

REFERENCE: R-2561CA

PROJECT: 34466

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<u>SHEET NO.</u>	<u>DESCRIPTION</u>
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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY COLUMBUS
 PROJECT DESCRIPTION NEW INTERCHANGE AT THE
INTERSECTION OF NC 87 AND NC 11
 SITE DESCRIPTION BRIDGE NO.372 ON NC 87 (-L-)
EASTBOUND LANE OVER WEYMAN CREEK

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2561CA	1	38

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

S. PAPKE
 MID-ATLANTIC DRILLING

INVESTIGATED BY S. PAPKE
 DRAWN BY C. DRISCOLL
 CHECKED BY T. WELLS
 SUBMITTED BY KLEINFELDER, INC.
 DATE AUGUST 2020

Prepared in the Office of:



Thomas R. Wells 8/18/20
 SIGNATURE DATE

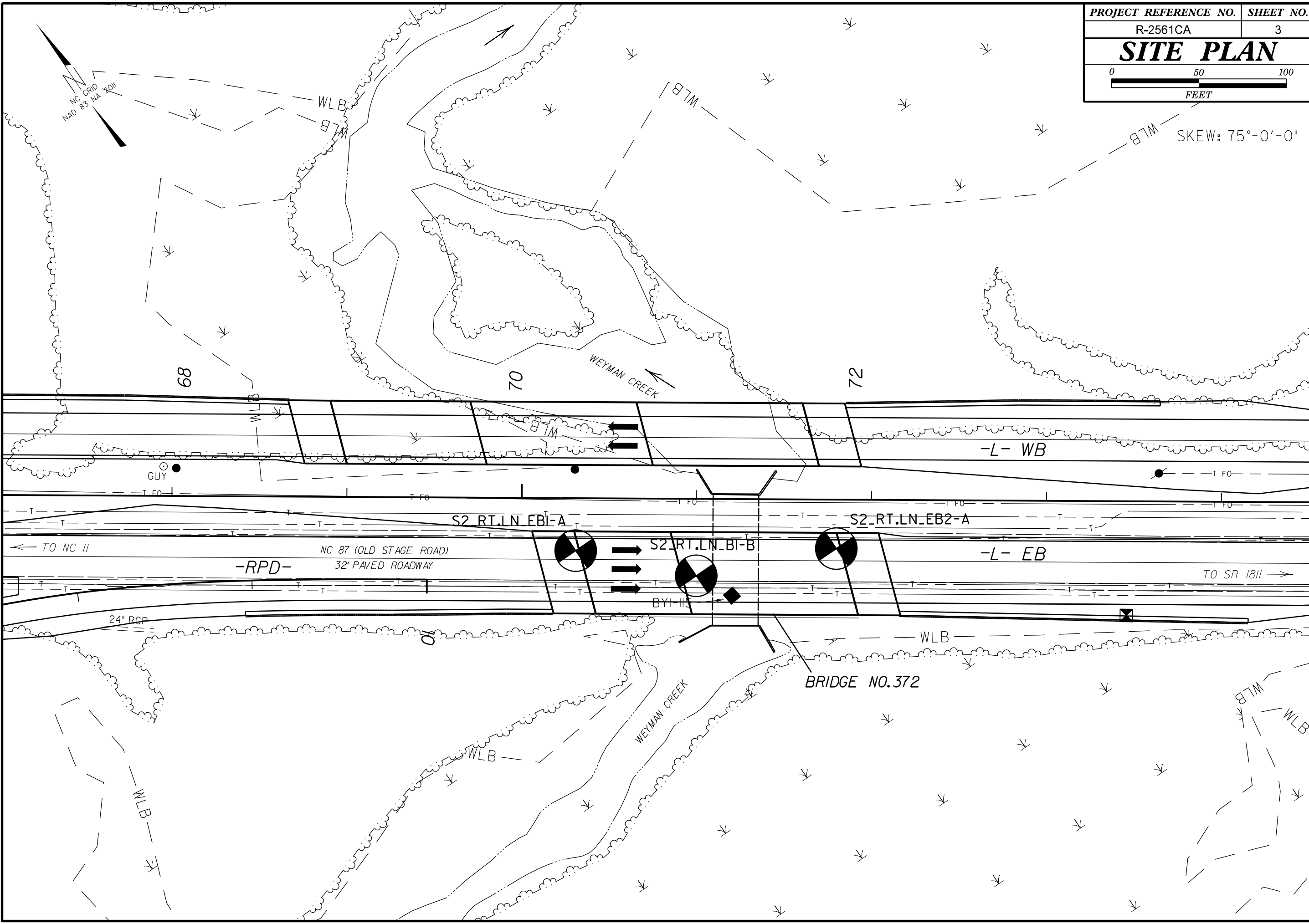
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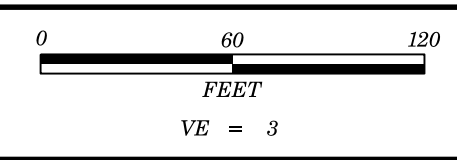
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																																																																																																														
<p>SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>										<p>WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</p>										<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p>										<p>ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																																																																																																														
<p style="text-align: center;">SOIL LEGEND AND AASHTO CLASSIFICATION</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th rowspan="2">GENERAL CLASS.</th> <th colspan="5">GRANULAR MATERIALS (≤ 35% PASSING #200)</th> <th colspan="5">SILT-CLAY MATERIALS (> 35% PASSING #200)</th> <th colspan="5">ORGANIC MATERIALS</th> </tr> <tr> <th>A-1</th> <th>A-2</th> <th>A-3</th> <th>A-4</th> <th>A-5</th> <th>A-6</th> <th>A-7</th> <th>A-1, A-2</th> <th>A-3</th> <th>A-4, A-5</th> <th>A-6, A-7</th> <th></th> <th></th> <th></th> <th></th> </tr> <tr> <td>GROUP CLASS.</td> <td>A-1-a</td> <td>A-1-b</td> <td>A-2-4</td> <td>A-2-5</td> <td>A-2-6</td> <td>A-2-7</td> <td>A-4</td> <td>A-5</td> <td>A-6</td> <td>A-7</td> <td>A-1, A-2</td> <td>A-3</td> <td>A-4, A-5</td> <td>A-6, A-7</td> <td></td> </tr> <tr> <td>SYMBOL</td> <td colspan="5">[Pattern]</td> <td colspan="5">[Pattern]</td> <td colspan="5">[Pattern]</td> </tr> <tr> <td>% PASSING #10 #40 #200</td> <td>50 MX 30 MX 15 MX</td> <td>50 MX 25 MX</td> <td>51 MN 35 MX 35 MX</td> <td>40 MX 35 MX 35 MX</td> <td>41 MN 41 MN 41 MN</td> <td>40 MX 41 MN 41 MN</td> <td>40 MX 41 MN 41 MN</td> <td>40 MX 41 MN 41 MN</td> <td>40 MX 41 MN 41 MN</td> <td>40 MX 41 MN 41 MN</td> <td>40 MX 41 MN 41 MN</td> <td>40 MX 41 MN 41 MN</td> <td>40 MX 41 MN 41 MN</td> <td>40 MX 41 MN 41 MN</td> <td>40 MX 41 MN 41 MN</td> </tr> <tr> <td>MATERIAL PASSING #40 LL PI</td> <td colspan="5"></td> <td colspan="5"></td> <td colspan="5"></td> </tr> <tr> <td>GROUP INDEX</td> <td colspan="5">0</td> <td colspan="5">4 MX</td> <td colspan="5">8 MX 12 MX 16 MX NO MX</td> </tr> <tr> <td>USUAL TYPES OF MAJOR MATERIALS</td> <td colspan="2">STONE FRAGS. 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ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.</p>										<p style="text-align: center;">WEATHERING</p> <p>FRESH: ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.</p> <p>VERY SLIGHT (V SL.): ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.</p> <p>SLIGHT (SL.): ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.</p> <p>MODERATE (MOD.): SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.</p> <p>MODERATELY SEVERE (MOD. SEV.): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i></p> <p>SEVERE (SEV.): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF</i></p> <p>VERY SEVERE (V SEV.): ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</i></p> <p>COMPLETE: ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. FABRIC MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.</p>									
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<p style="text-align: center;">TEXTURE OR GRAIN SIZE</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>U.S. STD. SIEVE SIZE OPENING (MM)</th> <th>4</th> <th>10</th> <th>40</th> <th>60</th> <th>200</th> <th>270</th> </tr> <tr> <td></td> <td>4.76</td> <td>2.00</td> <td>0.42</td> <td>0.25</td> <td>0.075</td> <td>0.053</td> </tr> <tr> <td>BOULDER (BLDR.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>COBBLE (COB.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>GRAVEL (GR.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>COARSE SAND (CS. SD.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>FINE SAND (F SD.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SILT (SL.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLAY (CL.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>GRAIN SIZE</td> <td>305</td> <td>75</td> <td>2.0</td> <td>0.25</td> <td>0.05</td> <td>0.005</td> </tr> <tr> <td>MM</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>IN.</td> <td>12</td> <td>3</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										U.S. STD. SIEVE SIZE OPENING (MM)	4	10	40	60	200	270		4.76	2.00	0.42	0.25	0.075	0.053	BOULDER (BLDR.)							COBBLE (COB.)							GRAVEL (GR.)							COARSE SAND (CS. SD.)							FINE SAND (F SD.)							SILT (SL.)							CLAY (CL.)							GRAIN SIZE	305	75	2.0	0.25	0.05	0.005	MM							IN.	12	3					<p style="text-align: center;">RECOMMENDATION SYMBOLS</p> <p>UNDERCUT</p> <p>SHALLOW UNDERCUT</p> <p>UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE</p> <p>UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK</p> <p>UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL</p>										<p style="text-align: center;">ROCK HARDNESS</p> <p>VERY HARD: CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.</p> <p>HARD: CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.</p> <p>MODERATELY HARD: CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.</p> <p>MEDIUM HARD: CAN BE GROUDED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.</p> <p>SOFT: CAN BE GROUDED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.</p> <p>VERY SOFT: CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.</p>																																																																				
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<p style="text-align: center;">INDURATION</p> <p>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p> <p>FRIABLE: RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.</p> <p>MODERATELY INDURATED: GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</p> <p>INDURATED: GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p> <p>EXTREMELY INDURATED: SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>										<p style="text-align: center;">NOTES:</p> <p>BENCH MARK: BY-115 AT STA. 7+20.16 -L- 55' RT (227,813 FT.N., 2,219,352 FT.E)</p> <p style="text-align: right;">ELEVATION: 24.22 FEET</p>																																																																																																																																																																		

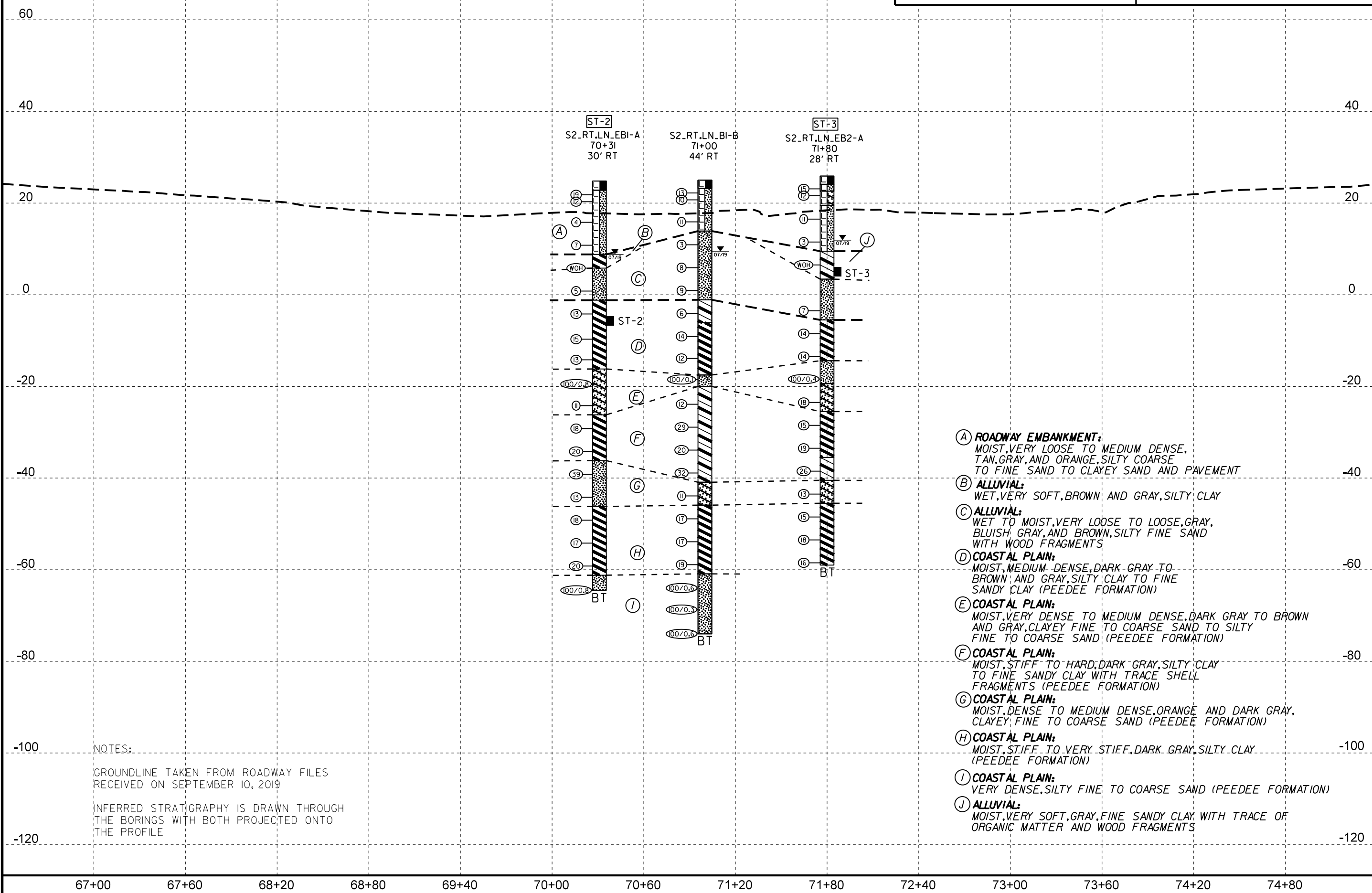
SKEW: 75°-0'-0"

NC GRID
NAD 83 NA 2011





PROJECT REFERENCE NO.	SHEET NO.
R-2561CA	4
PROFILE FOR BRIDGE NO. 372 ON NC 87 (-L-) EB OVER WEYMAN CREEK	



- (A) **ROADWAY EMBANKMENT:**
MOIST, VERY LOOSE TO MEDIUM DENSE, TAN, GRAY, AND ORANGE, SILTY COARSE TO FINE SAND TO CLAYEY SAND AND PAVEMENT
- (B) **ALLUVIAL:**
WET, VERY SOFT, BROWN AND GRAY, SILTY CLAY
- (C) **ALLUVIAL:**
WET TO MOIST, VERY LOOSE TO LOOSE, GRAY, BLuish GRAY, AND BROWN, SILTY FINE SAND WITH WOOD FRAGMENTS
- (D) **COASTAL PLAIN:**
MOIST, MEDIUM DENSE, DARK GRAY TO BROWN AND GRAY, SILTY CLAY TO FINE SANDY CLAY (PEEDEE FORMATION)
- (E) **COASTAL PLAIN:**
MOIST, VERY DENSE TO MEDIUM DENSE, DARK GRAY TO BROWN AND GRAY, CLAYEY FINE TO COARSE SAND TO SILTY FINE TO COARSE SAND (PEEDEE FORMATION)
- (F) **COASTAL PLAIN:**
MOIST, STIFF TO HARD, DARK GRAY, SILTY CLAY TO FINE SANDY CLAY WITH TRACE SHELL FRAGMENTS (PEEDEE FORMATION)
- (G) **COASTAL PLAIN:**
MOIST, DENSE TO MEDIUM DENSE, ORANGE AND DARK GRAY, CLAYEY FINE TO COARSE SAND (PEEDEE FORMATION)
- (H) **COASTAL PLAIN:**
MOIST, STIFF TO VERY STIFF, DARK GRAY, SILTY CLAY (PEEDEE FORMATION)
- (I) **COASTAL PLAIN:**
VERY DENSE, SILTY FINE TO COARSE SAND (PEEDEE FORMATION)
- (J) **ALLUVIAL:**
MOIST, VERY SOFT, GRAY, FINE SANDY CLAY WITH TRACE OF ORGANIC MATTER AND WOOD FRAGMENTS

NOTES:
GROUNDLINE TAKEN FROM ROADWAY FILES RECEIVED ON SEPTEMBER 10, 2019
INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
APPENDIX A
LABORATORY RESULTS

REFERENCE: R-2561CA

PROJECT: 34466

Prepared in the Office of:



LABORATORY SUMMARY SHEET FOR SOIL SAMPLES

SHEET 9

PROJECT NO.: 34466.4.1 (R-2561CA)

COUNTY: COLUMBUS

NEW INTERCHANGE AT INTERSECTION OF NC 87 AND NC 11

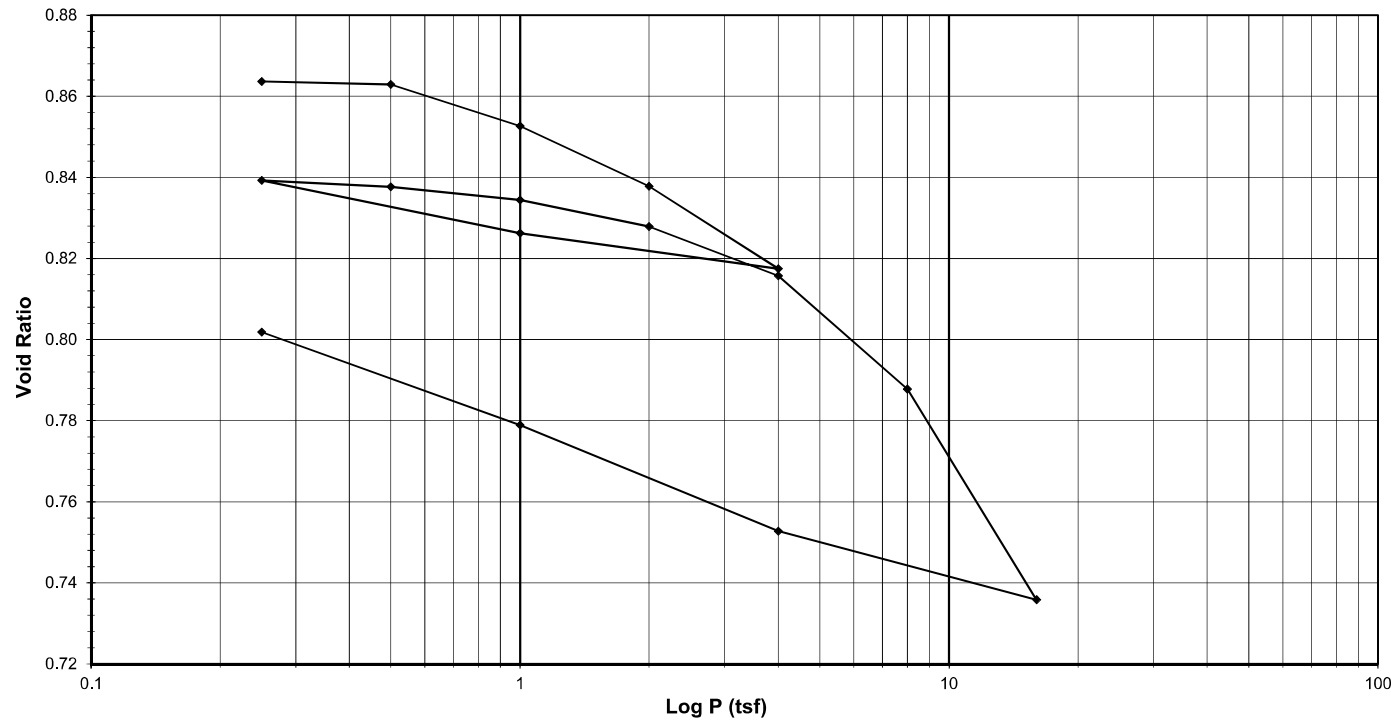
Sample No.	Boring Number	Alignment	Station	Offset	Sample Depth (ft.)	Natural Moisture Content (%)	Organic Content (%)	AASHTO Class.	Atterberg Limits			Gradation Results							
									L.L.	P.L.	P.I.	Retained #4 Sieve	Pass #10 Sieve	Pass #40 Sieve	Pass #200 Sieve	Coarse Sand (%)	Fine Sand (%)	Silt (%)	Clay (%)
ST-2	S2_RT.LN_EB1-A	-L-	70+31	30' RT	29.5 - 31.5	26.5	--	A-7-6	45	17	28	0.0	100.0	99.8	75.9	0.4	35.3	24.7	39.6
ST-3	S2_RT.LN_EB2-A	-L-	71+80	28' RT	19.9 - 21.9	--	--	A-6	37	17	20	0.0	100.0	99.9	74.9	0.1	36.6	25.1	38.2



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Reference R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By 129-0411 Date 7/19/2019 Approved By MPS Date 7/29/2019

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

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 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R470
 1 Division = 0.0001 (in.)

Sample Properties

	Initial	Final
<i>Water Content</i>		
Tare Number	TB-04	X-15
Wt. Tare & WS (g)	330.14	293.80
Wt. Tare & DS (g)	289.26	261.85
Wt. Water (g)	40.88	31.95
Wt. Tare (g)	135.09	142.28
Wt. DS (g)	154.17	119.57
Water Content (%)	26.52	26.72

	Initial	Final
<i>Sample Parameters</i>		
Sample Diameter (in)	2.5	2.5
Sample Height (in)	1.0000	0.9656
Sample Volume (cc)	80.44	77.67
Wt. Wet Sample + Ring (g)	365.80	366.04
Wt. of Ring (g)	214.73	214.73
Wt. of Wet Sample (g)	151.07	151.31
Wet Density (pcf)	117.19	121.56
Wet Density (g/cc)	1.88	1.95
Water Content (%)	26.52	26.72
Wt. of Dry Sample (g)	119.41	119.41
Dry Density (pcf)	92.63	95.93
Dry Density (g/cc)	1.48	1.54
Void Ratio	0.8660	0.8018
Saturation (%)	84.81	92.31
Specific Gravity	2.77	Measured

Test Data Summary

Applied Pressure (tsf)	Final Dial Reading (div)	Machine Deflection (div)	Corrected Reading (div)	Height of Sample (mm)	Volume (cc)	Dry Density (g/cc)	Void Ratio
Seating	0	0	0	25.400	80.440	1.48443	0.86603
0.25	35.5	22.8	12.7	25.368	80.338	1.48632	0.86366
0.5	60.9	44.2	16.7	25.358	80.305	1.48692	0.86291
1	132.4	60.5	71.9	25.217	79.861	1.49519	0.85261
2	244.9	93.6	151.3	25.016	79.223	1.50723	0.83780
4	390.8	130.5	260.3	24.739	78.346	1.52411	0.81746
1	296.4	83.0	213.4	24.858	78.724	1.51680	0.82622
0.25	196.3	52.7	143.6	25.035	79.285	1.50606	0.83923
0.5	210.1	58.3	151.8	25.014	79.219	1.50732	0.83770
1	244.4	74.9	169.5	24.969	79.076	1.51003	0.83440
2	304.6	100.0	204.6	24.880	78.794	1.51544	0.82786
4	402.9	133.4	269.5	24.715	78.272	1.52555	0.81574
8	589.3	169.9	419.4	24.335	77.066	1.54942	0.78777
16	923.9	226.1	697.8	23.628	74.827	1.59579	0.73582
4	768.7	161.7	607.1	23.858	75.557	1.58037	0.75275
1	578.7	111.7	466.9	24.214	76.684	1.55715	0.77890
0.25	417.0	73.0	344.0	24.526	77.673	1.53732	0.80184

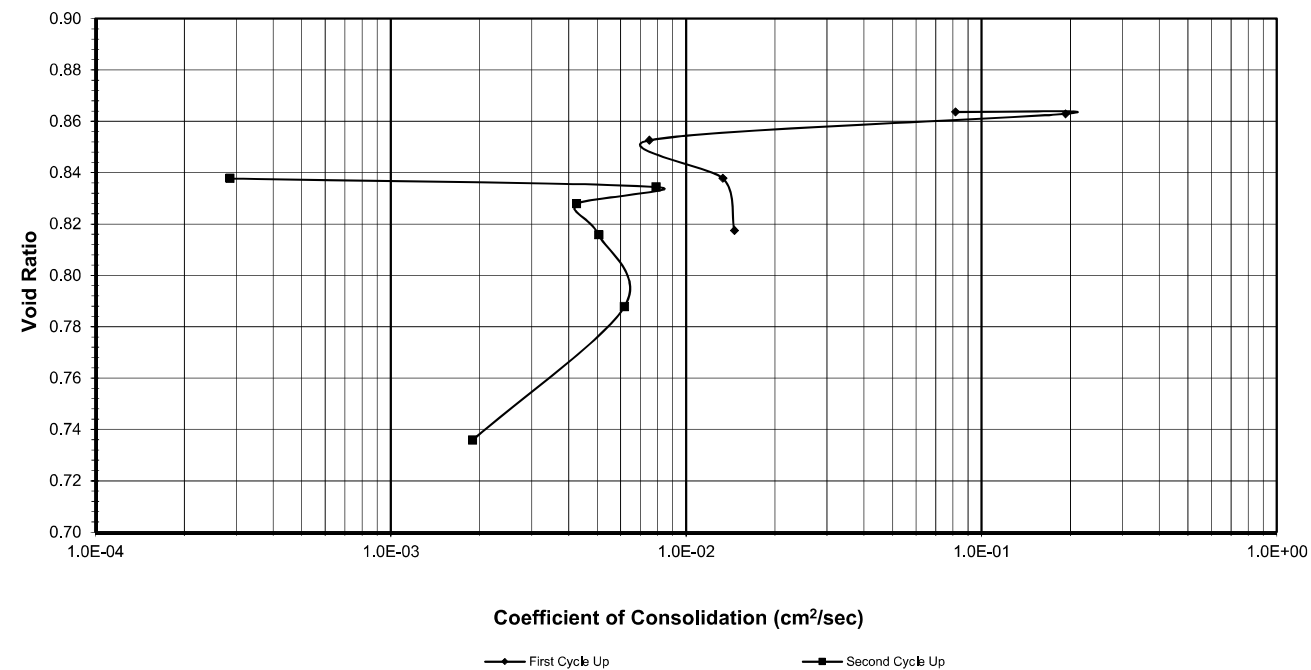
Tested By 129-0411 Date 7/19/2019 Input Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Reference R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By 129-0411 Date 7/19/2019 Input Checked By GEM Date 7/29/2019

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Reference R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R470
 1 Division = 0.0001 (in.)

Sample Properties	Initial	Final
Water Content		
Tare Number	TB-04	X-15
Wt. Tare & WS (g)	330.14	293.80
Wt. Tare & DS (g)	289.26	261.85
Wt. Water (g)	40.88	31.95
Wt. Tare (g)	135.09	142.28
Wt. DS (g)	154.17	119.57
Water Content (%)	26.52	26.72
Sample Parameters		
Sample Diameter (in)	2.5	2.5
Sample Height (in)	1.000	0.966
Sample Volume (cc)	80.44	77.67
Wt. Wet Sample + Ring (g)	365.80	366.04
Wt. of Ring (g)	214.73	214.73
Wt. of Wet Sample (g)	151.07	151.31
Wet Density (pcf)	117.19	121.56
Wet Density (g/cc)	1.88	1.95
Water Content (%)	26.52	26.72
Wt. of Dry Sample (g)	119.41	119.41
Dry Density (pcf)	92.63	95.93
Dry Density (g/cc)	1.48	1.54
Void Ratio	0.8660	0.8018
Saturation (%)	84.81	92.31
Specific Gravity	2.77	Measured

Load Increment (tsf)	Dial Reading @ t ₅₀ (div)	Machine Deflection (div)	C _v Test Data Summary		Time t ₅₀ (min.)	C _v (cm ² /sec)
			Corrected Dial Reading @ t ₅₀ (div)	Sample Height @ t ₅₀ (cm)		
0 - 0.25	16.5	22.8	-6.3	2.542	0.07	0.08158
0.25 - 0.5	45.8	44.2	1.6	2.540	0.03	0.19251
0.5 - 1.0	100.7	60.5	40.2	2.530	0.70	0.00750
1.0 - 2.0	192.7	93.6	99.1	2.515	0.39	0.01331
2.0 - 4.0	317.3	130.5	186.8	2.493	0.35	0.01457
4.0 - 1.0	NA	83.0	NA	NA	NA	NA
1.0 - 0.25	NA	52.7	NA	NA	NA	NA
0.25 - 0.5	205.1	58.3	146.8	2.503	18.00	0.00029
0.5 - 1.0	226.1	74.9	151.2	2.502	0.65	0.00790
1.0 - 2.0	279.3	100.0	179.2	2.494	1.20	0.00426
2.0 - 4.0	359.1	133.4	225.7	2.483	1.00	0.00506
4.0 - 8.0	506.3	169.9	336.4	2.455	0.80	0.00618
8.0 - 16.0	776.7	226.1	550.6	2.400	2.50	0.00189
16.0 - 4.0	NA	161.7	NA	NA	NA	NA
4.0 - 1.0	NA	111.7	NA	NA	NA	NA
1.0 - 0.25	NA	73.0	NA	NA	NA	NA

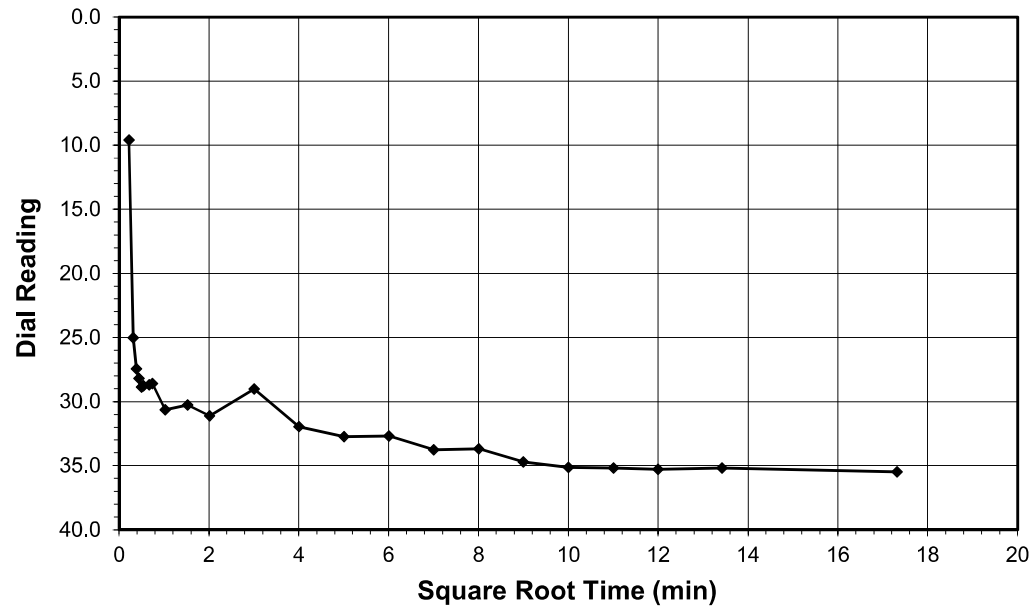
Tested By 129-0411 Date 7/19/2019 Input Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

