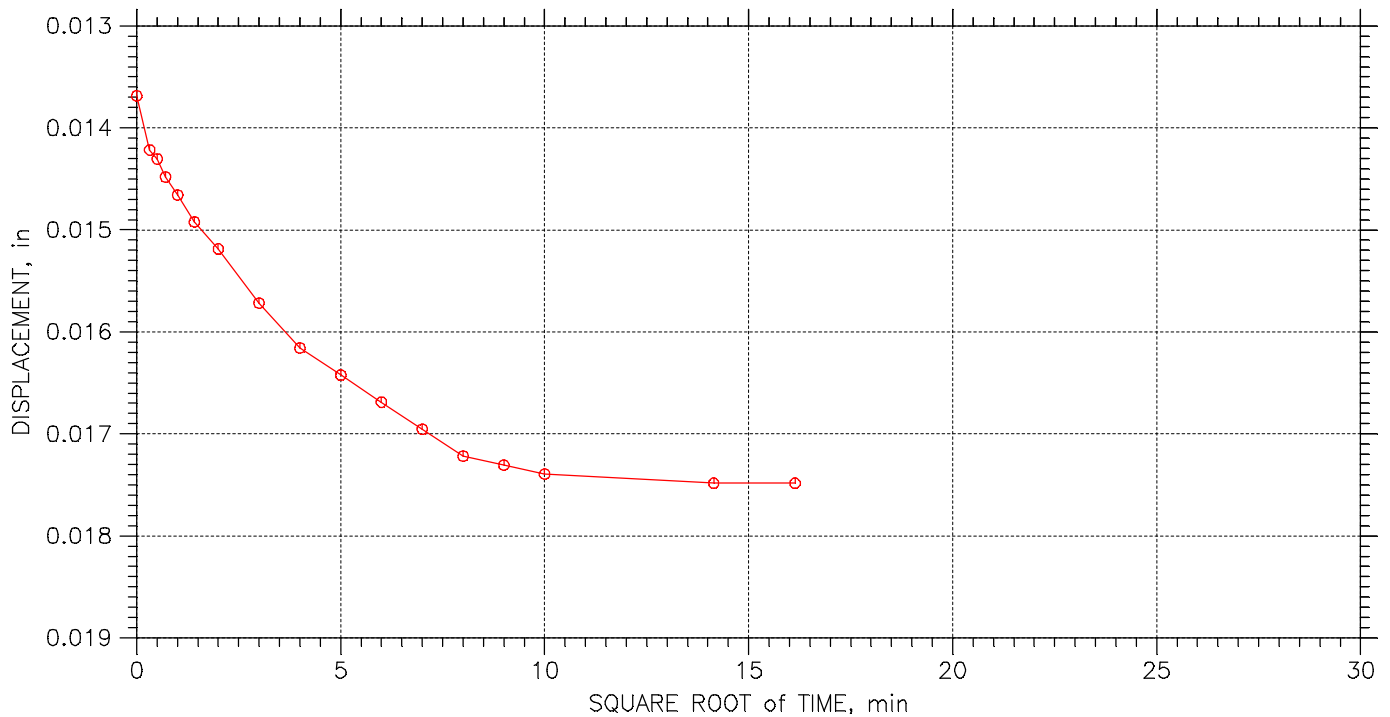
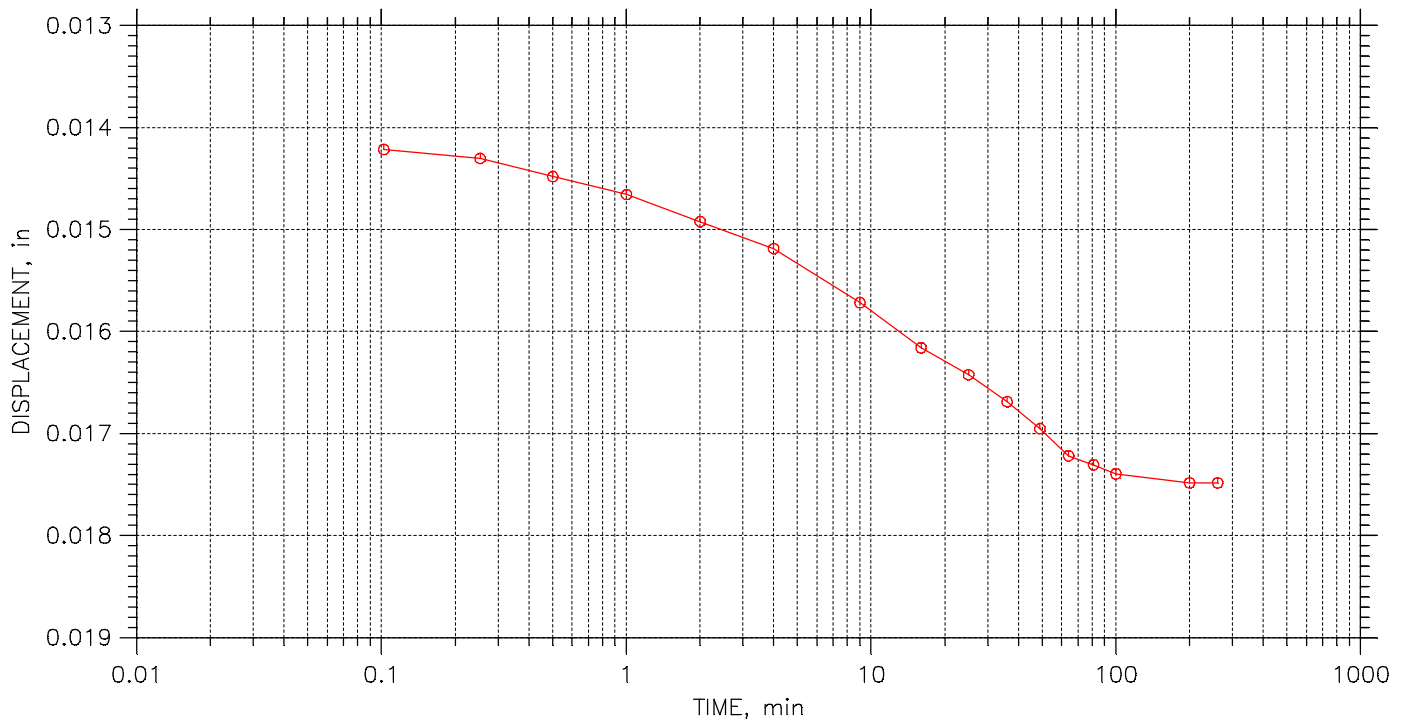
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf



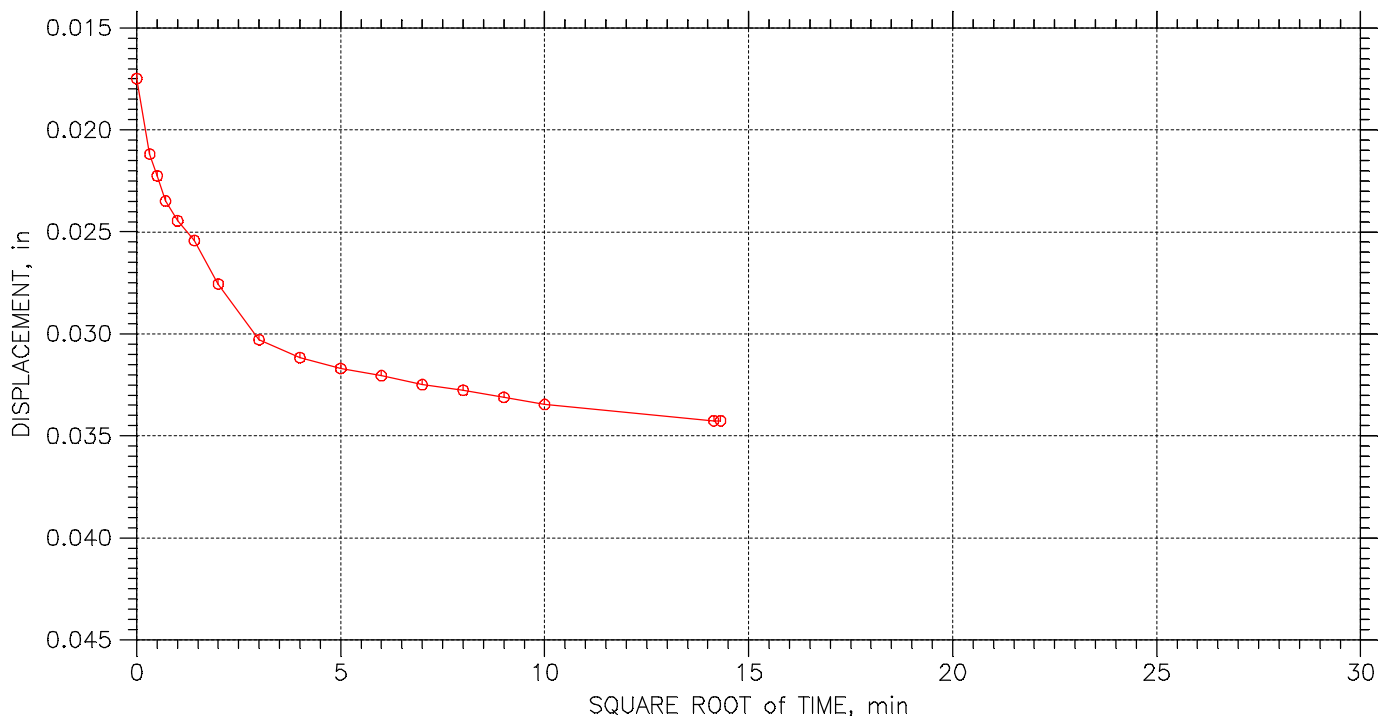
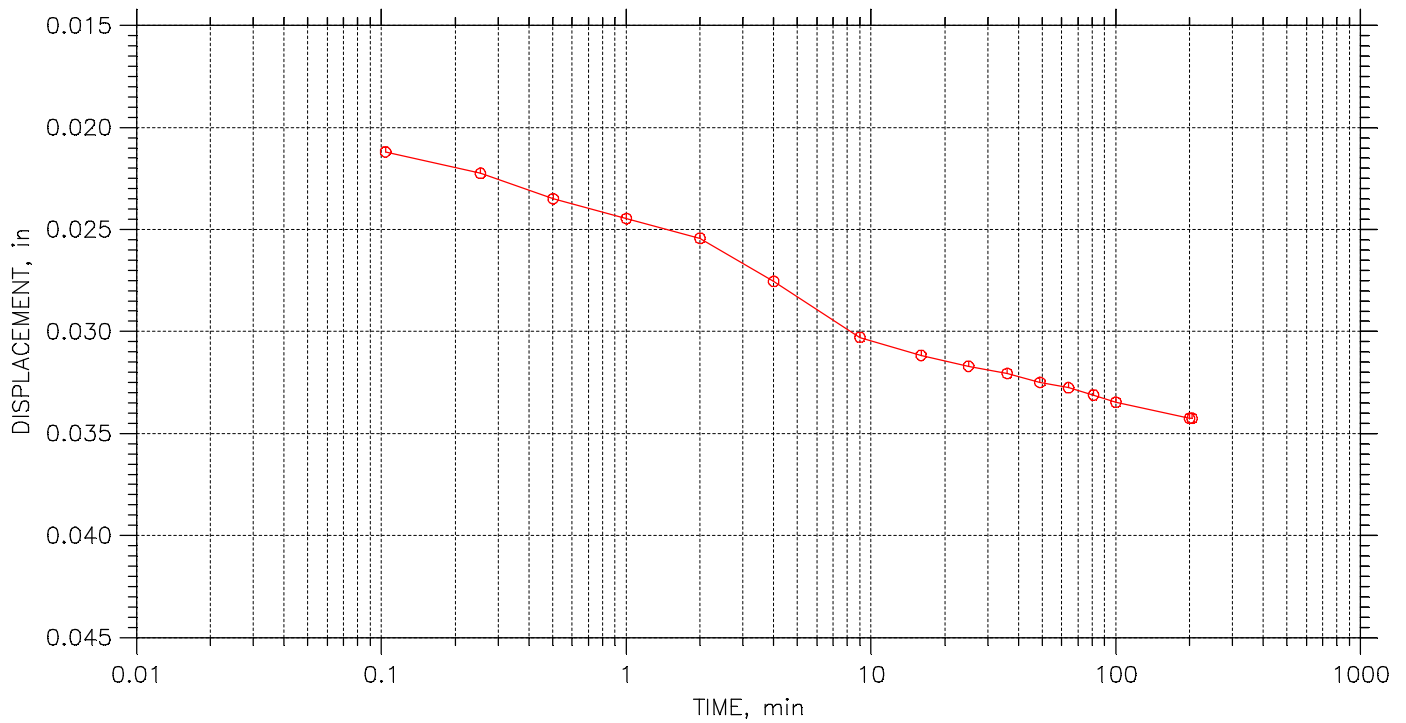
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf



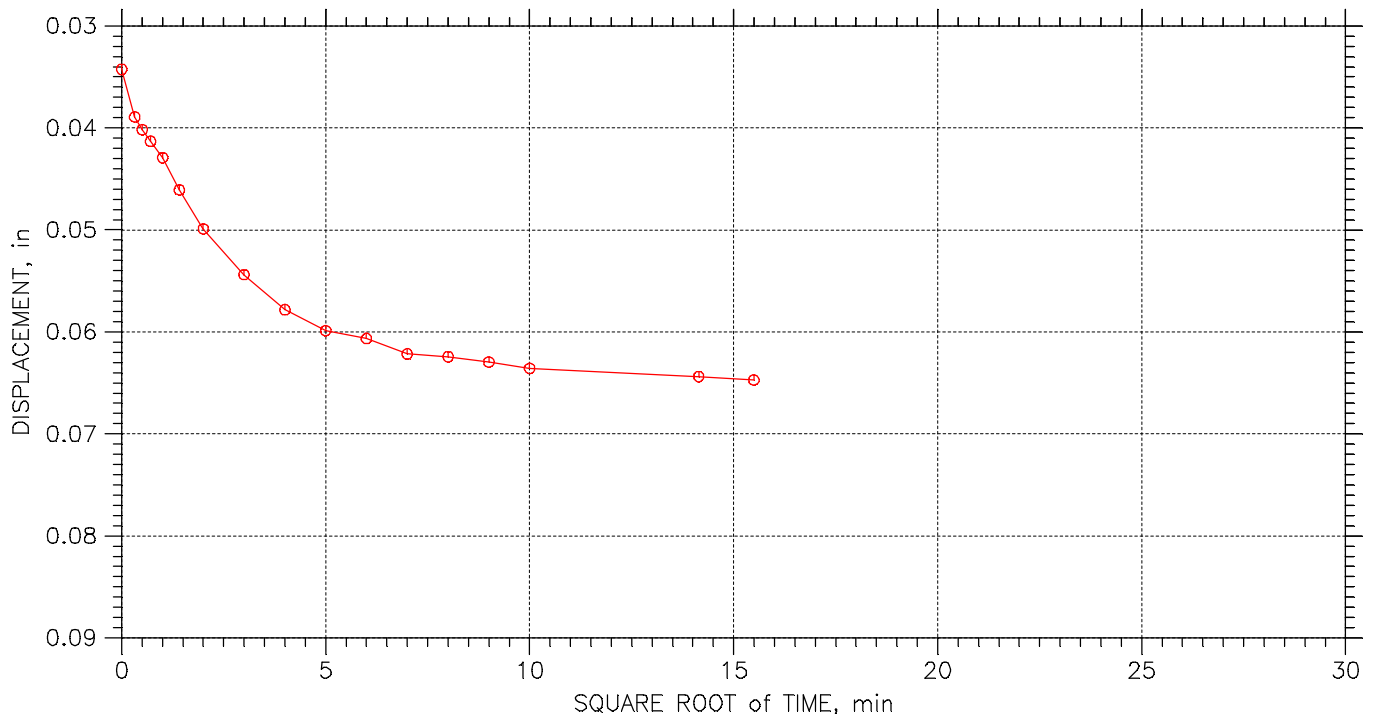
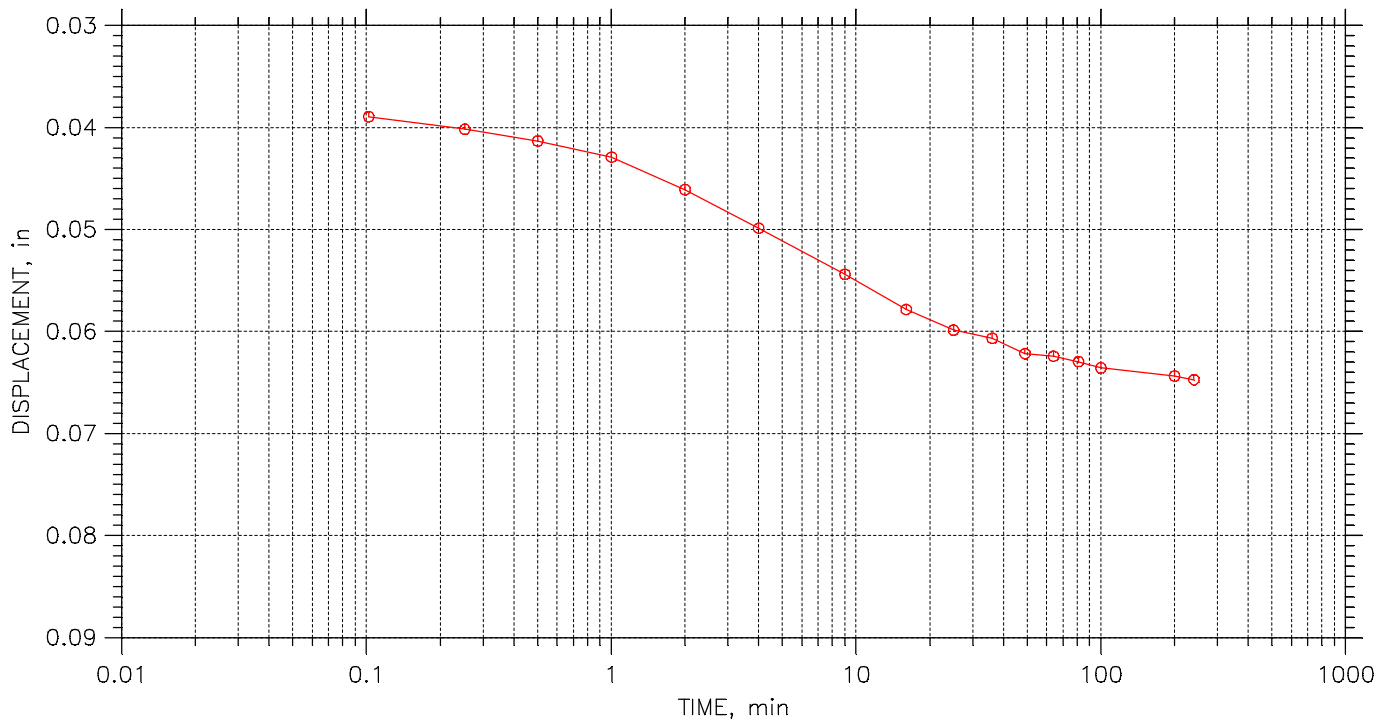
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf



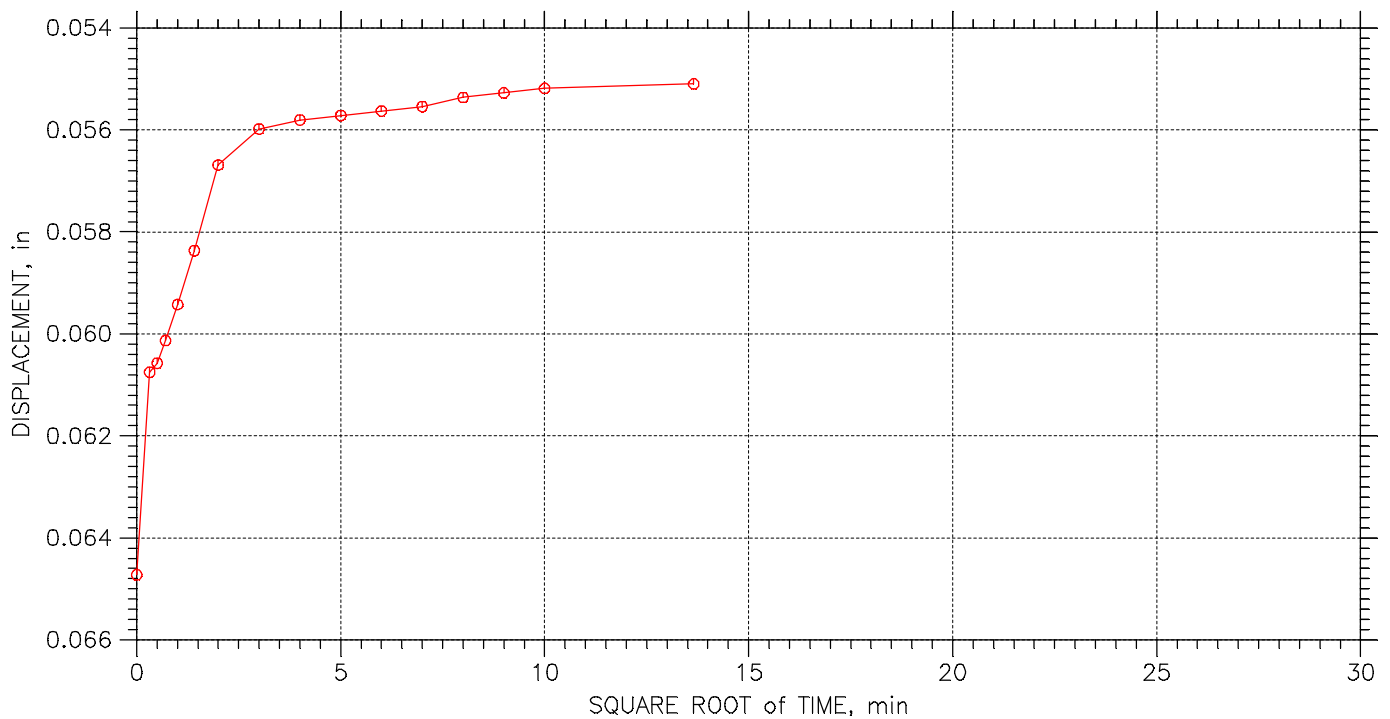
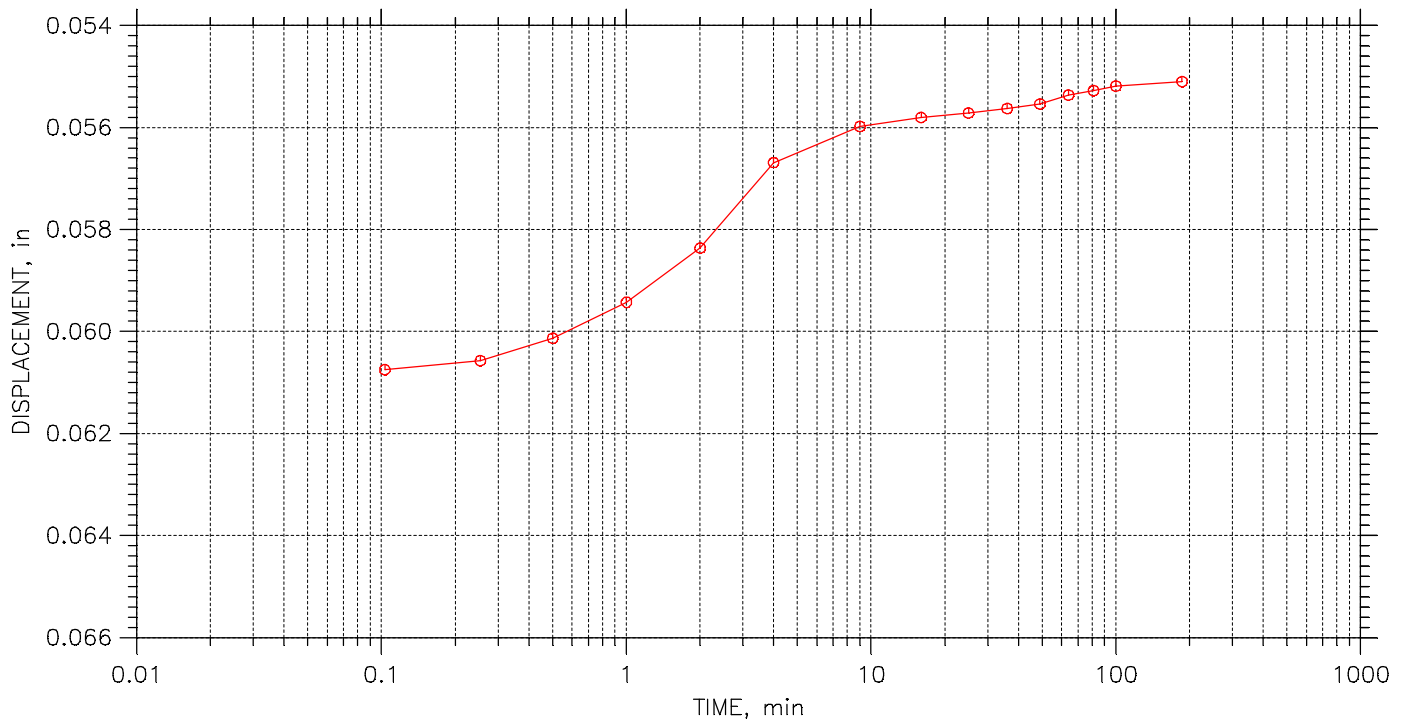
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf



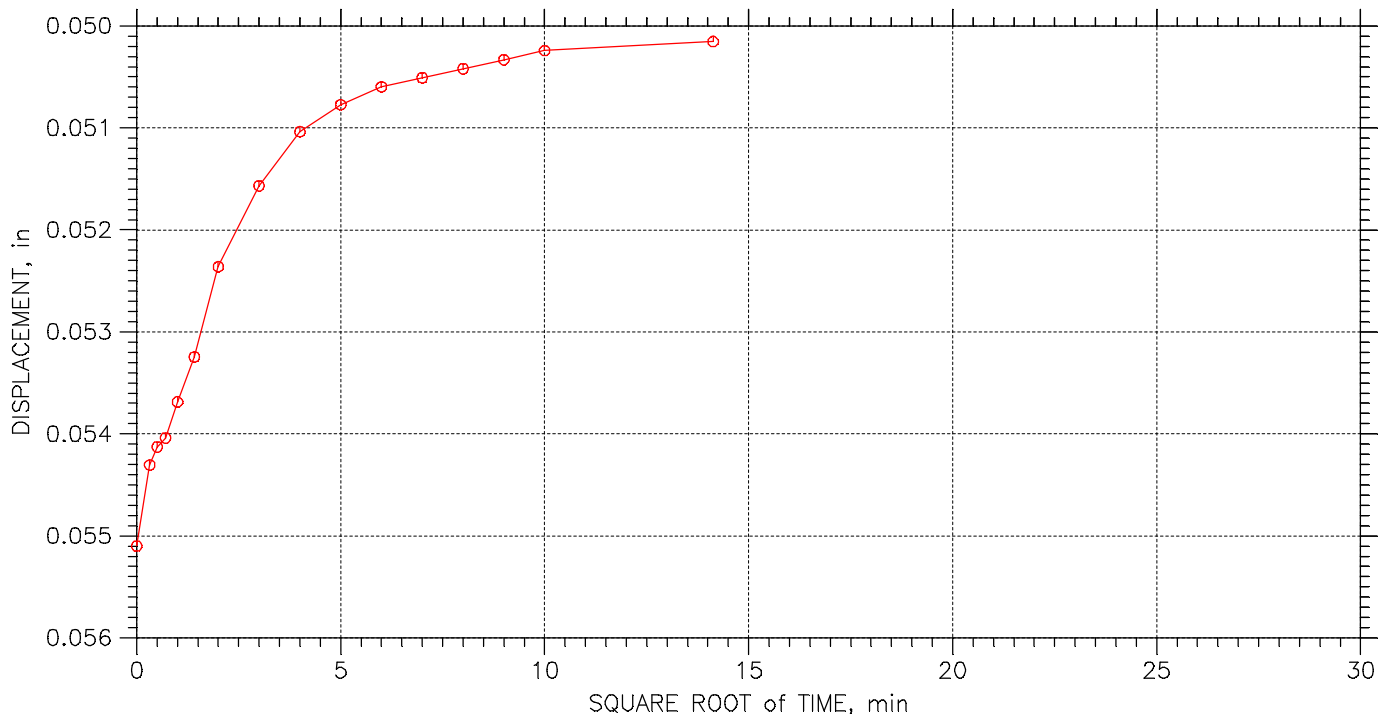
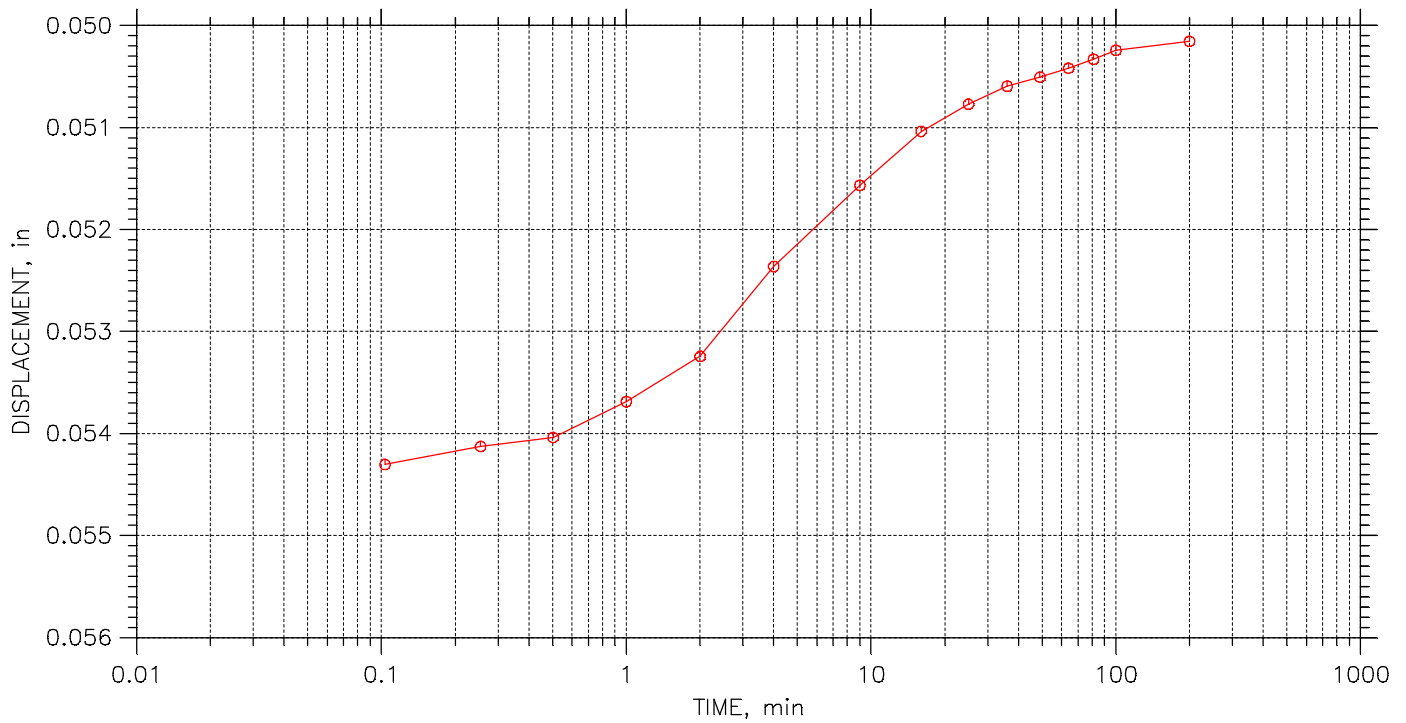
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf



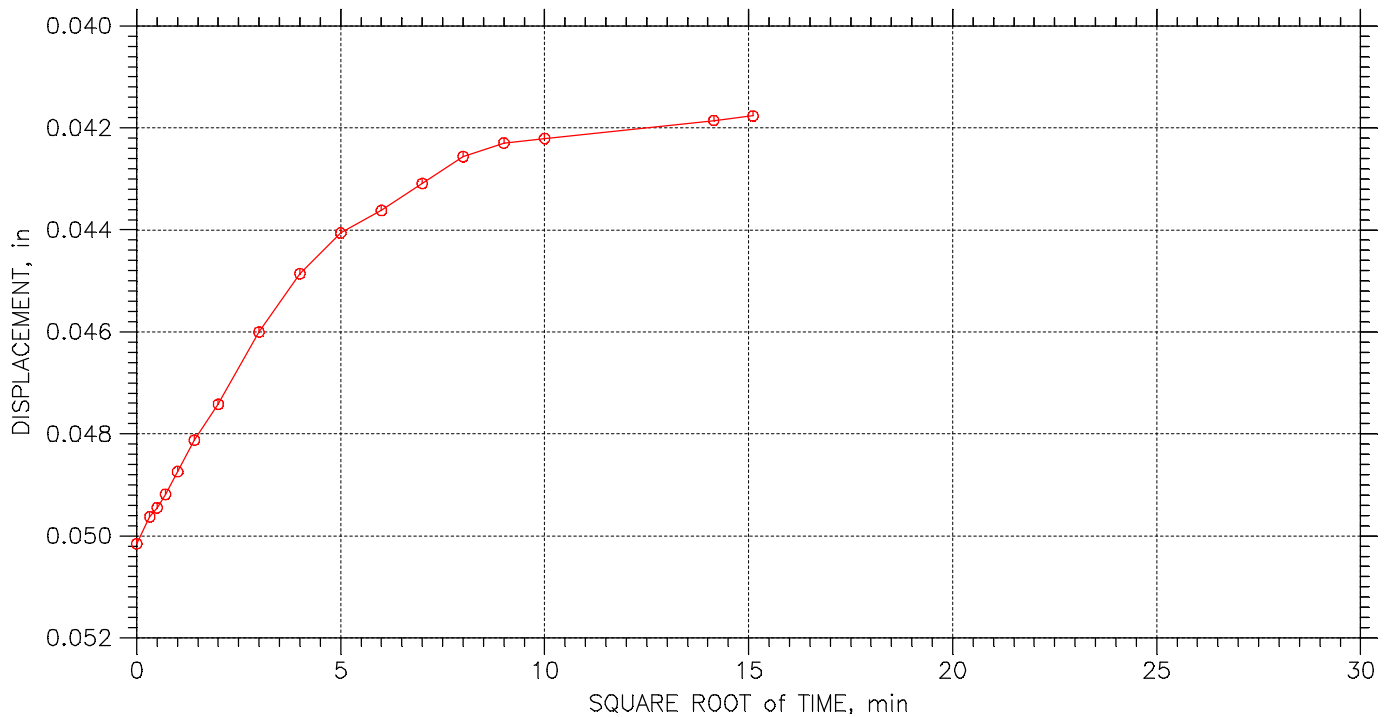
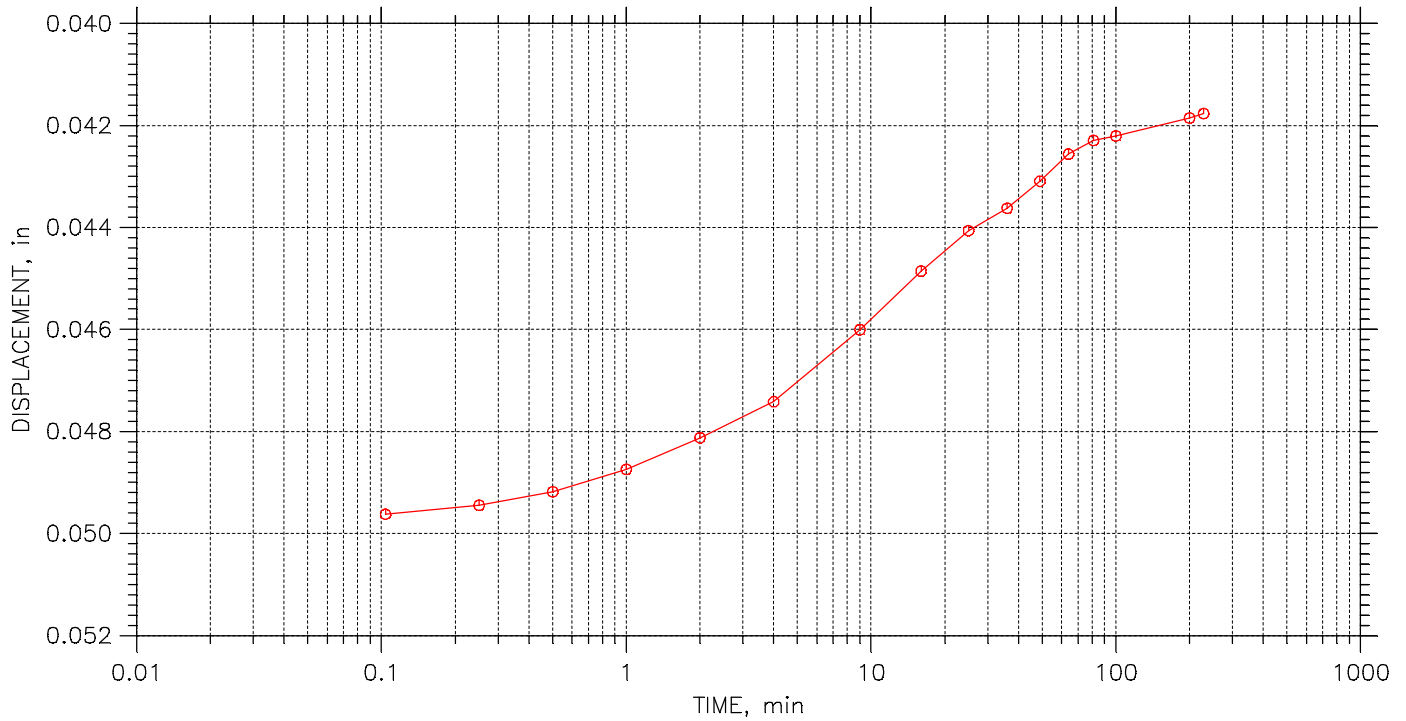
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



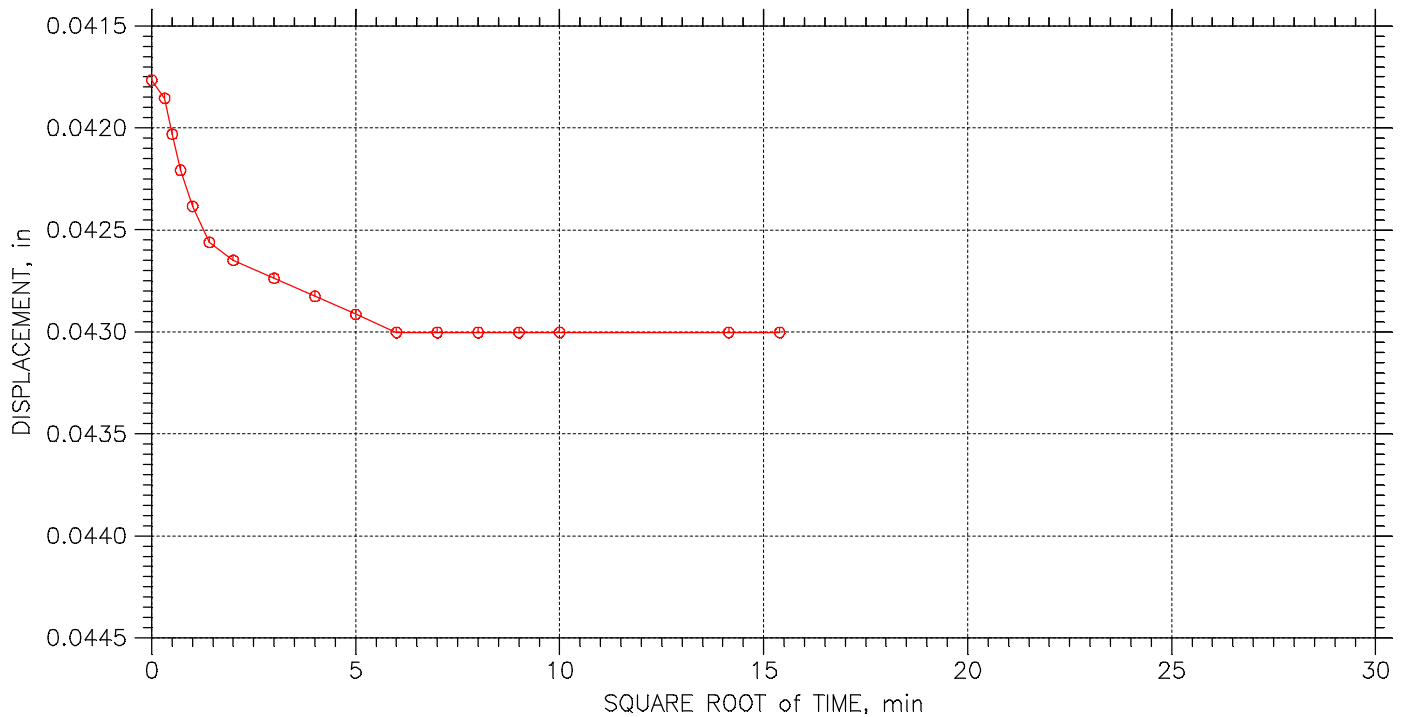
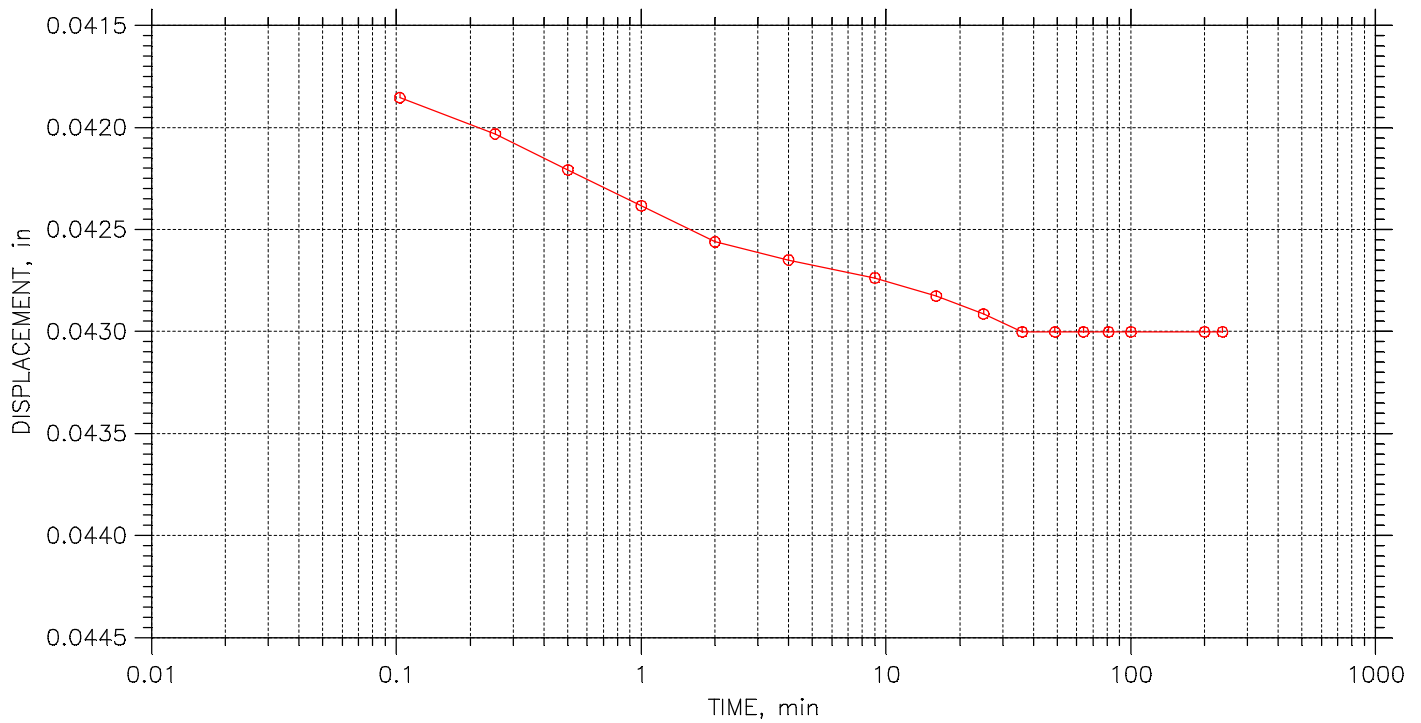
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf



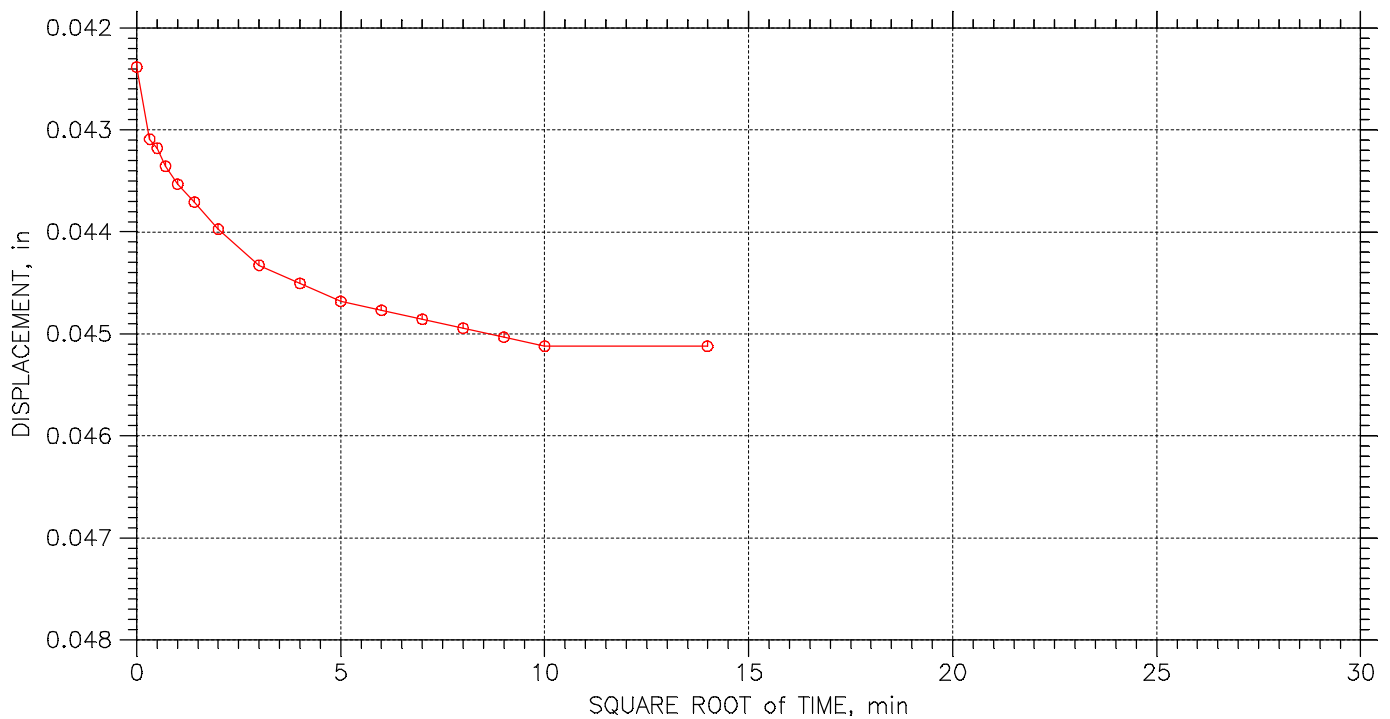
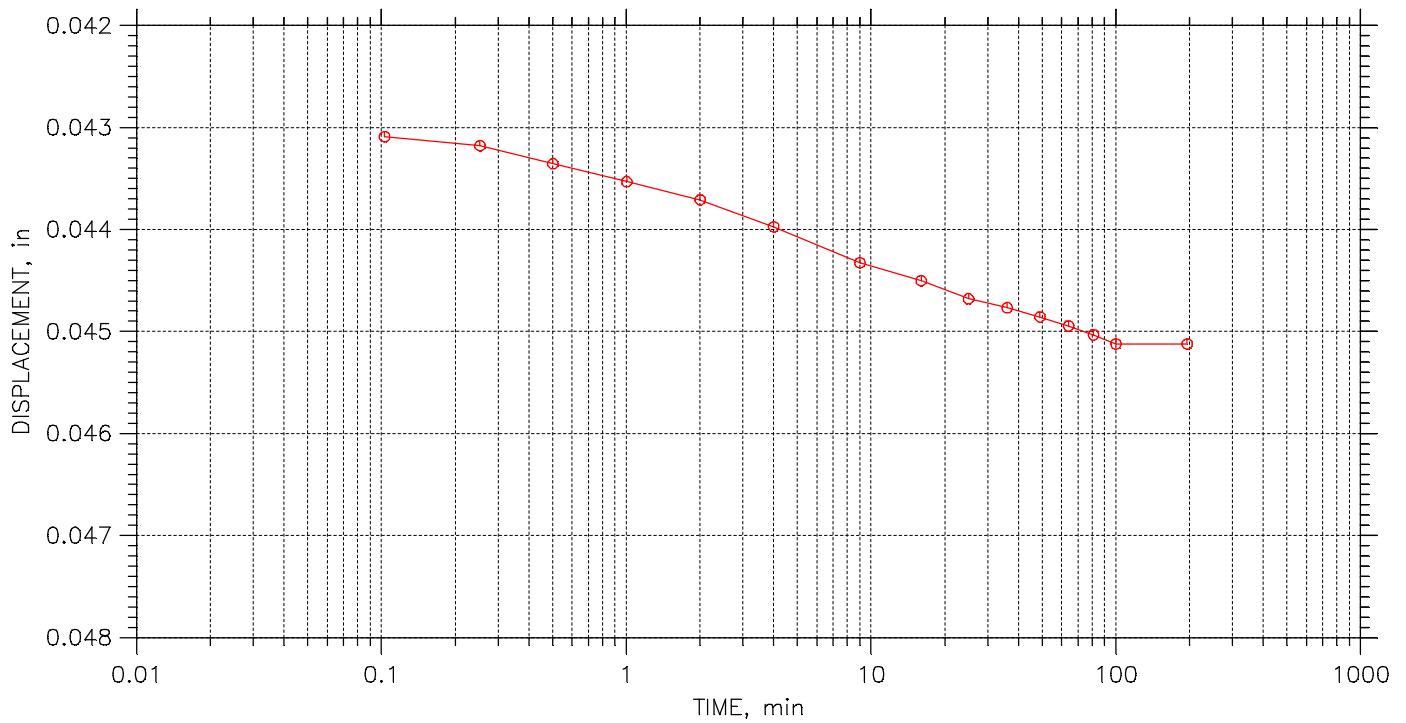
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf



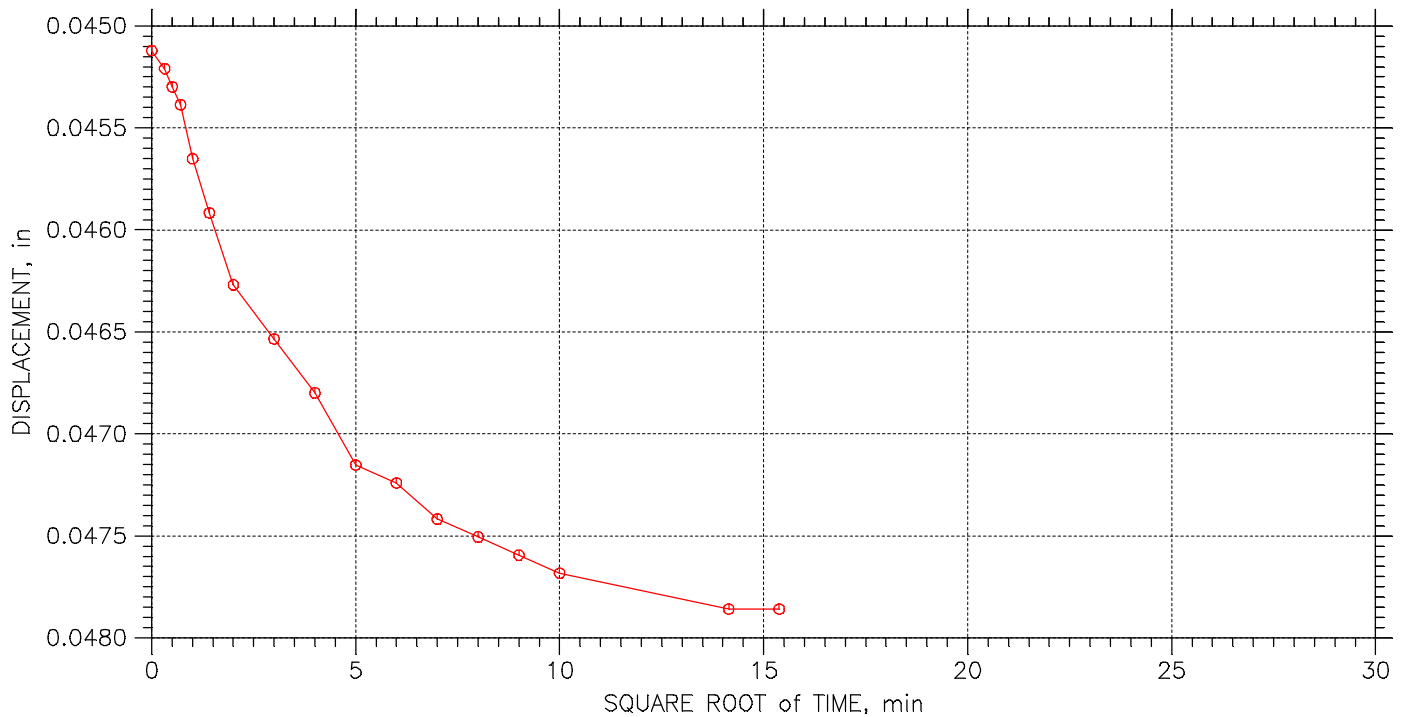
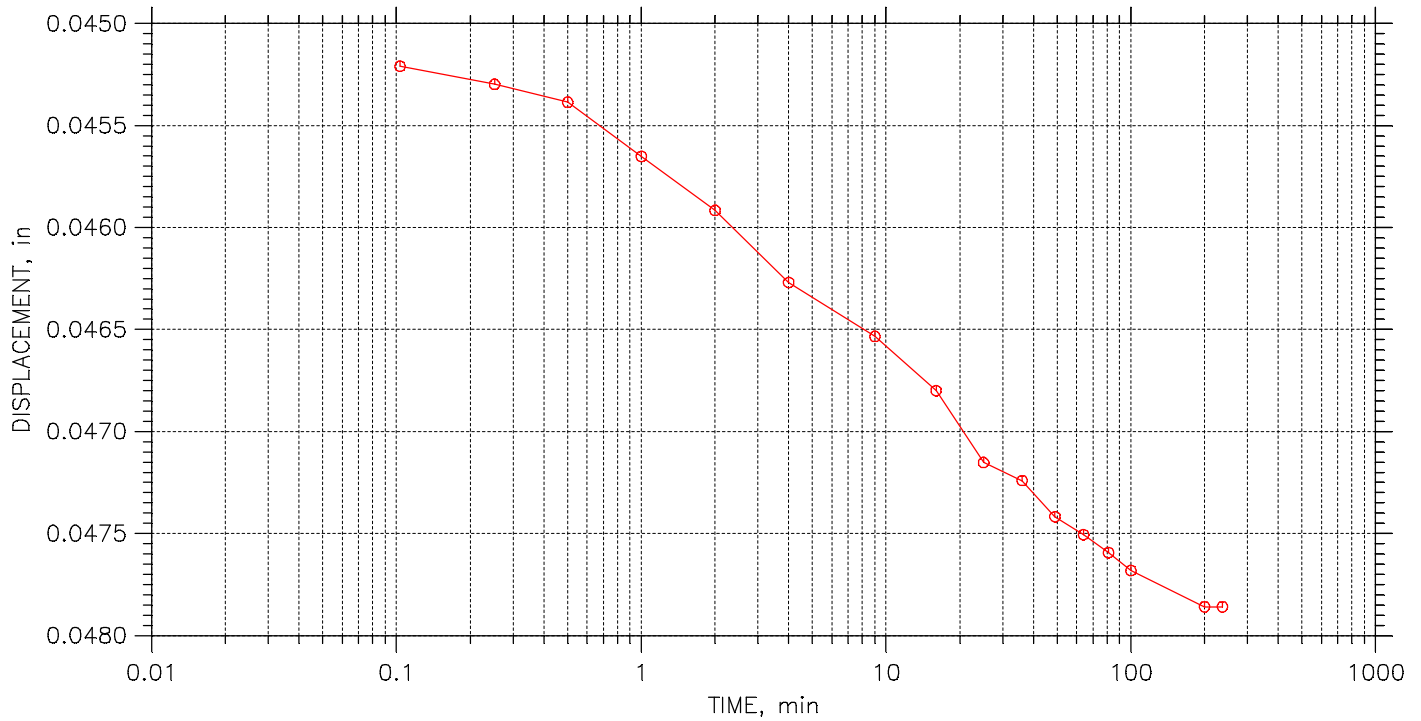
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf



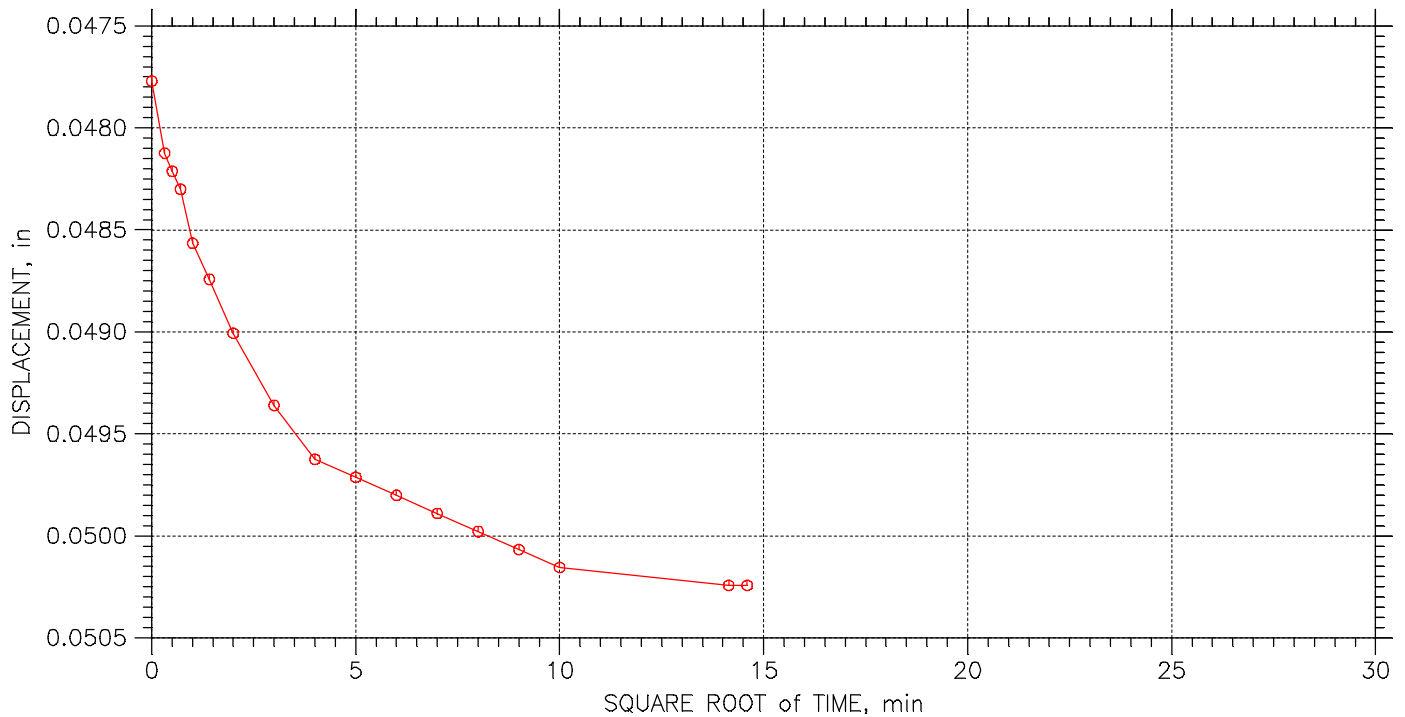
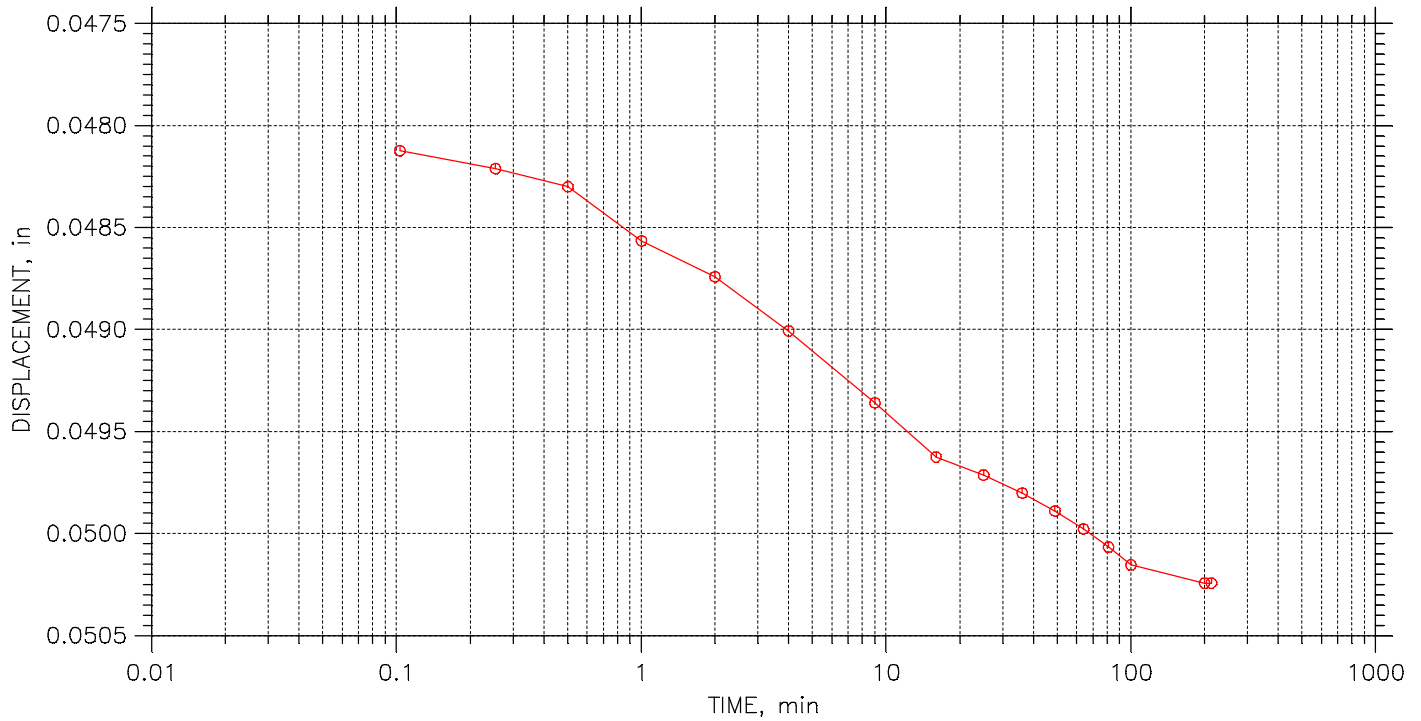
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf



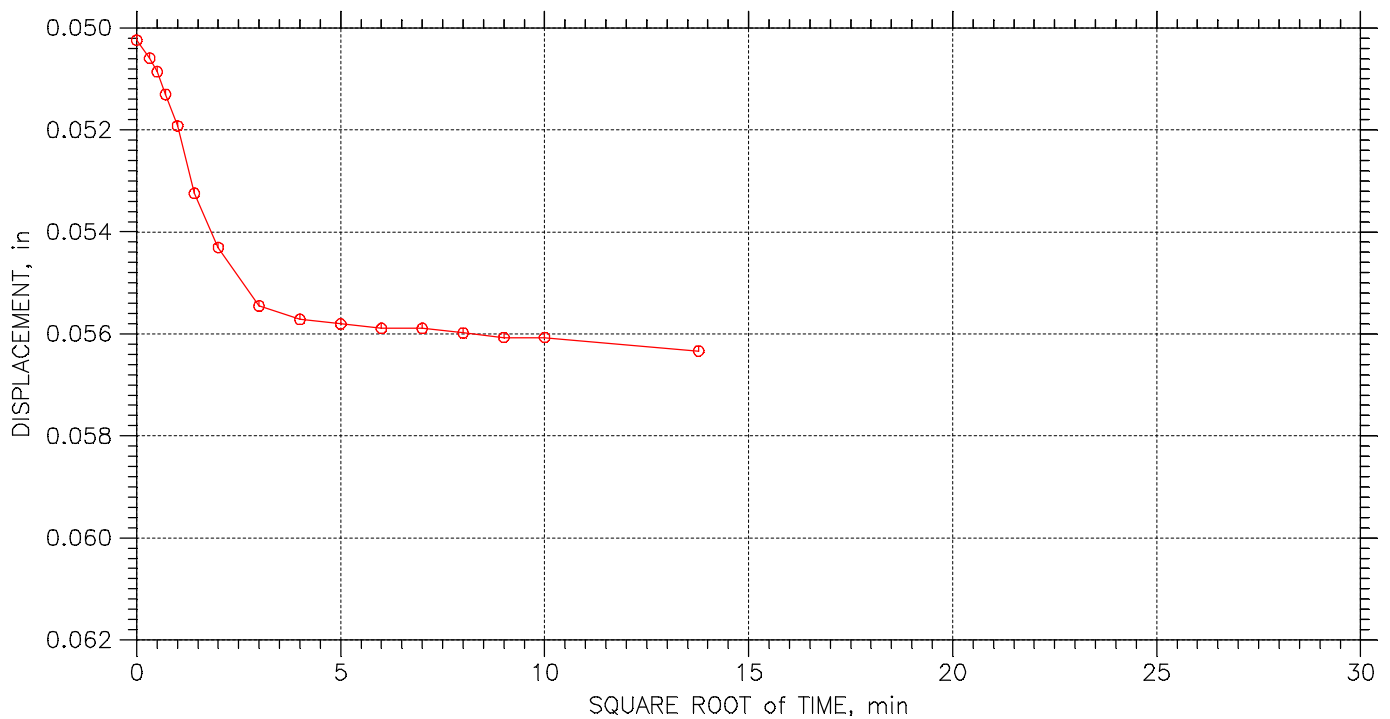
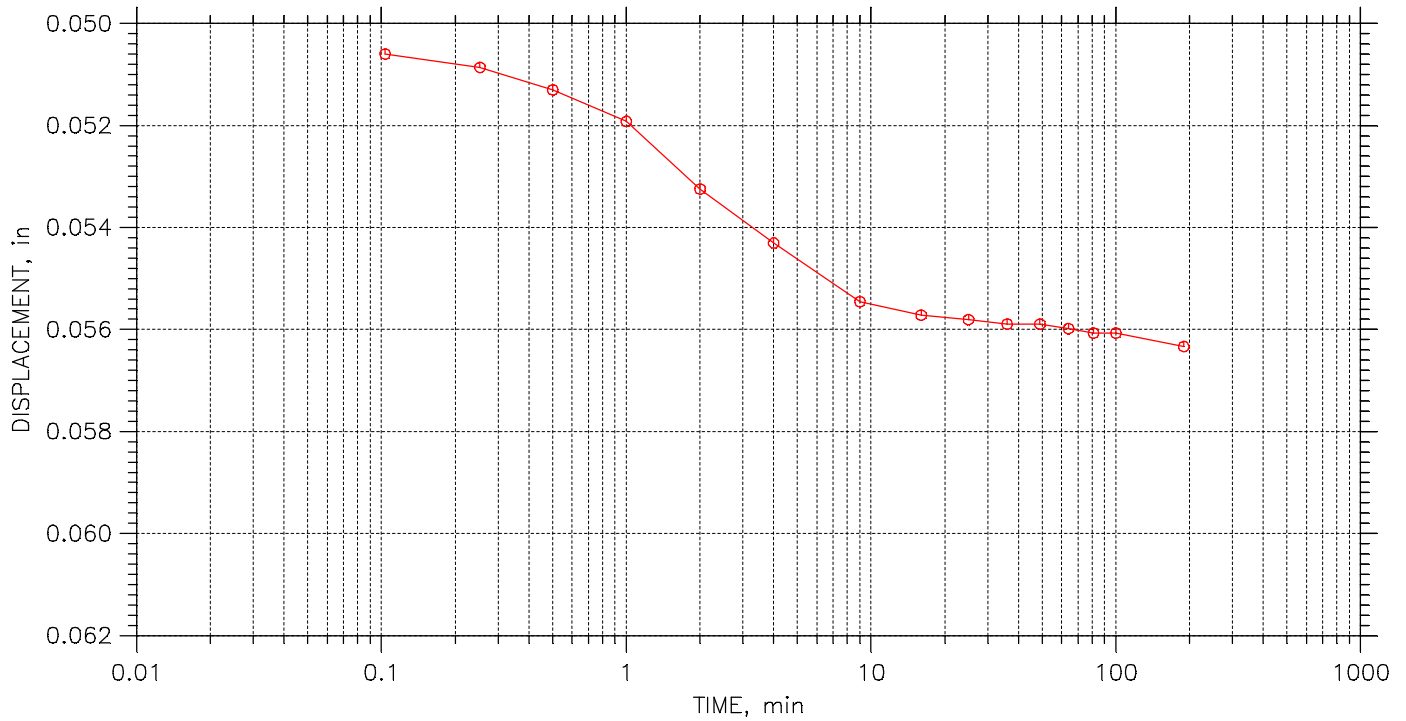
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf



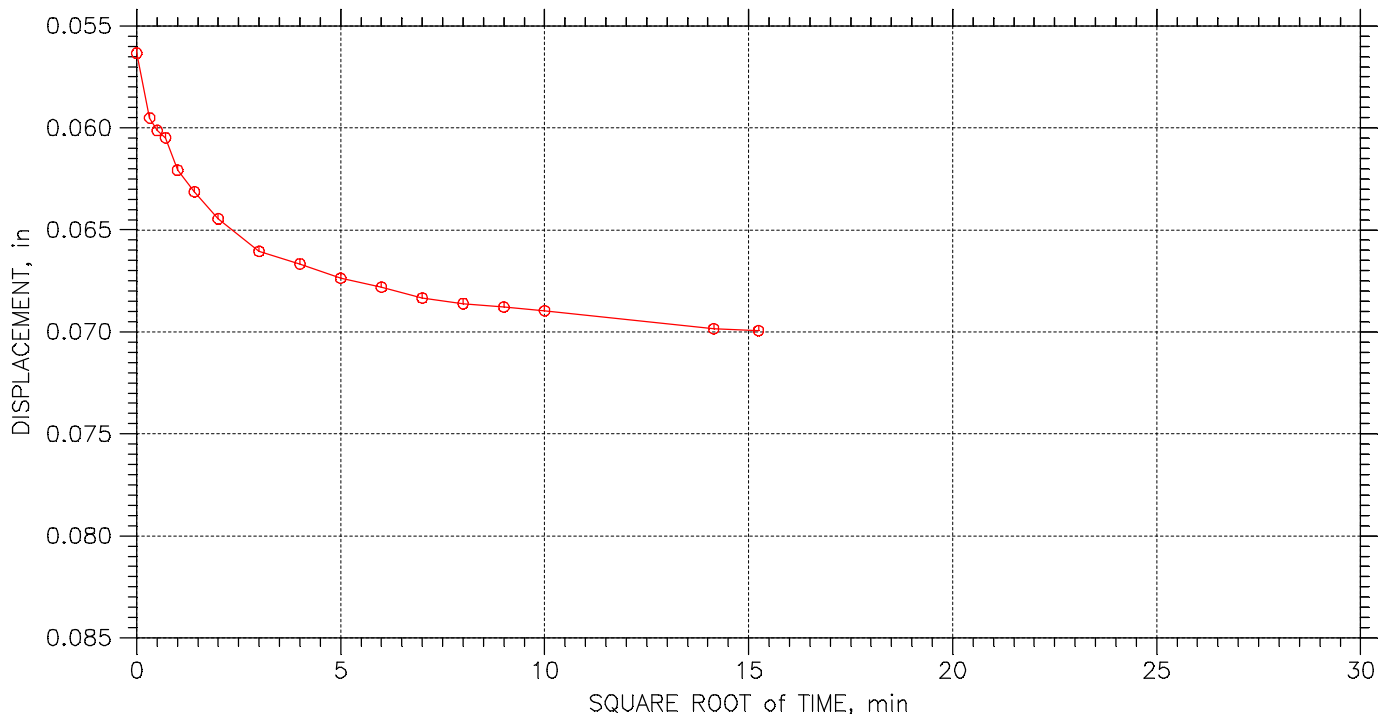
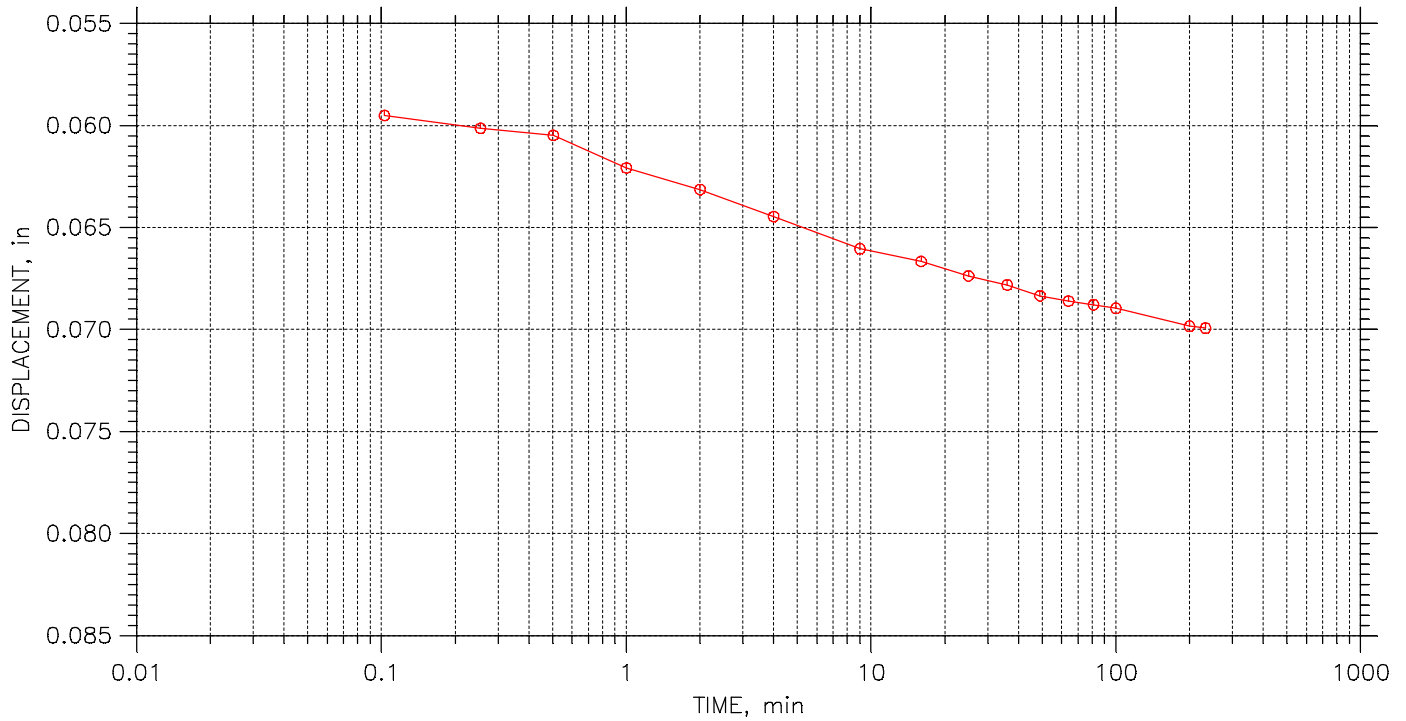
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf



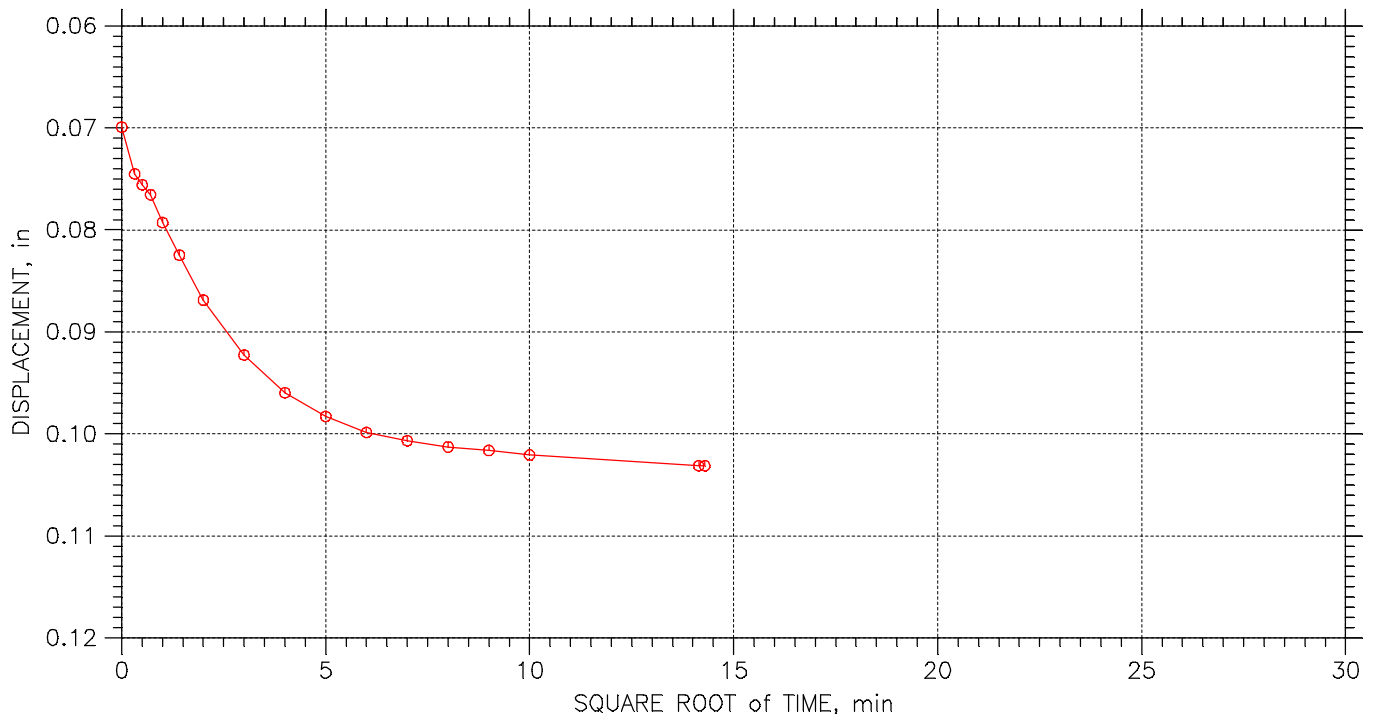
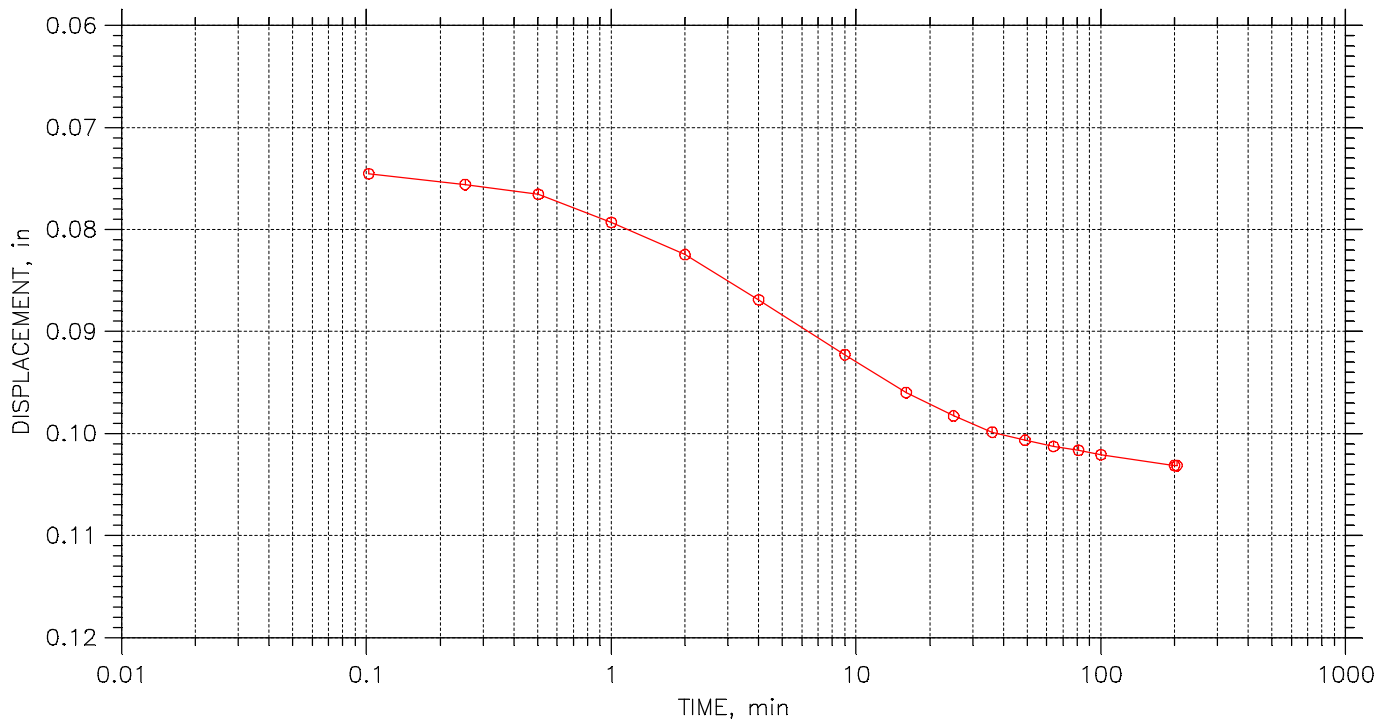
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf



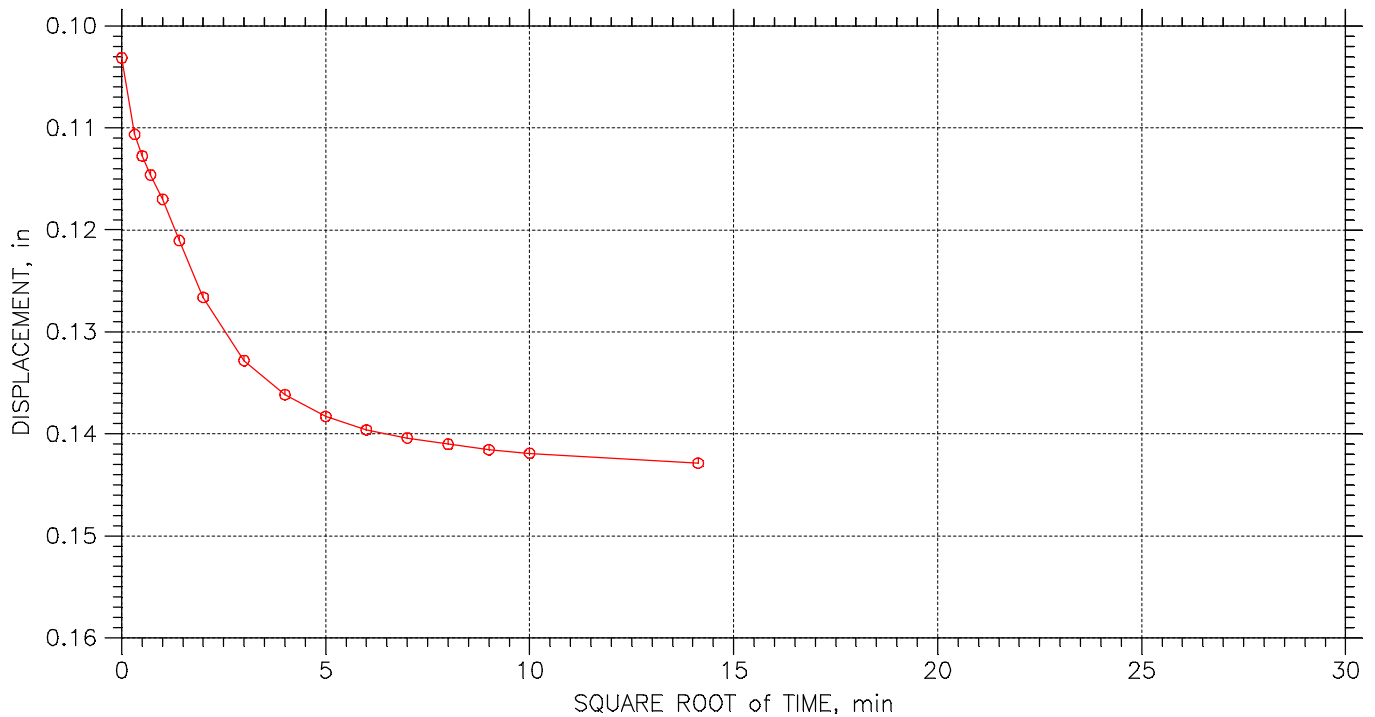
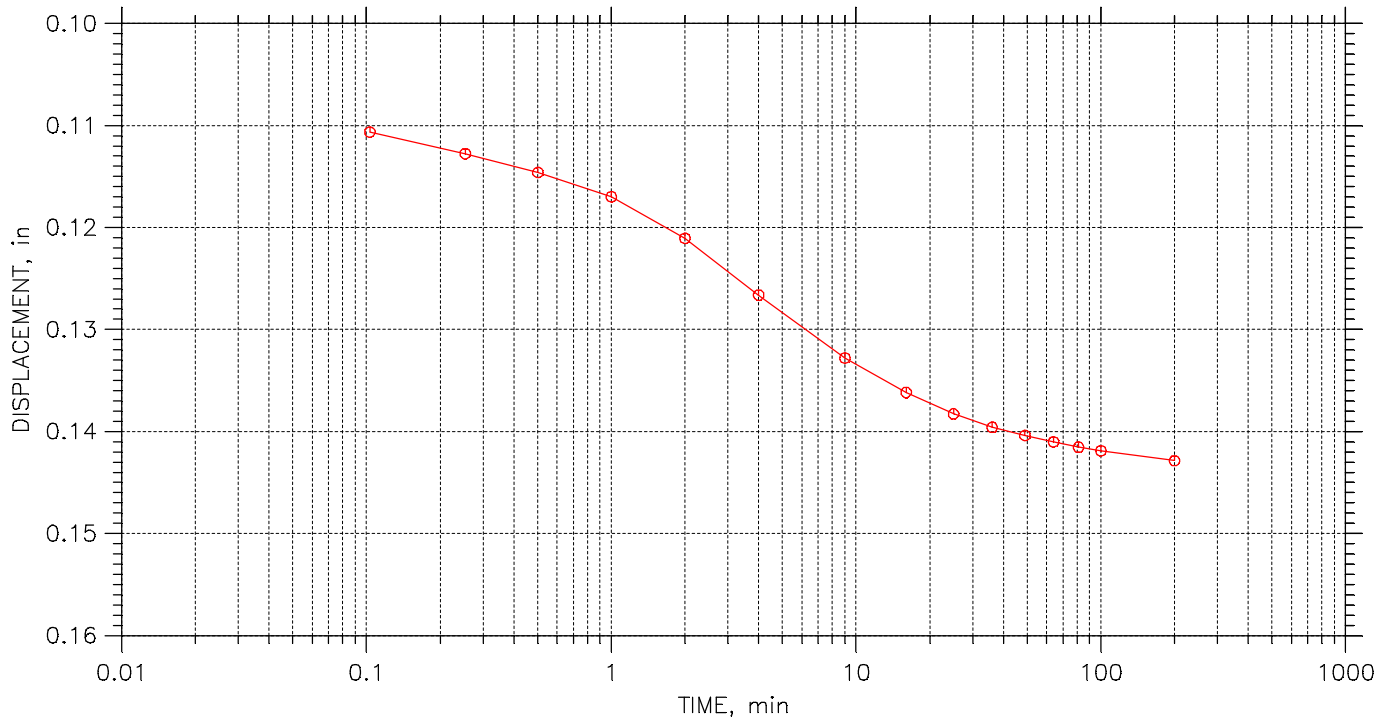
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf



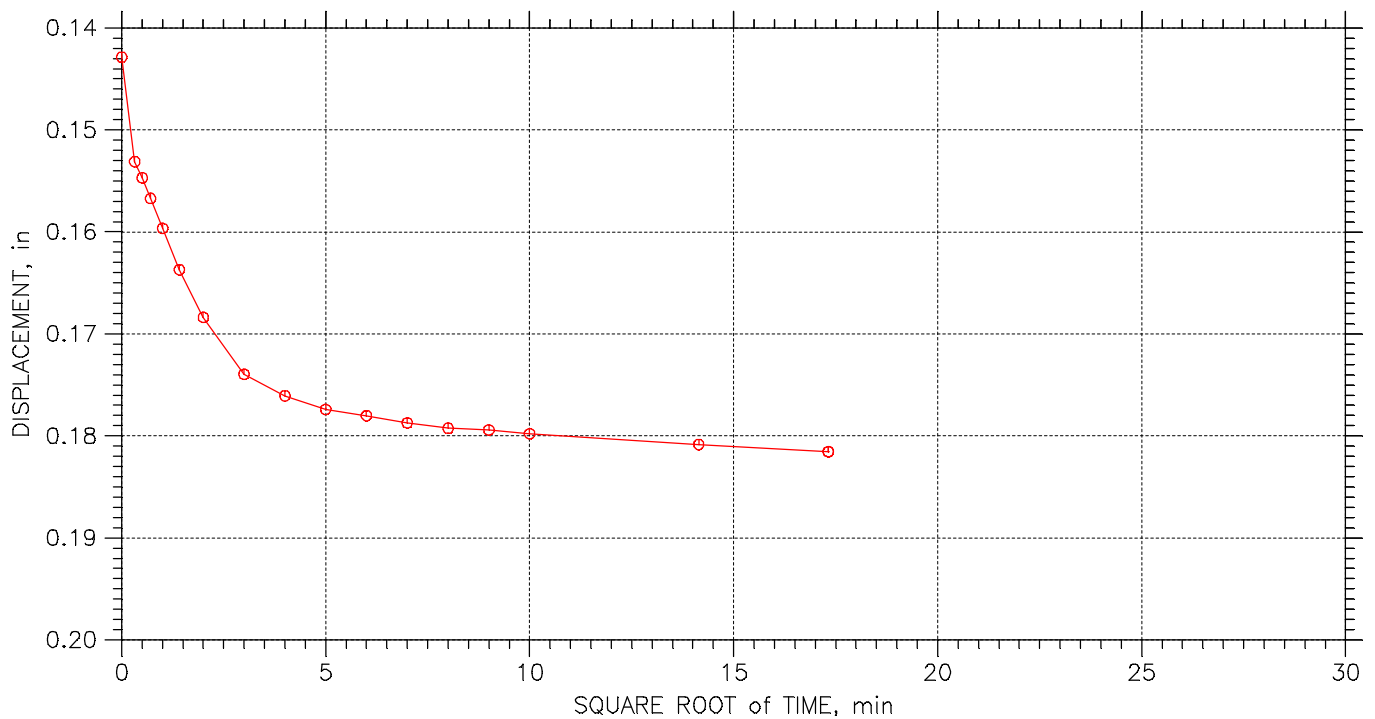
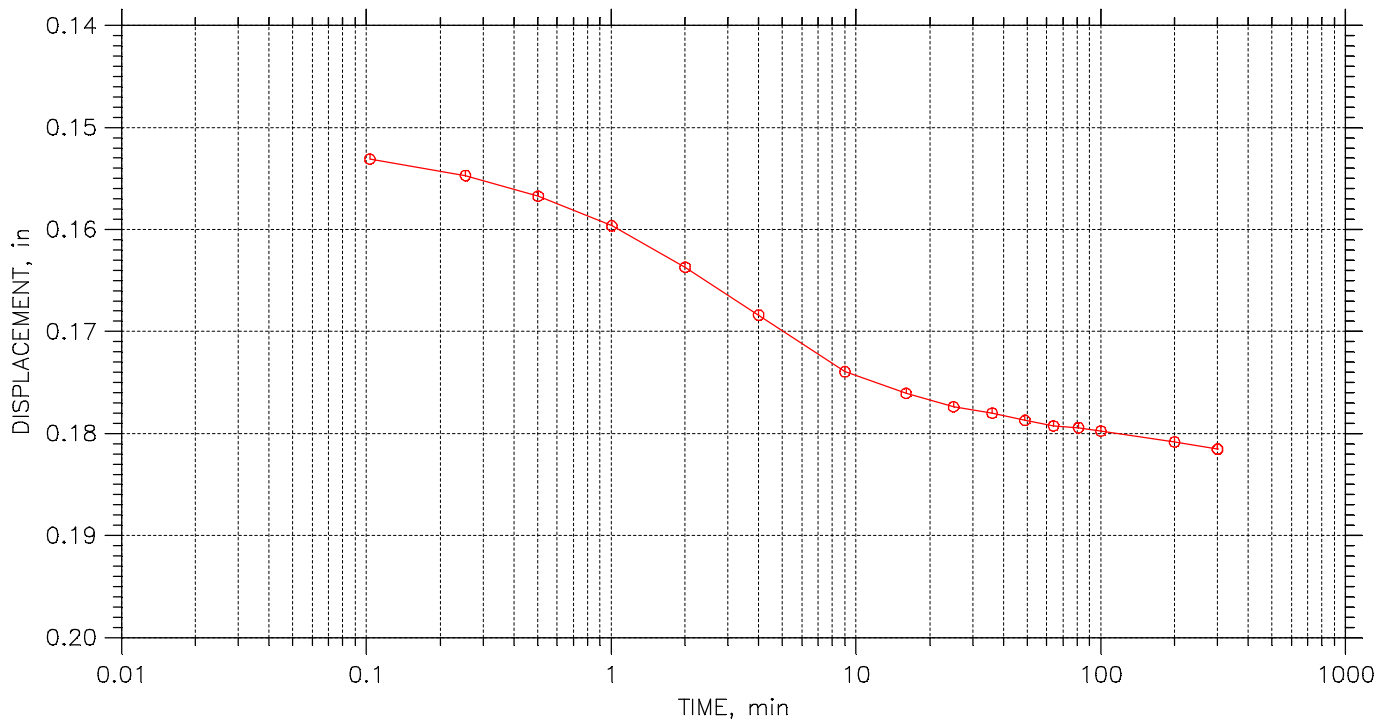
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



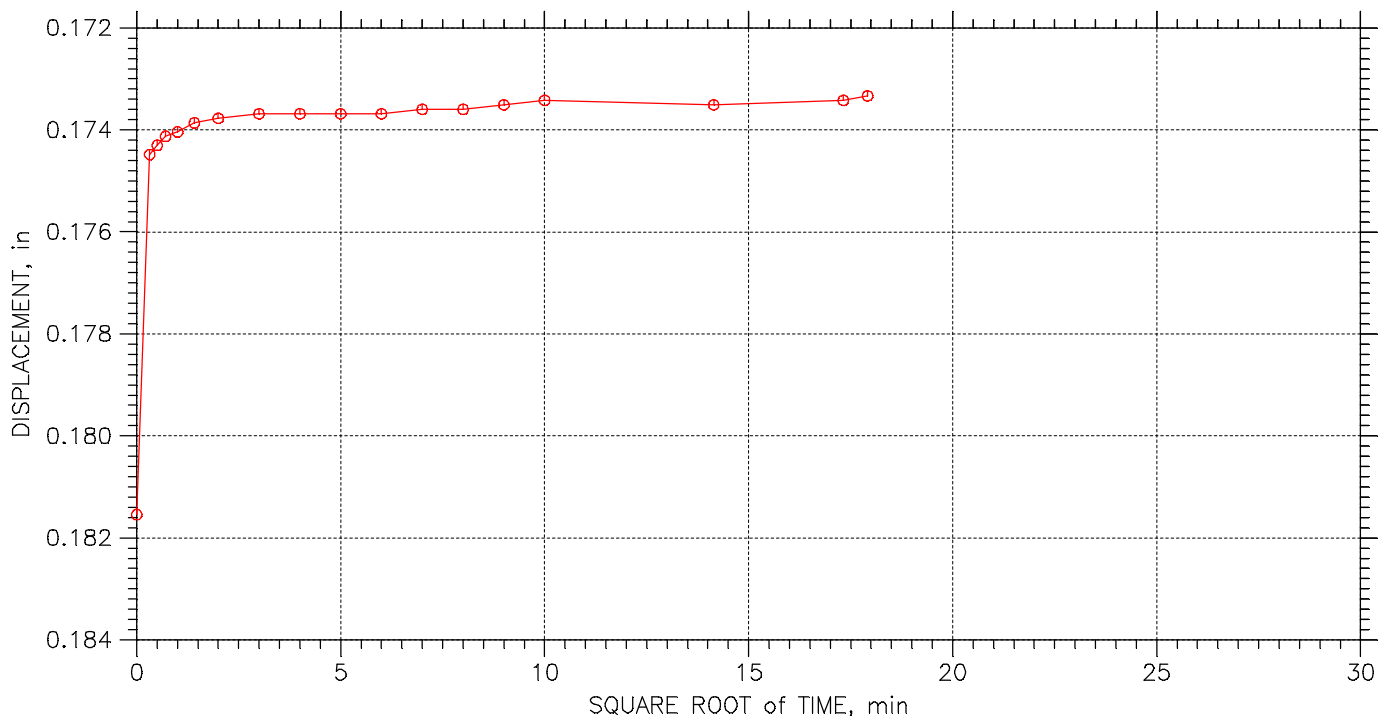
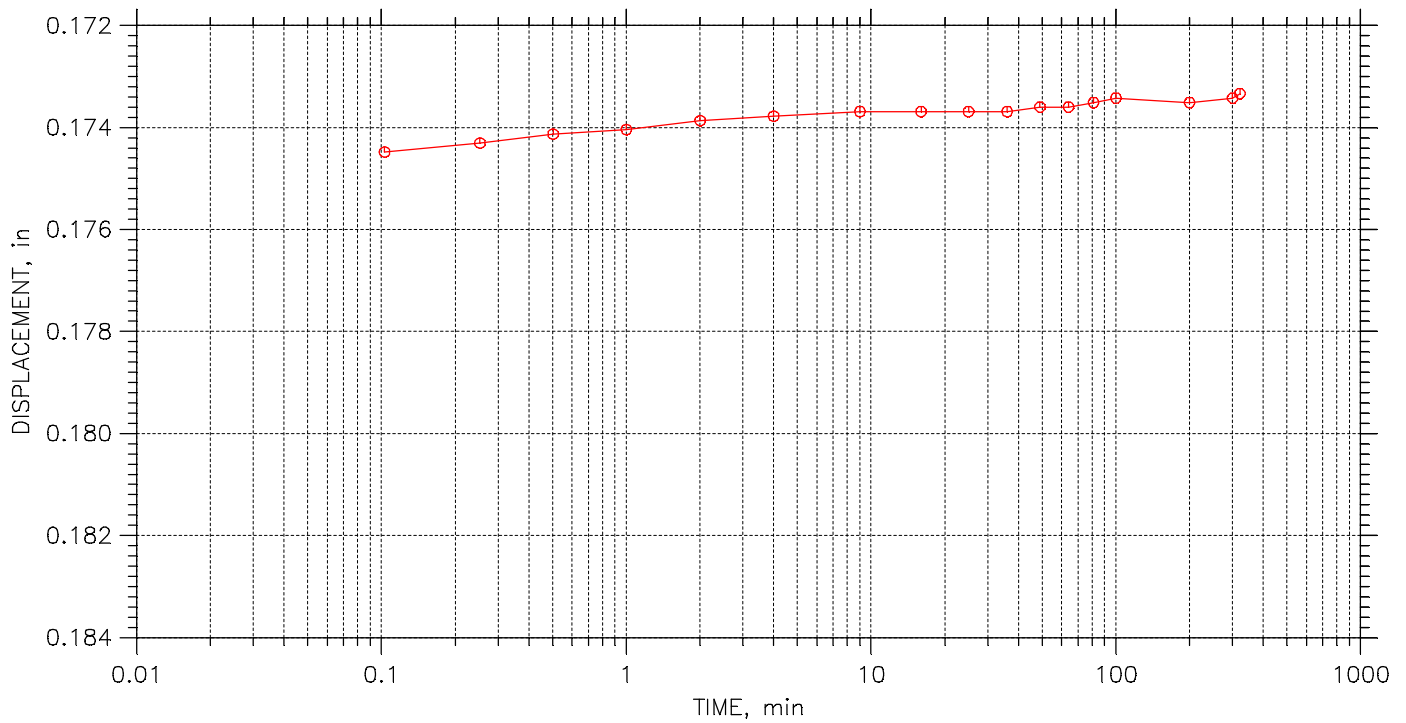
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



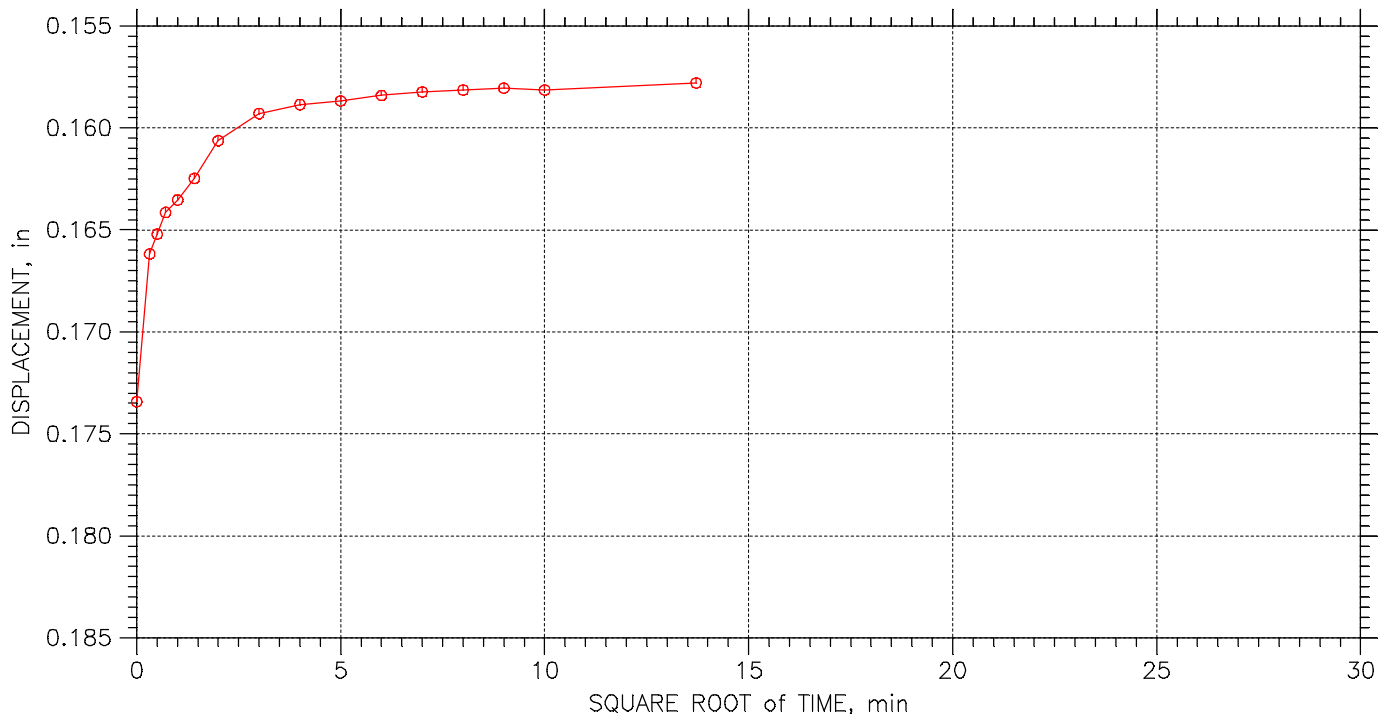
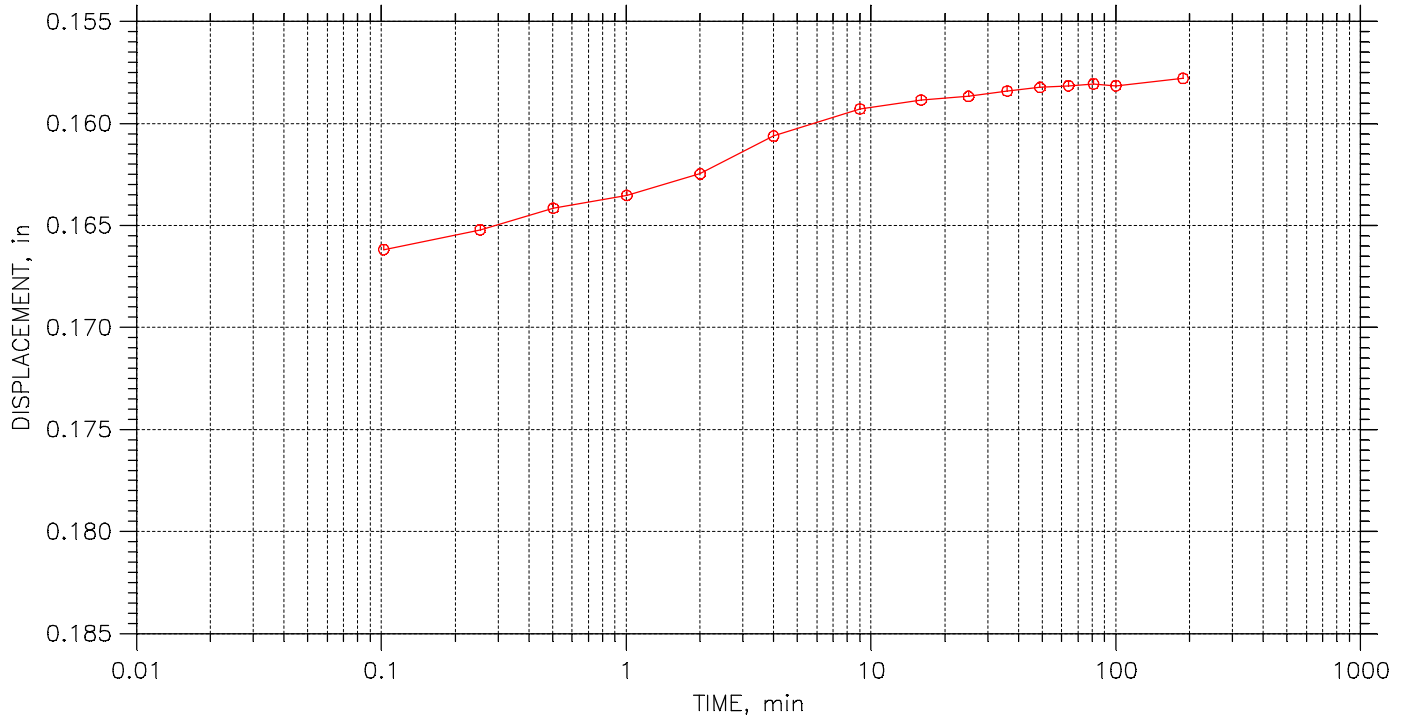
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf



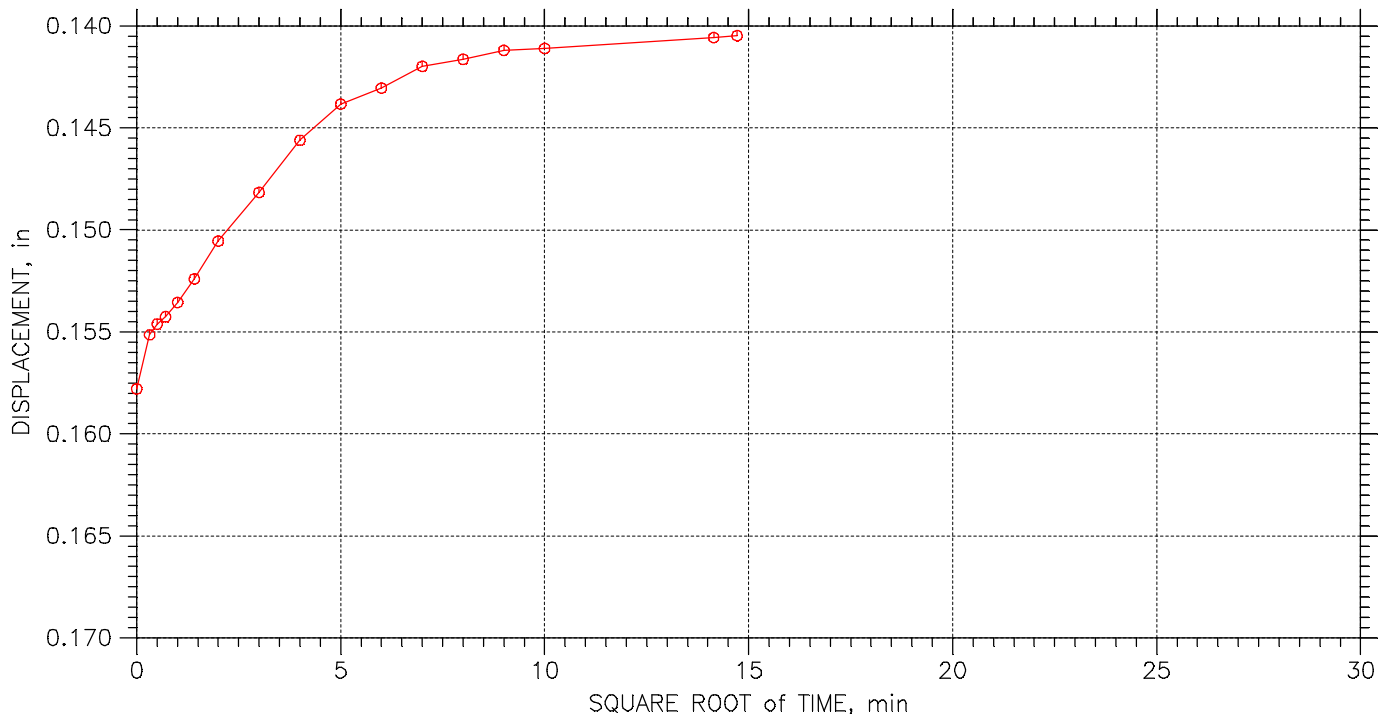
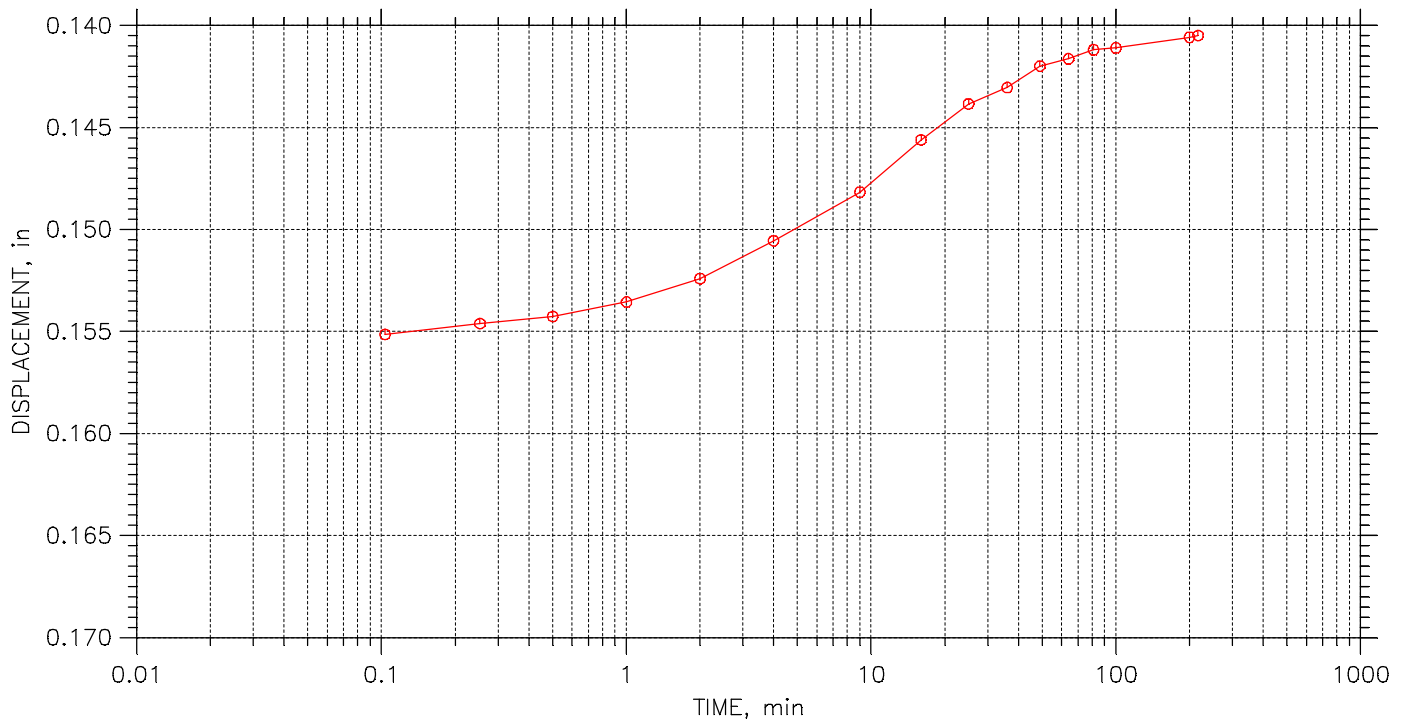
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf



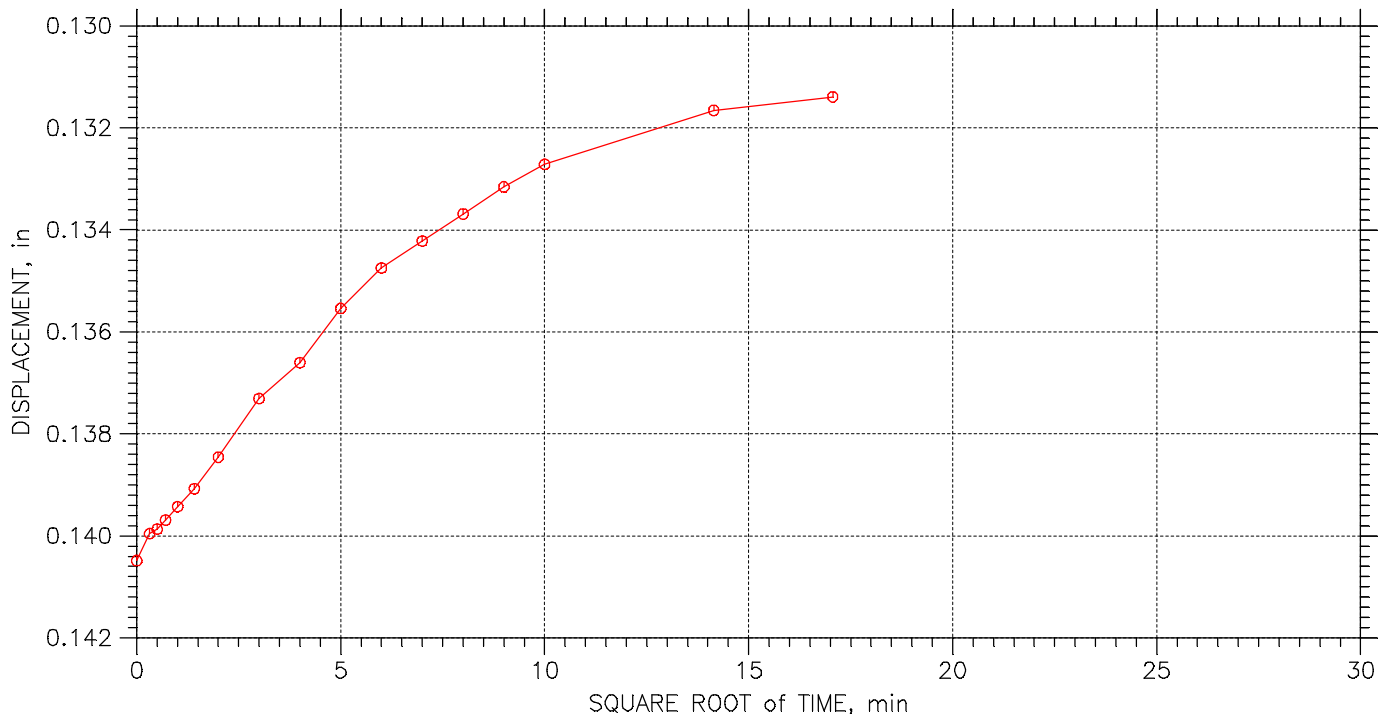
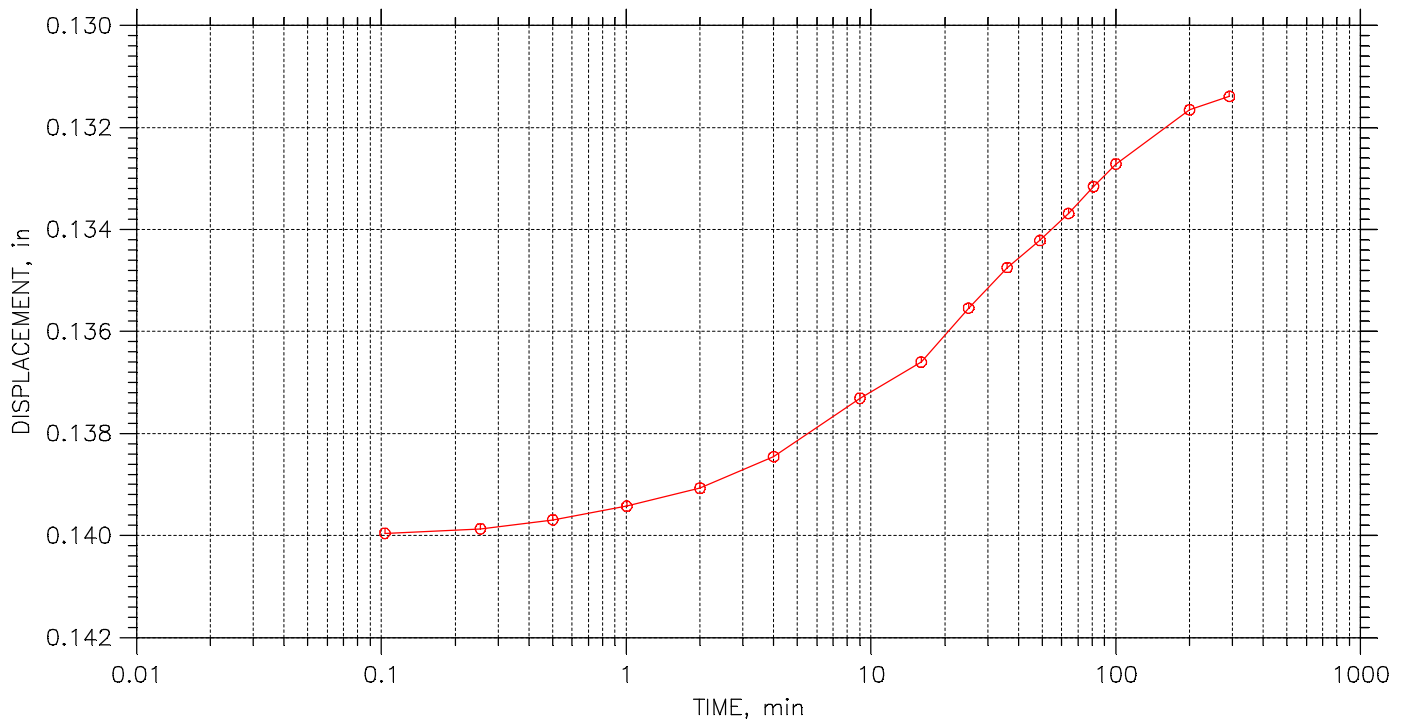
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf



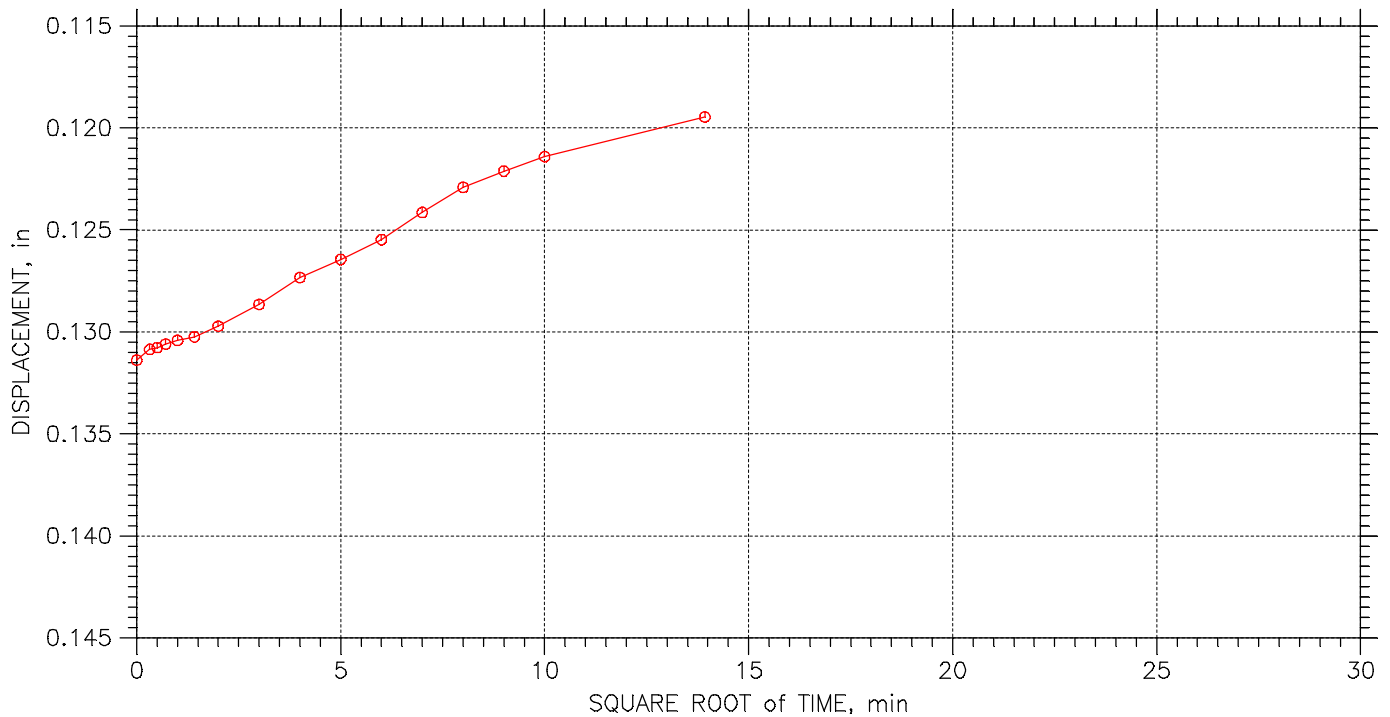
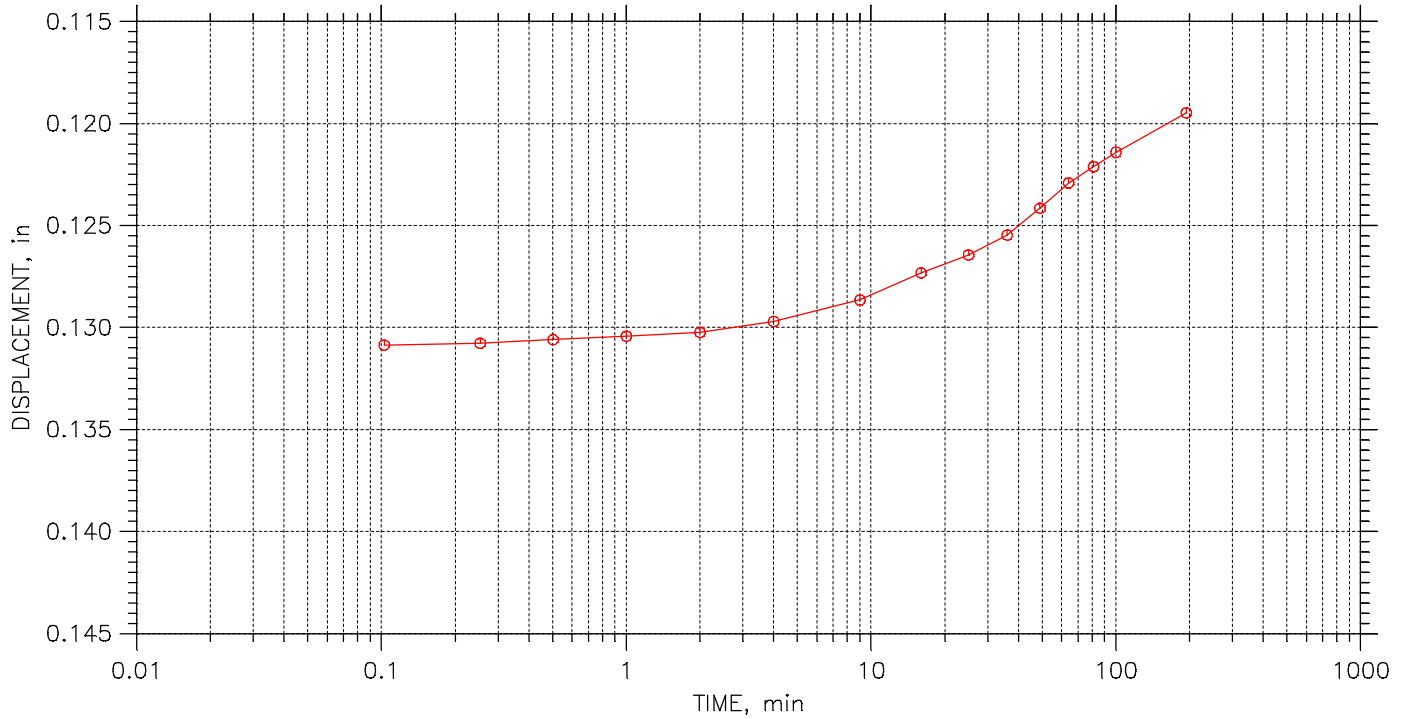
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	Boring No.: BL-6B S-6	Tested By: BCM	Checked By: BCM
	Sample No.: S-6	Test Date: 1/19/2023	Depth: 50.0'-52.0'
	Test No.: BL6BS6CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.0 tsf Cc = 0.322 Ccr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


CONSOLIDATION TEST DATA

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'
	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		

CONSOLIDATION TEST DATA

Project: PULLIAM PROPRTY RES.
Boring No.: BL-6B S-6
Sample No.: S-6
Test No.: BL6BS6CON

Location: GREEN BAY, WI
Tested By: BCM
Test Date: 1/19/2023
Sample Type: 3" ST

Project No.: 11225052
Checked By: BCM
Depth: 50.0'-52.0'
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

Estimated Specific Gravity: 2.72
Initial Void Ratio: 0.87
Final Void Ratio: 0.57

Liquid Limit: 41
Plastic Limit: 14
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	H11	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	---

CONSOLIDATION TEST DATA

Project: PULLIAM PROPRTY RES.
Boring No.: BL-6B S-6
Sample No.: S-6
Test No.: BL6BS6CON

Location: GREEN BAY, WI
Tested By: BCM
Test Date: 1/19/2023
Sample Type: 3" ST

Project No.: 11225052
Checked By: BCM
Depth: 50.0'-52.0'
Elevation: -----

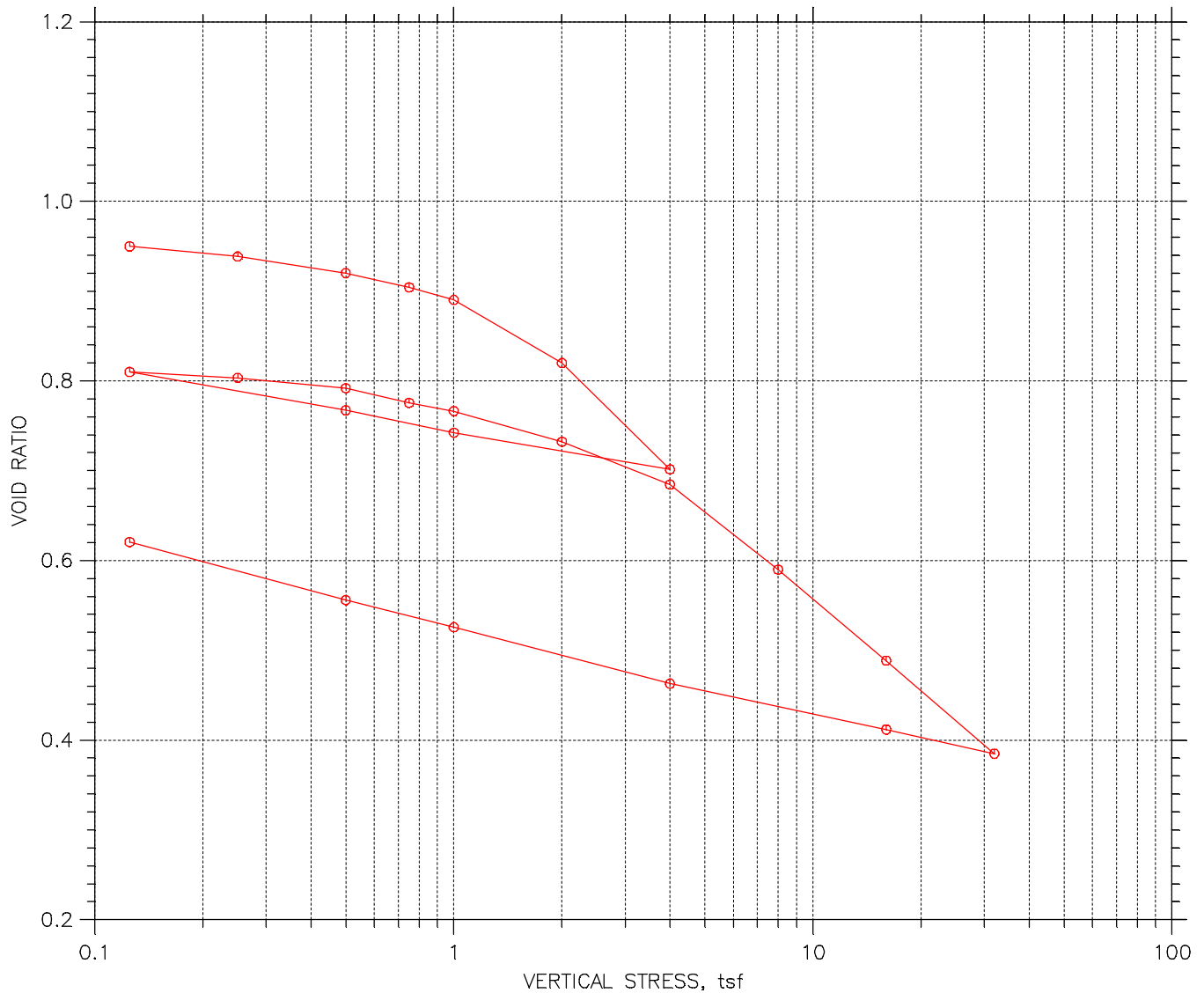


Soil Description: REDDISH BROWN LEAN CLAY (CL)


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

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. ft^2/sec	Log ft^2/sec	Ave. 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

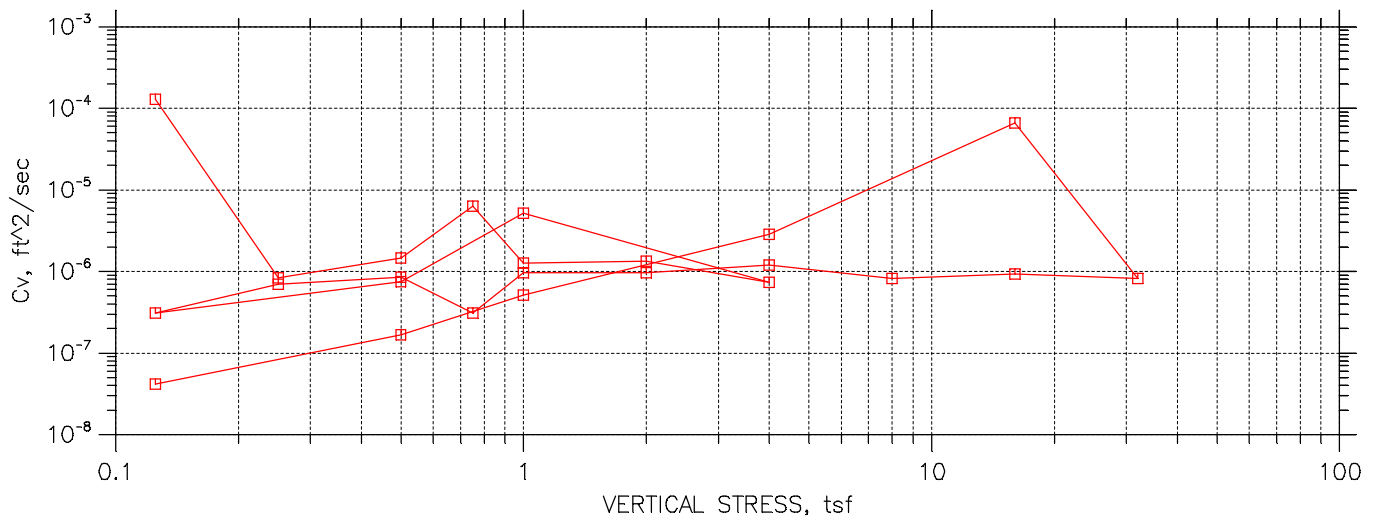
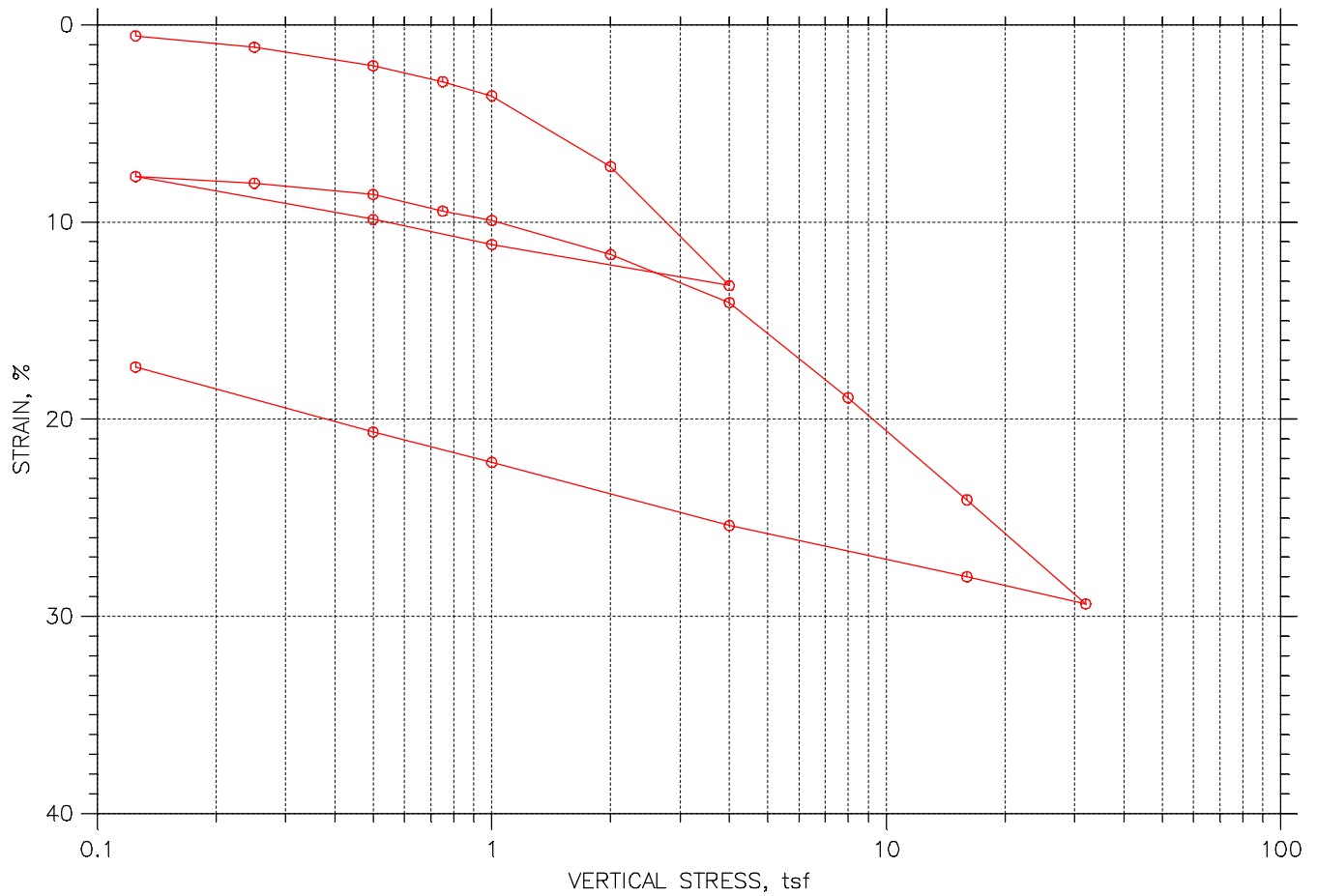
ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435




				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
	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 = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		

ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



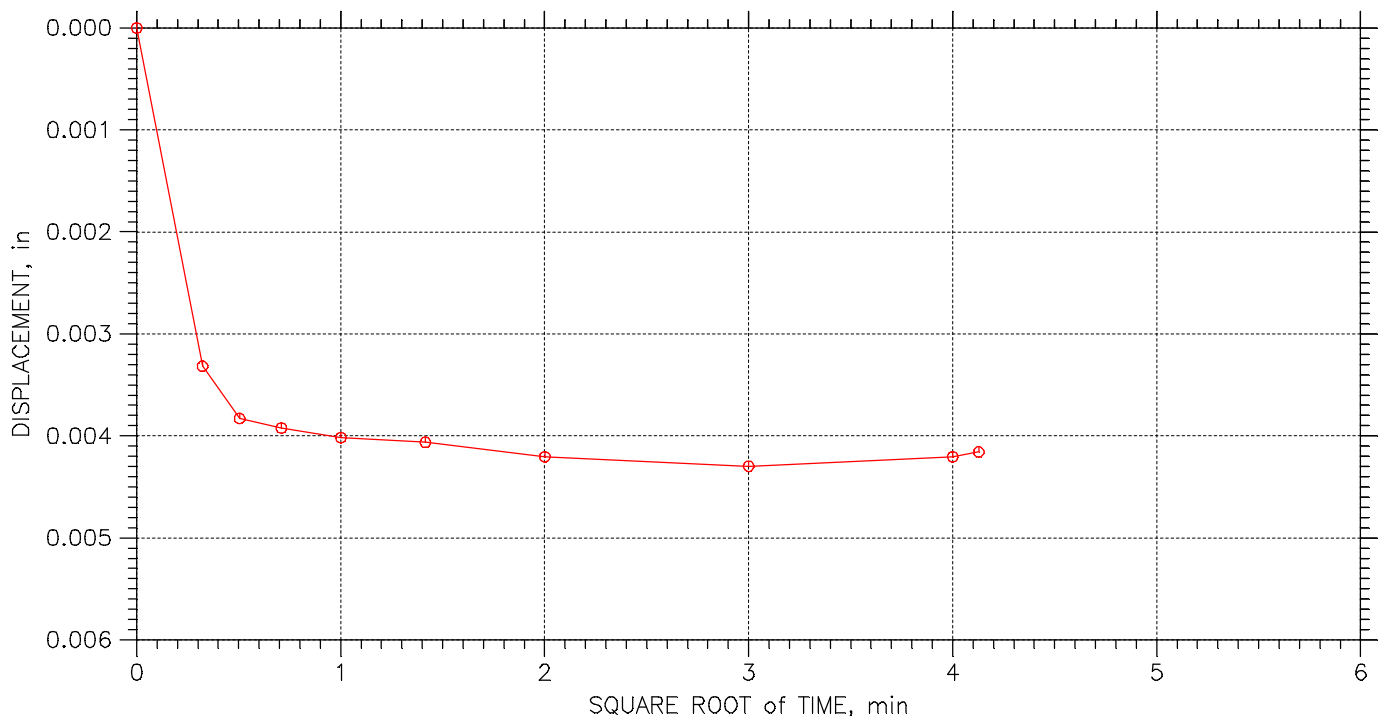
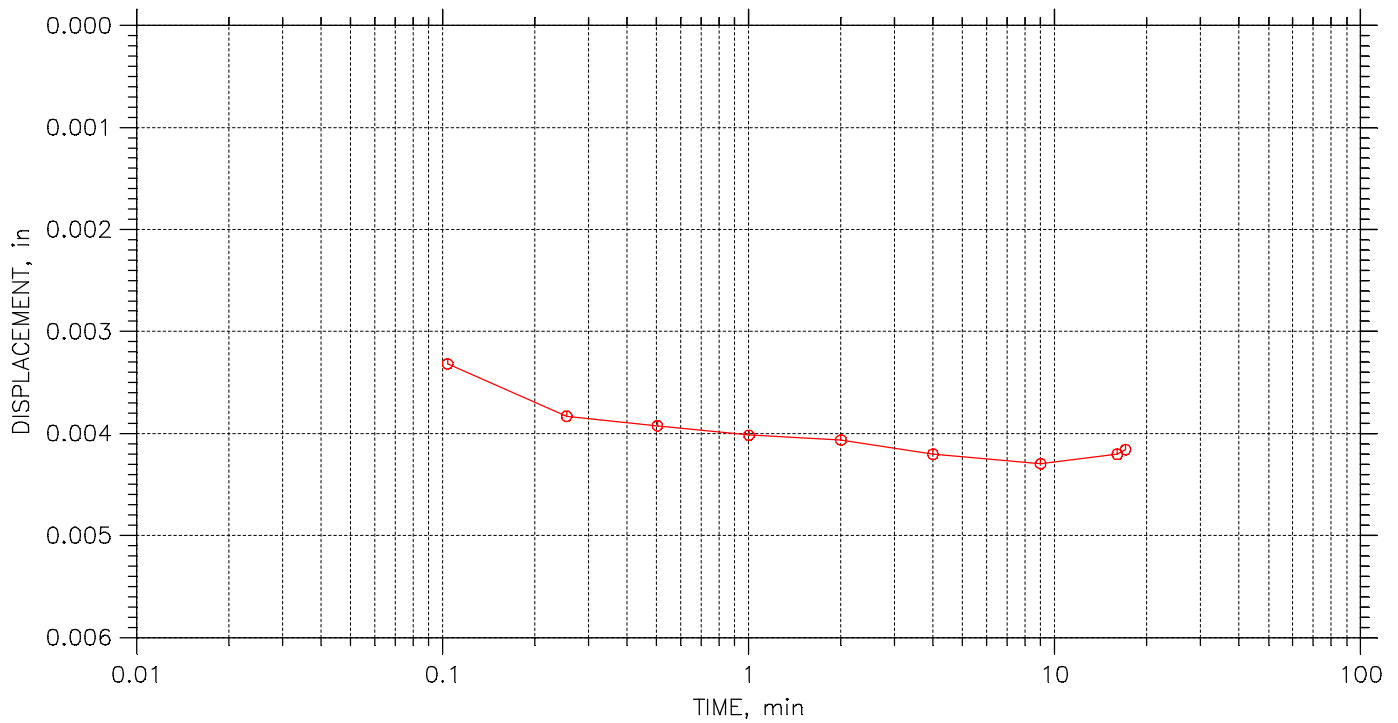
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	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $P_c = 1.2$ tsf $C_c = 0.342$ $C_{cr} = 0.097$ TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf



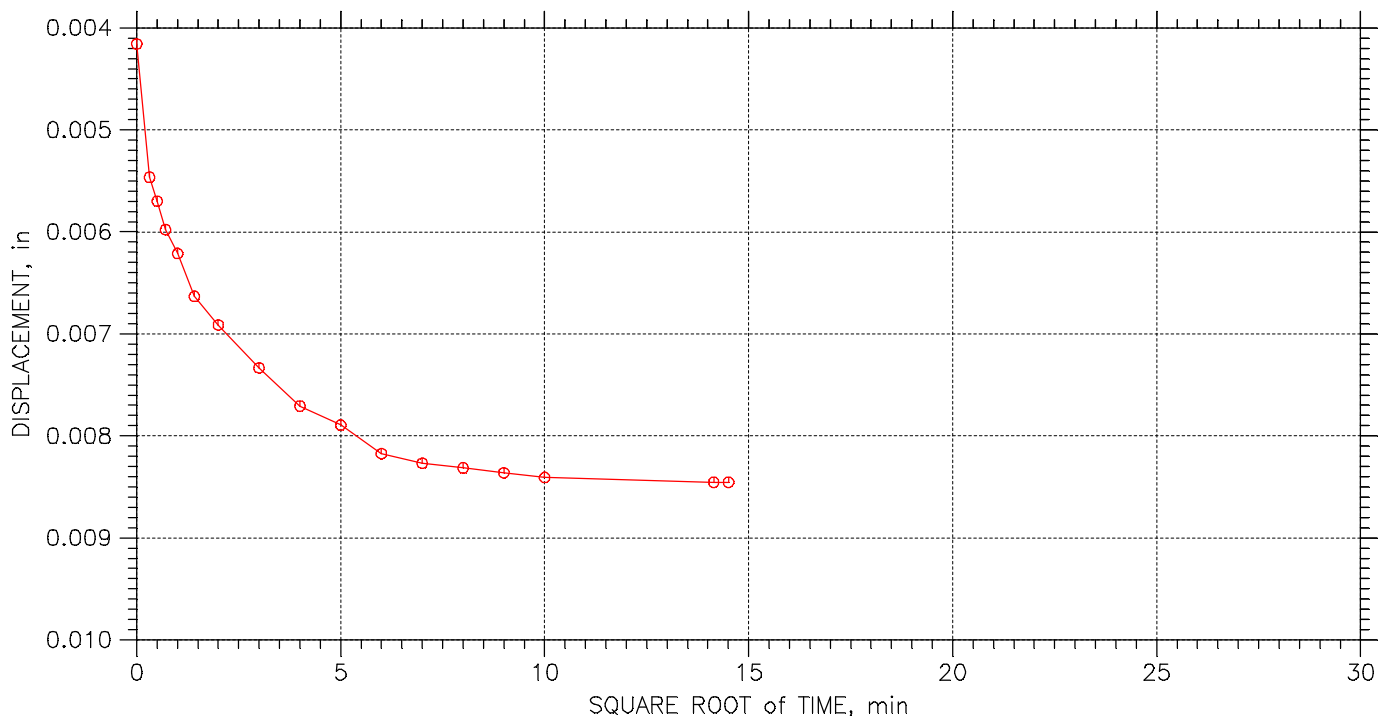
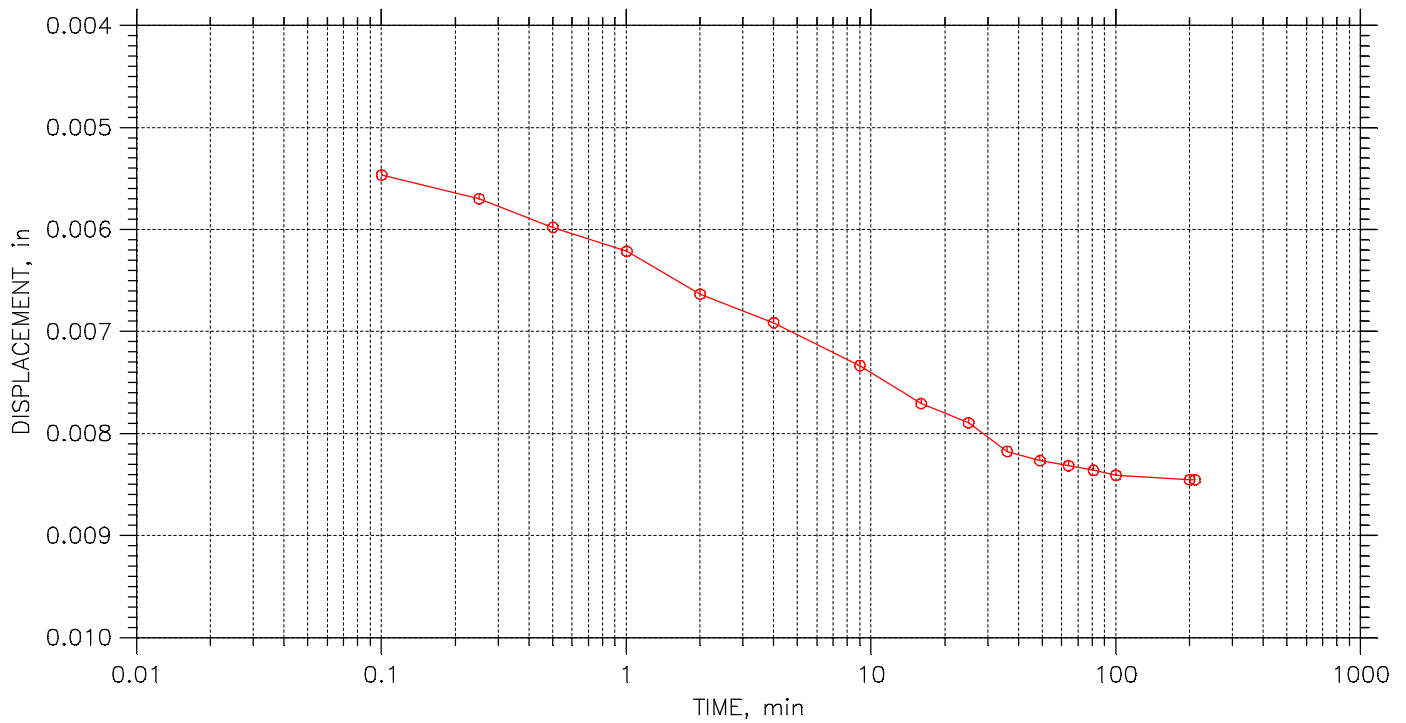
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf



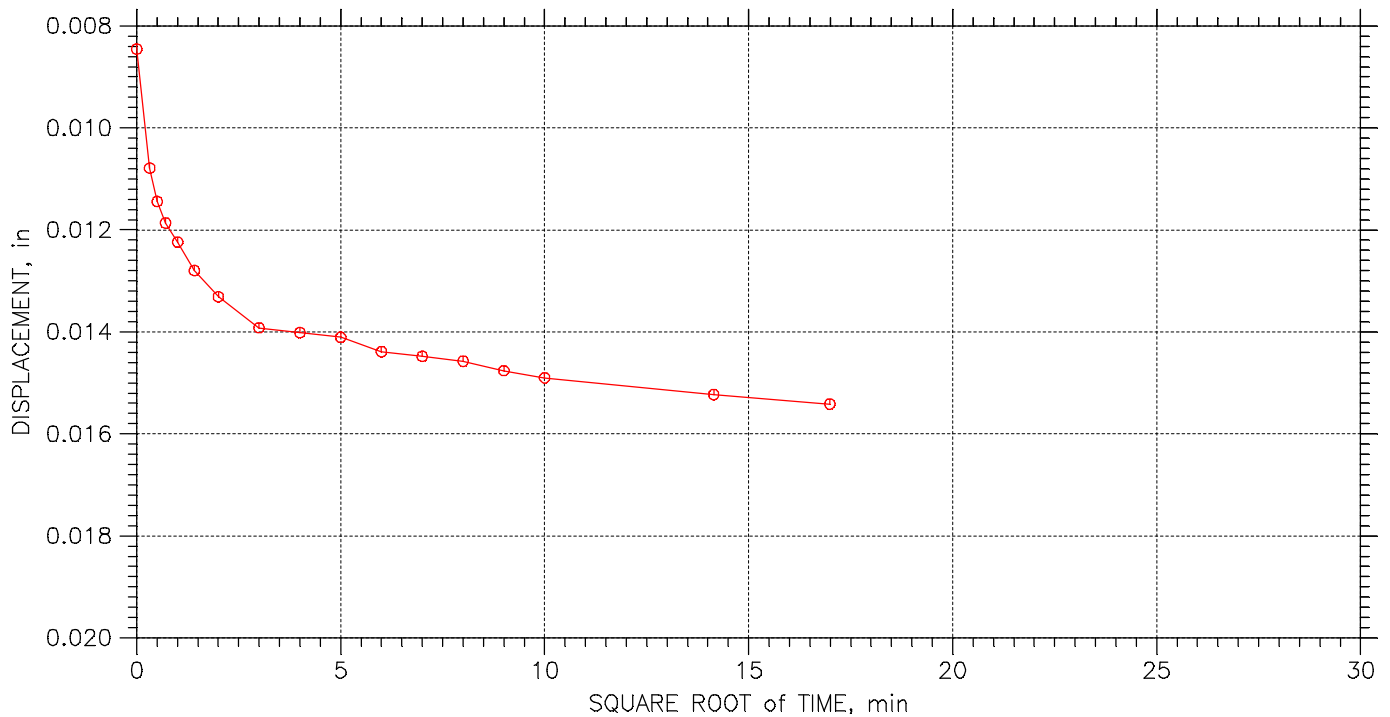
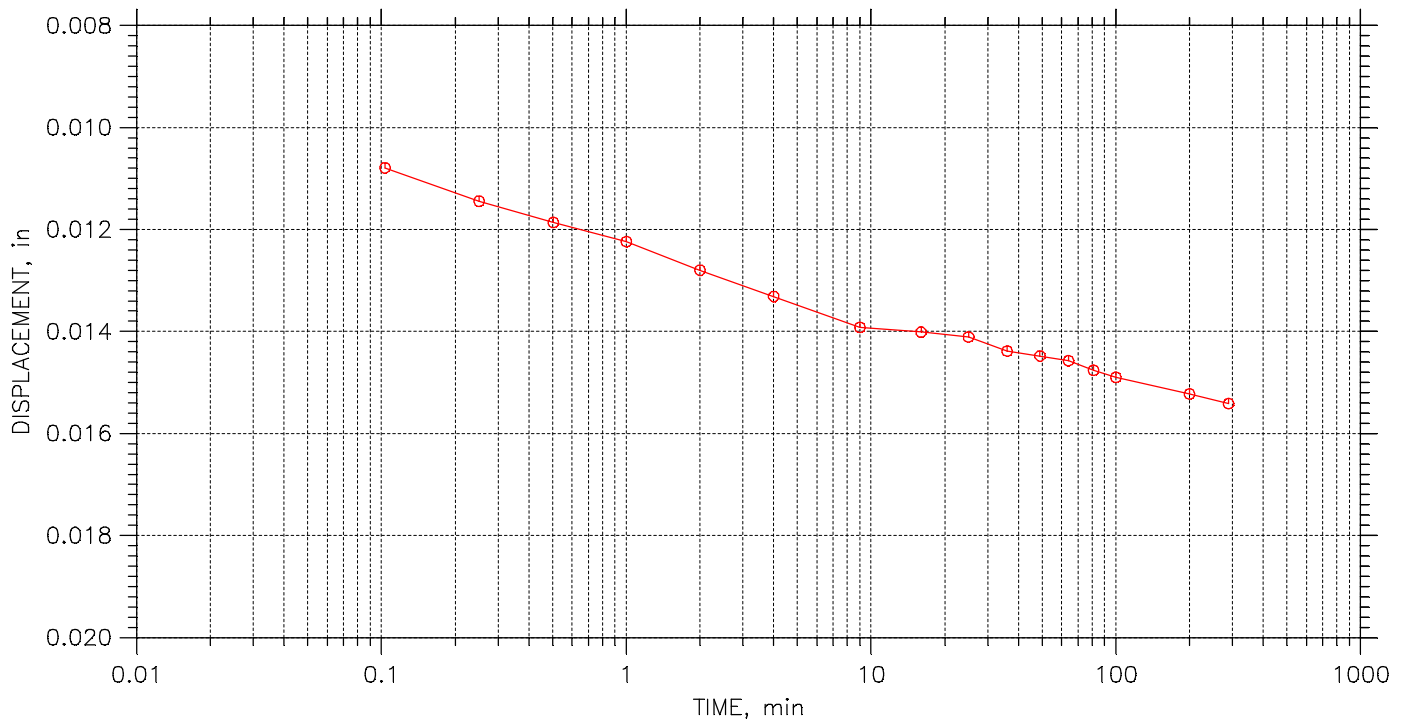
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	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf



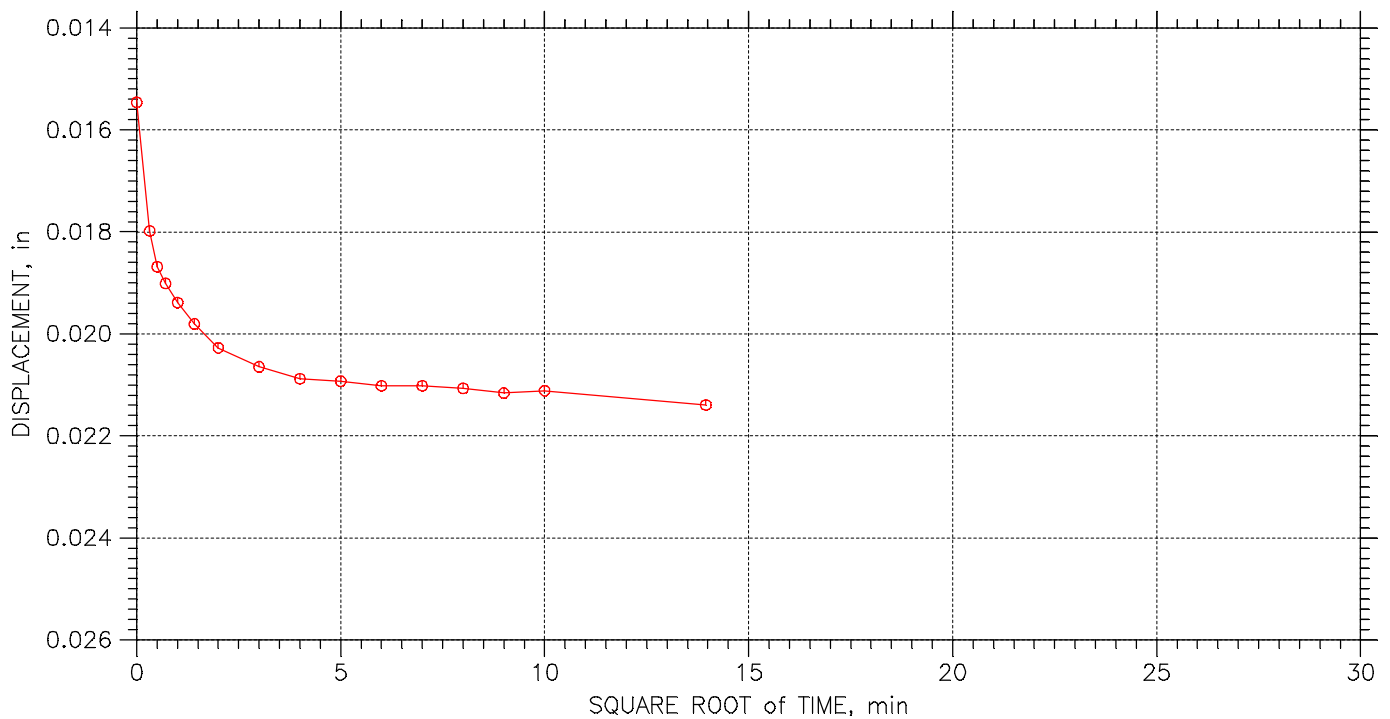
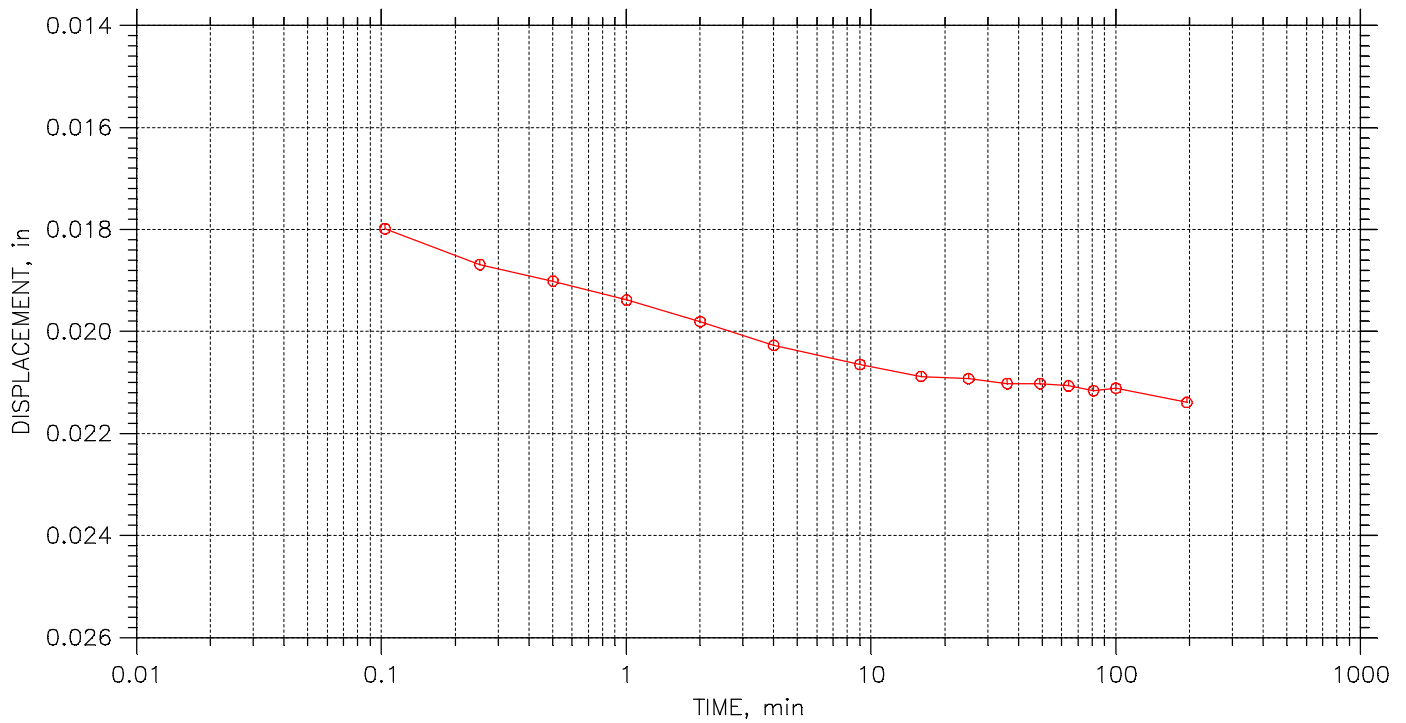
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	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf



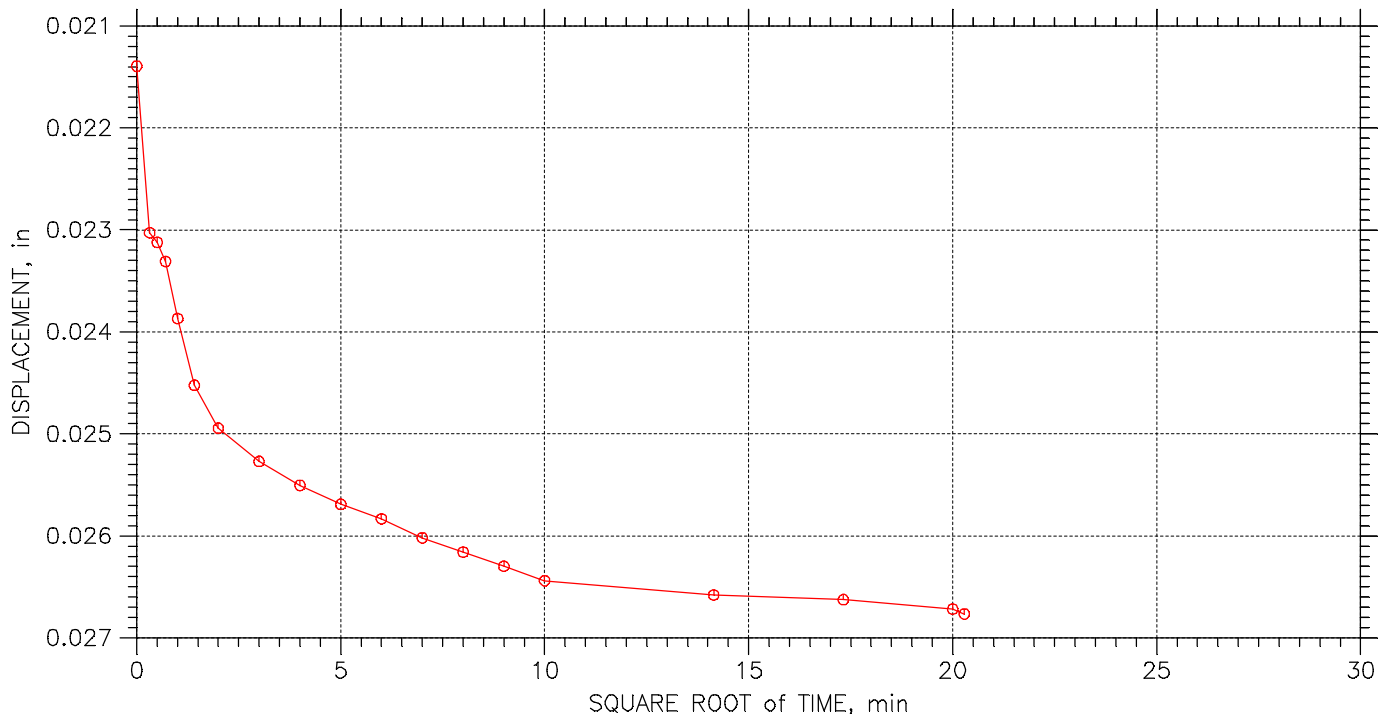
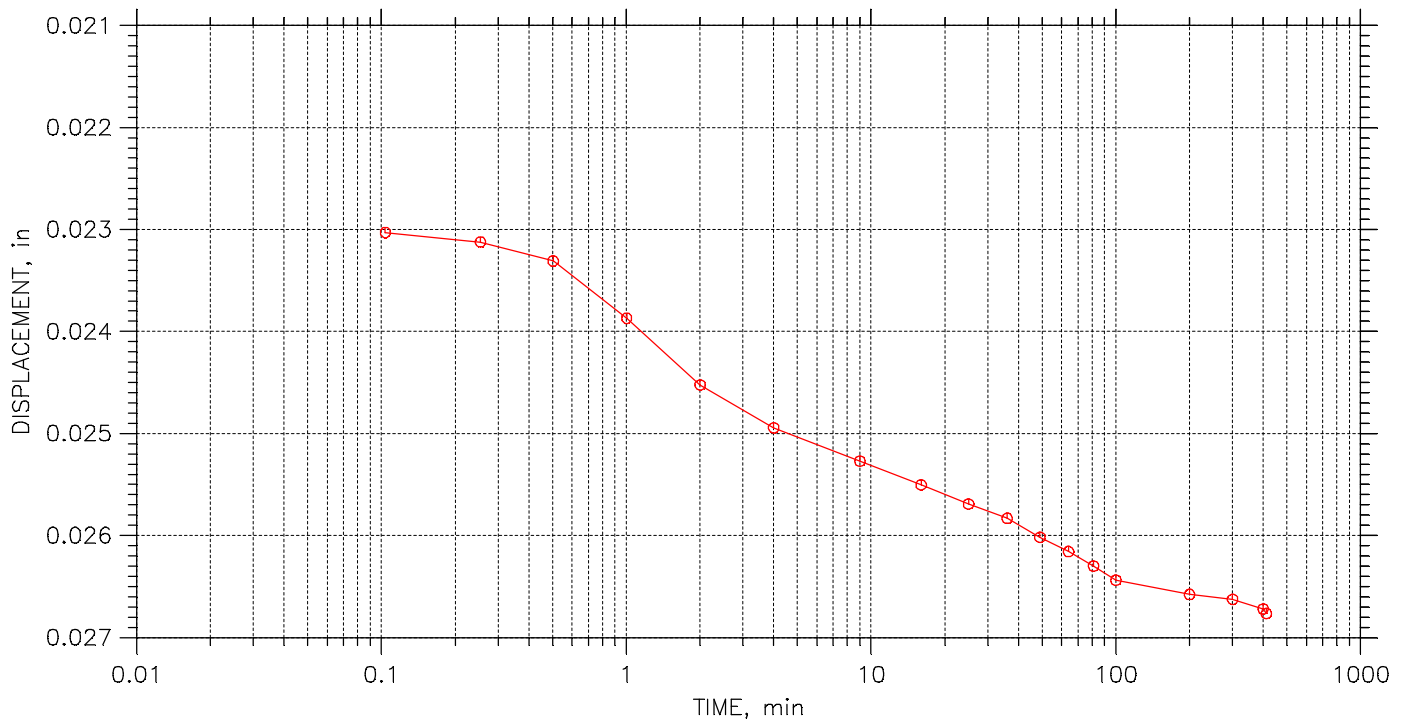
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf



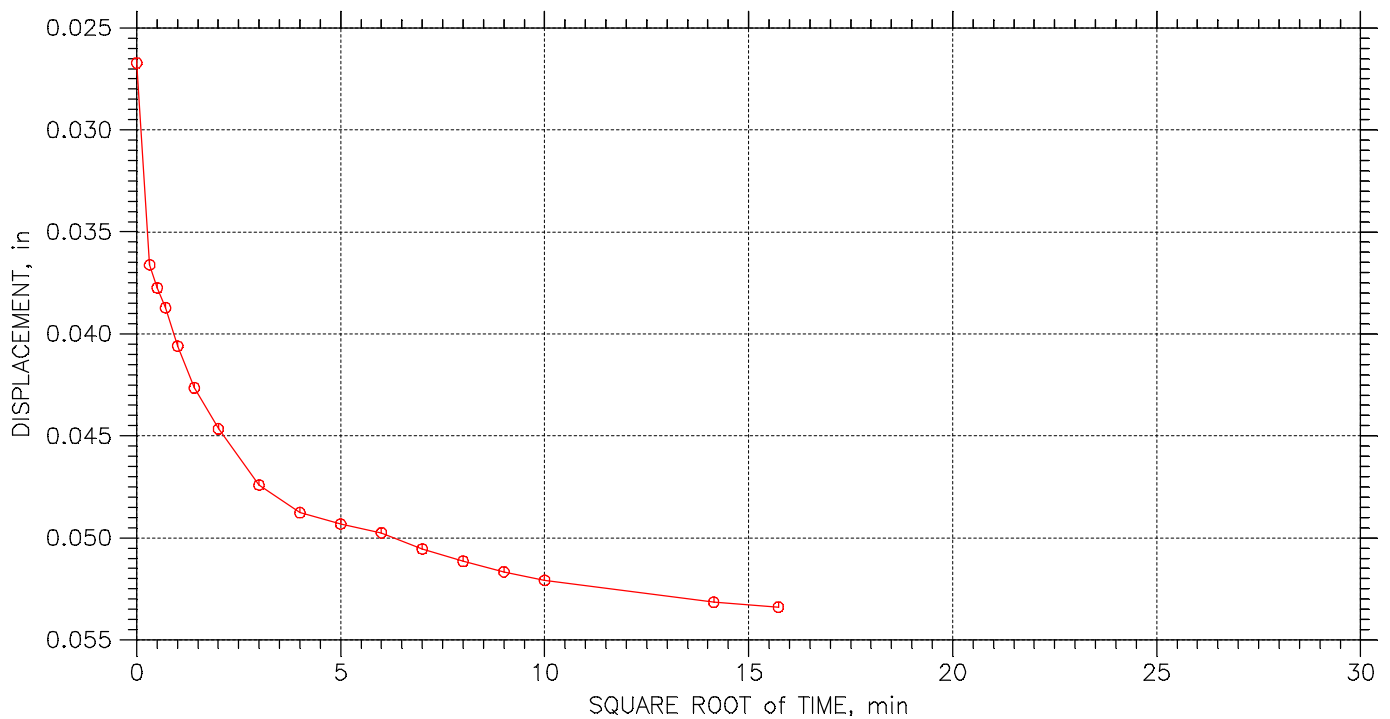
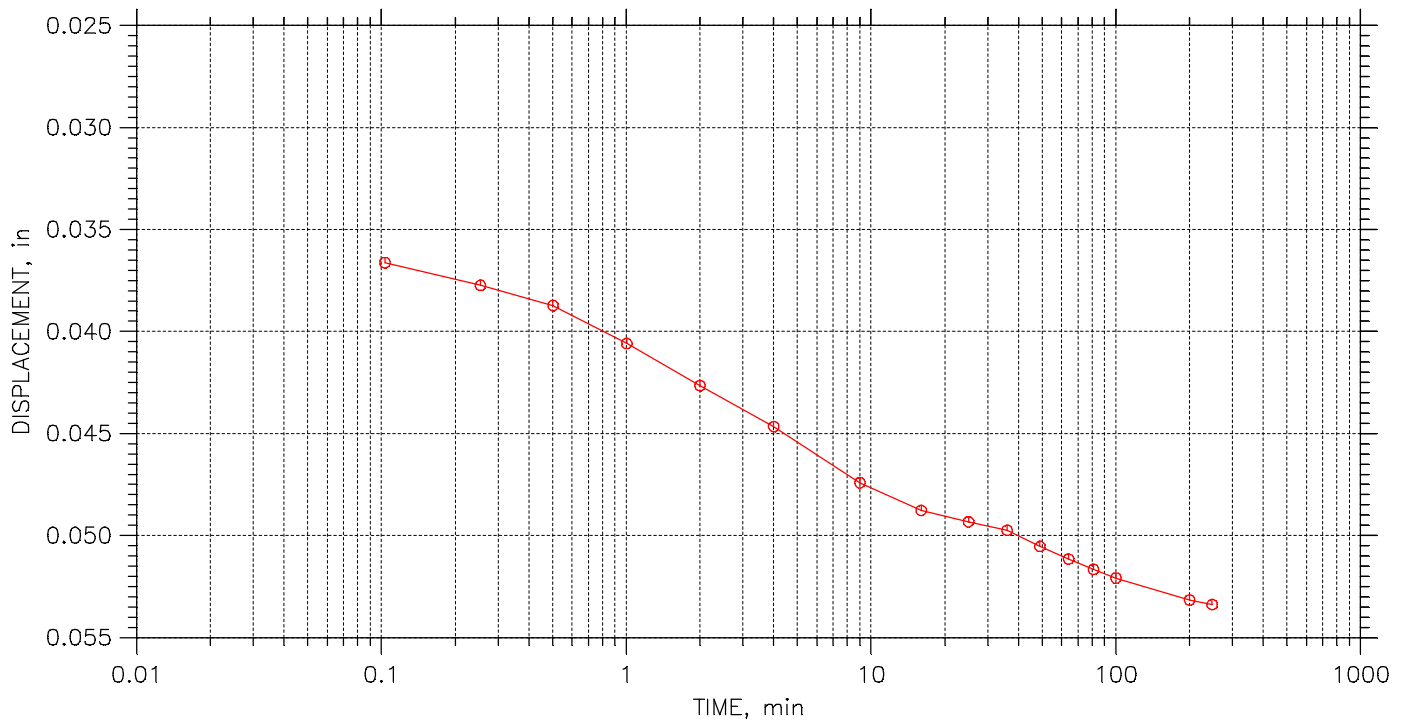
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf



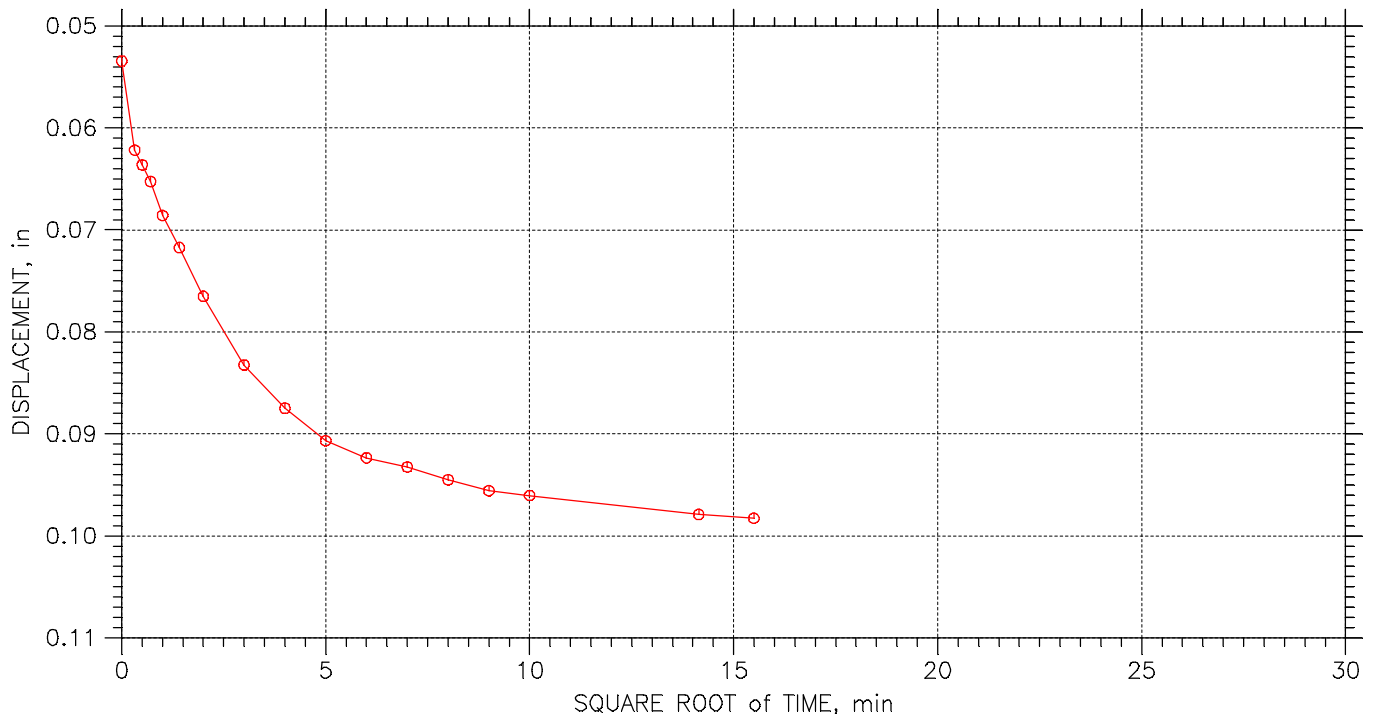
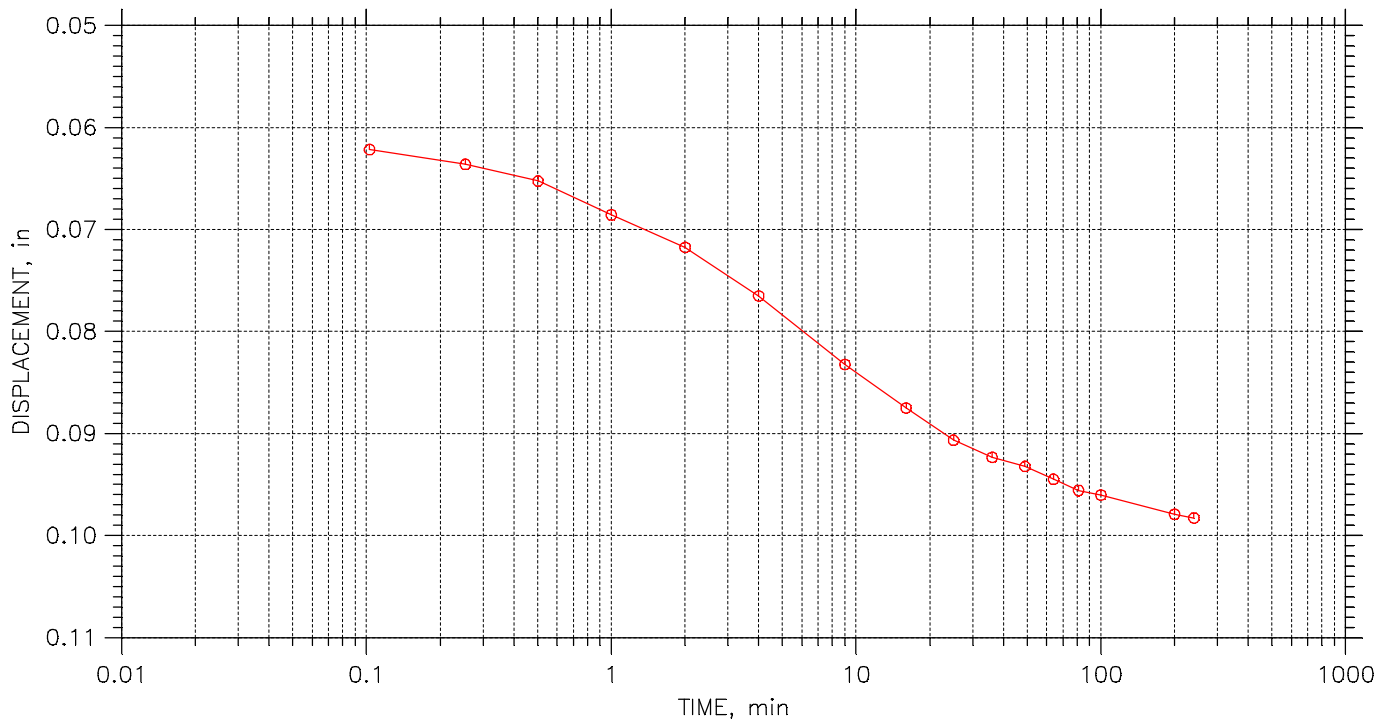
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf



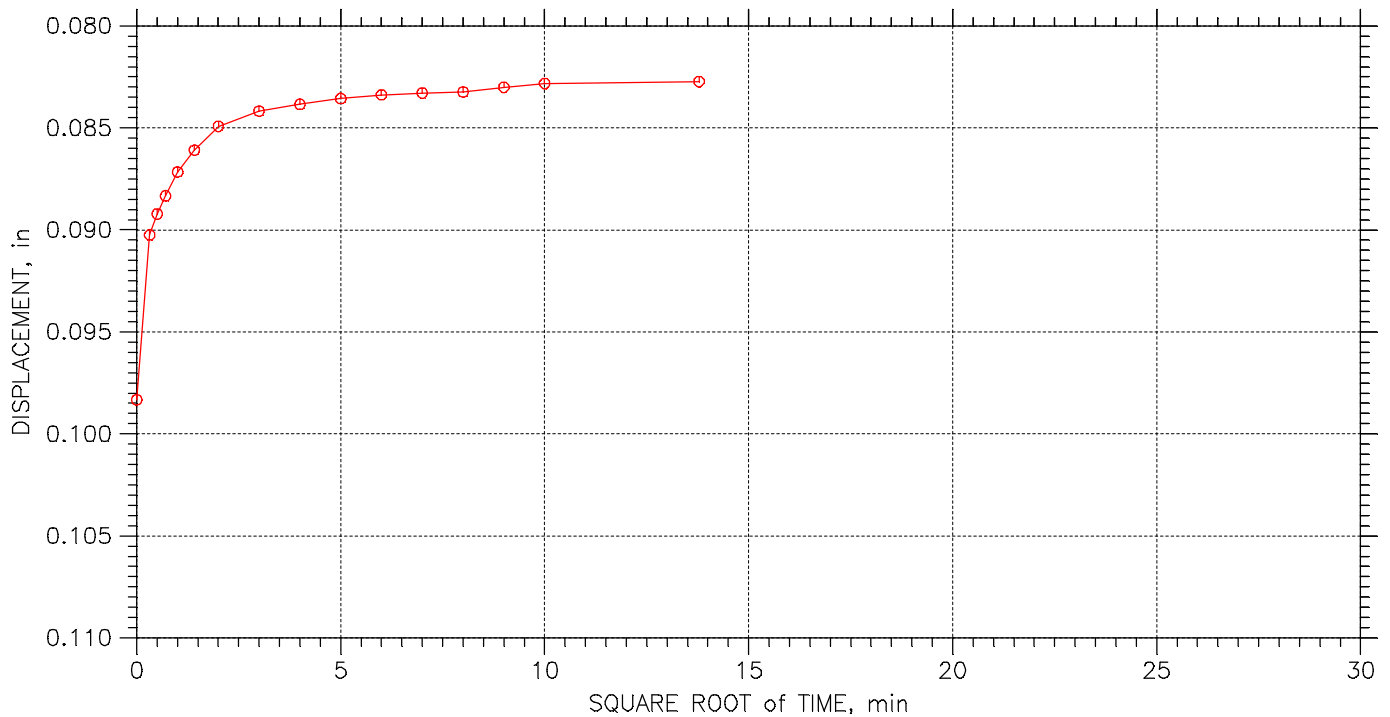
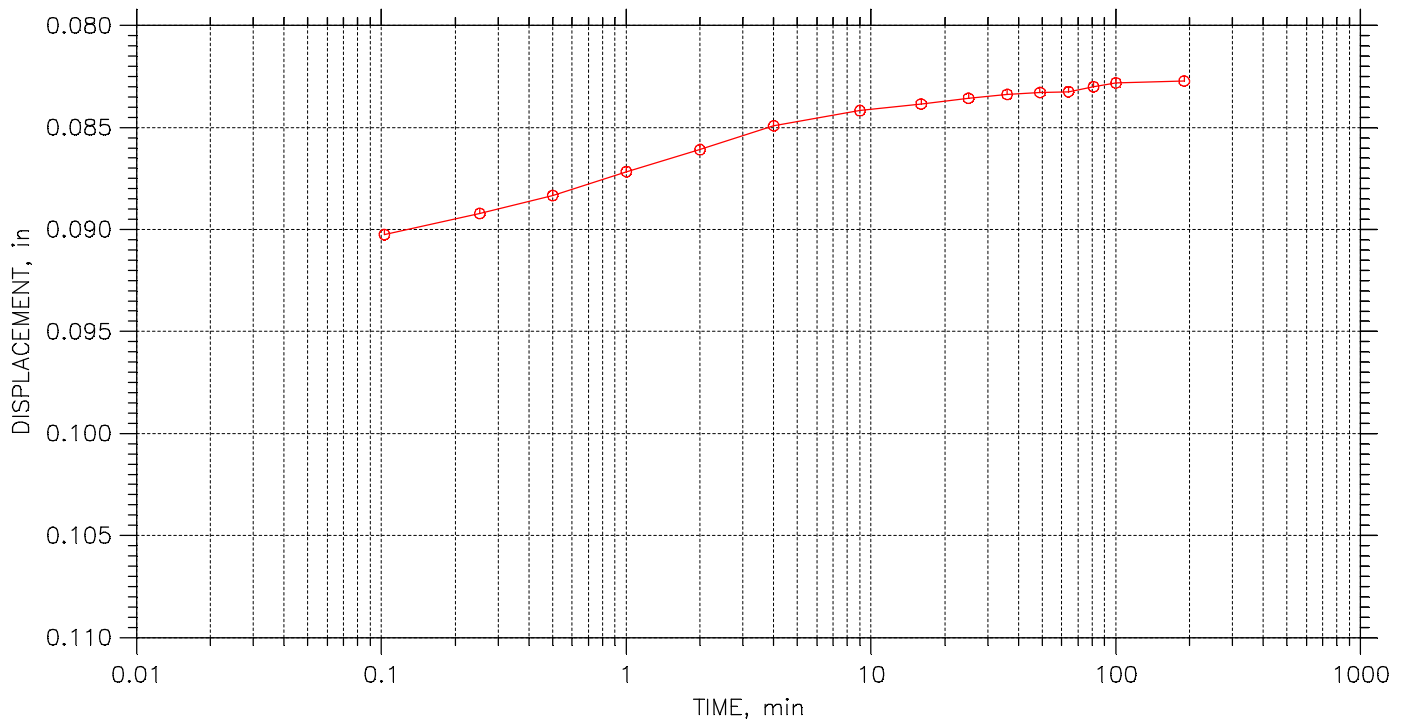
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf



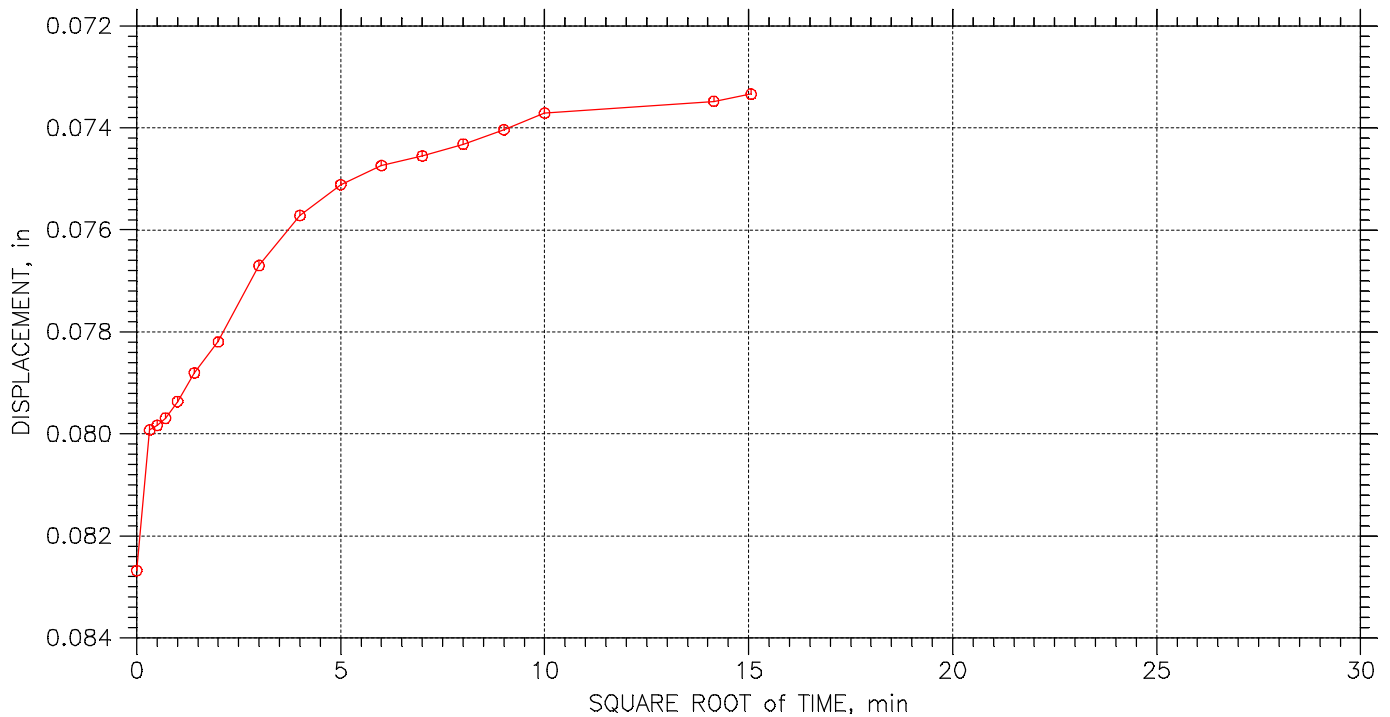
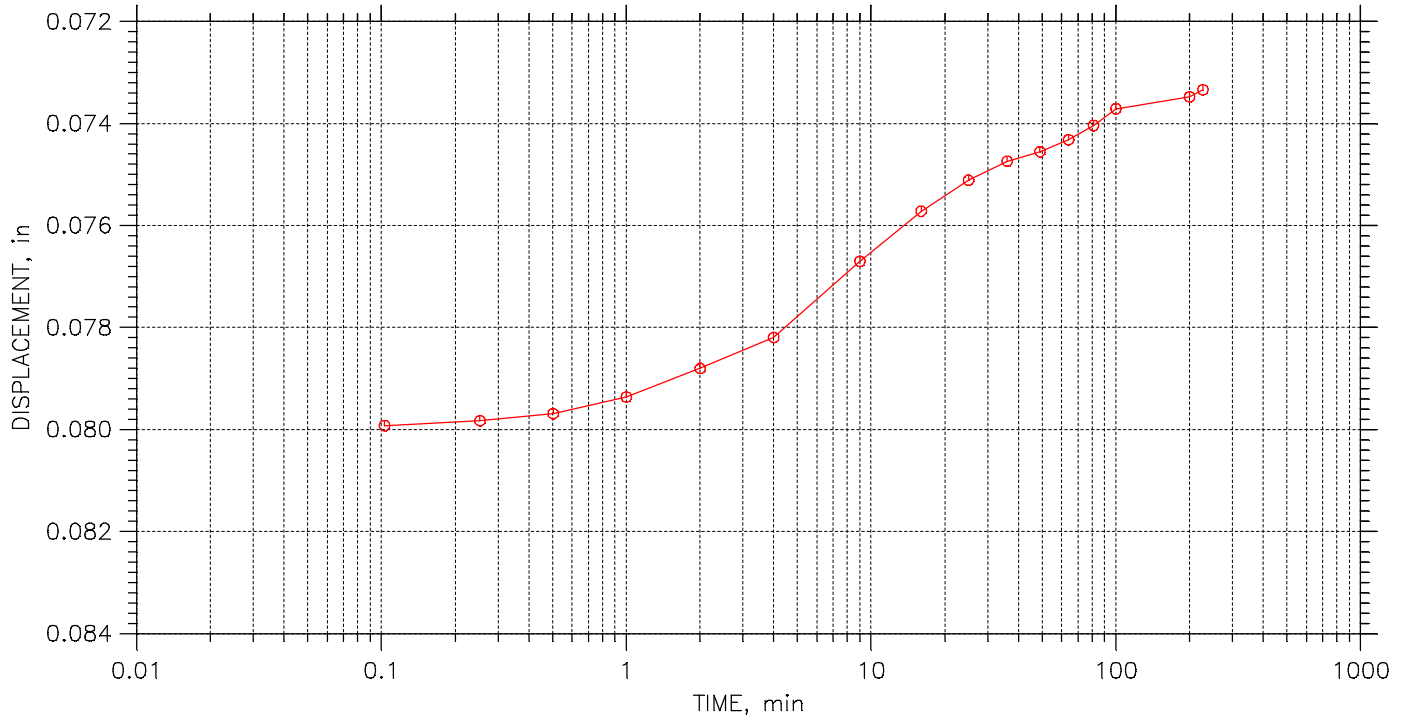
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf



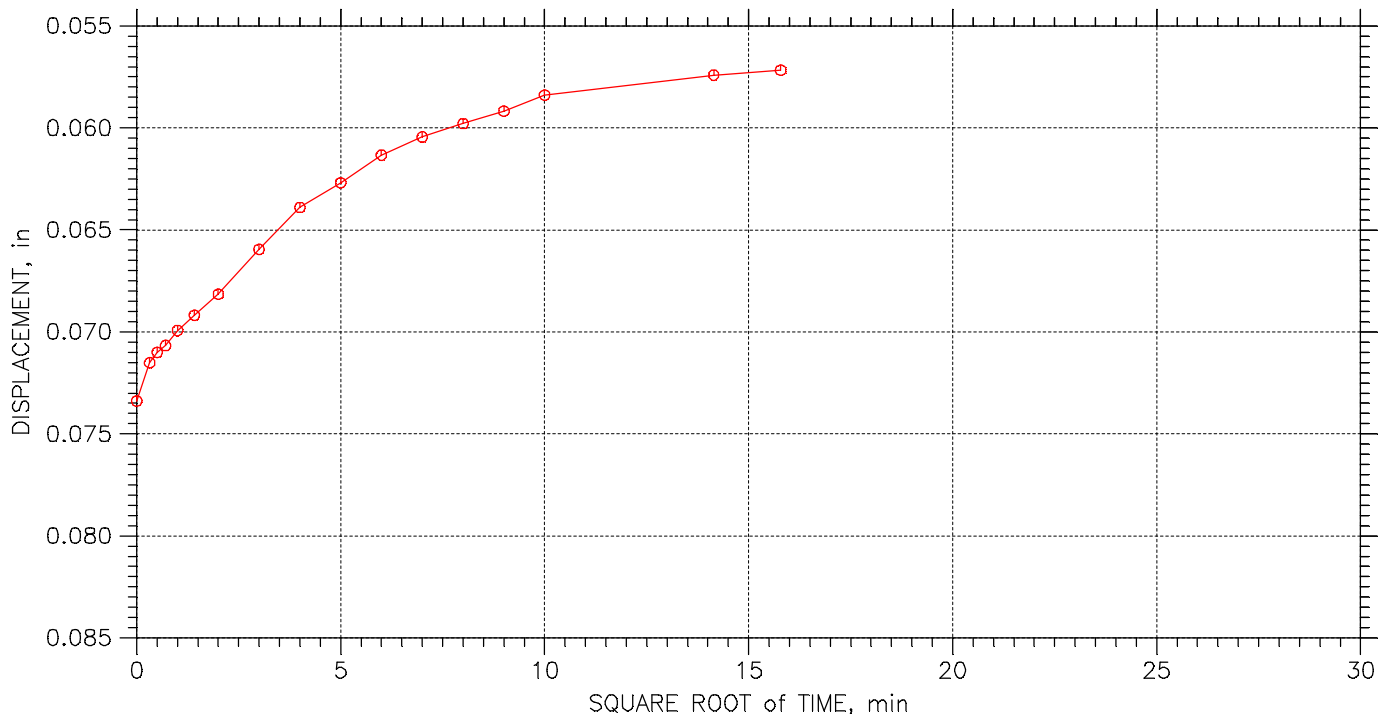
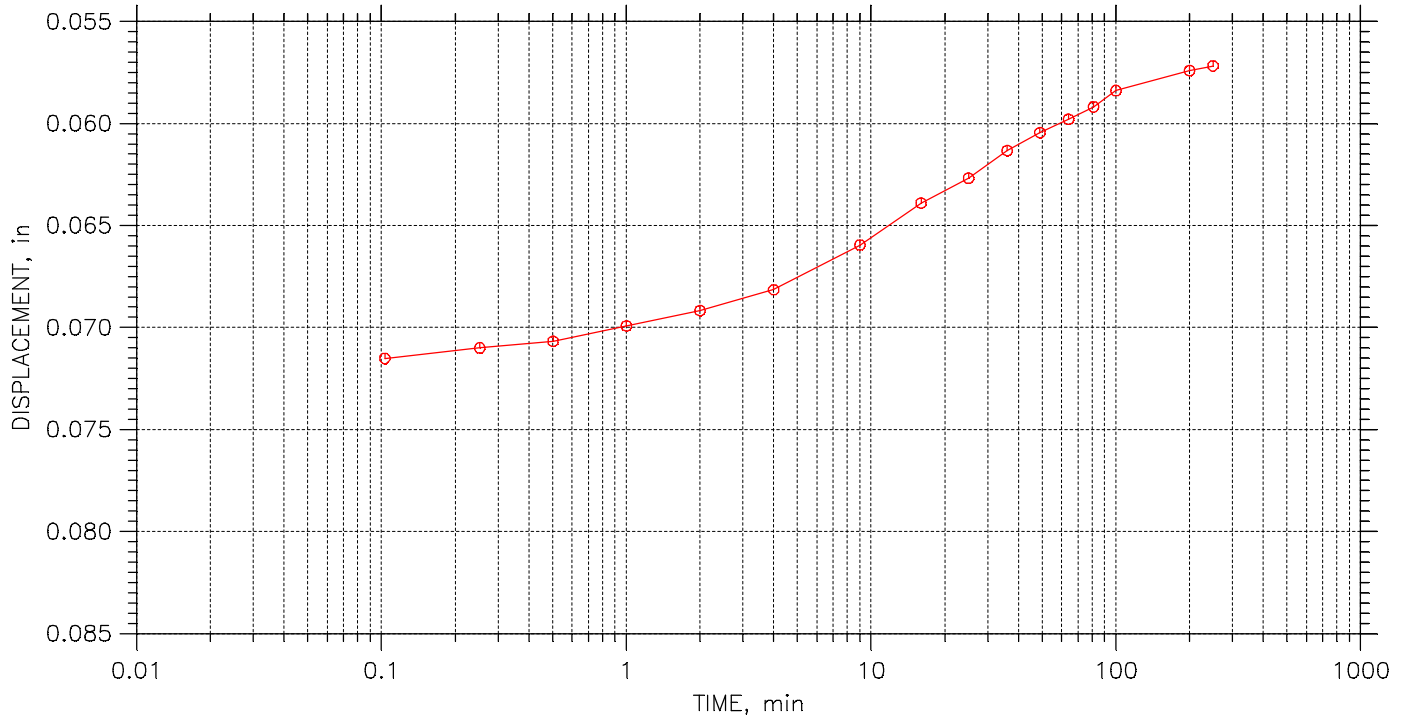
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



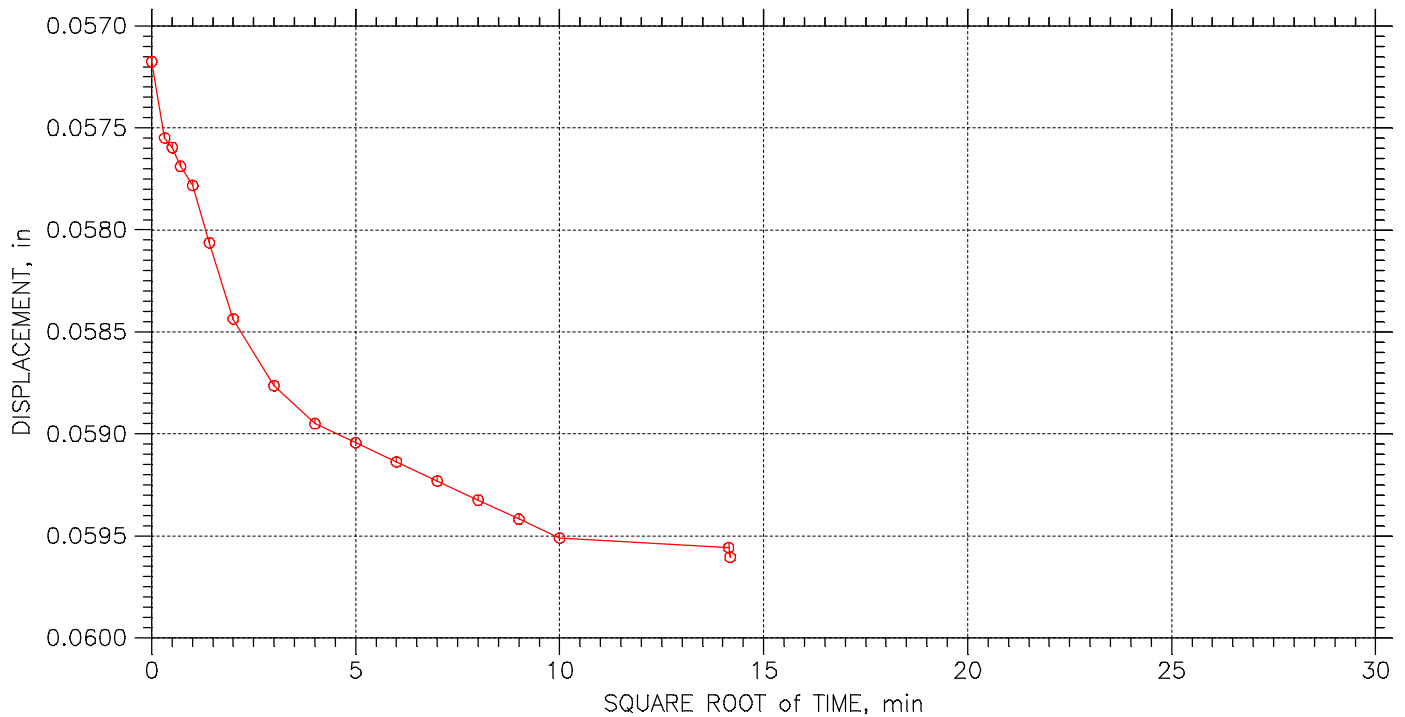
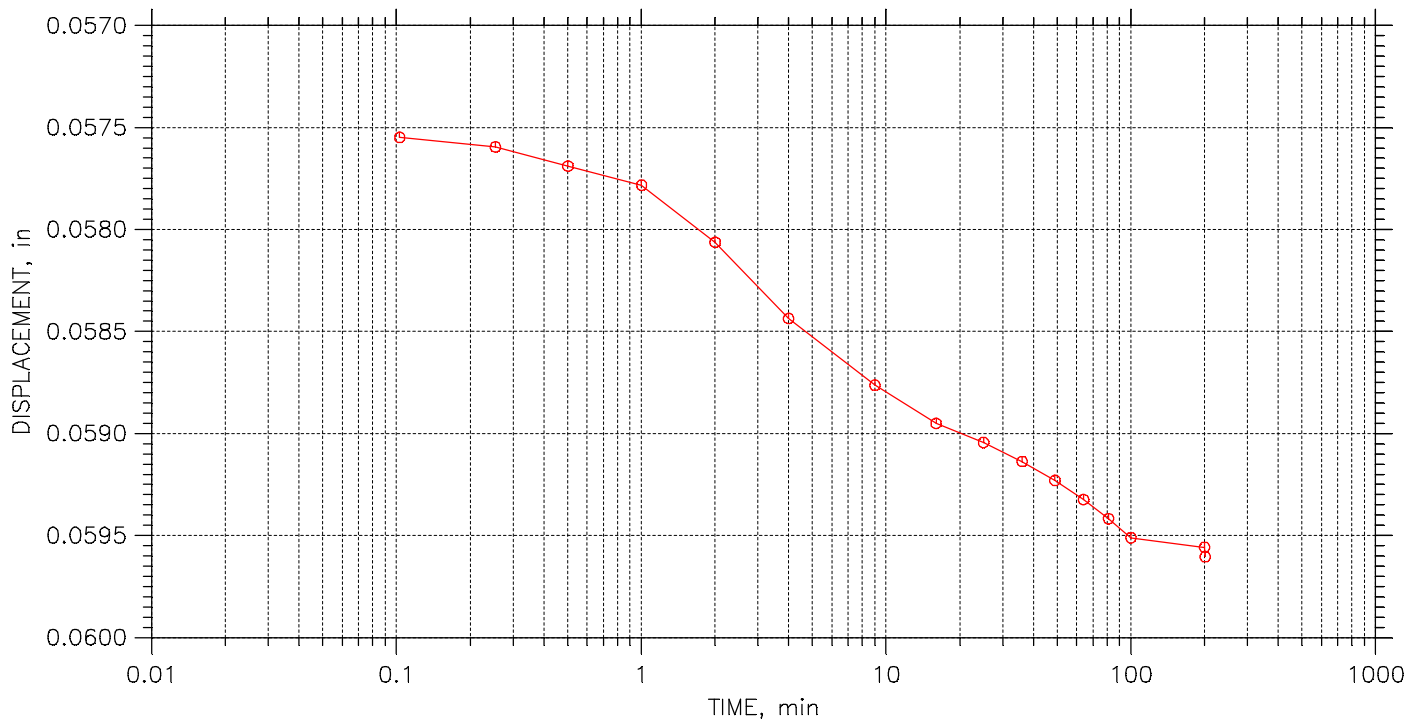
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf