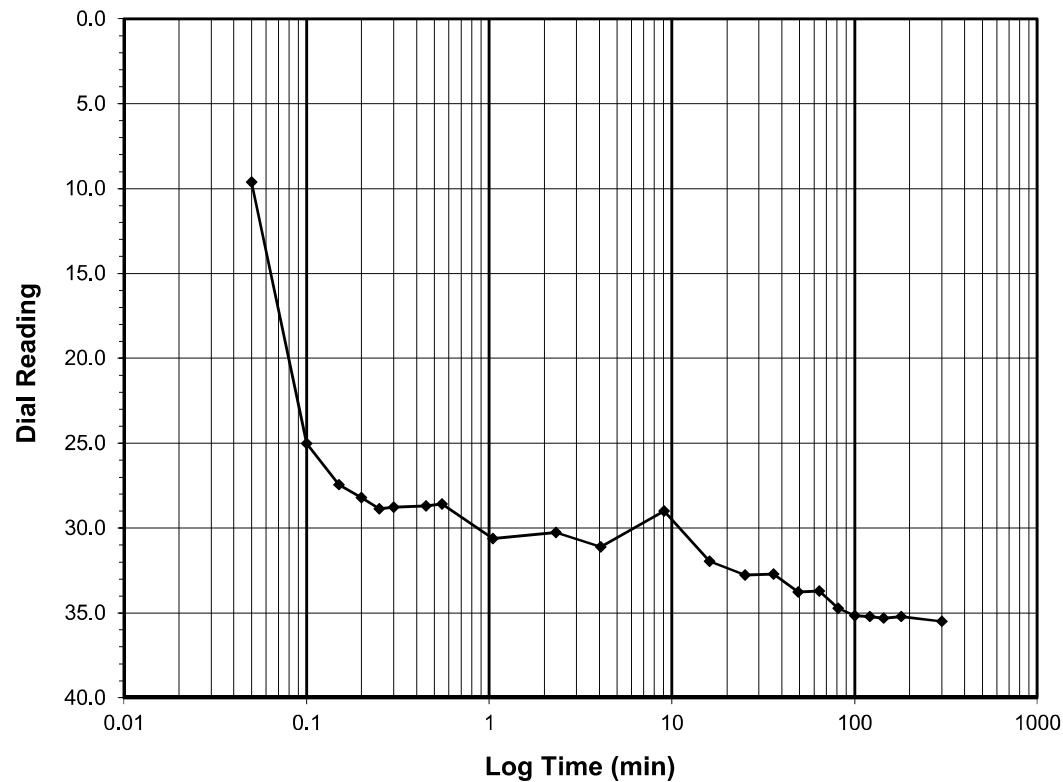
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.0-0.25
 Final Reading (div) 35.5
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 7/19/2019
 Start Time 10:46:49

Elapsed Time (min)	Dial Reading (div)
Initial	0.0
0.05	9.6
0.10	25.0
0.15	27.4
0.20	28.2
0.25	28.9
0.30	28.8
0.45	28.7
0.55	28.6
1.05	30.6
2.32	30.3
4.07	31.1
9.07	29.0
16.07	32.0
25.07	32.8
36.07	32.7
49.07	33.8
64.07	33.7
81.07	34.7
100.07	35.1
121.07	35.2
144.07	35.3
180.07	35.2
300.07	35.5



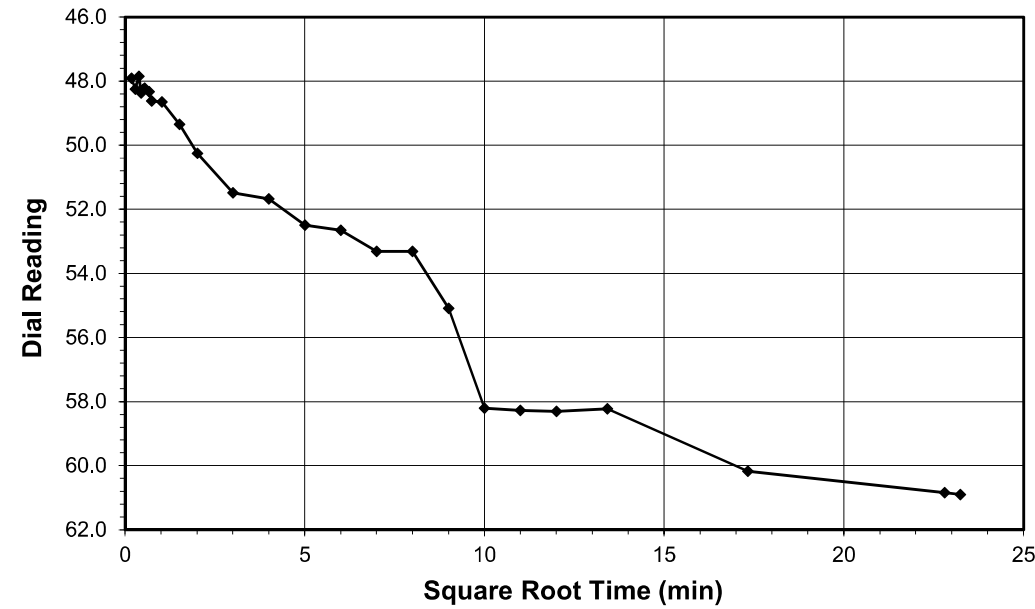
Tested By 129-0411 Date 7/19/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

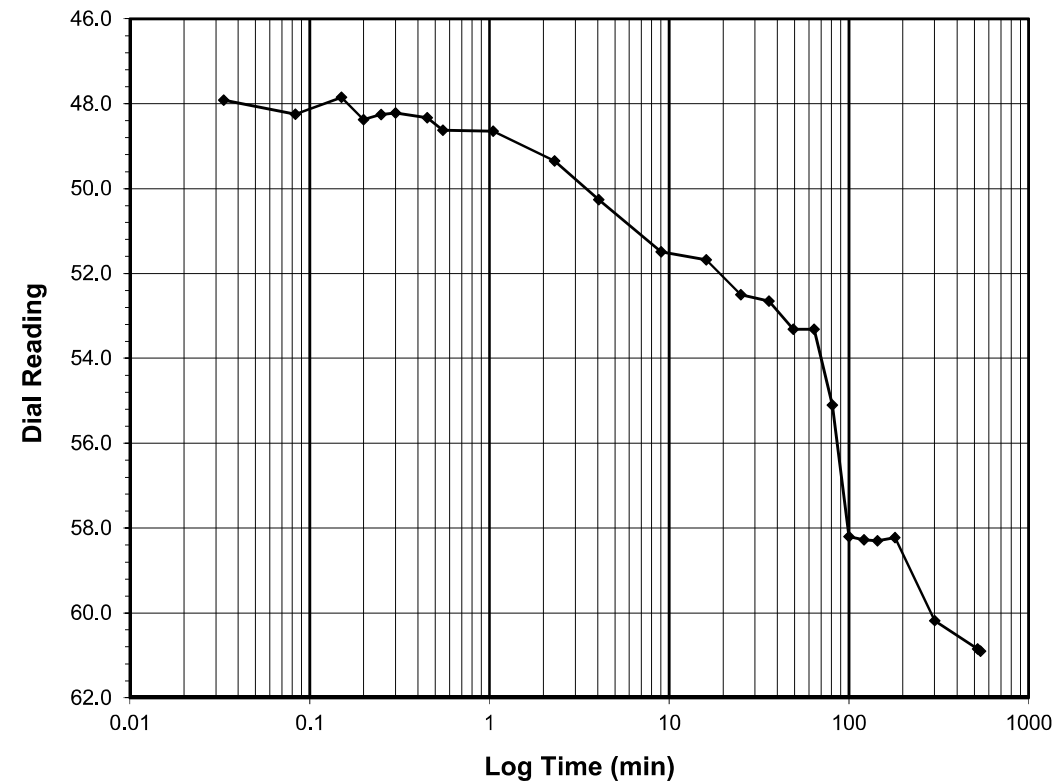
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
 Final Reading (div) 60.9
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 7/19/2019
 Start Time 19:47:08

Elapsed Time (min)	Dial Reading (div)
Initial	35.5
0.03	47.9
0.08	48.3
0.15	47.9
0.20	48.4
0.25	48.3
0.30	48.2
0.45	48.3
0.55	48.6
1.05	48.7
2.30	49.3
4.05	50.3
9.05	51.5
16.05	51.7
25.05	52.5
36.05	52.7
49.05	53.3
64.05	53.3
81.05	55.1
100.05	58.2
121.05	58.3
144.05	58.3
180.05	58.2
300.05	60.2
520.05	60.8
540.28	60.9



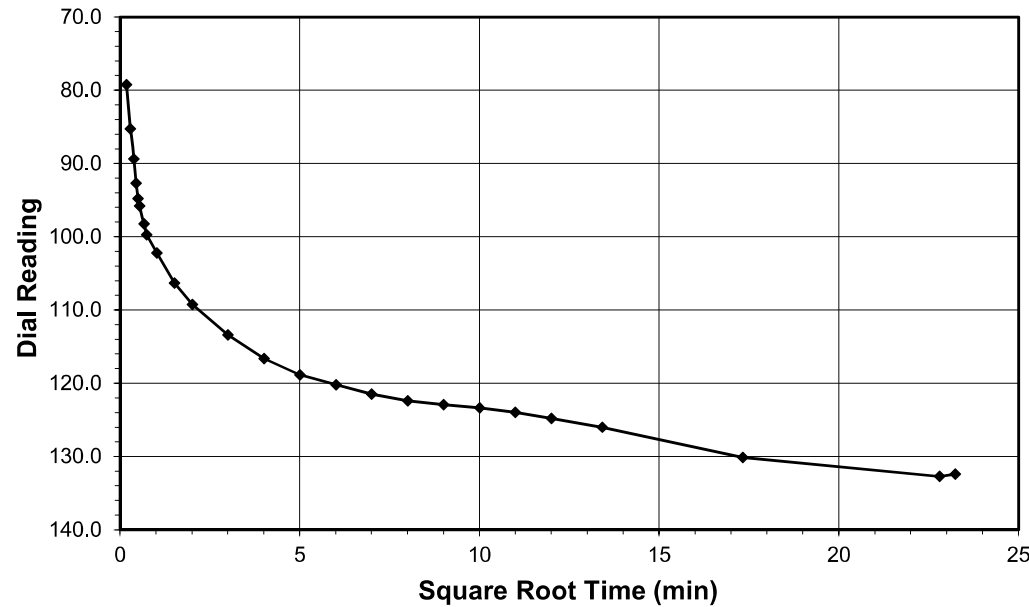
Tested By 129-0411 Date 7/19/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

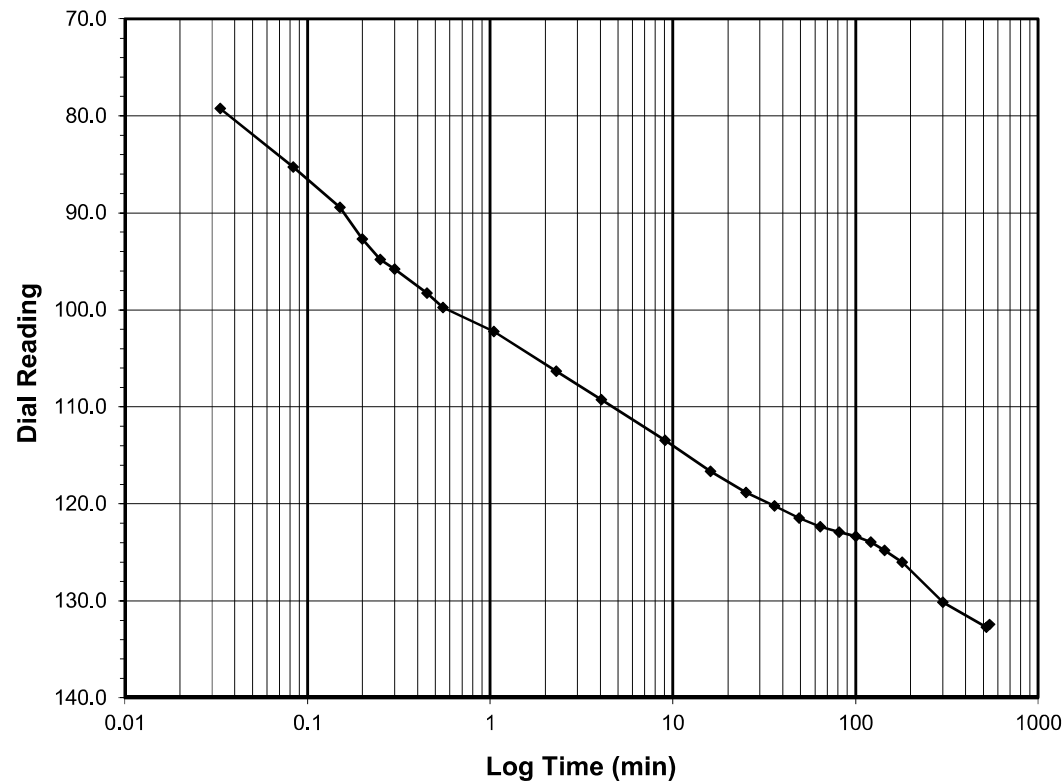
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 132.4
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 7/20/2019
 Start Time 4:47:26

Elapsed Time (min)	Dial Reading (div)
Initial	60.9
0.03	79.3
0.08	85.3
0.15	89.4
0.20	92.7
0.25	94.8
0.30	95.8
0.45	98.3
0.55	99.7
1.05	102.2
2.30	106.3
4.05	109.3
9.07	113.4
16.07	116.7
25.07	118.8
36.07	120.2
49.07	121.5
64.07	122.4
81.07	122.9
100.07	123.4
121.07	123.9
144.07	124.8
180.07	126.0
300.07	130.1
520.07	132.7
540.38	132.4



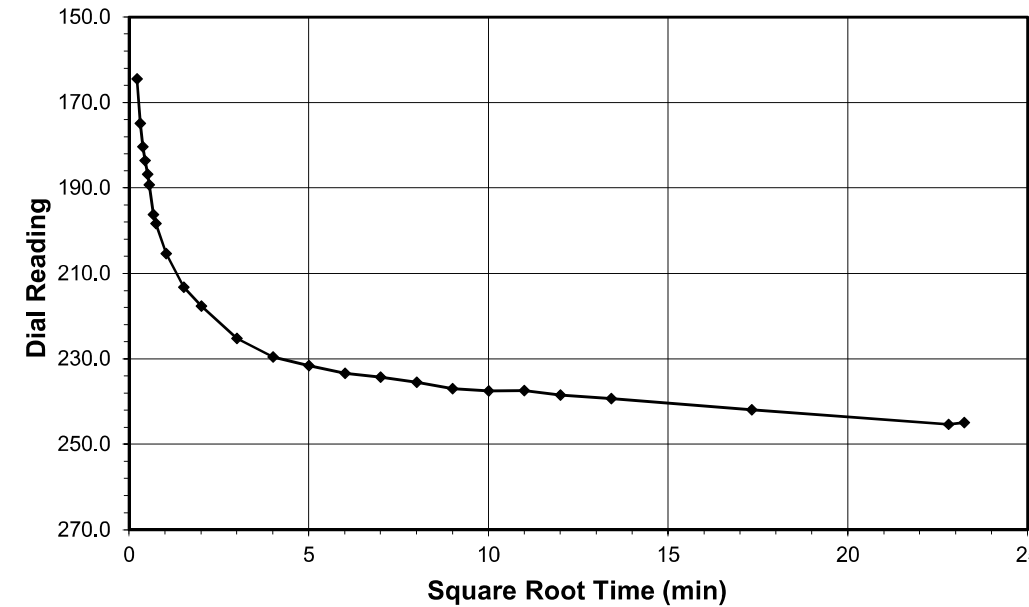
Tested By 129-0411 Date 7/20/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

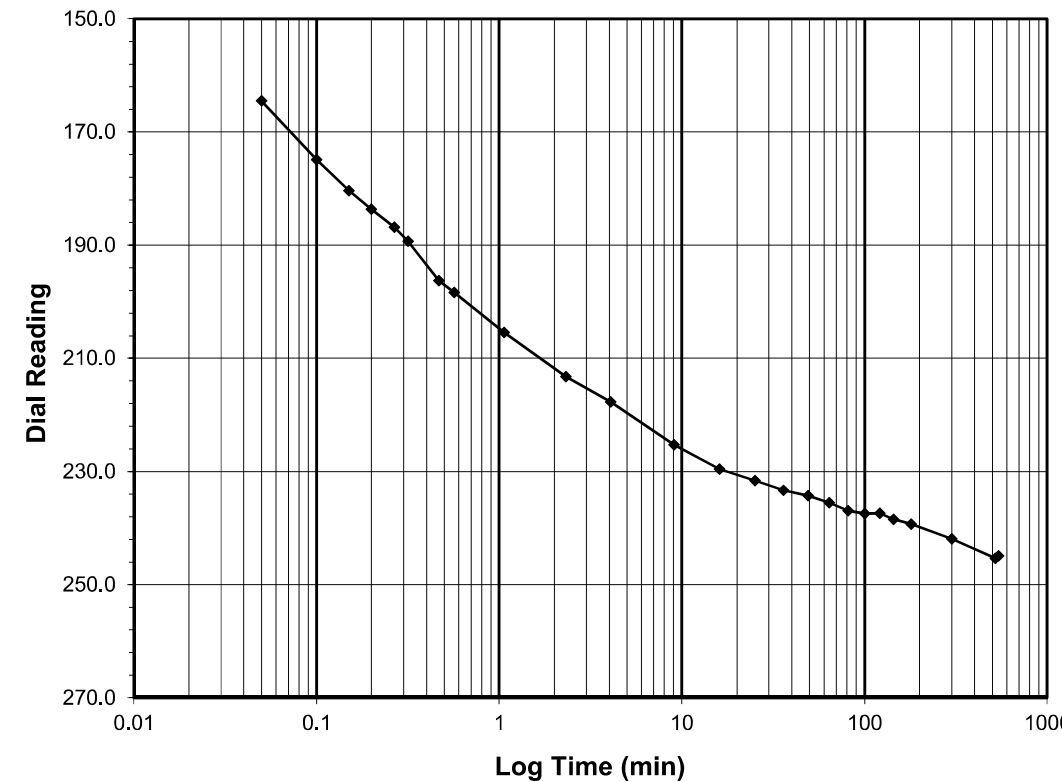
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 244.9
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 7/20/2019
 Start Time 13:47:50

Elapsed Time (min)	Dial Reading (div)
Initial	132.4
0.05	164.5
0.10	174.9
0.15	180.3
0.20	183.6
0.27	186.8
0.32	189.3
0.47	196.3
0.57	198.4
1.07	205.4
2.32	213.2
4.07	217.7
9.07	225.3
16.07	229.6
25.07	231.6
36.07	233.3
49.07	234.3
64.07	235.5
81.07	237.0
100.07	237.5
121.07	237.4
144.08	238.5
180.08	239.3
300.08	241.9
520.08	245.3
540.33	244.9



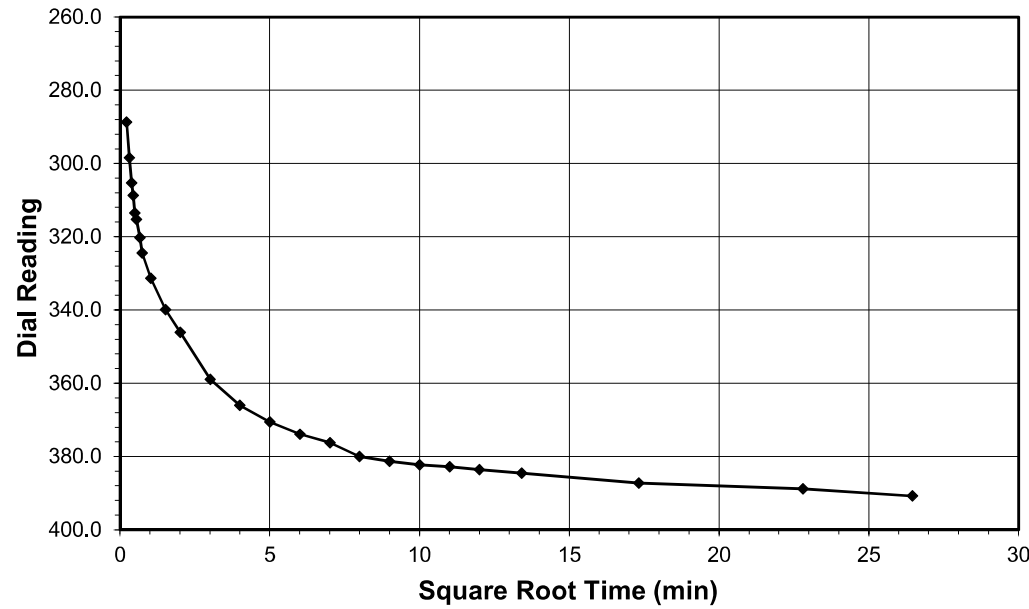
Tested By 129-0411 Date 7/20/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

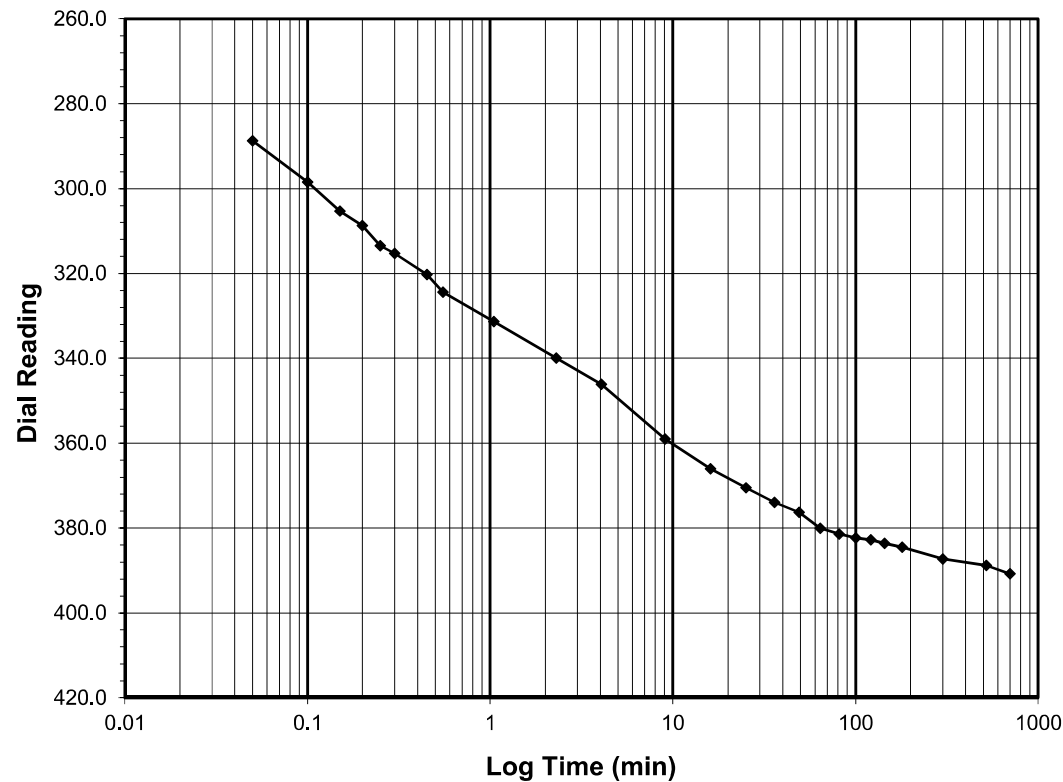
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 390.8
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 7/20/2019
 Start Time 22:48:10

Elapsed Time (min)	Dial Reading (div)
Initial	244.9
0.05	288.7
0.10	298.5
0.15	305.3
0.20	308.8
0.25	313.5
0.30	315.3
0.45	320.3
0.55	324.4
1.05	331.3
2.30	340.0
4.05	346.1
9.05	359.0
16.07	366.0
25.07	370.5
36.07	374.0
49.07	376.3
64.07	380.1
81.07	381.4
100.07	382.3
121.07	382.8
144.07	383.6
180.07	384.5
300.07	387.3
520.07	388.8
700.07	390.8



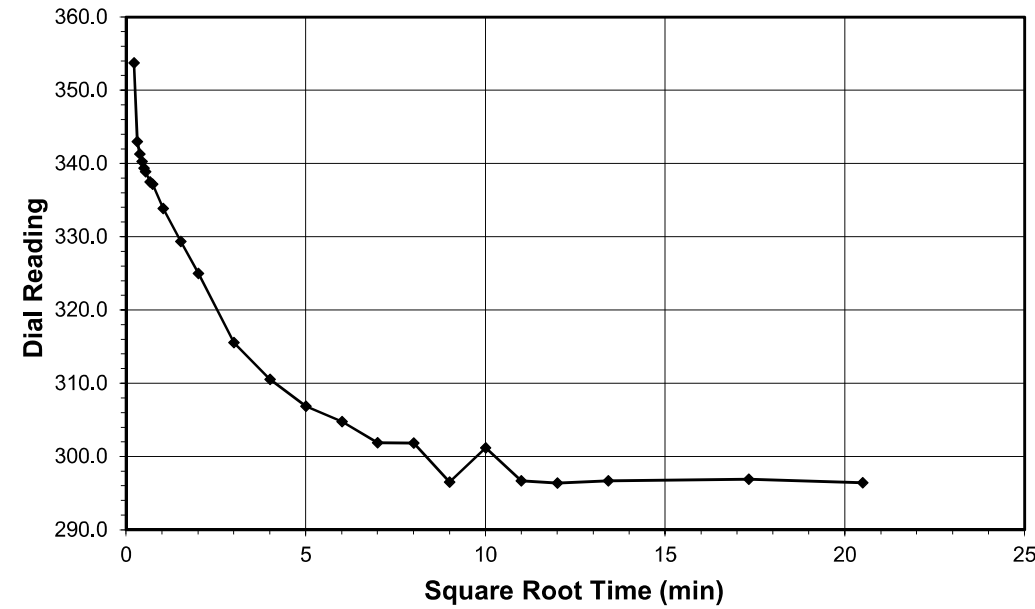
Tested By 129-0411 Date 7/20/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

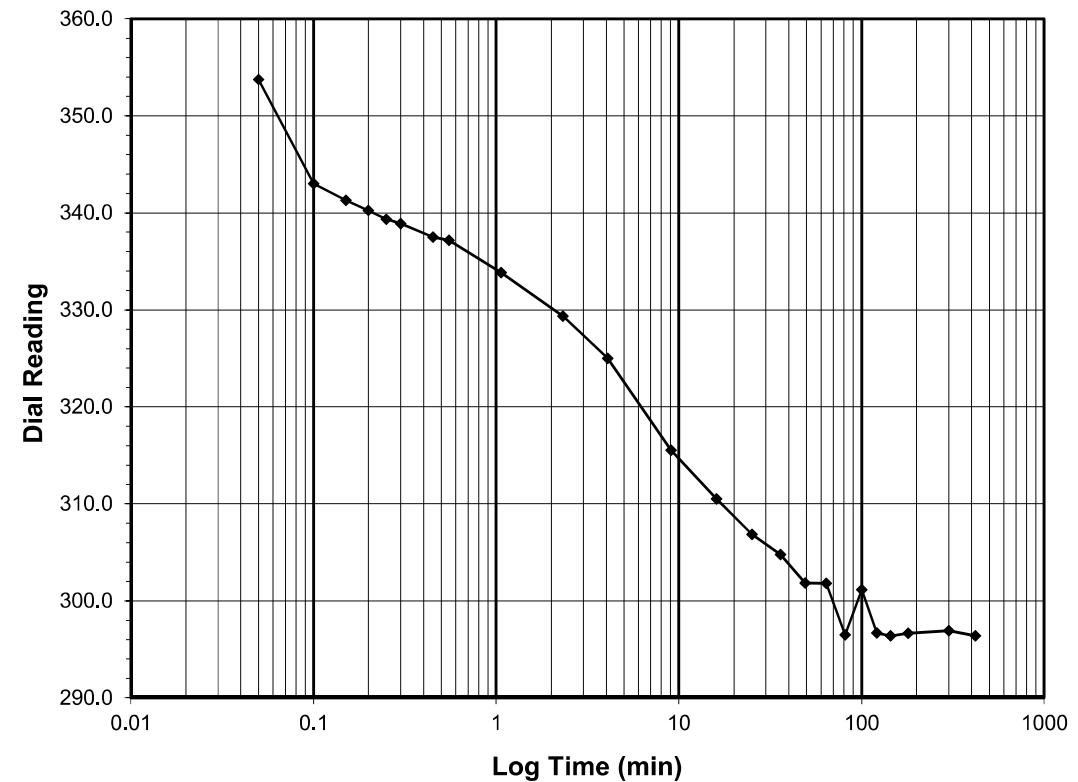
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
Final Reading (div) 296.4
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 7/21/2019
 Start Time 10:48:27

Elapsed Time (min)	Dial Reading (div)
Initial	390.8
0.05	353.7
0.10	343.0
0.15	341.3
0.20	340.3
0.25	339.3
0.30	338.9
0.45	337.5
0.55	337.2
1.07	333.8
2.32	329.3
4.07	325.0
9.07	315.6
16.07	310.5
25.07	306.9
36.07	304.8
49.07	301.9
64.08	301.8
81.08	296.5
100.08	301.2
121.08	296.7
144.08	296.4
180.08	296.7
300.08	296.9
420.12	296.4



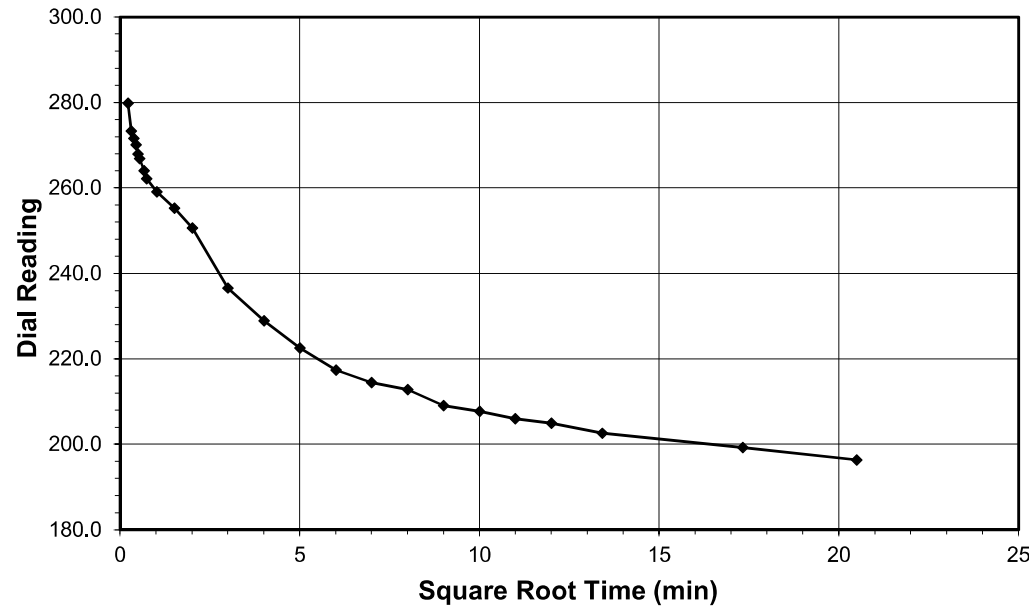
Tested By 129-0411 Date 7/21/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

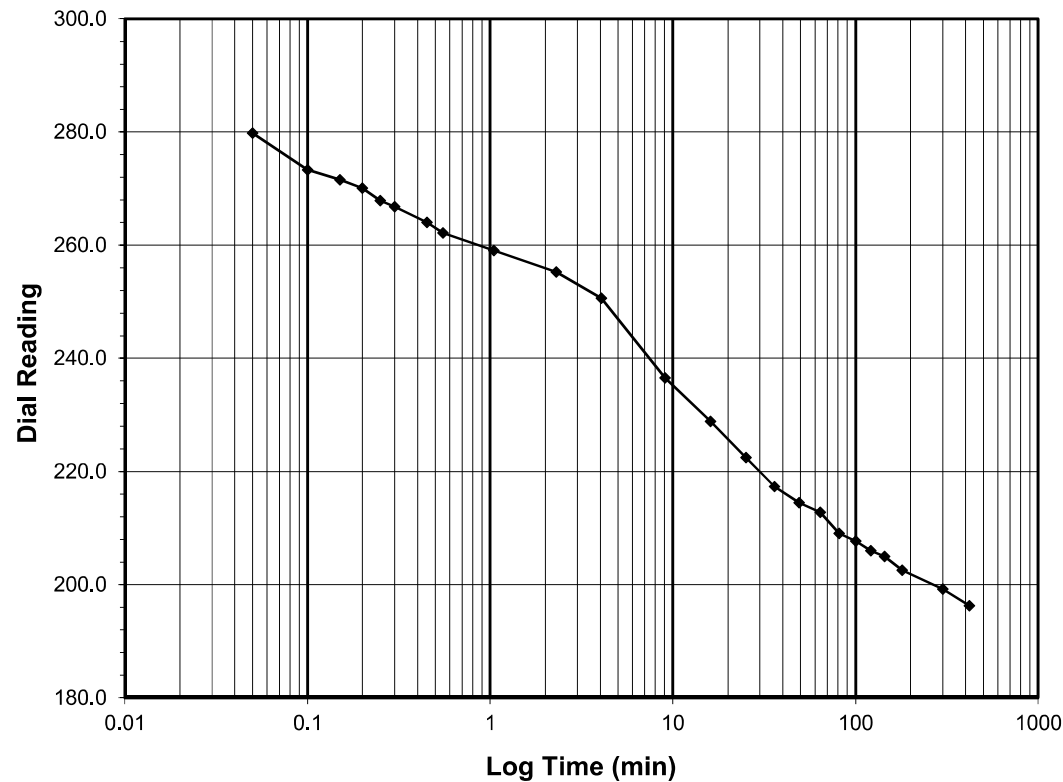
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
Final Reading (div) 196.3
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 7/21/2019
 Start Time 17:48:34

Elapsed Time (min)	Dial Reading (div)
Initial	296.4
0.05	279.8
0.10	273.3
0.15	271.6
0.20	270.1
0.25	267.9
0.30	266.8
0.45	264.0
0.55	262.1
1.05	259.0
2.30	255.3
4.05	250.6
9.07	236.5
16.07	228.9
25.07	222.5
36.07	217.4
49.07	214.5
64.07	212.8
81.07	209.1
100.07	207.7
121.07	206.0
144.07	205.0
180.07	202.6
300.07	199.2
420.10	196.3



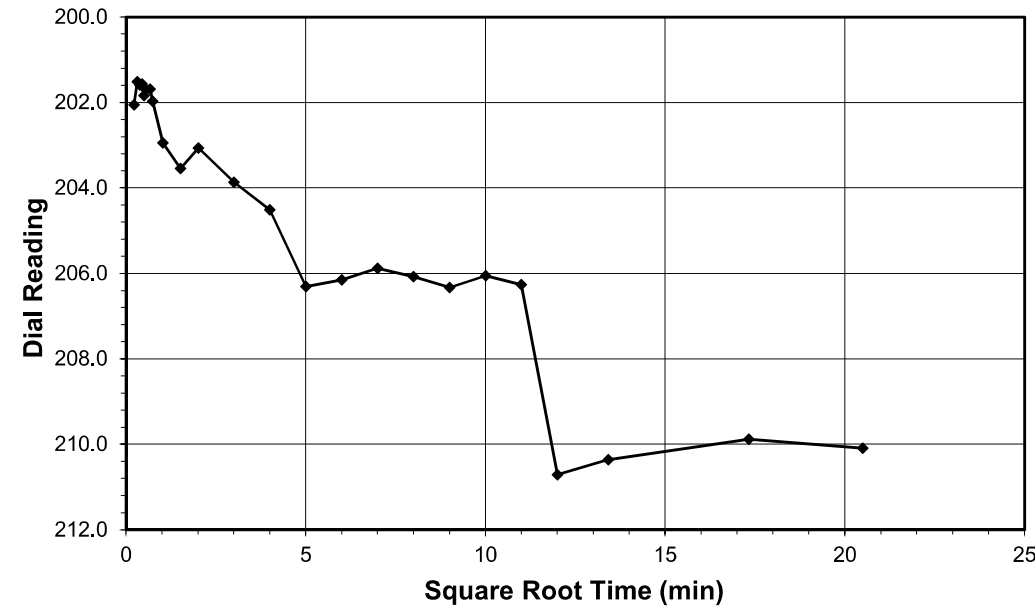
Tested By 129-0411 Date 7/21/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
Final Reading (div) 210.1
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 7/22/2019
 Start Time 0:48:40

Elapsed Time (min)	Dial Reading (div)
Initial	196.3
0.05	202.1
0.10	201.5
0.15	201.6
0.20	201.6
0.25	201.8
0.30	201.7
0.45	201.7
0.55	202.0
1.05	202.9
2.30	203.6
4.05	203.1
9.05	203.9
16.05	204.5
25.05	206.3
36.05	206.1
49.05	205.9
64.05	206.1
81.05	206.3
100.07	206.1
121.07	206.3
144.07	210.7
180.07	210.4
300.07	209.9
420.08	210.1



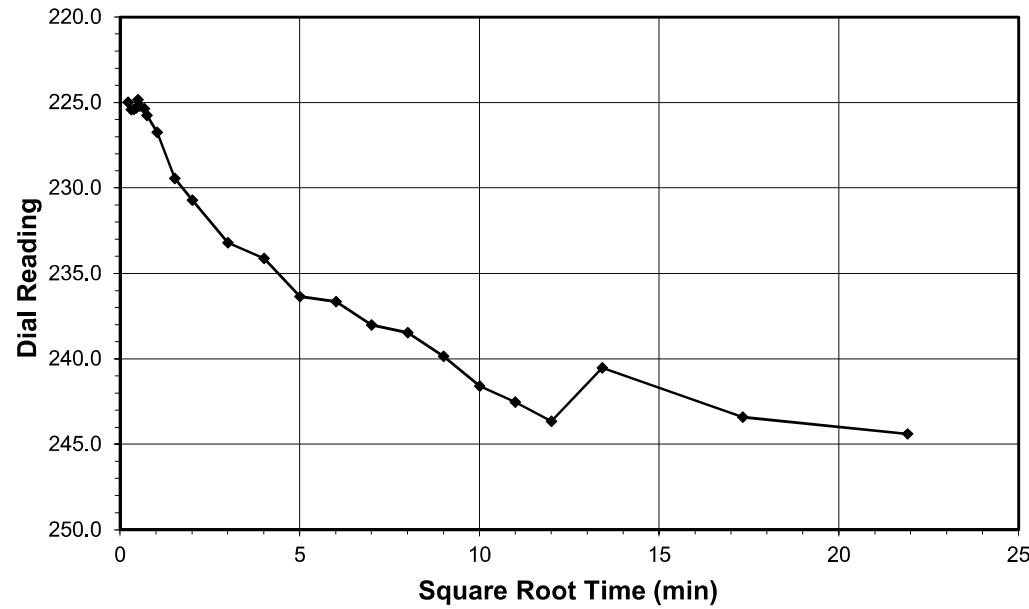
Tested By 129-0411 Date 7/22/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

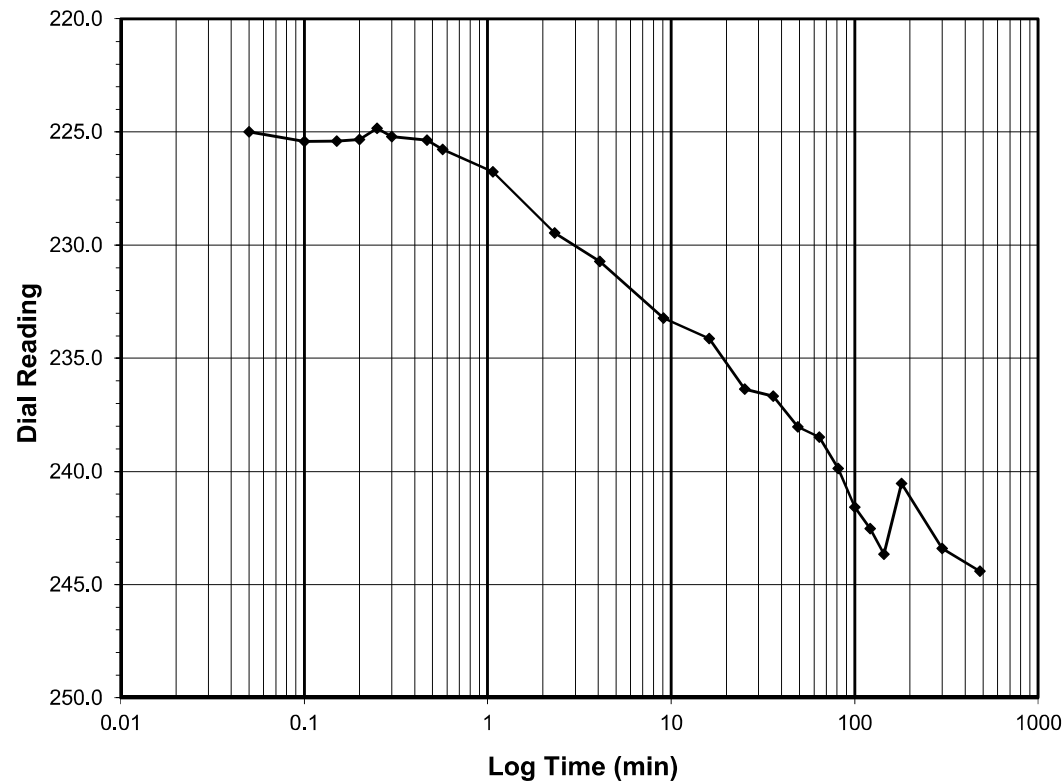
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 244.4
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 7/22/2019
 Start Time 7:48:45

Elapsed Time (min)	Dial Reading (div)
Initial	210.1
0.05	225.0
0.10	225.4
0.15	225.4
0.20	225.3
0.25	224.8
0.30	225.2
0.47	225.4
0.57	225.8
1.07	226.8
2.32	229.5
4.07	230.7
9.07	233.2
16.07	234.1
25.07	236.4
36.07	236.7
49.07	238.0
64.07	238.5
81.07	239.9
100.07	241.6
121.07	242.5
144.07	243.6
180.07	240.5
300.07	243.4
480.23	244.4



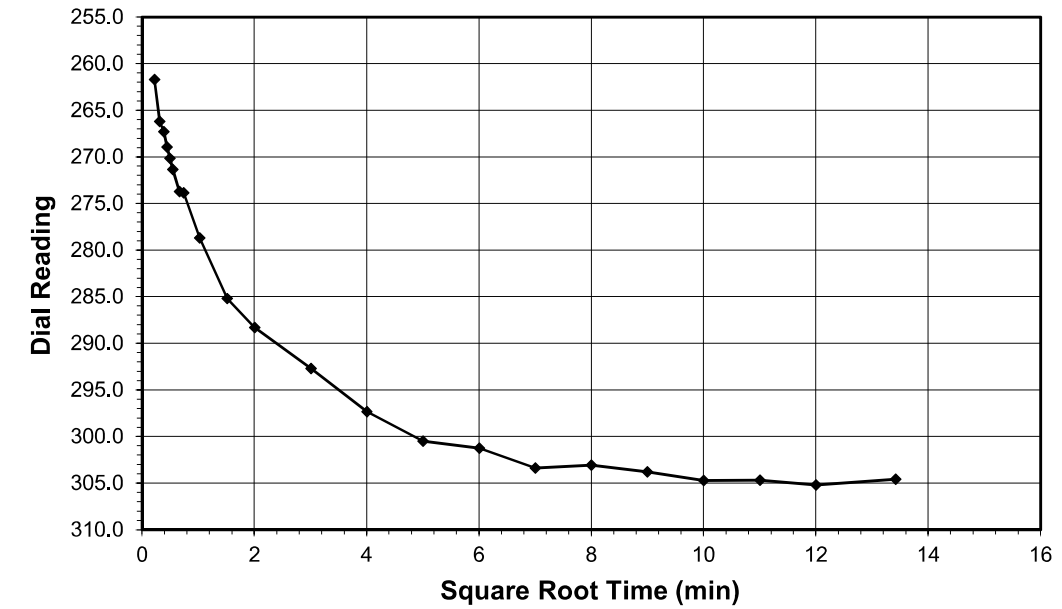
Tested By 129-0411 Date 7/22/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

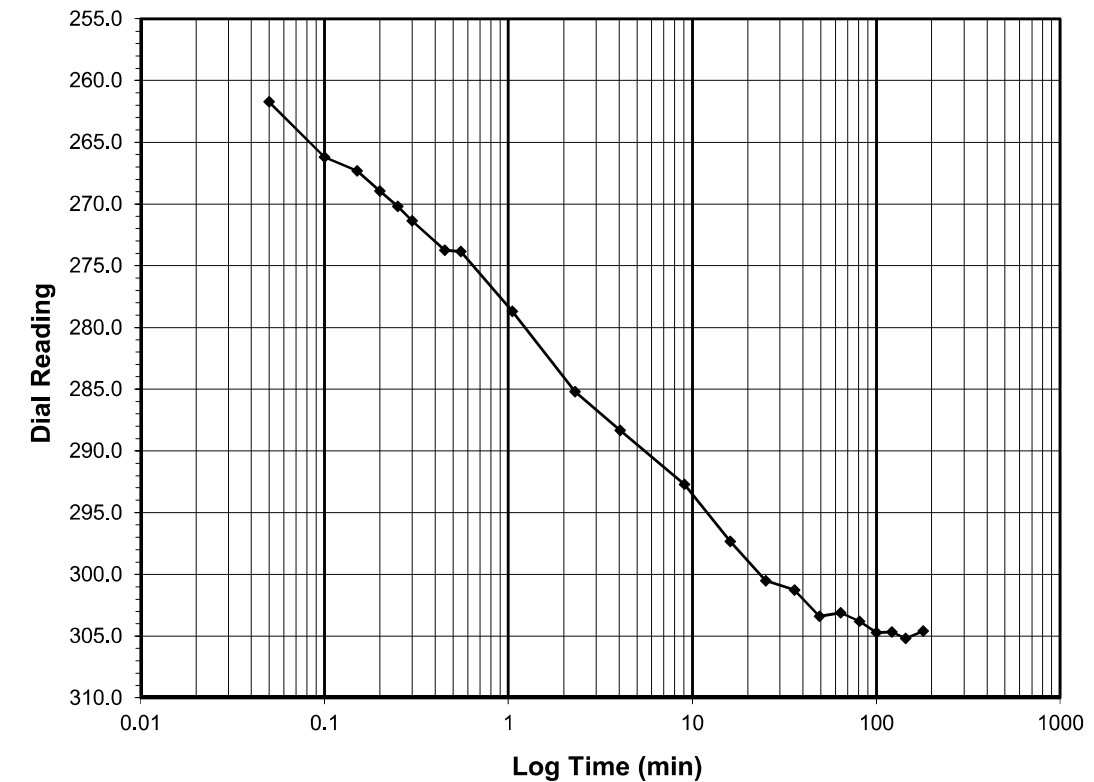
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 304.6
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 7/22/2019
 Start Time 15:48:59

Elapsed Time (min)	Dial Reading (div)
Initial	244.4
0.05	261.7
0.10	266.2
0.15	267.3
0.20	268.9
0.25	270.2
0.30	271.4
0.45	273.7
0.55	273.9
1.05	278.7
2.30	285.2
4.05	288.3
9.05	292.7
16.05	297.3
25.05	300.5
36.05	301.3
49.07	303.4
64.07	303.1
81.07	303.8
100.07	304.7
121.07	304.7
144.07	305.2
180.07	304.6



Tested By 129-0411 Date 7/22/2019 Checked By GEM Date 7/29/2019

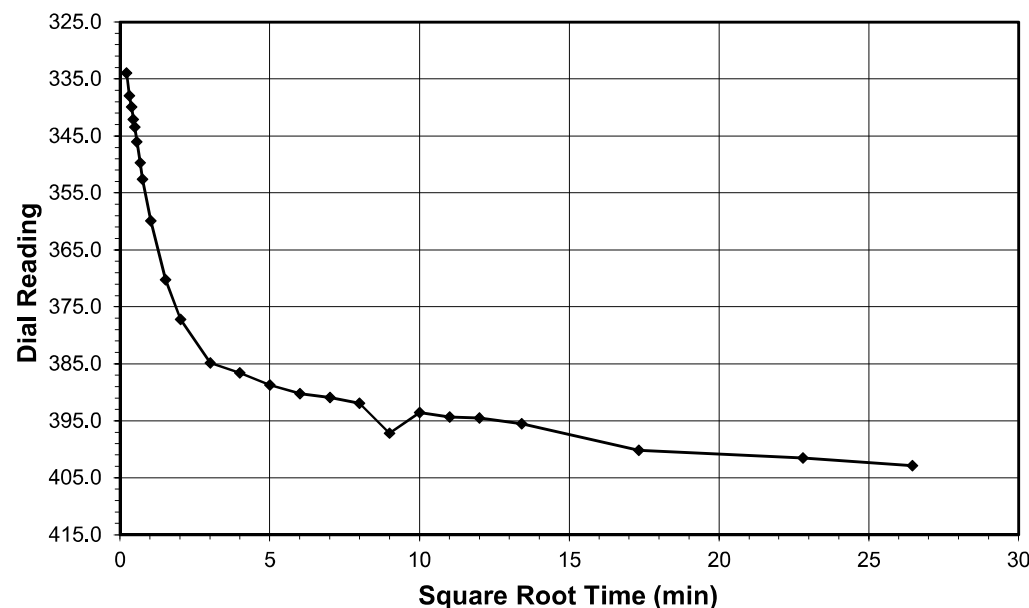


ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

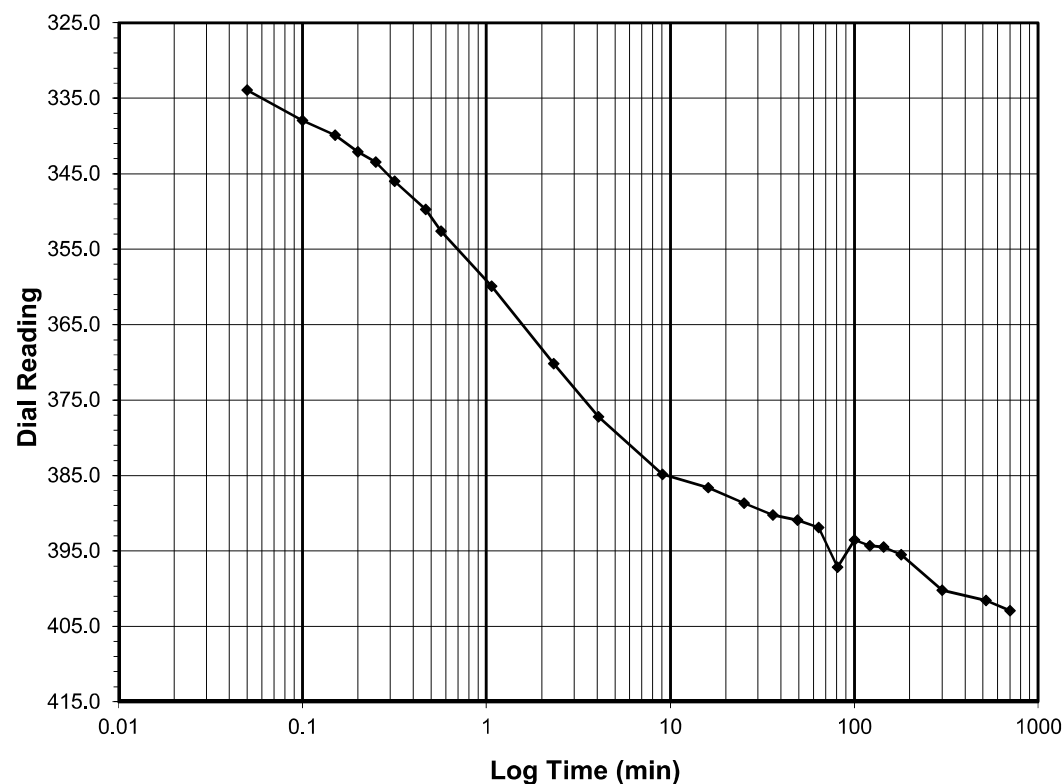
Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 402.9
 Consolidometer No. **R470**
 1 Division (in) 0.0001
 Start Date 7/23/2019
 Start Time 0:49:21

Elapsed Time (min)	Dial Reading (div)
Initial	304.6
0.05	333.9
0.10	337.9
0.15	339.9
0.20	342.1
0.25	343.4
0.32	346.0
0.47	349.7
0.57	352.6
1.07	359.9
2.32	370.2
4.07	377.2
9.07	384.8
16.07	386.6
25.07	388.7
36.07	390.2
49.07	390.9
64.07	391.9
81.07	397.2
100.07	393.6
121.07	394.3
144.07	394.5
180.07	395.5
300.07	400.2
520.07	401.6
700.08	402.9



Tested By 129-0411 Date 7/23/2019 Checked By GEM Date 7/29/2019

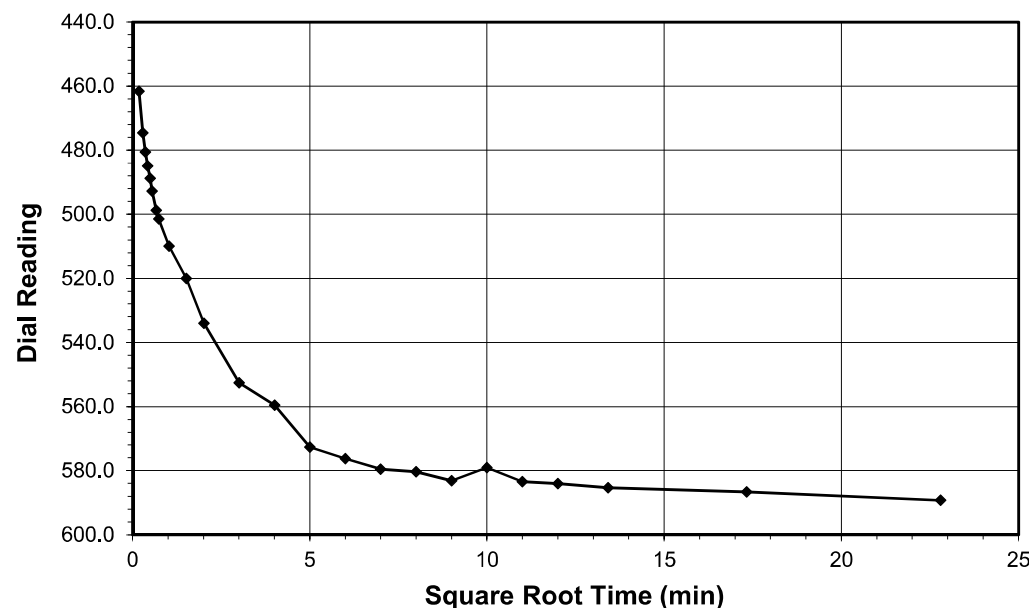


ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

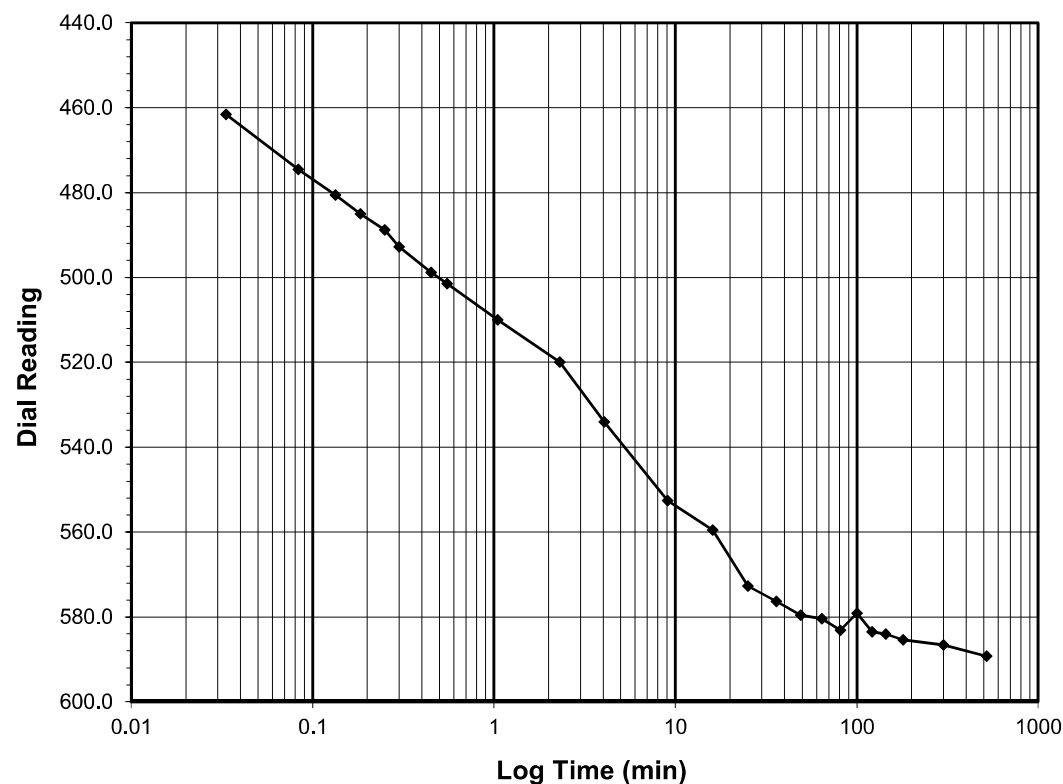
Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-8.0
Final Reading (div) 589.3
 Consolidometer No. **R470**
 1 Division (in) 0.0001
 Start Date 7/23/2019
 Start Time 12:49:41

Elapsed Time (min)	Dial Reading (div)
Initial	402.9
0.03	461.6
0.08	474.6
0.13	480.6
0.18	485.0
0.25	488.9
0.30	492.8
0.45	498.8
0.55	501.4
1.05	509.9
2.30	520.0
4.05	534.0
9.05	552.6
16.05	559.5
25.05	572.7
36.05	576.3
49.05	579.5
64.05	580.4
81.05	583.1
100.07	579.1
121.07	583.5
144.07	584.1
180.07	585.4
300.07	586.6
520.07	589.3



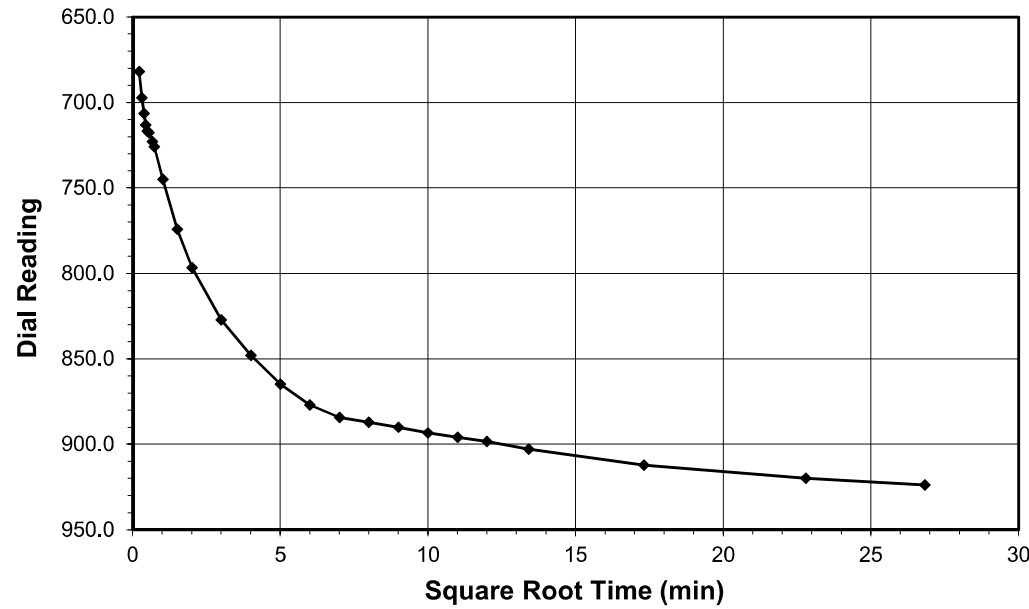
Tested By 129-0411 Date 7/23/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

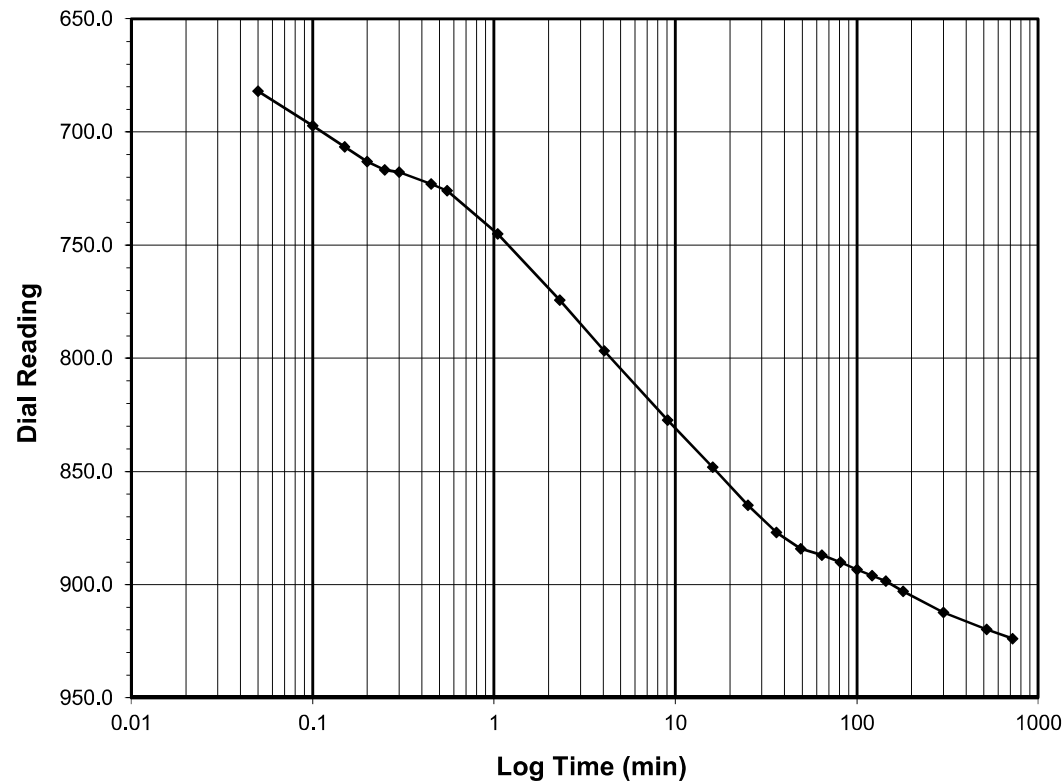
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 8.0-16.0
Final Reading (div) 923.9
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 7/24/2019
 Start Time 0:49:57

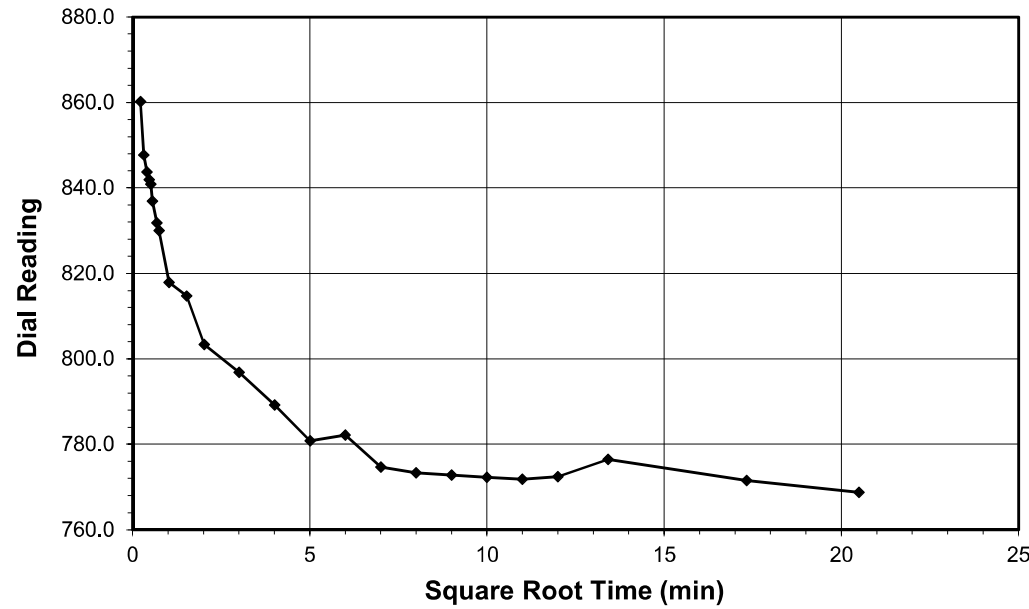
Elapsed Time (min)	Dial Reading (div)
Initial	589.3
0.05	682.0
0.10	697.3
0.15	706.5
0.20	713.1
0.25	716.7
0.30	717.7
0.45	722.9
0.55	725.9
1.05	745.1
2.30	774.3
4.05	796.6
9.05	827.3
16.07	848.1
25.07	864.9
36.07	876.9
49.07	884.2
64.07	887.0
81.07	890.0
100.07	893.4
121.07	896.0
144.07	898.4
180.07	902.9
300.07	912.2
520.07	919.8
720.20	923.9