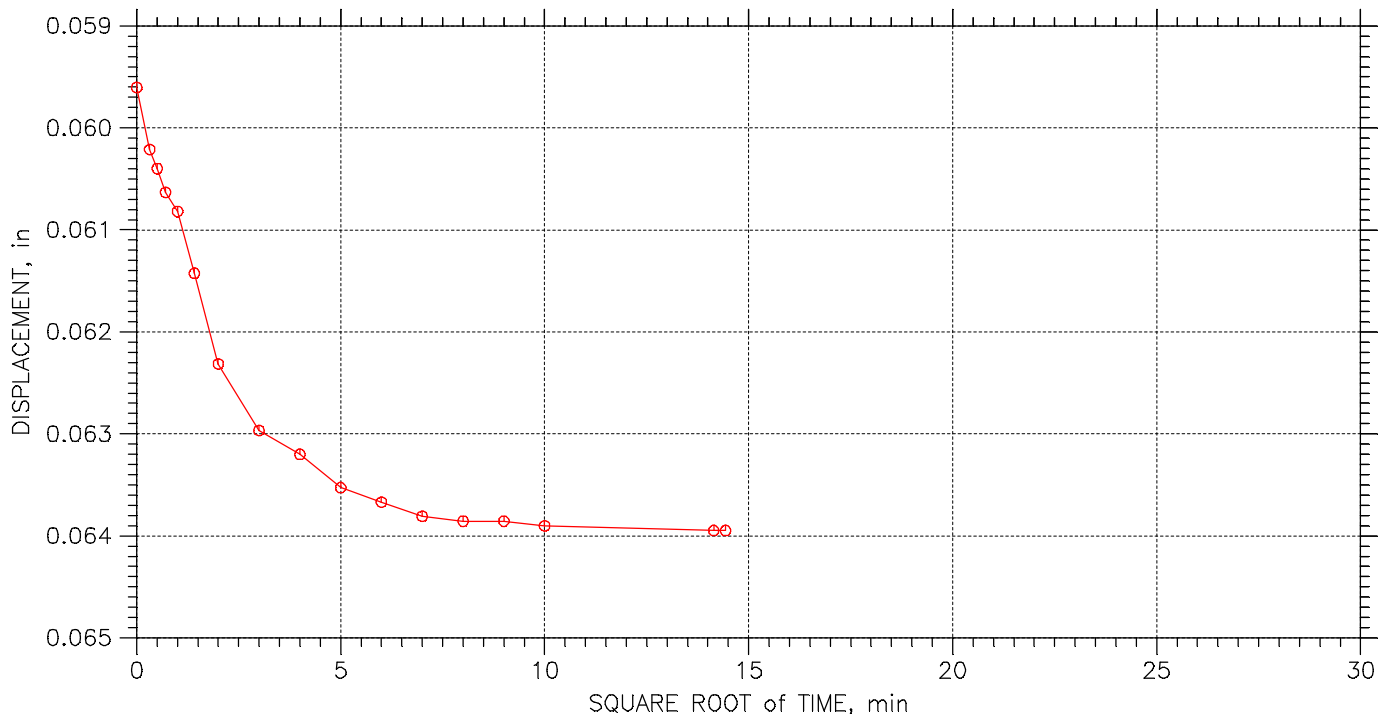
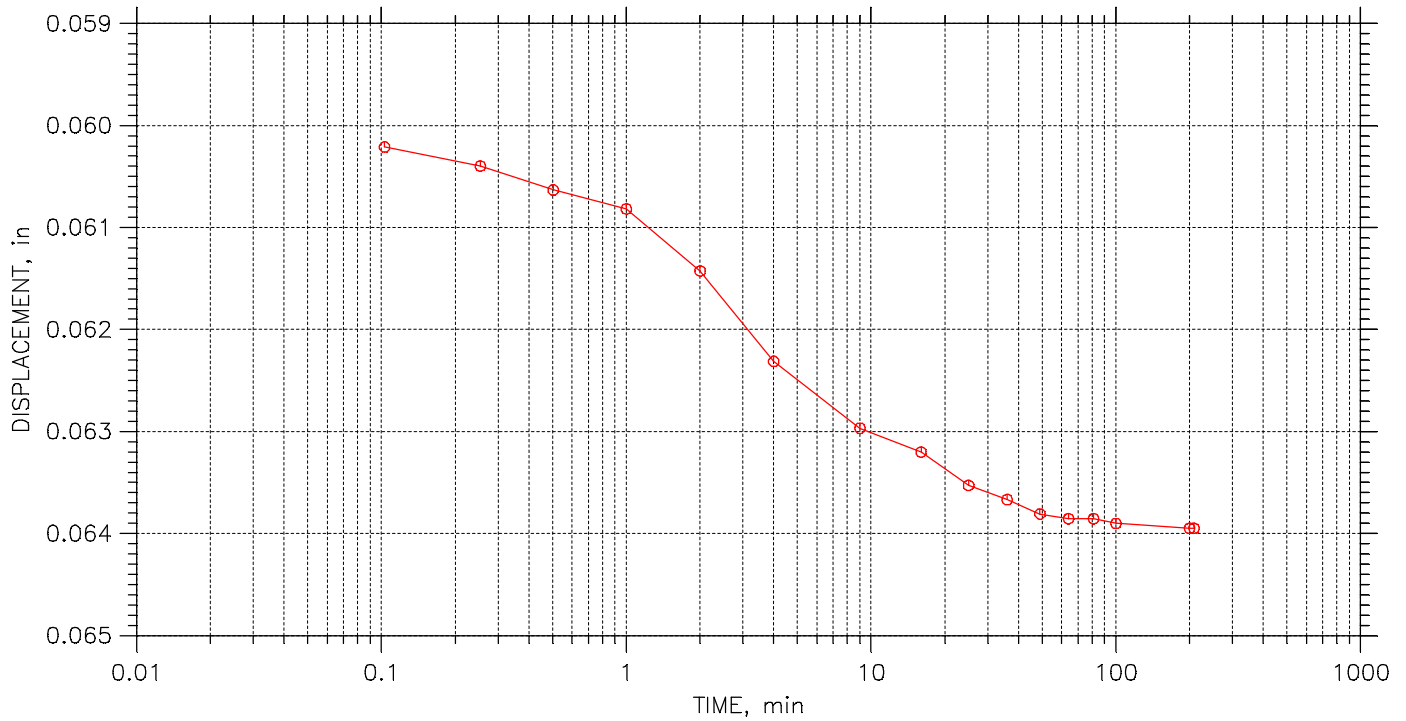
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf



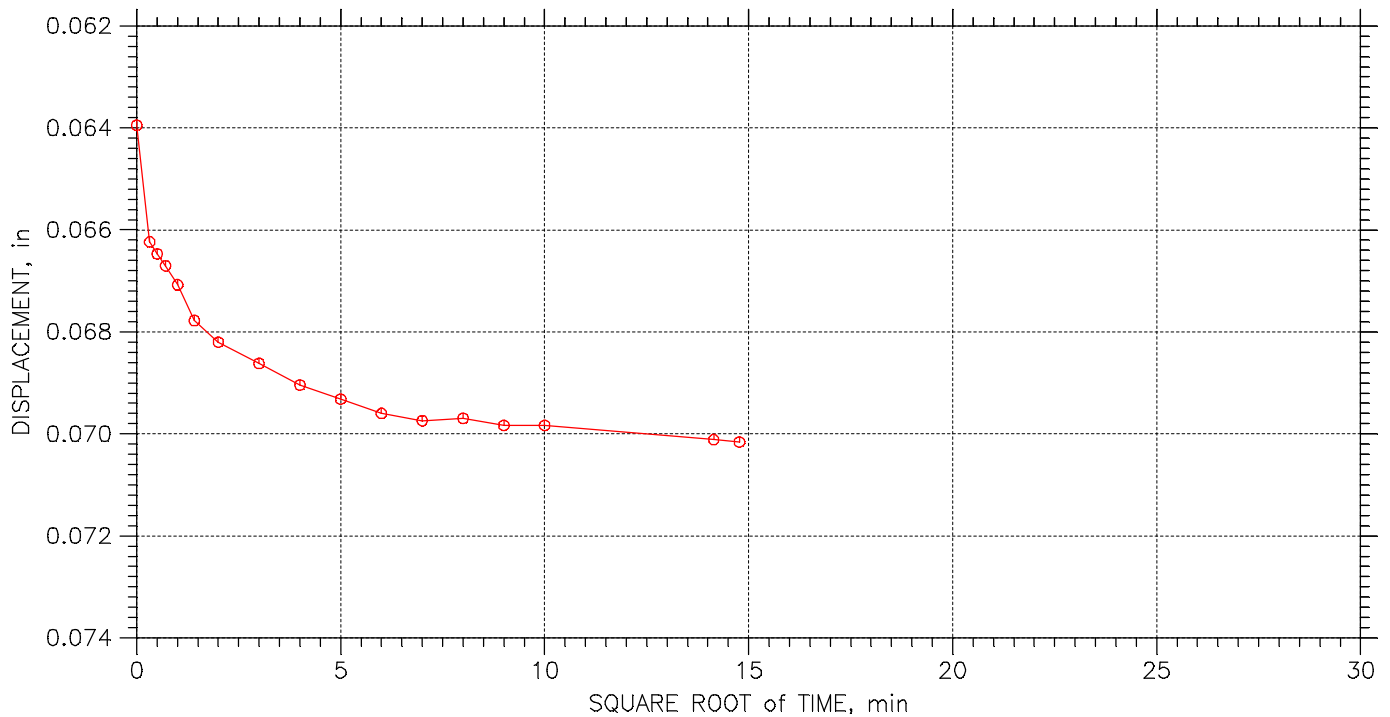
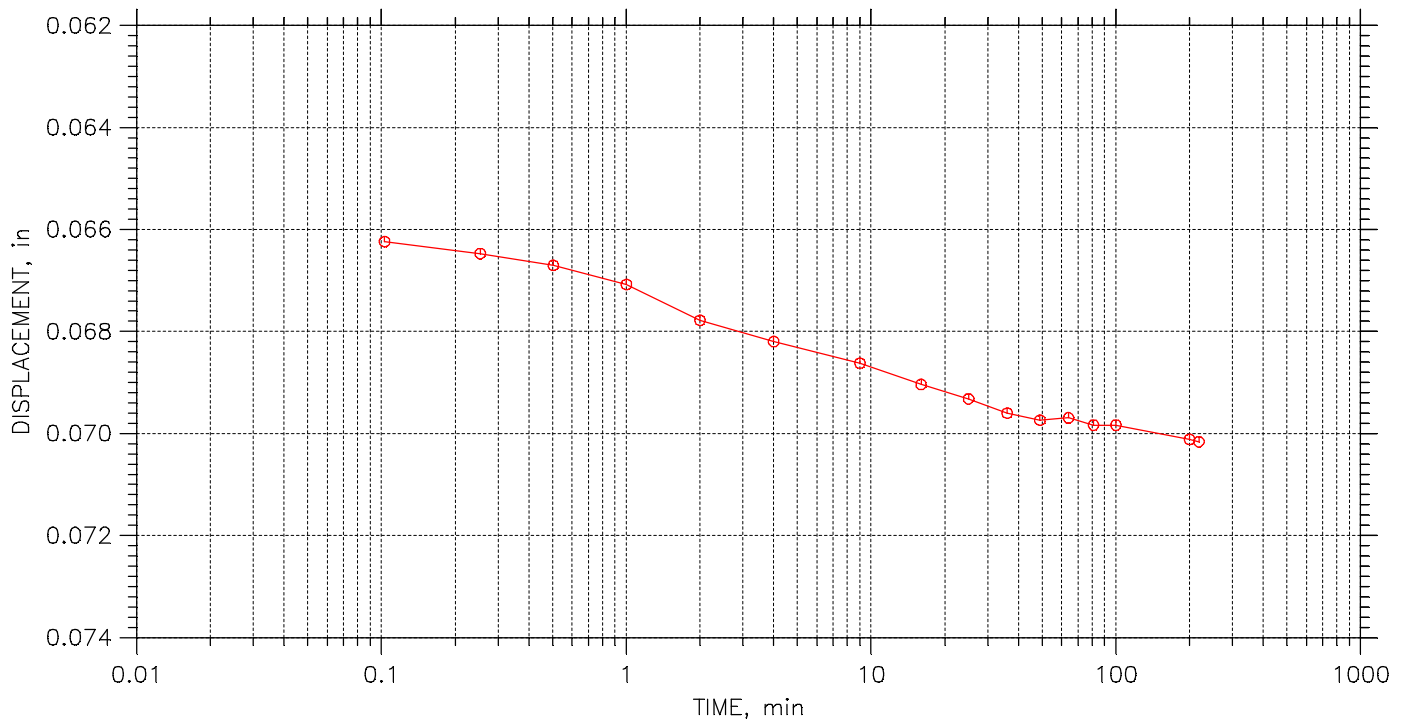
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf



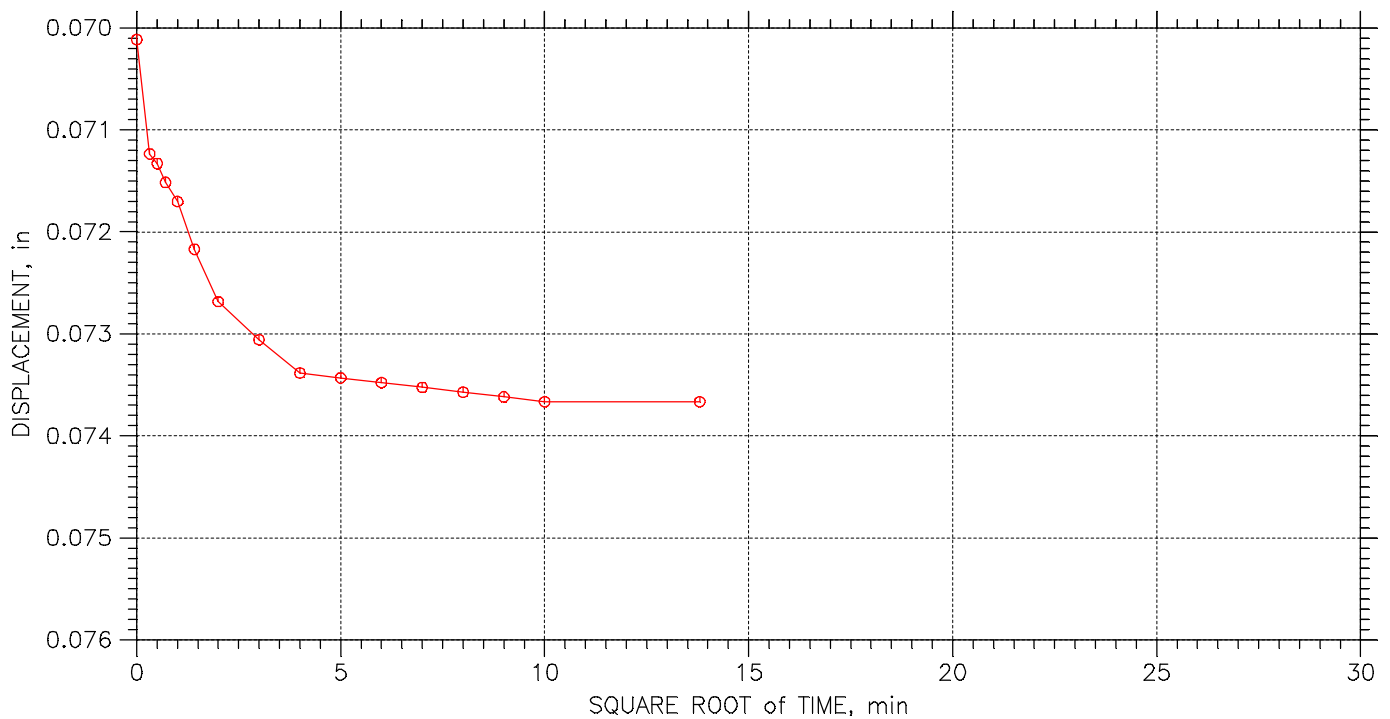
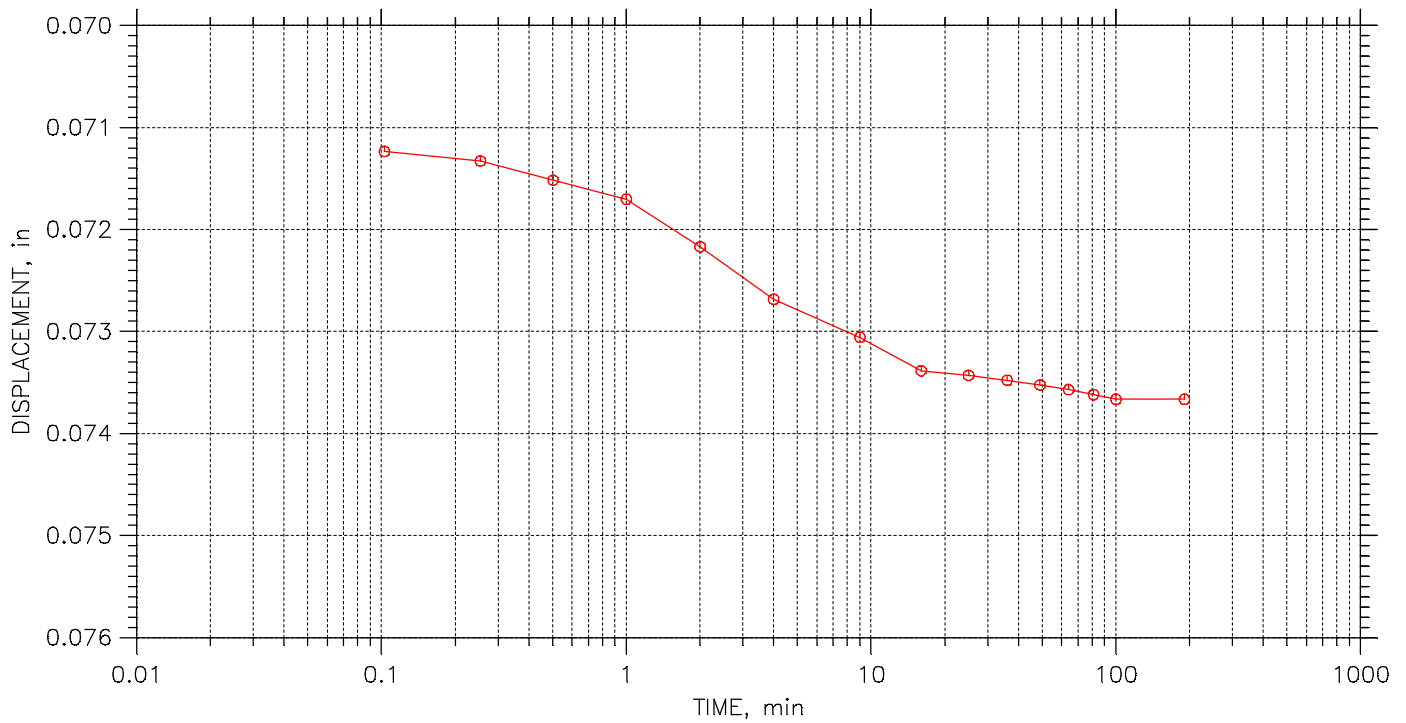
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf



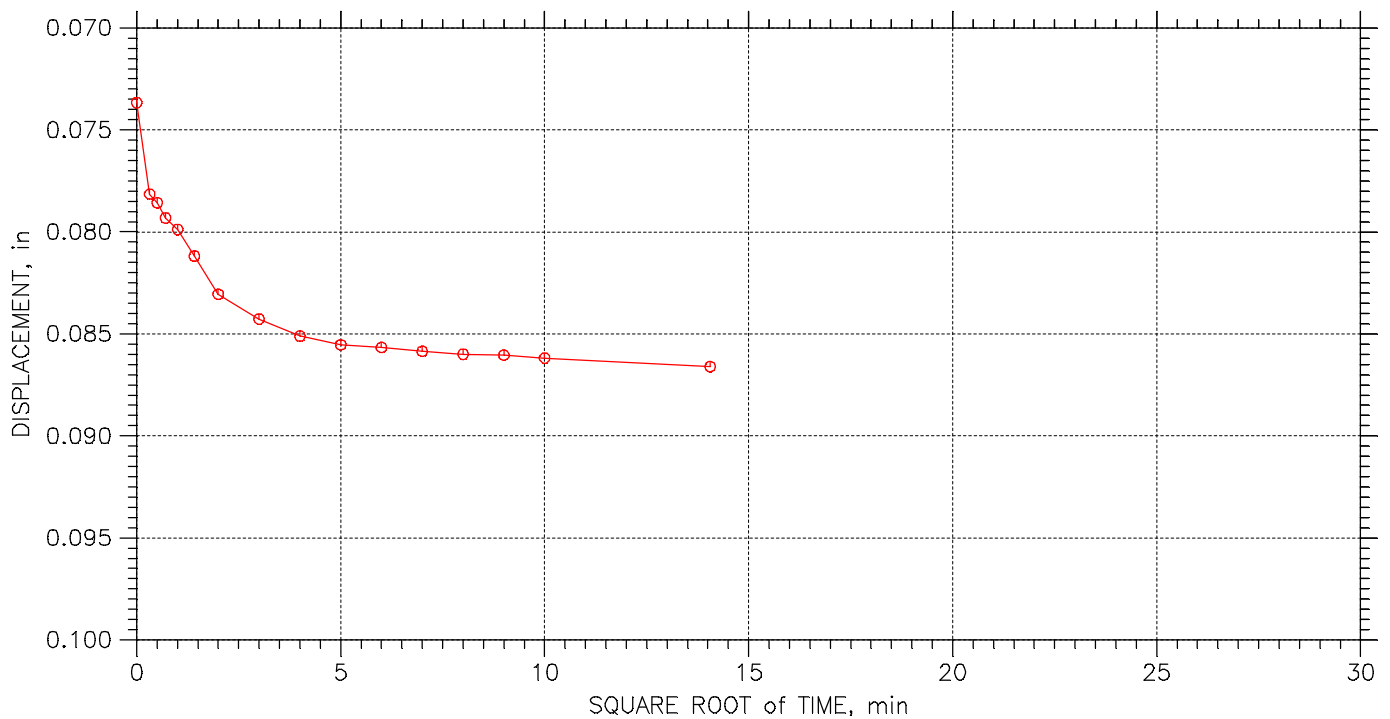
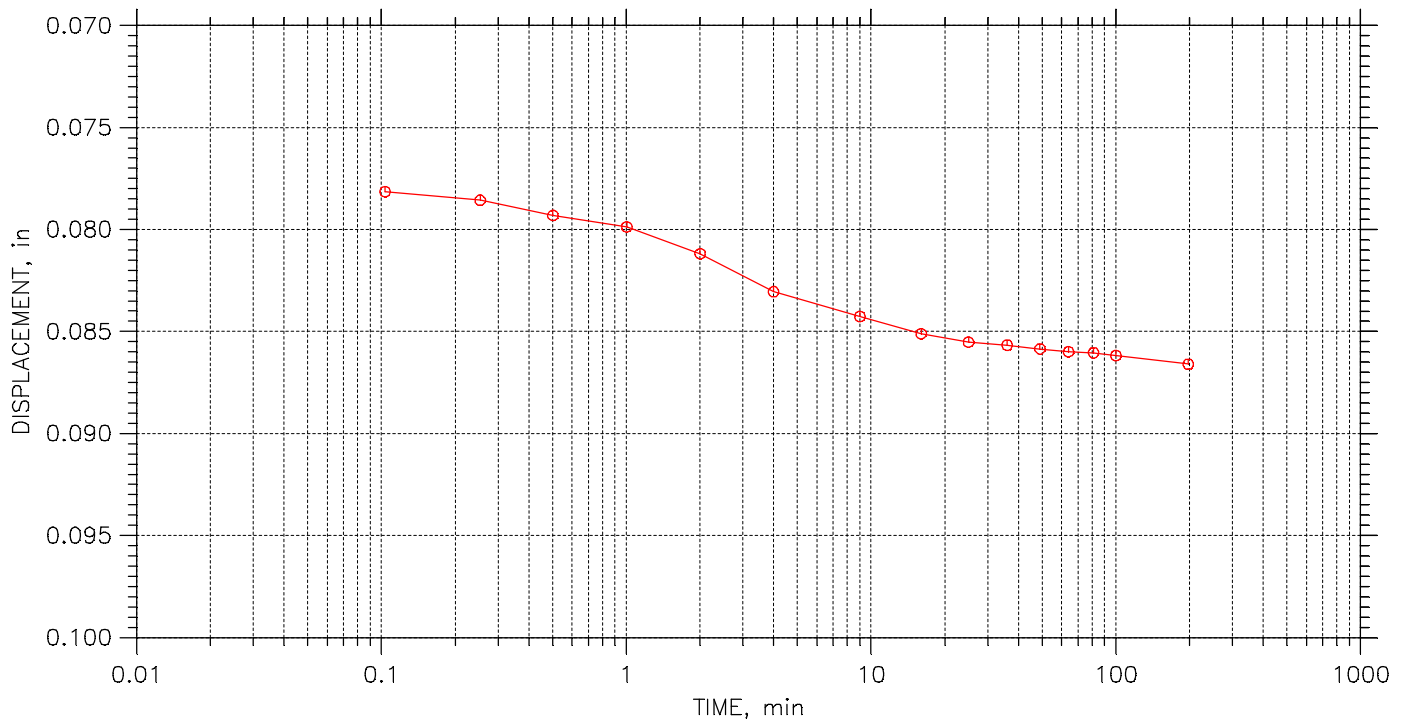
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf



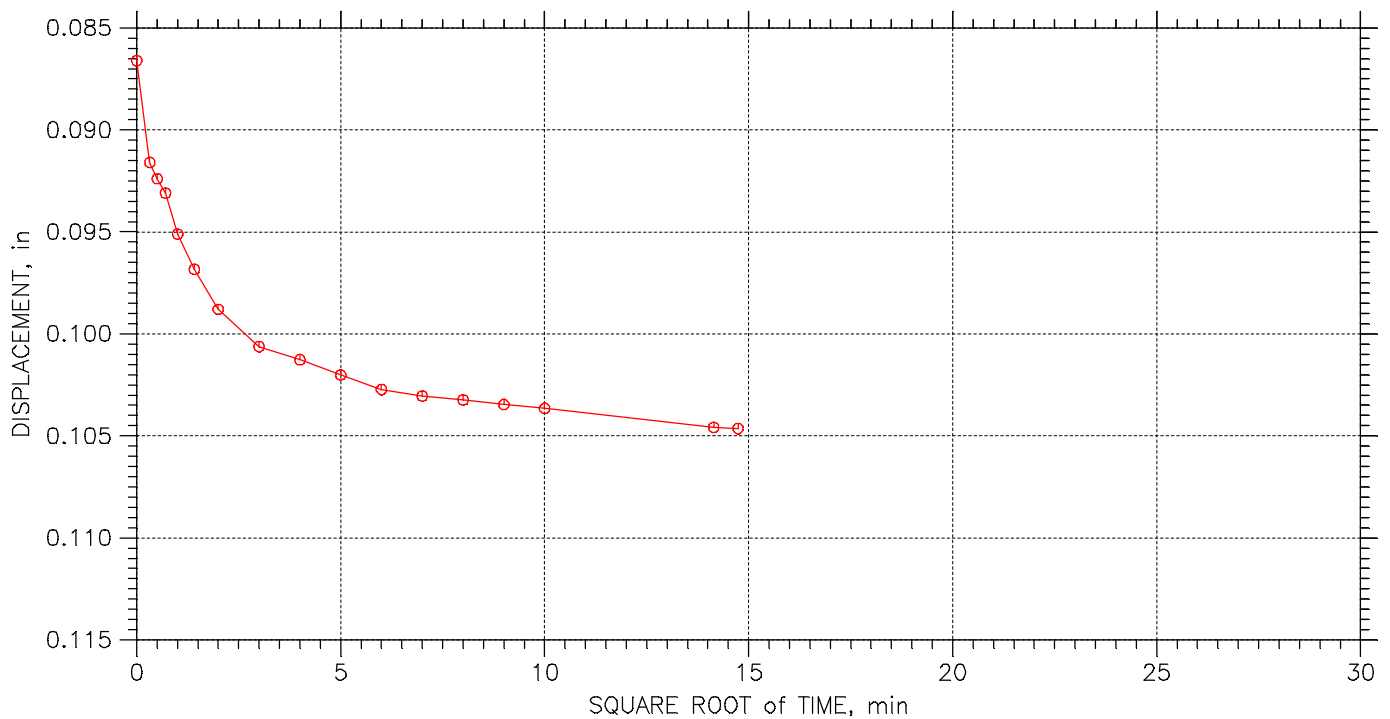
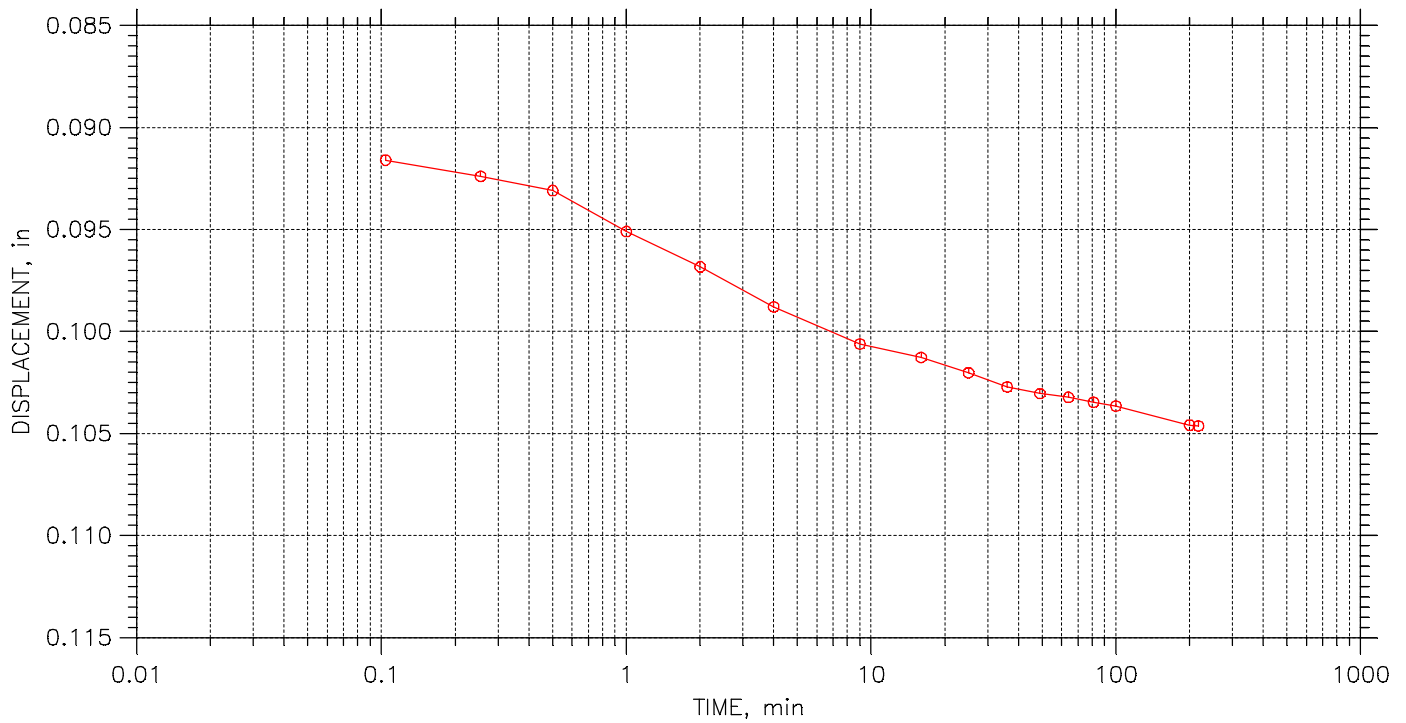
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf



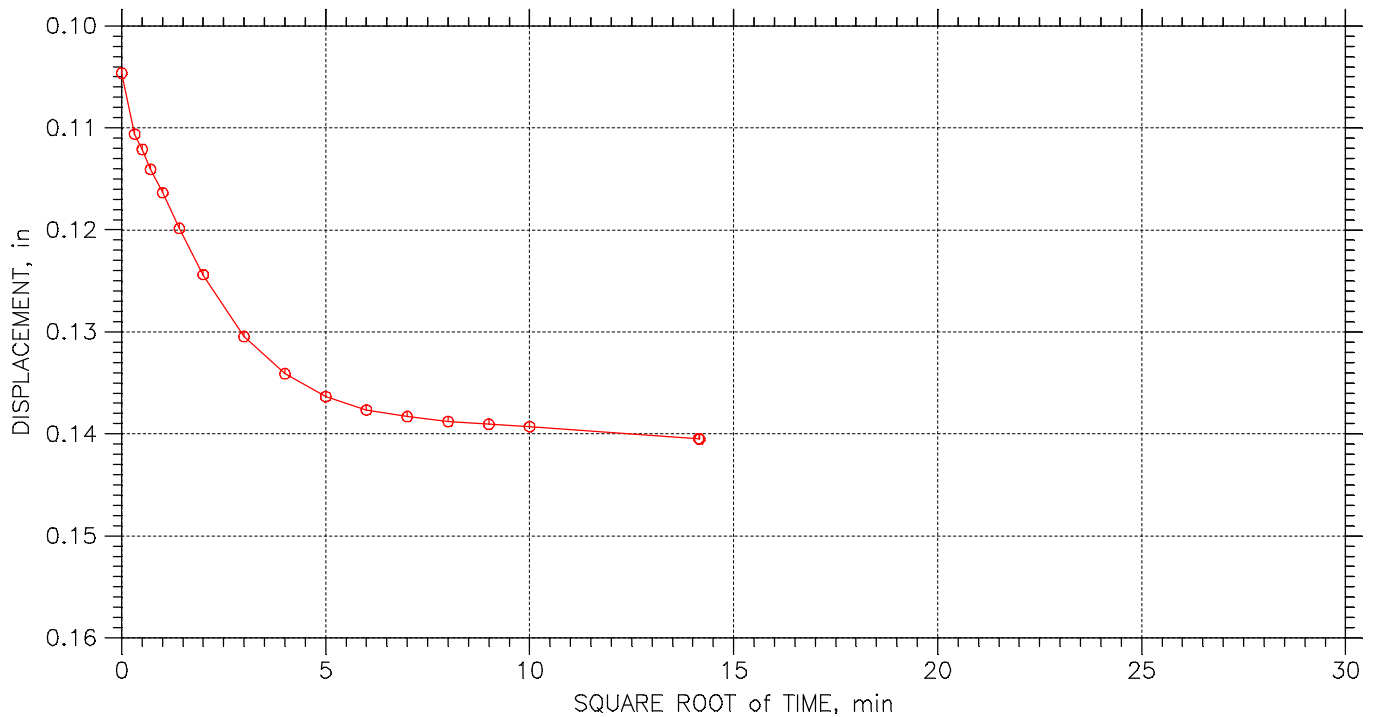
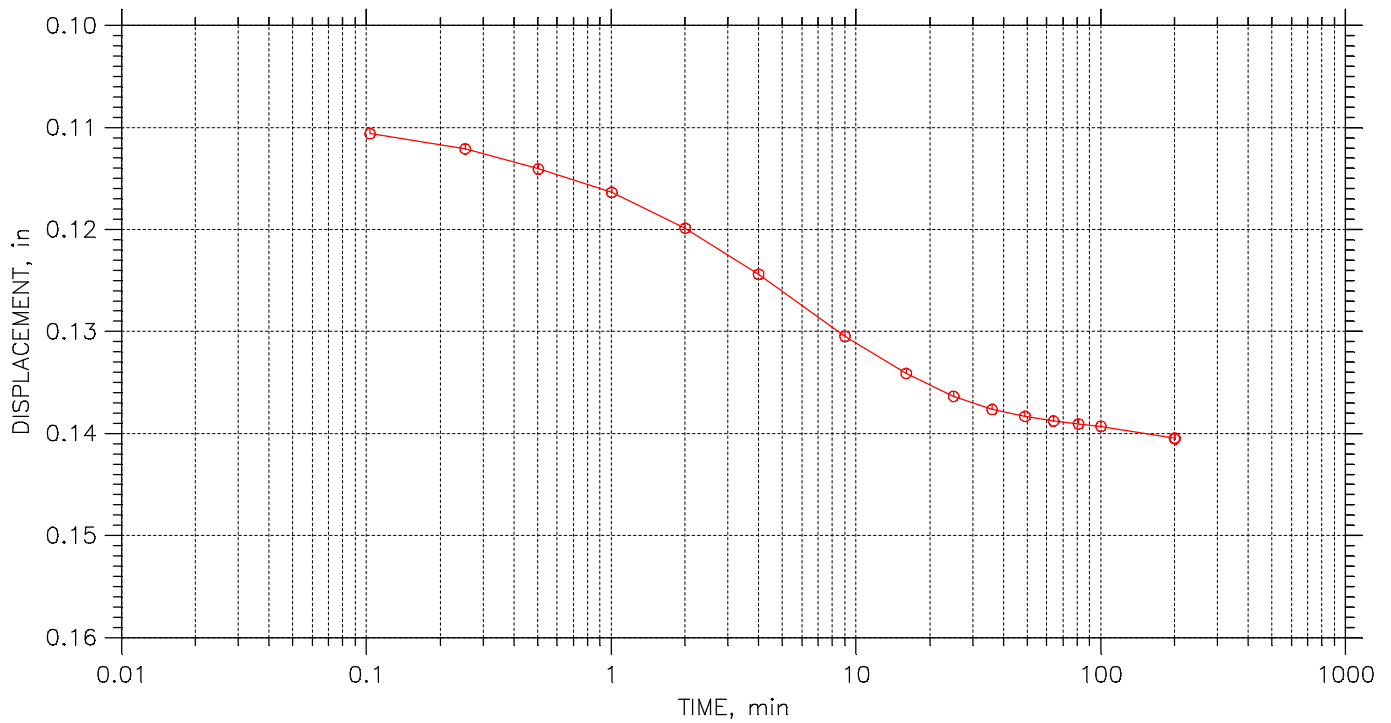
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf



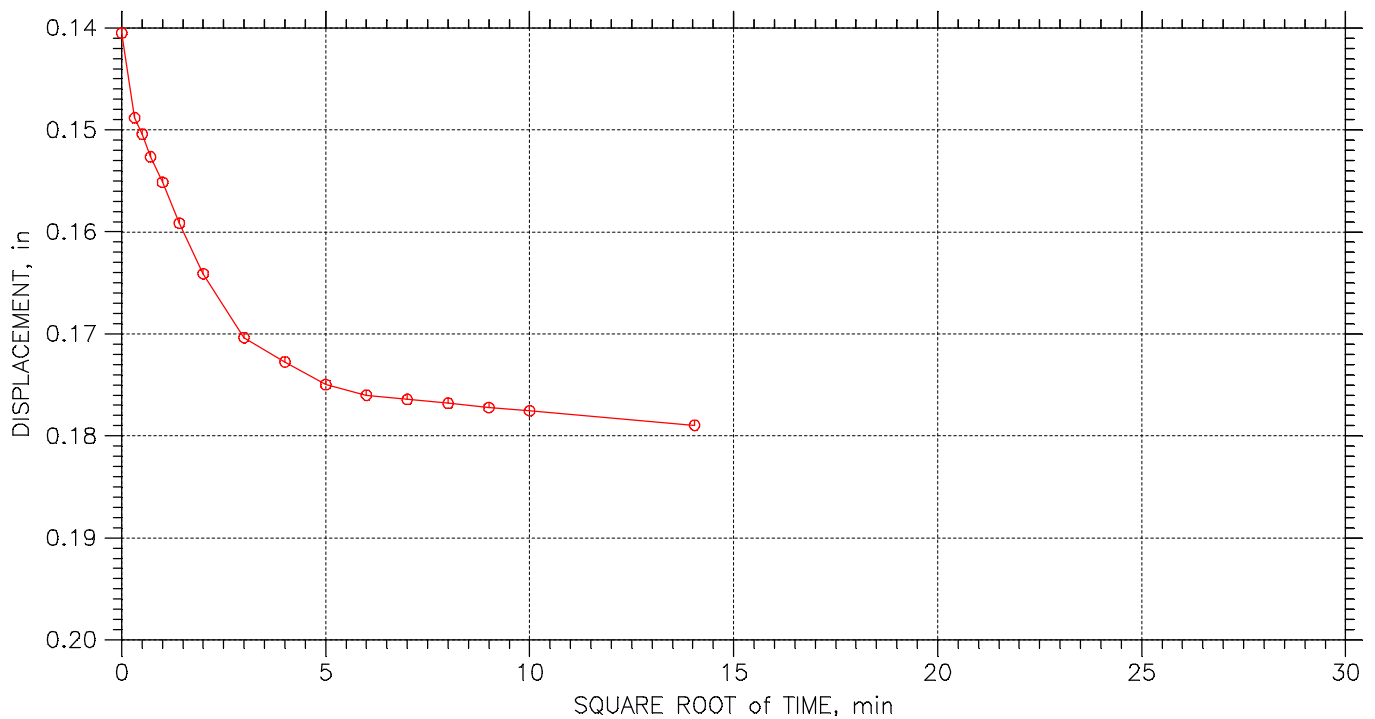
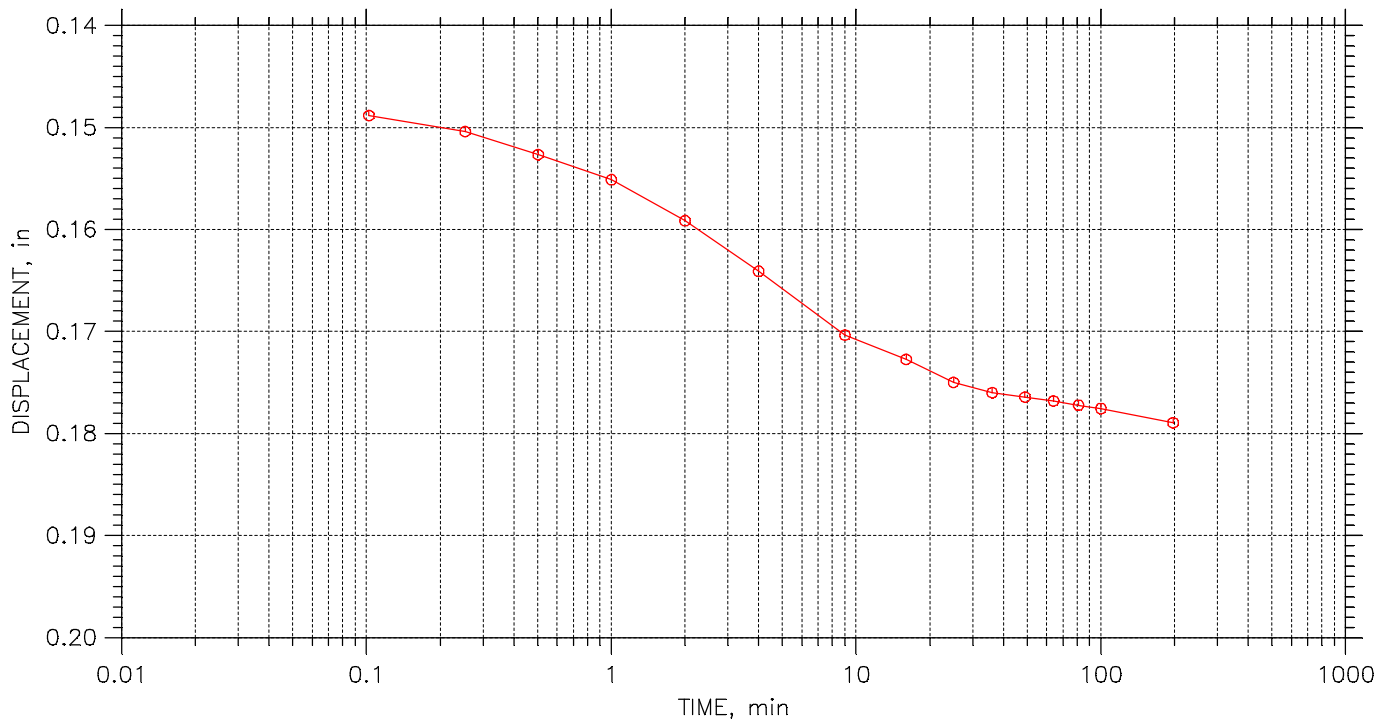
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf



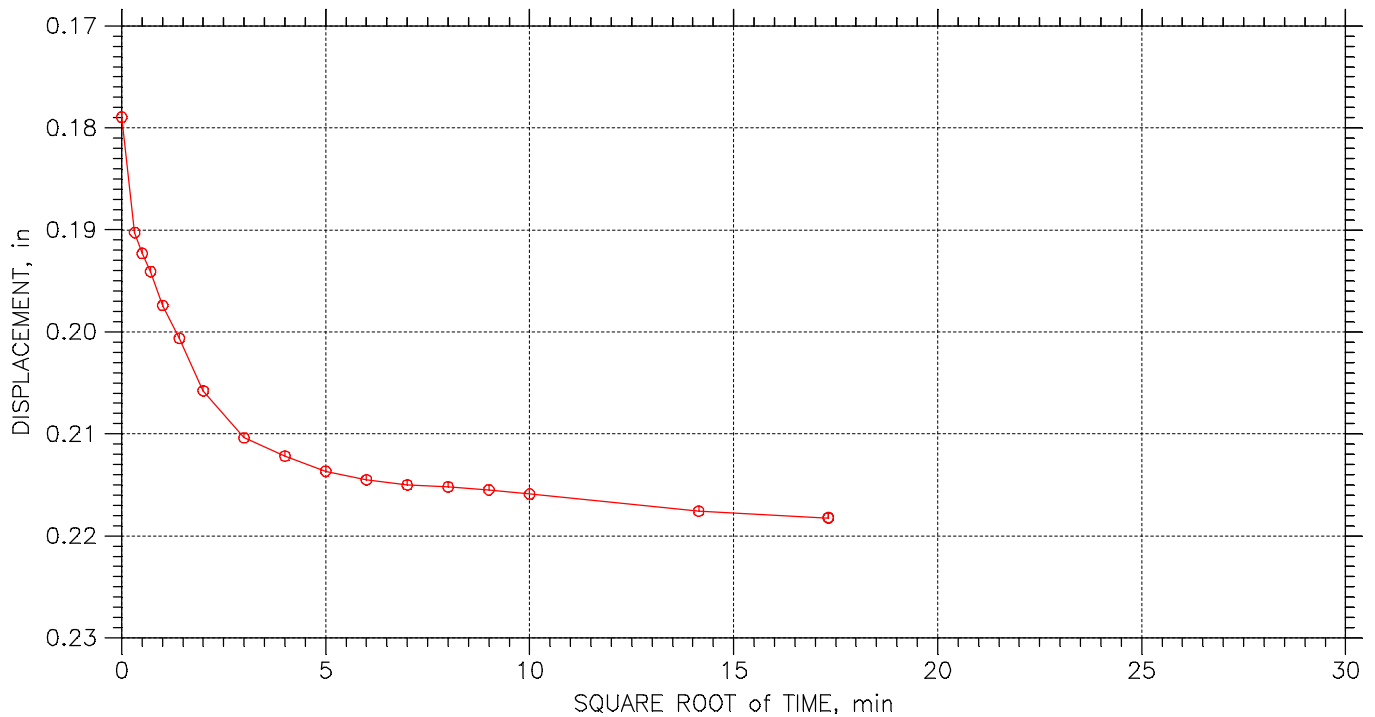
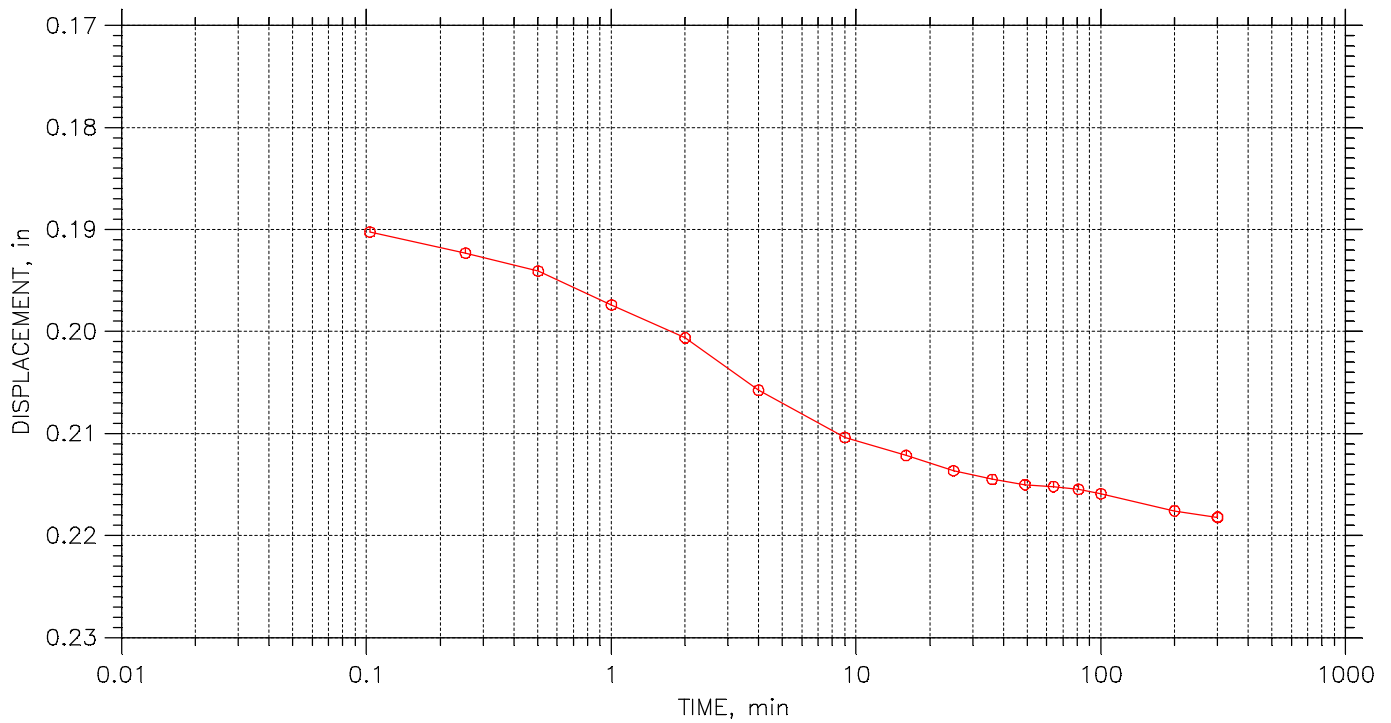
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



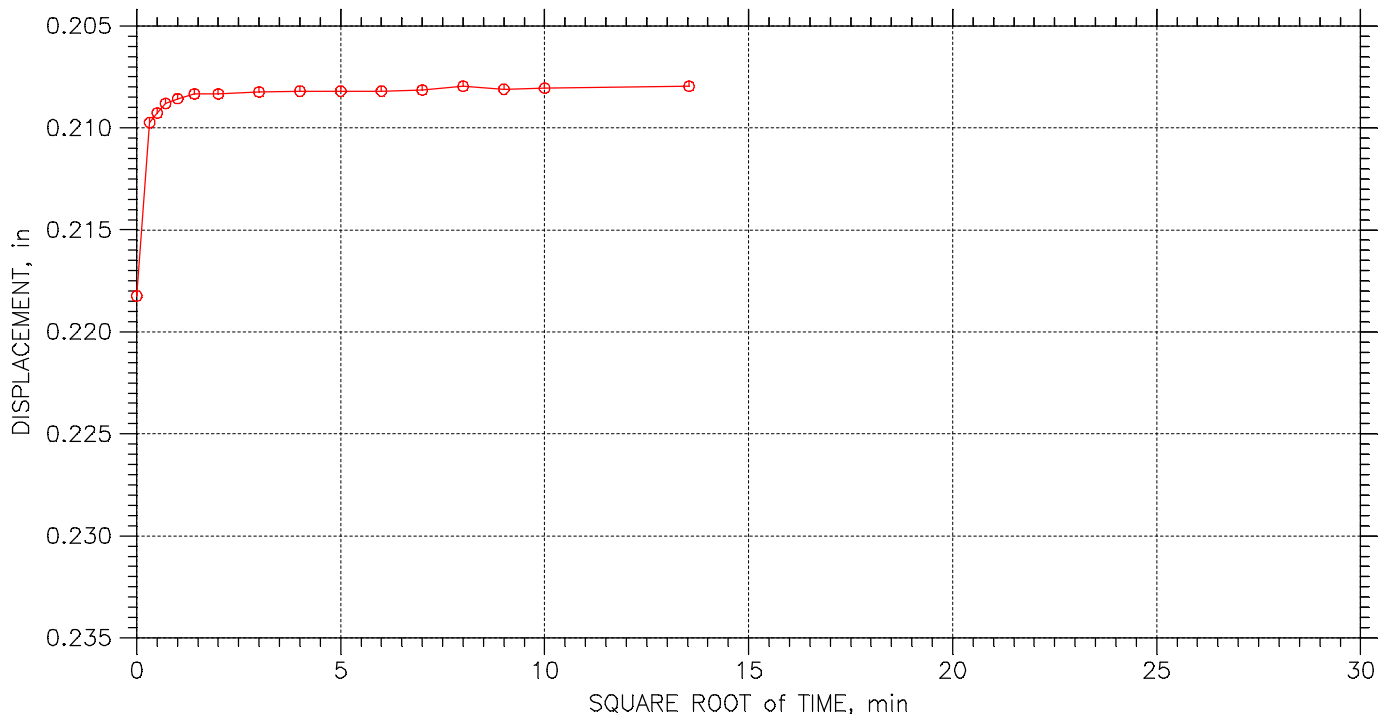
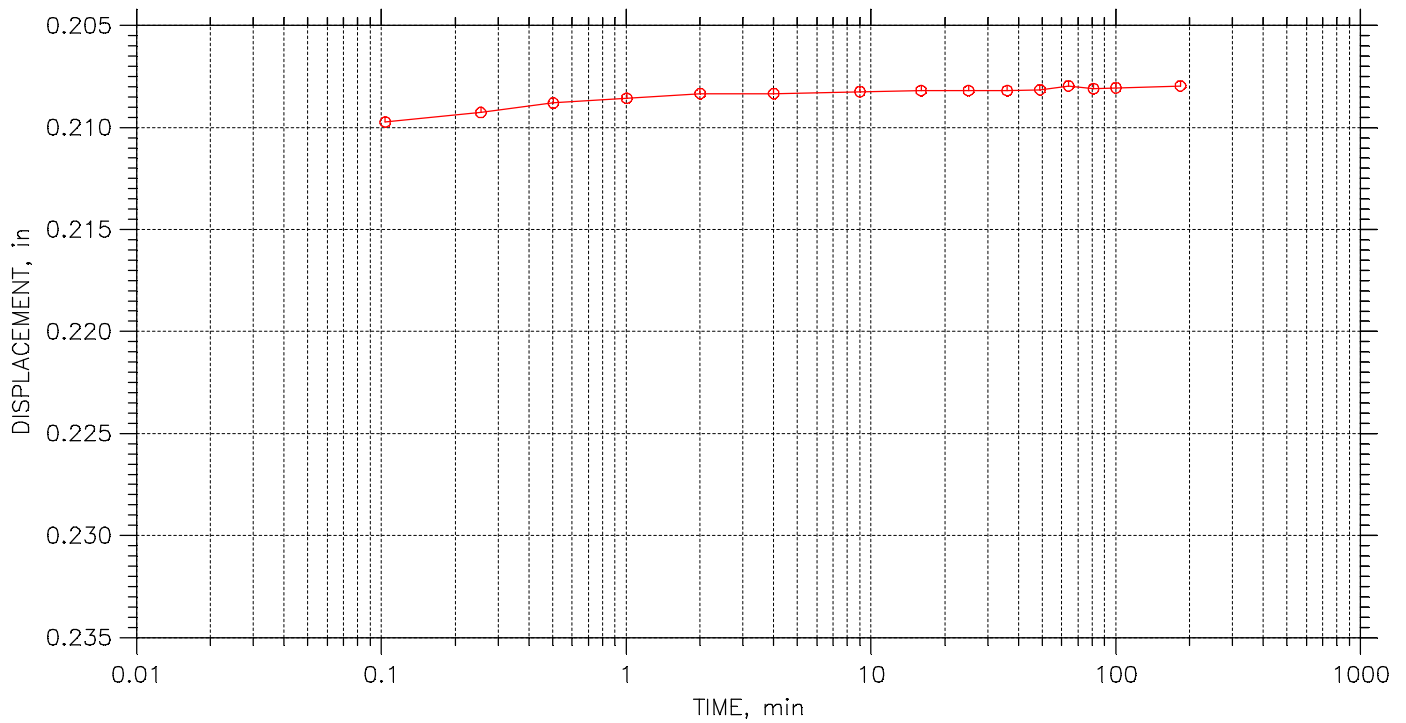
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



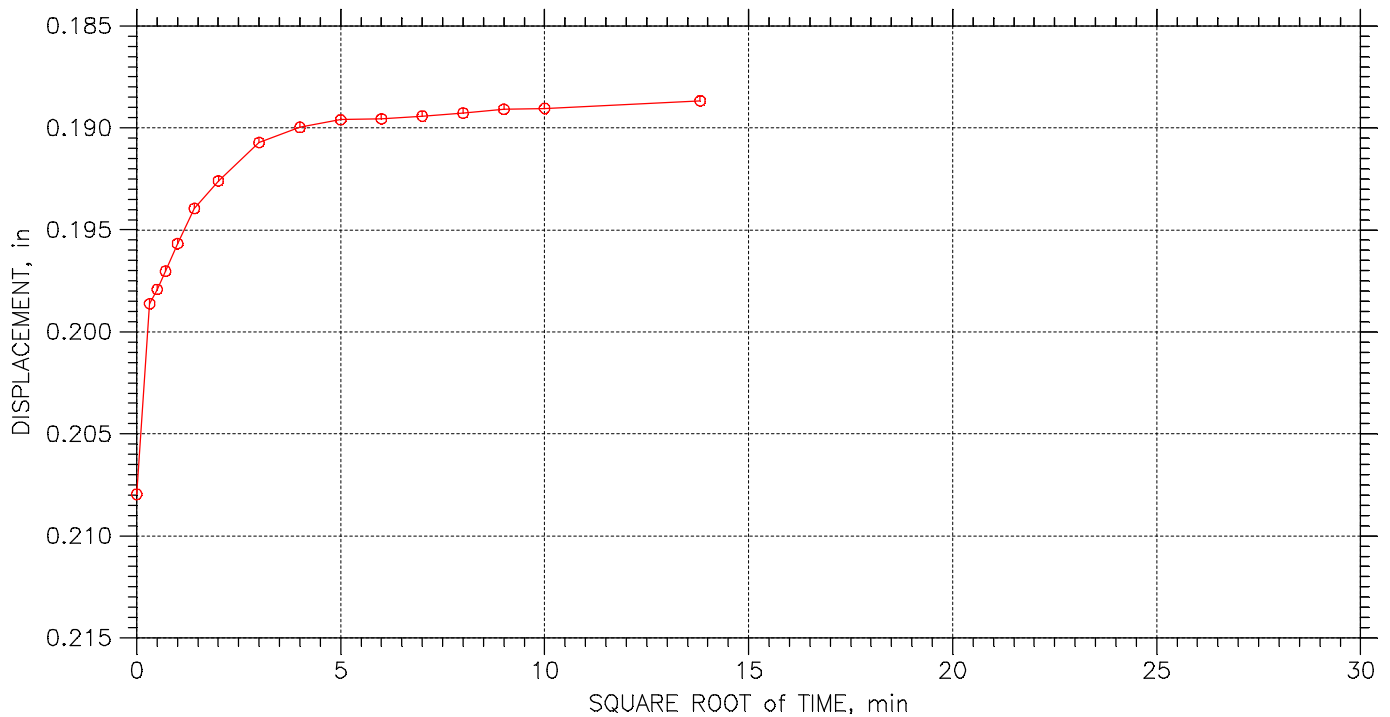
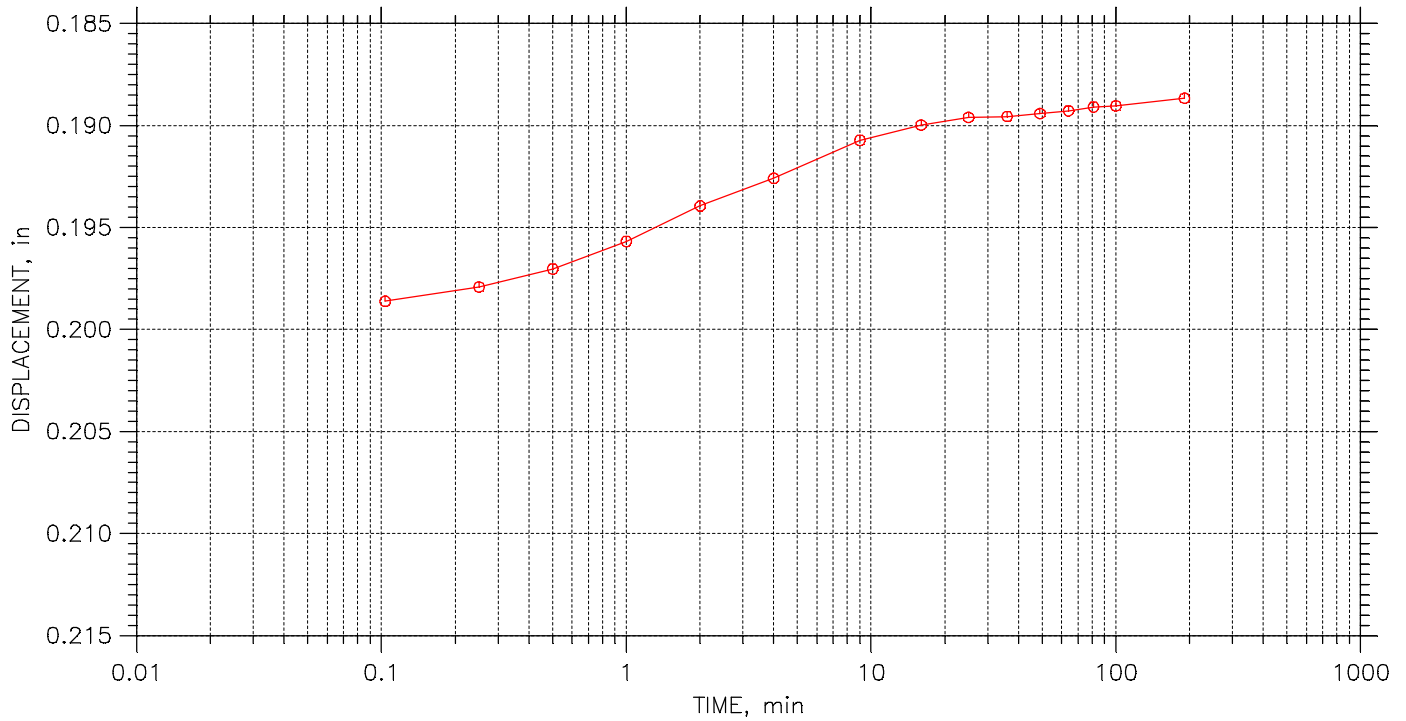
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf



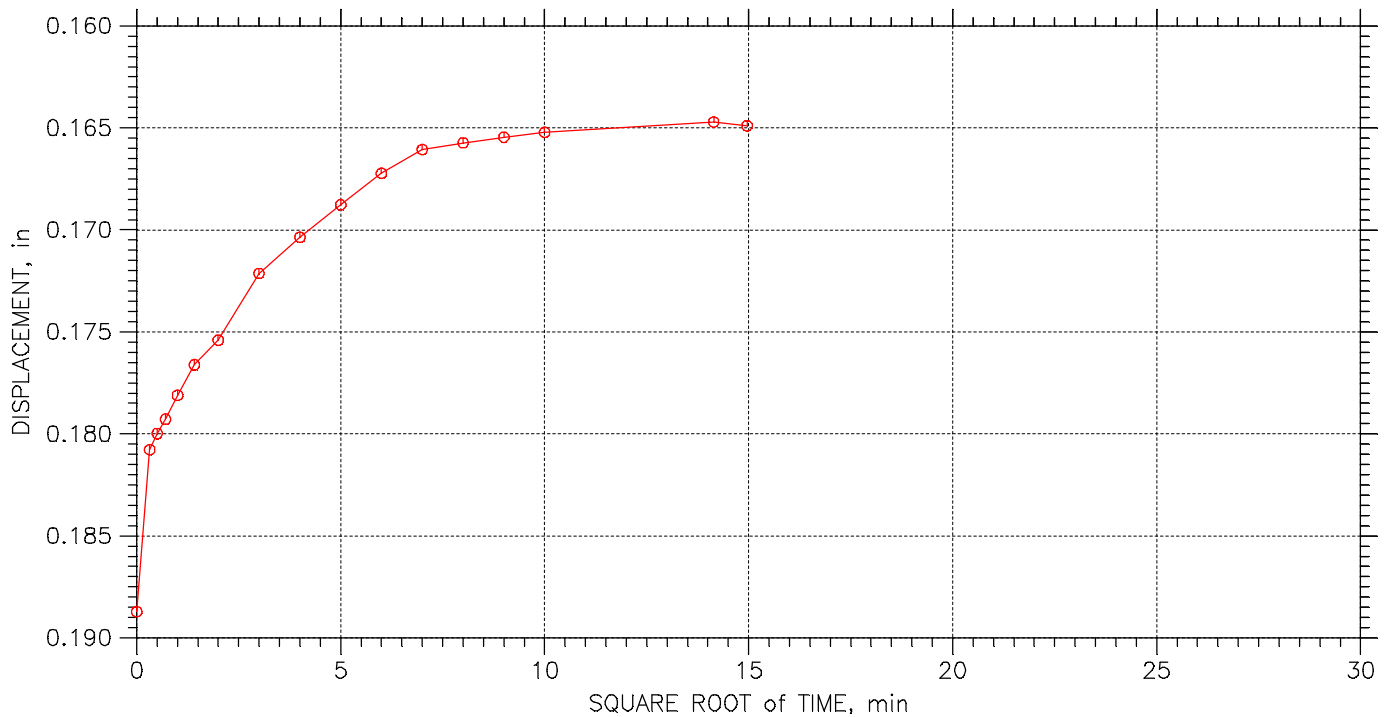
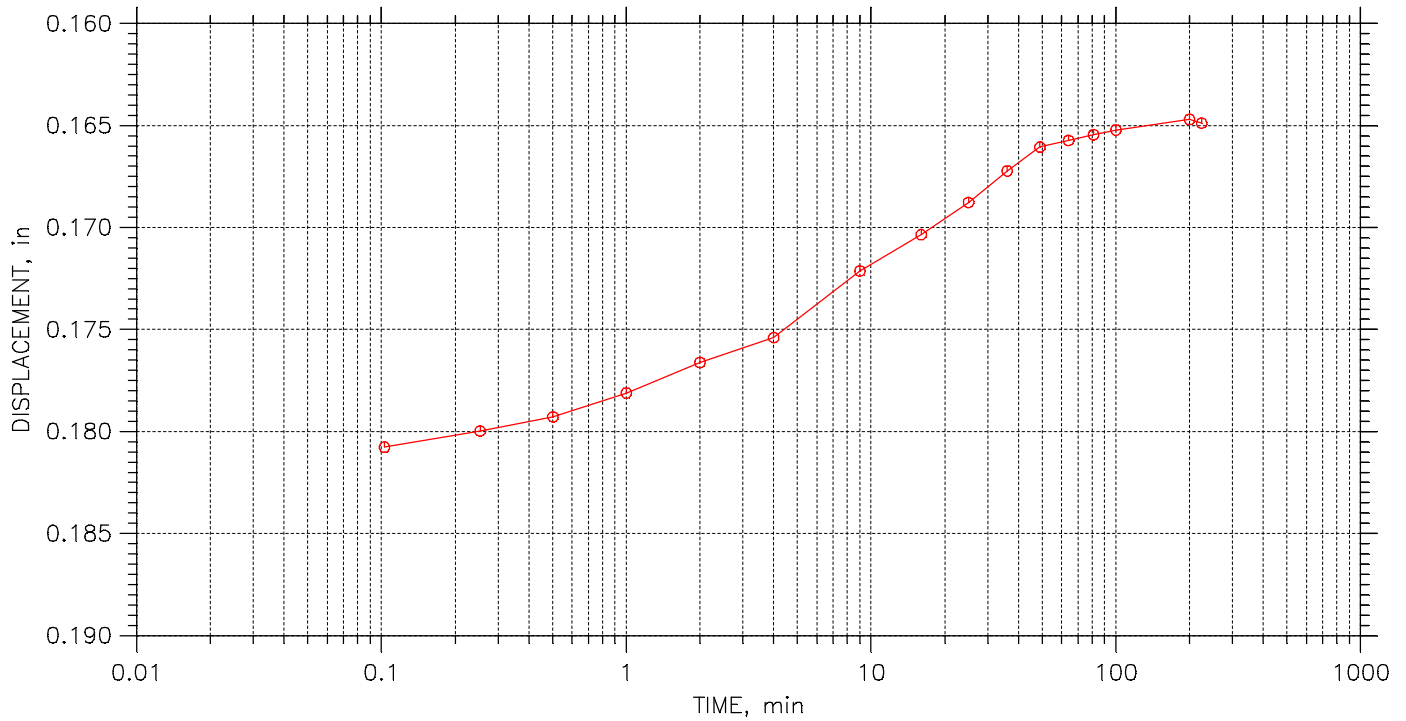
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf



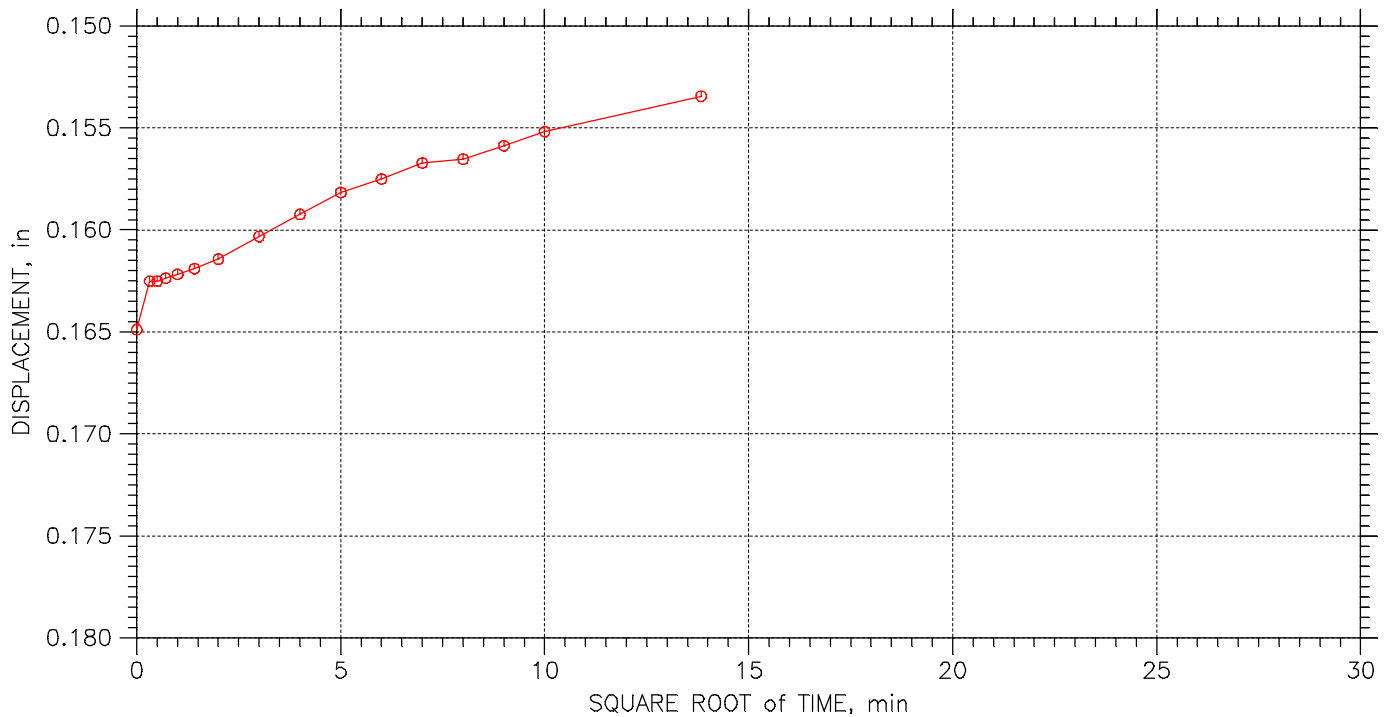
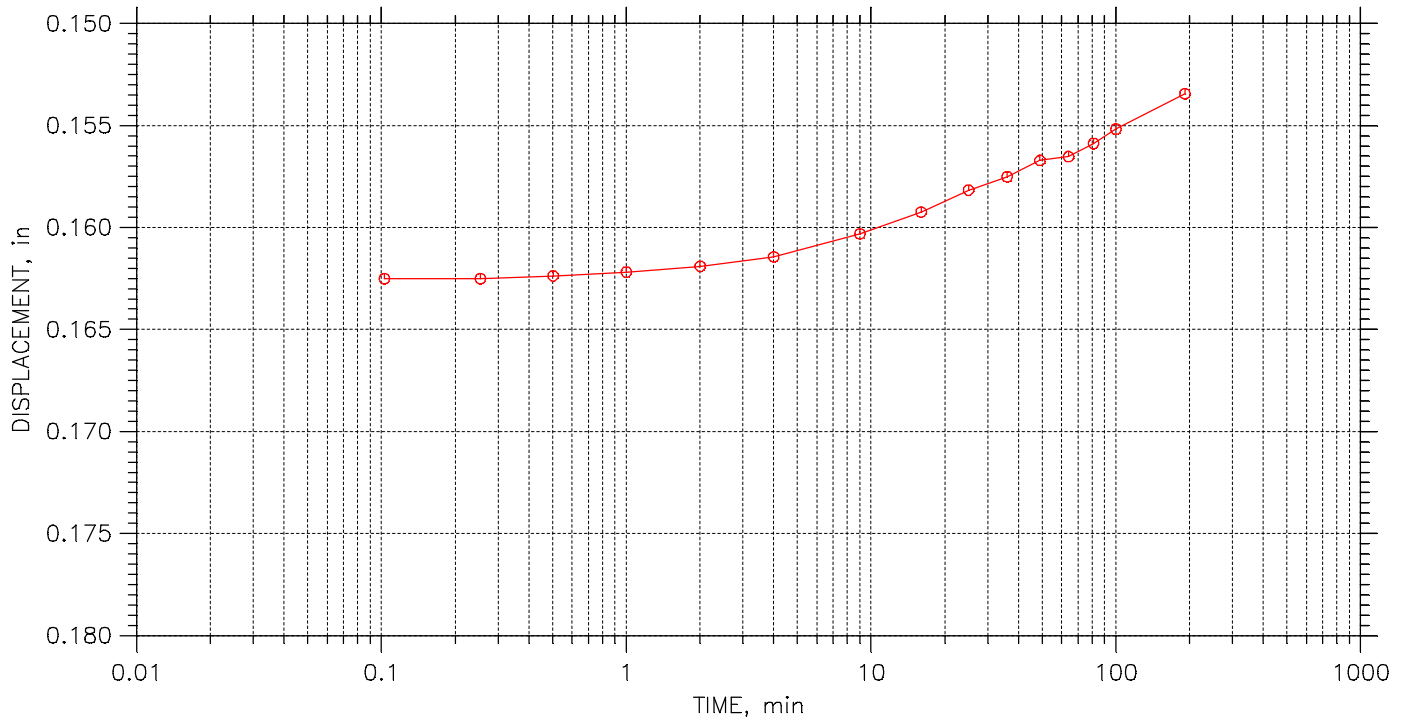
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf



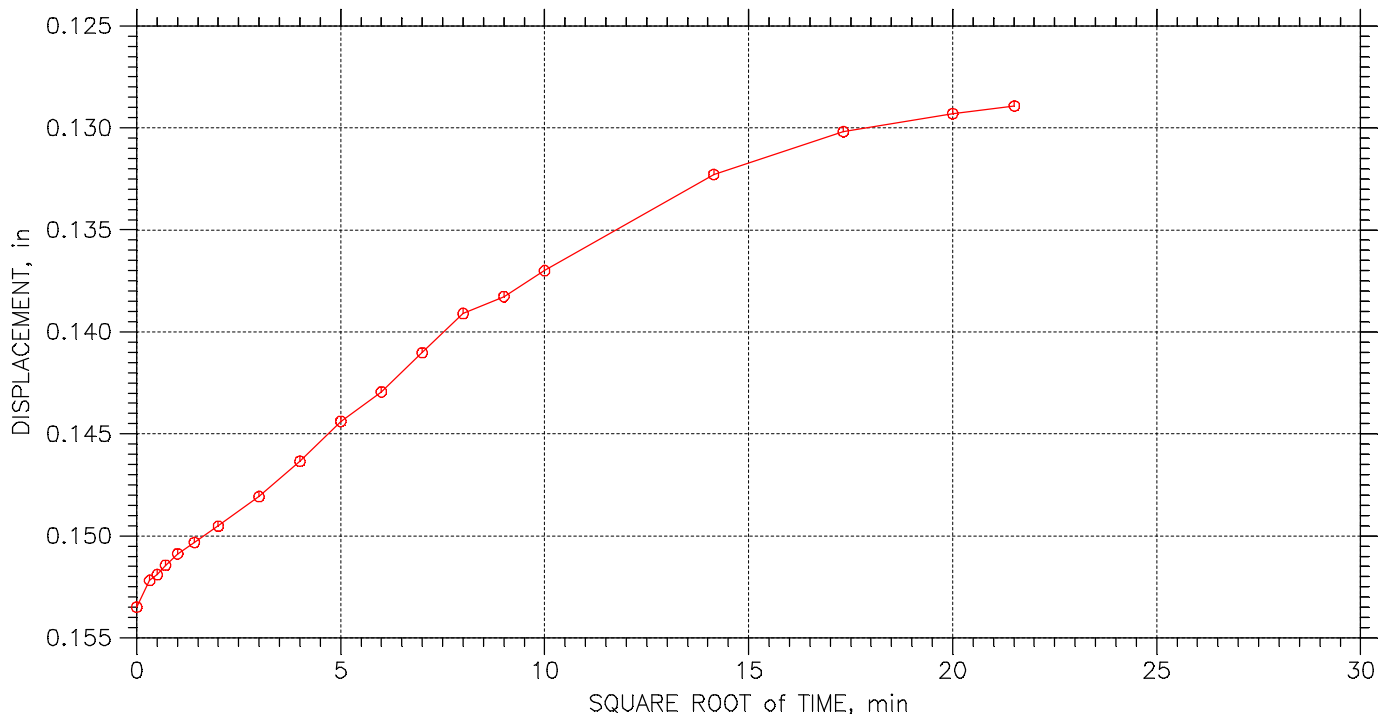
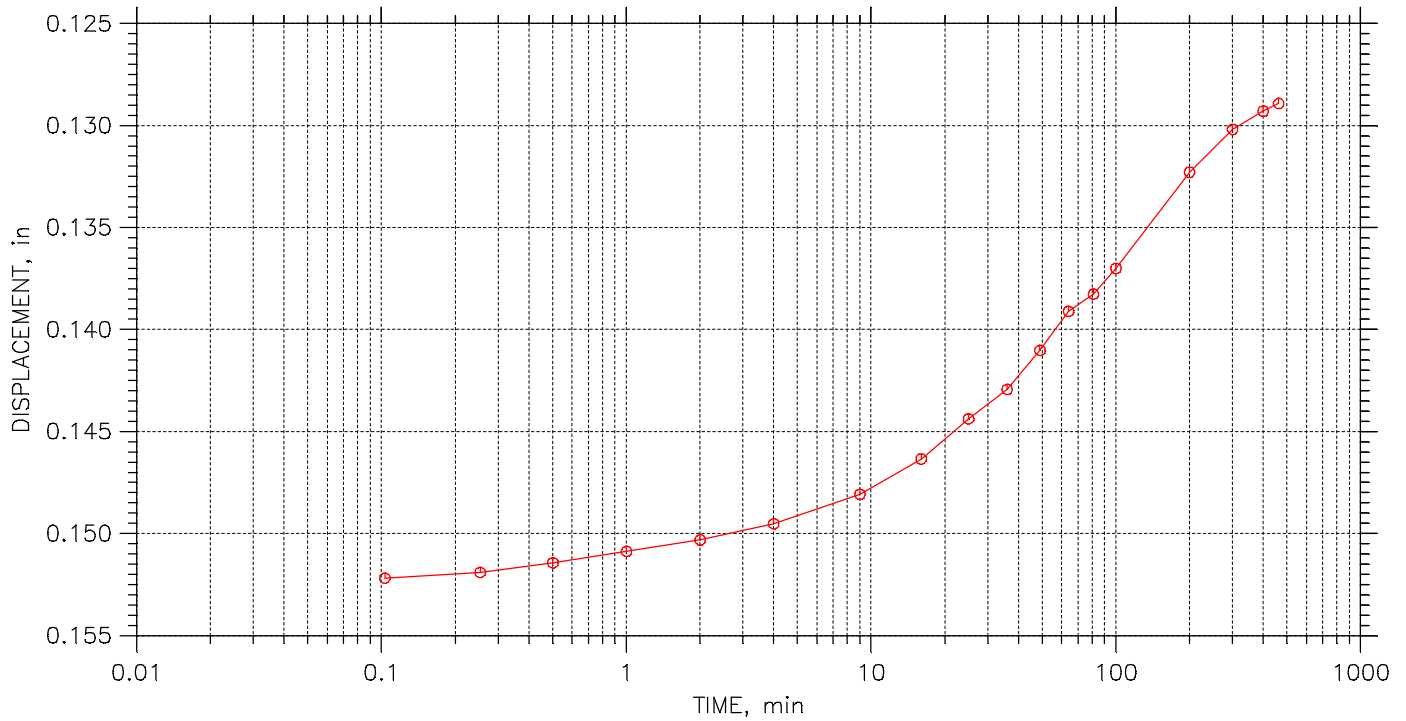
	Project: PULLIAM PROPRTY RES.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BL-7 S-10	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-10	Test Date: 1/19/2023	Depth: 40.0'-42.0'
	Test No.: BL7S10CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 1.2 tsf Cc = 0.342 Ccr = 0.097 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

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'
	Test No.: BL7S10CON	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		

CONSOLIDATION TEST DATA

Project: PULLIAM PROPERTY RES.
Boring No.: BL-7 S-10
Sample No.: S-10
Test No.: BL7S10CON

Location: GREEN BAY, WI
Tested By: IT/ED
Test Date: 1/19/2023
Sample Type: 3" ST

Project No.: 11225052
Checked By: BCM
Depth: 40.0'-42.0'
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
Initial Void Ratio: 0.96
Final Void Ratio: 0.62

Liquid Limit: 40
Plastic Limit: 15
Plasticity Index: 25

Initial Height: 0.74 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	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	---

CONSOLIDATION TEST DATA

Project: PULLIAM PROPRTY RES.
Boring No.: BL-7 S-10
Sample No.: S-10
Test No.: BL7S10CON

Location: GREEN BAY, WI
Tested By: IT/ED
Test Date: 1/19/2023
Sample Type: 3" ST

Project No.: 11225052
Checked By: BCM
Depth: 40.0'-42.0'
Elevation: -----

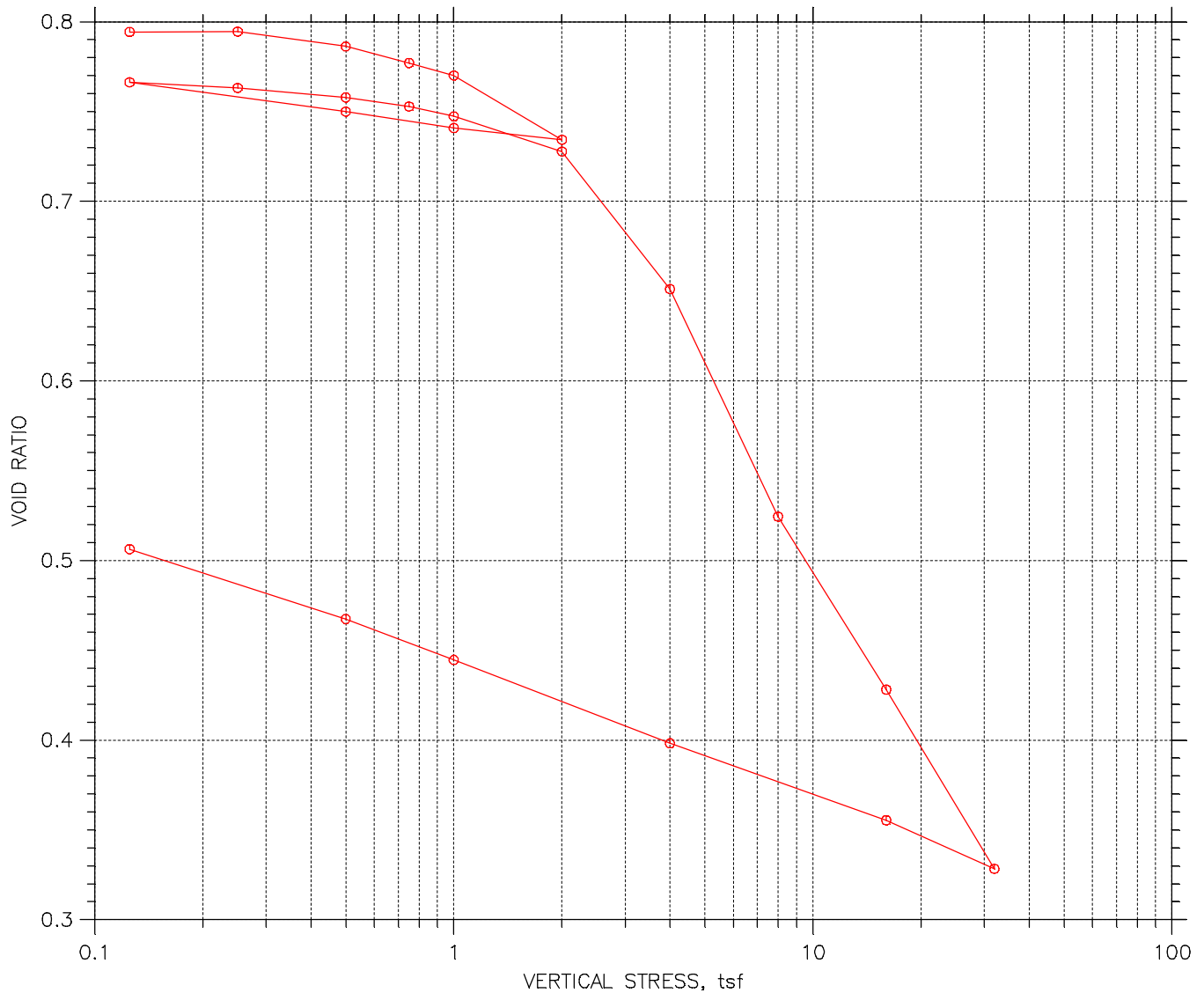


Soil Description: REDDISH BROWN LEAN CLAY (CL)


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

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. ft^2/sec	Log ft^2/sec	Ave. 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

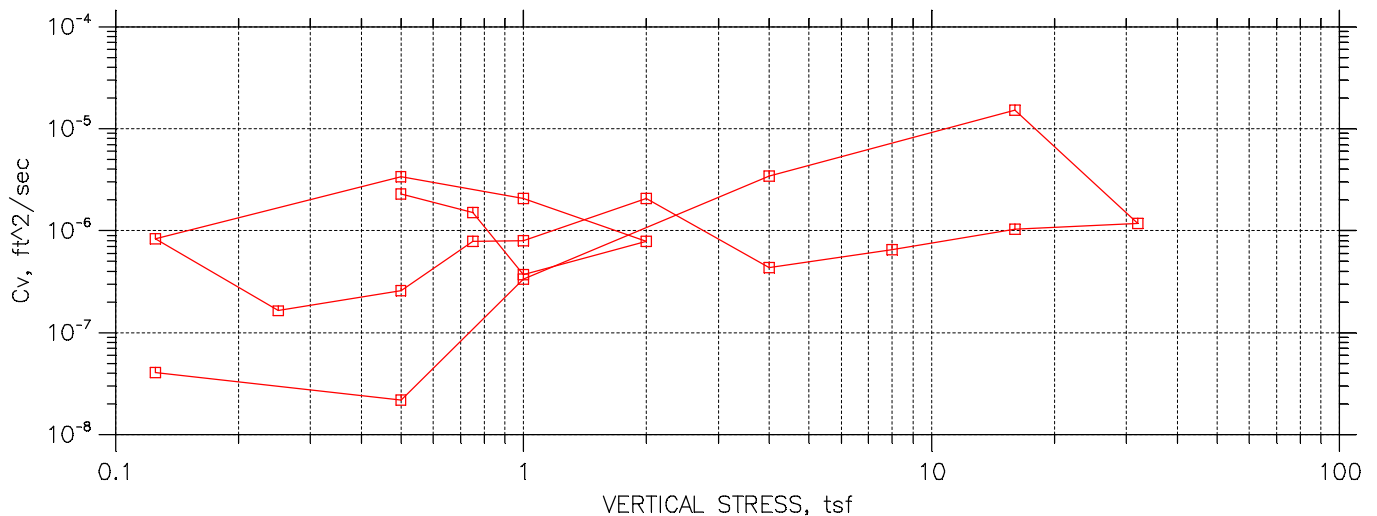
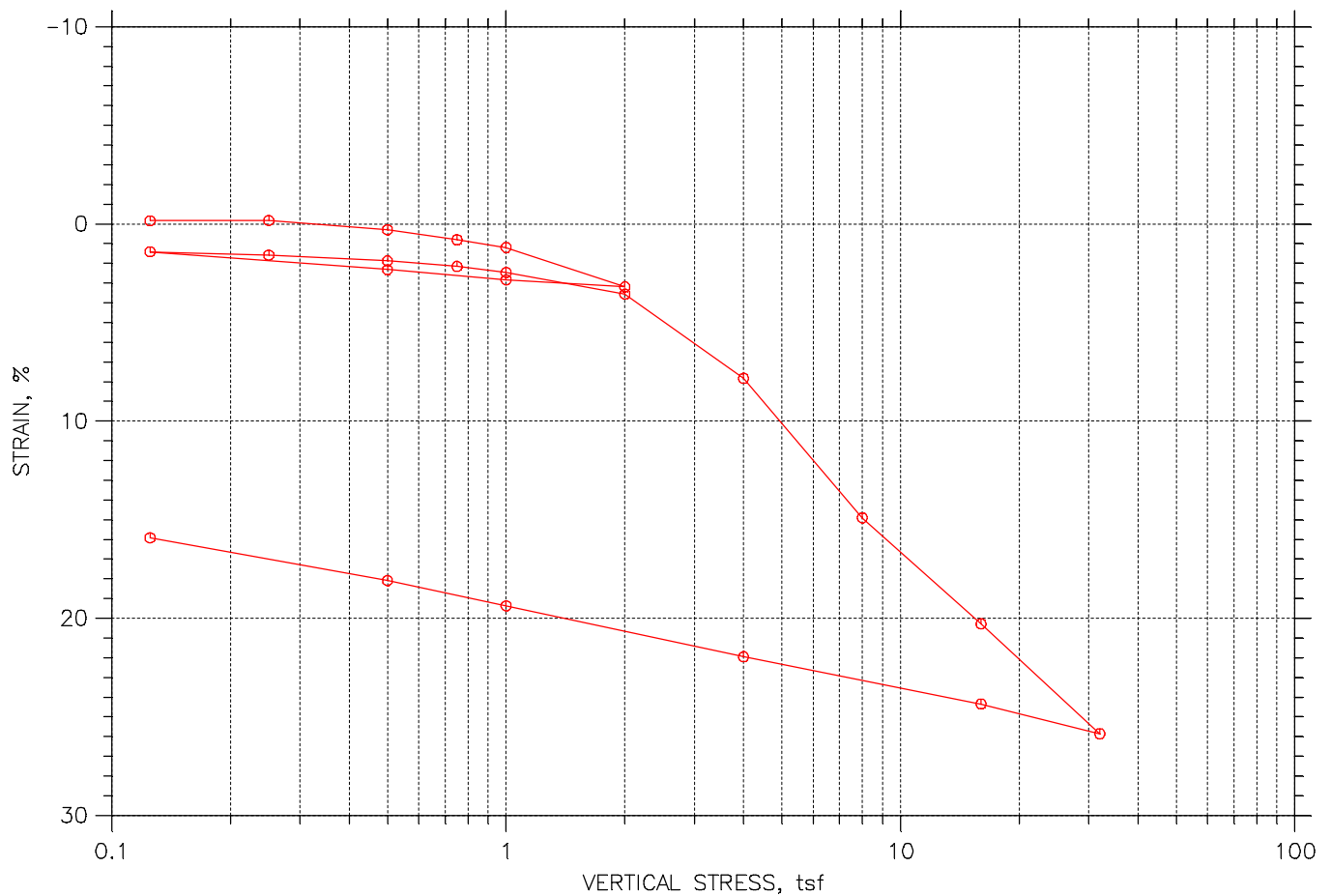
ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435




				Before Test	After Test	
				Water Content, %	28.89	19.10
Preconsolidation Pressure: 1.7 tsf				Dry Unit Weight, pcf	94.78	112.7
Compression Index: 0.332				Saturation, %	99.27	102.61
Diameter: 2.501 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'
	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		

ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



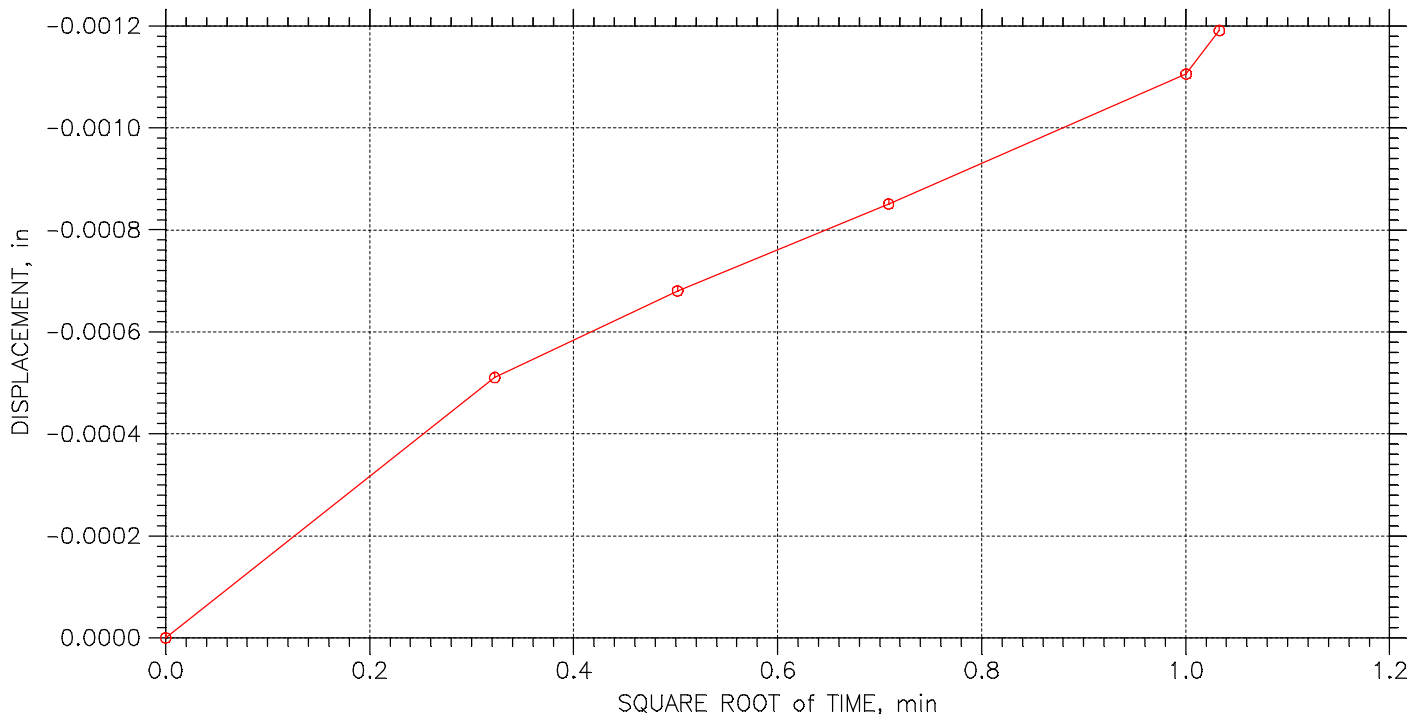
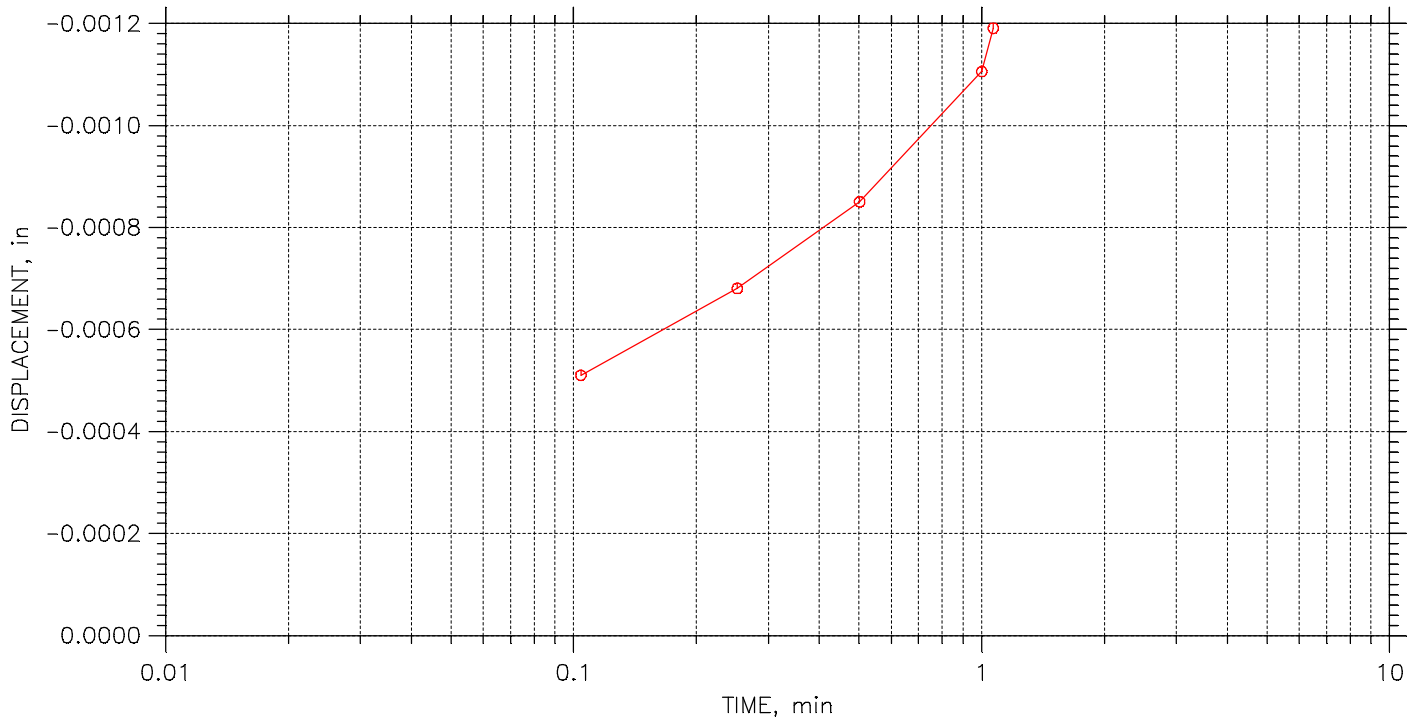
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $P_c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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 23

Stress: 0.125 tsf



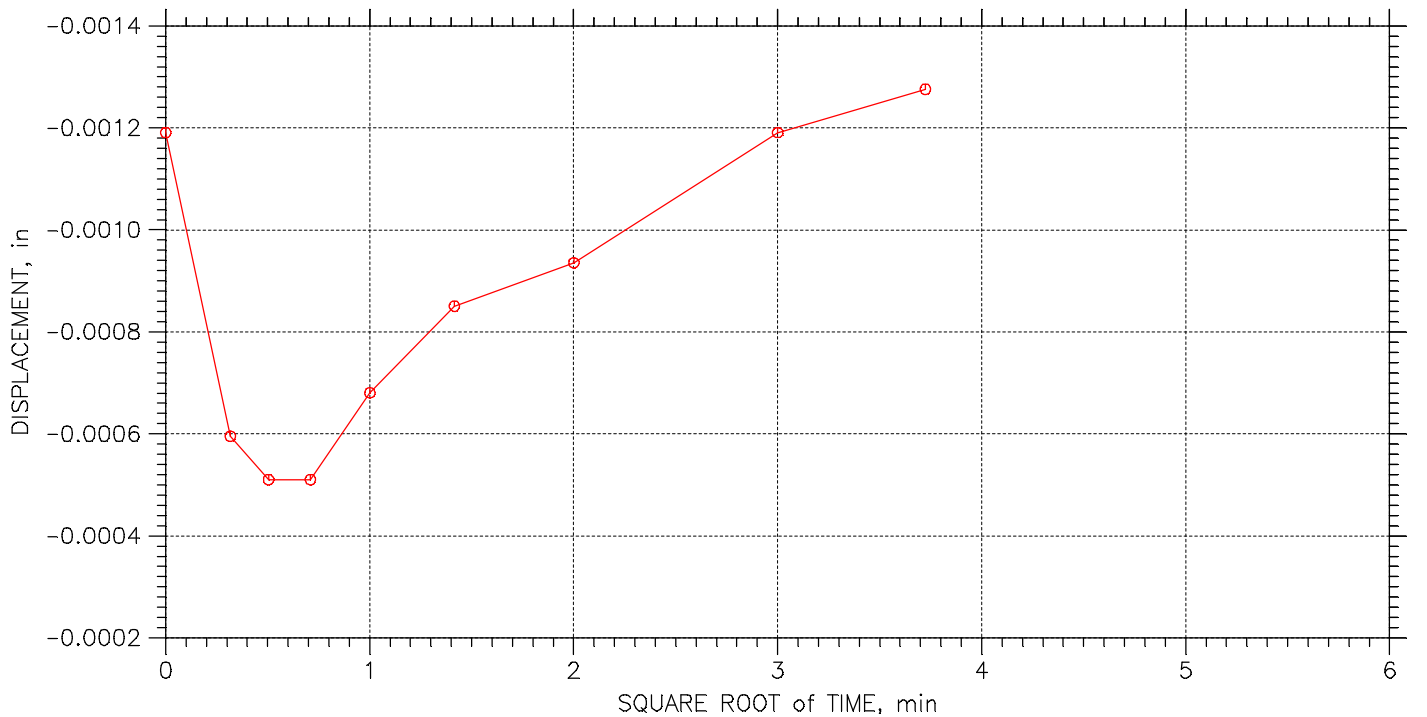
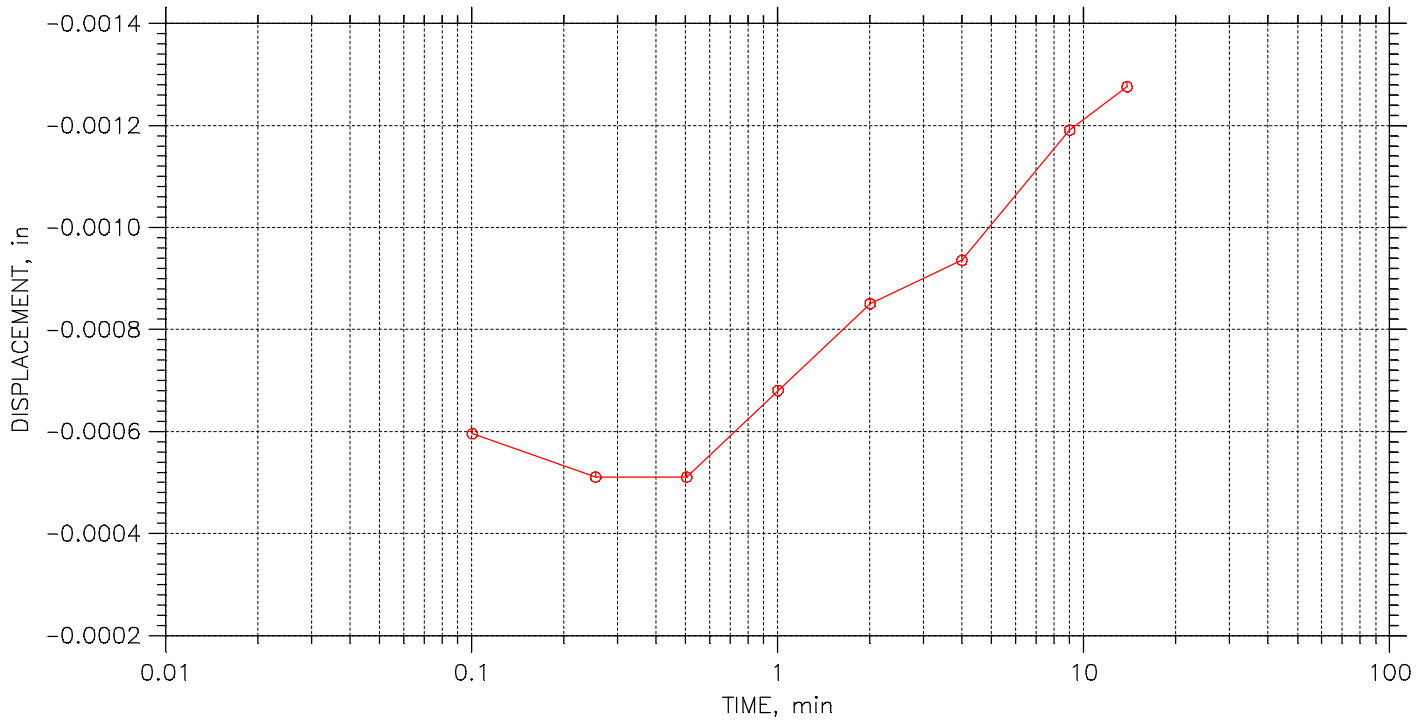
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 23

Stress: 0.25 tsf



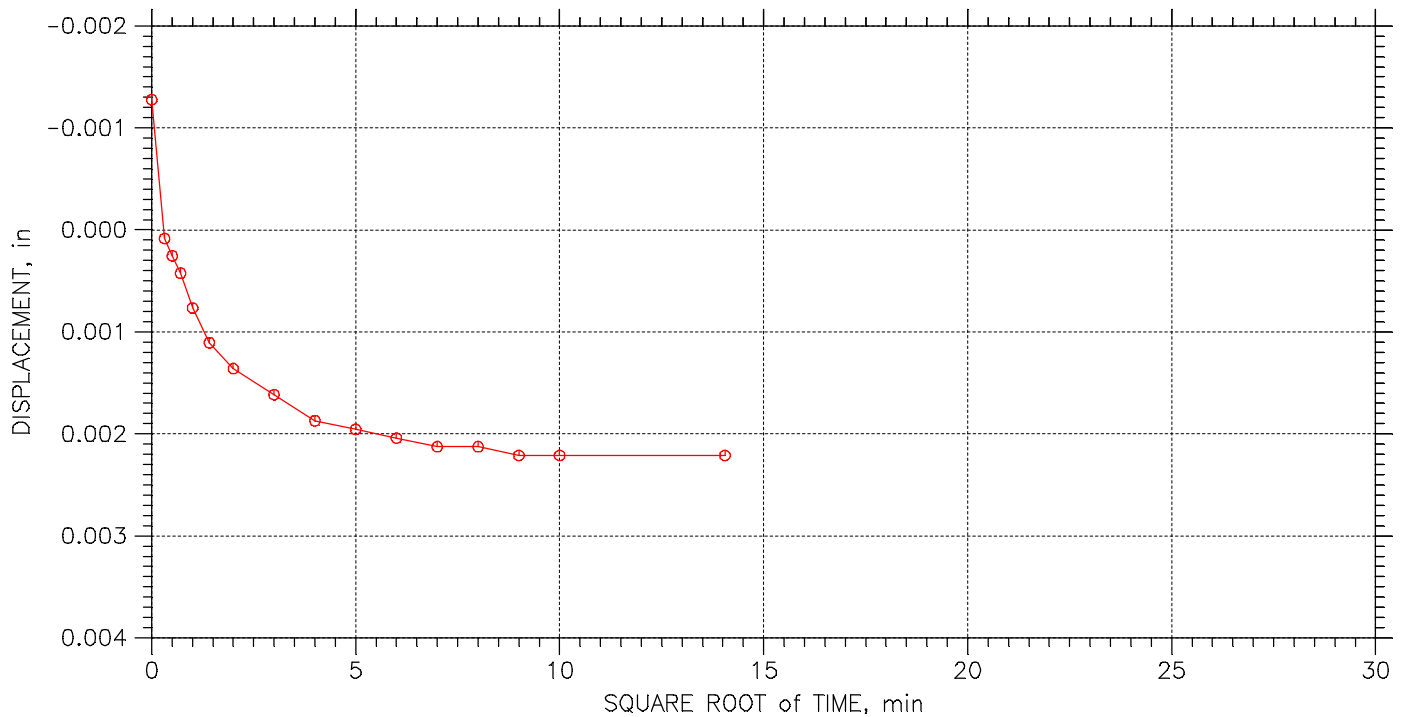
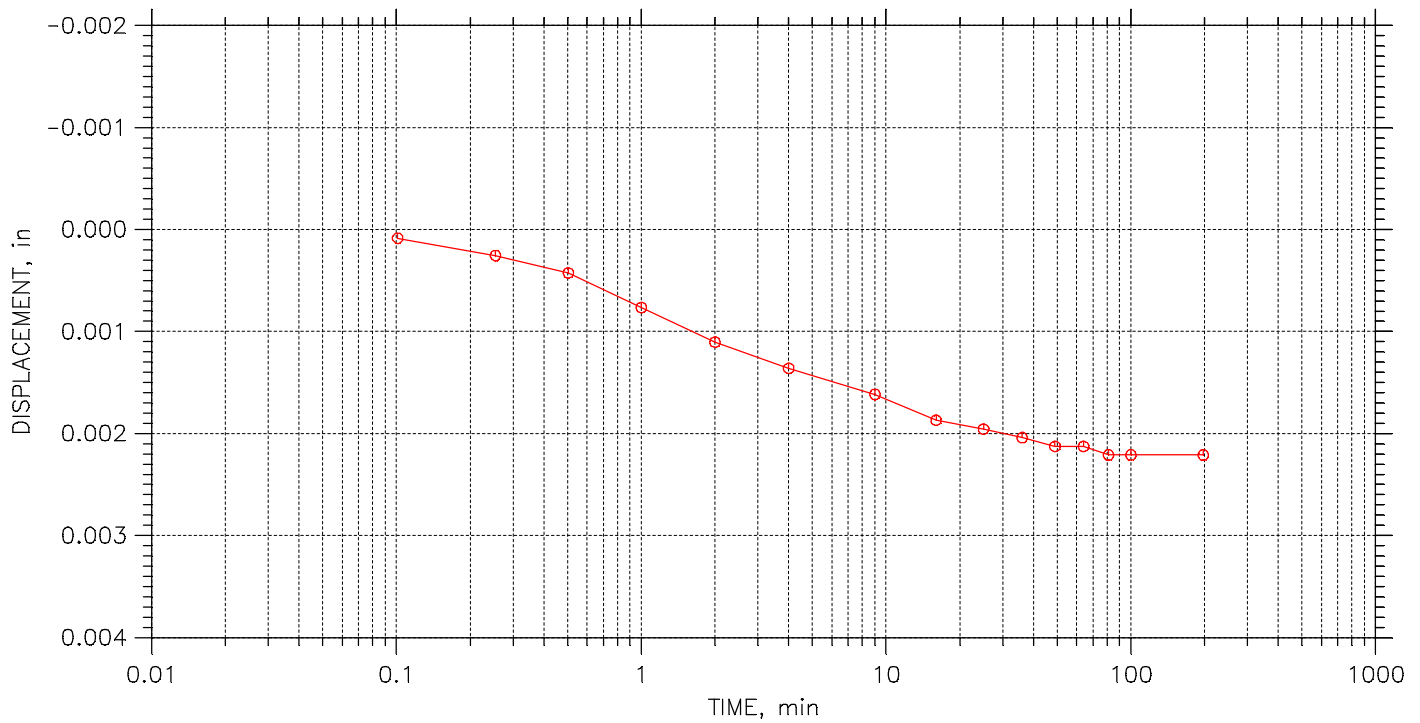
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 23

Stress: 0.5 tsf



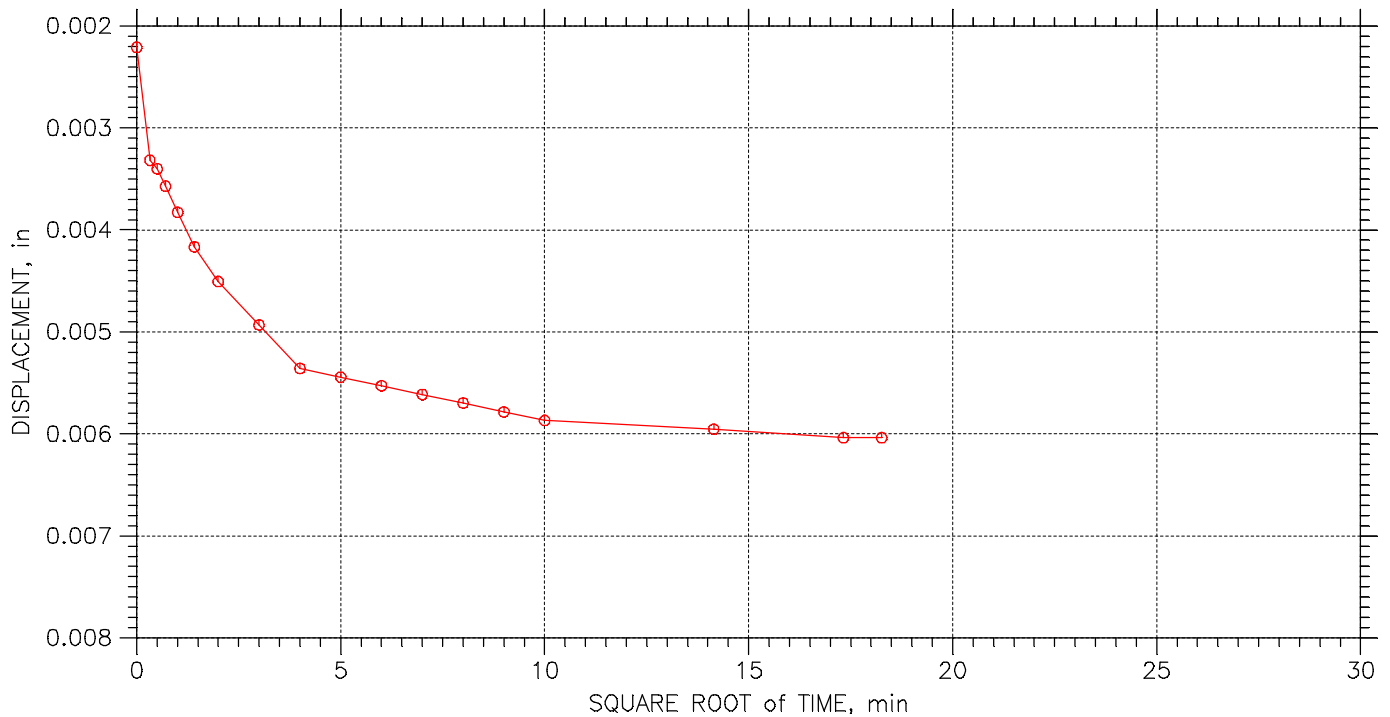
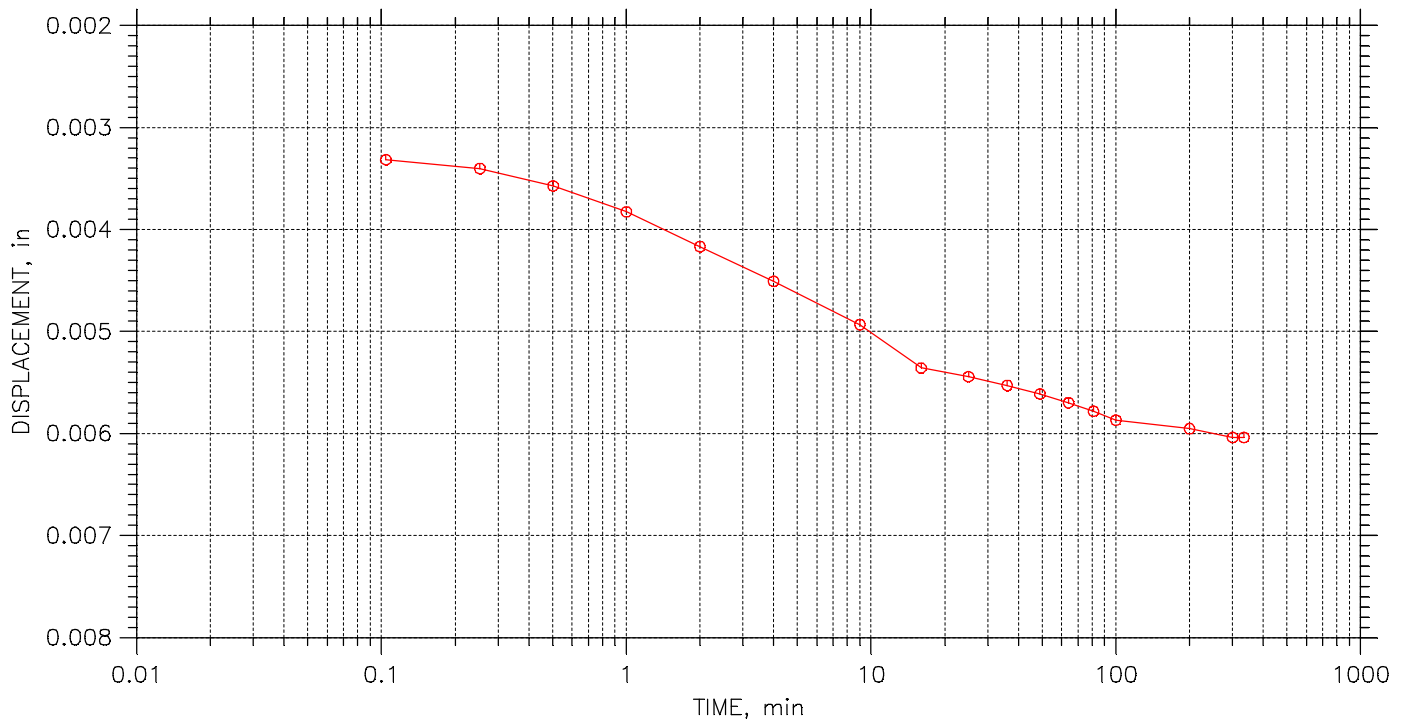
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 23

Stress: 0.75 tsf



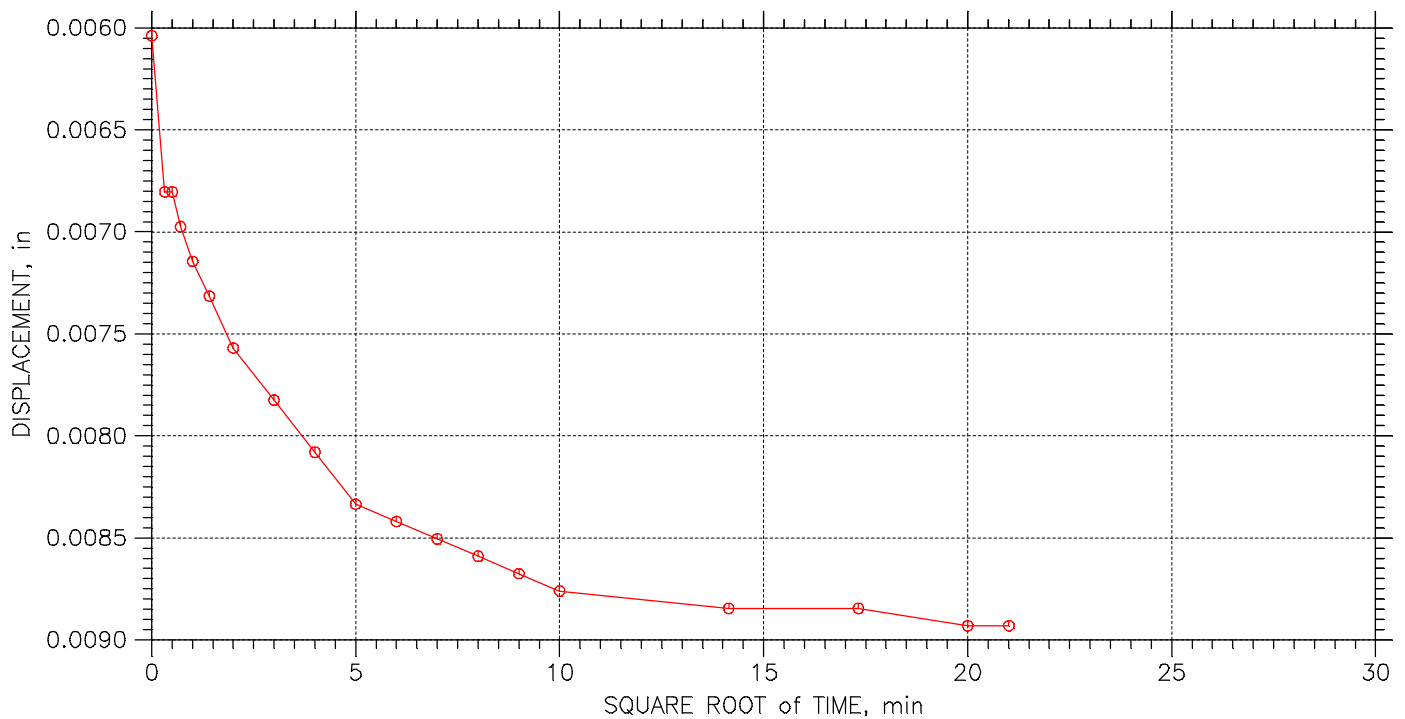
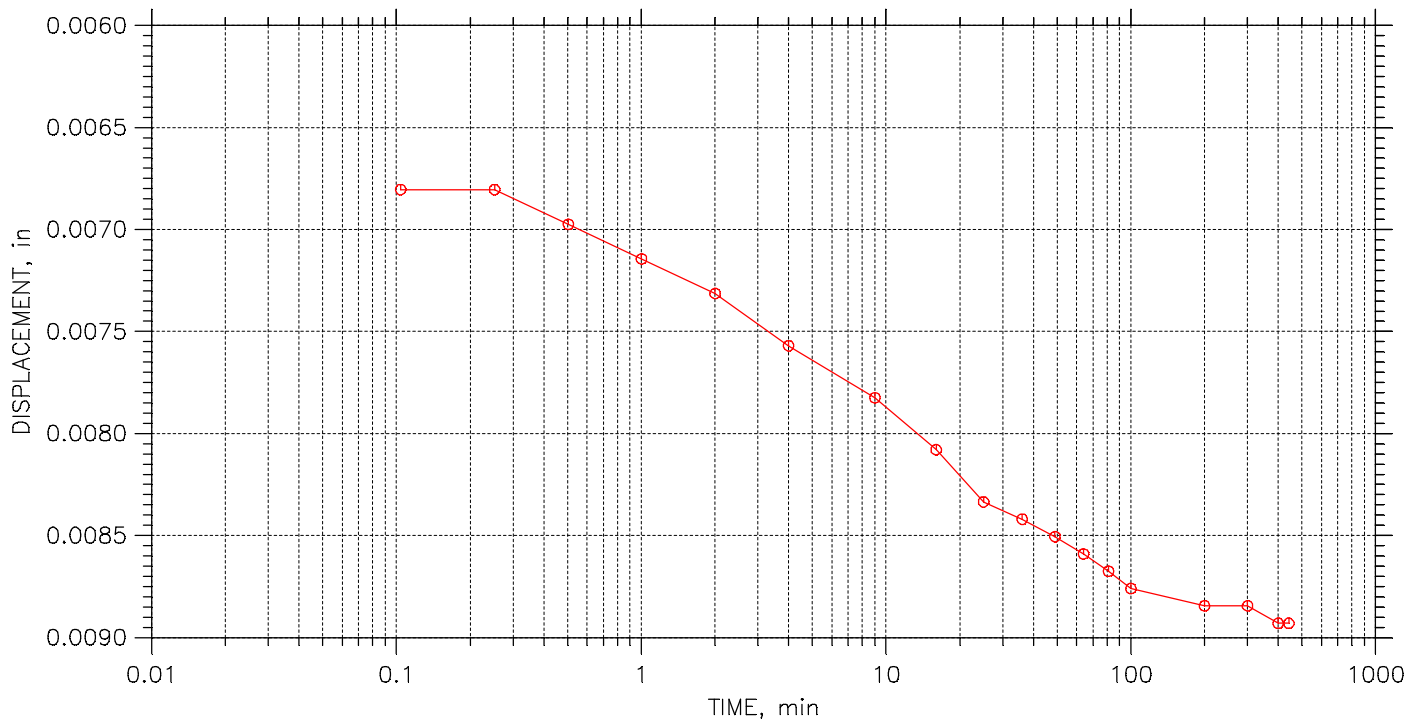
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 23

Stress: 1. tsf



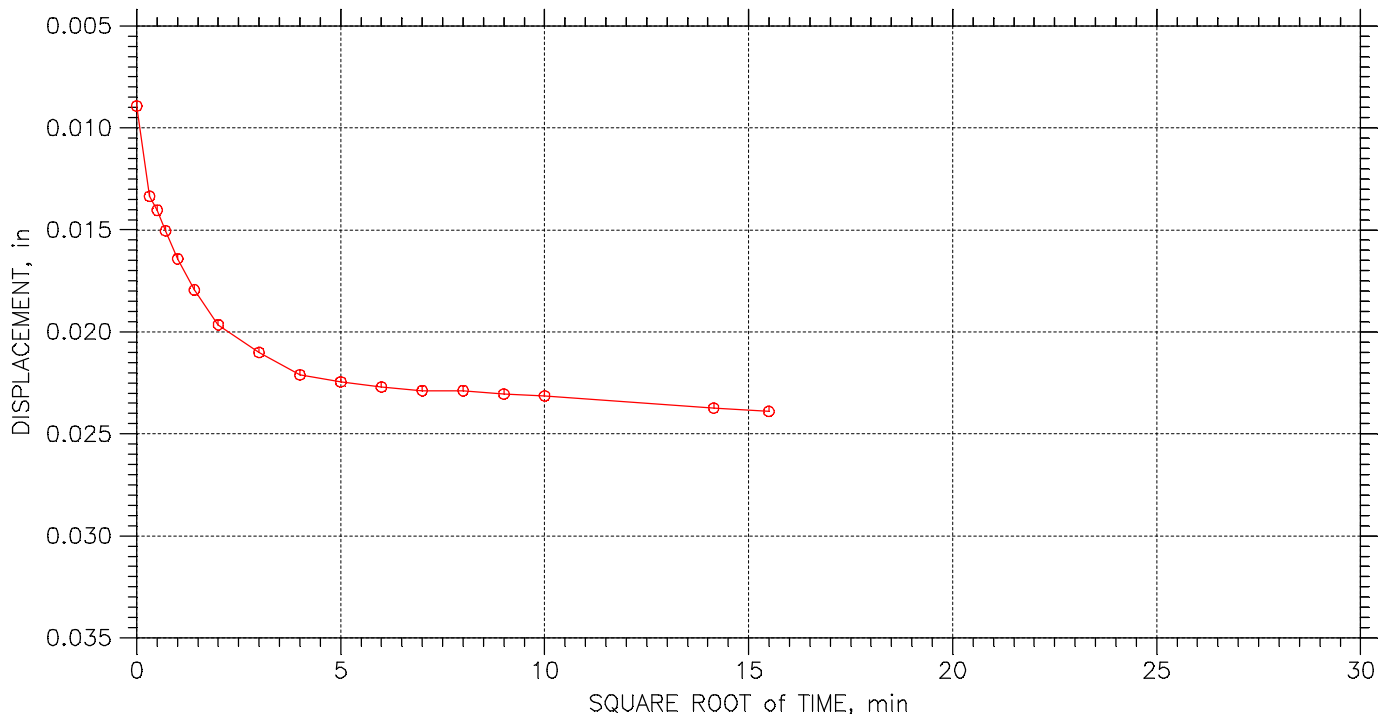
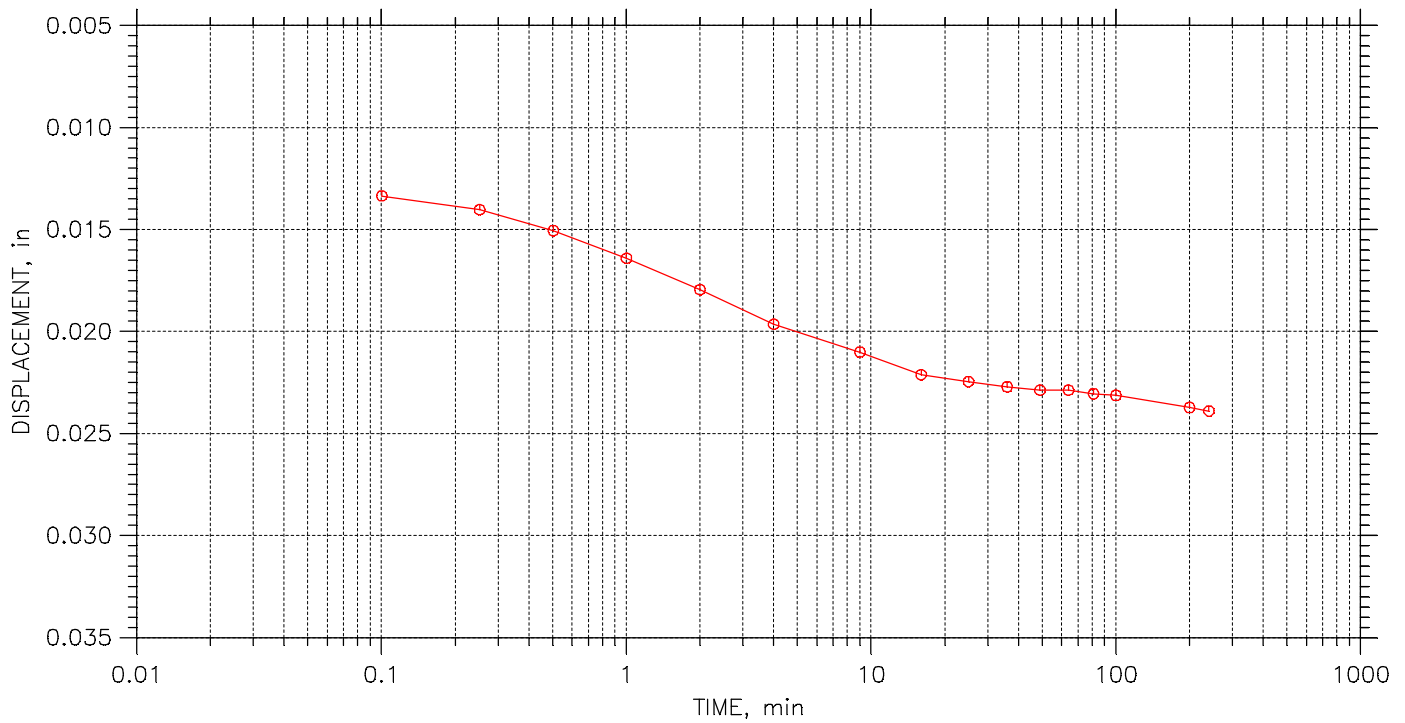
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 23

Stress: 2. tsf



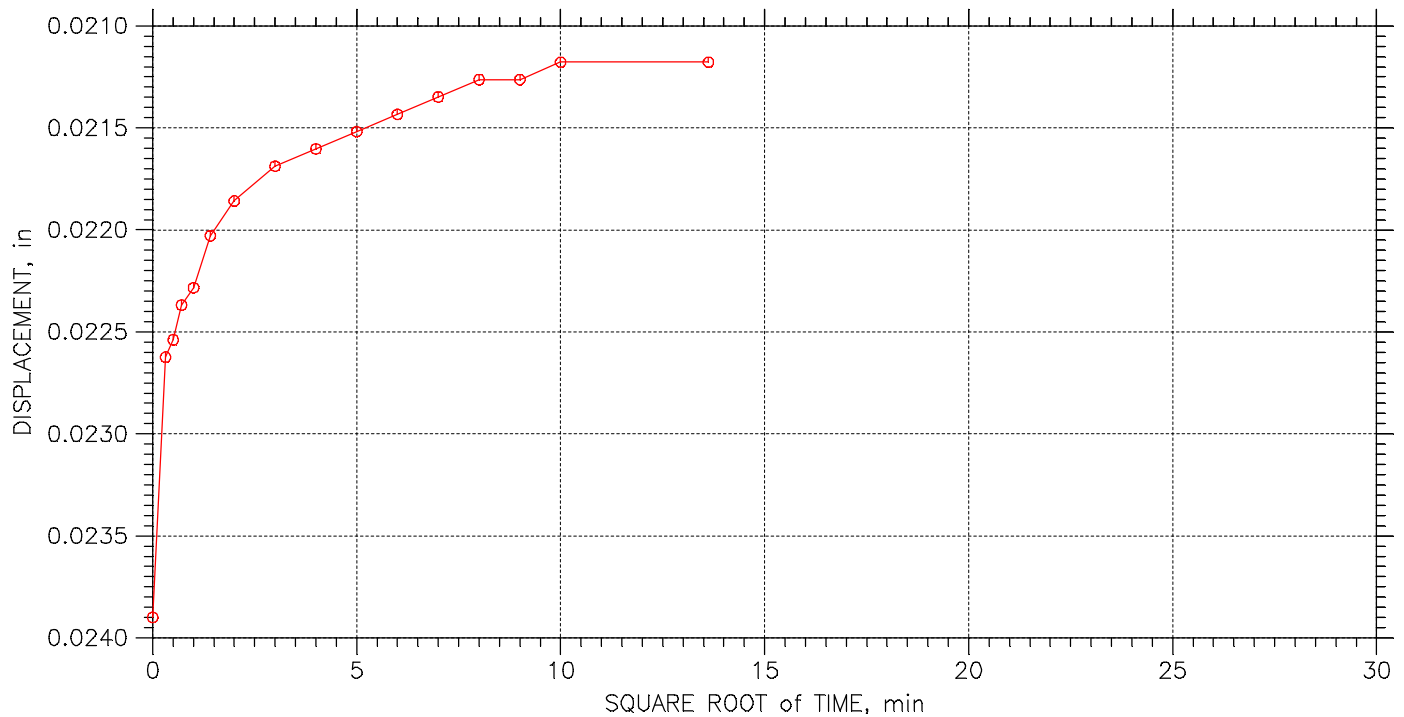
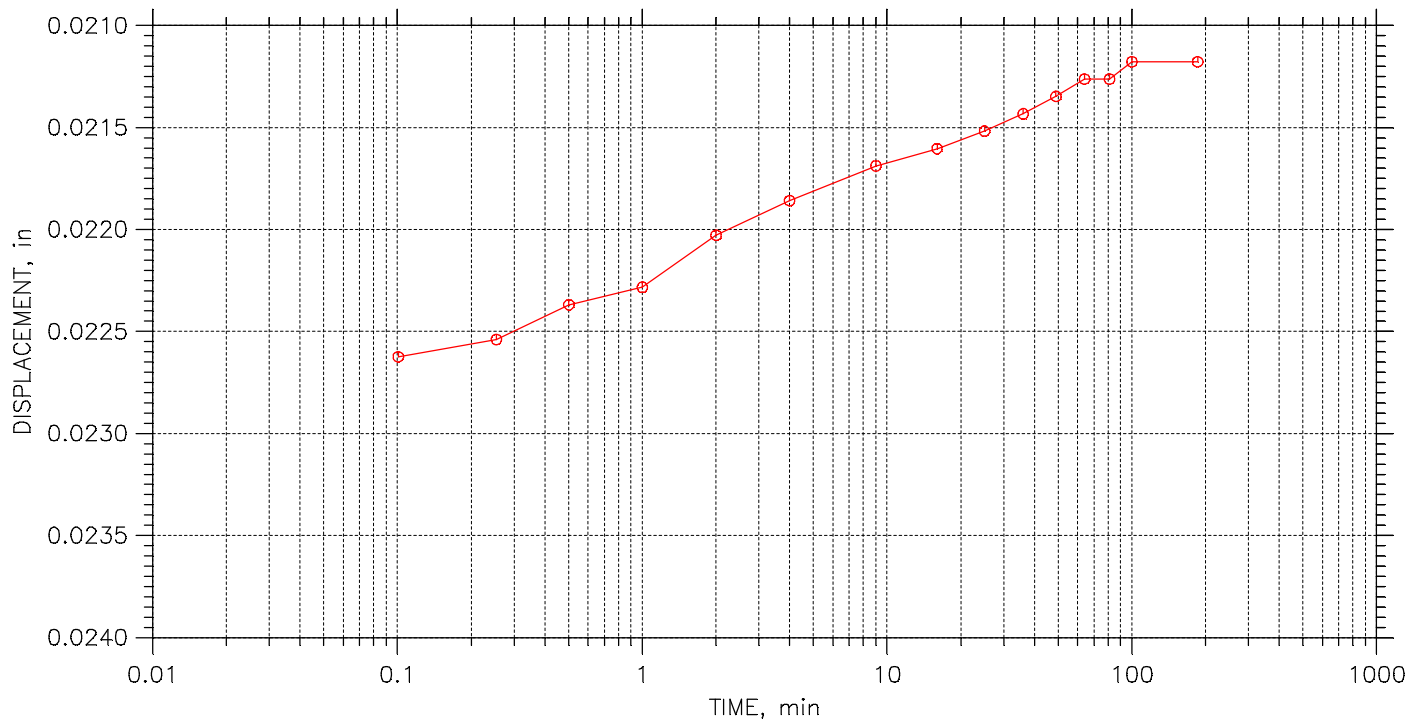
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 23

Stress: 1. tsf



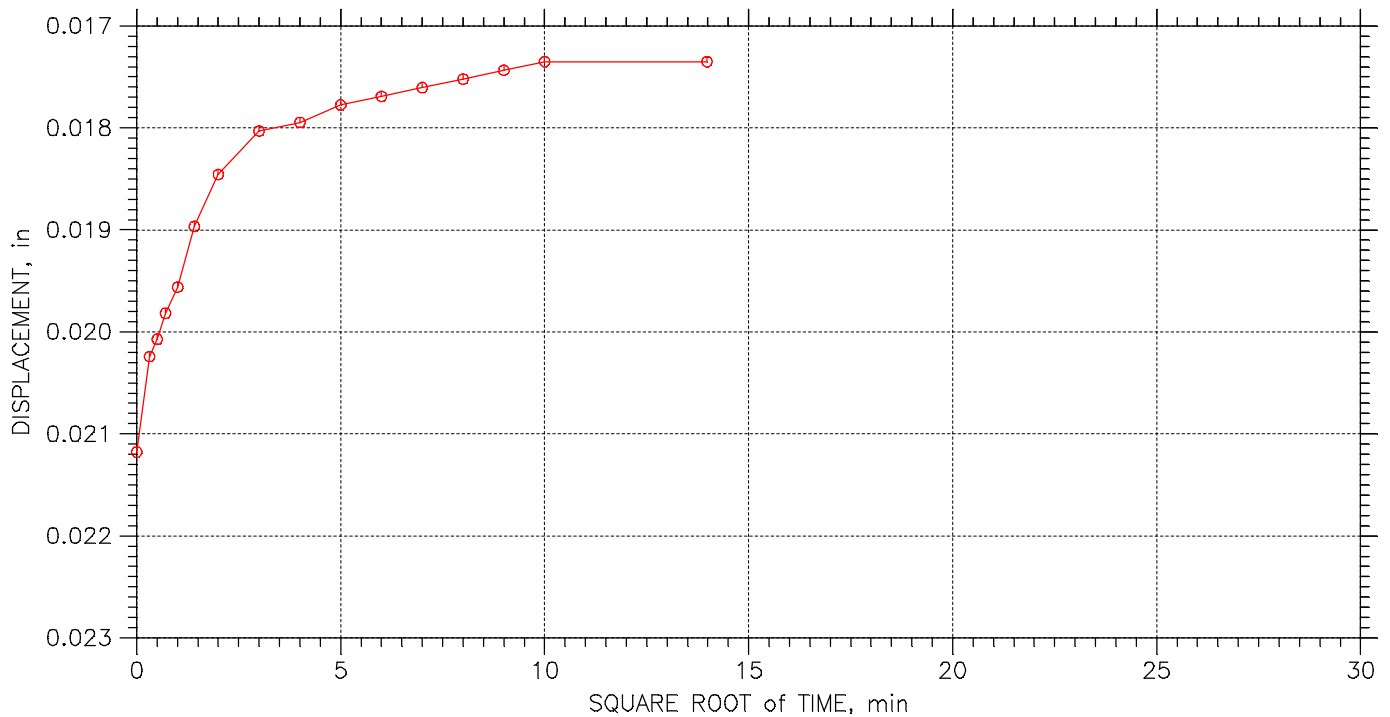
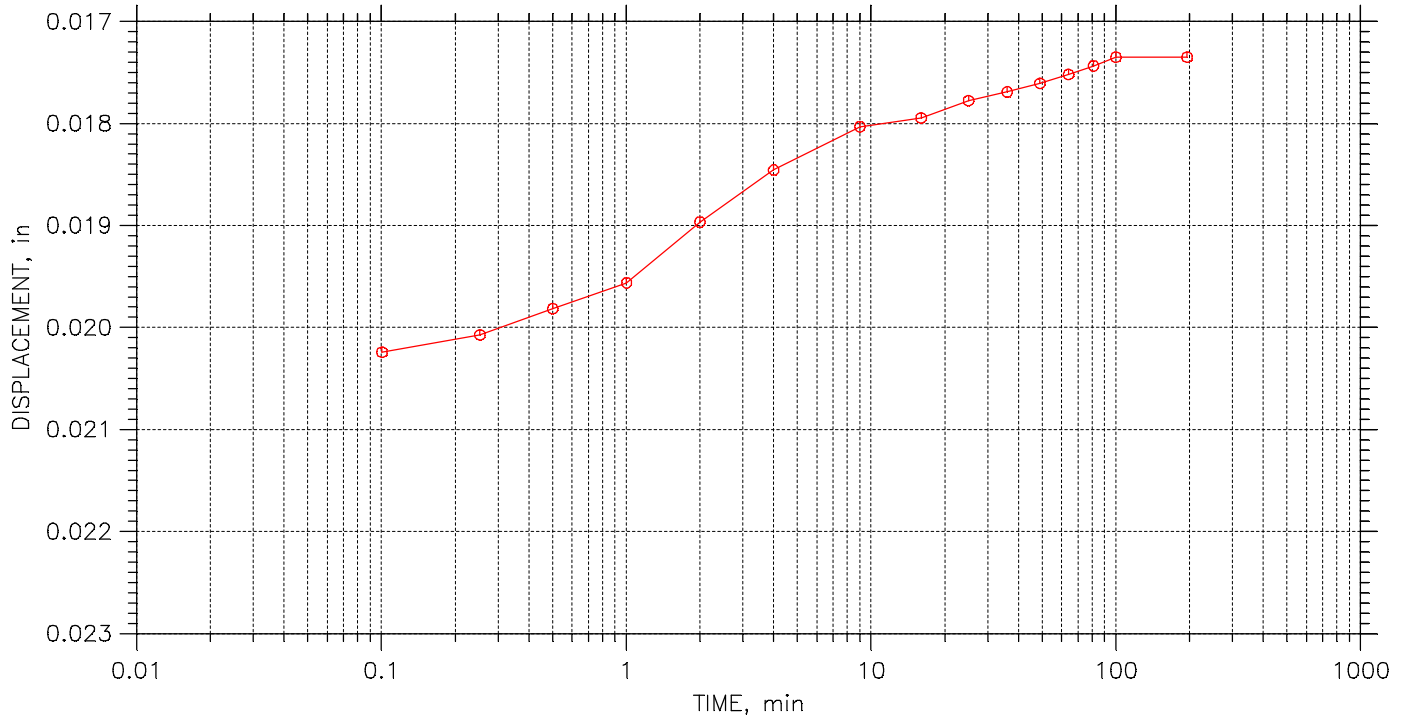
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 23

Stress: 0.5 tsf



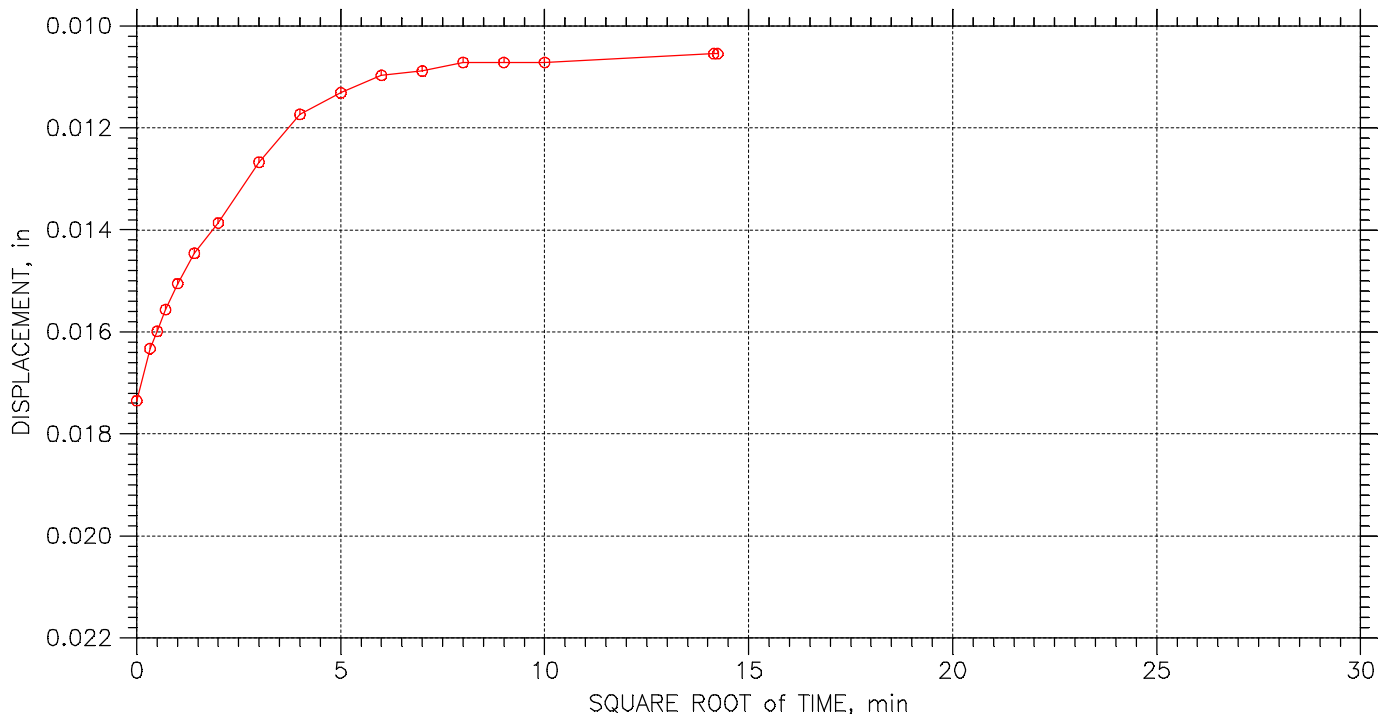
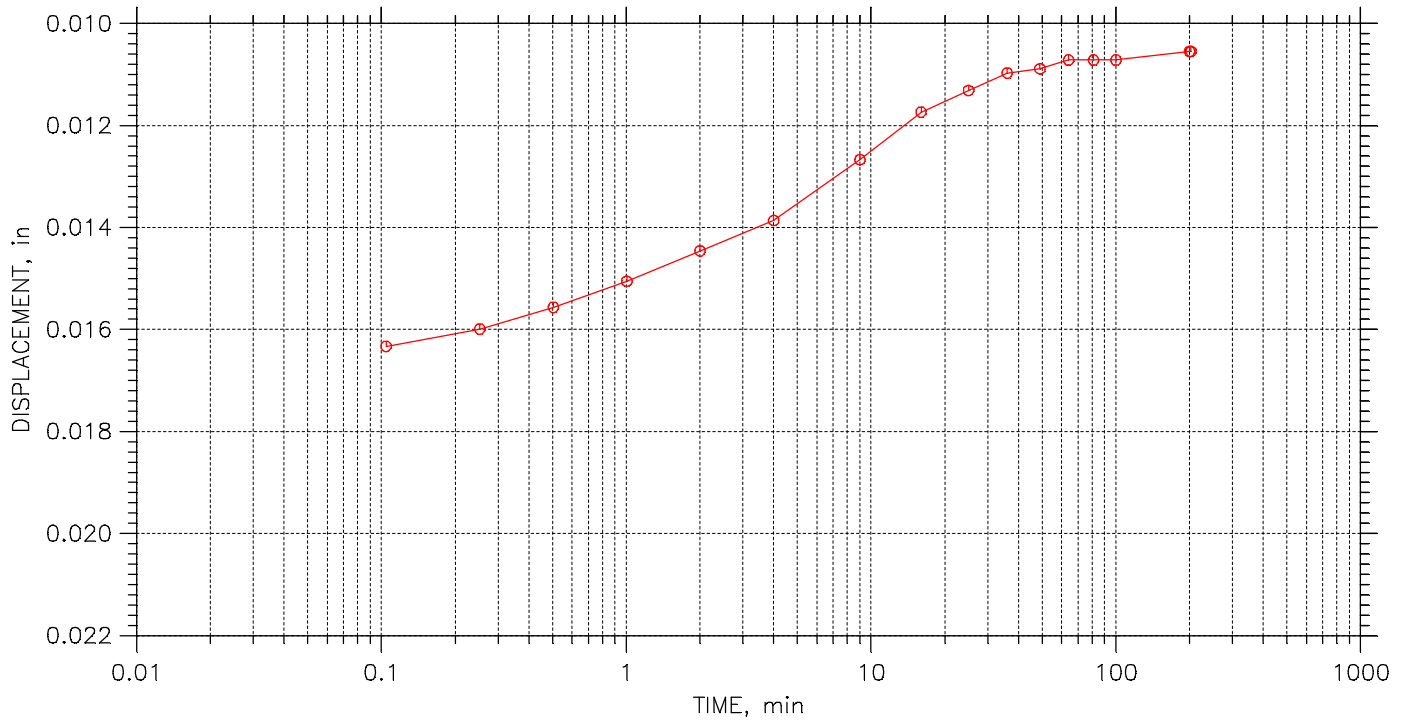
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 23

Stress: 0.125 tsf



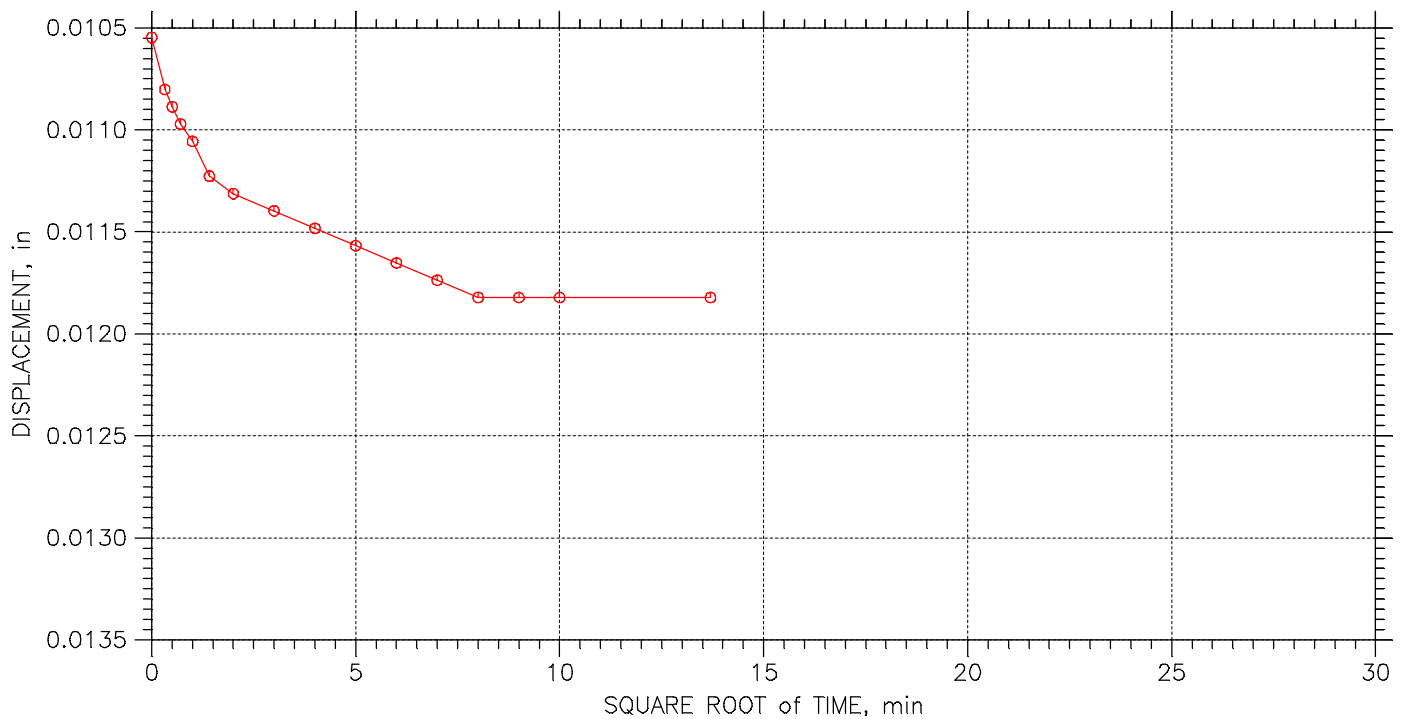
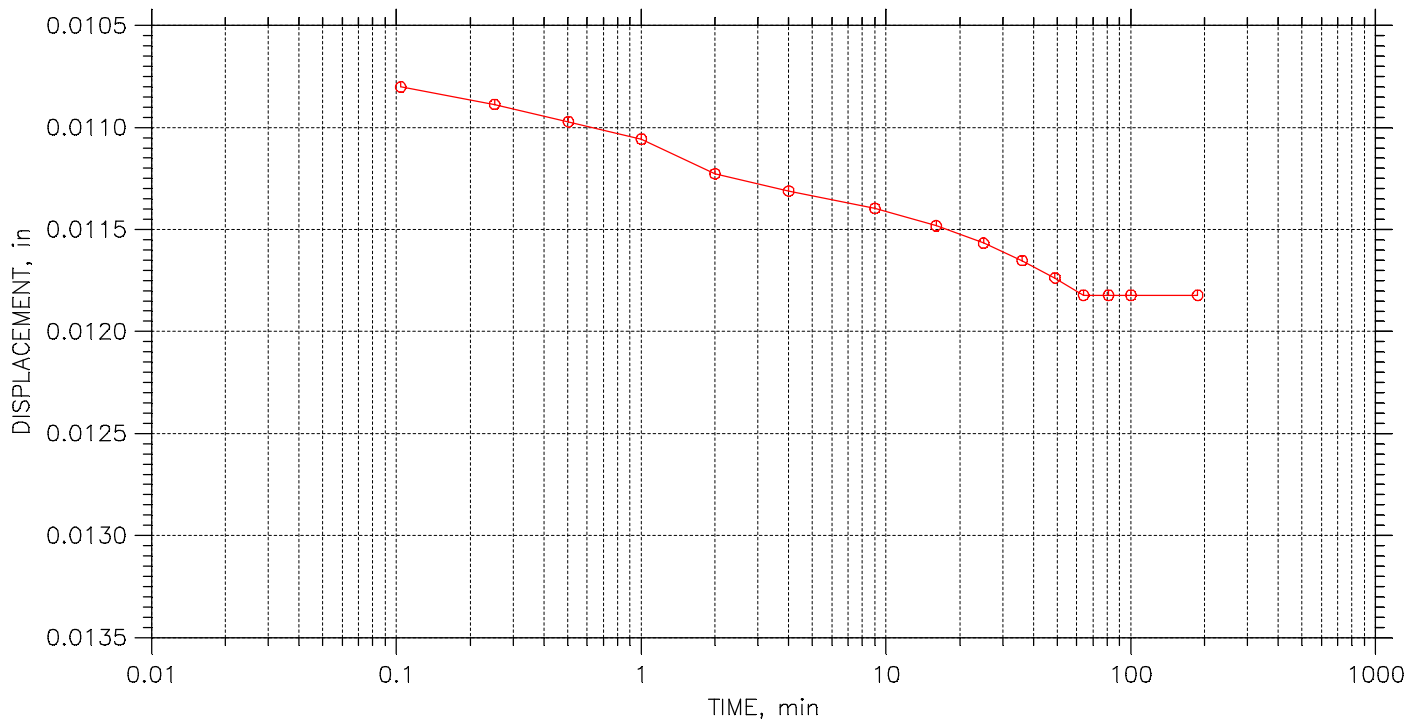
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 23

Stress: 0.25 tsf



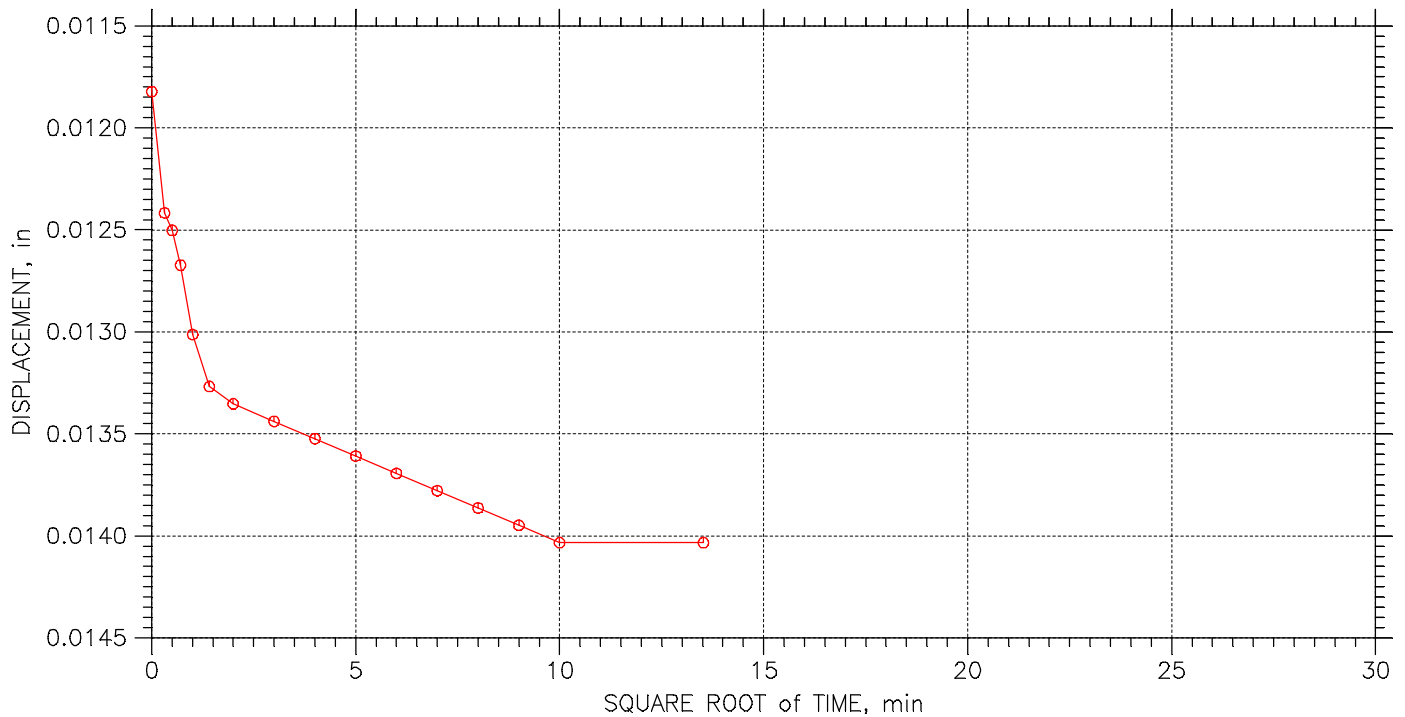
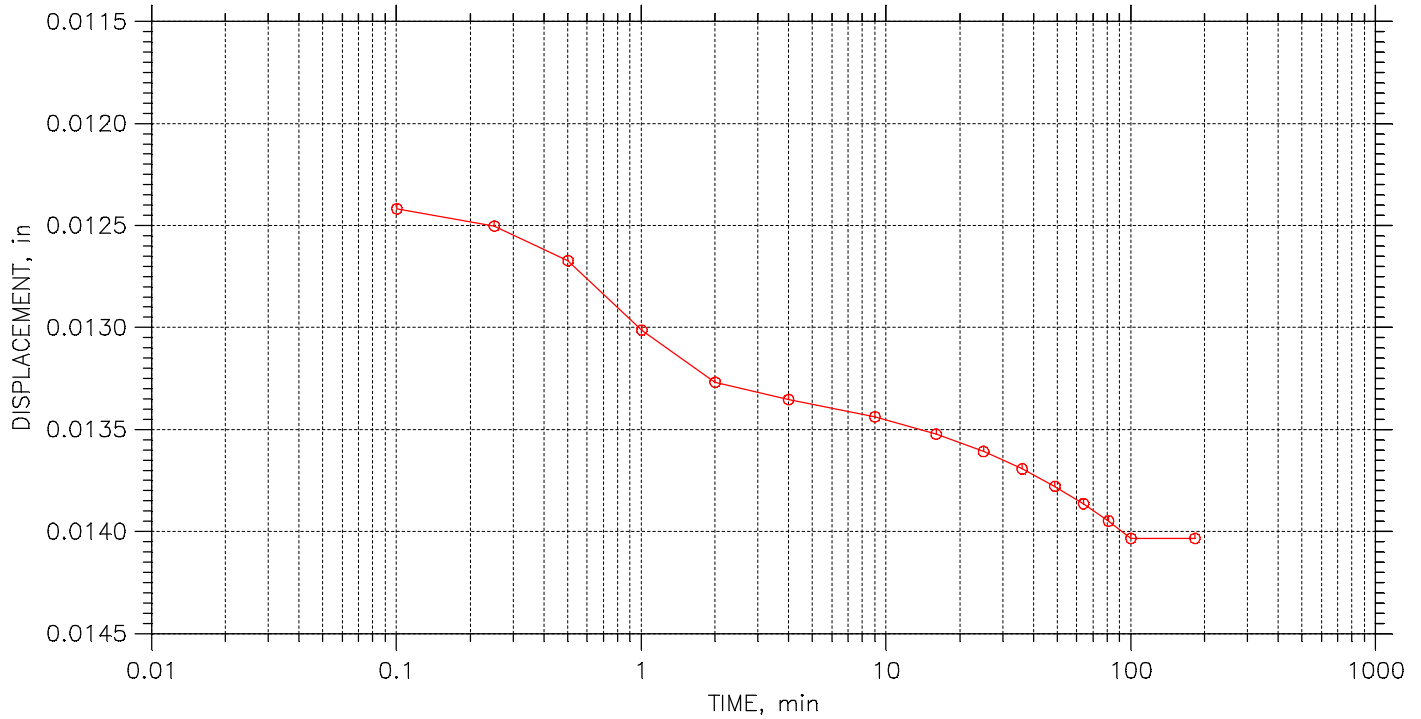
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 23

Stress: 0.5 tsf



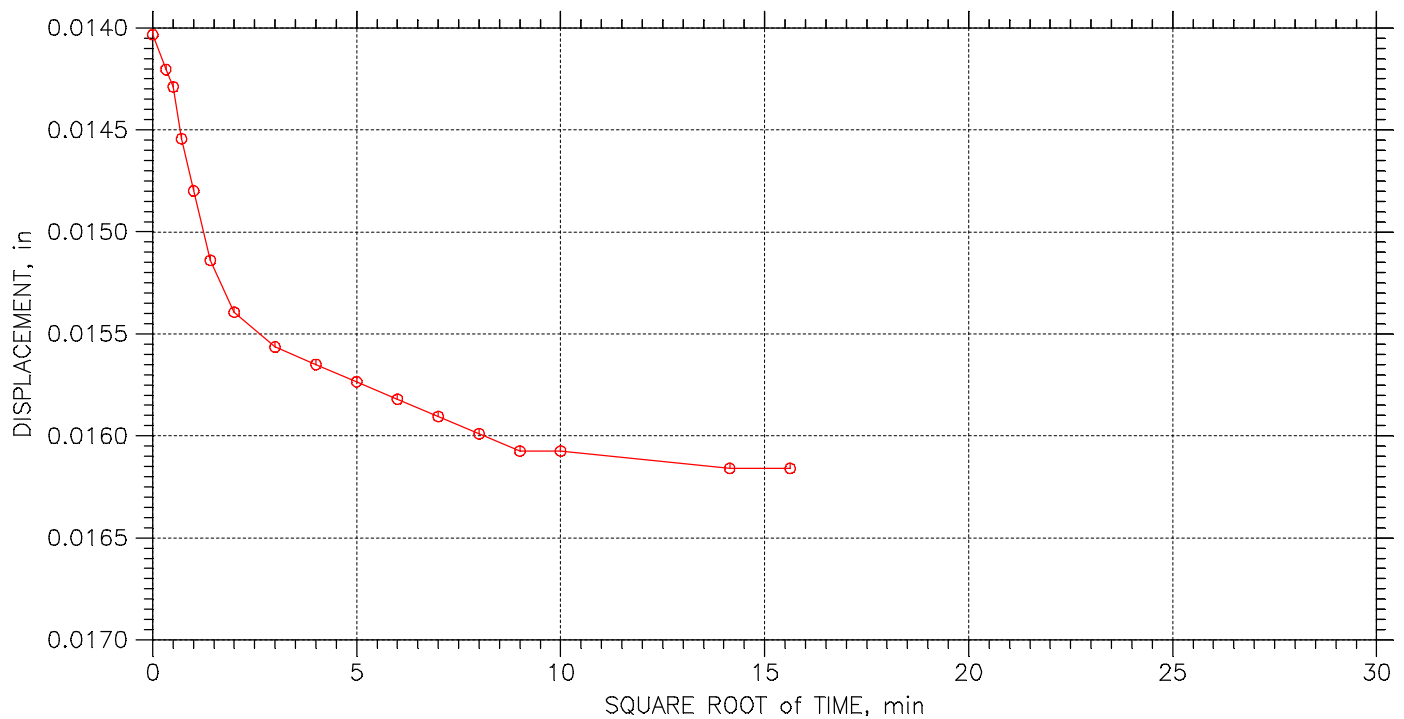
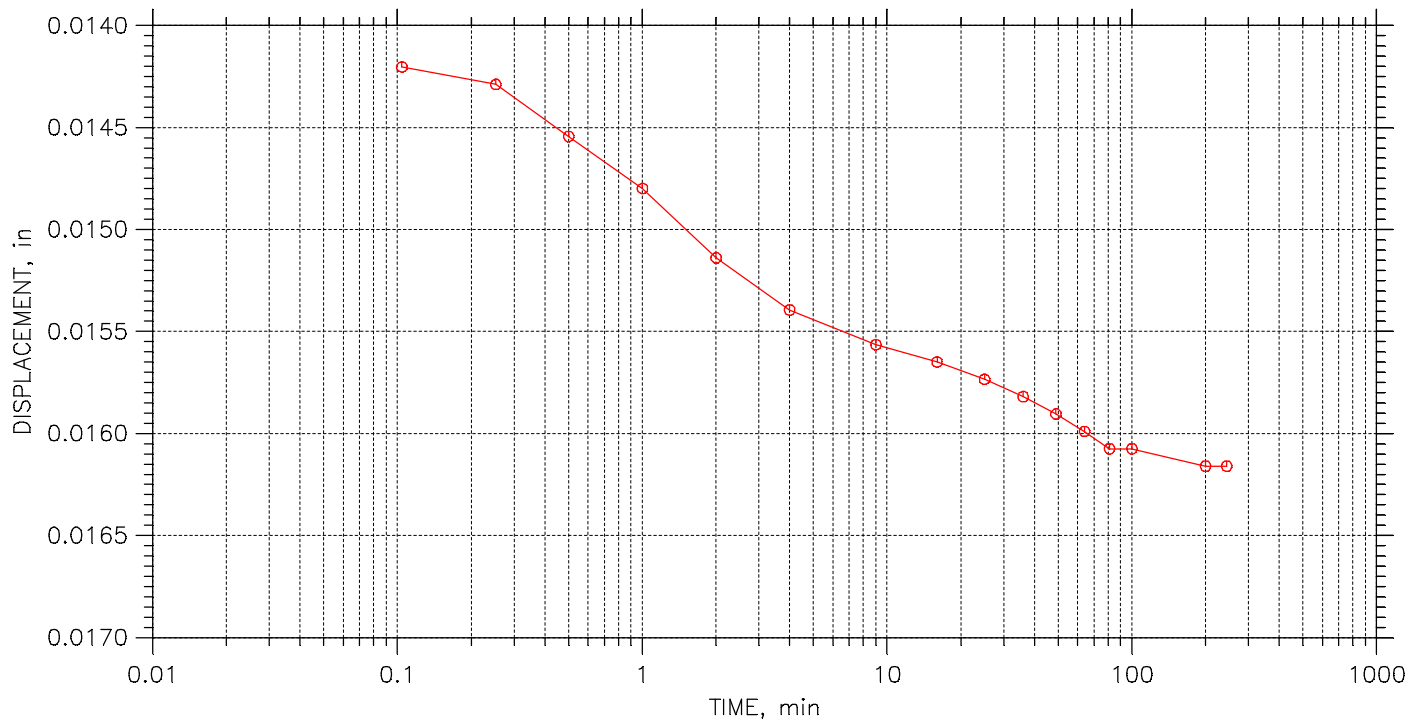
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 23

Stress: 0.75 tsf



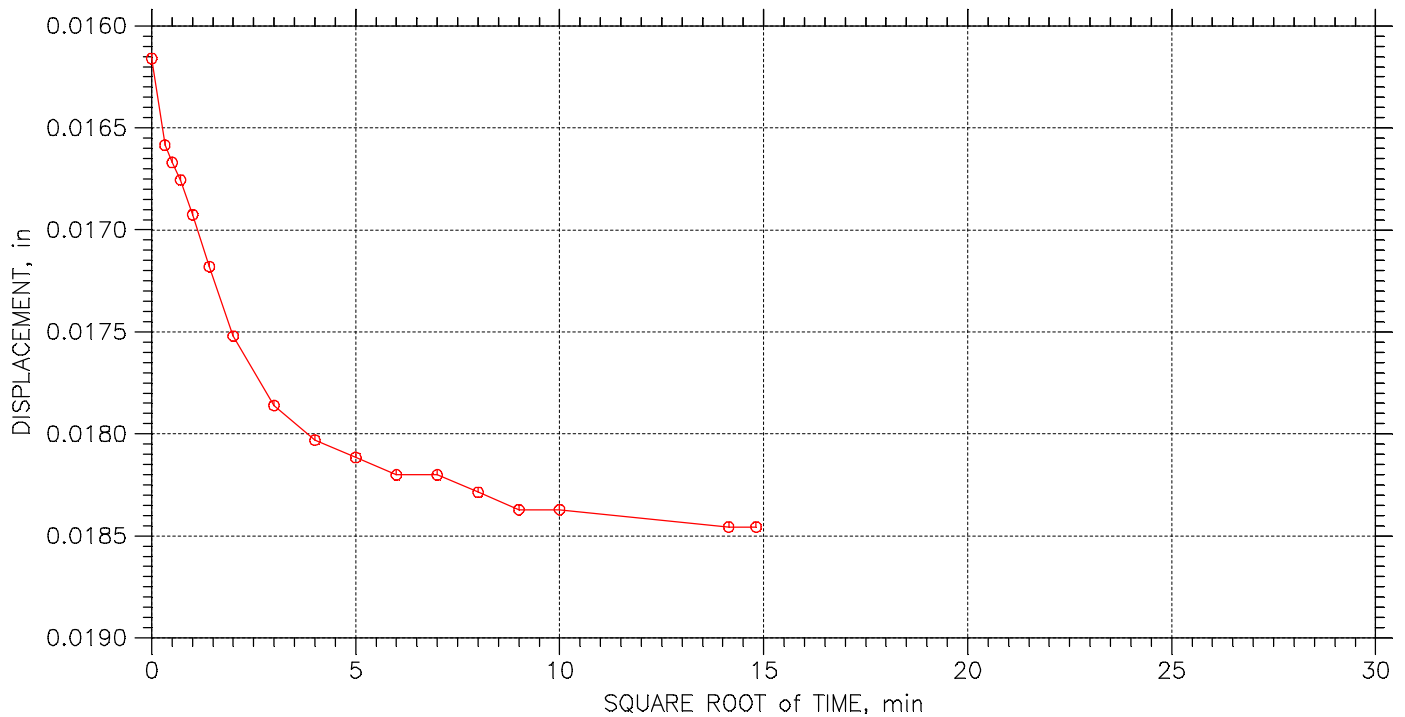
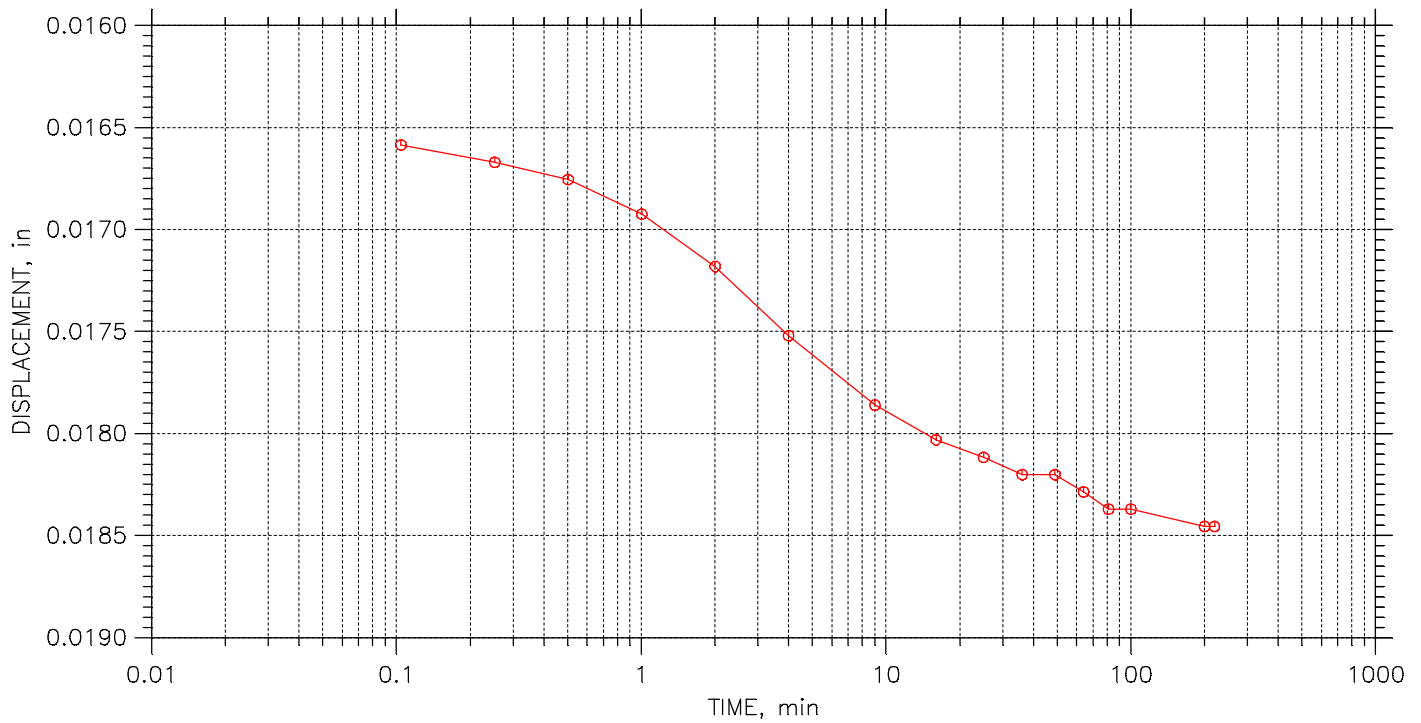
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 23

Stress: 1. tsf



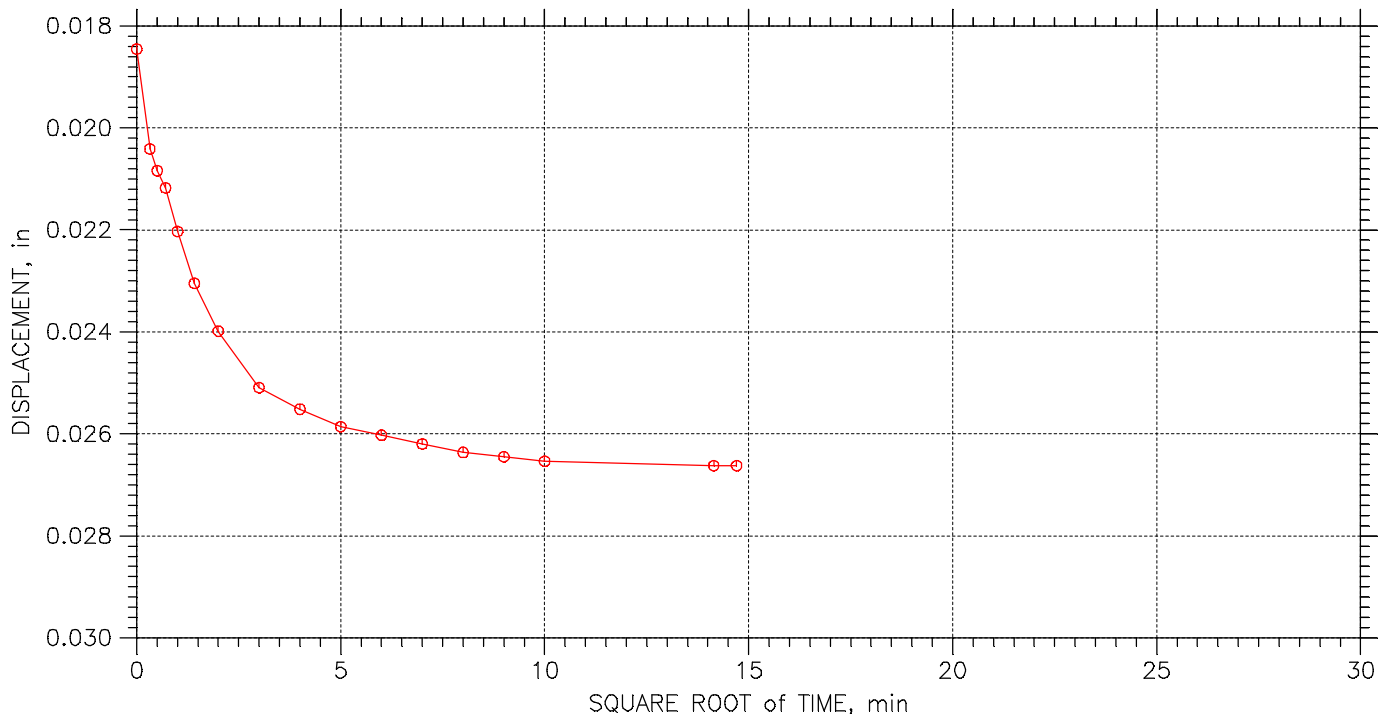
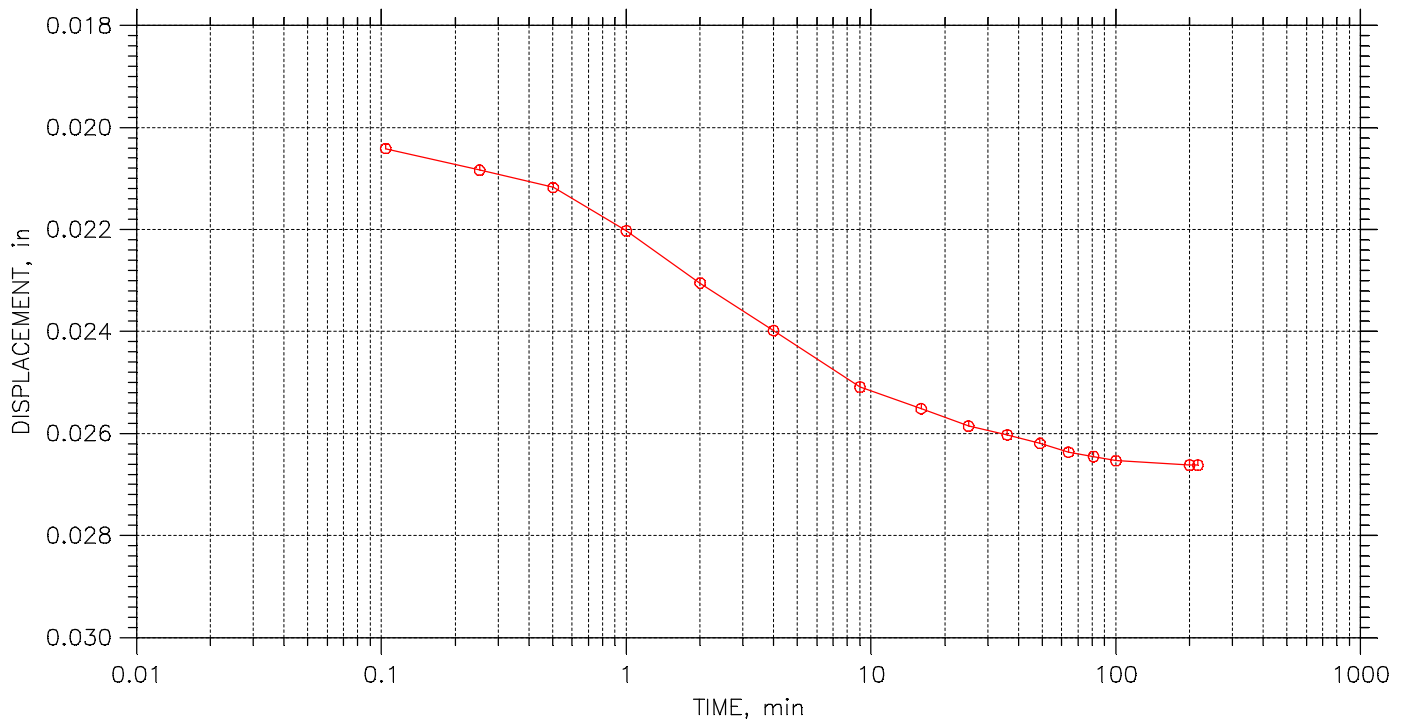
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 23

Stress: 2. tsf



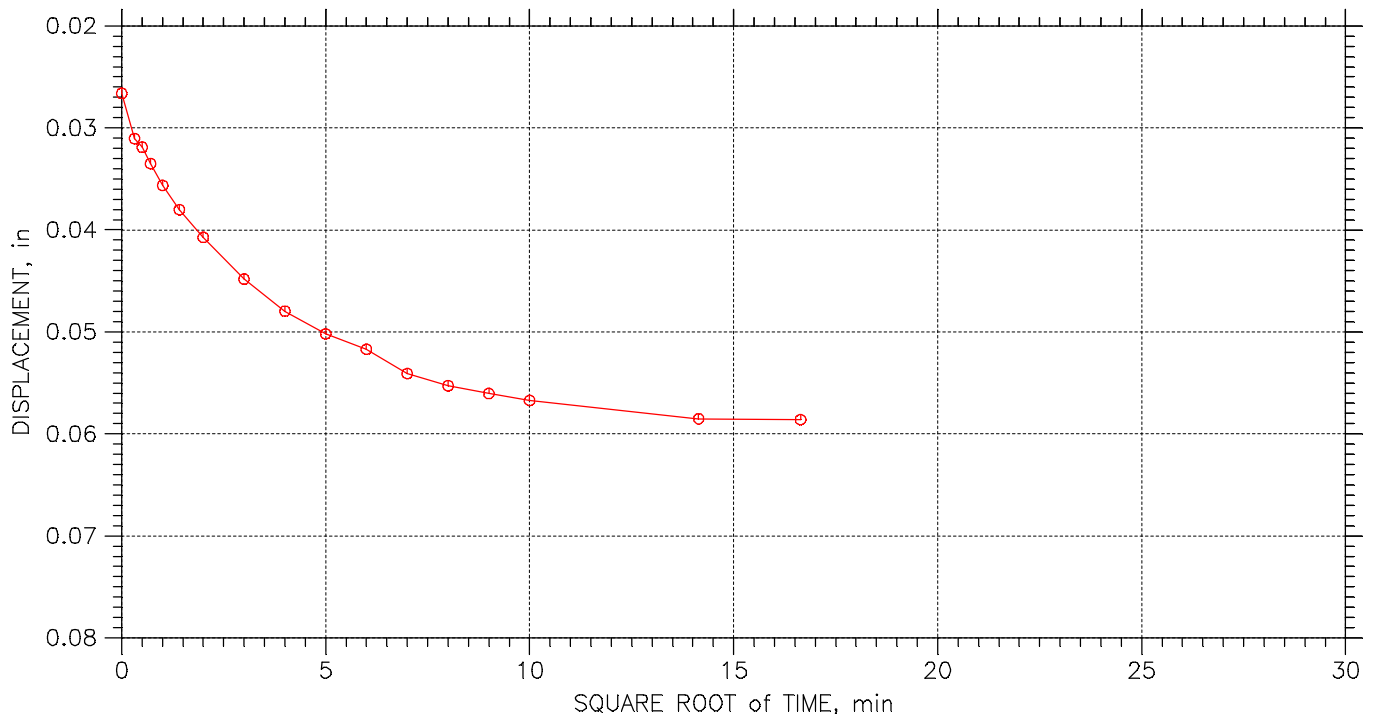
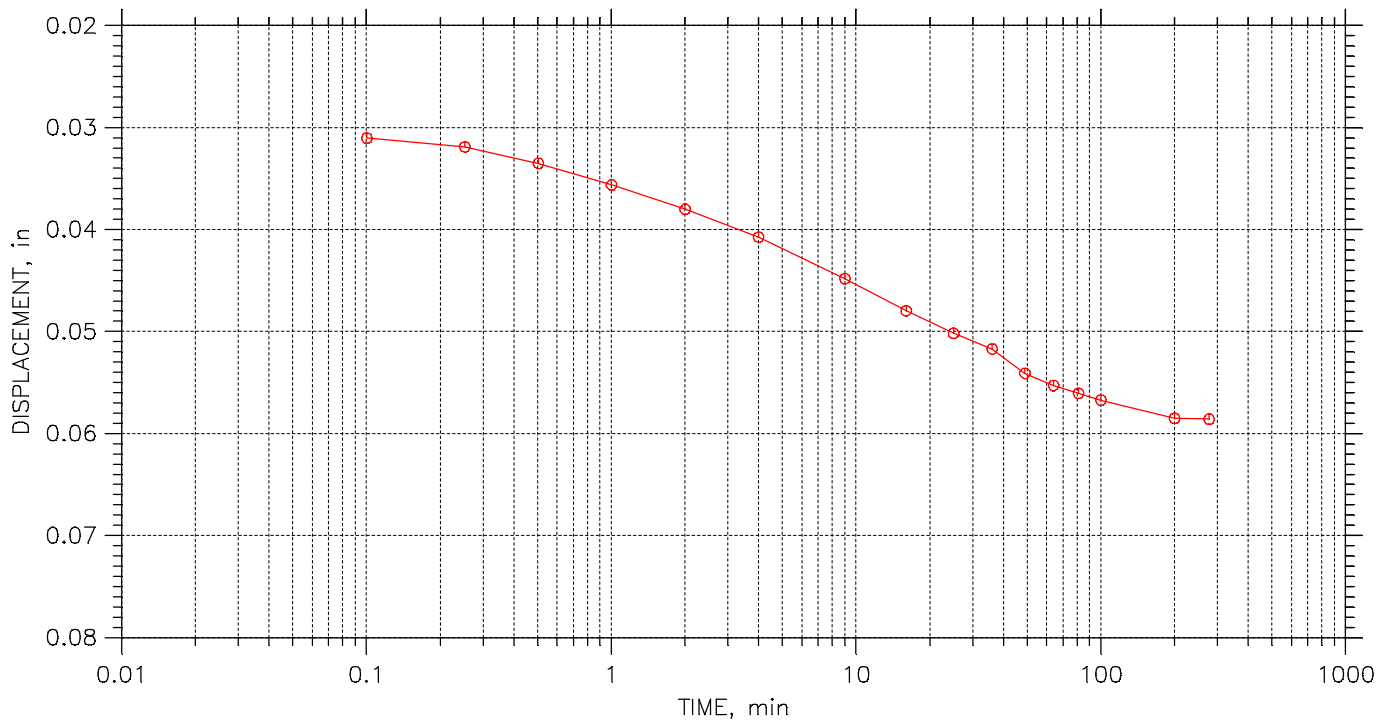
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 23

Stress: 4. tsf



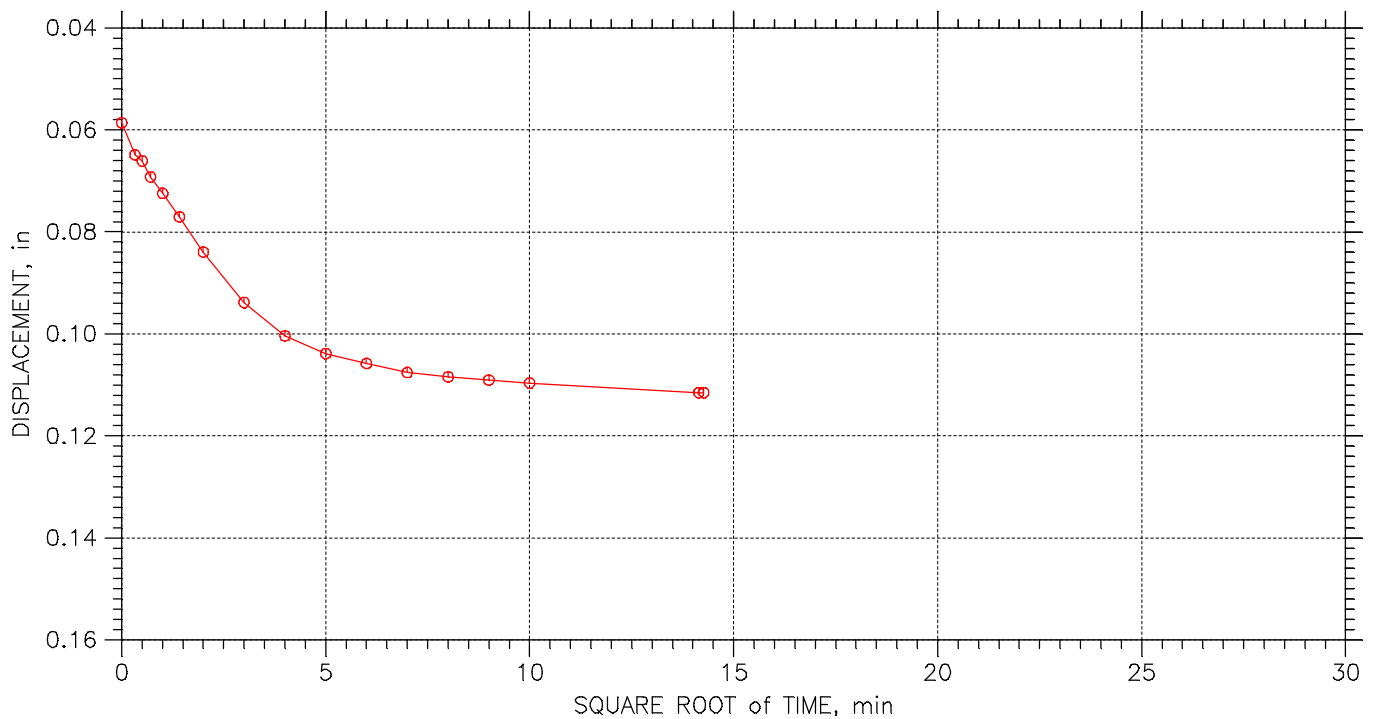
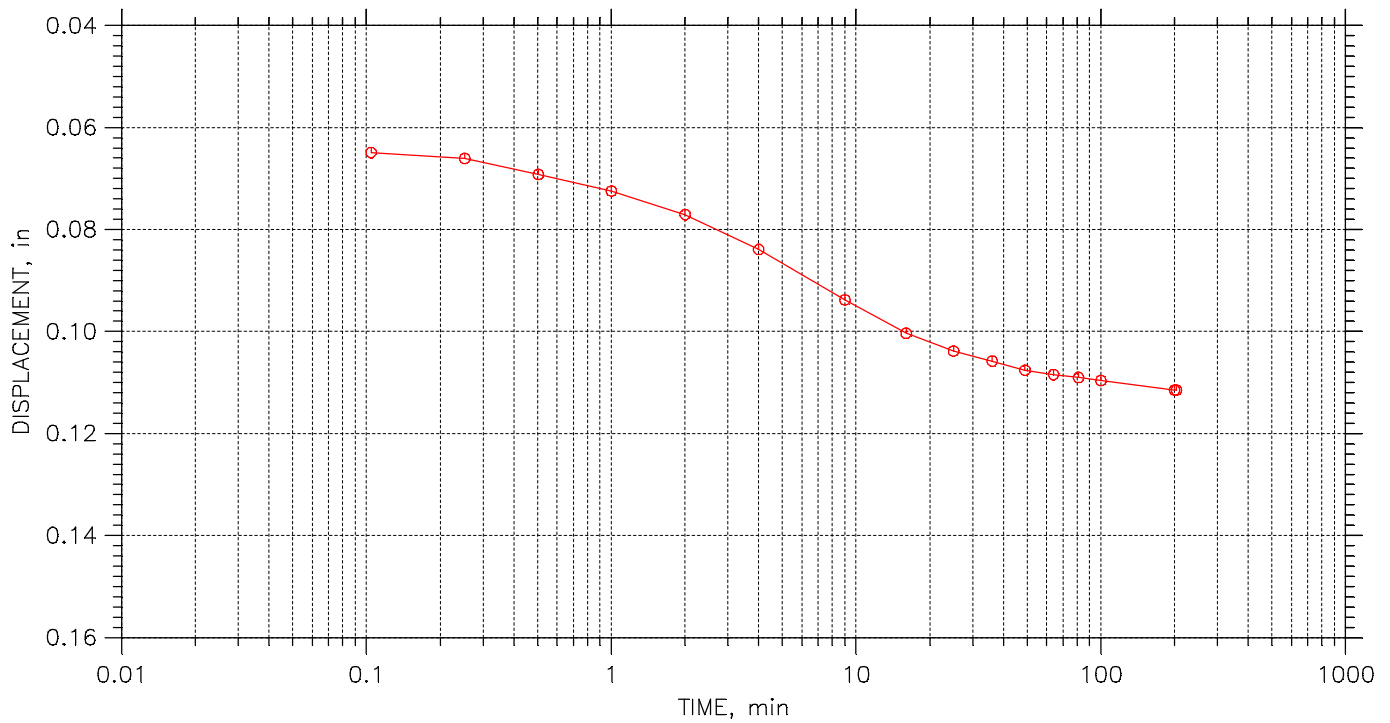
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 23

Stress: 8. tsf



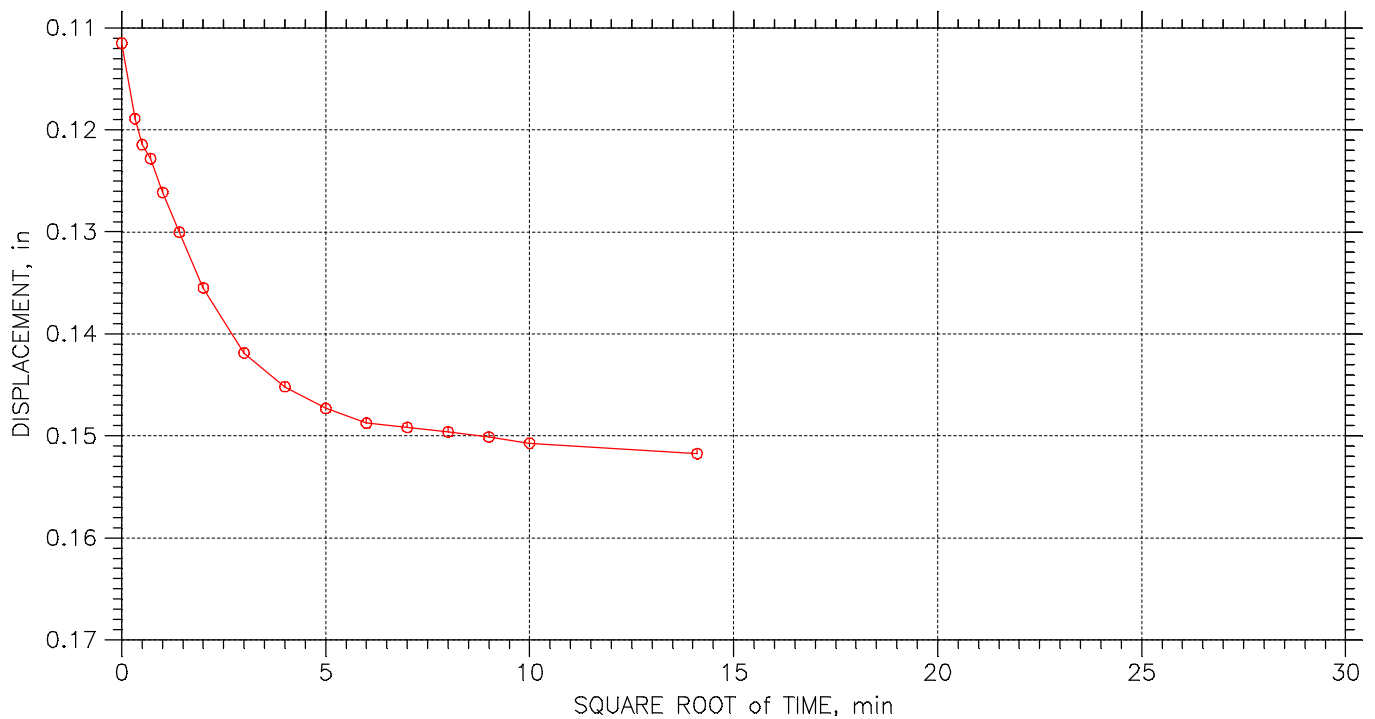
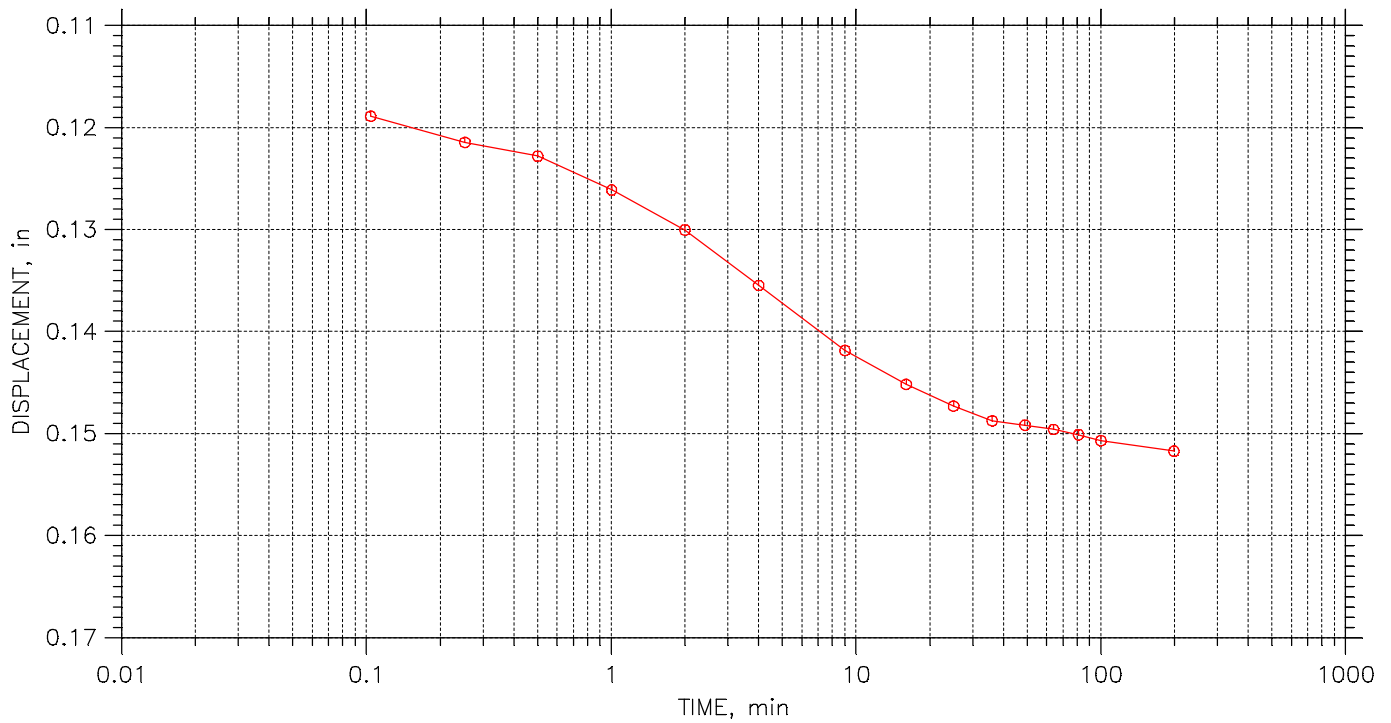
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 23