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

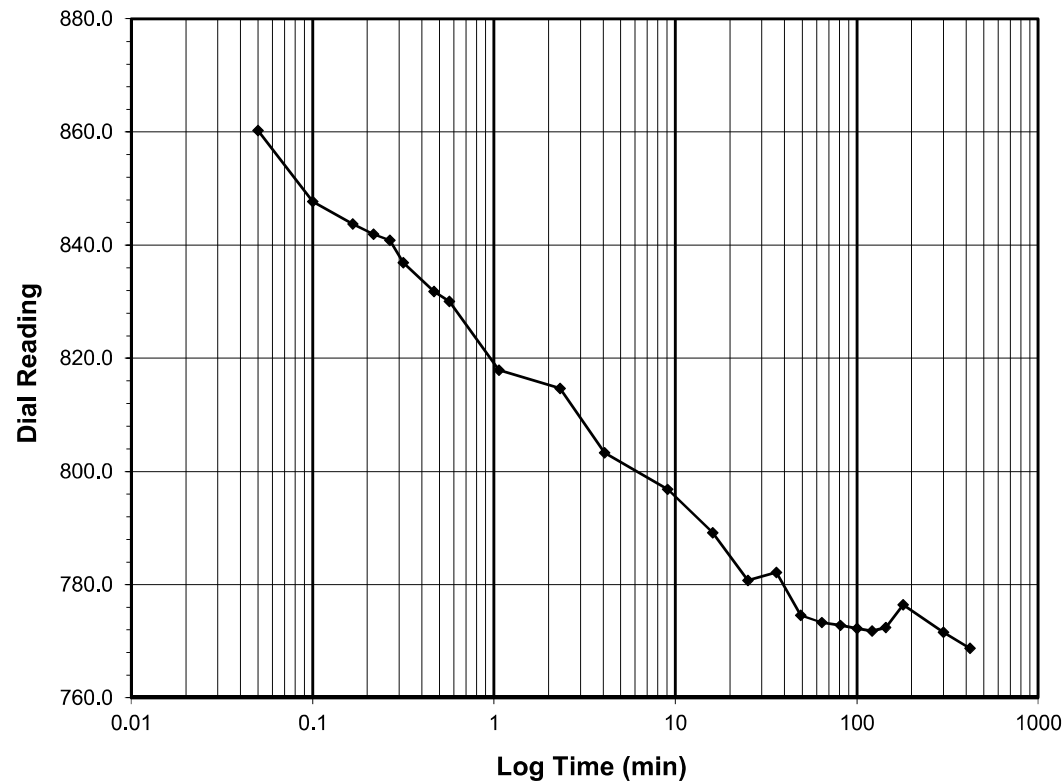
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 16.0-4.0
Final Reading (div) 768.7
 Consolidometer No. **R470**
 1 Division (in) 0.0001

Start Date 7/24/2019
 Start Time 12:50:09

Elapsed Time (min)	Dial Reading (div)
Initial	923.9
0.05	860.2
0.10	847.7
0.17	843.7
0.22	841.9
0.27	840.8
0.32	836.9
0.47	831.8
0.57	830.0
1.07	817.9
2.32	814.7
4.07	803.3
9.07	796.8
16.07	789.2
25.07	780.8
36.07	782.1
49.08	774.6
64.08	773.3
81.08	772.8
100.08	772.2
121.08	771.8
144.08	772.4
180.08	776.5
300.08	771.5
420.03	768.7



Tested By 129-0411 Date 7/24/2019 Checked By GEM Date 7/29/2019

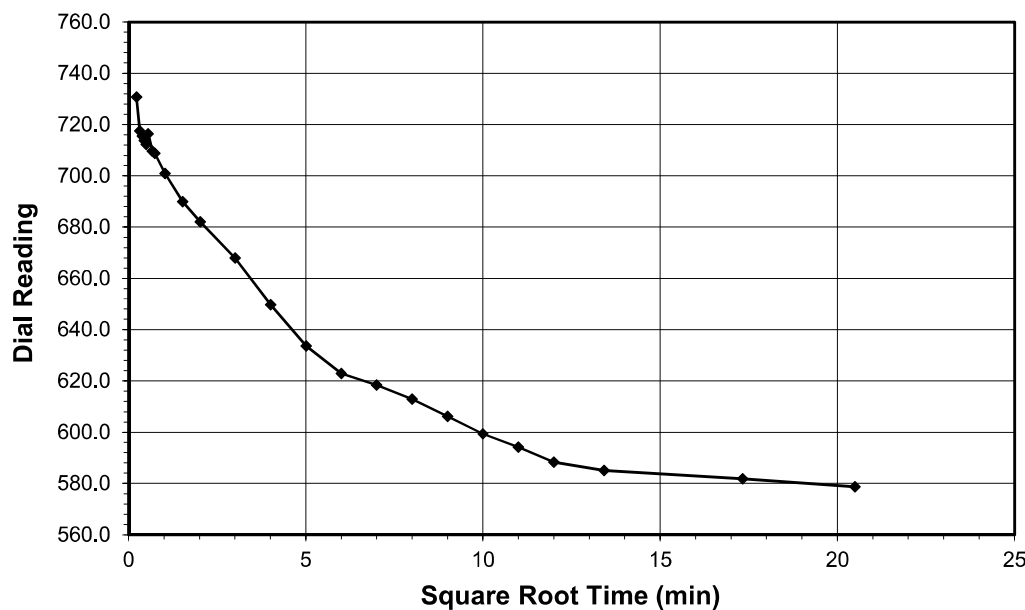
Tested By 129-0411 Date 7/24/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

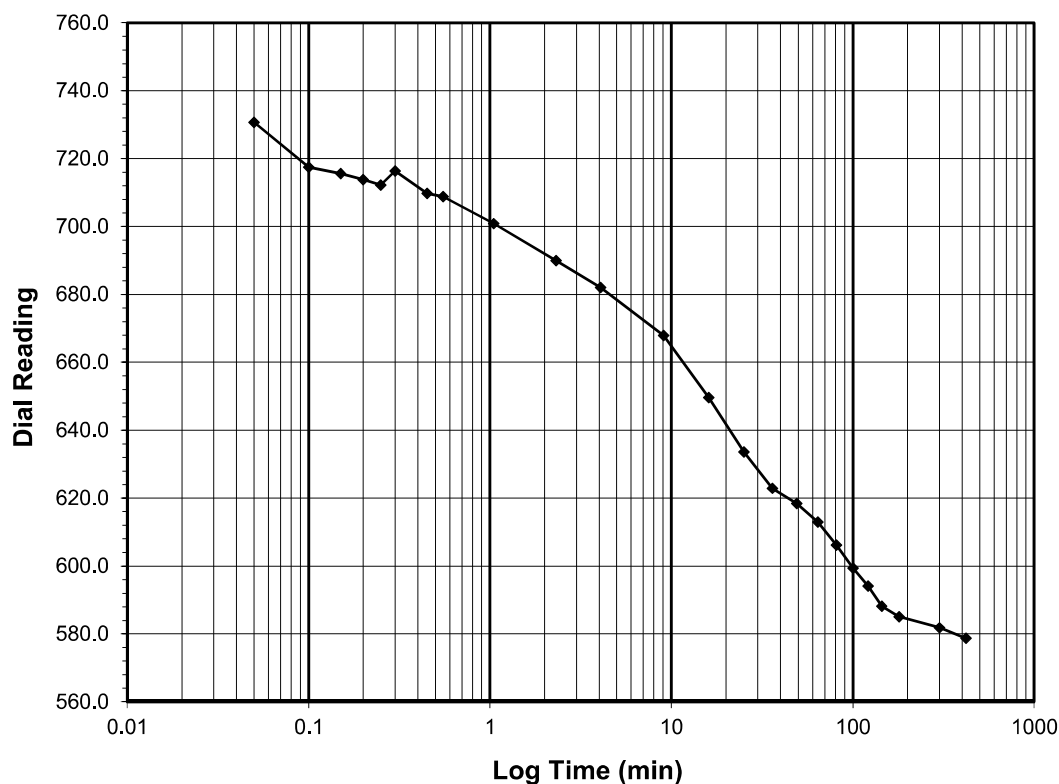
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
 Final Reading (div) 578.7
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 7/24/2019
 Start Time 19:50:11

Elapsed Time (min)	Dial Reading (div)
Initial	768.7
0.05	730.7
0.10	717.5
0.15	715.6
0.20	713.8
0.25	712.3
0.30	716.4
0.45	709.7
0.55	708.9
1.05	700.9
2.32	689.9
4.07	682.0
9.07	667.9
16.07	649.6
25.07	633.6
36.07	622.9
49.07	618.4
64.07	612.9
81.07	606.2
100.07	599.4
121.07	594.1
144.07	588.2
180.07	585.1
300.07	581.8
420.05	578.7



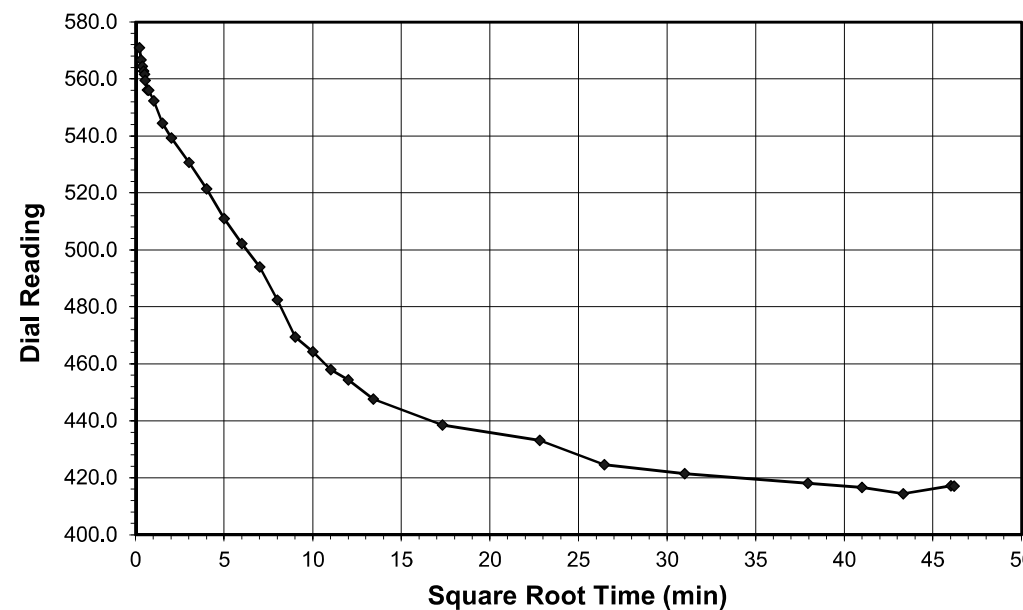
Tested By 129-0411 Date 7/24/2019 Checked By GEM Date 7/29/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT_LN_EB1-A
 Client Project R-2561CA Depth (ft) 29.5-31.5
 Project No. R-2019-209-001 Sample No. ST-2
 Lab ID R-2019-209-001-010 Visual Description GRAY LEAN CLAY

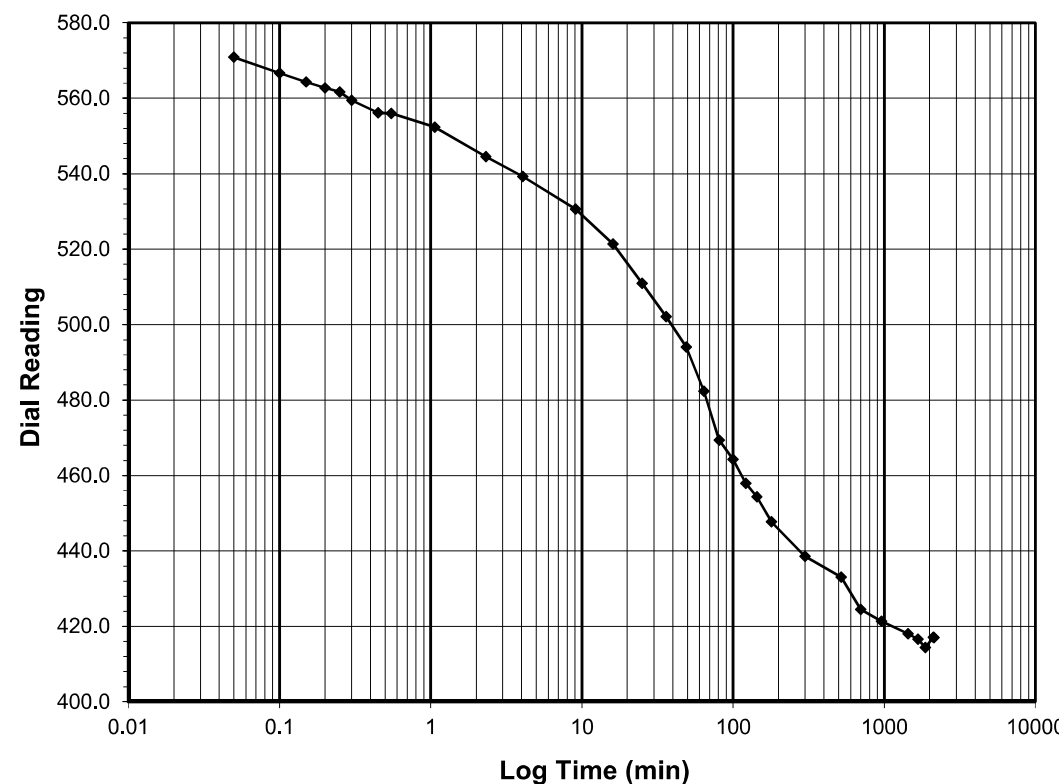
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
 Final Reading (div) 417.0
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 7/25/2019
 Start Time 2:50:14

Elapsed Time (min)	Dial Reading (div)
Initial	578.7
0.05	570.9
0.10	566.7
0.15	564.4
0.20	562.8
0.25	561.6
0.30	559.4
0.45	556.1
0.55	556.0
1.07	552.3
2.32	544.5
4.07	539.3
9.07	530.7
16.07	521.3
25.07	510.9
36.07	502.2
49.07	494.1
64.07	482.3
81.07	469.4
100.07	464.3
121.07	457.9
144.07	454.3
180.07	447.7
300.07	438.6
520.08	433.1
700.08	424.5
960.08	421.4
1440.08	418.0
1680.08	416.6
1877.92	414.4
2117.92	417.1
2134.02	417.0



Tested By 129-0411 Date 7/25/2019 Checked By GEM Date 7/29/2019

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS**

AASHTO T-297

Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	2
Test No.	1

INITIAL SAMPLE DIMENSIONS (in)			
Length 1:	6.379	Diameter 1:	2.859
Length 2:	6.458	Diameter 2:	2.875
Length 3:	6.444	Diameter 3:	2.862
Length 4:	6.395	Diameter 4:	2.858
Avg. Length:	6.419	Avg. Diam.:	2.864

PRESSURES (psi)	
Cell Pressure (psi)	55.0
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	5.0
Pore Pressure Response (%)	100

VOLUME CHANGE	
Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	13.5
Final Change (ml)	10.5

MAXIMUM OBLIQUITY POINTS	
\bar{P} =	7.09
\bar{Q} =	6.06

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
9.5	0.000	50.0
10.5	0.001	50.4
11.1	0.003	50.4
24.2	0.009	51.7
30.9	0.015	52.4
35.5	0.021	52.8
40.6	0.031	53.3
44.9	0.040	53.5
49.9	0.053	53.8
58.2	0.076	54.0
70.2	0.108	54.1
85.7	0.146	54.0
100.8	0.185	53.7
115.6	0.229	53.1
123.9	0.261	52.6
130.6	0.306	51.9
134.6	0.367	51.2
140.2	0.431	50.7
145.2	0.479	50.4
151.6	0.543	50.0
155.3	0.591	49.8
160.1	0.639	49.5
164.7	0.687	49.2
165.9	0.719	49.2
168.0	0.751	49.0
166.9	0.783	49.0
169.3	0.815	48.9
172.1	0.863	48.7
174.6	0.911	48.5
177.2	0.959	48.4
179.1	1.008	48.2

Tested By: 129-07-0411 Date: 8/2/19 Input Checked By: GEM Date: 8/12/19

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS**

AASHTO T-297

Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	5.0	Stage No.	2
		Test No.	1

INITIAL DIMENSIONS	
Initial Sample Length (in)	6.42
Initial Sample Diameter (in)	2.86
Initial Sample Area (in ²)	6.44
Initial Sample Volume (in ³)	41.34

VOLUME CHANGE	
Volume After Consolidation (in ³)	38.51
Length After Consolidation (in)	6.28
Area After Consolidation (in ²)	6.137

Strain (%)	Deviation Stress	ΔU	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	\bar{A}	\bar{P}	\bar{Q}
0.02	0.17	0.40	4.77	4.6	1.036	2.39	4.69	0.08
0.04	0.26	0.44	4.82	4.6	1.056	1.72	4.69	0.13
0.14	2.39	1.66	5.73	3.3	1.716	0.69	4.54	1.20
0.23	3.48	2.39	6.09	2.6	2.335	0.69	4.35	1.74
0.34	4.22	2.84	6.38	2.2	2.956	0.67	4.27	2.11
0.49	5.05	3.26	6.79	1.7	3.906	0.65	4.26	2.52
0.64	5.74	3.53	7.21	1.5	4.909	0.62	4.34	2.87
0.85	6.53	3.77	7.77	1.2	6.299	0.58	4.50	3.27
1.21	7.84	3.98	8.86	1.0	8.702	0.51	4.94	3.92
1.71	9.72	4.08	10.64	0.9	11.561	0.42	5.78	4.86
2.33	12.12	3.97	13.15	1.0	12.771	0.33	7.09	6.06
2.94	14.43	3.67	15.76	1.3	11.859	0.25	8.55	7.22
3.65	16.66	3.07	18.59	1.9	9.639	0.18	10.26	8.33
4.16	17.86	2.60	20.27	2.4	8.429	0.15	11.34	8.93
4.88	18.78	1.93	21.85	3.1	7.114	0.10	12.46	9.39
5.85	19.19	1.21	22.98	3.8	6.061	0.06	13.39	9.59
6.86	19.84	0.73	24.11	4.3	5.649	0.04	14.19	9.92
7.64	20.43	0.42	25.01	4.6	5.460	0.02	14.80	10.21
8.65	21.15	0.03	26.12	5.0	5.258	0.00	15.54	10.58
9.42	21.53	-0.23	26.75	5.2	5.120	-0.01	15.99	10.76
10.18	22.04	-0.52	27.56	5.5	4.993	-0.02	16.54	11.02
10.94	22.53	-0.76	28.28	5.8	4.914	-0.03	17.02	11.26
11.46	22.57	-0.83	28.40	5.8	4.870	-0.04	17.12	11.29
11.97	22.75	-0.95	28.70	6.0	4.822	-0.04	17.32	11.37
12.48	22.45	-1.03	28.48	6.0	4.721	-0.05	17.26	11.23
12.99	22.66	-1.14	28.80	6.1	4.688	-0.05	17.47	11.33
13.74	22.86	-1.29	29.15	6.3	4.636	-0.06	17.72	11.43
14.52	23.00	-1.46	29.45	6.5	4.560	-0.06	17.96	11.50
15.29	23.15	-1.61	29.76	6.6	4.502	-0.07	18.19	11.58
16.05	23.21	-1.75	29.96	6.8	4.436	-0.08	18.36	11.60

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297**

Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	3
Test No.	2

INITIAL SAMPLE DIMENSIONS (in)			
Length 1:	6.253	Diameter 1:	2.867
Length 2:	6.224	Diameter 2:	2.868
Length 3:	6.243	Diameter 3:	2.863
Length 4:	6.293	Diameter 4:	2.864
Avg. Length:	6.253	Avg. Diam.:	2.866

PRESSURES (psi)	
Cell Pressure (psi)	60.0
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	10.1
Pore Pressure Response (%)	98

VOLUME CHANGE	
Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	7.3
Final Change (ml)	16.7

MAXIMUM OBLIQUITY POINTS	
\bar{P} =	13.03
Q =	8.80

Initial Dial Reading (mil)	512
Dial Reading After Saturation (mil)	572
Dial Reading After Consolidation (mil)	645

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
11.7	0.000	50.0
14.0	0.001	49.9
17.0	0.004	50.0
37.2	0.009	51.3
46.4	0.016	52.3
55.0	0.022	53.1
64.4	0.031	53.8
66.4	0.041	54.3
75.7	0.053	54.8
84.7	0.076	55.4
96.9	0.107	55.8
109.3	0.145	56.0
117.4	0.182	55.9
125.6	0.225	55.8
129.6	0.257	55.6
138.2	0.301	55.3
144.8	0.361	54.7
145.5	0.423	54.2
150.7	0.470	53.8
155.4	0.534	53.5
161.2	0.582	53.3
162.2	0.629	53.1
164.3	0.675	52.7
167.9	0.707	52.7
169.5	0.739	52.5
173.2	0.770	52.3
172.8	0.802	52.2
171.9	0.849	52.1
178.1	0.897	51.9
183.5	0.928	51.9
181.7	0.959	51.7

Tested By: 129-07-0411 Date: 8/2/19 Input Checked By: GEM Date: 8/12/19
 page 5 of 11 DCN: CT-S28 DATE: 4/12/13 REVISION: 3

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297**

Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	10.1	Stage No.	3
		Test No.	2

INITIAL DIMENSIONS		VOLUME CHANGE	
Initial Sample Length (in)	6.25	Volume After Consolidation (in ³)	38.15
Initial Sample Diameter (in)	2.87	Length After Consolidation (in)	6.12
Initial Sample Area (in ²)	6.45	Area After Consolidation (in ²)	6.233
Initial Sample Volume (in ³)	40.33		

Strain (%)	Deviation Stress	ΔU	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	\bar{A}	\bar{P}	Q
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0.02	0.36	-0.03	10.45	10.1	1.036	-0.08	10.27	0.18
0.06	0.85	0.03	10.88	10.0	1.084	0.03	10.45	0.42
0.15	4.09	1.31	12.84	8.7	1.468	0.33	10.80	2.05
0.25	5.55	2.39	13.21	7.7	1.724	0.44	10.44	2.77
0.35	6.92	3.15	13.83	6.9	2.001	0.46	10.37	3.46
0.51	8.41	3.84	14.62	6.2	2.352	0.47	10.42	4.20
0.67	8.72	4.34	14.44	5.7	2.526	0.51	10.08	4.36
0.87	10.18	4.80	15.43	5.3	2.936	0.48	10.34	5.09
1.23	11.57	5.40	16.23	4.7	3.482	0.48	10.44	5.78
1.75	13.43	5.83	17.66	4.2	4.179	0.44	10.94	6.72
2.36	15.29	6.06	19.29	4.0	4.826	0.40	11.64	7.65
2.97	16.46	5.93	20.59	4.1	4.986	0.37	12.36	8.23
3.68	17.60	5.82	21.83	4.2	5.156	0.34	13.03	8.80
4.20	18.11	5.66	22.51	4.4	5.124	0.32	13.45	9.06
4.92	19.29	5.30	24.05	4.8	5.055	0.28	14.40	9.64
5.91	20.09	4.76	25.39	5.3	4.795	0.24	15.34	10.05
6.92	19.99	4.27	25.78	5.8	4.451	0.22	15.78	9.99
7.69	20.59	3.85	26.80	6.2	4.315	0.19	16.51	10.29
8.73	21.05	3.57	27.53	6.5	4.244	0.17	17.01	10.52
9.50	21.70	3.39	28.37	6.7	4.254	0.16	17.52	10.85
10.27	21.66	3.11	28.61	6.9	4.120	0.15	17.78	10.83
11.03	21.78	2.77	29.07	7.3	3.987	0.13	18.18	10.89
11.55	22.16	2.77	29.45	7.3	4.039	0.13	18.37	11.08
12.07	22.26	2.57	29.75	7.5	3.975	0.12	18.61	11.13
12.58	22.65	2.36	30.35	7.7	3.945	0.11	19.02	11.33
13.11	22.46	2.27	30.25	7.8	3.883	0.10	19.02	11.23
13.88	22.13	2.10	30.09	8.0	3.780	0.10	19.03	11.07
14.65	22.78	1.90	30.94	8.2	3.793	0.09	19.55	11.39
15.17	23.38	1.92	31.52	8.1	3.875	0.08	19.83	11.69
15.68	23.00	1.80	31.26	8.3	3.783	0.08	19.76	11.50

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297**

Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	1
Test No.	3

INITIAL SAMPLE DIMENSIONS (in)			
Length 1:	6.004	Diameter 1:	2.850
Length 2:	5.980	Diameter 2:	2.871
Length 3:	6.009	Diameter 3:	2.887
Length 4:	6.017	Diameter 4:	2.862
Avg. Length:	6.003	Avg. Diam.:	2.868

PRESSURES (psi)	
Cell Pressure (psi)	70.0
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	98

VOLUME CHANGE	
Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	6.2
Final Change (ml)	17.8

MAXIMUM OBLIQUITY POINTS	
\bar{P} =	35.56
Q =	28.29

Initial Dial Reading (mil)	172
Dial Reading After Saturation (mil)	211
Dial Reading After Consolidation (mil)	278

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
11.5	0.000	50.0
16.2	0.001	50.1
27.9	0.003	50.2
66.6	0.008	53.2
86.7	0.014	55.1
102.2	0.020	56.6
121.1	0.029	58.2
137.7	0.037	59.4
157.8	0.049	60.6
193.0	0.070	61.9
249.5	0.099	63.0
315.9	0.135	63.3
376.4	0.171	62.8
436.0	0.211	61.0
460.4	0.241	58.4
370.9	0.284	53.7
374.3	0.341	53.1
388.3	0.400	52.9
398.4	0.445	52.7
411.9	0.506	52.3
423.8	0.551	52.2
430.9	0.596	52.0
407.0	0.641	51.9
409.6	0.670	51.8
412.8	0.701	51.6
418.6	0.731	51.6
427.4	0.761	51.5
434.7	0.806	51.2
448.2	0.850	50.9
453.8	0.881	50.7
455.6	0.910	50.4

Tested By: 129-07-0411 Date: 8/2/2019 Input Checked By: GEM Date: 8/12/2019
 page 7 of 11 DCN: CT-S28 DATE: 4/12/13 REVISION: 3

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297**

Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	20.0	Stage No.	1
		Test No.	3

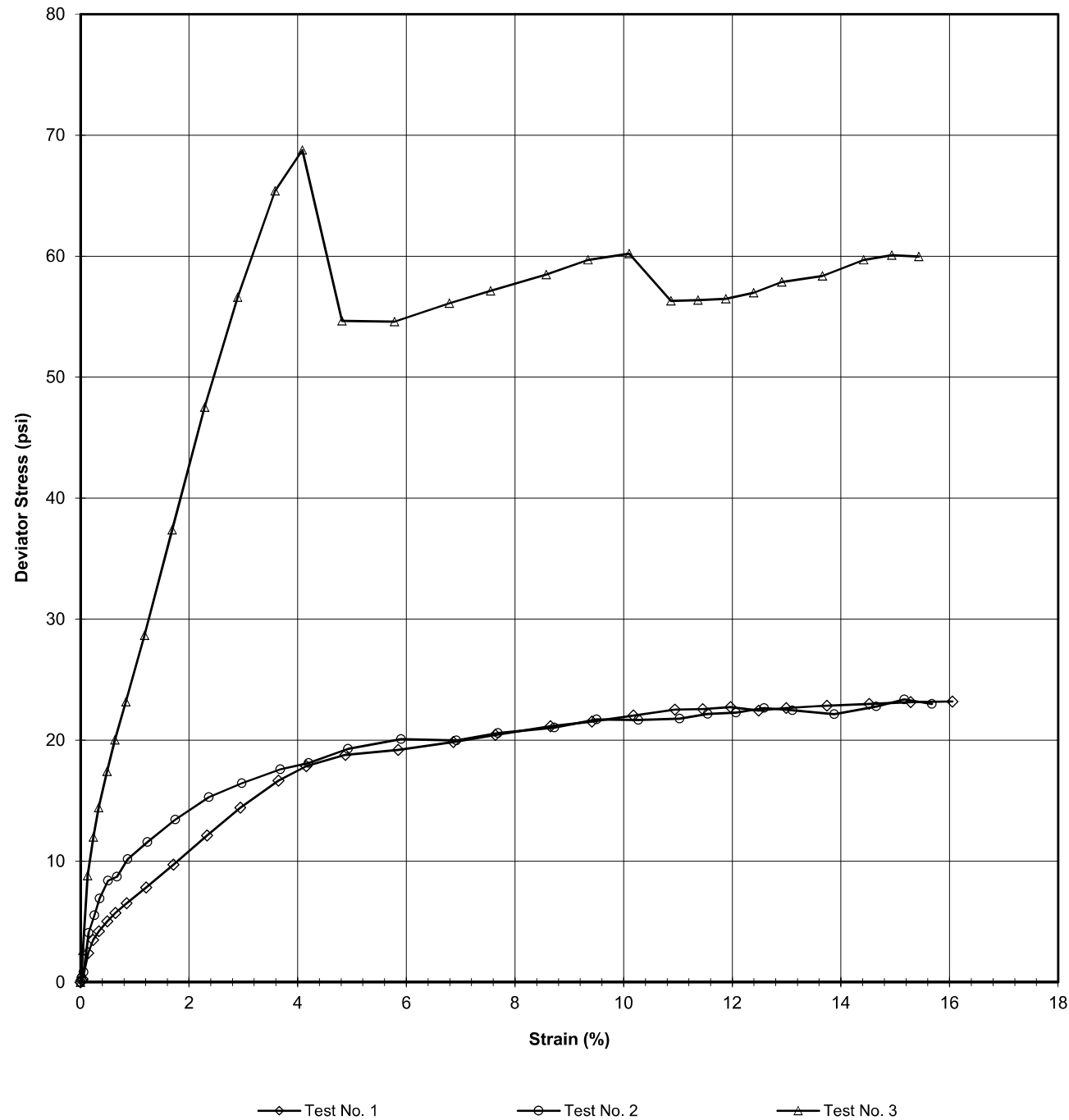
INITIAL DIMENSIONS		VOLUME CHANGE	
Initial Sample Length (in)	6.00	Volume After Consolidation (in ³)	36.92
Initial Sample Diameter (in)	2.87	Length After Consolidation (in)	5.90
Initial Sample Area (in ²)	6.46	Area After Consolidation (in ²)	6.262
Initial Sample Volume (in ³)	38.76		

Strain (%)	Deviation Stress	ΔU	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	\bar{A}	\bar{P}	Q
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0.02	0.76	0.13	20.68	19.9	1.038	0.17	20.30	0.38
0.04	2.62	0.22	22.45	19.8	1.132	0.08	21.14	1.31
0.13	8.80	3.21	25.64	16.8	1.522	0.37	21.24	4.40
0.24	11.98	5.17	26.86	14.9	1.806	0.44	20.86	5.99
0.33	14.44	6.64	27.85	13.4	2.077	0.47	20.63	7.22
0.49	17.42	8.22	29.24	11.8	2.473	0.48	20.53	8.71
0.63	20.03	9.42	30.65	10.6	2.885	0.48	20.64	10.01
0.83	23.17	10.60	32.62	9.4	3.452	0.47	21.04	11.59
1.18	28.65	11.97	36.73	8.1	4.546	0.43	22.40	14.32
1.69	37.38	13.01	44.42	7.0	6.310	0.36	25.73	18.69
2.29	47.51	13.31	54.24	6.7	8.054	0.29	30.49	23.75
2.89	56.59	12.78	63.86	7.3	8.786	0.23	35.56	28.29
3.59	65.38	11.02	74.41	9.0	8.239	0.17	41.72	32.69
4.09	68.77	8.42	80.39	11.6	6.917	0.13	46.01	34.39
4.81	54.64	3.71	70.98	16.3	4.344	0.07	43.66	27.32
5.78	54.59	3.15	71.49	16.9	4.231	0.06	44.19	27.30
6.79	56.10	2.88	73.26	17.2	4.269	0.05	45.21	28.05
7.55	57.13	2.73	74.45	17.3	4.299	0.05	45.88	28.56
8.58	58.46	2.37	76.14	17.7	4.308	0.04	46.91	29.23
9.34	59.69	2.21	77.53	17.8	4.347	0.04	47.69	29.85
10.10	60.22	2.06	78.20	18.0	4.348	0.03	48.09	30.11
10.87	56.30	1.91	74.43	18.1	4.105	0.03	46.28	28.15
11.37	56.36	1.79	74.62	18.3	4.087	0.03	46.44	28.18
11.88	56.48	1.67	74.86	18.4	4.073	0.03	46.62	28.24
12.39	56.96	1.60	75.40	18.4	4.089	0.03	46.92	28.48
12.91	57.85	1.49	76.41	18.6	4.117	0.03	47.49	28.93
13.66	58.36	1.24	77.16	18.8	4.103	0.02	47.98	29.18
14.42	59.69	0.95	78.78	19.1	4.126	0.02	48.94	29.84
14.94	60.09	0.70	79.43	19.3	4.106	0.01	49.39	30.04
15.44	59.98	0.39	79.63	19.7	4.052	0.01	49.64	29.99

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297**

Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010
 Visual Description: Gray Clay (UNDISTURBED)

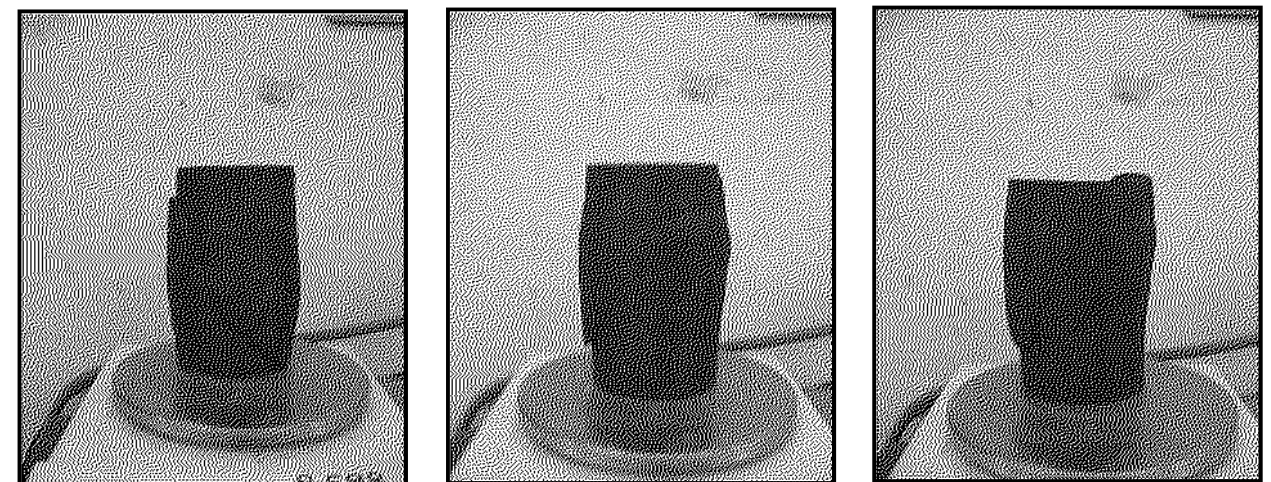


**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297**

Client: Kleinfelder
 Client Reference: R-2561CA
 Project No.: R-2019-209-001
 Lab ID: R-2019-209-001-010 Specific Gravity (Measured) 2.68
 Visual Description: Gray Clay (UNDISTURBED)

SAMPLE CONDITION SUMMARY

	S2_RT_LN_EB1-A	S2_RT_LN_EB1-A	S2_RT_LN_EB1-A
Boring No.:	S2_RT_LN_EB1-A	S2_RT_LN_EB1-A	S2_RT_LN_EB1-A
Depth (ft):	29.5-31.5	29.5-31.5	29.5-31.5
Sample No.:	ST- 2	ST-2	ST-2
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.0011	0.0011	0.0011
Back Pressure (psi)	50.0	50.0	50.0
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	37.4	31.9	27.4
Total Unit Weight (pcf)	114.1	114.8	120.5
Dry Unit Weight (pcf)	83.0	87.1	94.6
Moisture Content (%) (FINAL)	32.3	33.5	27.9
Initial State Void Ratio, e	1.015	0.921	0.769
Void Ratio at Shear, e	0.877	0.817	0.685



Tested By: 129-07-0411 Date: 8/2/2019 Approved By: MPS Date: 8/12/2019

Tested By: 129-07-0411 Date: 8/2/19 Input Checked By: GEM Date: 8/12/19



**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297**

**MOHR TOTAL STRENGTH ENVELOPE
AASHTO T-297**

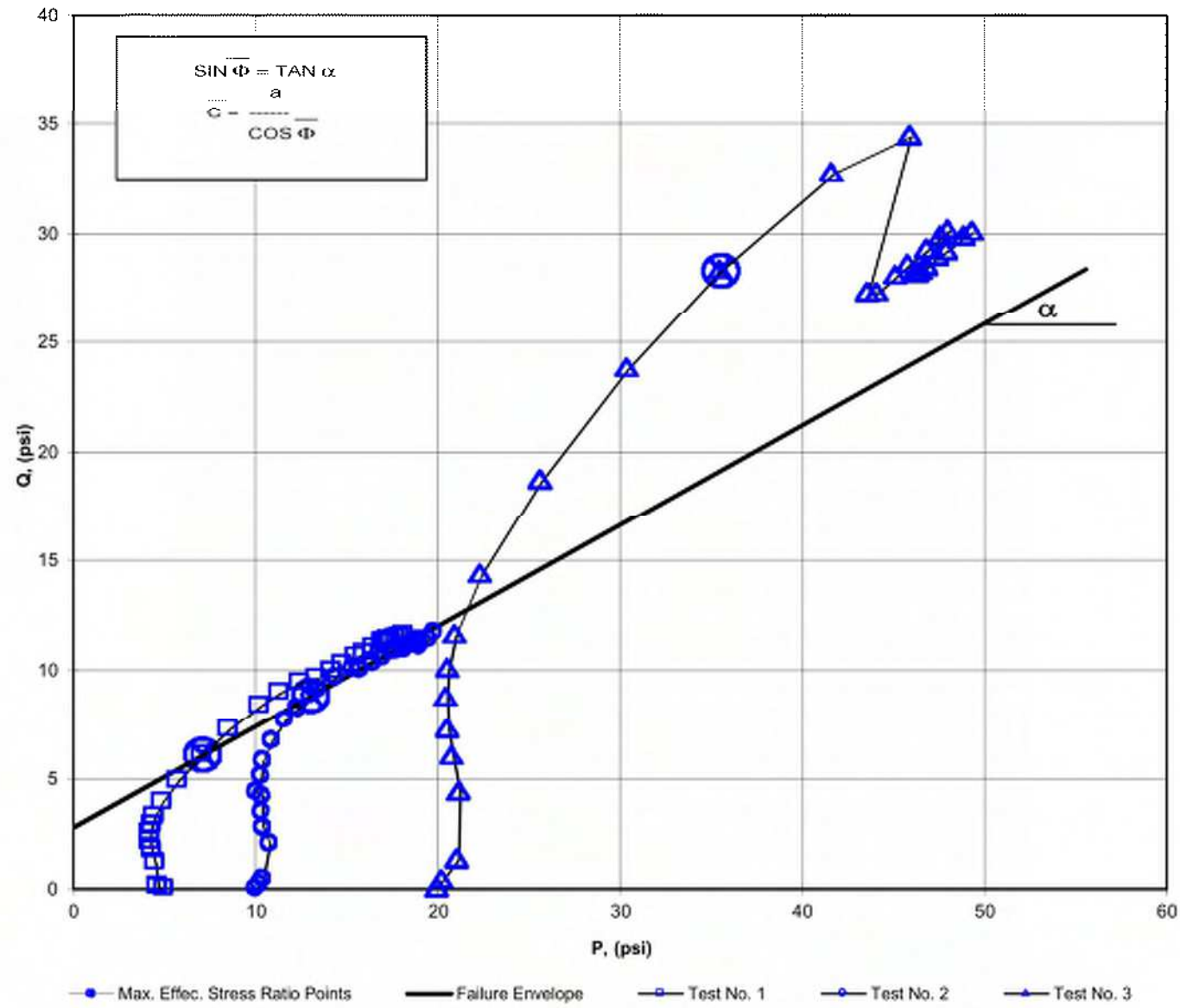
Client: Kleinfelder
 Client Reference: R-2561CA
 Project No.: R-2019-209-001
 Lab ID: R-2019-209-001-010

Boring No.: S2_RT_LN_EB1-A
 Depth (ft): 29.5-31.5
 Sample No.: ST-2

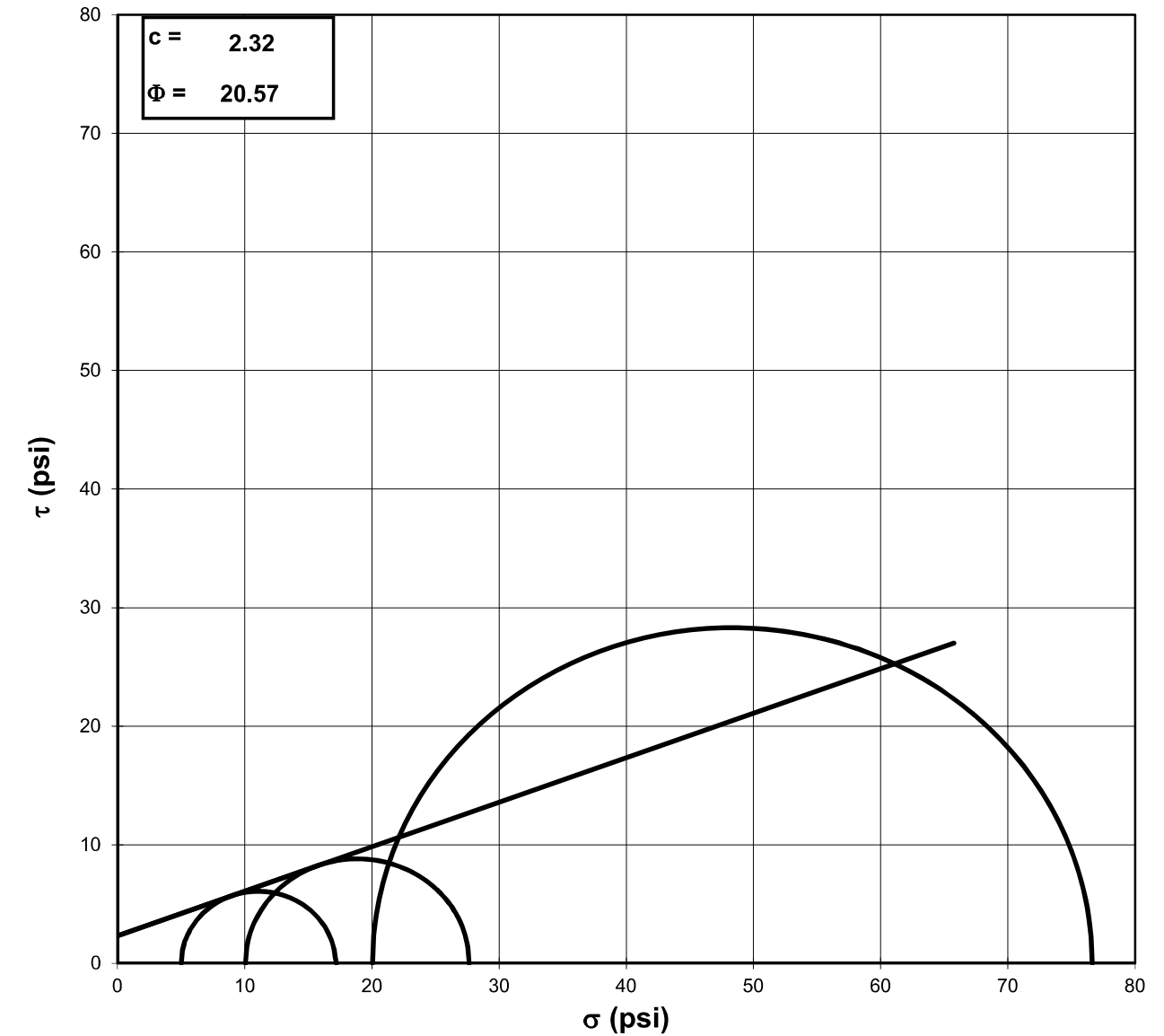
Client: Kleinfelder
 Client Reference: R-2561CA
 Project No.: R-2019-209-001
 Lab ID: R-2019-209-001-010
 Visual Description: Gray Clay (UNDISTURBED)

Boring No.: S2_RT_LN_EB1-A
 Depth (ft): 29.5-31.5
 Sample No.: ST-2

Consolidated Undrained Triaxial Test with Pore Pressure



a	=	2.79	C	=	3.15
α	=	24.7	Φ	=	27.44



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: 129-07-0411 Date: 8/2/19 Approved By: MPS Date: 8/12/19

Tested By: 129-07-0411 Date: 8/2/19 Approved By: MPS Date: 8/12/19



**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS**
AASHTO T-297

Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	2
Test No.	1

INITIAL SAMPLE DIMENSIONS (in)			
Length 1:	6.379	Diameter 1:	2.859
Length 2:	6.458	Diameter 2:	2.875
Length 3:	6.444	Diameter 3:	2.862
Length 4:	6.395	Diameter 4:	2.858
Avg. Length:	6.419	Avg. Diam.:	2.864

PRESSURES (psi)	
Cell Pressure (psi)	55.0
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	5.0
Pore Pressure Response (%)	100

VOLUME CHANGE	
Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	13.5
Final Change (ml)	10.5

MAXIMUM OBLIQUITY POINTS	
\bar{P} =	7.09
\bar{Q} =	6.06

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
9.5	0.000	50.0
10.5	0.001	50.4
11.1	0.003	50.4
24.2	0.009	51.7
30.9	0.015	52.4
35.5	0.021	52.8
40.6	0.031	53.3
44.9	0.040	53.5
49.9	0.053	53.8
58.2	0.076	54.0
70.2	0.108	54.1
85.7	0.146	54.0
100.8	0.185	53.7
115.6	0.229	53.1
123.9	0.261	52.6
130.6	0.306	51.9
134.6	0.367	51.2
140.2	0.431	50.7
145.2	0.479	50.4
151.6	0.543	50.0
155.3	0.591	49.8
160.1	0.639	49.5
164.7	0.687	49.2
165.9	0.719	49.2
168.0	0.751	49.0
166.9	0.783	49.0
169.3	0.815	48.9
172.1	0.863	48.7
174.6	0.911	48.5
177.2	0.959	48.4
179.1	1.008	48.2

Tested By: 129-07-0411 Date: 8/2/19 Input Checked By: GEM Date: 8/12/19



**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS**
AASHTO T-297

Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	5.0	Stage No.	2
		Test No.	1

INITIAL DIMENSIONS	
Initial Sample Length (in)	6.42
Initial Sample Diameter (in)	2.86
Initial Sample Area (in ²)	6.44
Initial Sample Volume (in ³)	41.34

VOLUME CHANGE	
Volume After Consolidation (in ³)	38.51
Length After Consolidation (in)	6.28
Area After Consolidation (in ²)	6.137

Strain (%)	Deviation Stress	ΔU	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	\bar{A}	\bar{P}	\bar{Q}
0.02	0.17	0.40	4.77	4.6	1.036	2.39	4.69	0.08
0.04	0.26	0.44	4.82	4.6	1.056	1.72	4.69	0.13
0.14	2.39	1.66	5.73	3.3	1.716	0.69	4.54	1.20
0.23	3.48	2.39	6.09	2.6	2.335	0.69	4.35	1.74
0.34	4.22	2.84	6.38	2.2	2.956	0.67	4.27	2.11
0.49	5.05	3.26	6.79	1.7	3.906	0.65	4.26	2.52
0.64	5.74	3.53	7.21	1.5	4.909	0.62	4.34	2.87
0.85	6.53	3.77	7.77	1.2	6.299	0.58	4.50	3.27
1.21	7.84	3.98	8.86	1.0	8.702	0.51	4.94	3.92
1.71	9.72	4.08	10.64	0.9	11.561	0.42	5.78	4.86
2.33	12.12	3.97	13.15	1.0	12.771	0.33	7.09	6.06
2.94	14.43	3.67	15.76	1.3	11.859	0.25	8.55	7.22
3.65	16.66	3.07	18.59	1.9	9.639	0.18	10.26	8.33
4.16	17.86	2.60	20.27	2.4	8.429	0.15	11.34	8.93
4.88	18.78	1.93	21.85	3.1	7.114	0.10	12.46	9.39
5.85	19.19	1.21	22.98	3.8	6.061	0.06	13.39	9.59
6.86	19.84	0.73	24.11	4.3	5.649	0.04	14.19	9.92
7.64	20.43	0.42	25.01	4.6	5.460	0.02	14.80	10.21
8.65	21.15	0.03	26.12	5.0	5.258	0.00	15.54	10.58
9.42	21.53	-0.23	26.75	5.2	5.120	-0.01	15.99	10.76
10.18	22.04	-0.52	27.56	5.5	4.993	-0.02	16.54	11.02
10.94	22.53	-0.76	28.28	5.8	4.914	-0.03	17.02	11.26
11.46	22.57	-0.83	28.40	5.8	4.870	-0.04	17.12	11.29
11.97	22.75	-0.95	28.70	6.0	4.822	-0.04	17.32	11.37
12.48	22.45	-1.03	28.48	6.0	4.721	-0.05	17.26	11.23
12.99	22.66	-1.14	28.80	6.1	4.688	-0.05	17.47	11.33
13.74	22.86	-1.29	29.15	6.3	4.636	-0.06	17.72	11.43
14.52	23.00	-1.46	29.45	6.5	4.560	-0.06	17.96	11.50
15.29	23.15	-1.61	29.76	6.6	4.502	-0.07	18.19	11.58
16.05	23.21	-1.75	29.96	6.8	4.436	-0.08	18.36	11.60

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS**
AASHTO T-297



Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	3
Test No.	2

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	6.253	Diameter 1:	2.867
Length 2:	6.224	Diameter 2:	2.868
Length 3:	6.243	Diameter 3:	2.863
Length 4:	6.293	Diameter 4:	2.864
Avg. Length:	6.253	Avg. Diam.:	2.866

PRESSURES (psi)

Cell Pressure (psi)	60.0
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	10.1
Pore Pressure Response (%)	98

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	7.3
Final Change (ml)	16.7

MAXIMUM OBLIQUITY POINTS

\bar{P}	=	13.03
Q	=	8.80

Initial Dial Reading (mil)	512
Dial Reading After Saturation (mil)	572
Dial Reading After Consolidation (mil)	645

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
11.7	0.000	50.0
14.0	0.001	49.9
17.0	0.004	50.0
37.2	0.009	51.3
46.4	0.016	52.3
55.0	0.022	53.1
64.4	0.031	53.8
66.4	0.041	54.3
75.7	0.053	54.8
84.7	0.076	55.4
96.9	0.107	55.8
109.3	0.145	56.0
117.4	0.182	55.9
125.6	0.225	55.8
129.6	0.257	55.6
138.2	0.301	55.3
144.8	0.361	54.7
145.5	0.423	54.2
150.7	0.470	53.8
155.4	0.534	53.5
161.2	0.582	53.3
162.2	0.629	53.1
164.3	0.675	52.7
167.9	0.707	52.7
169.5	0.739	52.5
173.2	0.770	52.3
172.8	0.802	52.2
171.9	0.849	52.1
178.1	0.897	51.9
183.5	0.928	51.9
181.7	0.959	51.7

Tested By: 129-07-0411 Date: 8/2/19 Input Checked By: GEM Date: 8/12/19

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS**
AASHTO T-297



Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	10.1	Stage No.	3
		Test No.	2

INITIAL DIMENSIONS

Initial Sample Length (in)	6.25
Initial Sample Diameter (in)	2.87
Initial Sample Area (in ²)	6.45
Initial Sample Volume (in ³)	40.33

VOLUME CHANGE

Volume After Consolidation (in ³)	38.15
Length After Consolidation (in)	6.12
Area After Consolidation (in ²)	6.233

Strain (%)	Deviation Stress	ΔU	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	\bar{A}	\bar{P}	Q
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0.02	0.36	-0.03	10.45	10.1	1.036	-0.08	10.27	0.18
0.06	0.85	0.03	10.88	10.0	1.084	0.03	10.45	0.42
0.15	4.09	1.31	12.84	8.7	1.468	0.33	10.80	2.05
0.25	5.55	2.39	13.21	7.7	1.724	0.44	10.44	2.77
0.35	6.92	3.15	13.83	6.9	2.001	0.46	10.37	3.46
0.51	8.41	3.84	14.62	6.2	2.352	0.47	10.42	4.20
0.67	8.72	4.34	14.44	5.7	2.526	0.51	10.08	4.36
0.87	10.18	4.80	15.43	5.3	2.936	0.48	10.34	5.09
1.23	11.57	5.40	16.23	4.7	3.482	0.48	10.44	5.78
1.75	13.43	5.83	17.66	4.2	4.179	0.44	10.94	6.72
2.36	15.29	6.06	19.29	4.0	4.826	0.40	11.64	7.65
2.97	16.46	5.93	20.59	4.1	4.986	0.37	12.36	8.23
3.68	17.60	5.82	21.83	4.2	5.156	0.34	13.03	8.80
4.20	18.11	5.66	22.51	4.4	5.124	0.32	13.45	9.06
4.92	19.29	5.30	24.05	4.8	5.055	0.28	14.40	9.64
5.91	20.09	4.76	25.39	5.3	4.795	0.24	15.34	10.05
6.92	19.99	4.27	25.78	5.8	4.451	0.22	15.78	9.99
7.69	20.59	3.85	26.80	6.2	4.315	0.19	16.51	10.29
8.73	21.05	3.57	27.53	6.5	4.244	0.17	17.01	10.52
9.50	21.70	3.39	28.37	6.7	4.254	0.16	17.52	10.85
10.27	21.66	3.11	28.61	6.9	4.120	0.15	17.78	10.83
11.03	21.78	2.77	29.07	7.3	3.987	0.13	18.18	10.89
11.55	22.16	2.77	29.45	7.3	4.039	0.13	18.37	11.08
12.07	22.26	2.57	29.75	7.5	3.975	0.12	18.61	11.13
12.58	22.65	2.36	30.35	7.7	3.945	0.11	19.02	11.33
13.11	22.46	2.27	30.25	7.8	3.883	0.10	19.02	11.23
13.88	22.13	2.10	30.09	8.0	3.780	0.10	19.03	11.07
14.65	22.78	1.90	30.94	8.2	3.793	0.09	19.55	11.39
15.17	23.38	1.92	31.52	8.1	3.875	0.08	19.83	11.69
15.68	23.00	1.80	31.26	8.3	3.783	0.08	19.76	11.50

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297**



Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	1
Test No.	3

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	6.004	Diameter 1:	2.850
Length 2:	5.980	Diameter 2:	2.871
Length 3:	6.009	Diameter 3:	2.887
Length 4:	6.017	Diameter 4:	2.862
Avg. Length:	6.003	Avg. Diam.:	2.868

PRESSURES (psi)

Cell Pressure (psi)	70.0
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	20.0
Pore Pressure Response (%)	98

VOLUME CHANGE

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	6.2
Final Change (ml)	17.8

MAXIMUM OBLIQUITY POINTS

\bar{P}	=	35.56	Initial Dial Reading (mil)	172
Q	=	28.29	Dial Reading After Saturation (mil)	211
			Dial Reading After Consolidation (mil)	278

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
11.5	0.000	50.0
16.2	0.001	50.1
27.9	0.003	50.2
66.6	0.008	53.2
86.7	0.014	55.1
102.2	0.020	56.6
121.1	0.029	58.2
137.7	0.037	59.4
157.8	0.049	60.6
193.0	0.070	61.9
249.5	0.099	63.0
315.9	0.135	63.3
376.4	0.171	62.8
436.0	0.211	61.0
460.4	0.241	58.4
370.9	0.284	53.7
374.3	0.341	53.1
388.3	0.400	52.9
398.4	0.445	52.7
411.9	0.506	52.3
423.8	0.551	52.2
430.9	0.596	52.0
407.0	0.641	51.9
409.6	0.670	51.8
412.8	0.701	51.6
418.6	0.731	51.6
427.4	0.761	51.5
434.7	0.806	51.2
448.2	0.850	50.9
453.8	0.881	50.7
455.6	0.910	50.4

Tested By: 129-07-0411 Date: 8/2/2019 Input Checked By: GEM Date: 8/12/2019

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297**



Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010

Visual Description: Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	20.0	Stage No.	1
		Test No.	3

INITIAL DIMENSIONS

Initial Sample Length (in)	6.00
Initial Sample Diameter (in)	2.87
Initial Sample Area (in ²)	6.46
Initial Sample Volume (in ³)	38.76

VOLUME CHANGE

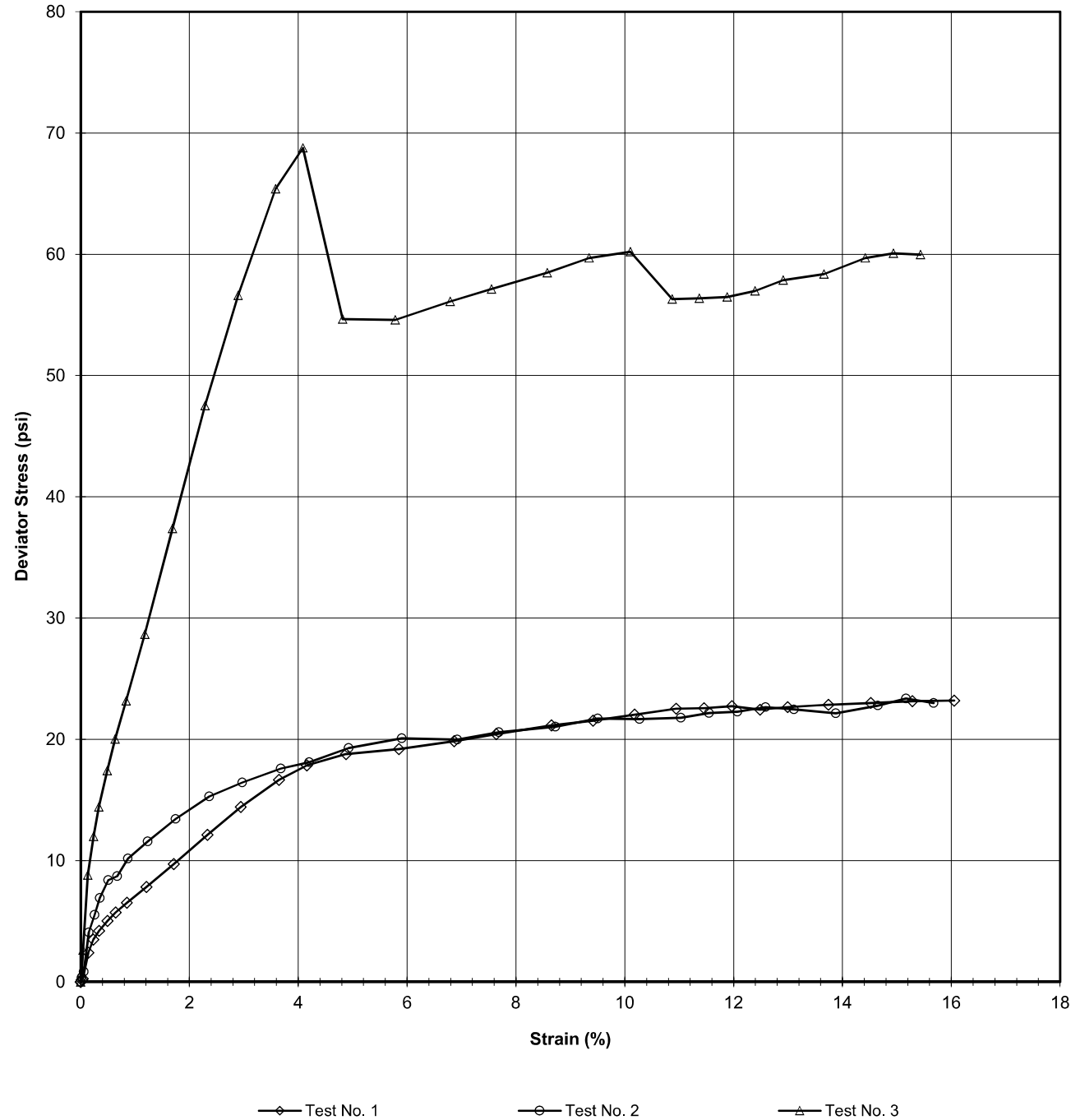
Volume After Consolidation (in ³)	36.92
Length After Consolidation (in)	5.90
Area After Consolidation (in ²)	6.262

Strain (%)	Deviation Stress	ΔU	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	\bar{A}	\bar{P}	Q
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0.02	0.76	0.13	20.68	19.9	1.038	0.17	20.30	0.38
0.04	2.62	0.22	22.45	19.8	1.132	0.08	21.14	1.31
0.13	8.80	3.21	25.64	16.8	1.522	0.37	21.24	4.40
0.24	11.98	5.17	26.86	14.9	1.806	0.44	20.86	5.99
0.33	14.44	6.64	27.85	13.4	2.077	0.47	20.63	7.22
0.49	17.42	8.22	29.24	11.8	2.473	0.48	20.53	8.71
0.63	20.03	9.42	30.65	10.6	2.885	0.48	20.64	10.01
0.83	23.17	10.60	32.62	9.4	3.452	0.47	21.04	11.59
1.18	28.65	11.97	36.73	8.1	4.546	0.43	22.40	14.32
1.69	37.38	13.01	44.42	7.0	6.310	0.36	25.73	18.69
2.29	47.51	13.31	54.24	6.7	8.054	0.29	30.49	23.75
2.89	56.59	12.78	63.86	7.3	8.786	0.23	35.56	28.29
3.59	65.38	11.02	74.41	9.0	8.239	0.17	41.72	32.69
4.09	68.77	8.42	80.39	11.6	6.917	0.13	46.01	34.39
4.81	54.64	3.71	70.98	16.3	4.344	0.07	43.66	27.32
5.78	54.59	3.15	71.49	16.9	4.231	0.06	44.19	27.30
6.79	56.10	2.88	73.26	17.2	4.269	0.05	45.21	28.05
7.55	57.13	2.73	74.45	17.3	4.299	0.05	45.88	28.56
8.58	58.46	2.37	76.14	17.7	4.308	0.04	46.91	29.23
9.34	59.69	2.21	77.53	17.8	4.347	0.04	47.69	29.85
10.10	60.22	2.06	78.20	18.0	4.348	0.03	48.09	30.11
10.87	56.30	1.91	74.43	18.1	4.105	0.03	46.28	28.15
11.37	56.36	1.79	74.62	18.3	4.087	0.03	46.44	28.18
11.88	56.48	1.67	74.86	18.4	4.073	0.03	46.62	28.24
12.39	56.96	1.60	75.40	18.4	4.089	0.03	46.92	28.48
12.91	57.85	1.49	76.41	18.6	4.117	0.03	47.49	28.93
13.66	58.36	1.24	77.16	18.8	4.103	0.02	47.98	29.18
14.42	59.69	0.95	78.78	19.1	4.126	0.02	48.94	29.84
14.94	60.09	0.70	79.43	19.3	4.106	0.01	49.39	30.04
15.44	59.98	0.39	79.63	19.7	4.052	0.01	49.64	29.99

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297**

Client: Kleinfelder Boring No.: S2_RT_LN_EB1-A
 Client Reference: R-2561CA Depth (ft): 29.5-31.5
 Project No.: R-2019-209-001 Sample No.: ST-2
 Lab ID: R-2019-209-001-010
 Visual Description: Gray Clay (UNDISTURBED)

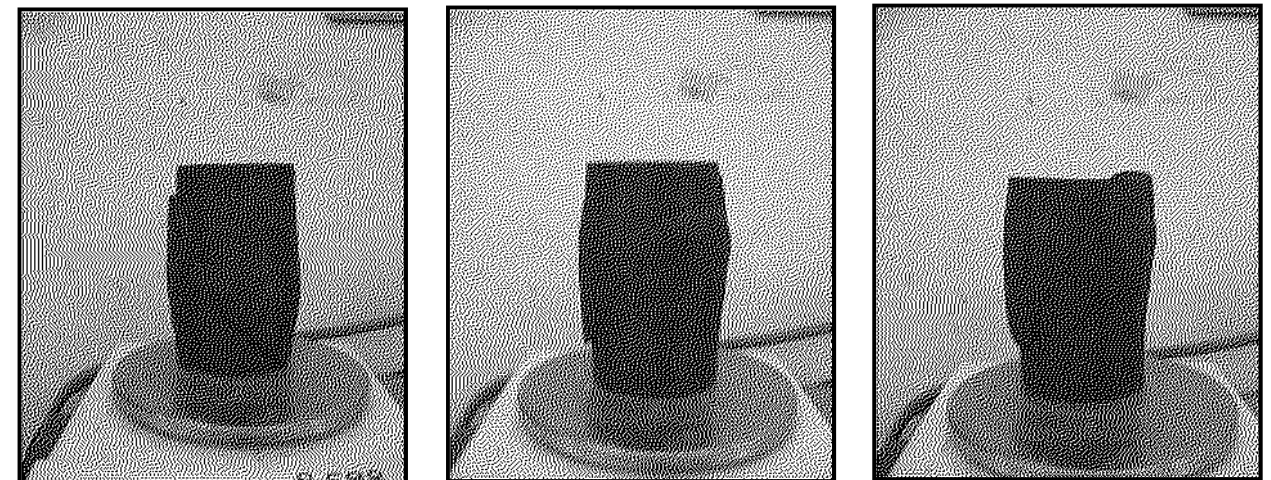


**CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
AASHTO T-297**

Client: Kleinfelder
 Client Reference: R-2561CA
 Project No.: R-2019-209-001
 Lab ID: R-2019-209-001-010 Specific Gravity (Measured) 2.68
 Visual Description: Gray Clay (UNDISTURBED)

SAMPLE CONDITION SUMMARY

	S2_RT_LN_EB1-A	S2_RT_LN_EB1-A	S2_RT_LN_EB1-A
Boring No.:	S2_RT_LN_EB1-A	S2_RT_LN_EB1-A	S2_RT_LN_EB1-A
Depth (ft):	29.5-31.5	29.5-31.5	29.5-31.5
Sample No.:	ST-2	ST-2	ST-2
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.0011	0.0011	0.0011
Back Pressure (psi)	50.0	50.0	50.0
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	37.4	31.9	27.4
Total Unit Weight (pcf)	114.1	114.8	120.5
Dry Unit Weight (pcf)	83.0	87.1	94.6
Moisture Content (%) (FINAL)	32.3	33.5	27.9
Initial State Void Ratio, e	1.015	0.921	0.769
Void Ratio at Shear, e	0.877	0.817	0.685



Tested By: 129-07-0411 Date: 8/2/2019 Approved By: MPS Date: 8/12/2019

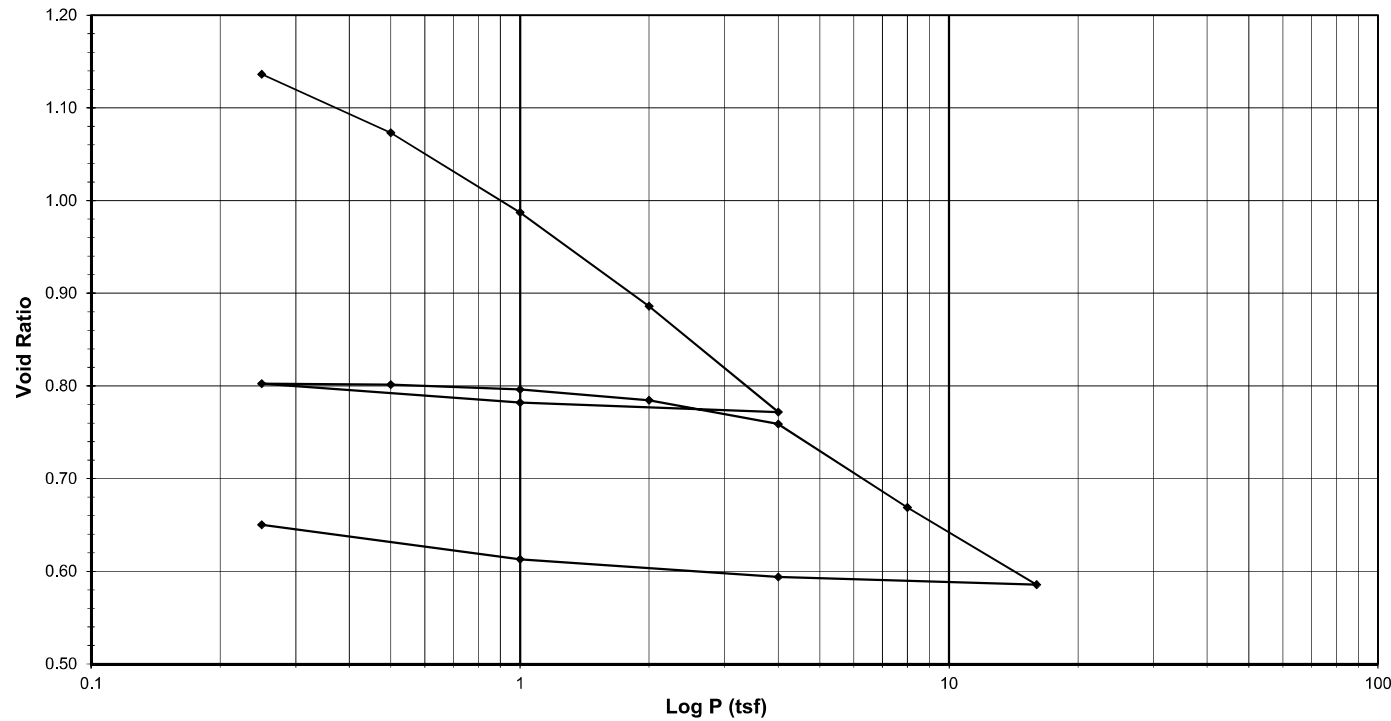
Tested By: 129-07-0411 Date: 8/2/19 Input Checked By: GEM Date: 8/12/19



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Reference R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By 129-08-0411 Date 8/5/2019 Approved By MPS Date 8/19/2019

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Reference R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R409
 1 Division = 0.0001 (in.)