Stress: 16. tsf



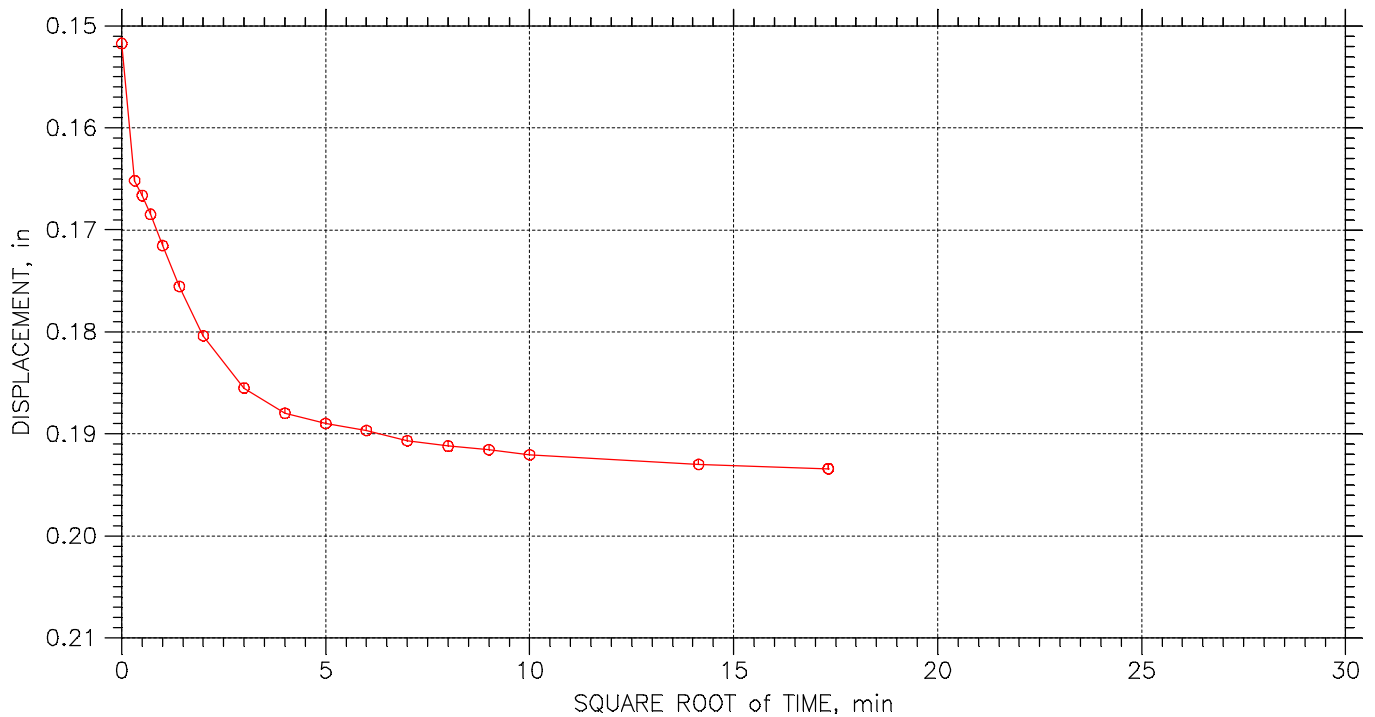
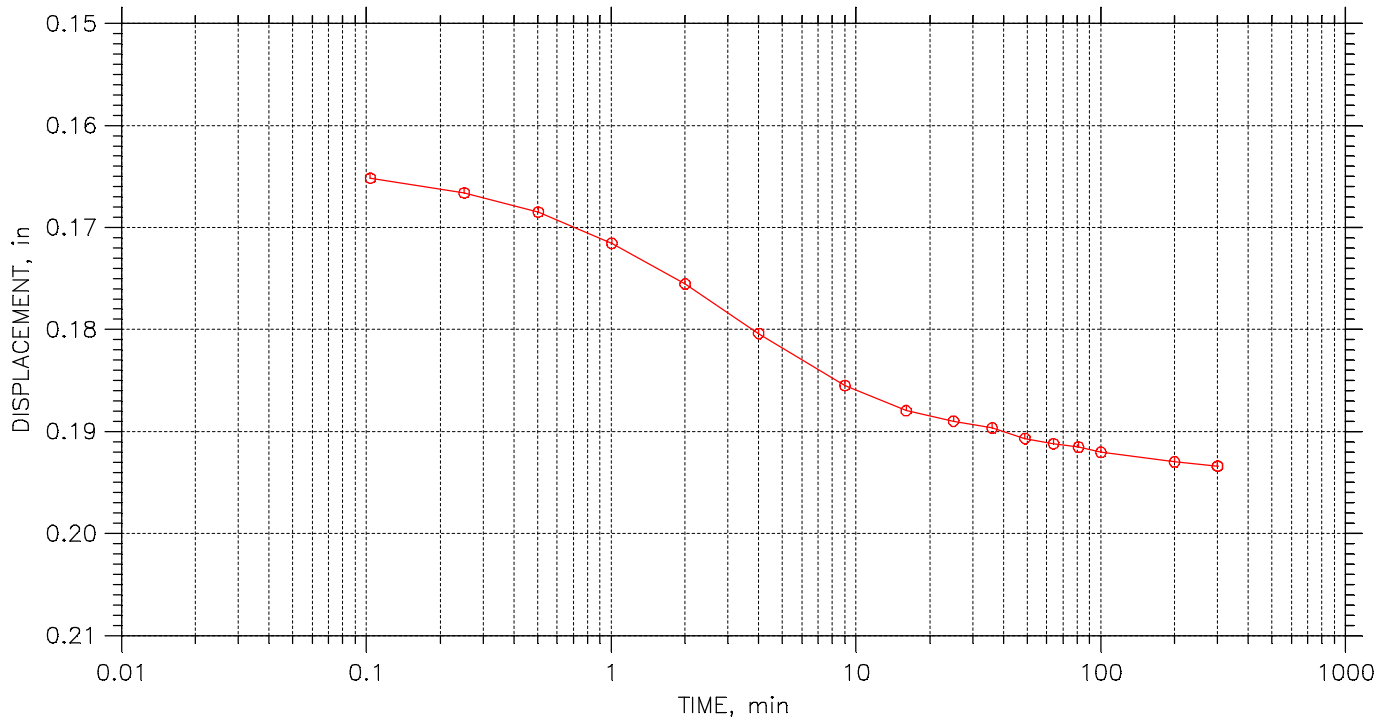
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 23

Stress: 32. tsf



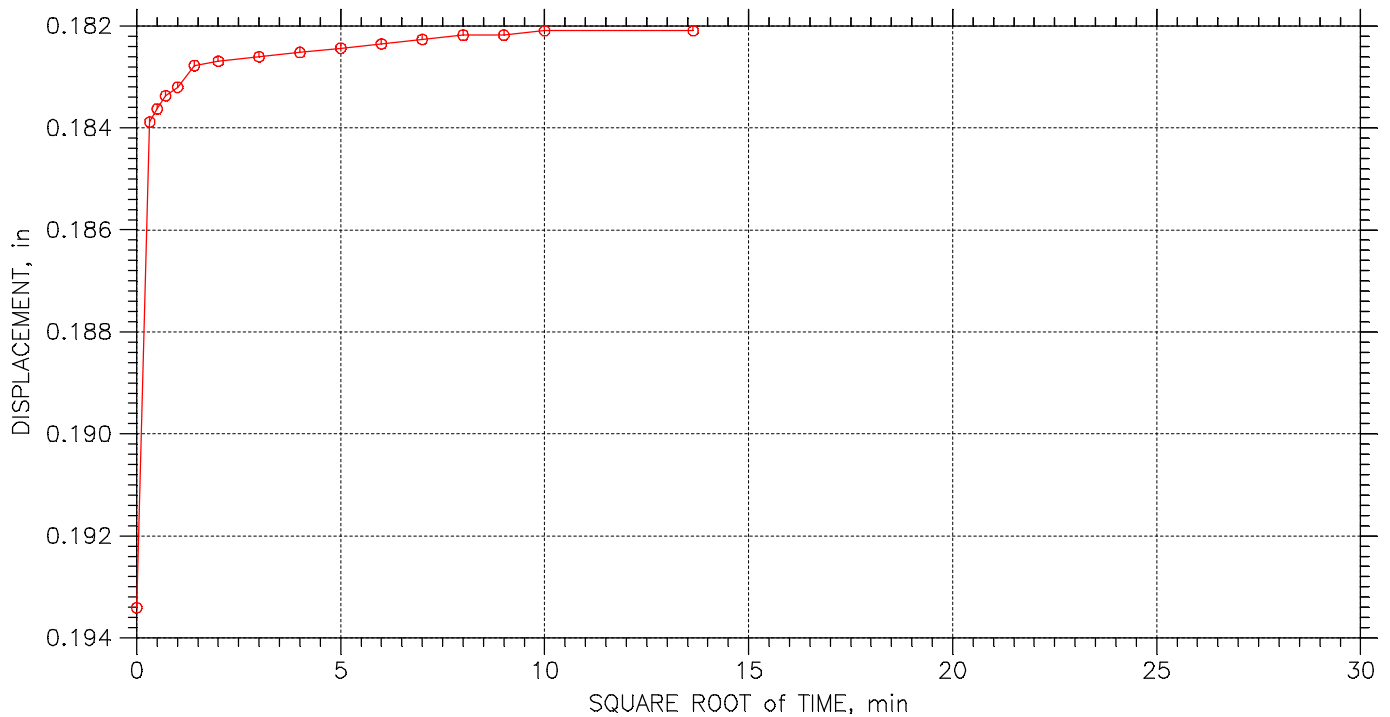
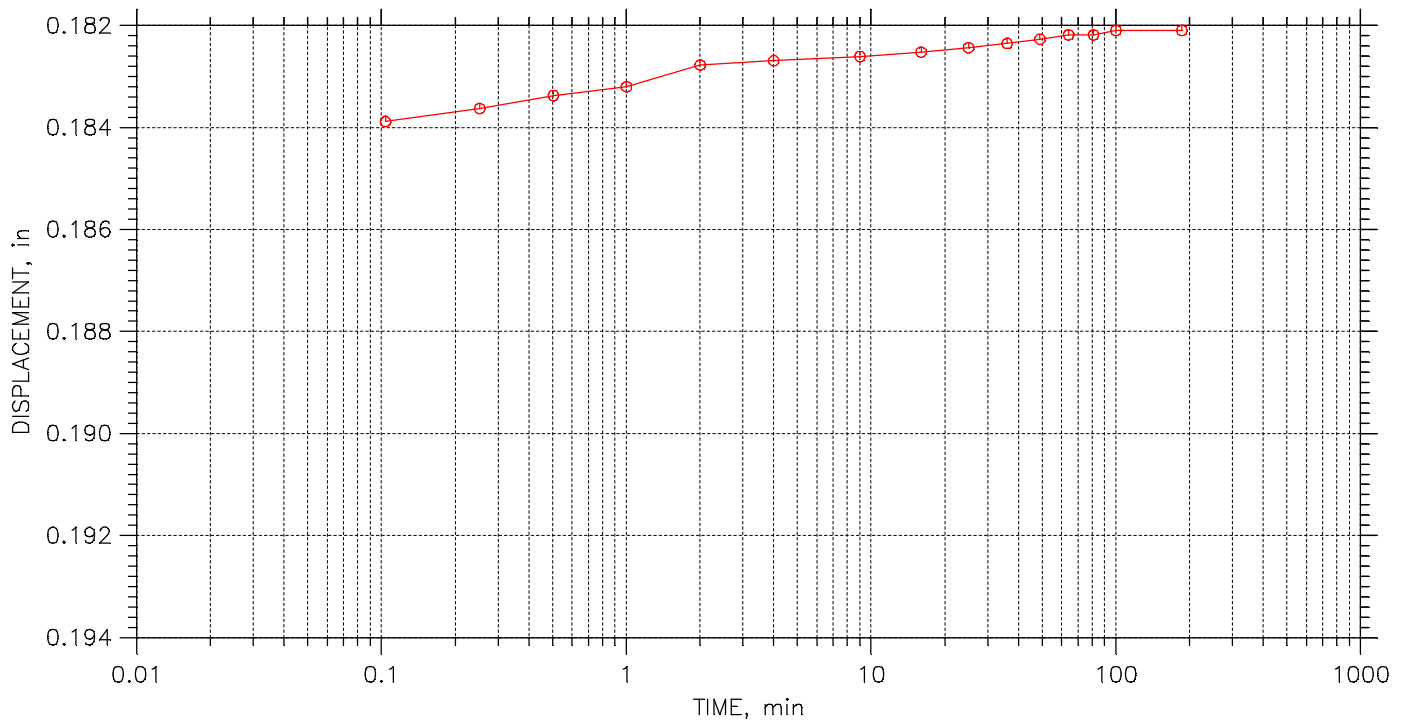
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 23

Stress: 16. tsf



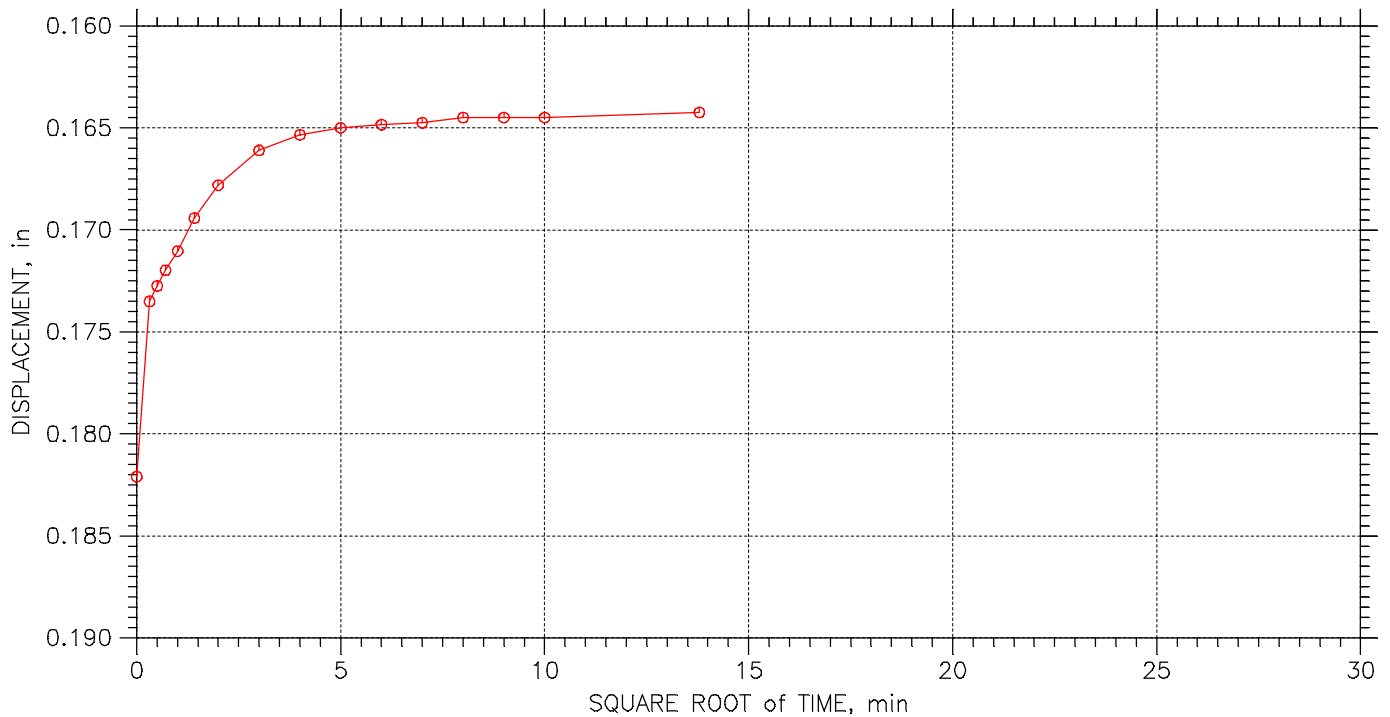
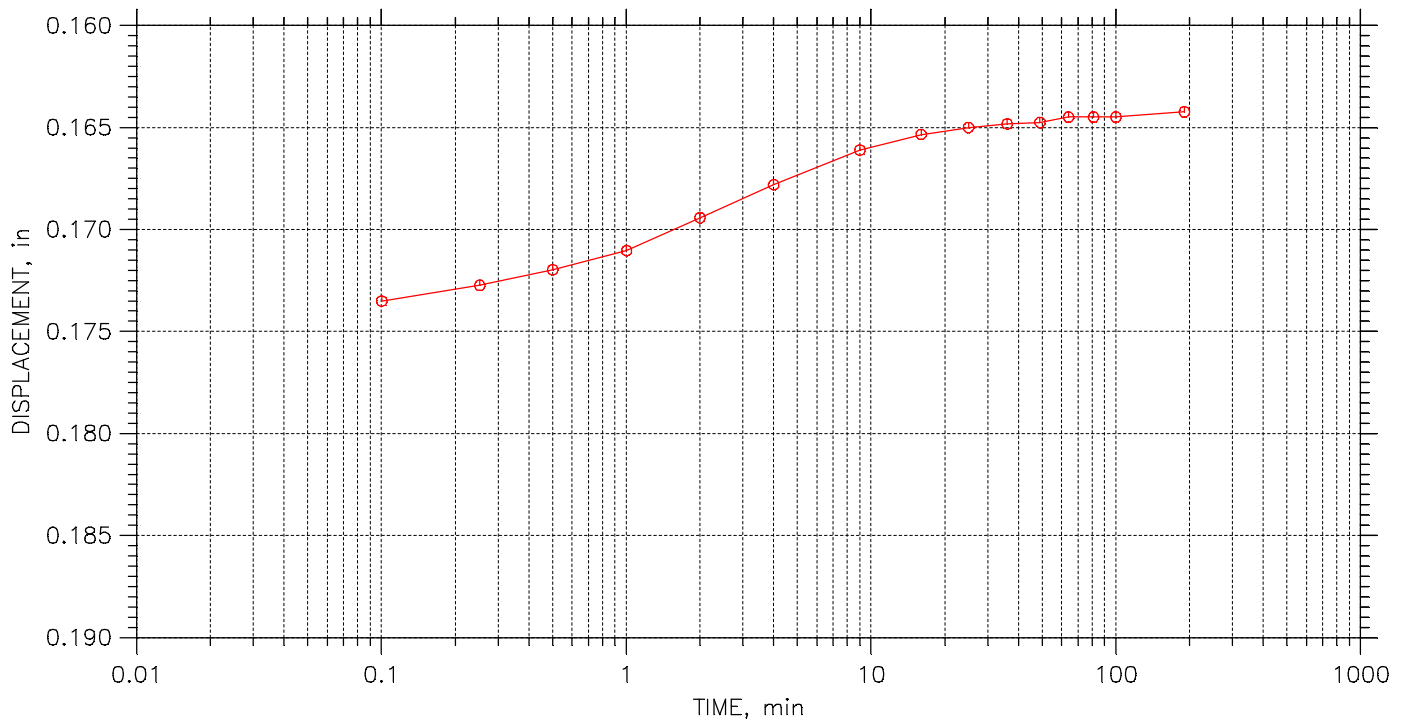
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 23

Stress: 4. tsf



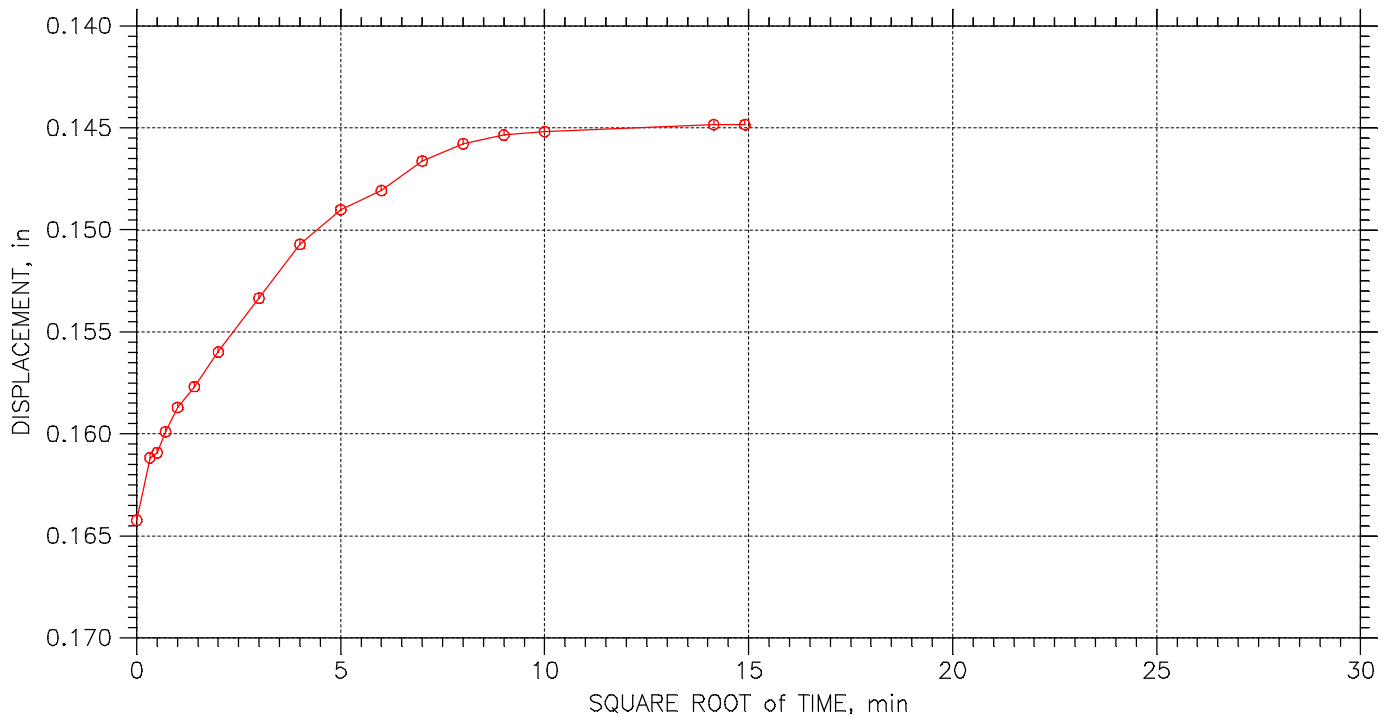
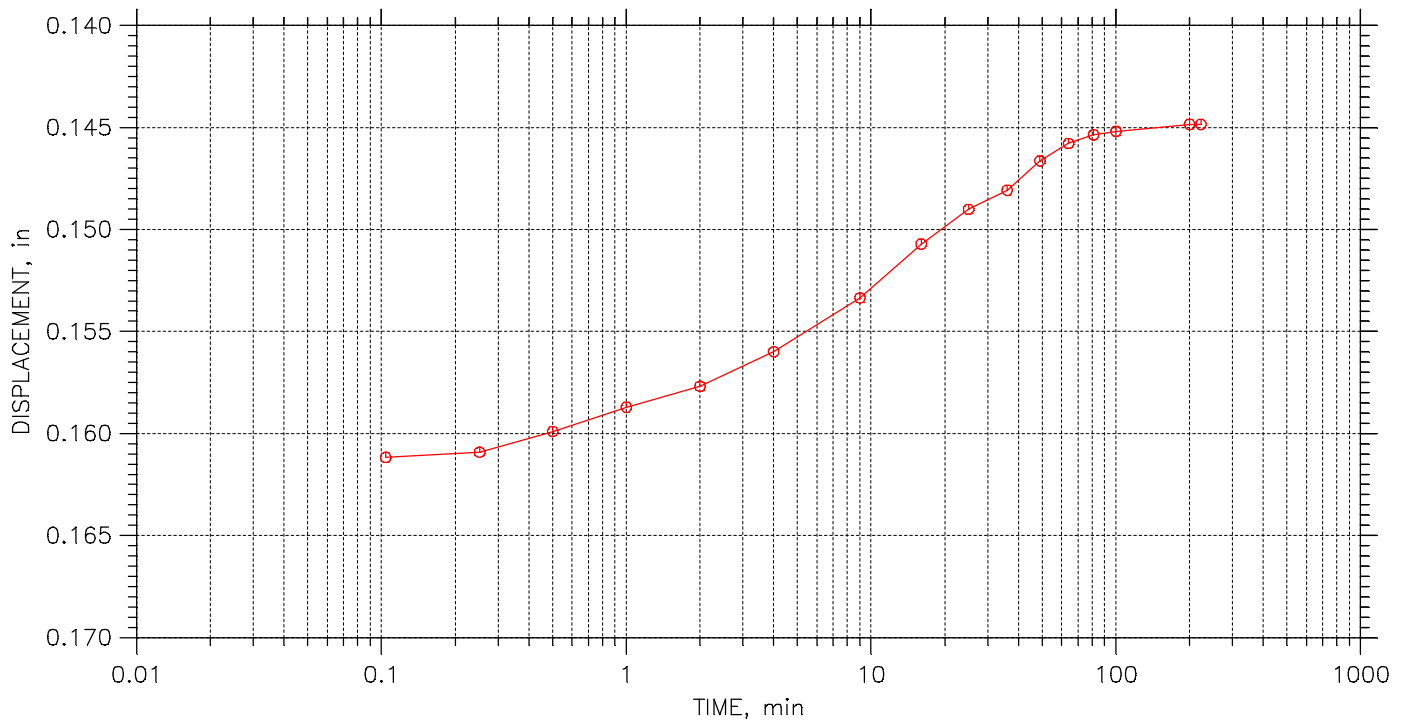
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 23

Stress: 1. tsf



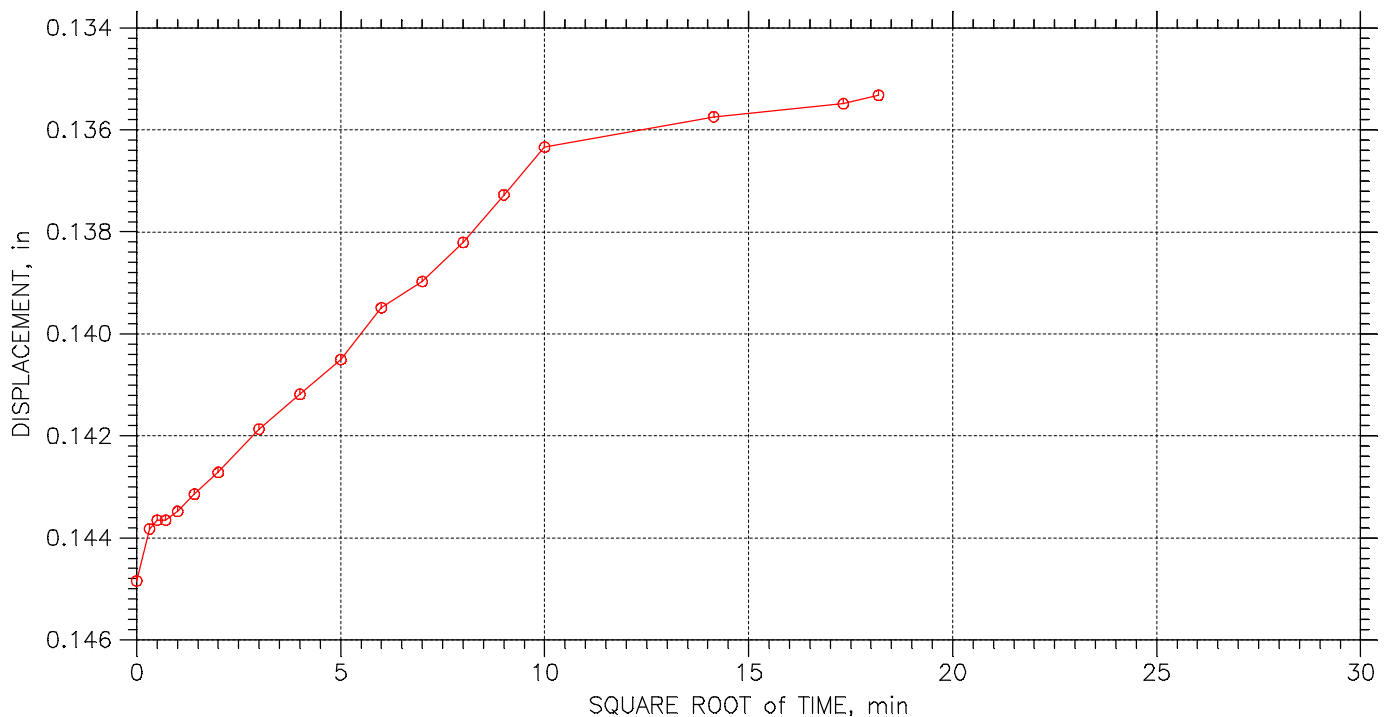
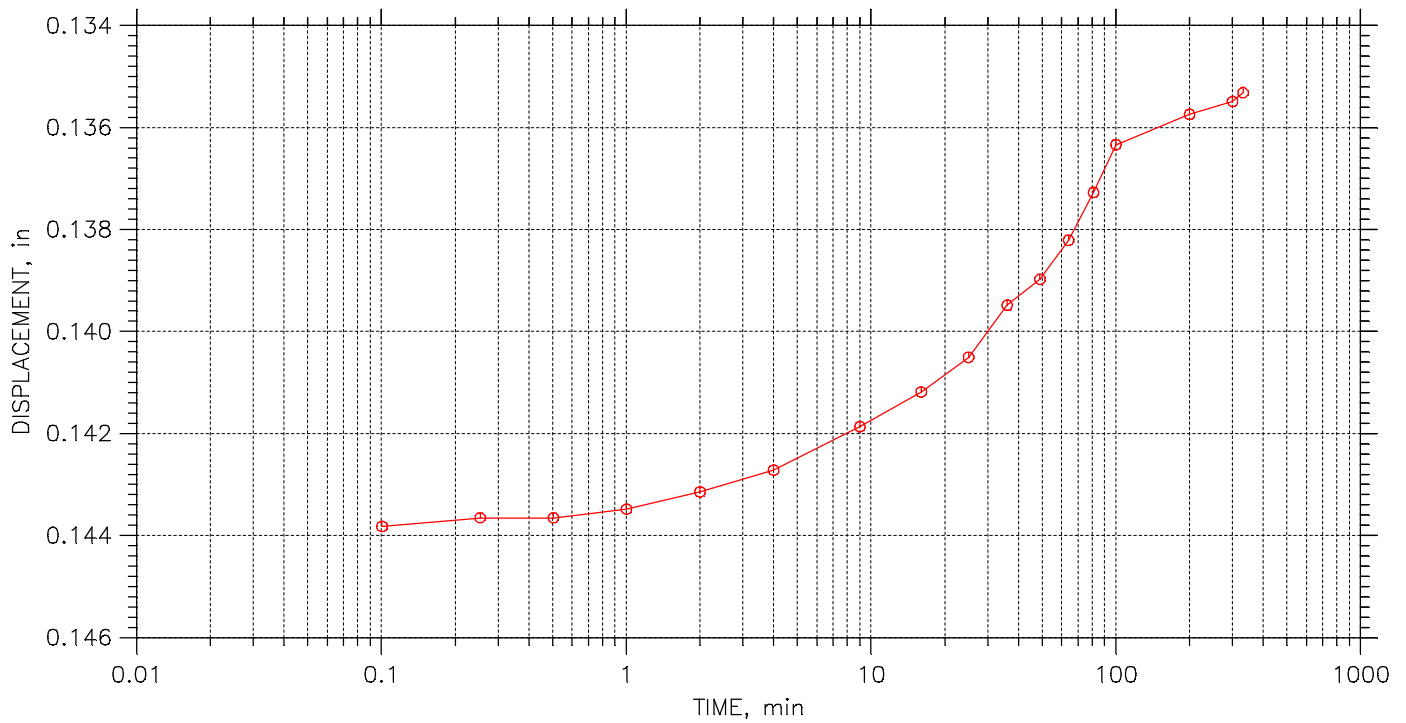
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 23

Stress: 0.5 tsf



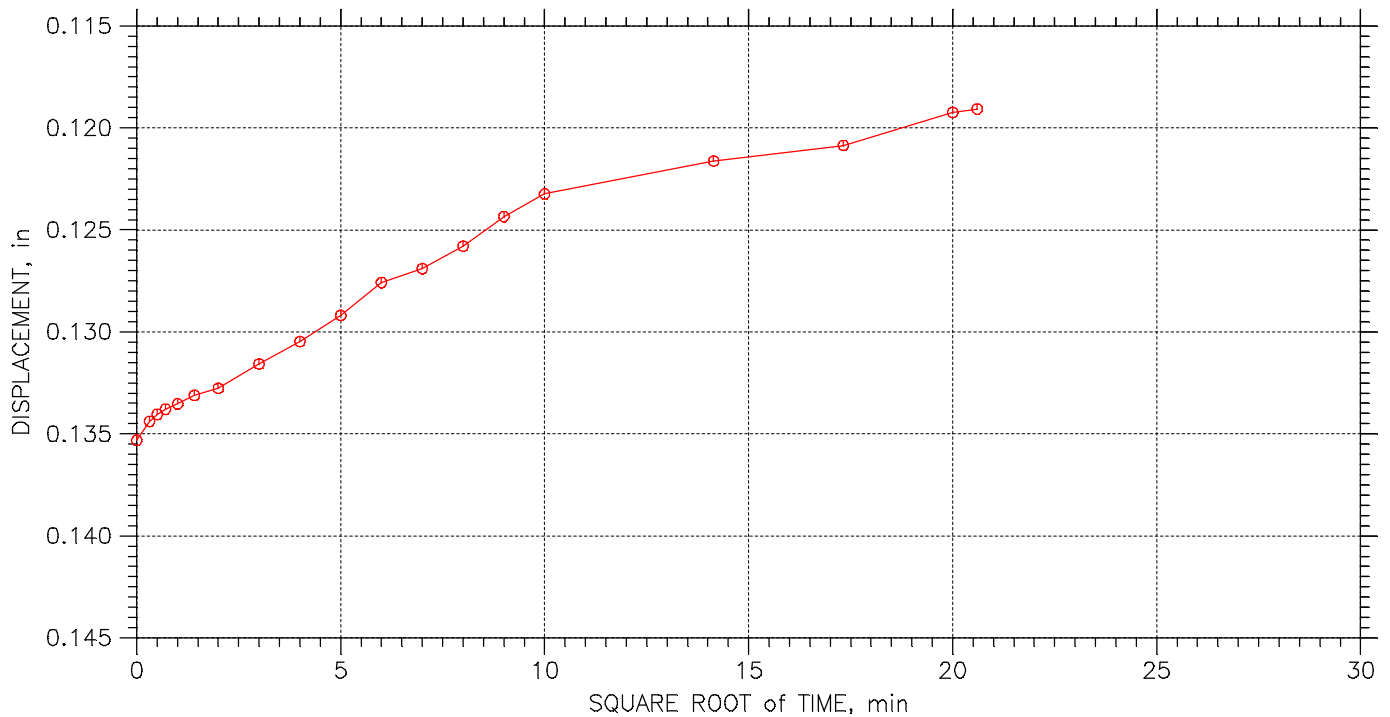
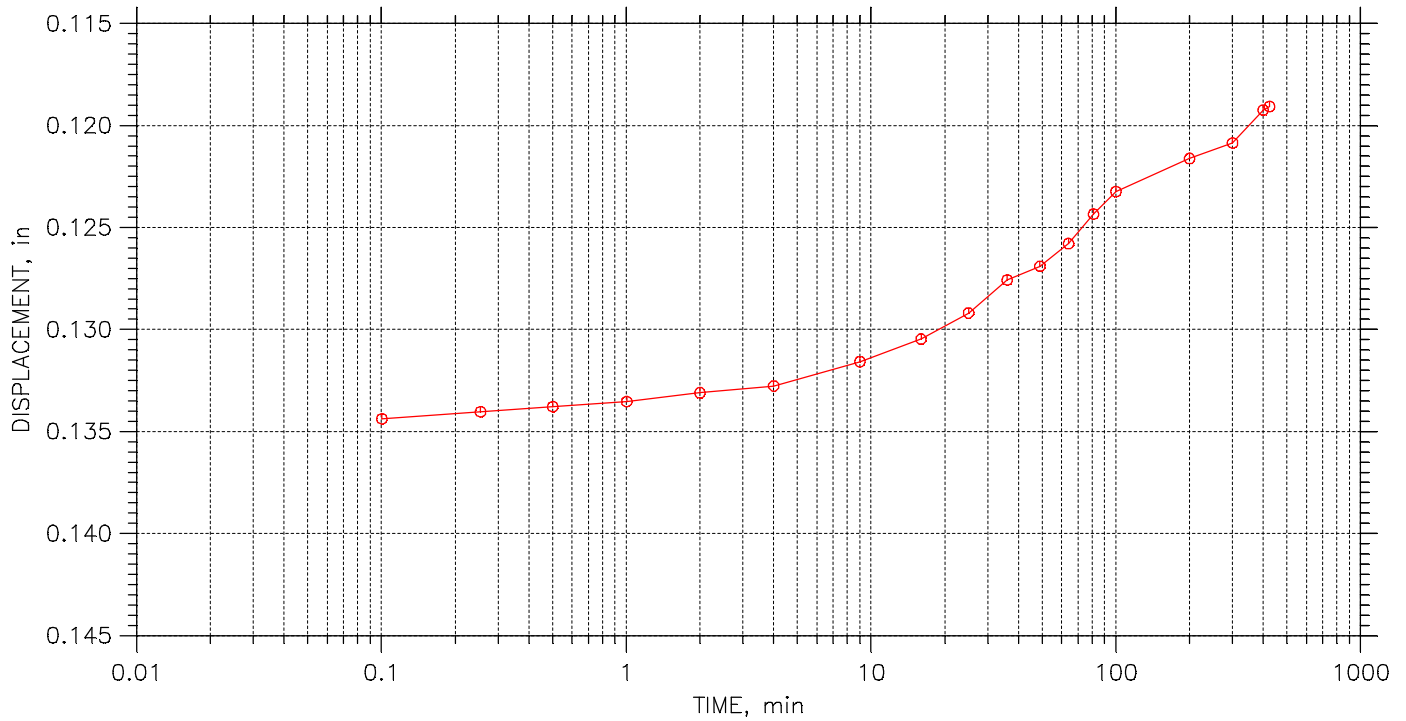
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-8 S-9	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-9	Test Date: 1/19/2023	Depth: 30.0'-32.0'
	Test No.: BL8S9CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

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	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		

CONSOLIDATION TEST DATA

Project: PULLIAM PROPERTY RES.
Boring No.: BL-8 S-9
Sample No.: S-9
Test No.: BL8S9CON

Location: MILWAUKEE, WI
Tested By: IT/ED
Test Date: 1/19/2023
Sample Type: 3.0" ST

Project No.: 11225052
Checked By: BCM
Depth: 30.0'-32.0'
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
Initial Void Ratio: 0.79
Final Void Ratio: 0.51

Liquid Limit: 41
Plastic Limit: 14
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	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	---

CONSOLIDATION TEST DATA

Project: PULLIAM PROPRTY RES.
Boring No.: BL-8 S-9
Sample No.: S-9
Test No.: BL8S9CON

Location: MILWAUKEE,WI
Tested By: IT/ED
Test Date: 1/19/2023
Sample Type: 3.0" ST

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

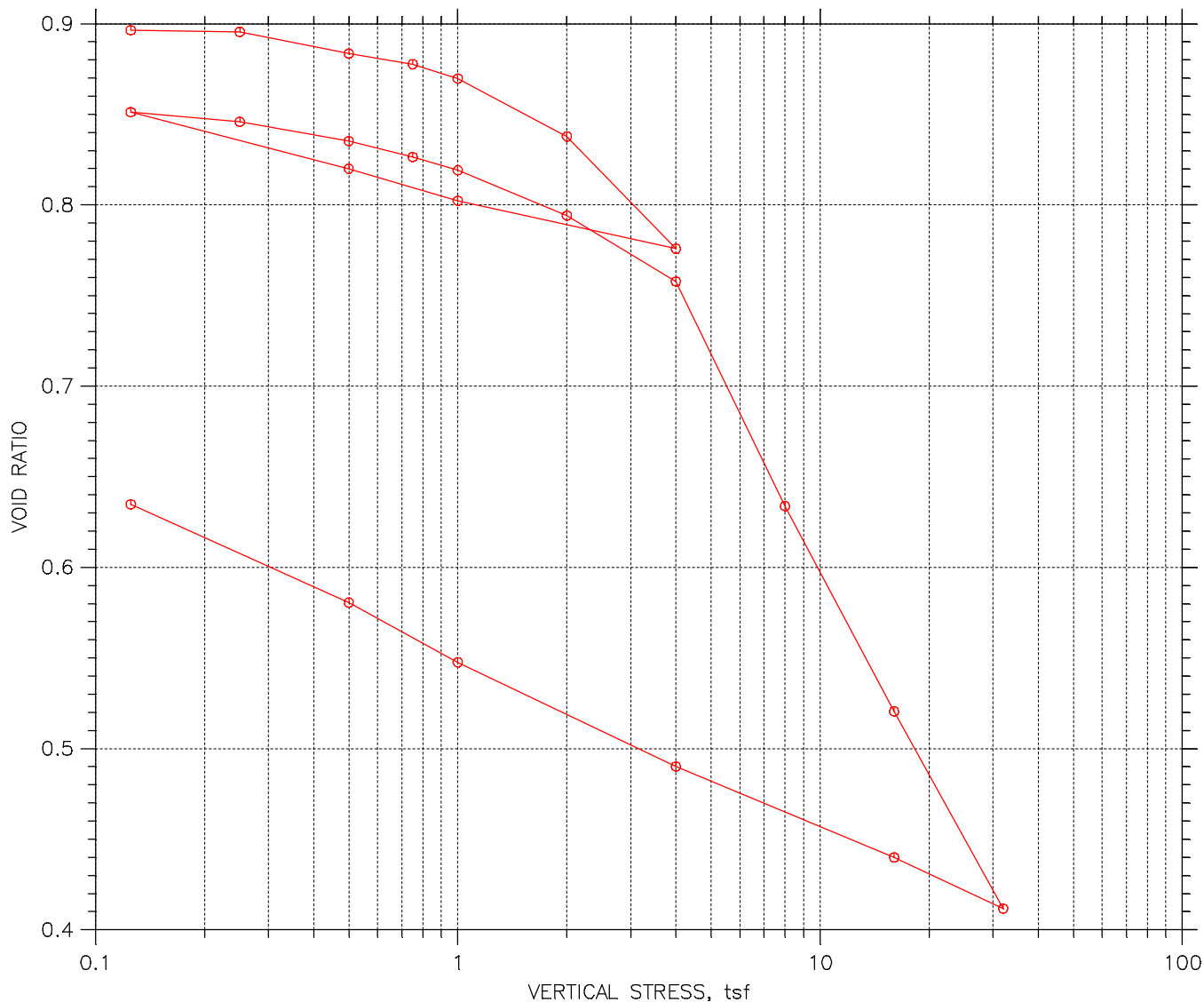


Soil Description: REDDISH BROWN LEAN CLAY (CL)


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

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. ft^2/sec	Log ft^2/sec	Ave. 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	0.002211	0.786	0.30	1.4	0.0	2.30e-006	0.00e+000	2.30e-006
4	0.75	0.006039	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	0.2	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

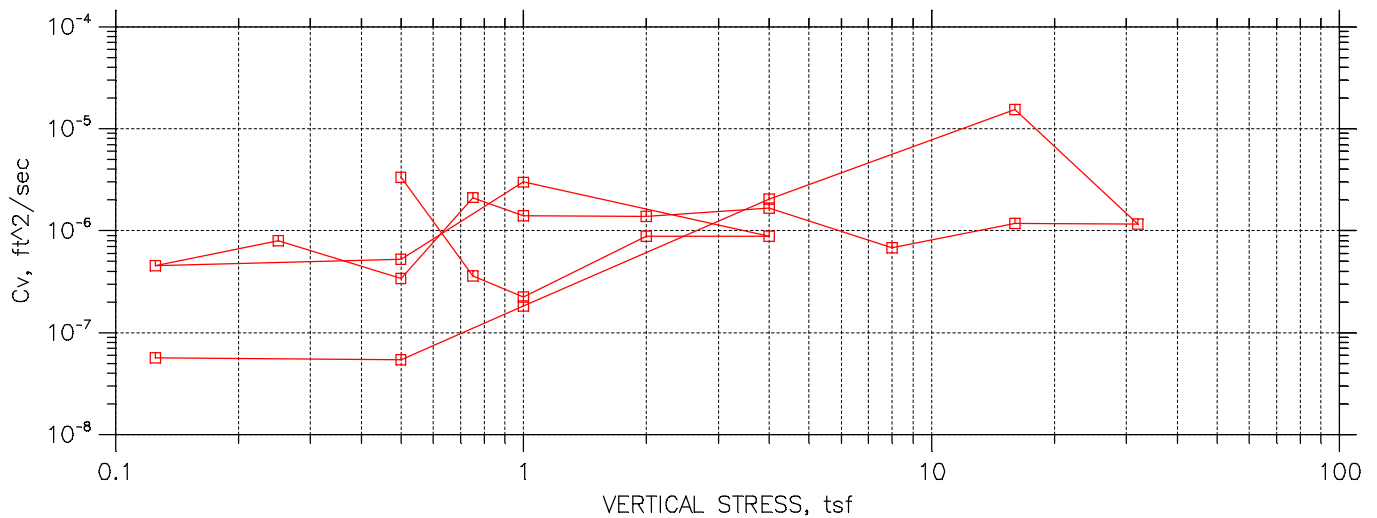
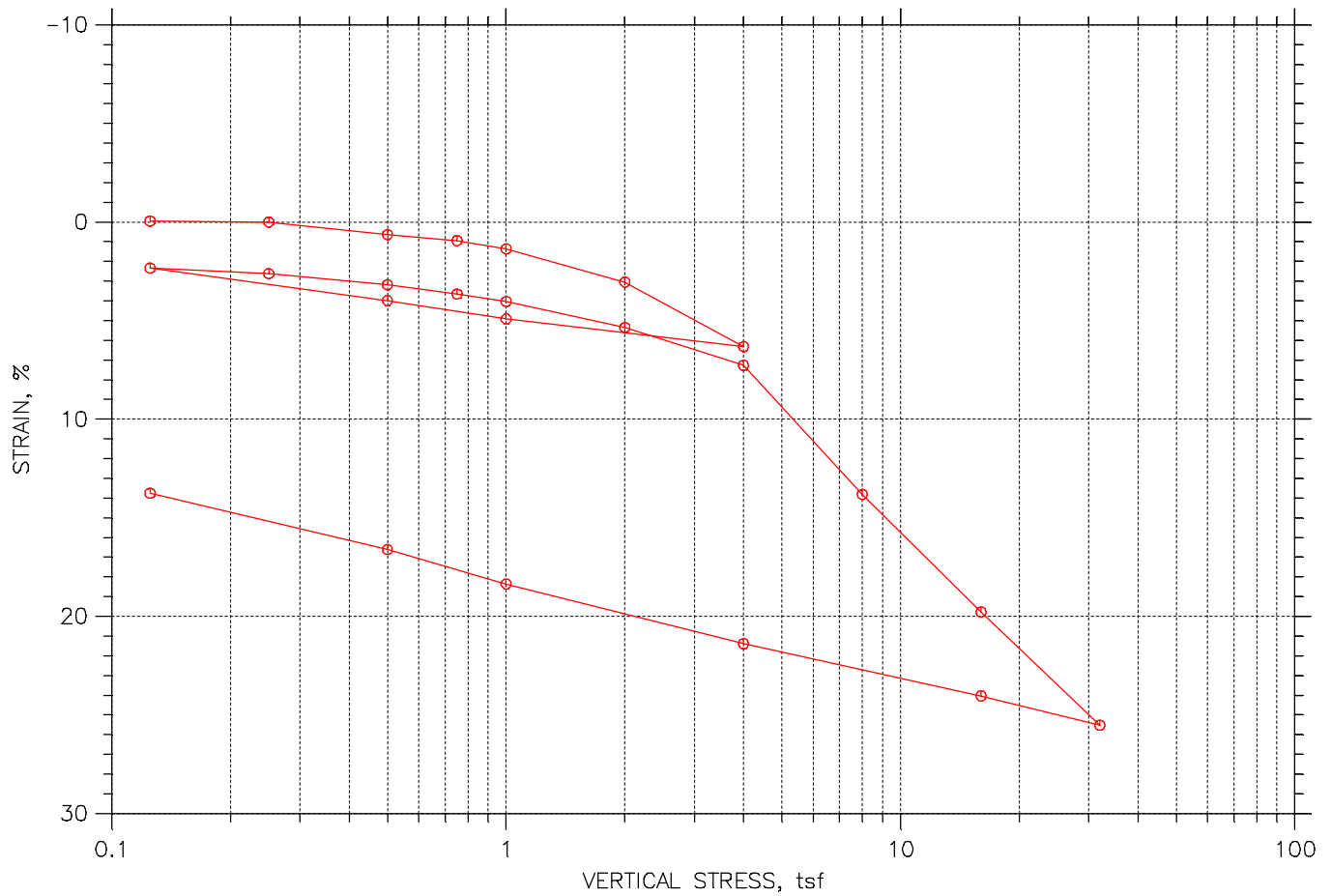
ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435




					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
	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		

ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



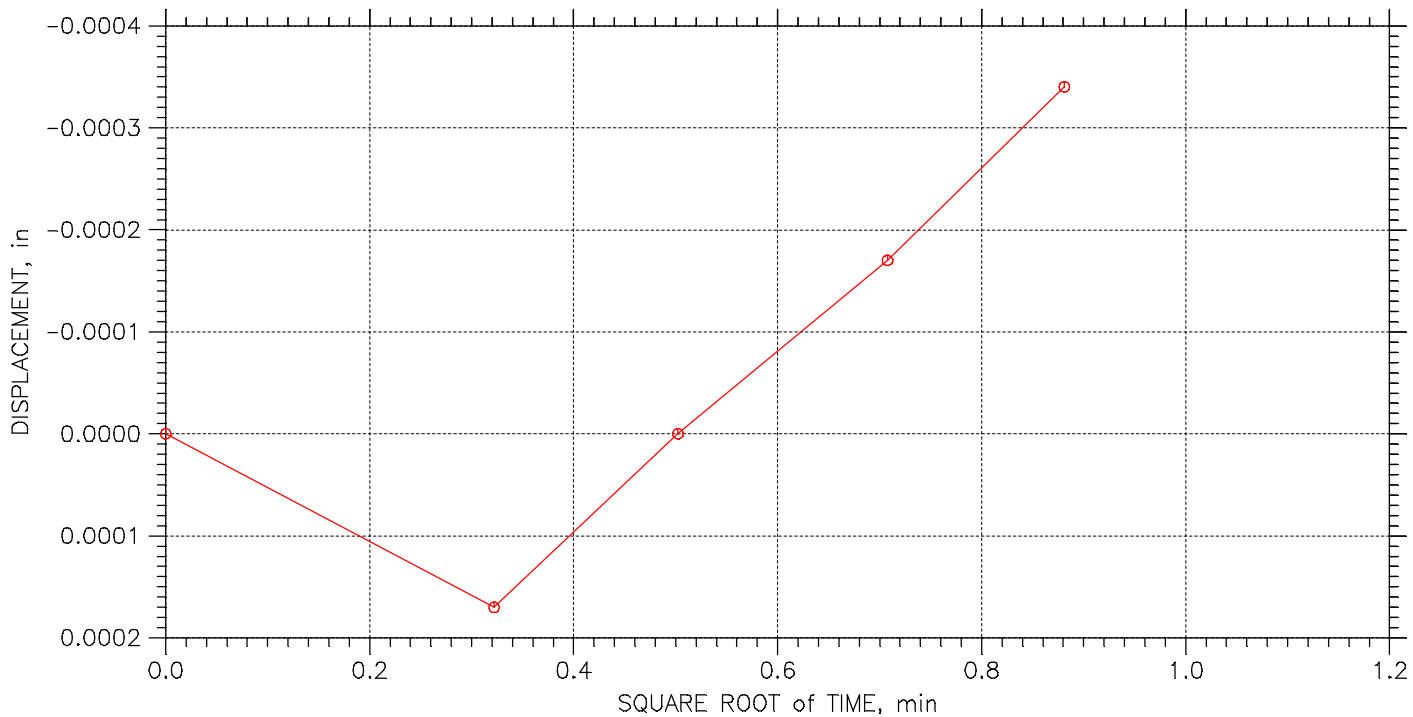
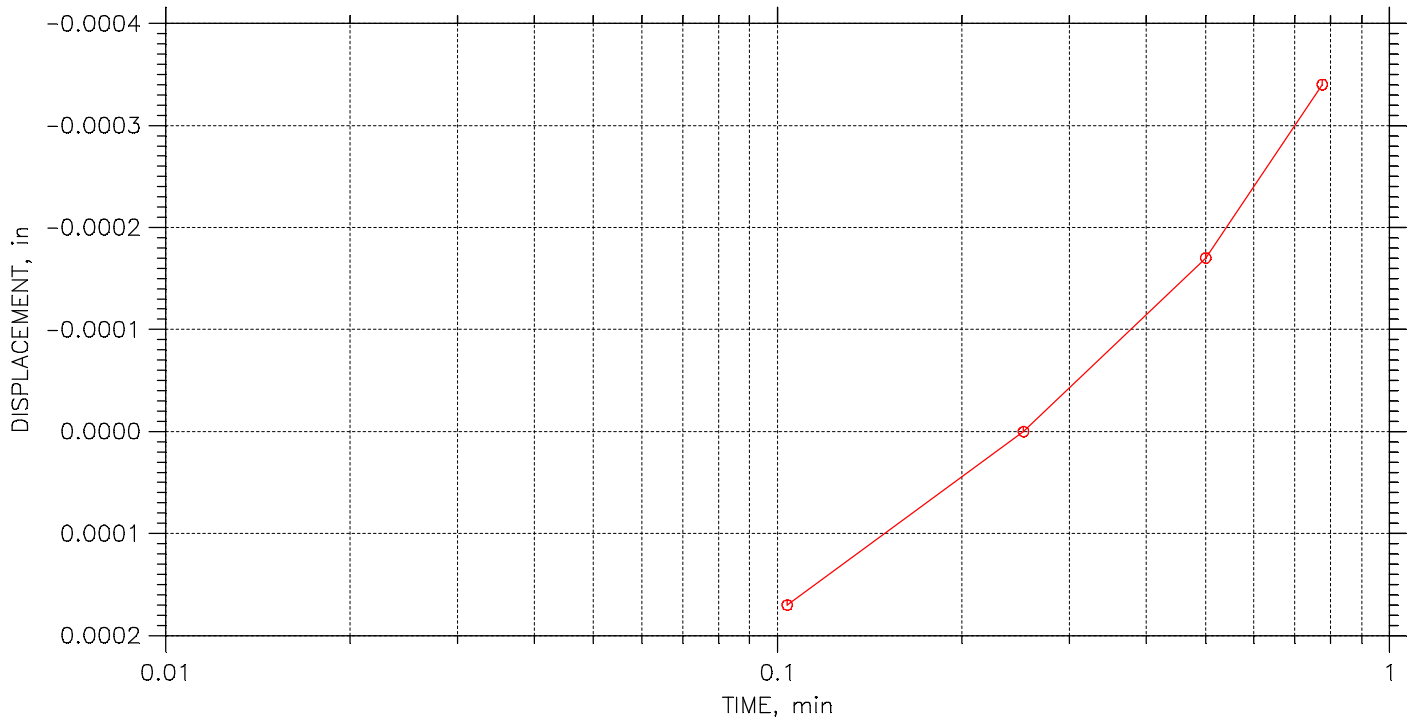
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf



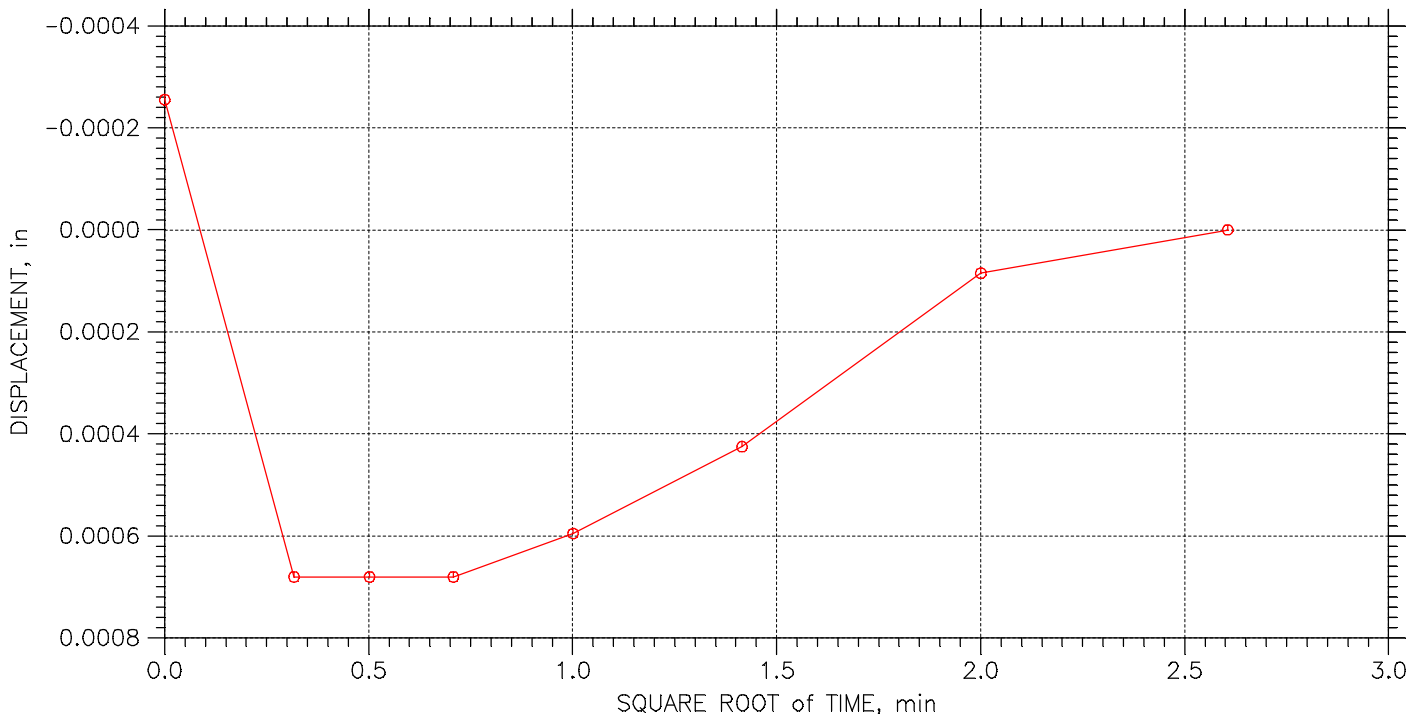
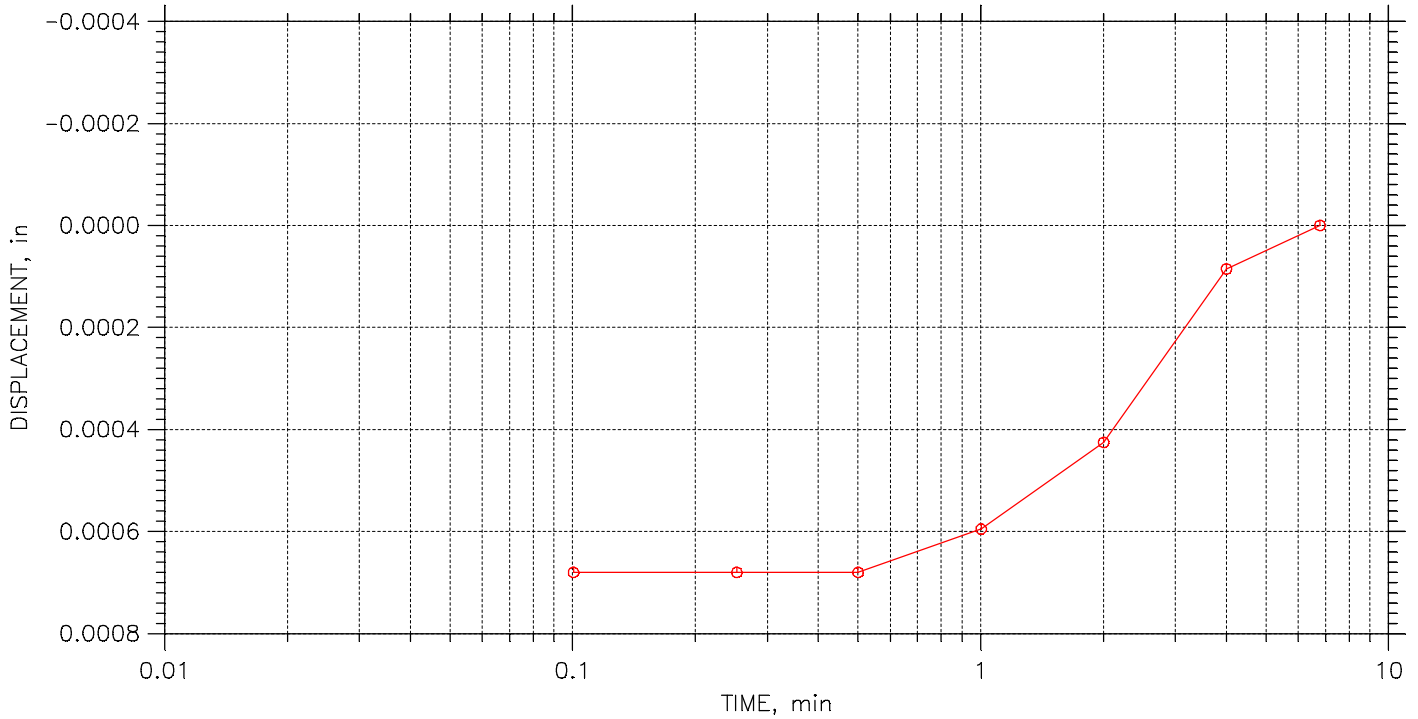
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf



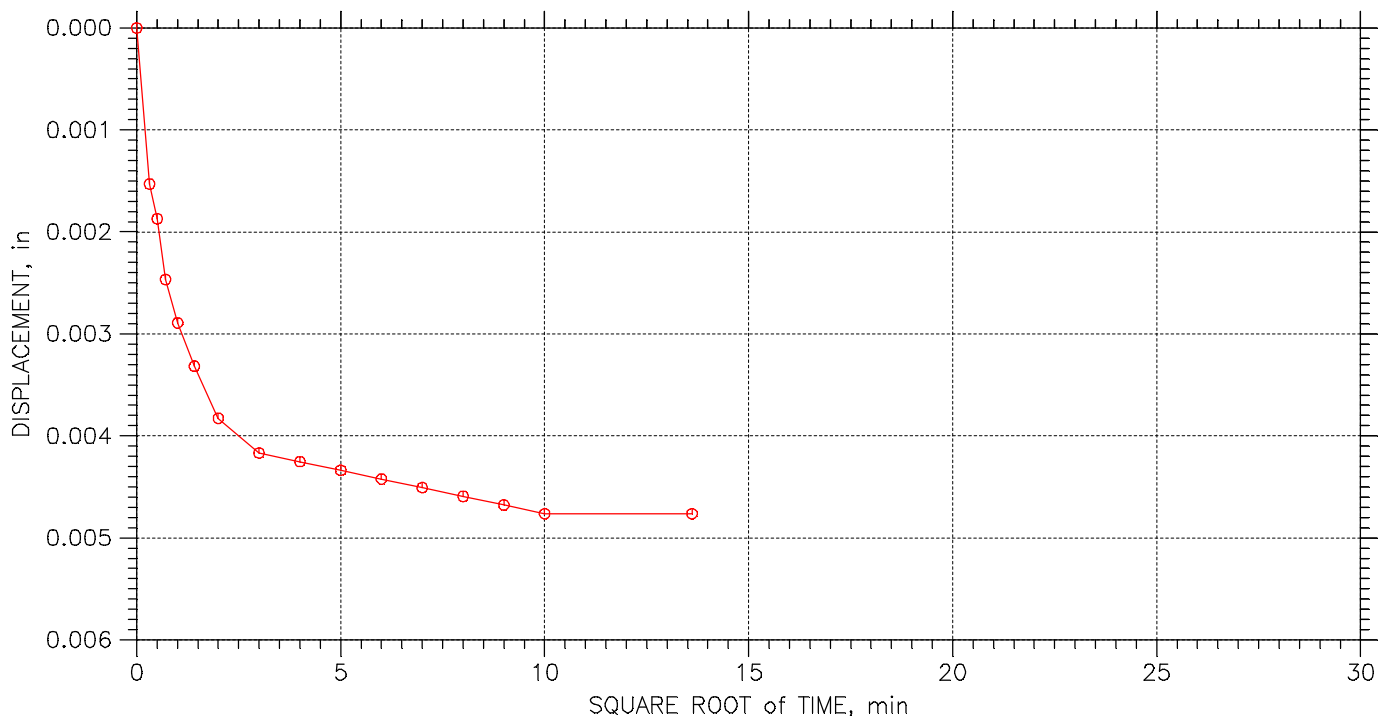
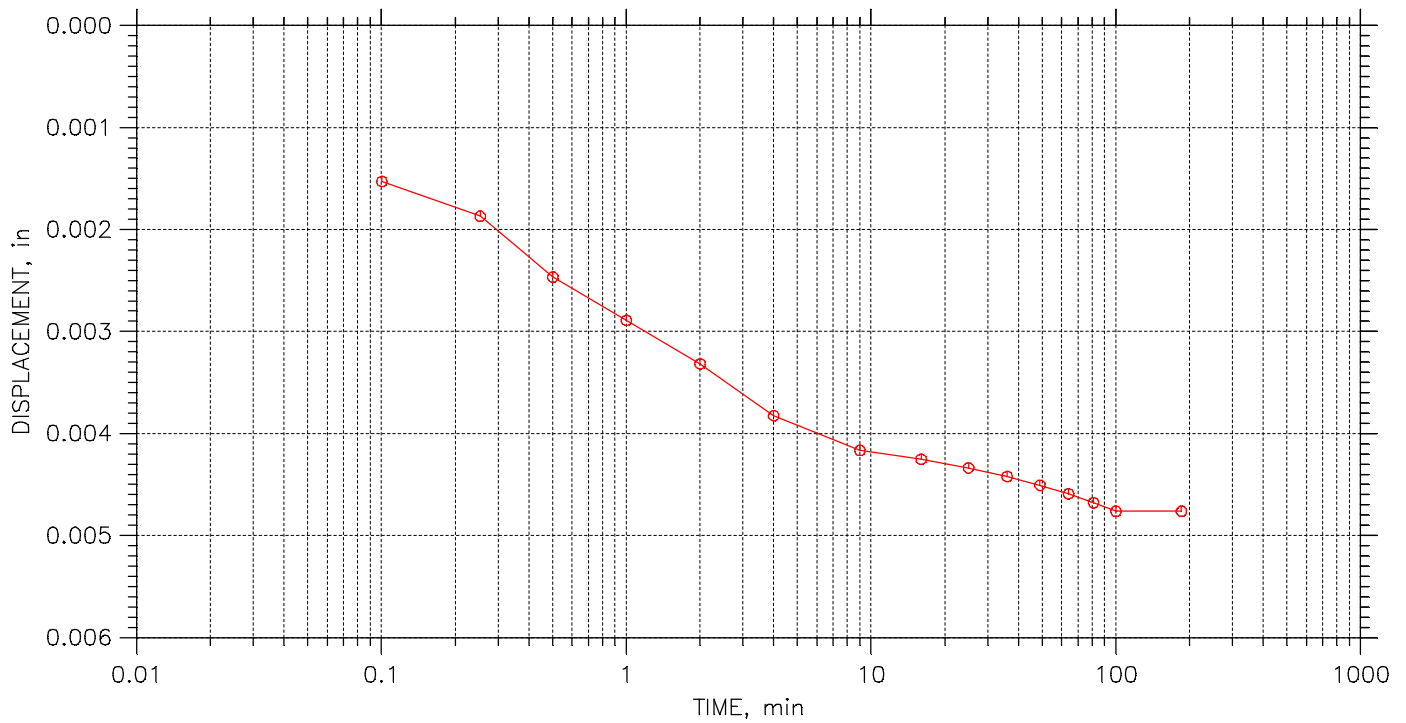
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf



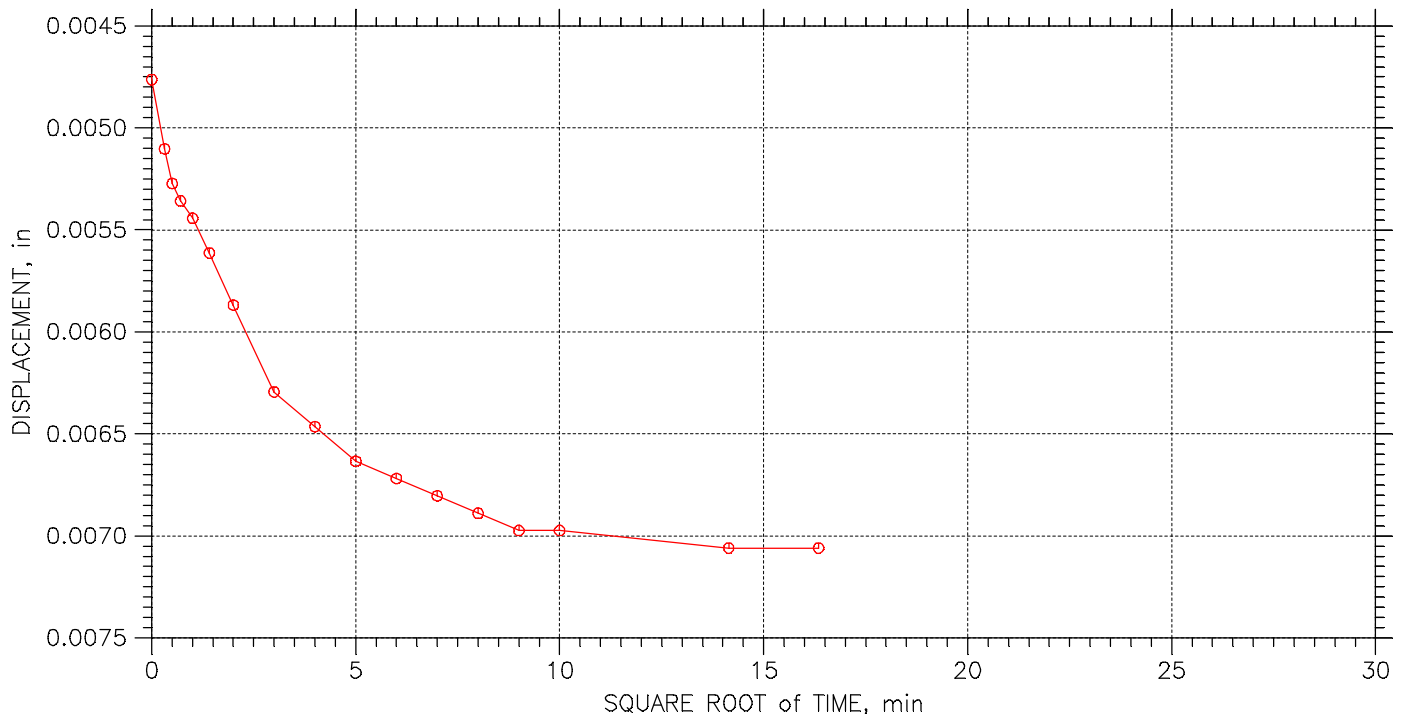
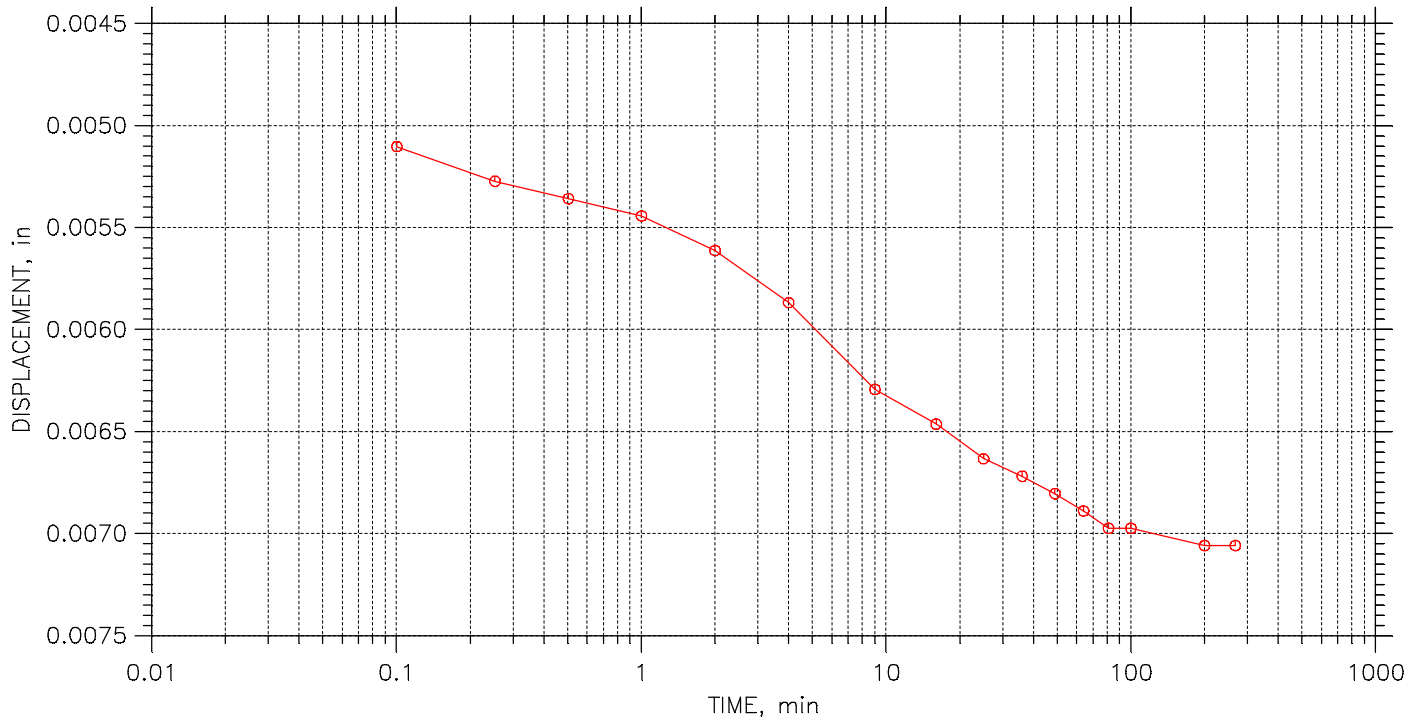
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	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf



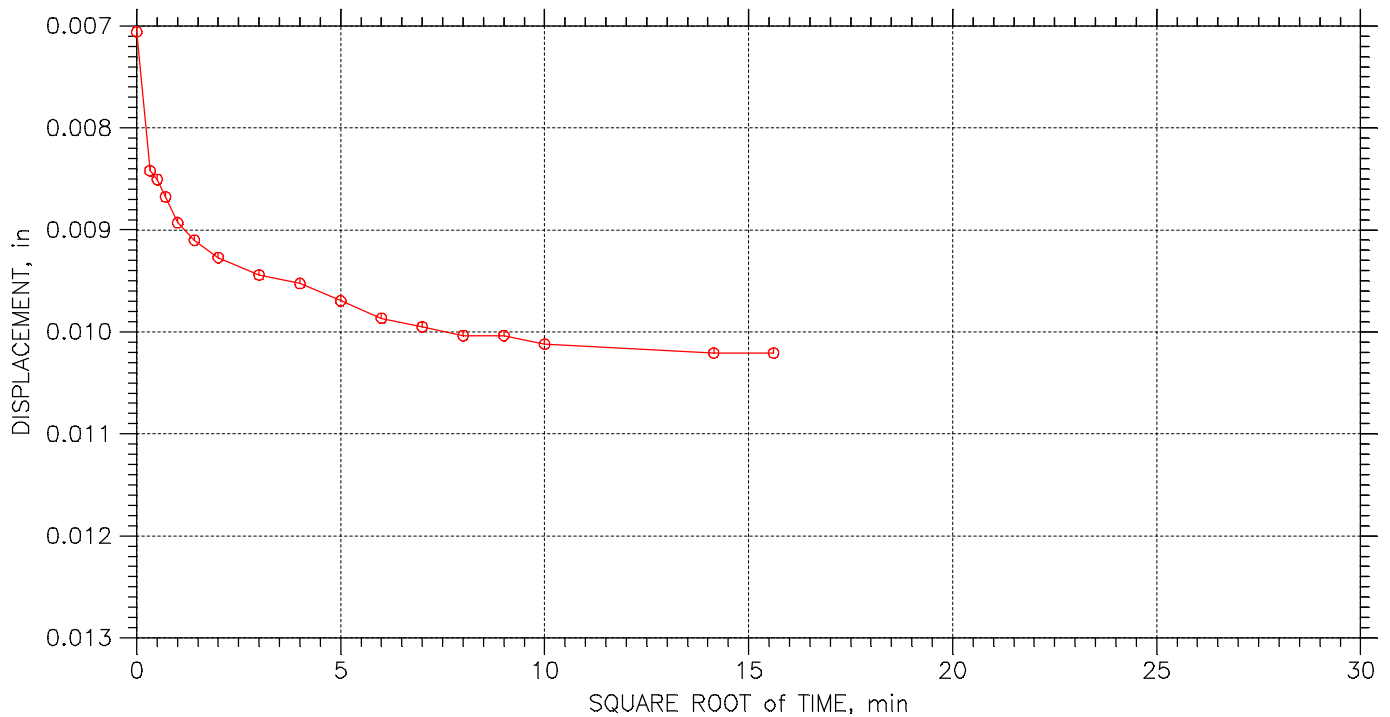
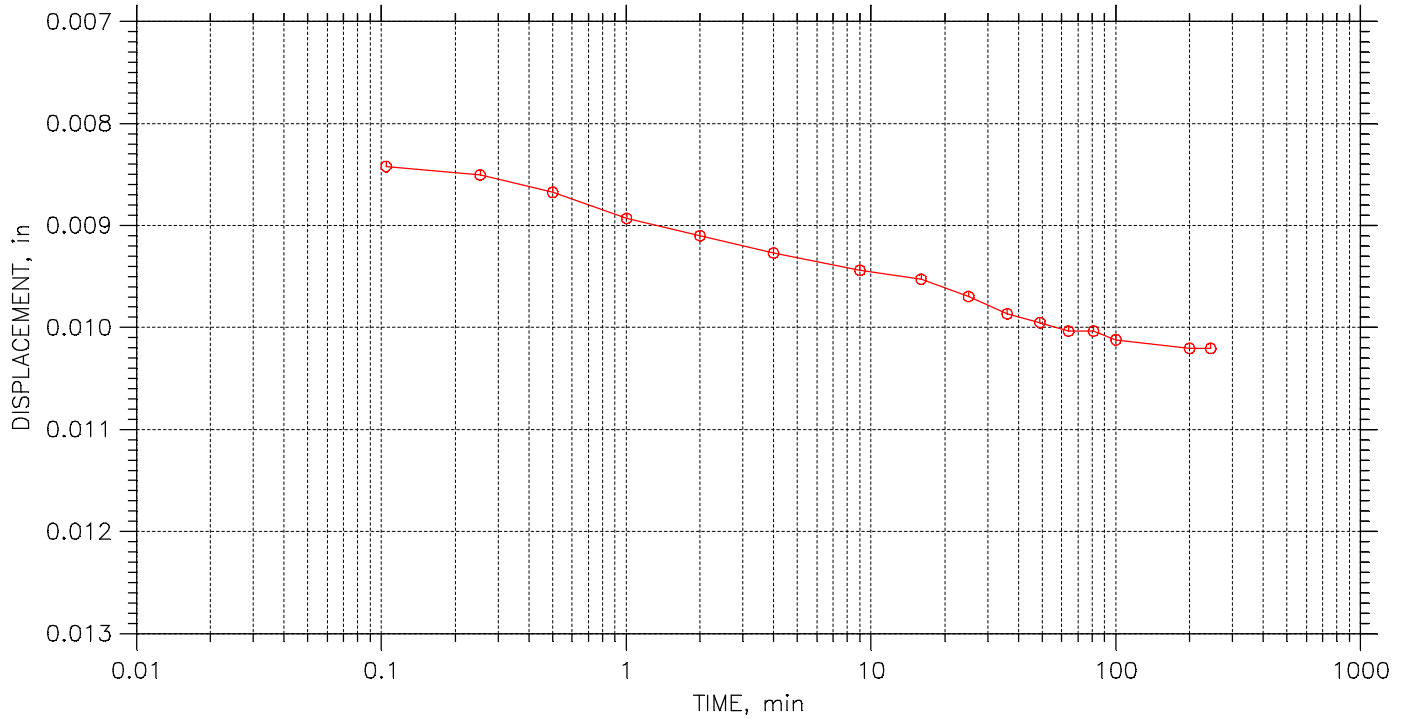
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf



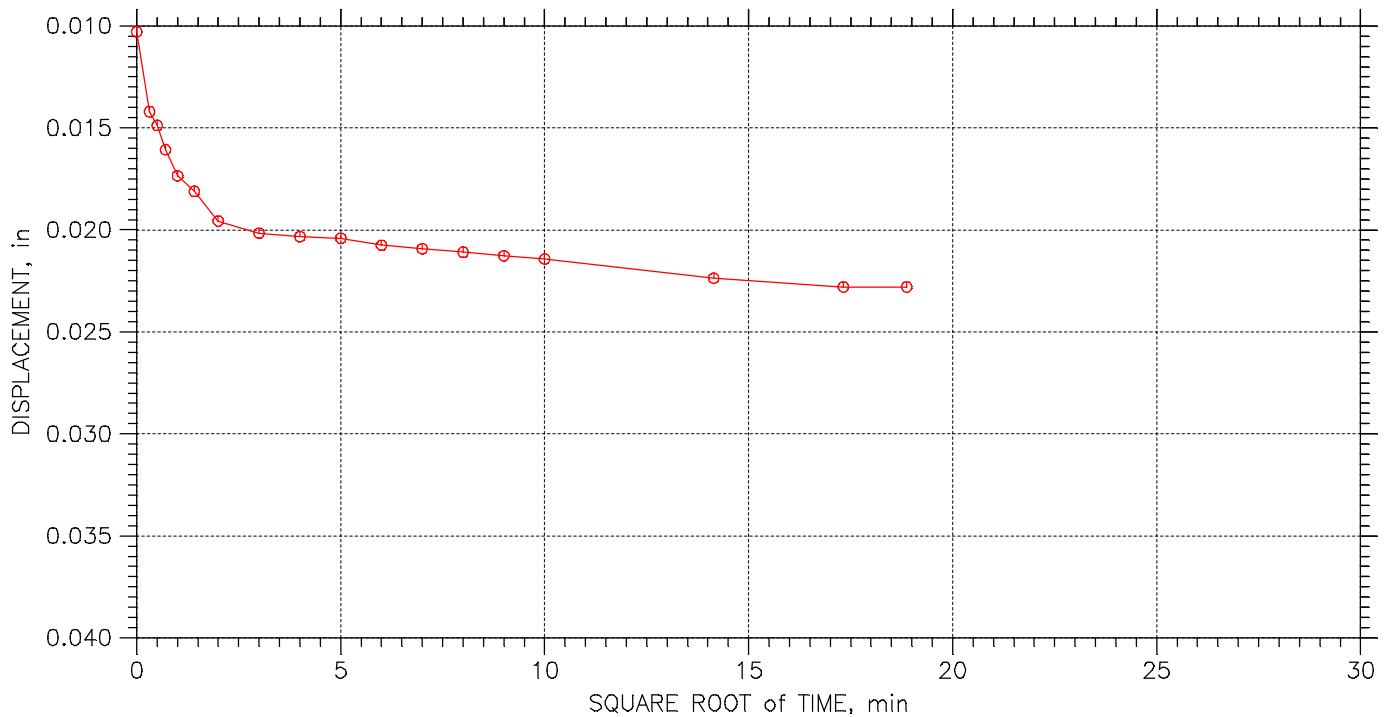
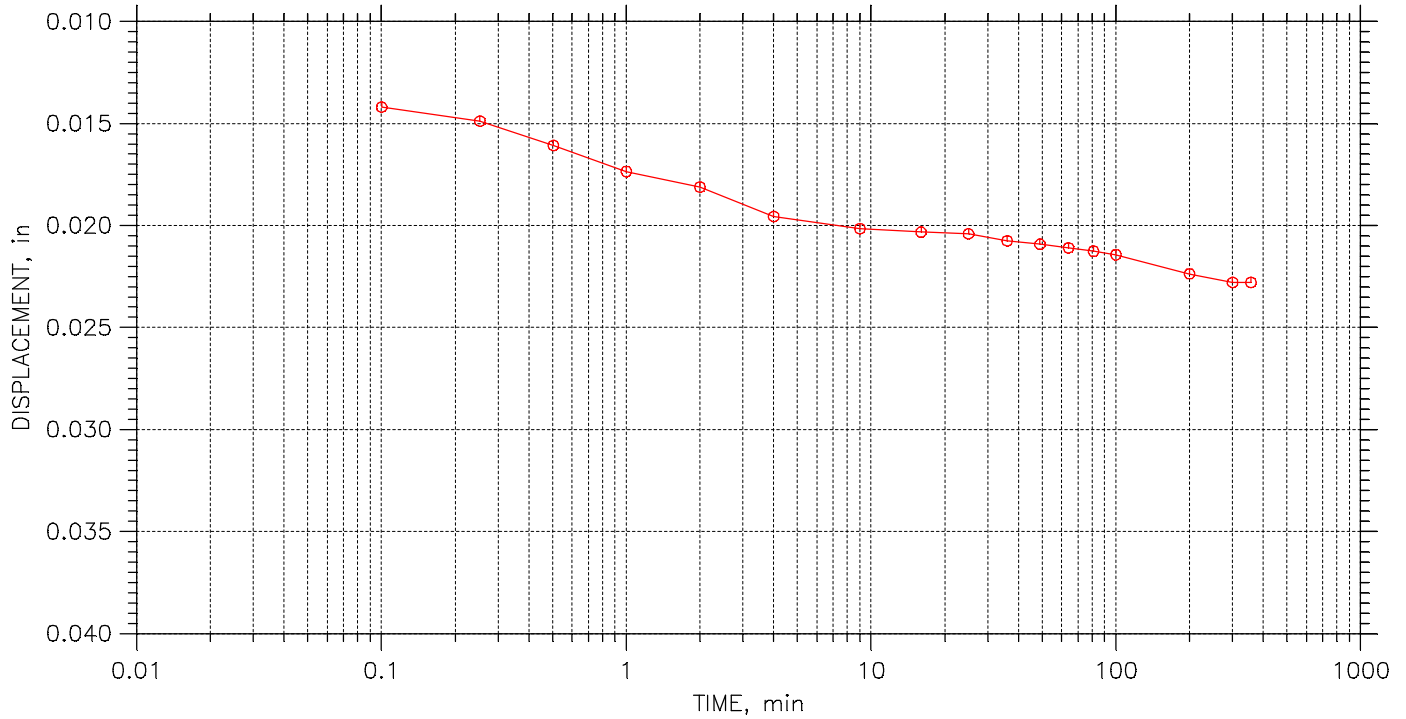
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf



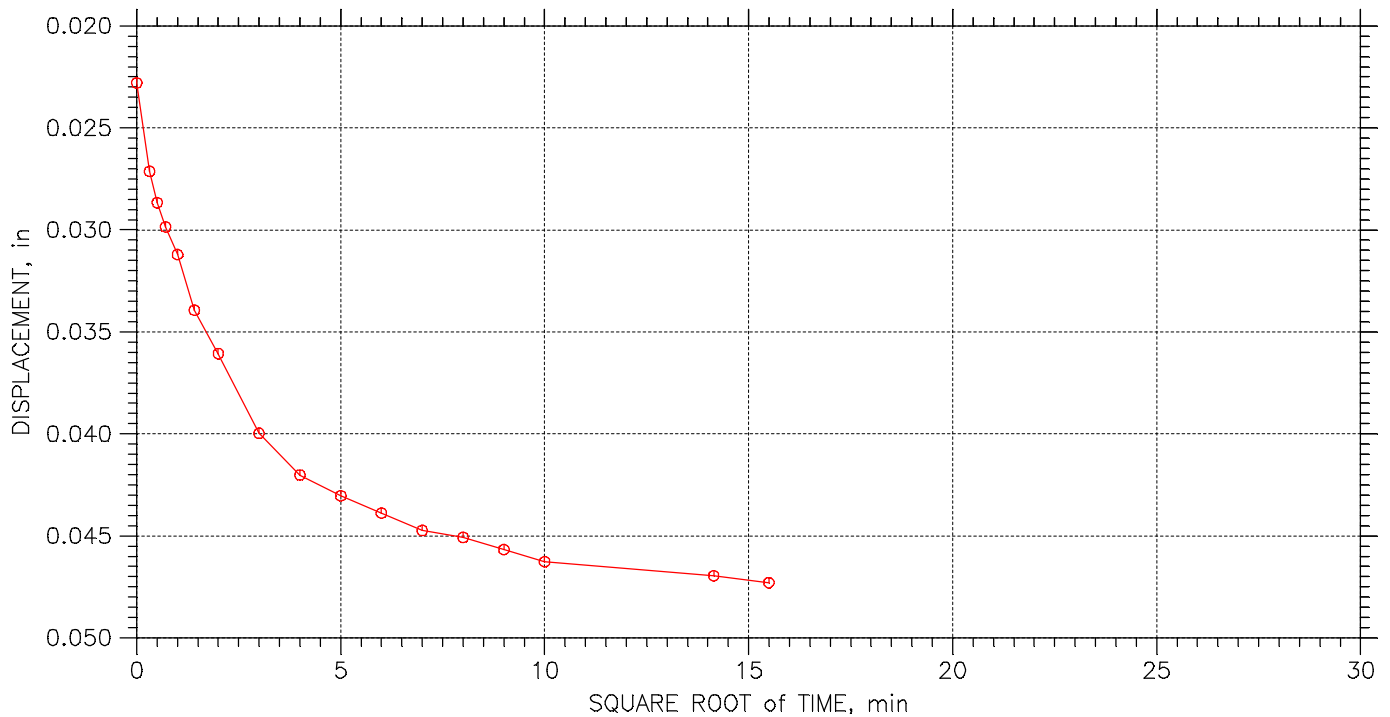
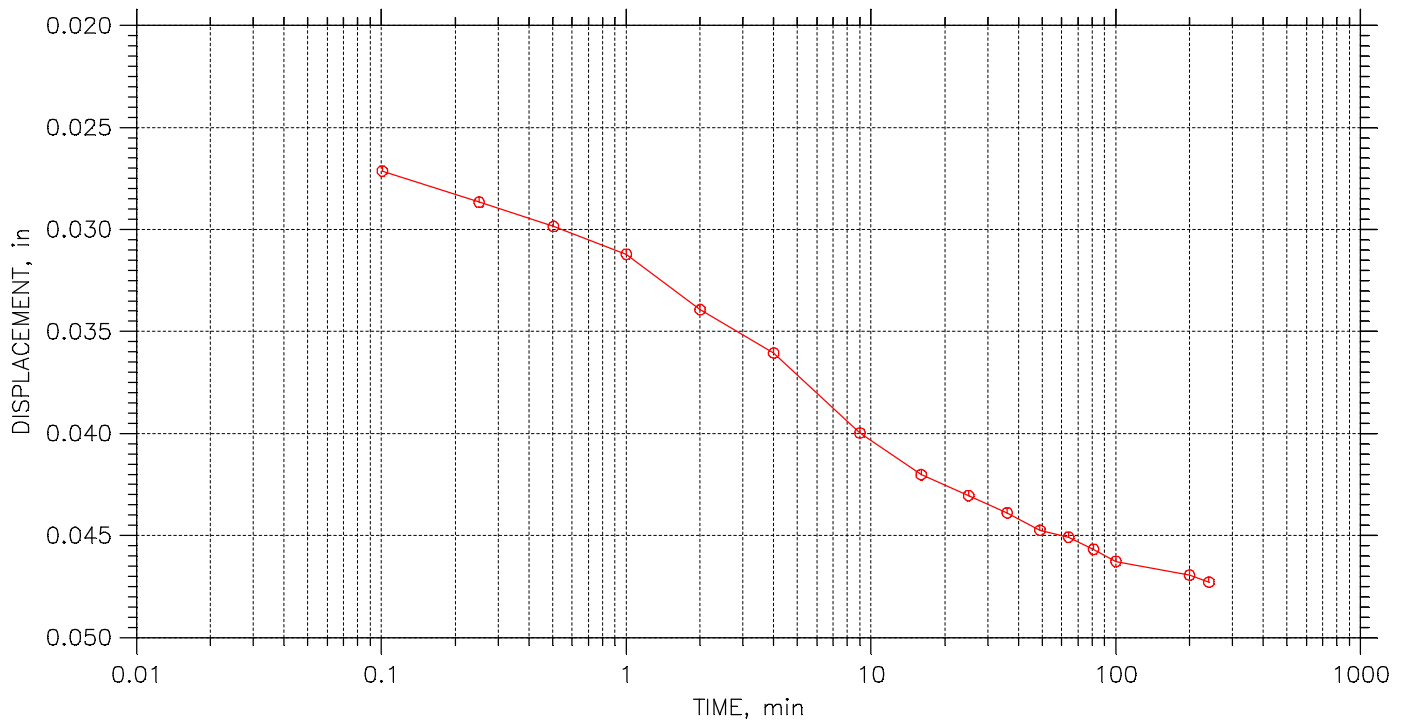
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf



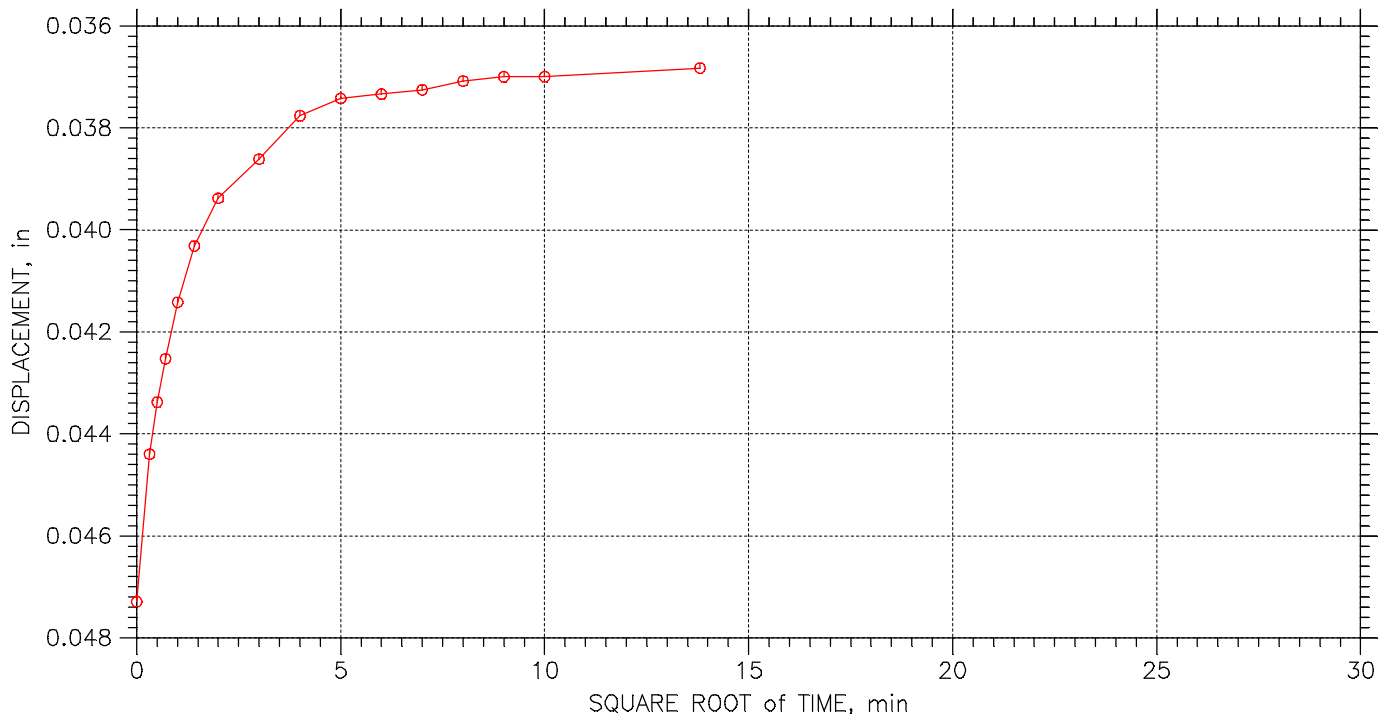
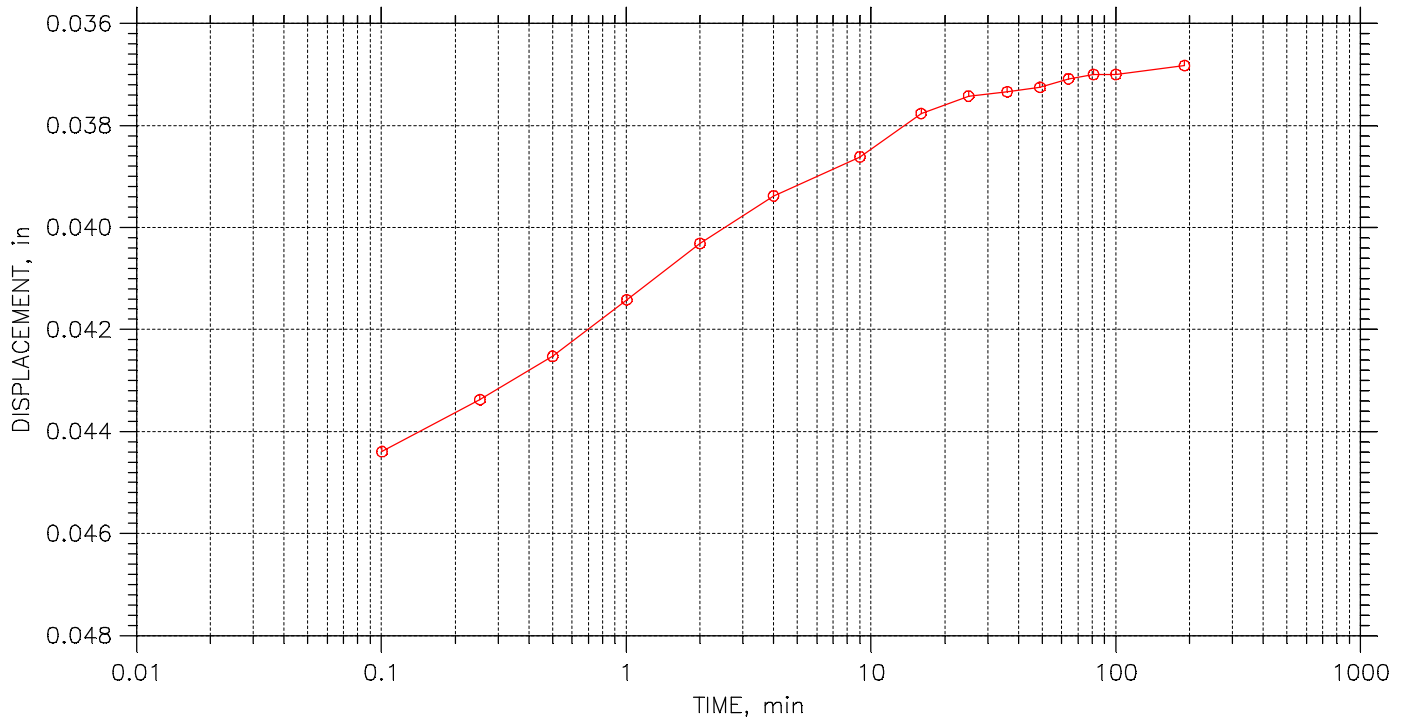
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	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf



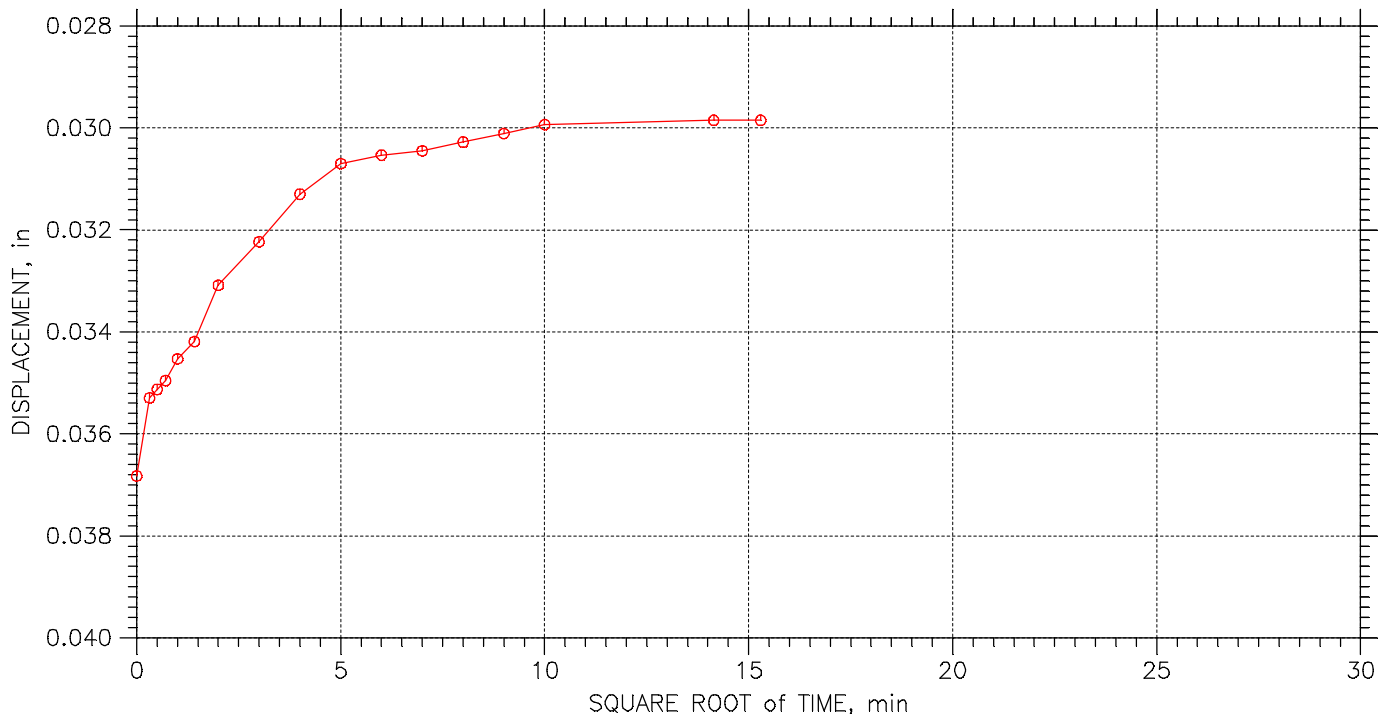
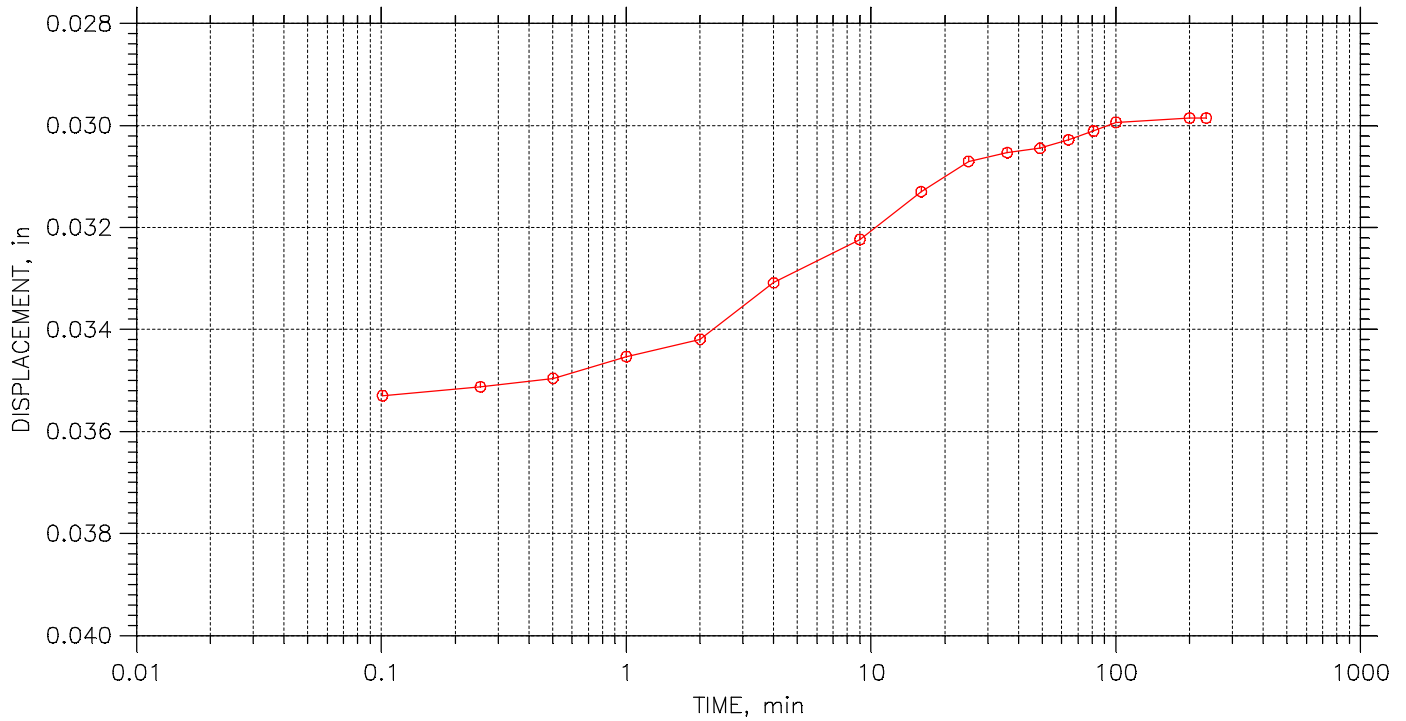
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	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf



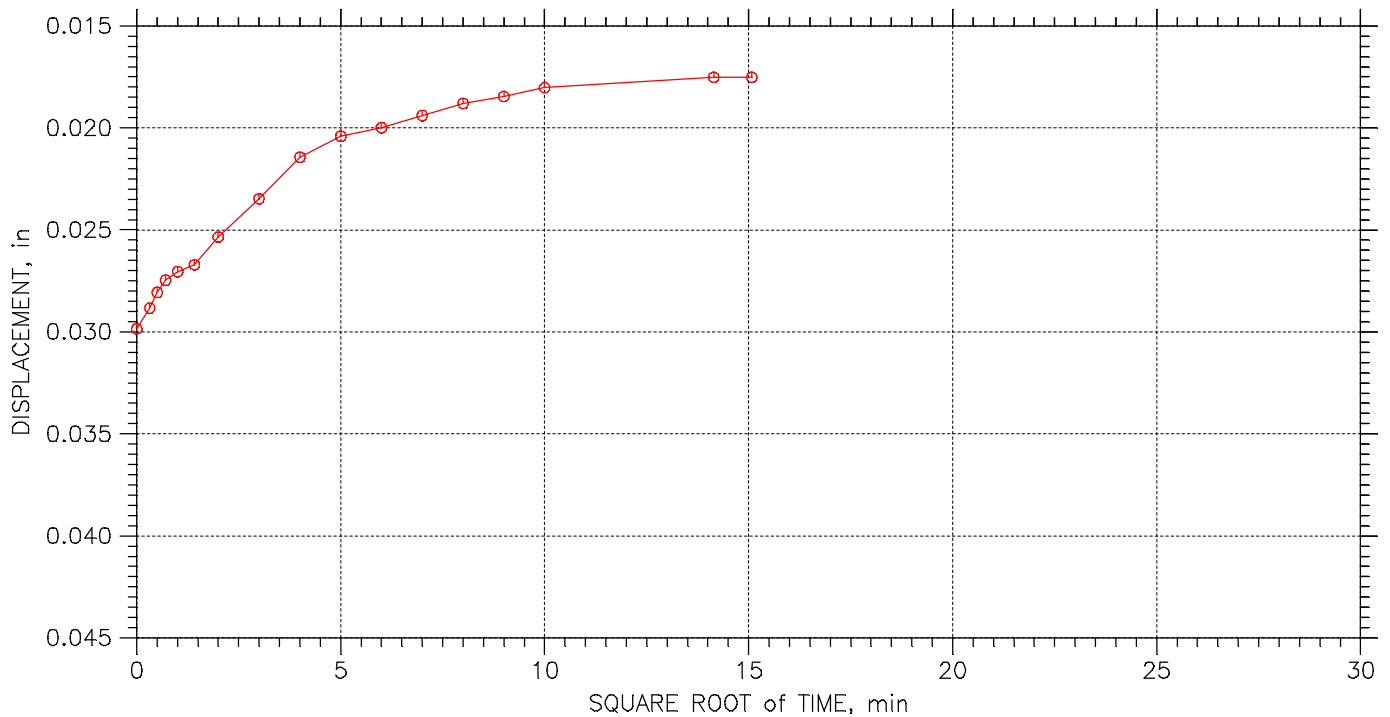
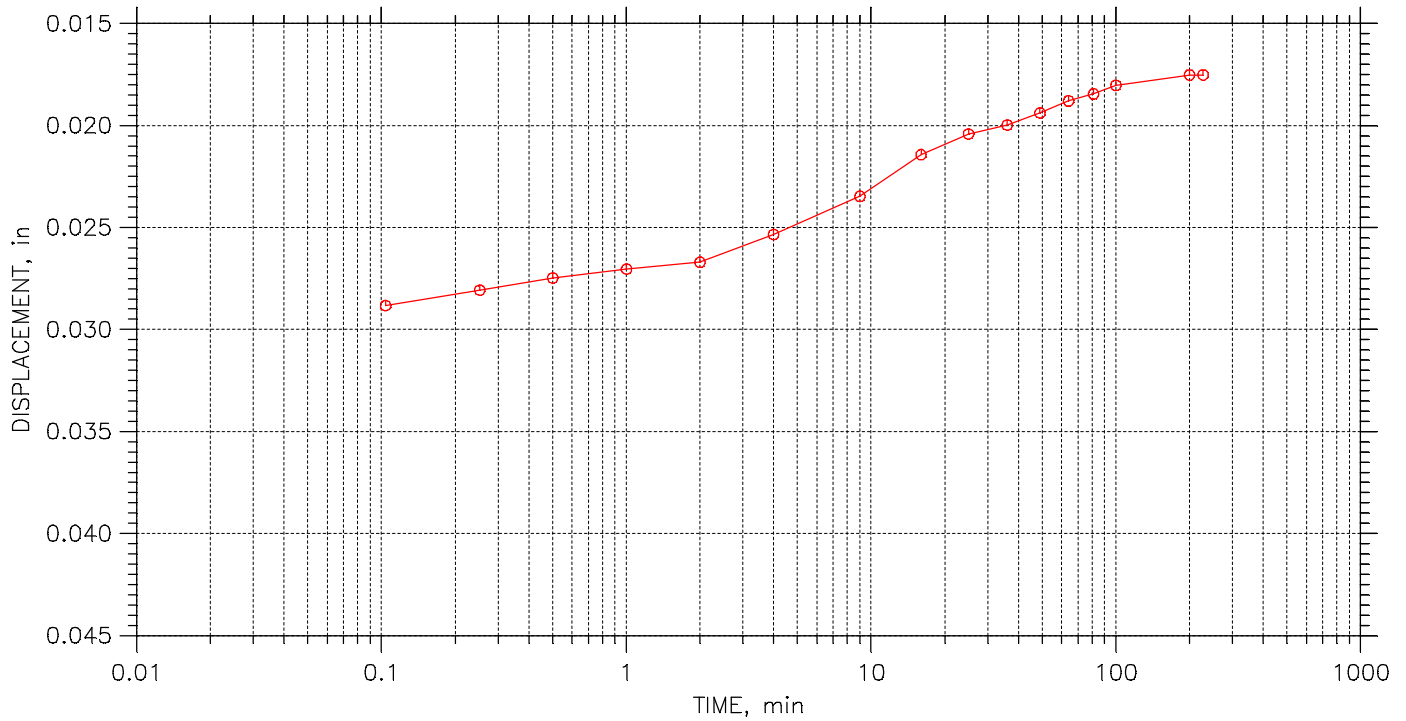
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	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



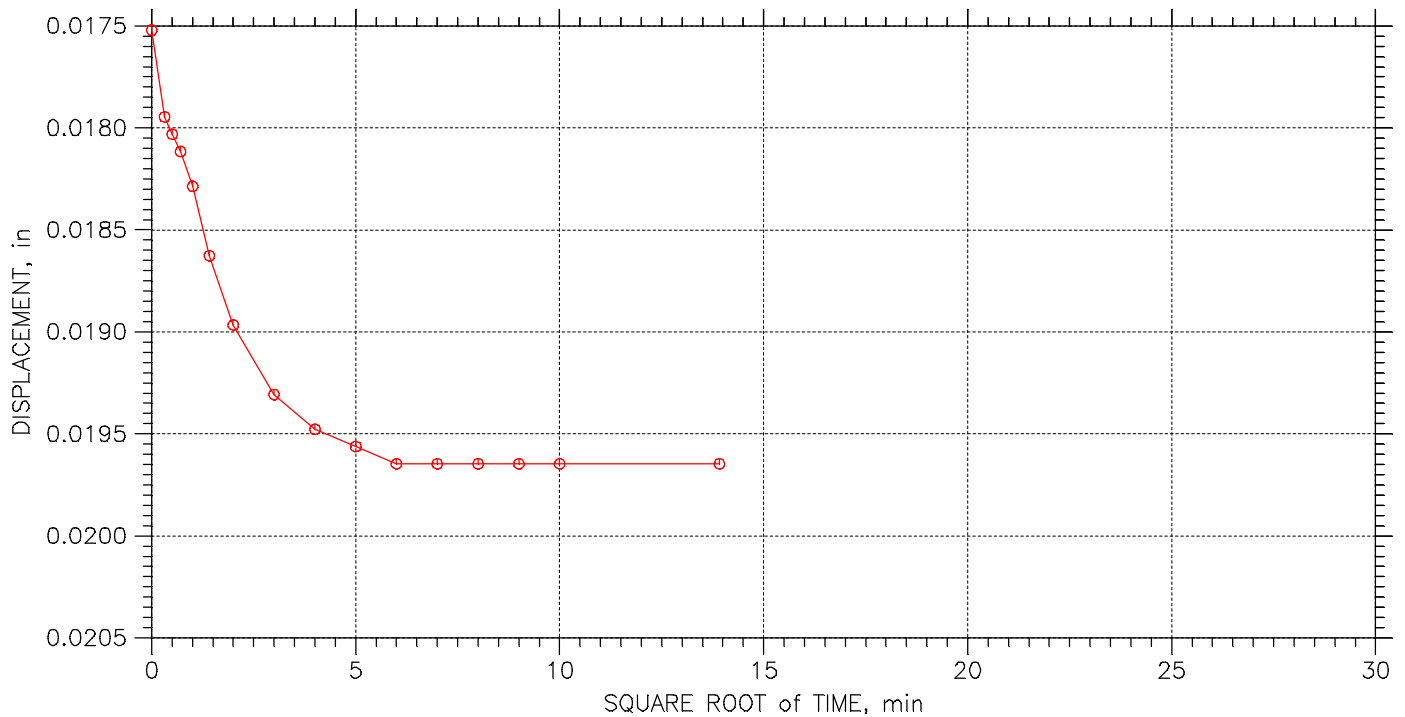
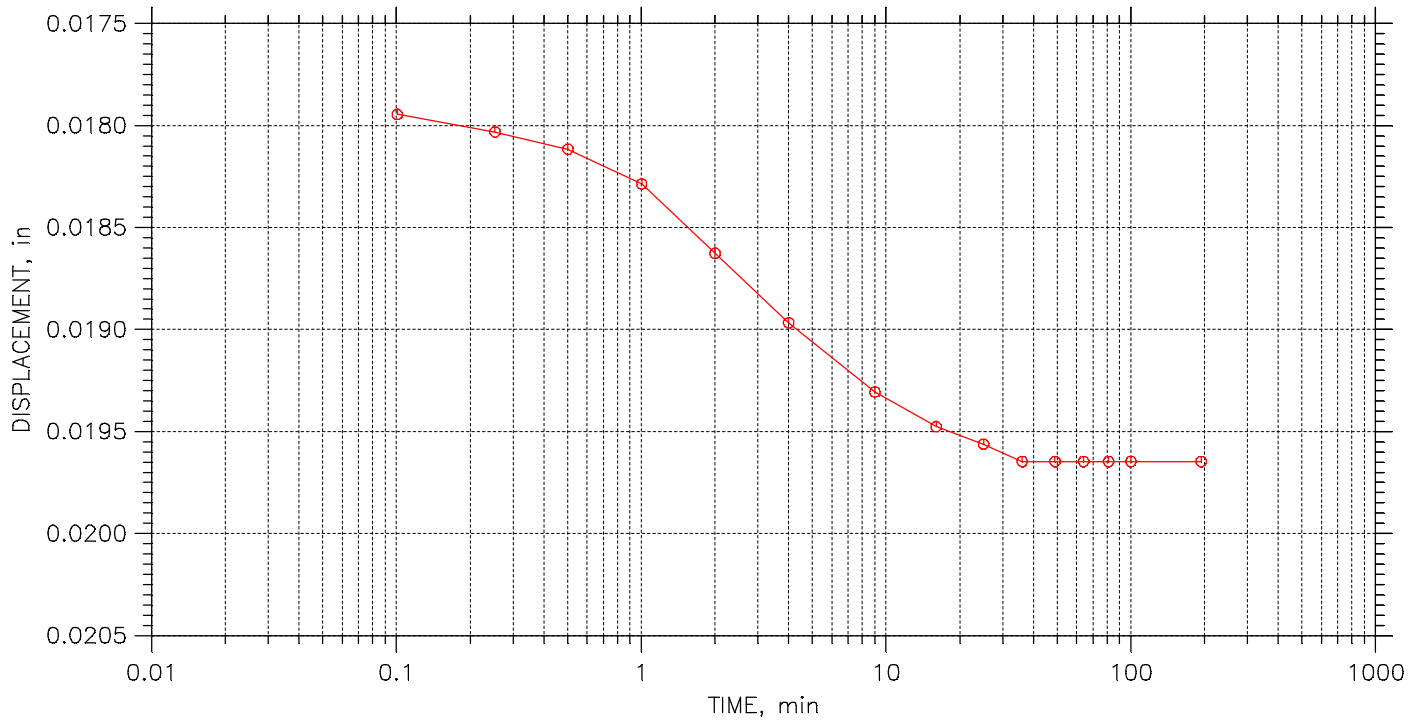
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	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf



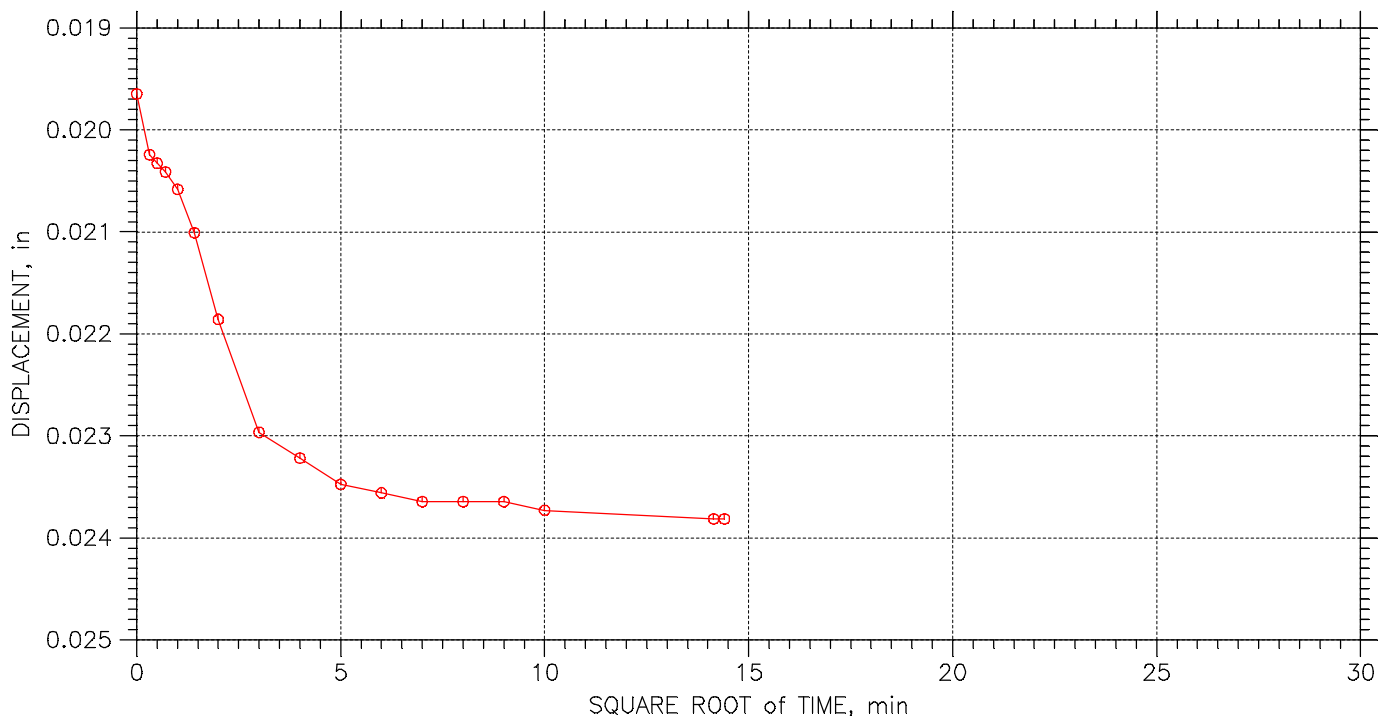
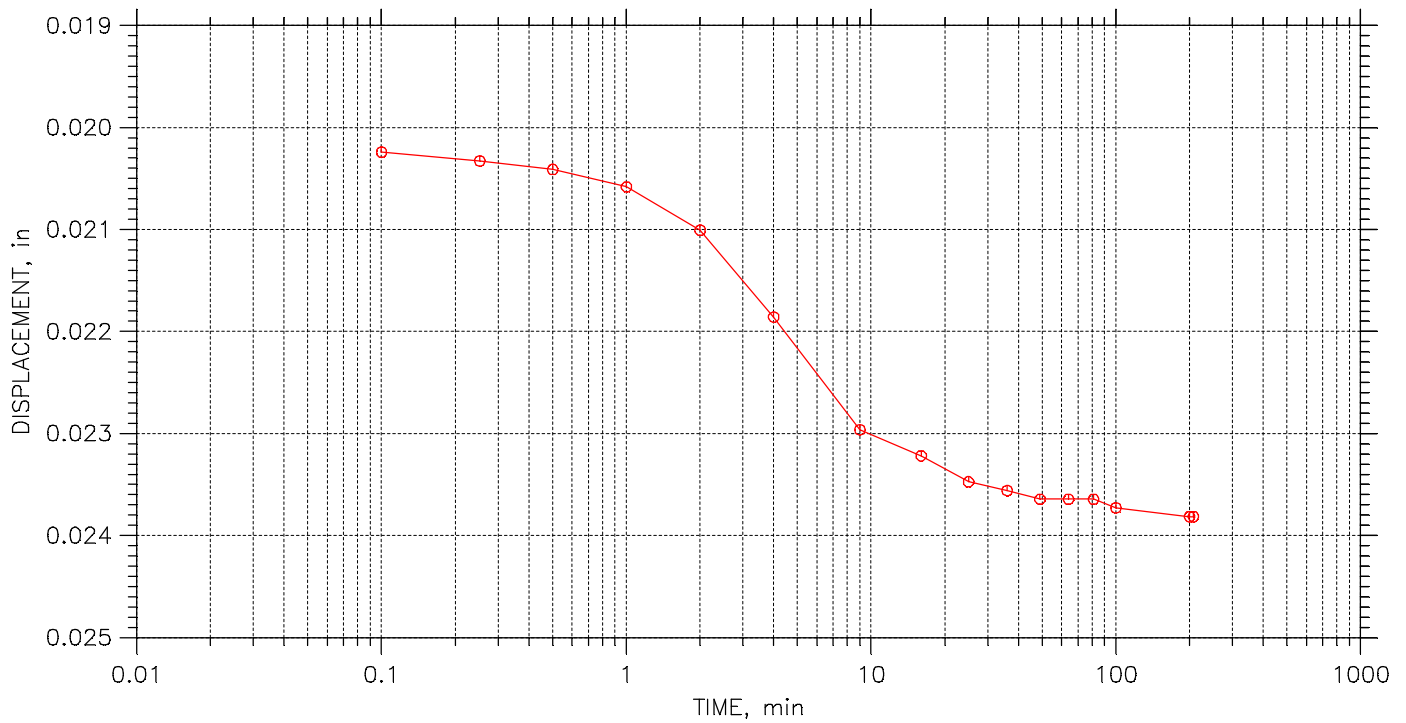
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf



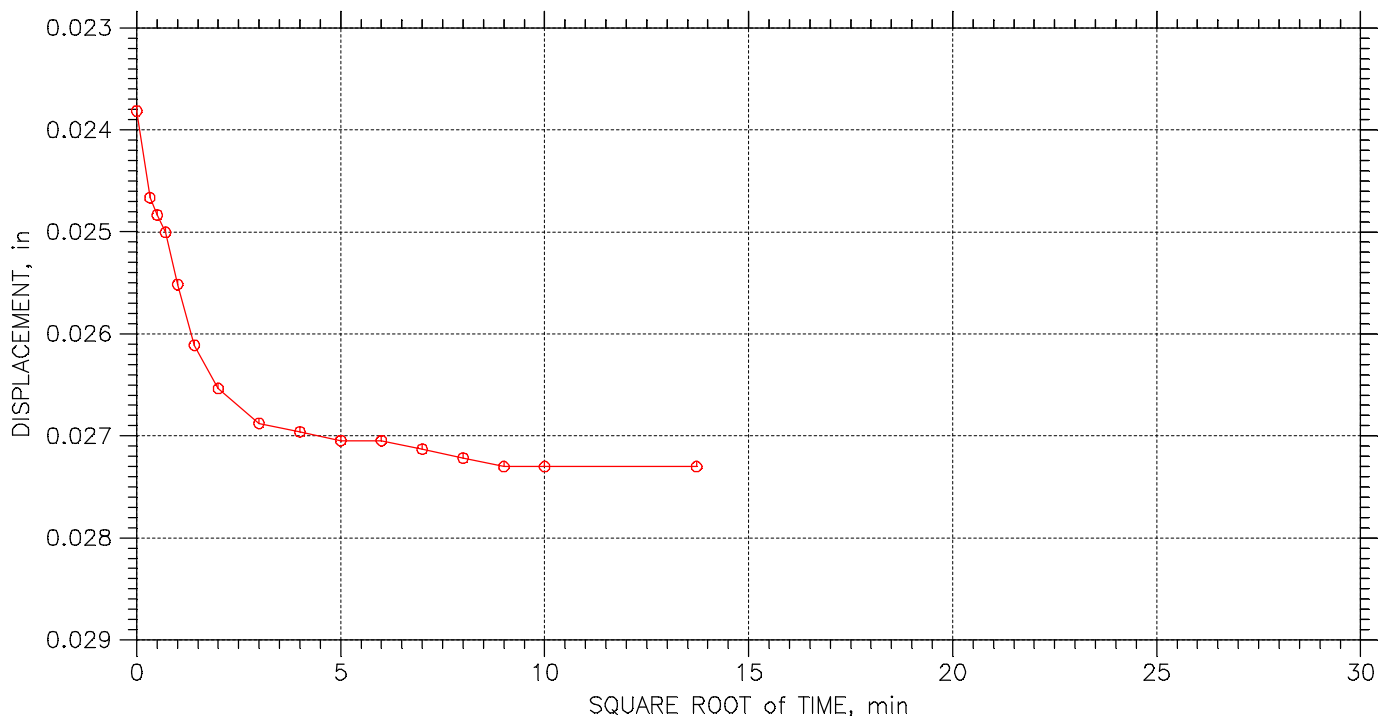
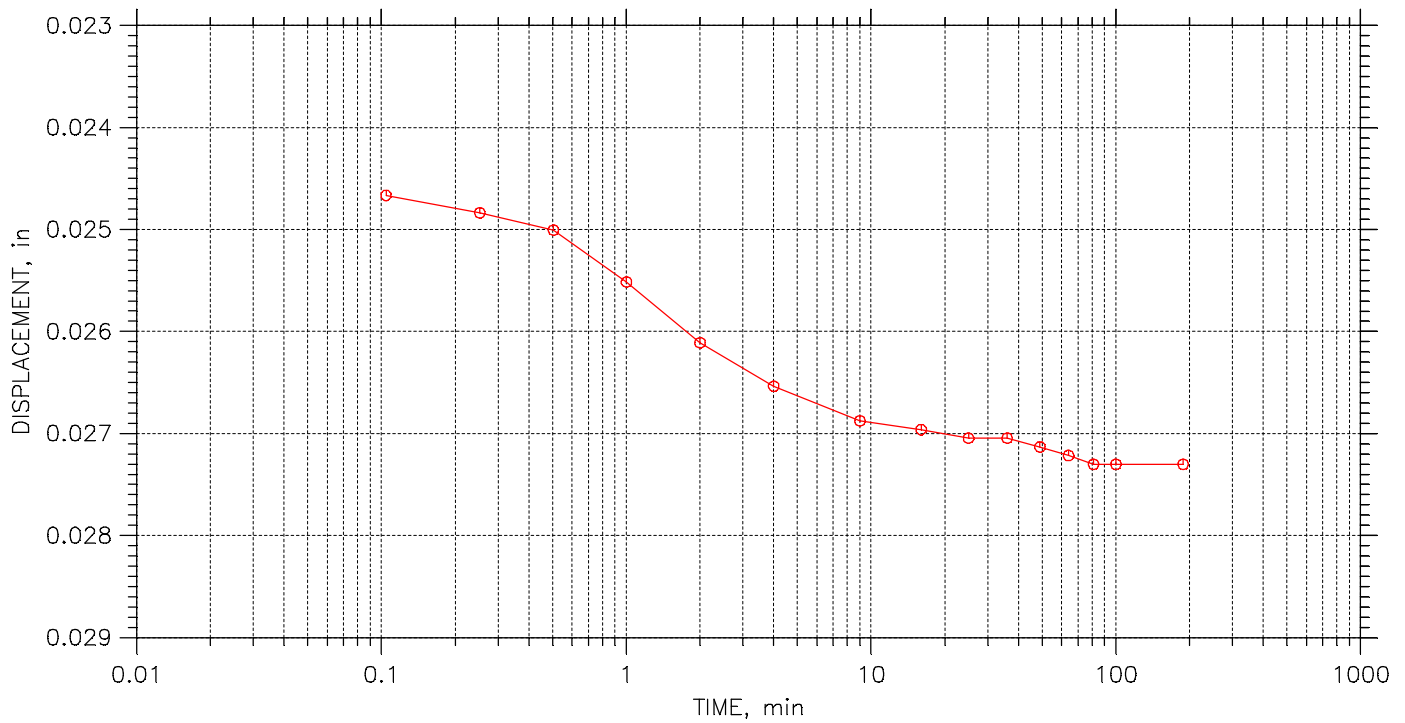
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf



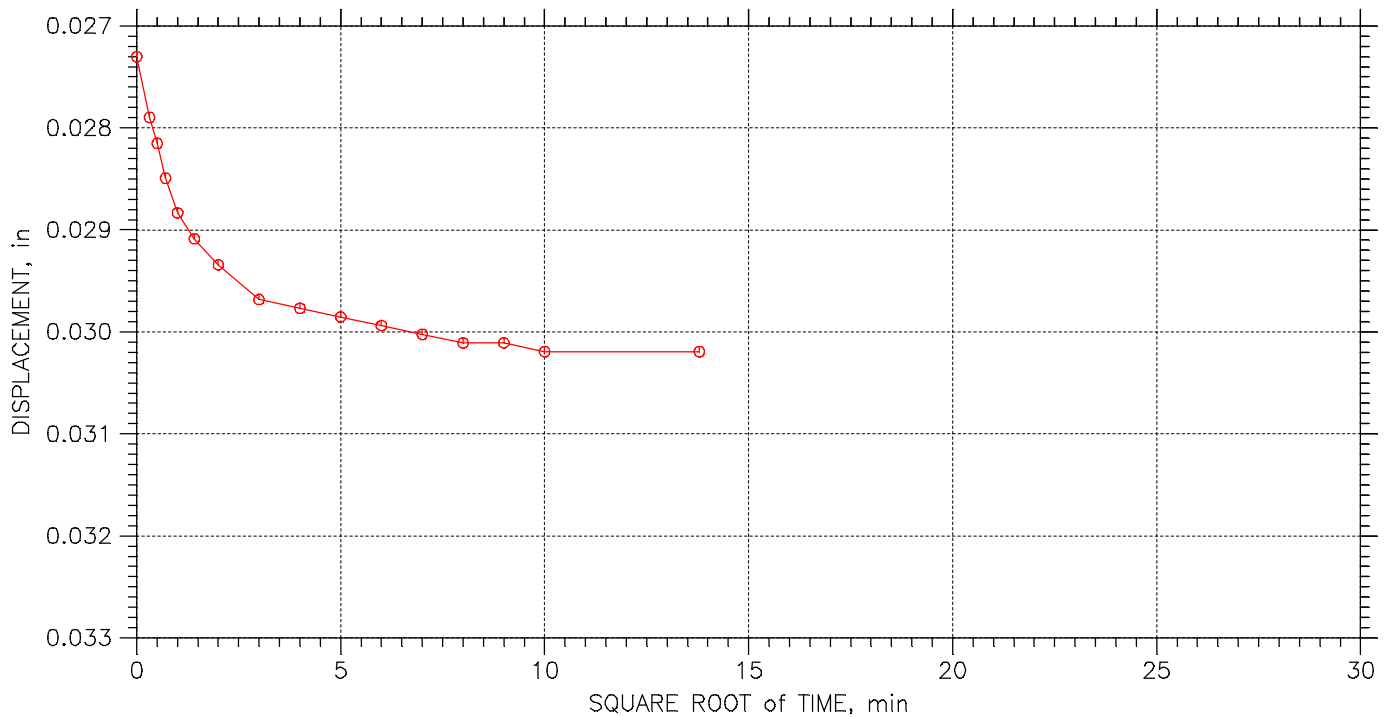
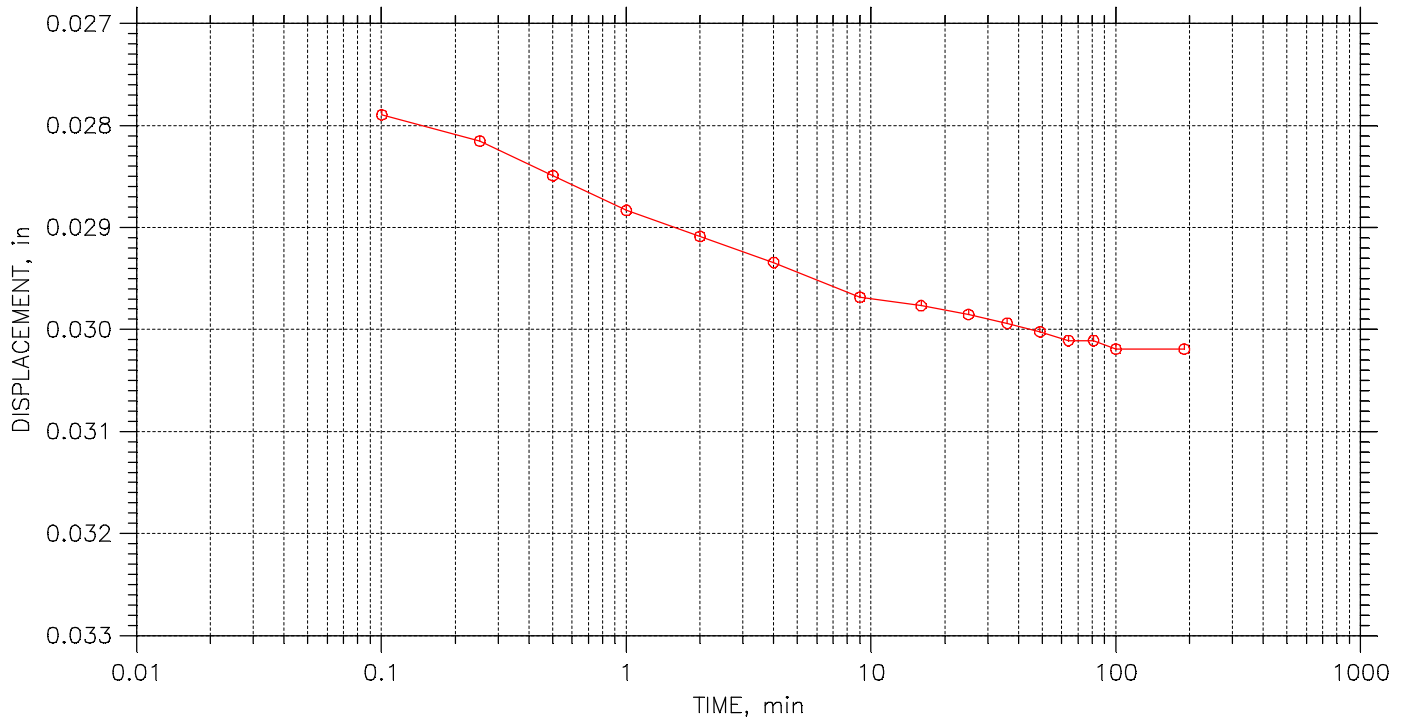
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	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf



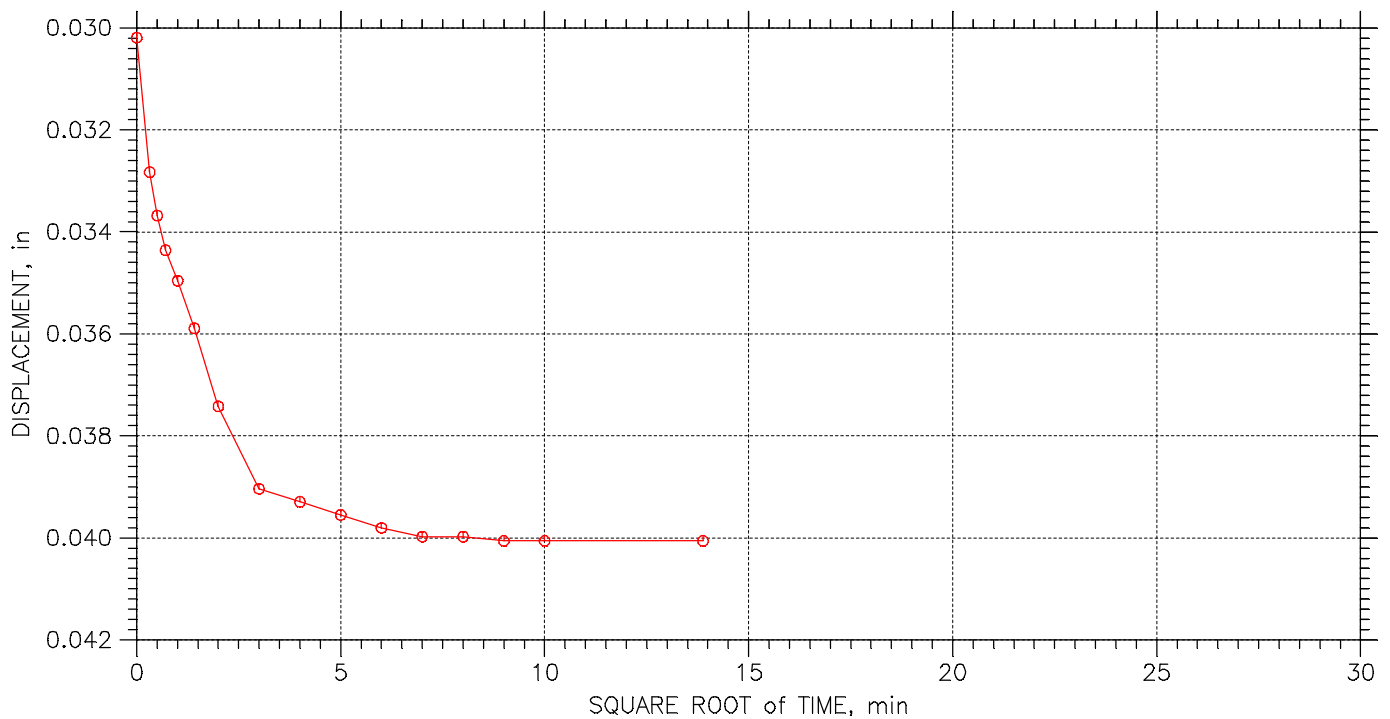
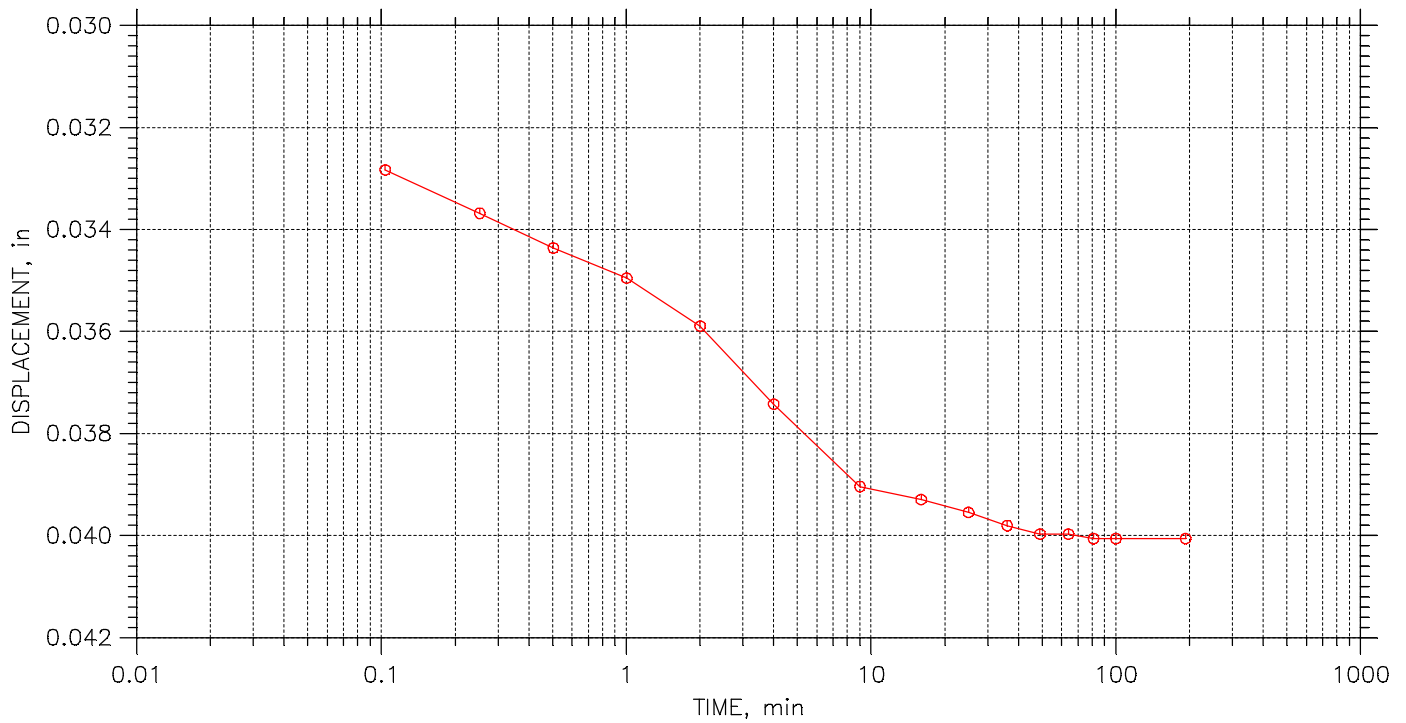
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf



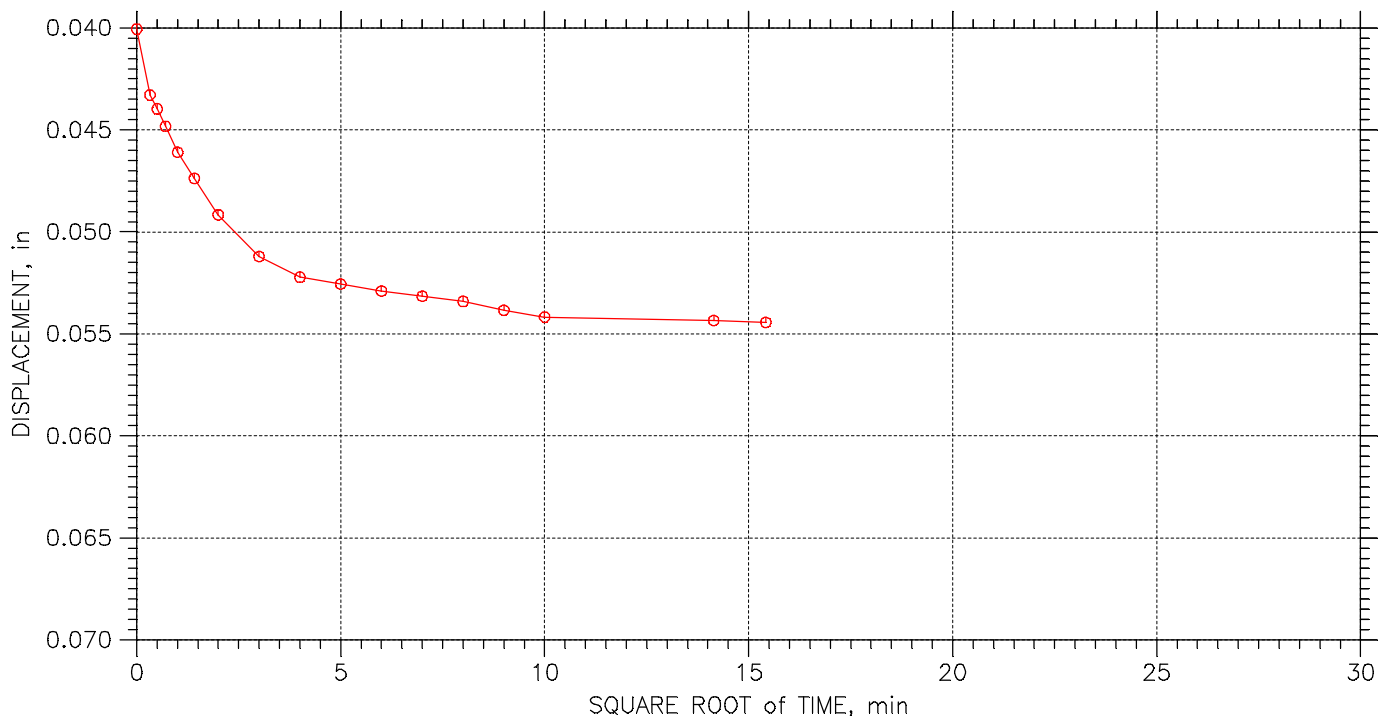
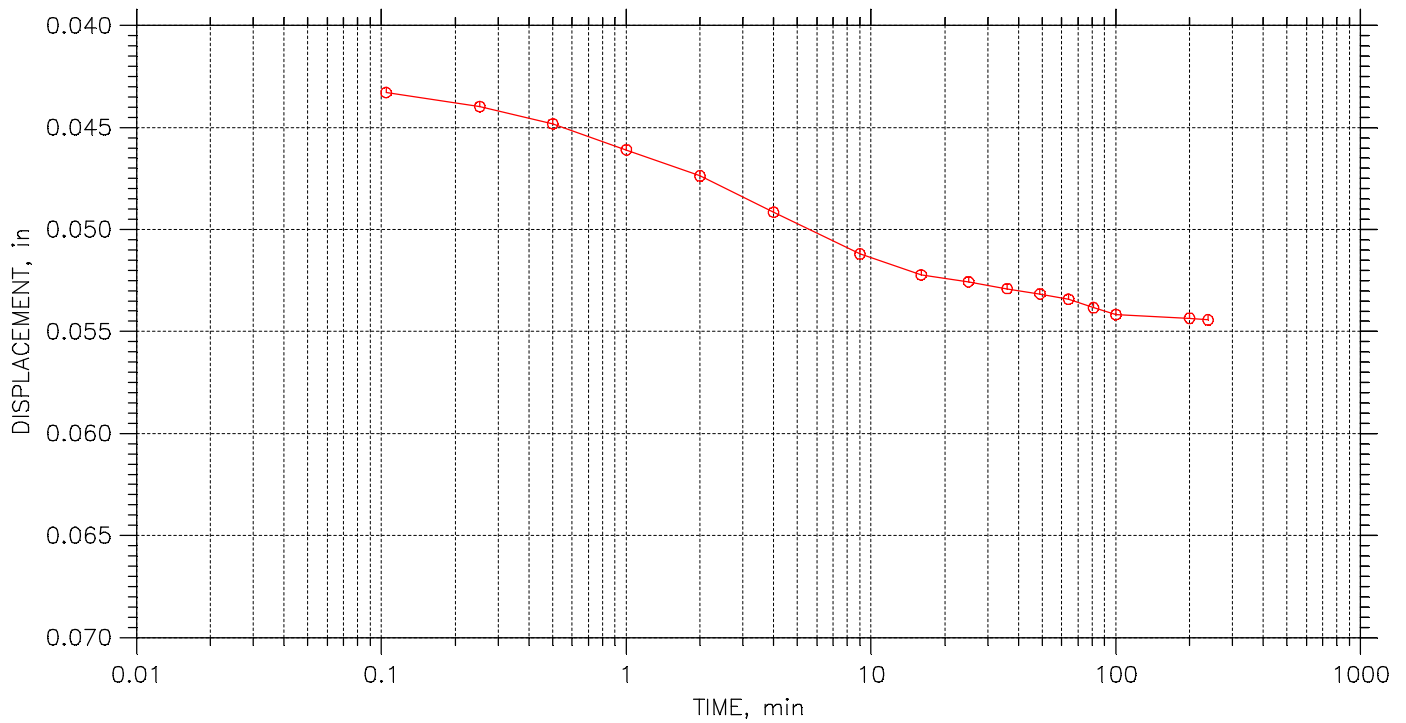
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	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf



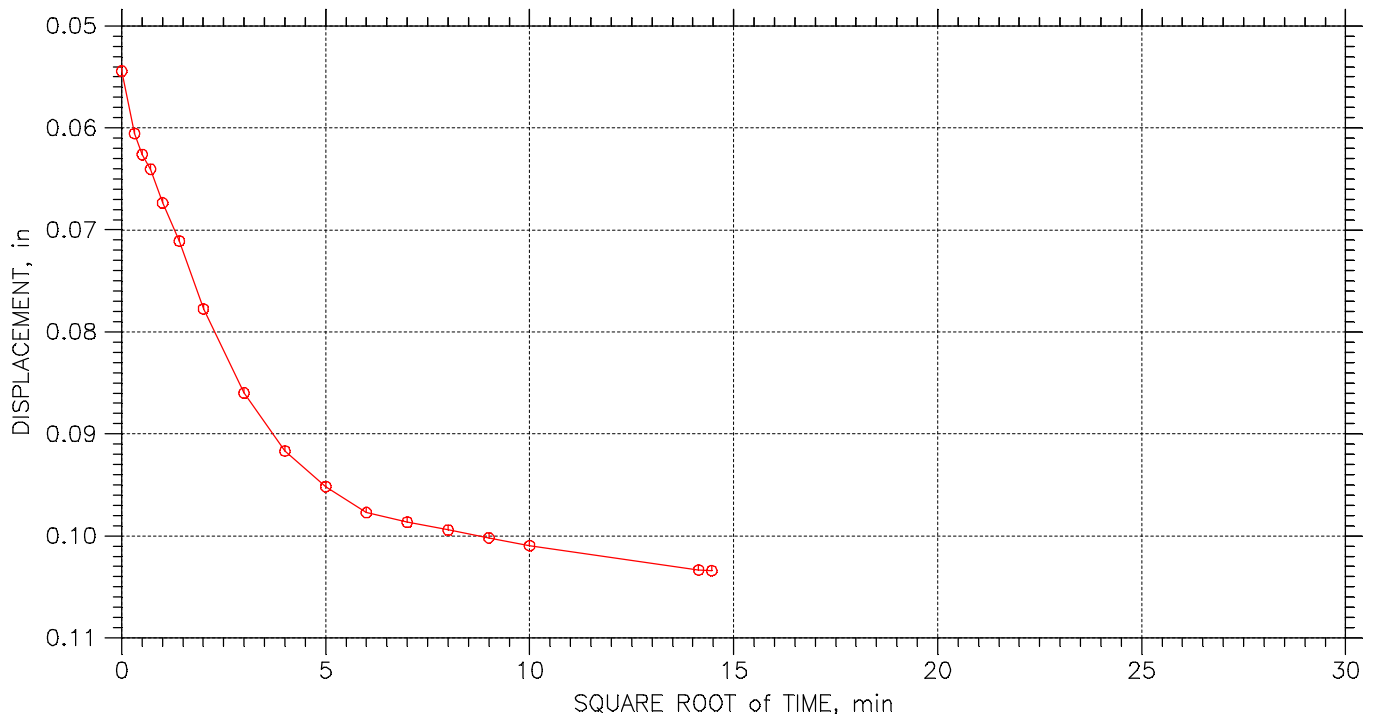
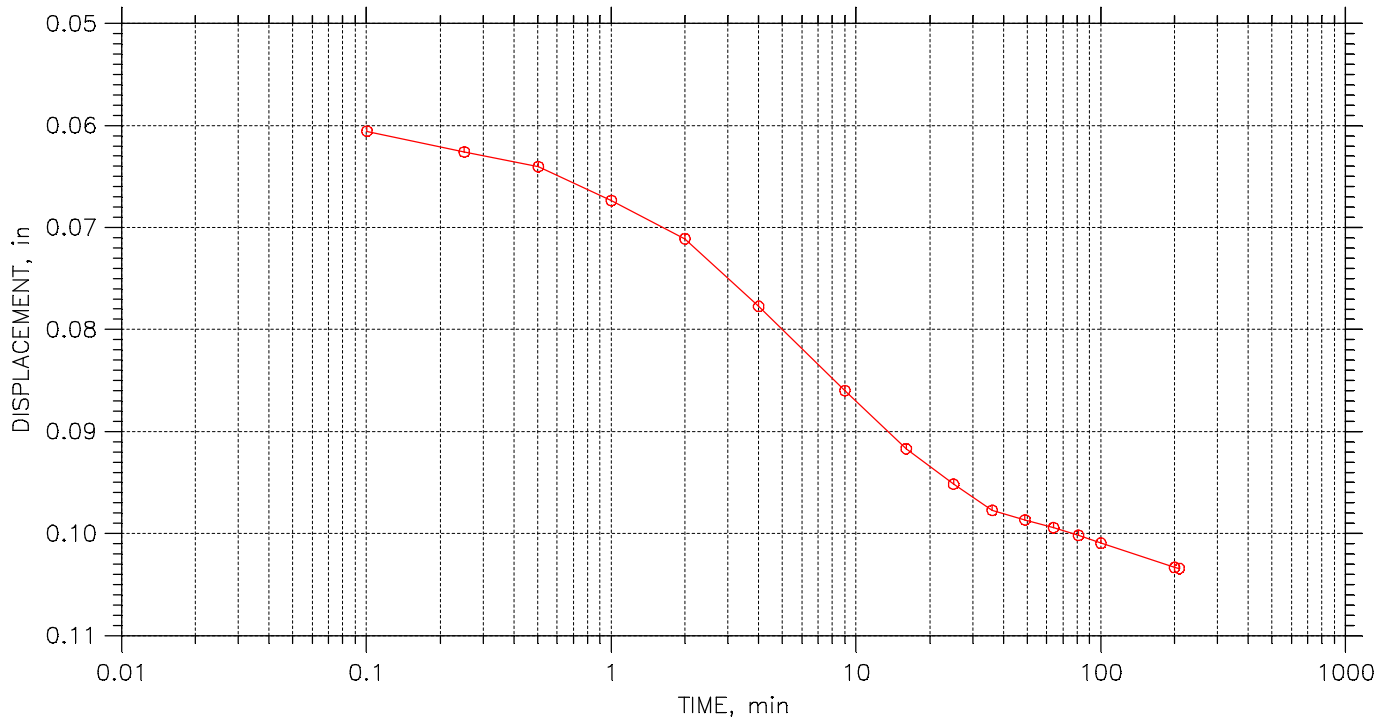
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf



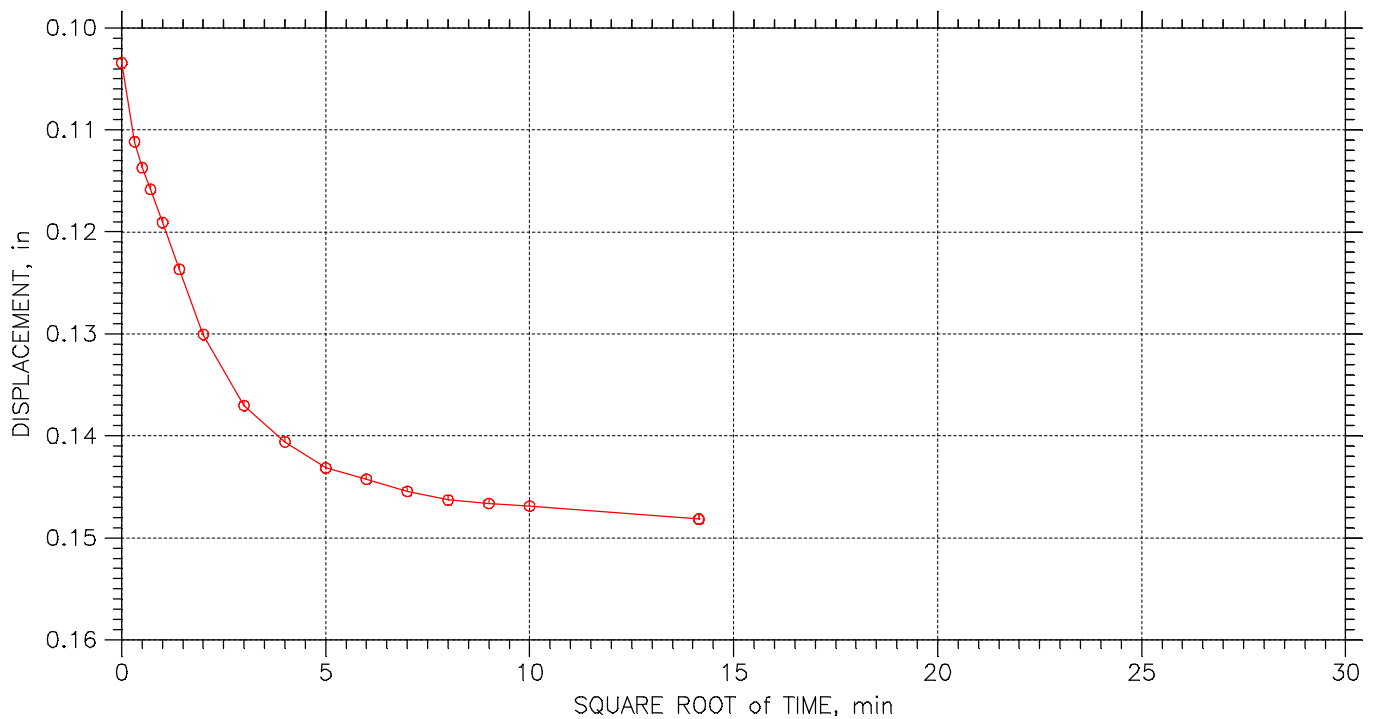
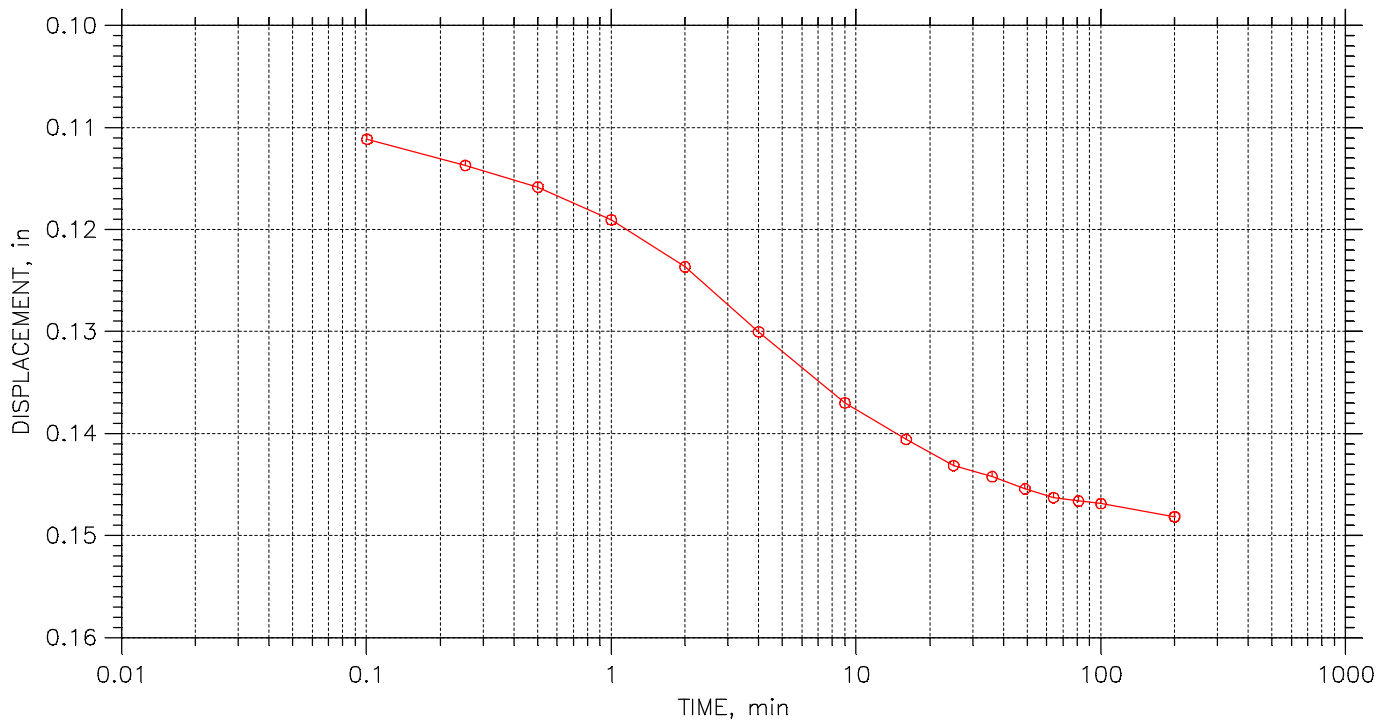
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf



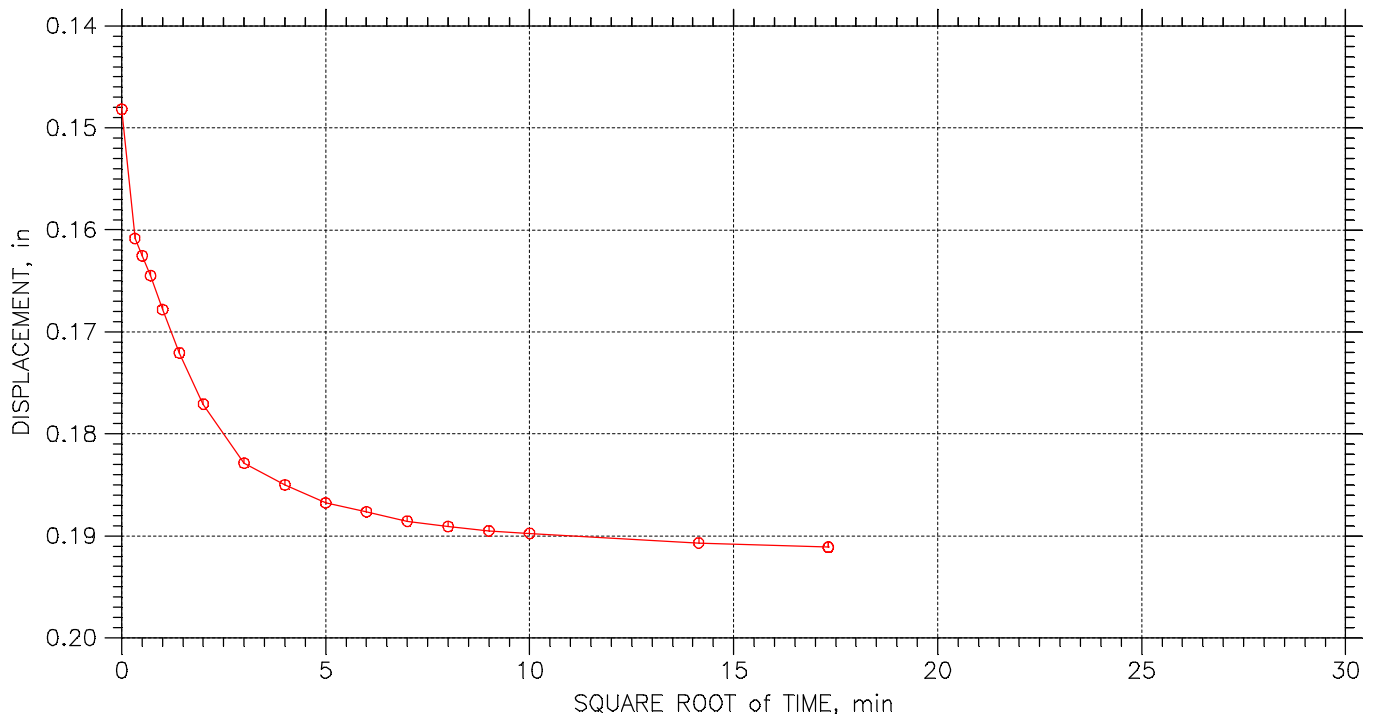
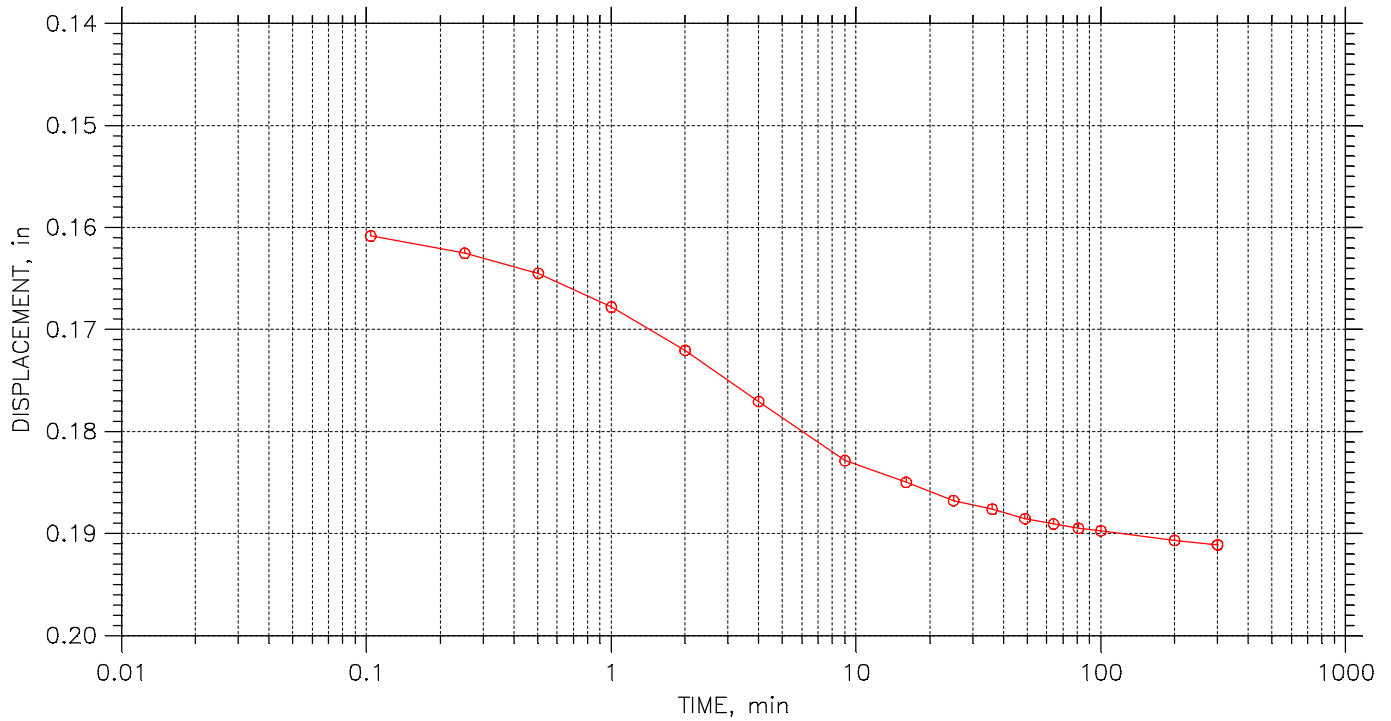
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



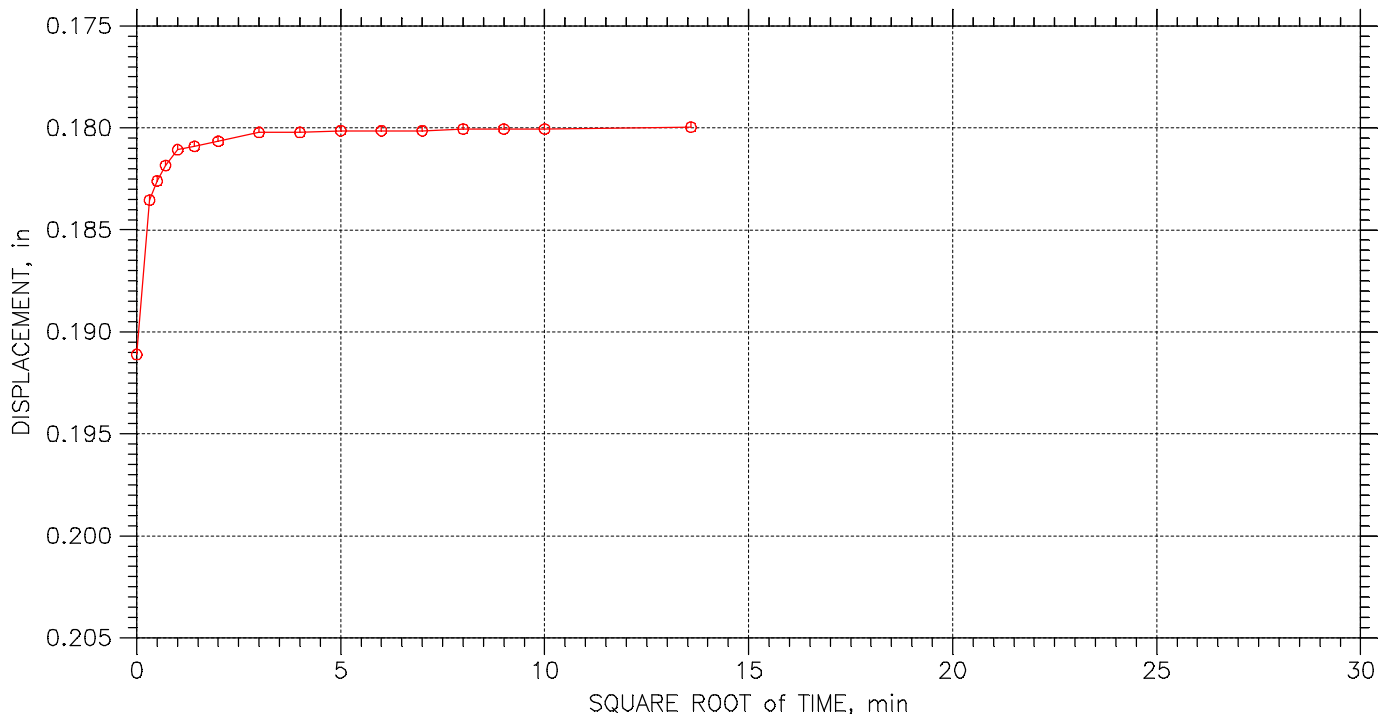
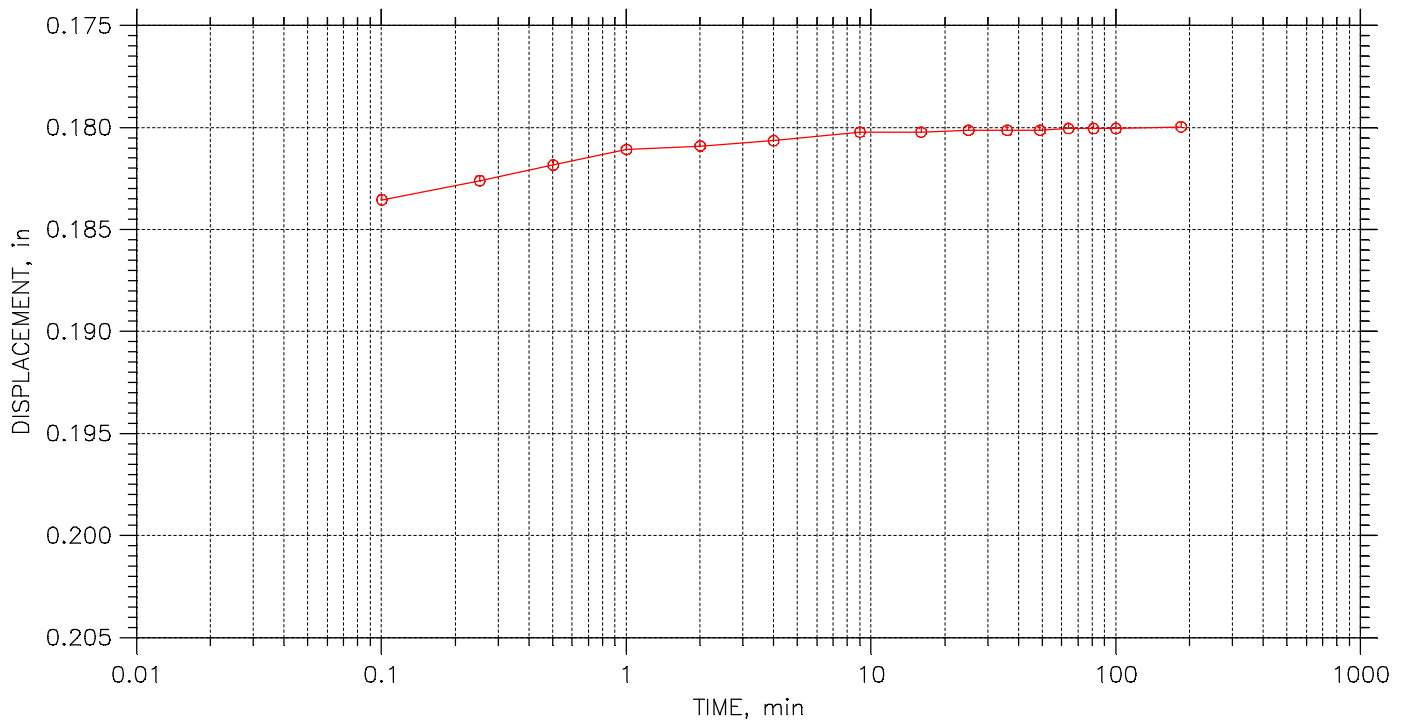
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



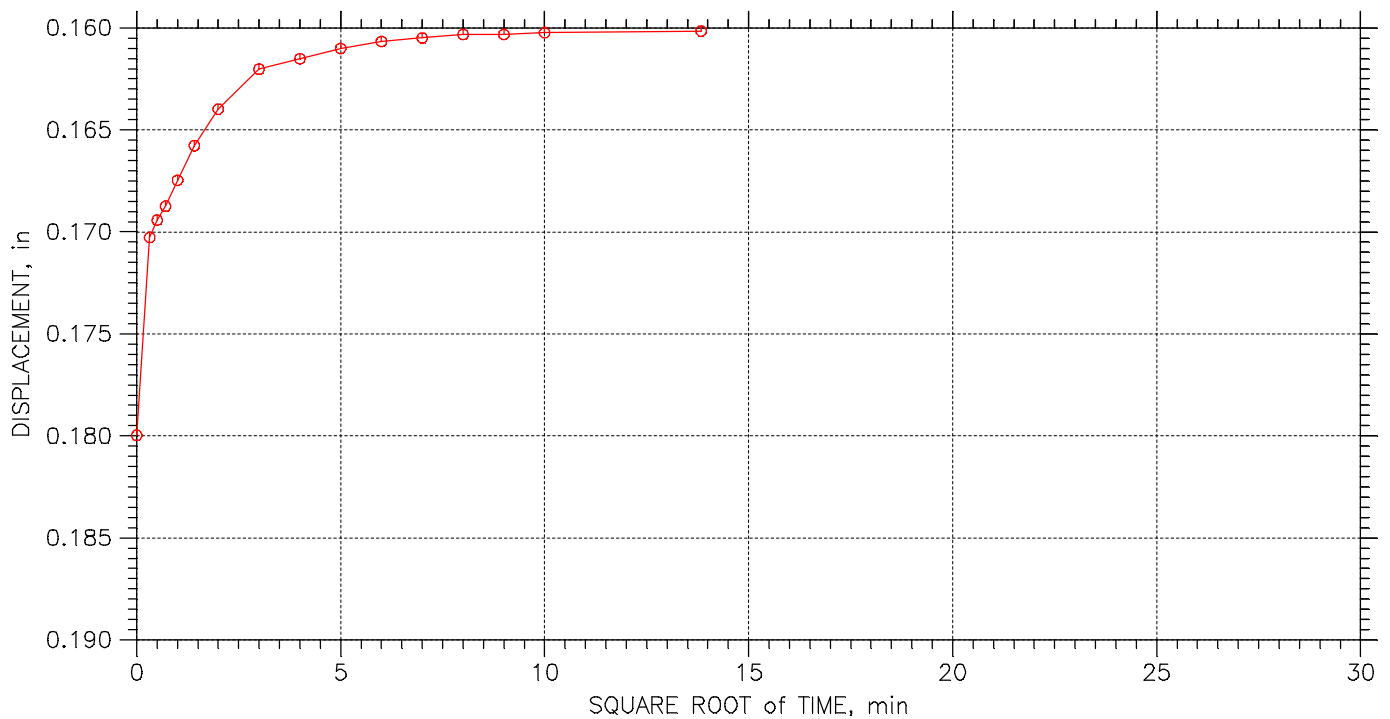
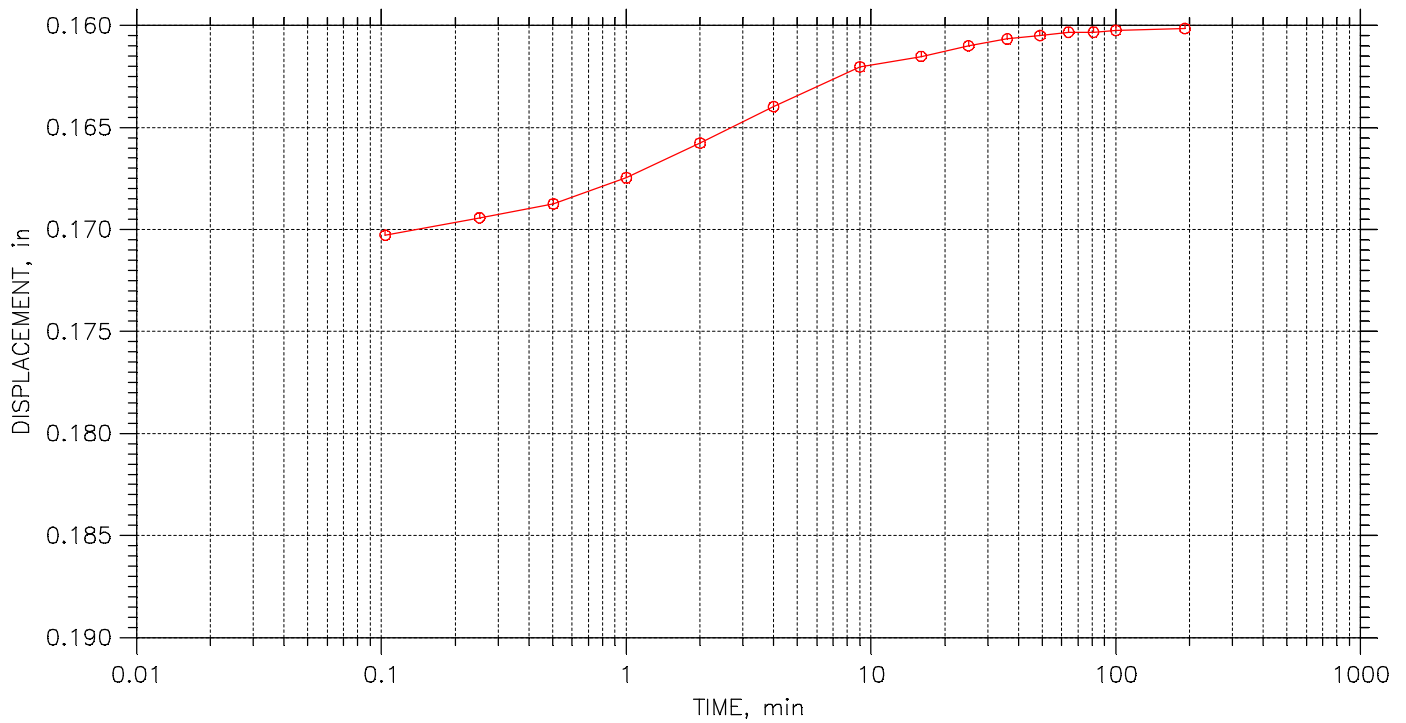
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	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 2.1 tsf Cc = 0.359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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf



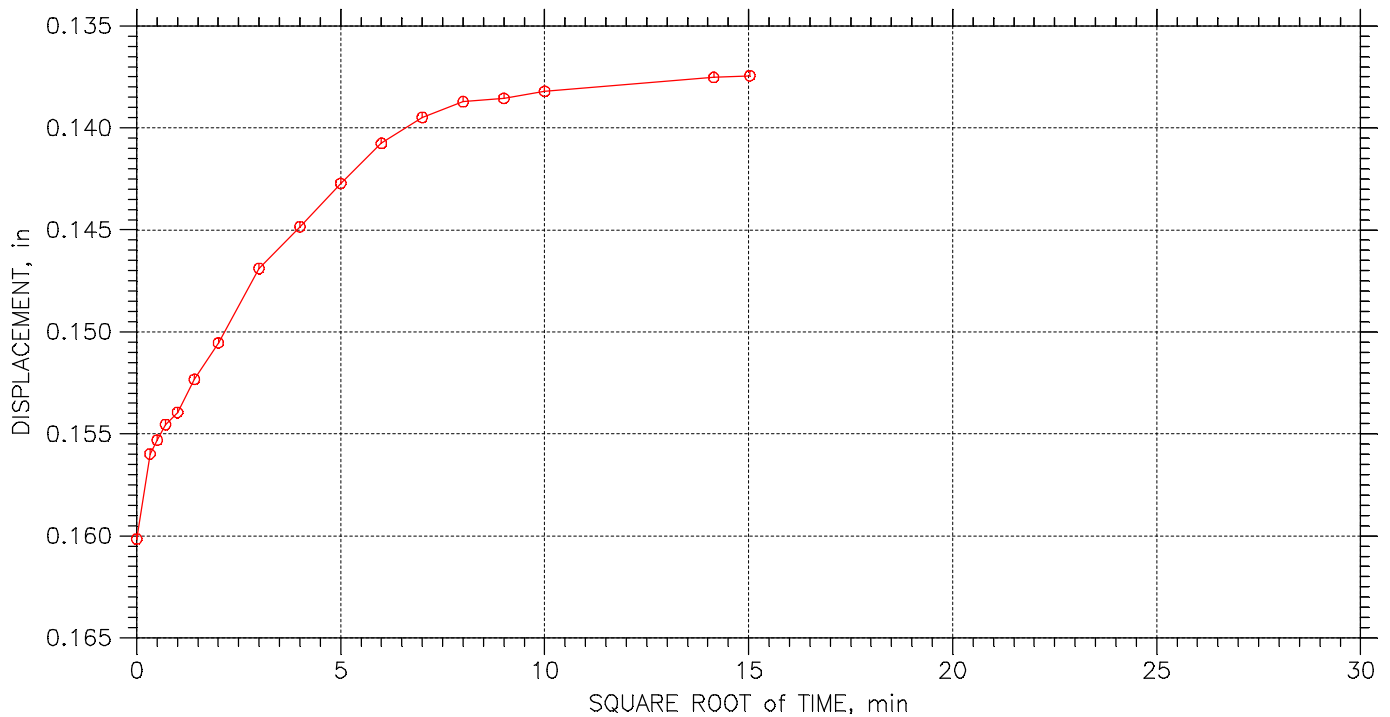
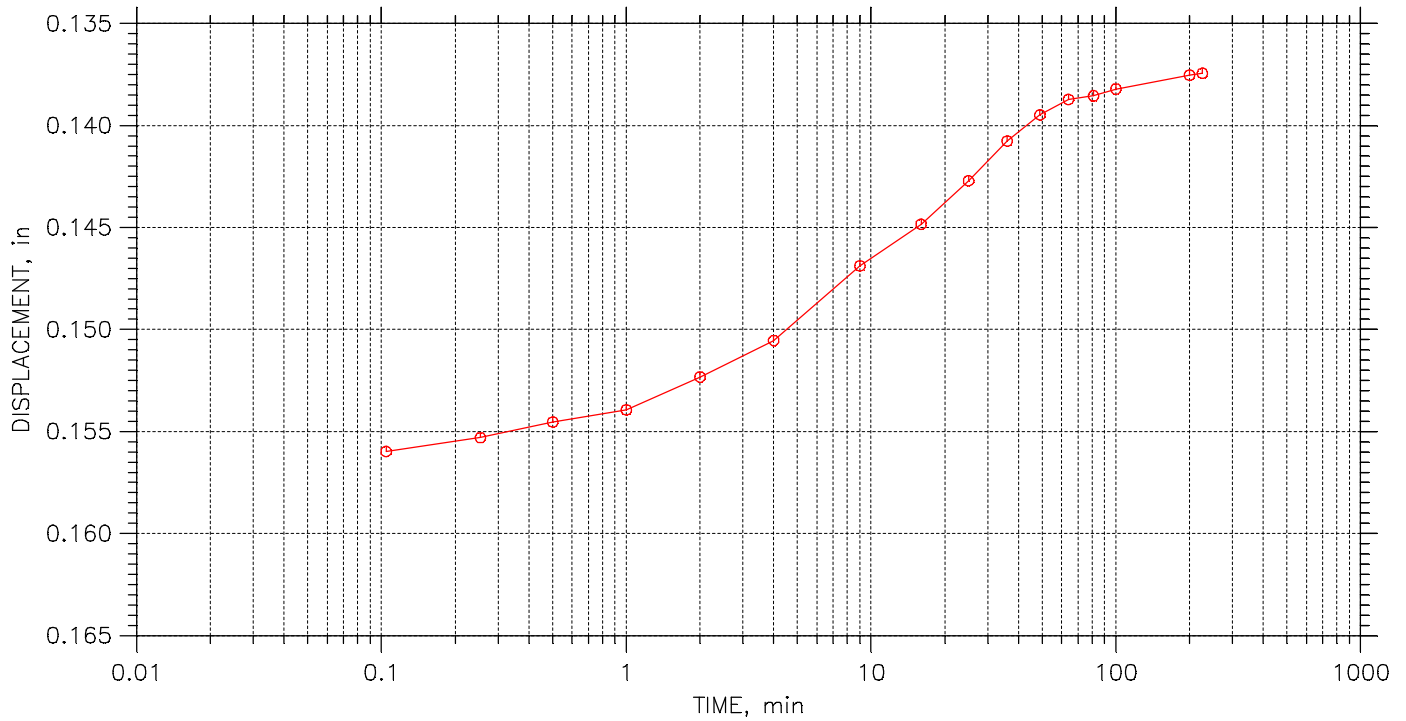
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf



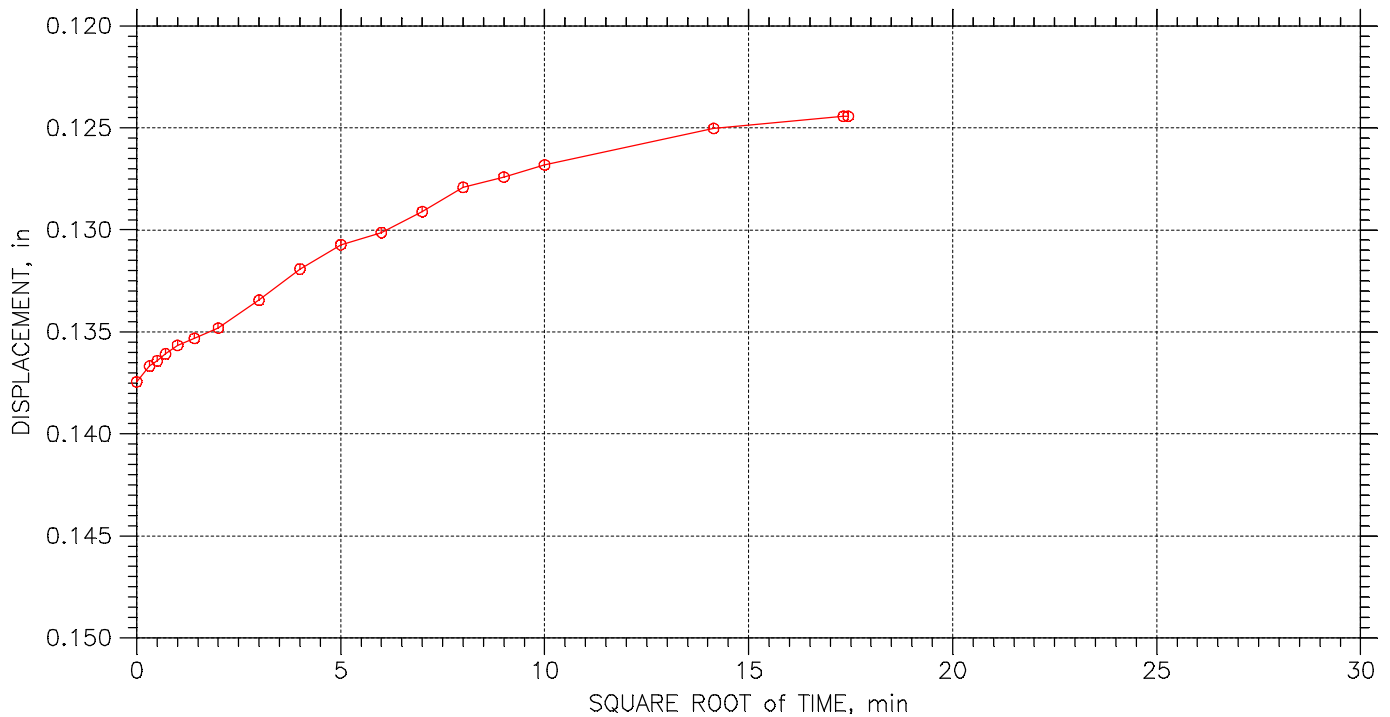
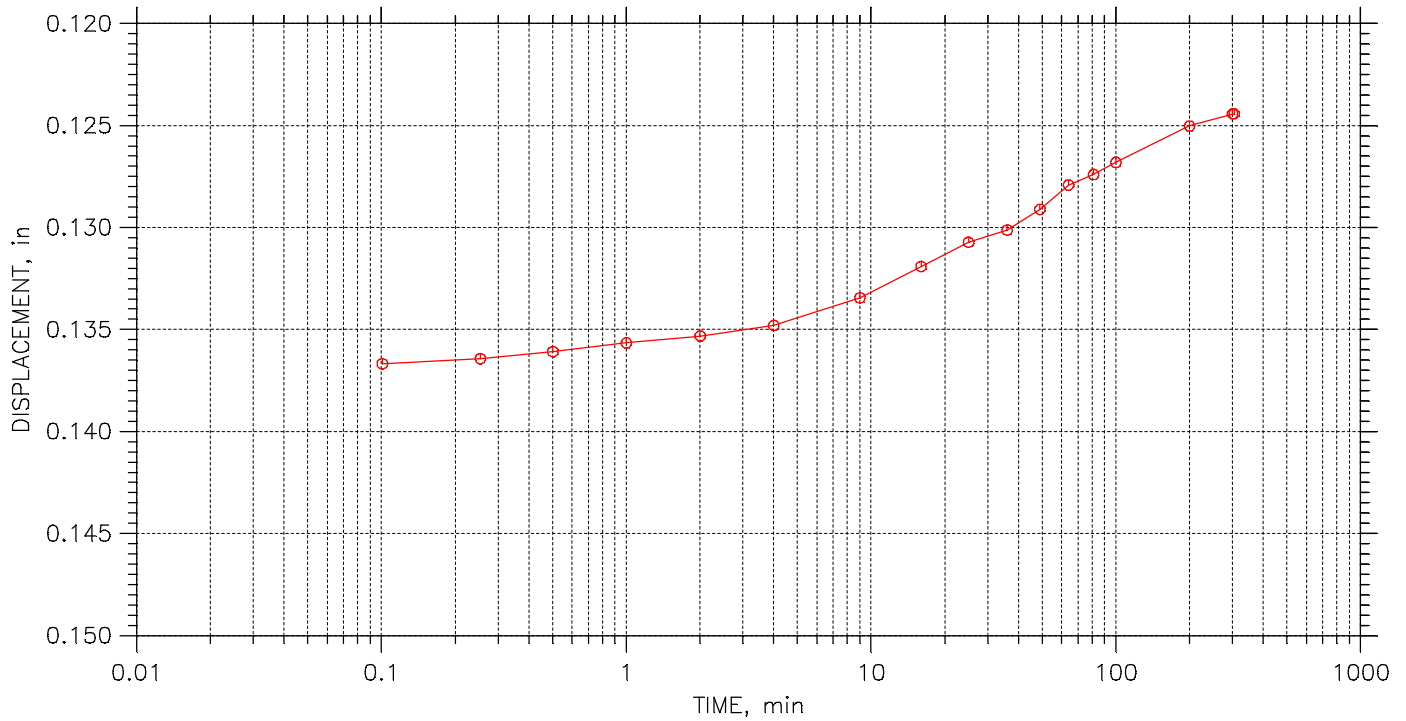
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf



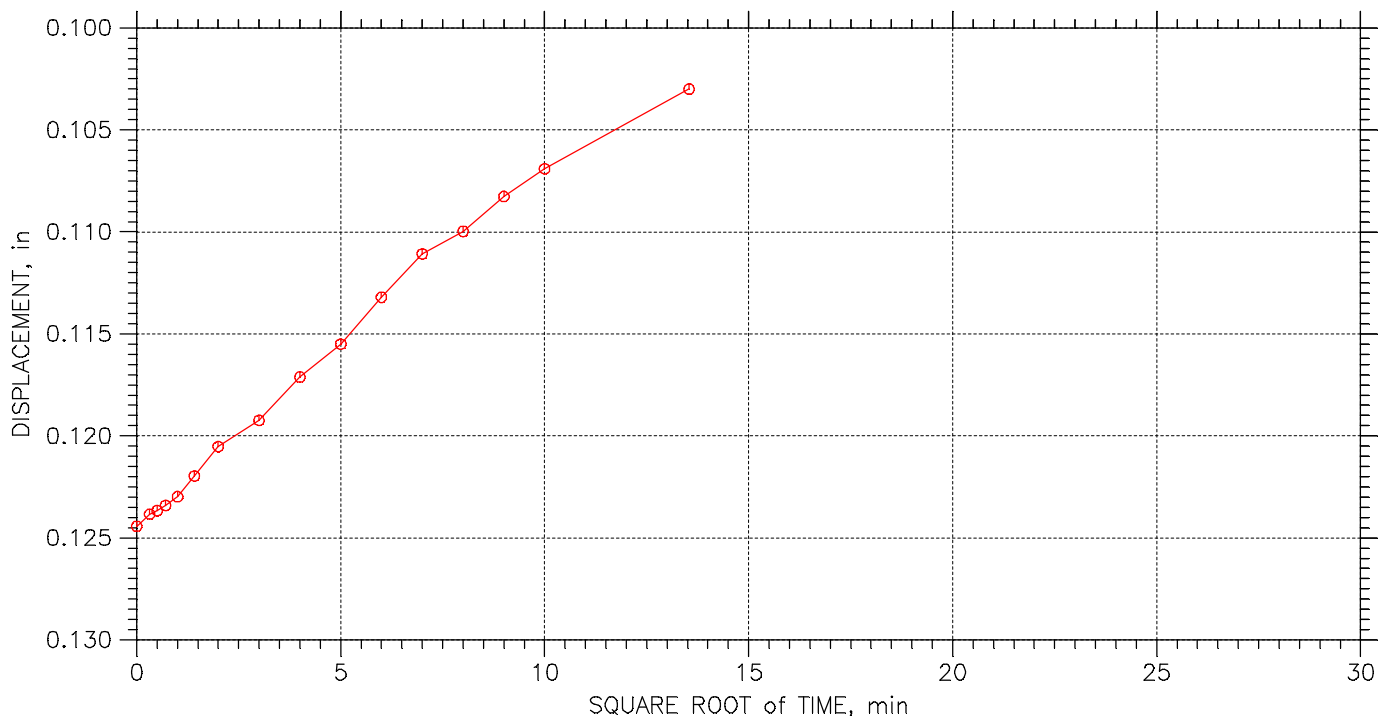
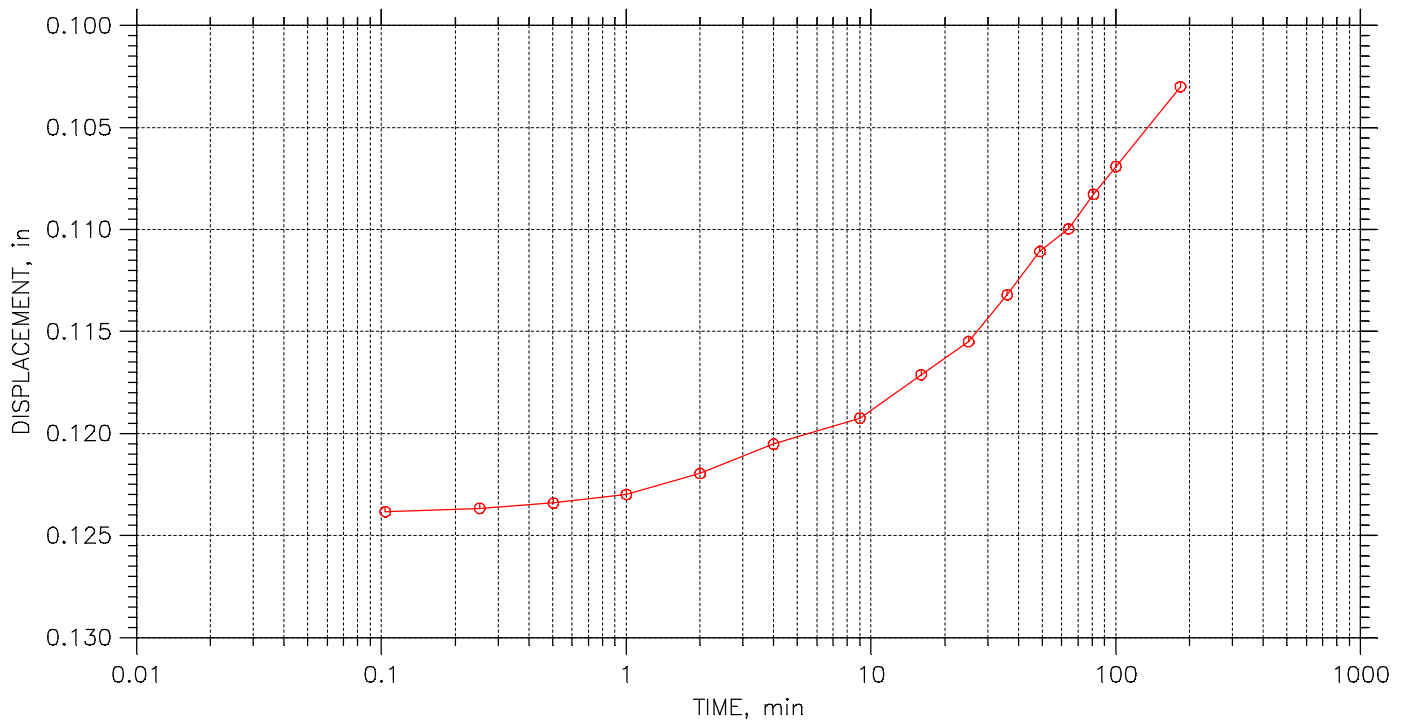
	Project: PULLIAM PROPRTY RES.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BL-11 S-11	Tested By: IT/ED	Checked By: BCM
	Sample No.: S-11	Test Date: 1/19/2023	Depth: 45.0'-47.0'
	Test No.: BL11S11CON	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

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'
	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		

CONSOLIDATION TEST DATA

Project: PULLIAM PROPRTY RES.
Boring No.: BL-11 S-11
Sample No.: S-11
Test No.: BL11S11CON

Location: MILWAUKEE,WI
Tested By: IT/ED
Test Date: 1/19/2023
Sample Type: 3.0" ST

Project No.: 11225052
Checked By: BCM
Depth: 45.0'-47.0'
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
Final Void Ratio: 0.63

Liquid Limit: 42
Plastic Limit: 14
Plasticity Index: 28

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	---

CONSOLIDATION TEST DATA

Project: PULLIAM PROPRTY RES.
Boring No.: BL-11 S-11
Sample No.: S-11
Test No.: BL11S11CON

Location: MILWAUKEE,WI
Tested By: IT/ED
Test Date: 1/19/2023
Sample Type: 3.0" ST

Project No.: 11225052
Checked By: BCM
Depth: 45.0'-47.0'
Elevation: ----

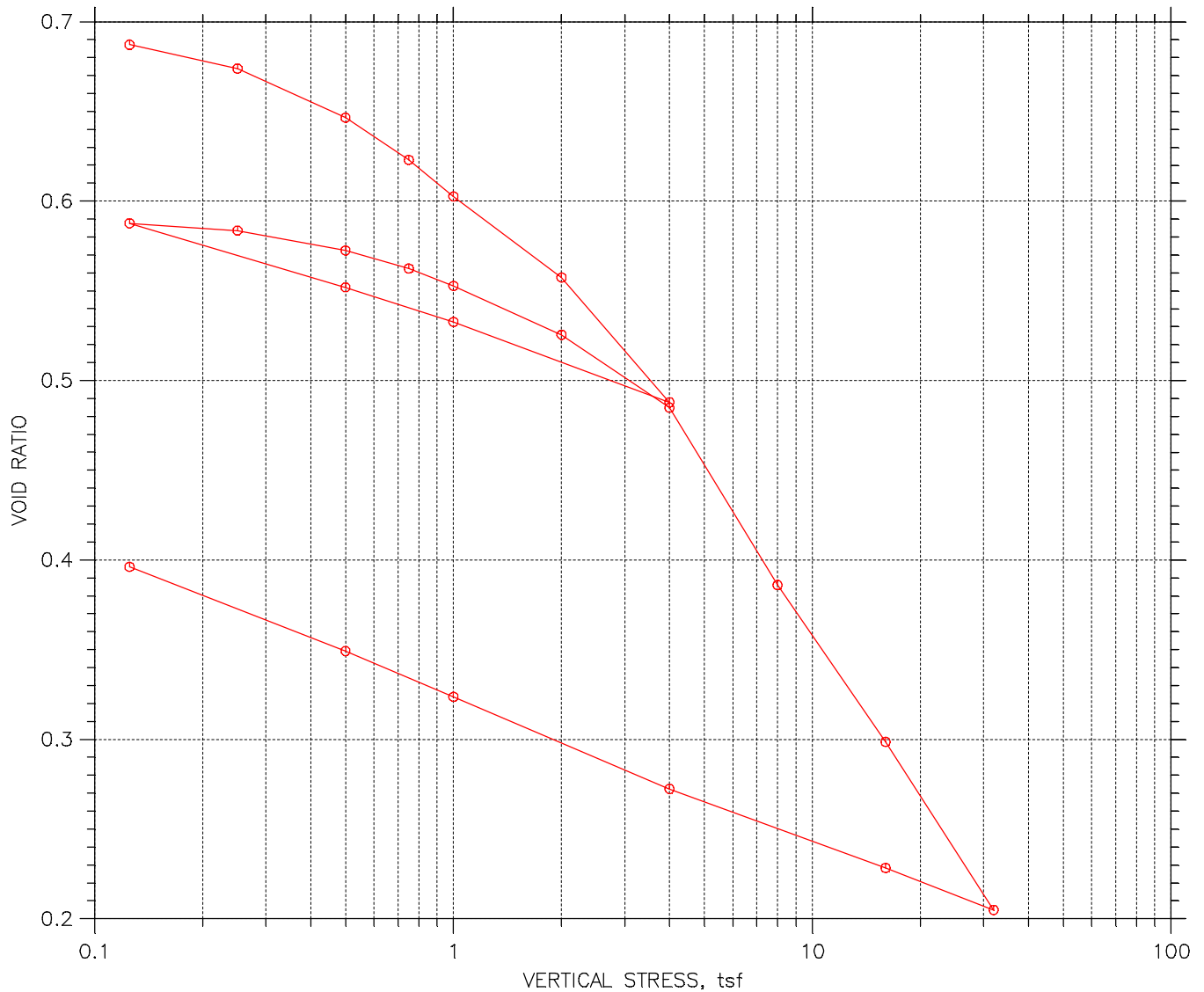


Soil Description: REDDISH BROWN LEAN CLAY (CL)


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

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. ft^2/sec	Log ft^2/sec	Ave. 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	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	0.007059	0.878	0.94	8.8	0.0	3.60e-007	0.00e+000	3.60e-007
5	1	0.01021	0.870	1.36	13.9	0.0	2.25e-007	0.00e+000	2.25e-007
6	2	0.02279	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	0.03683	0.802	4.92	1.0	0.0	2.99e-006	0.00e+000	2.99e-006
9	0.5	0.02985	0.820	3.99	5.6	0.0	5.26e-007	0.00e+000	5.26e-007
10	0.125	0.01752	0.851	2.34	5.6	7.7	5.38e-007	3.90e-007	4.53e-007
11	0.25	0.01965	0.846	2.62	3.8	0.0	7.92e-007	0.00e+000	7.92e-007
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