Sample Properties

	Initial	Final
<i>Water Content</i>		
Tare Number	TB-09	812
Wt. Tare & WS (g)	324.50	218.25
Wt. Tare & DS (g)	273.74	196.15
Wt. Water (g)	50.76	22.10
Wt. Tare (g)	134.08	104.60
Wt. DS (g)	139.66	91.55
Water Content (%)	36.35	24.14
<i>Sample Parameters</i>		
Sample Diameter (in)	2.5	2.5
Sample Height (in)	1.0000	0.7431
Sample Volume (cc)	80.44	59.78
Wt. Wet Sample + Ring (g)	346.56	334.71
Wt. of Ring (g)	214.20	214.20
Wt. of Wet Sample (g)	132.36	120.51
Wet Density (pcf)	102.68	125.80
Wet Density (g/cc)	1.65	2.02
Water Content (%)	36.35	24.14
Wt. of Dry Sample (g)	97.08	97.08
Dry Density (pcf)	75.31	101.34
Dry Density (g/cc)	1.21	1.62
Void Ratio	1.2207	0.6503
Saturation (%)	79.80	99.49
Specific Gravity	2.68	Measured

Test Data Summary

Applied Pressure (tsf)	Final Dial Reading (div)	Machine Deflection (div)	Corrected Reading (div)	Height of Sample (mm)	Volume (cc)	Dry Density (g/cc)	Void Ratio
Seating	0	0	0	25.400	80.440	1.20683	1.22070
0.25	391.0	10.7	380.3	24.434	77.380	1.25454	1.13624
0.5	694.5	30.0	664.5	23.712	75.095	1.29273	1.07313
1	1099.3	47.1	1052.2	22.727	71.976	1.34875	0.98703
2	1580.9	74.4	1506.5	21.573	68.321	1.42089	0.88614
4	2122.3	101.3	2021.0	20.267	64.183	1.51250	0.77190
1	2045.5	69.8	1975.7	20.382	64.547	1.50397	0.78195
0.25	1917.5	34.5	1883.0	20.617	65.293	1.48678	0.80255
0.5	1928.6	40.8	1887.8	20.605	65.254	1.48767	0.80148
1	1967.2	55.4	1911.8	20.544	65.061	1.49209	0.79614
2	2041.4	77.3	1964.1	20.411	64.640	1.50180	0.78452
4	2181.9	102.2	2079.7	20.118	63.711	1.52371	0.75887
8	2632.0	146.5	2485.5	19.087	60.447	1.60600	0.66874
16	3060.2	199.9	2860.3	18.135	57.431	1.69031	0.58551
4	2961.2	138.4	2822.8	18.230	57.734	1.68146	0.59385
1	2823.6	86.8	2736.8	18.449	58.425	1.66156	0.61294
0.25	2614.4	45.6	2568.8	18.875	59.777	1.62400	0.65025

Tested By 129-08-0411 Date 8/5/2019 Input Checked By GEM Date 8/19/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Reference R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By 129-08-0411 Date 8/5/2019 Input Checked By GEM Date 8/19/2019

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Reference R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R409
1 Division = 0.0001 (in.)

Sample Properties	Initial	Final
Water Content		
Tare Number	TB-09	812
Wt. Tare & WS (g)	324.50	218.25
Wt. Tare & DS (g)	273.74	196.15
Wt. Water (g)	50.76	22.10
Wt. Tare (g)	134.08	104.60
Wt. DS (g)	139.66	91.55
Water Content (%)	36.35	24.14
Sample Parameters		
Sample Diameter (in)	2.5	2.5
Sample Height (in)	1.000	0.743
Sample Volume (cc)	80.44	59.78
Wt. Wet Sample + Ring (g)	346.56	334.71
Wt. of Ring (g)	214.20	214.20
Wt. of Wet Sample (g)	132.36	120.51
Wet Density (pcf)	102.68	125.80
Wet Density (g/cc)	1.65	2.02
Water Content (%)	36.35	24.14
Wt. of Dry Sample (g)	97.08	97.08
Dry Density (pcf)	75.31	101.34
Dry Density (g/cc)	1.21	1.62
Void Ratio	1.2207	0.6503
Saturation (%)	79.80	99.49
Specific Gravity	2.68	Measured

Load Increment (tsf)	Dial Reading @ t ₅₀ (div)	Machine Deflection (div)	C _v Test Data Summary		Time t ₅₀ (min.)	C _v (cm ² /sec)
			Corrected Dial Reading @ t ₅₀ (div)	Sample Height @ t ₅₀ (cm)		
0 - 0.25	202.4	10.7	191.7	2.491	2.80	0.00182
0.25 - 0.5	546.6	30.0	516.6	2.409	9.20	0.00052
0.5 - 1.0	911.6	47.1	864.5	2.320	13.00	0.00034
1.0 - 2.0	1345.4	74.4	1271.0	2.217	12.00	0.00034
2.0 - 4.0	1856.2	101.3	1754.9	2.094	9.10	0.00040
4.0 - 1.0	NA	69.8	NA	NA	NA	NA
1.0 - 0.25	NA	34.5	NA	NA	NA	NA
0.25 - 0.5	1923.6	40.8	1882.8	2.062	10.00	0.00035
0.5 - 1.0	1949.2	55.4	1893.8	2.059	1.60	0.00217
1.0 - 2.0	2008.9	77.3	1931.6	2.049	1.90	0.00181
2.0 - 4.0	2114.5	102.2	2012.3	2.029	3.90	0.00087
4.0 - 8.0	2426.9	146.5	2280.4	1.961	9.00	0.00035
8.0 - 16.0	2869.1	199.9	2669.2	1.862	12.50	0.00023
16.0 - 4.0	NA	138.4	NA	NA	NA	NA
4.0 - 1.0	NA	86.8	NA	NA	NA	NA
1.0 - 0.25	NA	45.6	NA	NA	NA	NA

page 4 of 4

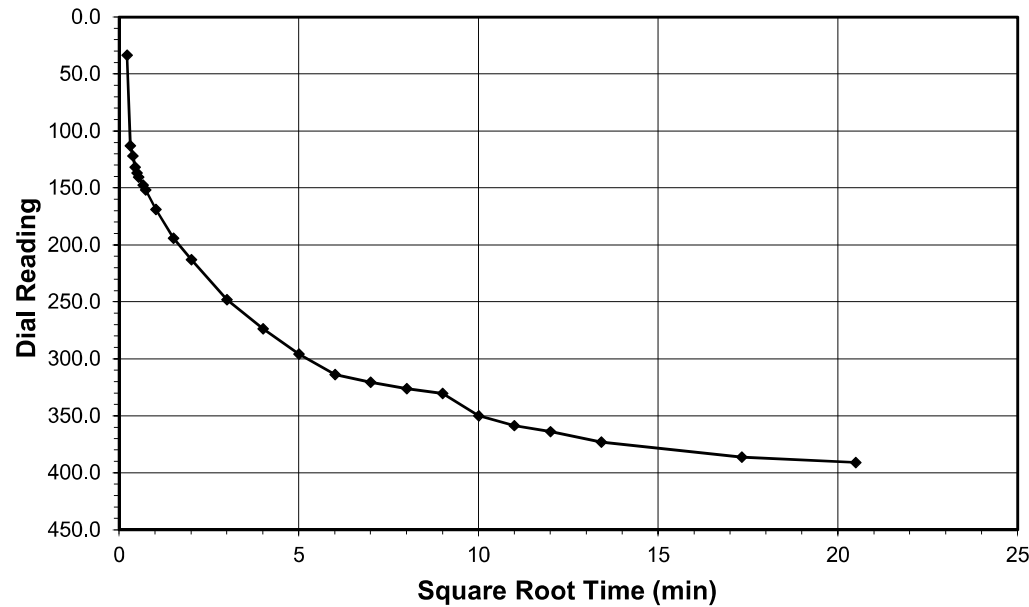
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ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

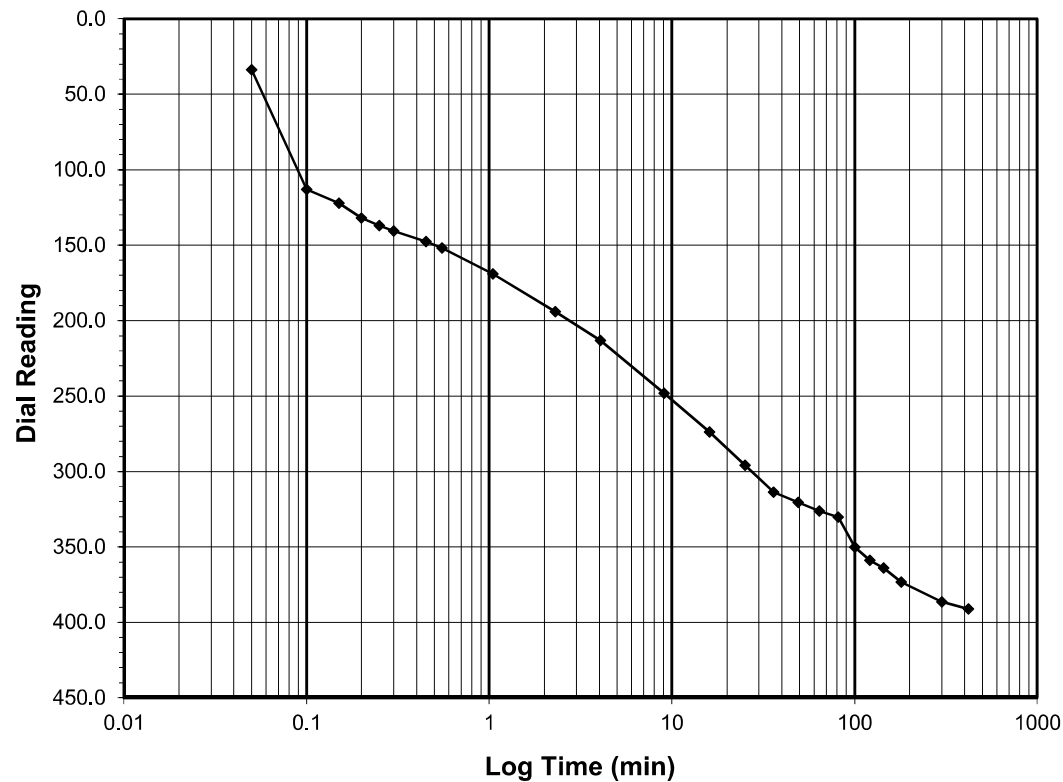
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.0-0.25
Final Reading (div) 391.0
 Consolidometer No. **R409**
 1 Division (in) 0.0001

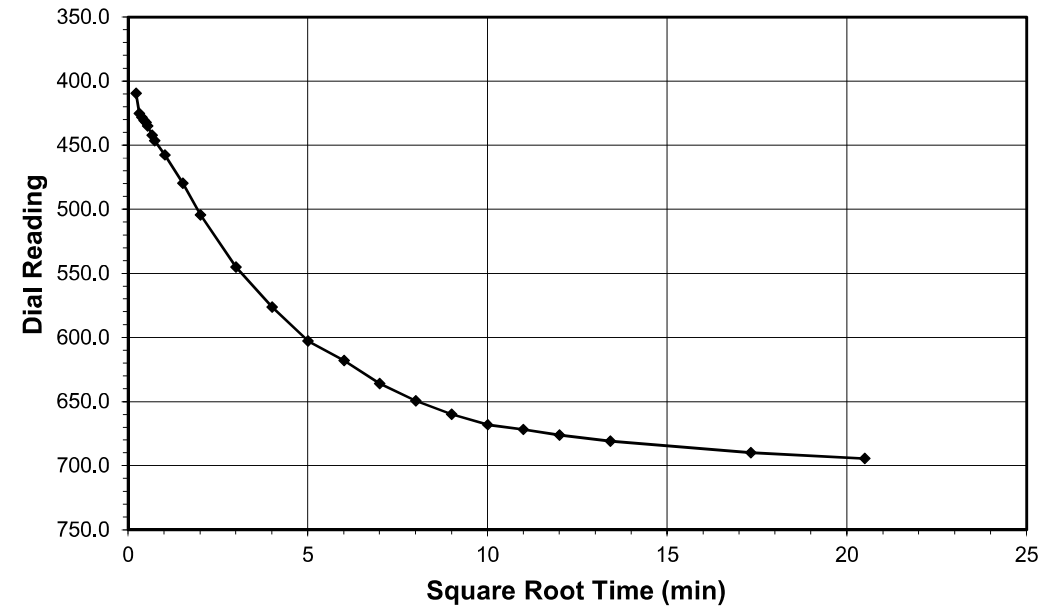
Start Date 8/5/2019
 Start Time 13:57:53

Elapsed Time (min)	Dial Reading (div)
Initial	0.0
0.05	33.7
0.10	113.0
0.15	122.0
0.20	132.1
0.25	137.1
0.30	140.8
0.45	147.8
0.55	152.0
1.05	169.0
2.30	194.1
4.05	213.1
9.05	248.2
16.07	273.9
25.07	295.8
36.07	313.9
49.07	320.6
64.07	326.2
81.07	330.4
100.07	350.1
121.07	358.8
144.07	363.8
180.07	373.3
300.07	386.4
420.12	391.0



Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

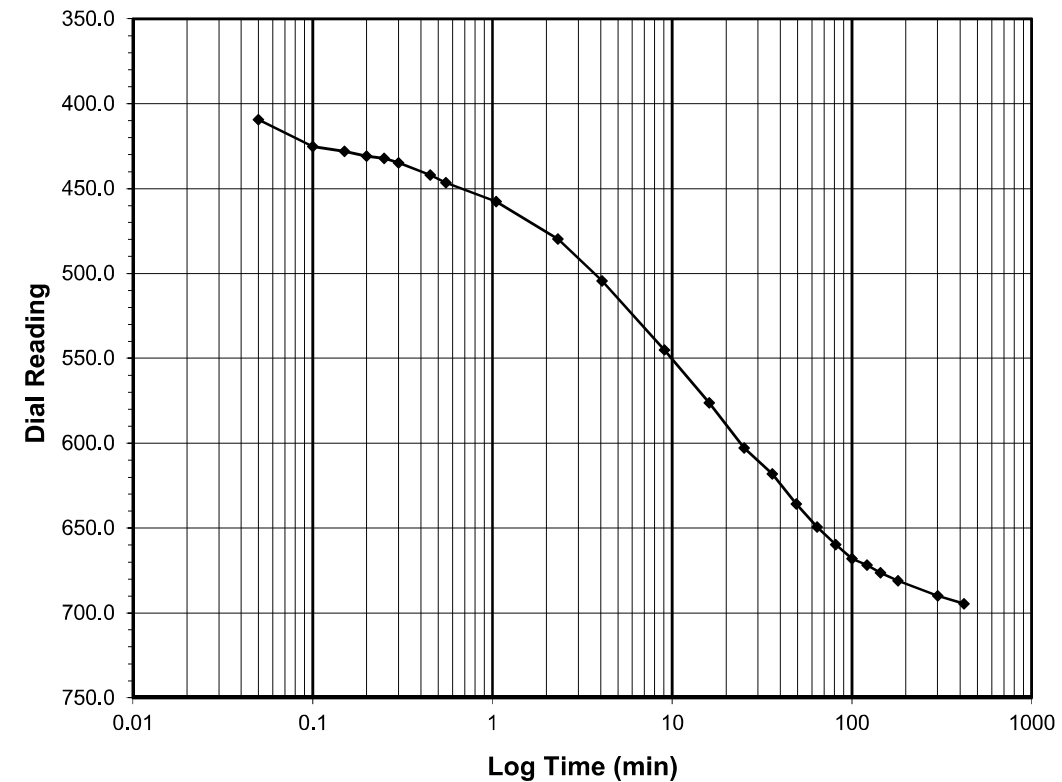
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
Final Reading (div) 694.5
 Consolidometer No. **R409**
 1 Division (in) 0.0001

Start Date 8/5/2019
 Start Time 20:58:00

Elapsed Time (min)	Dial Reading (div)
Initial	391.0
0.05	409.5
0.10	425.3
0.15	428.1
0.20	430.8
0.25	432.2
0.30	434.8
0.45	442.1
0.55	446.5
1.05	457.5
2.32	479.8
4.07	504.4
9.07	545.0
16.07	576.3
25.07	602.8
36.07	618.0
49.07	635.8
64.07	649.4
81.07	659.8
100.07	668.0
121.07	671.9
144.07	676.3
180.07	681.0
300.08	689.9
420.17	694.5



Tested By 129-08-0411 Date 8/5/2019 Checked By GEM Date 8/19/2019

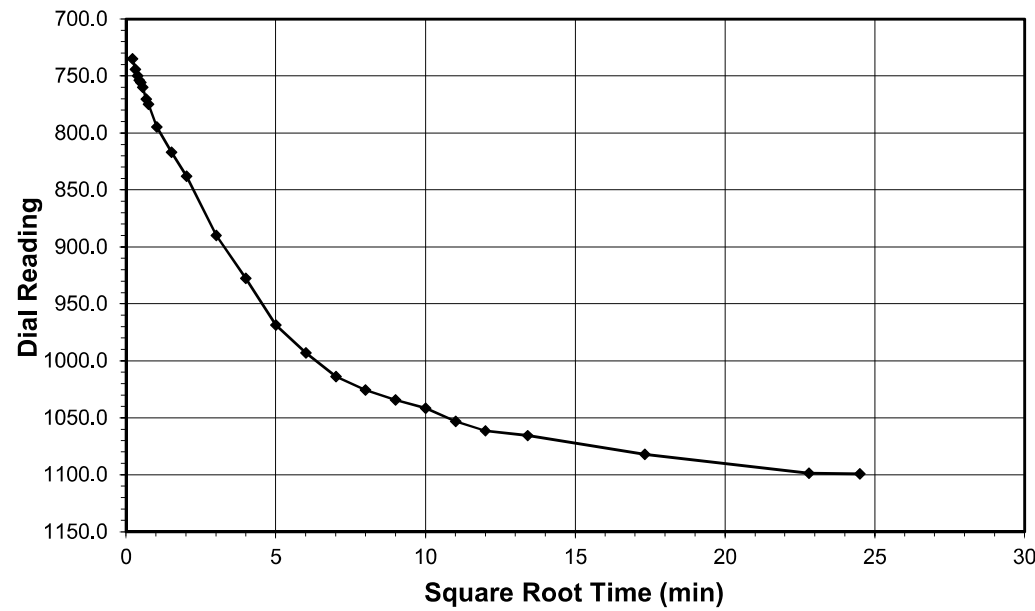
Tested By 129-08-0411 Date 8/5/2019 Checked By GEM Date 8/19/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

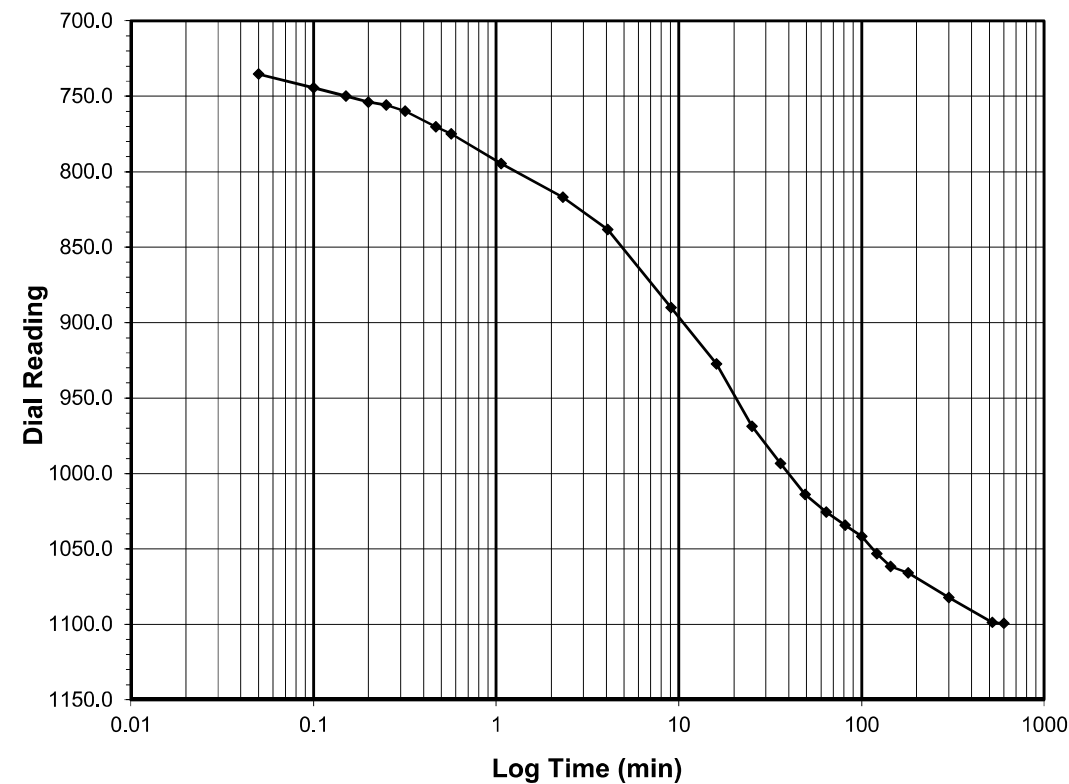
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 1099.3
 Consolidometer No. **R409**
 1 Division (in) 0.0001

Start Date 8/6/2019
 Start Time 3:58:10

Elapsed Time (min)	Dial Reading (div)
Initial	694.5
0.05	735.2
0.10	744.4
0.15	749.9
0.20	753.9
0.25	755.8
0.32	759.9
0.47	770.2
0.57	774.9
1.07	794.6
2.32	816.7
4.07	838.3
9.07	889.9
16.07	927.5
25.07	968.8
36.07	993.2
49.07	1013.9
64.07	1025.6
81.07	1034.4
100.07	1041.6
121.07	1053.1
144.07	1061.6
180.08	1065.8
300.08	1082.2
520.08	1098.7
600.08	1099.3



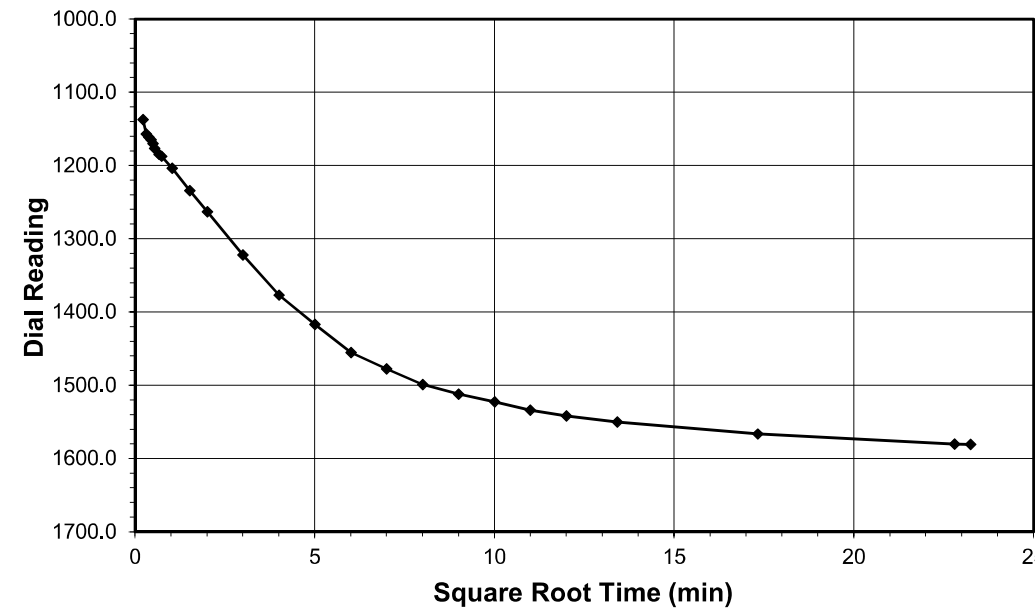
Tested By 129-08-0411 Date 8/6/2019 Checked By GEM Date 8/19/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

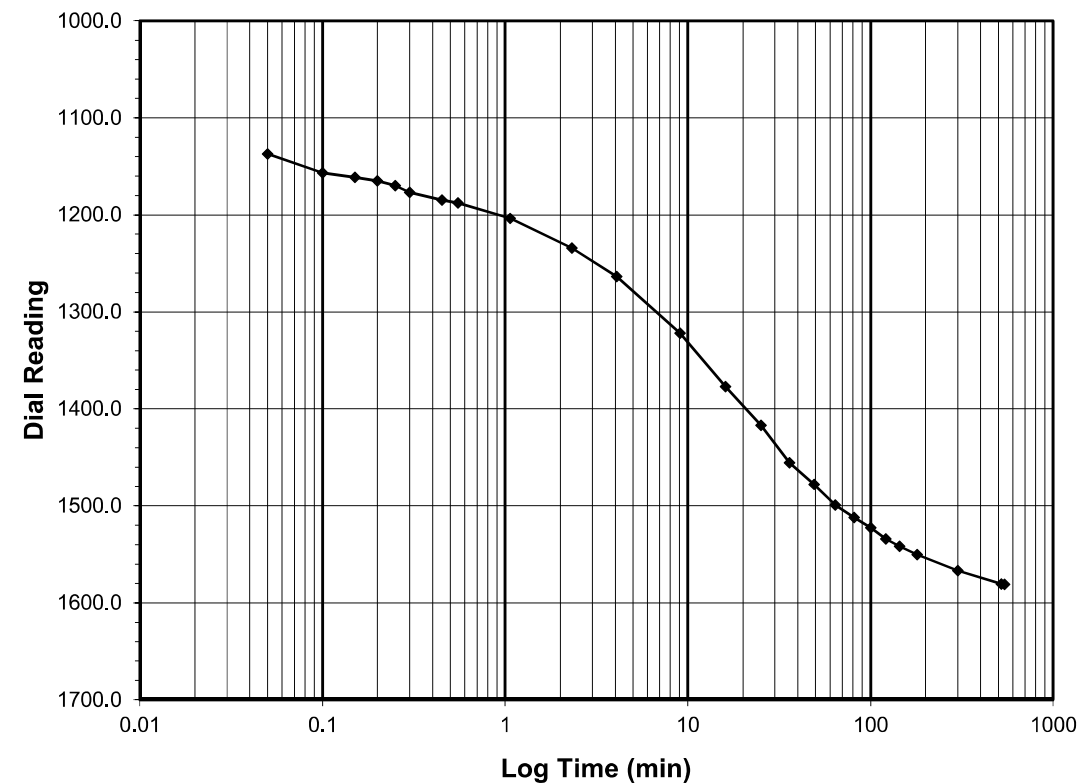
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 1580.9
 Consolidometer No. **R409**
 1 Division (in) 0.0001

Start Date 8/6/2019
 Start Time 12:58:33

Elapsed Time (min)	Dial Reading (div)
Initial	1099.3
0.05	1137.1
0.10	1156.8
0.15	1161.2
0.20	1164.9
0.25	1169.9
0.30	1176.6
0.45	1184.7
0.55	1187.5
1.07	1203.8
2.32	1234.3
4.07	1263.5
9.07	1322.0
16.07	1377.2
25.07	1417.0
36.07	1455.5
49.07	1477.8
64.07	1499.1
81.07	1512.2
100.07	1522.7
121.07	1534.1
144.07	1541.9
180.07	1550.2
300.07	1566.7
520.07	1580.7
540.43	1580.9



Tested By 129-08-0411 Date 8/6/2019 Checked By GEM Date 8/19/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