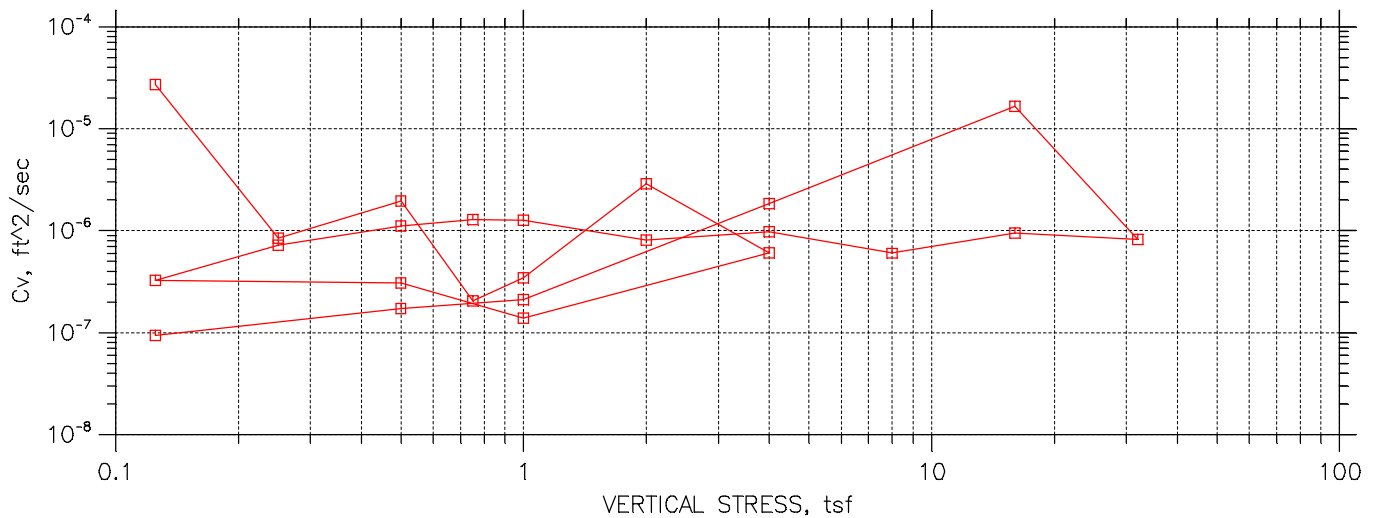
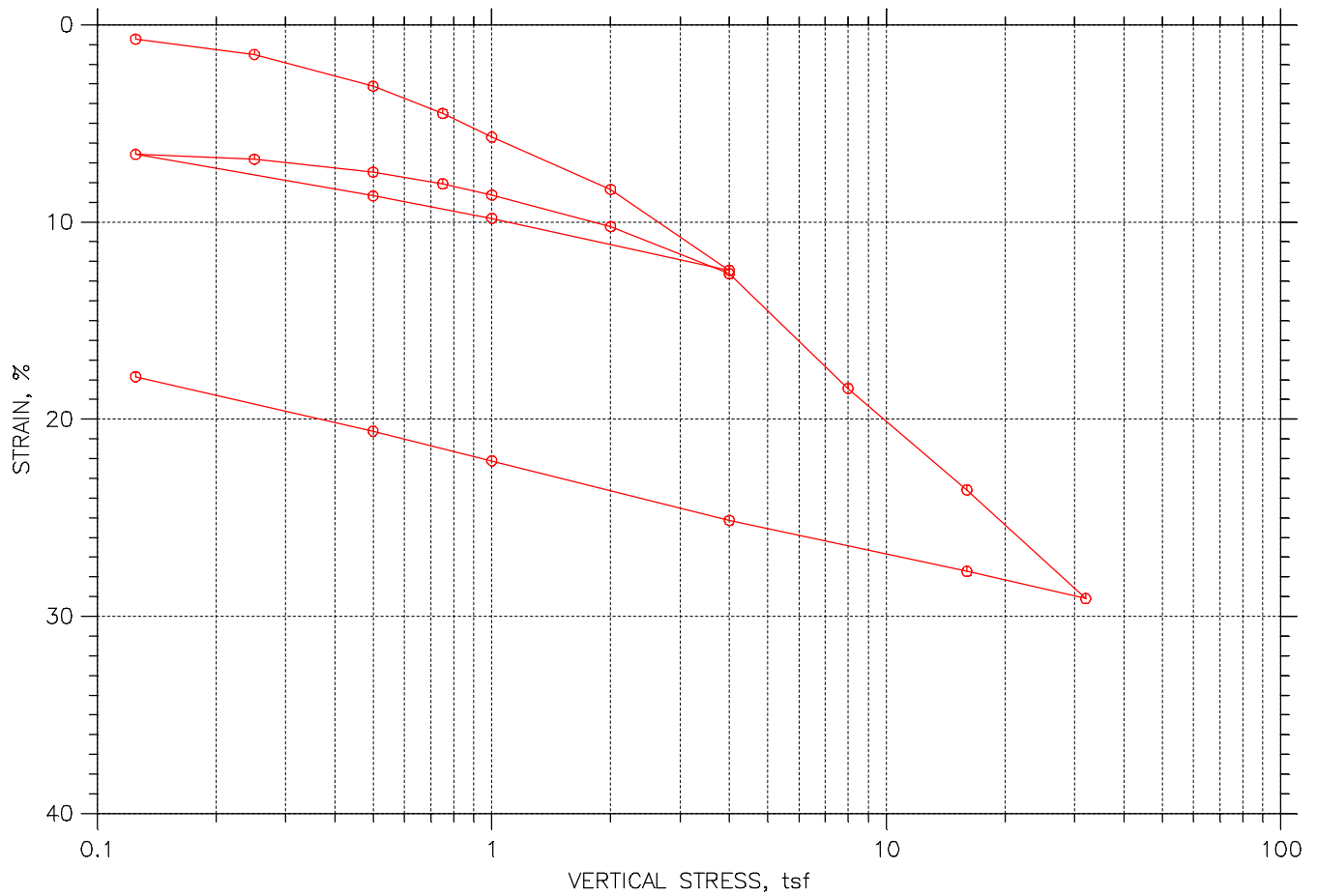
ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435




				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
	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



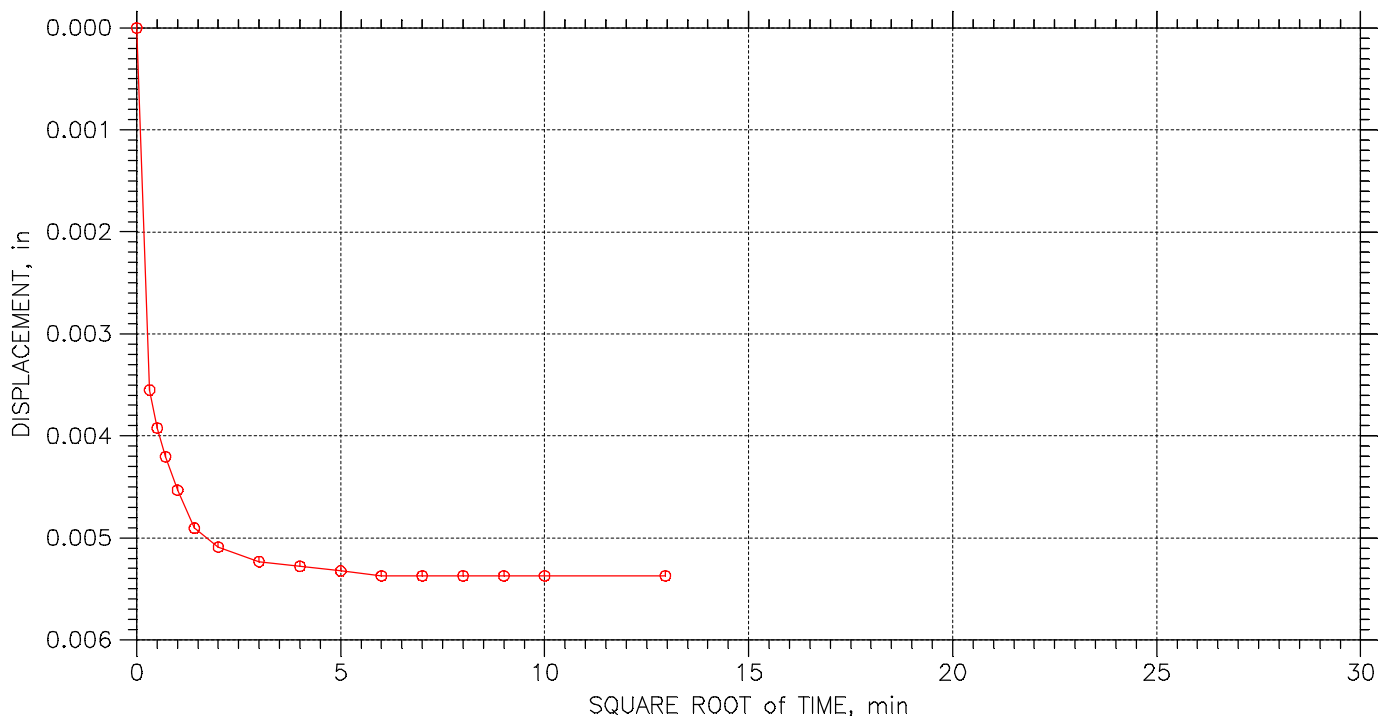
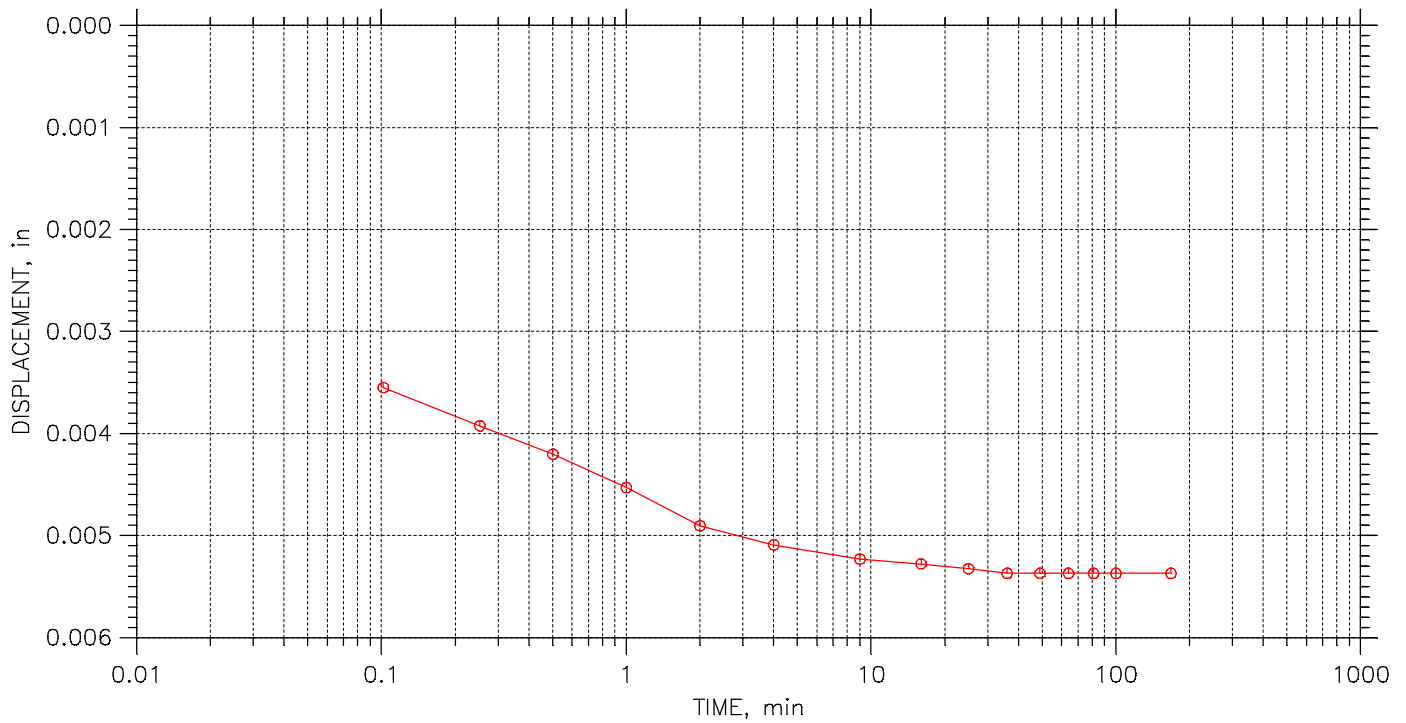
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: $P_c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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf



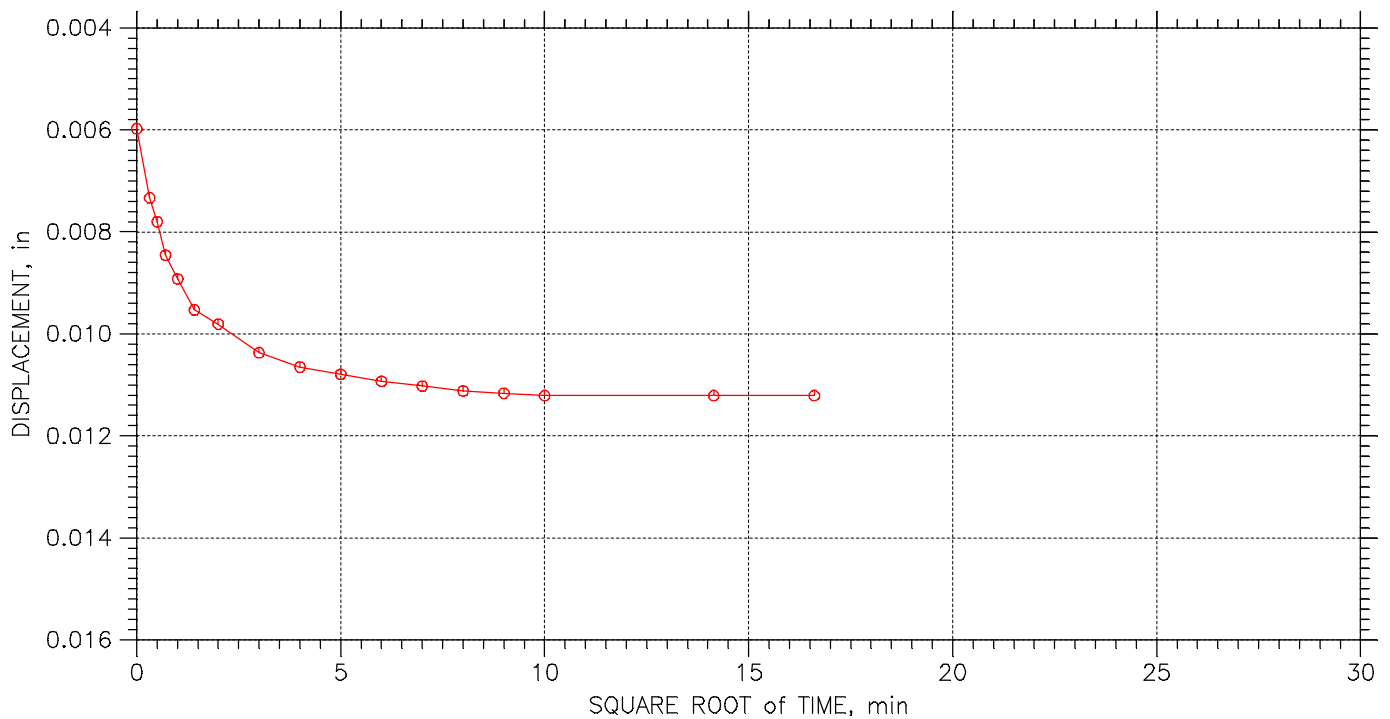
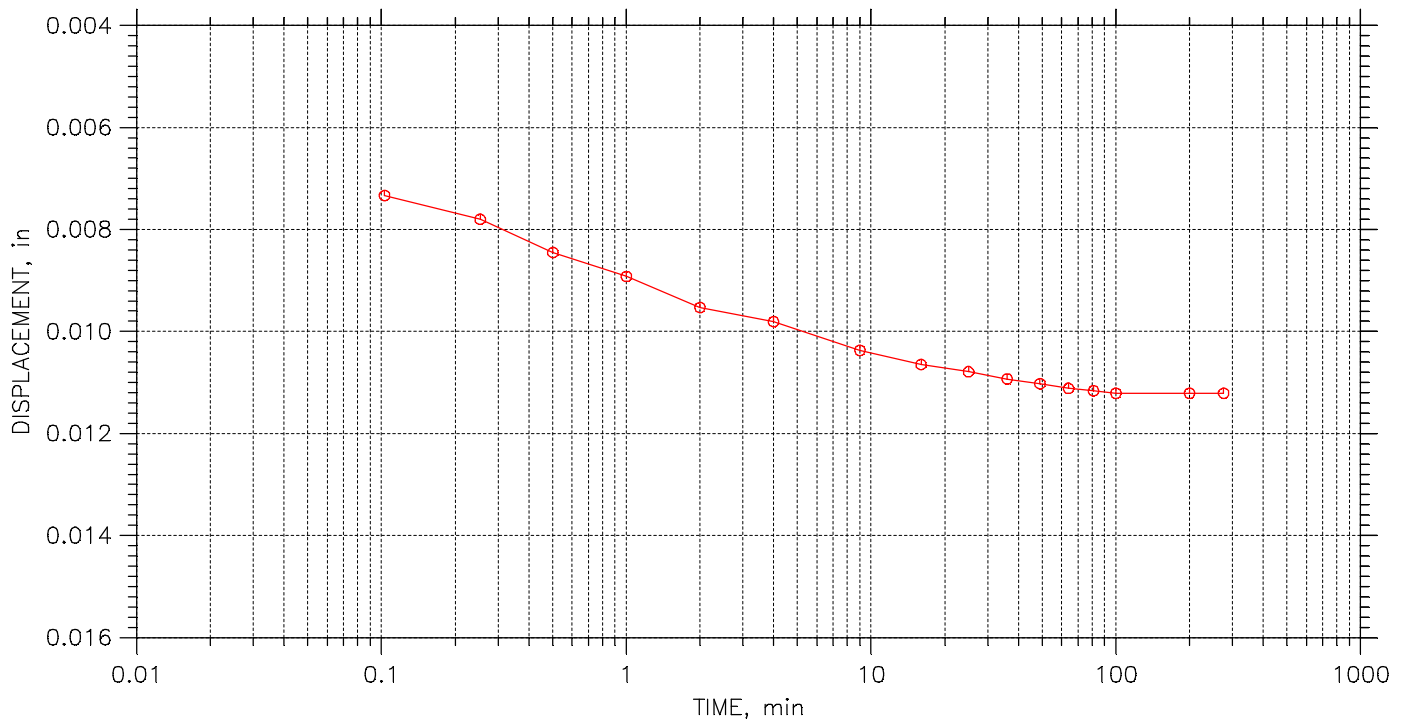
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf



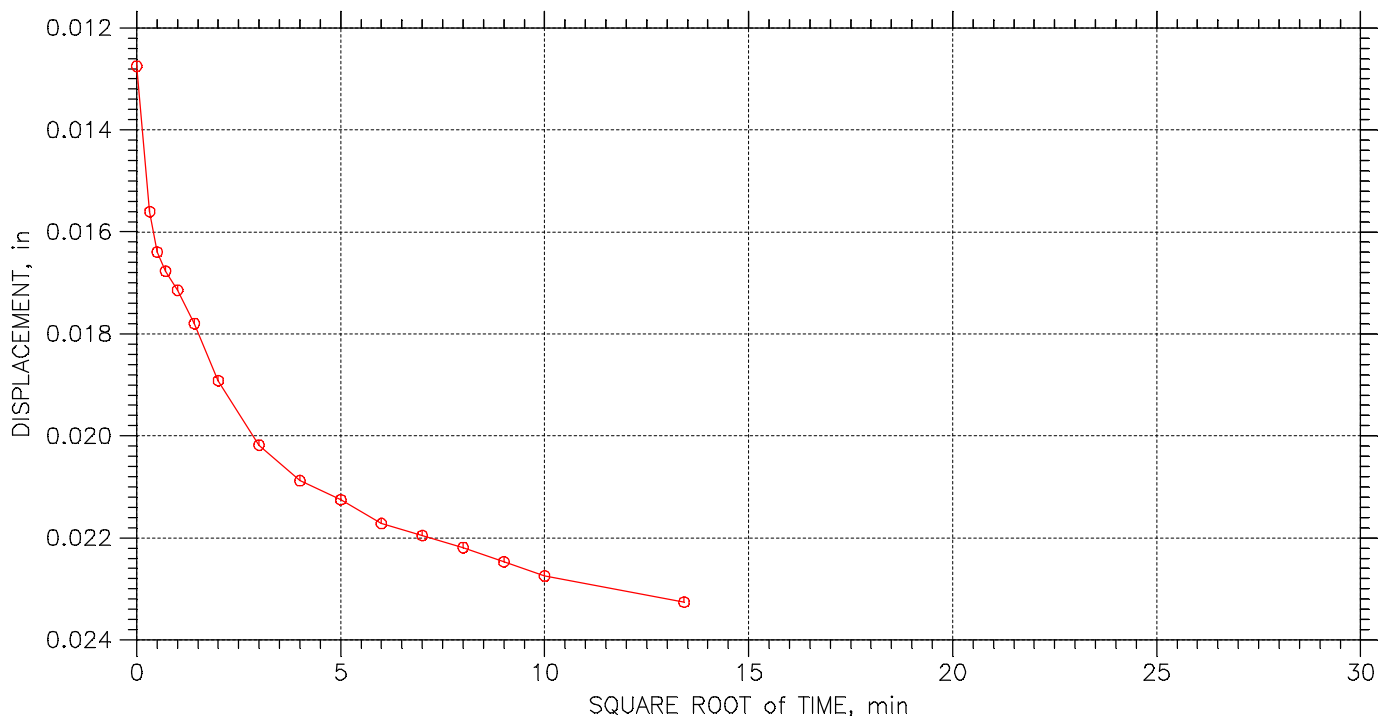
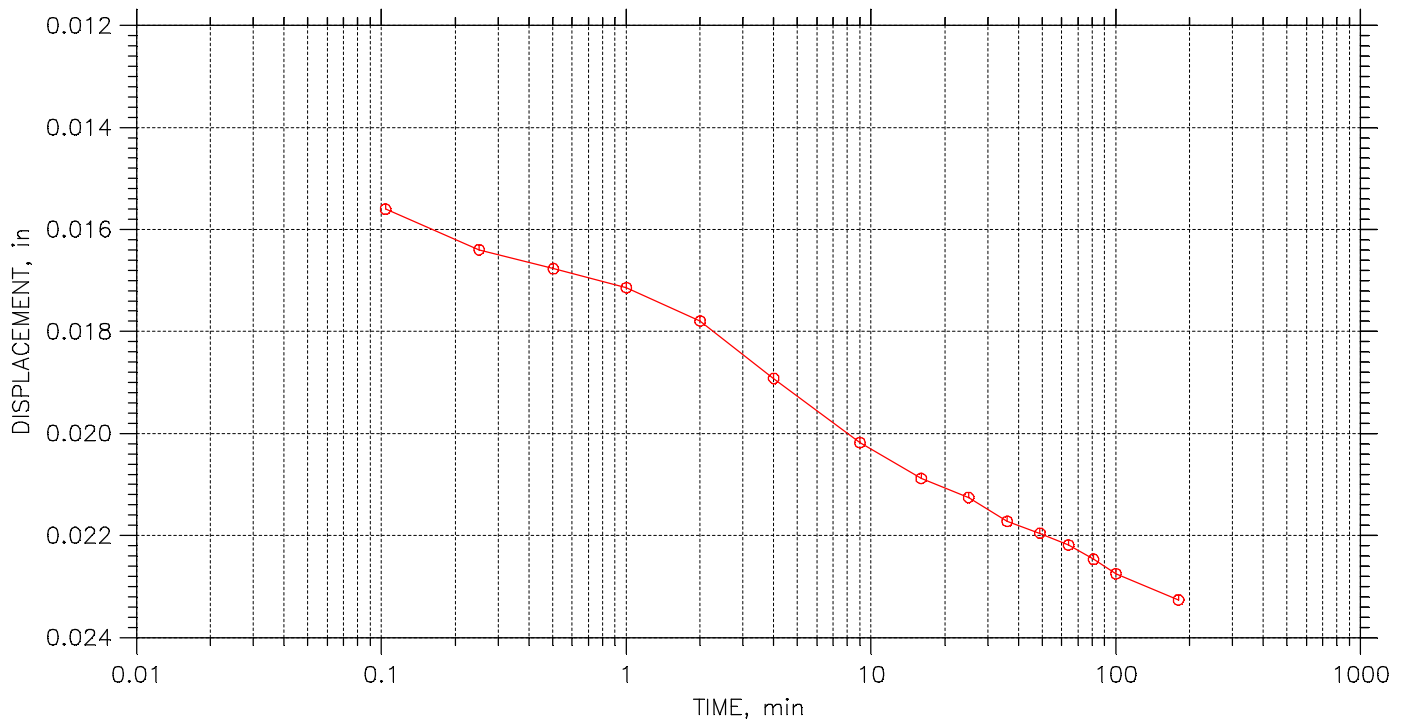
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf



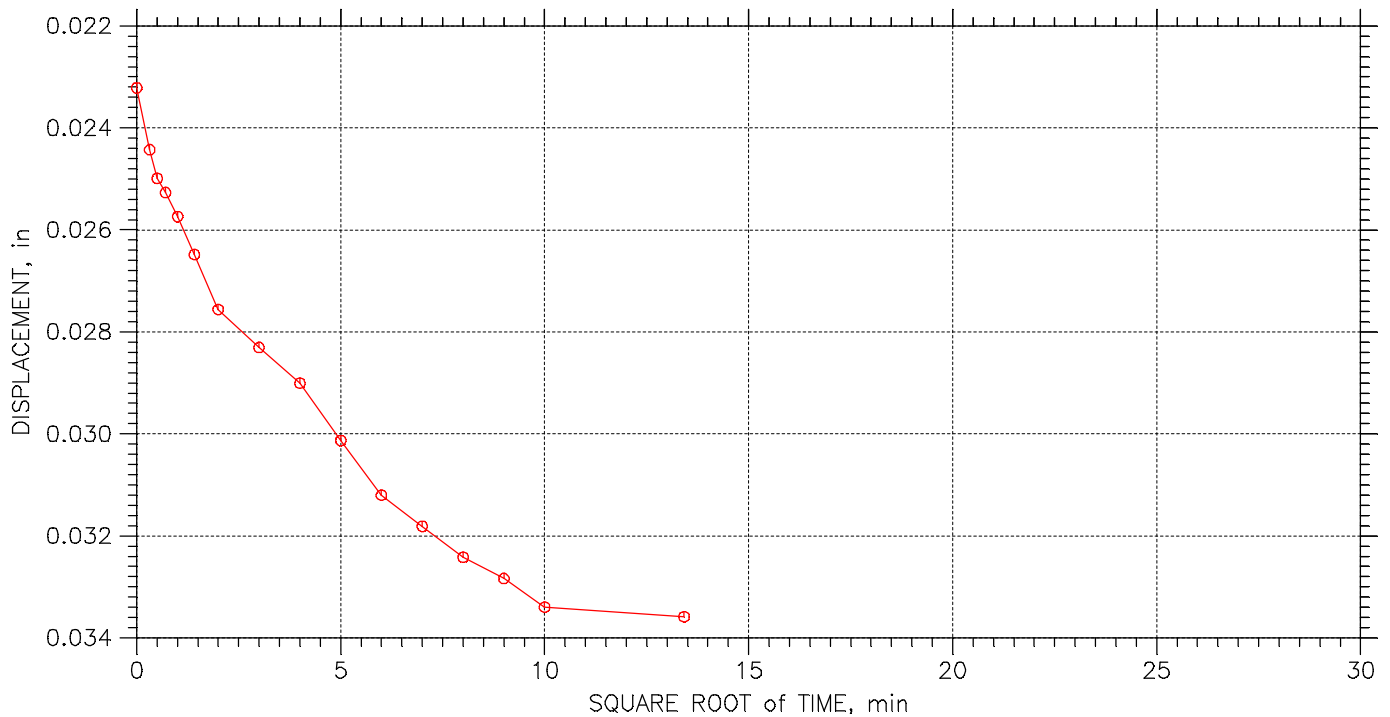
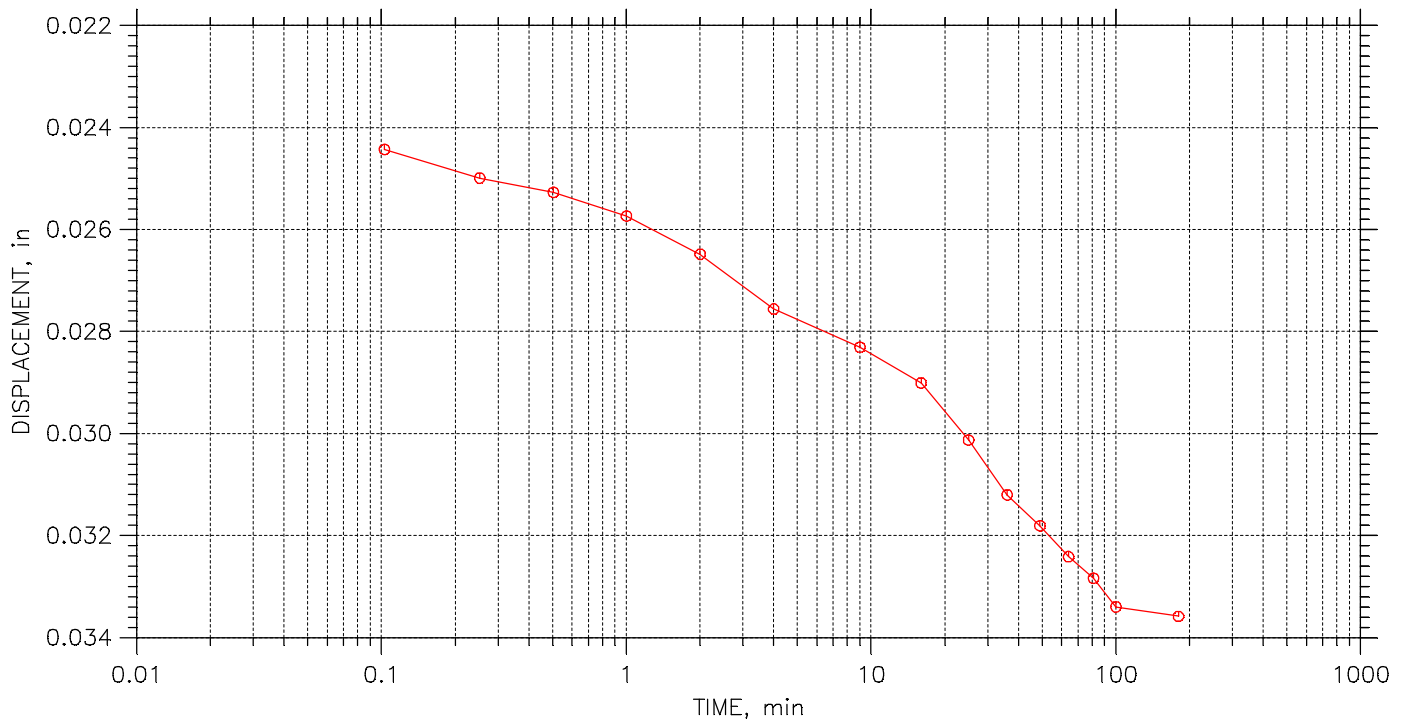
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf



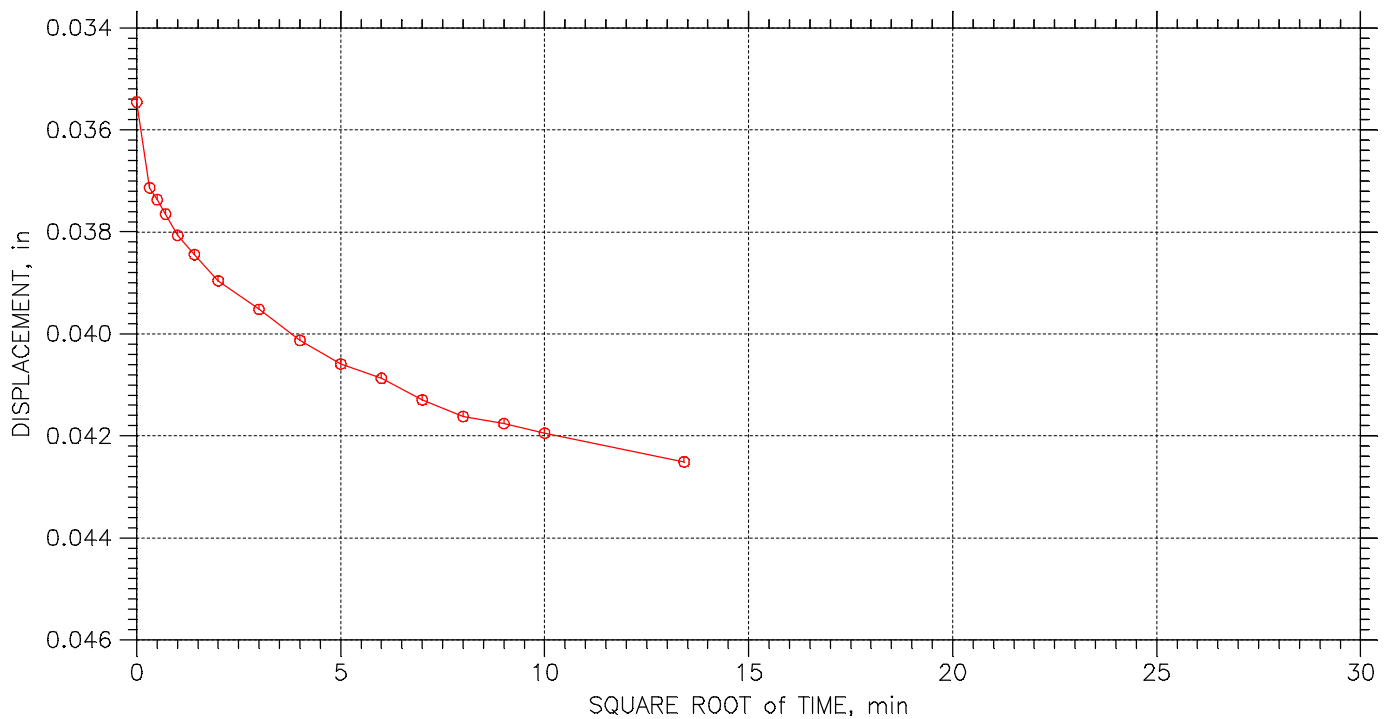
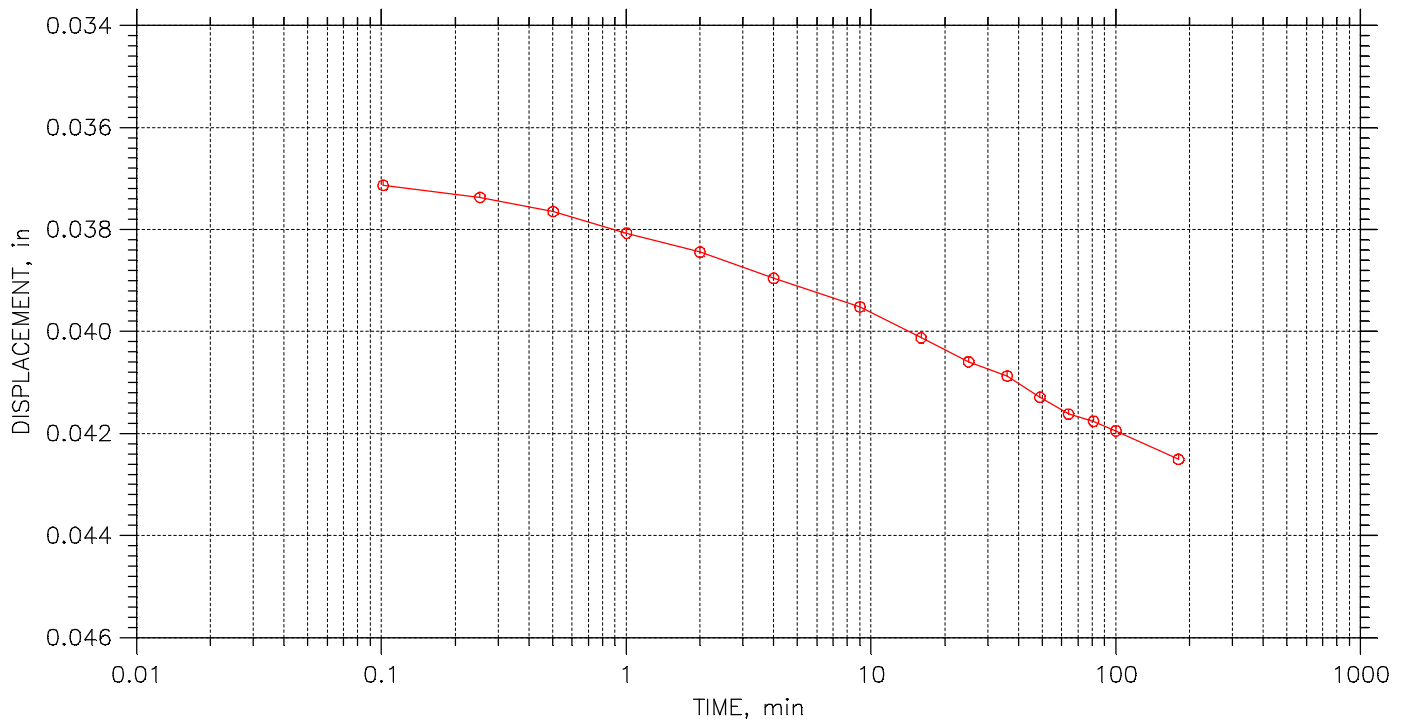
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf



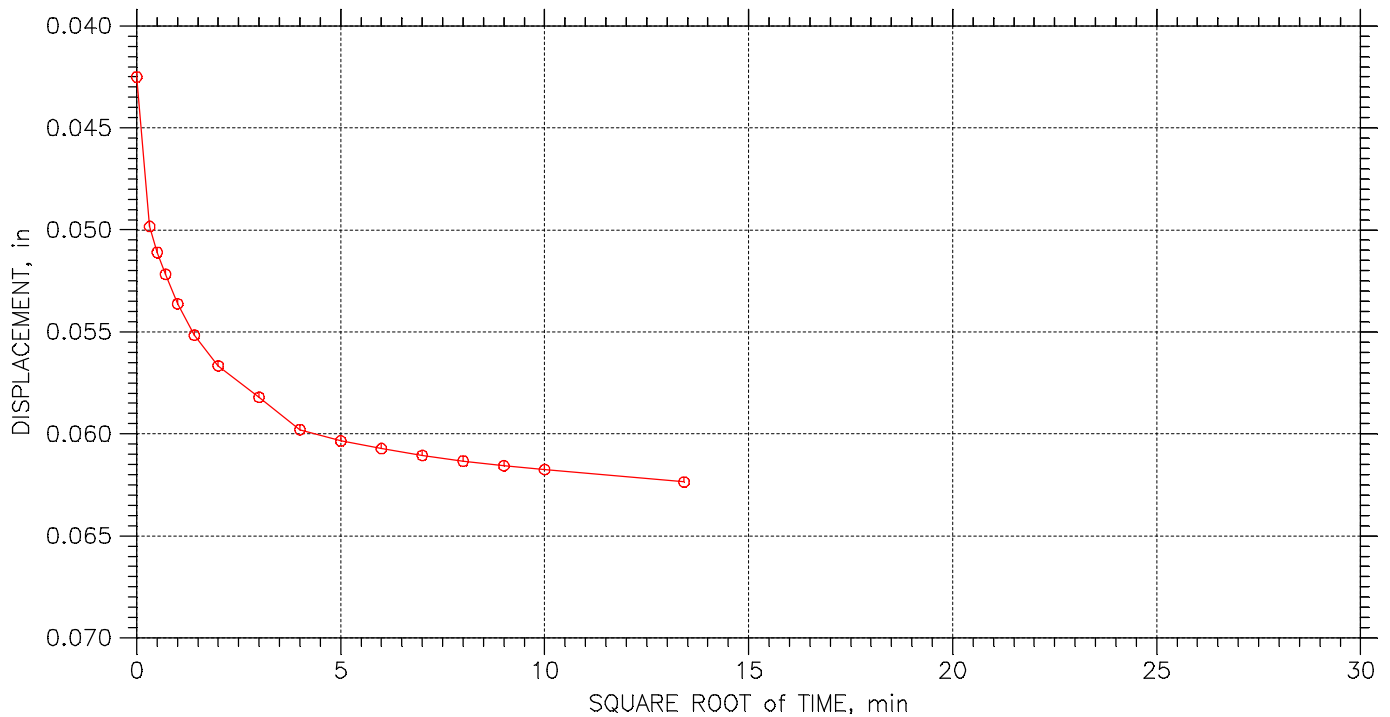
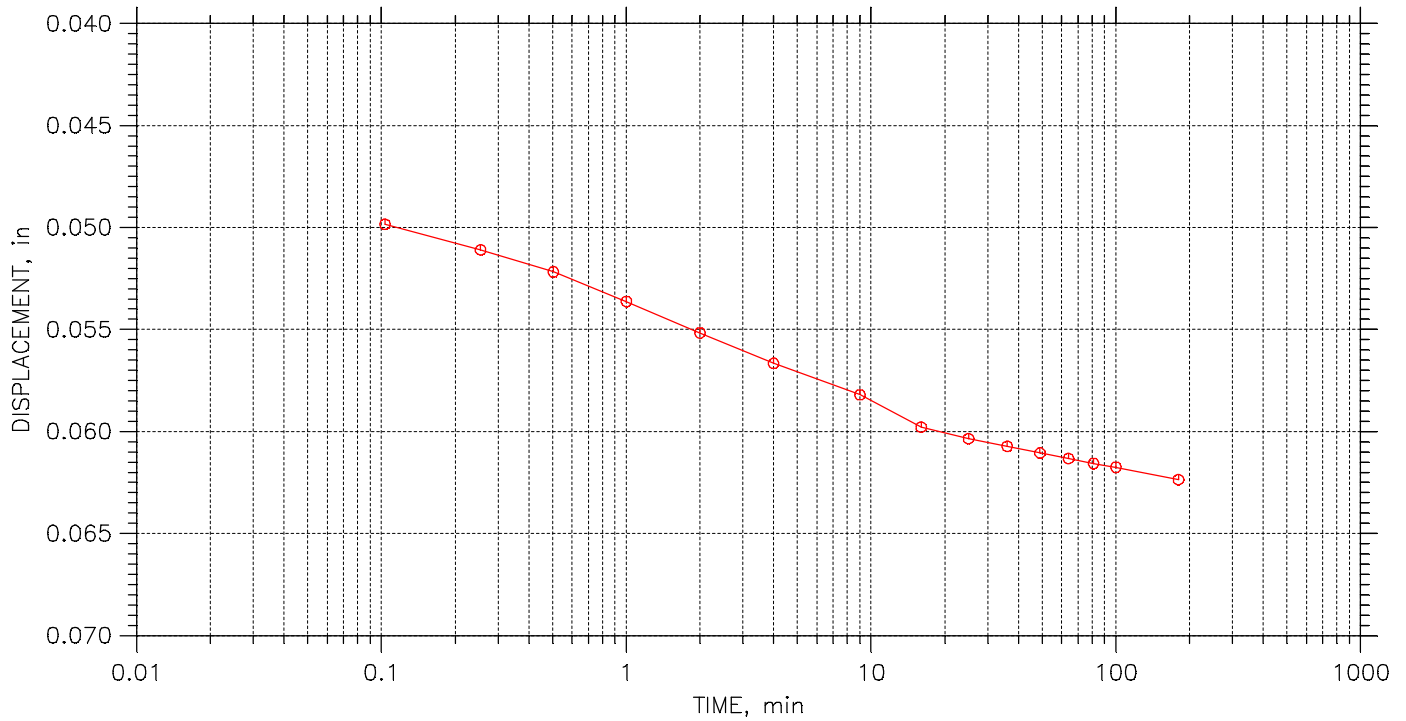
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf



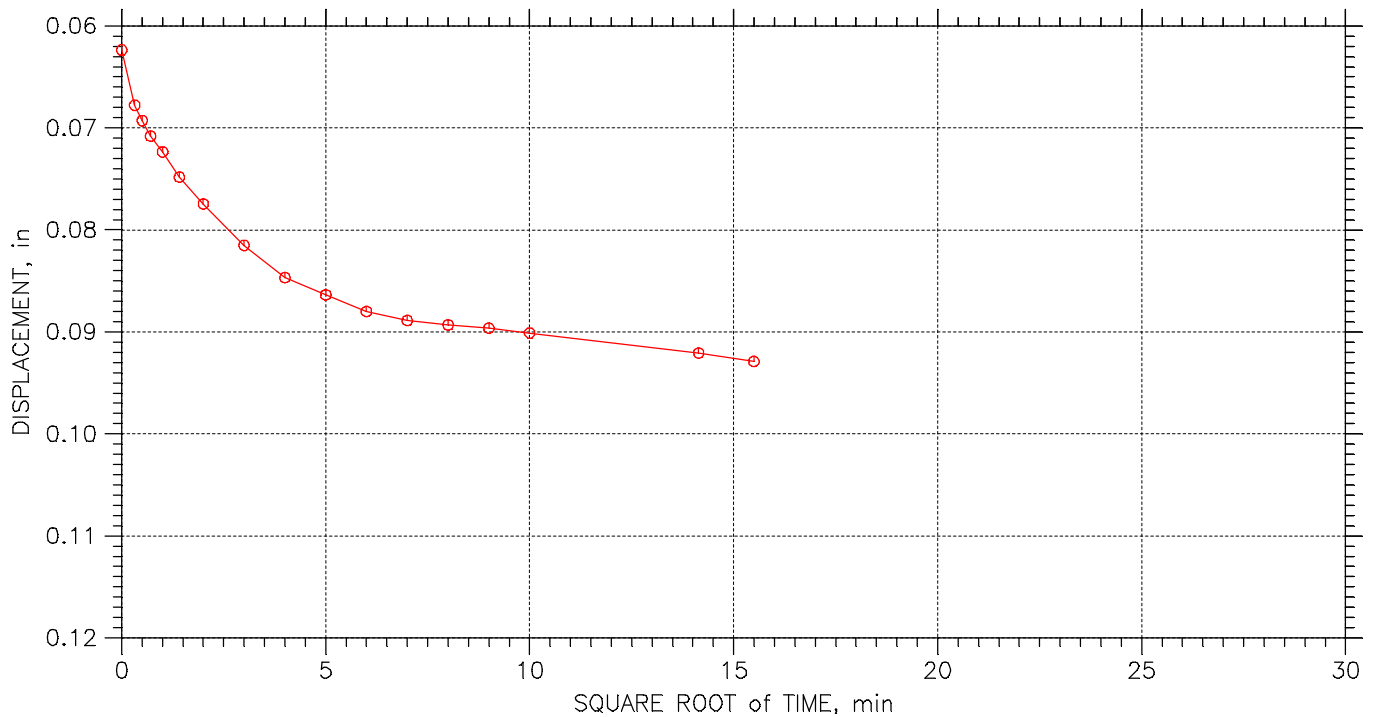
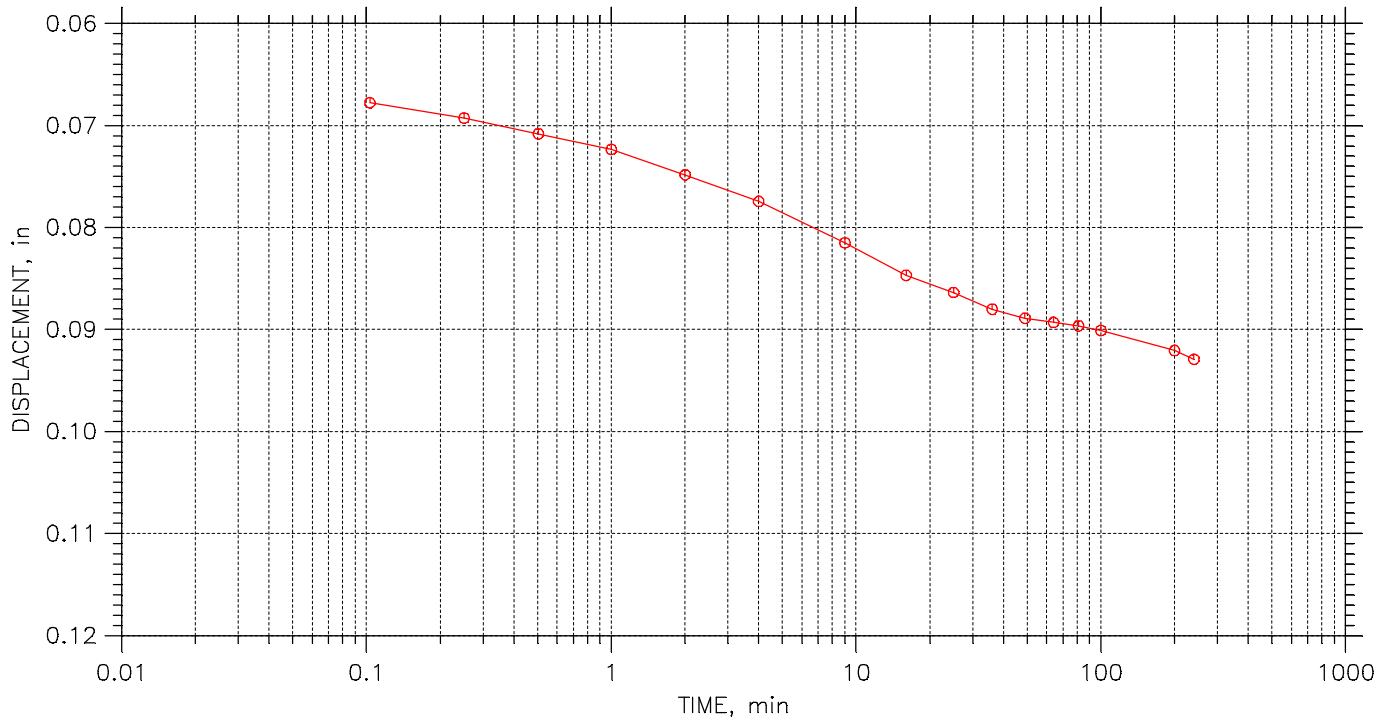
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf



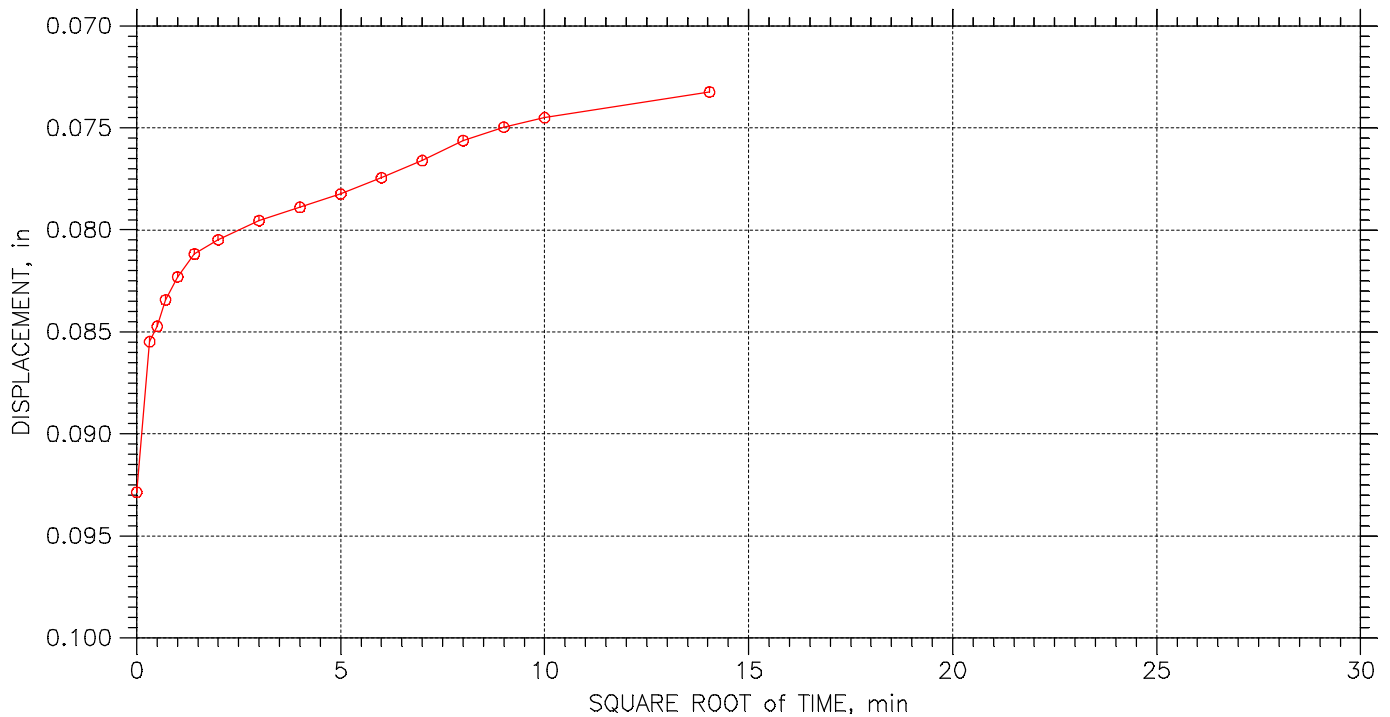
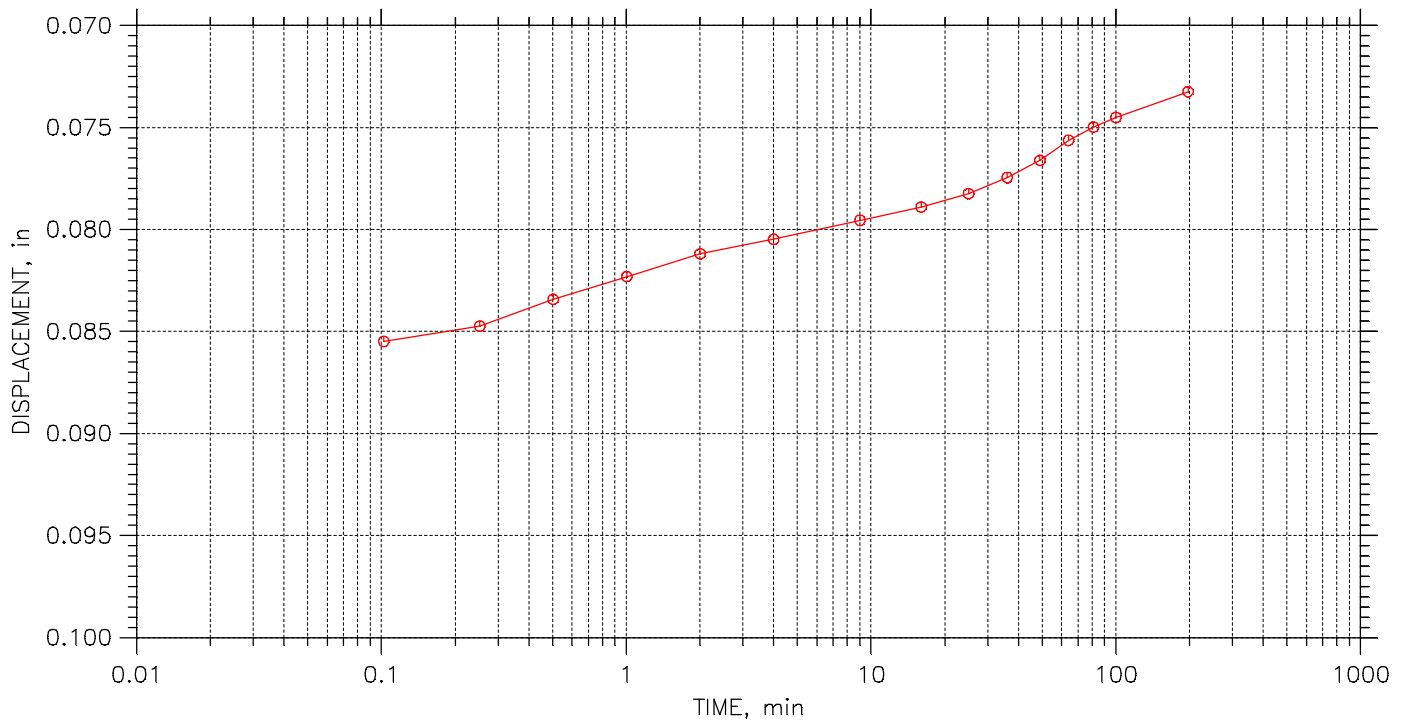
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf



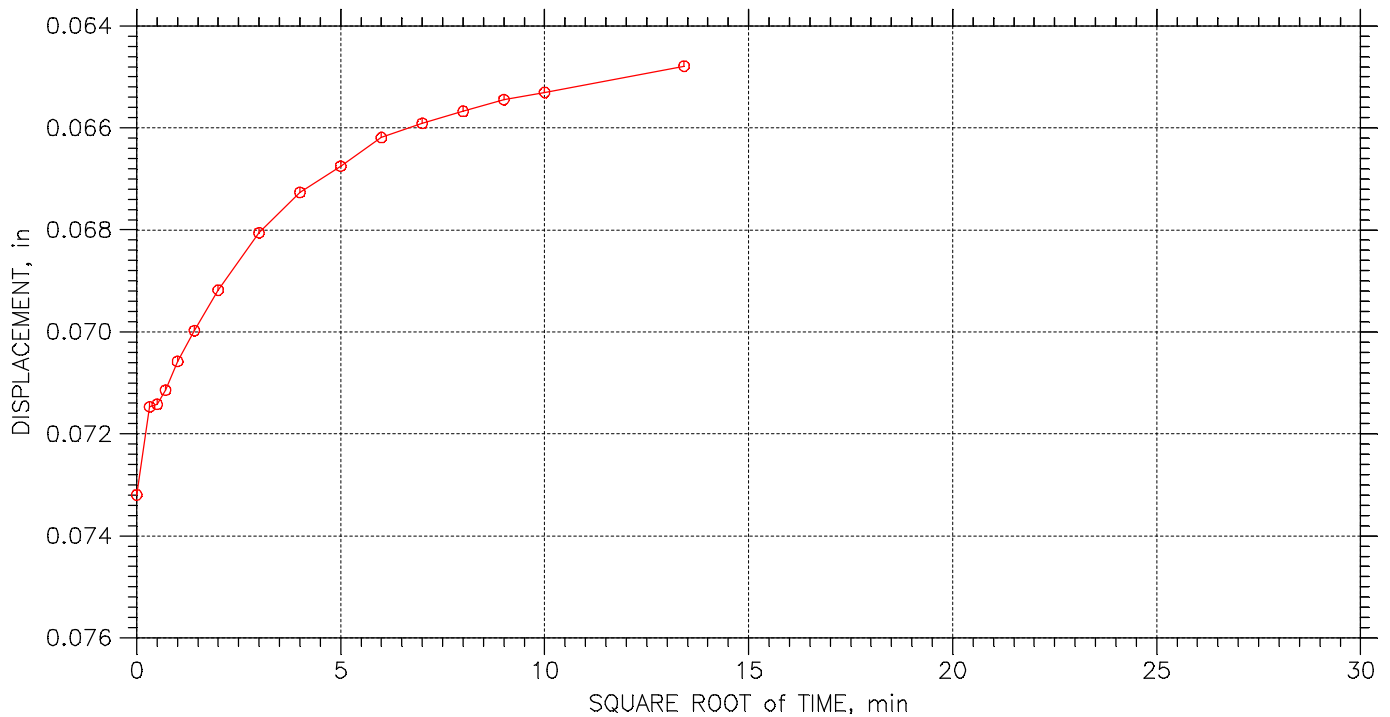
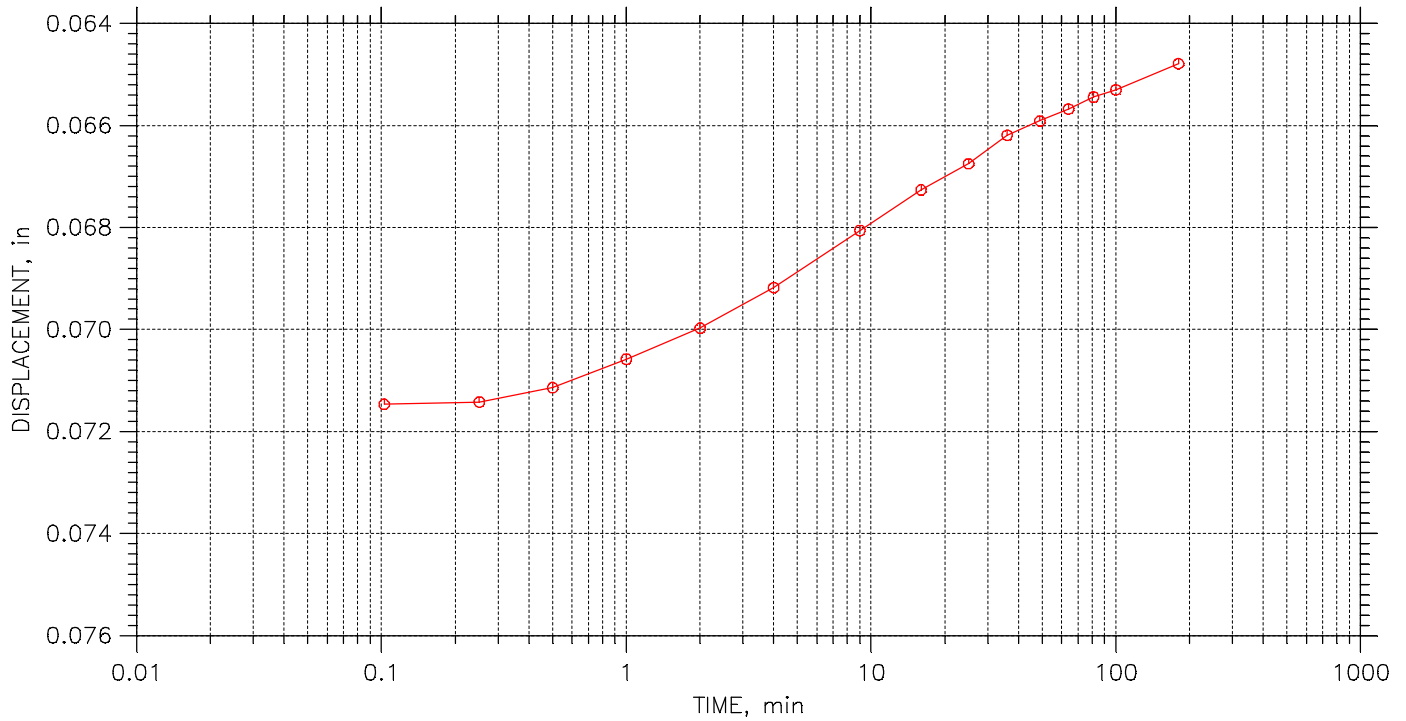
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf



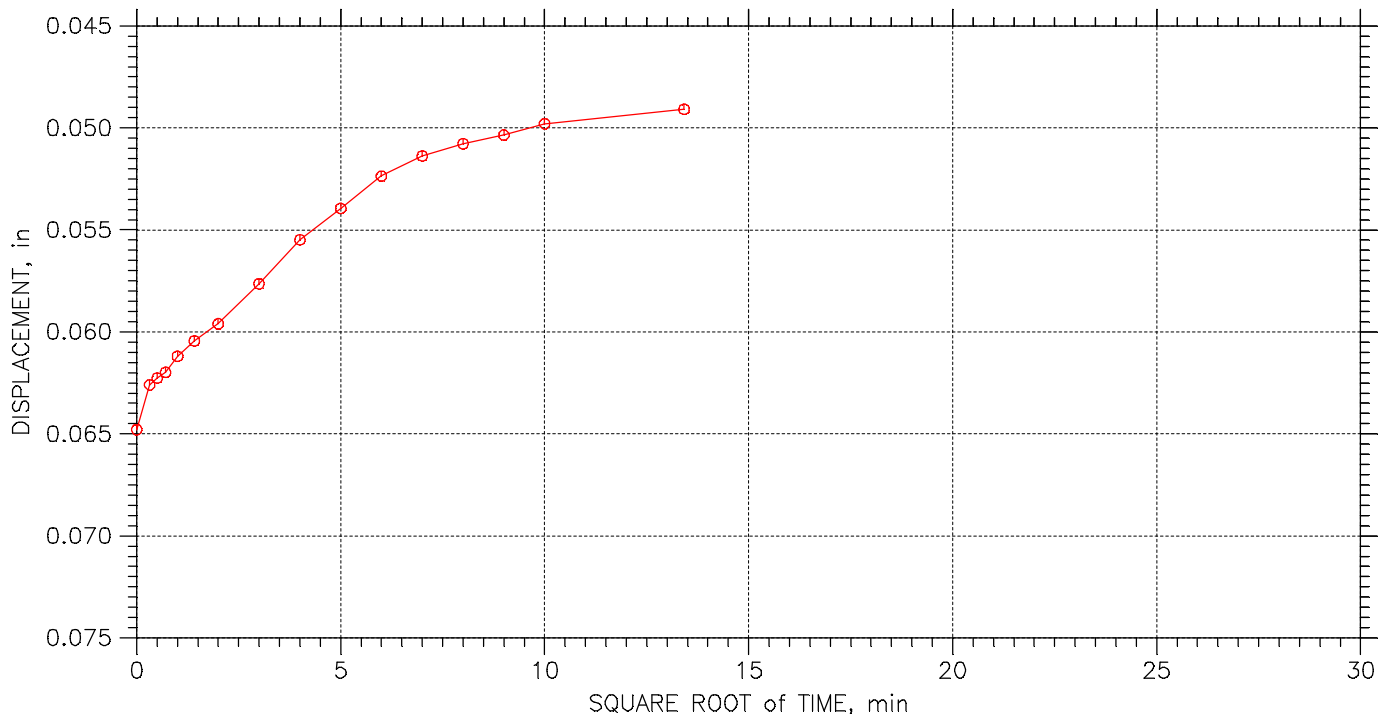
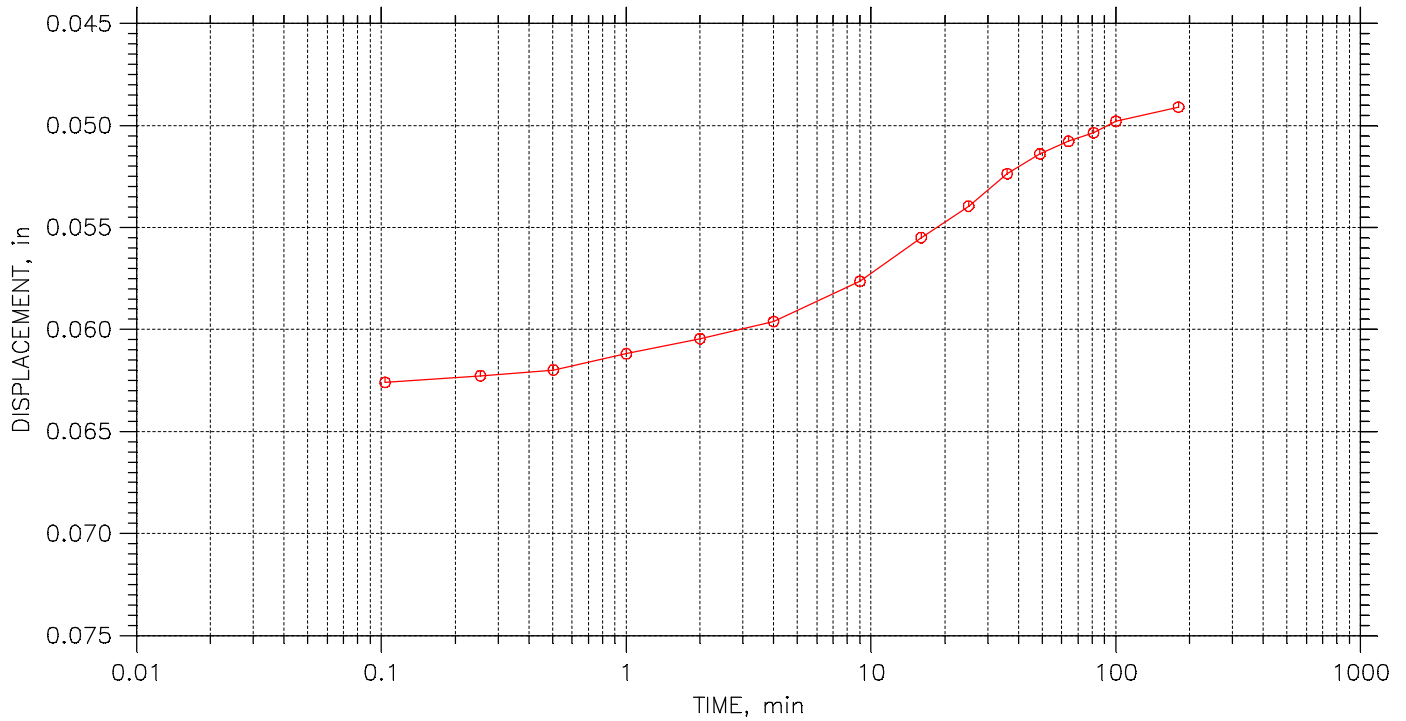
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



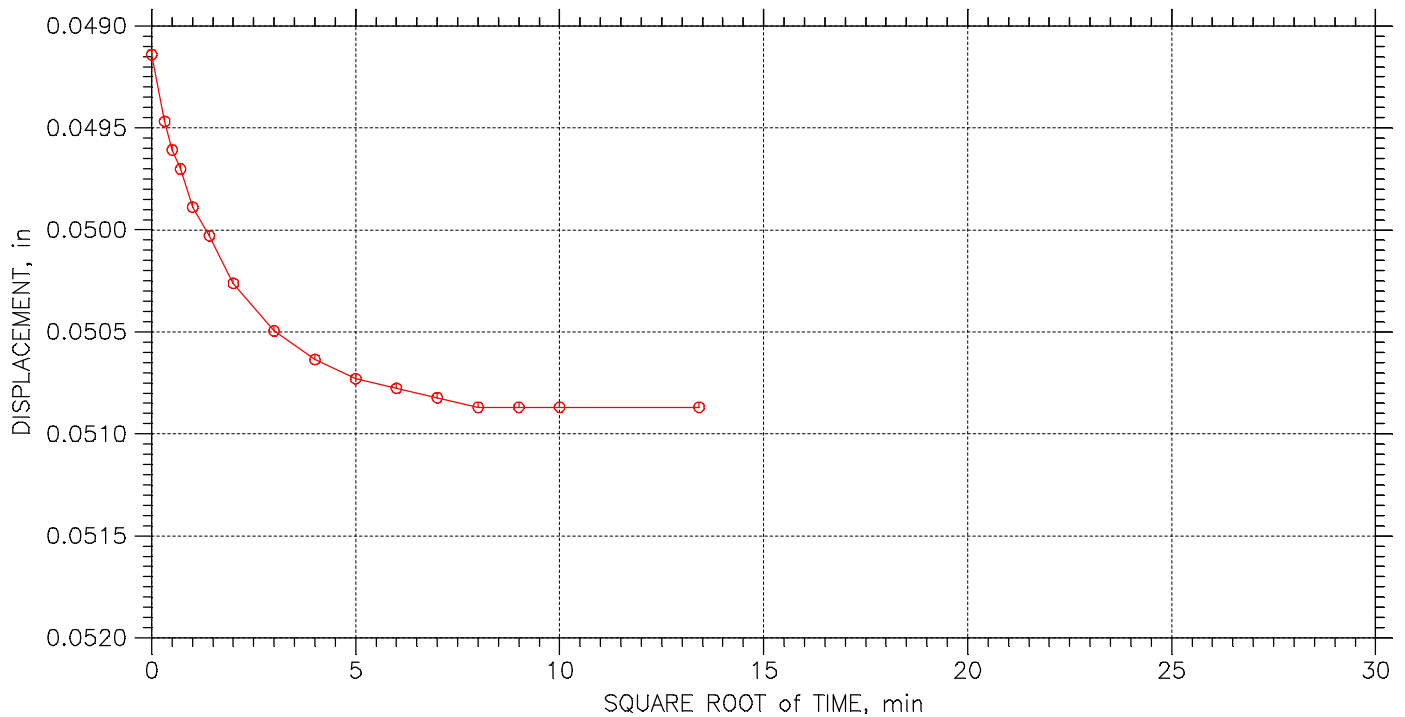
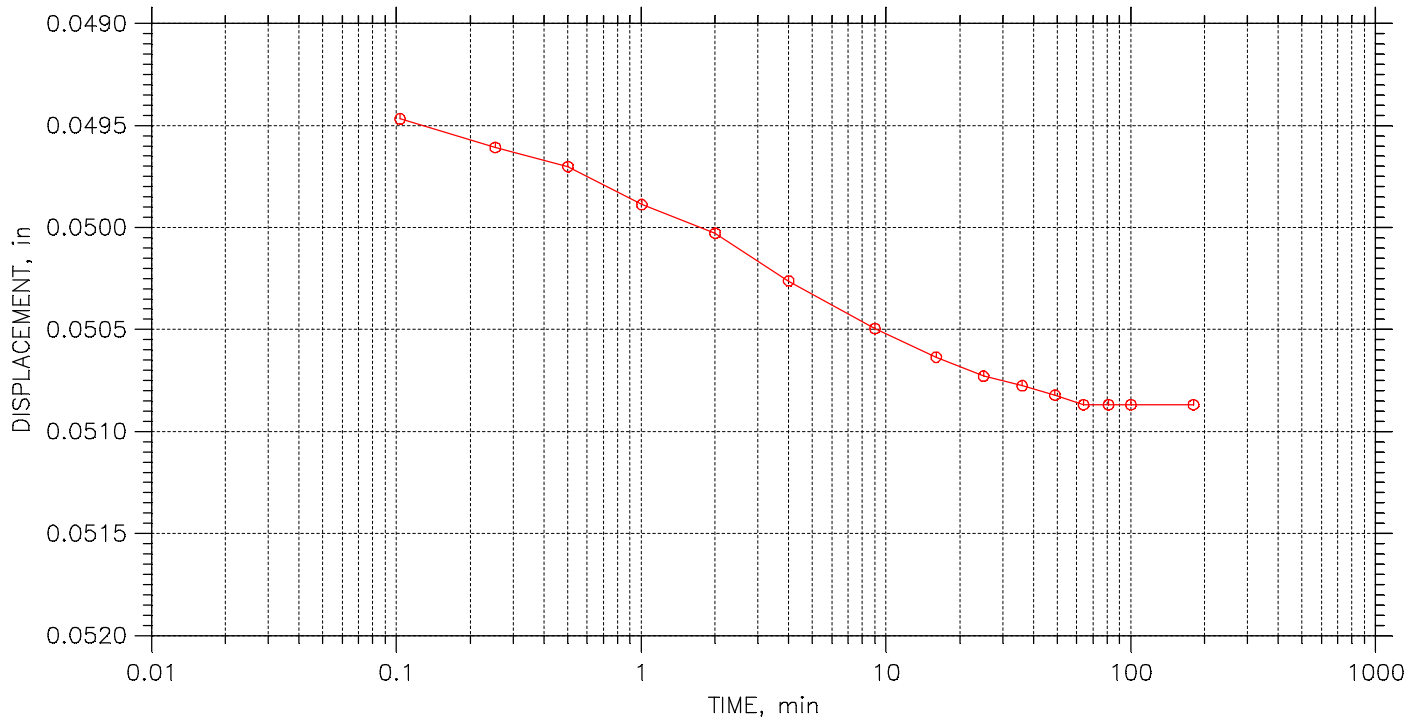
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf



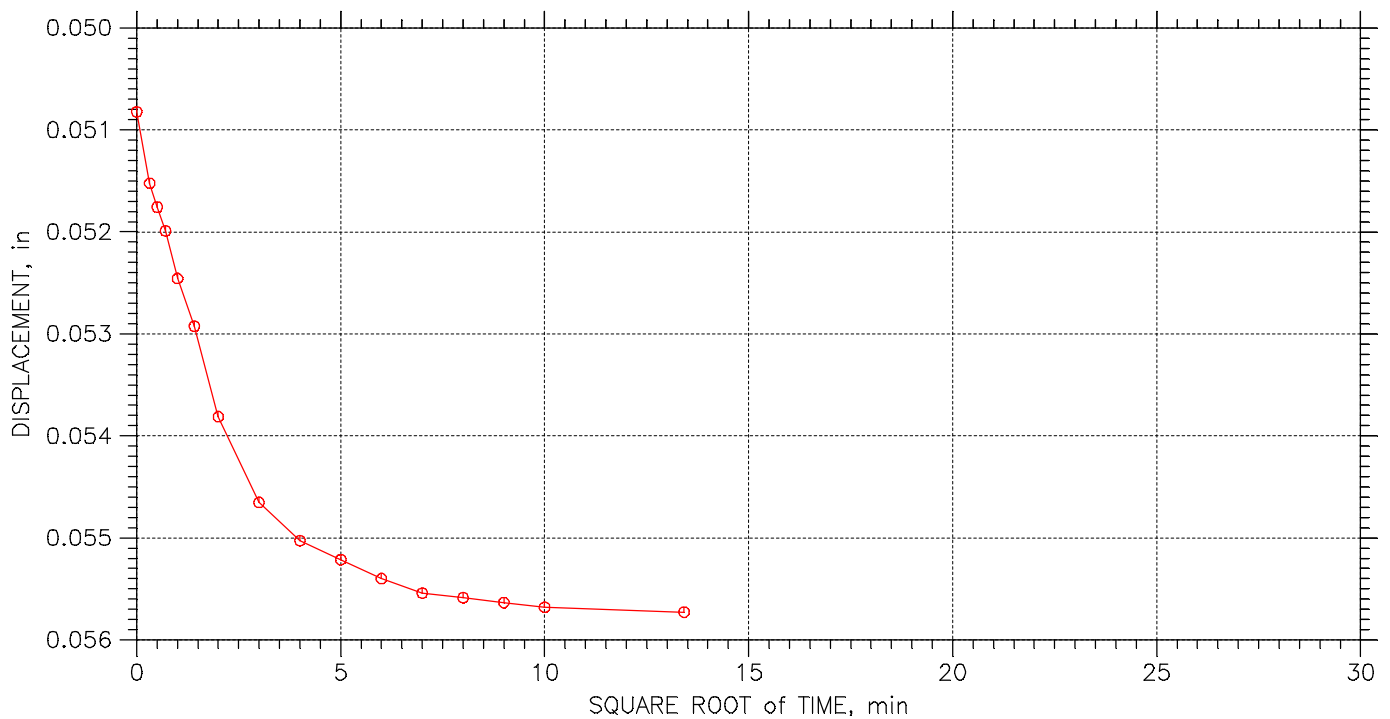
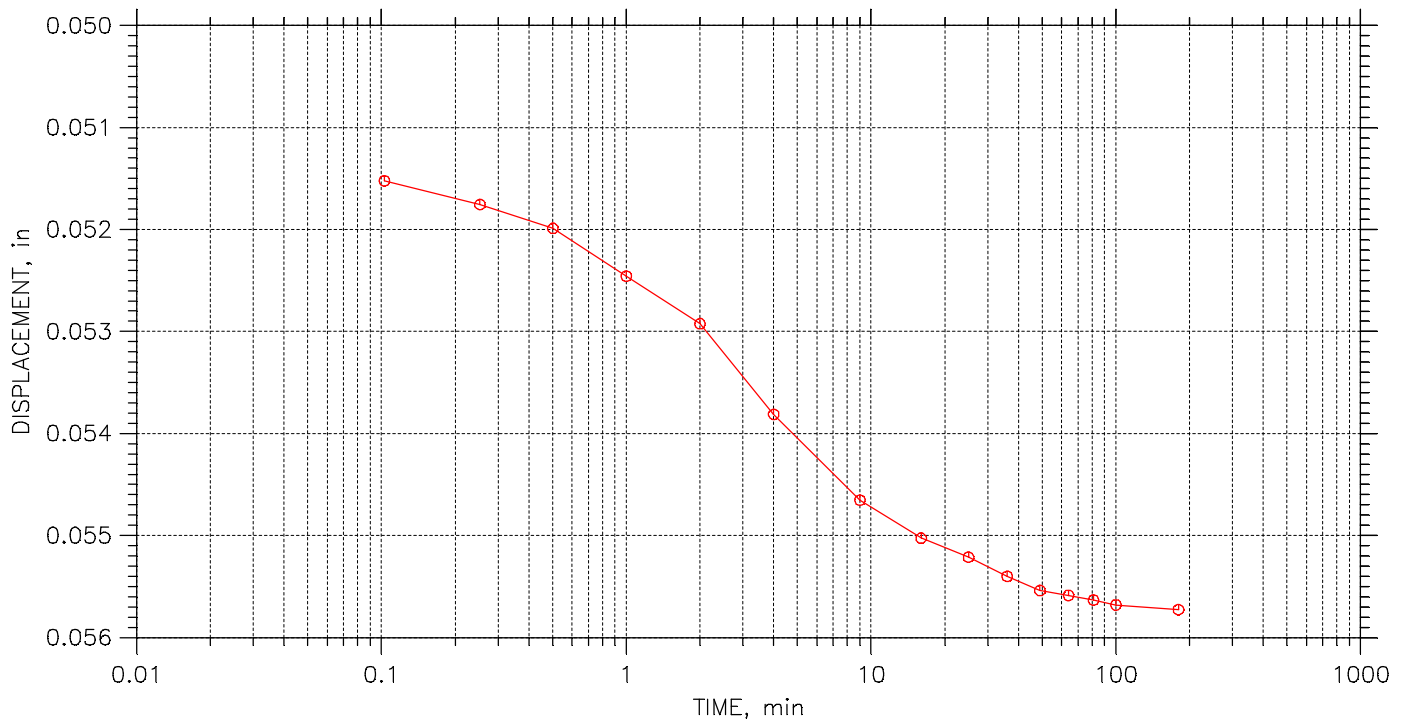
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf



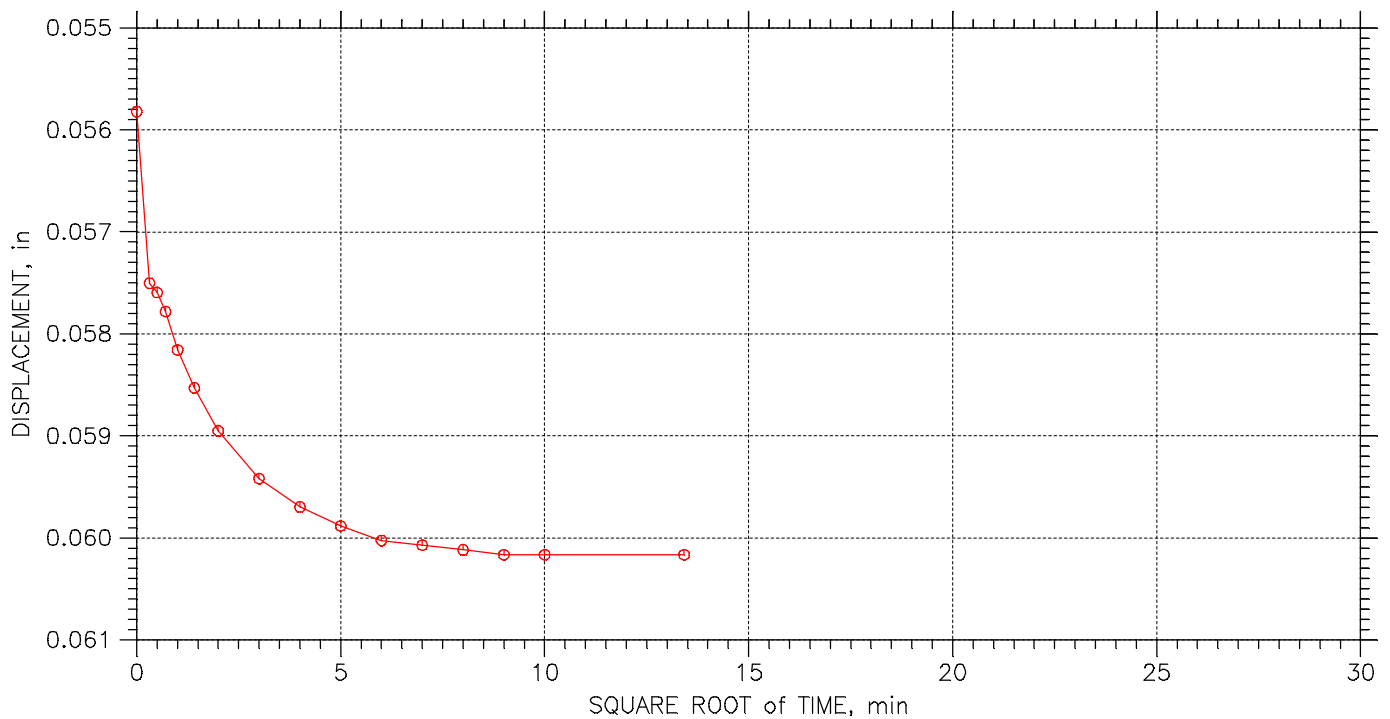
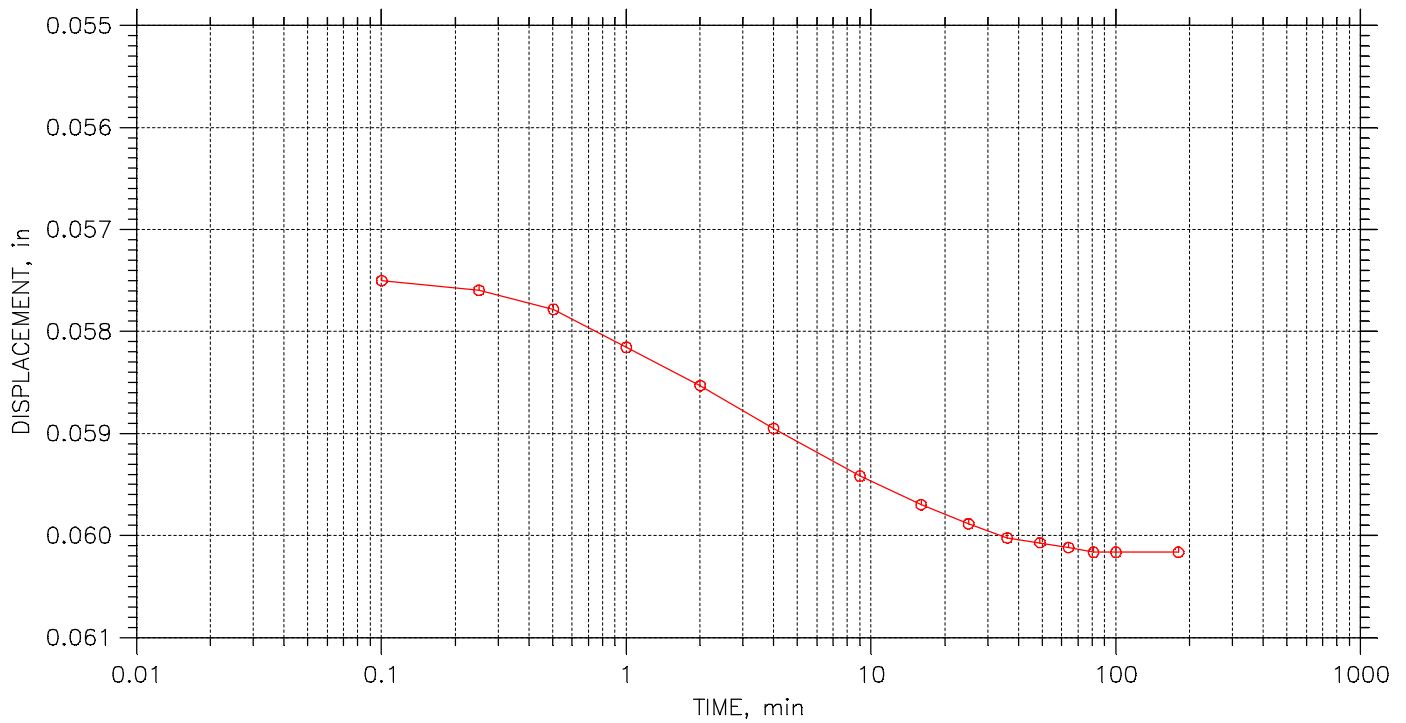
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf



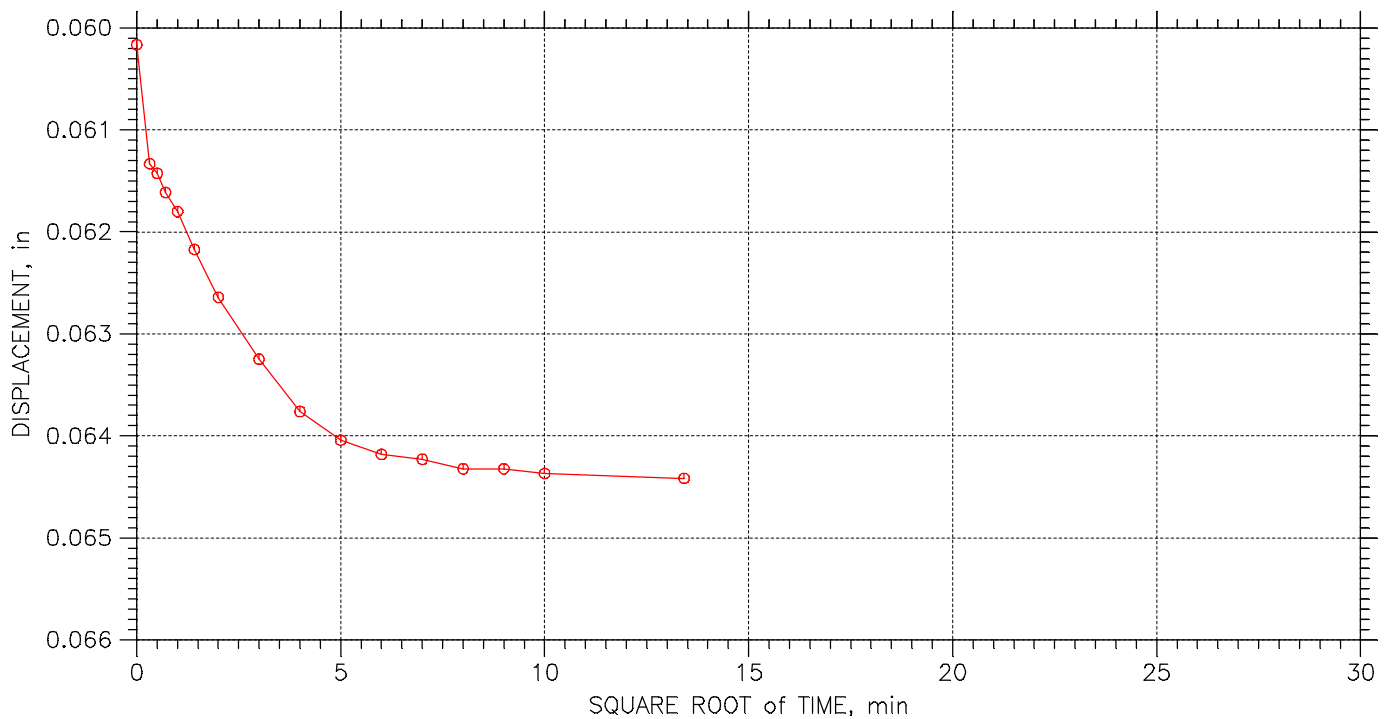
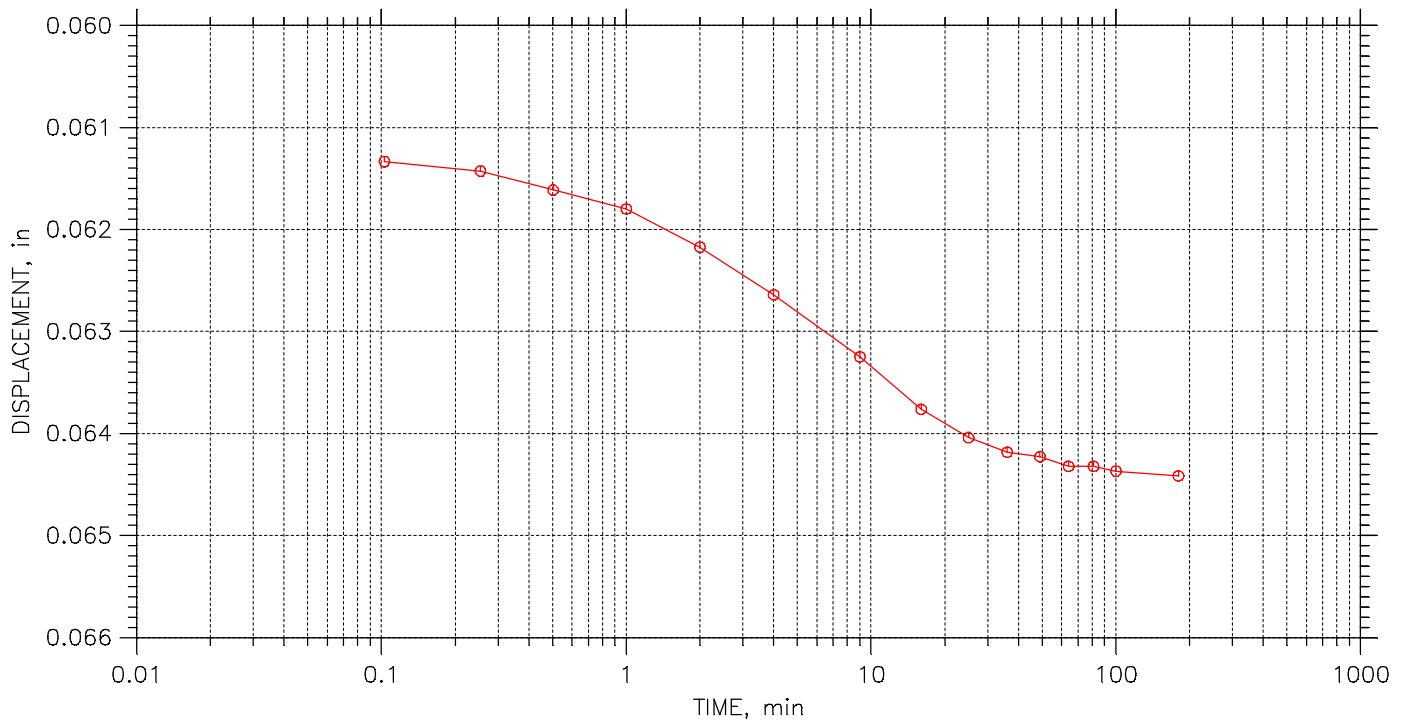
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf



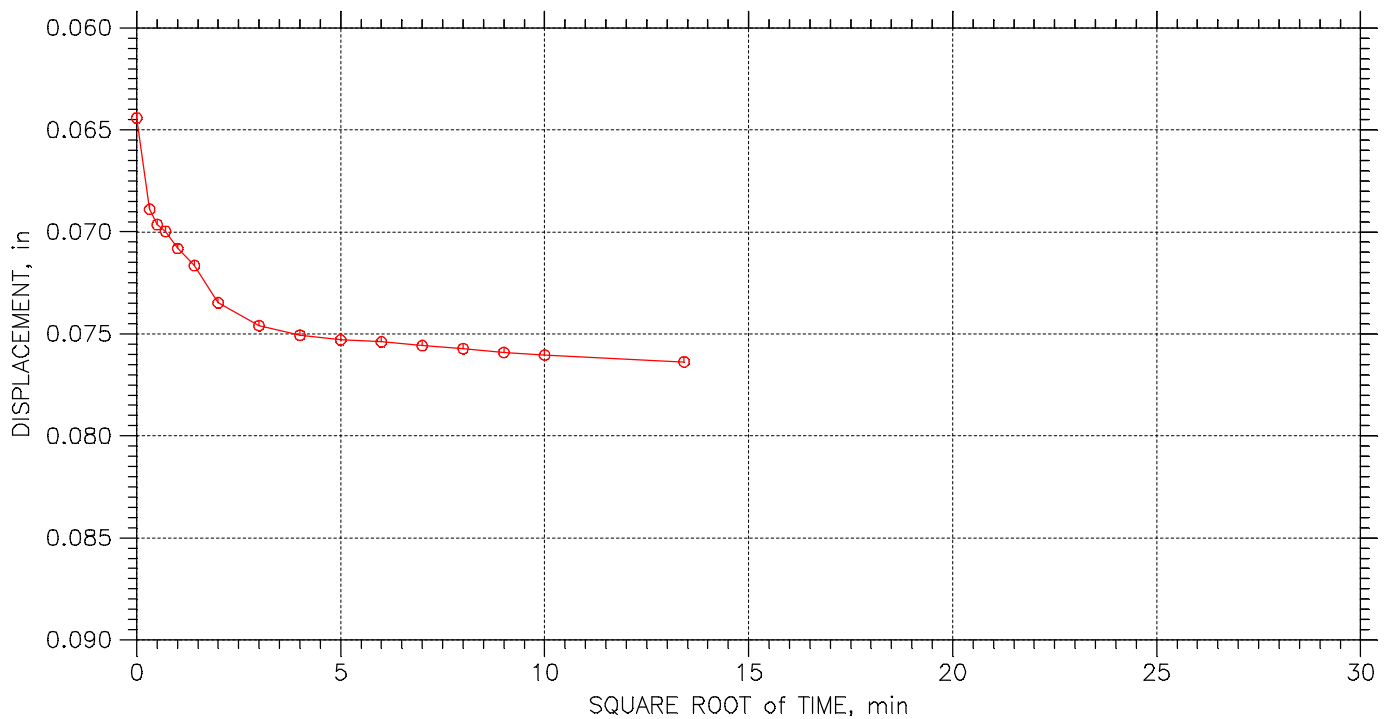
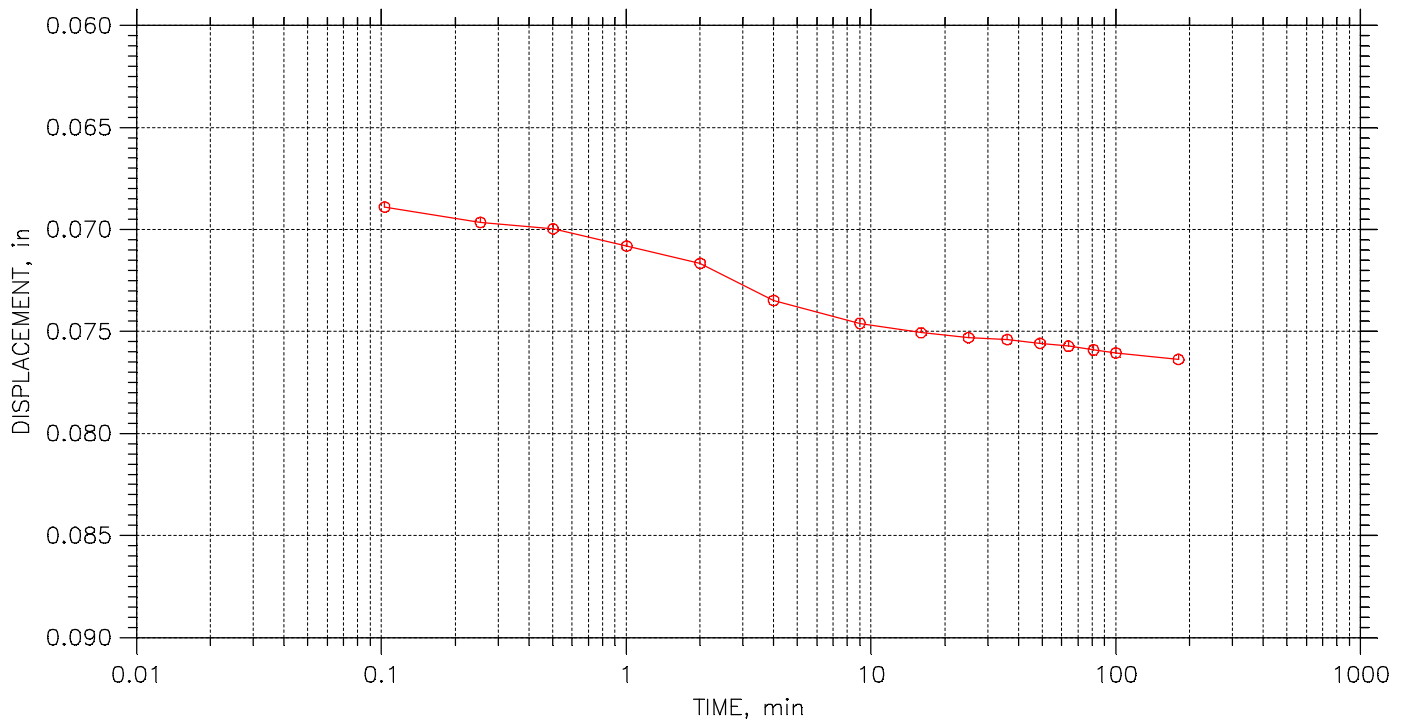
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf



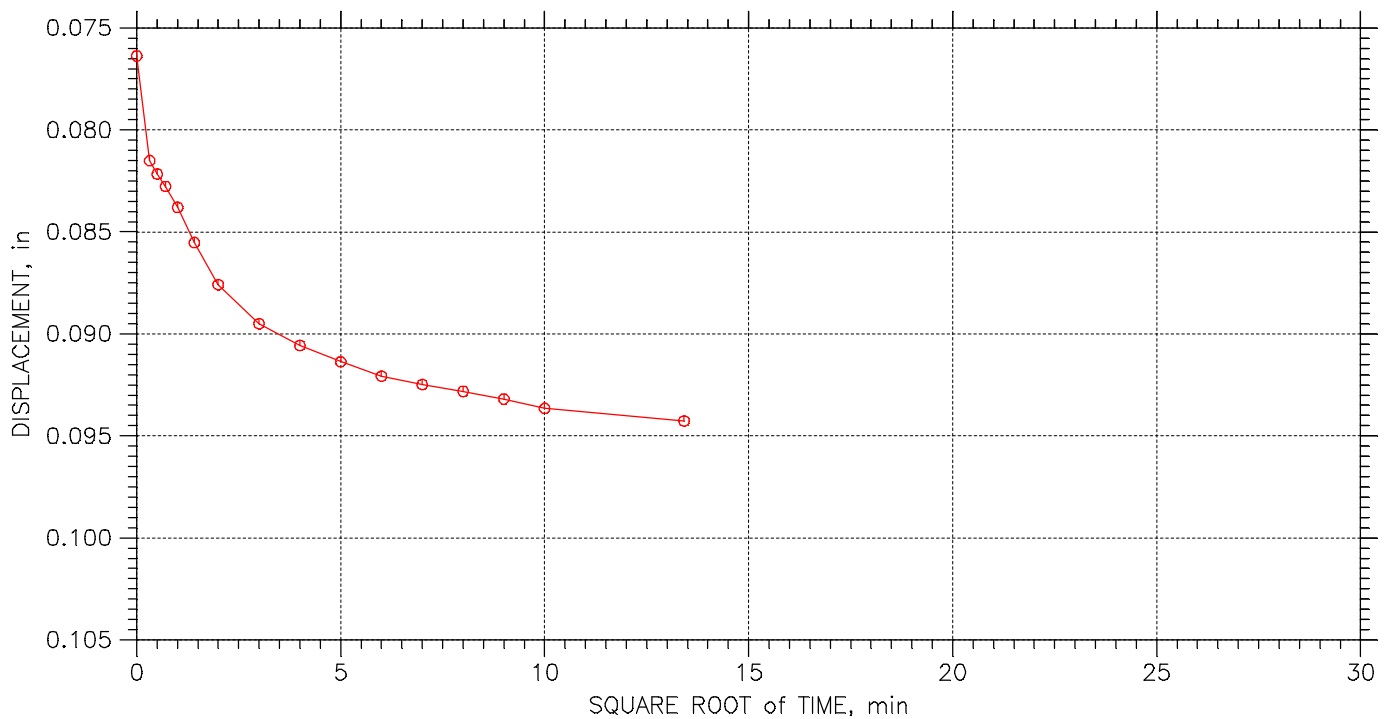
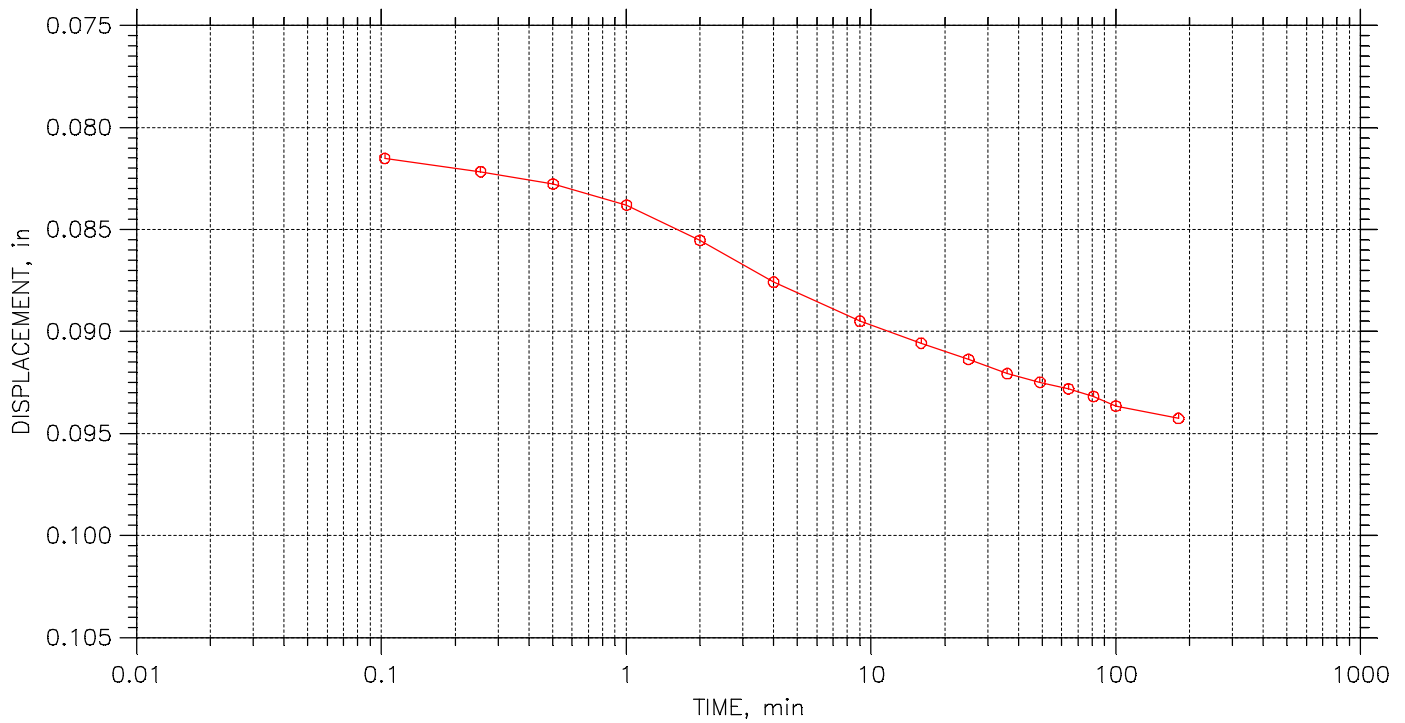
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf



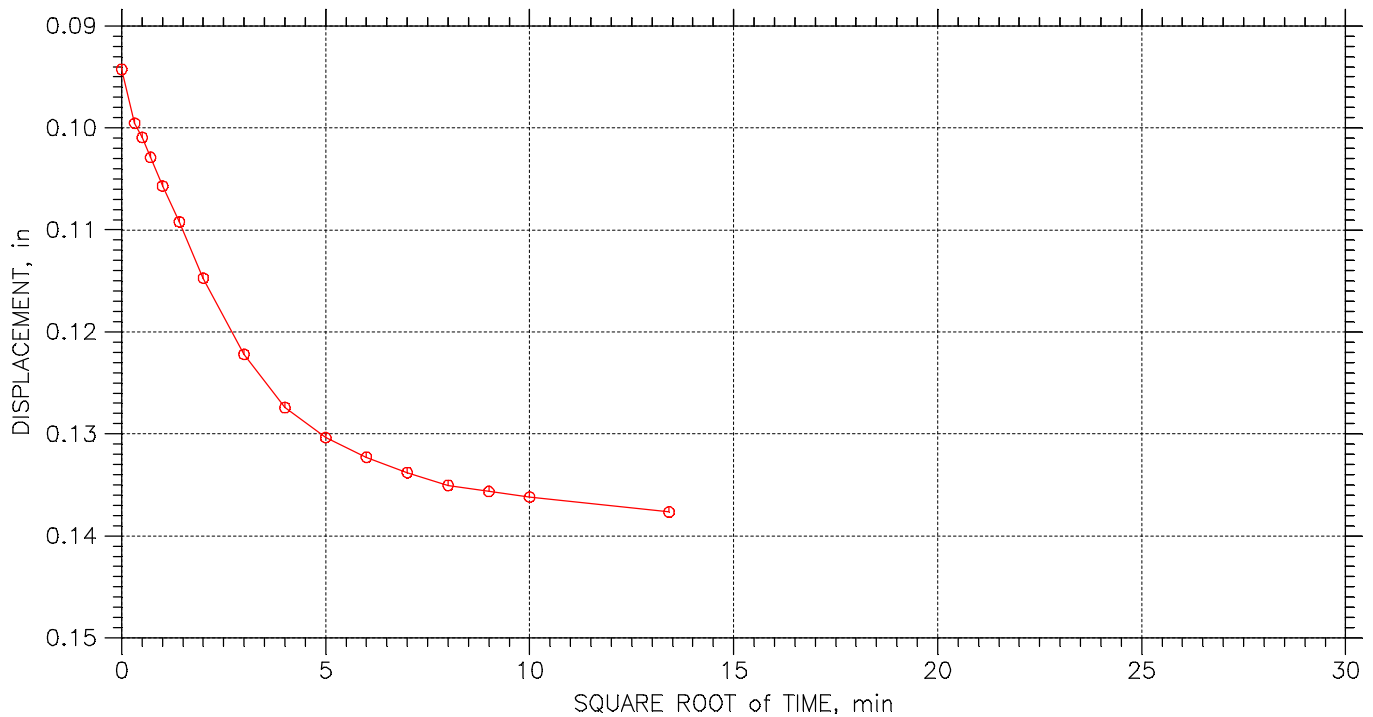
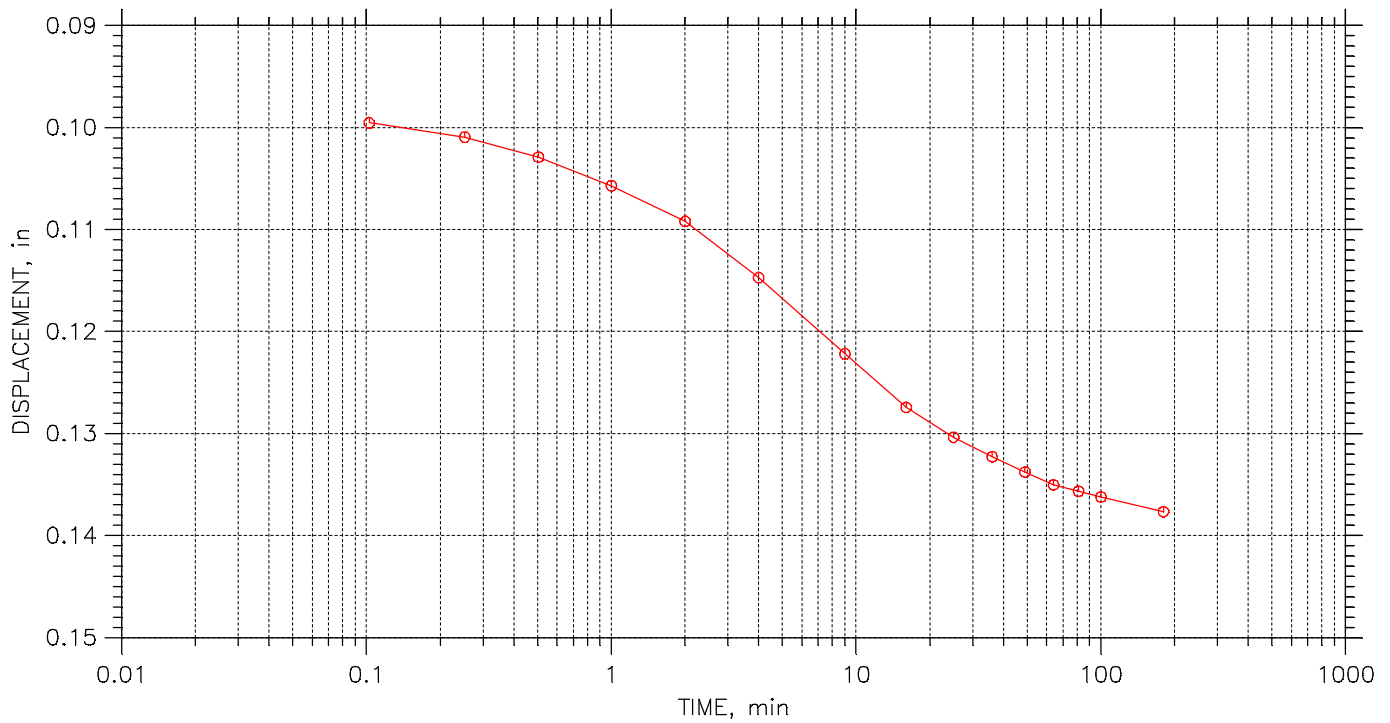
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf



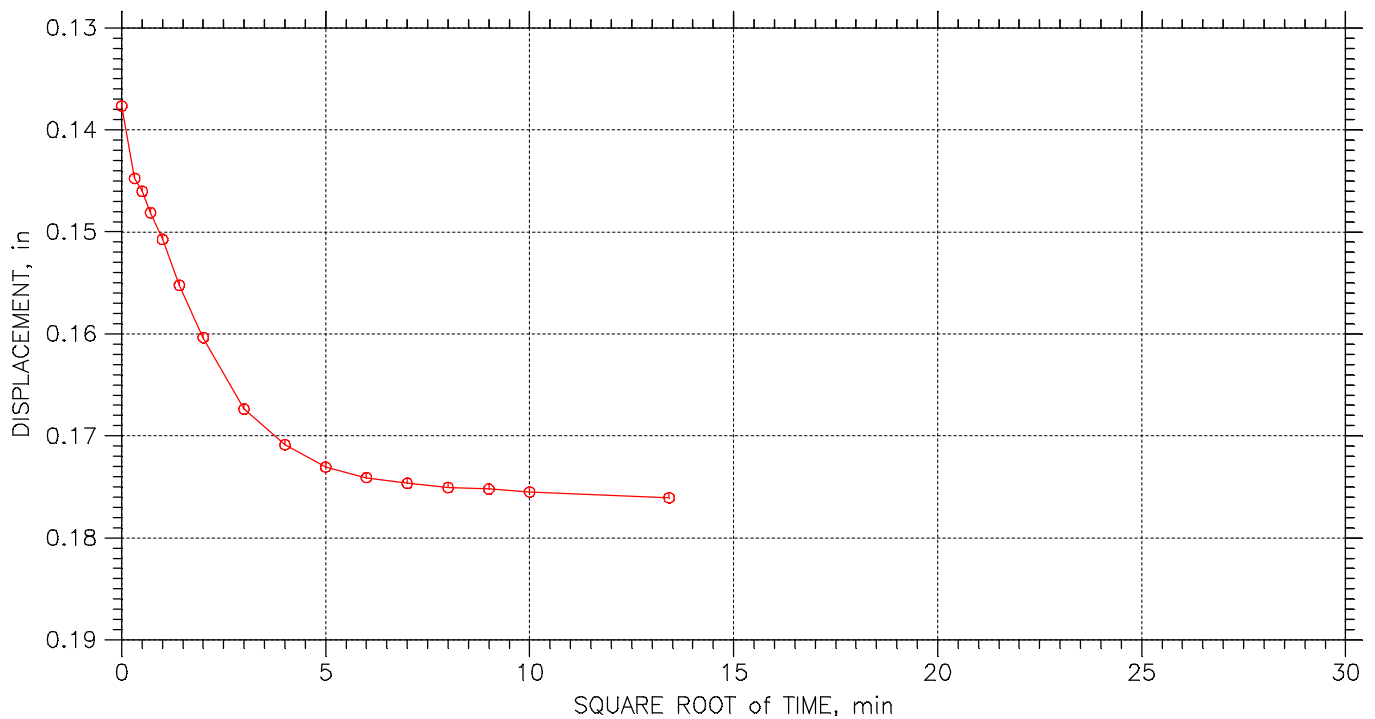
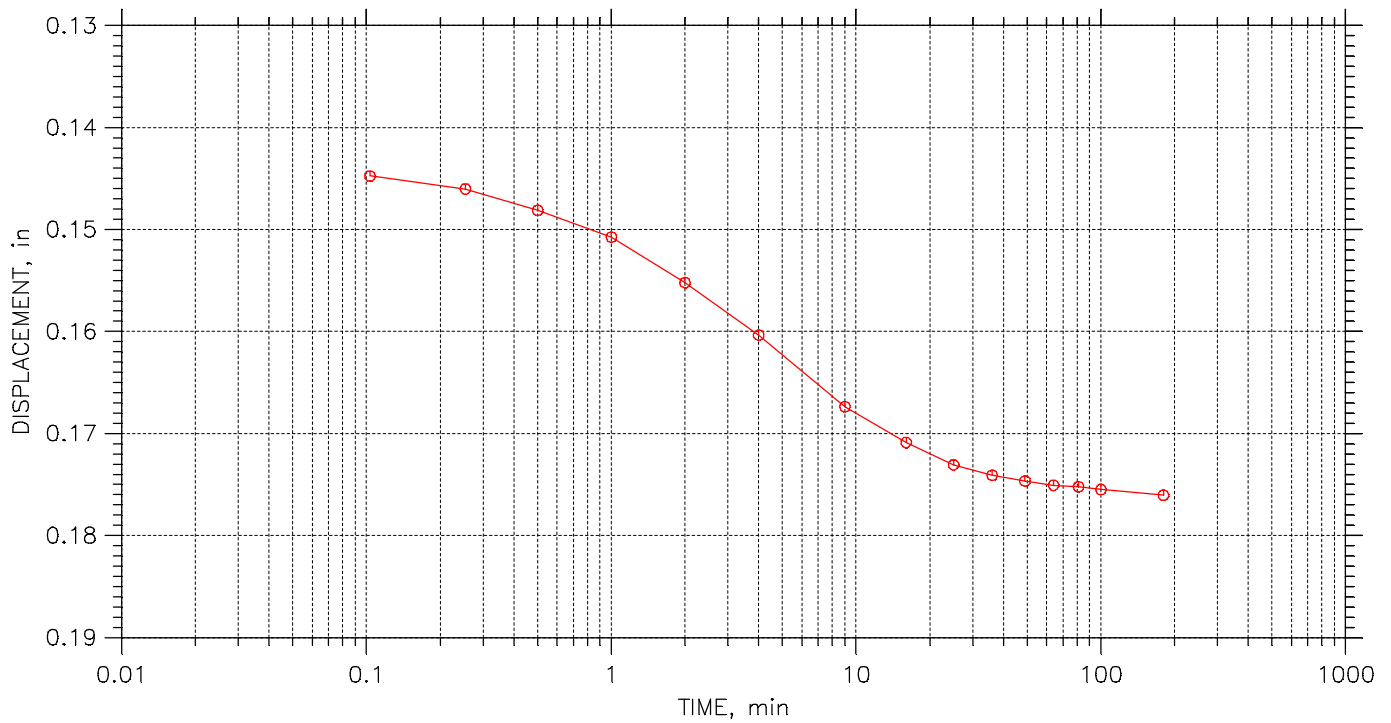
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf



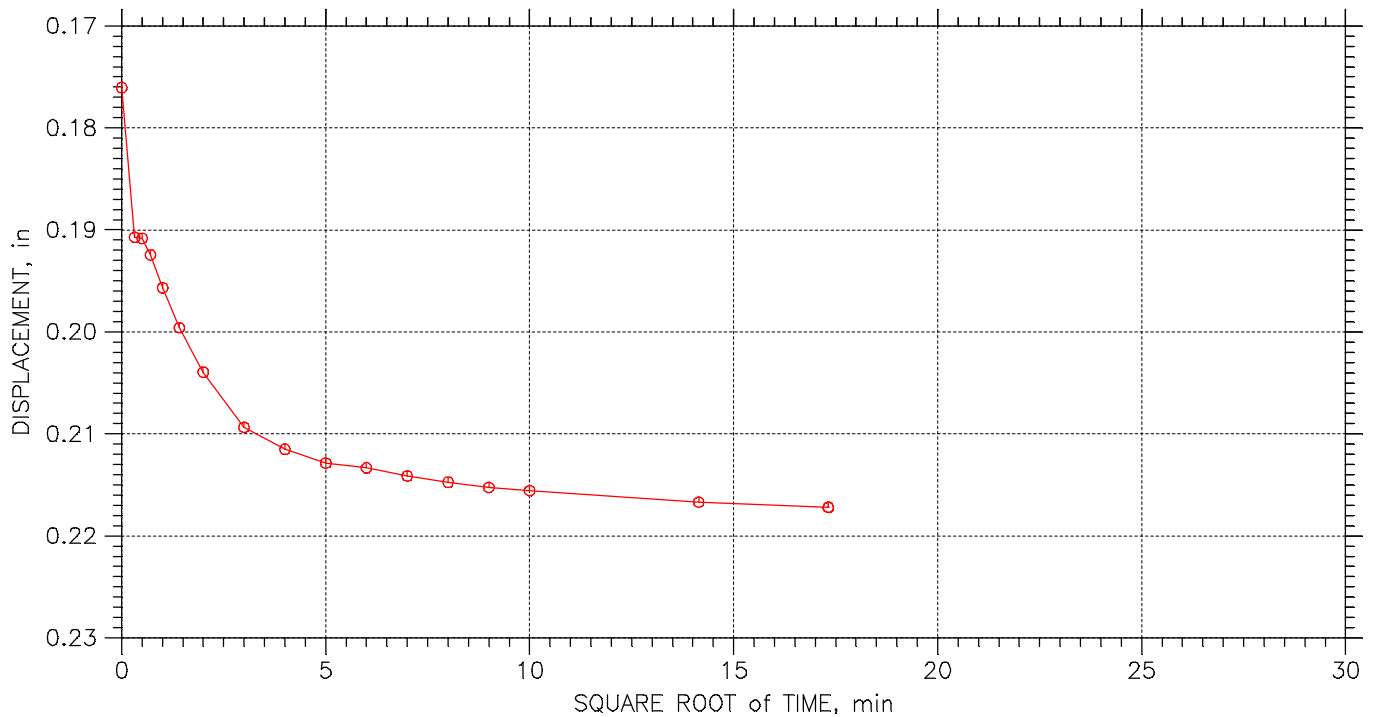
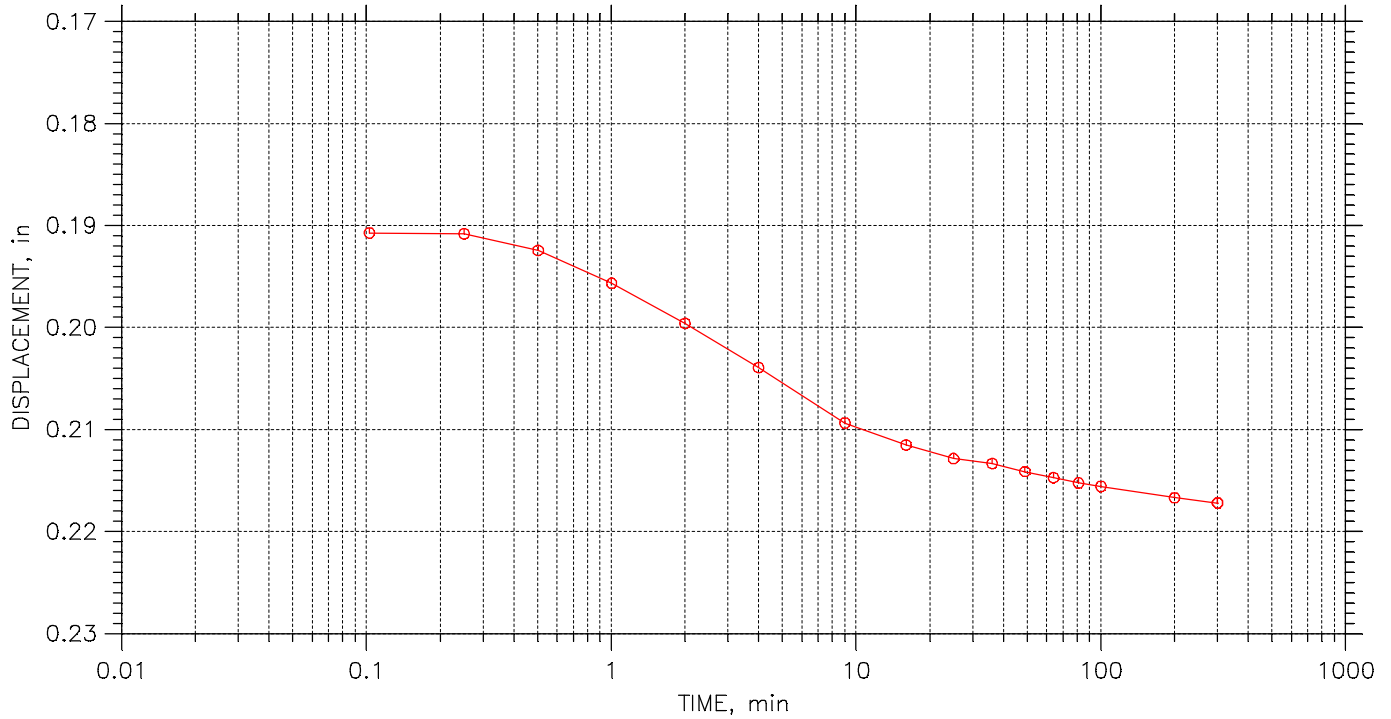
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



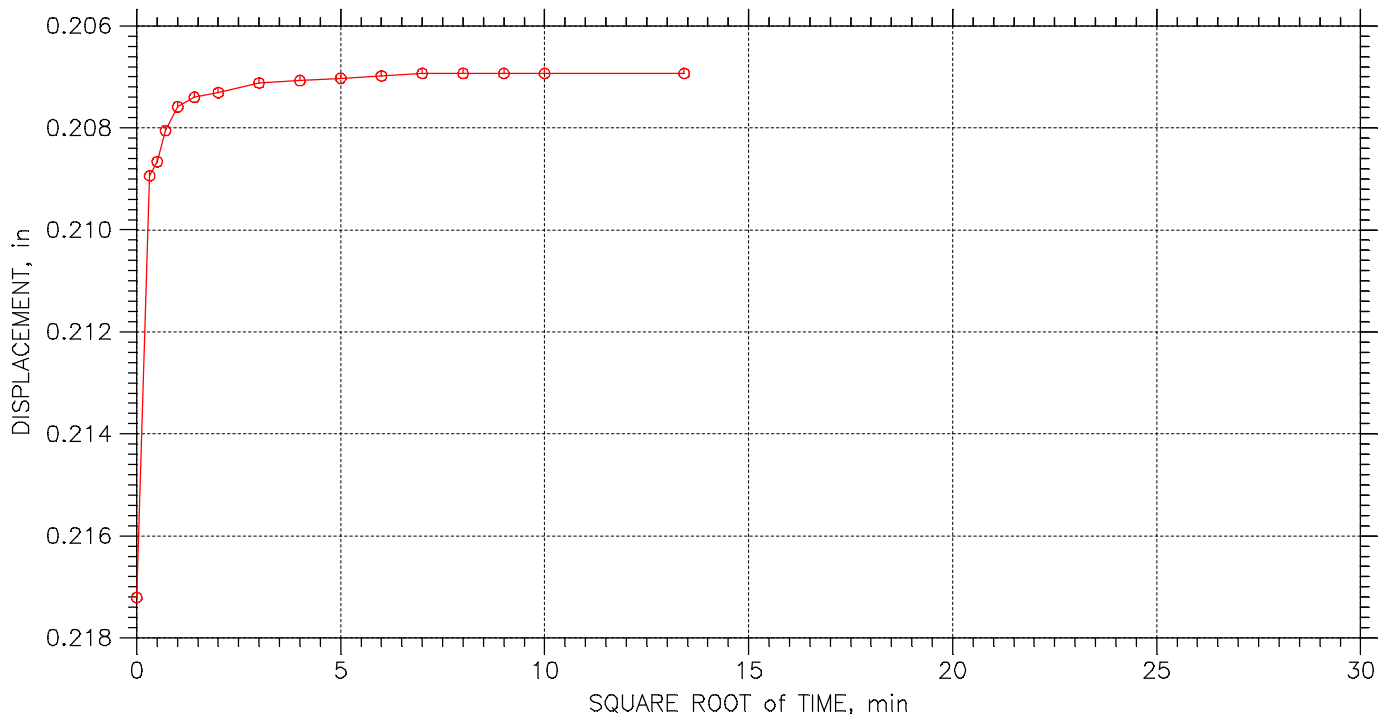
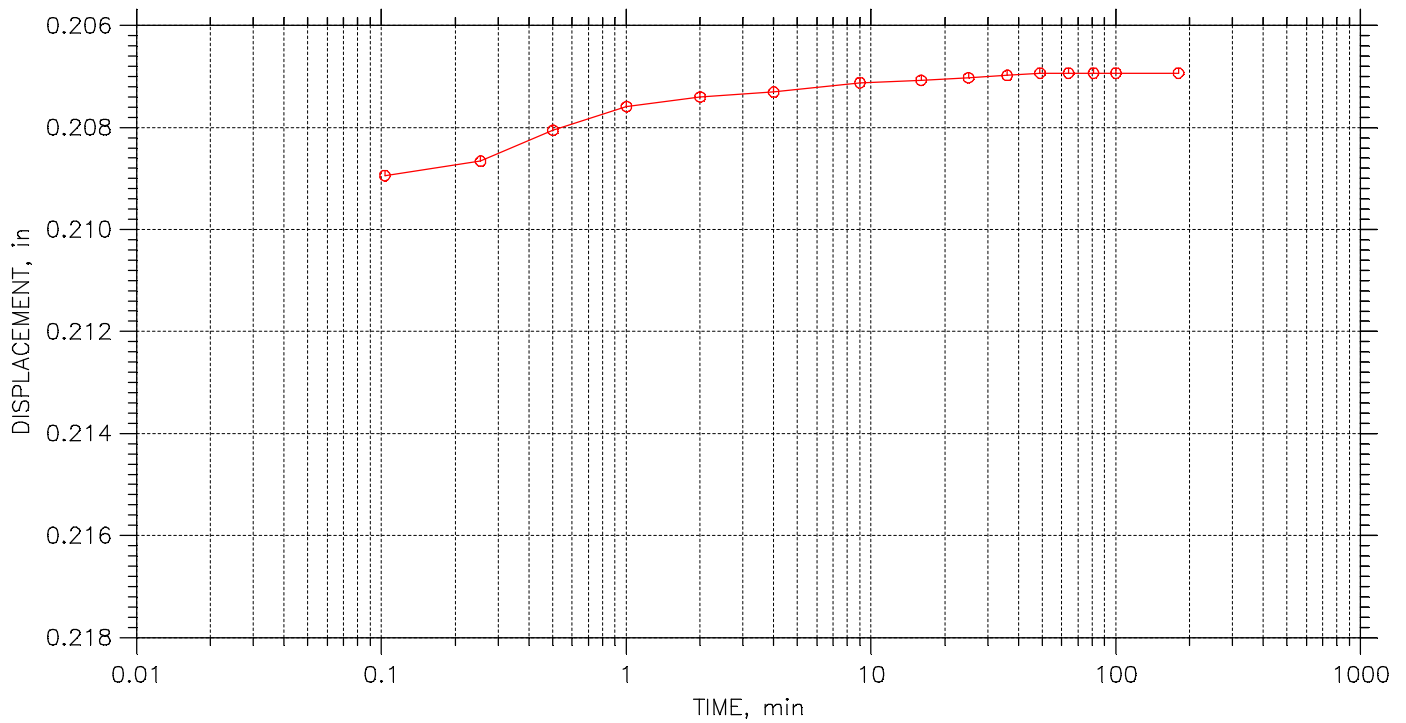
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



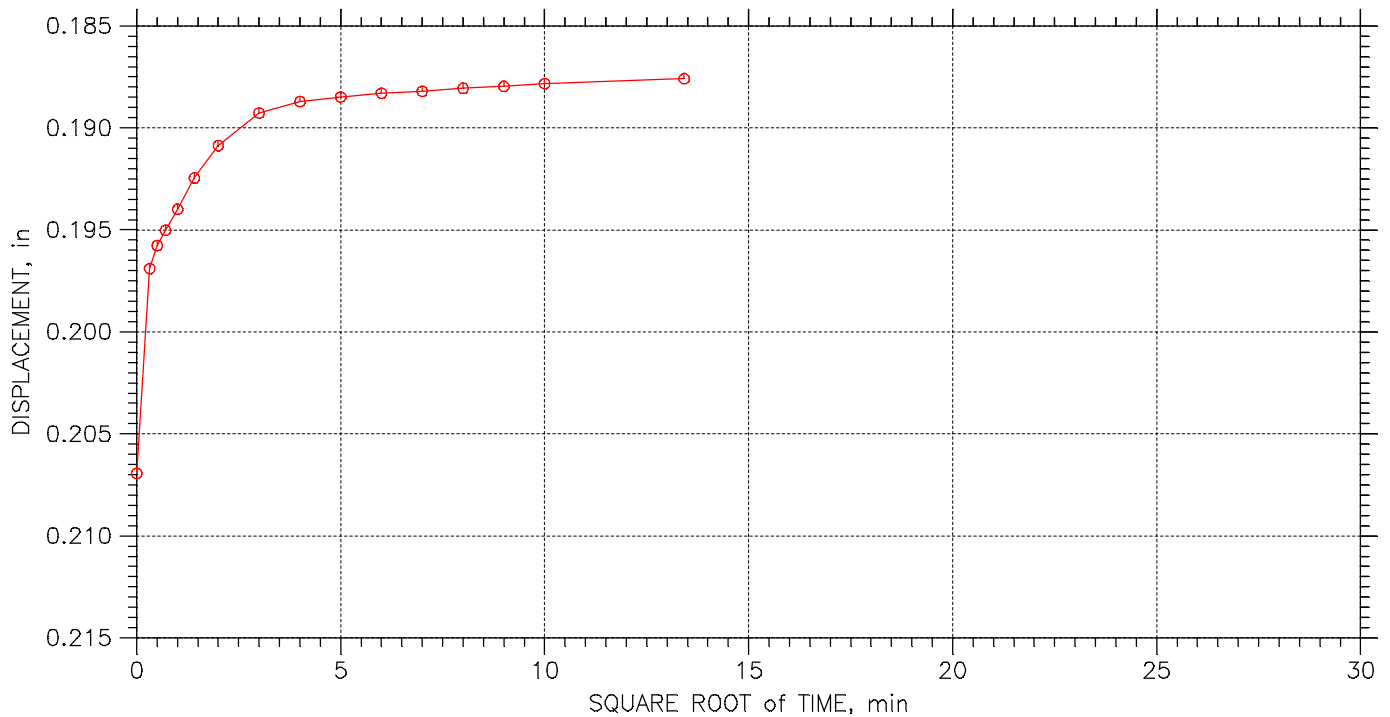
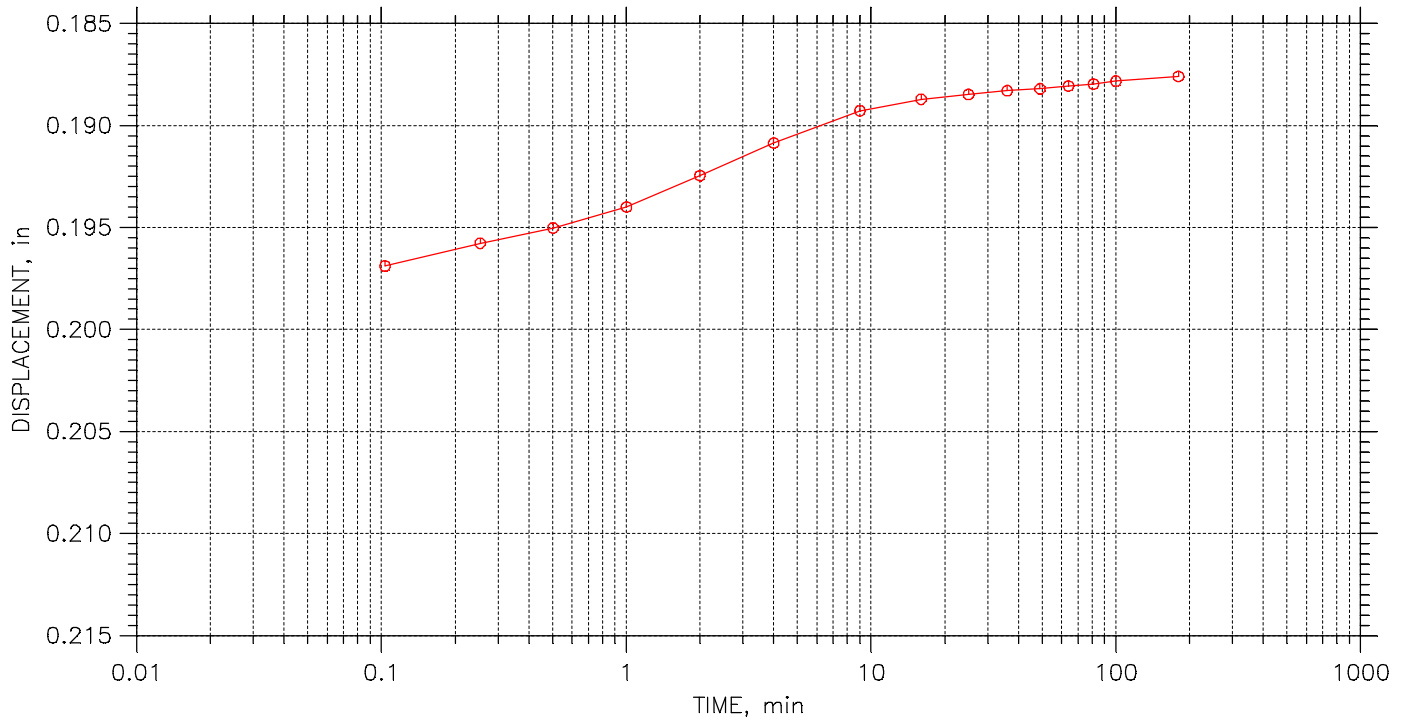
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf



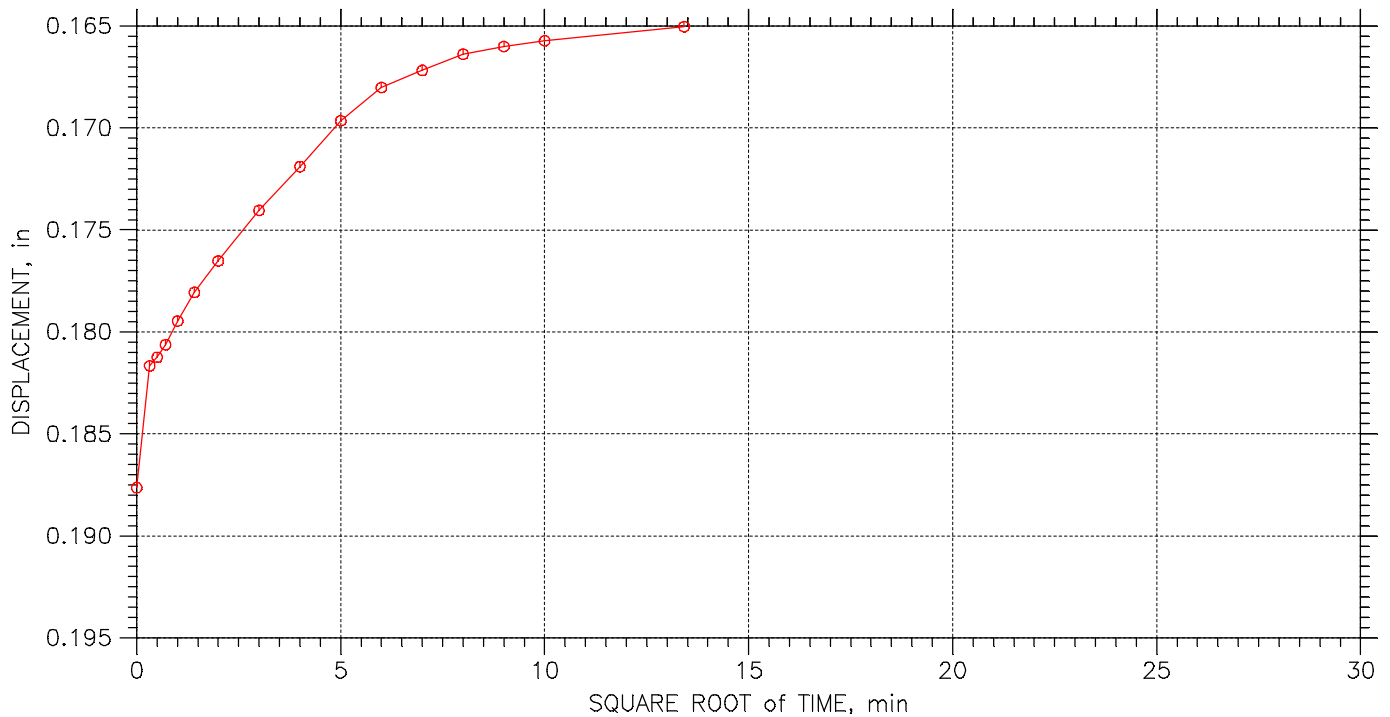
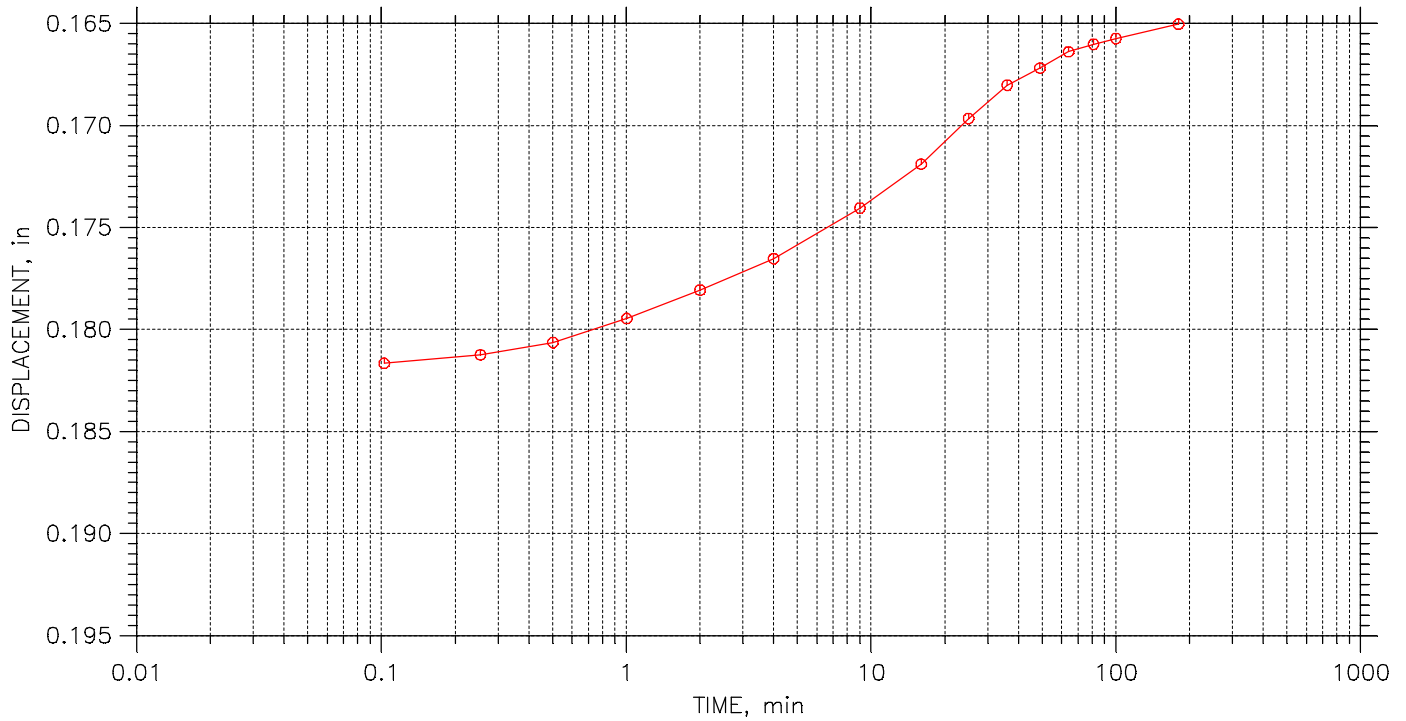
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf



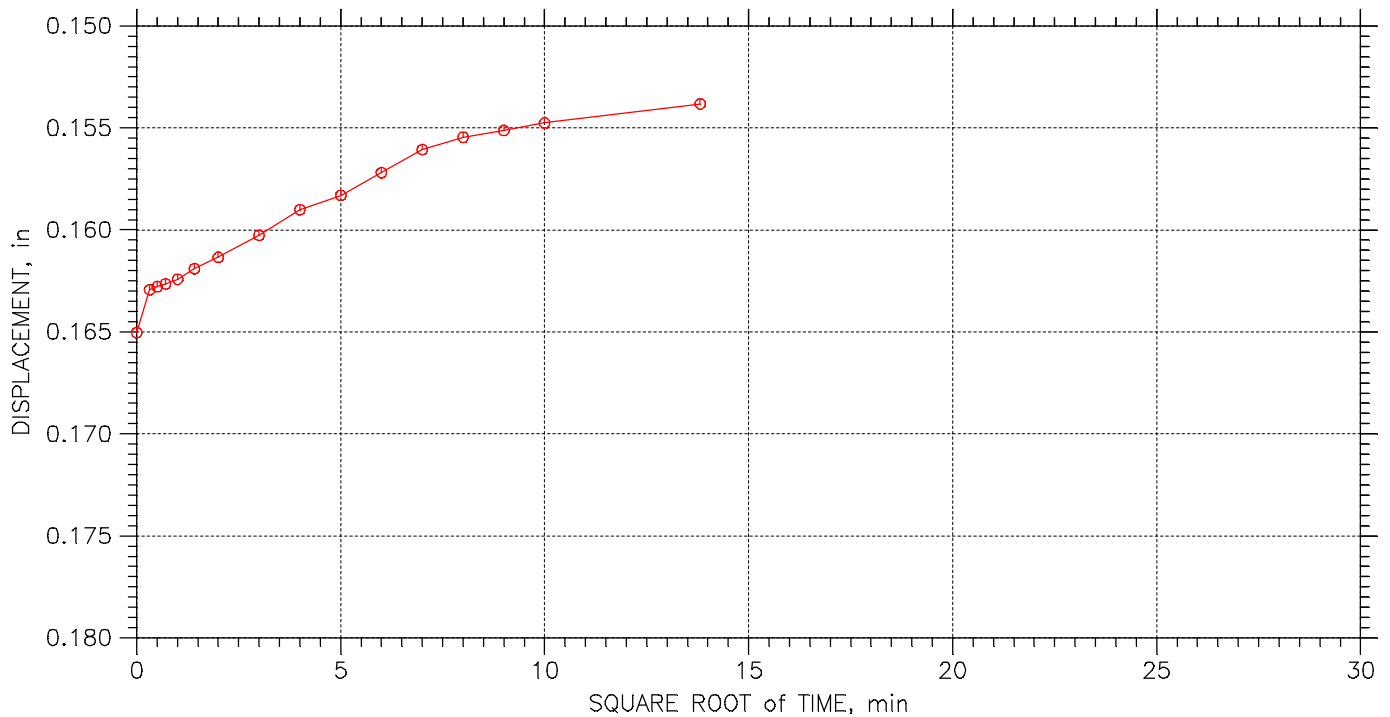
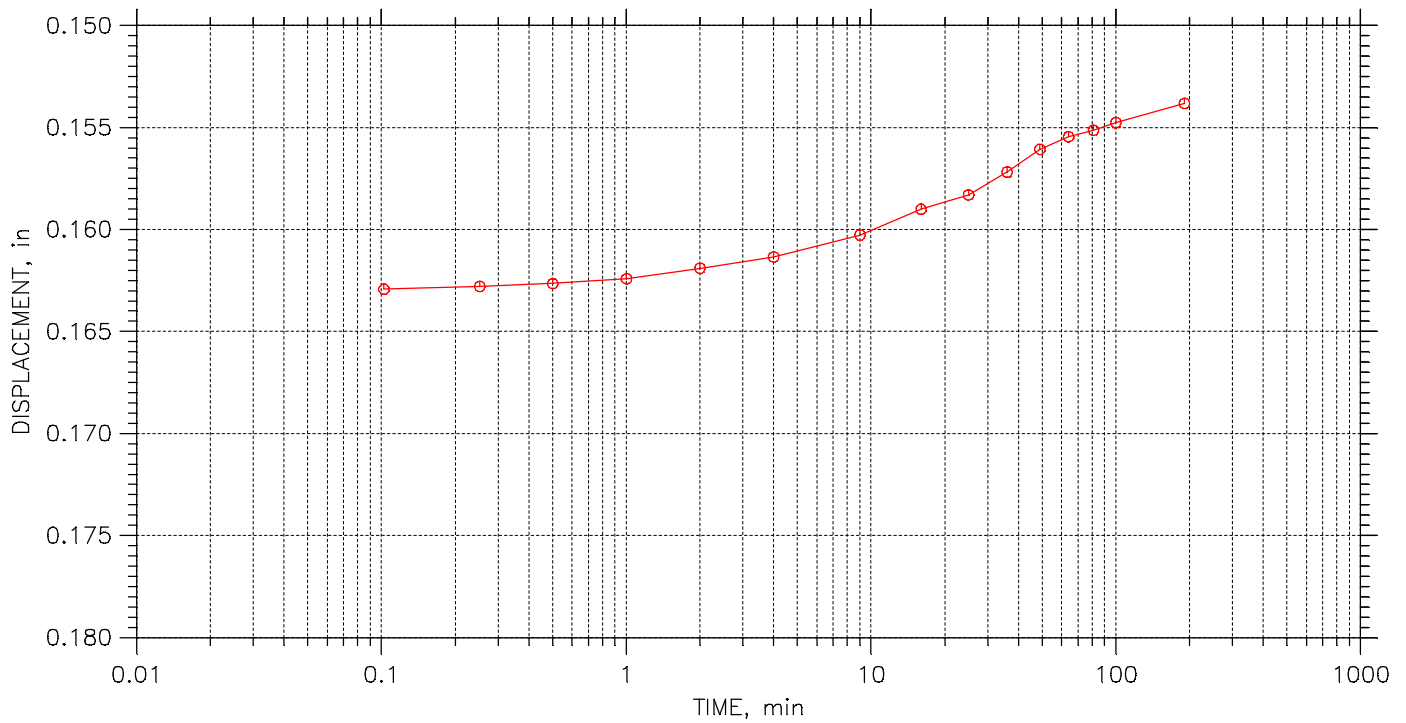
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf



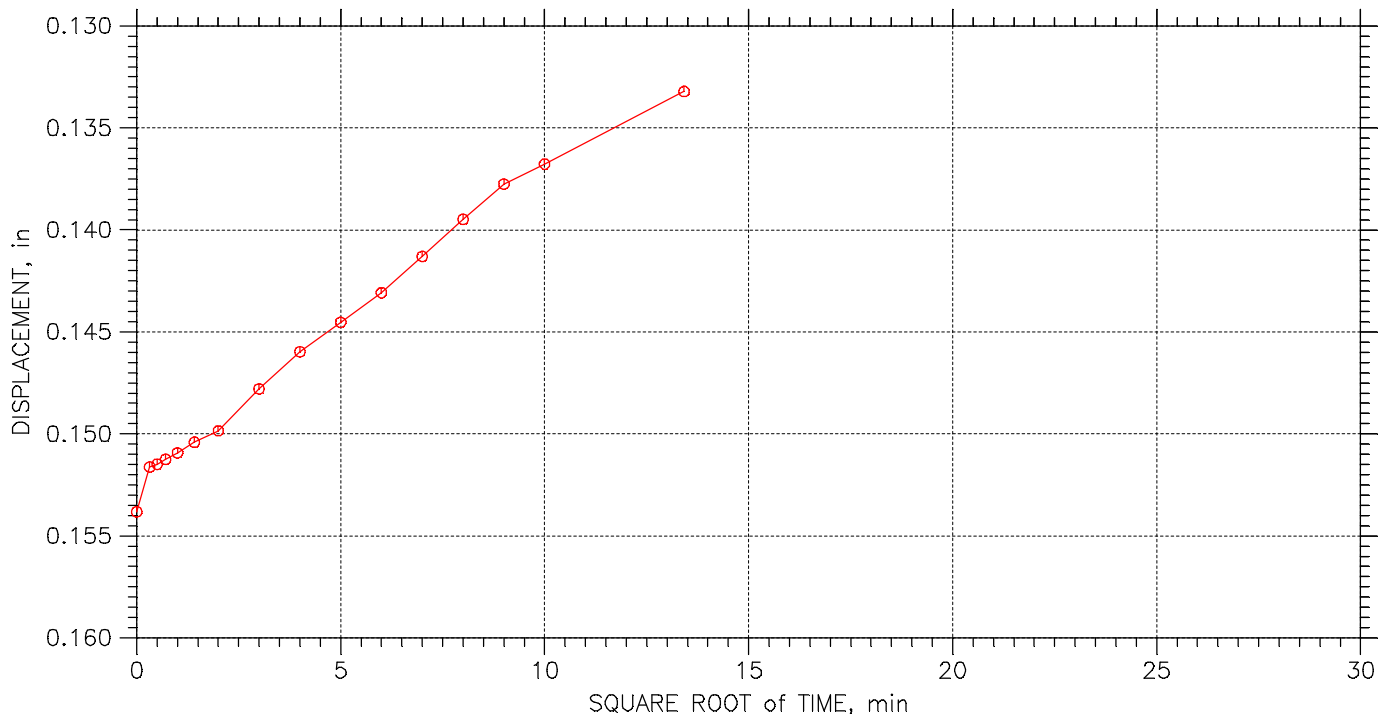
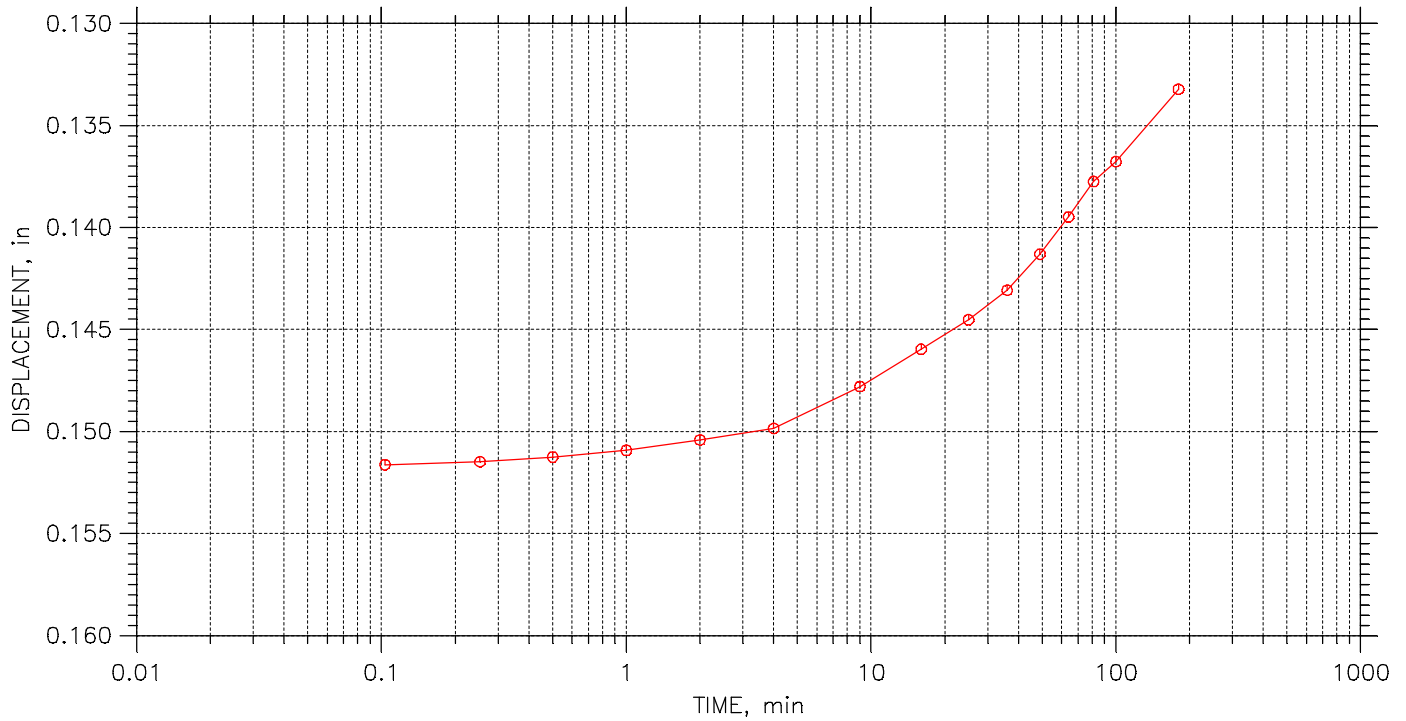
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW1-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 50.0'-52.0'
	Test No.: BW15052CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN FAT CLAY (CH)		
	Remarks: Pc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


CONSOLIDATION TEST DATA

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'
	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		

CONSOLIDATION TEST DATA

Project: PULLIAM PROPERTY RED.
Boring No.: BW1-22
Sample No.: ST-2
Test No.: BW15052CON

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

Project No.: 11225052
Checked By: BCM
Depth: 50.0'-52.0'
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
Initial Void Ratio: 0.70
Final Void Ratio: 0.40

Liquid Limit: 38
Plastic Limit: 14
Plasticity Index: 24

Initial Height: 0.75 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	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	---

CONSOLIDATION TEST DATA

Project: PULLIAM PROPERTY RED.
Boring No.: BW1-22
Sample No.: ST-2
Test No.: BW15052CON

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

Project No.: 11225052
Checked By: BCM
Depth: 50.0'-52.0'
Elevation: -----

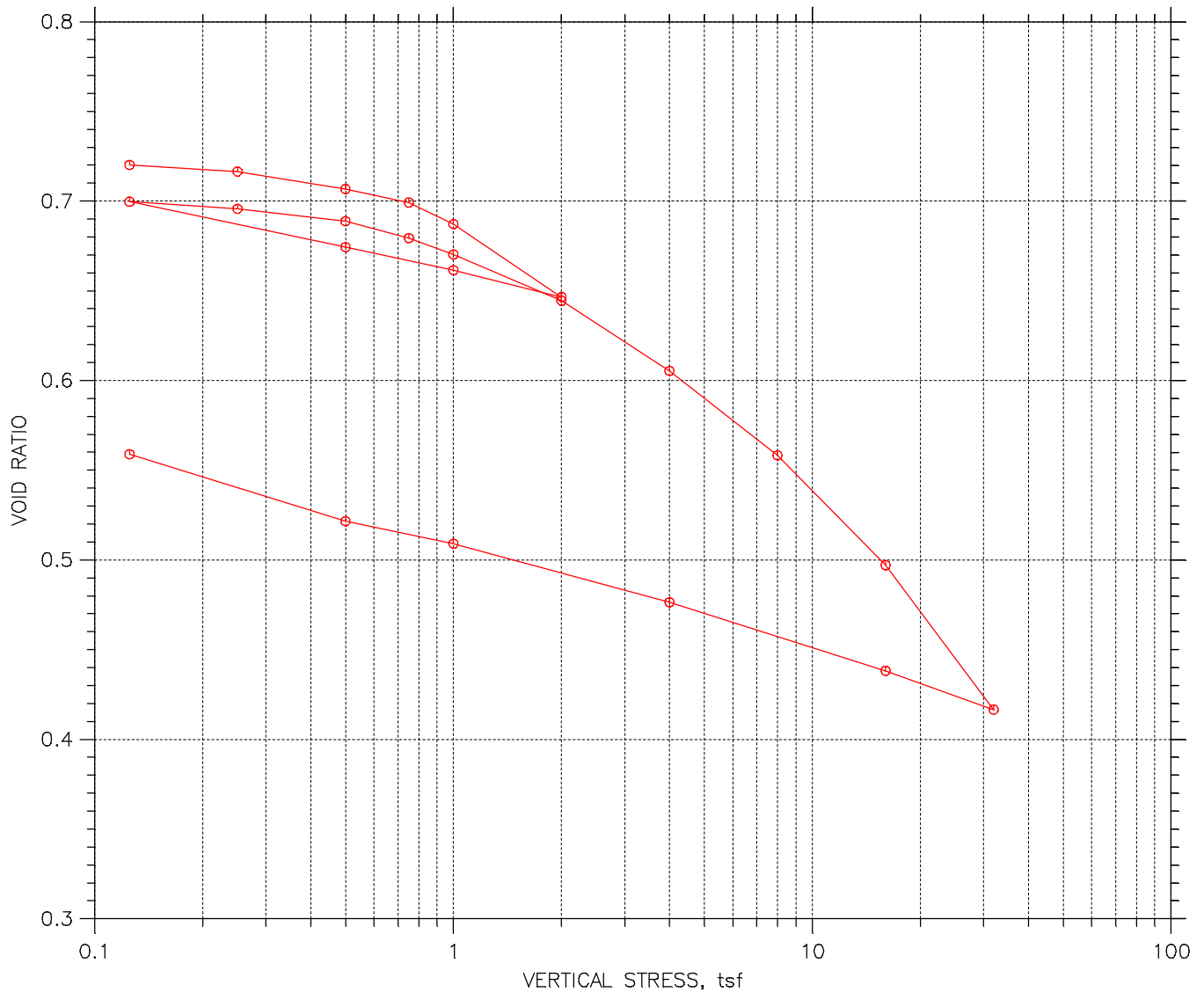


Soil Description: REDDISH BROWN FAT CLAY (CH)


Remarks: Pc = 1.1 tsf Cc = 0.299 Ccr = 0.078 TEST PERFORMED AS PER ASTM D2435

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. ft^2/sec	Log ft^2/sec	Ave. 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

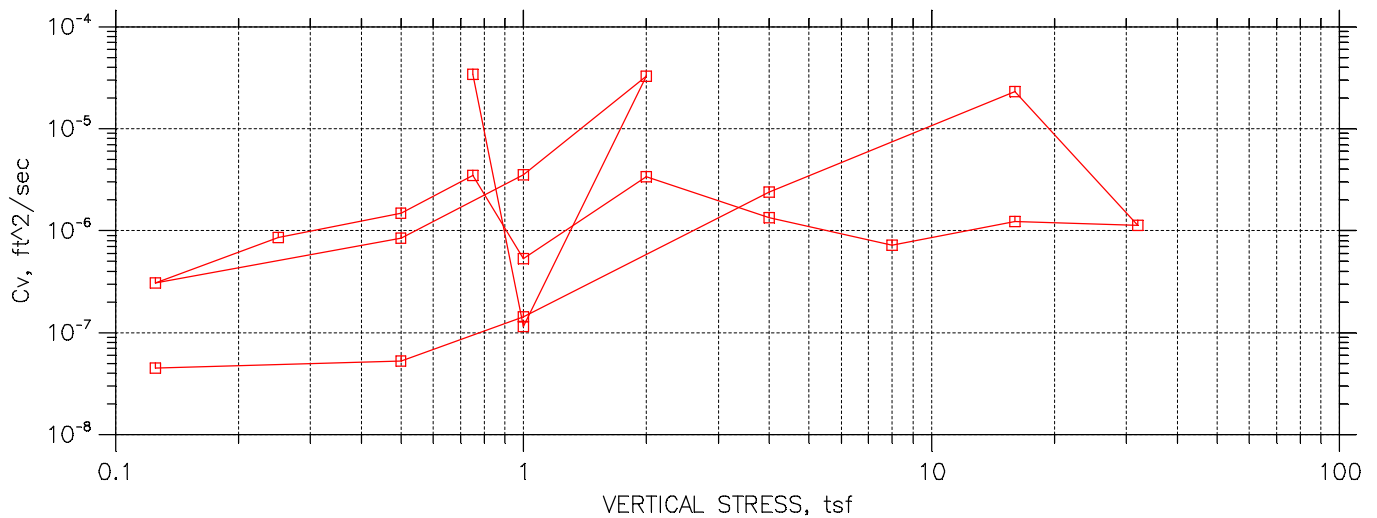
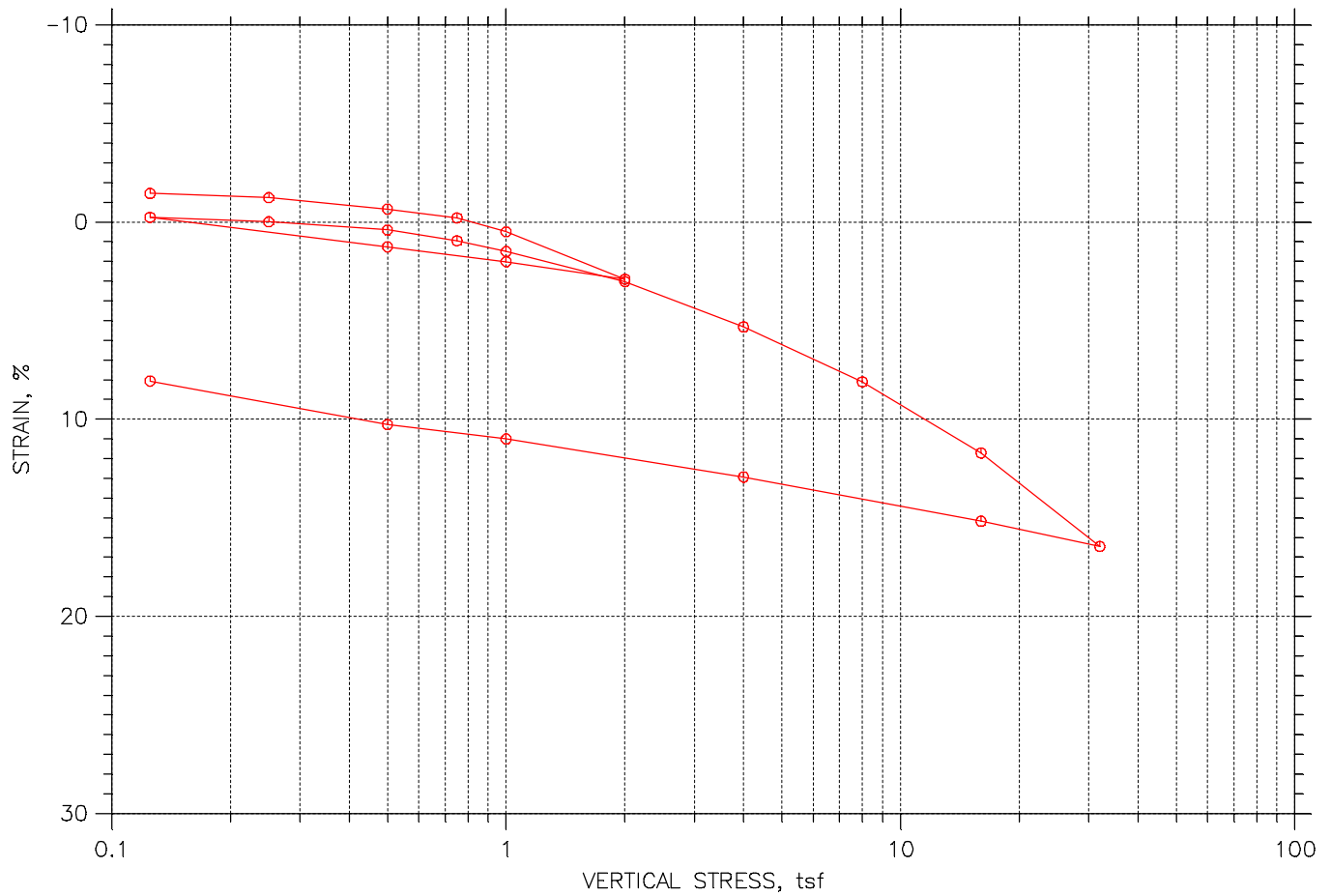
ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435




				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	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		

ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



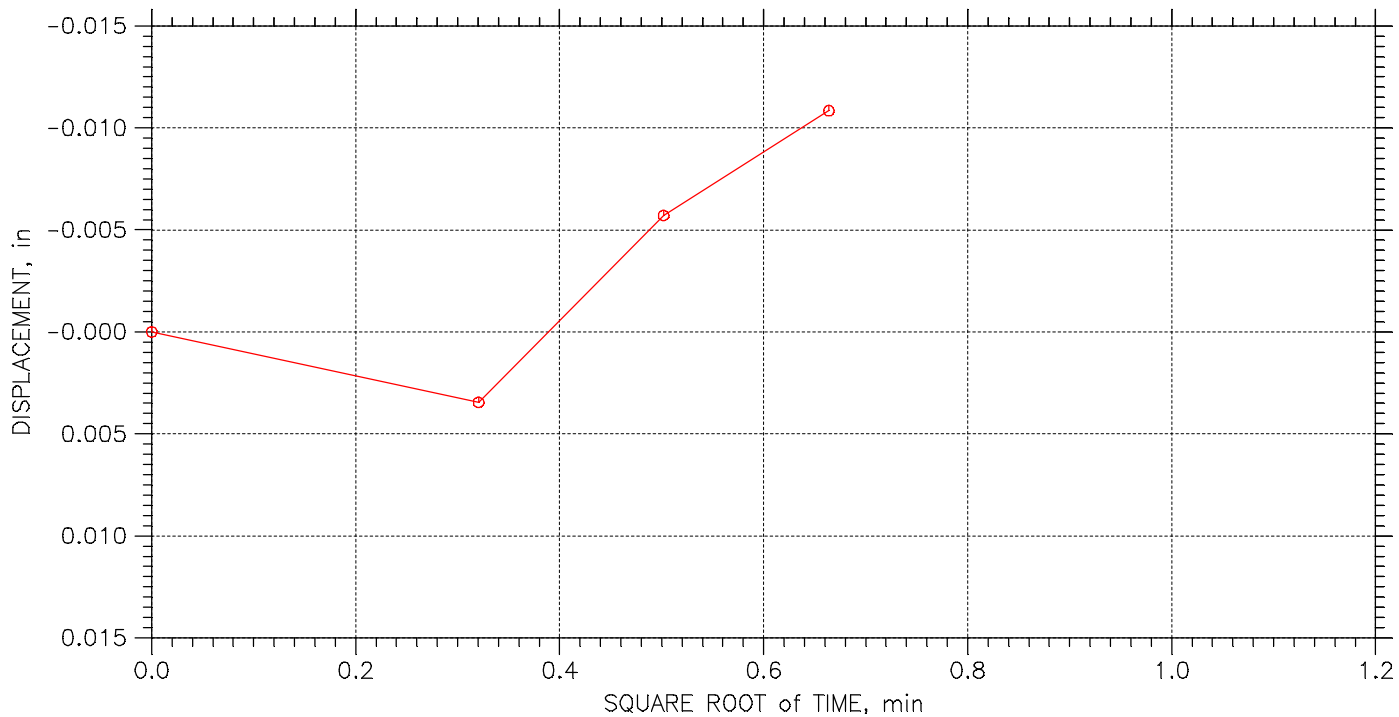
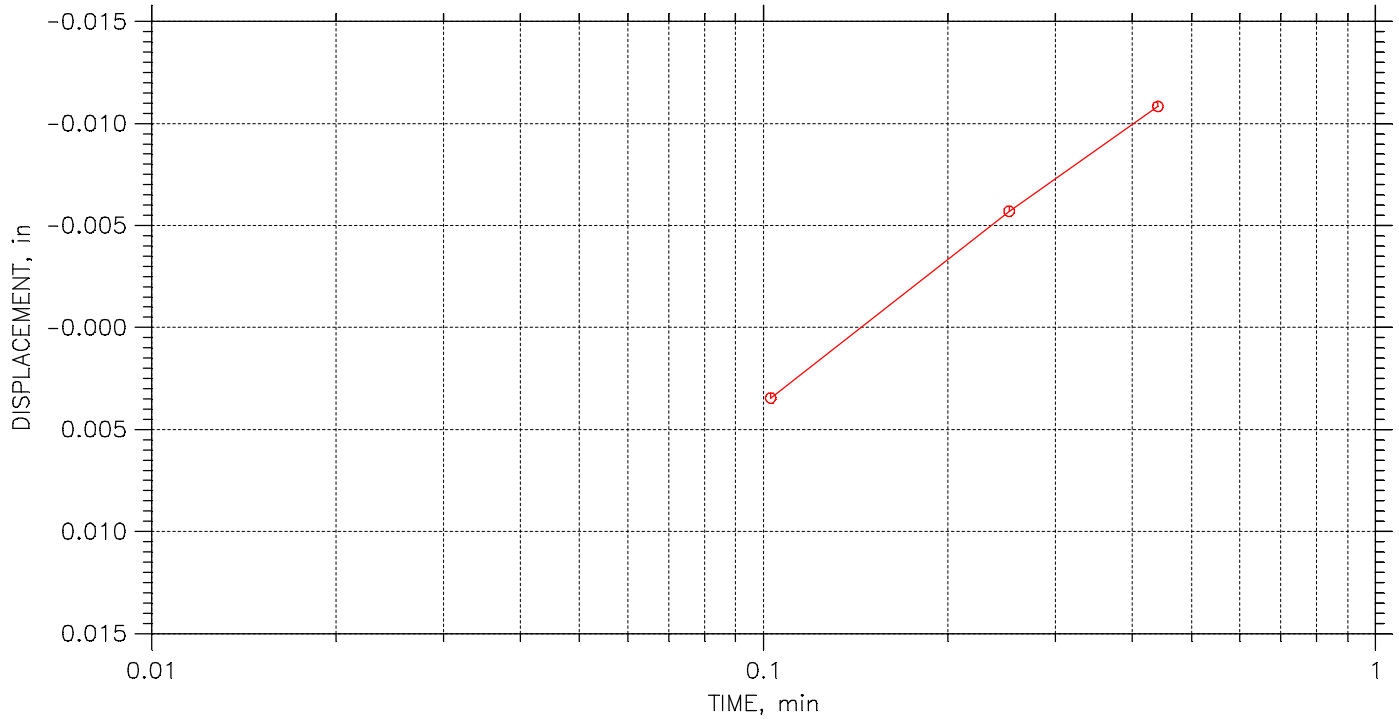
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 23

Stress: 0.125 tsf



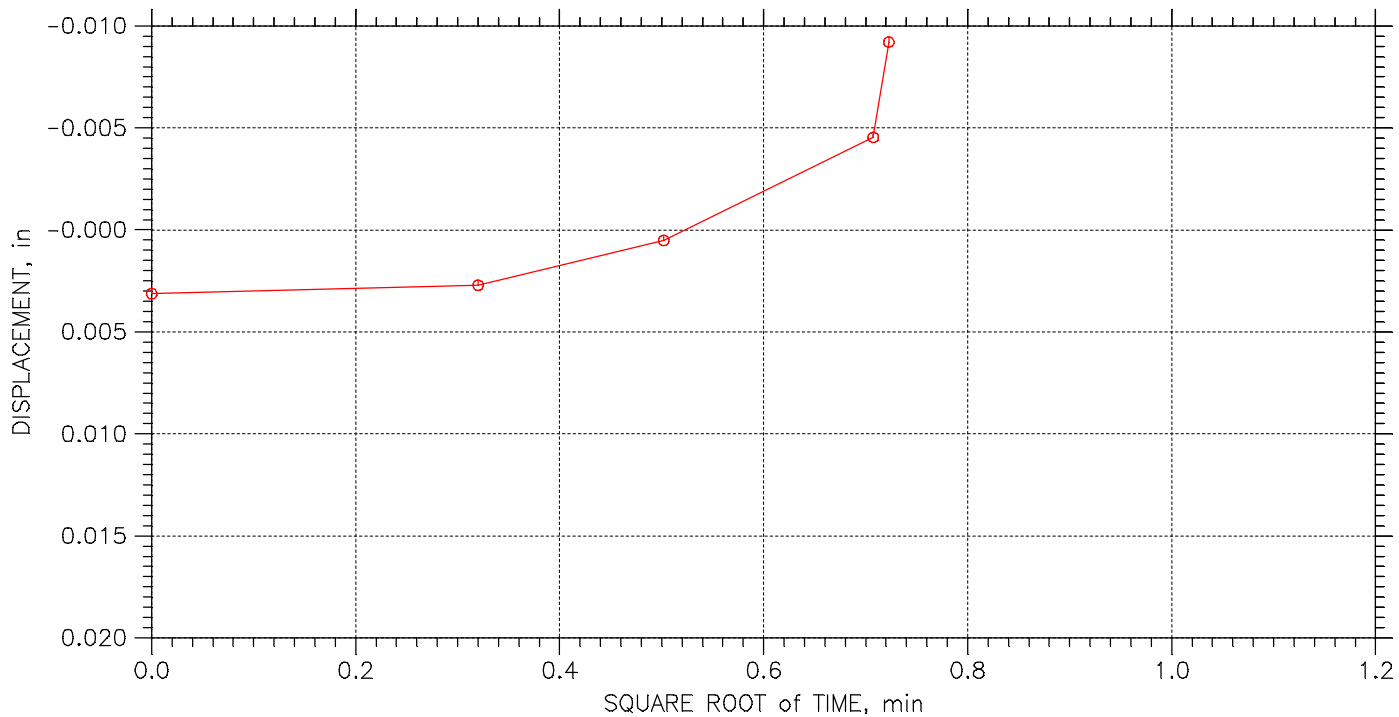
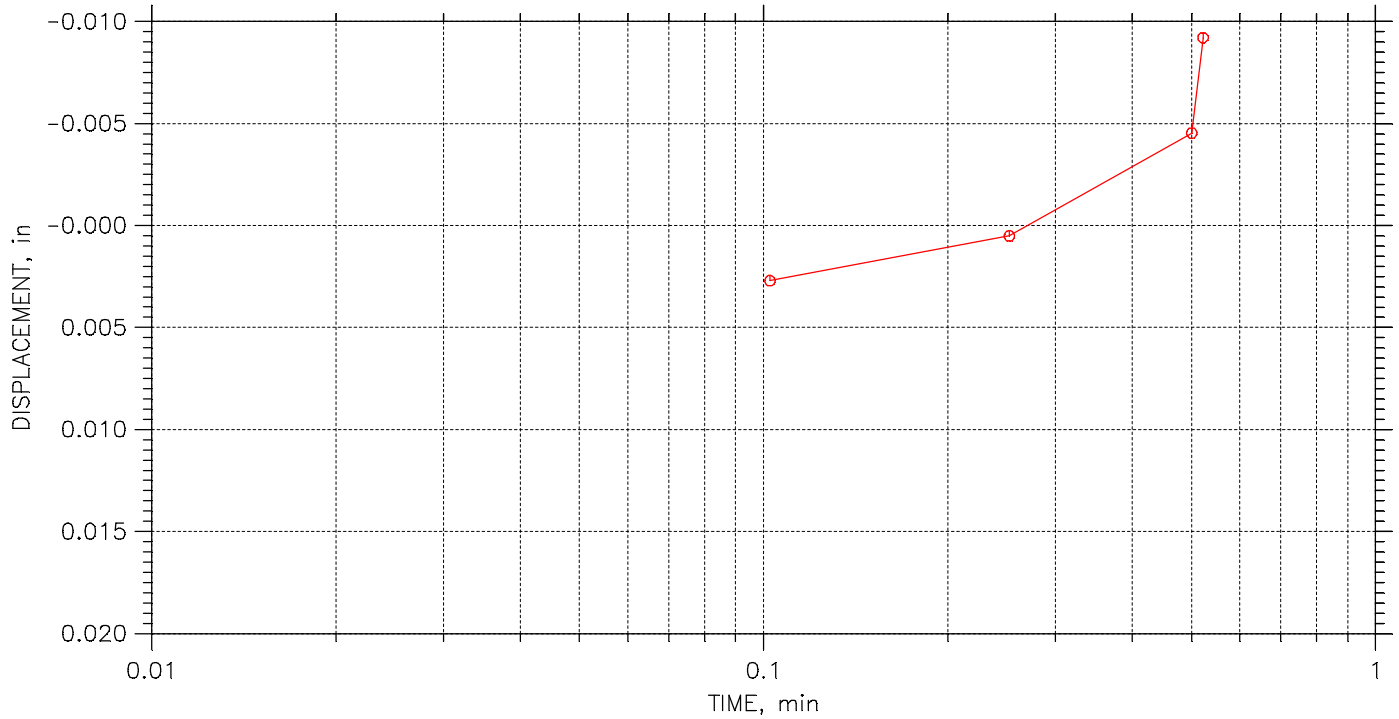
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 23

Stress: 0.25 tsf



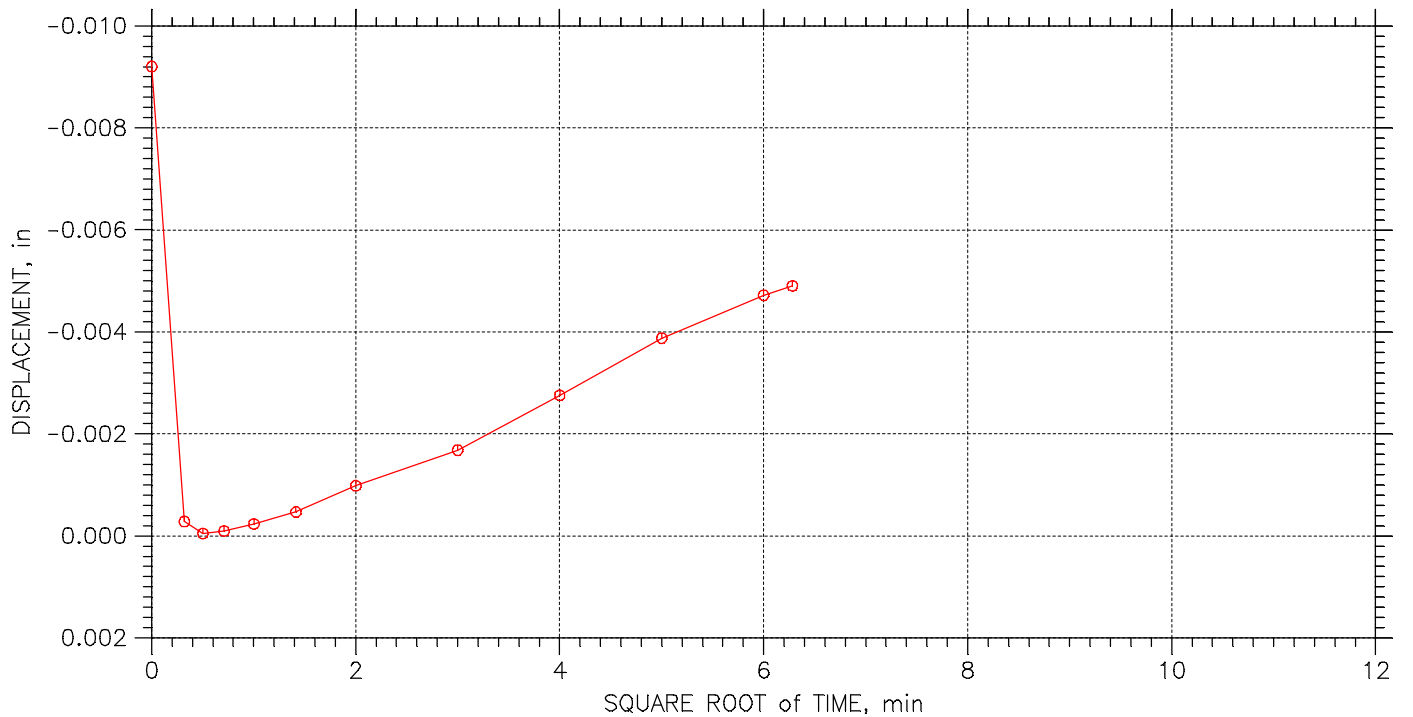
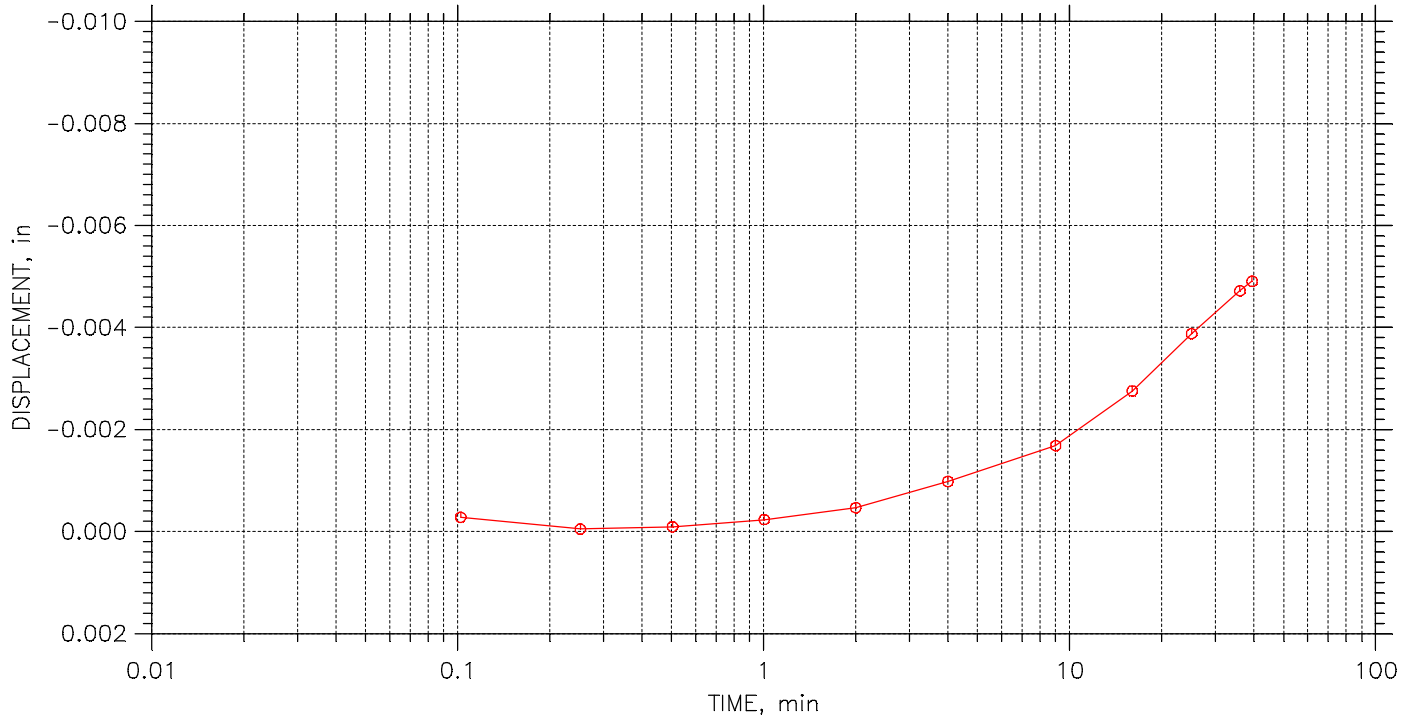
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 23

Stress: 0.5 tsf



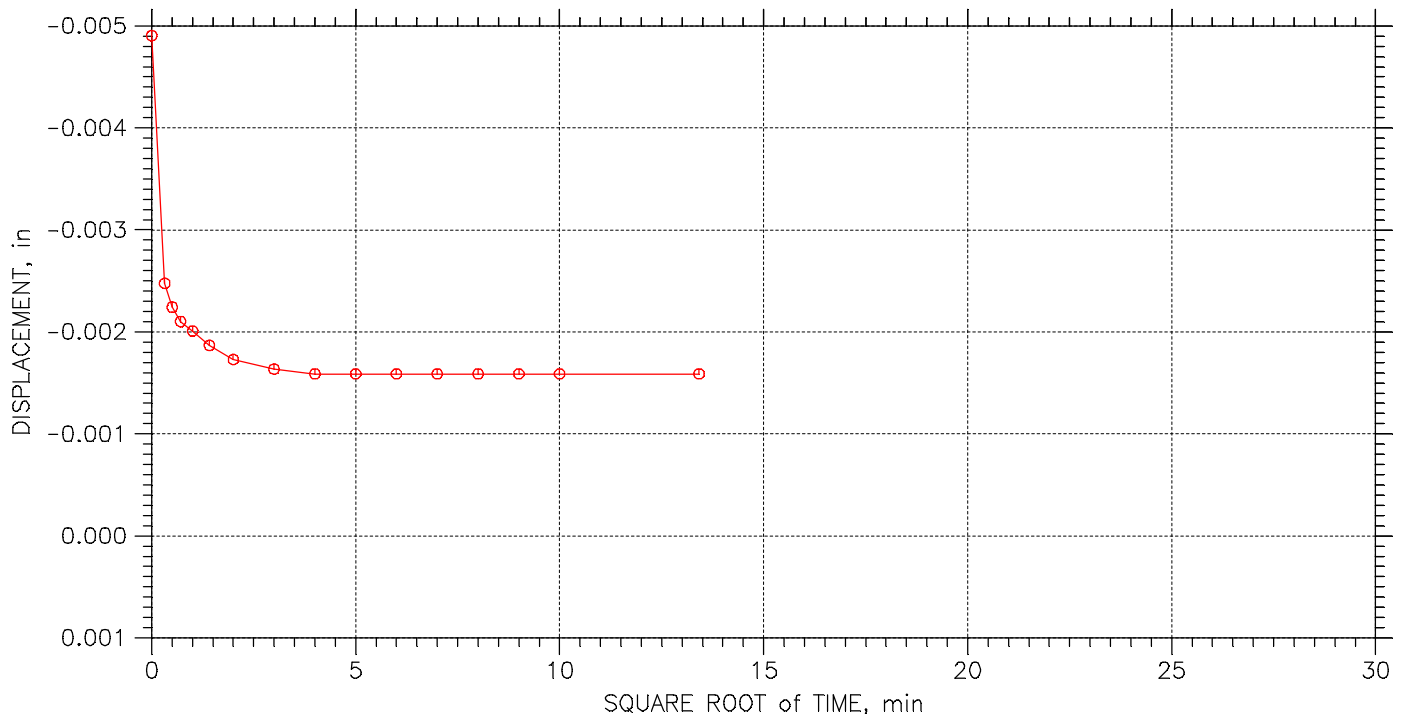
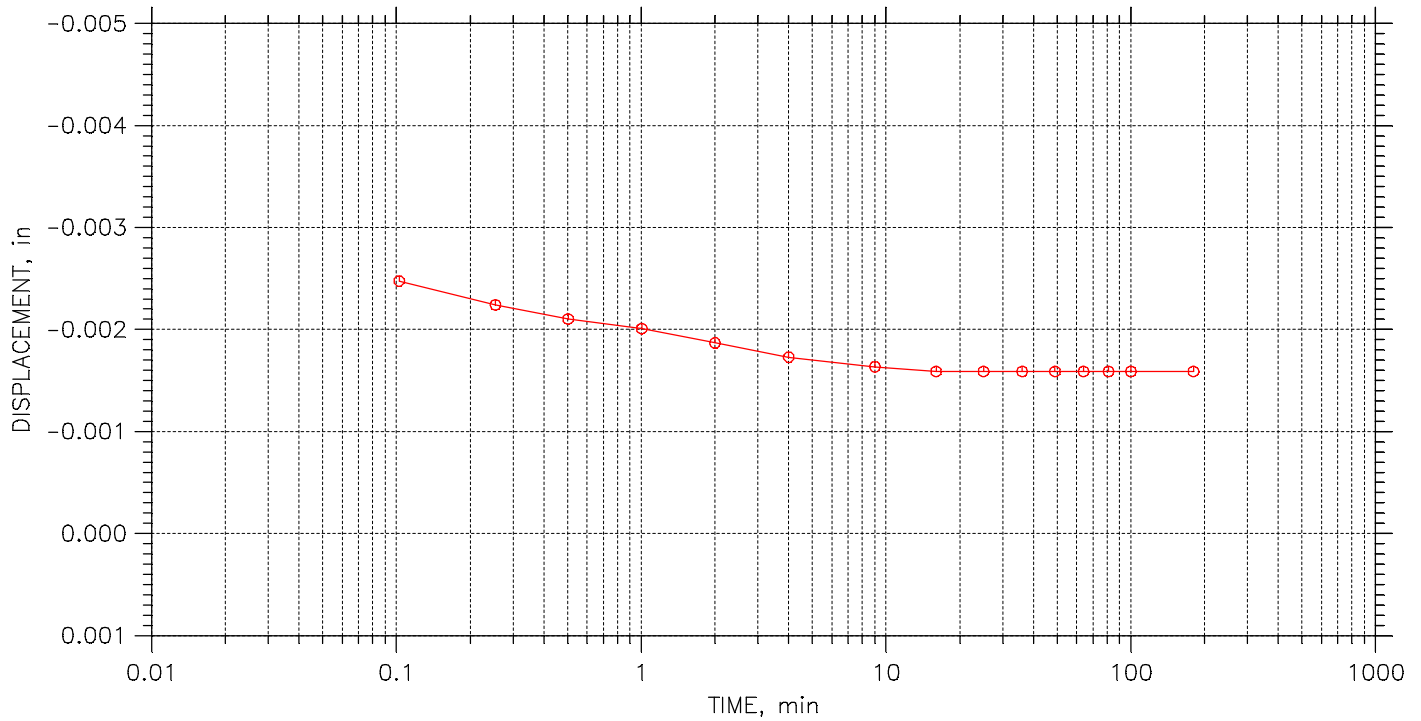
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	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 3.3 tsf Cc = 0.251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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 23

Stress: 0.75 tsf



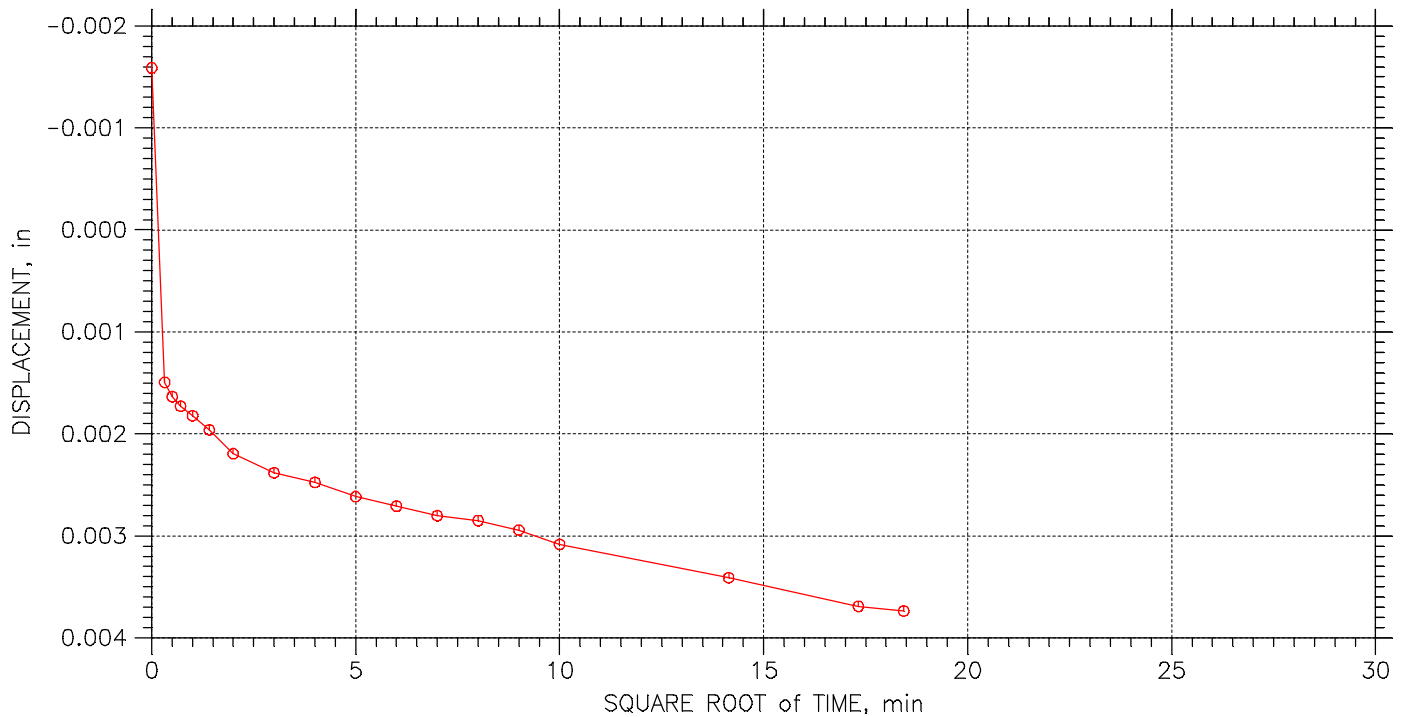
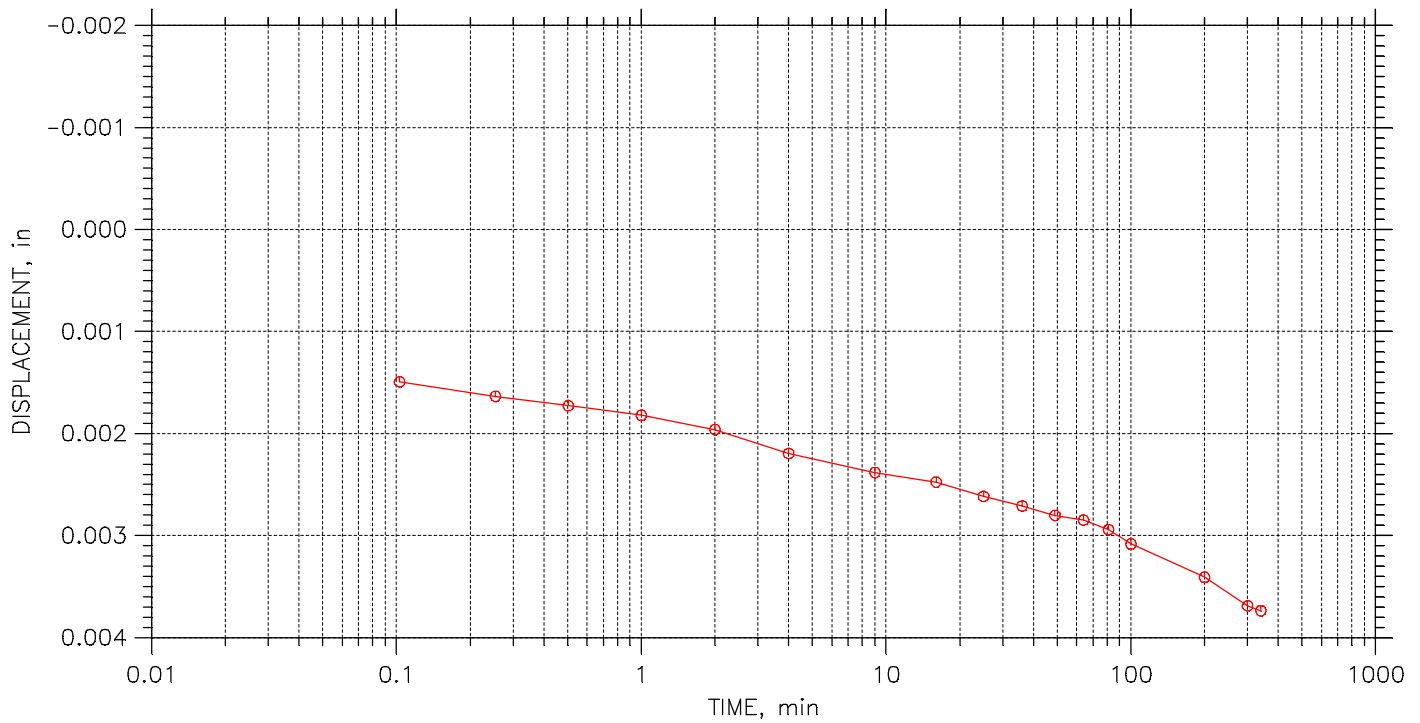
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 23

Stress: 1. tsf



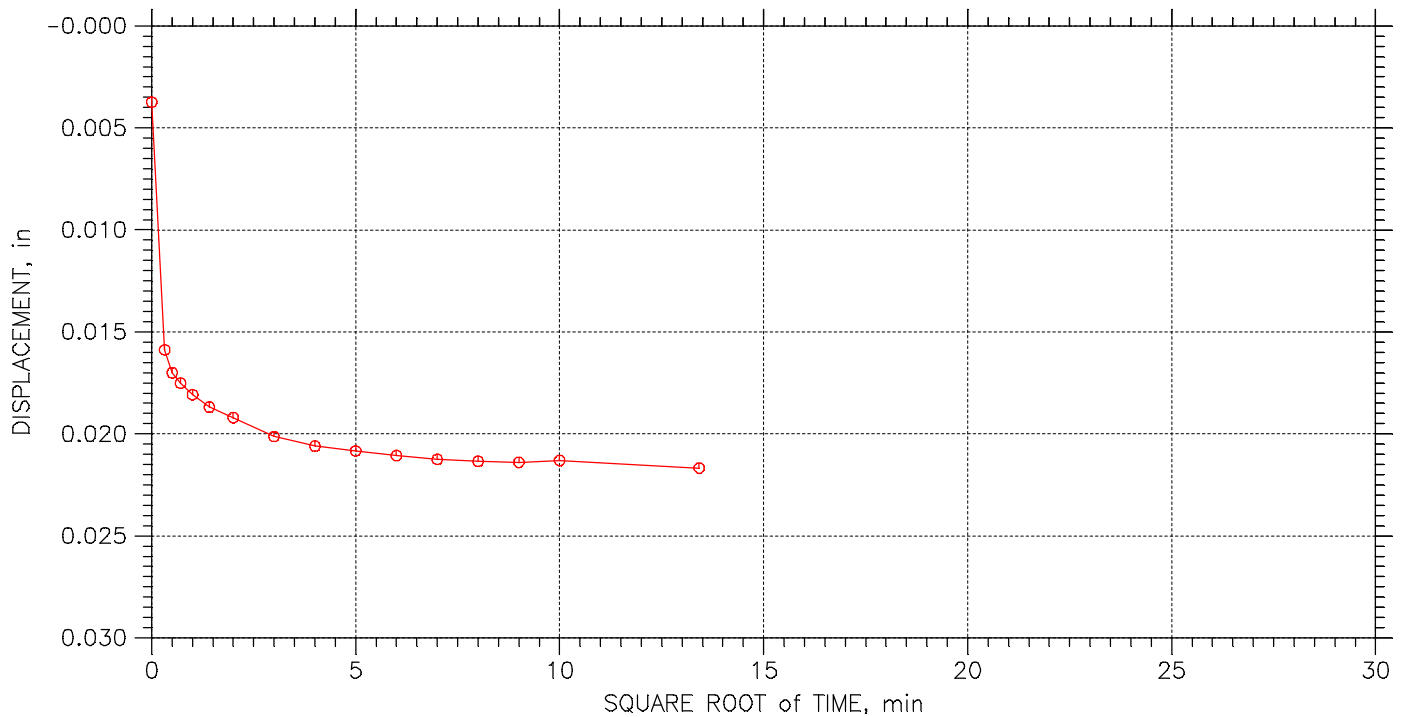
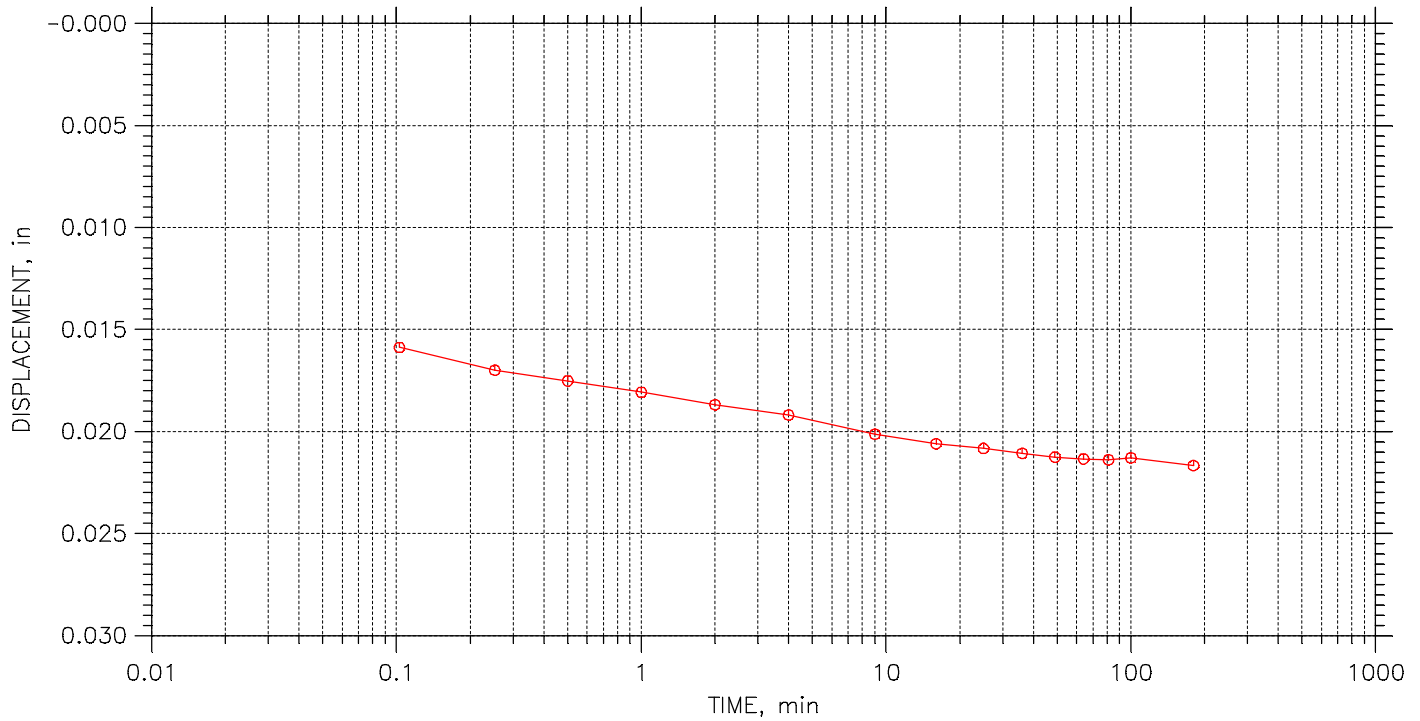
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 23