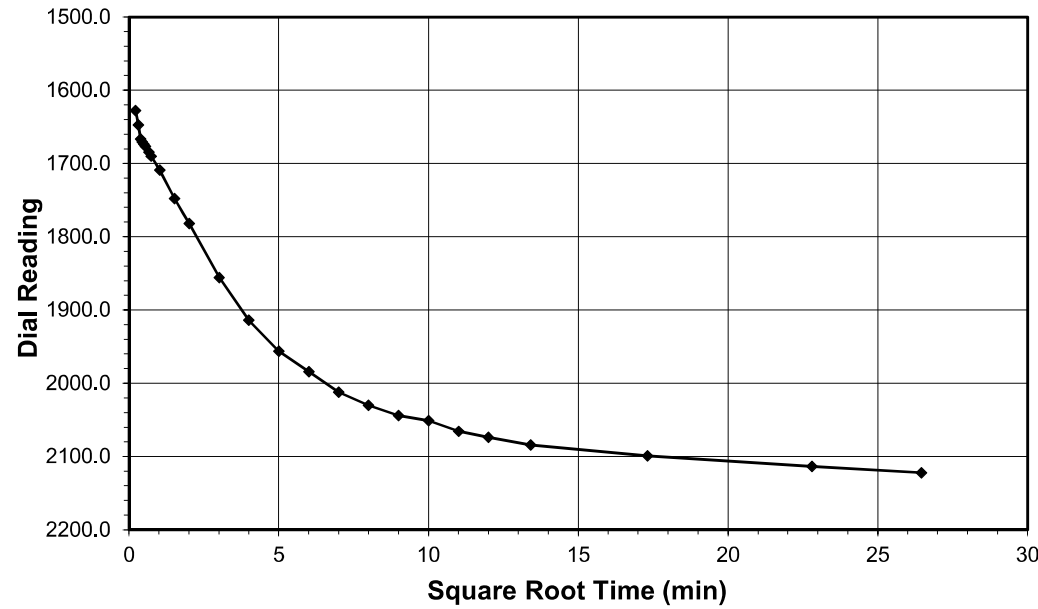
ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

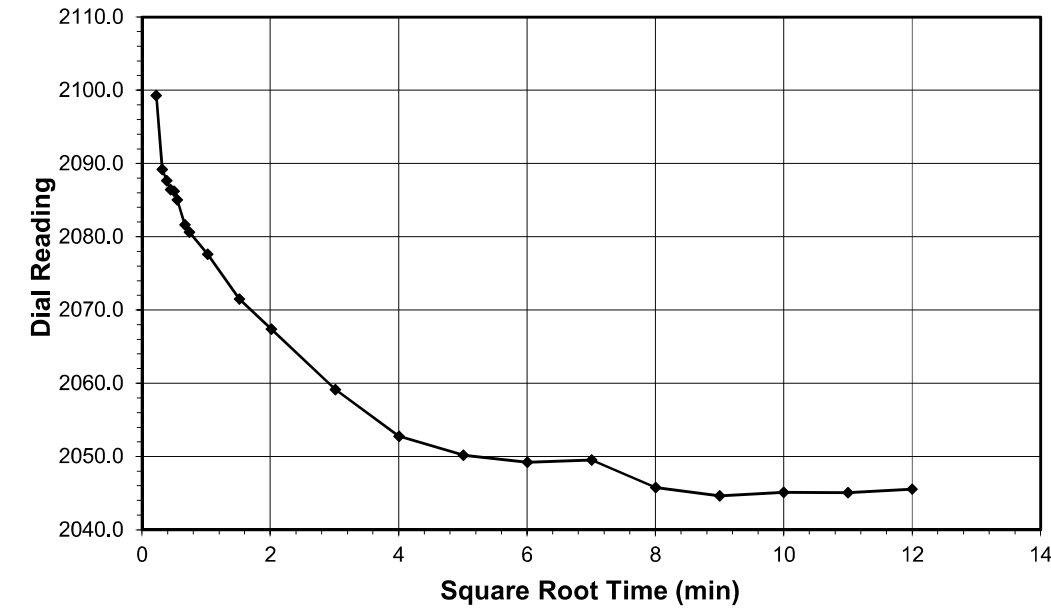
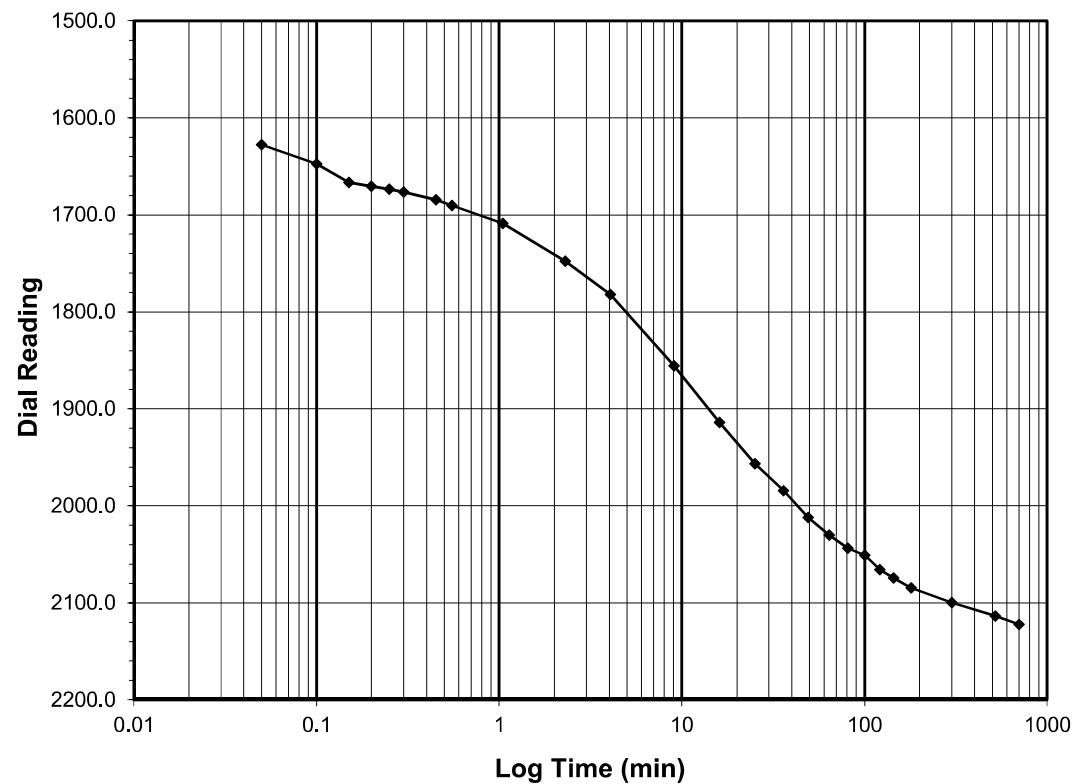
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 2122.3
 Consolidometer No. **R409**
 1 Division (in) 0.0001

Start Date 8/6/2019
 Start Time 21:58:59

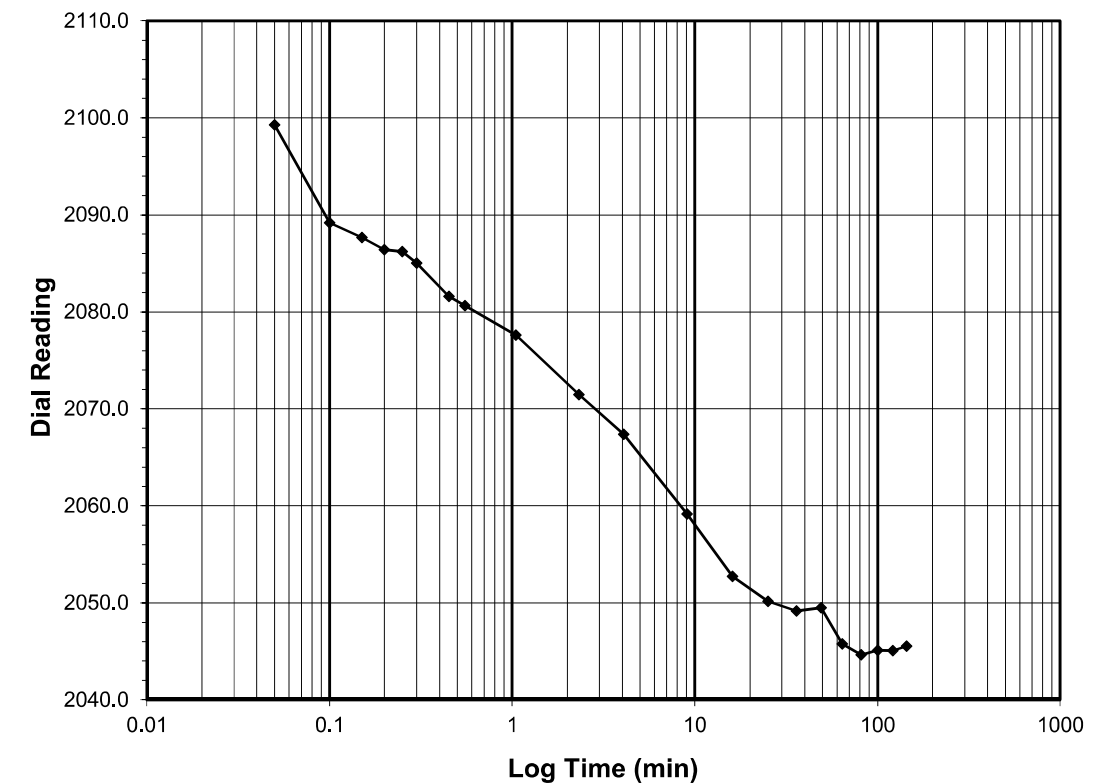
Elapsed Time (min)	Dial Reading (div)
Initial	1580.9
0.05	1627.7
0.10	1647.5
0.15	1666.4
0.20	1670.5
0.25	1673.4
0.30	1676.4
0.45	1684.3
0.55	1690.1
1.05	1709.1
2.30	1747.8
4.05	1782.0
9.05	1855.8
16.05	1914.0
25.05	1956.5
36.05	1984.4
49.05	2012.1
64.05	2030.1
81.05	2043.7
100.05	2051.1
121.05	2065.7
144.05	2074.2
180.05	2084.5
300.05	2099.5
520.05	2113.6
700.07	2122.3



Test Load (tsf) 4.0-1.0
Final Reading (div) 2045.5
 Consolidometer No. **R409**
 1 Division (in) 0.0001

Start Date 8/7/2019
 Start Time 9:59:21

Elapsed Time (min)	Dial Reading (div)
Initial	2122.3
0.05	2099.3
0.10	2089.2
0.15	2087.6
0.20	2086.4
0.25	2086.2
0.30	2085.0
0.45	2081.6
0.55	2080.6
1.05	2077.6
2.32	2071.5
4.07	2067.4
9.07	2059.1
16.07	2052.7
25.07	2050.2
36.07	2049.2
49.07	2049.5
64.07	2045.8
81.07	2044.6
100.07	2045.1
121.07	2045.1
144.07	2045.5



Tested By 129-08-0411 Date 8/6/2019 Checked By GEM Date 8/19/2019

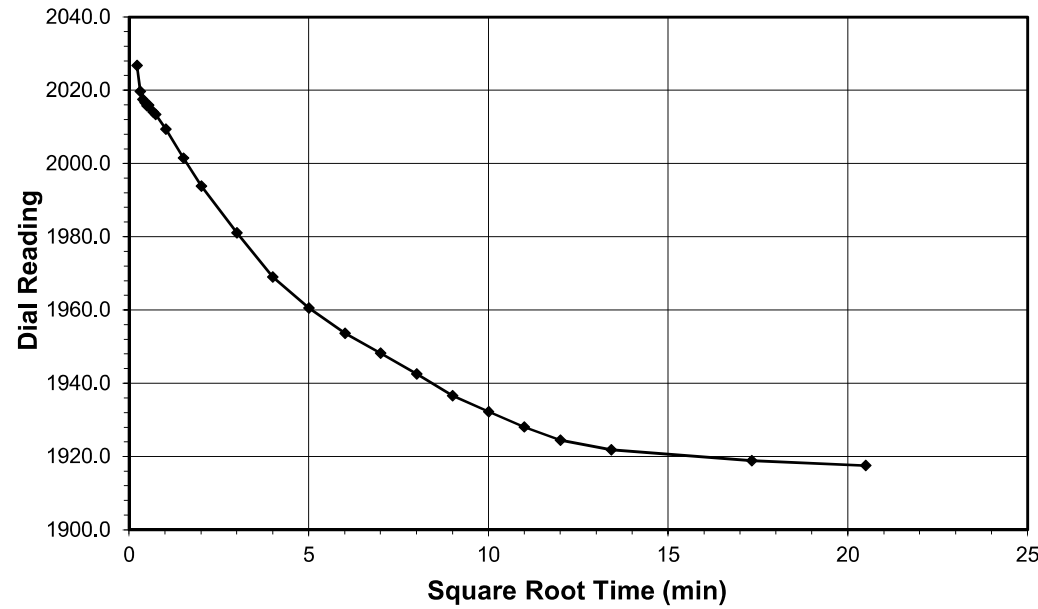
Tested By 129-08-0411 Date 8/7/2019 Checked By GEM Date 8/19/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

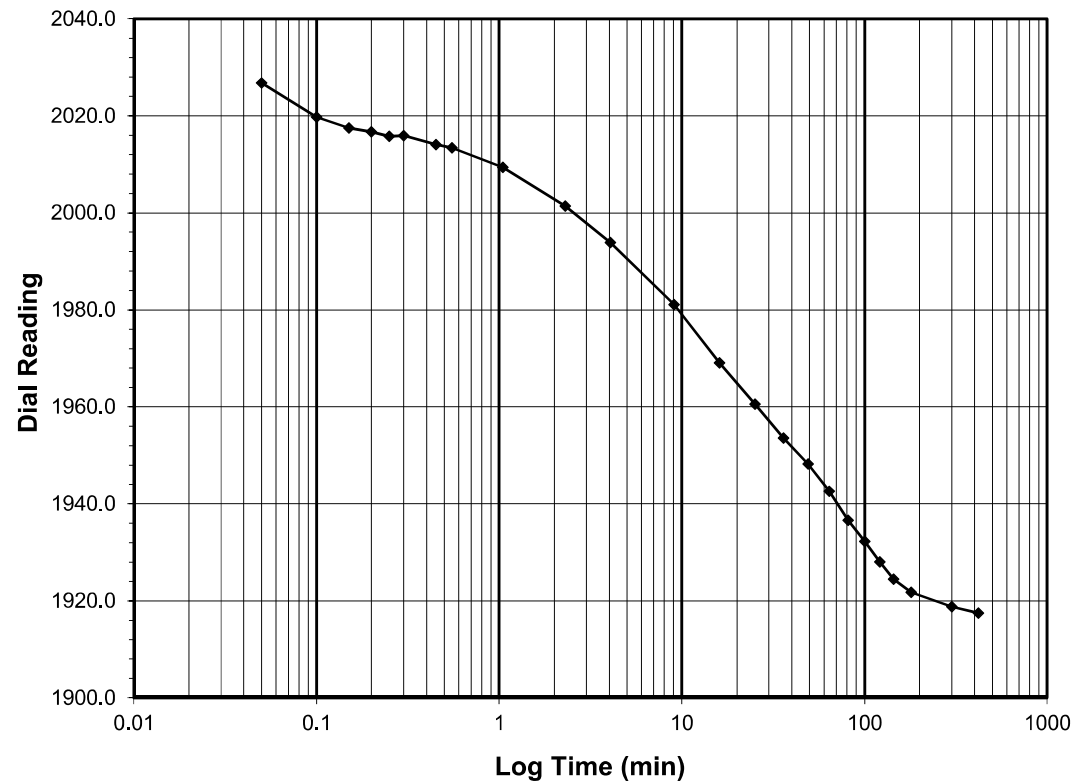
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
 Final Reading (div) 1917.5
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 8/7/2019
 Start Time 12:53:25

Elapsed Time (min)	Dial Reading (div)
Initial	2045.5
0.05	2026.8
0.10	2019.7
0.15	2017.5
0.20	2016.7
0.25	2015.8
0.30	2015.9
0.45	2014.1
0.55	2013.4
1.05	2009.4
2.30	2001.4
4.05	1993.8
9.05	1981.1
16.05	1969.0
25.07	1960.5
36.07	1953.6
49.07	1948.2
64.07	1942.6
81.07	1936.6
100.07	1932.2
121.07	1928.0
144.07	1924.4
180.07	1921.8
300.07	1918.8
420.10	1917.5



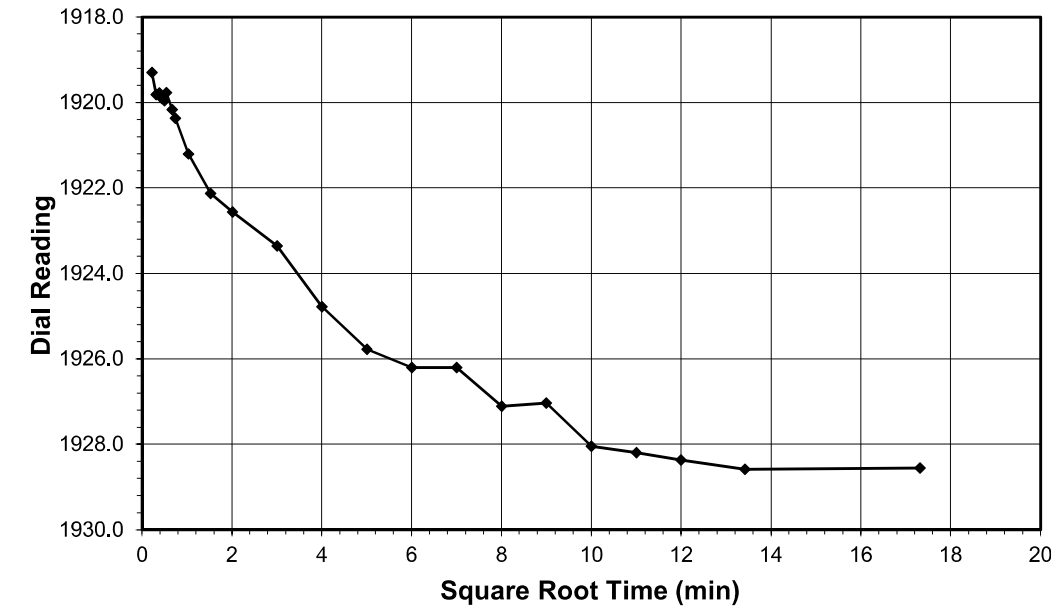
Tested By 129-08-0411 Date 8/7/2019 Checked By GEM Date 8/19/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

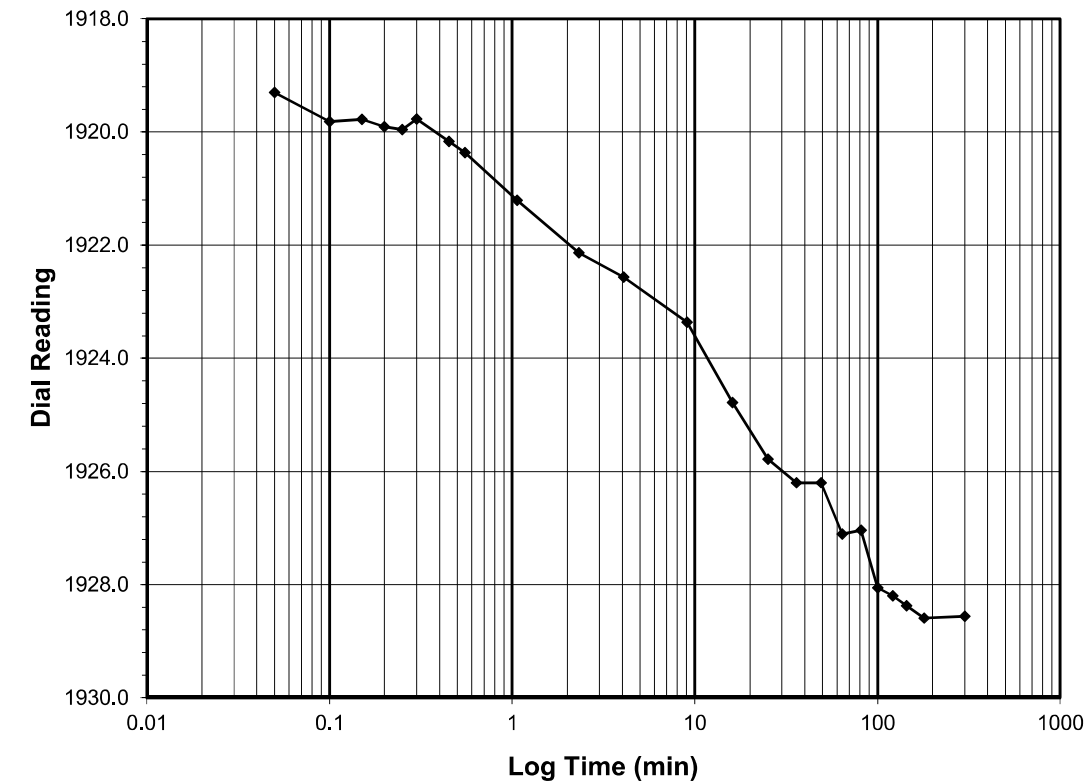
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
 Final Reading (div) 1928.6
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 8/7/2019
 Start Time 19:53:31

Elapsed Time (min)	Dial Reading (div)
Initial	1917.5
0.05	1919.3
0.10	1919.8
0.15	1919.8
0.20	1919.9
0.25	1920.0
0.30	1919.8
0.45	1920.2
0.55	1920.4
1.07	1921.2
2.32	1922.1
4.07	1922.6
9.07	1923.4
16.07	1924.8
25.07	1925.8
36.07	1926.2
49.07	1926.2
64.07	1927.1
81.07	1927.0
100.07	1928.1
121.07	1928.2
144.07	1928.4
180.07	1928.6
300.07	1928.6



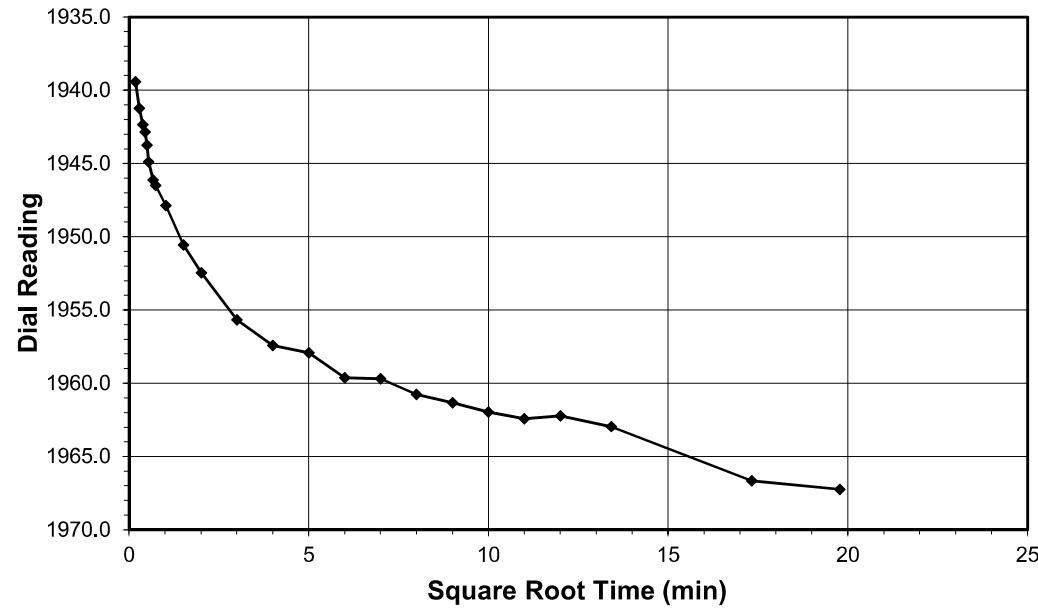
Tested By 129-08-0411 Date 8/7/2019 Checked By GEM Date 8/19/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

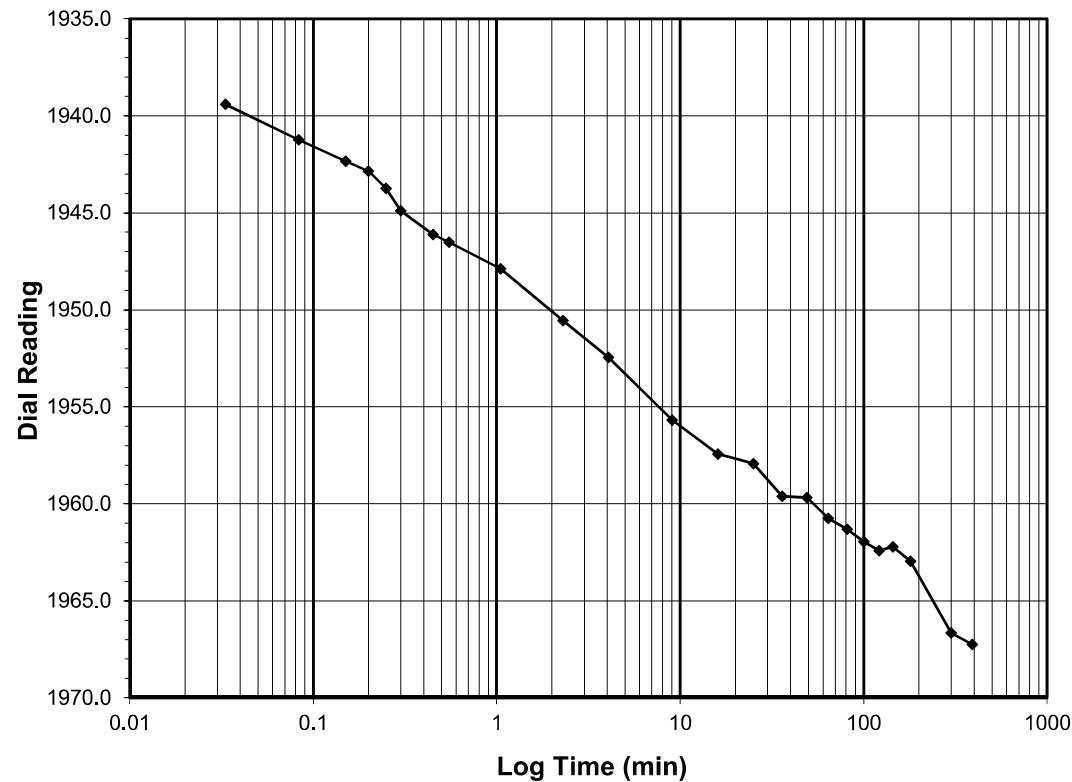
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 1967.2
 Consolidometer No. **R409**
 1 Division (in) 0.0001

Start Date 8/8/2019
 Start Time 3:53:42

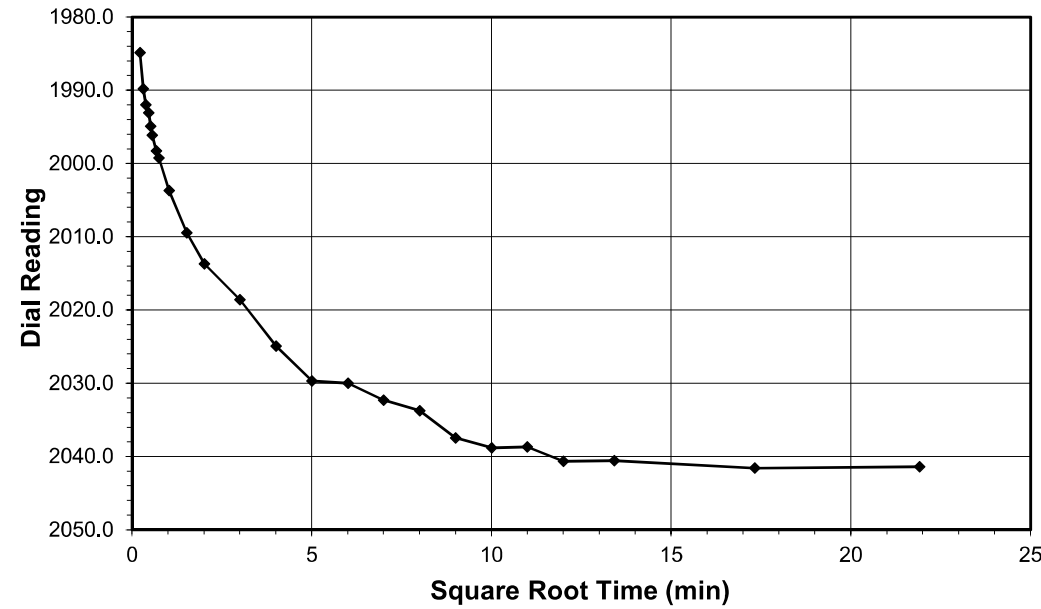
Elapsed Time (min)	Dial Reading (div)
Initial	1928.6
0.03	1939.4
0.08	1941.2
0.15	1942.3
0.20	1942.9
0.25	1943.7
0.30	1944.9
0.45	1946.1
0.55	1946.5
1.05	1947.9
2.30	1950.6
4.05	1952.5
9.05	1955.7
16.05	1957.4
25.05	1957.9
36.05	1959.6
49.05	1959.7
64.05	1960.8
81.05	1961.3
100.05	1962.0
121.05	1962.4
144.05	1962.2
180.07	1963.0
300.07	1966.7
391.07	1967.2



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

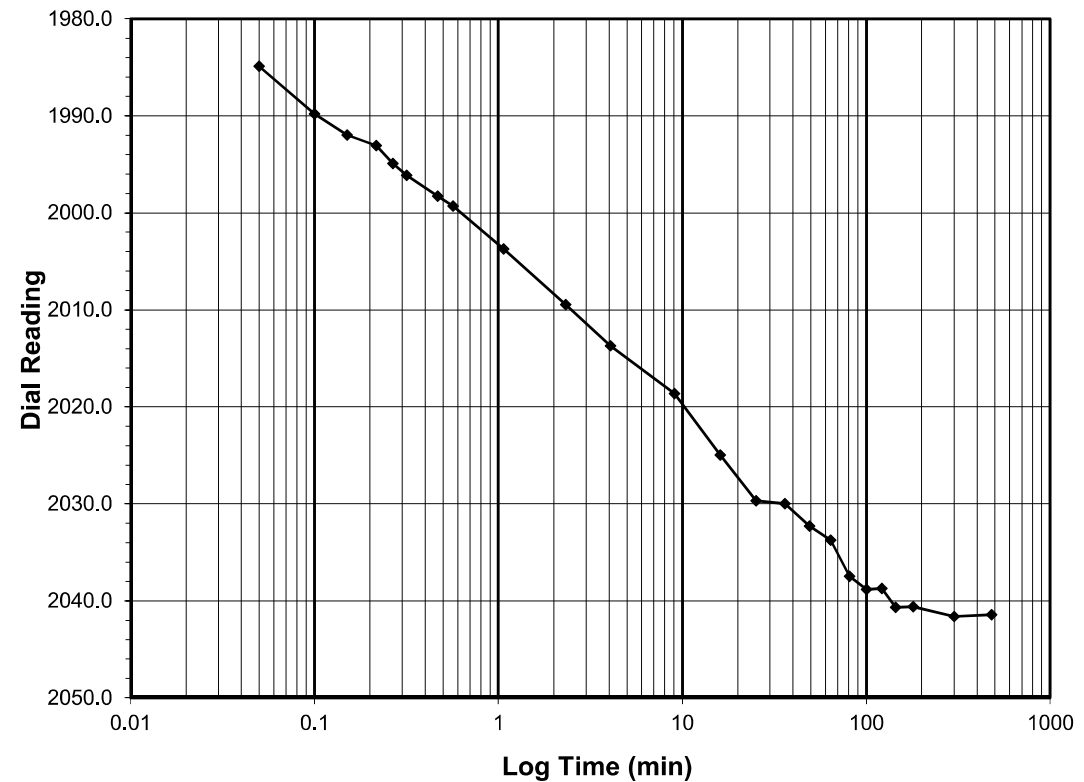
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 2041.4
 Consolidometer No. **R409**
 1 Division (in) 0.0001

Start Date 8/8/2019
 Start Time 10:24:47

Elapsed Time (min)	Dial Reading (div)
Initial	1967.2
0.05	1984.9
0.10	1989.8
0.15	1992.0
0.22	1993.1
0.27	1994.9
0.32	1996.1
0.47	1998.3
0.57	1999.3
1.07	2003.7
2.32	2009.4
4.07	2013.7
9.07	2018.6
16.07	2024.9
25.07	2029.7
36.07	2030.0
49.07	2032.3
64.07	2033.7
81.07	2037.5
100.08	2038.8
121.08	2038.7
144.08	2040.7
180.08	2040.6
300.08	2041.6
480.30	2041.4