Stress: 2. tsf



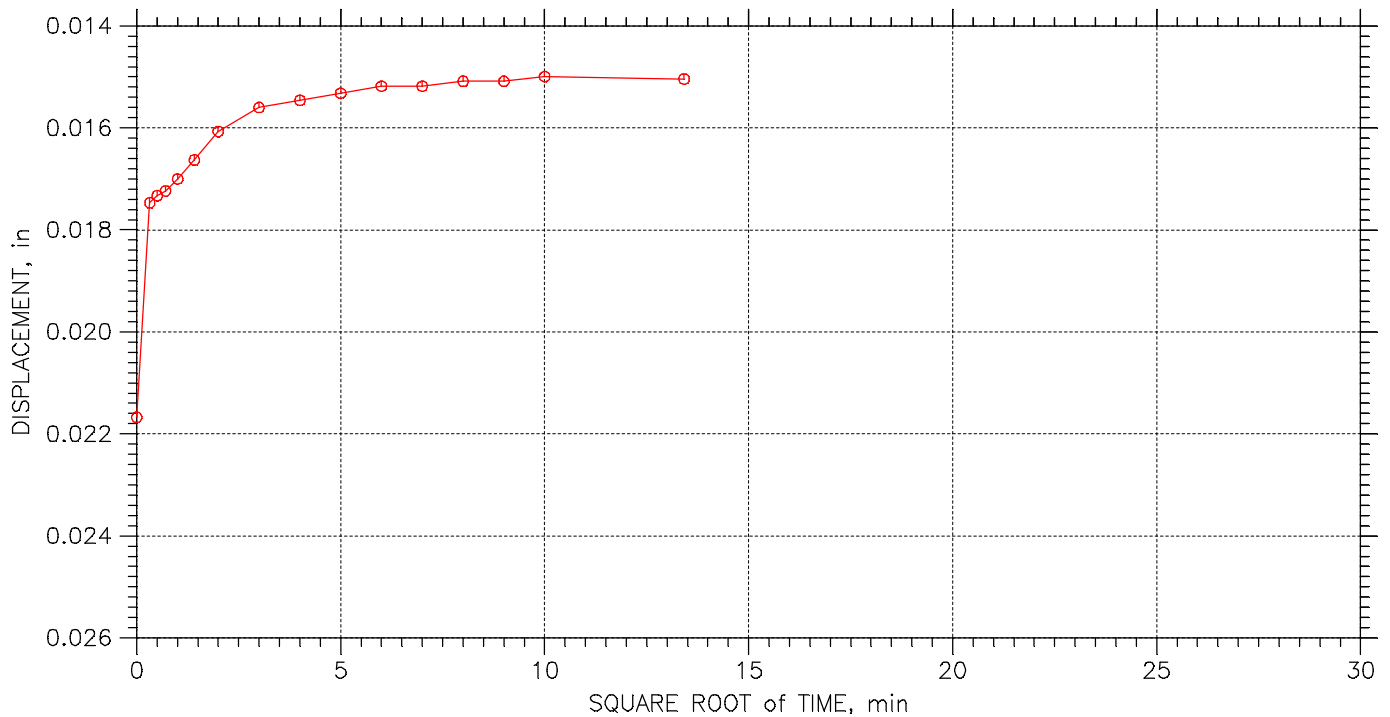
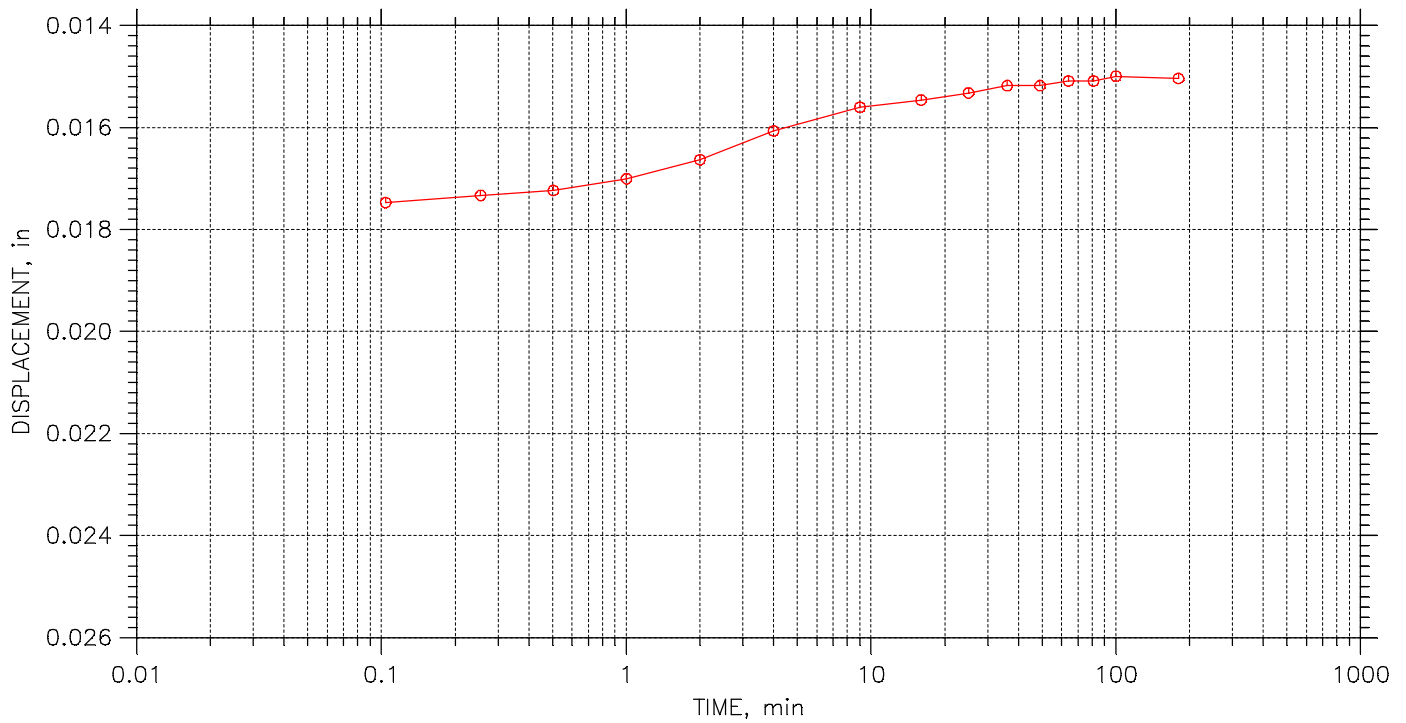
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 23

Stress: 1. tsf



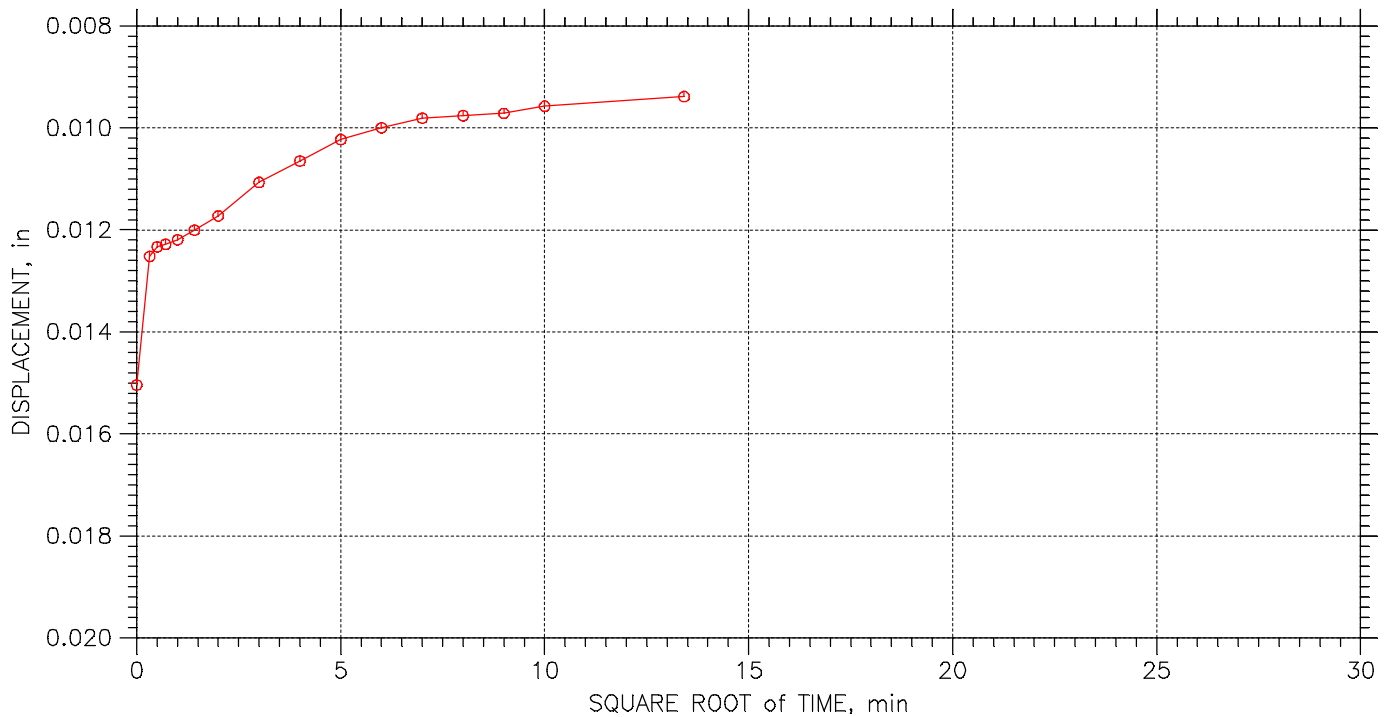
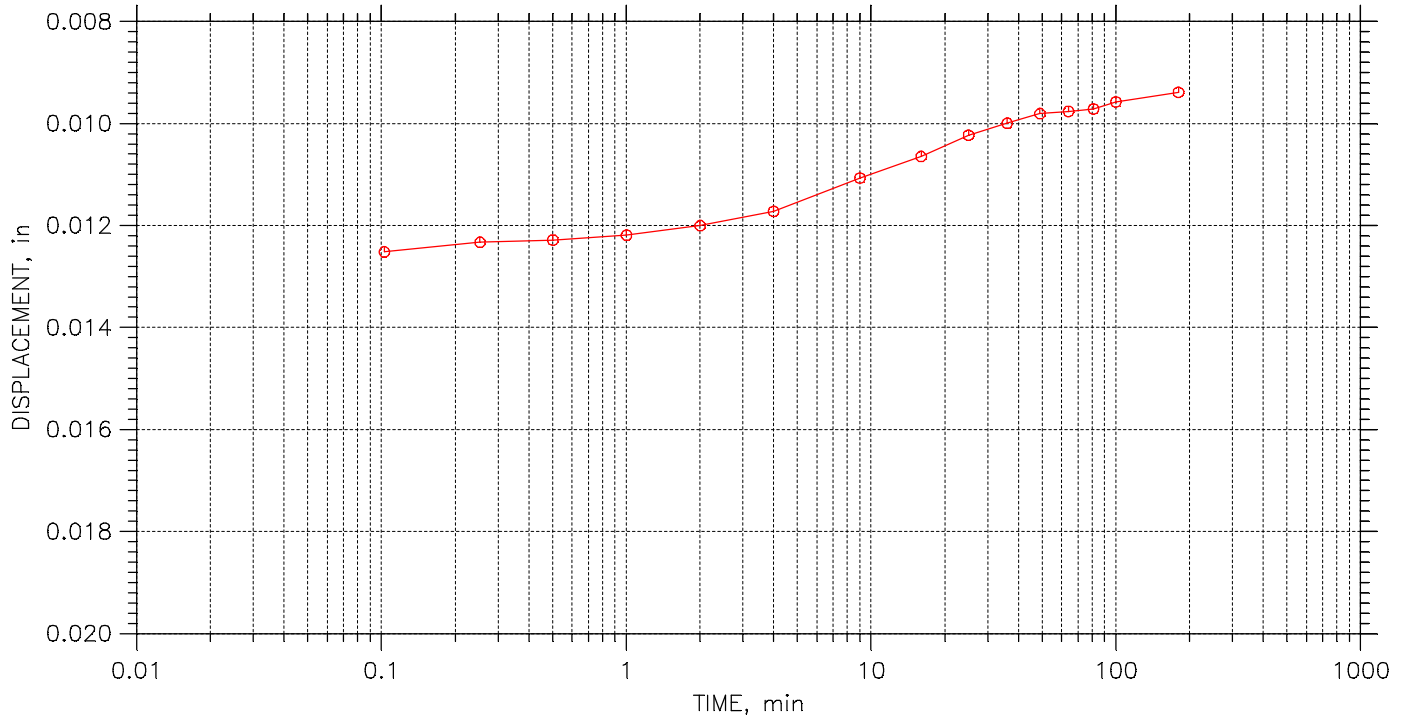
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 23

Stress: 0.5 tsf



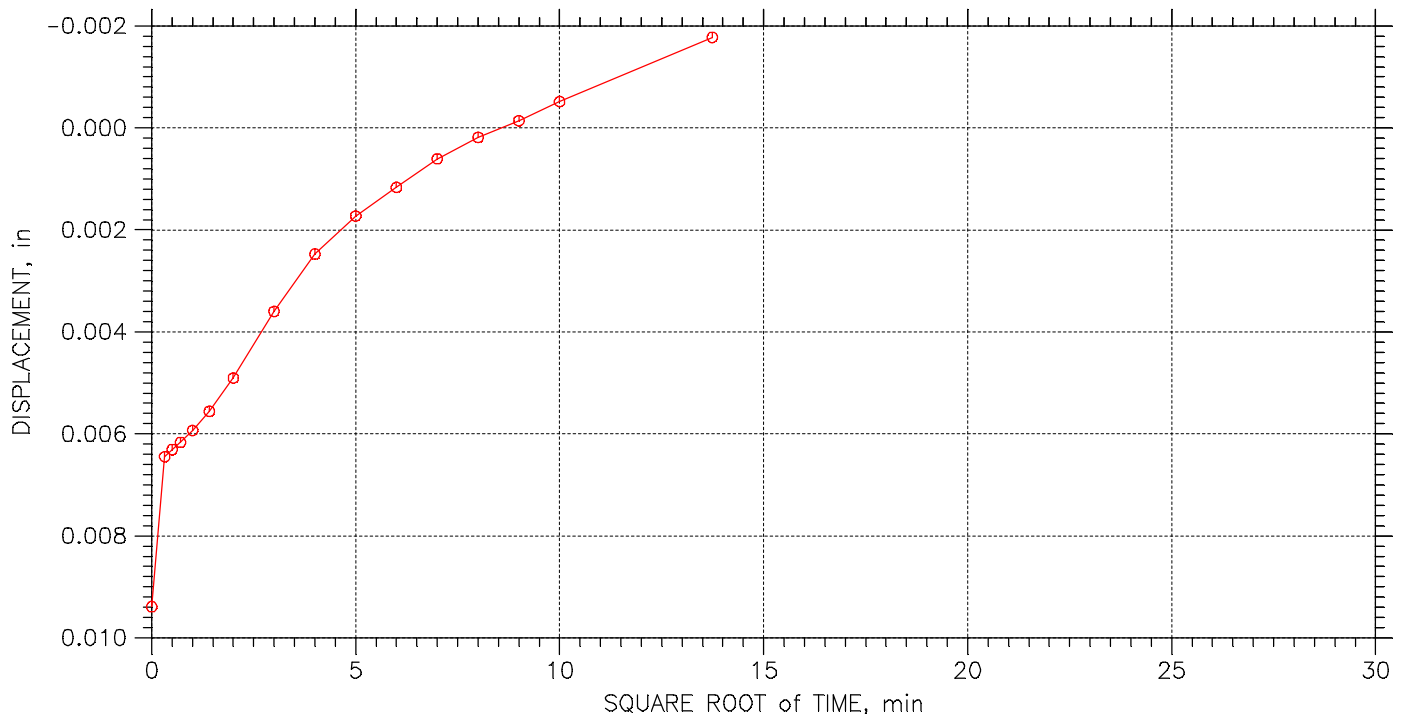
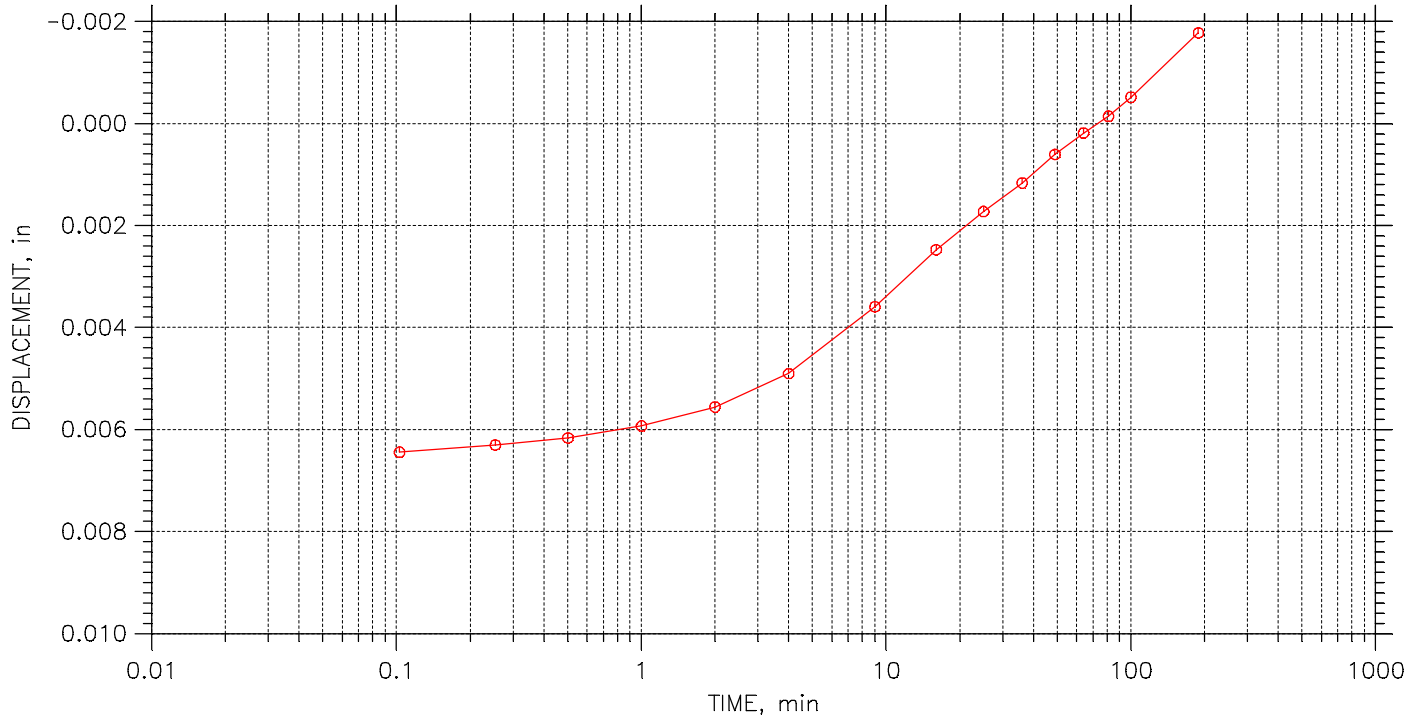
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 23

Stress: 0.125 tsf



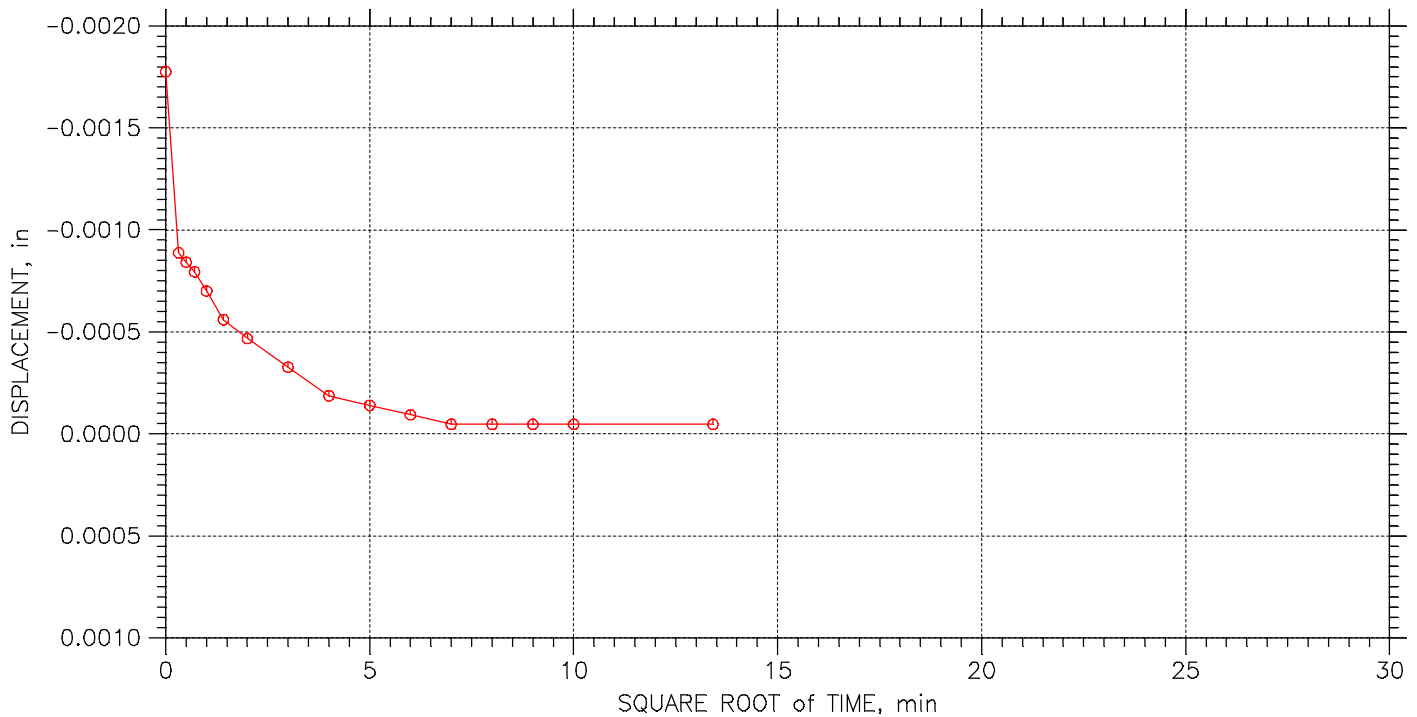
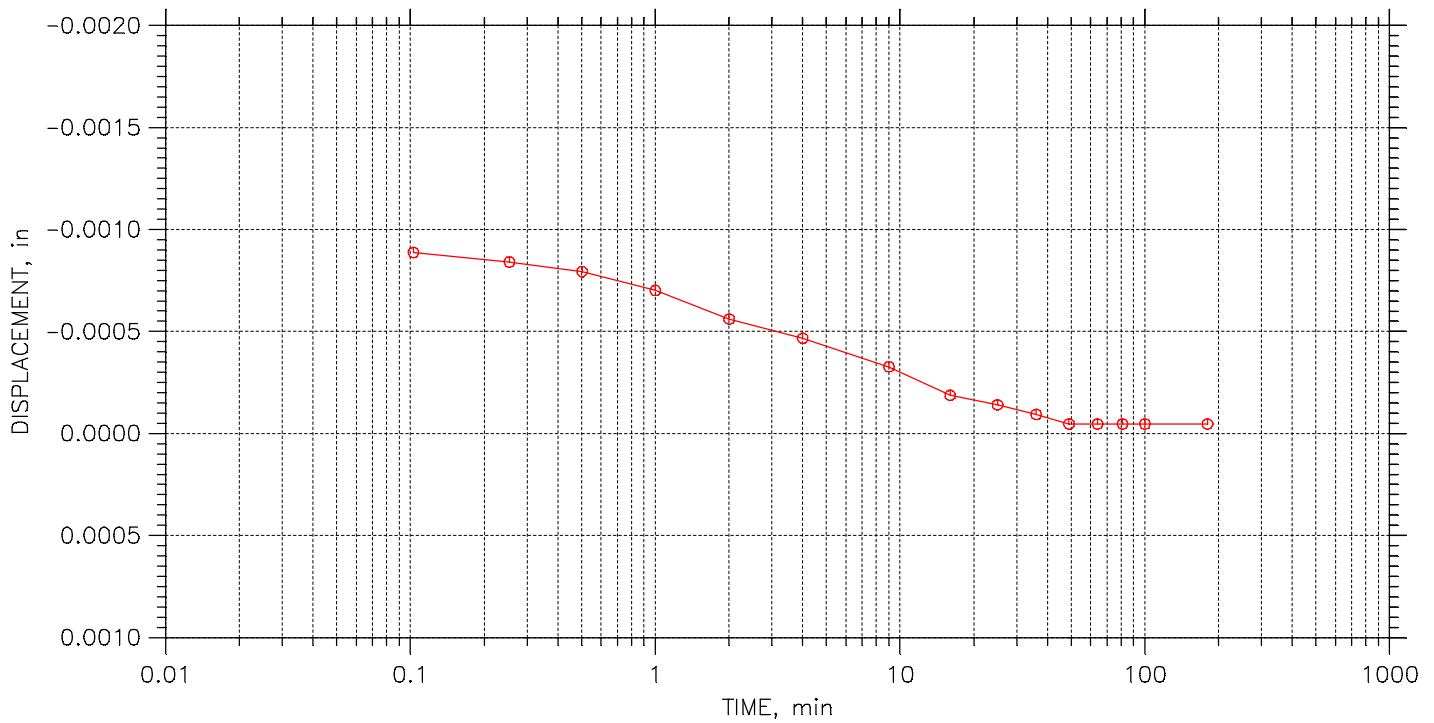
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 23

Stress: 0.25 tsf



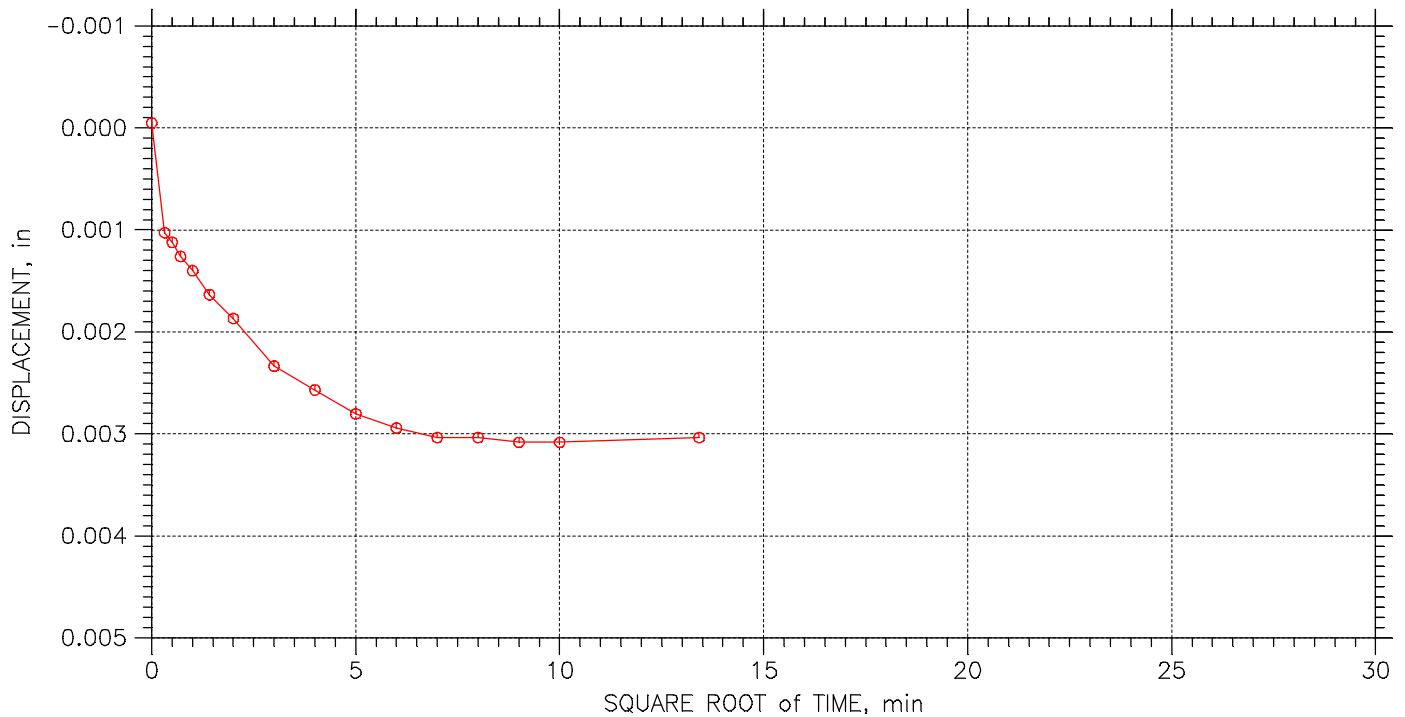
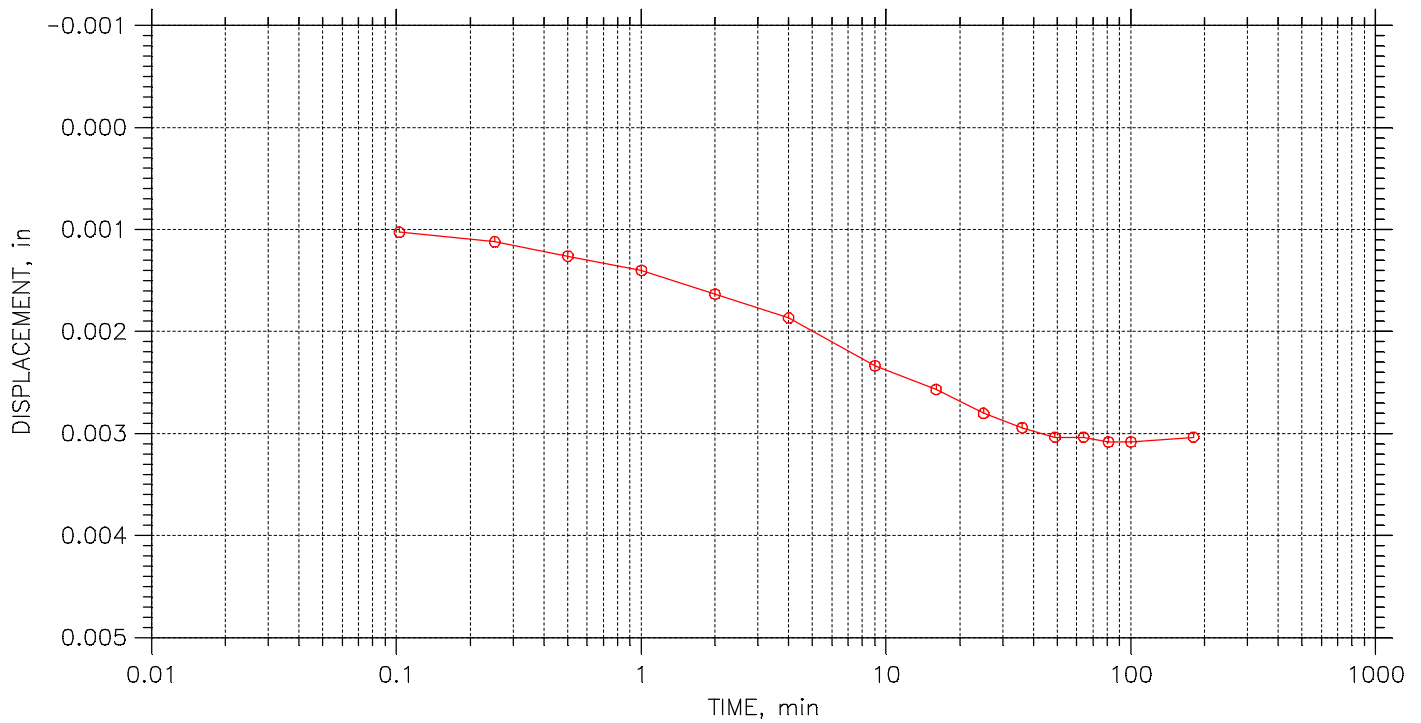
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 23

Stress: 0.5 tsf



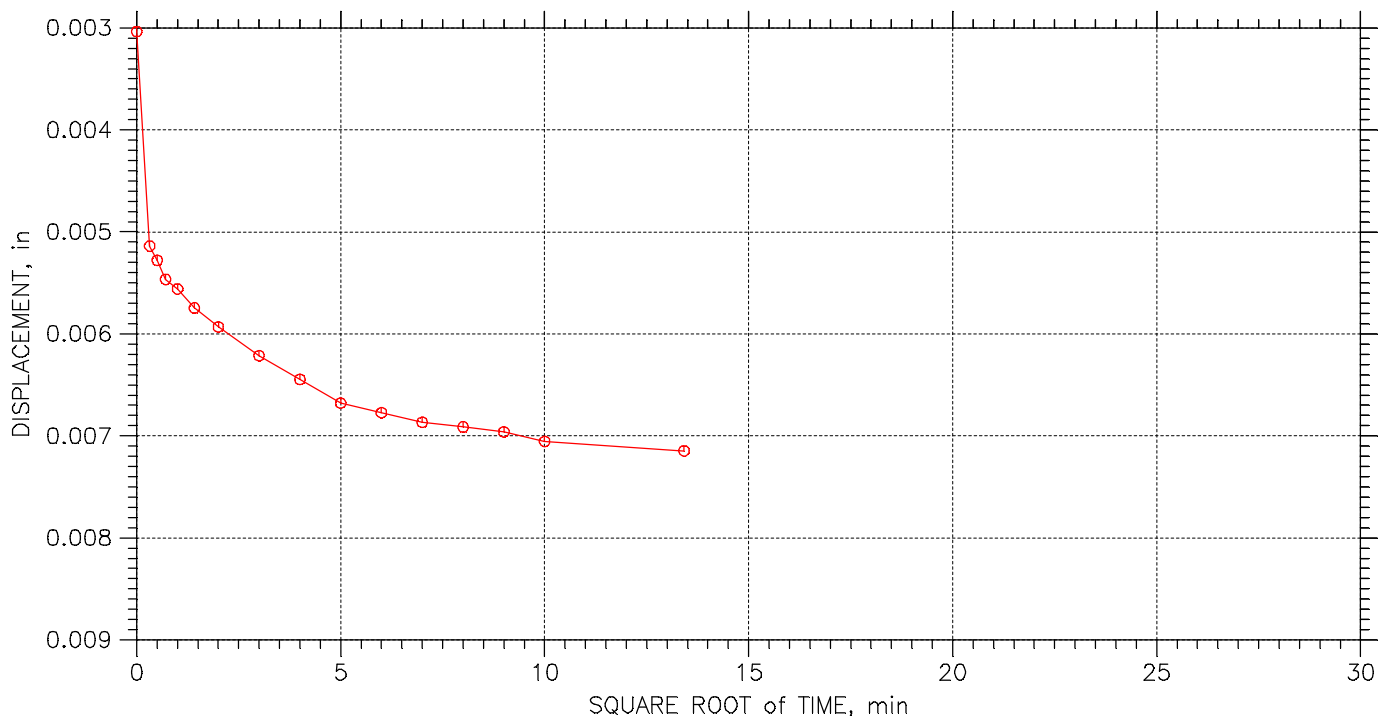
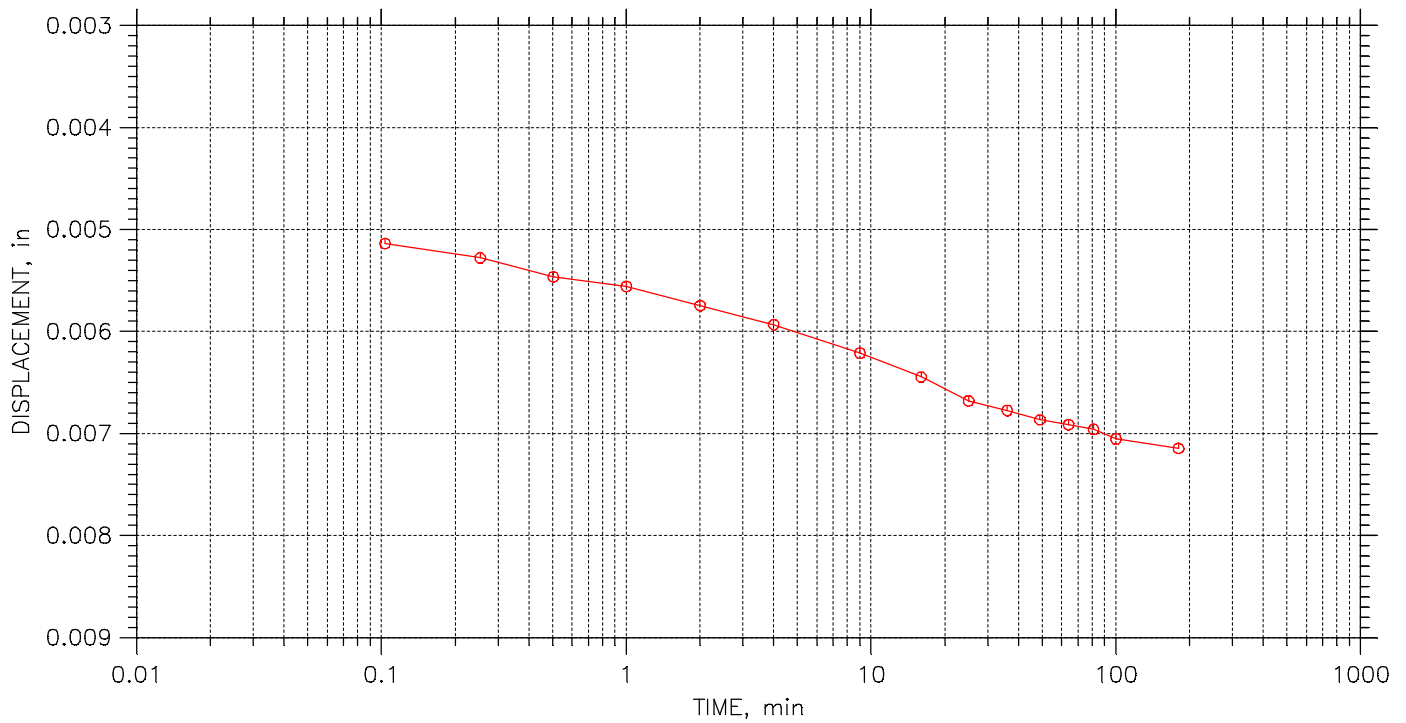
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	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 3.3 tsf Cc = 0.251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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 23

Stress: 0.75 tsf



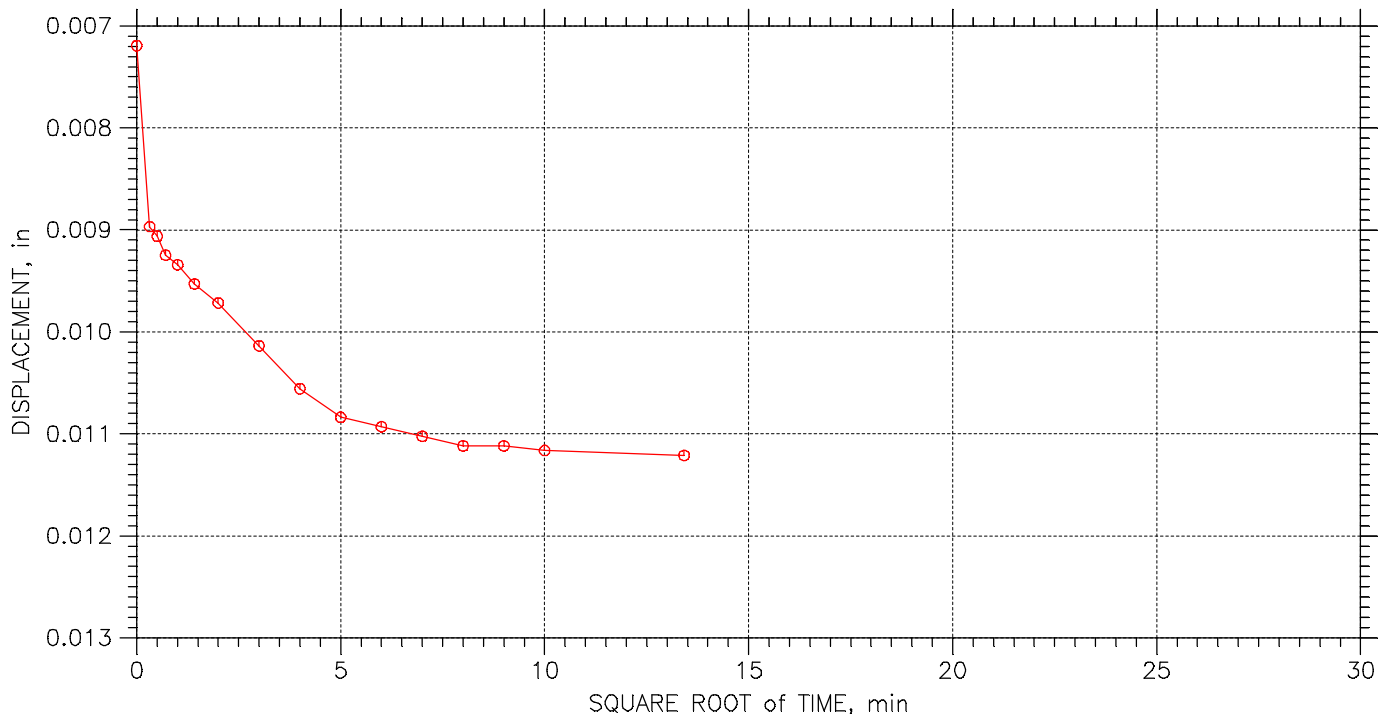
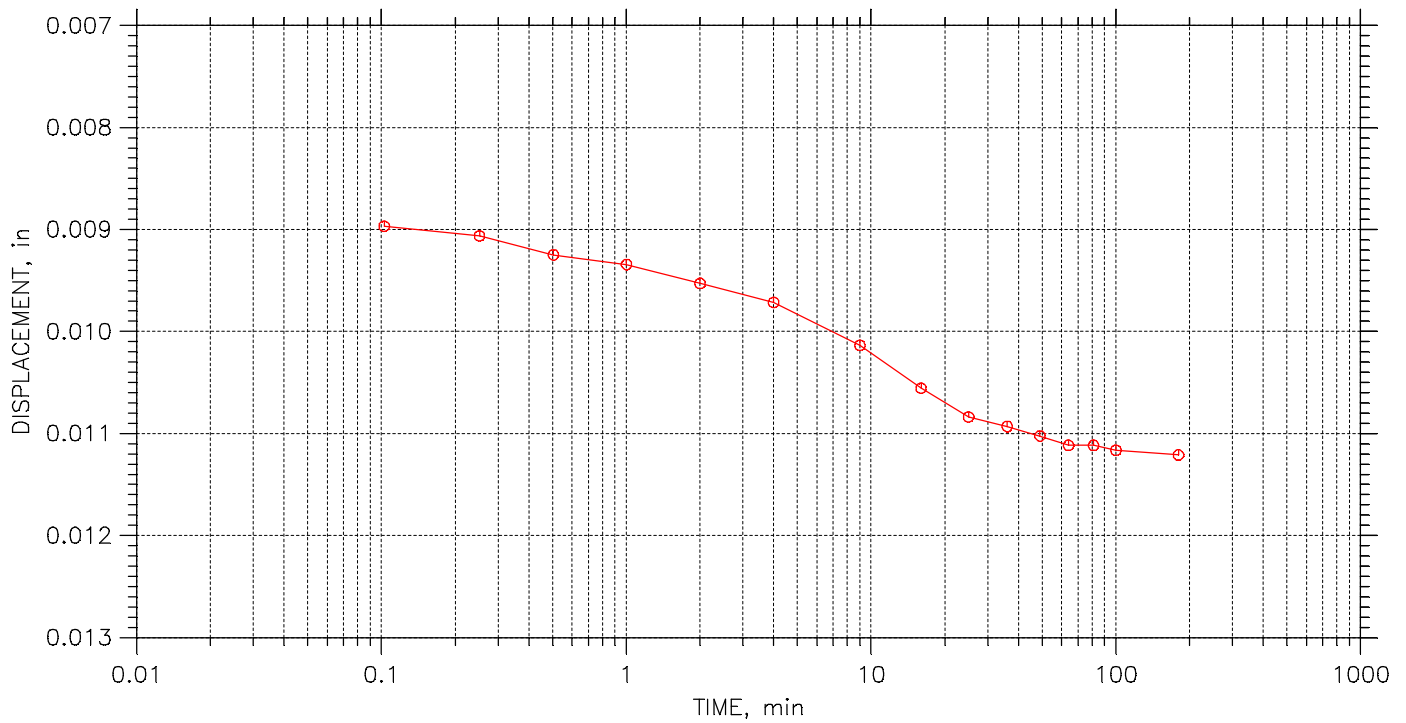
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 23

Stress: 1. tsf



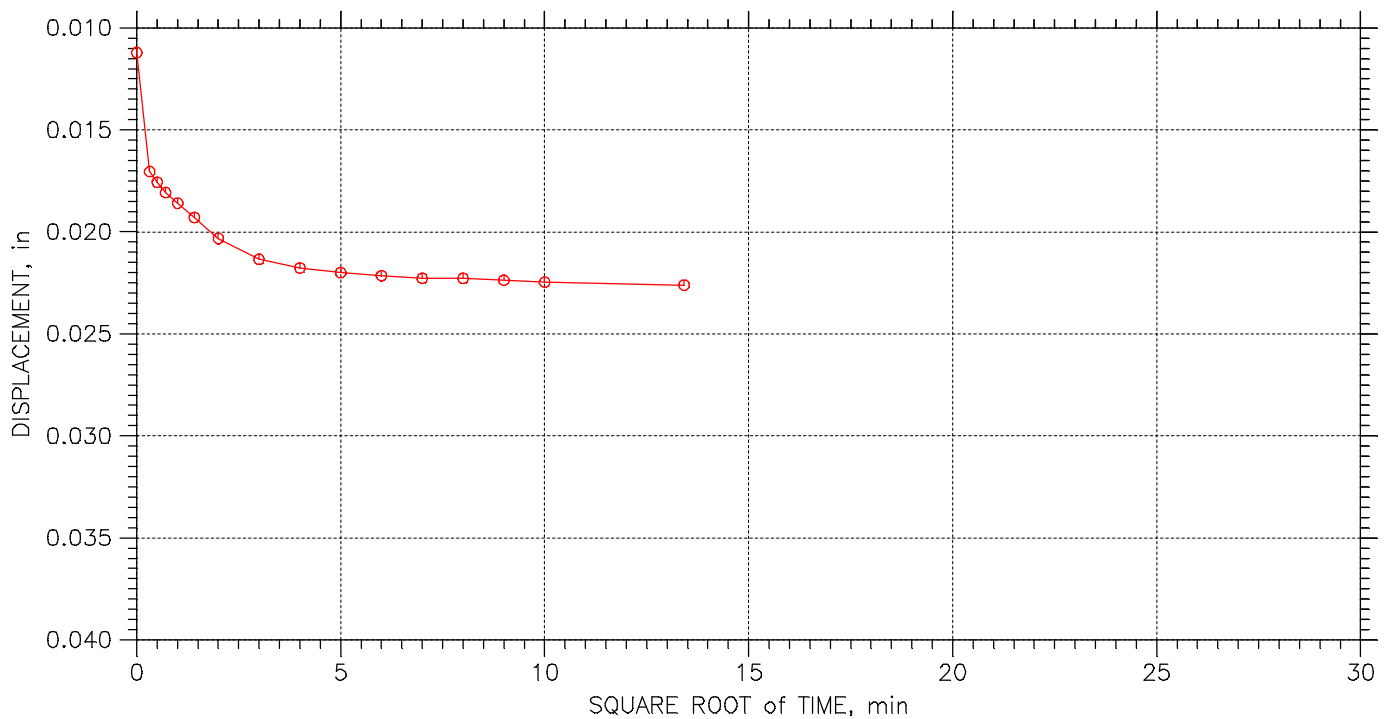
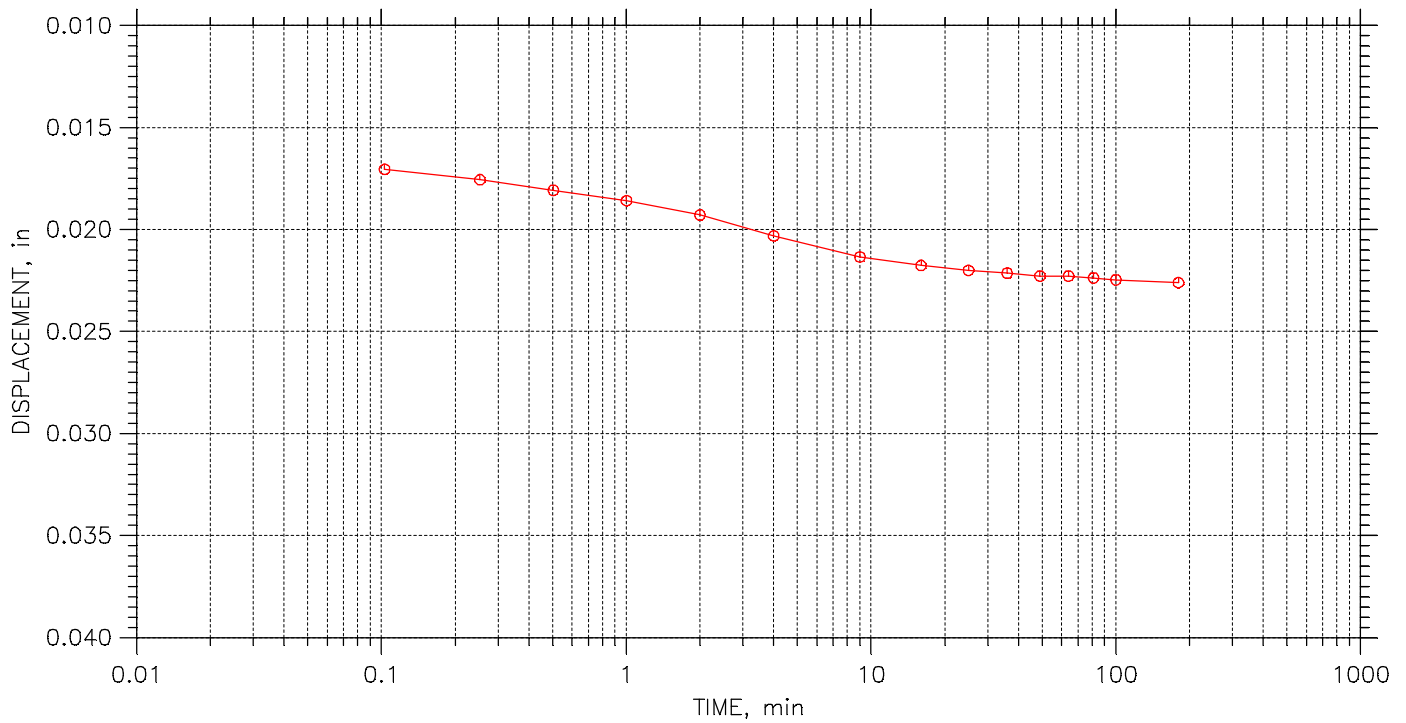
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 23

Stress: 2. tsf



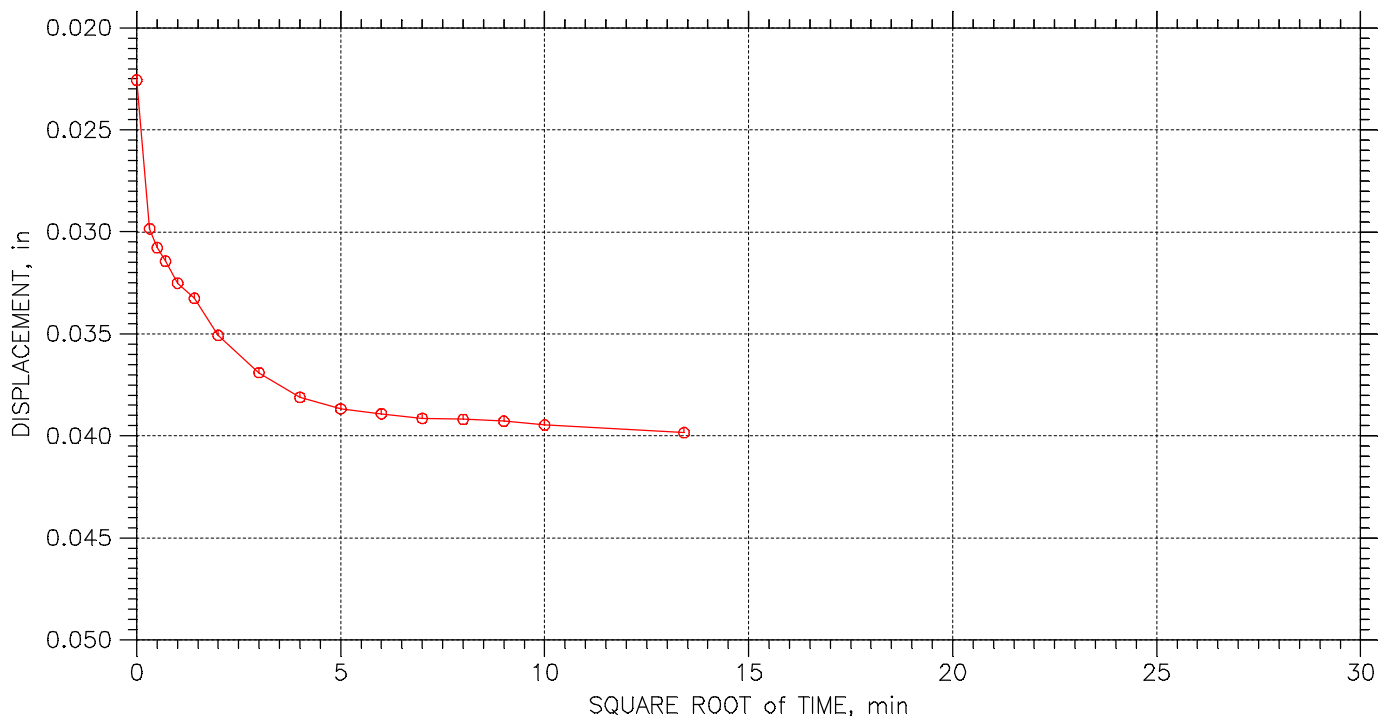
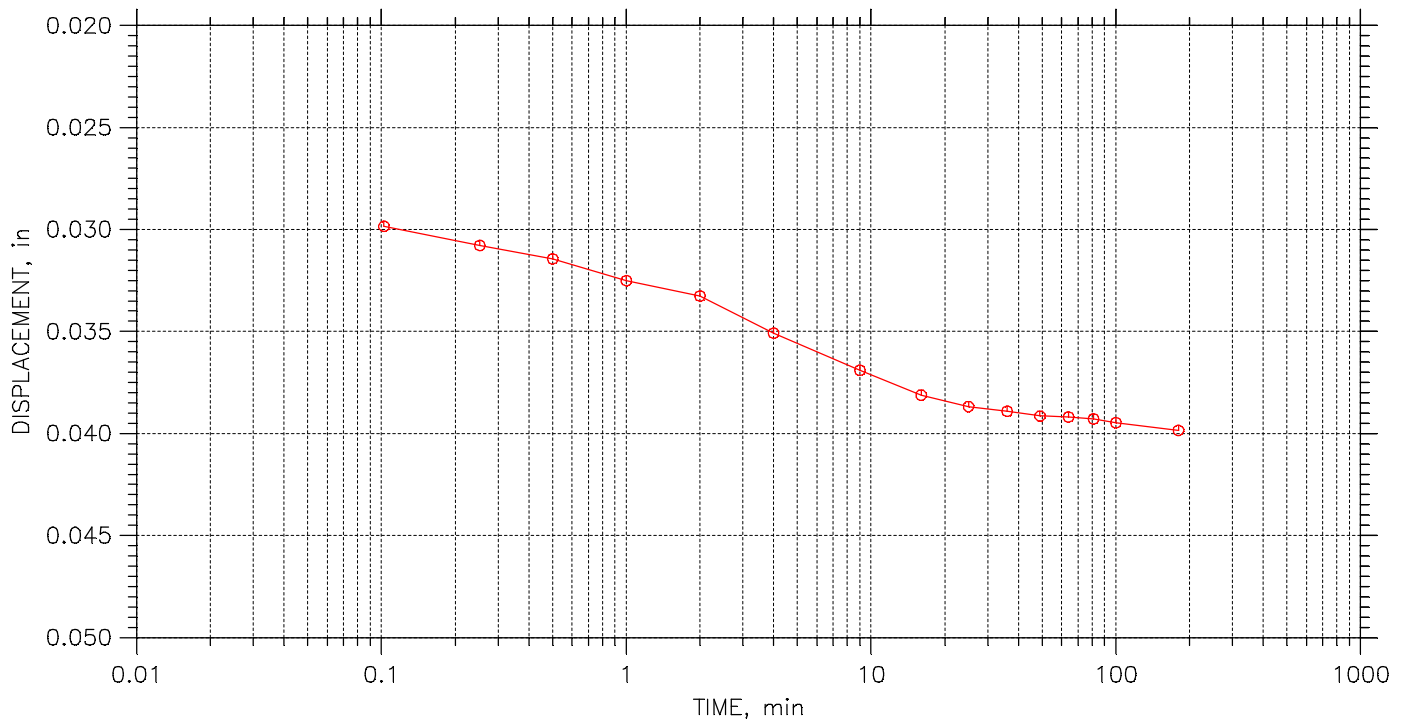
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 23

Stress: 4. tsf



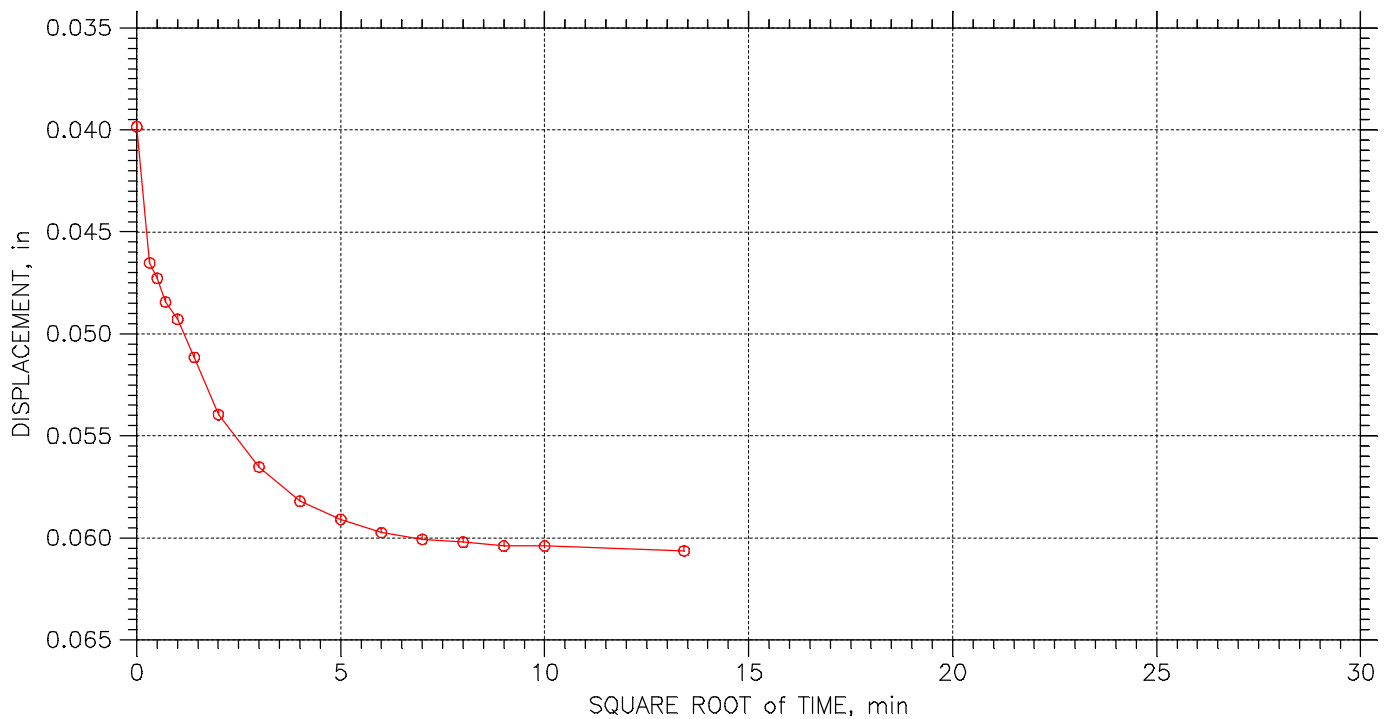
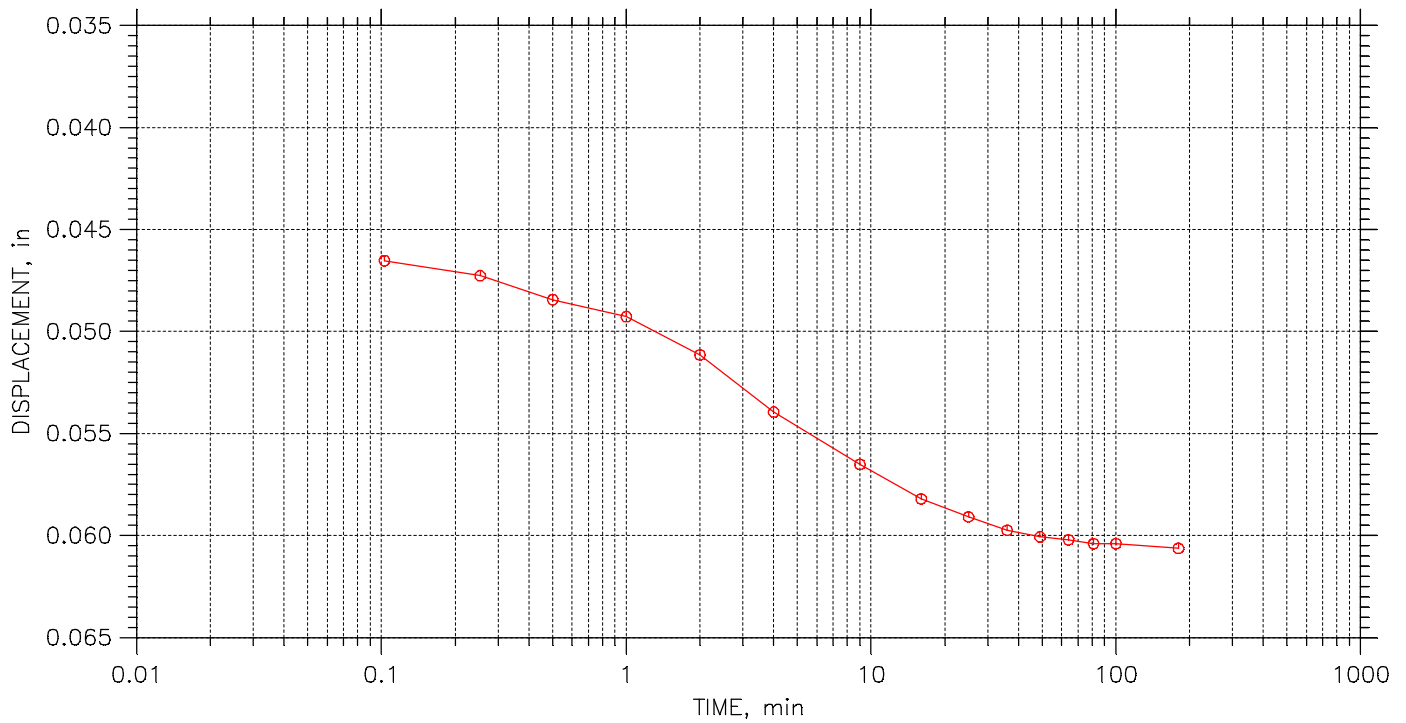
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 23

Stress: 8. tsf



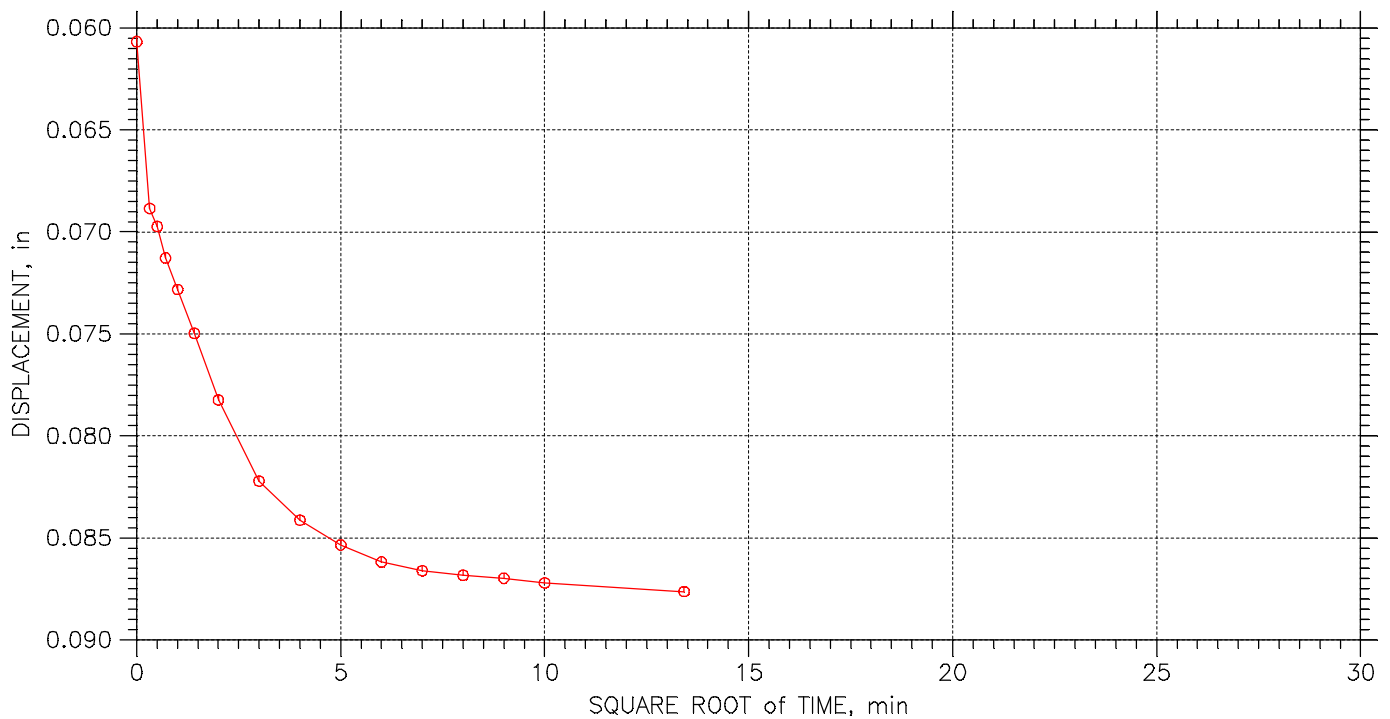
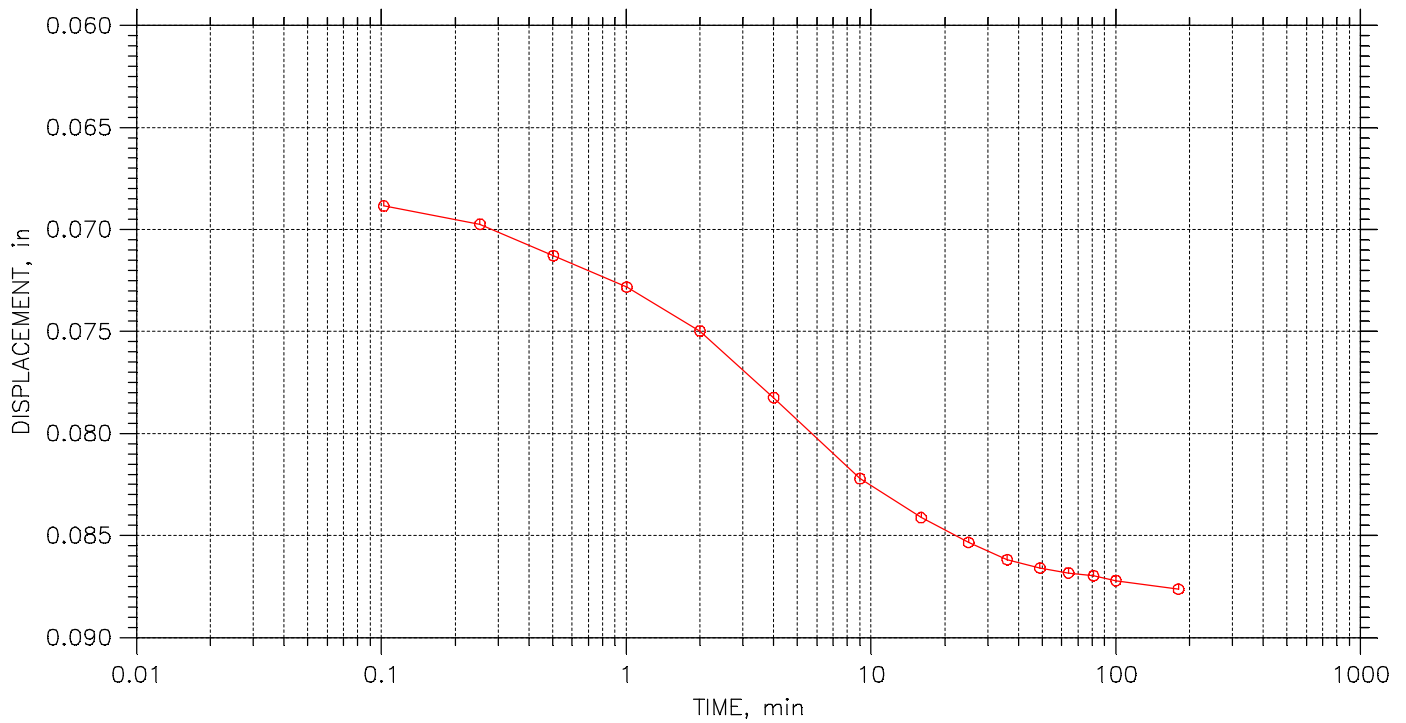
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 23

Stress: 16. tsf



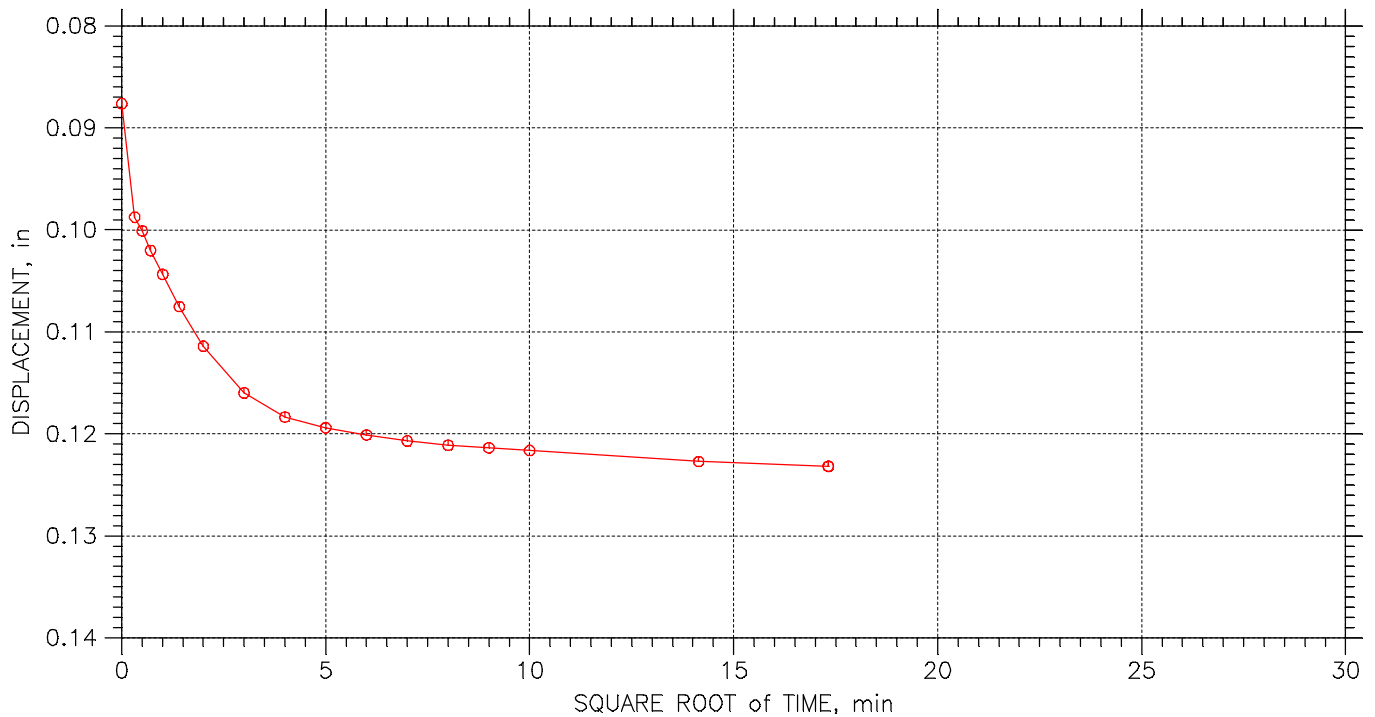
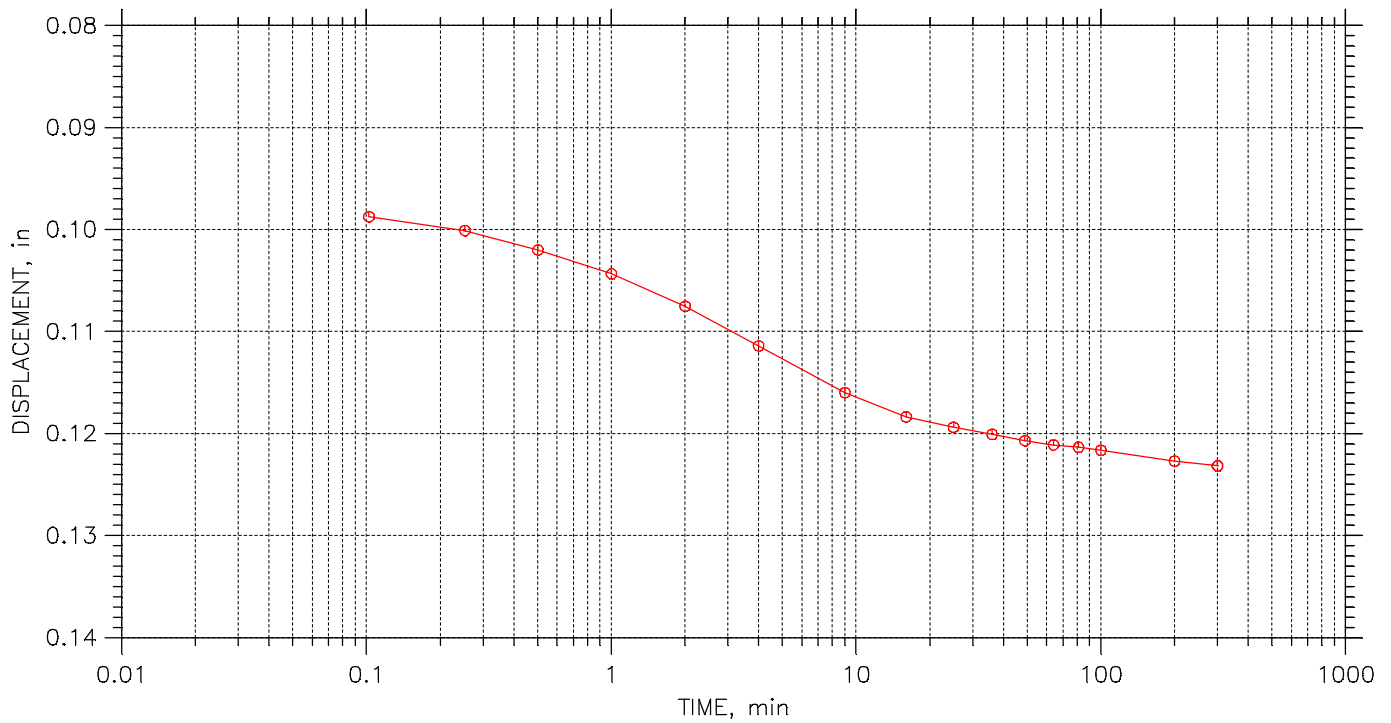
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 23

Stress: 32. tsf



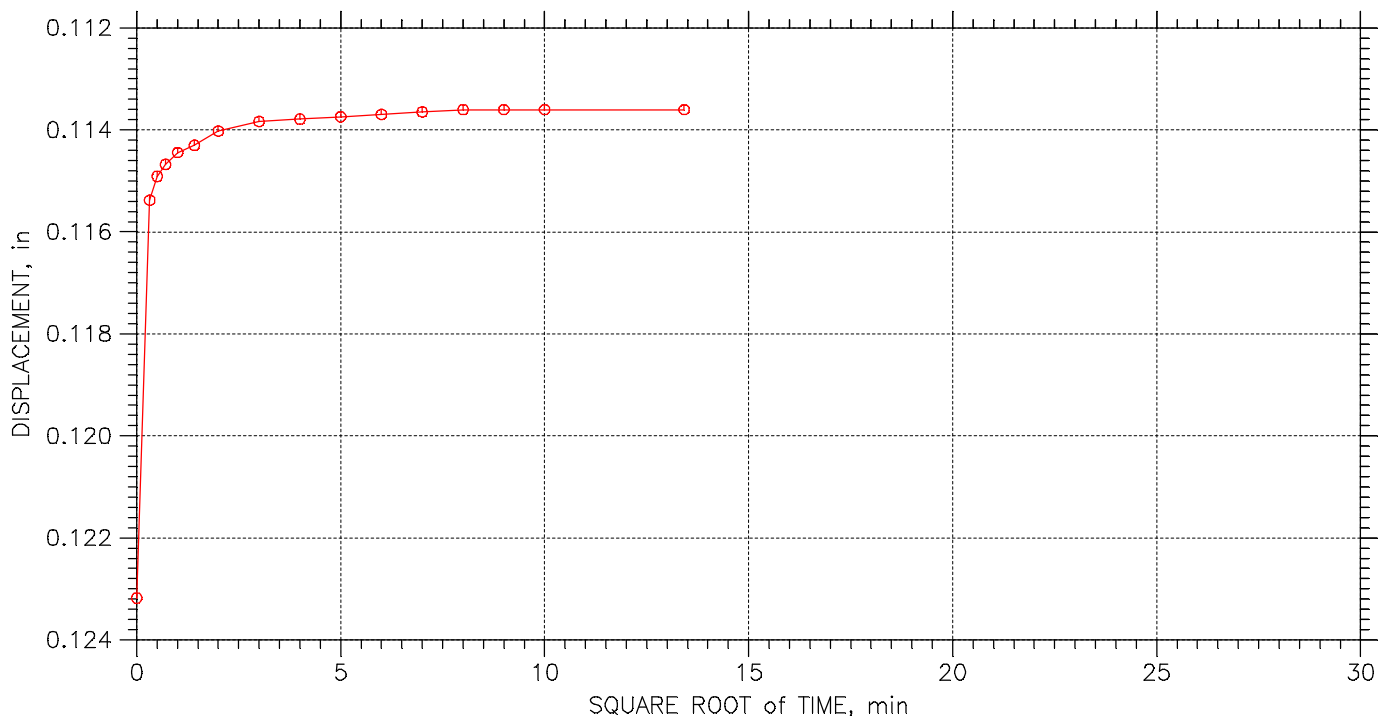
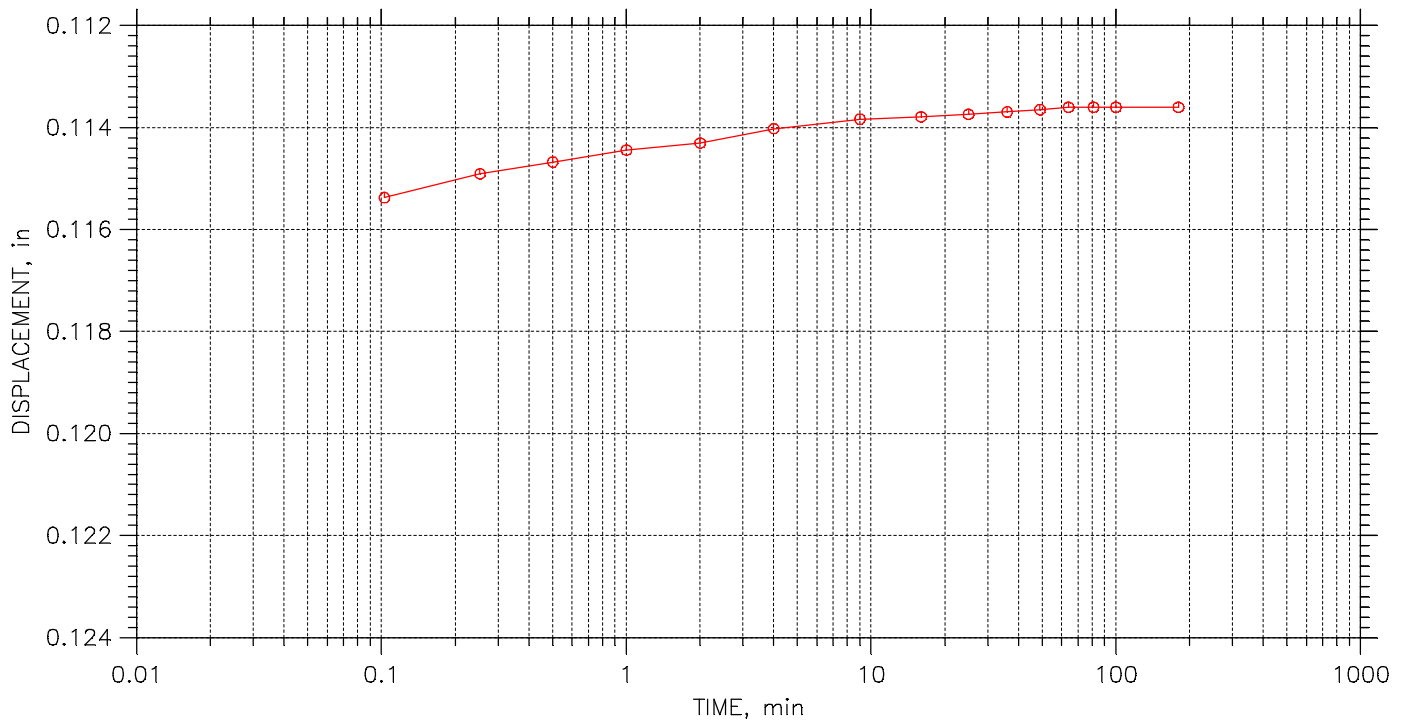
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 23

Stress: 16. tsf



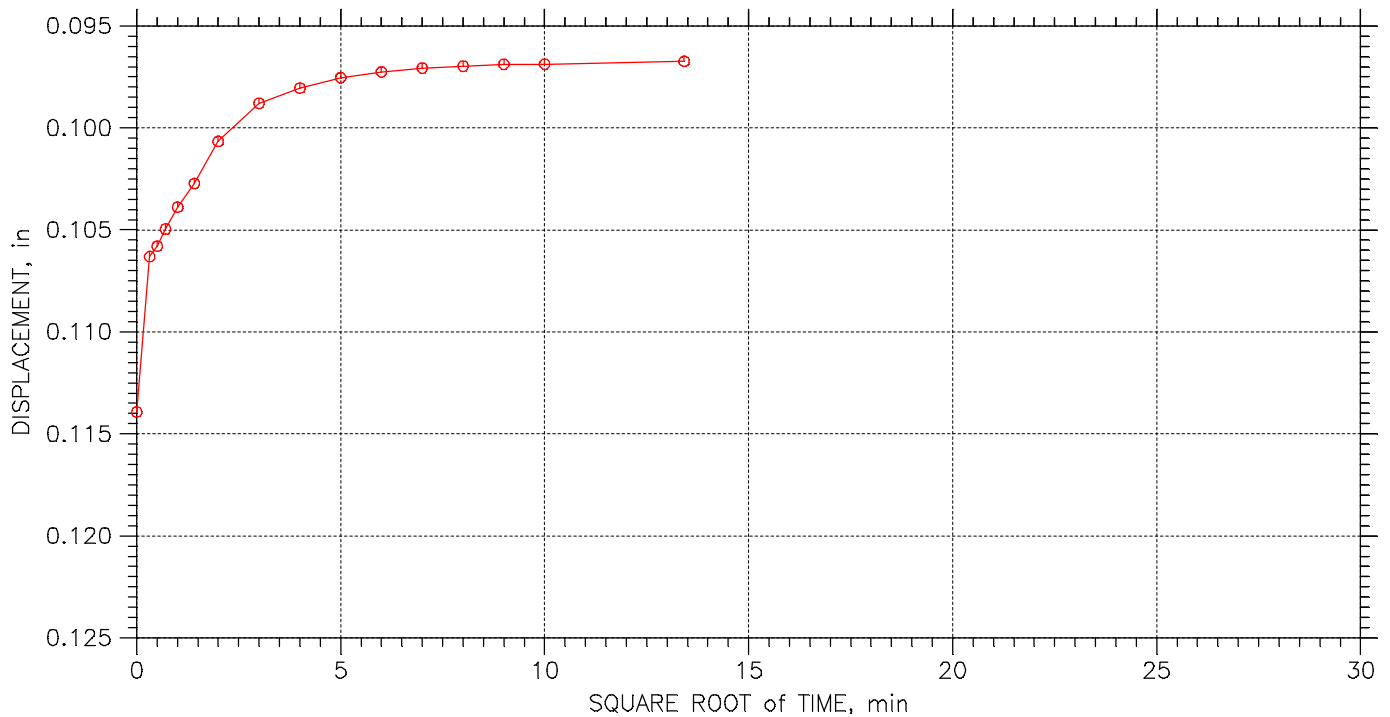
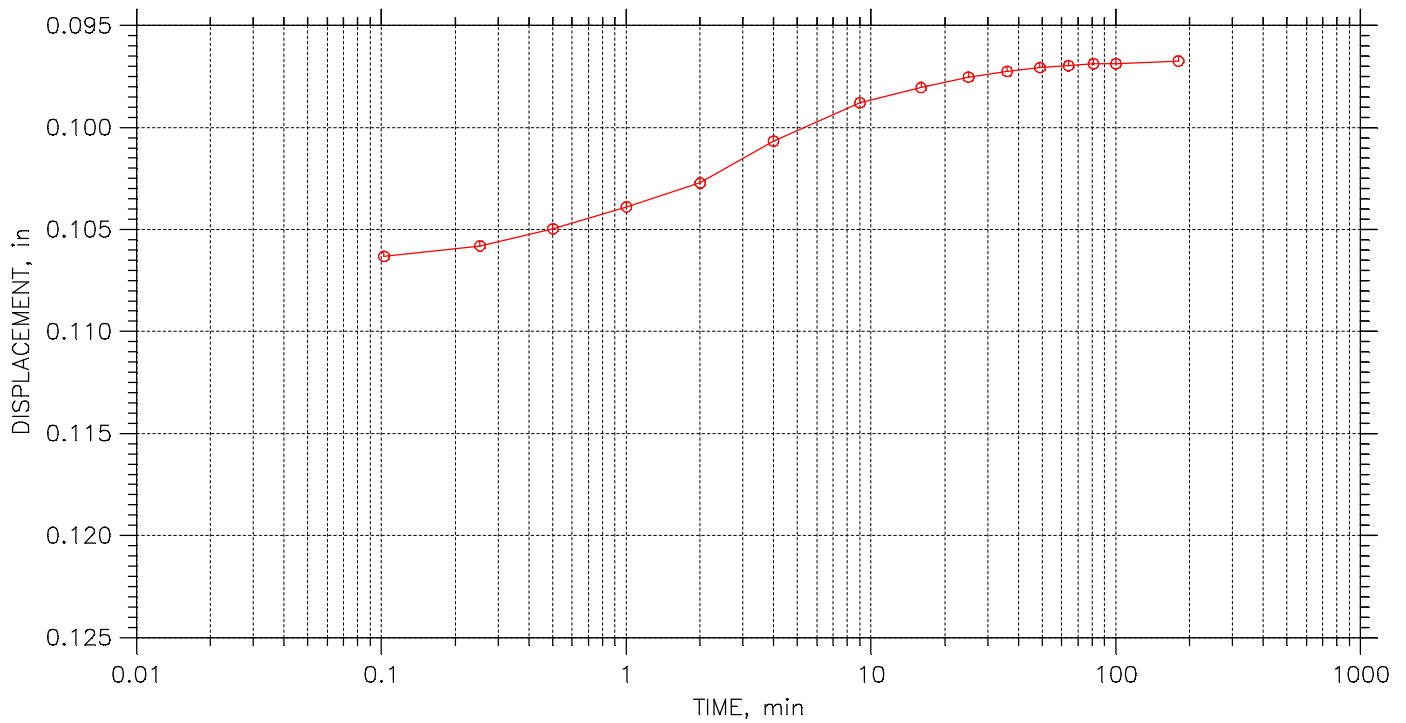
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 23

Stress: 4. tsf



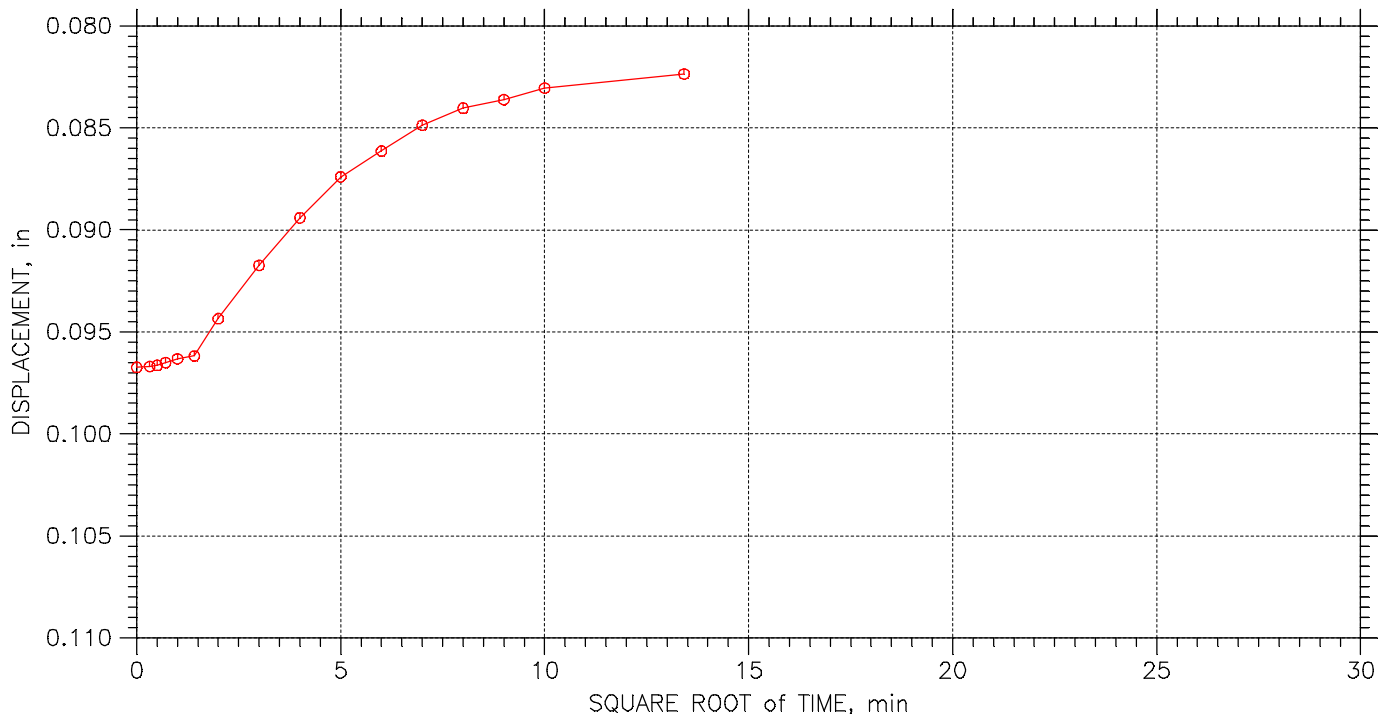
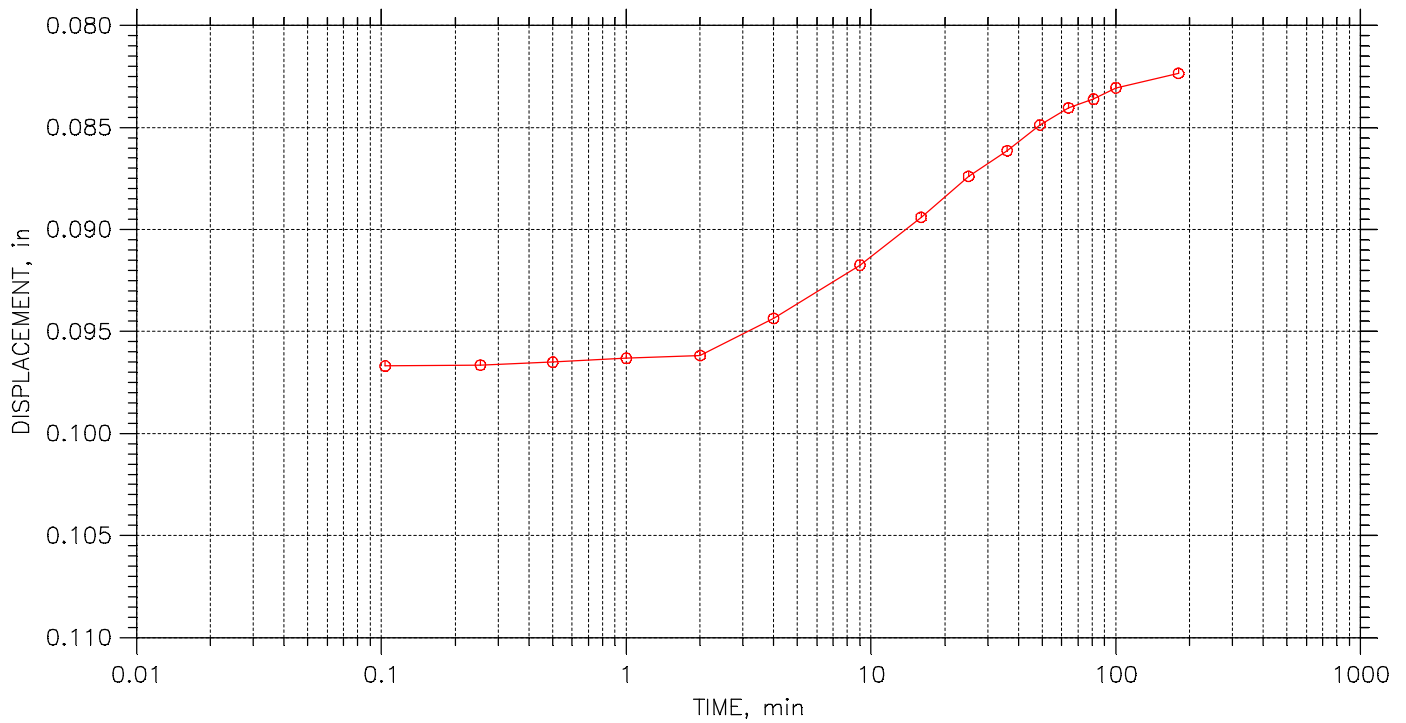
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 23

Stress: 1. tsf



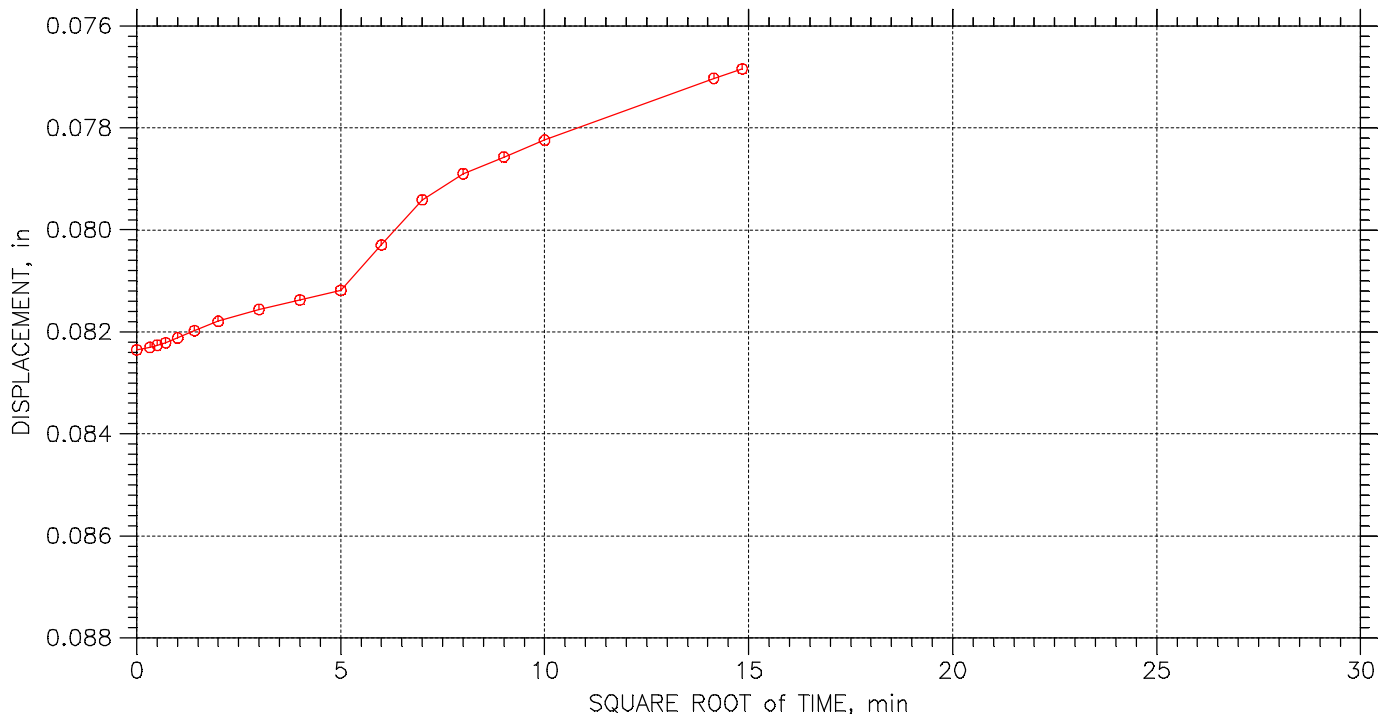
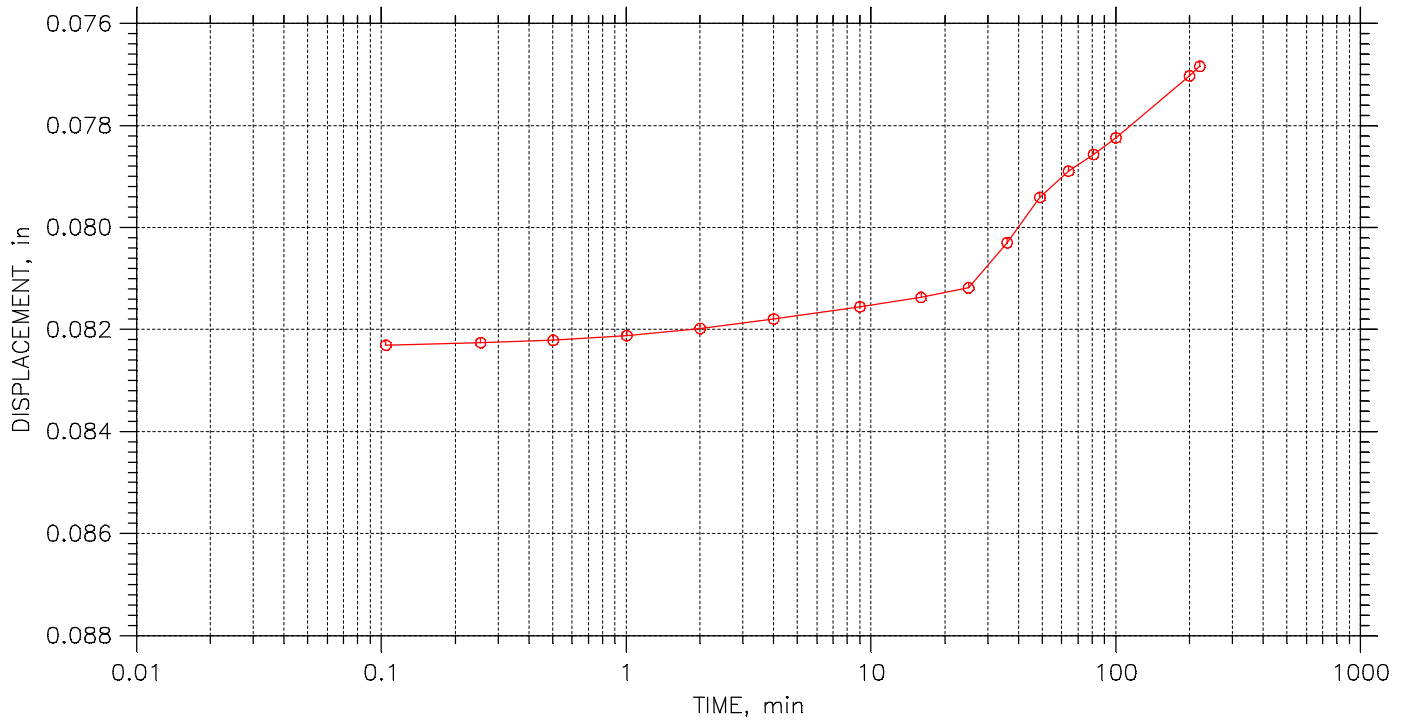
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 23

Stress: 0.5 tsf



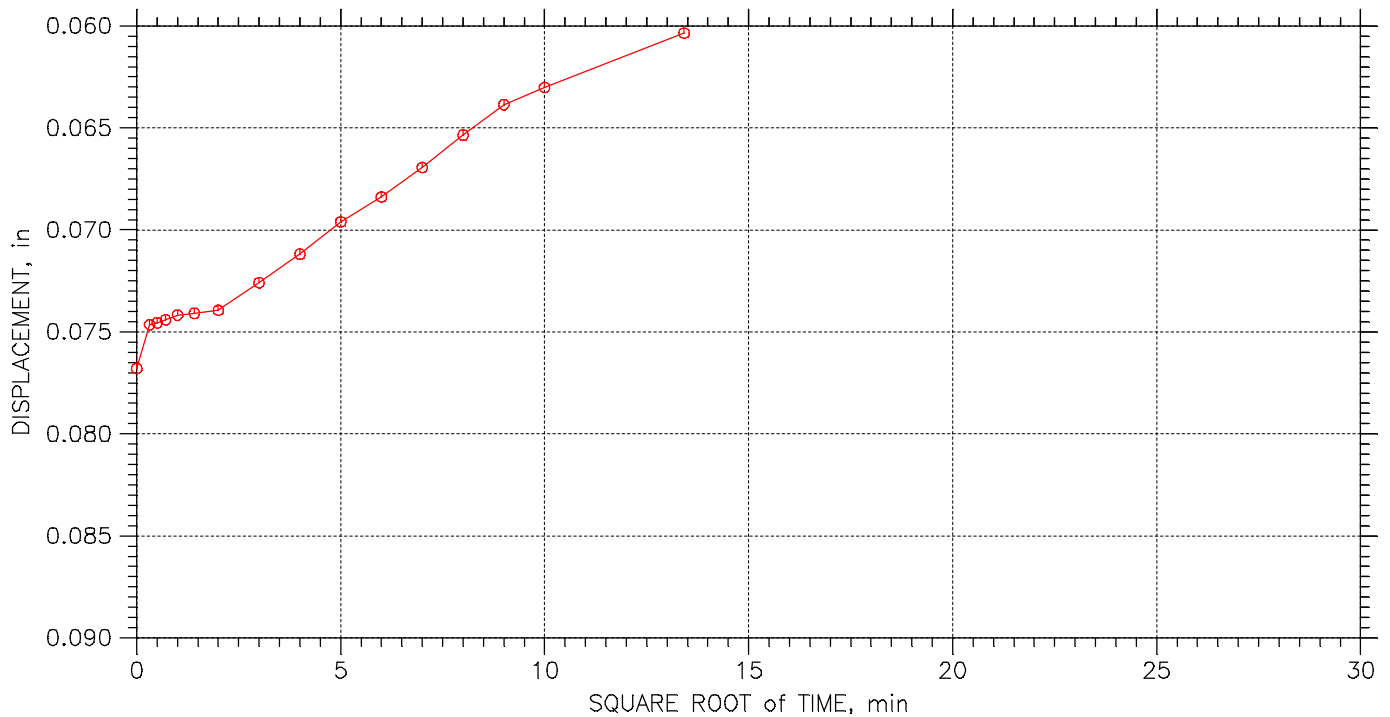
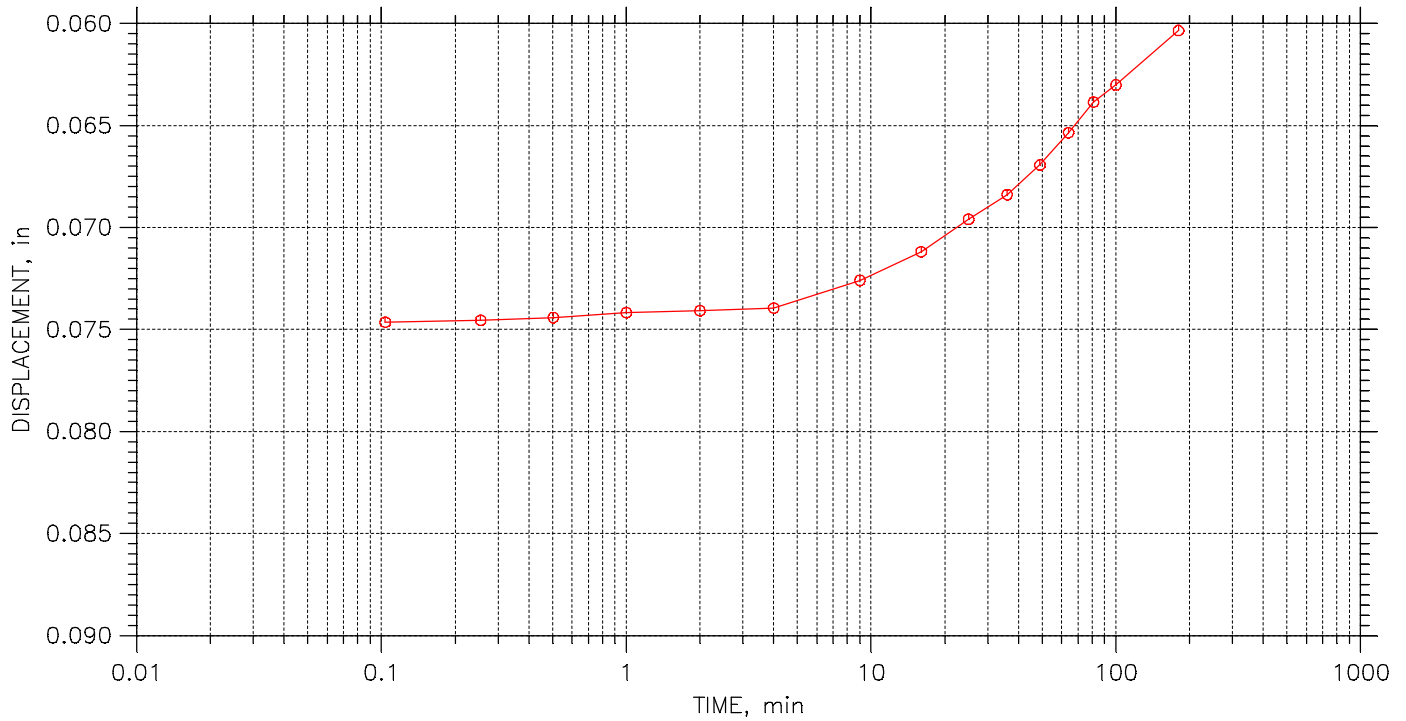
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	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-1	Test Date: 9/29/2022	Depth: 35.0'-37.0'
	Test No.: BW23537CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 3.3 tsf Cc = 0.251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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 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'
	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		

CONSOLIDATION TEST DATA

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

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
 Initial Void Ratio: 0.70
 Final Void Ratio: 0.56

Liquid Limit: 35
 Plastic Limit: 13
 Plasticity Index: 22

Initial Height: 0.75 in
 Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	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	---

CONSOLIDATION TEST DATA

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

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

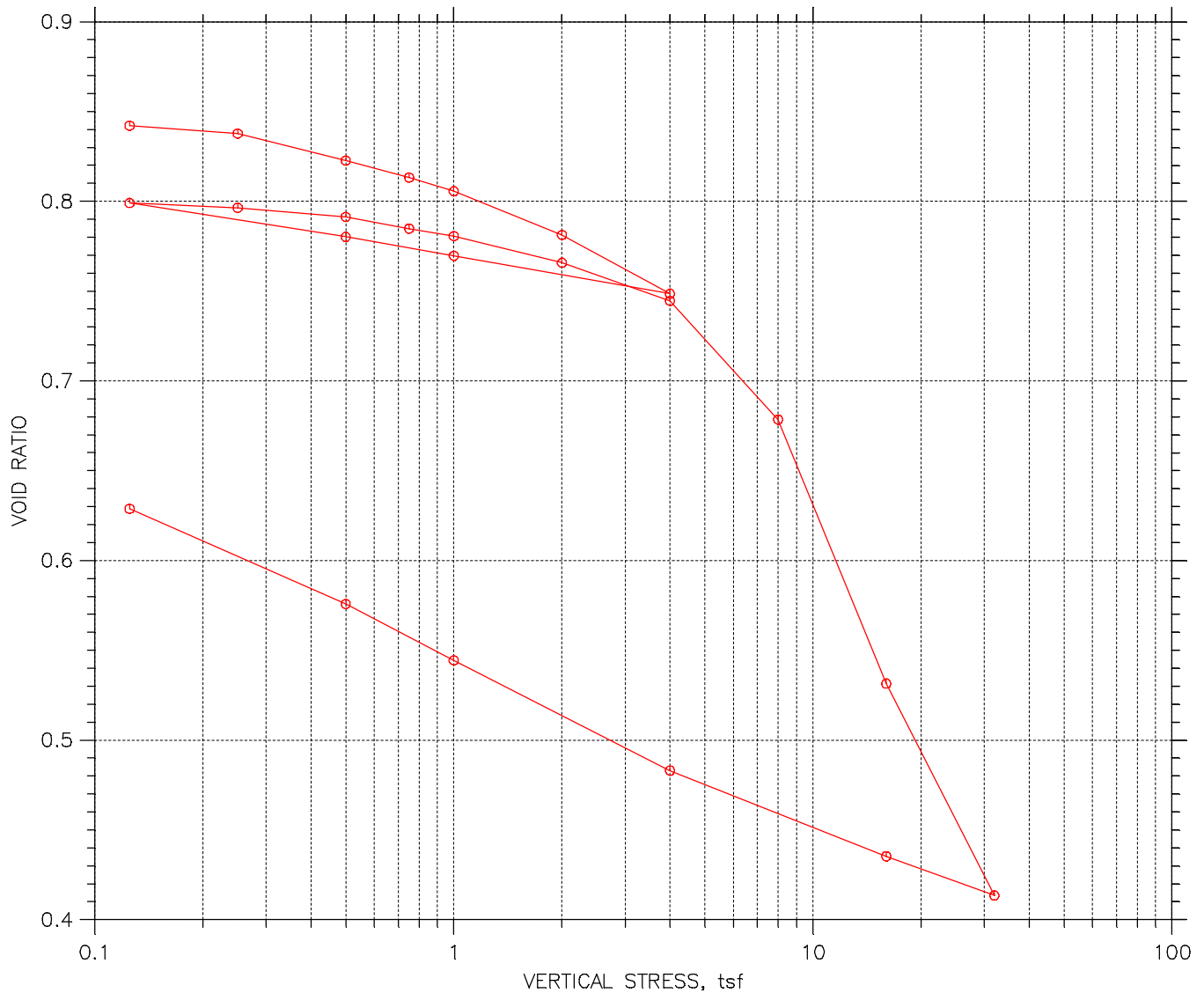


Soil Description: REDDISH BROWN LEAN CLAY (CL)


Remarks: Pc = 3.3 tsf Cc = 0.251 Ccr = 0.064 TEST PERFORMED AS PER ASTM D2435

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. ft^2/sec	Log ft^2/sec	Ave. 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	-0.004905	0.707	-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	0.003737	0.687	0.50	27.5	0.0	1.16e-007	0.00e+000	1.16e-007
6	2	0.02167	0.647	2.90	0.1	0.0	3.26e-005	0.00e+000	3.26e-005
7	1	0.01504	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	0.5	0.003036	0.689	0.41	2.1	0.0	1.49e-006	0.00e+000	1.49e-006
12	0.75	0.007147	0.679	0.95	0.9	0.0	3.47e-006	0.00e+000	3.47e-006
13	1	0.01121	0.670	1.50	5.8	0.0	5.35e-007	0.00e+000	5.35e-007
14	2	0.02261	0.644	3.02	0.9	0.0	3.36e-006	0.00e+000	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

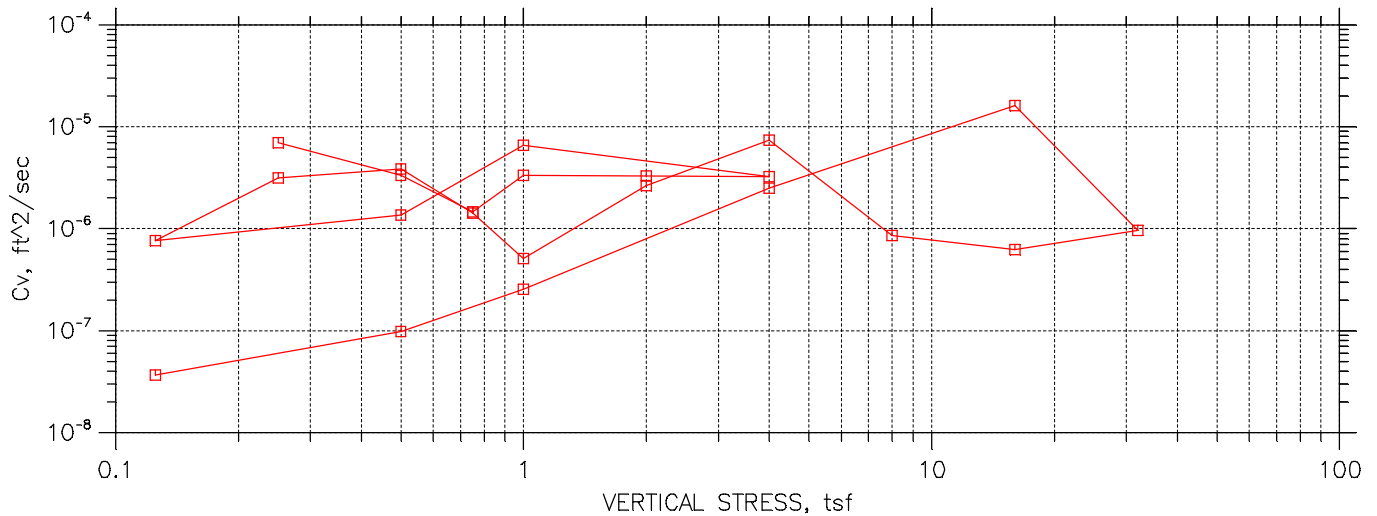
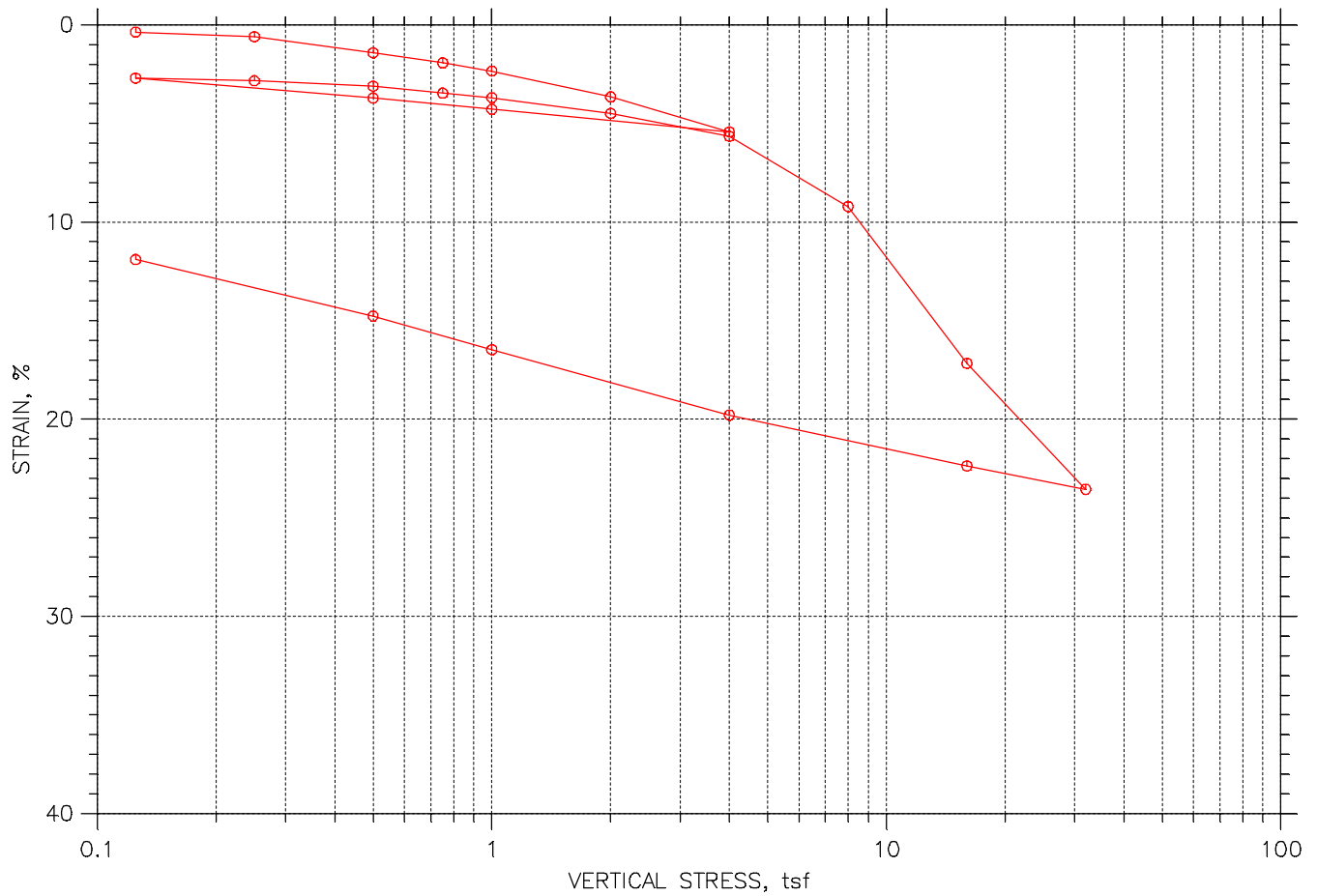
ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435




				Before Test	After Test	
				Water Content, %	30.14	23.14
Preconsolidation Pressure: 4.1 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'
	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 PERFORMED AS PER ASTM D2435		

ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



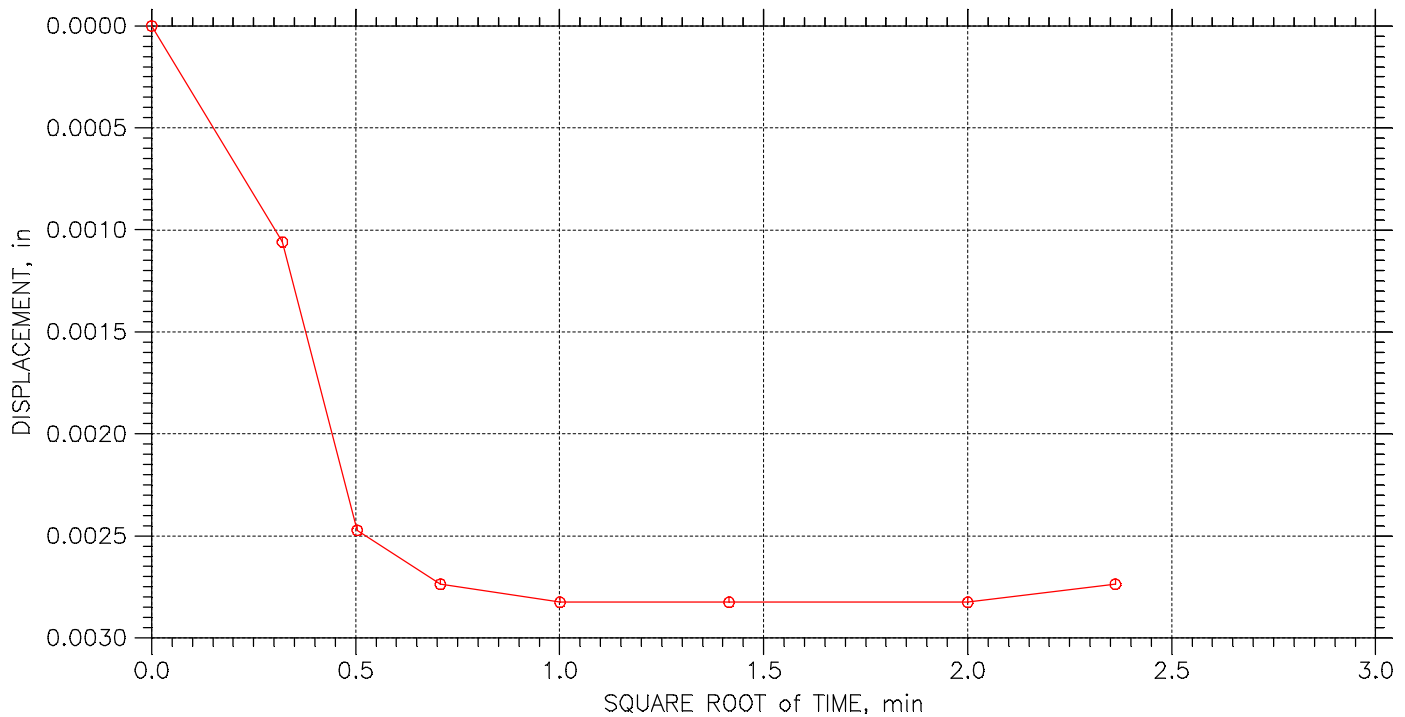
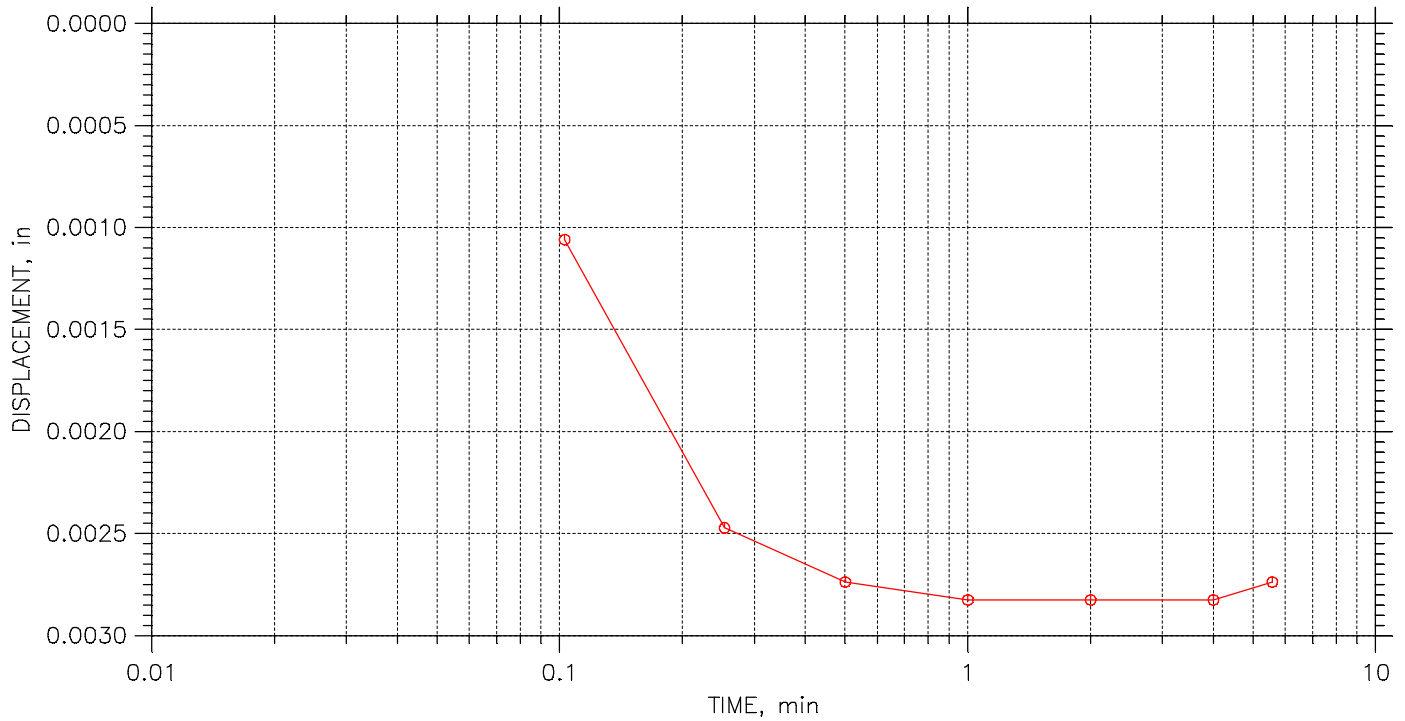
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	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: $P_c = 4.1$ tsf $C_c = 0.409$ $C_{cr} = 0.090$ TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf



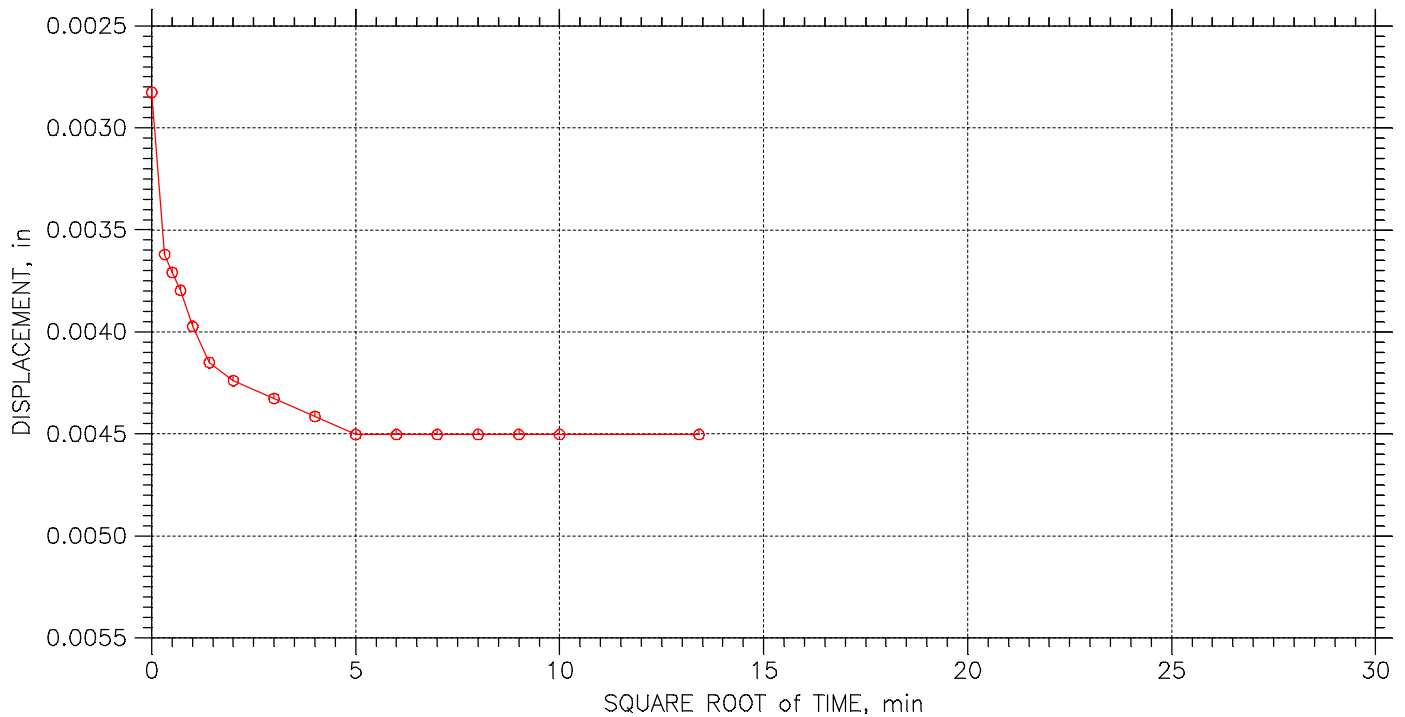
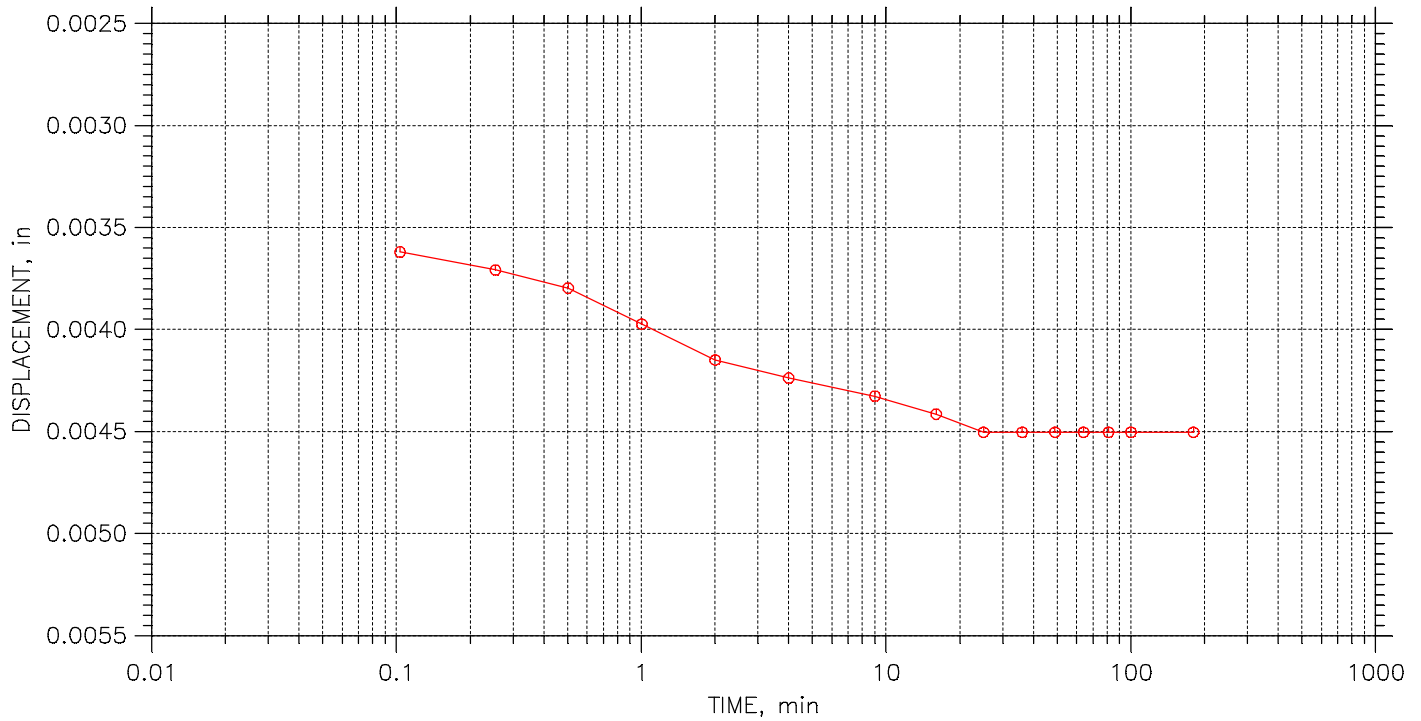
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	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf



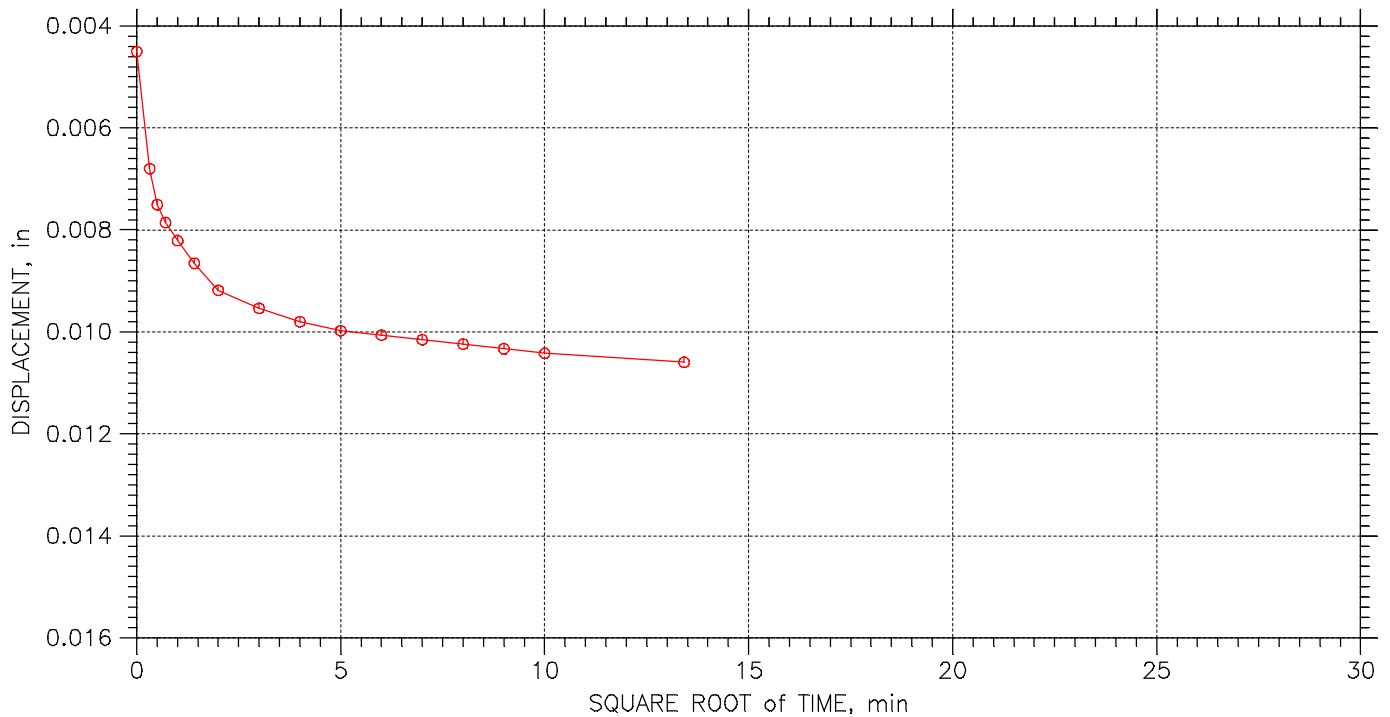
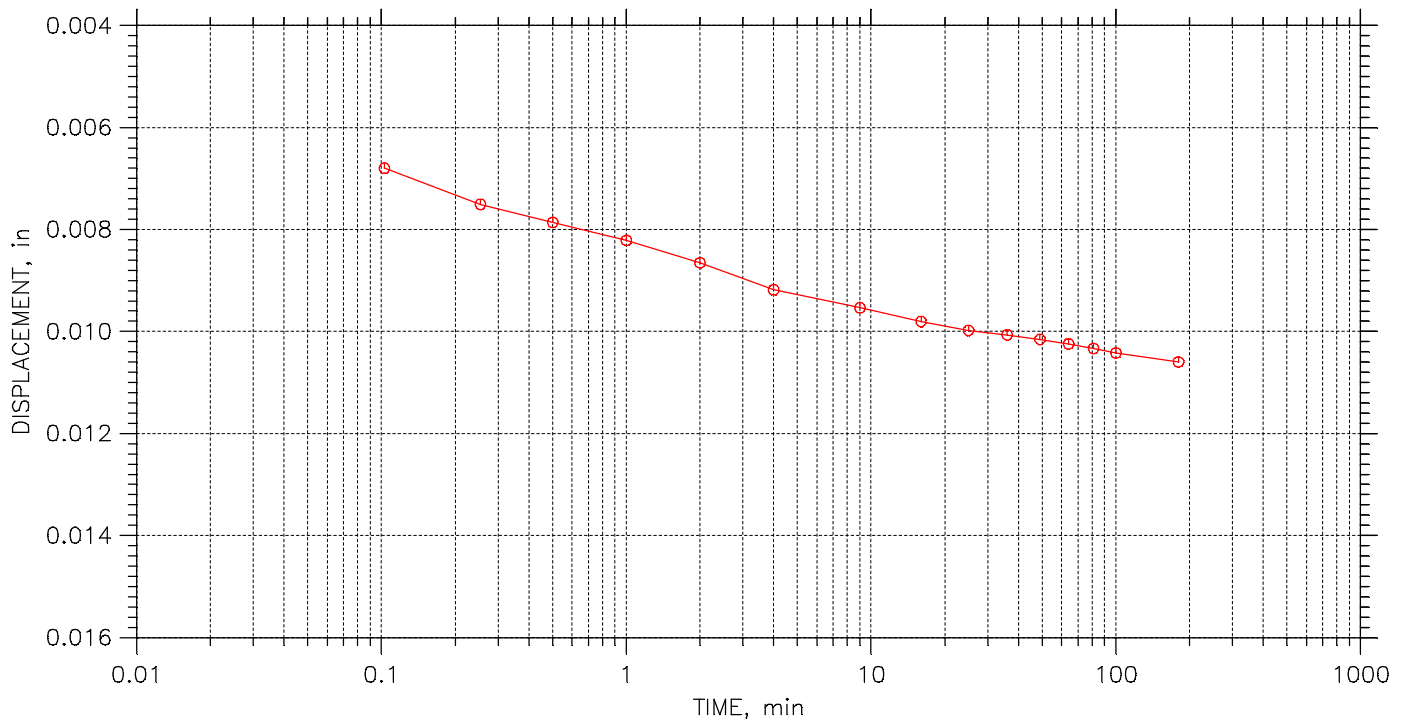
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	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf



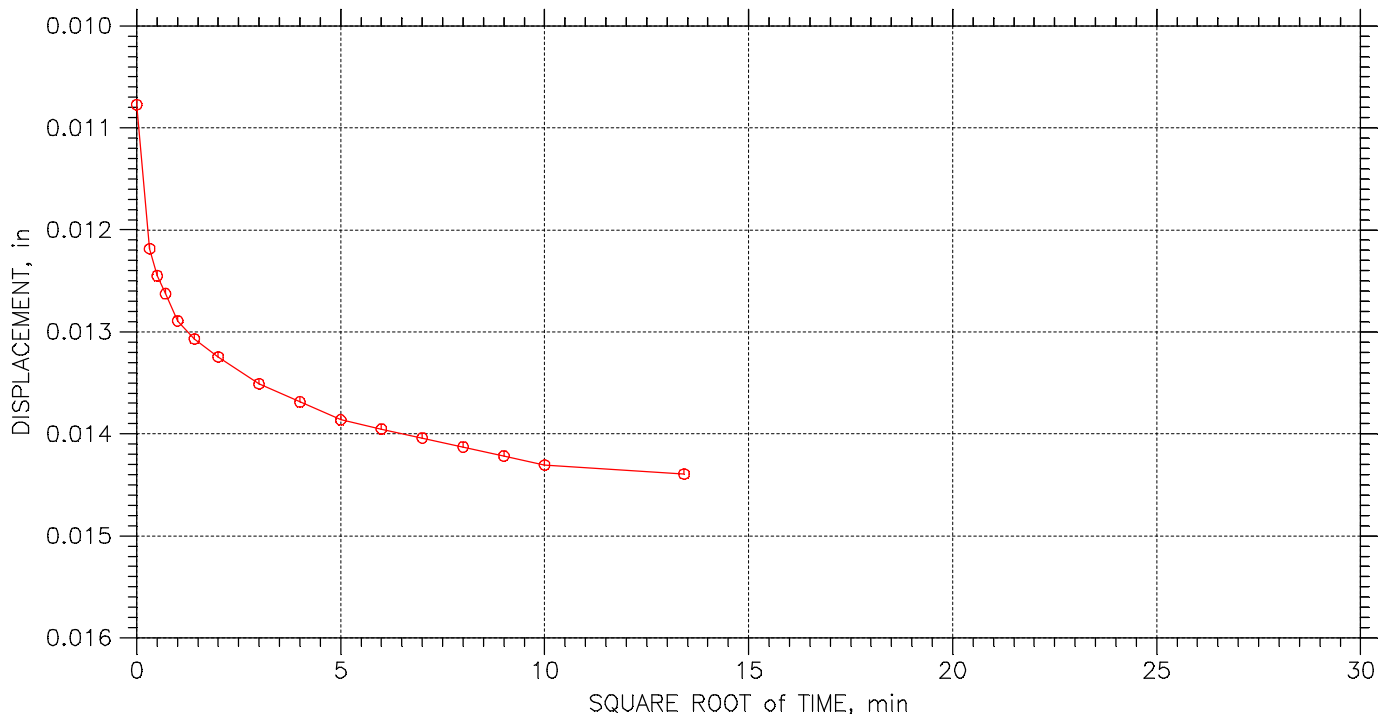
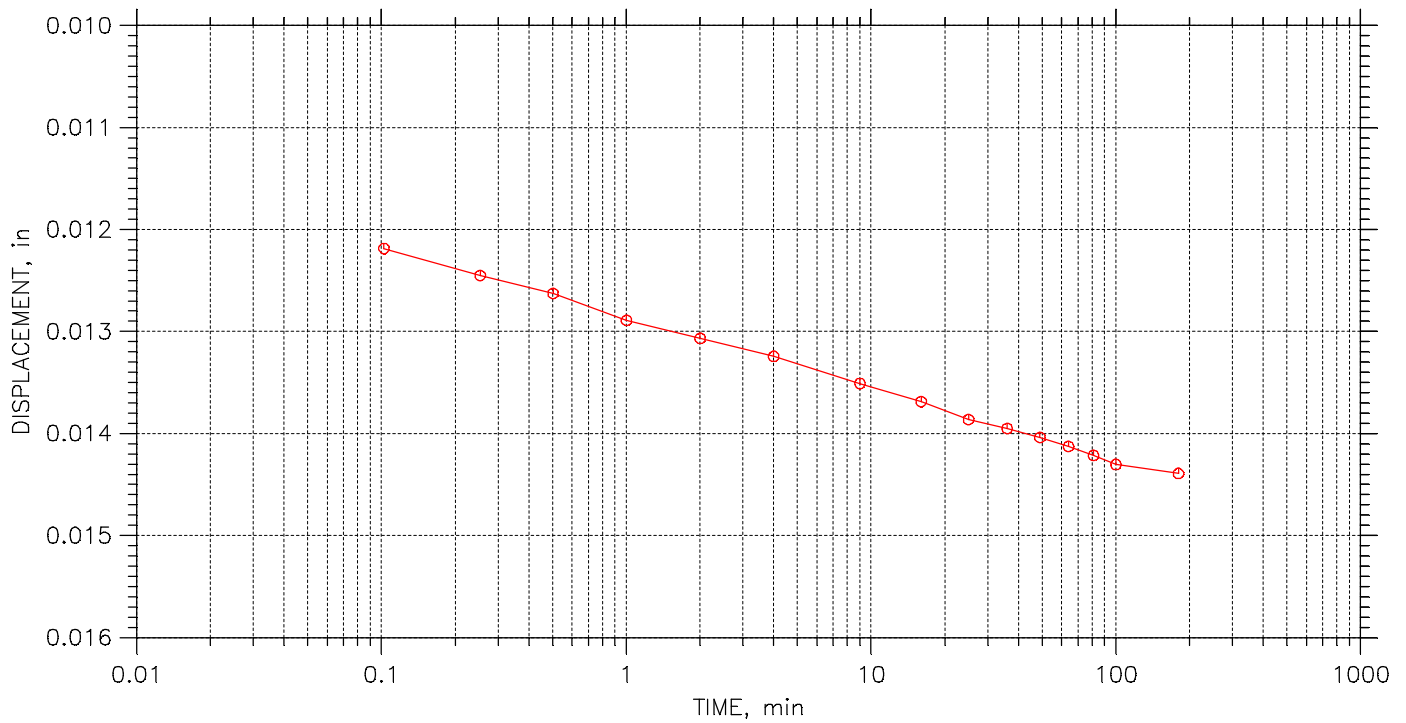
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	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf



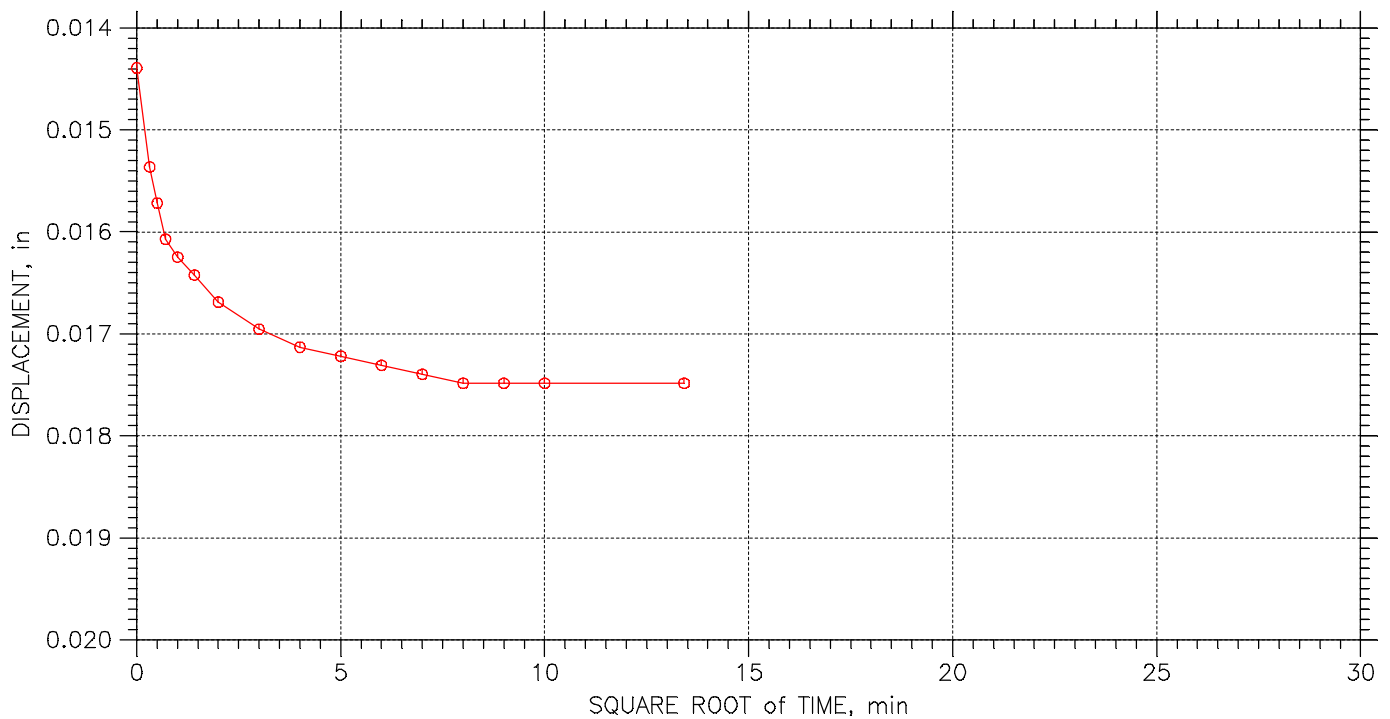
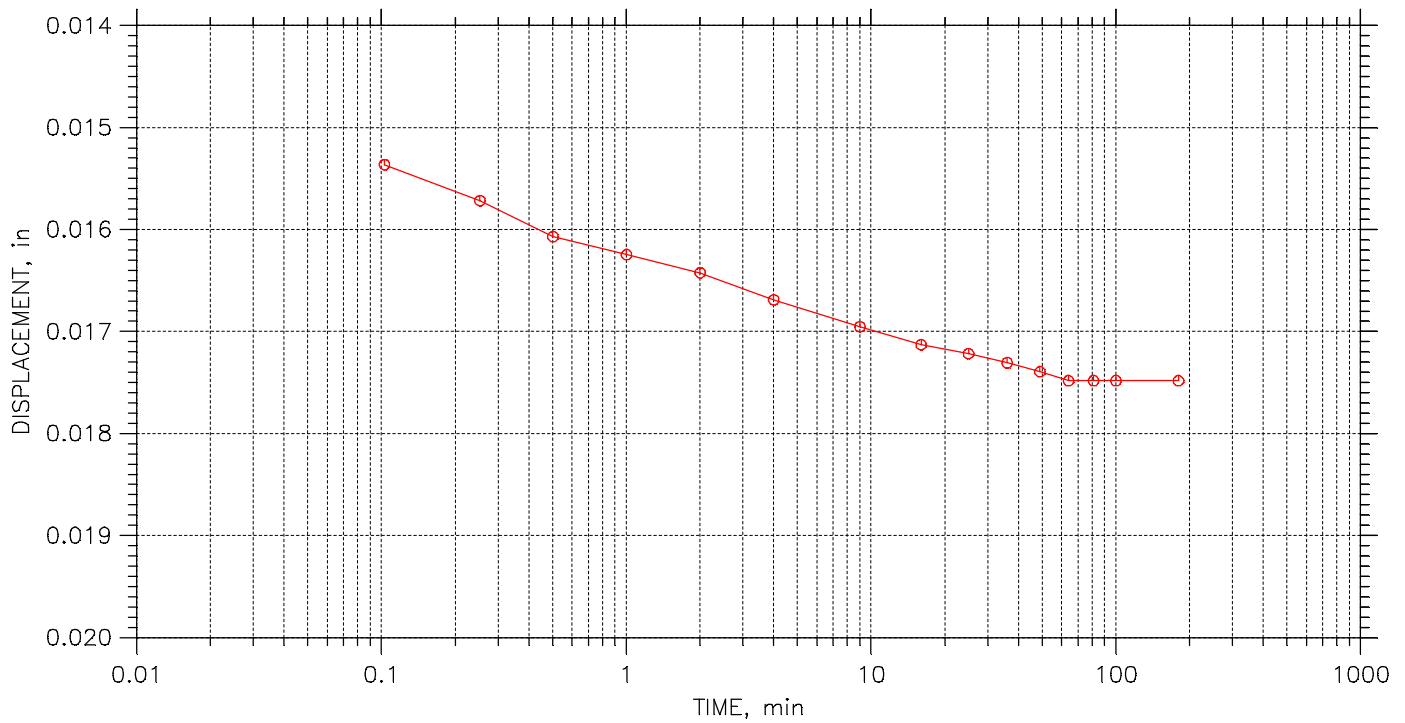
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf



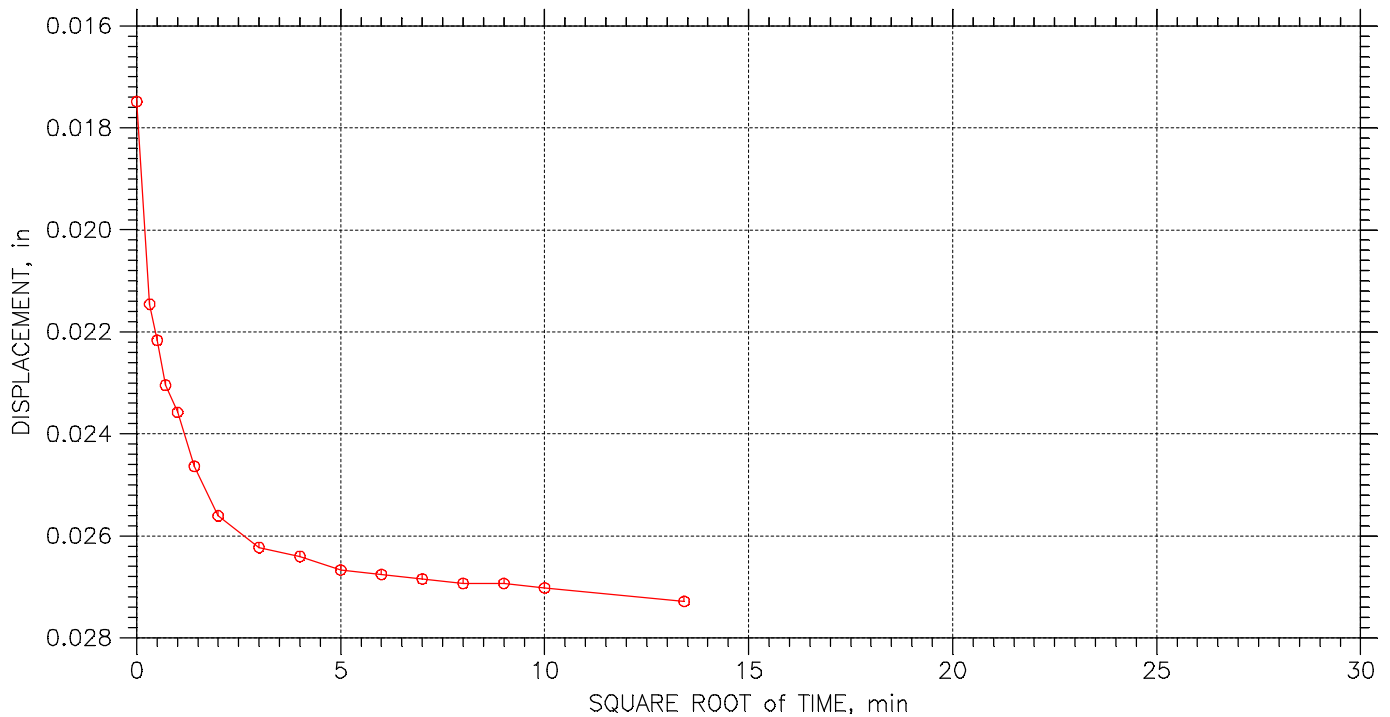
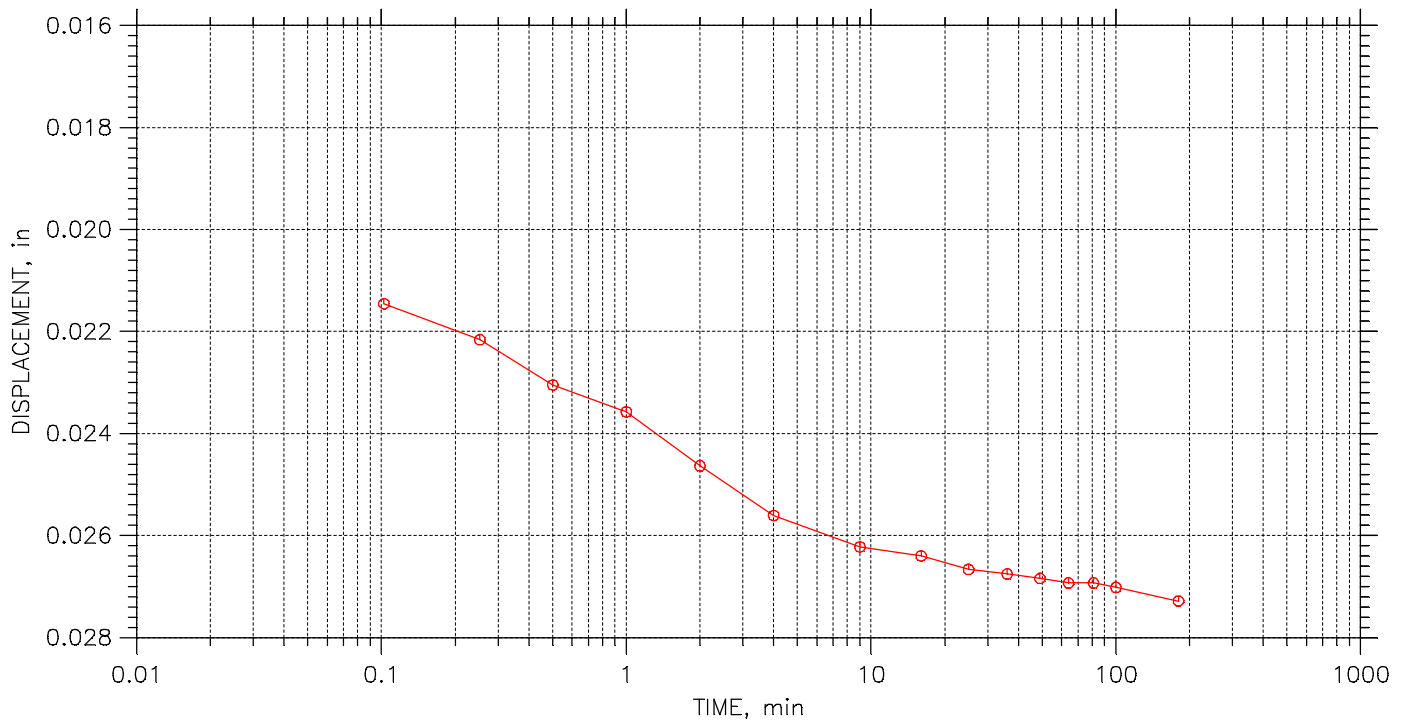
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf



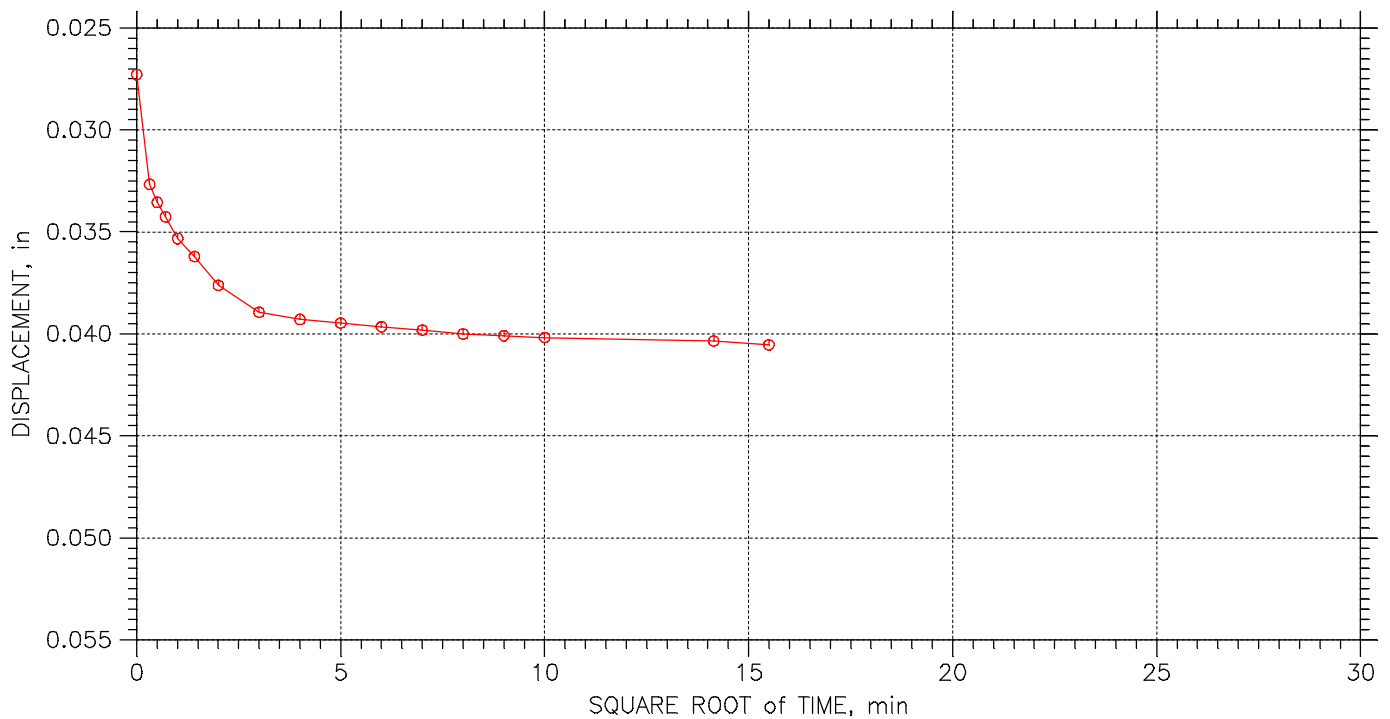
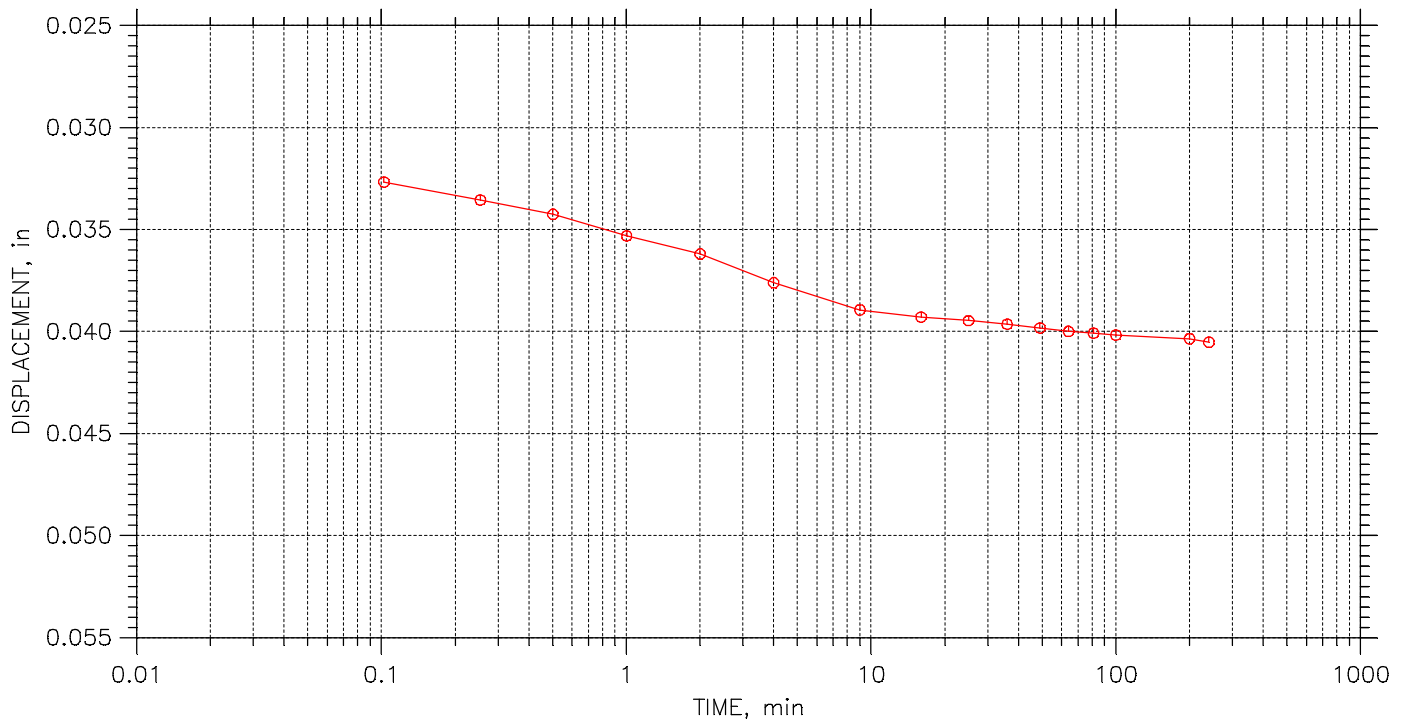
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf



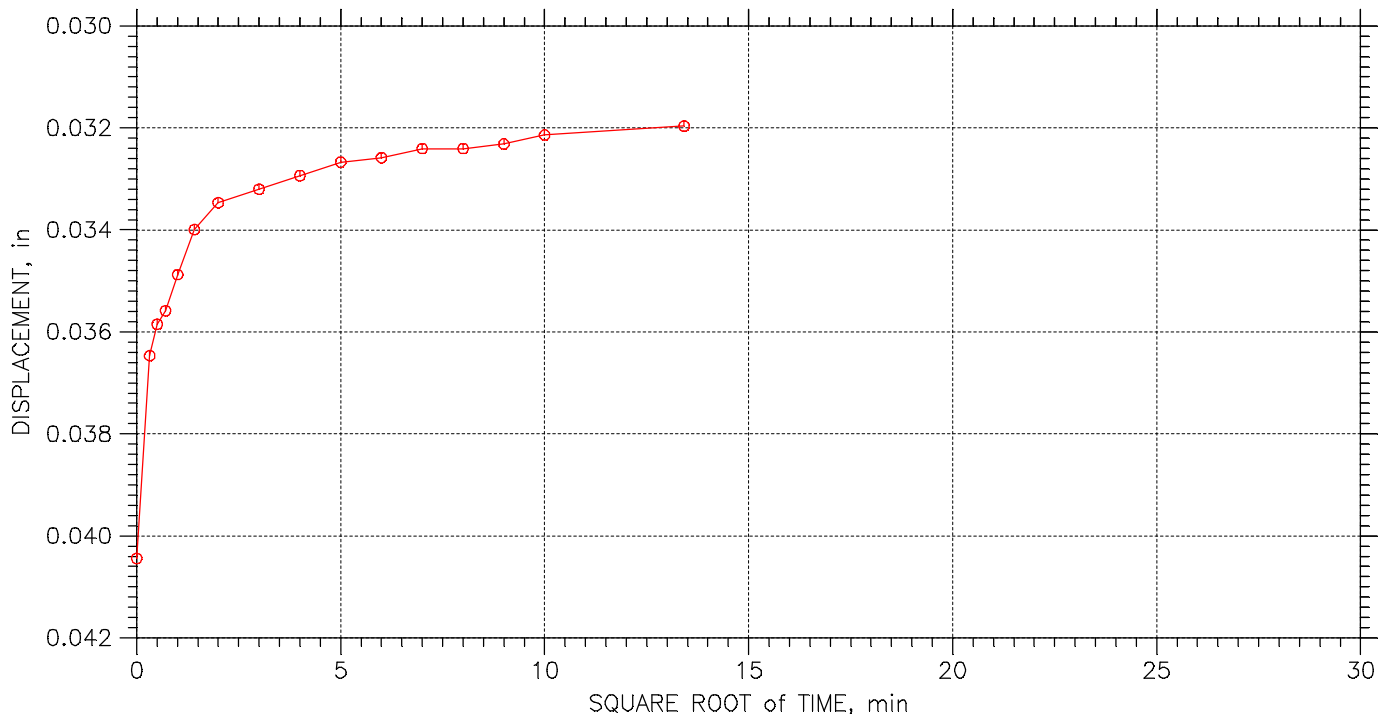
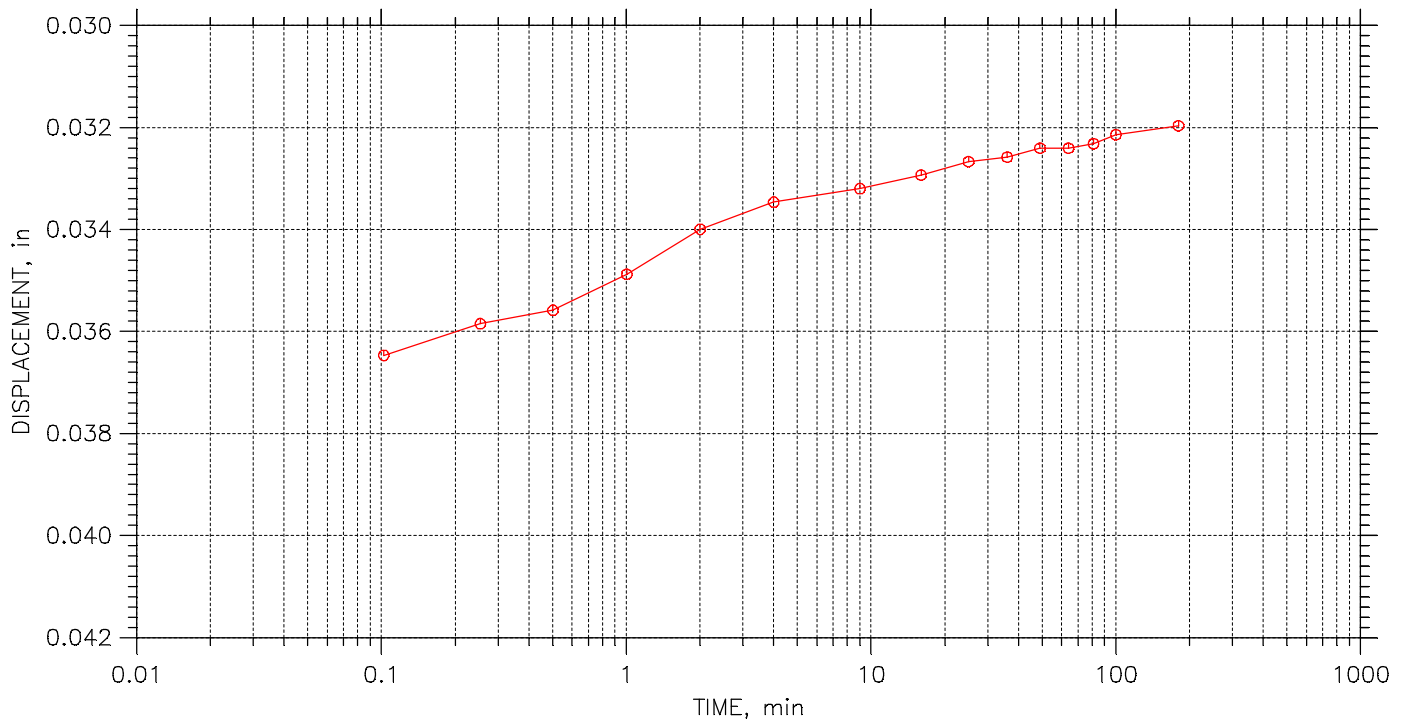
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	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf



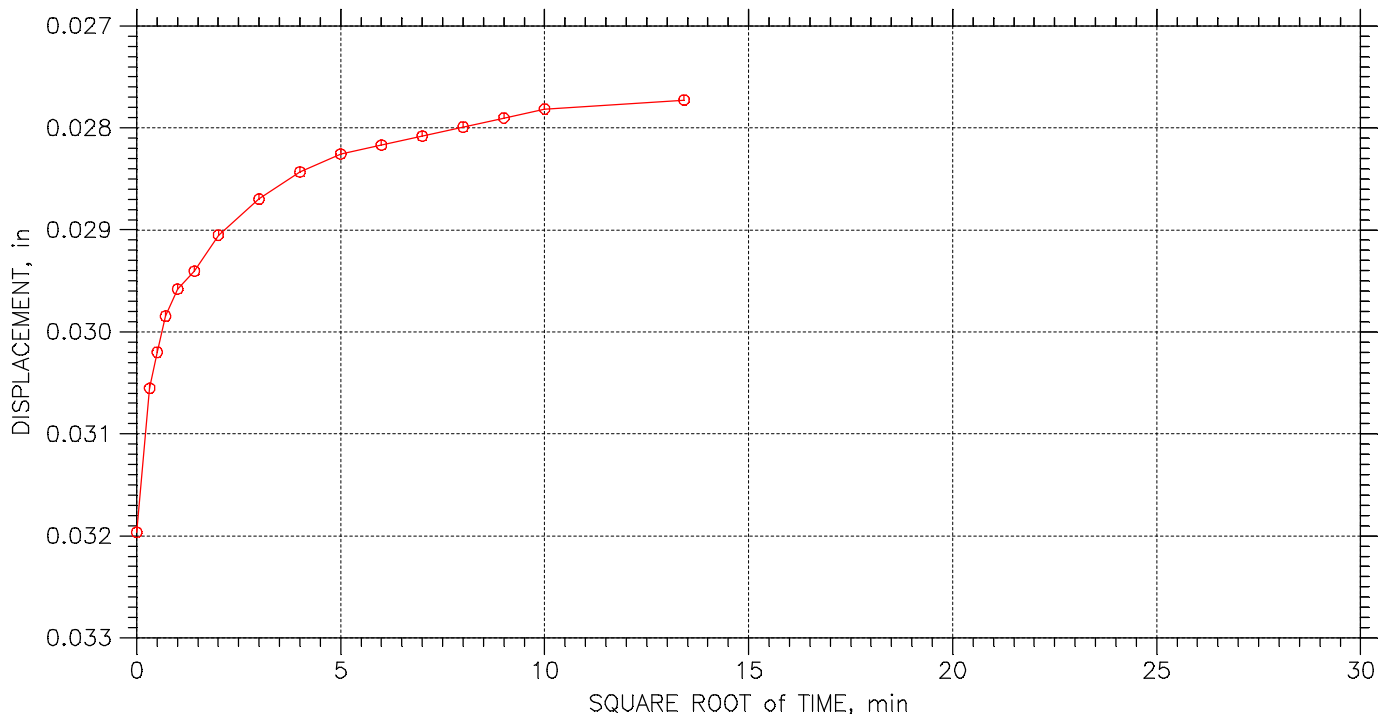
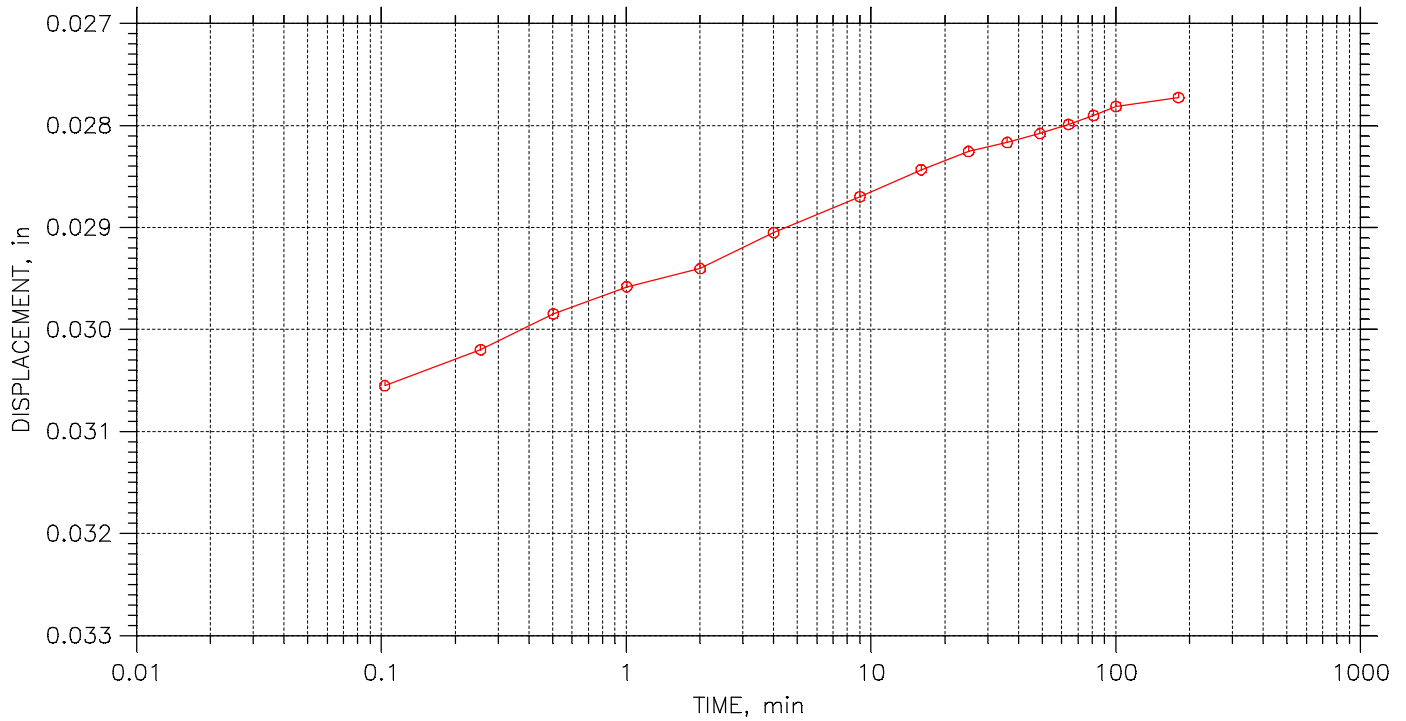
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	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf



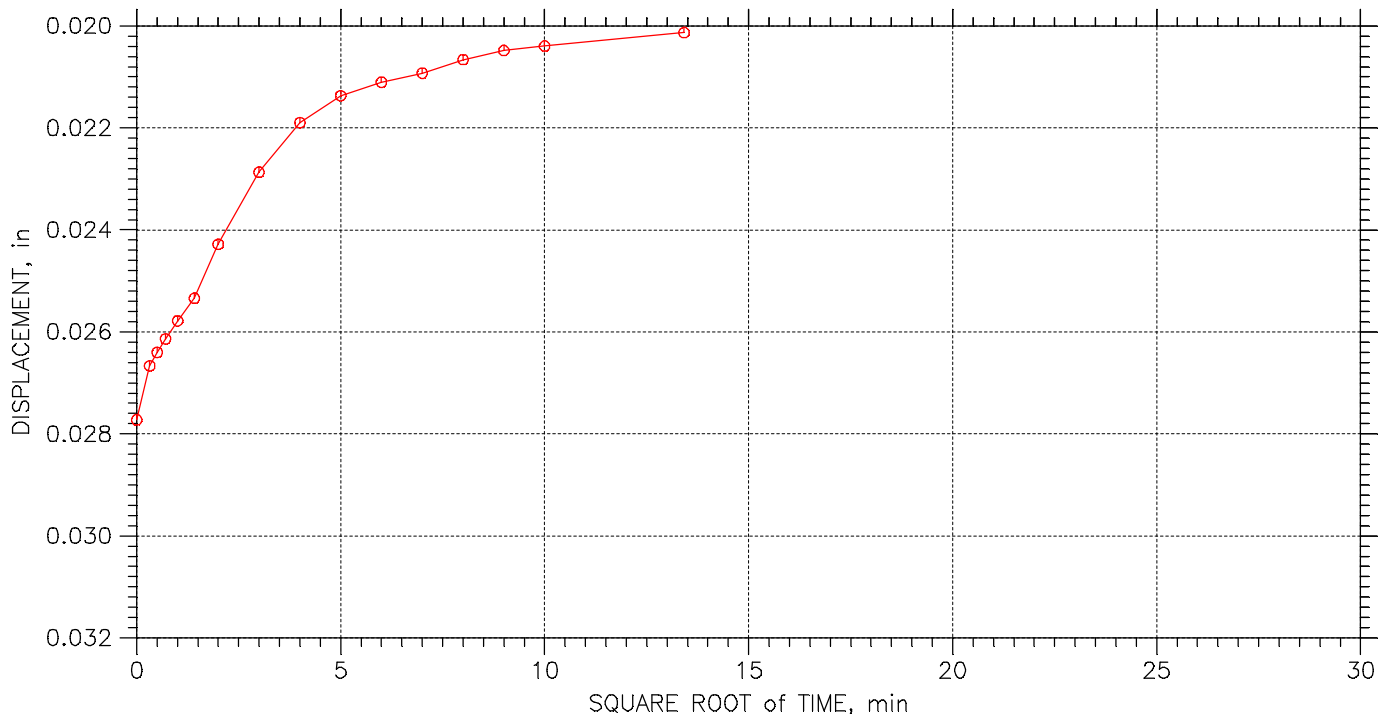
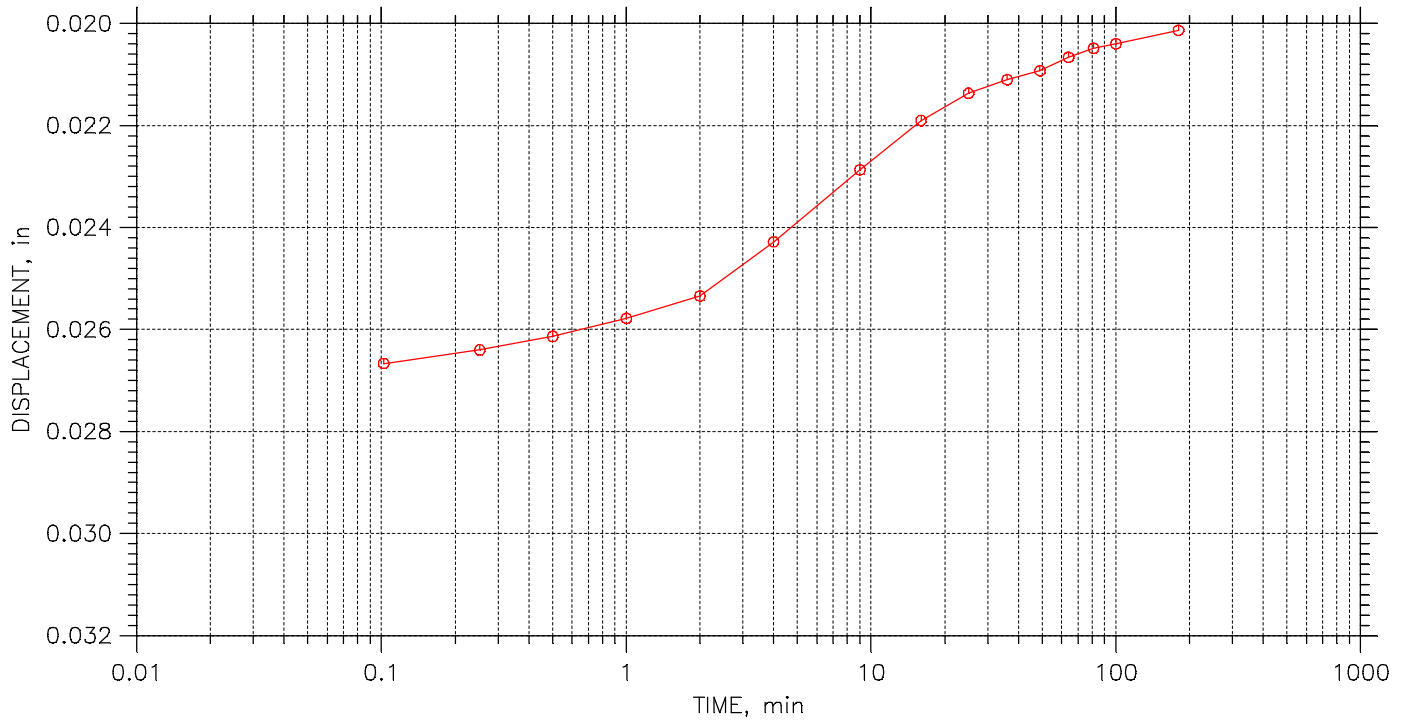
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



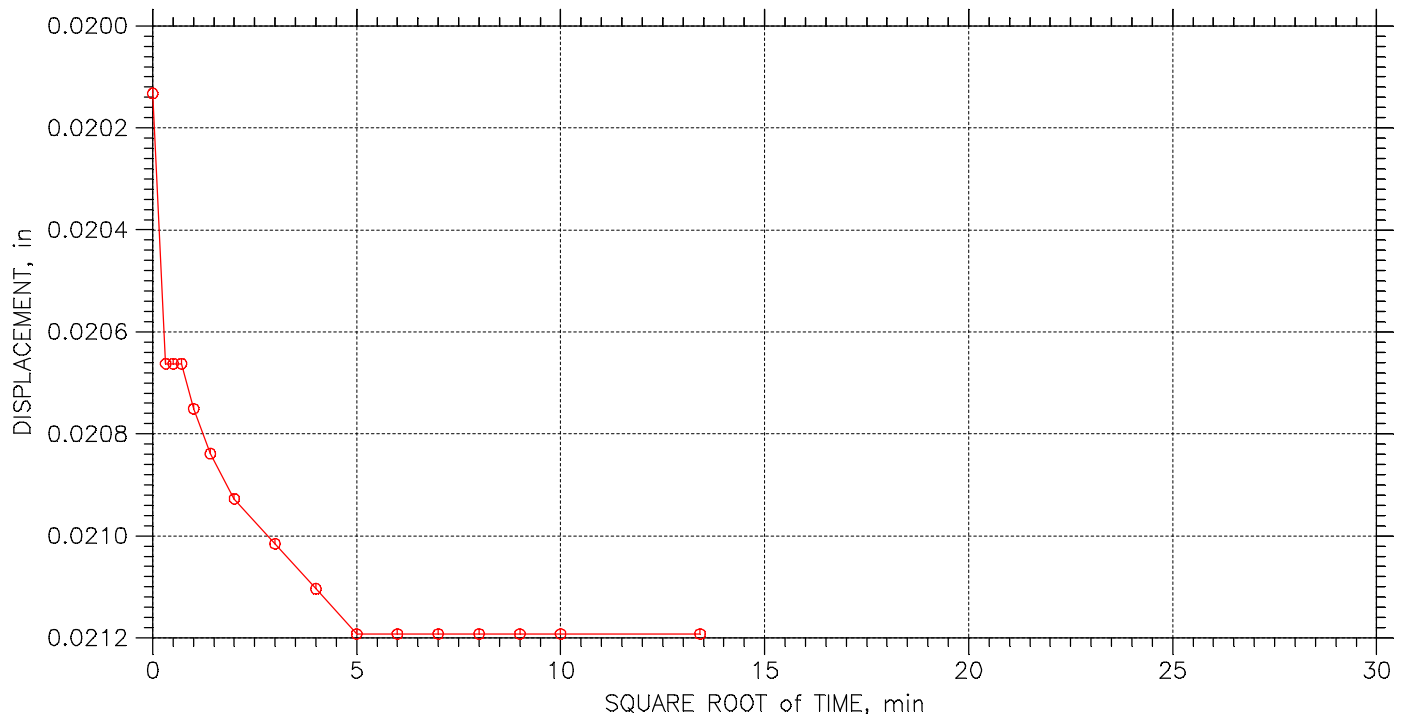
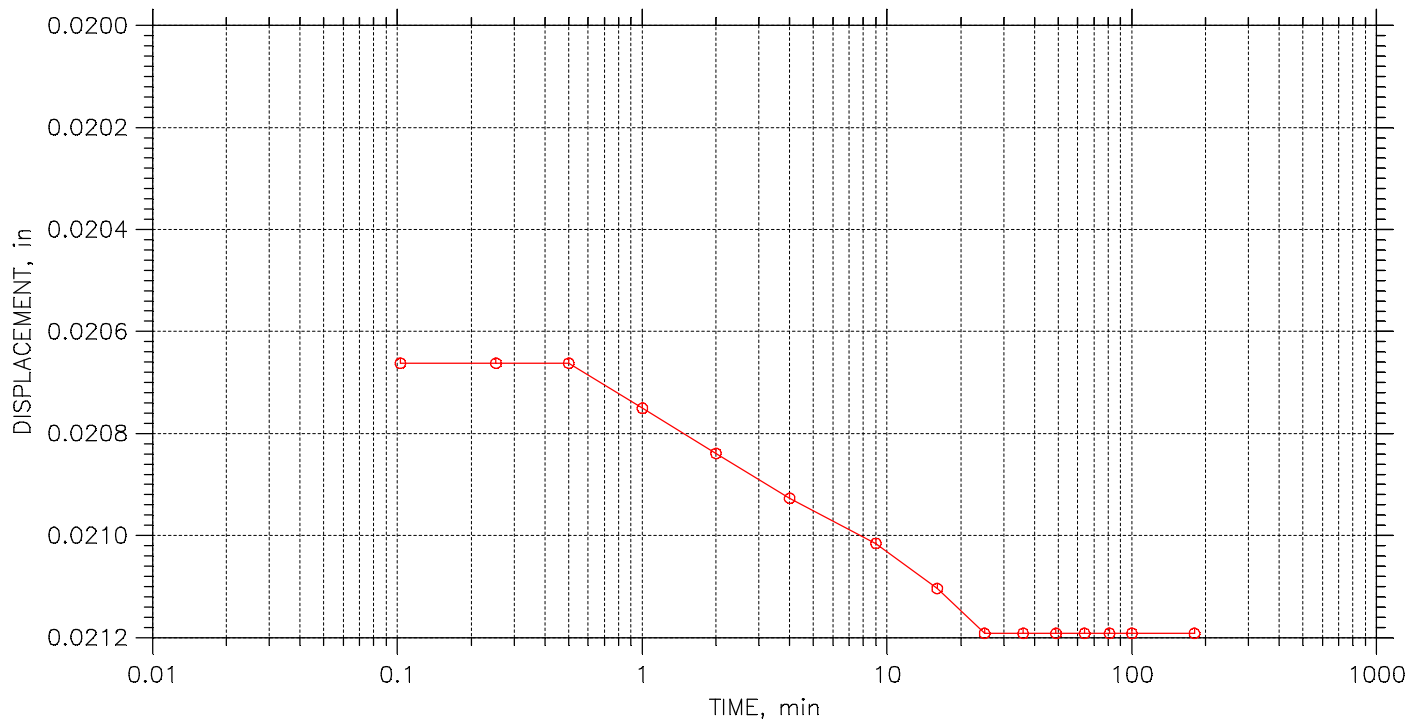
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf



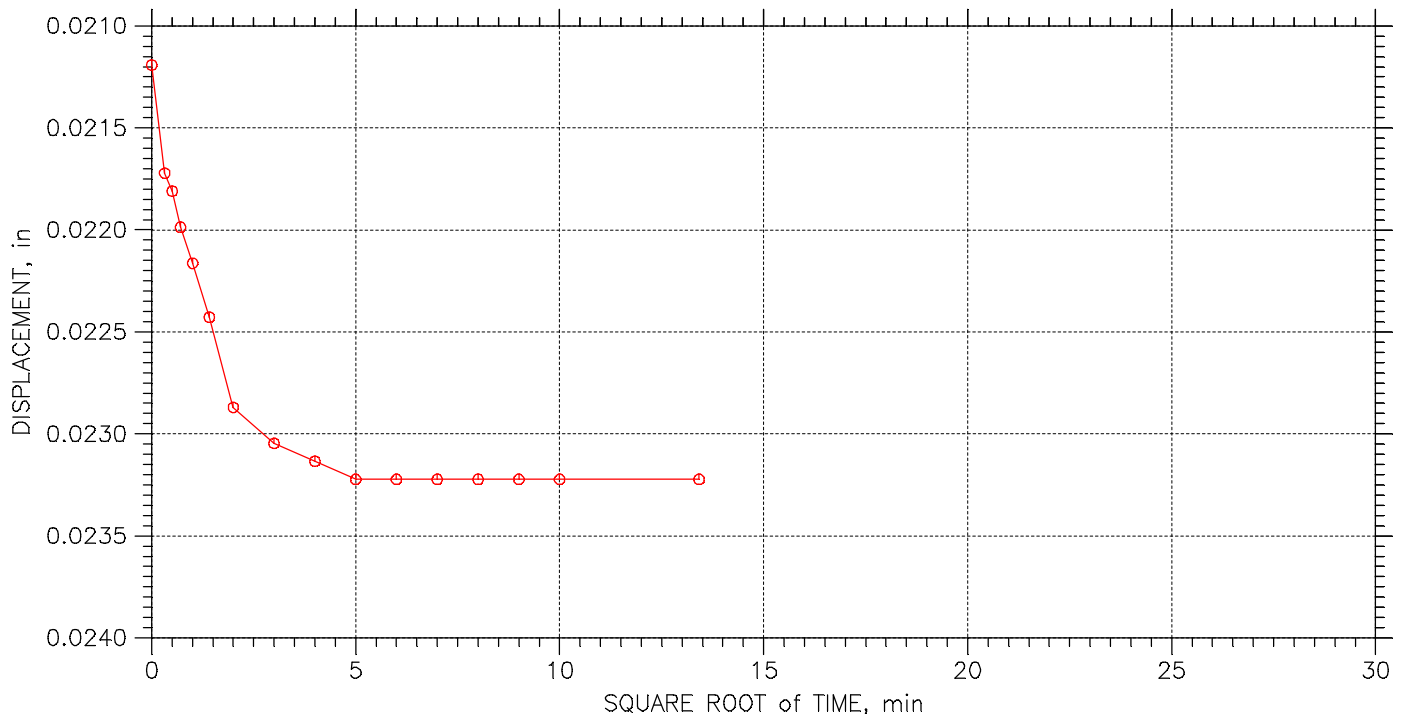
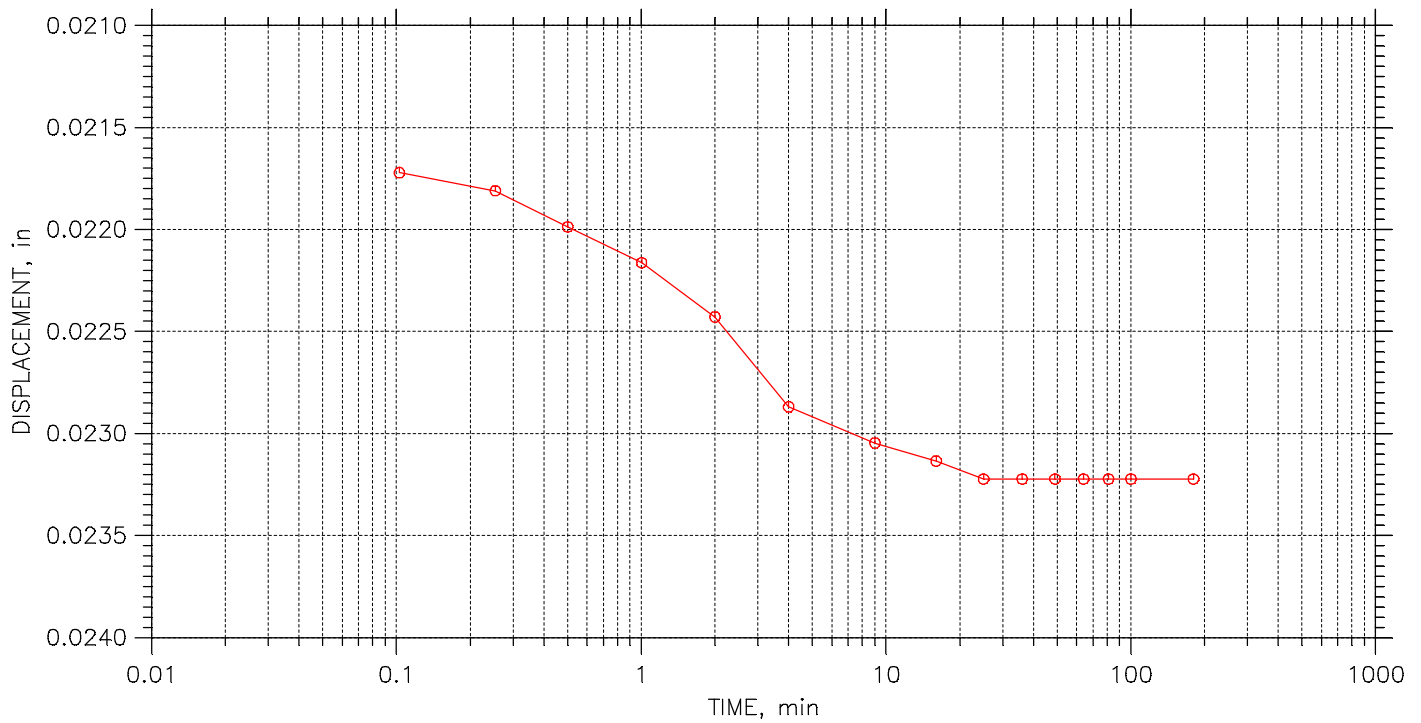
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf



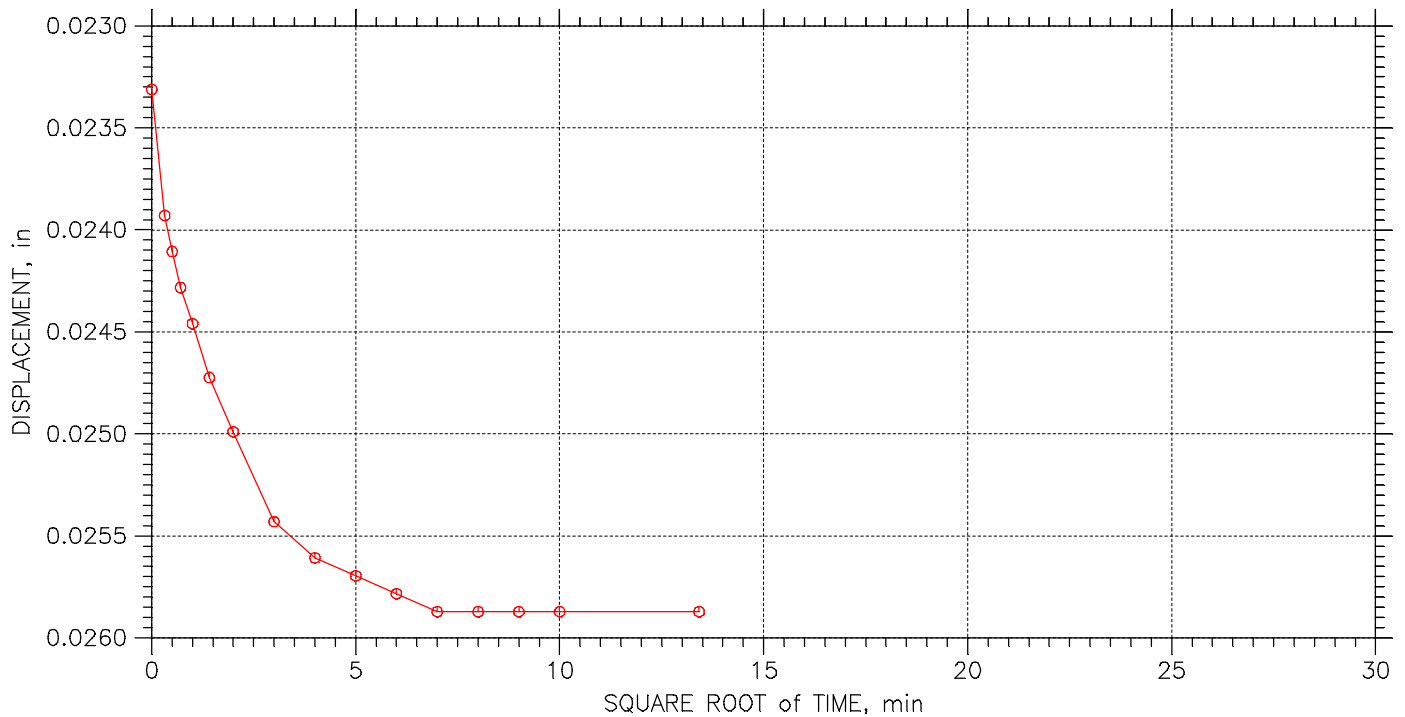
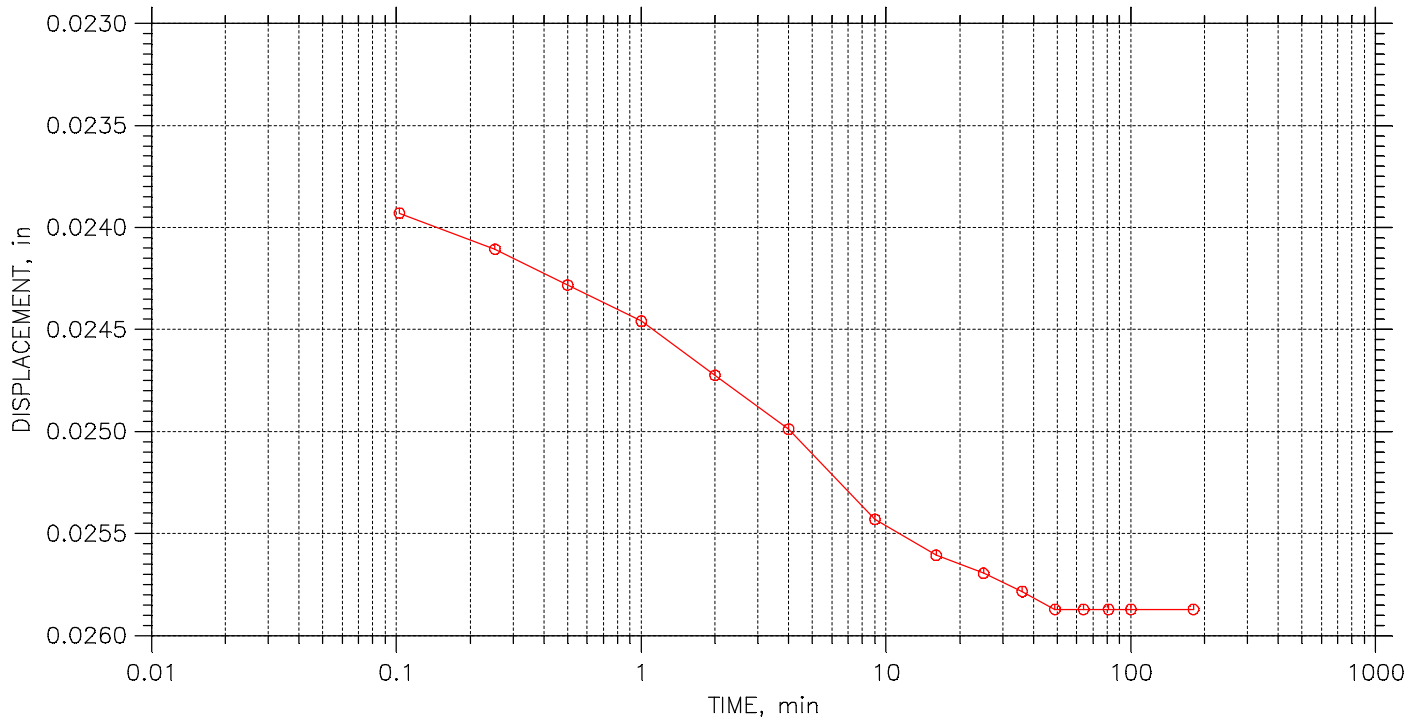
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf



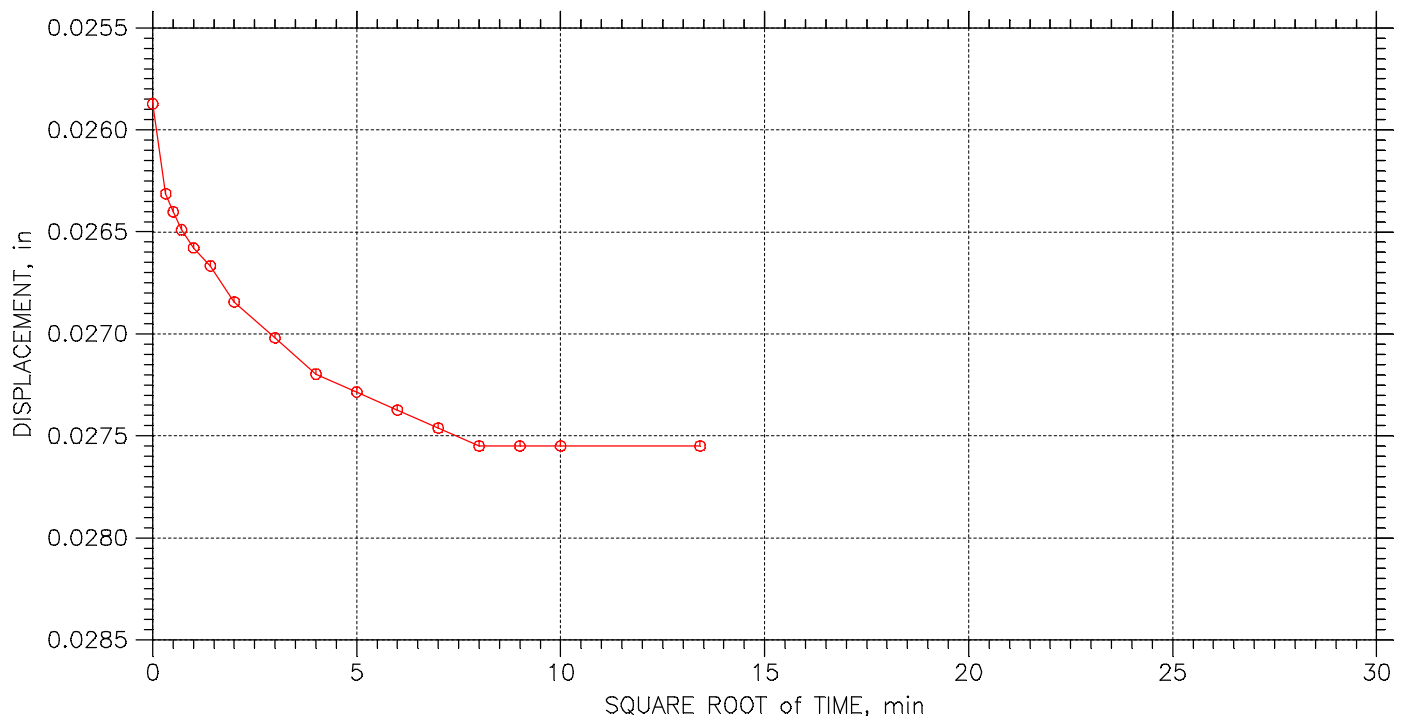
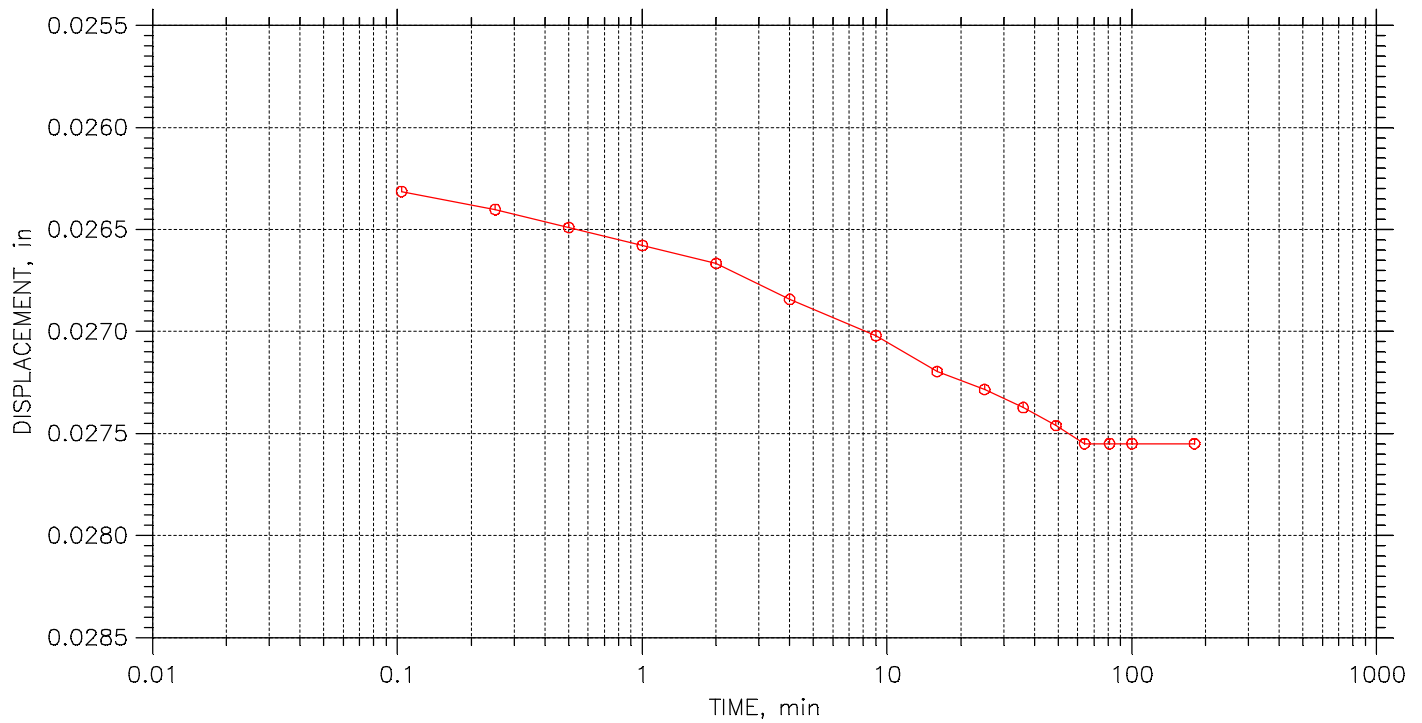
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf



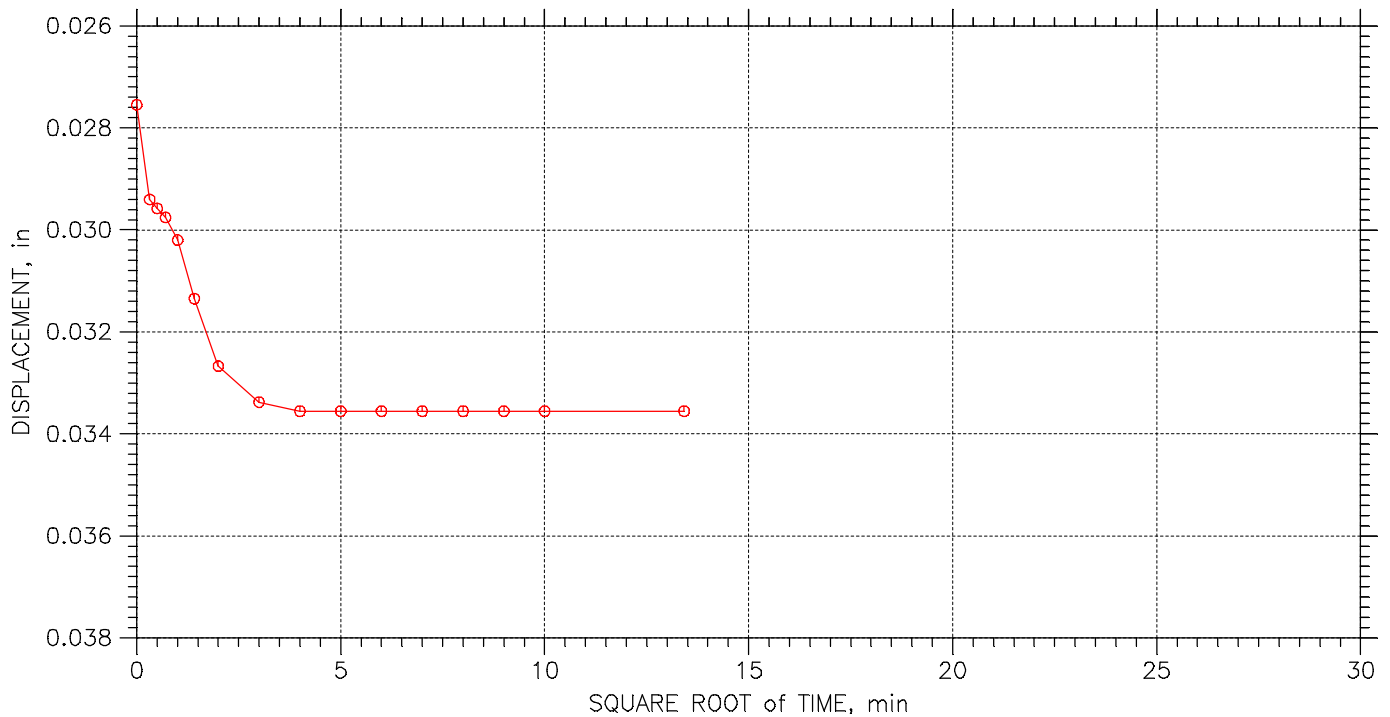
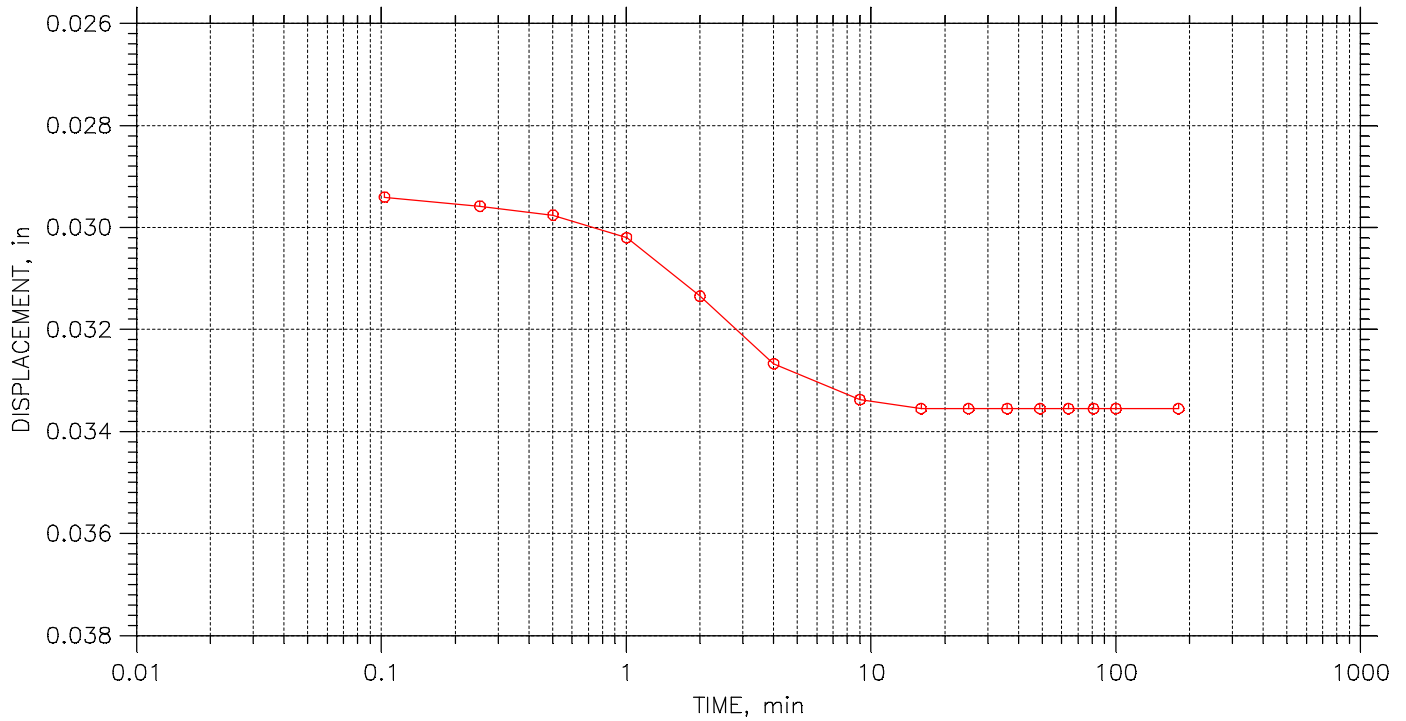
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf



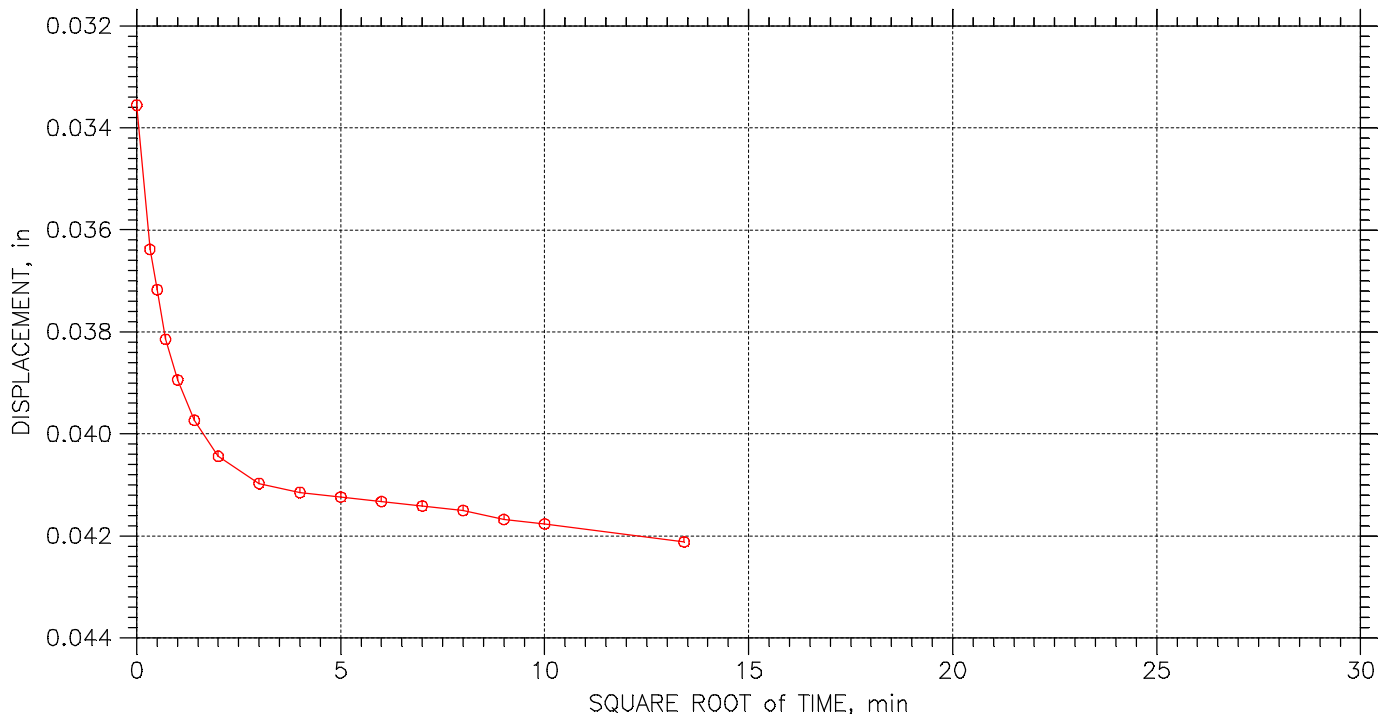
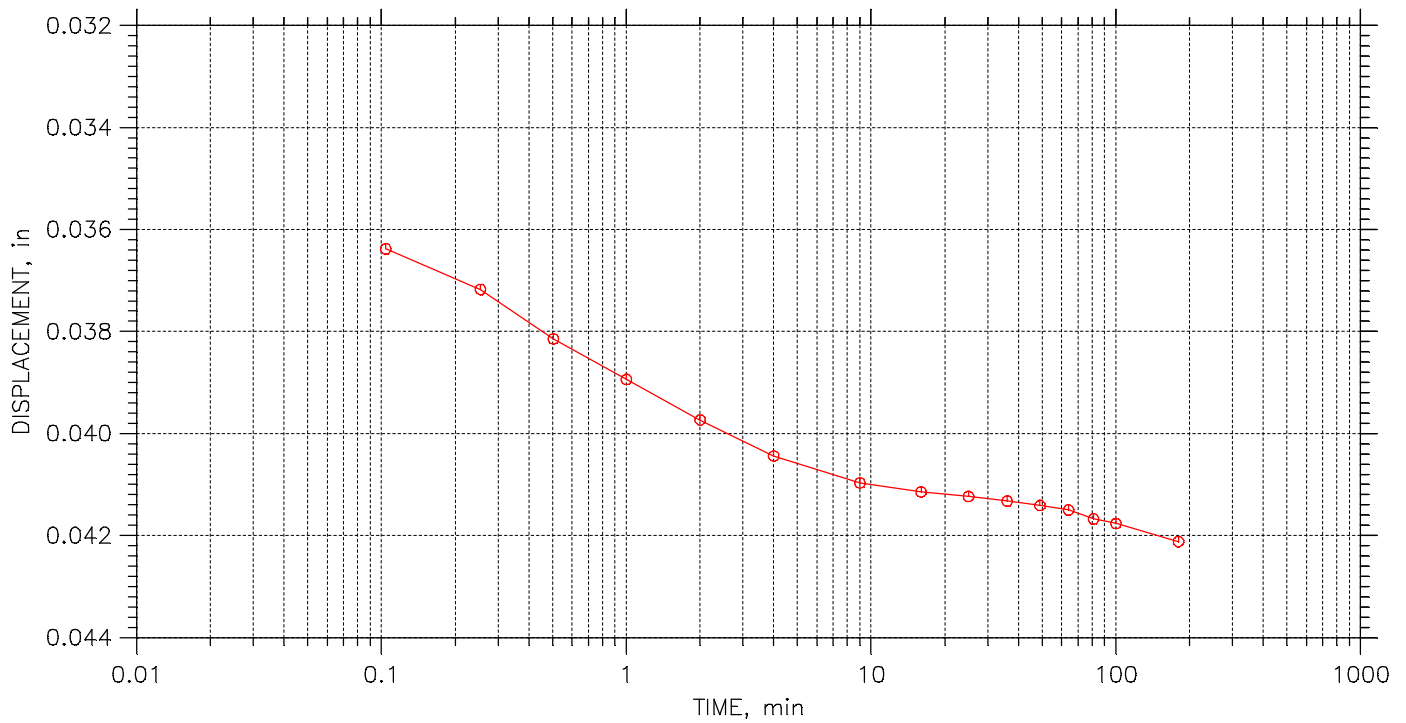
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf



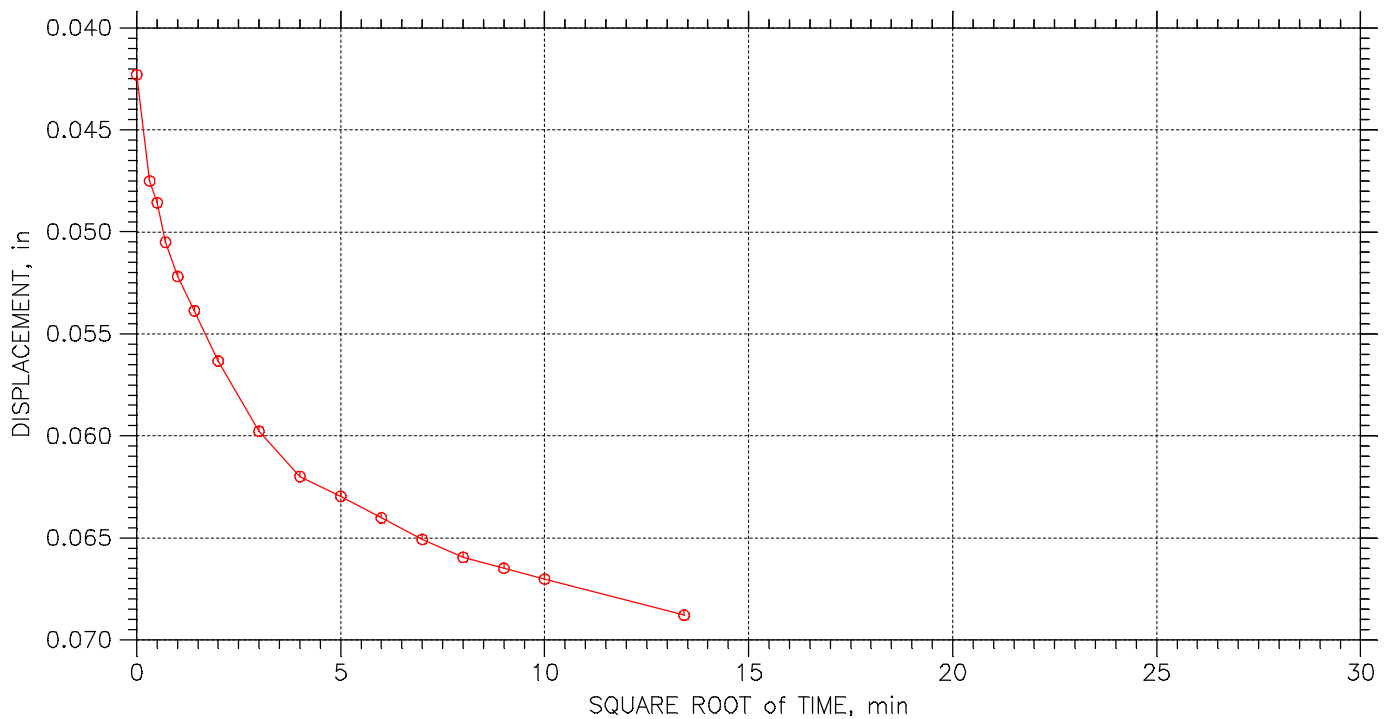
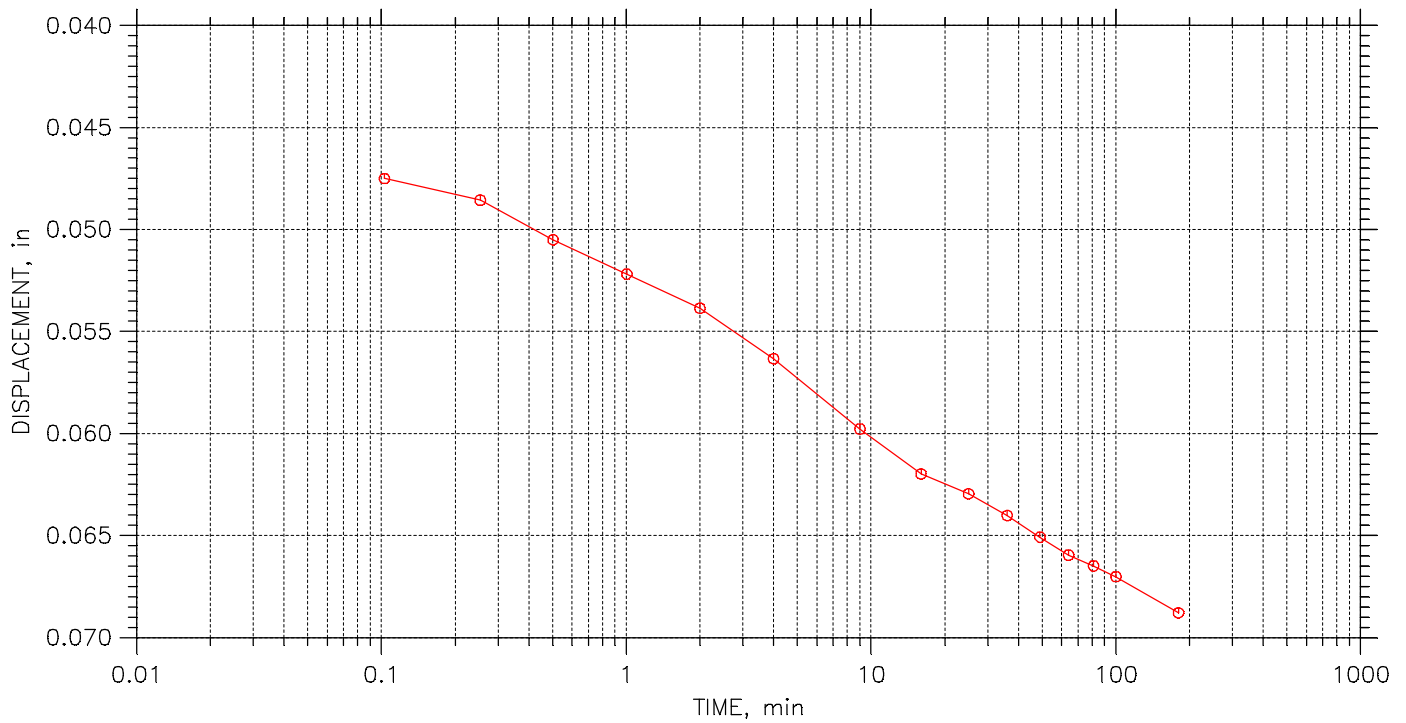
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf



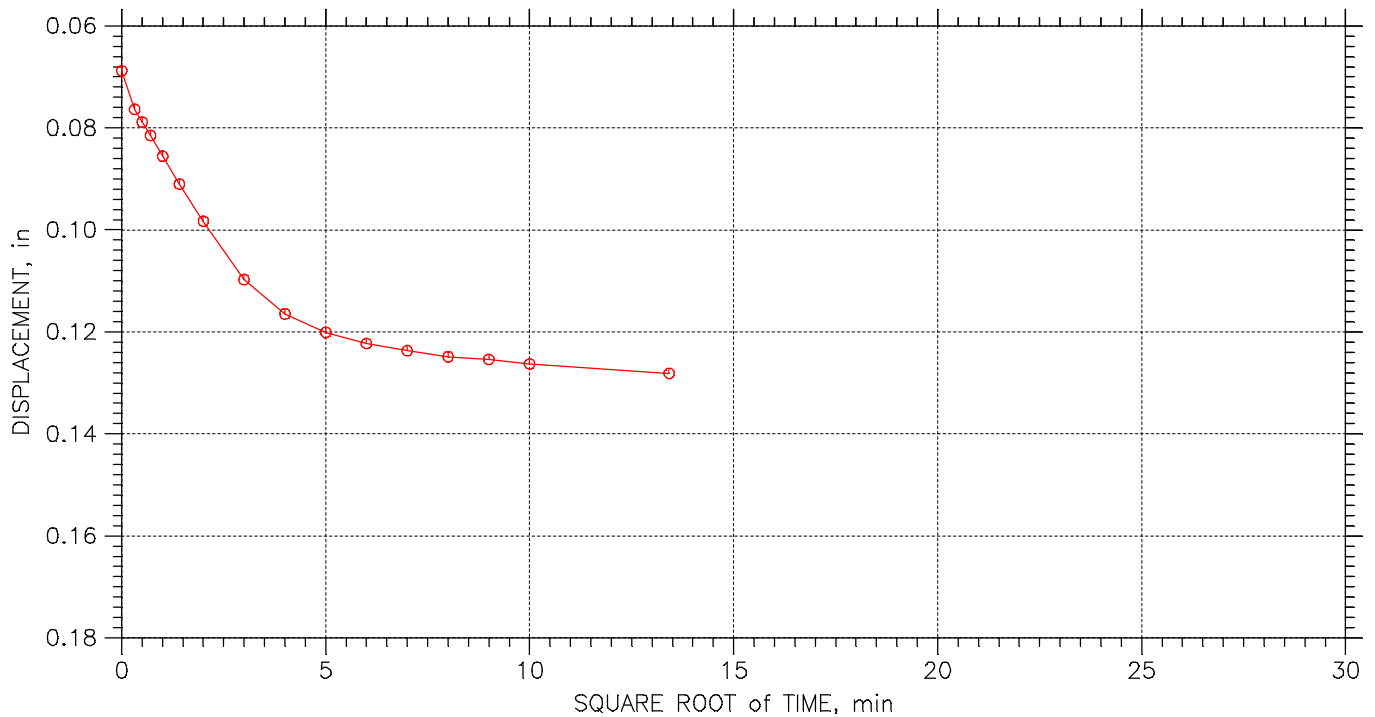
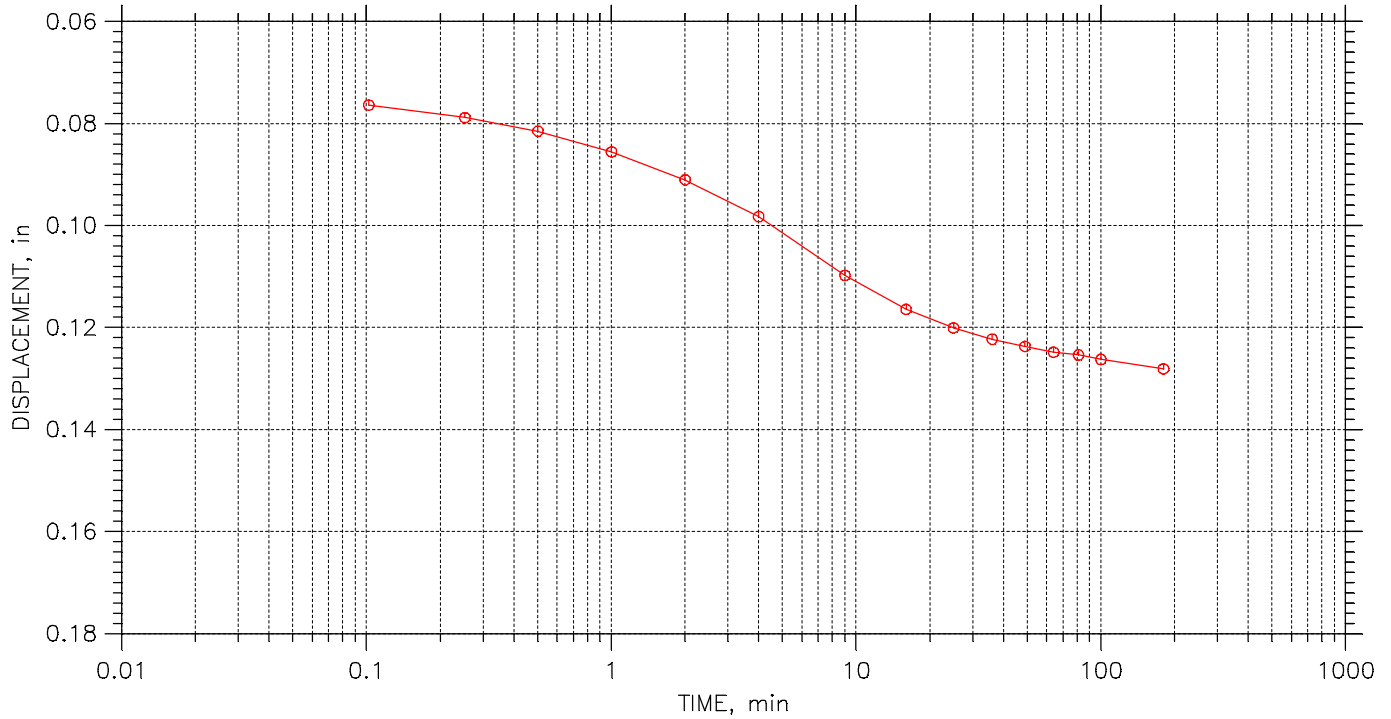
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf



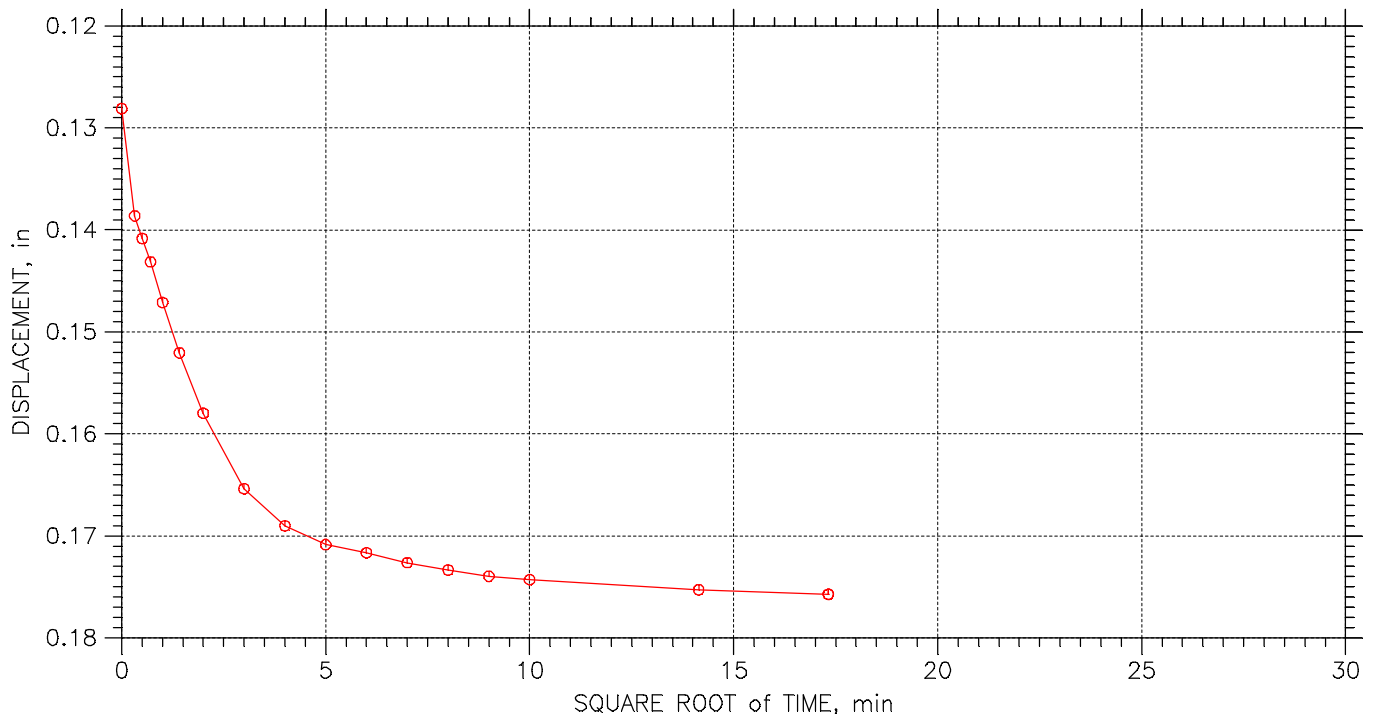
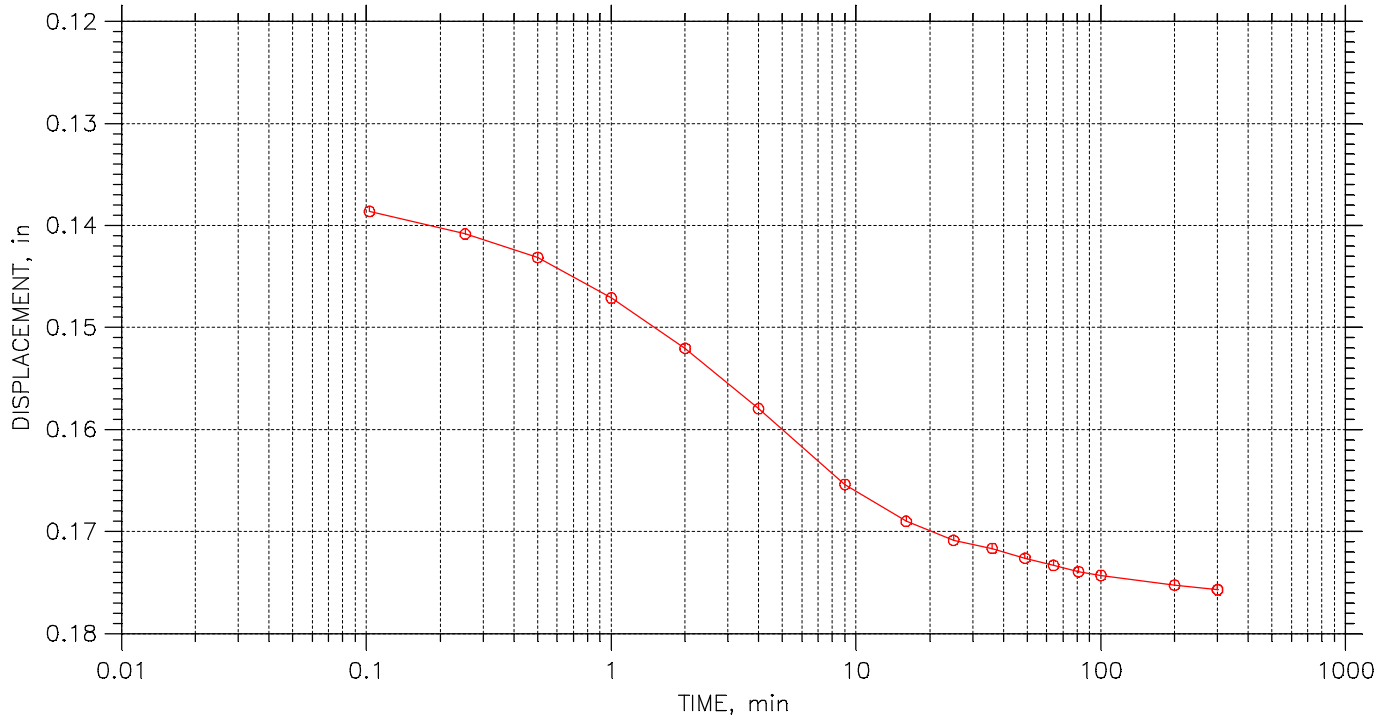
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



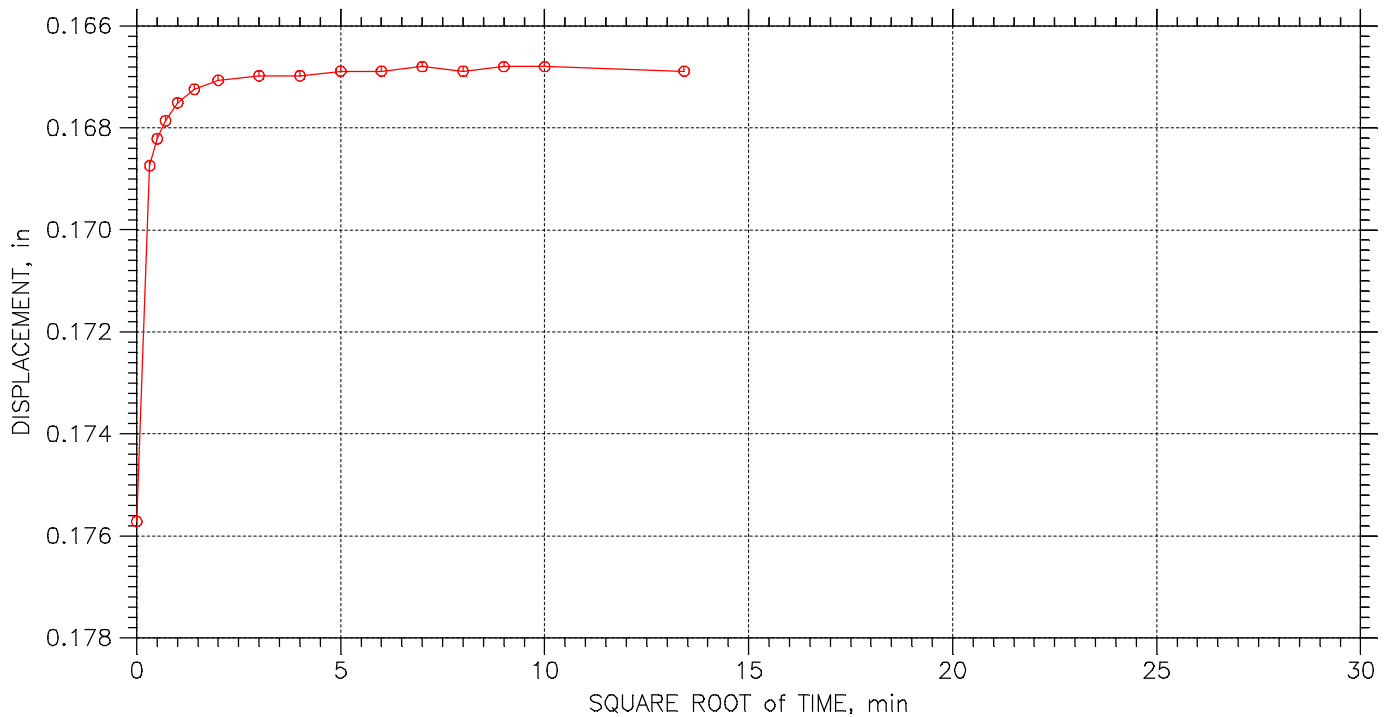
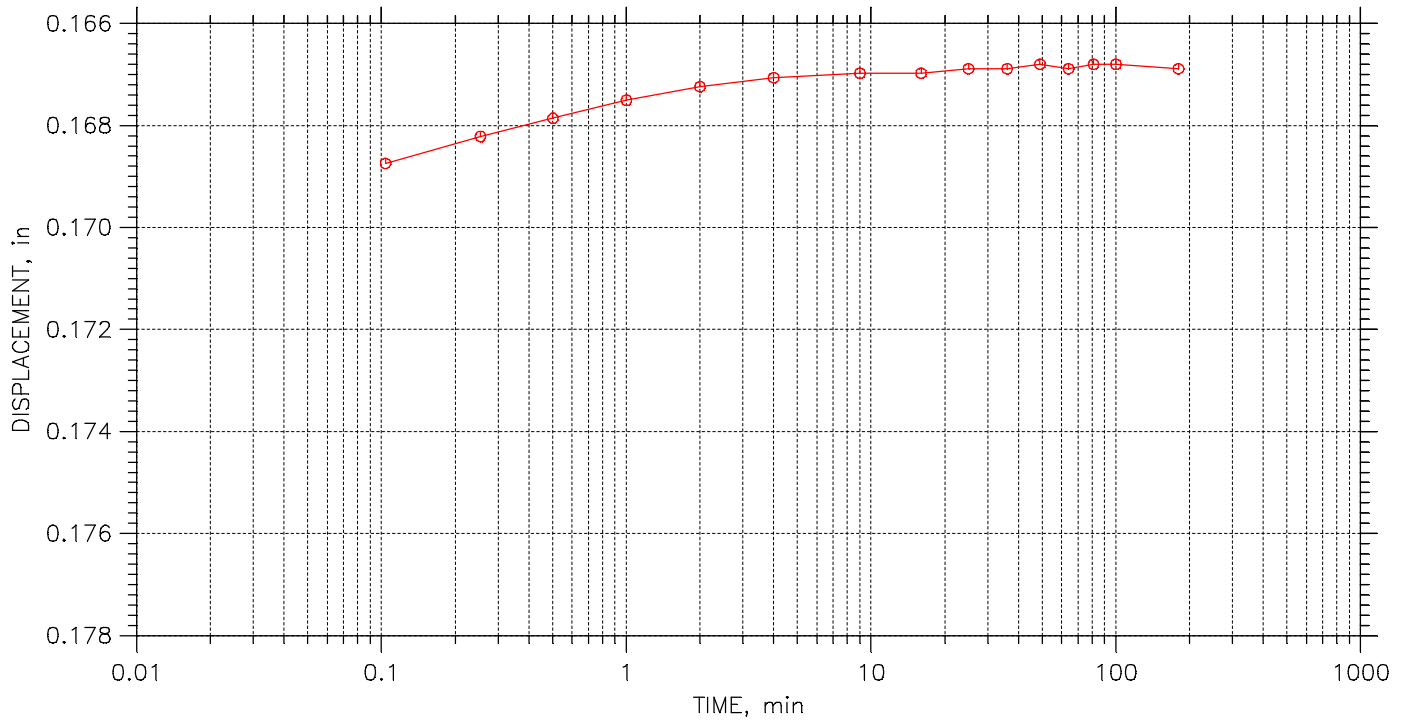
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



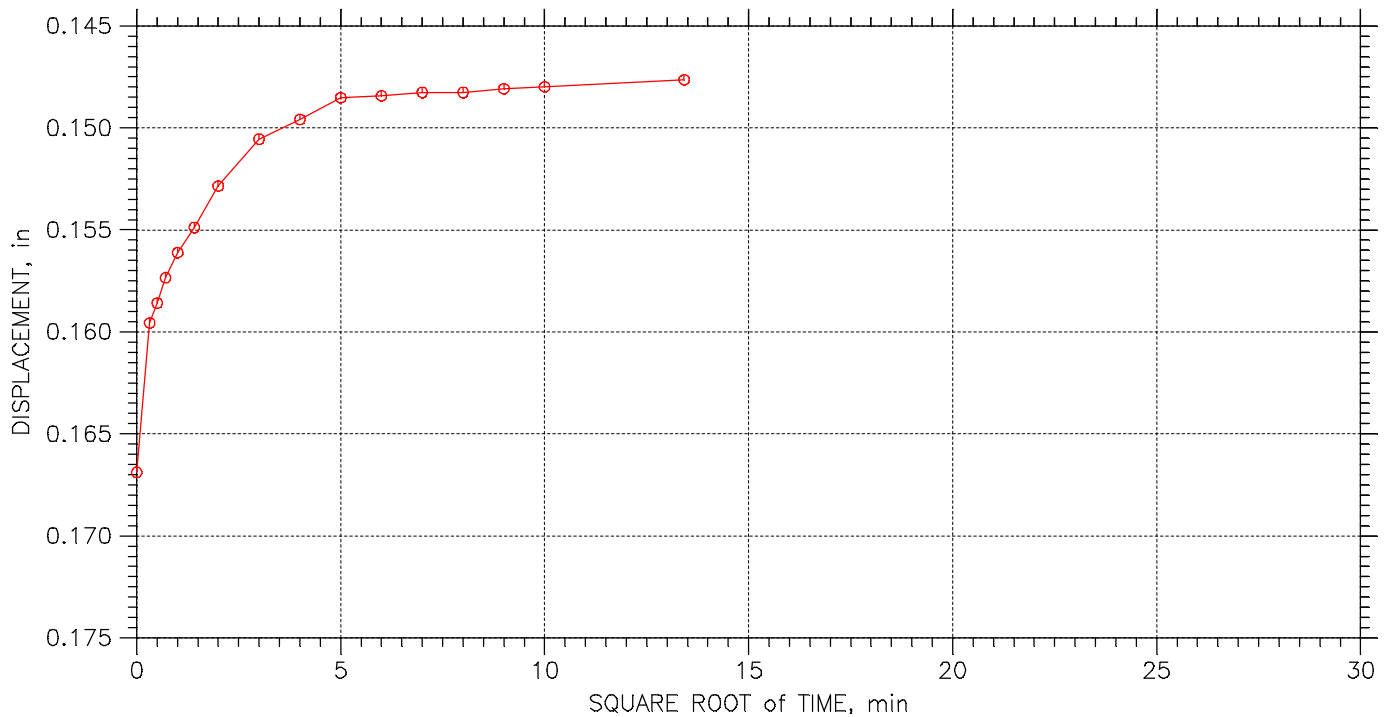
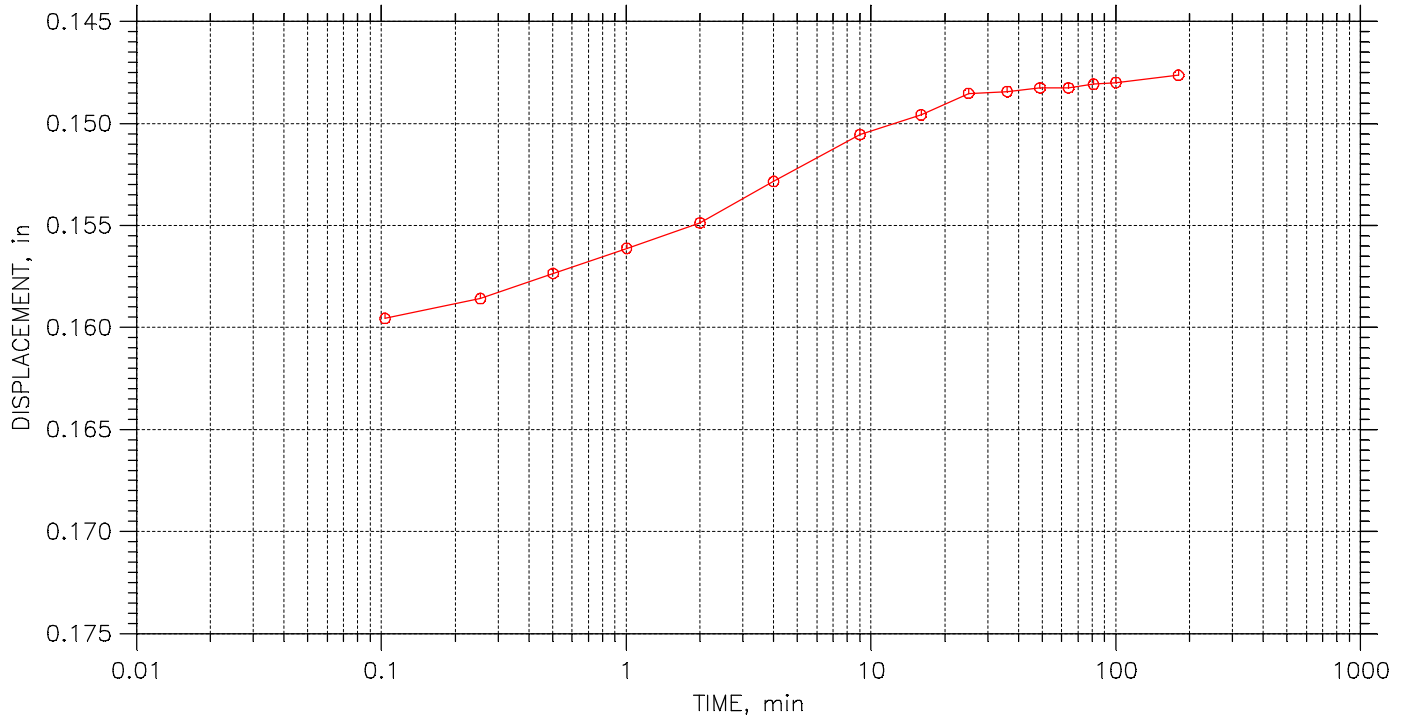
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf



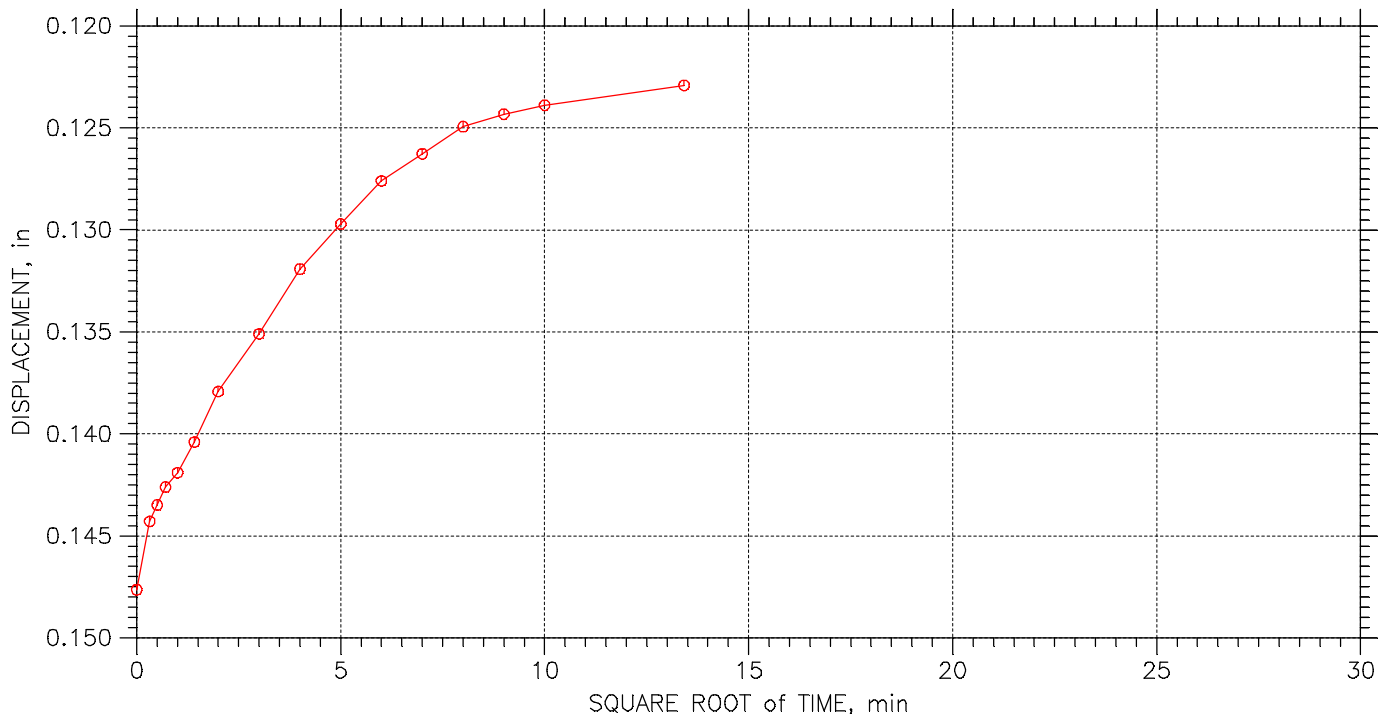
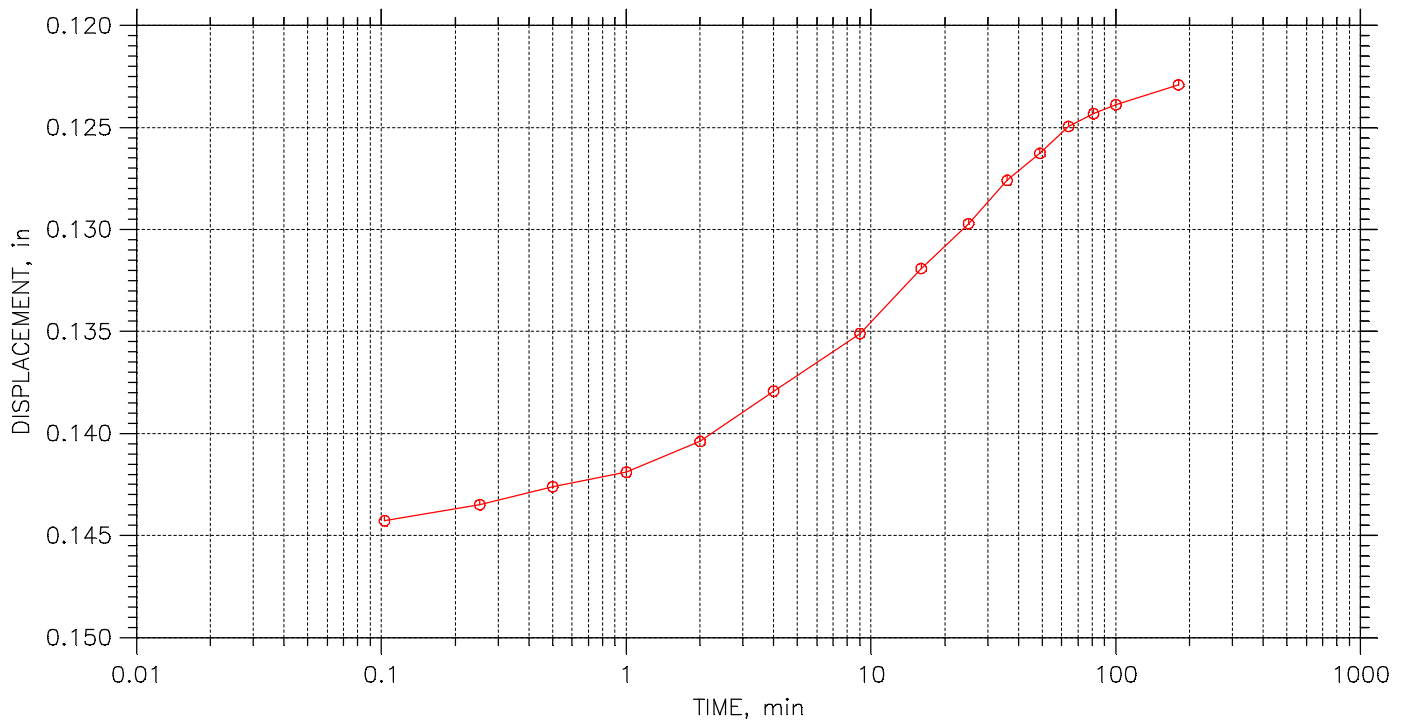
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf



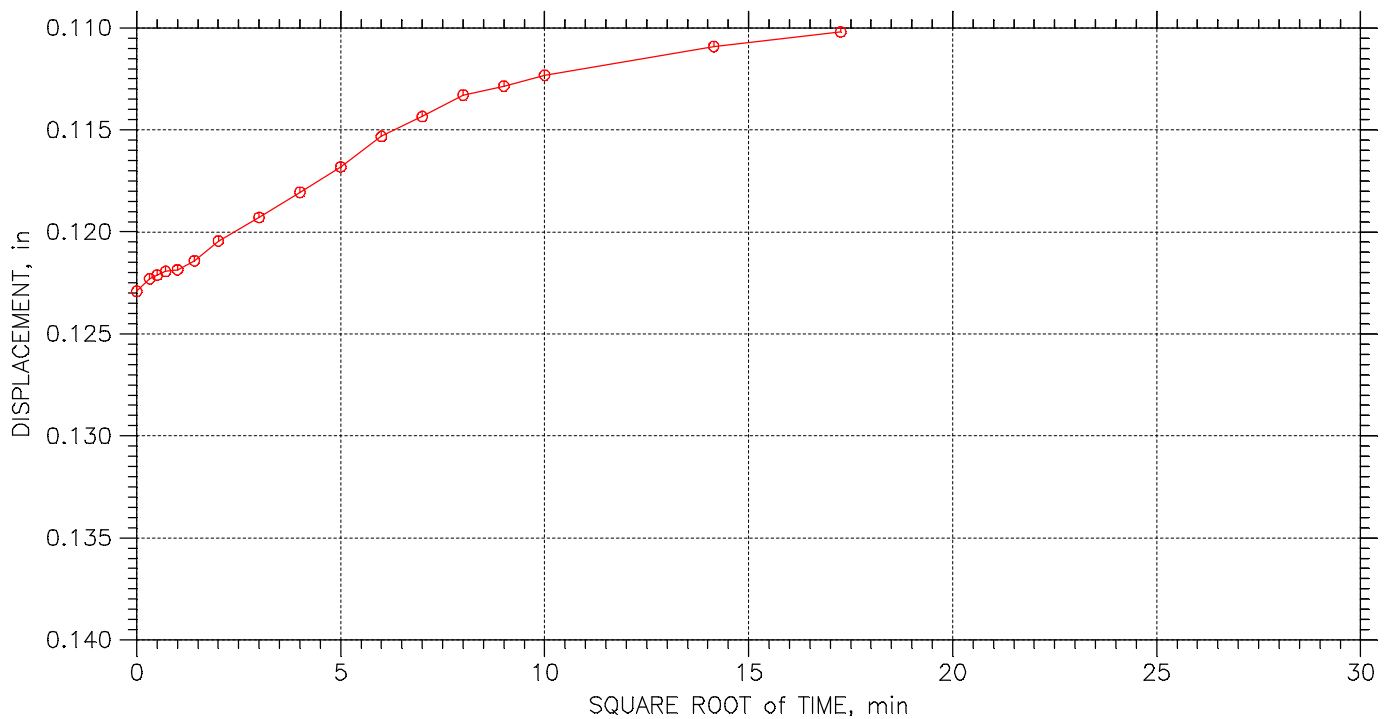
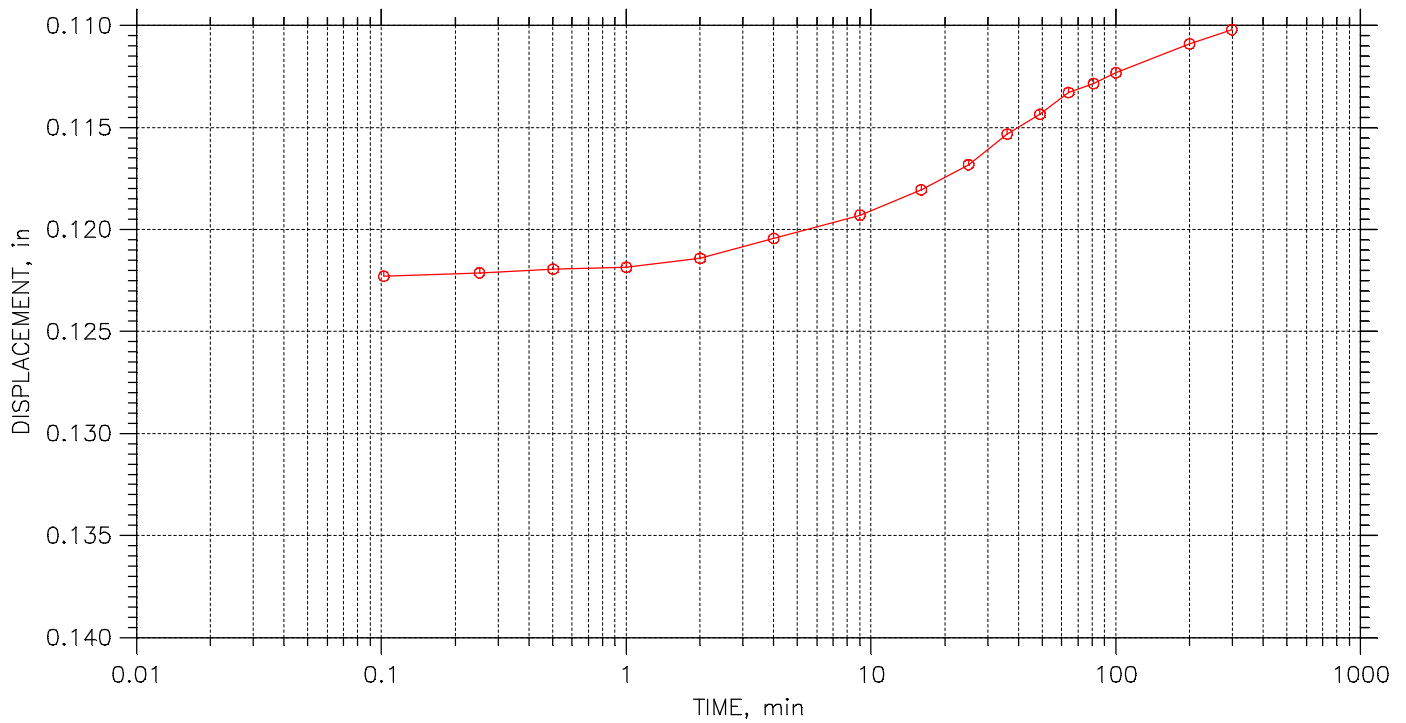
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf



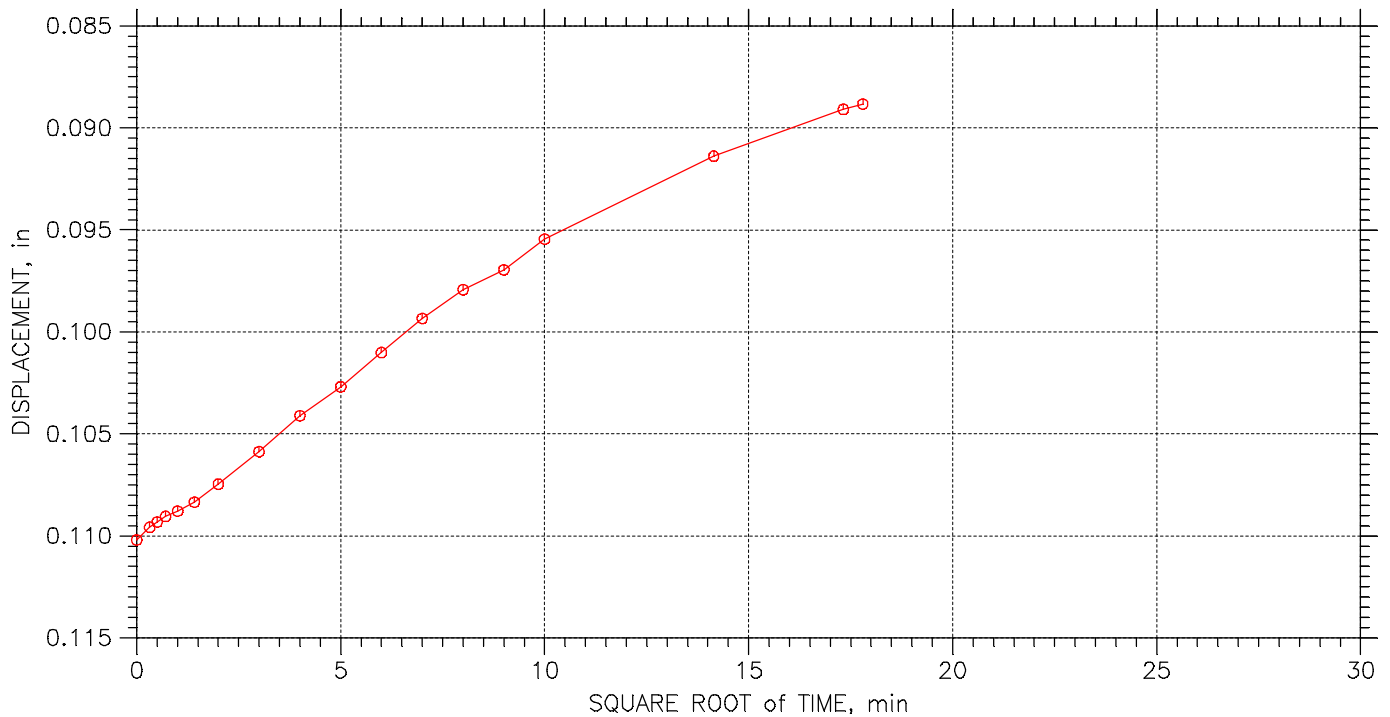
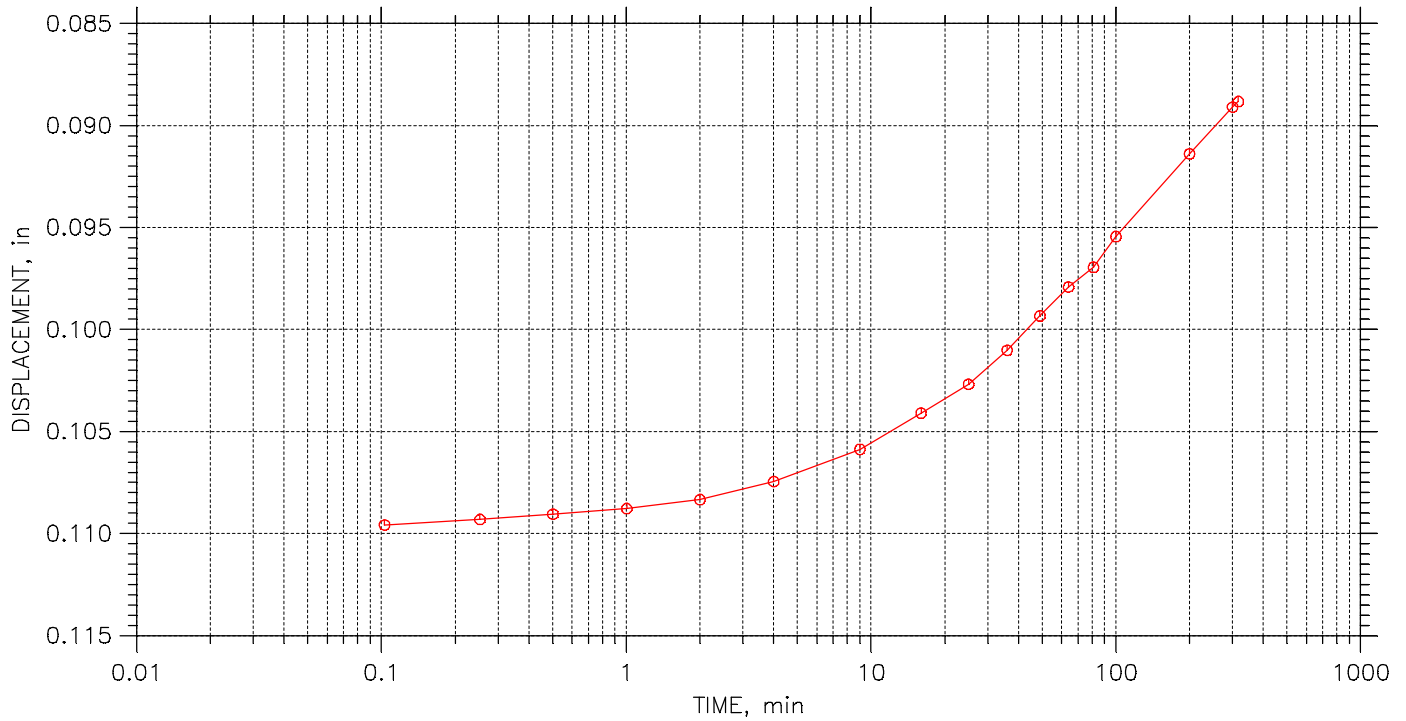
	Project: PULLIAM PROPERTY RED.	Location: GREEN BAY, WI	Project No.: 11225052
	Boring No.: B2-22	Tested By: BCM	Checked By: BCM
	Sample No.: ST-2	Test Date: 9/29/2022	Depth: 65.0'-67.0'
	Test No.: B226567CON	Sample Type: 3" ST	Elevation: -----
	Description: REDDISH BROWN LEAN CLAY CL		
	Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435		


CONSOLIDATION TEST DATA

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.: 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 PERFORMED AS PER ASTM D2435		

CONSOLIDATION TEST DATA

Project: PULLIAM PROPERTY RED.
Boring No.: B2-22
Sample No.: ST-2
Test No.: B226567CON

Location: GREEN BAY, WI
Tested By: BCM
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
Initial Void Ratio: 0.85
Final Void Ratio: 0.63

Liquid Limit: 41
Plastic Limit: 15
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	---

CONSOLIDATION TEST DATA

Project: PULLIAM PROPERTY RED.
Boring No.: B2-22
Sample No.: ST-2
Test No.: B226567CON

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

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

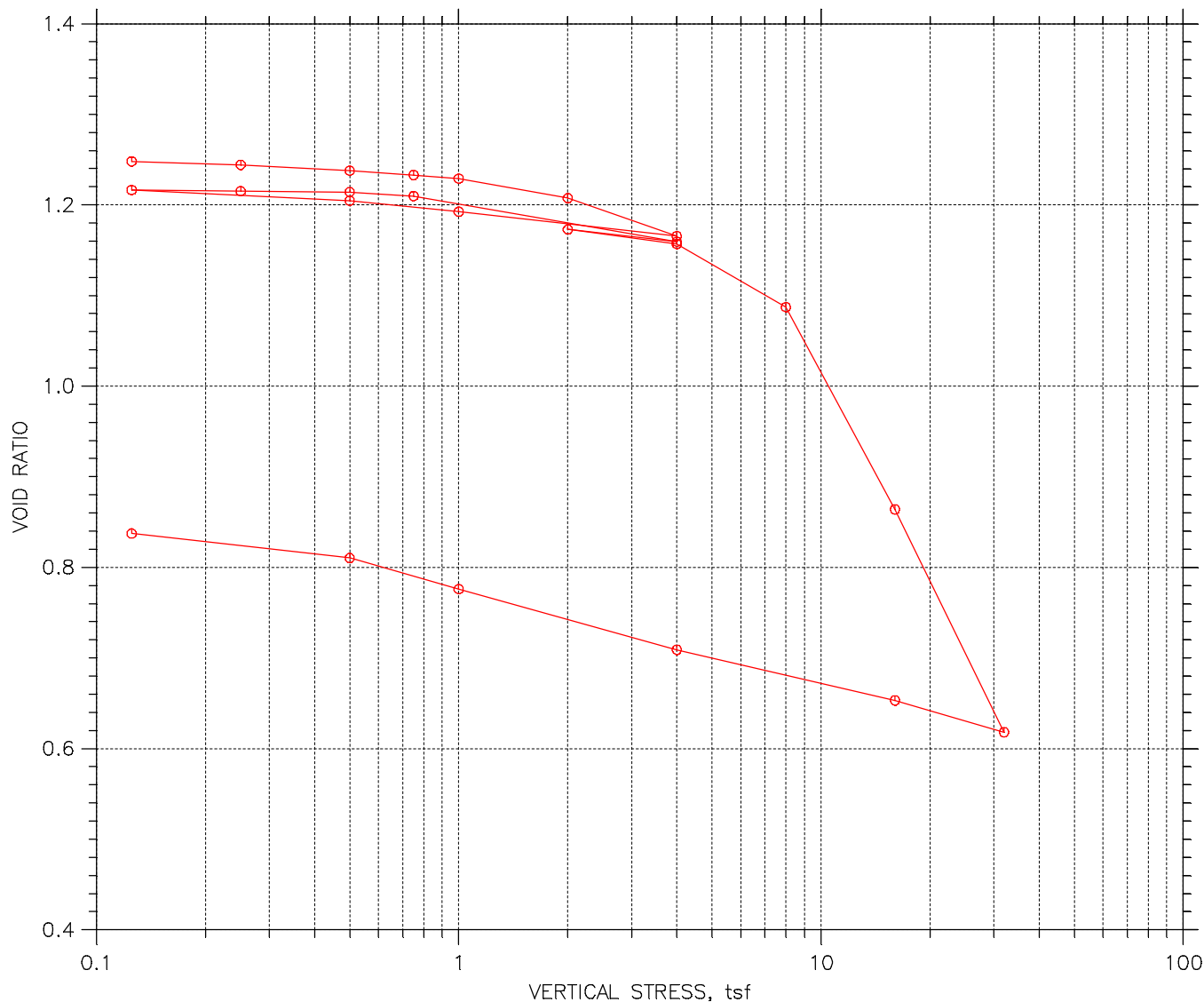


Soil Description: REDDISH BROWN LEAN CLAY CL


Remarks: Pc = 4.1 tsf Cc = 0.409 Ccr = 0.090 TEST PERFORMED AS PER ASTM D2435

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. ft^2/sec	Log ft^2/sec	Ave. ft^2/sec
1	0.125	0.002737	0.842	0.37	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
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

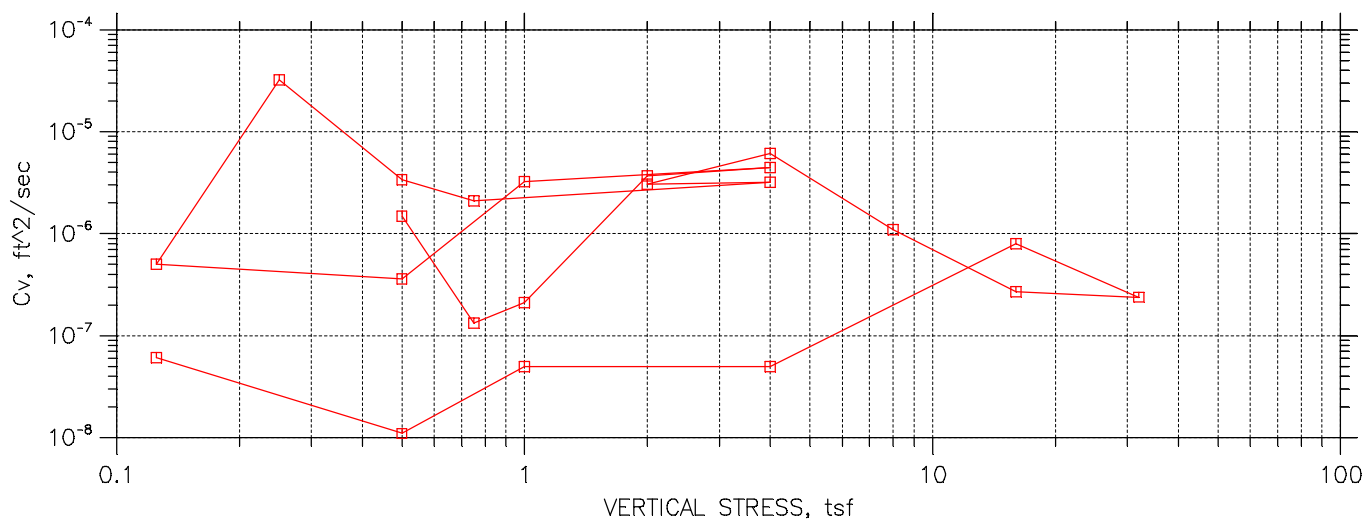
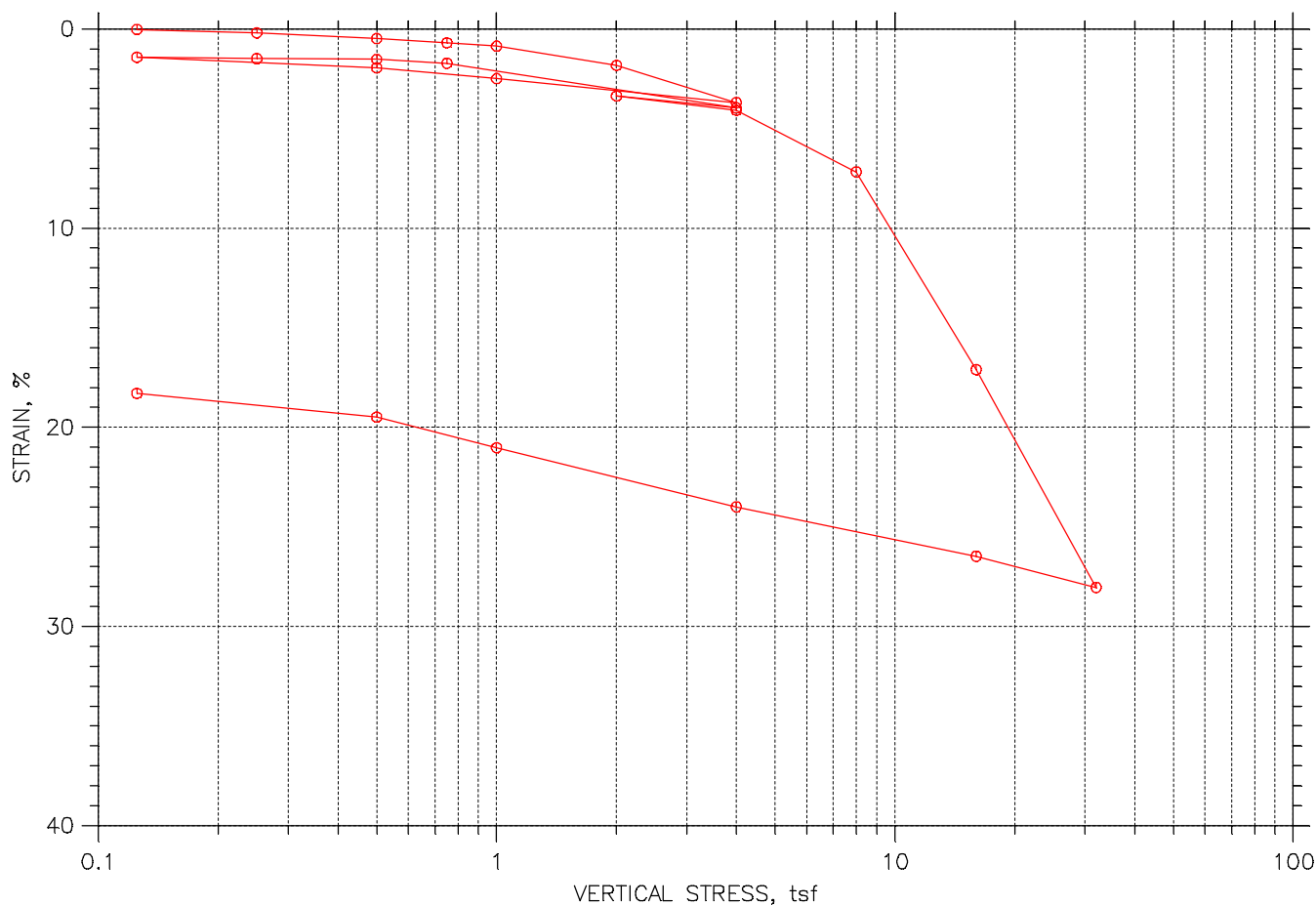
ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435




					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			

	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 PERFORMED AS PER ASTM D 2435		

ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



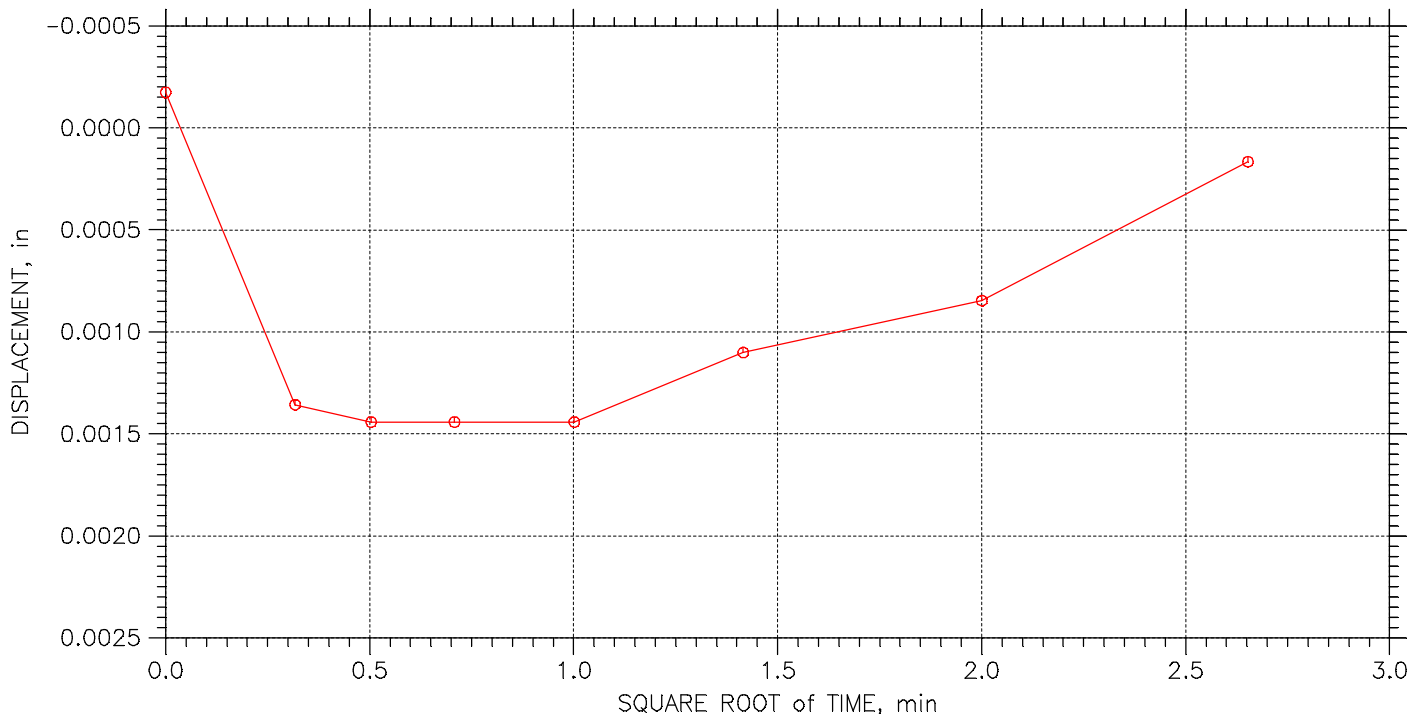
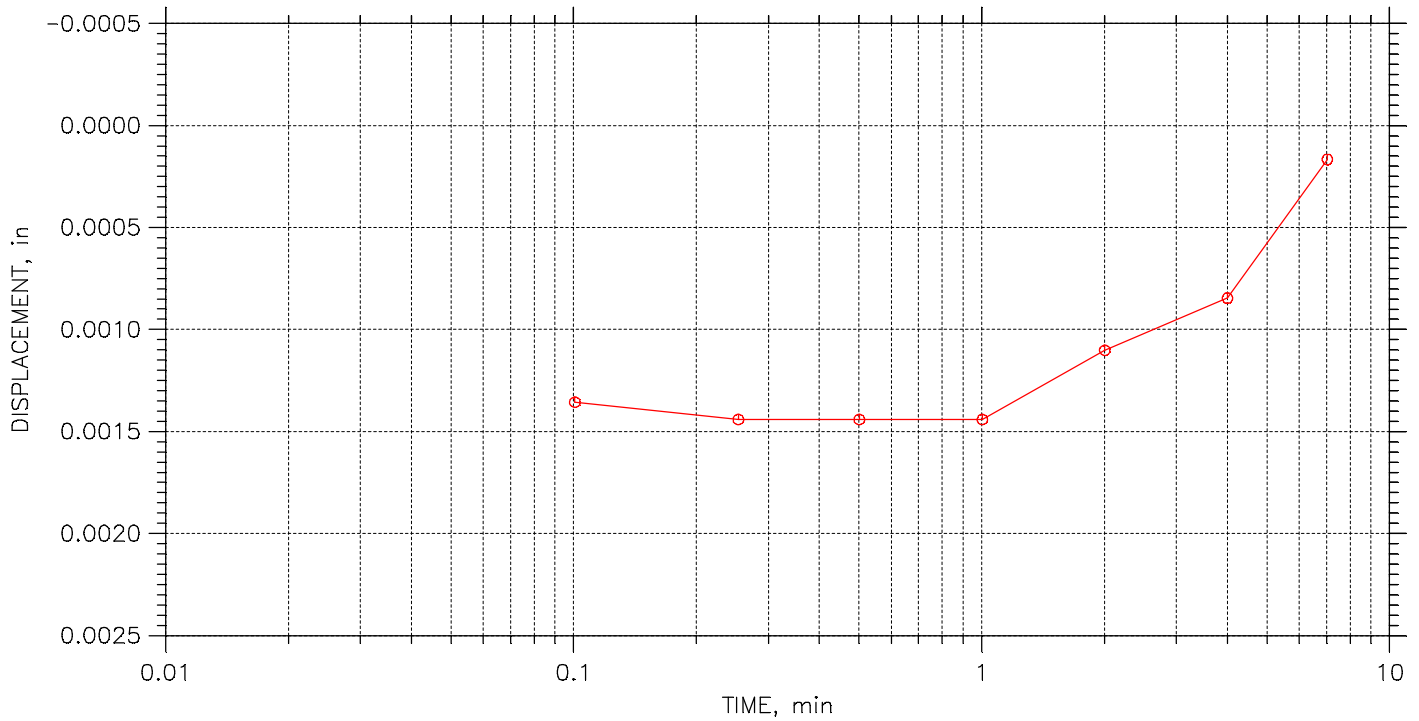
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: $P_c = 6.7$ tsf $C_c = 0.800$ $C_{cr} = 0.076$ TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf



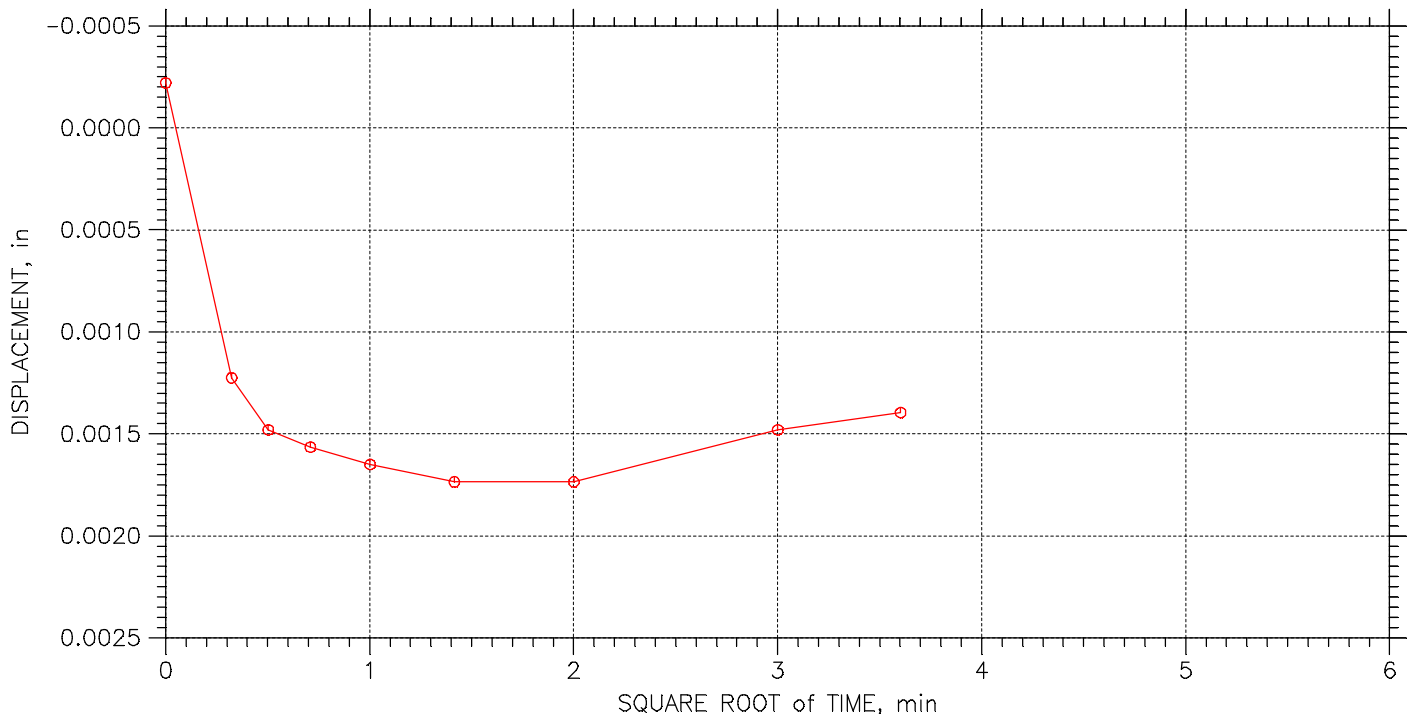
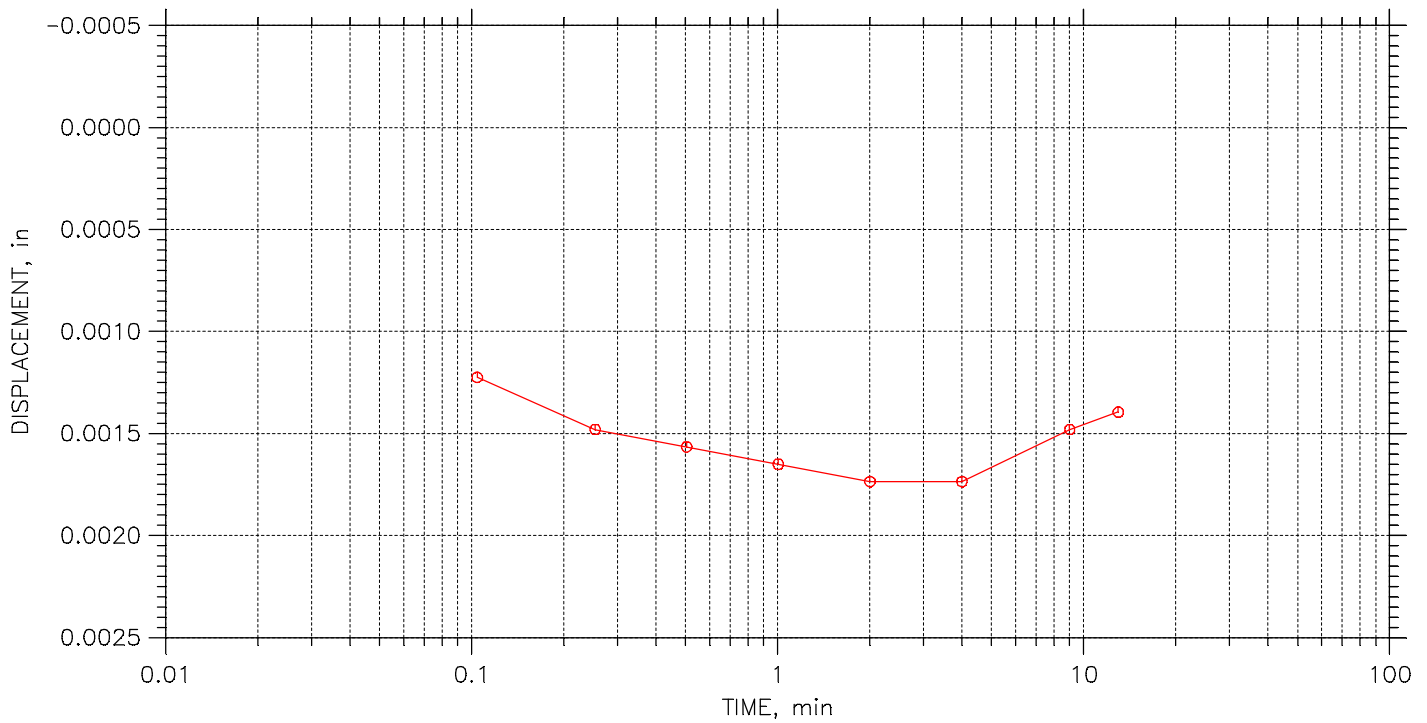
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf



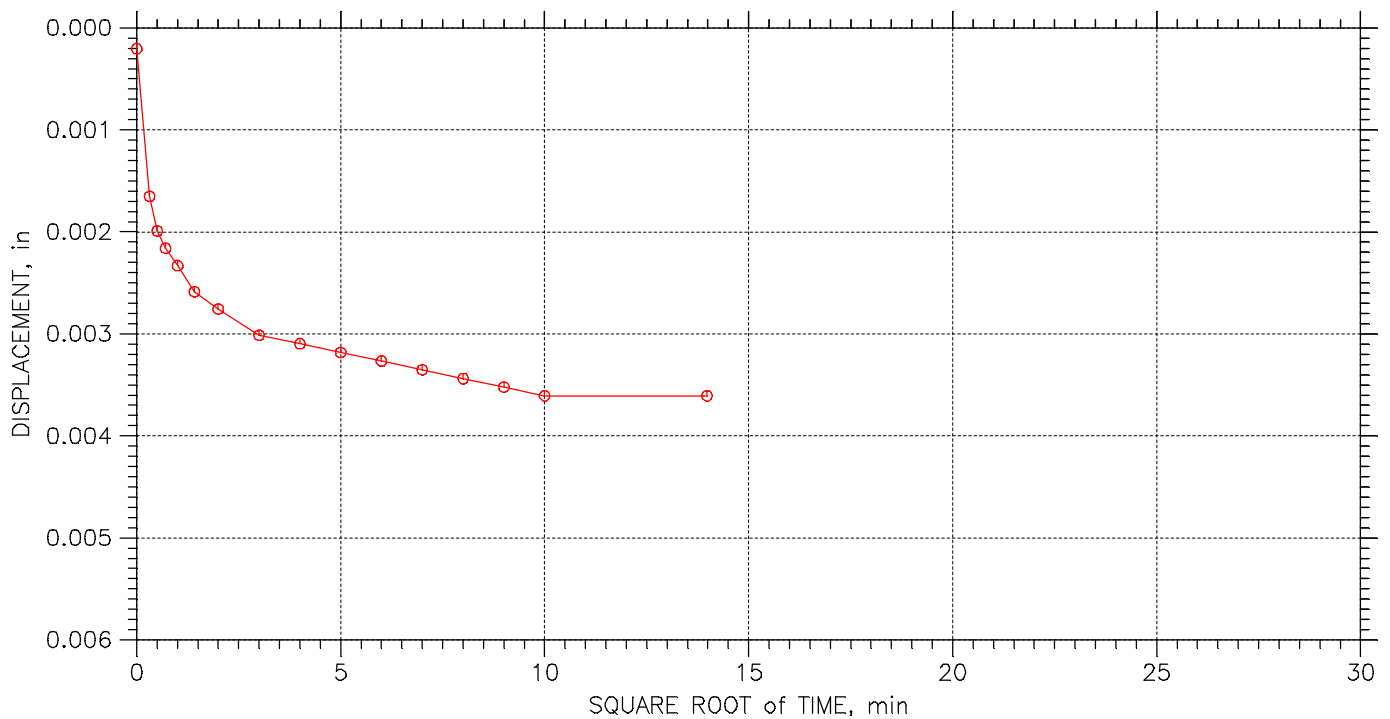
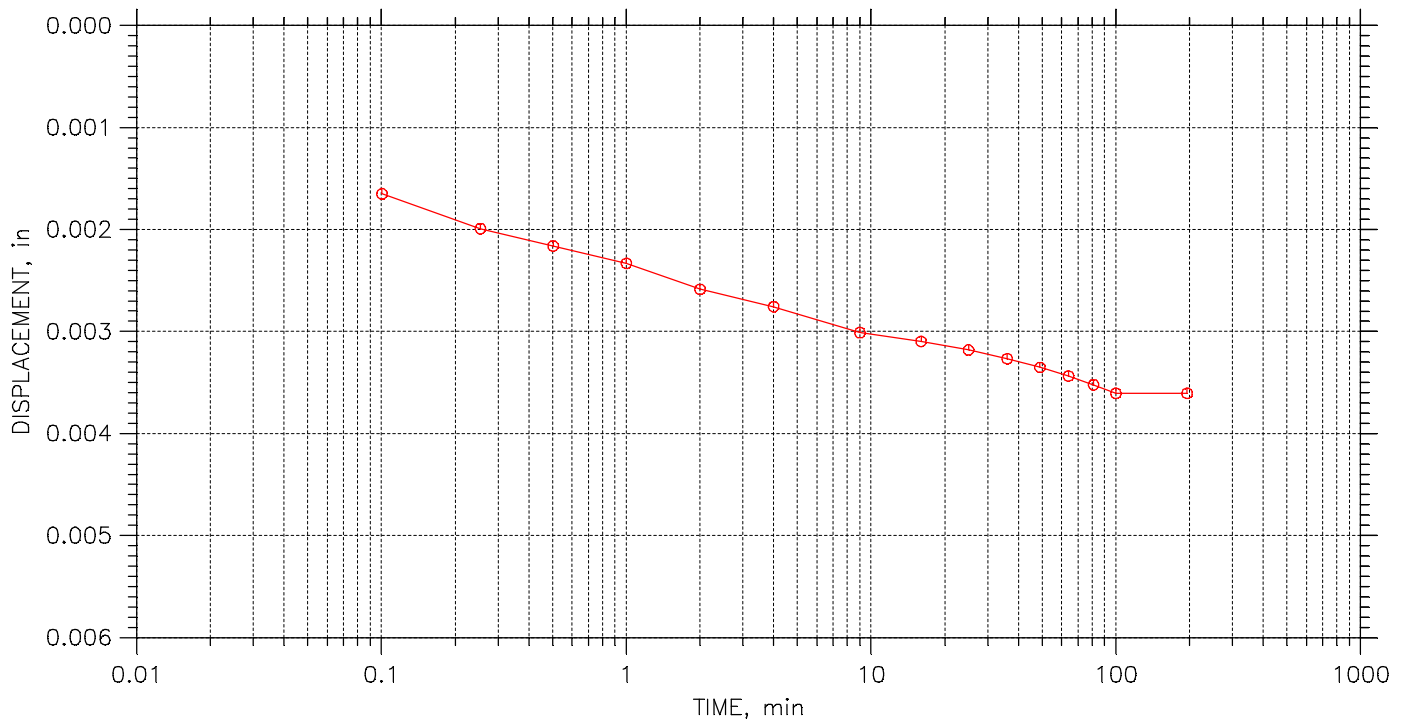
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf



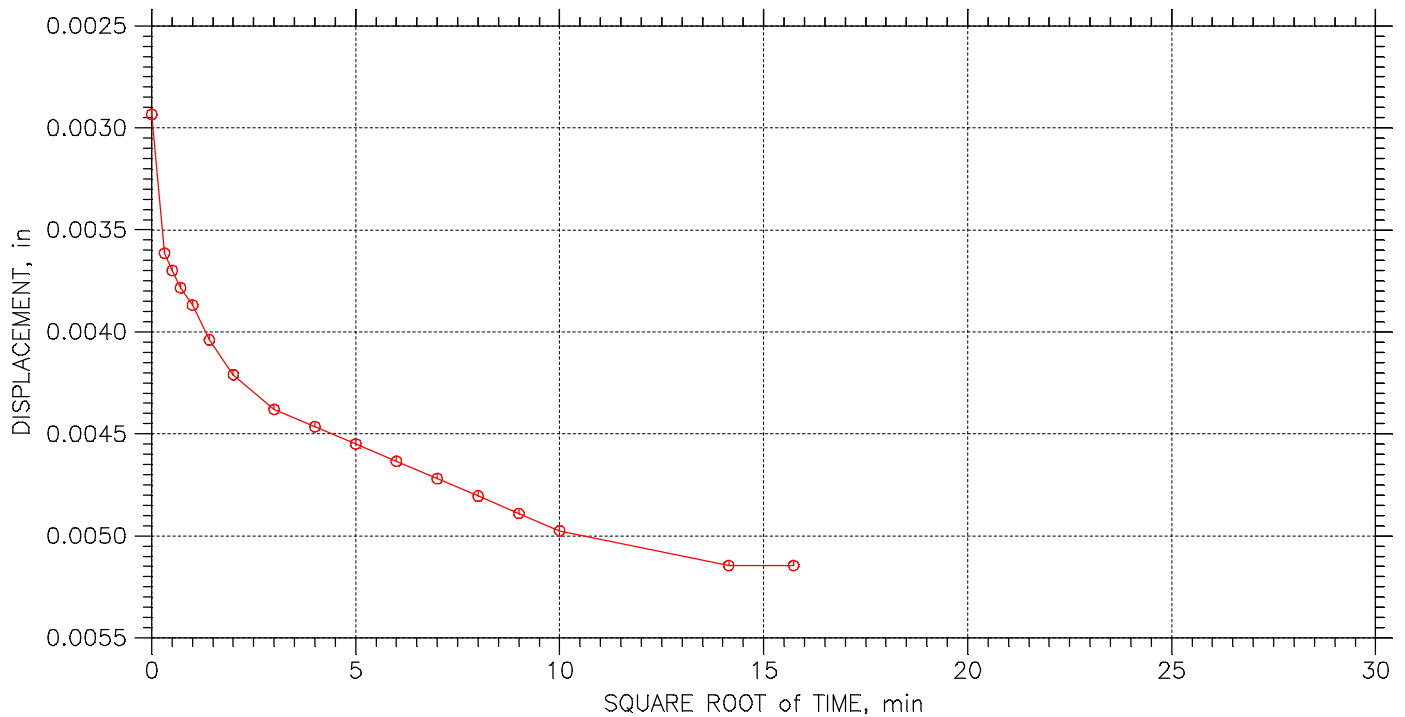
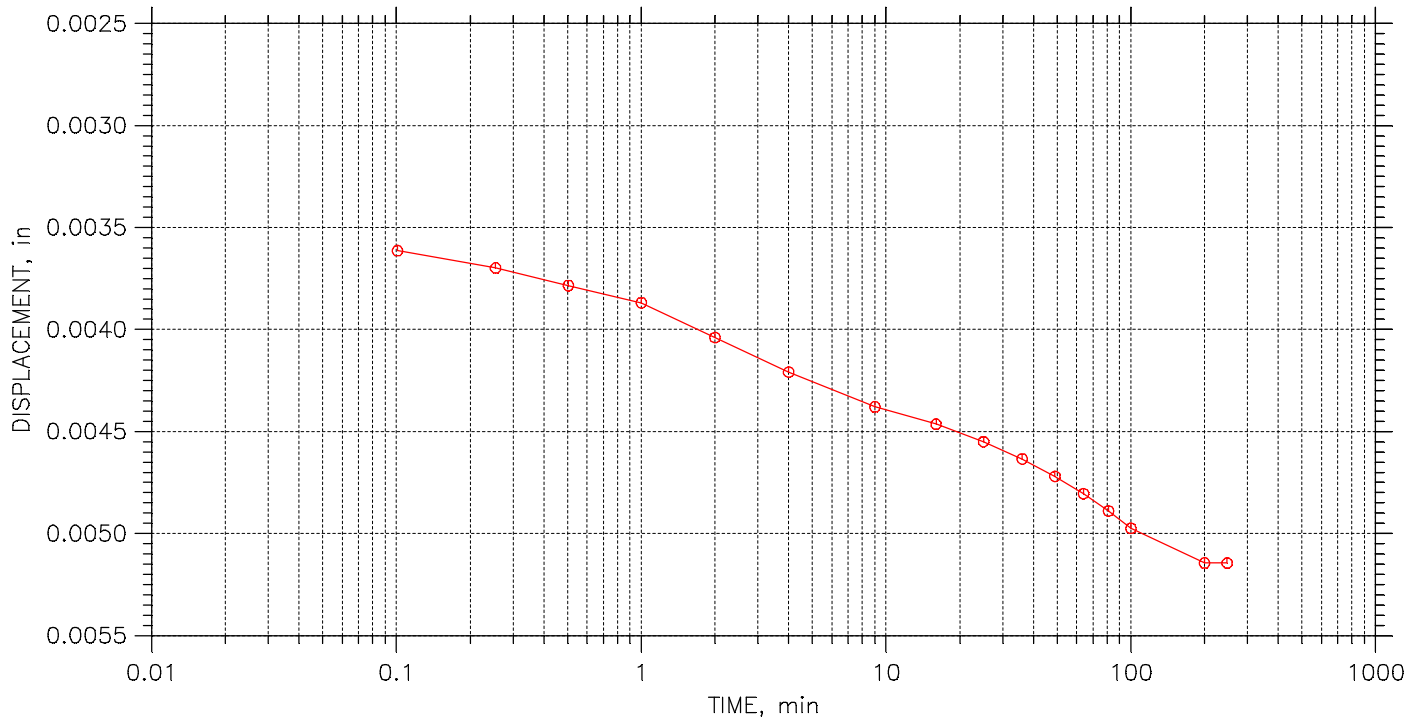
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf



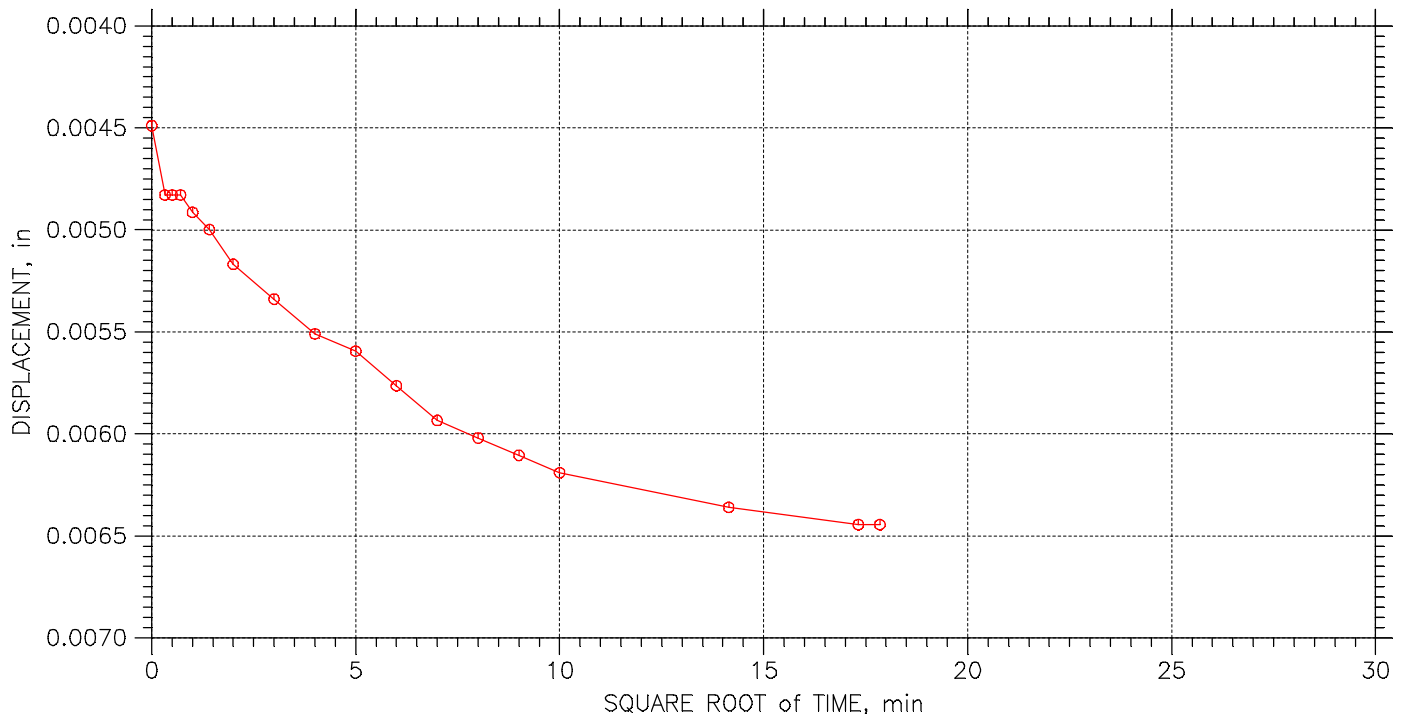
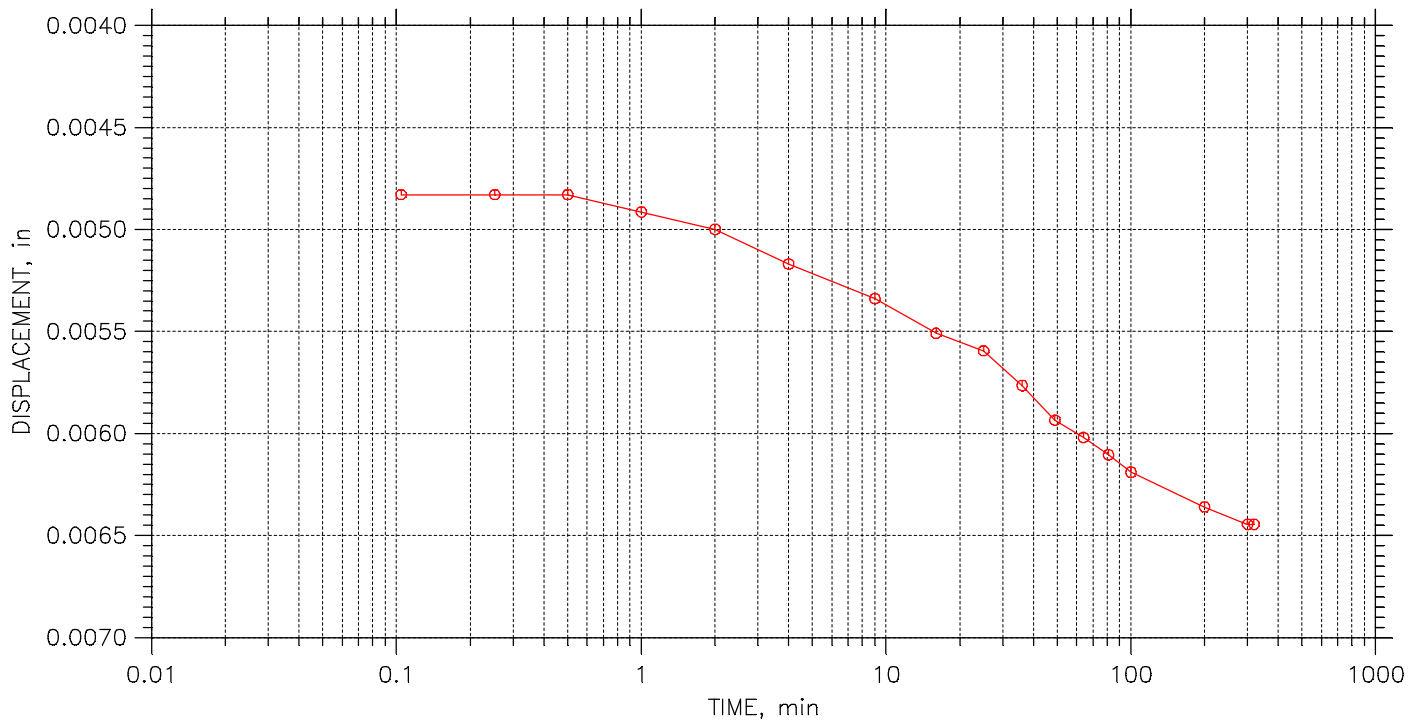
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf



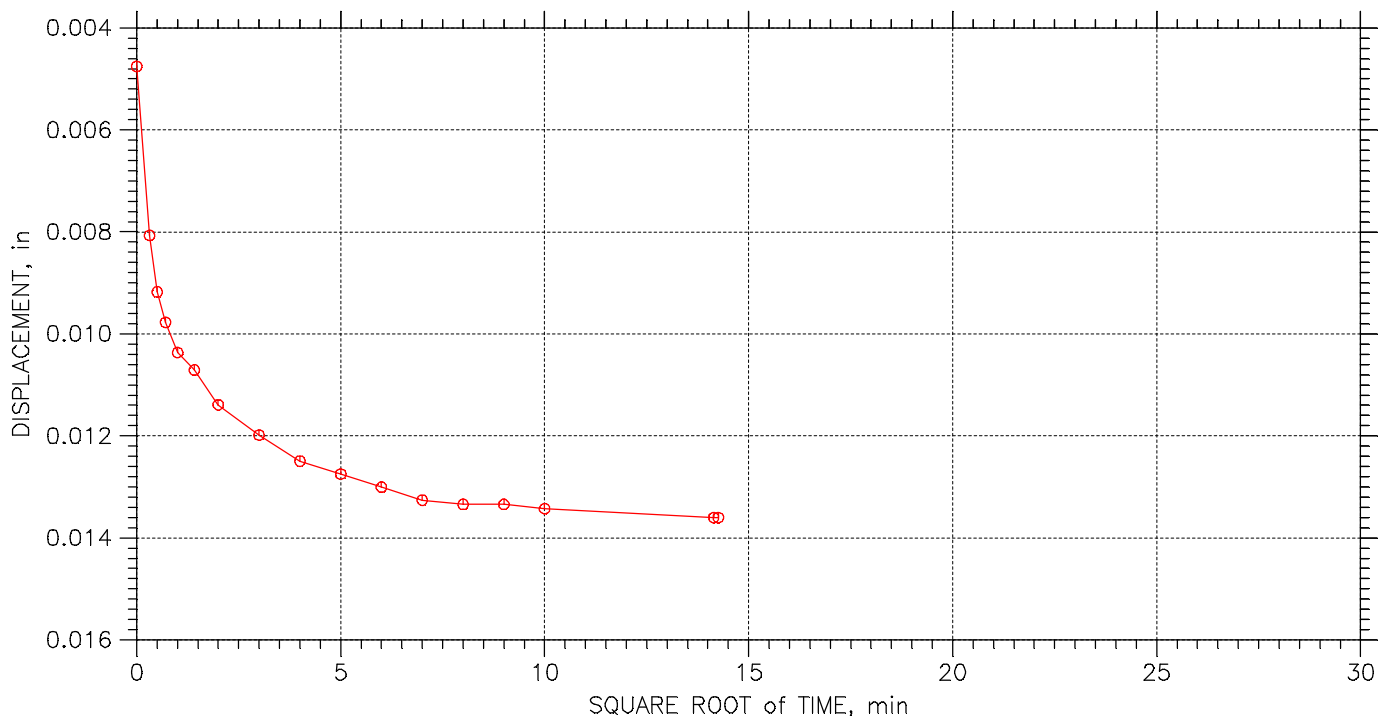
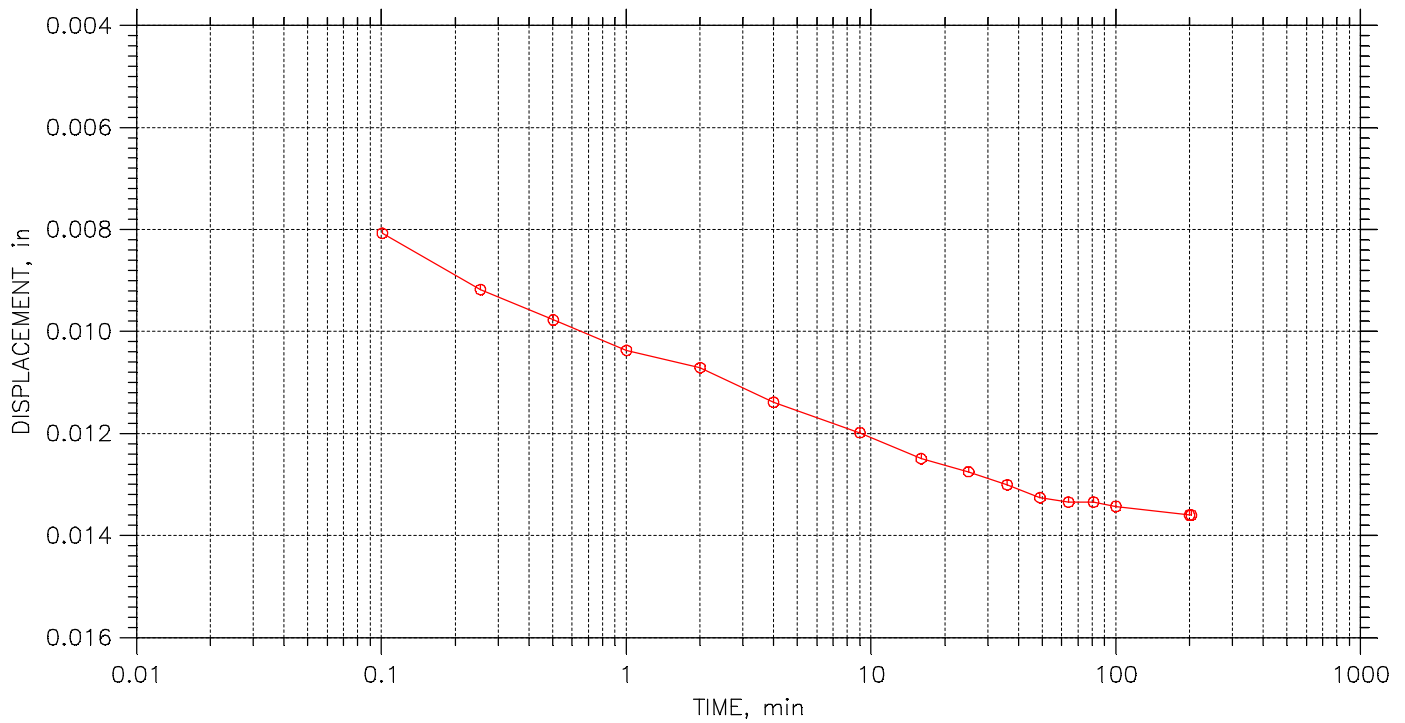
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf



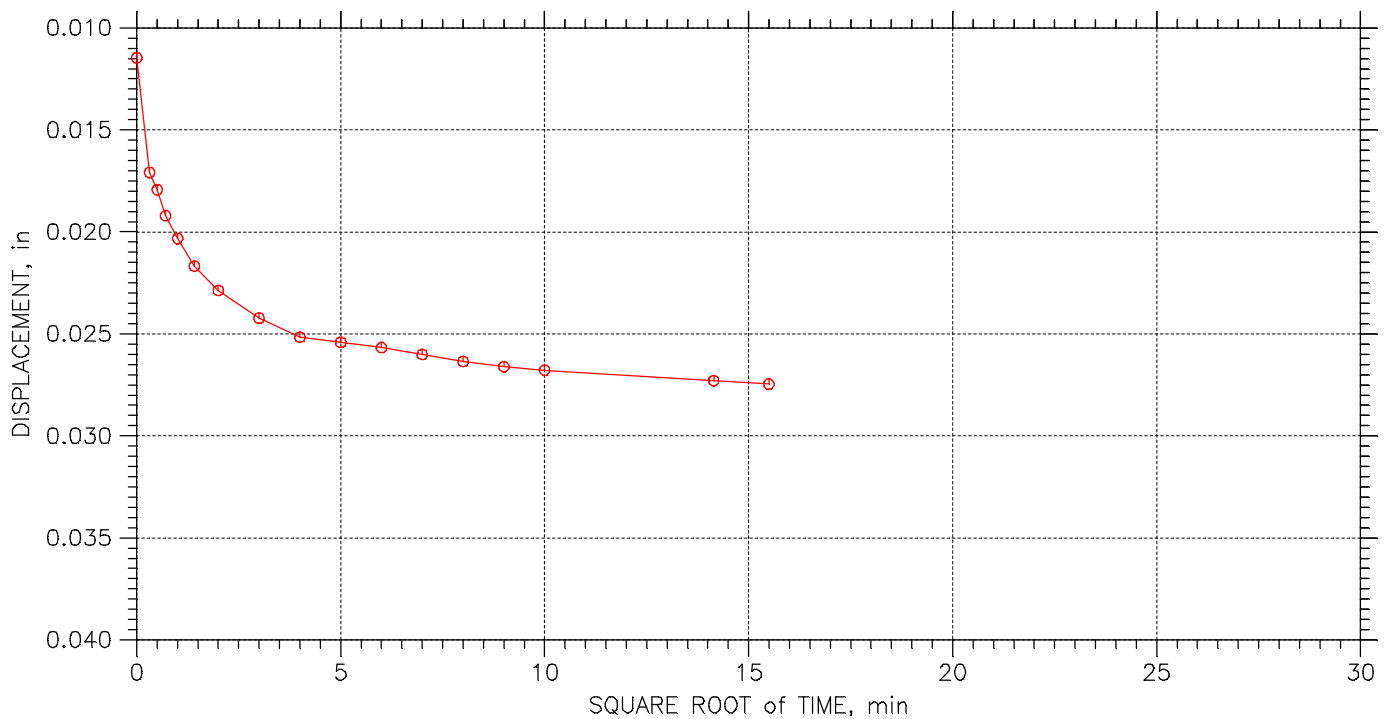
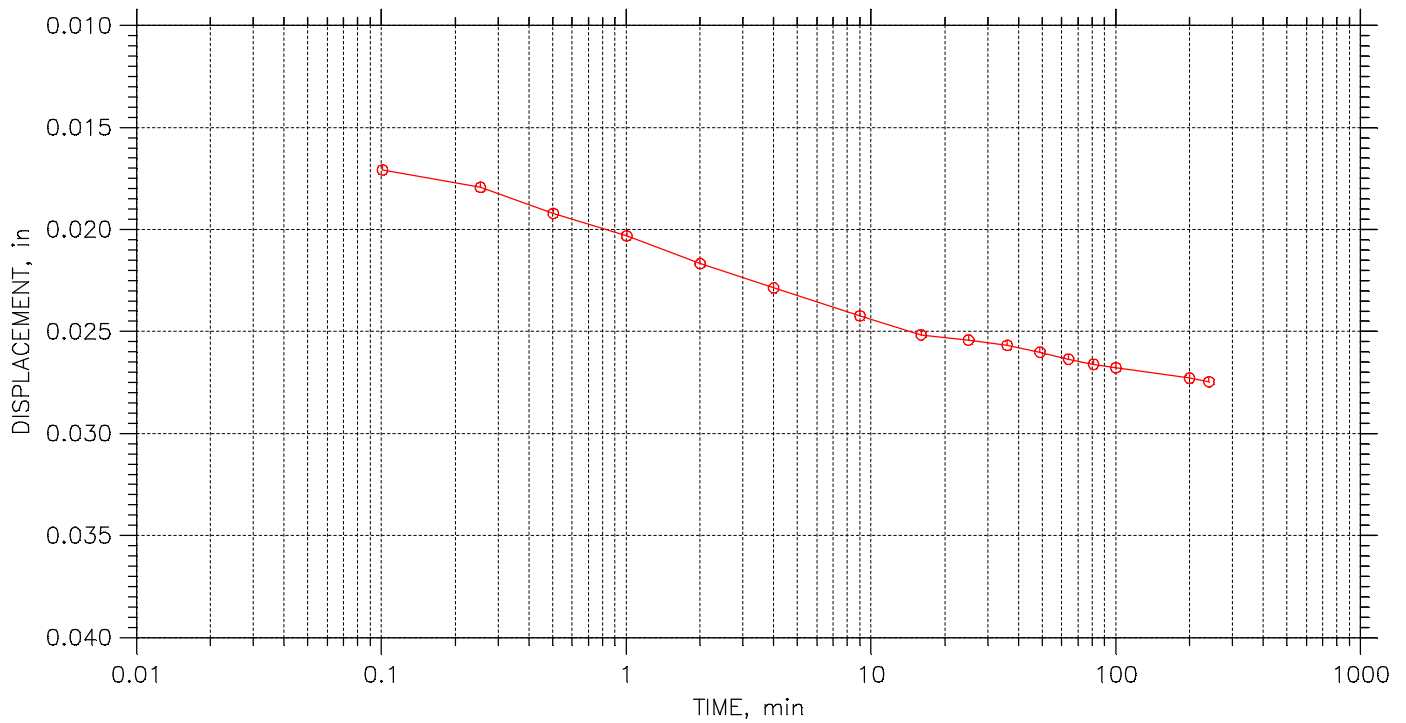
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf



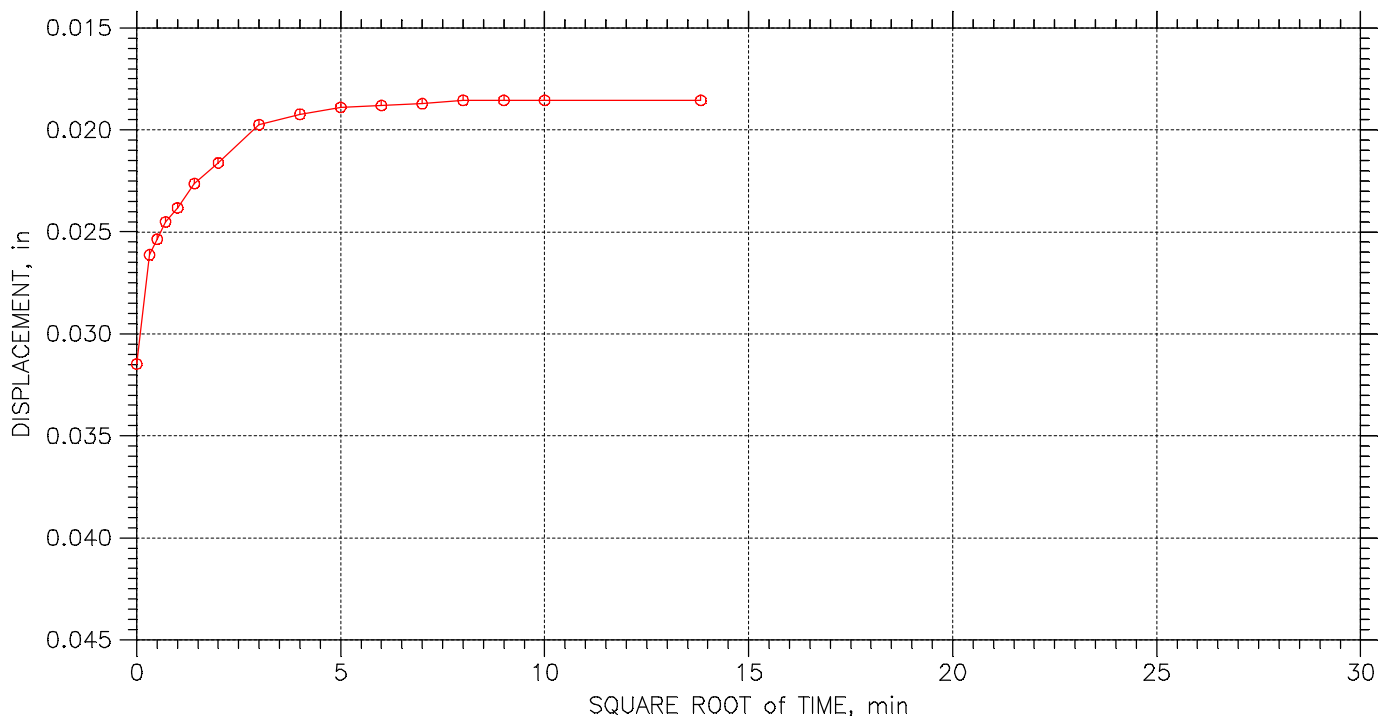
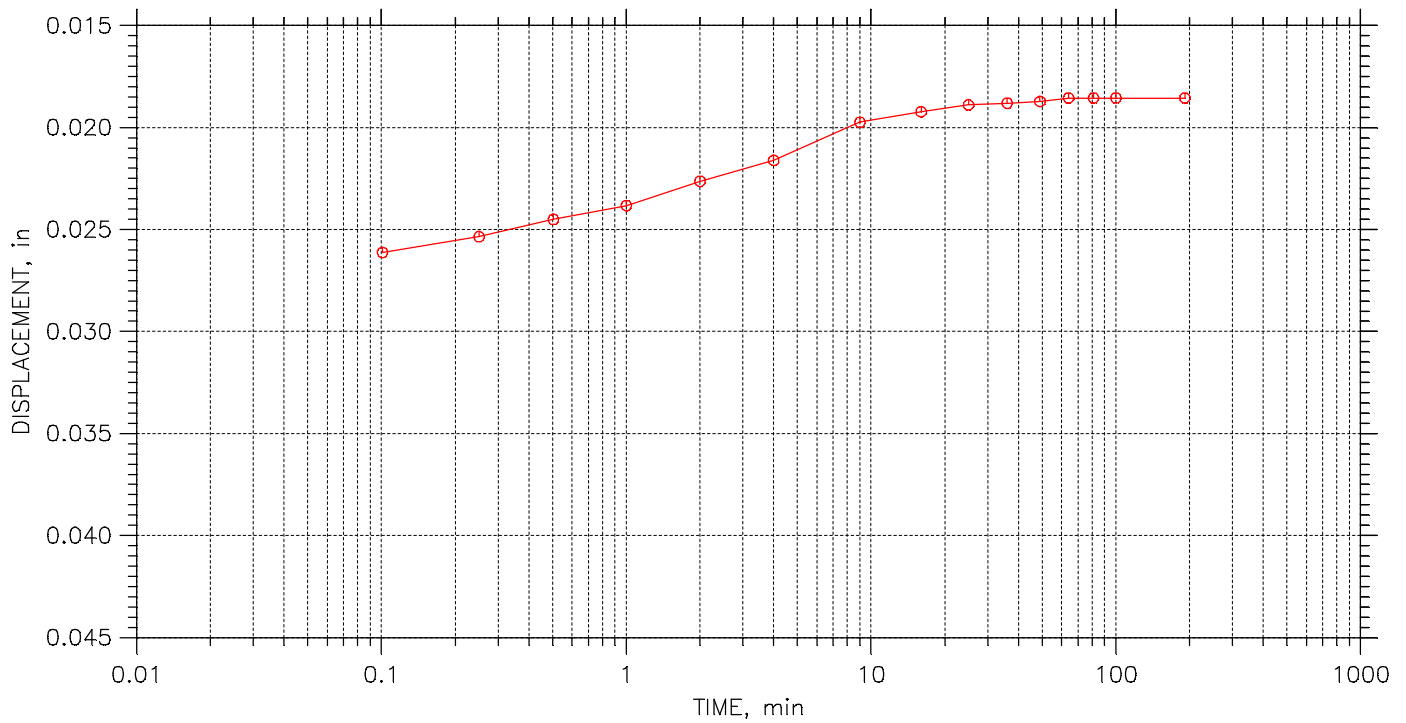
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf



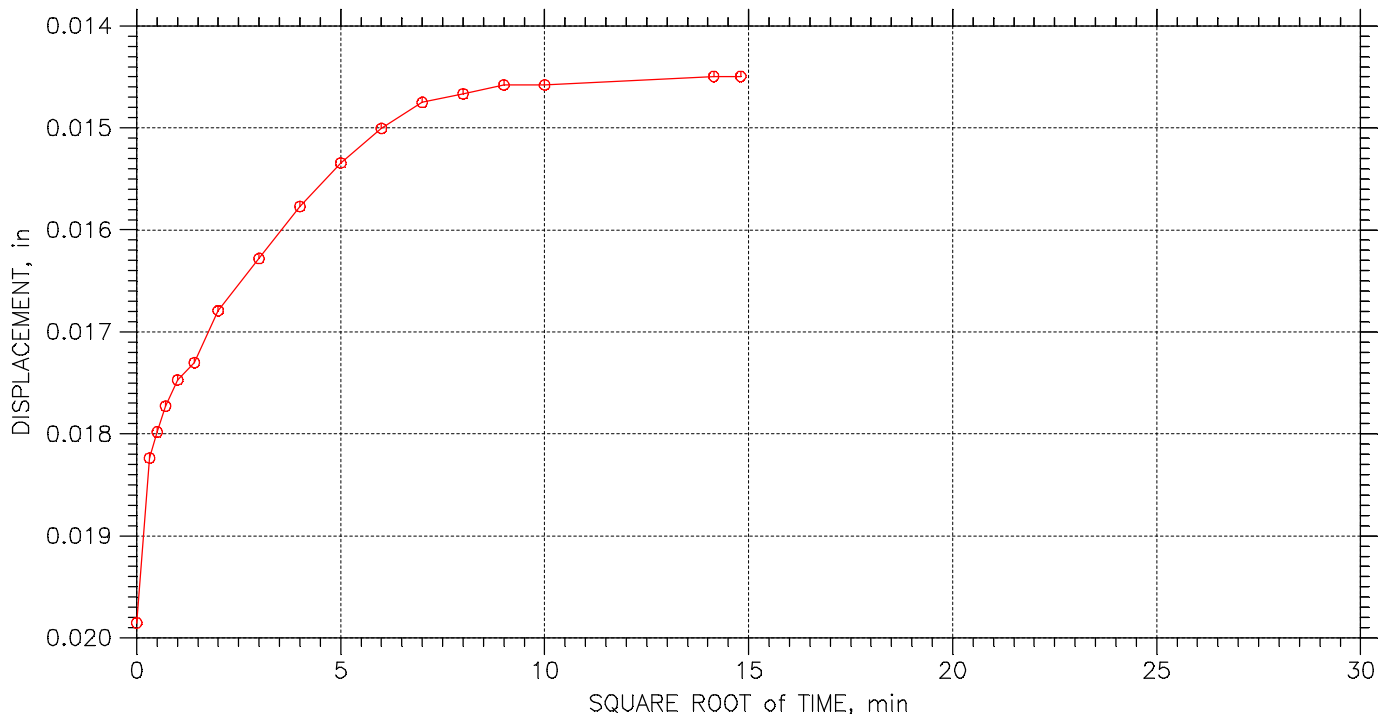
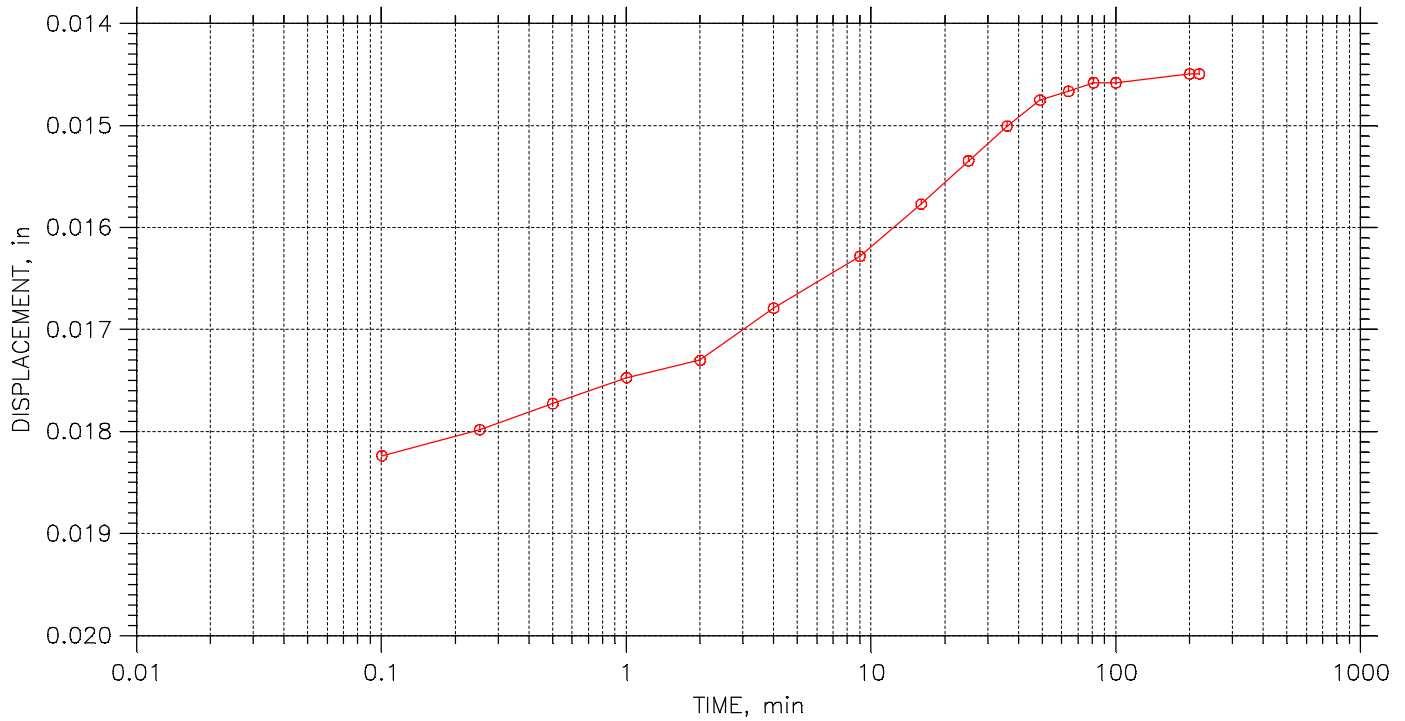
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf



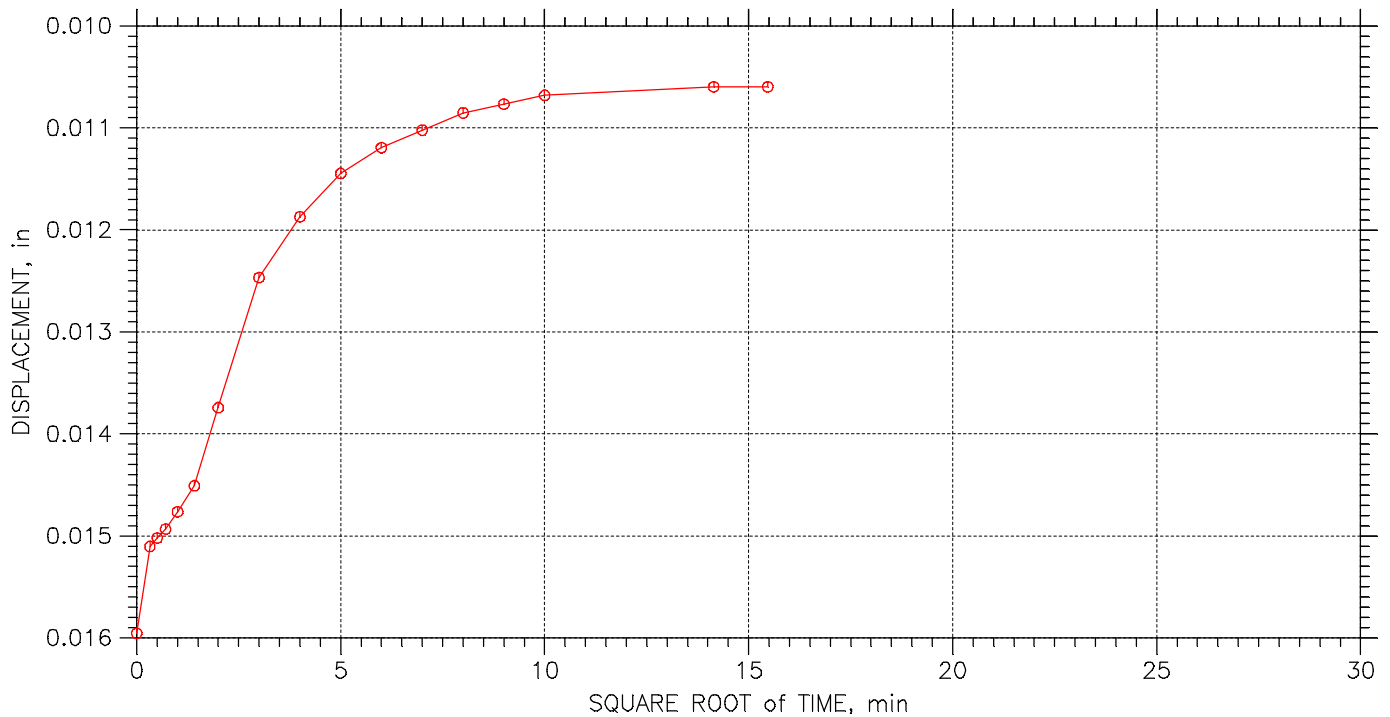
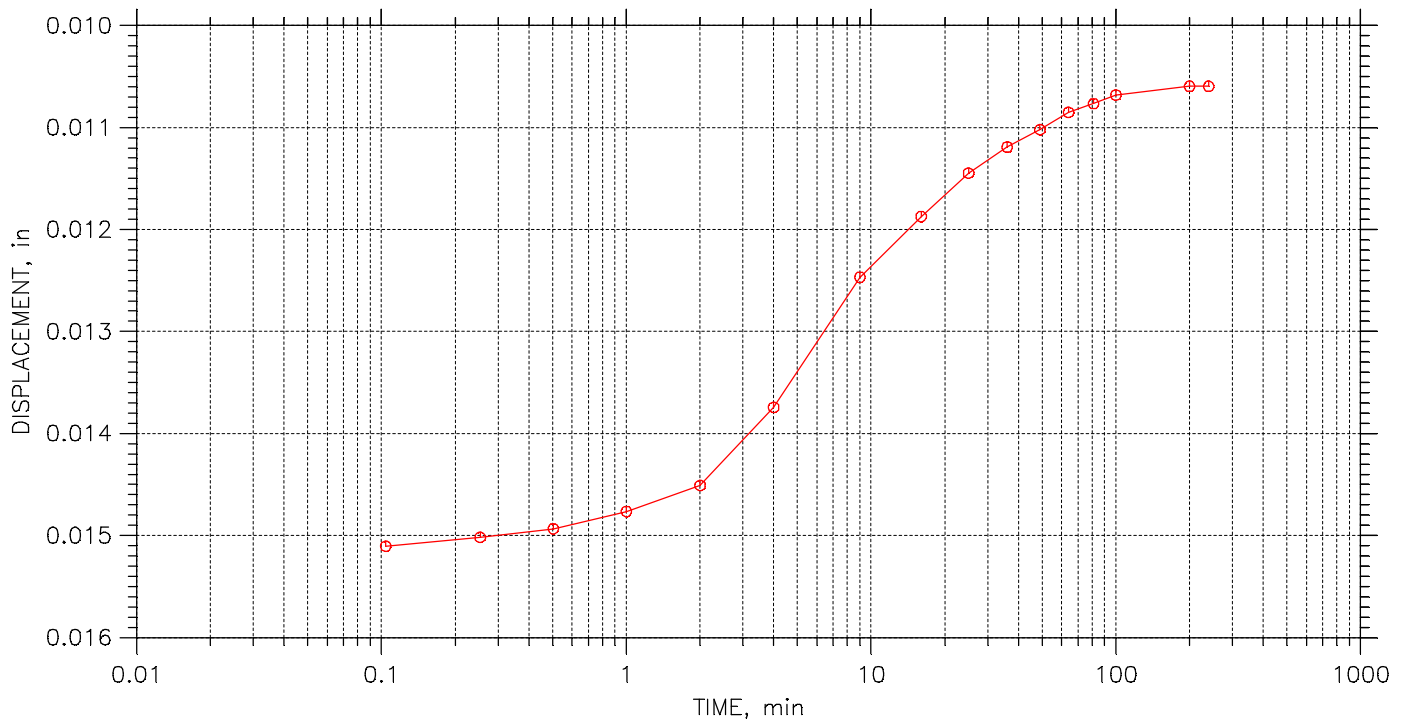
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



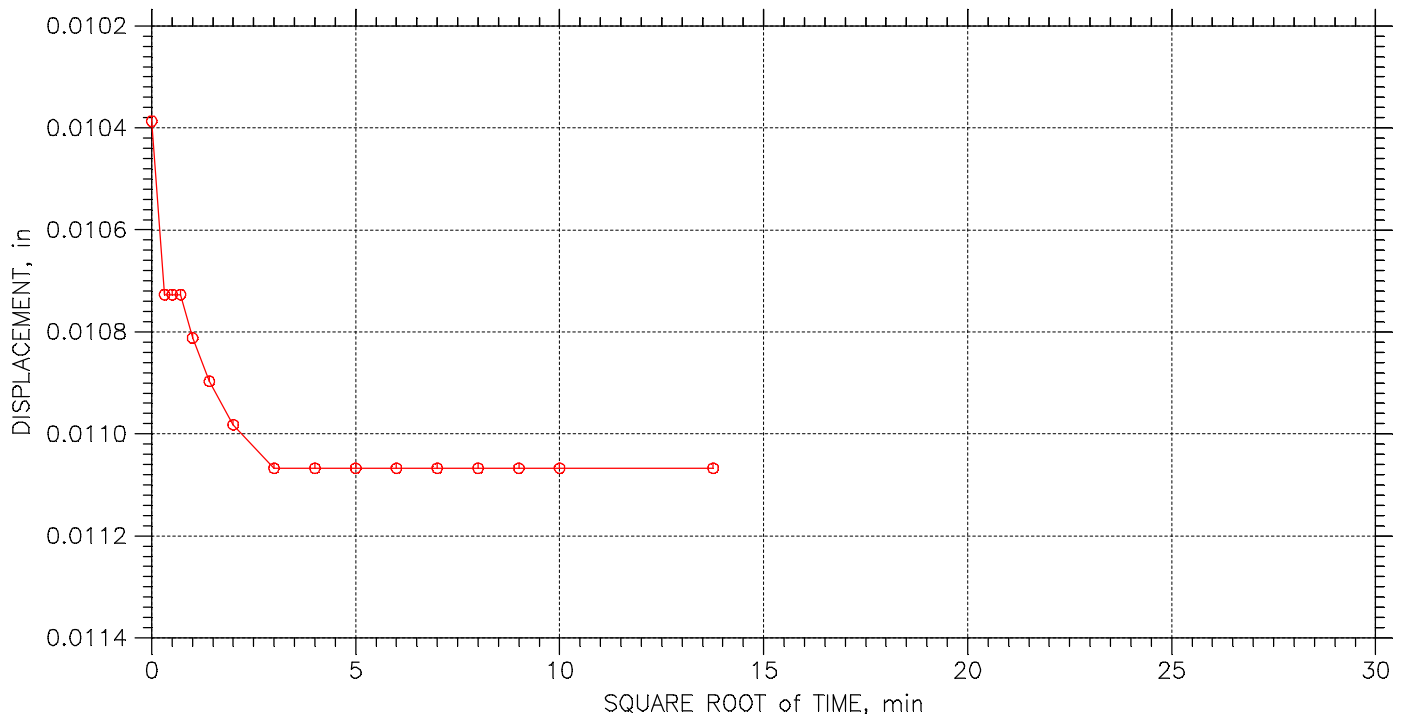
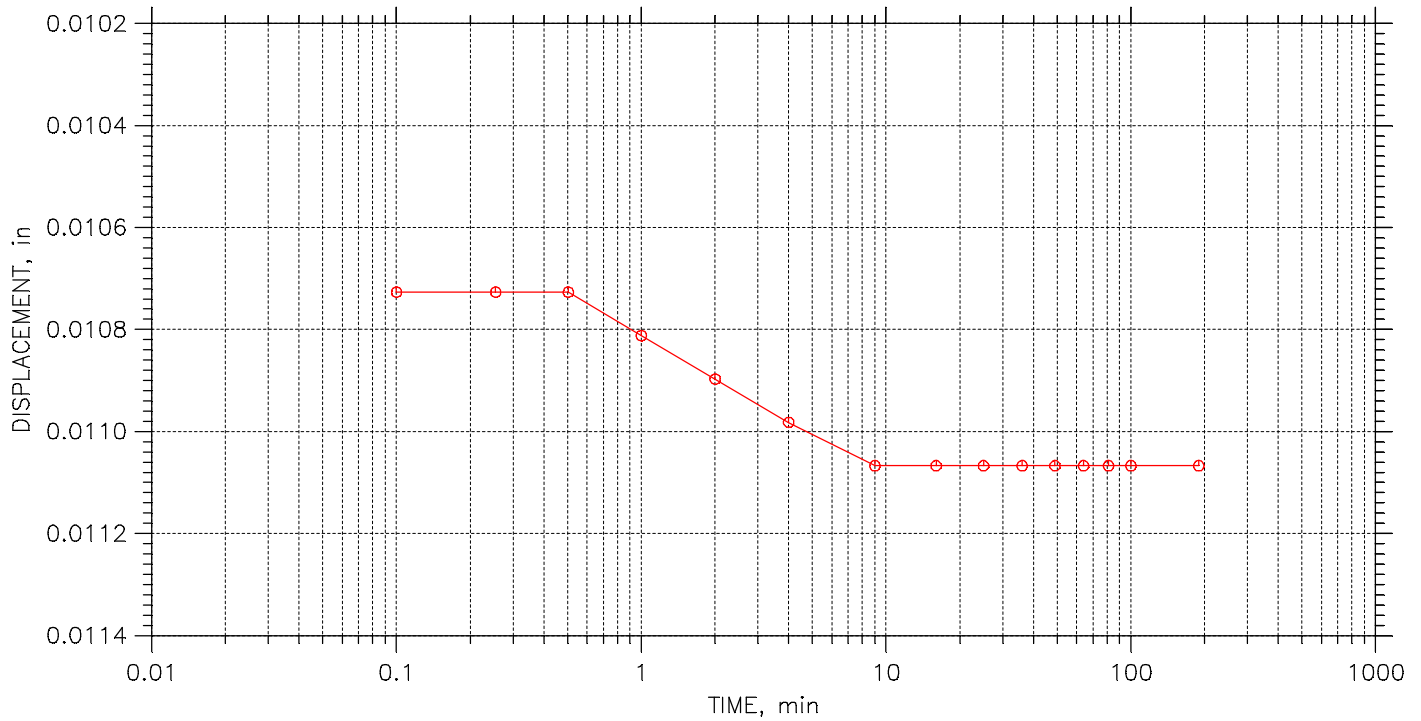
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf



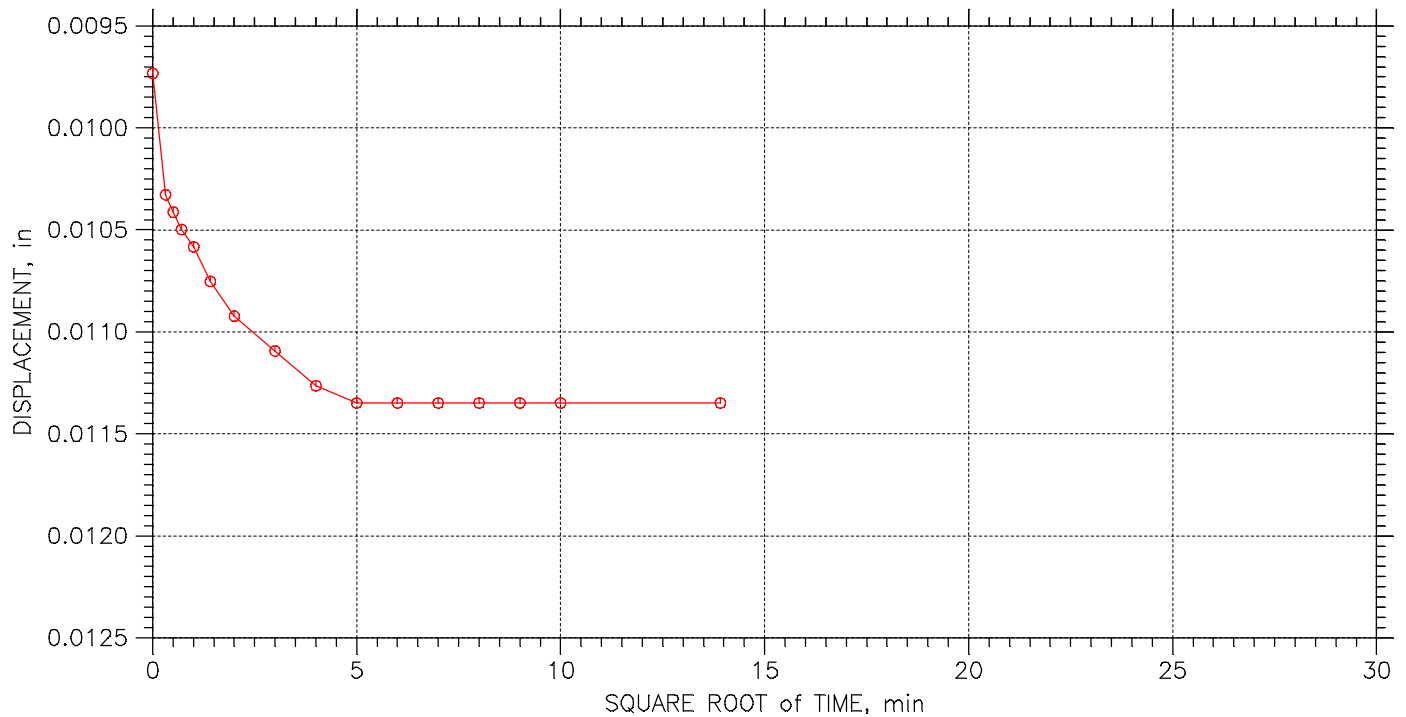
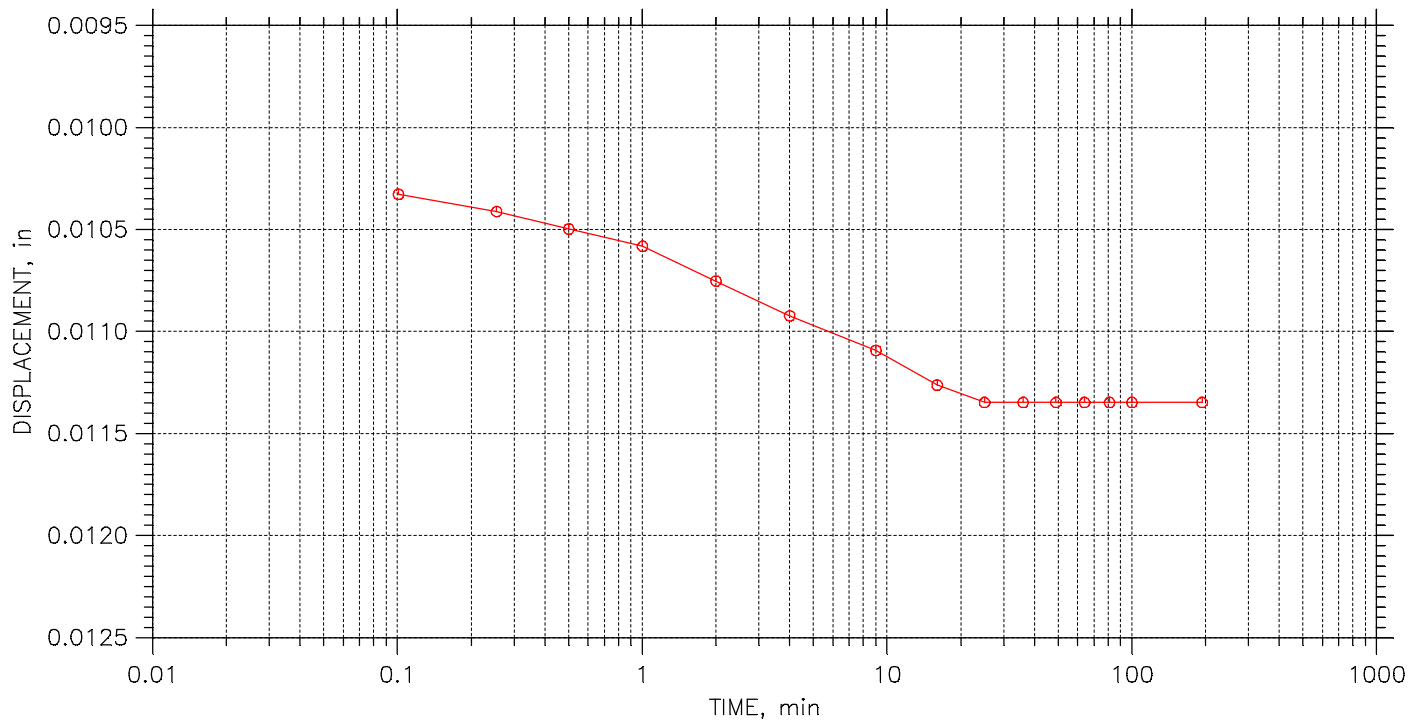
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf



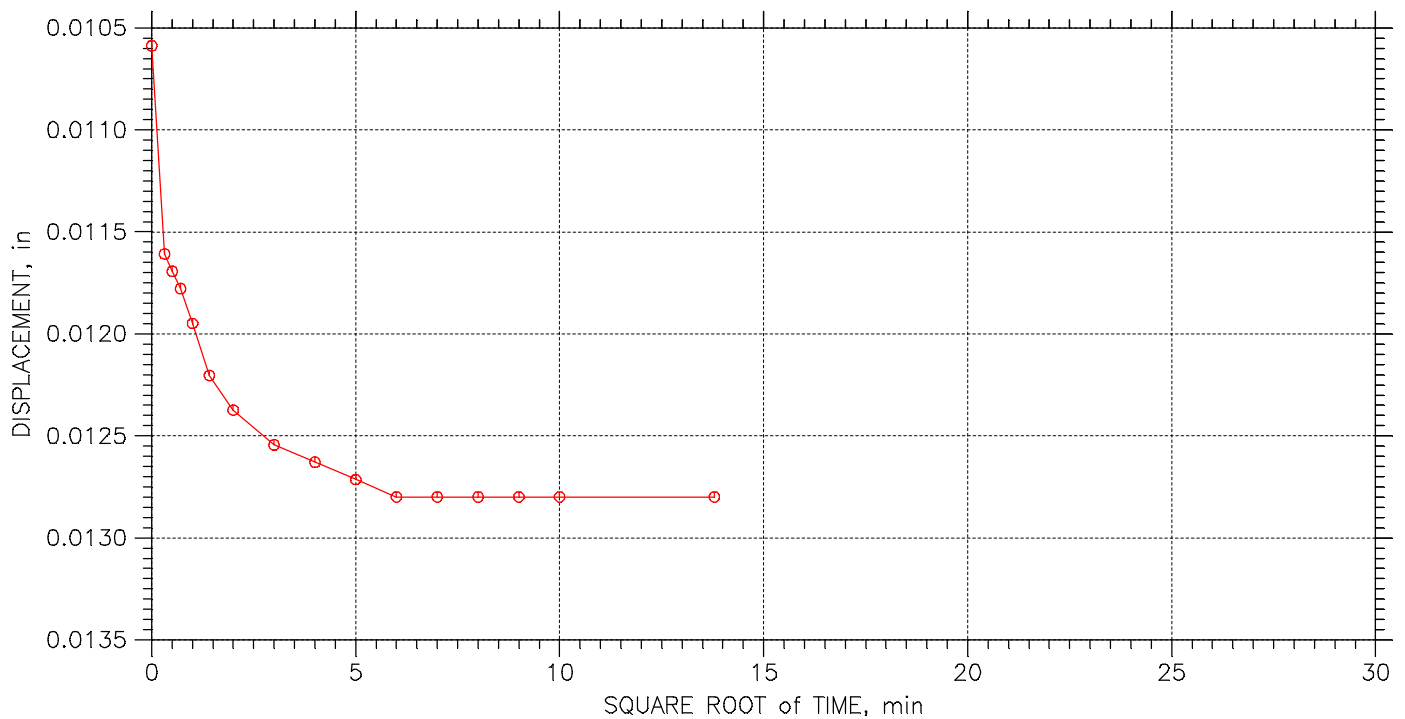
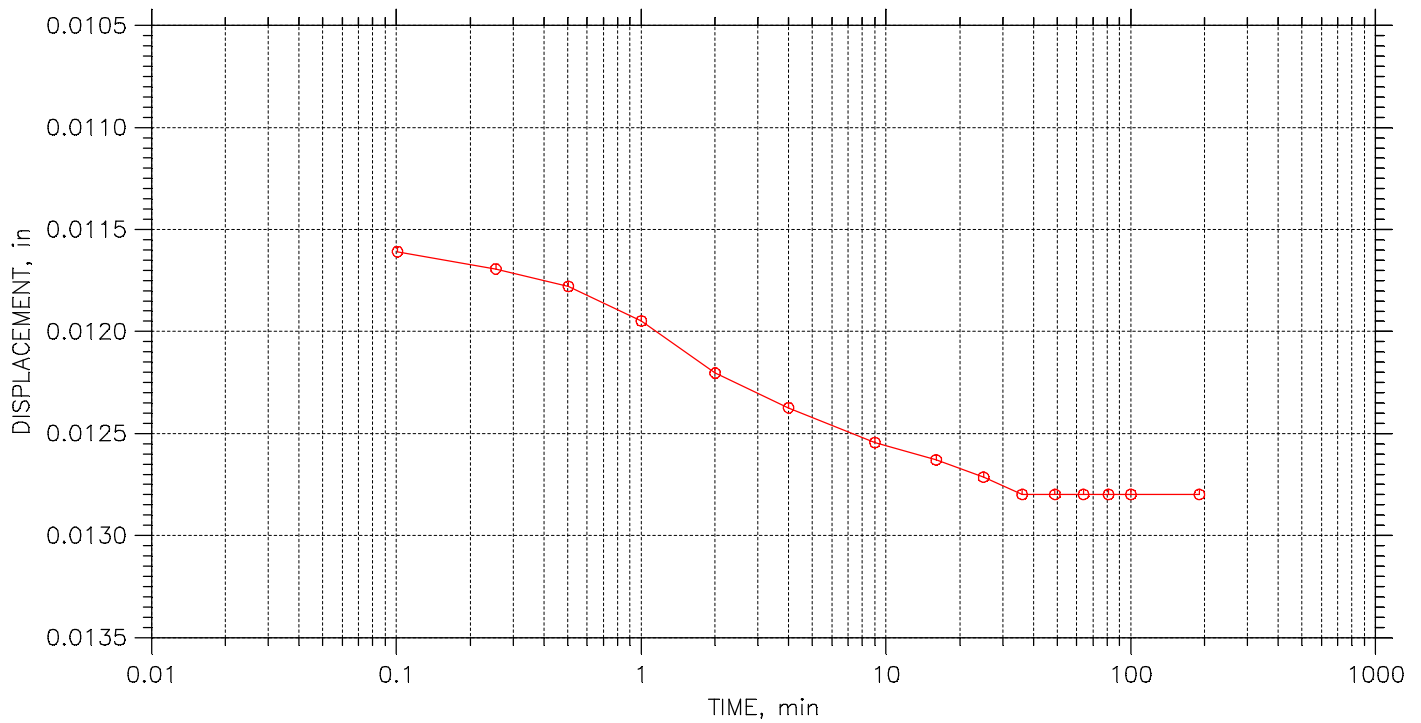
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf



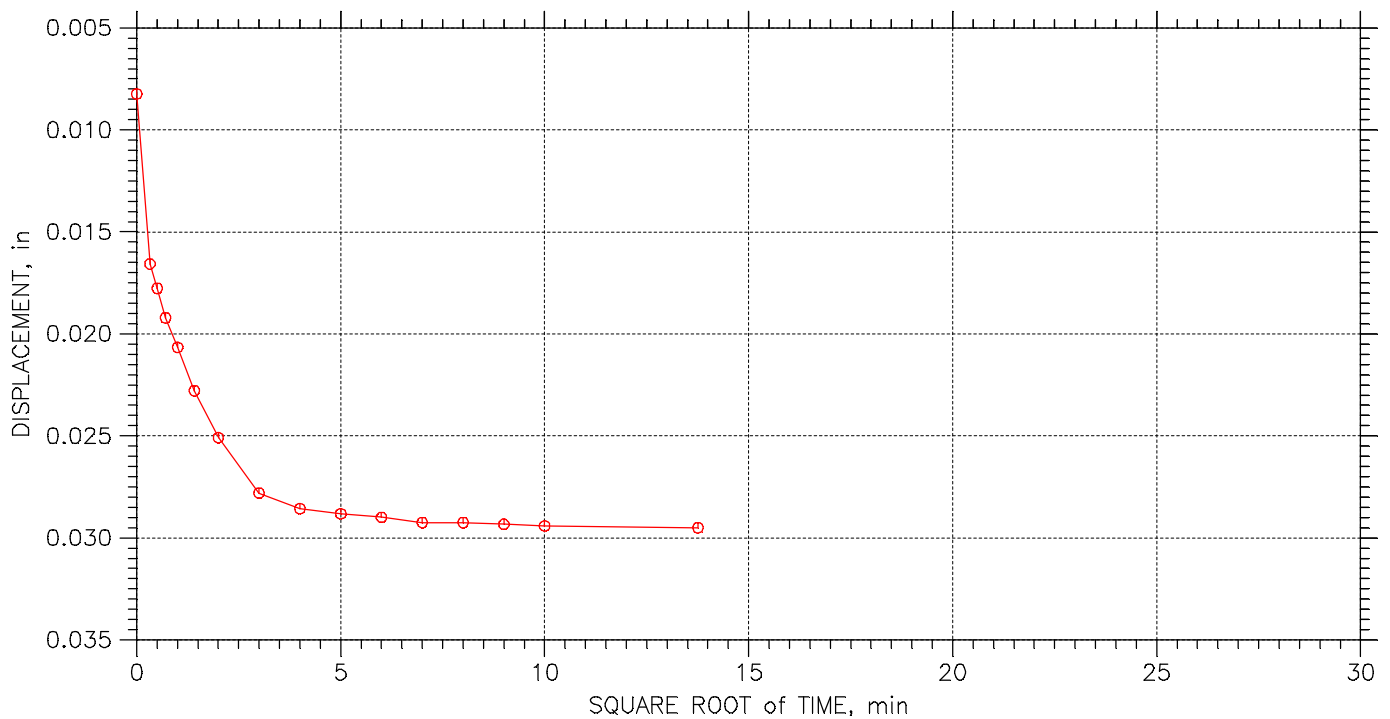
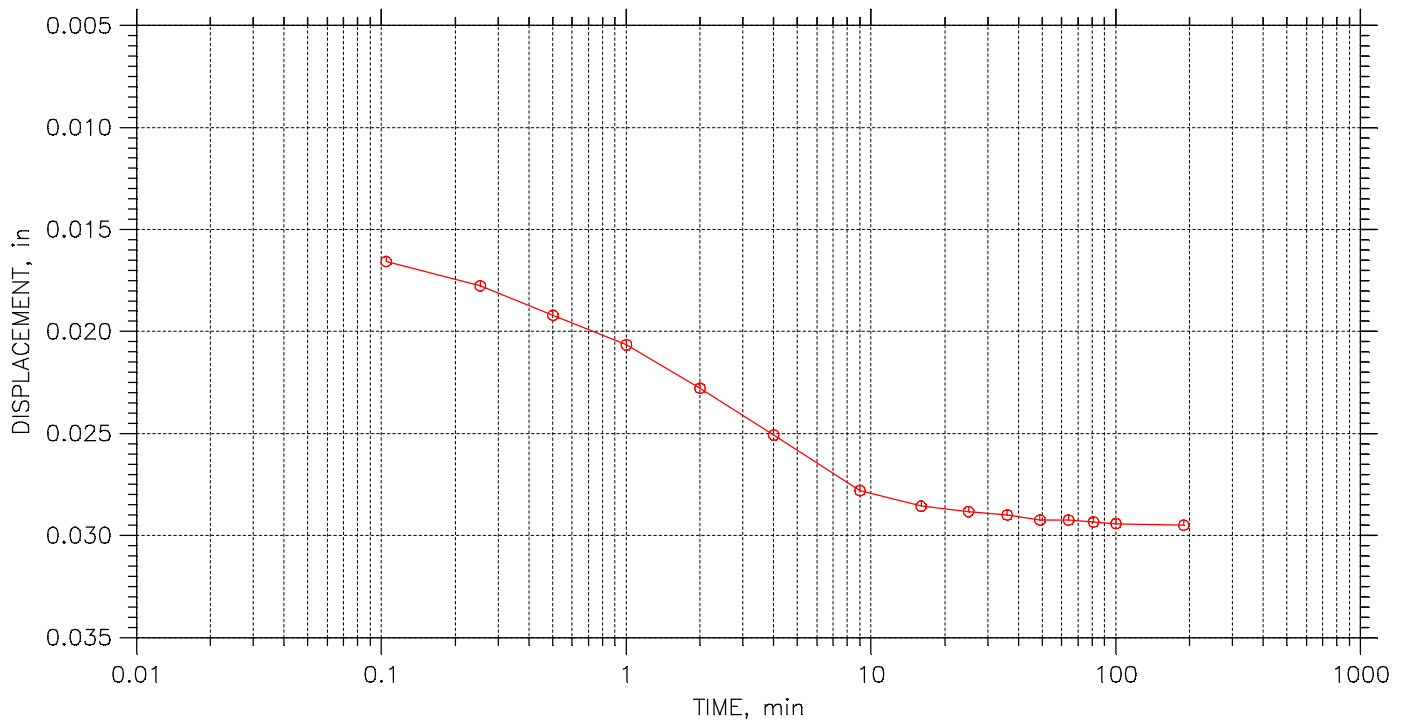
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 24

Stress: 4. tsf



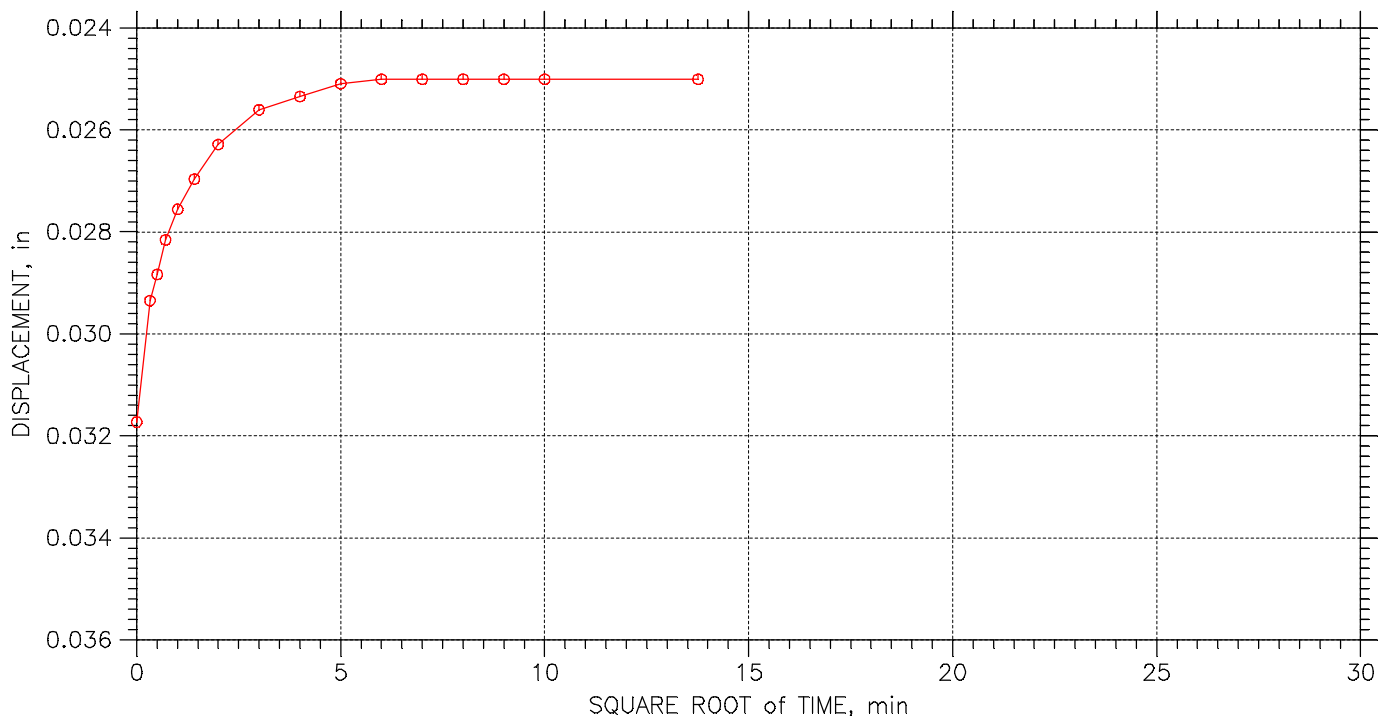
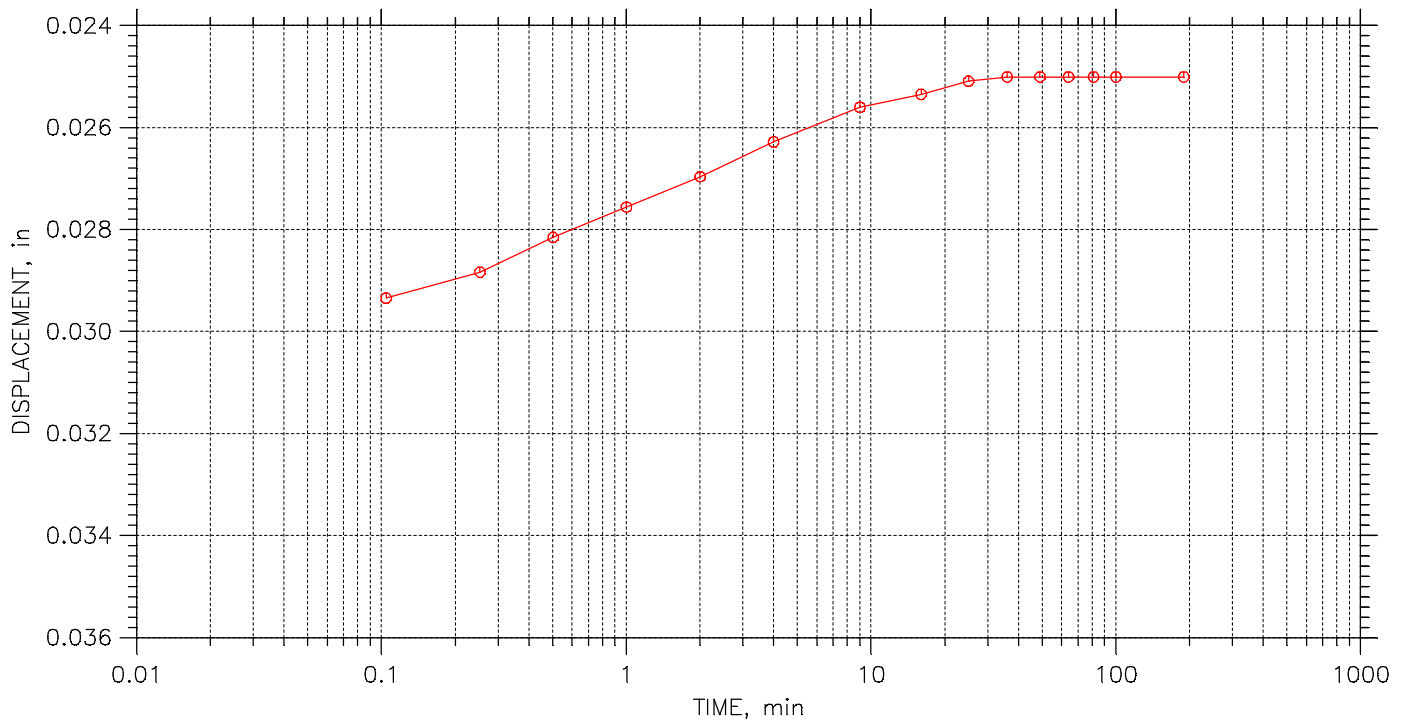
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf



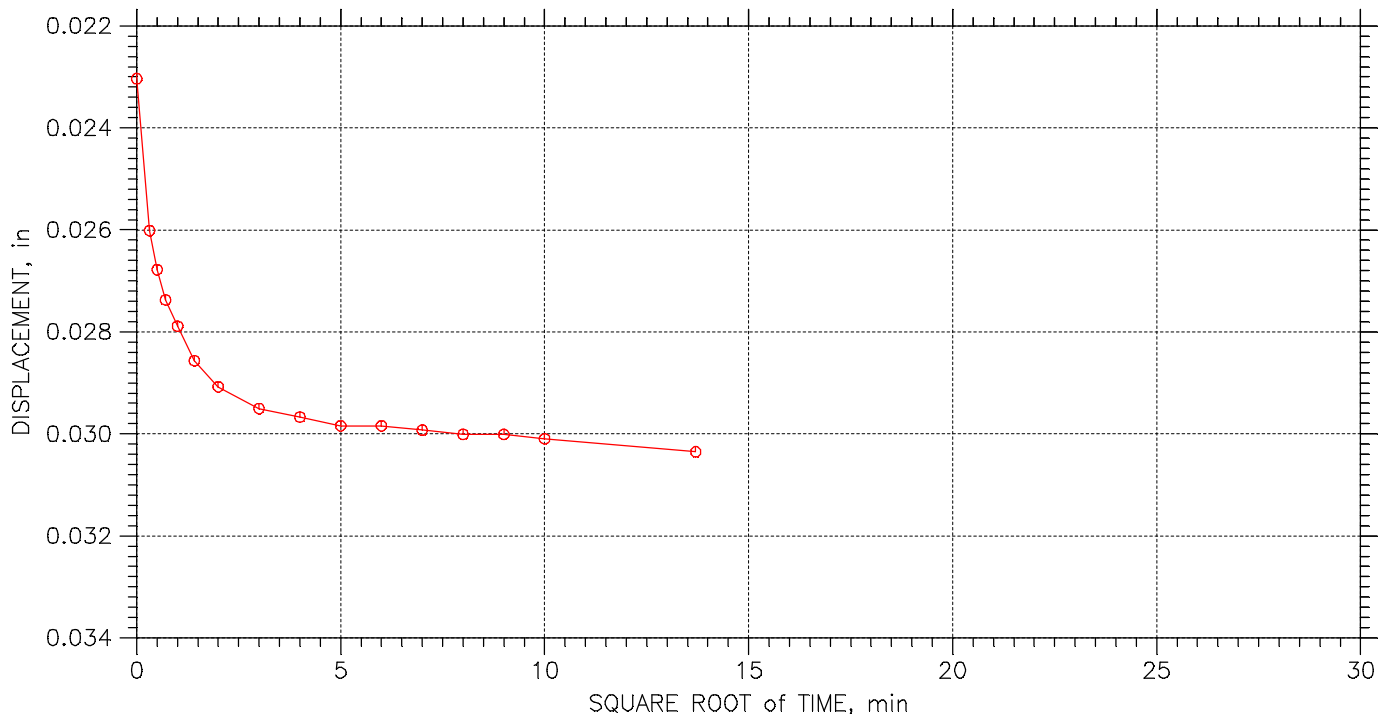
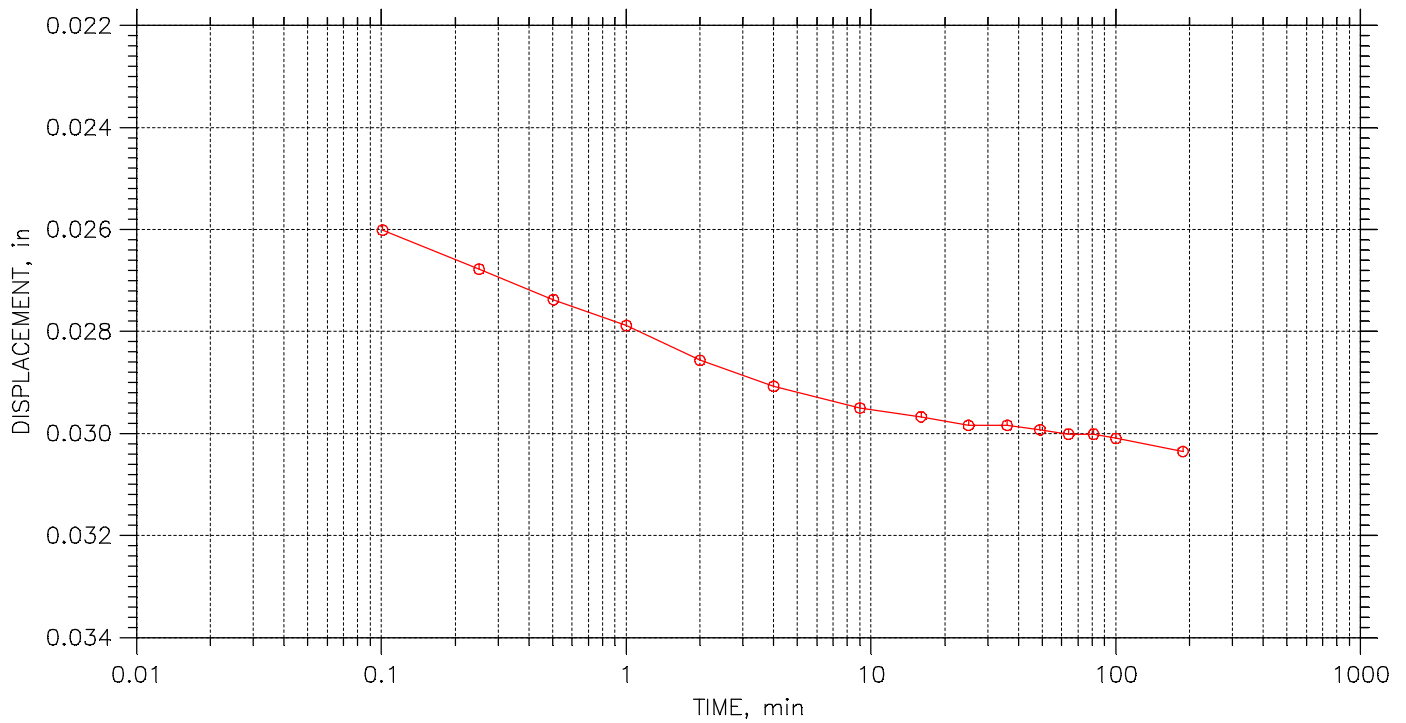
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf



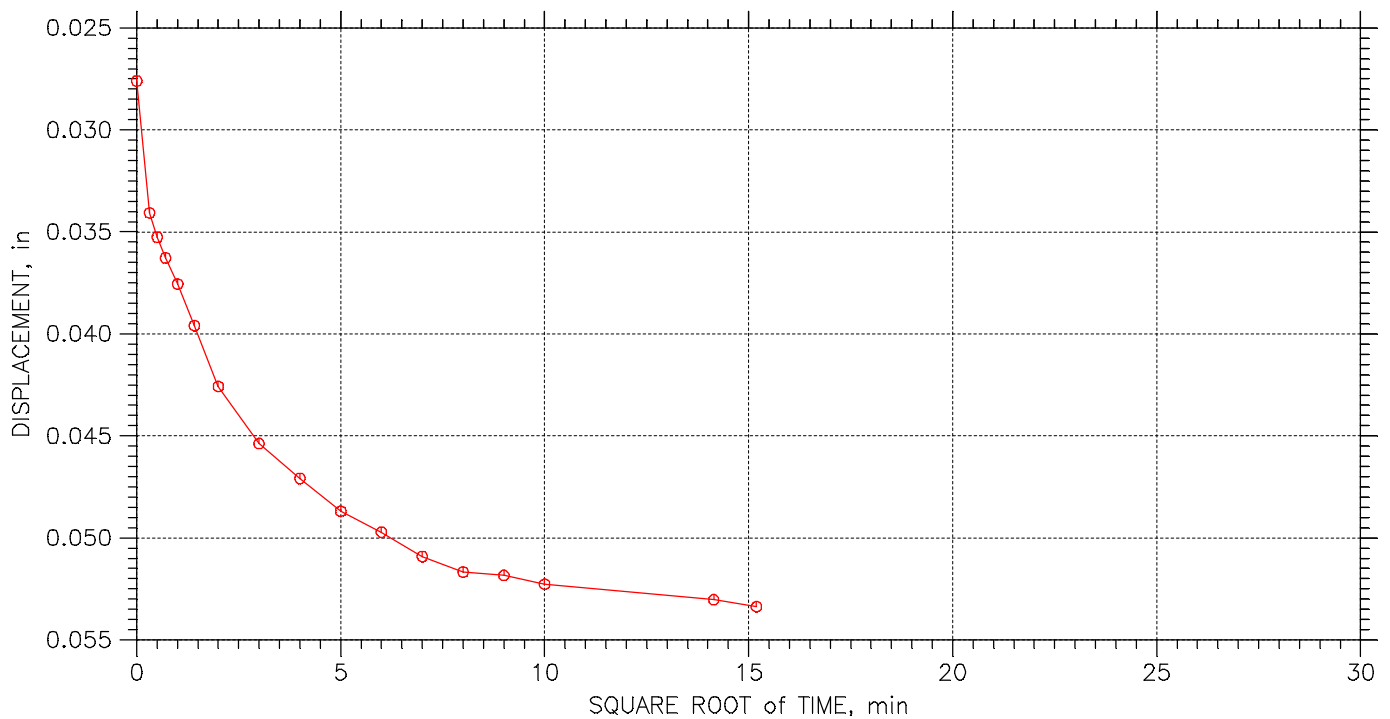
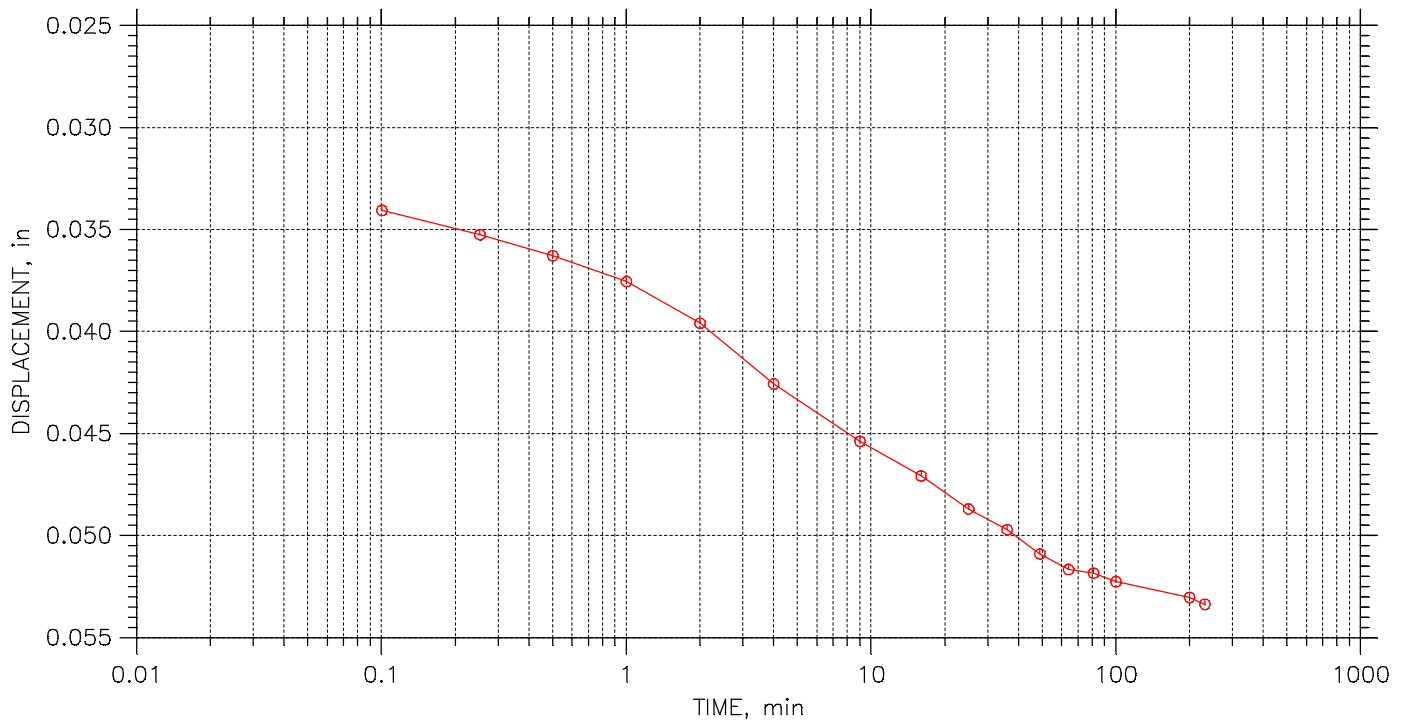
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf



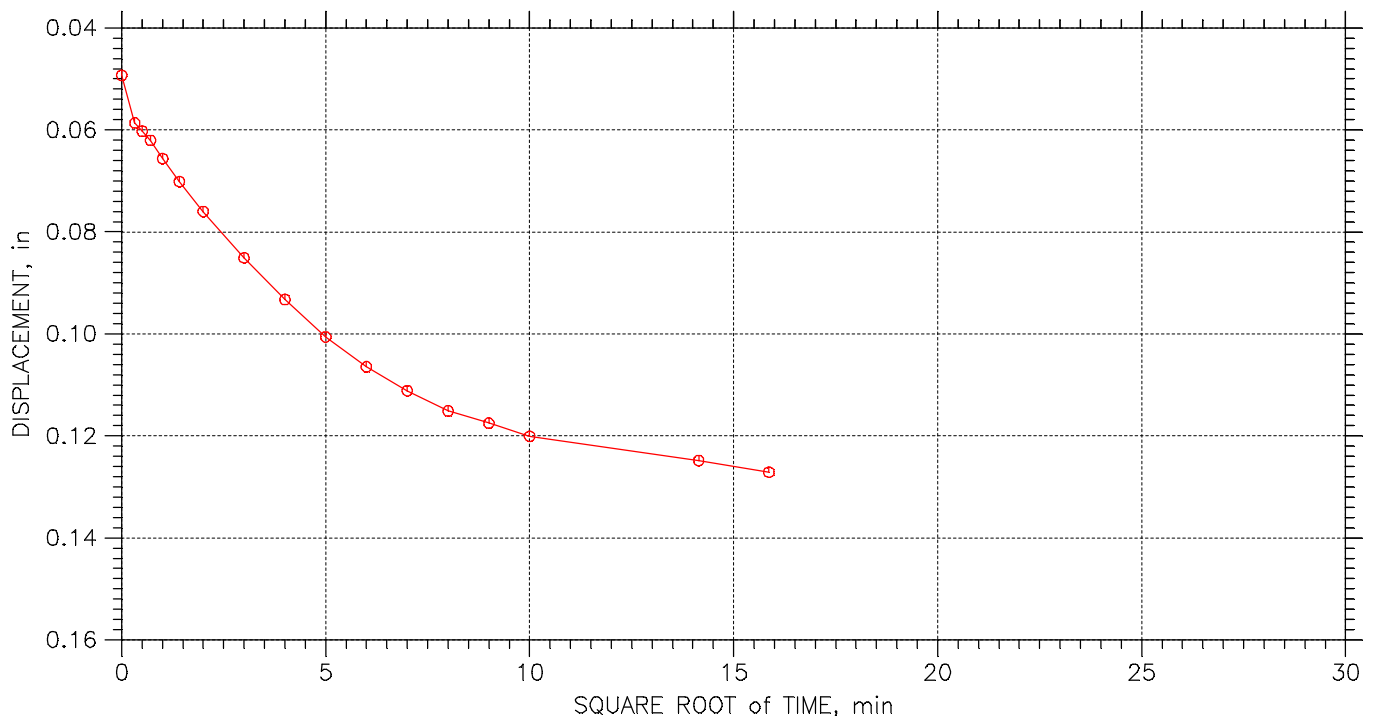
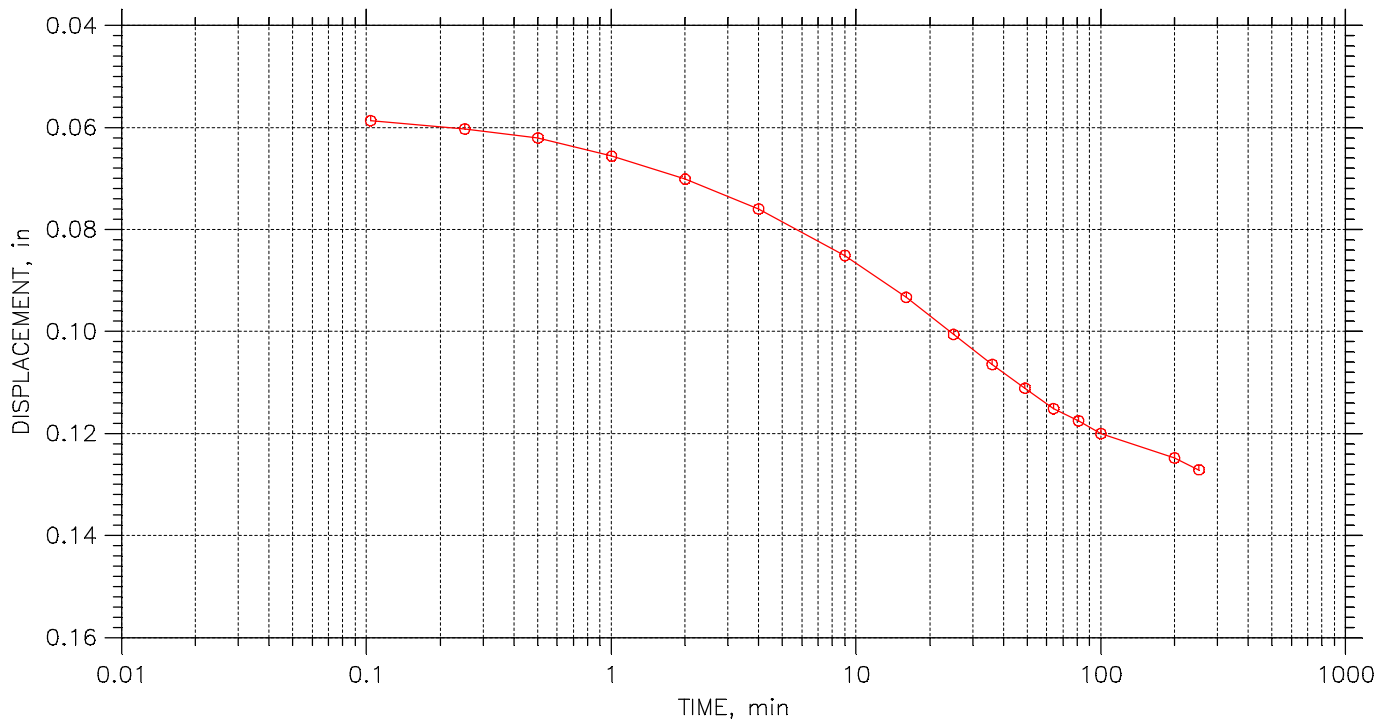
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf



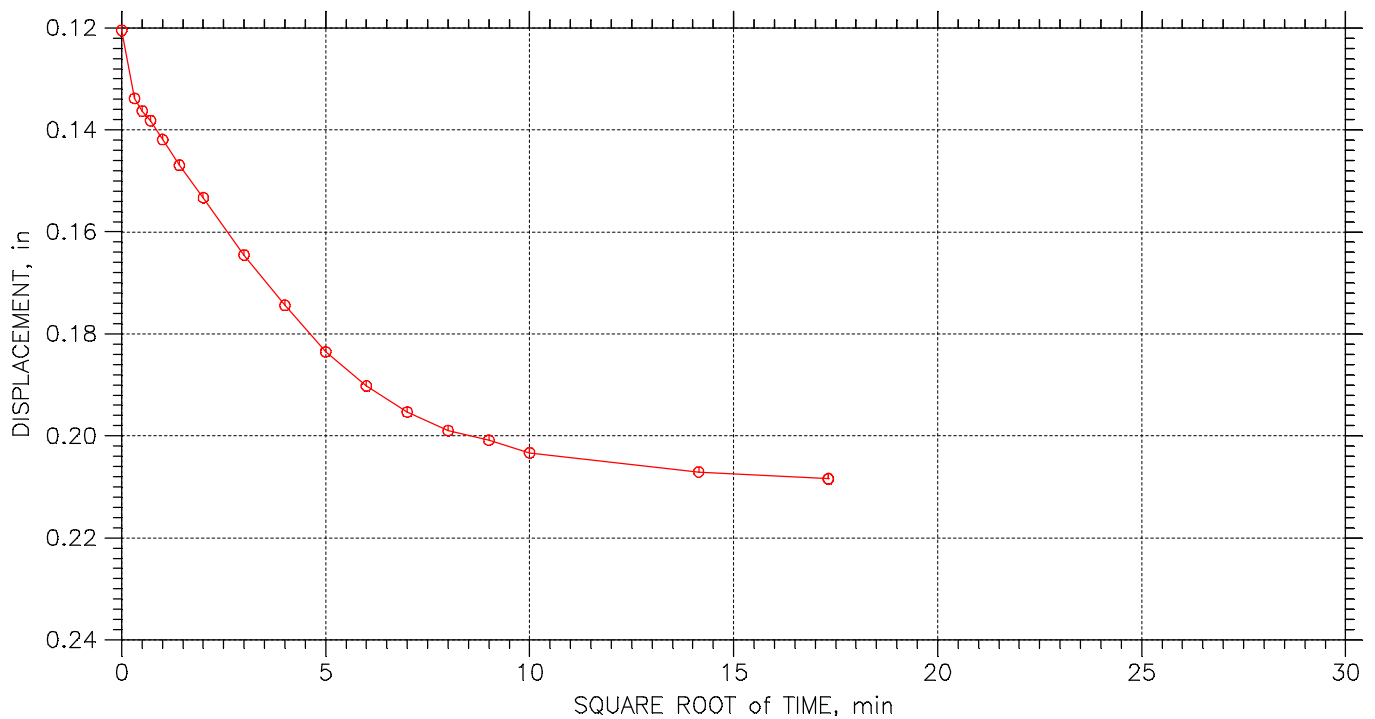
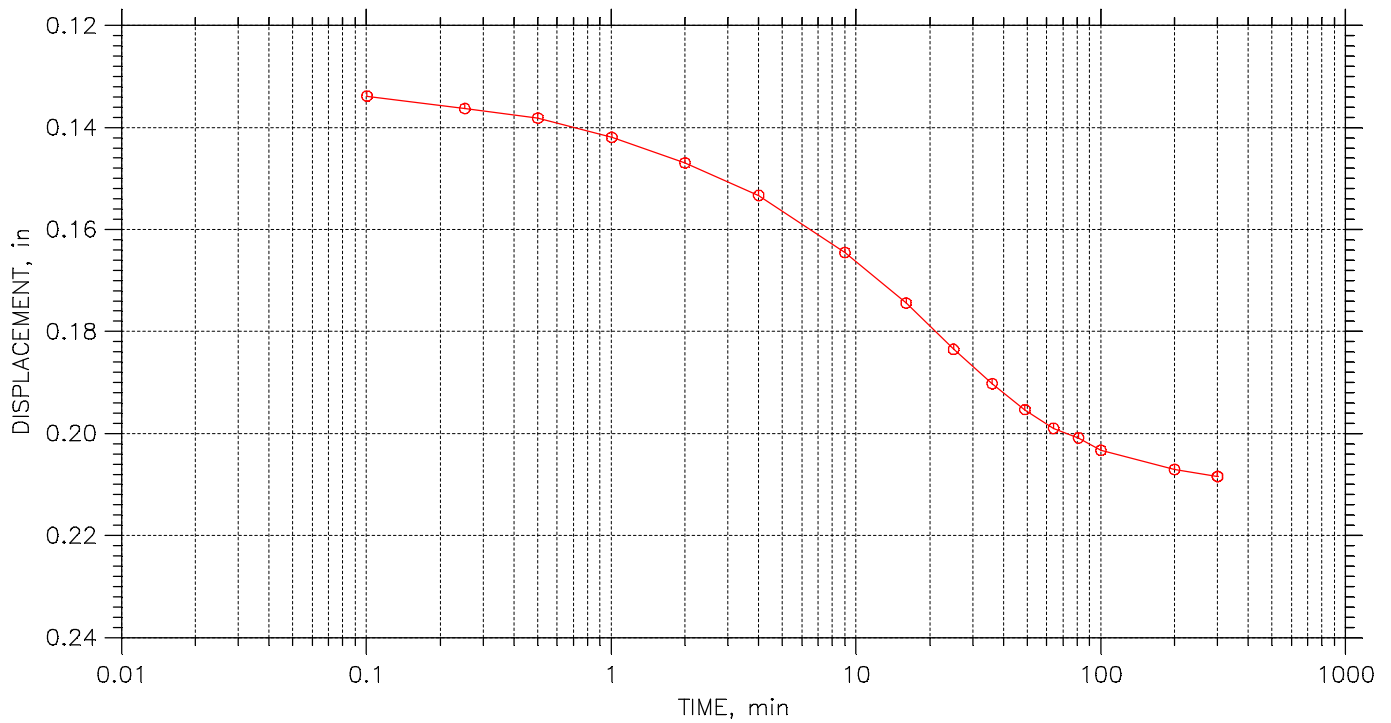
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



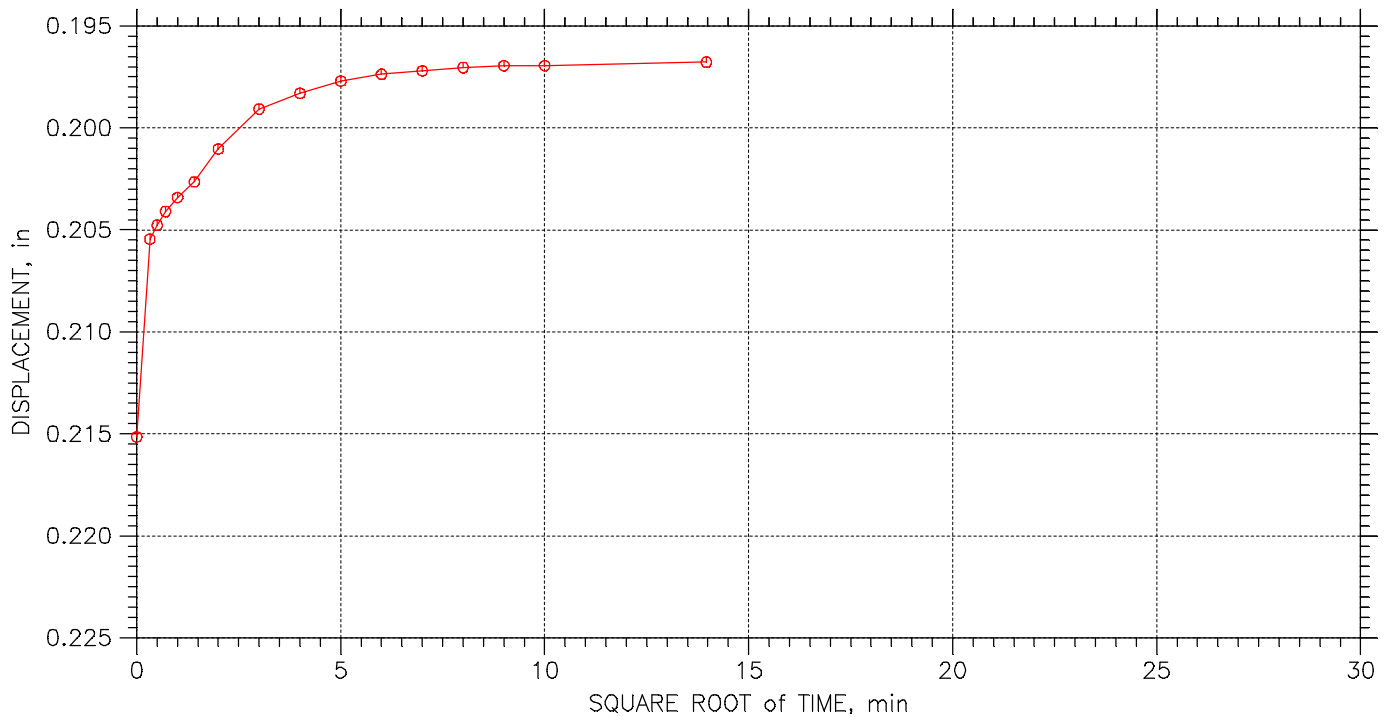
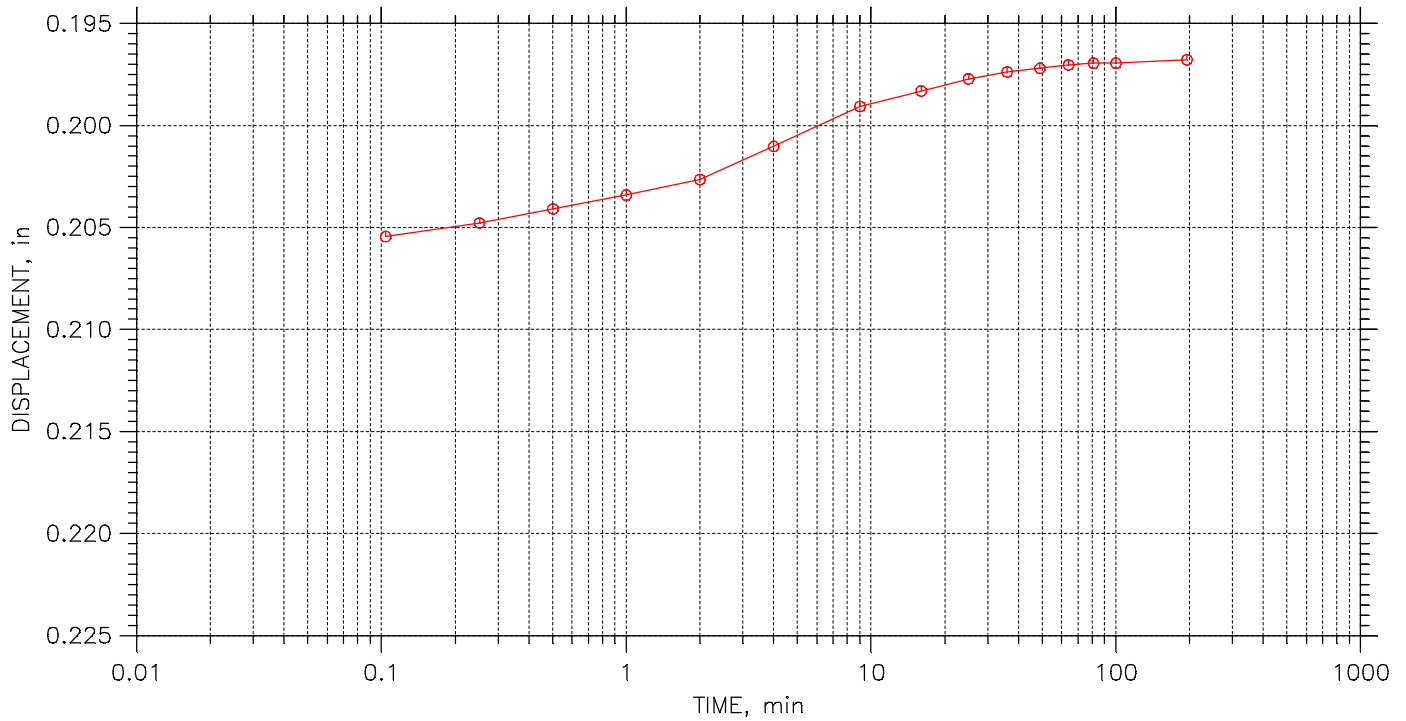
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



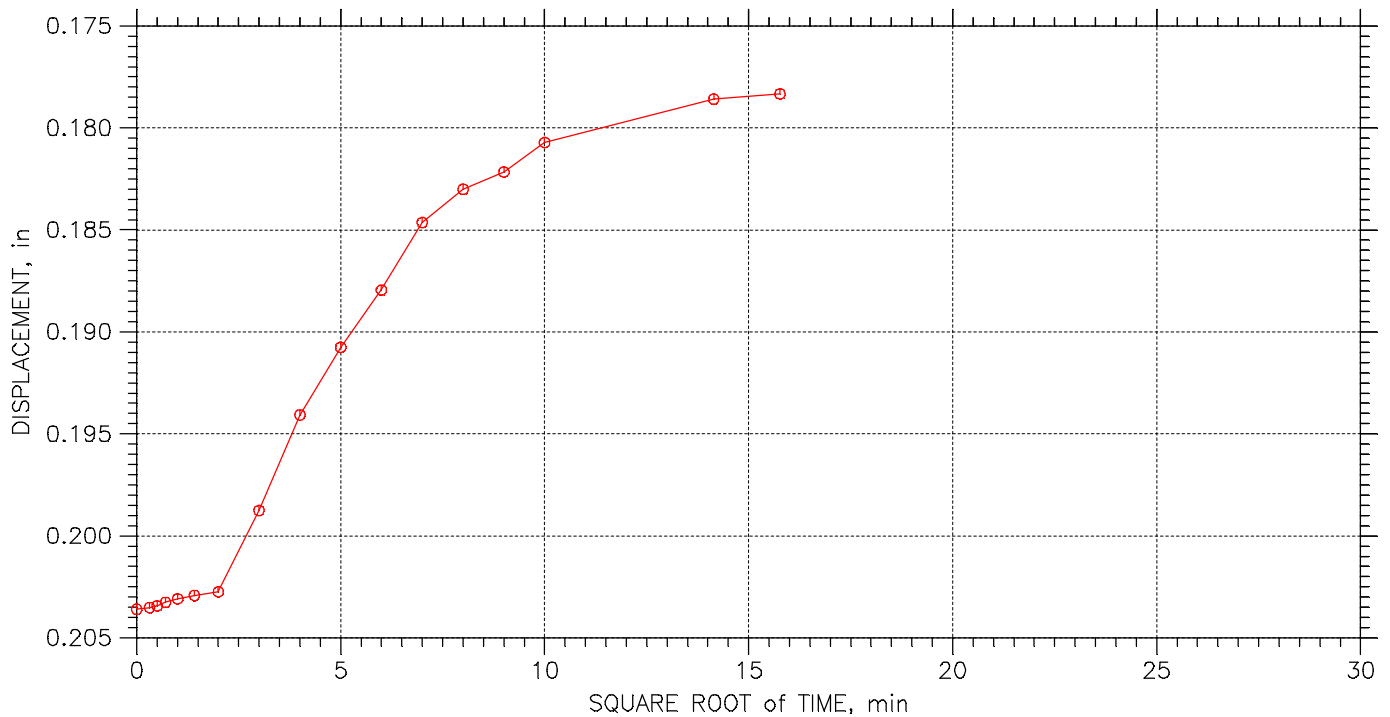
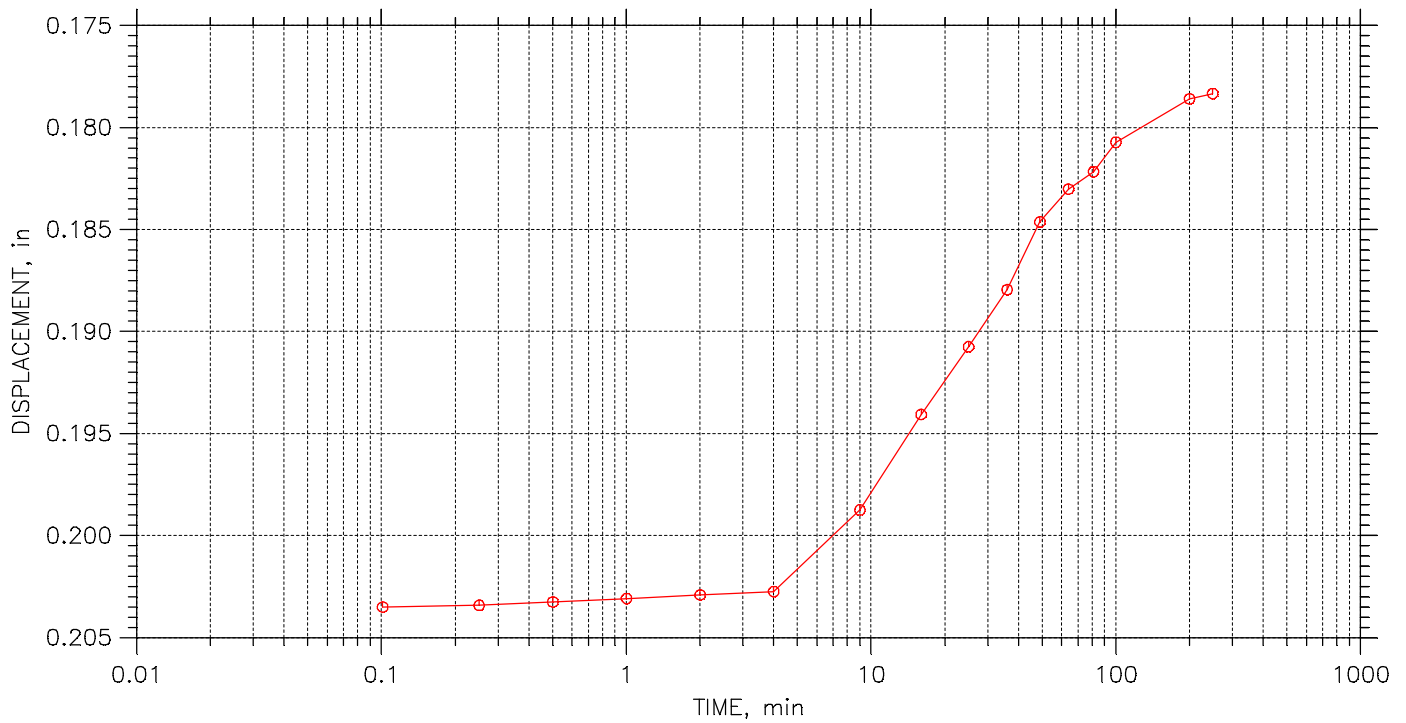
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf



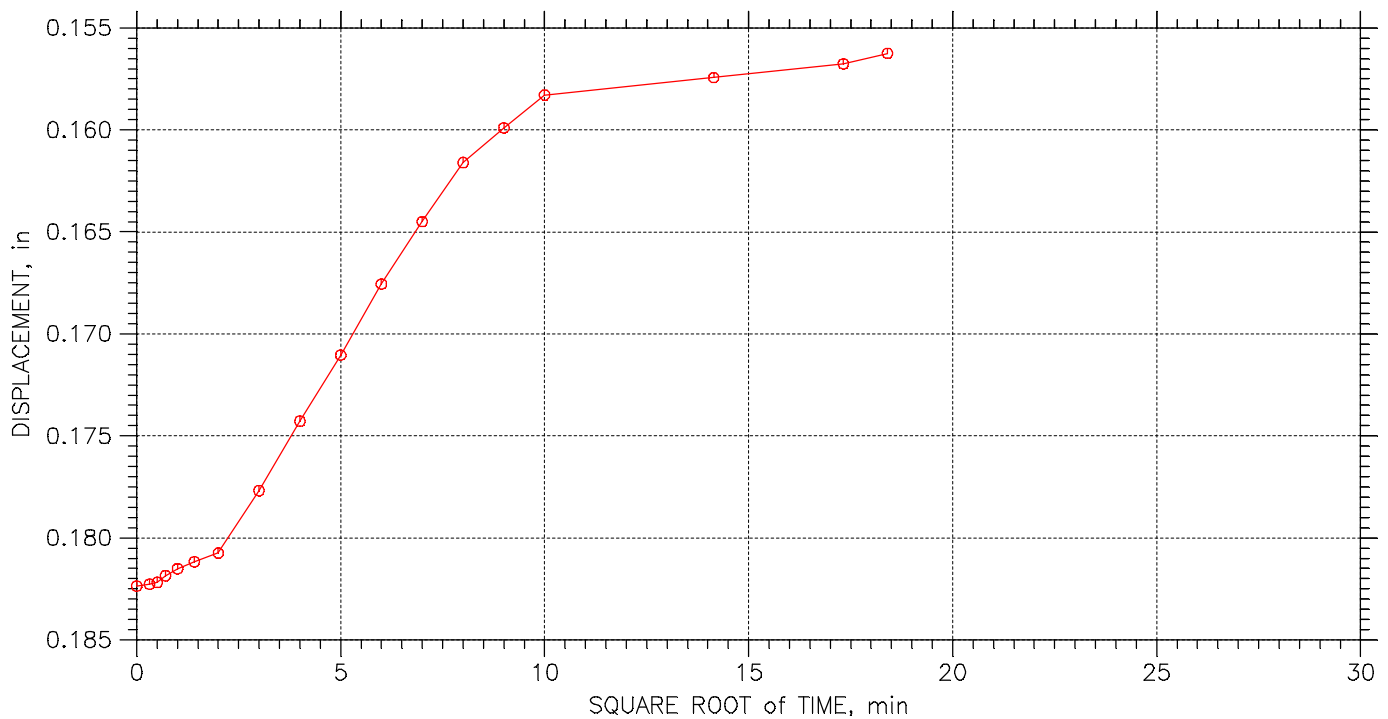
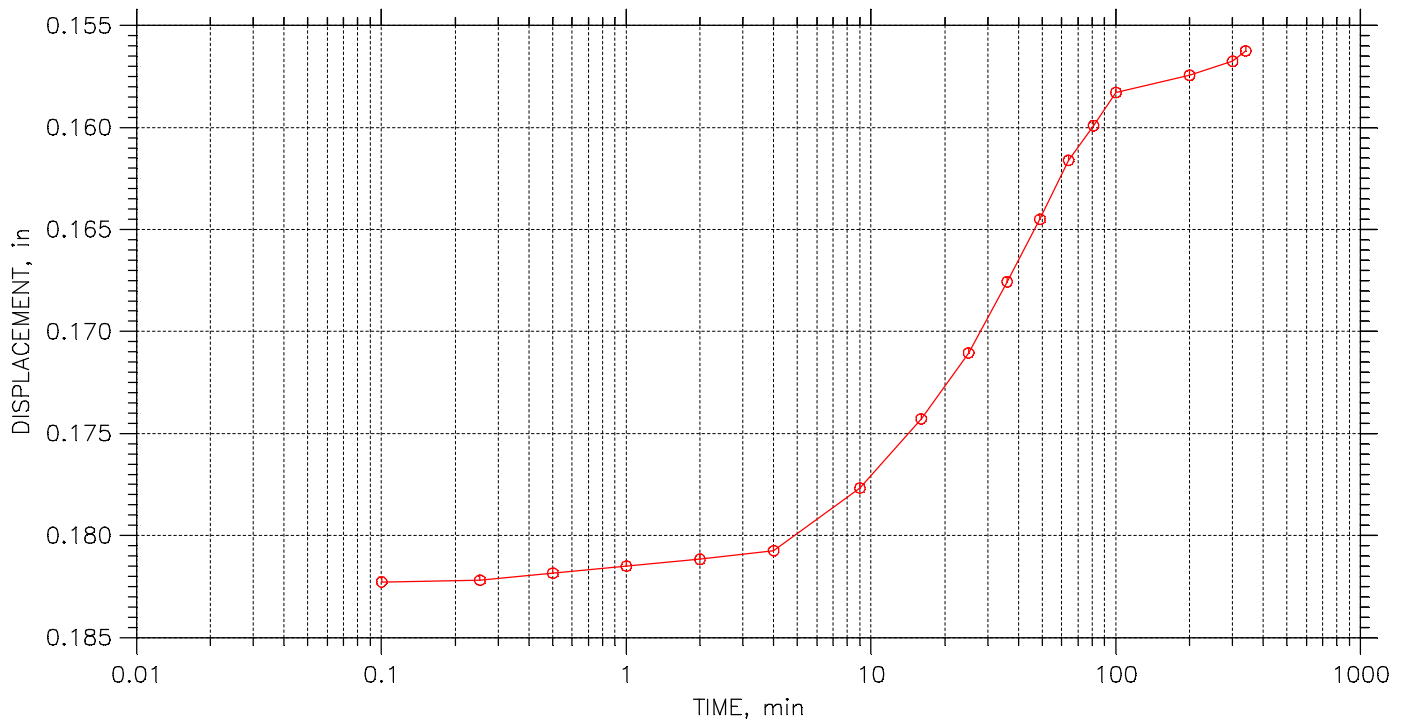
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf



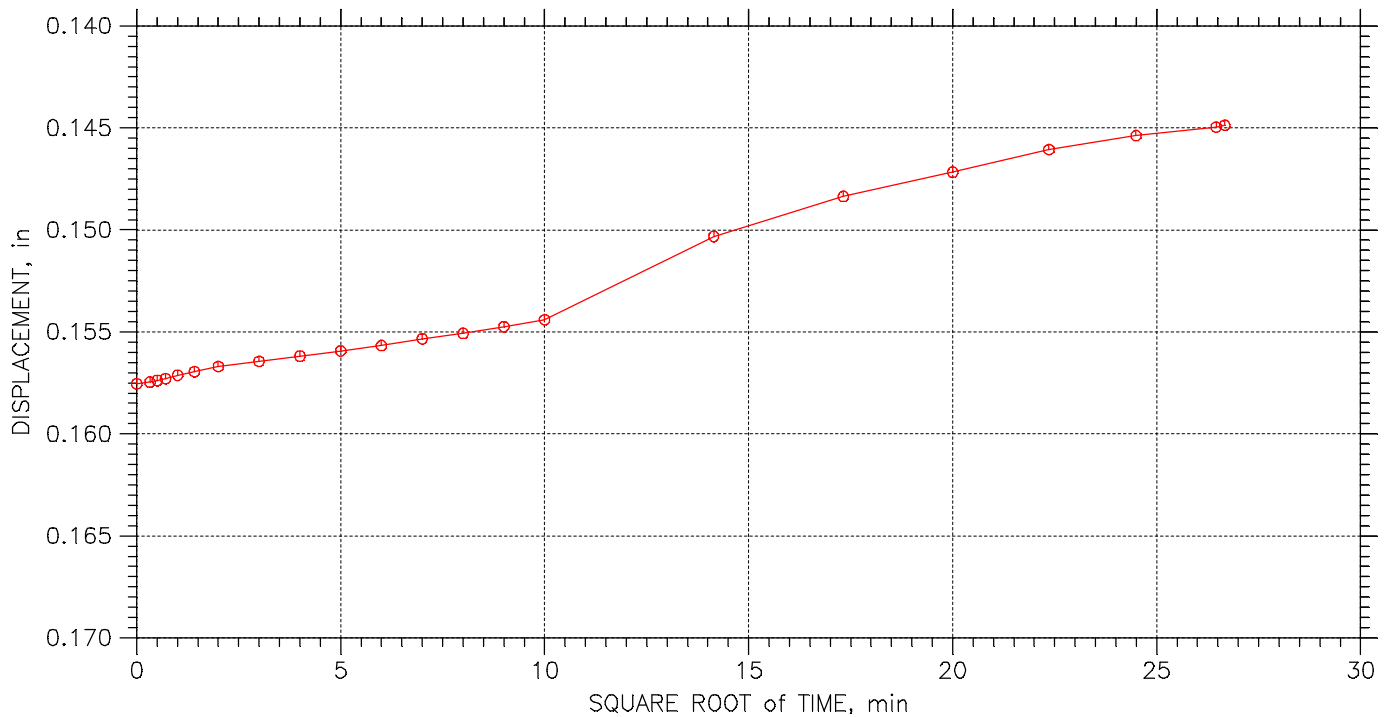
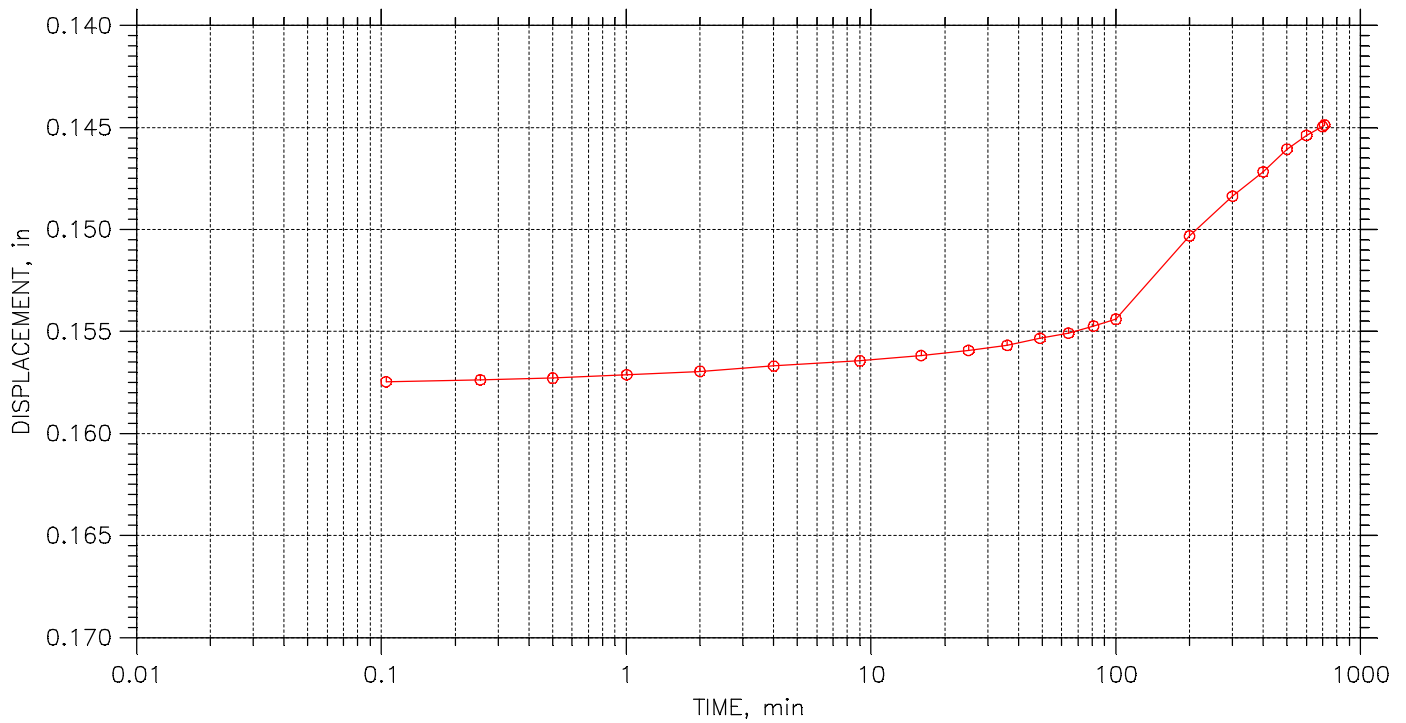
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf



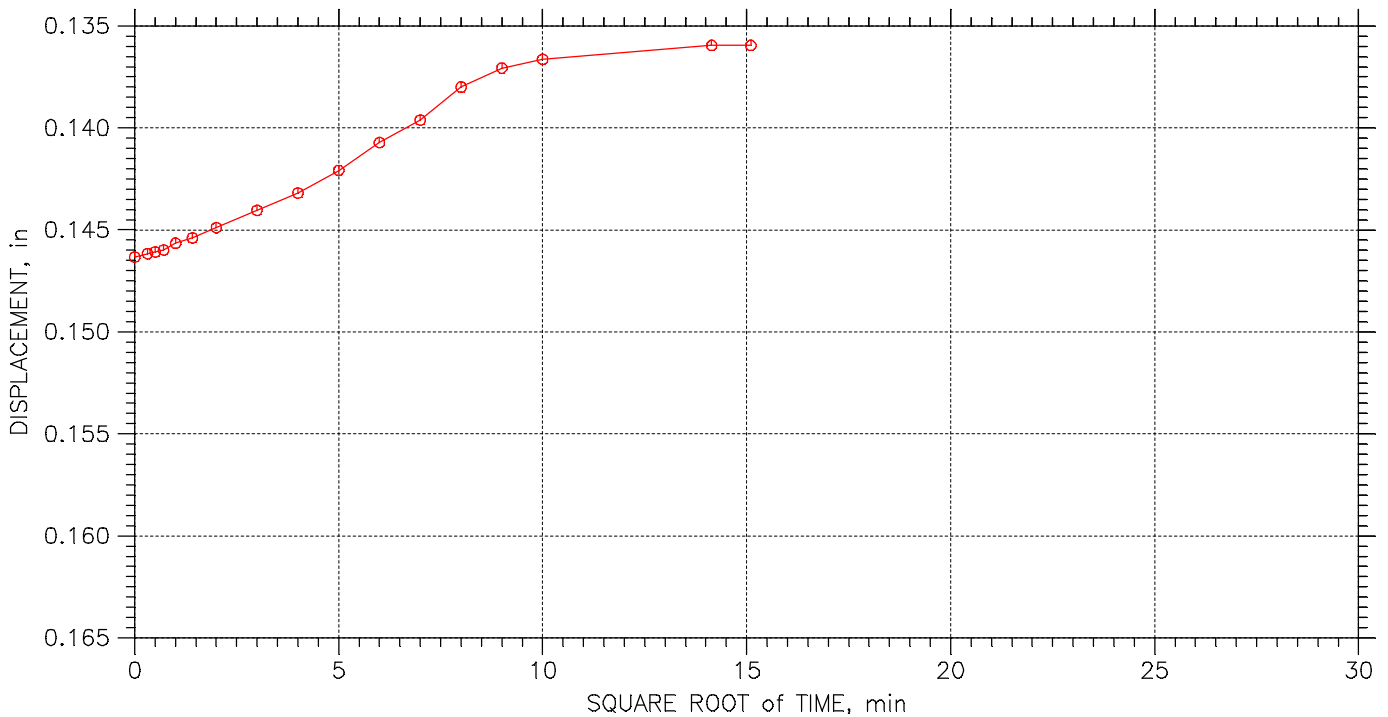
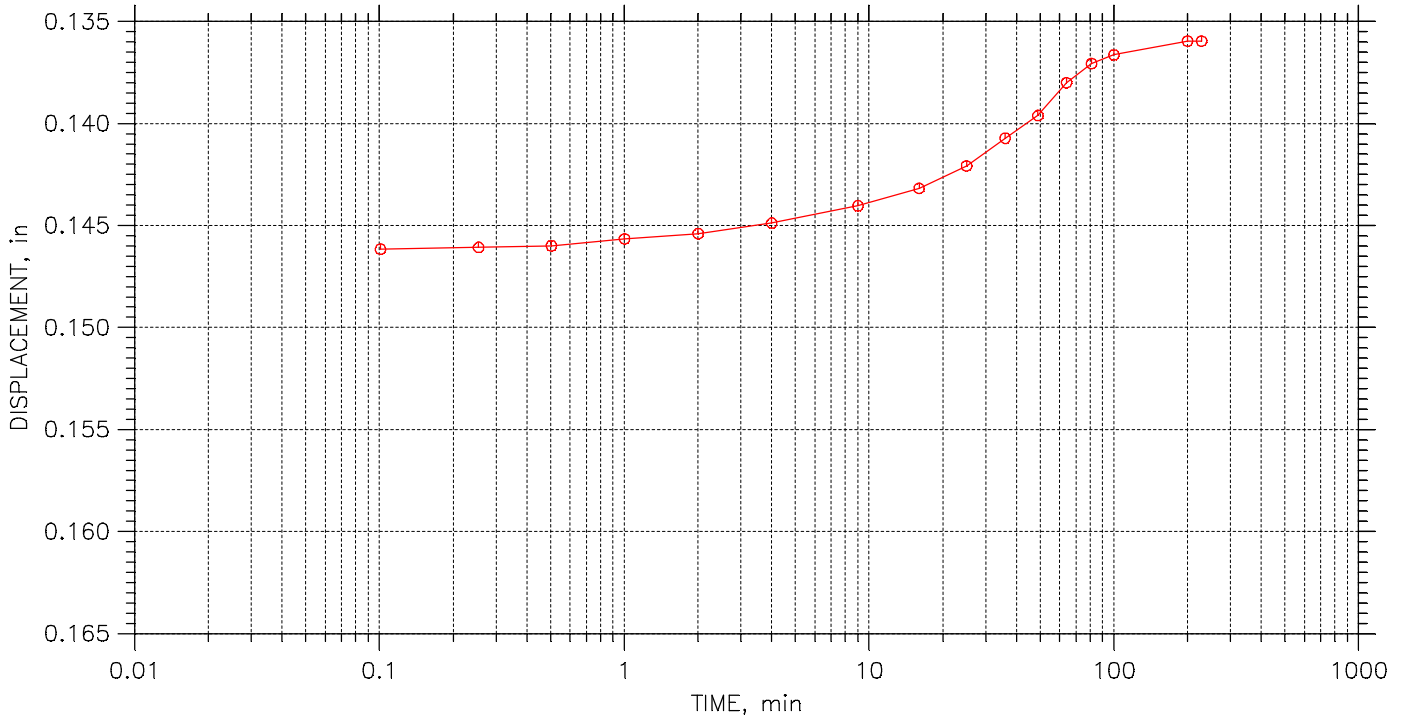
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW2-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 80.0-81.5'
	Test No.: BW2228081C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN LEAN CLAY (CL)		
	Remarks: Pc = 6.7 tsf Cc = 0.800 Ccr = 0.076 TEST PERFORMED AS PER ASTM D 2435		


CONSOLIDATION TEST DATA

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'
	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 PERFORMED AS PER ASTM D 2435		

CONSOLIDATION TEST DATA

Project: PULLIAM PROPERTY RED.
Boring No.: BW2-22
Sample No.: ST-3
Test No.: BW2228081C

Location: MILWAUKEE, WI
Tested By: IT/ED
Test Date: 9/29/2022
Sample Type: 3.0" ST

Project No.: 11225052
Checked By: BCM
Depth: 80.0-81.5'
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
Initial Void Ratio: 1.25
Final Void Ratio: 0.84

Liquid Limit: 45
Plastic Limit: 15
Plasticity Index: 30

Initial Height: 0.74 in
Specimen Diameter: 2.50 in

	Before Consolidation		After Consolidation	
	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	---

CONSOLIDATION TEST DATA

Project: PULLIAM PROPERTY RED.
Boring No.: BW2-22
Sample No.: ST-3
Test No.: BW2228081C

Location: MILWAUKEE,WI
Tested By: IT/ED
Test Date: 9/29/2022
Sample Type: 3.0" ST

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

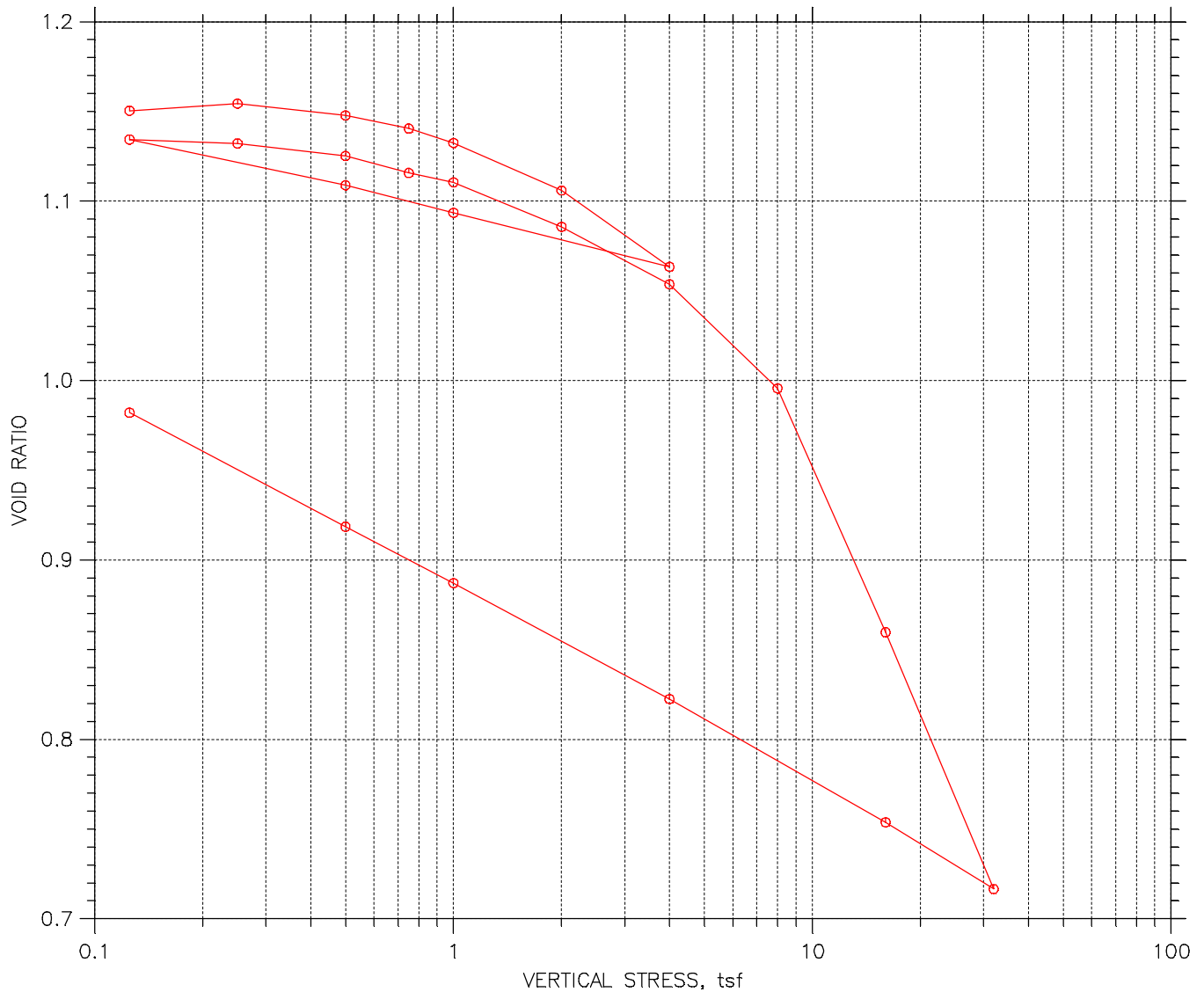


Soil Description: REDDISH BROWN LEAN CLAY (CL)


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

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. ft^2/sec	Log ft^2/sec	Ave. 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

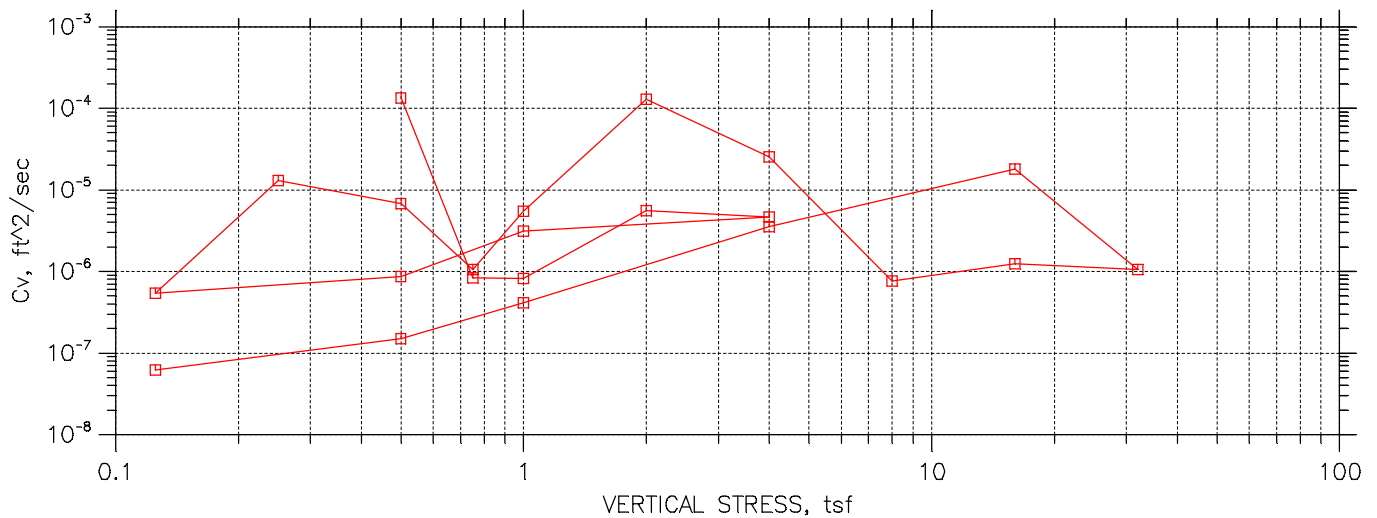
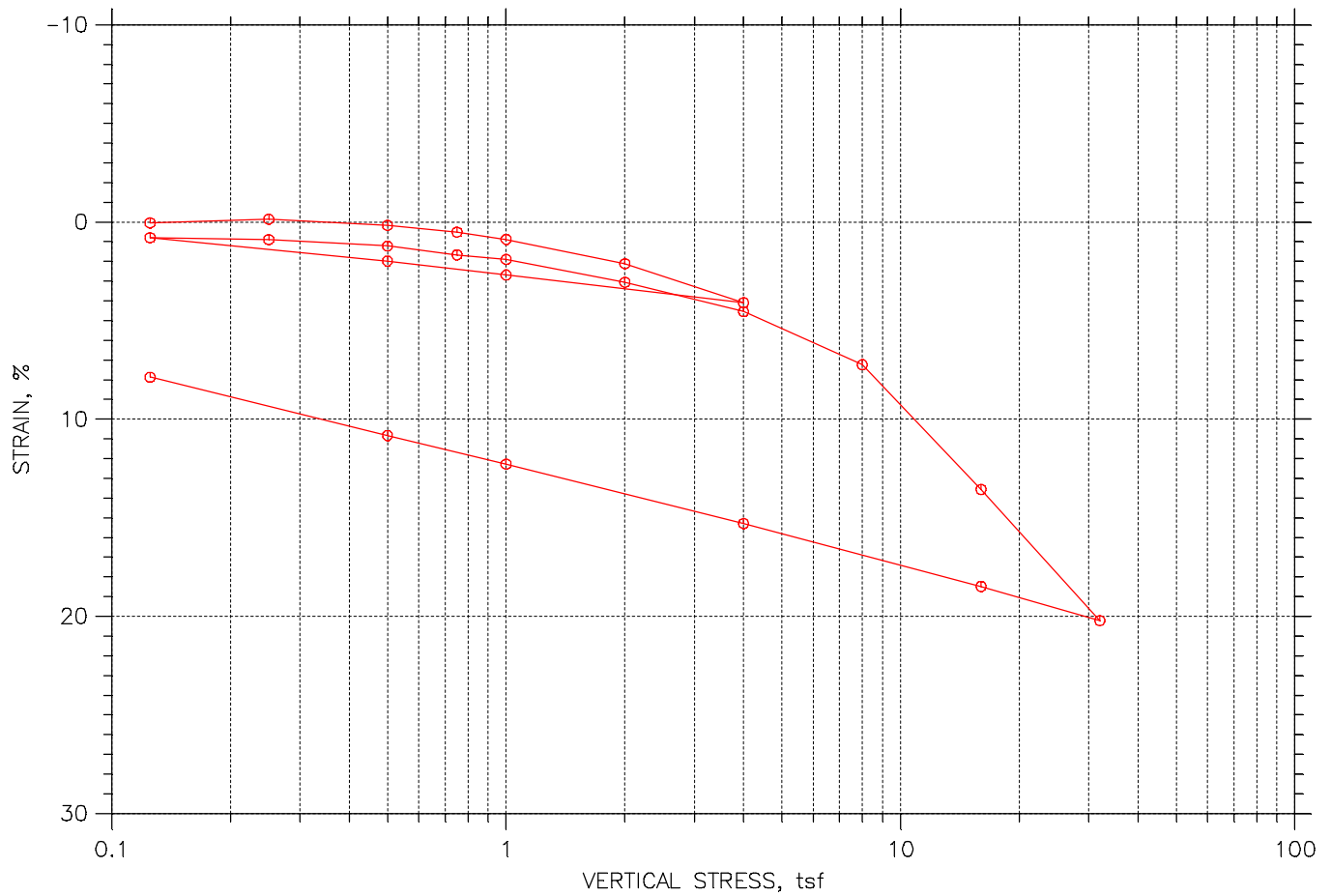
ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435




				Before Test	After Test	
				Water Content, %	41.88	36.77
Preconsolidation 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'
	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		

ONE DIMENSIONAL CONSOLIDATION USING INCREMENTAL LOADING ASTM D2435



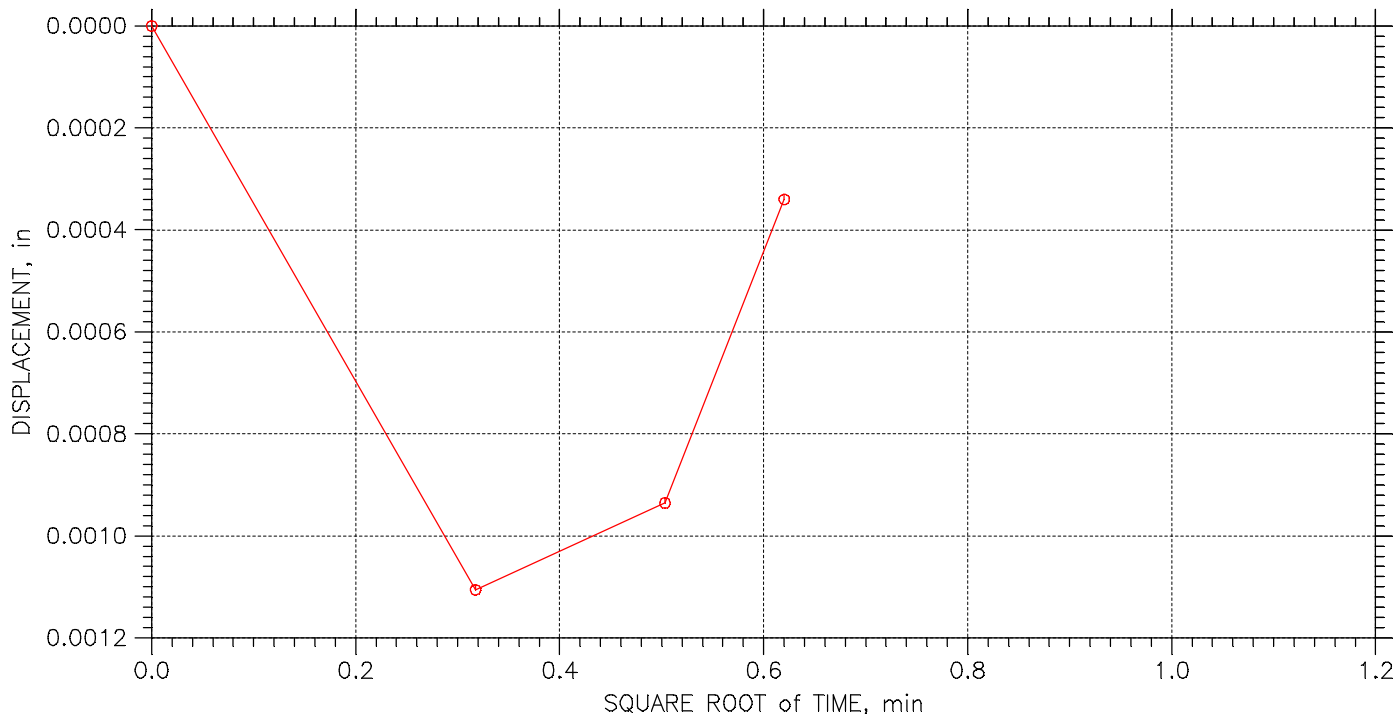
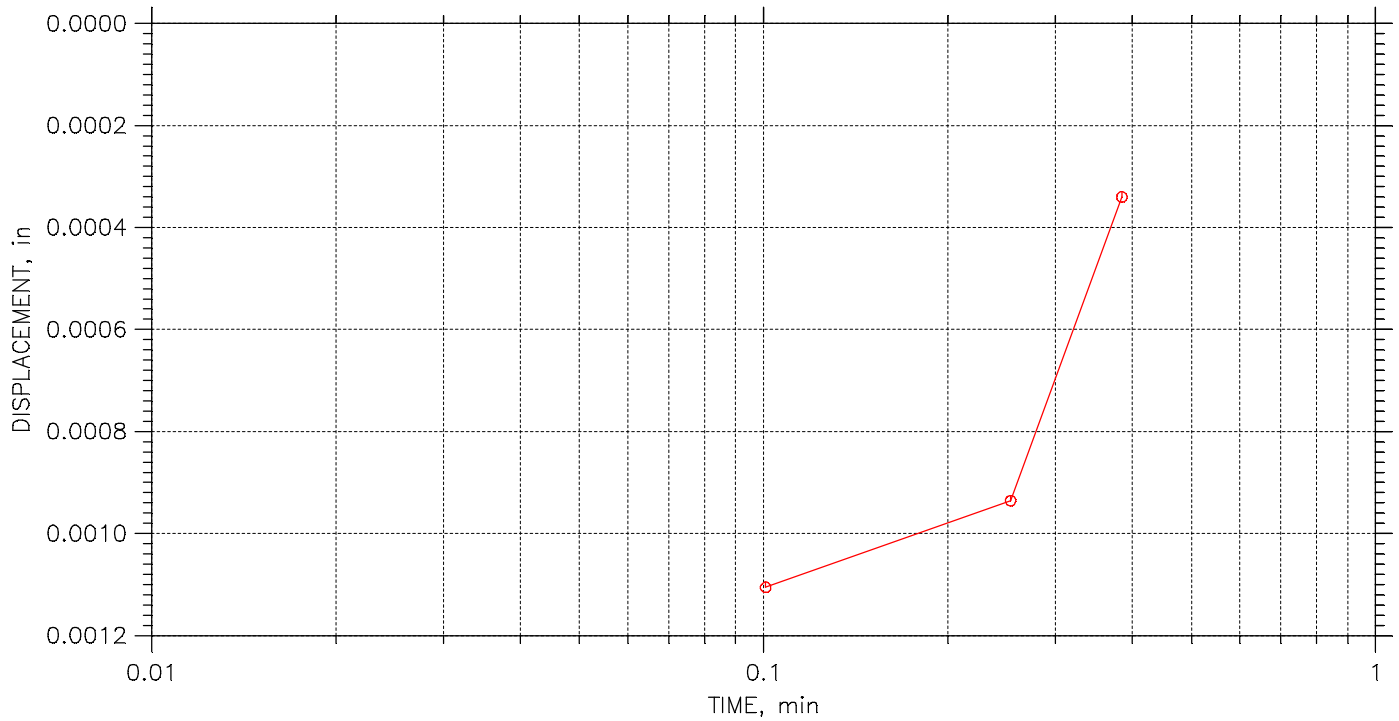
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 1 of 24

Stress: 0.125 tsf



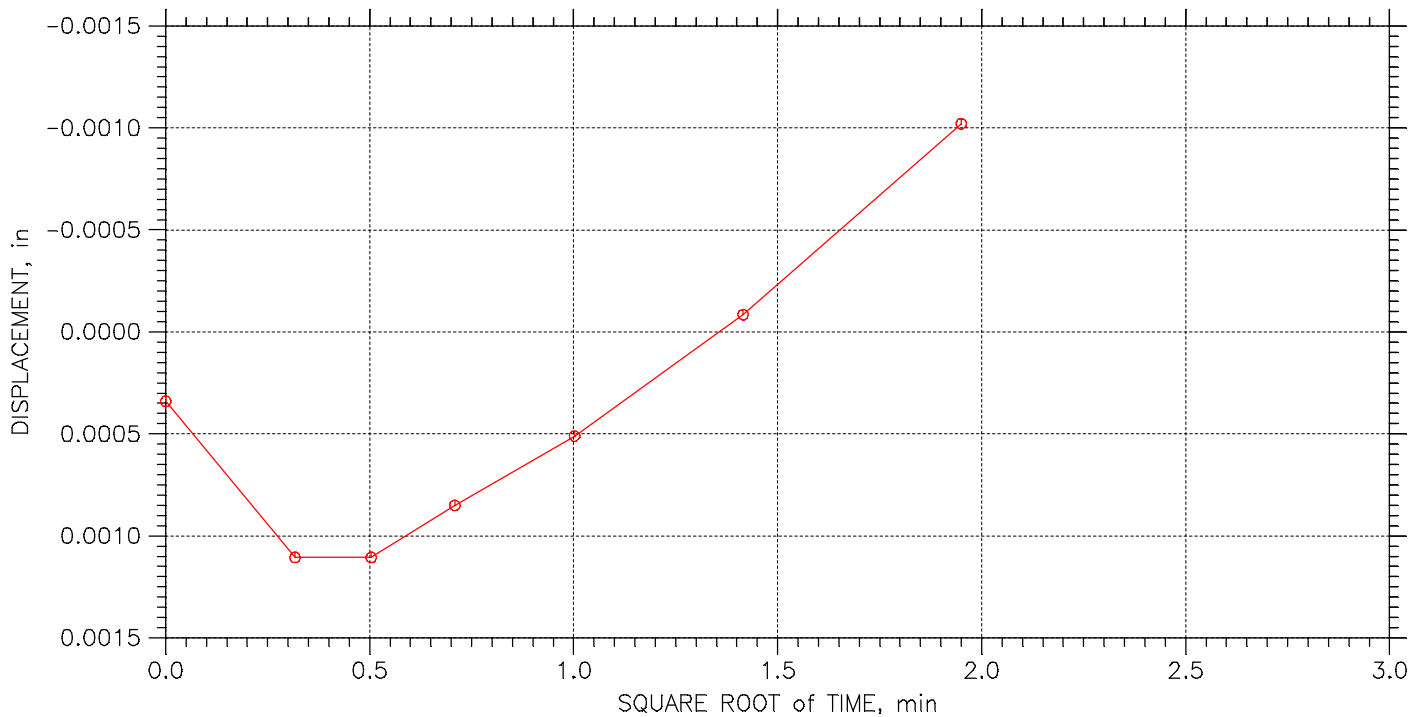
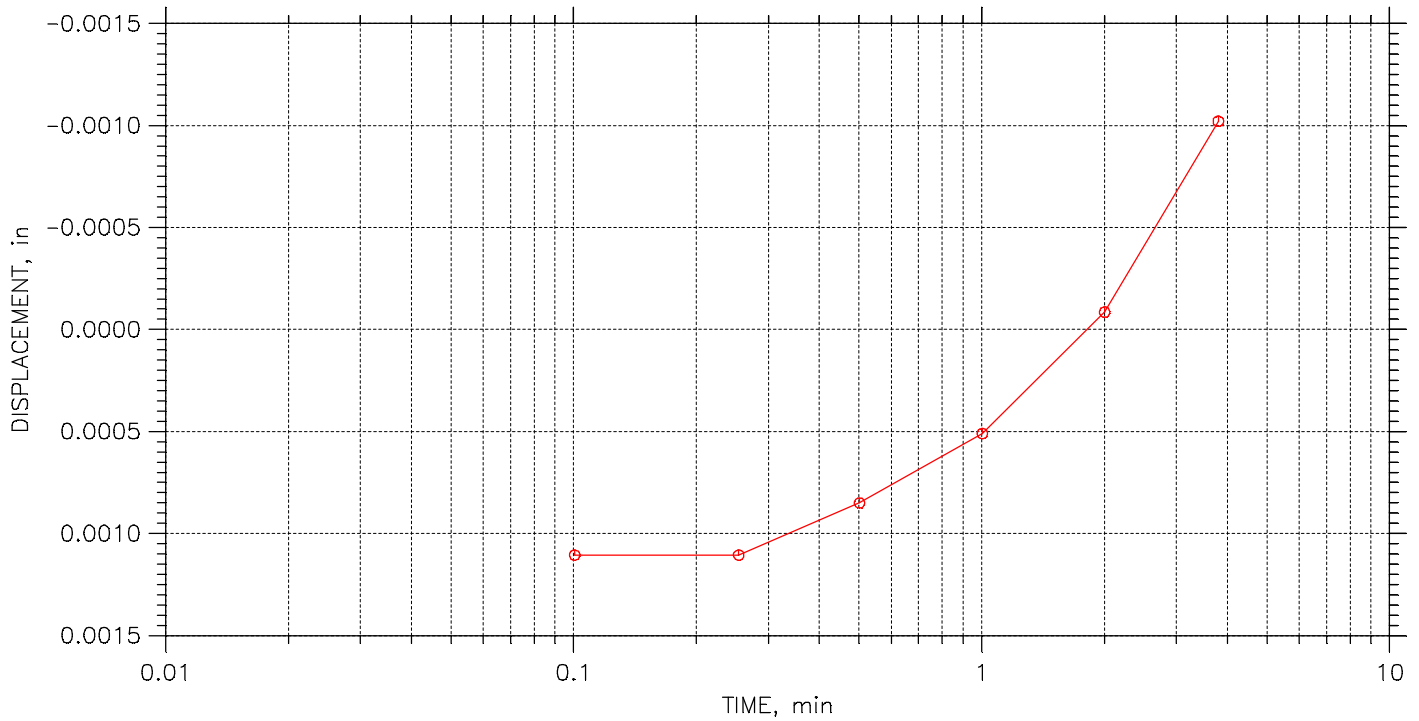
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 2 of 24

Stress: 0.25 tsf



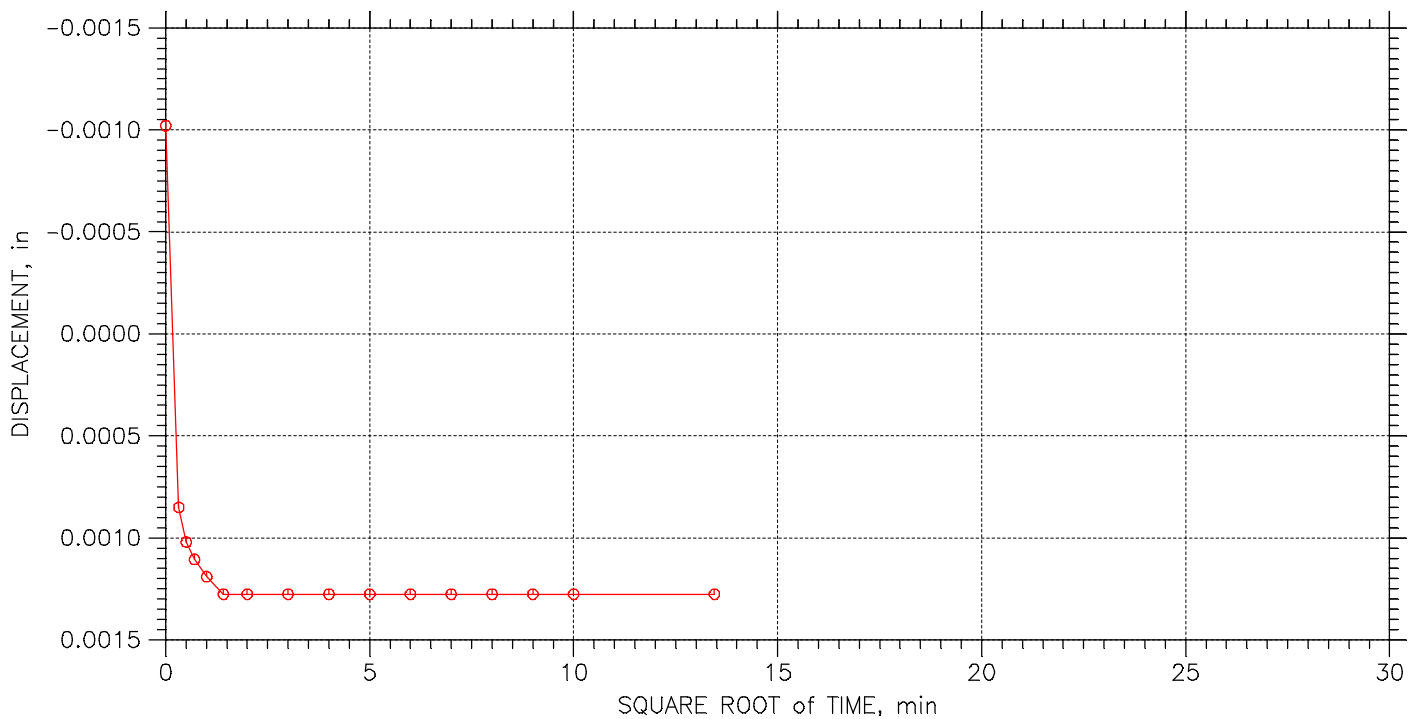
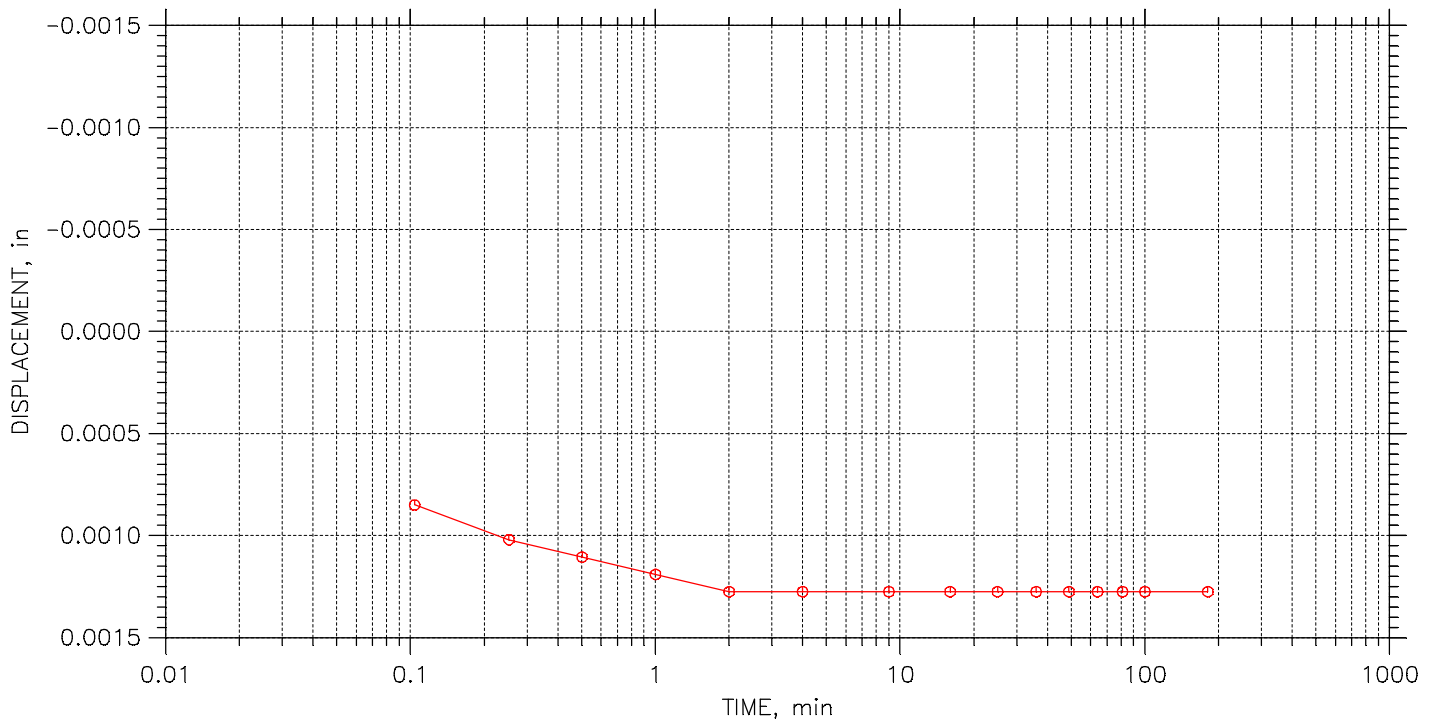
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 3 of 24

Stress: 0.5 tsf



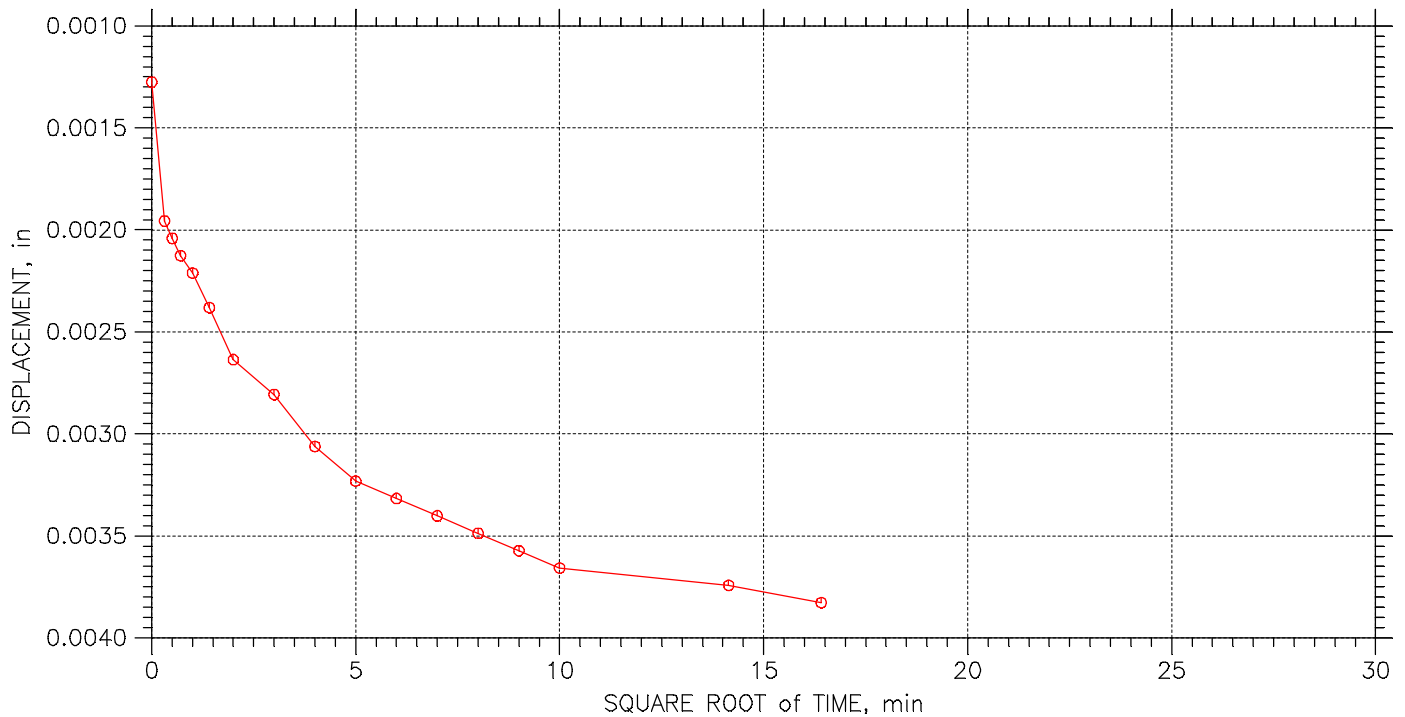
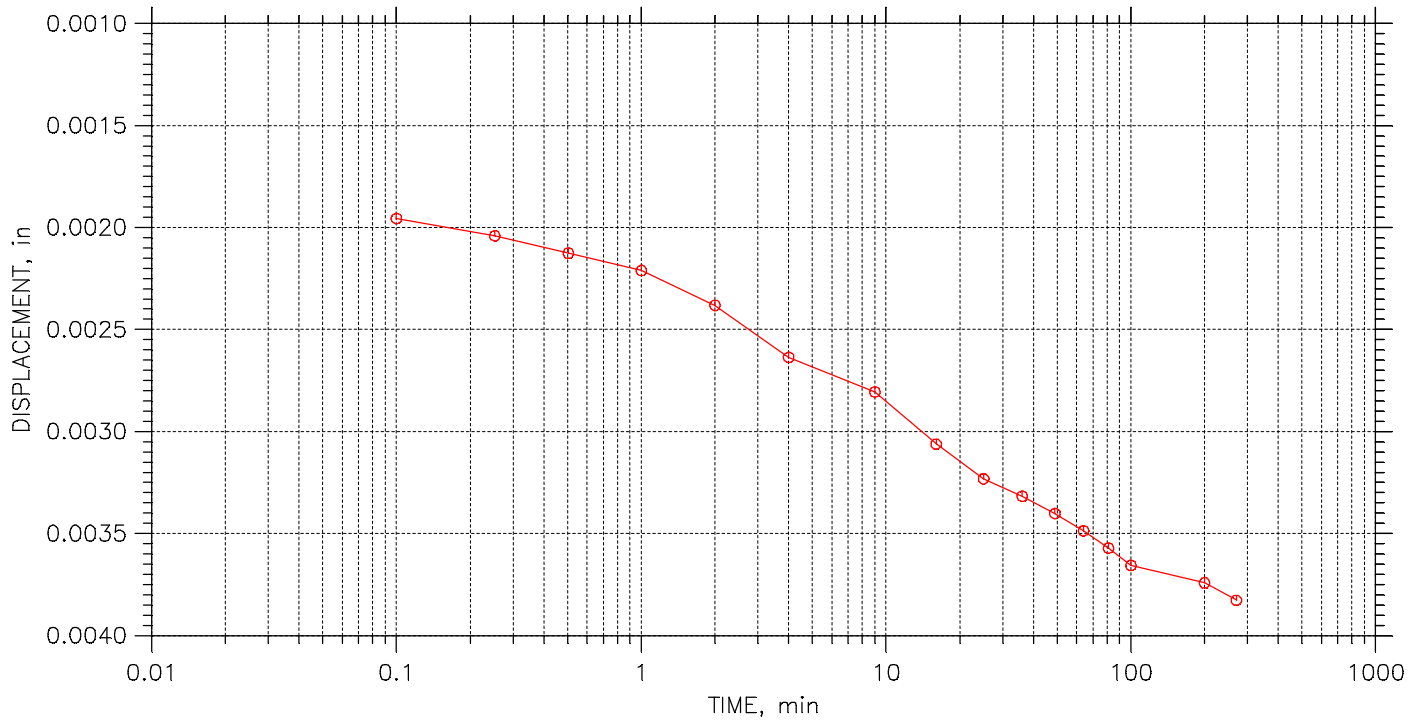
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 4 of 24

Stress: 0.75 tsf



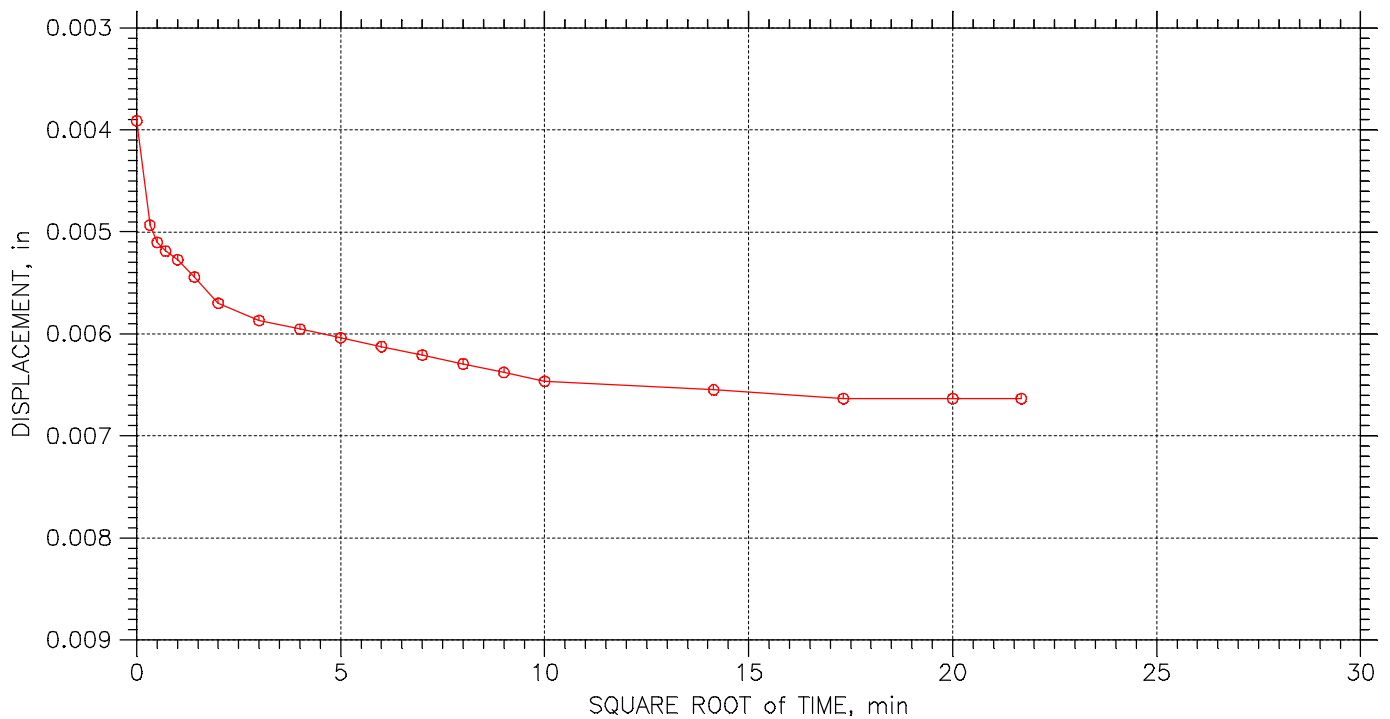
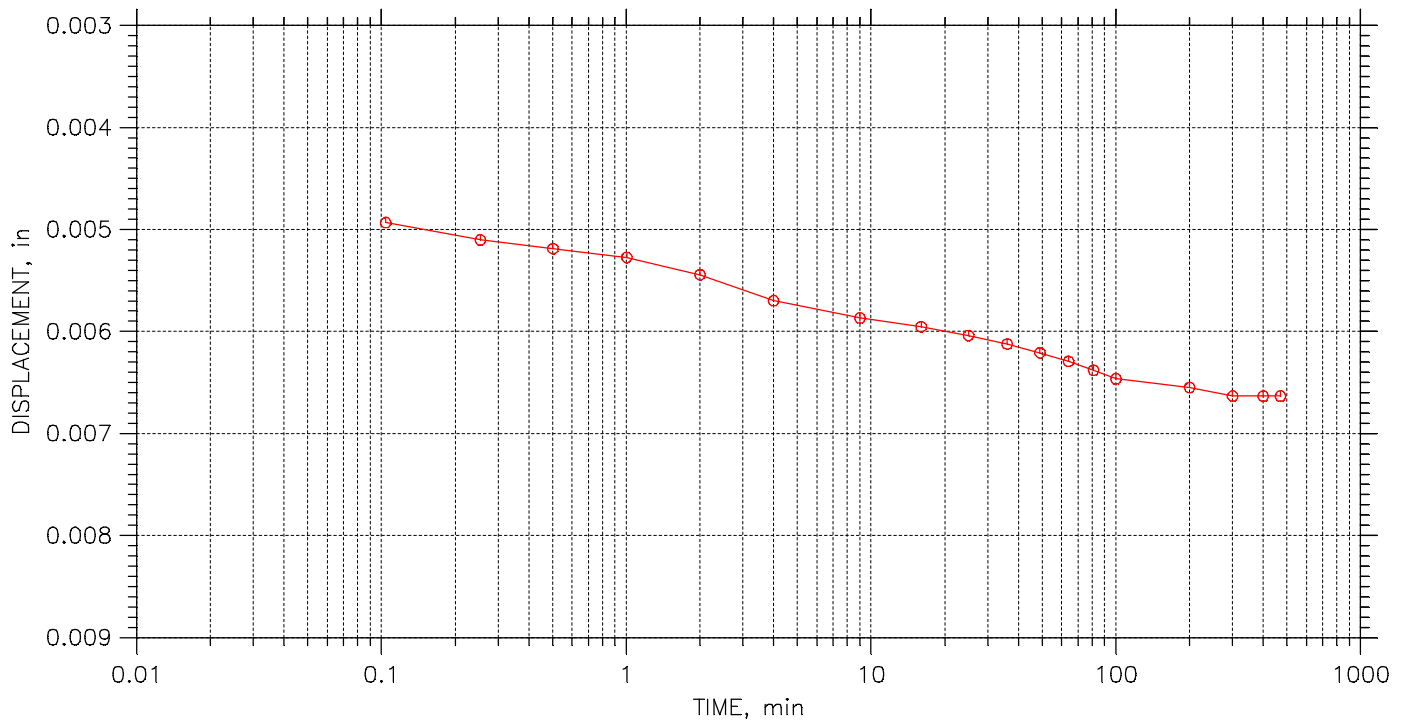
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 5 of 24

Stress: 1. tsf



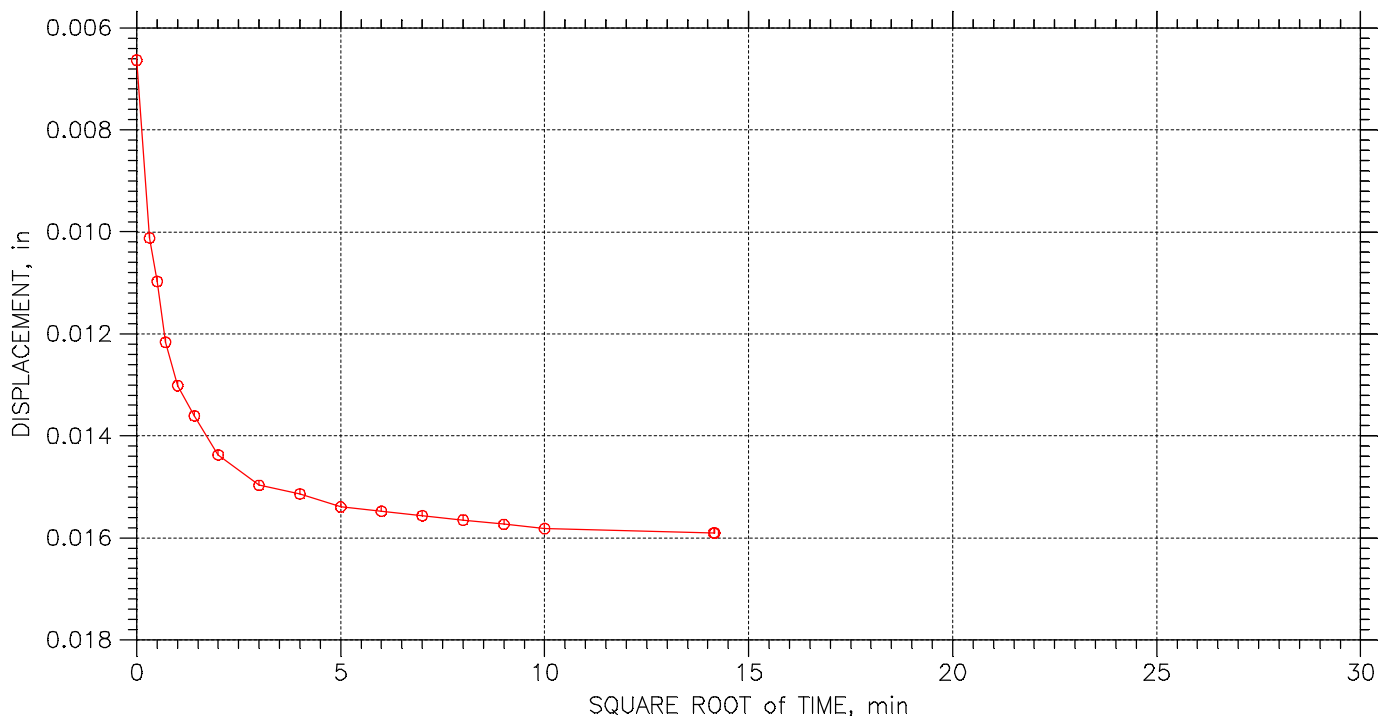
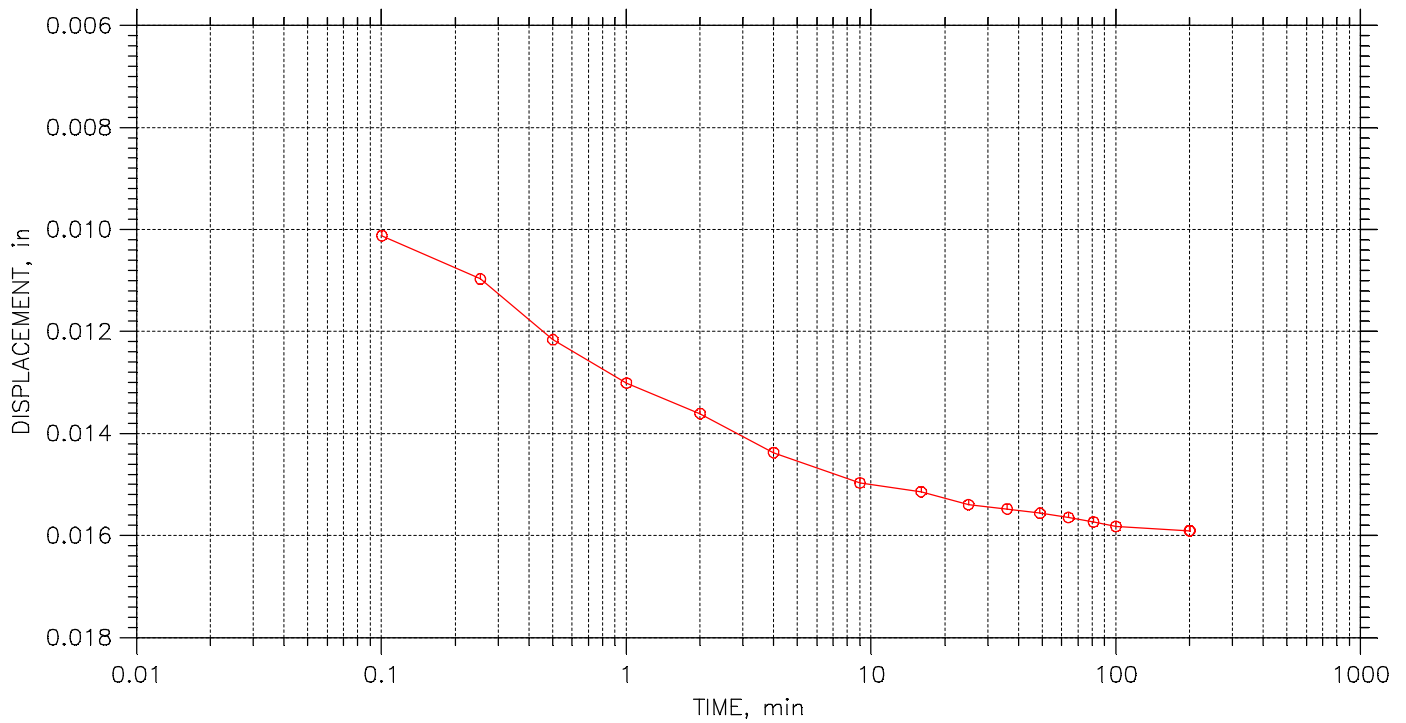
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 6 of 24

Stress: 2. tsf



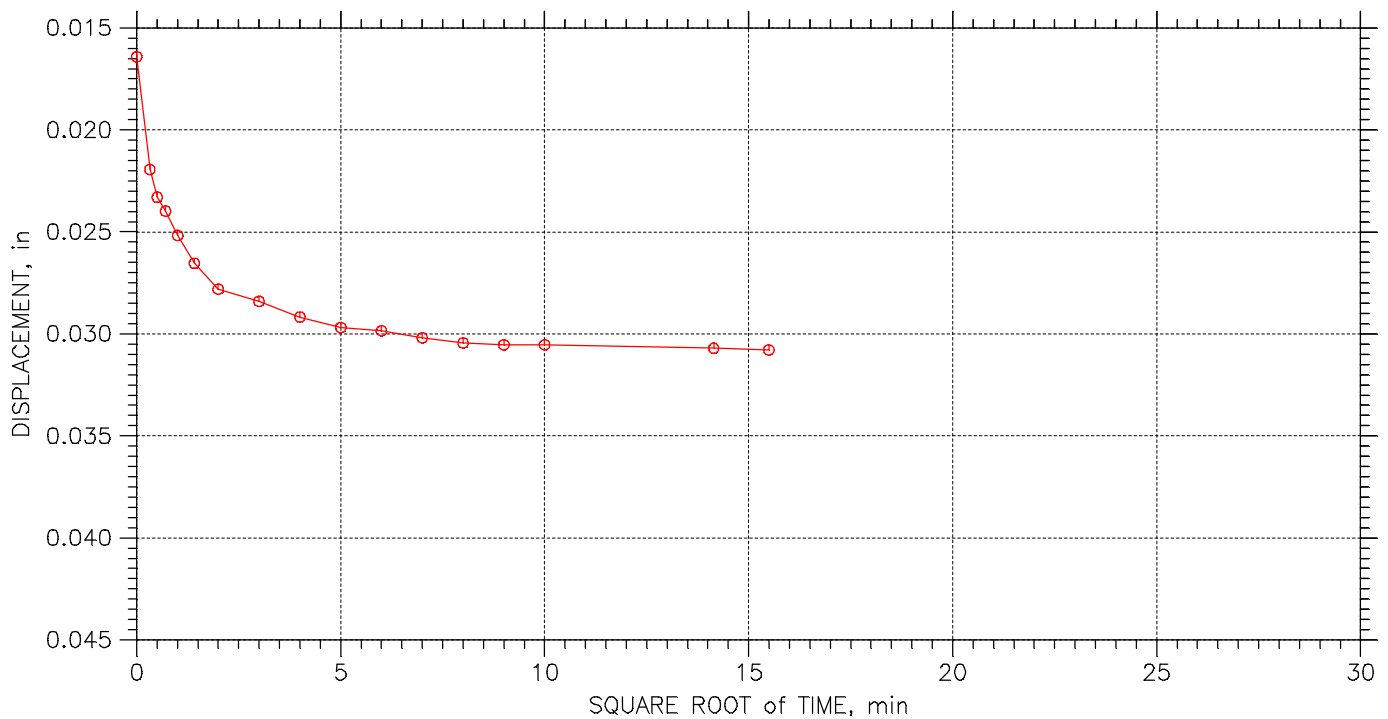
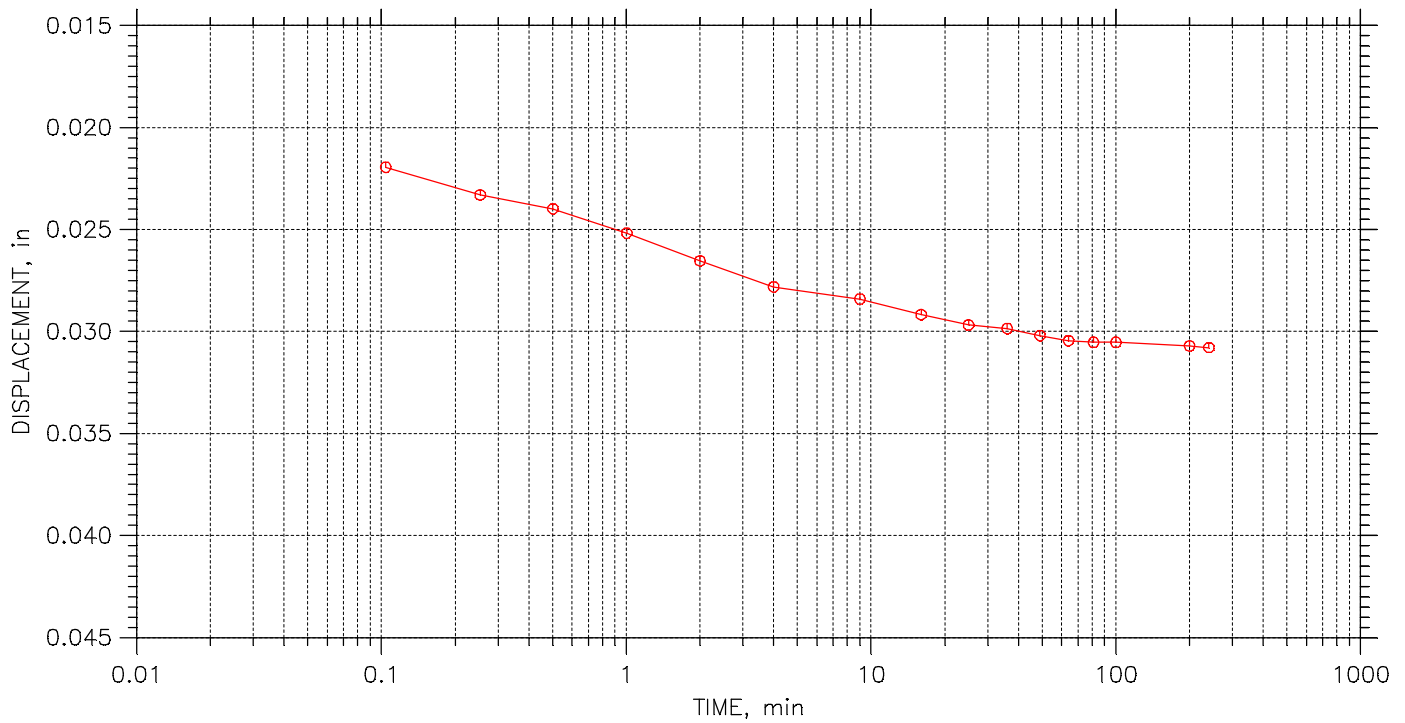
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 7 of 24

Stress: 4. tsf



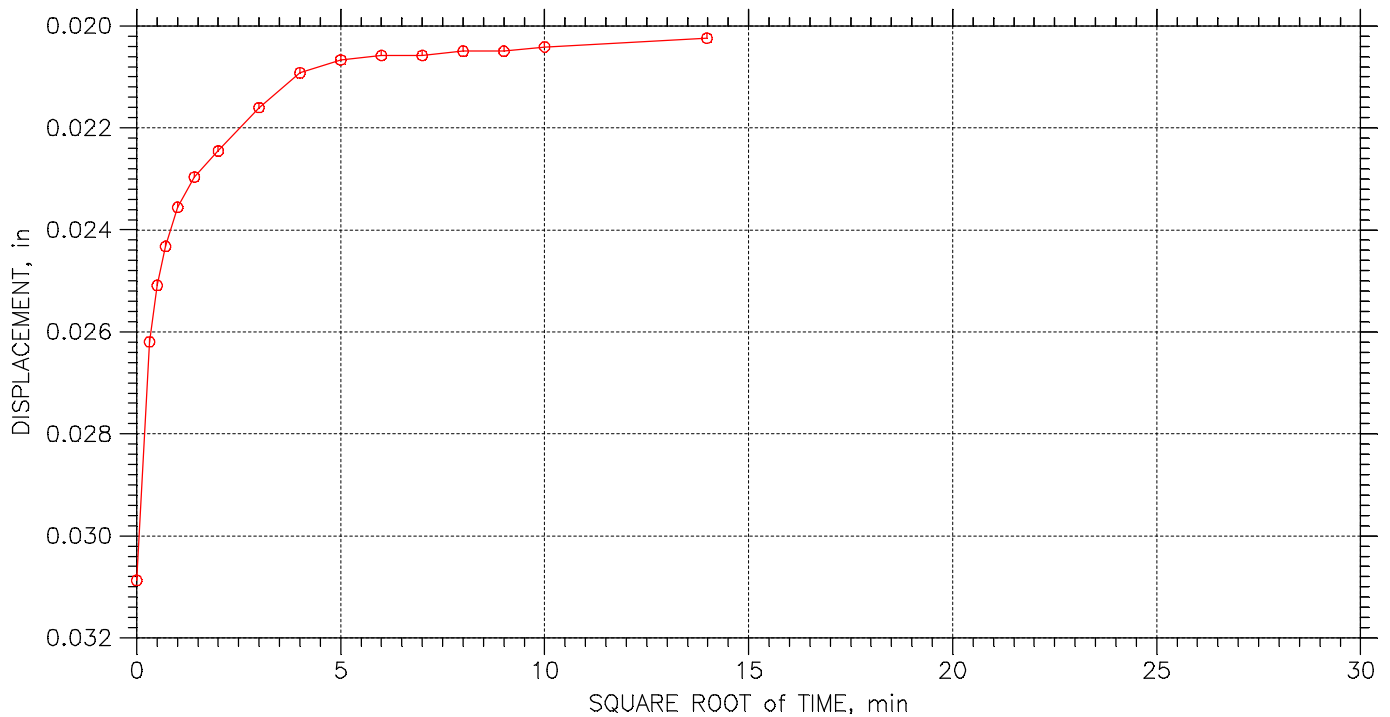
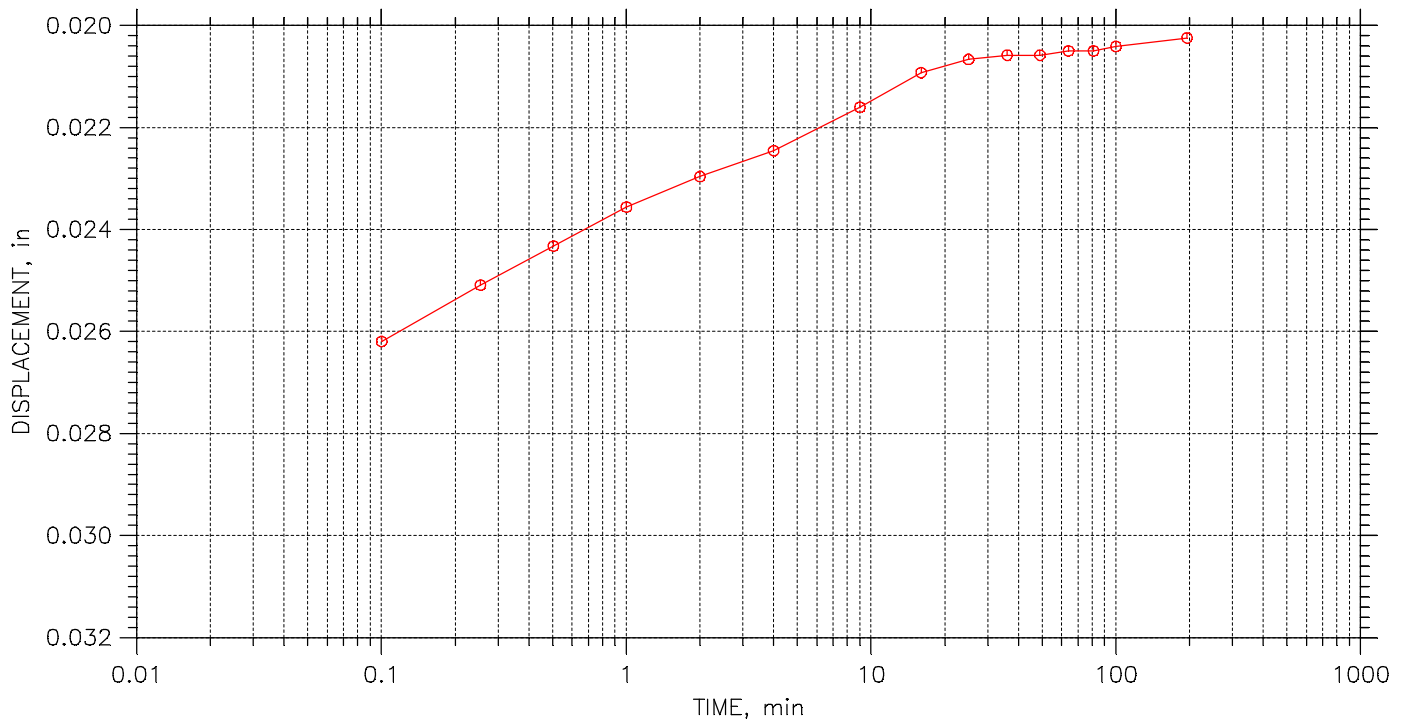
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 8 of 24

Stress: 1. tsf



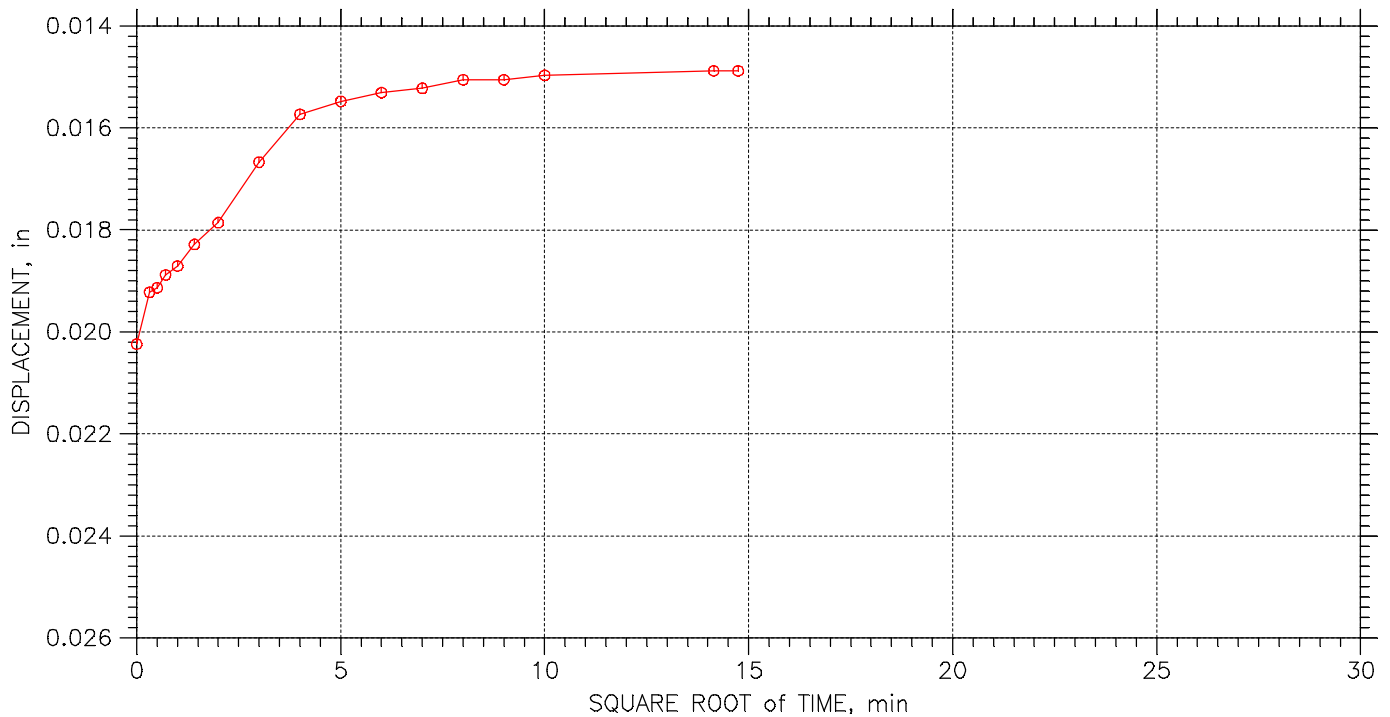
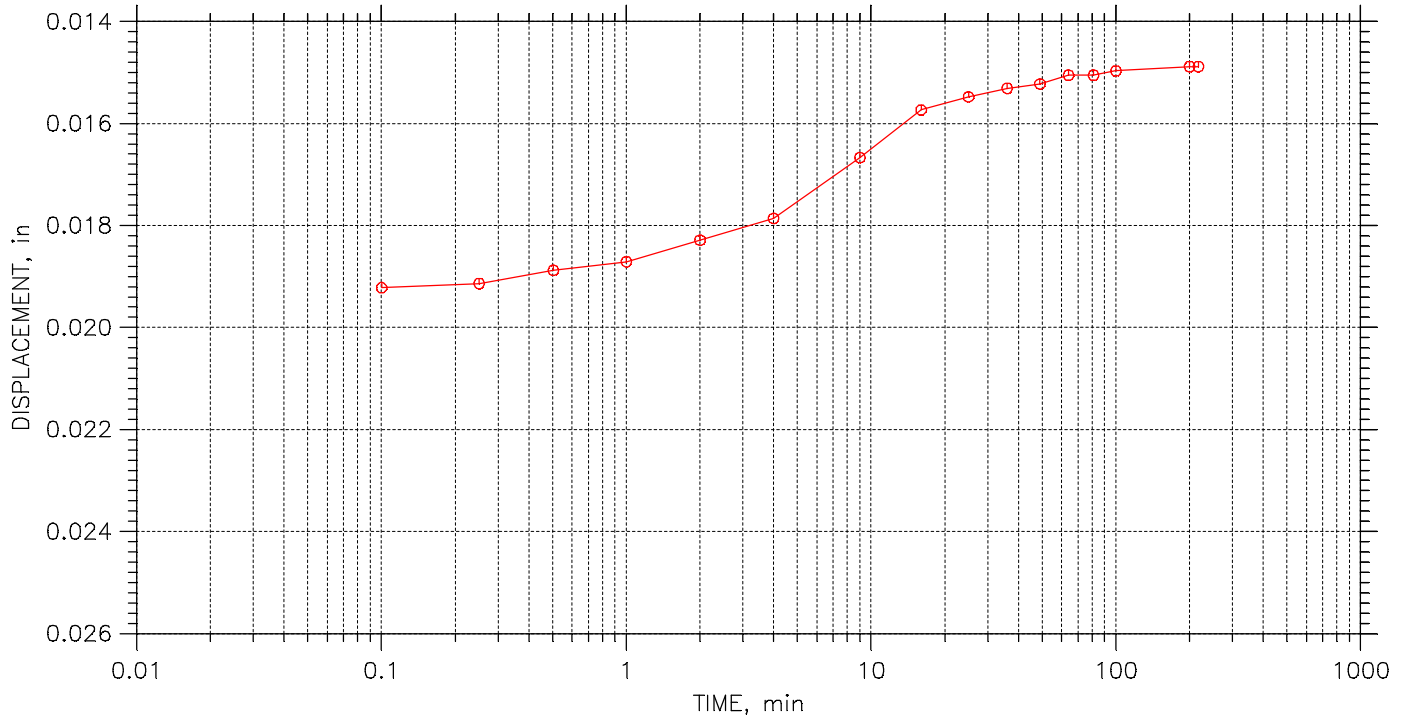
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 9 of 24

Stress: 0.5 tsf



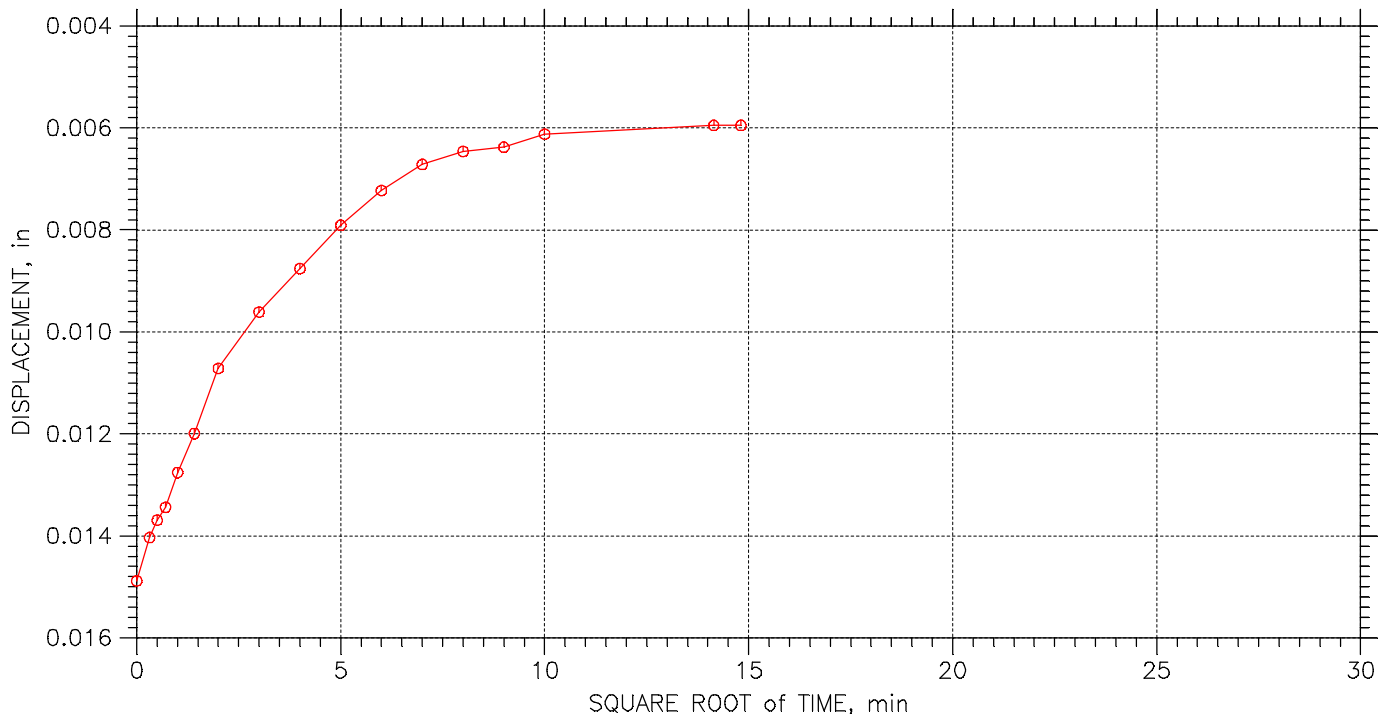
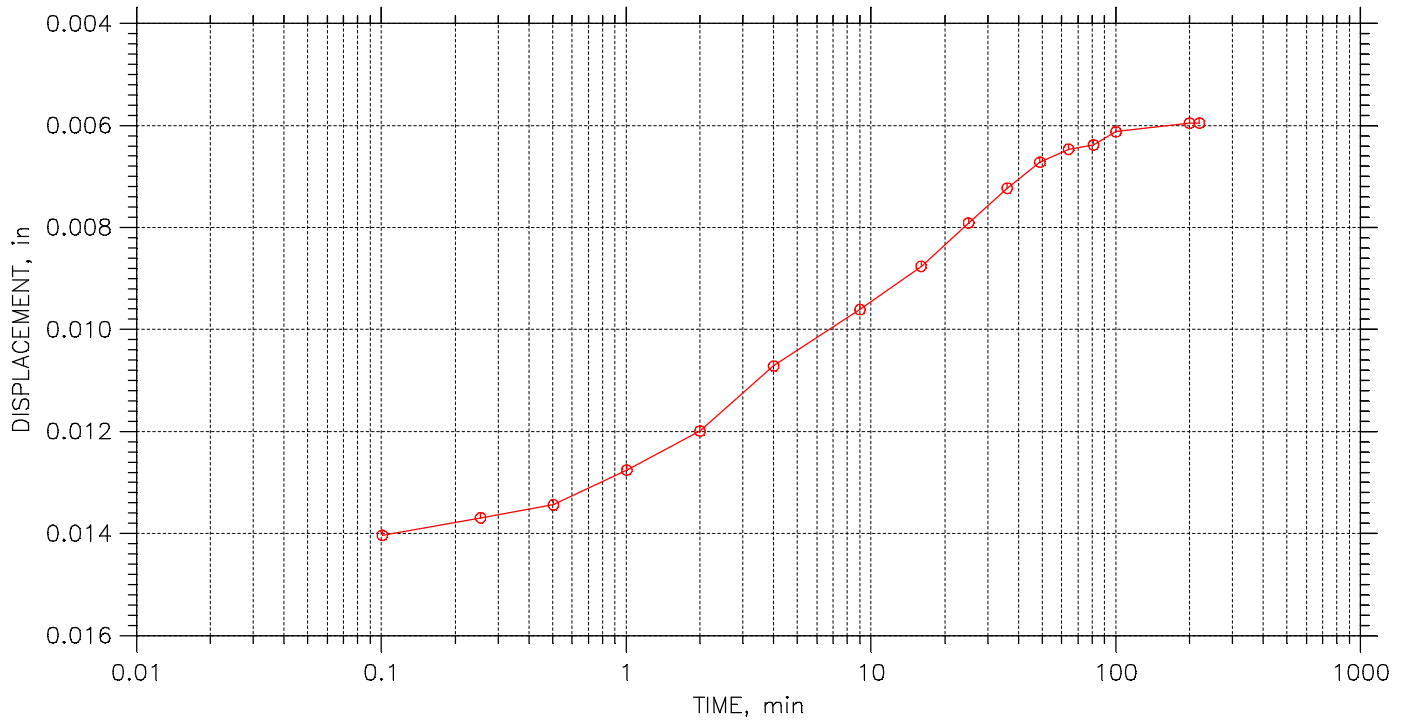
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 10 of 24

Stress: 0.125 tsf



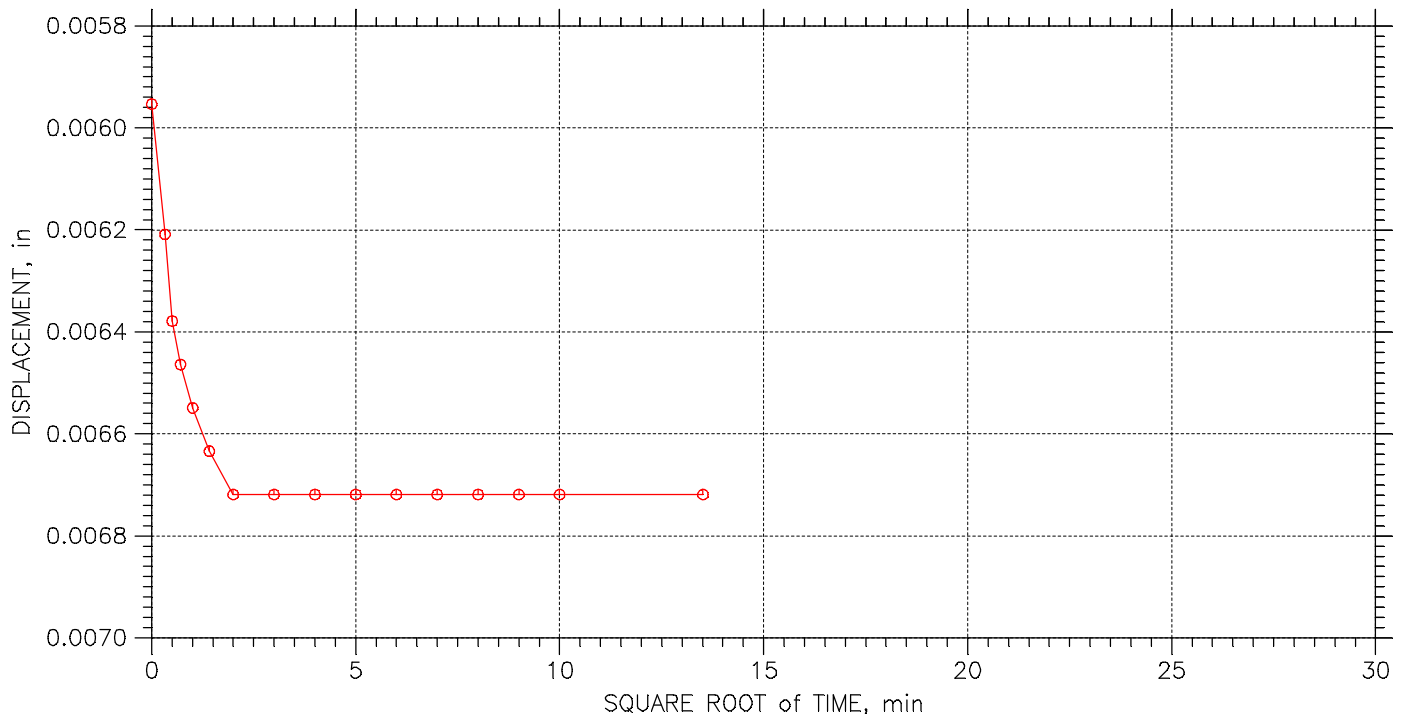
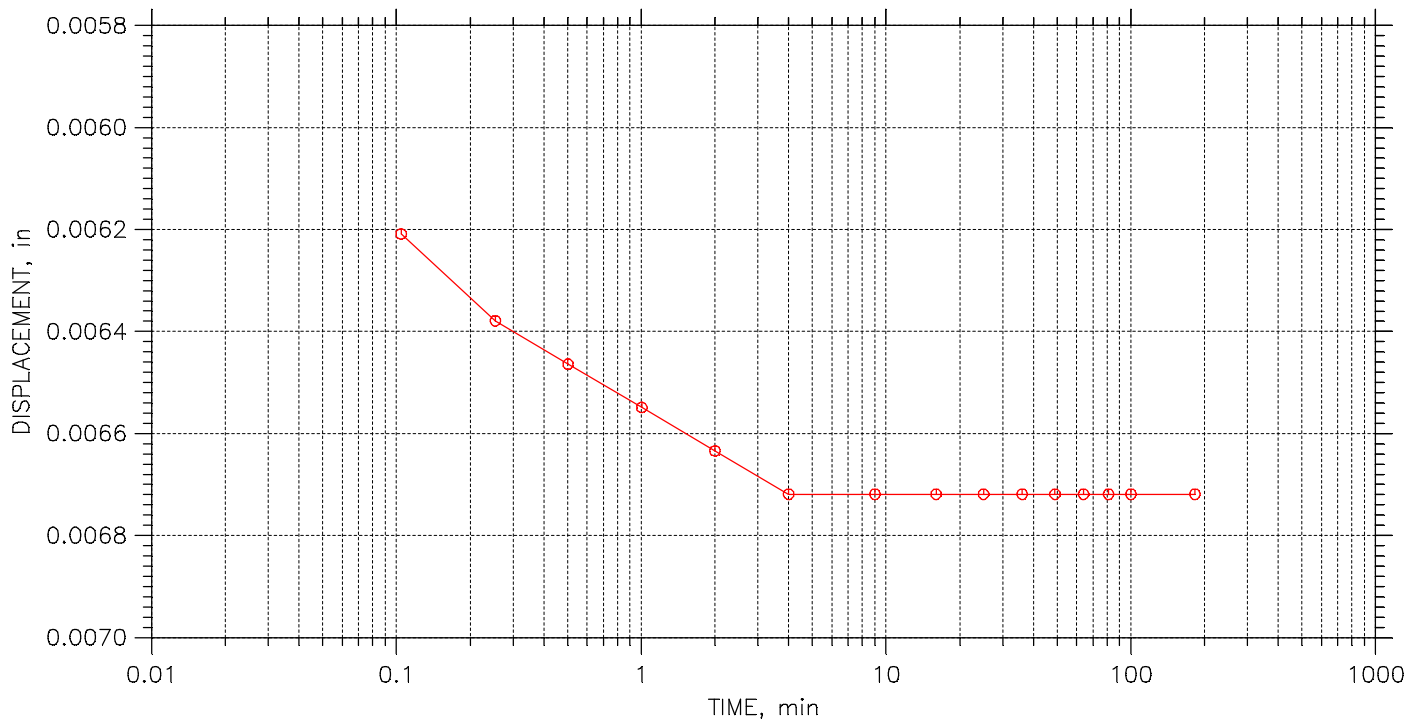
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 11 of 24

Stress: 0.25 tsf



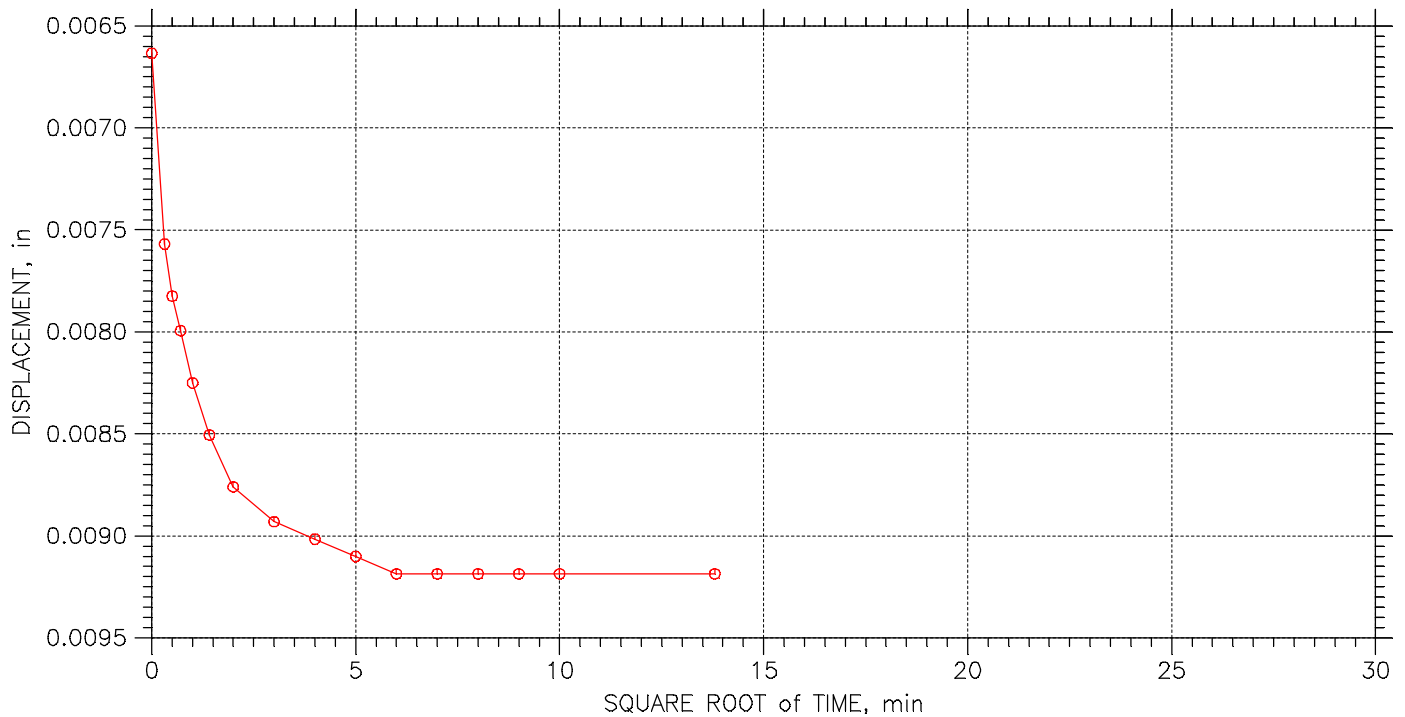
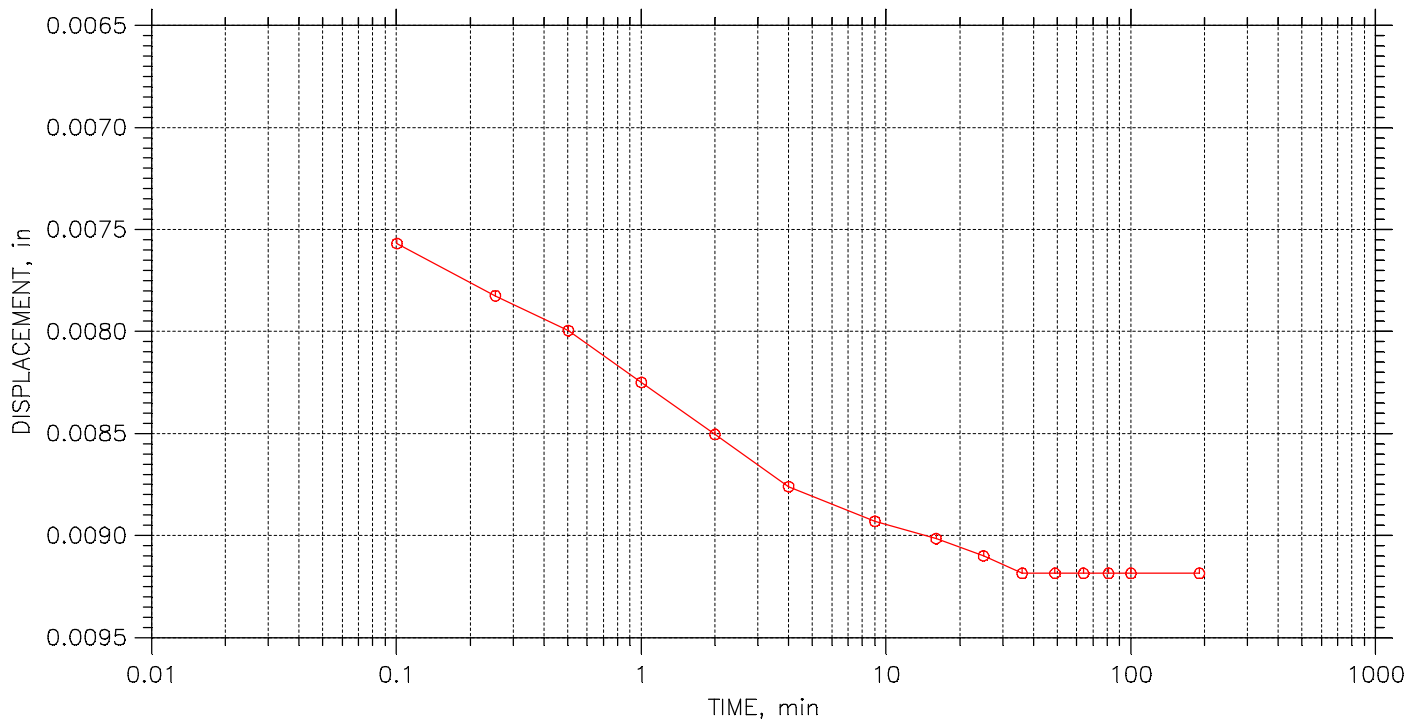
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 12 of 24

Stress: 0.5 tsf



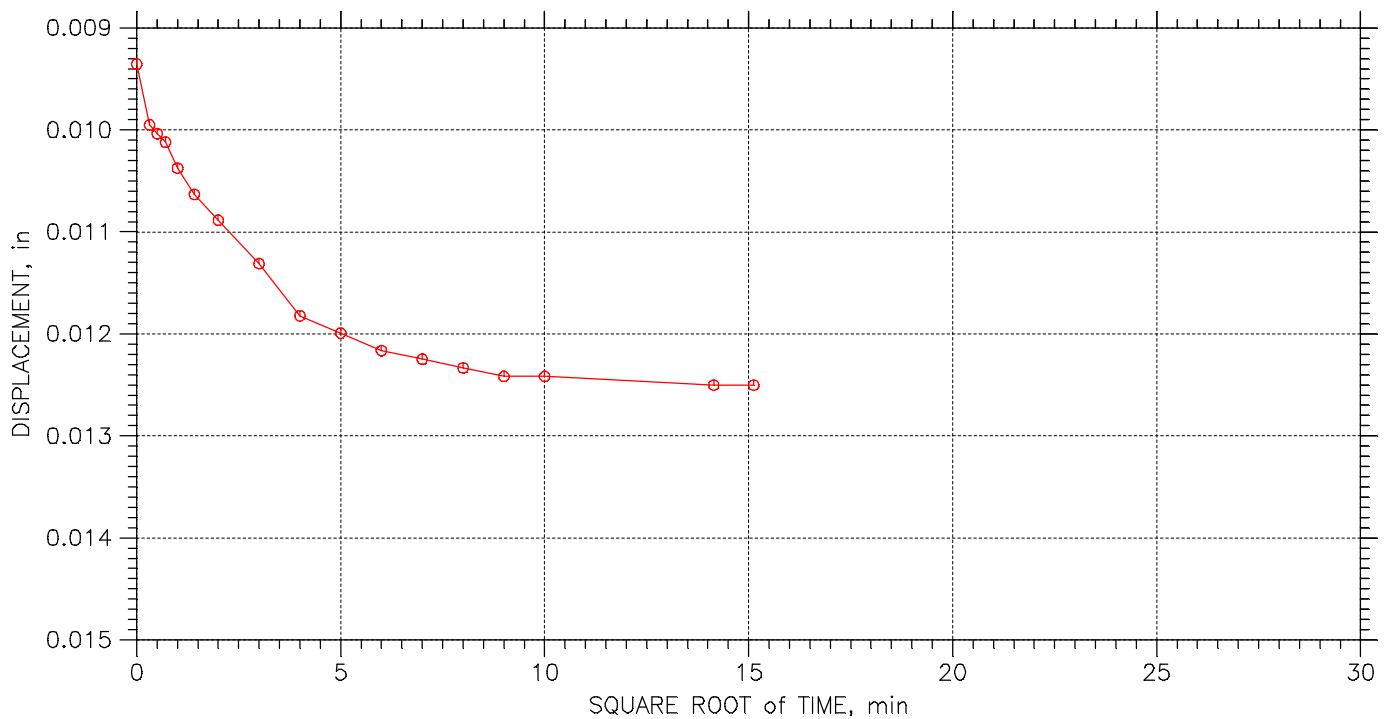
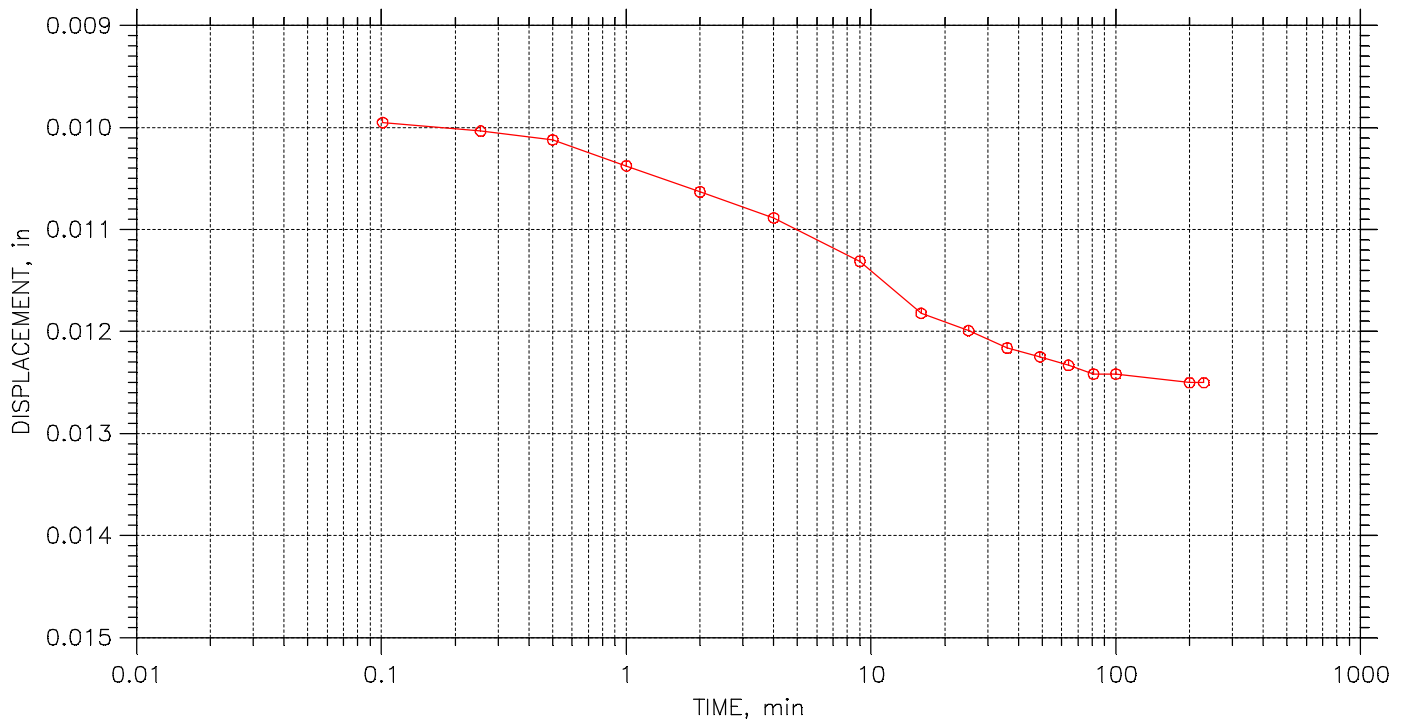
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 13 of 24

Stress: 0.75 tsf



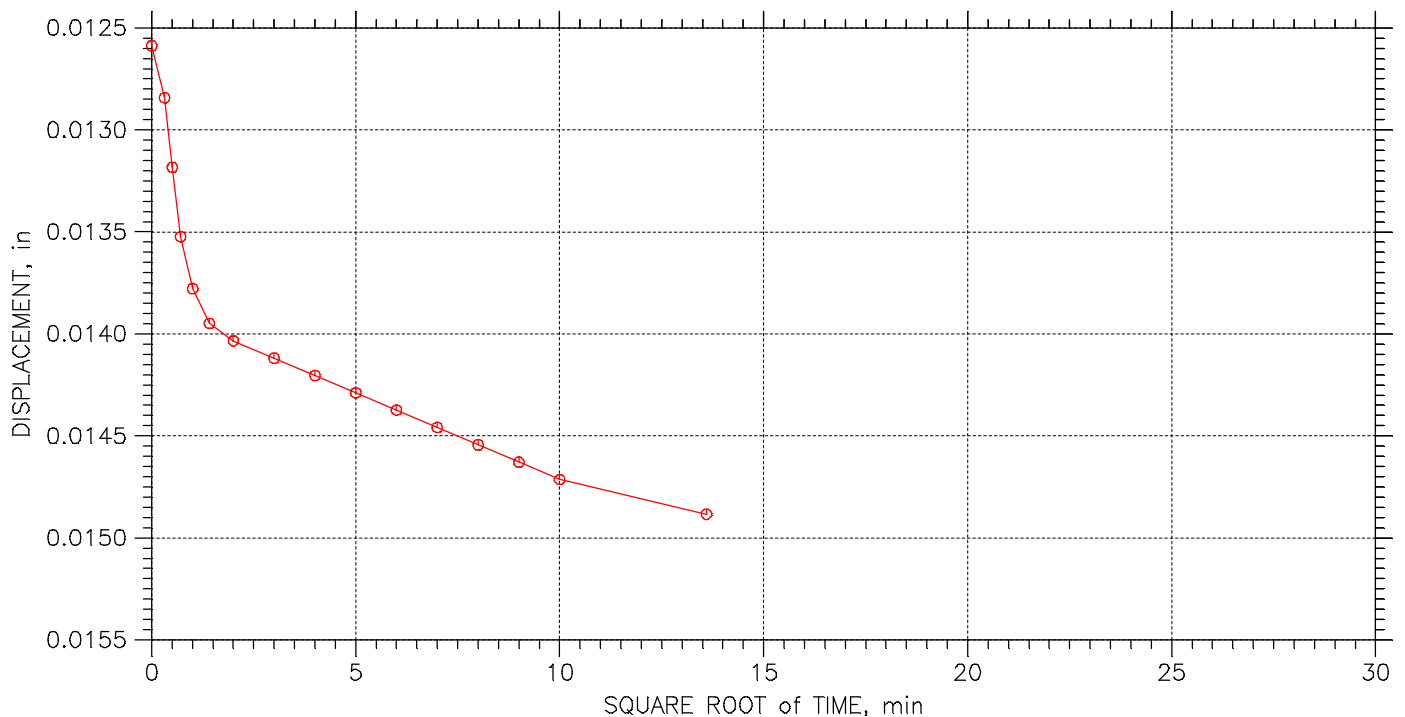
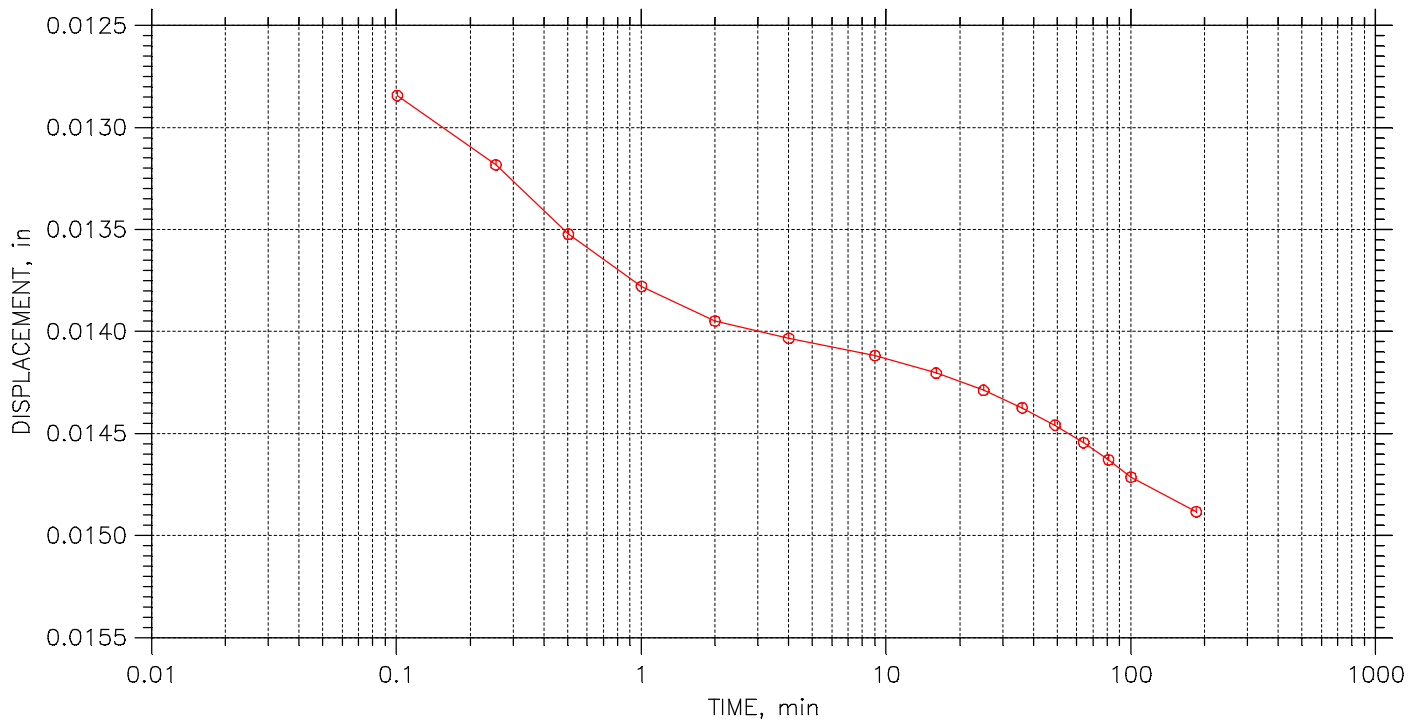
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 14 of 24

Stress: 1. tsf



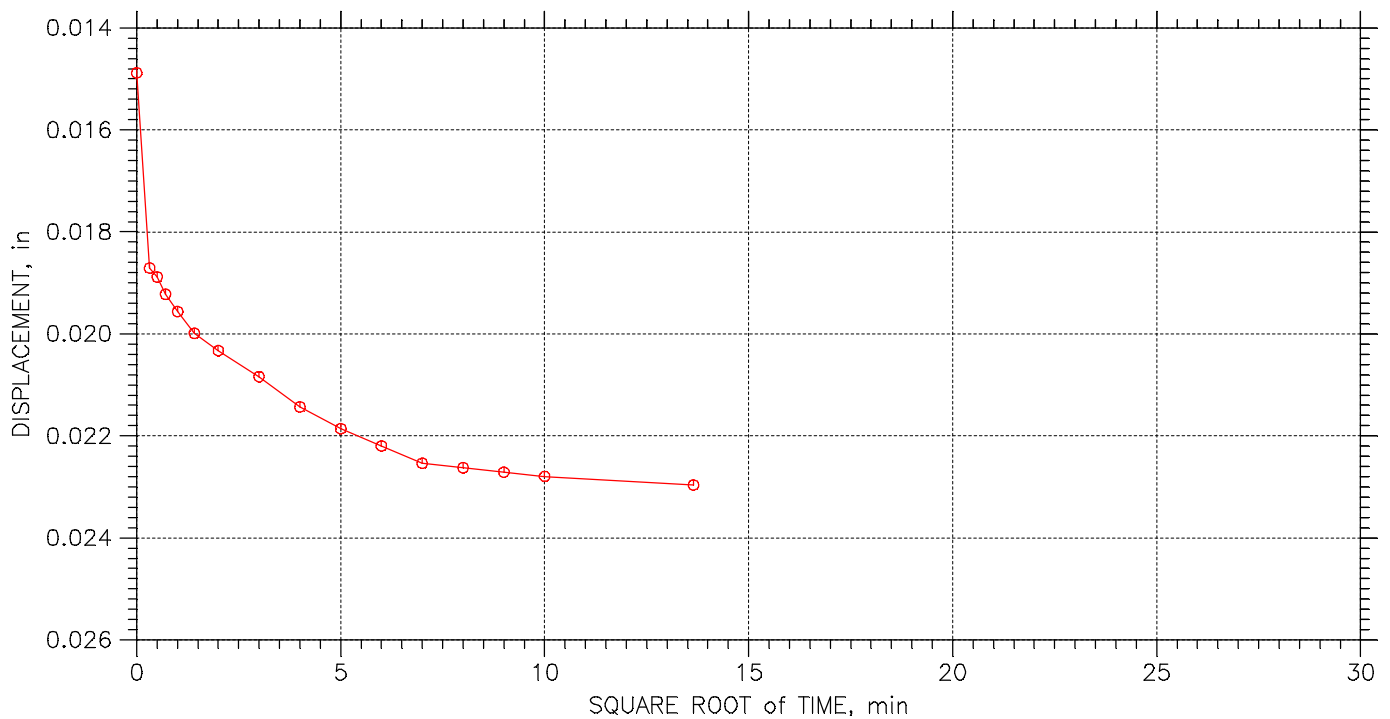
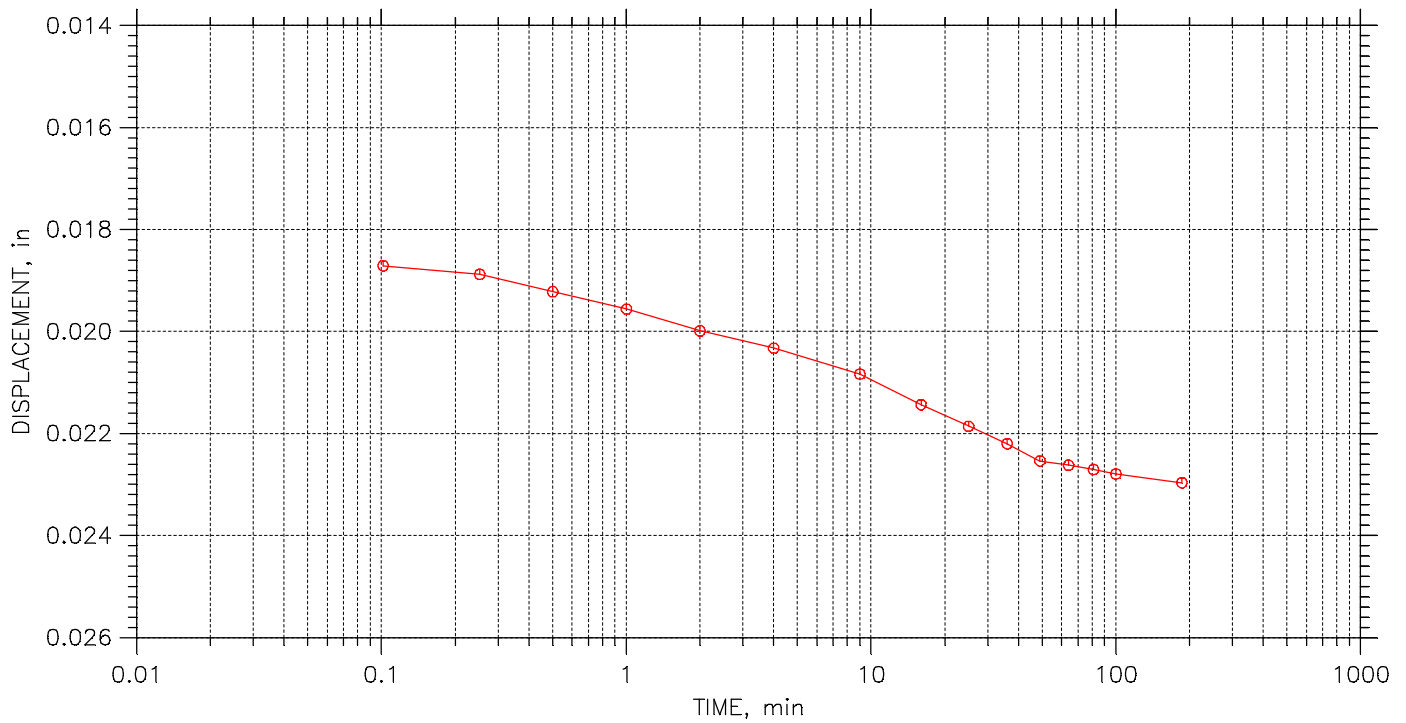
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 15 of 24

Stress: 2. tsf



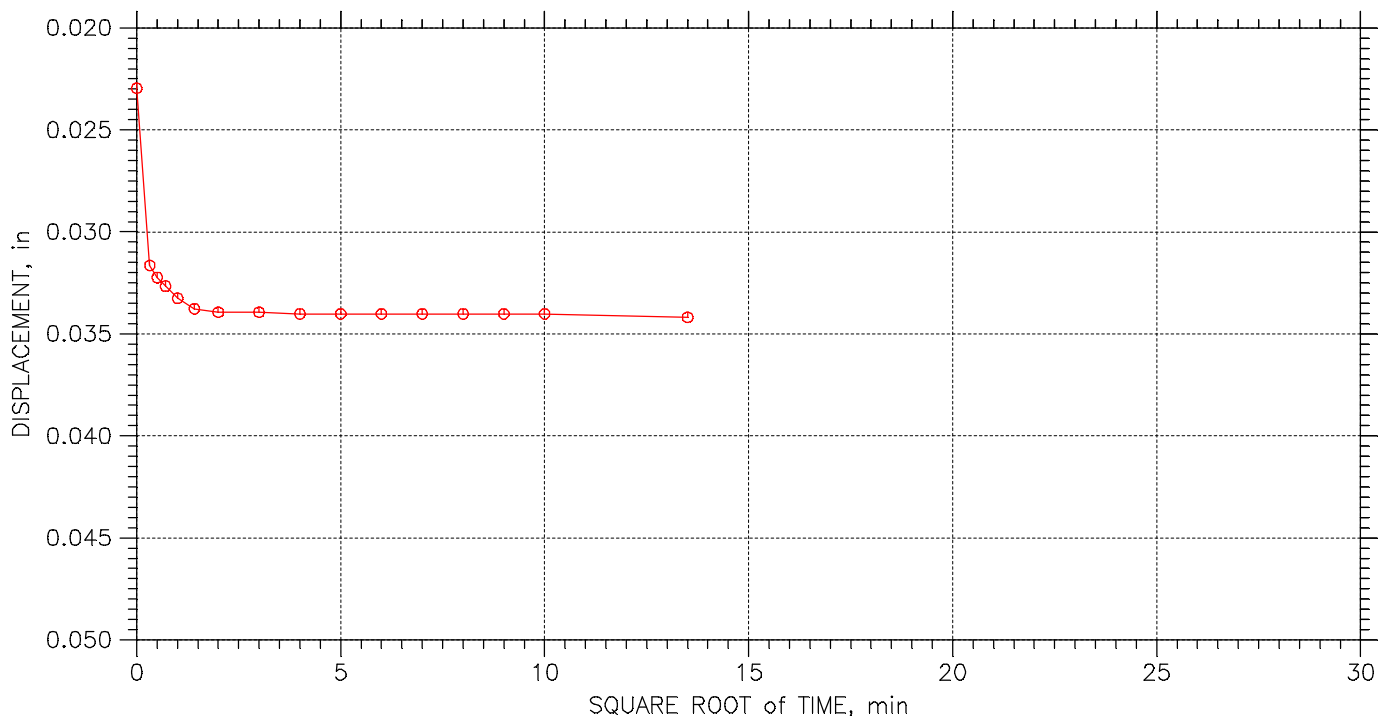
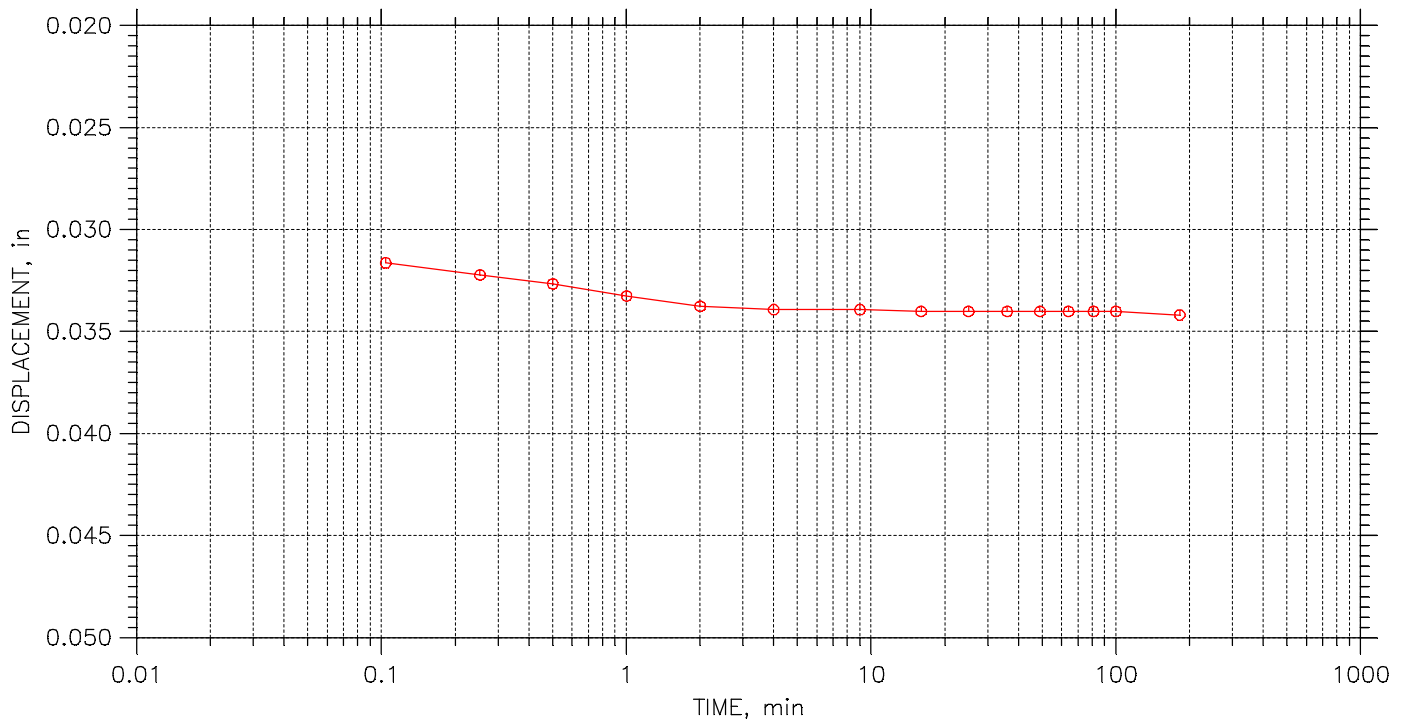
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 16 of 24

Stress: 4. tsf



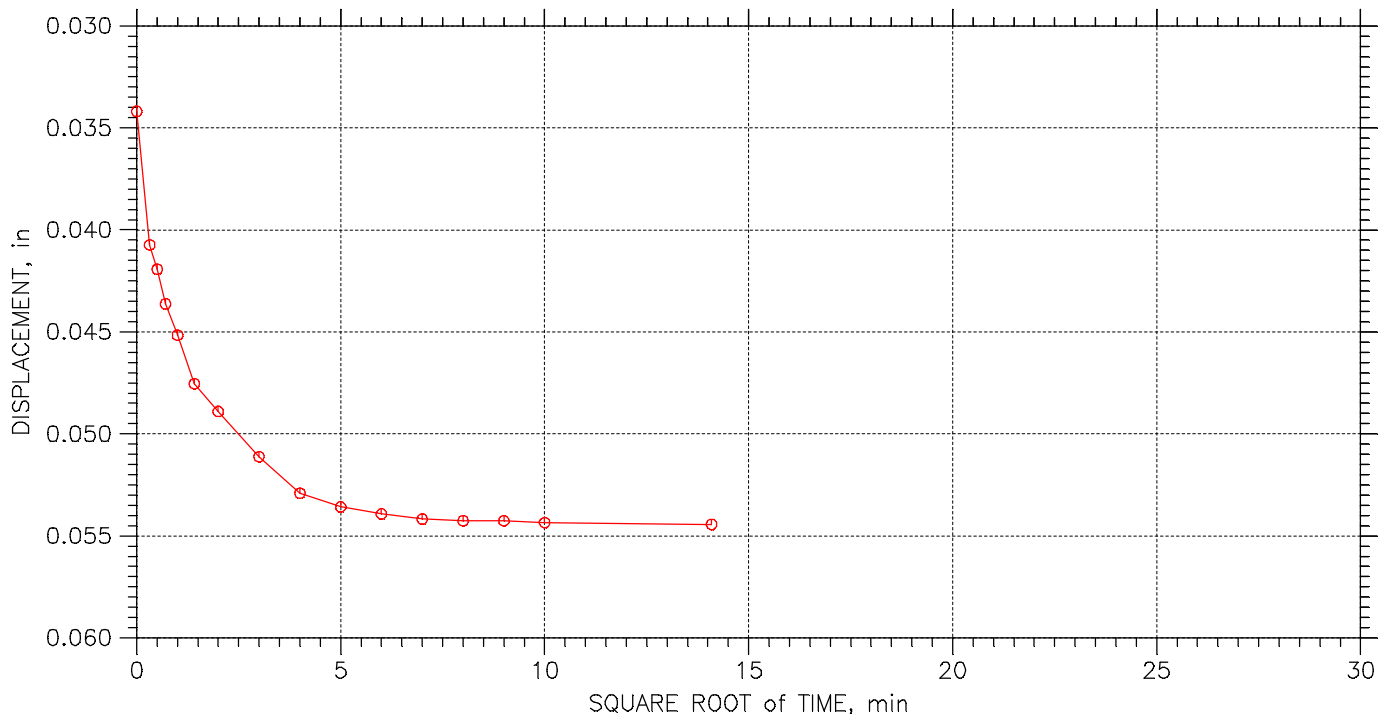
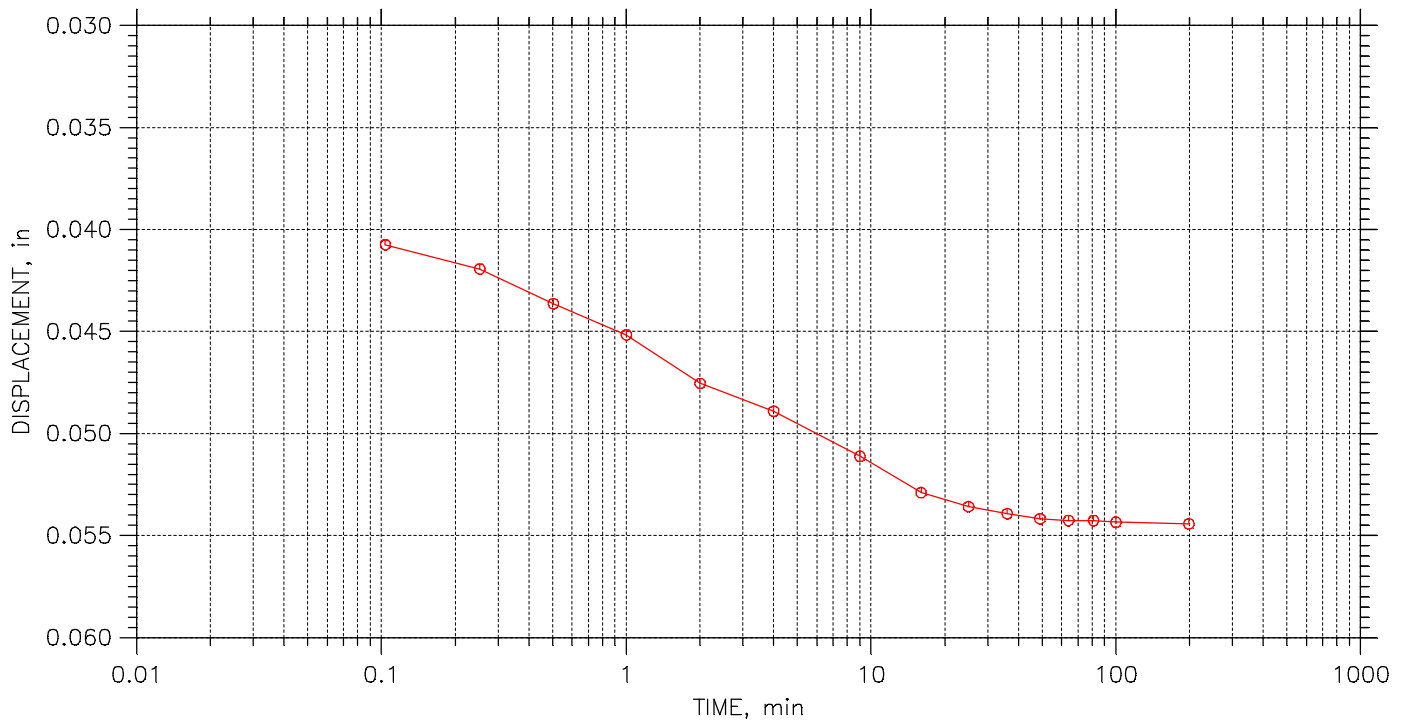
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	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED		
	Remarks: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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 17 of 24

Stress: 8. tsf



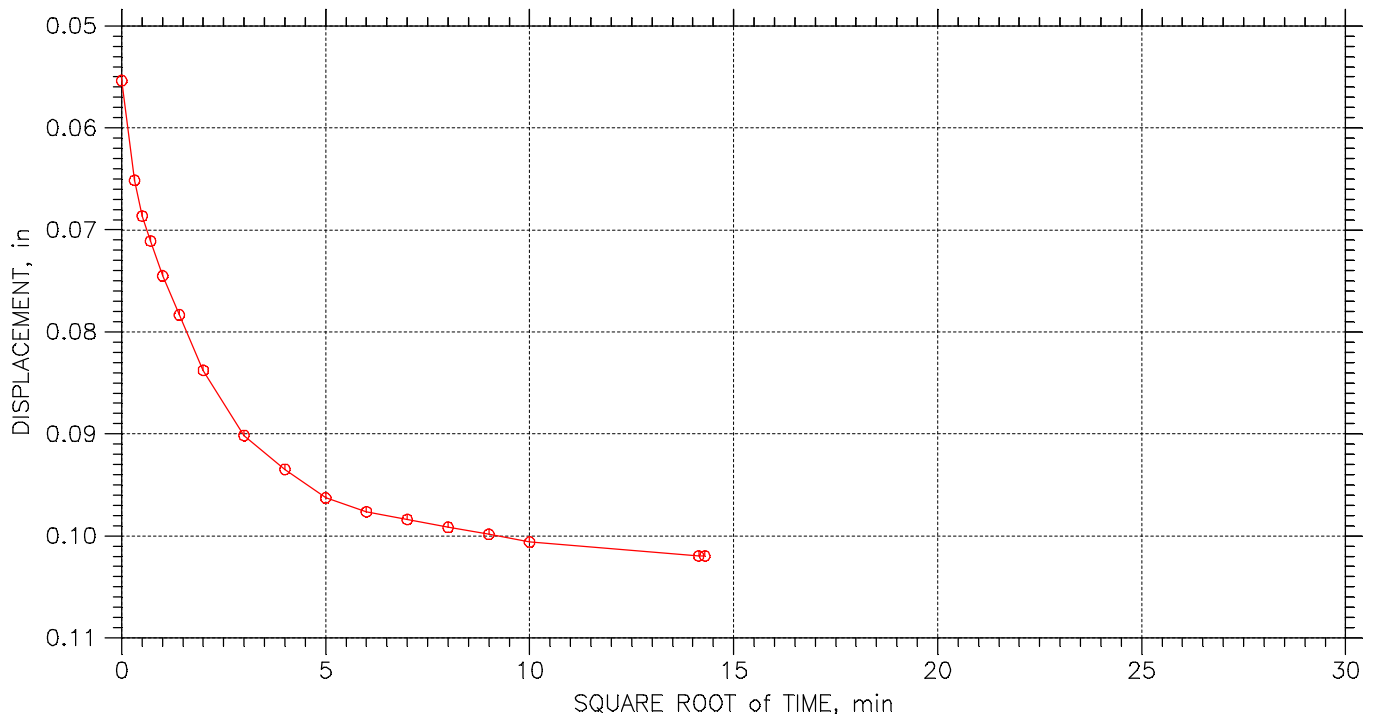
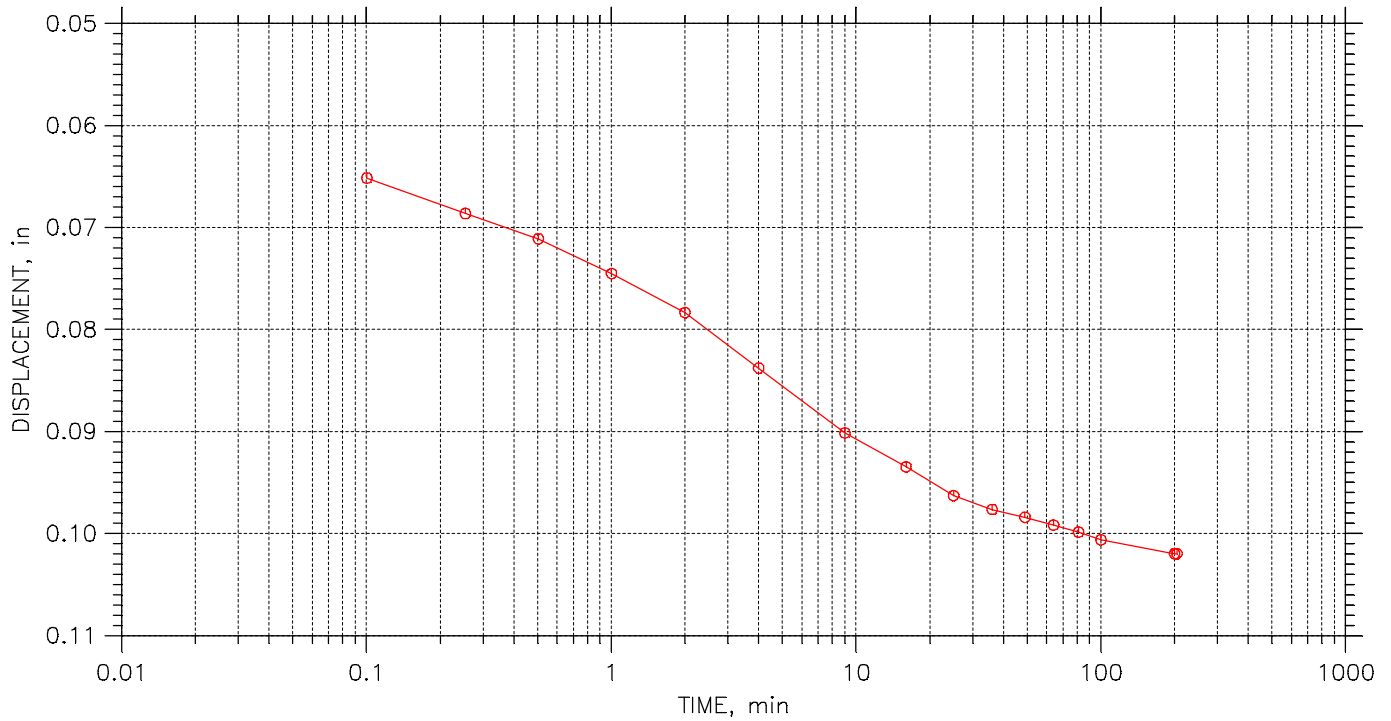
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 18 of 24

Stress: 16. tsf



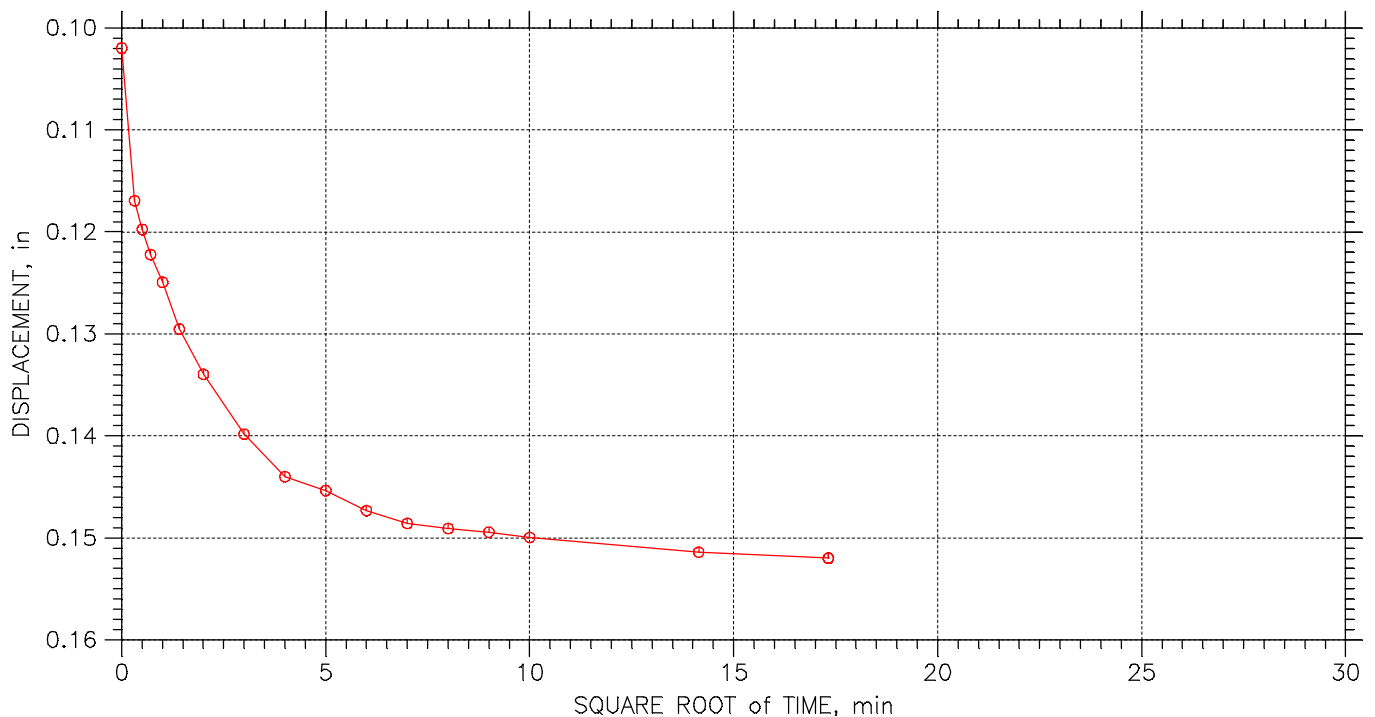
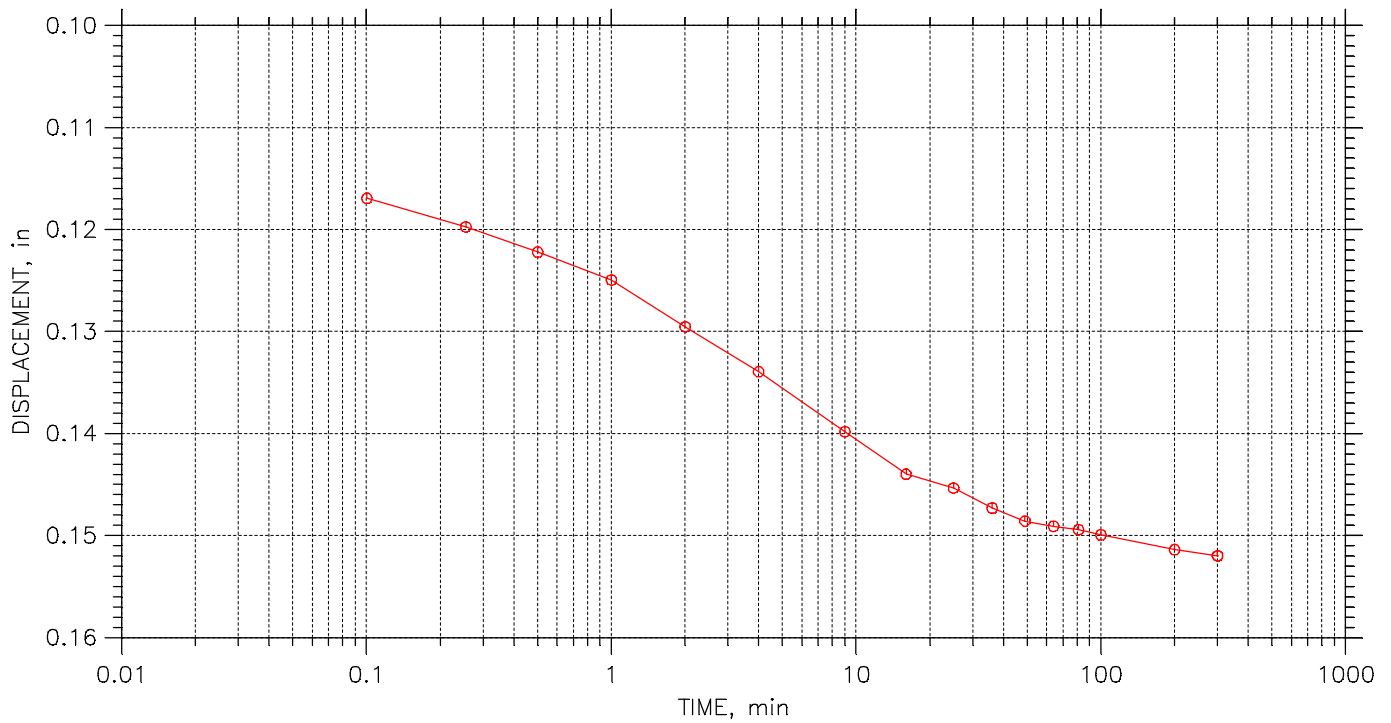
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 19 of 24

Stress: 32. tsf



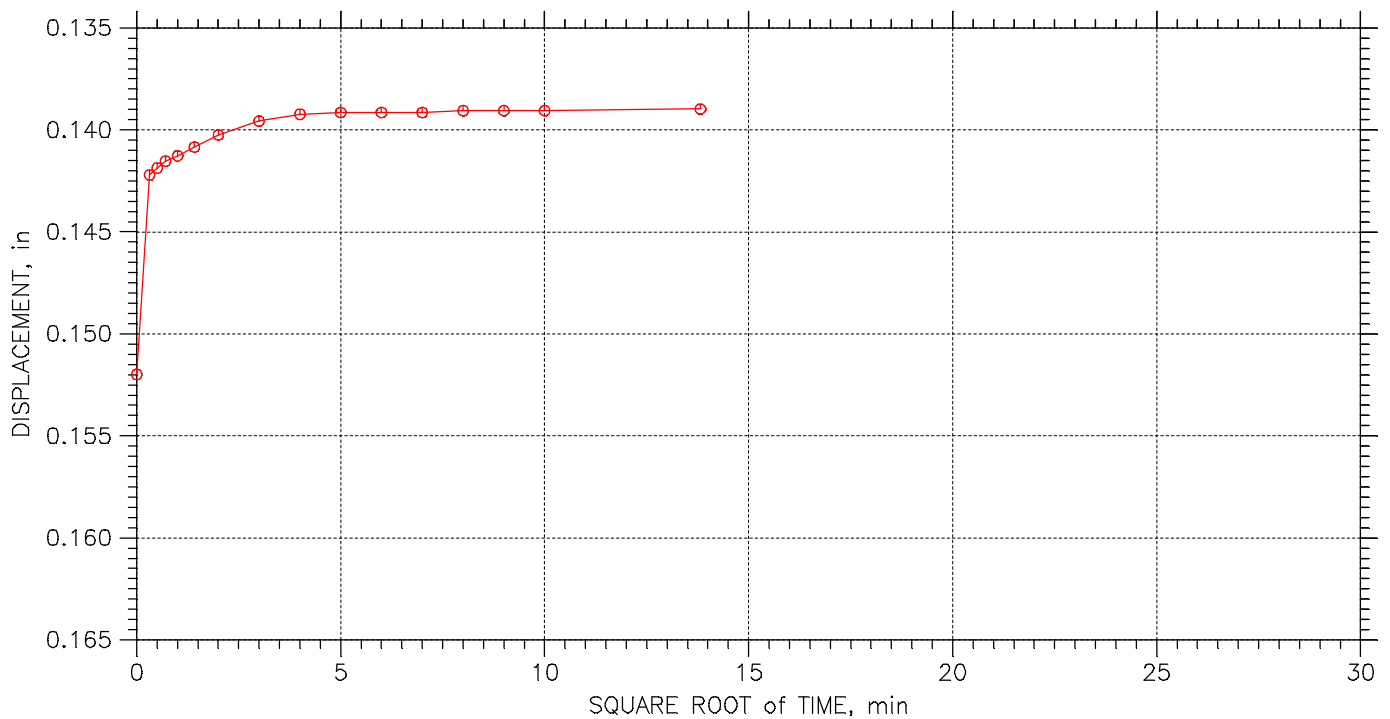
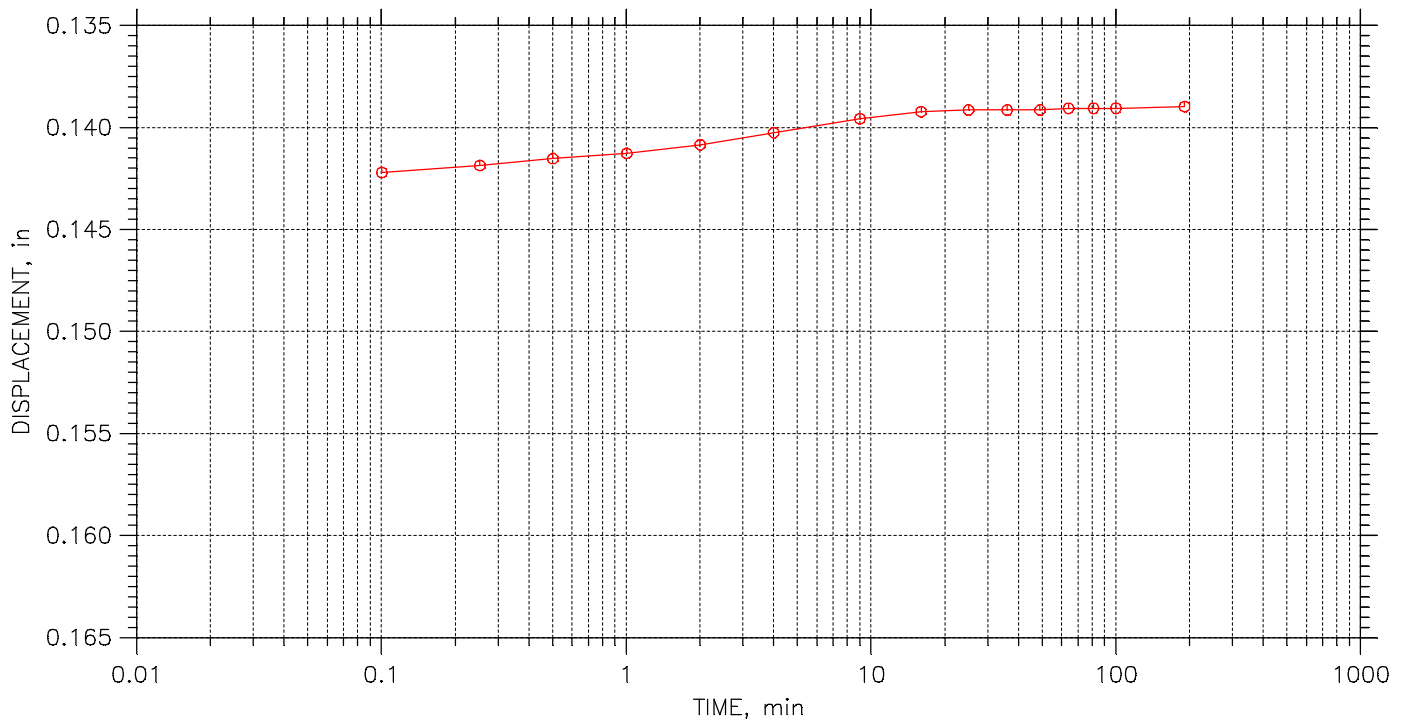
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 20 of 24

Stress: 16. tsf



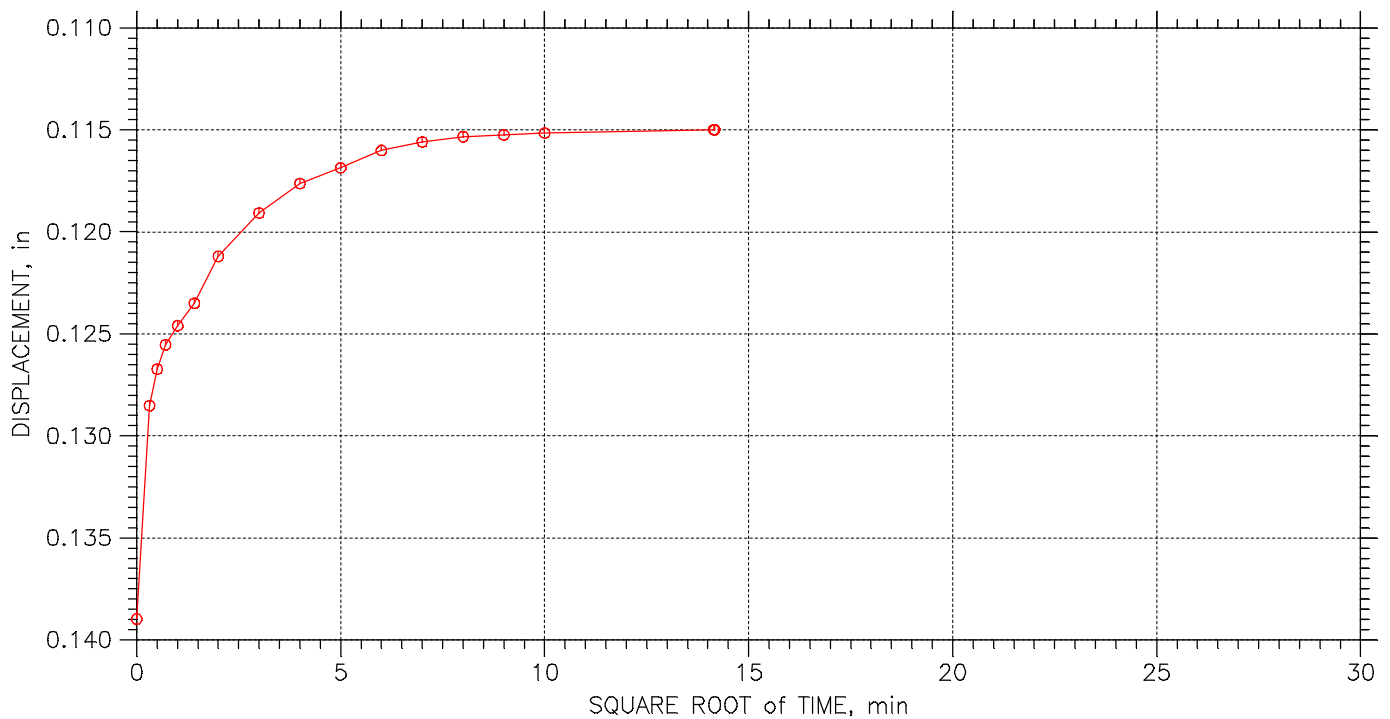
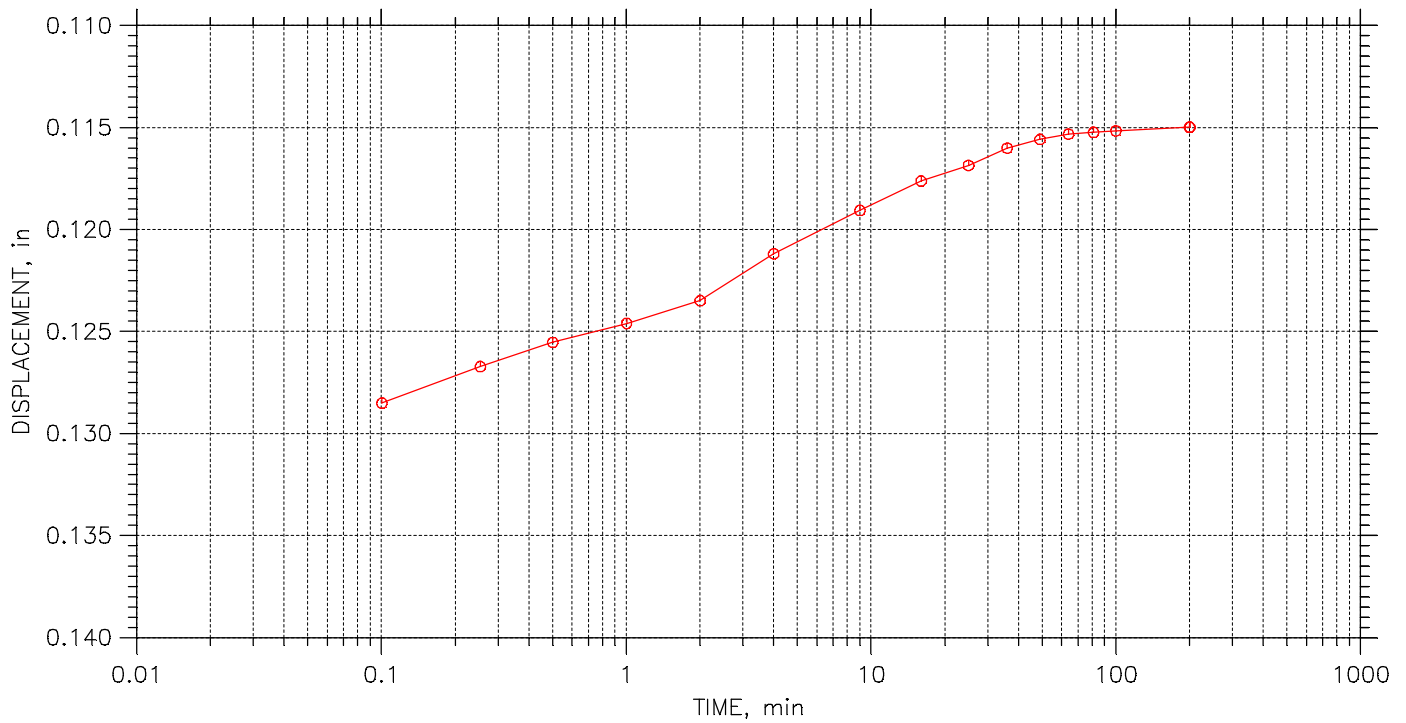
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 21 of 24

Stress: 4. tsf



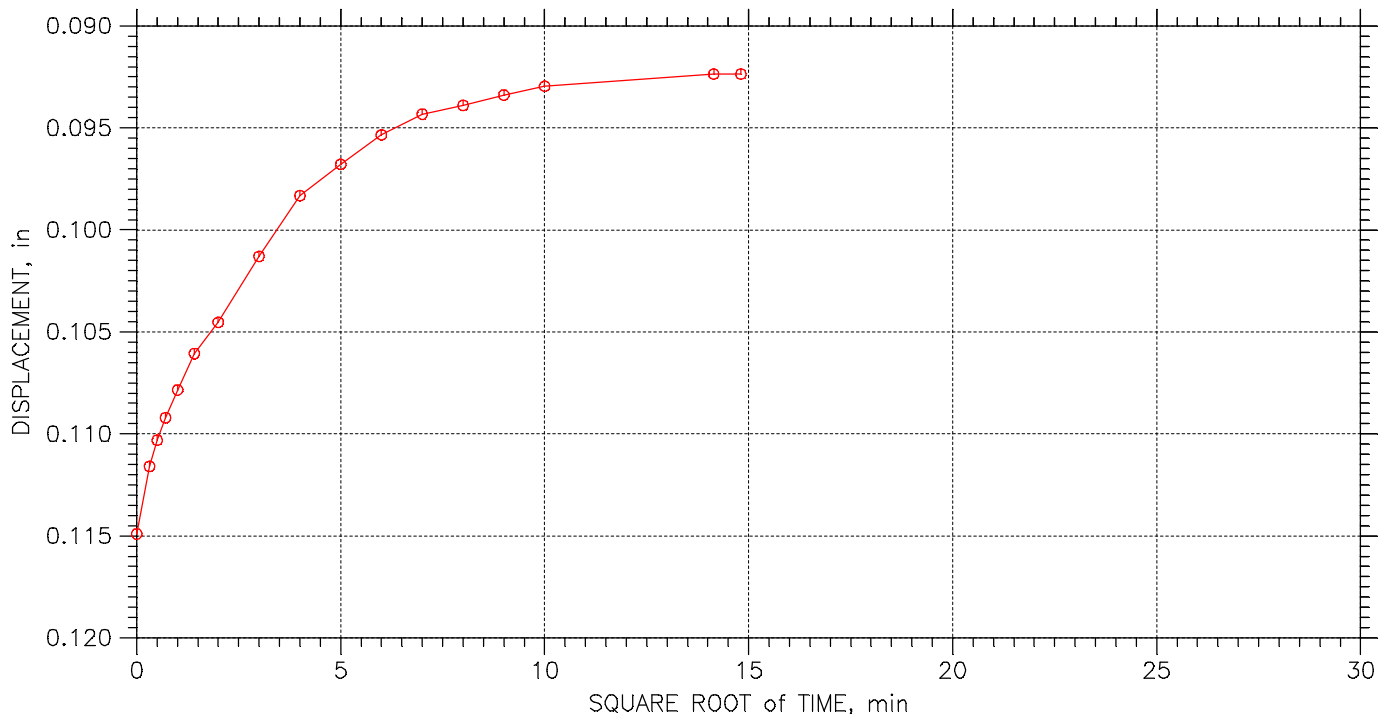
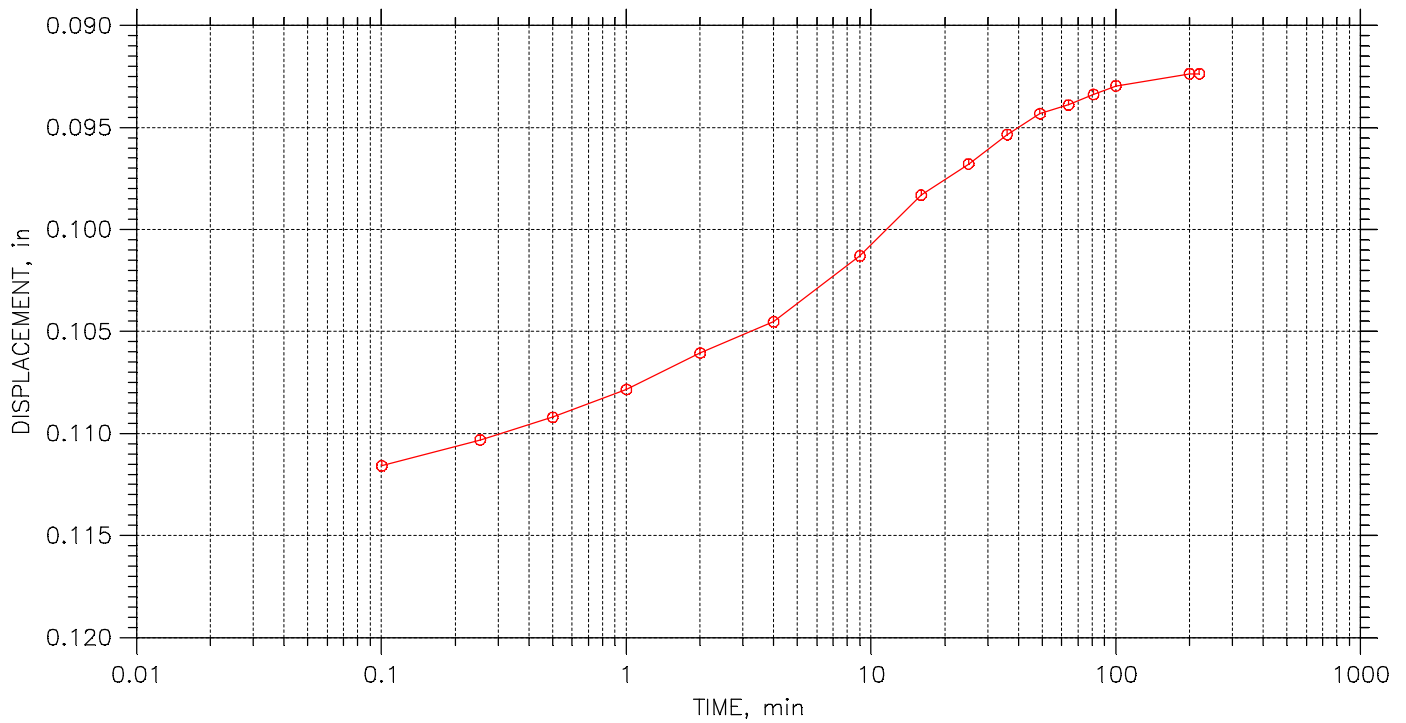
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 22 of 24

Stress: 1. tsf



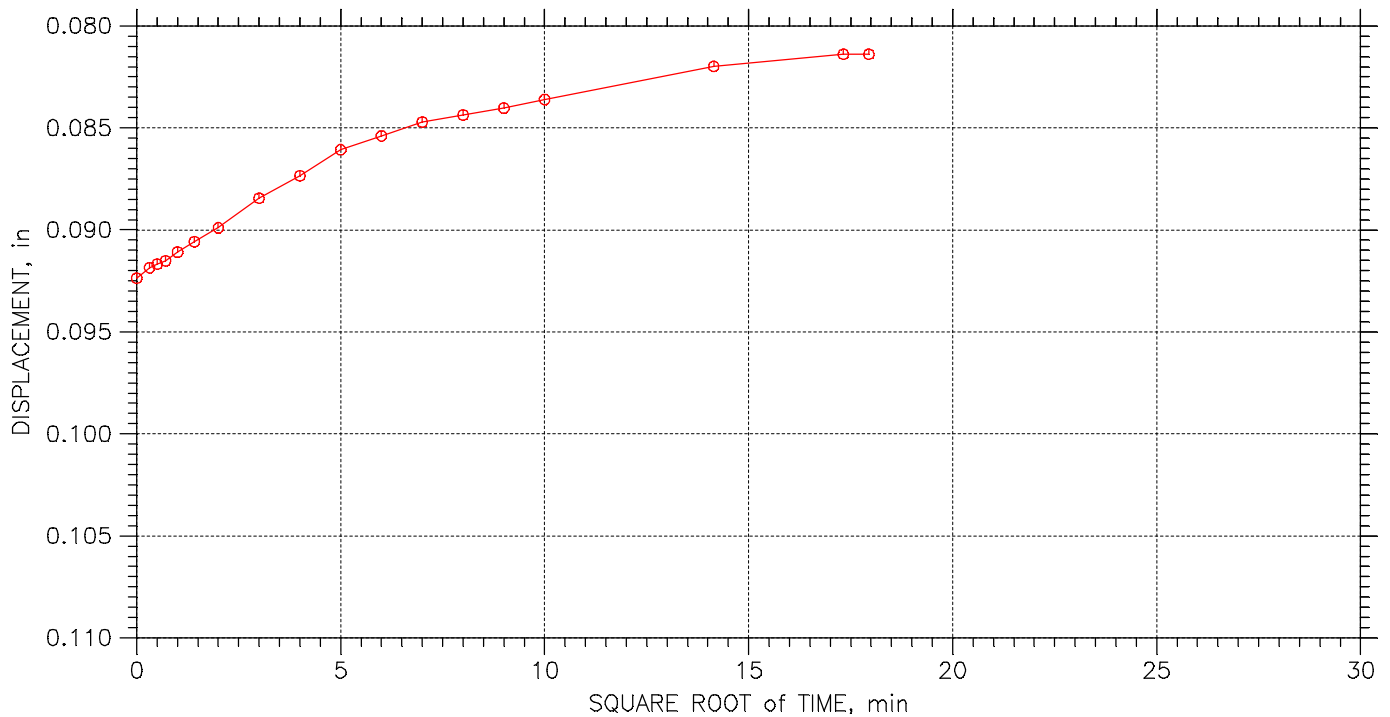
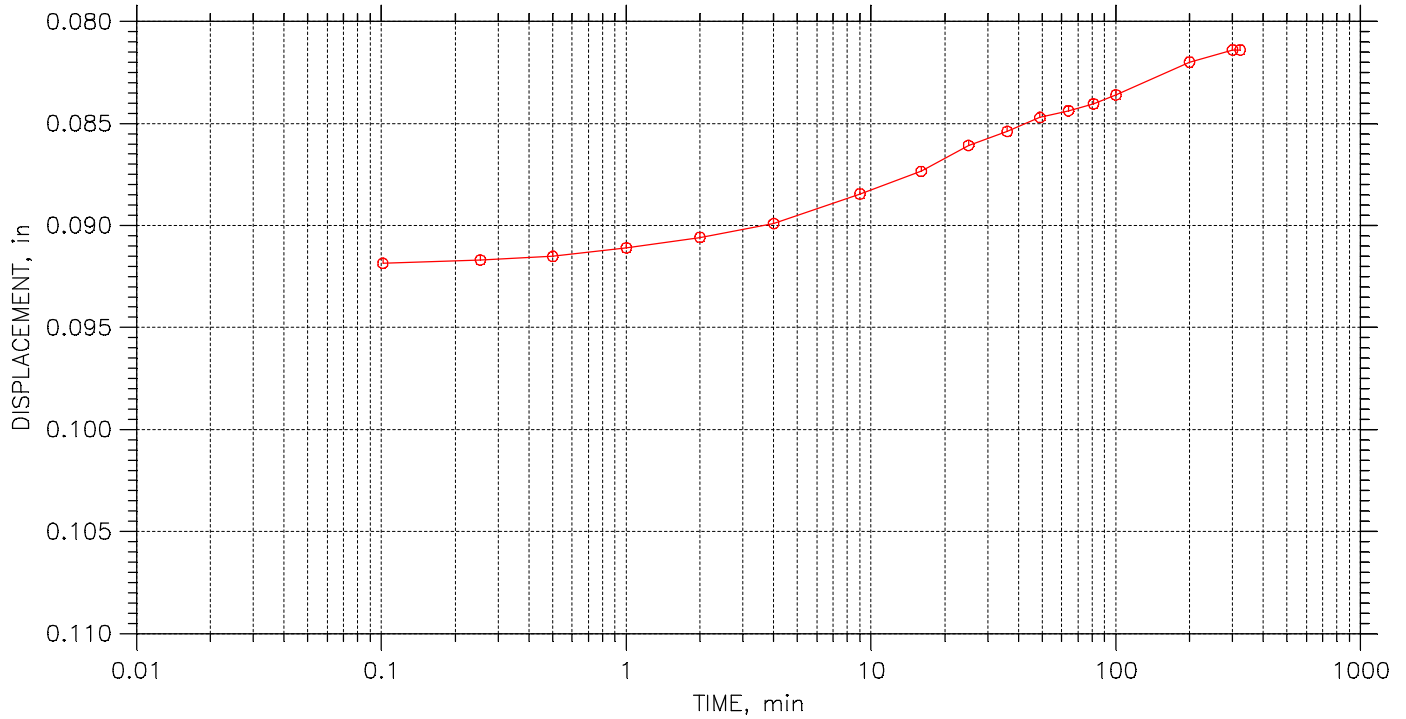
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS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


CONSOLIDATION TEST DATA

TIME CURVES

Constant Load Step: 23 of 24

Stress: 0.5 tsf



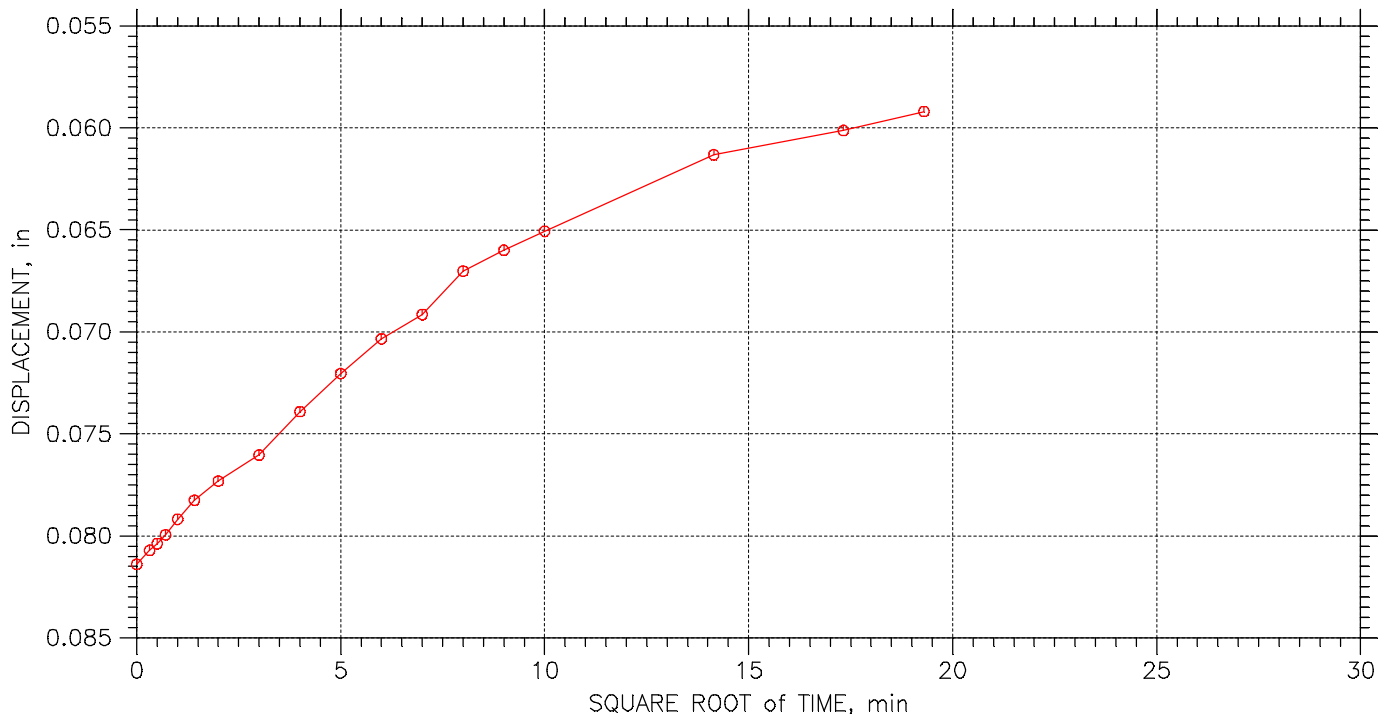
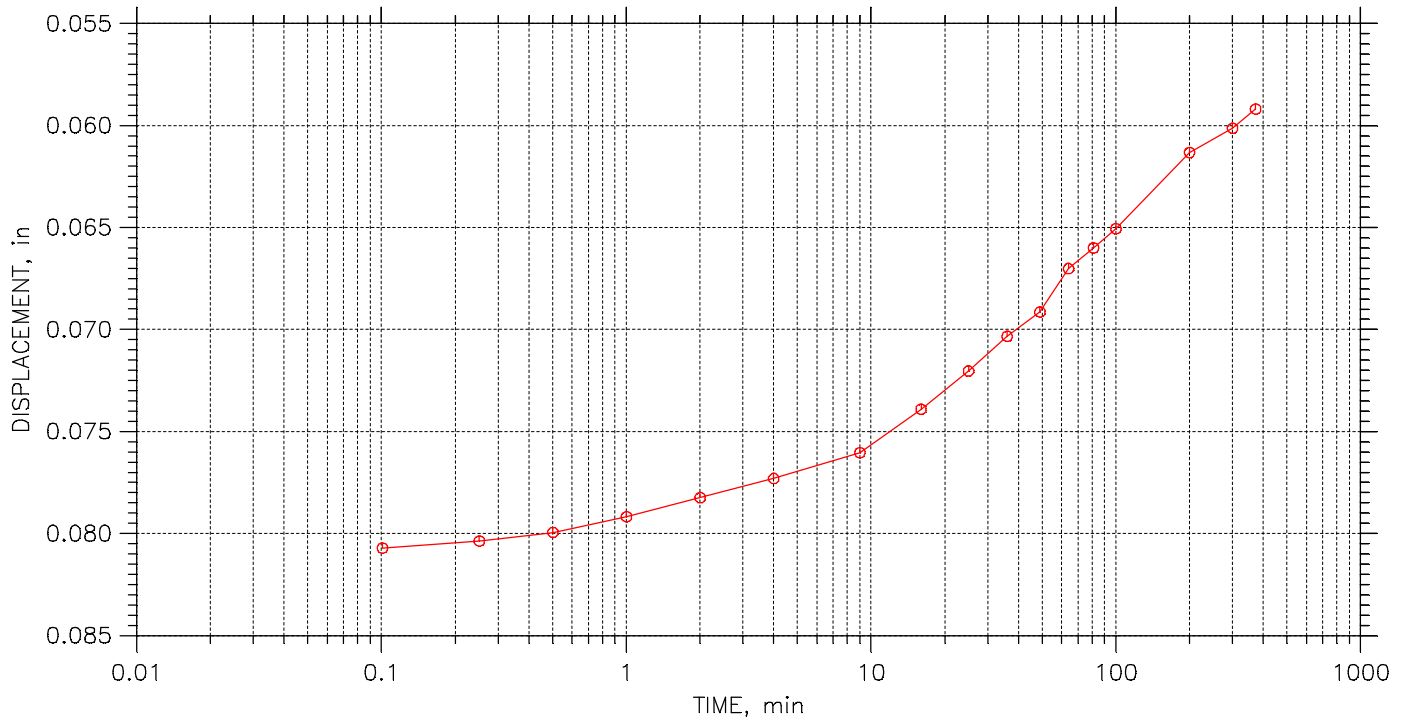
	Project: PULLIAM PROPERTY RED.	Location: MILWAUKEE,WI	Project No.: 11225052
	Boring No.: BW3-22	Tested By: IT/ED	Checked By: BCM
	Sample No.: ST-3	Test Date: 9/29/2022	Depth: 90.0'-92.0'
	Test No.: BW39092C	Sample Type: 3.0" ST	Elevation: ----
	Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS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


CONSOLIDATION TEST DATA

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'
	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		

CONSOLIDATION TEST DATA

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

Location: MILWAUKEE, WI
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 Consolidation		After Consolidation	
	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	---

CONSOLIDATION TEST DATA

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

Location: MILWAUKEE, WI
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: ----

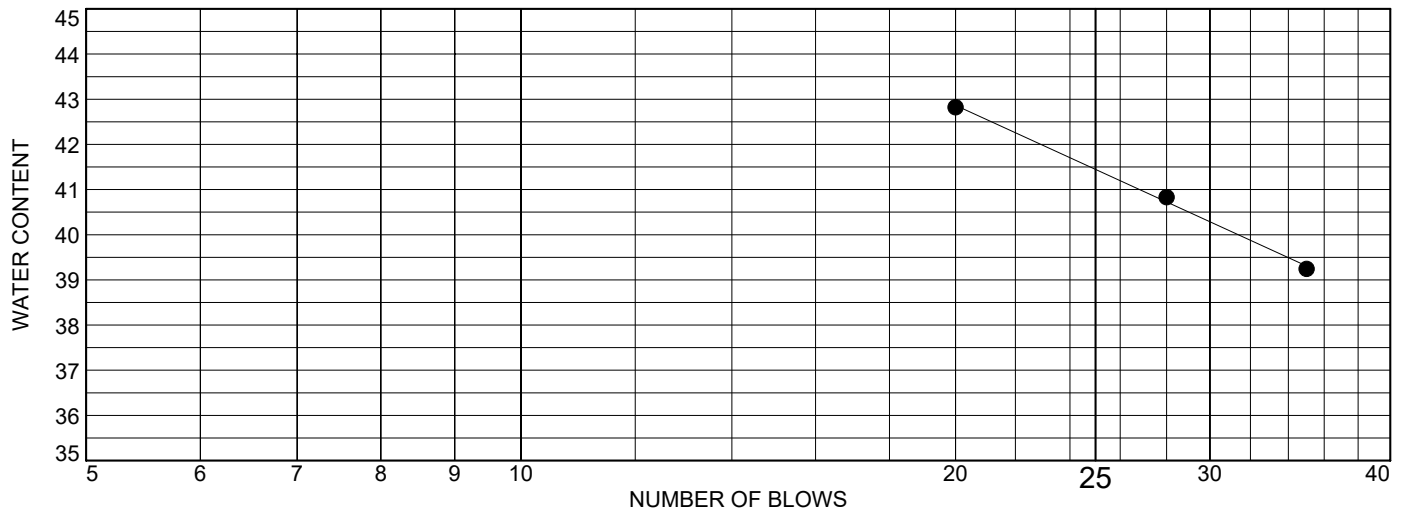
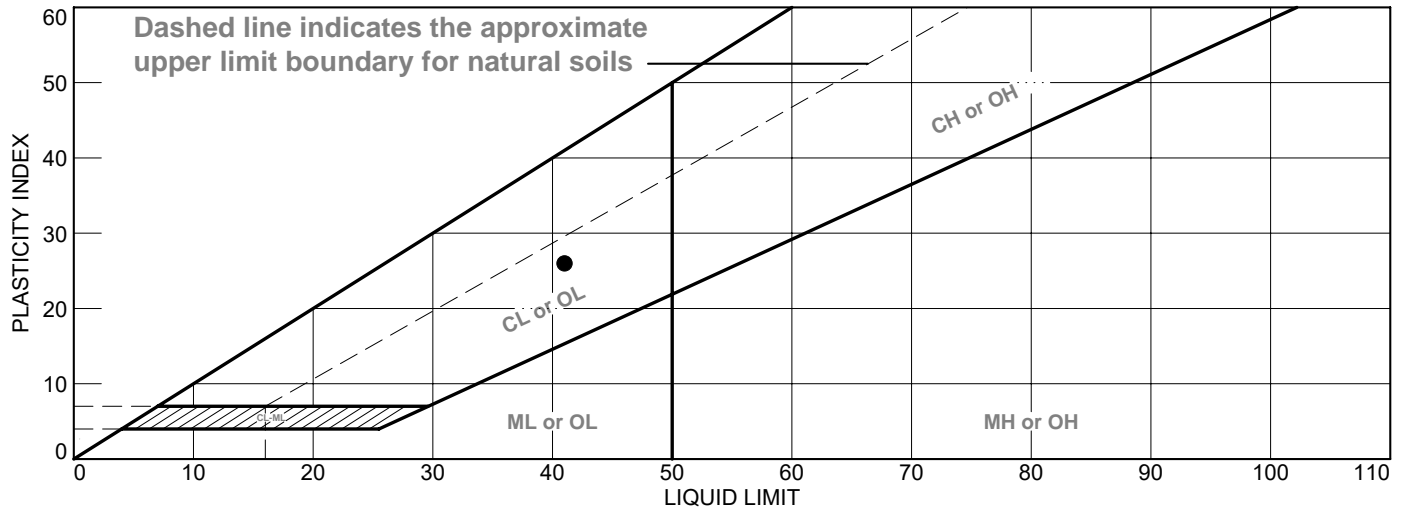


Soil Description: REDDISH BROWN FAT CLAY (CH) SILT AND SAND SEAMS NOTED
Remarks: Pc = 4.5 tsf Cc = 0.465 Ccr = 0.106 TEST PERFORMED AS PER ASTM D 2435

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting		Coefficient of Consolidation		
					Sq.Rt. min	Log min	Sq.Rt. ft^2/sec	Log ft^2/sec	Ave. ft^2/sec
1	0.125	0.0003402	1.150	0.05	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
2	0.25	-0.001021	1.154	-0.14	0.0	0.0	0.00e+000	0.00e+000	0.00e+000
3	0.5	0.001276	1.148	0.17	0.0	0.0	1.33e-004	0.00e+000	1.33e-004
4	0.75	0.003827	1.140	0.51	4.5	3.2	7.11e-007	1.01e-006	8.34e-007
5	1	0.006634	1.132	0.88	3.9	0.0	8.17e-007	0.00e+000	8.17e-007
6	2	0.0159	1.106	2.12	1.0	0.2	3.23e-006	1.89e-005	5.52e-006
7	4	0.03079	1.063	4.09	0.9	0.4	3.20e-006	8.51e-006	4.65e-006
8	1	0.02024	1.093	2.69	1.0	0.0	3.12e-006	0.00e+000	3.12e-006
9	0.5	0.01488	1.109	1.98	3.6	0.0	8.62e-007	0.00e+000	8.62e-007
10	0.125	0.005954	1.134	0.79	5.8	0.0	5.38e-007	0.00e+000	5.38e-007
11	0.25	0.006719	1.132	0.89	0.2	0.0	1.30e-005	0.00e+000	1.30e-005
12	0.5	0.009186	1.125	1.22	0.5	0.0	6.80e-006	0.00e+000	6.80e-006
13	0.75	0.0125	1.116	1.66	3.0	0.0	1.05e-006	0.00e+000	1.05e-006
14	1	0.01488	1.109	1.98	43.1	0.0	7.23e-008	0.00e+000	7.23e-008
15	2	0.02296	1.086	3.05	8.3	0.0	3.69e-007	0.00e+000	3.69e-007
16	4	0.03419	1.054	4.55	0.1	0.0	2.55e-005	0.00e+000	2.55e-005
17	8	0.05443	0.996	7.24	3.7	0.0	7.66e-007	0.00e+000	7.66e-007
18	16	0.102	0.860	13.56	2.1	0.0	1.23e-006	0.00e+000	1.23e-006
19	32	0.152	0.717	20.21	2.1	0.0	1.06e-006	0.00e+000	1.06e-006
20	16	0.139	0.754	18.48	0.1	0.0	1.79e-005	0.00e+000	1.79e-005
21	4	0.115	0.822	15.29	0.6	0.0	3.52e-006	0.00e+000	3.52e-006
22	1	0.09237	0.887	12.28	5.8	5.8	4.11e-007	4.15e-007	4.13e-007
23	0.5	0.0814	0.919	10.82	21.6	12.2	1.17e-007	2.07e-007	1.49e-007
24	0.125	0.0592	0.982	7.87	55.3	30.4	4.79e-008	8.73e-008	6.19e-008

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

LIQUID AND PLASTIC LIMITS 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.