Tested By 129-08-0411 Date 8/8/2019 Checked By GEM Date 8/19/2019

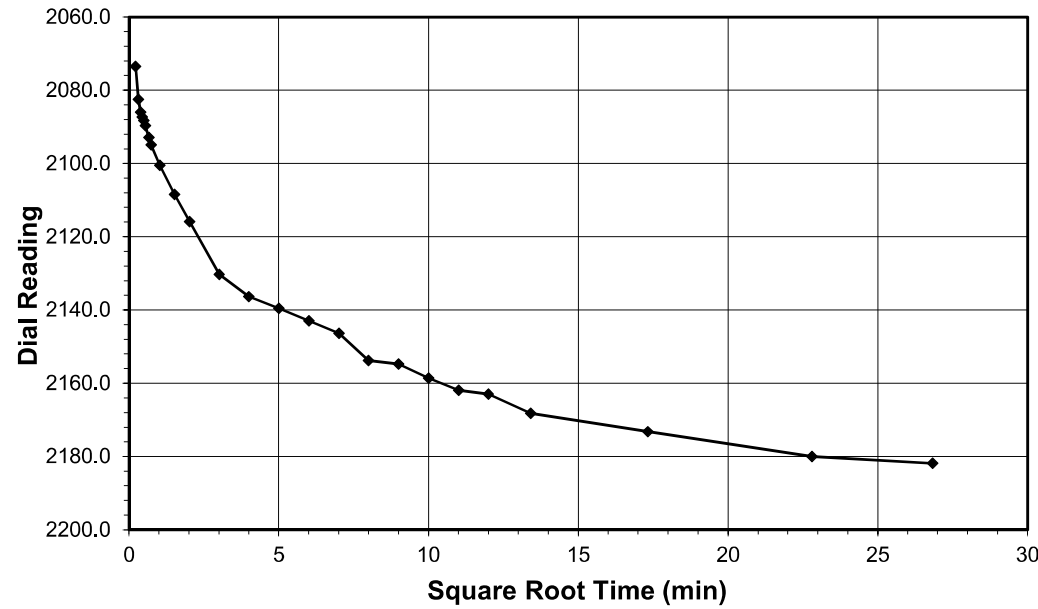
Tested By 129-08-0411 Date 8/8/2019 Checked By GEM Date 8/19/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

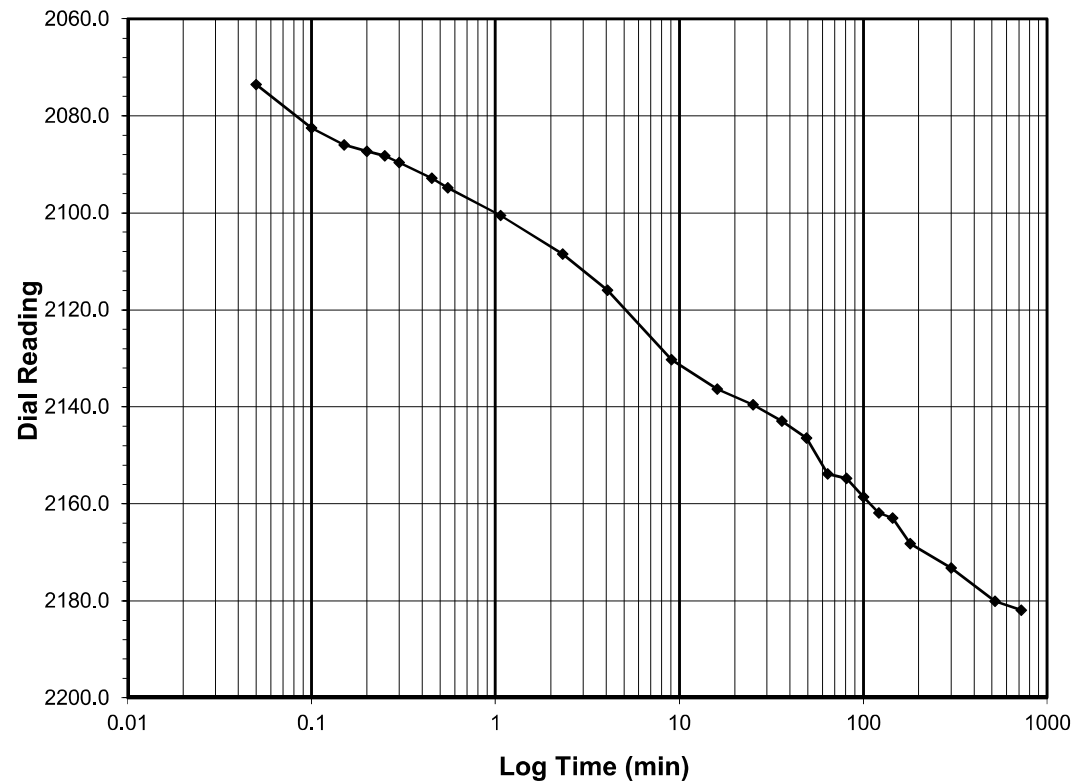
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
 Final Reading (div) 2181.9
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 8/8/2019
 Start Time 18:25:05

Elapsed Time (min)	Dial Reading (div)
Initial	2041.4
0.05	2073.6
0.10	2082.5
0.15	2086.0
0.20	2087.3
0.25	2088.3
0.30	2089.6
0.45	2092.9
0.55	2094.8
1.07	2100.6
2.32	2108.5
4.07	2115.9
9.07	2130.3
16.07	2136.4
25.07	2139.6
36.07	2142.9
49.07	2146.4
64.07	2153.8
81.07	2154.7
100.07	2158.6
121.07	2161.9
144.07	2163.0
180.07	2168.2
300.07	2173.2
520.07	2180.1
720.33	2181.9



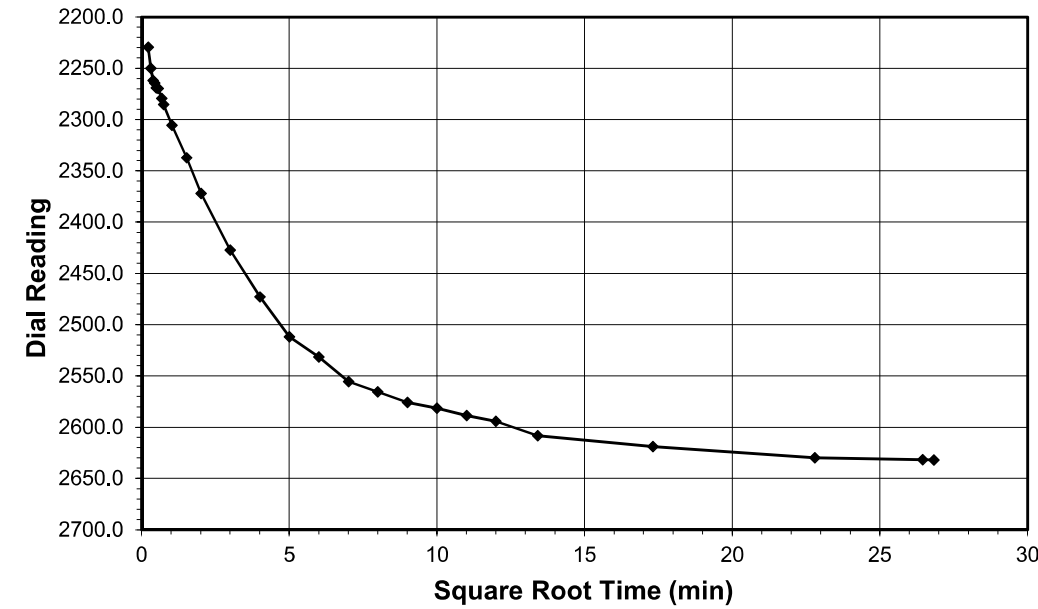
Tested By 129-08-0411 Date 8/8/2019 Checked By GEM Date 8/19/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

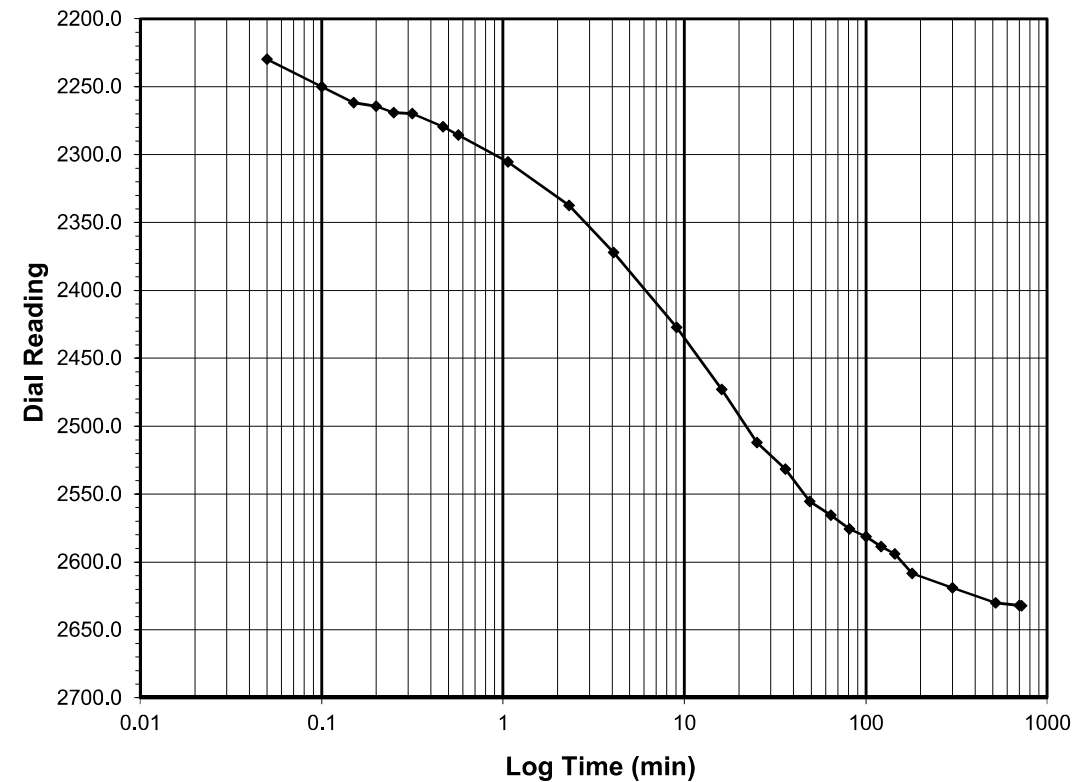
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-8.0
 Final Reading (div) 2632.0
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 8/9/2019
 Start Time 6:25:25

Elapsed Time (min)	Dial Reading (div)
Initial	2181.9
0.05	2229.6
0.10	2250.1
0.15	2261.9
0.20	2264.5
0.25	2269.2
0.32	2269.9
0.47	2279.5
0.57	2285.5
1.07	2305.4
2.32	2337.3
4.07	2372.1
9.07	2427.2
16.07	2473.0
25.07	2511.9
36.07	2531.5
49.07	2555.5
64.07	2565.6
81.07	2575.7
100.07	2581.4
121.08	2588.7
144.08	2594.1
180.08	2608.4
300.08	2618.9
520.08	2630.0
700.08	2631.9
720.32	2632.0



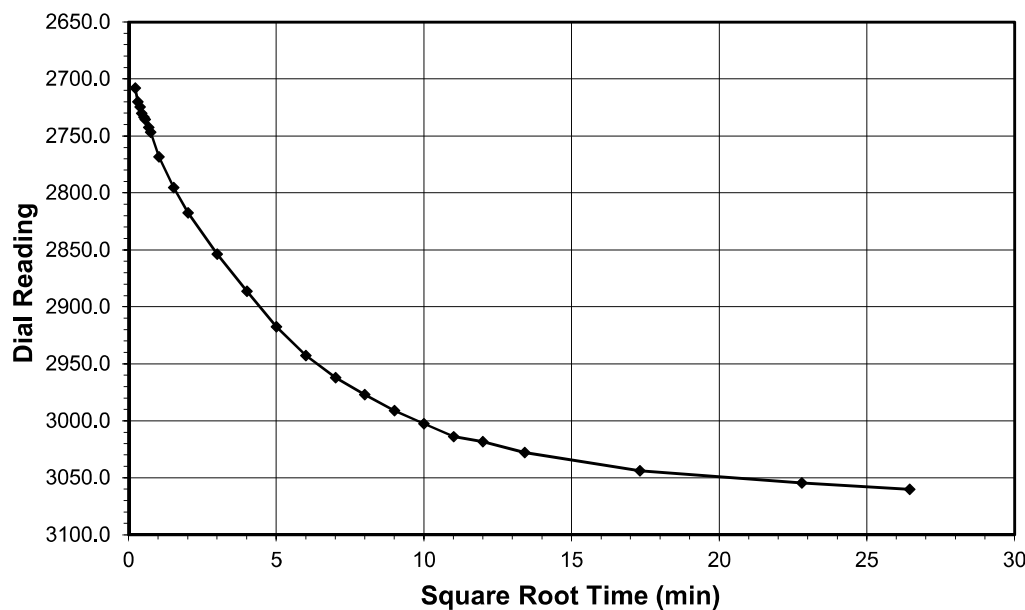
Tested By 129-08-0411 Date 8/9/2019 Checked By GEM Date 8/19/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

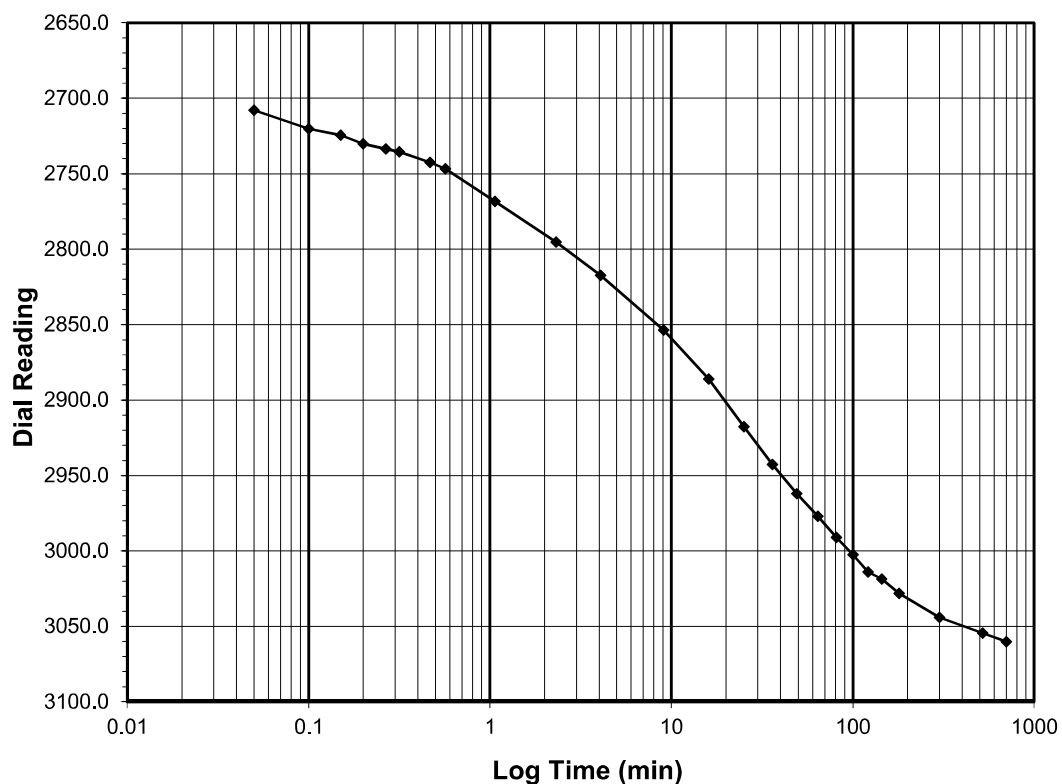
Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 8.0-16.0
 Final Reading (div) 3060.2
 Consolidometer No. R409
 1 Division (in) 0.0001
 Start Date 8/9/2019
 Start Time 18:25:44

Elapsed Time (min)	Dial Reading (div)
Initial	2632.0
0.05	2708.0
0.10	2720.2
0.15	2724.6
0.20	2730.3
0.27	2733.6
0.32	2735.6
0.47	2742.5
0.57	2746.8
1.07	2768.3
2.32	2795.4
4.07	2817.4
9.07	2853.6
16.07	2886.2
25.07	2917.7
36.07	2942.7
49.07	2962.1
64.07	2977.0
81.07	2991.0
100.07	3002.5
121.07	3013.9
144.07	3018.5
180.08	3028.0
300.08	3044.0
520.08	3054.5
700.08	3060.2



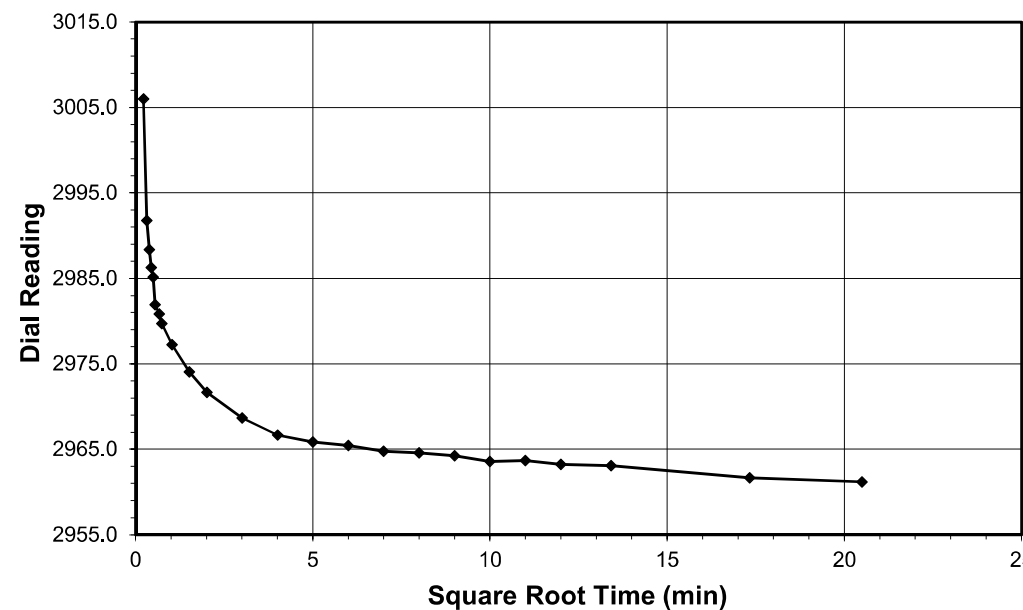
Tested By 129-08-0411 Date 8/9/2019 Checked By GEM Date 8/19/2019



ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

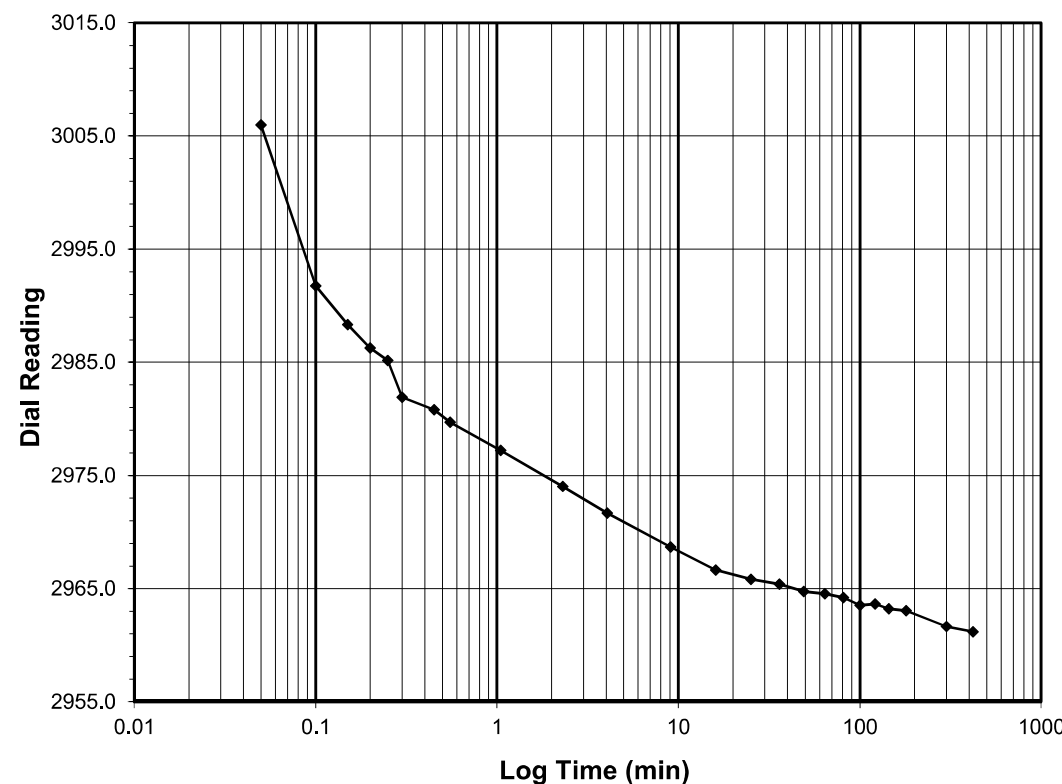
Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 16.0-4.0
 Final Reading (div) 2961.2
 Consolidometer No. R409
 1 Division (in) 0.0001
 Start Date 8/10/2019
 Start Time 6:26:10

Elapsed Time (min)	Dial Reading (div)
Initial	3060.2
0.05	3006.0
0.10	2991.7
0.15	2988.3
0.20	2986.3
0.25	2985.1
0.30	2981.9
0.45	2980.8
0.55	2979.7
1.05	2977.2
2.30	2974.0
4.05	2971.7
9.05	2968.7
16.05	2966.6
25.05	2965.8
36.05	2965.4
49.05	2964.8
64.05	2964.6
81.07	2964.2
100.07	2963.6
121.07	2963.7
144.07	2963.2
180.07	2963.1
300.07	2961.7
420.18	2961.2



Tested By 129-08-0411 Date 8/10/2019 Checked By GEM Date 8/19/2019

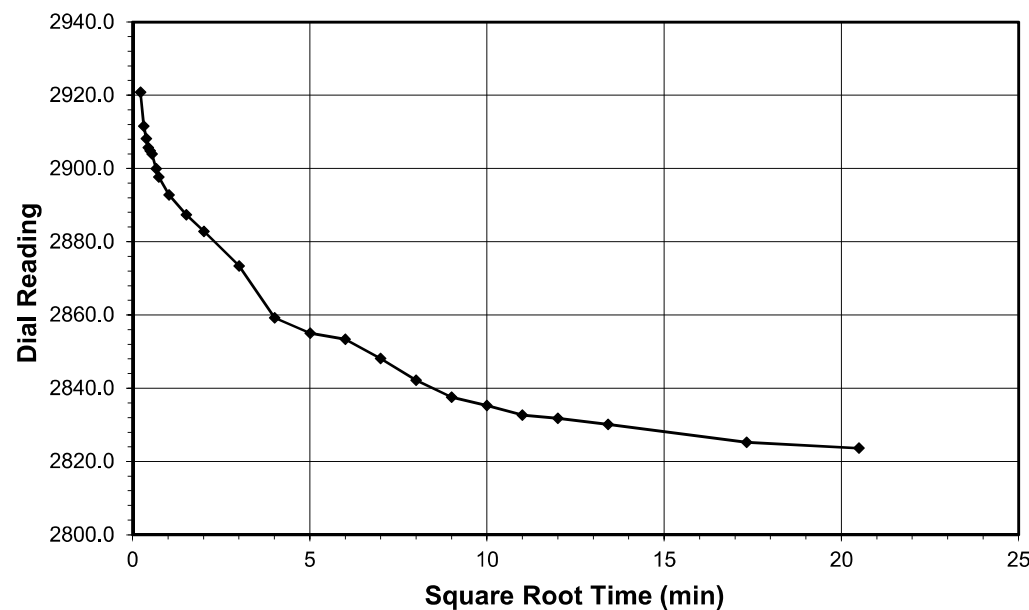


ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

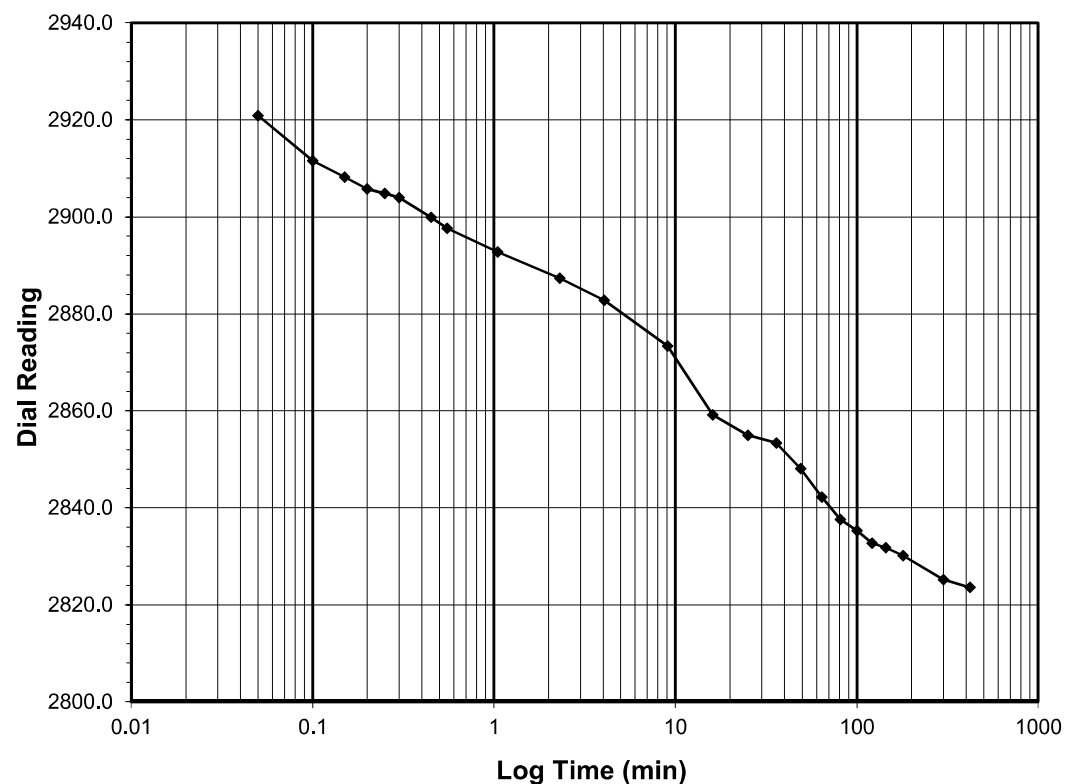
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
Final Reading (div) 2823.6
 Consolidometer No. **R409**
 1 Division (in) 0.0001

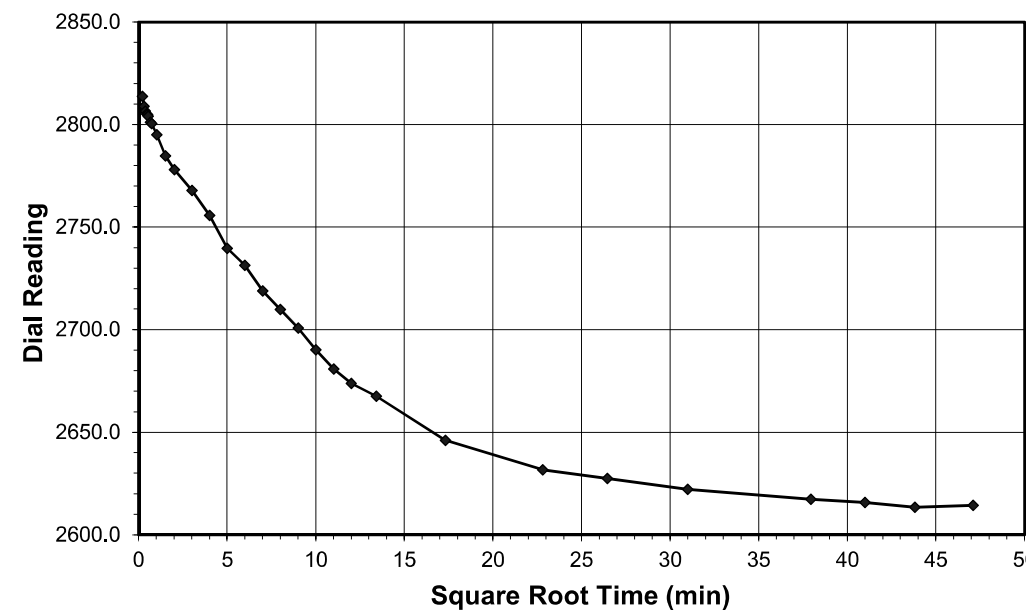
Start Date 8/10/2019
 Start Time 13:26:21

Elapsed Time (min)	Dial Reading (div)
Initial	2961.2
0.05	2920.9
0.10	2911.6
0.15	2908.2
0.20	2905.7
0.25	2904.8
0.30	2904.0
0.45	2899.9
0.55	2897.6
1.05	2892.7
2.30	2887.3
4.05	2882.8
9.07	2873.4
16.07	2859.2
25.07	2855.0
36.07	2853.4
49.07	2848.1
64.07	2842.2
81.07	2837.6
100.07	2835.3
121.07	2832.7
144.07	2831.8
180.07	2830.2
300.07	2825.2
420.02	2823.6



Client Kleinfelder Boring No. S2_RT.LN_EB2-A
 Client Project R-2561CA Depth (ft) 19.9-21.9
 Project No. R-2019-209-002 Sample No. ST-3
 Lab ID R-2019-209-002-003 Visual Description Gray Clay with Organics

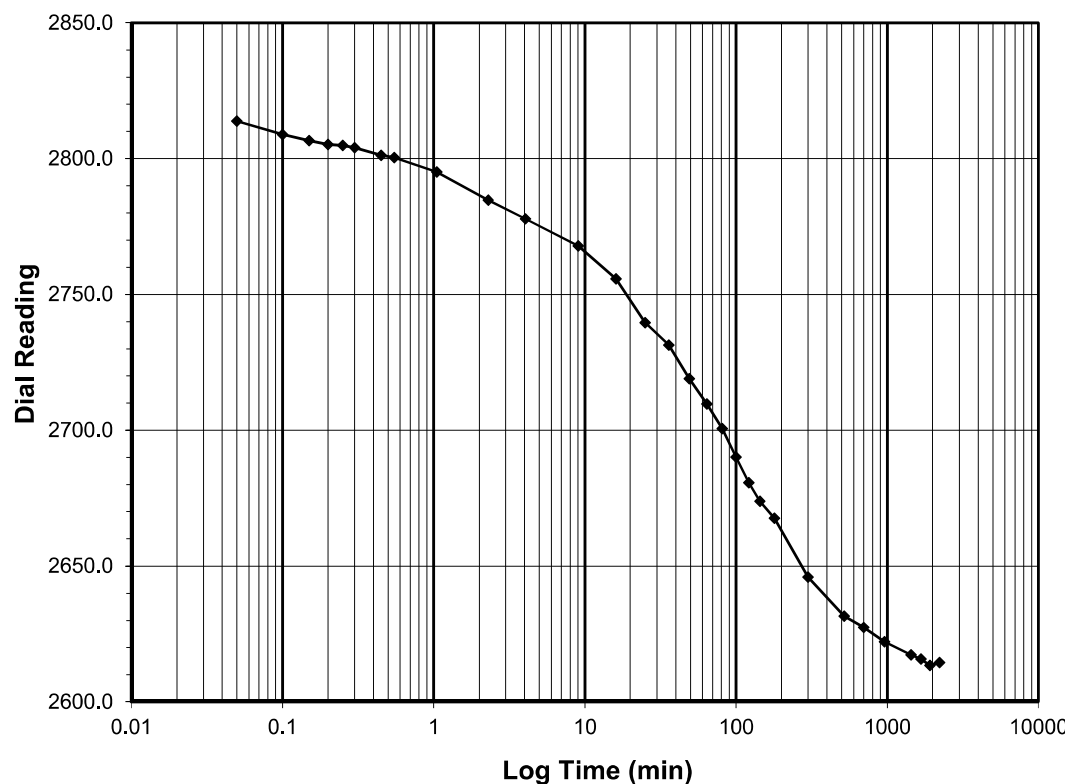
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
Final Reading (div) 2614.4
 Consolidometer No. **R409**
 1 Division (in) 0.0001

Start Date 8/10/2019
 Start Time 20:26:22

Elapsed Time (min)	Dial Reading (div)
Initial	2823.6
0.05	2813.8
0.10	2808.9
0.15	2806.6
0.20	2805.2
0.25	2804.9
0.30	2804.0
0.45	2801.2
0.55	2800.4
1.05	2795.0
2.30	2784.7
4.05	2777.9
9.05	2767.9
16.05	2755.7
25.05	2739.6
36.05	2731.4
49.05	2719.0
64.05	2709.7
81.05	2700.7
100.05	2690.1
121.07	2680.8
144.07	2673.8
180.07	2667.6
300.07	2646.0
520.07	2631.6
700.07	2627.4
960.07	2622.1
1440.07	2617.2
1680.07	2615.7
1920.07	2613.4
2218.40	2614.4



Tested By 129-08-0411 Date 8/10/2019 Checked By GEM Date 8/19/2019

Tested By 129-08-0411 Date 8/10/2019 Checked By GEM Date 8/19/2019