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

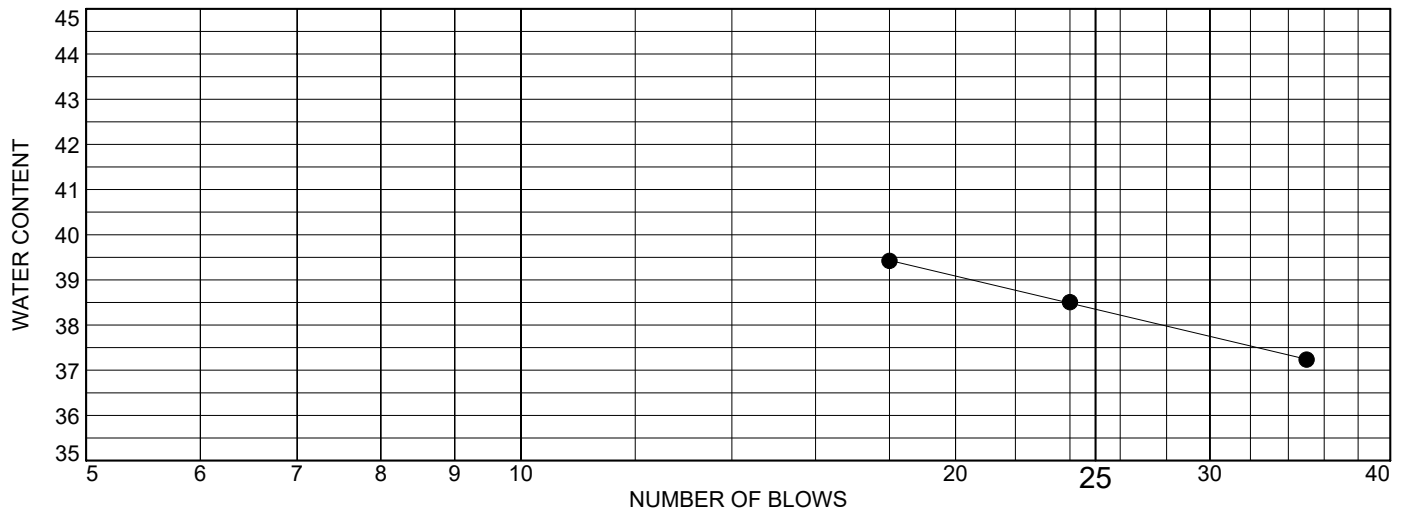
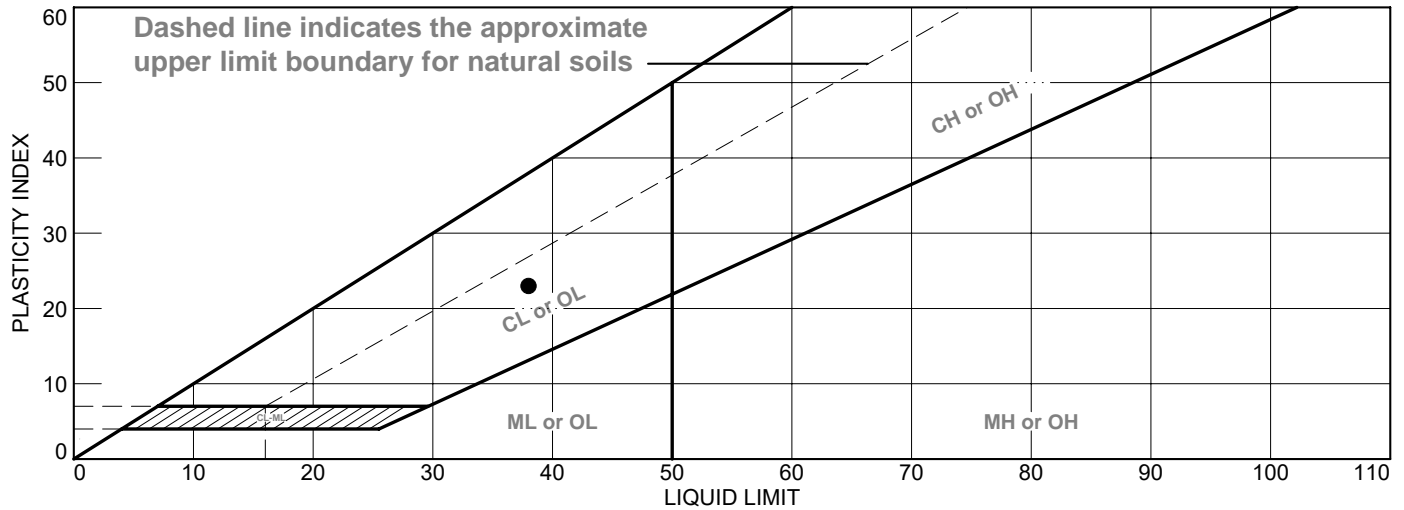
Remarks:



Figure

Tested By: DT **Checked By:** BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



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

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

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

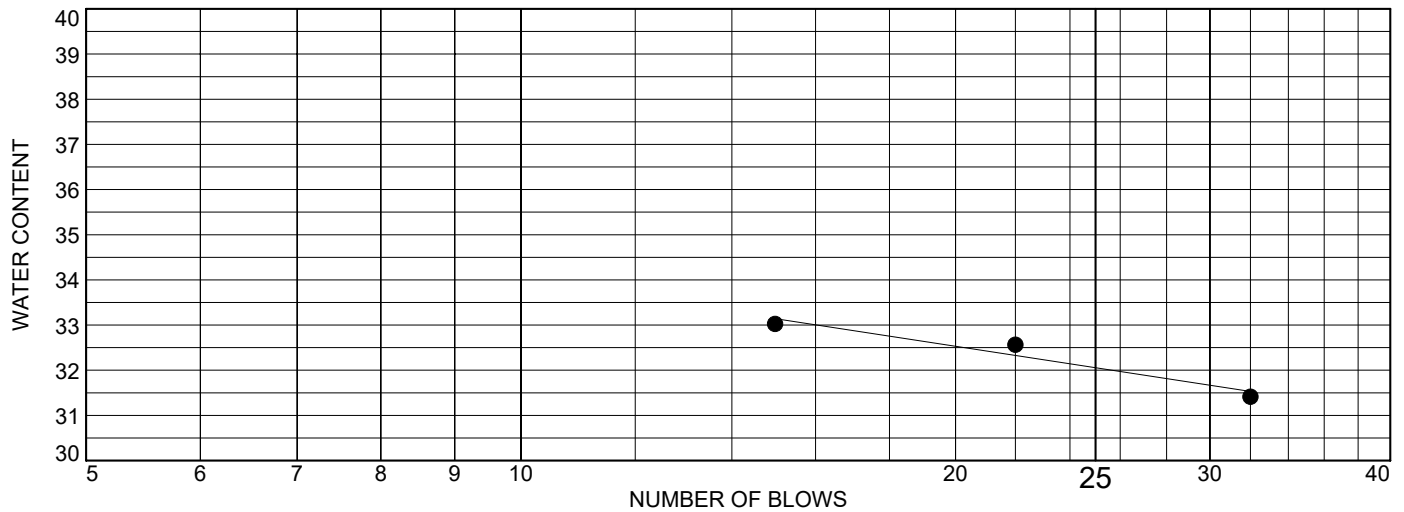
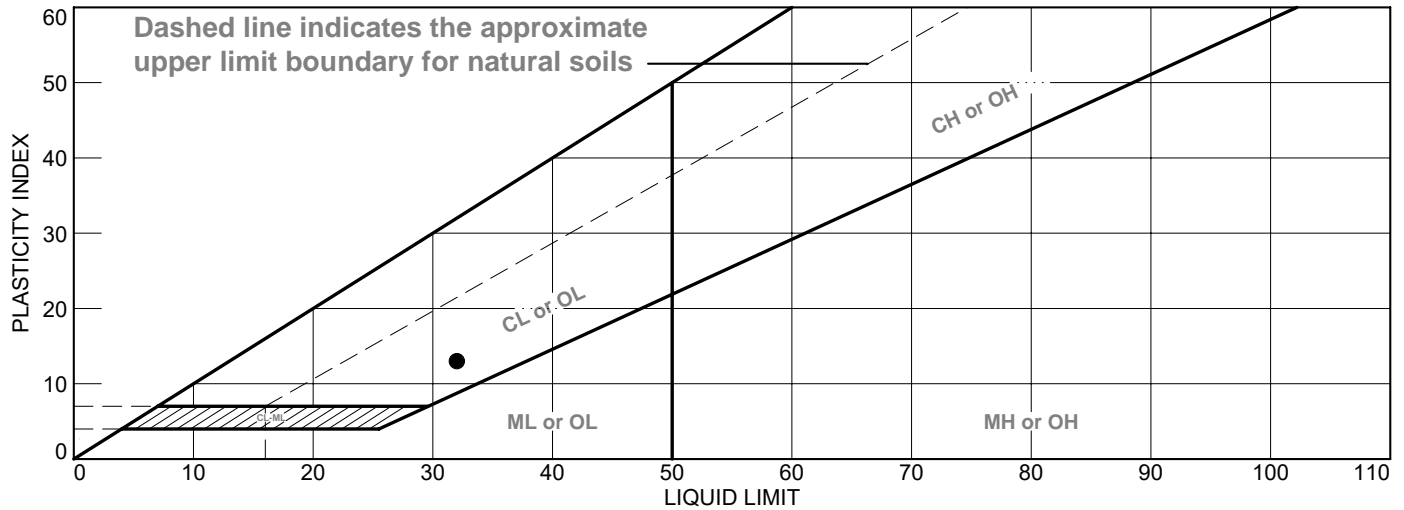
Remarks:



Figure

Tested By: DT **Checked By:** BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



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

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

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

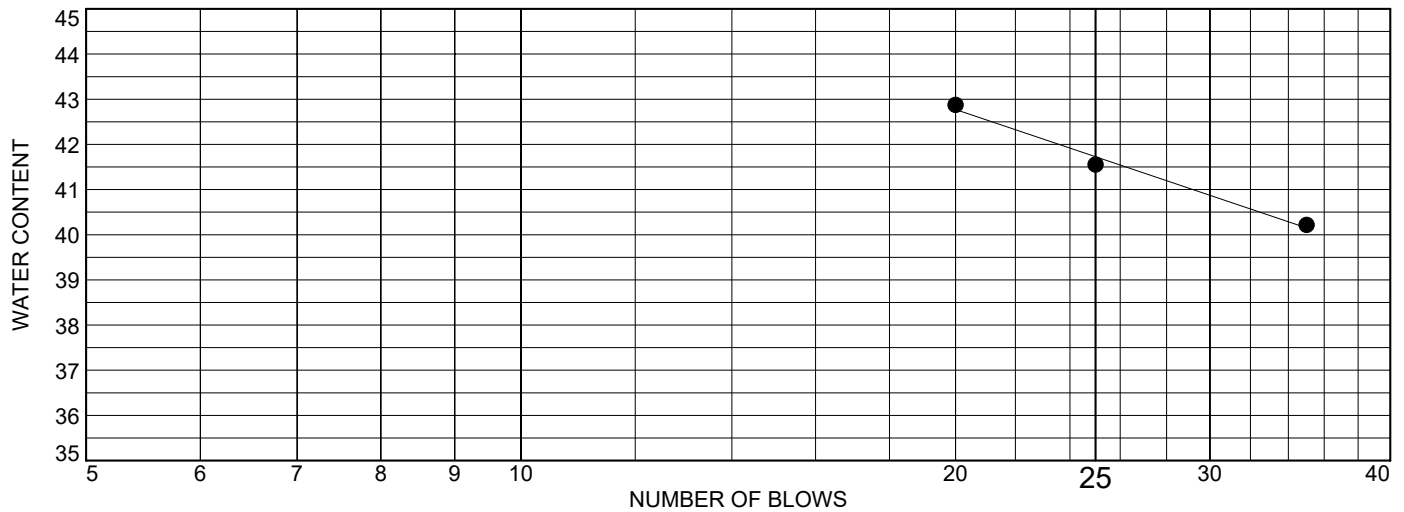
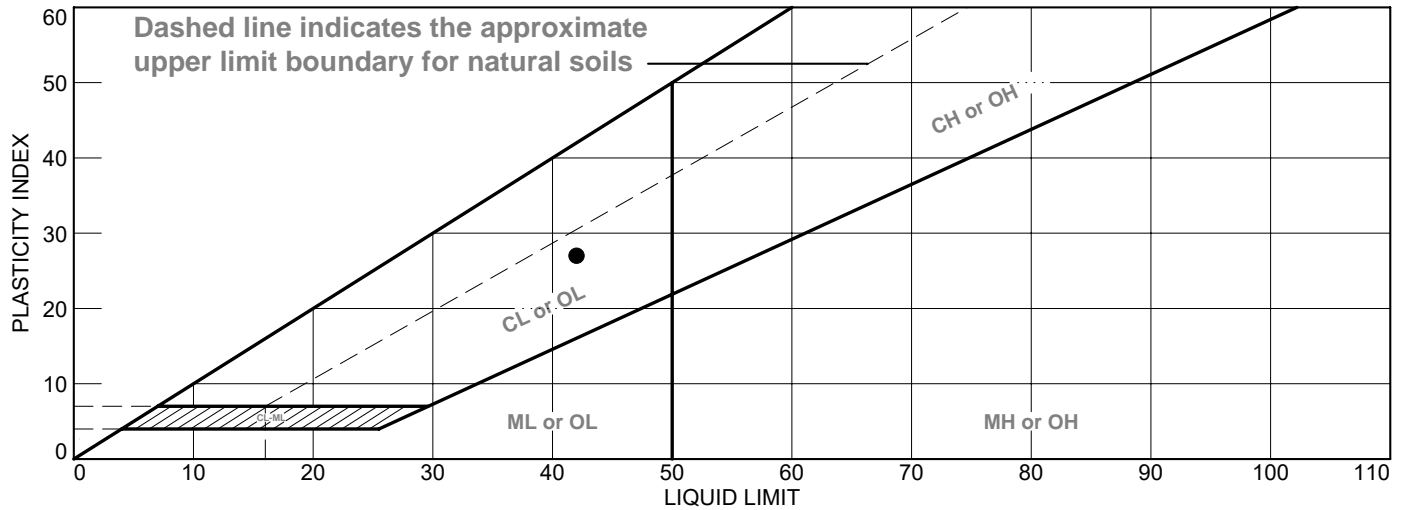
Remarks:



Figure

Tested By: DT **Checked By:** BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



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

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

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

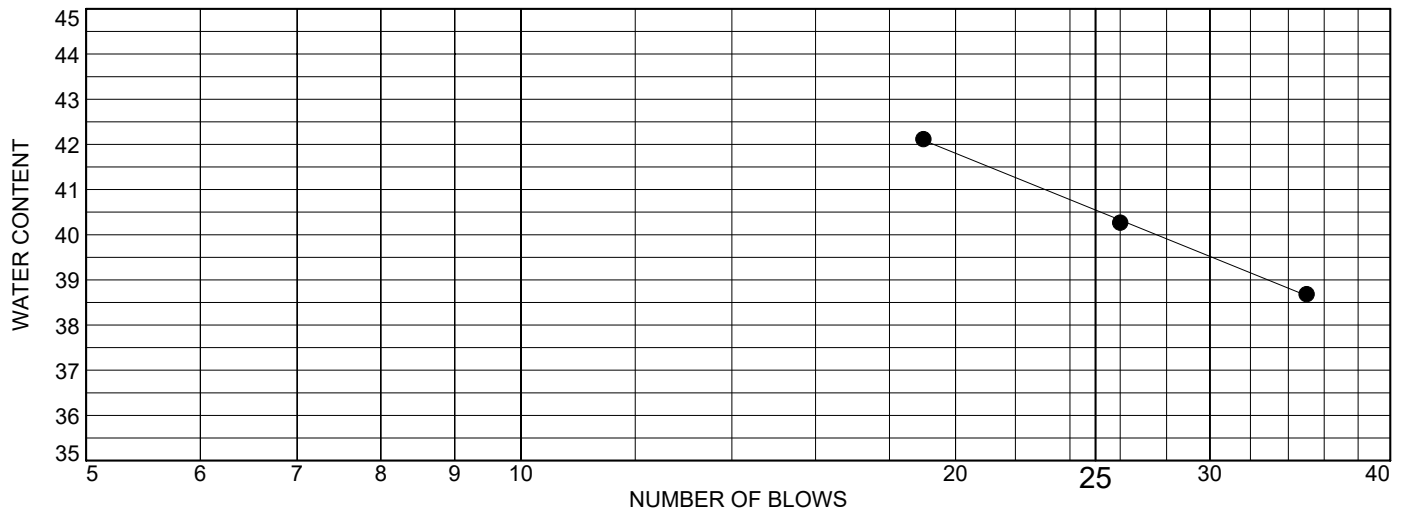
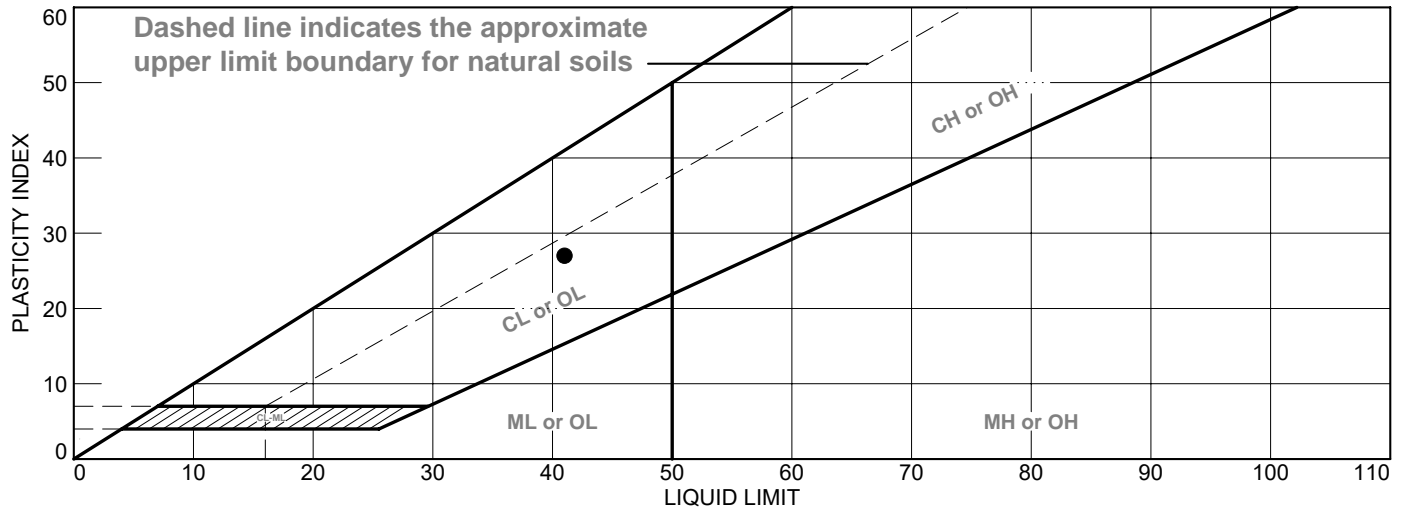
Remarks:



Figure

Tested By: DT **Checked By:** BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



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

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

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

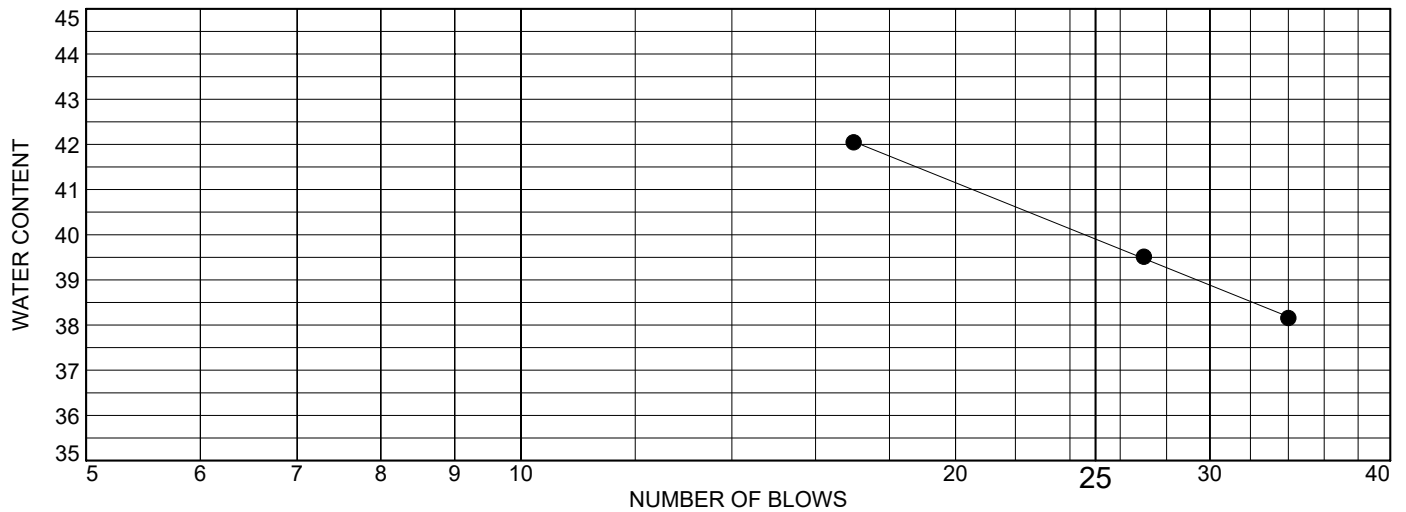
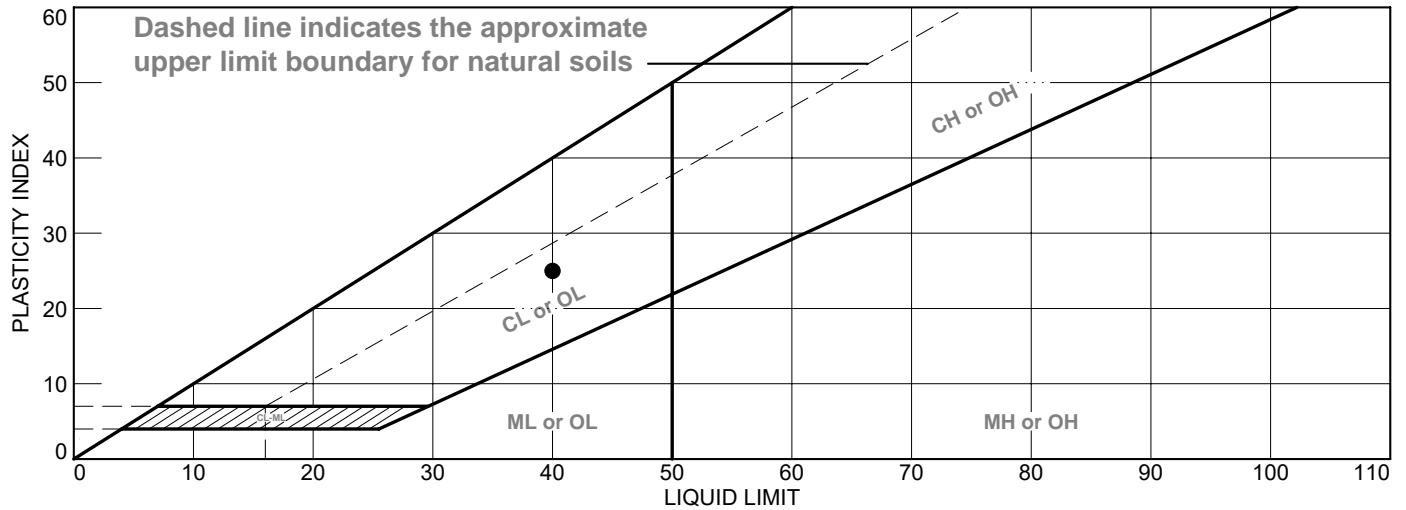
Remarks:



Figure

Tested By: DT **Checked By:** BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



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

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

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

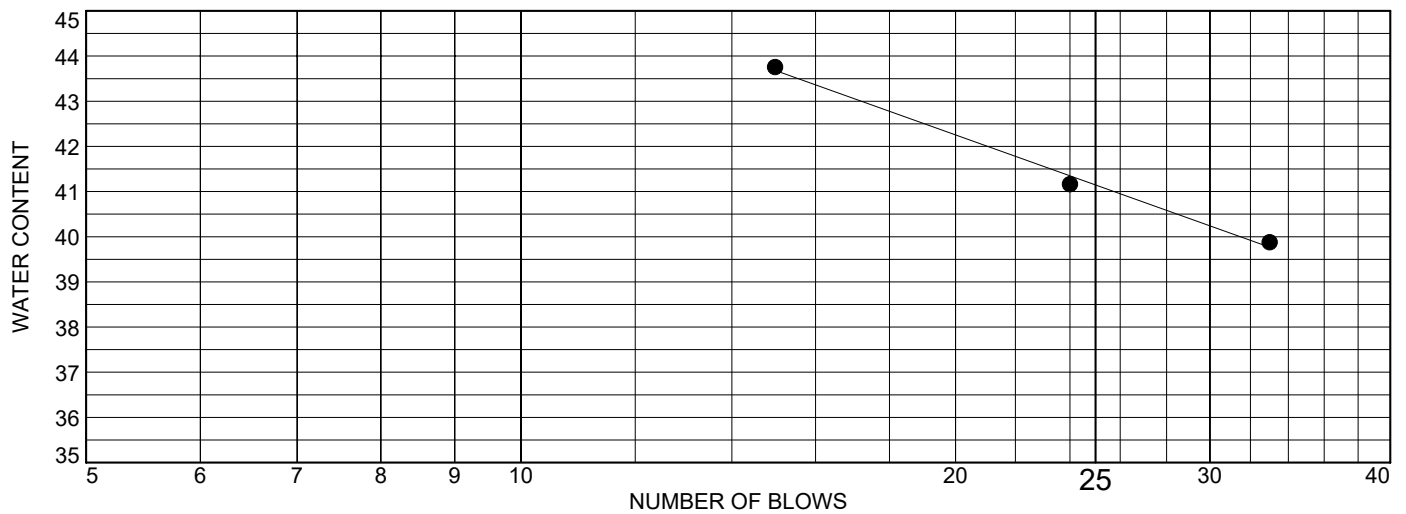
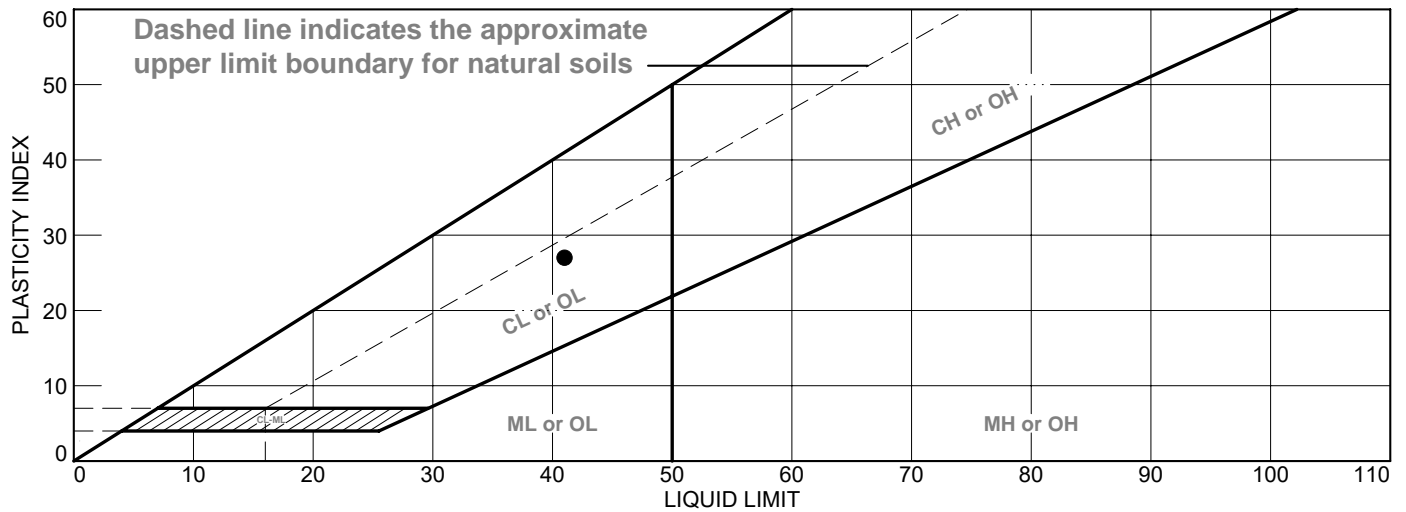
Remarks:



Figure

Tested By: DT **Checked By:** BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



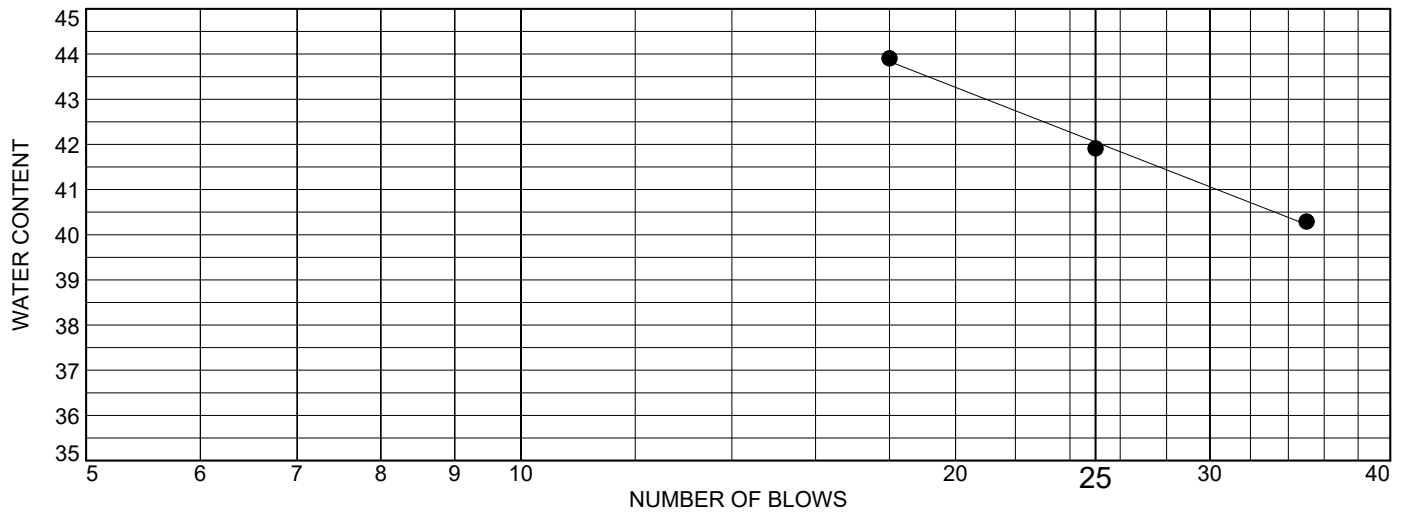
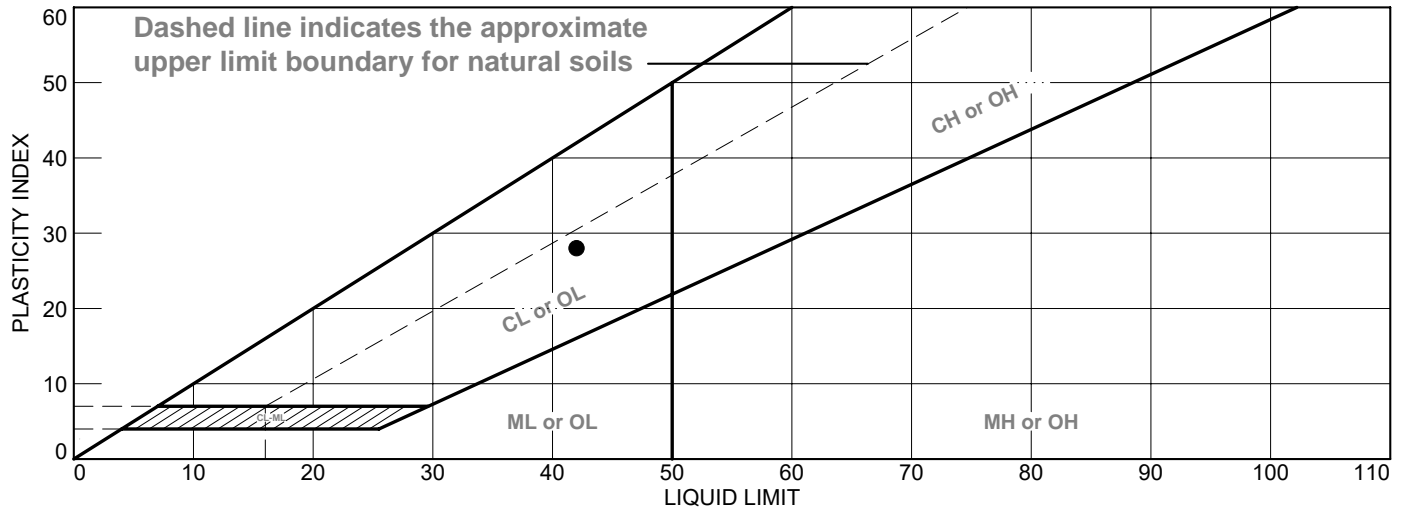
	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	REDDISH BROWN LEAN CLAY	41	14	27			CL

Project No. 11225052 **Client:** GEI CONSULTANTS INC.
Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT
Source of Sample: BL-8 **Depth:** 30.0'-32.0' **Sample Number:** ST-9

Remarks:

Figure

LIQUID AND PLASTIC LIMITS ASTM D4318



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

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

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

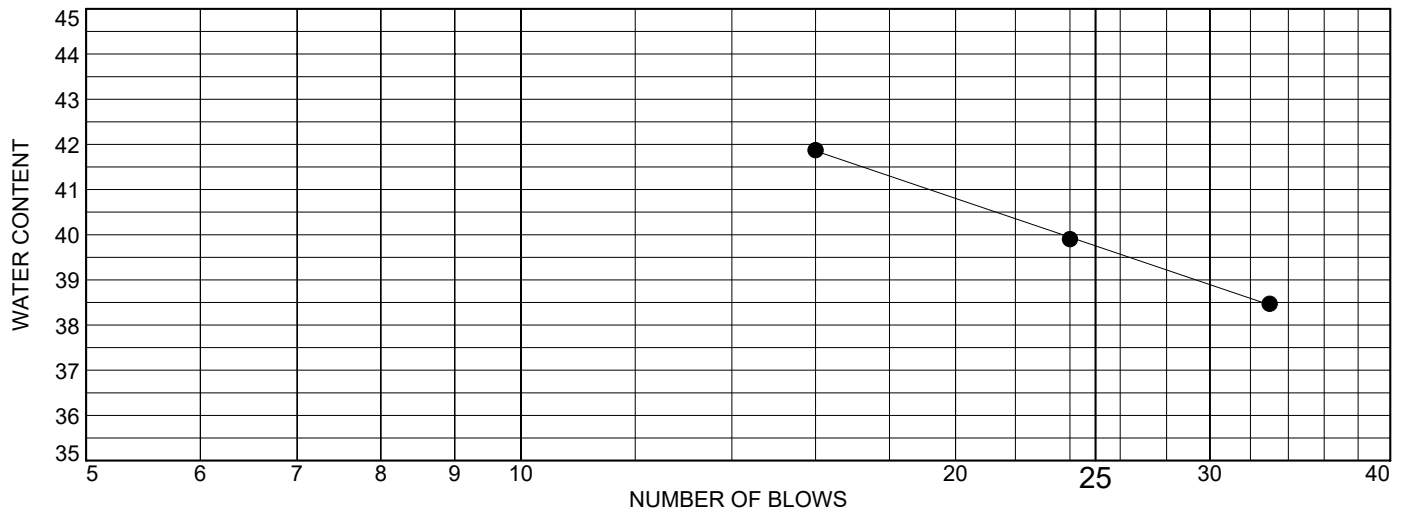
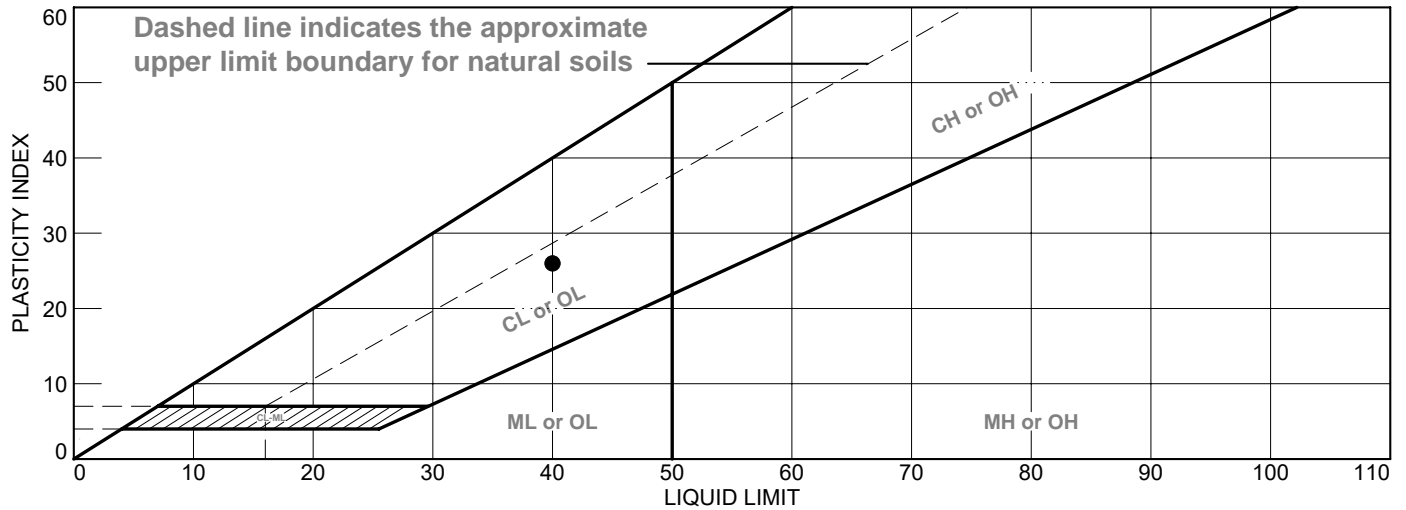
Remarks:



Figure

Tested By: DT **Checked By:** BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	REDDISH BROWN LEAN CLAY TRACE GRAVEL	40	14	26			CL

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

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

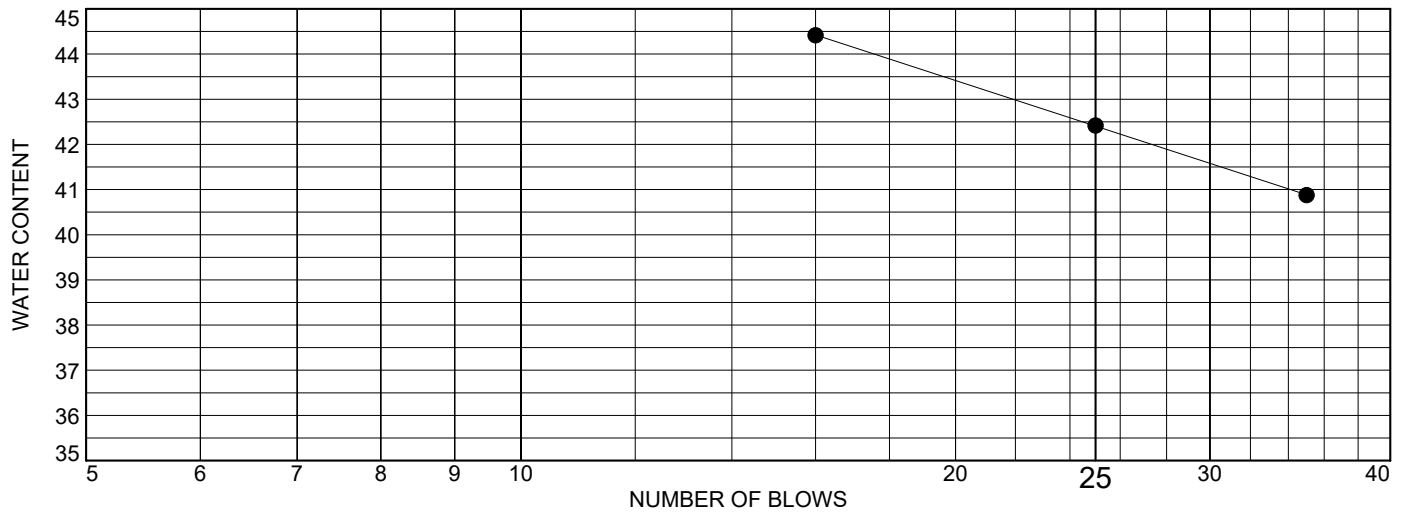
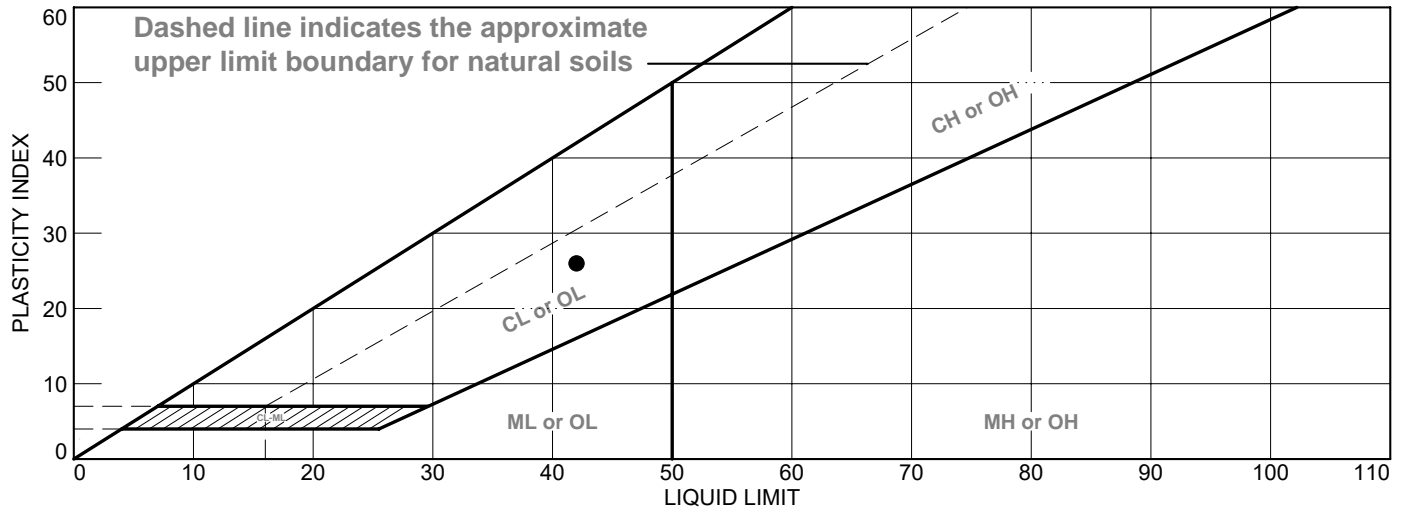
Remarks:



Figure

Tested By: DT **Checked By:** BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



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

Project No. 11225052 **Client:** GEI CONSULTANTS INC.
Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

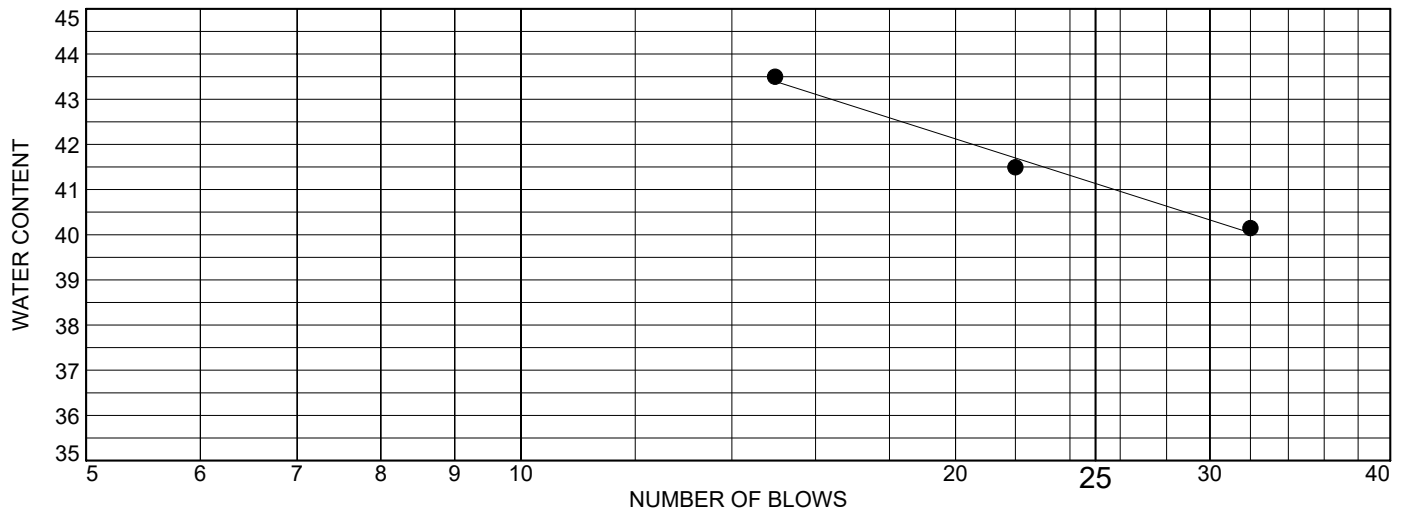
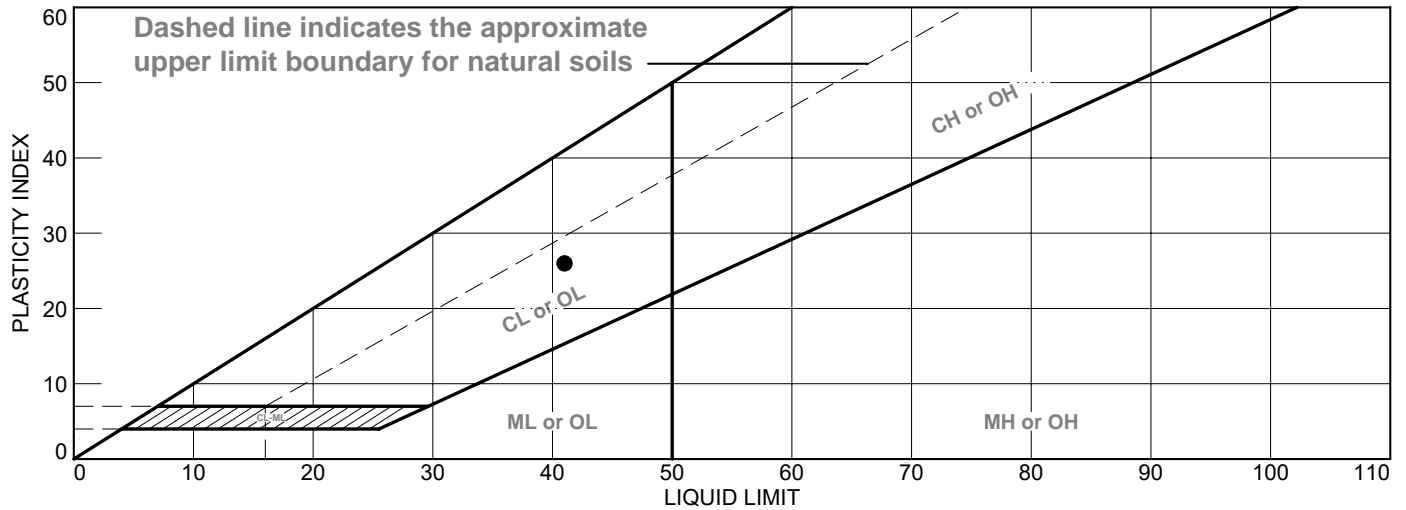
• **Source of Sample:** BL-12 **Depth:** 80.0'-82.0' **Sample Number:** ST-19



Remarks:

Figure

LIQUID AND PLASTIC LIMITS ASTM D4318



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

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

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

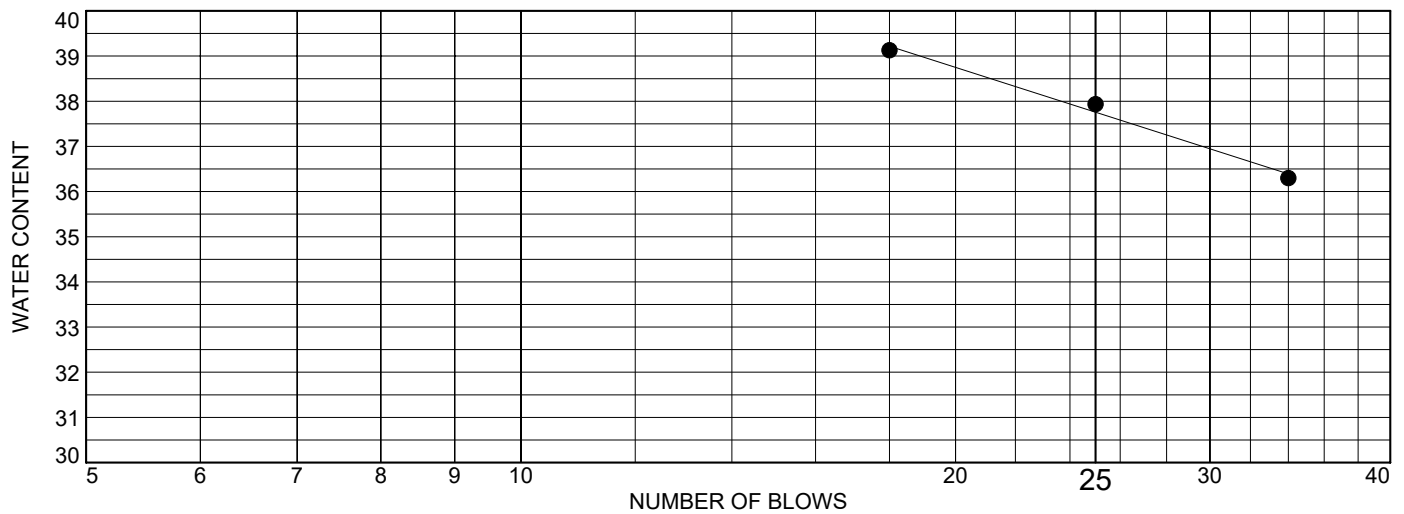
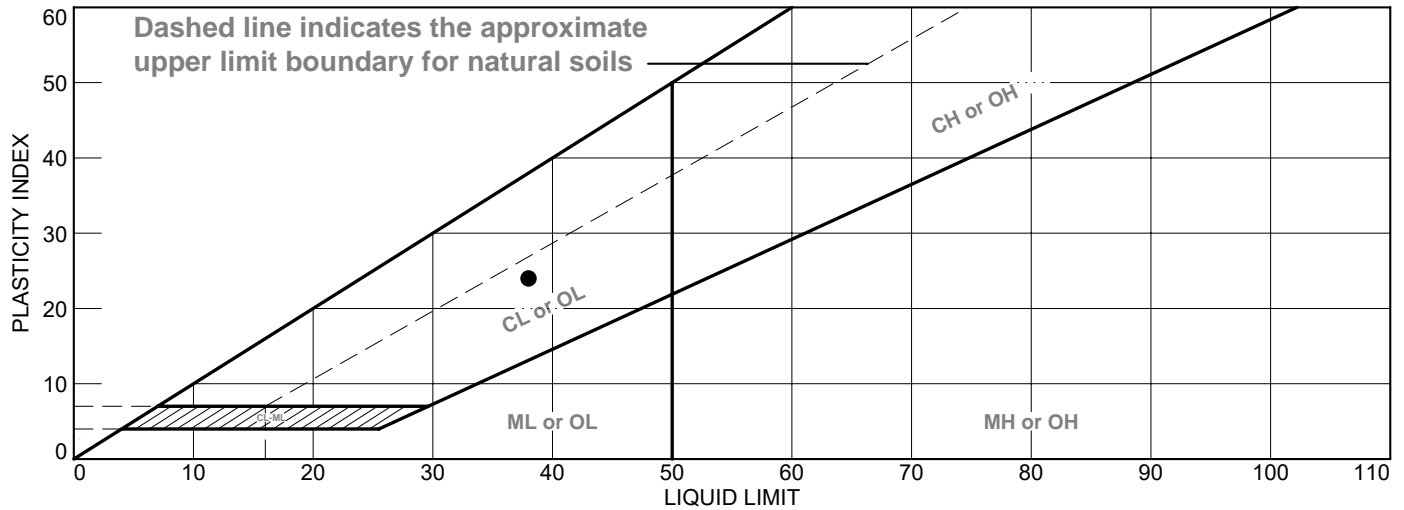
Remarks:



Figure

Tested By: DT **Checked By:** BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



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

Project No. 11225052 Client: GEI CONSULTANTS INC.

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

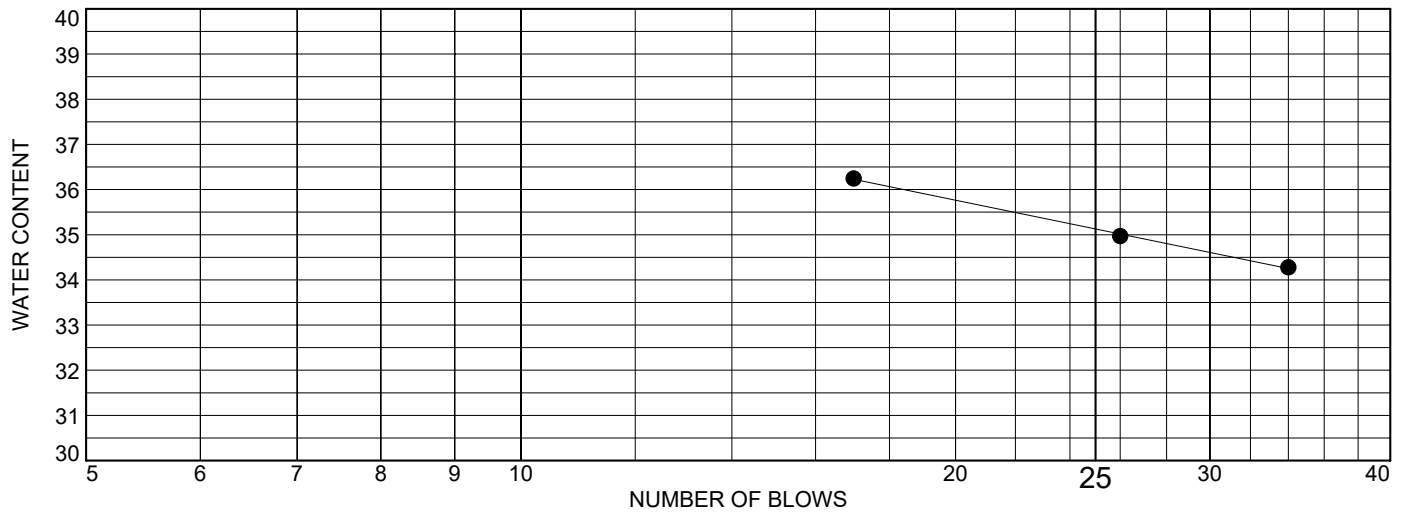
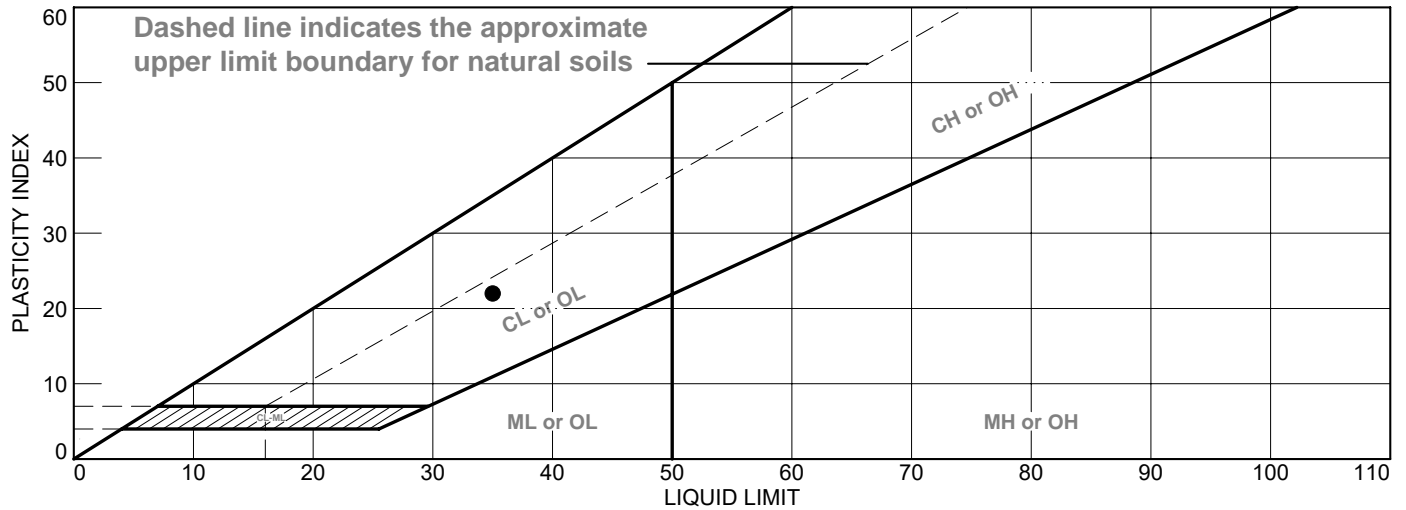
Remarks:



Figure

Tested By: DT Checked By: BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	REDDISH BROWN LEAN CLAY	35	13	22			CL

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

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

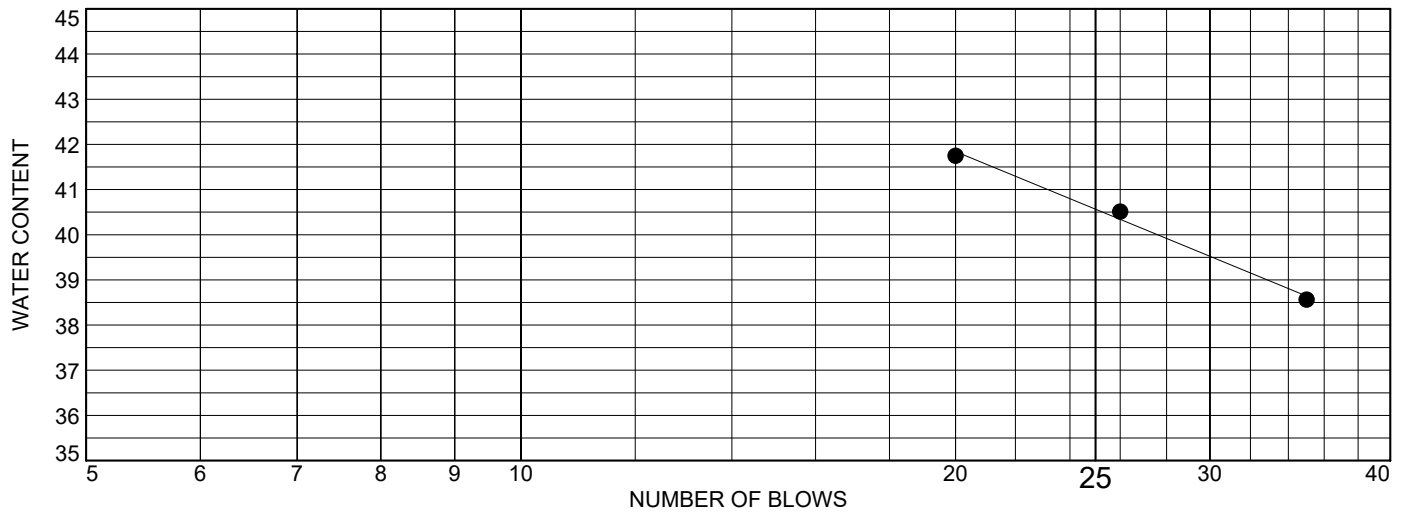
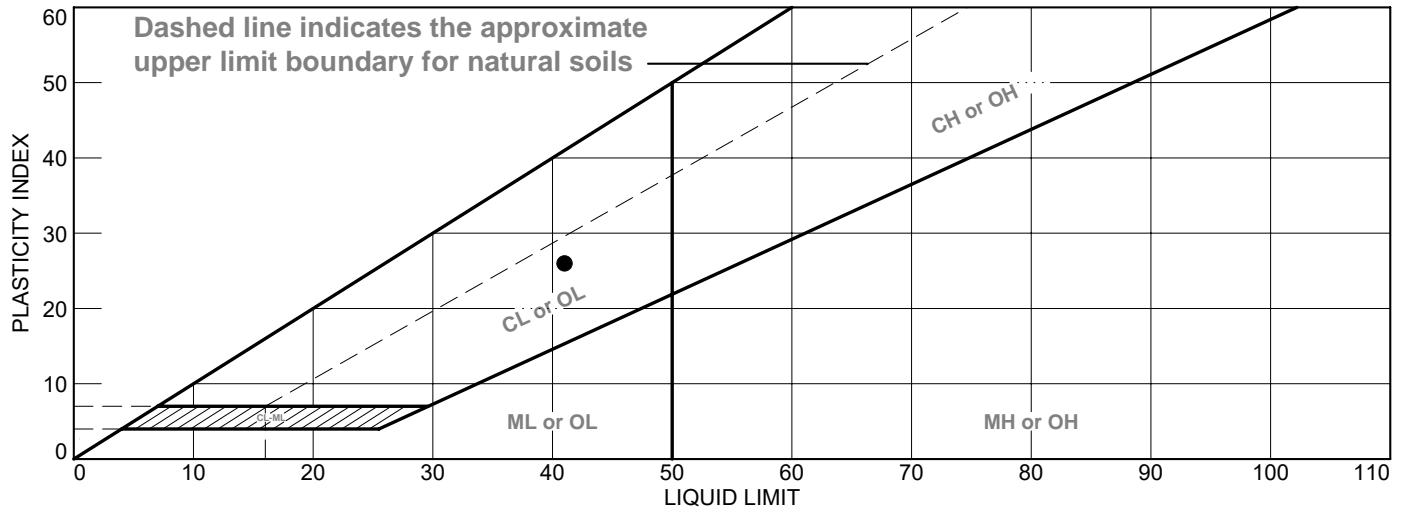
Remarks:



Figure

Tested By: BM **Checked By:** BCM

LIQUID AND PLASTIC LIMITS 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.

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

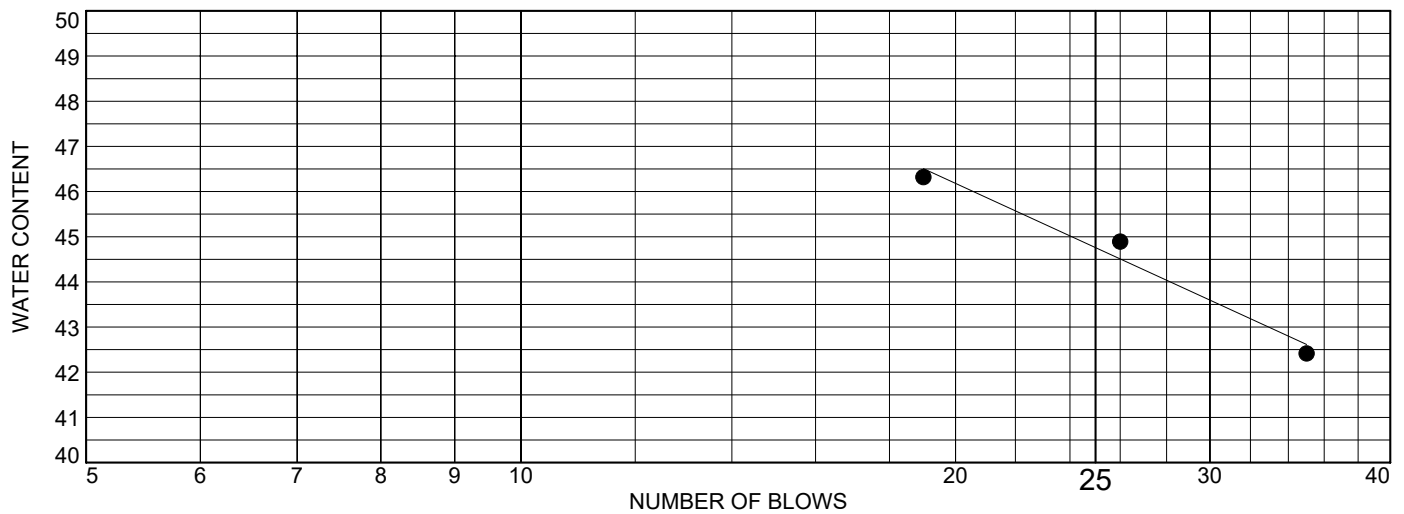
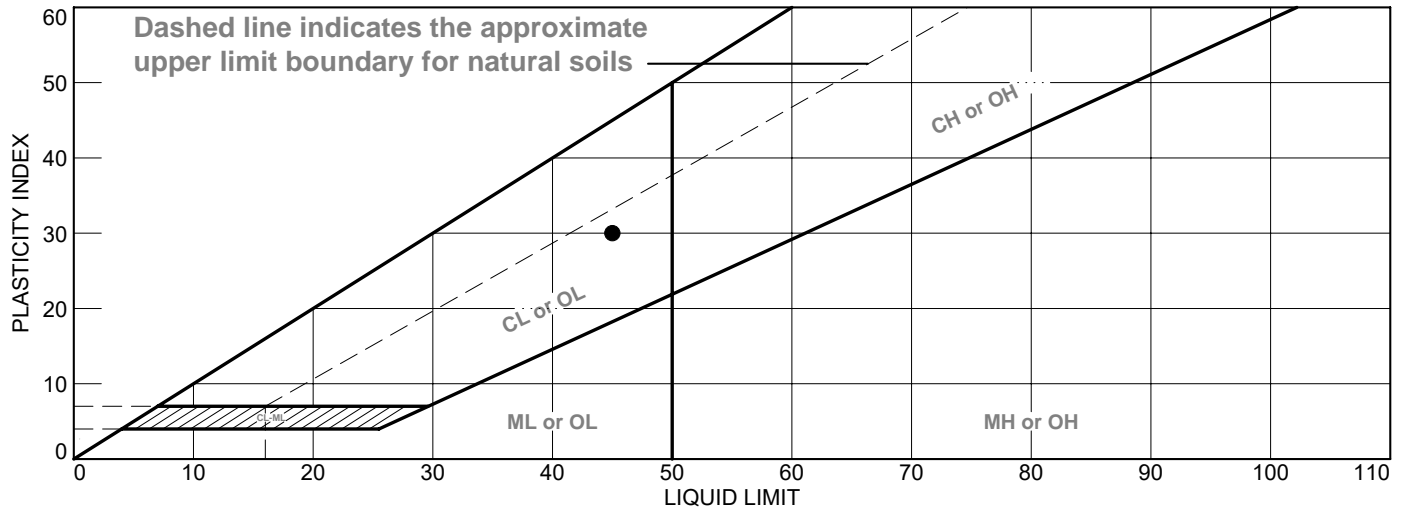
Remarks:



Figure

Tested By: DT Checked By: BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



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

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

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

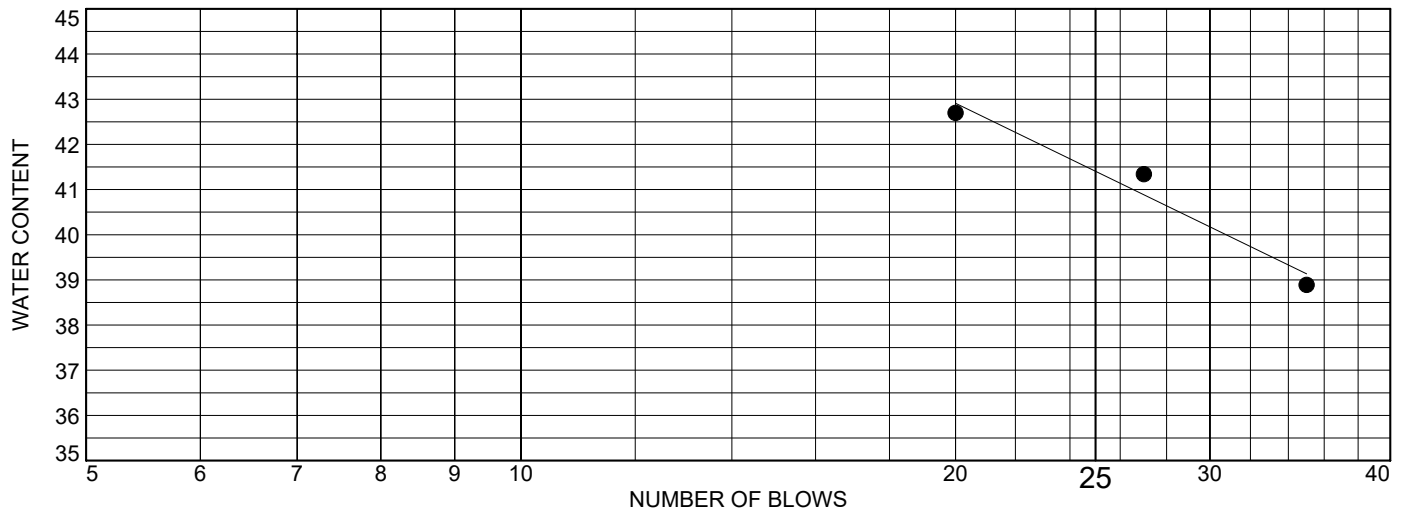
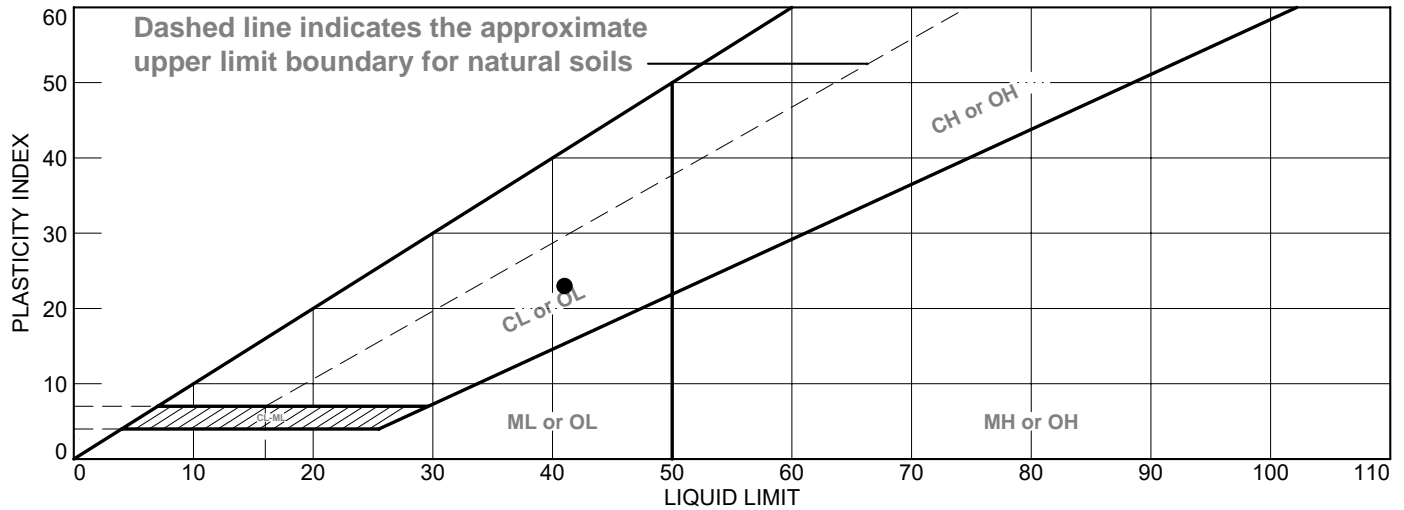
Remarks:



Figure

Tested By: DT **Checked By:** BCM

LIQUID AND PLASTIC LIMITS ASTM D4318



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

Project No. 11225052 Client: GEI CONSULTANTS INC.

Project: PULLIUM PROPERTY REDEVELOPMENT PROJECT

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

Remarks:



Figure

Tested By: DT Checked By: BCM

**Specific Gravity of Soils
ASTM D854**



SPECIFIC GRAVITY OF SOIL SOLIDS ASTM D-854

Project Number: 11225052
Project Name: Pulliam Properties
Test Date: 1/30/2023

Results Summary

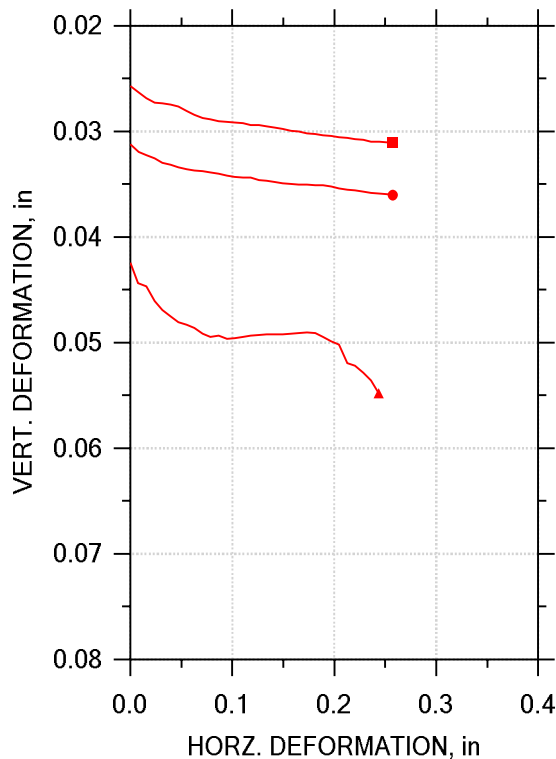
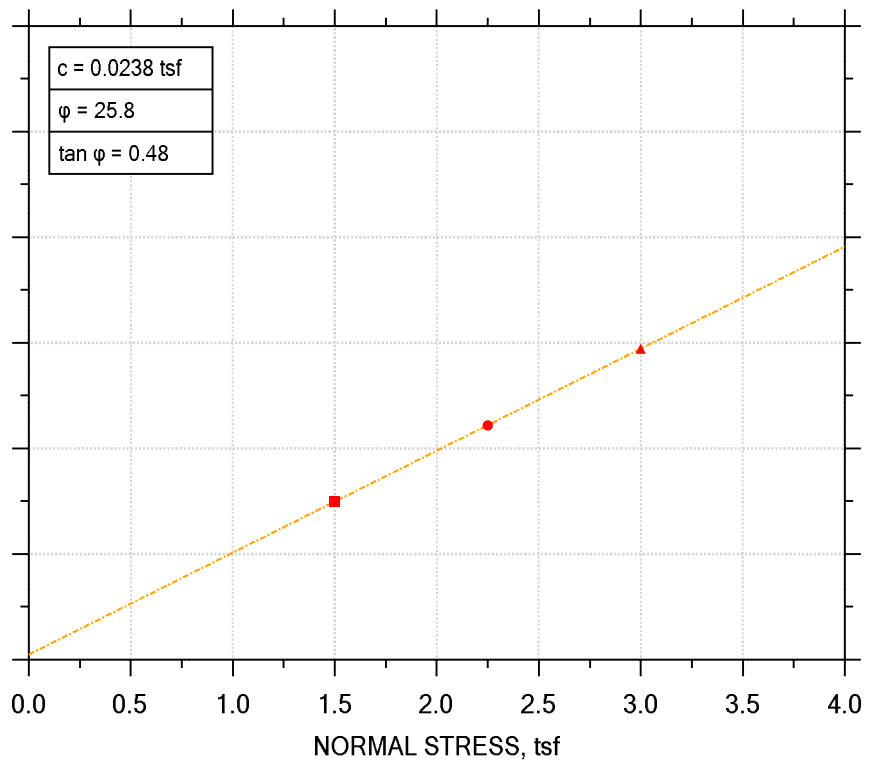
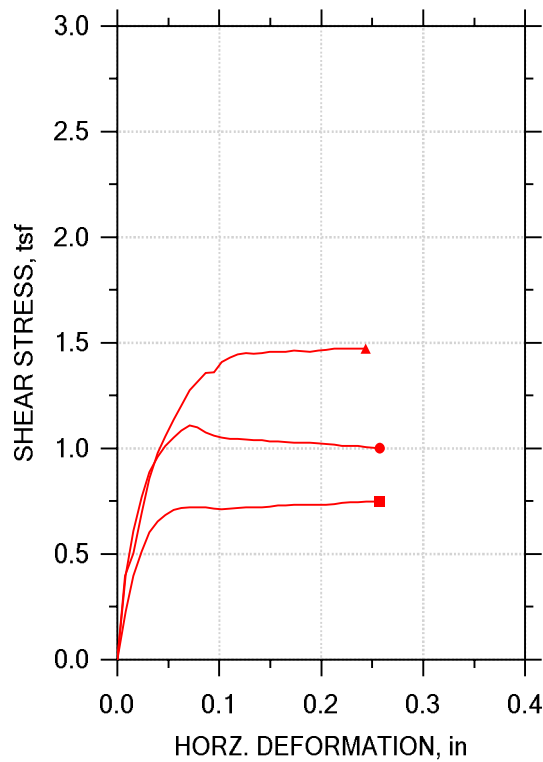
Boring / Sample	Sample Number	Depth (ft)		Specific Gravity (Gs)
BL-5	S-16	60.0'-62.0'		2.759
BL-11	S-11	45.5'-47.0'		2.716
BW2-22	ST-1	35.0'-37.0'		2.732
BW2-22	ST-2	65.0'-67.0'		2.738
BW3-22	ST-3	90.0'-92.0'		2.759

Tested By: SJH

Checked By: BCM

Direct Shear Test of Soils Under Consolidated
Drained Conditions
ASTM D3080

DIRECT SHEAR STRENGTH UNDER CONSOLIDATED DRAINED CONDITIONS ASTM D3080



Symbol	■	●	▲	
Test No.	3000 PSF	4500 PSF	6000 PSF	
Sample No.	S-10	S-10	S-10	
Shape	Circular	Circular	Circular	
Initial	Dimension, in	2.4969	2.4976	2.4988
	Area, in ²	4.8964	4.8995	4.9041
	Height, in	0.99134	0.98504	0.98189
	Water Content, %	25.18	23.84	25.95
	Dry Density, pcf	96.75	98.62	96.60
	Saturation, %	90.70	89.86	93.13
	Void Ratio	0.75512	0.72176	0.75784
Consol. Height, in		0.96563	0.95385	0.93946
Consol. Void Ratio		0.70961	0.66724	0.68187
Final	Water Content, %	25.61	24.14	23.17
	Dry Density, pcf	99.88	102.4	102.3
	Saturation, %	99.50	99.67	95.53
	Void Ratio	0.70009	0.65879	0.65975
Normal Stress, tsf		1.5007	2.25	2.9991
Max. Shear Stress, tsf		0.74901	1.109	1.4725
Ult. Shear Stress, tsf		0.74901	1.0009	1.4722
Time to Failure, min		1382.2	385.6	1300.9
Disp. Rate, in/min		0.00018898	0.00018898	0.00018898
Estimated Specific Gravity		2.72	2.72	2.72
Liquid Limit		---	---	---
Plastic Limit		---	---	---
Plasticity Index		---	---	---

Project: PULLIAM PROPERTIES	
Location: PULLIAM SITE	
Project No.: 11225052	
Boring No.: BL-9	
Sample Type: TRIMMED	
Description: REDDISH BROWN FAT CLAY TRACE SAND	
Remarks: TEST PERFORMED AS PER ASTM D3080	

DIRECT SHEAR TEST DATA



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

Location: PULLIAM SITE
 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

Step: 1 of 1

	Elapsed Time min	Vertical Stress tsf	Vertical Displacement in	Horizontal Stress tsf	Horizontal Displacement in	Cumulative Displacement 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



DIRECT SHEAR TEST DATA



Project: PULLIAM PROPERTIES
 Boring No.: BL-9
 Sample No.: S-10
 Test No.: 4500 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

Step: 1 of 1

	Elapsed Time min	Vertical Stress tsf	Vertical Displacement in	Horizontal Stress tsf	Horizontal Displacement in	Cumulative Displacement 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



DIRECT SHEAR TEST DATA



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: ----

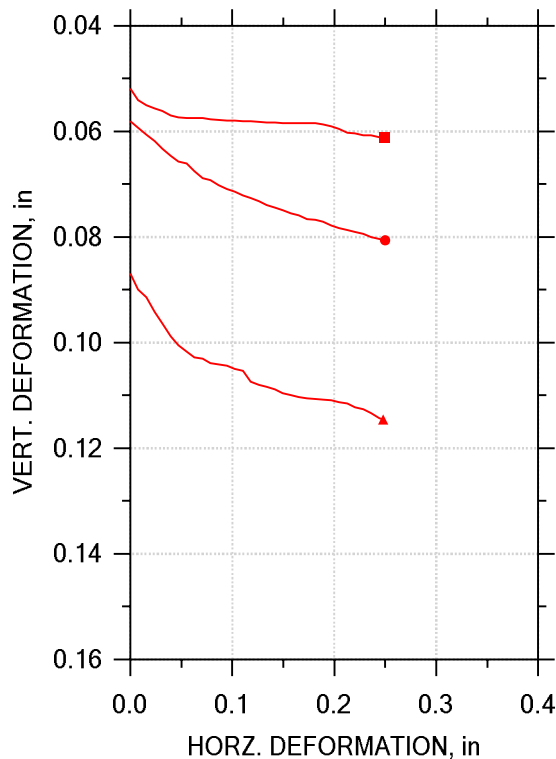
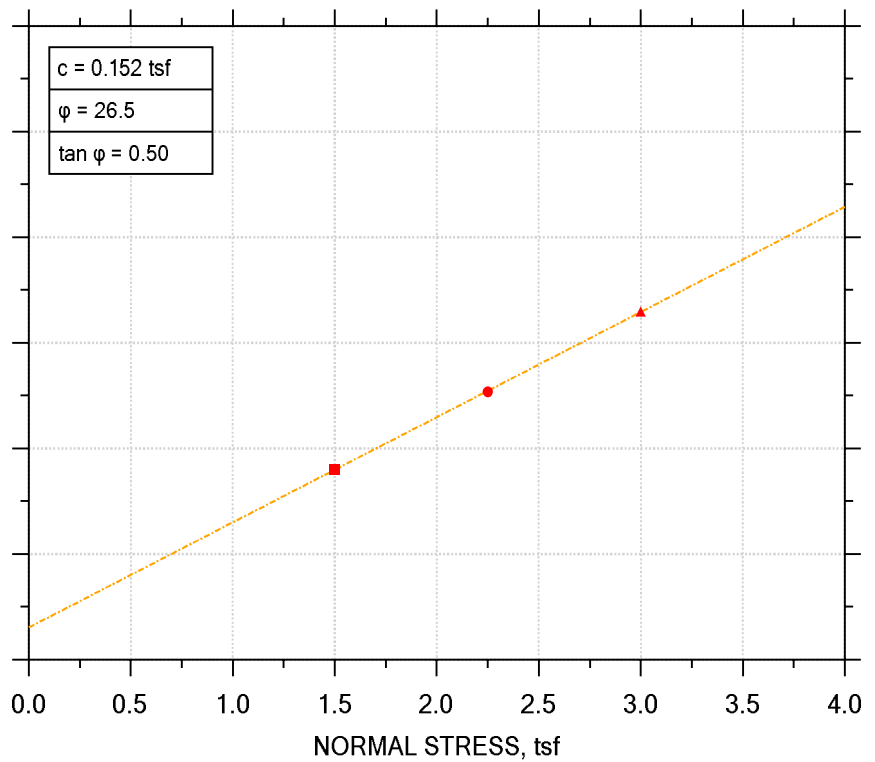
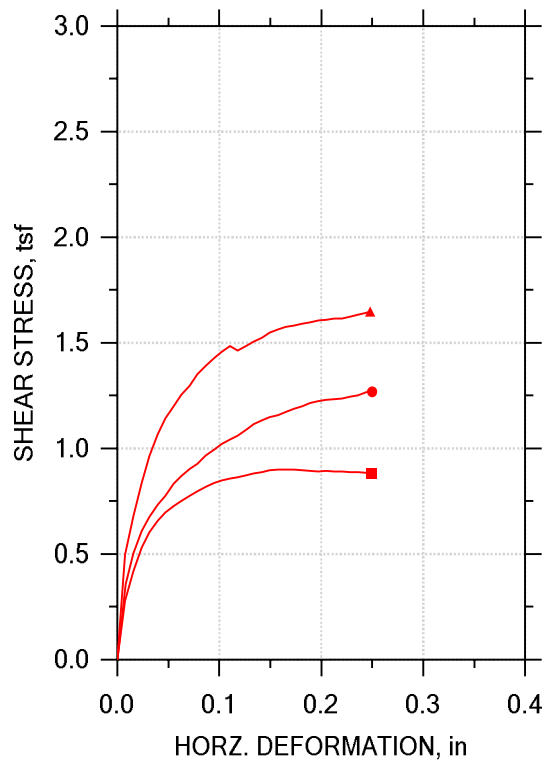
Soil Description: REDDISH BROWN FAT CLAY TRACE SAND
 Remarks: TEST PERFORMED AS PER ASTM D3080

Step: 1 of 1

	Elapsed Time min	Vertical Stress tsf	Vertical Displacement in	Horizontal Stress tsf	Horizontal Displacement in	Cumulative Displacement 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



Symbol	■	●	▲	
Test No.	3000 PSF	4500 PSF	6000 PSF	
Sample No.	S-9	S-9	S-9	
Shape	Circular	Circular	Circular	
Initial	Dimension, in	2.5004	2.4976	2.4965
	Area, in ²	4.9103	4.8995	4.8948
	Height, in	0.98425	0.98543	0.99173
	Water Content, %	22.77	21.82	22.19
	Dry Density, pcf	104.5	104.0	102.4
	Saturation, %	99.18	93.83	91.66
	Void Ratio	0.62437	0.63242	0.65855
Consol. Height, in		0.9324	0.92742	0.9048
Consol. Void Ratio		0.5388	0.53632	0.51317
Final	Water Content, %	19.05	18.41	17.14
	Dry Density, pcf	111.5	113.3	115.8
	Saturation, %	98.98	100.38	99.84
	Void Ratio	0.52348	0.49885	0.46693
Normal Stress, tsf		1.4999	2.25	2.9997
Max. Shear Stress, tsf		0.90119	1.2682	1.6481
Ult. Shear Stress, tsf		0.88215	1.2682	1.6481
Time to Failure, min		950.04	1318.6	1355.8
Disp. Rate, in/min		0.00018898	0.00018898	0.00018898
Estimated Specific Gravity		2.72	2.72	2.72
Liquid Limit		---	---	---
Plastic Limit		---	---	---
Plasticity Index		---	---	---

Project: PULLIAM SITE
 Location: PULLIAM SITE
 Project No.: 11225052
 Boring No.: BL-13
 Sample Type: TRIMMED
 Description: REDDISH BROWN LEAN TO FAT CLAY TRACE SAND
 Remarks: TEST PERFORMED AS PER ASTM D3080

DIRECT SHEAR TEST DATA



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

Location: PULLIAM SITE
 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

Step: 1 of 1

	Elapsed Time min	Vertical Stress tsf	Vertical Displacement in	Horizontal Stress tsf	Horizontal Displacement in	Cumulative Displacement 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



DIRECT SHEAR TEST DATA



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

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

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

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

Step: 1 of 1

	Elapsed Time min	Vertical Stress tsf	Vertical Displacement in	Horizontal Stress tsf	Horizontal Displacement in	Cumulative Displacement 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



DIRECT SHEAR TEST DATA



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

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

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

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

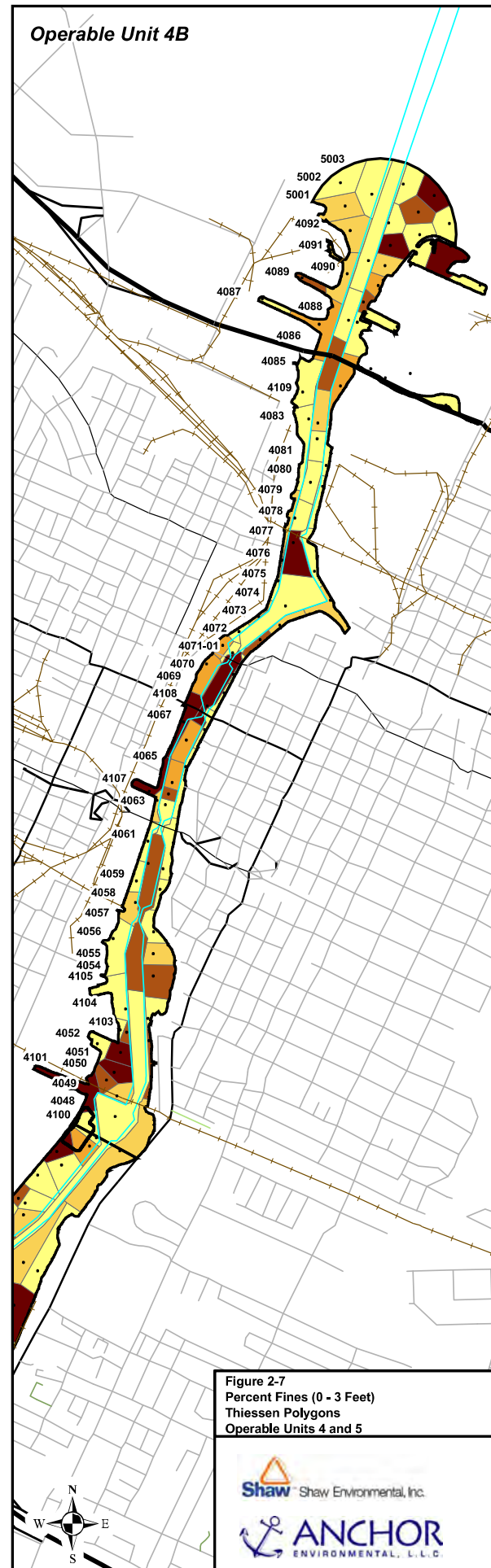
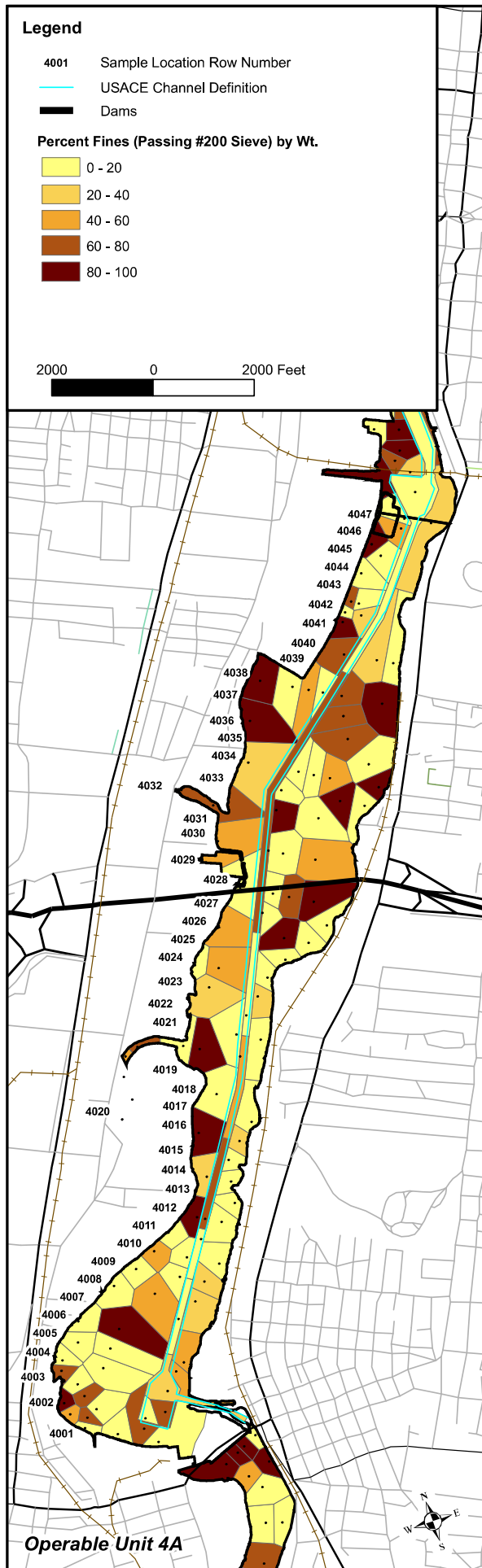
Step: 1 of 1

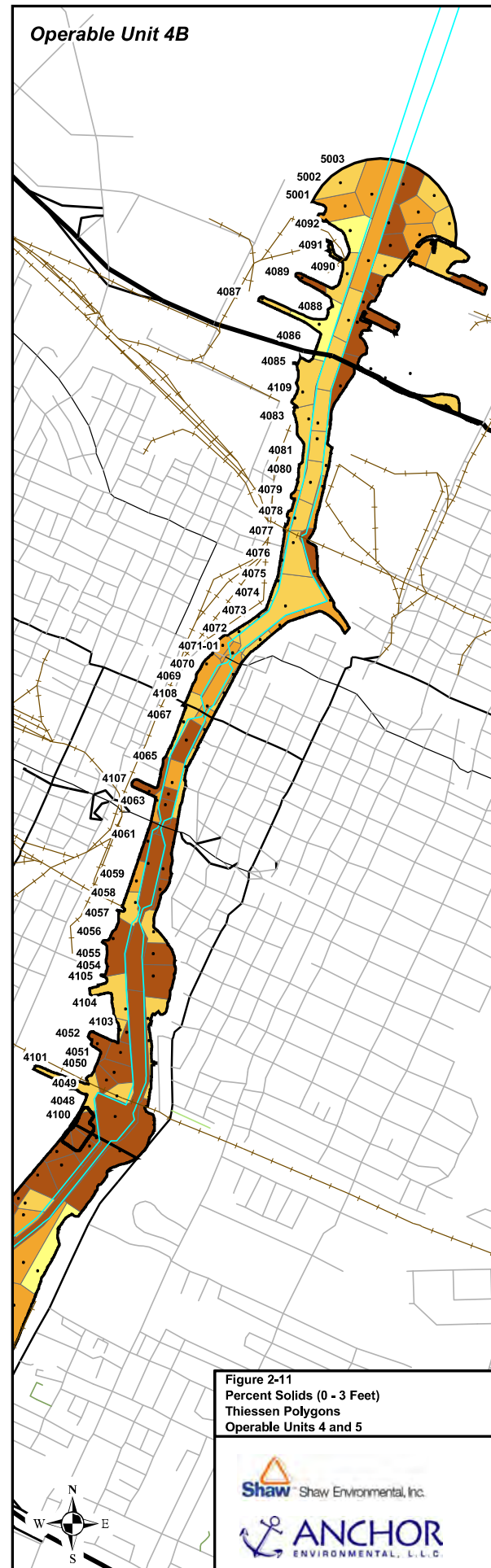
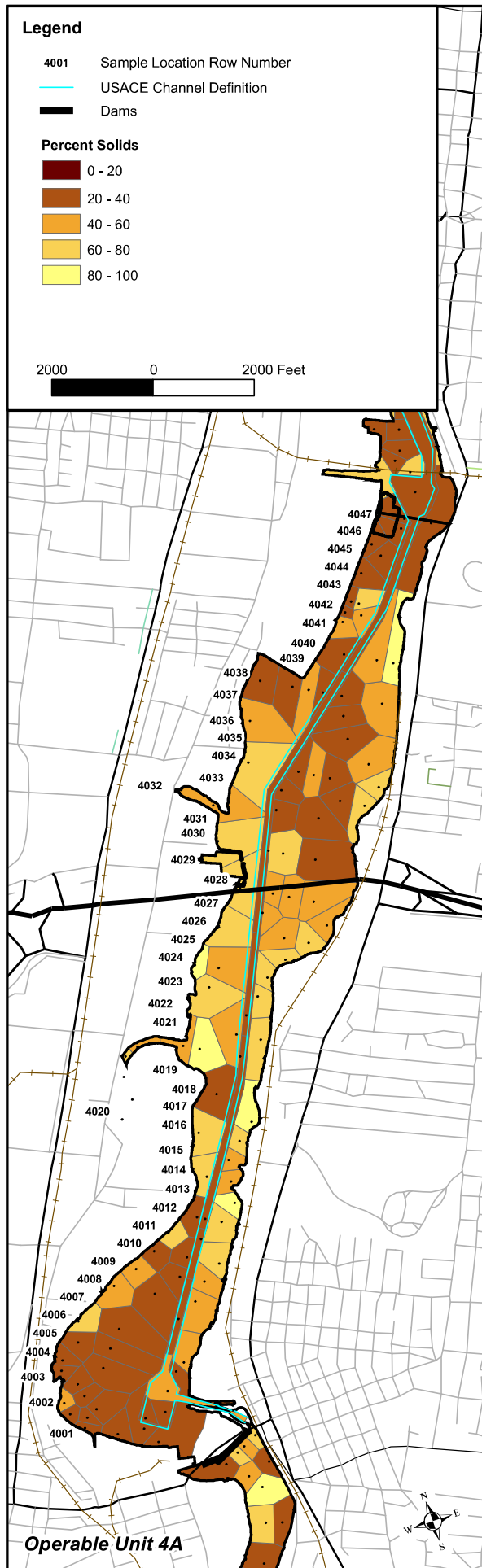
	Elapsed Time min	Vertical Stress tsf	Vertical Displacement in	Horizontal Stress tsf	Horizontal Displacement in	Cumulative Displacement in
1	0.00	3.00	0.08693	0.000	0.0000	0.0000
2	78.60	3.00	0.08999	0.498	0.007902	0.007902
3	123.99	3.00	0.09134	0.680	0.01577	0.01577
4	164.66	3.00	0.09422	0.836	0.02364	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



Appendix D

Historic Supplemental Data





Summary of In Situ Vane Shear Measurements for OUs 2-5.

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

Sample ID	Date Measured	Plasticity Index	Correction Factor, μ (after Bjerrum, 1972)	Shear Strength													
				1-foot Depth							2-foot Depth						
				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) ⁽¹⁾	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) ⁽¹⁾
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	0.51	64.0	0.244	6	1.36	0.01	28	15	64.0	0.244	20	4.52	0.05	94	48
3027-03	10/12/04	143.40	0.52	64.0	0.244	17	3.85	0.04	80	42	64.0	0.244	22	4.98	0.05	104	55
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					#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					64.0	0.244	sand				
3068-04	10/12/04	#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		#N/A	0.64		#N/A							#N/A					
4003-06		116.10	0.57		#N/A							#N/A					
4003-08		182.50	0.47		#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			0.64		#N/A							#N/A					
4006-05		162.60	0.50		#N/A							#N/A					
4006-10			0.64		#N/A							#N/A					
4007-03		119.20	0.57		#N/A							#N/A					
4007-11			0.64		#N/A							#N/A					

Summary of In Situ Vane Shear Measurements for OUs 2-5.

Sample ID	Date Measured	Shear Strength												Water Depth (ft)	Description
		3-foot Depth													
		Vane Length (mm)	Vane Constant	M-3 Scale Reading	Measured Shear Strength (kPa)	Measured Shear Strength (tsf)	Measured Shear Strength (psf)	Corrected Shear Strength (psf) ⁽¹⁾	Remolded M-3 Scale Reading	Measured Remolded Shear Strength (kPa)	Measured Remolded Shear Strength (tsf)	Measured Remolded Shear Strength (psf)	Corrected Remolded Shear Strength (psf) ⁽¹⁾		
2001-01			#N/A												No Access
2002-02			#N/A												No Access
2003-02			#N/A												No Access
2004-04			#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	0.16	321	331	24	5.43	0.06	113	117	5.4	sand/gravel 0-0.5', clayey sand below
3044-02	10/12/04	64.0	0.244	20	4.52	0.05	94	48	9	2.04	0.02	43	22	14.7	slightly sandy silt
3045-01	10/12/04	64.0	0.244	30	6.79	0.07	142	78	9	2.04	0.02	43	24	4.2	silt/clay
3046-02	10/12/04	64.0	0.244	18	4.07	0.04	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
3047-03	10/12/04	64.0	0.244											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		#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	10/12/04	64.0	0.244	sand										18.1	Dense sand at 0.8, 1' reading at 0/.5'
3064-03	10/12/04	64.0	0.244	18	4.07	0.04	85	43	10	2.26	0.02	47	24	10.9	silt
3065-01	10/12/04	64.0	0.244	sand										14.5	hard sand and gravel
3065-04	10/12/04		#N/A		#N/A					#N/A				16.3	bedrock
3066-03	10/12/04	64.0	0.244											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	
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										17.1	SAND
3068-04	10/12/04	64.0	0.244	hard					hard					17.7	Slightly Fine sandy silt
4002-10			#N/A							#N/A					
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					
4006-10			#N/A							#N/A					
4007-03			#N/A							#N/A					
4007-11			#N/A							#N/A					

Summary of In Situ Vane Shear Measurements for OUs 2-5.

Sample ID	Date Measured	Plasticity Index	Correction Factor, μ (after Bjerrum, 1972)	Shear Strength													
				1-foot Depth							2-foot Depth						
				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) ⁽¹⁾	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) ⁽¹⁾
4008-06		159.10	0.50		#N/A							#N/A					
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		183.80	0.47		#N/A							#N/A					
4014-02			0.64		#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	10/12/04	90.00	0.64	64.0	0.244	16	3.62	0.04	76	48	64.0	0.244	24	5.43	0.06	113	72
4022-03	10/12/04	26.60	0.95	64.0	0.244	20	4.52	0.05	94	89	64.0	0.244	31	7.01	0.07	146	139
4022-06	10/12/24	152.60	0.51	64.0	0.244	10	2.26	0.02	47	24	64.0	0.244	15	3.39	0.04	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	10/13/04		0.64	64.0	0.244	32	7.24	0.08	151	97	64.0	0.244	48	10.86	0.11	227	145
4028-03	10/13/04	68.60	0.71	64.0	0.244	26	5.88	0.06	123	88	64.0	0.244	40	9.05	0.09	189	135
4028-04	10/13/04	67.10	0.72	64.0	0.244	18	4.07	0.04	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	10/11/04	163.60	0.50	64.0	0.244	10	2.26	0.02	47	24	64.0	0.244	16	3.62	0.04	76	38
4033-03	10/11/04	152.50	0.51	64.0	0.244	10	2.26	0.02	47	24	64.0	0.244	13	2.94	0.03	61	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	0.04	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		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	10/11/04	97.40	0.62	64.0	0.244	15	3.39	0.04	71	44	64.0	0.244	22	4.98	0.05	104	64
4036-09	10/11/04	143.90	0.52	64.0	0.244	11	2.49	0.03	52	27	64.0	0.244	13	2.94	0.03	61	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	10/11/04		0.64	64.0	0.244	24	5.43	0.06	113	73	64.0	0.244	34	7.69	0.08	161	103
4042-02	10/11/04	53.30	0.78	64.0	0.244	10	2.26	0.02	47	37	64.0	0.244	32	7.24	0.08	151	118
4042-03	10/11/04	151.30	0.51	64.0	0.244	4	0.90	0.01	19	10	64.0	0.244	10	2.26	0.02	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	10/11/04	157.10	0.51	64.0	0.244						64.0	0.244	5	1.13	0.01	24	12
4048-02	10/11/04	148.70	0.52	64.0	0.244	12	2.71	0.03	57	29	64.0	0.244	12	2.71	0.03	57	29
4049-05	10/11/04		0.64	64.0	0.244	80	18.10	0.19	378	242	64.0	0.244	85	19.23	0.20	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			
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

Summary of In Situ Vane Shear Measurements for OUs 2-5.

Sample ID	Date Measured	Shear Strength												Water Depth (ft)	Description
		3-foot Depth													
		Vane Length (mm)	Vane Constant	M-3 Scale Reading	Measured Shear Strength (kPa)	Measured Shear Strength (tsf)	Measured Shear Strength (psf)	Corrected Shear Strength (psf) ⁽¹⁾	Remolded M-3 Scale Reading	Measured Remolded Shear Strength (kPa)	Measured Remolded Shear Strength (tsf)	Measured Remolded Shear Strength (psf)	Corrected Remolded Shear Strength (psf) ⁽¹⁾		
4008-06			#N/A							#N/A					
4008-11			#N/A							#N/A					
4009-03			#N/A							#N/A					
4009-05			#N/A							#N/A					
4011-04			#N/A							#N/A					
4012-02			#N/A							#N/A					
4014-02			#N/A							#N/A					
4015-01			#N/A							#N/A					
4016-05	10/12/04	64.0	0.244	130	29.40	0.31	614	393						7.2	Sandy silt/clay
4017-02	10/12/04	64.0	0.244	41	9.27	0.10	194	158						5.9	slightly fine sandy silt
4018-05	10/12/04	64.0	0.244	sand					sand					19.5	slightly fine sandy silt, sand @ 1.8'
4020-10	10/12/04	64.0	0.244	71	16.06	0.17	335	325	22	4.98	0.05	104	101	2.4	fine sandy silt
4020-12	10/12/04	64.0	0.244	30	6.79	0.07	142	75	22	4.98	0.05	104	55	19.1	sandy silt
4021-01	10/12/04	64.0	0.244	33	7.46	0.08	156	99	10	2.26	0.02	47	30	15.5	slightly fine sandy silt
4022-03	10/12/04	64.0	0.244	45	10.18	0.11	213	201	19	4.30	0.04	90	85	3.0	slightly fine sandy silt
4022-06	10/12/24	64.0	0.244	20	4.52	0.05	94	48	15	3.39	0.04	71	36	18.6	silt trace fine sand
4024-06	10/12/04	64.0	0.244	20	4.52	0.05	94	47	10	2.26	0.02	47	23	19.1	fine sandy silt
4025-03	10/13/04	64.0	0.244	16	3.62	0.04	76	39						19.6	silt/clay
4026-03	10/13/04	64.0	0.244	19	4.30	0.04	90	44	7	1.58	0.02	33	16	15.6	silt
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
4027-02	10/13/04	64.0	0.244	24	5.43	0.06	113	59	8	1.81	0.02	38	20	18.3	silt
4027-05	10/13/04	64.0	0.244	72	16.29	0.17	340	256	22	4.98	0.05	104	78	5.2	sandy silt/clay
4028-01	10/13/04	64.0	0.244	60	13.57	0.14	283	181	20	4.52	0.05	94	60	3.8	fine sandy silt
4028-03	10/13/04	64.0	0.244	44	9.95	0.10	208	148	17	3.85	0.04	80	57	15.6	slightly fine sandy silt
4028-04	10/13/04	64.0	0.244	40	9.05	0.09	189	136	13	2.94	0.03	61	44	8.2	FM sandy silt
4029-03	10/13/04	64.0	0.244	94	21.26	0.22	444	284	28	6.33	0.07	132	85	7.5	sl. Fine sandy silt
4030-04	10/11/04	64.0	0.244	20	4.52	0.05	94	62	12	2.71	0.03	57	37	10.9	sl. Fine sandy silt
4030-05	10/11/04	64.0	0.244	sand										9.7	sandy clay, hard d sand at 1.5
4031-02	10/11/04	64.0	0.244	sand										9.6	hard sand
4031-06	10/11/04	64.0	0.244	47	10.63	0.11	222	142	15	3.39	0.04	71	45	6.5	very sandy silt
4032-07	10/11/04	64.0	0.244	55	12.44	0.13	260	142	36	8.14	0.09	170	93	9.3	silt, sand @ 3'?
4032-10	10/11/04	64.0	0.244	22	4.98	0.05	104	52	10	2.26	0.02	47	24	5.4	silt
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
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
4034-06	10/11/04	64.0	0.244	150	33.93	0.35	709	412						7.8	sandy silt
4034-08	10/11/04	64.0	0.244	24	5.43	0.06	113	62	10	2.26	0.02	47	26	5.5	F sandy silt w/ organics
4035-03	10/11/04	64.0	0.244	25	5.65	0.06	118	84	nm					8.0	sl. F sandy silt
4035-06	10/11/04	64.0	0.244	34	7.69	0.08	161	108	14	3.17	0.03	66	44	7.1	F sandy silt w/ organics
4036-04	10/11/04	64.0	0.244	25	5.65	0.06	118	76	13	2.94	0.03	61	39	8.3	silt
4036-07	10/11/04	64.0	0.244	24	5.43	0.06	113	70	18	4.07	0.04	85	52	7.6	F sandy silt w/ organics
4036-09	10/11/04	64.0	0.244	17	3.85	0.04	80	42	8	1.81	0.02	38	20	5.9	F sandy silt
4036-10	10/11/04	64.0	0.244	23	5.20	0.05	109	85	12	2.71	0.03	57	44	7.2	sl. F sandy silt
4037-03	10/11/04	64.0	0.244	20	4.52	0.05	94	60	10	2.26	0.02	47	30	5.8	silt
4038-05	10/11/04	64.0	0.244	18	4.07	0.04	85	44	10	2.26	0.02	47	25	9.7	silt
4038-06	10/11/04	64.0	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	10/11/04	64.0	0.244	44	9.95	0.10	208	120	14	3.17	0.03	66	38	11.6	F sandy silt
4040-03	10/11/04	64.0	0.244	18	4.07	0.04	85	47	12	2.71	0.03	57	31	10.3	F sandy silt w/ organics
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	120	27.14	0.28	567	327						7.5	F sandy silt, orange native clay at 2.5', 3' measurement verified with 40mm vane (rdg=12)
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	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	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	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						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		#N/A		#N/A					#N/A				20.3	F Sandy Silt
4049-05	10/11/04		#N/A		#N/A					#N/A					
4049-08	10/11/04		#N/A		#N/A					#N/A				15.0	Rock
4050-03	10/11/04	64.0	0.244	18	4.07	0.04	85	52	8	1.81	0.02	38	23	7.8	sandy silt

Summary of In Situ Vane Shear Measurements for OUs 2-5.

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

Sample ID	Date Measured	Plasticity Index	Correction Factor, μ (after Bjerrum, 1972)	Shear Strength													
				1-foot Depth							2-foot Depth						
				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) ⁽¹⁾	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) ⁽¹⁾
4051-05	10/11/04	129.00	0.55	64.0	0.244	2	0.45	0.00	9	5	64.0	0.244	7	1.58	0.02	33	18
4052-02	10/11/04	108.30	0.59	64.0	0.244	5	1.13	0.01	24	14	64.0	0.244	8	1.81	0.02	38	22
4052-04	10/11/04	11.30	1.07		#N/A	sand	#N/A					#N/A		#N/A			
4053-03	10/11/04		0.64	64.0	0.244	8	1.81	0.02	38	24	64.0	0.244	10	2.26	0.02	47	30
4053-05	10/11/04		0.64	64.0	0.244	50	11.31	0.12	236	151	64.0	0.244	80	18.10	0.19	378	242
4055-02	10/11/04	114.10	0.58	64.0	0.244	2	0.45	0.00	9	5	64.0	0.244	10	2.26	0.02	47	27
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	0.244	6	1.36	0.01	28	16	64.0	0.244	18	4.07	0.04	85	49
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
4057-02	10/11/04		0.64	64.0	0.244	5	1.13	0.01	24	15	64.0	0.244	15	3.39	0.04	71	45
4057-05	10/11/04		0.64		#N/A	sand	#N/A					#N/A	sand	#N/A			
4059-04	10/11/04	97.80	0.61	64.0	0.244	6	1.36	0.01	28	17		#N/A	sand	#N/A			
4061-01	10/11/04	88.20	0.64		#N/A		#N/A					#N/A		#N/A			
4063-01	10/11/04		0.64	64.0	0.244	18	4.07	0.04	85	54	64.0	0.244	30	6.79	0.07	142	91
4067-01	10/11/04	23.20	0.97		#N/A		#N/A					#N/A		#N/A			
4069-04	10/11/04		0.64	64.0	0.244	21	4.75	0.05	99	63		#N/A	30	#N/A			
4073-01	10/11/04		0.64		#N/A		#N/A					#N/A		#N/A			
4074-05	10/11/04	124.20	0.56	64.0	0.244	16	3.62	0.04	76	42	64.0	0.244	28	6.33	0.07	132	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					
4083-03	10/11/04	#N/A	0.64	64.0	0.244	sand					64.0	0.244					
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	8	1.81	0.02	38	24
4089-03	10/11/04	#N/A	0.64	64.0	0.244	4	0.90	0.01	19	12	64.0	0.244	8	1.81	0.02	38	24
4089-07	10/11/04	105.80	0.59		#N/A		#N/A					#N/A		#N/A			
4090-01	10/11/04		0.64	50.8	0.488	38	17.19	0.18	359	230	50.8	0.488	84	38.00	0.40	794	508
4091-05	10/11/04	NP	#VALUE!	64.0	0.244	sand					64.0	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
3026-01	5/19/05		0.64	32.0	0.244	9	2.04	0.02	43	27	32.0	0.244	19	4.30	0.04	90	57
3046-21	5/19/05		0.64	32.0	0.244	11	2.49	0.03	52	33	32.0	0.244	22	4.98	0.05	104	67
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
3056-21	5/19/05		0.64	32.0	0.244	10	2.26	0.02	47	30	32.0	0.244	14	3.17	0.03	66	42
4002-22	5/18/05		0.64	32.0	0.244	8	1.81	0.02	38	24	32.0	0.244	12	2.71	0.03	57	36
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
4050-EAST	5/18/05		0.64	32.0	0.244	12	2.71	0.03	57	36	32.0	0.244	29	6.56	0.07	137	88
4051-04	5/18/05		0.64	25.4	0.488	3	1.36	0.01	28	18	25.4	0.488	7	3.17	0.03	66	42
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
4058-EAST	5/18/05		0.64	25.4	0.488	35	15.83	0.17	331	212	25.4	0.488	50	22.62	0.24	472	302
4060-EAST	5/18/05		0.64	25.4	0.488	86	38.90	0.41	813	520							
4061-EAST	5/18/05		0.64	25.4	0.488	17	7.69	0.08	161	103	25.4	0.488	26	11.76	0.12	246	157
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	5/18/05		0.64	25.4	0.488	32	14.48	0.15	302	193							
4069-WEST	5/18/05		0.64	25.4	0.488	7	3.17	0.03	66	42	25.4	0.488	10	4.52	0.05	94	60
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	10	4.52	0.05	94	60	25.4	0.488	18	8.14	0.09	170	109
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	25.4	0.488	28	12.67	0.13	265	169	25.4	0.488	89	40.26	0.42	841	538
4202-07	5/18/05		0.64	32.0	0.244	8	1.81	0.02	38	24	32.0	0.244	10	2.26	0.02	47	30
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
5100-01	5/18/05		0.64	65.0	0.029	30	0.81	0.01	17	11	65.0	0.029	40	1.08	0.01	22	14

Summary of In Situ Vane Shear Measurements for OUs 2-5.

Sample ID	Date Measured	Shear Strength												Water Depth (ft)	Description
		3-foot Depth													
		Vane Length (mm)	Vane Constant	M-3 Scale Reading	Measured Shear Strength (kPa)	Measured Shear Strength (tsf)	Measured Shear Strength (psf)	Corrected Shear Strength (psf) ⁽¹⁾	Remolded M-3 Scale Reading	Measured Remolded Shear Strength (kPa)	Measured Remolded Shear Strength (tsf)	Measured Remolded Shear Strength (psf)	Corrected Remolded Shear Strength (psf) ⁽¹⁾		
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
4052-04	10/11/04		#N/A		#N/A					#N/A				15.1	stiff silt and sand
4053-03	10/11/04	64.0	0.244	12	2.71	0.03	57	36						7.4	silt
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	
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	
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
4057-02	10/11/04	64.0	0.244	21	4.75	0.05	99	63	10	2.26	0.02	47	30	11.0	
4057-05	10/11/04		#N/A	sand	#N/A					#N/A				3.5	Hard Sand
4059-04	10/11/04		#N/A	sand	#N/A					#N/A				18.5	
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
4067-01	10/11/04		#N/A		#N/A					#N/A					Too Deep
4069-04	10/11/04		#N/A	30	#N/A					#N/A				19.1	
4073-01	10/11/04		#N/A		#N/A					#N/A					Too Deep
4074-05	10/11/04	64.0	0.244	38	8.60	0.09	180	100	12	2.71	0.03	57	32	12.3	
4075-07	10/11/04	64.0	0.244	50	11.31	0.12	236	193						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
4088-04	10/11/04	64.0	0.244	11	2.49	0.03	52	33						18.7	
4089-03	10/11/04	64.0	0.244	14	3.17	0.03	66	42						16.2	
4089-07	10/11/04		#N/A		#N/A					#N/A				21.3	Too Deep
4090-01	10/11/04	Large	#N/A		#N/A					#N/A				2.6	
4091-05	10/11/04	64.0	0.244											15.2	
4092-10	10/11/04	64.0	0.244	28	6.33	0.07	132	76						14.4	
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
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	
3056-21	5/19/05	32.0	0.244	20	4.52	0.05	94	60	10	2.26	0.02	47	30	5.7	brown sandy silt
4002-22	5/18/05	32.0	0.244	16	3.62	0.04	76	48	9	2.04	0.02	43	27	3.6	brown sandy silt
4032-10	5/18/05	32.0	0.244	26	5.88	0.06	123	79	13	2.94	0.03	61	39	5.5	
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
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	
4051-EAST	5/18/05								33					13.0	in marina; gravelly surface; refusal at 2.3 ft
4052-04	5/18/05								34					11.6	refusal at 1.5 feet
4053-05	5/18/05								35					14.2	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					9.3	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
4064-WEST	5/18/05													18.0	refusal on sand and gravel at 1.0 feet
4065-WEST	5/18/05													11.6	refusal at 0.5 feet; stiff brown clay
4068-WEST	5/18/05													10.5	refusal on sand and gravel at 0.3 feet
4069-WEST	5/18/05	25.4	0.488	14	6.33	0.07	132	85	7	3.17	0.03	66	42	15.4	
4070-WEST	5/18/05	25.4	0.488	68	30.76	0.32	642	411	42	19.00	0.20	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	
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	9.4	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	1.7	stiff penetration; feels sandy
4202-07	5/18/05	32.0	0.244	14	3.17	0.03	66	42	11	2.49	0.03	52	33	13.6	brown sandy silt; vane wants to sink under WOR
4231-01	5/18/05	32.0	0.244	26	5.88	0.06	123	79	13	2.94	0.03	61	39	6.9	brown sandy silt
4246-01	5/18/05	32.0	0.244	22	4.98	0.05	104	67	20	4.52	0.05	94	60	14.2	brown sandy silt
5001-MID	5/18/05	25.4	0.488	16	7.24	0.08	151	97						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	9.7	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	

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

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

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.

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

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* (Maynard 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 propwash 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

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 propwash-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.

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 propwash 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 ₅₀ Range [inches]	In-Slip Cap A Armor Stone Stable D ₅₀ Range [inches]	Distance From Crest Into Slip Where Armor Stone Stable D ₅₀ ≤ 3 Inches [feet]
65	Low (577.6 ft)	10 to 14 in.	< 0.25 to 4	0
	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 D₅₀ 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 D₅₀ 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,

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

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_{50} 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_{50} 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.

"It'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
Atlanta, GA 30308-1007

Dear Mr. Heath,

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

ATTACHMENT B

PCB CONCENTRATIONS BELOW THE PROPOSED CAP

PCB Concentrations Below Proposed Cap

Core ID	4089R-01			4089R-02			4089R-03			4089-04			4089-21		4088.5-07			4089-20	4088.5-06	4089-210	4089-38	4089-39	4089-40	4089-41	4089-42	4089-46	4089-47	4089-48	
Year	2005	2012	2016	2005	2012	2016	2005	2012	2016	2004	2012	2016	2012	2015	2012	2016		2012	2012	2014	2015	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			TOC																			1.17		0.684	TOC	
568.0	TOC	1.04	1.38		TOC	1.14								TOC					TOC						1.08		0.945		
567.5	1.4	1.06	1.21		1.34	1.6							TOC	0.911					1.1		TOC	1.1			1.12		0.896		
567.0	1.4	0.943	1.26		1.27	1.44					TOC	TOC	1.2	1.02					1.09			1.05	1.07		1.05		0.0253		
566.5	1.8	0.804	1.16		1.02	1.6					0.858	0.994	1.16	1.13					1.11			1.14	1.14		0.874		0.0254		
566.0	1.6	0.781	0.833		1.03	1.43					0.992	1.13	1.09	1.08					1.1			1.18	1.32	TOC	0.877				
565.5	1.8	0.886	1.03		0.801	1.16				TOC	1.03	1.2	0.95	1.1					0.76			0.99	0.906	1.08					
565.0	1.6	0.605	0.385		0.962	1.36				1.7	0.859	1.25	0.891	0.643					1.01			1.14	0.959	1.28					
564.5	1.7	0.548	0.199		1.04	1.2					0.962	1.06	0.862	0.861					1.1		1.36		0.929	1.12	0.959				
564.0	2.1	1.04	0.437		1.03	1.13					0.805	0.969	0.945						1.45			1.03	1.18	0.923					
563.5	2	1.21	0.926		0.829	1.05			TOC	1.55	0.838	1.1										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							1.41/0.78	0.96				0.88		TOC			
562.5	2.3	1.2			1	1.25		NA	1.21	1.6	0.986	1.21																	
562.0	2.1	0.84		TOC	0.915	1.22		NA	1.22	1.55	0.921	1.32																1.31	
561.5	2.1	1.29		1.6	1.12	1.39	TOC	NA	1.12	1.5	0.727	1.17																1.26	
561.0	1.5	1.61		1.7	1.32		1.3	NA	1.07	1.6	0.746	1.03																0.504	
560.5		1.28		1.5	1.27		1.3	NA	1.05	1.5	0.694	0.914																0.0253	
560.0		1.35		1.6	1.25		1.2	NA	0.923		1.07																	0.0253	
559.5		1.4		1.6	0.91		1.6	NA	0.961		1.18																		
559.0				1.5			1.7	NA	1.11		1.11																		
558.5				1.5			1.7	NA	1.31		1.52																		
558.0		1.71		1.6			1.9	NA	1.07		1.35				TOC	TOC													
557.5				1.8			2.1	NA	1.39		1.76				1.08	0.693													
557.0				1.6			1.9	NA	1.5		1.93				1.08	0.566													
556.5				2.1			1.8	NA			1.32				0.76	1.11													
556.0				1.7			2.4	1.27							0.86	0.509													
555.5				2			2.1	1.32							1.21	0.902													
555.0				2.2			1.7	1.5															0.955	0.865	1.57	3.37			
554.5				2.1			2.2	1.2																0.844	0.981	1.17			
554.0							2.3	1.43																1.13	1.04	0.979	0.0251		
553.5				1.3				1.49																	0.999		0.0251		
553.0				1.8				2.05																					
552.5								2.16																					
552.0																													
551.5								2.23																					
551.0																													
550.5											3.49																		
550.0																													
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549.0																													
548.5																													
		</																											

Contamination levels at surface before capping

ATTACHMENT C

SUMMARY OF SUPPORTING DATA AND RESULTS FROM PROPWASH ANALYSES

Table 1. Summary of Vessel Dimensions and Operating Data

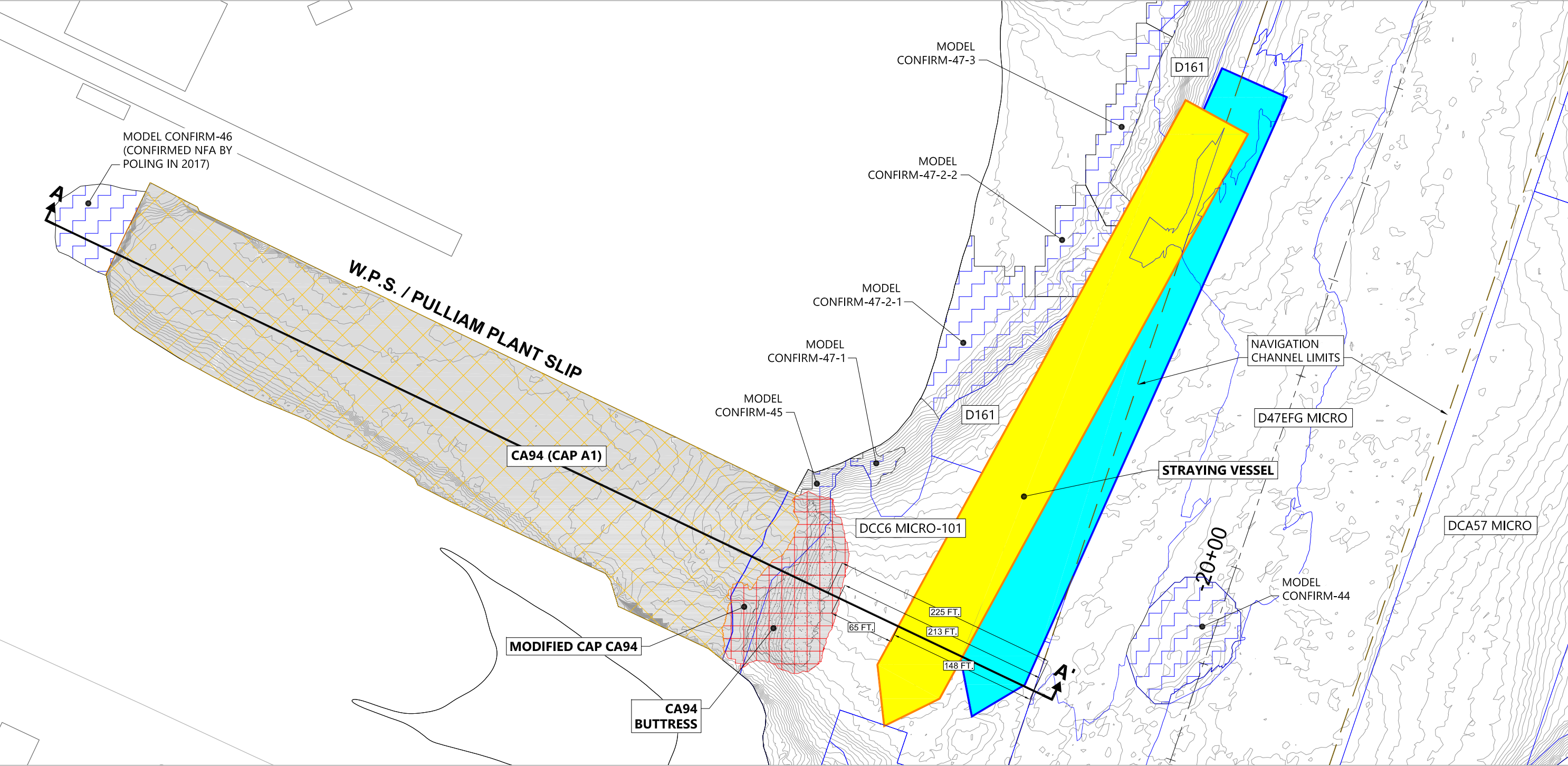
Vessel	Main Engine HP	Ducted/Non- Ducted	Number of Engines	Number of Propellers	Bow Thruster HP	Stern Thruster HP	Length	Beam	MidSummer Draft (ft)	Vessel Draft	Distance Between Main Engine Prop Shaft and Keel (ft)	Main Engine Prop Diameter (ft)	Distance Between Bow/Stern Thruster Shaft and Keel (ft)	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	5600	Non-Ducted	2	1	1000	NA	630	68	26.00	32	10	17	6	5
GL Ostrander														
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

Vessel	Vessel Owner or Operator	Operator/Contact Who Provided Information	Notes	Navigation Channel North of CNRR Bridge			
				Normal/Extreme Conditions		Recommended Conditions for Evaluation	
				Percentage of Applied Power (Main Engine)	Percentage of Applied Power (Bow Thruster)	Percentage of Applied Power (Main Engine)	Percentage of Applied Power (Bow Thruster)
Great Republic	Key Lakes IV	Capt. James Fisher, Great Lakes Fleet	webcast	25%	50%	75%	100%
		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 Navigation (affiliate of Lower Lakes)	Mike Farrell, Safety and Compliance Supervisor	webcast	15%	50%	15%	50%
Manitowoc							
Calumet							
Mississagi	Lower Lakes						
Sam Laud	American Steamship	Pierre Pelletreau, VP - Engineering	webcast	15%	30%	15%	30%
Buffalo							
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	Andrie Transportation	Steve Stanek, Port Captain	webcast and email reply; Andrie vessels only go as far south as the Lafarge/CRM dock; vessels "hug the East side of the channel just before turning into the Lafarge/CRM slip"	30%	30%	30%	30%
Ostrander/Integrity				30%	30%	30%	30%
Champlain/Innovation				30%	30%	30%	30%
Michigan/Great Lakes				30%	30%	30%	30%
Karen Andrie/Endeavor				30%	30%	30%	30%
Sarah Andrie/A-390				30%	30%	30%	30%
Mary Hannah/A-410				30%	30%	30%	30%

ATTACHMENT D

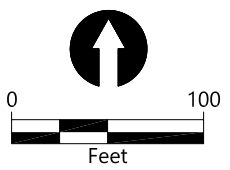
PROPWASH FIGURES



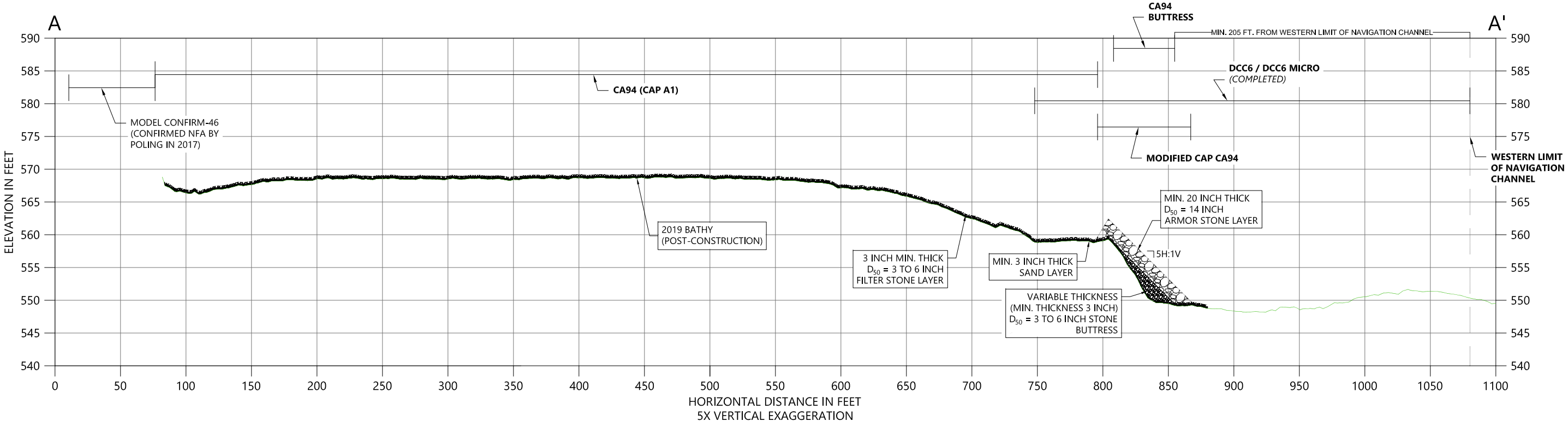
HORIZONTAL DATUM: WISCONSIN STATE PLANE, CENTRAL ZONE, NORTH AMERICAN DATUM (NAD83), U.S. SURVEY FEET
VERTICAL DATUM: NAVD88, FEET

NOTES:
1. THIS DESIGN IS SUBJECT TO CHANGE, AND NOT INTENDED FOR CONSTRUCTION.
2. DEPICTED CONTOURS ARE EXISTING BATHYMETRY CONDITIONS POST-2018 CONSTRUCTION.

LEGEND:	
	CA94 FOOTPRINT
	MODIFIED CAP CA94 FOOTPRINT
	CA94 BUTTRESS
	2019 POST-CONSTRUCTION BATHYMETRY CONTOURS (1 AND 5 FT. INTERVALS)
	DREDGING FOOTPRINTS
	MODEL CONFIRM AREA
	SEDIMENT CORE
	SEDIMENT CORE (UNDEFINED EOC)








**FIGURE 1
PLAN VIEW**
WISCONSIN PUBLIC SERVICE - PULLIAM PLANT SLIP DESIGN REFINEMENT
LOWER FOX RIVER REMEDIATION

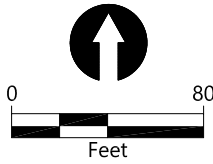


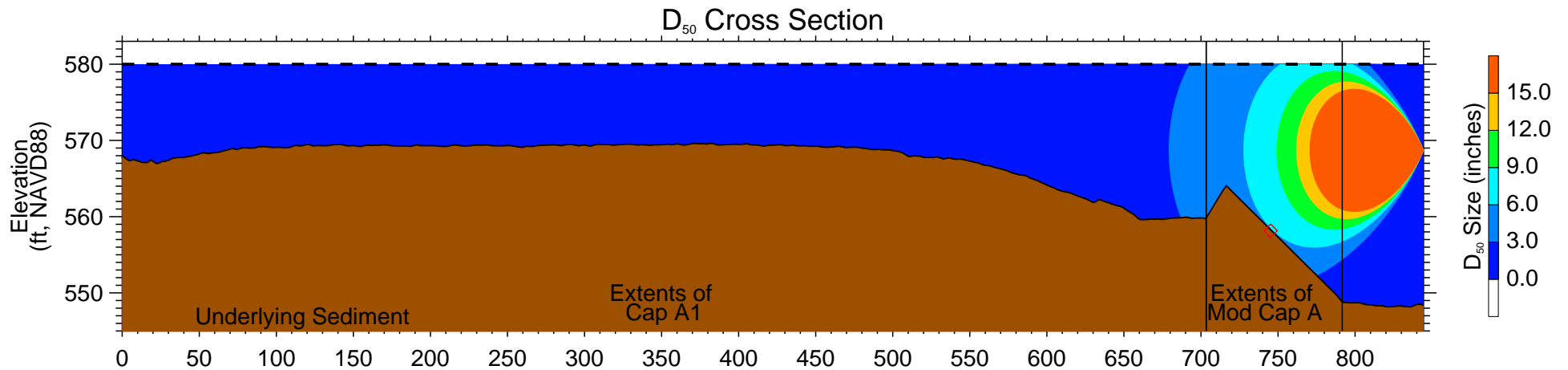
HORIZONTAL DATUM: WISCONSIN STATE PLANE, CENTRAL ZONE,
NORTH AMERICAN DATUM (NAD83), U.S. SURVEY FEET
VERTICAL DATUM: NAVD88, FEET

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

LEGEND:

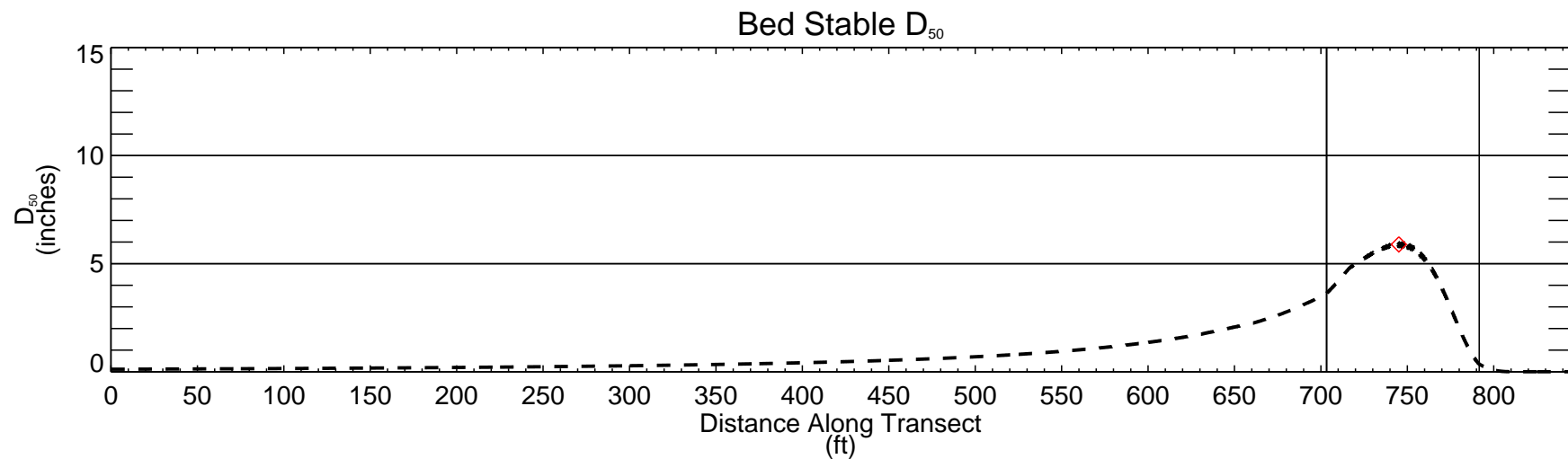
- | | | | |
|---|--|---|---|
|  | 2019 POST-CONSTRUCTION BATHYMETRY |  | VARIABLE THICKNESS (MIN. THICKNESS 3 INCH)
$D_{50} = 3$ TO 6 INCH STONE BUTTRESS |
|  | 3 INCH MIN. THICK SAND LAYER |  | MIN. 20 INCH THICK $D_{50} = 14$ INCH ARMOR STONE
LAYER |
|  | 3 INCH MIN. THICK $D_{50} = 3$ TO 6 INCH FILTER
STONE LAYER | | |





WPS-A

WPS-A'

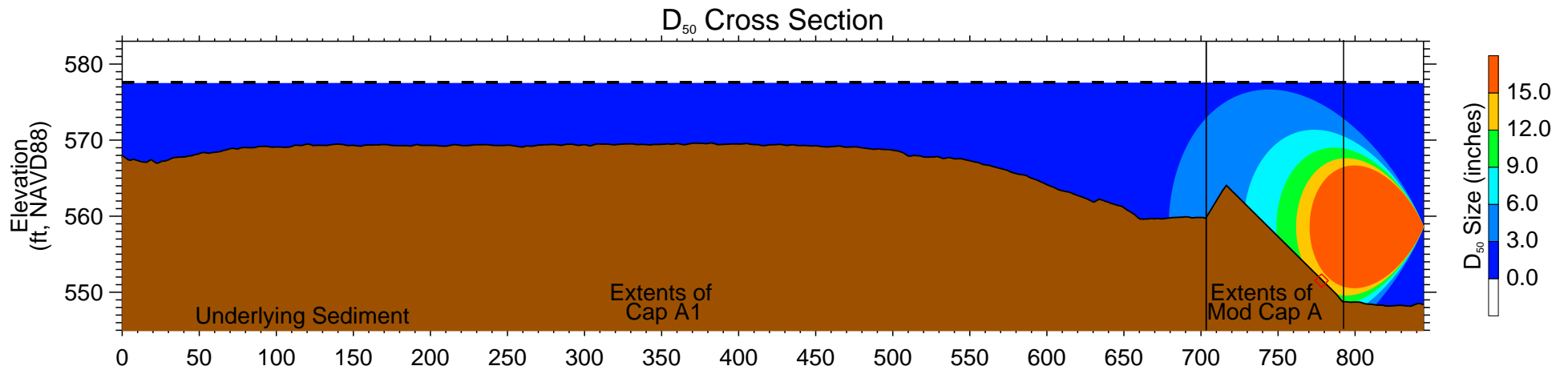


-- High Water Conditions = 580.0 ft, NAVD88



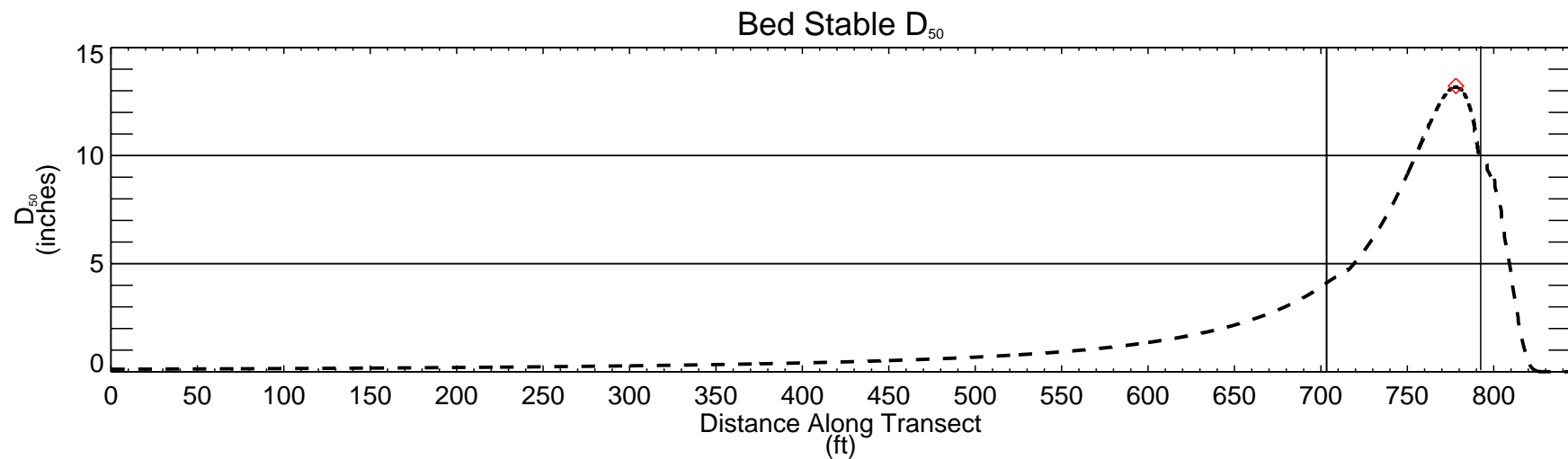
Notes: The applied horsepower is 100% at a distance of 148 feet beyond the navigation channel boundary with the keel of the vessel at elevation 562.75 feet NAVD88. Sediment surface shown incorporates post-dredge and post-cap elevations where applicable.

Figure 3
 Propeller Wash D_{50} Field - Great Republic Bow Thruster
 Cap Armor Layer Propeller Wash Assessment
 Lower Fox River Remediation



WPS-A

WPS-A'



-- Low Water Conditions = 577.6 ft, NAVD88



Figure 4
 Propeller Wash D_{50} Field - Great Republic Bow Thruster
 Cap Armor Layer Propeller Wash Assessment
 Lower Fox River Remediation

Notes: The applied horsepower is 100% at a distance of 148 feet beyond the navigation channel boundary with the keel of the vessel at elevation 552.7 feet NAVD88.
 Sediment surface shown incorporates post-dredge and post-cap elevations where applicable.

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, γ (pcf) = 80
Unit Weight of water, γ_w (pcf) = 62.4
Submerged Unit Weight of water, γ' (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_d (psf)	Stability Number, N_o (Slope circle)	Stability Number, N_o (Toe circle)	Stability Number, N_o (Deep circle)	Cohesion, C (psf)
1.3	2	26.57	10	30	0.33	176	7.2	6.7	7.2	31.8
1.3			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	3	18.43	10	30	0.33	176	8.3	7.3	8.3	27.6
1.3			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	4	14.04	10	30	0.33	176	8.7	7.8	8.7	26.3
1.3			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

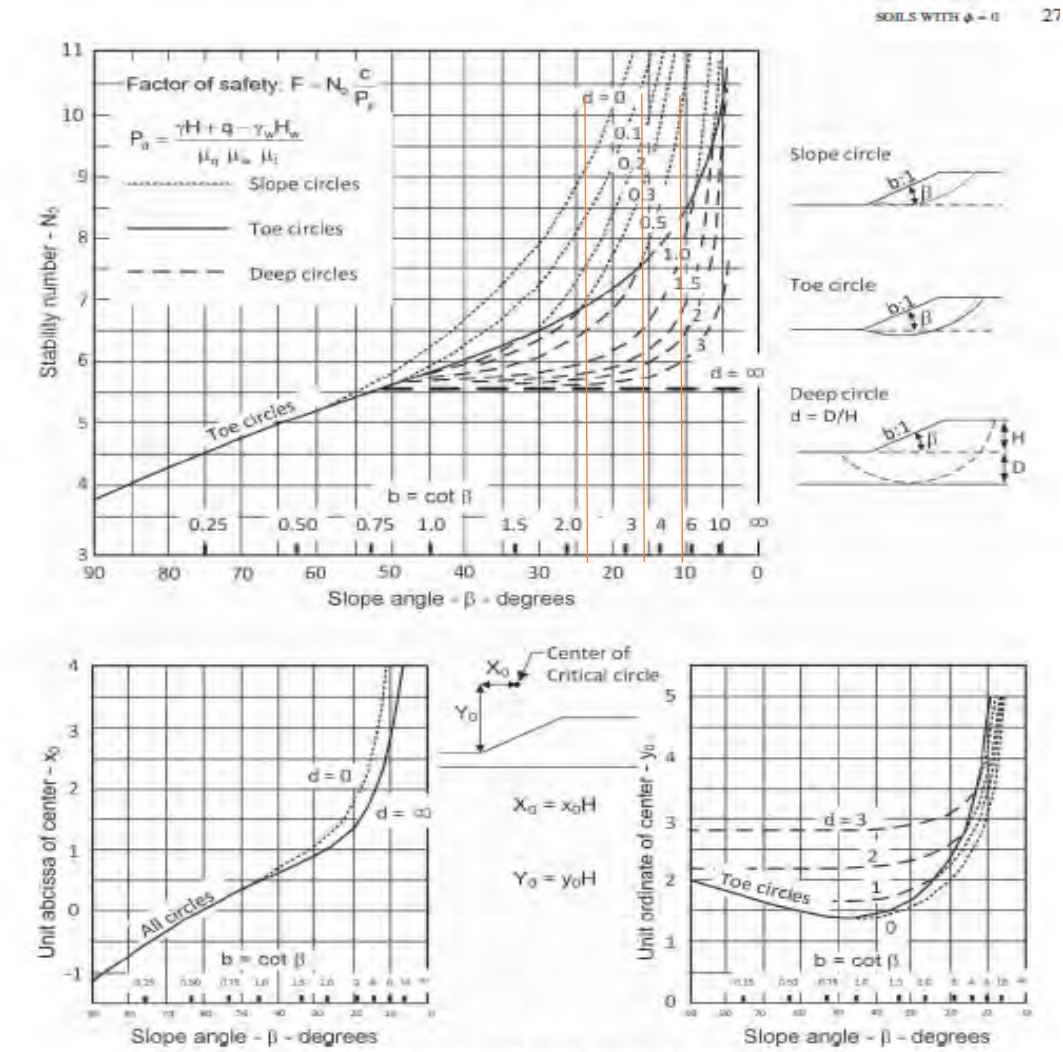


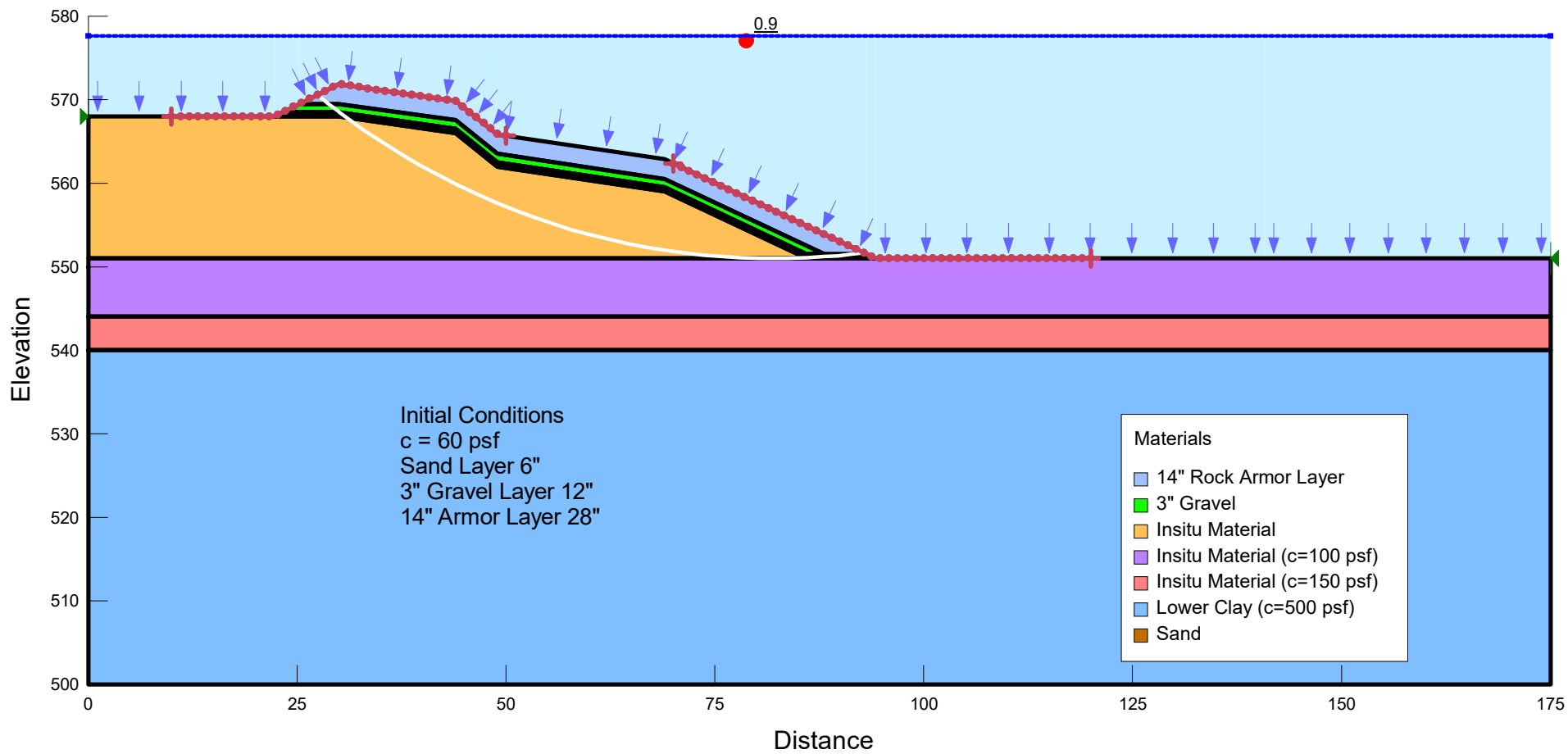
Figure A.1 Slope stability charts for $\phi = 0$ soils (after Janbu, 1968).

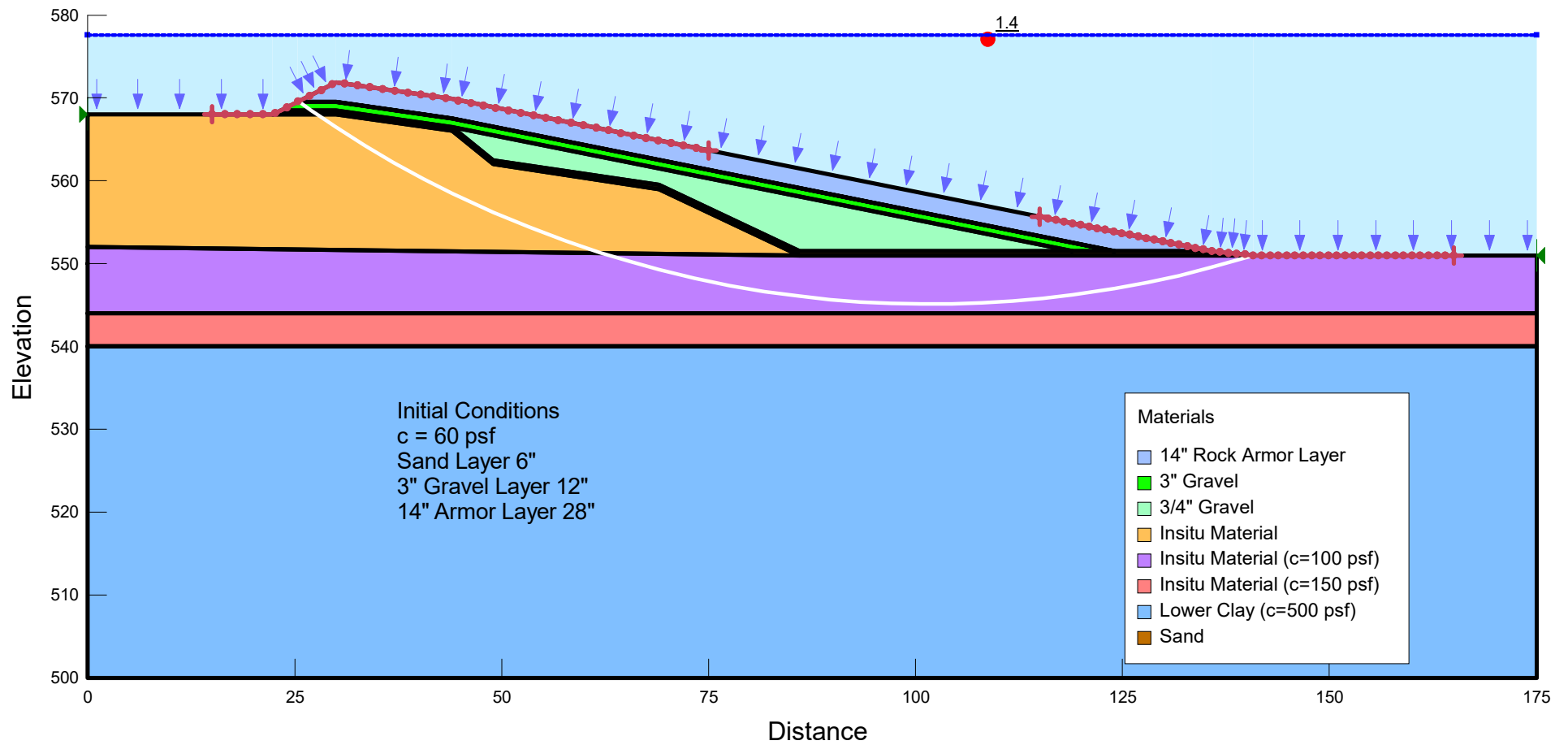
Janbu, N. 1968. Slope Stability Computations. Soil Mechanics and Foundation Engineering Report. Technical University of Norway, Trondheim.
Duncan, M.J., Wright, S.G., and Brandon T.L. (2014) Soil Strength and Slope Stability. 2nd Edition. John Wiley and Sons., Inc., New York.

Attachment E-2
CA94 Core Interval Review 11-Oct-19

Core ID	Interval	Elevation	Sediment Type	Pocket pen (kg)	Strength (psf) ¹
4088.5-65	F	563.5	CL/ML	0	0
4088.5-66	A	560	CL/ML	0	0
	B	559.5	CL/ML	0	0
	C	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	A	556	CL/ML	0	0
	B	555.5	CL/ML	0	0
	C	555	ML	0	0
	D	554.5	CL/ML	0	0
	F	553.5	CL/ML	0	0
	H	552.5	CL/ML	0	0
4089-50RVT	A	554.5	CL/ML	oversaturated-not tested	-
	B	554	CL	0	0
	C	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
	K	555.5	CL	0	0
	L	555	CL/ML	0	0
	M	554.5	CL/ML	0	0
	N	554	CL/ML	0	0
	P	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

1. Multiply kg reading by 1,000 for psf.





STS AECOM		CLIENT Wisconsin Public Services		LOG OF BORING NUMBER 1	
		PROJECT NAME J. P. Pulliam Plant Dockwall Feasibility Study		ARCHITECT/ENGINEER	
SITE LOCATION 1501 Bylsby Avenue, Green Bay, Wisconsin					
DEPTH (FT) ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS / Ft. ³
SURFACE ELEVATION: +589.0 feet (WPS Plant Datum)					
2.0	1	SS		Miscellaneous Fill: Topsoil, silty clay, silty sand and gravel, coal - moist - loose	⊗ 4
4.0	2	SS			
6.0	3	SS			
8.0	3A	SS		Reddish brown silty clay (CL) - trace sand seams - trace gravel - moist - very stiff	
10.0	4	SS		Grayish brown silty sand (SM) - moist - wet - medium dense	⊗ 11
12.0	5	ST		Reddish brown silty clay (CL) - trace gravel - trace sand - moist - stiff to soft	⊗
14.0					
16.0	6	SS			⊗
18.0	6A	SS		Grayish brown silty sand (SM) - trace clay - trace gravel - wet - loose	⊗
20.0					
22.0	7	SS		Reddish brown silty clay (CL) - trace to a little gravel - trace sand - moist - very stiff	⊗ 19
24.0					
26.0	8	SS		Reddish brown silty clay (CL) - trace to a little gravel - trace sand - moist - soft Note: Gravel obtained in split-spoon sample	⊗ 6
28.0					
30.0					⊗ 4
32.0	9	SS		Note: Disturbed sample	⊗
34.0					
36.0	10	ST			⊗
38.0					
40.0					
... continued					

○ UNCONFINED COMPRESSIVE STRENGTH
TONS/FT.² 1 2 3 4 5

PLASTIC LIMIT % WATER CONTENT % LIQUID LIMIT %

⊗ ○ △

10 20 30 40 50

⊗ ○ △

10 20 30 40 50

STANDARD PENETRATION BLOWS/FT.

WPS_CHIA 200803665_PULLIAM.GPJ STS.GDT 10/27/08

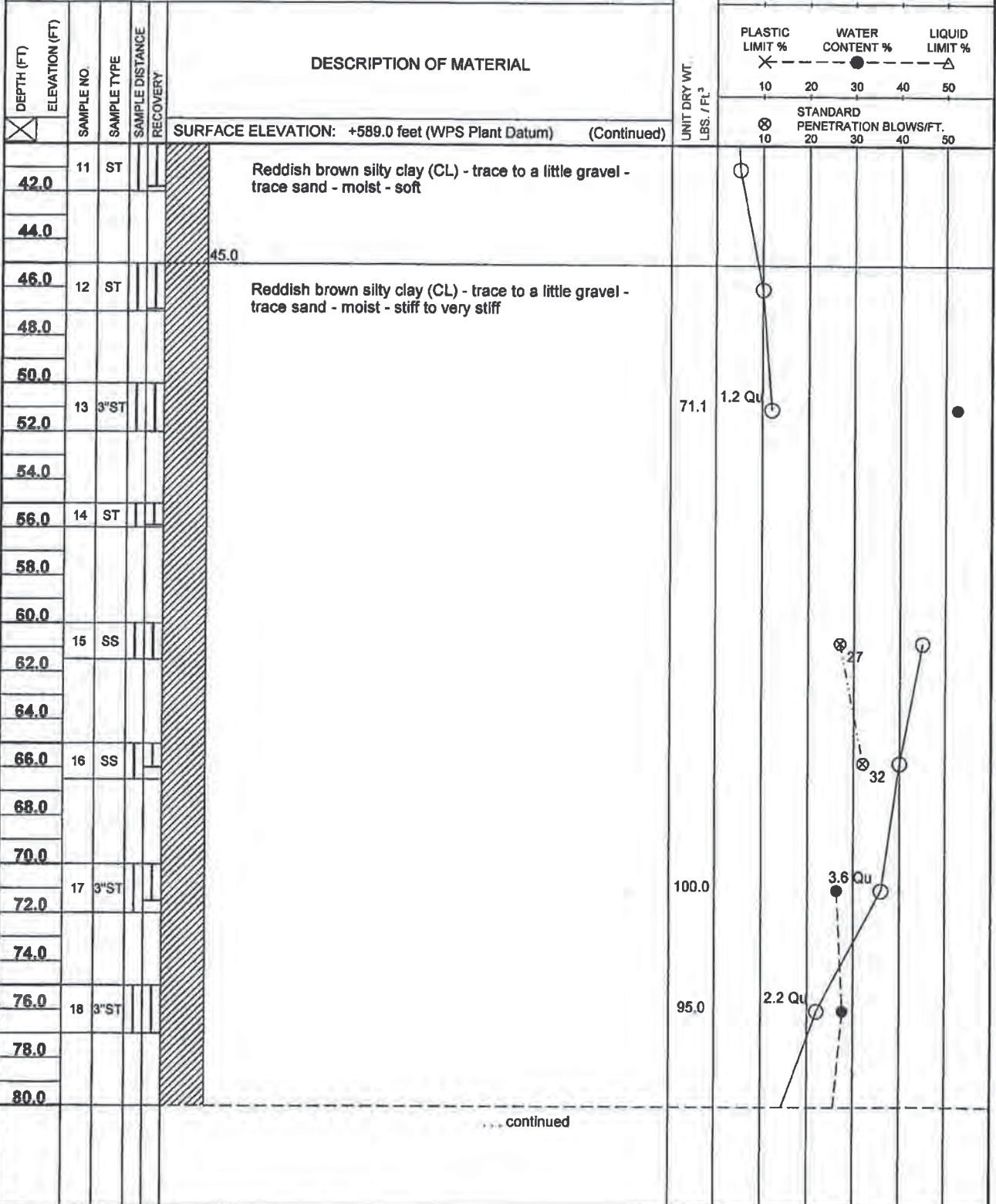
The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO. **200803665**

SHEET NO. **1** OF **3**

STS AECOM	CLIENT	LOG OF BORING NUMBER
	Wisconsin Public Services	1
	PROJECT NAME	ARCHITECT/ENGINEER
J. P. Pulliam Plant Dockwall Feasibility Study		

SITE LOCATION
1501 Bylsby Avenue, Green Bay, Wisconsin



... continued

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

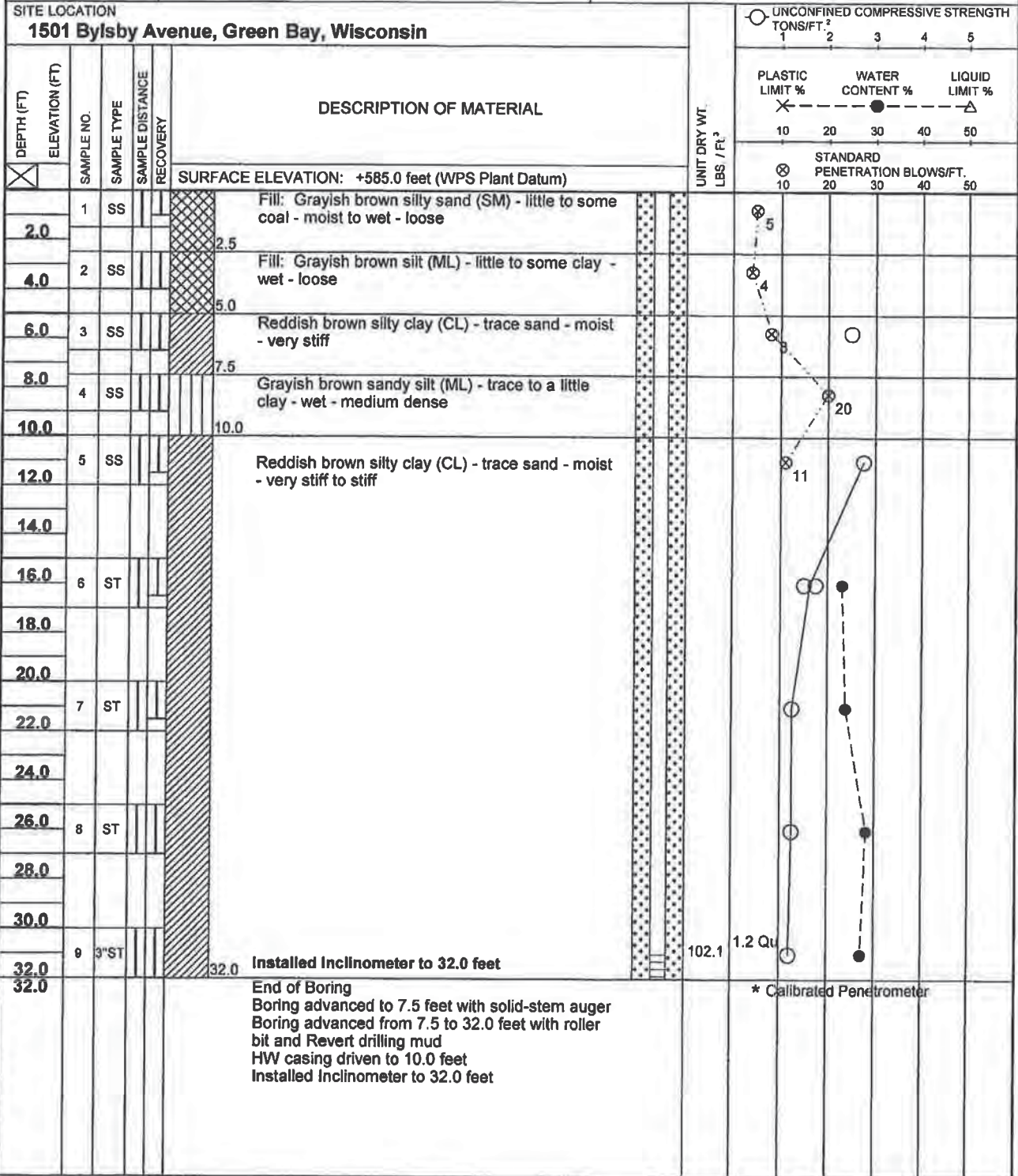
STS JOB NO. 200803665

SHEET NO. 2 OF 3

WPS CHIA 200803665 PULLIAM GPJ STS.GDT 10/27/08

WPS_CHIA 200803665 PULLIAM.GPJ STS.GDT 10/27/08

STS AECOM	CLIENT Wisconsin Public Services	LOG OF BORING NUMBER 2
	PROJECT NAME J. P. Pulliam Plant Dockwall Feasibility Study	ARCHITECT/ENGINEER



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL 2.5 ft. WS	BORING STARTED 9/11/08	STS OFFICE 1035 Kepler Drive Green Bay, Wisconsin 54311
WL	BORING COMPLETED 9/11/08	ENTERED BY BJV
WL	RIG/FOREMAN CME 850/BZ	APP'D BY BKB
		SHEET NO. 1 OF 1 STS JOB NO. 200803665

WPS_CHIA 200803665 PULLIAM.GPJ STS.GDT 10/27/08

STS AECOM		CLIENT Wisconsin Public Services		LOG OF BORING NUMBER 3	
		PROJECT NAME J. P. Pulliam Plant Dockwall Feasibility Study		ARCHITECT/ENGINEER	
SITE LOCATION 1501 Bylsby Avenue, Green Bay, Wisconsin					
DEPTH (FT) ELEVATION (FT)	SAMPLE NO. SAMPLE TYPE SAMPLE DISTANCE RECOVERY	DESCRIPTION OF MATERIAL		UNCONFINED COMPRESSIVE STRENGTH TONS/FT. ² 1 2 3 4 5	
				PLASTIC LIMIT % WATER CONTENT % LIQUID LIMIT % X ● △ 10 20 30 40 50 STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50	
SURFACE ELEVATION: +585.0 feet (WPS Plant Datum)					
2.0	1A SS 1B SS	Miscellaneous Fill: Silty clay, silty sand, gravel and coal - moist to wet Fill: Reddish brown silty clay (CL) with sand - moist - stiff Fill: Grayish brown silty sand (SM) - wet - loose		5 5	
4.0	2A SS 2B SS				
6.0	3 SS	Brown sandy silt (ML) - little to some clay - wet - loose		5 5	
8.0	4 ST				
10.0	5 ST	Reddish brown silty clay (CL) - trace sand - trace gravel - moist - stiff to soft		98.8 Qu 90.0	
12.0	5A ST				
14.0		Note: CIU Test performed on Sample 8		* Calibrated Penetrometer	
16.0	6 ST				
18.0		Installed Inclinator to 32.0 feet		90.0	
20.0	7 ST				
22.0		End of Boring Boring advanced to 5.0 feet with solid-stem auger Boring advanced from 5.0 to 32.0 feet with roller bit and drilling fluid HW casing driven to 8.0 feet Installed inclinometer to 32.0 feet		90.0	
24.0	8 3"ST				
26.0		32.0		90.0	
28.0	9 ST				
30.0		32.0		90.0	
32.0					
The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.					
WL 4.0 ft. WS		BORING STARTED 9/11/08		STS OFFICE 1035 Kopler Drive Green Bay, Wisconsin 54311	
WL		BORING COMPLETED 9/12/08		ENTERED BY BJV SHEET NO. 1 OF 1	
WL		RIG/FOREMAN CME 850/BZ		APP'D BY BKB STS JOB NO. 200803665	

WPS CHIA 200803665 PULLIAM.GPJ STS.GDT 10/27/08

STS AECOM

CLIENT

Wisconsin Public Services

LOG OF BORING NUMBER 5

PROJECT NAME

J. P. Pulliam Plant Dockwall Feasibility Study

ARCHITECT/ENGINEER

SITE LOCATION

1501 Bysby Avenue, Green Bay, Wisconsin

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS. / FT. ³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT. ²	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	STANDARD PENETRATION BLOWS/FT.
						SURFACE ELEVATION: +585.0 feet (WPS Plant Datum)						
2.0		1A 1B	SS			Miscellaneous Fill: Loose brown silty sand (SM) and stiff silty clay (CL) - trace coal - moist to wet		4				
4.0		2	SS					7				
6.0		3	SS					5				
8.0		4	SS			7.5						
10.0		5	SS			Possible Fill: Dark brown to brown silt (ML) - trace to a little clay - trace sand - trace roots - trace coal - wet - very loose						
12.0		6	SS									
14.0		7	SS									
16.0		8	SS									
18.0		9	SS									
20.0		10A 10B	SS									
22.0		11	SS									
24.0		12	SS			27.5						
26.0		13	SS			31.5						
28.0						Reddish brown silty clay (CL) - moist - very soft to firm						
30.0												
32.0						Reddish brown silty clay (CL) - moist - stiff to very stiff						
34.0												
36.0		14	ST									
38.0												
40.0												
... continued												

WPS_CHIA 200803665_PULLIAM.GPJ STS.GDT 10/27/08

The stratification lines represent the approximate boundary lines between soil types: In situ, the transition may be gradual.

STS JOB NO. 200803665

SHEET NO. 1 OF 3

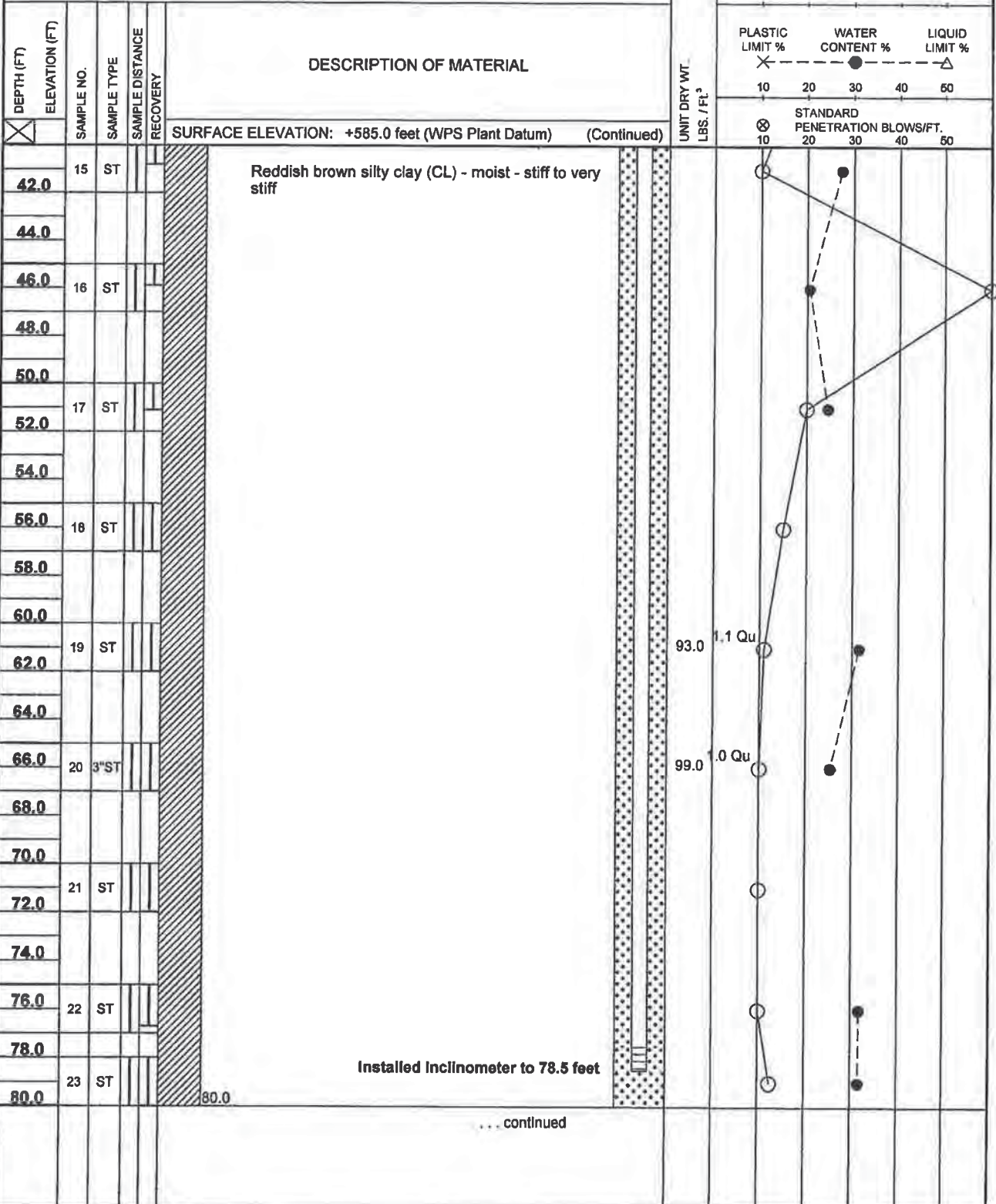
STS AECOM

CLIENT
Wisconsin Public Services
PROJECT NAME
J. P. Pulliam Plant Dockwall Feasibility Study

LOG OF BORING NUMBER **5**

ARCHITECT/ENGINEER

SITE LOCATION
1501 Bylsby Avenue, Green Bay, Wisconsin



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO. **200803665**

SHEET NO. **2** OF **3**

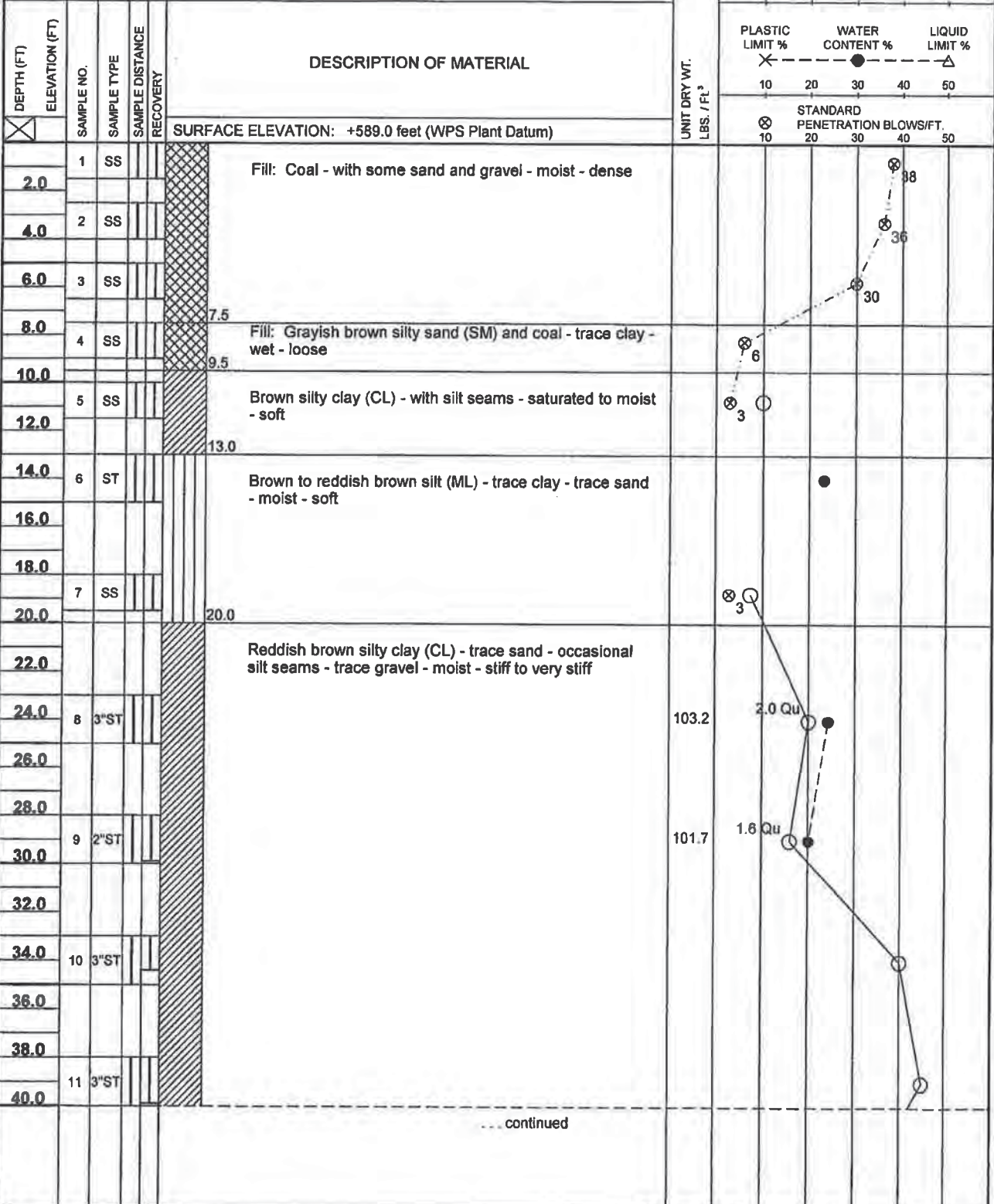
WPS CHIA 200803665 PULLIAM GFI STS.GDT 10/27/08

STS AECOM		CLIENT Wisconsin Public Services		LOG OF BORING NUMBER 5	
		PROJECT NAME J. P. Pulliam Plant Dockwall Feasibility Study		ARCHITECT/ENGINEER	
SITE LOCATION 1501 Bylsby Avenue, Green Bay, Wisconsin					
DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY
DESCRIPTION OF MATERIAL				UNIT DRY WT. LBS. / Ft. ³	<div style="text-align: center;"> UNCONFINED COMPRESSIVE STRENGTH TONS/FT.² 1 2 3 4 5 </div> <div style="text-align: center;"> PLASTIC WATER LIQUID LIMIT % CONTENT % LIMIT % X-----●-----△ 10 20 30 40 50 </div> <div style="text-align: center;"> STANDARD PENETRATION BLOWS/FT. 10 20 30 40 50 </div>
SURFACE ELEVATION: +585.0 feet (WPS Plant Datum) (Continued)				* Calibrated Penetrometer	
End of Boring Boring advanced to 15.0 feet with solid-stem auger Boring advanced from 15.0 to 80.0 feet with roller bit and drilling fluid HW casing driven to 20.0 feet Inclinator installed to 78.5 feet					
The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.					
WL 7.5 ft. WS		BORING STARTED 9/10/08		STS OFFICE 1035 Kepler Drive Green Bay, Wisconsin 54311	
WL		BORING COMPLETED 9/11/08		ENTERED BY BJV SHEET NO. 3 OF 3	
WL		RIG/FOREMAN CME 850/BZ		APP'D BY BKB STS JOB NO 200803665	

WPS_CHIA 200803665 PULLIAM.GPJ STS.GDT 10/27/08

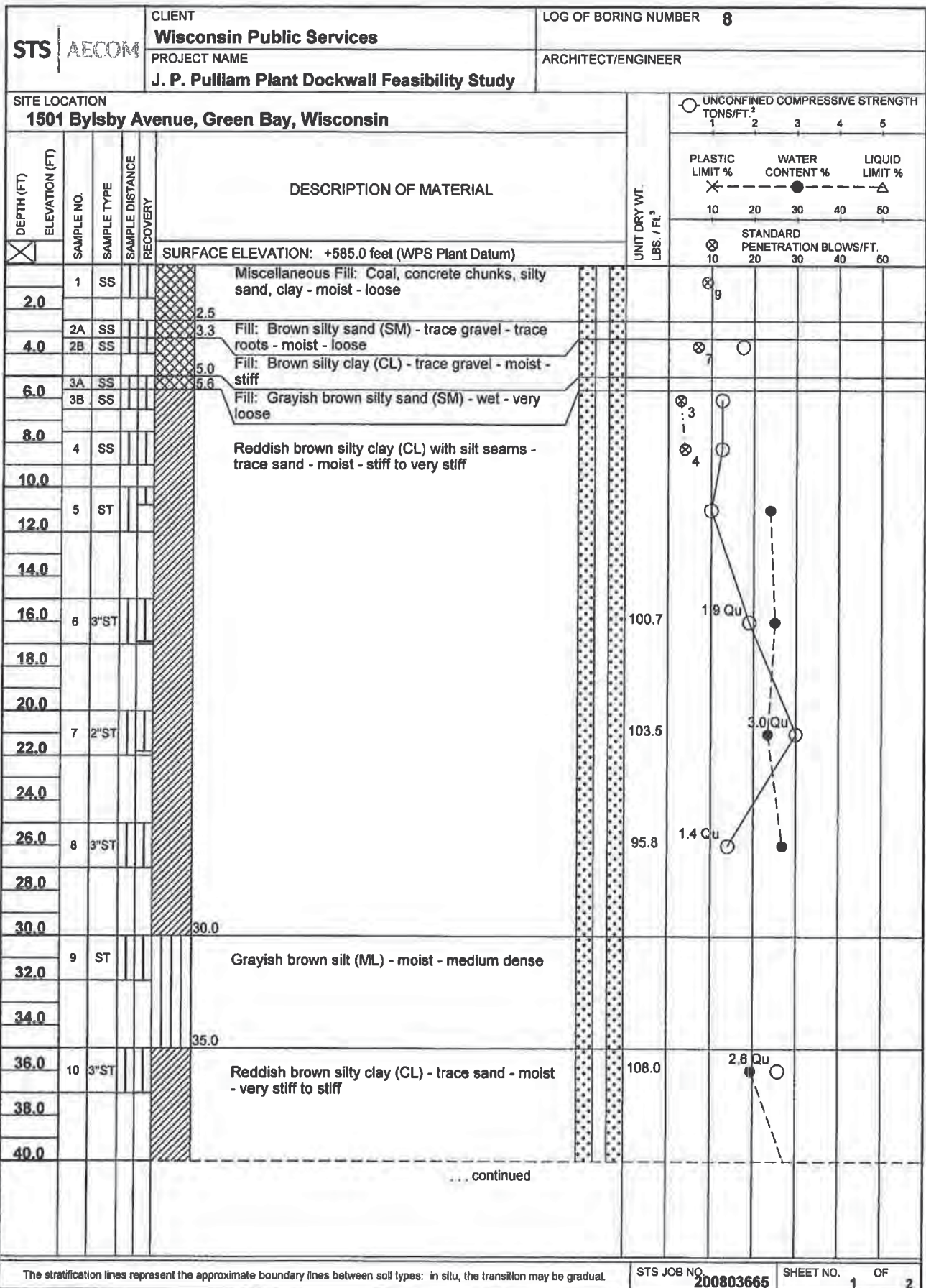
STS AECOM	CLIENT Wisconsin Public Services	LOG OF BORING NUMBER 6
	PROJECT NAME J. P. Pulliam Plant Dockwall Feasibility Study	ARCHITECT/ENGINEER

SITE LOCATION
1501 Bylsby Avenue, Green Bay, Wisconsin



WPS_CHIA 200803665 PULLIAM.GPJ STS.GDT 10/27/08

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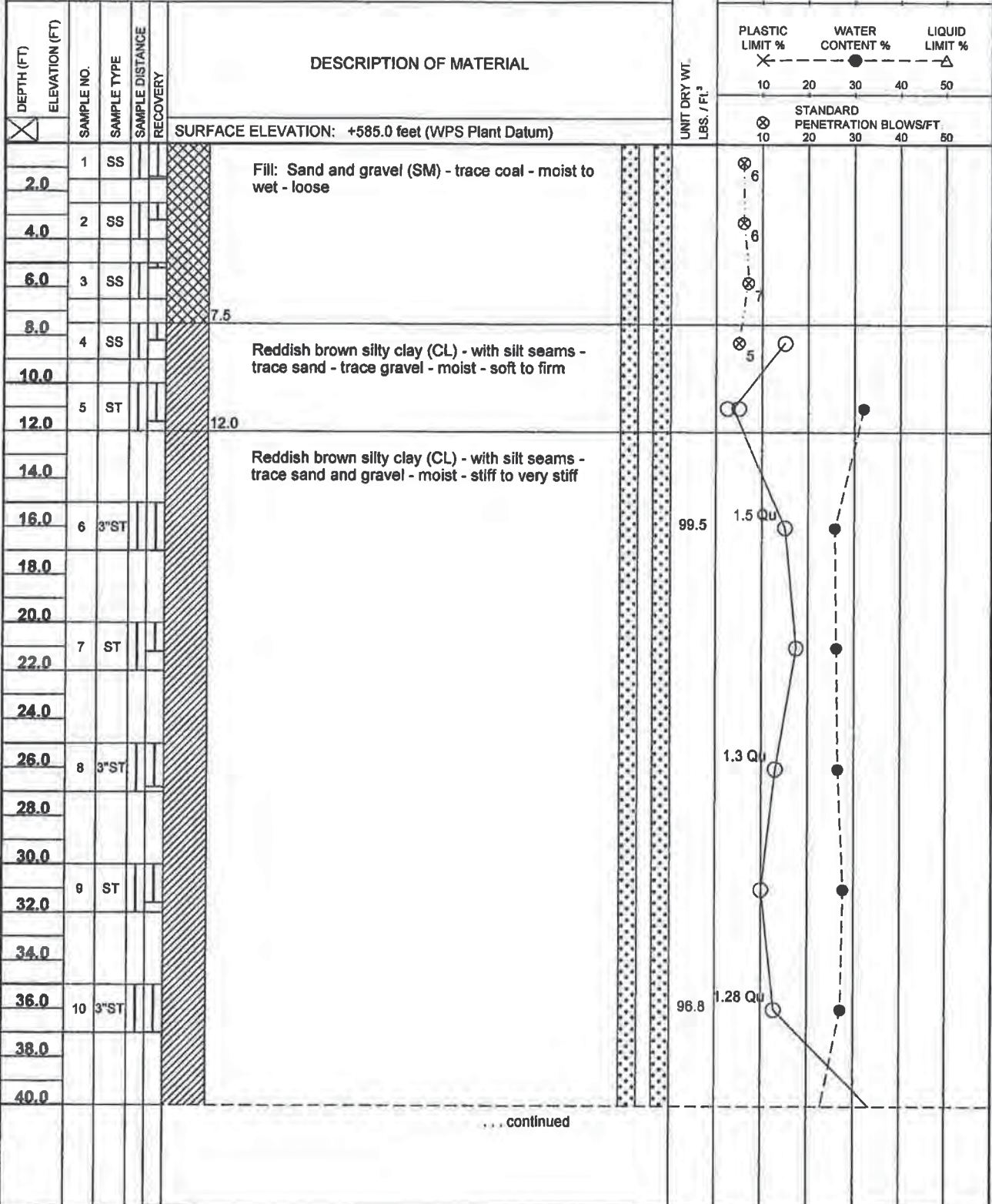


STS AECOM		CLIENT Wisconsin Public Services		LOG OF BORING NUMBER 8	
		PROJECT NAME J. P. Pulliam Plant Dockwall Feasibility Study		ARCHITECT/ENGINEER	
SITE LOCATION 1501 Bylsby Avenue, Green Bay, Wisconsin					
DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY
DESCRIPTION OF MATERIAL					
SURFACE ELEVATION: +585.0 feet (WPS Plant Datum) (Continued)					
42.0		11	ST		
44.0					
46.0		12	ST		
48.0					
50.0					
52.0		13	ST		
54.0					
56.0		14	2"ST		
58.0					
60.0					
62.0		15	ST		
64.0					
66.0		16	ST		
67.0					
Reddish brown silty clay (CL) - trace sand - moist - very stiff to stiff					
Installed Inclinator to 65.0 feet					
End of Boring Boring advanced to 7.5 feet with solid-stem auger Boring advanced from 7.5 to 67.0 feet with roller bit and Revert drilling mud HW casing driven to 15.0 feet Installed Inclinator to 65.0 feet					
* Calibrated Penetrometer					
The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.					
WL 5.0 ft. WS		BORING STARTED 9/9/08		STS OFFICE 1035 Kepler Drive Green Bay, Wisconsin 54311	
WL		BORING COMPLETED 9/9/08		ENTERED BY BJV SHEET NO. 2 OF 2	
WL		RIG/FOREMAN CME 850/BZ		APP'D BY BKB STS JOB NO. 200803665	

WPS-CHIA 200803665 PULLIAM.GPJ STS.GDT 10/27/08

SITE LOCATION

1501 Bylsby Avenue, Green Bay, Wisconsin



WPS_CHIA_200803665_PULLIAM.GPJ STS.GDT 10/27/08

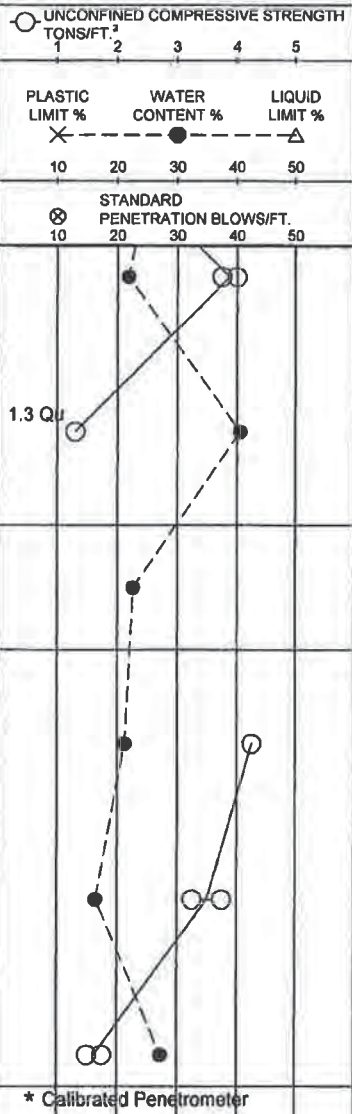
The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

STS JOB NO. **200803665**

SHEET NO. **1** OF **2**

STS AECOM	CLIENT	LOG OF BORING NUMBER 9
	Wisconsin Public Services	
	PROJECT NAME	ARCHITECT/ENGINEER
J. P. Pulliam Plant Dockwall Feasibility Study		

SITE LOCATION								UNCONFINED COMPRESSIVE STRENGTH TONS/FT. ²			
1501 Bylsby Avenue, Green Bay, Wisconsin								1 2 3 4 5			
DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS. / Ft. ³	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	
⊗								⊗	●	△	
SURFACE ELEVATION: +585.0 feet (WPS Plant Datum) (Continued)								10 20 30 40 50	10 20 30 40 50	10 20 30 40 50	
								STANDARD PENETRATION BLOWS/FT.			
								⊗	●	△	
								10 20 30 40 50			
42.0		11	ST			Reddish brown silty clay (CL) - with silt seams - trace sand and gravel - moist - stiff to very stiff					
44.0											
46.0		12	3"ST								
48.0											
50.0						49.0					
52.0		13	ST			Grayish brown silt (ML) - moist - medium dense					
54.0											
56.0		14	ST			Reddish brown silty clay (CL) - trace sand - moist - hard to stiff					
58.0											
60.0											
62.0		15	ST								
64.0						Installed inclinometer to 65.0 feet					
66.0		16	ST								
67.0						67.0					
End of Boring Boring advanced to 7.5 feet with solid-stem auger Boring advanced from 7.5 to 67.0 feet with roller bit and Revert drilling mud HW casing driven to 10.0 feet Installed inclinometer to 65.0 feet											



The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	5.0 to 6.0 ft. WS	BORING STARTED	9/9/08	STS OFFICE	1035 Kepler Drive Green Bay, Wisconsin 54311
WL		BORING COMPLETED	9/10/08	ENTERED BY	BJV
WL		RIG/FOREMAN	CME 850/BZ	APP'D BY	BKB
				SHEET NO.	2 OF 2
				STS JOB NO.	200803665

WPS_CHIA 200803665 PULLIAM.GPJ STS.GDT 10/27/08

CLIENT
Wisconsin Public Services
PROJECT NAME
J. P. Pulliam Plant Dockwall Feasibility Study

LOG OF BORING NUMBER **6A**
Offset 3 ft. East of Boring 6
ARCHITECT/ENGINEER

SITE LOCATION
1501 Bylsby Avenue, Green Bay, Wisconsin

DEPTH (FT)	ELEVATION (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DISTANCE	RECOVERY	DESCRIPTION OF MATERIAL	UNIT DRY WT. LBS. / Ft. ³	UNCONFINED COMPRESSIVE STRENGTH TONS/FT. ²	PLASTIC LIMIT %	WATER CONTENT %	LIQUID LIMIT %	STANDARD PENETRATION BLOWS/FT.
						SURFACE ELEVATION: +589.0 feet (WPS Plant Datum)						
2.0						Note: For Soil Classifications see Log of Boring Number 6						
4.0												
6.0												
8.0												
10.0												
12.0												
14.0												
16.0												
18.0			VST									
20.0			VST									
22.0						<p>Vane shear test at 16.0 to 16.5 feet Peak Su = 3525 psf - Remolded Su = 1275 psf</p> <p>Vane shear test at 19.3 to 19.8 feet Peak Su = 2250 psf - Remolded Su = 850 psf</p> <p>Vane shear test at 22.6 to 23.1 feet Peak Su = 3625 psf - Remolded Su = 2125 psf</p> <p>Vane shear test at 25.9 to 26.4 feet Peak Su = 4275 psf - Remolded Su = *</p> <p>Vane shear test at 29.2 to 29.7 feet Peak Su = 4375 psf - Remolded Su = *</p>						
24.0			VST									
26.0			VST									
28.0			VST									
29.7			VST									
						*Test Reached maximum capacity; Remolded test not completed						

The stratification lines represent the approximate boundary lines between soil types: in situ, the transition may be gradual.

WL	BORING STARTED 9/8/08	STS OFFICE 1035 Kepler Drive Green Bay, Wisconsin 54311
WL	BORING COMPLETED 9/8/08	ENTERED BY BJV
WL	RIG/FOREMAN CME 850/BZ	APP'D BY BKB
		SHEET NO. 1 OF 1
		STS JOB NO. 200803665

Appendix E

Geotechnical Soil Classification Procedures

COARSE-GRAINED SOILS

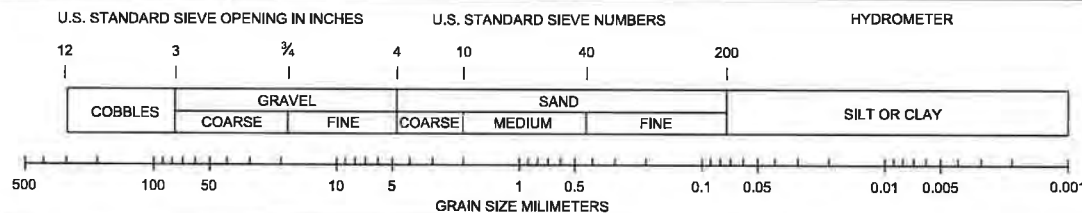
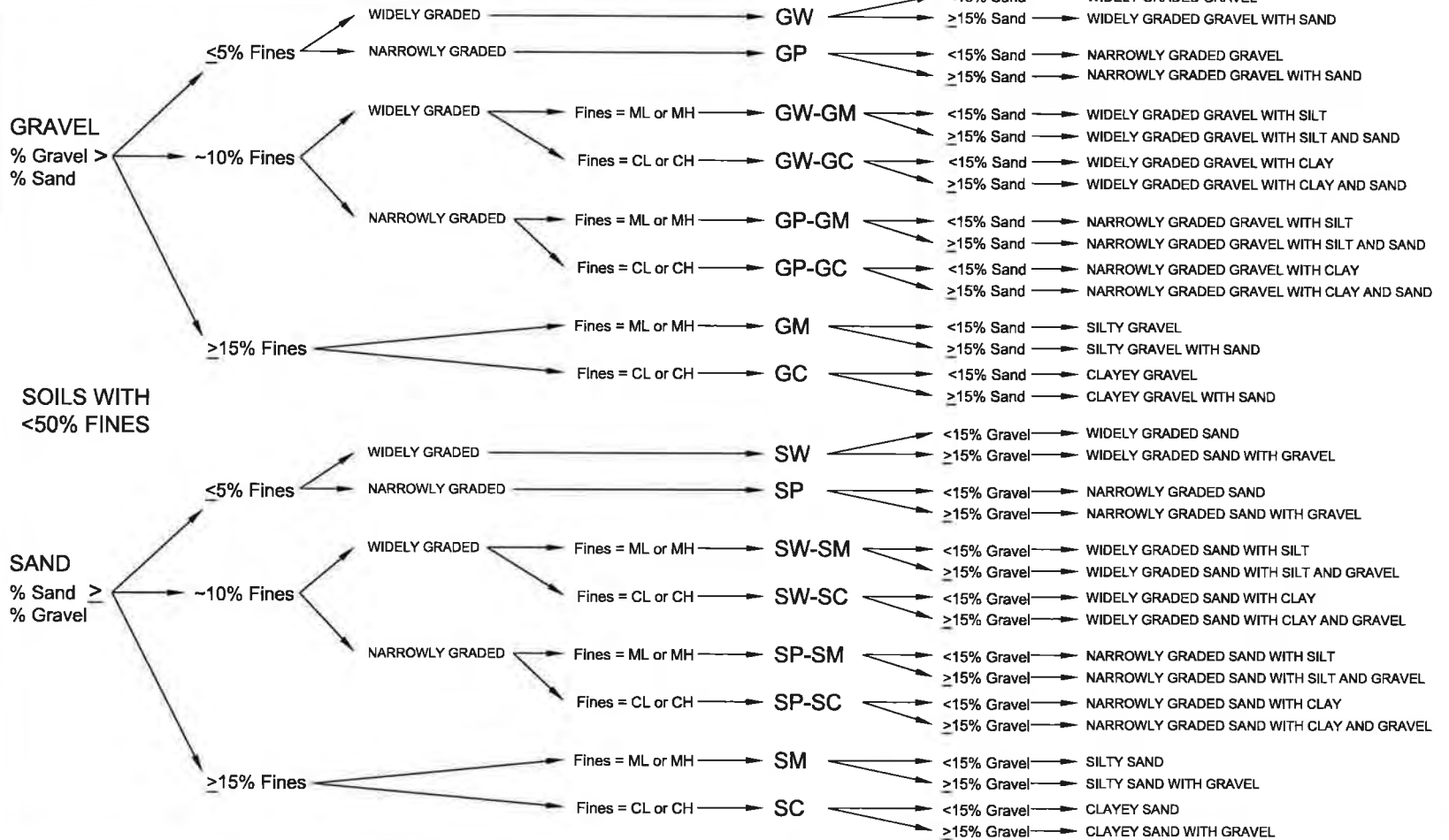
VISUAL-MANUAL DESCRIPTIONS

GROUP SYMBOL

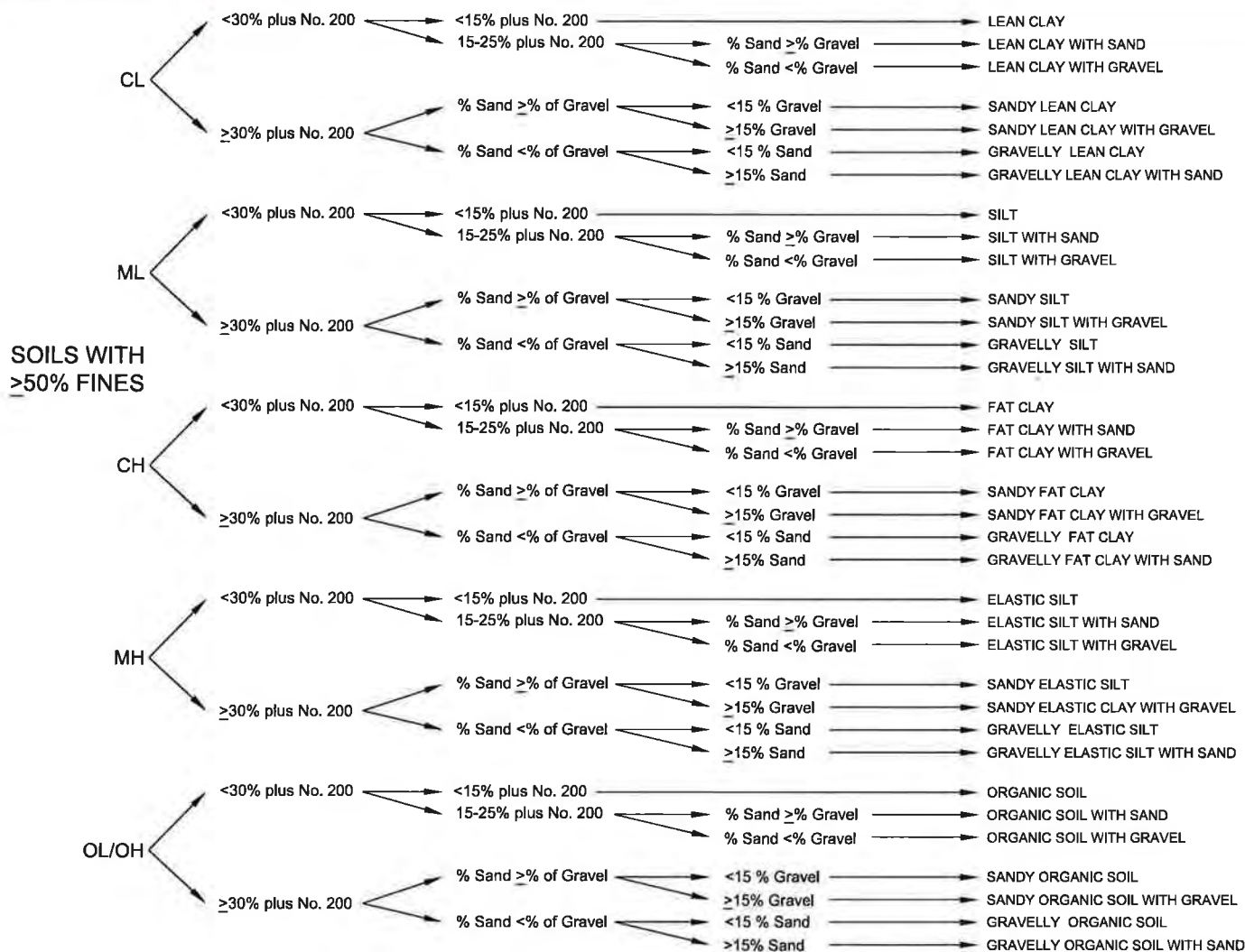
GROUP NAME



TYPICAL SOIL COLORS



1. GROUP NAME and (SYMBOL)
2. Structure, if any. (stratified layer thicknesses, lenses, varves, gradational changes)
3. Describe sand, gravel and fines components, with percentages, in order of predominance. Include max gravel size. For test pits give percent cobbles and boulders, by volume, and include max size.
4. Color
5. Sheen, odor, roots, ash, brick, cementation, reaction with HCL, etc.
6. "Fill," local name or geologic name, if known



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
MH	Elastic Silt	Low to medium	None to slow	Low to medium
CH	Fat Clay	High to very high	None	High

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 after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit

1. GROUP NAME and (SYMBOL)

PEAT

2. Describe fines, sand, and gravel components, in order of predominance. Include plasticity of fines. Include percentages of sand and gravel.

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 fines.

3. Color

4. Sheen, odor, roots, ash, brick, cementation, torvane and penetrometer results, etc.

5. "Fill," local name or geologic name, if known

* 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
Unless otherwise noted
ST: Shelby Tube
PA: Power Auger
DB: Diamond Bit
AS: Auger Sample
JS: Jar Sample
VS: Vane Shear

OS: Osterburg Sampler
HSA: Hollow Stem Auger
WS: Wash Sample
FT: Fish Tail
RB: Rock Bit
BS: Bulk Sample
PMT: Pressuremeter Test
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
WD: While Sampling
WD: While Drilling
AB: After Boring

WCI: Wet Cave-in
DCI: Dry Cave-in
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 Cohesive 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 AND LABORATORY PROCEDURES

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 placed 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.

FIELD AND LABORATORY PROCEDURES

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, trailer, 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.

FIELD AND LABORATORY PROCEDURES

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 (γ_d)

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).

FIELD AND LABORATORY PROCEDURES

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 and 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_a =atmospheric pressure (for unit normalization)

q_t =corrected cone tip resistance (tsf)

f_s =friction sleeve resistance (tsf)

$R_f = 100\% \cdot (f_s/q_t)$

u_2 =pore pressure behind cone tip (tsf)

u_0 =hydrostatic pressure

$$B_q = (u_2 - u_0) / (q_t - \sigma_{vo})$$

$$Q_t = (q_t - \sigma_{vo}) / \sigma'_{vo}$$

$$F_r = 100\% \cdot f_s / (q_t - \sigma_{vo})$$

$$I_c = ((3.47 - \log Q_t)^2 + (\log F_r + 1.22)^2)^{0.5} \quad 2$$

$$I_{SBT} = ((3.47 - \log(q_c/p_a))^2 + (\log F_r + 1.22)^2)^{0.5} \quad 23$$

$$I_{cJ\&D} = \sqrt{\{3 - \log(Q_t \cdot (1 - B_q))\}^2 + [1.5 + 1.3 \cdot \log(F_r)]^2} \quad 27$$

$$I_{cJ\&B} = \sqrt{\{3 - \log(Q_t \cdot (1 - B_q) + 1)\}^2 + [1.5 + 1.3 \cdot \log(F_r)]^2} \quad 28$$

K_o

$$K_o(1) \quad K_o = (1 - \sin \phi) OCR^{\sin \phi}$$

$$K_o(2) \quad K_o = 0.1(Q_t) \quad 1$$

Stress History

$$OCR = \sigma_p' / \sigma'_{vo}$$

$$OCR(1) \quad \sigma_p' = 0.33(q_t - \sigma_{vo}) - \text{clays} \quad 8$$

$$OCR(2) \quad \sigma_p' = 0.53(u_2 - u_0) - \text{clays} \quad 9$$

$$OCR(3) \quad \sigma_p' = 0.60(q_t - u_2) - \text{clays} \quad 9$$

$$OCR(4) \quad OCR = 0.25 Q_t^{1.25} - \text{clays} \quad 37$$

$$OCR(5) \quad OCR = \left[\frac{0.192 \cdot (q_t/p_a)^{0.22}}{(1 - \sin(\phi')) \cdot (\sigma'_{vo}/p_a)^{0.31}} \right]^{\frac{1}{\sin(\phi') - 0.27}} - \text{sands} \quad 35$$

$$OCR(6) \quad \sigma_p' = .101 \cdot p_a^{0.102} \cdot G_{max}^{0.478} \cdot \sigma'_{vo}{}^{0.420} - \text{all soils} \quad 36$$

N-Value

$$N_{60} = (q_t/p_a) / [8.5(1 - I_c/4.6)] \quad 6$$

Undrained Shear Strength

$$S_u(1) \quad S_u = (u_2 - u_0) / N_u \quad \text{where } 7 \leq N_u \leq 9 \quad 10$$

$$S_u(2) \quad S_u = (q_t - \sigma_{vo}) / N_{kT} \quad \text{where } 15 \leq N_{kT} \leq 20 \quad 11$$

$$S_u(3) \quad S_u = 0.091 \cdot ((\sigma'_{vo})^{0.2}) \cdot (q_t - \sigma_{vo})^{0.8} \quad 21$$

$$S_u(4) \quad S_u = (q_c - \sigma_{vo}) / N_k \quad \text{where } 15 \leq N_k \leq 20 \quad 11$$

$$S_u(5) \quad S_u = q_t / N_c \quad \text{where } XXX \leq N_c \leq YYY$$

$$S_u(6) \quad S_u = q_c / N_c \quad \text{where } XXX \leq N_c \leq YYY$$

Effective Cohesion

$$c' = 0.02 \cdot \sigma_p' \quad 38$$

Drained Friction Angle

$\phi' (1)$	$\phi' = 17.6 + 11.0 \log[q_t/(\sigma_{vo}')^{0.5}]$	1
$\phi' (2)$	$\phi' = \arctan[0.1 + 0.38 \log(q_t/\sigma_{vo}')]$	13
$\phi' (3)$	$\phi' = 30.8 \log[(f_s/\sigma_{vo}') + 1.26]$ (for clays or sands)	14
$\phi' (4)$	$\phi' = 29.5 B_q^{0.121} (0.256 + 0.33 B_q + \log(Q_t))$	24

Unit Weight

$$\rho = \gamma/\gamma_w$$

$$\rho = 0.8 \log(V_s) \quad V_s \text{ in m/sec} \quad 17$$

Relative Density and Void Ratio

$D_R (1)$	$D_R = 100(q_{c1}/305)^{1/2}$	where, $q_{c1} = q_c/(\sigma_{vo}')^{1/2}$	1
$D_R (2)$	$D_R = -1.292 + 0.268 \ln(q_c \cdot (\sigma_{vo}')^{-0.5})$		18
$D_R (3)$	$D_R = (1/2.41) \cdot \ln(q_{c1}/15.7)$		3
$D_R (4)$	$D_R = 1/2.91 \cdot \ln((q_c/(61 \cdot \sigma_{vo}')^{0.71})) \cdot 100$		20
$D_R (5)$	$D_R = 100 \cdot (0.268 \cdot \ln((q_t/p_a)/(\sigma_{vo}'/p_a)^{0.5}) - 0.675)$		34

$$e_o = 1.099 - 0.204 \log(q_{c1}) \quad 1$$

$$E_D = 5 q_t \quad I_D = 2.0 - 0.14(R_f) \quad K_D = E_D/(34.7 \cdot I_D \cdot \sigma_{vo}')$$

Compressibility

$$M (1) = R_m E_D \text{ where } R_m = \text{function}(I_D, K_D) \text{ see the following table} \quad 22$$

$I_D \leq 0.6$	$R_M = 0.14 + 2.36 \log K_D$
$I_D \geq 3$	$R_M = 0.5 + 2 \log K_D$
$0.6 < I_D < 3$	$R_M = R_{M,D} + (2.5 - R_{M,D}) \log K_D$
	$R_{M,D} = 0.14 + 0.15(I_D - 0.6)$
$K_D > 10$	$R_M = 0.32 + 2.18 \log K_D$
$R_M < 0.85$	$R_M = 0.85$

$M (2)$	$M = q_c \cdot 10^{(1.09 - 0.0075 D_R)}$	sands	1
$M (3)$	$M = 8.25 (q_t - \sigma_{vo})$	clays	1
$M (4)$	$M = \alpha \cdot G_{max}$	where $0.02 < \alpha < 2$ and G_{max} is from Vs	33

Rigidity Index

$$I_R = \exp \left[\left(\frac{1.5}{M} + 2.925 \right) \cdot \left(\frac{q_t - \sigma_{vo}}{q_t - u_2} \right) - 2.925 \right] \text{ where } M = 6 \sin \phi' / (3 - \sin \phi') \quad 39$$

Sensitivity

$S_t (1)$	$S_t = 7.5/R_f$	2
$S_t (2)$	$S_t = (q_t - \sigma_{vo})/(15 \cdot f_s)$	2

Fines Content

$FC = [(3.58 - \log(q_t))^2 + (1.43 + \log(R_f))^2]^{1.8}$	4
$FC = [5.31(I_{cfs})^{2.31}] + 9.61$, where $I_{cfs} = [(1.95 - \log Q_t)^2 + (\log F_r + 1.78)^2]^{0.5}$	

Shear Wave Velocity

$$V_s(1) = 277 \cdot q_t^{0.13} \cdot \sigma'_{vo}{}^{0.27} \quad (\text{sands}) - \text{m/s and MPa} \quad 29$$

$$V_s(2) = 1.75 \cdot q_t^{0.627} \quad (\text{clays}) - \text{m/s and kPa} \quad 30$$

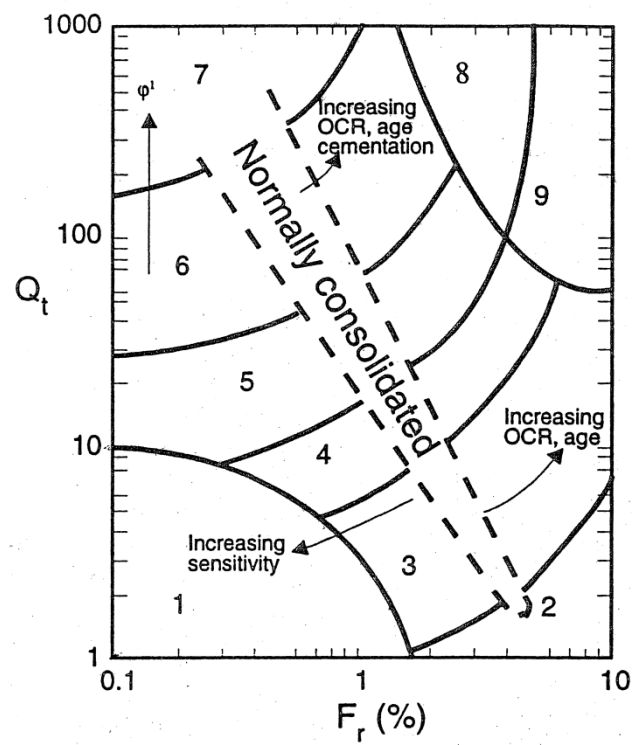
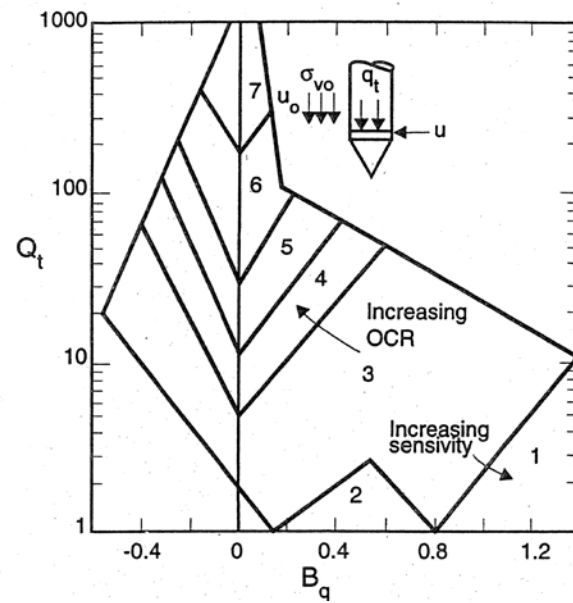
$$V_s(3) = (10.1 \cdot \log q_t - 11.4)^{1.67} \cdot \left(\frac{f_s}{q_t} \cdot 100\right)^{0.3} \quad (\text{all soils}) - \text{m/s and kPa} \quad 31$$

$$V_s(4) = 118.8 \cdot \log f_s + 18.5 \quad (\text{all soils}) - \text{m/s and kPa} \quad 32$$
$$G_{max} = \rho V_s^2$$

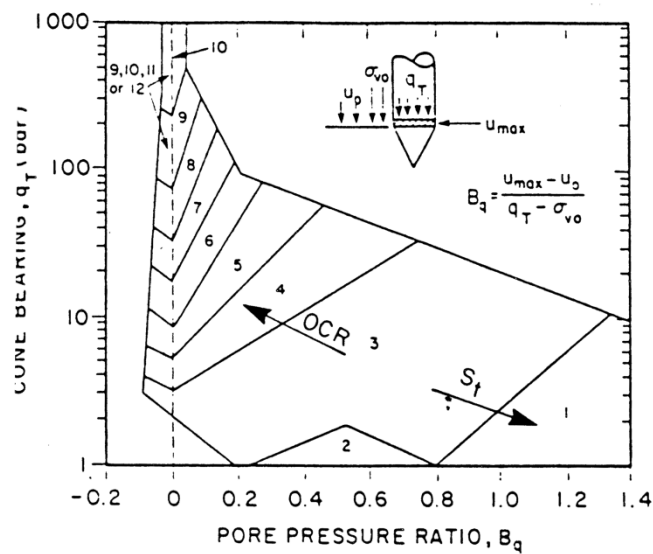
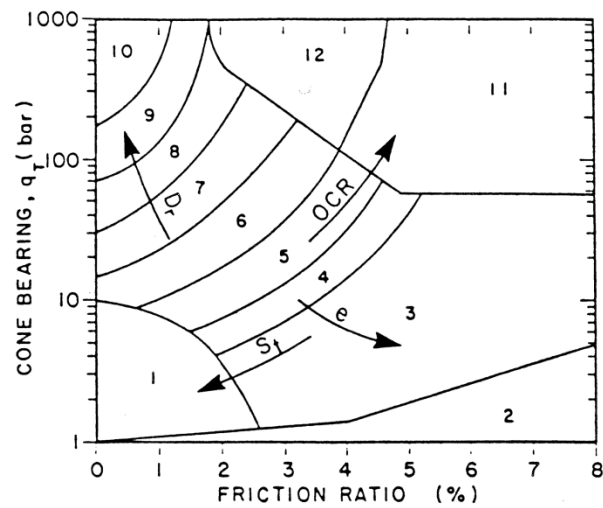
Hydraulic Conductivity

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)



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